400W Compact Medium Power Amplifier

for Satellite Communications

X-Band

The VZX-6984A4

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 7.9-8.4 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 fourteen regional factory Service Centers.

satcom division

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X-Band

SPECIFICATIONS, VZX-6984A4

Electrical

Frequency	7.9 to 8.4 GHz
Output Power	
TWT	400 W min. (56.02 dBm)
Flange	350 W min. (55.44 dBm)
Bandwidth	500 MHz
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	1.0 dB pk-pk max. across any 80 MHz band; 2.5 dB pk-pk max. across the 500 MHz band
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	3°/dB max. for a single carrier at 8 dB below rated power
Harmonic Output	-60 dBc at rated power, second and third harmonics
Noise and Spurious (at rated gain)	<-75 dBW/4 kHz from 7.25 to 7.75 GHz <-65 dBW/4 kHz from 7.9 to 8.4 GHz
Noise Figure	10 dB max.
Intermodulation	-23 dBc or better typ. with two equal carriers at total output power 7 dB below rated single-carrier output
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.

Electrical (continued)

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-112G waveguide flange, grooved with UNF 2B 8-32 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*
- *Redundant and Power Combined Subsystems*
- *External Receive Band Reject Filter*

ISO 9001 Certificate Number: 30515

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.

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