600W Peak Power Outdoor EIK Amplifier

for Satellite Communications

Q-Band

The VZQ-6903E1

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

Plays in the Rain

Provides up to 300 watts of CW power in a rugged and compact weatherproof package, digital ready, for wideband, single- and multi-carrier satellite service within the 47.9 – 48.1 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 (-40º to +55ºC) 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

Designed to meet International Safety Standard EN-60215, Electromagnetic Compatibility 89/336/EEC and Harmonic Standard EN-61000-3-2.

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: satcommarketing@cpii.com
www.cpii.com/satcom

Q-Band

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OPTIONS:

- *Remote Control Panel*
- *Integrated 1:1 Switch Control and Drive*

SPECIFICATIONS, VZQ-6903E1

Electrical

Channel Center Frequency	48.0 GHz
Bandwidth*	250 MHz min.
Output Power*	
Klystron	600 W peak at 250 MHz bandwidth; 300 W CW min. at 250 MHz bandwidth
Amplifier	200 W CW min. at 250 MHz bandwidth
Gain	70 dB min. at rated power; 70 dB min. at small signal
RF Level Adjust	0 to 20 dB typ.
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 20 MHz, max.	0.8 dB
pk-pk over any 40 MHz, typ.	1.0 dB
Attenuator Step Resolution	±0.1 dB typ.
Input VSWR	1.7:1 max.
Output VSWR	1.3:1 max.
Load VSWR	2.0 max. operational; any value for operation without damage
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 <-140 dBc below 21 GHz

Electrical (continued)

Intermodulation	-24 dBc max. with two equal carriers with total output power of 50 W
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	190-264 VAC, 47-63 Hz
Power Consumption	2.5 kVA, typ. 2.9 kVA, max.
Power Factor	0.95 min.

Environmental (Operating)

Ambient Temperature	-30°C to +45°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_{rms}; 5-500 Hz
Acoustic Noise	65 dBA @ 3 ft. from amplifier
Heat Dissipation	2600 watts, max.

Mechanical

Cooling (TWT)	Forced air with integral blower
RF Input	2.4 mm coax, female
RF Output	WR-22 waveguide flange
RF Output Monitor	2.4 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 (50.0 kg) typ.

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.

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