

14 GHz Solid-State Power Amplifiers

Using technology developed for VertexRSI's ModuMAX™ amplifiers, these rack-mount SSPAs offer an output power of 200 watts across the standard 14.0–14.5 GHz or extended 13.75–14.50 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

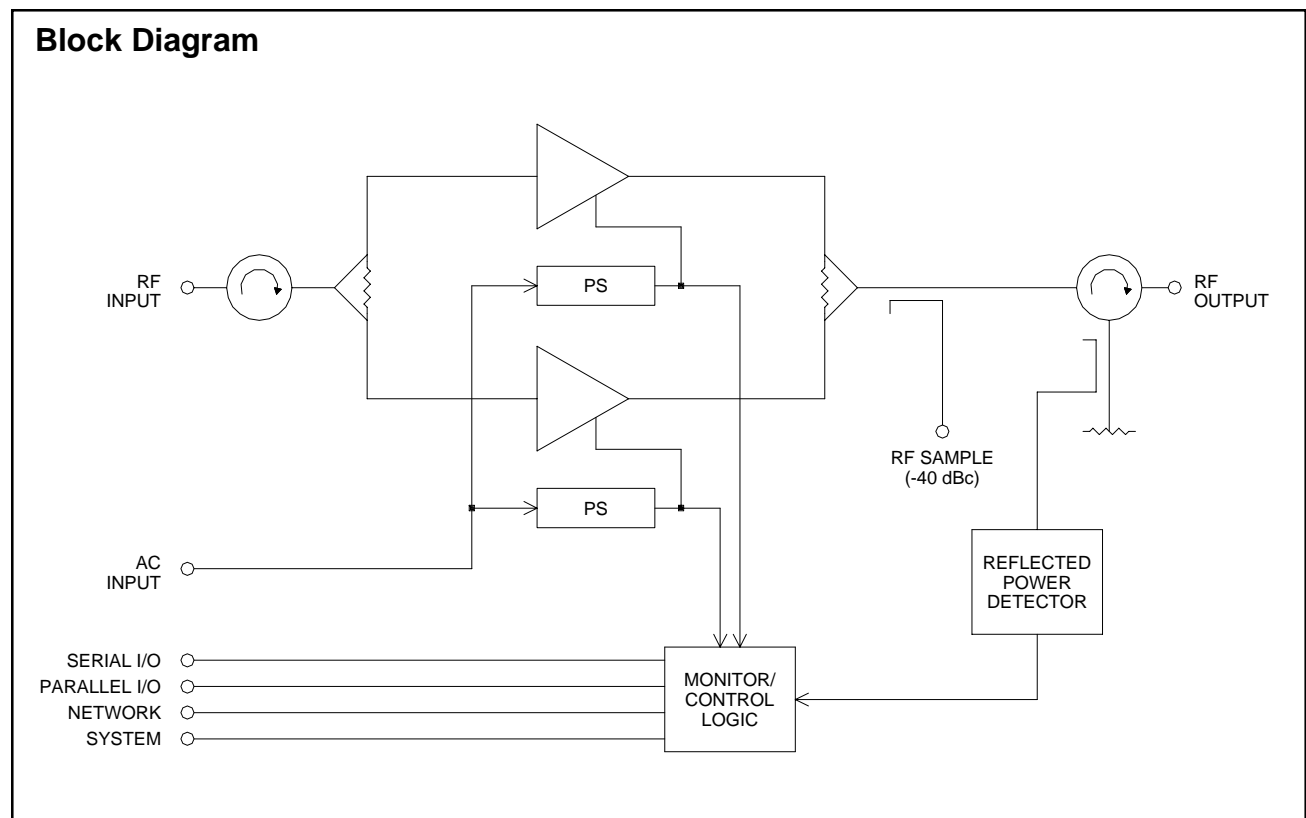
- 200 W saturated output power
- Digital gain adjustment (20 dB range)
- Forward and reflected power monitoring
- Microprocessor-based monitor and control
- Serial interface (RS232/422/485) standard
- 10 Base-T Network interface (SNMP, HTTP)
- RF input and output sample ports
- Integral 1:1 redundancy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

