X-Band Solid-State Power Amplifiers

DPXB8350N, 8400N

Using technology developed for ModuMAX™ amplifiers, these outdoor SSPAs feature a modular architecture with field-replaceable RF assemblies and offer an output power of 350 or 400 watts across the standard 7.90–8.40 GHz satellite uplink band. 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 assemblies
- 350/400 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
- External mute input
- Reflected power monitoring

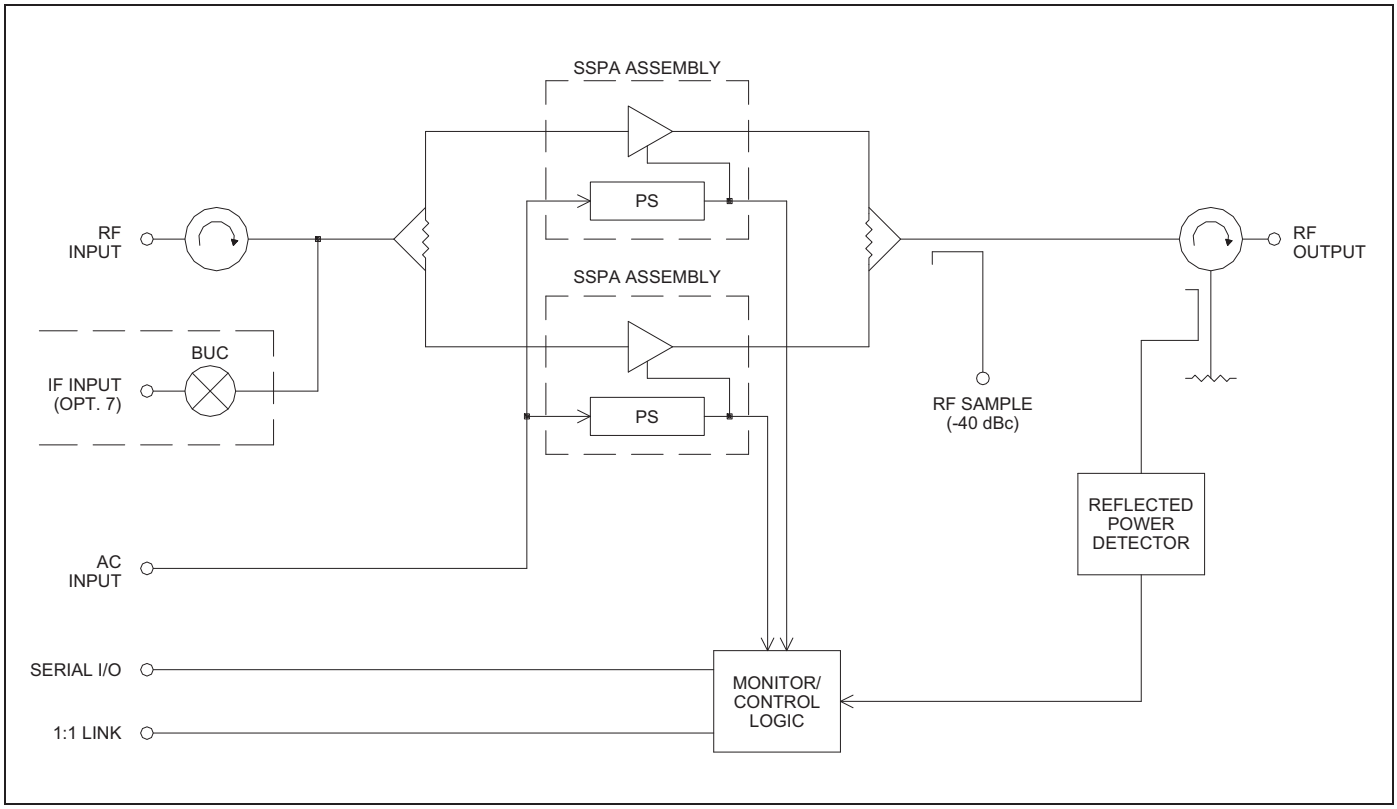
Applications

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

Options

- Block upconverter

Block Diagram



BUY NOW

Digisat International Inc.
4195 W. New Haven Ave., Suite 15
Melbourne, FL 32904
USA
+1-321-676-5250
Email: sales@digisat.org
http://www.digisat.org

