

Ku-Band Antenna-Mount SSPAs

PKM, PK014SxxLA

These high power solid-state amplifiers offer output powers of 25, 35, 50, 70 or 100 watts across the standard 14.0 to 14.5 GHz ("M") or extended 13.75 to 14.5 GHz ("O") satellite uplink bands. Housed in a compact weatherproof 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. The amplifiers feature a microprocessor-based M&C system that facilitates easy setup and control.

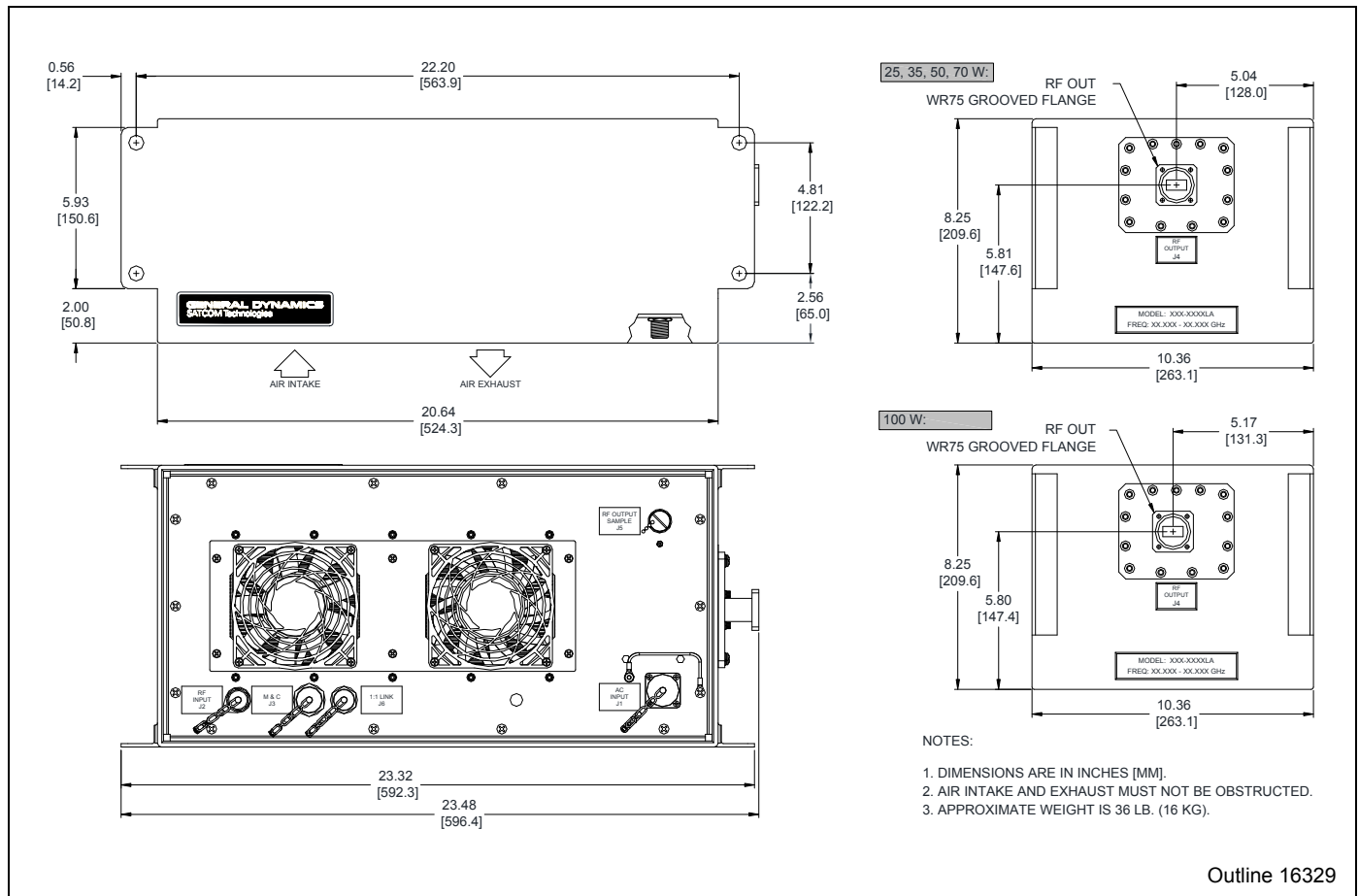
Options

- 1:1 and 1:2 redundant systems
- Integrated block upconverter with L-band input

Features

- 25/35/50/70/100 W saturated output power
- 70/75 dB gain
- Built-in monitor and control
- Temperature-compensated gain from -40 to +50 °C
- Serial interface (RS-232/-422/-485)
- Output isolator for high load VSWR protection
- 20 dB range digital gain adjustment
- RF output sample port (-40 dBc)
- Output power monitor
- Extremely light weight, nominally 36 lb (16 kg)
- Mounts on small antennas