Applications

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

Accessories

- RCP-2001 Remote Panel



GENERAL DYNAMICS

C4 Systems

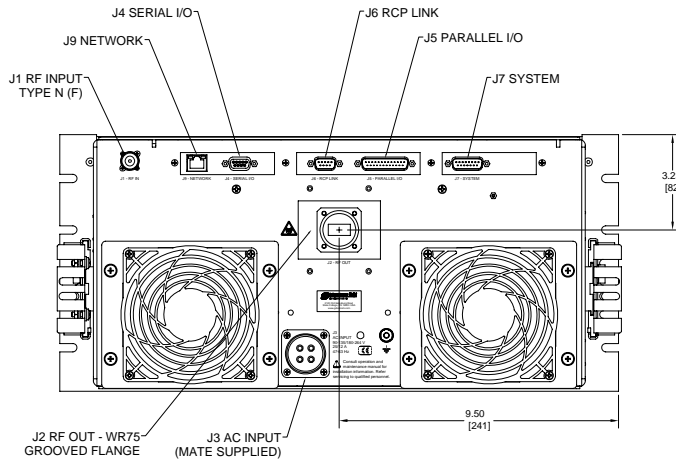
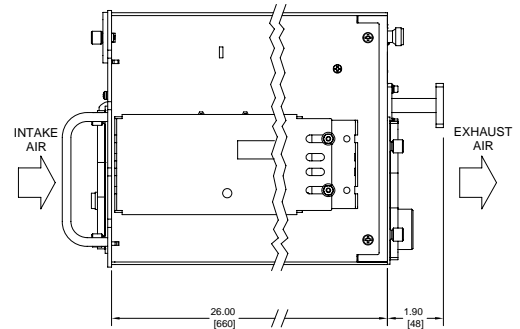
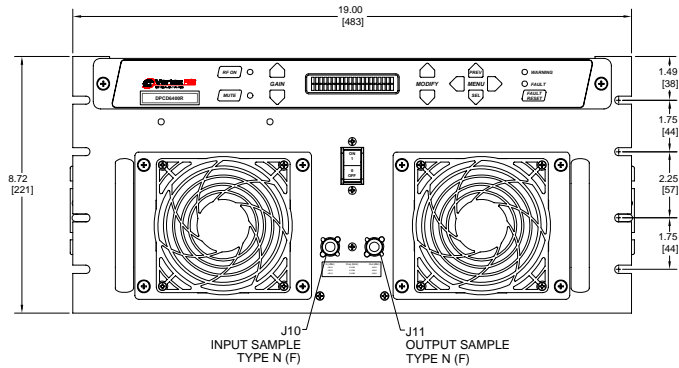
Parameter	Notes	Min	Nom/Typ*	Max	Units
Frequency Range	Band "M"	14.00		14.50	GHz
	Band "O"	13.75		14.50	GHz
Gain, at maximum gain setting	Standard	69			dB
Gain Adjust Range	Digital, 0.1 dB steps	20			dB
Gain Flatness	Full band			±1.0	dB
	Per 40 MHz			±0.3	dB
Saturated Power Output	Note (1)		+53 (200)		dBm (W)
Power Output, at 1 dB compression ($P_{1\text{ dB}}$)	Note (1)	+52.0 (158)			dBm (W)
Two-tone Intermodulation	At 3 dB total backoff from 1 dB compression point		-30	-25	dBc
Group Delay	Linear			0.03	ns/MHz
	Parabolic			0.003	ns/MHz ²
	Ripple			1.0	ns p-p
AM/PM Conversion	At $P_{1\text{ dB}}$		2.5	3.5	°/dB
VSWR	Input		1.25	1.30	:1
	Output		1.20	1.30	:1
RF Sample Ports	Input		-10		dB
	Output		-40		dB
Connectors	RF Input		Type N Female		
	RF Output		WR75 Waveguide		
	Sample Ports		Type N Female		
	Serial I/O		9-pos D-sub Female, mate supplied		
	Parallel I/O		25-pos D-sub Male, mate supplied		
	System		15-pos D-sub, Male		
	Network		RJ-45 Jack		
	RCP Link		9-pos D-sub, Male		
	Power		4-pos CE05, mate supplied		
Power Requirements	Voltage		90–135 or 180–270		Vac
	Frequency	47		63	Hz
	Power		1950	2400 ^A	W
	Power factor corrected		0.98		
Cooling System			Forced air		
Operating Temperature Range	Ambient air temperature	0		+50	°C
Weight	Approximate		93 (42)		lb (kg)
Dimensions	See outline drawing		8.75 H x 19 W x 27.88 D		inches
			222 H x 483 W x 708 D		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.

Note (1): Pout between 14.0 and 14.5 GHz; 1 dB lower between 13.75 and 14.0 GHz for Band "O" amplifier.

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

Outline Drawing, SSPA



NOTES:

