EMPOWER
RF SYSTEMS, INC.

Solid State Matched Band High Power Amplifier

6012 - MBS6C6KVT

3100 – 3500 MHz / 1300 Watts Pulse

The model MBS6C6KVI (SKU 6012) is suitable for high power S-Band pulse applications. This rack mount amplifier utilizes pulse power devices that provide high gain and excellent Pulse output power performance. Long-term reliability and high efficiency are achieved by employing advanced broadband matching networks and combining techniques, high quality PFC power supply, EMI/RFI filters, machined housing, and all qualified components. Empower RF's ISO9001 Quality Assurance Program assures consistent performance and the highest reliability.

Shown with option package 07

- Solid-state Class AB linear pulse design
- Instantaneous broadband
- Suitable for Pulse applications
- Built-in control, monitoring & protection circuits
- 50 ohm input/output impedance
- High reliability and ruggedness
- Isolator output protection

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

Characteristics	Rating	Min	Typ	Max	Units
Frequency Response	BW	3100		3500	MHz
Power Output @ Pulse conditions Duty Cycle = 5% Pulse Width = 2 - 64uSec	P_{PULSE}	1300			Watt
Pulse Power Variation (relative to mid pulse power)	P_{PPV}			±0.5	dB
Input Power for Rated Output	P_{IN}	23	24	25	dBm
Power Gain @ 1300W Pulse	G_P	38			dB
Output power flatness	ΔG			2	dB
Input/Output VSWR @ 50Ω	S11/S22			2:1	-
Noise Figure @ maximum gain	NF		10		dB
Harmonics	H		-30		dBc
Spurious Signals	Spur		-70	-60	dBc
Supply Voltage, Single Phase (50/60Hz)	VAC	100	208	240	Volt
Power Consumption @ 1300W peak (5% Duty)	P_D			900	Watt
Switching Speed (On/Off)	SW			1	uSec

MECHANICAL SPECIFICATIONS

Parameter	Value	Unit
Dimensions W x H x D (R3U)	19 x 5.25 x 22	Inch
Weight	50	lb.
RF Input Connector	SMA Female (Front)	
RF Output Connector	Type-N Female (Front)	
AMP OFF control connector	Dsub-9 pins (Rear)	
Cooling	Built in forced-air system	

ENVIRONMENTAL SPECIFICATIONS

Parameter	Symbol	Min	Typ	Max	Unit
Operating Temperature	Tc	-20		+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

PROTECTIONS

Input Overdrive	+10 dBm	Max
Load VSWR @ nominal peak power	∞ : 1 any angle & magnitude	Nom
Thermal Overload	85°C shutdown	Max
Duty Cycle Control	10%	Max

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SELECTED AVAILABLE OPTIONS (Refer to **www.empowerrf.com** for complete options listing)

