

# 750W Outdoor TWT Amplifier

for Satellite Communications

**DBS-Band**

## The T07DO

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



### Plays in the Rain

Provides 750 watts of power in a rugged and compact weatherproof package, digital ready, for wideband, single- and multi-carrier satellite service in the 17.3-18.4 GHz frequency band. 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. **SNMP enabled.**

### Reliable

Designed and built to survive in extremely adverse environmental conditions and features increased cooling margin for longer life. CAN-Bus architecture improves reliability and noise immunity.

### 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 three decades of satellite communications experience, and CPI's worldwide 24-hour customer support network that includes more than twenty regional factory service centers.



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**750W Outdoor TWT Amplifier**

- OPTIONS:**
- *Integral Linearizer*
  - *Remote Control Panel*
  - *Redundant and Hybrid Power Combined Systems*
  - *Integral L-Band Block Upconverter (BUC): see TD-187 for specifications*
  - *Integrated switch control and drive (1:1 or 1:2)*
  - *Computer Interface: Ethernet Interface (standard) or RS422/485 (optional)*
  - *Inlet Air Filter*

## SPECIFICATIONS, T07DO

### Electrical

Frequency	17.3 to 18.4 GHz
Output Power	
TWT	750 W min. (58.75 dBm)
Flange	630 W min. (58.00 dBm)
Bandwidth	1100 MHz
Gain	70 dB min.
RF Level Adjust Range	0 to 30 dB typ.
Gain Stability	
At constant drive & temp.	±0.25 dB/24hr max. (after 30 min. warmup)
Over temp., constant drive	±0.75 dB over ±10°C
Small Signal Gain Slope	±0.02 dB/MHz max.
Small Signal Gain Variation	
Across any 80 MHz band	1.0 dB pk-pk max.
Across the 1100 MHz band	4.0 dB pk-pk max.
Input VSWR	1.3:1 max.
Output VSWR	1.3:1 max.
Load VSWR	
Continuous operation	2.0:1
Full spec compliance	1.5:1
Operation without damage	Any value
Phase Noise	
IESS Phase Noise Profile	10 dB below mask
AC fundamentals	-42 dBc (IESS-308 by 12 dB)
Sum of spurs (370 Hz to 1 MHz)	-50 dBc
AM/PM Conversion	2.5°/dB max. for a single-carrier at 7 dB below rated power (at 3 dB below rated power with linearizer option)
Harmonic Output	-60 dBc at rated power, second and third harmonics
Noise Density	<-150 dBW/4 kHz, 10.0 to 12.75 GHz; <-65 dBW/4 kHz, passband (<-60 dBW/4 kHz with linearizer); <-105 dBW/4 kHz, 18.9 to 20.0 GHz
Intermodulation	-24 dBc or better with two equal carriers at total output power level of 51 dBm; -26 dBc at 54 dBm output power from 17.3 to 17.8 GHz with linearizer; -25 dBc at 54 dBm output power from 17.3 to 18.1 GHz with linearizer; -24 dBc at 54 dBm output power from 17.3 to 18.4 GHz with linearizer

### Electrical (continued)

Group Delay	0.02 ns/MHz linear max. (in any 80 MHz band)
	0.002 ns/MHz sq. parabolic max. 1.5 ns pk-pk ripple max. (0.5 ns typ.)
Primary Power	
Voltage	Single phase, 208-240 VAC ±10%
Frequency	47-63 Hz
Power Consumption	2.7 kVA max. 2.3 kVA typ. at 3 dB backoff
Power Factor	0.95 min.
Inrush Current	200% max.

### Environmental (Operating)

Ambient Temperature	-40°C to +60°C operating (to 55°C including solar loading); -40°C to +75°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 and Vibration	20 G peak, 11 msec, 1/2 sine; 2.1 G rms, 5 to 500 Hz.
Acoustic Noise	68 dBA (as measured at 3 ft.)
Heat Dissipation	2000 W max.

### Mechanical

Cooling (TWT)	Forced air with integral blower
RF Input Connection	Type SMA Female
RF Output Connection	WR-62 waveguide flange, grooved, threaded UNC 2B 6-32
RF Output Monitor	Type SMA female
Dimensions (W x H x D)	12.75 x 11.5 x 22.25 in. (324 x 292 x 566 mm)
Weight	79 lbs (35.9 kg) max.



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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