

## **PREMIUM POWER** AMPLIFIERS **W / S / ZETTA / T** SERIES





## W Series Heavy Duty Power Amps





RAM Audio<sup>®</sup> introduces this new generation of professional touring amplifiers based on the field proven QuantaPulse<sup>™</sup> Technology. These new devices feature two or four channel models, ready for rough handling in the touring world. For this purpose, V/W Series amps implement oversized high efficiency regulated power supply with PFC front end to deliver their full performances independently of mains status. This together with oversized high efficiency audio power stage, forced front to back cooling through a component-free path with removable front panel dust filters, improved rugged mechanical design with even weight distribution, full digital control from LCD display on the front panel. Resulting in: just power, reliability and robustness for your touring gigs!



#### Performance

- PFC QuantaPulse<sup>™</sup> Regulated Dual SMPS
- Digital Control with extra large LCD display user interface
- Channel Temperature and Output Level Monitor in the LCD
- USB port for firmware update and DSP control
- 25 position Gain, Bridge mode, Input Links and ICL, front panel configurable
- Digital Potentiometers with Encoder control
- RAM Audio Power Management System
- Hi Efficiency, Heavy Duty Audio Power section for extreme use
- Easily removable front panel dust filters
- Efficient front to back cooling
- Optional low latency 24bits high performance FIR DSP with post-DSP signal links and Ethernet control. More info
- Optional RAM OCS Ethernet monitor and control system
- Optional AES/EBU Digital input
- Industry standard Neutrik<sup>®</sup> XLR and Speakon<sup>®</sup> connectors

### **Display Menu features**

- Channel Temperature: shows the percent of maximum temperature
- Display Mode: change between Channel Attenuation or VU meter mode
- Operating Time: shows the amplifier total time operation
- Preset Manager: to change quickly the amplifier preset configuration • Input Links: you can Link the input signal to the next channel
- Amplifier Gain: change the gain for each channel from 26dB to 38dB
- Amplifier Mode: it configures the amplifier in Dual or Bridge mode
- Attenuators Link: to modify the output level for all channels simultaneously
- ICL Clip Limiter: you can turn on/off the ICL Clip Limiter for all channels
- Password protection: to prevent any modification of the configuration

## **Protections**

- ICL2<sup>™</sup>: improved Intelligent Clip Limiting
- **PMSTM**: Power Management System controls the amount of power that the amp delivers under diferent circumstances.
- SSPTM: SOA Sentry Protection effectively limiting the power that the amp could deliver into an incorrect load or to a direct short-circuit
- Faulty Channel Management (FCM<sup>™</sup>)
- Soft-start, turn-on transients, Over-heating, DC, RF, short-circuit
- Overloaded power supply, Mains overvoltage

PFC High Efficiency Heavy Duty Power Amplifier 0-632dB-Dual-UnLink M ØdB ØdB ØdB ØdB CH-D SIG TEUP PAIS KL. SIG TEUP PAIS KL. SIG TE



## NALOG DSP INPUT IN-2





## **DSP Module (optional)**

The Digital Signal Processor is real time fully programmable through USB or Ethernet network (optional) or directly from the front panel. There are two diferent versions: 4 Inputs/4 Outputs or 2 Inputs/2 Outputs totally free route configurable. Both versions include post-processor signal XLR output connectors to link the processed signal to another amplifier without DSP. You can save more than 50 presets directly in the amplifier. The main characteristics are:

- 56 bit double-precision floating-point DSP process
- 120dB dynamic range
- High performance 24bit, 512x Oversampling AD/DA Cirrus converters • 0.6ms latency for IIR filters

#### Input Section:

- · Gain, Mute and Phase inversion per input
- Input Delay: 0 to 118 meters (341ms) per input
- Input EQ: 31 EQs per input (Parametric, Shelving, LP, HP, BP, SB, AP)

#### **Output Section:**

- Crossover Filters: FIR (Linear-phase) and IIR (up to 48dB/oct, Butterworth/Linkwitz-Riley/Bessel)
- Output Delay: 0 to 18 meters (52ms) per channel
- Output EQ: 15 filters per channel (Parametric, Shelving, LP, HP, BP, SB, AP)
- Gain, Mute and Phase inversion per channel
- RMS and Peak power variable knee limiter per channel
- AES/EBU Digital Input: Input for digital audio signal AES/EBU (AES3) standard via Neutrik<sup>®</sup> XLR. Its Sample Rate Converter permits 16 or 24 bits resolution operation from 32kHz to 96kHz Sample Rate.

• EtheRAM<sup>™</sup> II Control Module: permits the control and monitoring of an installed group of Power Amps, connected to a standard Ethernet network. For it you can use third party control system as Crestron<sup>®</sup>. AMX<sup>®</sup> or third party software as Stardraw Control<sup>®</sup>.

### **DSP - RAM OCS (Software)**

High Performances FIR Digital Signal Processor

#### **Presentation**

The V/W Series Digital Signal Processor is real time fully programmable through Ethernet, USB or directly from the front panel. There are two different versions: 4 Inputs/4 Outputs or 2 Inputs/2 Outputs totally free route configurable. Both versions include post-processor signal XLR output connectors to link the processed signal to another amplifier without DSP. Optional AES3 digital input is available. The main characteristics are:

### **Features**

- 48kHz 56 bit double-precision floating-point DSP process
- 120dB dynamic range
- High performance 24bit/192kHz 512x Oversampling AD/DA Cirrus converters
- 0.6ms latency time (2.67ms using FIR filters)

### Input Section

- · Gain, Mute and Phase inversion per input
- Input Delay: 0 to 118 meters (341ms) per input
- Input EQ: 31 EQs per input (Parametric, Shelving, LP, HP, BP, SB, AP)

## **Output Section**

- Crossover Filters: FIR (Linear-phase) and IIR (up to 48dB/oct, Butterworth/Linkwitz-Riley/Bessel)
- Output Delay: 0 to 18 meters (52ms) per channel
- Output EQ: 15 filters per channel (Parametric, Shelving, LP, HP, BP, SB, AP)
- Gain, Mute and Phase inversion per channel
- RMS and Peak power variable knee limiter per channel

## **Library Manager**

- 100 Output preset memories, to save any Output configuration independently for each channel
- 40 Input preset memories, to save any Input configuration independently for each channel
- 80 Global preset memories, to save a combination of Input, Route and Output presets for all channels
- . Group management, to assign the same configuration simultaneously to different amplifiers





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Oversized high efficiency and high bandwidth, Heavy Duty Audio Power section for extreme use. The responsible of audio power and quality.

