

400W Compact Medium Power Amplifier for Satellite Communications

C-Band

The VZC-6964

400 Watt TWT
Medium Power
Amplifier—
high efficiency in a
compact package.



Compact

Provides 400 watts of power in a 3 rack unit package, digital ready, for wideband, single- and multi-carrier satellite service over any one of several frequency ranges in C-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 behind front panel door 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-6964

Electrical

Frequency	Select 5.850 to 6.650 GHz, 5.850 to 7.075 GHz or 5.725 to 6.525 GHz
Output Power	
TWT	400 W min. (56.02 dBm)
Flange	350 W min. (55.44 dBm)
Bandwidth	800 or 1225 MHz, depending on configuration
Gain	75 dB min. at rated power output; 78 dB min. at small signal
RF Level Adjust Range	0 to 20 dB
Gain Stability	±0.25 dB/24hr max. (at constant drive and temp.)
Small Signal Gain Slope	±0.02 dB/MHz max.
Small Signal Gain Variation	0.6 dB pk-pk across any 40 MHz band; 2.5 dB pk-pk across 5.725 - 6.525 GHz; 4.0 dB pk-pk across 5.850 - 6.650 GHz or 5.850 - 7.025 GHz (2.5 dB pk-pk typ.); 6.0 dB pk-pk across the 1225 MHz band with linearizer; 4.5 dB pk-pk across 800 MHz band with linearizer.
Input VSWR	1.3:1 max.
Output VSWR	1.3:1 max.
Load VSWR	2.0:1 max. operational; any value for operation without damage
Residual AM	-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 Phase Noise Profile	-6 dBc
AC Fundamental	-36 dBc
Sum of All Spurs	-47 dBc
AM/PM Conversion	2.5°/dB max. for a single carrier at 8 dB below rated power for 5.85 to 6.65 GHz configuration; 3.0°/dB max. for all other configurations
Harmonic Output	-60 dBc at rated power, second and third harmonics
Spurious Output (at rated gain)	<-130 dBW/4 kHz from 3.4 to 4.2 GHz <-65 dBW/4 kHz in passband (<-60 dBW/4 kHz with linearizer option) <-110 dBW/4 kHz from 12.0 to 40.0 GHz
Intermodulation	5.85 - 6.65 GHz configuration: -24 dBc max. with two equal carriers at total output power 7 dB (at 4 dB with optional integral linearizer) below rated single-carrier output; All other configurations: -23 dBc max at 7 dB OBO (at 4 dB OBO with linearizer)

Electrical (continued)

Group Delay (in any 40 MHz band)	0.01 ns/MHz linear max. 0.001 ns/MHz ² parabolic max. 0.5 ns pk-pk ripple max.
Primary Power	110 - 240 VAC ±10%, single phase 47- 63 Hz
Power Consumption	1.3 kVA typ. 1.5 kVA max.
Power Factor	0.95 min.

Environmental (Operating)

Ambient Temperature	-10° to +50°C operating -40° to +70°C non-operating
Relative Humidity	95% non-condensing
Altitude	10,000 ft. with standard adiabatic derating of 2°C/1000 ft., operating; 40,000 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 configuration.
Acoustic Noise	65 dBA @ 3 ft. from amplifier

Mechanical

Cooling (TWT)	Forced air with integral blower Rear air intake & exhaust
RF Input Connection	Type N female
RF Output Connection	CPR-137G waveguide flange, grooved with UNC 2B 10-32 threaded holes
RF Output Monitor	Type N female
Dimensions (W x H x D)	19 x 5.25 x 24 in. (483 x 133 x 610 mm)
Weight	70 lbs (31.8 kg) max.

OPTIONS:

- Remote Control Panel
- Integral Linearizer
- Redundant and Power Combined Subsystems
- External Receive Band Reject Filter (Increases loss by an additional 65 dB up to 4.8 GHz)

