### **GENERAL DYNAMICS**

SATCOM Technologies

# SPCD, SPCM6xxxN

### 6 GHz Solid-State Power Amplifiers

Using technology developed for VertexRSI's ModuMAX<sup>™</sup> amplifiers, these outdoor SSPAs feature a modular architecture with field-replaceable RF assemblies and offer output powers of up to 250 watts across the standard 5.850–6.425 GHz or extended 5.850–6.725 GHz satellite uplink bands. Housed in a weatherproof NEMA-4 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 100/125/200/250 W saturated output power Microprocessor-based monitor and control VertexR 0 ً⊛ 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** 0 0 Stand-alone SSPA • 1:1 redundancy Options Block upconverter ً⊛ 0 MODEL: SPCX6XXXN REQ: XX.XX - XX.XX GH



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Parameter	Notes	Min Nom/Typ <sup>†</sup>	Max	Units		
Frequency Range	Band "D"	5.850	6.425	GHz		
Input Frequency Range with	Band "D"	950	0.725	GHZ MHz		
Option 7, Block Upconverter	Band "M"	950	1825	MHz		
Gain, at maximum gain setting		70		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		±1.0 ±1.5 ±0.3 ±0.5	dB dB dB dB		
Gain Stability vs. Temperature	-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	100 W 125 W 200 W 250 W*	+50 (100) +51 (125) +53 (200) +54 (250)		dBm (W) dBm (W) dBm (W) dBm (W)		
Power Output, at 1 dB compression (P <sub>1 dB</sub> )	100 W 125 W 200 W 250 W*	+49.5 (89) +50.5 (112) +52.0 (158) +53.0 (200)		dBm (W) dBm (W) 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/MHz² ns p-p		
AM/PM Conversion	At P <sub>1 dB</sub>	2.5	3.5	°/dB		
Noise Figure	At maximum gain, standard At max. gain, with Option 7	8 20		dB dB		
VSWR	Input	1.20	1.30	:1		
	Input, with Option 7	1.35	1.50 1.30	:1 •1		
Output Sample Port	Output	-40	1.50	dBc		
Connectors	Input	Type N Female				
	Output	CPR137G Waveguide				
	Sample Port Serial I/O 1:1 Link Power	I ype N Female 10-pos MS, mate supplied 6-pos MS, mate supplied 3-pos MS, mate supplied				
Power Requirements	Voltage	90-135 or 180-265	5	Vac		
	Frequency Power, 100 W Power, 125 W	47 650 800	63 900 <sup>A</sup> 1200 <sup>A</sup>	Hz W W		
	Power, 200 W Power, 250 W* Power factor corrected	950 1000 0.97	1400 <sup>A</sup> 1500 <sup>A</sup>	W W		
Cooling System		Forced air				
Operating Temperature Range	Ambient air temperature	-40	+50	°C		
Weight	Approximate	53 (24)		lb (kg)		
Dimensions	See outline drawing	16.36 W x 25.67 H x 9.52 D 415.6 W x 651.9 H x 241.8 D		inches mm		
<sup>†</sup> 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 250 W extended band (Band "M").

<sup>A</sup> Cold start, at -40 °C and Pout in saturation.

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#### Part Number/Ordering Information





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#### **Connector Interface**

Ref. Des.	Function	Connector Type	Mating Connector	Comment	
J1	RF/IF Input	Type N Female	Type N Male		
J2	RF Output	CPR137G Waveguide	CPR137 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	

Vertex RSI<sup>®</sup>

18301 Rev. A ECR 8621 1/28/08 MSI Specifications are subject to change at VertexRSI's discretion.

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