

750 W Outdoor TWTA

Built for Outdoor Applications

Provides 750 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 frequency band (13.75 to 14.80 GHz and 12.75 to 14.50 GHz also available). 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.

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 enabled.**

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 2004/108/EC and Harmonic Standard EN-61000-3-2 to satisfy worldwide requirements. CE Marked and licensed for import in Brazil, Russia and China.

Worldwide Support

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



Model T07U0

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

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 or TD-192 for details.
- Multi-band block upconverter (BUC) --- specifications for when BUC is included are not contained in this document. Contact CPI for details.
- Computer Interface: Ethernet interface (standard) or RS422/485 (optional)



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750 W Ku-Band Outdoor TWTA

Specification	Model T07U0		
Output Frequency	13.75 to 14.50 GHz	12.75 to 14.50 GHz	13.75 to 14.80 GHz
Output Power (min.) TWT Saturated (P_{sat} , CW)	750 W (58.75 dBm) min. 650 W (58.13 dBm) min.		
Gain	70 dB min, 78 dB max.		
RF Level Adjust Range	0 to 30 dB (via PIN diode attenuator) typ, 0.1 dB steps		
Gain Stability Over temp, constant drive Over $\pm 10^{\circ}\text{C}$, constant drive	± 0.25 dB/24 hour max,max. at constant drive and temperature, after 30 minute warmup ± 1.6 dB max. from -40°C to $+55^{\circ}\text{C}$ ± 0.75 dB typ.		
Small Signal Gain Slope	± 0.02 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; 4.5 dB pk-pk max. across 750 MHz with linearizer option	1.0 dB pk-pk max. across any 80 MHz; 4.5 dB pk-pk max. across 1750 MHz; 5.5 dB pk-pk max. across 1750 MHz with linearizer option	1.0 dB pk-pk max. across any 80 MHz; 3.5 dB pk-pk max. across 1050 MHz; 4.5 dB pk-pk max. across 1050 MHz with linearizer option
Input/Output VSWR	1.3:1 max.		
Load VSWR	2.0:1 continuous operation; 1.5:1 for full spec. compliance; any value operation without damage		
Phase Noise	-10 dB IESS-308/309 phase noise profile; -42 dBc AC fundamentals; -50 dBs 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, second and third harmonics		
Noise Density	<-150 dBW/4 kHz, 10.70 to 12.7 GHz (10 to 11.7 GHz w/ 12.75 to 14.50 GHz amplifier); <-65 dBW/4 kHz passband; <-60 dBW/4 kHz passband with linearizer option; <-105 dBW/4 kHz, 18.9 to 26.0 GHz		
NPR	19 dB at 4 dB OBO with optional linearizer		
Intermodulation - with respect to each of 2 equal carriers 5 MHz apart	-24 dBc max. at 51.13 dBm output power; -25 dBc max. at 55.13 dBm output power with linearizer		
Spectral Regrowth	-30 dBc at 1 symbol rate at 55.13 dBm with optional linearizer		
Group Delay	0.01 ns/MHz linear max; 0.001 ns/MHz ² parabolic max; 0.5 ns pk-pk ripple max.		
Primary Power	Voltage: Single phase, 200-240 VAC $\pm 10\%$; Frequency: 47-63 Hz		
Power Consumption	2.3 kVA typ. at 3 dB backoff; 2.7 kVA max.		
Power Factor	0.95 min; 0.99 typ.		
Inrush Current	200% max.		
Ambient Temperature	-40°C to $+55^{\circ}\text{C}$ operating out of direct sunlight, -40°C to $+50^{\circ}\text{C}$ operating in direct sunlight, -54°C to $+71^{\circ}\text{C}$ non-operating		
Relative Humidity	100% condensing		
Altitude	10,000 ft. with standard adiabatic derating of $2^{\circ}\text{C}/1000$ 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		
Connections	RF Input: Type N Female; RF output: WR-75G grooved waveguide flange; RF output monitor: Type N Female		
M&C Interface	RJ45 Ethernet, includes embedded GUI control; RS422/485 serial interface optional		
Dimensions, W x H x D	12.75 x 11.5 x 22.25 inches (324 x 292 x 566 mm)		
Weight	79 lbs (35.9 kg) typ.		
Heat Dissipation	2000 watts max.		
Acoustic noise	68 dBA (as measured at 3 ft.) nom.		