

750 W Outdoor TWT Amplifier

Plays in the Rain

Provides 750 watts of power in a rugged and compact weatherproof package, digital ready, for wideband, single- and multi-carrier satellite service in the 7.9 to 8.4 GHz frequency band. Ideal for transportable and fixed earth station applications.



Cost Effective and Efficient

Employs a high efficiency, dual-depressed collector helix traveling wave tube, reducing operating costs.

Reliable

Designed and built to survive in extremely adverse environmental conditions and features increased cooling margin for longer life. CAN-Bus architecture improves reliability and noise immunity.

Simple to Operate

User-friendly microprocessor-controlled logic with integrated Ethernet computer interface. Digital metering, pin diode attenuation and optional integrated linearizer for improved intermodulation performance. SNMP v1 enabled.

Easy to Maintain

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

Global Applications

Meets International Safety Standard EN-60215, Electromagnetic Compatibility 2004/108/EC and Harmonic Standard EN-61000-3-2 to satisfy worldwide requirements.

Worldwide Support

Backed by over 35 years of satellite communications experience, and CPI's worldwide 24-hour customer support network that includes more than 20 regional factory service centers.

Model T07XO

750 watt X-band (7.9 to 8.4 GHz)
Outdoor/Hubmount TWTA for
satellite uplink applications

OPTIONS

- Remote Control Panel
- Integral Linearizer
- L-Band Block Upconverter (950 to 1450 MHz - contact CPI for specifications)
- Redundant and Hybrid Power Combined Systems
- Integral 1:1 or 1:2 Switch Control and Drive
- Computer Interface: Ethernet Interface (standard) or RS422/485 (optional)
- Reduced Radiated Emissions (contact CPI for specifications)
- External Receive Band Reject Filter (increases loss by a minimum of 115 dB from 7.25 to 7.75 GHz)



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750 W X-band Outdoor TWTA

| Specification | Model T07X0 |
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| Frequency | 7.9 to 8.4 GHz |
| Output Power (min.) TWT CW Power at Flange | 750 watts (58.75 dBm) min. 650 watts (58.13 dBm) min. |
| Bandwidth | 500 MHz |
| Gain | 70 dB min. |
| Gain Stability | ±0.25 dB/24 hours max. (after 30 minute warmup); ±0.75 dB over any 10°C |
| RF Level Adjust Range | 30 dB typ. in 0.1 dB steps |
| Small Signal Gain Slope | ±0.02 dB/MHz max. |
| Small Signal Gain Variation | 0.5 dB pk-pk max. across any 40 MHz segment; 2.5 dB pk-pk man. across any 500 MHz segment (3.5 dB with linearizer option) |
| Input VSWR | 1.3:1 max. |
| Output VSWR | 1.3:1 max. |
| Load VSWR | 2.0:1 max. continuous operation; 1.5:1 full spec compliance; any value for operation without damage |
| Phase Noise | 12 dB below IESS-308/309 mask; 10 dB below MIL-STD-188-164A mask; -36 dBc AC Fundamental; -47 dBc Sum of Spurs (370 Hz to 1 MHz) |
| Spurious Output | -60 dBc per MIL-STD-188-164A |
| AM/PM Conversion | 2.5°/dB at 8 dB below for a single carrier at 8 dB below rated output power (at 3 dB backoff with optional linearizer) |
| Harmonic Output | -12 dBc max. at rated power; -60 dBc with harmonic filter option |
| Noise Density (at max. gain) | <-70 dBW/4 kHz, 7.25 - 7.75 GHz; <-65 dBW/4 kHz, transmit band (<-60 dBW/4 kHz with optional linearizer) |
| Intermodulation | -25 dBc with regard to the sum of both carriers at total output power 7.5 dB below rated single carrier output (4.5 dB below with optional linearizer), per MIL-STD-188-164-A |
| Spectral Regrowth | -30 dBc max. at total output power 6 dB below rated (3 dB below with linearizer), QPSK modulation |
| Group Delay | 0.01 ns/MHz linear max, 0.001 ns/MHz ² parabolic max, 0.5 ns pk-pk ripple max. in any 40 MHz band |
| Prime Power | 208 to 240 VAC single phase, ±10%; 47-63 Hz |
| Power Consumption | 2.7 kVA max; 2.3 kVA typ. at 3 dB backoff |
| Power Factor | 0.95 min. |
| Ambient Temperature | -40°C to +60°C operating; -40°C to +75°C non-operating |
| Relative Humidity | 100% condensing |
| Altitude | 10,000 ft. with standard adiabatic derating of 2°C/1000 ft., operating; 50,000 ft, non-operating |
| Shock and Vibration | 20 g peak, 11 ms, 1/2 sine; 21 grms, 5 to 500 Hz |
| Acoustic Noise | 68 dBA at spatial average of 3 feet from amplifier |
| Heat Dissipation | 2000 W max. |
| Cooling | Forced air with integral blower |
| M&C Port | RS-422/485 Serial (Ethernet interface optional) |
| RF Input Connection | Type N Female |
| RF Output Connection | CPR-112 waveguide flange, grooved, threaded with UNC 2B 10-32 |
| RF Output Monitor | Type N female |
| Dimensions | 12.75 x 11.5 x 22.25 in. max. (324 x 292 x 566 mm) |
| Weight | 79 lbs (35.9 kg) with no options |