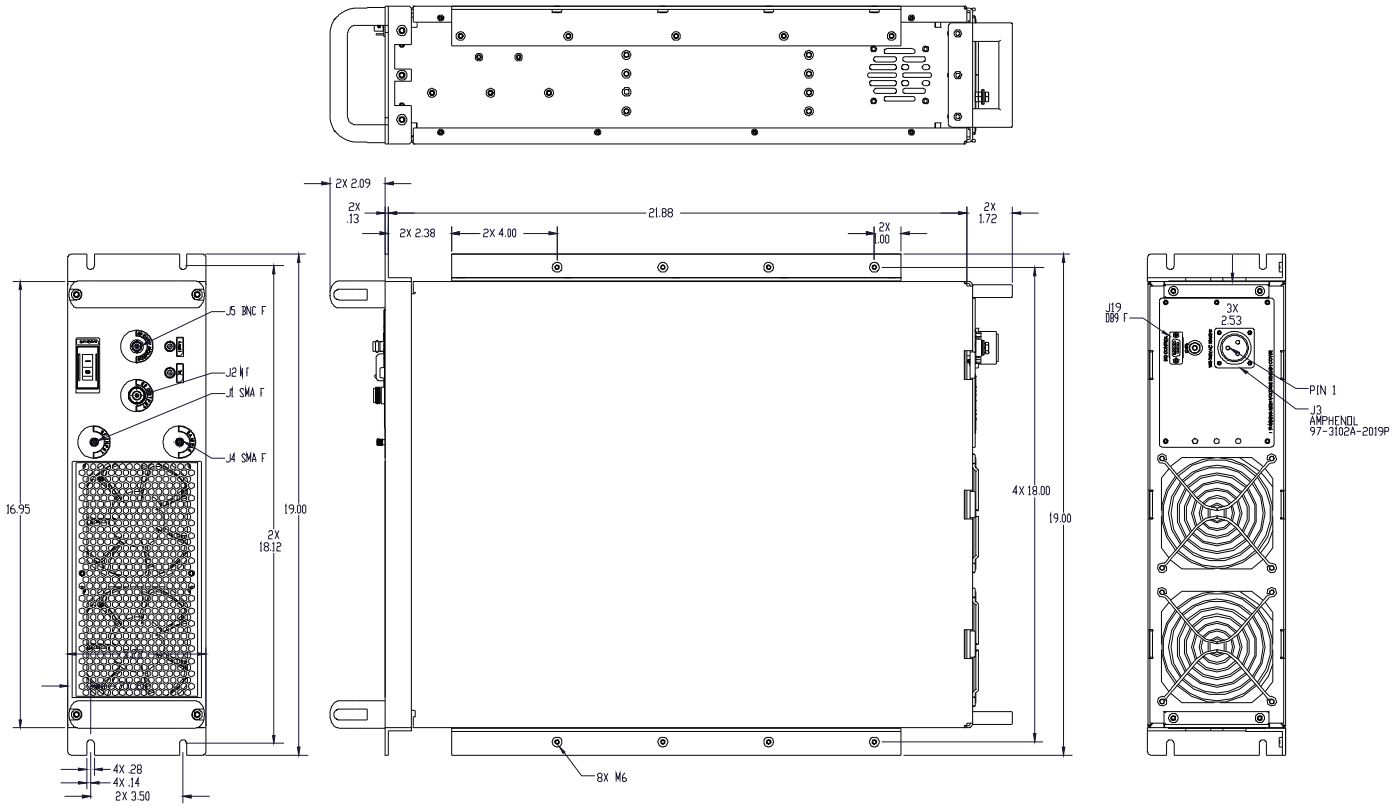
Option	Number	Description
LCD	**062**	Touchscreen Digital Display, including Fwd/Rev Power indication (dB or Watt scale), On/Off, Standby mode, Fault indication, Rear panel HPIB IEEE-488.2 or Full Duplex RS232 remote interface. **Note: Output Power is lowered by 0.5 - 0.75 dB with this option.**
FCN	**051**	Front Panel Type-N female
RCN	**052**	Rear Panel Type-N female
FSP	**053**	Front Panel SMA-F Sample Port
RSP	**054**	Rear Panel SMA-F Sample Port

Available Options Packages: 07, 08, 09, 10

I/O CONNECTOR

Pin No.	DESCRIPTION	SPECIFICATION
1	External Shutdown	TTL “Low” = PA Enable TTL “High” = PA Disable
2	GND	Ground
3	Reserved	N/A
4	Reserved	N/A
5	Reserved	N/A
6	Reserved	N/A
7	Reserved	N/A
8	Temperature Alarm - LED FAULT “ON”	TTL “LO” = Alarm ON & TTL “HI” Alarm OFF
9	GND	Ground

OUTLINE DRAWING - SHOWN WITH OPTION PACKAGE 07



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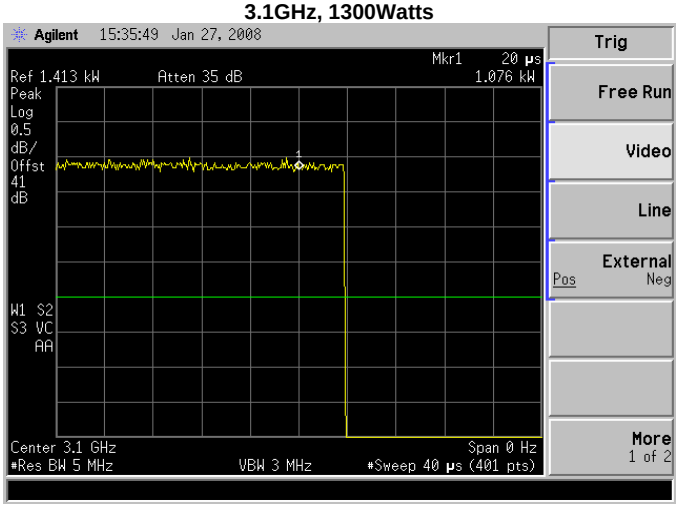
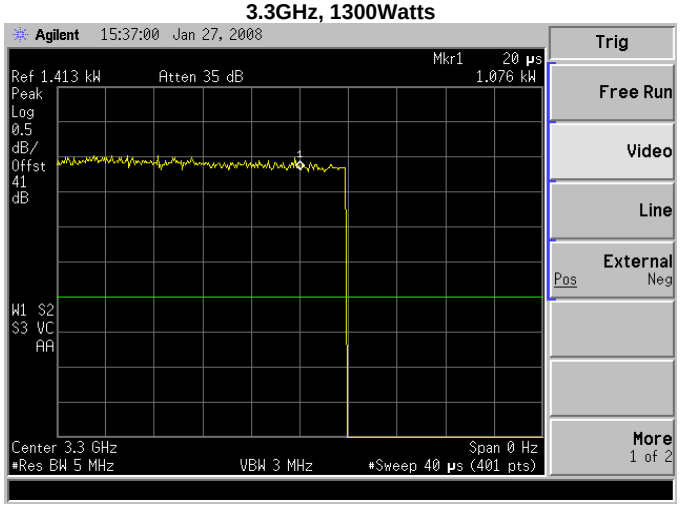
TYPICAL PERFORMANCE PLOTS

