

# NEXT GENERATION POWER AMPLIFIERS

CW & PULSE

**8 kW** Pulsed

**2 kW** CW

**1 kW** CW

**500 W** CW



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](http://www.EmpowerRF.com)

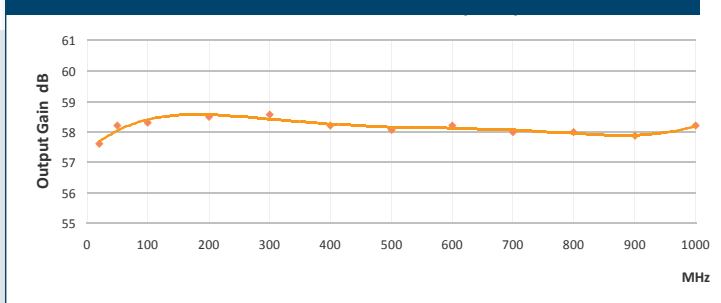
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# SIMPLIFY YOUR SYSTEM INTEGRATION

- 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)



**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. This mode simplifies your system design or test setup with benefits including:

- Input signal equalization for compensating gain variations no longer required
- Treat the amplifier as a calibrated gain block within your test equipment chain or system design
- Eliminate the need for external system measurements: couplers, power sensors, meter, and system software feedback loops
- Ideal for fast and accurate test setup and execution

## 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

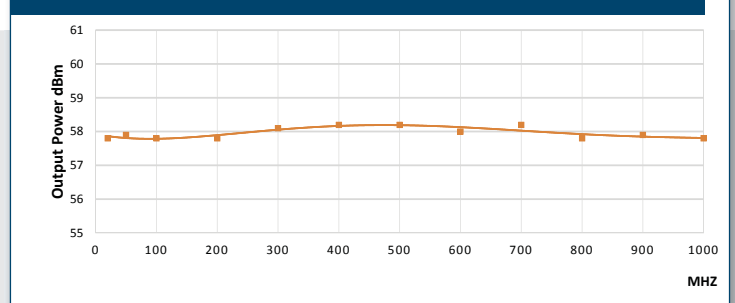
## PROTECTION

- 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

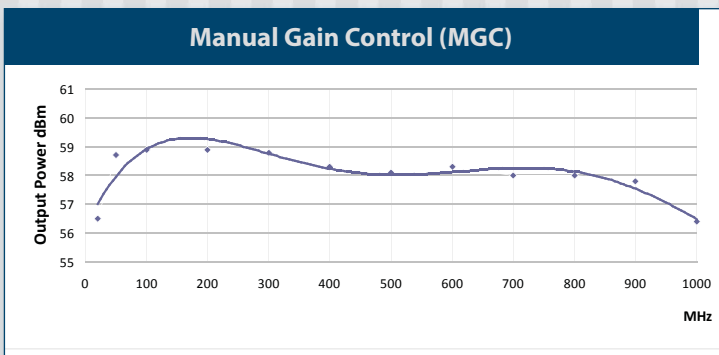
Automatic Level Control (ALC)



**ALC** mode allows the user to command the amplifier output to a specified power level rather than adjusting the exciter to a certain power level to achieve the desired output. The output power is set either through the front panel or as a SCPI command via the LAN port. Wouldn't you rather command the amplifier to your desired output power rather than build your own feedback loop to control the exciter?

- Allows you to build your own system with uncalibrated components
- Eliminate the need to develop your own real-time feedback loop to monitor the output and set the input exciter level
- Simplifies and speeds up system integration
- Output Level is set accurately across the entire band

