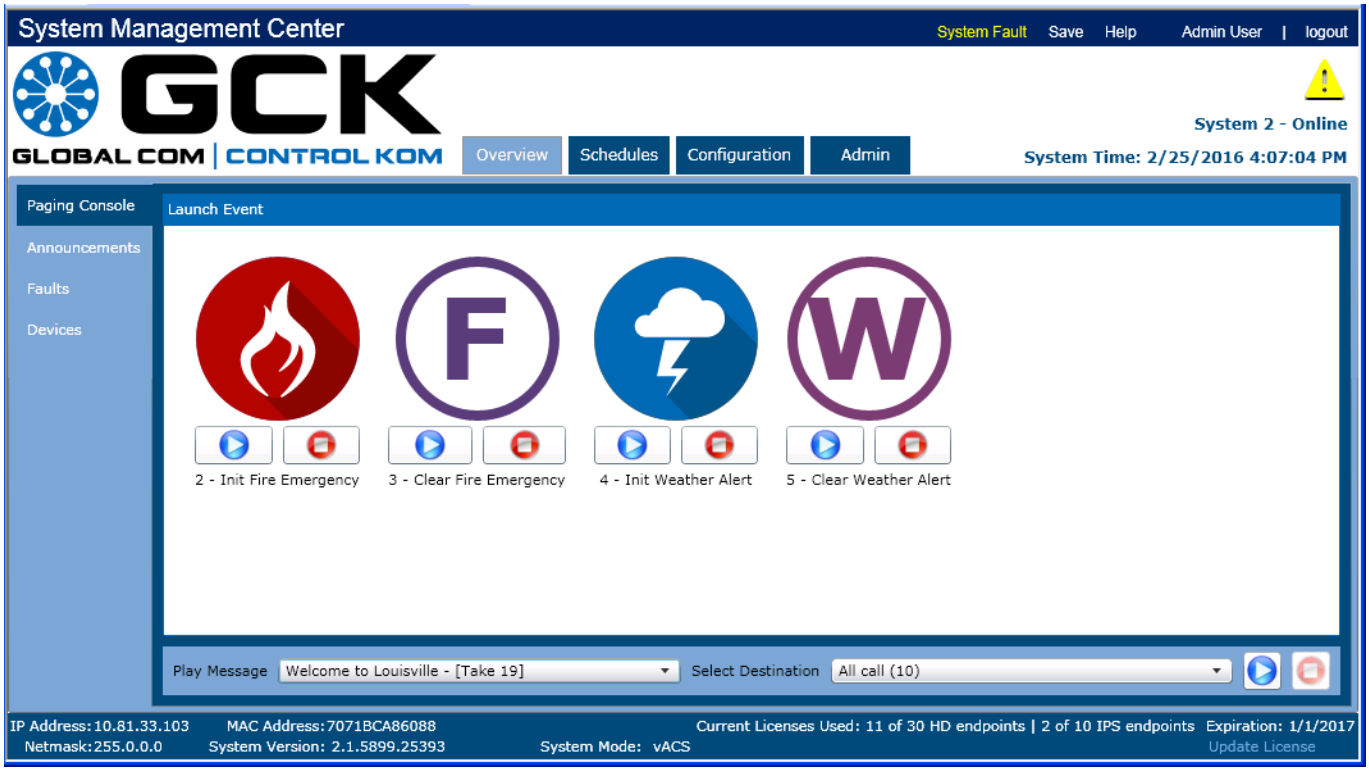
GLOBALCOM/CONTROLKOM (GCK) System Management Center (SMC) User Manual



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10/08/2015	0.9	Update Tel Interface, Unicast RTP & Licensing	Ken	
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1/11/2019	6.0.2	New Monitor Test windows, Touch screen template changes and re-formatting for pop-up windows under each device. Dropped First Run Wizard Appendix B.	Ken	

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GLOBALCOM/CONTROLKOM (GCK) SMC USER MANUAL

1. GLOBALCOM/CONTROLKOM (GCK) SMC Overview

1.1 Introduction

The System Management Center (SMC) is a browser-based configuration and control application used to manage GLOBALCOM systems. The SMC is hosted on the hardware for the Announcement Controller, Message Server or Telephone Interface. The hardware this runs on, available from IED or AtlasIED, has gone by various part numbers over the years such as 1100ACS, 1200ACS, 1200CPU, 1100MSG, 1150CPU, 1151CPU, IP100, IP108 or other computer/server that may be provided by the end user or installation company. Because it is browser-based, all functions and features available within the SMC can be accessed from any computer on the same network as long as it has a compatible browser application installed. The browser will need to support the installation of Microsoft's Silverlight run-time plug-in in order to display and function correctly.

Since the application is hosted as a web page on the device, you simply need to know the IP address of that device in order to access it from your web browser (preferably Internet Explorer). Enter the IP address in the address bar of the browser and you can launch the application. On many systems, a shortcut is provided on the desktop. Figure 1-1 shows the SMC main window and its sections.

Note: Starting with Version 3, the web pages are encrypted and sent on the network via secure sockets using the HTTPS protocol. GCK provides its own unverified certificate for this encryption. You may be prompted by the browser at startup to accept this certificate, which you should do.

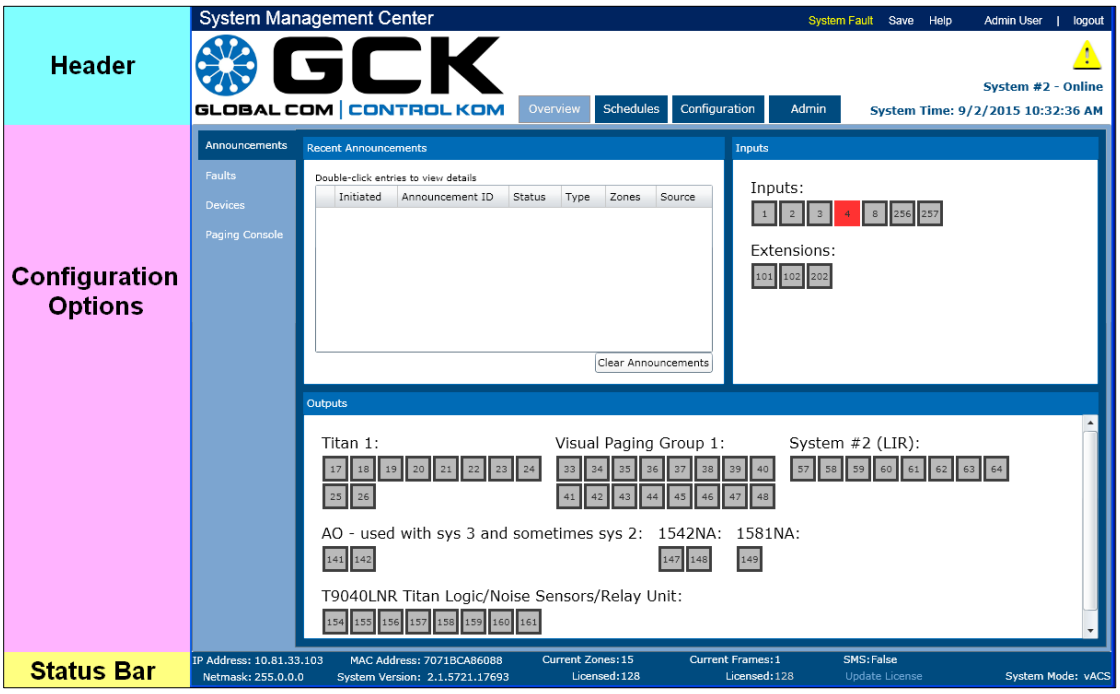


Figure 1-1: System Management Center Sections

The SMC interface is divided into three different sections. The **Header** and **Status Bar** provide various status information and overall system interface options. The **Configuration Options** section of the interface will change as needed based on the system parameters that you are editing. Each section is explained below.

Header

This section of the SMC interface contains various status information as well as general system commands accessible using icons or buttons as shown in Figure 1-2.

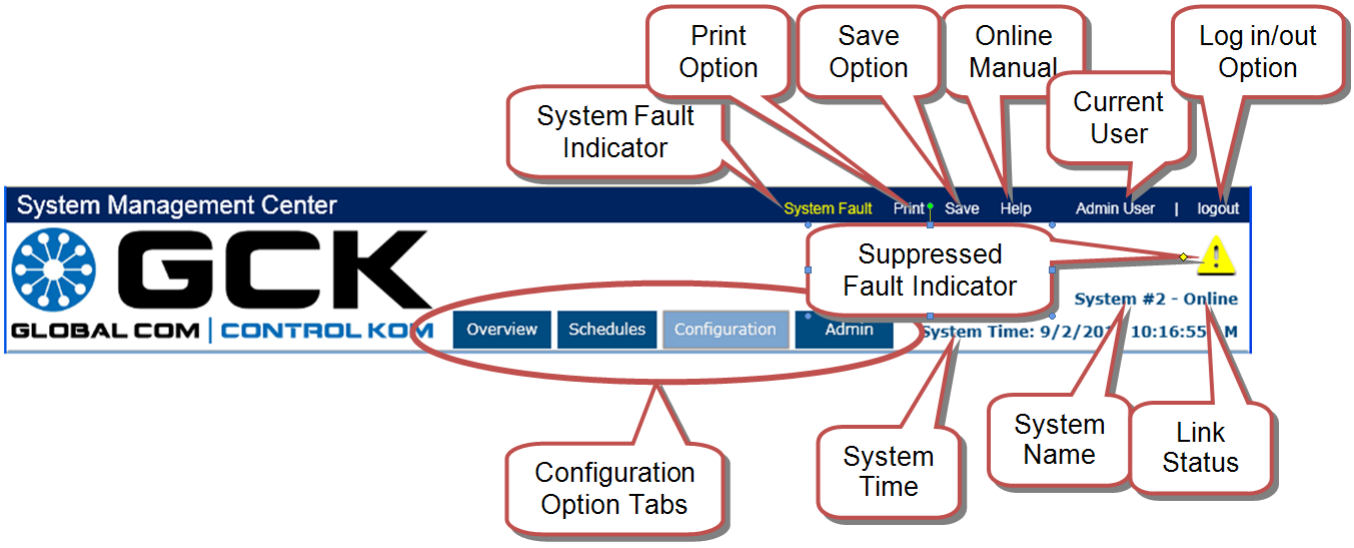


Figure 1-2: SMC Header Features

System Fault Indicator

This option will only appear when a fault has been detected by the System Supervision subsystem. Click on it and you will be taken to the Faults section located on the Overview Tab to view the current faults.

Print Option

This option will only appear when the Configuration Tab is selected and is used to create a document showing the complete system configuration, such as for documentation/archival purposes. This document may be saved as a data file or printed using this option. For more on this option see ***Section 4.16*** .

Save Option

This option will only appear when changes have been made to the configuration and have not yet been saved. Click the option to save the changes and send any new settings to the devices.

Current User

This shows the name of the currently logged-in user, if any.

Login/Logout Option

The text on this button will change based on the current login status. If you are logged in, it will display ***Logout*** and you can click it to log out of the system. If no one is logged in, it will display ***Login***. Click it and you will be prompted to enter a username and password to log into the system.

Suppressed Fault Indicator

This icon appears if there are any suppressed faults in the system. Clicking on this icon will take you to the Faults page to view the suppressed fault list.

Configuration Option Tabs

The SMC is divided into four basic sections that are referred to as "tabs" in this documentation. Access to each tab is based on permissions assigned to each individual user account and they are categorized based on system usage and increasing degree of complexity.

Click on the buttons to take you to the different tabs. The content available in the Configuration Options section of the application window will change to reflect the options available within that tab.

- Overview –***See "SMC Overview Tab"***
- Schedule – ***See "SMC Schedule Tab"***
- Configuration – ***See "SMC Configuration Tab"***
- Admin – ***See "SMC Admin Tab"***

System Name

The description for the system will appear here in the header, followed by the link status.

Link Status

This area shows the status of the link between the System Management Center and the controller. Possible options are:

Offline – The SMC hasn't connected with the controller yet. This will usually appear when the web pages are initially loading.

Online – The SMC is communicating with the controller.

(nothing) – This condition can occur when the connection to SMC exists, but the controller is not fully function because it is not licensed (yet) on this computer or device (1100/1200). One should also note read text in the status bar at the bottom in the license area when this condition exists.

Lifeline Monitoring – This will appear on a system that is operating as a Lifeline system. It indicates that it is up and running, but monitoring all programmed systems and will take over their functions if a failure is detected.

Lifeline System [x] – This will appear on a system that is operating as a Lifeline system. It indicates that it has taken over control for the system indicated (as the [x] variable) and is no longer monitoring other systems for failures.

System Time

This area shows the current time of the announcement controller, and is generally accurate to a couple of seconds. This is the time used to trigger scheduled events for example. If one is logged in with Installer or Administrator privileges, one may set the system time by double clicking on the time display. This changes the area to a time setting controls as shown below in Figure 1-3. One can enter a new time/date in the edit box on the left, followed by clicking on the ***Set System Time*** button beside it. To leave this time setting mode without changing the time, one clicks on the ***Cancel*** button.

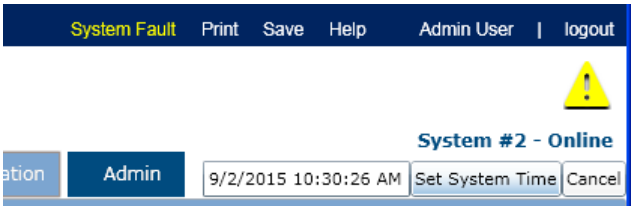


Figure 1-3: System Time Setting Controls

Configuration Options

The middle portion of the SMC screen will change to display the content associated with the ***Configuration Options Tab*** you have selected in the header. Figure 1-4 shows this section when the ***Overview*** tab is selected. This section consists of a series of pages, which are selected on the left to reveal details to be viewed or edited on the right.

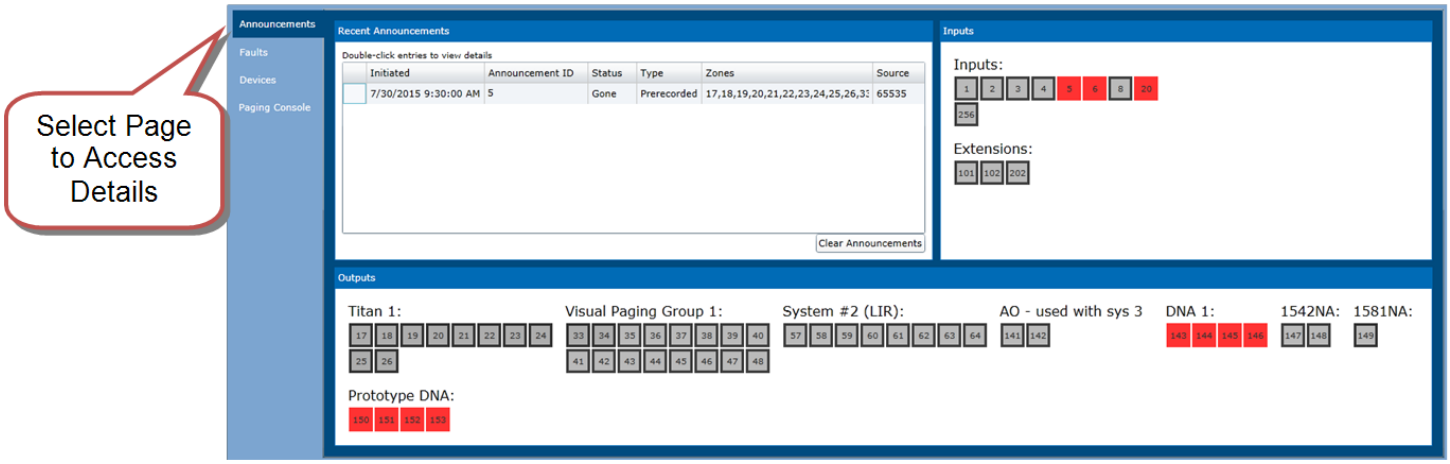


Figure 1-4: Configuration Options Pages

Status Bar

The bottom portion of the SMC screen contains a status bar that displays the systems information, the current license status and the current system operating mode. See "Licensing" in Appendix A for more information regarding the details of the items shown on the status bar.

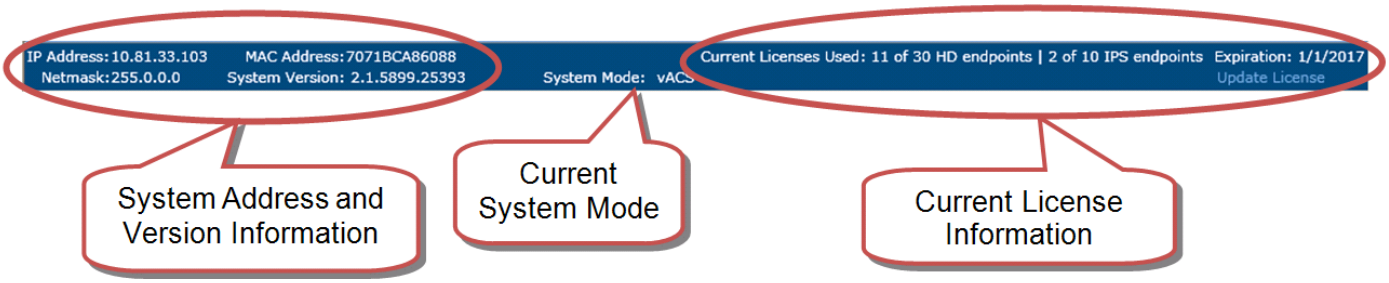


Figure 1-5: Status Bar Elements

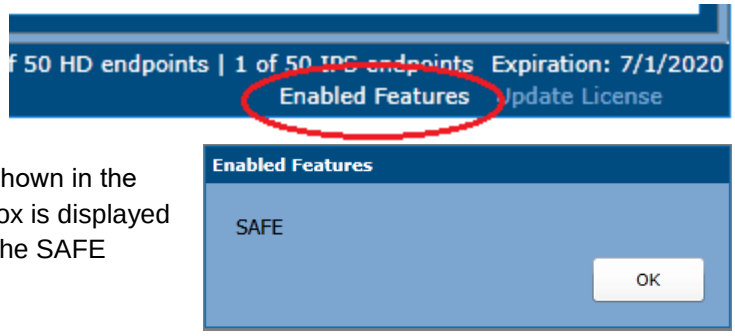
System Address and Version Information

This part of the header displays the current Ethernet address settings of the system. The IP Address and Netmask settings reflect the operating system address settings detected by the software. The MAC Address is based on the Ethernet interface hardware and cannot be changed. The System Version field displays the version of the GCK that is currently installed on your system.

Note: If the first three fields are ever just blank, check your network connection. If the system is booted without network connectivity, then the operating system does not provide any addressing information because the network service is not operating. Once you have resolved the network issue, you will need to close and reopen the SMC to get the correct information.

Current Licensing Information

This area shows key attributes of the current license for this installation. The “Update License” option may be clicked on to go to enter or update the license. See Appendix A for information on getting and applying a license key to the system to enable capabilities of the system.



In addition to endpoint licenses that appear, there can be licenses for special features. When such a feature is enabled, the additional text “Enabled Features” appears as shown in the example. If one clicks on this label, a pop-up box is displayed which lists what features are enabled, such as the SAFE example shown.

Current System Mode

See the next section for more details on the various system modes.

1.2 System Modes

The available configuration options available within the SMC will vary based on the hardware that it is controlling and/or the way the system has been licensed. The four general categories of different operational modes are outlined below.

Announcement Controller

In this mode, the vACS service is functioning as an announcement controller. It has the ability to "own" system devices, thus you have access to adding, deleting, and configuring devices from the SMC when operating in this mode. The majority of this documentation is dedicated to devices operating in this mode as they have the most configuration options available.

There is also a deployment of SMC that supports IP Audio devices only, no CobraNet devices. In this mode, a few of the features are hidden and all of the CobraNet type devices are removed from such things as the New Device pop-up, to avoid clutter and confusion. Differences in the SMC are denoted in the documentation with notes such as below.

*Note: **IP Only SMC** will not show this configuration section.*

1100MSG / 1200MSG

This mode is used for the message server devices. In this case, the device will be "owned" by an Announcement Controller and the parent device will manage the configuration of the device. Since the parent device will do the configuration, the options available on a device operating in this mode are very limited. The ***Configuration*** tab is not available and you will find that most of the items on the ***Overview*** tab provide very little information as they are managed on the vACS device. The ***Admin*** tab is the only tab of use for this mode, but typically reserved for debugging only. You will need to log in with an account with admin privileges to access that tab. On an MSG, the SMC will appear as in Figure 1-5.

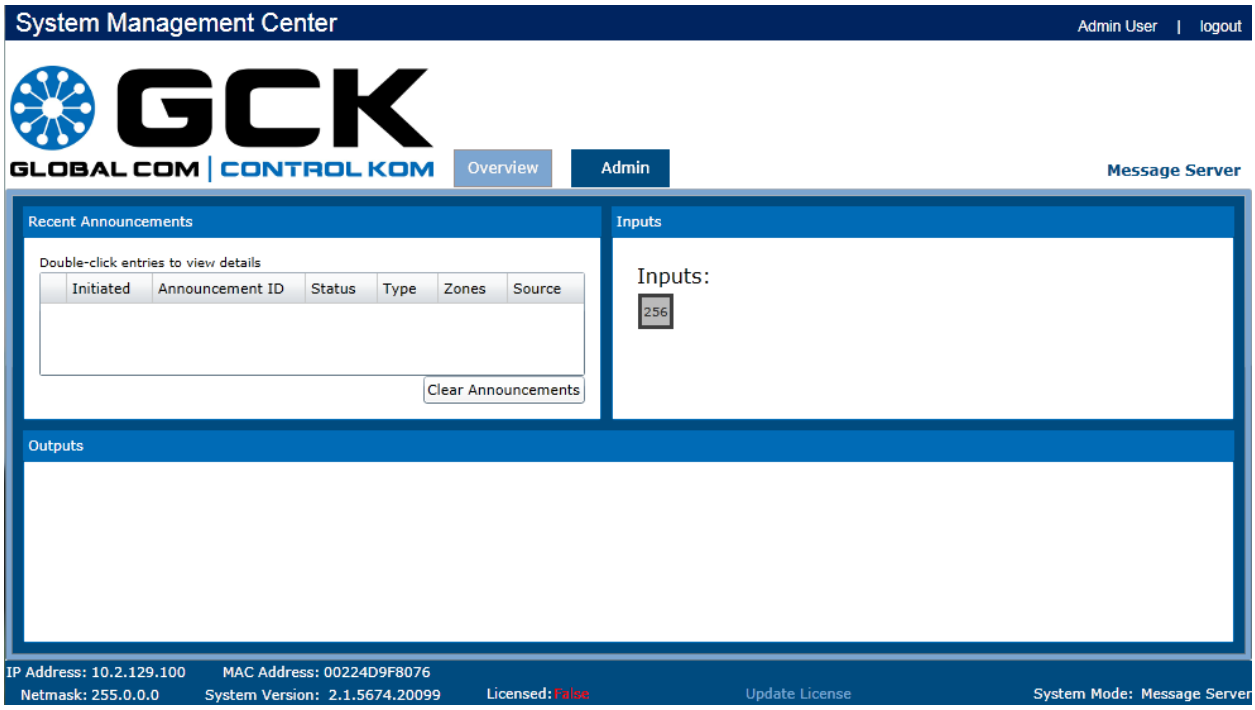


Figure 1-5: Message Server SMC Options

Lifeline

This mode is used for Lifeline devices that monitor other announcement controllers in the system and will assume their role if a failure is detected. Announcement controllers in the system will push their configuration file to the Lifeline so it is available and current if the Lifeline Controller needs to take over for a disabled primary GLOBALCOM announcement controller. The ***Admin*** tab is the only tab available for this mode. It has an additional "Lifeline Control" configuration tab. You will need to log in using an account with admin privileges to access that tab. See "*Lifeline Control*" for details on configuring systems that are monitored by the Lifeline.

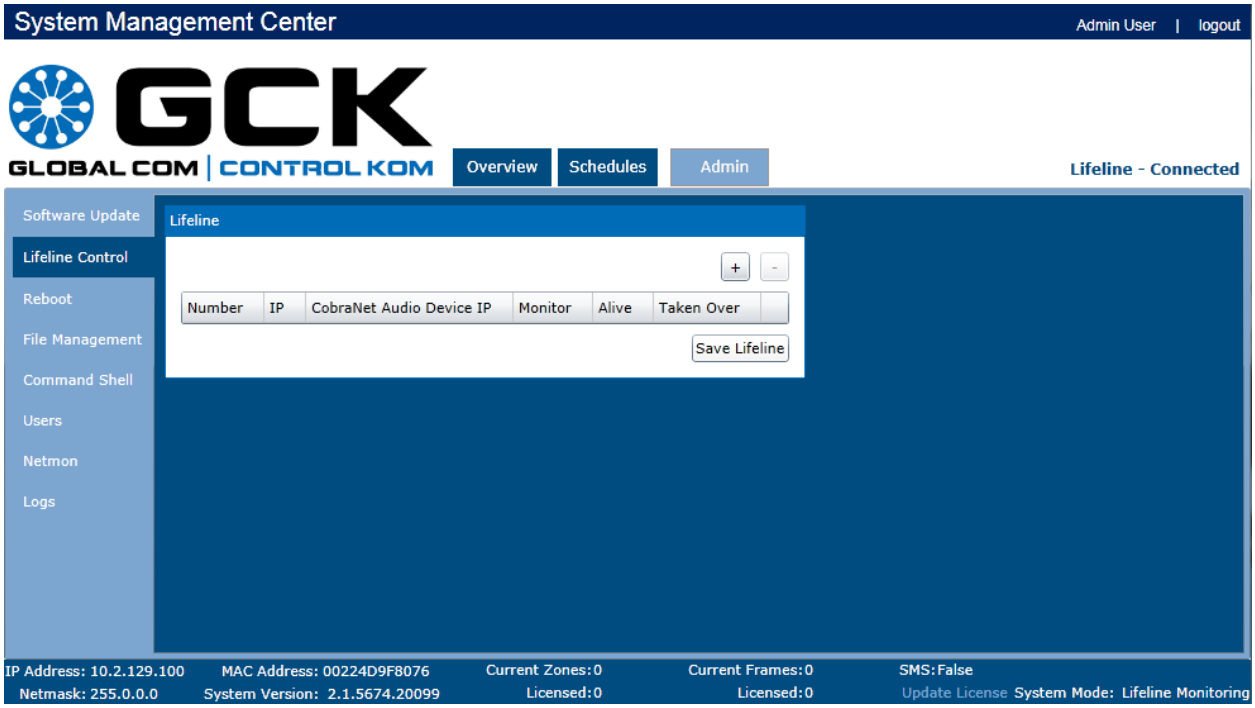


Figure 1-6: Lifeline SMC Options

1100TEL

This mode is used for the VoIP telephone interface device. In this case, the device will be "owned" by an Announcement Controller and the parent device will manage the configuration of the device. Since the parent device will do the configuration, the options available on a device operating in this mode are very limited. The ***Configuration*** tab is not available and you will find that most of the items on the ***Overview*** tab provide very little information as they are managed on the vACS device. The ***Admin*** tab is the only tab of use for this mode, but typically reserved for debugging only. You will need to log in with an account with admin privileges to access that tab.

1.3 Permissions and Feature Access

Which configuration tab pages are visible and what is editable by a user is determined by the user's password access level – if logged in at all. There can be any number of users configured in a system. Each user is defined as being in one of three permission classes:

- User – Basic operations, but no configuration options.
- Installer – User capabilities plus all configuration options
- Administrator – Installer capabilities plus advanced diagnostic options.

The permissions on each of the configuration tab pages are defined in Table 1-1 below. The right most column in the table is the document section where this page is defined. The annotations in the table are dash (-) for no access to this page, RO for read-only access to this page, and R/W for read/write access to this page.

*Note: **IP Only SMC** does not show the configuration pages marked in Yellow in the table.*

Table 1-1: SMC Configuration Page Access

Permissions / Page	None	User	Installer	Admin	See Section
Overview					2
Announcements	RO	R/W	R/W	R/W	2.1
Faults	RO	R/W	R/W	R/W	2.2
Devices	RO	RO	R/W	R/W	2.3
Paging Console	–	R/W	R/W	R/W	0
Schedules					3
Today's Schedule	RO	R/W	R/W	R/W	3.1
Calendar View	–	R/W	R/W	R/W	3.2
Schedule Profiles	–	R/W	R/W	R/W	3.3
Day/Night Schedule	–	_	R/W	R/W	3.4
Scheduled Actions	–	_	R/W	R/W	3.5
Configuration					4
Controllers	–	_	R/W	R/W	4.1
Recorded Messages	–	_	R/W	R/W	4.2
Chimes	–	_	R/W	R/W	4.3
Telephone / Telephone Actions	–	_	R/W	R/W	4.4
Devices	–	_	R/W	R/W	4.5
Action Types					4.5.7.5
Announcement Classes	–	_	R/W	R/W	4.7
Zone Groups	–	_	R/W	R/W	4.8
User Groups	–	_	R/W	R/W	4.9

Permissions / Page	None	User	Installer	Admin	See Section
Mic Templates	–	_	R/W	R/W	4.10
Mic Passwords	–	_	R/W	R/W	4.11
Events	–	_	R/W	R/W	4.12
Visual Alerts and Wayfinding	–	_	R/W	R/W	4.13
SMS Lists	–	_	R/W	R/W	4.14
System Supervision	–	_	R/W	R/W	4.15
Print Configuration					4.16
Admin					5
Backup/Restore	–	_	R/W	R/W	5.1
Software Update	–	_	_	R/W	5.2
Reboot	–	_	R/W	R/W	5.3
Lifeline Control			R/W	R/W	5.4
File Management	–	_	R/W	R/W	5.5
Command Shell	–	_	_	R/W	5.6
Users	–	_	R/W	R/W	5.7
Netmon	–	_	R/W	R/W	0
Debug Messages	–	_	R/W	R/W	5.9
Logs	–	_	R/W	R/W	5.10

1.4 System Definition Roadmap

Defining a system is an iterative process that you can perform as required based on the needs of a particular installation. The exact order and steps are really up to you, but there are certain dependencies that must be taken into consideration. For example, you need to have ***Announcement Classes*** defined before you start defining ***Actions,*** as you must pick an ***Announcement Class*** for many of the available action types. You can always go back and add them as needed, but it helps to plan ahead to minimize the time you must spend switching between screens.

This roadmap is here to give you a general starting point to guide you through configuring a new system while describing the various dependencies involved.

1: Define Users

You need to have at least three (3) users defined for your system with the different levels of available access. Systems typically ship with three user accounts (user, installer, and admin). You may use these three user accounts if desired, or you can change them. You can always add more later as needed.

2: Configure Local System

You need to configure the ***Controller*** tab to define essential configuration options for the local controller. If you will have a Lifeline system monitoring this controller, you will need to come back here to add it once you have defined the Lifeline system in the ***Remote Controllers*** tab. You need to skip the 1200LIR and VoIP configuration at this time. You will come back and do this when you are ready to define Actions.

3: Configure Remote Systems

Here you must tell the controller about all the other controllers in your system. You will need these defined when it comes time to program Actions that go between controllers.

4: Define Announcement Classes

You must have some ***Announcement Classes*** defined in order to define Actions for input devices. The system will have some defaults already programmed, but you may want to add more or edit the existing ones as needed. Again, you can always come back and add more as you have a need.

5: Define User Groups

You will need to define some basic ***User Groups*** in order to complete the configuration of graphical paging stations and the ***Mic Passwords and Mic Templates*** sections. You can skip this step if you do not have any graphical paging stations such as the 528 series stations.

6: Define Output Devices

Output devices include 1502AO, T9160, T9116, DNA68xx, T9016RY, T9032RY, T9040NLR relays, T9032LVIO logic outputs, visual displays, and other devices that are used as system outputs. Output devices own zone outputs and you must have zones in the system in order to define ***Zone Groups*** and just about any of the ***Action Types*** will require zone groups or zones in order to be completely defined. It is best to add all of your output devices so all zones will be available when you go to program actions. You will need to return to the output devices after you have configured input sources in order to assign BGM, adjust levels, and configure and calibrate ambient analysis and system supervision.

7: Define Zone Groups

Since you just added the output devices, now is a good time to go in and define the ***Zone Groups*** that you think may be needed for your system. You can always come back here and add them as needed, but it will save time if you can define as many as you can at this point so they are available when you go to define actions.

8: Define Input Devices

Input devices include microphone stations, 1502AI, Titan inputs, T9032LVIO, 1200LIR, T9040NLR inputs, and ambient noise sensors, etc.) You may need to return to some input devices again to perform additional configuration based on items added later. On example will be that you need to return to an MS528 type microphone station to add a default template after you have defined templates.

9: Load Prerecorded Messages & Chimes

Pre-recorded messages are WAV files that can be played by the announcement controller in response to input stimuli such as contact closures or user actions on mic stations. Chimes are such things as pre-announcement tones and tones that play when connected to intercom devices to indicate that listening is active. If these features are needed, then one needs to load the WAV files to use in the system before defining actions or scheduled events that make use of them.

10: Define Actions

This point is where you will define what happens with the inputs and outputs in the system. You will need to have any input devices defined prior to programming actions for them. You must have output devices and zone/zone maps defined in order to use them in an action.

11: Define Mic Templates

Mic templates determine the graphical button layout on the microphone stations that have a graphical display. The buttons defined in the template need to be tied to actions, which must be defined prior to creating the templates. You will need to go back to the microphone station configuration to assign a template to each station after you have created the templates in this step unless you are not using logins for the microphone station. If you are using logins, then the template is determined by the passwords defined in the next step.

12: Define Mic Passwords

If you are not going to lock your microphone stations, then you can skip this step. If you will require users to log into microphone stations, then you must define passwords for them. You will need to have ***User Groups*** and ***Mic Templates*** defined before defining ***Mic Passwords***.

13: Define Scheduled Actions

If one wishes to have regularly repeating actions, such as no-smoking reminders they should be done in this area.

14: Define Events

Events can be one or multiple actions linked into the same event. These can be triggered manually from a user interface or via other input stimuli such as contact closures or mic station input. If needed, these should be defined at this point.

15: Configure Output Levels and BGM Selections on Output Devices

Your specific situation may dictate that BGM settings and output levels are set as required while you are installing the system. What is critical is that you perform final level adjustments prior to calibrating the system supervision. Any changes made after that calibration will require a new set be performed to record the new levels correctly.

16: Calibrate System Supervision

Once all loudspeaker lines have been fully connected and all output levels set, you can calibrate the supervision sub-system and configure the periodic testing.

17: Calibrate Ambient Analysis

This is one of the last operations to be performed because it requires the system to be installed and in a normal operating mode prior to calibration. Most of the operations described above must be completed prior to attempting a calibration.

18: (opt.) Define Schedule Profiles and Assign to Calendar

If using a day-by-day schedule – for example, a bell schedule for schools or shift/break tones for a factory – these can be defined at any time after the initial configuration is completed.

2. SMC Overview Tab

The Overview tab in SMC provides an overall view of system operation and the device status. In addition, it contains an operational page in the Paging Console. This information is provided via the following pages:

- **Announcements** – Real-time view of active announcements w/ short-term history. Source and Zone status is also indicated via color coding.
- **Faults** – List of active and suppressed faults in the system.
- **Devices** – List of all system devices, basic properties and their status. Also shows any new available devices on the network and allows for adding these new devices to the system.
- **Paging Console** – Controls for activating pre-defined events (which can have multiple actions) or for playing a prerecorded message to a selected destination.

These pages are described in the sections that follow.

2.1 Announcements

This page combines a listing of recent/active announcements and status of system inputs and outputs (involvement in announcements as well as fault conditions).

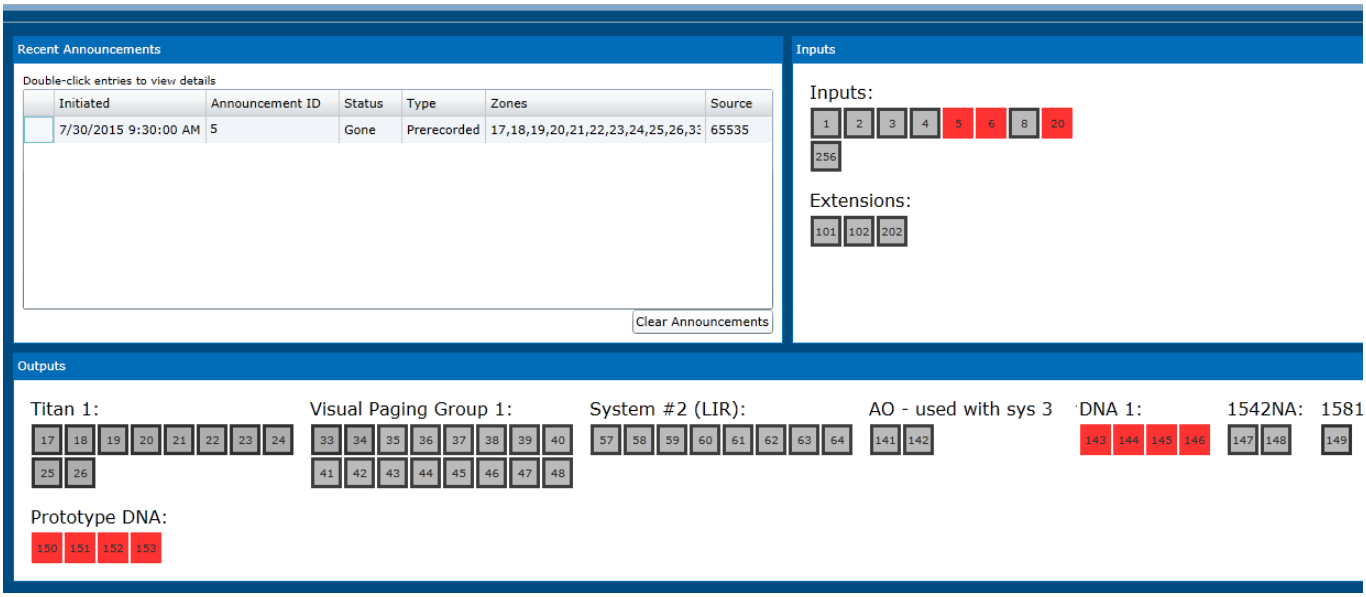


Figure 2-1: Announcements

Recent Announcements

This is a list of any announcements that are either active or being held in queue on the local announcement controller. This list provides some history of past announcements only from the point where the System Management Center application was launched or from the last time the **Clear Announcements** button was selected, such as the example in Figure 2-2. Fields and buttons in this area are described below.

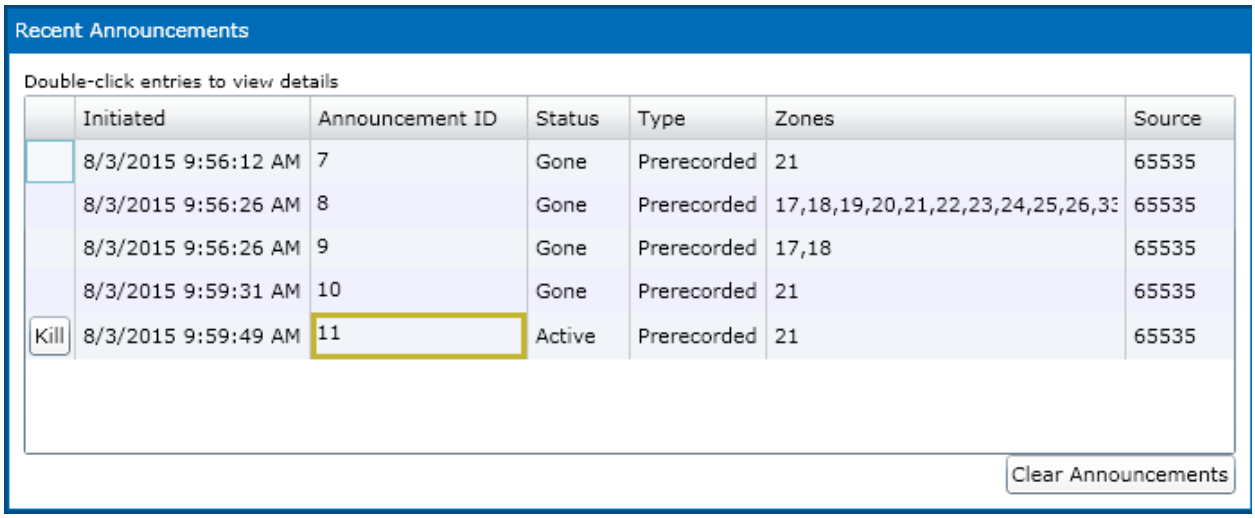


Figure 2-2: Recent Announcements

Kill

This button is only available when a user is logged in with a permission set of ***User*** or higher and will only appear on announcements that are active. Click this button to kill the active announcement.

Initiated

This is a date and time stamp of when the announcement was started.

Announcement ID

This is a system-assigned number to identify the announcement.

Status

This field indicates the current status of the announcement.

- **Gone-** This field indicates the current status of the announcement.
- **Active-** Indicates that the announcement is currently routing audio channels for either a live announcement or prerecorded message.
- **Busy-** Indicates that the announcement or message is being held in queue for future playback. This can be either because it is waiting for zones to be freed due to another active announcement or because it is waiting for additional playbacks if multiple playbacks are used.
- **Ready-** This status sometimes appears briefly indicating that all resources have been secured and the announcement is ready to play. This is immediately followed by a change to ***Active*** status.

Type

This field displays the type of the announcement in the list.

- **Prerecorded –** This type of announcement indicates a playback of digitally recorded audio from the internal sound card. When a ***Delayed*** message is playing back, it becomes a ***Prerecorded*** type.
- **Delayed –** This type indicates that an announcement is in the process of being recorded for future playback. When it plays back, it becomes a ***Prerecorded*** announcement type
- **Live –** This indicates that a live audio route is present between an input source and one or more output zones.

Zones

This is a list of zones that are included in the announcement.

Source

This number corresponds to the ***Mic Number*** of the device that started the announcement. If the announcement was launched via a network message or scheduled event, this value will be 65535.

Clear Announcements

Click this button to clear the announcement activity list. This only clears the list and will not impact any announcements that are still active.

Announcement Details

If one single-clicks on an entry in the Recent Announcement list, the Inputs and Outputs used in that announcement will be indicated in the other panels by a green border around the 

normally gray box that represents the input or output.

If one double-clicks on an entry in the Recent Announcement list, a pop-up window showing announcement details appears, such as the example in Figure 2-3. One closes this window by clicking on the small X in the upper right corner. Additional fields in this detail pop-up are described below.

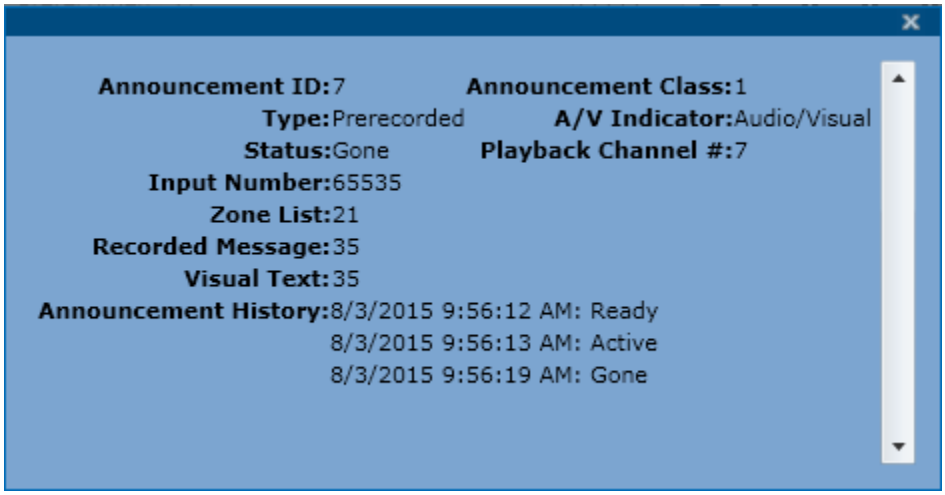


Figure 2-3: Announcement Details

Recorded Message

This is a list of Take ID's in the message if the message type is Prerecorded.

Visual Text

This shows either a list of Take ID's (e.g., 35 in the example figure) or the actual text for the displays (if actual text passed in with the announcement request).

Announcement History

This is the time-line of states the announcement went through.

Announcement Class

This is the announcement class (priority plus some behavior flags) for the announcement.

A/V Indicator

Indicator whether this announcement was audio-only, visual-only or both audio and visual.

Playback Channel

For announcement types that use a sound-card channel, this is the channel that was used. The numbering scheme extends across ACS and MSG devices, if present in the system configuration. (This is typically only useful when troubleshooting a system with some "broken" sound channels.)

{Announcement} Inputs

This area shows real-time graphical representation of announcement activity on inputs associated with the local announcement controller. Input sources are shown with a number that corresponds to the Mic Number in the device setup inside a color box. Color codings have the following meanings:

- 

Gray w/ Black Border – This input is inactive and does not have a fault.

-  **Red w/ Red Border** – When the box is red, the input is in fault. One can see the specific fault condition on the faults list.
-  **Gray w/ green border** – This input is used in the currently selected row in the Recent Announcement list. (A row in the Recent Announcements list has been clicked on to highlight the Inputs and Outputs in it.)
-  **Other Colors (lighter shade inside darker)** – When an input is active in an announcement, it is shown via some other color. There are several colors used to allow simultaneously active announcements to be discerned.

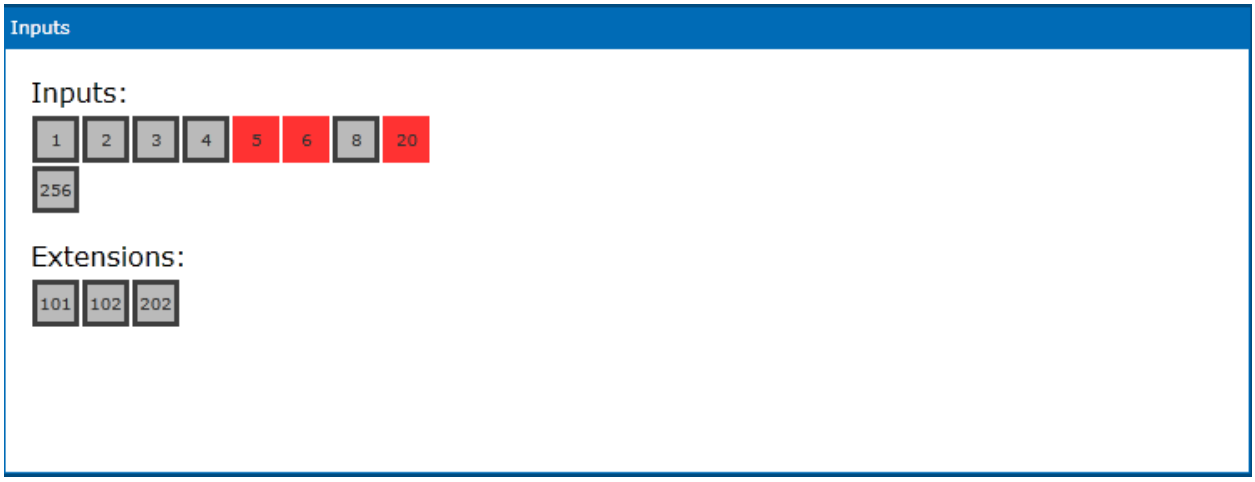


Figure 2-4: Inputs

Inputs

These are any input device in the system. These include mic stations, auxiliary audio devices like 1502AI units and logic input devices such as the 1516LI/1516LI-E.

Extensions

These are telephone extensions defined in the system, which also can be the source or input of audio for an announcement.

{Announcement} Outputs

This area shows real-time graphical representation of announcement activity on outputs associated with the local announcement controller. Output Destinations are organized by the device they reside on and are shown with a number that corresponds to the Zone Number inside a color box. Color codings have the same meanings as described above for Inputs.

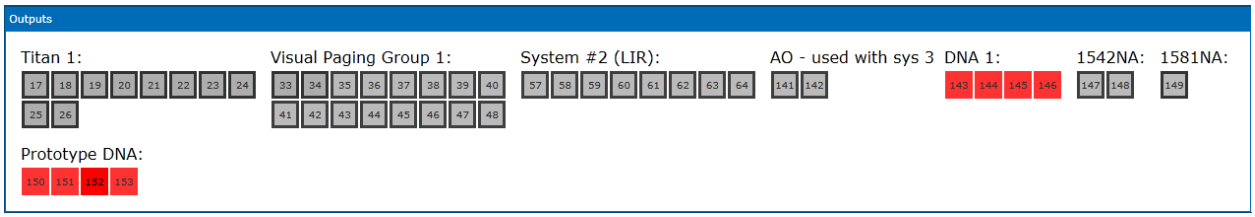


Figure 2-5: Outputs

Zone Monitor

Click on any audio zone output to bring up the *Zone Monitor* window as shown in Figure 2-6. Any adjustments made from this window will be immediately sent to the device.

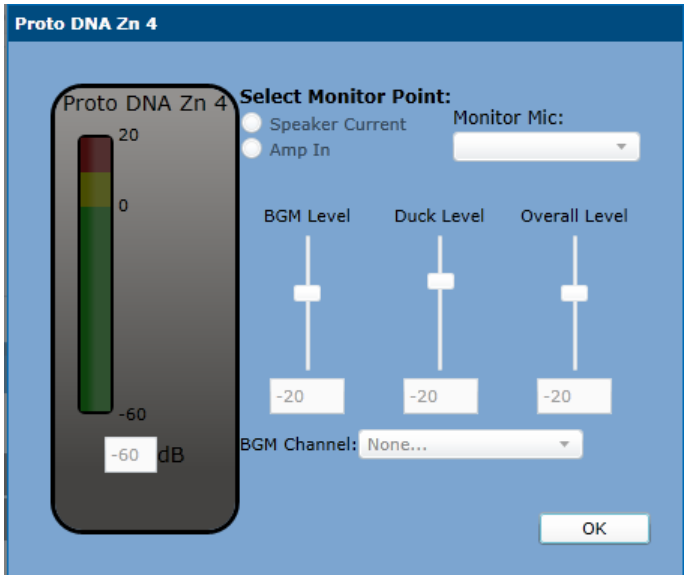


Figure 2-6: Zone Monitor

Output Level

This meter indicates the signal level at the currently selected point. A more precise numerical indication of the level is located immediately below the meter.

Select Monitor Point

You must select one of the three available monitor points for each output channel. The level meter will indicate the level of the signal at the point selected. This will also change the point monitored audibly through a local monitor speaker if one is configured.

Monitor Mic

Some microphone station types have a built-in monitor loudspeaker. If you have one installed in your system, then you can select it from this drop-down list and it will monitor the selected point. You must have the Monitor Enabled checkbox checked in the microphone station setup to get a microphone station to appear in the drop-down list.

Levels

Use these sliders to adjust the three available level parameters for each channel.

BGM – This adjusts the level of the background music channel for the output. This level is also dependent on the current setting of the ***Overall*** level.

Duck – This level sets the amount that the BGM channel will be lowered when an announcement is made. A level of –60 effectively will mute the BGM when an announcement is made.

Overall – This adjusts the master level of the output. This will affect both BGM and announcements and should be used to set the main level of the output.

BGM Channel

Select a BGM channel to use for this output from the drop-down list. Input devices that are configured as a BGM source will be available in this list.

OK

Click this button to close the window.

2.2 Faults

This area shows both current faults and suppressed faults. The two parts to this page are described separately below.

Current Faults

This list displays any current faults in the system. For information on historical logging of faults, refer to the Windows System Log section of the documentation.

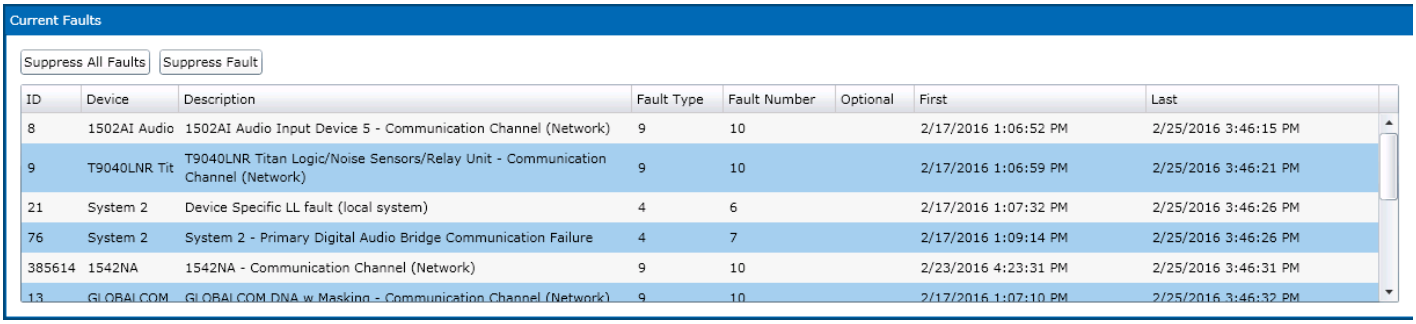


Figure 2-7: Current Faults Grid

Suppress All Faults Button

If logged in, pressing this icon will suppress all current faults, that is, move them to the Suppressed Faults list.

Suppress Fault Button

If logged in, one may select one of the rows in the Current Faults list and then press this icon to suppress just the selected fault, that is, move it to the Suppressed Faults list.

Note: One must be logged into SMC in order to use either the Suppress All Faults feature or the Suppress Selected Fault feature.

ID

This is an index number used to uniquely identify the fault.

Device

This field displays the system device that has *reported* the fault. This may not be the same as device with the actual fault. For example, the announcement controller monitors communications with many devices such as the mic stations or its lifeline controller, and therefore it is the reporting device for such faults.

Description

This is a textual description of the fault. Devices report a ***Fault Type*** and ***Fault Number*** and the *System Management Center* uses those two numbers to apply a description as defined in the ***System Supervision*** section of the application (i.e., user-entered description). If such entries are missing, the SMC applies a default description for the fault.

Fault Type

This is the type number reported by the *System Supervision* module. The *System Management Center* uses this, along with the ***Fault Number***, to apply a description as defined in the ***System Supervision*** section of the application.

Fault Number

This is the fault number reported by the *System Supervision* module. The *System Management Center* uses this, along with the ***Fault Type***, to apply a description as defined in the ***System Supervision*** section of the application.

Optional

This field will display any additional information, if any, reported by the *System Supervision* module. For example, in the case of automated testing faults, this field could show the deviation from the set (truth) value.

First

This field displays a date and time stamp of when the fault was originally reported.

Last

As long as a fault condition exists, the *System Supervision* module will continue to collect fault reports. This field displays the most recent fault report received.

Suppressed Faults

Suppressed faults are those conditions that are being deliberately ignored at present. For example, if there is an equipment failure and this device has been sent out for repair, one might suppress faults related to it so the system appears to be operating normally. This allows for easier detection of some other (new) fault condition when/if it arises.

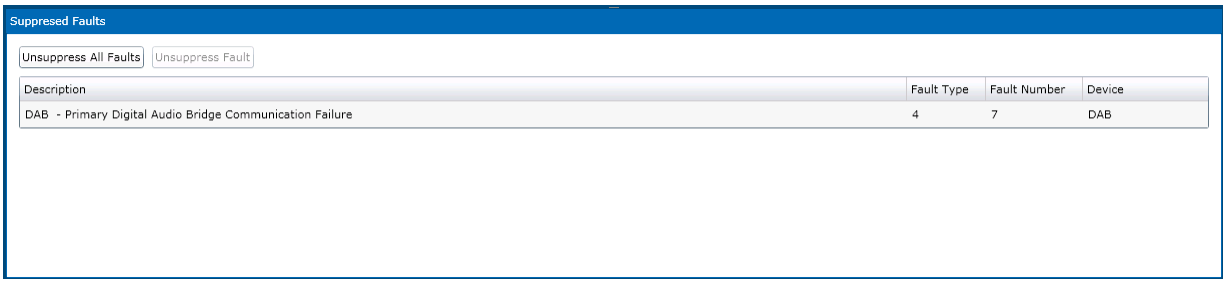


Figure 2-8: Suppressed Faults Grid

Unsuppress All Faults

If logged in, pressing this icon will un-suppress all faults shown in the Suppressed Faults list.

Unsuppress Fault

If logged in, one may select one of the rows in the Suppressed Faults list and then press this icon to un-suppress just the selected fault.

Note: One must be logged into SMC in order to use either the Unsuppress All Faults feature or the Unsuppress Selected Fault feature.

Description

This is a textual description of the fault. Devices report a ***Fault Type*** and Fault ***Number*** and the *System Management Center* uses those two numbers to apply a description as defined in the ***System Supervision*** section of the application.

Fault Type

This is the type number reported by the *System Supervision* module. The *System Management Center* uses this, along with the ***Fault Number***, to apply a description as defined in the ***System Supervision*** section of the application.

Fault Number

This is the fault number reported by the *System Supervision* module. The *System Management Center* uses this, along with the ***Fault Type***, to apply a description as defined in the ***System Supervision*** section of the application.

Device

This field displays the system device that has reported the fault

2.3 Devices

This page shows both the devices currently defined in the local announcement controller system (My Devices) and any other devices that have been discovered on the network (Available Devices). Each area of this page is described in a separate section below.

My Devices

This tab displays a list of all devices that are configured in the controller. It also indicates an overview of device status. If the device is highlighted in red as shown in Figure 2-9, then the device is not responding on the network. If a device is communicating, but reporting internal faults, then you will see an exclamation point icon in the ***Faults*** column, but no red highlight for the row. You can hold the mouse pointer over the fault icon to reveal a detailed list of the reported faults as shown in Figure 2-11, or go to the Faults page to view the faults.

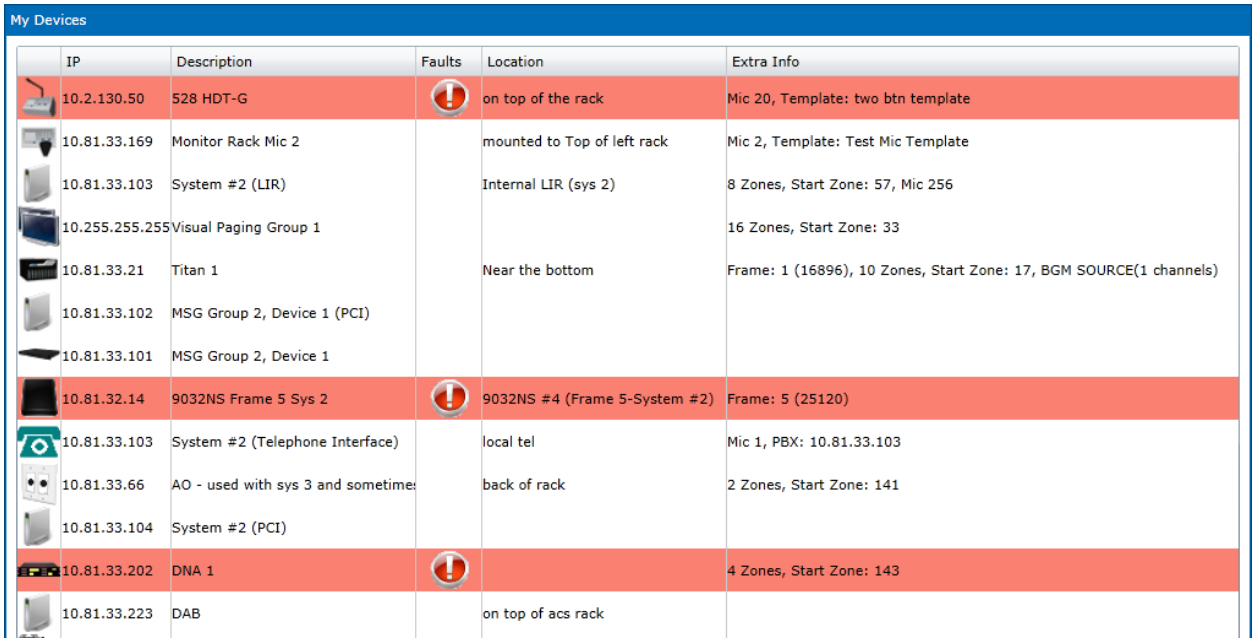


Figure 2-9: My Devices

Note: If you are logged in, then you can double-click on a device in the list to open the device configuration for that device.

IP

This will display the IP address of the device. If the device is detected, but the IP address does not match the configuration, then the device will be highlighted with a gold background and you will see a ***Resolve*** button as shown in Figure 2-16.

When you click the ***Resolve*** button, you will see a window like the one shown in Figure 2-10. You can choose to set the IP address of the device to match that in the configuration, or choose to change the configuration to match the IP address of the device.

Click the ***OK*** button to update the settings in the device and/or configuration.

Figure 2-10: Resolve IP Address

Description

This displays the text description of the device from the ***Description*** field in the device configuration.

Faults

If an icon appears in this column, then the device is reporting faults. These faults will be listed in the ***Current Faults*** list, but you can also display a list by hovering the mouse pointer over the icon to reveal a pop-up window as shown in Figure 2-11.

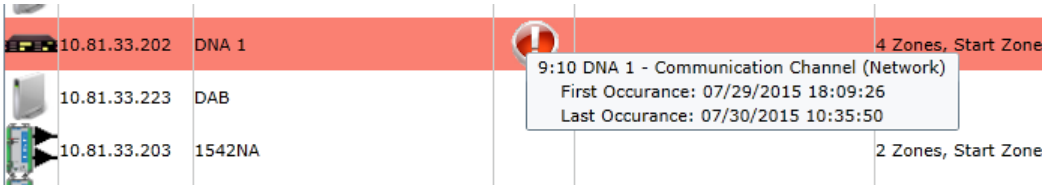


Figure 2-11: Device Fault Pop-up Window

Location

This displays the text description of the device from the ***Location*** field in the device configuration.

Extra Info

This column displays additional information contained within the configuration of each device. The information listed varies for each type of device, but it is easily readable as each property is listed with the appropriate title.

Available Devices

This tab is used to display any devices detected on the network that do not match any of the configured devices. The system uses a background process, known as the *Discovery Service*, that will detect and report any unknown devices on the network. This greatly simplifies the process of adding and configuring new devices. You simply plug in the new device, wait for it to appear in the list, and then add it to the system. There are three different configuration scenarios as described below.

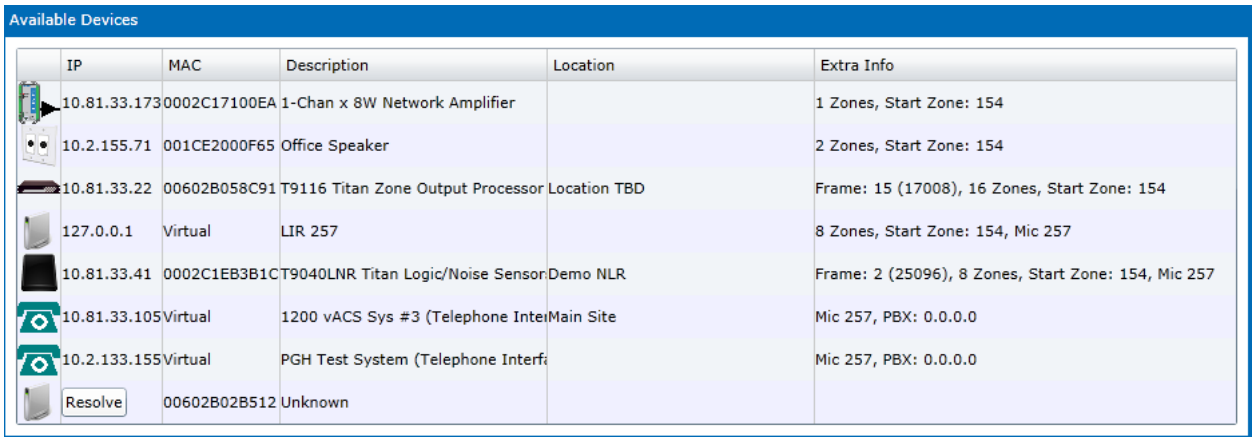


Figure 2-12: Available Devices Grid

Completely New Device

In this scenario, the system knows nothing of the newly detected device. You simply add the new device and then configure it as needed.

Replacement of Existing Device

In this scenario, you are adding a new device to the system that is replacing one that has already been configured. You will choose which device in the configuration that the newly discovered device will replace.

Adding a New Device Already Configured in Software

This scenario is similar to the previous, but in this case you have configured the device in software prior to physically installing the hardware. The process is essentially the same.

Figure 2-13 shows a 1581NA Network Amplifier detected in the ***Available Devices*** list. In this case, the station has been used before because it already has information in the ***Description***, ***Location***, and ***Extra Info*** fields. In this example, our goal is to replace the station named ***Main Office*** with this new one.

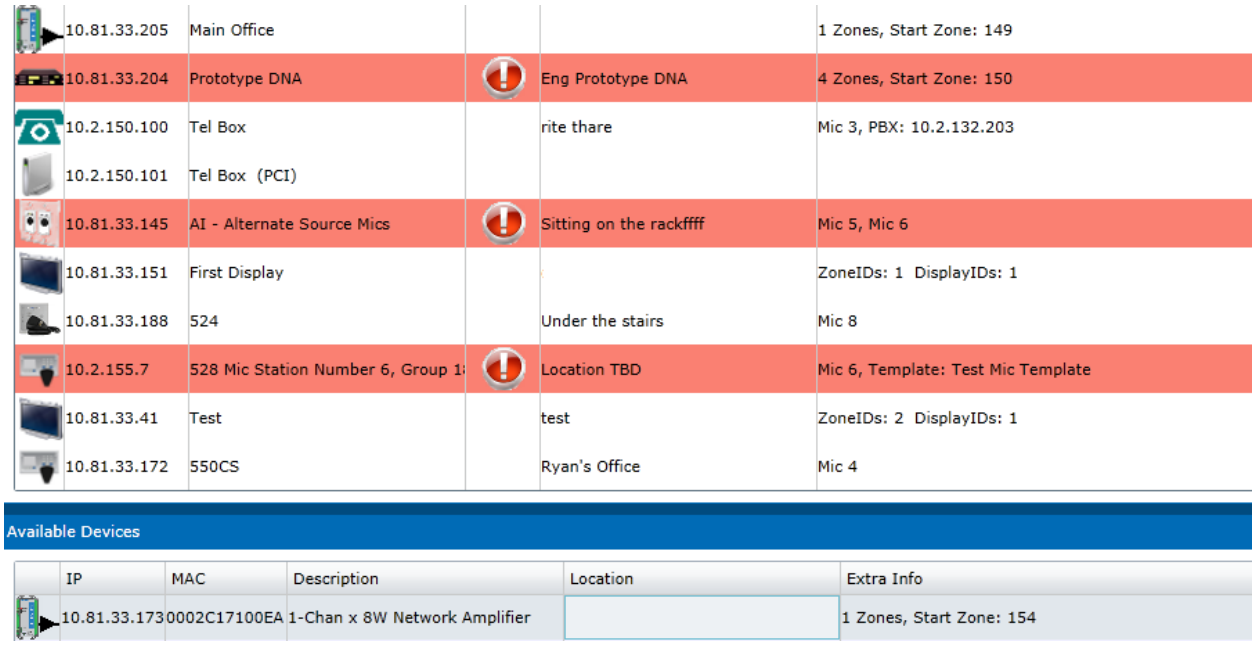


Figure 2-13: Replacement Device Detected

Double-click on the new device and you first be taken to a window to select whether this is a new or replacement device in the selection shown in Figure 2-14 below.

Figure 2-14: New or Replace Device Selection Window

Add as New Device

Select this option to add the discovered device as a completely new device in the system configuration. It will use the discovered IP address of the device and automatically assign any additionally required parameters and add it to the devices list. Once added, you can configure it from the ***Devices*** tab.

Replace Existing Device

Select this option to use the settings of a device that already appears in the devices list, but apply them to this newly discovered device. Select the existing device configuration that you want to use from the drop-down list as shown in Figure 2-14. Only devices of the same type will be presented in this drop-down list.

Pressing the OK button on this pop-up will display to the device configuration window as shown in Figure 2-15. This is the same as the usual device configuration window used when managing devices in the ***Devices*** tab. This gives you the opportunity to review and adjust other properties for the device before pressing OK.

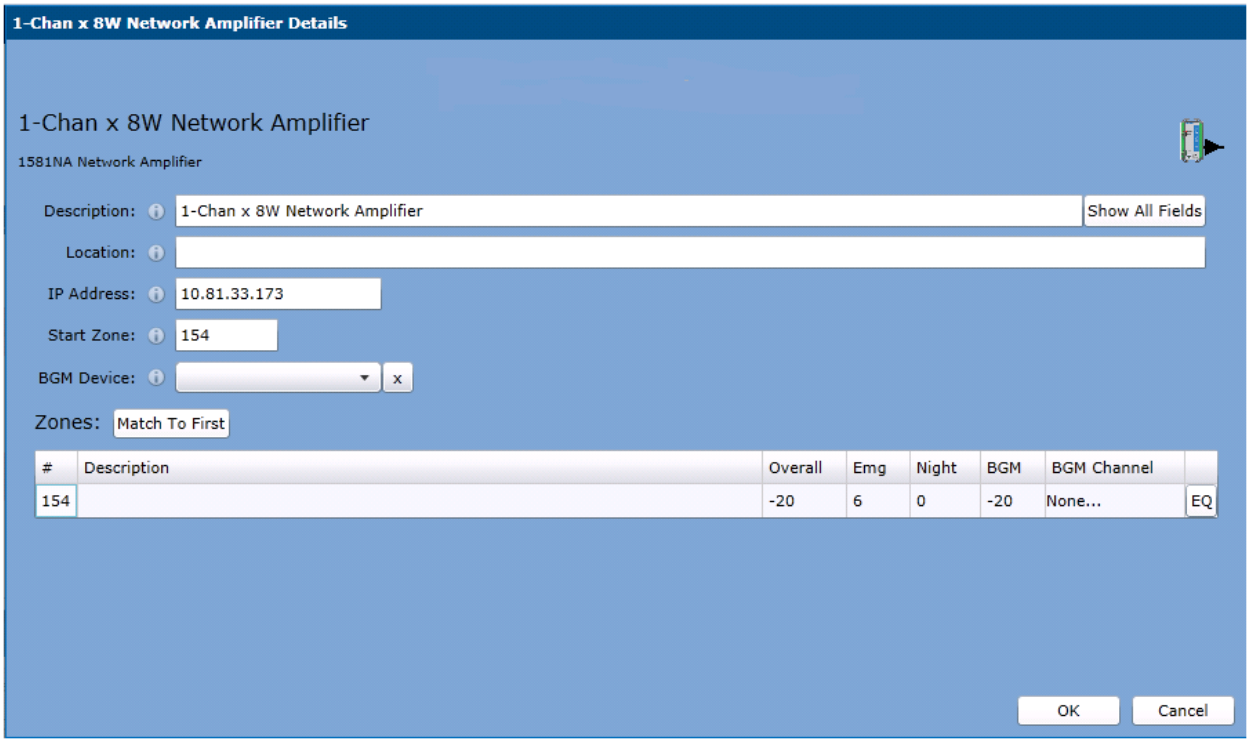


Figure 2-15: Device Configuration Window

Resolve

This button may appear in either the ***My Devices*** or ***Available Devices*** tabs when the discovered IP address is either not configured or does not match the IP address in the device configuration.

Figure 2-16: Resolve Device Button

When you click the ***Resolve*** button, you will see a window that matches one of the windows shown in Figure 2-17. The window on the left will appear if the device has not been set with an IP address. You can either enter one in the top box or select the bottom button to use the system-assigned IP address. If the device has an IP address, but it does not match the configuration, you will see the window on the right. You can choose to set the IP address of the device to match that in the configuration, or choose to change the configuration to match the IP address of the device.

Click the ***OK*** button to update the settings in the device and/or configuration.

Figure 2-17: Resolve IP Address

Unknown Device Type

If the *Discovery Service* detects the device, but is unable to determine the type of device, then you will see a window like that in Figure 2-18. If this occurs, you must manually set the device by selecting the appropriate type from the ***Type*** drop-down list as shown in Figure 2-19. After setting the type, then other fields may be filled in appropriately before clicking on the **OK** button to save the new device into the system configuration.

Figure 2-18: Unknown Device Configuration

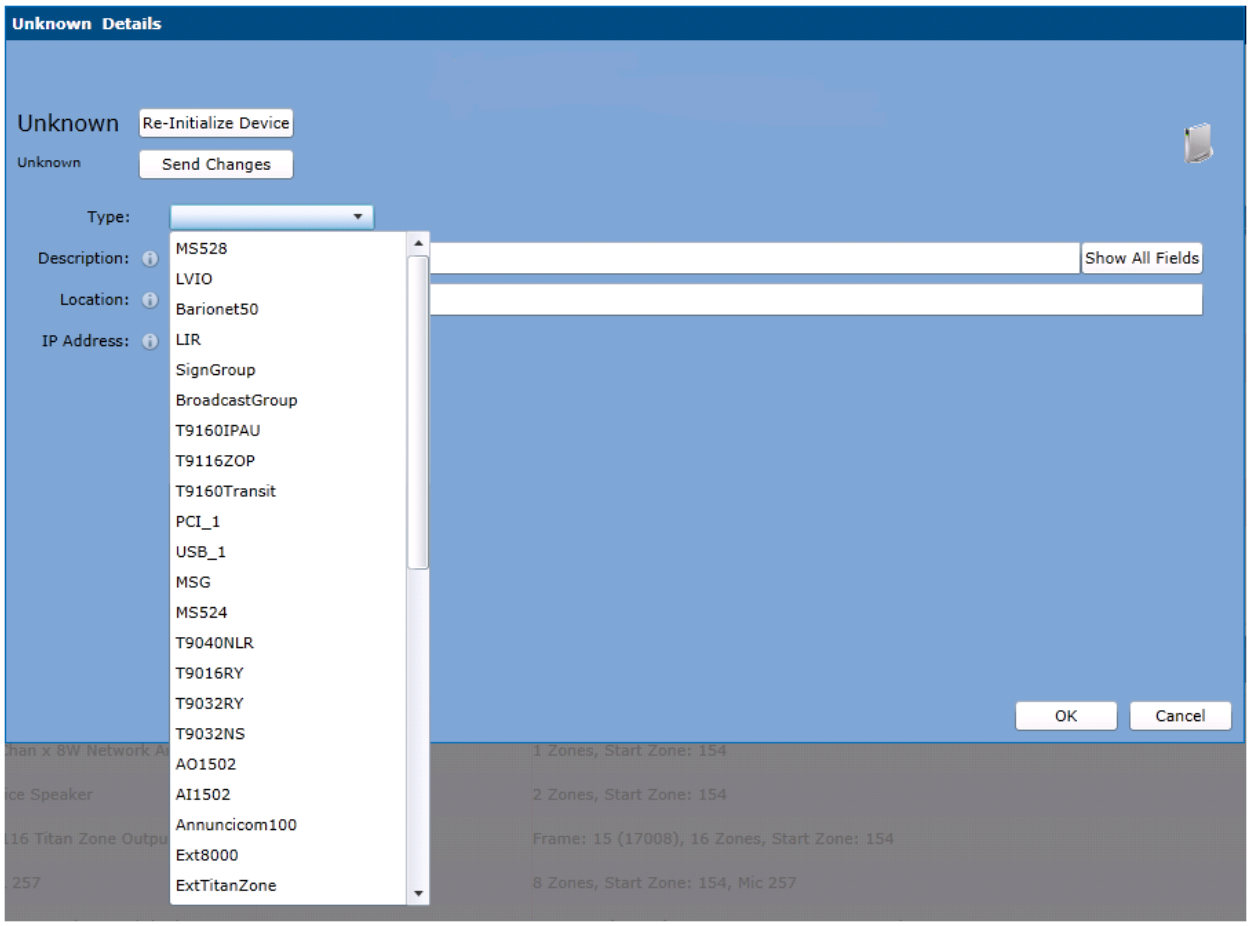


Figure 2-19: Unknown Device Type Selection

2.4 Paging Console

With permissions of User or higher, this page is available for launching events or prerecorded messages.

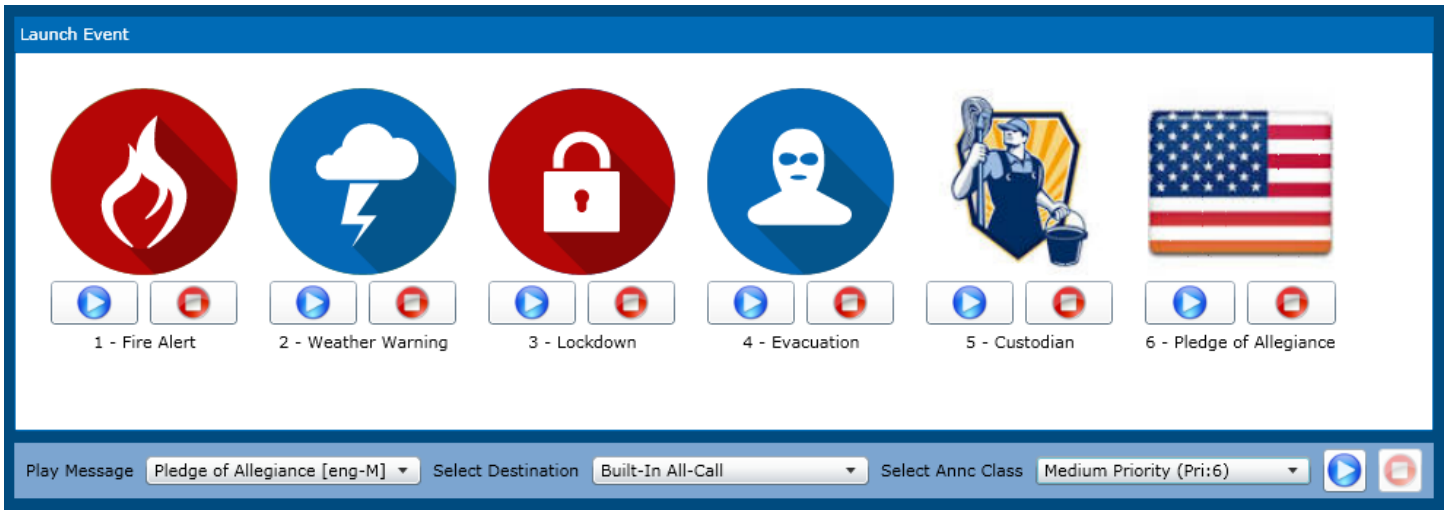


Figure 2-20: Paging Console

Launch Event

The actual events that appear are those which are defined in the Configuration tab page under Events, using descriptions provided there. Each event has a **Start** button and **Stop** button above the description. Generally, a status pop-up window appears indicating that the launch was successful. The icons for events are either imported when the event is defined or it can default to a Letter in a circle for the first significant word in each description (F and W in the figure).

Play Prerecorded Message

In this area at the bottom of the Paging Console, one can play any message in the prerecorded message library to any zone group (both of which are defined under the Configuration tab page).

Play Message Drop List

Click on this drop list to display all available prerecorded messages, and to select one to play.

Select Destination Drop List

Click on this drop list to display all defined zone groups, and to select one to play the message to.

Select Annc Class Drop List

Click on this drop list to display all the available announcement classes (priorities), and to select one to use when playing this message.

Play and Stop Buttons

Click on one of these buttons to start the selected message playing to the selected zone group, or stop the message if playing.

3. SMC Schedule Tab

The Schedule tab allows control of three types of schedules: calendar-based message playback, zone volume changes by time of day, and ad hoc scheduled or repeating actions. These are configured in the following pages:

- **Today's Schedule** – What daily tones/messages are scheduled for today, along with status on those that have played already. Can make ad hoc changes to today's schedule here as well.
- **Calendar View** – View of how schedule profiles are assigned to days on a month-by-month calendar. Can assign or remove profiles here as well.
- **Schedule Profiles** – a list of actions to play during a 24-hour day.
- **Day/Night Schedule** – For zones that can be adjusted to a different level at night than during the day, a definition of when day starts and night starts by day of the week.
- **Scheduled Actions** – Definition of miscellaneous scheduled and repeating actions, such as reminder messages every 10 minutes during operational hours.

Each of these is described in the sections which follow.

3.1 Today's Schedule

This page shows the tones which are scheduled to play today. The tones are usually defined by loading a Schedule Profile onto the day on the Calendar View, but may include ad hoc tones which can be added to today via this page.

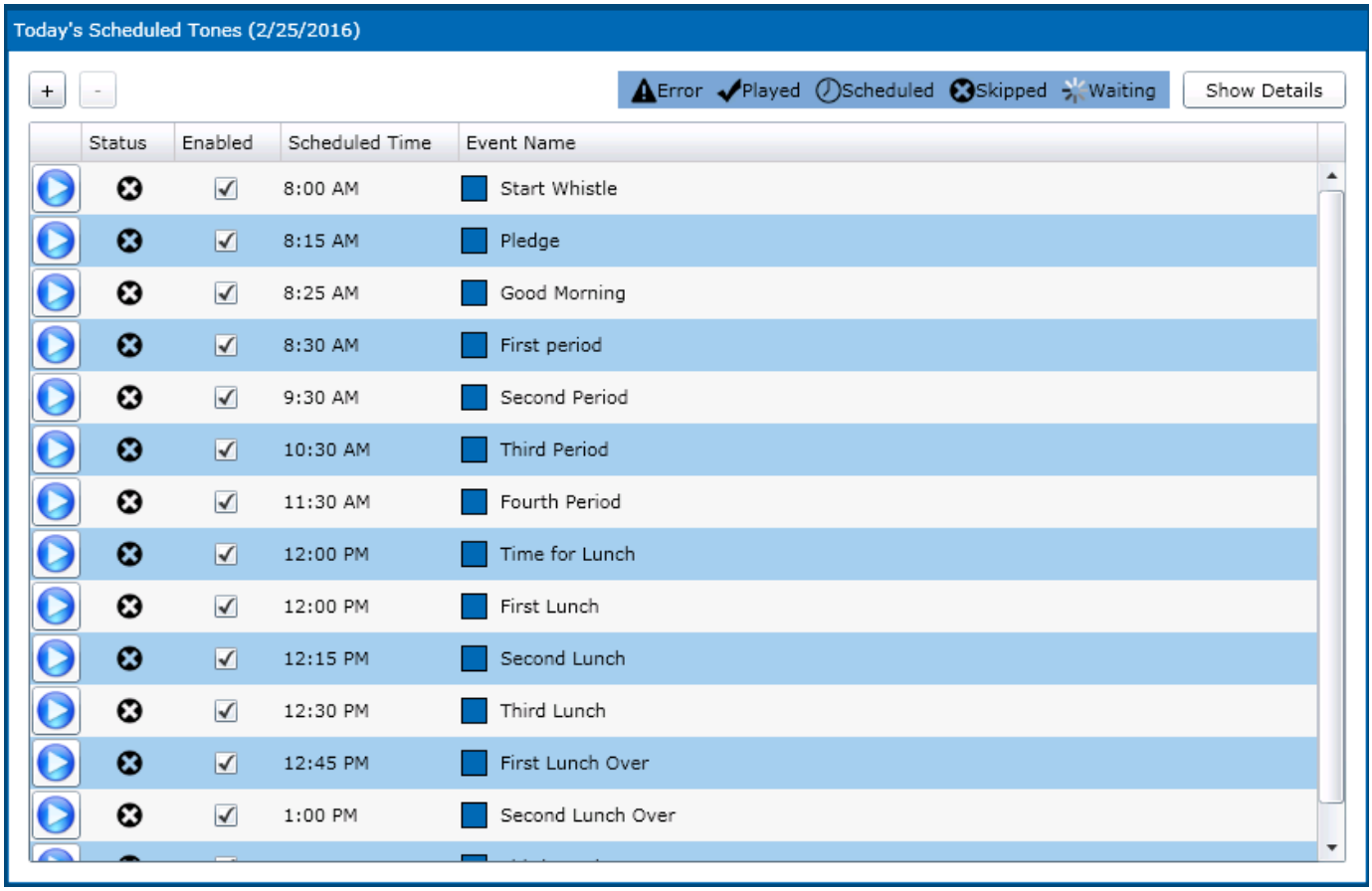


Figure 3-1: Today's Scheduled Tones

Pressing this button adds a new event to the schedule at the current time with the name “New Event”. The user should edit properties for this event in the grid, such as the actual time to schedule it, the event name, chime, prerecorded message and zone group. If the details are hidden when this button is pressed, they are made visible to allow this editing to take place.

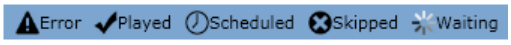
Pressing this button will delete the currently selected schedule event after the user responds positively to the pop-up Yes/No prompt to delete it.

Show Details / Hide Details Button

This button is a toggle action that can be used to show or hide the additional fields: chime, recorded message and zone group. These fields are explained below.

This button may be used to manually play the schedule event immediately. This may be used for example to test the events (message and zone group) or in situations where it is believed past tones were “missed” by some personnel in the facility.

Status

The status of the scheduled event. There is a legend at the top right that identifies the icons for the possible statuses. 

- **Error** – The event appeared to fail to play for some reason.
- **Played** – The event played normally.
- **Scheduled** – The event hasn’t played yet; still in the future.
- **Skipped** – The event was in the past when the announcement controller was last re-started or the schedule reloaded, such as due to a **Save** operation on the SMC. Therefore, it won’t be played (again) today.
- **Waiting** – This event is in progress for starting. This status may show up briefly between Scheduled and Played statuses.

*Note: If one hasn’t sent changes to the schedule to the announcement controller by clicking on the **Save** option at the top right of SMC, then new events will be displayed with No status in Today’s Scheduled Tones listing.*

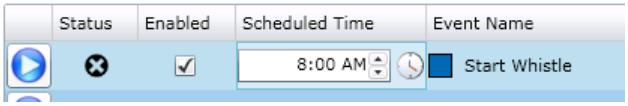
Enabled

This checkbox indicates whether this event is enabled for today or not. This may be un-checked to disable the event.

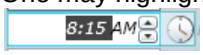
*Note: The disabling will not take effect until the **Save** option at the top right of SMC is pressed to send the change(s) to the announcement controller.*

Scheduled Time

The scheduled time may be edited in one of a number of ways. First one clicks in the cell to cause it to expand to some edit controls as shown below.



- One may highlight the time text and type in a new time (with AM/PM) just like an edit box.



- One may put the cursor in the hours, minutes or AM/PM area of the edit box and press the up or down arrows to increment or decrement this value.
- One may click on the clock icon to the right to bring up a drop list of times every half hour as shown in Figure 3-2. This may be the fastest way to jump to a time *near* the desired value and then adjust using the up/down arrow buttons to get to the exact time.

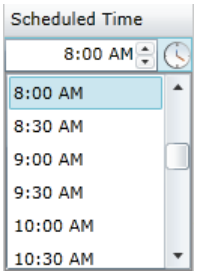


Figure 3-2: Scheduled Time Window

Event Name

This is a descriptive name entered by the user for this scheduled event such as “Lunch Start” or “Lunch Over”. The colored box ahead of the name identifies which schedule profile this event came from. For example, if there are two profiles loaded (e.g., high school bells and middle school bells), each profile will be identified by a different color box.

Chime

This is pre-announcement chime (if any) that is to be played ahead of the recorded message. The available chimes – as defined on the Configuration tab page – appear in a drop list box for easy selection.

Recorded Message

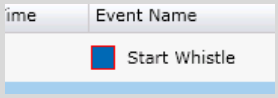
This is the (pre)recorded message to play for this event. The available messages – as defined in the Configuration tab page – appear in a drop list box for easy selection.

Zone Group

This is the destination for the scheduled event. The available zone groups – as defined in the Configuration tab page – appear in a drop list box for easy selection.

Note: If a scheduled event comes from a Schedule Profile and the user changes anything about it (e.g., the chime, recorded message or zone group), then this event becomes ad hoc (or custom) for just today.

When this happens, the color box for the event in the Event Name column will change to have a red border:



3.2 Calendar View

The Calendar View allows one to view and manage the assignment of Schedule Profiles to days of the month. The view is month by month. In the figure below, the profile named "Weekdays" has been assigned to the last full week of February. If on any particular day, there were customizations made to the profile events, the word *Altered* will appear as in the example below. If there are additional ad-hoc events added to a day, in addition to the profile events, the descriptions of these are shown in *italicized text* under the profile name. The features of this view are described below, along with the pop-up forms that can be launched from this view.

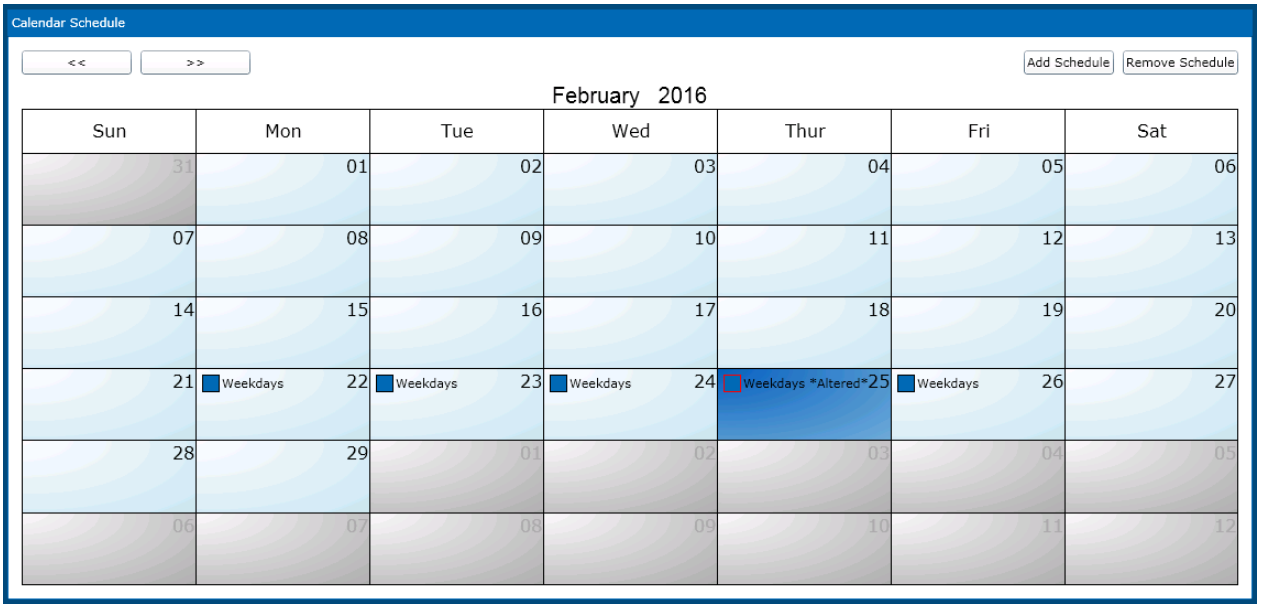


Figure 4-1: Calendar Schedule

[<<] Button (back one month)

Go back one month. Note: the system does not retain schedule information indefinitely into the past, but periodically erases schedule assignments that are old.

[>>] Button (forward one month)

Go forward one month.

Add Schedule Button

This button is used to add a schedule profile to one or more days. Note: it is possible to have more than one profile assigned to a day. For example, if an announcement controller services two distinct areas (e.g., buildings),

then administrators may create schedule profiles for these two areas and load both profiles into the calendar. Clicking this button brings up the window shown in Figure 4-2 with the fields explained below.

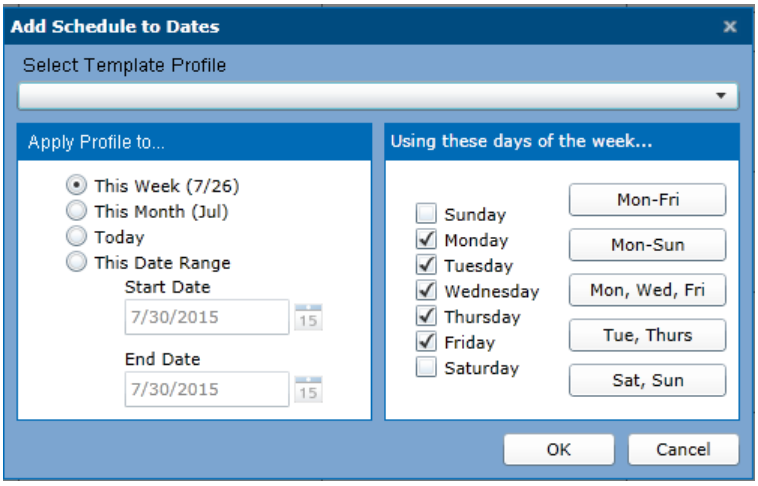


Figure 4-2: Add Schedule to Dates

Select Schedule Profile

This drop list is used to select a schedule profile from those that have been defined in the Schedule Profile page.

Apply Profile to…

This area determines which days to apply this profile in the broadest sense. The options are:

- **This Week** – some or all days of this week as determined by days of the week selected on the right.
- **This Month** – some or all days of this month as determined by days of the week selected on the right.
- **Today** – Just today
- **This Date Range** – The days that fall within the start/end dates below as determined by days of the week selected on the right. One can either type in dates in Month/Day/Year format or click on the calendar icon to the right of each edit box to bring up a mini calendar such as the one in the figure below, from which a date may be clicked.

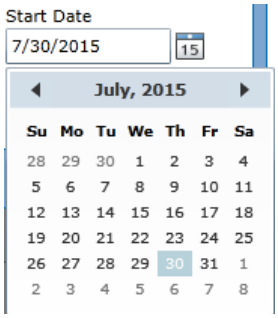


Figure 4-3: Date Selection Window

Using These Days of the Week…

This area is used to modify/refine the choices made on the left when one has selected This Week, This Month or This Date Range. One may either click on the individual day checkboxes or use of the shortcut buttons to the right.

OK

Clicking on this button will save the selections and apply the selected schedule profiles to the days indicated. One will need to click on the **Save** option at the top right of the SMC to send these changes to the announcement controller before they will actually take effect.

Cancel

Clicking on this button will exit the window without saving the changes.

Remove Schedule Button

This option brings up the same pop-up as is used for adding a schedule profile. All fields are the same as above. The difference is that the profile is removed from any days that fall in the ranges of days selected.

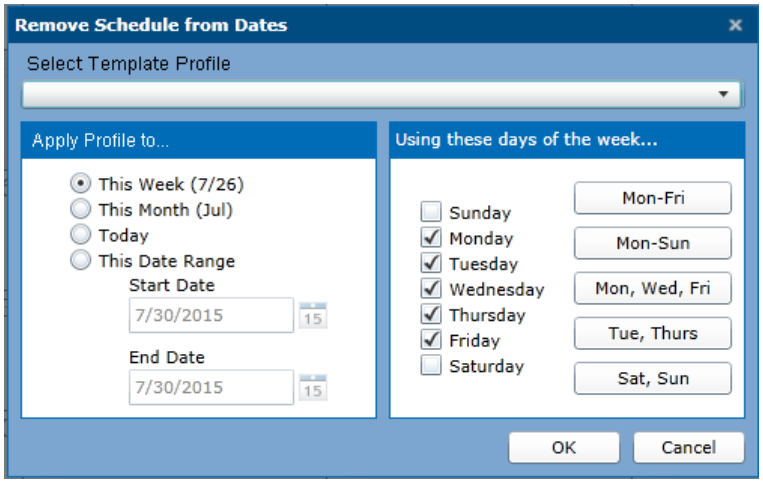


Figure 4-4: Remove Schedule from Dates

Edit Tones

One can edit the tones on a particular day by running the mouse cursor over a day and then clicking on the bell icon that appears in the upper left corner of the day grid box, as shown in Figure 4-5 below. Clicking on this brings up a Day's Scheduled Tones which looks exactly like the page Today's Scheduled Tones described above. When a day is customized via this form, the profile name will have the added text *Altered*, to show it is a non-standard profile on that day.

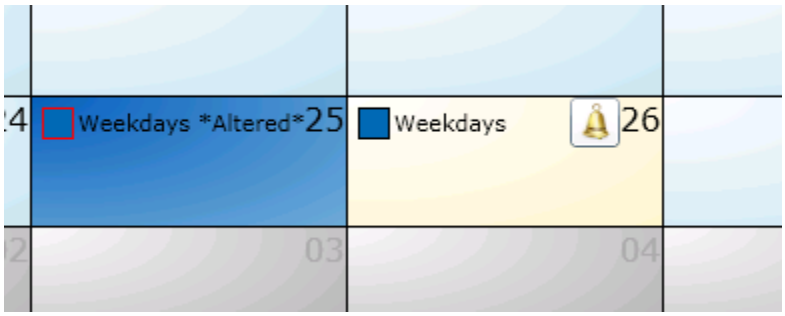


Figure 4-5: Edit Tones Icon

3.3 Schedule Profiles

Schedule Profiles are scripts of what messages to play when on any given day. It basically is a list of events defined by time, optional pre-announcement chime, prerecorded message and destination zone group. These are defined on the page as shown in Figure 5-1 and described below. The list box on the left is the list of Schedule Profiles. Selecting an item on this list shows its details on the right hand side.

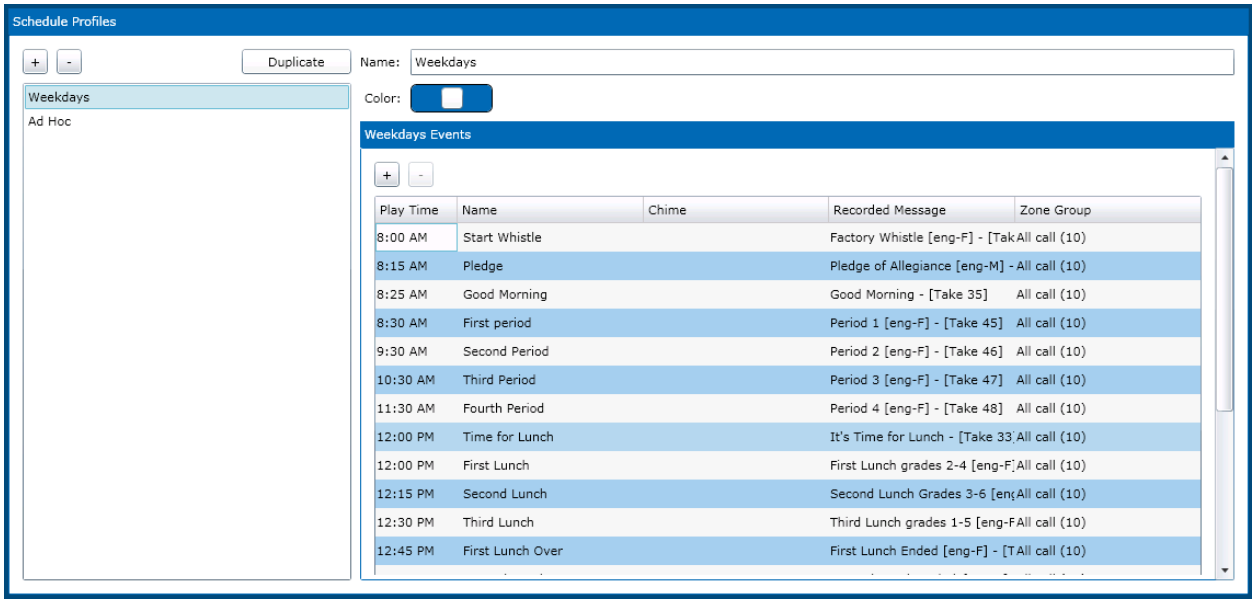


Figure 5-1: Schedule Profiles

Controls on the Left

Click this button to create a new blank Schedule Profile. The default name will be “New Profile”. One may edit the profile using the controls on the right of this page.

Delete the currently selected profile, after responding positively to the pop-up Yes/No prompt.

Duplicate Button

Duplicate the currently selected profile. The name will be initialized to the name of the original profile plus “(Duplicate)”.

Profiles List Box

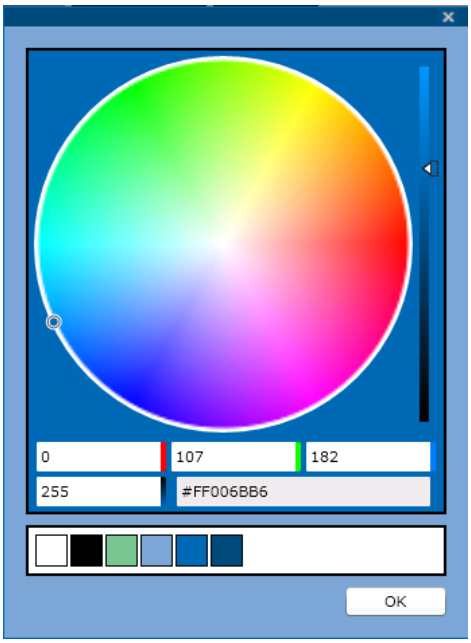
This is a list of all defined Schedule Profiles in the system.

Controls on the Right.

(Profile) Name

The name of the Profile (what appears on the left and elsewhere in SMC).

Color Picker

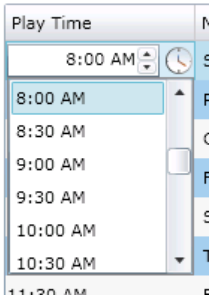


The larger box shows the current color (blue in the example). Clicking on the square button in the middle brings up the color picker pop-up, from which one can select a standard or recently used color from the ones near the bottom or any custom color by moving the cursor in the color wheel or by typing in RGB values. Clicking on the OK button closes the pop-up and assigns the selected color.

Adds an event (row to the grid) with default Play Time of midnight and event name of “New Event”. From here one may edit event in-place in the grid.

Delete the currently selected profile event. Note: there is no confirmation (Yes/No pop-up) for this action. It takes effect immediately.

Play Time



Change when this event will play each day that it is assigned to. Note: after changing this value, the event will be moved to in the grid to its time sequence location (e.g., between two other events with play times that bracket it.) To edit, click once in the cell. The view changes to edit as shown at right. If one clicks on the clock icon, it opens a

drop list of some common times, as shown. One can either type in a new time or position the cursor in the hours, minutes or AM/PM area and use the up/down arrows.

(Event) Name

The name/description for this event (e.g., Lunch Start).

Chime

The pre-announcement chime that should be played ahead of the pre-recorded message for this event. This is an optional field. One makes a selection by first clicking twice on the cell (row/column) so that a drop list control appears. Then open this control and select a chime from the list, such as the example shown in Figure 5-2.

Recorded Message

The message to play for this event. One makes a selection by first clicking twice on the cell so that a drop list control appears. Then open this control and select a message from the list, such as in the example shown in Figure 5-2.

Zone Group

Where to play the message for this event. One makes a selection by first clicking twice on the cell so that a drop list control appears. Then open this control and select a zone group from the list, such as in the example shown in Figure 5-2.

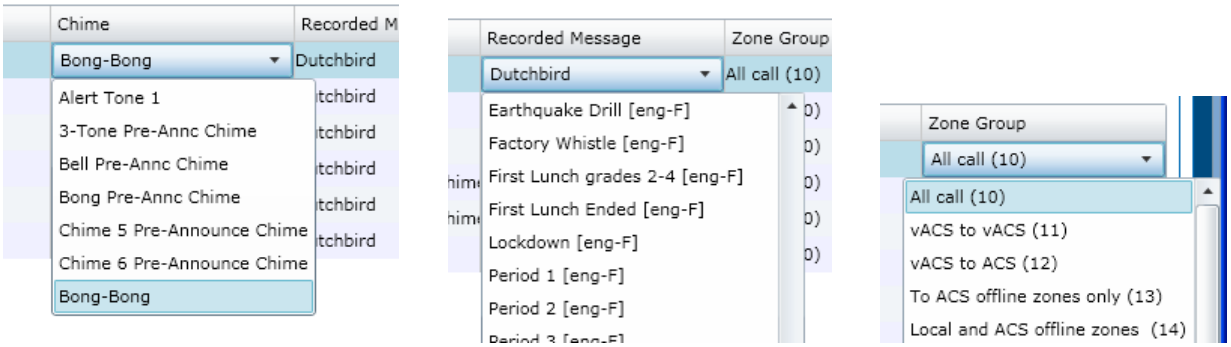


Figure 5-2: Select Chime, Message, and Zone Group

3.4 Day/Night Schedule

*Note: **IP Only SMC** will not show this configuration section.*

This feature allows you to change the output levels of the system by a pre-defined amount based on the time-of-day for each day of the week. You have a Day level and a Night level. The Day level is the Overall level that you have set for each output of the device. You can then define the Night level by entering an offset amount in the Night column for the zone, such as is shown in Figure 6-2. The value in the Night column will be subtracted from the Overall level to turn the system down during the Night schedule times, which are defined in this section.

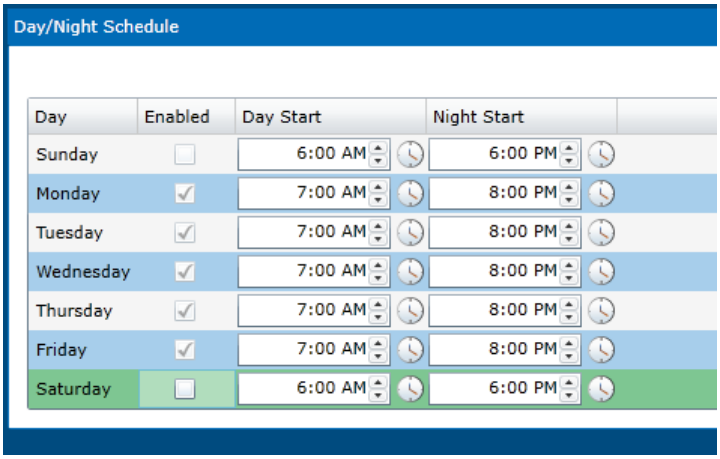


Figure 6-1: Day/Night Schedule

Match All to Sunday Button

Click this button to copy the values of the three columns for Sunday (the top row) to all other days (rows) in the weekly schedule.

Day

This read-only field identifies which day of the week the row defines.

Enabled

Click this checkbox to enable the Day/Night schedule for each day at the programmed Day Start and Night Start times.

Day Start

Enter the time-of-day here where the system will go from the night level to the day level. Enter the time in 24-hour time format. For example, you would enter "8:00" for 8AM and "20:00" for 8PM.

Night Start

Enter the time-of-day here where the system will go from the day level to the night level. Enter the time in 24-hour time format. For example, you would enter "8:00" for 8AM and "20:00" for 8PM.

Night Gain Offset

Each output device that is capable of Day / Night Schedule level adjustments will have a Night field for its zone configuration similar to what is shown in Figure 16-2. You must configure this level for each zone that you wish to change as part of the schedule. Leaving the default value of 0 will effectively remove the zone from the schedule.

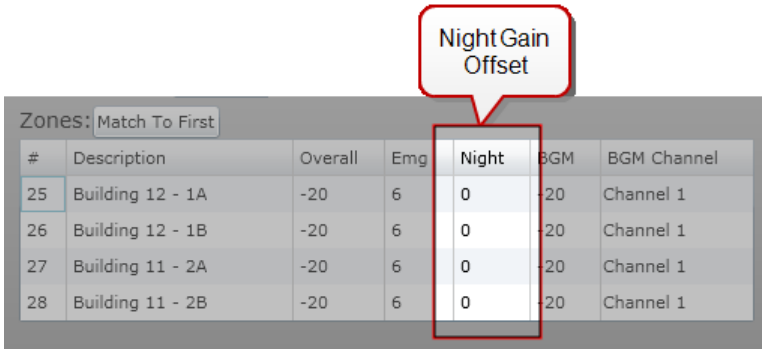


Figure 6-2: DNA7800 Zones Configuration

3.5 Scheduled Actions

Actions created here are played on a schedule rather than triggered from a device. Actions can be scheduled to play at periodic intervals throughout the day or only on specific days and during a programmed time window. The most common type of action used on a schedule is a prerecorded message. By using scheduled actions for prerecorded messages, the system can play various informational messages in a facility as determined by the management staff.

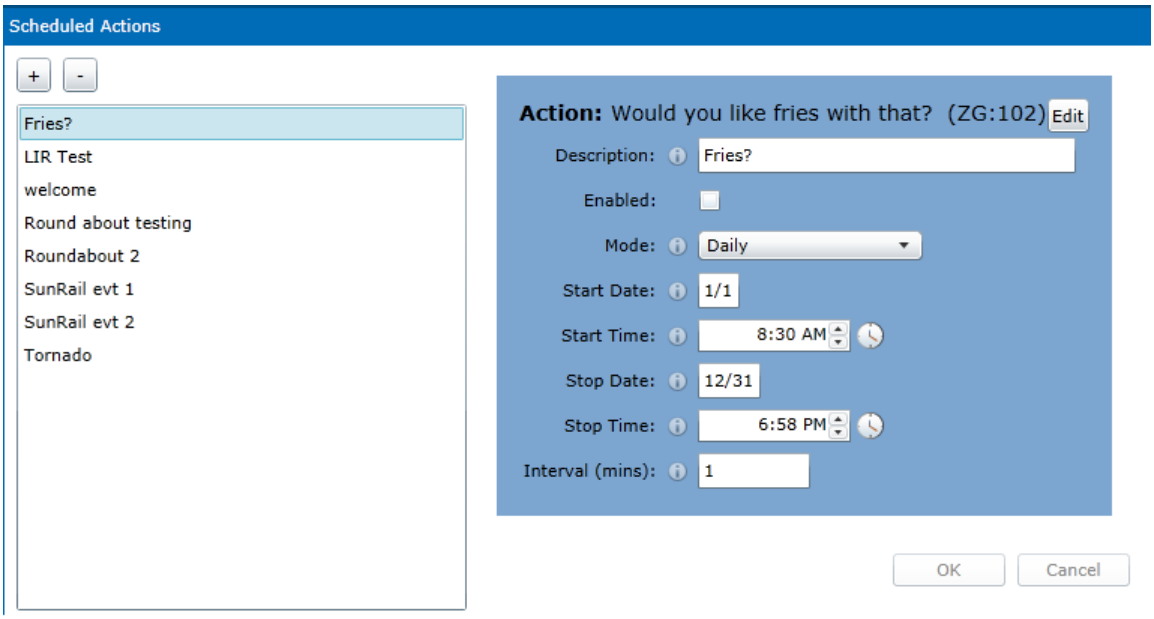


Figure 7-1: Scheduled Actions

Click this button to add a new action to the list. New actions will automatically open the action definition window to configure the action as shown in Figure 7-2. This process of creating the action is identical to creating actions for devices. Refer to the section on ***Action Types*** for details on configuring specific actions.

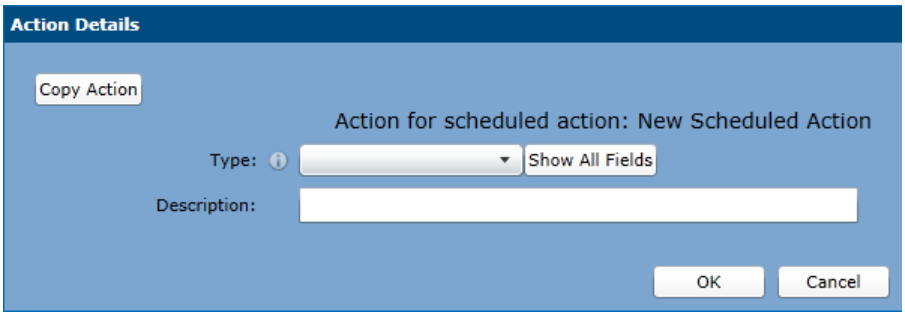


Figure 7-2: Action Definition Window

Click this button to delete the selected scheduled action from the list. Scheduled actions are highlighted by clicking on the name in the list.

Schedule

When a scheduled action is selected in the list, it displays the Scheduled Action Details window to the right of the list. This window provides access to the schedule and action configuration options.

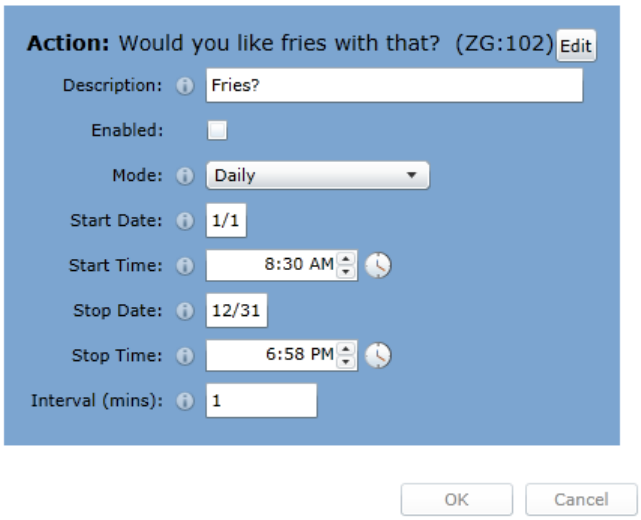


Figure 7-3: Scheduled Action Details

Action

This field displays the description of the action as entered in the description field of the action definition window. Click the Edit icon on the right to open the action definition window to edit the action parameters.

Edit Button

Click this button to edit the actual action, such as which message to play, in the same window as used to assign actions to devices. Refer to the section on ***Action Types*** for details on configuring specific actions.

Note: When actions are used as part of a scheduled action, the Entry Code field will be set to –1 by default. This is correct for embedded actions and you must not edit this field.

OK Button

After an edit to the scheduled action has been made, click the ***OK*** button to save the changes and move to a different action. This will not apply the changes to the system. That must be done using the ***Save*** option at the top right of SMC.

Cancel Button

Select ***Cancel*** to discard the edits.

Description

Use this text field to enter a basic description of the scheduled action. This is the text that will be used to identify the action in the scheduled actions list.

Enabled

When this box is checked, the action will play based on the programmed schedule. When not checked, the action will not play. This allows actions to be turned on or off without deleting them from the system.

Mode

There are five (5) schedule modes available from the ***Mode*** drop-down list. The default mode type is Daily, which will allow the action to play every day based on the date and time window defined. Each mode type is explained below.

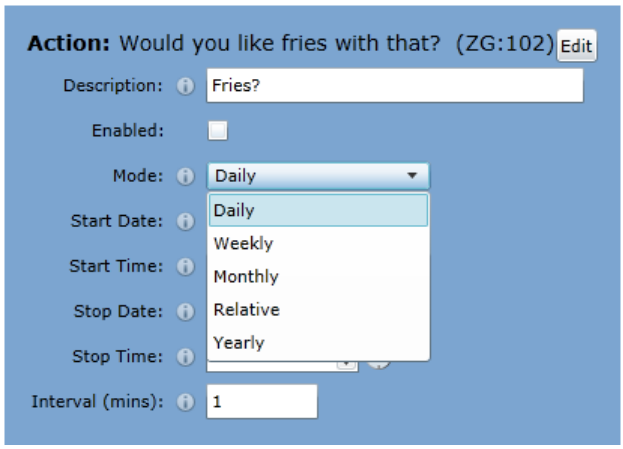


Figure 7-4: Scheduled Actions Mode

Daily

This schedule type will play the action at the specified interval every day of the week within the programmed start and stop dates. It will only play during the time window defined with the start and stop times.

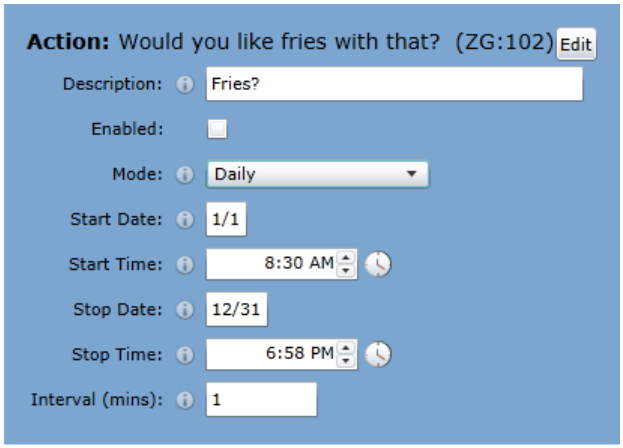


Figure 7-5: Daily Schedule Mode

Weekly

This mode also allows you to define a date window and a daily time window for the action to play just like the daily schedule mode. It adds the ability to choose which day(s) of the week to play the action. A day-of-week selection list appears as shown in Figure 7-6. The action will only play on those days that are checked.

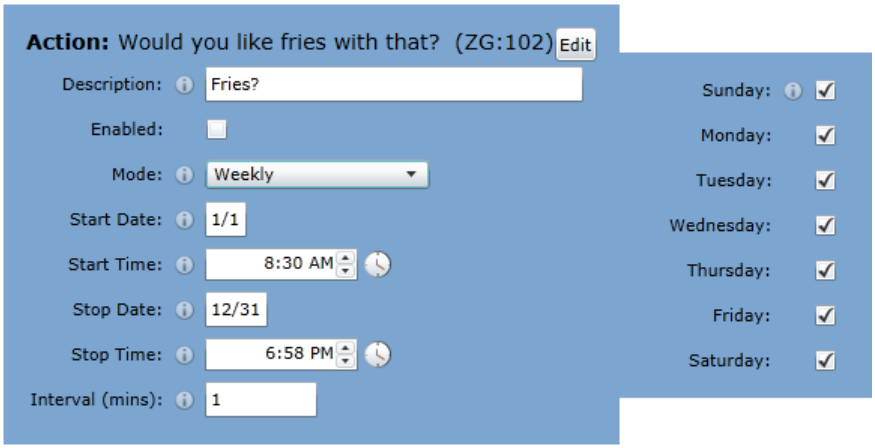


Figure 7-6: Weekly Schedule Mode

Monthly

This mode will only play the action on a specific day of the month. The day is entered in the ***Day of the Month*** field. The action will play on the specified day of the month within the programmed date range. It will play at the programmed interval during that day in the programmed time window.

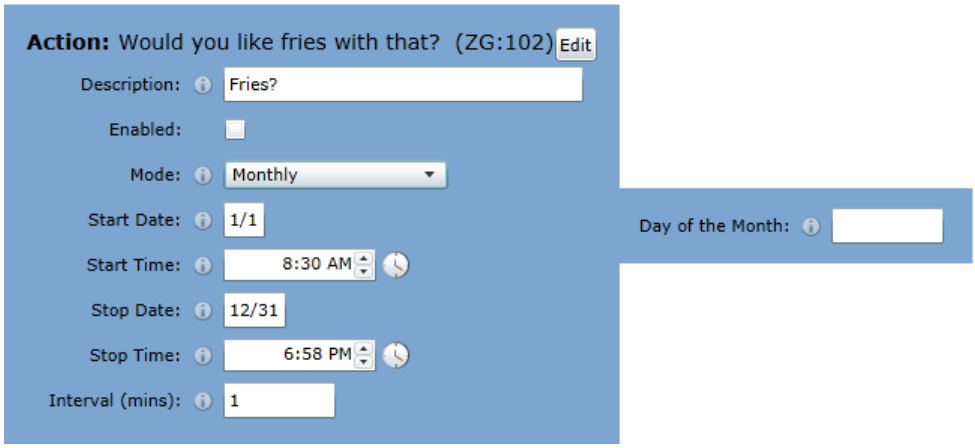


Figure 7-7: Monthly Schedule Mode

Relative

This mode allows you to play the action on a schedule that is relative to the first day of the month. This allows for scheduled actions such as the first Tuesday of every month. You enter the relative week number in the Week of the Month field and then check the box for each day within that week that the action is to play.

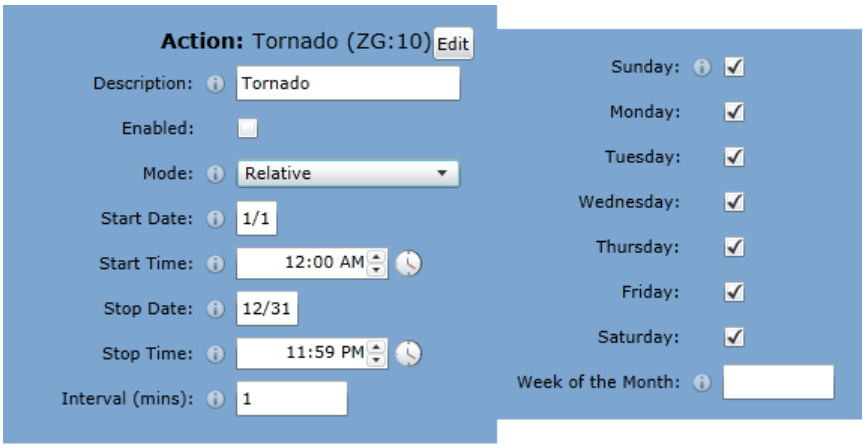


Figure 7-8: Relative Schedule Mode

As with the previous modes, the action must have a date window and a time window configured as well.

Yearly

With this mode, the action will only play on the date entered in the ***Start Date*** field. It can play once at the specified start time, or it can play at the programmed repeat interval within the programmed time window.

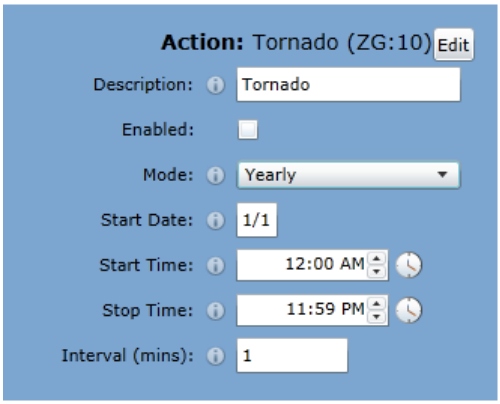


Figure 7-9: Yearly Schedule Mode

Start Date/Stop Date

These two fields specify the date range during which the action will play. These dates are month and day relative to the current year, thus no year should be included when manually typing in a date. For example, to play a message for the entire month of May, you would enter 5/1 for a start date and 5/31 for the stop date. The action will then play at the programmed interval during the programmed time window.

When you click on the date entry field, a calendar picker window will open as shown in Figure 7-10. You can either manually type in the date or click on a day in the calendar picker to set the date. Use the left and right arrows at the top of the calendar to navigate to different months.

Only the start date will be available when the mode is set to ***Yearly***.

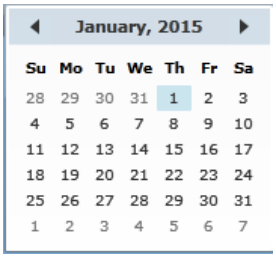


Figure 7-10: Date Picker Window

Start Time/Stop Time

The start and stop times are used to define a time window in which the action will play during the date range as determined by the start and stop dates. Click on the time field to edit the time. You can manually type in the time or use the up/down arrows to increase or decrease the value at the current cursor position. Alternately, one may click on the clock icon to the right and get a drop list of times on the half hours, as shown in Figure 7-11. This is used as a shortcut to jump to an approximate time.

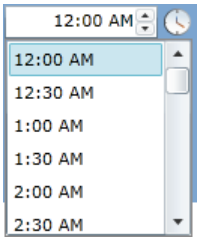


Figure 7-11: Time Picker Window

Interval (mins)

The interval determines how often the action will play during the specified time window. A positive whole number will set the playback interval in minutes while negative numbers indicate an interval in seconds. For example, an entry of 5 would create an interval of five (5) minutes. An entry of –30 would create an interval of 30 seconds. Intervals are start-to-start times. Therefore, if you entered a playback interval of 30 seconds and the message was 10 seconds long, there would be 20 seconds between the end of the message and the beginning of the next cycle.

4. SMC Configuration Tab

The Configuration Tab has the following configuration pages which are described in the sections which follow.

- **Controllers** – This local system's announcement controller and remote controllers that it must communicate with.
- **Recorded Messages** – Define the recorded message library for use with actions, events and scheduling.
- **Chimes** – Define tones for use as pre-announcement chimes and intercom/monitoring connection and notification tones.
- **Telephone Actions** – Define selected parameters for actions that may be done from a telephone.
- **Devices** – Define all devices used in this local system, settings for the devices (e.g., volume level and EQ) and actions that may be initiated from them (if input/control devices).
- **Announcement Classes** – The levels of priority with other announcement control properties.
- **Zone Groups** – Groupings of zones (device outputs) into handy groups for use in defining actions.
- **User Groups** – Groups for mic station users for large installations such as airports. This links to groups defined in PRIZM/Enterprise for granting/restricting permissions to certain flight data and such.
- **Mic Templates** – User interface definition for graphical type mic stations such as the IED528.
- **Mic Passwords** – Mic station login accounts (individual users).
- **Events** – Events are single actions or combinations of actions, including some sequence timing between multiple actions.
- **Visual Alerts and Wayfinding** – Additional visual graphics that may accompany announcement text and persist after the announcement ends.
- **E-mail Lists** – Destinations (mobile phone numbers) for sending visual text to as SMS (Short Message Service) text messages.
- **System Supervision** – Parameters and definitions for faults in the local system.

In addition, there are sections on **Actions Types** and how to **Print the Configuration** in this chapter.

4.1 Controllers

This section is where you define certain parameters of the controller as well as define all other controllers in the system. In order for this controller to communicate with another controller, it must be defined in the ***Remote Controllers*** list.

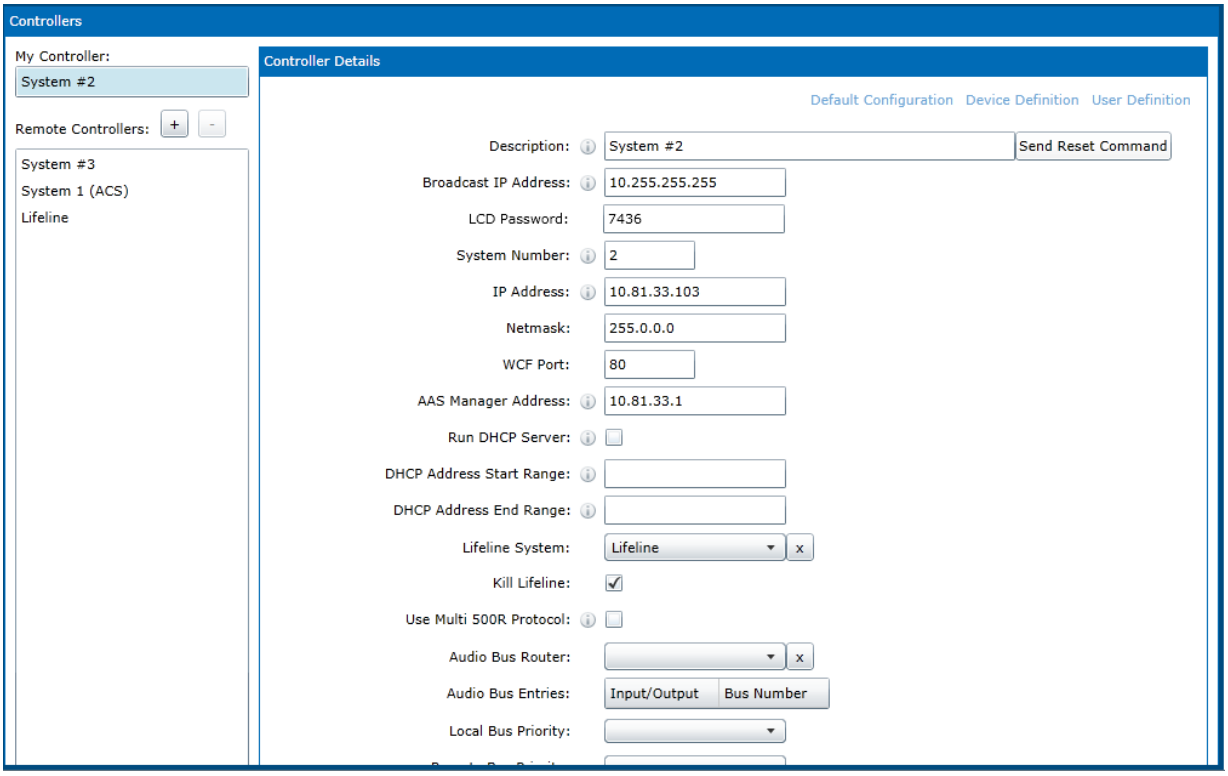


Figure 8-1: Controllers Tab

In versions of GCK prior to 3.0, there are three clickable text options located at the upper right corner of Figure 8-1. Clicking on one of the options will take you to a page in the ***First Run Setup Wizard*** to quickly configure the system. It is not recommended that you use these options if you have already configured devices in the system.

Default Configuration

Clicking on this text will take you to the ***vACS First Run Setup Wizard*** page as shown in Figure 8-2. From here, you can select a default configuration from the list or load one from a file. Refer to the ***vACS First Run Setup Wizard*** documentation for additional information.

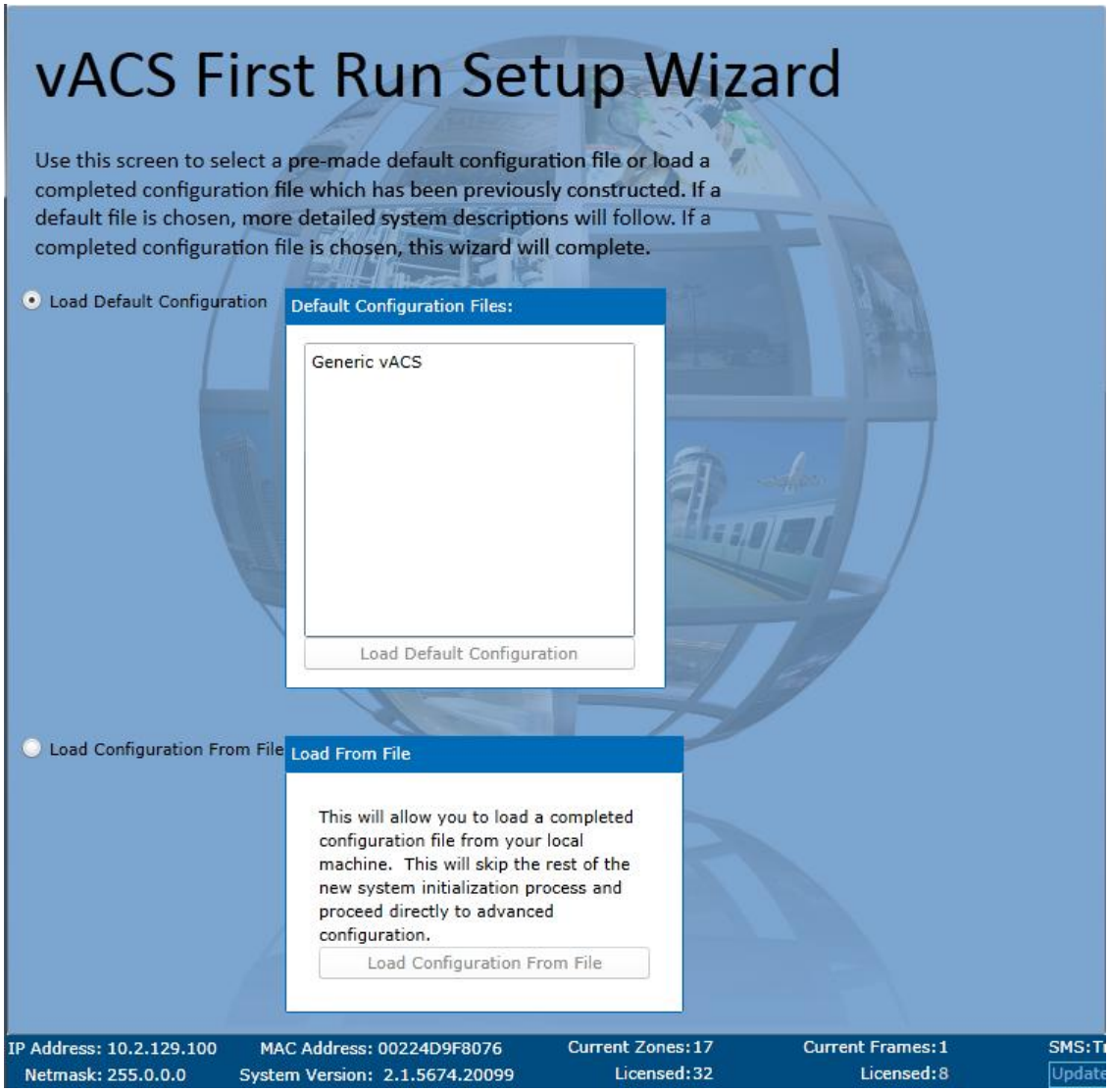


Figure 8-2: Default Configuration

Device Definition

Clicking on this text will take you to the ***vACS First Run Setup Wizard*** page as shown in Figure 8-3. From here, you can specify system address information and the number of each device type in the system. Refer to the ***vACS First Run Setup Wizard*** documentation for additional information.

Note: The Internal CobraNet Audio Device has its own network port that must be configured separately. The System Management Center cannot directly set this address. Refer to the Internal CobraNet Audio Device documentation for instructions on setting this address

Figure 8-3: Device Definition

User Definition

Clicking on this text will take you to the ***vACS First Run Setup Wizard*** page as shown in Figure 8-4. From here, you can define initial usernames and passwords for the three levels of access. More users can be added later from the ***Admin*** tab. Refer to the ***vACS First Run Setup Wizard*** documentation for additional information.

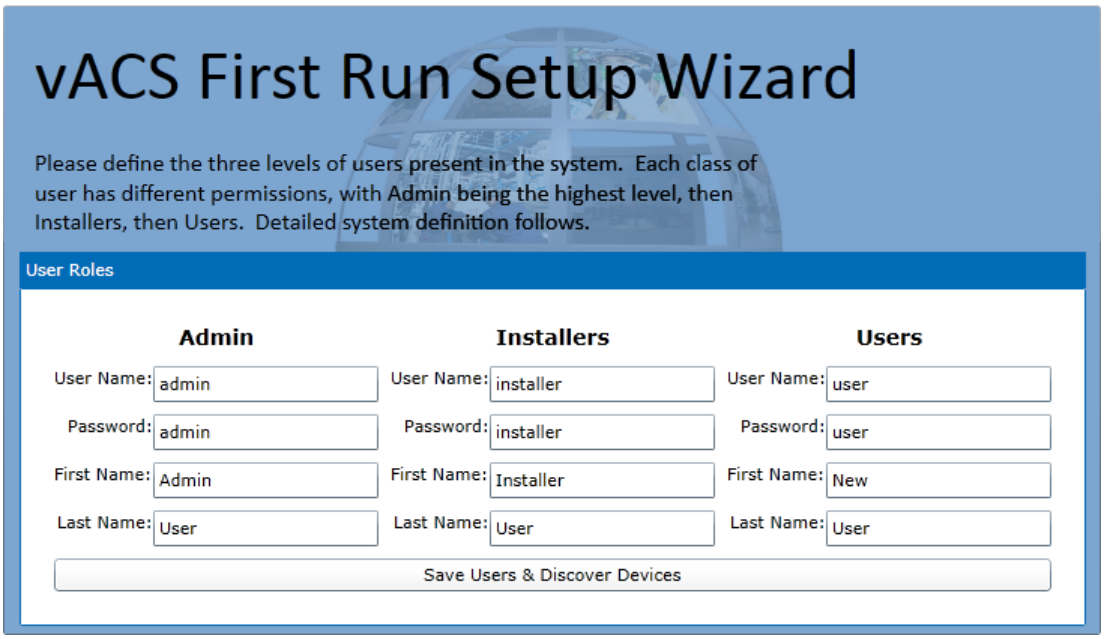


Figure 8-4: User Definition

My Controller

This represents the local controller to which you are currently connected. To edit the local controller options, select it under the My Controller list. The right section of the window will change to list the current configuration of the local controller. Any time you make changes to the local controller, you must click either the ***OK*** or ***CANCEL*** buttons before attempting to select anything else.

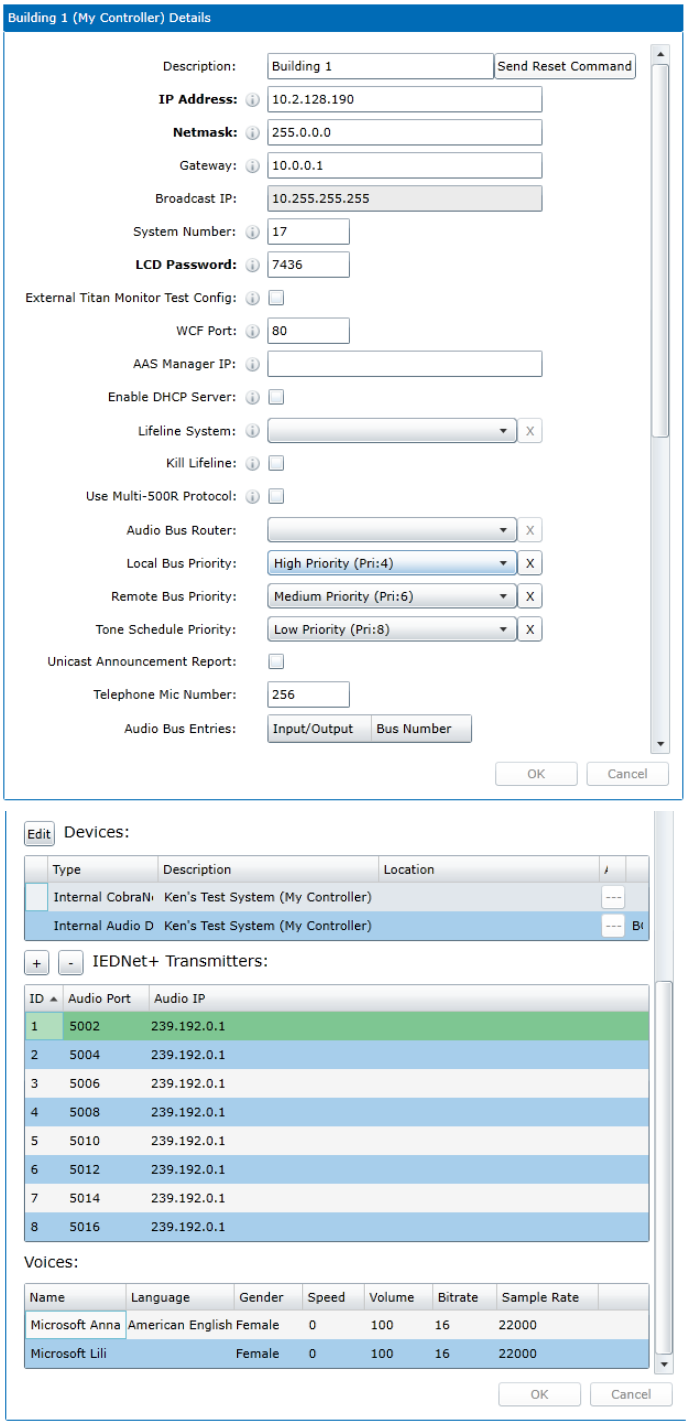


Figure 8-5: My Controller Configuration

Description

Enter a descriptive text string for the system. This text will appear at the top of the SMC window to identify which controller page is currently accessed.

Send Reset Command

Click this button to restart the vACS service. Note that this will take the announcement controller offline for a brief period of time.

IP Address

By default, this field is populated with the current IP address obtained from the operating system. If you change the address here, it will change the IP address of the controller.

Caution: Changing the address here will require a system reboot if it is different from the current settings.

Netmask

This setting also defaults to the subnet mask setting obtained from the operating system. If you change the address here, it will change the subnet mask of the controller.

*Note: The **Internal CobraNet Audio Device** has its own network port that must be configured separately. The System Management Center cannot directly set this address. Refer to the **Internal CobraNet Audio Device** documentation for instructions on setting this address.*

Gateway

By default, this field is populated with the current IP address obtained from the operating system. If you change the address here, it will change the IP address of the controller.

Caution: Changing the address here will require a system reboot if it is different from the current settings.

Broadcast IP Address

This is the network address to use for talking to all the mic stations and when broadcasting status messages such as announcement reports.

LCD Password

On units such as the IP100 or IP108 that have a front panel LCD, this is the password used to unlock advanced/admin features of the interface. See Appendix F for details on using the front panel and how the password is employed.

External Titan Monitor Test Configuration

This box should be checked when you are using enhanced Titan (T9160) testing functionality that requires the use of a separate configuration application. This is required when the End-of-Branch (EOB) testing devices are used in conjunction with a T9160 mainframe. When enabled, the test configuration features are disabled in the T9160 device setup screens of the SMC.

System Number

As a rule each controller must have a unique system number (1 – 32)[1]. Enter the appropriate number here. When you define this controller in another controller's Remote Controllers list, you will need to properly reference this system number. This is also the Group Number used to configure microphone stations to communicate with their parent controller.

WCF Port

This sets the port that the application uses to communicate with other applications and services. The default is 80 and it should not be changed unless it is required for a custom installation.

AAS Manager IP

AAS stands for Automated Announcement System, which is a subsystem of PRIZM/Enterprise. If you have an installation that utilizes an external announcement manager, such as the Flight Announcement System (FAS), then you must enter the IP address of that (PRIZM) server here. This allows the local controller to communicate with that server.

Enable DHCP Server

For systems that utilize intercom or IP speaker devices, it is necessary to have a DHCP (Dynamic IP address assignment) server running on the network. In some installations, the house network may already have such a server. In cases where one is not present, the server built into the system can be configured to run by enabling it here and setting the address range parameters that follow.

DHCP Range Low End

The first address that the built-in DHCP server may assign to devices.

DHCP Range High End

The last address that the built-in DHCP server may assign to devices.

Lifeline System

Select the Lifeline ACS (if used) that will be used to back up this controller from the dropdown list. Click the **[X] button** to the right of the drop-down list to remove the selection. In order for a system to appear in this list, you must have a system defined as a *vACS Lifeline* type in the Remote Controllers list.

