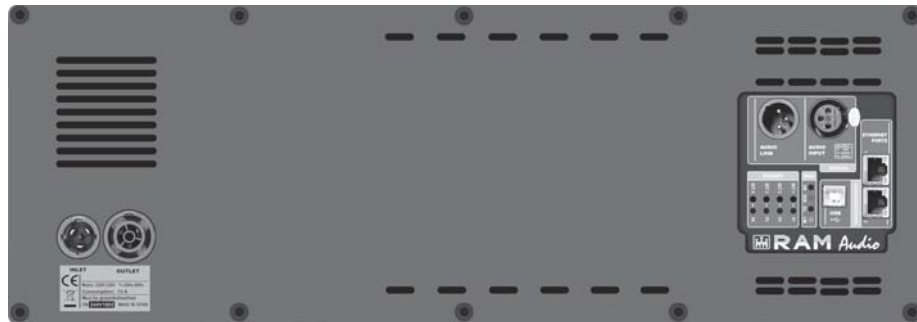


RAM

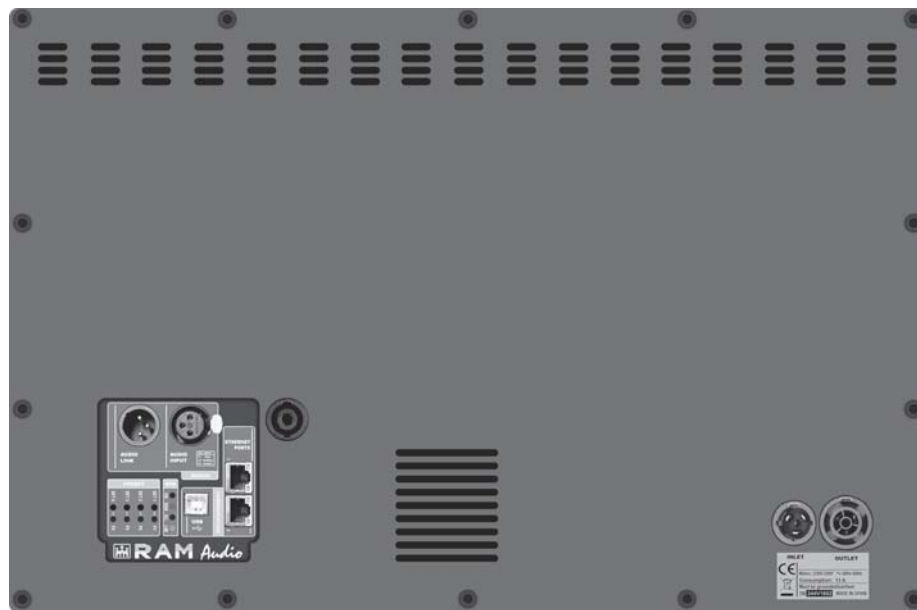
Audio®

DSP_PowerPack™ • SUB Series

SB 3K



SB 6K



OPERATION MANUAL BEDIENUNGSANLEITUNG MANUAL DE USUARIO



Module Assembly

Modul Zusammenbau

Montaje del Modulo

Installation Requirements

For the installation of the SUB module you need an internal chamber inside the acoustic enclosure, separate from the chamber where the speaker is mounted. If preferred, the SUB module can be supplied with a rear metal case for this purpose, avoiding having to make this space airtight.

The module is fixed to the enclosure with M5 screws, foam should be placed in the joint between the module and the box to avoid vibrations (it is not advisable to put foam in the joint between the module and the optional rear metal case).

In the drawings below you can see: (1) the external dimensions of the module (front/profile), (2) the optional rear metal case, and also (3) the recommended machining of the acoustic enclosure.

Installationsvoraussetzungen

Für die Installation des SUB Moduls wird ein eigenes Volumen im Lautsprechergehäuse benötigt, welches separat von dem des Lautsprechers ist. Wenn gewünscht kann das SUB Modul mit einer metallenen Schale versehen werden, um diesen Bereich nicht extra luftdicht machen zu müssen.

