

110W Outdoor TWT Low Power Amplifier for Satellite Communications

Tri-Band

The T01TO Series

110 Watt TWT Low Power Amplifier
— high efficiency in an environmentally sealed compact package designed for outdoor operation



Plays in the Rain

Provides up to 110 watts of power in a rugged and compact weatherproof package, with a digital serial interface, for wideband, single- and multi-carrier satellite service in C, X and Ku-bands. Ideal for mobile 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. **This amplifier is DSCS certified.**

Simple to Operate

User-friendly microprocessor-controlled logic with integrated RS422/485 computer interface. Digital metering, optional pin diode attenuator and solid state IPA for higher gain.

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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110W Outdoor TWT Low Power Amplifier

SPECIFICATIONS T01T0 110 W Series

OPTIONS:

- Solid State IPA
- Remote Control Panel
- Integrated Switch Control
- Redundant Switch Subsystems
- SSIPA with Variable Attenuator (provides RF level adjust range of 0 to 30 dB)
- Forward Detected RF Output Power Over CIF
- Remote Control Panel
- Extended Ku-Band (13.75 - 14.50 GHz)
- Ethernet Interface

Electrical

Frequency
Output Power, min.
TWT
Flange
Gain
at rated power
at small signal
Small Signal Gain Slope
Small Signal Gain Variation
Gain Stability (at constant drive and temperature)
VSWR
Input
Output
Load
Phase Noise
AM/PM Conversion
Noise Power Density (at max. gain)
Transmit Band
Receive Band
Intermodulation (with two equal carriers at total power level 6 dB OBO)
Group Delay
Linear
Parabolic
Ripple
Primary Power
Power Consumption
Power Factor

Environmental

Ambient Temperature (operating)
Relative Humidity
Altitude
Shock and Vibration

Mechanical

Cooling
RF Input Connection
RF Output Connection
RF Output Monitor
Dimensions (W x H x D)
Weight

Heat and Acoustic

Heat Dissipation
Acoustic

	C-Band	X-Band	Ku-Band
Frequency	5.850 - 6.425 GHz	7.9 - 8.4 GHz	14.0 - 14.5 GHz
Output Power, min.			
TWT	70 W (48.45 dBm)	110 W (50.41 dBm)	70 W (48.45 dBm)
Flange	60 W (47.78 dBm)	90 W (49.54 dBm)	60 W (47.78 dBm)
Gain			
at rated power	38 dB min. (68 dB with SSIPA)	41 dB min. (71 dB with SSIPA)	41 dB min. (71 dB with SSIPA)
at small signal	43 dB min. (73 dB with SSIPA)	46 dB min. (76 dB with SSIPA)	46 dB min. (76 dB with SSIPA)
Small Signal Gain Slope	± 0.04 dB/MHz max.		
Small Signal Gain Variation	1.0 dB pk-pk (across any 40 MHz band) 2.5 dB pk-pk (across individual frequency band)		
Gain Stability (at constant drive and temperature)	± 0.25 dB/24 hours max.		
VSWR			
Input	1.3:1 max.		
Output	2.2:1 max.		
Load	2.0:1 max.; no degradation, infinite VSWR without damage		
Phase Noise	10 dB below IESS 308 continuous mask		
AM/PM Conversion	2.5°/dB max. for a single carrier up to 6 dB OBO		
Noise Power Density (at max. gain)			
Transmit Band	-70 dBW / 4 kHz max.		
Receive Band	-70 dBW / 4 kHz max.		
Intermodulation (with two equal carriers at total power level 6 dB OBO)	-20 dBc max.	-22 dBc max.	-20 dBc max.
Group Delay			
Linear	0.01 nsec/MHz max.		
Parabolic	0.005 nsec/MHz sq. max.		
Ripple	0.5 nsec pk-pk max.		
Primary Power	99-264 VAC, single phase; 47-63 Hz		
Power Consumption	460 VA typ., 510 VA max.		
Power Factor	0.95 min., meets requirements of Harmonics EMC Directive EN61000-3-2		
Ambient Temperature (operating)	-40°C to +55°C, including solar loading		
Relative Humidity	100% condensing		
Altitude	10,000 ft with standard adiabatic derating of 2°C/1000 ft		
Shock and Vibration	20 g pk, 11 msec, 1/2 sine; 2.1 G rms, 5 to 500 Hz		
Cooling	Forced air with integral blower		
RF Input Connection	Type N Female		
RF Output Connection	WRD-580D28 waveguide flange, threaded 6-23 UNC-2B		
RF Output Monitor	Type N Female		
Dimensions (W x H x D)	8.6 x 8.6 x 15.75 inches (219 x 219 x 400 mm)		
Weight	30 lbs (13.6 kg) max. excluding options		
Heat Dissipation	400 W max.		
Acoustic	65 dBA typ.		

Mounting hardware is provided with each amplifier.



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.