Kill Lifeline

This checkbox only applies when a *vACS Lifeline* is used to backup the local system. When checked, the local controller will automatically instruct the Lifeline controller to reset and relinquish its control back to the local controller when it comes (back) online. When not checked, you must go to the *System Management Center* page on the Lifeline controller and manually relinquish control in order for control to "fail back" to the main controller. You may also send a reset command using the ***Send Reset Command*** button if you select the Lifeline controller in the ***Remote Controllers*** list to accomplish this manual fail back function.

[1] This rule is true for the typical peer-to-peer facility installation. For systems with one head end and many (slave) remote systems, such as a transit facility, there are special ways to configure the system to get around this rule. See application notes and information from IED for these cases.

User Multi 500R Protocol

Check this box if you are installing this controller in a system that has a 510/520ACS that uses two IEDA500R cards for a 16-bus system instead of the standard 8-bus system.

Note: The four Audio Bus fields which follow are used to configure a master controller that manages analog audio buses out to slave controllers (GLOBALCOM or legacy 8000 systems). Typically this might be used in a head end system of a large transit installation that still uses analog audio lines out to train lines and passenger stations.

Audio Bus Router

If ***Controllers*** uses an analog audio bus router device, it is selected/defined in this field. The selection in the drop list will be the 9032DSP device that is to be used as the audio bus router. Audio buses connect audio from the head end (master) controller to distributed (slave) controllers. Typically, each slave controller is attached to one audio bus (multiple controllers attach to each bus). So, in order to transmit audio to that controller, the audio must be placed on that particular audio bus.

Audio Bus Entries

Once a Bus Router device is selected, this table will populate showing each input and output of the router device (e.g., 8x8, 16x16 or 32x32 depending on the device type and number of inputs and outputs it has). One can then assign Audio Bus Numbers, which are identifiers used in network messages between the master controller and the slave controllers who request use of these buses. It is not necessary to assign a number to every input and output, only those that are actually used in the system architecture need to be numbered.

Local Bus Priorities

"Local" buses are owned by an area controller (e.g., a "tower" in charge of a section of the transit system). If the area controller wishes to use an audio bus, it designates this as his local bus, which is typically assigned a higher priority than the remote bus priority. The higher priority allows the area controller that owns the bus to pre-empt other uses of the bus. This selection is one of the announcement classes defined for this GLOBALCOM system, and also establishes the bus priority relative to other uses of the audio router inputs and outputs (e.g., as zones by locally initiated announcements).

Remote Bus Priority

"Remote" buses are not owned by an area controller that wishes to use them to reach slave controllers outside its normal area. For example: Off-hours, one area controller might take charge of additional sections of a transit system and then need to send announcements out to slave controllers attached to other (remote) buses. Typically, this priority is configured to be lower than the Local Bus Priority to give the area controller that owns a local bus preference for that resource. This selection is one of the announcement classes defined for this GLOBALCOM system, and also establishes the bus priority relative to other uses of the audio router inputs and outputs (e.g., as zones by locally initiated announcements).

Tone Schedule Priority

The ***Announcement Class*** (priority) to use for sending notification and monitoring tones to intercoms and IP speakers. This is also used for playing messages from the Calendar schedule (Day Template messages).

Unicast Announcement Report

When checked, the default behavior of broadcasting announcement reports will be over-ridden. Instead the announcement controller will send unicast messages to only those network devices (such as the

PRIZM/Enterprise server) that register for announcement reports. If one needs reports to span VLANs (or routed LANs), then this option should be checked.

Devices

These are devices built into the announcement controller, such as a 1200LIR logic input/relay output device (1200ACS only), a digital audio sound device (e.g., CobraNet sound card), and telephone interface module (a software-only device). Highlight the device and click the settings icon located at the top of the list or double click on the item to open the editor for the device. The1200 Logic Input/Relay Output device can be used to launch actions. Refer to the Devices section of the documentation to learn how to configure each individual device.

*Note: The **Internal CobraNet Audio Device** has its own network port that must be configured separately. The System Management Center cannot directly set this address. Refer to the **Internal CobraNet Audio Device** documentation for instructions on setting this address.*

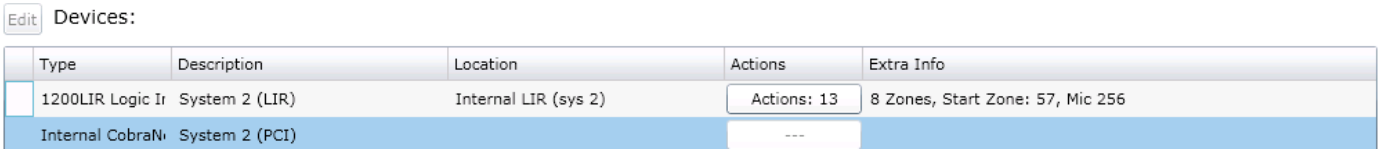


Figure 8-6: My Controller Device Configuration

IEDNet+ Transmitters

IEDNet+ uses an industry standard, Layer 3 routable RTP (Real-Time Protocol) for the audio transport between vACS controllers that reside on different VLANs. Each controller can support up to eight (8) simultaneous RTP connections. An IEDNet+ Transmitter must be defined for each outgoing channel and have a unique multicast IP address and port combination.

When you configure this controller as a remote controller on another vACS, you must use the IEDNet+ Transmitter information from here to tell the other controller that this controller uses these Transmitters.

Click the **[+] button** to add a new transmitter to the list. Click the **[X] button** to delete the currently selected item from the list.

ID

Each transmitter will be assigned its own unique ID number. This is a system-assigned number and cannot be edited.

Audio Port

This is the RTP port number that will be used along with the multicast group IP address to uniquely identify the audio channel. This number is automatically calculated by the system, but can be changed to meet the installation network requirements.

The default port number is calculated using the following formula:

4000 + (1000 x {system number}) + {ID}

For example, transmitters 1 and 2 on system 1 would use ports 5001 and 5002. Transmitters 1 and 2 on system 2 would use ports 6001 and 6002.

Audio IP

This is the multicast address to use for this channel. Generally all RTP channels share the same multicast address and are distinguished only by the Audio Port value. These addresses must be a valid class D address in the range 224.0.0.0 – 239.255.255.255. This may be over-ridden to meet the installation network requirements, but by default SMC assigns addresses of 239.192.0.x, where x is the system number.

Voices

This section configures the Text-to-Speech voices that will be available for selection when defining a TTS action type. This list is automatically populated with the languages that are installed on your system.

Note: TTS engines must be purchased and installed separately and are not included with the base system software. Some installations of Windows supply (low-quality) free voices which will appear in this area as well.

Note: Even the built-in voices may not be useable until they are fully configured. At a minimum they must be associated with a language that they can be used for. If they appear in this list, it only means they are detected, not that they are properly configured.

Description

This is a read-only description of the installed voice.

Language

Select the language for the voice. Only one voice can be defined for each language. Thus, you cannot have multiple voices for the same language.

Gender

Select either a male for female voice from the drop-down list.

Speed

This value is used to adjust the speed at which the voice plays. A valid range is from –10 (very slow) to +10 (very fast). The default value is 0 and you can adjust it to meet your needs. It is recommended that you adjust in increments of 1 until you are satisfied with the results.

Volume

Select a numerical percentage (0 – 100) to set the volume of the voice. The system will have default values that are unique to each voice. If the voice defaults to a value of 0, then you must adjust it yourself. A value between 80 and 90 is a good starting point. This field can be adjusted for each voice to evenly balance the installed voices with live and prerecorded announcements.

Bitrate

This field allows you to select between bit rates of 16 or 8. A bitrate of 16 is recommended as it will provide a higher quality speech rendering. Using a rate of 8 will result in smaller file sizes and slightly faster rendering times, but at reduced quality.

Sample rate

This field allows you to select between sample rates of 22000Hz and 16000Hz. 22000Hz is recommended as it will produce a higher quality speech rendering. Using a sample rate of 16000Hz will result in smaller file sizes and slightly faster rendering times, but at reduced quality.

*Note: If using pre-announcement tones from the **Chimes** library with TTS voices, 16000 Hz sample rate must be used to be compatible with the Chimes.*

Remote Controllers

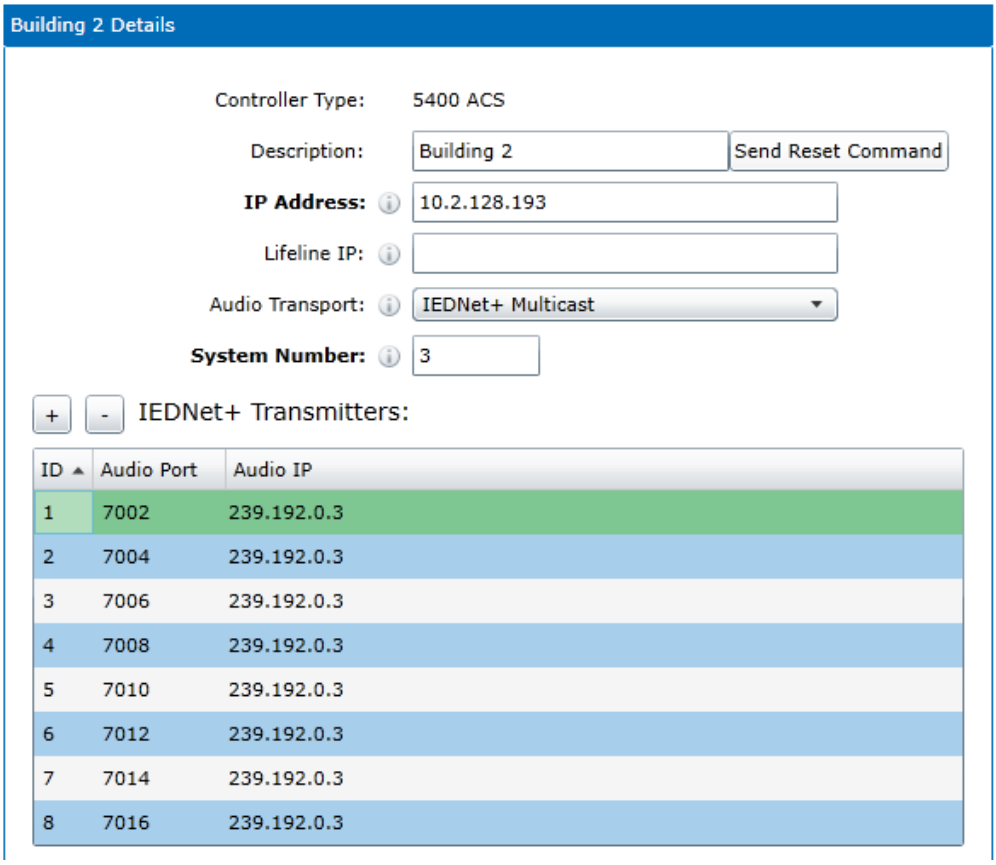
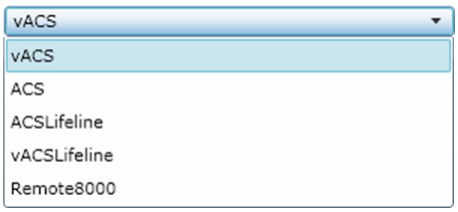


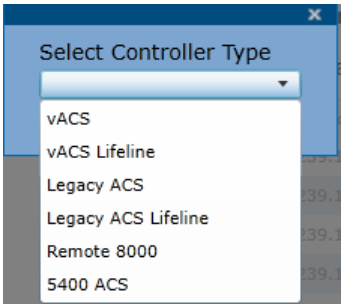
Figure 8-7: Remote Controller Configuration

Type

On versions prior to GCK Version 3, there was a type field on the remote controller for setting its type. This was a drop-list selector such as the one at right. In Version 3 and later, this is shown at the top as a read-only field “Controller Type”.



Starting with GCK Version 3, type select is done when the controller is added via the [+] button. Clicking this button brings up a selection window with a drop-list selection such as the one shown at right. One should select the type of remote controller that this entry represents.



Some of the fields below only apply to certain remote Controller Types.

Description

Enter a descriptive text string for the system. This text will appear in the ***Remote Controllers*** list to identify the system. A hyperlink to the SMC for the remote system will appear below the description field. You can click this link to open the SMC window for the remote controller, if it is a device that has SMC.

Send Reset Command

Click this button to restart the vACS service on the remote controller. Note that this will take the announcement controller offline for a brief period of time.

You can also use this to reset a vACS Lifeline controller to relinquish its control after a controller has been restored when the Kill Lifeline checkbox is not checked.

Bridge Device

Select the device that will be used as the network bridge device to access the remote system. Typically, this will be the 1100DAB assigned to the local controller.

System Number

This is an ID number used by each announcement controller in the system. Each system must have a unique system number (1 – 32). The system number is also used as the ***Group Number*** for microphone station setup. The system number for a remote controller must match the system number defined in the remote controller's ***My Controller*** definition.

IP Address

This is the IP address of the remote system.

IP Address #2

This is used to identify the IP address of a second CPU when interfacing with a legacy ACS that has redundant processors.

CobraNet Device IP

If the remote controller is a vACS Lifeline type, then you must enter the IP address of the CobraNet sound card (if installed) in the Lifeline controller. Typically this address is one number higher than the IP address of the controller.

WCF Port

This sets the port that the application uses to communicate with other applications and services. The default is 80 and it should not be changed unless it is required for a custom installation.

Remote TX

This number represents the ID number of the CobraNet bundle that the remote controller will use to send announcements to other controllers. This is used by the local controller, along with the System Number, to calculate the actual bundle number to receive audio signals from the remote controller. For most systems, this number will be 1 and can be found in the Internal CobraNet Audio Device setup on the remote system as shown in Figure 8-8.

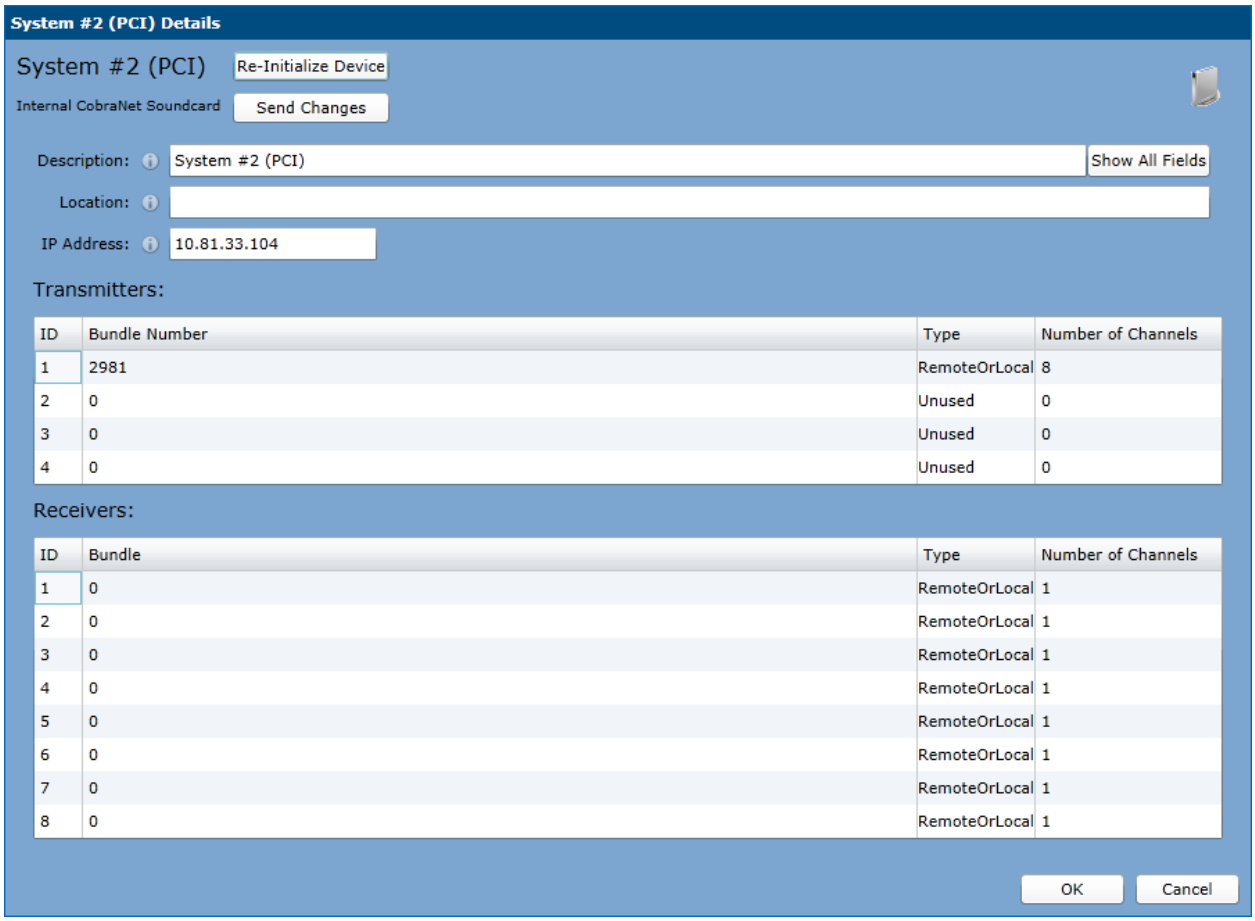


Figure 8-8: Internal CobraNet Audio Device Transmitter Channels

Lifeline System

Select the Lifeline ACS (if used) that will be used to back up this controller from the dropdown list. Since one Lifeline ACS may backup multiple controllers, it is important for the local controller to know which Lifeline ACS will backup each controller to prevent any conflicts. Click the **[X] button** to the right of the drop-down list to remove the selection. In order for a system to appear in this list, you must have a system defined as a *vACS Lifeline* type in the ***Remote Controllers*** list.

Push Takes and Configuration

If this box is checked, the local controller will transfer new audio and visual takes, and key configuration files to the remote controller as they are added to the local controller. When used appropriately, this will ensure that all controllers will have the same take files.

You must have this option checked when the remote controller is a Lifeline ACS.

Digital Audio Type

The way in which audio reaches this system from ***Controllers***. Choices are:

- RTP (networked layer 3 audio transmitted via multicast)
- Unicast RTP (networked layer 3 audio unicast to remote systems)
- CobraNet (networked layer 2, low-latency audio)

- Digital Audio Bus (bus controlled via a Bus Router Device configured on My System).

Audio Bus

If Digital Audio Bus type is selected, one uses this field to designate the audio bus number that this remote controller is connected to.

Audio Transport

This determines the method that the local controller will use to transmit and receive audio to and from the remote controller. You must select either ***CobraNet, Digital Audio Bus, IEDNet+ Multicast or IEDNet+ Unicast*** from the dropdown list. When selecting IEDNet+ as the transport method, you must configure the IEDNet+ Transmitters here to match the Transmitter settings in the ***My Controller*** definition of the other controller.

IEDNet+ Transmitters

Click the **[+] button** to add a new transmitter to the list. Click the **[X] button** to delete the currently selected item from the list.

ID

Each transmitter will be assigned its own unique ID number. This is a system-assigned number and cannot be edited.

Audio Port

This is the RTP port number that will be used along with the multicast group IP address to uniquely identify the audio channel. This number is automatically calculated by the system, but can be changed to meet the installation network requirements.

The default port number is calculated using the following formula:

4000 + (1000 x {system number}) + {ID}

For example, transmitters 1 and 2 on system 1 would use ports 5001 and 5002. Transmitters 1 and 2 on system 2 would use ports 6001 and 6002.

Audio IP

This is the multicast group IP address used by this controller. The default address is 239.192.0.x where x corresponds to the system number. When combined with the port number, this provides a unique transmitter address. The address and/or port configuration can be changed to meet the installation network requirements as needed.

Note: IEDNet+ Multicast and IEDNet+ Unicast digital audio types use this same list of transmitters, i.e., the same port numbers. The Unicast type ignores the Audio IP setting and instead transmits to the IP address of the remote system controller.

4.2 Recorded Messages

Recorded messages are WAV files that can be played as part of actions, events, and schedules. They are imported and defined on this configuration page.

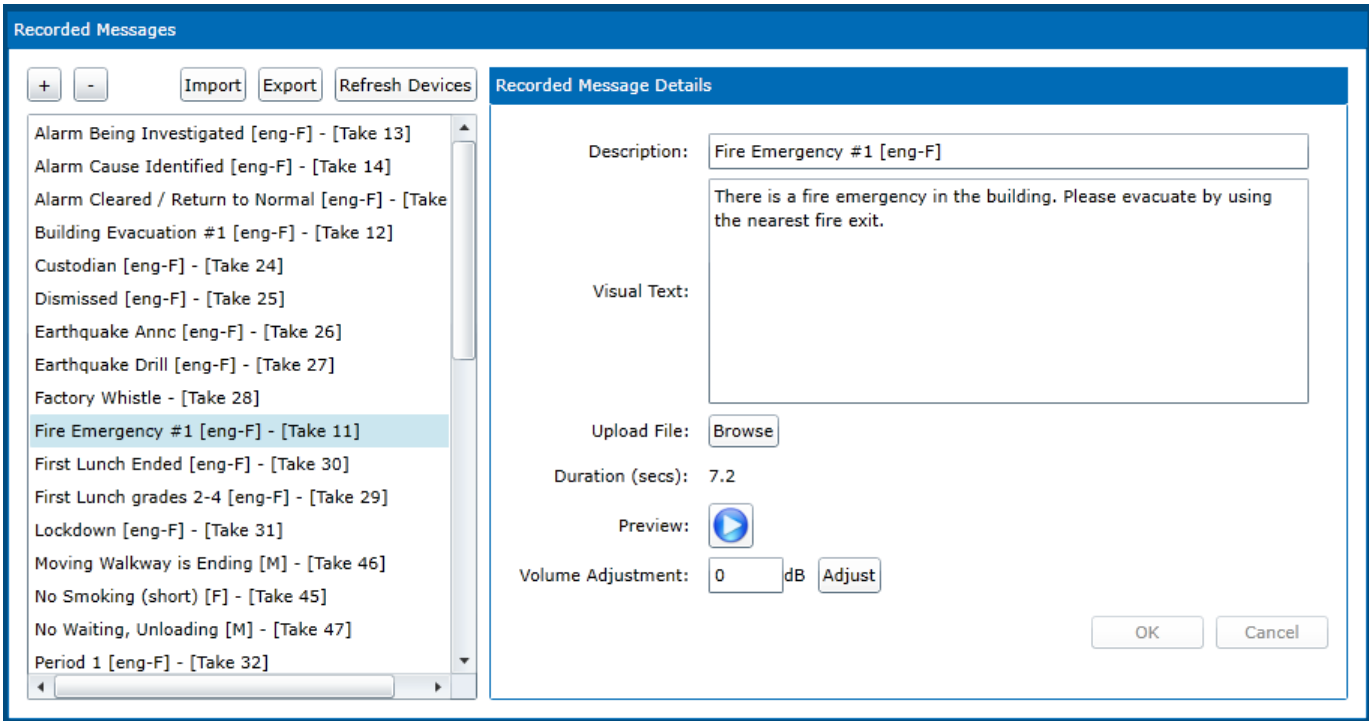


Figure 9-1: Recorded Messages

Add a new message to the list. It will be added with the default name/description of "New Recorded Message". This name and other properties can then be edited on the right. One must upload a file to the system before it can be used by the announcement controller.

Delete the currently selected message.

Import Button

Open a GLOBALCOM Take Library file (*.GCL) and select messages from this library to import into this local system. Clicking this button brings up a File Open dialog. Once a file is selected, then the Recorded Message Library Importer window appears, such as the example in Figure 9-2. One can listen to any of the messages in a library by clicking on the ***Play*** button on each entry.

To import, one checks off ***Import*** checkboxes on all the desired messages from this library followed by the ***OK*** button.

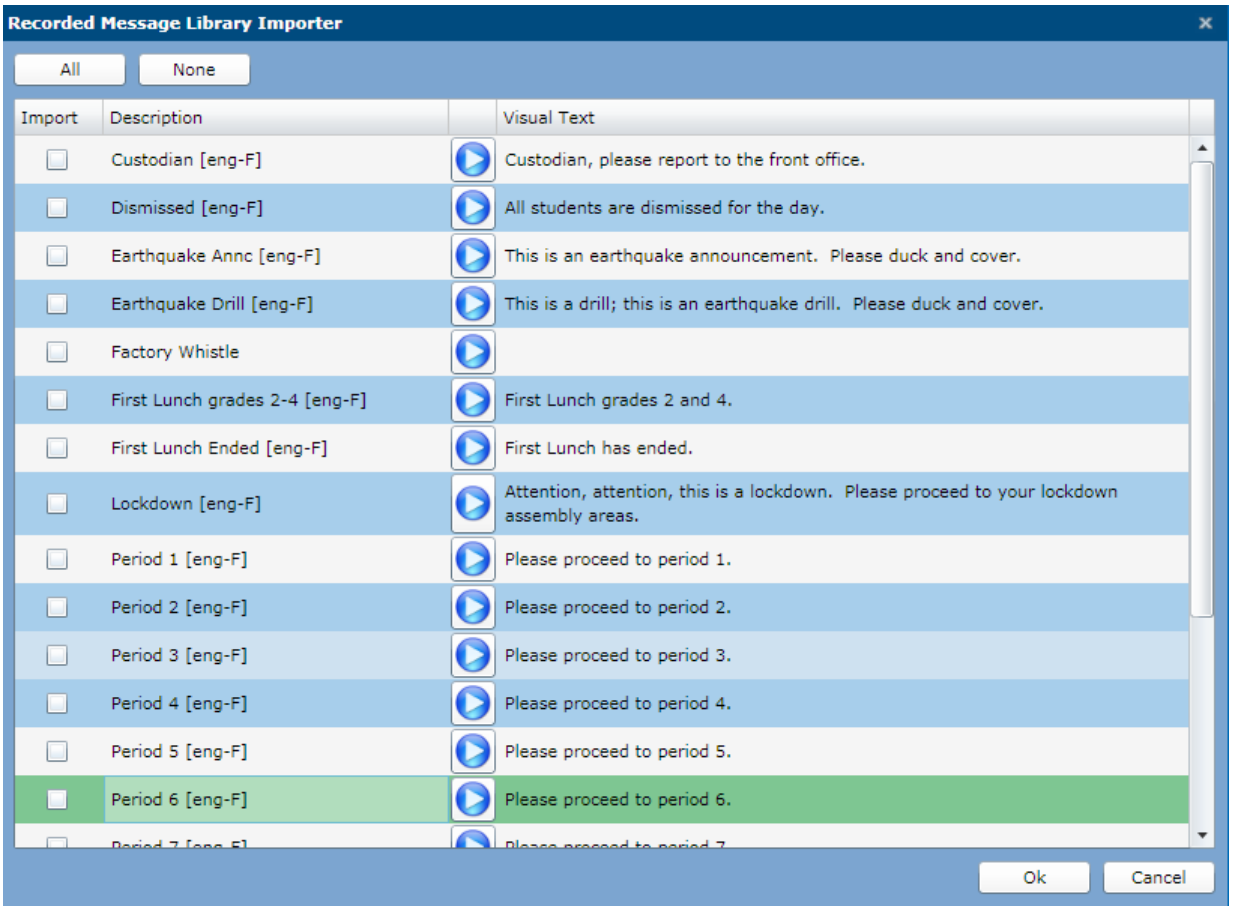
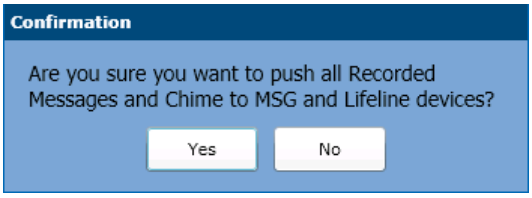


Figure 9-2: Recorded Message Library Importer

Export Button

Clicking this button brings up a File Save dialog box for selecting a folder and entering a file name for the exported library. This function will create a *.GCL file with all the messages in the Recorded Message section of the local system. This feature may be used for backup purposes or as a convenient way to take the recorded message library from one system and transfer it to another system (via the Import button on that second system).

Refresh Devices



When Takes must be shared across multiple devices for one system, such as one or more Message Player (MSG) devices or the Lifeline backup devices, this button can be used to immediately send all user takes in the Recorded Message Library to these other known devices. Clicking this button first brings up a confirmation dialog box. The Takes will be sent only if “Yes” is selected.

Message List

The messages currently defined in the local system are shown in this list box. The actual Take (message) numbers assigned to these are shown after the name/description. This is an aid for situations where the actual

file on the hard drive needs to be located or for when external announcement control software need to know Take numbers to supply in the network messages to the announcement controller.

Description

This is the name or short description of this message. This appears in the list box on the left and in all drop list controls in the SMC configuration areas where messages are used.

Visual Text

This is the text that should be sent to displays, if present in the system, or to SMS recipients. If there are no visual elements in the system, this field could also be used simply to document the full text transcript of the audio.

Upload File ([Browse] button)

Click on the Browse button to locate a file to be uploaded to the announcement controller. Uploaded files will automatically be converted to the standard message library sample size and data rate (usually 16-bits and 16000 Hz) and will be auto-adjusted level-wise to be compatible with the other messages and chimes in the library (so that some audio won't be much louder or softer than others).

If defining a Recorded Message only to use as a "slot" to store audio from a Record Message action, it is not necessary to Upload or Import any Take (WAV file) for the message. One may enter the description and optional Visual Text and leave the Recorded Message just like that, awaiting a Record Message action to fill in the audio.

Duration

This read-only field reports the length of the uploaded message file.

Preview

One can listen to a message by clicking on this button. This will play the WAV file out the speakers attached to computer one is running SMC on. If one is running SMC on the 1100ACS or 1200ACS hardware, then one will not be able to hear this preview.

Volume Adjustment

How much to adjust the volume of the imported file by. This is a positive or negative number in decibels (dB). SMC normalizes the volume of imported files automatically on upload, but it can sometimes be fooled by certain kinds of sounds. Or, the user may have a preference to have certain Take files be louder or softer than normal.

Adjust Button

When pressed, SMC takes the dB value in the Volume Adjustment edit box and applies it to the file that was previously uploaded into the system.

Note: Sometimes, after making lots of little adjustments, the audio file can become noisy due to the introduction of quantization errors when scaling up and down. Sometimes the best strategy is to find the desired volume level through multiple adjustments and then when the final level is determined, re-upload the original file and apply one total adjustment. For example, if the process was to add +3 dB, then +1 dB, another +1 dB and another +1 dB. One could re-upload the file and do one total adjustment of +6 dB.

OK Button

Save the changes made to the message.

Cancel Button

Discard any changes made to the message. Note, any upload operation that over-wrote an earlier version of the message and volume adjustments cannot be undone.

4.3 Chimes

Chimes are WAV files that can be played as pre-announcement tones or notification/monitoring tones for intercom and IP Speaker devices.

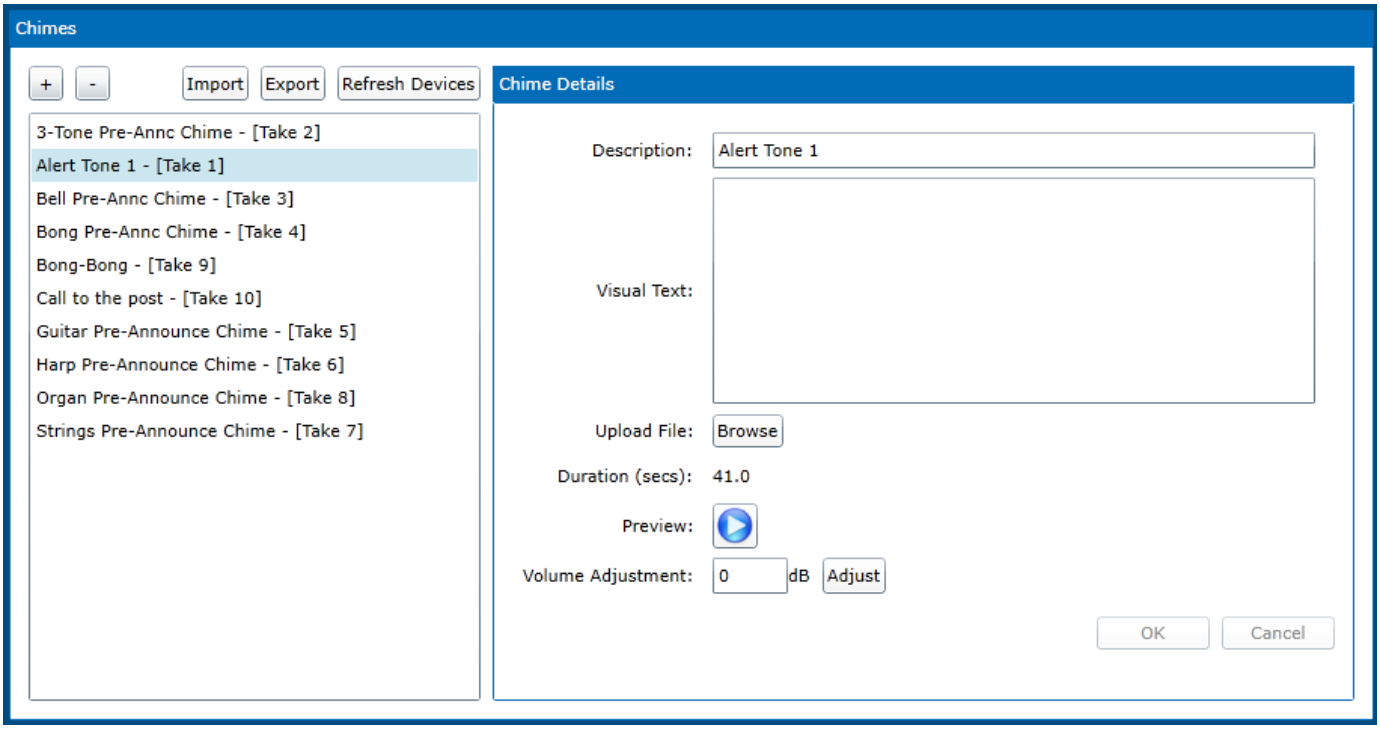


Figure 10-1: Chimes

Add a new chime to the list. It will be added with the default name/description of “New Chime”. This name and other properties can then be edited on the right. One must upload a file to the system before the announcement controller can use it.

Delete the currently selected chime.

Import Button

Open a GLOBALCOM Take Library file (*.GCL) and select chimes from this library to import into this local system. Clicking this button brings up a File Open dialog. Once a file is selected, then the Recorded Message Library Importer window appears, such as the example in Figure 10-2. One can listen to any of the chimes in a library by clicking on the ***Play*** button on each entry.

To import, one checks off ***Import*** checkboxes on all the desired messages from this library followed by the ***OK*** button.

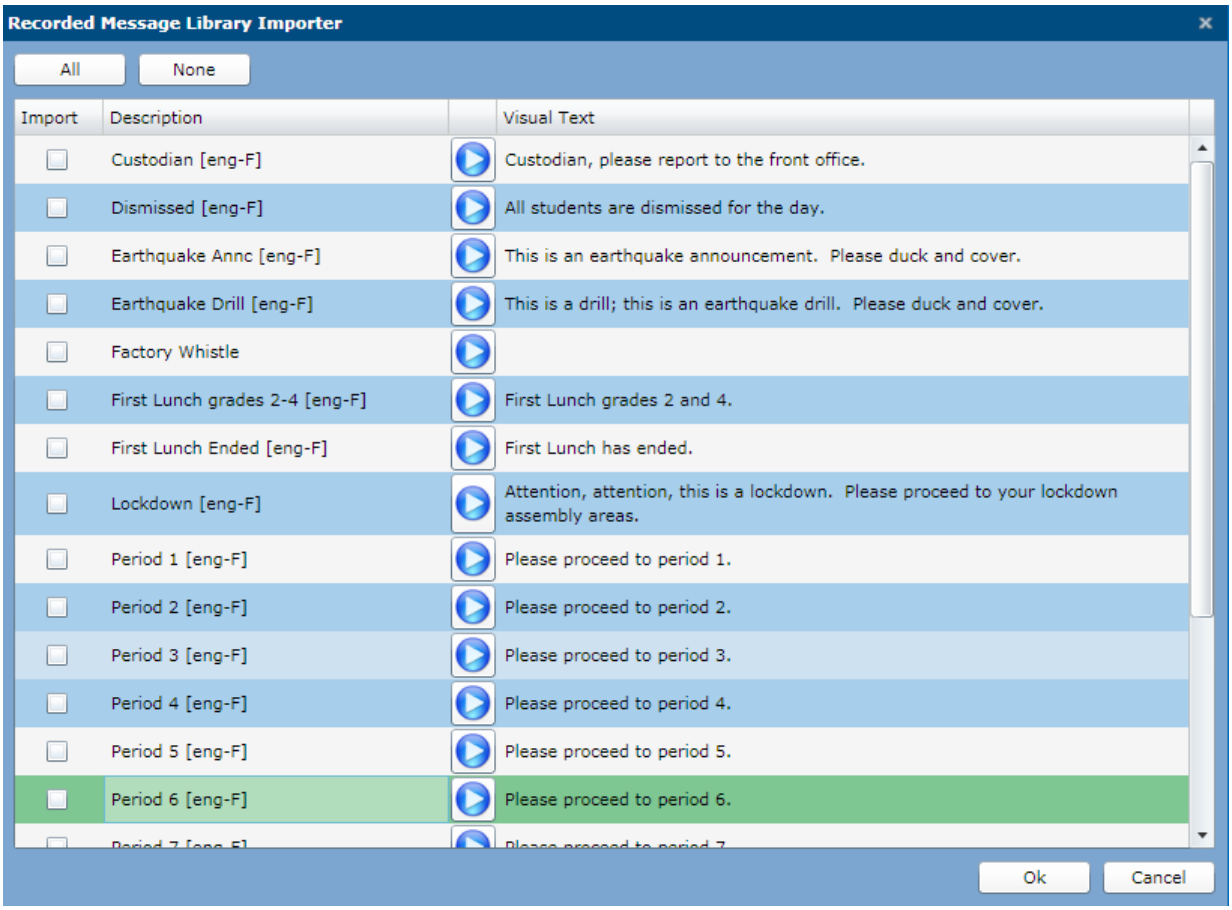


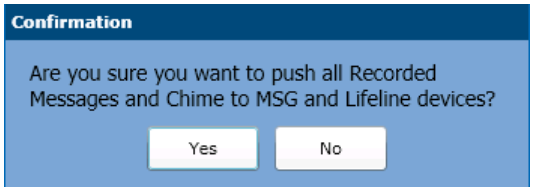
Figure 10-2: Recorded Message Library Importer

Export

Clicking this button brings up a File Save dialog box for selecting a folder and entering a file name for the exported library. This function will create a *.GCL file with all the chimes in the Chime section of the local system. This feature may be used for backup purposes or as a convenient way to take the chime library from one system and transfer it to another system (via the Import button on that second system).

Refresh Devices

When Takes must be shared across multiple devices for one system, such as one or more Message Player (MSG) devices or the Lifeline backup devices, this button can be used to



immediately send all user takes in the Chimes Library to these other known devices. Clicking this button first brings up a confirmation dialog box. The Takes will be sent only if "Yes" is selected.

Message List

The chimes currently defined in the local system are shown in this list box. The actual Take (message/chime) numbers assigned to these are shown after the name/description. This is an aid for situations where the actual file on the hard drive needs to be located or for when external announcement control software need to know Take numbers to supply in the network messages to the announcement controller.

Description

This is the name or short description of this chime. This appears in the list box on the left and in all drop list controls in the SMC configuration areas where chimes are used.

Visual Text

This is the text that should be sent to displays, if present in the system, or to SMS recipients. If there are no visual elements in the system, this field could also be used simply to document the full text transcript of the audio.

Upload File ([Browse] button)

Click on the Browse button to locate a file to be uploaded to the announcement controller. Uploaded files will automatically be converted to the standard message library sample size and data rate (usually 16-bits and 16000 Hz) and will be auto-adjusted level-wise to be compatible with the other messages and chimes in the library (so that some audio won't be much louder or softer than others).

Duration

This read-only field reports the length of the uploaded chime file.

Preview

One can listen to a chime by clicking on this button. This will play the WAV file out the speakers attached to computer one is running SMC on. If one is running SMC on the 1100ACS or 1200ACS hardware, then one will not be able to hear this preview.

Volume Adjustment

How much to adjust the volume of the imported file by. This is a positive or negative number in decibels (dB). SMC normalizes the volume of imported files automatically on upload, but it can sometimes be fooled by certain kinds of sounds. Or, the user may have a preference to have certain Take files be louder or softer than normal.

Adjust Button

When pressed, SMC takes the dB value in the Volume Adjustment edit box and applies it to the file that was previously uploaded into the system.

Note: Sometimes, after making lots of little adjustments, the audio file can become noisy due to the introduction of quantization errors when scaling up and down. Sometimes the best strategy is to find the desired volume level through multiple adjustments and then when the final level is determined, re-upload

the original file and apply one total adjustment. For example, if the process was to add +3 dB, then +1 dB, another +1 dB and another +1 dB. One could re-upload the file and do one total adjustment of +6 dB.

OK Button

Save the changes made to the chime.

Cancel Button

Discard any changes made to the chime. Note, any upload operation that over-wrote an earlier version of the chime and volume adjustments cannot be undone.

4.4 Telephone / Telephone Actions

The Telephone configuration page appears as in Figure 11-1 below and is composed of six subsections: SIP (general settings for the Telephone Interface), Trunks (configure inbound/outbound trunks *if used*), Prompts (audio files used to prompt the telephone user), Templates (choices available for assignment to prompting extensions or to users who enter a password when dialing in), Dial-Out (settings that control dial-out behavior) and Advanced (rarely changed settings for miscellaneous internal behaviors). Each of these sections is described in the subsections which follow.

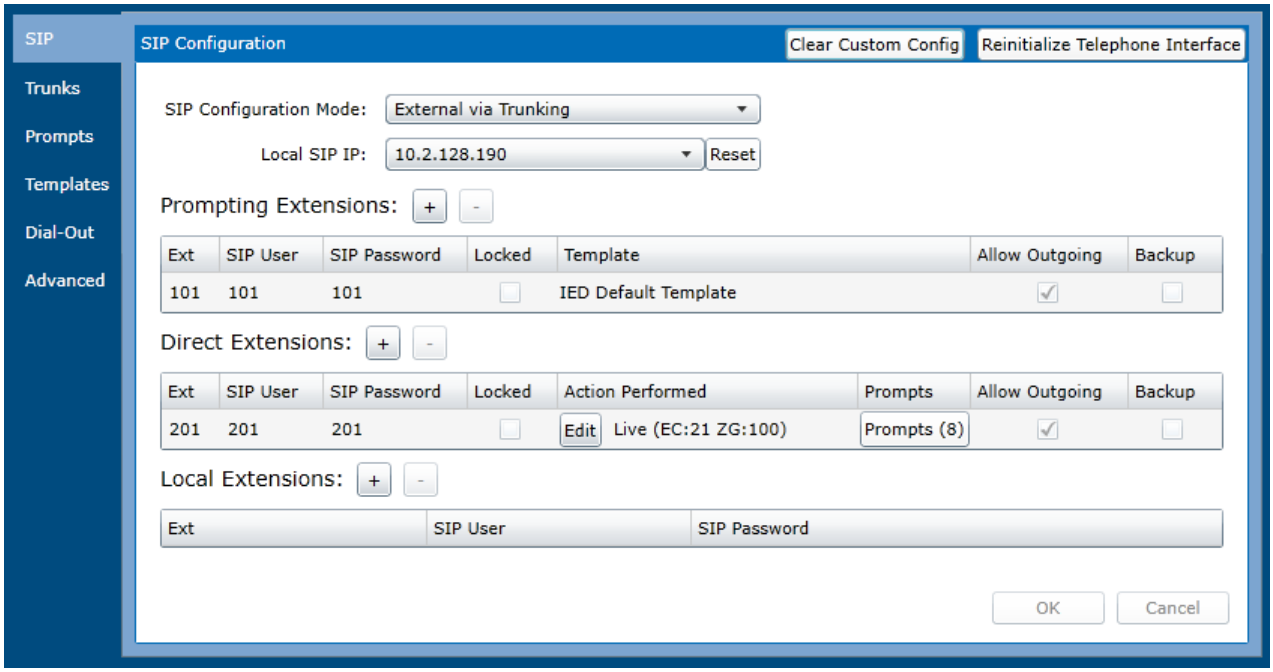


Figure 11-1: Telephone Interface Overview w/ Trunking Selected

There are two special buttons that appear at the top right side of the SIP configuration tab page as described below.

Clear Custom Config

If the system had previously been configured with a manually defined custom configuration, changes made to the telephone interface via SMC will be ignored. Typically the reason for a custom configuration was to implement some feature that is available in the underlying telephone interface, but was not yet available for easy configuration in the SMC. If more recent versions now implement that custom feature, the old custom configuration can be cleared via this button.

Reinitialize Telephone Interface

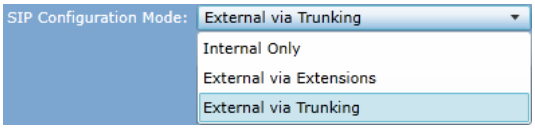
This works similar to the Re-Initialize Device button does for network devices; it sends all telephony configuration to the telephone interface.

Local Sip IP

If the controller is running on a multi-NIC computer, this setting is used to select the IP address of the telephone interface. Usually this is the same as the primary IP address for My Controller. The [Reset] button sets this field to the primary IP address automatically for you.

4.4.1 SIP Configuration

As shown in Figure 11-1, there are four possible primary parameter sections in the SIP general settings area as described below.



SIP Configuration Mode

There are three choices for this overall interface mode as follows:

- **Internal Only** – The Telephone Interface does not connect to an outside PBX, but only manages the action-oriented extensions (Prompting and Direct) and the local extensions for telephones directly connected to the GCK controller.
- **External via Extensions** – The Telephone Interface connects its action-oriented extensions directly to an external SIP PBX/Controller.
- **External via Trunking** – The Telephone Interface connects to the external SIP PBX/Controller via trunks. All action-oriented extensions are bundled inside the inbound trunk.

Prompting Extensions

This kind of action-oriented extension presents the call-in user with choices via voice or tone prompts it plays to the user. The user makes choices and does other data entry (e.g., Zone Group number) via touch-tone button presses on the telephone. Extensions are added or deleted via the [+] and [-] buttons above the grid. The extension is entered or edited via directly entering data in to the cells in the grid. The columns in the grid are as follows:

Ext

The extension number.

SIP User

The login user for the SIP connection (sometimes the same as Ext.).

SIP Password

The login password for the ZIP connection (sometimes the same as SIP User).

Locked

Whether this extension requires a the call-in user to enter a password in order to access it. Passwords are the same as for mic station users, defined in the Mic Passwords configuration section (4.11).

Template

When not locked, what template to use on this extension. The choices are any templates defined in the Telephone Templates configuration page (0).

Allow Outgoing

Whether this extension can be used for outgoing calls or not, such as those used for intercom requests. For example, it would be a good practice to not tie up emergency action extensions with these outgoing intercom requests.

Backup

Whether this extension connects to the backup PBX rather than the primary PBX.

Direct Extensions

This kind of action-oriented extension is configured to do one dedicated action when the extension is called. If the action requires data entry (e.g., Zone Group number), it will play the voice or tone prompt for the required data. Extensions are added or deleted via the [+] and [-] buttons above the grid. The extension is entered or edited via directly entering data in to the cells in the grid. The columns in the grid are as follows:

Ext

The extension number.

SIP User

The login user for the SIP connection (sometimes the same as Ext.).

SIP Password

The login password for the ZIP connection (sometimes the same as SIP User).

Locked

Whether this extension requires a the call-in user to enter a password in order to access it. Passwords are the same as for mic station users, defined in the Mic Passwords configuration section (4.11).

Action Performed

When not locked, what template to use on this extension. The choices are any templates defined in the Telephone Templates configuration page (0).

Allow Outgoing

Whether this extension can be used for outgoing calls or not, such as those used for intercom requests. For example, it would be a good practice to not tie up emergency action extensions with these outgoing intercom requests.

Backup

Whether this extension connects to the backup PBX rather than the primary PBX.

Local Extensions

These are used for SIP Endpoints (hard or soft phones) which register to GCK rather than to the facility's VoIP system. The SIP Endpoints must be manually configured to connect to GCK via these extensions with the credentials (login SIP user/password) defined for the extension here. Extensions are added or deleted via the [+] and [-] buttons above the grid. The extension is entered or edited via directly entering data in to the cells in the grid. The columns in the grid are as follows:

Ext

The extension number.

SIP User

The login user for the SIP connection (sometimes the same as Ext.).

SIP Password

The login password for the SIP connection (sometimes the same as SIP User).

Currently, Local Extensions are not available when in the "External via Extensions" mode of operation. In this case, telephone handsets will have to be configured as another extension of the external PBX/Controller.

When one has selected the SIP Configuration Mode of External via Extensions, there are additional properties that must be supplied as shown below in Figure 11-1b and explained below.

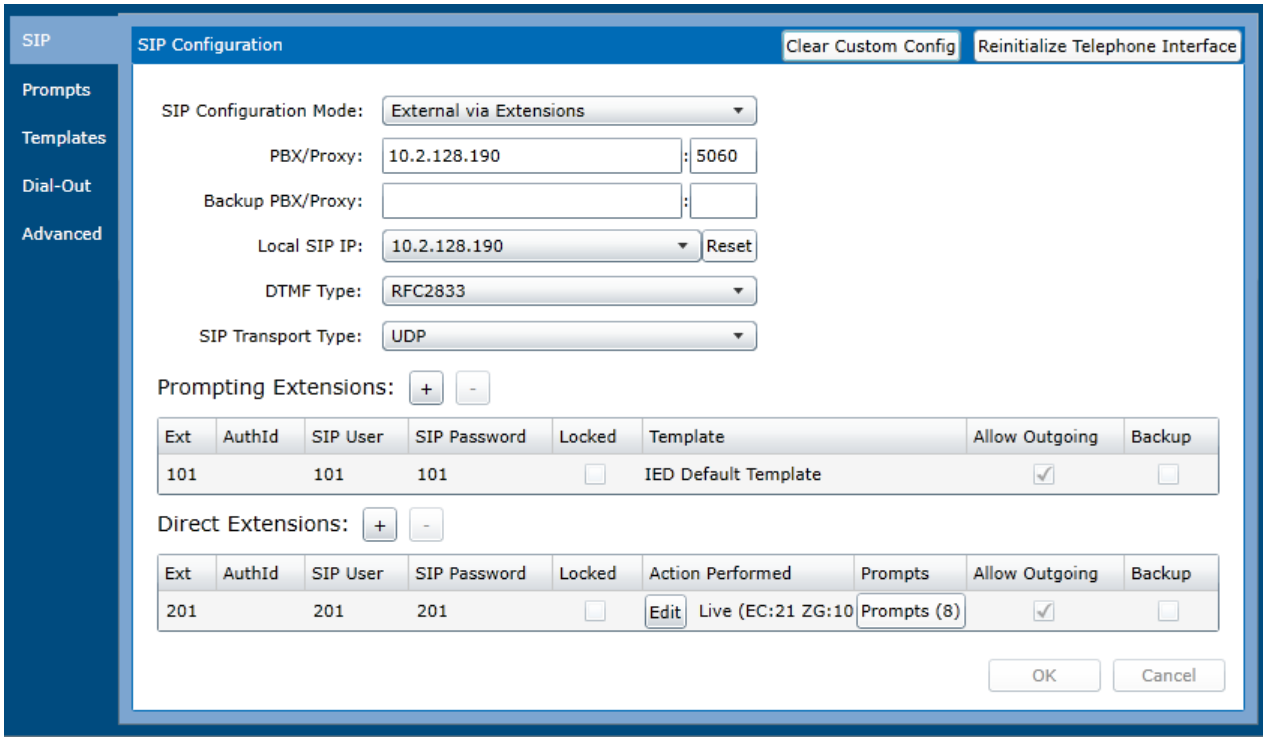


Figure 11-2: External via Extensions Properties

PBX/Proxy

The IP address and port of the external PBX or SIP Controller, or the Proxy device used to reach it.

Backup PBX/Proxy

The address and port of an optional backup/alternate external PBX or SIP Controller, or the Proxy device used to reach it.

DTMF Type

The two choices supported are: RFC2833 and Info.

SIP Transport Type

The choices are UDP and TCP.

It is not possible/feasible to explain all the options for telephony properties such as those above in this manual. When doing a new installation, the installer should check with the administrator of the external PBX that GCK is interfacing to in order to get the proper settings for the above properties.

4.4.2 Trunks Configuration

There are many, many different properties and options that can be used to define trunk connections between GCK and an external PBX. These are shown in the Figures that follow. For organizational reasons, they have been grouped into three sections: Common, Inbound and Outbound.

It is not possible/feasible to explain all the options for telephony properties such as those shown below in this manual. When doing a new installation, the installer should check with the administrator of the external PBX that GCK is interfacing to in order to get the proper settings for these properties.

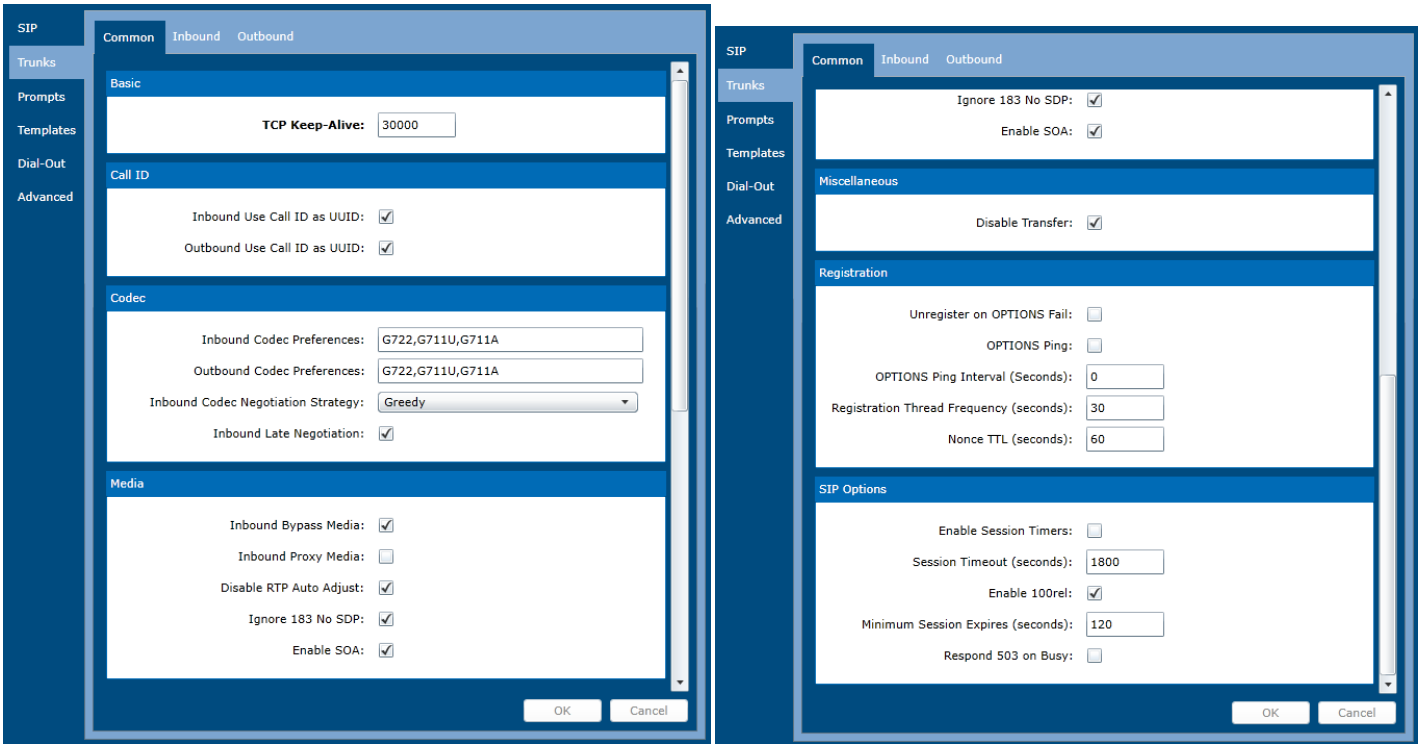


Figure 11-3: Trunk Configuration Common Parameters

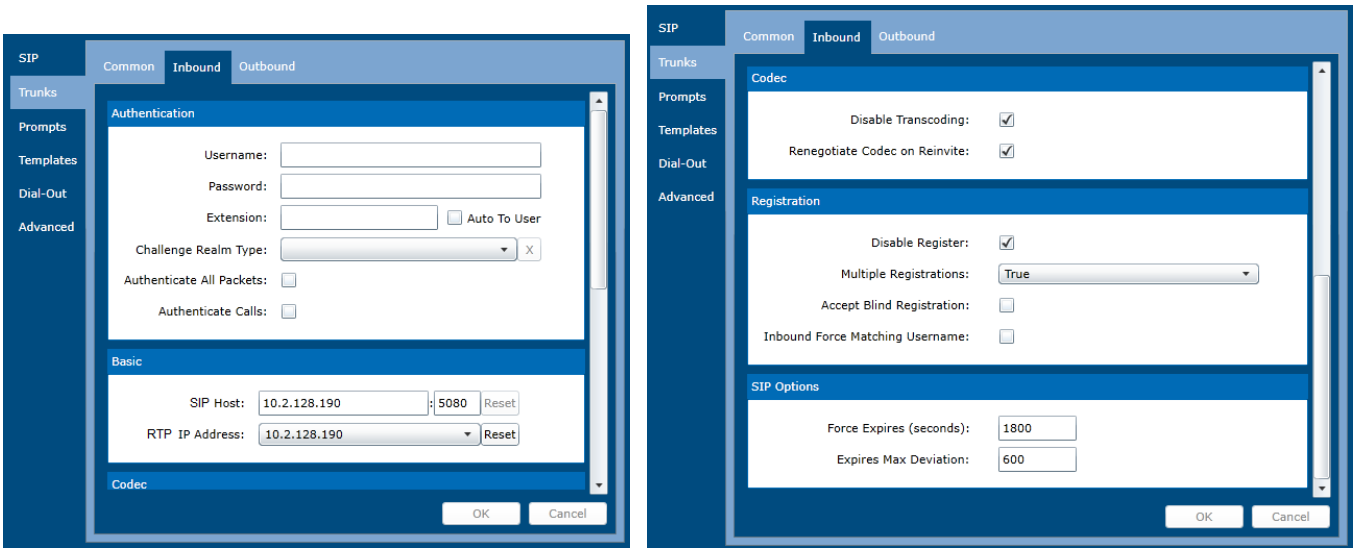


Figure 11-4: Trunk Configuration Inbound Parameters

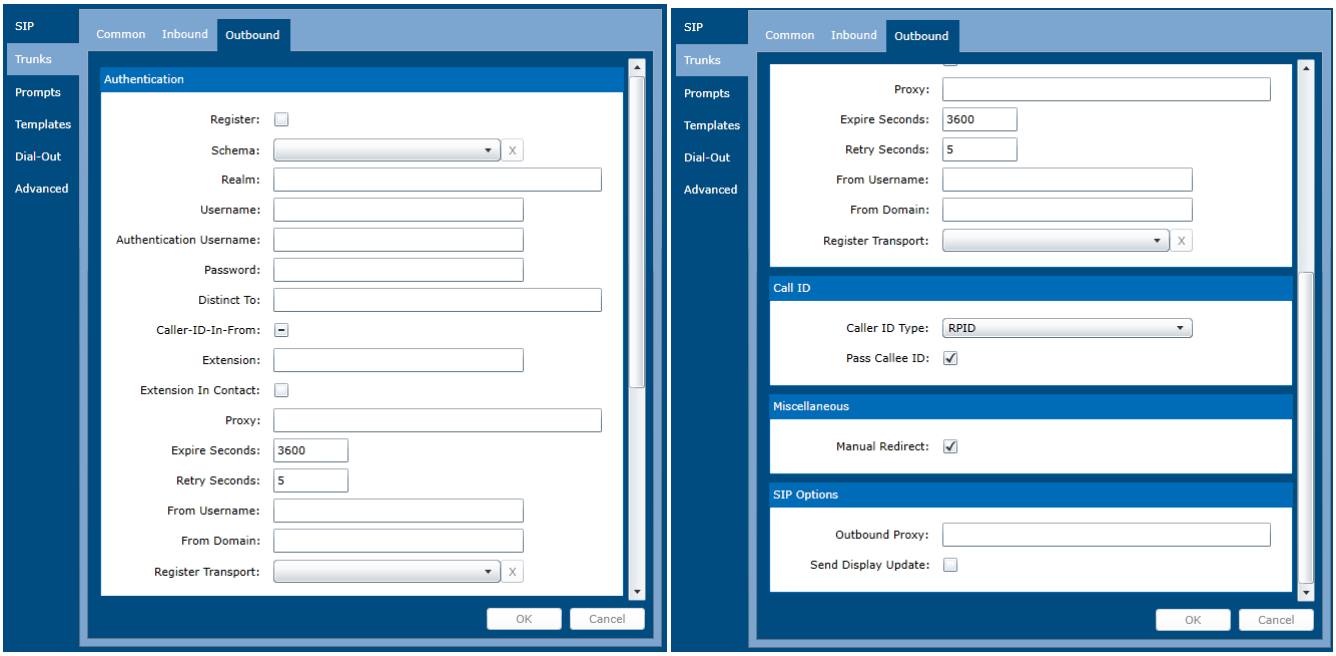


Figure 11-5: Trunk Configuration Outbound Parameters

4.4.3 Telephone Prompts Configuration

The Telephone Prompts are either voice or tone prompts used to instruct the dial-in user of what buttons to press for choices or what data to enter next (e.g., Zone Group number). These are loaded into the system on the Telephone Prompts configuration page and are then used in defining Telephone Templates on that configuration page. The Telephone Prompts configuration page appears as below in Figure 11-6.

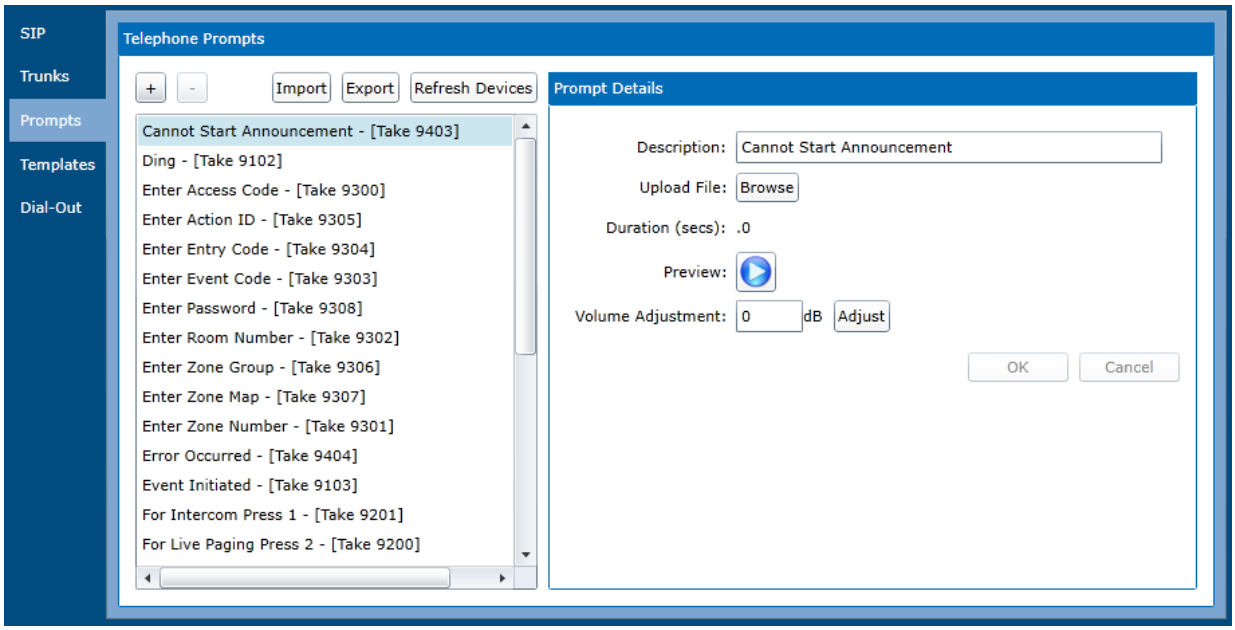


Figure 11-6: Telephone Prompts Configuration Page

[+] and [-] Buttons

Add or delete a prompt from the system.

Import

Allows one to import prompts from an external file, which is a GLOBALCOM Take Library file (*.GCL) and select prompts from this library to import into this local system. Clicking this button brings up a File Open dialog. Once a file is selected, then the Recorded Message Library Importer window appears, such as the example in Figure 11-7. One can listen to any of the chimes in a library by clicking on the ***Play*** button on each entry.

To import, one checks off ***Import*** checkboxes on all the desired messages from this library followed by the ***OK*** button.

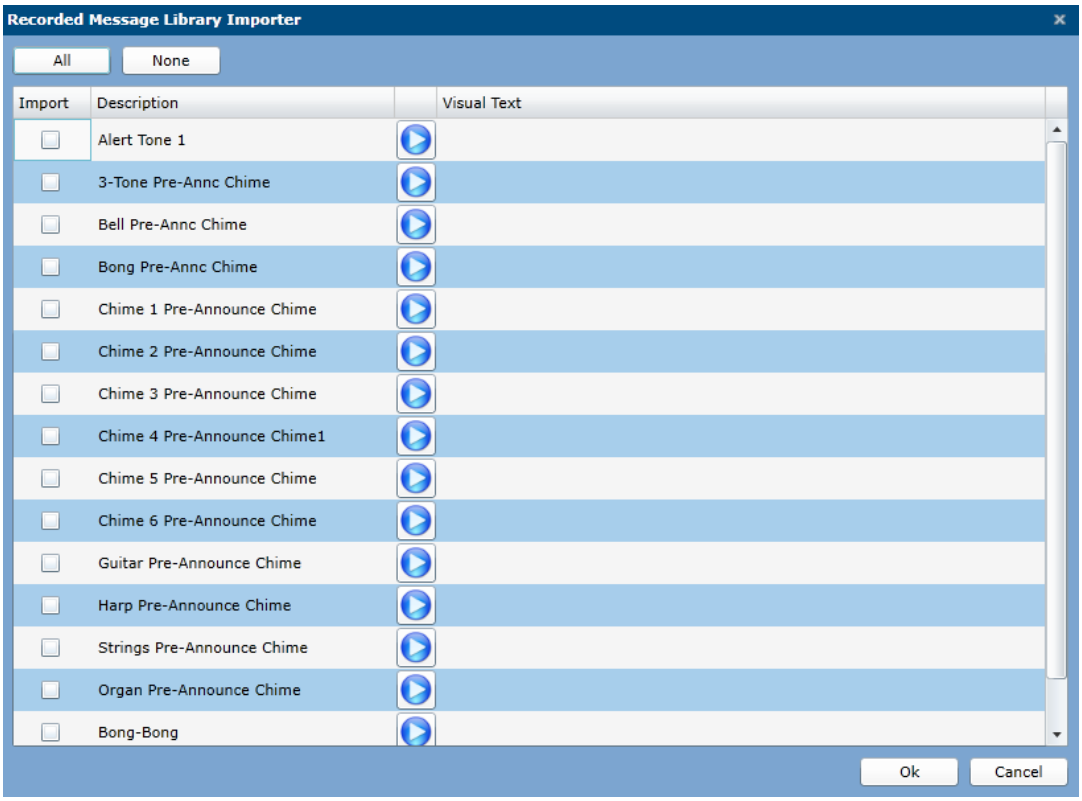
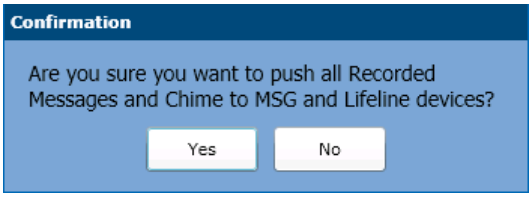


Figure 11-7: Recorded Message Library Importer

Export

Clicking this button brings up a File Save dialog box for selecting a folder and entering a file name for the exported library. This function will create a *.GCL file with all the chimes in the Chime section of the local system. This feature may be used for backup purposes or as a convenient way to take the chime library from one system and transfer it to another system (via the Import button on that second system).

Refresh Devices



When Takes must be shared across multiple devices for one system, such as one or more standalone Telephone (TEL) devices or the Lifeline backup devices, this button can be used to immediately send all user takes in the Prompts library to these other known devices. Clicking this button first brings up a confirmation dialog box. The Takes will be sent only if “Yes” is selected.

This is the name or short description of this chime. This appears in the list box on the left and in all drop list controls in the SMC configuration areas where chimes are used.

Upload File ([Browse] button)

Click on the Browse button to locate a file to be uploaded to the announcement controller. Uploaded files will automatically be converted to the *two* standard prompt library sample size and data rates (8 kHz and 16 kHz sample rates for standard and high-definition telephones) and will be auto-adjusted level-wise to be compatible with the other prompts in the library (so that some audio won’t be much louder or softer than others).

Duration

This read-only field reports the length of the uploaded prompt file.

Preview

One can listen to a prompt by clicking on this button. This will play the WAV file out the speakers attached to computer one is running SMC on. If one is running SMC on the 1100ACS or 1200ACS hardware, then one will not be able to hear this preview.

Volume Adjustment

How much to adjust the volume of the imported file by. This is a positive or negative number in decibels (dB). SMC normalizes the volume of imported files automatically on upload, but it can sometimes be fooled by certain kinds of sounds. Or, the user may have a preference to have certain Take files be louder or softer than normal.

Adjust Button

When pressed, SMC takes the dB value in the Volume Adjustment edit box and applies it to the file that was previously uploaded into the system.

Note: Sometimes, after making lots of little adjustments, the audio file can become noisy due to the introduction of quantization errors when scaling up and down. Sometimes the best strategy is to find the desired volume level through multiple adjustments and then when the final level is determined, re-upload the original file and apply one total adjustment. For example, if the process was to add +3 dB, then +1 dB, another +1 dB and another +1 dB. One could re-upload the file and do one total adjustment of +6 dB.

OK Button

Save the changes made to the prompt properties.

Cancel Button

Discard any changes made to the prompt properties. Note, any upload operation that over-wrote an earlier version of the prompt and volume adjustments cannot be undone.

4.4.4 Telephone Templates Configuration

The sequence of prompts and choices available on a call-in are defined in Telephone Templates. These are defined and configured on the Telephone Templates page as shown below in Figure 11-8, and explained in the text that follows. The Figure shows which prompts appear in simplified view and which appear when the **Show All Fields** button is pressed.

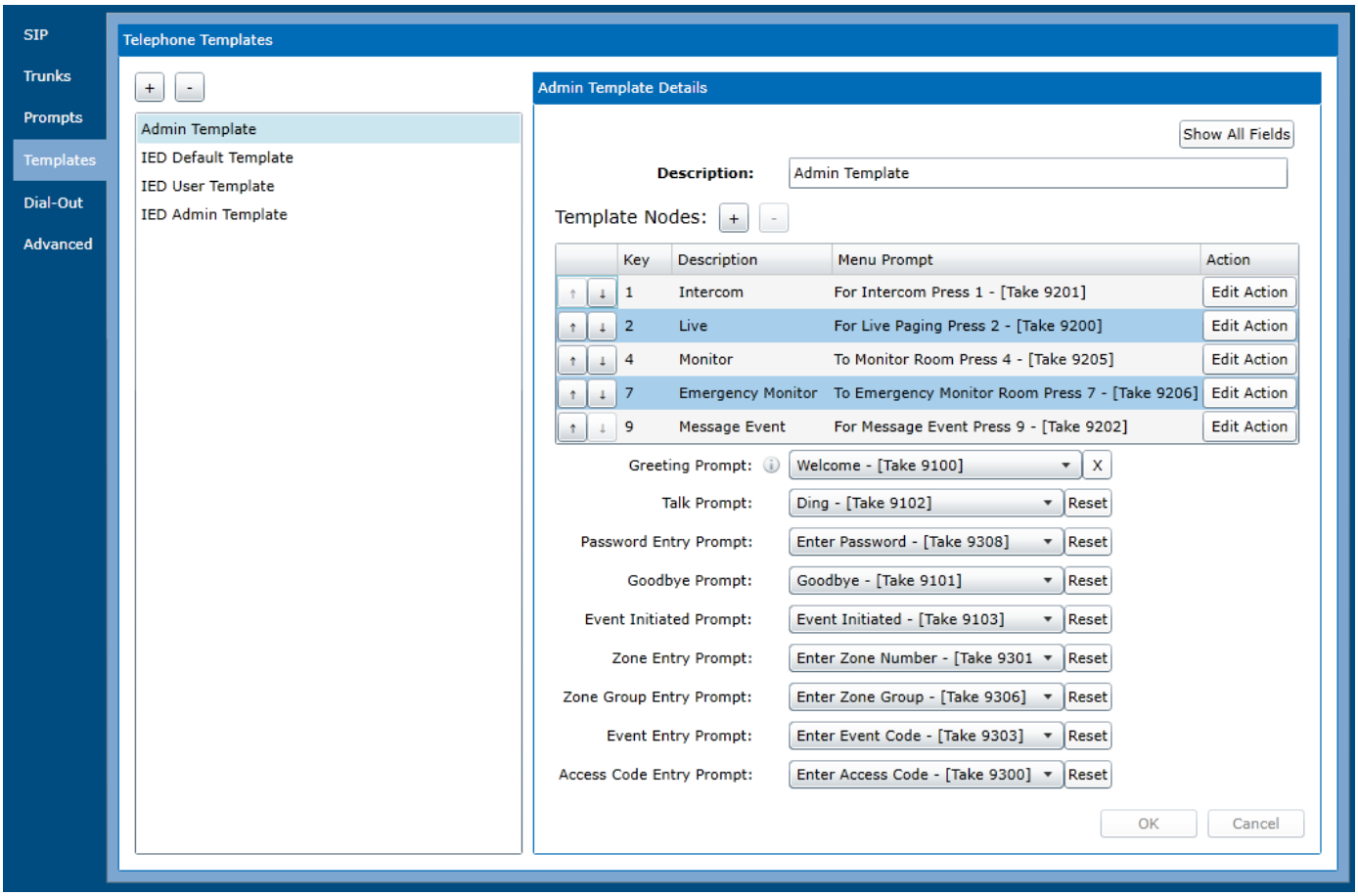


Figure 11-8a: Telephone Templates Configuration Page – Base Fields

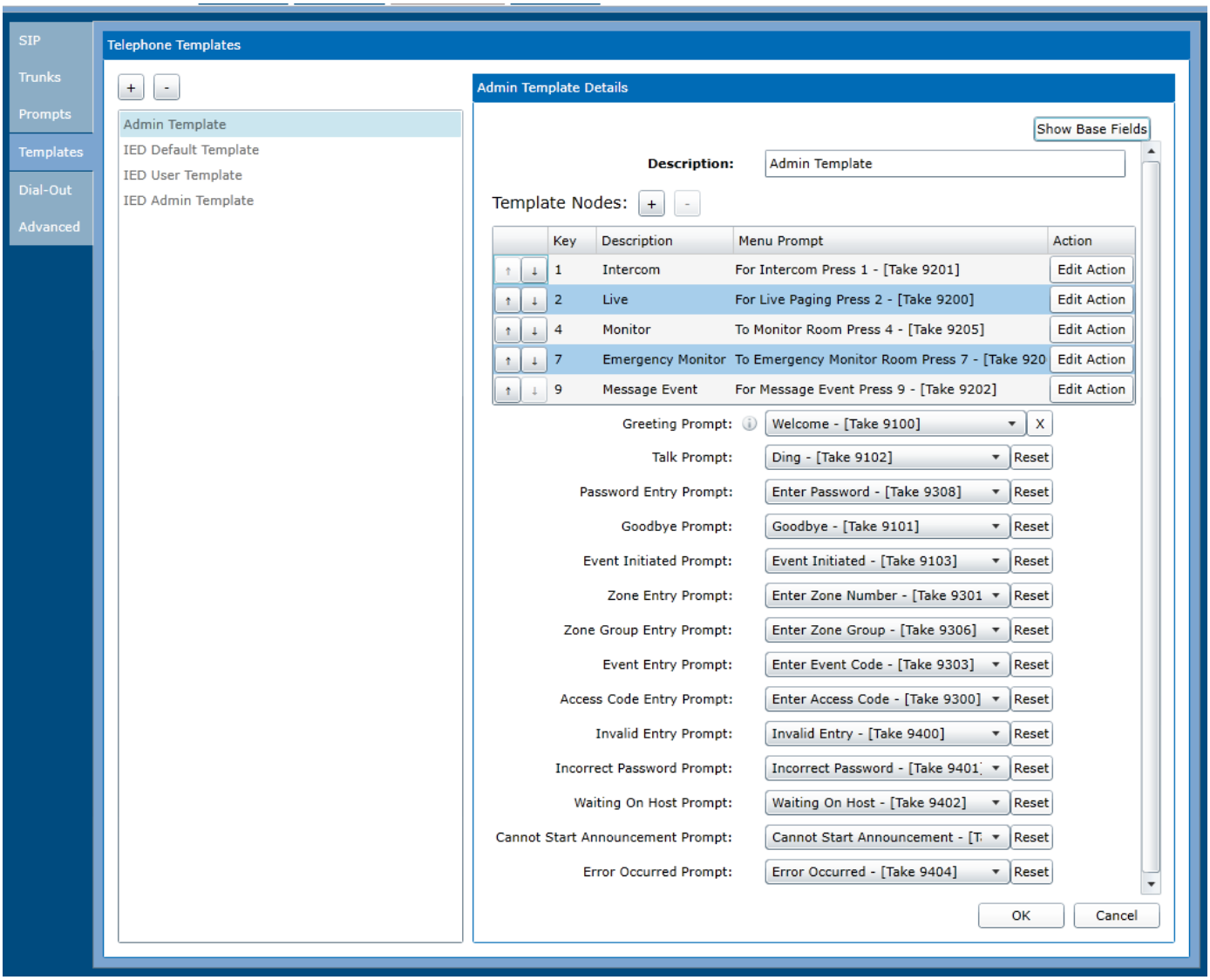


Figure 11-8b: Telephone Templates Configuration Page – All Fields

Add/Del Templates ([+] and [-] buttons on left)

These buttons are used to add or delete Telephone Templates from the system. On delete, SMC will prompt with Yes/No prompt before deleting the template.

Description

The name of this template. This identifier appears everywhere the template is used in SMC.

There is an [X] button beside each Prompt selection drop list. A previously selected prompt may be deleted by clicking on the [X] button to the right of the particular drop list control.

Add/Del Template Nodes ([+] and [-] Buttons above grid)

These buttons are used to add or delete nodes to a template. The nodes correspond to single digits 0..9 that may be keyed via the telephone. The following properties are defined for each Template Node:

Key

The digit 0...9 the call-in user presses to select this node.

Description

User friendly name for this template node.

Prompt

The prompt to play to inform the user about this choice, for example, “Press 1 for Zone Page”.

Action ([Edit Action] buttons)

The action that is launched from this template node. The action could incorporate a need for additional data via prompting for zone, zone group, event or access code. When configured for prompting, the appropriate prompt from the list of prompts for this template shall be used.

Greeting Prompt

The prompt to play when the phone extension is initially picked up – the machine’s version of “Hello”. It can be used to identify the phone line such as with voice prompts like “IED Telephone Interface” or “Building 44A Paging Line”, with just a tone prompt like a ding, or nothing at all (e.g., to make the interaction faster).

Talk Prompt

The prompt to play when it is OK for the caller to start talking, such as for a live or delayed page action. Often, this is simply a tone prompt like ding.

Password Entry Prompt

The prompt to play when user is required to enter a password to access the telephone interface.

Goodbye Prompt

The prompt to play when the telephone interface is initiating a hang up, because the announcement is completed or due to an error.

Event Initiated Prompt

The prompt to play to confirm that an event (other than one that plays the Talk prompt) has been successfully initiated, such as launching an Event.

Zone Entry Prompt

The prompt to play to get the user to enter a valid Zone number.

Zone Group Entry Prompt

The prompt to play to get the user to enter a valid Zone Group number.

Event Entry Prompt

The prompt to play to get the user to enter a valid Event number.

Access Code Entry Prompt

The prompt to play to get the user to enter a valid Access Code. Access Codes are numbers separate from zone numbers that identify system endpoints, such as IP speakers and intercom devices. For example, an IP speaker may be located in classroom A101, but to the system it is zone 11. The installer could assign an Access Code of 1101 to this device, so it can be used on the telephone interface when prompted.

*Note, the following error/warning prompts only appear if one has pressed the button **Show All Fields**.*

Invalid Entry Prompt

The prompt or tone to play when the user has made an error in entering a value. For example, if the menu choices are 1, 2 or 3 and they press 7.

Incorrect Password Prompt

The prompt or tone to play when the user enters an incorrect password.

Waiting on Host Prompt

The prompt or tone to play when the announcement controller appears to be down.

Cannot Start Announcement Prompt

The prompt or tone to play when the announcement controller cannot initiate the announcement or event because of higher priority activity in the system or the resource is busy, such as somebody is already connected to an intercom or classroom end point.

Error Occurred Prompt

The prompt of tone to play when the announcement controller cannot initiate the announcement or event for some reason other than those mentioned for other prompts. This is a catch-all for any other internal, communication or other error that can occur in the system.

4.4.5 Dial-Out Configuration

When an intercom or IP Speaker device makes an request to dial-out to a telephone extension, this action occurs with the properties that are configured in this section as shown in Figure 11-9 and are described below.

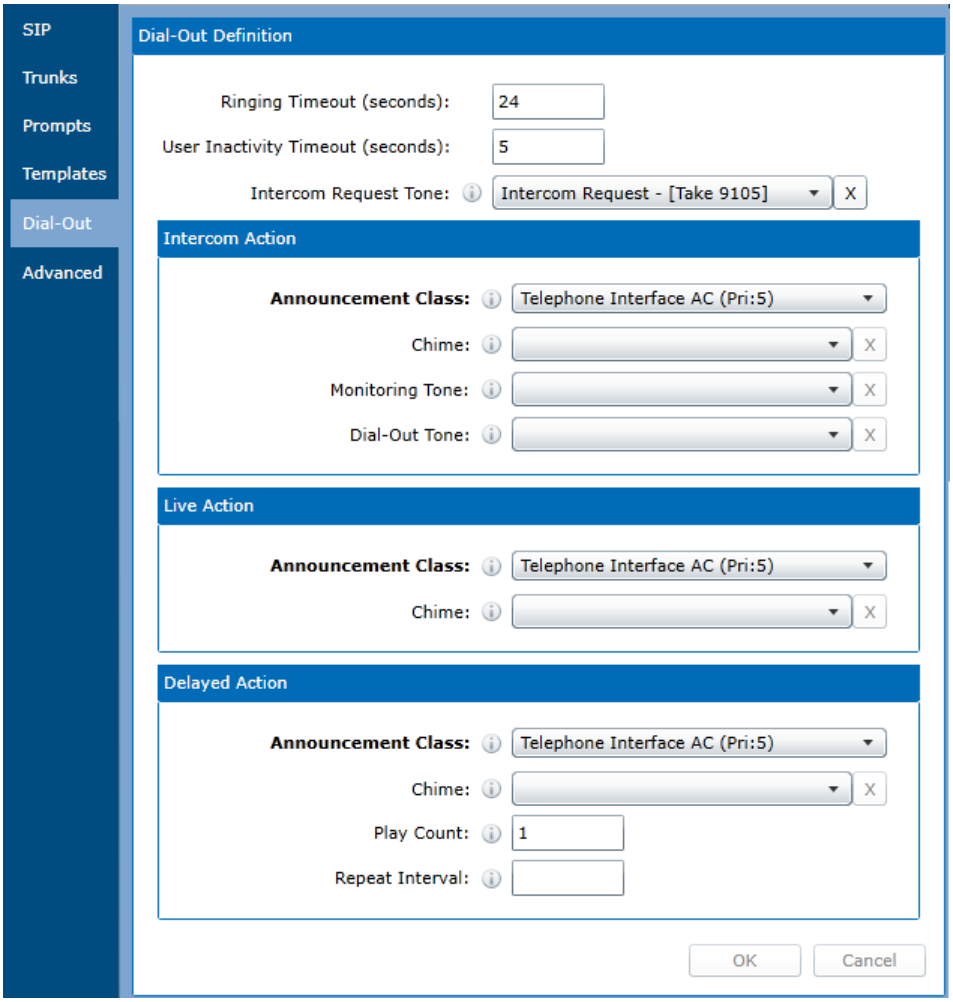


Figure 11-9: Dial-Out Configuration Page

Ringing Timeout

How long to wait (in seconds) for a user to pick up a telephone before declaring the call unsuccessful (and moving on if there are additional telephone extensions to try).

User Inactivity Timeout

How long to wait (in seconds) after the telephone goes off hook for a user to press a key to connect up an intercom request. If this timeouts (e.g., because line was answered by a machine/voicemail), then the call is declared unsuccessful.

Intercom Request Tone

This is the prompt that is played to the person who picks up the phone that is dialed. For example, it may say something like “There is an intercom request. Press any key to connect”.

The following properties are defined for each of the three possible dial-out actions that the system may perform: Intercom, live page and delayed page. The properties are grouped by action type.

Announcement Class

The priority level to use when doing the telephone dial-out action.

Chime

The pre-announcement chime (if any) to use for the telephone dial-out action.

Monitoring Tone (Intercom Action Only)

Any time there is a connection to the microphone in an endpoint like an IP speaker, it is common practice to play a tone periodically so people in the room know they are being listened to. The chime to play for once this function is defined as the Intra-Announcement Tone.

Dial-Out Tone (Intercom Action Only)

The “ringing tone” to play back on the initiating intercom/speaker while the dial-out is being done (ringing the phone, waiting for somebody to pick up and press a key to accept the connection).

Play Count (Delayed Action Only)

How many times to playback the message. That is, after the message is recorded, it may be played back more than once, e.g., twice to be sure the user who picks up the phone on the dial-out heard the whole message.

Repeat Interval (Delayed Action Only)

This is the time between successive playbacks. Positive numbers are used to designate an interval in minutes while negative numbers are used to designate an interval in seconds (5 would be 5 minutes, –30 would be 30 seconds). When minutes are specified, this time is from the start of the first playback to the start of the next one. If seconds is specified, this is the delay after finishing one play before starting the next play.

4.4.6 Advanced Configuration

There are several other properties that affect the behavior of the telephone portion of GLOBALCOM. These are configurable via the Advanced telephone configuration as shown in Figure 11-10 and as described below.

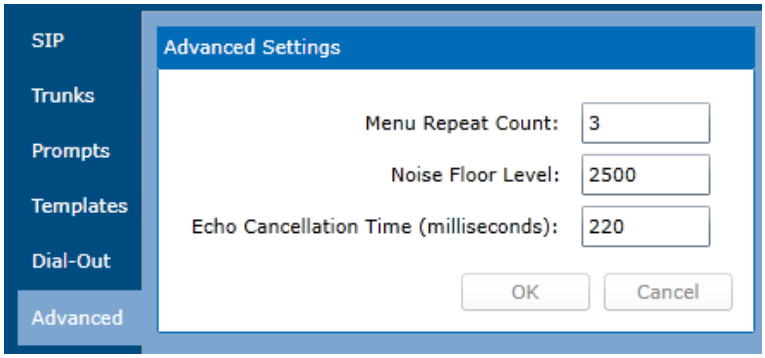


Figure 11-10: Dial-Out Configuration Page

Menu Repeat Count

How many times to replay the prompting extension menus, should no user input be detected yet.

Noise Floor Level

The audio detection level for telephone or mic station user audio on an intercom call, which is used to trigger the echo cancellation of the return audio. The value is a raw digital audio level on a scale where 32768 is full scale maximum value.

Echo Cancellation Time

This is how long (i.e., tail length) to cancel the return audio. This time must account for all delays in the transmission and return of audio, such as network audio latency, room echo (audio “return” off the opposite wall) and if relevant to the system architecture, the delay incurred in converting between digital audio formats (e.g., CobraNet to VoIP). Sometimes the best/only way to set this value is to try out different values after the system is installed and operational.

4.4.7 Legacy Telephone Actions Configuration

In earlier versions of GLOBALCOM and GCK, the Telephone Actions page is used to define selected parameters for actions that may be done from a telephone. When calling in on a phone extension, depending upon login permissions, one may be able to do live pages, intercom connections to endpoints such as IP Speakers, or monitor the audio at an endpoint. In addition, when an intercom makes a request to talk to somebody via a button press, this can automatically dial out to a phone line. Parameters for the dial out operation are covered on this page as well.

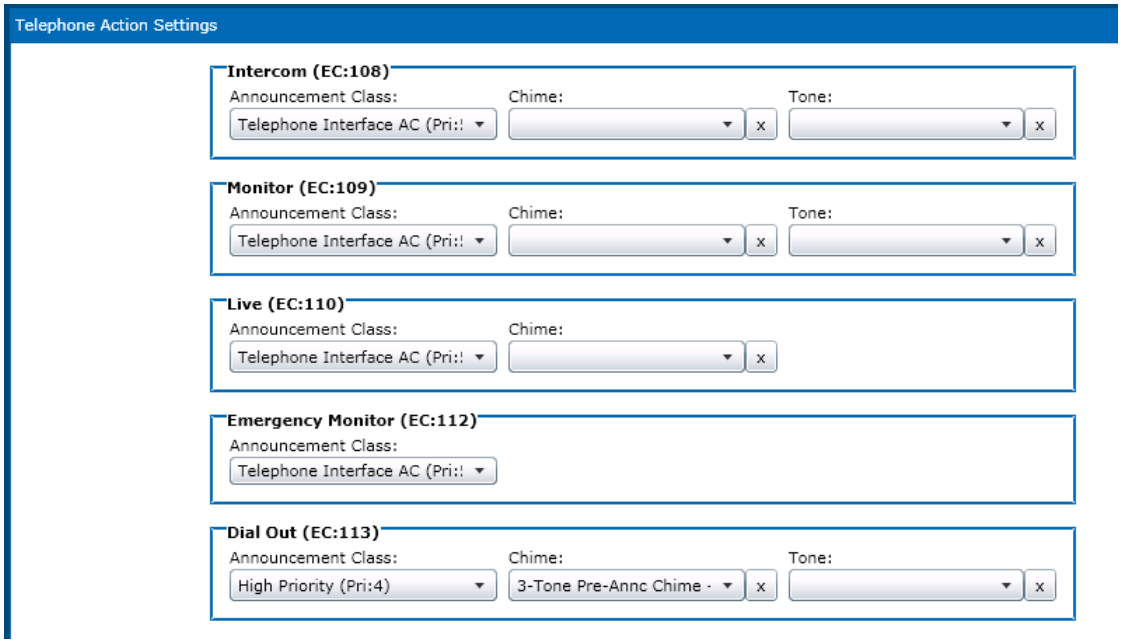


Figure 11-11: Telephone Action Parameters

Announcement Class

The priority level to use when doing the indicated type of action.

Chime

The pre-announcement chime (if any) to use for this action.

Tone

Any time there is a connection to the microphone in an endpoint like an IP speaker, it is common practice to play a tone periodically so people in the room know they are being listened to. The chime to play for this function is defined as the Tone.

Note: there are no chimes or tones for the emergency monitor function because this is one that may be done stealthily by police or rescuers when there is some crisis situation in the facility.

4.5 Devices

Devices

Devices are the individual hardware components used in the system. Each must first be defined in the ***Devices*** section of the software in order to be used. Once defined, devices can be used as sources to launch actions, audio inputs available for routing, logic outputs to control other pieces of hardware, or used as a destination for an announcement or message.

The specific details on configuring a device vary significantly with each type of device. They are broken down and grouped into categories that share similar functions and properties.

- Controllers/Subsystems
- CobraNet Line-Level Audio Devices
- CobraNet Amplifiers/Options
- CobraNet Mic Stations
- Logic/Relay Devices
- Endpoint Groups (and Endpoint Devices that belong to them)
- Third-Party Devices
- Dante Mic Stations
- Dante Amplifier/Options

These device groups are explained in the subsections below. Note, some deployments of SMC may not be enabled to show all device types and groups. For example, CobraNet related groups and devices may be hidden in some versions, or Dante related groups/devices in other versions.

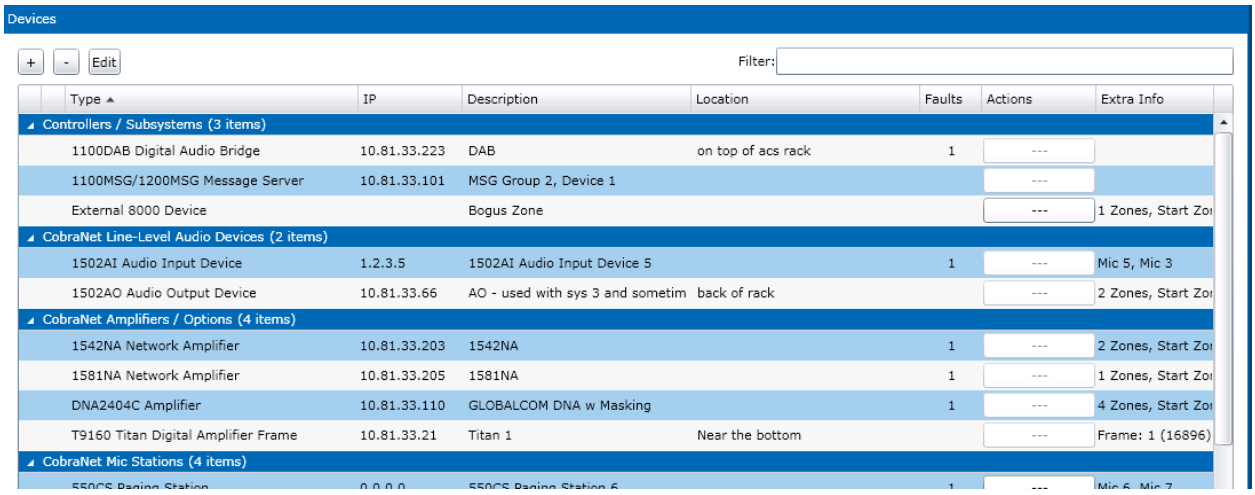


Figure 12-1: Devices

Click this button to add a new device to the system. A new window will appear as shown in Figure 12-2. Select the device and click the ***OK*** button to continue. Clicking the ***Cancel*** button will close the window without adding a new device. This window, one can add multiple devices at once by entering a count other than zero (0) in the # Devices column. Clicking on **OK** will add all these devices to the system and mark the

new devices with question marks (?) to indicate that they may need additional configuration/settings made to them as shown in Figure 12-2b. One can double-click the device or single-click and select the **Edit** button to finish configuring the newly added devices.

Figure 12-2: Add a New Device

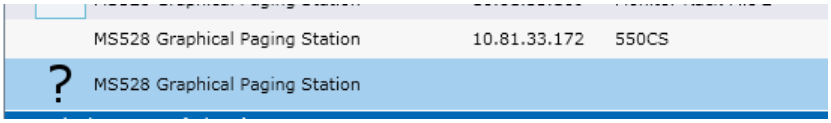


Figure 12-2b: New Device in Device List

After you click the ***OK*** button, the device will be added to the system and the properties window for the new device will appear. Figure 12-3 shows the window for a 4-button microphone station. Configure the properties and click ***OK*** to finish adding the new device to the system. If you click ***Cancel***, the window will close and the device will not be added to the system.

Click this button to delete the currently selected device.

Edit Button

Click this button to edit the device properties for the currently selected device. This is the same as double-clicking on the start of the device row in the Devices grid. This brings up a device edit form particular to the device as shown in Figure 12-3. By default, only the most commonly used fields are shown when you edit a device's properties. Click the ***Show All Fields*** button to reveal all available properties. Once the button has

been used, the caption will change to ***Show Base Fields***. You can click it again to hide the less commonly used fields.

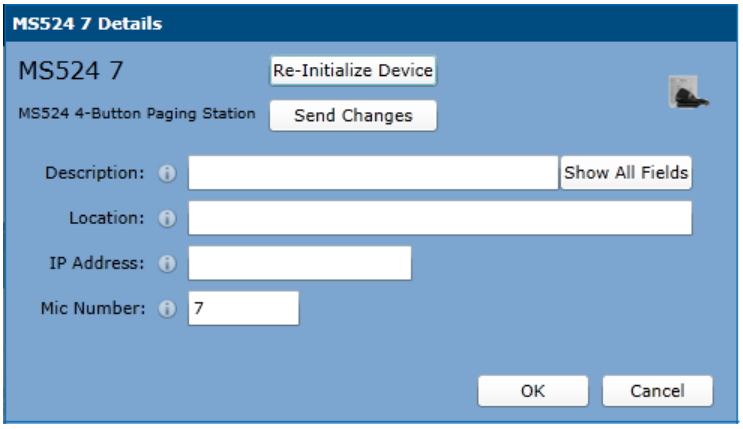


Figure 12-3: New MS524 Device

Filter Option

One may enter text in this field and the list of devices will immediately be trimmed down to only those devices that have text that matches the filter string will be displayed.

Device Grid

This grid lists key properties of all devices. There are dividers for the categories of devices. One may click on the right triangle on the left to collapse that section making it easier to view just those devices of interest. This area can be re-expanded by clicking on the same location (now changed to an isosceles triangle).

Actions

Certain device types have the ability to trigger actions. Microphone stations and logic input devices are most commonly used to launch actions. Devices that can use actions will have buttons that appear in the ***Actions*** column of the device list as shown in Figure 12-4. The button will appear dimmed for those that cannot use actions. One clicks on this button to edit actions for that device (or in some cases for that whole class of device). Action lists for devices depend on device type and are described in the relevant device property sections below. For information on configuring actions, please refer to the ***Action Types*** section of the documentation.

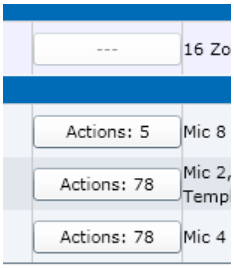


Figure 12-4: Device Actions Buttons

Controls/Fields Common to All Device Details Windows

The following controls and fields are common to all device detail windows and so are covered here rather than be repeated for each device (see Figure 12-3).

Send Changes and Re-Initialize Device Buttons

All device windows have two buttons: ***Re-initialize Device*** and ***Send Changes***. The first button will send ALL data to a device, including (re-)setting its IP address, if that can be changed via the network. The typical use case for this button is when you have replaced a device with a new device from stock and want to getting all the settings you once had on the old equipment transferred onto the new equipment. This operation can take a while on some of the more complicated devices.

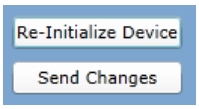


Figure 12-5: Send Changes and Re-Initialize Devices Buttons

The **Send Changes** button will only send data that has been edited. This is really a shortcut to clicking OK on the device details window followed by the ***Save*** option at the top-right of the SMC. With this button, changes can be sent to the device without leaving the device window.

Show All Fields / Show Base Fields

Click on this to expose all fields for the device or only show the base fields (the fields most commonly needed). This is like an “advanced” button since the fields which are not shown as a base fields are generally for more involved situations or special cases.

Note: In the sections below for simplicity, device windows are shown with Show All Fields button having been pressed.

Description

Enter text here to give the device a descriptive name.

Location

Enter text here to describe the physical location of the device.

OK

Save changes to this device and close the window.

Cancel

Discard changes to this device and close the window.

4.5.1 Controllers/Subsystems

Controller devices include 1100MSG/1200MSG Message Server, External 8000 Device, and the 1100DAB CobraNet Digital Audio Bridge device. The ACS and MSG can each have a built-in device, the Internal CobraNet Audio Device, so that device is covered in this section as well. In addition, the IP100 series ACS may have an internal sound device, so that is covered as well. Note, the 1200ACS/MSG and the IP100 series can also contain a 1200LIR logic input/relay module which is described in the Logic/Relay Devices section. The Device properties for each of the devices in this group are described below.

In prior versions of GLOBALCOM and GCK, the Telephone Interface "device" was included as part of My Controller. This version of the Telephone Interface is documented in section 4.5.1.4. For GCK Ver 2.0 and later, the Telephone Interface is in its own Configuration page and is described in section 4.4.

4.5.1.1 1100MSG/1200MSG Message Server

This device type is used to provide record and playback capacity for prerecorded messages, TTS messages, and delayed announcements. The 1200MSG version adds eight (8) logic inputs and eight (8) relays that can be used to launch messages or interface with external systems.

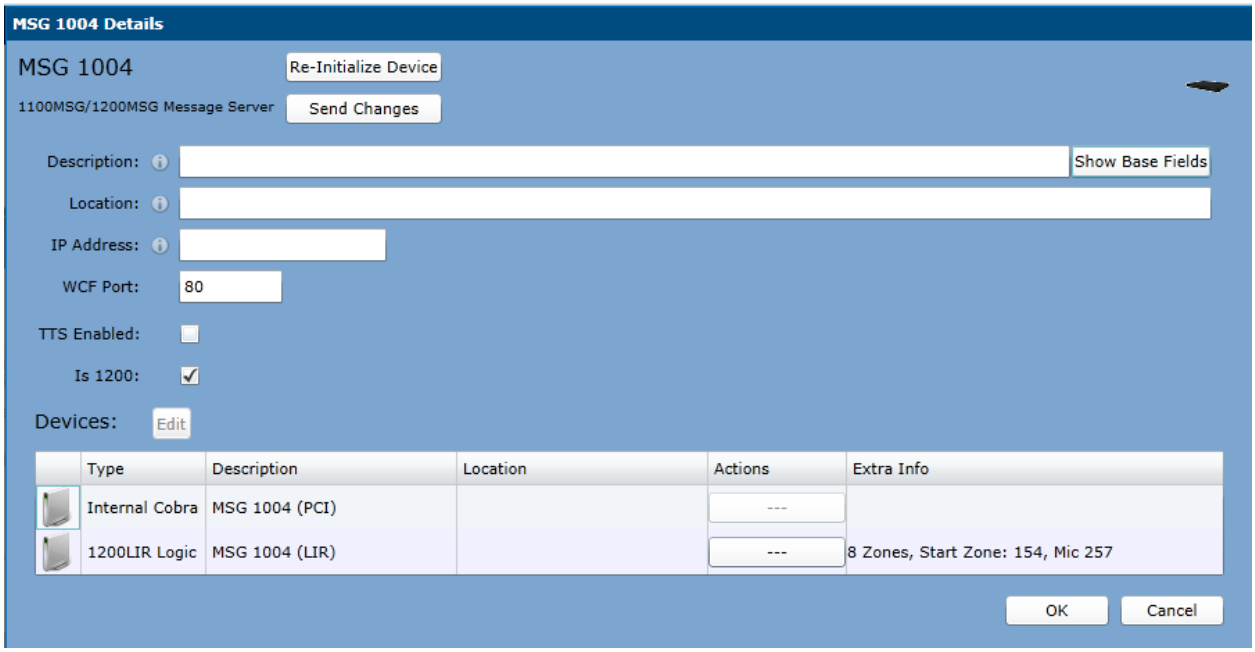


Figure 12-6: Message Server Device Properties

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the device.

Note: This IP address will automatically be assigned to the two VoIP interfaces and the 1200LIR device since they utilize the main network port on the unit. The Internal CobraNet Audio Device uses its own network port, thus will have a different IP address. Make sure this IP address is configured properly.

TTS Enabled

Check this box if the message server has the Text-to-Speech (TTS) option installed. When enabled, the message server will also be able to create and play TTS messages.

Is 1200

Check this box and the 1200 Logic Input/Relay Output device will be shown in the Devices list. This enables the logic inputs and relay outputs on the unit when it is a 1200MSG. If it is an 1100MSG, this option should not be checked.

*Note: Actions for the 1200LIR inputs are configured by accessing the device actions from the **Devices** section below.*

Devices

This section lists various devices that are contained *within* the message server. Highlight the device and click the settings icon located at the top of the list or double click on the item to open the editor for the device.

Refer to the individual device type configuration in this section of the documentation to learn how to configure each device.

4.5.1.2 Internal CobraNet Audio Device

This device is found in an 1100CPU/1200CPU when configured as an ACS, MSG or TEL device (formerly part numbers were 1100ACS, 1100MSG, etc.). For the 1100ACS and 1200ACS, it is configured from the ***My Controller tab*** as shown in Figure 12-7 of the ***Controllers*** section. For the MSG and TEL devices, it is configured from the individual device configuration page as shown in the ***1100/1200 Message Server***. This device is responsible for playing back all prerecorded messages, delayed announcements, and text-to-speech (TTS) messages over the network using CobraNet. It is also responsible for recording the audio used for delayed announcements.

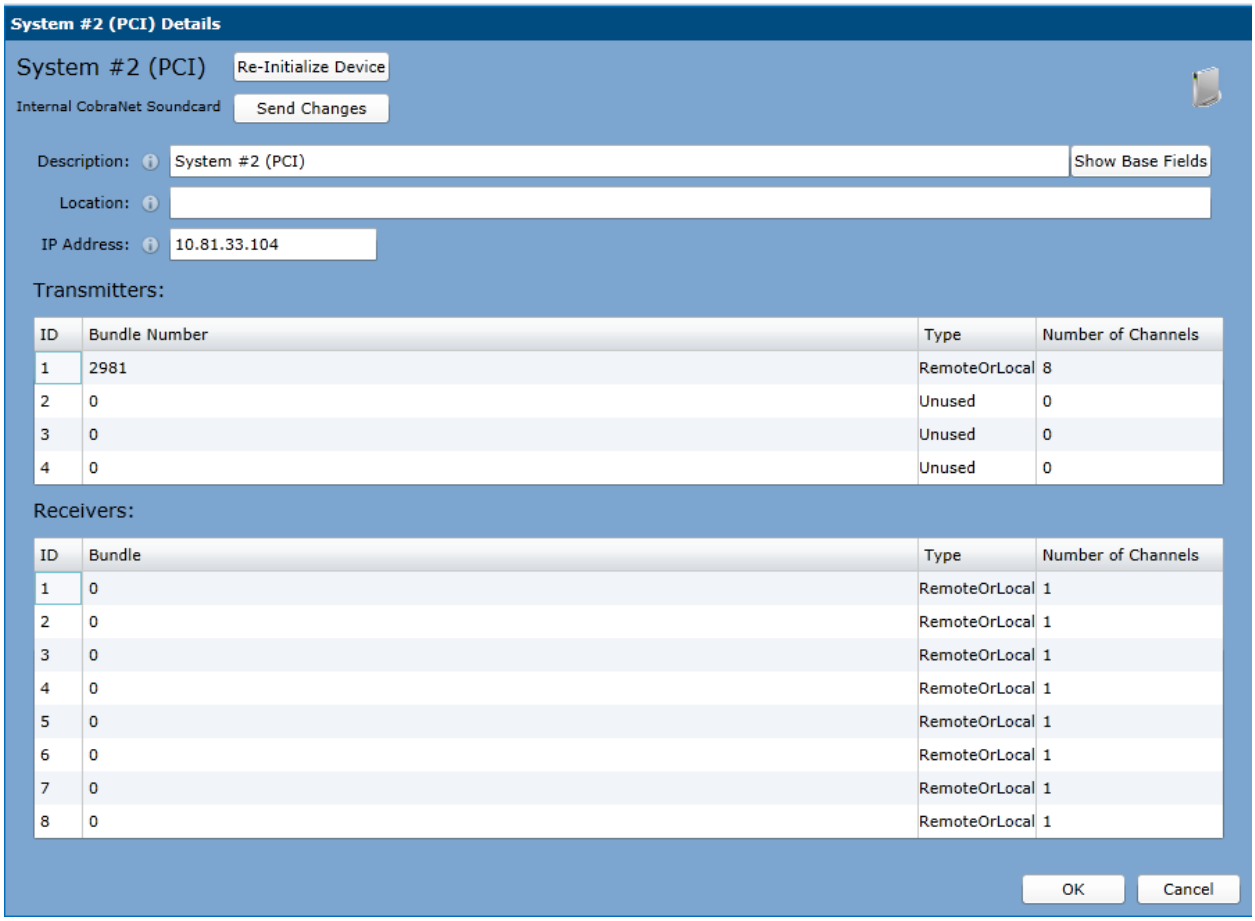


Figure 12-7: Internal CobraNet Audio Device Properties

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the device. By convention in many installations, this is one digit higher than the IP address of the controller unit that contains the device. But this is not a requirement.

Note: The IP address field only informs the System Management Center and the vACS of the address of the device. You MUST configure the actual address of the card using a separate configuration utility described later in this section.

CobraNet Transmitters and Receivers

The CobraNet transmitters and receivers are automatically set by the system and the defaults are sufficient for most applications. The ability to override the defaults is provided here if it is required.

4.5.1.3 External 8000 Device

This device type allows the vACS to operate in a system with an IED 8000 series system. In each 8000, you must configure a source using the ***EXTERNAL*** type in the 8000 configuration to allow it to receive announcement commands from the vACS. You must also configure a zone using the ***EXTERNAL*** type in the 8000 configuration to enable the 8000 to send commands to the vACS.

This device type enables only the data communications between the vACS and the 8000 system. You must also configure an audio input source that will be used to receive the audio signal from the 8000. An analog audio zone is used to send the audio signal from the vACS to the 8000.

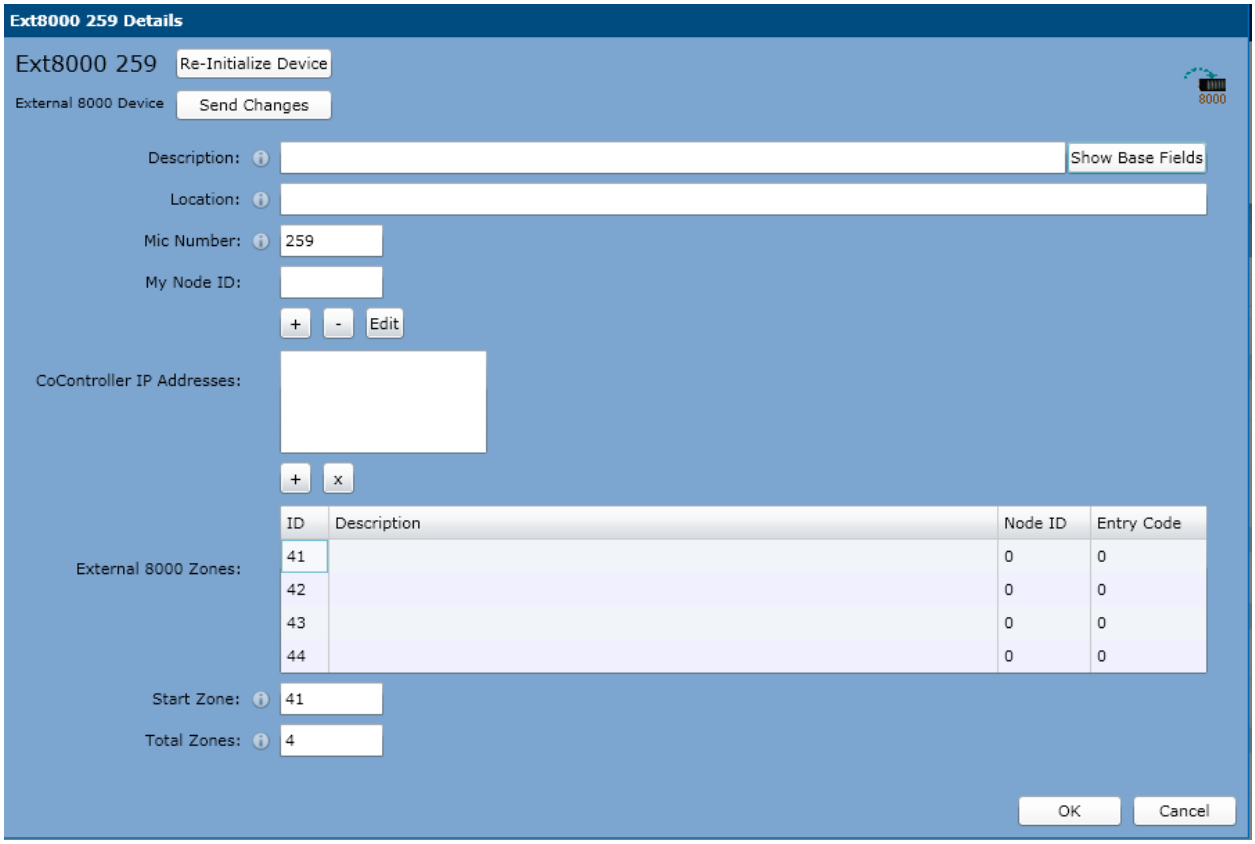


Figure 12-8: External 8000 Device Setup

Fields on this form beyond the basics for all devices are as follows:

Mic Number

Each input on the device must have its own unique mic number. This is the number used to identify the input as a usable source within the announcement controller. When you add the device, each number is automatically defined. It can be changed if needed. Once it has been defined here, it will appear as an available source when defining actions.

My Node ID

This is the number that is used to identify this controller to one or more 8000 systems. It must be defined in the 8000 configuration in the channel field of the zone setup as shown in Figure 12-9. In the example below, the Node ID is 4 and the ***Zone Type*** must be set to ***EXTERNAL.*** This is a screenshot of the *IED Navigator* software used to configure 8000 systems.

Table | Zones - The audio outputs from the frame and their parameters

ID	Name	Description	Zone Type	Audio Card	Chan	Volt Card	Chan	Ctrl Card	Chan	Norm Gain	Emerg Gain
204	ZONE204	Signal Frame 4	External		4						

Figure 12-9: 8000 Configuration

CoController IP Addresses

Each 8000 system that will be interacting with this controller must have their IP address entered in this list.

Click this icon to add another controller IP address to the list.

Edit

Click this icon to modify the currently selected IP address.

Click this icon to delete the currently selected IP address from the list.

Zones

This list is used to define one or more zones in the local controller that will be used in local zone groups with actions to trigger remote actions on the 8000. This configures the control zones, so you must also include the appropriate audio zone in the zone group in order to get live audio to the 8000.

Click this icon to add another zone to the list.

Click this icon to delete the currently selected zone from the list.

ID

This ID is used to uniquely identify the zone to the controller. This number is automatically assigned by the system based on the ***Start Zone*** number and the position of the item in the list.

Description

Enter a textual description of the zone here.

Node ID

This is the Node ID of the 8000 that corresponds to this zone.

Entry Code

This is the entry code number that will be passed from the controller to the 8000 system that matches the specified Node ID. This number must be defined in the ***Actions*** section of the 8000 configuration. This number corresponds to the ***Button Number*** in the 8000 Action definition.

Start Zone

This is the zone number that represents the first zone that the local controller will use to identify an 8000. The system will automatically use the next available zone number as the starting zone number when you add a new device. It can be edited here if needed.

Total Zones

This number represents the total number of zones that will be allocated to communicate with external 8000 systems. Each zone is numbered sequentially based on the start zone entered in the ***Start Zone*** field. Each zone can be used to trigger one action on a single 8000 system.

Actions

The 8000 will send a message to the vACS controller that contains a Node ID number and an Entry Code number. You must first define an action in the 8000 configuration that includes the zone defined for this controller. There is a ***Miscellaneous Parameter*** field in the 8000 Action definition. The number you enter there is the same number that will be passed to the vACS and used as the Entry Code to launch an action. You define an action here just as you would for any other device type. Refer to the ***Action Types*** section for instructions on defining individual actions.

For most announcements that originate from an 8000, you will use the ***LiveFromAlternateSource*** action type.

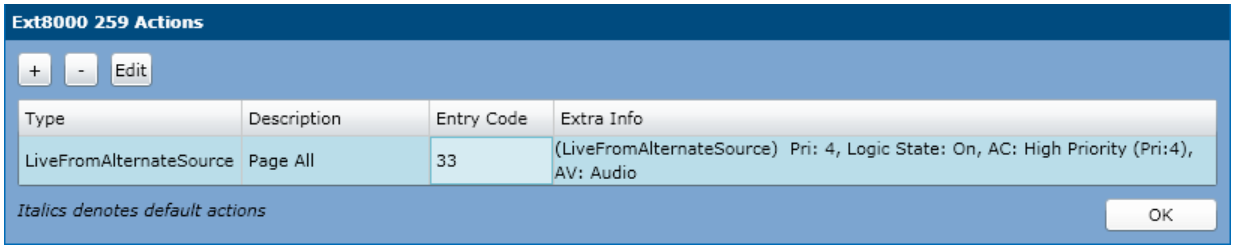


Figure 12-10: External 8000 Device Actions

4.5.1.4 1100TEL Telephone Interface

This section describes the Telephone Interface for earlier versions of GLOBALCOM and GCK, where it was included as a part of My Controller. If you have GCK Ver 2.0 or later, the Telephone Interface and templates are configured in their own configuration page covered in section 4.4.

This device is an additional piece of hardware used to provide additional VoIP telephone interface lines. It is capable of providing up two kinds of extensions: those that will prompt the user to select the actions that they wish to perform by using pre-defined action templates or those that will immediately execute the pre-defined action when the line answers (Direct Action Extensions).

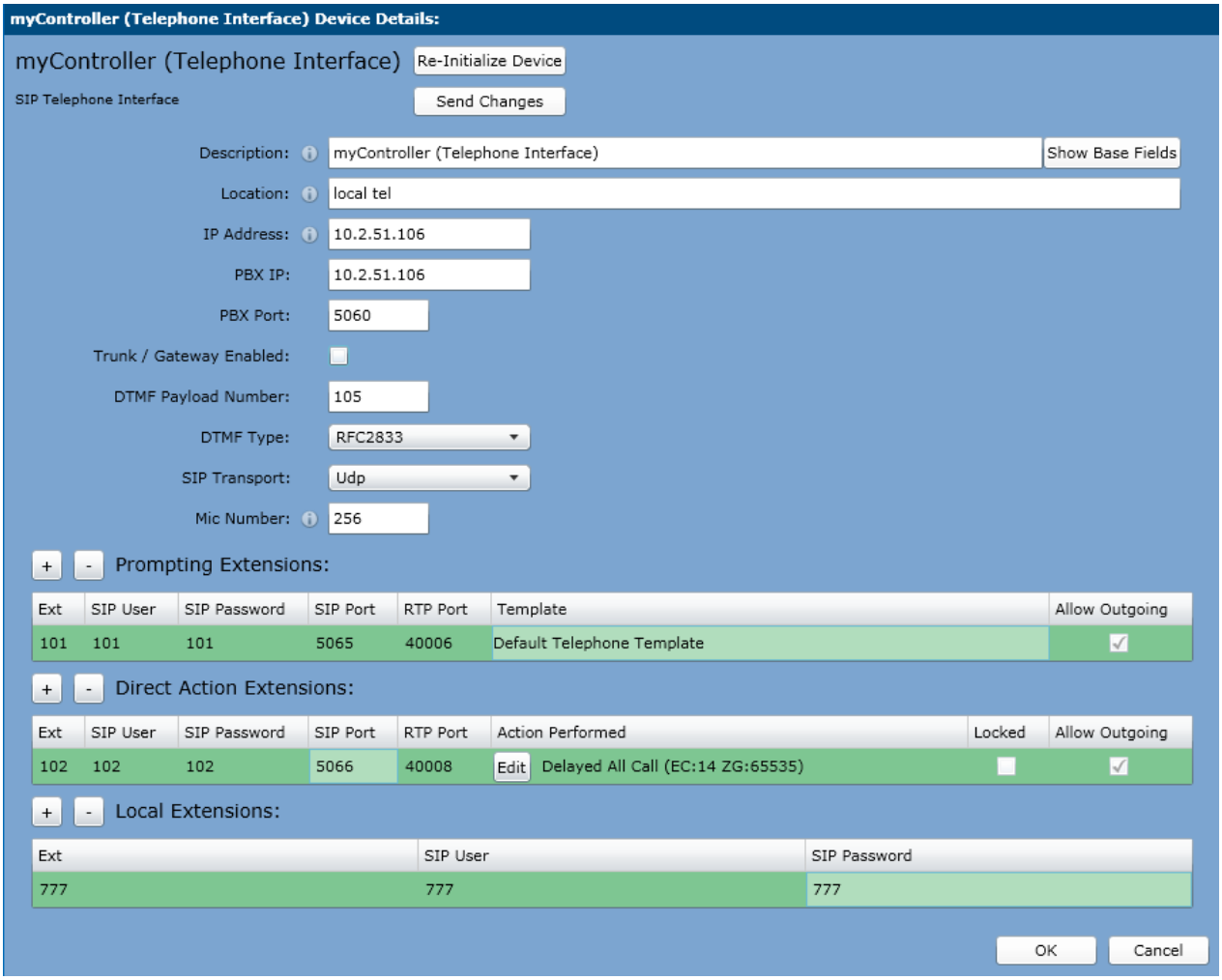


Figure 12-11: 1100TEL Telephone Interface Configuration

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the device here.

PBX IP

This is the IP address or host name of the PBX that will host this VoIP line (or SIP authentication server). If Trunk/Gateway mode is enabled (see below), this should be set to the IP address of the GLOBALCOM system, as the trunk is broken down into extensions in a mini-PBX hosted on the GCK controller.

PBX Port

This is the primary SIP port used for the VoIP service. This is automatically set and should not be edited unless required by the PBX vendor.

Trunk/Gateway Enabled

Unchecked: The extensions listed will register to the PBX as SIP Endpoints (softphones).

Checked: The GLOBALCOM unit will operate in the Trunk/Gateway mode. Calls into or out of the GLOBALCOM device will go through the specified gateway. In the case of analog lines, the gateway is the ATA/VoIP Gateway device. When checked, additional properties appear as shown in Figure 12-12 below, and described below it.

DTMF Payload Number

This determines the DTMF payload number used for the VoIP service. This is automatically set and should not be edited unless required by the PBX vendor.

DTMF Type

This drop-down list selects the DTMF type used for the VoIP service. This is automatically set and should not be edited unless required by the PBX vendor.

SIP Transport

Select UDP or TCP to match the PBX or Gateway requirements.

Mic Number

Each input on the device must have its own unique mic number. This is the number used to identify the input as a usable source within the announcement controller. When you add the device, each number is automatically defined. It can be changed if needed. Once it has been defined here, it will appear as an available source when defining actions.

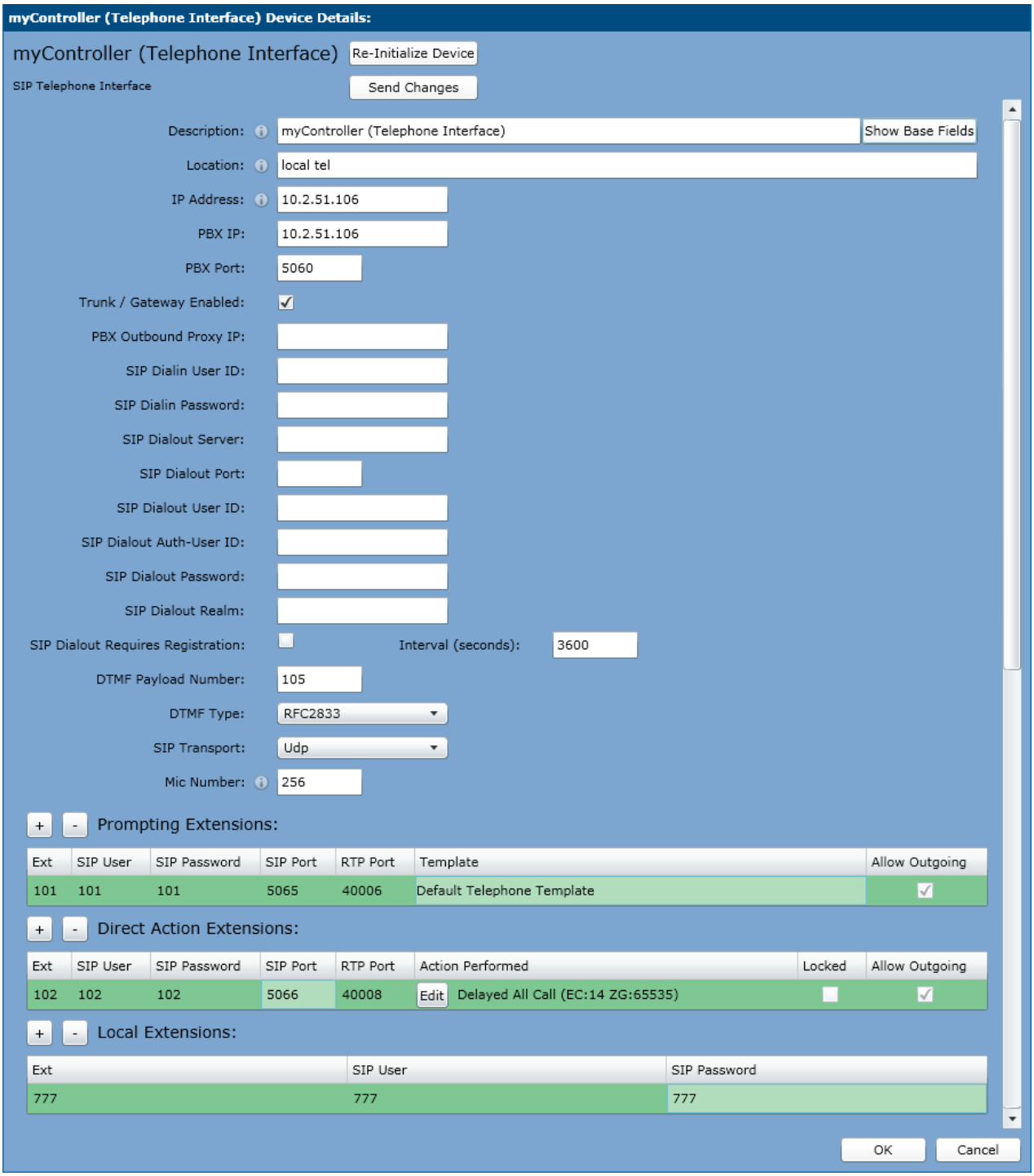


Figure 12-12: Trunk/Gateway Enabled

PBX Outbound Proxy IP

In situations where the PBX must be accessed via a proxy, its IP address is entered here.

SIP Dialin User ID:

The user in the GLOBALCOM system that a PBX or other gateway will use to authenticate calls into the GLOBALCOM system.

SIP Dialin Password:

The password associated with the SIP Dialin User ID.

SIP Dialout Server:

The user in the GLOBALCOM system that a PBX or other gateway will use to authenticate calls into the GLOBALCOM system.

SIP Dialout Server:

The IP Address of the PBX or gateway that will be the destination for outgoing calls.

SIP Dialout Port:

This is the primary SIP port used for the VoIP service on the SIP Dialout Server. This is automatically set and should not be edited unless required by the PBX vendor.

SIP Dialout User ID:

The user on the PBX or other gateway that GLOBALCOM will use to authenticate for SIP messaging.

SIP Dialout Password:

The password associated with the SIP Dialout User ID.

SIP Dialout Realm:

If required, this should be the Realm required by the PBX or Gateway for authentication. If unknown or unused, leave blank.

SIP Dialout Requires Registration:

Check this box if the PBX or Gateway requires registration.

Interval (seconds):

If the PBX or Gateway requires registration, this is the re-registration interval. Value must be between 5 and 3600. If unknown, leave at 3600.

Prompting Extensions

A prompting extension will answer the line and prompt the user to select what action they wish to perform. The prompts will play back and tell the user what button to press for an action or to move to another menu tree level. The prompt tree is implement by creating a telephone template and then applying that template to the extension.

Ext

This is the extension number that this line will use to connect to the PBX. You must obtain this information from the PBX provider.

SIP User

This is the user ID that this line will use to connect to the PBX. You must obtain this information from the PBX provider.

SIP Password

This is the password associated with the SIP User that this line will use to connect to the PBX. You must obtain this information from the PBX provider.

SIP Port

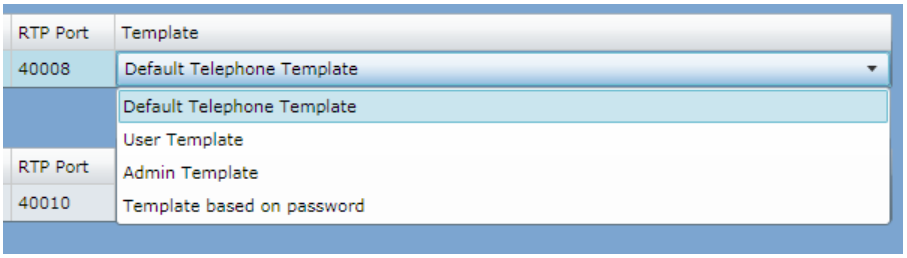
This determines the SIP port used by this line for the VoIP service. This is automatically set and should not be edited unless required by the PBX vendor.

RTP Port

This determines the RTP port used by this line for the VoIP service. This is automatically set and should not be edited unless required by the PBX vendor.

Template

Templates are used to define a series of voice prompts that the user will hear when the line is answered. Each item in the list is associated with an entry code in the template definition. Select the template to use for this line from the drop-down list, such as shown below. This list of templates is built in to the system and may not be edited by users.



Direct Action Extensions

When defined, each line will immediately execute the defined action when the line is answered.

Ext

This is the extension number that this line will use to connect to the PBX. You must obtain this information from the PBX provider.

SIP User

This is the user ID that this line will use to connect to the PBX. You must obtain this information from the PBX provider.

SIP Password

This is the password associated with the SIP User that this line will use to connect to the PBX. You must obtain this information from the PBX provider.

SIP Port

This determines the SIP port used by this line for the VoIP service. This is automatically set and should not be edited unless required by the PBX vendor.

RTP Port

This determines the RTP port used by this line for the VoIP service. This is automatically set and should not be edited unless required by the PBX vendor.

Action Performed

This is where you define the action that will be performed when the line answers. You define the action by clicking on the small ***Edit*** button or by double-clicking on the item in the list. This will open the standard action definition window. Refer to the ***Action Types*** section of the documentation for more information on defining an action.

Locked

When checked, security is enabled. Access is restricted based on the data entered in ***Mic Passwords.*** Caller ID can be used to automatically login a user calling from a particular extension. If this is not defined, then the user will be prompted to enter their 4-digit password to gain access. If this box is not checked, there will be no security protection. Refer to the ***Mic Passwords*** section of the documentation for more information.

Local Extensions

It is possible to directly attach a VoIP telephone to the GCK controller's telephone device. These telephones can only be used to access the other extensions on the controller (Prompting Extensions and Direct Action Extensions defined above), but will function even if the facility's PBX is down or the network link to a cloud-hosted PBX solution is lost.

Ext

This is the extension number that this line will use to connect to the GCK controller by a dedicated telephone. You must configure the telephone to be this extension.

SIP User

This is the user ID that this line will use to connect to the GCK controller. You must configure this in the telephone.

SIP Password

This is the password associated with the SIP User that this line will use to connect to the GCK controller. You must configure this in the telephone.

Devices

The 1100TEL has an internal device used to bridge the VoIP telephone audio to the CobraNet audio network. This internal card also has an IP address that must be set to one number higher than the base network IP address of the device. You can configure this device by either double-clicking on it in the list or highlight it and select the ***Edit*** button to open the properties window. Refer to the ***Internal CobraNet Audio Device*** documentation for information on how to configure this device.

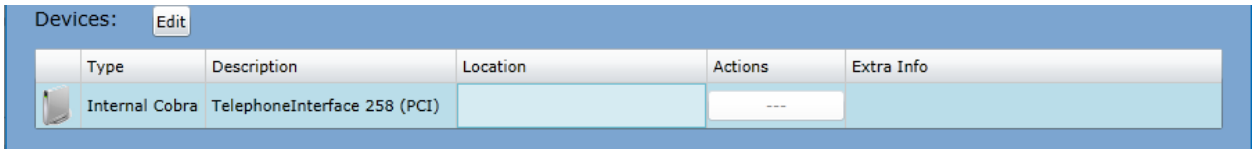


Figure 12-13: 1100TEL Devices List

4.5.1.5 1100DAB Digital Audio Bridge

This device is an additional piece of hardware used to span a GLOBALCOM system across different Local Area Networks (LAN) for larger systems. CobraNet is used to transmit and receive digital audio in a GLOBALCOM system and operates on Layer 2 of the OSI model. Therefore, the digital audio signal cannot be passed through a router and can only transmit and receive to other devices located on the same LAN. In order to send and receive digital audio to GLOBALCOM or 510/520ACS systems located on other networks, you must use one or more 1100 Digital Audio Bridge devices to span the networks. In large systems, you may have an 1100DAB unit for each announcement controller to bridge each controller to a separate intersystem audio network.

Note, in GCK Ver 3.0 a second kind of 1100DAB device was introduced, the "1100DAB CobraNet/Dante Digital Audio Bridge", used to communicate with remote 5400ACS systems. The only different in setup of this device is the "Local CobraNet IP" becomes "CobraNet IP" field and "Global CobraNet IP" becomes the "Dante IP" field.

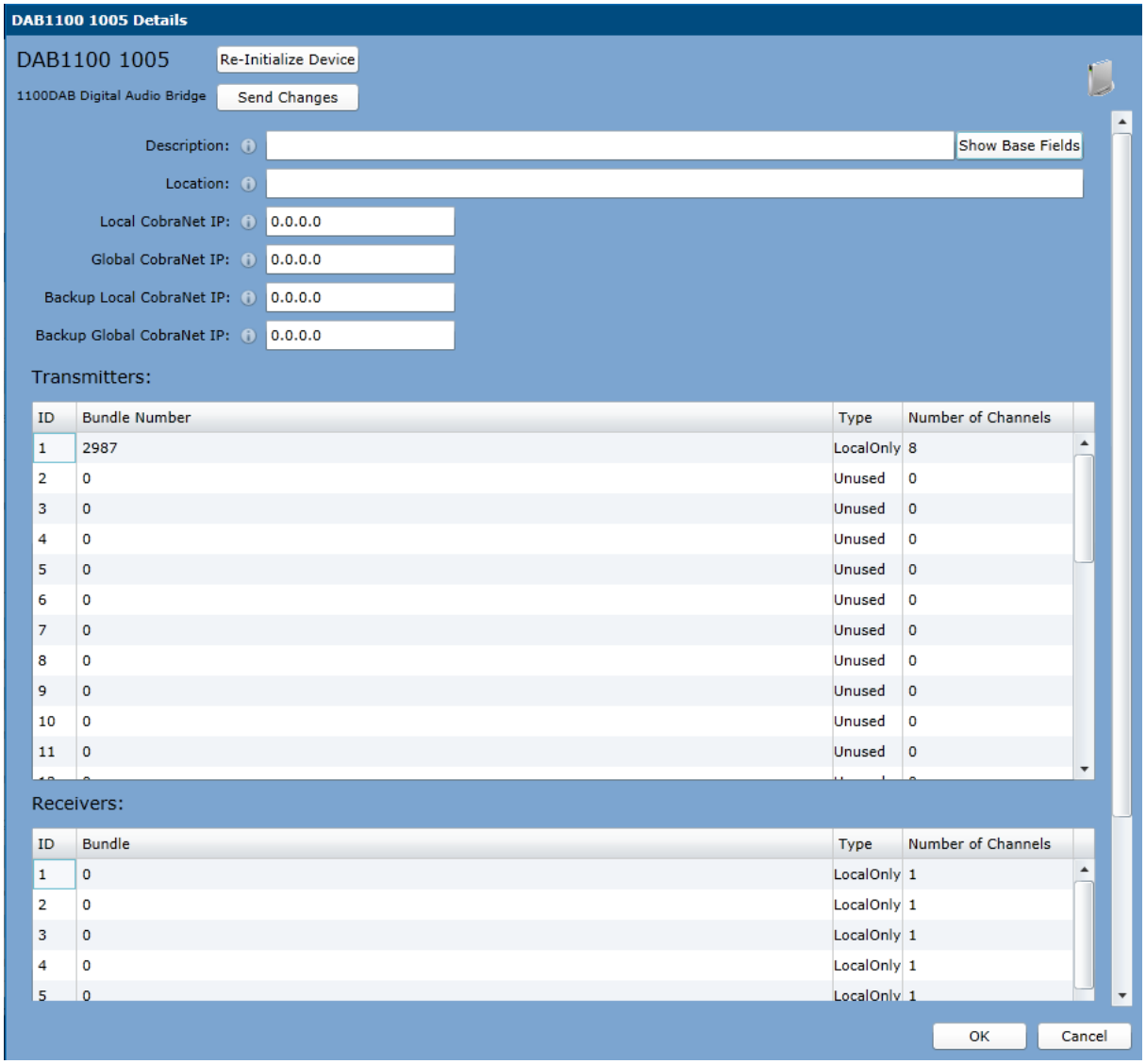


Figure 12-14: 1100DAB Digital Audio Bridge Configuration

Fields on this form beyond the basics for all devices are as follows:

Local CobraNet IP Address / CobraNet IP

Enter the IP address here that will be used to identify the device on the local GLOBALCOM network.

Global CobraNet IP Address / Dante IP

Enter the IP here that will be used to identify the device to the second audio network. (In the case of Dante IP, this is the Dante device seen by the 5400ACS remote controller.)

Backup Local CobraNet IP Address / Backup CobraNet IP

This is one of the two IP addresses for a backup 1100DAB device (one to provide failover for the primary 1100DAB).

Backup Global CobraNet IP Address / Backup Dante IP

This is the second IP address for the backup 1100DAB device.

(CobraNet) Transmitters and Receivers

The CobraNet transmitters and receivers are automatically set by the system and the defaults are sufficient for most applications. The ability to override the defaults is provided here if it is required.

4.5.1.6 Internal Audio Inputs

This device exists on the IP100 series of announcement controllers and consists of the two line inputs on the back between the logic inputs and the fan. These inputs may be used for background music (BGM) sources to be routed to zones in the system. The configuration window for this appears as in Figure 12-14a below.

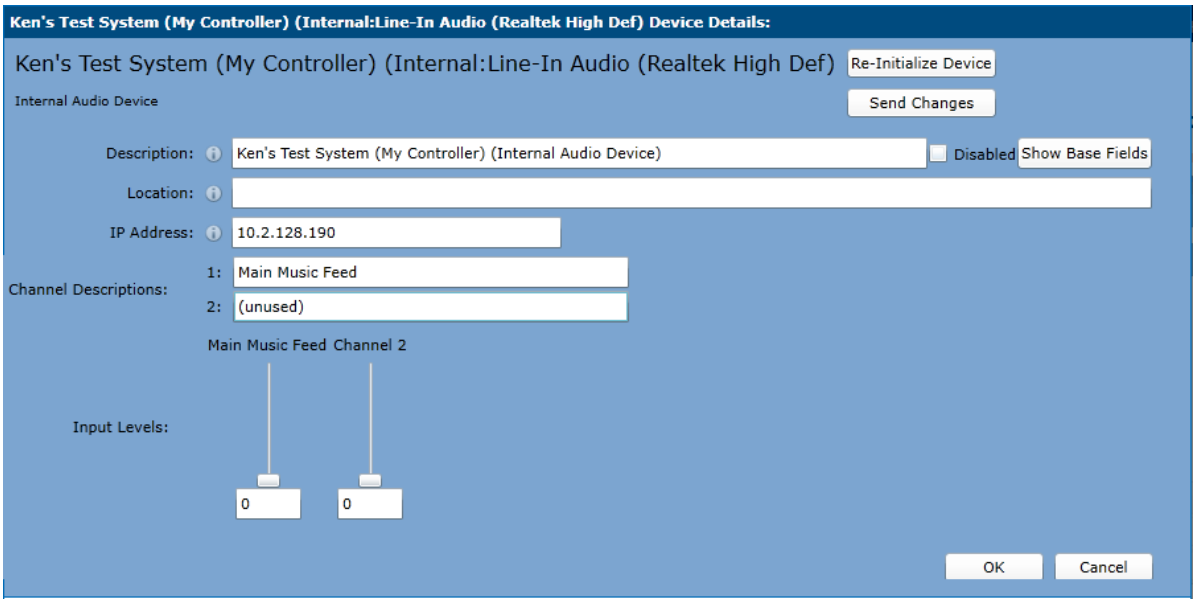


Figure 12-14a: Internal Audio Input Configuration

Fields on this form beyond the basics for all devices are as follows:

Channel Descriptions

User friendly descriptions of the channels, e.g., the source or function.

Input Levels

These are 0 – 100 sliders that set the level of the input. This allows adjustment for different line levels from consumer to professional levels. Note, if distortion is heard, then this level may be too high for the connected audio device, and additional volume will have to be adjusted on the zones themselves.

4.5.1.7 Dante USB Audio Device

This device is found inside an IP108-D or IP116-D or may be the heart of the external IPUSBD-8 or IPUSBD-16 device attached to a server running the GCK vACS software. It is found/configured from the ***My Controller tab*** as shown in Figure 12-7 of the ***Controllers*** section. This device is responsible for playing back all prerecorded messages, delayed announcements, and text-to-speech (TTS) messages over the network using the Dante audio transport. It is also responsible for recording the audio used for delayed announcements.

