

CPI Ka-Band TWTA for Satellite Uplink Communications

Provides 100 or 145 watts of CW 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, Efficient, Rugged

Employs a high efficiency helix traveling wave tube, reducing operating costs. Rugged construction allows for operation in extreme environments.

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 Model T01KO, 120/175 W Ka-band TWTA, provides up to 145 watts of CW power at the flange

OPTIONS:

- Remote control panel
- Integral switch control and drive
- Redundant or power combined subsystems
- Integral L-Band Block Upconverter (BUC) - contact CPI or consult document MKT-239 for specifications when BUC is included
- Integral Linearizer
- Ethernet interface

Quality Management
System - ISO 9001:2015



Specification	T01KO 175 W CW power	T01KO - 120 W CW power
Output Frequency	Up to 3500 MHz instantaneous bandwidth within the 27.5 to 31.0 GHz frequency band	
TWT / Flange CW Power	175 W / 145 W	125W / 100 W
Intermodulation - with respect to the each of two carriers	-24 dBc @ 7 dB backoff from rated power; -24 dBc @ 4 dB backoff from rated power with linearizer	
Noise Power Ratio	12 dB at 7 dB backoff from rated power; 18 dB at 4 dB backoff from rated power with linearizer	
Spectral Regrowth	30 dB at 7 dB backoff from rated power; 30 dB at 4 dB backoff from rated power	
Gain	70 dB min. at rated output, 75 dB min. at small signal (70 dB min. with linearizer)	
RF Level Adjust Range	0 to 25 dB (via PIN diode attenuator) min, 0.1 dB steps	
Gain Stability	±0.25 dB/24 hour max,max. at constant drive and temperature, after 30 minute warmup ±1.0 dB max. over operating temperature range	
Small Signal Gain Slope	±0.025 dB/MHz max.	
Small Signal Gain Variation	0.5 dB pk-pk max. across any 40 MHz segment; 2.5 dB pk-pk max. across 1 GHz segment	
Input/Output VSWR	1.3:1 max. / 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	-12 dB below IESS-308 continuous mask; -50 dBc AC fundamental; -47 dBc sum of all spurs	
Spurious	-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 optional linearizer)	
Harmonic Output	-12 dBc max. at rated power (-60 dBc with optional harmonic filter)	
Noise Density	<-150 dBW/4 kHz below 21.2 GHz; <-70 dBW/4 kHz max. in passband; <-65 dBW/4 kHz max. in passband with linearizer option	
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	750 VA typ, 800 VAC max.	650 VA typ, 700 VAC max.
Power Factor	0.95 min; 0.99 typ.	
Ambient Temperature	-40°C to +50°C operating in direct sunlight (to +55°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; 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 9.5 x 20.0 inches (261 x 242 x 508 mm)	
Weight	52 lbs (23.6 kg) with no options	
Heat Dissipation	600 W typ.	500 W typ.
Acoustic noise	65 dBA (as measured at 3 ft.) nom.	
Note 1	Customer must select desired frequency range at time of purchase. This decision is TWT dependent and is not field changeable. CW power is reduced by 0.1 dB with 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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