

MODEL NUMBER:
SS250M-500

SOLID STATE HIGH POWER AMPLIFIER



FEATURES

- Designed for EMI/RFI, lab, CW/Pulse and all communication applications
- Small form factor, rack mounted system
- Class A/AB Linear design
- High Power Advanced technology devices
- Instantaneous ultra-wide bandwidth
- Built-in protection circuits, with extensive monitoring
- Local LCD & remote flexible interfaces
- High efficiency, with unprecedented reliability and ruggedness

ELECTRICAL SPECIFICATIONS: 25°C, 50Ω

PARAMETER	SPECIFICATION	NOTES
Operating Frequency Range	10 kHz - 250 MHz	
Power Output @ Psat	500 Watt Min	Less than 0dBm for rated Pout
Power Output @ P1dB	300 Watt Typ	
Power Gain	57 dB Min	
Power Gain Flatness	3 dB p-p Max	Constant input power
Gain Adjustment Range	20 dB Min	Local or remote capable
Input / Return Loss	-10 dB Max	Relative to 50 Ohm
2-Tone Intermodulation (IMD)	-30 dBc Typ	47 dBm/Tone, Δ = 1 MHz
Harmonics	-20 dBc Typ	At rated output power
Spurious	-60 dBc Max	Non-harmonics
Operating Voltage	180 - 240 VAC	47 - 63 Hz
Power Consumption	4500 Watt Max	At rated output
Input Power Protection	+10 dBm Max ¹	
Load VSWR Protection	4 : 1: Max ²	Foldback @ preset limit
Sample Port Coupling (optional)	-50 dB	N-Female

1 Units with optional digital monitor and control, for basic units <10 Sec without damage

2 Units with optional digital monitor and control, for basic units <1 minute at rated Pout

ENVIRONMENTAL CHARACTERISTICS

PARAMETER	SPECIFICATION	NOTES
Operating Ambient Temperature	0 to +50 °C	
Storage Temperature	-40 to +85 °C	
Relative Humidity	up to 95 %	Non-condensing
Altitude	3000 meters	
Shock & Vibration	Normal transport ³	

