

Using technology developed for ModuMAX™ amplifiers, these outdoor SSPAs feature a modular architecture with field-replaceable RF assemblies and offer output powers of up to 100 Watts across the standard 14.00 - 14.50 GHz or extended 13.75 - 14.50 GHz satellite uplink bands.

Housed in a weatherproof NEMA 4X 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:

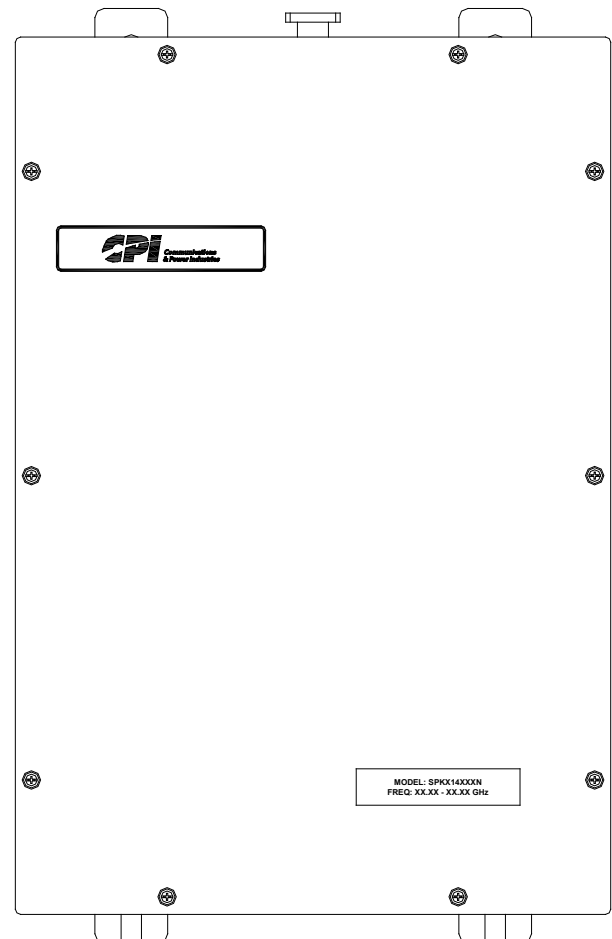
- Field replaceable RF assembly
- 40/50/70/100 W saturated output power
- Microprocessor based monitor and control
- Serial interface (RS-232/-422/-485)
- Output isolator for high load VSWR protection
- 20 dB range digital gain adjustment
- RF output sample port
- Reflected power monitoring

APPLICATIONS:

- Stand-alone SSPA
- 1:1 and 1:2 redundant systems

OPTIONS:

