

Technical Specifications

	S-1500	S-2000	S-3000	S-4000	S-6000	S-3004	S-4004	S-4044	S-6004	S-6044
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 W
@ 8Ω	2x 325 W	2x 460 W	2x 630 W	2x 810 W	2x 1250 W	4x 300 W	4x 430 W	4x 690 W	4x 620 W	4x 1015 W
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 W
<i>Pink Noise 12dB C.F.</i>										
@ 2Ω	2x 975 W	2x 1360 W	2x 2060 W	2x 2460 W	2x 4225 W	4x 890 W	4x 1170 W	-	4x 2080 W	-
@ 4Ω	2x 610 W	2x 880 W	2x 1240 W	2x 1600 W	2x 2600 W	4x 580 W	4x 820 W	4x 1230 W	4x 1280 W	4x 2110 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	>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	5.0/2.5/1.3
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)	0.5 A	0.5 A	0.5 A	0.5 A	0.5 A	0.5 A	0.5 A	0.5 A	0.5 A	0.5 A
@ 4Ω (1/8 rated power)	4 A	4.8 A	6.2 A	7.5 A	10.5A	6 A	7.5 A	11A	10.5A	15A
Dimensions										
W x H x D (mm)	483x89x310									
W x H x D (inches)	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
Protections										
Soft-start, Turn-on Turn-off transients, Muting at turn-on, Over-heating, DC, RF, Short-circuit, Open or mismatched loads, Overloaded power supply, ICL™, PMS™, SSP™										

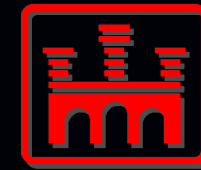
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RAM

Audio®

S Series

The Next Power Amps





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 distills 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.

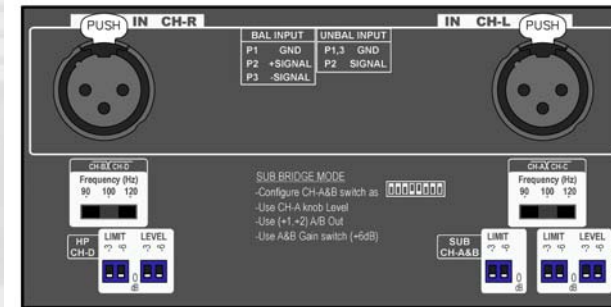
Read on to find out why an S Series RAM Audio power amplifier should be your next buy, to give you the peace of mind that only the best of keenly-priced, reliable and future-proof equipment can provide.

Welcome to the S Series.

S Series Input Module Options



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.



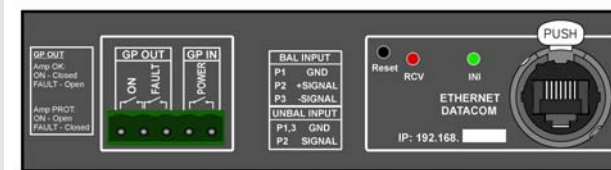
Analog Processor Module: permits a very easy, user-friendly signal processing to enable the amp to set up a bi-amp system without any other outboard device. These are the Processor's main characteristics:

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



DSP Module: Digital Signal Processor fully programmable through an USB port. These are the Processor's main characteristics:

- Four Inputs/Four Outputs or Two In/Two Out free route configurable.
- 24 bits/192 kHz 256x Oversampling Converters.
- Output Delay: 0 to 7.1 meters (20.69ms) per channel.
- Crossovers: 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 pannel configuration.



EtherRAM Control Module: permits the control and monitoring of an installed group of Power Amps, connected to a standard EtherNet LAN using the onboard Datacom port via a Neutrik® RJ-45 connector. Also, it has a general purpose input and output (GPIO) connector to interface with third party controllers like an alarm system. It permits to control the turn on and to report the operating status.



Ethernet Audio Transport: digital audio network interface module which permits the reception of audio signal through an Ethernet network. The network's own external control system permits signal routing to any of the amp's channels. Two different versions for CobraNet™ or EtherSound™ protocols.



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

EtherRAM Control System

EtherRAM is a control system which permits, with just a computer, the control and monitoring of an installed group of 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.