3 MIL Spec available for quotation

MECHANICAL SPECIFICATIONS

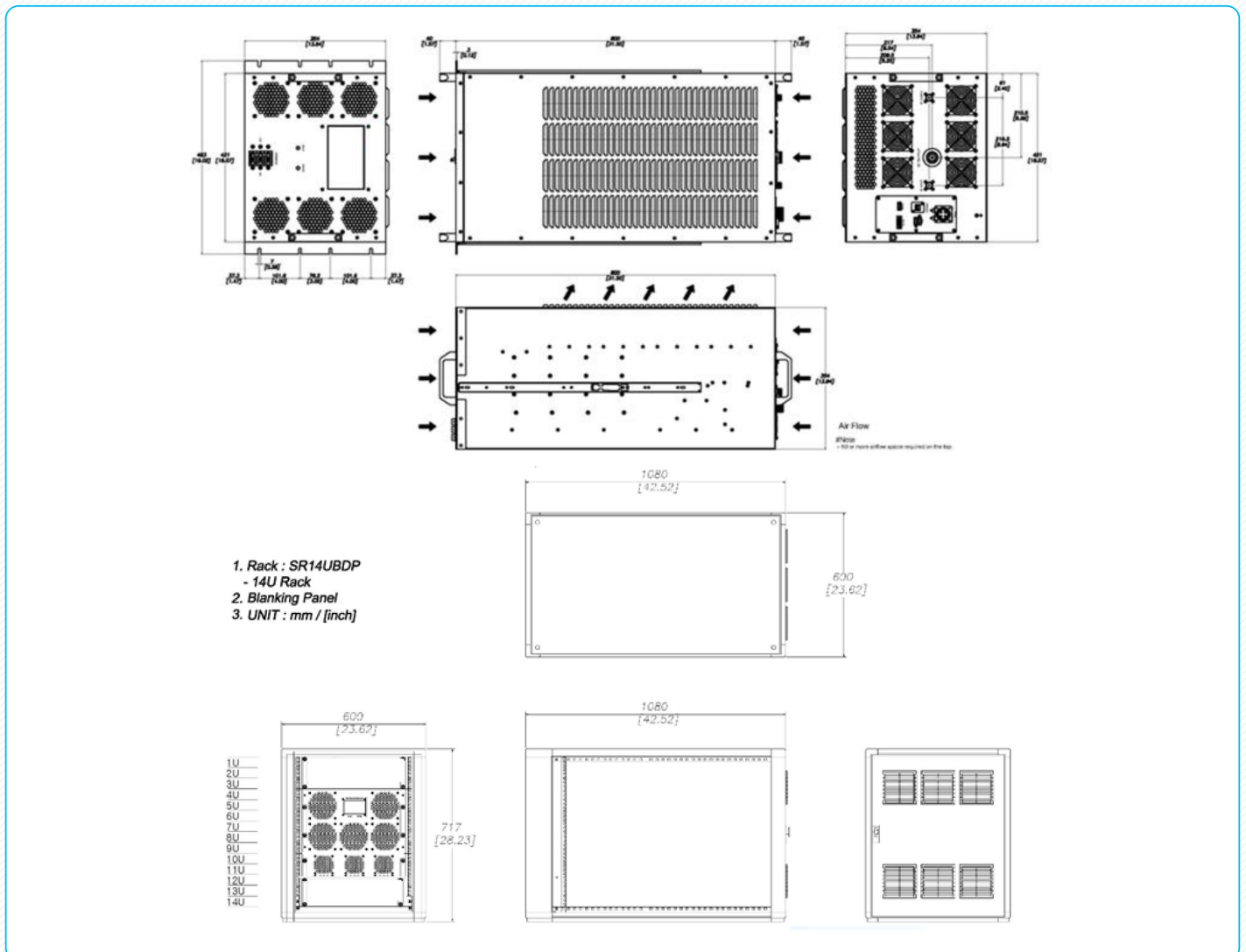
PARAMETER	SPECIFICATION	NOTES
Dimensions W x H x D	430 x 354 x 820 mm	8U - excluding handles
Weight	47 Kg.	
RF Conn. In / Out / Sample	N-Female	Front or Rear Panel
Interface Connector	9-Pin D-Sub	Rear panel
AC Power	MS Connector	Or equivalent (IEC Connector)
Cooling	Built in Fan Cooling	Open=STBY/Short=RFON
Safety Interlock Connector	D-Sub (Optional BNC female)	Variable speed
OPTIONAL: Digital Monitor & Control FWD, REV, VSWR, GAIN, ALC, V & I, TEMP	Ethernet RJ-45 TCP/IP, RS422/485 Optional GPIB Interface	

AVAILABLE SPECIAL OPTIONS

PARAMETER	SPECIFICATION	NOTES
Rack Cabinet Integration	Cabinet Height with Wheels specified at time of order (Optional lifting rings available)	Option RI: (quoted separate)

OUTLINE DRAWING

SHOWN WITH OPTIONAL LCD DIGITAL CONTROLLER



ACCEPTANCE TEST RESULTS

Date	Job No.	Model	Serial No.	Frequency	Output Power	Gain
2022-05-12	2110070	SS250M-500	10005	0.01 - 250MHz	500W	57dB

