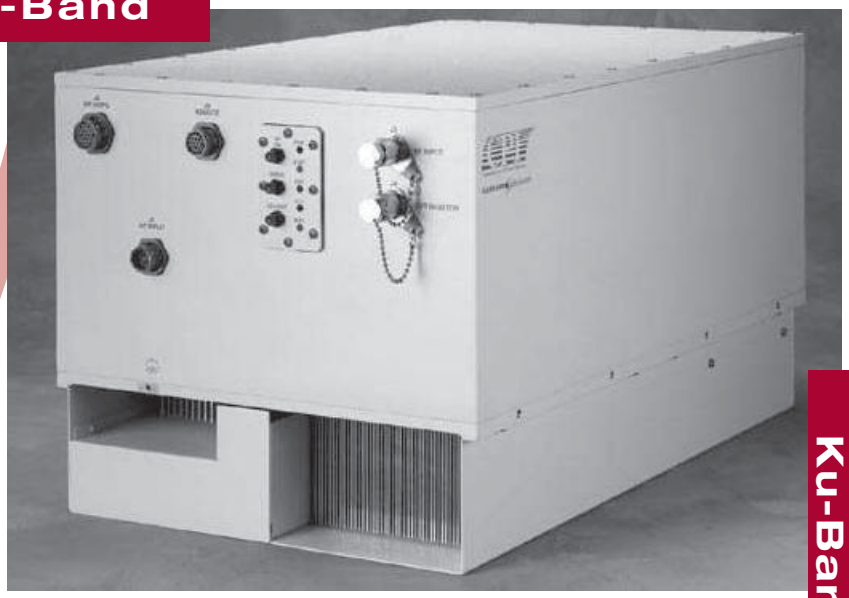
750W Outdoor TWT Medium Power Amplifier

for Satellite Communications

Ku-Band



The VZU-6997V Series

750 watt TWT Medium Power Amplifier — high efficiency in an environmentally sealed compact package designed for outdoor operation

Plays in the Rain

Provides 750 watts of power in a rugged and compact weatherproof package, digital ready, for wideband, single- and multi-carrier satellite service in the 13.75 - 14.50 (VZU-6997V7) or 12.75 - 14.50 GHz (VZU-6997VA) frequency band. Ideal for transportable and fixed earth station applications.

Cost Effective and Efficient

Mounting at the antenna improves performance through minimized cable losses and saves cost in system design. Employs a high efficiency, dual-depressed collector helix traveling wave tube, reducing operating costs.

Reliable

Designed and built to survive in extremely adverse environmental conditions and features increased cooling margin for longer life.

Simple to Operate

User-friendly microprocessor-controlled logic with integrated RS422/485 computer interface. Digital metering, pin diode attenuation and optional integrated linearizer for improved intermodulation performance.

Easy to Maintain

Modular design and built-in fault diagnostic capability via remote monitor and control.

Global Applications

Meets International Safety Standard EN-60215, Electromagnetic Compatibility 2004/108/EC and Harmonic Standard EN-61000-3-2 to satisfy worldwide requirements.

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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SPECIFICATIONS, VZU-6997V Series

Electrical

Frequency	13.75 to 14.50 GHz (VZU-6997V7) or 12.75 to 14.50 GHz (VZU-6997VA)
Output Power	
TWT	750 W min. (58.75 dBm)
Flange	650 W min. (58.13 dBm)
Bandwidth	750 MHz or 1750 MHz
Gain	70 dB min. at rated power 75 dB min. at small signal
RF Level Adjust Range	0 to 30 dB typ.
Gain Stability	
At constant drive & temp.	±0.25 dB/24hr max. (after 30 min. warmup)
Over temp., constant drive (any frequency)	±1.0 dB over oper. temp. range (typical), ±0.75 dB over ±10°C (typical)
Small Signal Gain Slope	±0.02 dB/MHz max.
Small Signal Gain Variation	
Across any 80 MHz band	1.0 dB pk-pk max.
Across the 750 MHz band	3.5 dB pk-pk max. (4.5 dB w/ linearizer)
Across the 1750 MHz band	4.5 dB pk-pk max. (5.5 dB w/ linearizer)
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
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 Phase Noise Profile	12 dB below mask
AC fundamentals	-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 (at 3 dB backoff with optional linearizer
Harmonic Output	-60 dBc at rated power, second and third harmonics
Noise and Spurious	<-130 dBW/4 kHz, below 12.7 GHz (below 11.7 GHz w/ 12.75 GHz config. <-65 dBW/4 kHz, passband to 18.0 GHz (-60 dBW/4 kHz w/ linearizer) <-105 dBW/4 kHz, 18.0 to 26.0 GHz <-125 dBW/4 kHz, 26.0 to 40.0 GHz

Electrical (continued)

Intermodulation	-24 dBc or better with two equal carriers at total output power level 7 dB below rated single-carrier output (at 3 dB below rated with with optional linearizer)
Group Delay (in any 80 MHz band)	0.01 ns/MHz linear max. 0.001 ns/MHz sq. parabolic max. 0.5 ns pk-pk ripple max.
Primary Power	
Voltage	Single phase, 200-240 VAC ±10%
Frequency	47-63 Hz
Power Consumption	2.3 kVA typ. 2.6 kVA max.
Power Factor	0.95 min.
Inrush Current	200% max.

Environmental (Operating)

Ambient Temperature	-40°C to +55°C operating, including solar loading; -40°C to +75°C non-operating
Relative Humidity	100% condensing
Altitude	10,000 ft. with standard adiabatic derating of 2°C/1000 ft., operating; 50,000 ft., non-operating
Shock and Vibration	20 G peak, 11 msec, 1/2 sine; 2.1 G rms, 5 to 500 Hz.
Acoustic Noise	68 dBA (as measured at 3 ft.)
Heat Dissipation	2000 W max.

Mechanical

Cooling (TWT)	Forced air with integral blower
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 (W x H x D)	14.5 x 13.1 x 24 in. (368 x 333 x 610 mm)
Weight	82 lbs (37.3 kg) typ.

OPTIONS:

- *Integral Linearizer*
- *Remote Control Panel*
- *Redundant and Hybrid Power Combined Systems*
- *Integrated 1:1 Switch Control and Drive*
- *External Receive Band Reject Filter (Increases loss by a minimum of 50 dB up to 13.5 GHz for 13.75 GHz HPA, or up to 11.7 GHz with 12.75 HPA)*
- *L-Band Block Up Converter (BUC) --- for specifications see MKT-90B or TD-104. BUC is available in frequency bands 13.75 to 14.0 GHz or 12.75 to 13.25 GHz only.*

ISO 9001 Certificate Number: 30515

NASDAQ GLOBAL SELECT

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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