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PFC QuantaPulse<sup>™</sup> Regulated Dual SMPS front end to deliver their full performances indepen-dently of mains status or load requirements. 2

> Digital Potentiometers with Encoder control with extra large blue LCD display user interface and USB port for firmware update and DSP control. The display menu features: Channel Temperature, Operating Time, Input Links, Amplifier Gain, Bridge Mode, ICL Clip limiter, Preset DSP manager, Password protection.





Optional low latency high performance DSP with post-DSP signal links, AES/EBU Digital Input and Ethernet connection



Industry standard Neutrik® XLR (IN+LINK) and 5 Industry standard Neuro Speakon® connectors.



**6** The cooling system is the guard who cares of maintain every power device into its operating temperature boundaries forcing into the case fresh air through an optimal path.



Easily removable front panel dust filters and the upside down assembly guarantees a reliable operation into dirty environments.

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## **PFC QuantaPulse™** Power Supply

At the heart of the new W Series power amps lies our most recent state-of-the-art achievement:

an evolved QuantaPulse EVO power supply that is designed to provide plenty of power when needed, but also monitors the audio amp's signals referring to its varying needs in the current supply demand and keeping the flow under control at all times.

Bi-directional data flow, compactness, and proven reliability. These are just a few more advances that RAM Audio has brought to market, in order to give you greater peace of mind.

The amp's QuantaPulse EVO brain, in the line of our classic function controllers, watches over more parameters and is far more compact as a result of SMD technology. Communication between the power supply and the audio amplifier is absolute.

Active power factor correction (PFC) is utilized in switchmode power supplies to draw continuous sine wave AC current that is in phase with the available mains voltage. Significantly reducing AC current harmonics and energy consumption PFC maximizes efficiency resulting in increased output power and higher volume levels. In addition, PFC eliminates the effects of voltage fluctuations, extended power cable runs, inadequate power cable diameters and poor mains wiring.

## **Technical Specifications**

Model name:	RAMW6000	RAMW9000	RAMW12000	RAMW9004	RAMW9044	RAMW12004	RAMW12044		
Output Power 1kHz, 1.0% THD+N									
@ 2Ω	2x 3025 W	2x 4400 W	2x 5900 W	4x 2260 W	-	4x 3025 W	-		
@ 4Ω	2x 1600 W	2x 2300 W	2x 3100 W	4x 1150 W	4x 2200 W	4x 1600 W	4x 2950 W		
@ 8Ω	2x 820 W	2x 1200 W	2x 1600 W	4x 600 W	4x 1150 W	4x 820 W	4x 1550 W		
Bridge @ $4\Omega$	6050 W	8800 W	11800 W	2x 4520 W	-	2x 6050 W	-		
Bridge @ 8Ω	3200 W	4600 W	6200 W	2x 2300 W	2x 4400 W	2x 3200 W	2x 5900 W		
Frequency Response Power Bandwidth ±0.25dB				20Hz-20kHz					
Phase Response @ 1 watt 20Hz-20kHz				±15 deg					
Total Harmonic Distortion 20Hz-20kHz				<0.05%					
Intermodulation Distortion SMPTE				<0.05%					
Damping Factor 20-500Hz @8Ω				>500					
Crosstalk 20Hz-20kHz				>80dB					
Voltage Gain		26dB to 38dB (0.5dB steps)							
Sensitivity Rated Power (26/32/38dB Gain)	4/2/1 V	4.9/2.5/1.2 V	5.7/2.8/1.4 V	3.5/1.7/0.9 V	4.8/2.4/1.2 V	4.1/2/1 V	5.6/2.8/1.4 V		
Signal-to-Noise Ratio 20Hz-20kHz	113dB	115dB	116dB	112dB	115dB	113dB	116dB		
Required AC Mains Operating Voltage (50Hz-60Hz) Power On Idling (@230V)				170V-265V AC 0.5 A					
1/8 Rated Power (@230V min. Z)	7A	10 A	13 A	11 A	10 A	14 A	13 A		
Dimensions W x H x D (mm) W x H x D (inches)				483x89x460 19x3.5x18.1					
Weight Net (Kg-Lbs)	10-22.1	12-26.5	12-26.5	12-26.5	12-26.5	12-26.5	12-26.5		
Protections		ing at turn-on/turn- Overvoltage (up to 4				tched loads, Overl	baded power		







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## **S** Series Professional Power Amplifiers





Modern power amplifiers have developed into light, powerful, versatile, rugged and reliable instruments designed to keep working in the most arduous conditions.

At RAM Audio, we have an enviable reputation in the industry, and continue to stay at the forefront of audio design by offering our many customers all those concepts combined with the following major advantage: a sensible price level for our pedigree products. This is made possible by our constant development of state-of-the-art designs, together with meticulous component selection and rigorous supervision of assembly quality.

The S Series of RAM Audio amplifiers distils all these features to fulfill all your needs, whether you're starting a P.A. amplifier project from scratch, or you need to upgrade your present sound reinforcement equipment.

In the S Series amps, you'll find five 2-channel models and five 4-channel models, all offering plentiful power levels at low distortion in the range of 1.5 to 6 kilowatts, yet weighing in around 8 kilos and 30 cm deep.

### **Features**

- Ultra-compact and lightweight 2-U high
- Laser cut aluminum front panels with integrated carrying handles
- Neutrik<sup>®</sup> XLR input connectors, input and signal link in 2 channel models
- Input Link switch: allow daisy-chaining of the input signal
- Neutrik<sup>®</sup> Speakon<sup>®</sup> output connectors
- Detented sealed potentiometers for easy recall of volume settings
- ICL<sup>™</sup>, PMS<sup>™</sup>, Hi-temp, Signal indicators per channel
- Power on and Stand-by leds
- Highly versatile with multiple configuration and additional module options
- Full PC control via EtheRAM (with EtheRAM Control module)
- Switchable ICL<sup>™</sup> clip-limiters per channel
- Switchable (30-50 Hz) sub-sonic highpass filter per channel
- Three-position gain selector (26, 32 or 38 dB)
- Dual or bridge mode selector
- Twin temperature controlled, back to front cooling fans
- Oversized power components (high SOA reserve specification)
- DSP modul optional

#### **Protections**

- ICL2<sup>™</sup>: improved Intelligent Clip Limiting
- Input signal muting at turn on
- Thermal overload protection
- Progressive Ramp input signal

Standard Signal Inputs Module: The S Series amps are equipped as standard with twin Neutrik® XLR, doubled by two other XLR connectors for linking purposes. In the 4 Channel models an XLR input per channel is provided with the signal linking facility.