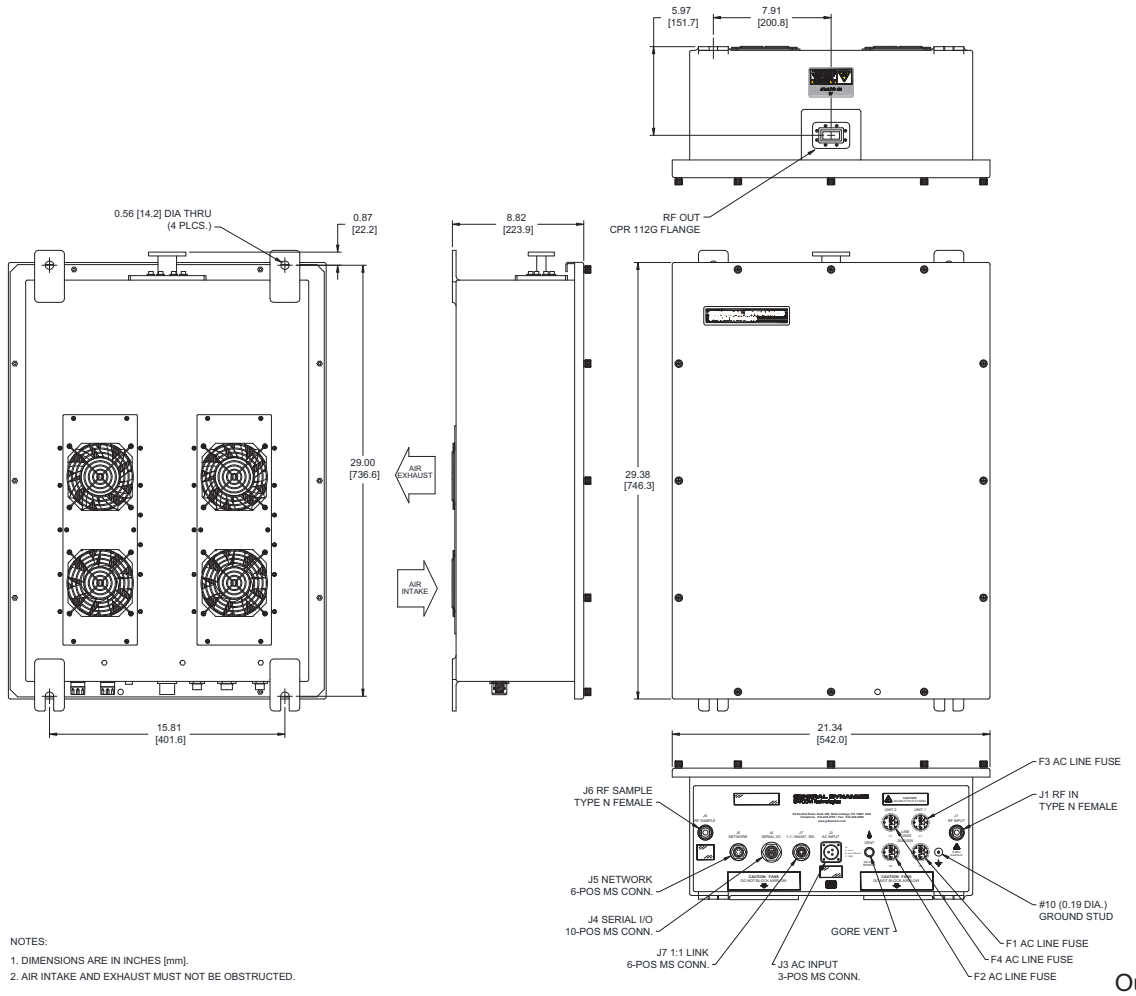
Single-Thread SSPA Specifications

Parameter	Notes	Min	Nom/Typ†	Max	Units
Frequency Range		7.90		8.40	GHz
Input Frequency Range with Option 7, Block Upconverter		950		1450	MHz
Gain, at max. gain setting	Standard With Option 7	70 70		73 75	dB 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			±0.75 ±2.0 ±0.3 ±0.5	dB dB dB dB
Gain Stability vs. Temp.	-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	350 W 400 W		+55.5 (350) +56.0 (400)		dBm (W) dBm (W)
Power Output at 1 dB Compression ($P_{1\ dB}$)	350 W 400 W	+54.5 (282) +55.0 (316)			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 3 dB backoff from $P_{1\ dB}$		1.0	2.0	°/dB
Noise Figure, at max. gain	Standard With Option 7		10 15		dB dB
VSWR	Input, Standard Input, with Option 7 Output		1.25 1.35 1.20	1.30 1.50 1.30	:1 :1 :1
Output Sample Port			-40		dBc
Connectors	Input Output Sample Port Serial I/O 1:1 Link Power		Type N Female CPR112G Waveguide Type N Female 10-pos MS, mate supplied 6-pos MS, mate supplied 3-pos MS, mate supplied		
Power Requirements	Voltage Frequency Power Power factor corrected	180 47	 2000 0.98	264 63 3200[A]	Vac Hz W
Cooling System			Forced air		
Operating Temp. Range	Ambient air temperature	-40		+50	°C
Weight			104 (47)		lb (kg)
Dimensions	See outline drawing		29.38 H x 21.34 W x 8.82 D 746 H x 542 W x 224 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.

[A] Cold start, at -40 °C and P_{OUT} in saturation.

