

For Satellite Communications Uplink Applications

Provides 400 watts of power in a rugged and compact weatherproof package, digital ready, for satellite uplinks in C-band. Ideal for transportable or fixed earth station applications.

Cost Effective and Efficient

Employs a high efficiency, dual-depressed collector helix traveling wave tube, reducing operating costs.

Reliable

Designed and built to survive in extremely adverse environmental conditions. Optional +60°C operating temperature limit available.

Simple to Operate

User friendly microprocessor-controlled logic with integrated RS422/485 interface. Digital metering, pin diode attenuation and optional integrated linearizer for improved intermodulation performance. Ethernet interface optional.

Easy to Maintain

Modular design and built-in fault diagnostic capability via remote monitor and control.

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 40 years of satellite communications experience, and CPI's worldwide 24-hour customer support network that includes more than 20 regional factory service centers.



CPI 400 W C-band outdoor TWTA,
Model T04CO

OPTIONS:

- Remote control panel
- Ethernet interface
- Redundant and hybrid power combined systems
- Integrated 1:1 switch control and drive
- Integral linearizer
- Integral block upconverter (BUC) - see CPI document TD-116 for specifications.
- Forward power detection
- Receive band reject filter - increases loss by a minimum 65 dB up to 4.8 GHz
- Higher operating temperature limit (+60°C)
- Extended Frequency Band (5.85 to 7.10 GHz)

Quality Management
System - ISO 9001:2015



Specification	CPI Model T04CO 400 W C-Band Outdoor TWTA
Output Frequency	5.85 to 6.65 GHz or optional extended band: 5.85 to 7.10 GHz
Output Power TWT Power Saturated (P _{sat} , CW)	400 W (56.02 dBm) min. 350 W (55.44 dBm) min.
Gain	70 dB min. at rated power output (46 dB with low gain option); 73 dB min at small signal (49 dB with low gain option)
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 typ over 10°C, constant drive
Small Signal Gain Slope	±0.02 dB/MHz max.
Small Signal Gain Variation	0.5 dB pk-pk across any 40 MHz band; 2.5 dB pk-pk max. across any 800 MHz (4.0 dB with linearizer option); 4.0 dB pk-pk max. across 1250 MHz (6.0 dB pk-pk with linearizer option)
Input/Output VSWR	1.3:1 max. / 1.3:1 max.
Load VSWR	2.0:1 continuous operation; any value operation without damage
Phase Noise	10 dB below IESS-308/309 phase noise profile; -42 dBc AC fundamentals; -47 dBc sum of spurs (130 Hz to 1 MHz)
AM/PM Conversion	2.5°/dB max. for a single-carrier at 7 dB below rated power (at 3 dB below rated power with linearizer)
Harmonic Output	-60 dBc at rated power
Noise Density, max.	<-150 dBW/4 kHz, 3.4 to 4.2 GHz; <-70 dBW/4 kHz, passband to 18 GHz; <-65 dBW/4 kHz, passband to 18 GHz with optional linearizer; <-105 dBW/4 kHz, 12 to 18 GHz
Intermodulation - with respect to each of 2 equal carriers 5 MHz apart	-24 dBc max. at 7 dB backoff from rated output power; -26 dBc max. at 4 dB backoff from rated output power with optional linearizer
Spectral Regrowth	-30 dBc, at 1 symbol rate away from carrier frequency, at 6 dB OBO (at 4 dB OBO with optional linearizer)
Group Delay	in any 80 MHz band: 0.01 ns/MHz linear max; 0.002 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	1.5 kVA max
Power Factor	0.95 min; 0.99 typ.
Inrush Current	200% max.
Ambient Temperature	-40°C to +50°C operating in direct sunlight; -40°C to +55°C out of direct sunlight; optional -40°C to +60°C operating in 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	Built for normal transportation environment per section 514.4 MIL-STD-810E; Designed to withstand 20g at 11 ms (1/2 sine pulse) in non-operating configuration.
Cooling	Forced air with integral blower
Connections	RF Input: Type N Female; RF output: CPR137 grooved w/g flange with threaded UNC 2B 10-32 holes
RF Output Monitor	Type N Female
M&C Interface	RS-422/485 or RS-232 serial interface (Ethernet optional)
Dimensions, W x H x D	10.25 x 10.50 x 20.5 inches (260 x 267 x 521 mm)
Weight	55 lbs (25.0 kg) typ.
Heat Dissipation	1100 watts typ.
Acoustic noise	65 dBA nom, as measured at 3 feet



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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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