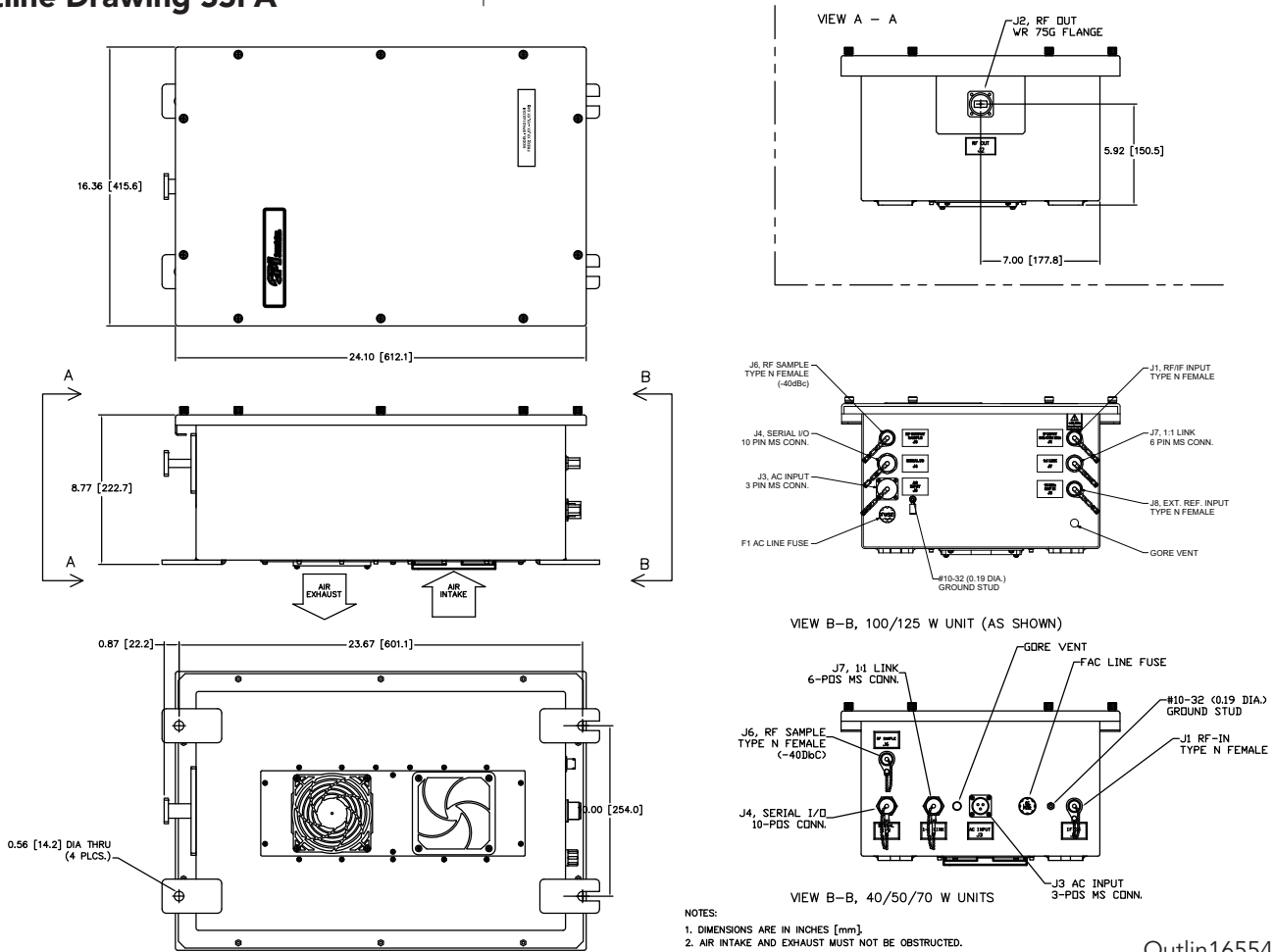
- Block upconverter



Parameter	Notes	Specification
Frequency Range	Band "M" Band "O"	14.00 to 14.50 GHz 13.75 to 14.50 GHz
Input Frequency Range with Option 7, Block Upconverter	Band "M" Band "O"	950 MHz min., 1450 MHz max. 950 MHz min., 1700 MHz max.
Gain, at Maximum Setting		70 dB min.
Gain Adjustment Range		20 dB min.
Gain Flatness		±1.0 dB over the full band, standard; ±1.5 dB full band, with Option 7 ±0.3 dB per 40 MHz, standard, ±0.5 dB per 40 MHz, with Option 7
Gain Stability vs. Temperature	-40 to +50°C, standard -40 to +50°C, with Option 7	±1.0 dB typical, ±1.5 dB max. ±2.0 dB typical, ±2.5 dB max.
Saturated Power Output	40 W 50 W 70 W 100 W	+46 dBm typ. (40 W) +47 dBm typ. (50 W) +48.5 dBm typ. (70 W) +50 dBm typ. (100 W)
Power Output at 1dB compression (P_{1dB})	40 W 50 W 70 W 100 W	+45 dBm min. (32 W) +46 dBm min. (40 W) +47.5 dBm min. (56 W) +49 dBm min. (80 W)
Two Tone Intermodulation		-25 dBc max., -30 dBc typical at 3 dB total backoff from 1dB compression point
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 max. at (P _{1dB})
Noise Figure		10 dB typical at maximum gain, standard 15 dB typical at maximum gain, with Option 7
VSWR	Input, Standard Input, with Option 7 Output	1.20:1 typical, 1.30:1 max. 1.35:1 typical, 1.50:1 max. 1.20:1 typical, 1.30:1 max.
Output Sample Port		-40 dBc typical
Connectors	Input Output Sample Port Serial I/O 1:1 Link Power	Type N Female WR75G Waveguide Type N Female 10-pos MS, mate supplied 6-pos MS, mate supplied 3-pos MS, mate supplied
Power Requirements	Voltage Frequency Power, 40 W Power, 50 W Power, 70 W Power 100 W Power factor corrected	90 to 135 VAC or 180 to 265 VAC 47 Hz min., 63 Hz max. 450 W typical, 575 W max. (1) 475 W typical, 625 W max. (1) 550 W typical, 700 W max. (1) 900 W typical, 1200 W max. (1) 0.97 typical
Cooling System		Forced Air
Operating Temperature Range	Ambient air temperature	-40°C to +50°C
Dimensions	See outline drawing	25.67" H x 16.36" W x 9.52" D; 651.9 mm H x 415.6 mm W x 241.8 mm D
Weight		53 lb (24 kg)

