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 in the 5.850-6.650 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 89/336/EEC 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 fifteen regional factory Service Centers.



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OPTIONS:

• Remote Control Panel

· Redundant and Power

Combined Subsystems

· External Receive Band

65 dB up to 4.8 GHz)

loss by a minimum

Reject Filter (Increases

• Integral Linearizer

SPECIFICATIONS, VZC-6964

Electrical

TWT Model Number VTC-6265M1

Frequency 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

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(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 <= 130 dBW/4 kHz from 3.4 to 4.2 GHz (at rated gain) <= 65 dBW/4 kHz from 4.2 to 12.0 GHz

(<-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 0B0 (at 4 dB 0B0 with linearizer)

Electrical (continued)

Group Delay 0.01 ns/MHz linear max.

(in any 40 MHz band) 0.001 ns/MHz² parabolic max.

0.5 ns pk-pk ripple max.

Primary Power $110 - 240 \text{ VAC} \pm 10\%$,

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 WR 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)

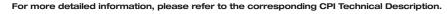
Weight 70 lbs (31.8 kg) max.











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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