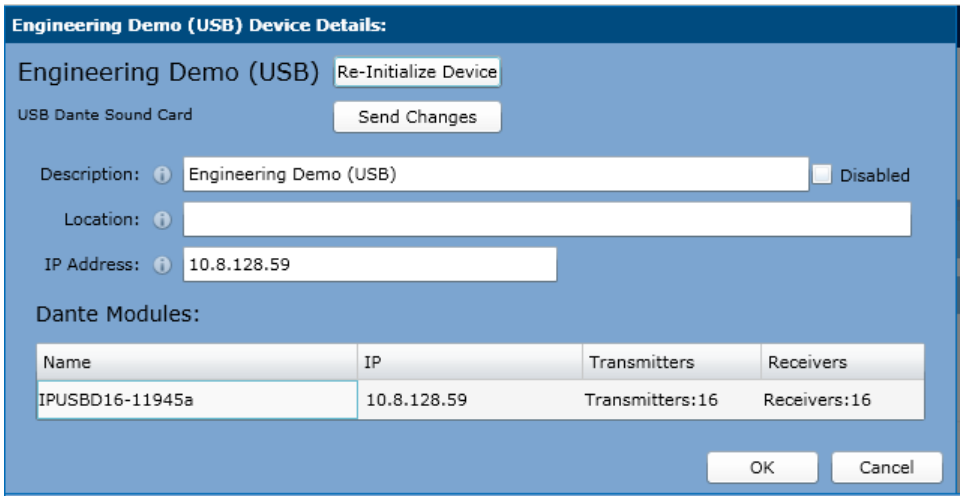


Figure 12-14b: Dante USB Audio Device

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the device here.

Dante Modules

This section is read-only of the parameters such as module Name, Transmitters and Receivers that were discovered for this device. Although, when using fixed IP addressing, the desired value may be entered here in the IP column.

4.5.2 CobraNet Line-Level Audio Devices

These devices convert analog audio to/from CobraNet, and include the following devices: 1502AI, 1502AO, and the four models of DSP: T9008/T9016/T9024/T9032DSP Zone Routers.

4.5.2.1 1502AI Audio Input Device

The 1502AI provides two balanced analog audio inputs that can be used as either announcement source inputs or BGM inputs. When used as an announcement source, you create actions using the ***LiveFromAlternateSource*** or the ***DelayedFromAlternateSource*** action type to route the input to a zone group. Using logic inputs to trigger actions, you can route a signal from an external system such as a fire alarm or an analog telephone page source.

Note: You cannot use each of the input channels of the 1502AI as different input source types. Both inputs must either used as BGM sources or as announcement sources. You cannot use one input as a BGM input and the other as an announcement source.

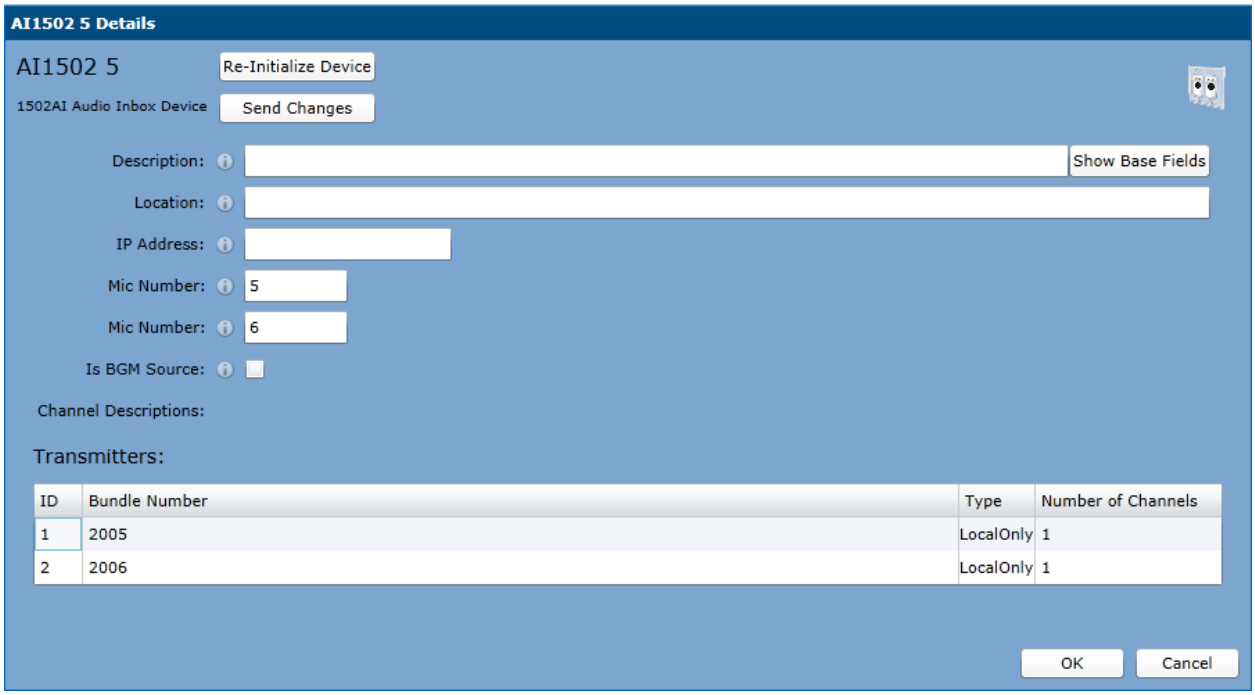


Figure 12-15: 1502AI Audio Input Device Setup

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the device here.

Mic Number

Each input on the device must have its own unique mic number. This is the number used to identify the input as a usable source within the announcement controller. When you add the device, each number is automatically defined. It can be changed if needed. Once it has been defined here, it will appear as an available source when defining actions.

Is BGM Source

When checked, the system will treat each input on the device as a BGM source for the system. The ***Mic Number*** fields are both blanked out when this is checked as shown in Figure 12-85. When configured as a BGM source, the device will appear as an available BGM source for output devices such as the *T9160 Digital Amplifier Frame*.

Channel Descriptions

This description is used to give a name to each channel. This name will appear in selection lists for devices when you are configuring outputs to receive BGM.

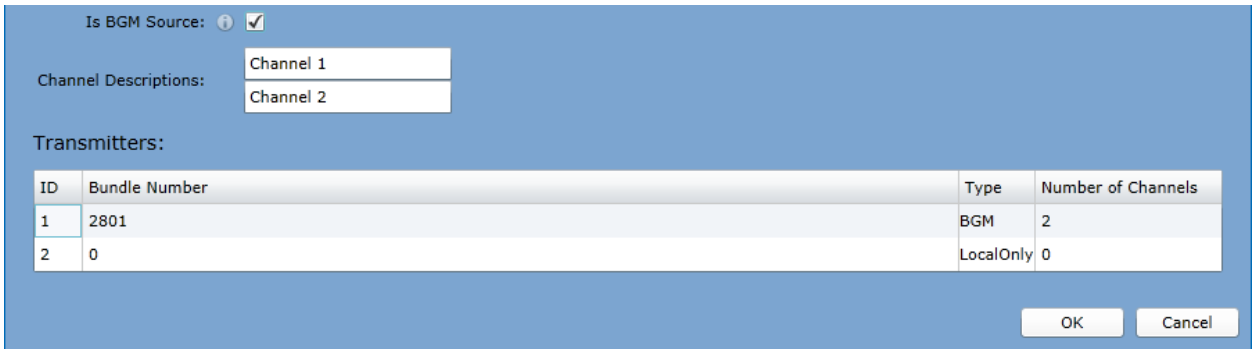


Figure 12-16: 1502 as BGM Source

CobraNet Transmitters

The CobraNet transmitters are automatically set by the system and the defaults are sufficient for most applications. The ability to override the defaults is provided here if it is required.

Note: If you need to use a single 1502AI to supply BGM to multiple GLOBALCOM controllers that are on the same vLAN, then you will need to manually override the bundle numbers. Start by adding the main 1502AI to its parent controller and make a note of the bundle number that is automatically assigned. Next, you add the 1502AI in the other controllers, but you will manually assign the bundle number in all of the secondary controllers to the one assigned by the primary controller.

4.5.2.2 1502AO Audio Output Device

The 1502AO provides two line outputs from two CobraNet streams and is configured on the form below.

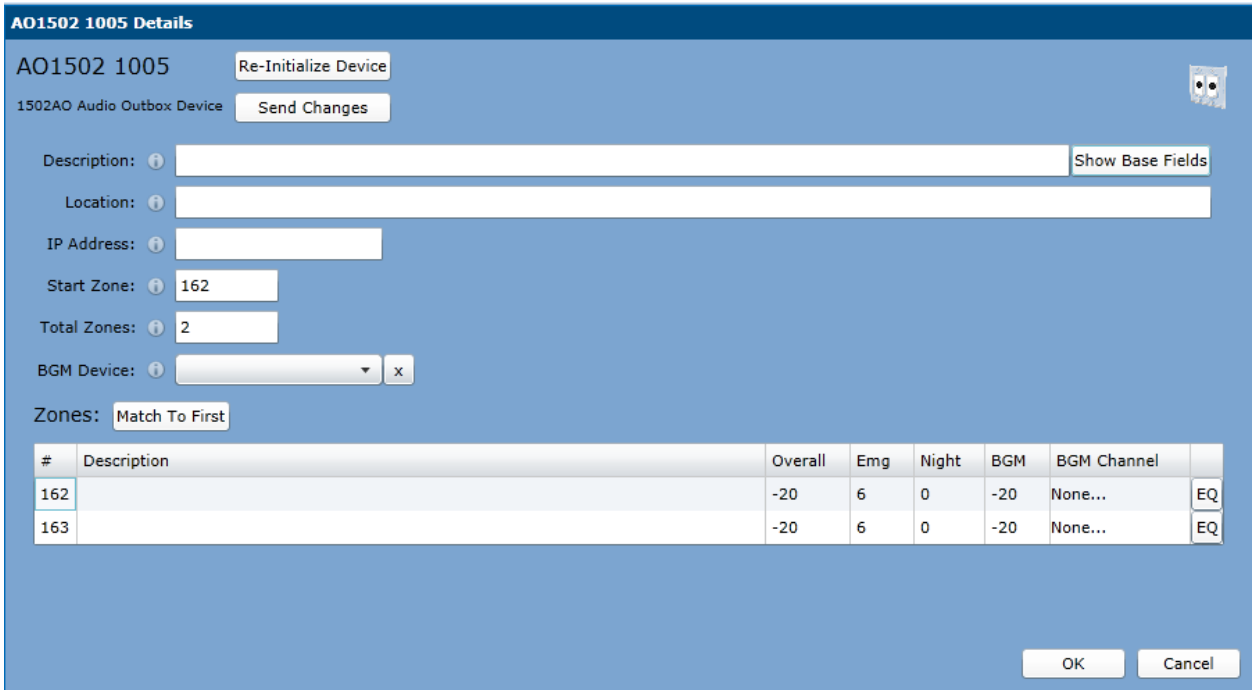


Figure 12-17: 1502AO Audio Output Device Setup

Description

Enter text here to give the device a descriptive name.

Location

Enter text here to describe the physical location of the device.

IP Address

Enter the IP address for the device here.

Start Zone

This is the zone number that represents the first zone in the device. The system will automatically use the next available zone number as the starting zone number when you add a new device. It can be edited here if needed. For example, you have a system that already has 32 zones. When you add a new 1502AO, the starting zone will be 33.

Total Zones

This number represents the total number of zones that will be present on this device. A 1502AO supports a total of 2 zones, but you may want to set this to 1 if you are only using one output. This will prevent the unused output from contributing to the total number of zones allowed with your software license.

BGM Device

Once you have defined one or more devices in the system as a BGM source, it is then available as an item in this drop-down list. You select the device from this list that will be used as the source device for the BGM. You can then select individual channels to be used for each zone output. You can click the **[X] button** to the right of the drop-down list to clear the selection.

Zones

This list allows you to configure each output zone in the device.

Zone Number

This is the number that will be used to identify this output zone in the system. This number is calculated based on the values in the ***Start Zone*** and ***Total Zones*** fields. Each output channel is an individual zone.

Description

Double-click on this field to edit a text descriptor for the zone.

Levels

• Overall – This is the master output level control for the zone. Adjusting this level will change the levels of both announcements and BGM. This number represents the amount of attenuation relative to 0dBFS. So a value of –30 will attenuate the level by 30dB. To reduce the level by an additional 10dB, you would enter a value of –40.

• Emg – This field defines an offset to the ***Overall*** level to use when an announcement is made with an announce class that has the ***Emergency*** flag set. This allows you to increase the level of the output for emergency announcements. The default value is 6dB. If you use this setting with an ***Overall*** setting of –20dB, then an emergency announcement will be played using an output level that is 6dB louder than normal announcements.

• Night – This field defines an offset to the ***Overall*** level to use when the night schedule is invoked as programmed in the ***Day / Night Schedule*** section of the ***Configuration*** tab. This allows you to decrease the level of the output based on the time of day for each day of the week. The default value is 0dB and is set by entering a value to turn the output down. For example, if you enter a value of 6, then the channel level will be turned down by 6dB when the Night schedule is placed in effect.

• BGM – This field sets the BGM level for the zone. This number represents the amount of attenuation relative to 0dBFS. So a value of –30 will attenuate the level by 30dB. To reduce the level by an additional 10dB, you would enter a value of – 40.

Mute

When checked, the output of the device will be muted.

BGM Channel

This drop-down list allows you to select an individual channel to use as the zone BGM. The channels available are for the device selected in the ***BGM Device*** field.

Match To First

Click this button to take the three levels (Overall, Emg, and BGM) and the BGM Channel selection and copy them to the remaining zones in the device.

EQ

Each channel has a ten-band parametric EQ available to adjust the signal as necessary to meet the needs of the loudspeakers and allow the system to be adjusted to maximize intelligibility in the acoustic space. Press the ***EQ*** button for a channel to open the EQ window as shown in Figure 12-18.

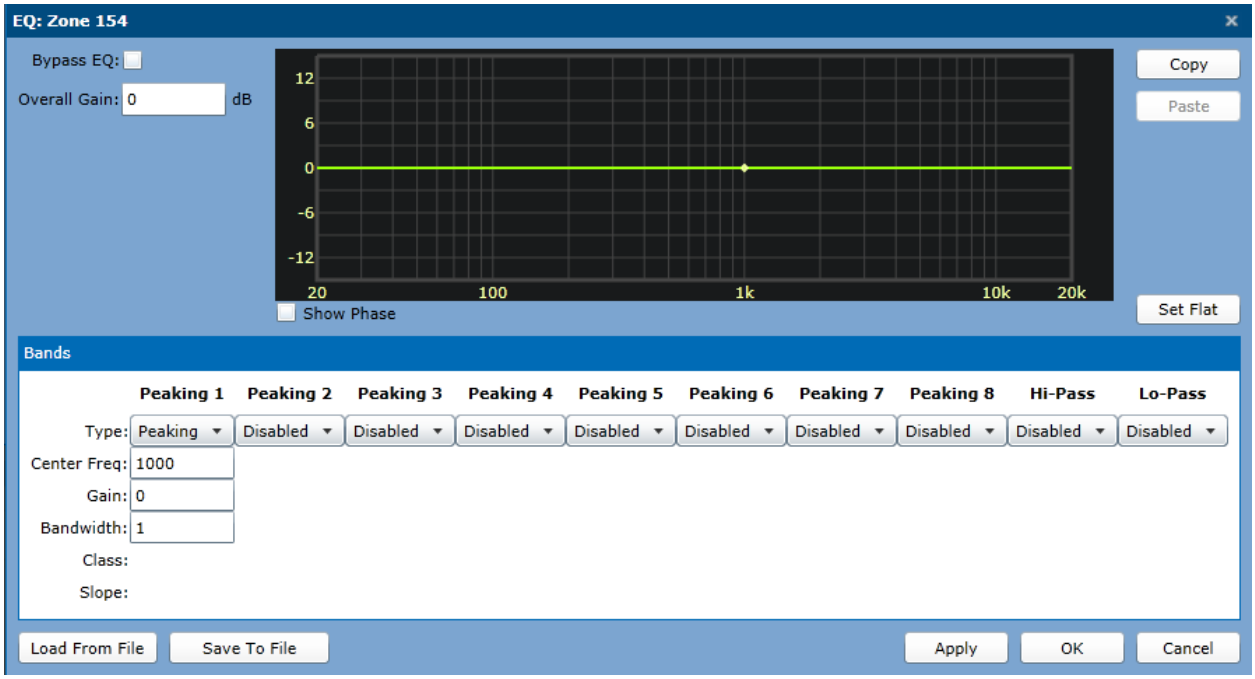


Figure 12-18: EQ Settings Window

Bands are selected by clicking on one of the ten band names immediately below the frequency response curve graph. A specific band can be selected and then adjusted using the edit boxes below the names. It is also possible to select a filter and edit its frequency, gain and bandwidth directly in the Frequency Response display window using the mouse to drag the filter position, cut/boost, or bandwidth.

Type

Select a filter type in the drop-down list. The available options for filters 1 through 7 are:

- Peaking – A typical bandpass type filter
- Disabled – Turn this filter off

The available options for the Hi-Pass and Lo-Pass filters are:

- Hi Pass – Filter for rolling off frequencies lower than the cutoff frequency
- Lo Pass – Filter for rolling off frequencies higher than the cutoff frequency
- Disabled – Turn this filter off

Note: The options for the filter parameters will change slightly depending on the filter type selected.

Center Frequency (Hz)

The center frequency (or cutoff frequency) of the filter is set by entering a numeric value in the edit box. The frequency parameter can also be changed by dragging the diamond icon in the graph laterally left or right.

Gain (dB)

This is only available for Peaking filter type.

The filter gain is set by entering a numeric value (using + or – values for relative dB) in the edit box. The gain can also be changed by clicking and dragging the diamond icon for the filter up or down in the frequency response graph.

Bandwidth (Oct.)

This is only available for Peaking filter type.

The filter bandwidth is set by entering a numeric value in the edit box. The value used is measured in Octaves. For example, if a 1/3 octave filter is required then a value of 0.333 would be used. The bandwidth can also be altered using vertical line icons located on each side of the diamond filter icon in the frequency response graph. Click a line and move the mouse laterally to change the bandwidth.

Class

This is only available for Hi Pass and Lo Pass filter types.

The mathematical function used to calculate the filter is selected by picking an available type from the drop-down list box. Currently, the only type of filter class available is the Butterworth type filter.

Slope (dB/Oct.)

This is only available for Hi Pass and Lo Pass filter types.

This value determines the frequency roll-off rate for the filter in decibels per octave. Available values range from 6 dB/Octave to 18 dB/Octave.

Set Flat

This button resets all filters to a gain setting of 0dB (flat response) and disables all bands except for band 1.

Show Phase

When checked, the phase response through the EQ will be shown as a red curve on the graph.

Bypass EQ

When checked, this removes the effects of all filter bands from the signal path without resetting the filters to a flat response curve. When the EQ is bypassed, the signal will pass through the object without any modifications to the frequency characteristics.

Overall Gain

The EQ provides a small range of gain adjustment in order to compensate for the overall effect of the EQ curve and allow signal-to-noise ratio and dynamic range to be maximized. This gain is set by entering a value (in + or - relative dB) in the edit box. It should only be used within a range from 6dB of attenuation to 6dB of gain.

Save To File

Click this button to save the EQ curve as an XML file. This allows you to archive the file as well as save it as a preset and load it into other channels.

Load From File

Click this button to open a standard Windows file dialog window. From here, you can locate an XML file that has been stored with an EQ curve and load it into the frame.

Copy

Click this button to copy all of the current EQ settings to the clipboard. You can then move to another channel and use the Paste button to copy settings between channels.

Paste

Click this button to paste the EQ settings stored on the clipboard to the current channel. This button will be dimmed if there are no available EQ settings to paste from the clipboard.

4.5.2.3 T90xxDSP Zone Router

There are four possible models of Zone Routers which different only in the number of inputs/outputs they have ranging from 8x8 to 32x32. The models are the T9008DSP, T9016DSP, T9024DSP and T9032DSP. This device is a digital signal processor (DSP) box used to route to/from analog audio buses such as in large transit system head end applications.

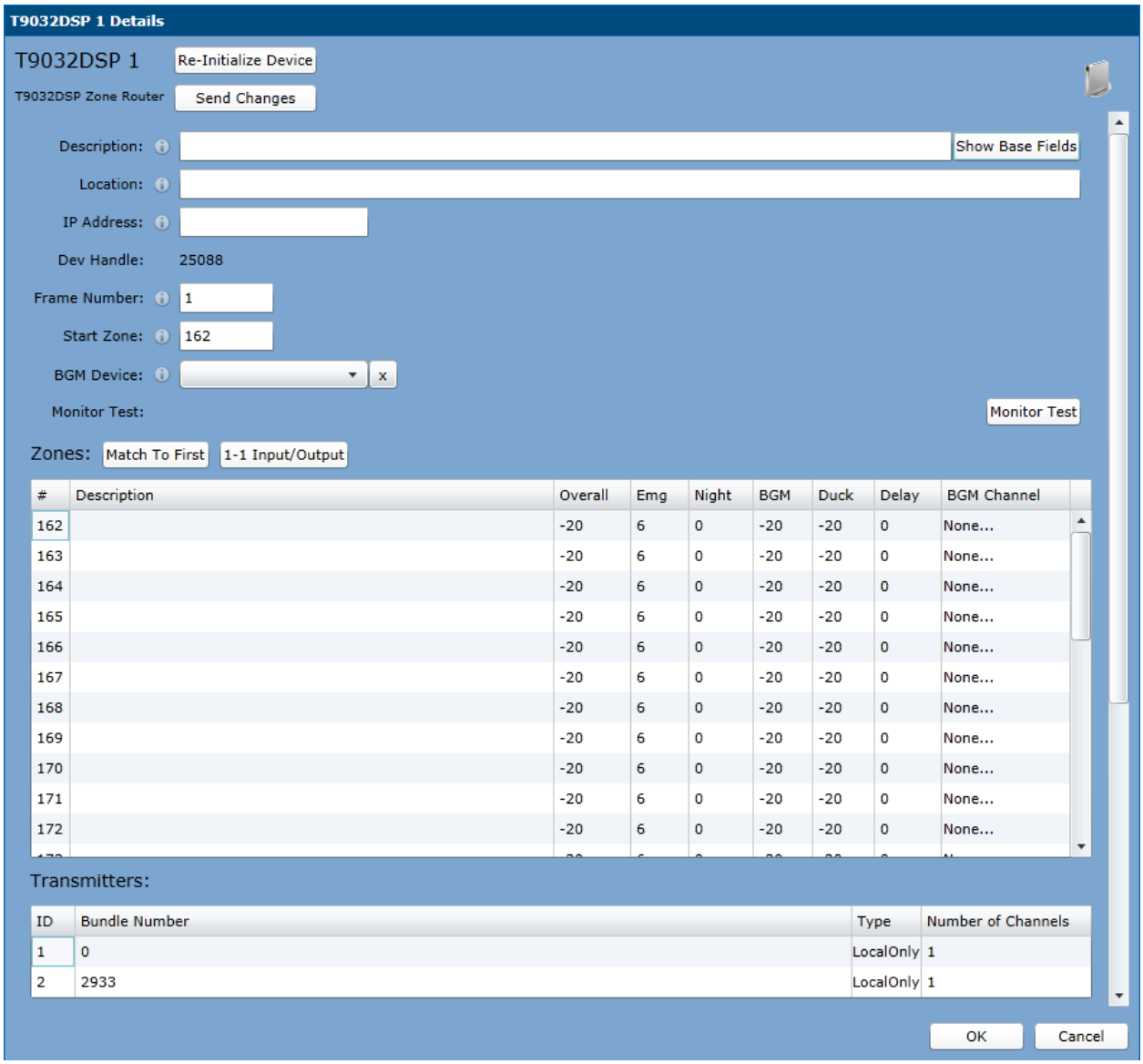


Figure 12-19: T9032DSP Zone Router Setup

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the device.

Dev Handle

This is a software address used by the system. It is assigned by the system and provided here for reference if needed.

Frame Number

This is a unique ID number used to identify the Titan frames used in the system. When you add the device, the system will automatically assign the next available frame number.

Start Zone

This is the zone number that represents the first zone in the device. The system will automatically use the next available zone number as the starting zone number when you add a new device. It can be edited here if needed. For example, you have a system that already has 32 zones. When you add a new T91xxDSP, the starting zone will be 33.

BGM Device

Once you have defined one or more devices in the system as a BGM source, it is then available as an item in this drop-down list. You select the device from this list that will be used as the source device for the BGM. You can then select individual channels to be used for each zone output. You can click the [X] button to the right of the drop-down list to clear the selection.

(a) T9xxxDSP Zones Grid

This grid allows you to configure each output zone in the device.

Zone Number

This is the number that will be used to identify this output zone in the system. This number is calculated based on the values in the ***Start Zone*** and ***Total Zones*** fields. Each output channel in a T90xxDSP is an individual zone.

Description

Double-click on this field to edit a text descriptor for the zone.

Levels

• Overall – This is the master output level control for the zone. Adjusting this level will change the levels of both announcements and BGM. This number represents the amount of attenuation relative to 0dBFS. So a value of –30 will attenuate the level by 30dB. To reduce the level by an additional 10dB, you would enter a value of –40.

• Emg – This field defines an offset to the ***Overall*** level to use when an announcement is made with an announce class that has the ***Emergency*** flag set. This allows you to increase the level of the output for emergency announcements. The default value is 6dB. If you use this setting with an ***Overall*** setting of –20dB, then an emergency announcement will be played using an output level that is 6dB louder than normal announcements.

• Night – This field defines an offset to the ***Overall*** level to use when the night schedule is invoked as programmed in the ***Day / Night Schedule*** section of the ***Configuration*** tab. This allows you to decrease the level of the output based on the time of day for each day of the week. The default value is 0dB and is set by entering a value to turn the output down. For example, if you enter a value of 6, then the channel level will be turned down by 6dB when the Night schedule is placed in effect.

• BGM – This field sets the BGM level for the zone. This number represents the amount of attenuation relative to 0dBFS. So a value of –30 will attenuate the level by 30dB. To reduce the level by an additional 10dB, you would enter a value of – 40.

• Duck – This field controls how much the level of BGM will be reduced when an announcement is made to the zone. A value of –10 will reduce the BGM level by 10dB when an announcement is made. A value of –60 will effectively mute the BGM level when an announcement is made.

Delay

Each output on the T90xxDSP has signal delay that can be used for loudspeaker alignment. Enter a numerical value to represent the number of milliseconds (ms) to use for the delay.

BGM Channel

This drop-down list allows you to select an individual channel to use as the zone BGM. The channels available are for the device selected in the BGM Device field and the local inputs on the back of the T90xxDSP mainframe.

Match To First

Click this button to take the three levels (Overall, BGM, and Duck) Delay and the BGM Channel selection of the first zone and copy them to the remaining zones in the device.

1-1 Input/Output

Click this button to route as analog input 1 to zone 1, input 2 to zone 2, etc. for the whole frame as the BGM Channel selection.

(b) T9xxxDSP Transmitters and Receivers Grid

The CobraNet transmitters and receivers are automatically set by the system and the defaults are sufficient for most applications. The ability to override the defaults is provided here if it is required.

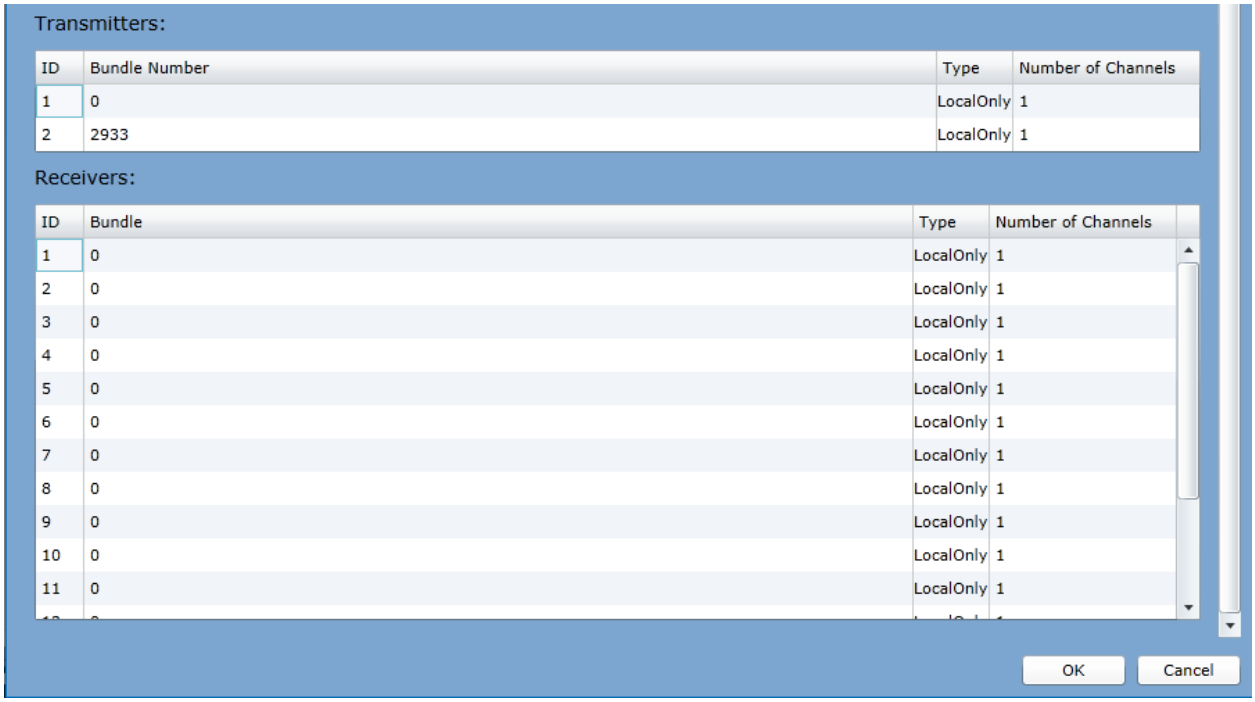


Figure 12-20: T90xxDSP CobraNet Transmitters and Receivers

OK/Cancel

Click the **OK** button to save any changes you made on this window. It will appear dimmed if there are no changes to save. Changes made to the Monitor/Test are saved when you close its window. This **OK** button may appear grayed out even if you have made changes in that sub-system.

Click the **CANCEL** button to discard any changes you have made to this screen. This will not undo any changes made to the Monitor/Test sub-system.

(c) T9xxxDSP Monitor Test Window

Click the [Monitor Test] button to open the Monitor Test window for the T9160 as shown in Figure 12-27. From here, you can configure the supervision parameters of the device, view the latest test results, or manually execute a test or set. The T9160 generates a test tone that is routed to each channel and then the level is measured at three places on each channel. The unit tests the analog output of the DSP before it enters the amplifier, the voltage level at the amplifier output, and the current drawn as a result of the loudspeaker load.

Three different test signals are provided, each of which defines a “test”. One selects which test to be looking at by selecting it in the “Selected Test” drop-list box at the top left of the window. The tests are:

- 400Hz – Ideal for full range cone-type loudspeakers.
- 1kHz – Ideal for horn-type loudspeakers.
- 20kHz – Ideal for periodic supervision since this frequency will be inaudible in most systems.

Note: Clicking the OK button on this window will immediately send and save any changes to the device.

The window contains checkboxes that allow you to enable or disable the test points for this selected test

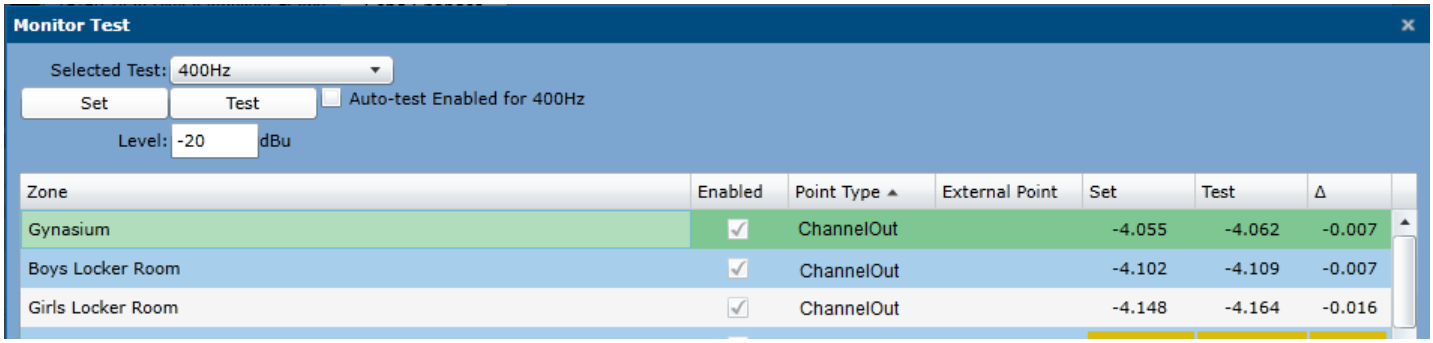


Figure 12-21: T9xxxDSP Monitor Test Window

Caution: Clicking either the Test or Set buttons on the 400Hz or 1kHz will cause audible tones to be played through the system.

Test

Click the test buttons to start a test for the selected test (frequency). As the test is run, results should appear in the results table as shown in the figure above. The actual measured values at each point are displayed in the ***Test*** column for each test point. The unit compares the test values measured with the values stored when a system set was performed. Any variances in the level are displayed in the Δ (Delta or Variance) column of the table. Variances that are outside of the acceptable tolerance are shown in red. Items in red will generate a fault report that is sent to the system supervisor software. Items shown with gold background are for points that do not (yet) have a valid Set value (i.e., the test result is indeterminate, rather than a fault or a pass).

Set

Click this button to execute a test for the selected frequency, but store the measured values as a baseline comparison for a system test of the same frequency. You should run a system set when you know the system is operating correctly. The unit will then use these values to determine if there is a fault.

Level

The edit box just below the [Set][Test] buttons are the test tone levels for each frequency. Typical values for these are in the -30 to -10 dB range (these are in dBu).

Schedule

Each frequency can be configured to run on a schedule. To enable a schedule, one first one first clicks on the checkbox labeled “Auto-Test Enabled for xxxHz” beside the [Test] button. This brings up schedule configuration options as shown in Figure 12-28. The options for the schedule are described below.

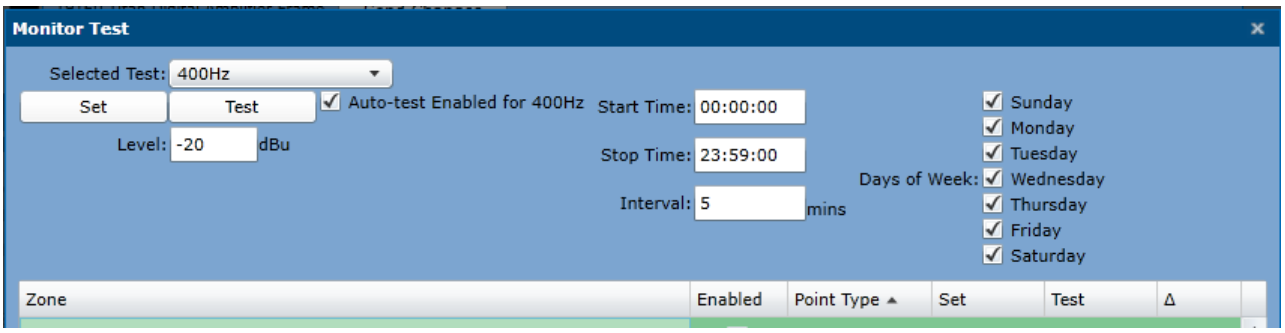


Figure 12-21b: Test Schedules

Start Time/Stop Time

You can restrict the times that a test will run based on the times entered in these two fields. To run continuously, enter 12:00 AM as the start time and 11:59 PM as the stop time.

Interval

Enter the time (in minutes) between each test.

Days of Week:

Which days of the week to run the test.

Note: If you only want the test to play once per day, you must enter an interval greater than the difference between the start and stop times. For example, you only want the 400Hz test to play at 3:00 AM when the building is empty. You could enter a start time of 3:00 AM, a stop time of 3:05 AM, with an interval of 15 minutes. This would cause the test to only run once at 3:00 AM

4.5.3 CobraNet Amplifiers/Options

CobraNet Amplifier devices include the T9160 Titan Digital Amplifier, the T9116 Titan Zone Output Device, the 1542NA and 1581NA Network Amplifiers, the DNA2404C (formerly DNA7800 family), a Backup DNA2404C and the 1544BAS Backup Amplifier switching device. Also included are ancillary devices that can be defined for a Titan frame such as External Titan Source and External Titan Zone. The Device properties for each of these is described below.

4.5.3.1 T9160 Titan Digital Amplifier Frame

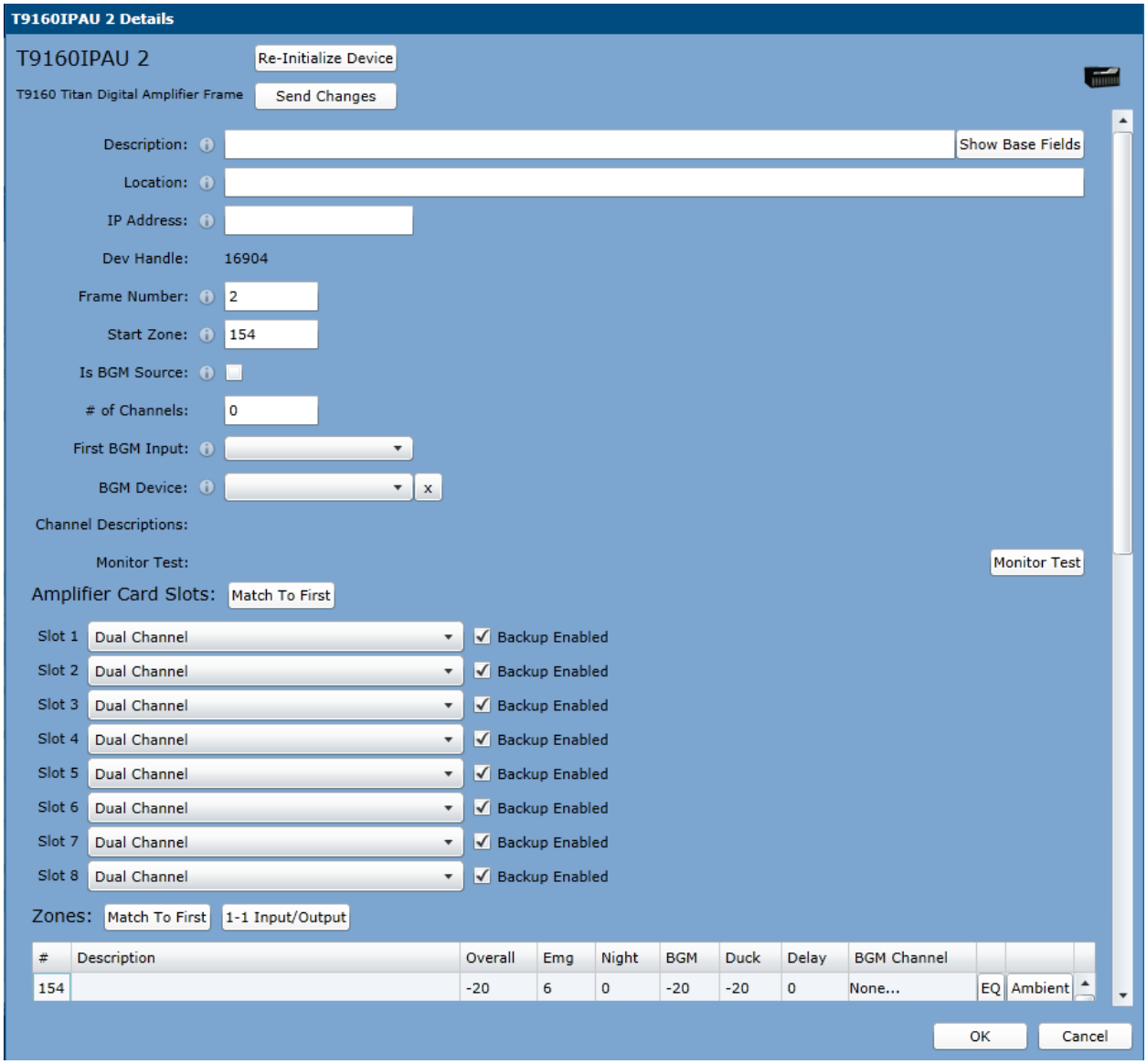


Figure 12-22: T9160 Digital Amplifier Frame Setup

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the device here.

Dev Handle

This is a software address used by the system. It is assigned by the system and provided here for reference if needed.

Frame Number

This is a unique ID number used to identify the Titan frames used in the system. When you add the device, the system will automatically assign the next available frame number.

Start Zone

This is the zone number that represents the first zone in the device. The system will automatically use the next available zone number as the starting zone number when you add a new device. It can be edited here if needed. For example, you have a system that already has 32 zones. When you add a new T9160, the starting zone will be 33.

Is BGM Source

When checked, the system will treat the device as a BGM source for the system. When configured as a BGM source, the device will appear as an available BGM source for output devices. The inputs defined using the ***First BGM Input*** and ***# of Channels*** fields will be routed over the audio network.

of Channels

This is the total number of channels that will be used as BGM inputs on the device. The input channels must be consecutive, so if you specify input 1 in the ***First BGM Input*** field and set a total number of channels at 4, then you will use inputs 1 through 4 as the BGM inputs.

First BGM Inputs

This drop-down list allows you to select the first input channel on the device that will be used as a BGM input.

BGM Device

Once you have defined one or more devices in the system as a BGM source, it is then available as an item in this drop-down list. You select the device from this list that will be used as the source device for the BGM. You can then select individual channels to be used for each zone output. You can click the **[X] button** to the right of the drop-down list to clear the selection.

Channel Descriptions

This description is used to give a name to each BGM channel that will be sourced from this device. This name will appear in selection lists for devices when you are configuring outputs to receive BGM.

Amplifier Card Slots

Each T9160 mainframe has 9 slots for amplifier cards. Slots 1 through 8 contain the primary amplifier cards while slot 9 holds an optional backup amplifier card that will automatically take over for a failed card when configured to operate as such. Each slot has two output channels, thus consumes two zones that count towards the total number of zones in the software license, unless you disable them by choosing the correct amplifier card type.

Amplifier Card Type

None – Select this type if the slot does not contain an amplifier card. This will disable both zones for that slot, thus removing them from the total zone count.

Single Channel – Select this type if the slot contains a single channel amplifier card such as the T6481, T6471, T6411, or T6441. This type will disable the zone for the second channel that is available in the slot, thus removing it from the total zone count.

Dual Channel – Select this type if the slot contains a dual channel amplifier card such as the T6482, T6472, T6412, or T6002.

Backup Enabled

Check this box to enable the backup amplifier card switching for the channel. If the card fails, it will automatically switch to the backup amplifier card located in slot 9 of the unit.

Match to First

Click this button to take the current settings for slot 1 and apply them to slots 2 through 8.

(a) T9160 Zones Grid

This list area allows you to configure each output zone in the device.

Zone Number

This is the number that will be used to identify this output zone in the system. This number is calculated based on the values in the ***Start Zone*** and ***Total Zones*** fields. Each output channel in a T9160 is an individual zone.

Description

Double-click on this field to edit a text descriptor for the zone.

Levels

• Overall – This is the master output level control for the zone. Adjusting this level will change the levels of both announcements and BGM. This number represents the amount of attenuation relative to 0dBFS. So a value of –30 will attenuate the level by 30dB. To reduce the level by an additional 10dB, you would enter a value of –40.

• Emg – This field defines an offset to the ***Overall*** level to use when an announcement is made with an announce class that has the ***Emergency*** flag set. This allows you to increase the level of the output for emergency announcements. The default value is 6dB. If you use this setting with an ***Overall*** setting of –20dB, then an emergency announcement will be played using an output level that is 6dB louder than normal announcements.

• Night – This field defines an offset to the ***Overall*** level to use when the night schedule is invoked as programmed in the ***Day / Night Schedule*** section of the ***Configuration*** tab. This allows you to decrease the level of the output based on the time of day for each day of the week. The default value is 0dB and is set by entering a value to turn the output down. For example, if you enter a value of 6, then the channel level will be turned down by 6dB when the Night schedule is placed in effect.

• BGM – This field sets the BGM level for the zone. This number represents the amount of attenuation relative to 0dBFS. So a value of –30 will attenuate the level by 30dB. To reduce the level by an additional 10dB, you would enter a value of – 40.

• Duck – This field controls how much the level of BGM will be reduced when an announcement is made to the zone. A value of –10 will reduce the BGM level by 10dB when an announcement is made. A value of –60 will effectively mute the BGM level when an announcement is made.

Delay

Each output on the T9160 has signal delay that can be used for loudspeaker alignment. Enter a numerical value to represent the number of milliseconds (ms) to use for the delay.

BGM Channel

This drop-down list allows you to select an individual channel to use as the zone BGM. The channels available are for the device selected in the ***BGM Device*** field and the local inputs on the back of the T9160 mainframe.

Match to First

Click this button to take the three levels (Overall, BGM, and Duck) Delay and the BGM Channel selection of the first zone and copy them to the remaining zones in the device.

1–1 Input/Output

Click this button to route as analog input 1 to zone 1, input 2 to zone 2, etc. for the whole frame as the BGM Channel selection.

(b) T9160 Channel Equalization Window

Each channel has a nine-band parametric EQ available to adjust the signal as necessary to meet the needs of the loudspeakers and allow the system to be adjusted to maximize intelligibility in the acoustic space. Press the [**EQ]** button for a channel to open the EQ window as shown in Figure 12-23.

Figure 12-23: EQ Settings Window

Type

Select a filter type in the drop-down list. The available options are:

- Peaking – A typical bandpass type filter

- Notch – Sharp bandpass cut-only filter
- Hi Pass – Filter for rolling off frequencies lower than the cutoff frequency
- Lo Pass – Filter for rolling off frequencies higher than the cutoff frequency
- All Pass – Filter used for phase adjustments near the center frequency
- Disabled – Turn this filter off

Note: The options for the filter parameters will change slightly depending on the filter type selected.

Center Frequency

The center frequency (or cutoff frequency) of the filter is set by entering a numeric value in the edit box. Dragging the diamond icon in the graph laterally left or right can also change the frequency parameter.

Gain (dB)

This is only available for Peaking and Notch filter types.

The filter gain is set by entering a numeric value (using + or – values for relative dB) in the edit box. The gain can also be changed by clicking and dragging the diamond icon for the filter up or down in the frequency response graph.

Bandwidth (Oct.)

This is only available for Peaking and Notch filter types.

The filter bandwidth is set by entering a numeric value in the edit box. The value used is measured in Octaves. For example, if a 1/3 octave filter is required then a value of 0.333 would be used. The bandwidth can also be altered using vertical line icons located on each side of the diamond filter icon in the frequency response graph. Click a line and move the mouse laterally to change the bandwidth.

Class

This is only available for Hi Pass and Lo Pass filter types.

The mathematical function used to calculate the filter is selected by picking an available type from the drop-down list box. There are three available class types listed below.

- Butterworth
- Bessel
- Linkwitz-Riley

Slope (dB/Oct.)

This is only available for Hi Pass and Lo Pass filter types. This value determines the frequency roll-off rate for the filter in decibels per octave. Available values range from a shallow 6 dB/Octave to a very steep 48 dB/Octave.

Bypass EQ

When checked, this removes the effects of all filter bands from the signal path without resetting the filters to a flat response curve. When the EQ is bypassed, the signal will pass through the object without any modifications to the frequency characteristics.

Overall Gain

The EQ provides a small range of gain adjustment in order to compensate for the overall effect of the EQ curve and allow signal-to-noise ratio and dynamic range to be maximized. This gain is set by entering a value (in + or – relative dB) in the edit box. It should only be used within a range from 6dB of attenuation to 6dB of gain.

Set Flat

This button resets all filters to a gain setting of 0dB (flat response) and disables all bands except for band 1.

Show Phase

When checked, the phase response through the EQ will be shown as a red curve on the graph.

Save To File

Click this button to save the EQ curve as an XML file. This allows you to archive the file as well as save it as a preset and load it into other channels.

Load From File

Click this button to open a standard Windows file dialog window. From here, you can locate an XML file that has been stored with an EQ curve and load it into the frame.

Get From Frame

Click this button to force the window to reload the current EQ settings from the frame.

Copy

Click this button to copy all of the current EQ settings to the clipboard. You can then move to another channel and use the ***Paste*** button to copy settings between channels.

Paste

Click this button to paste the EQ settings stored on the clipboard to the current channel. This button will be dimmed if there are no available EQ settings to paste from the clipboard.

(c) T9160 Ambient Analysis Window

Titan series amplifier frames are equipped with ambient noise compensation (Ambient Analysis) capabilities when paired with a noise sensor collector, such as a T9032NS. Ambient Analysis adjusts the output attenuation of a channel in response to ambient noise level measured in the area served by the channel. Anywhere from one (1) to four (4) ambient noise sensors can be assigned to each channel. Channels can also be slaved to other channels. Click the Ambient button for the channel you wish to configure to open a window such as that shown in Figure 12-24.

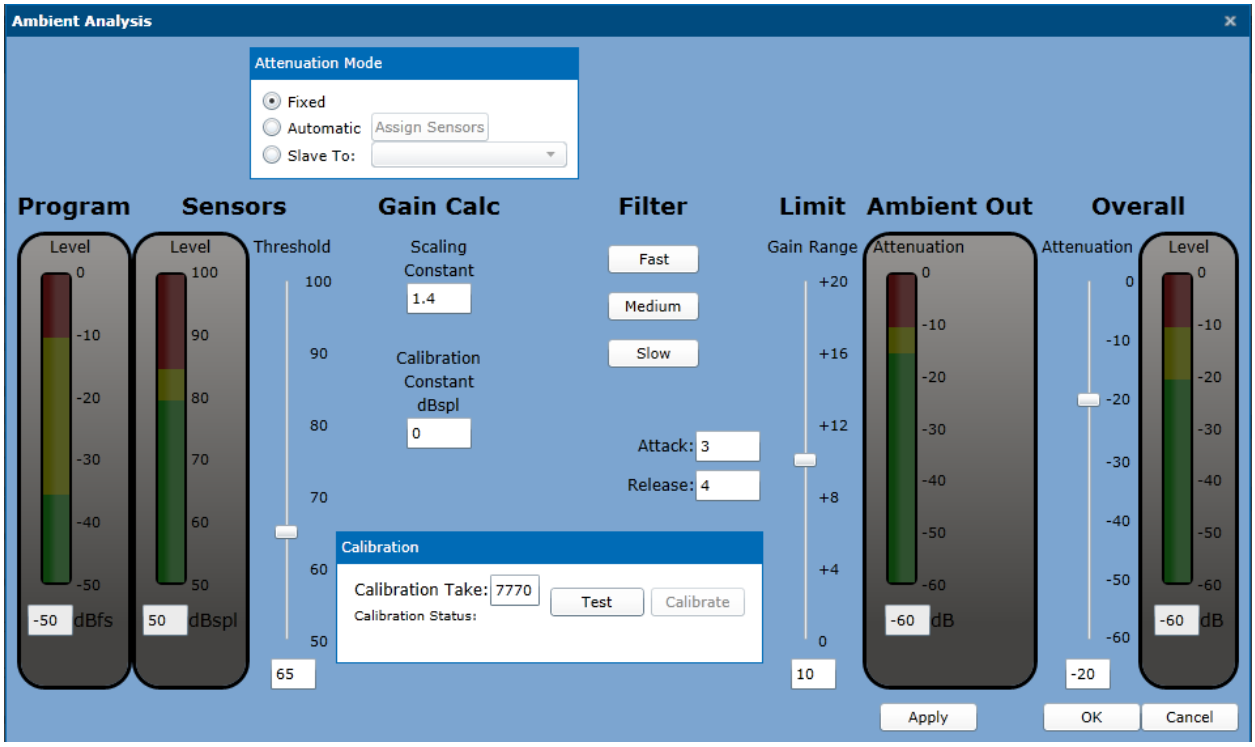


Figure 12-24: Ambient Analysis

Attenuation Mode

Each channel can be set to one of three different possible attenuation modes as described below

• Fixed- This mode deactivates the ambient noise compensation for this channel. The channel output level will remain at the level set by the **Overall** attenuator.

• Automatic- This mode will allow the level of the channel to automatically adjust based on the ambient noise level as detected by the ambient sensor input. The level will increase above the **Overall** attenuator setting as the ambient noise sensor detects higher ambient noise levels. The level will increase by an amount proportional to the detected level as determined by the **Scaling Constant**. The **Limit** slider determines the maximum level increase.

• Slave- This mode will cause the selected channel to follow the ambient noise compensation settings of another channel. Using this setting allows multiple outputs on the same T9160 frame to be adjusted by a single sensor or a gang of sensors. This setting is useful in very large spaces where multiple amplifier channels are required due to the power load requirements of the loudspeaker lines. Select the channel that this channel will be slaved to from the drop-down list.

Note: A channel can only be slaved to a channel that is located in the same T9160 mainframe.

Program

This level meter displays the real-time audio signal level at the input of the Ambient Analysis object. This signal is post-EQ and post-delay but does not have the test signal.

Sensors-Level

This level meter displays the real-time sound pressure level (SPL) from the ambient noise sensor.

Note: This level is the sum of both the ambient noise in the space and the program audio from the system. The Ambient Analysis algorithm filters out the audio system's contribution to the overall level and provides a real value of ambient noise level to the system for processing.

Sensors-Threshold

The threshold determines the level at which the ambient noise compensation is suspended because the level at the sensor is too low. When the detected level from the ambient noise sensor rises above the threshold setting, then the system will actively operate. It will filter the system program audio component from the detected level to accurately adjust the output attenuation based on the calculated noise level. When the level is below the threshold, the system will stop actively adjusting the output attenuation and return to the maximum attenuation setting which is the base level setting as defined by the **Overall** attenuation control.

The threshold is set by adjusting the slider with the mouse or by manually typing a value in the edit box below the slider using a positive numerical value.

Gain Calc- Scaling Constant

The **Scaling Constant** determines the amount of ambient noise level that will result in the output level to increase by 1dB. A scaling constant of 1 will result in the output level increasing by 1dB for each 1dB increase in ambient sensor level. Figure 12-27 shows a scaling constant of 1.4. With this setting, a 1.4dB increase in ambient sensor level will result in a 1dB increase in output level up to the point where the **Limit** has been reached.

Gain Calc- Calibration Constant

This value is calculated and automatically entered during the channel calibration process. It can be manually adjusted by typing in a new value in the edit box.

Caution: This value should only be manually adjusted after an automatic calibration has not been completely successful. Adjustments should be made in very small increments of 2 or 3 dB at a time.

Use the following guidelines when adjusting the calibration constant if the system is not properly responding after an automatic calibration.

- If the system turns down as soon as an announcement is active, then the calibration constant is too high. It should be reduced in small increments until the system remains stable while an announcement is active.

- If the system gets louder as while an announcement is active, then the calibration constant is too low. It should be increased in small increments until the system remains stable while an announcement is active.

Filter –Attack

This value determines the rate at which the output level will increase when an increase in the ambient sensor level has been received. The value is in the number of seconds and can be directly entered in the box using the keyboard.

Filter-Release

This value determines the rate at which the output level will decrease when a decrease in the ambient sensor level has been received. The value is in the number of seconds and can be directly entered in the box using the keyboard.

Filter-Presets

- Fast – Preset where the attack time is 1 second and the release time is 2 seconds.
- Medium – Preset where the attack time is 3 seconds and the release time is 4 seconds.
- Slow – Preset where the attack time is 7 seconds and the release time is 10 seconds.

Limit

The limit sets the maximum amount of gain that can be applied through the ambient analysis compensation process. The amount of gain available is determined by the attenuator setting of the **Overall** attenuation slider. For example, if the channel out slider is set to –20dB as shown in Figure 12-25, then the maximum available setting for the Limit slider will be +20dB. Setting the Limit to +12dB will cause the output level to be increased by a maximum of 12dB above the setting of the **Overall** attenuation slider. Thus, with very loud ambient noise levels the output level will be effectively set to –8dB and reduced to –20dB when the ambient noise level is very low or has dropped below the threshold. The ambient noise compensation will be continually adjusted within this range as long as the noise level remains above the threshold but below the amount required to drive the system to maximum level.

Note: The Ambient Analysis algorithm differentiates between program audio and ambient noise level detected by the ambient noise sensor. It is possible for the sensor level to be above the threshold with no ambient noise compensation applied when the level detected is program audio from the system.

The limit is set by adjusting the slider with the mouse or by manually typing a value in the edit box below the slider using a positive numerical value.

Overall level

This slider controls the main output attenuator for paging, BGM, and program signals. The meter indicates the current signal level that is feeding the analog input of the power amplifier.

Assign sensors

Clicking on the **Assign Sensors** button will launch the Ambient Sensor Assignment window as shown in Figure 12-25. This is where one or more ambient sensors are directly assigned to control the currently selected channel. Each channel can have one (1) to four (4) ambient noise sensors assigned. When multiple sensors are use, the system averages the signal levels from all assigned sensors to obtain an ambient noise level reading. There are three very critical rules related to using multiple ambient noise sensors in a single zone that are described below.

Rules for using multiple sensors for a single zone:

- All sensors must be connected to the same sensor collection unit.
- All sensors must be connected to the same input group on the collection unit.

- All sensors must be located in the same loudspeaker zone.

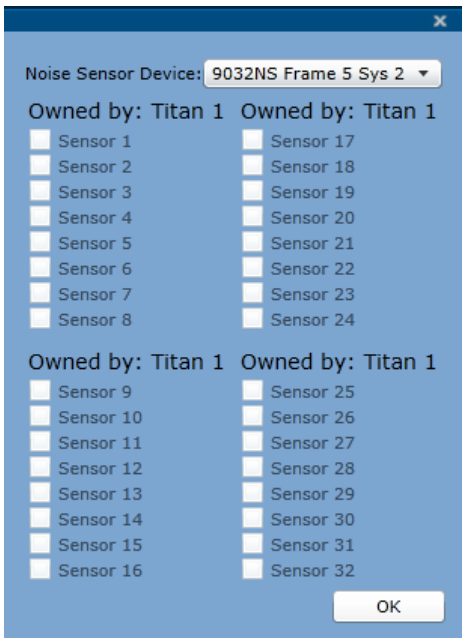


Figure 12-25: Ambient Sensor Assignment

To assign sensors, first select the appropriate collector device from the ***Noise Sensor Device*** drop-down list. Then select up to four (4) sensors to use for the channel.

Note: Sensor inputs on collector units are sub-divided into groups of eight (8). All sensors for a single channel must reside on the same collector unit group. If a sensor is currently selected for a channel, then all other groups will be grayed out and not available for selection. To change to a sensor that is not located in the currently selected group, first un-check all sensor assignments, then any sensor group will be available for selection.

Calibration Take

Enter the take number that you wish to play during the calibration if you wish to use something other than the default of 7770.

Calibrate

Press this button to start the calibration process. A calibration message will be played to the channel output.

Caution: The ambient noise level in the area being calibrated needs to be at least 15dB below the sensor threshold level setting during calibration in order to yield a valid calibration.

Test

The **Test** button will play the calibration take to the selected channel. This is used after the calibration process is complete to see if the system correctly differentiates between program and ambient noise. When the test take is playing and the calibration has been successful, the level should not change. If the system turns up or down during the test playback, then either the either the calibration constant should be adjusted or a recalibration should be attempted.

(d) T9160 Transmitters and Receivers Grids

The CobraNet transmitters and receivers are automatically set by the system and the defaults are sufficient for most applications. The ability to override the defaults is provided here if it is required.

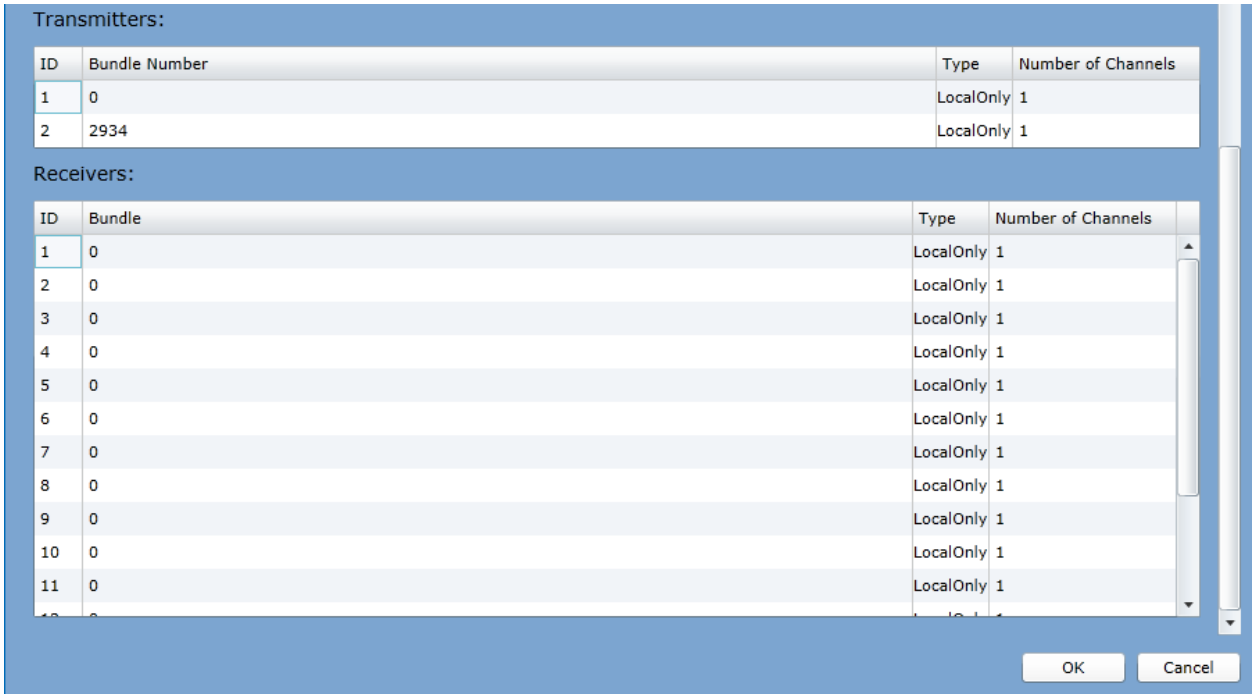


Figure 12-26: T9160 CobraNet Transmitters and Receivers

OK /Cancel

Click the **OK** button to save any changes you made on this window. It will appear dimmed if there are no changes to save. Changes made to the EQ, Monitor/Test, of Ambient settings are saved when you close their respective windows. This **OK** button may appear grayed out even if you have made changes in those sub-systems.

Click the **CANCEL** button to discard any changes you have made to this screen. This will not undo any changes made to the EQ, Monitor/Test, or Ambient sub-systems.

(e) T9160 Monitor Test

*Note: This button is not available when the **External Titan Monitor Test Configuration** checkbox is checked in the **My Controller** section.*

Click the [Monitor Test] button to open the Monitor Test window for the T9160 as shown in Figure 12-27. From here, you can configure the supervision parameters of the device, view the latest test results, or manually execute a test or set. The T9160 generates a test tone that is routed to each channel and then the level is measured at three places on each channel. The unit tests the analog output of the DSP before it enters the amplifier, the voltage level at the amplifier output, and the current drawn as a result of the loudspeaker load.

Three different test signals are provided, each of which defines a “test”. One selects which test to be looking at by selecting it in the “Selected Test” drop-list box at the top left of the window. The tests are:

- 400Hz – Ideal for full range cone-type loudspeakers.
- 1kHz – Ideal for horn-type loudspeakers.
- 20kHz – Ideal for periodic supervision since this frequency will be inaudible in most systems.

Note: Clicking the OK button on this window will immediately send and save any changes to the device.

The window contains checkboxes that allow you to enable or disable the test points for this selected test

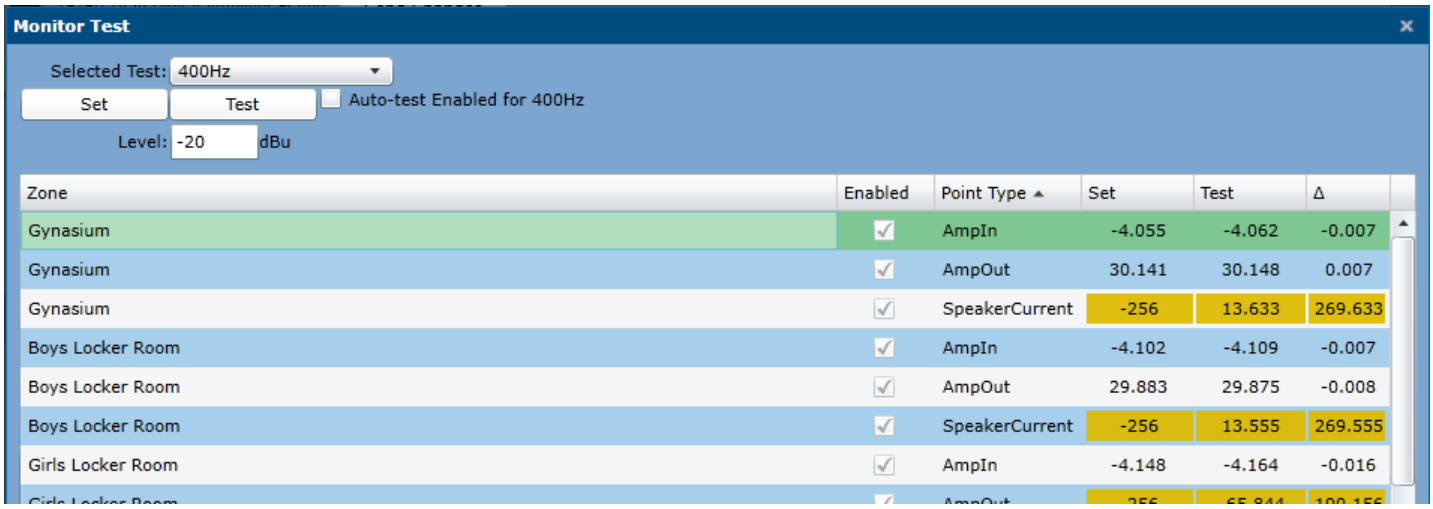


Figure 12-27: T9160 Monitor Test Window

Caution: Clicking either the Test or Set buttons on the 400Hz or 1kHz will cause audible tones to be played through the system.

Test

Click the test buttons to start a test for the selected test (frequency). As the test is run, results should appear in the results table as shown in the figure above. The actual measured values at each point are displayed in the ***Test*** column for each test point. The unit compares the test values measured with the values stored when a system set was performed. Any variances in the level are displayed in the Δ (Delta or Variance) column of the table. Variances that are outside of the acceptable tolerance are shown in red. Items in red will generate a fault report that is sent to the system supervisor software. Items shown with

gold background are for points that do not (yet) have a valid Set value (i.e., the test result is indeterminate, rather than a fault or a pass).

Set

Click this button to execute a test for the selected frequency, but store the measured values as a baseline comparison for a system test of the same frequency. You should run a system set when you know the system is operating correctly. The unit will then use these values to determine if there is a fault.

Level

The edit box just below the [Set][Test] buttons are the test tone levels for each frequency. Typical values for these are in the -30 to -10 dB range (these are in dBu).

Schedule

Each frequency can be configured to run on a schedule. To enable a schedule, one first one first clicks on the checkbox labeled “Auto-Test Enabled for xxxHz” beside the [Test] button. This brings up schedule configuration options as shown in Figure 12-28. The options for the schedule are described below.

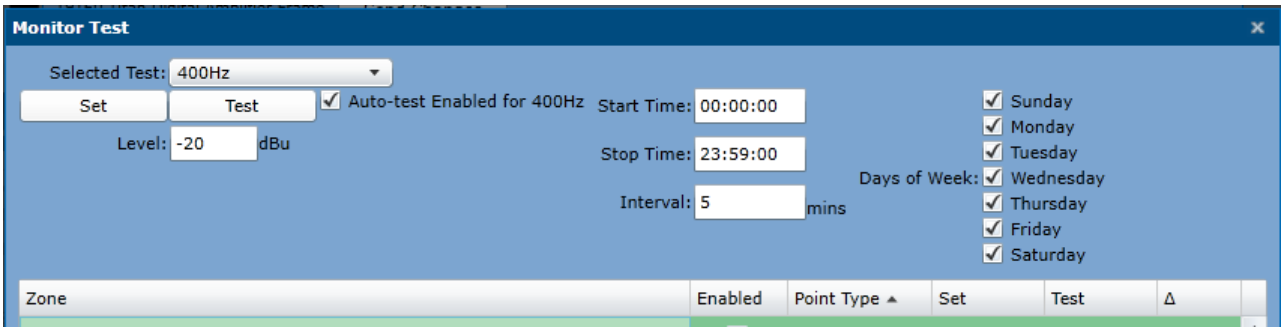


Figure 12-28: Test Schedules

Start Time/Stop Time

You can restrict the times that a test will run based on the times entered in these two fields. To run continuously, enter 12:00 AM as the start time and 11:59 PM as the stop time.

Interval

Enter the time (in minutes) between each test.

Days of Week:

Which days of the week to run the test.

Note: If you only want the test to play once per day, you must enter an interval greater than the difference between the start and stop times. For example, you only want the 400Hz test to play at 3:00 AM when the building is empty. You could enter a start time of 3:00 AM, a stop time of 3:05 AM, with an interval of 15 minutes. This would cause the test to only run once at 3:00 AM

4.5.3.2 T9116 Titan Zone Output Device

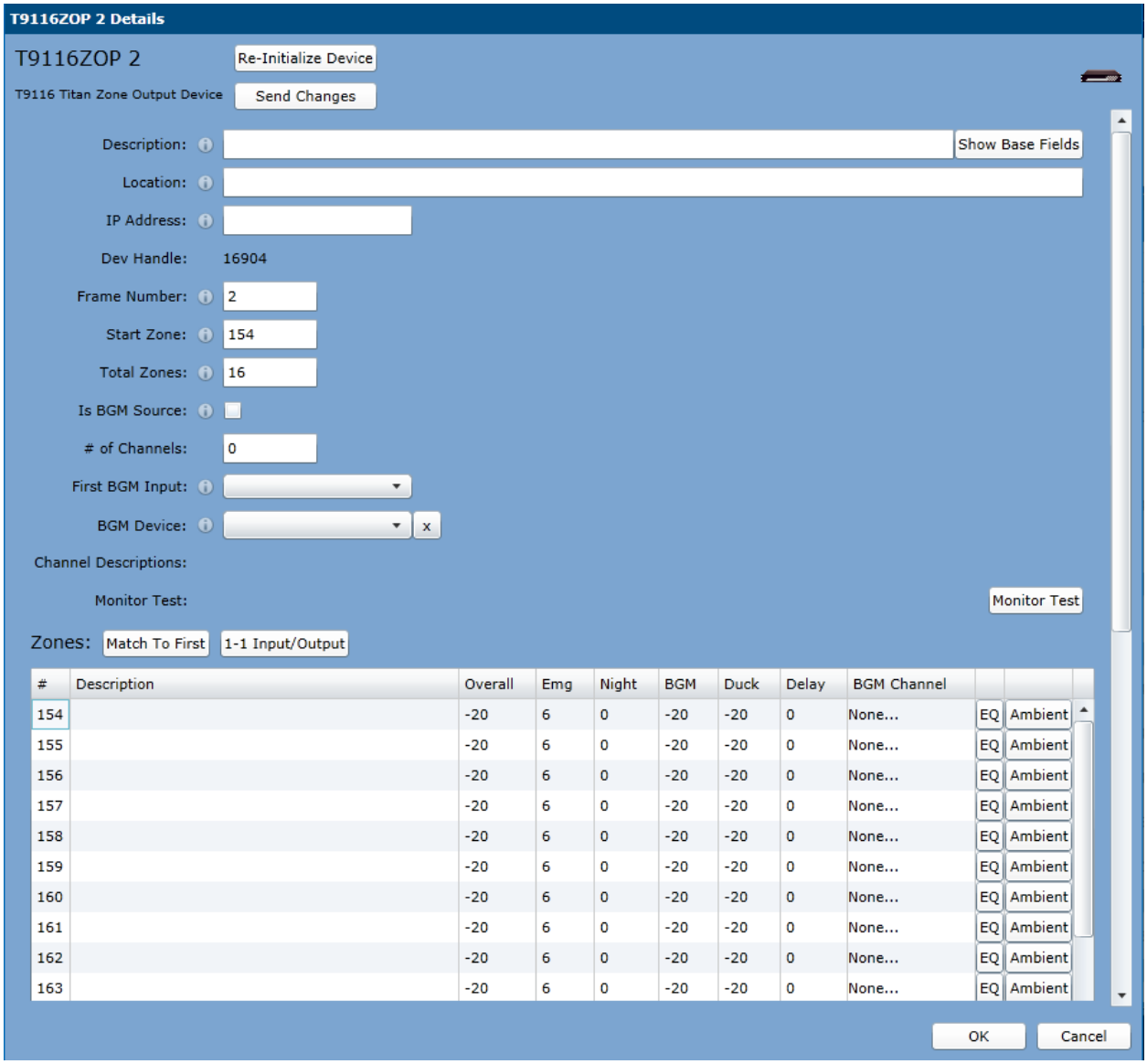


Figure 12-29: T9116 Titan Zone Output Device

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the device here.

Dev Handle

This is a software address used by the system. It is assigned by the system and provided here for reference if needed.

Frame Number

This is a unique ID number used to identify the Titan frames used in the system. When you add the device, the system will automatically assign the next available frame number.

Start Zone

This is the zone number that represents the first zone in the device. The system will automatically use the next available zone number as the starting zone number when you add a new device. It can be edited here if needed. For example, you have a system that already has 32 zones. When you add a new T9116, the starting zone will be 33.

Total Zones

This number represents the total number of zones that will be present on this device. A T9116 supports a total of 16 zones, but you may want to reduce the number if all 16 are not needed.

Is BGM Source

When checked, the system will treat the device as a BGM source for the system. When configured as a BGM source, the device will appear as an available BGM source for output devices. The inputs defined using the ***First BGM Input*** and ***# of Channels*** fields will be routed over the audio network.

of Channels

This is the total number of channels that will be used as BGM inputs on the device. The input channels must be consecutive, so if you specify input 1 in the ***First BGM Input*** field and set a total number of channels at 4, then you will use inputs 1 through 4 as the BGM inputs.

First BGM Input

This drop-down list allows you to select the first input channel on the device that will be used as a BGM input.

BGM Device

Once you have defined one or more devices in the system as a BGM source, it is then available as an item in this drop-down list. You select the device from this list that will be used as the source device for the BGM. You can then select individual channels to be used for each zone output. You can click the **[X] button** to the right of the drop-down list to clear the selection.

Channel Descriptions

This description is used to give a name to each BGM channel that will be sourced from this device. This name will appear in selection lists for devices when you are configuring outputsT9116 Zones

This list allows you to configure each output zone in the device.

Zone Number

This is the number that will be used to identify this output zone in the system. This number is calculated based on the values in the ***Start Zone*** and ***Total Zones*** fields. Each output channel in a T9116 is an individual zone.

Description

Double-click on this field to edit a text descriptor for the zone.

Levels

• Overall – This is the master output level control for the zone. Adjusting this level will change the levels of both announcements and BGM. This number represents the amount of attenuation relative to 0dBFS. So a value of –30 will attenuate the level by 30dB. To reduce the level by an additional 10dB, you would enter a value of –40.

• Emg – This field defines an offset to the ***Overall*** level to use when an announcement is made with an announce class that has the ***Emergency*** flag set. This allows you to increase the level of the output for emergency announcements. The default value is 6dB. If you use this setting with an ***Overall*** setting of –20dB, then an emergency announcement will be played using an output level that is 6dB louder than normal announcements.

• Night – This field defines an offset to the ***Overall*** level to use when the night schedule is invoked as programmed in the ***Day / Night Schedule*** section of the ***Configuration*** tab. This allows you to decrease the level of the output based on the time of day for each day of the week. The default value is 0dB and is set by entering a value to turn the output down. For example, if you enter a value of 6, then the channel level will be turned down by 6dB when the Night schedule is placed in effect.

• BGM – This field sets the BGM level for the zone. This number represents the amount of attenuation relative to 0dBFS. So a value of –30 will attenuate the level by 30dB. To reduce the level by an additional 10dB, you would enter a value of – 40.

• Duck – This field controls how much the level of BGM will be reduced when an announcement is made to the zone. A value of –10 will reduce the BGM level by 10dB when an announcement is made. A value of –60 will effectively mute the BGM level when an announcement is made.

Delay

Each output on the T9116 has signal delay that can be used for loudspeaker alignment. Enter a numerical value to represent the number of milliseconds (ms) to use for the delay.

BGM Channel

This drop-down list allows you to select an individual channel to use as the zone BGM. The channels available are for the device selected in the ***BGM Device*** field.

Match to First

Click this button to take the three levels (Overall, Emg, BGM, and Duck), Delay and the BGM Channel selection of the first zone and copy them to the remaining zones in the device.

Input/Output

Click this button to route as analog input 1 to zone 1, input 2 to zone 2, etc. for the whole frame as the BGM Channel selection.

(a) T9116 Equalization Window

Each channel has a nine-band parametric EQ available to adjust the signal as necessary to meet the needs of the loudspeakers and allow the system to be adjusted to maximize intelligibility in the acoustic space. Press the [**EQ**] button for a channel to open the EQ window as shown in Figure 12-30.

Figure 12-30: EQ Settings Window

Bands are selected by clicking on one of the nine band names immediately below the frequency response curve graph. A specific band can be selected and then adjusted using the edit boxes below the names. It is also possible to select a filter and edit its frequency, gain and bandwidth directly in the Frequency Response display window using the mouse to drag the filter position, cut/boost, or bandwidth.

Type

Select a filter type in the drop-down list. The available options are:

- Peaking – A typical bandpass type filter
- Notch – Sharp bandpass cut-only filter
- Hi Pass – Filter for rolling off frequencies lower than the cutoff frequency
- Lo Pass – Filter for rolling off frequencies higher than the cutoff frequency
- All Pass – Filter used for phase adjustments near the center frequency
- Disabled – Turn this filter off

Note: The options for the filter parameters will change slightly depending on the filter type selected.

Center Frequency (Hz)

The center frequency (or cutoff frequency) of the filter is set by entering a numeric value in the edit box. The frequency parameter can also be changed by dragging the diamond icon in the graph laterally left or right.

Gain (dB)

This is only available for Peaking and Notch filter types.

The filter gain is set by entering a numeric value (using + or - values for relative dB) in the edit box. The gain can also be changed by clicking and dragging the diamond icon for the filter up or down in the frequency response graph.

Bandwidth (Oct.)

This is only available for Peaking and Notch filter types.

The filter bandwidth is set by entering a numeric value in the edit box. The value used is measured in Octaves. For example: If a 1/3 octave filter is required, then a value of 0.333 would be used. The bandwidth can also be altered using vertical line icons located on each side of the diamond filter icon in the frequency response graph. Click a line and move the mouse laterally to change the bandwidth.

Class

This is only available for Hi Pass and Lo Pass filter types.

The mathematical function used to calculate the filter is selected by picking an available type from the drop-down list box. There are three available class types listed below.

- Butterworth
- Bessel
- Linkwitz-Riley

Slope (dB/Oct.)

This is only available for Hi Pass and Lo Pass filter types.

This value determines the frequency roll-off rate for the filter in decibels per octave. Available values range from a shallow 6 dB/Octave to a very steep 48 dB/Octave.

Bypass EQ

When checked, this removes the effects of all filter bands from the signal path without resetting the filters to a flat response curve. When the EQ is bypassed, the signal will pass through the object without any modifications to the frequency characteristics.

Overall Gain

The EQ provides a small range of gain adjustment in order to compensate for the overall effect of the EQ curve and allow signal-to-noise ratio and dynamic range to be maximized. This gain is set by entering a value (in + or - relative dB) in the edit box. It should only be used within a range from 6dB of attenuation to 6dB of gain.

Set Flat

This button resets all filters to a gain setting of 0dB (flat response) and disables all bands except for band 1.

Show Phase

When checked, the phase response through the EQ will be shown as a red curve on the graph.

Save To File

Click this button to save the EQ curve as an XML file. This allows you to archive the file as well as save it as a preset and load it into other channels.

Load From File

Click this button to open a standard Windows file dialog window. From here, you can locate an XML file that has been stored with an EQ curve and load it into the frame.

Get From Frame

Click this button to force the window to reload the current EQ settings from the frame.

Copy

Click this button to copy all of the current EQ settings to the clipboard. You can then move to another channel and use the ***Paste*** button to copy settings between channels.

Paste

Click this button to paste the EQ settings stored on the clipboard to the current channel. This button will be dimmed if there are no available EQ settings to paste from the clipboard.

(b) T9116 Ambient Analysis Window

Titan series T9116 frames are equipped with ambient noise compensation (Ambient Analysis) capabilities when paired with a noise sensor collector, such as a T9032NS. Ambient Analysis adjusts the output attenuation of a channel in response to ambient noise level measured in the area served by the channel. Anywhere from one (1) to four (4) ambient noise sensors can be assigned to each channel. Channels can also be slaved to other channels. Click the **[Ambient]** button for the channel you wish to configure to open a window such as that shown in Figure 12-31.

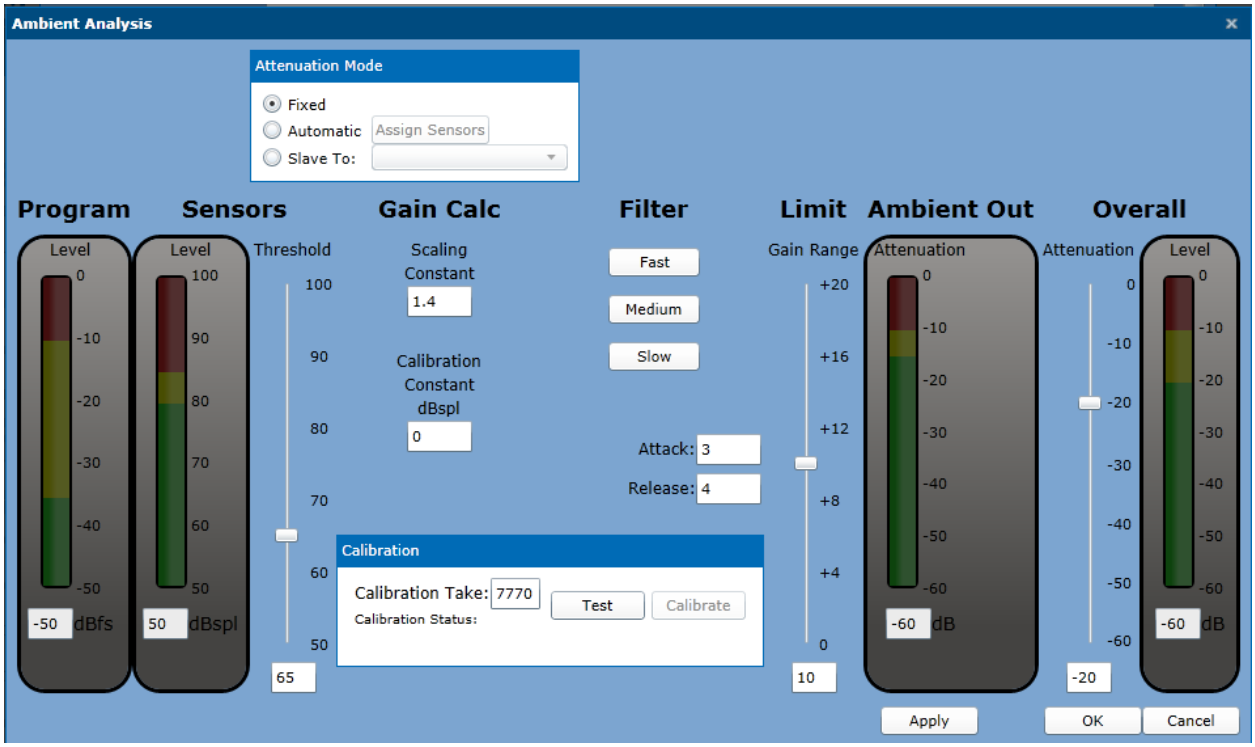


Figure 12-31: Ambient Analysis

Attenuation mode

Each channel can be set to one of three different possible attenuation modes as described below.

• Fixed – This mode deactivates the ambient noise compensation for this channel. The channel output level will remain at the level set by the **Overall** attenuator.

• Automatic – This mode will allow the level of the channel to automatically adjust based on the ambient noise level as detected by the ambient sensor input. The level will increase above the **Overall** attenuator setting as higher ambient noise levels are detected by the ambient noise sensor. The level will increase by an amount proportional to the detected level as determined by the **Scaling Constant.** The maximum level increase is determined by the **Limit** slider.

• Slave – This mode will cause the selected channel to follow the ambient noise compensation settings of another channel. Using this setting allows multiple outputs on the same T9116 frame to be adjusted by a single sensor or a gang of sensors. This setting is useful in very large spaces where multiple amplifier channels are required due to the power load requirements of the loudspeaker lines. Select the channel that this channel will be slaved to from the drop-down list.

Note: A channel can only be slaved to a channel that is located in the same T9116 mainframe.

Program

This level meter displays the real-time audio signal level at the input of the Ambient Analysis object. This signal is post-EQ and post-delay but does not have the test signal.

Sensors-Level

This level meter displays the real-time sound pressure level (SPL) from the ambient noise sensor.

Note: This level is the sum of both the ambient noise in the space and the program audio from the system. The Ambient Analysis algorithm filters out the audio system's contribution to the overall level and provides a real value of ambient noise level to the system for processing.

Sensors-Threshold

The threshold determines the level at which the ambient noise compensation is suspended because the level at the sensor is too low. When the detected level from the ambient noise sensor rises above the threshold setting, then the system will actively operate. It will filter the system program audio component from the detected level to accurately adjust the output attenuation based on the calculated noise level. When the level is below the threshold, the system will stop actively adjusting the output attenuation and return to the maximum attenuation setting which is the base level setting as defined by the **Overall** attenuation control. The threshold is set by adjusting the slider with the mouse or by manually typing a value in the edit box below the slider using a positive numerical value.

Gain Calc – Scaling Constant

The **Scaling Constant** determines the amount of ambient noise level that will result in the output level to increase by 1dB. A scaling constant of 1 will result in the output level increasing by 1dB for each 1dB increase in ambient sensor level. Figure 12-33 shows a scaling constant of 1.4. With this setting, a 1.4dB increase in ambient sensor level will result in a 1dB increase in output level up to the point where the **Limit** has been reached.

Gain Calc – Calibration Constant

This value is calculated and automatically entered during the channel calibration process. It can be manually adjusted by typing in a new value in the edit box.

Caution: This value should only be manually adjusted after an automatic calibration has not been completely successful. Adjustments should be made in very small increments of 2 or 3 dB at a time.

Use the following guidelines when adjusting the calibration constant if the system is not properly responding after an automatic calibration.

- If the system turns down as soon as an announcement is active, then the calibration constant is too high. It should be reduced in small increments until the system remains stable while an announcement is active.

- If the system gets louder as while an announcement is active, then the calibration constant is too low. It should be increased in small increments until the system remains stable while an announcement is active.

Filter – Attack

This value determines the rate at which the output level will increase when an increase in the ambient sensor level has been received. The value is in the number of seconds and can be directly entered in the box using the keyboard.

Filter- Release

This value determines the rate at which the output level will decrease when a decrease in the ambient sensor level has been received. The value is in the number of seconds and can be directly entered in the box using the keyboard.

Filter – Presets

- Fast – Preset where the attack time is 1 second and the release time is 2 seconds.
- Medium – Preset where the attack time is 3 seconds and the release time is 4 seconds.
- Slow – Preset where the attack time is 7 seconds and the release time is 10 seconds.

Limit

The limit sets the maximum amount of gain that can be applied through the ambient analysis compensation process. The amount of gain available is determined by the attenuator setting of the **Overall** attenuation slider. For example, if the channel out slider is set to –20dB as shown in ***Ambient Analysis***, then the maximum available setting for the Limit slider will be +20dB. Setting the Limit to +12dB will cause the output level to be increased by a maximum of 12dB above the setting of the **Overall** attenuation slider. Thus, with very loud ambient noise levels the output level will be effectively set to –8dB and reduced to –20dB when the ambient noise level is very low or has dropped below the threshold. The ambient noise compensation will be continually adjusted within this range as long as the noise level remains above the threshold but below the amount required to drive the system to maximum level.

Note: The Ambient Analysis algorithm differentiates between program audio and ambient noise level detected by the ambient noise sensor. It is possible for the sensor level to be above the threshold with no ambient noise compensation applied when the level detected is program audio from the system.

Overall Level

This slider controls the main output attenuator for paging, BGM, and program signals. The meter indicates the current signal level that is feeding the analog input of the power amplifier.

Assign Sensors

Clicking on the **Assign Sensors** button will launch the Ambient Sensor Assignment window as shown in Figure 12-32. This is where one or more ambient sensors are directly assigned to control the currently selected channel. Each channel can have one (1) to four (4) ambient noise sensors assigned. When multiple sensors are use, the system averages the signal levels from all assigned sensors to obtain an ambient noise level reading. There are three very critical rules related to using multiple ambient noise sensors in a single zone that are described below.

Rules for using multiple sensors for a single zone:

- All sensors must be connected to the same sensor collection unit.
- All sensors must be connected to the same input group on the collection unit.
- All sensors must be located in the same loudspeaker zone.

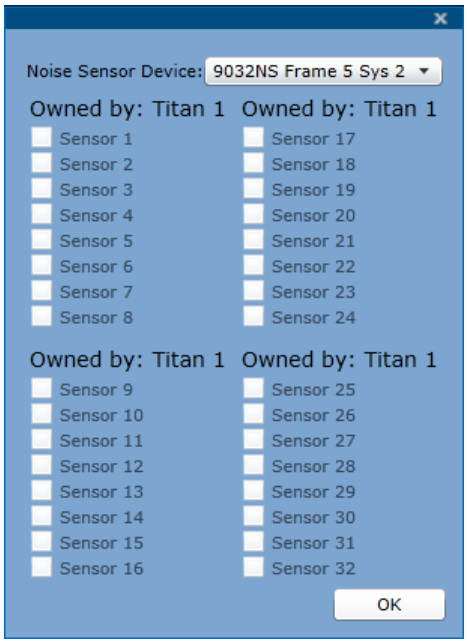


Figure 12-32: Ambient Sensor Assignment

To assign sensors, first select the appropriate collector device from the ***Noise Sensor Device*** drop-down list. Then select up to four (4) sensors to use for the channel.

Note: Sensor inputs on collector units are sub-divided into groups of eight (8). All sensors for a single channel must reside on the same collector unit group. If a sensor is currently selected for a channel, then all other groups will be grayed out and not available for selection. To change to a sensor that is not located in the currently selected group, first un-check all sensor assignments, then any sensor group will be available for selection.

Calibration Take

Enter the take number that you wish to play during the calibration if you wish to use something other than the default of 7770.

Calibrate

Press this button to start the calibration process. A calibration message will be played to the channel output.

Caution: The ambient noise level in the area being calibrated needs to be at least 15dB below the sensor threshold level setting during calibration in order to yield a valid calibration.

Test

The **Test** button will play the calibration take to the selected channel. This is used after the calibration process is complete to see if the system correctly differentiates between program and ambient noise. When the test take is playing and the calibration has been successful, the level should not change. If the system turns up or down during the test playback, then either the either the calibration constant should be adjusted or a recalibration should be attempted.

(c) T9116 Transmitters and Receivers Grids

The CobraNet transmitters and receivers are automatically set by the system and the defaults are sufficient for most applications. The ability to override the defaults is provided here if it is required.

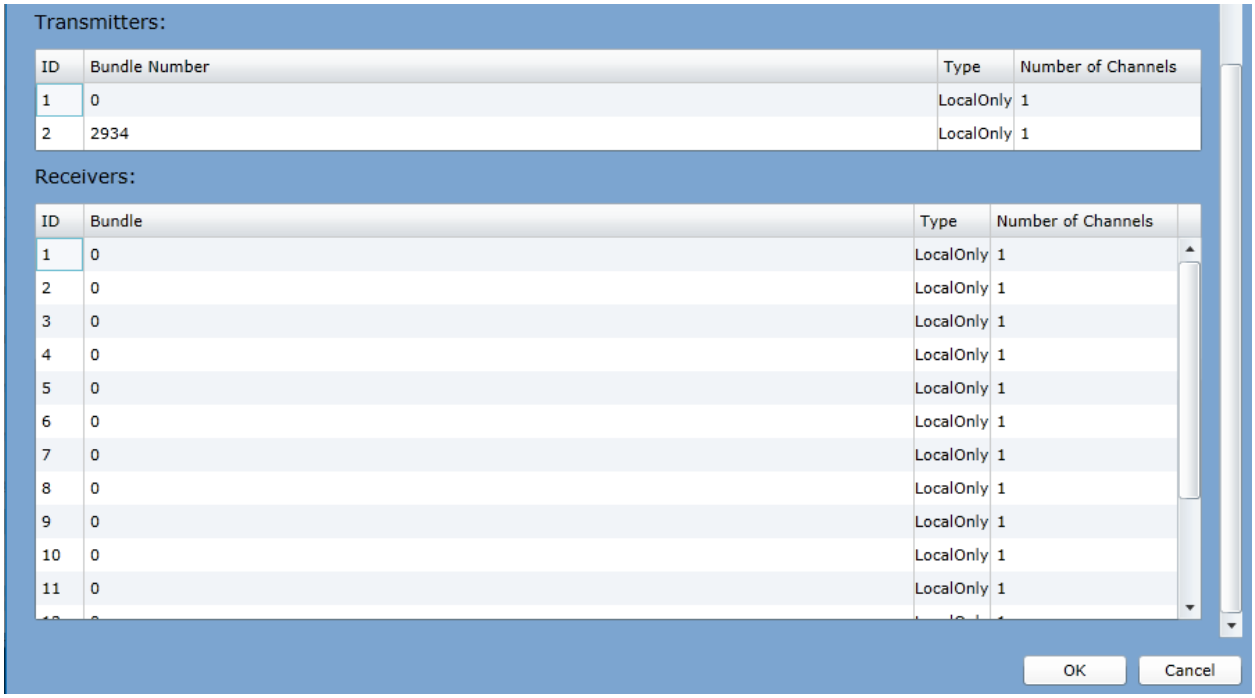


Figure 12-33: T9116 CobraNet Transmitters and Receivers

(d) T9116 Monitor Test Window

*Note: This button is not available when the **External Titan Monitor Test Configuration** checkbox is checked in the **My Controller** section.*

Click the [Monitor Test] button to open the Monitor Test window for the T9160 as shown in Figure 12-34. From here, you can configure the supervision parameters of the device, view the latest test results, or manually execute a test or set. The T9160 generates a test tone that is routed to each channel and then the level is measured at three places on each channel. The unit tests the analog output of the DSP before it enters the amplifier, the voltage level at the amplifier output, and the current drawn as a result of the loudspeaker load.

Three different test signals are provided, each of which defines a “test”. One selects which test to be looking at by selecting it in the “Selected Test” drop-list box at the top left of the window. The tests are:

- 400Hz – Ideal for full range cone-type loudspeakers.
- 1kHz – Ideal for horn-type loudspeakers.
- 20kHz – Ideal for periodic supervision since this frequency will be inaudible in most systems.

Note: Clicking the OK button on this window will immediately send and save any changes to the device.

The window contains checkboxes that allow you to enable or disable the test points for this selected test

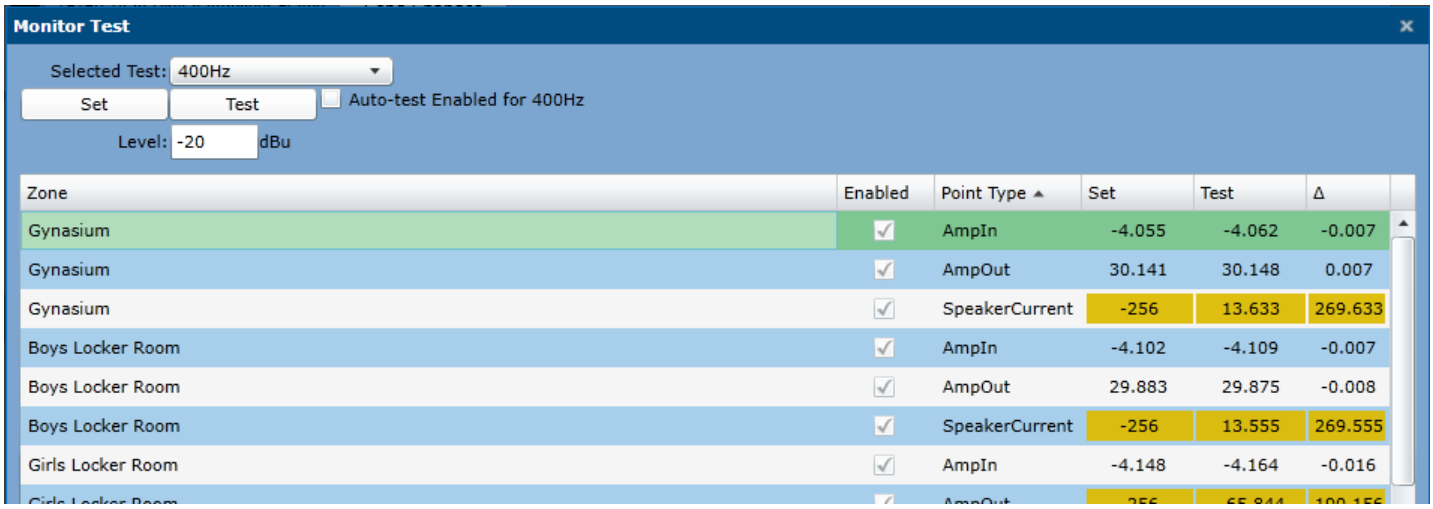


Figure 12-34: T9116 Monitor Test Window

Caution: Clicking either the Test or Set buttons on the 400Hz or 1kHz will cause audible tones to be played through the system.

Test

Click the test buttons to start a test for the selected test (frequency). As the test is run, results should appear in the results table as shown in the figure above. The actual measured values at each point are displayed in the ***Test*** column for each test point. The unit compares the test values measured with the values stored when a system set was performed. Any variances in the level are displayed in the Δ (Delta or Variance) column of the table. Variances that are outside of the acceptable tolerance are shown in red. Items in red will generate a fault report that is sent to the system supervisor software. Items shown with

gold background are for points that do not (yet) have a valid Set value (i.e., the test result is indeterminate, rather than a fault or a pass).

Set

Click this button to execute a test for the selected frequency, but store the measured values as a baseline comparison for a system test of the same frequency. You should run a system set when you know the system is operating correctly. The unit will then use these values to determine if there is a fault.

Level

The edit box just below the **[Set][Test]** buttons are the test tone levels for each frequency. Typical values for these are in the -30 to -10 dB range (these are in dBu).

Schedule

Each frequency can be configured to run on a schedule. To enable a schedule, one first one first clicks on the checkbox labeled “Auto-Test Enabled for xxxHz” beside the **[Test]** button. This brings up schedule configuration options as shown in Figure 12-35. The options for the schedule are described below.

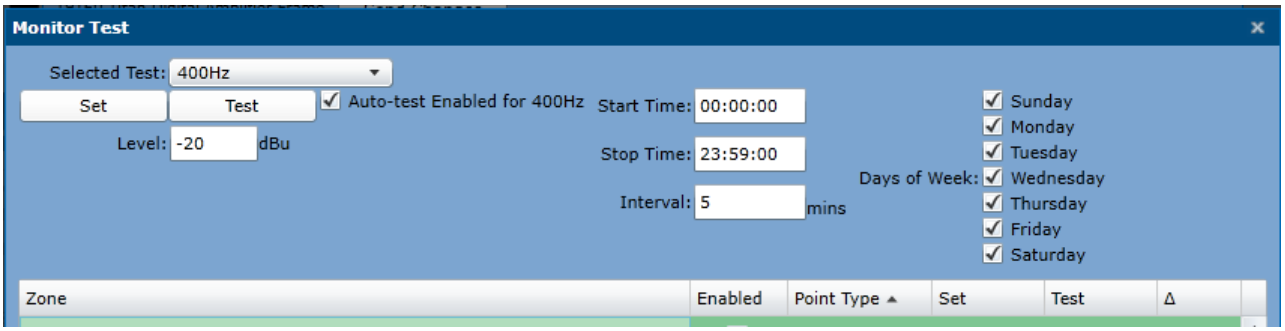


Figure 12-35: Test Schedules

Start Time/Stop Time

You can restrict the times that a test will run based on the times entered in these two fields. To run continuously, enter 12:00 AM as the start time and 11:59 PM as the stop time.

Interval

Enter the time (in minutes) between each test.

Days of Week:

Which days of the week to run the test.

Note: If you only want the test to play once per day, you must enter an interval greater than the difference between the start and stop times. For example, you only want the 400Hz test to play at 3:00 AM when the building is empty. You could enter a start time of 3:00 AM, a stop time of 3:05 AM, with an interval of 15 minutes. This would cause the test to only run once at 3:00 AM

4.5.3.3 External Titan Zone

This is a specialty device that is used when a Titan frame is used at a station in a transit application. This type of system utilizes a centralized command center that sends messages down to a series of stations using an audio network. Each station is capable of having a local source that gets overridden when an announcement is sent to the station from the command center. The audio is placed on a virtual audio bus on the network and then commands are sent to each station that is to route the audio bus to local zones.

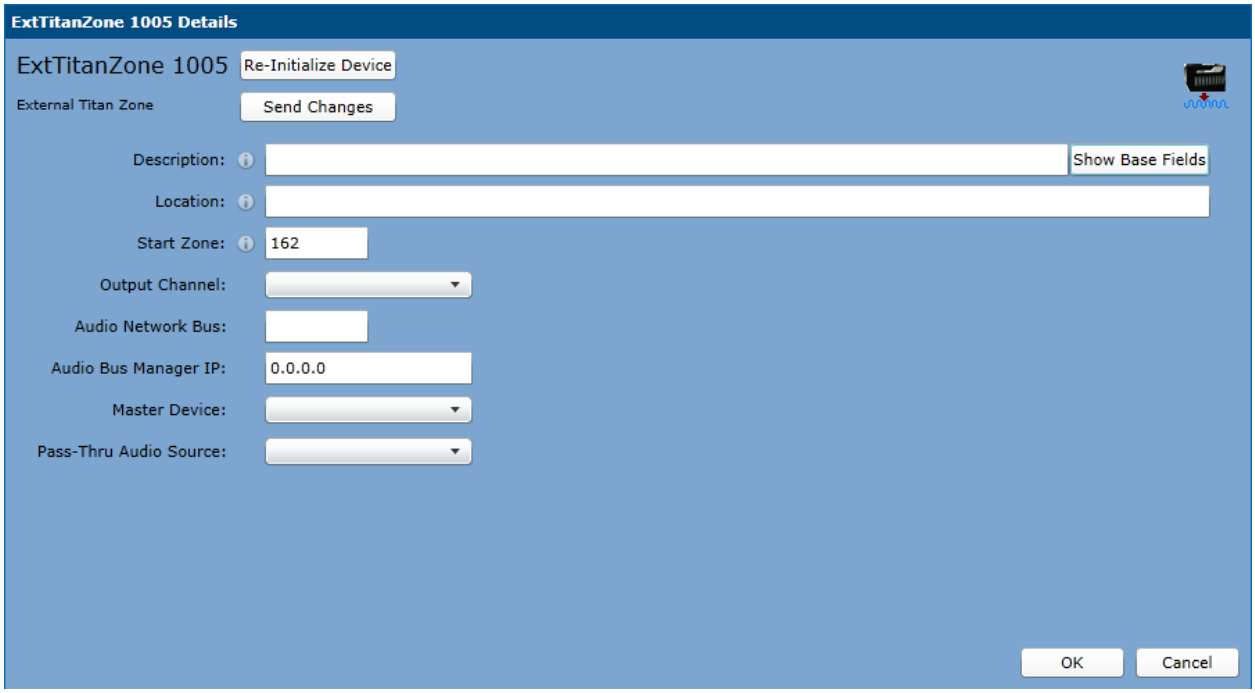


Figure 12-36: External Titan Zone Setup

Fields on this form beyond the basics for all devices are as follows:

Start Zone

This is the zone number that represents this device. The system will automatically use the next available zone number as the starting zone number when you add a new device. It can be edited here if needed. For example, you have a system that already has 32 zones. When you add a new External Titan Zone, the zone will be 33.

Output Channel

Select the output channel that will be used for this zone from the drop-down list.

Audio Network Bus

This field sets the audio bus number for installations that utilize networked audio busses that are typical of transit-type installations. This setting will be determined by the audio network configuration at the system head-end.

Audio Bus Manager

Enter the IP address of the network device that will be responsible for managing the audio bus.

Master Device

Select the Titan frame from the drop-down list that contains this audio output.

Pass-Thru Audio Source

If you have any other inputs on the Titan frame selected in the ***Master Device*** drop-down list defined as ***External Titan Source***, then they will be available in this list as a source. The source selected will be routed directly to this output when the Audio Bus Manager is not transmitting announcements or messages. This allows for a local source to be used and then overridden by announcements or messages coming from the system head-end.

4.5.3.4 External Titan Source

This is a specialty device used for certain situations.

Note, you cannot use this device if the Titan frame is also enabled for BGM, as the routings out to CobraNet will conflict.

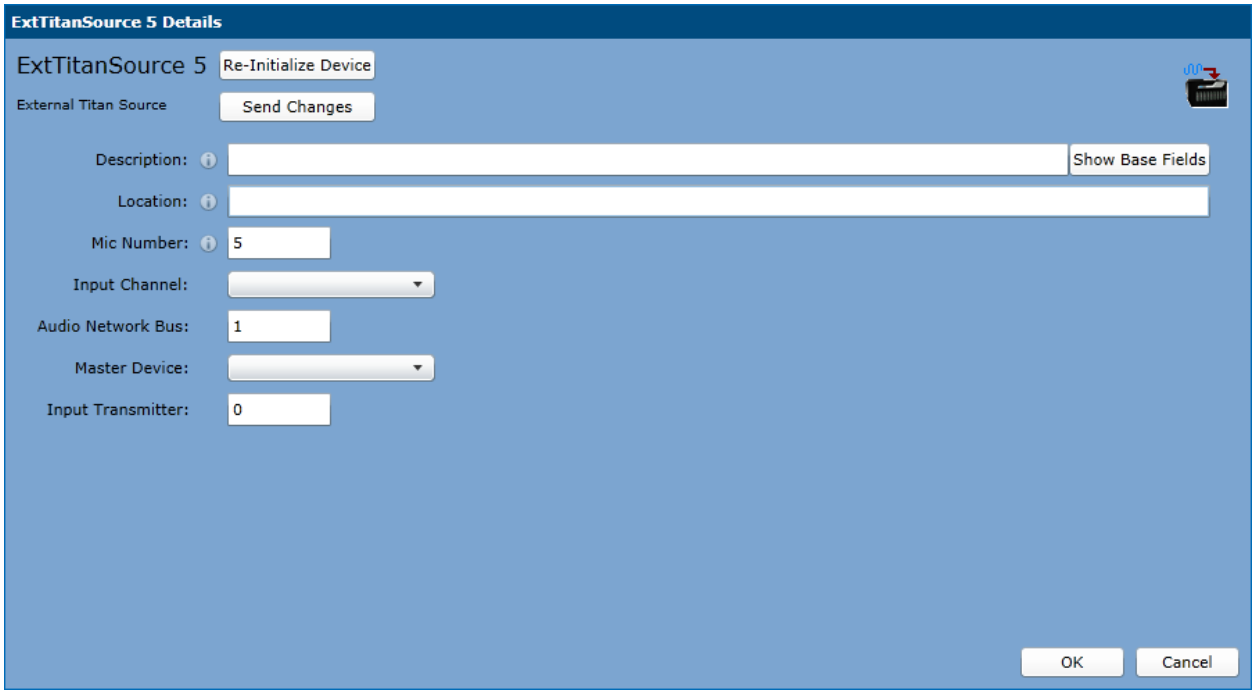


Figure 12-37: External Titan Source Setup

Description

Enter text here to give the device a descriptive name.

Location

Enter text here to describe the physical location of the device.

Mic Number

Each input on the device must have its own unique mic number. This is the number used to identify the input as a usable source within the announcement controller. When you add the device, each number is

automatically defined. It can be changed if needed. Once it has been defined here, it will appear as an available source when defining actions.

Input Channel

Select the input channel from the drop-down list for this input. This corresponds to the physical input connector on the Titan frame where this input is connected.

Audio Network Bus

This field sets the internal audio bus number that allows this input to be available for use as an audio source within the Titan frame. This number corresponds to the internal Tie Line number of which there are eight (8) available in each frame. If you are using more than one (1) External Titan Source input on a frame, each should have its own unique bus assignment (1-8).

Master Device

Select the Titan frame from the drop-down list that contains this audio input.

Input Transmitter

This field sets the CobraNet transmitter that will be used for this input in order to route its audio to other devices over the network. Leave this field at the default value of 0 if the input will only be used locally within the frame. Setting it to 1 or 2 will place this input in one of the two available output transmitters. Normally transmitter 1 is used for BGM (when this frame serves as a BGM source for other devices or Titan frames) and transmitter 2 is used for monitoring audio at a remote location. One of these features/functions will have to be sacrificed when configuring an External Titan Source to use one of the CobraNet transmitters to reach other devices or Titan frames.

4.5.3.5 1542NA/1581NA Network Amplifiers

This device is a PoE (Power over Ethernet) amplifier that receives CobraNet digital audio and drives an 8 Ohm speaker. The two models provide either 2 channels of up to 4 Watts each (1542NA) or 1 channel of up to 8 Watts (1581NA).

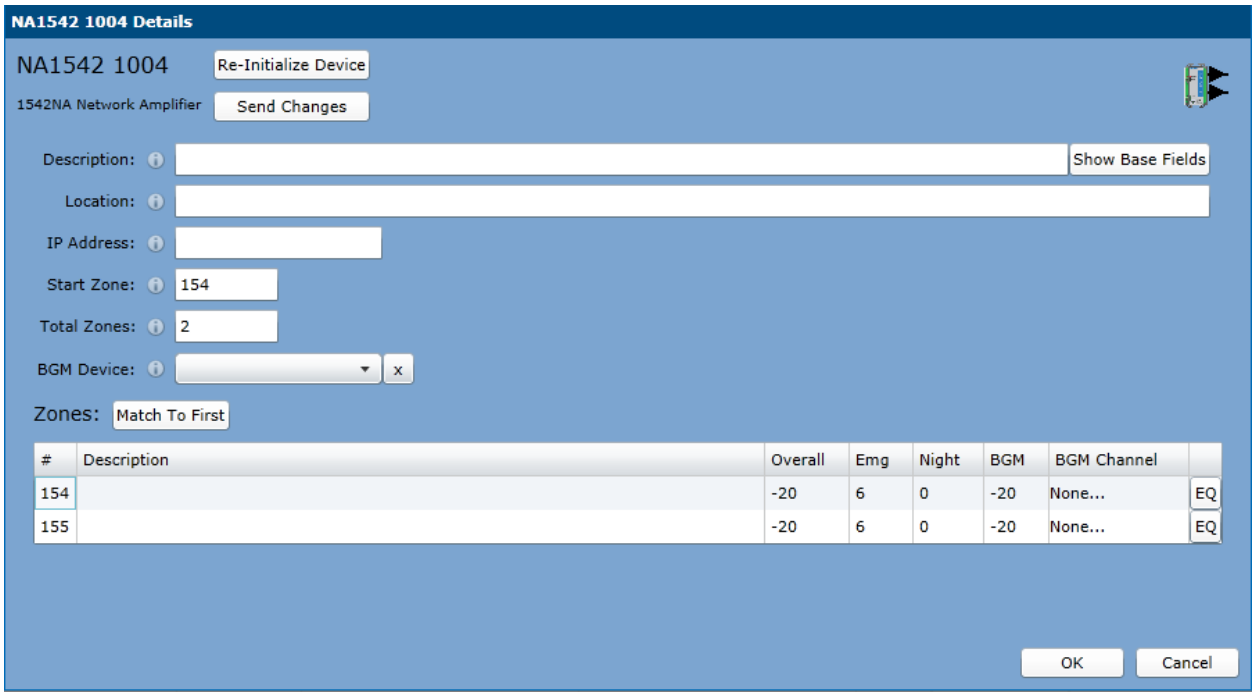


Figure 12-38: 1542NA Configuration

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the device here.

Start Zone

This is the zone number that represents the first zone in the device. The system will automatically use the next available zone number as the starting zone number when you add a new device. It can be edited here if needed. For example, you have a system that already has 32 zones. When you add a new 1542NA, the starting zone will be 33.

Total Zones

This number represents the total number of zones that will be present on this device. A 1542NA supports a total of 2 zones and a 1581NA, one, but you may want to reduce the number if both are not needed. You will want to manage this because the software license has a total number of audio zones allowed.

BGM Device

Once you have defined one or more devices in the system as a BGM source, it is then available as an item in this drop-down list. You select the device from this list that will be used as the source device for the BGM. You can then select individual channels to be used for each zone output. You can click the **[X] button** to the right of the drop-down list to clear the selection.

Zones

This list allows you to configure each output zone in the device.

Zone Number

This is the number that will be used to identify this output zone in the system. This number is calculated based on the values in the ***Start Zone*** and ***Total Zones*** fields.

Description

Double-click on this field to edit a text descriptor for the zone.

Levels

• Overall – This is the master output level control for the zone. Adjusting this level will change the levels of both announcements and BGM. This number represents the amount of attenuation relative to 0dBFS. So a value of –30 will attenuate the level by 30dB. To reduce the level by an additional 10dB, you would enter a value of –40.

• Emg – This field defines an offset to the ***Overall*** level to use when an announcement is made with an announce class that has the ***Emergency*** flag set. This allows you to increase the level of the output for emergency announcements. The default value is 6dB. If you use this setting with an ***Overall*** setting of –20dB, then an emergency announcement will be played using an output level that is 6dB louder than normal announcements.

• Night – This field defines an offset to the ***Overall*** level to use when the night schedule is invoked as programmed in the ***Day / Night Schedule*** section of the ***Configuration*** tab. This allows you to decrease the level of the output based on the time of day for each day of the week. The default value is 0dB and is set by entering a value to turn the output down. For example, if you enter a value of 6, then the channel level will be turned down by 6dB when the Night schedule is placed in effect.

• BGM – This field sets the BGM level for the zone. This number represents the amount of attenuation relative to 0dBFS. So a value of –30 will attenuate the level by 30dB. To reduce the level by an additional 10dB, you would enter a value of – 40.

BGM Channel

This drop-down list allows you to select an individual channel to use as the zone BGM. The channels available are for the device selected in the BGM Device field.

Match to First

Click this button to take the three levels (Overall, BGM, and Duck) Delay and the BGM Channel selection of the first zone and copy them to the remaining zones in the device.

(a) 1542NA/1581NA Equalization Window

Each channel has a ten-band parametric EQ available to adjust the signal as necessary to meet the needs of the loudspeakers and allow the system to be adjusted to maximize intelligibility in the acoustic space. Press the ***EQ*** button for a channel to open the EQ window as shown in Figure 12-39.

Figure 12-39: EQ Settings Window

Bands are selected by clicking on one of the ten band names immediately below the frequency response curve graph. A specific band can be selected and then adjusted using the edit boxes below the names. It is also possible to select a filter and edit its frequency, gain and bandwidth directly in the Frequency Response display window using the mouse to drag the filter position, cut/boost, or bandwidth.

Type

Select a filter type in the drop-down list. The available options for filters 1 through 7 are:

- Peaking – A typical bandpass type filter
- Disabled – Turn this filter off

The available options for the Hi-Pass and Lo-Pass filters are:

- Hi Pass – Filter for rolling off frequencies lower than the cutoff frequency
- Lo Pass – Filter for rolling off frequencies higher than the cutoff frequency
- Disabled – Turn this filter off

Note: The options for the filter parameters will change slightly depending on the filter type selected.

Center Frequency (Hz)

The center frequency (or cutoff frequency) of the filter is set by entering a numeric value in the edit box. The frequency parameter can also be changed by dragging the diamond icon in the graph laterally left or right.

Gain (dB)

This is only available for Peaking filter type.

The filter gain is set by entering a numeric value (using + or – values for relative dB) in the edit box. The gain can also be changed by clicking and dragging the diamond icon for the filter up or down in the frequency response graph.

Bandwidth (Oct.)

This is only available for Peaking filter type.

The filter bandwidth is set by entering a numeric value in the edit box. The value used is measured in Octaves. For example, if a 1/3 octave filter is required then a value of 0.333 would be used. The bandwidth can also be altered using vertical line icons located on each side of the diamond filter icon in the frequency response graph. Click a line and move the mouse laterally to change the bandwidth.

Class

This is only available for Hi Pass and Lo Pass filter types.

The mathematical function used to calculate the filter is selected by picking an available type from the drop-down list box. Currently, the only type of filter class available is the Butterworth type filter.

Slope (dB/Oct.)

This is only available for Hi Pass and Lo Pass filter types.

This value determines the frequency roll-off rate for the filter in decibels per octave. Available values range from 6 dB/Octave to 18 dB/Octave.

Set Flat

This button resets all filters to a gain setting of 0dB (flat response) and disables all bands except for band 1.

Show Phase

When checked, the phase response through the EQ will be shown as a red curve on the graph.

Bypass EQ

When checked, this removes the effects of all filter bands from the signal path without resetting the filters to a flat response curve. When the EQ is bypassed, the signal will pass through the object without any modifications to the frequency characteristics.

Overall Gain

The EQ provides a small range of gain adjustment in order to compensate for the overall effect of the EQ curve and allow signal-to-noise ratio and dynamic range to be maximized. This gain is set by entering a value (in + or - relative dB) in the edit box. It should only be used within a range from 6dB of attenuation to 6dB of gain.

Save To File

Click this button to save the EQ curve as an XML file. This allows you to archive the file as well as save it as a preset and load it into other channels.

Load From File

Click this button to open a standard Windows file dialog window. From here, you can locate an XML file that has been stored with an EQ curve and load it into the frame.

Copy

Click this button to copy all of the current EQ settings to the clipboard. You can then move to another channel and use the Paste button to copy settings between channels.

Paste

Click this button to paste the EQ settings stored on the clipboard to the current channel. This button will be dimmed if there are no available EQ settings to paste from the clipboard.

4.5.3.6 DNA2404C Series Amplifier

This amplifier also has DNA7800 part numbers for some markets. There are two versions in the US market: DNA2404CL (120V mains) and DNA2404CH (230V mains). Other than the supply voltage, the two units are identical. The settings are the same between all these versions.

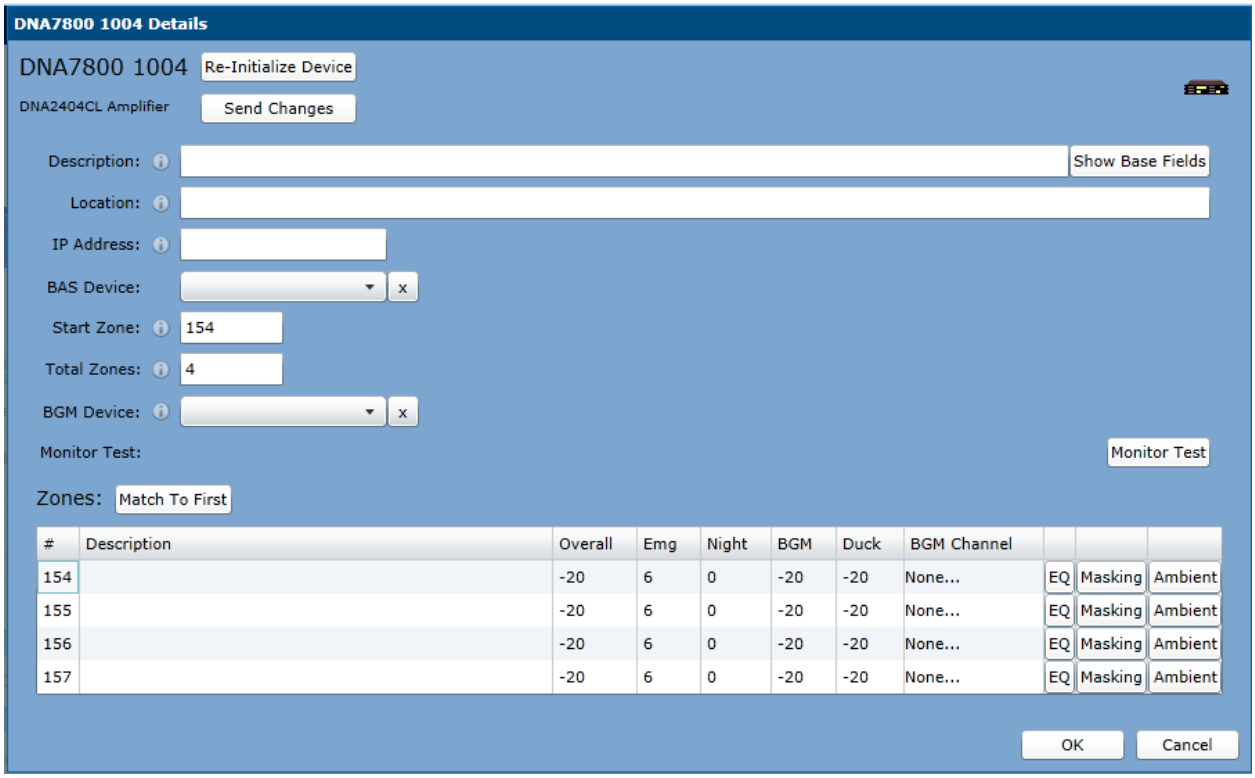


Figure 12-40: DNA7800/2404C Series Amplifier Device

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the device here.

BAS Device

Select the 1544BAS Backup Amplifier Switcher device that is associated with this DNA amplifier. This device switches the DNA amplifier's speaker loads over to a backup DNA amplifier should this device have faults.

Start Zone

This is the zone number that represents the first zone in the device. The system will automatically use the next available zone number as the starting zone number when you add a new device. It can be edited here if needed. For example, you have a system that already has 32 zones. When you add a new DNA7800, the starting zone will be 33.

Total Zones

This number represents the total number of zones that will be present on this device. A DNA7800 supports a total of 4 zones, but you may want to set this to a lower number if you are not using all outputs. This will prevent the unused output from contributing to the total number of zones allowed with your software license.

BGM Device

Once you have defined one or more devices in the system as a BGM source, it is then available as an item in this drop-down list. You select the device from this list that will be used as the source device for the BGM. You can then select individual channels to be used for each zone output. You can click the **[X] button** to the right of the drop-down list to clear the selection.

(a) DNA2404C Zones Grid

This grid allows you to configure each output zone in the device.

Zone Number

This is the number that will be used to identify this output zone in the system. This number is calculated based on the values in the ***Start Zone*** and ***Total Zones*** fields. Each output channel is an individual zone.

Description

Double-click on this field to edit a text descriptor for the zone.

Levels

• Overall – This is the master output level control for the zone. Adjusting this level will change the levels of both announcements and BGM. This number represents the amount of attenuation relative to 0dBFS. So a value of –30 will attenuate the level by 30dB. To reduce the level by an additional 10dB, you would enter a value of –40.

• Emg – This field defines an offset to the ***Overall*** level to use when an announcement is made with an announce class that has the ***Emergency*** flag set. This allows you to increase the level of the output for emergency announcements. The default value is 6dB. If you use this setting with an ***Overall*** setting of –20dB, then an emergency announcement will be played using an output level that is 6dB louder than normal announcements.

• Night – This field defines an offset to the ***Overall*** level to use when the night schedule is invoked as programmed in the ***Day / Night Schedule*** section of the ***Configuration*** tab. This allows you to decrease the level of the output based on the time of day for each day of the week. The default value is 0dB and is set by entering a value to turn the output down. For example, if you enter a value of 6, then the channel level will be turned down by 6dB when the Night schedule is placed in effect.

• BGM – This field sets the BGM level for the zone. This number represents the amount of attenuation relative to 0dBFS. So a value of –30 will attenuate the level by 30dB. To reduce the level by an additional 10dB, you would enter a value of – 40.

• Duck – This field controls how much the level of BGM will be reduced when an announcement is made to the zone. A value of –10 will reduce the BGM level by 10dB when an announcement is made. A value of –60 will effectively mute the BGM level when an announcement is made.

BGM Channel

This drop-down list allows you to select an individual channel to use as the zone BGM. The channels available are for the device selected in the ***BGM Device*** field.

Match to First

Click this button to take the three levels (Overall, Emg, Night, and BGM) and the BGM Channel selection and copy them to the remaining zones in the device.

(b) DNA2404C Equalization Window

Each channel has an EQ module available to adjust the signal as necessary to meet the needs of the loudspeakers and allow the system to be adjusted to maximize intelligibility in the acoustic space. Press the EQ button for a channel to open the EQ window as shown in Figure 12-41.

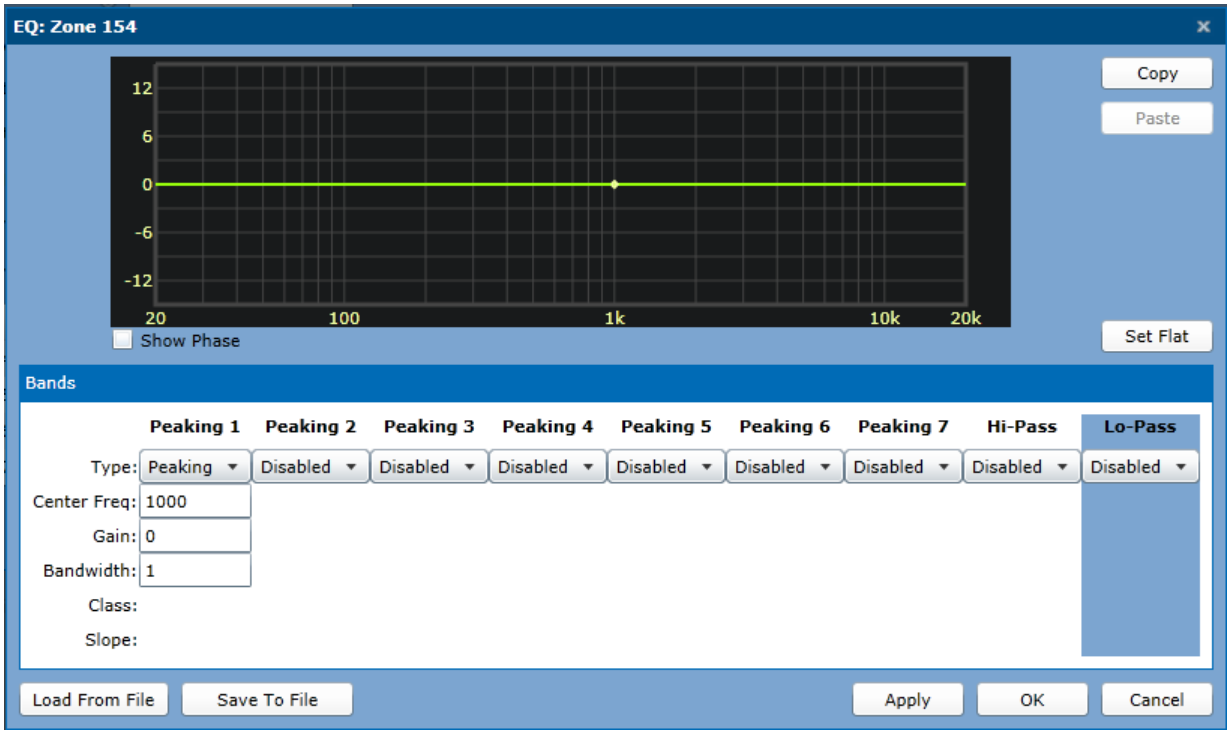


Figure 12-41: EQ Settings Window

Bands are selected by clicking on one of the ten band names immediately below the frequency response curve graph. A specific band can be selected and then adjusted using the edit boxes below the names. It is also possible to select a filter and edit its frequency, gain and bandwidth directly in the Frequency Response display window using the mouse to drag the filter position, cut/boost, or bandwidth.

Type

Select a filter type in the drop-down list. The available options for filters 1 through 7 are:

- Peaking – A typical band pass type filter
- Disabled – Turn this filter off

The available options for the Hi-Pass and Lo-Pass filters are:

- Hi Pass – Filter for rolling off frequencies lower than the cutoff frequency
- Lo Pass – Filter for rolling off frequencies higher than the cutoff frequency
- Disabled – Turn this filter off

Note: The options for the filter parameters will change slightly depending on the filter type selected.

Center Frequency (Hz)\

The center frequency (or cutoff frequency) of the filter is set by entering a numeric value in the edit box. The frequency parameter can also be changed by dragging the diamond icon in the graph laterally left or right.

Gain (dB)

This is only available for Peaking filter type.

The filter gain is set by entering a numeric value (using + or – values for relative dB) in the edit box. The gain can also be changed by clicking and dragging the diamond icon for the filter up or down in the frequency response graph.

Bandwidth (Oct.)

This is only available for Peaking filter type.

The filter bandwidth is set by entering a numeric value in the edit box. The value used is measured in Octaves. For example, if a 1/3 octave filter is required then a value of 0.333 would be used. The bandwidth can also be altered using vertical line icons located on each side of the diamond filter icon in the frequency response graph. Click a line and move the mouse laterally to change the bandwidth.

Class

This is only available for Hi Pass and Lo Pass filter types.

The mathematical function used to calculate the filter is selected by picking an available type from the drop-down list box. Currently, the only type of filter class available is the Butterworth type filter.

Slope (dB/Oct.)

This is only available for Hi Pass and Lo Pass filter types.

This value determines the frequency roll-off rate for the filter in decibels per octave. Available values range from 6 dB/Octave to 18 dB/Octave.

Set Flat

This button resets all filters to a gain setting of 0dB (flat response) and disables all bands except for band 1.

Show Phase

When checked, the phase response through the EQ will be shown as a red curve on the graph.

Save to File

Click this button to save the EQ curve as an XML file. This allows you to archive the file as well as save it as a preset and load it into other channels.

Load from File

Click this button to open a standard Windows file dialog window. From here, you can locate an XML file that has been stored with an EQ curve and load it into the frame.

Apply

Click this button to send the current EQ settings to the frame.

Copy

Click this button to copy all of the current EQ settings to the clipboard. You can then move to another channel and use the ***Paste*** button to copy settings between channels.

Paste

Click this button to paste the EQ settings stored on the clipboard to the current channel. This button will be dimmed if there are no available EQ settings to paste from the clipboard.

(c) DNA2404C Sound Masking Window

The DNA2404C has the ability to provide noise or sound masking to its outputs in addition to BGM or paging audio. This is enabled and configured by clicking on the ***Masking*** button for a channel.

Note: Not all versions of DNA2404C firmware support the Masking feature.

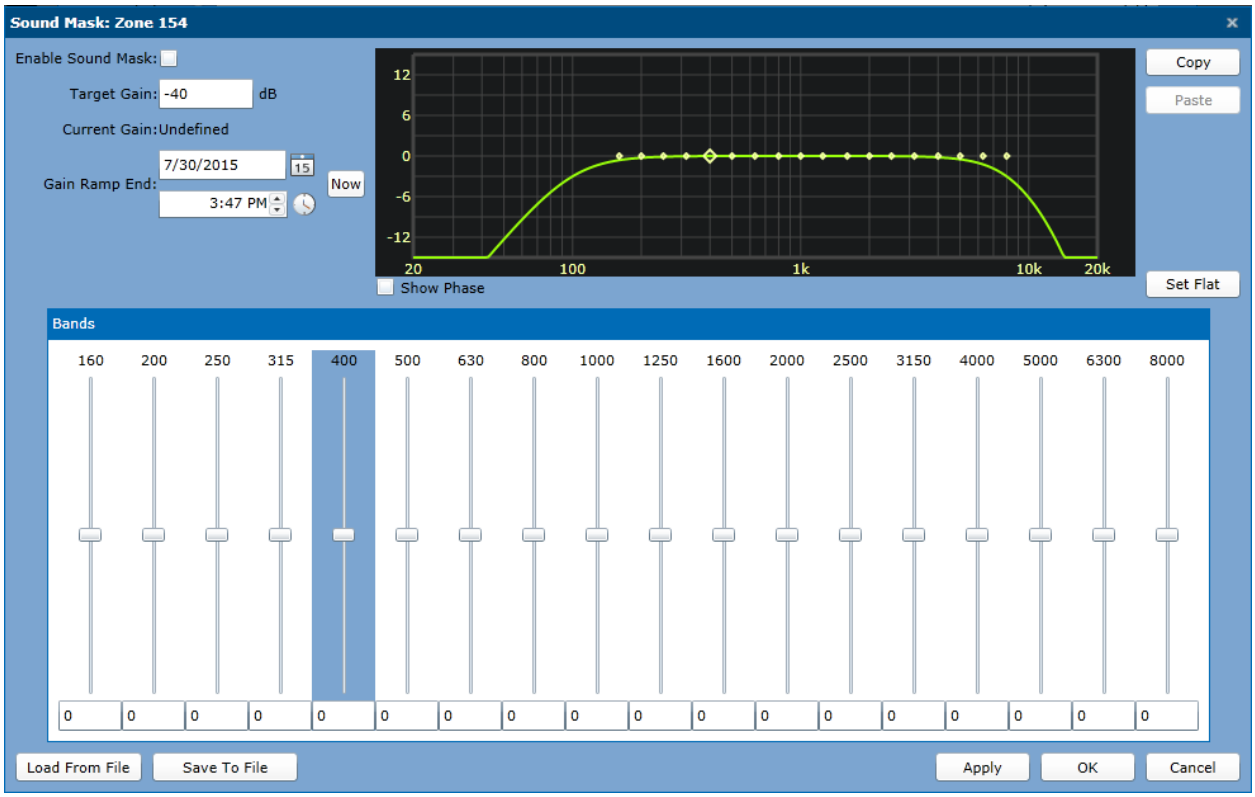


Figure 12-42: Masking Configuration Window

Enable Sound Mask

Check this box to enable sound masking for this channel.

Target Gain

Set the desired (final) gain level for the masking noise in this box.

Current Gain

This read-only field shows the current gain level, if any.

Gain Ramp End

It is common practice to introduce noise masking to a new facility in a gradual manner over hours or even days. By setting the date/time for the ramp end out in the future, the system will automatically ramp the gain from the current gain[1] up to the **Target Gain** over the time span between now and the date/time indicated here. One can either type in a new date and time value in the edit boxes or click on the icons to the right to bring up pickers like those shown in Figures 12-43 and 12-44. In addition, on the time entry box, one can place a cursor in a field (hours, minutes or AM/PM) and use the up/down arrows to increment/decrement the value.

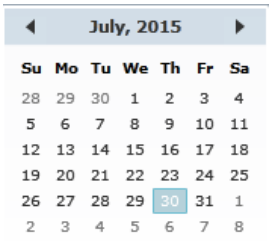


Figure 12-43: Date Picker Menu

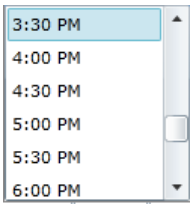


Figure 12-44: Time Picker Menu

Now button

Click this button to set the Gain Ramp End values to the current time, allowing one to hear the masking noise at the Target Gain and with all the other parameters when the ***Apply*** or ***OK*** buttons are pressed.

Show Phase

When checked, the plot of the phase of the equalization will be shown as well as the amplitude.

Set Flat

Set the middle portion of the equalization flat. The high and low frequency roll-offs shown in this graph are built into the pink noise source in the DNA amplifier.

Copy

Copy this EQ curve (settings) for use in another channel.

[1] If Current Gain is not defined, e.g., masking isn't active yet for this channel, then the system will start the ramping from 30 dB below the Target Gain.

Paste

If an EQ curve has been copied to the clipboard, it can be pasted into the current channel by clicking on this button.

Bands

The bands are 1/3 octave EQ bands whose boost or cut values may be set either by moving the appropriate slider or by enter a value in the edit box below each. The center frequency in Hz is shown above each band's slider.

Load From File / Save To File

Similar to cut/paste to the clipboard, one may save an EQ curve to a file and recall it from the file on another channel.

Apply

Send all setting changes to the DNA amplifier immediately.

(d) DNA2404C Ambient Analysis Window

DNA series amplifier frames are equipped with ambient noise compensation (Ambient Analysis) capabilities utilizing the eight (8) built-in ambient sensor inputs. Ambient Analysis adjusts the output attenuation of a channel in response to ambient noise level measured in the area served by the channel. One (1) or two (2) ambient noise sensors can be used for each channel. Channels can also be slaved to other zones. Click the ***Ambient*** button for the channel you wish to configure to open a window such as that shown in Figure 12-45.

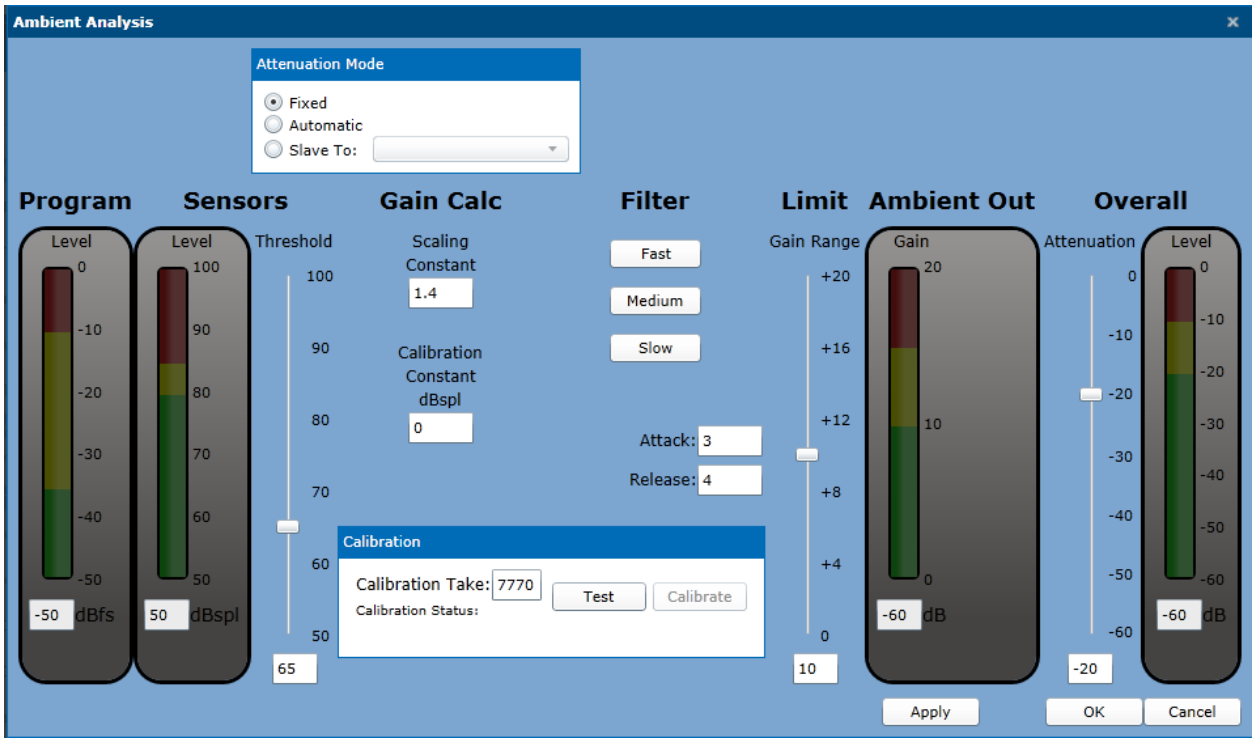


Figure 12-45: Ambient Analysis

Attenuation Mode

Each channel can be set to one of three different possible attenuation modes as described below.

• Fixed – This mode deactivates the ambient noise compensation for this channel. The channel output level will remain at the level set by the **Overall** attenuator.

• Automatic – This mode will allow the level of the channel to automatically adjust based on the ambient noise level as detected by the ambient sensor input. The level will increase above the **Overall** attenuator setting as higher ambient noise levels are detected by the ambient noise sensor. The level will increase by an amount proportional to the detected level as determined by the **Scaling Constant**. The maximum level increase is determined by the **Limit** slider.

• Slave – This mode will cause the selected channel to follow the ambient noise compensation settings of another channel. Using this setting allows multiple outputs on the same DNA amplifier frame to be adjusted by a single sensor or a pair of sensors. This setting is useful in very large spaces where multiple amplifier channels are required due to the power load requirements of the loudspeaker lines. Select the channel that this channel will be slaved to from the drop-down list.

Note: A channel can only be slaved to a channel that is located in the same DNA amplifier mainframe.

Program

This level meter displays the real-time audio signal level at the input of the Ambient Analysis object. This signal is post-EQ and post-delay but does not have the test signal.

Sensors-Level

This level meter displays the real-time sound pressure level (SPL) from the ambient noise sensor.

Note: This level is the sum of both the ambient noise in the space and the program audio from the system. The Ambient Analysis algorithm filters out the audio system's contribution to the overall level and provides a real value of ambient noise level to the system for processing.

Sensors-Threshold

The threshold determines the level at which the ambient noise compensation is suspended because the level at the sensor is too low. When the detected level from the ambient noise sensor rises above the threshold setting, then the system will actively operate. It will filter the system program audio component from the detected level to accurately adjust the output attenuation based on the calculated noise level. When the level is below the threshold, the system will stop actively adjusting the output attenuation and return to the maximum attenuation setting which is the base level setting as defined by the **Overall** attenuation control.

