



**Description**

The T6400 Series of power amplifier cards are Class D (switching mode) dual and single channel that are used in the Titan series power amplifier mainframes. Each model of amplifier may be used in the IED T9160 digital Integrated Power Amplifier Mainframe or in the IED T6400 analog 2-Card Power Amplifier Mainframe. Any card may be placed in any slot in the mainframes without requiring any configuration settings to be made on the amplifier cards.

Class D operation combined with an integral switching mode power supply offers many advantages, and the unique IED design makes full use of these benefits. They include:

- Higher Efficiency
- Increased Reliability
- Improved Performance
- Lower Operating Cost

Switching mode operation combined with high voltage power MOSFET devices make it possible to eliminate the heavy, costly, bulky transformers.

The card contains no onboard attenuation controls. Attenuation is handled ahead of the power amplifier by electronics or controls on the amplifier mainframes.

The power amplifier has built-in voltage limiting to protect the loudspeakers. In addition, a temperature sensor on the heatsink will automatically shut down an amplifier that becomes too hot to protect the electronics. When used with the IED T9160 mainframe, the amplifier status signals are monitored by the T9160 CPU. Any failures are detected and reported to the IED supervision system to alert the user that service is required. When used in the IED T6400 mainframe, these status signals are presented at the back of the mainframe for monitoring by external devices such as the T9032MT or T9032LVIO collectors.

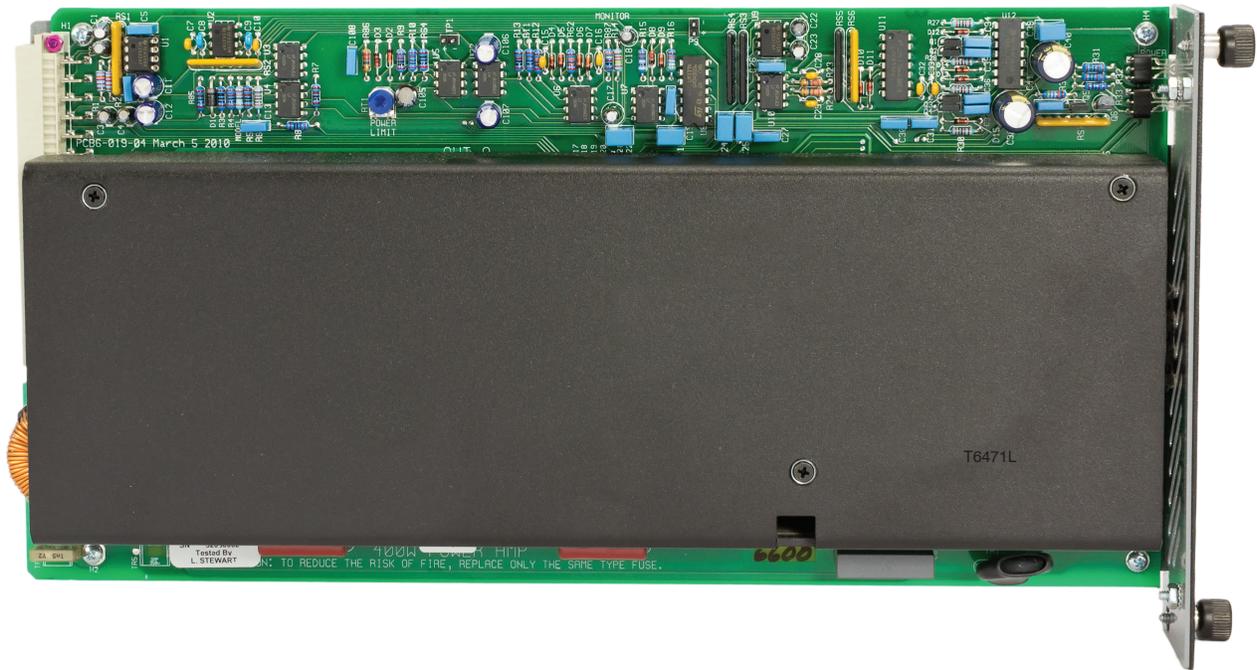
The amplifier card has LED indicators located on its front edge. A single green LED will illuminate to indicate that the amplifier is powered on. Each channel on the card also has a multi-color signal LED. It will illuminate green when input signal is present on the channel. This LED changes to yellow to indicate that the channel is clipping.

A power switch is provided on the front of each card. It is recessed and requires a tool to operate in order to prevent any accidental switch operation. The switch allows an individual card to be powered down and removed or replaced without affecting any other cards installed in the same mainframe. Each card provides +24VDC through current limiting resistors to operate of the fans in the rear of the mainframe.

Each model is available in either 120VAC or 240VAC power operation. 120VAC models contain an “L” suffix while 240VAC models contain an “H” suffix.

