

400W SuperLinear® Outdoor TWTA BUC

for Satellite Communications

Ku-Band

The TLO4UO

400 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 200 watts of linear power at the flange in a rugged and compact weatherproof package, digital ready, for wideband, single- and multi-carrier satellite service in the 13.75 to 14.50 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, dual-depressed 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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Ku-Band

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OPTIONS:

- *Remote Control Panel*
- *External Receive Band Reject Filter (Increases loss by a minimum 60 dB up to 12.7 GHz)*
- *Redundant Subsystems*
- *Integrated 1:1 Switch Control and Drive*
- *SNMP V3, Serial Interface*

SPECIFICATIONS, TL04UO BUC

Electrical

Frequency	950 MHz to 1700 MHz (input) 13.75 to 14.50 GHz (output)
Output Power	
TWT	400 W min. (56.0 dBm) peak
CW (Linear) power at flange	200 W w/ optional linearizer (53.0 dBm)
Maximum CW flange power	220 W max. (53.4 dBm) with linearizer
Bandwidth	750 MHz
Gain	67 dB min. at rated power 70 dB typ. at small signal
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	1.0 dB pk-pk across any 80 MHz band; 3.0 dB pk-pk across the 750 MHz band
RF Level Adjust Range	30 dB typ.
Input VSWR at L-Band	1.5:1 max.
Output VSWR	1.3:1 typ.
Load VSWR	2.0:1 max. continuous operation; any value for operation without damage
MUXed External 10 MHz Reference Phase Noise	-120 dBc/Hz at 10 Hz
Required (L-Band Input 950-1700 MHz)	-140 dBc/Hz at 100 Hz -145 dBc/Hz at 1 kHz -150 dBc/Hz at ≥10 kHz
Single Sideband Phase Noise	-33 dBc at 10 Hz offset -63 dBc at 100 Hz offset -73 dBc at 1 kHz offset -83 dBc at 10 kHz offset -93 dBc at 100 kHz offset -103 dBc at 1 MHz offset -113 dBc at ≥10 MHz offset
Spurious	-60 dBc max. at rated output
AM/PM Conversion	2.0°/dB max. for a single carrier at rated pwr
Residual AM	-50 dBc below 10 kHz -20 [1.5 + log (f)] dBc, 10 kHz to 500 kHz -85 dBc, >500 kHz
Harmonic Output	-60 dBc at rated power
Noise Density (at maximum gain)	<-150 dBW/4 kHz, 10.70 to 12.75 GHz <-65 dBW/4 kHz, passband to 18 GHz
Spectral Regrowth	-30 dBc max. @ 1.0 S.R.

Electrical (continued)

Intermodulation	-25 dBc max. with respect to the sum of both carriers at rated power
Group Delay (over 40 MHz)	0.01 ns/MHz linear max. 0.001 ns/MHz ² parabolic max. 1.0 ns pk-pk ripple
Primary Power	100-264 VAC single phase, 47-63 Hz
Power Consumption	1000 VA max. (950 VA typ. at rated power)
Power Factor	0.95 min.
Amplitude and Phase Linearity	Exceeds MIL-STD-188-164A

Environmental (Operating)

Ambient Temperature	-40°C to +60°C operating, plus solar loading; -50°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

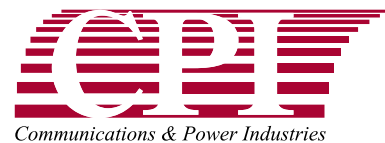
Cooling	Forced air with integral blower
M&C Port	Ethernet interface
L-Band Input Connection	Type N female
RF Output Connection	WR-75 waveguide flange, grooved with UNC 2B 6-32 threaded holes
RF Output Monitor	Type SMA
Dimensions (W x H x D)	10.5 x 8.5 x 17.0 in. max. (267 x 216 x 432 mm)
Weight	32 lbs (14.6 kg) typ.



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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