

200 W Outdoor TWTA

Built for Outdoor Applications

Provides 200 watts of power in a rugged and compact weatherproof package, digital ready, for wideband, single- and multi-carrier satellite service in the 13.75 to 14.50 GHz or 12.75 to 14.50 GHz frequency band. Ideal for both transportable and fixed earth station applications.

Cost Effective and Efficient

Employs a high efficiency, dual-depressed collector helix traveling wave tube, reducing operating costs. Efficiently consumes only 650 W of prime power to achieve 175 W of output power at the flange.

Reliable

Designed and built to survive in extremely adverse environmental conditions and features increased cooling margin for longer life. Operates in ambient temperatures up to 60°C.

Simple to Operate

User-friendly microprocessor-controlled logic. Integrated Ethernet computer interface and forward power detection over CIF are standard. A variety of options, including integral BUCs and linearizers, is available. **SNMP enabled (v1, v2, or v3).**

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.

Worldwide Support

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



Model T02UO-2G

200 watt Ku-band outdoor TWTA for **satellite uplink applications**

FEATURES

- Ethernet Interface
- SNMP Interface (v1, v2, or v3)
- EMC Directive 2014/30/EU
- Harmonic Standard EN-61000-3-2

OPTIONS

- Integral linearizer
- Remote control panel
- Redundant and hybrid power combined sub-systems
- L-Band block upconverter (BUC) --- specifications for when BUC is included are not contained in this document. Contact CPI for details. This option is available for 13.75 to 14.50 GHz frequency only.
- Computer Interface: Ethernet interface (standard) or serial (optional)
- Solid state IPA



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200 W Outdoor TWTA

Specification	Model T02UO-2G Standard Band	Model T02UO-2G Extended Band
Output Frequency	13.75 to 14.50 GHz	12.75 to 14.50 GHz
Output Power (min.) TWT Saturated (P_{sat} , CW)	200 W (53.01 dBm) min. 175 W (52.43 dBm) min.	
Gain	38 dB min. at rated power (68 dB with SSIPA option) 40 dB min. small signal (70 dB with SSIPA option, 71 dB with SSIPA and linearizer)	
RF Level Adjust Range	0 to 30 dB (via PIN diode attenuator) typ, 0.1 dB steps	
Gain Stability	± 0.25 dB/12 hour max, max. at constant drive and temperature	
Small Signal Gain Slope	± 0.04 dB/MHz max.	
Small Signal Gain Variation	1.0 dB pk-pk max. across any 80 MHz; 3.5 dB pk-pk max. across 750 MHz	1.0 dB pk-pk max. across any 80 MHz; 4.5 dB pk-pk max. across 1750 MHz
Input VSWR	1.3:1 max.	
Output VSWR	2.2:1 max. (1.3:1 max. with optional external output isolator)	
Load VSWR	2.0:1 continuous operation; any value operation without damage	
Phase Noise	10 dB below IESS-308 continuous mask; -36 dBc AC fundamentals; -41 dBc sum of spurs (130 Hz to 1 MHz)	
AM/PM Conversion	2.5°/dB max. for a single-carrier at 7 dB below rated power (at 4 dB below rated power with optional linearizer)	
Harmonic Output	-60 dBc at rated power	
Noise Density	<-130 dBW/4 kHz, below 12.7 GHz; <-70 dBW/4 kHz passband; <-66 dBW/4 kHz passband with linearizer option	<-130 dBW/4 kHz, below 11.7 GHz; <-70 dBW/4 kHz passband; <-66 dBW/4 kHz passband with linearizer option
Intermodulation - with respect to the sum of both carriers	-24 dB max. at 7 dB OBO from rated power; (at 4 dB OBO with optional linearizer)	
Group Delay	0.02 ns/MHz linear max; 0.003 ns/MHz ² parabolic max; 0.75 ns pk-pk ripple max.	
Primary Power	Voltage: Single phase, 100-240 VAC $\pm 10\%$; Frequency: 47-63 Hz	
Power Consumption	700 W max; 600 W typ. at 100 W output power	
Power Factor	0.95 min	
Inrush Current	200% max.	
Ambient Temperature	-40°C to +60°C, including solar loading; -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 pulse in non-operating condition); 3 g_{rms} , 50 to 500 MHz (non-operational)	
Cooling	Forced air with integral blower	
Connections	RF Input: Type N Female; RF output: WR75G grooved waveguide flange; RF output monitor: Type N Female, 44 dB nom.	
M&C Interface	RJ45 Ethernet, includes embedded GUI control; RS422/485 serial interface optional	
Dimensions, W x H x D	8.5 x 8.5 x 15.0 inches (216 x 216 x 381 mm)	
Weight	24.25 lbs (11 kg) with no options; 25.41 lbs (11.5 kg) with BUC option	
Acoustic Noise	65 dBA (as measured at 3 ft.) nom.	