Power amplifier final test	Test	Verify	QA	Approve
	JG	JR	HS	N/A

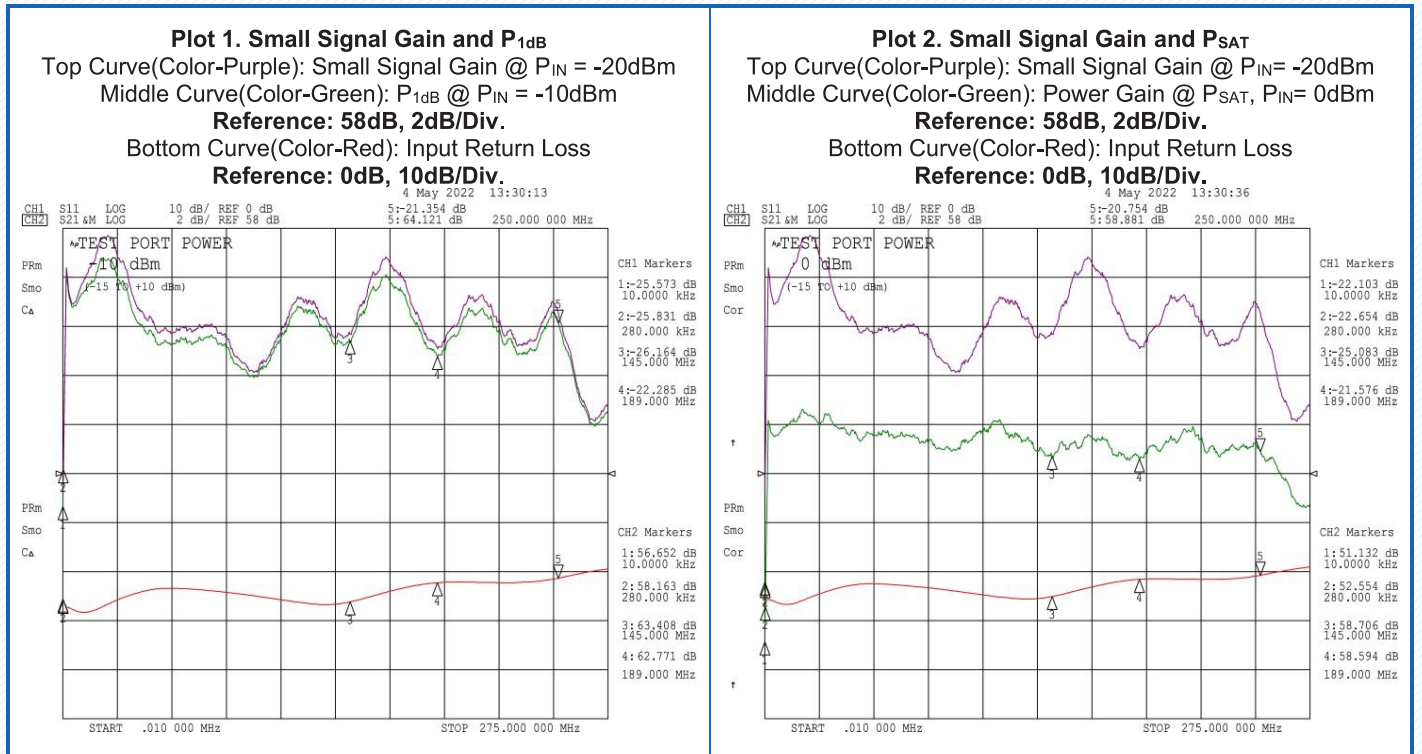
ELECTRICAL SPECIFICATIONS: -20C □, 25C □, 75C □

