

High Power Amplifier, Solid State, Broadband 100-500MHz, 60dB Gain, N Female Connectors, 1kiloWatt

RAMP-100-500M-60d-Nf-1kW-e7



This amplifier utilizes high power push-pull MOSFET devices that provide high gain, wide dynamic range, low distortions and good linearity

- Solid-state linear design
- Instantaneous ultra broadband
- Suitable for most modulation standards (AM, FM, PM, Pulse, Digital)
- Modular design
- 50 ohm input/output impedance
- Built in Control, Monitoring and Protection functions
- Highly rugged and ruggedness

ELECTRICAL SPECIFICATIONS @ 208 VAC, 3Ø, 25°C, 50 Ω System

Parameter	Symbol	Min	Typ	Max	Unit
Frequency Response	BW	100		500	MHz
Power Output CW	PSAT	1100	1200		Watt
Output Power @ 1 dB Gain Compression Point	P1dB	800	1000		Watt
Power Gain @ 1 dB Gain Compression Point	G1dB	60			dB
Input Power for Rated Pout	PIN			1.0	dBm
Gain Flatness / Leveled ALC	ΔG			±2.0 / ±0.5	dB
Gain Adjustment Range	VVA	20	25		dB
Input Return Loss	S11			-10	dB
Noise Figure @ maximum gain	NF		10		dB
Third Order Intercept Point	IP3		+69		dBm
Harmonics @ 100-200 MHz, 200-500 MHz	2 nd		-40	-30	dBc
	3 rd		-15		
Spurious Signals	Spur			-70	dBc
Supply Voltage (3 phase)	VAC	180	208	260	Volt
AC Power Consumption @ 1000 W CW	PD			5000	Watt

MECHANICAL SPECIFICATIONS

Parameter	Value	Units	Limits
Dimensions	17 x 14 x 22 (432 x 35 x 560)	Inch (mm)	Max
Weight	150	lb.	Max
RF Connectors, Input/Output	Type-N female / SC-Type Female		
Cooling	Built in forced-air system		

ENVIRONMENTAL CHARACTERISTICS

Parameter	Symbol	Min	Typ	Max	Unit
Operating Case Temperature	Tc	0		50	°C
Non-operating Temperature	Tstg	-40		+85	°C
Relative Humidity (non-condensing)	RH			95	%
Altitude (MIL-STD-810F Method 500.4)	ALT	10,000		30,000	Feet
Shock / Vibration (MIL-STD-810F Method 516.5)	SH / VI	Airborne			

PROTECTIONS

Input Overdrive	+10 dBm	Max
Load VSWR @ Pout = 80W	∞ @ any angle & magnitude	Nom
Thermal Overload	85°C shutdown	Max

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Specifications may be subject to change

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SELECTED AVAILABLE OPTIONS

Option	Description
FGA	Front panel manual gain adjustment 10 turns
LCD	Local: Front panel touch screen color LCD controller including Fwd/Rev Power indication (dB or Watt scale), VSWR, RF Gain, Gain Adjustment, ALC Fast/Slow & On/Off, Standby mode, Fault indication, Fault reset. Remote: Rear panel HPIB IEEE-488.2 or full duplex RS232 serial interface. Note: Output Power is lowered by 0.5 - 0.75 dB with this option.
ACC	208 VAC, 3-Phase, 50-400 Hz
DCC	28 VDC external voltage source, steady state voltage range of 24-29 VDC, ripple (10-1000 Hz) ± 2 V max within above range. To be undamaged by steady state voltage in the range of 18-29 Vdc, over-voltage surges of +80 VDC for 100 mSec, under-voltage surges of +8 VDC for 50 mSec, and voltage spikes of ± 600 V for μ Sec for both polarities.
INT	Rear Panel Interlock function – Blanking via TTL Command
	Rear Panel 7/16 output available upon special request.

