CPI 750 W SuperLinear® Outdoor TWTA

Ku-Band

Built for Satellite Communications Uplink Applications

Provides up to 330 watts of linear power (with linearizer) in a rugged and compact weatherproof package, digital ready, for satellite uplinks in the Ku-band frequency range. Ideal for transportable or fixed earth station applications.

CPI 750 W Ku-band SuperLinear outdoor TWTA, Model TL07UO

OPTIONS:

- Remote control panel
- Serial interface (Ethernet standard)
- Redundant and hybrid power combined systems
- Integrated 1:1 or 1:2 switch control and drive
- Integral linearizer
- Single or multi-band integral block upconverter (BUC)
- External receive band reject filter (increases loss by a minimum of 50 dB up to 11.7 GHz)
- TWT LifeExtender/LifePredictor significantly extends TWT life

Quality Management System - ISO 9001:2015

CE

Cost Effective and Efficient

CPI SuperLinear® TWTAs are among the most power efficient in the industry. This amplifier is optimized for maximum efficiency at linear output operating levels.

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™ significantly increases TWT lifetime.

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 (v1, v2, or v3) facilitates high level M&C integration.

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 certified.

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 Communications & Power Industries

www.cpii.com/satcom

Specification	CPI Model TL07UO 750 W SuperLinear® TWTA	
Output Frequency	13.75 to 14.50 GHz	12.75 to 14.50 GHz
Input Frequency	950 to 1700 MHz with BUC option	
Output Power TWT Peak Power Flange Peak Power Guaranteed CW Power Maximum CW Power	 750 W (58.75 dBm) min. 650 W (58.20 dBm) min. 330 W (55.20 dBm) min. 370 W (57.80 dBm) max.	
Note on Output Power	This amplifier guarantees 330 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 typ. (via PIN diode attenuator), 0.1 dB steps	
Gain Stability Over temp, constant drive	±0.25 dB/24 hour max,max. at constant drive and temperature, after 30 minute warmup ±1.6 dB max. over operating temperature range	
Small Signal Gain Slope	±0.02 dB/MHz max.	
Small Signal Gain Variation	1.0 dB pk-pk max. across any 80 MHz 3.5 dB pk-pk max. across 750 MHz (4.5 dB pk-pk across 750 MHz with optional linearizer)	1.0 dB pk-pk max. across any 80 MHz 4.5 dB pk-pk max. across 1750 MHz (5.5 dB pk-pk across 1750 MHz with optional linearizer) [1]
Input/Output VSWR	1.3:1 max. (1.5:1 max. with BUC option)	
Load VSWR	2.0:1 continuous operation; 1.2:1 for full spec. compliance; any value operation without damage	
Phase Noise	12 dB below IESS-308/309 phase noise profile (3 dB below with BUC option)	
AM/PM Conversion	2.0°/dB max. for a single-carrier at 8 dB below rated output power (at 3 dB OBO with optional linearizer) [1]	
Harmonic Output	-60 dBc at rated power, second and third harmonics	
Noise Density	<-70 dBW/4 kHz passband, (<-60 dBW/4 kHz passband, with BUC option); <-130 dBW/4 kHz, 10.7 to 12.7 GHz; <-105 dBW/4 kHz, 18.9 to 26.0 GHz	<-70 dBW/4 kHz passband (<-60 dBW/4 kHz with BUC); <-130 dBW/4 kHz, 10.7 to 12.2 GHz; <-65 dBW/4 kHz, 12.2 to 12.7 GHz; -105 dBW/4 kHz, 18.9 to 26.0 GHz
Intermodulation - with respect to each of 2 equal carriers 5 MHz apart	-24 dBc max. at output power level of 51.2 dBm (-25 dBc max. at output power level of 55.2 dBm with optional linearizer)	-24 dBc max. at output power level of 51.2 dBm [1]
Spectral Regrowth	-30 dBc at 1 symbol rate at 55.2 dBm with opt. linearizer	-30 dBc at 1 symbol rate at 51.2 dBm [1]
Noise Power Ratio	19 dB at 54.2 dB OBO with optional linearizer	-19 dB at 51.2 dBm [1]
Group Delay	0.01 ns/MHz linear max; 0.001 ns/MHz2 parabolic max; 0.5 ns pk-pk ripple max. (1.5 ns pk-pk ripple max. with BUC option)	
Primary Power	Voltage: Single phase, 120 to 240 VAC ±10%; Frequency: 47-63 Hz	
Power Consumption	1.5 kVA typ; 1.8 kVA max.	
Power Factor	0.95 min; 0.99 typ.	
Inrush Current	200% max.	
Ambient Temperature	-40ºC to +55ºC operating; -54ºC to +71ºC non-operating	
Relative Humidity	100% condensing	
Altitude	10,000 ft. with standard adiabatic derating of 2ºC/1000 ft. operating; 50,000 ft. non-operating	
Shock and Vibration	20 g peak, 11 ms (1/2 sine pulse); 2.1 g rms, 5 to 500 MHz non-operating	
Cooling	Forced air with integral blower	
Connections	RF Input: Type N Female; RF output: WR75G waveguide flange; 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	10.25 x 10.5 x 20.5 inches (260 x 267 x 521 mm)	
Weight	55 lbs (25 kg) typ.	
Heat Dissipation	1300 watts max.	
Acoustic noise	68 dBA (as measured at 3 ft.) nom.	

Note 1: a linearizer is possible but not recommended for frequency ranges greater than 1 GHz. Contact CPI for details and specifications.

Communications & Power Industries

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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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