Das Modul wird mit M5 Schrauben am Gehäuse befestigt, in den Spalt zwischen Modul und Gehäuse sollte Dichtschaum gegeben werden, um Vibrationen zu vermeiden (Es ist nicht ratsam zwischen dem Modul und dem optionalen metallenen rückwärtigen Gehäuse ebenfalls Dichtschaum zu geben).

In den Zeichnungen weiter unten kann man folgendes sehen: (1) Die äußeren Abmessungen des Moduls (von Vorne, von der Seite), (2) das optionale rückwärtige Gehäuse und (3) auch die benötigte Aussparung des Lautsprechergehäuses.

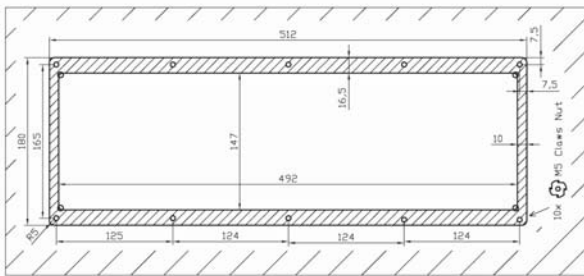
Requisitos de Instalación

Para la instalación del modulo SUB es necesario tener una cámara interna en el recinto acústico, separada de la cámara donde está montado el altavoz. Opcionalmente, el módulo SUB puede ser suministrado con un cajón metálico trasero para este propósito, y así evitar tener que hacer este alojamiento hermético en el recinto.

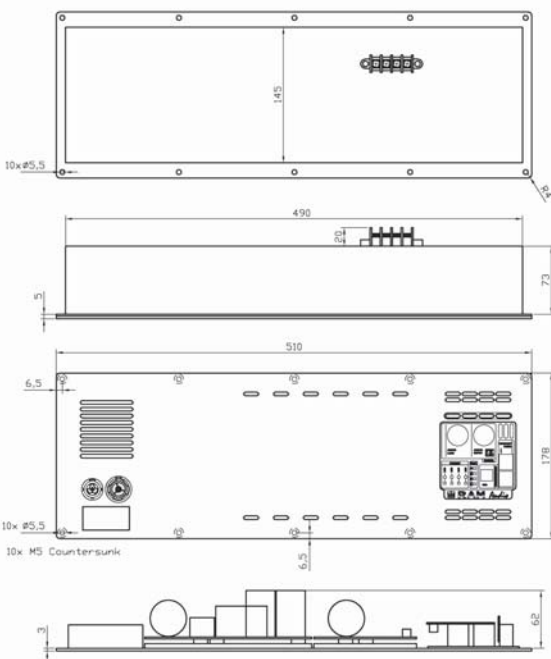
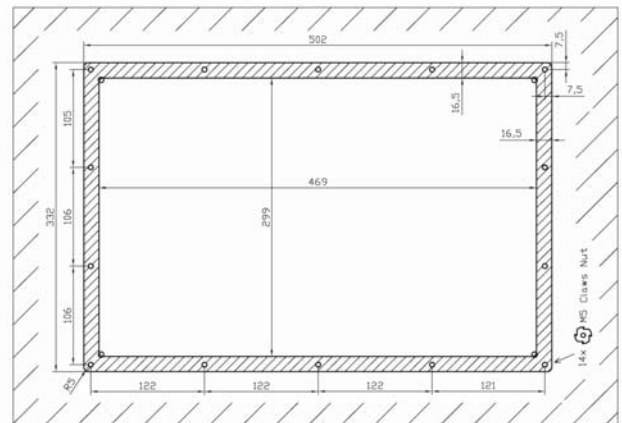
La sujeción del módulo al recinto se realiza mediante tornillos M5, y debe colocarse una junta de espuma entre el módulo y la caja para evitar vibraciones (no es recomendable poner esta junta entre el modulo y el cajón metálico opcional).

