

Built for Satellite Communications Uplink Applications

Provides up to 200 watts of linear power at the flange in a rugged and compact weatherproof package, digital ready, for satellite uplinks from 7.9 to 8.4 GHz. Ideal for transportable or fixed earth station applications.

Cost Effective and Efficient

As part of the SuperLinear® TWTA product line, this is the most efficient and compact amplifier in its class. Both the tube and HPA are optimized for efficient operation at linear power output 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.

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.

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. Meets EMI per MIL-STD-461F RE102 and CS114-116 Army Ground Profile.



CPI 500 W X-band SuperLinear outdoor TWTA, Model TL05XO

OPTIONS:

- Remote control panel
- Integral linearizer
- Integral block upconverter (BUC)
- External receive band reject filter (increases loss by a minimum of 115 dB from 7.25 to 7.75 GHz)
- Low passive intermodulation
- Low gain option (remove IPA)

Quality Management System - ISO 9001:2015



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.

Specification	CPI 500 W X-Band SuperLinear Outdoor TWTA - Model TL05KO
Input Frequency with BUC	950 to 1450 MHz
Output Frequency	7.9 to 8.4 GHz
Output Power (min.) TWT Peak Flange Peak CW Power at Flange Max. CW Flange Power	500 watts (56.99 dBm) min. 450 watts (56.53 dBm) min. 200 watts (53.00 dBm) min. 230 watts (53.60 dBm) max.
Bandwidth	500 MHz
Gain	72 dB min.
Gain Stability	±0.25 dB/24 hours max. (at constant drive and temperature); ±3.0 dB from -40°C to +60°C
Small Signal Gain Slope	±0.04 dB/MHz max.
Small Signal Gain Variation	1.5 dB pk-pk across any 120 MHz band; 3.0 dB pk-pk across the 500 MHz passband (4.0 dB pk-pk with optional linearizer)
RF Level Adjust Range	30 dB typ.
Input VSWR	1.3:1 max; 1.5:1 max. with optional BUC
Output VSWR	2.2:1 max.
Load VSWR	2.0:1 max. continuous operation; any value for operation without damage
Phase Noise	10 dB below MIL-STD-188-164B; 1 dB below MIL-STD-188-164B with optional BUC
Spurious	-60 dBc max. at 100 W output (at 200 W with optional linearizer)
AM/PM Conversion	2.5°/dB max. for a single carrier up to 100 W output (2.0°/dB up to 200 W output with linearizer option)
Harmonic Output	-60 dBc
Noise Density (at max. gain)	<-70 dBW/4 kHz, passband; additional -45 dBW/4 kHz, 7.25 to 7.75 GHz, with optional receive band reject filter.
Spectral Regrowth	-30 dBc max. @ 1.0 S.R, 5.6 Msps at 100 W (at 200 W with linearizer)
Intermodulation	-25 dBc max. with respect to the sum of both carriers at total output power of 100 W (at 200 W with optional linearizer)
Group Delay	0.02 ns/MHz linear max, 0.007 ns/MHz ² parabolic max, 1.0 ns pk-pk ripple max. in any 40 MHz band
Prime Power	120 to 240 VAC +/-10% single phase
Power Consumption	1250 VA max; 1100 VA typ.
Power Factor	0.95 min.
Amplitude and Phase Linearity	Exceeds MIL-STD-188-164B
Ambient Temperature	Ambient Temperature -40°C to +60°C operating, including solar loading; -54°C 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	20 g peak, 11 ms, 1/2 sine
Vibration	2.1 g _{rms} , 5 to 500 Hz
Acoustic Noise	65 dBA at 3 feet from amplifier
Cooling	Forced air with integral blower
M&C Port	Ethernet interface
L-Band Input Connection	Type N female
RF Output Connection	CPR112 waveguide flange, grooved with UNC 2B 8-32 threaded holes
RF Output Monitor	Type N Female, 45 dB nom.
Dimensions	10.5 x 8.5 x 17.0 in. max. (267 x 216 x 432 mm)
Weight	39 lbs (17.7 kg) typ, 40 lbs max. (18.2 kg)



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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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