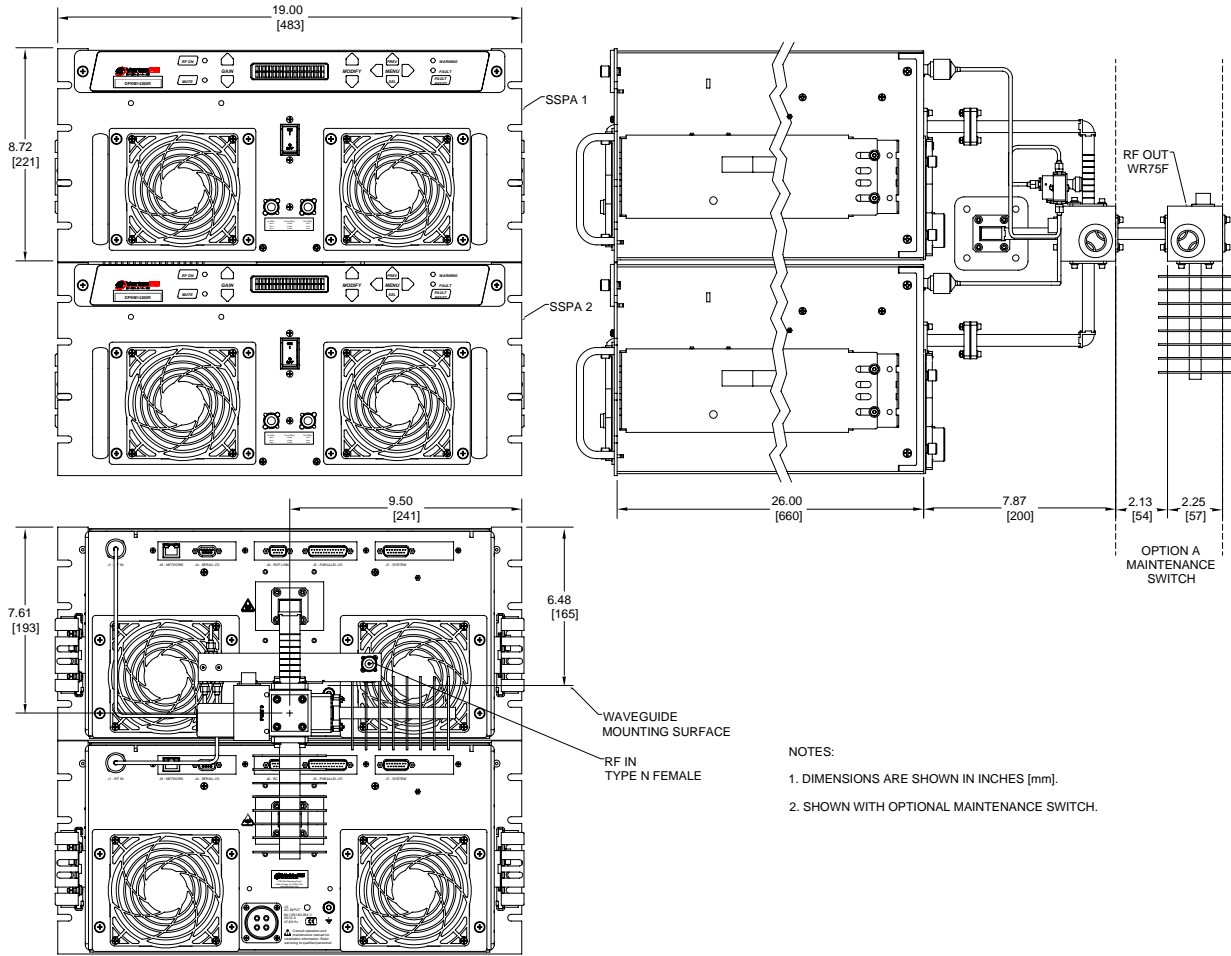
1. DIMENSIONS ARE SHOWN IN INCHES [mm].
2. MAX. AIRFLOW: 285 cfm (480 m³/hr)
3. NET WEIGHT APPROX. 93 lbs. (42 kg)
4. RACK SLIDES PROVIDED; INSTALLED BY CUSTOMER.

Outline 18447

Connector Interface

Ref. Des.	Function	Connector Type	Mating Connector	Comment
J1	RF Input	Type N Female	Type N Male	
J2	RF Output	WR75G Waveguide	WR75 Flange	
J3	AC Input	4-pos CE05, Male	4-pos MS or CE05, Female	Mate supplied
J4	Serial I/O	9-pos D-sub, Female	9-pos D-sub, Male	Mate supplied
J5	Parallel I/O	25-pos D-sub, Male	25-pos D-sub, Female	Mate supplied
J6	RCP Link	9-pos D-sub, Male	9-pos D-sub, Female	
J7	System	15-pos D-sub, Male	15-pos D-sub, Female	
J8	Network	RJ-45 Jack	RJ-45 Plug	
J9	RF Input Sample	Type N Female	Type N Male	
J10	RF Output Sample	Type N Female	Type N Male	

Outline Drawing, 1:1 System



Outline 18334

Part Number/Ordering Information

SSPAs: DPK 14200R
 14.00–14.50 GHz = M
 13.75–14.50 GHz = O
 200 Watts = 200

1:1 Redundant Systems: DPRK1 200R-X
 14.00–14.50 GHz = M
 13.75–14.50 GHz = O
 200 Watts = 200
Options:
Maintenance Switch
 Select antenna or dummy load at system output..... **A**

Related Accessories:

- **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.



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 Specifications are subject to change at VertexRSI's discretion.