

CPI Ka-Band TWTA for Satellite Uplink Communications

Provides 250 watts of CW power at the TWT 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 any of TT&C, transportable or fixed earth station applications.

Cost Effective and Efficient

Mounting at the antenna improves performance through minimized cable losses and saves cost in system design. Employs a high efficiency helix traveling tube, reducing operating costs.

Simple to Operate

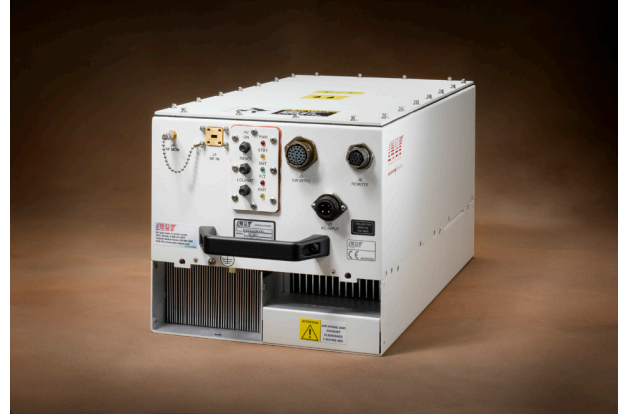
User-friendly microprocessor-controlled logic with integrated RS422/485 computer interface (or optional Ethernet interface). Digital metering is standard.

Meets Global Standards

Meets International Safety Standard EN-60215, Electromagnetic Compatibility 2014/30/EU and Harmonic Standard EN-61000-3-2 to satisfy worldwide requirements.

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 Model T03KO, 250 W Ka-band TWTA, provides up to 215 watts of CW power at the flange

OPTIONS:

- Remote control panel
- Internal switch control and drive
- Redundant or power combined subsystems
- Integral L-Band Block Upconverter (BUC) - refer to T03KO-B series, MKT-203)
- Integral Linearizer
- Ethernet interface

Quality Management System - ISO 9001:2015



Specification	CPI Model T03KO 250 W CW Ka-Band Outdoor TWTA
Output Frequency ¹	User-specified range within the 27.5 to 31.0 GHz band, as limited by bandwidth specification (see note 1)
TWT Output Power	250 W (54.0 dBm)
Flange Output Power (CW)	215 W (53.3 dBm)
Intermodulation - with respect to each of two equal carriers	-24 dBc max. or better with two equal carriers at total output flange power of 7 dB below rated single carrier output (-24 dBc at 4 dB below rated power with optional linearizer)
Noise Power Ratio (NPR)	18 dB at 4 dB OBO from rated power with optional linearizer
Spectral Regrowth	-30 dBc with optional linearizer at 4 dB OBO, in QPSK or OQPSK at 1 symbol offset, 5 Msps
Gain	70 dB min.
RF Level Adjust Range	0 to 25 dB min.
Gain Stability	±0.25 dB/24 hour max, at constant drive and temperature; ±1.0 dB from -5°C to +60°C
Small Signal Gain Slope	±0.025 dB/MHz max.
Small Signal Gain Variation	1.0 dB pk-pk across any 40 MHz segment; 2.5 dB pk-pk across 1000 MHz
Input/Output VSWR	1.3:1 max. / 1.3:1 max.
Load VSWR	1.5:1 max. continuous operation, any value operation without damage; 2.0:1 max. continuous
Phase Noise	12 dB below IESS-308 continuous mask; -50 dBc AC fundamental; -47 dBc sum of all spurs
Spurious Output	-60 dBc max.
AM/PM Conversion	2.5°/dB max. for a single carrier up to 6 dB OBO (1.0°/dB max, up to 3 dB OBO with linearizer option)
Harmonic Output ²	-12 dBc max. at rated power (-60 dBc with optional filter)
Noise Density	<-70 dBW/4 kHz max. 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, 100-240 VAC ±10%; Frequency: 47-63 Hz
Power Consumption	800 VA max.
Power Factor	0.95 min; 0.99 typ.
Ambient Temperature	-40°C to +50°C operating, in direct sunlight; -40°C to +55°C operating, 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 at 11 ms (1/2 sine pulse in non-operating condition); 2.1 g rms, 5 to 500 MHz
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	RS422/485 and RS232 serial (Ethernet interface optional)
Dimensions, W x H x D	10.25 x 9.5 x 20.0 inches (261 x 242 x 508 mm)
Weight	55 lbs (25 kg) with no options
Heat Dissipation	800 W max.
Note 1	Customer must select desired frequency range at time of purchase. This decision is TWT dependent and is not field changeable.
Note 2	Power is reduced by 0.25 dB with addition of harmonic filter option



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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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