SSPA Outline Drawing



Single-Thread SSPA Specifications

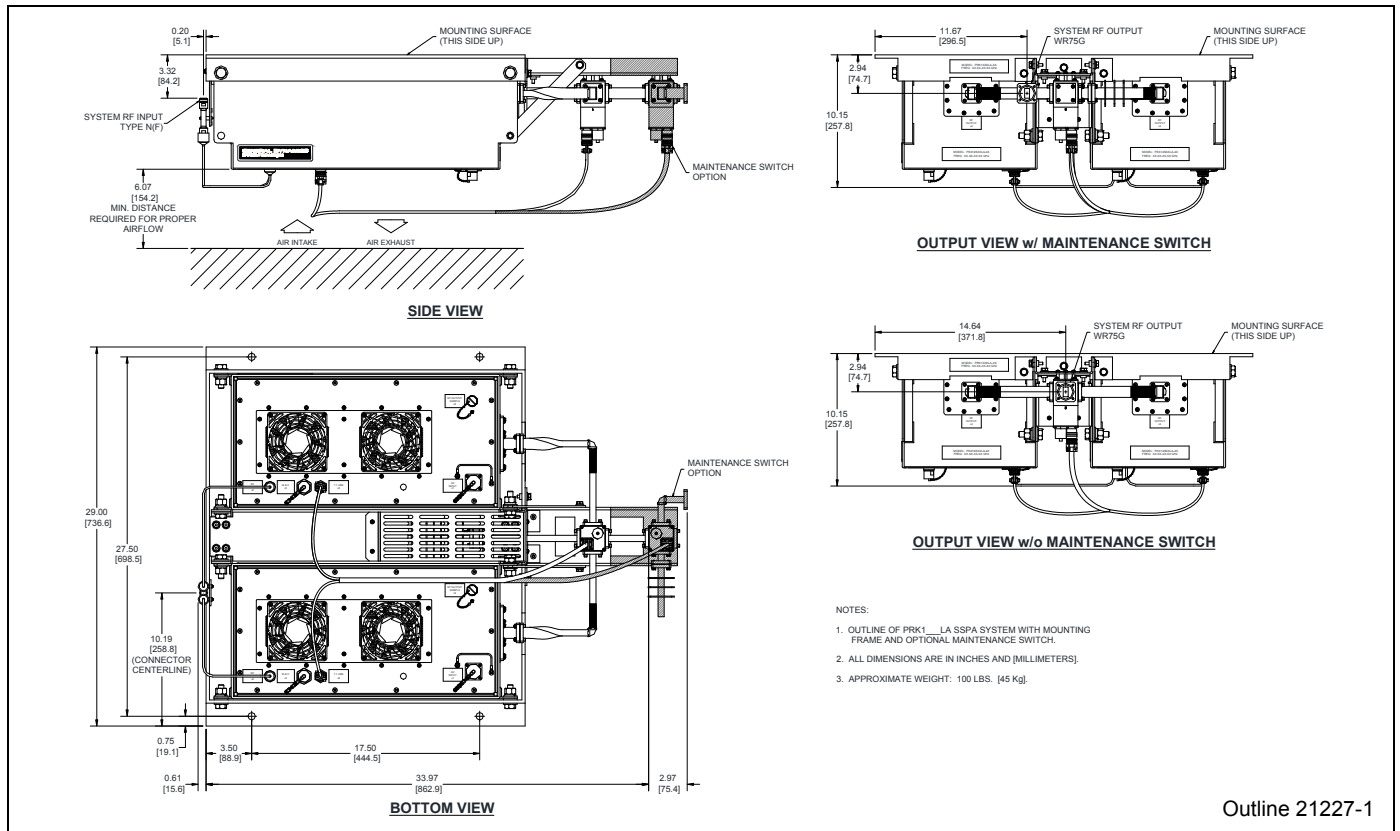
Parameter	Notes	Min.	Nom./Typ. [†]	Max.	Units
Frequency Range	Band 'M'	14.00		14.50	GHz
	Band 'O'	13.75		14.50	GHz
Input Frequency Range with Option 7, Block Upconverter	Band "M"	950		1450	MHz
Gain, at maximum gain setting	Band "O"	950		1700	MHz
	25 W, 35 W	70			dB
	50 W, 70 W, 100 W	75			dB
Gain Adjust Range		20			dB
Gain Flatness	Full band, standard			±1.0	dB
	Full band, with Option 7			±1.5	dB
	Per 40 MHz, standard			±0.3	dB
	Per 40 MHz, with Option 7			±0.5	dB
Gain Stability vs. Temperature	-40 to +50 °C, standard		±1.0	±1.5	dB
	-40 to +50 °C, with Option 7		±2.0	±2.5	dB
Saturated Power Output (See Note 1)	25 W		+44 (25)		dBm (W)
	35 W		+45.5 (35)		dBm (W)
	50 W		+47 (50)		dBm (W)
	70 W		+48.5 (70)		dBm (W)
	100 W		+50 (100)		dBm (W)
Power Output, at 1 dB compression (P _{1 dB}) (See Note 1)	25 W	+43 (20)			dBm (W)
	35 W	+44.5 (28)			dBm (W)
	50 W	+46 (40)			dBm (W)
	70 W	+47.5 (56)			dBm (W)
	100 W	+49.3 (85)			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 dB}		2.5	3.5	%/dB
Noise Figure	At maximum gain, standard		8		dB
	At max. gain, with Option 7		20		dB
VSWR	Input		1.20	1.30	:1
	Input, with Option 7		1.35	1.50	:1
	Output		1.20	1.30	:1
Noise Power Density (See Note 2)	At max. gain			-75	dBm/Hz
	13.75–14.50 GHz			-160	dBm/Hz
	10.70–12.75 GHz				dBc
Output Sample Port Connectors	Input		-40		
	Output		Type N Female		
	Sample Port		WR75G Waveguide		
	I/O		Type N Female		
	Power		10-pin MS, mate supplied		
	Voltage		3-pin MS, mate supplied		
	Frequency	47	90-135 or 180-265		Vac
Power Requirements	Power, 25 W		300	375	W
	Power, 35 W		450	475	W
	Power, 50 W		580	675	W
	Power, 70 W		650	750	W
	Power, 100 W		900	1200	W
	Power factor corrected		0.97		
Cooling System			Forced air		
Operating Temperature Range	Ambient air temperature	-40		+50	°C
Weight			36 (16)		lb (kg)
Dimensions	See outline drawing		8.25 x 23.48 x 10.36		inches
			210 x 596 x 263		mm

