

Built for Satellite Communications Uplink Applications

Provides up to 110 watts of power in a rugged and compact weatherproof package, with a digital serial interface, for wideband, single and multi-carrier satellite service in C, X and Ku-bands. Ideal for mobile and fixed earth station applications.

Reliable

Designed and built to survive in extremely adverse environmental conditions and features increased cooling margin for longer life.

This amplifier is DSCS Certified.

Simple to Operate

User-friendly microprocessor-controlled logic with integrated RS422/485 computer interface. Digital metering, optional pin diode attenuator and solid state IPA for higher gain.

Easy to Maintain

Modular design and built-in fault diagnostic capability via remote monitor and control.

Meets Global Requirements

Meets International Safety Standard EN-60215, Electromagnetic Compatibility 2014/30/EU and Harmonic Standard EN-61000-3-2 to satisfy worldwide requirements. CE Marked.

Worldwide Support

Backed by over 40 years of satellite communications experience, and CPI's worldwide 24-hour customer support network that includes more than 20 regional factory service centers.



CPI 110 W C, X, Ku-band outdoor TWTA, Model T01TO-A

OPTIONS:

- Solid State IPA
- SSIPA with variable attenuator (provides RF level adjust range of 30 dB)
- 65°C ambient temperature (operating)
- Remote control panel
- Integral switch control and drive
- Redundant switch systems
- Forward detected RF output power over computer interface
- Extended Ku-band (13.75 to 14.50 GHz)
- Ethernet interface
- X/Ku-band integral linearizer

Quality Management System - ISO 9001:2015



| Specification | Model T01TO, 110 W Tri-Band Outdoor TWTA | | |
|--|---|--|--|
| Operating Band | C-BAND | X-BAND | Ku-BAND |
| Frequency | 5.85 to 6.425 GHz | 7.9 to 8.4 GHz | 14.0 to 14.5 GHz (13.75 to 14.50 GHz optional) |
| TWT Flange Power | 70 W (48.45 dBm) | 110 W (50.41 dBm) | 70 W (48.45 dBm) |
| Rated Amplifier Flange Power | 60 W (47.78 dBm) | 90 W (49.54 dBm) | 60 W (47.78 dBm) |
| Gain at Rated Power | 38 dB min. (68 dB with SSIPA) | 41 dB min. (71 dB with SSIPA) | 41 dB min. (71 dB with SSIPA) |
| Gain at Small Signal | 43 dB min. (73 dB with SSIPA) | 46 dB min. (71 dB with SSIPA) | 46 dB min. (71 dB with SSIPA) |
| Small Signal Gain Slope | ± 0.04 dB/MHz max. | | |
| Small Signal Gain Variation | 1.0 dB pk-pk (across any 40 MHz band), 2.5 dB pk-pk (across individual frequency bands) | | |
| RF Level Adjust Range | 0 to 30 dB (via PIN diode attenuator) typ, 0.1 dB steps | | |
| Gain Stability | ±0.25 dB/24 hour max. at constant drive and temperature | | |
| VSWR | 1.3:1 max. output; 2.2:1 max. input; Load: 2.0:1 max, no degradation, infinite VSWR without damage | | |
| Phase Noise | 10 dB below IESS-308 continuous mask | | |
| AM/PM Conversion | 2.5°/dB max. for a single-carrier up to 6 dB OBO | | |
| Noise Density | <-70 dBW/4 kHz max. in transmit and receive bands | | |
| Group Delay (over 40 MHz) | 0.01 ns/MHz linear max; 0.005 ns/MHz ² parabolic max; 0.5 ns pk-pk ripple max. | | |
| Intermodulation (with regard to the sum of two equal carriers) | -20 dBc max. @ 6 dB OBO | -22 dBc max. @ 6 dB OBO | -20 dBc max. @ 6 dB OBO |
| Noise Power Ratio | -15 dB max. @ 6 dB OBO; -10 dB max. @ 3dB OBO | -17 dBc max. @ 6 dB OBO; -17 dBc max. @ 3dB OBO with linearizer | -15 dBc max. @ 6 dB OBO -15 dBc max. @ 3 dB OBO with linearizer |
| Spectral Regrowth | -28 dB max. @ 6 dB OBO; -22 dB max. @ 3dB OBO | -30 dBc max. @ 6 dB OBO; -30 dBc max. @ 3dB OBO with linearizer | -28 dBc max. @ 6 dB OBO; -28 dBc max. @ 3dB OBO with linearizer |
| Primary Power | 90 to 264 VAC, 47 to 63 Hz | | |
| Power Consumption | 510 VA max. | | |
| Power Factor | 0.95 min., meets requirements of Harmonics EMC Directive EN61000-3-2 | | |
| Ambient Temperature | -40°C to +55°C operating, including solar loading (to +65°C operating optional); -54°C to +71°C non-operating | | |
| Relative Humidity | 100% condensing | | |
| Altitude | 10,000 ft. with standard adiabatic derating of 20C/1000 ft. operating; 50,000 ft. non-operating | | |
| Shock and Vibration | 20 G at 11 ms (1/2 sine pulse in non-operating condition); 2.1 g rms, 50 to 500 MHz | | |
| Cooling | Forced Air with integral blower | | |
| RF Input Connection | Type N Female | | |
| RF Output Connection | WRD-580G waveguide flange, threaded 6-23 UNC-2B | | |
| RF Output Monitor | Type N Female | | |
| M&C Interface | RS422/485 serial | | |
| Dimensions, W x H x D | 8.6 x 8.6 x 15.75 inches (219 x 219 x 400 mm) | | |
| Weight | 30 lbs (13.6 kg) excluding options | | |
| Heat Dissipation | 400 W typ. | | |
| Acoustic noise | 65 dBA (as measured at 3 ft.) nom. | | |

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