

Built for Satellite Communications Uplink Applications

Provides 750 watts of power in a rugged and compact weatherproof package, digital ready, for satellite uplinks in the Ku-band frequency range. Ideal for transportable or 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. Optional LifeExtender significantly increases TWT life.

Simple to Operate

User-friendly microprocessor-controlled logic with integrated Ethernet computer interface. Digital metering, pin diode attenuation and integrated linearizer for improved intermodulation performance. SNMP (v1, v2, or v3) facilitates high level M&C integration.

Easy to Maintain

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



CPI 750 W Ku-band Air-Cooled Outdoor TWTA, Model T07UO-A1

OPTIONS:

- 1 RU remote control panel
- Serial interface
- Redundant and hybrid power combined systems
- Integrated 1:1 switch control and drive
- Integral block upconverter (BUC)
- External receive band reject filter (increases loss by a minimum of 50 dB up to 11.7 GHz)
- LifeExtender/LifePredictor technology to significantly extend TWT life
- Inlet air filter
- Liquid-cooled version available

Quality Management
System - ISO 9001:2015



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. CE Marked.

Worldwide Support

Backed by over five decades of satellite communications experience, and CPI's global customer support network, including regional service centers located worldwide.

Specification	CPI 750 W Ku-Band Outdoor TWTA (T07UO-A1)	
Output Frequency	13.75 to 14.50 GHz	12.75 to 14.80 GHz
Output Power TWT Power Rated Amplifier Flange Power	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 temperature Over $\pm 10^{\circ}\text{C}$	± 0.25 dB/24 hour max,max. at constant drive and temperature, after 30 minute warmup ± 2.5 dB max. from -40°C to $+55^{\circ}\text{C}$, constant drive ± 0.75 dB typ, constant drive	
Small Signal Gain Slope	± 0.02 dB/MHz max. (± 0.04 dB/MHz max. with BUC and linearizer)	
Small Signal Gain Variation	1.0 dB pk-pk max. across any 80 MHz 4.5 dB pk-pk max. across 750 MHz	1.0 dB pk-pk max. across any 80 MHz 5.5 dB pk-pk max. across 1750 MHz
Input/Output VSWR	1.3:1 max. (1.5:1 max. Input VSWR with BUC)	
Load VSWR	2.0:1 continuous operation; 1.5:1 for full spec. compliance; any value operation without damage	
Phase Noise	10 dB below IESS-308/309 phase noise profile (3 dB below with BUC); -42 dBc AC fundamentals (-36 dBc with BUC); -50 dBc sum of all spurs (-42 dBc with BUC)	
AM/PM Conversion	2.5°/dB max. for a single-carrier at 4 dB below rated power	
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 12.2 GHz w/ 12.75 to 14.50 GHz amplifier); <-70 dBW/4 kHz pass-band; <-60 dBW/4 kHz passband with BUC; <-105 dBW/4 kHz, 18.9 to 26.0 GHz	
Intermodulation - with respect to each of 2 equal carriers 5 MHz apart	-26 dB max. at 54.1 dBm output power	
Noise Power Ratio (NPR)	19 dB at 4 dB OBO	
Spectral Regrowth	-30 dBc at 1 symbol rate at 55.1 dBm	
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 $+55^{\circ}\text{C}$ in direct sunlight; -40°C to $+60^{\circ}\text{C}$ out of 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 peak, 11 ms (1/2 sine pulse); 2.1 g rms, 5 to 500 MHz non-operating	
Cooling	Forced air with integral blower	
Connections	RF Input: Type N Female; RF output: WR75G 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 typ.	
Acoustic noise	68 dBA nom, as measured at 3 feet	