Outline Drawing, SSPA



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

Outline 18773

Part Number/Ordering Information

SSPA:

Part/Model No. **DPXB8□N-X**

- 7.90–8.40 GHz = B
- 350 Watts = 350
- 400 Watts = 400

Options:

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

* 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.

Redundant Systems* (Consists of 1:1 switching assembly, indoor redundancy controller, two SSPAs, and cabling):

Part/Model No. **DPRX1B□N-XX**

- 7.90–8.40 GHz = B
- 350 Watts = 350
- 400 Watts = 400

Options:

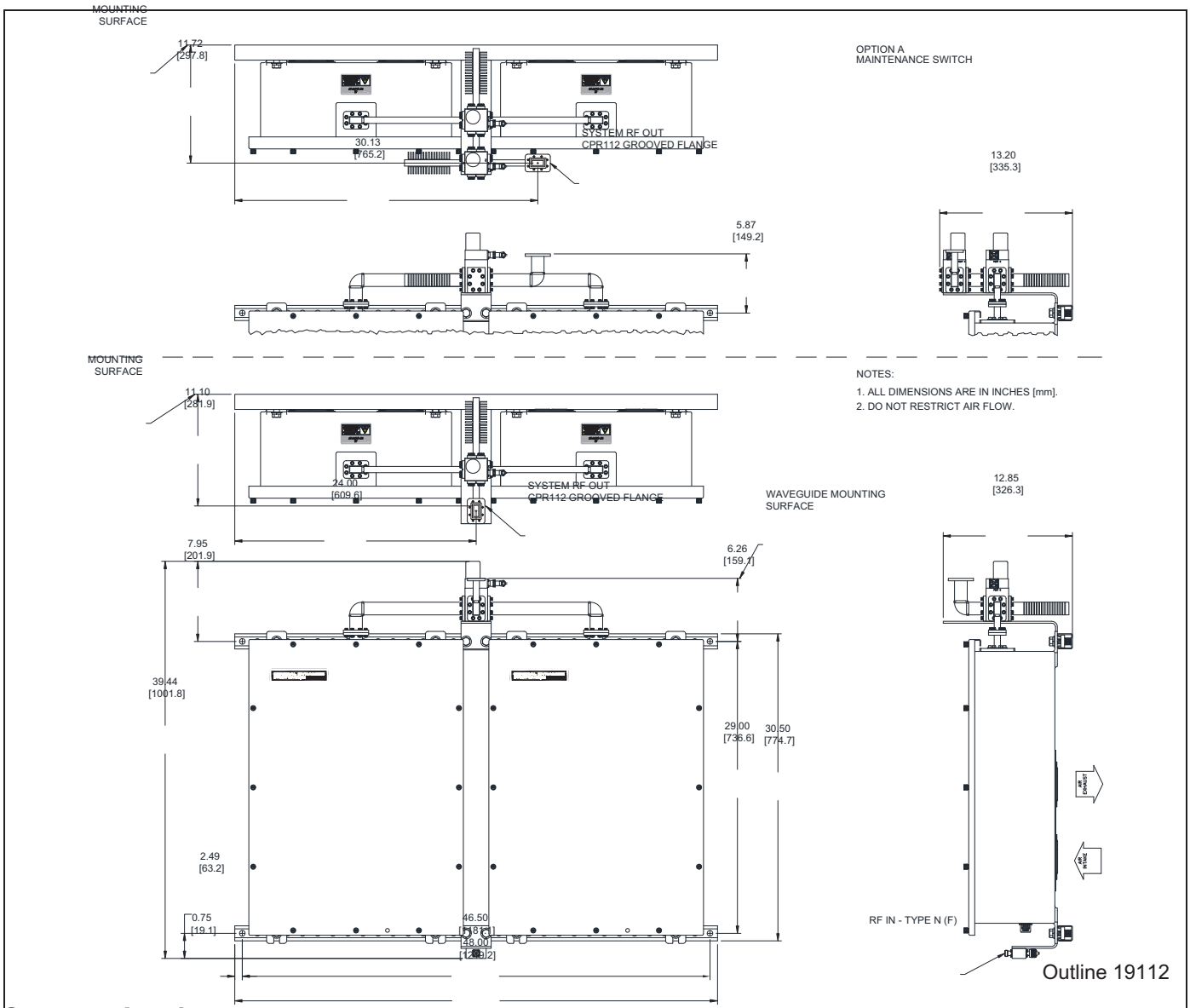
Block Upconverter 7
L-Band IF Input

Maintenance Switch.....A
Selects antenna or dummy load at system output

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



Outline 19112

Connector Interface

Ref. Des.	Function	Connector Type	Mating Connector	Comment
J1	RF/IF Input	Type N Female	Type N Male	
J2	RF Output	CPR112G Waveguide	CPR112 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

GENERAL DYNAMICS
SATCOM Technologies