**Available Models**

| Model | Channels | Output Power (per channel) | Output Type | Gain  |
|-------|----------|----------------------------|-------------|-------|
| T6411 | 1        | 400W                       | 100V        | 37 dB |
| T6412 | 2        | 200W                       | 100V        | 37 dB |
| T6471 | 1        | 400W                       | 70.7V       | 34 dB |
| T6472 | 2        | 200W                       | 70.7V       | 34 dB |



## Specifications

### Electrical (analog, each channel)

All Measurements at 120VAC unless noted otherwise.

#### Power Output

|   |              |
|---|--------------|
| T6411L, T6411H ( $R_L = 25 \Omega$ ).....   | 400W (100V)  |
| T6412L, T6412H ( $R_L = 50 \Omega$ ).....   | 200W (100V)  |
| T6471L, T6471H ( $R_L = 12.5 \Omega$ )..... | 400W (70.7V) |
| T6472L, T6472H ( $R_L = 25 \Omega$ ).....   | 200W (70.7V) |

#### Efficiency

|                          |     |
|--------------------------|-----|
| Power Output = 100%..... | 79% |
| Power Output = 50%.....  | 74% |

#### Input Power (Measured at 117VAC)

|                 |      |
|-----------------|------|
| Quiescent.....  | 39W  |
| Full Power..... | 505W |
| 1/2 Power.....  | 270W |
| 1/4 Power.....  | 156W |
| 1/8 Power.....  | 100W |

#### Clipping Level

|                     |           |
|---------------------|-----------|
| T6411L, T6411H..... | 141V Peak |
| T6412L, T6412H..... | 141V Peak |
| T6471L, T6471H..... | 100V Peak |
| T6472L, T6472H..... | 100V Peak |

Frequency Response ( $P_o = 25\%$  rated output) ...20 Hz – 20 kHz,  $\pm 1$  dB

Power Bandwidth (+0 dB, -3 dB) ..... 20 Hz – 20 kHz

Signal-to-Noise Ratio (Unweighted, 20 Hz – 20 kHz)..... > 85 dB

Total Harmonic Distortion ( $P_o = 100\%$  rated output) ..... < 0.2% @ 2 kHz

#### Input Sensitivity

|  |        |
|--|--------|
| T6411L, T6411H ( $P_o = 400W, R_L = 25\Omega$ ).....   | +5 dBu |
| T6412L, T6412H ( $P_o = 200W, R_L = 50\Omega$ ).....   | +5 dBu |
| T6471L, T6471H ( $P_o = 400W, R_L = 12.5\Omega$ )..... | +5 dBu |
| T6472L, T6472H ( $P_o = 200W, R_L = 25\Omega$ ).....   | +5 dBu |

|  |                          |
|--|--------------------------|
| Input Impedance.....                                     | 20 k $\Omega$ , balanced |
| Input Common Mode Rejection Ratio (20 Hz – 20 kHz) ..... | > 70 dB                  |
| Output Impedance   |                          |
| T6411L, T6411H .....                                     | 0.35 $\Omega$            |
| T6412L, T6412H .....                                     | 0.60 $\Omega$            |
| T6471L, T6471H .....                                     | 0.38 $\Omega$            |
| T6472L, T6472H .....                                     | 0.67 $\Omega$            |
| Overcurrent Protection                                   |                          |
| "L" (120V) .....   | 5A-2AG-SB fuse           |
| "H" (240V) .....   | 2.5A-2AG-SB fuse         |

### Controls

|                    |                           |
|--------------------|---------------------------|
| Power Switch ..... | Two position slide switch |
|--------------------|---------------------------|

### Indicators

|   |                    |
|---|--------------------|
| Signal Present / Clipping (one per channel) ..... | Green / Yellow LED |
| Power 'On' (one per card) .....                   | Green LED          |

### Connectors

|                             |                     |
|-----------------------------|---------------------|
| 32-pin Euro Connector ..... | Panduit 100-032-033 |
|-----------------------------|---------------------|

### Mechanical

|                                   |                  |
|-----------------------------------|------------------|
| Size (maximum overall dimensions) |                  |
| Height.....                       | 6.8" (17.3 cm)   |
| Width.....                        | 1.8" (4.6 cm)    |
| Depth .....                       | 12.5" (31.75 cm) |
| Weight .....                      | 4.0 lbs (1.8 kg) |

### Environmental

|   |  |
|---|--|
| Operating Temperature Range .....                                     | +32 $^{\circ}$ F - +122 $^{\circ}$ F (0 $^{\circ}$ C - +50 $^{\circ}$ C)   |
| Applicable for typical voice paging and background music applications |  |
| Storage Temperature Range .....                                       | -40 $^{\circ}$ F - +158 $^{\circ}$ F (-40 $^{\circ}$ C - +70 $^{\circ}$ C) |