The threshold is set by adjusting the slider with the mouse or by manually typing a value in the edit box below the slider using a positive numerical value.

Gain Calc-Scaling Constant

The **Scaling Constant** determines the amount of ambient noise level that will result in the output level to increase by 1dB. A scaling constant of 1 will result in the output level increasing by 1dB for each 1dB increase in ambient sensor level. Figure 12-43 shows a scaling constant of 1.4. With this setting, a 1.4dB increase in ambient sensor level will result in a 1dB increase in output level up to the point where the **Limit** has been reached.

Gain Calc-Calibration Constant

This value is calculated and automatically entered during the channel calibration process. It can be manually adjusted by typing in a new value in the edit box.

Caution: This value should only be manually adjusted after an automatic calibration has not been completely successful. Adjustments should be made in very small increments of 2 or 3 dB at a time.

Use the following guidelines when adjusting the calibration constant if the system is not properly responding after an automatic calibration.

- If the system turns down as soon as an announcement is active, then the calibration constant is too high. It should be reduced in small increments until the system remains stable while an announcement is active.
- If the system gets louder as while an announcement is active, then the calibration constant is too low. It should be increased in small increments until the system remains stable while an announcement is active.

Filter-Attack

This value determines the rate at which the output level will increase when an increase in the ambient sensor level has been received. The value is in the number of seconds and can be directly entered in the box using the keyboard.

Filter-Release

This value determines the rate at which the output level will decrease when a decrease in the ambient sensor level has been received. The value is in the number of seconds and can be directly entered in the box using the keyboard.

Filter-Presets

- Fast – Preset where the attack time is 1 second and the release time is 2 seconds.
- Medium – Preset where the attack time is 3 seconds and the release time is 4 seconds.
- Slow – Preset where the attack time is 7 seconds and the release time is 10 seconds.

Limit

The limit sets the maximum amount of gain that can be applied through the ambient analysis compensation process. The amount of gain available is determined by the attenuator setting of the **Overall** attenuation slider. For example, if the channel out slider is set to –20dB as shown in Figure 12-43, then the maximum available setting for the Limit slider will be +20dB. Setting the Limit to +12dB will cause the output level to be increased by a maximum of 12dB above the setting of the **Overall** attenuation slider. Thus, with very loud ambient noise levels the output level will be effectively set to –8dB and reduced to –20dB when the ambient noise level is very low or has dropped below the threshold. The ambient noise compensation will be continually adjusted within this range as long as the noise level remains above the threshold but below the amount required to drive the system to maximum level.

Note: The Ambient Analysis algorithm differentiates between program audio and ambient noise level detected by the ambient noise sensor. It is possible for the sensor level to be above the threshold with no ambient noise compensation applied when the level detected is program audio from the system.

The limit is set by adjusting the slider with the mouse or by manually typing a value in the edit box below the slider using a positive numerical value.

Overall Level

This slider controls the main output attenuator for paging, BGM, and program signals. The meter indicates the current signal level that is feeding the analog input of the power amplifier.

Sensor Assignments

Sensor assignments in the DNA amplifier are fixed as listed below. One or two sensors can be connected and will be averaged to control a channel. The amplifier will automatically configure itself to use two sensors if a second sensor is attached so there is no need to enable or disable a sensor.

Sensor inputs are assigned as follows:

- Sensor Inputs 1 and 2 are assigned to Channel 1A
- Sensor Inputs 3 and 4 are assigned to Channel 1B
- Sensor Inputs 5 and 6 are assigned to Channel 2A
- Sensor Inputs 7 and 8 are assigned to Channel 2B

Calibration Takes

Enter the take number that you wish to play during the calibration if you wish to use something other than the default of 7055.

Calibrate

Press this button to start the calibration process. A calibration message will be played to the channel output.

Caution: The ambient noise level in the area being calibrated needs to be at least 15dB below the sensor threshold level setting during calibration in order to yield a valid calibration.

Test

The **Test** button will play the calibration take to the selected channel. This is used after the calibration process is complete to see if the system correctly differentiates between program and ambient noise. When the test take is playing and the calibration has been successful, the level should not change. If the system turns up or down during the test playback, then either the either the calibration constant should be adjusted or a recalibration should be attempted.

(e) DNA2404C Monitor Test

Click the **[Monitor Test]** button to open the monitor test window for the DNA amplifier as shown in the following image. From here, you can view test results, initiate a test, calibrate the test points, and configure the automated testing functions. There are two tests possible in the DNA2404C, referred to as Inaudible and Audible, although one can set the frequencies for these two tests to be any values, e.g., both down in the audible range. Only the Inaudible test can be scheduled to repeat automatically.

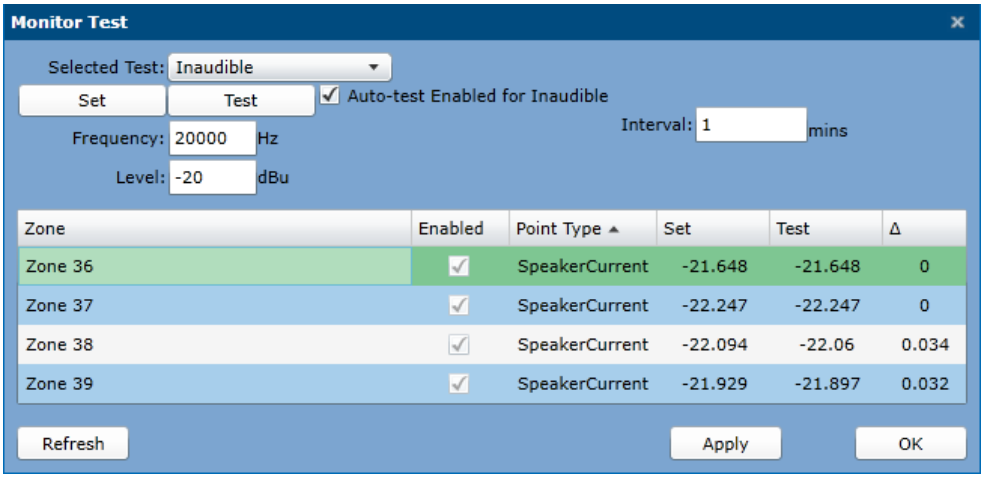


Figure 12-46: DNA Monitor Test Window

Selected Test

One selects which test to look at and configure via this drop-list box.

Test Button

Manually run the selected test via this button. The test is run and the results displayed.

Set Button

Set is used to record the baseline values for each channel. You must perform a set once you have the system operational and all loudspeakers attached. The amplifier will store these channel values and compare them with the results obtained when performing a test. When test values do not match the set values, then a channel will be faulted.

*Note: Clicking on the **Test** or **Set** buttons for a test frequency in the audible range will result in tones played to all outputs of the amplifier and possibly being heard in the installation facility.*

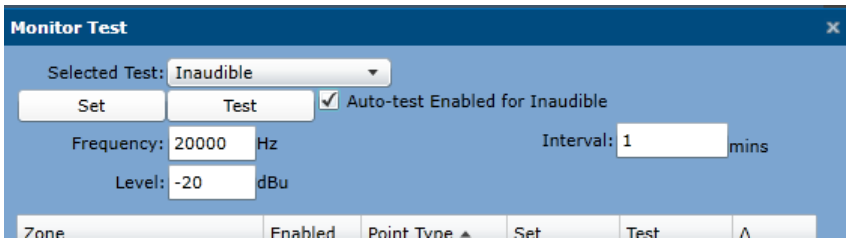
Test Frequency and Level

You can specify the frequency to be used for the inaudible and audible tests by typing it into the appropriate edit box. The output level of the test tone for each test is also adjustable. You change the output level by typing in the output level in the edit box. The valid range for the test tone is -100 to +3 where +3 will produce a tone just shy of driving the amplifier into clipping.

Note: If a "?" is shown, it indicates that data was not available for that channel. This could be the case if the test has been disabled for a channel or if no set has been performed.

Auto-test Enabled for Inaudible

(*Only available for the Inaudible Test)* When this box is checked, the inaudible test will execute automatically at the interval specified in the ***Interval*** edit box. This allows for periodic testing of channels without any disruption in functionality.



Interval

This entry box only appears when the ***Auto-test Enabled for Inaudible*** box is checked. Enter the time (in minutes) for the interval between periodic inaudible tests.

Enabled

These checkboxes on each test point (zone) enable or disable testing for the point as part of the selected test.

Refresh

Click this button to reload the ***Test / Set*** values from the amplifier.

Apply

Click this button to send the current settings to the amplifier frame without closing the window.

OK

Click this button to send the current settings to the amplifier frame and close the window.

4.5.3.7 Backup DNA2404CL Amplifier

A DNA7800 device that is designated as a backup has fewer configuration settings, since all of its other settings such as EQ and levels are dynamically set based on which (main) DNA amplifier it is currently backing up.

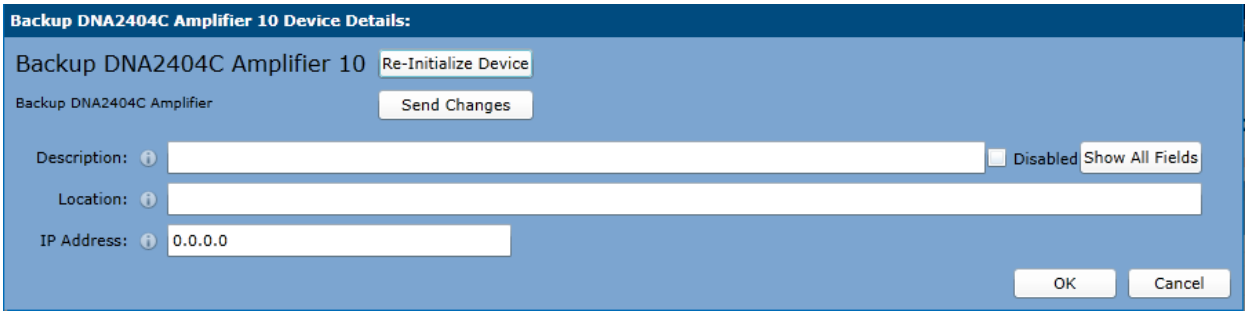


Figure 12-48: DNA Backup Configuration

There are no fields on this form beyond the basics for all devices.

4.5.3.8 1544BAS Backup Amplifier Switch

The 1544BAS is used to switch speaker line loads for DNA7800 amplifiers, allowing one DNA and 1544BAS pair to serve as a backup for any number of other (main) DNA/BAS pairs.

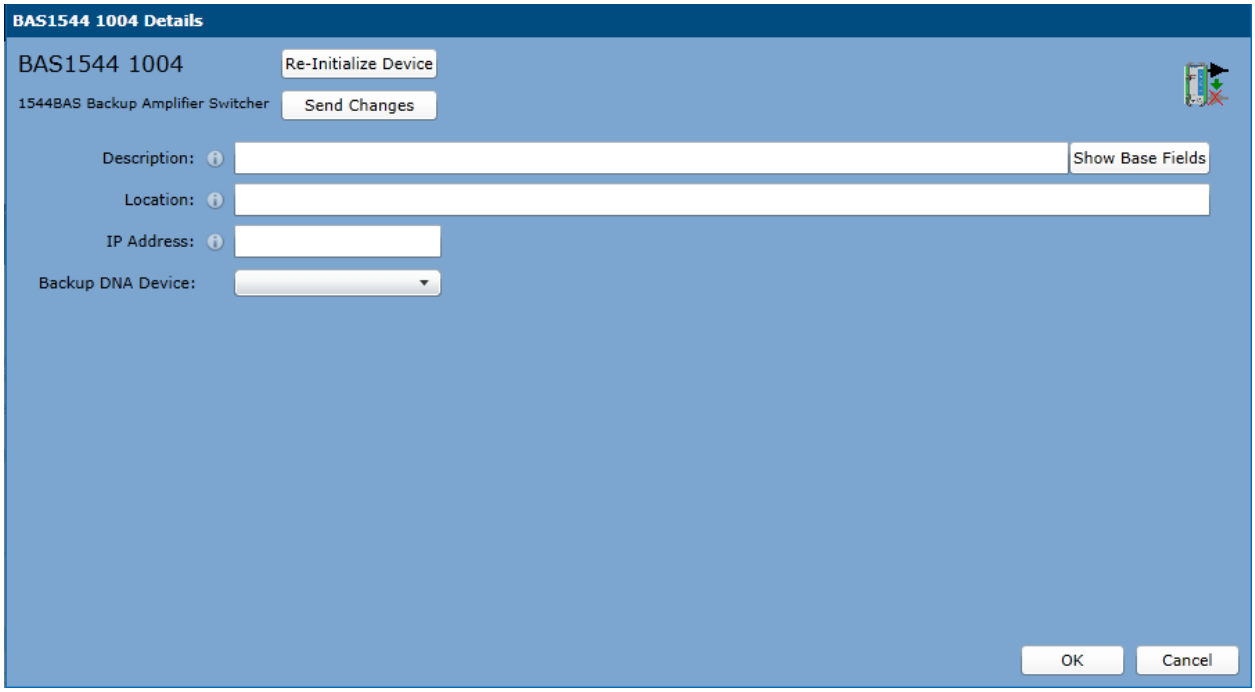


Figure 12-49: 1544BAS Device Configuration

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the device

Backup DNA Device

Use this field to select which DNA frame is attached to this 1544BAS. Each main DNA frame that is to be backed up must have its own 1544BAS to switch the high power speaker lines. The DNA devices must be added to the system first, so they can be selected here when adding the 1544BAS devices.

4.5.3.9 T9032NS Titan Noise Sensor Device

These devices provide serve as ambient sensor collectors for Titan amplifiers.

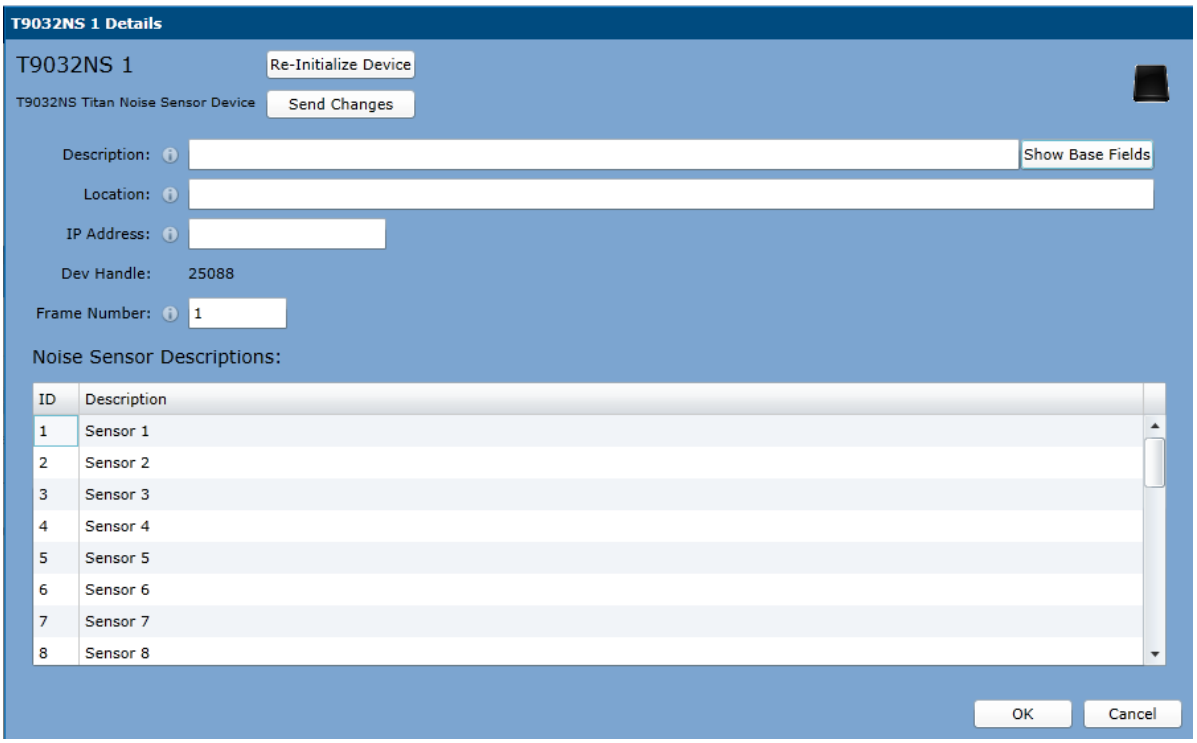


Figure 12-50: T9032NS Titan Noise Sensor Device Properties

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the device here.

Dev Handle

This is a software address used by the system. It is assigned by the system and provided here for reference.

Frame Number

This is a unique ID number used to identify the Titan frames used in the system. When you add the device, the system will automatically assign the next available frame number.

Noise Sensor Descriptions

This list is used to assign your own descriptive names for each noise sensor. This is the name that will appear when you assign a sensor to a channel. It is recommended that you use a name that references the either the name or zone number where the sensor is located.

ID

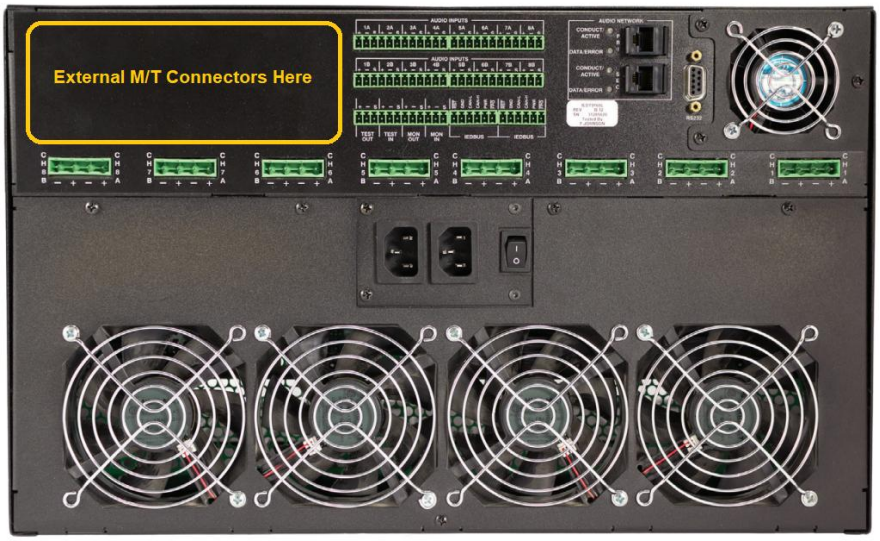
This is a read-only field that matches the physical sensor input number on the T9040NLR device.

Description

Double-click on this field to edit the text used to describe/name the sensor.

4.5.3.10 T9160MT48 Titan Amp Frame w External M/T Points

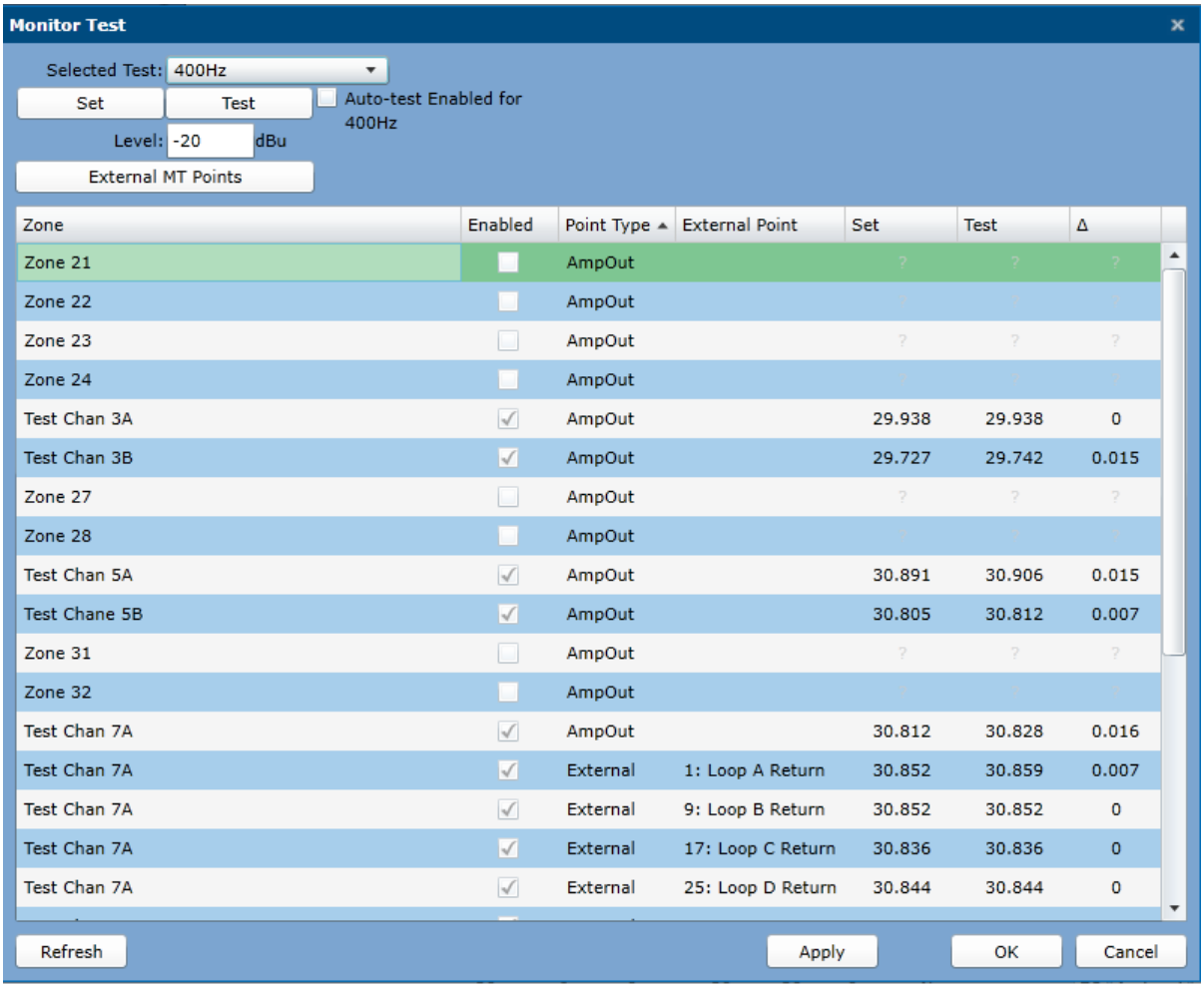
The T9160MT48 is a customized version of the T9160 amplifier frame, where 48 of the internal monitor/test points and brought out to connectors on the rear of the frame. The T9160MT48 can be recognized by the addition of monitor/test point connections on the left rear of the frame (as one faces the rear), i.e., in the area indicated below.



Most of the configuration for the T9160MT48 is the same as for the T9160 (see section 4.5.3.1). The one exception are the screens related to monitor/test functions. There also is a different in monitor points presented from the Announcements overview window. These differences are documented here.

(a) T9160MT48 Monitor Test Window

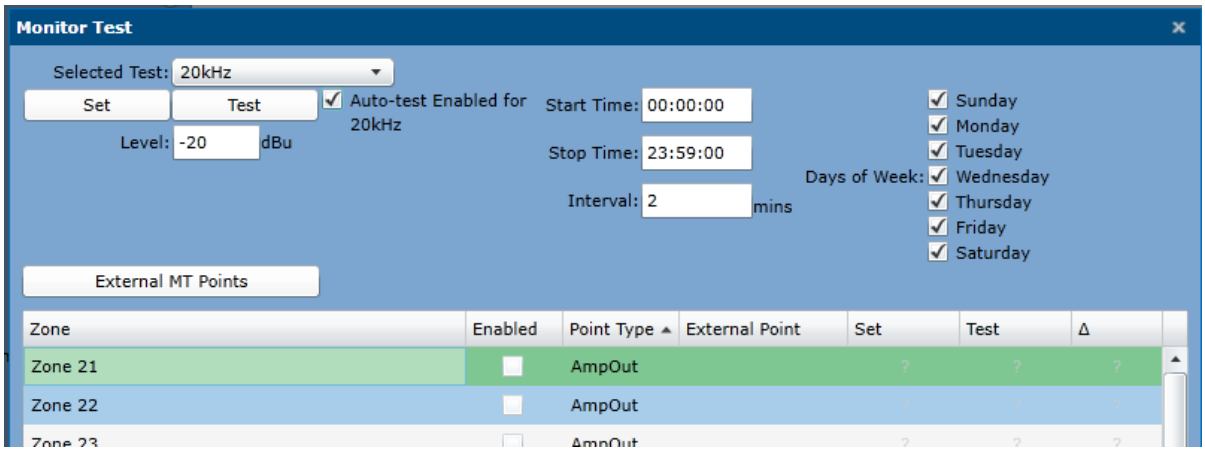
The Monitor Test Window for the T9160MT48 appears as shown in the figure below. The grid shows one Monitor/Test Point per row, with the data in the row being that for *only* the test which is selected in the drop-list box at the very top-left. To see the data for any of the other two available tests, one changes the test via that drop-list box.



Zone	Enabled	Point Type	External Point	Set	Test	Δ
Zone 21	☐	AmpOut		?	?	?
Zone 22	☐	AmpOut		?	?	?
Zone 23	☐	AmpOut		?	?	?
Zone 24	☐	AmpOut		?	?	?
Test Chan 3A	☑	AmpOut		29.938	29.938	0
Test Chan 3B	☑	AmpOut		29.727	29.742	0.015
Zone 27	☐	AmpOut		?	?	?
Zone 28	☐	AmpOut		?	?	?
Test Chan 5A	☑	AmpOut		30.891	30.906	0.015
Test Chane 5B	☑	AmpOut		30.805	30.812	0.007
Zone 31	☐	AmpOut		?	?	?
Zone 32	☐	AmpOut		?	?	?
Test Chan 7A	☑	AmpOut		30.812	30.828	0.016
Test Chan 7A	☑	External	1: Loop A Return	30.852	30.859	0.007
Test Chan 7A	☑	External	9: Loop B Return	30.852	30.852	0
Test Chan 7A	☑	External	17: Loop C Return	30.836	30.836	0
Test Chan 7A	☑	External	25: Loop D Return	30.844	30.844	0

For initial configuration of the tests, one should first click on **External MT Points** button and configuration the external points as described in the next section of this application note. Then, one completes the configuration by doing the following:

- Set the test tone **Level** in the edit box at the top (typically -40 to -20 dBu).
- Disable test points in the grid which should not be tested as part of this test. For example, unused zones (those without an amplifier card installed) should be disabled. This is done by unchecking the **Enabled** checkbox for that point (row in the grid).
- If the test is to run periodically, check the **Auto-Test Enabled** checkbox, and fill in the information on when to run the tests in the controls which appear, such as the example shown below.



The user controls on this window are described below.

Caution: Clicking either the Test or Set buttons on the 400Hz or 1kHz will cause audible tones to be played through the system.

Test

Click the test buttons to start a test for the selected test (frequency). As the test is run, results should appear in the results table as shown above in Figure 12-23. The actual measured values at each point are displayed in the ***Test*** column for each test point. The unit compares the test values measured with the values stored when a system set was performed. Any variances in the level are displayed in the Δ (Delta or Variance) column of the table. Variances that are outside of the acceptable tolerance are shown in red. Items in red will generate a fault report that is sent to the system supervisor software. Items shown with gold background are for points that do not (yet) have a valid Set value (i.e., the test result is indeterminate, rather than a fault or a pass).

Set

Click this button to execute a test for the selected frequency, but store the measured values as a baseline comparison for a system test of the same frequency. You should run a system set when you know the system is operating correctly. The unit will then use these values to determine if there is a fault.

Level

The edit box just below the [Set][Test] buttons are the test tone levels for each frequency. Typical values for these are in the -30 to -10 dB range (these are in dBu).

Each frequency can be configured to run on a schedule. To enable a schedule, one first one first clicks on the checkbox labeled “Auto-Test Enabled for xxxHz” beside the [Test] button. This brings up schedule configuration options as shown in the figure above. The options for the schedule are described below.

Start Time/Stop Time

You can restrict the times that a test will run based on the times entered in these two fields. To run continuously, enter 12:00 AM as the start time and 11:59 PM as the stop time.

Interval

Enter the time (in minutes) between each test.

Days of Week:

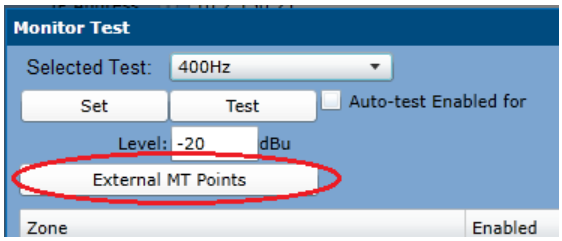
Which days of the week to run the test.

Note: If you only want the test to play once per day, you must enter an interval greater than the difference between the start and stop times. For example, you only want the 400Hz test to play at 3:00 AM when the building is empty. You could enter a start time of 3:00 AM, a stop time of 3:05 AM, with an interval of 15 minutes. This would cause the test to only run once at 3:00 AM

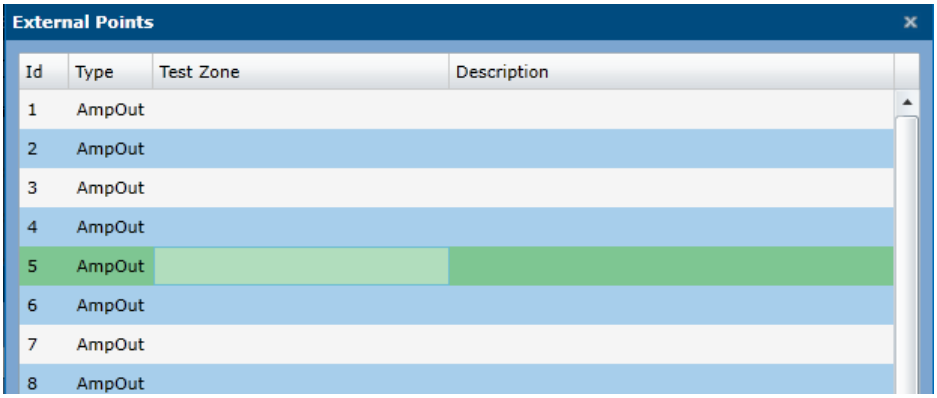
Note: One should not turn on auto-testing until a proper calibration or "Set" has been done for this test, and the results manually verified to be accurate/correct.

(b) Assigning External M/T Points to Zones

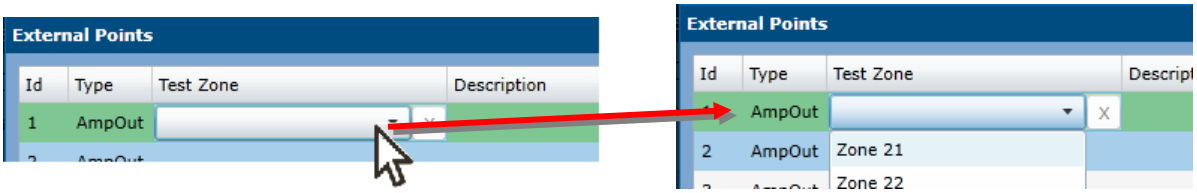
Before one can run tests on the external monitor/test points, one needs to first assign them to (or associate them with) zones in the frame. One can view and edit the assignments by first clicking on the **External MT Points** button at the top-left of the Monitor/Test window.



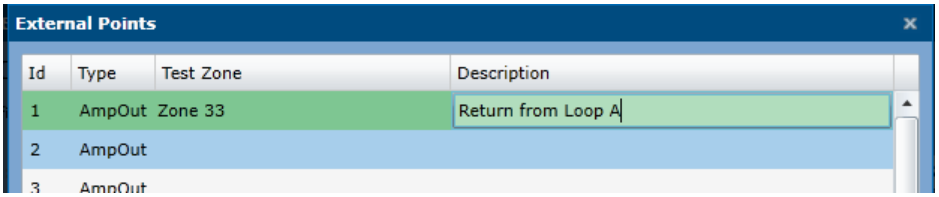
This brings up the **External Points** window as shown below. Initially, there are no assignments shown under the **Test Zone** column, and no description for the point in that column.



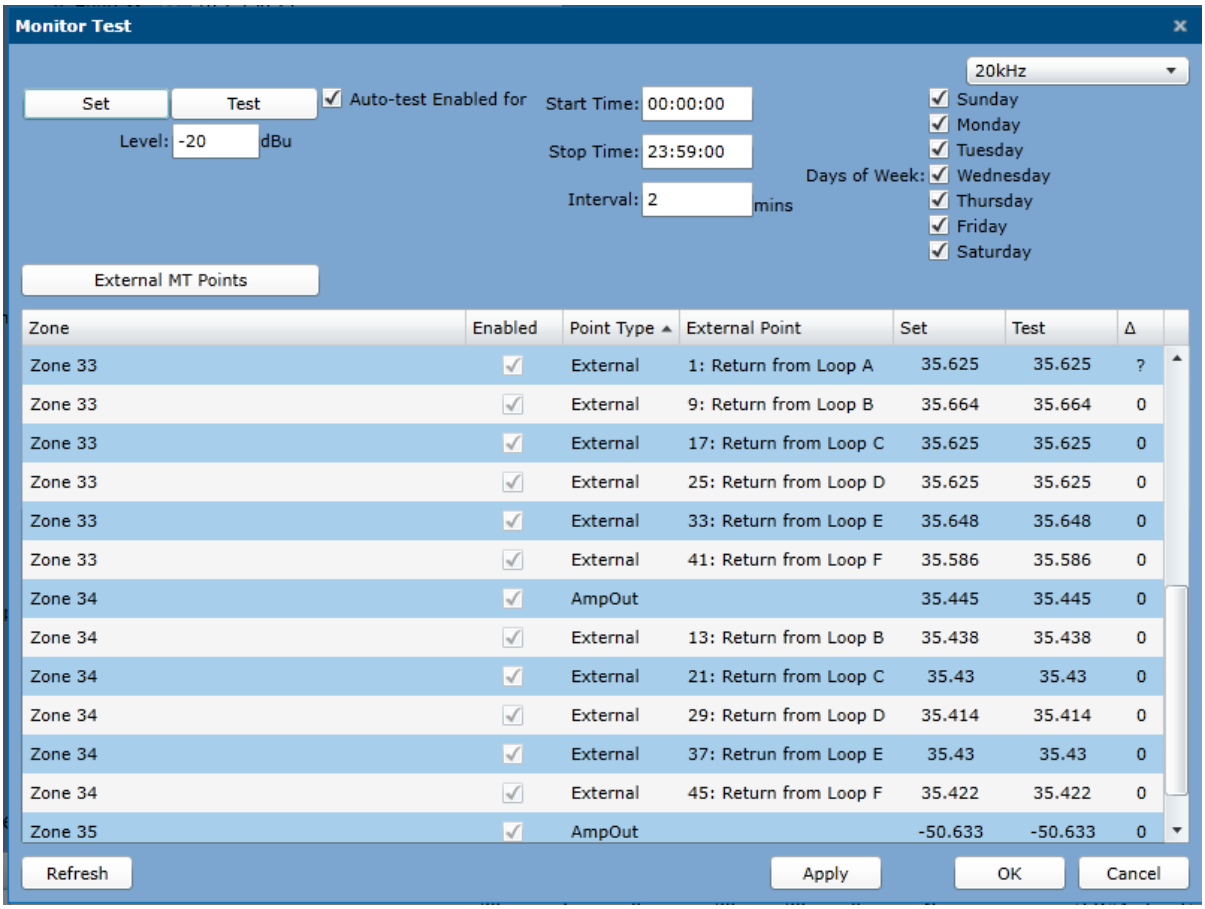
Clicking twice in the Test Zone cell for a row (external test point) will make a drop list control appear as shown below. One can then click on the control and select the zone that goes with this external test point from the list.



Once selected, the zone will appear in the Test Zone cell of the grid. Now, one can click in the Description cell for that row (external test point) and enter text, such as below:



Currently the Type cannot be edited, but is always set to “AmpOut”, which means maximum attenuation on the input so that voltages up to the full speaker line level can be handled. One should continue down the list filling in all the Test Zones and Descriptions, and close the window via the **OK** button. Now, back on the Monitor/Test window, one will see the external points grouped with the Zone they relate to as in the example shown below:

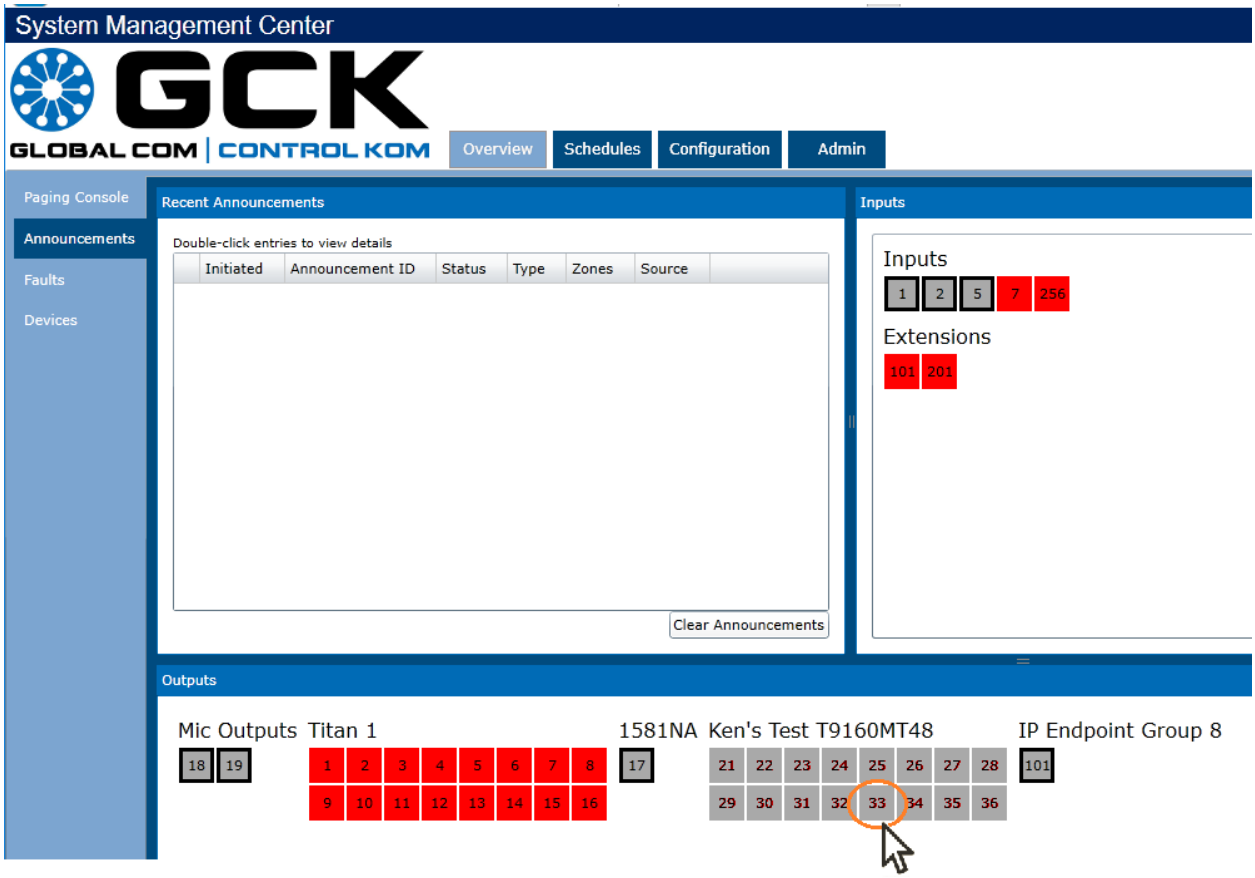


Now, one can select each test and determine whether the external point should be tested or not as part of that test via the **Enabled** checkboxes on each row of this grid.

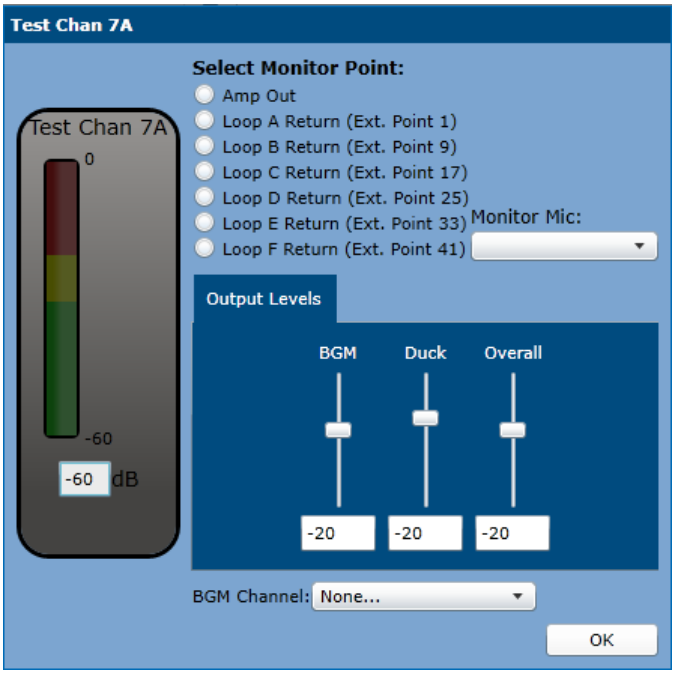
> *Note, before running a test or set after defining the external MT points, one should click on the **Apply** button to send the settings down to the T9160MT48 frame. Clicking set/test before doing so, will have the Titan frame run with the last saved configuration of points, and so will/may be incomplete.*

Monitoring External M/T Points

One can observe signals on a meter and listen to external monitor/test points by clicking on the associated zone in the Announcements section of the Overview tab page, as shown below.



Doing this brings up a modified Monitor window such as the example shown at right. This window view will change depending on exactly which and how many external monitor/test points are assigned to the selected zone. On the usual T9160 frame, one would see three monitor/test points to select from in this window: Amp In, Amp Out and Speaker Current. Instead of seeing those choices on the T9160MT48, one always will see the one internal point (Amp Out), plus whatever external M/T points have been assigned to this zone via the External Points window described earlier in this write-up. One can click on any of the available monitor points to see its audio level on the meter and listen to its audio on the selected **Monitor Mic**, if any is selected.



4.5.4 CobraNet Mic Stations

Mic Station devices include the 528, the 524 and the 550CS mic stations. The Device properties for each of these are described below.

4.5.4.1 IED528 Graphical Paging Station

There are several varieties of 528 mic stations including vertical and horizontal mount, with hand-held or gooseneck mic, and even a rack mounted version with monitor speaker. All of these products are covered by this general 528 mic station device type.

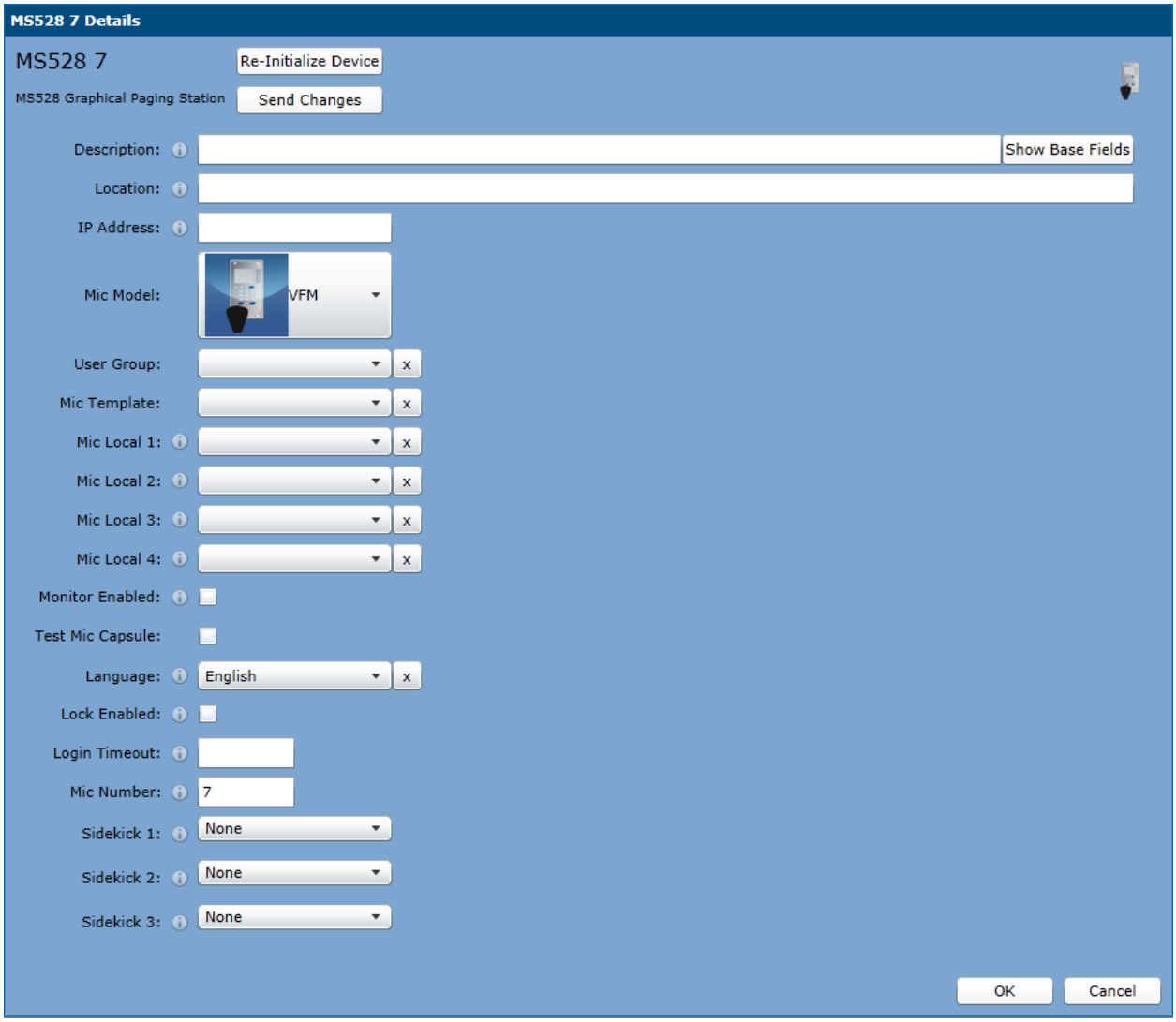


Figure 12-51: IED528 Graphical Paging Station Properties

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the microphone station here. You can find the IP address of the station by pressing the **4** and **6** buttons simultaneously. This will bring up the information window on the station display. You can then use the **ENTER** button to cycle through the information and find the IP address.

Mic Model

Select the appropriate version of the 528 used. Available selections are horizontal, vertical, or horizontal with a gooseneck microphone.

User Group

Select the user group associated with the microphone station from the drop-down list. The list of available groups is defined in the ***User Groups*** tab of the software. The name will be displayed across the top of the microphone station display when the ***Lock Enabled*** box is not checked. When the ***Lock Enabled*** box is checked, the name on the display is determined by the "logged in" user as defined in the ***Mic Passwords*** tab. This field is optional unless you are using the microphone station in a system with the Flight Announcement System (FAS) software option.

You can clear the selection in this field by clicking on the *[X] button* to the right of the field.

Mic Template

Select the graphical button template to use for the microphone station. Templates are defined in the ***Mic Templates*** tab of the software. This template will be used only when the ***Lock Enabled*** box is not checked. When that box is checked, the template used is determined by the one assigned to the user in the ***Mic Passwords*** tab. If no template is selected here, the station will use the one specified in the ***Default Template*** field in the ***Controllers*** tab.

You can clear the selection in this field by clicking on the *[X] button* to the right of the field.

Mic Local

Each microphone station can have up to four (4) *Mic Local* zone groups assigned. *Mic Local* zone groups are a method of consistently assigning actions that have destinations that are relative to the location of the microphone station. Let's say you always want the push-to-talk (PTT) button on the microphone station to do a live page to the same zone where the microphone station is physically located. You would create a single action that has an entry code of 0 (0 is for the PTT or ANNC buttons) with a zone group destination of ***Mic Local 1***. You would then assign the ***Mic Local 1*** field in the microphone station setup to correspond to a zone group programmed with the zone(s) local to that station. Each station can have a different zone group assigned to the ***Mic Local 1*** field. Since the action references that field as the destination, it will always go to the local zone group.

This logic can apply to all of the available *Mic Local* zone group assignments. ***Mic Local 2*** could be used for all immediately adjacent zones. ***Mic Local 3*** could apply to all zones within the local building. Using this feature allows you to create actions that function relative to the location of the microphone station that is used to launch the action.

You can clear the selection in this field by clicking on the *[X] button* to the right of the field.

Monitor Enabled

Check this box when using a microphone station with an attached monitor speaker such as the IEDA528SRM.

Test Mic Capsule

Check this box if the microphone station uses the 510HH handheld microphone. This optional model of microphone has a built-in oscillator used to test the function of the microphone element. Do not check this box if the microphone station has the standard 501HH handheld microphone.

Language

Select the default language for the microphone station from the drop-down list. This selects the language used to display the various built-in prompts. Click the [X] button to the right of the field to clear the entry.

Lock Enabled

When checked, users are required to login using a password that has been configured in the ***Mic Passwords*** tab. When enabled, the graphical template specified in the ***Mic Template*** field is ignored and the template is determined by the user password.

Login Timeout

When microphone stations require user login, it will also automatically logout after the interval specified in this field. This value is in seconds and defaults to 15 minutes (900 seconds) if left blank. The maximum value is 4200 seconds (70 minutes).

Mic Number

This is the number used to identify the microphone station within the announcement controller. It must be a unique number within the local announcement controller.

Sidekick

Up to three (3) expansion stations can be used with a 528-series microphone station when equipped with an IEDA528E expansion board. Select the type of expansion station connected to each port using the appropriate drop-down list. Available selections are as follows:

- None – Expansion port is not used.
- FME – An IEDA520FME expansion station with PTT is used.
- Sidekick – An IEDA528SK Sidekick expansion station with 4-buttons and PTT is used.

The PTT on the expansion station will always launch the same action that is assigned to the PTT of the parent station.

Sidekick Button Configuration

When you configure one of the types to Sidekick, you are presented with a new list like the one shown in Figure 12-13. This allows you to define actions for each of the 4 buttons available on the IEDA528SK expansion station. Select a button in the list and then the ***Edit*** button. This will open the Action Definition window for the highlighted button. From here, you define an action as described in the ***Action Types*** section of the documentation.

Figure 12-52: Sidekick Button Configuration

Actions

All microphone stations that are the MS528 type share the same set of actions. You can limit access to individual actions by simply not including them in the various graphical templates you create for the system. Figure 12-53 shows a list of actions defined for MS528 microphone stations. Refer to the ***Action Types*** section for information on configuring individual actions. Actions are added, deleted or Edited via the buttons at the top. Double-clicking a row also does the Edit function.

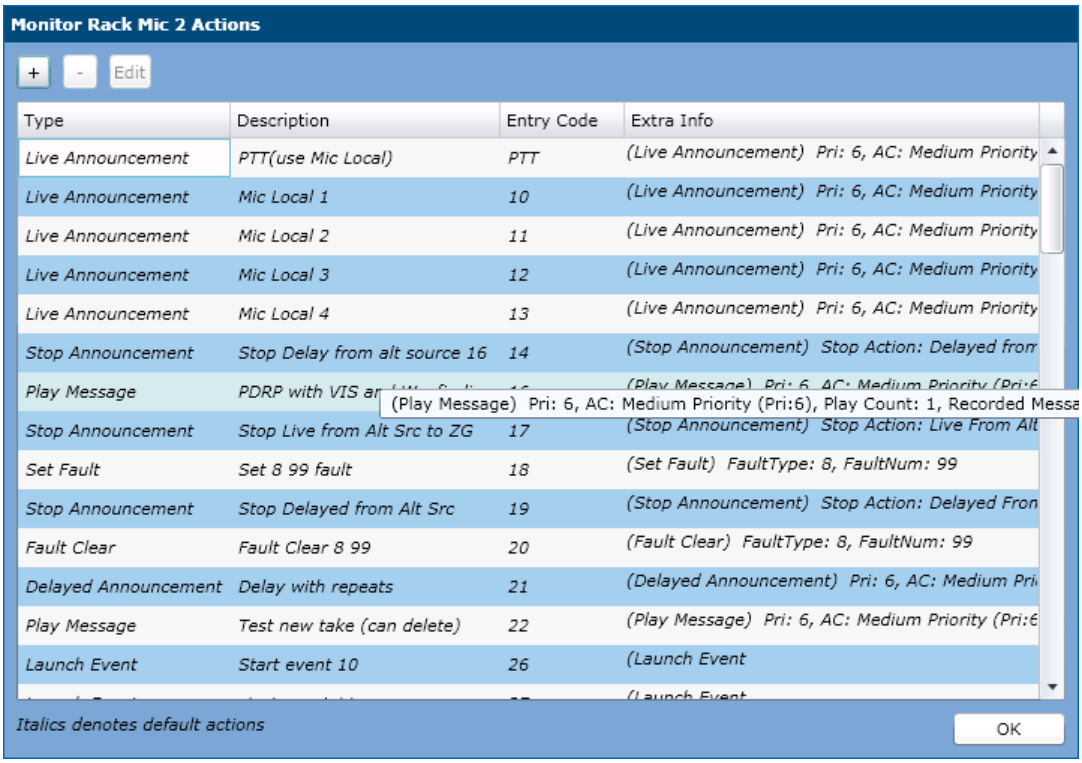


Figure 12-53: IED528 Actions

The ***Extra Info*** column on the right will tell you if several things. Some abbreviations used in the ***Extra Info*** column are listed below:

- AC – Announcement Class
- ZG – Zone Group
- AV – This will say Audio, Visual, or Both to indicate the presence of audio and/or video takes.
- EC – Entry Code

4.5.4.2 IED524 Four-Button Paging Station

The 524 mic station comes in only a hand-held version and is configured via the form below.

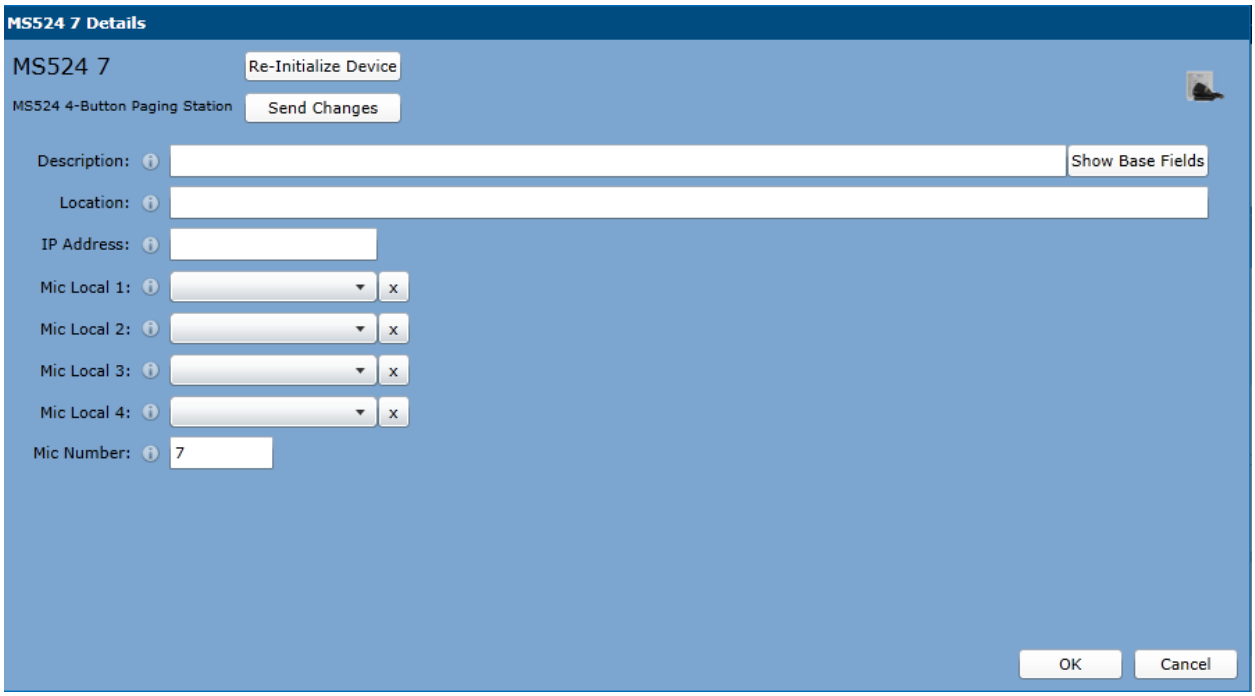


Figure 12-54: IED524 Four-Button Paging Station Properties

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the microphone station here.

Mic Local

Each microphone station can have up to four (4) Mic Local zone groups assigned. Mic Local zone groups are a method of consistently assigning actions that have destinations that are relative to the location of the microphone station. Let's say you always want the push-to-talk (PTT) button on the microphone station to do a live page to the same zone where the microphone station is physically located. You would create a single action that has an entry code of 0 (0 is for the PTT or ANNC buttons) with a zone group destination of ***Mic Local 1***. You would then assign the ***Mic Local 1*** field in the microphone station setup to correspond to a zone group programmed with the zone(s) local to that station. Each station can have a different zone group assigned to the ***Mic Local 1*** field. Since the action references that field as the destination, it will always go to the local zone group.

This logic can apply to all of the available Mic Local zone group assignments. ***Mic Local 2*** could be used for all immediately adjacent zones. ***Mic Local 3*** could apply to all zones within the local building. Using this feature allows you to create actions that function relative to the location of the microphone station that is used to launch the action.

You can clear the selection in this field by clicking on the *[X] button* to the right of the field.

Mic Number

This is the number used to identify the microphone station within the announcement controller. It must be a unique number within the local announcement controller.

Note: The 524 microphone station uses DIP switches to configure the Group Number and Mic Number on the hardware. They must be set to match the System Number and Mic Number in the software.

Actions

Actions for 524 microphone stations are divided into *Global* and *Device Specific* actions. *Global* actions will apply to all 524 microphone stations in the controller. This allows you to quickly define actions that will be common to all 524 stations. *Device Specific* actions are those that are only associated with an individual 524 microphone station. Each button on the microphone station allows you to edit or define either the *Global* or *Device Specific* actions. If you have a *Device Specific* action, then it will override the Global action on that specific microphone station.

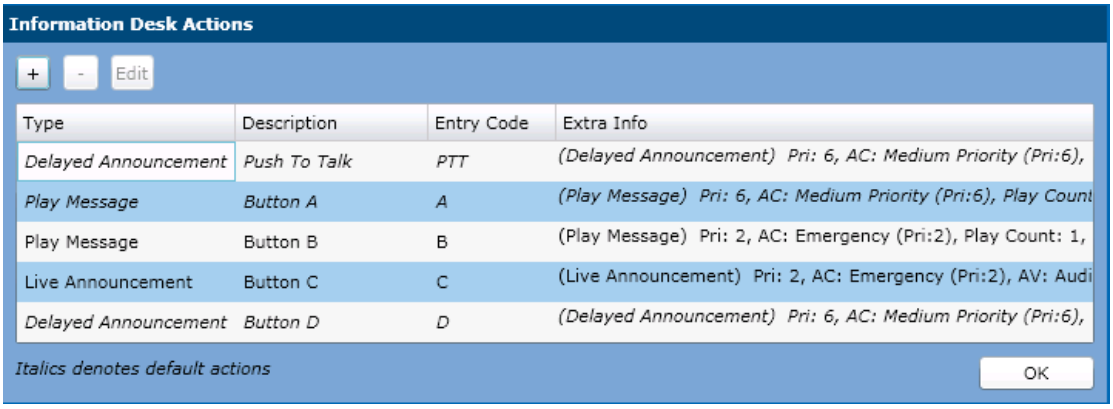


Figure 12-55: 524 Actions

Figure 12-55 shows the action definition window for a 524 microphone station. The top of the window will display the name of the station, which in this case is "Information Desk" to indicate that the station is located at the information desk. This window allows you to assign an action to each of the available buttons on the 524, or edit *Default Actions* that apply to all 524 microphone stations in the controller.

The ***Extra Info*** column on the right will tell you if several things.

- If neither a *Default* or *Device Specific* action have been defined, this field will be blank.
- If the button is using a *Default* action, it will appear in italics as shown for button A in Figure 12-55.
- If the button is using a *Device Specific* action and there is no *Default* action defined, then it will appear in regular text as shown for button B in Figure 12-55.
- If the button is using a *Device Specific* action and there is a *Default* action defined, then you will see both listed as shown for the PTT button in Figure 12-55. An icon is also displayed indicating that a *Device Specific* action is overriding the *Default* action. Since both are displayed, it will show you what the button will do if you choose to delete the *Device Specific* action, or if you need to edit the *Default* action.

Some abbreviations used in the ***Extra Info*** column are listed below:

- AC – Announcement Class
- ZG – Zone Group
- AV – This will say Audio, Visual, or Both to indicate the presence of audio and/or video takes.

- EC – Entry Code

You can edit a button by selecting (single click) it in the list and then clicking one of the appropriate icons located at the top of the window. You can also double-click on the button in the list to edit it.

Note: Any time you attempt to add, edit, or delete a button action, you will be prompted to select either the Device Specific or Default action with a dialog box similar to the one shown in Figure 12-56.

Figure 12-56 shows the prompt that will appear if you selected to Add or Edit a button that does not have either a *Device Specific* or *Default* action assigned. Note that you can select to ***Add*** either type of action to the button by clicking on the appropriate button. This will take you to the standard action definition window. Refer to the ***Action Types*** section of the documentation for information on defining individual actions. Click the ***Cancel*** button to close the prompt without making any changes.

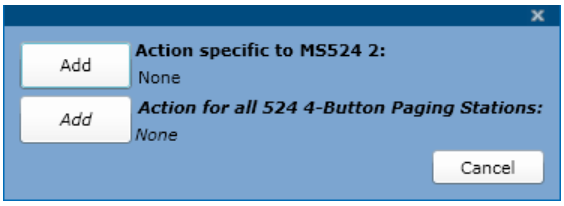


Figure 12-56: Add New 524 Action

*Note: If you add, edit or delete a Default action on any 524 microphone station, then those changes will apply to **all** 524 microphone stations.*

Figure 12-57 shows the prompt that will appear if you selected to Add or Edit a button that already has a *Default* action defined but does not have a *Device Specific* action defined. Notice that since a *Default* action is already defined, you now have an ***Edit*** button that will allow you to edit the *Default Action.* Since a *Device Specific* action has not been defined for this button, the prompt gives you the option to add one using the ***Add*** button.

If you had selected a button that has both defined, then you would be presented with an ***Edit*** button for each type of action.

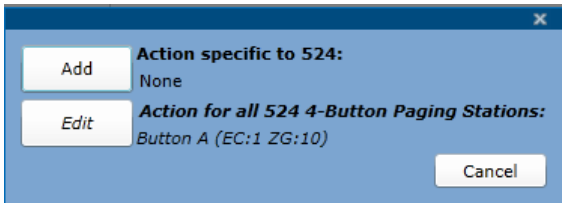


Figure 12-57: Add Specific or Edit Default 524 Action

Figure 12-58 shows the prompt that will appear if you first select a button and then click the ***Delete*** icon. You will be prompted to delete either the *Device Specific* action for the button or the *Default* action. If only one type is defined, then the ***Delete*** button will be grayed out as you cannot delete something that has not been defined.

Note: If you have a Device Specific action defined for a button and you wish to revert to the Default action, simply delete the Device Specific action associated with that button.

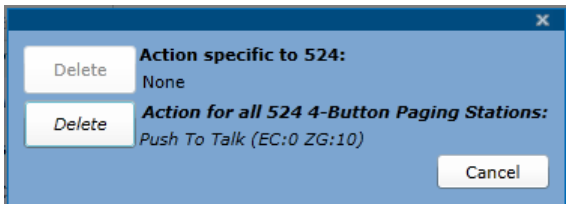


Figure 12-58: Delete MS524 Action

4.5.4.3 IED550CS Touch Panel Mic Station

The 550CS Touch Screen mic station is configured a little differently from the other mic stations. Instead of defining actions to assign to buttons or templates, the 550CS templates themselves contain all the action information. The basic properties for the 550CS are as shown below in Figure 12-59.

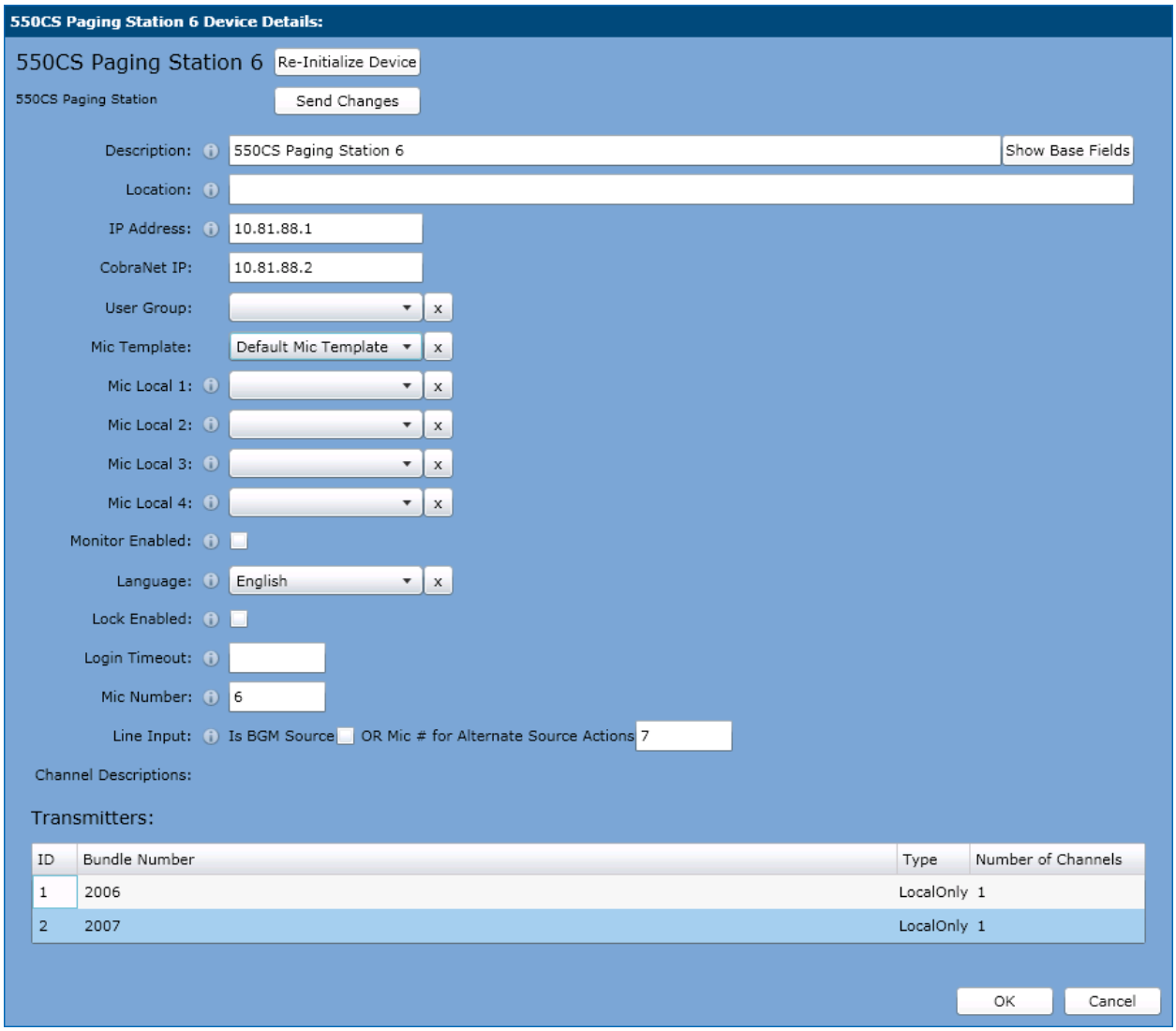


Figure 12-59: 550CS Touch Screen Paging Station Properties

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the controller part of the microphone station here. This information is available on the settings page of the 550CS (accessed by pressing the icon).

CobraNet IP

The IP address of the CobraNet module inside the 550CS. Unlike the 528 and 524 mic stations, the 550CS has separate network nodes for the control and CobraNet audio connections.

User Group

Select the user group associated with the microphone station from the drop-down list. The list of available groups is defined in the ***User Groups*** tab of the software. The name will be displayed across the top of the microphone station display when the ***Lock Enabled*** box is not checked. When the ***Lock Enabled*** box is checked, the name on the display is determined by the "logged in" user as defined in the ***Mic Passwords*** tab. This field is optional.

You can clear the selection in this field by clicking on the *[X] button* to the right of the field.

Mic Template

Select the graphical button template to use for the microphone station. Templates are defined in the ***Mic Templates*** tab of the software. This template will be used only when the ***Lock Enabled*** box is not checked. When that box is checked, the template used is determined by the one assigned to the user in the ***Mic Passwords*** tab. If no template is selected here, the station will use the one specified in the ***Default Template*** field in the ***Controllers*** tab.

You can clear the selection in this field by clicking on the *[X] button* to the right of the field.

Mic Local

Each microphone station can have up to four (4) *Mic Local* zone groups assigned. *Mic Local* zone groups are a method of consistently assigning actions that have destinations that are relative to the location of the microphone station. Let's say you always want the push-to-talk (PTT) button on the microphone station to do a live page to the same zone where the microphone station is physically located. You would create a single action that has an entry code of 0 (0 is for the PTT or ANNC buttons) with a zone group destination of ***Mic Local 1***. You would then assign the ***Mic Local 1*** field in the microphone station setup to correspond to a zone group programmed with the zone(s) local to that station. Each station can have a different zone group assigned to the ***Mic Local 1*** field. Since the action references that field as the destination, it will always go to the local zone group.

This logic can apply to all of the available *Mic Local* zone group assignments. ***Mic Local 2*** could be used for all immediately adjacent zones. ***Mic Local 3*** could apply to all zones within the local building. Using this feature allows you to create actions that function relative to the location of the microphone station that is used to launch the action.

You can clear the selection in this field by clicking on the *[X] button* to the right of the field.

Monitor Enabled

Check this box when using a microphone station with an attached monitor speaker.

Test Mic Capsule

Check this box to check the microphone connected to the station. Unlike the 528 mic station, this function works with any handheld or gooseneck model of microphone. If enabled, this will generate a fault if the microphone is disconnected from the station base or the mic capsule or pre-amp portions of the microphone fail.

Language

Select the default language for the microphone station from the drop-down list. This selects the language used to display the various built-in prompts. Click the [X] button to the right of the field to clear the entry.

Lock Enabled

When checked, users are required to login using a password that has been configured in the ***Mic Passwords*** tab. When enabled, the graphical template specified in the ***Mic Template*** field is ignored and the template is determined by the user password.

Login Timeout

When microphone stations require user login, it will also automatically logout after the interval specified in this field. This value is in seconds and defaults to 15 minutes (900 seconds) if left blank. The maximum value is 4200 seconds (70 minutes).

Mic Number

This is the number used to identify the microphone station within the announcement controller. It must be a unique number within the local announcement controller.

Line Input is BGM Source or Mic

The 550CS has a line input connection on the back that can be used for either a BGM source or a second paging source, such as for Live from Alternate Source type actions. If not BGM source, then a second Mic # must be provided in the edit box here.

CobraNet Transmitters

The CobraNet transmitters are automatically set by the system and the defaults are sufficient for most applications. The ability to override the defaults is provided here if it is required.

4.5.5 Logic/Relay Devices

Auxiliary I/O devices include the T9032LVIO Titan Logic/Voltage I/O device, 1200LIR (device built into 1200CPU), T9040NLR Titan Noise Sensor/Logic/Relay device, T9016RY/T9032RY Titan Relay devices, 1522LR Logic/Relay Module, and 1516LI Logic Input device. The Device properties for each of these are described below.

4.5.5.1 T9032LVIO Titan Logic /Voltage I/O

The IEDT9032LVIO is a logic input/output device with 32 channels that are configured as either inputs or outputs. The type of each channel, input or output, is determined in groups of eight (8) so the following combinations are possible.

- 32 OUT / 0 IN
- 24 OUT / 8 IN
- 16 OUT / 16 IN
- 8 OUT / 24 IN
- 0 OUT / 32 IN

The I/O configuration of the device is determined by the value entered in the ***Total Relays*** field. The channels are configured with outputs first and then inputs. If you decide to use eight (8) channels for logic outputs, then you would enter a value of 8 in the ***Total Relays*** field. This would configure the device with channels 1 through 8 as logic outputs and 9 through 32 would then be available as logic inputs and available to launch actions. If you entered a value of 16 in the ***Total Relays*** field, then channels 1 through 16 would be logic outputs and 17 through 32 would be inputs.

To configure the device as all logic inputs, just leave the ***Total Relays*** field blank. Figure 12-60 shows the setup properties of a device with eight (8) channels configured as outputs.

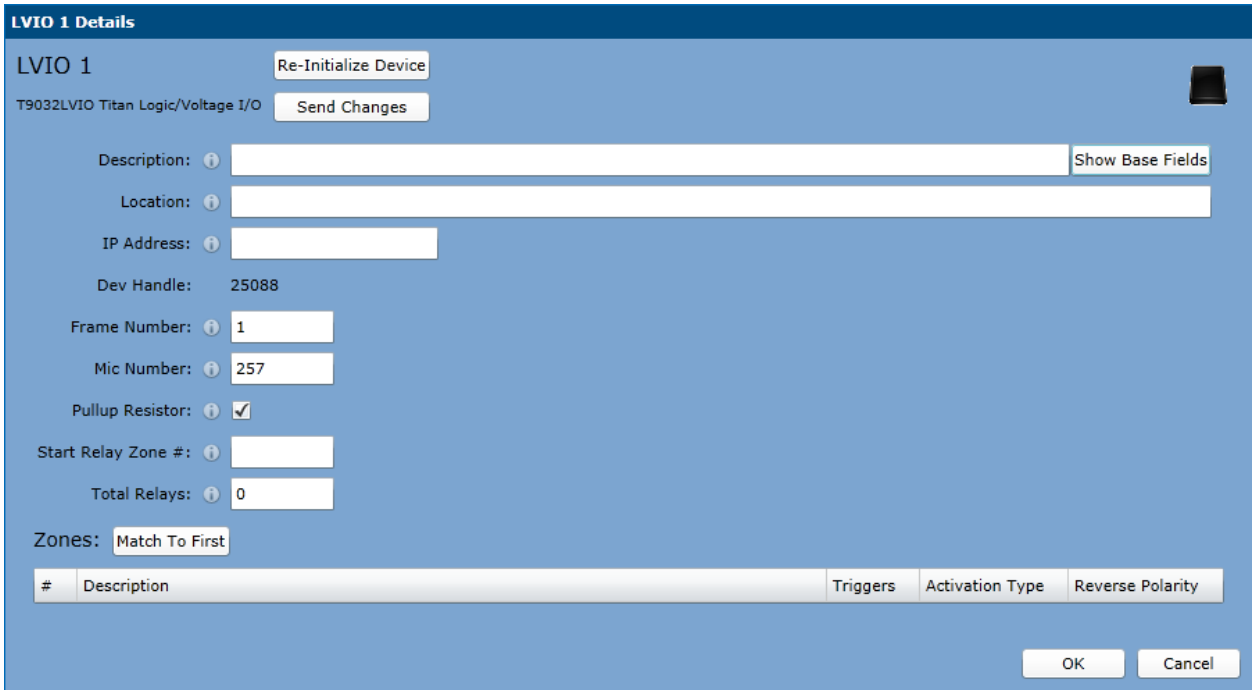


Figure 12-60: T9032LVIO Logic/Voltage I/O Setup

Note: You can configure a device with a number of outputs that are not a multiple of 8. However, doing this will block the remaining channels of that group from use. For example, you only want to use channels 1 through 4 as outputs. This will block 5 through 8 from use and the first available action source will be input 9.

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the device

Dev Handle

This is a software address used by the system. It is assigned by the system and provided here for reference if needed.

Frame Number

This is a unique ID number used to identify the Titan frames used in the system. When you add the device, the system will automatically assign the next available frame number.

Mic Number

This is the number used to identify the device as an input device within the announcement controller. It must be a unique number within the local announcement controller. This number is automatically assigned when you add the device, but can be edited if necessary.

Pullup Resistor

When checked, the input will detect dry contact closures between the input and the ground reference on the device. When not checked, the input will activate when it receives a voltage above a certain threshold.

Start Relay Zone

This is the zone number that represents the first output logic zone on the device. The system will automatically use the next available zone number as the starting zone number when you add a new device. It can be edited here if needed.

Total Relays

This number represents the total number of output logic zones that will be present on this device. Each output is numbered sequentially based on the start zone entered in the ***Start Relay Zone #*** field.

Note: You may be wondering why the term "Relays" is used here when we are talking about logic outputs. The system treats relays and logic outputs in the same manner. The difference is in the physical hardware and the software really does not care about the physical hardware interface. For programming simplicity, the term has been re-used.

(a) T9032LVIO Zones Grid

Match To First

This button has no function for this device.

Zone Number

This is the zone number that will be associated with this logic output. This is calculated based on the values entered in the ***Start Relay Zone #*** and ***Total Relays*** fields.

Description

This is a text field used to describe the output function or connection. To edit, double-click on the field.

Triggers

If a logic output zone is used as part of a zone map in an announcement, then the output will energize for the duration of the announcement. It will function this way as long as no triggers are defined for the output. The ***Trigger*** field is used to associate the output with faults that are reported as part of the *System Supervision* module. Click the ***Edit*** button to assign a trigger to the output. This will open the assignment window as shown in Figure 12-61. From here, select a specific fault from the drop-down list and click the **[+] button**. This will add the selected fault to the list. To remove a fault, select the fault with the mouse and then click the **[X] button**. You can stack multiple faults on a single output. The output will activate as determined by the setting in the ***Activation Type*** field when any of the assigned faults are reported.

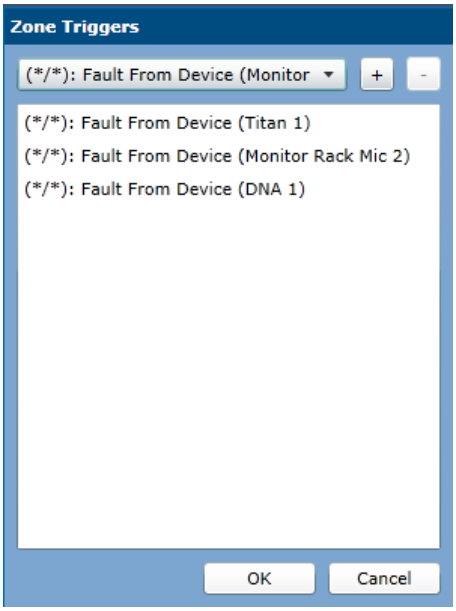


Figure 12-61: T9032LVIO Triggers

Activation Type

The ***Activation Type*** applies only to outputs that function as fault indicators and have definitions in the ***Triggers*** field.

- Solid – The output will activate while the fault condition is present and deactivate once the fault condition has cleared.
- Momentary – The output will activate for approximately 1 second and then deactivate.
- Pulsating – The output will cycle between active and inactive states at a rate of approximately 1 second on and 1 second off.

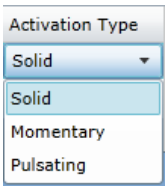


Figure 12-62: T9032LVIO Activation Types

Reverse Polarity

Check this box to reverse the operating polarity of the relay. Normally, a relay is in its de-energized state until it is triggered. When this box is checked, it will normally energize and will de-energize when triggered. This is most useful when a relay is used to indicate a fault to an external system or indicator panel. That way a fault condition will be triggered if the unit loses power.

(b) T9032LVIO Actions

When you open the *Actions* for a logic device, you will notice that there are two actions for each logic input. One is associated with the activation of the input and the other with the deactivation of the input. You can differentiate between the two by looking for ***On*** or ***Off*** in the ***Logic State*** field in the ***Extra Info*** column. This allows you to create an action that will remain active while a contact closure is held. To do this, you must define an action to start the announcement and then a separate action to stop it using the other logic state.

*Note: The T9032LVIO operates slightly different from the 1200LIR in that it has a reference voltage available in addition to a ground. To control an action using a contact closure, you must wire the closure between the input and the ground reference on the terminal connector. When a closure is present between the input and ground, it will trigger the action programmed for the **On** logic state. When the closure is removed, it will trigger the action programmed for the **Off** logic state. If you wire between the input and the reference voltage, the logic is reversed. It is recommended that you only use the ground terminal and NOT use the voltage reference terminal.*

The number in the Entry Code field corresponds to the physical input on the device. Note that the first available input is not 1 in Figure 12-66. This is because 1 through 8 were defined to be outputs. The starting input number is determined by the value placed in the ***Total Relays*** field of the device setup.

To edit an action, select the action and then click the edit icon located at the top of the window. You can also double-click on a row in the ***Type*** column to open the editor. Refer to the ***Action Types*** section for information on configuring actions.

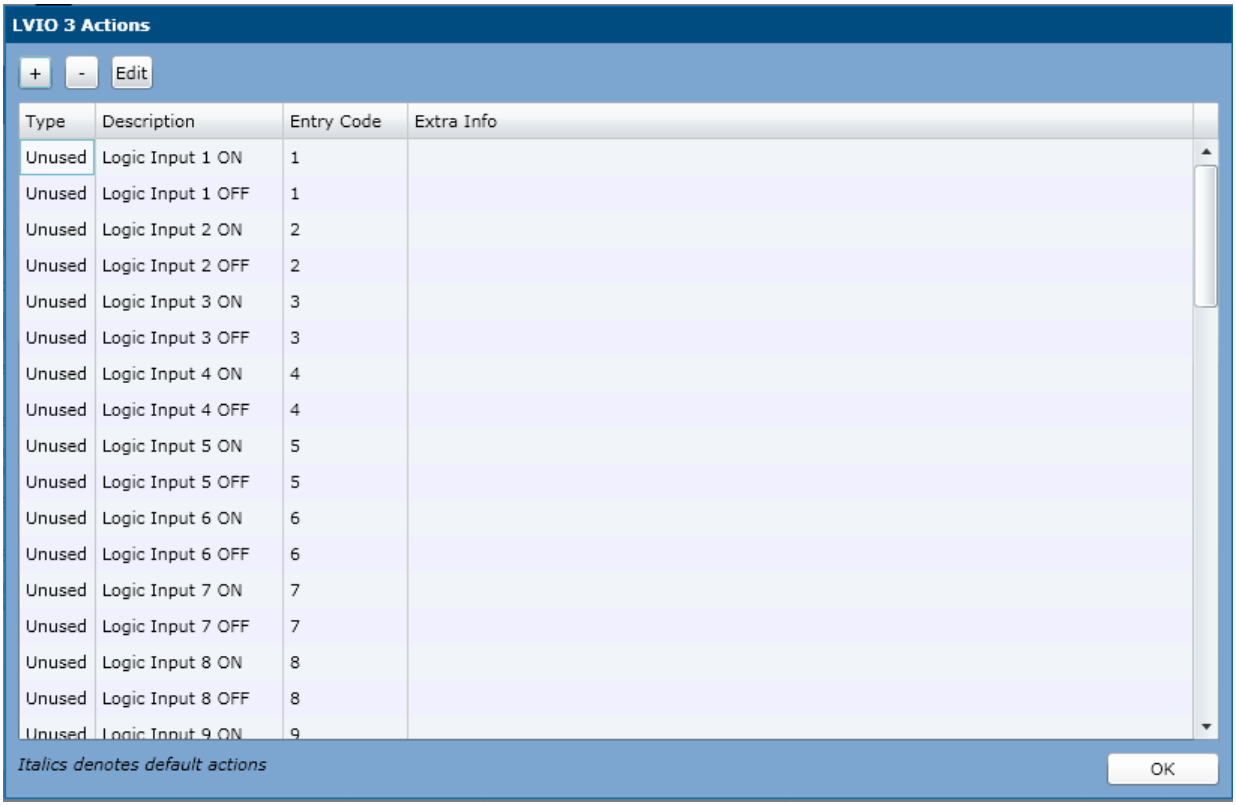


Figure 12-63: T9032LVIO Actions

4.5.5.2 1200LIR Logic Input/Relay Output

This is the configuration for the 1200LIR card that is installed in the 1200ACS and 1200MSG controllers. This device has eight (8) logic inputs capable of sensing contact closures or logic voltages. It also has eight (8) form C relay outputs for interfacing with external devices. You can assign actions to each of the logic inputs. The relay outputs can either be used as output zones that close while announcements are in progress or they may be tied to the *System Supervision* module to indicate faults.

Note: Relay 8 on the 1200LIR board will ALWAYS momentary close when the unit powers up or is restarted. Care should be taken to not use this relay as an output to trigger emergency conditions to an external device such as a fire alarm system.

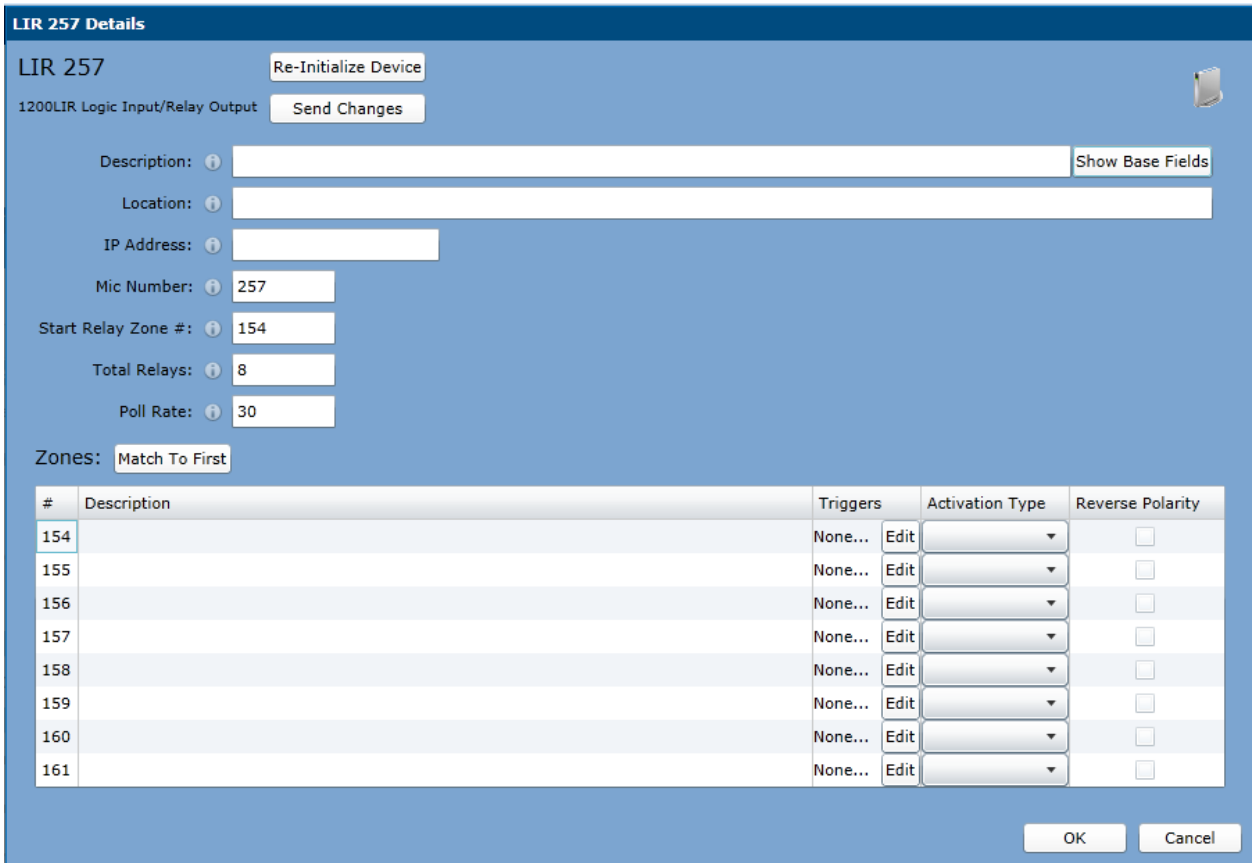


Figure 12-64: 1200 Logic Input/Relay Output Setup

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the device that contains the 1200LIR card. If the device is installed in the local controller, then you will use the address of the local controller. That address can be found in the lower left corner of the *System Management Center* window. If the device is installed in an external 1200MSG Message Server, then you will need to use the IP address of that device.

Mic Number

This is the number used to identify the device as an input device within the announcement controller. It must be a unique number within the local announcement controller. This number is automatically assigned when you add the device, but can be edited if necessary.

Start Relay Zone

This is the zone number that represents the first relay zone in the device. The system will automatically use the next available zone number as the starting zone number when you add a new device. It can be edited here if needed.

Total Relays

This number represents the total number of relay zones that will be present on this device. The device has eight (8) relays that will function as zones and this is the default number when adding the device. Since relay zones do not count towards the total number of zones used in the software license, this should always be set to 8.

Poll Rate

The device will automatically transmit any changes of input states to the system as they occur. The ***Poll Rate*** is a backup in the event that a change message is missed. The system will poll the device for the status of all inputs at the rate entered here. This time is in seconds and the default is 30 seconds.

(a) 1200LIR Zones Grid

Match To First

This button has no function for this device.

Zone Number

This is the zone number that will be associated with this relay output. This is calculated based on the values entered in the ***Start Relay Zone*** # and ***Total Relays*** fields.

Description

This is a text field used to describe the relay function or connection. To edit, double-click on the field.

Triggers

If a relay zone is used as part of a zone map in an announcement, then the relay will energize for the duration of the announcement. It will function this way as long as no triggers are defined for the relay. The ***Trigger*** field is used to associate the relay with faults that are reported as part of the *System Supervision* module. Click the ***Edit*** button to assign a trigger to the relay. This will open the assignment window as shown in Figure12-65. From here, select a specific fault from the drop-down list and click the **[+] button**. This will add the selected fault to the list. To remove a fault, select the fault with the mouse and then click the **[-] button**. You can stack multiple faults on a single relay. The relay will activate as determined by the setting in the ***Activation Type*** field when any of the assigned faults are reported.

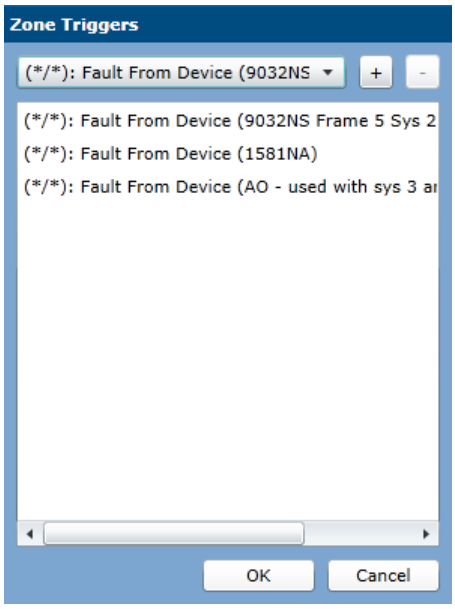


Figure 12-65: 1200LIR Triggers

Activation Type

The ***Activation Type*** applies only to relays that function as fault relays and have definitions in the ***Triggers*** field.

- Solid – The relay will activate while the fault condition is present and deactivate once the fault condition has cleared.
- Momentary – The relay will activate for approximately 1 second and then deactivate.
- Pulsating – The relay will cycle between active and inactive states at a rate of approximately 1 second on and 1 second off.

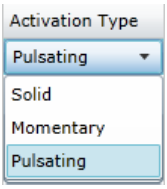


Figure 12-66: 1200LIR Activation Types

Reverse Polarity

Check this box to reverse the operating polarity of the relay. Normally, a relay is in its de-energized state until it is triggered. When this box is checked, it will normally energize and will de-energize when triggered. This is most useful when a relay is used to indicate a fault to an external system or indicator panel. That way a fault condition will be triggered if the unit loses power.

(b) 1200LIR Actions

When you open the Actions for a logic device, you will notice that there are two actions for each logic input. One is associated with the activation of the input and the other with the deactivation of the input. You can differentiate between the two by looking for ***On*** or ***Off*** in the ***Logic State*** field in the ***Extra Info*** column. This allows you to create an action that will remain active while a contact closure is held. To do this, you must define an action to start the announcement and then a separate action to stop it using the other logic state.

The number in the ***Entry Code*** field corresponds to the physical input on the device. To edit an action, select the action and then click the edit icon located at the top of the window. You can also double-click on a row in the ***Type*** column to open the editor. Refer to the ***Action Types*** section for information on configuring actions.

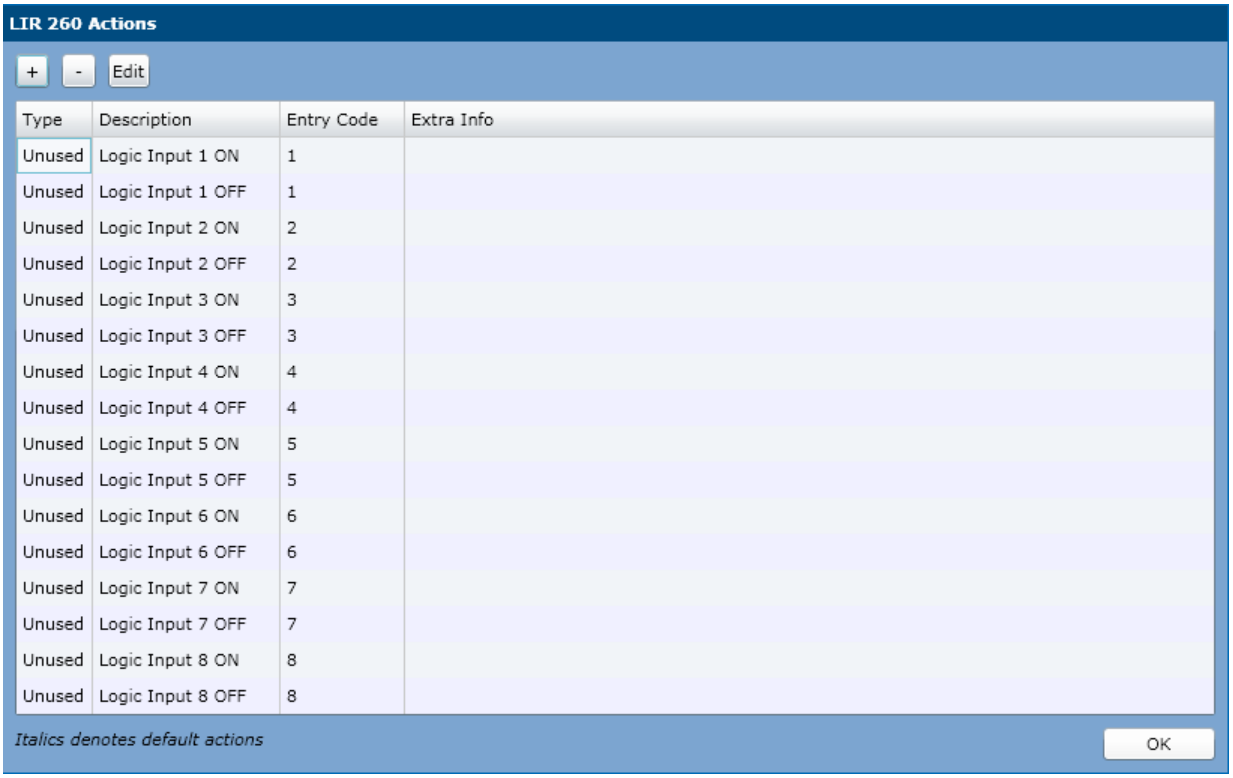


Figure 12-67: 1200LIR Actions

4.5.5.3 T9040NLR Titan Noise, Logic & Relay Device

The T9040NLR is a device that combines ambient noise sensor inputs, logic inputs, and relay outputs into a single device. It has the following capacities:

- 16 ambient noise sensor inputs
- 16 logic inputs
- 8 form C relay outputs

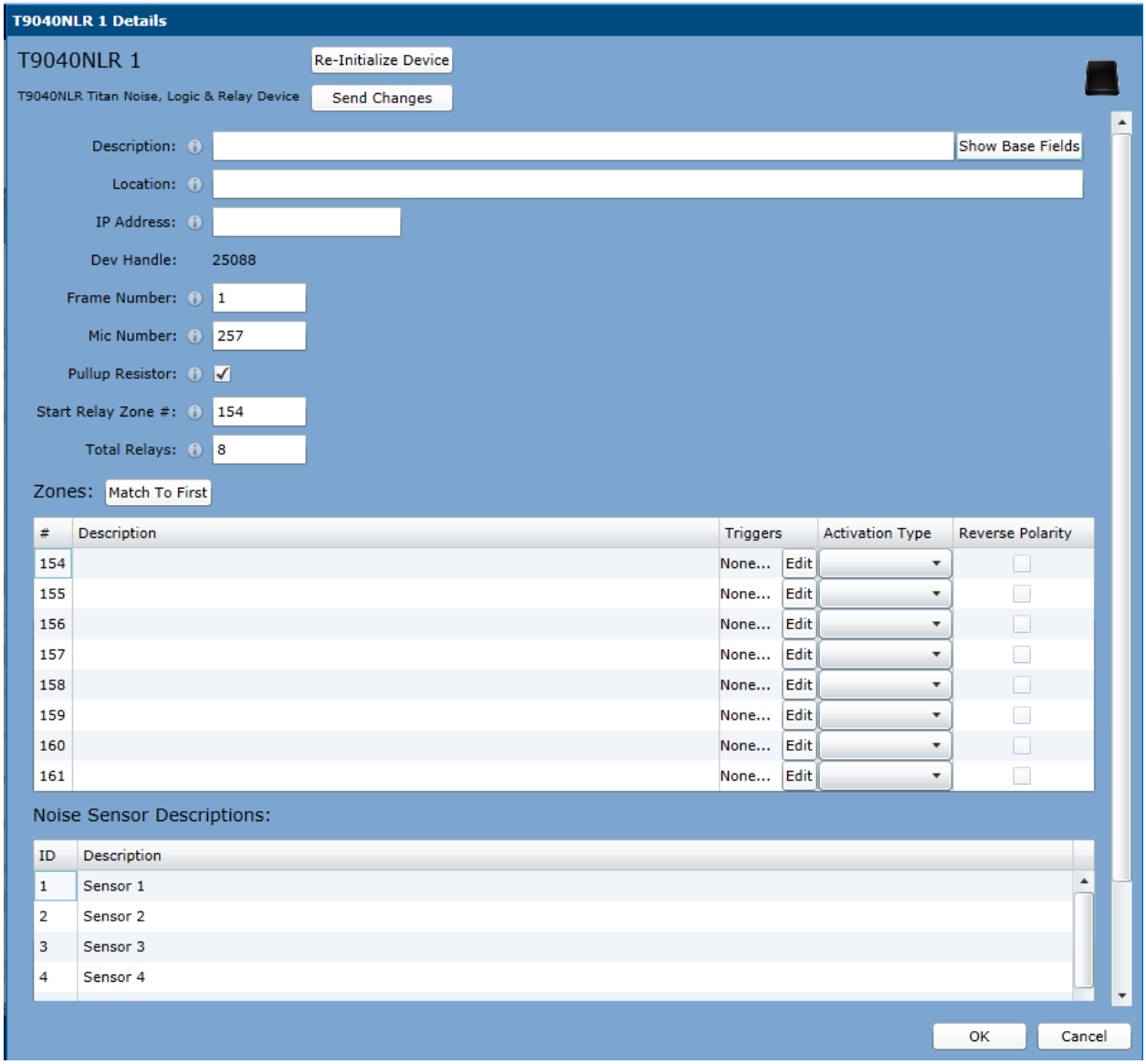


Figure 12-68: T9040NLR Noise, Logic, & Relay Device Setup

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the device.

Dev Handle

This is a software address used by the system. It is assigned by the system and provided here for reference if needed.

Frame Number

This is a unique ID number used to identify the Titan frames used in the system. When you add the device, the system will automatically assign the next available frame number.

Mic Number

This is the number used to identify the device as an input device within the announcement controller. It must be a unique number within the local announcement controller. This number is automatically assigned when you add the device, but can be edited if necessary.

Pullup Resistor

When checked, the input will detect dry contact closures between the input and the ground reference on the device. When not checked, the input will activate when it receives a voltage above a certain threshold.

Start Relay Zone

This is the zone number that represents the first relay zone on the device. The system will automatically use the next available zone number as the starting zone number when you add a new device. It can be edited here if needed.

Total Relays

This number represents the total number of relay zones that will be present on this device. Each output is numbered sequentially based on the start zone entered in the ***Start Relay Zone*** # field. The T9040NLR can have a total of 8 relay zones defined. Fewer can be defined if necessary.

(a) T9040NLR Zones Grid

Match To First

This button has no function for this device.

Zone Number

This is the zone number that will be associated with this relay output. This is calculated based on the values entered in the ***Start Relay Zone*** # and ***Total Relays*** fields.

Description

This is a text field used to describe the output function or connection. To edit, double-click on the field.

Triggers

If a relay zone is used as part of a zone map in an announcement, then the relay will energize for the duration of the announcement. It will function this way as long as no triggers are defined for the relay. The ***Trigger*** field is used to associate the relay with faults that are reported as part of the *System Supervision* module. Click the ***Edit*** button to assign a trigger to the relay. This will open the assignment window as shown in Figure 12-69. From here, select a specific fault from the drop-down list and click the **[+] button**. This will add the selected fault to the list. To remove a fault, select the fault with the mouse and then click the **[-] button**. You can stack multiple faults on a single relay. The relay will activate as determined by the setting in the ***Activation Type*** field when any of the assigned faults are reported.

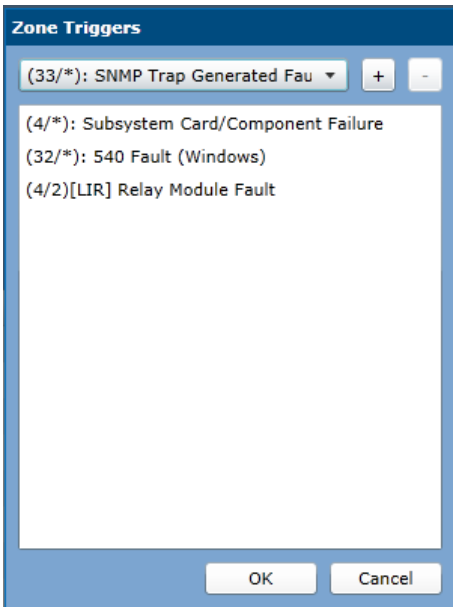


Figure 12-69: T9040NLR Triggers

Activation Type

The ***Activation Type*** applies only to outputs that function as fault indicators and have definitions in the ***Triggers*** field.

- Solid – The relay will activate while the fault condition is present and deactivate once the fault condition has cleared.
- Momentary – The relay will activate for approximately 1 second and then deactivate.
- Pulsating – The relay will cycle between active and inactive states at a rate of approximately 1 second on and 1 second off.

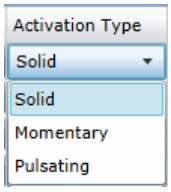


Figure 12-70: T9040NLR Activation Types

Reverse Polarity

Check this box to reverse the operating polarity of the relay. Normally, a relay is in its de-energized state until it is triggered. When this box is checked, it will normally energize and will de-energize when triggered. This is most useful when a relay is used to indicate a fault to an external system or indicator panel. That way a fault condition will be triggered if the unit loses power.

Noise Sensor Descriptions

This list is used to assign your own descriptive names for each noise sensor. This is the name that will appear when you assign a sensor to a channel. It is recommended that you use a name that references the either the name or zone number where the sensor is located.

ID

This is a read-only field that matches the physical sensor input number on the back of the T9040NLR device.

Description

Double-click on this field to edit the text used to describe/name the sensor.

(b) T9040NLR Actions

Actions are available for the 16 logic inputs on the device. When you open the Actions for the device, you will notice that there are two actions for each logic input. One is associated with the activation of the input and the other with the deactivation of the input. You can differentiate between the two by looking for ***On*** or ***Off*** in the ***Logic State*** field in the ***Extra Info*** column. This allows you to create an action that will remain active while a contact closure is held. To do this, you must define an action to start the announcement and then a separate action to stop it using the other logic state.

*Note: The T9040NLR operates slightly different from the 1200LIR in that it has a reference voltage available in addition to a ground. To control an action using a contact closure, you must wire the closure between the input and the ground reference on the terminal connector. When a closure is present between the input and ground, it will trigger the action programmed for the **On** logic state. When the closure is removed, it will trigger the action programmed for the **Off** logic state. Make sure you use the ground terminal and NOT the voltage reference terminal.*

To edit an action, select the action and then click the edit icon located at the top of the window. You can also double-click on a row in the ***Type*** column to open the editor. Refer to the ***Action Types*** section for information on configuring actions.

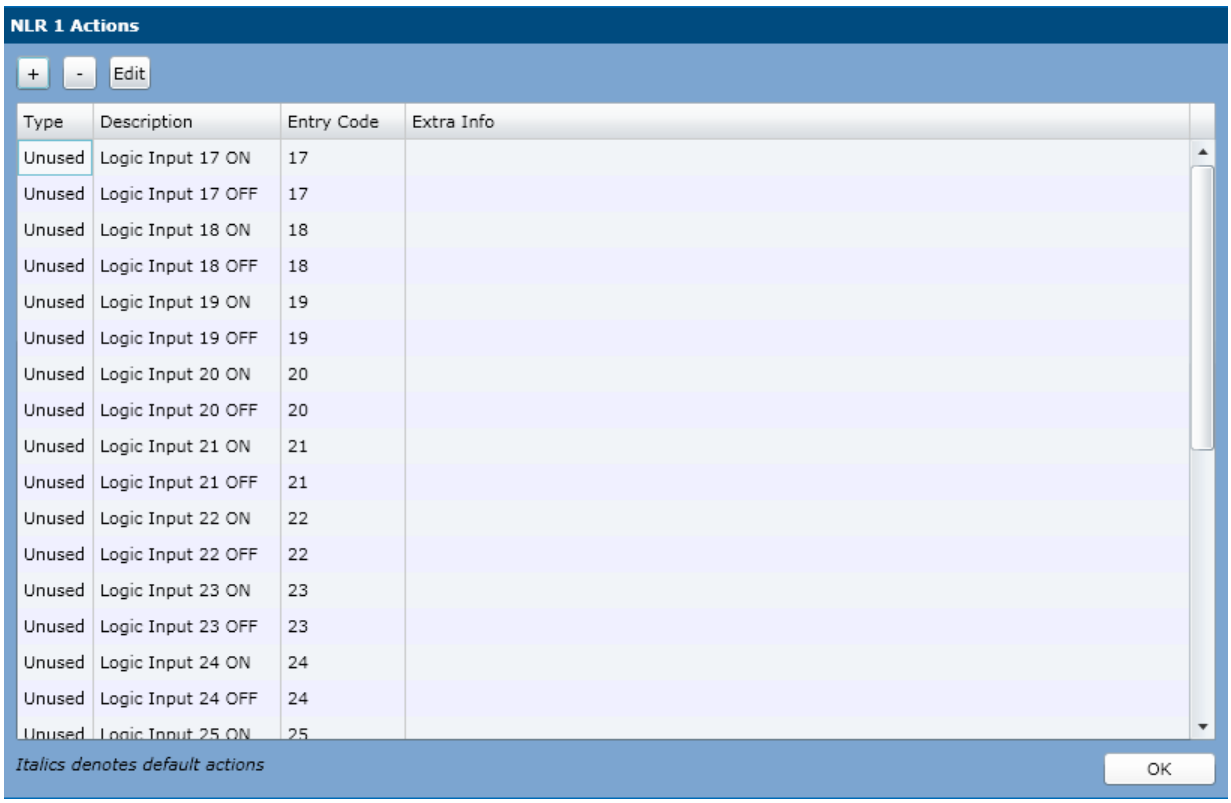


Figure 12-71: T9040NLR Actions

4.5.5.4 T9016RY/T9032RY Titan Relay Device

The Titan relay boxes come in two sizes 16 form-C relays and 32 form-C relays, T9016RY and T9032RY respectively. The form to configured these in SMC is shown below in Figure 12-72

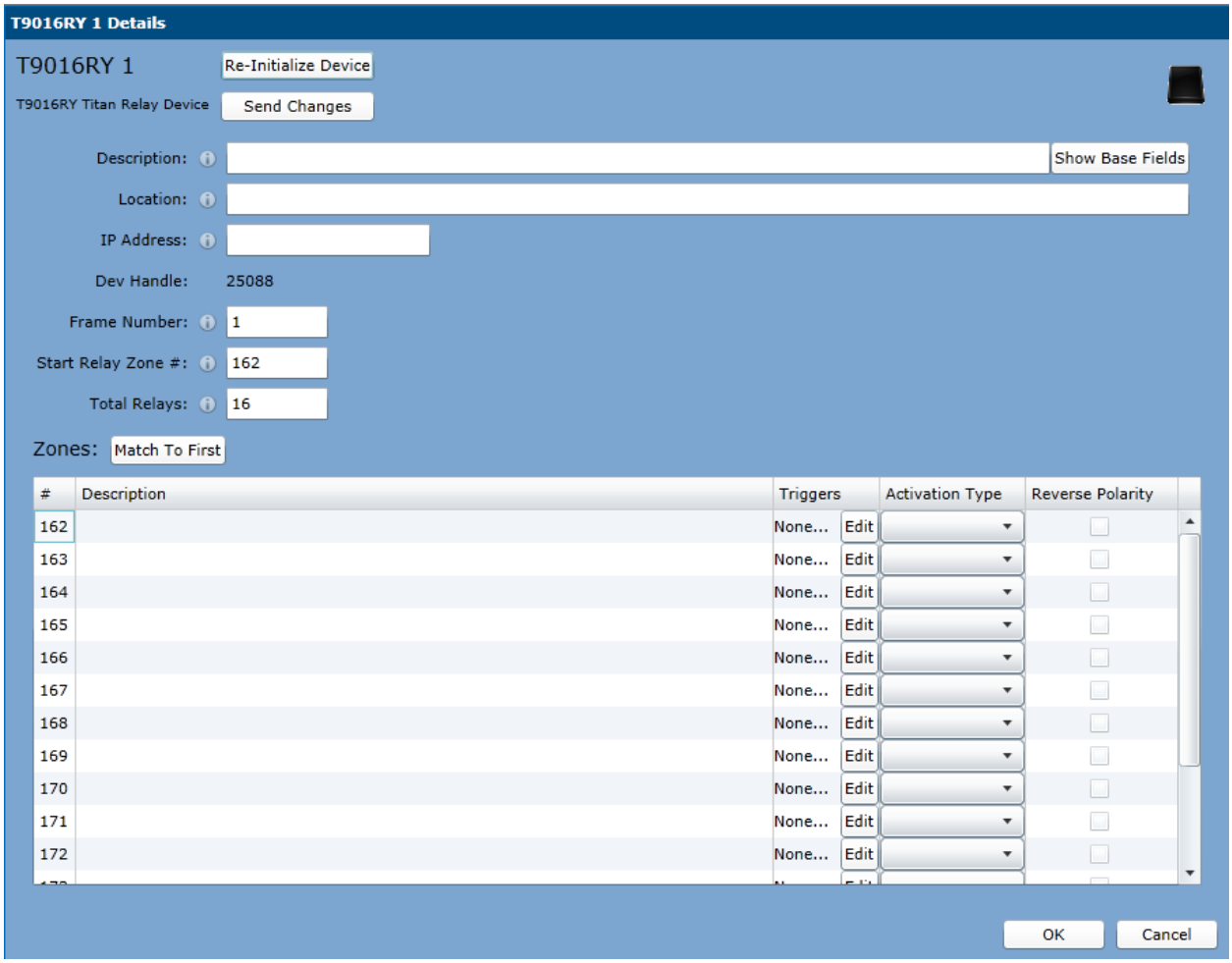


Figure 12-72: T9016RY Titan Relay Device Setup

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the device.

Dev Handle

This is a software address used by the system. It is assigned by the system and provided here for reference if needed.

Frame Number

This is a unique ID number used to identify the Titan frames used in the system. When you add the device, the system will automatically assign the next available frame number.

Start Relay Zone

This is the zone number that represents the first relay zone on the device. The system will automatically use the next available zone number as the starting zone number when you add a new device. It can be edited here if needed.

Total Relays

This number represents the total number of relay zones that will be present on this device. Each output is numbered sequentially based on the start zone entered in the ***Start Relay Zone*** # field. The T9016RY can have a total of 16 relay zones defined and the T9032RY can have a total of 32. Fewer can be defined if necessary.

(a) T9016RY/T9032RY Zones Grid

Match To First

This button has no function for this device.

Zone Number

This is the zone number that will be associated with this relay output. This is calculated based on the value entered in the ***Start Relay Zone*** # and the relay output number. The T9016RY has 16 relays and the T9032RY has 32 relays.

Description

This is a text field used to describe the output function or connection. To edit, double-click on the field.

Triggers

If a relay zone is used as part of a zone map in an announcement, then the relay will energize for the duration of the announcement. It will function this way as long as no triggers are defined for the relay. The ***Trigger*** field is used to associate the relay with faults that are reported as part of the *System Supervision* module. Click the ***Edit*** button to assign a trigger to the relay. This will open the assignment window as shown in Figure 12-73. From here, select a specific fault from the drop-down list and click the **[+] *button***. This will add the selected fault to the list. To remove a fault, select the fault with the mouse and then click the **[-] button**. You can stack multiple faults on a single relay. The relay will activate as determined by the setting in the ***Action Type*** field when any of the assigned faults are reported.

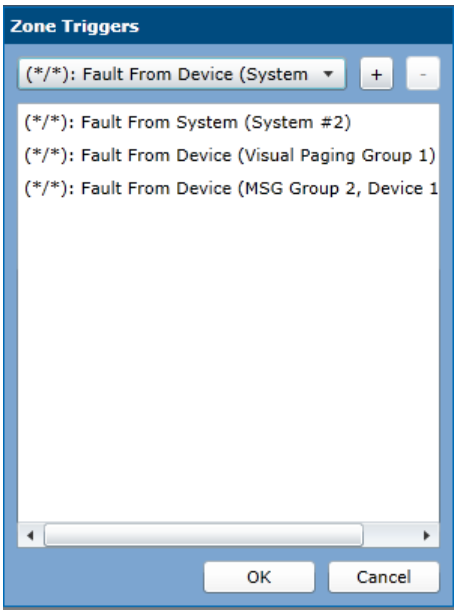


Figure 12-73: T9016RY Triggers

Activation Type

The ***Activation Type*** applies only to outputs that function as fault indicators and have definitions in the ***Triggers*** field.

- Solid – The relay will activate while the fault condition is present and deactivate once the fault condition has cleared.
- Momentary – The relay will activate for approximately 1 second and then deactivate.
- Pulsating – The relay will cycle between active and inactive states at a rate of approximately 1 second on and 1 second off.

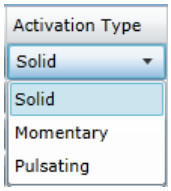


Figure 12-74: T9016RY Activation Types

Reverse Polarity

Check this box to reverse the operating polarity of the relay. Normally, a relay is in its de-energized state until it is triggered. When this box is checked, it will normally energize and will de-energize when triggered. This is most useful when a relay is used to indicate a fault to an external system or indicator panel. That way a fault condition will be triggered if the unit loses power.

4.5.5.5 1522LR Logic/Relay Module

This device has two (2) logic inputs capable of sensing contact closures or logic voltages. It also has two (2) form-C relay outputs for interfacing with external devices. You can assign actions to each of the logic inputs. The relay outputs can either be used as output zones that close while announcements are in progress or they may be tied to the *System Supervision* module to indicate faults.

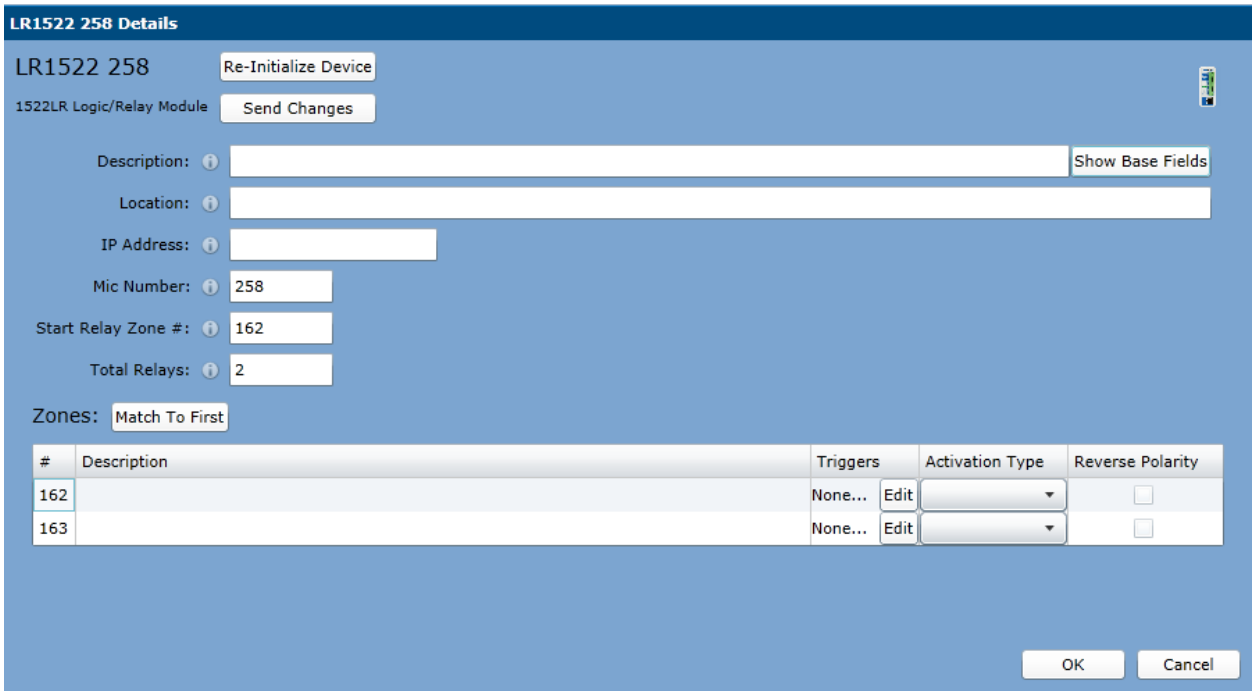


Figure 12-75: 1522LR Logic/Relay Module Device Setup

*Note: The 1522LR is not automatically discovered by the system. You must manually create it by adding it as a new device in the **Devices** section.*

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the device.

Mic Number

This is the number used to identify the device as an input device within the announcement controller. It must be a unique number within the local announcement controller. This number is automatically assigned when you add the device, but can be edited if necessary.

Start Relay Zone

This is the zone number that represents the first relay zone on the device. The system will automatically use the next available zone number as the starting zone number when you add a new device. It can be edited here if needed.

Total Relays

This number represents the total number of relay zones that will be present on this device. Each output is numbered sequentially based on the start zone entered in the ***Start Relay Zone*** # field. The 1522LR can have a total of 2 relay zones defined. The total number of relay zones can be reduced to one if necessary.

(a) 1522LR Zones Grid

Match To First

This button has no function for this device.

Zone Number

This is the zone number that will be associated with this relay output. This is calculated based on the values entered in the ***Start Relay Zone*** # and ***Total Relays*** fields.

Descriptions

This is a text field used to describe the output function or connection. To edit, double-click on the field.

Triggers

If a relay zone is used as part of a zone map in an announcement, then the relay will energize for the duration of the announcement. It will function this way as long as no triggers are defined for the relay. The ***Trigger*** field is used to associate the relay with faults that are reported as part of the *System Supervision* module. Click the ***Edit*** button to assign a trigger to the relay. This will open the assignment window as shown in Fig 12-76. From here, select a specific fault from the drop-down list and click the **[+] button**. This will add the selected fault to the list. To remove a fault, select the fault with the mouse and then click the **[-] button**. You can stack multiple faults on a single relay. The relay will activate as determined by the setting in the ***Activation Type*** field when any of the assigned faults are reported.

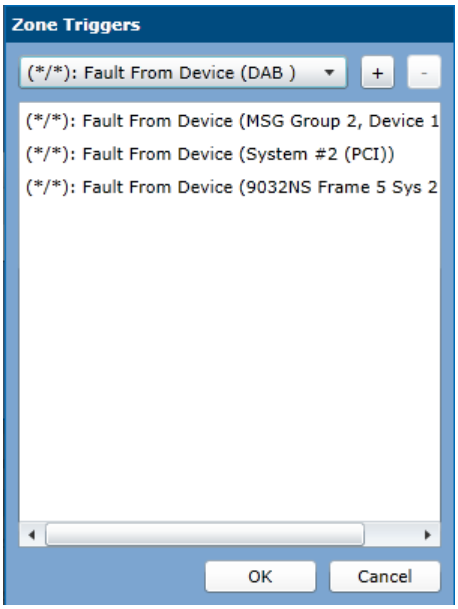


Figure 12-76: 1522LR Triggers

Activation Type

The ***Activation Type*** applies only to outputs that function as fault indicators and that have definitions in the ***Triggers*** field.

- Solid – The relay will activate while the fault condition is present and deactivate once the fault condition has cleared.
- Momentary – The relay will activate for approximately 1 second and then deactivate.
- Pulsating – The relay will cycle between active and inactive states at a rate of approximately 1 second on and 1 second off.

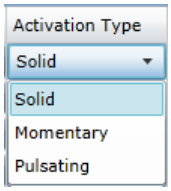


Figure 12-77: 1522LR Activation Type

Reverse Polarity

Check this box to reverse the operating polarity of the relay. Normally, a relay is in its de-energized state until it is triggered. When this box is checked, it will normally energize and will de-energize when triggered. This is most useful when a relay is used to indicate a fault to an external system or indicator panel. That way a fault condition will be triggered if the unit loses power.

(b) 1522LR Actions

Actions are available for the two logic inputs on the device. When you open the Actions for the device, you will notice that there are two actions for each logic input. One is associated with the activation of the input and the other with the deactivation of the input. You can differentiate between the two by looking for ***On*** or ***Off*** in the ***Logic State*** field in the ***Extra Info*** column. This allows you to create an action that will remain active while a contact closure is held. To do this, you must define an action to start the announcement and then a separate action to stop it using the other logic state.

To edit an action, select the action and then click the edit icon located at the top of the window. You can also double-click on a row in the ***Type*** column to open the editor. Refer to the ***Action Types*** section for information on configuring actions.

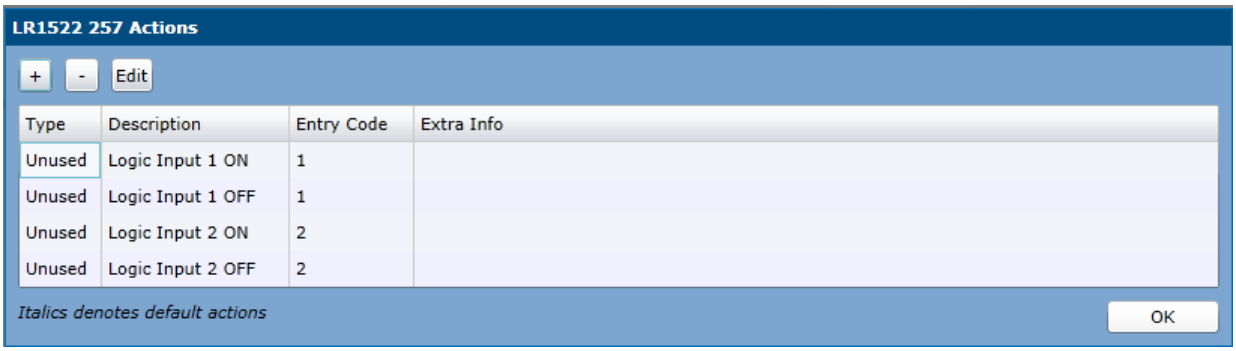


Figure 12-78: 1522LR Actions

4.5.5.6 1516LI Logic Input Device

This device has 16 logic inputs and with the addition of one 1516LI-E expansion module, 32 logic inputs that can be used to trigger actions in the GLOBALCOM system.

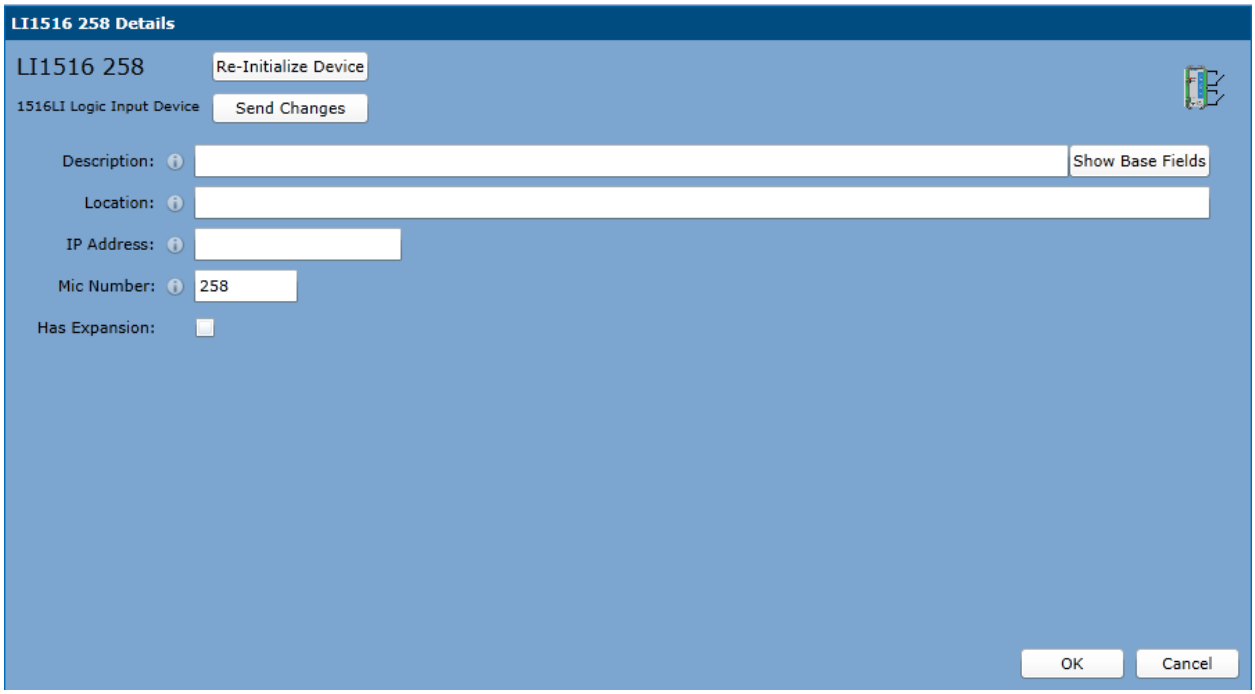


Figure 12-79: 1516LI Logic Input Device Setup

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the device.

Mic Number

This is the number used to identify the device as an input device within the announcement controller. It must be a unique number within the local announcement controller. This number is automatically assigned when you add the device, but can be edited if necessary.

Has Expansion

Check this box if a 1516LI-E expansion is attached to this device to expand the inputs from 16 to 32 available.

4.5.6 Endpoint Groups (and Endpoint Devices)

There are three kinds of Groups: Display Group, CobraNet Group and IP Endpoint Group. The Display Group owns individual Display Devices while the other two groups own either CobraNet or IP audio type endpoints, such as intercom devices, IP Speakers and Zone Controllers. The Device properties for each of the groups and devices owned by them are described below.

4.5.6.1 Display Zone Controller

Use this device type to define a group of displays for visual paging. When you are using a text-to-speech (TTS) or prerecorded message, the display will show text that is synchronized to the audible message. Each display will appear as an available zone in the ***Zone Group*** setup and individual ***Action*** configuration.

This allows you to define a group of displays that will be addressed using a broadcast IP address. For situations where you must individually configure each display, you must add a ***Display*** device type for each individual display that is required. This would be the case if you must configure displays to show other content when idle or if they are used for wayfinding.

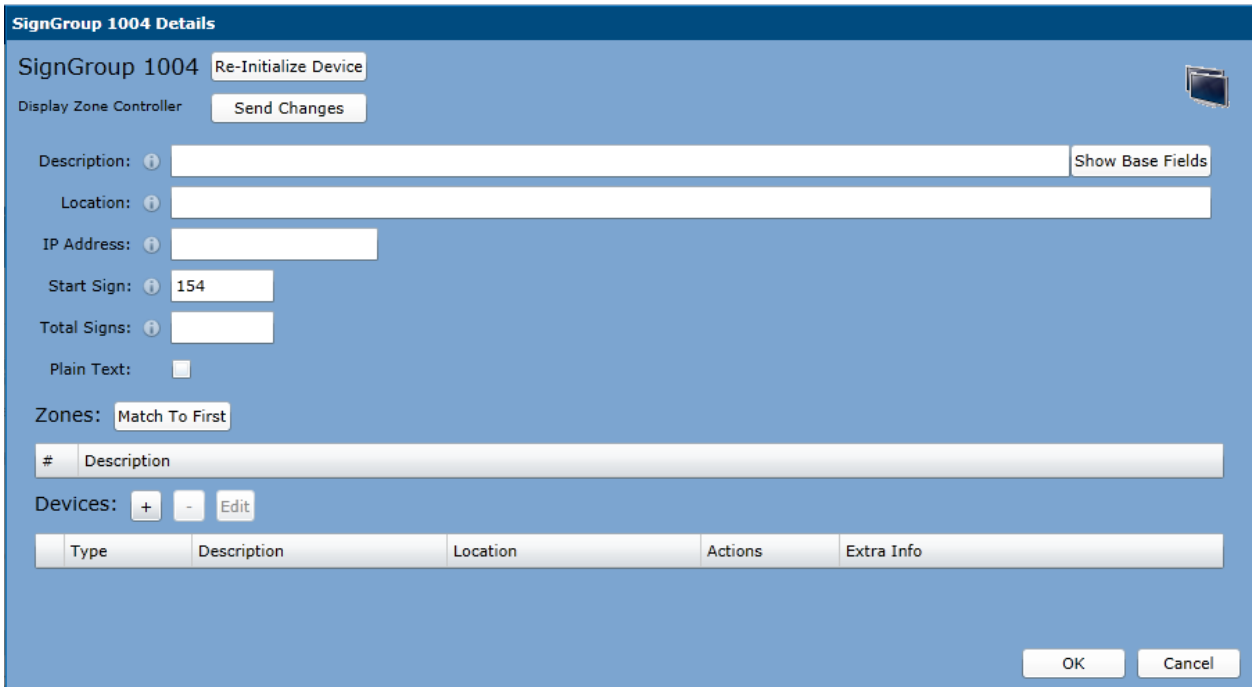


Figure 12-80: Display Zone Controller Setup

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter an appropriate *broadcast* (or unicast) IP address that will reach the display(s). For example, an address of 10.2.128.255 will includes all displays with an IP address in the range from 10.2.128.1 through 10.2.128.253 if the controller's subnet mask is 255.255.255.0.

Start Sign

This is the sign number that represents the first sign in the group. The sign number is treated like the zone number for audio zones and included in the same list. The system will automatically use the next available

zone number as the starting zone number when you add a new device. It can be edited here if needed. For example, you have a system that already has 32 zones. When you add a new Display Zone Controller, the starting zone will be 33.

Total Signs

This number represents the total number of signs that will be present in this group. Sign zones do not count towards the total number of zones allowed by the software license.

Note: The system allows you to use display zone numbers that match audio zone numbers. This is useful when you have displays that match up with audio zones and you always want to include the visual display in any actions that include the corresponding audio zone. For example, if you have an audio zone 10 and a display zone 10, you only need to select zone 10 in the zone group and both the display and audio zone will be used.

Plain Text

Check this box when this Display Zone Controller will be used to broadcast visual paging data to a non-IED system. This will cause the visual paging text to be sent without the formatting and queuing tags used by the IED VisDID Visual Display application.

(a) Display Zone Controller Zones Grid

This list allows you to configure associate each sign in the group with a logical name.

#

This is the number that will be used to identify this sign in the system. This number is calculated based on the values in the ***Start Sign*** and ***Total Signs*** fields. Each sign will appear as an individual zone.

Description

Double-click on this field to edit a text descriptor for the display.

Match To First

This button has no function for this device.

Devices

This list is used to add individual displays to the Display Zone Controller. Refer to the ***Display*** device section of the help for information on configuring each device.

Click this icon to add a new Display device to the Display Zone Controller. A new window will appear as shown in Figure 12-48 in the Display section of this documentation.

Click this icon to delete the currently selected display.

Edit

Click this icon to edit the properties for the currently selected display. Refer to the ***Display*** section for more information on how to configure an individual display.

4.5.6.2 Display

This device type is used to configure individual displays. From here, you can configure the content that will be shown when the display is idle and you can specify which image to show for a visual alert or wayfinding event.

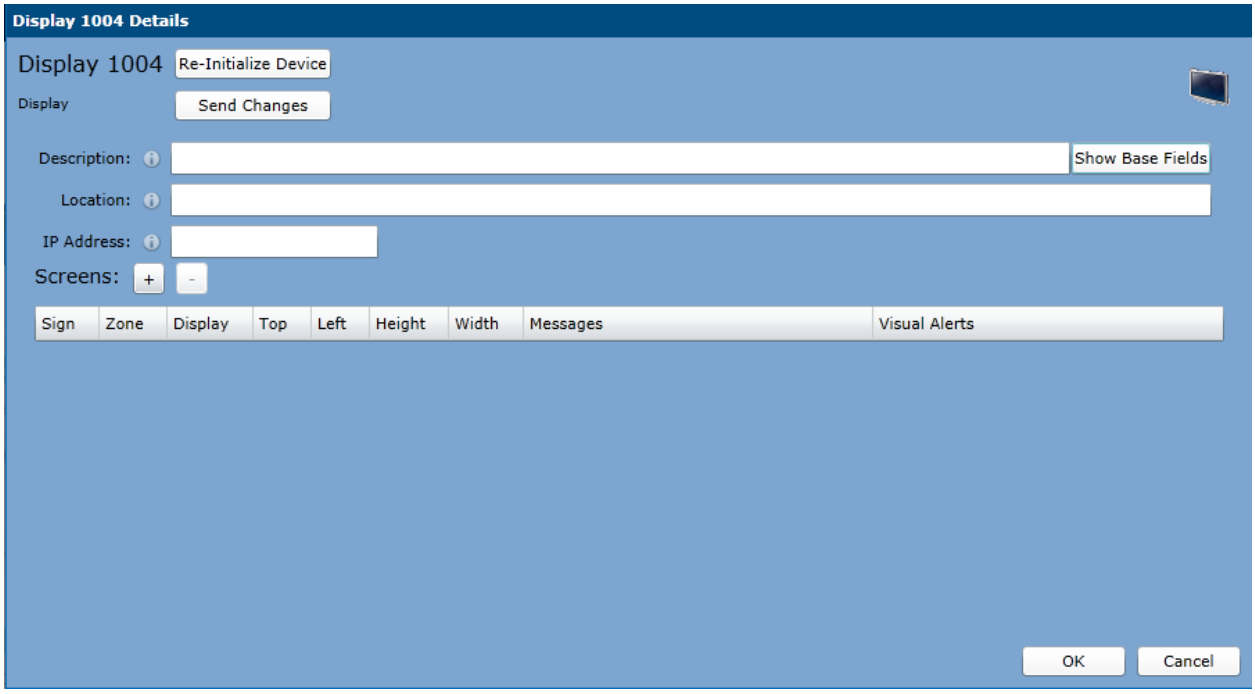


Figure 12-81: Display Setup

Description

Enter text here to give the display a descriptive name.

Location

Enter text here to describe the physical location of the display.

IP Address

Enter an appropriate *broadcast* (or multicast) IP address that will reach the endpoints. For example, an address of 10.2.128.255 will includes all endpoints with an IP address in the range from 10.2.128.1 through 10.2.128.253, if the controller's subnet mask is 255.255.255.0.

Screens

Click the **[+] button** to add a new screen to the list. Click the **[-] button** to delete the currently highlighted screen from the list.

Sign

This ID number is used to identify the control processor (internal or external) that is driving the sign. Some signs have built-in processors. This ID is used to identify the sign to the system server for content display.

Zone

This number corresponds to the actual zone number that will be used by the announcement controller to send visual pages to the display.

Display

This ID number is used to identify the video output that drives this display. For a single display, this ID will always be 1. For a processor that is driving multiple displays, this ID will correspond to the monitor output as defined in the Windows setup. This ID is used to identify the sign to the system server for content display.

Top / Left

The top and left pixel values for the screen (typically 0/0 if only one screen on a Display device). If there is a second or third screen on the device, then this depends on graphics settings, but usually means the left value is incremented by the width of the previous screen(s) to make it logically to the right of the previous screen.

Height / Width

This is the height and width of the screen in pixels. Typically for a one screen Display device, this is the height and width of the device's display.

Messages

This is a list of content that will be shown on the display when a visual page is not in progress. A message in the list actually points to either a file or an HTML page that is either stored on the local machine, or on a server. The display will cycle through the list in the order based on the ID field.

Figure 12-82: Display Messages

To edit the messages, you will need to double-click on the ***Messages*** field in the table for the display. This will open a new table that you can edit as shown in Figure 12-82. Use the scroll bar at the bottom to access the individual message fields. The behavior of each message is configured using the following fields in the table.

-  Click the **[+] button** to add a new message to the list. Click the **[-] button** to delete the currently highlighted message from the list.
- URL – This can be either a link pointing to an HTML page or a media file.
- Format – Enter ***HTML*** to identify this message as an HTML page. Enter ***FILE*** if the link points to a media file. Valid media file types are .mpg, .mpeg, .wmv, .avi, .mov, .mp4, .jpg, .jpeg, .gif, .bmp, .png, and .swf.
- Count – This is the number of times this message will play before moving on to the next message in the list.
- Priority – This field is currently not implemented.

- Hold Time – This is the amount of time that this message will stay on the screen before moving on to the next message. This value is in 60ths of a second. A value of 300 will hold the image on the display for 5 seconds.
- Refresh – This is the interval, in seconds, between refreshes of the HTML page. This property has no function when the ***Format*** is set to ***FILE.***

Visual Alerts

Visual Alerts are defined as described in the ***Visual Alerts and Wayfinding*** section. There you will create individual alerts and upload the images that will be available for use in each alert. You will see a list of the available alerts in this field. Select an image for each alert from the drop-down list. Click the **[X] button** to clear an image selection.

Owner Device

A Display device must be associated with an owner Display Zone Controller device. You can either add a new display from the ***Devices*** list or from within the configuration window of an individual ***Display Zone Controller***. If you add a new Display directly from the ***Devices*** list, then you will be prompted to add the new Display to an Owner Device when you exit the properties window as shown in Figure 12-83. Select the appropriate device from the dropdown list and then press the **OK** button. The Display will now be available for editing from within the configuration of the owner device.

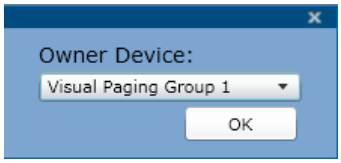


Figure 12-83: Owner Device Prompt

4.5.6.3 CobraNet or IP Endpoint Group

In order to define behaviors like tones and dial-out numbers, every intercom device and similar technology endpoints belongs to a group. There are two types of groups: one for CobraNet devices like the SRM and ICM and one type for IP audio (RTP protocol) devices like the Atlas IP Speakers. Their device properties window looks very similar between the two

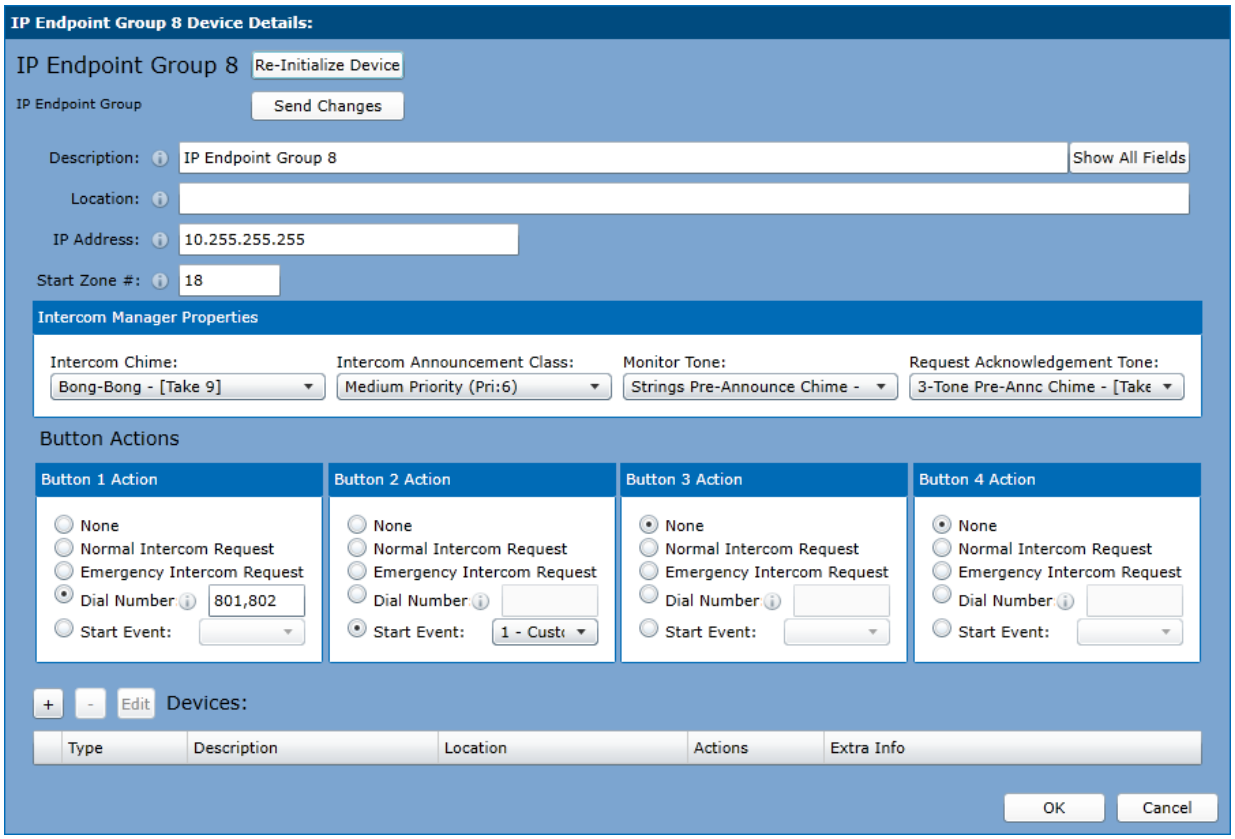


Figure 12-84: Endpoint Group Setup

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the device

Start Zone

This is the zone number that represents the first zone in the device (zone of the first intercom device). The system will automatically use the next available zone number as the starting zone number when you add a new device. It can be edited here if needed.

