

CPI DBS-band touchscreen 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. Standard Ethernet 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 DBS-Band KPA

FEATURES:

- Motorized channel selector
- Remote control panel
- 65 or 85 MHz instantaneous bandwidth
- Extended frequency range
- Meets international safety standard EN-60215, EMC compatibility 2014/30/EU and harmonic standard EN-61000-3-2
- Power saver improves efficiency

BENEFITS:

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

Quality Management
System - ISO 9001:2015



Specification	Model K4D8 Series DBS-Band Gen IV				
Frequency	17.3 to 18.4 GHz	17.3 to 18.1 GHz			16.7 to 17.5 GHz
Klystron Power Output, min.	1.7 kW (62.30 dBm)	1.7 kW (62.3 dBm)	2.1 kW (63.22 dBm)	2.4 kW (63.80 dBm)	2.4 kW (63.8 dBm)
Amplifier Power Output ¹ , min.	1.4 kW (61.46 dBm)	1.4 kW (61.46 dBm)	1.745 kW (62.42 dBm)	2.0 kW (63.01 dBm)	2.0 kW (63.01 dBm)
Instantaneous Bandwidth, in.	50 MHz	85 MHz	65 MHz	50 MHz	40 MHz
Preset Channels	Up to 12 (Up to 50 with digital fast tuner system (DFTS))				
Output Power Adjustability	0 to -20 of output with ± 0.1 dB typical resolution				
Gain at Rated Power	75 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 (Fo \pm 18) MHz	0.04 dB/MHz max. over (Fo \pm 30) MHz	0.04 dB/MHz max. over (Fo \pm 28) MHz	0.04 dB/MHz max. over (Fo \pm 18) MHz	0.04 dB/MHz max. over (Fo \pm 14) MHz
Gain Variation at rated power (dB)	0.4 dB pk-pk max. over (Fo \pm 18) MHz	0.4 dB pk-pk max. over (Fo \pm 30) MHz	0.65 dB pk-pk max. over (Fo \pm 28) MHz	0.4 dB pk-pk max. over (Fo \pm 18) MHz	0.65 pk-pk max. over (Fo \pm 14) MHz
VSWR	Input: 1.30:1 max; Output: 1.35:1 max. (1.30:1 max. without harmonic filter); 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	6°/dB at rated power	6°/dB at rated power	6°/dB at rated power		
Harmonic Output ¹	-70 dBc with filter, -35 dBc without filter				
Phase Noise ^{2, 3}	10 dB below IESS 308 continuous mask; AC fundamental: -42 dBc; Sum of all spurs: -47 dBc				
Noise Power Density	-65 dBc passband (-60 dBc passband with linearizer)				
Intermodulation	-28 dBc with two equal carriers at total output 7 dB below rated single-carrier output				
Group Delay	In any 36 or 72 MHz band: 0.1 ns/MHz linear max, 0.02 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: 208 VAC or 380 to 415 VAC				
Power Consumption ⁴	8.5 kW max. Typical values for the following RF output backoffs with respect to rated (power saver off): 8.1 kW @ 0 dB (rated); 6.4 kW @ -4 dB OBO; 5.6 kW @ -7 dB OBO; 5.2 kW @ -10 dB OBO; 5.0 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 SMA female				
RF Output Connection	WR62 with grooved flange				
RF Power Monitors	Type SMA Female				
Dimensions	(W x H x D without fans and handles) RF Drawer PS Drawer 19 x 17.5 x 28 in. (483 x 445 x 711 mm) 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	5,000 W max.				
Heat Loss Into Room	1,500 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				

Note 1. Harmonic filter can be removed as an option. Add 0.25 dB to amplifier output for units ordered without harmonic filter.

Note 2. Prime power AC line unbalance not to exceed 3%. Excess imbalance may cause an increase in residual RF noise (AM, FM, and PM). Phase noise increase is typically 2.5 dB / % imbalance.

Note 3. AC current harmonic content: less than 20%, primarily fifth and seventh harmonics. Harmonics must be considered when choosing UPS sources.

Note 4. Lower power consumption can be achieved if power saver (included as standard) is employed when operating below rated output power.



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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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