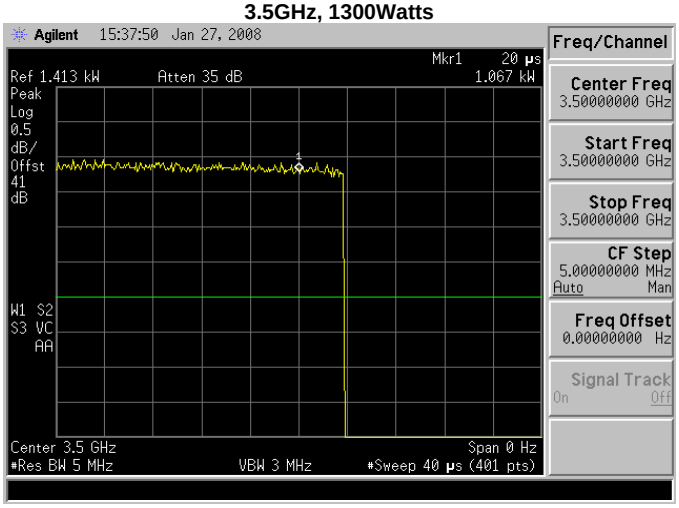
Plot 3
3.1GHz, 1300Watts



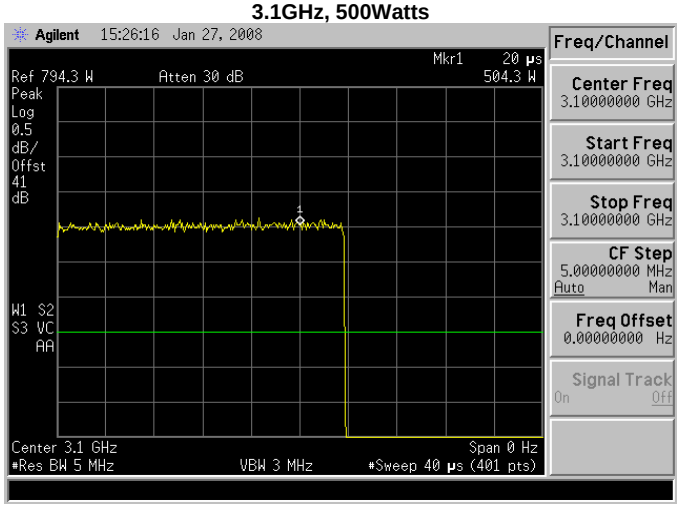
Plot 4
3.3GHz, 1300Watts



Plot 5
3.5GHz, 1300Watts



Plot 6
3.1GHz, 500Watts



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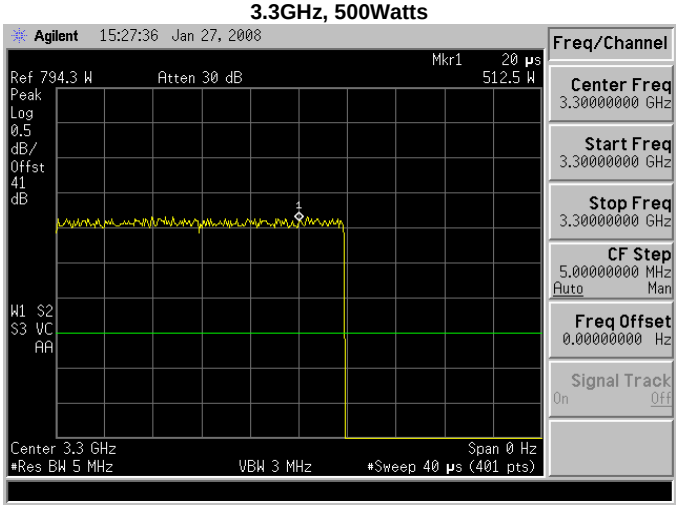
Plot 7
3.3GHz, 500Watts



