

# 750 W Liquid Cooled Outdoor TWTA

## Built for Outdoor Applications

Provides 750 watts of power in a rugged and compact weatherproof package, digital ready, for wideband, single and multi-carrier satellite service in the 5.85 to 6.65 GHz frequency band (5.580 to 6.725 GHz also available). Ideal for both transportable and 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 and features increased cooling margin for longer life. CAN-Bus architecture improves reliability and noise immunity. Optional LifeExtender™/ LifePredictor improves TWT life by up to 50%.

## Simple to Operate

User-friendly microprocessor-controlled logic with integrated Ethernet computer interface. Digital metering, pin diode attenuation and optional integrated linearizer for improved intermodulation performance. SNMP enabled (v1, v2 or v3).

## 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 and licensed for import in Brazil, Russia and China.

## 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.



### Model T07CO-L1

750 watt liquid cooled C-band outdoor TWTA for **satellite uplink applications**

#### FEATURES

- Ethernet Interface
- SNMP interface (v1, v2, or v3)
- Redundant switch controller
- EMC Directive 2014/30/EU
- Harmonic Standard EN-61000-3-2

#### OPTIONS

- Integral linearizer
- Remote control panel
- Redundant and hybrid power combined sub-systems
- L-band block upconverter (BUC) --- specifications for when BUC is included are not contained in this document. Contact CPI or TD-192 for details.
- Multi-band block upconverter (BUC) --- specifications for when BUC is included are not contained in this document. Contact CPI for details.
- Computer interface: Ethernet interface (standard) or RS422/485 (optional)
- LifeExtender/LifePredictor



811 Hansen Way, PO Box 51625  
Palo Alto, CA 94303 USA  
tel: +1 (650) 846-3803  
fax: +1 (650) 424-1744  
e-mail: [satcommarketing@cpii.com](mailto:satcommarketing@cpii.com)  
website: [www.cpii.com/satcom](http://www.cpii.com/satcom)

## 750 W Liquid Cooled Outdoor TWTA

Specification	Model T07CO-L1	
Frequency	5.85 to 6.65 GHz	5.850 to 6.725 or 5.850 to 7.100 GHz
Output Power (min.) TWT Saturated Psat, CW)	750 W (58.75 dBm) min. 650 W (58.13 dBm) min.	750 W (58.75 dBm) min. 650 W (58.13 dBm) min.
Gain	70 dB min.	
RF Level Adjust Range	30 dB typ. in 0.1 dB steps	
Gain Stability	±0.25 dB/24 hour max, at temp. and constant drive, after 30 min. warmup ±0.75 dB typ. over 10°C over temp. and constant drive, any freq.	
Small Signal Gain Slope	±0.02 dB/MHz max.	
Small Signal Gain Variation	1.0 dB pk-pk max. across any 80 MHz; 4.0 dB pk-pk max. across the full transmit band	
Input VSWR/Output VSWR	1.3:1 max.	
Load VSWR	2.0:1 max. continuous operation; 1.5:1 full spec compliance; any value operation without damage	
Phase Noise	-10 dB IESS-308/309 phase noise profile; -42 dBc AC fundamentals; -50 dBc sum of spurs (370 Hz to 1 MHz)	
AM/PM Conversion	2.5°/dB max. for a single-carrier up to 51.1 dBm rated power (up to 54.1 dBm with optional 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; <-105 dBW/4 kHz, 12 to 18 GHz	
Intermodulation with linearizer	-24 dBc with regard to each of two equal carriers at 51.1 dBm output power (-26 dBc max. with regard to each of two equal carriers at 54.1 output power, w/ optional linearizer)	
NPR	19 dB at 4 dB OBO with optional linearizer	
Spectral Regrowth	-30 dBc at 51 dBm (at 54 dBm with optional linearizer)	
Group Delay	In any 80 Mhz band: 0.01 ns/MHz linear max, 0.001 ns/MHz <sup>2</sup> parabolic max, 0.5 ns pk-pk ripple max.	
Primary Power	Voltage: Single phase, 200-240 VAC ±10%; Frequency: 47-63 Hz	
Power Consumption	2.6 kVA max.	
Inrush Current	200%	
Power Factor	0.95 min, 0.99 typ.	
Ambient Temperature	-40° to +50°C operating in direct sunlight; -40° to +55°C operating out of direct sunlight; -54° 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 <sub>peak</sub> , 11 ms 1/2 sine; 2.1 grms, 5 to 500 Hz non-operating	
Cooling	Liquid cooled: 1 gallon (3.79 liters) per minute of water, +60°C max. at inlet	
Connections	RF Input: Type N Female; RF Output: CPR137 waveguide flange with threaded 10-32 UNC 2B	
RF Output Monitor	Type N Female	
M&C Interface	RJ45 Ethernet, includes embedded GUI control; RS422/485, RS232 serial interface optional	
Dimensions, W x H x D	12.75 x 10.06 x 22.25 in. (324 x 256 x 566 mm)	
Weight	75 lbs (34 kg) max.	
Heat Dissipation	1960 watts typ.	
Acoustic Noise	No cooling fan required	