• PMS™: Power Management System controls the amount of power that the amp delivers under different circumstances. • SSPTM: SOA Sentry Protection effectively limiting the power that the amp could deliver into an incorrect load or to a direct short-circuit











## **S Series** Input Module Options

**Analog Processor Module:** permits a very easy, user-friendly signal processing to enable the amp to set up a bi-amp system without any other outboard device. These are the Processor's main characteristics:

- 2-way stereo crossover (dual mono or single bridged sub output)
- 24dB/oct Linkwitz-Riley configurable crossover (90, 100 o 120Hz)
- Adjustable attenuation in the High-pass outputs (-3, -6 or -9dB)
- Adjustable Limiter, relative to Max. Output (-3, -6 or -9dB)

## **DSP44\_S Module:** Digital Signal Processor fully programmable through an USB port. These are the Processor's main characteristics:

- 4 Inputs/4 Outputs or 2 In/2 Out free route configurable.
- 24 bits/192 kHz 256x Oversampling Converters.
- Output Delay: 0 to 7.1 meters (20.69ms) per channel.
- XOver: Up to 48dB/oct Butterworth, Linkwitz-Riley and Bessel.
- EQ: 9 filters per channel (Parametric, Shelving, LP,HP,BP,SB).
- Gain, Mute and Phase inversion per channel.
- RMS Power and Peak Voltage output limiter per channel.
- Real Time operation from USB or front panel configuration.

• EtheRAM Control Module: permits the control and monitoring of an installed group of 2 channels S series Power Amps, connected to a standard EtherNet LAN using the onboard Datacom port via a Neutrik<sup>®</sup> RJ-45 connector. Also, it has a general purpose input and output connector to interface with third party controllers like an alarm system. It permits to control the turn on and to report the operating status.

• **AES/EBU Digital Input:** Input for digital audio signal for AES/EBU (AES3) standard via Neutrik<sup>®</sup> XLR, (extra Link XLR connector fitted). Its Sample Rate Converter permits 16 or 24 bits resolution operation at 32 to 48 KHz Sample Rate.

## EtheRAM Control System

EtheRAM is a control system which permits, with just a computer, the control and monitoring of an installed group of DQX-E or S Power Amps, connected to a standard EtherNet LAN (local area network). The system can be used to switch-on remotely the amplifiers as well as to control their output levels, it can also be used as a monitoring system for all the Amps parameters. Finally, it can be used as a diagnosis tool to visualize the status of any acoustic system connected to the Amps.

The EtheRAM Control software, installed in any Windows system, permits the visualization and control of more than a hundred amps in real time, with a simple connection to a wired or a wireless EtherNet LAN. The system can be integrated in any existing EtherNet LAN and does not require any other external device to function. In other words, the system does not need any exclusive or specific network installation. Each Power Amp network-ready includes a DataCom port with a RJ45 connector (Neutrik®), through which the amp is connected to the EtherNet LAN via a standard switch.

- Input Control and Monitoring:
- Input sensitivity selected: 26-32-38dB
- Pre/Post-fader signal level metering (dBu or Volts)
- Pre/Post-fader signal monitoring" servicing
- Front panel level knob position monitoring (dB)
- Level control
- Level monitoring (dB)
- Mute control
- Solo control

#### Output Monitoring:

- Output voltage metering (dB relative to true maximun voltage output)
- Output current metering (Amperes)
- Output power metering (Watts)
- Output Clip monitoring
- Output signal monitoring

#### Load Monitoring:

- Open/shorted load detection
- Adjustable threshold for detecting load opens and shorts
- Real time average minimun impedance (ohm)

#### General Parameters:

- On/Stby control mode selection
- Supply mode indication (Off/Stby/On)
- Fault status monitoring
- Temp protection status monitoring
- Operating temperature metering
- Model indication
- SN indication
- User-writable main reference
- User-writable channel references

#### Other Features:

Log file repport (On/Stby/Off mode, Fault, Temp, excesive Clip, incorrect load, connection state), 10 direct presets, Passwords manager, amplifier groups tree visualization, sequential turn-on, 3 visualization modes, off-line operation option, instant emergency alarm visualization (Standby/Off, Fault, low gain, mismatch load), amplifier groups level, mute and solo control.





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Industry reference Neutrik® Speakon® connectors are directly soldered to the power supply board to shorten the output current path and its return, to dramatically improve the damping factor.

Gain, Subsonic, bridge-dual and ICL switches, let you select your preferred operation configuration to make the most out of your PA.



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Location of the actual and future connection bays. Back removable plate can host the interfaces for DSP Processor, Analog Processor, EtheRAM Control, EtherSound, Cobranet, AES3 Input, etc.

All low power electronic components are SMD, mounted upside down on the circuit board and shielded from the cooling air flow, which is very positive where needed, but otherwise is a source of UFD (Unidentified Flying Dust).



Newly designed short tunnel cooling system forces air directly onto the high efficiency heat-sinks and the o/p devices bolted directly to them. PFC QuantaPulse<sup>™</sup> Regulated Dual SMPS front end to deliver their full performances independently of mains status or load requirements.

21 step detented level controls are integrated with four LEDs to display the amp status at a glance: ICL, PMS, SIGNAL and TEMP.



## QuantaPulse<sup>™</sup> Power Supply

At the heart of the new S Series power amps lies our most recent state-of-the-art achievement: an evolved QuantaPulse EVO power supply that is designed to provide plenty of power when needed, but also monitors the audio amp's signals

referring to its varying needs in the current supply demand and keeping the flow under control at all times.

Bi-directional data flow, compactness, and proven reliability. These are just a few more advances that RAM Audio has brought to market, in order to give you greater peace of mind.

#### The amp's QuantaPulse EVO brain, in the line of our classic function controllers, watches over more parameters and is far more compact as a result of SMD technology. Communication between the power supply and the audio amplifier is absolute.