Intercom Chime

This drop list allows for selection of a pre-announce tone from the Chime library to play at the start of intercom connections to devices in this group, when initiated from the Intercom Manager client application.

Intercom Announcement Class

This drop list allows for selection of a priority to for the intercom connection announcements, when initiated from the Intercom Manager client application.

Monitor Tone

This drop list allows for selection of a monitoring tone (notification that room is being listened to via the intercom device) from the Chime library and how often it plays, when initiated from the Intercom Manager client application.

Request Acknowledgement Tone

This drop list allows for selection of a tone from the Chime library to play in order to acknowledge to the user that their button push on the intercom device has been noticed and is being acted upon, when initiated from the Intercom Manager client application.

Button Actions

This area is used to configure what, if anything, should happen when buttons 1 – 4 is pressed on any intercom device in this group.

- None – Do nothing. Ignore the press.
- Normal Intercom Request – Post an intercom request to the Intercom Manager software. It is up to a staff person to notice the request and make the connection.
- Emergency Intercom Request – Post an emergency (urgent) intercom request to the Intercom Manager software.
- Dial Number – Dial out to the number indicated in the edit box and prompt the person who picks up to press a button to initiate an intercom connection to the requesting intercom device.

  Starting with GCK Version 3.0, one can enter multiple phone numbers or "hunt groups" into this edit box. Phone numbers separated by commas are dialed sequentially, i.e., try the first number, if no answer move on to the second number, etc. Phone numbers separated by vertical bars ("|" or pipe characters) are dialed simultaneously. After the first line is answered, the other calls are dropped. These two features can be combined into one call plan, such as the numbers "101|102,103" will dial 101 and 102 simultaneously and if neither answer, move on to dial 103.

When using the IP+ loudspeaker or ZCM-V2+ as a part of a GLOBALCOM.IP system, connect the device you want to define in the configuration as "Button 1" to GPI 2 and connect the device you want to define as "Button 2" to GPI 1

Devices

This is a list of intercom devices in this group. These can be added with the **[+]** and **[-] buttons**, but a better way is to discover them on the network and add them from the ***Available Devices*** section of the Overview Tab. If added from

If you add a new Intercom device directly from the ***Devices*** list, then you will be prompted to add the new Intercom to an Owner Device when you exit the properties window as shown in Figure 12-85. Select the appropriate device from the dropdown list and then press the **OK** button. The Intercom device will now be available for editing from within the configuration of the owner device. If no intercom group (of the right digital audio type) exists yet, an error pop-up will be displayed notifying you of this condition.

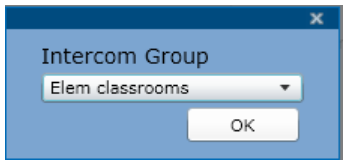


Figure 12-85: Owner Device Prompt

4.5.6.4 SRM

The LC372SR is referred to in SMC as the SRM (Sound Reinforcement Module). This is an endpoint device that can do intercom and paging functions, but also includes a sound reinforcement mixer and amplifier for classroom inputs, including infrared microphones. The configuration is done via the form below.

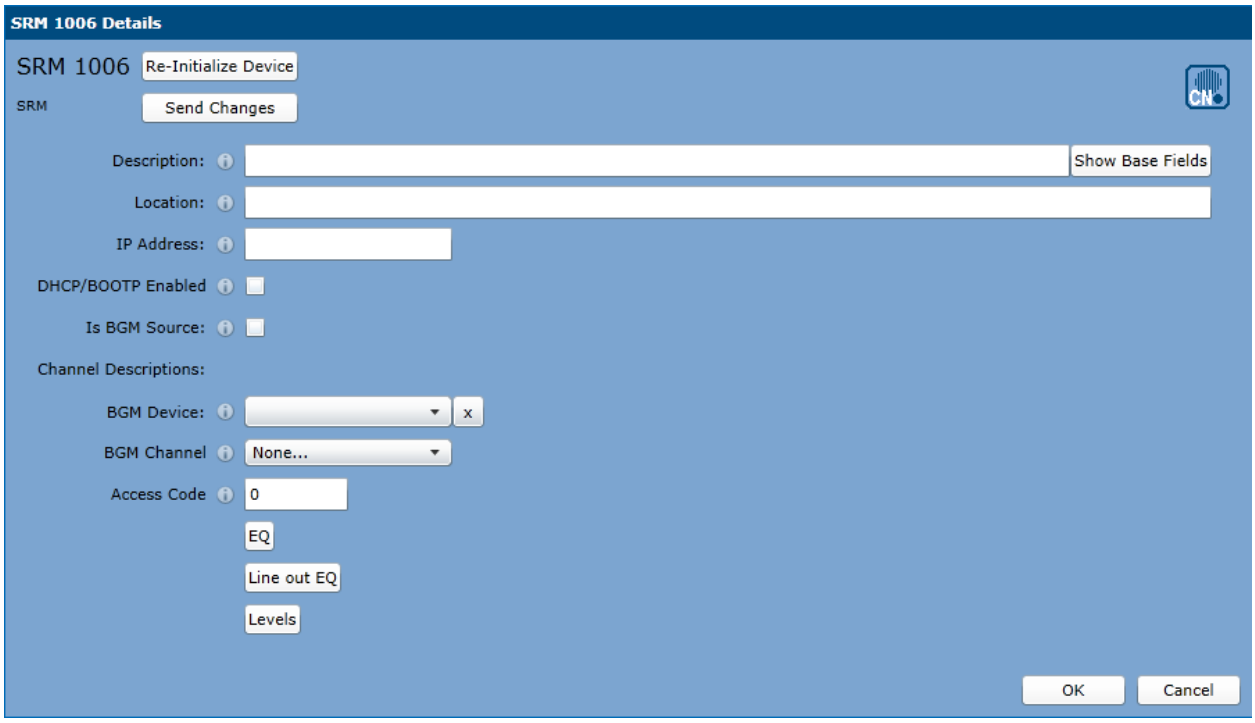


Figure 12-86: SRM Intercom Setup

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the device if using fixed addressing.

DHCP/BOOTP Enabled

If using dynamic addressing of intercom devices rather than fixed, check this box to enable it for this device.

Is BGM Source

When checked, the system will treat the device as a BGM source for the system. When configured as a BGM source, the device will appear as an available BGM source for output devices. This is one way to allow routing room audio (IR mic user's voice or line input from a source) to other rooms, e.g., combine classrooms for a lecture.

Channel Descriptions

This description is used to give a name to each BGM channel that will be sourced from this device. This name will appear in selection lists for devices when you are configuring outputs to receive BGM.

BGM Device

Once you have defined one or more devices in the system as a BGM source, it is then available as an item in this drop-down list. You select the device from this list that will be used as the source device for the BGM. You can then select individual channels to be used for each zone output. You can click the **X** icon to the right of the drop-down list to clear the selection.

BGM Channel

This drop-down list allows you to select an individual channel to use as the zone BGM. The channels available are for the device selected in the ***BGM Device*** field.

Access Code

Enter a value to be used for accessing this intercom device from a mic station or telephone prompt (e.g., the “room number”).

EQ

Each channel has a nine-band parametric EQ available to adjust the signal as necessary to meet the needs of the loudspeakers and allow the system to be adjusted to maximize intelligibility in the acoustic space. Press the EQ button for a channel to open the EQ window as shown in Figure 12-87.

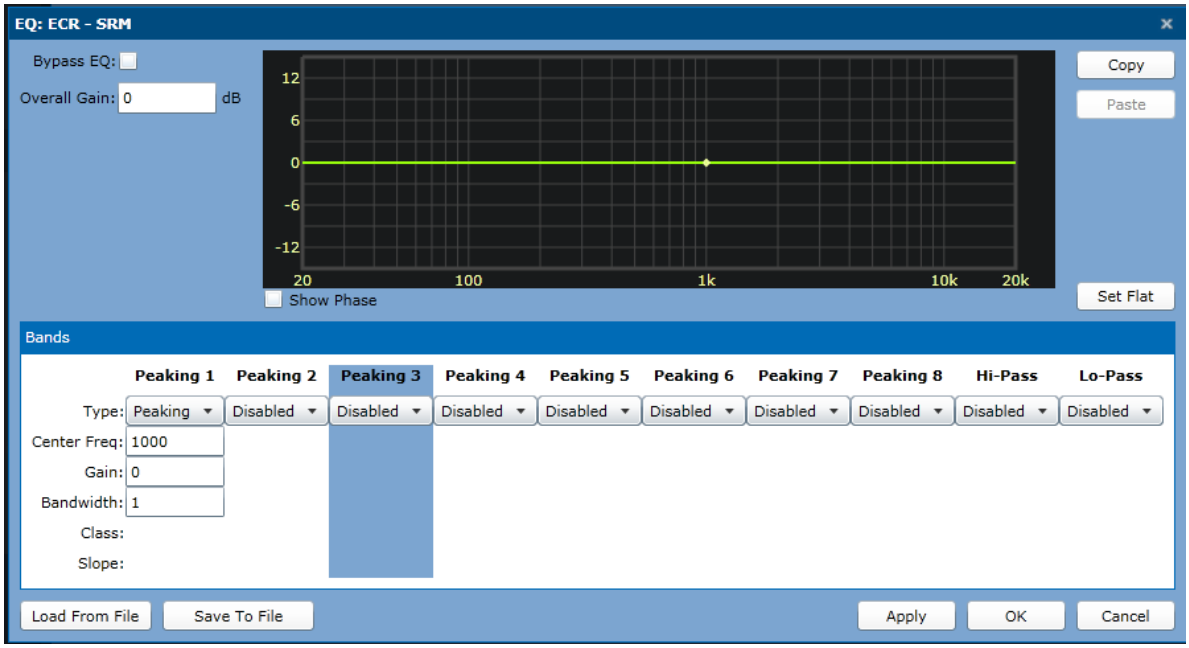


Figure 12-87: SRM EQ Settings Window

Bands are selected by clicking on one of the ten band names immediately below the frequency response curve graph. A specific band can be selected and then adjusted using the edit boxes below the names. It is also possible to select a filter and edit its frequency, gain and bandwidth directly in the Frequency Response display window using the mouse to drag the filter position, cut/boost, or bandwidth.

Type

For the Peaking bands 1 – 7, the options are Peaking or Disabled. For the Hi-Pass/Lo-Pass bands, the options are Hi-Pass/Lo-Pass or Disabled. Basically, this selector only enables the band or not.

Center Frequency (Hz)

The center frequency (or cutoff frequency) of the filter is set by entering a numeric value in the edit box. The frequency parameter can also be changed by dragging the diamond icon in the graph laterally left or right.

Gain (dB)

This is only available for Peaking filter type.

The filter gain is set by entering a numeric value (using + or – values for relative dB) in the edit box. The gain can also be changed by clicking and dragging the diamond icon for the filter up or down in the frequency response graph.

Bandwidth (Oct.)

This is only available for Peaking filter type.

The filter bandwidth is set by entering a numeric value in the edit box. The value used is measured in Octaves. For example, if a 1/3 octave filter is required then a value of 0.333 would be used. The bandwidth can also be altered using vertical line icons located on each side of the diamond filter icon in the frequency response graph. Click a line and move the mouse laterally to change the bandwidth.

Class

This is only available for Hi Pass and Lo Pass filter types.

This value determines the frequency roll-off rate for the filter in decibels per octave. Available values range from 6 dB/Octave to 18 dB/Octave.

Slope (dB/Oct.0

This is only available for Hi Pass and Lo Pass filter types.

This value determines the frequency roll-off rate for the filter in decibels per octave. Available values range from 6 dB/Octave to 18 dB/Octave.

Set Flat

This button resets all filters to a gain setting of 0dB (flat response) and disables all bands except for band 1.

Show Phase

When checked, the phase response through the EQ will be shown as a red curve on the graph.

Save To File

Click this button to save the EQ curve as an XML file. This allows you to archive the file as well as save it as a preset and load it into other channels.

Load From File

Click this button to open a standard Windows file dialog window. From here, you can locate an XML file that has been stored with an EQ curve and load it into the frame.

Bypass EQ

When checked, this removes the effects of all filter bands from the signal path without resetting the filters to a flat response curve. When the EQ is bypassed, the signal will pass through the object without any modifications to the frequency characteristics.

Overall Gain

The EQ provides a small range of gain adjustment in order to compensate for the overall effect of the EQ curve and allow signal-to-noise ratio and dynamic range to be maximized. This gain is set by entering a value (in + or – relative dB) in the edit box. It should only be used within a range from 6dB of attenuation to 6dB of gain.

Copy

Click this button to copy all of the current EQ settings to the clipboard. You can then move to another channel and use the ***Paste*** button to copy settings between channels.

Paste

Click this button to paste the EQ settings stored on the clipboard to the current channel. This button will be dimmed if there are no available EQ settings to paste from the clipboard.

Apply

Click this button to send the current EQ settings to the frame.

Line Out EQ

In addition to the powered amplifier output, this device has a line level output that could be used, for example, to connect to a higher power amplifier for large spaces. This output can be EQ much like the main amplifier output.

Figure 12-88: SRM Line Out EQ Settings Window

Type

For the Peaking bands 1 – 7, the options are Peaking or Disabled. For the Hi-Pass/Lo-Pass bands, the options are Hi-Pass/Lo-Pass or Disabled. Basically, this selector only enables the band or not.

Center Frequency (Hz)

The center frequency (or cutoff frequency) of the filter is set by entering a numeric value in the edit box. Dragging the diamond icon in the graph laterally left or right can also change the frequency parameter.

Gain (db)

This is only available for Peaking filter type.

The filter gain is set by entering a numeric value (using + or – values for relative dB) in the edit box. The gain can also be changed by clicking and dragging the diamond icon for the filter up or down in the frequency response graph.

Bandwidth (Oct.)

This is only available for Peaking filter type.

Entering a numeric value in the edit box sets the filter bandwidth. The value used is measured in Octaves. For example, if a 1/3 octave filter is required then a value of 0.333 would be used. The bandwidth can also be altered using vertical line icons located on each side of the diamond filter icon in the frequency response graph. Click a line and move the mouse laterally to change the bandwidth.

Class

This is only available for Hi Pass and Lo Pass filter types.

The mathematical function used to calculate the filter is selected by picking an available type from the drop-down list box. Currently, the only type of filter class available is the Butterworth type filter.

Slope (dB/Oct.)

This is only available for Hi Pass and Lo Pass filter types.

This value determines the frequency roll-off rate for the filter in decibels per octave. Available values range from 6 dB/Octave to 18 dB/Octave.

Set Flat

This button resets all filters to a gain setting of 0dB (flat response) and disables all bands except for band 1.

Show Phase

When checked, the phase response through the EQ will be shown as a red curve on the graph.

Save To File

Click this button to save the EQ curve as an XML file. This allows you to archive the file as well as save it as a preset and load it into other channels.

Load From File

Click this button to open a standard Windows file dialog window. From here, you can locate an XML file that has been stored with an EQ curve and load it into the frame.

Apply

Click this button to send the current EQ settings to the frame.

Copy

Click this button to copy all of the current EQ settings to the clipboard. You can then move to another channel and use the Paste button to copy settings between channels.

Paste

Click this button to paste the EQ settings stored on the clipboard to the current channel. This button will be dimmed if there are no available EQ settings to paste from the clipboard.

Levels

Pressing this button brings up a form for setting the levels on this intercom device as shown in Figures 12-89 and 12-91. There are two tabs, one for setting the input levels (inputs to the built-in mixer) and one for the output levels for the different receivers (which are used logically for different operations such as normal paging, emergency paging, background music and tones.

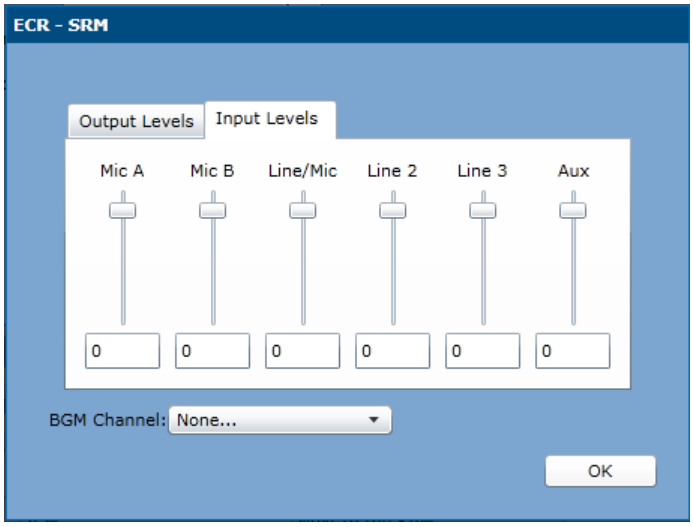


Figure 12-89: SRM Input Levels Setting Window

Input Level Controls

The levels can be set by either moving the “thumb” on a slider or by typing a value (in dB) in the edit box below the appropriate slider. The available sliders are:

- Mic A/Mic B – These are the two Infrared (IR) microphone channel inputs (set by switches on the microphones).
- Line/Mic – The input labeled Line/Mic on the Audio Input plate (LC372AI)
- Line 2/Line 3 – The inputs labeled Line 2/Line 3 on the Audio Input plate
- Aux – The additional auxiliary audio input available on the LC372SR, typically to connect to a co-located device like a projector.

The Audio Input plate (LC372AI) is a two-gang mountable plate with audio jacks labeled with the inputs above. It appears as in Figure 12-90.

Figure 12-90: The Audio Input LC372AI Plate

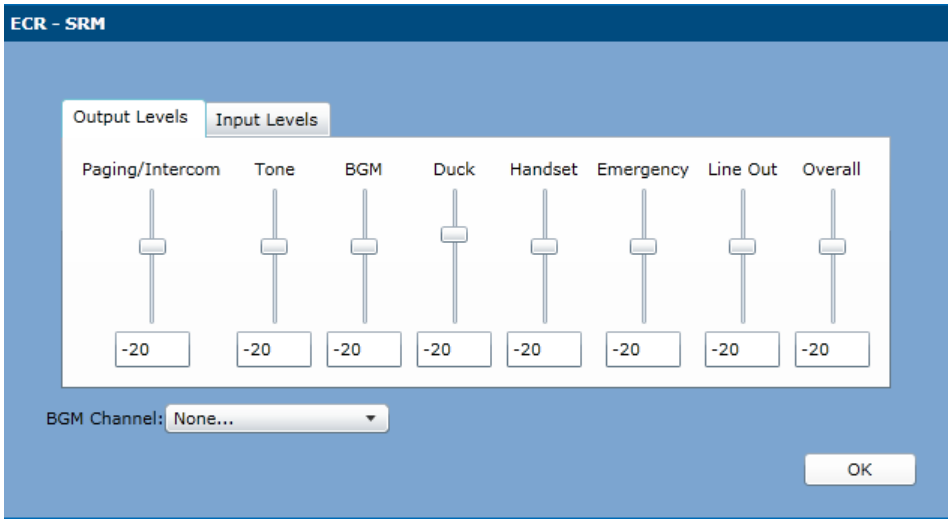


Figure 12-91: SRM Output Levels Setting Window

Output Level Controls

The levels can be set by either moving the "thumb" on a slider or by typing a value (in dB) in the edit box below the appropriate slider. The available sliders are:

- Paging/Intercom – The CobraNet receiver for (live) audio for these functions.
- Tone – The CobraNet receiver for pre-announce tones, intercom chimes and other pre-recorded sounds like bells or shift-change tones from the day schedule.
- BGM – The CobraNet receiver for background music input.
- Duck – The amount to duck BGM when a page or intercom occurs.
- Handset – The audio level of the earpiece on the optional telephone-style handset (LC21HS).
- Emergency – The CobraNet receiver for emergency paging .
- Line Out – The overall level to the non-amplified line level output.
- Overall – The overall level for the built-in amplifier.

BGM Channel

Use this control to select a BGM source for this device.

4.5.6.5 ICM

The LC331IC is referred to in SMC as the ICM (InterCom Module). It is configured via the form below.

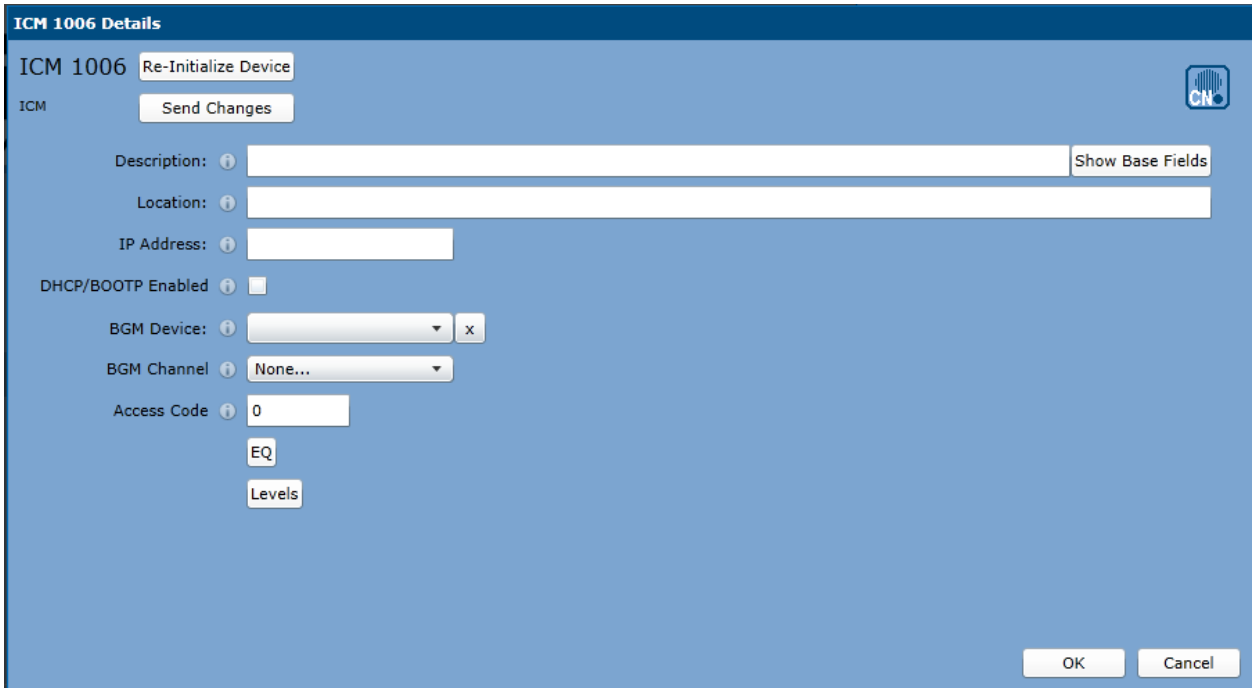


Figure 12-92: ICM Intercom Setup

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the device

DHCP/BOOTP Enabled

If using dynamic addressing of intercom devices rather than fixed, check this box to enable it for this device.

BGM Device

Once you have defined one or more devices in the system as a BGM source, it is then available as an item in this drop-down list. You select the device from this list that will be used as the source device for the BGM. You can then select individual channels to be used for each zone output. You can click the **X** icon to the right of the drop-down list to clear the selection.

BGM Channel

This drop-down list allows you to select an individual channel to use as the zone BGM. The channels available are for the device selected in the ***BGM Device*** field.

Access Code

Enter a value to be used for accessing this intercom device from a mic station or telephone prompt (e.g., the "room number").

EQ

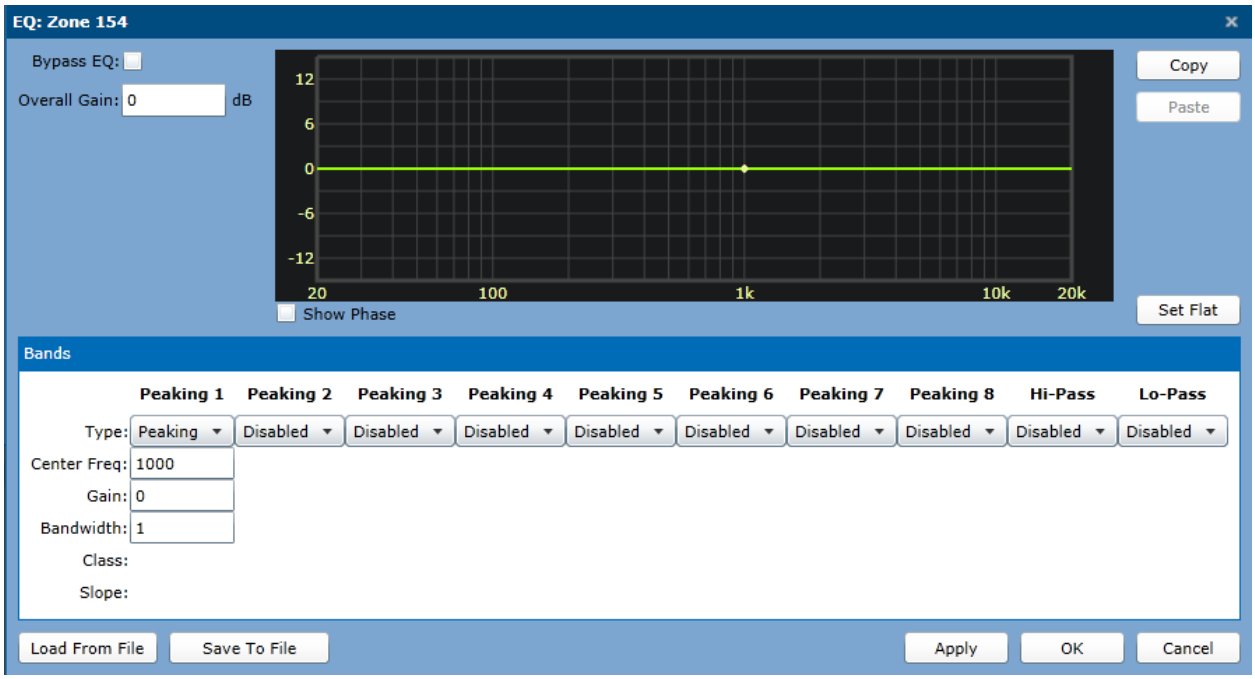


Figure 12-93: ICM EQ Settings Window

Type

For the Peaking bands 1 – 7, the options are Peaking or Disabled. For the Hi-Pass/Lo-Pass bands, the options are Hi-Pass/Lo-Pass or Disabled. Basically, this selector only enables the band or not.

Center Frequency (Hz)

The center frequency (or cutoff frequency) of the filter is set by entering a numeric value in the edit box. The frequency parameter can also be changed by dragging the diamond icon in the graph laterally left or right.

Gain (db)

This is only available for Peaking filter type.

The filter gain is set by entering a numeric value (using + or – values for relative dB) in the edit box. The gain can also be changed by clicking and dragging the diamond icon for the filter up or down in the frequency response graph.

Bandwidth (Oct.)

This is only available for Peaking filter type.

The filter bandwidth is set by entering a numeric value in the edit box. The value used is measured in Octaves. For example, if a 1/3 octave filter is required then a value of 0.333 would be used. The

bandwidth can also be altered using vertical line icons located on each side of the diamond filter icon in the frequency response graph. Click a line and move the mouse laterally to change the bandwidth.

Class

This is only available for Hi Pass and Lo Pass filter types.

The mathematical function used to calculate the filter is selected by picking an available type from the drop-down list box. Currently, the only type of filter class available is the Butterworth type filter.

Slope (dB/Oct.)

This is only available for Hi Pass and Lo Pass filter types.

This value determines the frequency roll-off rate for the filter in decibels per octave. Available values range from 6 dB/Octave to 18 dB/Octave.

Set Flat

This button resets all filters to a gain setting of 0dB (flat response) and disables all bands except for band 1.

Show Phase

When checked, the phase response through the EQ will be shown as a red curve on the graph.

Save To File

Click this button to save the EQ curve as an XML file. This allows you to archive the file as well as save it as a preset and load it into other channels.

Load From File

Click this button to open a standard Windows file dialog window. From here, you can locate an XML file that has been stored with an EQ curve and load it into the frame.

Apply

Click this button to send the current EQ settings to the frame.

Copy

Click this button to copy all of the current EQ settings to the clipboard. You can then move to another channel and use the Paste button to copy settings between channels.

Paste

Click this button to paste the EQ settings stored on the clipboard to the current channel. This button will be dimmed if there are no available EQ settings to paste from the clipboard.

Levels

Pressing this button brings up a form for setting the levels on this intercom device as shown in Figure 12-94.

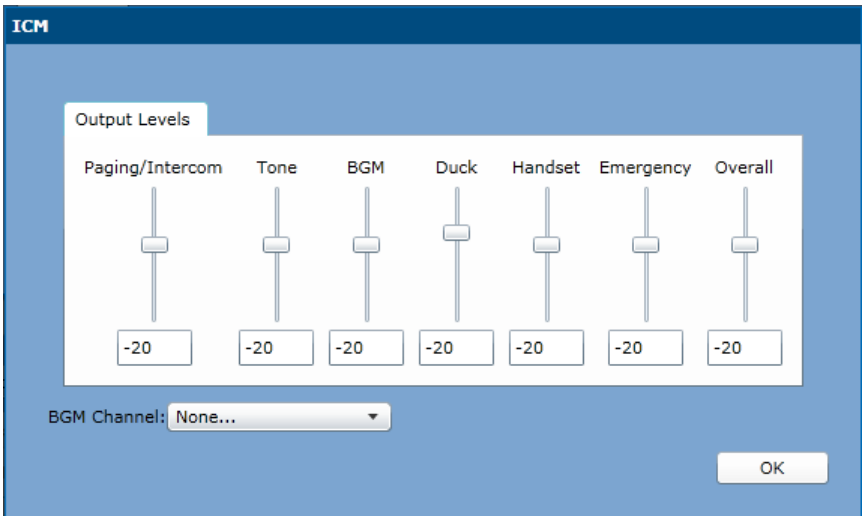


Figure 12-94: ICM Level Setting Window

Output Level Controls

The levels can be set by either moving the "thumb" on a slider or by typing a value (in dB) in the edit box below the appropriate slider. The available sliders are:

- Paging/Intercom – The CobraNet receiver for (live) audio for these functions.
- Tone – The CobraNet receiver for pre-announce tones, intercom chimes and other pre-recorded sounds like bells or shift-change tones from the day schedule.
- BGM – The CobraNet receiver for background music input.
- Duck – The amount to duck BGM when a page or intercom occurs.
- Handset – The audio level of the earpiece on the optional telephone-style handset (LC21HS).
- Emergency – The CobraNet receiver for emergency paging.
- Overall – The overall level for the built-in amplifier.

BGM Channel

Use this control to select a BGM source for this device.

4.5.6.6 Atlas IP Speaker

There are several models of IP Speakers and Zone Controllers that include a speaker or line output to an amplifier, microphone, clock/display, and strobe that are all covered under the umbrella “Atlas IP Speaker” device in SMC. These devices are configured via the form below.

Figure 12-95: Atlas IP Speaker Setup

Fields on this form beyond the basics for all devices are as follows:

Note: There is no IP Address or DHCP Enable field for this device as these devices are ALWAYS managed with dynamic addressing.

Access Code

Enter a value to be used for accessing this intercom device from a mic station or telephone prompt (e.g., the “room number”).

Levels

Pressing this button brings up a form for setting the levels on this intercom device as shown in Figure 12-96.

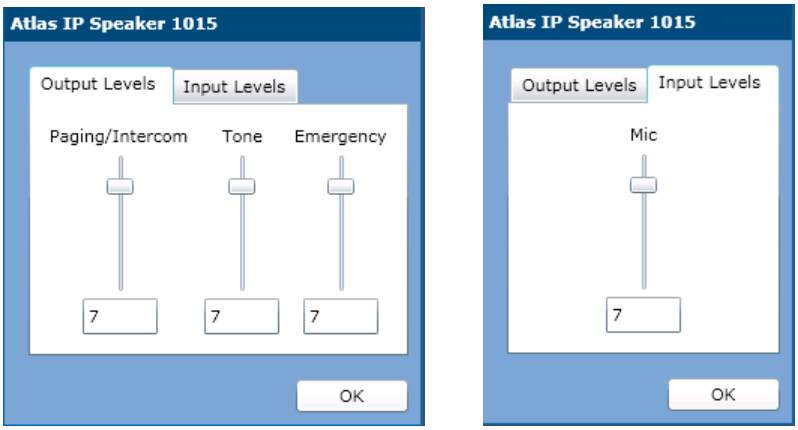


Figure 12-96: IP Speaker Level Setting Window

Output Levels Controls

The levels can be set by either moving the “thumb” on a slider or by typing a value (in dB) in the edit box below the appropriate slider. The available sliders are:

- Paging/Intercom – The IP audio receiver for (live) audio for these functions.

- Tone – The IP audio receiver for pre-announce tones, intercom chimes and other pre-recorded sounds like bells or shift-change tones from the day schedule.
- Emergency – The IP Audio receiver for emergency paging.

Input Levels Controls

The levels can be set by either moving the “thumb” on a slider or by typing a value (in dB) in the edit box below the appropriate slider. The available sliders are:

- Mic – Adjusts the gain of the microphone level to the network audio

4.5.7 Third Party Devices

Auxiliary I/O devices include the Barionet 50 Logic/Relay I/O device, Annuncicom 100 device, Generic CobraNet Audio Source, and the External Supervised device. Starting with Service Pack 6 of GCK, support was added for Generic Dante Devices. The Device properties for each of these are described below.

4.5.7.1 Barionet50 Remote Logic/Relay I/O

The Barionet 50 is a hardware device manufactured by *Barix AG* and is natively supported by the vACS as a remote logic I/O device. The device is has four (4) logic inputs and four (4) relay outputs.

The Barionet 50 must be configured using its own built-in web server configuration pages. Consult the ***Barionet Family Product Manual*** available for download at www.barix.com.

Note: The RS-485 and RS-232 features of the Barionet 50 are not supported.

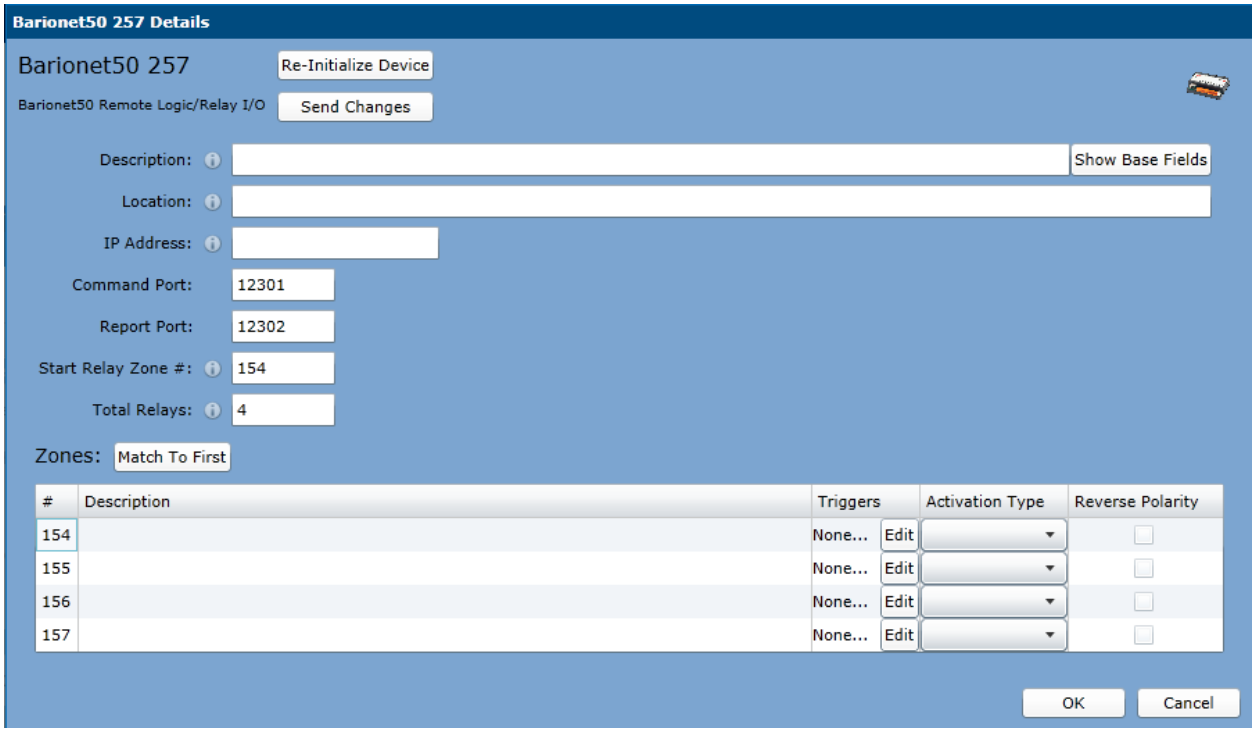


Figure 12-97: Barionet50 Remote Logic/Relay I/O Setup

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the device.

Command Port

This is the port that the vACS will use to communicate with the Barionet 50. It must match the ***UDP Command Port*** number in the Barionet 50 setup.

Report Port

This is the port that the Barionet 50 will use to send logic input state change messages to the vACS. It must match the ***UDP Destination Port*** in the Barionet 50 setup. You must also put the IP address of the vACS in the ***UDP Send Info Address*** field in the Barionet 50 setup.

Start Relay Zone

This is the zone number that represents the first output relay on the device. The system will automatically use the next available zone number as the starting zone number when you add a new device. It can be edited here if needed.

Total Relays

This number represents the total number of relay zones that will be present on this device. Each output is numbered sequentially based on the start zone entered in the ***Start Relay Zone #*** field. The default is four (4), but you can define fewer if needed.

Zones

Match To First

This button has no function for this device.

Zone Number

This is the zone number that will be associated with relay. This is calculated based on the values entered in the ***Start Relay Zone #*** and ***Total Relays*** fields.

Description

This is a text field used to describe the output function or connection. To edit, double-click on the field.

Triggers

If a relay is used as part of a zone map in an announcement, then it will energize for the duration of the announcement. It will function this way as long as no triggers are defined for the relay. The ***Trigger*** field is used to associate the relay with faults that are reported as part of the *System Supervision* module. Click the ***Edit*** button to assign a trigger to the output. This will open the assignment window as shown in Figure 12-68. From here, select a specific fault from the drop-down list and click the **[+] button**. This will add the selected fault to the list. To remove a fault, select the fault with the mouse and then click the **[-] button**. You can stack multiple faults on a single output. The output will activate as determined by the setting in the ***Activation Type*** field when any of the assigned faults are reported.

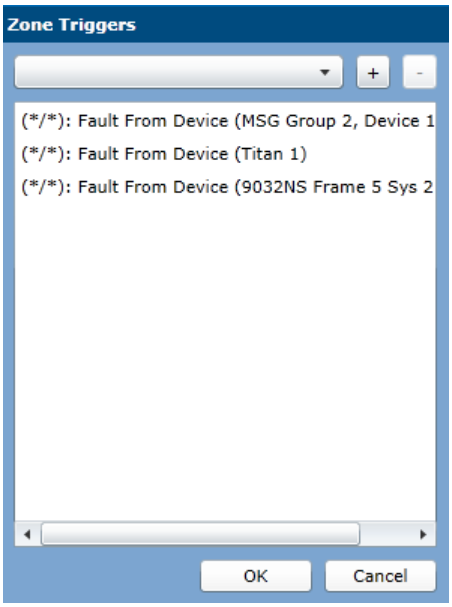


Figure 12-98: Barionet50 Triggers

Activation Type

The ***Activation Type*** applies only to relays that function as fault indicators and have definitions in the ***Triggers*** field.

- Solid – The relay will activate while the fault condition is present and deactivate once the fault condition has cleared.
- Momentary – The relay will activate for approximately 1 second and then deactivate.
- Pulsating – The relay will cycle between active and inactive states at a rate of approximately 1 second on and 1 second off.

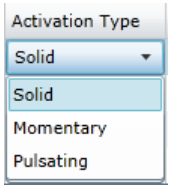


Figure 12-99: Barionet50 Activation Types

Reverse Polarity

Check this box to reverse the operating polarity of the relay. Normally, a relay is in its de-energized state until it is triggered. When this box is checked, it will normally energize and will de-energize when triggered. This is most useful when a relay is used to indicate a fault to an external system or indicator panel. That way a fault condition will be triggered if the unit loses power.

Actions

When you open the Actions for the Barionet 50 device, you will notice that there are two actions for each logic input. One is associated with the activation of the input and the other with the deactivation of the input. You can differentiate between the two by looking for ***On*** or ***Off*** in the ***Logic State*** field in the ***Extra Info*** column.

This allows you to create an action that will remain active while a contact closure is held. To do this, you must define an action to start the announcement and then a separate action to stop it using the other logic state.

The number in the ***Entry Code*** field corresponds to the physical input on the device. To edit an action, select the action and then click the edit icon located at the top of the window. You can also double-click on a row in the ***Type*** column to open the editor. Refer to the ***Action Types*** section for information on configuring actions.

Figure 12-100: Barionet50 Remote Logic/Relay I/O Actions

4.5.7.2 Annuncicom 100 Device

The Annuncicom 100 is a hardware device manufactured by *Barix AG* and is natively supported by the vACS as a remote device. The Annuncicom 100 must be configured using its own built-in web server configuration pages. Consult the ***Annuncicom Product Manual*** available for download at www.barix.com.

Note: The serial communications and logic I/O features of the Annuncicom 100 are not supported.

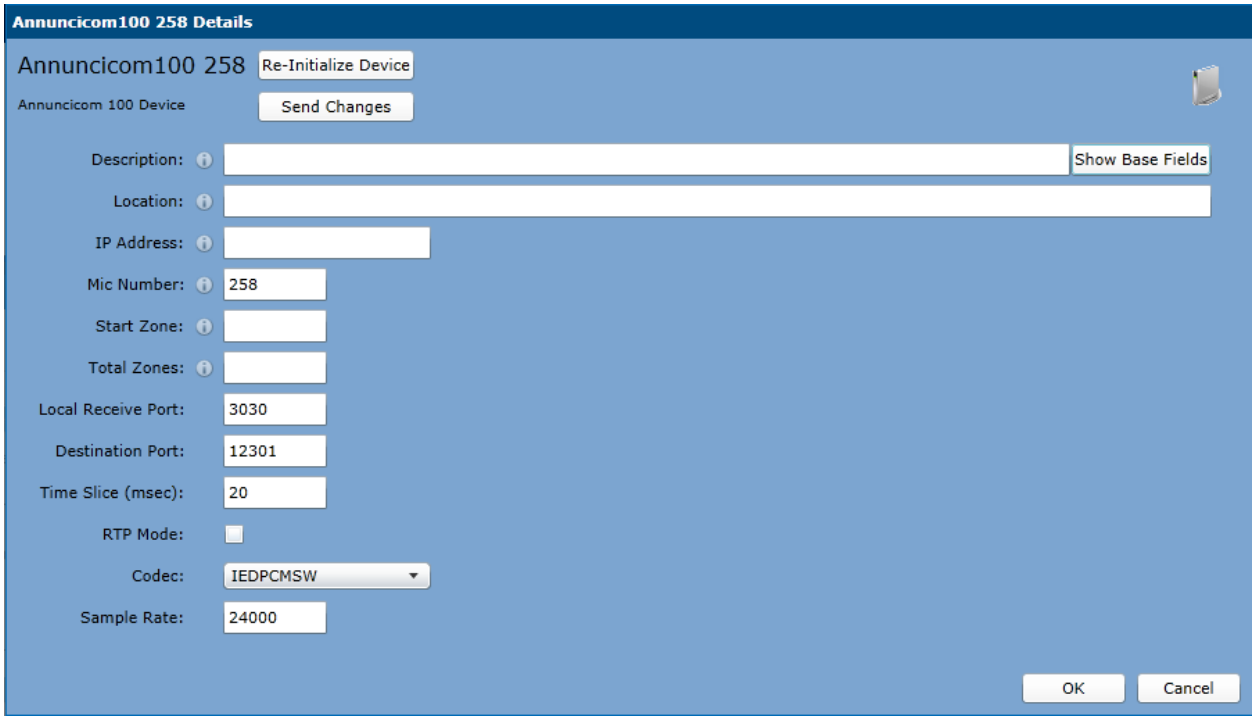


Figure 12-101: Annuncicom 100 Device Setup

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the device here.

Mic Number

Each input on the device must have its own unique mic number. This is the number used to identify the input as a usable source within the announcement controller. When you add the device, each number is automatically defined. It can be changed if needed. Once it has been defined here, it will appear as an available source when defining actions.

Start Zone

This is the zone number that represents the first zone in the device. The system will automatically use the next available zone number as the starting zone number when you add a new device. It can be edited here if needed. For example, you have a system that already has 32 zones. When you add a new Annuncicom 100, the starting zone will be 33.

Total Zones

This number represents the total number of zones that will be present on this device. An Annuncicom 100 supports a total of 2 zones, but you may want to set this to 1 if you are only using one output. This will prevent the unused output from contributing to the total number of zones allowed with your software license.

Local Receive Port

This is the port number that the vACS will use to receive audio from the Annuncicom 100. It must match the destination port in the Annuncicom 100 setup. The default port setting is 3030 and can be left at that for most applications.

Destination Report

This is the port number that the vACS will use to transmit audio to the Annuncicom 100. It must match the UDP Interface Port set in the Annuncicom 100 setup. The default port setting is 12301 and can be left at that for most applications.

Time Slice (msec)

This value determines the sampling window for the audio to be included in each network packet. Larger values increase latency while smaller values may lead to disruptions in the real-time audio. The default value of 20msec is acceptable in most applications.

RTP Mode

When checked, the data packets will include RTP headers instead of raw data packets. This setting must match the settings in the Annuncicom 100 setup.

Codec

The codec selection determines the sample size (number of bits) and compression used for the audio data. This setting must match the setting in the Annuncicom 100 setup.

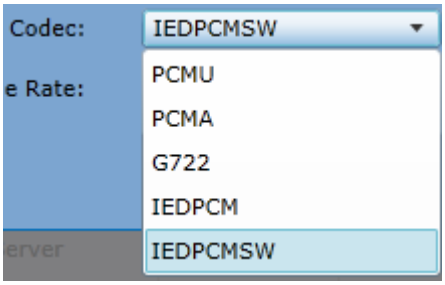


Figure 12-102: Annuncicom 100 Codec Types

Available codecs are as follows...

- PCMU – PCM μ-Law, 8 bit samples
- PCMA – PCM a-Law, 8 bit samples
- G722 – G.722, 16 bit samples
- IEDPCM – Raw PCM, 16 bit samples
- IEDPCMSW – Raw PCM, 16 bit samples, reversed byte order

Sample Rate

This number defines the number of samples per second used to digitize the audio. This setting will affect packet size and the network bandwidth used by the audio data. Typical values for each codec type are listed below. This must match the setting in the Annuncicom 100 setup.

- PCMU or PCMA – 8000
- G722 – 16000
- IEDPCM or IEDPCMSW – 16000 or higher.

4.5.7.3 Generic CobraNet Audio Source

This device type is used to configure the system to accept a non-IED CobraNet device as a BGM source.

*Note: The Generic CobraNet Audio Source is not automatically discovered by the system. You must manually create it by adding it as a new device in the **Devices** section. The physical device must be manually configured with the appropriate settings using other utilities such as **CobraNet Discovery.***

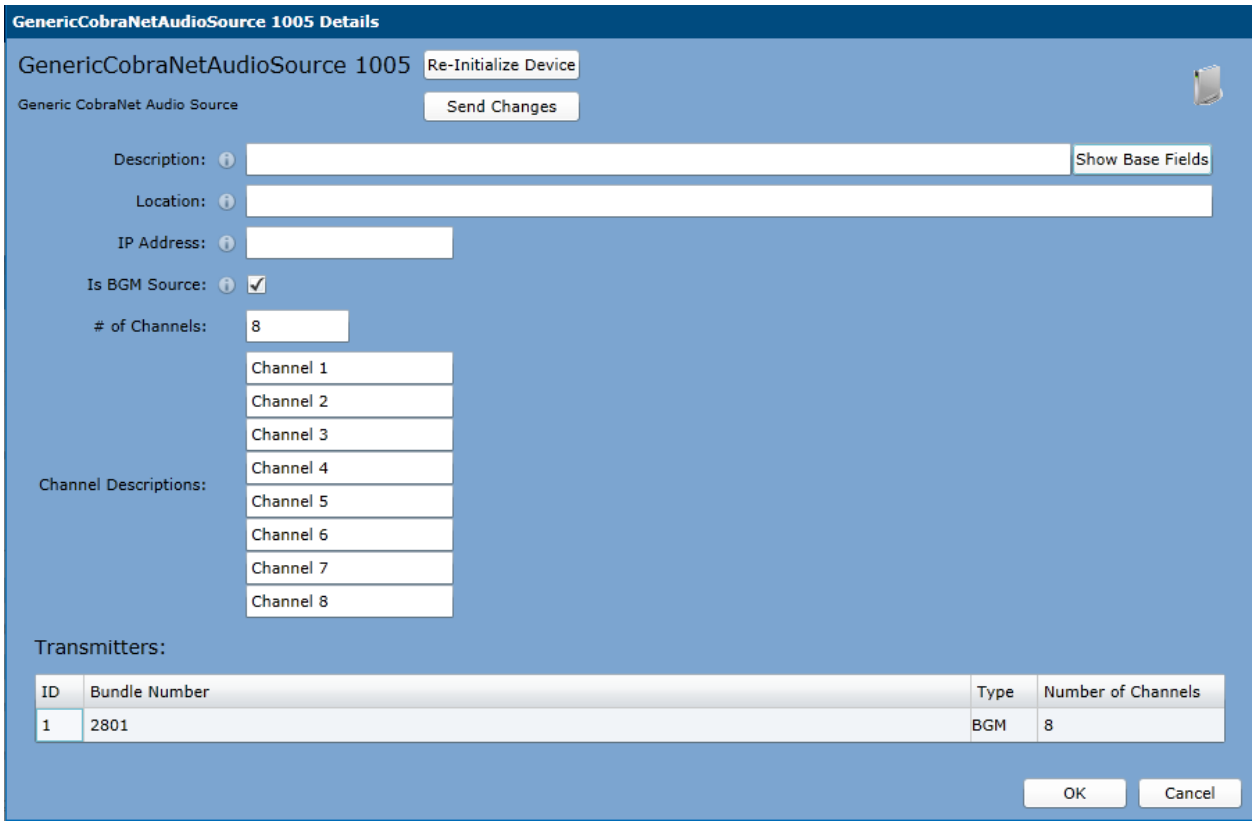


Figure 12-103: Generic CobraNet Audio Source Setup

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the device.

Is BGM Source

This box is checked by default, and must be so to allow the system to treat the device as a BGM source for the system. The device will appear as an available BGM source for output devices.

of Channels

This is the total number of channels that will be used as BGM inputs on the device. (Maximum of 8 channels)

Note: If you are using a device that has more than one (1) transmitter for more than eight (8) channels, then you must configure two or more of the Generic CobraNet Device, one for each transmitter used.

Channel Descriptions

This description is used to give a name to each BGM channel that will be sourced from this device. This name will appear in selection lists for devices when you are configuring outputs to receive BGM.

Transmitters

This section is where you specify the CobraNet information for the transmitter used by the device. The settings here must match the settings on the device.

ID

This is an index number used to identify the transmitter in the list. It will be fixed at 1 for this device and cannot be changed.

Bundle Number

Click to edit the bundle number for the device. You must use the bundle number that matches the one used by the device.

Type

This should always be set to BGM.

Number of Channels

Enter the number of channels that will be received from the transmitting device here. If you are not using all eight (8) channels defined in the ***# of Channels*** field, you should change this number to match the number of channels actually being used.

4.5.7.4 External Supervised Device

In some installations, it is necessary for the IED Supervision function within GLOBALCOM to monitor other equipment on the network and report problems as faults. These network devices are defined as being one of these kinds of devices.

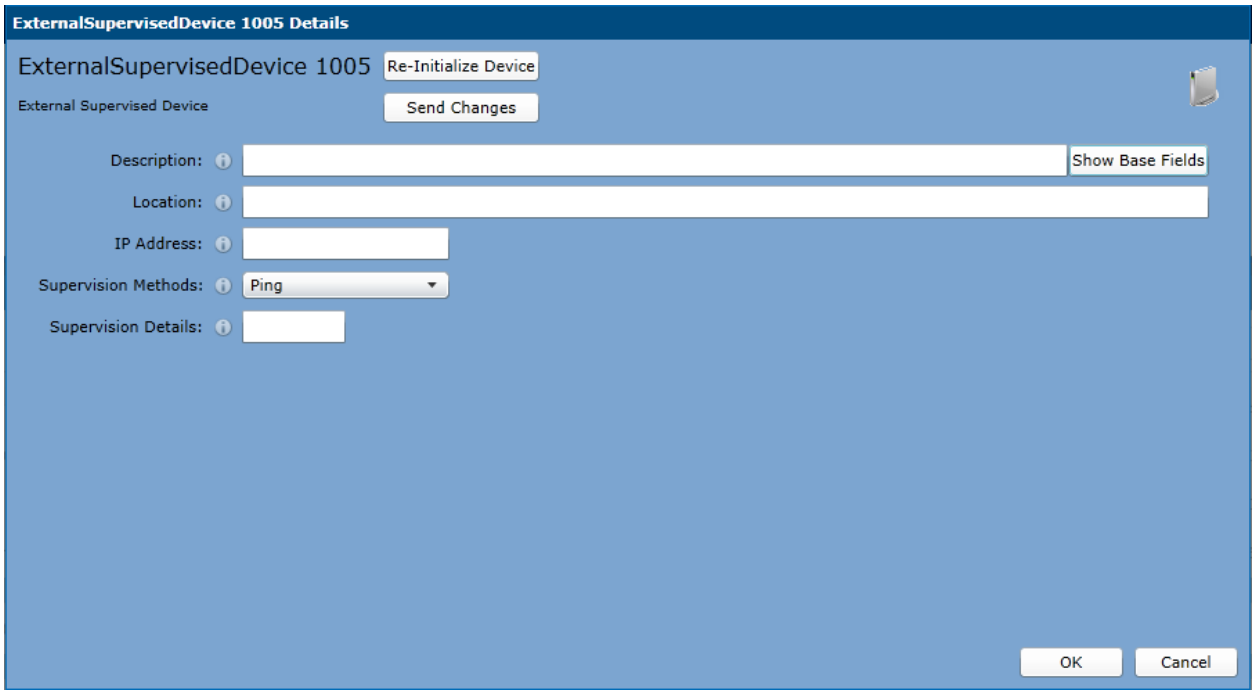


Figure 12-104: External Supervised Device Setup

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the device.

Supervision Methods

How to communicate with and supervise the device. The options are:

- Ping – use standard ICMP packet to determine that the device is on/off-line
- IEDnet – Use IEDnet fault polling messages to query the device for faults.
- SNMP – Use Simple Network Management Protocol to query the device for properties which indicate fault/status conditions on the device. How to interpret these SNMP properties and map them to IED faults is defined in the associated Supervision Details file described below.

Supervision Details

Link a file which contains a list of one or more SNMP properties and how to interpret values returned as IED faults. If more than one property is provided, then an SNMP Multi-GET command is used; otherwise a simple GET command is used. If the device does not support the SNMP v2 Multi-GET command, then one should only define one SNMP property in this file.

This file defines the SNMP properties in an XML document format. Below is a sample XML file with comments to explain the fields and formatting of this file.

```
<!-- ---------------------------------------------------------------------
Device Polling Fields are in the top-level node
   timeoutMS - in milliseconds
   retries - Number of retries, if first poll fails
------------------------------------------------------------------------ -->

<faultProperties timeoutMS="3000" retries="1">

<!-- ---------------------------------------------------------------------
   A fault definition is described by a "faultProperty" node, one per fault
   Fields are:
   .   faultOnZero (Boolean) - fault when result is zero (vs. non-zero)
   .   oid - SNMP property to poll for
   .   mask - mask to apply to property before testing for zero/non-zero
   .   faultType - fault category 1..255.  Can be anything, but may
                   want to follow IED conventions on these.
   .   faultNumber - ID for this fault, 1..255. Can be anything, but…
------------------------------------------------------------------------ -->

   <faultProperty faultOnZero="false">
      <oid>.1.3.6.1.4.1.33815.1.2.1.2.2.1.0</oid>
      <mask>0xFFFFFFFF</mask>
      <faultType>4</faultType>
      <faultNumber>18</faultNumber>
   </faultProperty>

<!-- ---------------------------------------------------------------------
   Additional fault definitions are added by inserting additional
      "faultProperty" nodes. Note the different SNMP OID, faultType and
      faultNumber values.
------------------------------------------------------------------------ -->

   <faultProperty faultOnZero="false">
      <oid>.1.3.6.1.4.1.33815.1.2.1.2.2.1.99</oid>
      <mask>0xFFFFFFFF</mask>
      <faultType>17</faultType>
      <faultNumber>99</faultNumber>
   </faultProperty>

</faultProperties>
```

4.5.7.5 Generic Dante Device

If a third-party Dante device is used in a system in capacities such as a BGM source, paging audio source or zone output, it can be incorporated into the GCK system as a Generic Dante Device. This device has configuration properties as shown below.

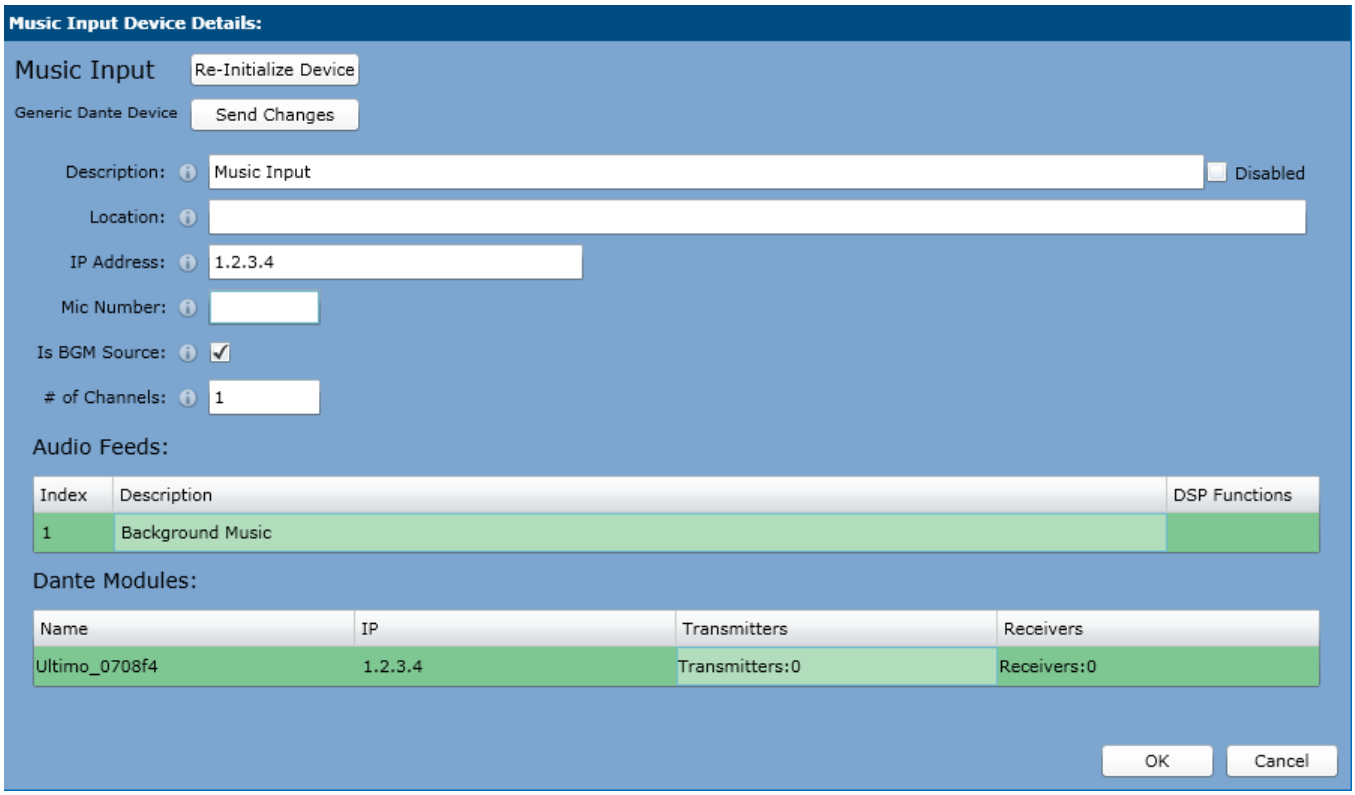


Figure 12-105: Generic Dante Device Setup

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the device.

Mic Number

If **Is BGM Source** is not checked, then one can enter the Mic Number to use in Live from Alternate Source actions here.

Is BGM Source

This box is checked by default, and must be so to allow the system to treat the device as a BGM source for the system. The device will appear as an available BGM source for output devices.

of Channels

This is the total number of channels that will be used as BGM inputs on the device. Changing this value, changes the number of rows in the Audio Feeds grid.

Audio Feeds

This grid is used to give a name to each BGM channel that will be sourced from this device. This name will appear in selection lists for devices when you are configuring outputs to receive BGM.

Dante Modules

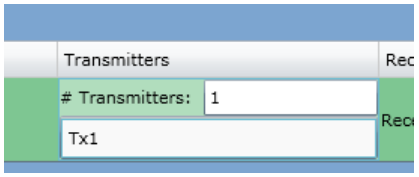
This section is of the parameters such as module Name, Transmitters and Receivers that were discovered for this device. These may be populated via the device discovery or manually entered. To manually edit, one should click in the Name, Transmitters and Receivers cells and fill in the information:

Name

Clicking here enables an edit box where one can enter the Dante device name *exactly* as it appears on the device (e.g., read with Dante Controller software). This name is used to communicate with the device rather than the IP address, so getting this correct is vital.

Transmitters

When one clicks on this cell, it opens up additional edit boxes: one for the transmitter count, and additional ones for each transmitter itself, as shown at right. One edits the count value first, and SMC will create/open additional edit boxes with default names like Tx1, Tx2, etc. One should over-write this default name with the actual channel name as it appears on the device.



Receivers

When one clicks on this cell, it opens up additional edit boxes as described above for transmitters.

4.5.8 Dante Mic Stations

There are two styles of Dante mic stations currently available: the IPCSD1/IPCSD4 and the IPCSDTOUCH. There are two models in each category. In the first case the mics are two-gang box mountable, but either only have a push-to-talk (PTT) switch (IPCD1) or four buttons (A-D) plus the PTT switch. In the IPCSDTOUCH series, there is a unit with a handheld PTT microphone and a gooseneck microphone option.

4.5.8.1 IPCSD1/IPCSD4 Mic Stations

These two-gang mountable mic stations are configured via the configuration properties shown below. Note, the device properties are the same for these two mic stations. The differences come in when defining actions for the mic stations. Note, as far as GCK configuration goes, the IPCSD4 is very similar, almost identical, to the 524 mic station with the obvious exception of Dante Module vs. CobraNet bundle configuration.

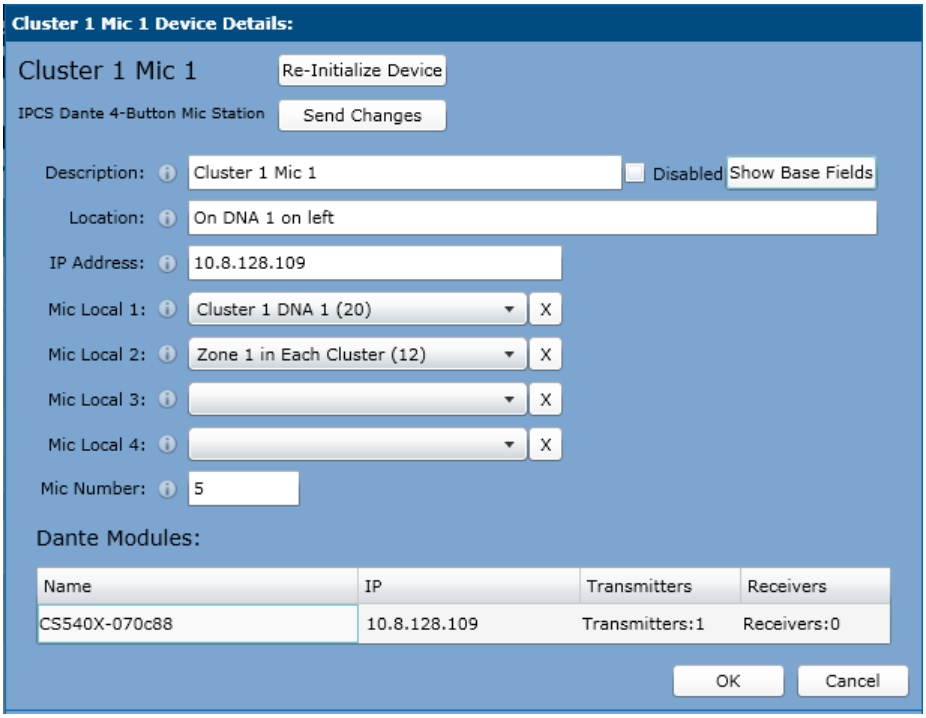


Figure 12-106: IPCSD1 or IPCSD4 Setup

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the device.

Mic Local

Each microphone station can have up to four (4) Mic Local zone groups assigned. Mic Local zone groups are a method of consistently assigning actions that have destinations that are relative to the location of the microphone station. Let's say you always want the push-to-talk (PTT) button on the microphone station to do a live page to the same zone where the microphone station is physically located. You would create a single action that has an entry code of 0 (0 is for the PTT or ANNC buttons) with a zone group destination of ***Mic Local 1***. You would then assign the ***Mic Local 1*** field in the microphone station setup to correspond to a zone

group programmed with the zone(s) local to that station. Each station can have a different zone group assigned to the ***Mic Local 1*** field. Since the action references that field as the destination, it will always go to the local zone group.

This logic can apply to all of the available Mic Local zone group assignments. ***Mic Local 2*** could be used for all immediately adjacent zones. ***Mic Local 3*** could apply to all zones within the local building. Using this feature allows you to create actions that function relative to the location of the microphone station that is used to launch the action.

You can clear the selection in this field by clicking on the *[X] button* to the right of the field.

Mic Number

This is the number used to identify the microphone station within the announcement controller. It must be a unique number within the local announcement controller. For the IPCSD1/IPCSD4 mic stations, these are software defined, unlike the 524 mic stations which used DIP switches to define the mic number.

Dante Modules

This section is read-only of the parameters such as module Name, Transmitters and Receivers that were discovered for this device.

(a) IPCSD1/IPCSD4 Actions

Actions for IPCSD1/IPCSD4 microphone stations are divided into *Global* and *Device Specific* actions. *Global* actions will apply to all microphone stations of this type in the controller. This allows one to quickly define actions that will be common to all microphone stations. *Device Specific* actions are those that are only associated with an individual microphone station. Each button on the microphone station allows you to edit or define either the *Global* or *Device Specific* actions. If you have a *Device Specific* action, then it will override the Global action on that specific microphone station. Note, although SMC may allow you to define actions for buttons A – D on the IPCSD1 model mic station, only the PTT action can actually be used by it.

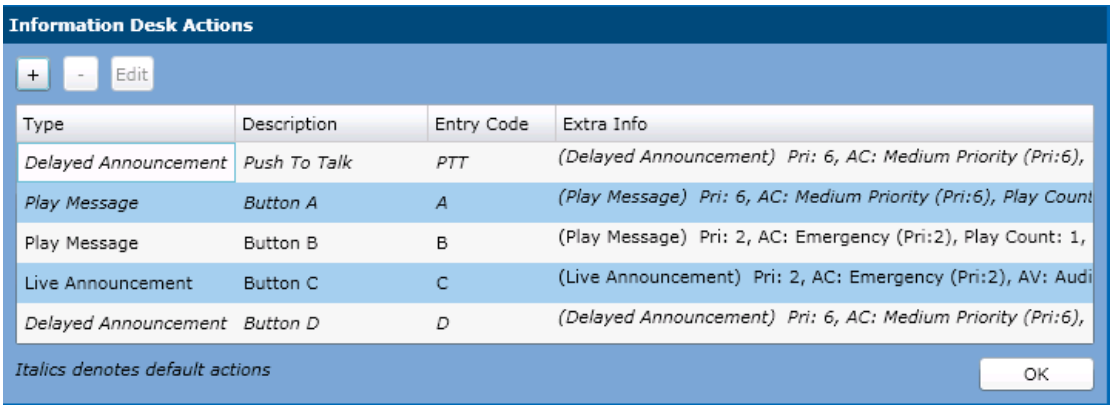


Figure 12-107: IPCSD1/IPCSD4 Actions

Figure 12-107 shows the action definition window for a IPCSD1/IPCSD4 microphone station. The top of the window will display the name of the station, which in this case is "Information Desk" to indicate that the station is located at the information desk. This window allows you to assign an action to each of the available buttons on the mic station, or edit *Default Actions* that apply to all of this type of microphone station in the controller.

The ***Extra Info*** column on the right will tell you if several things.

- If neither a *Default* or *Device Specific* action have been defined, this field will be blank.
- If the button is using a *Default* action, it will appear in italics as shown for button A in the figure.
- If the button is using a *Device Specific* action and there is no *Default* action defined, then it will appear in regular text as shown for button B in the figure.
- If the button is using a *Device Specific* action and there is a *Default* action defined, then you will see both listed as shown for the PTT button in the figure. An icon is also displayed indicating that a *Device Specific* action is overriding the *Default* action. Since both are displayed, it will show you what the button will do if you choose to delete the *Device Specific* action, or if you need to edit the *Default* action.

Some abbreviations used in the ***Extra Info*** column are listed below:

- AC – Announcement Class
- ZG – Zone Group
- AV – This will say Audio, Visual, or Both to indicate the presence of audio and/or video takes.
- EC – Entry Code

You can edit a button by selecting (single click) it in the list and then clicking one of the appropriate icons located at the top of the window. You can also double-click on the button in the list to edit it.

Note: Any time you attempt to add, edit, or delete a button action, you will be prompted to select either the Device Specific or Default action with a dialog box similar to the one shown in the figure below.

The figure below shows the prompt that will appear if you selected to Add or Edit a button that does not have either a *Device Specific* or *Default* action assigned. Note that you can select to ***Add*** either type of action to the button by clicking on the appropriate button. This will take you to the standard action definition window. Refer to the ***Action Types*** section of the documentation for information on defining individual actions. Click the ***Cancel*** button to close the prompt without making any changes.

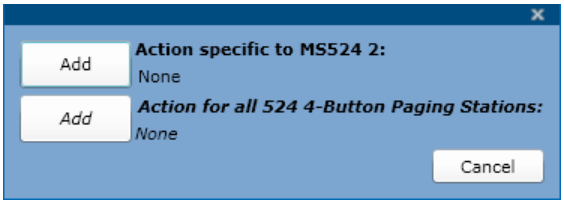


Figure 12-108: Add New 524 Action

*Note: If you add, edit or delete a Default action on any microphone station, then those changes will apply to **all** microphone stations of that type.*

The figure below shows the prompt that will appear if you selected to Add or Edit a button that already has a *Default* action defined but does not have a *Device Specific* action defined. Notice, that since a *Default* action is already defined, you now have an ***Edit*** button that will allow you to edit the *Default Action.* Since a *Device Specific* action has not been defined for this button, the prompt gives you the option to add one using the ***Add*** button.

If you had selected a button that has both defined, then you would be presented with an ***Edit*** button for each type of action.

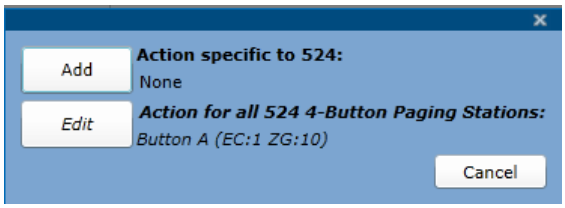


Figure 12-109: Add Specific or Edit Default 524 Action

The figure below shows the prompt that will appear if you first select a button and then click the ***Delete*** icon. You will be prompted to delete either the *Device Specific* action for the button or the *Default* action. If only one type is defined, then the ***Delete*** button will be grayed out as you cannot delete something that has not been defined.

Note: If you have a Device Specific action defined for a button and you wish to revert to the Default action, simply delete the Device Specific action associated with that button.

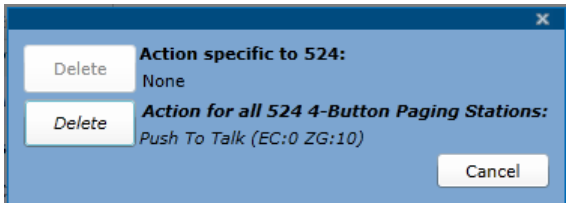


Figure 12-110: Delete MS524 Action

4.5.8.2 IPCSDTOUCH Mic Stations

The Touch Screen mic station is configured a little differently from the other mic stations. Instead of defining actions to assign to buttons or templates, the mic station templates themselves contain all the action information. The basic properties for the IPCSDTOUCH device are as shown below in the figure below. The configuration of the IPCSDTOUCH is very similar, almost identical, to the setup of the 550CS mic station, with the obvious difference of Dante Module vs. CobraNet transmitter information.

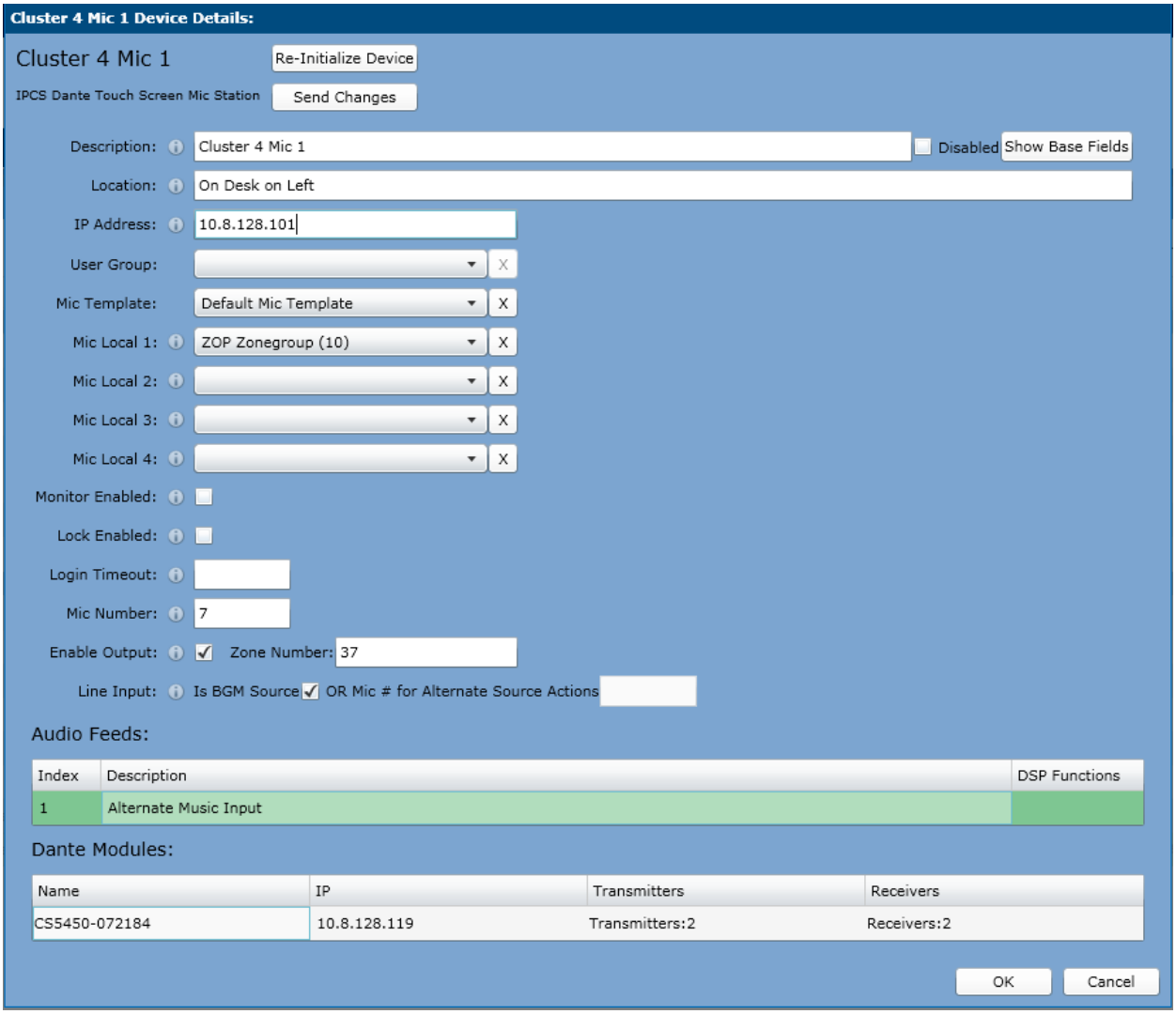


Figure 12-111: IPCSDTOUCH Mic Station Properties

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the controller part of the microphone station here. This information is available on the settings page of the mic station (accessed by pressing the icon).

CobraNet IP

The IP address of the CobraNet module inside the 550CS. Unlike the 528 and 524 mic stations, the 550CS has separate network nodes for the control and CobraNet audio connections.

User Group

Select the user group associated with the microphone station from the drop-down list. The list of available groups is defined in the ***User Groups*** tab of the software. The name will be displayed across the top of the microphone station display when the ***Lock Enabled*** box is not checked. When the ***Lock Enabled*** box is checked, the name on the display is determined by the "logged in" user as defined in the ***Mic Passwords*** tab. This field is optional.

You can clear the selection in this field by clicking on the *[X] button* to the right of the field.

Mic Template

Select the graphical button template to use for the microphone station. Templates are defined in the ***Mic Templates*** tab of the software. This template will be used only when the ***Lock Enabled*** box is not checked. When that box is checked, the template used is determined by the one assigned to the user in the ***Mic Passwords*** tab. If no template is selected here, the station will use the one specified in the ***Default Template*** field in the ***Controllers*** tab.

You can clear the selection in this field by clicking on the *[X] button* to the right of the field.

Mic Local

Each microphone station can have up to four (4) *Mic Local* zone groups assigned. *Mic Local* zone groups are a method of consistently assigning actions that have destinations that are relative to the location of the microphone station. Let's say you always want the push-to-talk (PTT) button on the microphone station to do a live page to the same zone where the microphone station is physically located. You would create a single action that has an entry code of 0 (0 is for the PTT or ANNC buttons) with a zone group destination of ***Mic Local 1***. You would then assign the ***Mic Local 1*** field in the microphone station setup to correspond to a zone group programmed with the zone(s) local to that station. Each station can have a different zone group assigned to the ***Mic Local 1*** field. Since the action references that field as the destination, it will always go to the local zone group.

This logic can apply to all of the available *Mic Local* zone group assignments. ***Mic Local 2*** could be used for all immediately adjacent zones. ***Mic Local 3*** could apply to all zones within the local building. Using this feature allows you to create actions that function relative to the location of the microphone station that is used to launch the action.

You can clear the selection in this field by clicking on the *[X] button* to the right of the field.

Monitor Enabled

Check this box when using a microphone station with an attached monitor speaker to monitor test points (i.e., make this mic available on the monitor destination selector).

Lock Enabled

When checked, users are required to login using a password that has been configured in the ***Mic Passwords*** tab. When enabled, the graphical template specified in the ***Mic Template*** field is ignored and the template is determined by the user password.

Login Timeout

When microphone stations require user login, it will also automatically logout after the interval specified in this field. This value is in seconds and defaults to 15 minutes (900 seconds) if left blank. The maximum value is 4200 seconds (70 minutes).

Mic Number

This is the number used to identify the microphone station within the announcement controller. It must be a unique number within the local announcement controller.

Enable Output

Check this box to enable the auxiliary output on the mic station to be used as a zone for paging actions.

Zone Number

The zone number to use for the auxiliary output of the mic station.

Line Input is BGM Source or Mic

The IPCSDTOUCH has a line input connection on the back that can be used for either a BGM source or a second paging source, such as for Live from Alternate Source type actions. If not defined to be a BGM source, then a second Mic # must be provided in the edit box here.

Dante Modules

This section is read-only of the parameters such as module Name, Transmitters and Receivers that were discovered for this device.

4.5.9 Dante Amplifiers/Options

Dante Amplifier devices include the T112 TitanONE Smart Mainframe with DSP, the 1542NA-D and 1581NA-D Network Amplifiers, the DNA2404D (and a Backup DNA2404D) Digital Network Amplifier, and the 1544ZOP Zone Output Processor. The Device properties for each of these is described below.

4.5.9.1 T112 TitanONE Smart Mainframe

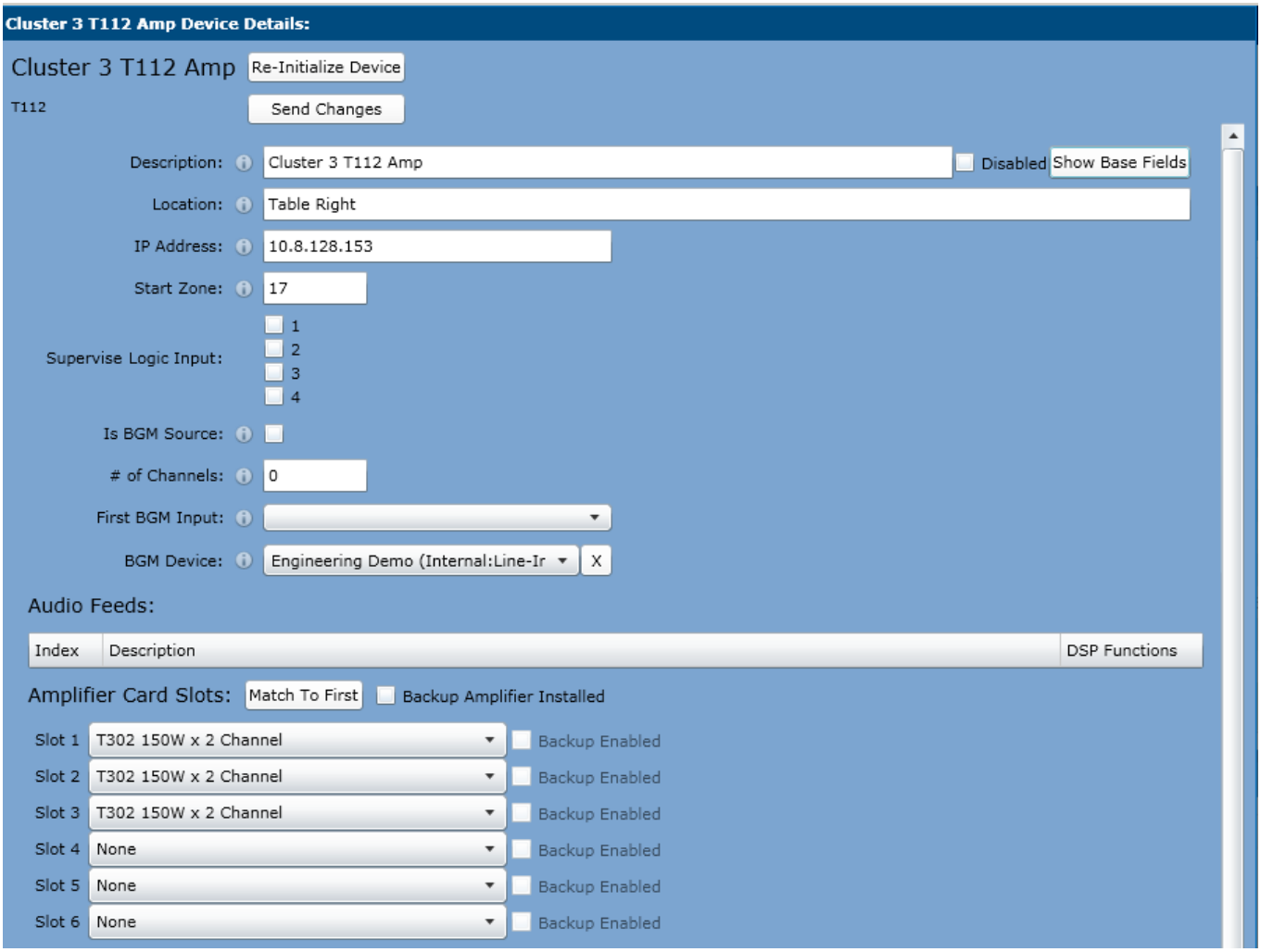


Figure 12-112: T112 Device Properties (part 1 or 2)

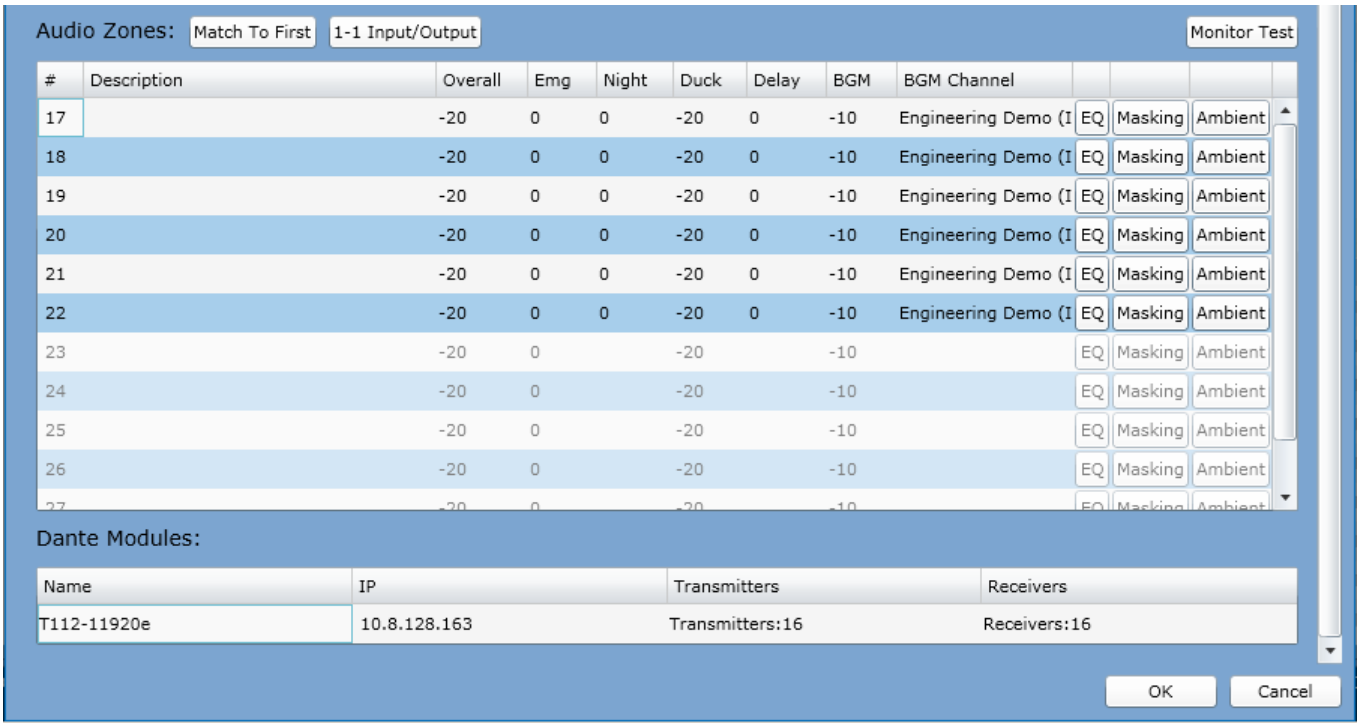


Figure 12-113: T112 Device Properties (part 2 or 2)

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the device here.

Start Zone

This is the zone number that represents the first zone in the device. The system will automatically use the next available zone number as the starting zone number when you add a new device. It can be edited here if needed. For example, you have a system that already has 32 zones. When you add a new T112, the starting zone will be 33.

Supervise Logic Input

The T112 has four logic inputs that can accept dry contact closures to trigger actions. These may be configured as supervised inputs, where the T112 can detect that the connection has a short or open condition, or unsupervised inputs (simply closure or open condition). These checkboxes indicate to the T112 which inputs should be supervised.

Note: Supervised inputs require special wiring with resistors mounted external to the T112 frame, at the remote end of the connection. One cannot simply check these boxes and expect the connections to become magically supervised.

Is BGM Source

When checked, the system will treat the device as a BGM source for the system. When configured as a BGM source, the device will appear as an available BGM source for output devices. The inputs defined using the ***First BGM Input*** and ***# of Channels*** fields will be routed over the audio network.

of Channels

This is the total number of channels that will be used as BGM inputs on the device. The input channels must be consecutive, so if you specify input 1 in the ***First BGM Input*** field and set a total number of channels at 4, then you will use inputs 1 through 4 as the BGM inputs.

First BGM Input

This drop-down list allows you to select the first input channel on the device that will be used as a BGM input.

BGM Device

Once you have defined one or more devices in the system as a BGM source, it is then available as an item in this drop-down list. You select the device from this list that will be used as the source device for the BGM. You can then select individual channels to be used for each zone output. You can click the **[X] button** to the right of the drop-down list to clear the selection.

Audio Feeds

This table of descriptions is used to give a name to each BGM channel that will be sourced from this device. This name will appear in selection lists for devices when you are configuring outputs to receive BGM.

Amplifier Card Slots

Each T112 mainframe has 7 slots for amplifier cards. Slots 1 through 6 contain the primary amplifier cards while slot 7 holds an optional backup amplifier card that will automatically take over for a failed card when configured to operate as such. Each slot has two output channels, thus consumes two zones that count towards the total number of zones in the software license, unless you disable them by choosing the correct amplifier card type.

Backup Amplifier Installed

This checkbox indicates whether there is a backup amplifier in slot 7 to be supervised and used for main amplifier backup.

Note, it is the user's responsibility to insure that the backup amplifier is of sufficient power to handle the load for any of the main amplifiers it is intended to back up. For example, if any of the backed up amplifiers are the highest power T1202 type, they the backup should be a T1202 as well. (Or back up a frame of T2LD's with another T2LD line driver card.)

Amplifier Card Type

None – Select this type if the slot does not contain an amplifier card. This will disable both zones for that slot, thus removing them from the total zone count.

T302, T602, T1202 – There are the three power amplifier options. All of these options are dual-channel, just differing in power level. By specifying which model, the T112 will report a fault when any amplifier is placed into the wrong slot.

T2LD – Select this type if the slot contains a T2LD line driver card.

Backup Enabled

Check this box to enable the backup amplifier card switching for this amplifier card. If the card fails, it will automatically switch to the backup amplifier card located in slot 7 of the unit (if available).

Match to First

Click this button to take the current settings for slot 1 and apply them to slots 2 through 6.

(a) T112 Zones Grid

This grdi allows you to configure each output zone in the device.

Zone Number

This is the number that will be used to identify this output zone in the system. This number is calculated based on the values in the ***Start Zone*** and ***Total Zones*** fields. Each output channel in a T9160 is an individual zone.

Description

Double-click on this field to edit a text descriptor for the zone.

Levels

• Overall – This is the master output level control for the zone. Adjusting this level will change the levels of both announcements and BGM. This number represents the amount of attenuation relative to 0dBFS. So a value of –30 will attenuate the level by 30dB. To reduce the level by an additional 10dB, you would enter a value of –40.

• Emg – This field defines an offset to the ***Overall*** level to use when an announcement is made with an announce class that has the ***Emergency*** flag set. This allows you to increase the level of the output for emergency announcements. The default value is 6dB. If you use this setting with an ***Overall*** setting of –20dB, then an emergency announcement will be played using an output level that is 6dB louder than normal announcements.

• Night – This field defines an offset to the ***Overall*** level to use when the night schedule is invoked as programmed in the ***Day / Night Schedule*** section of the ***Configuration*** tab. This allows you to decrease the level of the output based on the time of day for each day of the week. The default value is 0dB and is set by entering a value to turn the output down. For example, if you enter a value of 6, then the channel level will be turned down by 6dB when the Night schedule is placed in effect.

• BGM – This field sets the BGM level for the zone. This number represents the amount of attenuation relative to 0dBFS. So a value of –30 will attenuate the level by 30dB. To reduce the level by an additional 10dB, you would enter a value of – 40.

• Duck – This field controls how much the level of BGM will be reduced when an announcement is made to the zone. A value of –10 will reduce the BGM level by 10dB when an announcement is made. A value of –60 will effectively mute the BGM level when an announcement is made.

Delay

Each output on the T112 has signal delay that can be used for loudspeaker alignment. Enter a numerical value to represent the number of milliseconds (ms) to use for the delay.

BGM Channel

This drop-down list allows you to select an individual channel to use as the zone BGM. The channels available are for the device selected in the ***BGM Device*** field and the local inputs on the back of the T112 mainframe.

Match to First

Click this button to take the three levels (Overall, BGM, and Duck) Delay and the BGM Channel selection of the first zone and copy them to the remaining zones in the device.

1–1 Input/Output

Click this button to route as analog input 1 to zone 1, input 2 to zone 2, etc. for the whole frame as the BGM Channel selection.

(b) T112 Equalization Window

Each channel has a nine-band parametric EQ available to adjust the signal as necessary to meet the needs of the loudspeakers and allow the system to be adjusted to maximize intelligibility in the acoustic space. Press the **[EQ]** button for a channel to open the EQ window as shown in the figure below.

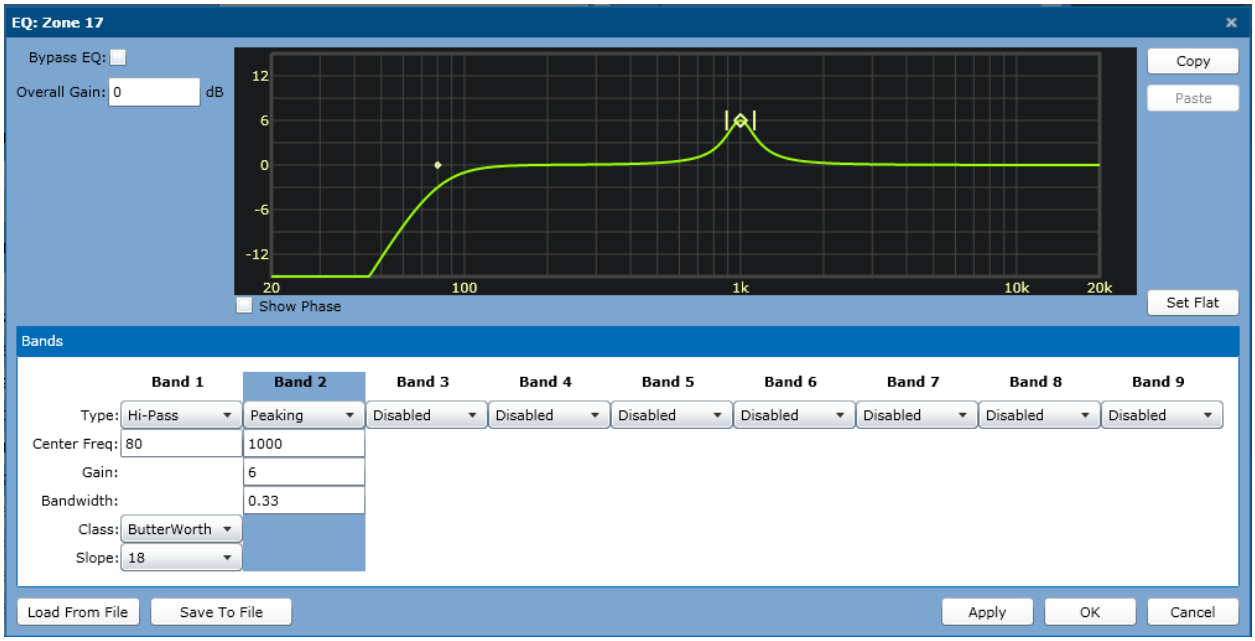


Figure 12-114: T112 EQ Settings Window

Type

Select a filter type in the drop-down list. The available options are:

- Peaking – A typical bandpass type filter
- Notch – Sharp bandpass cut-only filter
- Hi Pass – Filter for rolling off frequencies lower than the cutoff frequency
- Lo Pass – Filter for rolling off frequencies higher than the cutoff frequency
- All Pass – Filter used for phase adjustments near the center frequency
- Disabled – Turn this filter off

Note: The options for the filter parameters will change slightly depending on the filter type selected.

Center Frequency

The center frequency (or cutoff frequency) of the filter is set by entering a numeric value in the edit box. Dragging the diamond icon in the graph laterally left or right can also change the frequency parameter.

Gain (dB)

This is only available for Peaking and Notch filter types.

The filter gain is set by entering a numeric value (using + or – values for relative dB) in the edit box. The gain can also be changed by clicking and dragging the diamond icon for the filter up or down in the frequency response graph.

Bandwidth (Oct.)

This is only available for Peaking and Notch filter types.

The filter bandwidth is set by entering a numeric value in the edit box. The value used is measured in Octaves. For example, if a 1/3 octave filter is required then a value of 0.333 would be used. The bandwidth can also be altered using vertical line icons located on each side of the diamond filter icon in the frequency response graph. Click a line and move the mouse laterally to change the bandwidth.

Class

This is only available for Hi Pass and Lo Pass filter types. *This is for possible future enhancements. Currently there are no options available here.*

Slope (dB/Oct.)

This is only available for Hi Pass and Lo Pass filter types. This value determines the frequency roll-off rate for the filter in decibels per octave. *This is for possible future enhancements. Currently these filters are fixed at a 12 dB/Octave roll-off.*

Bypass EQ

When checked, this removes the effects of all filter bands from the signal path without resetting the filters to a flat response curve. When the EQ is bypassed, the signal will pass through the object without any modifications to the frequency characteristics.

Overall Gain

The EQ provides a small range of gain adjustment in order to compensate for the overall effect of the EQ curve and allow signal-to-noise ratio and dynamic range to be maximized. This gain is set by entering a value (in + or – relative dB) in the edit box. It should only be used within a range from 6dB of attenuation to 6dB of gain.

Set Flat

This button resets all filters to a gain setting of 0dB (flat response) and disables all bands except for band 1.

Show Phase

When checked, the phase response through the EQ will be shown as a red curve on the graph.

Save To File

Click this button to save the EQ curve as an XML file. This allows you to archive the file as well as save it as a preset and load it into other channels.

Load From File

Click this button to open a standard Windows file dialog window. From here, you can locate an XML file that has been stored with an EQ curve and load it into the frame.

Get From Frame

Click this button to force the window to reload the current EQ settings from the frame.

Copy

Click this button to copy all of the current EQ settings to the clipboard. You can then move to another channel and use the ***Paste*** button to copy settings between channels.

Paste

Click this button to paste the EQ settings stored on the clipboard to the current channel. This button will be dimmed if there are no available EQ settings to paste from the clipboard.

(c) T112 Ambient Analysis Window

TitanONE series amplifier frames are equipped with ambient noise compensation (Ambient Analysis) capabilities with built-in noise collector inputs. Ambient Analysis adjusts the output attenuation of a channel in response to ambient noise level measured in the area served by the channel. Either from one or two ambient noise sensors can used for each channel. The noise sensor inputs on the rear of the T112 are pre-assigned to amplifier channels. Channels can also be slaved to other channels. Click the Ambient button for the channel you wish to configure to open a window such as that shown in the figure below.

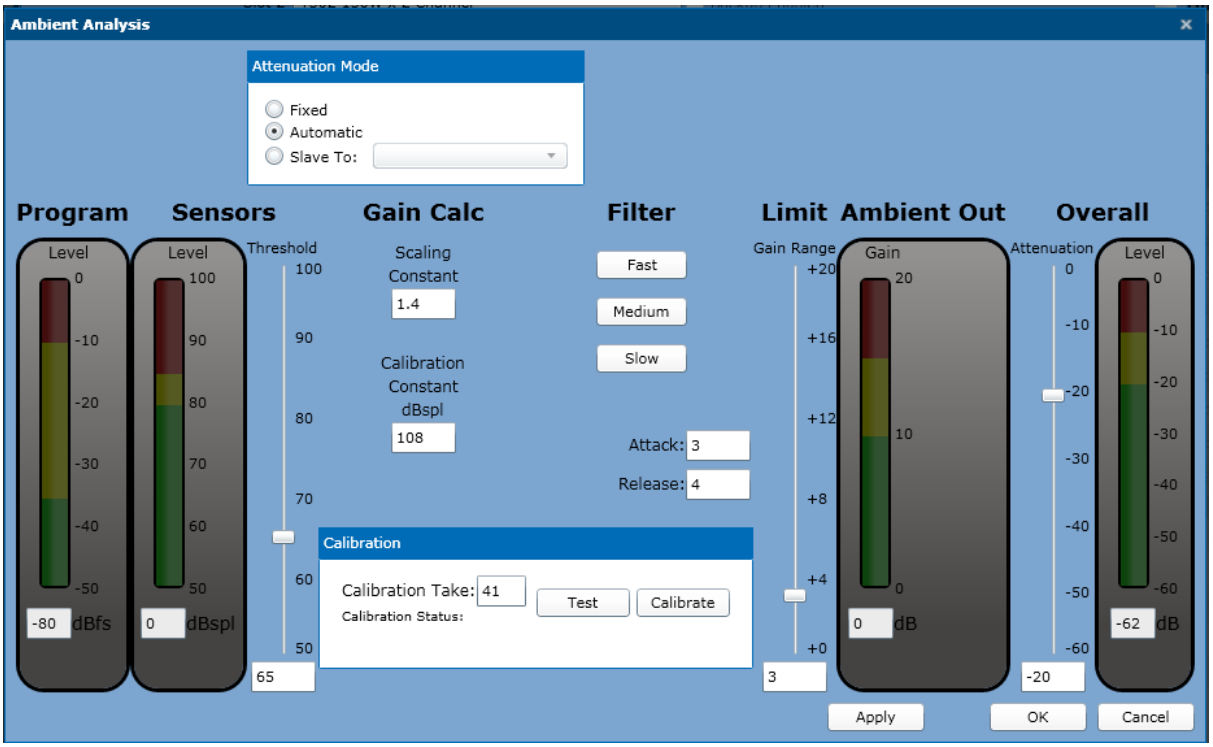


Figure 12-115: T112 Ambient Analysis Setup Window

Attenuation Mode

Each channel can be set to one of three different possible attenuation modes as described below

• Fixed - This mode deactivates the ambient noise compensation for this channel. The channel output level will remain at the level set by the **Overall** attenuator.

• Automatic - This mode will allow the level of the channel to automatically adjust based on the ambient noise level as detected by the ambient sensor input. The level will increase above the **Overall** attenuator setting as the ambient noise sensor detects higher ambient noise levels. The level will increase by an amount proportional to the detected level as determined by the **Scaling Constant**. The **Limit** slider determines the maximum level increase.

• Slave - This mode will cause the selected channel to follow the ambient noise compensation settings of another channel. Using this setting allows multiple outputs on the same T112 frame to be adjusted by a single sensor or a gang of sensors. This setting is useful in very large spaces where multiple amplifier channels are required due to the power load requirements of the loudspeaker lines. One should select the channel that this channel will be slaved to from the drop-down list.

Note: A channel can only be slaved to a channel that is located in the same T112 mainframe.

Program

This level meter displays the real-time audio signal level at the input of the Ambient Analysis object. This signal is post-EQ and post-delay but does not have the test signal.

Sensors - Level

This level meter displays the real-time sound pressure level (SPL) from the ambient noise sensor.

Note: This level is the sum of both the ambient noise in the space and the program audio from the system. The Ambient Analysis algorithm filters out the audio system's contribution to the overall level and provides a real value of ambient noise level to the system for processing.

Sensors -Threshold

The threshold determines the level at which the ambient noise compensation is suspended because the level at the sensor is too low. When the detected level from the ambient noise sensor rises above the threshold setting, then the system will actively operate. It will filter the system program audio component from the detected level to accurately adjust the output attenuation based on the calculated noise level. When the level is below the threshold, the system will stop actively adjusting the output attenuation and return to the maximum attenuation setting which is the base level setting as defined by the **Overall** attenuation control.

The threshold is set by adjusting the slider with the mouse or by manually typing a value in the edit box below the slider using a positive numerical value.

Gain Calc - Scaling Constant

The **Scaling Constant** determines the amount of ambient noise level that will result in the output level to increase by 1dB. A scaling constant of 1 will result in the output level increasing by 1dB for each 1dB increase in ambient sensor level. The figure shows a scaling constant of 1.4. With this setting, a 1.4dB increase in ambient sensor level will result in a 1dB increase in output level up to the point where the **Limit** has been reached.

Gain Calc - Calibration Constant

This value is calculated and automatically entered during the channel calibration process. It can be manually adjusted by typing in a new value in the edit box.

Caution: This value should only be manually adjusted after an automatic calibration has not been completely successful. Adjustments should be made in very small increments of 2 or 3 dB at a time.

Use the following guidelines when adjusting the calibration constant if the system is not properly responding after an automatic calibration.

- If the system turns down as soon as an announcement is active, then the calibration constant is too high. It should be reduced in small increments until the system remains stable while an announcement is active.
- If the system gets louder as while an announcement is active, then the calibration constant is too low. It should be increased in small increments until the system remains stable while an announcement is active.

Filter – Attack

This advanced user setting determines the rate at which the output level will increase when an increase in the ambient sensor level has been received. The value is in the number of seconds and can be directly entered in the box using the keyboard.

Filter - Release

This advanced user setting determines the rate at which the output level will decrease when a decrease in the ambient sensor level has been received. The value is in the number of seconds and can be directly entered in the box using the keyboard.

Filter - Presets

- Fast – Preset where the attack time is 1 second and the release time is 2 seconds.
- Medium – Preset where the attack time is 3 seconds and the release time is 4 seconds.
- Slow – Preset where the attack time is 7 seconds and the release time is 10 seconds.

Limit

The limit sets the maximum amount of gain that can be applied through the ambient analysis compensation process. The amount of gain available is determined by the attenuator setting of the **Overall** attenuation slider. For example, if the channel out slider is set to –20dB as shown in the figure, then the maximum available setting for the Limit slider will be +20dB. Setting the Limit to +12dB will cause the output level to be increased by a maximum of 12dB above the setting of the **Overall** attenuation slider. Thus, with very loud ambient noise levels the output level will be effectively set to –8dB and reduced to –20dB when the ambient noise level is very low or has dropped below the threshold. The ambient noise compensation will be continually adjusted within this range as long as the noise level remains above the threshold but below the amount required to drive the system to maximum level. The limit is set by adjusting the slider with the mouse or by manually typing a value in the edit box below the slider using a positive numerical value.

Note: The Ambient Analysis algorithm differentiates between program audio and ambient noise level detected by the ambient noise sensor. It is possible for the sensor level to be above the threshold with no ambient noise compensation applied when the level detected is program audio from the system.

Overall level

This slider controls the main output attenuator for paging, BGM, and program signals. The meter indicates the current signal level that is feeding the analog input of the power amplifier.

Calibration Take

Enter the take number that you wish to play during the calibration.

Calibrate

Press this button to start the calibration process. A calibration message will be played to the channel output.

Caution: The ambient noise level in the area being calibrated needs to be at least 15dB below the sensor threshold level setting during calibration in order to yield a valid calibration.

Note: During calibration, the output level of the zone will be placed at its maximum level in order to induce as much audio coupling between the speakers and the ambient noise sensor in order to get a good measure of this coupling effect.

Test

The **Test** button will play the calibration take to the selected channel. This is used after the calibration process is complete to see if the system correctly differentiates between program and ambient noise. When the test take is playing and the calibration has been successful, the level should not change. If the system turns up or down during the test playback, then either the either the calibration constant should be adjusted or a recalibration should be attempted.

Dante Modules (refer to Figure 12-113)

This section is read-only of the parameters such as module Name, Transmitters and Receivers that were discovered for this device.

OK /Cancel (refer to figure 12-113)

Click the **OK** button to save any changes you made on this window. It will appear dimmed if there are no changes to save. Changes made to the EQ, Monitor/Test, of Ambient settings are saved when you close their respective windows. This **OK** button may appear grayed out even if you have made changes in those sub-systems.

Click the **CANCEL** button to discard any changes you have made to this screen. This will not undo any changes made to the EQ, Monitor/Test, or Ambient sub-systems.

(d) T112 Monitor Test Window

Click the [Monitor Test] button to open the Monitor Test window for the T9160 as shown in Figure 12-27. From here, you can configure the supervision parameters of the device, view the latest test results, or manually execute a test or set. The T9160 generates a test tone that is routed to each channel and then the level is measured at three places on each channel. The unit tests the analog output of the DSP before it enters the amplifier, the voltage level at the amplifier output, and the current drawn as a result of the loudspeaker load.

Three different test signals are provided, each of which defines a “test”. One selects which test to be looking at by selecting it in the “Selected Test” drop-list box at the top left of the window. The tests are:

- 400Hz – Ideal for full range cone-type loudspeakers.

- 1kHz – Ideal for horn-type loudspeakers.
- 20kHz – Ideal for periodic supervision since this frequency will be inaudible in most systems.

Note: Clicking the OK button on this window will immediately send and save any changes to the device.

The window contains checkboxes that allow you to enable or disable the test points for this selected test

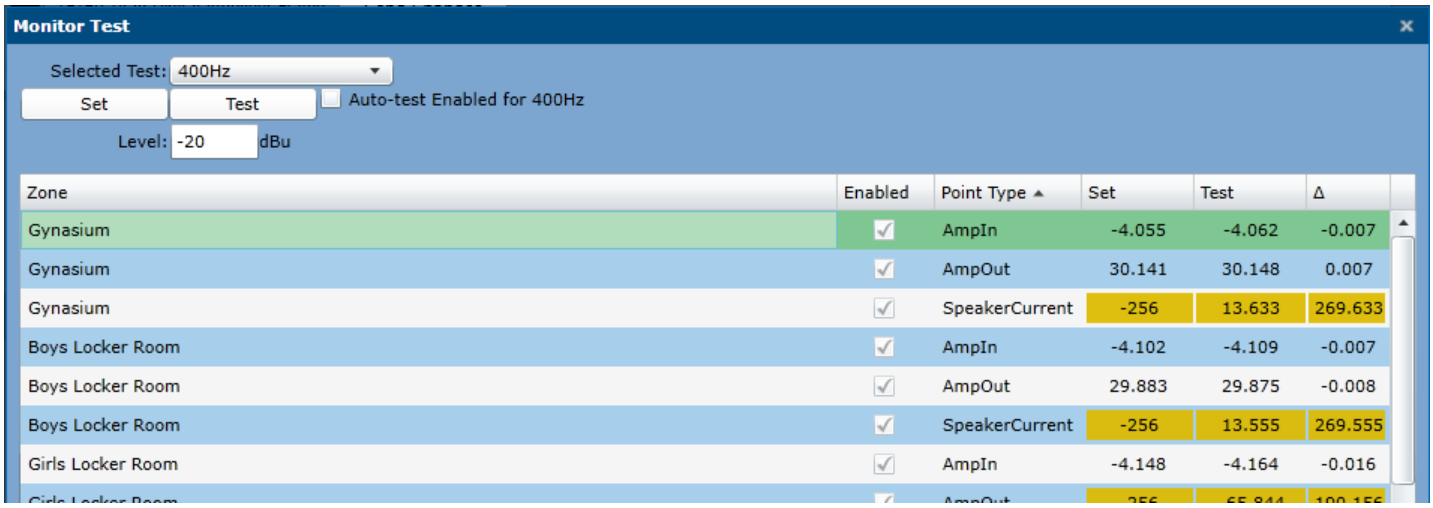


Figure 12-116: T112 Monitor Test Window

Caution: Clicking either the Test or Set buttons on the 400Hz or 1kHz will cause audible tones to be played through the system.

Test

Click the test buttons to start a test for the selected test (frequency). As the test is run, results should appear in the results table as shown in the figure above. The actual measured values at each point are displayed in the ***Test*** column for each test point. The unit compares the test values measured with the values stored when a system set was performed. Any variances in the level are displayed in the Δ (Delta or Variance) column of the table. Variances that are outside of the acceptable tolerance are shown in red. Items in red will generate a fault report that is sent to the system supervisor software. Items shown with gold background are for points that do not (yet) have a valid Set value (i.e., the test result is indeterminate, rather than a fault or a pass).

Set

Click this button to execute a test for the selected frequency, but store the measured values as a baseline comparison for a system test of the same frequency. You should run a system set when you know the system is operating correctly. The unit will then use these values to determine if there is a fault.

Level

The edit box just below the [Set][Test] buttons are the test tone levels for each frequency. Typical values for these are in the -30 to -10 dB range (these are in dBu).

Schedule

Each frequency can be configured to run on a schedule. To enable a schedule, one first one first clicks on the checkbox labeled “Auto-Test Enabled for xxxHz” beside the [Test] button. This brings up schedule configuration options as shown in Figure 12-28. The options for the schedule are described below.

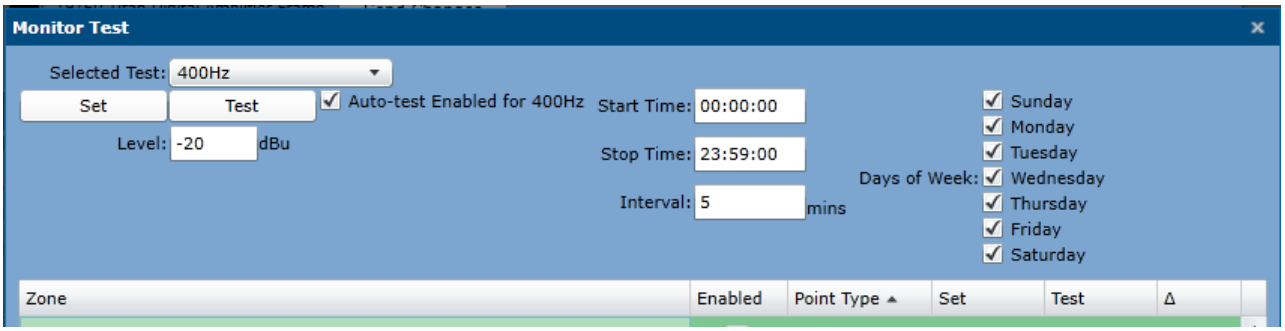


Figure 12-116b: Test Schedules

Start Time/Stop Time

You can restrict the times that a test will run based on the times entered in these two fields. To run continuously, enter 12:00 AM as the start time and 11:59 PM as the stop time.

Interval

Enter the time (in minutes) between each test.

Days of Week:

Which days of the week to run the test.

Note: If you only want the test to play once per day, you must enter an interval greater than the difference between the start and stop times. For example, you only want the 400Hz test to play at 3:00 AM when the building is empty. You could enter a start time of 3:00 AM, a stop time of 3:05 AM, with an interval of 15 minutes. This would cause the test to only run once at 3:00 AM

4.5.9.2 1542NA-D/1581NA-D Network Amplifiers

This devices are PoE (Power over Ethernet) amplifiers that receive Dante digital audio and drive 8 Ohm speakers. The two models provide either two channels of up to 4 Watts each (1542NA-D) or one channel of up to 8 Watts (1581NA-D).

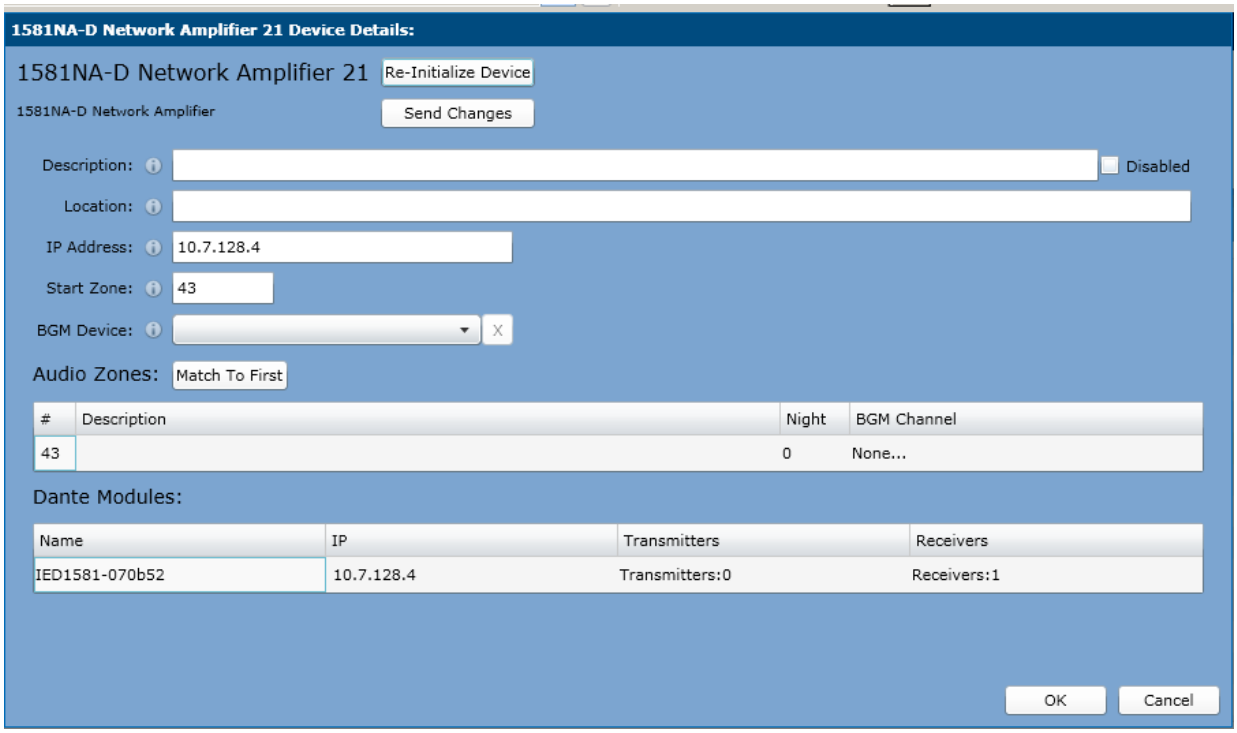


Figure 12-117: 1581NA-D Configuration

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the device here.

Start Zone

This is the zone number that represents the first zone in the device. T he system will automatically use the next available zone number as the starting zone number when you add a new device. It can be edited here if needed. For example, you have a system that already has 32 zones. When you add a new Network Amplifier, the starting zone will be 33.

BGM Device

Once you have defined one or more devices in the system as a BGM source, it is then available as an item in this drop-down list. You select the device from this list that will be used as the source device for the BGM. You can then select individual channels to be used for each zone output. You can click the **[X] button** to the right of the drop-down list to clear the selection.

Audio Zones

This list allows you to configure each output zone in the device.

Zone Number

This is the number that will be used to identify this output zone in the system. This number is calculated based on the values in the ***Start Zone*** field.

Description

Double-click on this field to edit a text descriptor for the zone.

Night

This field defines an offset to the ***Overall*** level to use when the night schedule is invoked as programmed in the ***Day / Night Schedule*** section of the ***Configuration*** tab. This allows you to decrease the level of the output based on the time of day for each day of the week. The default value is 0dB and is set by entering a value to turn the output down. For example, if you enter a value of 6, then the channel level will be turned down by 6dB when the Night schedule is placed in effect.

BGM Channel

This drop-down list allows you to select an individual channel to use as the zone BGM. The channels available are for the device selected in the BGM Device field.

Dante Modules

This section is read-only of the parameters such as module Name, Transmitters and Receivers that were discovered for this device.

4.5.9.3 DNA2404D Series Amplifier

There are two models in this series, the DNA2404DL (120V mains) and DNA2404DH (230V mains). The settings are the same between the two models and are treated the same by GCK/SMC. This device is very similar to the DNA2404C, so one will find many of its configuration settings to be similar or identical.

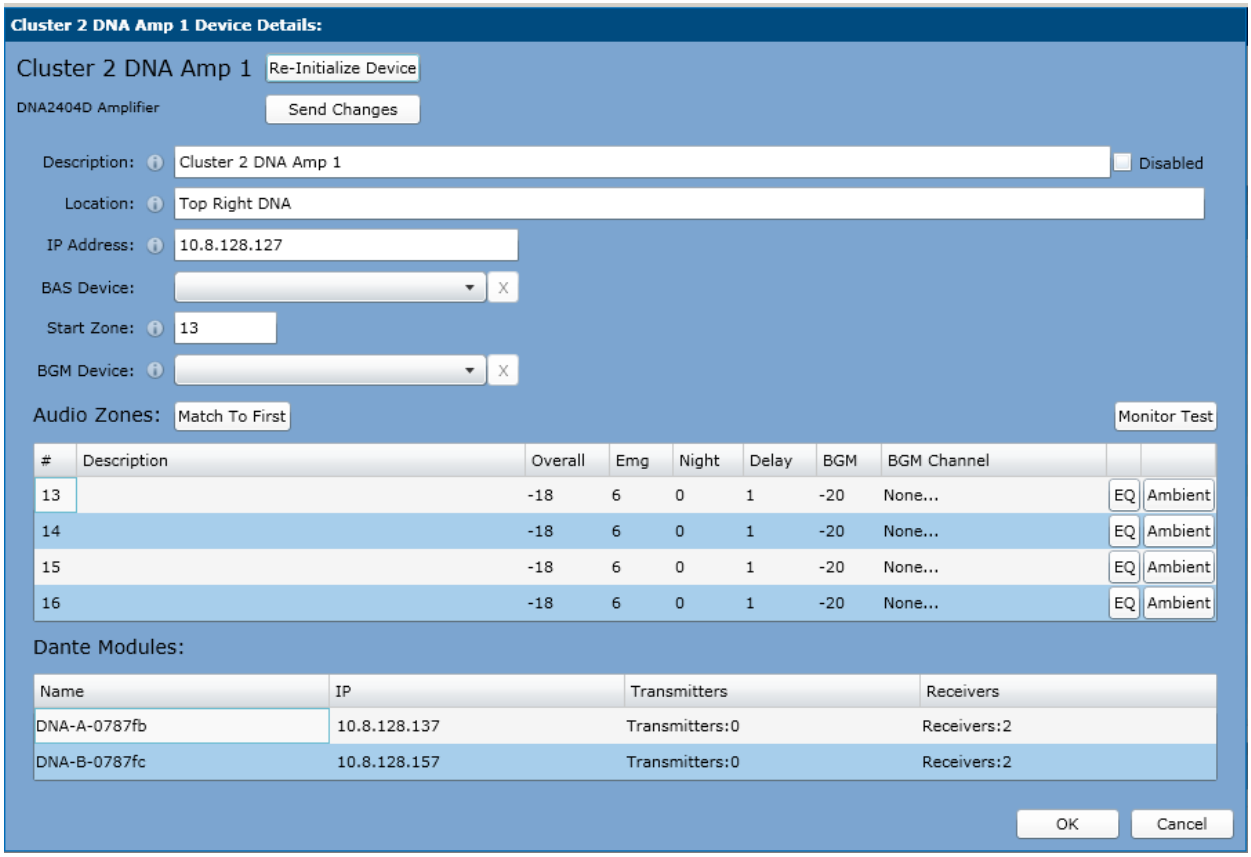


Figure 12-118: DNA2404D Series Amplifier Device

Fields on this form beyond the basics for all devices are as follows:

IP Address

The IP address for the control processor inside the device (separate from the Dante nodes inside).

BAS Device

Select the 1544BAS Backup Amplifier Switcher device that is associated with this DNA amplifier. This device switches the DNA amplifier's speaker loads over to a backup DNA amplifier should this device have faults.

Start Zone

This is the zone number that represents the first zone in the device. The system will automatically use the next available zone number as the starting zone number when you add a new device. It can be edited here if needed. For example, you have a system that already has 32 zones. When you add a new amplifier device, the starting zone will be 33.

BGM Device

Once you have defined one or more devices in the system as a BGM source, it is then available as an item in this drop-down list. One selects the device from this list that will be used as the source device for the BGM. One can then select individual channels to be used for each zone output. One can click the **[X] button** to the right of the drop-down list to clear the selection.

(a) DNA2404D Zones Grid

This grid allows you to configure each output zone in the device.

Zone Number

This is the number that will be used to identify this output zone in the system. This number is calculated based on the values in the ***Start Zone*** and field. Each output channel is an individual zone.

Description

Double-click on this field to edit a text descriptor for the zone.

Levels

- Overall – This is the master output level control for the zone. Adjusting this level will change the levels of both announcements and BGM. This number represents the amount of attenuation relative to 0dBFS. So a value of –30 will attenuate the level by 30dB. To reduce the level by an additional 10dB, you would enter a value of –40.
- Emg – This field defines an offset to the ***Overall*** level to use when an announcement is made with an announce class that has the ***Emergency*** flag set. This allows you to increase the level of the output for emergency announcements. The default value is 6dB. If you use this setting with an ***Overall*** setting of –20dB, then an emergency announcement will be played using an output level that is 6dB louder than normal announcements.
- Night – This field defines an offset to the ***Overall*** level to use when the night schedule is invoked as programmed in the ***Day / Night Schedule*** section of the ***Configuration*** tab. This allows you to decrease the level of the output based on the time of day for each day of the week. The default value is 0dB and is set by entering a value to turn the output down. For example, if you enter a value of 6, then the channel level will be turned down by 6dB when the Night schedule is placed in effect.
- BGM – This field sets the BGM level for the zone. This number represents the amount of attenuation relative to 0dBFS. So a value of –30 will attenuate the level by 30dB. To reduce the level by an additional 10dB, you would enter a value of – 40.
- Delay – This field controls the amount of delay induced into this zone, specified in milliseconds. Maximum available is 40 msec.

BGM Channel

This drop-down list allows you to select an individual channel to use as the zone BGM. The channels available are for the device selected in the ***BGM Device*** field.

Match to First

Click this button to take the three levels (Overall, Emg, Night, and BGM) and the BGM Channel selection and copy them to the remaining zones in the device.

(b) DNA2404D Equalization Window

Each channel has an EQ module available to adjust the signal as necessary to meet the needs of the loudspeakers and allow the system to be adjusted to maximize intelligibility in the acoustic space. Press the EQ button for a channel to open the EQ window as shown in the figure below.

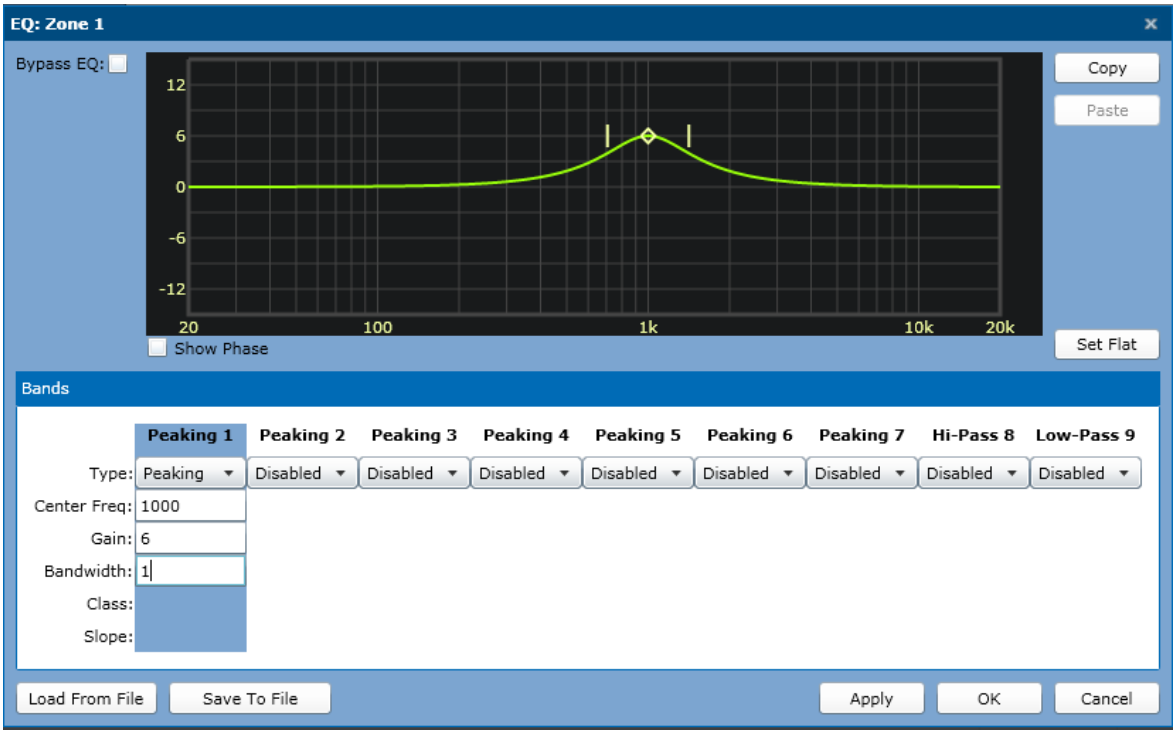


Figure 12-119: DNA2404D EQ Settings Window

Bands are selected by clicking on one of the nine band names immediately below the frequency response curve graph. A specific band can be selected and then adjusted using the edit boxes below the names. It is also possible to select a filter and edit its frequency, gain and bandwidth directly in the Frequency Response display window using the mouse to drag the filter position, cut/boost, or bandwidth. Note, that the first seven bands are parametric, while bands 8 and 9 have fixed hi-pass and lo-pass functionality.

Type

Select a filter type in the drop-down list. The available options for filters 1 through 7 are:

- Disabled – Turn this filter off
- Peaking – A typical band pass type filter

The available options for the Hi-Pass and Lo-Pass filters are:

- Disabled – Turn this filter off
- Hi-Pass – Filter for rolling off frequencies lower than the cutoff frequency
- Lo-Pass – Filter for rolling off frequencies higher than the cutoff frequency

Note: The options for the filter parameters will change slightly depending on the filter type selected.

Center Frequency (Hz)\

The center frequency (or cutoff frequency) of the filter is set by entering a numeric value in the edit box. The frequency parameter can also be changed by dragging the diamond icon in the graph laterally left or right.

Gain (dB)

This is only available for Peaking filter type.

The filter gain is set by entering a numeric value (using + or – values for relative dB) in the edit box. The gain can also be changed by clicking and dragging the diamond icon for the filter up or down in the frequency response graph.

Bandwidth (Oct.)

This is only available for Peaking filter type.

The filter bandwidth is set by entering a numeric value in the edit box. The value used is measured in Octaves. For example, if a 1/3 octave filter is required then a value of 0.333 would be used. The bandwidth can also be altered using vertical line icons located on each side of the diamond filter icon in the frequency response graph. Click a line and move the mouse laterally to change the bandwidth.

Class

This is only available for Hi Pass and Lo Pass filter types.

The mathematical function used to calculate the filter is selected by picking an available type from the drop-down list box. Currently, the only type of filter class available is the Butterworth type filter.

Slope (dB/Oct.)

This is only available for Hi Pass and Lo Pass filter types.

This value determines the frequency roll-off rate for the filter in decibels per octave. Available values range from 6 dB/Octave to 18 dB/Octave.

Set Flat

This button resets all filters to a gain setting of 0dB (flat response) and disables all bands except for band 1.

Show Phase

When checked, the phase response through the EQ will be shown as a red curve on the graph.

Save to File

Click this button to save the EQ curve as an XML file. This allows you to archive the file as well as save it as a preset and load it into other channels.

Load from File

Click this button to open a standard Windows file dialog window. From here, you can locate an XML file that has been stored with an EQ curve and load it into the frame.

Apply

Click this button to send the current EQ settings to the frame.

Copy

Click this button to copy all of the current EQ settings to the clipboard. You can then move to another channel and use the ***Paste*** button to copy settings between channels.

Paste

Click this button to paste the EQ settings stored on the clipboard to the current channel. This button will be dimmed if there are no available EQ settings to paste from the clipboard.

(c) DNA2404D Ambient Analysis Window

DNA series amplifier frames are equipped with ambient noise compensation (Ambient Analysis) capabilities utilizing the eight (8) built-in ambient sensor inputs. Ambient Analysis adjusts the output attenuation of a channel in response to ambient noise level measured in the area served by the channel. One (1) or two (2) ambient noise sensors can be used for each channel. Channels can also be slaved to other zones. Click the ***Ambient*** button for the channel you wish to configure to open a window such as shown below.

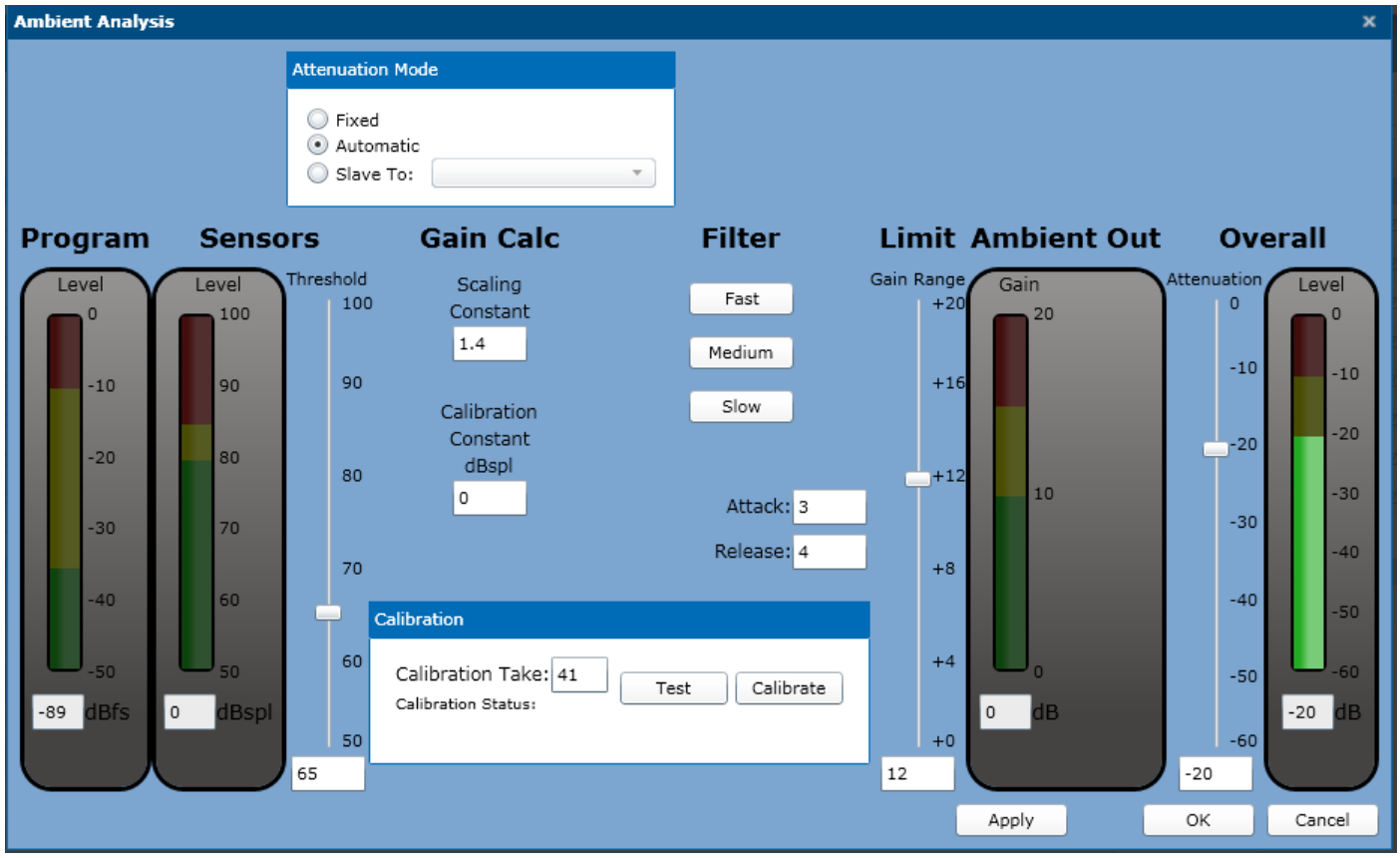


Figure 12-120: DNA2404D Ambient Analysis Setup

The fields and controls on this form are as follows:

Attenuation Mode

Each channel can be set to one of three different possible attenuation modes as described below.

- Fixed – This mode deactivates the ambient noise compensation for this channel. The channel output level will remain at the level set by the **Overall** attenuator.

- Automatic – This mode will allow the level of the channel to automatically adjust based on the ambient noise level as detected by the ambient sensor input. The level will increase above the **Overall** attenuator setting as higher ambient noise levels are detected by the ambient noise sensor. The level will increase by an amount proportional to the detected level as determined by the **Scaling Constant**. The maximum level increase is determined by the **Limit** slider.
- Slave – This mode will cause the selected channel to follow the ambient noise compensation settings of another channel. Using this setting allows multiple outputs on the same DNA amplifier frame to be adjusted by a single sensor or a pair of sensors. This setting is useful in very large spaces where multiple amplifier channels are required due to the power load requirements of the loudspeaker lines. Select the channel that this channel will be slaved to from the drop-down list.

Note: A channel can only be slaved to a channel that is located in the same DNA amplifier mainframe.

Program

This level meter displays the real-time audio signal level at the input of the Ambient Analysis object. This signal is post-EQ and post-delay but does not have the test signal.

Sensors-Level

This level meter displays the real-time sound pressure level (SPL) from the ambient noise sensor.

Note: This level is the sum of both the ambient noise in the space and the program audio from the system. The Ambient Analysis algorithm filters out the audio system's contribution to the overall level and provides a real value of ambient noise level to the system for processing.

Sensors-Threshold

The threshold determines the level at which the ambient noise compensation is suspended because the level at the sensor is too low. When the detected level from the ambient noise sensor rises above the threshold setting, then the system will actively operate. It will filter the system program audio component from the detected level to accurately adjust the output attenuation based on the calculated noise level. When the level is below the threshold, the system will stop actively adjusting the output attenuation and return to the maximum attenuation setting which is the base level setting as defined by the **Overall** attenuation control.

The threshold is set by adjusting the slider with the mouse or by manually typing a value in the edit box below the slider using a positive numerical value.

Gain Calc-Scaling Constant

The **Scaling Constant** determines the amount of ambient noise level that will result in the output level to increase by 1dB. A scaling constant of 1 will result in the output level increasing by 1dB for each 1dB increase in ambient sensor level. The figure above shows a scaling constant of 1.4. With this setting, a 1.4dB increase in ambient sensor level will result in a 1dB increase in output level up to the point where the **Limit** has been reached.

Gain Calc-Calibration Constant

This value is calculated and automatically entered during the channel calibration process. It can be manually adjusted by typing in a new value in the edit box.

Caution: This value should only be manually adjusted after an automatic calibration has not been completely successful. Adjustments should be made in very small increments of 2 or 3 dB at a time.

Use the following guidelines when adjusting the calibration constant if the system is not properly responding after an automatic calibration.

- If the system turns down as soon as an announcement is active, then the calibration constant is too high. It should be reduced in small increments until the system remains stable while an announcement is active.
- If the system gets louder as while an announcement is active, then the calibration constant is too low. It should be increased in small increments until the system remains stable while an announcement is active.

Filter-Attack

This value determines the rate at which the output level will increase when an increase in the ambient sensor level has been received. The value is in the number of seconds and can be directly entered in the box using the keyboard.

Filter-Release

This value determines the rate at which the output level will decrease when a decrease in the ambient sensor level has been received. The value is in the number of seconds and can be directly entered in the box using the keyboard.

Filter-Presets

- Fast – Preset where the attack time is 1 second and the release time is 2 seconds.
- Medium – Preset where the attack time is 3 seconds and the release time is 4 seconds.
- Slow – Preset where the attack time is 7 seconds and the release time is 10 seconds.

