

Ku-Band Solid-State Power Amplifiers

Using technology developed for VertexRSI's ModuMAX™ amplifiers, these rack-mount SSPAs offer output powers of 50, 70, or 100 watts across the standard 14.00 to 14.50 GHz or extended 13.75 to 14.50 GHz 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

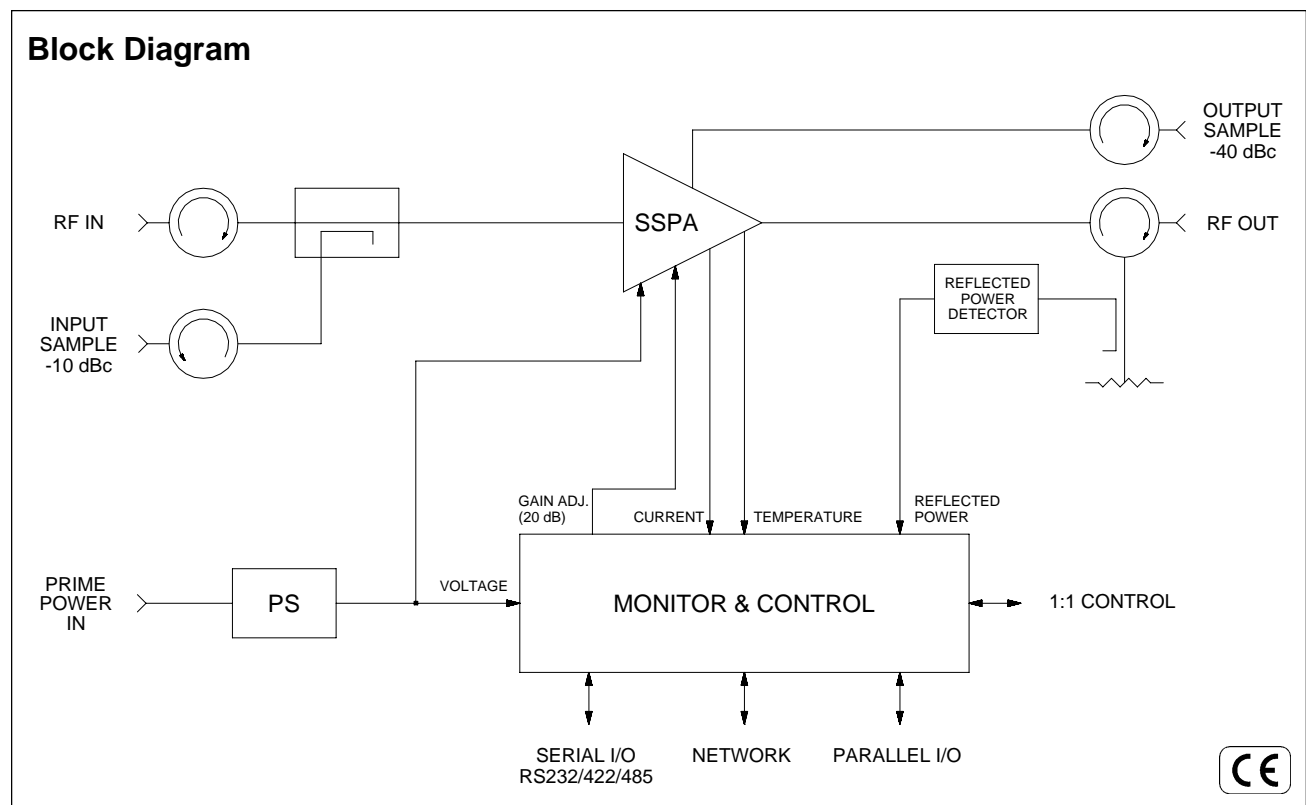
- 50/70/100 W saturated output power
- Digital gain adjustment (20 dB range)
- Forward and reflected power monitoring
- Microprocessor-based monitor and control
- Serial interface (RS232/422/485) standard
- 10 Base-T Network interface (SNMP, HTTP)
- RF input and output sample ports
- Integral 1:1 redundancy control

Applications

- Single-thread SSPA
- Redundant systems (1:1, 1:2)
- Fixed installations
- Mobile terminals
- Satellite News Gathering (SNG)