## **TECHNICAL SPECIFICATIONS**

Model name:	RAMS1500	RAMS2000	RAMS3000	RAMS4000	RAMS6000	RAMS3004	RAMS4004	RAMS4044	RAMS6004	RAMS604
Output Power 1kHz, 1.0% THD+N										
@ 2Ω	2x 880 W	2x 1190 W	2x 1570 W	2x 1950 W	2x 2950 W	4x 700 W	4x 980 W	-	4x 1440 W	-
@ 4Ω	2x 575 W	2x 790 W	2x 1100 W	2x 1380 W	2x 2025 W	4x 500 W	4x 670 W	4x 975 W	4x 1000 W	4x 1480
@ 8Ω	2x 325 W	2x 460 W	2x630 W	2x 810 W	2x 1250 W	4x 300 W	4x 430 W	4x 690 W	4x 620 W	4x 1015
Bridge @ 4Ω	1760 W	2380 W	3140 W	3900 W	5900 W	2x 1400 W	2x 1960 W	-	2x 2880 W	-
Bridge @ 8Ω	1150 W	1580 W	2200 W	2760 W	4050 W	2x 1000 W	2x 1340 W	2x 1950 W	2x 2000 W	2x 2960
Pink Noise 12dB C.F. @ 2Ω @ 4Ω	2x 975 W 2x 610 W	2x 1360 W 2x 880 W	2x 2060 W 2x 1240 W	2x 2460 W 2x 1600 W	2x 4225 W 2x 2600 W	4x 890 W 4x 580 W	4x 1170 W 4x 820 W	- 4x 1230 W	4x 2080 W 4x 1280 W	- 4x 2110
Frequency Response Power Bandwidth ±0.25dB					20Hz-	20kHz				
Phase Response @ 1 watt 20Hz-20kHz	±15 deg									
Total Harmonic Distortion 20Hz-20kHz	<0.05%									
Intermodulation Distortion SMPTE	<0.05%									
Damping Factor 20-500Hz @8Ω	>500									
Crosstalk 20Hz-20kHz >75 dB										
Voltage Gain					26/32	/38 dB				
Sensitivity Rated Power @ 8Ω (V)	2.6/1.3/0.6	3.0/1.5/0.8	3.6/1.8/0.9	4.0/2.0/1.0	5.0/2.5/1.3	2.6/1.3/0.6	3.0/1.5/0.8	3.7/1.9/0.9	3.5/1.8/0.9	5.0/2.5/1
Signal-to-Noise Ratio 20Hz-20kHz	112 dB	113 dB	115 dB	116 dB	118dB	112dB	113dB	116dB	116dB	118dB
Required AC Mains 230 V - 50 Hz (idle) @ 4Ω (1/8 rated power)	0.5 A 4 A	0.5 A 4.8 A	0.5 A 6.2 A	0.5 A 7.5 A	0.5 A 10.5A	0.5 A 6 A	0.5 A 7.5 A	0.5 A 11A	0.5 A 10.5A	0.5 A 15A
Dimensions W x H x D (mm) W x H x D (inches)	483 x 89 x 310 19x3.5x12.2									
Weight Net (Kg-Lbs)	8-17.6	8-17.6	8.5-18.7	8.5-18.7	8.6-18.9	8.5-18.7	8.5-18.7	8.5-18.7	8.6-18.9	8.6-18.9

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## **ZETTA** Series 2 & 4 Channels Power Amplifiers





The RAM Audio ZETTA Series, is the result of an in depth study, in order to reach the best compromise between economy and performances, taking advantage of latest improvements in automated mixed surface mount and through hole electronic assembly.

ZETTA Series are a project based on an up-side-down mono-block approach offering an all-in-one power module that contains the entire amplifier assembly. Simplicity and effectiveness run hand by hand through the entire design to obtain an effectively skilled and workable product. The last generation QuantaPulse switching power supply allows to reach a new level of refined sensing and control of the power flow.

The cost-effective ZETTA Series amplifiers are packed with solid and convincing arguments for the professionals researching quality, reliability and value!

### **Features**

- Unmatched audio quality hi efficiency Class H design
- 2/4 Channels models from 1000W up to 4000W
- Ultra light weight 6kg, compact package 25cm deep
- Last generation QuantaPulse<sup>™</sup> switch mode power supply
- Power Management System (PMS™) and Clip Limiter (ICL™)
- Up-side-down design to avoid fan dust acumulation
- Industry standard Neutrik® XLR and Speakon® connectors
- Comprehensive protection set (ICL, PMS, SSP, turn-on, Temp, DC....)
- Detented sealed potentiometers
- Dual or bridge mode operation
- Temperature controlled, back to front cooling fan

## **Protections**

- PMS<sup>™</sup>: Power Management System controls the amount of power that the amp delivers under different circumstances.
- SSPTM: SOA Sentry Protection effectively limiting the power that the amp could deliver into an incorrect load or to a direct short-circuit
- ICL2<sup>™</sup>: improved Intelligent Clip Limiting
- Input signal muting at turn on
- Thermal overload protection

## **Technical Specifications**

Model name.:	RAMZ210	RAMZ215	RAMZ220	RAMZ236	RAMZ420	RAMZ430	RAMZ440		
Туре:	2-channel	2-channel	2-channel	2-channel	4-channel	4-channel	4-channel		
Output power (1 kHz 2 ohms):	2 x 500 W	2 x 750 W	2 x 1000 W	2 x 1800 W	4 x 500 W	4 x 750 W	4 x 1000 W		
Output power (1 kHz 4 ohms):	2 x 400 W	2 x 700 W	2 x 1000 W	2 x 1750 W	4 x 400 W	4 x 700 W	4 x 1000 W		
Output power (1 kHz 8 ohms):	2 x 200 W	2 x 370 W	2 x 520 W	2 x 920 W	4 x 210 W	4 x 370 W	4 x 520 W		
Output power (1 kHz 4 ohms, bridged mode):	1000 W	1500 W	2000 W	3600 W	2 x 1000 W	2 x 1500 W	2 x 2000 W		
Output power (1 kHz 8 ohms, bridged mode):	800 W	1400 W	2000 W	3500 W	2 x 800 W	2 x 1400 W	2 x 2000 W		
Circuit concept:	class AB	class H	class H	class H	class AB	class H	class H		
Frequency response:				20 - 20,000 Hz					
THD:				< 0,05 %					
S/N ratio:				116 dB					
Damping Factor:				> 400					
Crosstalk:				> 75 dB					
Voltage gain:				32 dB					
Input sensitivity:				1.9 dB					
Input impedance:				10 kohms					
Protection:	Soft start, po	wer on/off transien	ts, power on muting	g, overheating, DC v matching	oltage, high freque	ncy, short circuit, op	oen outputs, mis-		
Controls:		Power, 2 x volume, dual/bridge switch							
Indicators:				Power LED					
Line input connectors:	2 x XLR	2 x XLR	2 x XLR	2 x XLR	4 x XLR	4 x XLR	4 x XLR		
Speaker output connections:	2 x Speakon	2 x Speakon	2 x Speakon	2 x Speakon	4 x Speakon	4 x Speakon	4 x Speakon		
Cooling system:				Fan					
Power supply:				30 - 240 V AC					
Power consumption full load:				11 A					
Width:				483 mm					
Height:				89 mm					
Depth:				250 mm					
Weight Net (Kg- Lbs)	5-10	5-10	6-12	6-12	6-12	6-12	6-12		

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## **T** Series Multichannel Installed Sound





The T Series multichannel power amplifiers utilize extremely efficient dual power rail Class H topology and fast-switching high performance Fairchild power transistors with a wide SOA (safe operating area) for exceptional reliability.

