750W Outdoor TWT Medium Power Amplifier for Satellite Communications

Ku-Band

The VZU-6997V7

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 13.75-14.5 GHz 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 89/336/EEC and Harmonic Standard EN-60555-2 to satisfy worldwide requirements.

Worldwide Support
Backed by over two decades of satellite communications experience, and CPI's worldwide 24-hour customer support network that includes eleven regional factory service centers.

satcom division

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OPTIONS:

- *Remote Control Panel*
- *Integral Linearizer*
- *Integrated 1:1 switch control and drive*
- *Extended Frequency (12.75-14.5, model VZU-6997VA)*
- *Redundant and Power Combined Subsystems*
- *External Receive Band Reject Filter (Increases loss by a minimum 60 dB up to 12.7 GHz)*

SPECIFICATIONS, VZU-6997V7

Electrical

Frequency	13.75 to 14.50 GHz
Output Power	
TWT	750 W min. (58.75 dBm)
Flange	650 W min. (58.13 dBm)
Bandwidth	750 MHz
Gain	73 dB min. at rated power output; 78 dB min. at small signal
RF Level Adjust	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 across any 80 MHz band; 3.5 dB pk-pk across the 750 MHz band
Input VSWR	1.3:1 max.
Output VSWR	1.3:1 max.
Load VSWR	2.0 max. continuous operation; any value for operation without damage
Residual AM	-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	6 dB below mask
AC Fundamental	-36 dBc (IESS-308 by 6 dB)
Sum of all Spurs	-47 dBc (370 Hz to 1 MHz)
AM/PM Conversion	2.5°/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)	<-130 dBW/4 kHz from 10.9 to 12.7 GHz <-65 dBW/4 kHz from 13.75 to 18.0 GHz <-105 dBW/4 kHz from 18.0 to 26.0 GHz <-125 dBW/4 kHz from 26.0 to 40.0 GHz
Noise Figure	10 dB max.
Intermodulation	-24 dBc max. with two equal carriers at total output power 7 dB (4 dB with optional integral linearizer) below rated single-carrier output

Electrical (continued)

Group Delay (in any 80 MHz band)	0.01 ns/MHz linear max. 0.001 ns/MHz^2 parabolic max. 0.5 ns pk-pk ripple max.
Primary Power	208 - 240V ± 10% single phase; 47-63 Hz
Power Consumption	2.3 kVA, typ. 2.5 kVA, max.
Power Factor	0.95 min.

Environmental (Operating)

Ambient Temperature	-40°C to +50°C operating -40°C to +75°C non-operating
Relative Humidity	100% 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 configuration.
Acoustic Noise	65 dBA @ 3 ft. from amplifier

Mechanical

Cooling (TWT)	Forced air with integral blower
RF Input Connection	Type N female
RF Output Connection	WR 75 waveguide flange, grooved with UNC 2B 6-32 threaded holes
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) max.

ISO 9001
Certificate Number: 10515

CE

KEEPING YOU ON THE AIR
not up in the air

Communications & Power Industries
satcom division

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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