Ku-Band

1.25 kW SuperLinear® Outdoor TWT Amplifier

Built for Outdoor Applications

Provides up to 540 watts of linear power (with linearizer) in a rugged and compact weatherproof package, digital ready, for satellite or troposcatter uplinks in the 13.75 to 14.50, 12.75 to 14.50, or 13.75 to 14.80 GHz frequency band. Ideal for transportable or fixed earth station applications.

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. Optional SNMP 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 2004/108/EC and Harmonic Standard EN-61000-3-2 to satisfy worldwide requirements. CE Marked.

Worldwide Support

Backed by over three decades of satellite communications experience, and CPI's worldwide 24-hour customer support network that includes more than 20 regional factory service centers.

Model TL12UO

1250 watt X-band SuperLinear® ODU for **satellite uplink** or **troposcatter applications**

OPTIONS

- 1 RU remote control panel
- Serial interface
- Redundant and hybrid power combined sub-systems
- Integrated 1:1 switch control and drive
- L-band block upconverter (BUC) - contact CPI for specifications
- Integral linearizer
- External receive band reject filter (increases loss by a minimum of 50 dB up to 11.7 GHZ
- SNMP capability
- TWT LifeExtender™
- Inlet air filter

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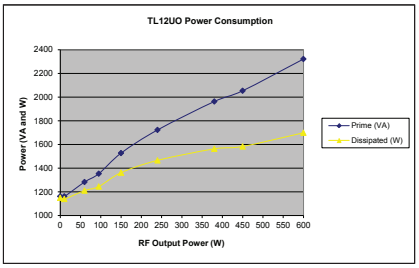
811 Hansen Way, PO Box 51625
Palo Alto, CA 94303 USA
tel: +1 (650) 846-3803
fax: +1 (650) 424-1744
e-mail: satcommarketing@cpii.com
website: www.cpii.com/satcom

1.25 kW Ku-Band SuperLinear® Outdoor TWT Amplifier

Specification	Model TL12UO		
Output Frequency	13.75 to 14.50 GHz	12.75 to 14.50 GHz	13.75 to 14.80 GHz
Output Power (min.) TWT Peak Power Flange Peak Power Guaranteed CW Power at Flange Maximum CW Power at Flange	1250 W (60.97 dBm) min. 1100 W (60.41 dBm) min. 540 W (57.32 dBm) min. 600 W (57.80 dBm) min.		
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) typ, 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 ±1.0 dB typ. 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; 3.0 dB pk-pk max. across 750 MHz (4.0 dB pk-pk with optional linearizer)	1.0 dB pk-pk max. across any 80 MHz; 4.0 dB pk-pk max. across 750 MHz (6.0 dB pk-pk with optional linearizer)	1.0 dB pk-pk max. across any 80 MHz; 3.5 dB pk-pk max. across 750 MHz (4.5 dB pk-pk with optional linearizer)
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	10 dB below IESS-308/309 phase noise profile		
AM/PM Conversion	2.0˚/dB max. for a single-carrier at 52.32 dBm output power (at 57.32 dBm with optional linearizer)		
Harmonic Output	-60 dBc at rated power, second and third harmonics		
Noise Density	<-65 dBW/4 kHz passband; <-60 dBW/4 kHz passband with linearizer option		
Intermodulation - with respect each of 2 equal carriers 5 MHz apart	-26 dBc max. at output level of 540 W (57.3 dBm) with linearizer; -26 dBc max. at 270 W (54.3 dBm) without optional linearizer		-25 dBc max. at output level of 540 W (57.3 dBm) with linearizer; -25 dBc max. at 270 W (54.3 dBm) without optional linearizer
Group Delay	0.01 ns/MHz linear max; 0.001 ns/MHz^2 parabolic max; 0.5 ns pk-pk ripple max. (1.5 ns pk-pk ripple max. with BUC option)		
Primary Power	Voltage: Single phase, 208 - 240 VAC ±10%; Frequency: 47-63 Hz		
Power Consumption	2.2 kVA typ. at 540 W output power; 1.35 kVA typ. at 100 W output power; 1.18 kVA typ. at 10 W output power		
Power Factor	0.95 min; 0.99 typ.		
Ambient Temperature	-40˚C to +55˚C operating (less 5˚C for solar loading); -40˚C to +70˚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 at 11 ms (1/2 sine pulse in non-operating condition); 2.1 G rms, 5 to 500 MHz		
Cooling	Forced air with integral blower		
Connections	RF Input: Type N Female; RF output: WR-112 waveguide flange; RF output monitor: Type N Female		
M&C Interface	RJ45 Ethernet, includes embedded GUI control; RS422/485, RS232 serial interface optional		
Weight and Dimensions	80 lbs (36.0 kg) typ. / 12.75 W x 11.5 H x 22.25 D inches (324 W x 293 H x 562 D mm)		
Heat Dissipation	1600 watts typ. at 500 W output power		
Acoustic noise	70 dBA (as measured at 3 ft.) nom.		



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Quality Management System - ISO 9001:2008

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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