200W Outdoor TWT Amplifier
for Satellite Communications

Ku-Band

note: photo is not necessarily representative of your desired configuration

The T02UO-2G

200 Watt TWT Power Amplifier — higher efficiency in an environmentally sealed compact package designed for outdoor operation

Less Prime Power, More Efficient
CPI's environmentally sealed 200 W Ku-band hubmount TWTA is the most efficient amplifier in its class. Consuming only 650 W prime power to achieve 175 W at the flange, the Mini-Ku is at least 24% more efficient than any similar product.

Reliable
Designed and built to survive in extremely adverse environmental conditions. Operates in ambient temperatures up to 60˚C.

Digital Ready, Simple to Operate
User-friendly microprocessor-controlled logic. Integrated Ethernet computer interface and forward power detection over CIF are now standard. A variety of optional configurations, including integral linearizers and BUCs, is available.

Highly Compact
10% smaller and 25% lighter than any other 200 W TWTA.

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.

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Ku-Band

200W Outdoor TWT Amplifier

OPTIONS:

- *Remote Control Panel*
- *Redundant Subsystems*
- *Integrated 1:1 switch control and drive*
- *Integral Linearizer*
- *Extended Frequency --- 12.75 - 14.50 GHz*
- *Attenuated Solid State IPA*
- *Serial Interface*
- *Integral L-Band Block Upconverter (BUC --- option is available over 12.75 to 13.25 GHz OR 13.75 to 14.50 GHz frequency ranges only).* ***This data sheet does not provide amplifier specifications for when the BUC is included. Consult CPI for details.***

SPECIFICATIONS, T02UO-2G

Electrical

Frequency	13.75 to 14.50 GHz (output, wideband option 12.75 to 14.50 GHz)
Output Power	
TWT	200 W min. (53.01 dBm)
Flange	175 W min. (52.43 dBm)
Bandwidth	750 MHz (1750 MHz with wideband option)
Gain	38 dB min. at rated power output (68 dB min. with SSIPA option); 40 dB min. at small signal (70 dB min. with SSIPA option) (71 dB min. with SSIPA and linearizer)
Gain Stability	±0.45 dB/24hr max. (at constant drive and temp.)
Small Signal Gain Slope	±0.04 dB/MHz max.
Small Signal Gain Variation	1.0 dB pk-pk across any 80 MHz band; 3.5 dB pk-pk across the 750 MHz band 4.5 dB pk-pk across 1750 MHz (wideband option)
RF Level Adjust Range	30 dB typ. (not available with low gain version)
Input VSWR	1.3:1 max.
Output VSWR	2.2:1 max. (1.3:1 max. with optional external output isolator)
Load VSWR	2.0:1 max. continuous operation; any value for operation without damage
Residual AM	-50 dBc below 10 kHz -20 [1.5 + log F(kHz)] dBc 10 kHz to 500 kHz
Phase Noise	10 dB below IESS-308 continuous mask -36 dBc AC fundamental -41 dBc sum of all spurs
Spurious	-60 dBc max. at 175 W flange output
AM/PM Conversion	2.0°/dB max. for a single carrier up to 7 dB OBO (up to 4 dB OBO with linearizer option)
Harmonic Output	-60 dBc max. at rated power
Noise Power Density (at maximum gain)	<-130 dBW/4 kHz, below 12.7 GHz <-70 dBW/4 kHz, passband <-66 dBW/4 kHz, passband with linearizer
Group Delay in any 80 MHz band	0.02 ns/MHz linear 0.003 ns/MHz^2 parabolic max. 0.75 ns pk-pk ripple max.

Electrical (continued)

Intermodulation	-24 dBc max. with respect to the sum of both carriers at total output power 7 dB OBO (4 dB OBO with optional linearizer)
Primary Power	100-240 VAC ±10% single phase, 47-63 Hz
Power Consumption	700 VA max; 600 VA typ. at 100 W output power
Power Factor	0.95 min.

Environmental (Operating)

Ambient Temperature	-40°C to +60°C operating, including solar loading; -40°C to +71°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	20 g pk, 11 mS, 1/2 sine
Vibration	3 g_{rms}
Acoustic Noise	65 dBA @ 3 ft. from amplifier

Mechanical

Cooling	Forced air with integral blower
Computer Interface	Ethernet (serial interface optional)
RF Input Connection	Type N female (standard)
RF Output Connection	WR-75 waveguide flange, grooved with UNC 2B 6-32 threaded holes
RF Output Monitor	Type N female, 44 dB nom.
Dimensions (W x H x D)	8.5 x 8.5 x 15.0 in. max. (216 x 216 x 381 mm)
Weight	24.25 lbs (11.0 kg) with no options; 25.41 lbs (11.5 kg) with BUC

ISO 9001 Certificate Number: 30515

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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