750W Compact Medium Power Amplifier

for Satellite Communications



The VZU-6997AD

750 Watt TWT
Medium 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 13.75-14.50 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 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.



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OPTIONS:

- Integral Linearizer
- · Remote Control Panel
- Redundant and Power Combined Subsystems
- · External Receive Band Reject Filter (Increases loss by a minimum of 75 dB up to 12.75 GHz)
- Extended Frequency (12.75 to 14.50 GHz, Model Number VZU-6997AB)

SPECIFICATIONS, VZU-6997AD Electrical

13.75 to 14.50 GHz Frequency

Output Power

TWT 750 W min. (58.75 dBm) Flange 650 W min. (58.13 dBm)

Bandwidth 750 MHz

Gain 75 dB min. at rated power, 88 dB max.

78 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 hr. max.

(after 30 min. warmup)

±0.04 dB/MHz max.

Over temp., constant drive ±1.0 dB over oper. temp. range (typical)

(any frequency) ±0.75 dB over ±10°C (typical)

Small Signal Gain Slope Small Signal Gain Variation

Across any 80 MHz band Across the 750 MHz band Across 750 MHz, with linearizer

1.0 dB pk-pk max. 3.5 dB pk-pk max. 5.5 dB pk-pk max.

Input VSWR 1.3:1 max.

Output VSWR 1.3:1 max.

Load VSWR

2.0:1 Continuous operation 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

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, improves to

1.0 deg/dB max.

Harmonic Output -80 dBc at rated power.

second and third harmonics

<-120 dBW/4 kHz, below 12.7 GHz Noise and Spurious

<-65 dBW/4 kHz. 12.7 to 18.0 GHz <-60 dBW/4 kHz, 12.7 to 18.0 GHz

with linearizer option <-105 dBW/4 kHz, 18.0 to 26.0 GHz <-125 dBW/4 kHz, 26.0 to 40.0 GHz

Noise Figure 10 dB max.; 15 dB max. with optional integral linearizer Electrical (continued)

-23 dBc or better with two equal Intermodulation

> carriers at total output power level 7 dB (4 dB with optional integral linearizer) below rated single-carrier output.

Group Delay

0.02 ns/MHz linear max. (in any 80 MHz band) 0.005 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 2.7 kVA typ. (at saturated

output power) 3.0 kVA max.

Power Factor 0.95 min. 200% max. Inrush Current

Environmental (Operating)

Ambient Temperature -10°C to +50°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 with 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 WR-75 waveguide flange,

grooved, threaded UNC 2B 6-32

RF Output Monitor Type N female Dimensions (WxHxD)

19 x 8.75 x 24 in. (483 x 222 x 610 mm)

Weight 95 lbs (43 kg) max.

Heat and Acoustic

Heat Dissipation 2,000 Watts max.

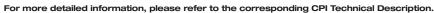
Acoustic Noise 68 dBA (as measured at 3 ft.)











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.