Limit

The limit sets the maximum amount of gain that can be applied through the ambient analysis compensation process. The amount of gain available is determined by the attenuator setting of the **Overall** attenuation slider. For example, if the channel out slider is set to –20dB as shown in Figure 12-43, then the maximum available setting for the Limit slider will be +20dB. Setting the Limit to +12dB will cause the output level to be increased by a maximum of 12dB above the setting of the **Overall** attenuation slider. Thus, with very loud ambient noise levels the output level will be effectively set to –8dB and reduced to –20dB when the ambient noise level is very low or has dropped below the threshold. The ambient noise compensation will be continually adjusted within this range as long as the noise level remains above the threshold but below the amount required to drive the system to maximum level.

Note: The Ambient Analysis algorithm differentiates between program audio and ambient noise level detected by the ambient noise sensor. It is possible for the sensor level to be above the threshold with no ambient noise compensation applied when the level detected is program audio from the system.

The limit is set by adjusting the slider with the mouse or by manually typing a value in the edit box below the slider using a positive numerical value.

Overall Level

This slider controls the main output attenuator for paging, BGM, and program signals. The meter indicates the current signal level that is feeding the analog input of the power amplifier.

Sensor Assignments

Sensor assignments in the DNA amplifier are fixed as listed below. One or two sensors can be connected and will be averaged to control a channel. The amplifier will automatically configure itself to use two sensors if a second sensor is attached so there is no need to enable or disable a sensor.

Sensor inputs are assigned as follows:

- Sensor Inputs 1 and 2 are assigned to Channel 1A
- Sensor Inputs 3 and 4 are assigned to Channel 1B
- Sensor Inputs 5 and 6 are assigned to Channel 2A
- Sensor Inputs 7 and 8 are assigned to Channel 2B

Calibration Takes

Enter the take number that you wish to play during the calibration if you wish to use something other than the default of 7055.

Calibrate

Press this button to start the calibration process. A calibration message will be played to the channel output.

Caution: The ambient noise level in the area being calibrated needs to be at least 15dB below the sensor threshold level setting during calibration in order to yield a valid calibration.

Test

The **Test** button will play the calibration take to the selected channel. This is used after the calibration process is complete to see if the system correctly differentiates between program and ambient noise. When the test take is playing and the calibration has been successful, the level should not change. If the system turns up or down during the test playback, then either the either the calibration constant should be adjusted or a recalibration should be attempted.

(d) Dante Modules

This section is read-only of the parameters such as module Name, Transmitters and Receivers that were discovered for this device.

(e) DNA2404D Monitor Test Window

Click this button to open the automated test window for the DNA amplifier as shown in the following image. From here, you can view test results, initiate a test, calibrate the test points, and configure the automated testing functions.

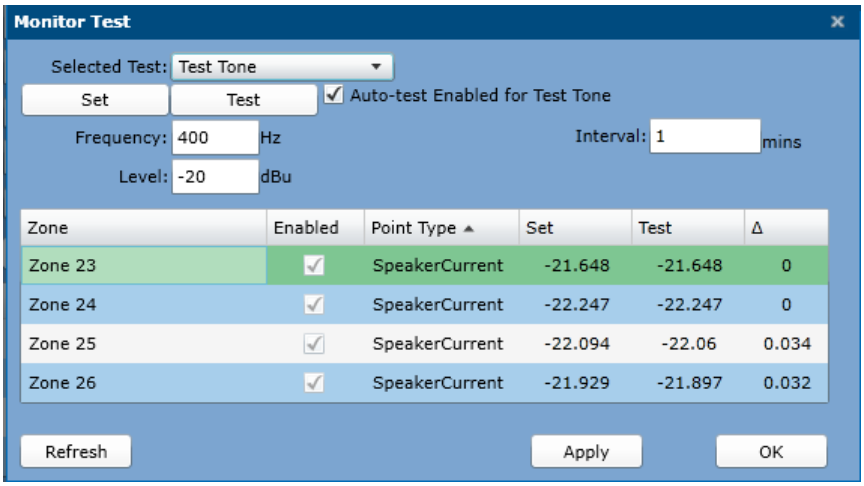


Figure 12-121: DNA2404D Monitor Test Window

Set Button

Set is used to run a test at the test tone frequency and level shown, and record the baseline values for each channel. You must perform a set once you have the system operational and all loudspeakers attached. The amplifier will store these channel values and compare them with the results obtained when performing a test. When test values do not match the set values, then a channel will be faulted.

Test Button

Run a test at the test tone frequency and level shown, and record the test values. When test values do not match the set values, then a channel will be faulted.

*Note: Clicking on the **Test** or **Set** buttons for the audible test will result in tones played to all outputs of the amplifier.*

Test Tone Frequency

You can specify the frequency to be used for the tests by typing it into this edit box, range 20 to 20,000.

Test Tone Level

The output level of the test tone is set here. You change the output level by typing in the output level in the edit box. The valid range for the test tone is -100 to +3 where +3 will produce a tone just shy of driving the amplifier into clipping. Typical test tone levels are -30 to -20 dBu.

Points – Enable Checkboxes

You have the option to individually enable or disable the tests for each channel via these checkboxes. When the checkbox for a test is checked, it will be performed for that channel when you click the Test or Set button for the test. If it is not checked, then it will not read a value for that channel.

Points – Results Columns

These three columns display the actual results of the test. The ***Set*** column displays the reading that was recorded when you calibrated the test using the ***Set*** button. The ∆ ***(Delta or Variance)*** column displays the difference between the recorded set level and the level measured during the most recent test. This level is the dB above (+) or below (–) the set value for the channel. When the measured value is beyond a +/– 3dB window, then the point is considered faulted and it will be displayed with a red background.

Note: If a "?" is shown, it indicates that data was not available for that channel. This could be the case if the test has been disabled for a channel or if no set has been performed.

Auto-test Enabled

When this box is checked, the test will execute automatically at the interval specified in the ***Interval*** edit box. This allows for periodic testing of channels without any disruption in functionality.

Interval

This entry box only appears when the ***Auto-test Enabled for Test Tone*** box is checked. Enter the time (in minutes) for the interval between periodic inaudible tests.

Refresh

Click this button to reload the ***Test / Set*** values from the amplifier.

Apply

Click this button to send the current settings to the amplifier frame without closing the window.

OK

Click this button to send the current settings to the amplifier frame and close the window.

4.5.9.4 Backup DNA2404D Amplifier

A DNA7800 device that is designated as a backup has fewer configuration settings, since all of its other settings such as EQ and levels are dynamically set based on which (main) DNA amplifier it is currently backing up.

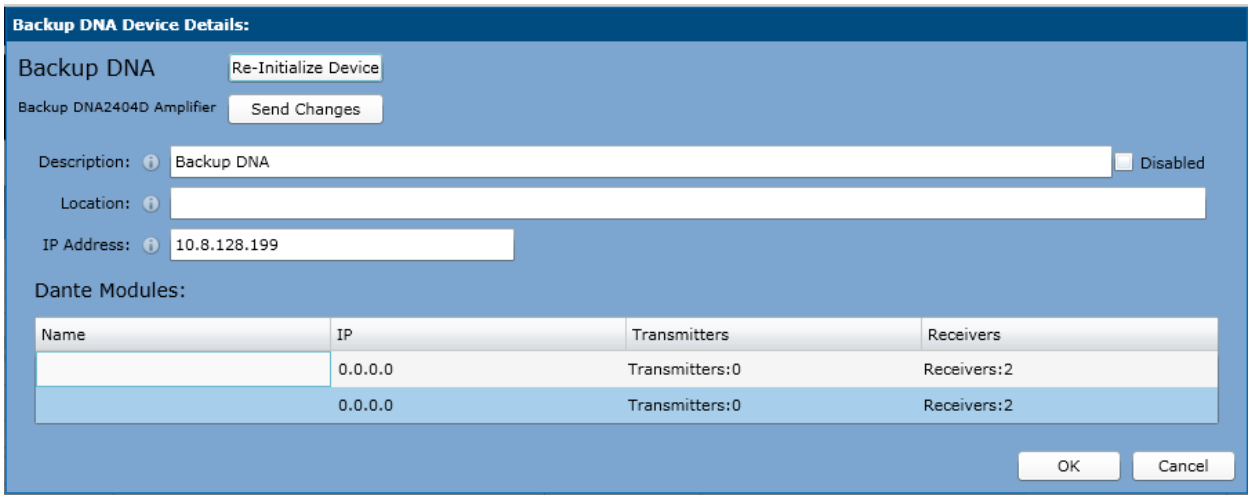


Figure 12-123: DNA Backup Configuration

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the device here.

Dante Modules

This section is read-only of the parameters such as module Name, Transmitters and Receivers that were discovered for this device.

4.5.9.5 1544ZOP Zone Output Processor

The 1544ZOP has many of the same capabilities as the DNA2404D, except it has line level outputs instead of amplifiers. In addition, it has four line level inputs and eight logic inputs. Actions can be defined for the logic inputs. Half of the logic inputs can be configured for connection supervision. This device is configured via the properties shown in the figure below.

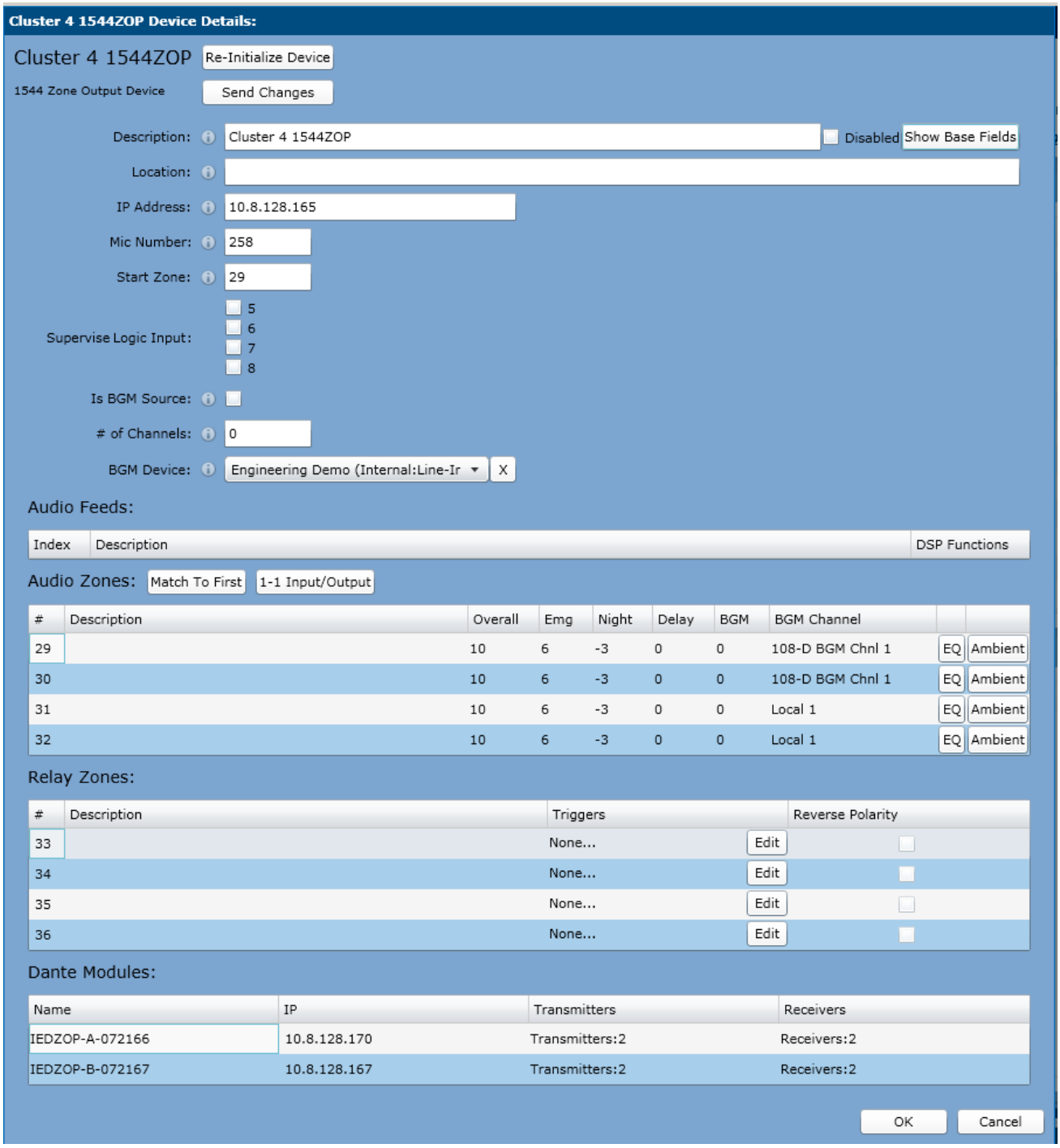


Figure 12-124: 1544ZOP Device

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the device here.

Start Zone

This is the zone number that represents the first zone in the device. The system will automatically use the next available zone number as the starting zone number when you add a new device. It can be edited here if needed. For example, you have a system that already has 32 zones. When you add a new amplifier device, the starting zone will be 33.

Supervise Logic Input

The T112 has four logic inputs that can accept dry contact closures to trigger actions. These may be configured as supervised inputs, where the T112 can detect that the connection has a short or open condition, or unsupervised inputs (simply closure or open condition). These checkboxes indicate to the T112 which inputs should be supervised.

Note: Supervised inputs require special wiring with resistors mounted external to the T112 frame, at the remote end of the connection. One cannot simply check these boxes and expect the connections to become magically supervised.

Is BGM Source

When checked, the system will treat the device as a BGM source for the system. When configured as a BGM source, the device will appear as an available BGM source for output devices. The inputs defined using the ***First BGM Input*** and ***# of Channels*** fields will be routed over the audio network.

of Channels

This is the total number of channels that will be used as BGM inputs on the device. The input channels must be consecutive, so if you specify input 1 in the ***First BGM Input*** field and set a total number of channels at 4, then you will use inputs 1 through 4 as the BGM inputs.

First BGM Input

This drop-down list allows you to select the first input channel on the device that will be used as a BGM input.

BGM Device

Once you have defined one or more devices in the system as a BGM source, it is then available as an item in this drop-down list. One selects the device from this list that will be used as the source device for the BGM. One can then select individual channels to be used for each zone output. One can click the **[X] button** to the right of the drop-down list to clear the selection.

Audio Feeds

This table of descriptions is used to give a name to each BGM channel that will be sourced from this device. This name will appear in selection lists for devices when you are configuring outputs to receive BGM.

Audio Zones

This list allows you to configure each output zone in the device.

Zone Number

This is the number that will be used to identify this output zone in the system. This number is calculated based on the values in the ***Start Zone*** and field. Each output channel is an individual zone.

Description

Double-click on this field to edit a text descriptor for the zone.

Levels

- Overall – This is the master output level control for the zone. Adjusting this level will change the levels of both announcements and BGM. This number represents the amount of attenuation relative to 0dBFS. So a value of –30 will attenuate the level by 30dB. To reduce the level by an additional 10dB, you would enter a value of –40.
- Emg – This field defines an offset to the ***Overall*** level to use when an announcement is made with an announce class that has the ***Emergency*** flag set. This allows you to increase the level of the output for emergency announcements. The default value is 6dB. If you use this setting with an ***Overall*** setting of –20dB, then an emergency announcement will be played using an output level that is 6dB louder than normal announcements.
- Night – This field defines an offset to the ***Overall*** level to use when the night schedule is invoked as programmed in the ***Day / Night Schedule*** section of the ***Configuration*** tab. This allows you to decrease the level of the output based on the time of day for each day of the week. The default value is 0dB and is set by entering a value to turn the output down. For example, if you enter a value of 6, then the channel level will be turned down by 6dB when the Night schedule is placed in effect.
- BGM – This field sets the BGM level for the zone. This number represents the amount of attenuation relative to 0dBFS. So a value of –30 will attenuate the level by 30dB. To reduce the level by an additional 10dB, you would enter a value of – 40.
- Delay – This field controls the amount of delay induced into this zone, specified in milliseconds. Maximum available is 35 msec.

BGM Channel

This drop-down list allows you to select an individual channel to use as the zone BGM. The channels available are for the device selected in the ***BGM Device*** field.

Match to First

Click this button to take the three levels (Overall, Emg, Night, and BGM) and the BGM Channel selection and copy them to the remaining zones in the device.

1-1 Input/Output

Click this button to route as analog input 1 to zone 1, input 2 to zone 2, etc. for the whole frame as the BGM Channel selection.

EQ

Each channel has an EQ module available to adjust the signal as necessary to meet the needs of the loudspeakers and allow the system to be adjusted to maximize intelligibility in the acoustic space. Press the EQ button for a channel to open the EQ window as shown in the figure below.

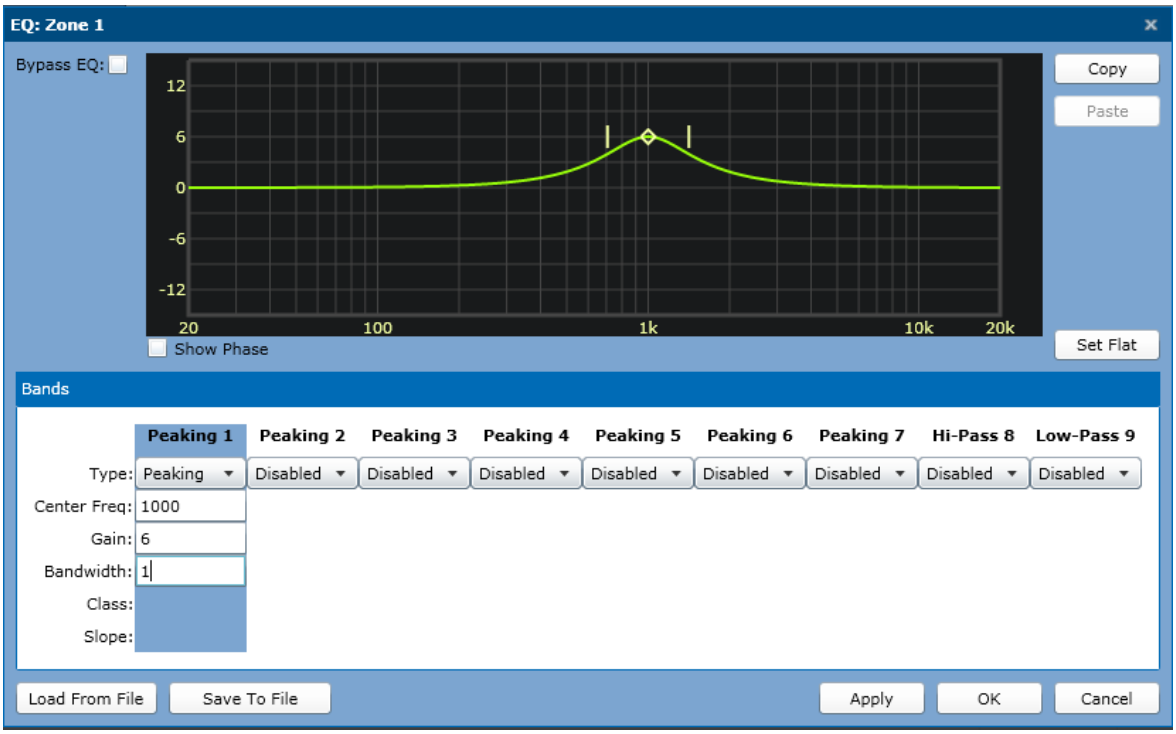


Figure 12-125: 1544ZOP EQ Settings Window

Bands are selected by clicking on one of the nine band names immediately below the frequency response curve graph. A specific band can be selected and then adjusted using the edit boxes below the names. It is also possible to select a filter and edit its frequency, gain and bandwidth directly in the Frequency Response display window using the mouse to drag the filter position, cut/boost, or bandwidth. Note, that the first seven bands are parametric, while bands 8 and 9 have fixed hi-pass and lo-pass functionality.

Type

Select a filter type in the drop-down list. The available options for filters 1 through 7 are:

- Disabled – Turn this filter off
- Peaking – A typical band pass type filter

The available options for the Hi-Pass and Lo-Pass filters are:

- Disabled – Turn this filter off
- Hi-Pass – Filter for rolling off frequencies lower than the cutoff frequency
- Lo-Pass – Filter for rolling off frequencies higher than the cutoff frequency

Note: The options for the filter parameters will change slightly depending on the filter type selected.

Center Frequency (Hz)\

The center frequency (or cutoff frequency) of the filter is set by entering a numeric value in the edit box. The frequency parameter can also be changed by dragging the diamond icon in the graph laterally left or right.

Gain (dB)

This is only available for Peaking filter type.

The filter gain is set by entering a numeric value (using + or – values for relative dB) in the edit box. The gain can also be changed by clicking and dragging the diamond icon for the filter up or down in the frequency response graph.

Bandwidth (Oct.)

This is only available for Peaking filter type.

The filter bandwidth is set by entering a numeric value in the edit box. The value used is measured in Octaves. For example, if a 1/3 octave filter is required then a value of 0.333 would be used. The bandwidth can also be altered using vertical line icons located on each side of the diamond filter icon in the frequency response graph. Click a line and move the mouse laterally to change the bandwidth.

Class

This is only available for Hi Pass and Lo Pass filter types.

The mathematical function used to calculate the filter is selected by picking an available type from the drop-down list box. Currently, the only type of filter class available is the Butterworth type filter.

Slope (dB/Oct.)

This is only available for Hi Pass and Lo Pass filter types.

This value determines the frequency roll-off rate for the filter in decibels per octave. Available values range from 6 dB/Octave to 18 dB/Octave.

Set Flat

This button resets all filters to a gain setting of 0dB (flat response) and disables all bands except for band 1.

Show Phase

When checked, the phase response through the EQ will be shown as a red curve on the graph.

Save to File

Click this button to save the EQ curve as an XML file. This allows you to archive the file as well as save it as a preset and load it into other channels.

Load from File

Click this button to open a standard Windows file dialog window. From here, you can locate an XML file that has been stored with an EQ curve and load it into the frame.

Apply

Click this button to send the current EQ settings to the frame.

Copy

Click this button to copy all of the current EQ settings to the clipboard. You can then move to another channel and use the ***Paste*** button to copy settings between channels.

Paste

Click this button to paste the EQ settings stored on the clipboard to the current channel. This button will be dimmed if there are no available EQ settings to paste from the clipboard.

Ambient

DNA series amplifier frames are equipped with ambient noise compensation (Ambient Analysis) capabilities utilizing the eight (8) built-in ambient sensor inputs. Ambient Analysis adjusts the output attenuation of a channel in response to ambient noise level measured in the area served by the channel. One (1) or two (2) ambient noise sensors can be used for each channel. Channels can also be slaved to other zones. Click the ***Ambient*** button for the channel you wish to configure to open a window such as shown below.

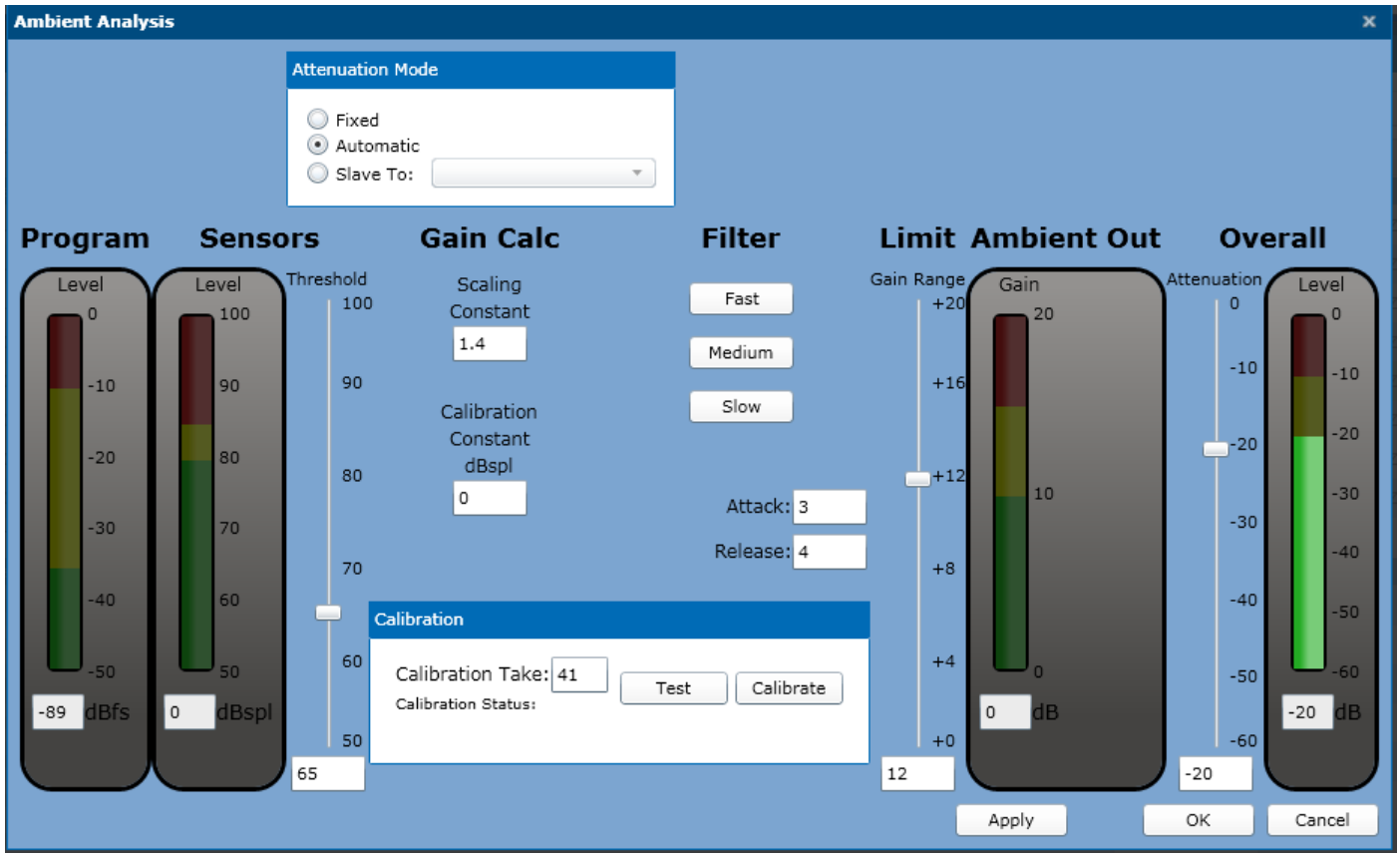


Figure 12-126: 1544ZOP Ambient Analysis Setup

The fields and controls on this form are as follows:

Attenuation Mode

Each channel can be set to one of three different possible attenuation modes as described below.

- Fixed – This mode deactivates the ambient noise compensation for this channel. The channel output level will remain at the level set by the **Overall** attenuator.
- Automatic – This mode will allow the level of the channel to automatically adjust based on the ambient noise level as detected by the ambient sensor input. The level will increase above the **Overall** attenuator setting as higher ambient noise levels are detected by the ambient noise sensor. The level will increase by an amount proportional to the detected level as determined by the **Scaling Constant**. The maximum level increase is determined by the **Limit** slider.
- Slave – This mode will cause the selected channel to follow the ambient noise compensation settings of another channel. Using this setting allows multiple outputs on the same DNA amplifier frame to be

adjusted by a single sensor or a pair of sensors. This setting is useful in very large spaces where multiple amplifier channels are required due to the power load requirements of the loudspeaker lines. Select the channel that this channel will be slaved to from the drop-down list.

Note: A channel can only be slaved to a channel that is located in the same DNA amplifier mainframe.

Program

This level meter displays the real-time audio signal level at the input of the Ambient Analysis object. This signal is post-EQ and post-delay but does not have the test signal.

Sensors-Level

This level meter displays the real-time sound pressure level (SPL) from the ambient noise sensor.

Note: This level is the sum of both the ambient noise in the space and the program audio from the system. The Ambient Analysis algorithm filters out the audio system's contribution to the overall level and provides a real value of ambient noise level to the system for processing.

Sensors-Threshold

The threshold determines the level at which the ambient noise compensation is suspended because the level at the sensor is too low. When the detected level from the ambient noise sensor rises above the threshold setting, then the system will actively operate. It will filter the system program audio component from the detected level to accurately adjust the output attenuation based on the calculated noise level. When the level is below the threshold, the system will stop actively adjusting the output attenuation and return to the maximum attenuation setting which is the base level setting as defined by the **Overall** attenuation control.

The threshold is set by adjusting the slider with the mouse or by manually typing a value in the edit box below the slider using a positive numerical value.

Gain Calc-Scaling Constant

The **Scaling Constant** determines the amount of ambient noise level that will result in the output level to increase by 1dB. A scaling constant of 1 will result in the output level increasing by 1dB for each 1dB increase in ambient sensor level. The figure above shows a scaling constant of 1.4. With this setting, a 1.4dB increase in ambient sensor level will result in a 1dB increase in output level up to the point where the **Limit** has been reached.

Gain Calc-Calibration Constant

This value is calculated and automatically entered during the channel calibration process. It can be manually adjusted by typing in a new value in the edit box.

Caution: This value should only be manually adjusted after an automatic calibration has not been completely successful. Adjustments should be made in very small increments of 2 or 3 dB at a time.

Use the following guidelines when adjusting the calibration constant if the system is not properly responding after an automatic calibration.

- If the system turns down as soon as an announcement is active, then the calibration constant is too high. It should be reduced in small increments until the system remains stable while an announcement is active.

- If the system gets louder as while an announcement is active, then the calibration constant is too low. It should be increased in small increments until the system remains stable while an announcement is active.

Filter-Attack

This value determines the rate at which the output level will increase when an increase in the ambient sensor level has been received. The value is in the number of seconds and can be directly entered in the box using the keyboard.

Filter-Release

This value determines the rate at which the output level will decrease when a decrease in the ambient sensor level has been received. The value is in the number of seconds and can be directly entered in the box using the keyboard.

Filter-Presets

- Fast – Preset where the attack time is 1 second and the release time is 2 seconds.
- Medium – Preset where the attack time is 3 seconds and the release time is 4 seconds.
- Slow – Preset where the attack time is 7 seconds and the release time is 10 seconds.

Limit

The limit sets the maximum amount of gain that can be applied through the ambient analysis compensation process. The amount of gain available is determined by the attenuator setting of the **Overall** attenuation slider. For example, if the channel out slider is set to –20dB as shown in Figure 12-43, then the maximum available setting for the Limit slider will be +20dB. Setting the Limit to +12dB will cause the output level to be increased by a maximum of 12dB above the setting of the **Overall** attenuation slider. Thus, with very loud ambient noise levels the output level will be effectively set to –8dB and reduced to –20dB when the ambient noise level is very low or has dropped below the threshold. The ambient noise compensation will be continually adjusted within this range as long as the noise level remains above the threshold but below the amount required to drive the system to maximum level.

Note: The Ambient Analysis algorithm differentiates between program audio and ambient noise level detected by the ambient noise sensor. It is possible for the sensor level to be above the threshold with no ambient noise compensation applied when the level detected is program audio from the system.

The limit is set by adjusting the slider with the mouse or by manually typing a value in the edit box below the slider using a positive numerical value.

Overall Level

This slider controls the main output attenuator for paging, BGM, and program signals. The meter indicates the current signal level that is feeding the analog input of the power amplifier.

Sensor Assignments

Sensor assignments in the DNA amplifier are fixed as listed below. One or two sensors can be connected and will be averaged to control a channel. The amplifier will automatically configure itself to use two sensors if a second sensor is attached so there is no need to enable or disable a sensor.

Sensor inputs are assigned as follows:

- Sensor Inputs 1 and 2 are assigned to Channel 1A

- Sensor Inputs 3 and 4 are assigned to Channel 1B
- Sensor Inputs 5 and 6 are assigned to Channel 2A
- Sensor Inputs 7 and 8 are assigned to Channel 2B

Calibration Takes

Enter the take number that you wish to play during the calibration if you wish to use something other than the default of 7055.

Calibrate

Press this button to start the calibration process. A calibration message will be played to the channel output.

Caution: The ambient noise level in the area being calibrated needs to be at least 15dB below the sensor threshold level setting during calibration in order to yield a valid calibration.

Test

The **Test** button will play the calibration take to the selected channel. This is used after the calibration process is complete to see if the system correctly differentiates between program and ambient noise. When the test take is playing and the calibration has been successful, the level should not change. If the system turns up or down during the test playback, then either the either the calibration constant should be adjusted or a recalibration should be attempted.

Triggers

If a relay zone is used as part of a zone map in an announcement, then the relay will energize for the duration of the announcement. It will function this way as long as no triggers are defined for the relay. The ***Trigger*** field is used to associate the relay with faults that are reported as part of the *System Supervision* module. Click the ***Edit*** button to assign a trigger to the relay. This will open the assignment window as shown in Fig 12-76. From here, select a specific fault from the drop-down list and click the **[+] button**. This will add the selected fault to the list. To remove a fault, select the fault with the mouse and then click the **[-] button**. You can stack multiple faults on a single relay. The relay will activate as determined by the setting in the ***Activation Type*** field when any of the assigned faults are reported.

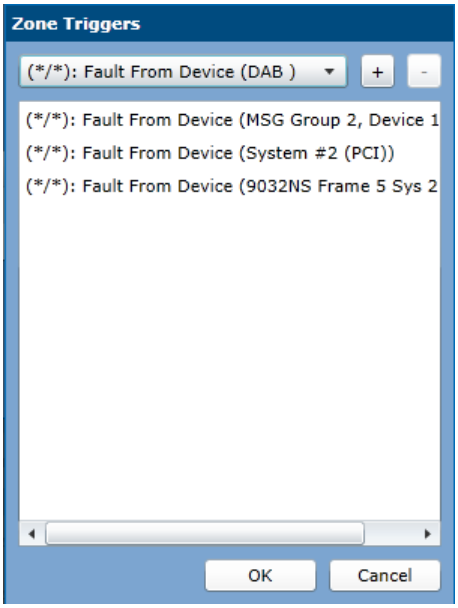


Figure 12-127: Triggers

Activation Type

The ***Activation Type*** applies only to outputs that function as fault indicators and that have definitions in the ***Triggers*** field.

- Solid – The relay will activate while the fault condition is present and deactivate once the fault condition has cleared.
- Momentary – The relay will activate for approximately 1 second and then deactivate.
- Pulsating – The relay will cycle between active and inactive states at a rate of approximately 1 second on and 1 second off.

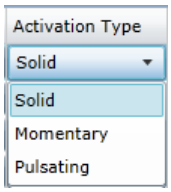


Figure 12-128: Activation Types

Reverse Polarity

Check this box to reverse the operating polarity of the relay. Normally, a relay is in its de-energized state until it is triggered. When this box is checked, it will normally energize and will de-energize when triggered. This is most useful when a relay is used to indicate a fault to an external system or indicator panel. That way a fault condition will be triggered if the unit loses power.

Dante Modules (refer back to Figure 12-124)

This section is read-only of the parameters such as module Name, Transmitters and Receivers that were discovered for this device.

4.5.9.6 1544AIO-D Audio Input/Output Device

The 1544AIO is theoretically a four-input/four-output device accepting inputs ranging from microphone level up to line level, with phantom power available when set for one of the microphone levels. This device is configured via the properties shown in the figure below.

Note: When used in a GLOBALCOM.IP system with its dynamic routing of audio sources and audio zones, it is necessary to assign each input or output to its own network audio "flow". The Dante chip used in the design of this product can only support two flows in and two flows out. Hence, it is necessary to limit the use the use of this device to only two of its audio inputs and two of its audio outputs.

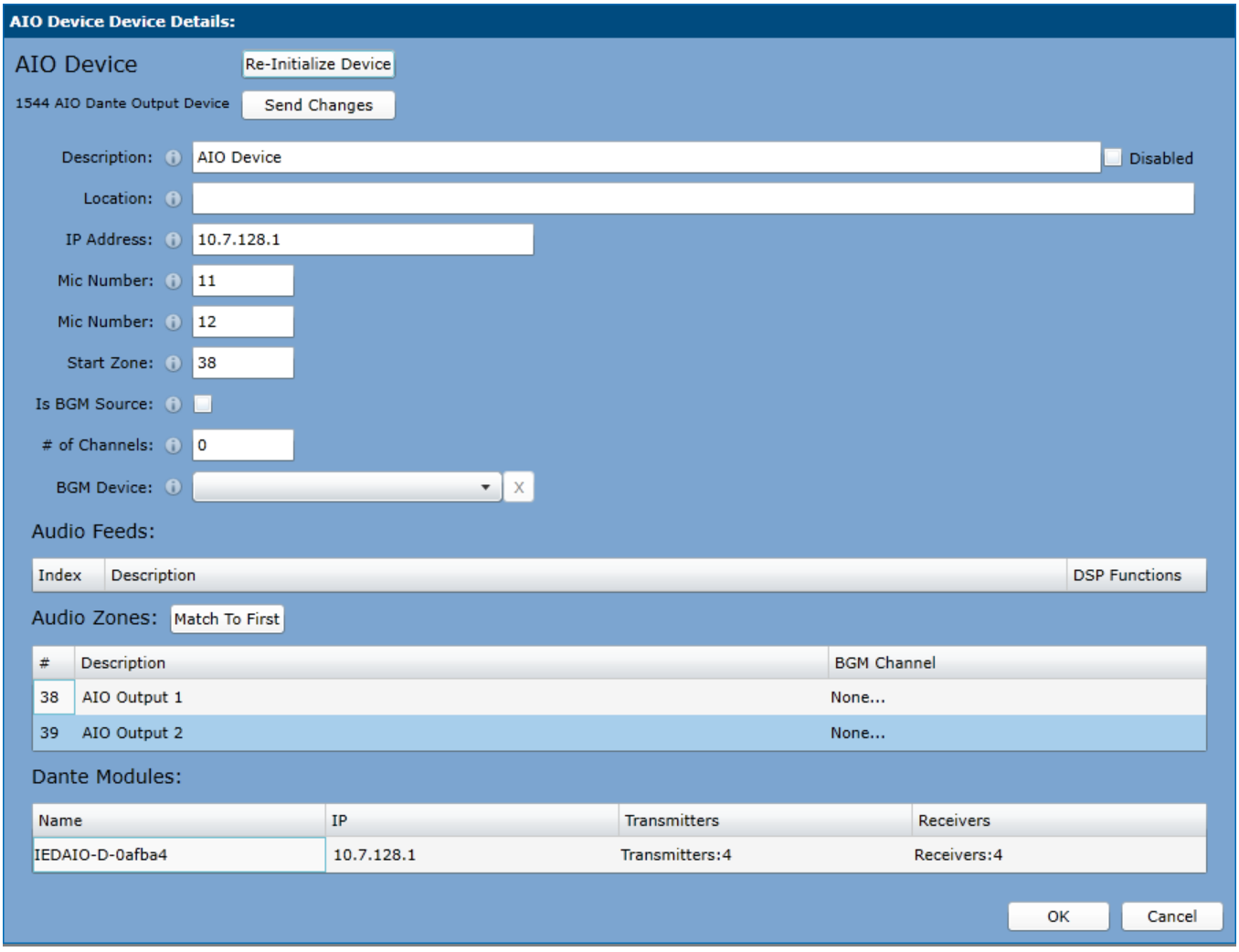


Figure 12-129: 1544AIO Device

Fields on this form beyond the basics for all devices are as follows:

IP Address

Enter the IP address for the device here.

Mic Number (2)

If **Is BGM Source** is not checked, then one can enter the Mic Numbers to use in Live from Alternate Source actions here for the two audio inputs on this device.

Is BGM Source

This box is checked by default, and must be so to allow the system to treat the device as a BGM source for the system. The device will appear as an available BGM source for output devices.

of Channels

This is the total number of channels that will be used as BGM inputs on the device. Changing this value, changes the number of rows in the Audio Feeds grid.

Audio Feeds

This grid is used to give a name to each BGM channel that will be sourced from this device. This name will appear in selection lists for devices when you are configuring outputs to receive BGM.

Audio Zones

This list allows you to configure each output zone in the device.

Zone Number

This is the number that will be used to identify this output zone in the system. This number is calculated based on the values in the ***Start Zone*** and field. Each output channel is an individual zone.

Description

Double-click on this field to edit a text descriptor for the zone.

BGM Channel

This drop-down list allows you to select an individual channel to use as the zone BGM. The channels available are for the device selected in the ***BGM Device*** field.

Match to First

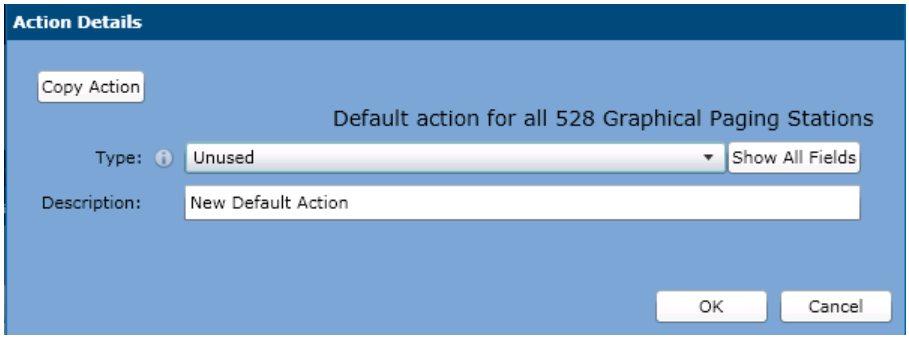
Click this button to take the BGM Channel selection and copy them to the remaining zones in the device.

Dante Modules

This section is read-only of the parameters such as module Name, Transmitters and Receivers that were discovered for this device.

4.6 Action Types

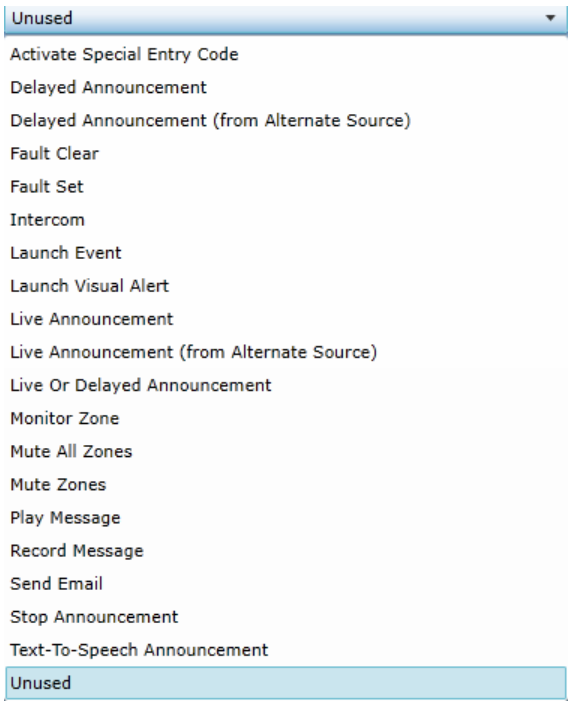
An action is a system response that is performed as a result of a stimulus. The action type determines the response of the action. Examples of actions are live pages, pre-recorded messages, SMS notifications, text-to-speech messages, etc. The system supports a wide variety of stimuli capable of triggering actions. The most common stimulus is a button or entry code from a microphone station. Contact closures, time-of-day, and network messages from other systems are all examples of stimuli available to trigger actions. Adding an action brings up a new action form such as that shown below.



Each action requires different parameters to be defined before the action can be used. These parameters differ for each action type, but there are some common items related to the Action Definition window as defined below.

Type

This drop-down list contains all of the available action types available for use. Select the desired action type and the remaining fields on the form will change appropriately. Each of these types is explained in subsections that follow.



Copy Action Button

This button is used to copy all parameters for the currently selected action to the clipboard. It is used to quickly configure new actions based on one that has already been defined.

Paste Action Button

This button only appears when there is information stored on the clipboard by using the ***Copy Action*** button. Pressing this button will take the action parameters from the clipboard and apply them to the currently open action, overwriting any previous settings. Once pasted, the action can be modified to be different than the original source action.

Description

This is a free text field used to give a logical description to the action.

Show All Fields Button

When an action is selected, only the most commonly used data fields relevant to that action type are displayed. Press this button to display all available parameters for the selected action type. This provides

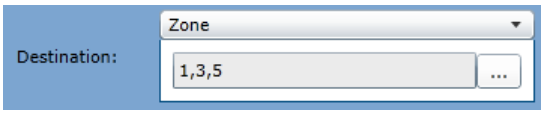
access to the other fields for more advanced configuration situations and will not be needed for most applications.

Show Base Fields Button

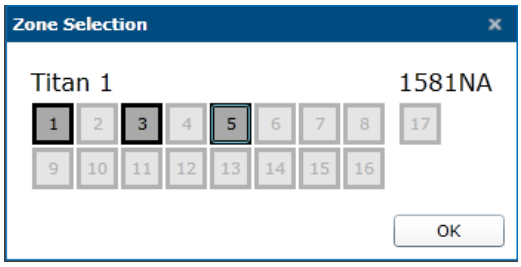
The ***Show All Fields*** button changes to the ***Show Base Fields*** button once it has been selected to reveal all parameter fields. Press the ***Show Base Fields*** button to hide the parameters that are not required for most applications.

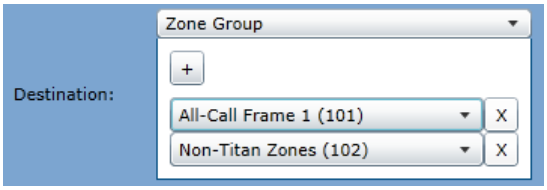
Destination

Many action types require the definition of the destination for the action, such as the zones to route audio to. There are several ways to designate destinations in the GLOBALCOM system: by Zone numbers, by Zone Group numbers and by Access Code[1]. Not all action types support all destination designations. The Destination control on each action that has it, consists at a minimum of a drop list box with the available destination designations. Possible destination designations are: Zone, Prompt for Zone, Zone Group, Prompt for Zone Group and Prompt for Access Code. Depending on which is selected, additional controls may appear as shown below.



The Zone option brings up an edit box that shows the selected zones separated by commas. One clicks on the […] button to bring up a dialog box in which one can select additional zones, such as the one shown at right. One clicks on the desired zone boxes to toggle their selection. Currently selected zones appear darker as in the example.





The Zone Group option brings up an Add [+] button and an area with Zone Group drop list selectors. One can open each drop list added and select the desired Zone Group. Extra Zone Groups can be deleted via the [X] buttons to the right of each Zone Group selector.

For the three prompt choices, there are no additional controls shown as the value for Zone, Zone Group or Access Code is entered from the user interface device (mic station or telephone interface).

Logic ID (logic input devices only)

For actions on logic input devices (IEDT9032LVIO, IEDT9040NLR, 1200LIR), this corresponds to the logic input on the device used to trigger the action.

Logic State (logic input devices only)

For actions on logic input devices (IEDT9032LVIO, IEDT9040NLR, 1200LIR), this corresponds to the logic state on logic input that will trigger the action. When set to ***ON***, the action will trigger when the logic input is activated. When set to ***OFF***, it will trigger when the input is deactivated.

[1] Access Codes are numbers separate from zone numbers that identify system endpoints, such as IP speakers and intercom devices. For example, an IP speaker may be located in classroom A101, but to the system it is zone 11. The installer could assign an Access Code of 1101 to this device, so it can be used on the telephone interface when prompted.

OK

Select ***OK*** to store the changes and close the window. Note that this does not save or apply the changes to the system. That must be done using the ***Save*** option at the top-right of SMC before moving to another tab.

Cancel

Select ***Cancel*** to discard the edits and close the window.

4.6.1 Unused Action

The unused action type is the default action type that appears when a new action is created. While it has no functional use, it is the starting place for creating a new action by either selecting a new action type or using the ***Past Action*** command. This type also allows a placeholder action to be defined and reserve an ***Entry Code*** for future use.

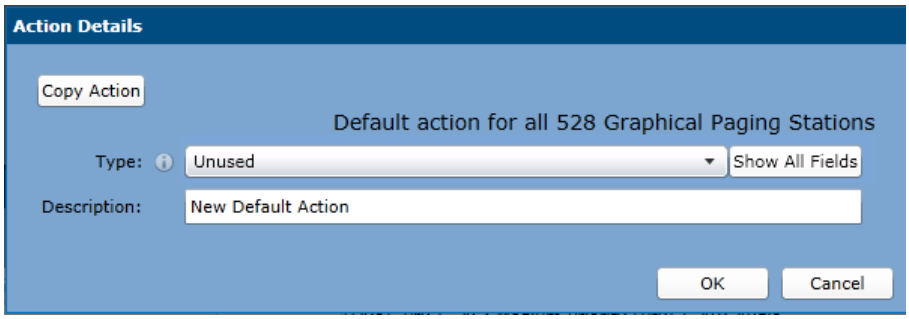


Figure 13-1: Unused Action Type

4.6.2 Activate Special Entry Code

This action type is exclusively used to assign specific Flight Announcement System (FAS) actions to 524 series 4-button paging stations, 528SK 4-button expansion paging stations, or logic closures. In many airport applications using the FAS, the initial flight sequence is loaded using the 528-series paging station located at the ticket counter, or automatically through the FAS database. The 528-series station provides you with a graphic display along with selection buttons that allow you to select messages to play easily while managing a flight at the gate. However, 4-button stations are often installed near the jetway door as they typically do not require the full feature set available in a 528 series station. This action type allows you to continue interacting with the FAS system while boarding a flight without moving back to the 528 series station installed at the counter.

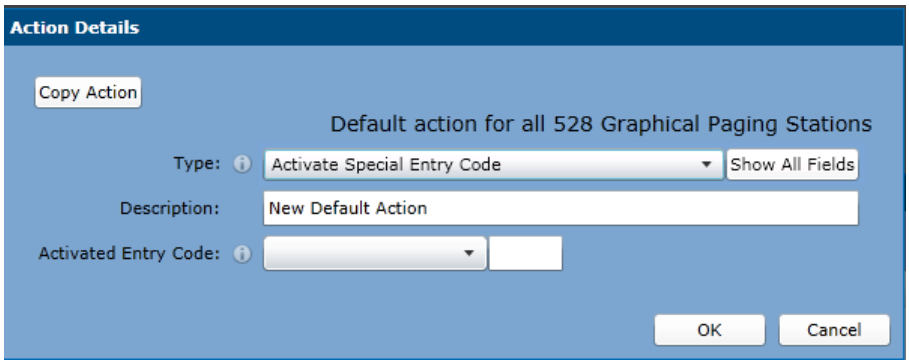


Figure 13-2: Activate Special Entry Code

Activated Entry Code

This drop-down list allows you to select the FAS action to be triggered with the action. If you are using a non-standard FAS code, you can manually type it into the edit box immediately to the right of the drop-down list.

Caution: Only use manually entered codes when directed by IED support personnel.

Note: This action will not work with any FAS messages that require prompting for information or multiple sequence operations. A full-featured 528 series microphone station is required for these operations.

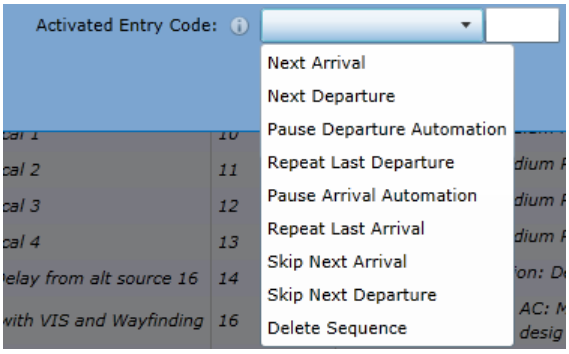


Figure 13-3: Activated Entry Code Selection

The meanings of these entry code selections are as follows:

- Next Arrival – Immediately play the next arrival message in the sequence.
- Next Departure – Immediately play the next departure message in the sequence.
- Pause Departure Automation – If any timers are used in the sequence to automatically play the sequence of departure messages, this will pause the playback of the sequence. It is resumed when the ***Next Departure*** entry code is activated.
- Repeat Last Departure – This will immediately replay the most recently played departure message.
- Pause Arrival Automation – If any timers are used in the sequence to automatically play the sequence of arrival messages, this will pause the playback of the sequence. It is resumed when the ***Next Arrival*** entry code is activated.
- Repeat Last Arrival – This will immediately replay the most recently played arrival message.
- Skip Next Arrival – This will immediately skip over the next arrival message in the sequence and play the subsequent message.
- Skip Next Departure – This will immediately skip over the next departure message in the sequence and play the subsequent message.
- Delete Sequence – This will remove the active sequence from the queue and it will no longer be available at the microphone station.

4.6.3 Delayed Announcement

A delayed announcement is one that is recorded into the system from a microphone station and is immediately played back once the push-to-talk (PTT) switch is released. If the zones are busy, then the message will be held in queue until the zones are available for playback of the message.

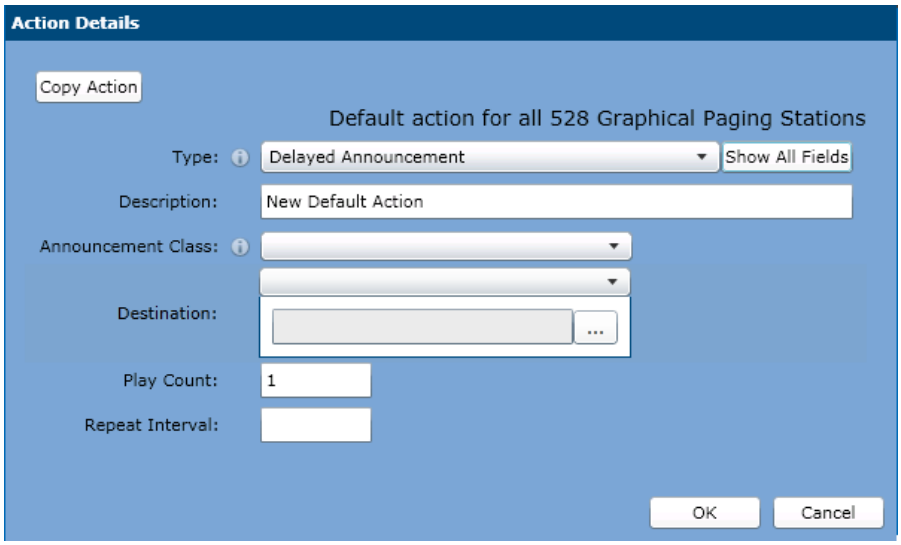


Figure 13-4: Delayed Announcement Action Type

Announcement Class

Select the appropriate announcement class for the action. The announcement class determines the announcement priority relative to other announcements as well as various other behaviors as defined for each announcement class.

Destination

See explanation under Action Types, Section 4.5.7.5.

Play Count

A delayed message can be played multiple times. Enter the total number of times to play the message once it has been recorded. All messages must play at least once, thus requiring at least a 1 to be in this field.

Repeat Interval

This is the time between successive playbacks. Positive numbers are used to designate an interval in minutes while negative numbers are used to designate an interval in seconds (5 would be 5 minutes, –30 would be 30 seconds). When minutes are specified, this time is from the start of the first playback to the start of the next one. If seconds is specified, this is the delay after finishing one play before starting the next play.

Delayed Announcement – Advanced Properties

The following properties will only be visible after selecting the ***Show All Fields*** button.

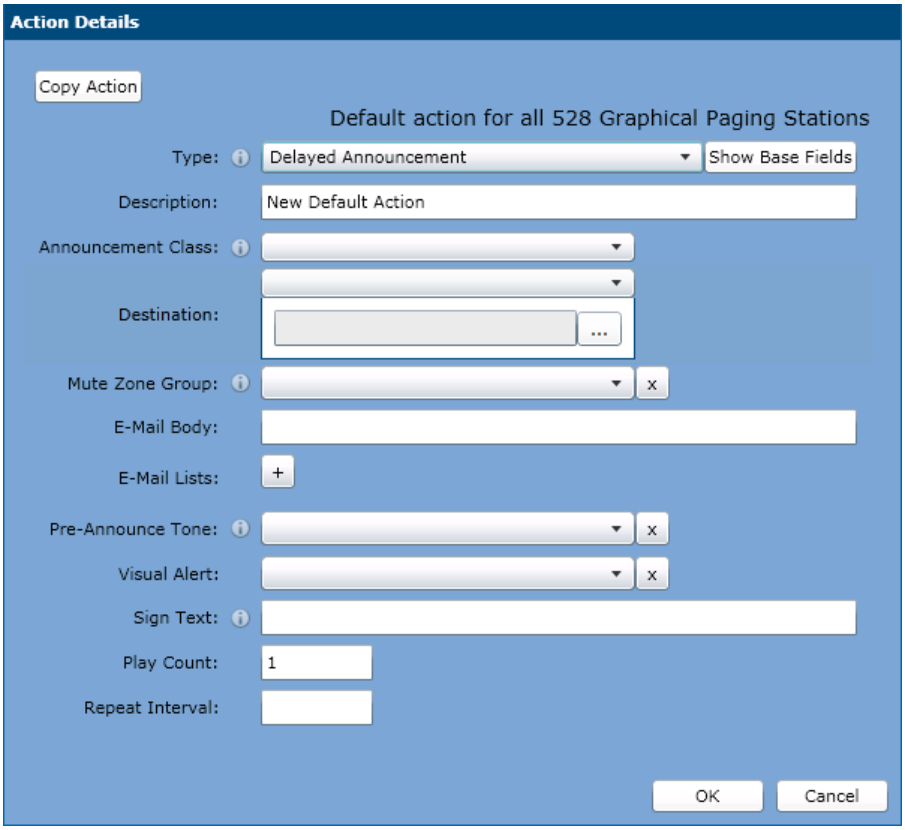


Figure 13-5: Delayed Action Type – Show All Fields

Mute Zone Group

Select the zone group to use as a blanking zone group from the drop-down list box. The zone group selected will effectively be muted when this action is executed. Blanking zone groups are typically used to mute areas that are adjacent to where the announcement will be made to prevent other announcements, messages, or background music from interfering with the delivery of an announcement. Click the **[X] button** to clear the selection from the list.

E-Mail Body

Enter the text that will be sent as the message body of the e-mail message.

E-mail Lists

One adds list slots via the **[+]** button and then selects an E-mail List for each slot from the drop-down selection list to receive the message. Multiple E-mail Lists can be added by clicking the **[+]** button to add more slots, each with its own drop-down selection list. Click the **[-] button** to remove it from the action. Once defined, the message will be sent to all device numbers in the selected E-mail Lists.

Note: E-mail Messaging requires an Internet connection or access to an in-house e-mail server.

Pre-Announce Tone

Select one of the WAV files from the Chime Library to play as a pre-announcement tone. Leave this field blank if you do not want to play a pre-announce tone.

Visual Alert

Select one of the pre-defined visual alerts to display on any visual displays included in the assigned zone group. Visual alerts are displayed after the completion of the visual message, if defined, and remain on the displays until cleared. Visual alerts can also be used without any sign text.

Use the ****Clear Alert**** item if this action is used to end the alert.

Sign Text

Type in the text to be shown on any visual displays included in the assigned zone group. Sign text can be used as an alternative to visual takes to define a visual message to accompany a delayed announcement.

4.6.4 Delayed Announcement (From Alternate Source)

When an action is triggered from a microphone station, the audio input source for the announcement is the microphone station. The *Delayed Announcement (From Alternate Source)* action type is used to activate an announcement using an audio source different from the activating device. For example, you may have a paging output on a telephone system that provides a line level output and contact closure. When the system senses the closure, it will record the audio until the closure is released, after which it is played back once the zones are available. Closures are detected using devices that are not directly associated with an audio input, therefore they must be defined using a *Delayed Announcement (From Alternate Source* action type if they are to route any audio signals. In such cases, the source will be the logic device and the ***Alternate Source*** will be the audio input.

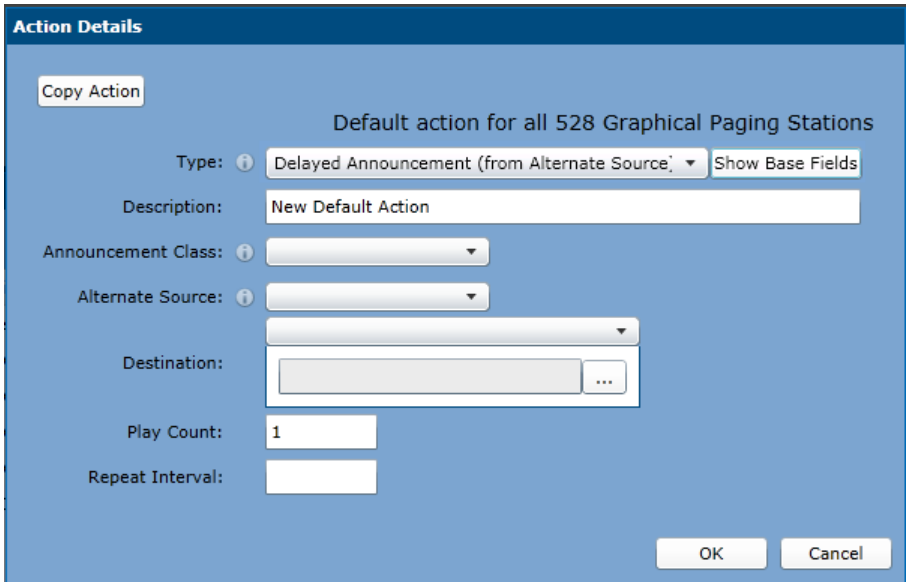


Figure 13-6: Delayed Announcement (From Alternate Source) Type

Announcement Class

Select the appropriate announcement class for the action. The announcement class determines the announcement priority relative to other announcements as well as various other behaviors as defined for each announcement class.

Alternate Source

This drop-down list box displays all the available sources in the system. Select the appropriate input source that will be routed as a result of this action.

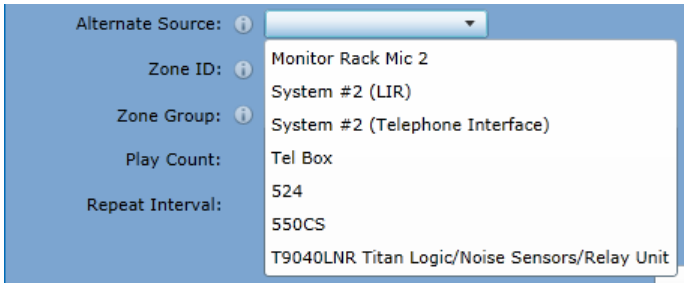


Figure 13-7: Alternate Source Selection

Destination

See explanation under Action Types, Section 4.5.7.5.

Play Count

A delayed message can be played multiple times. Enter the total number of times to play the message once it has been recorded. All messages must play at least once, thus requiring at least a 1 to be in this field.

Repeat Interval

This is the time between successive playbacks. Positive numbers are used to designate an interval in minutes while negative numbers are used to designate an interval in seconds (5 would be 5 minutes, –30 would be 30 seconds). When minutes are specified, this time is from the start of the first playback to the start of the next one. If seconds is specified, this is the delay after finishing one play before starting the next play.

DelayedFromAlternateSource – Advanced Properties

The following properties will only be visible after selecting the ***Show All Fields*** button.

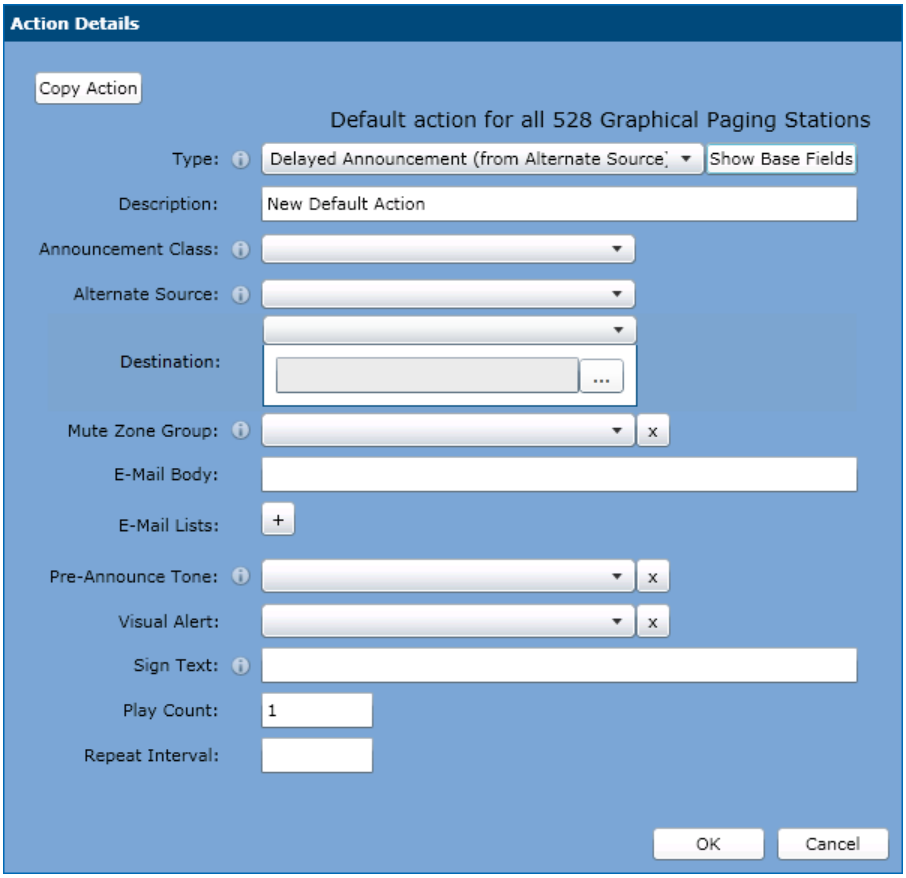


Figure 13-10: Delayed Announcement (From Alternate Source) Action Type – Show All Fields

Mute Zone Group

Select the zone group to use as a blanking zone group from the drop-down list box. The zone group selected will effectively be muted when this action is executed. Blanking zone groups are typically used to mute areas that are adjacent to where the announcement will be made to prevent other announcements, messages, or background music from interfering with the delivery of an announcement. Click the **[X] button** to clear the selection from the list.

E-Mail Body

Enter the text that will be sent as the message body of the e-mail message.

E-mail Lists

One adds list slots via the **[+]** button and then selects an E-mail List for each slot from the drop-down selection list to receive the message. Multiple E-mail Lists can be added by clicking the **[+]** button to add more slots, each with its own drop-down selection list. Click the **[-] button** to remove it from the action. Once defined, the message will be sent to all device numbers in the selected E-mail Lists.

Note: E-mail Messaging requires an Internet connection or access to an in-house e-mail server.

Pre-Announce Tone

Select one of the WAV files from the Chime Library to play as a pre-announcement tone. Leave this field blank if you do not want to play a pre-announce tone.

Visual Alert

Select one of the pre-defined visual alerts to display on any visual displays included in the assigned zone group. Visual alerts are displayed after the completion of the visual message, if defined, and remain on the displays until cleared. Visual alerts can also be used without any sign text.

Use the ****Clear Alert**** item if this action is used to end the alert.

Sign Text

Type in the text to be shown on any visual displays included in the assigned zone group. Sign text can be used as an alternative to visual takes to define a visual message to accompany a live message.

4.6.5 Launch Event

Events are used when multiple actions must be performed at the same time as a result of a common stimulus. See the ***Events*** section to learn more about creating events. After you create an Event, then you create an action to launch it.

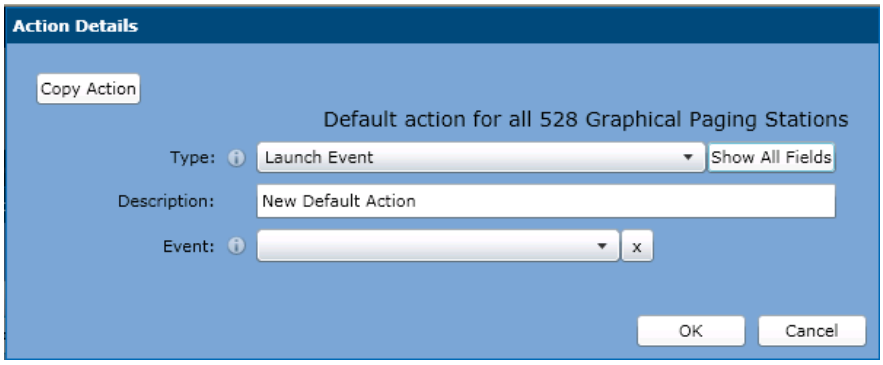


Figure 13-11: Launch Event Action Type

Event

Select the event to be triggered by this action from the drop-down list. Selecting the **[X] button** will clear the selected event from the field.

4.6.6 Fault Set

This action type will activate the specified system fault. Once activated, the fault can be viewed in the status viewer. This action type is typically used with system logic inputs to monitor external events, such as UPS failures, rack door switches, environmental system failures, etc. *Set Fault* actions are reported and logged with all other system faults or events and stored in the ***Windows System Log***. Refer to the ***System Supervision*** section for more information on fault reporting and logging.

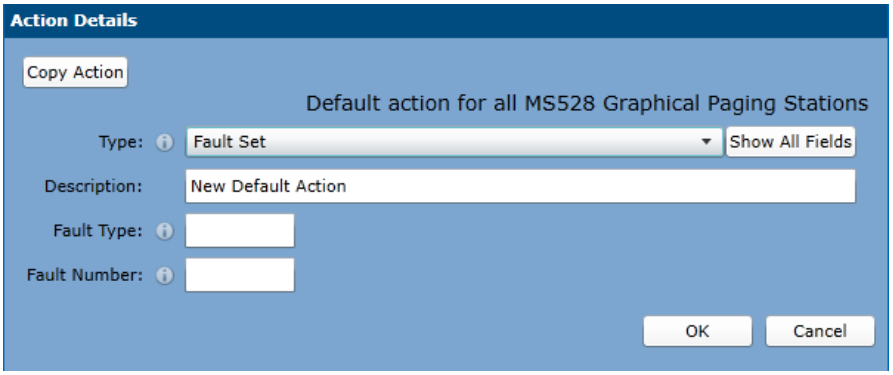


Figure 13-12: Fault Set Action Type

*Note: In order to use this feature, a fault must first be defined in the **Device Specific Fault Descriptions** section of the System Supervision configuration.*

Fault Type

Enter the fault type that matches the fault to be set.

Fault Number

Enter the fault number that matches the fault to be set.

4.6.7 Fault Clear

This action type is used to clear a fault that was triggered by using the *Set Fault* action.

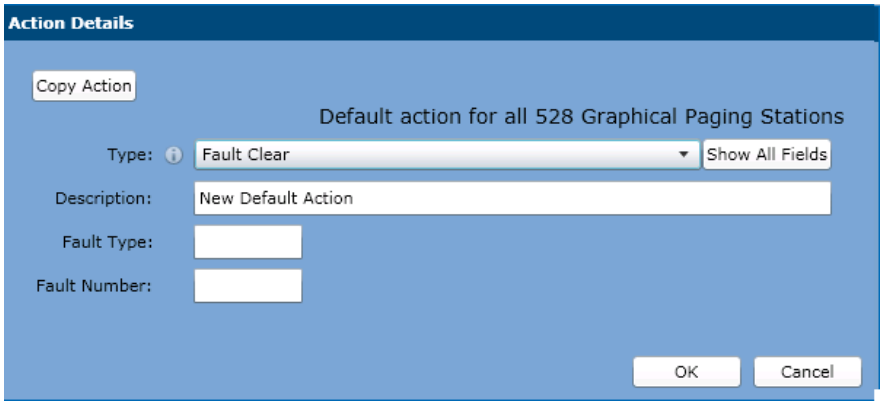


Figure 13-13: Fault Clear Action Type

Fault Type

Enter the fault type that matches the fault to be cleared.

Fault Number

Enter the fault number that matches the fault to be cleared.

4.6.8 Intercom

The I*ntercom* action type is reserved only for hardware devices that support 2-way communications. You must have a room module or sound reinforcement module or IP Speaker with microphone located in the zone to be monitored. The microphone station that initiates the action must also support 2-way communications. This action will route bi-directional audio: (1) mic station audio to the room speaker and (2) the microphone signal from the room to the speaker or earpiece located at the mic station. It can also be configured to play a pre-announce tone when the intercom action is started as well as providing a periodic tone to indicate that the room is being monitored.

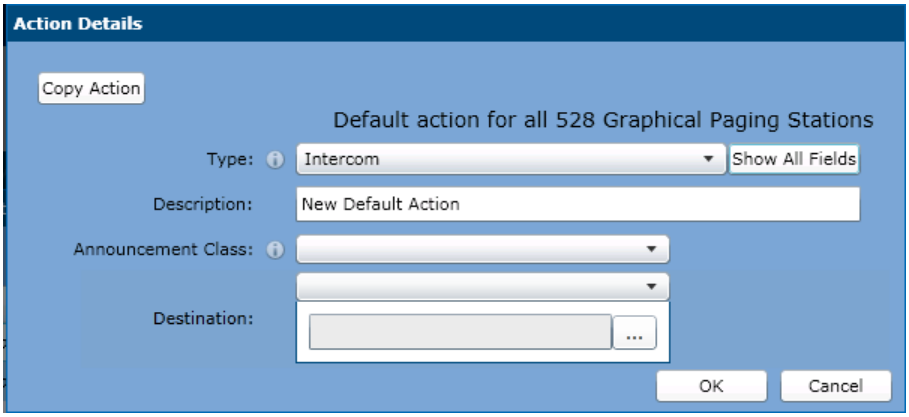


Figure 13-14: Intercom Action Type

Destination

See explanation under Action Types, Section 4.5.7.5. Note, Intercoms can only have Zone, Prompt for Zone and Prompt for Access Code as their destination choices, since intercoms are done to single endpoints, not a multi-point destination such as a Zone Group.

Intercom – Advanced Properties

The following properties will only be visible after selecting the Show All Fields button.

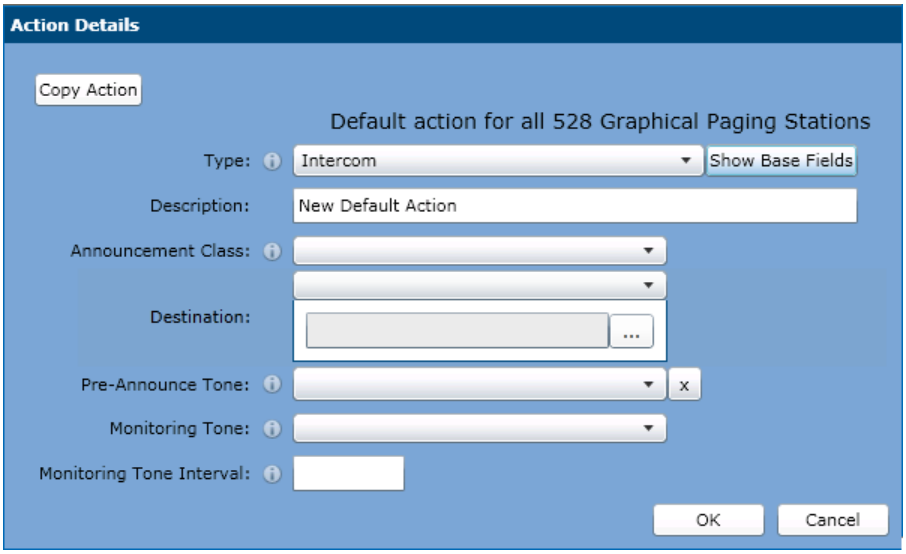


Figure 13-15: Intercom Action Type – Show All Fields

Pre-Announce Tone

Select one of the WAV files from the Chime Library to play as a pre-announcement tone. Leave this field blank if you do not want to play a pre-announce tone.

Monitoring Tone

Select one of the WAV files from the Chime Library to play as a monitoring tone (periodic audible notification that the microphone in the room is being listened to). Leave this field blank if you do not want to play a monitoring tone.

Monitoring Tone Interval

Select how often (in seconds) to play the Monitoring Tone.

4.6.9 Live Announcement

A live message is one that is immediately routed from the microphone station to the zones included in the programmed zone map. If the announcement cannot be made due to zone availability, then the microphone station will indicate ***BUSY***. The microphone station will indicate ***READY*** when the zones are available.

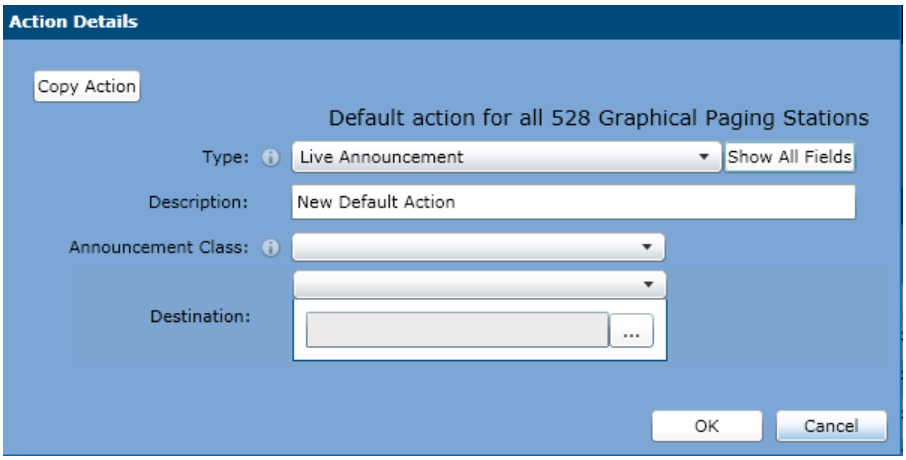


Figure 13-16: Live Announcement Action Type

Announcement Class

Select the appropriate announcement class for the action. The announcement class determines the announcement priority relative to other announcements as well as various other behaviors as defined for each announcement class.

Destination

See explanation under Action Types, Section 4.5.7.5.

Live Announcement – Advanced Properties

The following properties will only be visible after selecting the ***Show All Fields*** button.

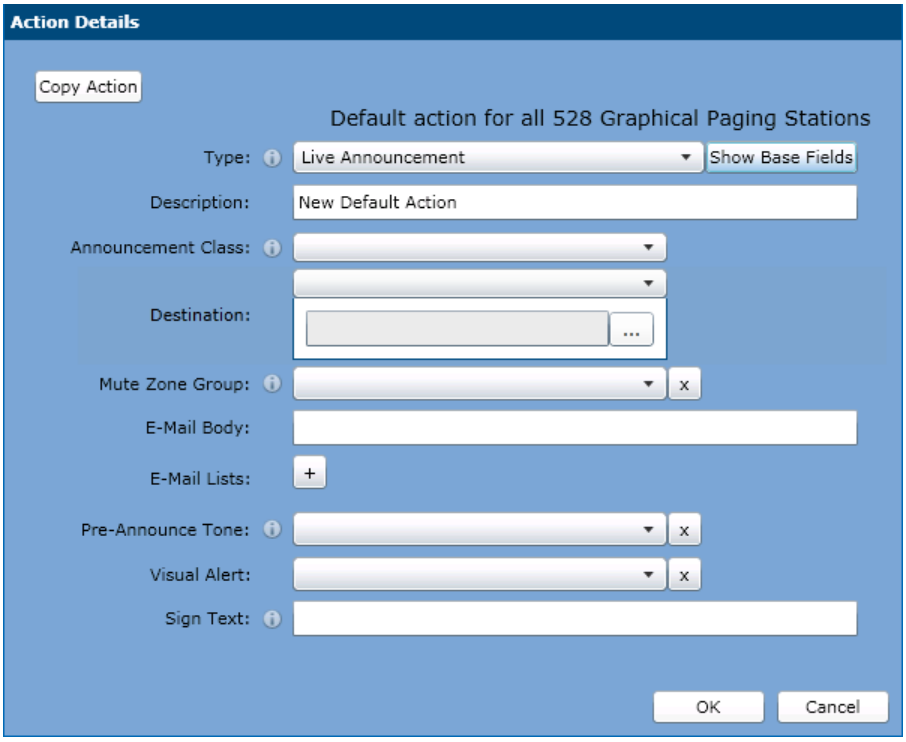


Figure 13-20: Live Announcement Action Type – Show All Fields

Mute Zone Group

Select the zone group to use as a blanking zone group from the drop-down list box. The zone group selected will effectively be muted when this action is executed. Blanking zone groups are typically used to mute areas that are adjacent to where the announcement will be made to prevent other announcements, messages, or background music from interfering with the delivery of the announcement. Click the **[X] button** to clear the selection from the list.

E-Mail Body

Enter the text that will be sent as the message body of the e-mail message.

E-mail Lists

One adds list slots via the **[+]** button and then selects an E-mail List for each slot from the drop-down selection list to receive the message. Multiple E-mail Lists can be added by clicking the **[+]** button to add more slots, each with its own drop-down selection list. Click the **[-] button** to remove it from the action. Once defined, the message will be sent to all device numbers in the selected E-mail Lists.

Note: E-mail Messaging requires an Internet connection or access to an in-house e-mail server.

Pre-Announce Tone

Select one of the WAV files from the Chime Library to play as a pre-announcement tone. Leave this field blank if you do not want to play a pre-announce tone.

Visual Alert

Select one of the pre-defined visual alerts to display on any visual displays included in the assigned zone group. Visual alerts are displayed after the completion of the visual message, if defined, and remain on the displays until cleared. Visual alerts can also be used without any sign text.

Use the ****Clear Alert**** item if this action is used to end the alert.

Sign Text

Type in the text to be shown on any visual displays included in the assigned zone group. Sign text can be used as an alternative to visual takes to define a visual message to accompany a live message.

4.6.10 Live Announcement (From Alternate Source)

When a live action is triggered from a microphone station, the audio input source for the announcement is the microphone station. The *Live Announcement (From Alternate Source)* action type is used to activate an announcement using an audio source different from the activating device. For example, you may have a fire alarm system where the audio must be routed to a zone group when a dry contact closure is tripped. When the system senses the closure, it must route the audio input associated with the fire alarm system. Closures are detected using devices that are not directly associated with an audio input, therefore they must be defined using a *Live Announcement (From Alternate Source)* action type if they are to route any audio signals. In such cases, the source will be the logic device and the Alternate Source will be the audio input.

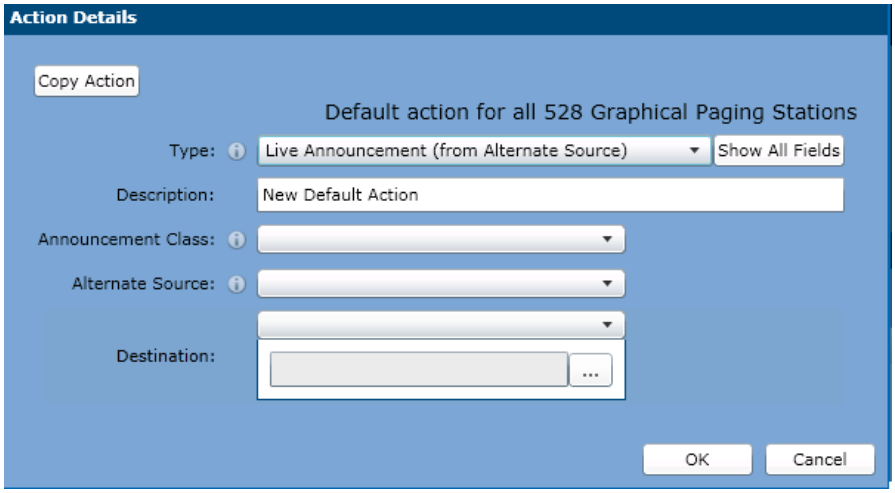


Figure 13-21: Live Announcement (From Alternate Source) Action

Announcement Class

Select the appropriate announcement class for the action. The announcement class determines the announcement priority relative to other announcements as well as various other behaviors as defined for each announcement class.

Alternate Source

This drop-down list box displays all the available sources in the system. Select the appropriate input source that will be routed as a result of this action.

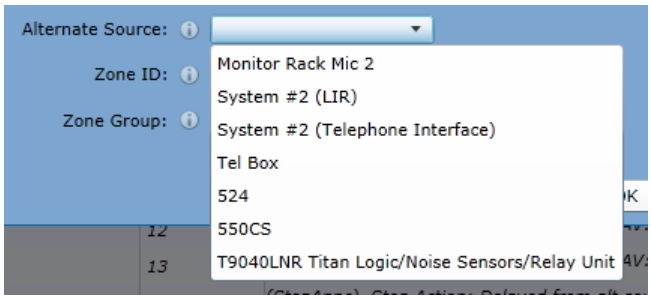


Figure 13-22: Alternate Source Selection

Destination

See explanation under Action Types, Section 4.5.7.5.

Live Announcement (From Alternate Source) – Advanced Properties

The following properties will only be visible after selecting the ***Show All Fields*** button.

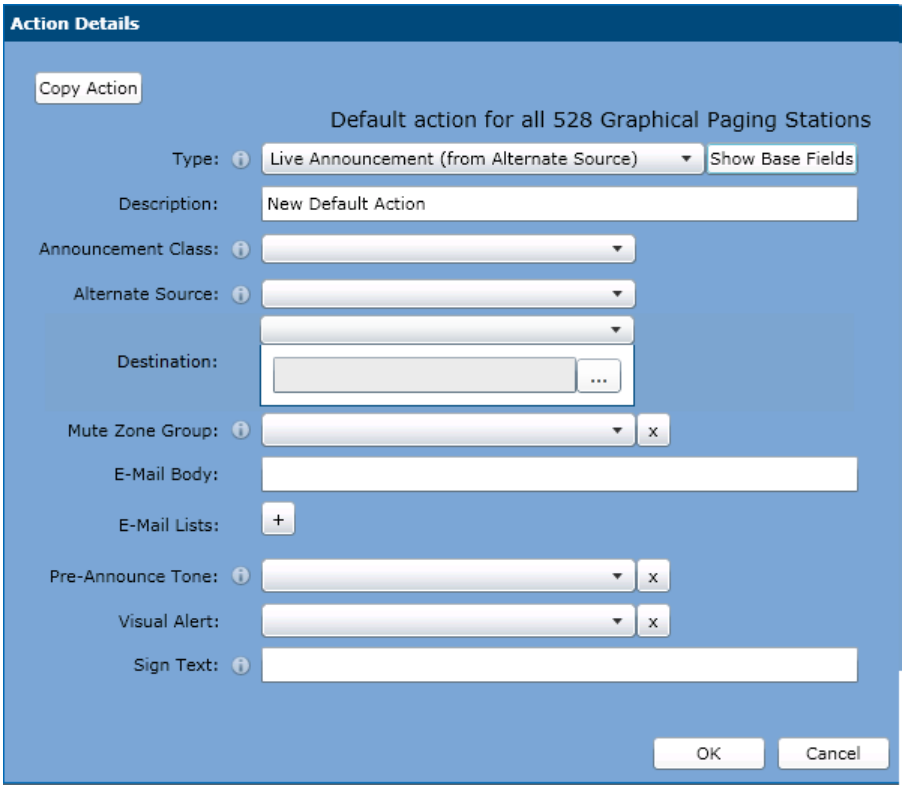


Figure 13-25: Live Announcement (From Alternate Source) Action Type – Show All Fields

Mute Zone Group

Select the zone group to use as a blanking zone group from the drop-down list box. The zone group selected will effectively be muted when this action is executed. Blanking zone groups are typically used to mute areas that are adjacent to where the announcement will be made to prevent other announcements, messages, or

background music from interfering with the delivery of an announcement. Click the **[X] button** to clear the selection from the list.

E-Mail Body

Enter the text that will be sent as the message body of the e-mail message.

E-mail Lists

One adds list slots via the **[+]** button and then selects an E-mail List for each slot from the drop-down selection list to receive the message. Multiple E-mail Lists can be added by clicking the **[+]** button to add more slots, each with its own drop-down selection list. Click the **[-] button** to remove it from the action. Once defined, the message will be sent to all device numbers in the selected E-mail Lists.

Note: E-mail Messaging requires an Internet connection or access to an in-house e-mail server.

Pre-Announce Tone

Select one of the WAV files from the Chime Library to play as a pre-announcement tone. Leave this field blank if you do not want to play a pre-announce tone.

Visual Alert

Select one of the pre-defined visual alerts to display on any visual displays included in the assigned zone group. Visual alerts are displayed after the completion of the visual message, if defined, and remain on the displays until cleared. Visual alerts can also be used without any sign text.

Use the ****Clear Alert**** item if this action is used to end the alert.

Sign Text

Type in the text to be shown on any visual displays included in the assigned zone group. Sign text can be used as an alternative to visual takes to define a visual message to accompany a live message.

4.6.11 Live Or Delayed Announcement

This type of action will initiate a live announcement if the defined zones are available for the announcement. If they are not available, then a delayed announcement will be initiated. The available setup parameters for this action type are identical to those of a ***Live*** action type.

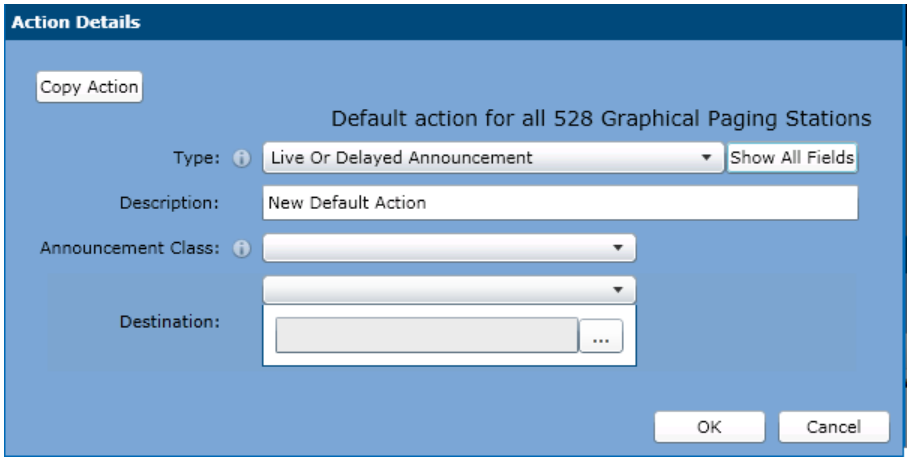


Figure 13-26: Live Or Delayed Action Type

Announcement Class

Select the appropriate announcement class for the action. The announcement class determines the announcement priority relative to other announcement as well as various other behaviors as defined for each announcement class.

Destination

See explanation under Action Types, Section 4.5.7.5.

Live Or Delayed – Advanced Properties

The following properties will only be visible after selecting the ***Show All Fields*** button.

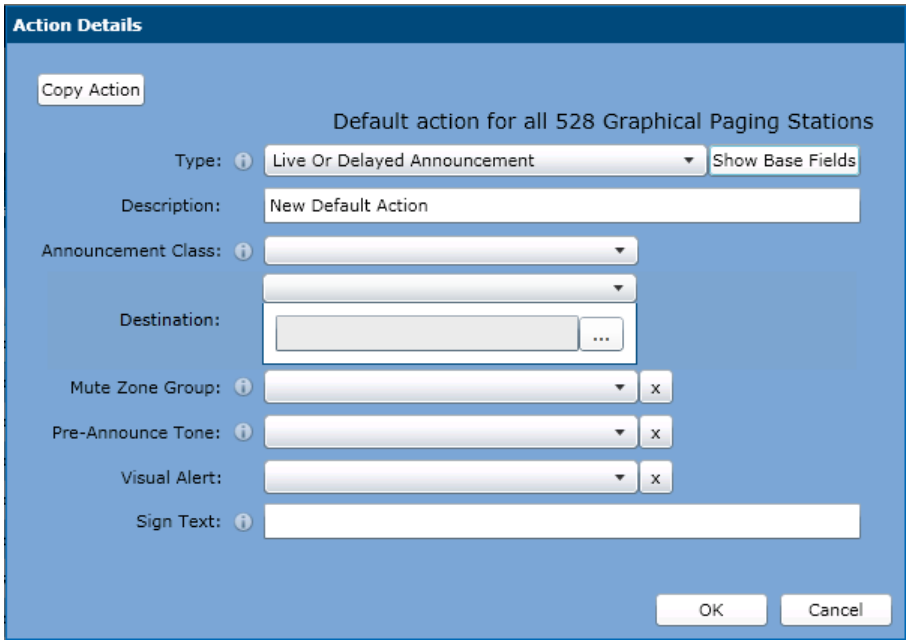


Figure 13-27: Live Or Delayed Action Type – Show All Fields

Mute Zone Group

Select the zone group to use as a blanking zone group from the drop-down list box. The zone group selected will effectively be muted when this action is executed. Blanking zone groups are typically used to mute areas that are adjacent to where the announcement will be made to prevent other announcements, messages, or background music from interfering with the delivery of an announcement. Click the [X] button to clear the selection from the list.

E-Mail Body

Enter the text that will be sent as the message body of the e-mail message.

E-mail Lists

One adds list slots via the **[+]** button and then selects an E-mail List for each slot from the drop-down selection list to receive the message. Multiple E-mail Lists can be added by clicking the **[+]** button to add more slots, each with its own drop-down selection list. Click the **[-] button** to remove it from the action. Once defined, the message will be sent to all device numbers in the selected E-mail Lists.

Note: E-mail Messaging requires an Internet connection or access to an in-house e-mail server.

Pre-Announce Tone

Select one of the WAV files from the Chime Library to play as a pre-announcement tone. Leave this field blank if you do not want to play a pre-announce tone.

Visual Alert

Select one of the pre-defined visual alerts to display on any visual displays included in the assigned zone group. Visual alerts are displayed after the completion of the visual message, if defined, and remain on the displays until cleared. Visual alerts can also be used without any sign text.

Use the ****Clear Alert**** item if this action is used to end the alert.

Sign Text

Type in the text to be shown on any visual displays included in the assigned zone group. Sign text can be used as an alternative to visual takes to define a visual message to accompany an announcement.

4.6.12 Monitor Zone

The *Monitor Zone* action type is reserved only for hardware devices that support 2-way communications. You must have a room module or sound reinforcement module located in the zone to be monitored. The microphone station that initiates the action must also support 2-way communications. This action will route the microphone signal from the room to the speaker or earpiece located at the monitoring device. It can also be configured to play a pre-announce tone when the monitor action is started as well as providing a periodic tone to indicate that the room is being monitored.

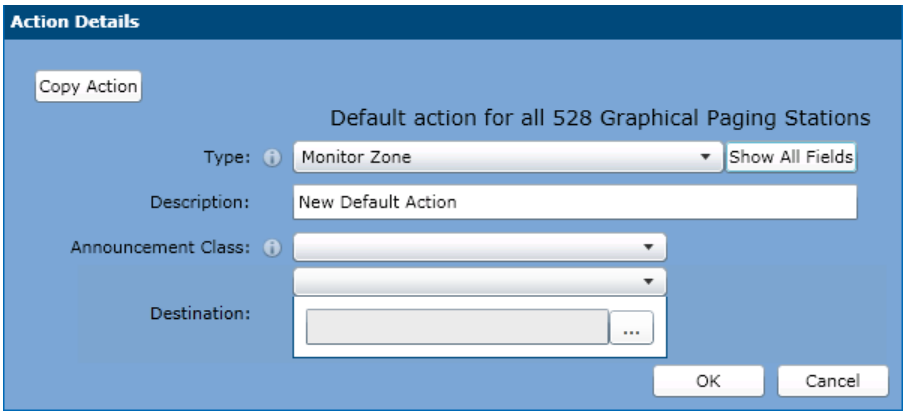


Figure 13-28: Monitor Zone Action Type

Announcement Class

Select the appropriate announcement class for the action. The announcement class determines the announcement priority relative to other announcements as well as various other behaviors as defined for each announcement class.

Destination

See explanation under Action Types, Section 4.5.7.5.

Monitor Zone – Advanced Properties

The following properties will only be visible after selecting the ***Show All Fields*** button.

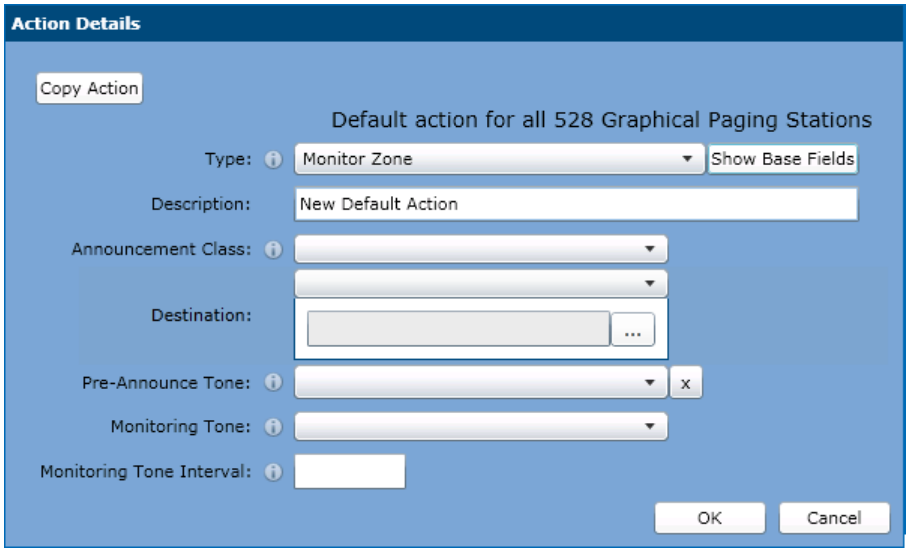


Figure 13-30: Monitor Zone Action Type – Show All Fields

Pre-Announce Tone

Select one of the WAV files from the Chime Library to play as a pre-announcement tone. Leave this field blank if you do not want to play a pre-announce tone.

Monitoring Tone

Enter the take number to be played approximately at the Monitoring Tone Interval (e.g., every 30 to 45 seconds) to alert occupants that the room is being monitored. Leave this field blank if you do not want to play a periodic monitoring tone.

Monitoring Tone Interval

How often to play the monitoring tone in seconds.

4.6.13 Mute Zones

The *Mute Zones* action type is used to mute selected zone groups or individual zones. It does this by activating an announcement that does not have an input source, thus effectively blanking out other announcements in the specified areas. Because the system treats a mute as an announcement, it is also assigned a priority. This allows a mute action to be overridden by higher priority announcements if needed.

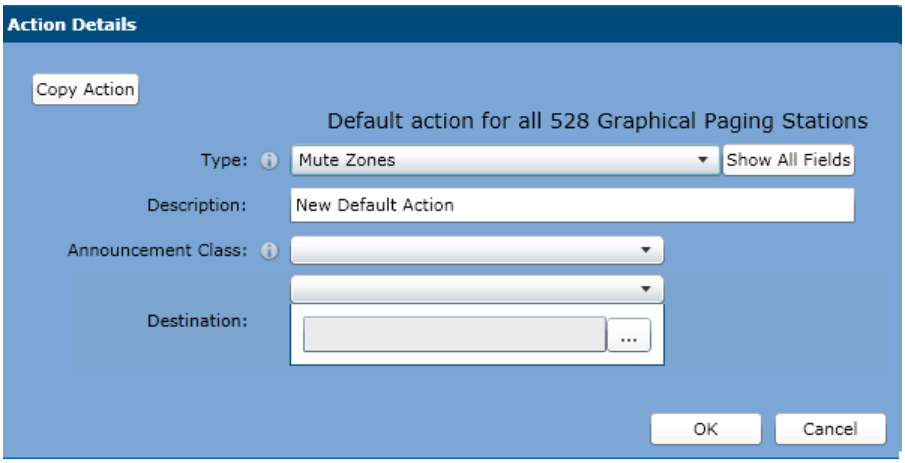


Figure 13-31: Mute Zones Action Type

Announcement Class

Select the appropriate announcement class for the action. The announcement class determines the mute priority relative to other announcement as well as various other behaviors as defined for each announcement class.

Destination

See explanation under Action Types, Section 4.5.7.5.

Mute Zones – Advanced Properties

The following properties will only be visible after selecting the ***Show All Fields*** button.

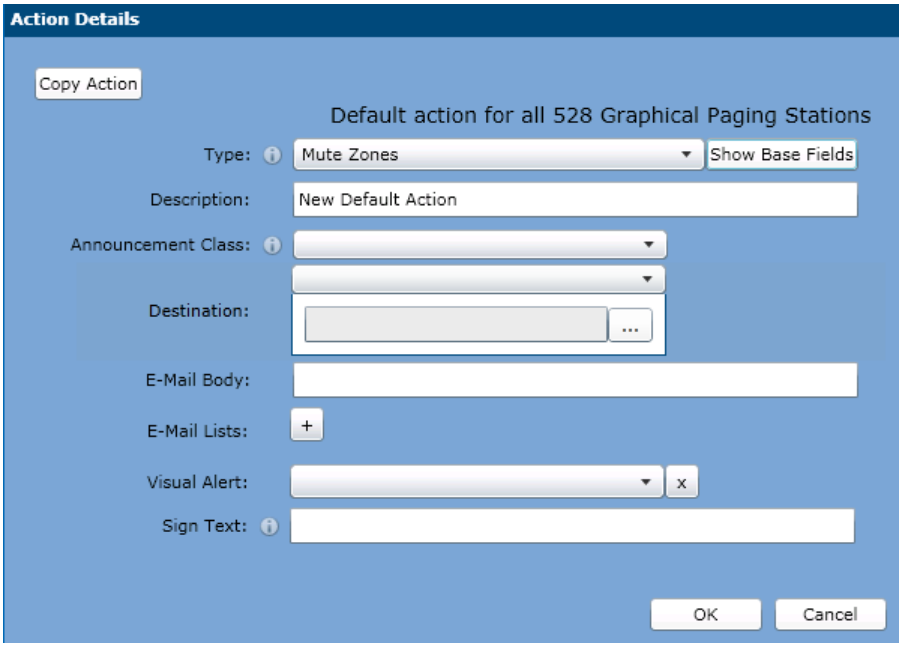


Figure 13-33: Mute Zones Action Type – Show All Fields

E-Mail Body

Enter the text that will be sent as the message body of the e-mail message.

E-mail Lists

One adds list slots via the **[+]** button and then selects an E-mail List for each slot from the drop-down selection list to receive the message. Multiple E-mail Lists can be added by clicking the **[+]** button to add more slots, each with its own drop-down selection list. Click the **[-] button** to remove it from the action. Once defined, the message will be sent to all device numbers in the selected E-mail Lists.

Note: E-mail Messaging requires an Internet connection or access to an in-house e-mail server.

Visual Alert

Select one of the pre-defined visual alerts to display on any visual displays included in the assigned zone group. Visual alerts are displayed after the completion of the visual message, if defined, and remain on the displays until cleared. Visual alerts can also be used without any sign text.

Use the *****Clear Alert***** item if this action is used to end the alert.

Sign Text

Type in the text to be shown on any visual displays included in the assigned zone group. Sign text can be used as an alternative to visual takes to define a visual message to accompany a live message.

4.6.14 Mute All Zones

This action type is used to mute the entire system. The action is given an Announcement Class that determines what, if any, other actions can override the mute. For example, if a mute all zones action is given a medium priority (priority 6) announcement class, then any actions with high (priority 4) or emergency (priority 2) announcement class will override the mute and be allowed to go active. This example outlines a case where perhaps background music and general low priority announcements are blocked due to a special event. High priority and emergency announcements will still be allowed.

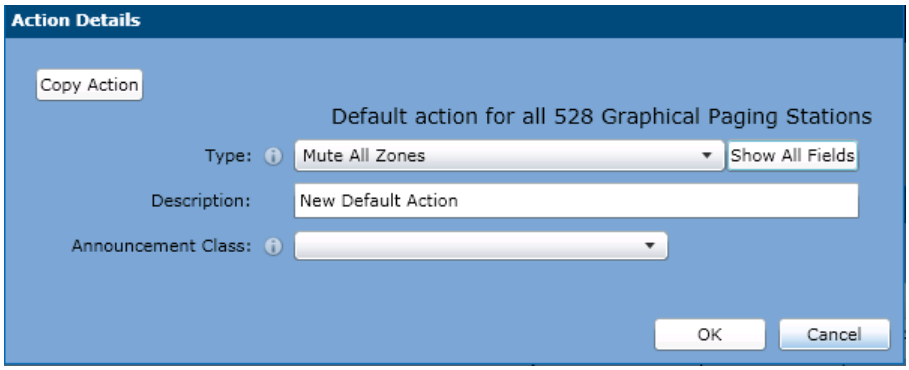


Figure 13-34: Action All Zones Types – MuteAll

Figure 13-34 shows the most common use of the MuteAll action type. By using an Emergency (priority 2) announcement class, all other announcement functions will be blocked. This example is common when the system must be muted entirely while the fire alarm system takes over the distribution of emergency messages and/or alert tones.

Mute All Zones – Advanced Properties

The following properties will only be visible after selecting the ***Show All Fields*** button.

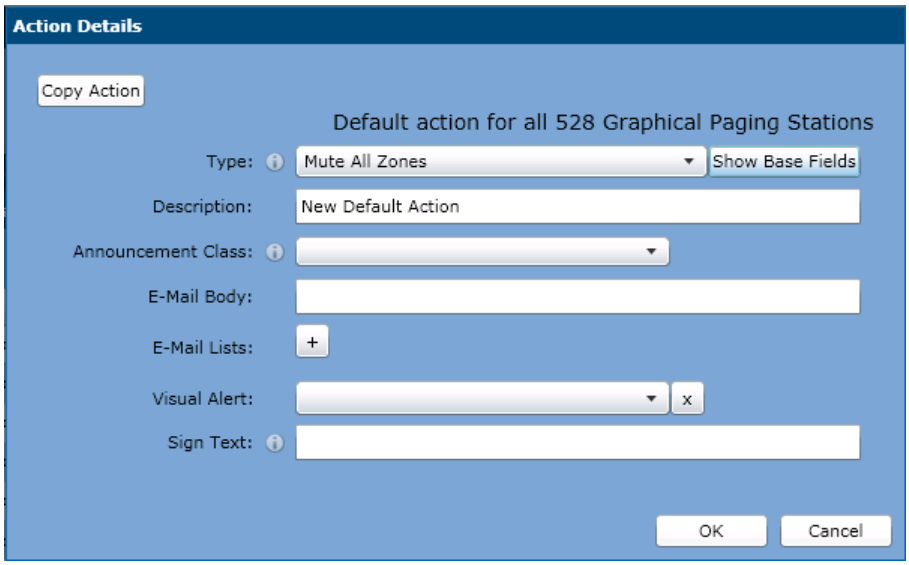


Figure 13-35: Mute All Zones Action Type – Show All Fields

E-Mail Body

Enter the text that will be sent as the message body of the e-mail message.

E-mail Lists

One adds list slots via the **[+]** button and then selects an E-mail List for each slot from the drop-down selection list to receive the message. Multiple E-mail Lists can be added by clicking the **[+]** button to add more slots, each with its own drop-down selection list. Click the **[-] button** to remove it from the action. Once defined, the message will be sent to all device numbers in the selected E-mail Lists.

Note: E-mail Messaging requires an Internet connection or access to an in-house e-mail server.

Visual Alert

Select one of the pre-defined visual alerts to display on any visual displays included in the assigned zone group. Visual alerts are displayed after the completion of the visual message, if defined, and remain on the displays until cleared. Visual alerts can also be used without any sign text.

Use the ****Clear Alert**** item if this action is used to end the alert.

Sign Text

Type in the text to be shown on any visual displays included in the assigned zone group. Sign text can be used as an alternative to visual takes to define a visual message while a mute is in progress.

4.6.15 Play Message

This action type is used to playback any recorded message from the library, optionally with a pre-announcement tone.

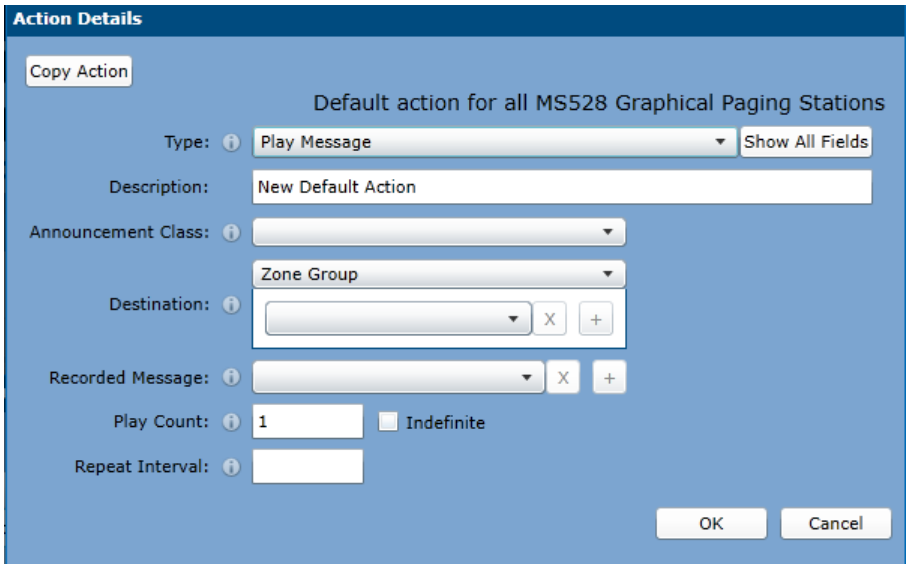


Figure 13-36: Play Message Action Type

Announcement Class

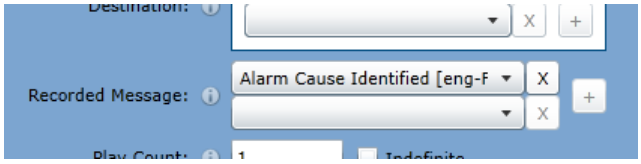
Select the appropriate announcement class for the action. The announcement class determines the announcement priority relative to other announcements as well as various other behaviors as defined for each announcement class.

Destination

See explanation under Action Types, Section 4.5.7.5.

Recorded Message

The actual WAV file to play is selected in this drop list that shows all defined Recorded Messages in the library. The [X] button to the right is used to delete any previous selection (although a message *must* be defined or the action will not work).



The [+] button to the right is used to add additional messages that will be concatenated together at play time. This feature is often called “message assembly”. After one recorded message is selected in the drop list box, this button becomes enabled allowing addition of an additional message. Pressing this button creates another drop list box at the after the last one, allowing a user to select an additional message to append.

Prerecorded messages allow for repeats to be defined as part of the message by using the following three fields.

Play Count

A message can be played multiple times. Enter the total number of times to play the message once it has been launched. All messages must play at least once, thus requiring at least a 1 to be in this field.

Indefinite

When checked, the ***Play Count*** edit box disappears. This will allow the message to play continuously at the specified ***Repeat Interval*** until it is stopped using a ***StopAnnc*** action type programmed to stop this action.

Repeat Interval

This is the time between successive playbacks. Positive numbers are used to designate an interval in minutes while negative numbers are used to designate an interval in seconds (5 would be 5 minutes, –30 would be 30 seconds). When minutes are specified, this time is from the start of the first playback to the start of the next one. If seconds is specified, this is the delay after finishing one play before starting the next play.

Play Message – Advanced Properties

The following properties will only be visible after selecting the ***Show All Fields*** button.

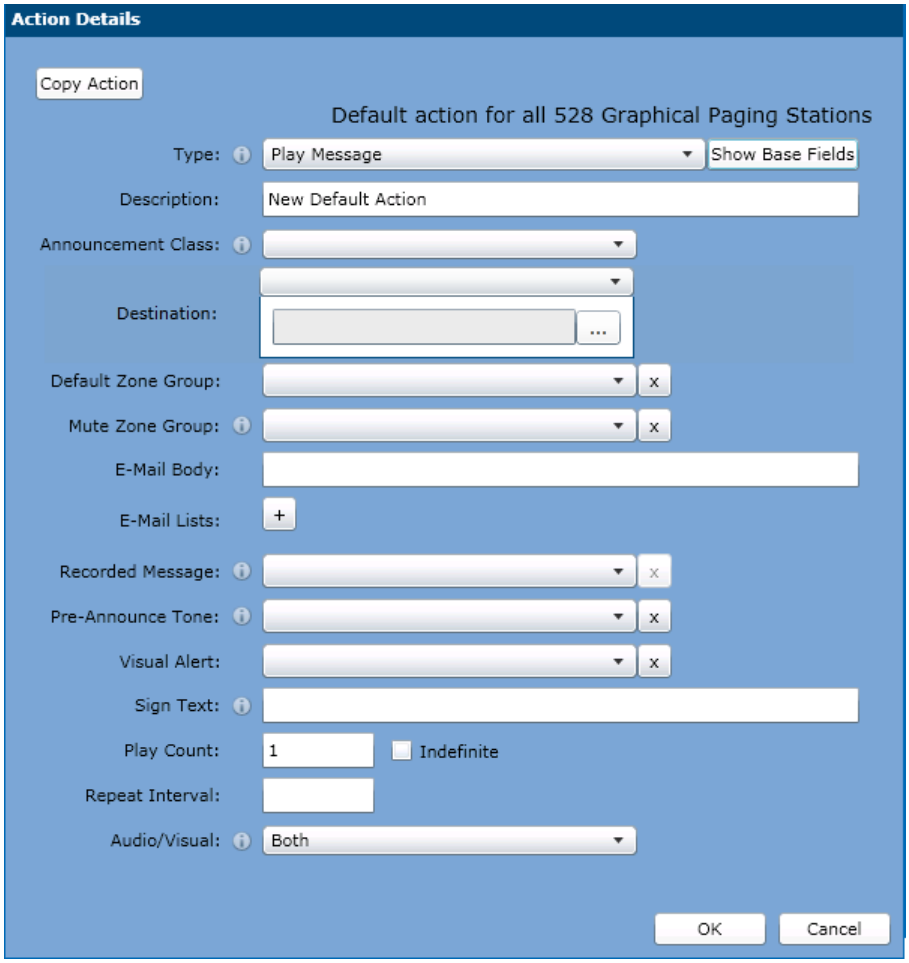


Figure 13-37: Play Message Action Type – Show All Fields

Default Zone Group

When the Use Prompt option is checked, then the action on a graphical mic station will prompt the user for the zone group to use. If the user does not supply one and the action has a default zone group, then the default will be used.

Mute Zone Group

Select the zone group to use as a blanking zone group from the drop-down list box. The zone group selected will effectively be muted when this action is executed. Blanking zone groups are typically used to mute areas that are adjacent to where the announcement will be made to prevent other announcements, messages, or background music from interfering with the delivery of an announcement. Click the **[X]** button to clear the selection from the list.

E-Mail Body

Enter the text that will be sent as the message body of the e-mail message.

E-mail Lists

One adds list slots via the **[+]** button and then selects an E-mail List for each slot from the drop-down selection list to receive the message. Multiple E-mail Lists can be added by clicking the **[+]** button to add more slots, each with its own drop-down selection list. Click the **[-] button** to remove it from the action. Once defined, the message will be sent to all device numbers in the selected E-mail Lists.

Note: E-mail Messaging requires an Internet connection or access to an in-house e-mail server.

Pre-Announce Tone

Select one of the WAV files from the Chime Library to play as a pre-announcement tone. Leave this field blank if you do not want to play a pre-announce tone.

Visual Alert

Select one of the pre-defined visual alerts to display on any visual displays included in the assigned zone group. Visual alerts are displayed after the completion of the visual message, if defined, and remain on the displays until cleared. Visual alerts can also be used without any sign text.

Use the *****Clear Alert***** choice if this action is used to end the alert.

Sign Text

Type in the text to be shown on any visual displays included in the assigned zone group. Sign text can be used as an alternative to the text that is defined with the recorded message in the library to accompany a prerecorded message.

Audio Visual

A flag whether this action is audio-only, visual-only or both audio and visual.

4.6.16 Record Message

This action type allows a message take to be recorded and stored on the system using the specified take number. It can then be used in a pre-recorded action type for playback. The Record Take must be one of the Recorded Messages that are defined in that section of SMC. Note, you do not have to upload a WAV file for a “slot” that is to be used only for Record Message actions. One can create the message with the [+] button, give it a description, but do not upload a WAV file for it. (Optionally, one can enter sign text like “Now an important message from Customer Service” or the like.)

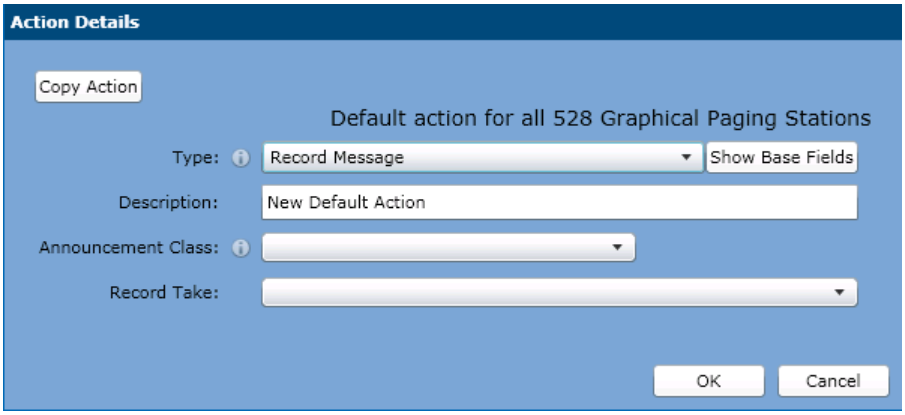


Figure 13-38: Record Message Action Type

Note: When multiple playback devices are used such as 1100MSG devices, it may take up to one (1) minute for recorded takes to be transferred to all other playback devices in the system.

4.6.17 Send Email

The *Send Email* action type allows the system to send text messages to one or more e-mail recipients, including mobile devices. (Most mobile providers allow e-mail messages that are automatically converted to SMS or text messages to mobile phones.) Once an Email list has been defined in the system, the *Send Email* action type can be used to alert individuals of system events or issues. Refer to the ***E-Mail Lists*** section for information on adding lists to a system.

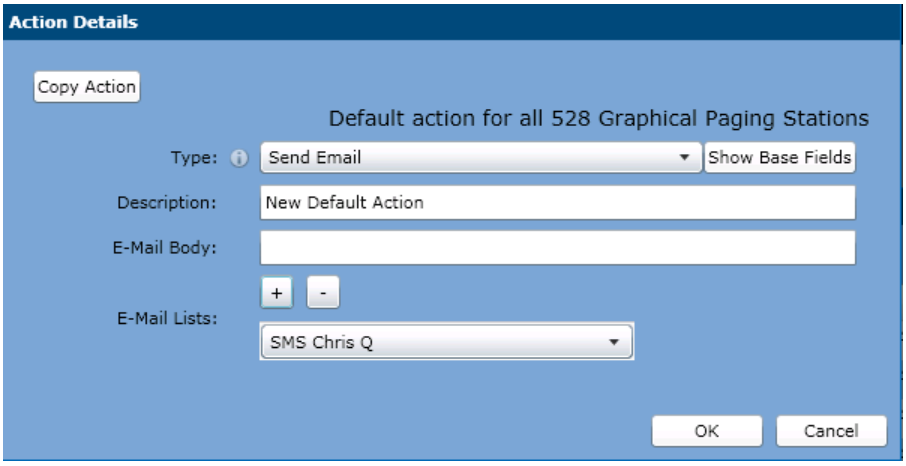


Figure 13-39: Send E-mail Action Type

E-Mail Body

Enter the text that will be sent as the message body of the e-mail message.

E-mail Lists

One adds list slots via the **[+]** button and then selects an E-mail List for each slot from the drop-down selection list to receive the message. Multiple E-mail Lists can be added by clicking the **[+]** button to add more slots, each with its own drop-down selection list. Click the **[-] button** to remove it from the action. Once defined, the message will be sent to all device numbers in the selected E-mail Lists.

Note: E-mail Messaging requires an Internet connection or access to an in-house e-mail server.

4.6.18 Stop Announcement

The *Stop Announcement* action type is used to stop active announcements or messages from any further activity. For example, a message is created with the ***Indefinite*** checkbox checked so the message will play continuously at the defined ***Play Interval***. A separate action is then created to stop that specific message. A stop announcement action is defined as shown in Figure 13-40.

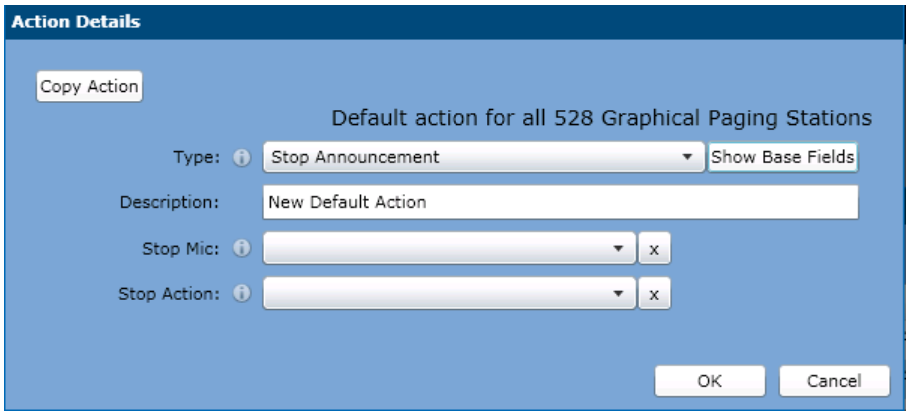


Figure 13-40: Stop Announcement Action Type

Stop Mic

This drop-down list box lists all available microphone stations currently programmed in the system. Selecting a station from this list will allow the action to stop any and all active announcements that were initiated from that station.

Click the **[X] button** to clear the selection.

Stop Action

This drop-down list box lists all available actions currently programmed in the system. Selecting an action from this list will allow the action to stop the selected action, regardless of the source that triggered the announcement.

Click the **[X] button** to clear the selection.

*Note: Specify either a **Stop Mic** or a **Stop Action** for most applications. Selecting both a **Stop Mic** and **Stop Action** will limit the action where it will only stop an action that was started from a specific microphone station. Specifying both is typically used to stop actions that were started from logic input devices.*

4.6.19 Text-to-Speech Announcement

Text-to-speech (TTS) Announcement action type allows the user to type in the text of the desired message and the optional TTS engine will generate the human-like speech for the message. The system supports multiple voices and multiple languages, but only one voice per language can be used.

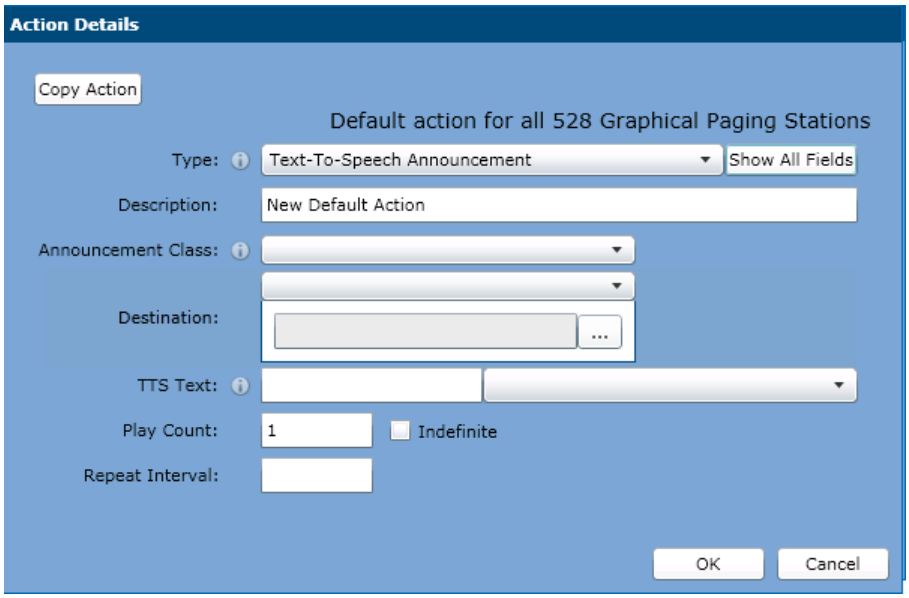


Figure 13-41: Text-to-Speech Announcement Action Type

Announcement Class

Select the appropriate announcement class for the action. The announcement class determines the announcement priority relative to other announcements as well as various other behaviors as defined for each announcement class.

The Zone ID or Zone Group fields determine the destination for the announcement. These parameters are mutually exclusive, thus only one zone destination method may be used.

Zone ID

The ***Zone ID*** field specifies one (1) or more system zones as the destination for the announcement. Zones are entered either by directly typing them into the entry box (e.g., 1,2,3, 7,18) or by opening the Zone Selector by clicking the button immediately to the right of the entry box. Click on an individual zone to add or remove it from the action. To add a range of zones in the same device, select the first zone and then the last zone in the range while holding down the **SHIFT** key.

Zone Group

A zone group is assigned to the action by selecting one of the previously defined zone groups from the drop-down list. Multiple zone groups can be assigned to an action by clicking the **[+] button** to add more fields, each with its own drop-down selection list. Click the **[-] button** to remove a zone group field. Once defined, the message will play cumulatively for all zones included in the selected zone groups.

Use Prompt

This feature requires a graphical paging station such as the IEDA528 series microphone station. When checked, this action will prompt the station user for either the zone code or zone group code for the action.

This gives the operator flexibility to choose the mute destination at the time of launch. This requires the microphone station operator to know a valid ***Zone ID*** or ***Zone Group*** that is available for use.

TTS Text

Type in the text that will be used to generate the message.

Voice Selection

Select the appropriate voice from this drop-down list box that will be used to generate the message. The names and number of voices available on the system will vary based on the options that are installed.

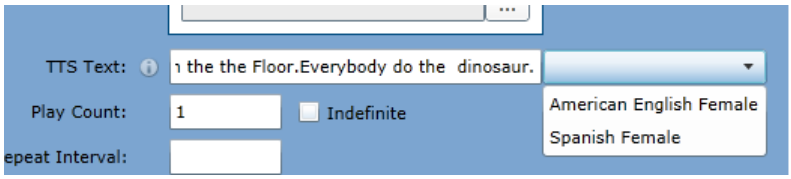


Figure 13-42: Text-to-Speech Announcement Voice Selection

Play Count

A message can be played multiple times. Enter the total number of times to play the message once it has been recorded. All messages must play at least once, thus requiring at least a 1 to be in this field.

Indefinite

When checked, the ***Play Count*** edit box disappears. This will allow the message to play continuously at the specified ***Repeat Interval*** until it is stopped using a ***StopAnnc*** action type programmed to stop this action.

Repeat Interval

This is the time between successive playbacks. Positive numbers are used to designate an interval in minutes while negative numbers are used to designate an interval in seconds (5 would be 5 minutes, –30 would be 30 seconds). When minutes are specified, this time is from the start of the first playback to the start of the next one. If seconds is specified, this is the delay after finishing one play before starting the next play.

Text-to-Speech Announcement – Advanced Properties

The following properties will only be visible after selecting the ***Show All Fields*** button.

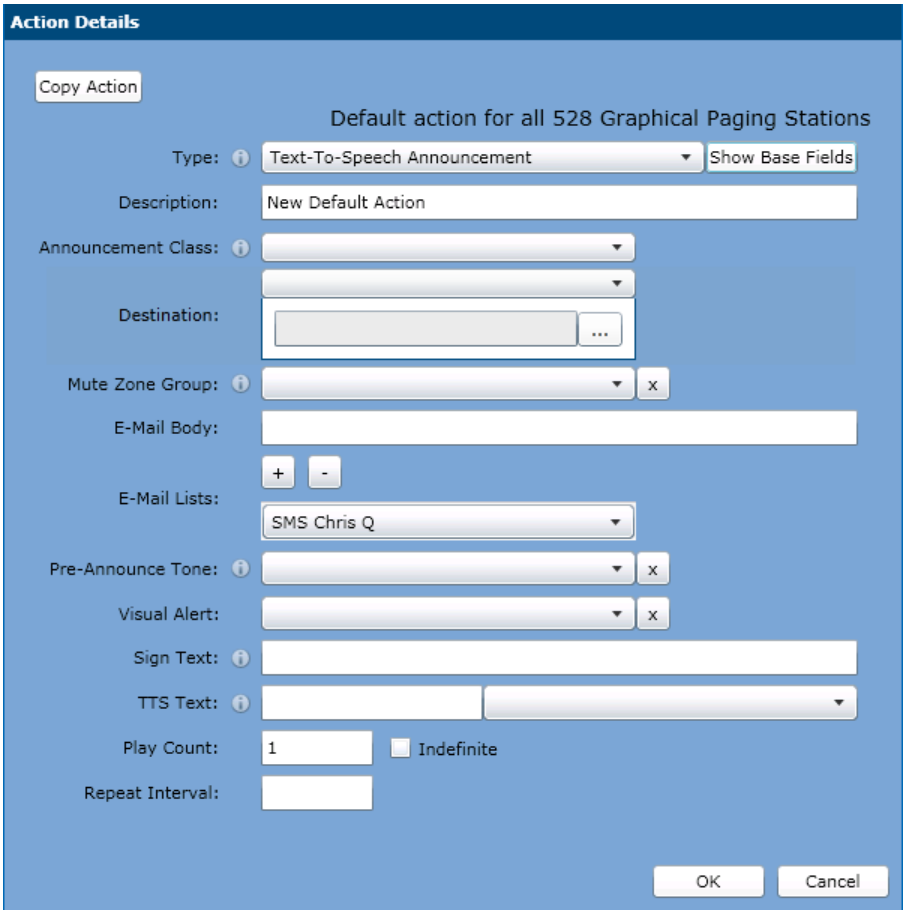


Figure 13-43: Text-to-Speech Announcement Type – Show All Fields

Mute Zone Group

Select the zone group to use as a blanking zone group from the drop-down list box. The zone group selected will effectively be muted when this action is executed. Blanking zone groups are typically used to mute areas that are adjacent to where the announcement will be made to prevent other announcements, messages, or background music from interfering with the delivery of an announcement. Click the **[X] button** to clear the selection from the list.

E-Mail Body

Enter the text that will be sent as the message body of the e-mail message.

E-mail Lists

One adds list slots via the **[+]** button and then selects an E-mail List for each slot from the drop-down selection list to receive the message. Multiple E-mail Lists can be added by clicking the **[+]** button to add more slots, each with its own drop-down selection list. Click the **[-] button** to remove it from the action. Once defined, the message will be sent to all device numbers in the selected E-mail Lists.

Note: E-mail Messaging requires an Internet connection or access to an in-house e-mail server.

Pre-Announce Tone

Select one of the WAV files from the Chime Library to play as a pre-announcement tone. Leave this field blank if you do not want to play a pre-announce tone.

Visual Alert

Select one of the pre-defined visual alerts to display on any visual displays included in the assigned zone group. Visual alerts are displayed after the completion of the visual message, if defined, and remain on the displays until cleared. Visual alerts can also be used without any sign text.

Use the ****Clear Alert**** item if this action is used to end the alert.

Sign Text

Type in the text to be shown on any visual displays included in the assigned zone group. For most TTS uses, the sign text will be identical to the TTS text. Two fields are provided for cases where special phonetic spellings are necessary to get the TTS engine to correctly pronounce a word.

4.6.20 Launch Visual Alert

This action type is used for cases where you want to start or stop a visual alert (e.g., wayfinding screen on displays) when not including it with any other type of action. A common use is to start a visual alert at the end of a prerecorded message and then clear it when you play a different prerecorded message. This action type is provided for situations where you want the visual alert to operate independently of any other actions.

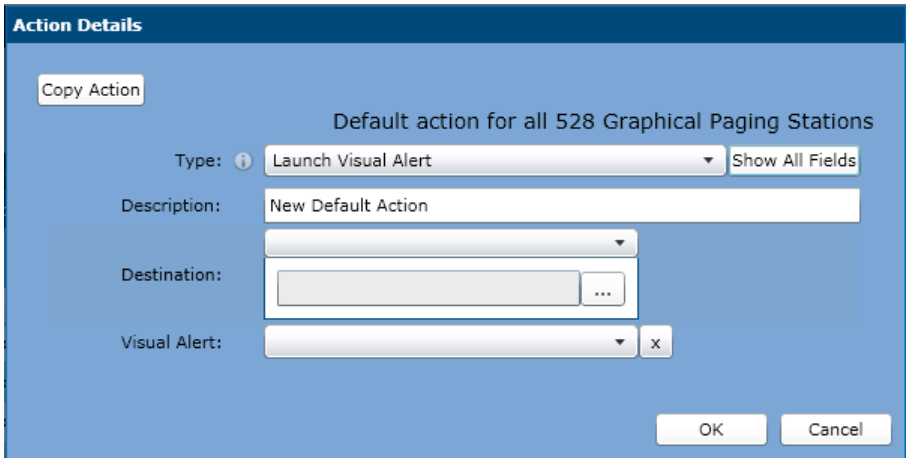


Figure 13-44: Launch Visual Alert Action Type

Destination

See explanation under Action Types, Section 4.5.7.5.

Visual Alert

Select one of the pre-defined visual alerts to display on any visual displays included in the assigned zone group. Visual alerts remain on the displays until cleared.

Use the ****Clear Alert**** item if this action is used to end the alert.

4.7 Announcement Classes

Announcement classes are used to define specific behaviors for the actions in the system. Most, but not all, actions require the assignment of an announcement class. This determines how the action will interact with other actions in the system as they start and stop.

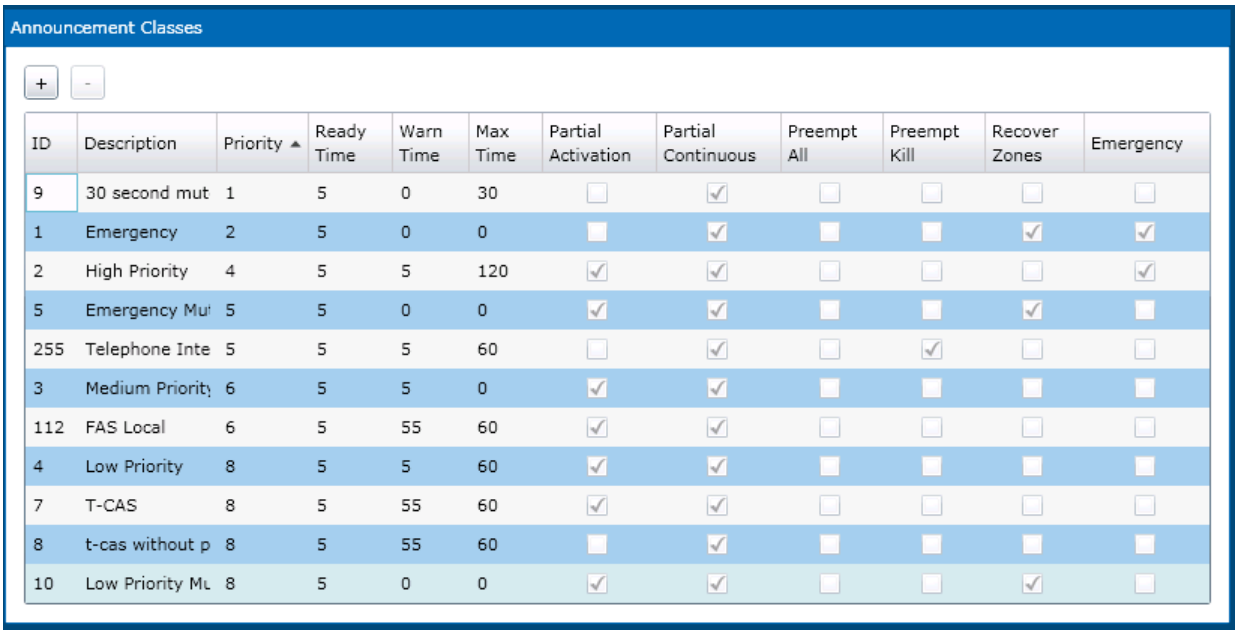


Figure 14-1: Announcement Classes

Click this button to add a new announcement class to the list.

Click this button to delete the highlighted announcement class from the list.

ID

This is a positive whole number used to identify the announcement class. Each announcement class defined must have a unique ID number. This number is primarily used for external control from paging applications over the network or multi-controller announcements.

Description

This is a text description for the announcement class. Double-click on the field to edit the text.

Priority

Each announcement class must have a priority level. Lower numbers designate a higher priority over larger numbers. Announcement classes with a higher priority (lower number) will override announcements of a lower

priority (higher number) in most cases. The exceptions are any announcement classes with the Pre-empt All selected.

Ready Time

When an announcement is initiated from a microphone station with a push-to-talk switch or button, a green ***READY*** light will flash along with a chime. This indicates to the user that the system is ready for the and they should key the microphone and make the announcement. The ***Ready Time*** specifies how long the system will wait (in seconds) for the user before killing the announcement request. A typical value for this setting is five (5) seconds.

Warn Time

The system will warn the user that the maximum time limit for the announcement has almost been reached. It does so by flashing the ***READY*** light on the microphone station. Enter the time (in seconds) to issue the warning before the end of the announcement.

Max Time

This is the maximum time (in seconds) that an announcement can be made from the time the user keys the microphone. After this time has elapsed, the announcement will be automatically killed by the system. Typical values for most applications range from 60 (1 minute) to 120 (2 minutes). For no time restrictions, enter a value of 0.

Partial Activation

This parameter determines what the announcement will do if some of the zones required are busy with announcements of equal or higher priority. When enabled, the announcement will proceed and activate only those zones that are available or are busy with lower priority announcements. When disabled, the announcement will indicate that the system is busy and the user must wait to make the announcement. In the case of delayed or pre-recorded messages, the system will wait until all zones are available and then play the message.

Lower priority announcements and general informational messages typically allow for partial activation. This allows scheduled messages to continue at their designated playback interval while allowing higher priority announcements and messages to continue as needed.

Partial Continuous

This parameter determines what happens when an announcement of higher priority, or one with ***Pre-empt All*** enabled, takes over some of the zones of an active announcement. When enabled, the announcement will proceed with only the zones that are available. When disabled, the entire announcement will be terminated and the user will need to restart the announcement. In the case of delayed and pre-recorded messages, the message will be killed and placed into a busy state. It will play back from the beginning once the zones are available.

Preempt All

When enabled, the announcement will always take priority over any other active announcements, acquiring all needed resources such as zones and playback channels. After the announcement has started, its priority level is then used to determine what other announcements may have priority over it.

Preempt Kill

When an announcement is overridden by one of a higher priority, this parameter will determine what happens to that announcement. If it is enabled, the announcement will be killed and not attempt to re-start. If disabled, the announcement will return to a busy state and attempt to re-start once the needed zones and other resources are available.

Recover Zones

When either ***Partial Activation*** or ***Partial Continuation*** is enabled, then an announcement may start or continue with some of its needed zones unavailable. This parameter determines what happens to those zones that are either not available at the time the announcement is started or are taken away by one of a higher priority while it is active. When enabled, the zones that were taken over by another announcement will be immediately added back to the active announcement. When disabled, those zones will remain excluded for the duration of the announcement.

Emergency

Devices with audio outputs have a configurable emergency gain offset used to increase the output level by the defined amount when an emergency announcement is made. When this box is checked, any announcements or messages that use this announcement class will be played using the higher gain amount.

4.8 Zone Groups

The term ***zone*** is a rather broad term that generically refers to the outputs of several different types of devices. An output channel on a Titan T9160 amplifier channel is a zone. A relay output on a T9016RY or internal 1200LIR is a zone. Visual displays are also treated as an output zone.

Zone groups are collections of individual zones that share a common purpose or logical area. Individual zones can be included in multiple zone groups as needed. Most systems will include an *All Call* zone group that is made up of all output zones in the system. You can program individual zone groups in a way that best suits your facility. For example, all zones in a building could be a zone group for building-wide pages. Zones for each floor of a building could be grouped together to allow quick access to one or more floors of a building. This flexibility makes programming actions much easier as you only need to specify one or more zone groups in an action and you will get all of the system output zones that are associated with that area, providing that the zone groups have been configured correctly.

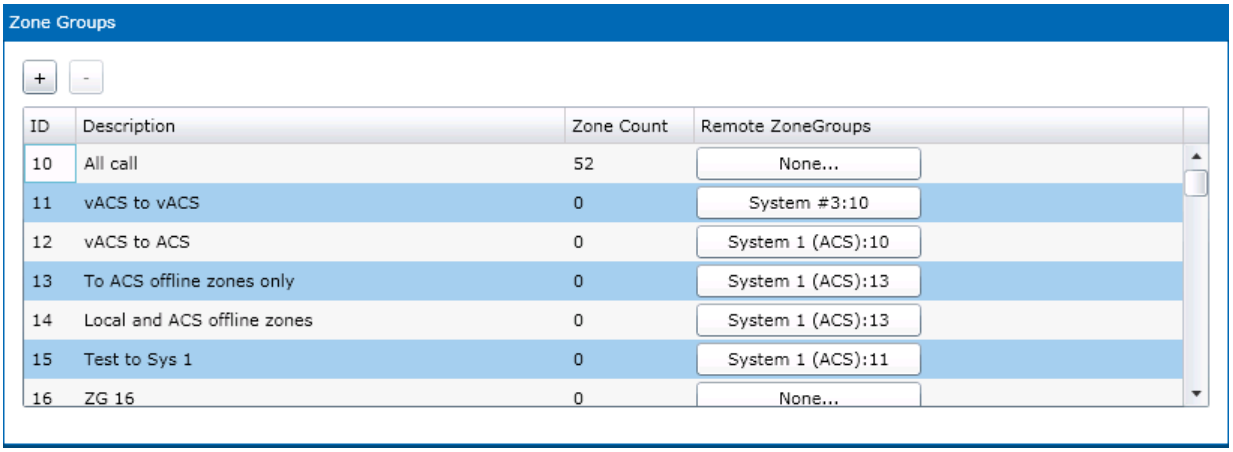


Figure 15-1: Zone Groups

Figure 15-1 shows a very simple system with only five (5) zone groups. Zone groups are added to the list by using the **[+] button**. Once a new one has been added, you must configure an ID, description, and select the zones to be included in the group. Optionally, you can configure zone groups in other announcement controllers when part of a multi-controller system.

