

# Rack-Mount Solid State Power Amplifiers

CPI Solid Inside and Out

**X-Band**

## High Power SSPAs

*Model S5XI series  
100 and 200 watt  
X-band solid state  
power amplifiers—  
efficient and compact  
with CPI brick inside.*



100 W SSPA --- 200 W SSPA requires additional 1 RU power supply module

### 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 200 watts of power in a 5.25" rack-mountable unit covering the 7.9 to 8.4 GHz frequency band.

### 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 Standard 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 sixteen regional factory service centers.

**satcom**  **division**

811 Hansen Way  
P.O. Box 51625, Palo Alto, CA 94303

**tel:** +1 (650) 846-3803  
**fax:** +1 (650) 424-1744

**e-mail:** [satcommarketing@cpil.com](mailto:satcommarketing@cpil.com)  
[www.cpii.com/satcom](http://www.cpii.com/satcom)

**X-Band**

**Rack Mount Solid State Power Amplifiers**

## OPTIONS :

- 1 RU Remote Control Panel
- Redundant and Power Combined Subsystems
- L-Band BUC
- RF Input and Output Monitors
- Ethernet Interface
- DC Power Supply Redundancy Module (100 W SSPA only --- this is standard on the 200 W SSPA)
- Hardened Power Supply
- External Receive Band Reject Filter
- High Power Transient Voltage Surge Suppressor (TVSS)

## SPECIFICATIONS, S5XI Rack-Mount SSPA

### Electrical

Frequency Range	7.9 to 8.4 GHz
RF Output	
Saturated, min.	200 W (53.0 dBm) or 100 W (50.0 dBm)
P1dB, min.	160 W (52.0 dBm) or 80 W (49.0 dBm)
Small Signal Gain	70 dB min. (at max. gain setting)
Gain Adjustment Range	23 dB min.
Gain Setting Resolution	0.1 dB
Gain Stability	
Over oper. temp. range	±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 500 MHz
Input VSWR	1.3:1 max.
Output VSWR	1.3:1 max.
3rd Order Intermod	-25 dBc max. at 3dB total backoff from 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 Density (at max. gain)	-80 dBW/4 kHz in passband, -135 dBW/4 kHz from 7.25 to 7.75 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	200 W SSPA: 500 VA typ. 100 W SSPA: 800 VA typ.
Power Factor	0.95 min.
RF Output Monitor	-35 dBc ±3 nom. wrt output

### Environmental (Operating)

Ambient Temperature	-10°C to +50°C operating
Relative Humidity	95% non-condensing
Altitude	10,000 ft. max. operating
High Power TVSS Option	
Clamp Voltage	440 VDC (line to line 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-112 waveguide flange, grooved
RF Output Monitor	Type N female
Dimensions (W x H x D)	
125 W SSPA	19.0 x 5.25 x 26 in. (483 x 134 x 661 mm) (height is 7.00" with power supply redundancy option)
200 W SSPA (includes 1 RU power supply module)	19.0 x 7.00 x 26 in. (483 x 178 x 661 mm)
Weight	
100 W SSPA:	80 lbs (36.4 kg) typ, no options
200 W SSPA:	86 lbs (39.0 kg) typ, no options



SSPA with redundant hot-swappable power supplies  
(optional with 100 W SSPA, required with 200 W SSPA)



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.



Communications & Power Industries

satcom division