

CPI C-band GEN IV klystron power amplifier for satellite uplink communications

This HPA is equipped with an MSDC klystron for high power and high efficiency.

Unmatched Efficiency

Uses less power and produces less heat than any other K-HPA. Features Power Saver and Power Tracker optimizing K-HPA efficiency to meet your operating condition.

New Features and Options

Scopescreen provides a graphical log display. The Ethernet option provides higher speed connections, can update and coordinate all clock settings, and enables a snapshot feature where user can create a file containing all settings, alarms and faults at a single point in time.

Greater Reliability

Low temperatures are the key to longer lifetimes for klystrons and electronic parts. The CPI power supply design and high efficiency multi-stage depressed collector klystron make these lower temperatures possible.

Useful Displays

Large, high quality, color, graphical display has a wide viewing angle and a sharp appearance. All important functions are clearly displayed, and an event log is included.

Acoustically Quiet

The quietest K-HPA in the market.



CPI GEN IV C-band KPA

FEATURES:

- Motorized channel selector
- Remote control panel
- 45 MHz instantaneous bandwidth (with option for 80 MHz)
- Extended frequency range
- Meets international safety standard EN-60215, EMC compatibility 2014/30/EU and harmonic standard EN-61000-3-2

BENEFITS:

- Multi-stage depressed collector results in saved money and more available physical space
- Worldwide 24 hour support, with more than 20 service centers around the globe

Quality Management
System - ISO 9001:2015



Specification	Model KD8 Series C-band Gen IV
Frequency Range	5.850 to 6.425; others available
Klystron Power Output	2.45 to 3.35 kW min. (63.9 to 65.2 dBm), depending on klystron
Amplifier Power Output ¹	2.15 to 2.88 kW min. (63.3 to 64.6 dBm), depending on klystron, at flange with harmonic filter
Instantaneous Bandwidth	45 MHz; 80 MHz optional
Preset Channels	Up to 12 or 24, depending on klystron (Up to 50 with digital fast tuner system (DFTS))
Output Power Adjustability	0 to 20 dB of output with ± 0.1 dB typical resolution (0 to 30 dB typ)
Gain at Rated Power	77 dB min.
Gain Stability	± 0.25 dB/24hr max, at constant drive and temperature 1.0 dB from 20°C to 40°C; ± 2.5 dB max from 0° to 50°C, at constant drive
Gain Slope at rated power	0.04 dB/MHz max. over $F_o \pm 13$ MHz ($F_o \pm 18$ MHz with 80 MHz option)
Gain Variation at rated power (dB)	0.4 dB pk-pk max. over $F_o \pm 13$ MHz ($F_o \pm 18$ MHz with 80 MHz option)
VSWR	Input: 1.25:1 max; Output: 1.30:1 max; Load: 2.0:1 max. for full spec. compliance; any value for operation without damage
Residual AM ³	-50 dBc max, 20 to 400 Hz; -60 dBc max, 400 Hz to 2 kHz; -80 dBc max, 2 kHz to 500 kHz
AM/PM Conversion	4°dB max. at rated power
Harmonic Output ¹	-80 dBc with filter, -35 dBc without filter
Phase Noise ^{2, 3}	Exceeds requirements of INTELSAT Standard IESS-308/309 at 10 dB backoff
Noise Density (at rated gain)	-70 dBW/4 kHz in passband
Intermodulation	-29 dBc with two equal carriers at total output 7 dB below rated single-carrier output
Group Delay	In 72 MHz band: 0.25 ns/MHz linear max, 0.05 ns/MHz ² parabolic max, 2.0 ns pk-pk ripple max.
Primary Power ²	All ratings are $\pm 10\%$, 47-63 Hz with neutral and ground: 380 to 415 VAC
Power Consumption ⁴	9.5 kW max. Typical values for the following RF output backoffs with respect to rated (power saver off): 8.9 kW @ 0 dB (rated); 6.6 kW @ -4 dB OBO; 5.6 kW @ -7 dB OBO; 5.2 kW @ -10 dB OBO; 4.8 kW @ -13 dB OBO
Power Factor	0.95 min.
Inrush Current, peak	180% of normal line current peak max. (first half-cycle only)
RF Input Connection	Type N Female
RF Output Connection	CPR-137F Flange
RF Power Monitors	Type N Female
Dimensions	(W x H x D without fans and handles)
RF Drawer	19 x 17.5 x 28 in. (483 x 445 x 711 mm)
PS Drawer	19 x 8.75 x 24 in. (483 x 223 x 610 mm)
Weight	RF Drawer: 220 lbs w/ klystron (100 kg); Power Supply Drawer: 100 lbs (45.4 kg)
Cooling	Forced air with integral blower and fans; separate klystron collector cooling path
Air Flow Rate, Klystron	200 cfm at sea level
Acoustic Noise	68 dBA nominal, as measured 3 ft from front of equipment (noise reduced with variable fan speed control option)
Klystron Heat Loss	5,300 W max.
Heat Loss Into Room	1,700 W max.
Ambient Temperature	-10°C to +50°C operating; -54°C to +71°C non-operating
Relative Humidity	95% non-condensing
Altitude	10,000 ft (3000 m) with std. adiabatic derating of 2.5°C/1000 ft or 8.125°C/km, operating; 40,000 ft (12,000 m) non-operating
Shock and Vibration	As normally encountered in satellite earth stations and shipping



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For more detailed information, please refer to the corresponding CPI technical description if one has been published, or contact CPI. 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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