

# 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 2014/30/EU 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 T07XO
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 min. 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 <sup>2</sup> parabolic max, 0.5 ns pk-pk ripple max. in any 40 MHz band
Prime Power	200 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 8-32
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