500W SuperLinear® Outdoor TWTA with BUC

for Satellite Communications

The TL05XO

500 Watt Peak Power
TWTA with BUC
— high efficiency
and linearity in an
environmentally sealed
compact package
designed for outdoor
operation



Plays in the Rain

Provides 100 or 200 watts linear power at the flange in a rugged and compact weatherproof package, digital ready, for wideband, single- and multi-carrier satellite service in the 7.9 to 8.4 GHz frequency band. An L-Band Block Upconverter is included as standard. Ideal for transportable and fixed earth station applications.

Cost Effective and Efficient

Mounting at the antenna improves performance through minimized cable losses and saves cost in system design. Employs a high efficiency, dualdepressed collector helix traveling wave tube, reducing operating costs.

Reliable

Designed and built to survive in extremely adverse environmental conditions and features increased cooling margin for longer life.

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.

Easy to Maintain

Modular design and built-in fault diagnostic capability via remote monitor and control.

Global Applications

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

Worldwide Support

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



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OPTIONS:

- Remote Control Panel
- · External Receive Band Reject Filter (Increases loss by a minimum 60 dB from 7.25 to 7.75 GHz)
- Integral Linearizer

SPECIFICATIONS, TL05XO BUC **Electrical**

950 MHz to 1450 MHz (input) Frequency 7.9 to 8.4 GHz (output) **Output Power** TWT Peak Power* 500 W min. (56.99 dBm) min. Flange Peak Power* 450 W min. (56.53 dBm) min. 200 W min. (53.00 dBm) CW Power at flange Max. Power at flange 250 W max. (53.98 dBm) Linear Power at flange

100 W min. (50.00 dBm), 125 W typ. (50.97 dBm) 200 W min. (53.00 dBm) with linearizer

*This amplifier does not provide 450 W of CW power at the flange. This number is provided so that user can more easily calculate desired backoff levels. For CW power level, see the CW power specification above.

500 MHz Bandwidth Gain 72 dB min.

Gain Stability ±0.25 dB/24hr max.

(at constant drive and temp.)

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 band

RF Level Adjust Range 30 dB typ. Input VSWR 1.3:1 max. **Output VSWR** 2.2:1 max.

Load VSWR 2.0:1 max. continuous operation; any value for

operation without damage

Phase Noise 1 dB below MIL-STD-188-164A

-60 dBc max. at 100 W output **Spurious**

AM/PM Conversion 2.0°/dB max. for a single carrier up to 100 W

Harmonic Output

Noise Density <-70 dBW/4 kHz, passband 7.25 to 8.40 GHz

(at maximum gain)

-30 dBc max. @ 1.0 S.R. Spectral Regrowth

Electrical (continued)

Intermodulation -25 dBc max. with respect to the

> sum of both carriers at total output power of 100 W (at 200 W with

linearizer option)

Primary Power 100-240 VAC ±10% single phase,

47-63 Hz

Power Consumption 1100 VA max, 850 VA typ.

Power Factor 0.95 min.

Amplitude and Exceeds MIL-STD-188-164A

Phase Linearity

Environmental (Operating)

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

including solar loading; -40°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 pk, 11 ms, 1/2 sine Vibration 2.1 grms, 5 to 500 Hz

Acoustic Noise 65 dBA @ 3 ft. from amplifier

Mechanical

Cooling Forced air with integral blower

L-Band Input Connection Type N female

RF Output Connection CPR-112 waveguide flange,

grooved with UNC 2B 10-32

threaded holes

RF Output Monitor Type N female, 45 dB nom.

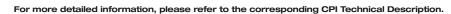
Dimensions (WxHxD) 10.5 x 8.5 x 17.0 in. max.

(267 x 216 x 432 mm)

Weight 32 lbs (14.5 kg)







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.



Communications & Power Industries