T Series amplifiers feature an oversized heat dissipation system for maximum thermal stability and safe operation with no time limit. Twin temperature controlled variable speed fans keep the T Series amps cool when running at high output levels while minimizing noise during low power operation.

#### Multichannel Power with Minimum Footprint

The T Series multichannel power amplifiers have been designed especially for installation and networked audio systems.

T Series amplifiers\* are available with 4 and 8 discrete channels and output ratings from 160 to 320 Watts per channel providing optimum solutions for multizoning. They feature Euroblock inputs, terminal strip outputs and a rugged 2U rackmountable chassis with 4 mm front panel.

\*Also available as GPIO versions with remote and emergency paging switching.

#### **Performances**

- Eight and four channel models with 300W and 150W per channel
- Minimal footprint and mass arround 200mm depth and 6 Kg
- Optional Add-on card to interface with third party alarm systems with GPIO connections
- FCM<sup>™</sup> Faulty Channel Management system to avoid entire device shutdown
- State-of-the-art layout for maximum performance and reliability
- Highly oversized thermal dissipation design for maximum reliability
- Superb distortion and noise figures
- Low-Noise cooling fan
- All channels bridgeable by pairs
- Selectable gain in four channel groups (26, 32 and 38dB)
- Subsonic filter per channel (35Hz user selectable)
- Temperature and signal dependant, intelligent cooling system for minimal noise
- Optimal heat extraction due to the air tunneled enclosure and insulator-less power devices attachment to the heatsink
- Direct connector-less output for maximum quality loudspeaker control
- High grade engineering inside with the latest SMD technology
- Balanced Inputs with 0.1% tolerance resistors for a precise noise rejection.
- Critical electronic and mechanical parts selection
- Innovative protection systems, FCM™ Faulty Channel Management and SSP™ SOA Sentry Protection
- Detented and optionally tamper-proof volume potentiometers
- Hi efficiency, two steps Class H Audio topology
- · Protection, Signal and Clip indicators per channel
- Power On and Standby general indicators
- Extremely compact, fully featured QuantaPulse power supply
- Low current consumption and heat generation allowing less demanding conditions for multiple amplifier installations
- Factory preset worldwide mains voltage power supply
- Laser cut four milimeters aluminium front panel
- Rugged 2U steel chasis





#### Protections

• PMS<sup>TM</sup>: Power Management System. This is a complete set of protections that monitors the main amp parameters, in order to draw from the power supply only the precise amount of current required to maintain safe operation during hazardous or extreme working conditions. This system controls the amount of power that the amp delivers under two basic circumstances: • When internal temperatures rise to near thermal shutdown point due to abnormal operating conditions.

• Excessive mains current consumption under laboratory conditions or in conditions of prolonged acoustic howl-round.

• SSPTM: SOA Sentry Protection effectively limiting the power that the amp could deliver into an incorrect load or to a direct short-circuit. This avoids power transistor failure.

• ICL2<sup>TM</sup>: improved Intelligent Clip Limiting, to avoid speaker failure and provide more acceptable sound quality even when clipping occurs. With the ICL<sup>™</sup> system you don't lose the music punch but the speakers are kept under control. FCM<sup>™</sup> Faulty Channel Management system to avoid entire device shutdown

HRAM Audio 31

## QuantaPulse<sup>™</sup> Power Supply

At the heart of the new T Series power amps lies our most recent state-of-the-art achievement: an evolved QuantaPulse EVO power supply that is designed to provide plenty of power when needed, but also monitors the audio amp's signals referring to its varying needs in the current supply demand and keeping the flow under control at all times. Bi-directional data flow, compactness, and proven reliability. These are just a few more advances that RAM Audio has brought to market, in order to give you greater peace of mind.

The amp's QuantaPulse EVO brain, in the line of our classic function controllers, watches over more parameters and is far more compact as a result of SMD technology. Communication between the power supply and the audio amplifier is absolute.

## GPIO Module Option

At the back of the amplifier are located remote on/off connections to switch-on the amplifier from a third party controller or alarm system. The amplifier power switch must be activated to enter in the stand-by mode, indicated by the corresponding front panel led, being ready for a power-on command from the external circuitry.

Relay contacts are provided too for easy an inexpensive remote monitoring that can be routed to a supervisor control system to switch a spare amplifier or to any other control action.













## **Technical Specifications**

Model name:	RAMT604	RAMT1204	RAMT1208	RAMT2408			
Output Power Continuous Average Power RMS, 1kHz, 1.0% THD+N							
@ 4Ω	4x 160 W	4x 320 W	8x 150 W	8x 300 W			
@ 8Ω	4x 115 W	4x220 W	8x100 W	8x 195 W			
Bridge @ 8Ω	2x 320 W	2x 640 W	4x 300 W	4x 600 W			
Pink Noise 12dB Crest Factor@ $4\Omega$	4x 210 W	4x 415 W	8x 180 W	8x 370 W			
Circuit concept:			class H				
Frequency Response Power Bandwidth ±0.25dB			20Hz				
Phase Response @ 1 watt 20Hz-20kHz			±15 deg				
Total Harmonic Distortion 20Hz-20kHz	<0.05%						
Intermodulation Distortion SMPTE			<0.05%				
Crosstalk 20Hz-20kHz			>70 dB				
Voltage Gain	26/32/38 dB	26/32/38 dB	26/32/38 dB	26/32/38 dB			
Sensitivity Rated Power @ 8Ω	1.5/0.8/0.4 V	2.1/1.0/0.5 V	1.4/0.7/0.4 V	2.0/1.0/0.5 V			
Signal-to-Noise Ratio 20Hz-20kHz	107 dB	110 dB	107 dB	110 dB			
Required AC Mains 230 V - 50 Hz (idle)	0.5A	0.5A	0.5A	0.5A			
@ $8\Omega$ (1/8 rated power)	1 A	1.5 A	1.4 A	2.6 A			
Dimensions W x H x D (mm) W x H x D (inches)			483x89x210 19x3.5x8.27				
Weight Net (Kg- Lbs)	5.4- 11.8	5.4- 11.8	6.2- 13.5	6.2- 13.5			

Protections

Soft-start, Turn-on Turn-off muting, Over-heating, DC, RF, Short-circuit, Open or mismatched loads, Overloaded power supply, ICL<sup>TM</sup>, SSPTM and FCMTM.

