

# Rack-Mount Solid State Power Amplifiers

CPI Solid Inside and Out

C-Band

## High Power SSPAs

Model S5CI Series 125 and 225 Watt C-band Solid State Power Amplifiers—Efficient and Compact With CPI Brick Inside.



C-Band

Rack Mount Solid State Power Amplifiers

### CPI-Built RF Brick Inside

With CPI-built RF brick inside and plenty of thermal margin, SSPA is rock-solid, highly efficient and easy to maintain. Provides up to 125 or 225 watts of power in a 5.25" rack-mountable unit covering the 5.850 - 6.425 GHz frequency band (to 6.725 GHz optional).

### Multi-Carrier Digital Operation

Highly linear: excellent AM/PM, phase noise and spectral regrowth performance.

### Simple to Operate

User-friendly microprocessor-controlled logic with integrated RS422/485 computer interface, digitally controlled attenuator, and optional Ethernet interface.

### Global Applications

Meets International Safety Standards EN-60950 and EN-60215, Electromagnetic Compatibility 2004/108/EC and Harmonic Standard EN-61000-3-2 to satisfy worldwide requirements.

### Worldwide Support

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

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## OPTIONS :

- 1 RU Remote Control Panel
- Redundant and Power Combined Subsystems
- L-Band BUC
- Extended Frequency Range (to 6.725 GHz)
- RF Input and Output Monitors
- Ethernet Interface
- DC Power Supply Redundancy Module
- External Receive Band Reject Filter
- High Power Transient Voltage Surge Suppressor (TVSS)

## SPECIFICATIONS, S5CI Rack-Mount SSPA

### Electrical

Frequency Range	5.850 to 6.425 GHz (to 6.725 GHz optional <sup>1</sup> )
RF Output	
Saturated, min.	125 W (50.97 dBm) or 225 W (53.50 dBm) <sup>1</sup>
P1dB, min.	100 W (50.0 dBm) or 200 W (53.0 dBm) <sup>1</sup>
Small Signal Gain (at max.)	70 dB min. (at max. gain setting)
Gain Adjustment Range	23 dB
Gain Setting Resolution	0.1 dB
Gain Stability	
Over -10°C to +50°C	±1.5 dB
At constant temp. and drive	±0.25 dB
Small Signal Gain Slope	±0.04 dB/MHz max.
Small Signal Gain Variation	±0.3 dB pk-pk across any 40 MHz band; ±1.5 dB pk-pk across passband
Input VSWR	1.3:1 max.
Output VSWR	1.3:1 max.
3rd Order Intermod	-25 dBc max. at 3dB total backoff from P1dB
Harmonic Output	-60 dBc max. at P1dB
Spurious	-60 dBc max. at P1 dB (-55 dBc w/ BUC option)
Residual AM	-50 dBc below 10 kHz -20 [1 +log F(kHz)] dBc, 10 kHz to 500 kHz -85 dBc above 500 kHz
Noise Power Density	-80 dBW/4 kHz in transmit band, -135 dBW/4 kHz from 3.7 to 4.2 GHz
Phase Noise	10 dB below IESS phase noise profile, max.
AM/PM Conversion	1.0°/dB max. at 3dB backoff from P1dB

### Electrical (continued)

Group Delay	0.03 ns/MHz linear max. 0.003 ns/MHz <sup>2</sup> parabolic max. 1.0 ns pk-pk ripple max.
Primary Power	100-240 VAC ±10%, single phase; 47-63 Hz
Power Consumption	800 W typ. for 125 W SSPA; 1500 W typ. for 200/225 W SSPAs
Power Factor	0.95 min.
RF Output Monitor	-55 dB ±3 nom. wrt output

### Environmental (Operating)

Ambient Temperature	0°C to +50°C operating
Relative Humidity	95% non-condensing
Altitude	10,000 ft. with standard adiabatic derating of 2°C/1000 ft., operating; 50,000 ft., non-operating
High Power TVSS Option	
Clamp Voltage	440 VDC (line to line protection); 560 VDC (line to ground protection)
Energy Absorption	2 ms/250 J (line to line protection)
Peak Current Shunt	10,000 A repetitive

### Mechanical

Cooling	Forced air with integral blower
RF Input Connection	Type N female
RF Output Connection	CPR-137 waveguide flange, grooved threaded UNF 2B 10-32
RF Output Monitor	Type N female
Dimensions (W x H x D)	19.0 x 5.25 x 26 in. (483 x 134 x 661 mm); 19.0 x 7.00 x 26 in. (483 x 178 x 661 mm) with DC Power Supply Redundancy Option
Weight	76 lbs (34.6 kg) typ., no options



SSPA with optional redundant hot-swappable power supplies

Note 1: There are three options for the 5.850 to 6.725 GHz frequency range: P1dB of 200 W; P1dB of 160 W; and P1dB of 80 W.



For more detailed information, please refer to the corresponding CPI Technical Description.

Note: 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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