

400 W SuperLinear® Outdoor TWTA

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 multicarrier satellite service in the 13.75 to 14.50 GHz frequency band. Ideal for transportable and fixed earth station applications.

Cost Effective and Highly 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.

Internal Self-Resetting Protection

Protects against high temperatures, open/short/overdrive RF output conditions, INT/EXT reference 10 MHz conditions, prime power fluctuations. RF output overdrive protection prevents damage from higher than rated input power.

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.

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 35 years of satellite communications experience, and CPI's worldwide 24-hour customer support network that includes more than 20 regional factory service centers.



Model TL04UO

400 watt Ku-band SuperLinear TWTA
for **satellite uplink applications**

OPTIONS

- Remote Control Panel
- L-Band Block Upconverter (refer to TD-191 or contact CPI for specifications)
- Integral Linearizer
- Extended Frequency (12.75 - 14.50 GHz)
- External Receive Band Reject Filter (Increases loss by a minimum of 60 dB up to 12.7 GHz)
- Redundant Subsystems
- Integrated 1:1 Switch Control and Drive
- SNMP V3, Serial Interface



811 Hansen Way, PO Box 51625
Palo Alto, CA 94303 USA
tel: +1 (650) 846-3803
fax: +1 (650) 424-1744
e-mail: satcommarketing@cpil.com
website: www.cpii.com/satcom

400 W Ku-band SuperLinear® Outdoor TWTA

Specification	Model TL04U0
Frequency	14.00 to 14.50 GHz or 13.75 to 14.50 GHz (12.75 to 14.50 GHz optional)
Output Power (min.) TWT CW Power at Flange Max. CW Flange Power	400 watts (56.0 dBm) peak 200 W (53.0 dBm) min. 220 W (53.4 dBm)
Bandwidth	500 or 750 MHz (1075 MHz optional)
Gain	67 dB min. at rated power, 70 dB typ. at small signal
Gain Stability	±0.25 dB/24 hours max. (at constant drive and temperature)
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	1.5:1 max.
Output VSWR	2.0:1 max.
Load VSWR	2.0:1 max. continuous operation; any value for operation without damage
Phase Noise	-10 dB below IESS-308/309
Spurious	-60 dBc max. at rated output
AM/PM Conversion	2.0°/dB max. at 2 dB output backoff
Harmonic Output	-60 dBc at rated power
Noise Density (at max. gain)	<-150 dBW/4 kHz, 10.70 to 12.75 GHz; <-70 dBW/4 kHz, passband to 18 GHz (<-65 dBW/4 kHz with optional linearizer)
Spectral Regrowth	-30 dBc max. @ 1.0 S.R.
Intermodulation	-25 dBc max. with two equal carriers at total output power of 80 W (at 160 W with optional linearizer); -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	0.01 ns/MHz linear max, 0.001 ns/MHz ² parabolic max, 1.0 ns pk-pk ripple max. in any 40 MHz band
Prime Power	100 to 264 VAC single phase, 47-63 Hz
Power Consumption	1000 VA max; 750 VA typ. at 100 W output power
Power Factor	0.95 min.
Amplitude and Phase Linearity	Exceeds MIL-STD-188-164B
Ambient Temperature	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 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
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
Dimensions	10.5 x 8.5 x 17.0 in. max. (267 x 216 x 432 mm)
Weight	32 lbs (14.6 kg) typ.