#### **Features**

- Two Inputs and four Outputs: configurable as two way stereo and three or four way mono processor
- 24 bits/96 kHz A/D and D/A converters
- 32 bits floating point DSPs. 56 bits internal resolution
- Optional AES/EBU, SPDIF Digital Input. It includes bit rate frequency converter (32kHz-96kHz 24 Bits)
- USB and EtherNet port conection to PC

#### **Input/ Output Configuration**

- Gain control
- Delay Line: 0 to 20 meters
- EQ: 29 full configuration filters per input (Parametric, Shelving, LowPass, HiPass, BandPass, StopBand, AllPass)
- Free Routing
- Output Delay: 0 to 7 meter
- Crossovers: Up to 8th Order (48dB/Oct). Butterworth, Linkwitz-Riley and Bessel
- Output EQ: 9 full configuration filters (Parametric, Shelving, LowPass, HiPass, BandPass, StopBand, AllPass)
- Gain, Mute and Phase inversion
- RMS and Peak Compressor/Limiter with adjustable knee, which permits a progressive limitation threshold offering a more transparent effect when compared with conventional limiters. Absolutely distortion free Dynamics Control Noise Gate
- Possibility to use the acoustic system parameters, magnitude and phase, and refer to the system's Total Electro-acoustic response so that "you hear what you see"

### **Technical Specifications**

	Model name:	RAMADM24
	Input Impedance:	12 kohm Balanced
	Output Impedance:	50 ohm Balanced
	Dynamic Range:	120dB
	THD:	<0.0018% @-1 dBFS
	Crosstalk:	-90dB
	Storing Memories:	50
	Switching Power Supply:	Universal 85V-265V AC, 50Hz-60Hz

## **ADM 24 Controller** Audio Digital Management







<b>RAM Audio Item</b>	List	Price in Euro	RAMS6044DSPGPI0
Item No.	Amplifiers	RRP	RAMS6044GPIO
	-		RAMS6044XOVER
RAMADM24	ADM 24 - 19" DSP Controller	1.985,0	BAMT1204
RAMDSP22S	DSP 22 S - DSP Module for S Series 2-Channel Professional Power Amplifiers	879,0	BAMT1204GPI0
RAMDSP22W	DSP 22 W - DSP Module for W Series 2-Channel Professional Power Amplifiers	1.104,0	BAMT1208
RAMDSP22WE	DSP 22 WE - Ethernet Module for RAMDSP22W	1.225,0	BAMT1208GPIO
RAMDSP44S	DSP 44 S - DSP Module for S Series 4-Channel Professional Power Amplifiers	995,0	RAMT2408
RAMDSP44W	DSP 44 W - DSP Module for W Series 4-Channel Professional Power Amplifiers	1.225,0	RAMT2408GPI0
RAMDSP44WE	DSP 44 WE - Ethernet Module for RAMDSP44W	1.349,0	BAMT604
RAMGPIOS	NEW GPIO S - GPIO Module for S Series Professional Power Amplifiers	198,0	BAMT604GPI0
RAMGPIOT	NEW GPIO T - GPIO Module for T Series Professional Power Amplifiers	136,0	BAMW12000
RAMS1500	S 1500 - PA Power Amplifier 2 x 880 W 2 Ohms	1.249,0	BAMW12000DSP
RAMS1500DSP	NEW S 1500 DSP - PA Power Amplifier 2 x 880 W 2 Ohms incl. DSP Module	2.704,0	BAMW12000DSPAFS
RAMS1500DSPGPI0	NEW S 1500 DSP GPIO - PA Power Amplifier 2 x 880 W 2 Ohms incl. DSP and GPIO Module	2.954,0	BAMW12000DSPE
RAMS1500GPI0	NEW S 1500 GPIO - PA Power Amplifier 2 x 880 W 2 Ohms incl. GPIO Module	1.840,0	RAMW12000DSPEAES
RAMS2000	S 2000 - PA Power Amplifier 2 x 1190 W 2 Ohms	1.349,0	BAMW12004
RAMS2000DSP	NEW S 2000 DSP - PA Power Amplifier 2 x 1190 W 2 Ohms incl. DSP Module	2.832,0	RAMW12004DSP
RAMS2000DSPGPI0	NEW S 2000 DSP GPIO - PA Power Amplifier 2 x 1190 W 2 Ohms incl. DSP and GPIO Module	3.082,0	BAMW12004DSPAFS
RAMS2000GPI0	NEW S 2000 GPIO - PA Power Amplifier 2 x 1190 W 2 Ohms incl. GPIO Module	1.968,0	BAMW12004DSPF
RAMS3000	S 3000 - PA Power Amplifier 2 x 1570 W 2 Ohms	1.559,0	BAMW12004DSPEAES
RAMS3000DSP	NEW S 3000 DSP - PA Power Amplifier 2 x 1570 W 2 Ohms incl. DSP Module	3.100,0	0 BAMW12044
RAMS3000DSPGPI0	NEW S 3000 DSP GPIO - PA Power Amplifier 2 x 1570 W 2 Ohms incl. DSP and GPIO Module	3.350,0	0 BAMW12044DSP
RAMS3000GPI0	NEW S 3000 GPIO - PA Power Amplifier 2 x 1570 W 2 Ohms incl. GPIO Module	2.236,0	0 BAMW12044DSPAFS
RAMS3004	S 3004 - PA Power Amplifier 4 x 700 W 2 Ohms	1.696,0	0 RAMW12044DSPE
RAMS3004DSP	NEW S 3004 DSP - PA Power Amplifier 4 x 700 W 2 Ohms incl. DSP Module	3.444,0	0 BAMW12044DSPEAES
RAMS3004DSPGPI0	NEW S 3004 DSP GPIO - PA Power Amplifier 4 x 700 W 2 Ohms incl. DSP and GPIO Module	3.694,0	0 BAMW6000
RAMS3004GPI0	NEW S 3004 GPIO - PA Power Amplifier 4 x 700 W 2 Ohms incl. GPIO Module	2.414,0	0 RAMW6000DSP
RAMS3004X0VER	NEW S 3004 X OVER - PA Power Amplifier 4 x 700 W 2 Ohms incl. Analog Processor Module	2.414,0	0 RAMW6000DSPAES
RAMS4000	S 4000 - PA Power Amplifier 2 x 1950 W 2 Ohms	1.840,0	RAMW6000DSPE
RAMS4000DSP	NEW S 4000 DSP - PA Power Amplifier 2 x 1950 W 2 Ohms incl. DSP Module	3.460,0	0 RAMW6000DSPEAES
RAMS4000DSPGPI0	NEW S 4000 DSP GPIO - PA Power Amplifier 2 x 1950 W 2 Ohms incl. DSP and GPIO Module	3.708,0	0 BAMW9000
RAMS4000GPI0	NEW S 4000 GPIO - PA Power Amplifier 2 x 1950 W 2 Ohms incl. GPIO Module	2.594,0	0 RAMW9000DSP
RAMS4004	S 4004 - PA Power Amplifier 4 x 980 W 2 Ohms	1.983,0	0 BAMW9000DSPAES
RAMS4004DSP	NEW S 4004 DSP - PA Power Amplifier 4 x 980 W 2 Ohms incl. DSP Module	3.806,0	BAMW9000DSPE
RAMS4004DSPGPI0	S 4004 DSP GPI0 - PA Power Amplifier 4 x 980 W 2 Ohms incl. DSP and GPI0 Module	4.056,0	0 RAMW9000DSPEAES
RAMS4004GPI0	NEW S 4004 GPI0 - PA Power Amplifier 4 x 980 W 2 Ohms incl. GPIO Module	2.776,0	0 RAMW9004
RAMS4004X0VER	S 4004 X OVER - PA Power Amplifier 4 x 980 W 2 Ohms inkl. Analogem Prozessor-Modul	2.776,0	0 RAMW9004DSP
RAMS4044	S 4044 - PA Power Amplifier 4 x 975 W 4 Ohms	1.983,0	0 RAMW9004DSPAES
RAMS4044DSP	NEW S 4044 DSP - PA Power Amplifier 4 x 975 W 4 Ohms incl. DSP Module	3.806,0	0 RAMW9004DSPE
RAMS4044GPI0	NEW S 4044 GPIO - PA Power Amplifier 4 x 975 W 4 Ohms incl. GPIO Module	2.776,0	0 RAMW9004DSPEAES
RAMS4044X0VER	NEW S 4044 X OVER - PA Power Amplifier 4 x 975 W 4 Ohms incl. Analog Processor Module	2.776,0	0 RAMW9044
RAMS6000	S 6000 - PA Power Amplifier 2 x 2950 W 2 Ohms	2.319,0	0 RAMW9044DSP
RAMS6000DSP	NEW S 6000 DSP - PA Power Amplifier 2 x 2950 W 2 Ohms incl. DSP Module	4.072,0	0 RAMW9044DSPAES
RAMS6000DSPGPI0	S 6000 DSP GPI0 - PA Power Amplifier 2 x 2950 W 2 Ohms incl. DSP and GPI0 Module	4.320,0	0 RAMW9044DSPE
RAMS6000GPI0	NEW S 6000 GPI0 - PA Power Amplifier 2 x 2950 W 2 Ohms incl. GPI0 Module	3.206,0	0 RAMW9044DSPEAES
RAMS6000PS	NEW S 6000 PS - Power Supply for RAMS6000	n.a	A. RAMXOVERS
RAMS6004	S 6004 - PA Power Amplifier 4 x 1440 W 2 Ohms	2.448,0	0 RAMZ210
RAMS6004DSP	NEW S 6004 DSP - PA Power Amplifier 4 x 1440 W 2 Ohms incl. DSP Module	4.402,0	U BAM7215
RAMS6004DSPGPI0	S 6004 DSP GPI0 - PA Power Amplifier 4 x 1440 W 2 Ohms incl. DSP and GPIO Module	4.652,0	0 RAMZ220
RAMS6004GPI0	NEW S 6004 GPI0 - PA Power Amplifier 4 x 1440 W 2 Ohms incl. GPI0 Module	3.372,0	0 RAMZ220
RAMS6004X0VER	NEW S 6004 X OVER - PA Power Amplifier 4 x 1440 W 2 Ohms incl. Analog Processor Module	3.372,0	0 RAMZ420
RAMS6044	S 6044 - PA Power Amplifier 4 x 1480 W 4 Ohms	2.448,0	0 RAMZ420
RAMS6044DSP	NEW S 6044 DSP - PA Power Amplifier 4 x 1480 W 4 Ohms incl. DSP Module	4.402,0	0 RAMZ430
			10 102-110

