CPI 750 W DBS-Band Outdoor TWTA

DBS-Band

Built for Satellite Communications Uplink Applications

Provides 750 watts of power in a rugged and compact weatherproof package, digital ready, for satellite uplinks from 17.3 to 18.4 GHz. Ideal for transportable or fixed earth station applications.

CPI 750 W liquid cooled DBS-band outdoor TWTA, Model T07DO-L1

OPTIONS:

- Remote control panel
- Serial interface
- Redundant and hybrid power combined systems
- Integrated 1:1 switch control and drive
- Integral linearizer
- Integral block upconverter (BUC) – see CPI document TD-187 for specifications.
- TWT LifeExtender/LifePredictor significantly extends TWT life
- Inlet air filter
- Air-cooled version available
- Uplink Power Control

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. 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.

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 that includes more than 20 regional factory service centers.

Specification	CPI Model T07DO-L1 750 W DBS-Band TWTA
Output Frequency	17.3 to 18.4 GHz
Output Power **TWT Flange Power (rated)** **Amplifier Flange Power (rated)**	 750 W (58.75 dBm) min. 630 W (58.00 dBm) min.
Gain	70 dB min, 81 dB max.
RF Level Adjust Range	0 to 30 dB (via PIN diode attenuator) typ, 0.1 dB steps
Gain Stability **Over temp. range** **Over ±10OC**	±0.25 dB/24 hour max,max. at constant drive and temperature, after 30 minute warmup ±1.6 dB max. from -40OC to +55OC, at constant drive ±0.75 dB typ, constant drive
Small Signal Gain Slope	±0.02 dB/MHz max.
Small Signal Gain Variation	1.0 dB pk-pk max. across any 80 MHz; 4.0 dB pk-pk max. the 1100 MHz
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 below IESS-308/309 phase noise profile; -42 dBc AC fundamentals; -50 dBc sum of spurs (370 Hz to 1 MHz)
AM/PM Conversion	2.5⁰/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, 10.7 to 12.75 GHz; <-70 dBW/4 kHz passband
Intermodulation - with respect to each of 2 equal carriers 5 MHz apart	-24 dB max. at 51 dBm output power (-26 max. at 54 dBm with optional linearizer)
Spectral Regrowth	-30 dBc at 1 symbol rate at 55 dBm with optional linearizer, 51dBm without optional linearizer
Group Delay	in any 80 MHz band: 0.02 ns/MHz linear max; 0.002 ns/MHz^2 parabolic max; 1.5 ns pk-pk ripple max.
Primary Power	Voltage: Single phase, 208 - 240 VAC ±10%; Frequency: 47-63 Hz
Power Consumption	2.6 kVA Max; 2.21 kVA typical @ 55dBm
Power Factor	0.95 min; 0.99 typical
Inrush Current	200% max.
Ambient Temperature	-40ºC to +60ºC operating; -40ºC to +55ºC including solar loading; -54ºC to +71ºC non-operating
Relative Humidity	100% condensing
Altitude	10,000 ft. with standard adiabatic derating of 2ºC/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	Liquid cooled: 1 gallon (3.79 liters) per minute of water, +60°C max. at inlet
Connections	RF Input: Type SMA Female; RF output: WR62 grooved waveguide flange
RF Output Monitor	Type SMA Female
M&C Interface	RJ45 Ethernet, includes embedded GUI control; RS422/485, RS-232 serial interface optional
Dimensions, W x H x D	12.75 x 10.06 x 22.25 inches (324 x 256 x 566 mm)
Weight	82 lbs (37.2 kg) typ.
Heat Dissipation	1900 watts typ.
Acoustic noise	Negligible

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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-602 Revision 1 OCT 2022