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, single- and 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.

satcom products

811 Hansen Way
P.O. Box 51625, Palo Alto, CA 94303

e-mail: sales@servsat.com
www.servsat.com

Ext Ku-Band

750W Peak Power Compact HPA

Ext Ku-Band

SPECIFICATIONS, VZU6997AB-L

Electrical

Frequency	12.75 to 14.50 GHz
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
Gain	75 dB min, 88 dB max. 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 (any frequency)	±1.0 dB over oper. temp. range (typical) ±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
Noise and Spurious	<-120 dBW/4 kHz,10.0 to 11.7 GHz <-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 (in any 80 MHz band)	0.02 ns/MHz linear max. 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
Dimensions (W x H x D)	19 x 8.75 x 24 in. (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.)

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)*
- *L-Band Block Upconverter (BUC) --- contact factory for specifications*

ISO 9001 Certificate Number: 30515

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.

MKT 331PK, ISSUE C APR 13 PDF

Communications & Power Industries

satcom products