

NEXT GENERATION **AIR COOLED** **POWER AMPLIFIERS**



Solid State
CW & Pulse
HF to X-Band

Highest power density
with patented new hardware
and software architecture
that is unrivaled

A unique design architecture from Empower RF Systems is yielding unprecedented size and weight reduction for 500W, 1 kW, and multi-kW power amplifier platforms. These breakthrough designs have been fielded using both LDMOS and GaN devices for user applications that include EMC / Radiated Immunity, Communications, EW, Radar, and RF Component Testing.



www.EmpowerRF.com

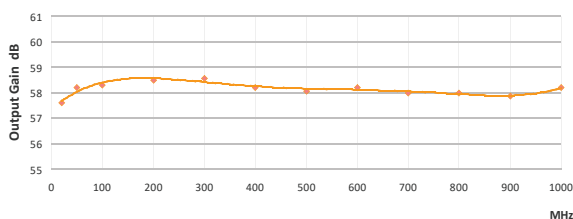
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SIMPLIFY YOUR SYSTEM INTEGRATION

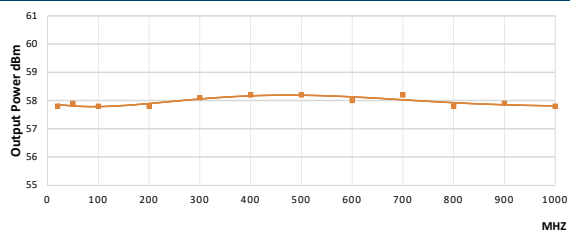
- ⚙ Accurate input and output power metering based on user-selectable modulation mode
- ⚙ With no software to install, monitor and control from your PC directly with peer-to-peer connection or on your local network
- ⚙ Wifi control and monitoring by PC/Tablet/Smartphone when wireless router is connected to the amplifier – no local network required
- ⚙ Full access to internal metering helps identify system problems upstream, downstream, or internal to the amplifier
- ⚙ Storage of user defined configurations for quick setup of your most common test scenarios
- ⚙ Small size allows amplifier to be moved around as needed in your test environment



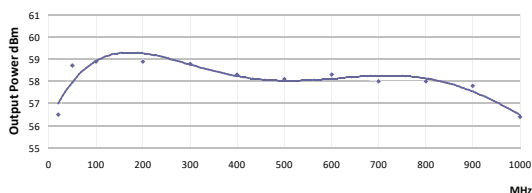
Automatic Gain Control (AGC)



Automatic Level Control (ALC)



Manual Gain Control (MGC)



OUTPUT POWER CONTROL [Selectable]

- ⚙ Automatic Gain Control (AGC) - Utilizes internal feedback for flat gain output across the band
- ⚙ Automatic Level Control (ALC) - when input signal varies, maintains user defined output without clipping
- ⚙ Manual Gain Control (MGC) - user controls gain manually, runs like your typical amplifier in open loop

MEASUREMENT MODES [Selectable]

The amplifier reads the proper power level for your modulation type

- ⚙ CW, CE (constant envelope modulation), FM, AM
- ⚙ Digital Modulation- user inputs PAR (peak to average ratio)
- ⚙ Multi-carrier / Multi-tone – up to 16 tones
- ⚙ Pulse Modulation

PROTECTION

- ⚙ Load VSWR 3:1 (6:1 at 1/2 Psat)
- ⚙ Input Overdrive Protection
- ⚙ Thermal Overload Protection
- ⚙ Over/Under AC voltage protection
- ⚙ Out of Band Drive Protection

BUILT IN PEAK DETECTORS

- ⚙ Input and Output Detectors
- ⚙ Selectable Peak and RMS

AGC mode enables internal feedback to automatically fix the gain to the level you set so the amplifier gain remains flat across the broadband range of the amplifier. Use this mode to treat the amplifier as a calibrated gain block within your test equipment chain or system design. It eliminates the need for external system measurements.

ALC mode allows the user to command the amplifier output to a specified power level rather than adjusting the exciter to achieve the desired output. This mode eliminates the need to develop your own real-time feedback loop to monitor the output and set the input exciter level. A non calibrated RF exciter can be used and the exciter can drift yet the amplifier will still maintain the set output level across the entire band.

MGC is the output power mode found in your typical high power RF amplifier. The amp is run in an open loop mode where the output power vs frequency changes due to device non-linearity and variations of temperature. With this mode you can take advantage of the gain peaks to get the most output power available if you are working in the associated frequency range.

