

## 6 GHz Solid-State Power Amplifiers

Using technology developed for VertexRSI's ModuMAX™ amplifiers, these outdoor SSPAs feature a modular architecture with field-replaceable RF assemblies and offer output powers of up to 250 watts across the standard 5.850–6.425 GHz or extended 5.850–6.725 GHz satellite uplink bands. Housed in a weatherproof NEMA-4 enclosure, the amplifiers can be mounted in an antenna hub or outdoors in applications where it is desirable to reduce cable losses by mounting the SSPA close to the antenna. Built for reliable, trouble-free service, the amplifiers incorporate a microprocessor-based monitor and control system.

### Features

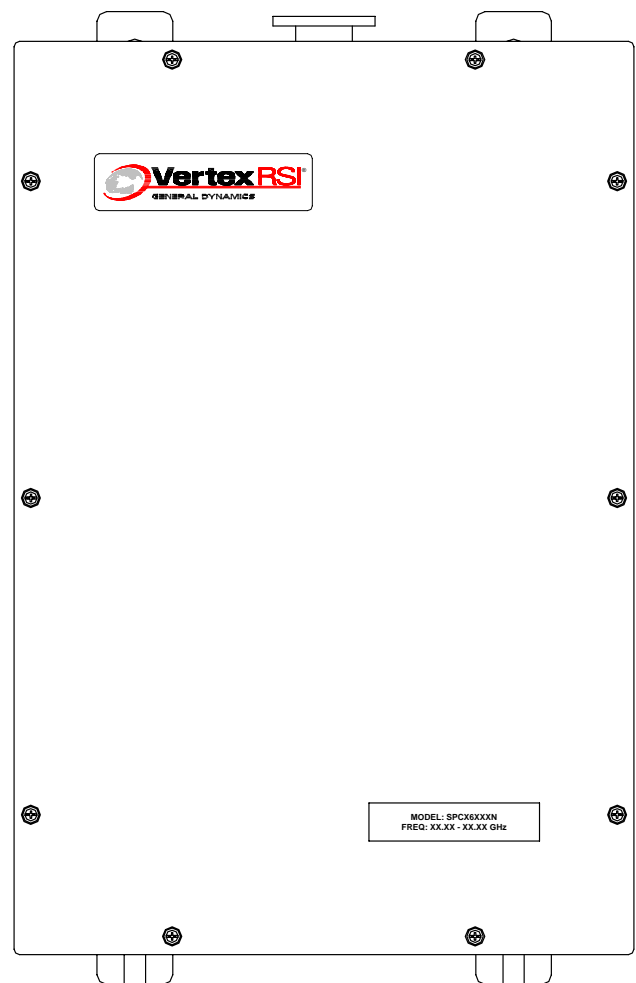
- Field-replaceable RF assembly
- 100/125/200/250 W saturated output power
- Microprocessor-based monitor and control
- Serial interface (RS-232/-422/-485)
- Output isolator for high load VSWR protection
- 20 dB range digital gain adjustment
- RF output sample port
- Reflected power monitoring

