

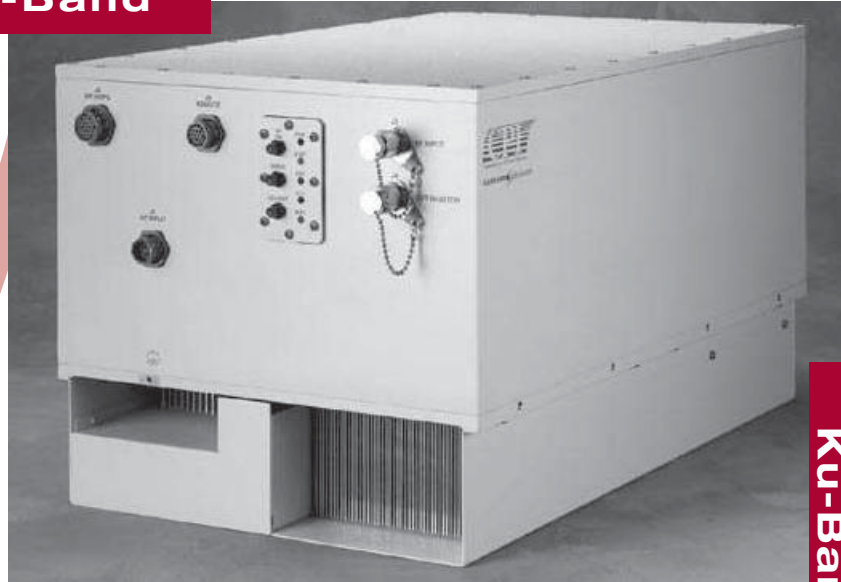
# 750W SuperLinear® Outdoor TWT Amplifier

for Satellite Uplink Applications

**Ku-Band**

## The VZU-6997VL

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



### Plays in the Rain

Provides up to 300 watts of linear power in a rugged and compact weatherproof package, digital ready, for satellite uplinks in the 13.75 - 14.50 GHz frequency band.

### 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. Operating temperature of up to 60°C, including solar loading.

### Simple to Operate

User-friendly microprocessor-controlled logic with integrated RS422/485 computer interface. Digital metering and pin diode attenuation for improved intermodulation performance. An Ethernet option with simple web browser interface is also available.

### 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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**Ku-Band**

**750W SuperLinear® Outdoor TWT Amplifier**

## SPECIFICATIONS, VZU-6997VL

### Electrical

Frequency	13.75 - 14.50 GHz
Output Power	
TWT	750 W min. (58.8 dBm)
Flange Peak Power*	650 W min. (58.1 dBm)
Maximum at Flange	330 W max. (55.2 dBm)
Minimum at Flange	300 W min. (54.8 dBm)
<i>*note: this amplifier does <b>not</b> provide 650 W of power at the flange. The 650 W figure is provided so that desired backoff from peak power may be more easily calculated.</i>	
Bandwidth	750 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	±1.0 dB over oper. temp. range (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. (1.5 dB pk-pk max. with BUC option)
Across the 750 MHz band	3.5 dB pk-pk max. (4.5 dB pk-pk max. with optional linearizer)
Input VSWR	1.5:1 max.
Output VSWR	1.5:1 max.
Load VSWR	
Continuous operation	2.0:1
Full spec compliance	1.2:1
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	6 dB below mask
AC fundamentals	-36 dBc (IESS-308 by 6dB)
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 with optional linearizer)
Harmonic Output	-60 dBc at rated power, second and third harmonics
Noise and Spurious	<-130 dBW/4 kHz, below 12.75 GHz <-65 dBW/4 kHz, 13.75 - 15.4 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 300 W output power 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. (1.5 ns pk-pk ripple max. with BUC option)
Primary Power	
Voltage	200 to 240 VAC ±10% single phase
Frequency	47-63 Hz
Power Consumption	1.45 kVA typ. 1.60 kVA max.
Power Factor	0.95 min.
Inrush Current	200% max.

### Environmental (Operating)

Ambient Temperature	-40°C to +55°C operating, in direct sunlight; -40°C to +60°C operating, out of direct sunlight; -40°C to +70°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	950 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:

- 1 RU Remote Control Panel
- Ethernet Interface
- Redundant and Hybrid Power Combined Systems
- Integrated 1:1 Switch Control and Drive
- Integral L-Band Block Up Converter (BUC)
- Integral Linearizer
- External Receive Band Reject Filter (Increases loss by a minimum of 60 dB up to 12.7 GHz)
- Integral L-Band Block Up Converter (BUC)



Communications & Power Industries



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.