

500W Wideband Millitron High Power Amplifier for Satellite Communications

Ka-Band

The VZA-6906C6

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



Plays in the Rain

Provides up to 2000 MHz of bandwidth at 500 watts of power in a rugged and compact weatherproof package, digital ready, for wideband, single- and multi-carrier satellite service within the 27.5 - 30.0 GHz or 30.0 to 31.0 GHz frequency bands. 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 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 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.

satcom  **division**

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

tel: +1 (650) 846-3803
fax: +1 (650) 424-1744

e-mail: marketing@satcom.cpii.com
www.cpii.com/satcom

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500W Wideband Millitron High Power Amplifier

OPTIONS:

- Remote Control Panel
- Integrated Linearizer
- Integrated 1:1 Switch Control and Drive
- Redundant and Power Combined Subsystems
- Ethernet Interface
- Harmonic Filter
- L-Band Block Up Converter

SPECIFICATIONS, VZA-6906C6

Electrical

Frequency	Custom frequency ranges between 27.5 and 30.0 GHz or 30.0 to 31.0 GHz
Output Power	
Millitron	500 W min. (57.0 dBm)
Flange	400 W min. (56.0 dBm)
Bandwidth	1000 or 2000 MHz instantaneous max.
Small Signal Gain	70 dB typ.
RF Level Adjust	0 to 30 dB typ.
Gain Stability	±0.25 dB/24hr max. (at constant drive and temp.) ; ±1 dB over temp.
Small Signal Gain Slope	0.05 dB/MHz max.
Small Signal Gain Variation	1.5 dB pk-pk max. across any 500 MHz band; 2.5 dB pk-pk max. across 2500 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
Phase Noise	
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	2.0°/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 <-70 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)	
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. 2.0 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	1400 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)



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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.