

400 W Outdoor TWT Amplifier

Plays in the Rain

Provides 400 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.

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.

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



Model T04XO

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

OPTIONS

- 1 RU or 3 RU Remote Control Panel
- 1:1 Integrated Switch Control and Drive
- Redundant and Hybrid Power Combined Systems
- SSIPA with Variable Attenuator
- L-Band Block Upconverter (requires SSIPA, see TD-137 for specifications)
- Forward Power Detection Over CIF
- Ethernet Interface



811 Hansen Way, PO Box 51625
Palo Alto, CA 94303 USA
tel: +1 (650) 846-3803
fax: +1 (650) 424-1744
e-mail: satcommarketing@cpii.com
website: www.cpii.com/satcom

400 W X-band Outdoor TWTA

Specification	Model T04XO
Frequency	7.9 to 8.4 GHz
Output Power (min.) TWT CW Power at Flange	400 watts (56.02 dBm) min. 350 watts (55.44 dBm) min.
Bandwidth	500 MHz
Gain	46 dB min. (70 dB with SSIPA); 49 dB min. at small signal (75 dB with SSIPA)
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	1.0 dB pk-pk max. across any 40 MHz segment; 2.5 dB pk-pk max. across the 500 MHz band (4.0 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	10 dB below IESS-308/309 mask; -42 dBc AC Fundamental; -47 dBc Sum of Spurs (370 Hz to 1 MHz)
Spurious Output	-60 dBc per MIL-STD-188-164B
AM/PM Conversion	2.5°/dB at 7 dB below rated output power for a single carrier (at 3 dB below rated power with optional linearizer)
Harmonic Output	-60 dBc with harmonic filter option
Noise Density	-70 dBW/4 kHz max., passband (-65 dBW/4 kHz max. with optional linearizer); -70 dBW/4 kHz max. from 7.25 to 7.75 GHz
Intermodulation	-24 dBc or better with regard to the sum of both carriers at total output power 7.5 dB below rated single carrier output (-25 dBc or better at 4.5 dB OBO with optional linearizer), per MIL-STD-188-164B
Spectral Regrowth	30 dB at 6 dB OBO (at 4 dB OBO with optional linearizer)
Group Delay	0.01 ns/MHz linear max, 0.002 ns/MHz ² parabolic max, 0.5 ns pk-pk ripple max. in any 40 MHz band
Prime Power	100 to 240 VAC single phase, ±10%; 47-63 Hz
Power Consumption	1500 VA max; 1350 VA typ.
Power Factor	0.95 min.
Ambient Temperature	-40°C to +55°C operating in direct sunlight, -40°C to +60°C operating out of direct sunlight; -54°C to +71°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	65 dBA at spatial average of 3 feet from amplifier
Heat Dissipation	1100 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	10.25 x 10.5 x 20.5 in. max. (260 x 267 x 521 mm)
Weight	55 lbs (25.0 kg) with no options