NEW S 6044 GPIO - PA Power Amplifier 4 x 1480 NEW S 6044 X OVER - PA Power Amplifier 4 x 148 T 1204 - PA Power Amplifier 4 x 320 W 4 Ohms NEW T 1204 GPIO - PA Power Amplifier 4 x 320 W T 1208 - PA Power Amplifier 8 x 150 W 4 Ohms NEW T 1208 GPIO - PA Power Amplifier 8 x 150 W T 2408 - PA Power Amplifier 8 x 300 W 4 Ohms T 2408 GPIO - PA Power Amplifier 8 x 300 W 4 Oh T 604 - PA Power Amplifier 4 x 160 W 4 Ohms T 604 GPIO - PA Power Amplifier 4 x 160 W 4 Ohn W 12000 - PA Power Amplifier 2 x 5900 W 2 0hm NEW W 12000 DSP - PA Power Amplifier 2 x 5900 W 12000 DSP AES - PA Power Amplifier 2 x 5900 NEW W 12000 DSP E - PA Power Amplifier 2 x 590 W 12000 DSP E AES - PA Power Amplifier 2 x 590 W 12004 - PA Power Amplifier 4 x 3025 W 2 Ohm NEW W 12004 DSP - PA Power Amplifier 4 x 3025 NEW W 12004 DSP AES - PA Power Amplifier 4 x 3 NEW W 12004 DSP E - PA Power Amplifier 4 x 302 W 12004 DSP E AES - PA Power Amplifier 4 x 302 W 12044 - PA Power Amplifier 4 x 2950 W 4 Ohm NEW W 12044 DSP - PA Power Amplifier 4 x 2950 W 12044 DSP AES - PA Power Amplifier 4 x 2950 NEW W 12044 DSP E - PA Power Amplifier 4 x 29 W 12044 DSP E AES - PA Power Amplifier 4 x 295 W 6000 - PA Power Amplifier 2 x 3025 W 2 Ohms NEW W 6000 DSP - PA Power Amplifier 2 x 3025 NEW W 6000 DSP AES - PA Power Amplifier 2 x 30 NEW W 6000 DSP E - PA Power Amplifier 2 x 302 W 6000 DSP E AES - PA Power Amplifier 2 x 3025 W 9000 - PA Power Amplifier 2 x 4400 W 2 Ohms NEW W 9000 DSP - PA Power Amplifier 2 x 4400 V NEW W 9000 DSP AES - PA Power Amplifier 2 x 44 NEW W 9000 DSP E - PA Power Amplifier 2 x 4400 W 9000 DSP E AES - PA Power Amplifier 2 x 4400 W 9004 - PA Power Amplifier 4 x 2260 W 2 Ohms NEW W 9004 DSP - PA Power Amplifier 4 x 2260 NEW W 9004 DSP AES - PA Power Amplifier 4 x 22 W 9004 DSP E - PA Power Amplifier 4 x 2260 W 2 W 9004 DSP E AES - PA Power Amplifier 4 x 2260 W 9044 - PA Power Amplifier 4 x 2200 W 4 Ohms NEW W 9044 DSP - PA Power Amplifier 4 x 2200 NEW W 9044 DSP AES - PA Power Amplifier 4 x 22 NEW W 9044 DSP E - PA Power Amplifier 4 x 2200 W 9044 DSP E AES - PA Power Amplifier 4 x 2200 NEW X OVER S - Analog Processor Module for S S NEW Zetta 210 - PA Power Amplifier 2 x 500 W 2 NEW Zetta 215 - PA Power Amplifier 2 x 750 W 2 NEW Zetta 220 - PA Power Amplifier 2 x 1000 W NEW Zetta 236 - PA Power Amplifier 2 x 1800 W Zetta 420 - PA Power Amplifier 4 x 500 W 2 Ohms Zetta 430 - PA Power Amplifier 4 x 750 W 2 Ohms Zetta 440 - PA Power Amplifier 4 x 1000 W 2 Ohn