Plot 8
3.5GHz, 500Watts

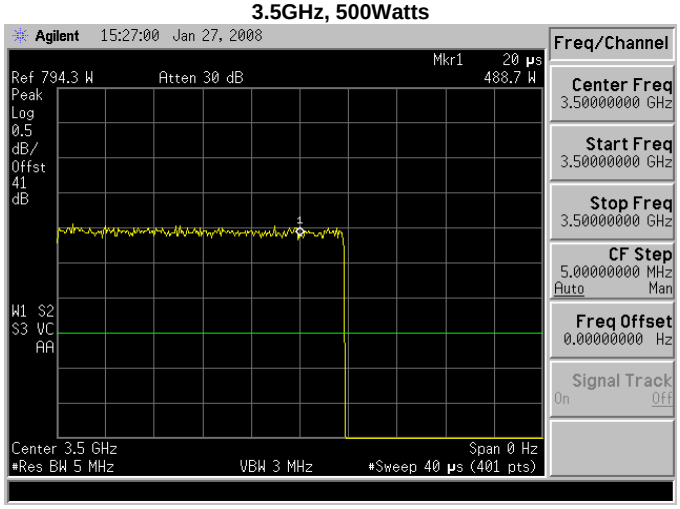


Table 1: Data Measured at Ambient temperature, 5% Duty Cycle at specified Pulse width, 115VAC, 60Hz.

Parameters	Frequency									Units	Pulse Width
	3100	**3150**	**3200**	**3250**	**3300**	**3350**	**3400**	**3450**	**3500**	MHz	**[uSec]**
Power _Out	2090	2180	2480	2580	2500	2380	2360	2300	2030	Watt pk	
AC Current	6.70	7.00	7.30	7.40	7.50	7.55	7.60	7.60	7.20	Amp._avg.	**2**
RF_V_Mon.	5.80	6.00	6.50	6.65	6.80	6.90	6.85	6.90	6.55	Volts pk.	
P_Out	2070	2150	2460	2550	2490	2350	2320	2290	2010	Watt pk	
AC Current	6.75	6.95	7.10	7.30	7.50	7.55	7.60	7.60	7.10	Amp._avg.	**10**
RF_V_Mon.	5.80	6.00	6.50	6.65	6.80	6.90	6.85	6.90	6.55	Volts pk.	
P_Out	2060	2140	2420	2530	2480	2330	2300	2280	2000	Watt pk	
AC Current	6.00	6.20	6.50	6.65	6.75	6.80	6.90	6.75	6.40	Amp._avg.	**20**
RF_V_Mon.	5.85	6.10	6.50	6.55	6.80	6.85	6.80	6.80	6.50	Volts pk.	
Power _Out	2040	2110	2390	2500	2440	2290	2270	2250	1980	Watt pk	
AC Current	6.20	6.20	6.70	6.75	6.90	6.90	7.0	6.90	6.55	Amp._avg.	**30**
RF_V_Mon.	5.75	5.90	6.45	6.55	6.70	6.80	6.80	6.80	6.40	Volts pk.	
P_Out	2030	2100	2380	2470	2430	2270	2260	2230	1970	Watt pk	
AC Current	5.90	6.10	6.40	6.50	6.60	6.65	6.75	6.60	6.30	Amp._avg.	**40**
RF_V_Mon.	5.70	5.80	6.40	6.50	6.70	6.75	6.80	6.80	6.40	Volts pk.	
P_Out	2020	2080	2350	2450	2400	2250	2240	2200	1950	Watt pk	
AC Current	6.00	6.10	6.45	6.50	6.65	6.60	6.75	6.65	6.30	Amp._avg.	**50**
RF_V_Mon.	5.75	5.90	6.40	6.50	6.70	6.80	6.80	6.80	6.50	Volts pk.	
Power _Out	2050	2100	2350	2460	2410	2260	2230	2220	1950	Watt pk	
AC Current	5.85	6.00	6.25	6.30	6.50	6.50	6.60	6.50	6.20	Amp._avg.	**64**
RF_V_Mon.	**5.70**	**5.85**	**6.35**	**6.35**	**6.60**	**6.65**	**6.65**	**6.80**	**6.40**	**Volts pk.**	

Table 2: Input Power Level

Parameters	Frequency									Units	
	3100	**3150**	**3200**	**3250**	**3300**	**3350**	**3400**	**3450**	**3500**	MHz	
Power _IN	23.8	23.4	23.4	23.4	23.6	23.5	23.6	23.5	23.4	dBm	
Power _IN	**239.9**	**218.8**	**218.8**	**218.8**	**229.1**	**223.9**	**229.1**	**223.9**	**218.8**	**mW**	