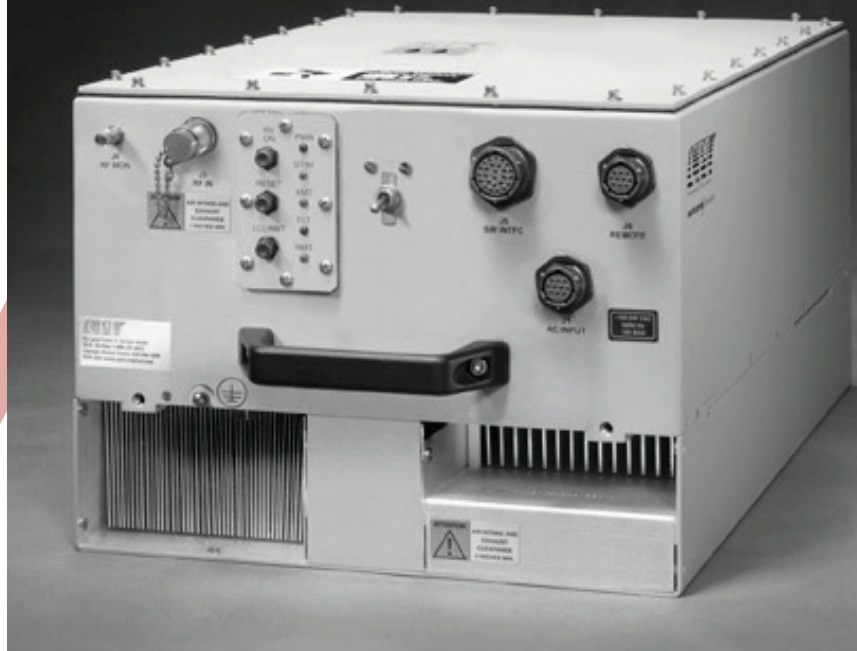


250 W CW Outdoor TWT Power Amplifier with Block Upconverter for Satellite Communications

Ka-Band

The T03KO B-Series

*250 Watt Ka-band TWT
Power Amplifier with Block
Upconverter—
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. Includes integral block upconverter (BUC) as standard.

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 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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Ka-Band

250 W CW Outdoor TWT Power Amplifier

SPECIFICATIONS, 250 W CW Ka-band Outdoor TWTA

Electrical

Model Number	T03K0 B Series (includes Block Upconverter as standard)	
Frequency	Within the 27.5 to 31.00 GHz frequency range*	
Output Power		
TWT	250 W (54.0 dBm) min.	
at Flange	215 W (53.3 dBm)	
Bandwidth	1000 to 2500 MHz, depending on desired frequency range*	
Gain		
at rated power	70 dB min.	
at small signal	75 dB min., 70 dB min. with linearizer	
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	0.5 dB pk-pk (across any 40 MHz segment within the passband)	
	4.5 dB pk-pk (across any 1000 MHz)	
Gain Stability (at constant drive and temperature)	±0.4 dB/24 hours max. (after 30 minute warm-up)	
	±3.0 dB, -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	3 dB below IESS-308 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 option)	
Noise Density	<-150 dBW/4 kHz, below 21.2 GHz	
(at rated gain)	<-65 dBW/4 kHz, passband	
Spectral Regrowth	-30 dBc at 7.0 dB backoff (at 3.0 dB with linearizer option)	
Intermodulation	-24 dBc or better with two equal carriers at total output power level 7 dB below rated single carrier output (-23 dB at 4 dB backoff with linearizer option)	
Group Delay	(in any 40 MHz band)	
Linear	0.02 nsec/MHz max.	
Parabolic	0.007 nsec/MHz sq. max.	
Ripple	1.0 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 Connection	N Type Female
RF Output Monitor	2.9 mm SMA Female
Dimensions (WxHxD)	13.25 x 9.5 x 20 inches with BUC option (337 x 242 x 508 mm)
Weight	58 lbs (26.4 kg)

Heat and Acoustic

Heat Dissipation	450 W typ.
Acoustic	65 dBA typ.

*Note: Please consult CPI to confirm that desired bandwidth is available over desired frequency range.
Mounting hardware is provided with each amplifier.



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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