

250W SuperLinear® Outdoor BUC for Satellite Communications

Ku-Band

The TL02UO

*250 Watt Peak Power
TWT BUC — high
efficiency and linearity
in an environmentally
sealed compact
package designed for
outdoor operation*



Plays in the Rain

Provides up to 100 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 14.0-14.5 GHz or 13.75-14.50 GHz frequency bands. 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

250/100W SuperLinear® Outdoor BUC

SPECIFICATIONS, TL02UO BUC

Electrical

Frequency	950 MHz to 1450 MHz (input) 14.0 to 14.5 GHz (output)
Output Power	
TWT Peak Power	250 W min. (53.98 dBm)
Flange Peak Power*	220 W min. (53.42 dBm)
CW (Linear) power at flange	40 W min. (46.0 dBm) (80 W min. with linearizer)
CW (Linear) at flange (max)	50 W (100 W with linearizer)
*Note: This amplifier does not provide 220 W of power at the flange. The Flange Peak Power specification is provided so that the user can more easily calculate the desired backoff level from peak.	
Bandwidth	500 MHz
Gain	60 dB min. at rated power output; 64 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 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
MUXed External 10 MHz Reference Phase Noise Required (L-Band Input 950 - 1450 MHz)	-115 dBc/Hz at 10 Hz -140 dBc/Hz at 100 Hz -145 dBc/Hz at 1 kHz -150 dBc/Hz at ≥10 kHz (Level -3 to +7 dBm)
Single Sideband Phase Noise	-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 100 W output
AM/PM Conversion	2.0°/dB max. for a single carrier up to 100 W
Harmonic Output	-60 dBc max. at 100 W output
Noise Power Density (at maximum gain)	<-150 dBW/4 kHz, below 12.7 GHz <-66 dBW/4 kHz, passband to 18.0 GHz

Electrical (continued)

Intermodulation	-25 dBc max. with respect to the sum of both carriers at total output power of 100 W
Primary Power	100-240 VAC ±10% single phase, 47-63 Hz
Power Consumption	550 VA max. 500 VA typ. at 100 W output power 300 VA typ. at 1 W output power
Power Factor	0.95 min.

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	3 gms
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	WR-75 waveguide flange, grooved with UNC 2B 6-32 threaded holes
RF Output Monitor	Type N female, 44 dB nom.
Dimensions (W x H x D)	8.5 x 8.5 x 15 in. max. (216 x 216 x 381 mm)
Weight	25 lbs (11.4 kg) typ

OPTIONS:

- Remote Control Panel
- Extended Frequency: 13.75-14.50 GHz; 12.75-13.25 GHz)
- Redundant and Power Combined Subsystems
- External Receive Band Reject Filter (Increases loss by a minimum 60 dB up to 12.7 GHz)
- Integrated 1:1 switch control and drive
- Integral Linearizer
- Remove BUC - contact CPI for details on specifications



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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.

MKT 214L, ISSUE 3 03/10 PDF