750W Peak Power Compact High Power Amplifier

for Satellite Communications

Ext Ku-Band

The VZU6997AB-L

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



Compact

Provides 290 watts of linear power in a 5 rack unit package, digital ready, for wideband, singleand multi-carrier satellite service in the 12.75-14.50 GHz frequency band. Ideal for transportable and fixed earth station applications where space and prime power are at a premium.

Efficient

Employs a SuperLinear TWT. This HPA consumes about half the power of competing SSPAs, and is significantly more efficient than traditional dual-collector TWTAs.

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 twenty regional factory service centers.



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OPTIONS:

Integral Linearizer

· Remote Control Panel

Redundant and Power

· External Receive Band

loss by a minimum of

specifications

Reject Filter (Increases

75 dB up to 12.75 GHz)

• L-Band Block Upconverter

(BUC) --- contact factory for

Combined Subsystems

SPECIFICATIONS, VZU6997AB-L Electrical

12.75 to 14.50 GHz Frequency **Output Power**

TWT Peak Power 750 W min. (58.8 dBm) Flange Peak Power 650 W min. (58.1 dBm) Flange CW Power (min) 325 W (55.1 dBm) Flange CW Power (max) 400 W (56.0 dBm)

Note: This TWTA produces a maximum of 400 W at the flange. The 650 W number is provided so that backoff levels can be more easily calculated.

Bandwidth 1750 MHz

75 dB min. 88 dB max. Gain

80 dB typical

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)

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 ±0.04 dB/MHz max.

Small Signal Gain Variation

Across any 80 MHz band 1.0 dB pk-pk max. Across the 1750 MHz band 3.5 dB pk-pk max. Across 1750 MHz,

with linearizer 4.0 dB pk-pk max.

Input VSWR 1.3:1 max. **Output VSWR** 1.3:1 max.

Load VSWR

Continuous operation 2.0:1 Full spec. compliance 1:5:1 Operation without damage Any value

Phase Noise

IESS-308/309

phase noise profile -10 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

4 dB below rated CW power

Harmonic Output -80 dBc at rated CW power, second and third harmonics

<-120 dBW/4 kHz,10.0 to 11.7 GHz Noise and Spurious

<-65 dBW/4 kHz, passband <-60 dBW/4 kHz, passband with linearizer option

Electrical (continued)

Intermodulation -23 dBc or better with two equal

> carriers at total output power level of 51.13 dBm (-25 dBc at 54.63 dBm with linearizer)

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 1.2 kVA typ. (at 110 W output pwr)

1.5 kVA max. (at rated output pwr)

Power Factor 0.95 min. Inrush Current 200% max.

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

19 x 8.75 x 24 in. Dimensions (WxHxD)

(483 x 222 x 610 mm)

Weight 95 lbs (43 kg) max.

Heat and Acoustic

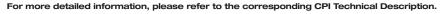
Heat Dissipation 900 watts max.

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.

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