Input Control and Monitoring:

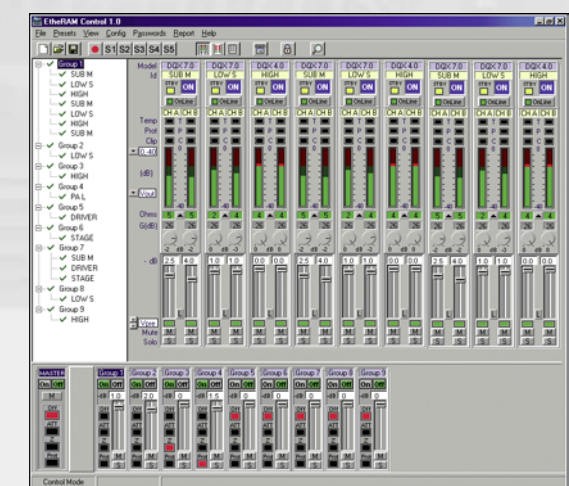
- Input Gain selected: 26-32-38dB
- Pre/Post-fader signal level metering
- Pre/Post-fader signal monitoring
- Front panel level knob monitoring
- Level control
- Level monitoring (dB)
- Mute control
- Solo control

Output Monitoring:

- Output voltage metering
- Output current metering (Amperes)
- Output power metering (Watts)
- Output Clip monitoring
- Output signal monitoring

Load Monitoring:

- Open/shorted load detection
- Adjustable threshold for detecting open and short
- Real time average minimum impedance (Ohms)



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

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.

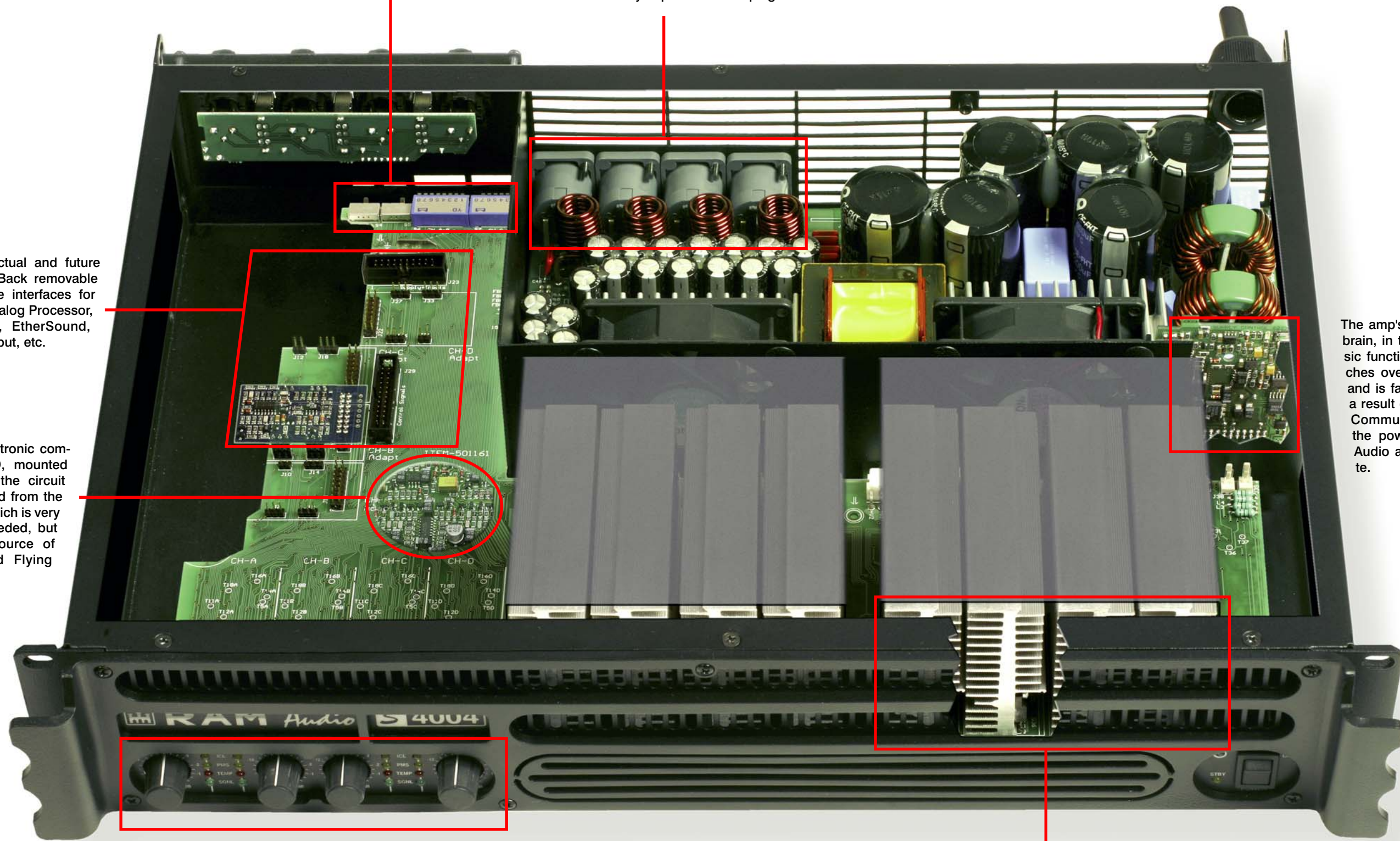
Location of the actual and future connection bays. Back removable plate can host the interfaces for DSP Processor, Analog Processor, EtherRAM Control, EtherSound, Cobranet, AES3 Input, etc.