When a zone group is selected with the mouse, it will appear highlighted in the list and the zone editor window for that group will be displayed below the list as shown in Figure 15-2. Use the check box for each zone to determine if it will be included in the zone group. Available zones are grouped according to the device that contains the zones. Each group contains a ***Select All*** and ***Clear All*** button to quickly select or clear all available zones within that device.

Clicking on the **[-] button** will delete the currently selected zone group.

The "Built-In All-Call" Zone Group does not appear on this configuration screen, as it is automatically maintained. It will always contain every audio and visual zone defined in the system (not relays). Similarly, the Mic Local Zone Groups will not appear in this list.

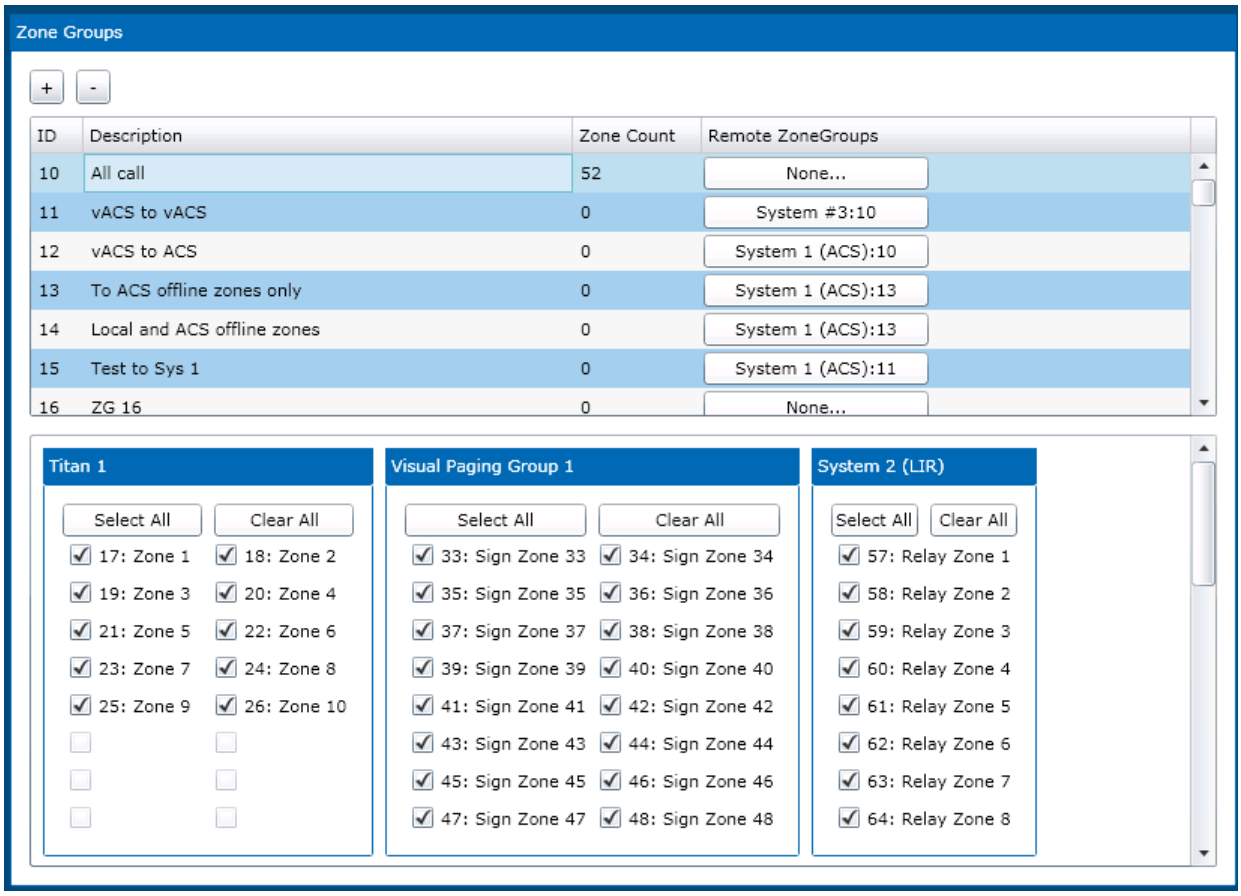


Figure 15-2: Editing Zone Groups

Select this icon to add a new zone group to the list. You may then edit the ***ID, Description***, or ***Remote Zone Groups*** as needed.

Select this icon to delete the currently selected zone group from the list.

ID

This is a zone group ID number that is used by actions in the local system or from remote systems to reference the zone group used. This number must be unique within the system, but may be reused in other remote systems. For example, an ID of 101 may be used in multiple announcement controllers to define an *All Call* zone group in each frame.

Double-click on this field in order to edit the ID number.

Description

This is a text field used to logically describe the zone group. Double-click on the field in order to edit. This description should provide a user with sufficient information to be able to understand the general areas within the facility that are included in the zone group.

Zone Count

This field provides a quick reference of the total number of zones included in the zone group. This field is calculated by the system and cannot be edited. This number only counts zones that are part of the local system. It does not include any remote zone groups.

Remote Zone Groups

A zone group can include one or more zone groups that are located in other announcement controllers within a multi-controller system. You make announcements or launch messages to zones that are owned by other controllers by including them in the ***Remote ZoneGroups*** field of a local zone group.

When an action includes a zone group with a remote zone group defined, it will send an announcement request to the other systems using the same priority as the one specified in the action definition in the source controller. The behavior of the action is controlled by the source controller and the zones in the remote controllers are treated as live zones off of the source controller. Thus, when a delayed message is recorded on System A, it will open a live path to the zones included on System B when it plays back. Prerecorded messages are also played on the source controller while routed live to the remote controller's zones that are available.

The source controller will check zone availability on any remote controllers and respond with a ***BUSY*** response if the announcement cannot play in any of the remote controllers. If partial activation is allowed, the announcement will proceed with those zones that are available.

To add a new remote zone group, double-click in the ***Remote ZoneGroups*** field of the zone group that you wish to edit. This changes the field to display a button as shown in Figure 15-3. Once it is visible, click the button to open the editor as shown in Figure 15-4.

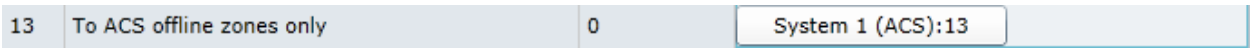


Figure 15-3: Remote Zone Groups

From here, you can add one or more references to zone groups located in other systems. Click the **[+] button** to add a new item to the list. Then, select the appropriate system from the drop-down list in the ***System*** column. Remote systems must first be configured as a ***Remote Controller*** in the ***My Systems*** tab of the software. Once you have selected a controller, enter the desired zone group ID in the ***Remote ZoneGroup ID*** field. This field is edited by double-clicking on the field and then typing in the appropriate number. The selected item in the list can be deleted by clicking on the **[-] button**.

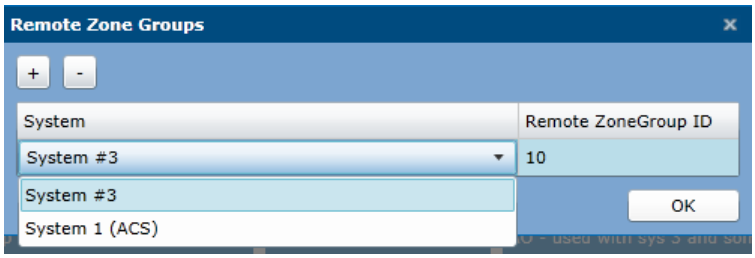


Figure 15-4: Adding Remote Zone Groups

4.9 User Groups

Note: ***IP Only SMC*** *will not show this configuration section.*

User Groups are used to assign individual microphone station users and/or microphones to a group such as a company or service entity. For many systems, this provides identification text to go along with the graphical paging station displays.

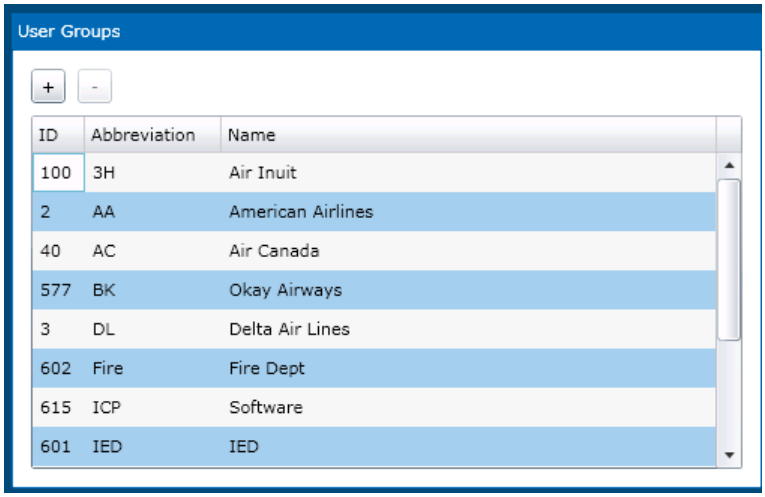


Figure 16-1: User Groups

When a microphone station is assigned to a specific user group, then the text from the ***Name*** field will appear at the top of the station display. Figure 16-2 shows the setup screen for a *528 Graphical Paging Station* type device. The drop-down list for the ***User Group*** field is populated from the ***User Groups*** list. In this example, IED will appear at the top of the microphone station display.

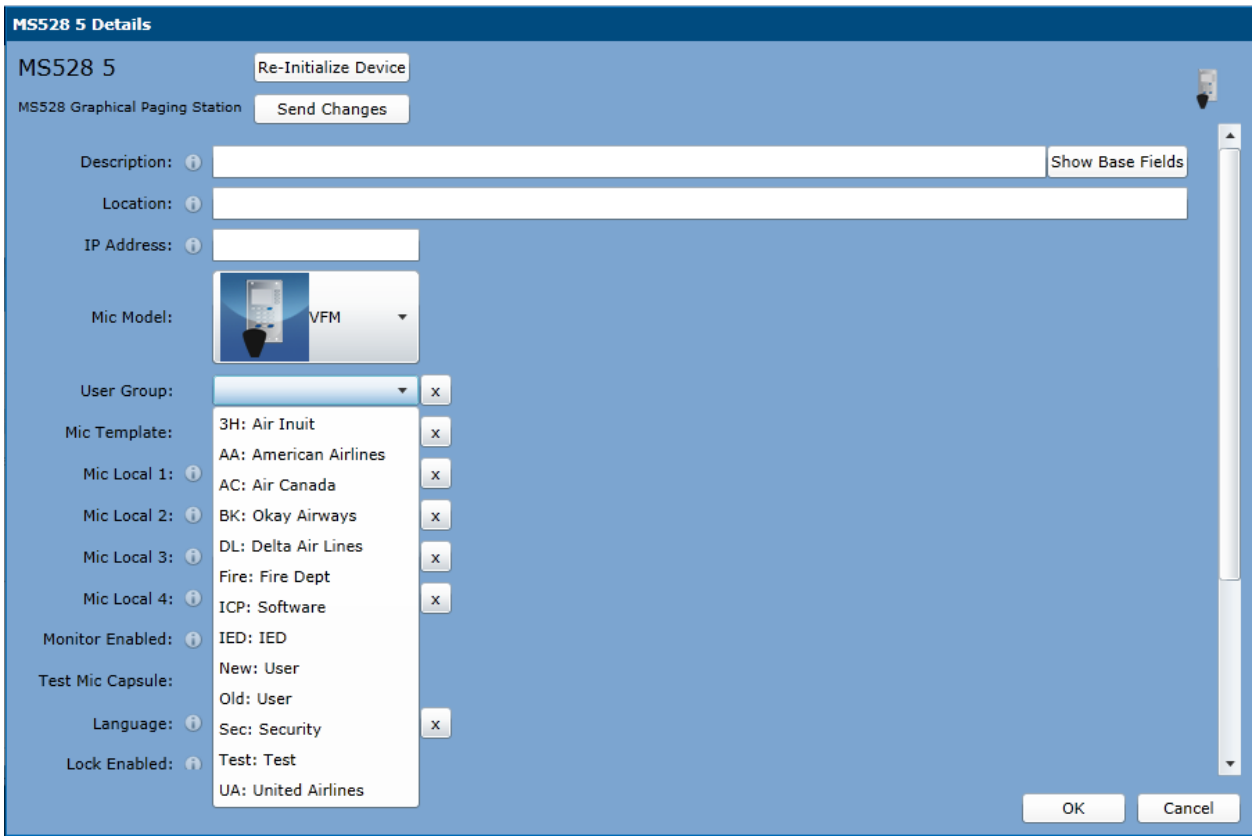


Figure 16-2: Setting User Group on 528 Paging Station

If a station is locked and requires user logins, then a user group can be associated with the user from the ***User Group*** field in the ***Mic Passwords*** tab as shown in Figure 16-3. In this case, the user name as entered in the ***Name*** field will display at the top of the graphical display, indicating who is currently logged into the station.

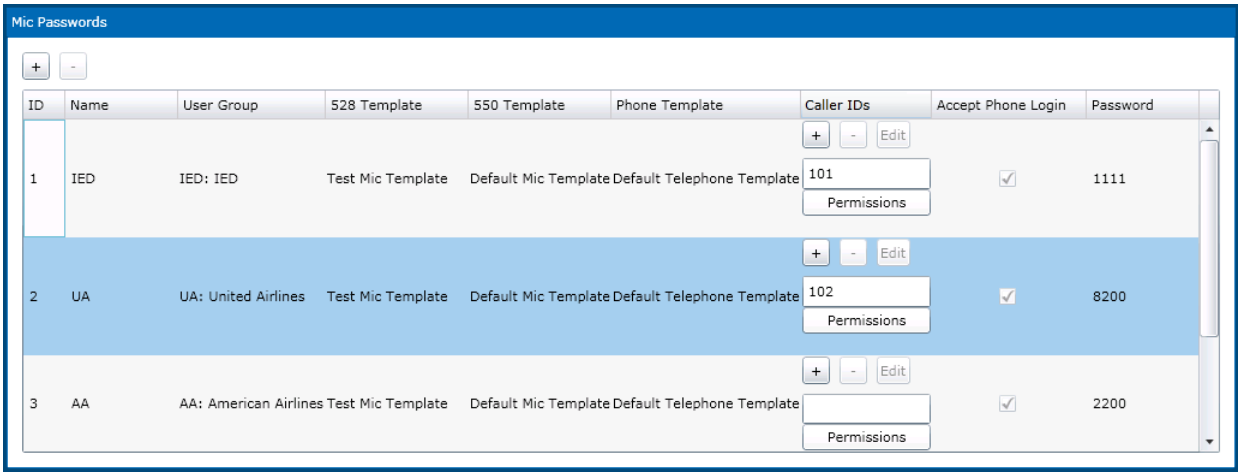


Figure 16-3: Mic Passwords

User Groups become more critical in systems that utilize the optional *Flight Announcement System (FAS)* or other automated systems. In the case of the FAS, members of one group cannot launch flight messages that belong to a different user group.

+

Click this icon to add a new user group to the list. It will add a new row to the list as shown in Figure 16-4. You can then type in an abbreviation and a name in the appropriate fields.

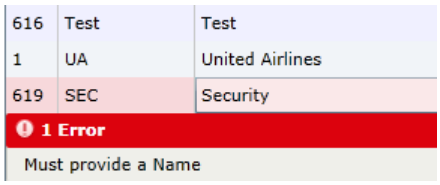


Figure 16-4: Add a New User Group

-

Click this icon to delete the highlighted item from the list.

ID

This is a system assigned index number for the user group. This field cannot be edited.

Abbreviation

This field is used to display an abbreviation of the user group or company name. Double-click on this field to edit the text.

Name

This is a text field for the name of the group or company. Double-click on this field to edit the text.

4.10 Mic Templates

*Note: **IP Only SMC** will not show this configuration section.*

Templates are used to create buttons on graphical paging stations such as the 528 series of microphone stations or the touch screen communication stations (either the CobraNet 550CS or the Dante IPCSDTOUCH model). The two types of mic stations get different types of templates. So, in this section of SMC, there is a list area with two categories, such as is shown below. Creating and editing each type of template is described in sections 4.10.2 and 4.10.3. The next section covers how templates are employed in SMC.

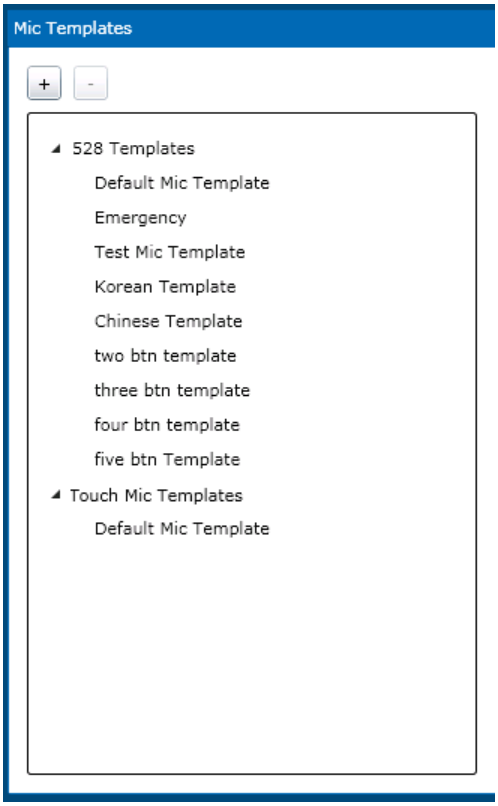


Figure 17-1: Mic Templates List Box

These icons are used to add or delete templates from the list. Click the **[+] button** to add a new template. The template is added to the section currently selected or in which a template of that type is selected. Clicking the **[-] button** will delete the currently-selected template.

4.10.1 Using Templates in SMC

You begin defining a template based on the functional needs, such as those of an information center user, a security office user, the fire department, a ticket agent, etc. Once a template has been created, you then have two methods for deploying its use.

For microphone stations that do not require user login, you specify the template in the microphone station properties accessed from the ***Devices*** tab as shown in Figure 17-2a. Note that the ***Lock Enabled*** box is not checked; therefore, the station will be accessible without a login.

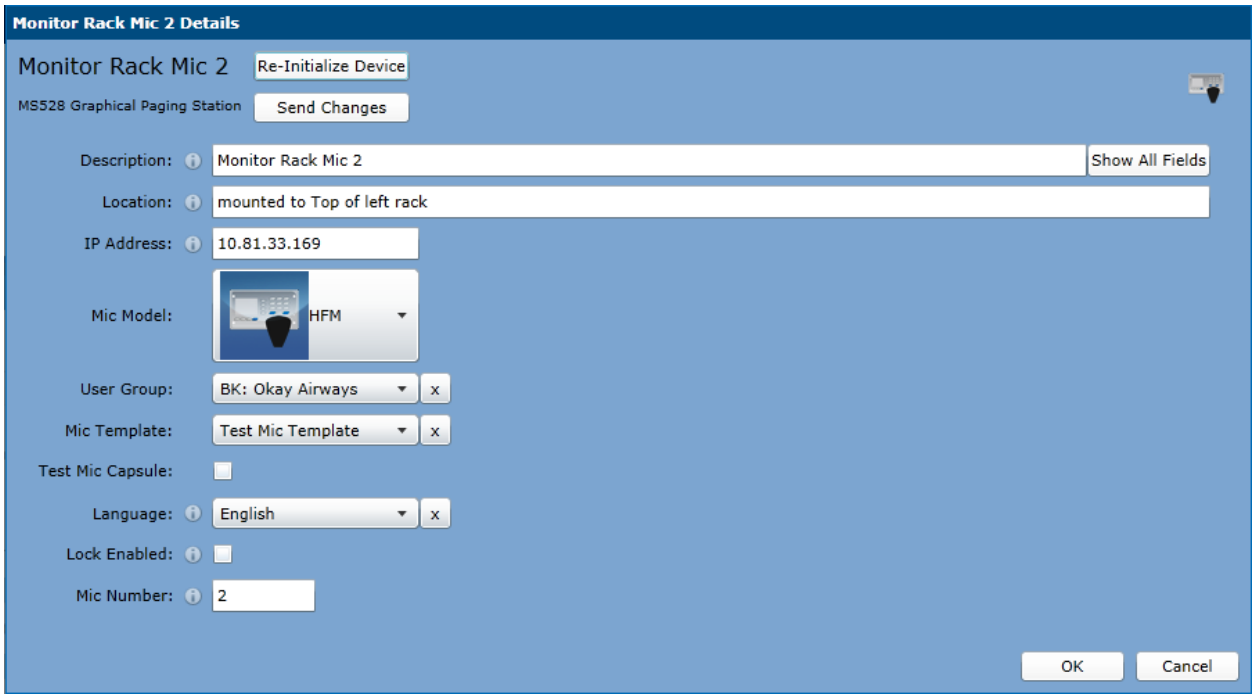


Figure 17-2a: Mic Template Selection When Logins Are Disabled

For microphone stations that require user login, you associate a template with a user in the ***Mic Passwords*** section. This is done by selecting the appropriate template from the drop-down list in the ***Template*** column as shown in Figure 17-2b.

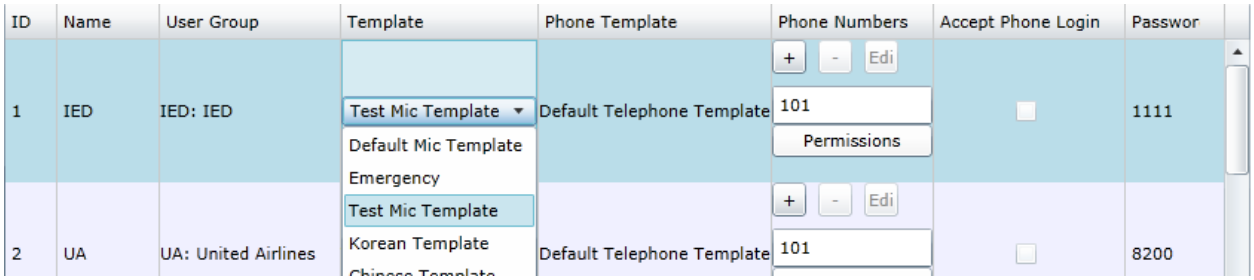


Figure 17-2b: Mic Template Selection When Logins Are Enabled

The flexibility of using templates assigned to different users allows you to program a system that is very easy to operate and secure from unauthorized users. A user will have the same access as they move between different microphone stations. This allows you to grant general users access to page pre-determined areas and launch specific messages while blocking them from emergency messages, such as a building evacuation. You could grant such emergency messages to security and facility management personnel and even give login information to emergency personnel such as the fire and police departments.

Using templates without logins allows you to define what announcements and messages will be available at each station. You could program a microphone station in the security office with access to launch specific security-related messages and make general and emergency announcements. You program other microphone stations where they can only make announcements and launch messages to local areas while blocking facility-wide pages.

Using various combinations of templates with microphone station logins provides you with nearly limitless combinations. You can configure the system where some microphone stations are locked and others are not. This allows you to tailor the system to meet the needs of the facility by locations or by individual users.

4.10.2 528 Mic Template Editor

When you first open the Mic Templates tab, you will see a list of templates currently programmed for use as shown back in Figure 17-1. Clicking on one of these shows information about that template to the right of the edit box as shown below in Figure 17-3.

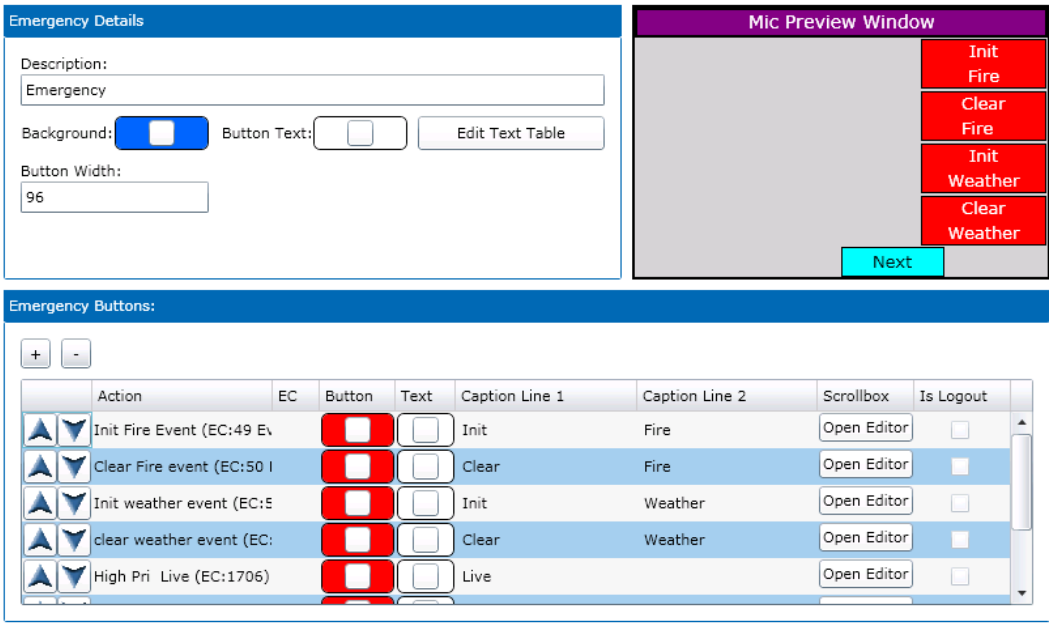


Figure 17-3: 528 Mic Template Editor

Description

This is a text field used to name and describe the template. You can edit it by double-clicking on the field and then typing in a new description. The template named Default Template is automatically included in a new system. For simple systems, you can simply modify this template if all microphone stations will have the same template. Use a description that will allow you to easily identify the template such as, Security, Fire Department, Information, Gate Agent, etc.

Background Color / Button Text Color

When you add new buttons to the template, they are created using these *default* colors. You can always edit the individual button colors afterwards, but this speeds up the process and allows you to define your color scheme before creating the buttons. When you click on the color button, the color selection window appears as shown in Figure 17-4. Simply click on the color that you want to use in the color wheel, or enter RGB (Red, Green, Blue) values in the edit boxes or the 32-bit computer expression of this in the box with the hash mark (#).

Note, this general color picker also has Alpha channel (transparency setting) setting, although this feature is not supported in the 528 mic stations.

The color picker window provides a row of the most recently used colors along the bottom of the window. This allows you to pick consistent colors when designing templates.

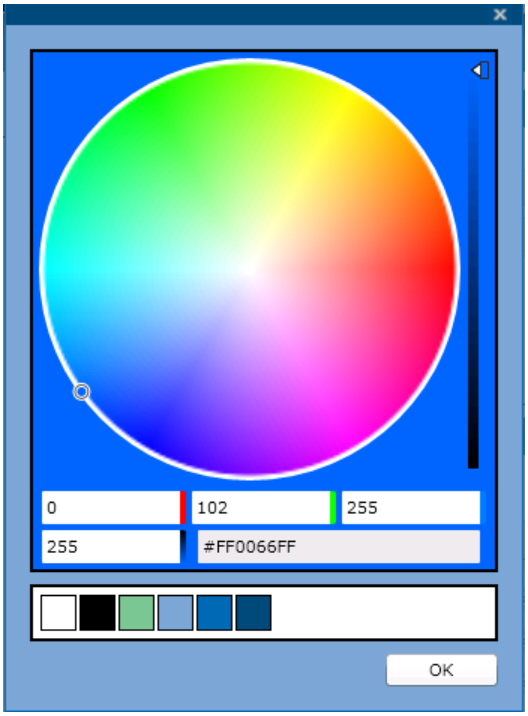


Figure 17-4: Button Color Selection

Button Width

You can adjust the width of all buttons in the template by adjusting this number. The default button width is 96 pixels. You can increase the width of the buttons if your button labels do not fit using the default setting. The maximum width is 255 pixels.

528 Mic Preview Window

This view at upper right shows an approximation to how the template will appear, such as in Figure 17-5. If **Next** and **Prev** buttons are shown, they may be clicked just like on the 528 to see additional buttons that may be defined in the template.

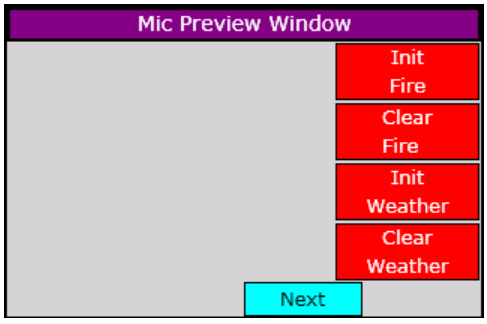
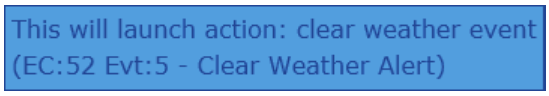


Figure 17-5: 528 Mic Preview Window

If you click on a button that has an action assigned to it, the action that would be initiated is shown in a pop-up box at the top of SMC, such as the example below:



If instead, the button brings up a Scrollbox, then the scroll box will be displayed along with Up/Down buttons to navigate as shown below in Figure 17-6. One may scroll down to an entry and click **Select** to simulate triggering the action, yielding a pop-up such as above.

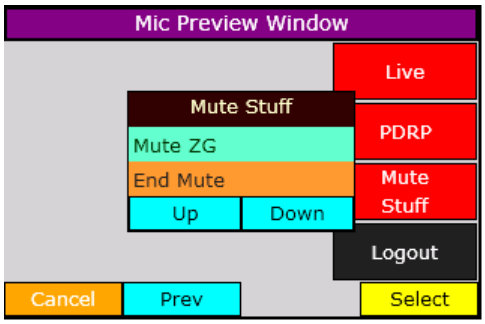


Figure 17-6: 528 Mic Preview w/ Scrollbox

Text Table

This table contains the text for the prompts that are used by the microphone station. You can edit the text in the ***Text*** column for each prompt, such as to translate to a local language.

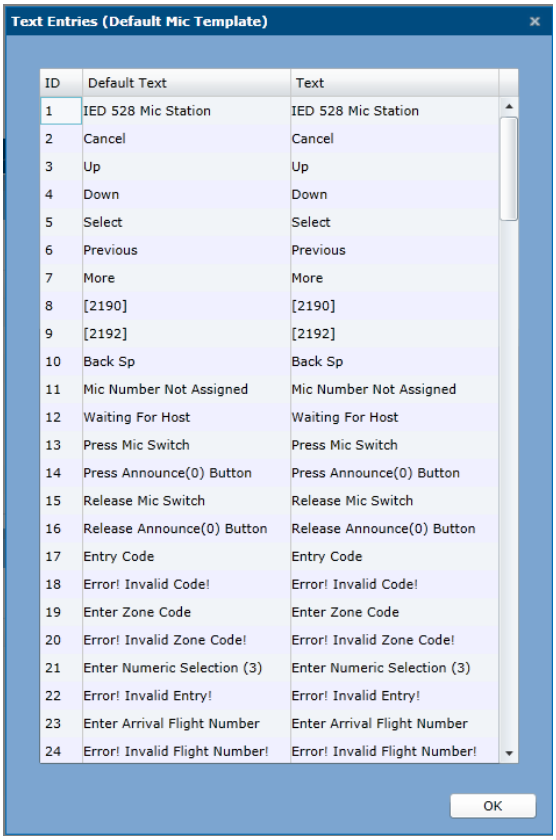


Figure 17-7: Text Table

528 Mic Template Button Editor

When you select a 528 template from the list, it will open a list of the buttons contained within that template. Figure 17-8 shows a template with several buttons. You use the **[+]** and **[-] button**s shown in the figure to add and delete buttons. The up/down arrows located on the left side of each row are used to change the position of the button in the list. The order in the list is the order in which they will appear down the right side of the microphone station display.

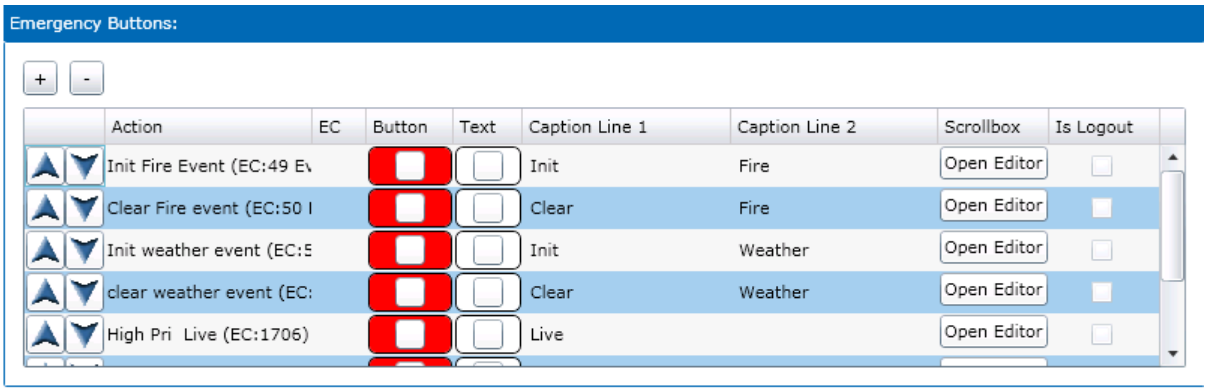


Figure 17-8: Mic Template Buttons

Action

Buttons are used to trigger actions that have already been defined for the 528 type microphone stations. When you double-click on the ***Actions*** field for a button, a drop-down list appears as shown in Figure 17-9. Select the action that this button will launch. You can click on the Edit button immediately to the right of the list to open the editor window for the selected action. You can delete the action assignment from the button by clicking the **[-] button**.

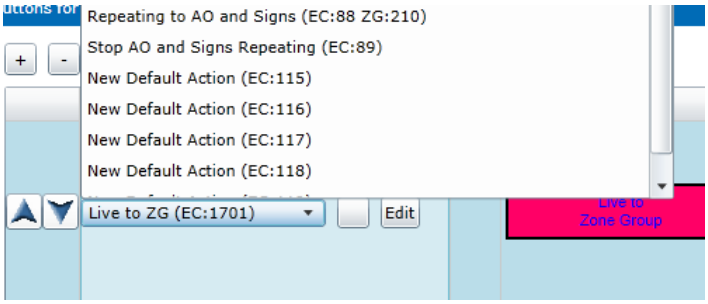


Figure 17-9: Assign an Action to a Button

EC (Entry Code)

You can directly type in the numeric entry code in this field. Typically, you will select actions from the drop-down list, but in some special situations you must use this field when the microphone station is launching actions that are not part of the local system. For example, this might be the case when you are using the optional Flight Announcement System (FAS) that utilizes the *IED Enterprise* software suite with an external SQL database.

Button Color / Text Color

New buttons are created using the colors selected at the template level. You can use the fields here to change the individual button colors. Clicking the buttons in the middle of the color bars in each cell brings up the color picker such as the one shown in Figure 17-4 above.

Caption Line 1 / Caption Line 2

Each button supports a maximum of two (2) lines of text for the button caption. If the text entered in the ***Caption Line 1*** field is too wide for the button, it will automatically scroll to the next line. However, it will probably not separate the way you want, so two fields are provided so you can specify exactly what you want to appear on each line.

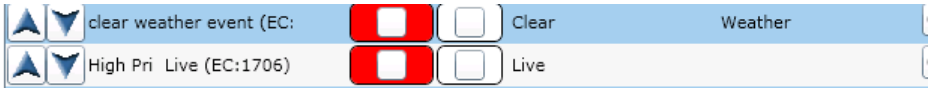


Figure 17-10: Single and 2-Line Button Captions

Scroll Box

This field displays a list of the items contained within the scroll box if the button is defined as a scroll box button. Double-click this field and you will see an ***Open Editor*** button appear. Click this button to open the scroll box editor. Refer to the ***Scroll Boxes*** section that follows for more information on creating scroll boxes.

Is Logout

When checked, the button will only be used to log the user out of the microphone station. It will only appear if the microphone station is configured to use logins. If the button is defined, but the lock feature is disabled in the microphone station setup, then the button will not be visible.

Scroll Boxes

Scroll boxes allow you to create a list of items from which you scroll through and select. Each item in the list is then associated with an action or entry code. When a button has a scroll box defined for it, pressing the button will result in opening the scroll box. You then simply scroll up and down on the microphone station to select the item you wish to use.

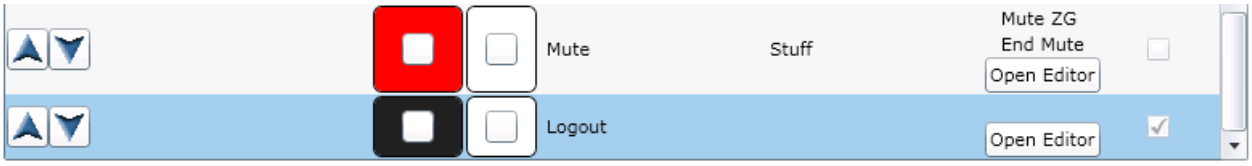


Figure 17-11: Buttons with Scroll Boxes

Figure 17-11 shows a template that has a button with a scroll box. You can see a list of the items in the ***Scrollbox*** column. To create a scroll box for a button or edit an existing one, simply click on the ***Open Editor***.

Figure 17-121 shows the scroll box editor. From here, you can edit the appearance of the scroll box and add or remove items from the list. You will see a preview of the scroll box at the bottom of the window. This is used to help you set the colors for the scroll box. The preview is limited to show only the first three items in the list and the width setting will not affect the width of the preview. Click the **OK** button to save changes and close the window.

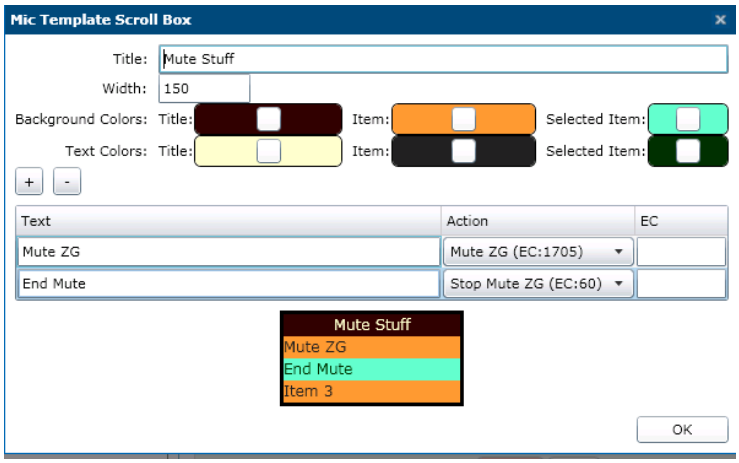


Figure 17-12: Scroll Box Editor

Title

This is the text that will appear at the top of the scroll box when it is open.

Width

This is the width (in pixels) of the scroll box as it will appear on the microphone station. A value of 250 is a good width for most applications with a maximum width of 320.

Background Colors / Text Colors

This group of buttons allows you to select the background and text colors of the three different types of items in a scroll box. Figure 17-13 points out where each type of item will appear in the scroll box. The selected item will move as you scroll through the list.

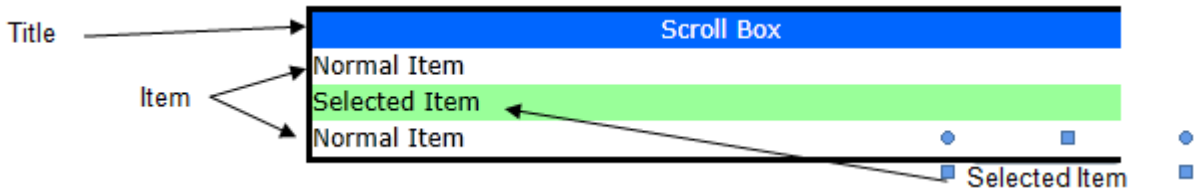


Figure 17-13: Scroll Box Item Colors

These icons are used to add or delete items in the list. Click the **[+] button** to add a new item. Clicking the **[-] button** will delete the currently-selected item.

Text

This is the text that will appear in the scroll box item list. Double-click this field and type in a name for the item.

Action

To assign an action to a scroll box item, click in the ***Action*** column to open a drop-down list of available actions. Select the appropriate action from the list as shown in Figure 17-14.

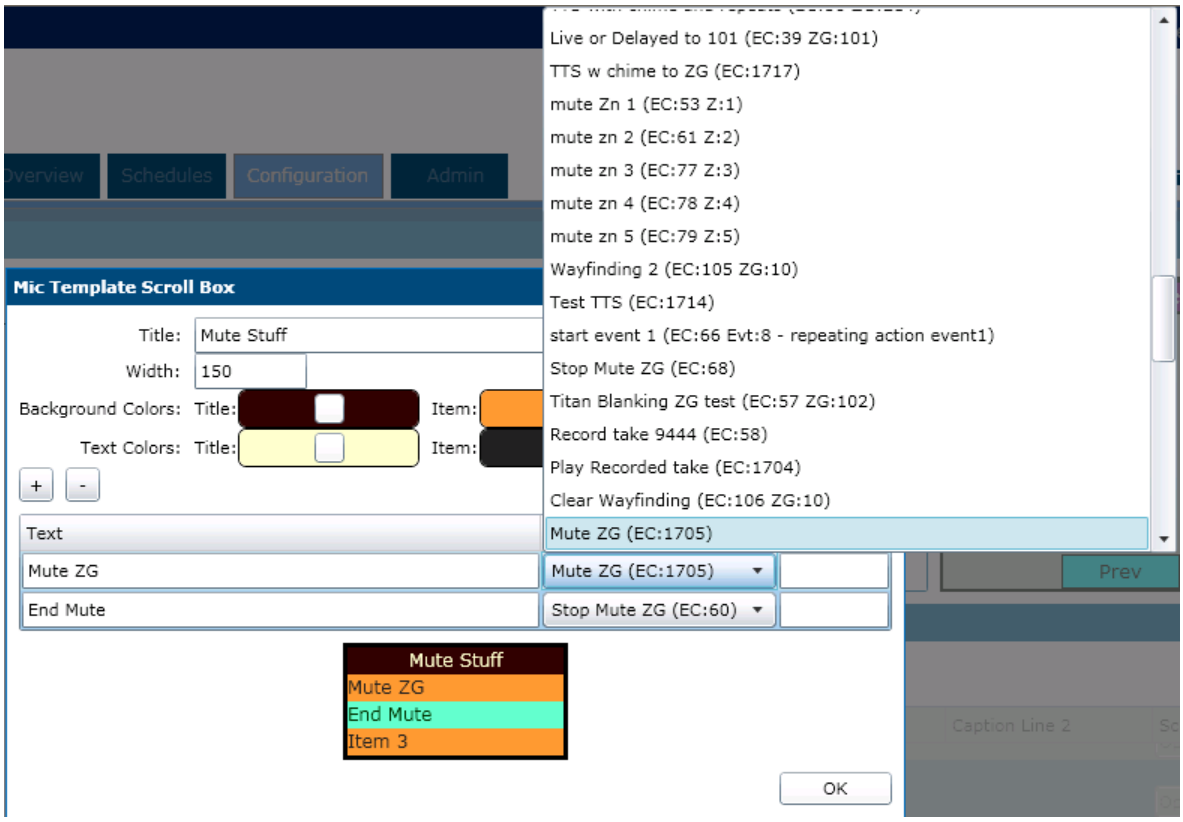


Figure 17-14: Scroll Box Item Action Selection

EC (Entry Code)

You can directly type in the numeric entry code in this field. Typically, you will select the action from the drop-down list, but you must use this field when the microphone station is launching actions that are not part of the local system. This is the case when you are using the optional Flight Announcement System (FAS) that utilizes the *IED Enterprise* software suite with an external SQL database.

4.10.3 Touch Screen Mic Station Template Editor

A touch screen template is a set of one or more pages of the designer's choosing. The basic template editor appears as the example in Figure 17-15.

Figure 17-15: Touch Screen Template Editor

At the top of the editor are a few properties that apply to the whole template:

Description

The name of this template, as it will appear in other parts of SMC for selection.

Language

The language to display built-in status screens in. For example, when the mic station is ready, busy or active, there is a status screen that appears on the mic station. This setting controls the language of the text on this screen and its buttons.

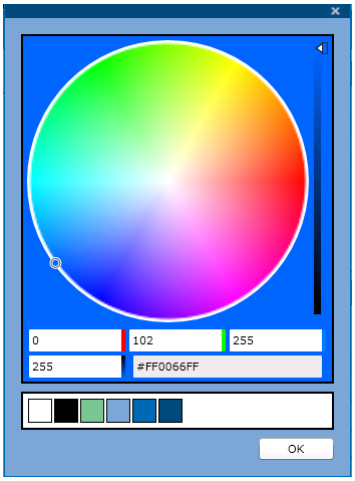
Alternate Templates

This feature is to support multi-lingual operation of a mic station, where the operator for one shift or flight prefers a template labeled in one language while the operator at another time prefers a different language. To support this, two templates can be created, for example one with all the labeling in French and the second with all the labeling in English. One of these will be the default template for a mic station and the second one will be designated at the alternative (checkbox checked in the area shown in the figure above).

When an alternate template is defined, a new icon appears at the top of the touch screen mic station with a globe on it. Clicking the icon, drops a list box with the available alternate templates. The user can click on one of these alternates to load that template (as shown at right).

Header

The background color of the header bar at the top of the screen. Clicking the button in the middle of the color bar brings up color picker, such as shown at right.



Title

The text color of the header bar text. Clicking the button in the middle of the color bar brings up the color picker.

Background

The color of the background behind the buttons and other controls below the header bar. Clicking the button in the middle of the color bar brings up the color picker.

Image

Click to load a background image to go in place of the solid background defined by the ***Background*** selection. The image will be stretched or shrunk to fit the 800 x 424 pixel area below the header bar. For best results, you may want to design for and/or scale your graphic file using image editing software to fit the 800x424 area, rather than rely on the automatic scaling done.

Reset

Clicking on this clears any previously loaded background image, and resets the template colors to the default blue scheme. If there was an image previously selected, SMC will do a Yes/No confirmation prompt before resetting.

Below the template-level properties are the template pages area. This area shows previews of all the configured pages along with the following buttons:

Add a new template page. Calls up the Add Page Selector pop-up as shown in Figure 17-16. Note, there are currently six styles of pages available (more may be provided in future releases) as shown slightly larger in 17-17 and listed below:

- **2, 4, 8 and 16 button pages** – These pages have N buttons on a page that can be individually configured.
- **Icon page** – This page has slots for 40 icons which may be configured as web camera feed displays or generic web page displays, such as to access additional functions in a system.
- **Zone picker page** – This page has a scrollable list of zones or zone groups on the left and found buttons on the right, which can be configured as alarms or actions to the selected destination zones from the picker on the left.

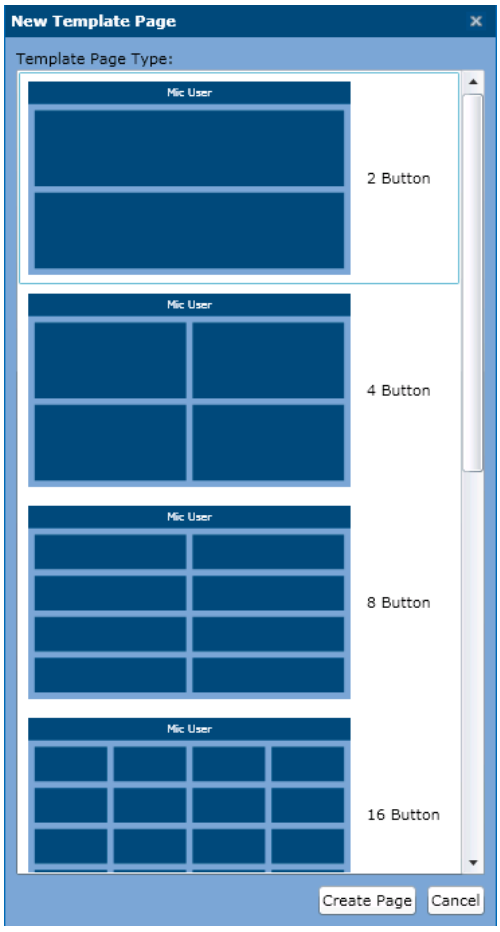


Figure 17-16: Add Page Pop-up

- **Intercom/Monitor page** – This page has a scrollable list of intercom devices (e.g., IP speakers) on the left and Intercom/Monitor action buttons on the right. As an alternative to selecting from the list, it also has an edit box for entering the Access Code for the desire device.
- **FAS Widget page** – This page is the Flight Announcement System (FAS) mini-application that can run on the touch screen mic station, provided the AtlasIED FAS option has been purchased for the system.

Delete the currently selected template page

Move the template page left in the page order.

Move the template page right in the page order.

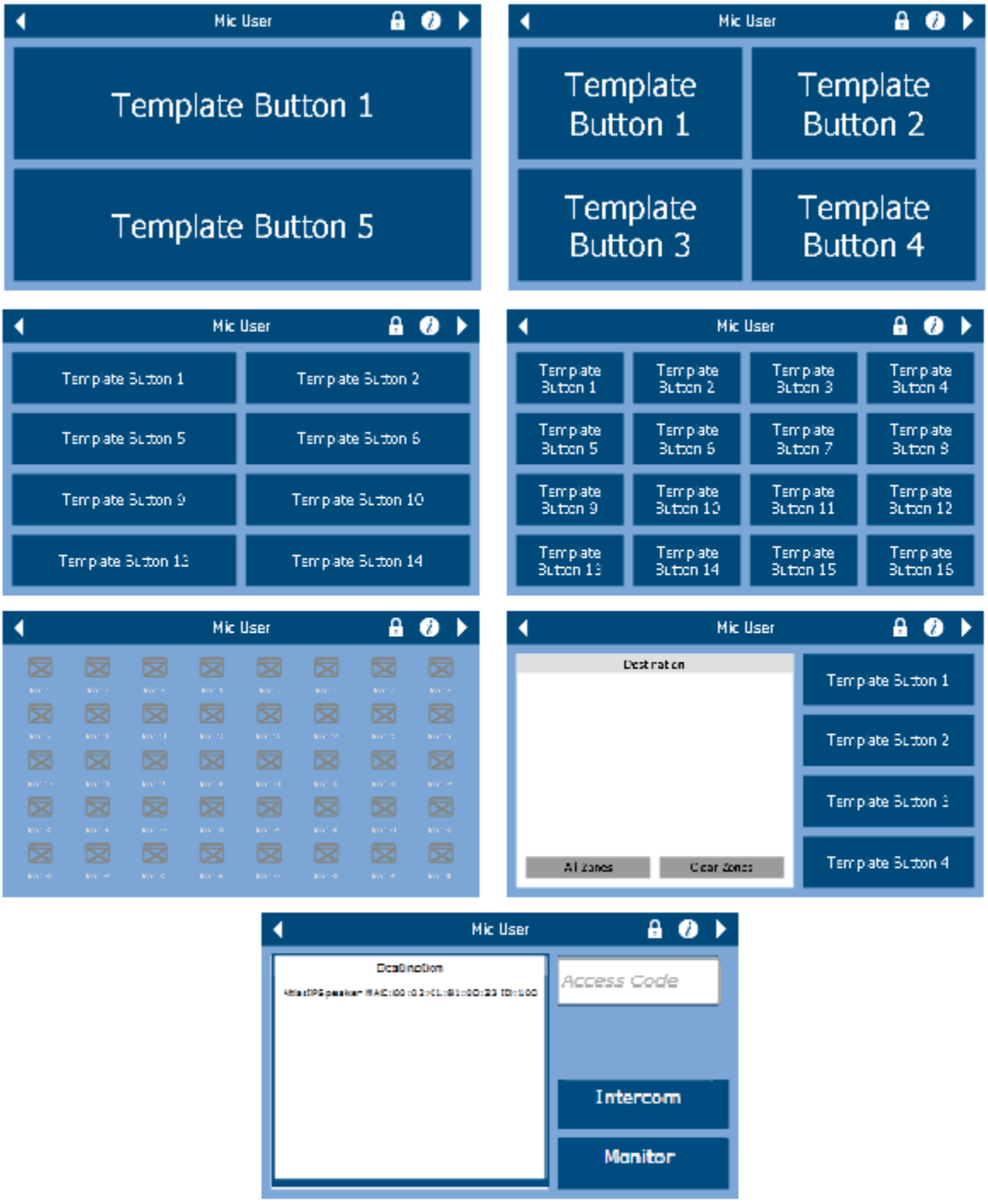


Figure 17-17: Touch Screen Mic Station Template Page Options

Buttons Template Page Type

To Edit a button in any of the 2, 4, 8 or 16 button template pages, one clicks on the button in the page depiction. This selects the button and turns it to a green outline and brings up the button details area below it such as shown in Figure 17-18.

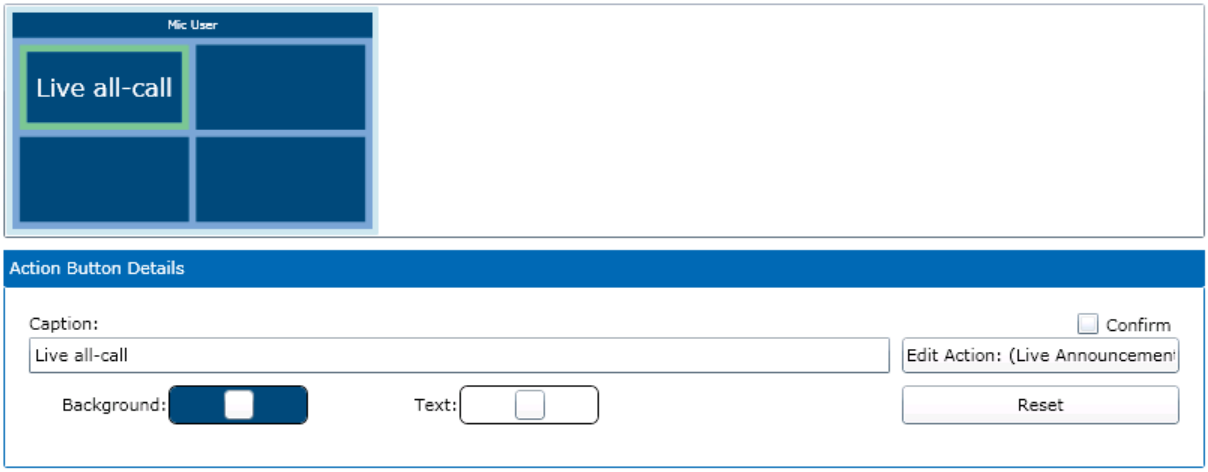


Figure 17-18: Touch Screen Mic Station Template Button Details

Some of the properties/controls shown will vary depending on choices made in Button Results and Action Type controls. The properties available include:

Caption

The label for the button. The caption will auto-wrap to fit the left-right space of the button. However, if one wishes to break lines in other places, the two-character new-line sequence of "\n" may be used. For example. If one simply types in the caption "High Five", it will appear on one line centered in the button on most buttons sizes. If one types in the caption "High\nFive", then "High" and "Five" will appear on two lines.

Confirm

Flag indicating that the paging station user should be presented with a Yes/No prompt, and have to answer "Yes" before the action is initiated. For example, one may wish to put this kind of confirmation on initiation of emergency messages.

Edit Action button

Click on this button to bring up an Action Details form. The action can then be editing just like any other action for other devices in SMC. See the chapter on Actions for more details.

Background

Set the color of the button background via the pop-up color picker (as shown above). Note, this is the one place where the Alpha channel (transparency) setting may be of good use. One can make the button background partially or fully transparent to allow the background image to show through.

Text

Set the color of the button text via the pop-up color picker (as shown above).

Reset

Clicking on this resets the button to the default color scheme.

Icons Template Page Type

To configure the **Icons Page**, one clicks on one of the 40 icons on the page. This changes its background to green and brings up the icon details below it as shown in Figure 17-19.

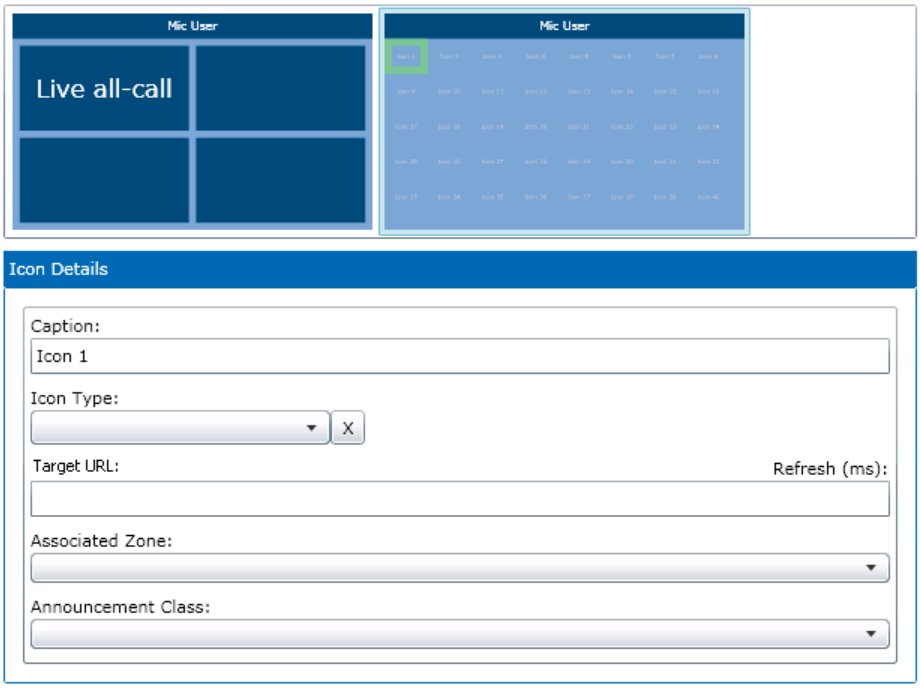


Figure 17-19: Touch Screen Mic Station Template Icon Details

Icon Type

The choices in this control are:

- **(None)** – This icon is not used and will be blanked on the paging station. If one of the other types is selected, pressing the [X] button will restore the icon to this state.
- **Generic Web Page** – Call up a web page as defined in the Target URL.
- **Security Camera Feed** – Call up the images from a web camera that resides on the same network as the system. Optionally, the icon can be configured to do a live page to the area that the camera is viewing.

Target URL

This is the web address of the Generic Web Page to call up when this icon is pressed. This should be a complete properly formed URL (Uniform Resource Locator) address, including any protocol preface such as "http://".

Security Camera Feed URL

This is the Uniform Resource Locator address to the security camera from which to pull the feed.

Refresh Time (ms)

How often to pull a new image from the security camera. Suggested values are 250 ms or higher. The touch screen mic station cannot support real high frame frames.

Associated Zone

If configured, then there will be a mic station icon appear overlaid on the security camera feed (as shown at right). This configures and enables a Live Announcement action to this zone, using the announcement class defined in the next field.

Announcement Class

The announcement class (priority and other properties) for the Live Announcement to the ***Associated Zone*** if clicked by the mic station operator.

Zone Picker Template Page Type

To configure the **Zone Picker** page, one must configure both what destinations are on the picker list and what actions are on the four buttons on the right. The four buttons on the right are configured similarly to the buttons on the button template page types, as described above. The only difference is that no zone or zone group is defined for the action, since this information comes from the zone picker list on the left.

To configure the zone picker list, one clicks on the list area on the left, which highlights it with a green border and brings up a details section as shown in Figure 17-20. In this area, one can enter the text to appear at the top of the list (by default the word “Destination” as shown in the figure), and create the list to choose from. One clicks on the [+] button to call up the zone group selector window (see Figure 17-21) to add a zone group to the list. The zone groups can be rearranged (re-ordered top to bottom) by selecting a group and pressing the up/down ([↑]/[↓]) buttons to move the entry in the list.

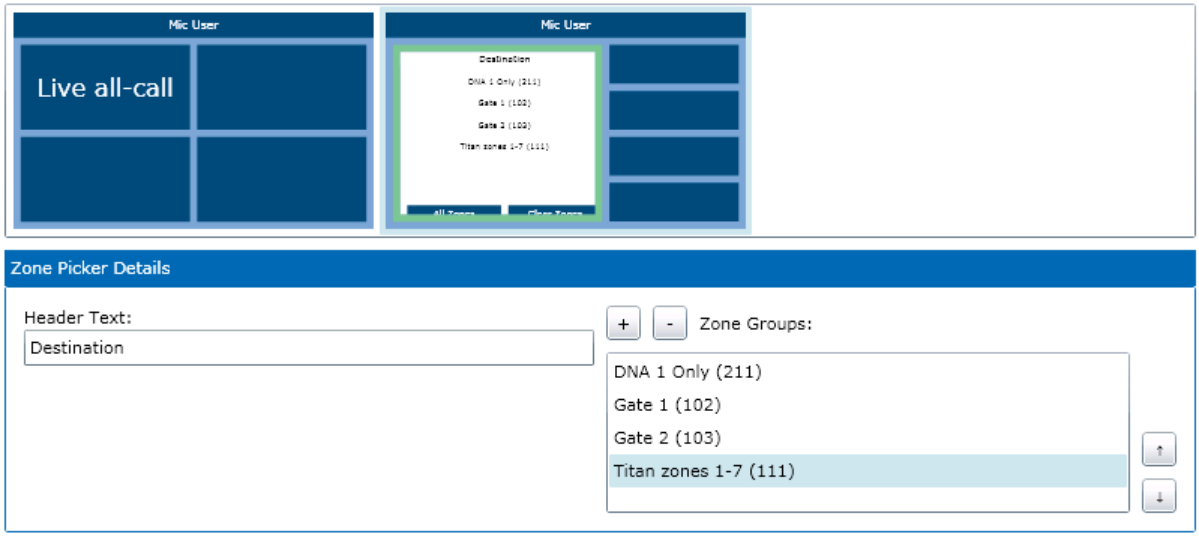


Figure 17-20: Zone Picker List Details

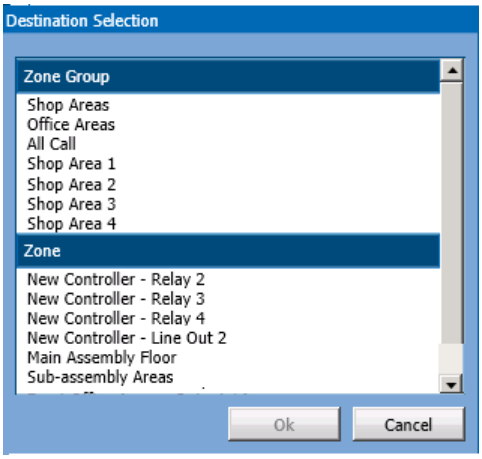


Figure 17-21: Zone Group Selector

Intercom/Monitor Template Page Type

To configure the **Intercom/Monitor** page, one has minimal configuration to do. They can define the caption over the list of destinations (e.g., IP Speakers) and the caption in the access code edit box. The actions for the two buttons Intercom and Monitor are defined, but the user can select some of the properties for the actions, such as the announcement class (priority) and pre-announcement/monitor tones to play.

To configure either the Intercom or Monitor actions, one clicks on the appropriate button as shown in Figure 17-22 and edits the properties shown below it.

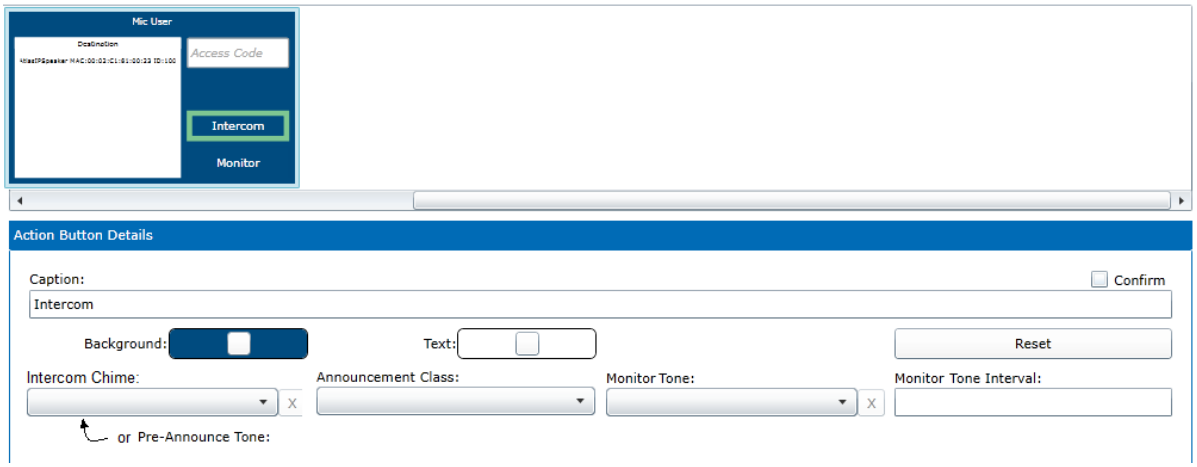


Figure 17-22: Intercom/Monitor Action Button Details

The fields to be edited are listed below.

Caption

The label for the button. The caption will auto-wrap to fit the left-right space of the button. However, if one wishes to break lines in other places, the two-character new-line sequence of "\n" may be used. For example. If one simply types in the caption "High Five", it will appear on one line centered in the button on most buttons sizes. If one types in the caption "High\nFive", then "High" and "Five" will appear on two lines.

Confirm

Flag indicating that the paging station user should be presented with a Yes/No prompt, and have to answer "Yes" before the action is initiated. For example, one may wish to put this kind of confirmation on initiation of emergency messages.

Background

Set the color of the button background via the pop-up color picker (as shown above). Note, this is the one place where the Alpha channel (transparency) setting may be of good use. One can make the button background partially or fully transparent to allow the background image to show through.

Text

Set the color of the button text via the pop-up color picker (as shown above).

Reset

Clicking on this resets the button to the default color scheme.

Announcement Class

The announcement class (priority and other properties) for the intercom or monitor action.

Intercom Chime / Pre-Announcement Tone

This drop list allows for selection of a pre-announce tone from the Chime library to play at the start of intercom or monitor connection.

Monitor Tone

This drop list allows for selection of a monitoring tone (notification that room is being listened to via the intercom device) from the Chime library. This tone is used on both intercom and monitor type actions.

Monitor Tone Interval

This is the time in **seconds** between plays of the Monitor Tone.

FAS Widget Page Type

To configure the FAS Widget page type, one needs to define only two things: the network address of the FAS server (e.g., the PRIZM server) and whether to display all flights or not. If left unchecked, then the mic station user will only see flights that they are login permissions to operate on (e.g., logged in as airline X employee). If checked, they can view all flights at the gate in the time roll window, although they cannot access/control the other airlines flights.

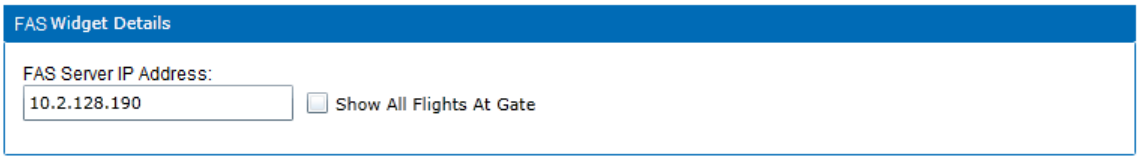


Figure 17-23: FAS Widget Page Details

4.11 Mic Passwords

This section is used to configure user access to microphone stations that have the Lock Enabled box checked in the microphone station setup.

*Note: **IP Only SMC** will not show this Mic Passwords in Figure 18-1b, i.e., without the User Group, 528 Template and 550 Template columns.*

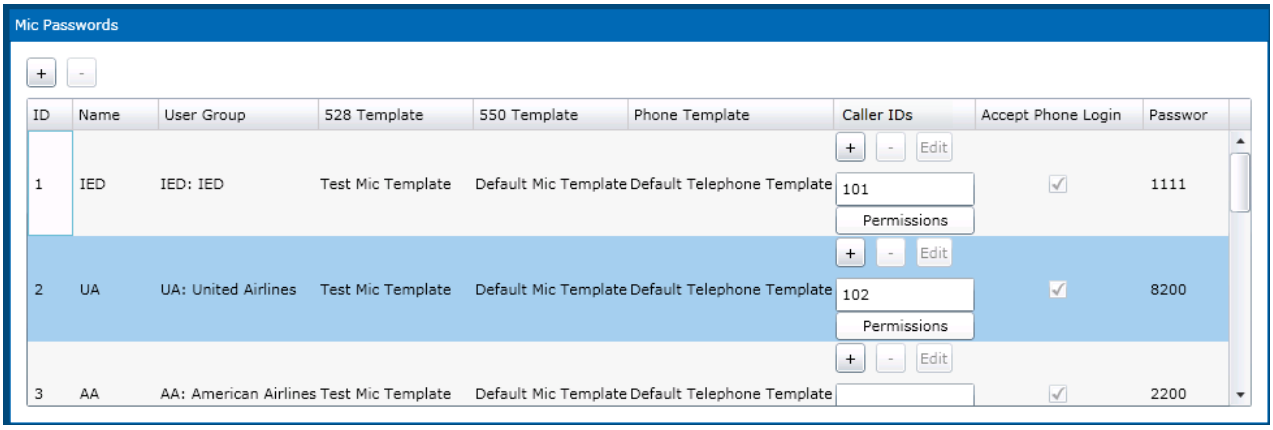


Figure 18-1a: Mic Passwords

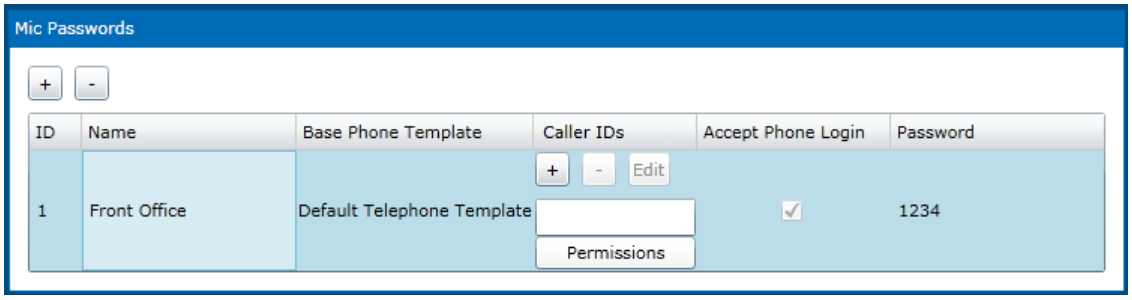


Figure 18-1b: Mic Password (IP Only SMC)

Click this icon to add a new user to the list.

Click this icon to delete the highlighted item from the list.

ID

This is an index number used to identify the user. It is system assigned and cannot be edited.

Name

This is a text field used to describe the user. It could be an individual name, department, or other entity. Double-click this field to edit the text.

User Group

This will associate the user with a user group. Double-click this field to open a dropdown list that is populated with the information in the ***User Groups*** tab.

528 Template

Use this field to assign a graphical template to a user when they log into a 528 mic station. This is how you will control what announcements a user can access from a graphical paging station. When logins are enabled, a user must enter their password to gain access to the microphone station. The graphical template that appears when they access the station is determined by the selection specified in this field. Double-click the field to open the dropdown list.

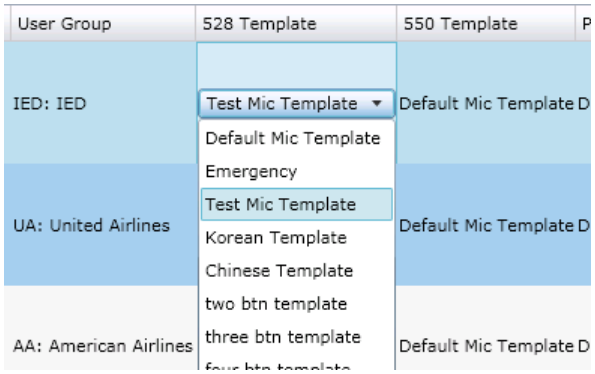


Figure 18-2: 528 Template Selection

550 Template

Use this field to assign a graphical template to a user when they log into a touch screen mic station. This is how you will control what announcements a user can access from that type of mic station. When logins are enabled, a user must enter their password to gain access to the microphone station. The graphical template that appears when they access the station is determined by the selection specified in this field. Double-click the field to open the dropdown list.

Phone Template

Use this field to assign a telephone-prompting template to a user. This is how this user will interact via telephone dial-in – modified by the Permissions setting described below.

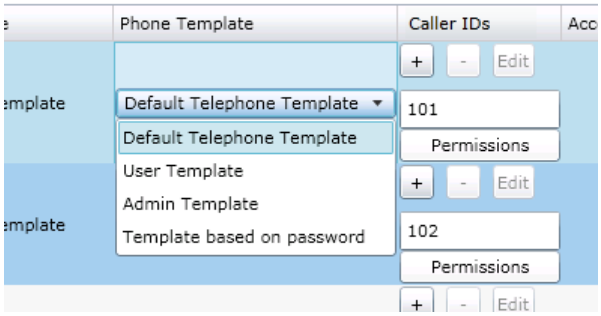


Figure 18-3: Phone Template Selection

Caller IDs

When a telephone number or phone extension name (e.g., VoIP phone systems) is in this list and Caller ID is enabled for the phone extensions, the system will automatically login this user when the caller ID for the incoming call matches. This allows users from certain offices/phones to access the telephone interface without having to enter a password. Use the **[+] button** to add a new Caller ID to the currently-selected user. You can then type in the number/name in the window as shown in Figure 18-4. This same window appears when you select the edit icon. Select the **[-] button** to delete the highlighted number from the list.

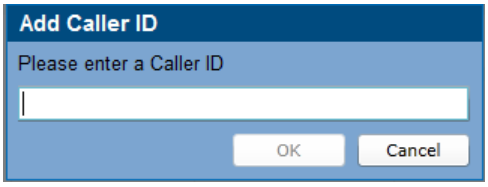
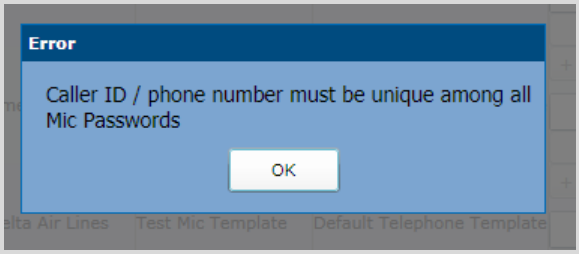


Figure 18-4: Add a Caller ID

Note: Just like mic passwords, telephone extensions must be unique across all users (in order to uniquely define the user). When the same extension is assigned to multiple mic passwords, the user will be warned in a pop-up messages such as the one below.



Permissions

This button calls up a pop-up window, as shown in Figure 18-5, that is used to define what types of functions this user can do on the telephone interface. The maximum number of functions is defined by the ***Telephone Template*** selected in that column. This field allows you to assign a subset of those possible functions to this particular mic password. Telephone functions include paging to a zone group, making intercom calls, monitoring rooms, etc.

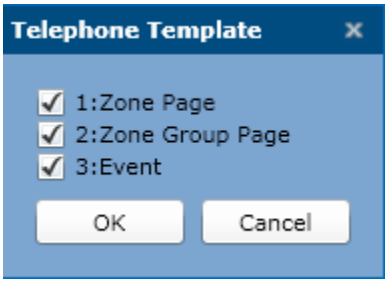


Figure 18-5: Telephone Permissions Pop-up Window

Accept Phone Login

When checked, this user with this Mic Password will have the ability to access the system from the VoIP telephone interface. Leaving this unchecked will block a user from accessing the system via the telephone while still allowing them access using a microphone station.

Password

This is a numeric password to be used for login. This password can be used from either a microphone station or telephone interface if enabled. It is used for manual entry on the telephone interface when the caller ID does not match a phone number for any user.

4.12 Events

Events

Events allow you to trigger multiple actions from a common stimulus and create items to be launched from the Paging Console. Each event is made up of multiple actions that are defined specifically for each event. In addition to the basic action definition properties, each action within the event has an additional property that allows the action to be launched at a predefined time interval after the initial launch of the action. Events are launched by programming actions for microphone stations, logic inputs, or from the SMC Paging Console.

Events are ideal for handling complex emergency situations where you need to deliver different instructions to different areas of the facility, or even different buildings. An event allows you to play an evacuation message to one area while issuing a warning message to the rest of the facility instructing occupants to stay in place until the situation has been resolved. This can be combined with visual alerts to direct occupants to the nearest exit.

Figure 19-1: Events

Programmed events will appear in the events list as shown in Figure 19-1. When an event is highlighted by selecting it with the mouse, the view is expanded to show the details of the event as shown in Figure 19-2. This expanded view shows the individual actions assigned to the event and a play schedule that shows when each action will be triggered within the event.

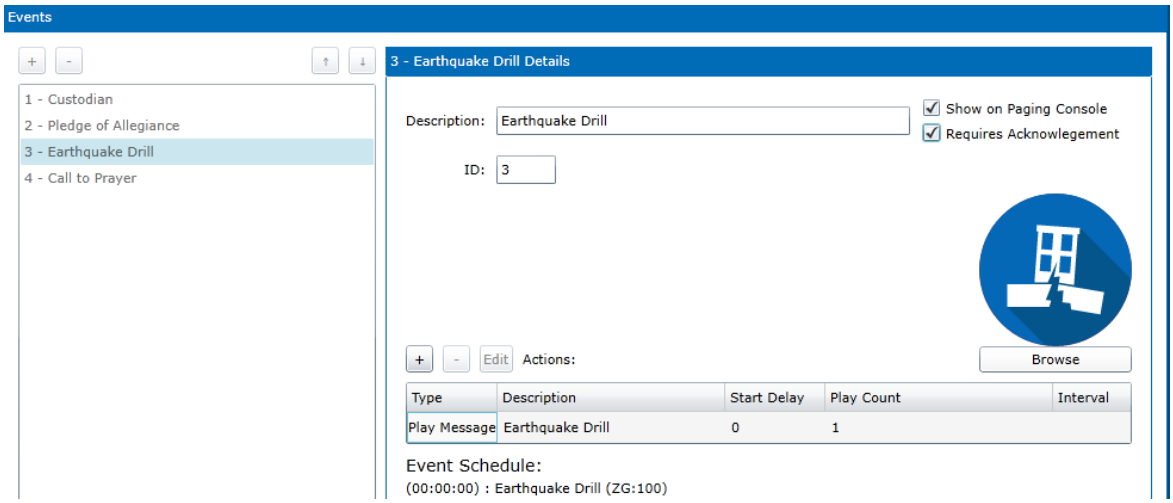


Figure 19-2: Event Details

Click this icon to add a new event to the list.

Click this icon to delete the currently selected event from the list.

Description

Enter a text descriptor for the event. This text is displayed in the event list to name the event.

ID

The event identifier, which must be unique. By default SMC assigns the next higher number. But, when these events are triggered by external software like Director or custom interfaces, the exact ID needs to be known and configured in that software. In this case, the installer may wish to assign these IDs according to some logical scheme.

Show on Paging Console

Checking this checkbox will make this event appear in the SMC Paging Console. This also enables a control for setting the 128x128 pixel icon that appears with the event on the console. By default, the SMC generates an icon of a letter in a circle, such as in the example. (SMC auto-selects the letter from the Description.) However, the user can select an icon of their choosing by clicking on the ***Browse*** button and selecting an icon file. Most of the common graphic file formats are supported. SMC will attempt to auto-scale to 128x128, but you may want to make and icon with that size in mind or manually scale it before importing it.

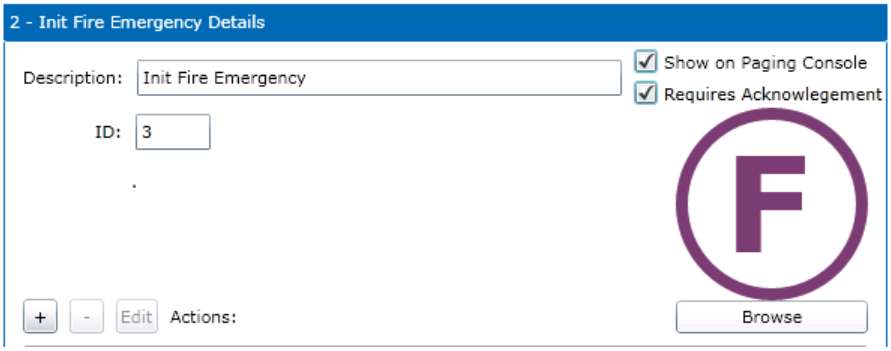


Figure 19-3: Paging Console Icon

Requires Acknowledgement

If this event should prompt building occupants to press a button on room intercoms, mic stations or other devices to acknowledge that they have heard the announcement and have complied (e.g., lock down a classroom or proceed to evacuate the area). Viewing the acknowledgements requires a separate web page application as detailed in Appendix G.

Actions

Actions are added, removed, or modified from the actions list using the icons shown in Figure 19-4.

Figure 19-4: Action Icons

Click this button to add a new action to the event. This will automatically open the action definition window. Once an action has been added, it is configured identically to actions that are used by devices***,*** *except that repeats are not handled in the action, but at the Event level via the Play Count and Play Interval columns in the Event's Action grid.*

Edit

This button is used to edit the highlighted action. This will open the action definition window for the highlighted action.

Click this button to delete the highlighted action, thus removing it from the event.

The actions list displays the actions that are currently programmed for the event. Figure 19-5 shows an event with two emergency prerecorded messages to be played to two different areas (zone groups).

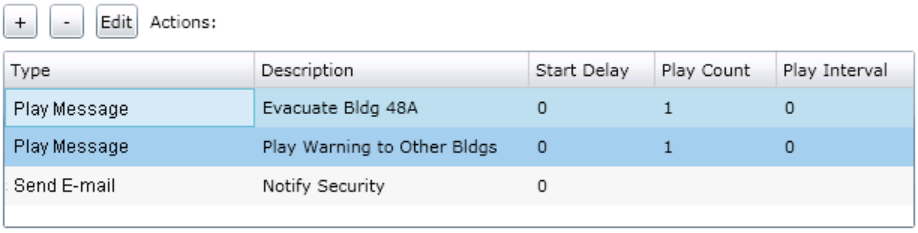


Figure 19-5: Actions List

Type

This displays the action type that has been selected for the action. You must open the action definition window to edit this property.

Description

This displays the description for the action. You must open the action definition window to edit this property.

Start Delay

This is the time (in seconds) that the system will wait to launch the action after the event has started. This field is edited directly in the list by double-clicking on the field and typing in the value.

Play Count

This is the number of times to launch the action within the event. It is edited by double-clicking on the field and typing in a new value. A value of 0 indicates that the action will repeat continuously until it is stopped by an appropriate action.

Play Interval

This is the time between successive playbacks of the action. Positive numbers are used to designate an interval in minutes while negative numbers are used to designate an interval in seconds (5 would be 5 minutes, –30 would be 30 seconds). This time is from the start of the first playback to the start of the next one. If the interval is set to 30 seconds and the message is 10 seconds in duration, then there will be one 20 seconds between playbacks. It is edited by double-clicking on the field and typing in a new value.

Event Schedule

The event schedule shows a time line for the event. It will show you at what point each action will be launched after the event has been launched. Figure 19-6 shows and example event schedule. You can see that the first action plays five times, once every minute. Then, after 10 minutes the second event plays five times, once every minute. It also shows the zone or zone group for the action.

Type	Description	Start Delay	Play Count	Play Interval
Prerecorded	repeating evt 2 action 1	0	5	1
Prerecorded	repeat event 2 action 2	10	5	1

Event Schedule:

(00:00:00) : repeating evt 2 action 1 (Z:3)
(00:01:00) : repeating evt 2 action 1 (Z:3)
(00:02:00) : repeating evt 2 action 1 (Z:3)
(00:03:00) : repeating evt 2 action 1 (Z:3)
(00:04:00) : repeating evt 2 action 1 (Z:3)
(00:10:00) : repeat event 2 action 2 (Z:4)
(00:11:00) : repeat event 2 action 2 (Z:4)
(00:12:00) : repeat event 2 action 2 (Z:4)
(00:13:00) : repeat event 2 action 2 (Z:4)
(00:14:00) : repeat event 2 action 2 (Z:4)

Figure 19-6: Event Schedule

4.13 Visual Alerts and Wayfinding

Visual Alerts and Wayfinding

Visual Alerts allow you to display graphical images on visual displays to provide situational information to occupants in the facility. Visual Alerts are activated within certain action types and will remain on the displays until cleared. You can create simple scenarios that display a single static image on the displays to inform occupants of a certain condition such as a fire or a weather alert. The system supports more complex scenarios such as displaying directional arrows to guide people to the nearest emergency exit or to sheltered areas of the facility. In this case, each display is configured to display a situation-appropriate graphical image.

An action can trigger a single Visual Alert. Within each alert, you can have one or more images to be shown on displays while the alert is active. In the configuration of each display, you select the specific image to use for each visual alert.

Figure 20-1: Visual Alerts and Wayfinding

There are eight available slots that can each be setup for a different scenario. To add a new scenario to an empty slot, simply highlight it and begin making changes in the options that appear to the right.

Name

Input the Visual Alert scenario name here.

+

Click this icon to add a new image to the selected Visual Alert scenario.

-

Click this icon to delete the currently selected image.

Image

This is a small thumbnail preview of the image file selected.

Browse

Click this button to choose the image file to use. This will open a standard Windows open file dialog window as shown in Figure 20-2. From here, you should locate and open the file that you wish to use. Once complete, a preview of the file will appear in the ***Preview*** field of the image list.

Figure 20-2: Load Image File

Description

Use this field to enter a text description of the image. Double-click the field to enter/edit the text.

Visual Alert Usage

Figure 20-3 shows the Visual Alert field as it appears when defining an action. You can see that the eight scenarios in Visual Alerts and Wayfinding are available for selection. An additional item, **Clear Alert**, is used for an action that will clear an active alert. Refer to the Action Types section for more details on configuring system actions.

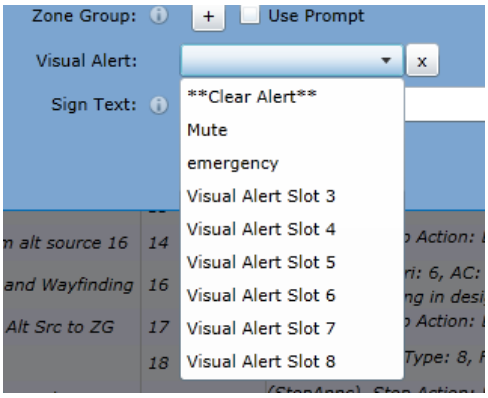


Figure 20-3: Visual Alert Usage

Figure 20-4 shows the configuration screen for a display device. Here, you see that there is a dropdown selection list for each alert scenario in the ***Visual Alerts and Wayfinding*** list. Refer to the ***Devices*** section for more information on configuring displays in the system. From this list, you select which image this display will use when each alert is activated.

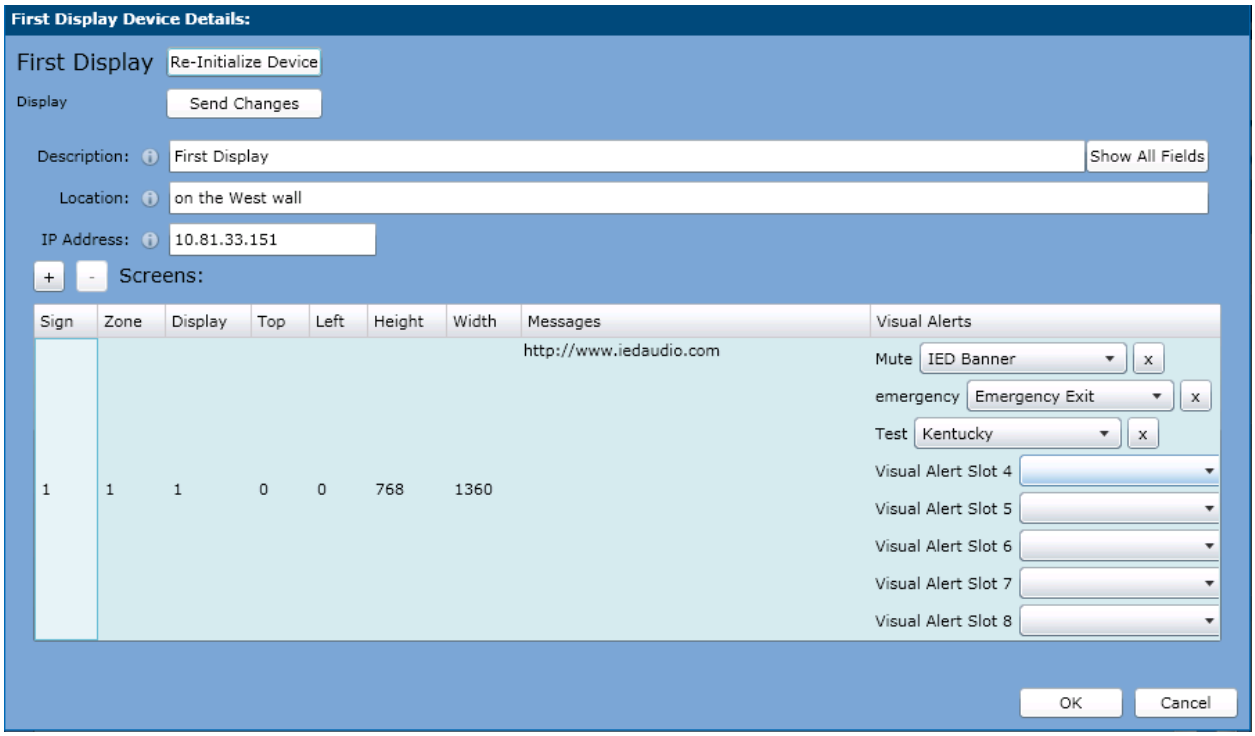


Figure 20-4: Visual Display Configuration

4.14 E-mail Lists

E-mail Lists allows the system to send text messages to one or more e-mail accounts. Using e-mail portals provided by most mobile phone providers, SMS (Text) messaging to mobile devices can be sent this way as well. E-mail lists are used as destinations in actions (e.g.,. when an emergency message is triggered) or as a place to report faults in the system.

Note: E-mail Messaging requires a connection to an E-mail server via the network.

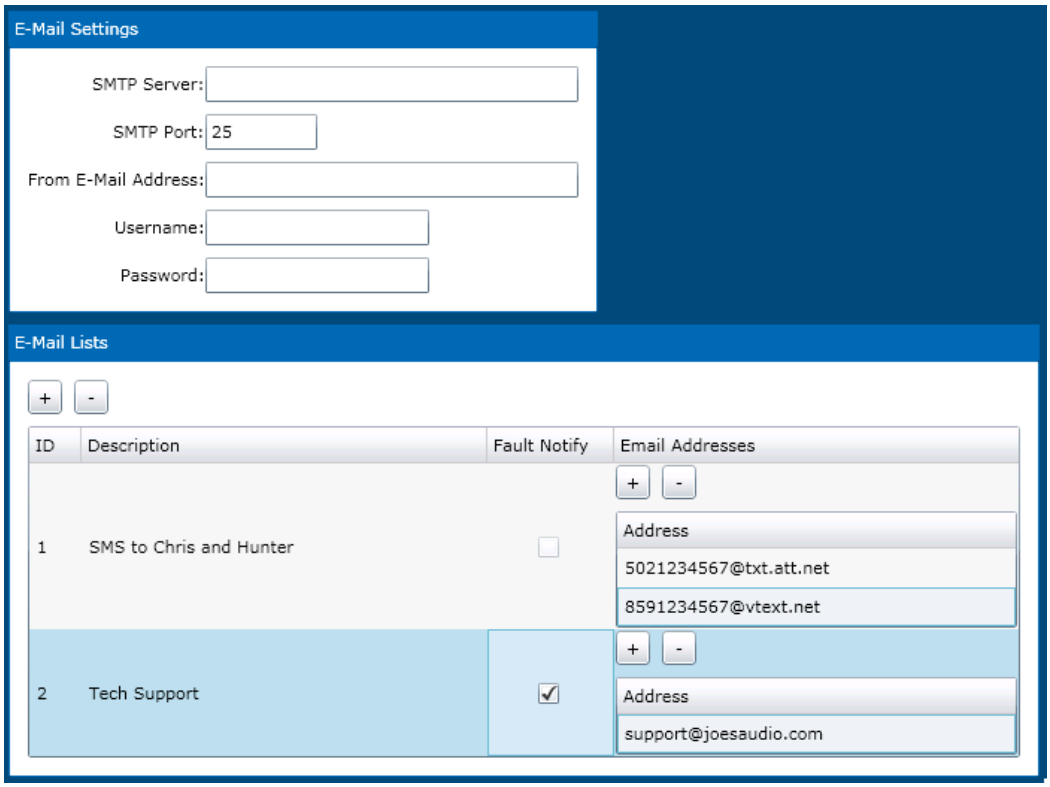


Figure 21-1: E-mail Lists

The areas on this page are as described below. The top section of this page are how to access and log into the SMTP (e-mail) server. This information should be provided by the local network or IT support. It is how GLOBALCOM will log-in to the e-mail server to send its e-mail messages. The lower portion is a set of E-mail lists. Each (big) row is one "list" which can contain one or more Email Addresses. In the example above, the first list has two SMS message entries (one to ATT mobile and the other to Verizon). The second list is simply one e-mail address, such as one that might be used to report faults.

SMTP Server

This is the e-mail server address, such as "gmail.com" or "mycompany.net".

SMTP Port

This is the port used for SMTP (Simple Mail Transfer Protocol) messages. The default is 25, but some facilities use a non-standard port, such as for added security.

From E-Mail Address

This is the account name that GLOBALCOM will send the e-mail from. That is, when recipients get the message they will see this in the "From" portion of the message (e.g., Bldg48PAsystem@mycompany.net)

Username

This is the username for logging into the server in order to send the e-mail.

Password

This is the password for logging into the server in order to send the e-mail.

Click this icon to add a new e-mail list (row to the table). Once added, you can edit the Description field by double-clicking on the field, and use the controls in the Email Addresses column to build the list.

Click this icon to delete the currently selected list.

ID

This is an index number used to reference the list. It is generated by the system and cannot be edited.

Description

Use this field to enter a descriptive name for the list. This is the name that will be used in the drop-down lists in other areas of the SMC where you select e-mail lists.

Fault Notify

When checked, members of the list will receive e-mail notifications when there is a system fault.

Email Addresses

In this column, there are [+] and [-] buttons to add or delete rows in the Address table. Each table entry is free-form text where e-mail addresses may be entered. Note, for using this feature to send SMS (Text) messages to mobile devices in the United States, one enters special e-mail addresses which are usually the full 10-digit phone number, and @ sign and then a special e-mail server address provided by the mobile provider. (Outside the US, there are similar arrangements. Check with your local carriers for details.) The flyover help for the address edit box provides the special addressing for the top-5 US mobile carriers, as is shown in Figure 21-2.

SMS Messages can be sent using the following E-Mail Addresses:
AT&T: TenDigitPhoneNumber@txt.att.net
Sprint: TenDigitPhoneNumber@sprintpcs.net
T-Mobile: TenDigitPhoneNumber@tmomail.net
US Cellular: TenDigitPhoneNumber@email.uscc.net
Verizon: TenDigitPhoneNumber@vtext.net

Figure 21-2: Common SMS

4.15 System Supervision

The system constantly polls all of the programmed devices for their current status and will report a fault if a device fails to respond. Titan series amplifier frames also monitor the analog audio outputs and loudspeaker lines and will report a fault if the tested audio level is out of tolerance. Each controller is responsible for monitoring its own devices and will report any faults on the ***Faults*** section located in the ***Overview*** tab of the *System Management Center* application as shown in Figure 22-1. In this example, we have a Titan frame with an amplifier card that has failed.

Fault history is recorded in the *IED Fault Log* which can be viewed under the Admin section of SMC or from a stand-alone fault viewer application. For larger networked systems where you need the ability to view the faults from all controllers from a central location, you can create an SNMP Endpoint to receive fault messages from all controllers.

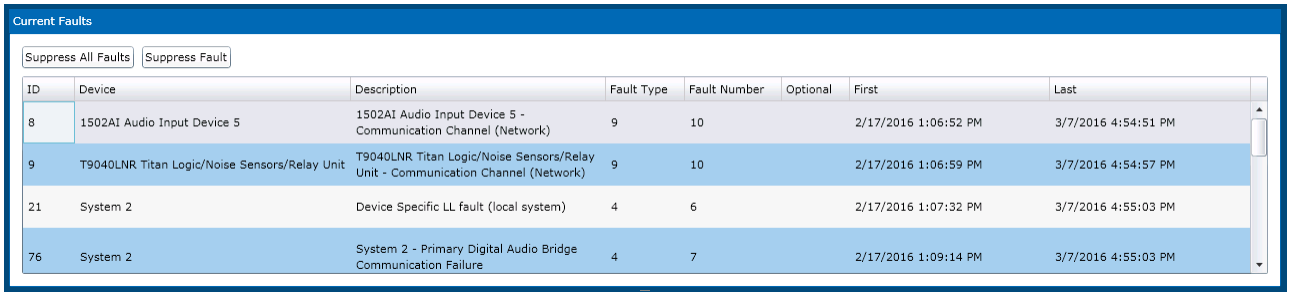


Figure 22-1: Faults

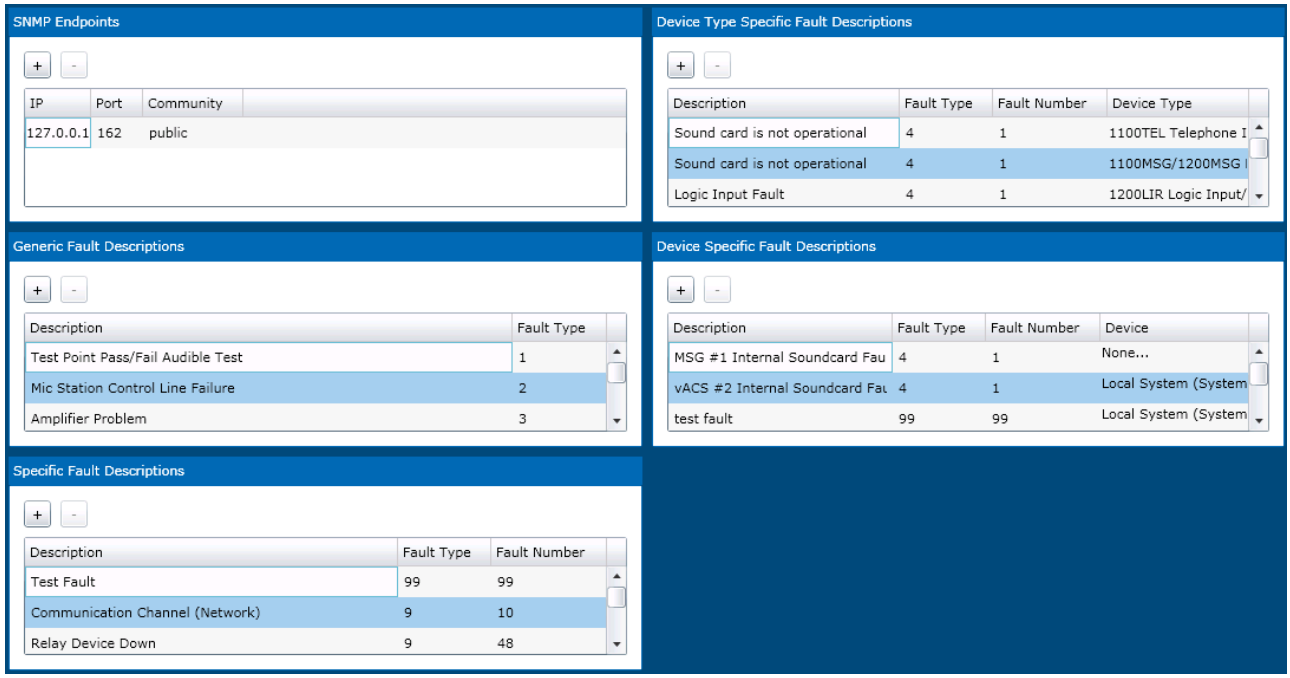


Figure 22-2: System Supervision

As you can see from Figure 22-2, there are several individual lists in the ***System Supervision*** section. With the exception of the ***SNMP Endpoints*** list, they are used to associate a textual description to a fault message reported from a device. The three lists ***Generic Fault Descriptions***, ***Specific Fault Descriptions*** and ***Device Type Specific Fault Descriptions***, are configured with the necessary information for nearly all applications. However, you do have the ability

to edit the descriptions if the installation requires it. The last list, ***Device Specific Fault Descriptions***, will give you a method to define your own faults based on the usage of specific devices installed in your system.

SNMP Endpoints

The system will send out SNMP messages when faults are detected and when they clear. This allows you to use a third party SNMP monitoring application to monitor the audio system along with other network devices within the facility. This also allows a system composed of multiple vACS units to be monitored using a centralized software monitoring application, often referred to as an SNMP Trap.

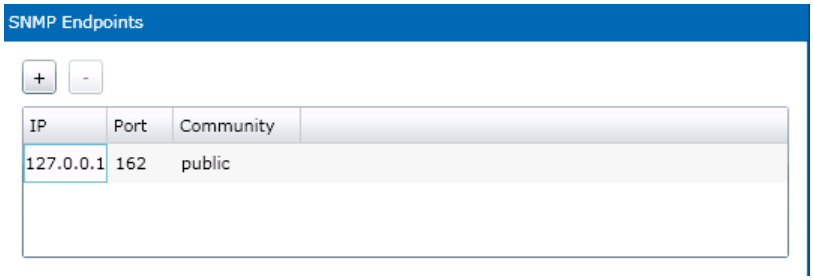


Figure 22-3: SNMP Endpoints

Click this icon to add a new SNMP Endpoint to the list.

Click this icon to delete the currently selected SNMP Endpoint from the list.

IP

Enter the destination IP address for the SNMP Endpoint.

Port

Enter the port number that will be used to send SNMP messages from this controller to the SNMP Endpoint.

Community

Enter the community name that will be used to send SNMP messages from this controller to the SNMP Endpoint.

Fault Descriptions

Generic Fault Descriptions

This list is used to describe system faults with an associated device. You will notice that this list does not contain a ***Fault Number*** field. That number is somewhat dependent on the type of fault, but often associated with the number associated with the device. For example, if microphone station 8 failed, you would see a fault reported with a ***Fault Type*** of 2 and a ***Fault Number*** of 8.

Specific Fault Descriptions

This list provides more detailed descriptions of specific types of faults.

Device Type Specific Fault Descriptions

This list is used for breaking out faults that occur within an individual device. Currently, this is used to provide descriptions of the various faults that are detected within a T9160 amplifier mainframe.

Device Specific Fault Descriptions

This section is where you define faults that will be set and cleared by programming Action ***Types*** on a device. While it is possible to program a fault from any device using the ***FaultSet*** and ***FaultClear*** action types, the most common application is using logic inputs on a 1200LIR, T9032LVIO, or T9040NLR to monitor external equipment. You can use the logic inputs to monitor a fault relay on a UPS so any failure gets reported. You could monitor a door switch so there is a record of any time that the equipment room (or rack) door was accessed. In Figure 22-4, we have defined a fault to indicate a failure in the system UPS. In this example, we have not yet assigned it to a device.

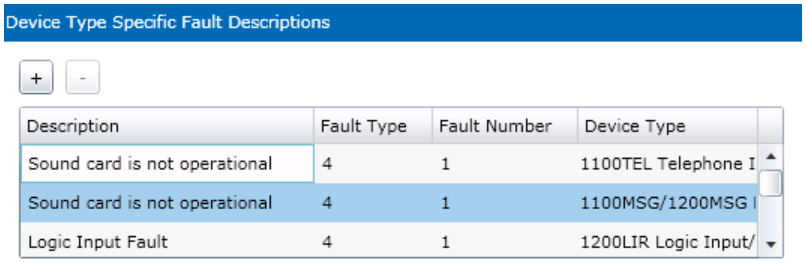


Figure 22-4: Device Specific Fault Descriptions

Click this icon to add a new item to the list.

Click this icon to delete the currently selected item from the list.

Description

Enter a textual description for the fault.

Fault Type

Assign a number to categorize the type of this fault. This is useful if you are monitoring different types of devices with logic inputs. For example, you could assign all UPS failures to be a type 1 while having door sensors assigned to type 12. This is one of the parameters that you will need to enter when defining an action to set or clear the fault.

Fault Number

This, combined with the Fault Type, will provide you with a unique ID number for the fault. This is one of the parameters that you will need to enter when defining an action to set or clear the fault.

Device

Select the device that will be reporting this fault as shown in Figure 22-5. In this example, we are using a logic input on a 1200LIR to detect and report the fault.

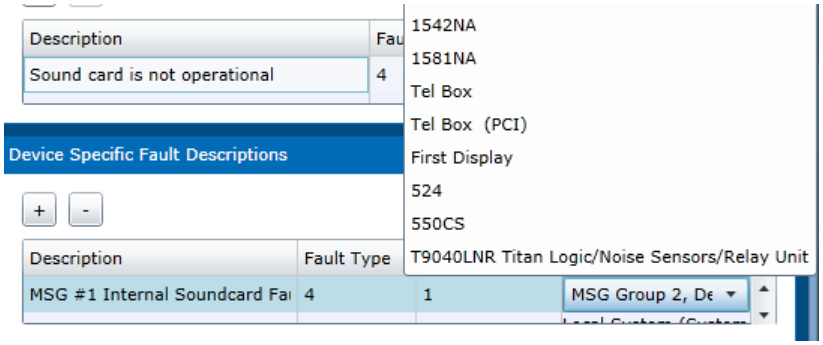


Figure 22-5: Device Selection

4.16 Print Configuration

The system will generate a report that contains a list of all system settings necessary to document a configuration. You can use this report to store a paper copy for system documentation or as a backup should you ever need to re-build the system from scratch. The report is generated as an .HTML file that can be printed or saved as a file. The print icon appears at the top of the *System Management Center* (SMC) window as shown in Figure 23-1 *only* if one is viewing the **Configuration** tab.

Figure 23-1: Print Configuration Icon

Clicking on the Print icon brings up an additional browser window such as the one in Figure 23-2, which shows an example of the first part of the generated configuration report.

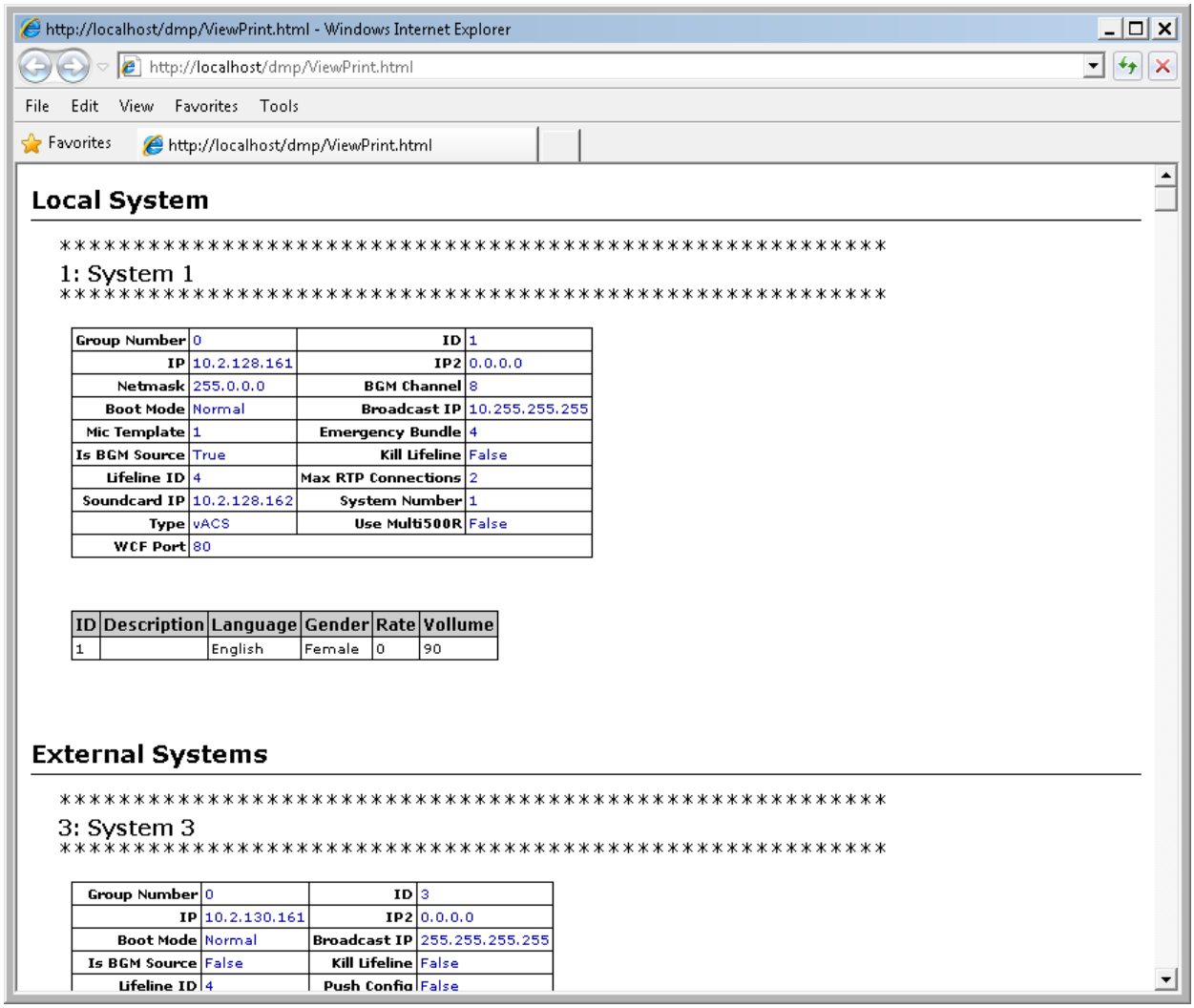


Figure 23-2: Configuration Output File

To print the report, choose the ***Print*** option from the ***File*** menu of the browser. If you wish to save the file, choose the ***Save As...*** option. Saving this file only saves the printable report. It does not save the data to be used as a backup file. To

store a file backup that *can be restored*, you must use the ***Backup/Restore*** feature located in the ***Admin*** section of the software.

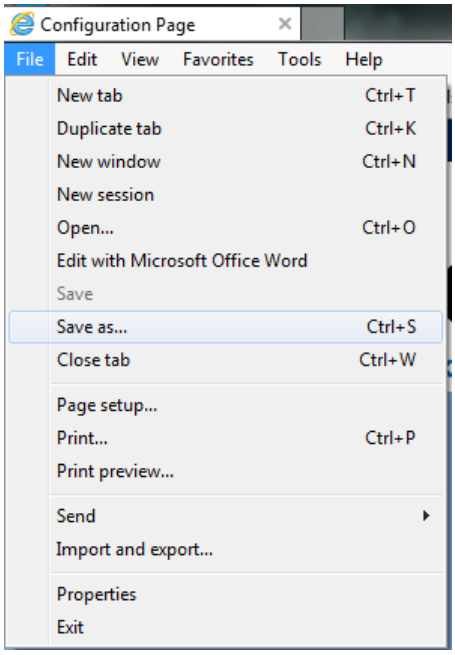


Figure 23-3: Windows Internet Explorer File Menu

5. SMC Admin Tab

This tab is available only to those with administrator privileges and is used for such things as editing SMC user accounts, updating software, viewing logs and performing debug operations on the system. The pages in this tab area are:

- **Backup/Restore** – Make backup copies of the local system configuration, or restore a previously created backup.
- **Software Update** – Update the system software via a service pack or hot fix release package.
- **Reboot** – Restart the services running on the controller (e.g., to attempt to clear a problem).
- **Authorization** – Manage the mapping of either local users or Windows Active Directory user groups to GCK SMC and SAFE Roles (permission sets)
- **View Logs** – View any of three logs: fault history, announcement history and user activity history.
- **File Management** – View files on the controller.
- **Command Shell** – Access a command line interface into the controller for debug or special operations.
- **Netmon** – An interface to monitor IEDnet traffic on the controller
- **Debug Messages** – An interface to monitor activity of the announcement controller via the messages it generates as it conducts its operations.

Each of these pages is described in one of the sections which follow.

5.1 Backup/Restore

This section allows you to create a backup of the current system configuration. The configuration is automatically saved as a .VBK file type on the local system. It also gives you the option of saving it to a different location or to your local machine if you are accessing the *System Management Center* from a remote location. Clicking the appropriate ***Restore*** button will restore a locally-stored backup file or you can load a backup file from a disk or other removable storage device.

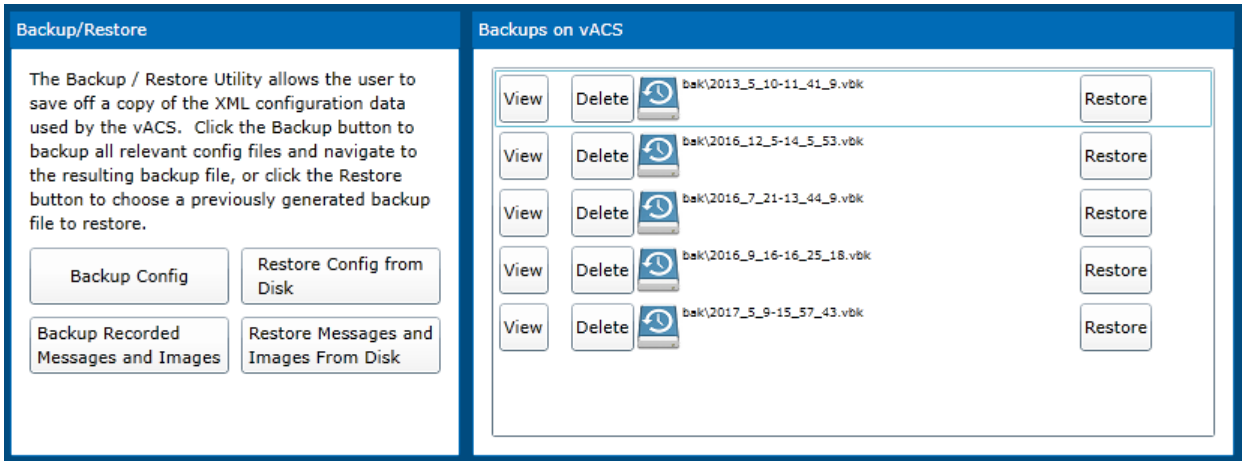


Figure 24-1: Backup/Restore

Backup Config

Click this button to create a new backup configuration file. A local backup will automatically be saved and a new browser window will appear with the contents of the backup configuration file as shown in Figure 24-2.

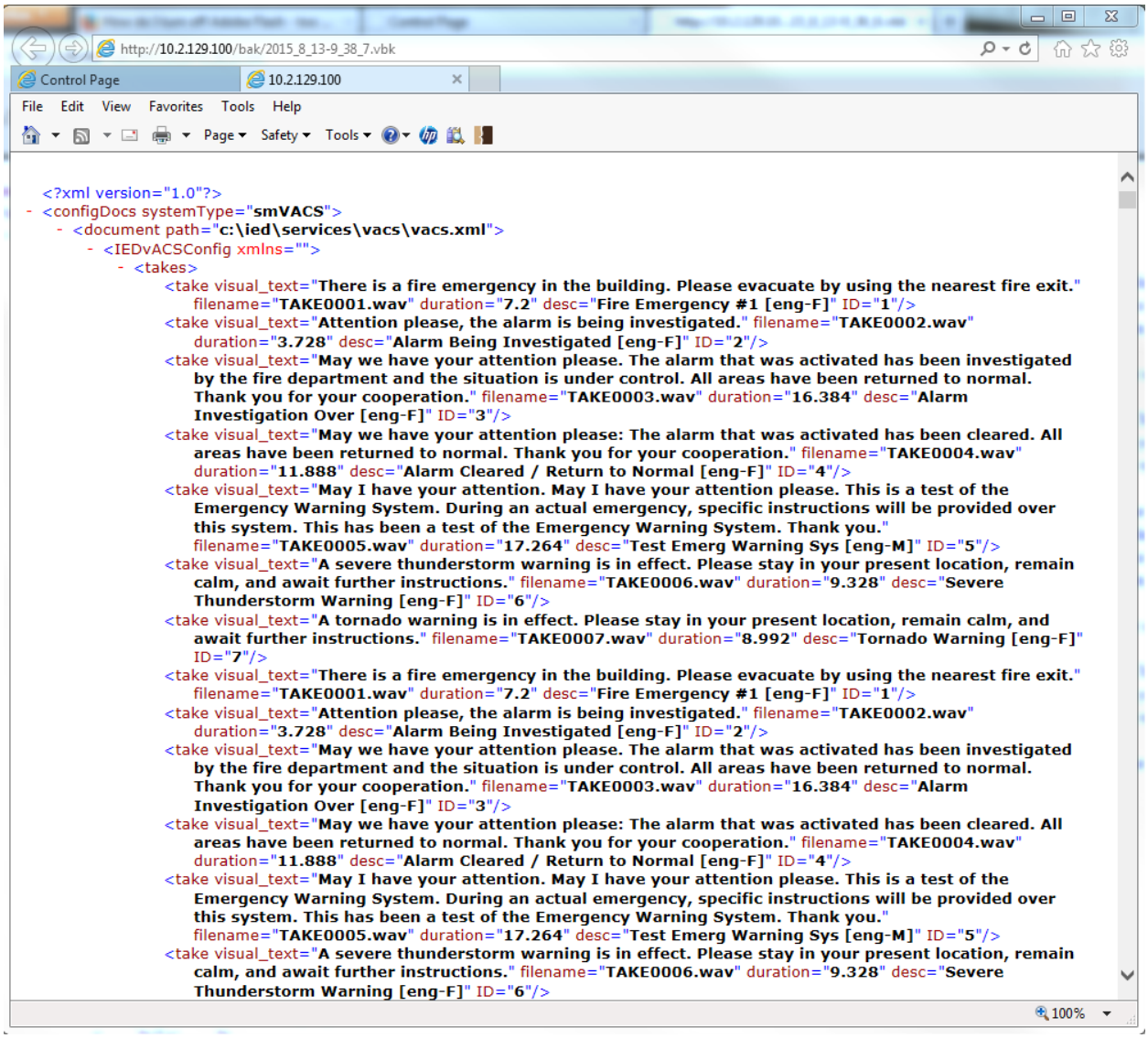


Figure 24-2: Internet Explorer Backup File View

At this point, you can close the backup file window if you are only creating a local backup copy. If you wish to save the backup file to another location, you can do so by saving the file from the browser window menu bar. Figure 24-3 shows the ***File*** menu in Internet Explorer where you would select the ***Save As...*** option to save the file.

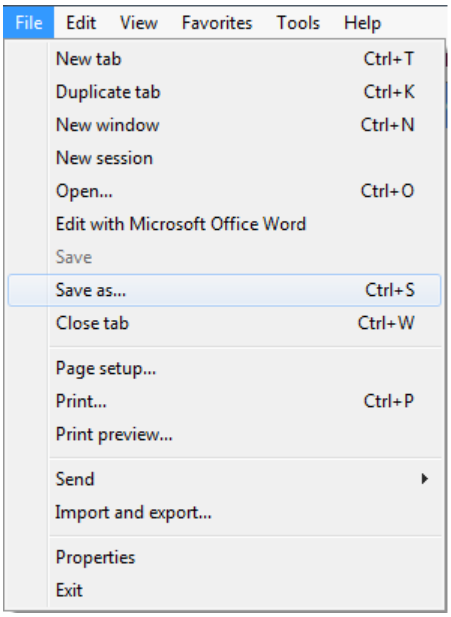


Figure 24-3: Internet Explorer File Menu

This will prompt you to select a file location with a dialog window as shown in Figure 24-4. If you are accessing the *System Management Center* from another computer, you may want to store the backup file on your local machine or save it to an external storage device. If you choose not to do this, the backup file will still be stored on the local controller.

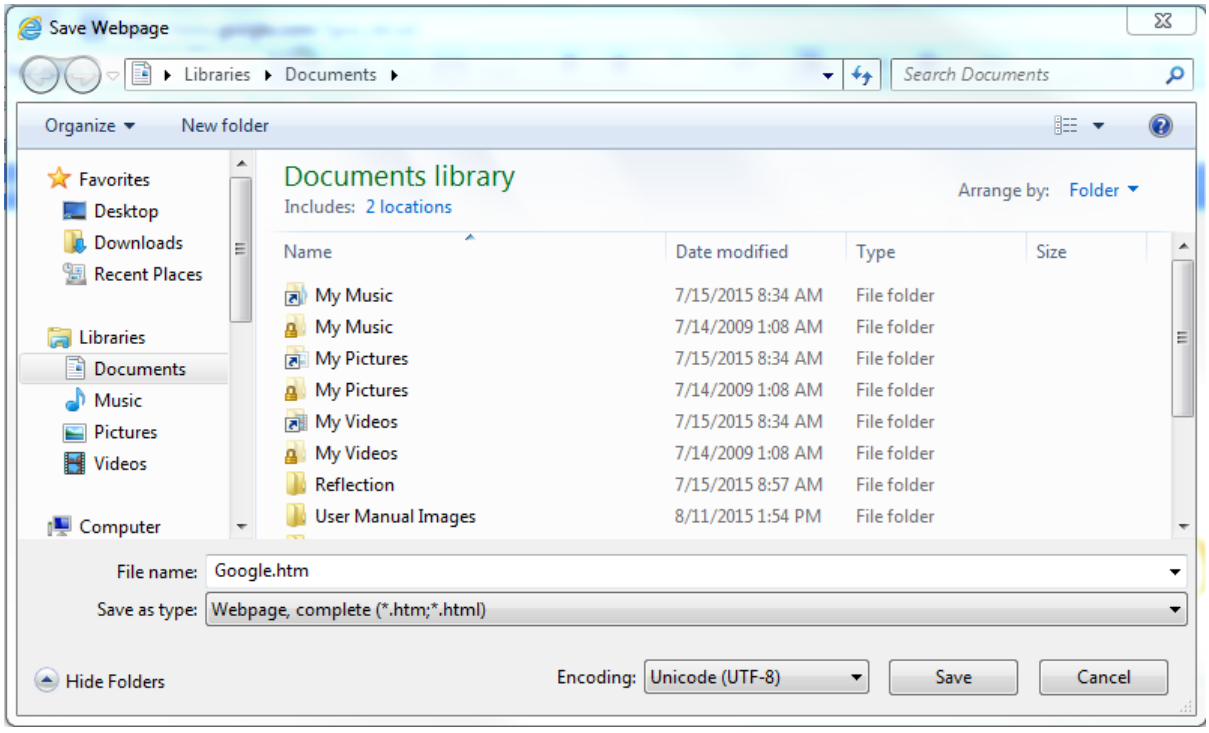


Figure 24-4: Internet Explorer Save As Window

Restore Config From Disk

Click this button when you want to restore the system configuration from a backup file stored on a disk or other remote storage device. You will be warned and prompted as shown in Figure 24-5. If you click Yes, then you will be shown a standard Open dialog window as shown in Figure 24-6.

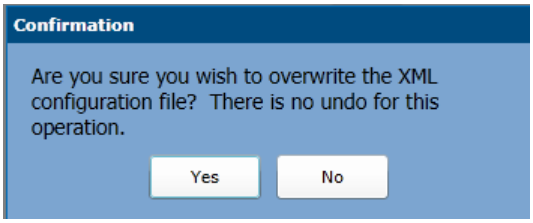


Figure 24-5: Restore Confirmation

Once you begin the restoration process, the system will shut down all appropriate services and restart with the new configuration file. This operation will take the controller off-line for a short time.

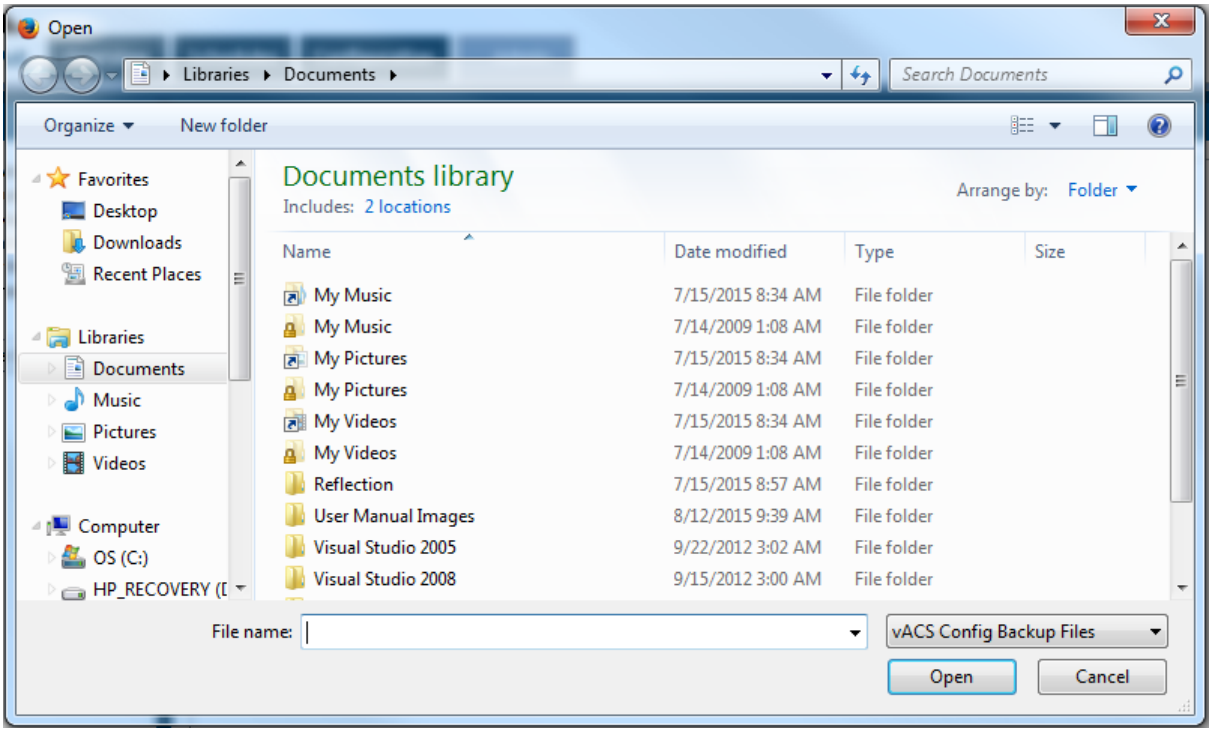


Figure 24-6: Open File Window

Backup Recorded Messages and Images

Pressing this button prompts for a filename to save the messages in. Then the WAV files and a list of the Takes from both the Recorded Messages and Chimes portions of the project (user-defined files only) are saved, along with all user-imported images into the one backup file (extension: .gcb). User-imported images include background (wall paper) images in mic station templates, wayfinding images and event launch icon images.

Restore Messages and Images from Disk

Pressing this button prompts for a .gcb file to restore the Takes and images from. These Takes are then restored to the user-defined message file area, and the images to their various locations.

Backup on vACS

This is a list of all backups that are stored on the local controller. The filename is actually a date/time stamp for the backup. It contains the year, month, day, hour, minute, and second when the backup was created.

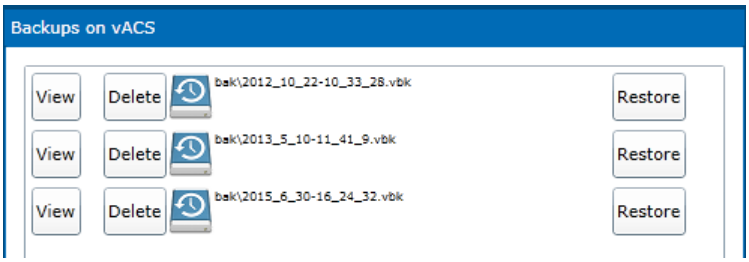


Figure 24-7: Backups on the GCK System

View

Click this button to display the contents of the backup file in your browser. This will appear as shown in Figure 24-2.

Delete

Click this button to delete the backup file from the controller. This will not impact the current operation of the controller. The number of backups that can be kept is only limited by the amount of available drive space on the controller. It is a good idea to remove older backups to keep the list manageable.

Restore

Click this button to restore the backup configuration to the system. You will be warned and prompted to continue since this will delete the current system configuration and stop the controller from operating for a brief period of time.

Note: This Backup/Restore operation only handles project configuration data and does NOT backup the audio files from the Recorded Messages or Chimes areas, nor the various user-imported images. If you need a backup of these (larger) files, you should use the Backup Recorded Messages and Images feature described above, also.

5.2 Software Update

You must be logged in as a user with ***Admin*** permissions in order to update the system software. You access the ***Software Update*** screen shown in Figure 25-1 from the ***Admin*** tab of the *System Management Center* application.

You do not necessarily need to be running the *System Management Center* application on the local controller in order to perform the update. You can update the system from any computer that is able to connect to the controller through the network.

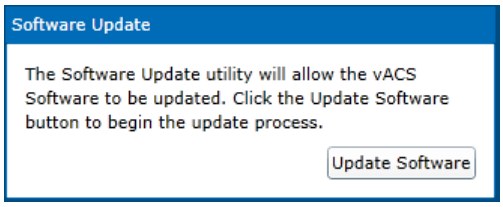


Figure 25-1: Software Update

Click the ***Update Software*** button to open the file selection dialog window as shown in Figure 25-2.

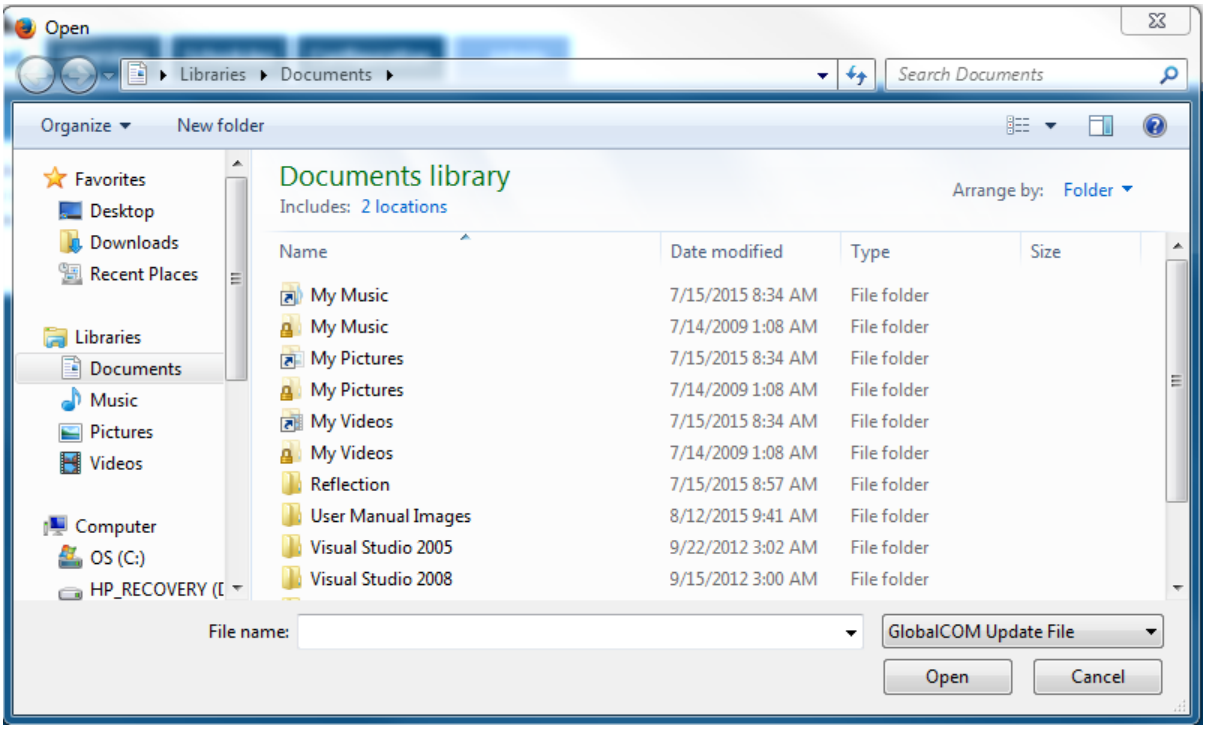


Figure 25-2: Open Update Package

Navigate to the appropriate directory and highlight an update package. Click the ***OK*** button to begin the update process. The system will stop the necessary services, install the new files, and then start the new services. This may take a few minutes for larger updates and you will see a progress window like the one shown in Figure 25-3.

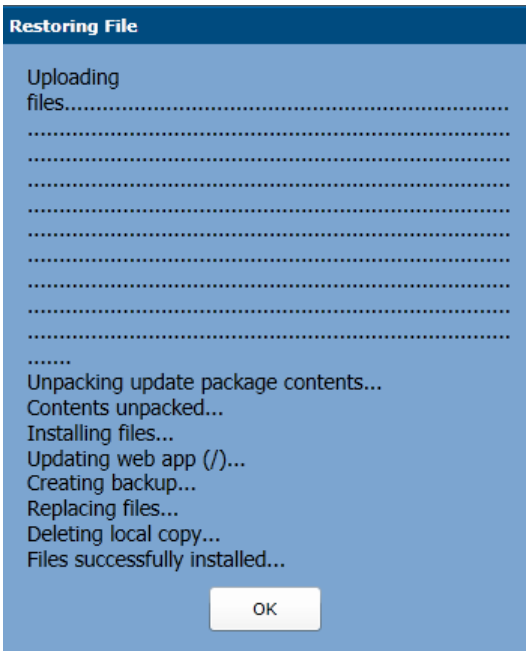


Figure 25-3: Update Successful

Once you see that the files were successfully installed, click the ***OK*** button to close the window. You can now proceed to update the next package.

Caution: System operation may be interrupted while an update is in progress!

5.3 Reboot

This tab provides you with two restart options for the controller. Using this may not be necessary if you are running the *System Management Center* (SMC) on the local controller. If you are working with your monitor and keyboard connected directly to the controller, you may choose to use the Windows restart command through the START menu. However, this gives you the ability to restart the controller while connected to the SMC through the web page from another computer.

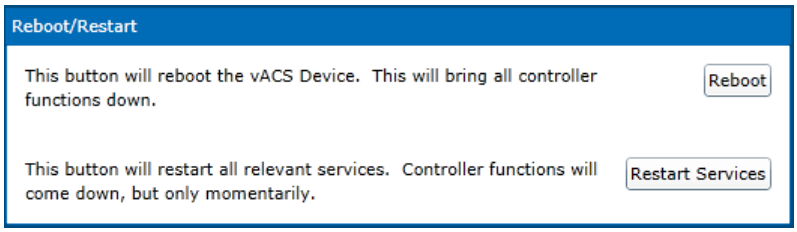


Figure 26-1: Reboot

Reboot

Click this button to reset the unit. It will shut down the operating system and restart the device. This will take the controller offline until it has completely restarted and all the supporting services are fully operational.

Restart Services

The announcement controller functions are managed by what are known as Services in the Windows operating system. These run in the background and most are started when the operating system starts while others are started and stopped on an as-needed basis. This eliminates the possibility of a user inadvertently shutting down a system-critical application.

There are cases where simply restarting all of the services that are operating in the background is all that is necessary instead of completely rebooting the entire controller. The controller will still be offline while the services are in the process of shutting down and restarting, but the time is much less than a complete reboot.

5.4 Lifeline Control

This section is only available on the ***Admin*** tab for systems that have been licensed as a Lifeline system. This feature allows an announcement controller to monitor other announcement controllers in the system for failures. If the Lifeline system detects a failure in one of the announcement controllers that it has been assigned to monitor, it will take over for the failed controller.

There are three critical steps that must be performed to ensure that the Lifeline feature will work correctly.

1. Ensure that the Lifeline controller is on the same network or vLAN as all of the primary controllers that it will monitor.

2. Add the Lifeline controller to each monitored primary announcement controller in each respective Remote Controllers definition section.

3. Add each monitored primary announcement controller to the Lifeline controller's monitoring list as shown in Figure 27-1.

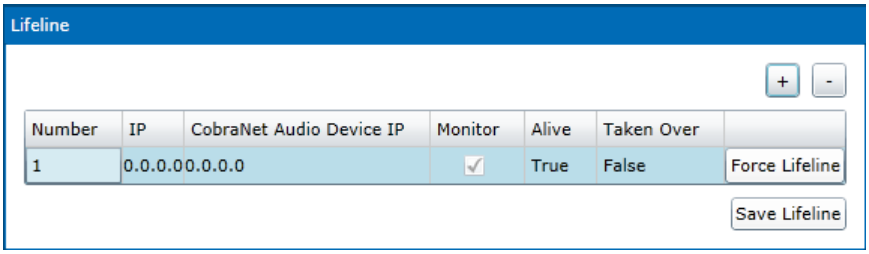


Figure 27-1: Lifeline Monitoring List

Click this icon to add a new system to the monitoring list.

Click this icon to delete the currently selected system from the monitoring list.

Number

This is the system number for the monitored controller.

IP

Enter the IP address for the monitored controller. This will be the IP address of the network card in the controller.

CobraNet Audio Device IP

Enter the IP address for the CobraNet interface card in the monitored controller. This address will typically be one number higher than the IP address of the device.

Monitor

When checked, the Lifeline system will monitor the primary announcement controller and take over if it fails. When not checked, it will no longer monitor the primary controller for failures. This allows you to temporarily exclude a controller from automatic backup while you are working on that system.

Alive

This field will display ***True*** when it detects that the primary announcement controller is online. It will switch to ***False*** if it can no longer communicate with the primary controller.

Taken Over

This field will display ***True*** if the Lifeline has taken over control for this primary announcement controller. It will display ***False*** when it has not taken control and is monitoring if the ***Monitoring*** checkbox is checked for that system.

Force Lifeline

Each primary announcement controller in the monitoring list will have this button. Click this button to immediately force the Lifeline controller to take over the duties of the primary announcement controller. It takes approximately 45 to 55 seconds for this process to take place.

Save Lifeline

Click this button to manually switch control from the Lifeline controller back to the primary controller if the automatic fail-back has been disabled or if the system was manually forced into Lifeline mode using the ***Force Lifeline*** button.

5.5 File Management

This tab allows you to remotely transfer individual files from a client or server to a vACS located on the network. Figure 28-1 shows the File Management tab and its major components. The ***Path Entry Box*** is used to specify a directory or complete file path on the vACS. When uploading a file, this will be the path to place the selected file. When downloading, this is the complete path and filename that you will download to the local machine.

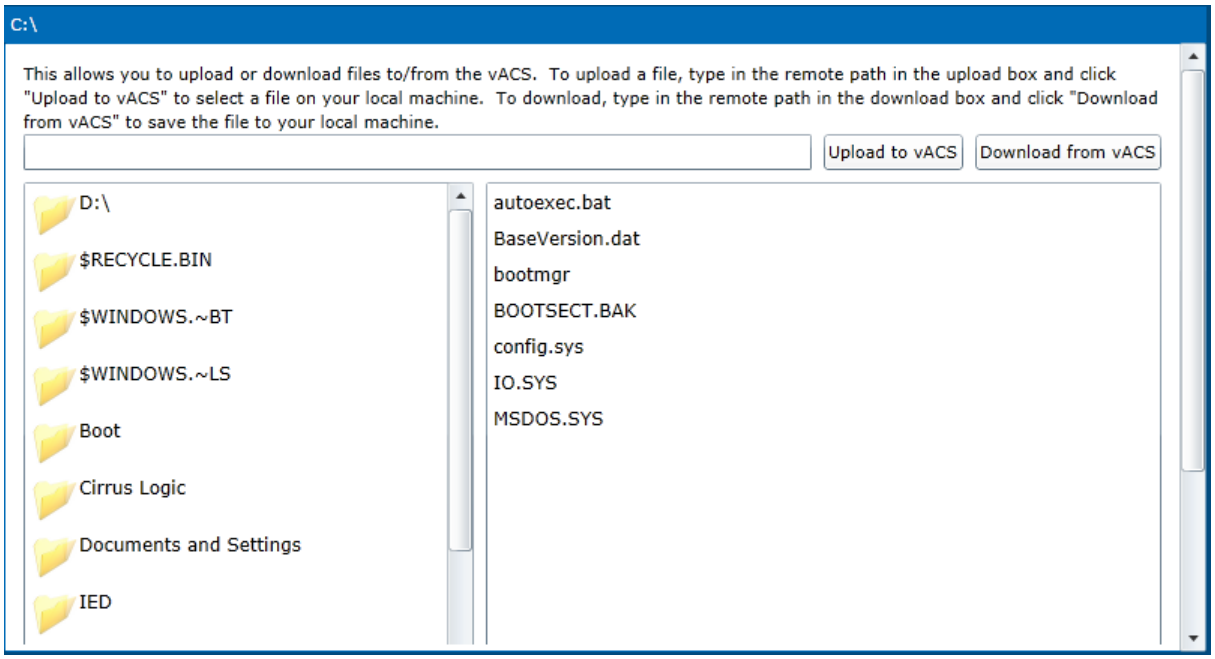


Figure 28-1: File Management

Download from vACS

Click this button to initiate a transfer of the selected file from the vACS to your local machine. You must first select the file to transfer by either navigating the file system windows and selecting the appropriate file, or by manually typing in the complete file path in the ***Path Entry Box***.

Due to system constraints, files downloaded using this method must be transferred as a zip file. The remote file will be compressed into a file named temp.zip and sent to your local machine. Upon clicking the button to download the file, Windows will prompt you to specify what you want to do with the file as shown in Figure 28-2. You can choose to open temp.zip or save it. We recommend that you simply choose the ***Open*** option. This will open the zip file and display the contents, which is the file you want to save as shown in Figure 28-3. From here, simply use the standard Windows commands to copy the file to the desired location on the local machine.

