

CPI Low C-band touchscreen GEN IV klystron power amplifier for troposcatter applications

Provides a guaranteed minimum 2.0 kW of output power at the flange, over the 4.4 to 5.0 GHz frequency band.

Outstanding 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. K-HPA MTBF is nearly 90,000 hours.

Highly Efficient

Multi-stage depressed collector klystron allows the amplifier to use less power and produce less heat than other K-HPAs. Employs a power saver feature to optimize K-HPA efficiency to meet your operating condition.

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.

Easy Maintenance, Easy Handling

All areas of the amplifier are easily accessible and there are no large harnesses to get in the way. Separate RF and power supply drawers slide out from a standard rack.

Worldwide Support

Backed by more than 40 years of satellite communications experience, and CPI's worldwide 24-hour customer support network that includes more than 20 regional factory service centers.



CPI GEN IV Low C-band KPA, Model K4T
for troposcatter applications

FEATURES:

- Motorized channel selector
- Remote control panel
- Integral linearizer
- Block Upconverter (contact CPI for specifications)
- SSIPA/Attenuator

Quality Management
System - ISO 9001:2015



Specification	CPI Model K4T, 2 kW Low C-Band GEN IV Klystron Amplifier
Output Frequency	4.4 - 5.0 GHz
Output Power ¹ Klystron CW Power Flange CW Power (min.)	2.6 kW (64.1 dBm) min. 2.0 kW (63.0 dBm) min.
Instantaneous Bandwidth	14 MHz at rated CW power
Gain at Rated Power	40 dB min. (77 dB min. with SSIPA/attenuator option)
Gain Stability vs. Time	±0.25 dB/24 hr. max. at constant drive and temperature
Gain Stability vs. Temperature	1 dB max. from 20° to 40°C; ±2.5 dB max. from 0° to 50°C (at constant drive)
Gain Slope	0.12 dB/MHz max. over Fo ±3.5 MHz at rated output power
Gain Variation	0.5 dB pk-pk max. over Fo ±3.5 MHz at rated output power
Input/Output VSWR ¹	1.25:1 max. input; 1.30:1 max. output (1.25:1 max. without harmonic filter)
Load VSWR	2.0:1 max. for full spec. compliance; any value for operation without damage
Residual AM	-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 typ.
Harmonic Output ³	-80 dBc with harmonic filter; -35 dBc second, -50 dBc third, without harmonic filter
Noise	-65 dBW/4 kHz, in passband; -60 dBW/4 kHz, passband with linearizer option
Spurious (passband)	-70 dBc, passband; -65 dBc, passband with linearizer option
Intermodulation	-29 dBc with regard to each of two equal carriers at 7 dB backoff from rated output power (at 4 dB backoff typical with optional linearizer)
Phase Noise	Exceeds requirements of IESS-308/309 by -10 dB at 10 dB backoff
Group Delay	4.0 ns/MHz linear max; 0.5 ns/MHz ² parabolic max; 10.0 ns pk-pk ripple max.
Primary Power ²	All ratings are ±10%; Frequency: 47-63 Hz, 3 phase with neutral and ground; 200 VAC (without neutral); 208 VAC (with or without neutral); 380/415 VAC
Power Consumption ⁴	7.5 kW max; typical values for the following RF output backoffs with respect to rated (power saver OFF): 7.2 kW at 0 dB (rated); 5.6 kW at 4 dB OBO; 4.8 kW at 7 dB OBO; 4.3 kW at 10 dB OBO; 4.0 kW at 13 dB OBO
Power Factor	0.95 min.
Inrush Current, peak	180% of normal line current peak max. (first half-cycle only)
Ambient Temperature	-10°C to +50°C operating, -54°C to +71°C non-operating
Relative Humidity	95% non-condensing
Altitude	10,000 ft. with standard adiabatic derating of 2°C/1000 ft. operating; 40,000 ft. non-operating
Shock and Vibration	As normally encountered in satellite earth stations and shipping
Cooling	Forced air with integral blower and fans; separate klystron collector cooling path
Air Flow Rate, Klystron	175 cfm min. at sea level
External Ducts Back Pressure	0.5 inch water gauge total, max.
Klystron Heat Loss	4000 W max.
Heat Loss in Room	Cabinet less klystron: 1500 W max.
Acoustic Noise	63 dBA nom, measured 3 ft from front of equipment
Connections	RF Input: Type N Female; RF output: CPR187 waveguide flange, grooved; RF power monitors: Type N Female
M&C Interface	RS422/485, RS232 serial interface; Ethernet optional
Dimensions, W x H x D	RF Drawer: 19 x 17.5 x 28 inches (483 x 445 x 711 mm), 19 x 17.5 x 32 inches (483 x 445 x 813 mm) with motorized channel selector option; Power Supply: 19 x 8.75 x 24 in. (483 x 223 x 610 mm)
Weight	RF Drawer: 220 lbs with klystron (100 kg) nom; Power Supply: 100 lbs (45.4 kg)



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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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