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).

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 amplifiers is absolute.

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

Newly designed short tunnel cooling system forces air directly onto the high efficiency heat-sinks and the o/p devices bolted directly to them.



Performances

- Ultra-compact and lightweight 2-U high, around 8 kg and 30 cm deep.
- Laser cut aluminum front panels with integrated carrying handles.
- Neutrik® XLR input connectors, input and signal link in 2 channel models.
- Input Link switch: allow daisy-chaining of the one channel input signal to other channel.
- Neutrik® Speakon® output connectors.
- Detented sealed potentiometers for easy recall of volume settings.
- ICL, PMS, Hi-temp, Signal indicators per channel. Power on and Stand-by leds.
- Highly versatile with multiple configuration possibilities and additional module options.
- Switchable ICL clip-limiters per channel.
- Switchable and selectable (30 or 50 Hz) sub-sonic highpass filter per channel.
- Three-position gain selector (26, 32 or 38 dB).
- Dual or bridge mode selector.
- Twin continuously variable, temperature controlled, back to front cooling fans.
- Oversized power components (high SOA reserve specification).



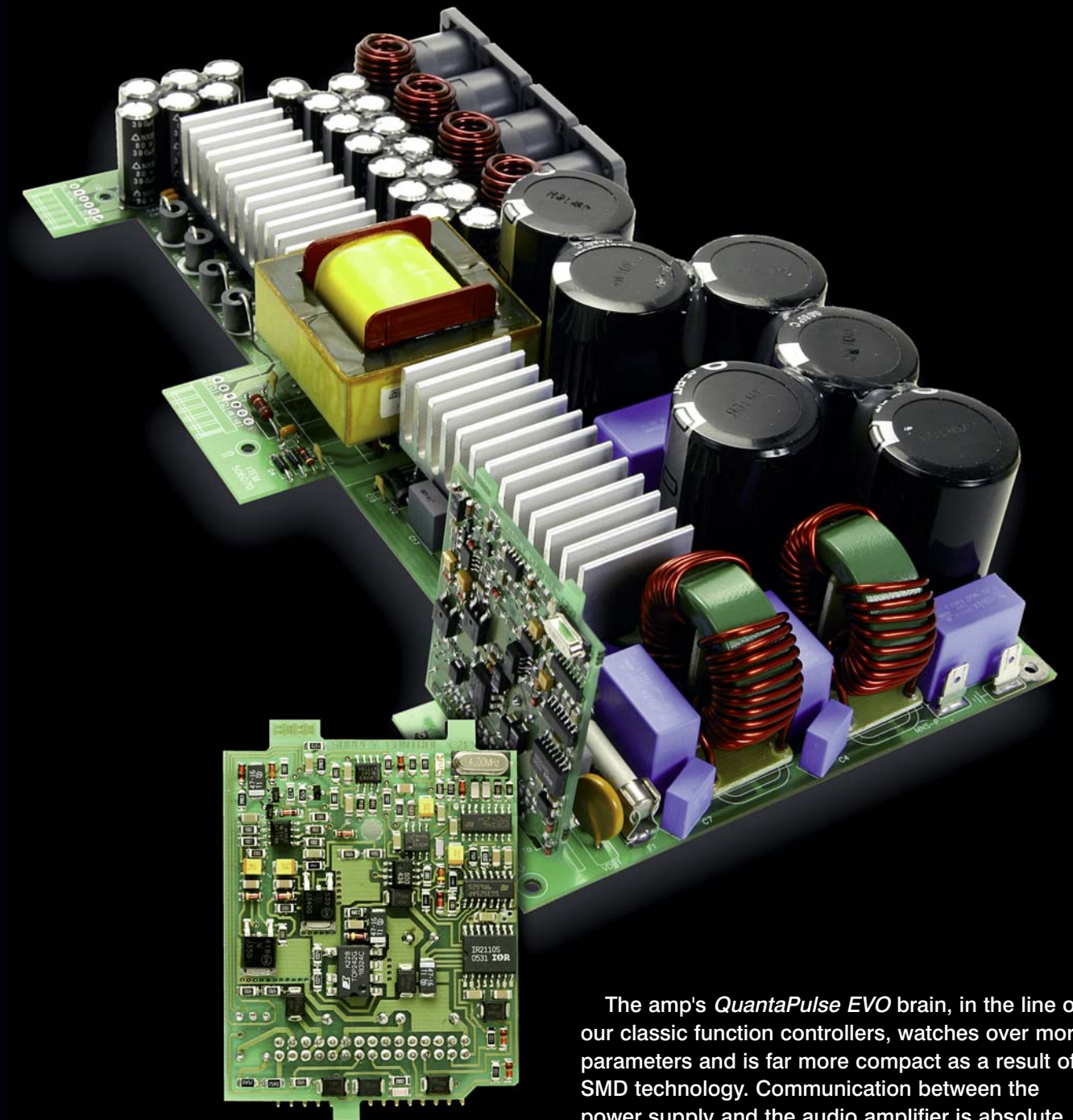
Protections

