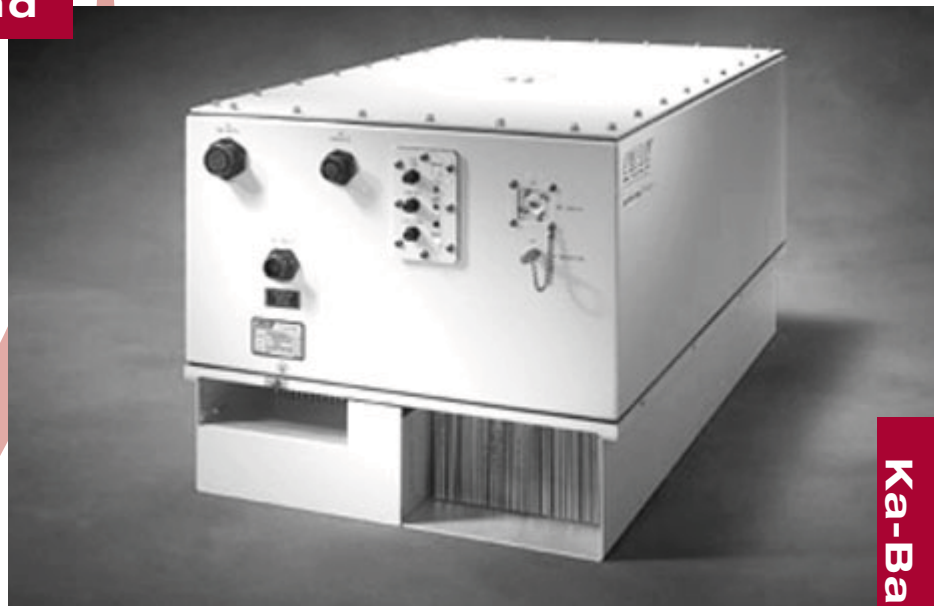


400W/500W Millitron High Power Amplifier for Satellite Communications

Ka-Band

The VZA-6906C5

400/500 Watt High Power Amplifier
— high efficiency in an environmentally sealed compact package designed for outdoor operation



Plays in the Rain

Provides 400 or 500 watts of power, depending on configuration, in a rugged and compact weatherproof package. Digital ready, ideal for wideband, single- and multi-carrier satellite service within the 28.35 - 31.00 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 Millitron coupled cavity 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. Ethernet interface is available as an option. 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-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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Ka-Band

400W/500W Millitron High Power Amplifier

OPTIONS:

- Remote Control Panel
- Integrated Linearizer
- Integrated 1:1 Switch Control and Drive
- Redundant and Power Combined Subsystems
- Other frequency ranges
- Ethernet Interface
- Integrated L-Band Block Upconverter (BUC)

SPECIFICATIONS, VZA-6906C5

Electrical

Frequency	Custom frequency ranges between 28.35 and 31.00 GHz
Output Power	<ul style="list-style-type: none"> Millitron (standard version) 400 W min. (56.02 dBm) Millitron (high power version) 500 W min. (56.99 dBm) Flange (standard version) 320 W min. (55.05 dBm) Flange (high power version) 400 W min. (56.02 dBm)
Bandwidth	1000 MHz instantaneous max.
Gain	68 dB min. at rated average power; 70 dB typ. at small signal
RF Level Adjust	0 to 30 dB typ.
Gain Stability	±0.25 dB/24hr max. (at constant drive and temp.)
Small Signal Gain Slope	0.05 dB/MHz max.
Small Signal Gain Variation	3.0 dB pk-pk across any 250 MHz band; 3.5 dB pk-pk across the 1000 MHz band
Input VSWR	1.3:1 max.
Output VSWR	1.3:1 max.
Load VSWR	2.0 max. operational; 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	<ul style="list-style-type: none"> Single Carrier Exceeds IESS-308/309 by 10 dB AC fundamentals related -36 dBc Sum of Spurs -47 dBc (370 Hz to 1 MHz)
AM/PM Conversion	2.5°/dB max. for a single carrier at 7 dB below rated power (at 3 dB below rated power with linearizer)
Harmonic Output	-30 dBc at rated power, second and third harmonics
Noise and Spurious (at rated gain)	<-150 dBW/4 kHz below 21.2 GHz <-96 dBW/4 kHz in passband <-50 dBc above 31 GHz

Electrical (continued)

Intermodulation	-24 dBc max. with two equal carriers at total output power 7 dB OBO (3 dB OBO with optional integral linearizer)
Group Delay (in any 40 MHz band)	<ul style="list-style-type: none"> Linear 0.03 ns/MHz max. Parabolic 0.02 ns/MHz sq. max. Ripple 2.0 ns pk-pk max.
Primary Power	180-264 VAC, 47-63 Hz
Power Consumption	1.7 kVA, typ. 2.5 kVA, max.
Power Factor	0.95 min.

Environmental (Operating)

Ambient Temperature	-40°C to +50°C operating, -30°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	20 g pk, 11 msec, 1/2 sine pulse
Vibration	2.1 g _{rms} ; 5-500 Hz
Acoustic Noise	65 dBA @ 3 ft. from amplifier
Heat Dissipation	1500 watts, max.

Mechanical

Cooling (TWT)	Forced air with integral blower
RF Input Connection	WR-28G waveguide
RF Output Connection	WR 34 waveguide with UG-1530/U flange (WR-28 optional)
RF Output Monitor	2.9 mm coax, female
Dimensions (W x H x D)	14.5 x 13.1 x 24.0 (368 x 333 x 610)
Weight	91 lbs with no options (41.4 kg)



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.