Accessories

- RCP-2001 Remote Panel



GENERAL DYNAMICS

C4 Systems

Parameter	Notes	Min	Nom/Typt	Max	Units
Frequency Range	Band "M" Band "O"	14.00 13.75		14.50 14.50	GHz GHz
Gain	At maximum gain setting	70			dB
Gain Adjust Range		20			dB
Gain Flatness	Full band Per 40 MHz			±0.75 ±0.3	dB dB
Saturated Power Output	50 W 70 W 100 W *		+47 (50) +48.5 (70) +50 (100)		dBm (W) dBm (W)
Power Output, at 1 dB compression ($P_{1\text{ dB}}$)	50 W 70 W 100 W *	+46.0 (40) +47.5 (56) +49.0 (80)			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 ² ns p-p
AM/PM Conversion	At $P_{1\text{ dB}}$		2.5	3.5	°/dB
Noise Figure	At maximum gain		8		dB
VSWR	Input Output		1.25 1.20	1.30 1.30	:1 :1
Front Panel Sample Ports	Input Output		-10 -40		dBc dBc
Connectors	Input Output Sample Ports Serial I/O Parallel I/O Power System Network		Type N Female WR75 Waveguide Type N Female 9-pos D, Female 25-pos D, Male 4-pos CE05 15-pos D, Male RJ-45 jack		
Power Requirements	Voltage Frequency Power, 50 W Power, 70 W Power, 100 W Power factor corrected	47	90-135 or 180-270 500 650 900 0.99	63 800 ^A 1200 ^A	Vac Hz W W W
Cooling System		Forced air. Intake on front panel.			
Operating Temperature Range	Ambient air temperature	0		+50	°C
Size			19 W x 7 H x 24 D 483 W x 178 H x 610 D		inches mm

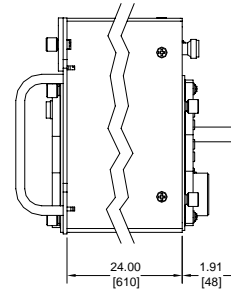
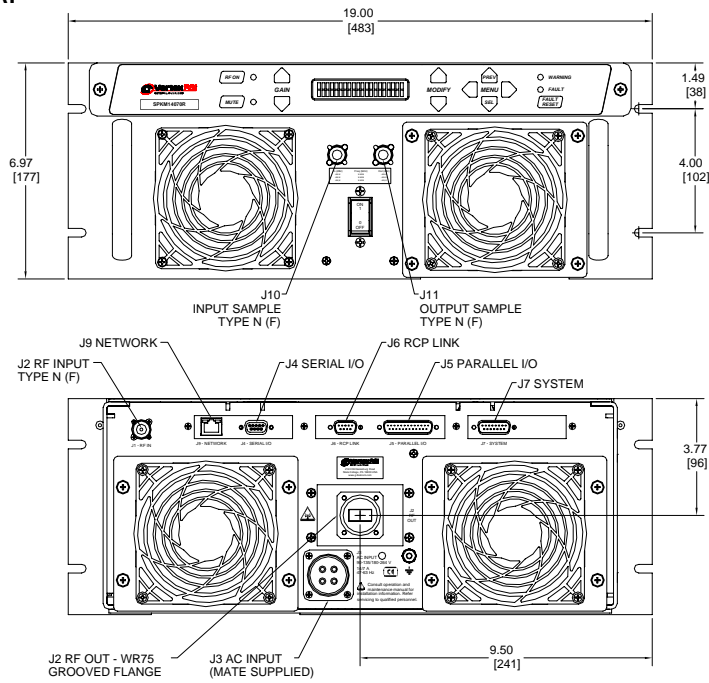
† When there is only one value on a line, this column is a nominal value. Otherwise it is a typical value. Typical values are intended to illustrate typical performance, but are not guaranteed.

* Consult factory for 100 W extended band (Band "O").

^A Cold start at 0 °C and Pout in saturation.

