CPI 1.25 kW SuperLinear® Touchscreen TWTA **Ku-Band**

For Satellite Communications Uplink Applications

Provides 1250 watts of peak power in a 5 rack unit package, digital ready, for wideband satellite service within the Ku-band frequency range.

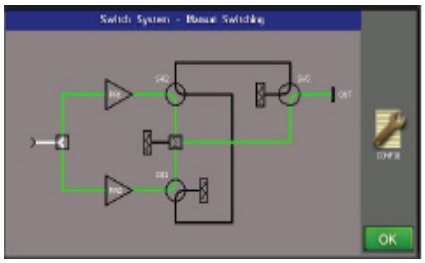
CPI 1250 W Ku-band TouchPower TWTA, Model T5UI-12

Touchscreen Graphical Interface

Equipped with a state-of-the-art touchscreen interface offering both amplifier- and system-level control capabilities. Includes fault logs, parameter trending and a scopescreen for monitoring performance. Its internal switch control eliminates the need for external controllers.

Super Efficient, Easy to Maintain

Modular design and includes built-in fault diagnostic capabilities, with convenient and clearly visible indicators for easy maintainability in the field. A USB port is available for uploading new firmware and system configurations, and downloading logs and system configurations for cloning to other units. Consumes only 2.3 kVA to produce 540 W of output power.



Touchscreen TWTA Sample Redundancy System Schematic Display; Various Configurations Available

FEATURES

- Touchscreen user interface
- Integral linearizer
- Ethernet interface
- SNMP interface (v1, v2, or v3)
- Serial interface (compatible with CHPA)
- CAN-Bus architecture improves reliability and noise immunity.

OPTIONS

- Remote control panel
- Redundant and hybrid power combined sub-systems
- Integral block upconverter (BUC): Contact CPI for specifications
- LifeExtender/LifePredictor technology to significantly extend TWT lifespan
- Uplink Power Control
- External receive band reject filter (increases loss by 75 dB min. at bandwidth appropriate in relation to passband)

Quality Management System - ISO 9001:2015

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

CPI satcom amplifiers are backed by over 40 years of satellite communications experience, and CPI's global customer support network, including regional factory service centers located worldwide.

CPI Communications & Power Industries

www.cpii.com/satcom

Specification	CPI Model T5UI-12, 1250 W Ku-band TouchPower TWTA	
Output Frequency	12.75 to 14.50 GHz	12.75 to 14.80 GHz
Output Power (min.) TWT Peak Power Flange Peak Power CW Power at Flange Max. CW Power at Flange	 1250 W (60.97 dBm) min. 1100 W (60.41 dBm) min. 540 W (57.33 dBm) min. 600 W (57.78 dBm) max.	
Note on Output Power	This amplifier guarantees 540 W of CW power at the flange. The peak power specifications are provided so that desired backoff may be more easily calculated.	
Gain	70 dB min.	
RF Level Adjust Range	0 to 30 dB (via PIN diode attenuator), 0.1 dB steps	
Gain Stability Over temp, constant drive Over ±10˚C , constant drive	±0.25 dB/24 hour max,max. at constant drive and temperature, after 30 minute warmup 2.0 dB pk-pk max. at 48 dBm output power 1.5 dB pk-pk max. at 48 dBm output power	
Small Signal Gain Slope	±0.02 dB/MHz max.	
Small Signal Gain Variation	1.5 dB pk-pk max. over any 80 MHz; 6.0 dB pk-pk max. across 1750 MHz	1.5 dB pk-pk max. over any 80 MHz; 5.0 dB pk-pk max. across 1050 MHz
Input/Output VSWR	1.3:1 max.	
Load VSWR	2.0:1 continuous operation; 1.5:1 for full spec. compliance; any value operation without damage	
Phase Noise	12 dB below IESS-308/309 profile; -47 dBc AC harmonic (100/120 Hz); -50 dBc AC fundamental (50/60 Hz); -47 dB sum of spurs (370 Hz to 1 MHz)	
AM/PM Conversion	2.5˚/dB max. for a single-carrier at 57 dBm output power	
Harmonic Output	-60 dBc at rated power, second and third harmonics	
Noise Density	<-150 dBW/4 kHz from 10.7 to 12.2 GHz; <-65 dBW/4 kHz, transmit band; <-105 dBW/4 kHz, 18 to 26 GHz; <-125 dBW/4 kHz, 26 to 40 GHz	<-150 dBW/4 kHz from 10.0 to 12.7 GHz; <-65 dBW/4 kHz, transmit band; <-105 dBW/4 kHz, 18 to 26 GHz; <-125 dBW/4 kHz, 26 to 40 GHz
NPR	-19 dB at 4 dB OBO (wrt flange)	
Intermodulation - with respect to each of two equal carriers	-25 dBc or better at 57.3 dBm output power (540 W)	
Group Delay	0.01 ns/MHz linear max; 0.001 ns/MHz2 parabolic max; 0.5 ns pk-pk ripple max.	
Primary Power	Voltage: Single phase, 200-240 VAC ±10%; Frequency: 47-63 Hz, 15 A max.	
Power Consumption	2.3 kVA typ. at 540 W output power	
Power Factor	0.95 min; 0.99 typ.	
Inrush Current	200% max.	
Ambient Temperature	-10˚C to +60˚C operating, -54˚C to +71˚C non-operating	
Relative Humidity	95% non-condensing	
Altitude	10,000 ft. with standard adiabatic derating of 2˚C/1000 ft. operating; 50,000 ft. non-operating	
Shock and Vibration	Designed for normal transportation environment per section 514.4 MIL-STD-810G. Designed to withstand 20G at 11 ms (1/2 sine pulse in non-operating condition)	
Cooling	Forced Air with integral blower. Rear air intake and exhaust. Maximum external pressure loss allowable: 0.5" water column	
Connections	RF Input: Type N Female; RF output: WR-75 grooved waveguide flange; RF output monitor: Type N Female	
M&C Interface	RJ45 Ethernet, includes embedded GUI control; RS422/485, RS232 serial interface	
USB Port	Download/Upload software, logs	
Dimensions, W x H x D	19 x 8.75 x 24 inches (483 x 222 x 610 mm)	
Weight	78 lbs (35 kg) nom.	
Heat Dissipation	1,450 watts to duct; 350 watts to room	
Acoustic noise	68 dBA (as measured at 3 ft.) nom.	

Communications & Power Industries

Power Electronics:
Amplifier Products
tel: +1 (650) 846 3600
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.

MKT-423 Revision 10 dated JUL 2025