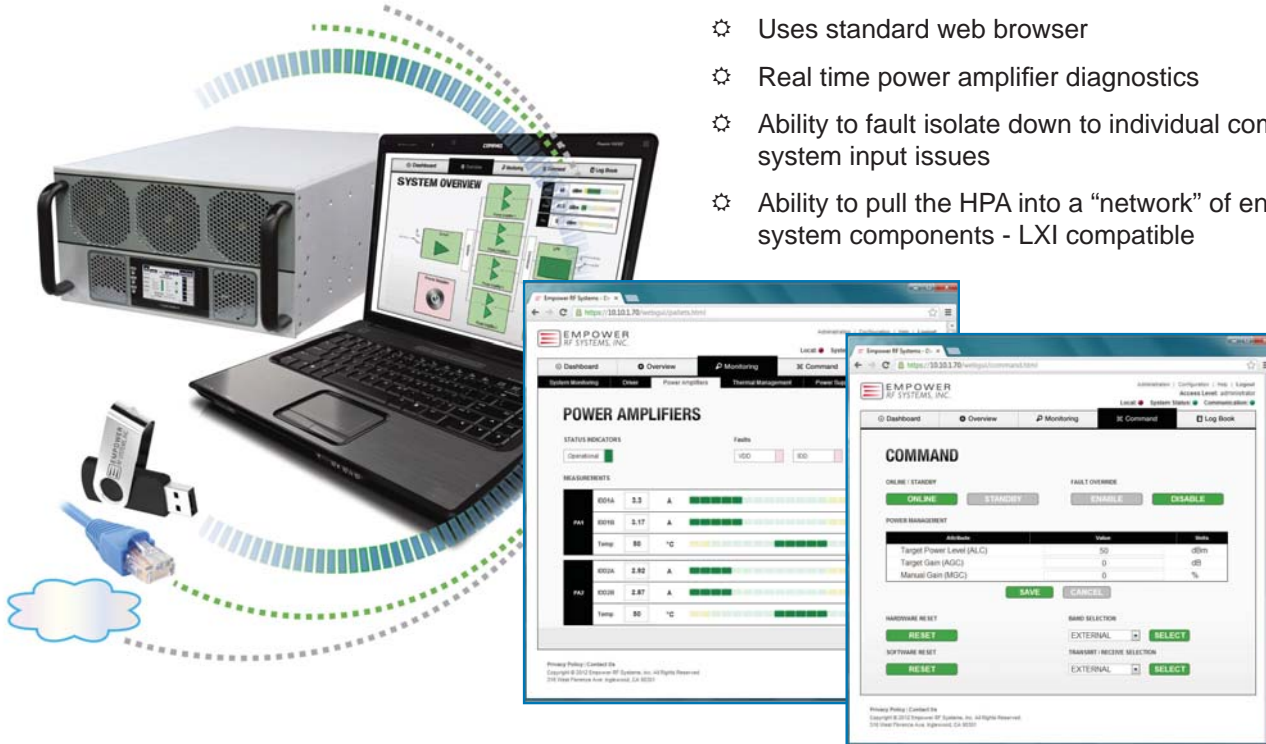
SKU	Start (MHz)	Stop (MHz)	Pout (Watt)	Gain (dB)	Size (Chassis)
2204	1	30	500	56	R3U
2203	1	30	1000	60	R5U
2173	20	500	500	56	R3U
2126	20	500	1000	60	R5U
2191	20	1000	100	49	R3U
2192	20	1000	250	54	R3U
2162	20	1000	1000	63	R5U
2198	20	6000	100/100/40	49/49/45	R3U
2175	80	1000	500	60	R3U
2210	150	450	12000 Pulse 20%	75	R19U
2178	270	450	2000	68	R8U
2174	500	1000	500	56	R3U
2066	500	1000	1000	60	R5U
2199	500	2500	200	60	R5U
2202	500	2500	1000	60	R8U
2185	960	1215	10000 Pulse 2.5%	70	R9U
2222	600	6000	50	50	R3U
2223	600	6000	150	53	R5U
2206	1000	2000	2000 Pulse 10%	63	R6U
2207	1000	2000	4000 Pulse 10%	66	R9U
2208	1000	2000	8000 Pulse 10%	69	R15U
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
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	2500	6000	200	53	R5U
2211	2700	3100	1200 Pulse 12%	62	R3U
2213	2900	3500	10000 Pulse 6%	70	R13U
2214	2900	3500	8000 Pulse 25%	70	R14U
2217	5200	5900	8000 Pulse 25%	70	R17U



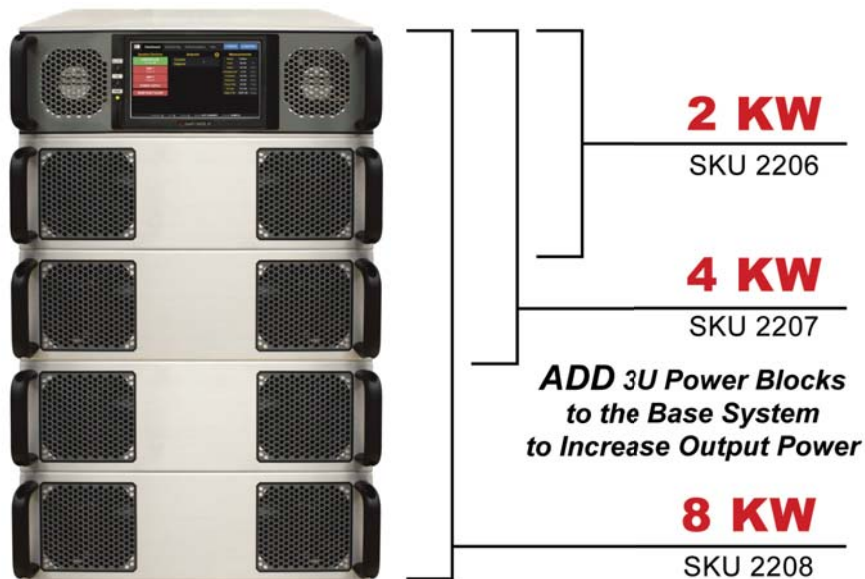
**MGC** is the output power mode found in your typical high power RF amplifier. The amp is run in an open loop mode where the output power vs frequency changes due to device non-linearity and variations of temperature. With this mode you can take advantage of the gain peaks to get the most output power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

# 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



## SCALABLE L-Band PULSED FAMILY



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