TOUCHPOWER™

750W Touchscreen TWTA

for Satellite Communications

C-Band

The T5CI Series

750 Watt TWT High Power Amplifier — high efficiency in a compact package

Compact

Provides 750 watts of power in a 5 rack unit package, digital ready, for wideband, single-and multi-carrier satellite service in the 5.85 - 6.65 GHz frequency bands, with options for extended band to 6.725 or 7.075 GHz. Ideal for transportable and fixed earth station applications where space and prime power are at a premium.

Efficient

Employs a high efficiency dual-depressed collector helix traveling wave tube backed by many years of field-proven experience in airborne and military applications. CAN-Bus architecture improves noise immunity and reliability.

Touchscreen Graphical Interface

State of the art touchscreen interface with both amplifier and/or system level control capabilities. Includes fault logs, parameter trending and scopescreen for monitoring performance. Internal switch control eliminates need for external controllers.

Global Applications

Meets International Safety Standard EN-60215, Electromagnetic Compatibility 2004/108/EC and Harmonic Standard EN-61000-3-2 to satisfy worldwide requirements.

Easy to Maintain

Modular design and built-in fault diagnostic capability 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.

Worldwide Support

Backed by over three decades of satellite communications experience, and CPI's worldwide 24-hour customer support network that includes more than twenty regional factory service centers.

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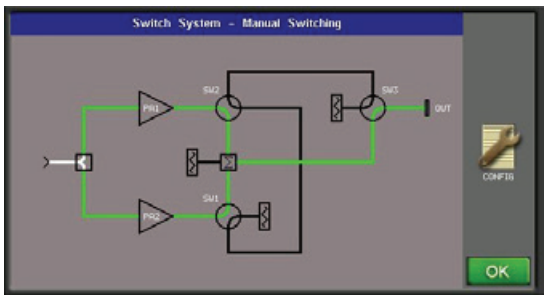
C-Band

SPECIFICATIONS, T5CI

Electrical

Frequency	5.85 - 6.65 GHz (extended bands available from 5.85 GHz to 6.725 or 7.075 GHz)
Output Power	
TWT	750 W min. (58.75 dBm)
Flange	665 W min. (58.25 dBm)
Bandwidth	800 MHz (875 and 1225 MHz optional)
Gain	70 dB min. at rated power, 88 dB max. 75 dB min. at small signal, 90 dB max.
RF Level Adjust Range	0 to 30 dB (via PIN diode attenuator), 0.1 dB steps
Gain Stability	
At constant drive & temp.	±0.25 dB/24 hr. max. (after 30 min. warmup)
Over temp., constant drive (any frequency)	±1.0 dB over oper. temp. range (typical) ±0.75 dB over ±10°C (typical)
Small Signal Gain Slope	±0.04 dB/MHz max.
Small Signal Gain Variation	
Across any 40 MHz band	0.5 dB pk-pk max.
Across any 500 MHz	2.5 dB pk-pk max.
Across full band, with linearizer	3.5 dB pk-pk max.
Input VSWR	1.3:1 max.
Output VSWR	1.3:1 max.
Load VSWR	
Continuous operation	2.0:1
Full spec. compliance	1:5:1
Operation without damage	Any value
Phase Noise	
IESS-308/309 phase noise profile	-12 dB
AC fundamentals	-52 dBc
Sum of spurs (370 Hz to 1 MHz)	-50 dBc
AM/PM Conversion	2.5°/dB max. for a single-carrier at 6 dB below rated power. With optional integral linearizer, improves to 2.0 deg/dB typ at 3 dB OBO.
Harmonic Output	-70 dBc at rated power, second and third harmonics
Noise Density	<-150 dBW/4 kHz, 3.4 to 4.2 GHz <-75 dBW/4 kHz, passband <-72 dBW/4 kHz, passband with linearizer option
NPR	19 dB at 4 dB OBO with optional linearizer



Touchscreen TWTA Sample Redundancy System Schematic Display; Various Configurations Available

Electrical (continued)

Intermodulation	-23 dBc or better with with regard to each carrier at total output power level of 51.13 dBm (-27 dBc at 55.25 dBm with linearizer).
Spectral Regrowth	-30 dBc at 1 symbol rate at 3 dB OBO with optional linearizer
Group Delay (in any 80 MHz band)	0.01 ns/MHz linear max. 0.005 ns/MHz sq. parabolic max. 0.5 ns pk-pk ripple max.
Primary Power	
Voltage	Single phase, 208-240 VAC ±10%
Frequency	47-63 Hz, 15 A max.
Power Consumption	2.2 kVA typ. (at saturated output power) 2.4 kVA max.
Power Factor	0.95 min.
Inrush Current	200% max.

Environmental (Operating)

Ambient Temperature	-20°C to +60°C operating -40°C to +70°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.

Mechanical

Cooling	Forced air with integral blower. Rear air intake & exhaust. Maximum external pressure loss allowable: 0.5 inches water column
RF Input Connection	Type N female
RF Output Connection	CPR-137F waveguide flange, grooved, threaded UNC 2B 6-32
M&C Interface	RJ45 Ethernet, includes embedded GUI control; Serial - RS422/485, RS232
USB Port	Download/Upload software, logs
RF Output Monitor	Type N female
Dimensions (W x H x D)	19 x 8.75 x 24 in. (483 x 222 x 610 mm)
Weight	78 lbs (35 kg) nom.

Heat and Acoustic

Heat Dissipation	1,440 Watts to duct; 360 W to room
Acoustic Noise	68 dBA (as measured at 3 ft.)

OPTIONS:

- *Integral Linearizer*
- *Remote Control Panel*
- *Redundant and Power Combined Subsystems*
- *External Receive Band Reject Filter (Increases loss by a minimum of 75 dB up to 12.75 GHz)*
- *SNMP compatibility*
- *LifeExtender™/LifePredictor*
- *High Altitude Operation Kit (for amplifiers to be used at over 10,000 feet (3,048 meters) above sea level.*
- *L-Band Block Upconverter (BUC) --- specifications for when BUC* ***is included are not contained in this document. Contact CPI for details.***

CE Quality Management System - ISO 9001:2008

For more detailed information, please refer to the corresponding CPI Technical Description.

Note: *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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