En los planos de debajo de estas líneas se muestran: (1) las dimensiones externas del módulo (frontal/perfil), (2) las del cajón opcional, así como (3) el mecanizado recomendado a realizar en el recinto acústico.

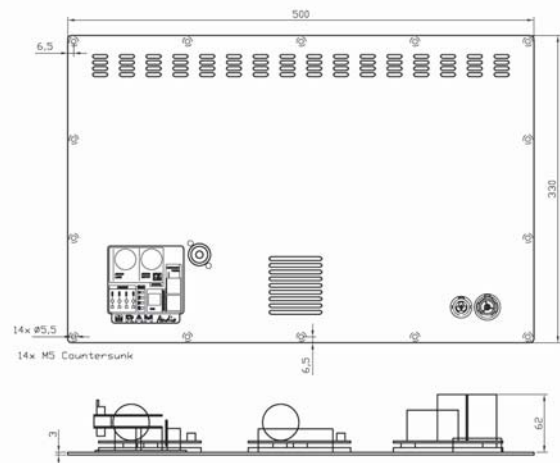
(3) SB 3K Cabinet Mechanization



(3) SB 6K Cabinet Mechanization



(2) SB 3K
Optional
Aluminium
Case



(1) SB 3K Profile-Front Dimensions

(1) SB 6K Profile-Front Dimensions

Connection and Description

Modul Zusammenbau

Conexión y Descripción

Speakers Connection

The connection of the speakers to the module is done using Faston connectors. The PCB male Faston connectors are duplicated, to facilitate the connection of 2 speakers in parallel.

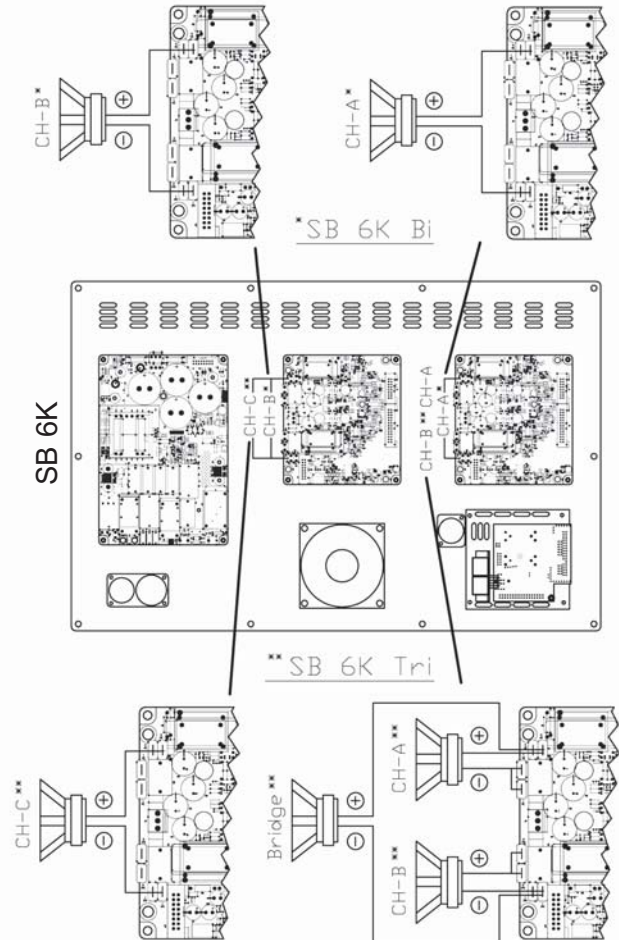
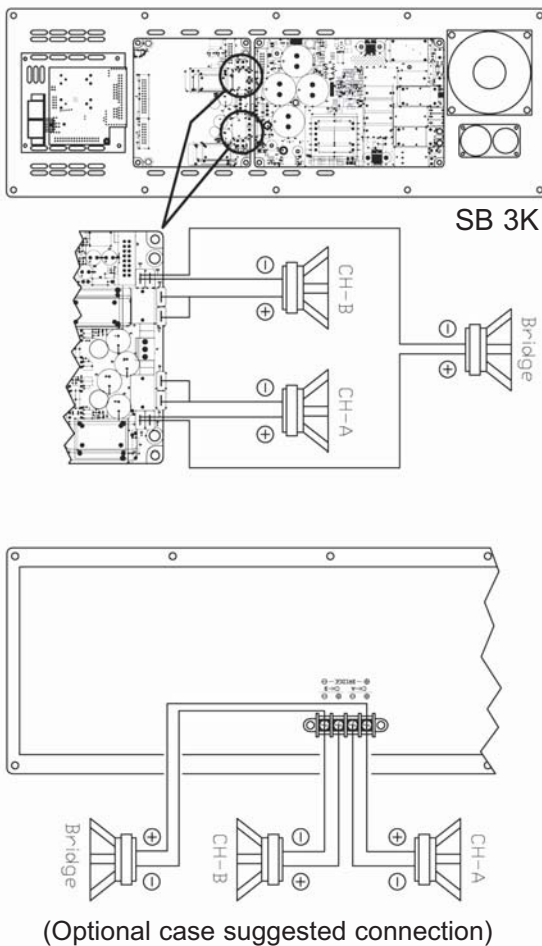
The connection is as follows:

