175 W Outdoor TWT Power Amplifier

for Satellite Communications

Ka-Band

The T01KO Series

175 Watt Ka-Band TWT Power Amplifiers—Environmentally sealed compact design for outdoor operation

Plays in the Rain

Rugged, compact and lightweight amplifier designed for outdoor use.

Efficient and Cost Effective

Mounting at the antenna improves performance through minimized cable losses and saves cost in system design. Employs a high efficiency helix traveling wave tube, reducing operating costs.

Simple to Operate

User-friendly microprocessor-controlled logic with integrated RS422/485 computer interface. Digital metering is standard.

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 89/336/EEC 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.

satcom division

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SPECIFICATIONS

175 W Ka-band Outdoor LPA

Electrical

Model Number	T01KO
Frequency	User-specified frequency range within the 27.5 to 31.0 GHz band, as limited by bandwidth specification[1]
TWT	175 W (52.4 dBm)
Flange	145 W (51.6 dBm)
Bandwidth	1000 to 2500 MHz, depending on desired frequency range[1]
Gain	
at rated power	70 dB min.
at small signal	75 dB min. (70 dB min. with linearizer option)
RF Level Adjust Range	0 to 25 dB
Attenuator Step Size	0.1 dB
Small Signal Gain Slope	±0.025 dB/MHz max.
Small Signal Gain Variation	1.0 dB pk-pk (across any 40 MHz segment within the passband); 2.5 dB pk-pk (across any 1000 MHz)
Gain Stability (at constant drive and temperature)	±0.25 dB/24 hours max. (after 30 minute warm-up) ±1.0 dB over temperature range -5°C to +60°C
VSWR	
Input	1.3:1
Output	1.3:1
Load	1.5:1 max.; no degradation, infinite VSWR without damage
Phase Noise	12 dB below IESS 308 continuous mask
AM/PM Conversion	2.5° /dB max. for a single carrier up to 6 dB OBO (1.0° /dB max. up to 3 dB OBO with linearizer)
Noise and Spurious	<-150 dBW/4 kHz, below 21.2 GHz
(at rated gain)	<-70 dBW/4 kHz, 27.0 - 31.0 GHz (<-65 dBW/4 kHz with linearizer)
Intermodulation	-24 dBc max @ 7 dB backoff from rated power (@ 4 dB backoff from rated power with linearizer)
Group Delay	(in any 40 MHz band)
Linear	0.01 nsec/MHz max.
Parabolic	0.001 nsec/MHz sq. max.
Ripple	0.5 nsec pk-pk max.
Primary Power	100 - 240 VAC ± 10%, 47-63 Hz
Power Consumption	750 VA typ, at saturated RF output power; 800 VA max.
Power Factor	0.95 min.

Environmental (operating)

Ambient Temperature	-40° to +60° C with extra margin for solar loading
Relative Humidity	100% condensing
Altitude	10,000 ft with standard adiabatic derating of 2° C/1000 ft
Shock and Vibration	20 g peak, 11 msec, 1/2 sin; 2.1 g_{rms}, 5 to 500 Hz

Mechanical

Cooling	Forced air with integral blower
RF Input Connection	WR-28F (WR-34F optional)
RF Output Connection	WR-34G (WR-28G optional)
RF Output Monitor	2.9 mm SMA Female
Dimensions (WxHxD)	10.25 x 9.5 x 20 inches (261 x 242 x 508 mm)
Weight	52 lbs (23.6 kg) max.

Heat and Acoustic

Heat Dissipation	600 W typ.
Acoustic	65 dBA typ.

Note 1: Please consult CPI representative to confirm that desired bandwidth is available over desired frequency range.

Mounting hardware is provided with each amplifier.

OPTIONS:

- *1 RU Remote Control Panel*
- *Integral 1:1 Switch Control and Drive*
- *Redundant and Power Combined Subsystems*
- *Integral Linearized Solid State IPA*
- *Block Upconverter (refer to T01KO B-Series TWTA)*

CE

ISO 9001 Certificate Number: 30515

NASDAQ GLOBAL SELECT

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.

MKT 99, ISSUE 12 12/08 PDF

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