CPI 750 W Ku-Band Outdoor TWTA

Ku-Band

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.

CPI 750 W Ku-band outdoor TWTA, Model T07UO-A1

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 lifetime.

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, 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.

OPTIONS:

- 1 RU remote control panel
- Serial interface
- Redundant and hybrid power combined systems
- Integrated 1:1 switch control and drive
- Integral linearizer
- Integral block upconverter (BUC)
- External receive band reject filter (increases loss by a minimum of 50 dB up to 11.7 GHz)
- TWT LifeExtender/LifePredictor extends TWT life by up to 50%
- Inlet air filter
- Liquid cooling - Contact CPI for details

Quality Management System - ISO 9001:2015

CE

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

CPI Communications & Power Industries

www.cpii.com/satcom

Specification	CPI Model T07UO-A1 750 W Ku-Band TWTA		
Output Frequency	13.75 to 14.50 GHz	12.75 to 14.50 GHz	13.75 to 14.80 GHz
Output Power TWT Power Saturated (Psat, 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 temperature Over ±10°C	±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°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 3.0 dB pk-pk max. across 750 MHz (4.5 dB pk-pk withoptional linearizer)	1.0 dB pk-pk max. across any 80 MHz 4.5 dB pk-pk max. across 1750 MHz (5.5 dB pk-pk with optional linearizer)	1.0 dB pk-pk max. across any 80 MHz 3.5 dB pk-pk max. across 1050 MHz (4.5 dB pk-pk with optional linearizer)
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 7 dB below rated power (at 4 dB below 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 12.2 GHz w/ 12.75 to 14.50 GHz amplifier); <-70 dBW/4 kHz passband; <-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	-24 dB max. at 51.1 dBm output power (-26 max. at 54.1 dBm with optional linearizer)		
Noise Power Ratio (NPR)	19 dB at 4 dB OBO with optional linearizer		
Spectral Regrowth	-30 dBc at 1 symbol rate at 55.1 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 ±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°C in direct sunlight; -40°C to +60°C 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 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		

Communications & Power Industries

Power Electronics:
Amplifier Products
tel: +1 (669) 275-2744
email: satcommarketing@cpii.com
web: www.cpii.com/satcom

For more detailed information, please refer to the corresponding CPI technical description if one has been published, or contact CPI. Specifications may change without notice as a result of additional data or product refinement. Please contact CPI before using this information for system design.

MKT-285 Revision V dated MAR 2024