- **PMS™: 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 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.
 - Excessive mains current consumption: this event only occurs either under laboratory conditions (longterm sinusoidal signal testing with dummy loads) or, 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 fuse blowing.
- **SSP™: 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™: improved Intelligent Clip Limiting**, to avoid speaker failure and provide more acceptable sound quality even when clipping occurs. With the ICL™ system you don't lose the music punch but the speakers are kept under control.

QuantaPulse™ EVO 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.

4 Channel S-Series



Die neue Verstärkerbaureihe der S-Serie ist komplett mit modernsten QuantaPulse™ EVO-Schaltnetzteilen versehen. Die wichtigsten Vorteile: auch bei hohen Ausgangsleistungen bleiben die Verstärker „tragbar“ (nur ca. 8 bis 8,5 kg), sie erzeugen weniger Wärme, der Wirkungsgrad und die Zuverlässigkeit wurden weiter gesteigert. Zur Wahl stehen 2- und 4-Kanal-Verstärker mit Ausgangsleistungen von 1,5 bis 6 kW. Alle Modelle sind nur 30 cm tief bei einem Standardrackgehäuse von 2 HE. Die SMD-Technologie bietet hohe Packungsdichte und ein Höchstmaß an Betriebsicherheit. Für die 2-Kanal-Modelle gibt es ein gesondertes Datenblatt.

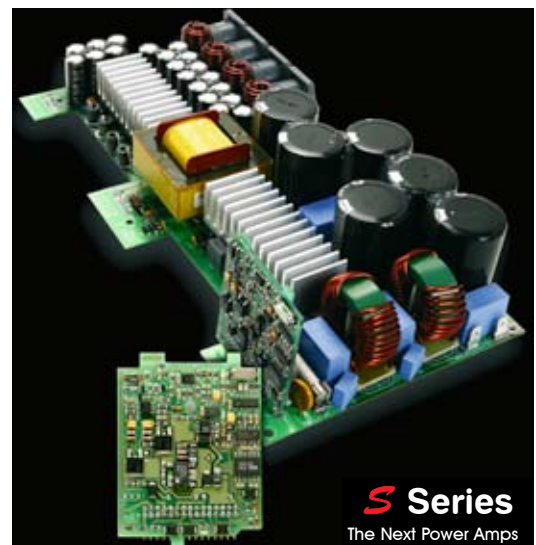
Die wichtigsten Features der 4-Kanal-Modelle