Outline Drawings

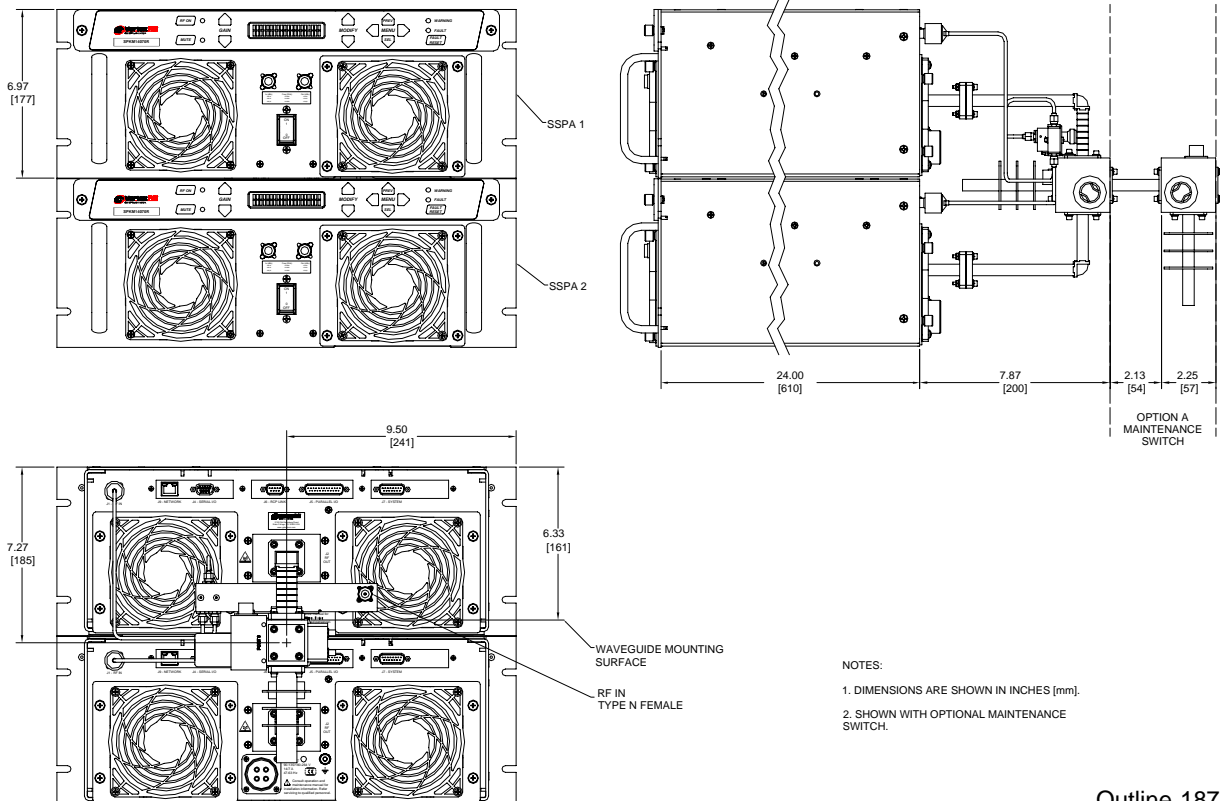
SSPA:



NOTES:
1. DIMENSIONS ARE SHOWN IN INCHES [mm].

Outline 18502

1:1 Redundant System:



NOTES:
1. DIMENSIONS ARE SHOWN IN INCHES [mm].
2. SHOWN WITH OPTIONAL MAINTENANCE SWITCH.

Outline 18712

Part Number/Ordering Information

SSPAs:

SPK **14** **R**

14.00–14.50 GHz = M
13.75–14.50 GHz = O*

50 watts = 050
70 watts = 070
100 watts = 100*

* Consult factory for 100 W extended band (Band "O").

Redundant Systems:

(Consists of 1:1 switching assembly, two SSPAs, and interconnecting cables.)

SPRK1 **R-X**

14.00–14.50 GHz = M
13.75–14.50 GHz = O*

50 watts = 050
70 watts = 070
100 watts = 100*

Options

Maintenance Switch **A**

Allows selection of antenna or dummy load at system output

* Consult factory for 100 W extended band (Band "O").

Related Accessories:

- **RCP-2001** SSPA Remote Control Panel
1U-high rack-mounted panel duplicates all menus and functions available at SSPA front panel. Can be located up to 1.3 km (4000 ft) away and interconnects with inexpensive cable.

OTHER VertexRSI PRODUCTS

- Low Noise Amplifiers and LNA Systems
- Solid-State Power Amplifiers and SSPA Systems
- General Purpose Converters
- Satellite Communications Equipment
- Custom Subsystems



18760 Rev. – As Issued 3/14/06 RJS
Specifications are subject to change at VertexRSI's discretion.