S 6044 DSP GPIO - PA Power Amplifier 4 x 1480

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าร		1.199,00	
2 Ohms		1.099,00	
2 Ohms		949,00	
2 Ohms		899,00	
2 Ohms		799,00	
Series 4-Channel Professional Power Amplifiers		198,00	
0 W 4 Ohms incl. DSP with AES/EBU Digital Input +	Ethernet Module	6.602,00	
00 W 4 Ohms incl. DSP + Ethernet Module		6.446,00	
2200 W 4 Ohms incl. DSP Module with AES/EBU Dig	ital Input	6.446,00	
) W 4 Ohms incl. DSP Module		6.290,00	
S		3.710,00	
i0 W 2 Ohms incl. DSP with AES/EBU Digital Input +	Ethernet Module	6.602,00	
2 Ohms incl. DSP + Ethernet Module		6.446,00	
2260 W 2 Ohms incl. DSP Module with AES/EBU Dig	ital Input	6.446,00	
) W 2 Ohms incl. DSP Module		6.290,00	
s		3.710,00	
0 W 2 Ohms incl. DSP with AES/EBU Digital Input +	Ethernet Module	5.922,00	
00 W 2 Ohms incl. DSP + Ethernet Module		5.798,00	
4400 W 2 Ohms incl. DSP Module with AES/EBU Dig	ital Input	5.922,00	
W 2 Ohms incl. DSP Module		5.640,00	
s		3.325,00	
5 W 2 Ohms incl. DSP with AES/EBU Digital Input +	Ethernet Module	5.110,00	
25 W 2 Ohms incl. DSP + Ethernet Module		4.986,00	
3025 W 2 Ohms incl. DSP Module with AES/EBU Dig	ital Input	4.954,00	
5 W 2 Ohms incl. DSP Module		4.830,00	
S		2.689,00	
50 W 4 Ohms incl. DSP with AES/EBU Digital Input	+ Ethernet Module	7.254,00	
950 W 4 Ohms incl. DSP + Ethernet Module		7.098,00	
0 W 4 Ohms incl. DSP Module with AES/EBU Digital I	nput	7.098,00	
50 W 4 Ohms incl. DSP Module		6.942,00	
ns		4.220,00	
25 W 2 Ohms incl. DSP with AES/EBU Digital Input	+ Ethernet Module	7.254,00	
025 W 2 Ohms incl. DSP + Ethernet Module		7.098,00	
3025 W 2 Ohms incl. DSP Module with AES/EBU Di	gital Input	7.098,00	
25 W 2 Ohms incl. DSP Module	sitel lesut	6.942,00	
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000 W 2 Ohms incl. DSP with AES/EBU Digital Input	+ Ethernet Module	6.578,00	
900 W 2 Ohms incl. DSP + Ethernet Module		6.452,00	
0 W 2 Ohms incl. DSP Module with AES/EBU Digital I	nput	6.422,00	
00 W 2 Ohms incl. DSP Module		6.296,00	
ns		3.838,00	
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Ohms incl. GPIO Module		1.590,00	
W 4 Ohms incl. GPIO Module		1.325,00	
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W 4 Ohms incl. GPIO Module		1.140,00	
HOU W 4 UTITIS ITCL ATIAIOU PLOCESSOF MODULE			
180 W 4 Ohms incl. Analog Processor Module		3.372,00	
) W 4 Ohms incl. GPIO Module		4.652,00 3.372,00	
W 4 Ohms incl. DSP and GPIO Module		4 652 00	

### **Protection Systems**

#### PMS<sup>™</sup> - Power Management System

This is a complete set of protections that monitors the main amp parameters (load status, signal input, temperature, current, etc.) in order to draw from the power supply only the precise amount of current required to maintain safe operation during hazardous or extreme working conditions. This system controls the amount of power that the amp delivers under three basic circumstances:

1.- The power-on sequence, where output is inhibited until the amp circuits are ready to operate. This routine is repeated at every restart, not just when the power switch is activated.

2.- When internal temperatures rise to near thermal shutdown point due to unfavourable operating conditions. Here the system takes control, restricting current so as to maintain operational continuity at the precise power level which the amp is capable of withstanding at that particular moment.

3.- Excessive mains current consumption. This event only occurs either under laboratory conditions (long term sinusoidal signal testing with dummy loads) or, for example, in field applications in conditions of prolonged acoustic howl-round. Here PMS takes control to avoid any damage to the speakers and to prevent the mains breaker from tripping or the fuses blowing.

#### ICL2<sup>™</sup> - Intelligent Clip Limiter

The RAM Audio ICL2 is an anticlip system to avoid speaker failure and provide more acceptable sound quality even when clipping occurs. With the ICL2 system you don't lose the music "punch" but the speakers are kept under control.

#### SSP<sup>™</sup> - SOA Sentry Protection

SOA Sentry protection effectively limits the power that the amp could deliver into an incorrect load or to a direct short-circuit. This avoids power transistor failure.

#### FCM<sup>™</sup> - Faulty Channel Management

Faulty Channel Management system to avoid entire device shutdown.



42 I RAM Audio



# HRAM Audio

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