# 250W SuperLinear® Outdoor BUC

for Satellite Communications

# 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 more than twenty regional factory service centers.



satcom 🌖 products

811 Hansen Way P.O. Box 51625, Palo Alto, CA 94303

**tel:** +1 (650) 846-3803 **fax:** +1 (650) 424-1744

**e-mail:** satcommarketing@cpii.com www.cpii.com/satcom

#### **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

# **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)

Linear power at flange 40 W min. (46.0 dBm) (100 W min. with linearizer)

CW output power at flange 100 W (max.)

\*Note: This amplifier provides a maximum of 100 W CW power at the flange. The Flange Peak Power specification (220 W) is provided so that the user can more easily calculate the desired backoff level from peak.

500 MHz Bandwidth 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-115 dBc/Hz at 10 HzReference Phase Noise-140 dBc/Hz at 100 HzRequired (L-Band Input-145 dBc/Hz at 1 kHz950 - 1450 MHz)-150 dBc/Hz at ≥10 kHz<br/>(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
-60 dBc max. at 100 W output
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) -60 dBc max. at 100 W output

-150 dBW/4 kHz, below 12.7 GHz

-66 dBW/4 kHz, passband to 18.0 GHz

## **Electrical (continued)**

Intermodulation -25 dBc max. @ 40 W output power (at 100 W output power with optional linearizer), with respect to

the sum of two carriers.

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 grms

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

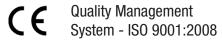
threaded holes

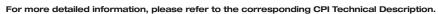
RF Output Monitor Type N female, 44 dB nom.

Dimensions (WxHxD) 8.5 x 8.5 x 15 in. max.

(216 x 216 x 381 mm)

Weight 25 lbs (11.4 kg) typ





PDF

**Spurious** 

AM/PM Conversion



