750W Compact High Power Amplifier

for Satellite Communications

Wide C-Band

The VZC-6967AN

750 Watt TWT High Power Amplifier — high efficiency in a compact package.

Compact

Provides 750 watts of power in a 5 rack unit package, digital ready, for wideband, single- and multi-carrier satellite service in the 5.850 to 7.075 GHz frequency band. Ideal for transportable and fixed earth station applications where space and prime power are at a premium.

Efficient

Employs a high efficiency dual-depressed collector helix traveling wave tube backed by many years of field-proven experience in airborne and military applications.

Simple to Operate

User-friendly microprocessor-controlled logic with integrated computer interface, digital metering, pin diode attenuation and optional integrated linearizer for improved intermodulation performance.

Global Applications

Meets International Safety Standard EN-60215, Electromagnetic Compatibility 2004/108/EC and Harmonic Standard EN-61000-3-2 to satisfy worldwide requirements.

Easy to Maintain

Modular design and built-in fault diagnostic capability with convenient and clearly visible indicators for easy maintainability in the field.

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, VZC-6967AN

Electrical

Frequency	5.850 to 7.075 GHz
Output Power	
TWT	750 W min. (58.75 dBm)
Flange	650 W min. (58.13 dBm)
Bandwidth	1225 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 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 1225 MHz band	2.5 dB pk-pk max.
Across 1225 MHz band, with linearizer option	5.0 dB pk-pk max.
Input VSWR	1.25:1 max.
Output VSWR	1.25:1 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[1.3 +log F(kHz)] dBc, 10 kHz to 500 kHz -85 dBc above 500 kHz
Phase Noise	
IESS-308/309 phase noise profile	-6 dB
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 8 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 <-70 dBW/4 kHz, 4.2 to 12.0 GHz <-60 dBW/4 kHz, 4.2 to 12.0 GHz with linearizer option <-110 dBW/4 kHz, 12.0 to 40.0 GHz
Intermodulation	
with linearizer	-26 dBc with two equal carriers at total output power of 54.13 dBm (259 W); -24 dBc with two equal carriers at total output power of 55.13 dBm (325 W)
without linearizer	-23 dBc at 7 dB backoff from rated power

Electrical (continued)

Group Delay (in any 40 MHz band)	0.01 ns/MHz linear max. 0.001 ns/MHz sq. parabolic max. 0.5 ns pk-pk ripple max.
Primary Power	
Voltage	Single phase, 208-240 VAC ±10%
Frequency	47- 63 Hz
Power Consumption	2.2 kVA max.; 2.03 kVA typ. at 650 W output power; 1.72 kVA typ. at 300 W output power
Power Factor	0.95 min. (.995 typ.)
Inrush Current	200% max.

Environmental

Ambient Temperature	-10°C to + 60°C operating -40°C to + 70°C non-operating
Relative Humidity	95% non-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 loss allowable: 0.5 inches water column.
RF Input Connection	Type N female
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)	19 x 8.75 x 24 in. (483 x 222 x 610 mm)
Weight	95 lbs (43 kg) max.

Heat and Acoustic

Heat Dissipation	1500 Watts typ.
Acoustic Noise	68 dBA (as measured at 3 ft.)

OPTIONS:

- *Integral Linearizer*
- *Remote Control Panel*
- *Redundant and Power Combined Subsystems*
- *Other Frequency Ranges (5.850 to 6.725 GHz, Model Number VZC-6967AT; and 5.850 to 6.650 GHz, Model Number VZC-6967AM)*
- *External Receive Band Reject Filter (increases loss by a minimum of 70 dB up to 4.8 GHz)*
- *Integral Block Upconverter (BUC). For specifications with BUC included, please contact CPI or refer to document TD-105).*

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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