LPC, LPX, LPKxxxxR Low-Power Solid-State Power Amplifier

Using technology developed for ModuMAX™ amplifiers, these rack-mount SSPAs offer output powers of up to 50 watts in C-, X-, and Ku-Band satellite uplink bands

The SSPAs incorporate a modular architecture that includes the RF modules, power supplies, logic, fans, and front panel assembly. The amplifiers are designed for reliable service in fixed and mobile applications.

FEATURES:

- 25, 35, or 50 W saturated output power
- Digital gain adjustment (20 dB range)
- Forward power monitoring
- Microprocessor based monitor and control
- Serial interface (RS-232/-422/-485) stadard
- 10 Base-T network interface (SNMP)
- Integral 1:1 redundancy control
- RF output sample port

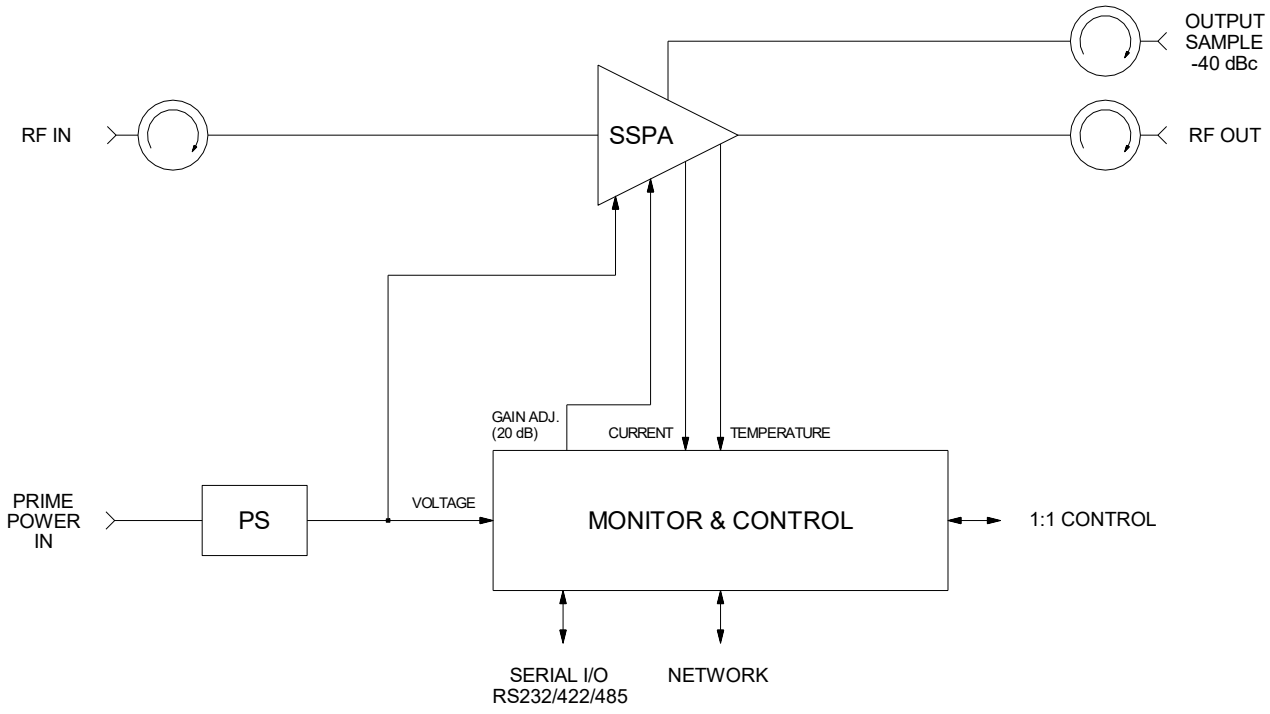
APPLICATIONS:

- Single-thread SSPA
- Redundant systems (1:1, 1:2)
- Fixed installations
- Mobile terminals
- Commercial, Government, and Military systems

ACCESSORIES:

