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
Scopescrren 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.

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

Specification | Model K4D8 Series DBS-Band Gen IV
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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
Gain Slope at rated power | 0.04 dB/MHz max. over (Fo ± 18) MHz | 0.04 dB/MHz max. over (Fo ± 30) MHz | 0.04 dB/MHz max. over (Fo ± 28) MHz | 0.04 dB/MHz max. over (Fo ± 18) MHz | 0.04 dB/MHz max. over (Fo ± 14) MHz
Gain Variation at rated power (dB) | 0.4 dB pk-pk max. over (Fo ± 18) MHz | 0.4 dB pk-pk max. over (Fo ± 30) MHz | 0.65 dB pk-pk max. over (Fo ± 28) MHz | 0.4 dB pk-pk max. over (Fo ± 18) MHz | 0.65 pk-pk max. over (Fo ± 14) MHz
VSWR | Input: 1.30:1 max; Output: 1.35:1 max. (1.30:1 max. without harmonic filter); Load: 2.0 max. for full spec. compliance; any value for operation without damage
Residual AM\(^2\) | -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\(^{th}\)/db at rated power | 6\(^{th}\)/db at rated power | 6\(^{th}\)/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 parabolic max, 2.0 ns pk-pk ripple max.
Primary Power\(^4\) | All ratings are ±10%, 47-63 Hz with neutral and ground: 208 VAC or 380 to 415 VAC
Power Consumption | 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: 19 x 17.5 x 28 in. (483 x 445 x 711 mm) | 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 | 5,000 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.