No.	PARAMETER	SPECIFICATION	TEST RESULTS (MHz)					NOTES	P/F
			0.01	0.28	145	189	250		
1	Operating Frequency - Plot 3dB BW	0.01 - 250MHz	x	x	x	x	x	Plot 1	P
2	Output Power @ Rated Input	500W Min.	609.5	1106.6	734.5	679.2	687.1	Plot 2 Record	P
3	Output Power @ 1dB G.C.P.	300W Typ	415.0	576.8	387.3	306.2	369.0	Plot 1 Record	P
4	Power Gain	57dB Min	x	x	x	x	x	Plot 2	P
5	Small Signal Gain Flatness	Ref. Only(dB)	x	x	x	x	x	Plot 1,2	P
6	Input Power Flatness at Rated Pout	Ref. Only(dBm)	-1.8	-9.1	-5.2	-3.7	-5.4	Record	P
7	Power Gain Flatness @ rated input power	3dB p-p Max	57.85	60.44	58.66	58.32	58.37	Plot 2	P
8	Input Return Loss	S11: 10dB Min	x	x	x	x	x	Plot 1,2	P
9	Inter-modulation Distortion (3rd Order Intercept) 2-tones @ 47dBm/Tone, Δ = 1MHz	IMD: -30dBc Typ	x	x	-32.58	-28.84	-31.01	Record	P
		IP3: +62dBmTyp	x	x	63.29	61.42	62.51	Calculated	P
10	Harmonics @ rated output power	2 nd : -20dBc Typ	-33.69	-19.95	-31.29	-17.78	-35.98	Record	P
11		3 rd : -20dBc Typ	-42.32	-34.78	-34.59	-32.95	-33.79		P
12	Spurious Signals (Non-harmonics)	-60dBc Max	<-60	<-60	<-60	<-60	<-60	Record	P
13	Noise Figure	Ref. Only(dB)	x	x	12.67	12.71	12.78	Record	P
14	Operating Voltage	100 - 240VAC	220					Verify	P
15	Power Consumption @ Rated Power	4500Watts Max	1610.4	1674.2	1678.6	1843.6	1683.0	Record	P
16	Idle Power Consumption	Ref. Only(W)	1447.6					Record	P
17	Power Consumption @ Shutdown	Ref. Only(W)	418.0					Record	P
18	Gain Adjustment Range	20dB	x	x	x	x	x	Plot 3	P
19	Input Overdrive @ +3dBm Max	Pout W	x	x	x	x	x	Record	N/A
20		Pd W	x	x	x	x	x		
21	Forward Sampling @ 500W Output Power	Ref. Only(dBm)	10.95	10.77	11.19	11.21	11.40	Record	P
CONTROLLER FUNCTION									
22	Over Temperature Alarm	70 - 75°C	Verified					Verify	P
23	Module Operating mode Test	Built-In	Verified					Verify	P
24	Protection Against excess Output VSWR	Built-In	Shutdown @ 4:1					Record	P
25	Protection Against RF input over drive	Built-In	Shutdown @ +3.0dBm					Record	P
26	Protection Against Over Temperature	Built-In	Shutdown @ 70°C					Record	P
27	Protection Against Over and under Voltage	Built-In	Shutdown @ +38.0V ± 2.0VDC					Record	P
28	Protection Against Over Current	Built-In	Shutdown @ 20A					Record	P
29	Protection Against Over Output Power	Built-In	Shutdown @ 58.5dBm					Record	P
30	Remote control via Serial, USB, LAN and GPIB	Built-In	Verified					Verify	P

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2022-05-12	2110070	SS250M-500	10005	0.01 - 250MHz	500W	57dB

31	Fans Operation Test	Built-In	Shutdown @ +14.0V ± 13.0V	Verify	P
32	Fault LED Indicator Operation Test	Built-In	Verified	Verify	P
33	LCD Display Operation Test	Display, Fault, Touch	Verified	Verify	P
34	RF Connectors In/Out/Sample	N-type Female / N-type Female / N-type Female	Verified	Verify	P
35	AC Power Connector	IEC60320-14	Verified	Verify	P

DATA PLOTS



Date	Job No.	Model	Serial No.	Frequency	Output Power	Gain
2022-05-12	2110070	SS250M-500	10005	0.01 - 250MHz	500W	57dB



RS-422 D-SUB CONNECTOR PIN ASSIGNMENT

Pin	Function	Test Results
1	RXD-	Received Data -
2	RXD+	Received Data +
3	TXD+	Transmit Data +
4	TXD-	Transmit Data -
5	GND	Ground
6	N/A	N/A
7	N/A	N/A
8	N/A	N/A
9	N/A	N/A

TEST EQUIPMENTS

No.	EQUIPMENT	MODEL	NOTES
1	Network Analyzer	8720ES	
2	Signal Source	E8257D	
3	NFA Series Figure Analyzer	N8975A	
4	Spectrum Analyzer	E4407B	
5	Power Meter	E4418B	

