# **750W Outdoor TWT Amplifier**

for Satellite Communications

### The TO7DO

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.



satcom ) products

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OPTIONS:

• Integral Linearizer

· Remote Control Panel

· Redundant and Hybrid

• Integral L-Band Block Upconverter (BUC): see

Power Combined Systems

TD-187 for specifications

Integrated switch control

and drive (1:1 or 1:2)

(standard) or RS422/485

• Computer Interface:

Ethernet Interface

(optional)

· Inlet Air Filter

## Electrical

17.3 to 18.4 GHz Frequency

SPECIFICATIONS, T07DO

**Output Power** 

750 W min. (58.75 dBm) TWT Flange 630 W min. (58.00 dBm)

1100 MHz

1.3:1 max.

Gain 70 dB min. RF Level Adjust Range 0 to 30 dB typ.

Gain Stability

Bandwidth

At constant drive & temp. ±0.25 dB/24hr max. (after 30 min. warmup) ±0.75 dB over ±10°C Over temp., constant drive

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** 

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

<-150 dBW/4 kHz, 10.0 to 12.75 GHz; Noise Density

> <-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

Forced air with integral blower Cooling (TWT)

**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

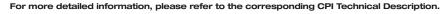
Dimensions (WxHxD) 12.75 x 11.5 x 22.25 in.

(324 x 292 x 566 mm)

Weight 79 lbs (35.9 kg) max.







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.