- RCP-2001 remote panel

Block Diagram



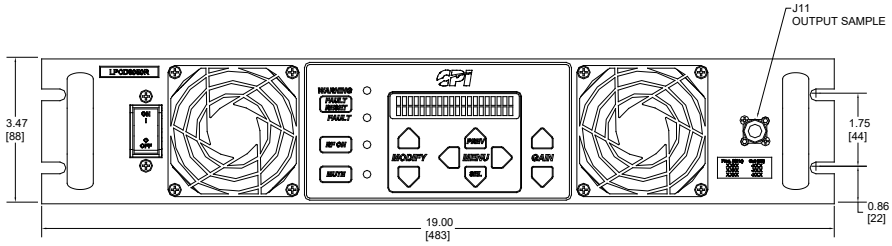
Communications & Power Industries

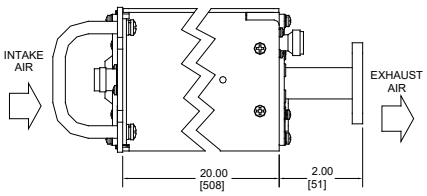
www.cpii.com/satcom

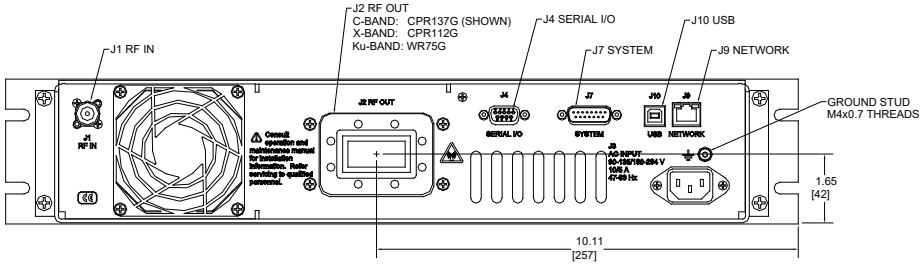
Parameter	Notes	Specification
Frequency Range	C-band, Standard ("D") C-Band, Extended ("M") X-Band, Standard ("B") Ku-Band, Standard ("M") Ku-Band, Extended ("O")	5.85 to 6.425 GHz 5.85 to 6.725 GHz 7.90 to 8.40 GHz 14.00 to 14.50 GHz 13.75 to 14.50 GHz
Gain, at Maximum Setting		70 dB min., 75 dB max.
Gain vs. Temperature	0 to 50° C	±0.75 max., ±0.5 typical
Gain Adjustment Range	Digital	20 dB min. in 0.1 dB steps
Gain Flatness		±0.75 dB over the full band; ±0.30 dB over any 40 MHz
Saturated Power Output	50 W C-Band 25 W C-Band 50 W X-Band 25 W X-Band 35 W Ku-Band 25 W Ku-Band	+47 dBm typ. (50 W) +44 dBm typ. (25 W) +47 dBm typ. (50 W) +44 dBm typ. (25 W) +45.5 dBm typ. (35 W) +44 dBm typ. (25 W)
Power Output at 1dB compression ($P_{1\ dB}$)	50 W C-Band 25 W C-Band 50 W X-Band 25 W X-Band 35 W Ku-Band 25 W Ku-Band	+46.5 dBm min. (45 W) +43.5 dBm min. (22 W) +46.5 dBm min. (45 W) +43.5 dBm min. (22 W) +44.5 dBm min. (28 W) +43.0 dBm min. (20 W)
Two Tone Intermodulation		-25 dBc max.,-30 dBc typical at 3 dB total backoff from 1dB compression point
Noise Figure		8 dB typical at maximum gain
Residual Noise	C-Band, 5.85–6.425 GHz C-Band, 3.4–4.2 GHz X-Band, 7.25–8.40 GHz Ku-Band, 13.75–14.50 GHz Ku-Band, 10.7–12.75 GHz	-70 dBW/4 kHz -150 dBW/4 kHz -70 dBW/4 kHz -70 dBW/4 kHz -120 dBW/4 kHz
Group Delay	Linear Parabolic Ripple	0.03 ns/MHz 0.003 ns/MHz^2 1.0 ns peak to peak
AM/PM Conversion		2.5°/dB typical, 3.5°/dB at ($P_{1\ dB}$)
Second Harmonic		-60 dBc typical at ($P_{1\ dB}$)
Spurious		-70 dBc max. at ($P_{1\ dB}$), in band
VSWR	Input Output	1.3:1 max, 1.2:1 typical 1.5:1 max, 1.3:1 typical
Front Panel Sample Ports	Output	-40 dB typical
Connectors	RF Input RF Output, C-Band RF Output, X-Band RF Output, Ku-Band Sample Port Serial I/O System Network Power	Type N Female CPR137G Waveguide CPR112G Waveguide WR75G Waveguide Type N Female 9-pos D-sub Female, mate supplied 15-pos D-sub, Male RJ-45 Jack IEC-320
Power Requirements	Voltage Frequency Power factor corrected	100 to 240 VAC 63 Hz max., 47 Hz min. .99 typical
Power Consumption	50 W C-Band 25 W C-Band 50 W X-Band 25 W X-Band 35 W Ku-Band 25 W Ku-Band	275 W typical, 375 W max. (1) 225 W typical, 325 W max. (1) 325 W typical, 400 W max. (1) 250 W typical, 350 W max. (1) 300 W typical, 350 W max. (1) 275 W typical, 325 W max. (1)
Cooling System	Forced Air	
Operating Temperature Range	Ambient/Inlet air	0°C to +50°C
Altitude Derating	10,000 ft (3000 m) max.	Derate 2°C per 1000 ft (300 m)
Dimensions	See outline drawing	3.5" H x 19" W x 22" D; 89 mm H x 483 mm W x 559 mm D

(1) Cold start, at -40 °C and P_{OUT} in saturation.