### Applications

- Stand-alone SSPA
- 1:1 redundancy

### Options

- Block upconverter



# GENERAL DYNAMICS

## SATCOM Technologies

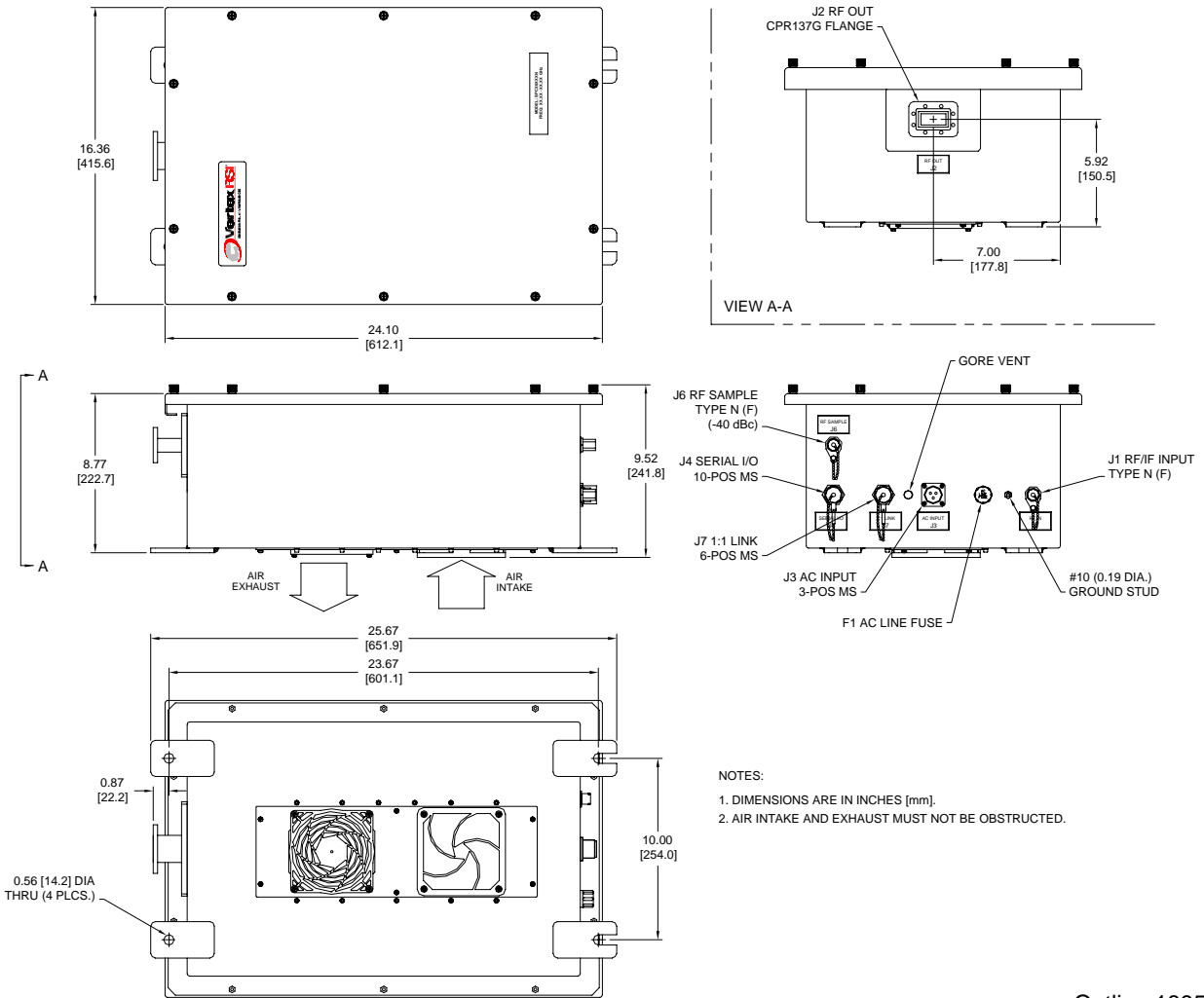
Parameter	Notes	Min	Nom/Typ <sup>†</sup>	Max	Units
Frequency Range	Band "D" Band "M"	5.850 5.850		6.425 6.725	GHz GHz
Input Frequency Range with Option 7, Block Upconverter	Band "D" Band "M"	950 950		1525 1825	MHz MHz
Gain, at maximum gain setting		70			dB
Gain Adjust Range		20			dB
Gain Flatness	Full band, standard Full band, with Option 7 Per 40 MHz, standard Per 40 MHz, with Option 7			±1.0 ±1.5 ±0.3 ±0.5	dB dB dB dB
Gain Stability vs. Temperature	-40 to +50 °C, standard -40 to +50 °C, with Option 7		±1.0 ±2.0	±1.5 ±2.5	dB dB
Saturated Power Output	100 W 125 W 200 W 250 W*		+50 (100) +51 (125) +53 (200) +54 (250)		dBm (W) dBm (W) dBm (W) dBm (W)
Power Output, at 1 dB compression (P <sub>1dB</sub> )	100 W 125 W 200 W 250 W*	+49.5 (89) +50.5 (112) +52.0 (158) +53.0 (200)			dBm (W) dBm (W) dBm (W) dBm (W)