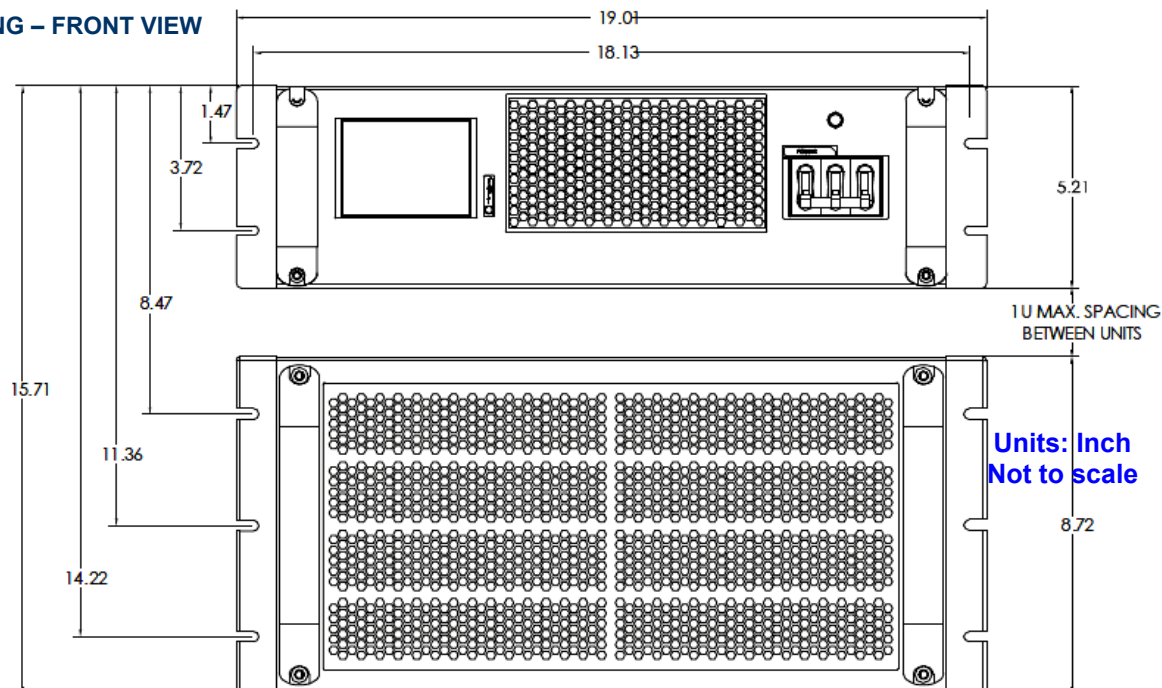
INTERFACE CONNECTOR – D-Sub, 9-Pin

Pin #	Description	Specifications
1	Forward Test Point	Analog Voltage 0-5 V Test Point relative to Forward Power Output
2	Reverse Test Point	Analog Voltage 0-5 V Test Point relative to Reverse Power
3	+5 V Test Point	Measurement Voltage Output 5 V
4	N/C	Reserved
5	EXT Shutdown	Disable: TTL High (5 V) Enable: TTL Low (0 V) or Open or Ground
6	+12 V (Test Point)	Measurement Voltage Output 12 V Test Point
7	PS+ (Test Point)	Measurement Voltage Output 28 V Test Point
8,9	GND	Ground

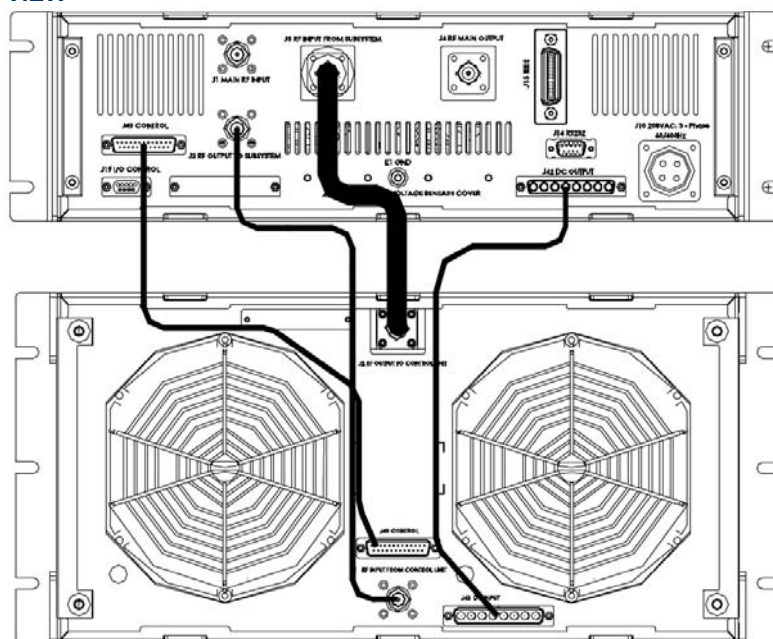
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OUTLINE DRAWING – FRONT VIEW