- QuantaPulse™ EVO Schaltnetzteil hoher Effizienz, stellt höchsten Strom bei hervorragender Sicherheit zur Verfügung
- 5 Modelle mit zwei Kanälen und 5 Modelle mit 4 Kanälen bei Gesamtleistungen zwischen 1,5 bis 6 kW (RMS)
- Alle Modelle sind ca. 8 kg leicht, bei 30 cm Tiefe und 2 HE
- Elektronische Sicherheitsschaltungen
- SMD-Bestückungstechnologie für hohe Packungsdichte, hohe Betriebsicherheit und Robustheit
- Elektronische Sicherheitsschaltungen
- XLR-Steckverbindungen zur Signaldurchschleifung
- **Optionale Eingangserweiterungsmodule:**
 - Analoges Prozessormodul
 - DSP-Eingangsmodul
 - EtheRam-Steuermodul
 - Ethernet-Audioeingangsmodul
 - AES/EBU-Digitaleingangsmodul, CobraNet oder EtherSound

Die Ausgangsleistungen

	S-3004	S-4004	S-4044	S-6004	S-6044
RMS*					
Watt @ 2 Ω	4 x 700	4 x 980	-	4 x 1440	-
Watt @ 4 Ω	4 x 500	4 x 670	4 x 975	4 x 1000	4 x 1480
Watt @ 8 Ω	4 x 300	4 x 430	4 x 690	4 x 620	4 x 1015
Brücke @ 4 Ω	2 x 1400	2 x 1960	-	2 x 2880	-
Brücke @ 8 Ω	2 x 1000	2 x 1340	2 x 1950	2 x 2000	2 x 2960
Pink Noise**					
Watt @ 2 Ω	4 x 890	4 x 1170	-	4 x 2080	-
Watt @ 4 Ω	2 x 580	4 x 820	4 x 1230	4 x 1280	4 x 2110

* 1 kHz, 1% THD+N; ** 12 dB Crest-Factor



Schaltnetzteil QuantaPulse™ EVO



4 Channel S-Series

Technische Daten

Modell	S-3004	S-4004	S-4044	S-6004	S-6044
Übertragungsbereich ±25 dB	20...20 000 Hz	20...20 000 Hz	20...20 000 Hz	20...20 000 Hz	20...20 000 Hz
Phasengang @ 1 W, 20...20 000 Hz	±15°	±15°	±15°	±15°	±15°
THD (20...20 000 Hz)	<0,05%	<0,05%	<0,05%	<0,05%	<0,05%
IM-Verzerrungen (SMPTÉ)	<0,05%	<0,05%	<0,05%	<0,05%	<0,05%
Dämpfungsfaktor 20...500 Hz @ 8 Ω	>500	>500	>500	>500	>500
Übersprechdämpfung (20...20 000 Hz)	>75 dB	>75 dB	>75 dB	>75 dB	>75 dB
Spannungsverstärkung bei Nennleistung	26 / 32 / 38 dB	26 / 32 / 38 dB	26 / 32 / 38 dB	26 / 32 / 38 dB	26 / 32 / 38 dB
Empfindlichkeit @ 8 Ω	2,6 / 1,3 / 0,6 V	3,0 / 1,5 / 0,8 V	3,7 / 1,9 / 0,9 V	3,5 / 1,8 / 0,9	5,0 / 2,5 / 1,3
Störspannungsabstand @ 20...20 000 Hz	112 dB	113 dB	116 dB	116 dB	118 dB
Stromaufnahme Leerlauf 230 V @ 50 Hz @ 4 Ω (1/8 Nennleistung)	0,5 A 6 A	0,5 A 7,5 A	0,5 A 11 A	0,5 A 10,5 A	0,5 A 15 A
Abmessungen mm (B x H x T)	483 x 89 x 310	483 x 89 x 310	483 x 89 x 310	483 x 89 x 310	483 x 89 x 310
Nettogewicht (kg)	8,5	8,5	8,5	8,6	8,6

Schutzschaltungen Sofortstart; Ein-/Ausschalttransienten, Muting bei Einschaltung, Überhitzung, Gleichspannungsanteile, Hochfrequenz, Kurzschluss, offene Ausgänge, Fehlanpassungen

Garantie **5 Jahre**

Technische Änderungen vorbehalten



Geräte-Rückseite

(rechte Seite mit den Anschlüssen DIP-Schaltern)