Installationsvoraussetzungen

Die Verbindung der Lautsprecher zum Modul erfolgt mittels Faston Stecker. Die männlichen Leiterplatten Faston Stecker sind doppelt ausgeführt, um eine Parallelschaltung von zwei Lautsprecher zu ermöglichen. Der Anschluss erfolgt wie folgt:

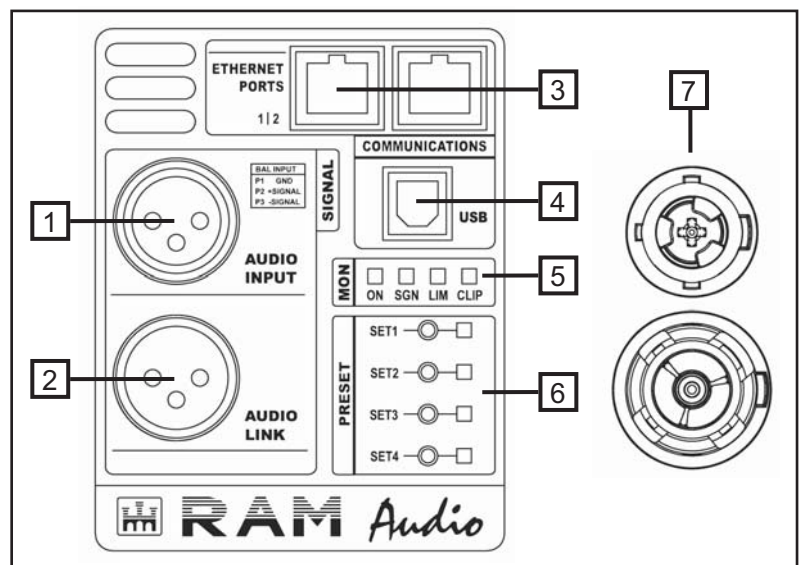
Conexión de Altavoces

La conexión de los altavoces al modulo se realiza a través de conectores Faston. Los conectores Faston macho del circuito impreso están duplicados, para facilitar el conexionado de 2 altavoces en paralelo. El conexionado es el siguiente:



Front Panel Description

- 1 **Signal Input:** Female XLR Connector for signal input.
- 2 **Signal Link:** Male XLR Connector for signal link.
- 3 **Ethernet Connectors:** RJ45, two ports Ethernet switch.
- 4 **USB Connector:** B type USB connection.
- 5 **LED ON:** power supply ON.
LED SIGNAL: input signal presence indication.
LED LIMIT: lights when the DSP limiters are working.
LED CLIP: the maximum input or output has been reached.
- 6 **Quick Preset:** press the button for 3 seconds to change the desired output preset.
LEVEL: push SET 3-4 buttons simultaneously to enter LEVEL mode (both LEDs light up). Then use 3 and 4 to change level.
- 7 **Mains connection:** inlet and outlet powerCON True1 connection. It works also as a main switch, as it is a connector with breaking capacity.



