400W Compact Medium Power Amplifier for Satellite Communications

Ku-Band

The VZU-6994AD

400 Watt TWT Medium Power Amplifier— high efficiency in a compact package.

Compact
Provides 400 watts of power in a 3 rack unit 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 where space and prime power are at a premium.

Efficient
Employs a high efficiency dual-depressed collector helix traveling wave tube backed by many years of field-proven experience in airborne and military applications.

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

Easy to Maintain
Modular design and built-in fault diagnostic capability with convenient and clearly visible indicators behind front panel door 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 eleven regional factory Service Centers.

satcom division

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Ku-Band
400W Compact Medium Power Amplifier

OPTIONS:

- *Remote Control Panel*
- *Integral Linearizer*
- *Redundant and Power Combined Subsystems*
- *External Receive Band Reject Filter (Increases loss by a minimum 75 dB up to 12.7 GHz)*

SPECIFICATIONS, VZU-6994AD

Electrical

TWT Model Number	VTU-6395M1A
Frequency	13.75 to 14.50 GHz
Output Power	
TWT	400W min. (56.02 dBm)
Flange	340W min. (55.31 dBm)
Bandwidth	750 MHz
Gain	73 dB min. at rated power output; 78 dB min. at small signal
RF Level Adjust Range	0 to 20 dB
Gain Stability	±0.25 dB/24hr max. (at constant drive and temp.)
Small Signal Gain Slope	±0.015 dB/MHz max.
Small Signal Gain Variation (max.)	1.0 dB pk-pk across any 80 MHz band; 2.5 dB pk-pk across the 750 MHz band
Input VSWR	1.3:1 max.
Output VSWR	1.3:1 max.
Load VSWR	2.0:1 max. operational; any value for operation without damage
Residual AM	-50 dBc below 10 kHz -20[1.3 +log F(kHz)] dBc, 10 kHz to 500 kHz -85 dBc above 500 kHz
Phase Noise	
IESS Phase Noise Profile	-6 dBc
AC Fundamental	-42 dBc
Sum of All Spurs	-47 dBc
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)	<-150 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
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.

Electrical

Primary Power	110 - 240 VAC ±10%, single phase 47- 63 Hz (100 VAC optional)
Power Consumption	1.3 kVA, typ. 1.4 kVA, max.
Power Factor	0.95 min.

Environmental (Operating)

Ambient Temperature	-10° to +50°C operating -40° to +70°C non-operating
Relative Humidity	95% non-condensing
Altitude	10,000 ft. with standard adiabatic derating of 2°C/1000 ft., operating; 40,000 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 Rear air intake & exhaust
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)	19 x 5.25 x 24 in. (483 x 133 x 610 mm)
Weight	60 lbs (27.3 kg) max.

ISO 9001

KEEPING YOU ON THE AIR
not up in the air

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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