



modular rf

# MODEL AR-5010

## AR-5000 SERIES

### 500 WATTS CW/PEP

### 30 to 88 MHz

AR Modular RF's **AR-5000 Series** is the next generation of wideband, Class A/AB linear amplifier designed for use with modern digital modulations. Engineered with a flexible system architecture, **AR-5000 Series** amplifiers are tailored to meet specific user needs over the frequency range of 80 kHz to 1000 MHz and power range of up to 1000 Watts CW and 4000 Watts peak.

#### Key Features:

- Lightweight 19", 2U/3U Chassis
- Rack Mount Enclosure
- AC Powered, Single Phase
- Ethernet Remote Control
- RF Gain Control
- Input Overdrive Protection
- Output VSWR Protection
- Over Temperature Protection
- Unconditionally Stable
- Forward & Reflected Power Monitoring
- Sleep Mode (Remote Controlled)
- Blanking



The following specifications apply to the **Model AR-5010** amplifier – part of the **AR-5000 Series**. **Model AR-5010** is a class A amplifier designed with optimized performance to support linearly modulated, multi-carrier waveforms with high crest factors. **Model AR-5010** is the recommended replacement for the legacy amplifier model **KAA4040M11**.

DOC-0000077 REV C  
10 JULY 2019

† The amplifier is capable of producing greater than 1000-Watt peak-power. Extreme caution should be exercised when driven with high PEP signals.

**ar modular rf**

21222 30<sup>th</sup> Dr SE, Suite 200 • Bothell, Washington 98021 • 425-485-9000 • Fax 425-486-9657 • [www.arworld.us](http://www.arworld.us)



modular rf

## PERFORMANCE SPECIFICATIONS – MODEL AR-5010 AMPLIFIER

### ELECTRICAL

SPECIFICATION	Units	Minimum	Typical	Maximum	Notes
Amplifier Class	-	A			Optimized for multi-carrier linear modulation
Frequency Response	MHz	30		88	Amplifier operating range
Maximum Output Power	W		500	†	Continuous operation. Output power limited to 550W (500W+10%); the below specifications apply at 500W output power (and below)
	dBm		57	†	
Power Gain	dB	57	68	70	
Input Power	dBm		-12	10	Input drive above 0 dBm requires corresponding reduction in amplifier gain
Gain Control Range	dB	20	21	23	Approximately 0.1dB Steps
Blanking	µs			450	RF on/off, rear connector control
Gain Flatness	dB		± 0.75	± 1.0	Across entire band
Noise Figure	dB		12	15	
Input / Output Impedance	Ohm		50		
VSWR Tolerance	-			3:1	No Shutdown @ 500 W CW or below; power may be reduced above 3:1 (limited to 200 Watts).
	-			Infinite	No Shutdown @ 50 W CW or below
Spurious Outputs	dBc		73	68	Rated output, 100 kHz & 10 kHz span, 10 Hz resolution
Harmonic Performance	dBc		-45	-22	After 10-minute warm-up period
OIP3	dBm	65			2 tones, 100kHz spacing, 125 Watts per tone
Input Power (AC)	VAC	100		240	
	Hz	50		60	
Power Consumption	kW			1.8	

### MECHANICAL & ENVIRONMENTAL

SPECIFICATION	Units	Details	Notes
Size	Inches	19.0" W x 20.8" L x 3.5" H	Standard 19" Rack Mount, 2U
Weight	kg	~16	
Operating Temperature, Ambient	°C	+5 to +40	
Relative Humidity	%	95	Maximum, non-condensing
Cooling	-		Forced Air (Integrated Fans, Automatically Controlled)

DOC-0000077 REV C 10 JULY 2019
-----------------------------------

† The amplifier is capable of producing greater than 1000-Watt peak-power. Extreme caution should be exercised when driven with high PEP signals.

**ar modular rf**

21222 30<sup>th</sup> Dr SE, Suite 200 • Bothell, Washington 98021 • 425-485-9000 • Fax 425-486-9657 • www.arworld.us