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

Outline Drawing SSPA



Outlin16554

Part Number Ordering Information

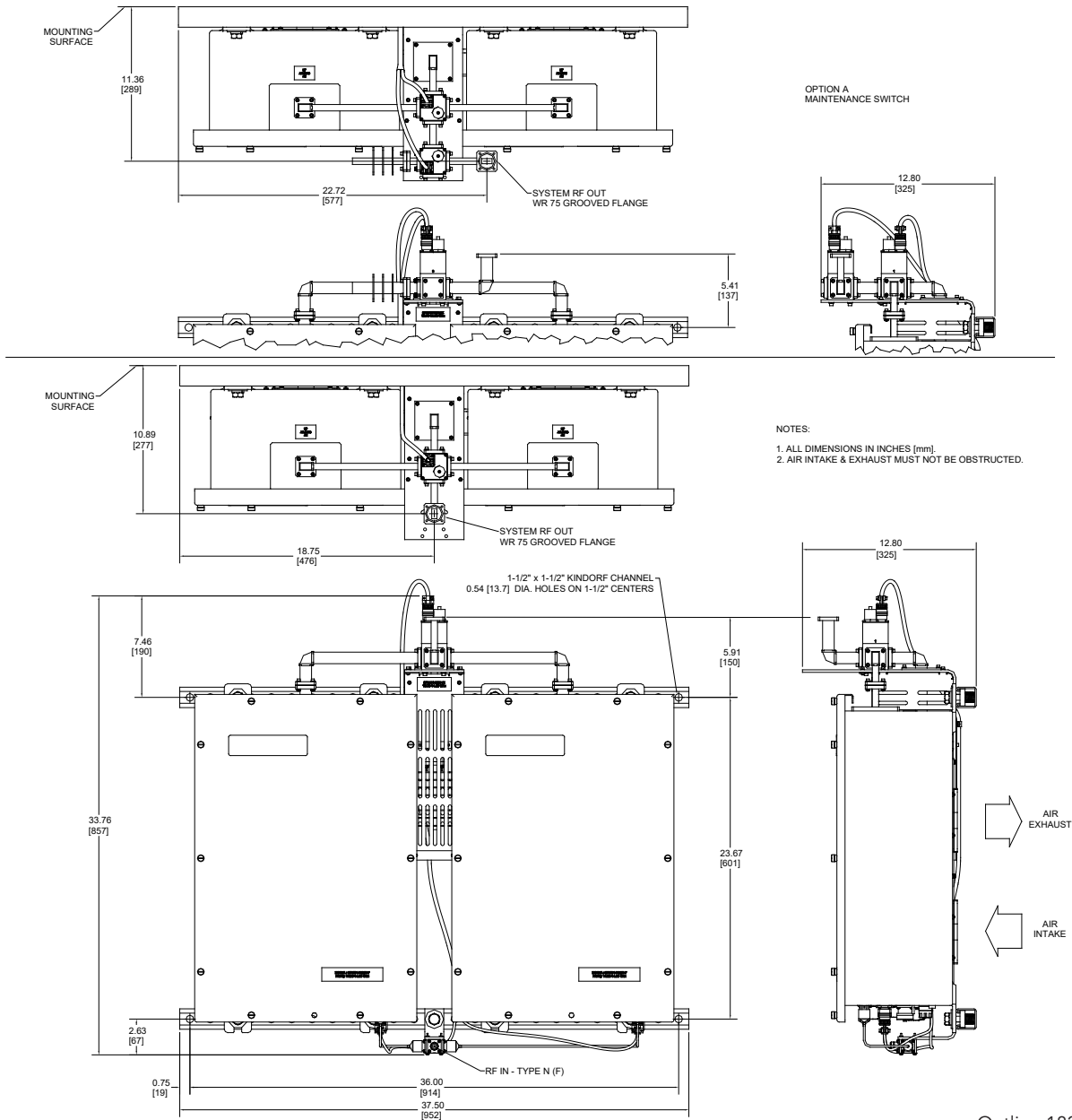
<p>SSPA:</p> <p>Part/Model No. SPK <input type="text"/> 14 <input type="text"/> N-X</p> <p>14.00–14.50 GHz = M 13.75–14.50 GHz = O</p> <p>40 Watts = 040 50 Watts = 050 70 Watts = 070 100 Watts = 100</p> <p>Options: Block Upconverter.....7 L-Band IF Input</p> <p><small>*Performance specifications of a redundant system depend on the installed configuration and optional accessories. Contact the factory for more information and for 1:2 system capabilities.</small></p>	<p>Redundant Systems*: Consists of 1:1 switching assembly, two SSPAs, and interconnecting cables</p> <p>Part/Model No. SPRK1 <input type="text"/> <input type="text"/> N-XX</p> <p>14.00–14.50 GHz = M 13.75–14.50 GHz = O</p> <p>40 Watts = 040 50 Watts = 050 70 Watts = 070 100 Watts = 100</p> <p>Options: Block Upconverter.....7 L-Band IF Input Maintenance Switch.....A Selects antenna or dummy load at system output</p>
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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.

Typical 1:1 System Outline Drawing



NOTES:
 1. ALL DIMENSIONS IN INCHES [mm].
 2. AIR INTAKE & EXHAUST MUST NOT BE OBSTRUCTED.

Outline 18240

Connector Interface

Ref. Des.	Function	Connector Type	Mating Connector	Comment
J1	RF/IF Input	Type N Female	Type N Male	
J2	RF Output	WR75G Waveguide	WR75 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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For more detailed information, please refer to the corresponding CPI technical description if one has been published, or contact CPI. Specifications may change without notice as a result of additional data or product refinement. Please contact CPI before using this information for system design.

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