

# 750W Outdoor EIK Amplifier for Satellite Communications

**Ka-Band**

## The VZA-6903E

750 Watt EIK Amplifier  
— high efficiency in an  
environmentally sealed  
compact package  
designed for outdoor  
operation



### Plays in the Rain

Provides up to 750 watts of power in a rugged and compact weatherproof package, digital ready, for wideband, single- and multi-carrier satellite service within the 27.0 – 31.0 GHz frequency band. 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, integral cooling system for light weight and compact size.

### Reliable

Designed and built to survive in extremely adverse environmental conditions (-40° to +55°C) and features increased cooling margin for longer life.

### Simple to Operate

User-friendly microprocessor-controlled logic with integrated RS422/485 computer interface. 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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## OPTIONS:

- Remote Control Panel
- Integrated Linearizer
- Integrated 1:1 Switch Control and Drive
- Redundant and Power Combined Subsystems
- Ethernet Interface

## SPECIFICATIONS, VZA-6903E

### Electrical

Frequency	Custom frequency ranges with the 27.0 to 31.0 GHz frequency band
Bandwidth*	100 to 550 MHz instantaneous
Output Power*	
Klystron	750 W min. at 300 MHz bandwidth; 600 W min. at 500 MHz bandwidth
Amplifier	600 W min. at 300 MHz bandwidth; 475 W min. at 500 MHz bandwidth
Gain	75 dB min. at rated power; 80 dB min. at small signal
RF Level Adjust	0 to 20 dB typ. (30 dB optional)
Gain Stability	±0.25 dB/24hr max. after 30 min. warmup (at constant drive and temp.)
Small Signal Gain Slope	±0.05 dB/MHz max.
Small Signal Gain Variation	
pk-pk over any 40 MHz, max.	1.0 dB at 300 MHz bandwidth; 1.5 dB at 500 MHz bandwidth
over entire passband, max.	1.5 dB at 300 MHz bandwidth; 5.0 dB at 500 MHz bandwidth
Attenuator Step Resolution	±1.0 dB
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	
Single Carrier	10 dB below IESS 308 mask
AC fundamentals related	-36 dBc
Sum of Spurs	-47 dBc (370 Hz to 1 MHz)
AM/PM Conversion	1.0°/dB max. for a single carrier at 7 dB below rated power
Harmonic Output	-30 dBc at rated power, second and third harmonics
Noise and Spurious (at rated gain)	<-65 dBW/4 kHz in passband <-150 dBc below 21 GHz

\*This amplifier is factory adjustable for bandwidth and output power. For instance, it can provide 475 W at the flange over 500 MHz, or 600 W at the flange over 300 MHz, and other combinations of power and bandwidth are available. It does NOT have field-adjustable frequency range.

### Electrical (continued)

Intermodulation	-24 dBc max. with two equal carriers at total output power 7 dB OBO
Group Delay (in any 20 MHz band)	
Linear	0.1 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	2.5 kVA, typ. 2.9 kVA, max.
Power Factor	0.95 min.

### Environmental (Operating)

Ambient Temperature	-40°C to +55°C operating, -40°C to +75°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 <sub>rms</sub> , 5-500 Hz
Acoustic Noise	65 dBA @ 3 ft. from amplifier
Heat Dissipation	2300 watts, max.

### Mechanical

Cooling (TWT)	Forced air with integral blower
RF Input and Output	UG-1530/U grooved waved flange (WR-34 waveguide); WR-28 flange/waveguide optional
RF Output Monitor	2.9 mm coax, female
Dimensions (W x H x D)	12.0" x 17.0" x 29.36" (305 x 432 x 746 mm)
Weight	111 lbs with no options (50.0 kg)



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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