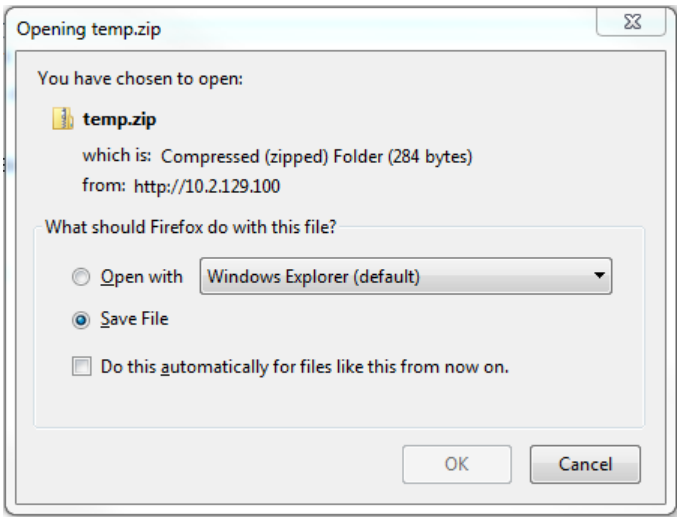


Figure 28-2: Temp.zip

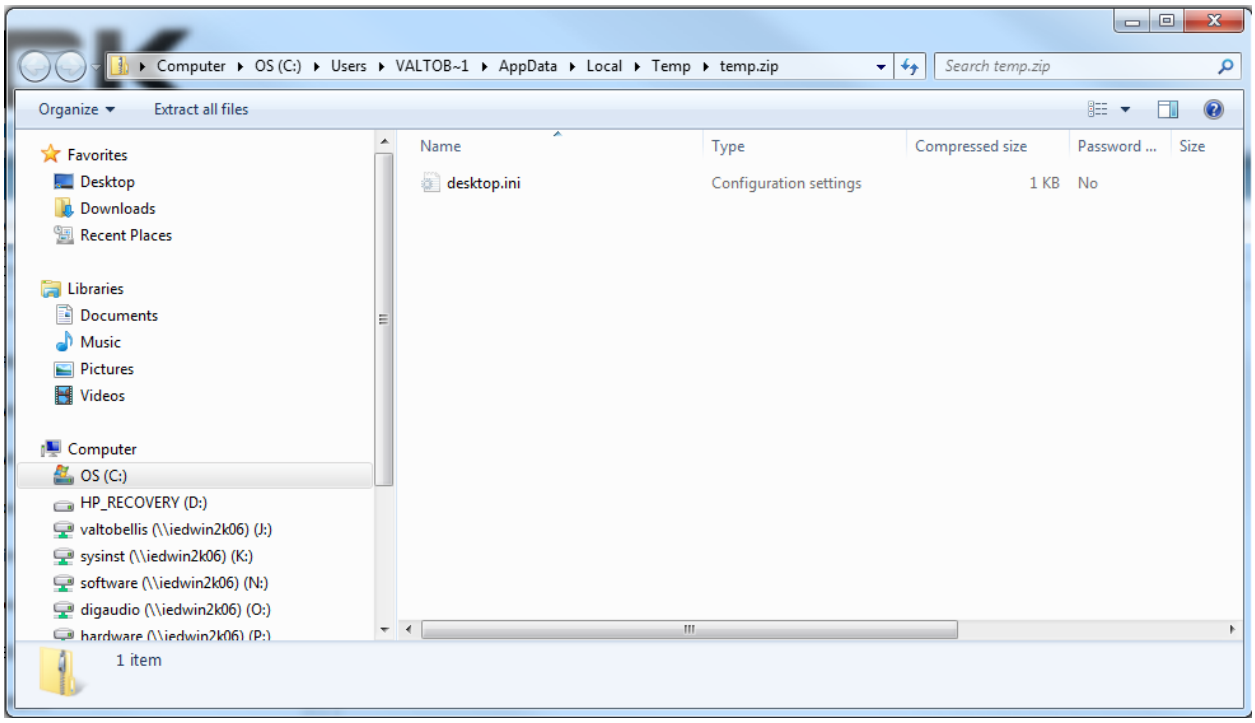


Figure 28-3: Contents of Temp.zip File

Upload to vACS

This command will allow you transfer a file from your local computer to the vACS. You must first enter the path on the remote vACS where the file is to be placed. You must type this path directly into the ***Path Entry Box*** shown in Figure 28-1. For example, if you want to place the file in the root directory of the C drive, then you would type "C:\" in the ***Path Entry Box***.

You then click the ***Upload to vACS*** button and you will be prompted with a windows Open dialog as shown in Figure 28-4. From here, navigate to the file that you wish to transfer and click the ***Open*** button to begin the transfer.

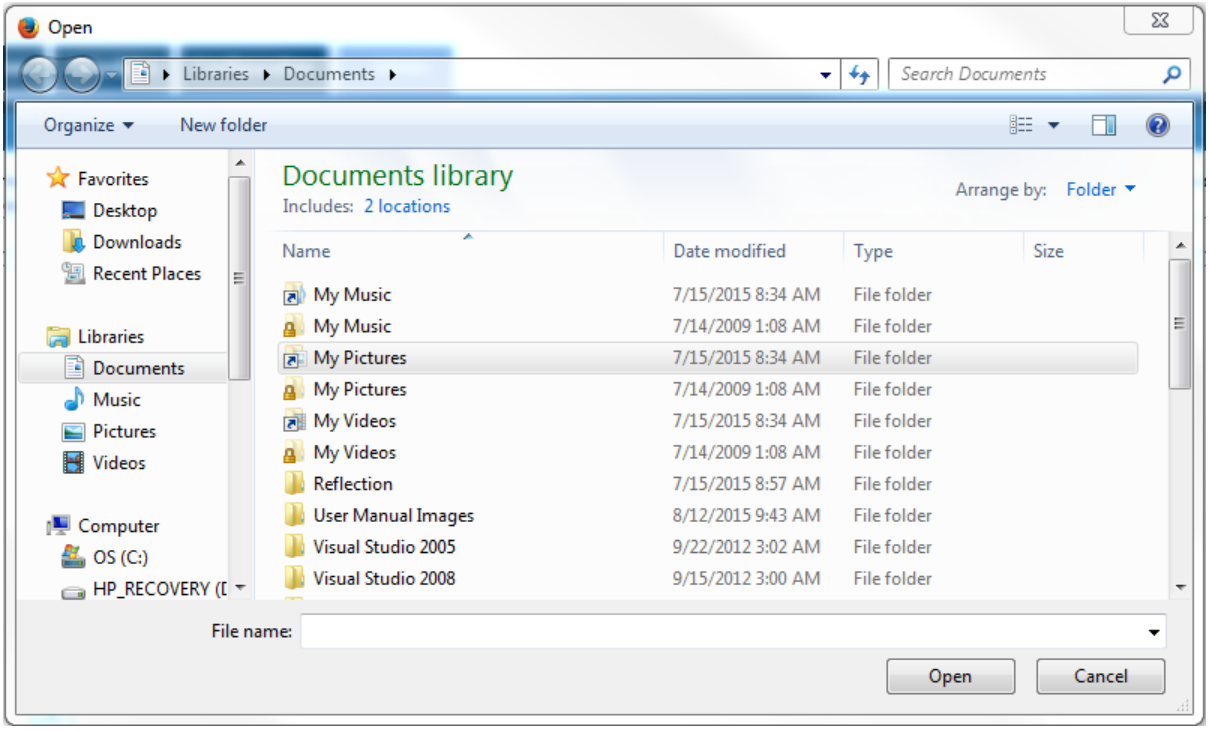


Figure 28-4: Windows Open Dialog

Once the file is complete, you will receive a pop-up window like the one shown in Figure 28-5. This will tell if the transfer was successful or unsuccessful.

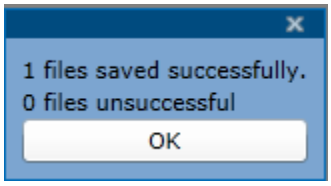


Figure 28-5: Transfer Confirmation

5.6 Command Shell

This tab provides you with direct access to the command-line shell of the operating system. You will not need this if you are accessing the controller from a monitor and keyboard connected directly to the controller. If you are accessing the *System Management Center* web page from another computer, then this will give you access to key in direct commands if needed.

To utilize this feature, you first type in (or use the past command) the appropriate command in the top window. Then you must click the appropriate button to send the command in the correct format.

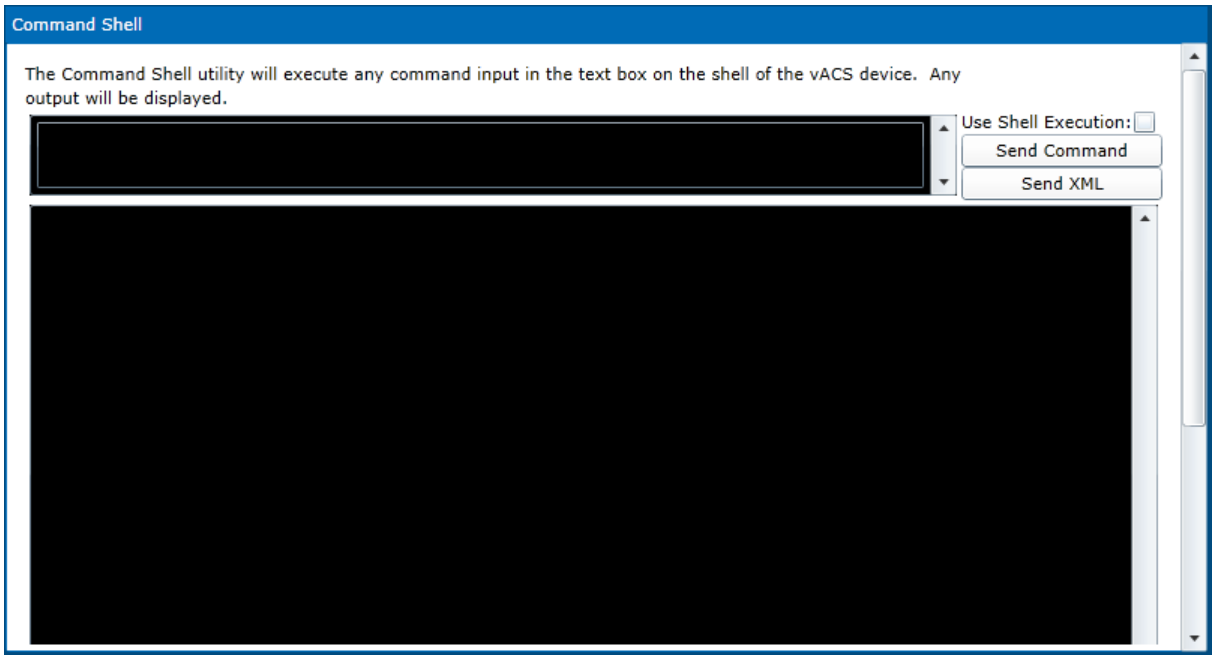


Figure 29-1: Command Shell

Use Shell Execution

When checked, the command entered will be executed at the Windows shell level and you will not see a response. This option is only for major system debugging and should only be used when instructed by IED support personnel.

Send Command

This will send the command directly to the command-line shell. This is the equivalent of typing in the command and pressing the **ENTER** key if you are directly accessing the Windows ***Command Prompt*** window.

Send XML

When this button is clicked, the command will be sent as an XML-formatted message directly to the vACS. This is only for sending various debug commands to the vACS service and should only be used when instructed by IED support personnel.

5.7 Authorization (formerly Role Mapping (formerly Users))

In versions of GLOBALCOM and GCK prior to Version 3, SMC had its own user accounts. Starting with Version 3, SMC uses user groups defined in Windows local machine or Windows Active Directory or other LDAP authentication system used on-site. The description of the pre-Ver 3 User setup page is included later in this section for legacy users of SMC, with description of the Version ¾ Role Mapping setup page before that.

Starting in GCK Version 5, authorization became one of two ways: local user accounts managed in SMC or Windows Active Directory (or other LDAP authentication system). This section appears differently depending on whether local or Active Directory authorization is configured for the system.

5.7.1 Local GCK User Management

When GCK initially ships it will have three default local accounts installed:

- gck_admin – full permissions to everything in GCK, plus SAFE administration rights (if licensed/enabled)
- gck_installer – system configuration permissions in GCK, plus SAFE view rights
- gck_user – view/operate controls in GCK, plus SAFE view rights

One can view these accounts and manage the addition of other accounts via the Authorization section as shown in the figure below.

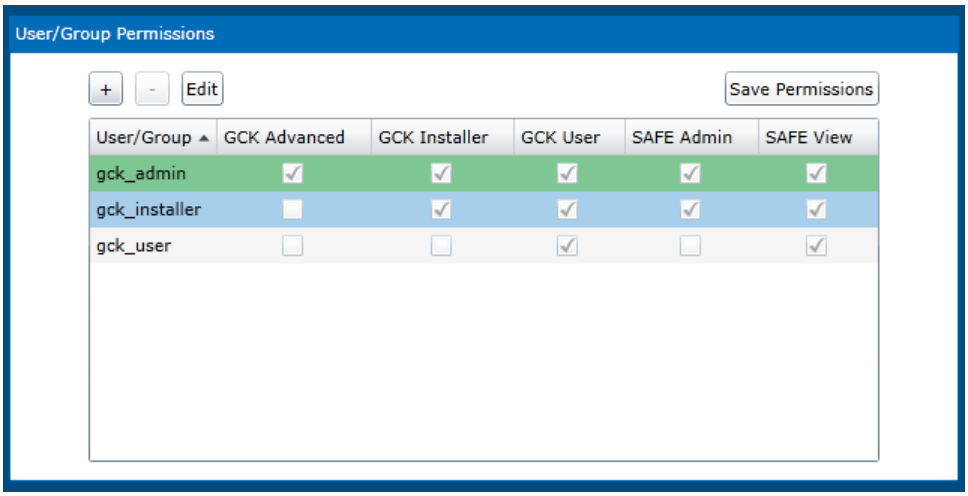


Figure 30-1: Local User Authorization Page

The [+] Add button brings up a New User entry form as shown in the figure below. On fills in the information shown and clicks on the **OK** button. The [-] Delete button will delete the currently selected user after first prompting via an confirmation prompt.

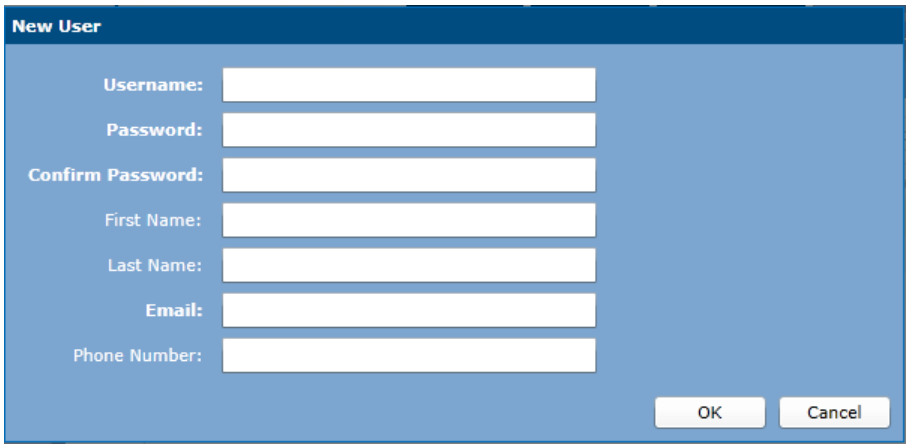


Figure 30-2: New Local User Entry Form

The **Edit** button brings up a local User Edit form as shown in the figure below. Note, to access the new password fields, one must first click on the **Change Password** checkbox. After making the changes, one clicks on the **OK** button to save them.

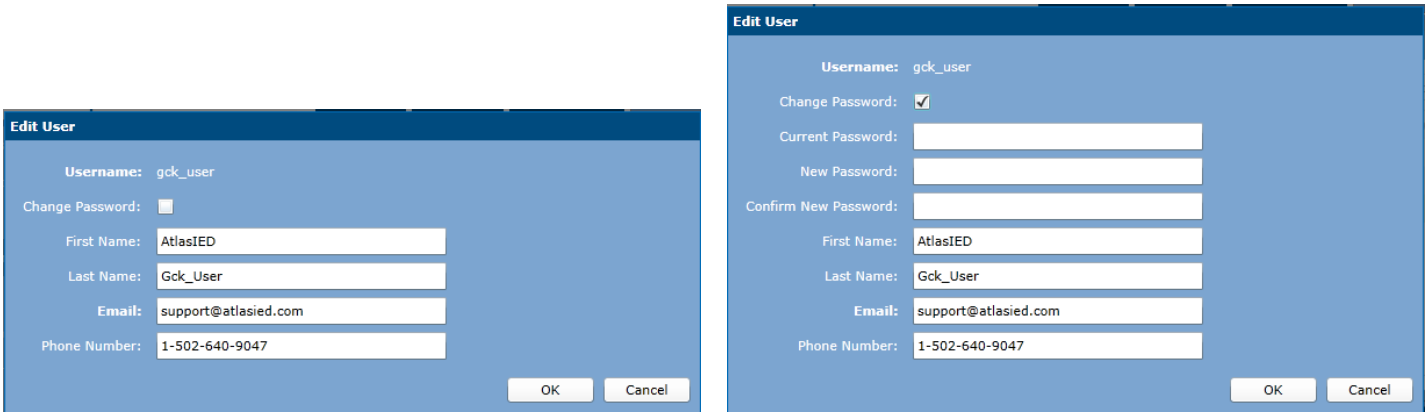
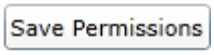


Figure 30-3: Edit User Form

When done with any account additions or editing, one should be sure to click on the **Save Permissions** button at the top right of the Authorization page.



5.7.2 Active Directory User Group Management

In order to enable Active Directory (AD) integration in GCK, one should follow these steps:

- Join the controller to your domain
- Configure "IED Authorization Service" to integrate with AD
  - Stop the service "IED GlobalCOM Authorization Service"
  - Open the file "C:/IED/Services/AuthorizationService/AuthorizationService.exe.config"
    - In the settings section, find the node for "MasterRoleName" and change its value to your "Master" AD group name (this group will ALWAYS have ALL permissions in the GCK system. The default is "Administrators"
    - In the settings section, find the node for "UseRoleMapping" and change the value to "True"
    - Save the file
  - Start the service "IED GlobalCOM Authorization Service"
- Configure the SMC to integrate with AD
  - Open the file "C:/IED/WebPages/SMC/web.config"
    - In the settings section, find the node for "Authorization_UseRoleMaps" and change the value to "True"
    - Save the file
  - Restart the SMC web interface
  - Login with just the username portion (no "@domain.com")
    - The first attempt to log in after restarting the service may time out
- (If Installed/licensed) Configure SAFE to integrate with AD
  - Open the file "C:/IED/WebPages/SAFE/web.config"
    - In the settings section, find the node for "UseADIntegration" and change the value to "True"
    - Save the file
  - Restart the SAFE web interface
  - Login with just the username portion (no "@domain.com")
    - The first attempt to log in after restarting the service may time out

When AD integration is enabled, the view on the Authorization page changes as shown in the figure below. Now, one cannot add/delete users, but instead is presented with a list of all user groups present in the AD domain. What one does with these is decide which GCK and (if installed/licensed) which SAFE permissions to grant to each user group in the system. When done, one clicks on the **Save Permissions** button to save the changes.

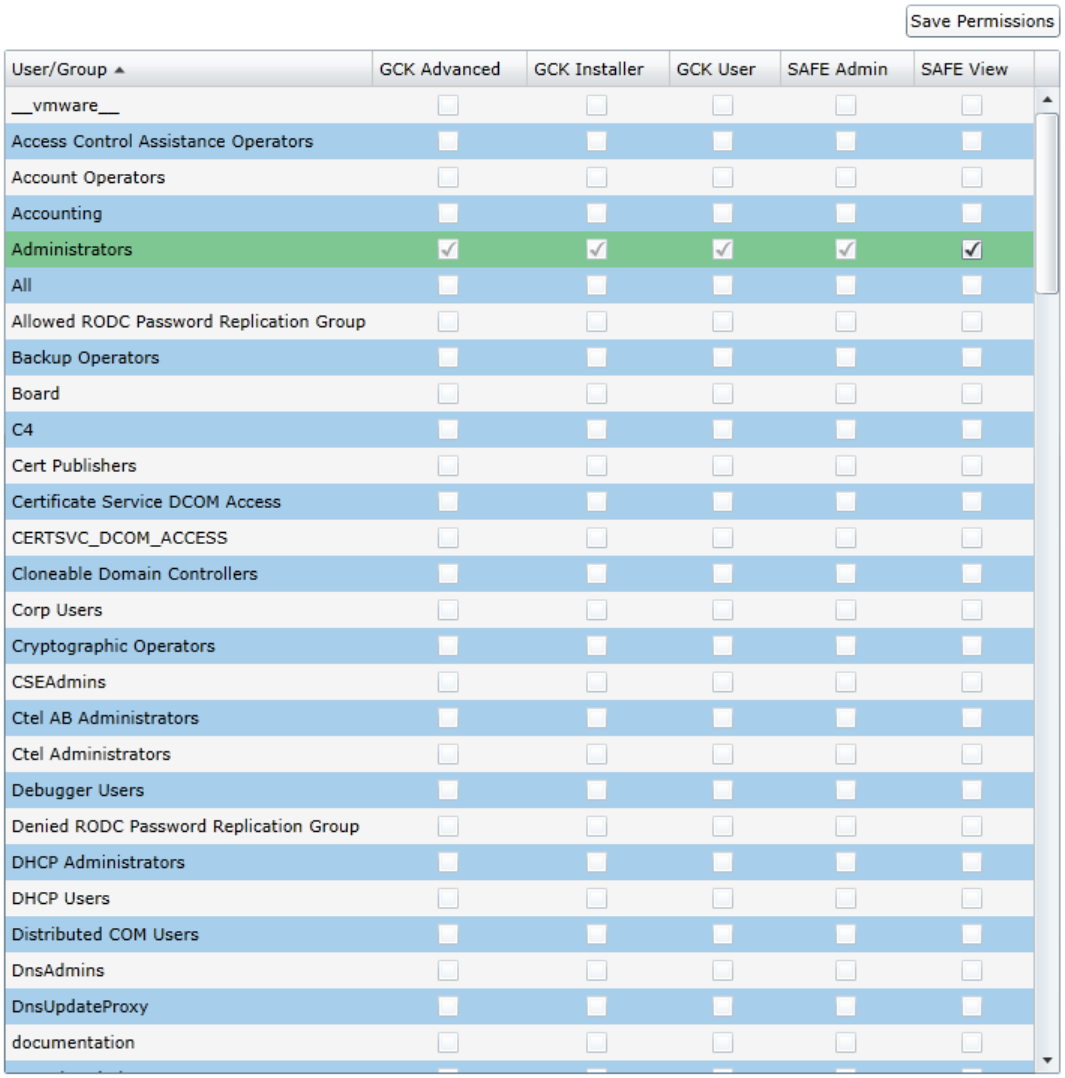


Figure 30-4: Active Directory User Group Mapping

5.7.3 GCK Version 3/4 Role Mapping

Below is the description for the Role Mapping version of this section that was present in GCK Version 3 and Version 4.

SMC cannot be accessed without some Windows Active Directory or LDAP groups available with SMC roles assigned. On an initial installation, local user groups are created on the host Windows system for:

- GCK Advanced Users
- GCK Installers
- GCK Users

In addition, one account in each group is created which match the old default accounts for SMC. By default versions of Windows Server editions require more complex passwords (see: https://technet.microsoft.com/en-us/library/cc786468(v=ws.10).aspx). The "legacy" passwords used in earlier versions of SMC do not satisfy these requirements, so the installers when running on non-Server editions now provide the option of using the legacy passwords or using the new more secure passwords. Either set of passwords are just the factory default ones. It is assumed and recommended that installers or end users will change these to some other values during system installation and commissioning. The two sets of accounts that are set up by default are as follows:

Legacy Accounts

- Admin/admin
- Installer/installer
- User/user

More Secure Accounts

- Admin/12345ied!
- Installer/12345ied!
- User/12345ied!

If addition user groups want to be granted access, particularly if/when this controller computer has been added to a network Domain at an installation, then these can be managed on this page. The page appears as in Figure 30-1 below. This shows the state *after* the Retrieve button has been pressed to get all the available user groups.

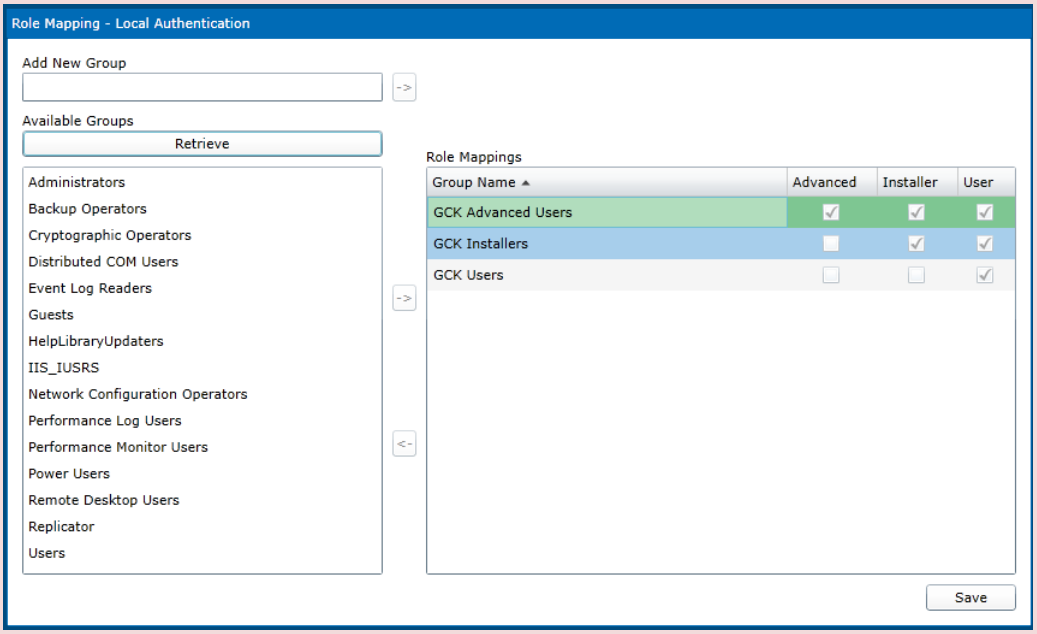


Figure 30-1: Role Mapping Initial Setup

If one wishes to get all Administrators on this computer, full GCK SMC administrator rights, this would be done by first clicking on the Administrators group in the left box, then on the [->] button to move this to the list as shown below in Figure 30-2.

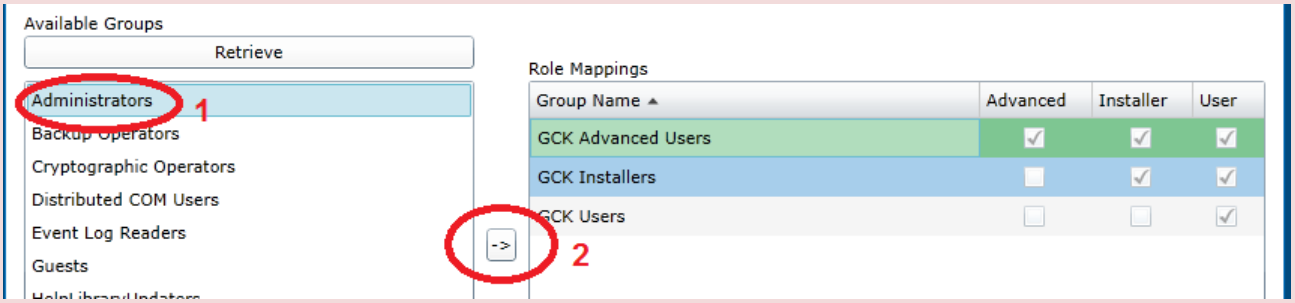


Figure 30-2: Moving Administrators Group to SMC Role List

Then, click on the highest role you wish to assign to this group. (SMC will automatically fill in the lower roles.)

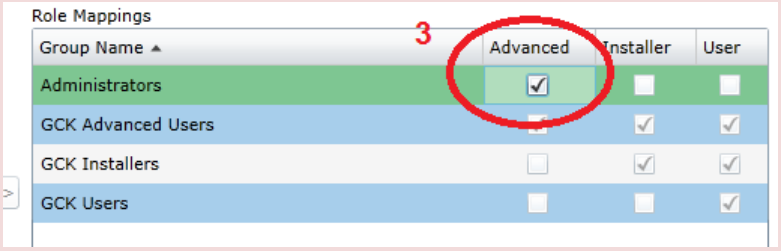


Figure 30-3: Selecting Administrators SMC Role

5.7.4 GLOBALCOM and Early GCK User Configuration

Below is the legacy User configuration page description. This applies to GLOBALCOM to GCK prior to Version 3.

When a system is initially configured, it has four (4) default users as shown in Figure 30-1. If you ran the ***First Run Setup Wizard*** and used different names, then your list will appear different. There are basically three (3) different categories of users that have a permission set based on their role as a system user. These roles are defined below and you configure them on a per-user basis as shown in Figure 30-3.

Admin

This level is for a user that needs to have administrative access to the system. A user with this permission level will have access to all system configuration options on the ***Admin*** tab.

Installer

A user with this permission level will have edit access to everything on the ***Overview***, ***Schedules*** and ***Configuration*** tabs. Some features on the ***Admin*** tab will not be available to this category of user.

User

A user with this permission level will have edit access to items on the ***Overview*** and ***Schedules*** tabs that are needed for basic system operation. All functions on the ***Configuration*** and ***Admin*** tabs are blocked for this category of user.

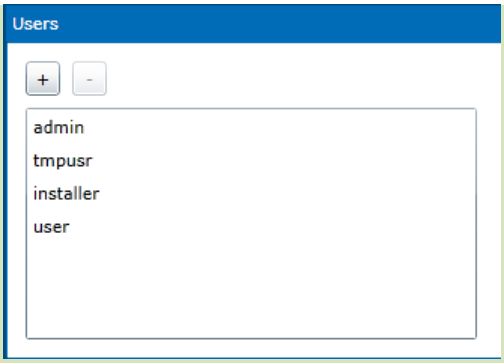


Figure 30-1: Users

tmpusr

This is a special user that exists in all systems. Should you forget the password to gain access to the system, you can utilize the tmpusr account to log into the system. The password for this account is a special date-sensitive password that you must obtain by contacting IED support personnel. They will give you the *Password-of-the-Day* for your system to use with the tmpusr account.

Note: If this account gets deleted, there is also a built-in user "tempuser" that also accepts the Password-of-the-Day.

Click this icon to add a new user. You will be prompted to enter a new user as shown in Figure 30-2. Type in a new username and click the **OK** button to add the new user. Selecting the **CANCEL** button will close the window without adding the new user.

Note: Usernames cannot contain any spaces.

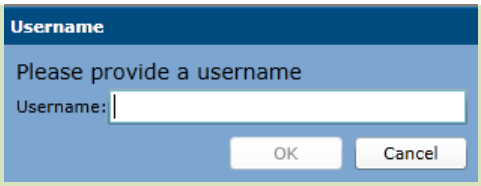


Figure 30-2: Add New User

Click this icon to delete the user that is currently highlighted in the list.

User Configuration

When you select a user in the list, the configuration options for that user become available for editing.

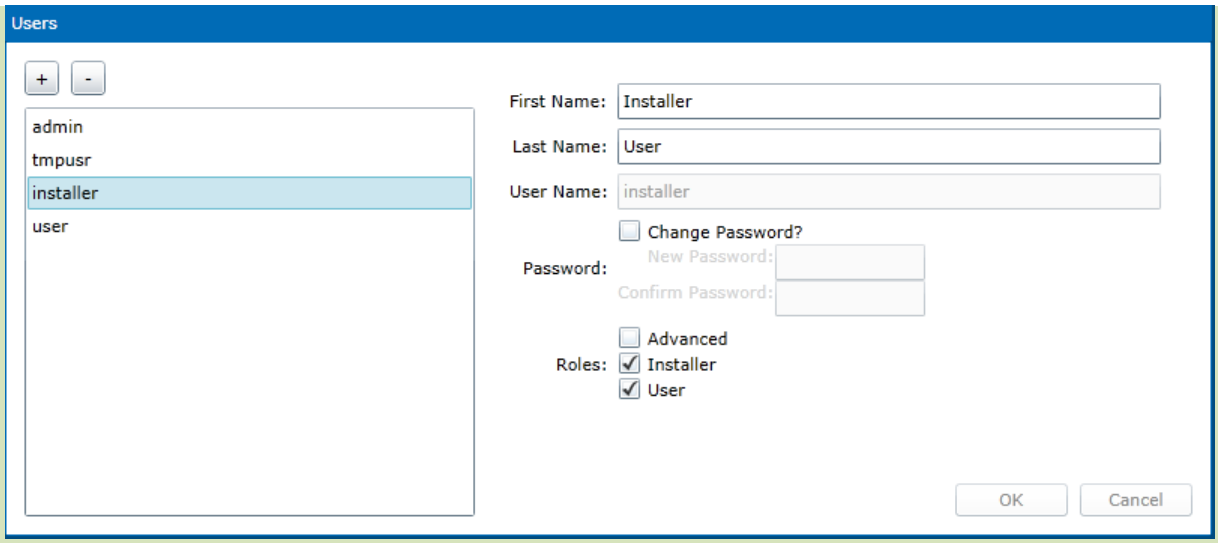


Figure 30-3: User Configuration

First Name

Enter the first name of the user that is associated with this username. This name will appear at the top of the screen when the user is logged in.

Last Name

Enter the last name of the user that is associated with this username. This name will appear at the top of the screen when the user is logged in.

User Name

This is the name that you entered when creating the user. This field cannot be edited. You must delete the user and add a new one in order to change the username.

Password

When you check the ***Change Password*** box, the ***New Password*** and ***Confirm Password*** fields become active to allow you to change this user's password. Enter the new password in the two fields and then new password will take effect when you click the **OK** button.

Roles

Select the role that best suits this user. Permissions are assigned cumulatively so you must check all three boxes to give a user full access to the system. The permissions associated with each role are defined at the top of this topic.

5.8 Netmon

NetMon is a built-in network monitoring tool used to monitor Ethernet messages sent between IED devices. This tool is almost exclusively reserved for use by IED personnel, but it is shown here because you may be asked to use it while communicating with support personnel. Using the tool is quite simple, but the data displayed by the tool is very complex and beyond the scope of this document.

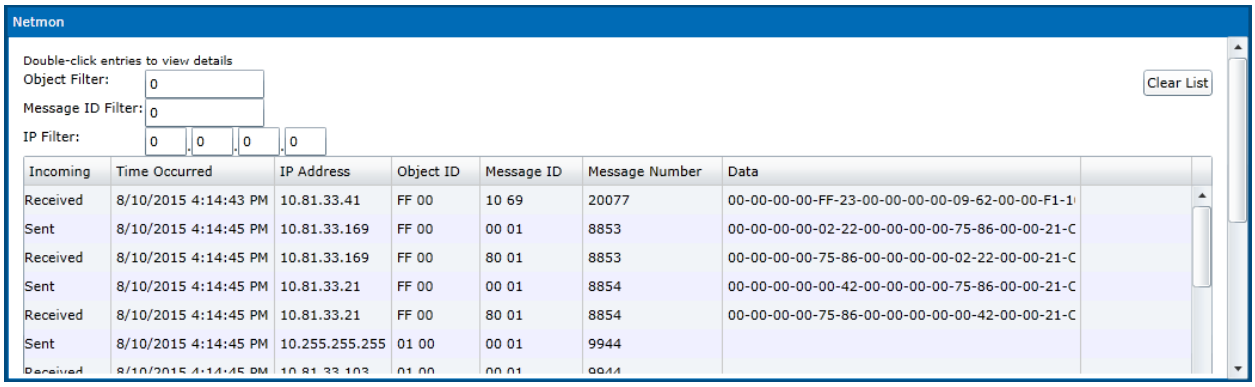


Figure 31-1: NetMon

Object Filter

Enter a valid object ID here to filter the message list and display messages that only contain that object ID.

Message ID Filter

Enter a valid message ID here to filter the message list and display messages that only contain that message ID.

IP Filter

You can enter a specific IP address in this field to view only message associated with a specific device at a known address. Figure 31-2 illustrates this where an address of 10.81.33.172 has been entered as a filter address. Only messages to or from this IP address will be displayed in the Message Window.

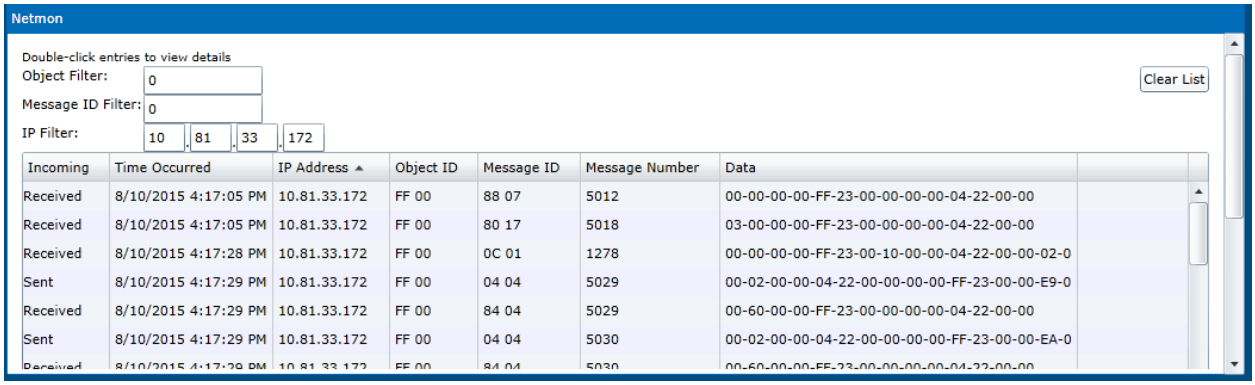


Figure 31-2: NetMon IP Filter

Clear List

Click this button to clear the contents of the message window.

Message Window

This list displays the message data in a tabular format.

Incoming

This field indicates if the host device sent the message or if the host received it from another device. ***Sent*** indicates that the message was transmitted by the host while ***Received*** indicates it was received by another device.

Time Occurred

This is the system date and time when the message was sent or received.

IP Address

For a ***Sent*** message type, this is the destination address for the message. This could also be a broadcast IP address for certain messages. For a ***Received*** message type, this is the address of the device that originated the message.

Object ID

This field displays the object ID contained within the network message.

Message ID

This field displays the message ID contained within the network message.

Message Number

This field displays the message number contained within the network message.

Data

This is the raw message data in hex format that is contained in the message.

Message Details

You can view more detailed information for an individual message by double-clicking on it in the Message Window. This will open another window with additional information as shown in Figure 31-3. If the message uses the IED24 message protocol and the ***Interpret*** checkbox is checked, this display will decode the raw hex data and display the IED24 message data values. If it cannot be interpreted as an IED24 message, then only the raw hex data will be displayed.

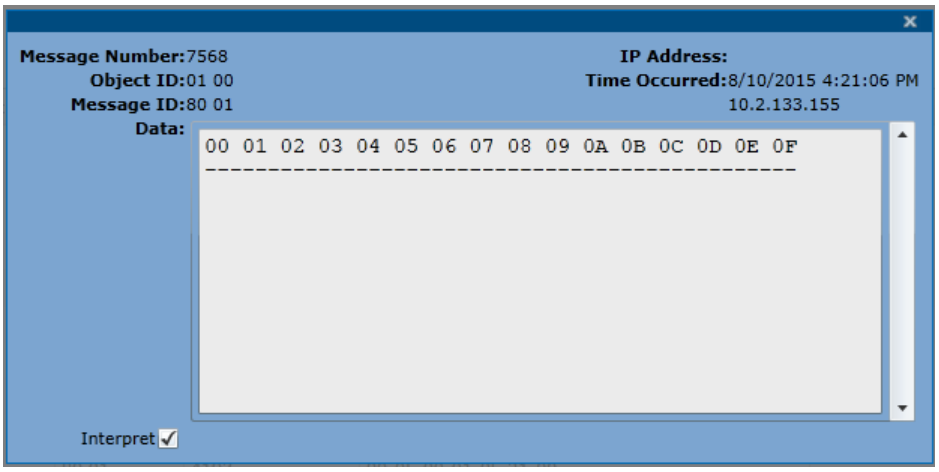


Figure 31-3: Message Details

5.9 Debug Messages

This tab is used to display various system messages that can be used for debugging purposes. The top portion of the tab contains a list of checkboxes that allow you to enable or disable a specific type of message from appearing in the message window. Using this will cut down significantly on the amount of data displayed in the window and make it easier for you to track a series of messages. When a box is checked, then its corresponding message type will be displayed in the message window. If it is not checked, it will be excluded from the display.

Most of these debug messages are useful to factory personnel only, but there are some instances where you may need to use them. For example, you could only select the LIR message type if you are troubleshooting a problem related to a contact closure connected to the built-in 1200LIR board in a 1200ACS unit. This will allow you to verify if the unit is detecting the contact closure. If it is being detected but not launching an action correctly, then the problem may be in the way the action is configured. If the closure is not showing up in the debug window, then it is not being properly detected by the 1200LIR board and could be a connectivity problem.

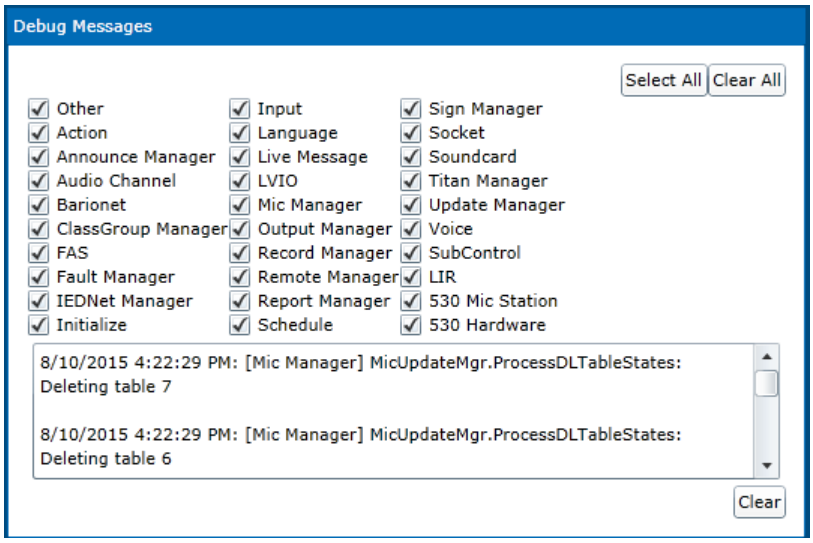


Figure 32-1: Debug Messages

Select All

Click this button to check all message type boxes.

Clear All

Click this button to uncheck all message type boxes.

Clear

Click this button to clear the contents of the debug message window.

5.10 Logs

The Log is used to keep a record of any changes made by system users, any faults that have occurred, and any announcements that have been made. The system utilizes the *Windows System Log* for logging user actions. Refer to the ***Windows System Log*** for details on accessing the log directly or for clearing the log when necessary. You will find the information in a new log titled ***IED_User***.

Within the ***Logs*** menu there are three options: ***User Activity Log***, ***Fault Log***, and ***Announcement Log***. Alongside these three options is a ***Refresh*** button that will update the currently displayed log.

User Activity Log

This is a log of user activity on the System Management Center, such as adding devices or editing parameters. An example is shown in Figure 33-1.

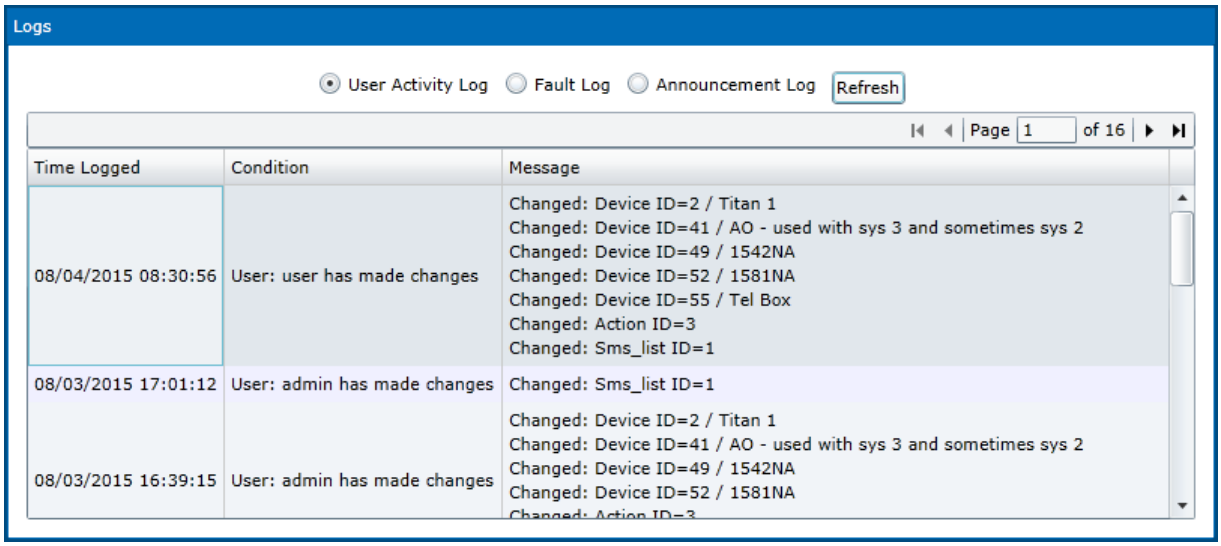


Figure 33-1: User Activity Log

Fault Log

This is a history of faults in the system. An example is shown in Figure 33-2.

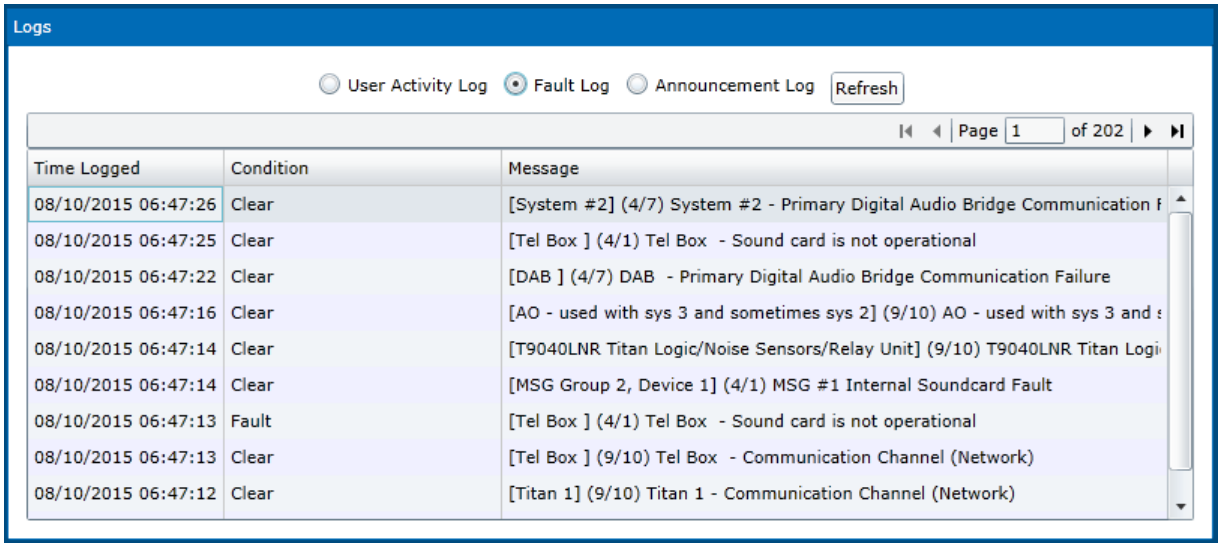


Figure 33-2: Fault Log

Announcement Log

This is a history of announcements in the system. An example is shown in Figure 33-3.

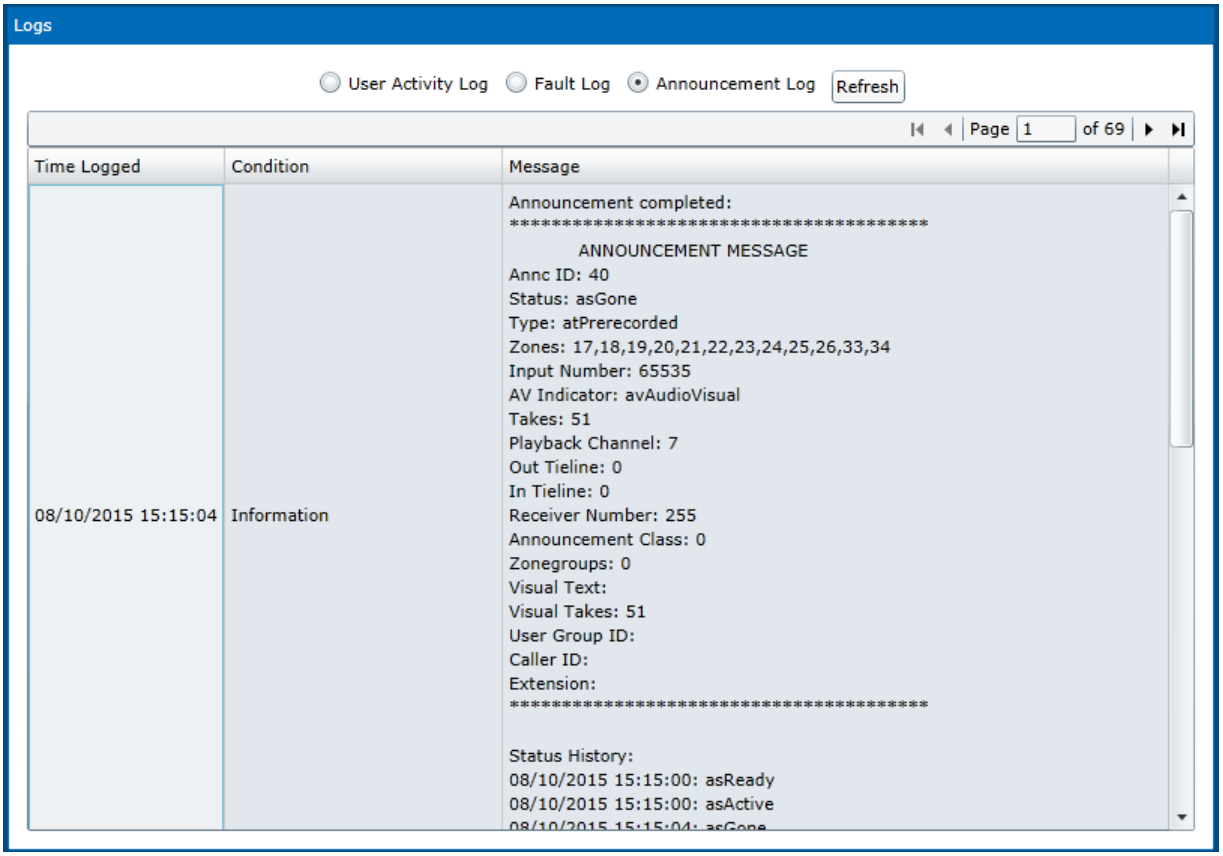


Figure 33-3: Announcement Log

As the log grows in size, it will expand to multiple pages. The current page and total number of pages available are displayed at the lower right corner of the Log tab. From here, you can use the navigation arrows to navigate to the first, previous, next, or last pages. You can also type in a page number in the box to go directly to that page.

Appendix A: Licensing the Software

GCK has primarily two aspects to licensing: the number of endpoint devices supported and the maintenance period.

Number of Endpoints

There are two types of endpoints in the system: Standard Definition audio (SD) and High Definition audio (HD) endpoints. Non-audio endpoint devices like logic input or relay output devices count as SD endpoints as well. SD audio devices are IP audio devices like IP speakers, IP zone controllers and Annuncicom devices. HD audio devices are all CobraNet-based devices such as mic stations, 1502AI/AO aux audio I/O, and Titan frames. Each endpoint requires one license regardless of the number of sources or zones contained in that device. Therefore a 4-zone DNA amplifier frame needs one endpoint license in GCK, the same as a 16-zone Titan T9160 amplifier frame.

Maintenance Period

Normal license activation is for one year. This duration is called the maintenance period. During that time, the software may be used and software updates that come out may be applied. At the end of that time, one needs to renew the maintenance period. Multi-year maintenance period activations/renewals are available. When the maintenance period expires the software will not stop functioning, but one cannot do any updates until the maintenance is renewed.

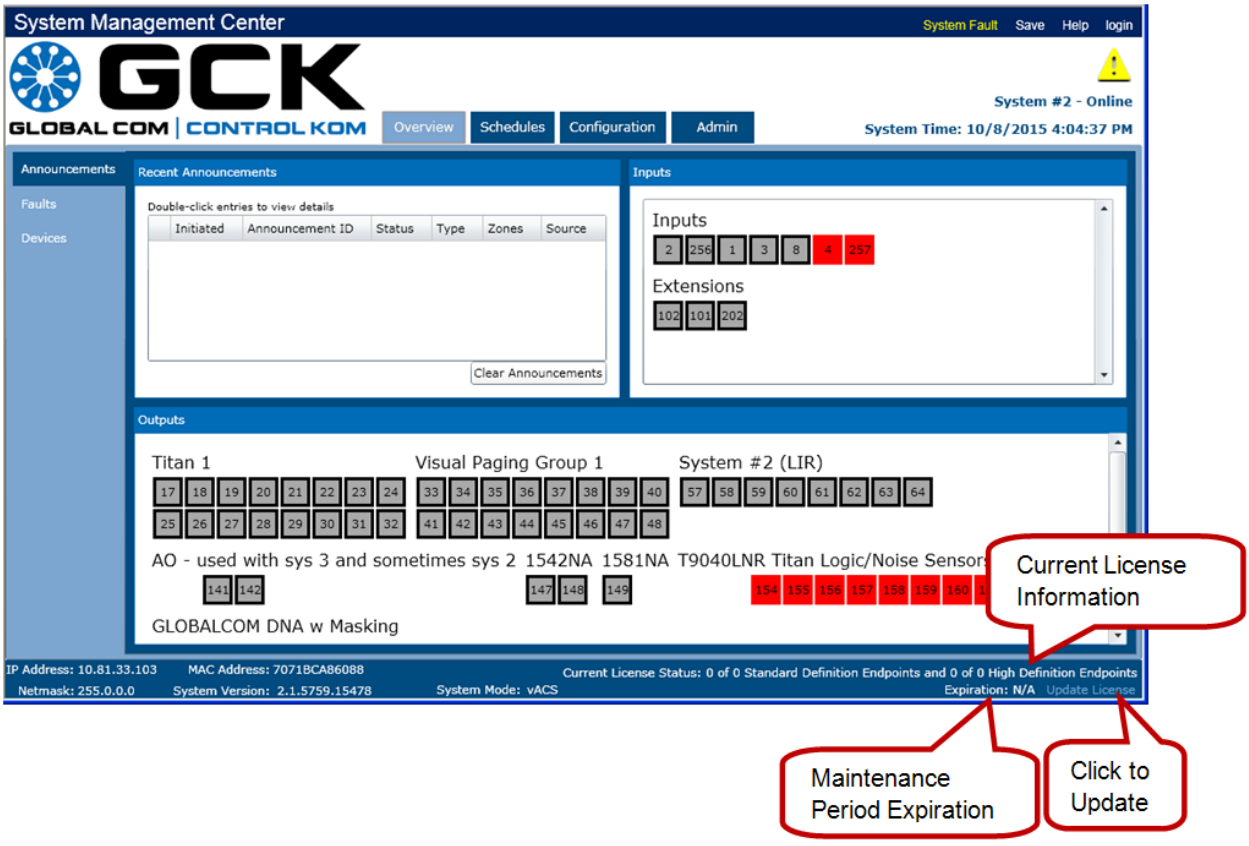


Figure A-1: SMC Window

A.1 License Update/Activation

Figure A-1 shows where this information is shown on the main SMC window. If one clicks on the Update License label in the lower right corner, this brings up a license update window, the center portion of which is shown below in Figure A-2. Explanation of the areas on this form are listed below.

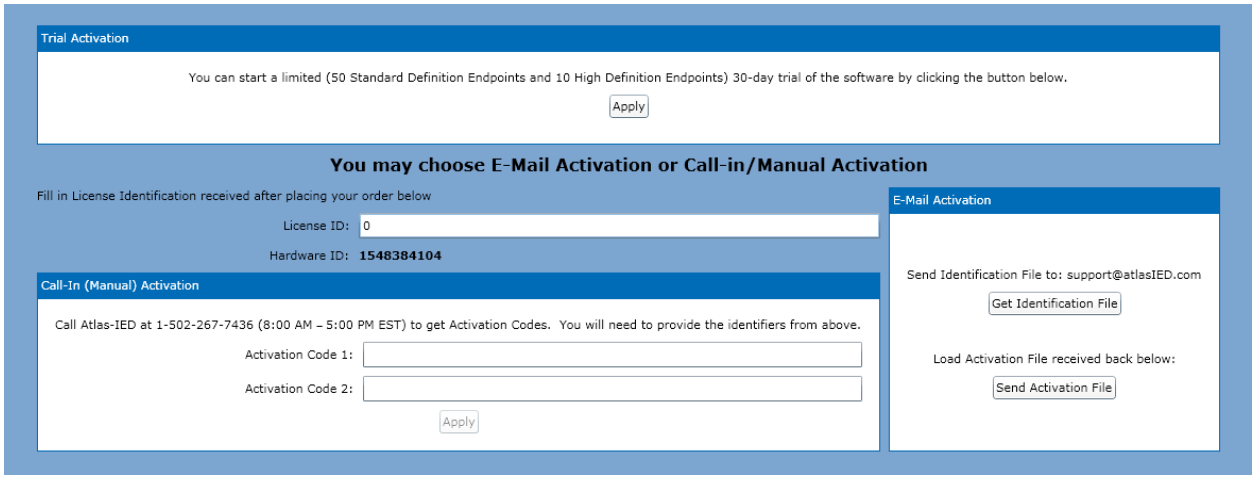


Figure A-2: Update License Form

Trial Activation

If no license for GCK has been activated on this hardware yet (i.e., first time users), then SMC offers a limited time trial which can be activated by clicking on the ***Apply*** button. Unlike the maintenance period, when the trial period is over, the software will stop working completely. This trial is intended as simply a way to get one's feet wet with the software or to bridge over until the real activation codes can be procured and applied.

License ID

This is an identifier that is unique for your job/project that is procured when a license if purchased from AtlasIED. This identifier may be used in the future to determine who the license was original sold to, who the installer/contractor was, etc. When calling in for manual activation, one will need to provide this number as well as the Hardware ID.

Hardware ID

This number is derived from features of the hardware that uniquely identify it. License activations are keyed to this Hardware ID to prevent abuses such as attempts to install the same license on multiple computers. When calling in for manual activation, one will need to provide this number as well as the License ID.

Activation Codes 1 and 2

These numbers are provided by AtlasIED over the phone for manual activation. Once entered into the edit boxes, one presses the ***Apply*** button to activate it.

Note: One will receive activation codes for each feature to be applied to the license: # of SD endpoints, # of HD endpoints and maintenance period.

E-Mail Activation

To activate via e-mail, one first enters the License ID in the edit box for it, and then presses the ***Get Identification File*** button. (The identification file contains the License ID and Hardware ID.) One then e-mails this file to AtlasIED at: support@AtlasIED.com . An activation file is returned via e-mail and be applied via the ***Send Activation File*** button. In the e-mail, be sure to indicate what project this is for, such as the sales order number that this system was purchased under.

Note, if multiple feature activations are required, they are all covered by the one activation file you will receive back from AtlasIED

A.2 License Issues

There can be several issues between the current GCK license and how the software is being used. These issues and what they mean are explained below.

License Not Yet Activated

In this situation, users can still build projects in the SMC and save them, but the real-time functions of the system will not work.

License Activated, But Insufficient Endpoint Licenses

In this situation, users can still build projects in the SMC and save them. Also the real-time functions of the system are active, but it will only operate with the first N devices in the configuration that meet the license endpoint counts. Additional endpoints beyond the license limit will be ignored.

Trial Period Has Expired

This situation is the same as License Not Yet Activated. The once operating controller will no longer function.

Maintenance Period Expired

In this situation, users can still build projects and save them – although users will be reminded of the expiration when they do. The real-time functions of the system will continue to operate. The software cannot be updated to the latest revision, whether to fix bugs or add new features while in this situation.

Appendix B: (Intentionally Blank)

This section on using the First Run Setup Wizard has been deprecated.

Appendix C: Upgrading from GLOBALCOM to GCK

In some ways GCK is the next evolution in GLOBALCOM. Projects implemented in GLOBALCOM may be upgraded to GCK with no loss in functionality. There are two key differences though between them:

- User Defined Recorded Messages and Chimes
- Software Licensing

These features are described further below.

User Defined Recorded Messages and Chimes

In GLOBALCOM, user-defined messages or pre-announcement tones either drew Takes from the standard IED library or had to load them being careful not to create a conflict with a Take number already in the library (e.g., only use the 9400's range). In GCK, the user message/chime library space has been separated from the IED library. The user library can have up to 9999 takes without fear of Take number conflict.

However, in the process of upgrading from GLOBALCOM, it will be necessary to move any Takes used in the project from its old IED Library location to the user defined library location, re-numbering the Takes to start from 1. Of course, this will require some fixes to the project file to account for the new Take numbers. There has been a tool built to seamlessly make this move, the GCK Take Migrator explained below.

Software Licensing

Starting with GCK, the software uses a new licensing model that enforces endpoint licenses and maintenance periods. When GCK is installed over top of an existing GLOBALCOM system, though it respects the existing GLOBALCOM license as far as allowing use of all endpoints. However, down the road when updates may be required to the software, one *may* have to upgrade the license on the unit to allow this. (Everybody's situation with existing GLOBALCOM licenses, Platinum Assurance Plan contracts, etc. may vary.)

Upgrade Steps

To upgrade from GLOBALCOM to GCK, the following steps should be followed.

- Backup the current project configuration via the Backup/Restore section under the Admin tab of the SMC. (See Section 5.1 of this manual.)
- Run the GCK Upgrade Installer to install some new elements not handled by GLOBALCOM update packages. (More on this below.)
- If upgrading to GCK Version 3 or later, run the SMC HTTPS Updater, which moves the web pages from unsecure to secure sockets, and creates default GCK Windows accounts and groups.
- Restart Windows to get all the IED services running properly again.
- Install the GLOBALCOM update package (.gcz file) for the latest GCK update. (See Section 5.2 of this manual). *For a major update such as this one, one may wish to not upload the .gcz file through the webpage, but instead just copy it to C:\IED\update folder from a USB drive.*
- Close SMC (i.e., the web browser it is running on).
- Run the GCK Take Migrator tool (more on running it below) and migrate all user defined takes.

Upgrade complete. Restart SMC, if desired, to marvel at the new user interface.

GCK Upgrade Installer

The GCK Upgrade Installer first checks for Windows pre-requisites. Older GLOBALCOM systems used the then-latest Microsoft .Net environment, version 4.0. Some of the newer software requires the current latest .Net, version 4.5.2. If not present on the system, the installer will launch this Microsoft installer. The installer may ask to either stop other software and services or else require a reboot after the installation. Either option will work. *It is important that this get properly installed before continuing with the IED GCK Upgrade Installer.* If a reboot is done, simply re-run the installer after Windows comes back up.

Next The GCK Upgrade Installer re-organizes the System Management Center (SMC) web pages to the new friendlier approach. This change should be transparent to the user as there is a re-direction installed from the default/root web page to the new location.

Thirdly, the GCK Upgrade Installer updates the underlying IEDnet files to the latest version, if necessary.

The last stage of the GCK Upgrade Installer is to install the following three packages. These all run as their own installers with prompts. One should always leave the default options as displayed and click through "Next" buttons.

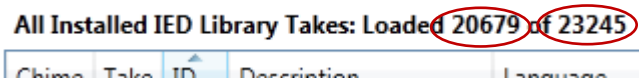
- VB-Audio Virtual Cable – Third-party application used by new Telephone Interface in GCK.
- Updated GLOBALCOM Update Manager – This is the service that unpacks and installs new versions for IED services that come in .gcz packages. With this version, it also handles encrypted .gce packages as well.
- GLOBALCOM Take Migrator Tool – This tool is used to either move Takes from the IED library area to the new user Take area. Initially this should be run to move Takes that are used in the latest project file. It may also be run in the future to extract other general-purpose audio Takes from the IED library.

The remainder of this appendix is about using the GLOBALCOM Take Migrator Tool.

Using the Take Migrator Tool

The GCK Take Migrator tool is launched by double-clicking on the desktop icon such as shown in Figure C-1. This brings up the tool's window such as in Figure C-2. All Takes known to GLOBALCOM (e.g., the IED provided library plus any user-defined ones) are listed in the list box at the bottom of the page. Note, it can take some time to build this list. During that time, progress will be shown in the label above the bottom list box, such as below.

Figure C-1: Desktop Icon



If there are Takes used in the GLOBALCOM project, they will appear in the top two list boxes (pre-announcement tone Takes in Chimes and other prerecorded message Takes in the middle box).

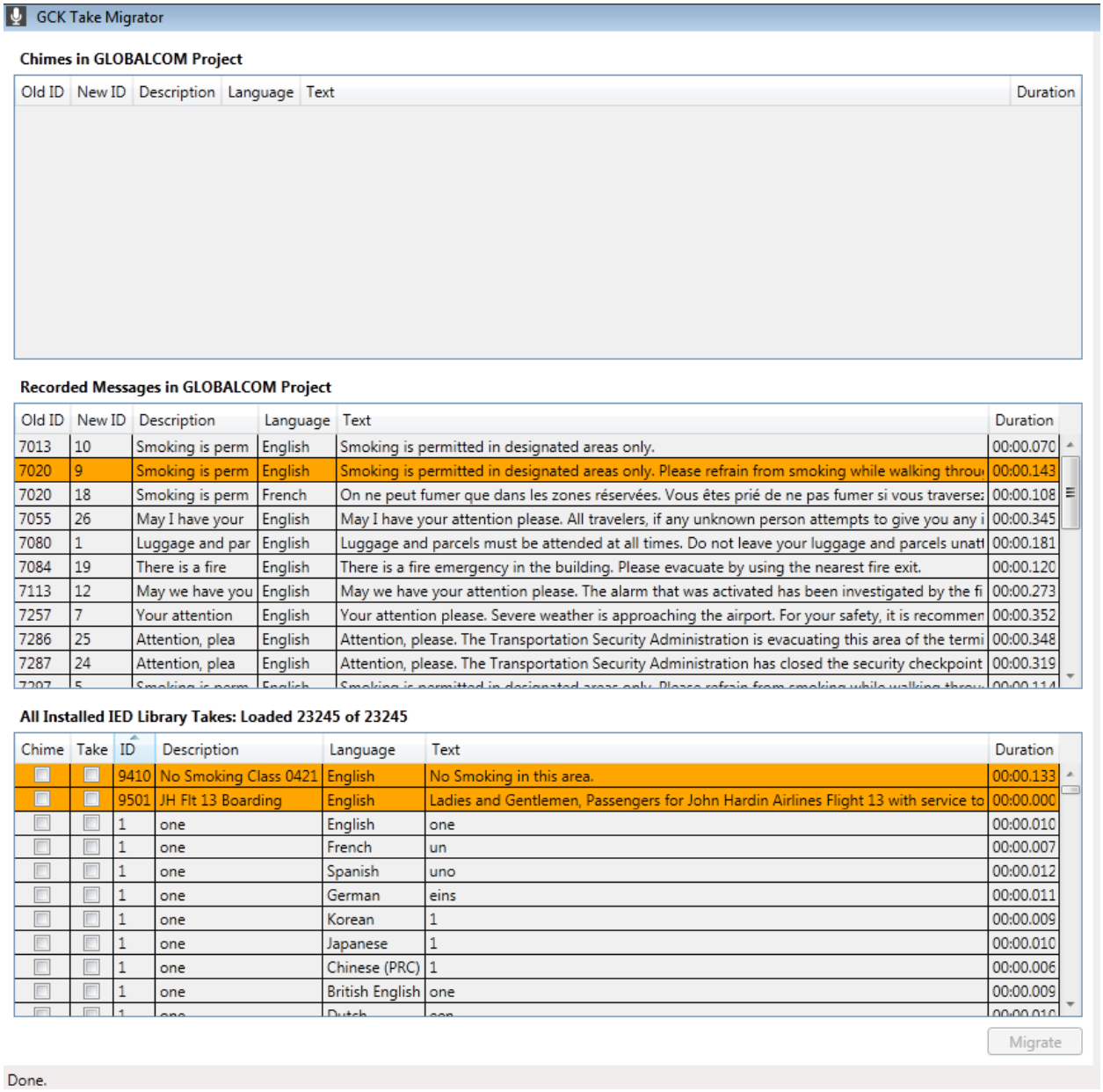


Figure C-2: GCK Take Migrator Main Window

Now all one has to do is press the ***Migrate*** button to migrate the takes listed in the Chimes and Recorded Messages list boxes. For example in Figure C-2, Take 7013 from the IED English library will be moved to user defined Take 10, etc. The project file will be automatically updated to match the new Take numbers.

If one also wishes to copy additional Takes out of the IED library at this time, this can be done by checking the checkboxes in the Chime and Take columns in the lower list box. The checked items will be assigned new Take IDs and copied over to the user defined area as well when the **Migrate** button is pressed.

Note, if there are Takes that appear in the old project file or Takes.xml listing file, but do not seem to be present on the hard drive of the unit, these are indicated by coloring the background of the row in the list box (any of the three list boxes) orange as in the example below in Figure C-3.

All Installed IED Library Takes: Loaded 23245 of 23245

Chime	Take	ID	Description	Language	Text	Duration
☐	☐	9410	No Smoking Class 0421	English	No Smoking in this area.	00:00.133
☐	☐	9501	JH Flt 13 Boarding	English	Ladies and Gentlemen, Passengers for John Hardin Airlines Flight 13 with service to	00:00.000
☐	☐	1	one	English	one	00:00.010
☐	☐	1	one	French	un	00:00.007
☐	☐	1	one	Spanish	uno	00:00.012

Figure C-3: Missing Take Files in GCK Take Migrator

When the migration is completed, if there were some missing files, the tool will present an error pop-up indicating that some files were missing and ask whether you want to view the error log file. If you click on the Yes button, you will be presented with the file such as is shown in Figure C-4.

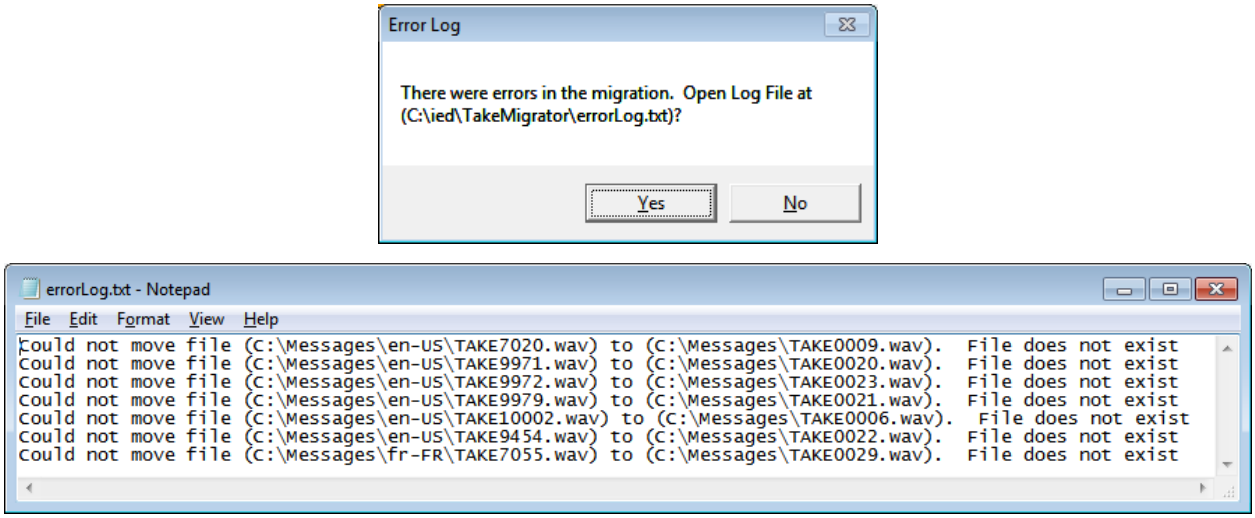


Figure C-4: Error Log Prompt and File in GCK Take Migrator

At the end of the migration, the tool creates an .html log file, and prompts you to view it as shown in Figure C-5 below.

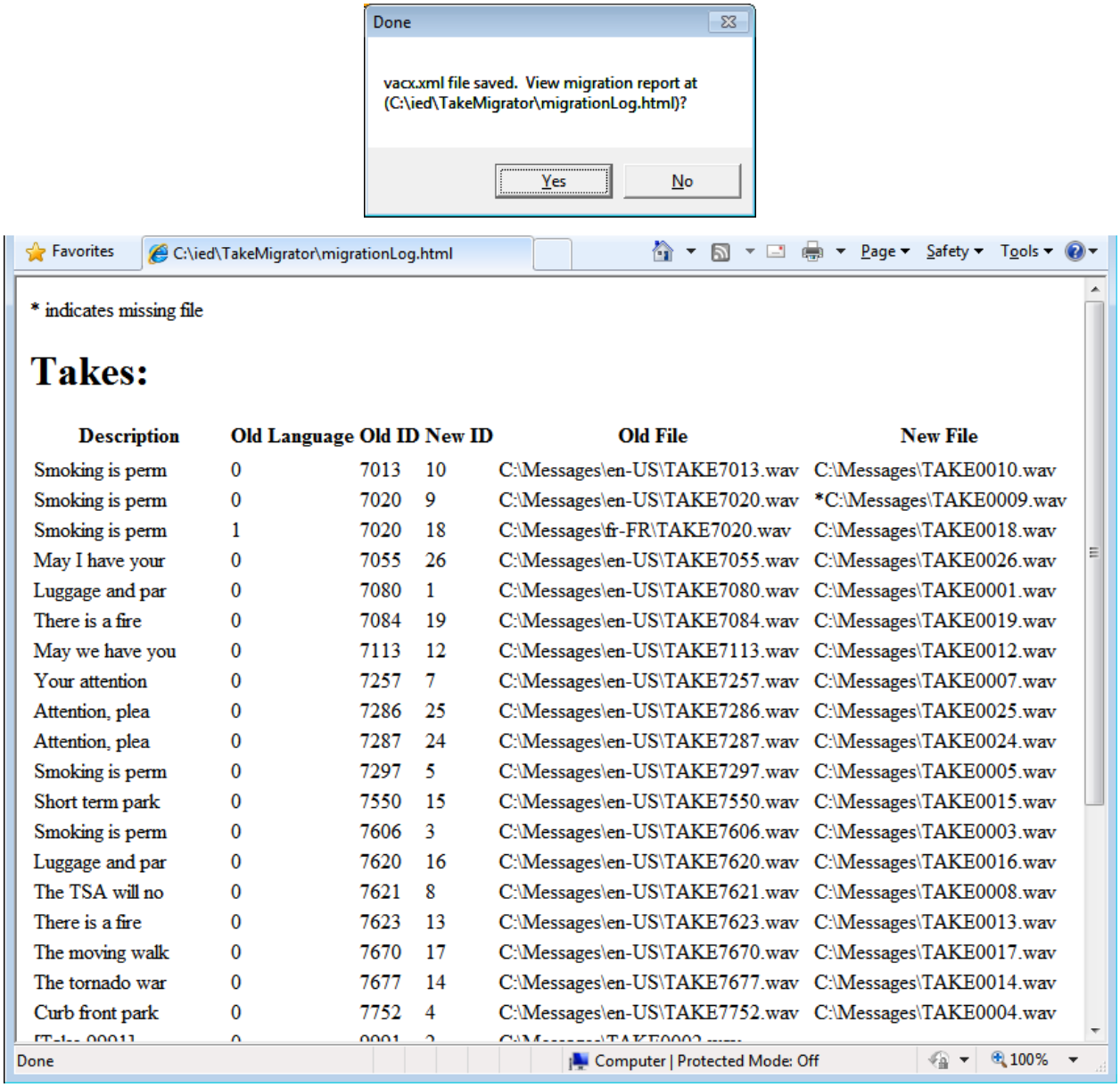


Figure C-5: Migration Log Prompt and File in GCK Take Migrator

Using GCK Take Migrator Tool After Original Migration

After all the Takes have been migrated, there still may be times when it would be useful to pull a message file out of the IED library and put it into the project as a user defined Take file. This can be done by re-running the GCK Take Migrator. Now, only the bottom list box will be populated. The other two list boxes will be blank. One locates the Take of interest and checks the checkbox in the Chime column or Take column (or both). When all Takes are selected, click on the ***Migrate*** button to bring the Take into the project as a user defined file.

Appendix D: GLOBALCOM Network Protocol/Port Utilization

(This appendix is a copy of document IED005041 at the time this manual was prepared, included here as a convenience. An updated/later version of this document may be available.)

Destination Ports

The ports used depend on what features are implemented in a system. For a given system, the following network messages may occur which use the ports indicated:

- IEDnet Messages – These are TCP/UDP packets always sent to UDP port 3048. On GLOBALCOM systems the source port is port 3049. On legacy systems, the source port is 1026.
- SQL Server Messages – In Enterprise systems, the clients communicate to the Microsoft SQL Server database on the server computer. These are TCP/IP connections to server TCP port 1433.
- MSMQ Messages – In Enterprise systems, clients also communicate with IED-provided Windows services on the server computer via Microsoft Message Queuing (MSMQ). The ports used for this are: TCP: 1801, RPC 135 and UDP: 3527 & 1801. If firewall or other network configuration needs to be done to accommodate MSMQ, one should refer to Microsoft's online articles such as: http://support.microsoft.com/kb/178517
- ICMP (Ping) – Used to monitor some devices on the network. This uses TCP/UDP Port 7.
- FTP – Used to pass configuration files to Lifeline ACS's and new message files between ACS's, Lifelines and MSG boxes. This uses UDP/TCP Ports 20 and 21.
- SNMP – Used control some peripherals like DNA7800's, 15xxNA's or 1100DAB's. If a Lifeline controller is employed, this is used to ensure the other controller's bundles are cleared. In some systems, SNMP Traps are used to report fault information. The ports used for this are UDP/TCP Ports 161 and 162.
- HTTP – Used to access GLOBALCOM System Management Center (SMC) and to view Logs on the server or to access T-CAS via TCP port 80.
- WCF (Windows Communication Foundation) – This is between services/devices, such as between the 1100ACS and the 1100MSG units. These use TCP ports 8088 and 8089.
- SIP (Session Initiation Protocol) – This is used for VoIP phone connections. These use a range of UDP ports 5065 – 5105, although there are configuration options in GLOBALCOM which may be changed by the installer.
- RTP (Real-Time Protocol) – This is used for VoIP phone data exchange. These use a range of UDP ports 40006 – 40086, although these are configuration options in GLOBALCOM which may be changed by the installer (user).
- SMC (System Management Center) Live Feeds – These are Silverlight feeds to drive such things as meters and announcement/zone activity on the web pages using TCP ports in the range of 4502 – 4534. In addition, there are optional protocols and ports used depending on what kinds of remote access are implemented on site:
- LogMeIn – If this remote access is installed for IED Technical Support, TCP port 443.
- Windows Remote Desktop (RDP) – For accessing one client computer on site from another, TCP port 3389
- VNC – Alternate to RDP for computer-to-computer access, TCP ports 5500, 5800 & 5900

Source Ports

Sources ports can be any free port. This is managed by underlying drivers and network stacks. For example, an SNMP request may go to port 161, but the source port can be any free port. Some software uses only free ports above 49152. Other software uses any free port. For example, HTTP requests often use lower valued free ports

in the 1000's range. IED recommends that any network/firewall configuration should not block or filter on source port.

Other Network Traffic/Notes

Underlying Ethernet management protocols such as ARP must be enabled across the network connecting IED devices. It is standard for network stacks to time-out dynamic ARP entries in their tables every few minutes (ranging from 2 to 10 minutes by default in most versions of Windows, for example). This protocol must be enabled across all layer 2 and layer 3 network connections to IED devices and computers that talk to them.

In addition, the network should support CobraNet traffic within each system's LAN or VLAN. CobraNet is layer 2 and does involve broadcasting (technically MAC multicasting). All traffic is identified as Ethernet type 0x8819. The exact requirements on network equipment and configuration can be found on the cobranet.info website, in particular the page on network performance is:

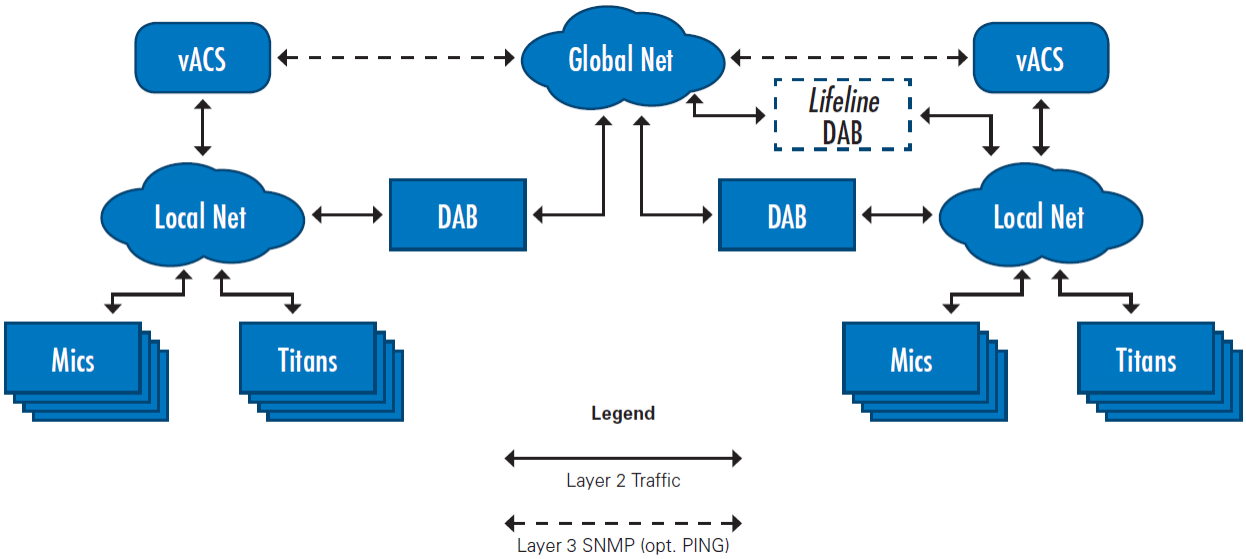
http://www.cobranet.info/support/design/performance

Communications between LANs/VLANs can/should block CobraNet traffic, but should include all other TCP/UDP and ARP traffic described above. Not doing this will risk breaking certain features of the system.

1100DAB Specifics

The two sides of an IED1100DAB (Digital Audio Bridge) are connected to two different networks (LANs or VLANs) and provide a mechanism for bridging CobraNet audio across those two networks. To allow for the dynamic configuration of CobraNet bundles during real-time operation, the GLOBALCOM 1100/1200ACS must be able to communicate with both sides of the 1100DAB at all times. This means it must be able to communicate using the SNMP protocol, which uses the fixed destination port of 161, but any available source port above 49152. In addition, basic network communication protocols must be enabled such as ARP, and PING. (PING is not absolutely required, but is highly recommended for technician diagnostic purposes.)

The block diagram below shows how 1100DAB's are connected to networks. The Local Net will be implemented as a set of network switches. The Global Net may be implemented via separate switches and/or routers, or just by a bridge between VLANs on a master/core switch.



Appendix E: ACS to ACS IP Multicast Layer 3 Network Requirements

(This appendix is a copy of document IED005068 at the time this manual was prepared, included here as a convenience. An updated/later version of this document may be available.)

For ACS ↔ ACS audio transport in a GLOBALCOM system between VLANs, IED employs IP Multicasting. This enables one ACS to source audio that may be received by N receivers. To support this capability, there are prerequisite network equipment and configuration settings which must be in place.

Switches

Switches must support IGMP (Internet Group Management Protocol). The current standard is IGMPv3, but versions 1 and 2 are compatible. There are other settings related to IGMP that may be configured. IED has found that on some installations, enabling IGMP Snooping has a detrimental effect on the local CobraNet audio. So even though it may help IP Multicasting, it may hurt local isochronous Ethernet audio traffic, due to some impacts internal to the switches.

Multicast Router

To route multicast traffic between subnets and maintain multicast group membership lists, a multicast-capable router is required. If more than one router is necessary, the routers must communicate multicast information to each other. This is typically done using Protocol Independent Multicast (PIM). There are several types of PIM. One common type is Sparse Mode, typically referred to as PIM-SM. There is also a Dense Mode version of the protocol. As far as IED knows, either mode may be employed with a GLOBALCOM system, as recommended by the site's network engineer or switch manufacturer for the type of installation.

Multicast Groups

Multicast groups are generated using Class D network addresses (224.0.0.0 – 239.255.255.255) in combination with a port number. In a VLAN situation, 224.0.0.X addresses cannot be used. In the GLOBALCOM configuration software (System Management Console or SMC), there are defaults assigned. These may be manually over-ridden as dictated by the site's network engineer. By default, the ACS multicast group is 239.192.0.x where x is the system number. So System 1 uses 239.192.0.1, System 2 transmits on 239.192.0.2, etc. The default port numbers used IP multicasts are 5001 – 5008 for system 1, 6001 – 6008 for system 2, 7001 – 7008 for system 3, etc. Again, these can be manually over-ridden if different ranges of ports are opened up between VLANs.

Appendix F: IP100 Family LCD Front Panel Operation

There is a 16 character by 2 line LCD (Liquid Crystal Display) with navigation buttons on the left front of the IP100 series products, as shown by the highlight oval in Figure F-1 below. The up and down arrow buttons are used to navigate through lists, such as menu options and faults list. The left and right arrow buttons are only used to move forward or backward in position when entering data, such as the Level 2 password. The green check button is the select button. Typically pressing this button will select a menu item and if a sub-menu is available, move the user into that sub-menu. The red X button is used to go back one level/option (e.g., reverse of select).

Figure F-1: Front Panel Display & Navigation Buttons

During boot-up, the LCD shows the product identity screen as shown at right. After the unit has fully started up, the display changes to the summary screen described below.

```
AtlasIED
IP100 Series
```

Figure F-2 summarizes the menu tree available on this display. Features in italics are only available to users who log in for level 2 access. The summary screen is what is shown when the menu is in its quiescent state. Pressing the select button while the summary screen is displayed moves the display into the top-level menu as shown down the left side of Figure F-2. Pressing the select button at any other level moves one over to the right another step, e.g., to sub-menus or setting options.

An item that shows up frequently in the menu tree is the [ACK Prompt]. This is an acknowledgement prompt. The top line of this prompt is tailored to the operation that is being acknowledged. For example if clearing all faults, then the prompt may appear as at right. One acknowledges (confirms) the operation by pressing the green check select button or cancels out by pressing the red X button.

```
Ack Clear All
√-OK X-Cancel
```

The Summary Screen appears when the menu is not in use. After two minutes of no navigation button activity, the LCD display will automatically return to the Summary Screen. Alternately, canceling out of the top level menu, returns to the Summary Screen. This screen lists the current status of the unit and any active faults. The status line can display any of the following statuses:

```
Primary Active
Faults: 0
```

- **Inactive** – offline due to configuration issues or serious faults
- **Primary Active** – controller that is running normally
- **Monitoring** – lifeline controller that is currently monitoring one or more active controllers. When a lifeline takes over for a controller, its status will change to Primary Active.
- **Active** – non-controller such as message server (MSG) or telephone service (TEL) device is running normally.

Pressing the select button while the Summary Screen is displayed takes one to the Main Menu, described in the next section, followed by descriptions of the other menus that branch off the Main Menu in the sections that follow. While navigating the menus, the top line always shows the current location in the menu tree (e.g., Main Menu), and the second line shows the current option that will be taken if the Select button is pressed.

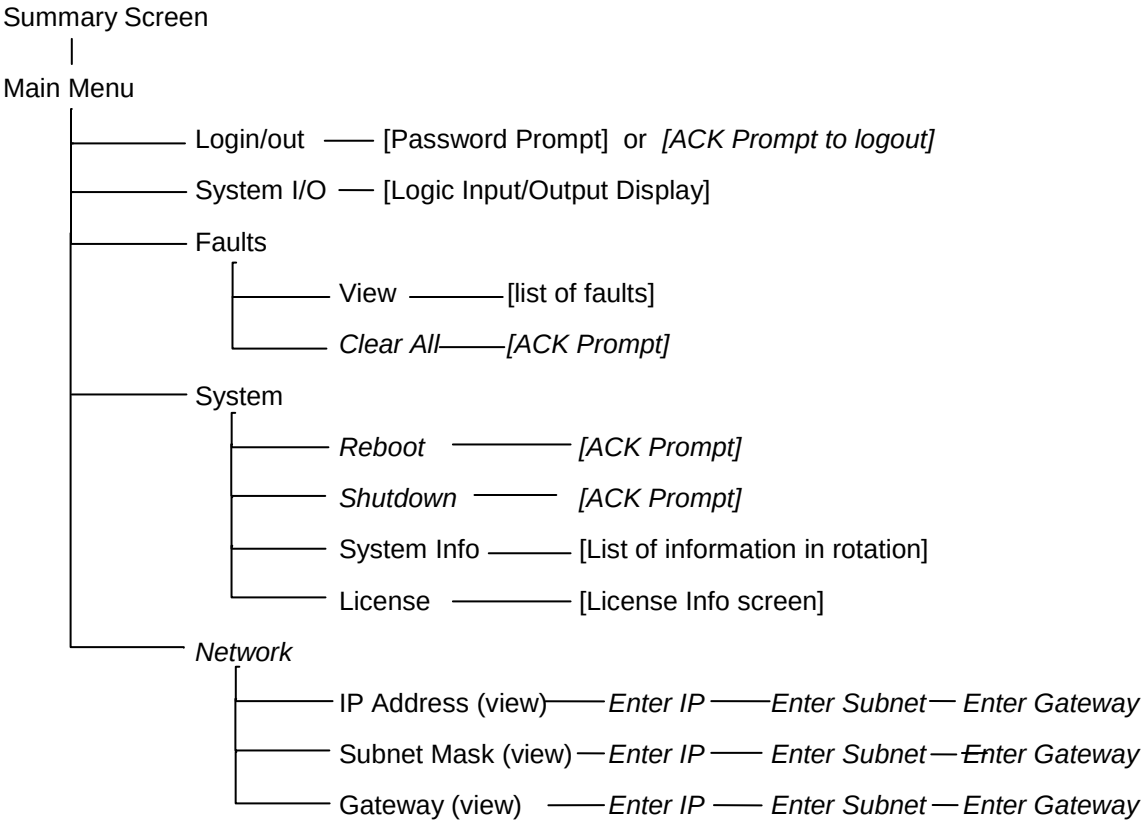


Figure F-2: LCD Menu Structure

F.1 Main Menu

On the Main Menu the following options are available to select:

- **Login/Logout** – This is how access to the Level 2 features is obtained. When not currently logged in this shows **Login**. Selecting **Login** will present the user with a login prompt. If logged in, this menu item shows **Logout**. Selecting **Logout** will present the user with an acknowledge prompt to logout.
- **Faults** – Selecting **Faults** will present the Faults Menu. A Level 1 user will only be able to view faults in each category. A Level 2 user (entered the correct password) will be able to both view and clear faults.
- **System I/O** – If the box has the Logic Input/Relay output section as the IP100 family does, then selecting this will display the current state of the logic inputs on the top line and the relay outputs on the bottom line.
- **System** – Selecting **System** will present the System Menu. A Level One user will be able to view system information. A Level 2 user will also be able to reboot/shutdown the system.
- **Network** – Selecting this menu will display the IP Address, Subnet Mask and default Gateway settings of the controller. A Level 2 user can select any of these and go into a sequence of three prompts to edit all three properties.

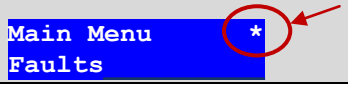
Since the convention is to show the menu location on the top line and the current option on the second line of the LCD display, when first entering the Main Menu, the display will appear as at right. As one presses the down arrow button the second line will change to Faults, System I/O, System and Network with successive presses. One presses the Select button (√) when the desired menu option is displayed on the second line in order to enter that submenu.

```
Main Menu
Login
```

F.2 Login/Logout

This option is used to login for Level 2 access or logout from this level, depending on whether the user is currently logged out or in.

The LCD menu indicates whether currently logged in or not by showing an asterisk (*) in the top right corner when logged in, e.g.,



If logging in, the user will be presented with the **Enter Password** prompt such as shown at right. One selects the first digit of the password by pressing the up (▲) or down (▼) arrows until the correct value is shown. Then, one presses the right arrow button (►) once to move to the second password digit, and use the up and down arrows to select that digit, etc. until all digits required are filled in. One can use the left arrow button (◄) to back up and correct any earlier digits as necessary. The digit currently being entered will flash between _ or a number and a full box cursor (■). The example at right shows the first three digits of password entered, and the cursor on the fourth digit. When all digits are entered, the Select button (√) should be pressed to enter the password.

```
Enter Password
_ _ _ _
```

By default, systems ship with a Level 2 password of 7436. This may be used to access the LCD menu and set the unit's IP address to one that is compatible with the network it is on. Once the user accesses the SMC web pages via the unit's IP address, this default password may be changed.

```
Enter Password
9 8 7 ■
```

F.3 System I/O Menu

Selecting this menu option leads to a screen that shows the current status of the Logic Inputs and Relay Outputs of the IP100 series device. This brings up a screen such as the one at right. If no logic inputs are active (shorted) and no relays are energized, the screen appears with two rows of eight dashes. Each dash is a position holder for input/output 1..8. If an input or output is active, then the dash in that position changes to the number of the position. For example, the second case at right shows logic inputs 2 and 6 active and relay output 5 active. The status updates to this display are not instantaneous, but update about every two seconds.

```
I:--------
O:--------
```

```
I:-2---6--
O:----5---
```

F.4 Fault Menu

On the Fault Menu, the following options are available to select to view/manage each fault list:

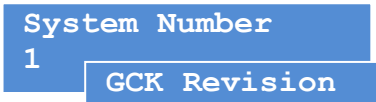
- **View** – View a list of current faults in the system.
- **Clear All** – Clear all faults in the system. If the fault condition persists, the system will re-discover the faults and re-post them to the fault list. The user must press the Select button (√) when the ACK prompt is displayed before the faults are actually cleared.

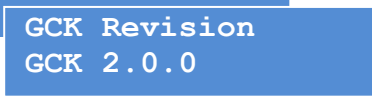
When the **View** option is selected, the user will see the first fault in the list displayed on the second line of the LCD display. The top line will say "Fault n/m" where n is the index of the fault in the list and m is the total number of faults (length of the list). So, in the example at right, the fault shown on the second line is the first of 20 faults.

F.5 System Menu

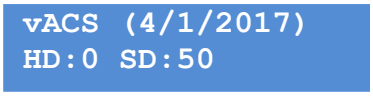
On the System Menu, the options that may be selected are:

- **Reboot** – [with Level 2 access] Reboot (restart) the system, after pressing the Select button (√) again at the ACK prompt.
- **Shutdown** – [with Level 2 access] Do an orderly shutdown of the system before powering it off. If the unit is going to be powered off for any reason, it is recommended that this shutdown be done first.
- **System Information** – View system information which consists of two types of information: System Number (e.g., identifier in a multi-ACS installation) and GCK version. The display will alternate between these two pieces of information such as in the examples at right.



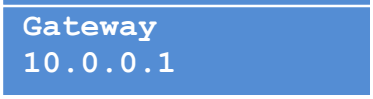


- **License** – View the license type, maintenance period expiration and end-point licenses such as in the example at right. License types can be vACS (primary controller), Lifeline, and MSG.

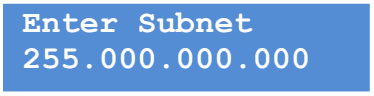


F.6 Network

There are three View-only options in this submenu: IP Address, Subnet Mask and Gateway (sometimes also called "default router". These options appear as in the examples at right.



If the user is logged in (has Level 2 access), then pressing the Select button while any of these views are present will go into a trio of edit screens that allow one to change these three settings. The process is the same as for entering the password: one uses the up/down arrows to select numbers in each position and the left/right arrows to move forward or backward in the entry. Pressing the Select moves to the next edit screen until all three are entered. If you do not wish to change an entry, simply hit the Select button on that screen.



Appendix G: SAFE Web Pages & Changes to SMC

An available plug-in for GCK is the SAFE (Smart Alerts For Emergencies) feature. This feature requires a separate installation of some web pages, a license activation key in GCK, and an optional license for SAFE desktop notification clients, if those are employed as part of the system. There are two parts to alerts:

1. Audio/Visual message Events that are played out from the announcement controller to zones and digital endpoints such as IP speakers.
2. Text and graphic Alerts that are sent to SAFE clients which are computers running the SAFE desktop notifier client software.

Both zones on the announcement controller and SAFE desktop notification clients can be designated to require acknowledgement. With this feature, Events/Alerts which are designated as needed acknowledgement are logged when they occur and all the zones within that Event that are so designated will be tracked for if/when an acknowledgement for the zone is sent back to the controller. For example, in a school, each classroom would be a zone, and there may be other zones in the school like the hallways, outside areas, gym, cafeteria, etc. The emergency management plan for the facility may require acknowledgement by each instructor in the classrooms, but no acknowledgement for hallways and other zones. Acknowledgements may be done via pushbuttons attached to IP Speakers (intercoms) or other buttons or mic stations in the facility. In any case, it is something that requires a human action and whether it has occurred or not is tracked/logged by the Event Acknowledgement feature of GCK/SAFE.

Similarly, the status of Alerts that go out to SAFE clients is tracked for both proper delivery and for acknowledgement by the user at the client. Delivery tracking is monitored since SAFE clients may be powered off or removed from the network at the time of the Alert.

SAFE status and configuration is handled via separate a web site from those for System Management Center (SMC) and are described in this appendix. One can get to the web pages on this site by the following path:

http://w.x.y.z/SAFE

On a GLOBALCOM.IP controller there should be a desktop shortcut to this web site provided by the installer, which is the easiest way to get to the pages when logged into the controller. There is also a hyperlink at the top of SMC as shown in section G.10 of this appendix. When the SAFE feature is enabled there are some changes to SMC to link to SAFE and control Events and Alerts that need acknowledgement. These SMC changes are covered in section G.10.

Note, with only a few exceptions, the web pages shown in this appendix are as they might appear on a computer/laptop. The pages are designed to automatically adjust for a tablet or mobile device. Therefore the actual pages one sees may be different from those shown in this document. Examples of the menus on wider screens and on mobile devices are shown below.

Figure G-1: Menus on Wide and Narrow Screens

General notes on Web Page Usage -These are web pages, so there are not [OK] or [Close] buttons to exit a page. Instead, one should navigate back by using the browser's back button (typically also available with the keyboard shortcut of the backspace key). Also, one can get to the main event acknowledgement page by clicking on the title/caption "SAFE" in the upper left corner of every web page or the **Home** menu option.

G.1 Main Event Acknowledgement Page

The main page looks as shown in two examples in the figure below.

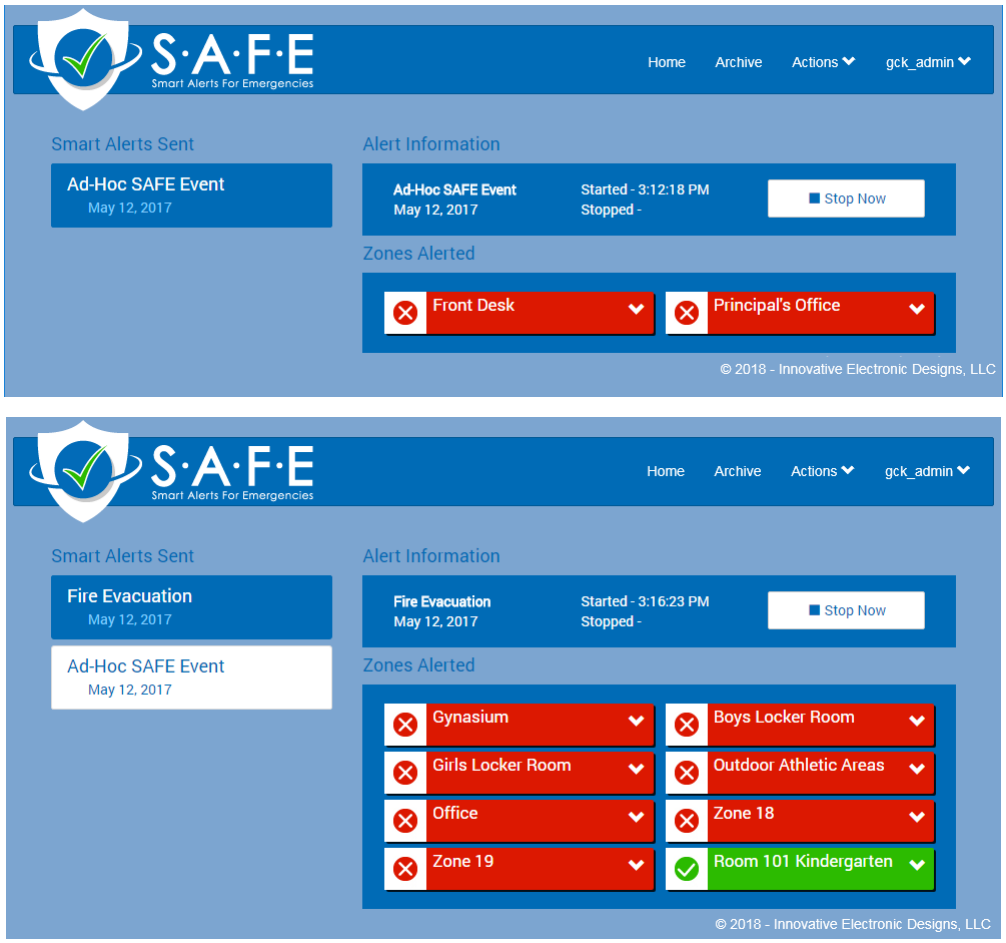
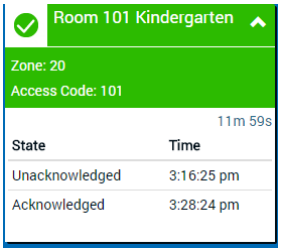


Figure G-2: Main SAFE Event Acknowledgement Page

On the left are current events in the system, with the most recent (or currently active) event on top. (Past events are visible under the Archive page, accessed by clicking on **Archive** on the menu bar at top right.) To the right of this are zones for this event that required acknowledgement and their current state. Red boxes with the X icons are the zones that have not been acknowledged yet. The green zones with a checkbox have already been acknowledged. The event header shows when the event started and if it has stopped, when that occurred.



One can see when a zone was acknowledged by clicking on the down-arrow in any box. This brings up a view such as shown at right that shows the start of the event start (unacknowledged time), when the zone was acknowledged, and above that how much time elapsed between the two (e.g., 11m 59s).

The event or alert remains active until somebody clicks on the ■ **Stop Now** button in the Event header section. This brings up a confirmation prompt as shown in the figure below. One must click on the **Yes** button in the pop-up to actual cancel the event acknowledgement period (or press the **Continue** button to cancel out of the pop-up). Note, this function can be performed by any user, whether they have administrator privileges or not.

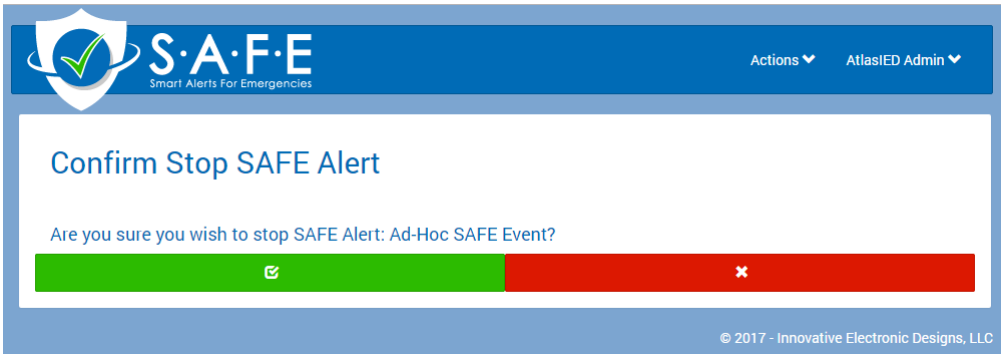
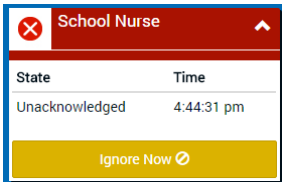


Figure G-3: Stop Event Confirmation Prompt

If one knows there is nobody at a location, then one can click on an unacknowledged zone and select **Ignore Now** as shown at right. Once this is done, the zone appears in yellow with a minus (-) icon as shown in the figure below.



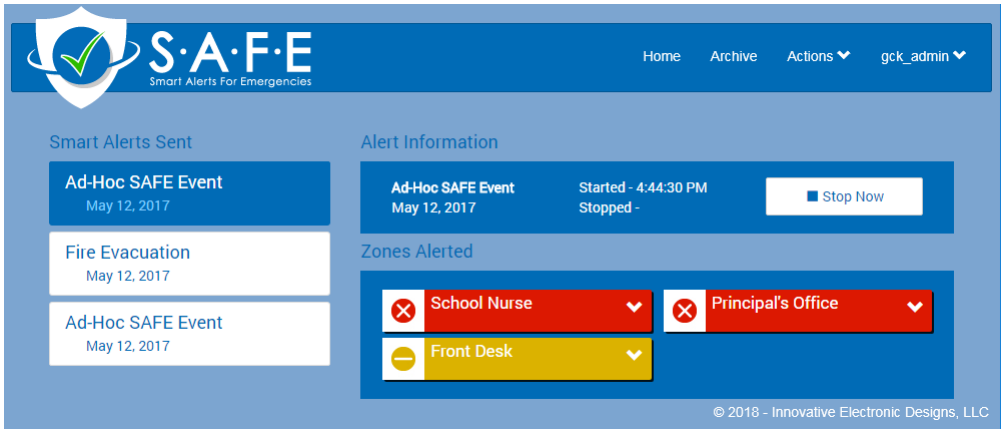


Figure G-4: Alert Event with Ignore Status on Zone

G.2 Admin Functions and Logging In

Admin functions are available via a menu that appears in the upper right corner *after* one is logged in. Initially, on large screen devices (i.e., laptops, tablets), this appears with the label "**Login**" as shown below in the top half. If one is accessing this web site on a mobile device, this may appear as a menu icon as shown in the second header below.

Figure G-5: Label & Menu Icon on Main Event Acknowledgement Page

Clicking on Login brings one to the log-in page as shown in the figure below. The accounts are the same ones as defined in the System Management Center (SMC) pages, such as the factory default gck_admin account.

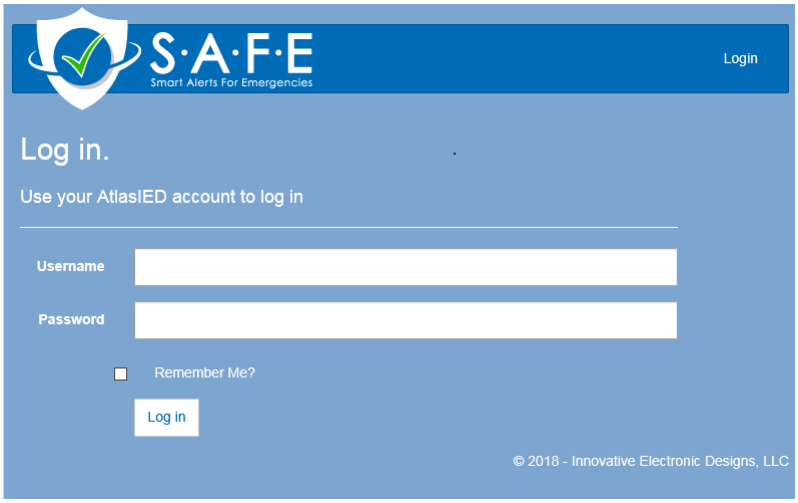


Figure G-6: Menu Icon Submenu Options

Once a user with site administrator privileges has logged in, the "Login" caption changes to the logged in user name, and clicking on the name brings up the administrator functions menu as shown below.

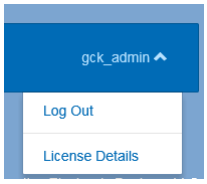


Figure G-7: Administrator Menu

The Log Out action in this menu does the obvious thing. The License Details option brings up details of the SAFE licensing on this system; primarily the number of SAFE clients that are supported/licensed, such as in the example shown below.

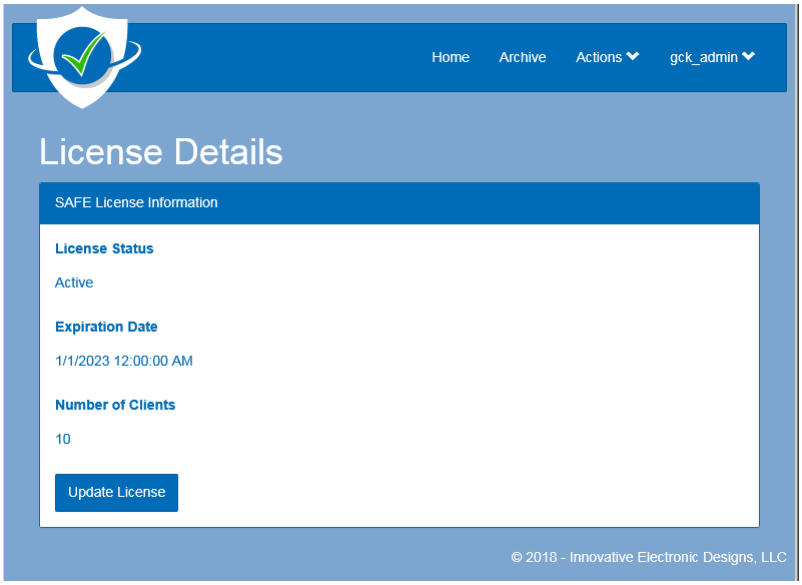


Figure G-8: SAFE License Details

To update the license, one clicks on the [Update License] button, which brings up the window shown below.

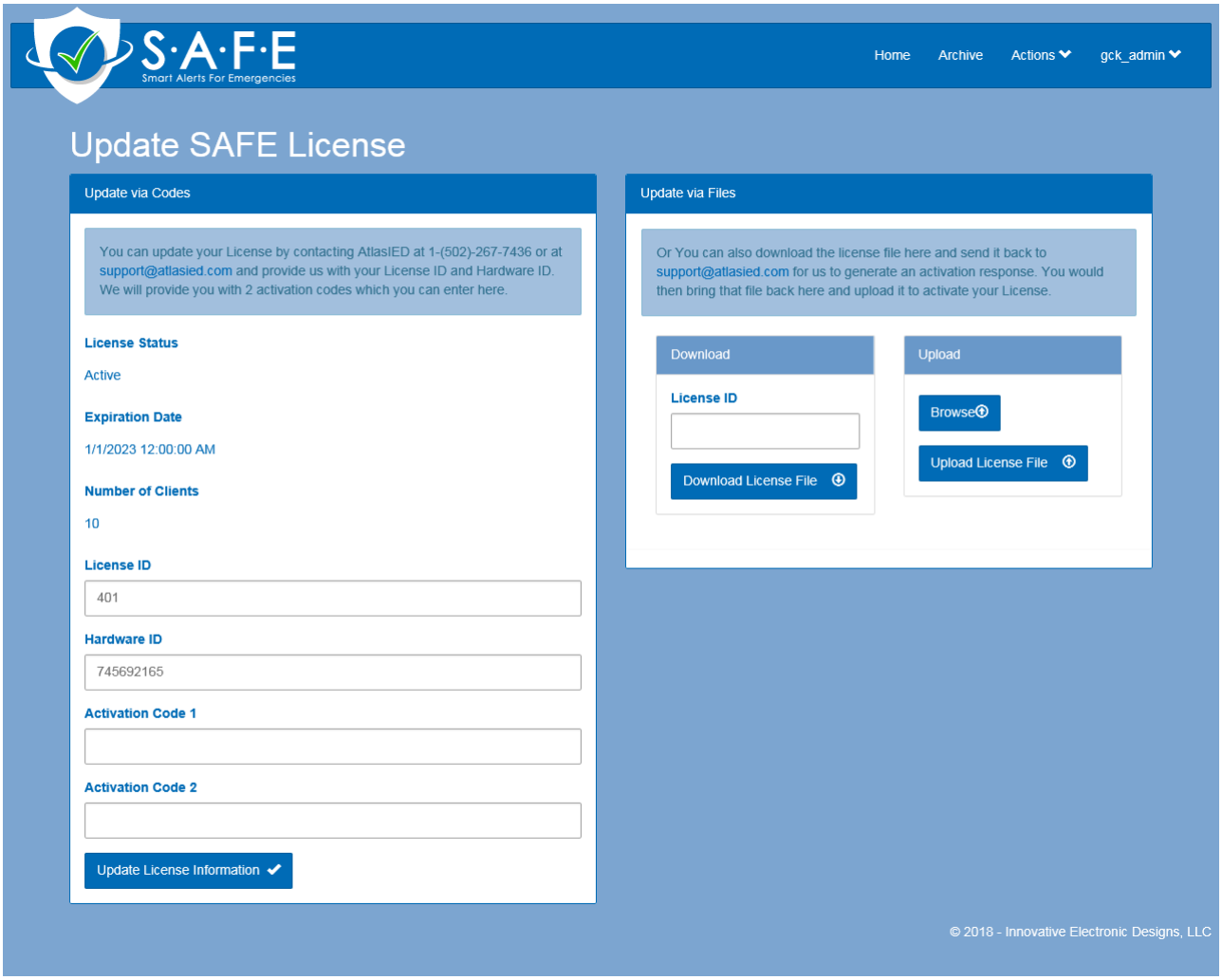


Figure G-9: Update License Window

The four list boxes on the left are for manual activation and have the following meanings (the same as for GCK/SMC).

License ID

This is an identifier that is unique for your job/project that is procured when a license if purchased from AtlasIED. This identifier may be used in the future to determine who the license was original sold to, who the installer/contractor was, etc. When calling in for manual activation, one will need to provide this number as well as the Hardware ID.

Hardware ID

This number is derived from features of the hardware that uniquely identify it. License activations are keyed to this Hardware ID to prevent abuses such as attempts to install the same license on multiple computers. When calling in for manual activation, one will need to provide this number as well as the License ID.

Activation Codes 1 and 2

These numbers are provided by AtlasIED over the phone for manual activation. Once entered into the edit boxes, one presses the **[Update License Information]** button to activate it.

File Activation involves sending and receiving files via e-mail. To activate via e-mail, one first enters the License ID in the edit box for it, and then presses the **[Download License File]** button. The license file at this point contains the License ID and Hardware ID information. One e-mails this file to AtlasIED at: support@AtlasIED.com . An activation file is returned via e-mail and be applied via the **[Upload License File]** button. In the e-mail, be sure to indicate what project this is for, such as the sales order number that this system was purchased under, otherwise additional time and follow-up e-mails or phone calls may be required..

To the left of the user menu is an Action menu with the options as shown in the figure below.

Each of these menu options are covered in the sections which follow.

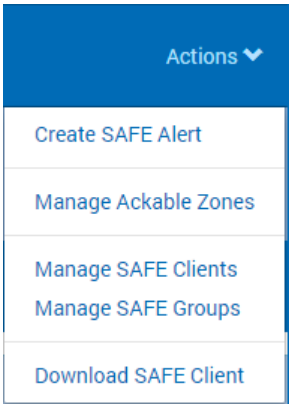


Figure G-10: Action Menu

G.3 Create SAFE Alert

This feature is for sending SAFE Alerts only (not Events) to the SAFE desktop clients. An Alert consists of a text message and optional image to display. The **Emergency** and **Require Acknowledgements** checkboxes affect the behavior of the notification and whether it is shown on the Home page (and later in the Archive page) or not. If the message is just an informational message to the staff, one probably should not mark it as Emergency or Require Acknowledgements, so it does not fill (clutter) up these lists. When defining an alert, there must be at least one SAFE Group or SAFE client selected in the Destinations area before submitting (sending) the SAFE Alert. The SAFE Groups and SAFE Clients boxes can be collapsed, requiring one to click on the blue banner to open them and see all the choices available.

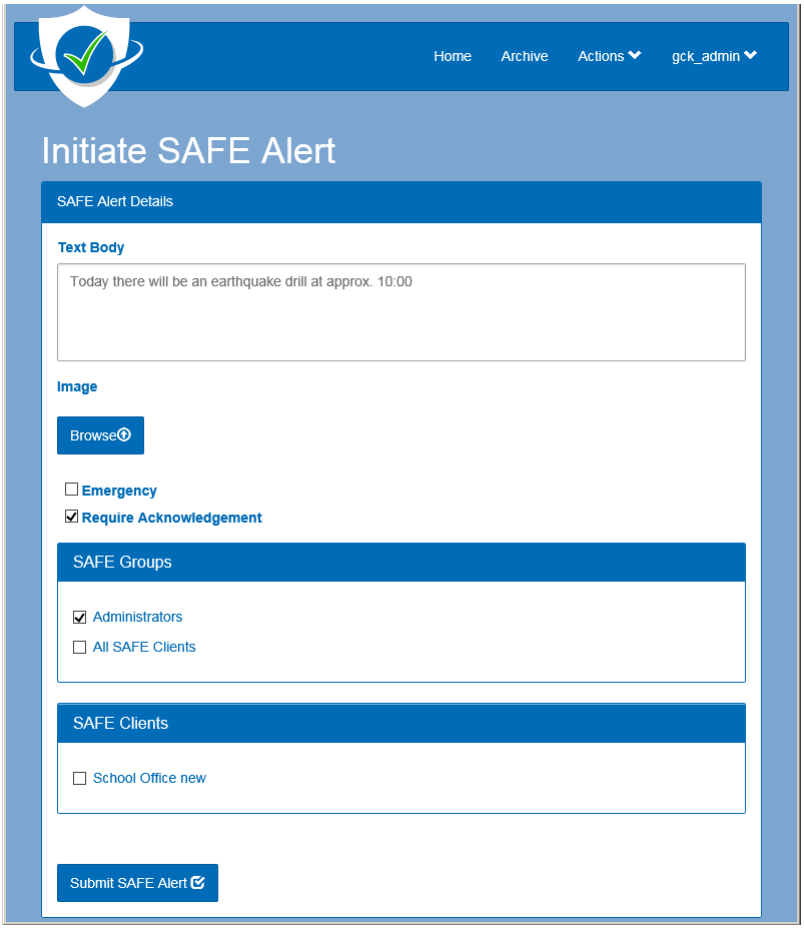


Figure G-11: Initiate SAFE Alert Page

G.5 Manage Ackable Zones

This page is used to designate which zones in the current GLOBALCOM.IP configuration require acknowledgement. This page should be revisited any time zones are added or deleted from the configuration via SMC. The page appears as in the example below. One simply changes the checkboxes in the "Acknowledge" column (or use the **All** checkbox to toggle all zones) until the configuration is as desired, followed by clicking on the **Submit Acknowledgeable Zones** button. Clicking will return the user to the main Event Acknowledgement page.

Figure G-12: Manage Acknowledgeable Zones Page

G.6 Manage SAFE Clients

This is used to manage the SAFE desktop notification clients via the page as shown in the figure below. On this page one may enter information about the clients or delete clients via the red **[X]** button to the right. Some properties can be edited via the edit boxes available here. If one clicks on the **[(i)]** (information) button on a line, it brings up the Client Details window as shown in the next figure where all properties can be edited. When done making any edits, one should click the **Submit** buttons at each level. The Popup | Fullscreen | Minimized buttons near the bottom control how normal and emergency alerts behave, i.e., how the client should respond. That is, client behavior is configured here in the SAFE head end, not out at each client. This allows things like the use of pop-ups for emergencies to be a matter of facility policy rather than individual user preference.

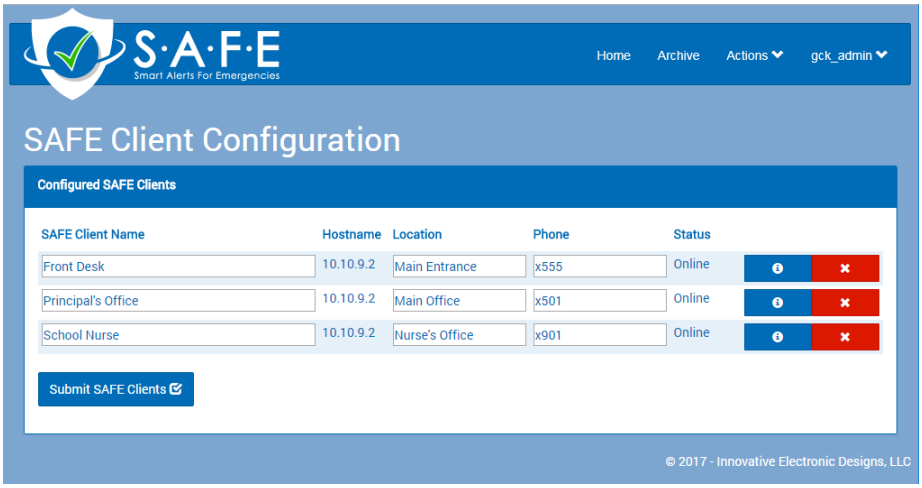


Figure G-13: Manage SAFE Clients

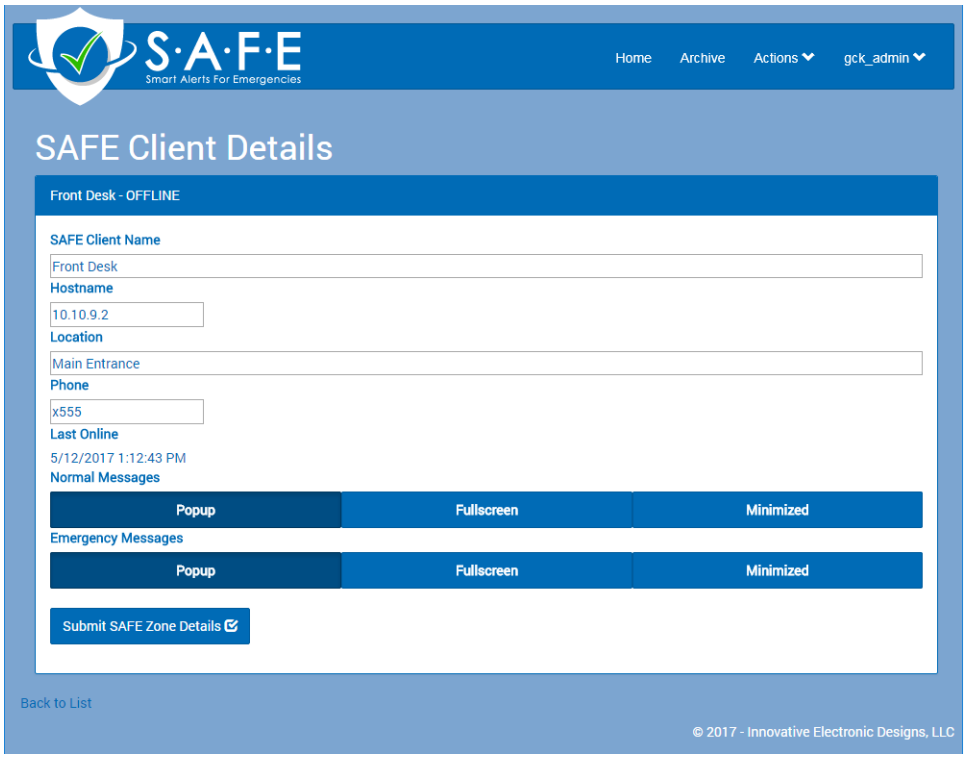


Figure G-14: Manage SAFE Client Details

G.7 Manage SAFE Groups

This function is used to group SAFE Clients into SAFE Groups that may be used as destinations for Alerts. One can delete a group via the red **[X]** button on the group line. If one clicks on the delete button, they are first prompted for the delete with a page such as the one in the next figure. Of course one must click on the **Yes** button on the configuration page to actually delete the group. One may add a group via the [+] button at the top.

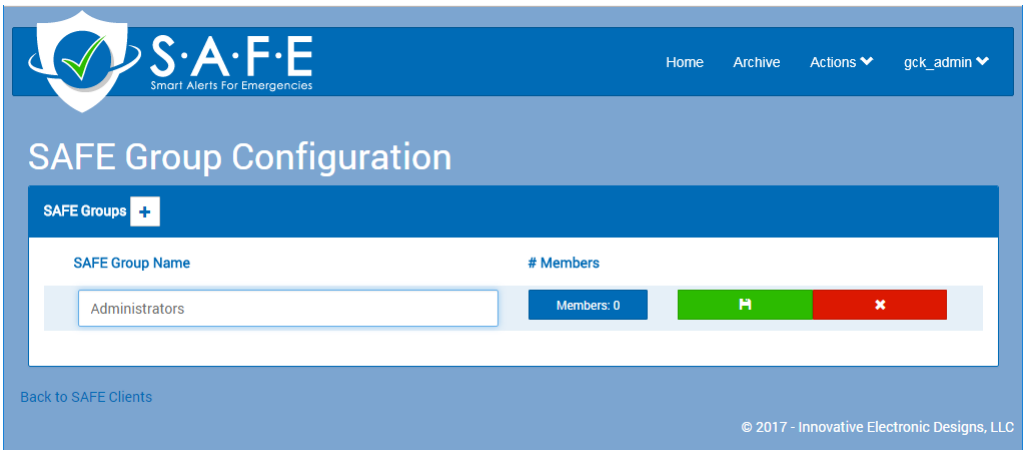


Figure G-15: Manage SAFE Groups

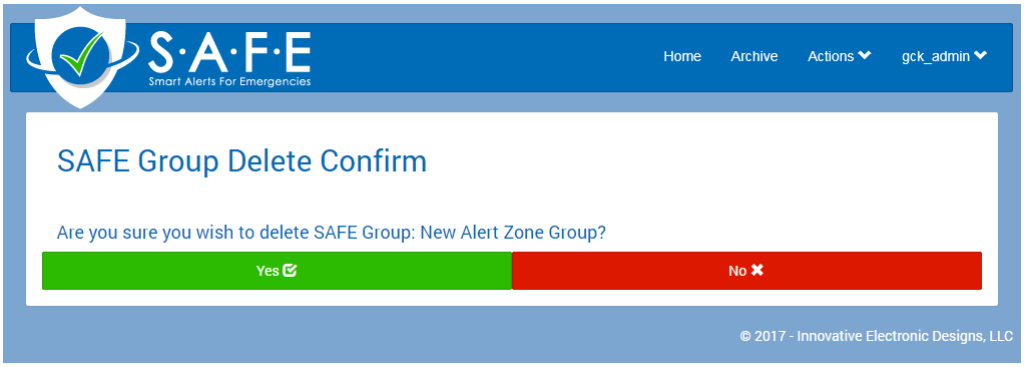


Figure G-16: Delete SAFE Group Confirmation Prompt

One changes the members within each group by clicking on the blue **[Members]** button. This brings up a page such as in the figure below. On this page, one simply clicks on the checkboxes beside the clients to select/deselect it for the group.

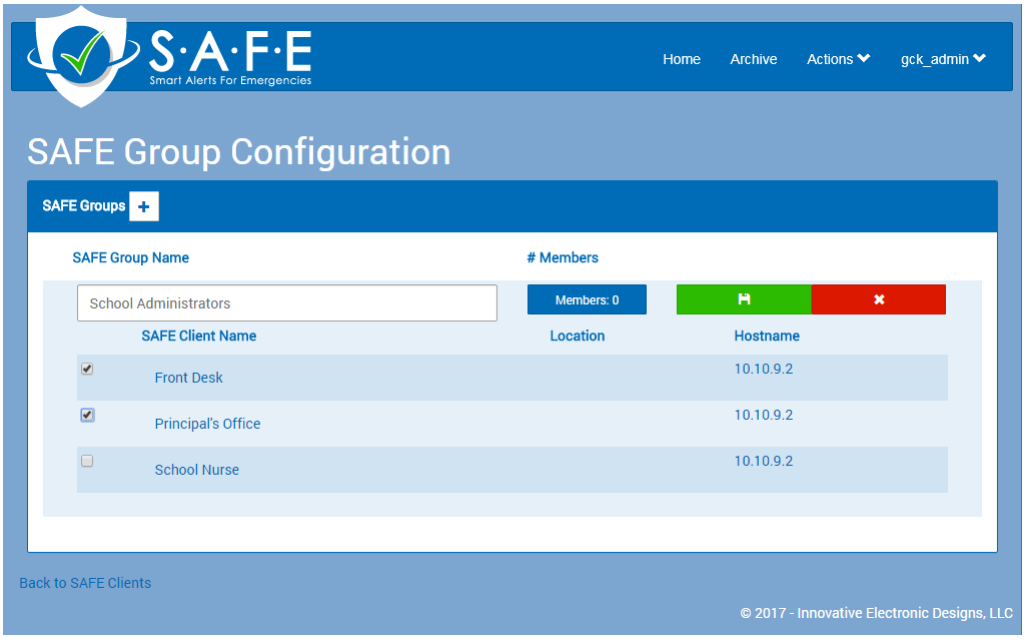


Figure G-17: SAFE Group Members Page

G.8 Download SAFE Client

This capability allows one to install a SAFE client on the local machine. Clicking on this menu option brings up a download window such as the one shown in the figure below. If there is more than one option available, they all will be shown in the bullet list. One moves the cursor over top of the desired (or only) installer listed and clicks to download. One then follows the usual procedure for the brand/version of browser being used to access the downloaded installer file.

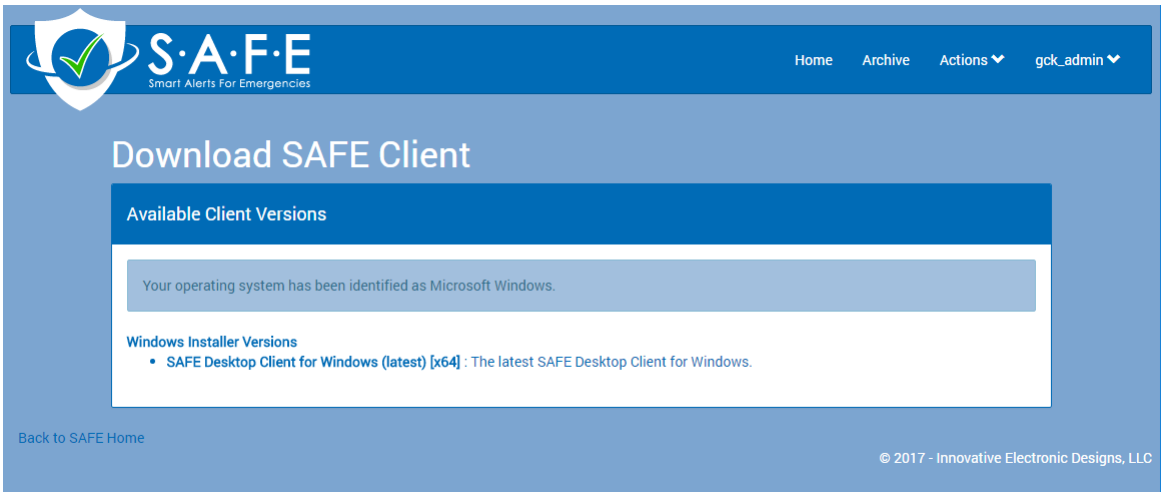


Figure G-18: Download SAFE Client Page

G.9 SAFE Event Archive

Events that once appeared on the Home page and are no longer active, get moved to the Archive page. One can go back and review these events by clicking on the Archive menu option. This brings up a page such as below.

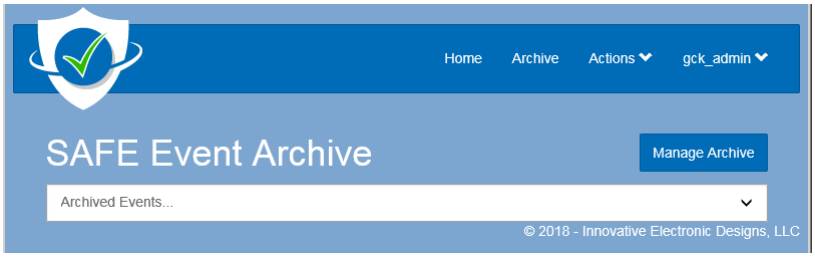


Figure G-19: Archive Page

There is one button on this page: **[Manage Archive].** Pressing this button brings up the Clear Archive page as shown below. Possibly, one may never wish to clear the archive. It can be important to retain any (real) emergency events for years. However, it is more than likely that during system installation, several TEST emergency messages will be generated. Before system hand-over and real operations, the installer/technician may wish to clear out all those bogus emergency messages. This is the place to do it.

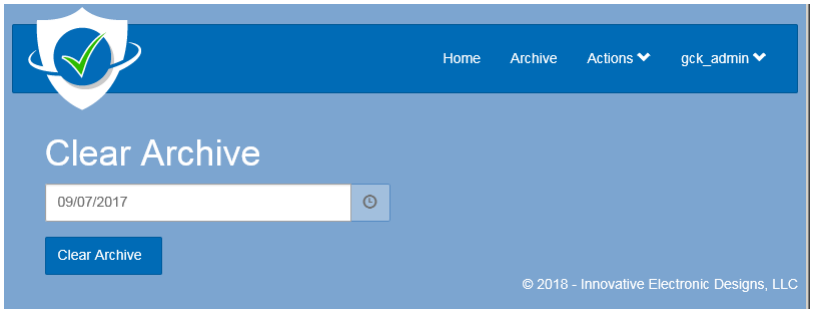
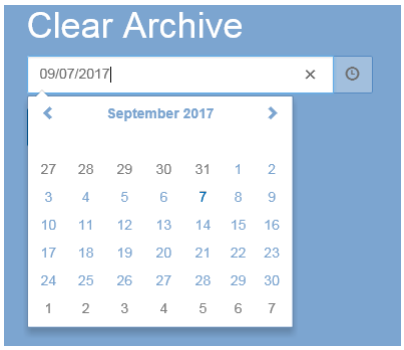


Figure G-20: Clear Archive Page

One can either manually enter a date in the edit box, or click on the clock button to the right to bring up a calendar view such as at right, to select a date from.



Clicking on the **[Clear Archive]** button first presents a confirmation prompt such as the one shown below. The user must click on the **[Yes]** button to actually do the clear operation.

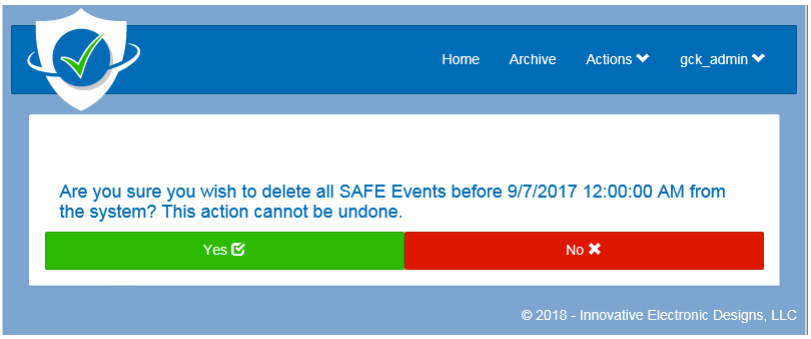


Figure G-21: Clear Archive Confirmation

G.10 Changes to SMC for SAFE Integration

When the SAFE feature is licensed in GCK, there are three changes that occur:

1. A new category of Visual Alerts “SAFE Alert Images” is added
2. Events can be marked for acknowledgement and can also have SAFE Alerts (notifications to SAFE Clients) added to them.

The additional SAFE Alert Images category appears in the list below the Visual Alert Slots. Once selected, one may add or remove images from this category via the [+] and [-] buttons at the top. Descriptions are entered by the user to be meaningful for referencing when selecting these images for Events for Alerts sent from SAFE.

Please note that any newly created SAFE Groups will not appear until SMC is reloaded/restarted.

When the SAFE feature is enabled, the Requires Acknowledgement checkbox will become enabled (not grayed out) when editing Events as shown in the figure below.

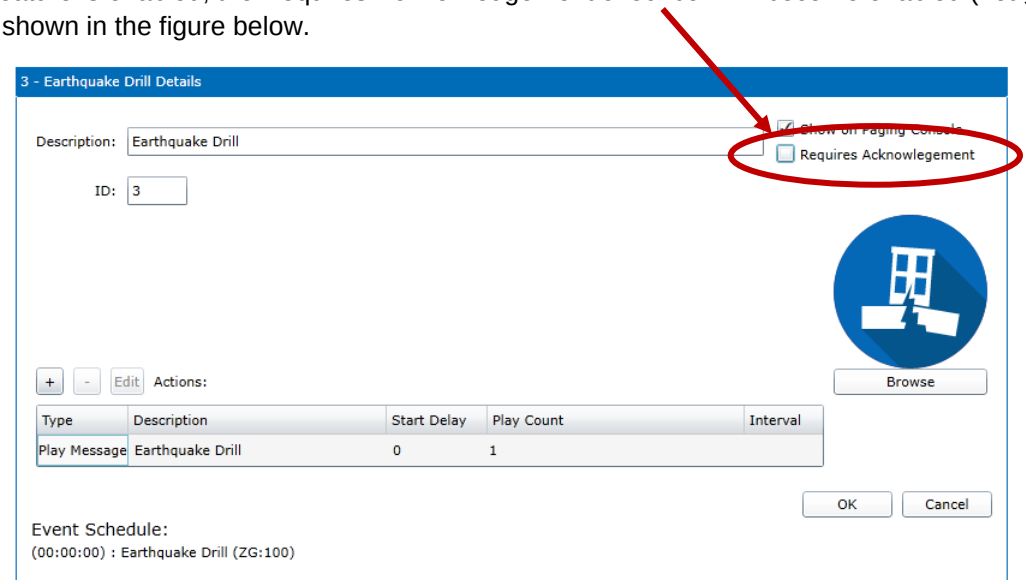


Figure G-20: Event w/o Acknowledgement

After one checks this box, new fields will appear to allow one to also formulate a SAFE Alert message and image to go out to the SAFE desktop clients, as shown in the figure below. One selects the SAFE Alert destination by selecting SAFE Groups, enters the text of the message and optionally selects an image to display.

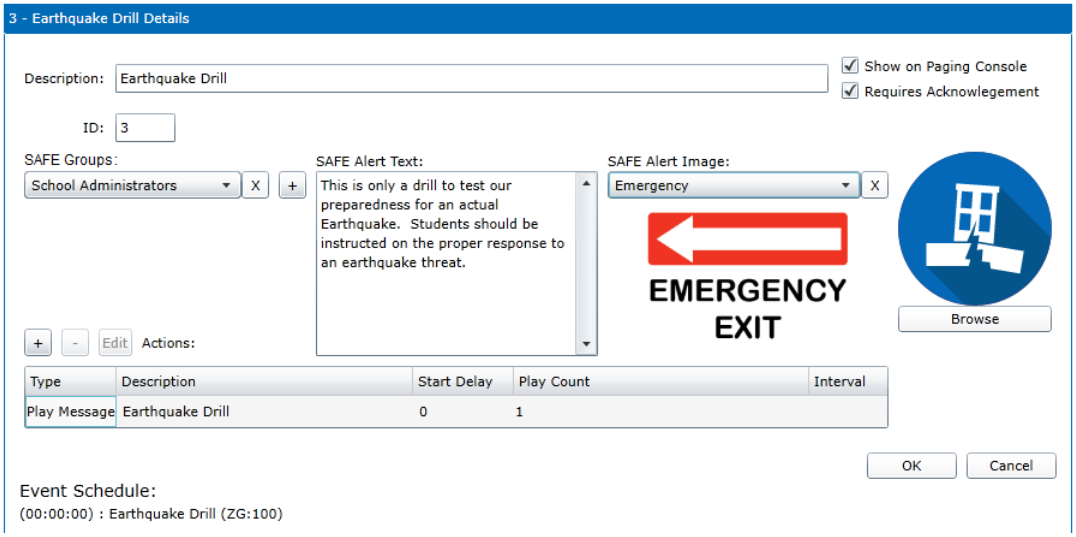


Figure G-21: Event w/ Acknowledgement

The additional fields are described below.

SAFE Groups

This is the destination for the Alert. It can be one or more groups which are selected in the drop-list box(es) and are added with the [+] button beside the top drop-list box just like Zone Groups used for actions elsewhere in SMC.

SAFE Alert Text

The message to deliver to the SAFE clients.

SAFE Alert Image

One may select an image to display along with the text from those defined for SAFE alerts.