

250 Watt SuperLinear® TWTA Ka-Band

CPI Ka-Band TWTA for Satellite Uplink Communications

Provides up to 110 watts of linear power in a rugged and compact weatherproof package, digital ready, for wideband single- and multi-carrier satellite service over up to 3.5 GHz within the Ka-band frequency band. Ideal for both transportable and fixed earth station applications.

Cost Effective and Efficient

Employs a high efficiency helix traveling wave tube, reducing operating costs. Both single and multi-band BUCs are available. The multi-band BUC allows users to switch between two pre-selected frequency ranges with up to 1 GHz of bandwidth each.

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.

Worldwide Support

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



CPI 250 W Ka-band TWTA,
model TL02KO

OPTIONS:

- Remote control panel
- Integral Linearizer
- Integral 1:1 switch control and drive
- Redundant subsystems
- Integral L-Band Block Upconverter (BUC) - contact CPI or consult document TD-232B for specifications when BUC is included.
- Multi-band L-band block upconverter allows for switching between two, preset 1.0 GHz bands within the Ka-band frequency range. Contact CPI for details.
- SNMP v3 and serial interface

Quality Management
System - ISO 9001:2015



Specification	CPI Model TL02KO - 250 W Ka-Band SuperLinear® TWTA
Output Frequency	Up to 2500 MHz within the 27.5 to 31.0 GHz frequency band.
TWT Peak/CW Power	250 W (54.00 dBm)
Flange Peak/CW Power	110 W (50.4 dBm) min, 123 W (50.9 dBm) max.
Intermodulation - with respect to the sum of two carriers	-25 dBc max. at 110 W flange output power with linearizer; (-25 dBc max. at 40 W without linearizer)
Spectral Regrowth	-30 dBc max. @ 1.0 S.R.
Gain	65 dB min. at rated power; 67 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/24hr max. (at constant drive and temperature)
Small Signal Gain Slope	±0.04 dB/MHz max.
Small Signal Gain Variation	1.0 dB pk-pk max. across any 80 MHz segment; 3.5 dB pk-pk max. across 2500 MHz segment
Input/Output VSWR	1.3:1 max. / 1.3:1 typ.
Load VSWR	2.0:1 max. continuous operation, any value operation without damage
Phase Noise	12 dB below IESS 308/309 continuous mask; -47 dBc AC fundamental; -45 dBc sum of spurs
Spurious	-60 dBc max. at rated output power
AM/PM Conversion	2.0°/dB max. for a single carrier at rated output power
Harmonic Output	-60 dBc at rated output power
Noise Density (at max. gain)	<-150 dBW/4kHz, below 21.2 GHz; <-70 dBW/4 kHz, 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	100 to 240 VAC +/-10% single phase, 47-63 Hz
Power Consumption	800 VA max. (600 VA typ. at rated power)
Power Factor	0.95 min
Amplitude and Phase Linearity	Exceeds MIL-STD-188-164B
Ambient Temperature	-40°C to +60°C operating, including solar loading; -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; 2.1 g _{rms} , 5 to 500 Hz (non-operational)
Cooling	Forced Air with integral blower
RF Input Connection	WR28 or WR34 waveguide flange
RF Output Connection	WR28 waveguide flange, grooved with UNC 2B 4-40 threaded holes (WR34 optional)
RF Output Monitor	2.92 mm SMA Female
M&C Interface	Ethernet (RS422/485 serial optional)
Dimensions, W x H x D	10.5 x 8.5 x 17.0 inches (267 x 216 x 432 mm)
Weight	32 lbs (14.6 kg) typ.
Acoustic noise	65 dBA (as measured at 3 ft.) nom.



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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.

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