750 Watt Peak TWTA

Ka-Band

CPI Ka-Band TWTA for Satellite Uplink Communications

Provides 750 watts of peak power in a rugged and compact weatherproof package, digital ready, for wideband single- and multi-carrier satellite service from 27.0 to 31.0 GHz. Ideal for fixed earth station applications.

Cost Effective and Efficient
Employs a high efficiency helix traveling wave tube, reducing operating costs.

Rugged and Easy to Maintain
Built-in fault diagnostic capability via remote monitor and control. Easy access enclosure for improved serviceability. CAN-Bus architecture improves reliability and improves noise immunity.

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 and licensed for import in Brazil and China.

Worldwide Support
Backed by over four decades of satellite communications experience, and CPI's global 24-hour customer support network, including regional factory service centers located worldwide.

CPI's 750 W air-cooled Ka-band TWTA (TL07KO-A1) provides up to 350 watts of linear power at the flange

FEATURES:

- Ethernet interface with integral web server for easy monitoring and control
- SNMP interface (v1, v2, or v3)

OPTIONS:

- LifeExtender/LifePredictor
- Remote control panel
- Internal switch control and drive
- Redundant or power combined subsystems
- Integral L-Band block upconverter (BUC) - contact CPI for specifications when BUC is included
- Uplink Power Control (UPC)
- Integral Linearizer
- RS-422/485 serial interface
- Harmonic Filter - lowers harmonic output to -60 dBc max (reduces CW and peakpower by 0.1 dB)
- Liquid cooling - see MKT-608 or contact CPI for specifications

Quality Management System - ISO 9001:2015

CE

CPI Communications & Power Industries

www.cpii.com/satcom

Specification	TL07KO-A1 - 750 W Peak Power Ka-band TWTA
Output Frequency	Up to 4000 MHz instantaneous bandwidth from 27.0 to 31.0 GHz (multi-band BUC option allows for two different, factory-set frequency ranges, each up to 1 GHz - contact CPI for more information)
TWT Peak/CW Power[1]	750 W/450 W (58.75/56.5 dBm)
Flange Peak/CW Power[1]	625 W/370 W (57.95/55.7 dBm)
Intermodulation - with respect to the sum of two carriers	-28 dBc at total output power of 53.95 dBm
Intermodulation - with respect to each of 2 equal carriers 5 MHz apart	-25 dBc at total output power of 53.95 dBm
NPR	-19 dB at 53.95 dBm flange output power
Gain	70 dB min. at rated output, 70 dB typ. at small signal
RF Level Adjust Range	0 to 30 dB (via PIN diode attenuator) typ, 0.1 dB steps
Gain Stability	±0.25 dB/24 hour max,max. at constant drive and temperature, after 30 minute warmup ±0.75 dB max. from ±10 ºC; ±1.0 dB typ. over operating temperature range
Small Signal Gain Slope	±0.04 dB/MHz max.
Small Signal Gain Variation	1.2 dB pk-pk max. across any 500 MHz segment; 2.5 dB pk-pk max. across 1 GHz segment
Input/Output VSWR	1.3:1 max.
Load VSWR	1.5:1 max. full spec. compliance; 2.0:1 max. continuous; any value for operation without damage
Phase Noise	-15 dB below IESS-308 continuous mask (-3 dB below with BUC); -47 dBc AC fundamental; -50 dBc sum of all spurs
Spurious	-60 dBc max.
AM/PM Conversion	2.0º/dB max. up to 4 dB OBO
Harmonic Output	-12 dBc max. at rated power (-60 dBc with optional filter)
Noise Density	<-150 dBW/4 kHz below 21.2 GHz; <-70 dBW/4 kHz max. in passband; <-80 dBW/4 kHz typ. in passband
Group Delay (over 40 MHz)	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, 110-240 VAC ±10%; Frequency: 47-63 Hz
Power Consumption	1600 VA max; 1200 VA typ.
Power Factor	0.95 min; 0.99 typ.
Amplitude and Phase Linearity	Exceeds MIL-STD-188-164A
Ambient Temperature	-40 ºC to +55 ºC operating in direct sunlight (to +60 ºC out of direct sunlight); -54 ºC to +71 ºC non-operating
Relative Humidity	100% condensing
Altitude	10,000 ft with standard adiabatic derating of 2 ºC/1000 ft operating; 50,000 ft non-operating
Shock and Vibration	20 G_{peak}, 11 ms 1/2 sine; 2.1 g_{rms}, 5 to 500 Hz (non-operational)
Cooling	Forced air with integral blower
Connections	RF Input: WR-28F (WR-34F optional); RF output: WR-34G (WR-28G optional); RF output monitor: 2.9mm SMA Female
M&C Interface	Ethernet (RS422/485 serial optional)
Dimensions, W x H x D	10.25 x 10.50 x 22.25 in (261 x 267 x 566 mm)
Weight	65 lbs (29.48 kg) with no options
Heat Dissipation	1230 W max.
Acoustic noise	68 dBA as measured at 3 ft nom.
Note 1	**Customer must select desired peak/output power and frequency range at time of purchase. These options are TWT dependent and are not field changeable. Peak power specs are provided so that desired backoff can more easily be calculated. The amplifier's actual output at the flange, CW power, is 370 W. CW and peak power are both reduced by 0.1 dB with harmonic filter option.**

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