

CPI V-Band TWTA for Satellite Uplink Communications

Provides 80 watts of minimum power in a rugged and compact weatherproof package, digital ready, for wideband single- and multi-carrier satellite service over a 4.2 GHz bandwidth (5.2 GHz bandwidth optional) within the V-band frequency band. Ideal for fixed earth station applications.

Cost Effective and Efficient

Mounting at the antenna improves performance by reducing IFL losses and saves cost in system design. Provides 80 W of linear power at the amplifier flange.

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. User-friendly microprocessor-controlled logic with integrated Ethernet computer interface.

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 certified. SNMP enabled.

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 V-band TWTA, provides up to 80 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)
- EMC Directive 2014/30/EU
- Harmonic Standard EN-61000-3-2

OPTIONS:

- 5.2 GHz operation - from 47.2 to 52.4 GHz
- Remote control panel
- Integral linearizer
- Integral 1:1 switch control and drive
- Liquid cooling (please see CPI doc. MKT-492 for dimensions and specifications)
- Redundant systems
- Harmonic filter
 - optional for 51.4 GHz version
 - standard on 52.4 GHz version
- Serial interface (RS232/422)
- Uplink Power Control

Quality Management
System - ISO 9001:2015



Specification		CPI Model TL02VO-A1 - 250 W Peak Power V-Band TWTA	
ELECTRICAL SPECIFICATIONS			
Output Frequency	47.2 to 51.4 GHz		47.2 to 52.4 GHz
Peak TWT Flange Power	250 W (53.97 dBm)		
Peak Amplifier Flange Power	200 W (53.00 dBm)		
Rated Linear Amplifier Flange Power	80 W (49.03 dBm)		
Intermodulation - with respect to the sum of two carriers	-28 dBc max. at total output power of 80 W with optional linearizer		
Intermodulation-withrespecttoeach of 2 equalcarriers	-25 dBc max. at total output power of 80 W with optional linearizer		
NPR (with linearizer option)	19 dB at 80 W output power (75 W with optional harmonic filter)		19 dB at 75 W output power
Spectral Regrowth	-30 dBc max. at rated CW power with linearizer		
Gain	60 dB min; 64 dB typ. at 3 dB backoff from rated CW power		
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, at constant drive and temperature, after 30-minute warmup		
Small Signal Gain Variation	4 dB pk-pk max. across the 4.2 GHz band		5 dB pk-pk max. across the 5.2 GHz band
	2.5 dB max. over any 1 GHz band; 1 dB pk-pk max. over any 250 MHz		3.0 dB max. over any 1 GHz band; 1.5 dB pk-pk max. over any 250 MHz
Input/Output VSWR	1.3:1 max.		
Load VSWR	2.0:1 max. operational; any value for operation without damage		
Phase Noise	-12 dB below IESS-308 continuous mask; -45 dBc AC fundamental; -45 dBc sum of all spurs		
AM/PM Conversion	2.0°/dB max. for a single carrier up to 4 dB OBO from rated CW power (at rated CW power with optional linearizer)		
Harmonic Output	-60 dBc with harmonic filter option		-60 dBc
Noise Density	<-150 dBW/4 kHz below 31.4 GHz; <-150 dBW/4 kHz from 37.5 to 42.5 GHz; <-70 dBW/4 kHz max. in passband; -65 dBW/4 kHz with optional linearizer		
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	1100 VA max		
Power Factor	0.95 min; 0.99 typ.		
MECHANICAL SPECIFICATIONS			
Cooling	Forced air with integral blower		
Connections	RF input:	WR22 cover flange waveguide (WR-19 optional)	WR19 cover flange waveguide
	RF output:	WR22 grooved flange waveguide (WR-19 optional)	WR19 grooved flange waveguide
	RF output monitor	1.85mm coaxial, Female	
M&C Interface	Ethernet (serial interface optional - RS232/422)		
Dimensions, W x H x D	10.25 x 11.37 x 22.25 inches (261 x 289 x 566 mm)		
Weight	65 lbs (29.5 kg) nominal, with options		
ENVIRONMENTAL SPECIFICATIONS			
Ambient Temperature	-40°C to +55°C operating in direct sunlight (to +60°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, 11 ms 1/2 sine; 2.1 g _{rms} , 5 to 500 Hz (non-operational)		
Heat Dissipation	1000 W max.		
Acoustic noise	68 dBA as measured at 3 feet, nom.		



SMP Division
Satcom Products
tel: +1 669-275-2744
email: satcommarketing@cpii.com
web: www.cpii.com/satcom

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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