SKU	Start (MHz)	Stop (MHz)	Pout (Watt)	Gain (dB)	Size (Chassis)
2204	1	30	500	56	R3U
2203	1	30	1000	60	R5U
2173	20	500	500	56	R3U
2126	20	500	1000	60	R5U
2191	20	1000	100	49	R3U
2192	20	1000	250	54	R3U
2162	20	1000	1000	63	R5U
2198	20	6000	100/100/40	49/49/45	R3U
2175	80	1000	500	60	R3U
2243	100	500	2000	63	R11U
2227	100	1000	1600	63	R11U
2209	150	450	2000	63	R11U
2178	270	450	2000	68	R8U
2235	400	1000	1600	63	R11U
2066	500	1000	1000	60	R5U
2199	500	2500	200	60	R5U
2202	500	2500	1000	60	R8U
2233	500	2500	500	60	R8U
2223	500	6000	150	53	R5U
2222	600	6000	50	50	R3U
2226	900	1600	2000	63	R8U
2180	1000	2500	2000	68	R8U
2193	1000	3000	100	49	R3U
2194	1000	3000	250	54	R3U
2187	1000	3000	500	57	R3U
2170	1000	3000	1000	63	R5U
2176	1750	2120	4000	73	R20U
2215	1900	6000	200	53	R5U
2196	2000	6000	35	46	R3U
2197	2000	6000	80	49	R3U
2195	2000	6000	120	51	R3U
2200	2000	6000	200	53	R5U

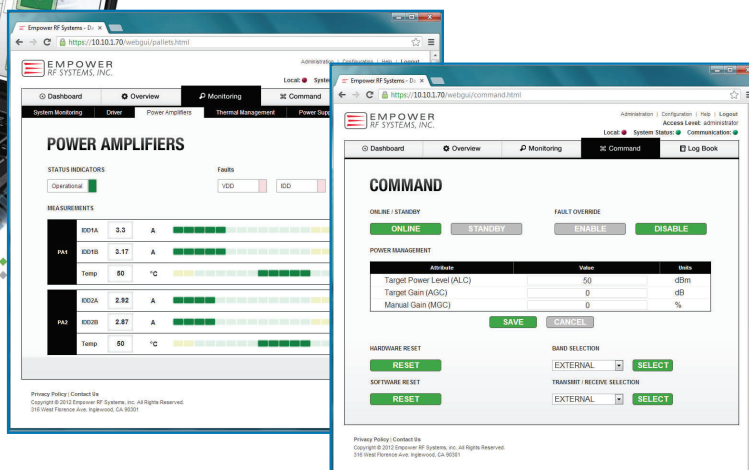
Pulse

SKU	Start (MHz)	Stop (MHz)	Pout (Watt)	Gain (dB)	Size (Chassis)
2210	150	450	12000 Pulse 20%	75	R19U
2185	960	1215	10000 Pulse 2.5%	70	R9U
2206	1000	2000	2000 Pulse 10%	63	R6U
2207	1000	2000	4000 Pulse 10%	66	R9U
2208	1000	2000	8000 Pulse 10%	69	R15U
2211	2700	3100	1200 Pulse 12%	62	R3U
2239	2900	3500	10000 Pulse 20%	65	R3U
2213	2900	3500	10000 Pulse 6%	70	R13U
2214	2900	3500	8000 Pulse 25%	70	R14U
2229	2900	3500	2500 Pulse 20%	65	R5U
2254	2900	3500	15000 Pulse 20%	75	R19U
2240	5200	5900	1000 Pulse 20%	65	R3U
2232	5200	5900	2500 Pulse 20%	65	R5U
2242	5200	5900	4000 Pulse 20%	67	R8U
2217	5200	5900	8000 Pulse 25%	70	R17U
2221	9000	10000	8000 Pulse 20%	70	R18U
2241	9000	10000	1000 Pulse 20%	65	R3U

POWER AMPLIFIERS THAT ARE SMARTER



- ⚙ Uses standard web browser
- ⚙ Real time power amplifier diagnostics
- ⚙ Ability to fault isolate down to individual components or system input issues
- ⚙ Ability to pull the HPA into a “network” of end user system components - LXI compatible



For Very High Power Requirements see our **LIQUID COOLED Scalable SSPA Product Family**



- ⚙ Hundreds of Kilowatts of Pulse and CW Power
- ⚙ No Single Point of RF Failure
- ⚙ Distributed Power Supplies
- ⚙ SSPA “on air” Hot Swapping
- ⚙ Asymmetrical and Random Pulse Width and Duty Cycle Operation
- ⚙ Short and Long Pulse Capabilities - 100ns up to 500usec with 500KHz PRF's and 20% Duty Cycles

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