

700 W High Power Amplifier

Built for Outdoor Applications

Rugged, compact and lightweight amplifier designed for outdoor use. Typically provides 600 W of CW power at the flange in standard bands within the 27 to 31 GHz frequency range (24.75 to 25.25 GHz optional).

Cost Effective and Efficient

Mounting at the antenna improves performance by reducing IFL losses and saves cost in system design. Provides up to 365 W of linear power at the amplifier flange.

Rugged, Easy to Maintain, Simple to Operate

Built-in fault diagnostic capability via remote monitor and control. Easy access enclosure for improved serviceability. CAN-Bus architecture improves reliability and improves noise immunity. User-friendly microprocessor-controlled logic with integrated Ethernet computer interface.

Meets Global Requirements

Meets International Safety Standard EN-60215, Electromagnetic Compatibility 2004/108/EC and Harmonic Standard EN-61000-3-2 to satisfy worldwide requirements. CE certified.

Worldwide Support

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



Model C07K0

700 watt Ka-band outdoor TWTA for satellite uplink applications

OPTIONS

- Remote control panel
- Integral linearizer
- Integrated 1:1 switch control and drive
- Redundant and power combined subsystems
- RS 422/485 serial interface
- Integral single or multi-band, L-band block upconverter (BUC). Contact CPI for specifications
- TWT LifeExtender™



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700 W Ka-Band High Power Amplifier

Specification	Model C07KO
Output Frequency Range	27.0 to 31.0 GHz; 27.35 to 30.0 GHz, 28.35 to 30.50 GHz; 29.0 to 31.0 GHz; 30.0 to 31.0 GHz; 24.75 to 25.25 GHz; others available (contact CPI)
TWT Output Power	700 W min. (58.5 dBm)
Flange CW Power	580 W min. (57.6 dBm)
Intermodulation - with respect to the sum of two carriers	-25 dBc max. at total output power of 365 W with optional linearizer
Intermodulation - with respect to each of two equal carriers 5 MHz apart	-25 dBc max. at total output power of 260 W with optional linearizer
Gain	70 dB min; 73 dB typ. at 7 dB backoff from rated power
RF Level Adjust Range	0 to 30 dB (via PIN diode attenuator) typ, 0.1 dB steps
Gain Stability	±0.25 dB/24 hour max, at constant drive and temperature
Small Signal Gain Slope	0.05 dB/MHz max.
Small Signal Gain Variation	4.0 dB pk-pk max. across any 2000 MHz band
Input/Output VSWR	1.3:1 max.
Load VSWR	2.0:1 max. operational; any value for operation without damage
Phase Noise	-12 dB below IESS-308 continuous mask; -47 dBc AC fundamental; -50 dBc sum of all spurs
AM/PM Conversion	2.0°/dB max. for a single-carrier up to 7 dB OBO (up to 3 dB OBO with optional linearizer)
Harmonic Outputs	-65 dB max. (RF); -60 dB max. (IF)
Noise Density	<-150 dBW/4 kHz below 21.2 GHz; <-70 dBW/4 kHz max. in passband
Noise Power Ratio	19 dB at 4 dB OBO with linearizer; 22 dB at 5 dB OBO with linearizer; 25 dB at 6 dB OBO with linearizer; 32 dB at 10 dB OBO with linearizer
Spectral Regrowth	-30 dBc max. at 2.5 dB OBO (330 W) with linearizer
Group Delay (over 40 MHz)	0.01 ns/MHz linear max; 0.001 ns/MHz ² parabolic max; 1.5 ns pk-pk ripple max.
Primary Power	Voltage: Single phase, 200-240 VAC ±10%; Frequency: 47-63 Hz
Power Consumption	2.2 kVA max; 1.5 kVA typ. at linear output power
Power Factor	0.95 min; 0.99 typ.
Amplitude and Phase Linearity	Exceeds MIL-STD-188-164A
Ambient Temperature	-40°C to +55°C operating in direct sunlight (to +60°C out of direct sunlight); -50°C to +71°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 and Vibration	20 G at 11 ms (1/2 sine pulse in non-operating condition); 2.1 g rms, 50 to 500 MHz
Cooling	Forced Air with integral blower
RF Input Connection	WR-28 cover flange waveguide (WR-34 cover flange optional); WR-34 flange required for 24.75 to 25.25 GHz operation
RF Output Connection	WR-34 grooved waveguide with grooved UT-1530/U waveguide flange (WR-28 optional); WR-34 grooved waveguide required for 24.75 to 25.25 GHz operation
RF Monitor	2.9 mm coaxial, female
M&C Interface	Ethernet (RS232/422/485 serial optional)
Dimensions, W x H x D	12.75 x 11.5 x 22.25 inches (324 x 292 x 566 mm)
Weight	79 lbs (35.9 kg) max. with no options
Heat Dissipation	1550 W max; 1250 W typ.
Acoustic noise	65 dBA (as measured at 3 ft.) nom.