

750W Outdoor TWT Medium Power Amplifier for Satellite Communications

C-Band

The VZC-6967V7

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



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 5.85 - 6.65 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, 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 89/336/EEC and Harmonic Standard EN-60555-2 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 eleven regional factory service centers.

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SPECIFICATIONS, VZC-6967V7

Electrical

Frequency	5.850-6.650 GHz
Output Power	
TWT	750 W min.
Flange	650 W min.
Bandwidth	800 MHz
Gain	73 dB min. at rated power 78 dB min. at small signal
RF Level Adjust Range	0 to 20 dB (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 800 MHz band	2.5 dB pk-pk max.
Input VSWR	1.3:1 max.
Output VSWR	1.3:1 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	6 dB below mask
phase noise continuous	
AC fundamentals related	-36 dBc
Sum of spurs (370 Hz to 1 MHz)	-47 dBc
AM/PM Conversion	2.5°/dB max. for a single-carrier at 6 dB below rated power. With optional integral linearizer, can be tuned to 1.0 deg/dB max.
Harmonic Output	-60 dBc at rated power, second and third harmonics
Noise and Spurious	<-130 dBW/4 kHz, 3.4 to 4.2 GHz <-65 dBW/4 kHz, 4.2 to 12.0 GHz <-110 dBW/4 kHz, 12.0 to 40.0 GHz
Noise Figure	10 dB max.; 15 dB max. with optional integral linearizer
Intermodulation	-24 dBc max. with two equal carriers at total output power 7 dB (4 dB with optional integral linearizer) below rated single-carrier output

Electrical (continued)

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	2.3 kVA typ. (at saturated RF output power) 2.5 kVA max.
Power Factor	95 min.
Inrush Current	200% max.

Environmental

Ambient Temperature	-40° to + 50°C operating -40° to + 70°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.
Acoustic Noise	68 dBA (as measured at 3 ft.)

Mechanical

Cooling	Forced air w/ integral blower.
RF Output Connection	CPR-137 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)
Weight	82 lbs (37.3 kg) max.

Heat Dissipation

Into Hub	200 W
Ducted	2000 W

OPTIONS:

- *Integral Linearizer*
- *Remote Control Panel*
- *Redundant and Power Combined Subsystems*
- *Extended Frequency (5.850 to 7.100 GHz; Model Number VZC-6967VE)*
- *External Receive Band Reject Filter (increases loss by a minimum of 70 dB up to 4.8 GHz)*



KEEPING YOU ON THE AIR
not up in the air



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.