Two-tone Intermodulation	At 3 dB total backoff from 1 dB compression point		-30	-25	dBc
Group Delay	Linear Parabolic Ripple			0.03 0.003 1.0	ns/MHz ns/MHz <sup>2</sup> ns p-p
AM/PM Conversion	At P <sub>1dB</sub>		2.5	3.5	°/dB
Noise Figure	At maximum gain, standard At max. gain, with Option 7		8 20		dB dB
VSWR	Input Input, with Option 7 Output		1.20 1.35 1.20	1.30 1.50 1.30	:1 :1 :1
Output Sample Port Connectors	Input Output Sample Port Serial I/O 1:1 Link Power		Type N Female CPR137G Waveguide Type N Female 10-pos MS, mate supplied 6-pos MS, mate supplied 3-pos MS, mate supplied		dBc
Power Requirements	Voltage Frequency Power, 100 W Power, 125 W Power, 200 W Power, 250 W* Power factor corrected	47		63 900 <sup>A</sup> 1200 <sup>A</sup> 1400 <sup>A</sup> 1500 <sup>A</sup> 0.97	Vac Hz W W W W
Cooling System			Forced air		
Operating Temperature Range	Ambient air temperature	-40		+50	°C
Weight	Approximate		53 (24)		lb (kg)
Dimensions	See outline drawing		16.36 W x 25.67 H x 9.52 D 415.6 W x 651.9 H x 241.8 D		inches mm