OUTLINE DRAWING – REAR VIEW



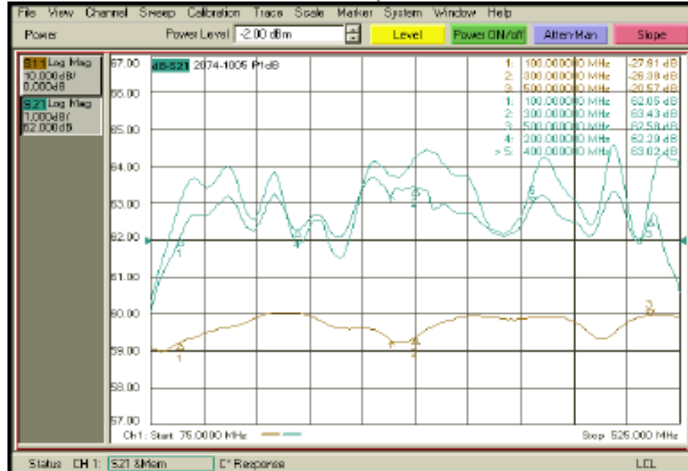
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TYPICAL PERFORMANCE PLOTS

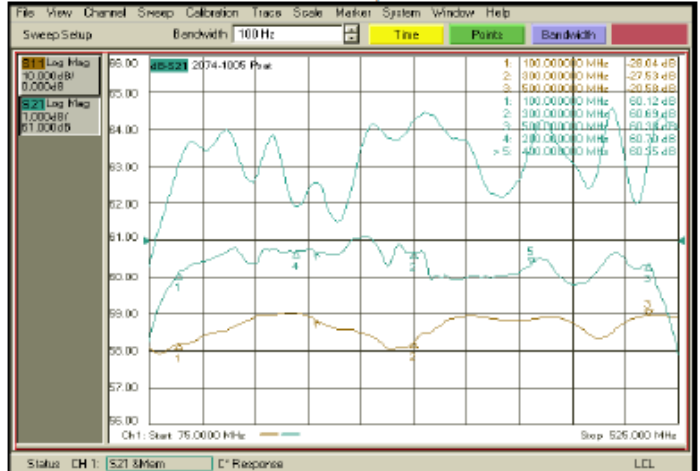
Plots 1 - Small Signal and P_{1dB} Gain

Top Curve: Small Signal Gain @ $P_{IN} = -20dBm$
Middle Curve: Power Gain @ P_{1dB} , $P_{IN} = -1.0dBm$
Reference: 62dB, 1dB/Div.
Bottom Curve: Input VSWR
Reference: 0dB, 10dB/Div.



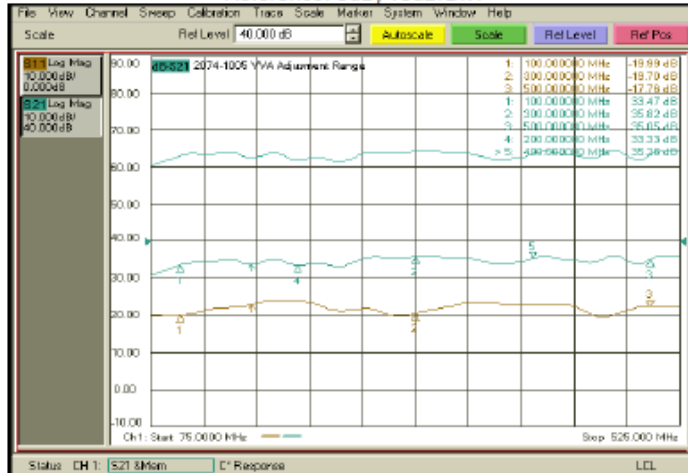
Plot 2 - Small Signal and P_{SAT}

Top Curve: Small Signal Gain @ $P_{IN} = -20dBm$
Middle Curve: P_{SAT} @ $P_{IN} = 1.0dBm$
Reference: 61dB, 1dB/Div.
Bottom Curve: Input VSWR
Reference: 0dB, 10dB/Div.



Plot 3 - Gain Adjust Dynamic Range

Top Curve: Maximum Gain @ $P_{IN} = -20dBm$
Middle Curve: Minimum Gain
Reference: 40dB, 5dB/Div.
Bottom Curve: Input VSWR
Reference: 0dB, 10dB/Div.



Plot 4 - ALC Flatness @ 500W & 100W

Top Curve: ALC @ 500W, $P_{IN} = 0dBm$
Middle Curve: ALC @ 100W, $P_{IN} = 0dBm$
Reference: 53dB, 2dB/Div.
Bottom Curve: Input VSWR
Reference: 0dB, 10dB/Div.