Ausschreibungstexte

S-3004

Vierkanaliger Hochleistungsverstärker; Ausgangsleistung: 4 x 700 W an 2 Ω, 4 x 670 W an 4 Ω, 4 x 300 W an 8 Ω; Schaltnetzteil mit hoher Effizienz; Modularbauweise in SMD-Technik mit hoher Packungsdichte; Störspannungsabstand 112 dB (20 bis 20 000 Hz); elektronische Schutzschaltungen; LED-Anzeigen: Übersteuerung (Clip), Betriebsbereitschaft, Signalpräsenz, Temperatur, Fehler; Eingänge: XLR; Ausgänge: Neutrik Speakon™; getrennte XLR für Signaldurchschleifung; adaptierbare Eingangsmodule; Rackgehäuse, 2 HE, Tiefe 310 mm; Gewicht 8,5 kg. Der Verstärker soll ein RAM-Audio Modell S-3004 sein.

S-4044

Vierkanaliger Hochleistungsverstärker; Ausgangsleistung: 4 x 975 W an 2 Ω, 4 x 690 W an 8 Ω; Schaltnetzteil mit hoher Effizienz; Modularbauweise in SMD-Technik mit hoher Packungsdichte; Störspannungsabstand 116 dB (20 bis 20 000 Hz); elektronische Schutzschaltungen; LED-Anzeigen: Übersteuerung (Clip), Betriebsbereitschaft, Signalpräsenz, Temperatur, Fehler; Eingänge: XLR; Ausgänge: Neutrik Speakon™; getrennte XLR für Signaldurchschleifung; adaptierbare Eingangsmodule; Rackgehäuse, 2 HE, Tiefe 310 mm; Gewicht 8,5 kg. Der Verstärker soll ein RAM-Audio Modell S-4044 sein.

S-6044

Vierkanaliger Hochleistungsverstärker; Ausgangsleistung: 4 x 1480 W an 4 Ω, 4 x 1015 W an 8 Ω; Schaltnetzteil mit hoher Effizienz; Modularbauweise in SMD-Technik mit hoher Packungsdichte; Störspannungsabstand 118 dB (20 bis 20 000 Hz); elektronische Schutzschaltungen; LED-Anzeigen: Übersteuerung (Clip), Betriebsbereitschaft, Signalpräsenz, Temperatur, Fehler; Eingänge: XLR; Ausgänge: Neutrik Speakon™; getrennte XLR für Signaldurchschleifung; adaptierbare Eingangsmodule; Rackgehäuse, 2 HE, Tiefe 310 mm; Gewicht 8,6 kg. Der Verstärker soll ein RAM-Audio Modell S-6044 sein.

S-4004

Vierkanaliger Hochleistungsverstärker; Ausgangsleistung: 4 x 980 W an 2 Ω, 4 x 670 W an 4 Ω, 4 x 300 W an 8 Ω; Schaltnetzteil mit hoher Effizienz; Modularbauweise in SMD-Technik mit hoher Packungsdichte; Störspannungsabstand 113 dB (20 bis 20 000 Hz); elektronische Schutzschaltungen; LED-Anzeigen: Übersteuerung (Clip), Betriebsbereitschaft, Signalpräsenz, Temperatur, Fehler; Eingänge: XLR; Ausgänge: Neutrik Speakon™; getrennte XLR für Signaldurchschleifung; adaptierbare Eingangsmodule; Rackgehäuse, 2 HE, Tiefe 310 mm; Gewicht 8,5 kg. Der Verstärker soll ein RAM-Audio Modell S-4004 sein.

S-6004

Vierkanaliger Hochleistungsverstärker; Ausgangsleistung: 4 x 1440 W an 2 Ω, 4 x 1000 W an 4 Ω, 4 x 620 W an 8 Ω; Schaltnetzteil mit hoher Effizienz; Modularbauweise in SMD-Technik mit hoher Packungsdichte; Störspannungsabstand 112 dB (20 bis 20 000 Hz); elektronische Schutzschaltungen; LED-Anzeigen: Übersteuerung (Clip), Betriebsbereitschaft, Signalpräsenz, Temperatur, Fehler; Eingänge: XLR; Ausgänge: Neutrik Speakon™; getrennte XLR für Signaldurchschleifung; adaptierbare Eingangsmodule; Rackgehäuse, 2 HE, Tiefe 310 mm; Gewicht 8,6 kg. Der Verstärker soll ein RAM-Audio Modell S-6004 sein.