<sup>†</sup> When there is only one value on a line, this column is a nominal value. Otherwise it is a typical value. Typical values are intended to illustrate typical performance, but are not guaranteed.

\* Consult factory for 250 W extended band (Band "M").

<sup>A</sup> Cold start, at -40 °C and Pout in saturation.

## Outline Drawing, SSPA



Outline 18951

## Part Number/Ordering Information

**SSPAs:** **SPC**  **6**  **N-X**

5.850–6.425 GHz = D 100 watts = 100  
 5.850–6.725 GHz = M 125 watts = 125  
 200 watts = 200  
 250 watts =  
**Options:** 250\*

**Block Upconverter**  
 L-Band IF Input ..... 7

**Redundant Systems:** **SPRC1**   **N-XX**

5.850–6.425 GHz = D 100 watts = 100  
 5.850–6.725 GHz = M 125 watts = 125  
 200 watts = 200  
 250 watts = 250\*

**Options:**

**Block Upconverter** 200 watts = 200  
 L-Band IF Input ..... 7

**Maintenance Switch**  
 Select antenna or dummy load at system output ... A

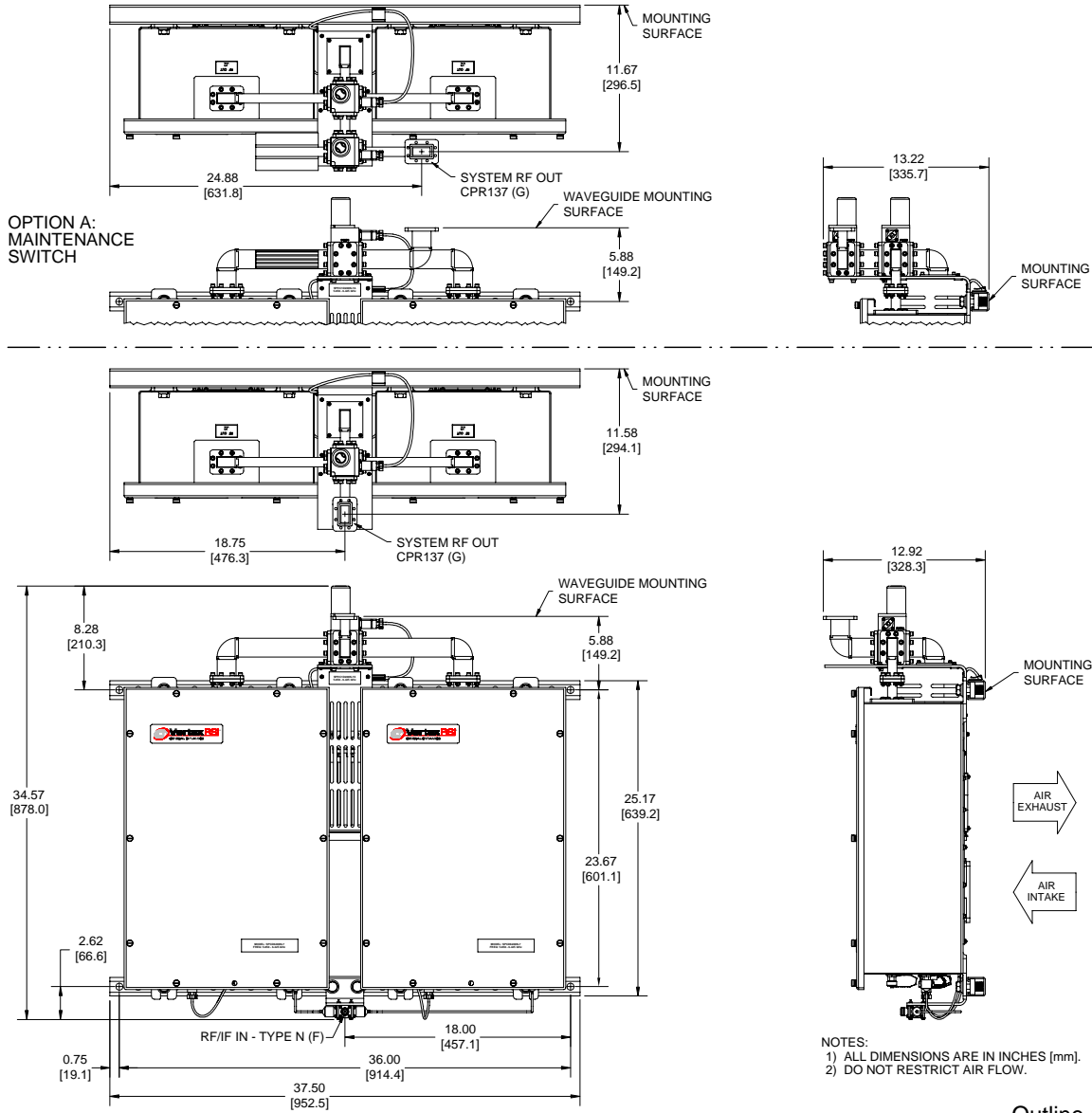
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### Related Accessory:

- **RCP-2001 SSPA Remote Control Panel**

1U-high rack-mounted panel. Can be located up to 1.3 km (4000 ft) away from the SSPA.

**Outline Drawing, 1:1 System**



Outline 19073

**Connector Interface**

Ref. Des.	Function	Connector Type	Mating Connector	Comment
J1	RF/IF Input	Type N Female	Type N Male	
J2	RF Output	CPR137G Waveguide	CPR137 Flange	
J3	AC In	3-pos MS, Male	3-pos MS, Female	Mate supplied
J4	Serial I/O	10-pos MS, Female	10-pos MS, Male	Mate supplied
J6	Output Sample	Type N Female	Type N Male	
J7	1:1 Link	6-pos MS, Female	6-pos MS, Male	Mate supplied



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Specifications are subject to change at VertexRSI's discretion.