### INTERFACE & CONTROL

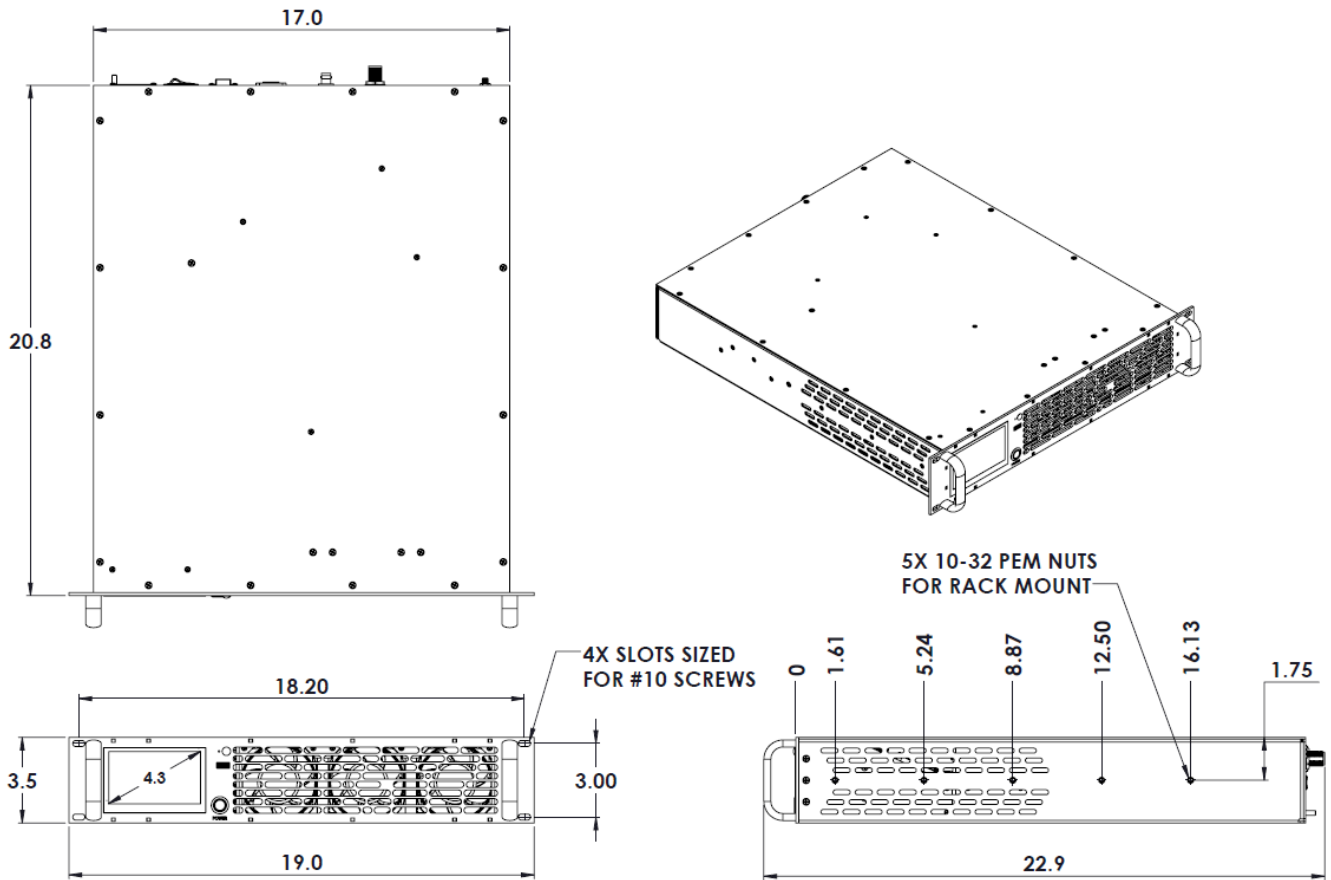
The **AR-5010** has interface and control elements on both the front and rear panels. The amplifier is fully operational using the front-panel interface and can be optionally controlled via a rear-panel Ethernet connection.

Element	Panel	Details	Notes
Ethernet	Rear	RJ45	Ethernet control for remote operation. All amplifier control and monitoring can be performed remotely via Ethernet
RS-232	Rear	DB9	(contact AR Modular if this interface is required)
RF Input	Rear	SMA-Type, Female	
RF Output	Rear	N-Type, Female	
Remote Interlock / Blanking	Rear	BNC, Female	Used as a discrete, fast on/off switch
AC Power Connector	Rear	IEC Appliance Inlet C20	Shipped with unterminated mating cable
AC Power Control	Rear	Toggle switch	Hard power control
	Front	Push button	Soft power control
Status LEDs	Front	Various indicators	AC present, Amplifier ON/OFF, general fault
Display Screen	Front	Menu based local interface for amplifier operation	Access to forward/reflected power performance, status monitoring, amplifier remote configuration, etc.

DOC-0000077 REV C  
10 JULY 2019

† The amplifier is capable of producing greater than 1000-Watt peak-power. Extreme caution should be exercised when driven with high PEP signals.

**modular rf**



Outline Drawing

DOC-0000077 REV C  
10 JULY 2019

† The amplifier is capable of producing greater than 1000-Watt peak-power. Extreme caution should be exercised when driven with high PEP signals.