DSP Specifications

Overall:

- High performance 96kHz 120dB 32 bits AD/DA converters
- 64 bit double-precision 96kHz DSP process
- 0.6ms minimum process latency time
- Up to 3000 taps custom FIR process
- Up to 562ms total audio delay

Input Section:

- Gain, Mute and Phase inversion
- Input Delay: 0 to 140 meters (406ms)
- Input EQ: 31 GEQ + 8 PEQ (Parametric, Shelving, LP, HP, BP, SB, AP)

Output Section:

- Crossover Filters: FIR and IIR (up to 48dB/oct, Butterworth / Linkwitz-Riley / Bessel)
- Output Delay: 0 to 18 meters (52ms) per channel
- Output IIR EQ: 12 filters per channel (Parametric, Shelving, LP, HP, BP, SB, AP)
- Output FIR EQ: 20 filters per channel (Parametric, Shelving, LP, HP, BP, SB, AP), or Custom up to 3000 taps
- RMS, Peak, and Thermal limiter per channel

RAM_OCS Control

Control & Monitor:

- Signal, Lim, Clip, Temp and Prot monitor
- Input, Output, and Temperature meters

Communications:

- Two ports Ethernet switch for daisy chain connection
- USB 2.0, Type B connector

Overall:

- 20 Manufacturer preset memories library
- 5 User preset memories library
- 4 Quick Preset selection
- Manufacturer/Installer/User passwords
- Independent selectable output power per channel (Z dependant)
- User control groups for virtual Equalization, Gain and Delay
- Zone management for library, stand-by and alerts information
- Smaart® analysis software integration

Amplifier Specifications

Output Power Configuration (Selectable by channel)	SB 3K		SB 6K Bi		SB 6K Tri		
	CH-A	CH-B	CH-A	CH-B	CH-A	CH-B	CH-C
8 ohm	400W	400W	1500W	1500W	400W	400W	1500W
4 ohm	750W	750W	3000W	3000W	750W	750W	3000W
2 ohm	1500W	1500W	1500W	1500W	1500W	1500W	1500W
Bridge 8 ohm	1500W		-		1500W		
Bridge 4 ohm	3000W		-		3000W		
Total Harmonic Distortion	<0.05%		<0.05%		<0.05%		
Efficiency	>90%		>90%		>90%		
Damping Factor (20-500Hz @8Ω)	>400		>400		>400		
Voltage Gain	26dB-38dB		26dB-38dB		26dB-38dB		
Operational Mains voltage	85-265V AC/50-60Hz		85-265V AC/50-60Hz		85-265V AC/50-60Hz		
Consum. @4Ω, 1/8 r.p., 230V AC	2.2 A		4.3 A		4.3 A		
Power Factor	>0.95		>0.95		>0.95		
Efficiency	>90%		>90%		>90%		
Dimensions							
External Plate WxH	510x178 mm		500x330 mm		500x330 mm		
Internal Enclosure WxHxD	490x145x68 mm		467x297x68 mm		467x297x68 mm		
Occupied Volume (optional case)	4.8 l		9.4 l		9.4 l		
Weight	2.5 kg		3.4 kg		3.4 kg		
Connections:	XLR Input, XLR Link, powerCON True1 in-out, USB, 2x RJ45, barrier strip (in optional case)						
Protections:	Turn-on transients, Over-heating, DC, RF, Short-circuit, mismatched loads, ICL™, PMS™						



The exclamation point inside an equilateral triangle indicates the existence of internal components whose substitution may affect safety.



The lightning and arrowhead symbol warns about the presence of uninsulated dangerous voltage.



To avoid fire or electrocution risk do not expose the unit to rain or moisture. To avoid electric shock, do not open the unit. No user serviceable parts inside. In the case of disfunction, have the unit checked by qualified agents. Class I device.