

750W Outdoor TWT Amplifier

for Satellite Communications

C-Band

The T07CO

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 5.85 to 6.65 GHz frequency band (to 6.725 or 7.1 GHz optional). 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, thereby reducing operating costs.

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.

Rugged and Easy to Maintain

Built-in fault diagnostic capability via remote monitor and control. Easy access enclosure for improved serviceability. CANBUS architecture improves reliability and improves noise immunity.

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 sixteen regional factory service centers.

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OPTIONS:

- *Integral Linearizer*
- *Remote Control Panel*
- *Redundant and Hybrid Power Combined Systems*
- *Integral L-Band Block Upconverter (BUC)*
- *Integrated switch control and drive (1:1 or 1:2)*
- *Computer Interface: Ethernet Interface (standard) or RS422/485 (optional)*
- *Extended frequency band, 5.85 GHz to either 6.725 GHz or 7.1 GHz*

SPECIFICATIONS, T07CO

Electrical

Frequency	5.85 to 6.65 GHz
Output Power	
TWT	750 W min. (58.75 dBm)
Flange	650 W min. (58.10 dBm)
Bandwidth	800 MHz
Gain	70 dB min. at rated power 70 dB min. at small signal
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 40 MHz band	0.5 dB pk-pk max.
Across the 800 MHz band	3.0 dB pk-pk max. (4.0 dB with linearizer)
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
Residual AM, max.	-50 dBc below 10 kHz -20 [1.5 +log F(kHz)] dBc, 10 kHz to 500 kHz -85 dBc above 500 kHz
Phase Noise	
IESS Phase Noise Profile	12 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	2.0°/dB max. up to 7 dB below rated output power (up to 3 dB below with linearizer)
Harmonic Output	-60 dBc at rated power, second and third harmonics
Noise Density	<-150 dBW/4 kHz, 3.4 to 4.2 GHz <-65 dBW/4 kHz, passband (<-60 dBW/4 kHz w/ optional linearizer) <-110 dBW/4 kHz, 12.0 to 40.0 GHz
Intermodulation	-24 dBc max. with two equal carriers at total output power 7 dB (3 dB with optional integral linearizer) below rated single-carrier output

Electrical (continued)

Group Delay	0.01 ns/MHz linear max. (in any 80 MHz band) 0.001 ns/MHz sq. parabolic max. 0.5 ns pk-pk ripple max.
Primary Power	
Voltage	Single phase, 200-240 VAC ±10%
Frequency	47-63 Hz
Power Consumption	2.45 kVA max. 2.0 kVA typ. at 3 dB backoff
Power Factor	0.95 min.
Inrush Current	200% max.

Environmental (Operating)

Ambient Temperature	-40°C to +55°C operating in direct sunlight (to 60°C optional); -40°C to +60°C operating out of direct sunlight; -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 typ. (as measured at 3 ft.)
Heat Dissipation	2000 W max.

Mechanical

Cooling (TWT)	Forced air with integral blower
RF Input Connection	Type N Female
RF Output Connection	WR-137 waveguide flange, grooved, threaded UNC 2B 6-32
RF Output Monitor	Type N 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.



Communications & Power Industries

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