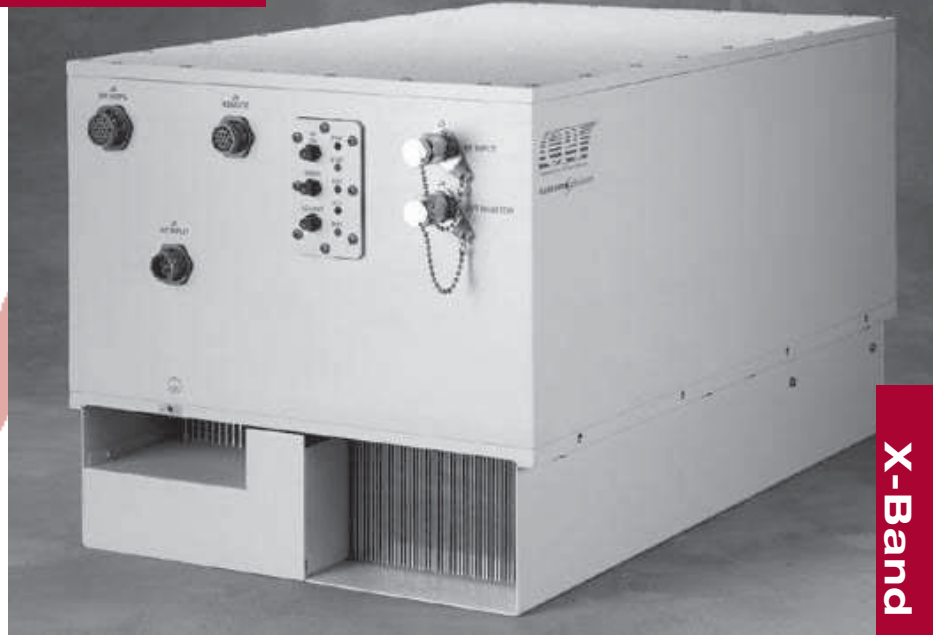


750W Outdoor TWT Medium Power Amplifier for Satellite Communications

The VZX-6987V7

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

X-Band



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 7.9 - 8.4 GHz frequency band. Ideal for transportable and fixed satcom uplink 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.

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.

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X-Band

750W Outdoor TWT Medium Power Amplifier

OPTIONS:

- *Integral Linearizer*
- *Remote Control Panel*
- *Ethernet Interface*
- *Redundant and Power Combined Subsystems*
- *External Receive Band Reject Filter (increases loss by a minimum of 115 dB at 7.25 to 7.75 GHz)*
- *Block Upconverter (950 - 1450 MHz) --- see TD-129 for specifications*

SPECIFICATIONS, VZX-6987V7

Electrical

Frequency	7.9 - 8.4 GHz
Output Power	
TWT	750 W min. (58.75 dBm)
Flange	650 W min. (58.13 dBm)
Bandwidth	500 MHz
Gain	70 dB min. at rated power, 88 dB max. 75 dB min. at small signal, 90 dB max.
RF Level Adjust Range	0 to 30 dB typ. (via PIN diode attenuator)
Gain Stability	
At constant drive & temp.	±0.25 dB/24 hrs. max. (after 30 min. warmup)
Over temp., constant drive (any frequency)	±1.0 dB over oper. temp. range ±0.75 dB over ±10°C
Small Signal Gain Slope	±0.02 dB/MHz max.
Small Signal Gain Variation	
Across any 40 MHz band	0.5 dB pk-pk max.
Across the 500 MHz band	2.5 dB pk-pk max.
Across 500 MHz, with linearizer option	3.5 dB pk-pk max.
Input VSWR	1.3 max.
Output VSWR	1.3 max.
Load VSWR	
Continuous operation	2.0:1
Full spec compliance	1.5:1
Operation without damage	Any value
Residual AM, max.	-50 dBc below 10 kHz -20[1.5 + log F(kHz)] dBc, 10 kHz to 500 kHz -85 dBc above 500 kHz
Phase Noise	
IESS-308/309	
phase noise profile	12 dB below mask
MIL-STD-188-164A	10 dB below mask
AC Fundamental	-36 dBc
Sum of spurs (370 Hz to 1 MHz)	-47 dBc
AM/PM Conversion	2.5°/dB max. for a single-carrier at 8 dB below rated power (at 3 dB backoff with optional linearizer)
Noise Density	<-70 dBW/4 kHz, 7.25 - 7.75 GHz <-65 dBW/4 kHz, 7.9 - 8.4 GHz <-60 dBW/4 kHz, 7.9 - 8.4 GHz with linearizer option
Spurious Output	-60 dBc per MIL-STD-188-164A
Intermodulation	-25 dBc max. with two equal carriers at total output power 7.5 dB (4.5 dB with optional integral linearizer) below rated single-carrier output, per MIL-STD-188-164-A

Electrical (continued)

Spectral Regrowth	-30 dBc max. at total output power 6 dB backoff (3 dB with linearizer) QPSK modulation
Group Delay	0.01 ns/MHz linear max. (in any 40 MHz band) 0.001 ns/MHz sq. parabolic max. 0.5 ns pk-pk ripple max.
Primary Power	
Voltage	Single phase, 200-240 VAC ±10%
Frequency	47- 63 Hz
Power Consumption	2.2 kVA typ. (at 3 dB backoff) 2.6 kVA max.
Power Factor	0.95 min.
Inrush Current	200% max.

Environmental

Ambient Temperature	-40°C to + 50°C operating, in direct sunlight; -40°C to + 55°C operating, out of direct sunlight; -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	Designed for normal transportation environment per Section 514.4 MIL-STD-810E. Designed to withstand 20G at 11 ms (1/2 sine pulse) in non-operating condition.

Mechanical

Cooling	Forced air w/ integral blower. Rear air intake & exhaust. Maximum external pressure drop allowable: 0.5 inches water column.
RF Input Connection	Type N female
RF Output Connection	CPR-112 waveguide flange, grooved, threaded UNF 2B 10-32
RF Output Monitor	Type N female
Dimensions (W x H x D)	14.5 x 13.1 x 24 in. (368 x 333 x 610 mm)
Weight	87 lbs (39.5 kg) typ.

Heat and Acoustic

Heat Dissipation	
Ducted	2,000 W max.
Into Hub	200 W max.
Acoustic Noise	68 dBA (as measured at 3 ft.)



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.