[†] When there is only one value on a line, the Nom./Typ. 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: Between 14.0 and 14.5 GHz; 1 dB lower between 13.75 and 14.0 GHz for Band "O" amplifiers.

NOTE 2: Consult factory for 100 W units.

Typical 1:1 Redundant System Outline Drawing



Part Number/Ordering Information

SSPA:

Part/Model No. PK 14S LA-XX

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

25 Watts = 25
 35 Watts = 35
 50 Watts = 50
 70 Watts = 70
 100 Watts = 100

Option:

1:1 Redundancy 4

Redundant Capability
 (required for units in 1:1 systems)

Block Upconverter 7

L-Band IF Input

1:1 Redundant Systems* (Consists of 1:1 switching assembly, two SSPAs, and interconnecting cables):

Part/Model No. PRK1 LA-XX

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

25 Watts = 25
 35 Watts = 35
 50 Watts = 50
 70 Watts = 70
 100 Watts = 100

Options:

Block Upconverter 7

L-Band IF Input

Maintenance Switch A

Selects antenna or dummy load at system output

* 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.

Related Accessory:

RCP-2001, SSPA Remote Control Panel

1U-high rack-mount panel enables remote manual control of the SSPA. Can be located up to 1.3 km (4000 ft.) away and interconnects with inexpensive cable. (One panel is required for each SSPA in a redundant system, for full remote manual control.)



Other Products

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

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