Outline Drawing, SSPA (C-Band shown, other bands are similar)





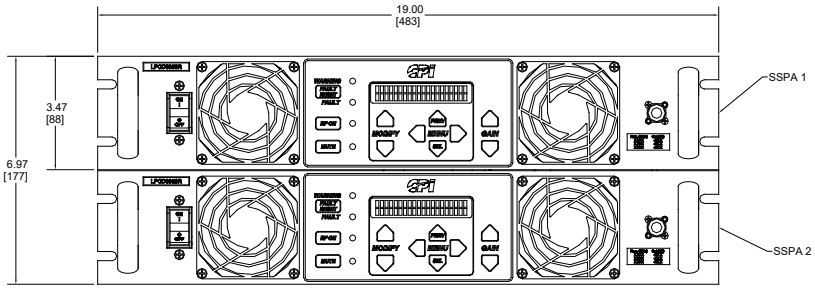


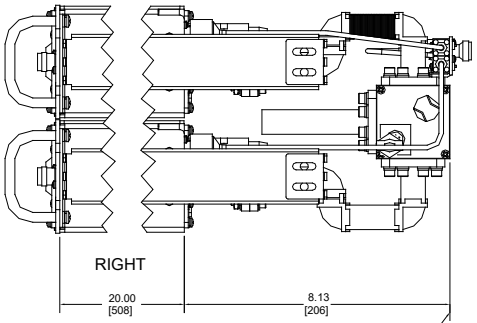
NOTES:

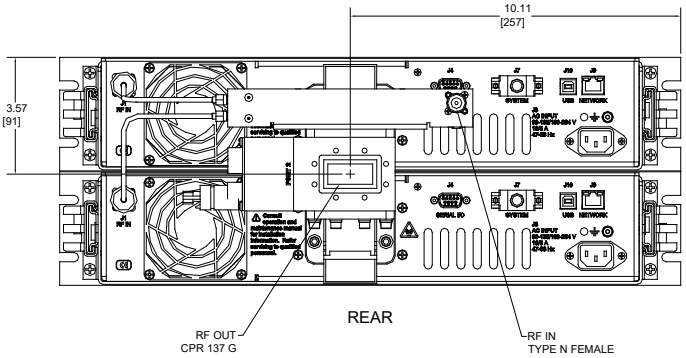
1. DIMENSIONS ARE SHOWN IN INCHES [mm].
2. MAX. AIRFLOW: 75 cfm (127 m^3/hr)
3. NET WEIGHT: C-BAND = 34 lbs. (15 kg)
   X-BAND = 34 lbs. (15 kg)
   Ku-BAND = 35 lbs. (16 kg)
4. 24" LONG RACK SLIDES PROVIDED; INSTALLED BY CUSTOMER.

Outline 19110

Outline Drawing, Typical 1:1 Redundant System (C-Band shown, other bands are similar)







NOTES:

1. DIMENSIONS ARE SHOWN IN INCHES [mm].
2. NET WEIGHT: 75 lbs. (34 kg)

Outline 20024

Part Number/Ordering Information, Single-Thread SSPAs

C-Band	X-Band	Ku-Band
LPC□6□R 5.850-6.425 GHz = D 5.850-6.725 GHz = M 25 Watts = 025 50 Watts = 050	**LPXB8□R** 7.90-8.40 GHz = B 25 Watts = 025 50 Watts = 050	**LPK□14□R** 14.00-14.50 GHz = M 13.75-14.50 GHz = O 25 Watts = 025 35 Watts = 035

Part Number/Ordering Information, 1:1 Redundant Systems*

C-Band	X-Band	Ku-Band
LPRC1□□R 5.850-6.425 GHz = D 5.850-6.725 GHz = M 25 Watts = 025 50 Watts = 050	**LPRX1B□R** 7.90-8.40 GHz = B 25 Watts = 025 50 Watts = 050	**LPRK1□□R** 14.00-14.50 GHz = M 13.75-14.50 GHz = O 25 Watts = 025 35 Watts = 035

* Performance specifications of a redundant system depend on the installed configuration and optional accessories. Contact the factory for more information and for 1:2 system capabilities.

Communications & Power Industries

SMP Division
Satcom Products
tel: +1 (669) 275-2744
email: satcommarketing@cpii.com
web: www.cpii.com/satcom