400W Outdoor TWT Amplifier

for Satellite Communications

The T04XO Series

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



Plays in the Rain

Provides 400 watts of power in a rugged and compact weatherproof package, digital ready, for wideband, single- and multi-carrier satellite service in the 7.9 - 8.4 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, dualdepressed 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.

Simple to Operate

User-friendly microprocessor-controlled logic with integrated RS422/485 computer interface. Digital metering, pin diode attenuation and optional integrated linearizer for improved intermodulation performance.

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 sixteen regional factory service centers.



811 Hansen Way P.O. Box 51625, Palo Alto, CA 94303

tel: +1 (650) 846-3803 **fax:** +1 (650) 424-1744

e-mail: satcommarketing@cpii.com www.cpii.com/satcom

OPTIONS:

• Remote Control Panel

• Integrated 1:1 Switch

· Redundant and Power

• SSIPA with Variable

Attenuator (provides

Range of 0 to 30 dB)

• Integral Linearizer

• L-Band Block

NOTE below)

• Forward Power

typical RF Level Adjust

(Requires SSIPA option)

Upconverter (BUC ---

requires SSIPA --- SEE

Combined Subsystems

Control and Drive

SPECIFICATIONS, T04XO Series

Electrical Electrical (continued) 7.9 - 8.4 GHz Frequency **Group Delay** 0.01 ns/MHz linear max. (in any 40 MHz band) 0.002 ns/MHz² parabolic max. **Output Power** 0.5 ns pk-pk ripple max. TWT 400 W min. (56.02 dBm) Flange 350 W min. (55.44 dBm) **Primary Power** 90-264 volts AC, single phase 47-63 Hz Bandwidth 500 MHz **Power Consumption** 1350 W typ. Gain 46 dB min, at rated power output 1500 W max. (70 dB with SSIPA) 52 dB min. at small signal Power Factor 0.95 min. (75 dB with SSIPA) **Environmental (Operating)** Gain Stability **Ambient Temperature** -40°C to +50°C, operating in At constant drive and temp. ±0.25 dB/24hr max. (after 30 min. warmup) direct sunlight; Over temp. constant drive ±1.0 dB over operating temp. range (any freq.); -40°C to +55°C, operating out ± 0.75 dB over ± 10 °C of direct sunlight; Small Signal Gain Slope ±0.02 dB/MHz max. -40°C to +75°C non-operating Small Signal Gain Variation 1.0 dB pk-pk across any 40 MHz band; Relative Humidity 100% condensing 2.5 dB pk-pk across the 500 MHz band Altitude 10,000 ft. with standard adiabatic 4.0 dB pk-pk across 500 MHz with linearizer derating of 2°C/1000 ft., operating; RF Level Adjust Range 0 to 30 dB typ. (SSIPA option required) 50,000 ft., non-operating Attenuator Step-Size 0.1 dB (SSIPA option required) **Shock and Vibration** Designed for normal transportation environment per Section 514.4 Input VSWR 1.3:1 max. MIL-STD-810E. Designed to **Output VSWR** 1.3:1 max. withstand 20G at 11 ms (1/2 Load VSWR 2.0:1 max. continuous operation; sine pulse) in non-operating any value for operation without damage configuration. -50 dBc below 10 kHz Acoustic Noise 65 dBA @ 3 ft. from amplifier Residual AM -20[1.5 +log F (kHz)] dBc, **Heat Dissipation** 1100 W max. 10 kHz to 500 kHz Mechanical

• Ethernet Interface

Detection Over CIF

Note: This data sheet does not provide specifications for when the BUC option is included. Please refer to TD-137 or contact CPI for details.

Phase Noise

10 dB below mask IESS-308/309

phase noise continuous

AC fundamentals related -42 dBc Sum of spurs (370 Hz to 1 MHz) -47 dBc

AM/PM Conversion 2.5°/dB max. for a single carrier at

7 dB below rated power (2.5°/dB max. at 3 dB below rated with linearizer)

Harmonic Output -60 dBc at rated power

Noise and Spurious -60 dBc per MIL-STD-188-164A, transmit

(at rated gain) and receive band

Intermodulation -24 dBc max. at 7.5 dB OBO per

MIL-STD-188-164A

-85 dBc above 500 kHz

Weight

Cooling (TWT)

RF Input Connection

RF Output Connection

RF Output Monitor

Dimensions (WxHxD)

55 lbs (25.0 kg) with no options, max.

Forced air with integral blower

CPR-112 G waveguide flange,

grooved with UNC 2B 10-32

10.25 x 10.5 x 20.5 in. (260 x 267 x 521 mm)

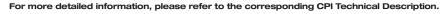
Type N female

threaded holes

Type N female







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