MATRIX-22
Users manual

D.A.S.

SOUND WITH SOUL

INDEX

MATRIX-22
Safety Precautions

The exclamation point inside an equilateral triangle is intended to alert the users to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product. Heed all warnings. Follow all instructions. Keep these instructions.

WARNING: This is a class A product. In a domestic environment this product may cause radio interferences in which case the user may be required to take adequate measures.

Use this product only in E1, E2, E3 or E4 environments according to EN55103-2.

Do not remove mains connector ground, it is dangerous and illegal. Class I device. The product must be connected to a mains socket outlet with protective earth connection. Only use this equipment with an appropriate mains cord for your country.

The lightning and arrowhead symbol warns about the presence of uninsulated dangerous voltage. To reduce the risk of electric shock, do not remove the cover.

The device have a standard connector IEC60320-14, with fuseholder, for mains.

Only use this equipment with an appropriate mains cord.

The connected outer wiring to these terminals requires of its installation by an instructed person and the use of a flexible cable already prepared.

This symbol on the product indicates that this product should not be treated as household waste. Instead it shall be handed over to the appicable collection point for the recycling of electrical and electronic equipment.

The ON position is indicated in the switch by means of the corresponding standardized symbols (IEC 60417-1 and IEC 60417-2).

If the apparatus is connected permanently, the electrical system of the building must incorporate a multipolar switch with a separation of contact of at least 3mm in each pole.

Do not expose this device to rain or moisture. Do not use this apparatus near water (for example, swimming pools and fountains). Do not place any objects containing liquids, such as bottles or glasses, on top of the unit. Do not splash liquids on the unit. IP-20 equipment.

Clean only with a dry cloth. Do not use any solvent based cleaners.

Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus that produce heat.

The circulation of air must not be blocked.

Unplug this apparatus during lightning storms, earthquakes or when unused for long periods of time.

Take into account that the nominal AC voltage is the value shown in the equipment ±10% (according to IEC 60065:2001). If the fuse needs to be replaced, please pay attention to correct type and ratings.

If the cable or the mains plug are damaged they must be replaced. Contact the manufacturer to provide you with the necessary spare parts. No user serviceable parts inside. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally or has been dropped.

MATRIX-22
Warranty

All our products are warrantied against any manufacturing defect for a period of 2 years from date of purchase.

The warranty excludes damage from incorrect use of the product.

All warranty repairs must be exclusively undertaken by the factory or any of its authorised service centers.

To claim a warranty repair, do not open or intend to repair the product.

Return the damaged unit, at shippers risk and freight prepaid, to the nearest service center with a copy of the purchase invoice.

MATRIX-22
Declaration of conformity

DAS Audio Group, S.L.
C/ Islas Baleares, 24 - 46988
Pol. Fuente del Jarro - Valencia. España
(España)

Declares that MATRIX-22

Abide by essential objectives relating Directives:

- Low Voltage Directive   2014/35/UE
- Electromagnetic Compatibility (EMC)   2014/30/UE
- RoHS   2011/65/UE
- RAEE (WEEE)   2012/19/UE

In accordance with Harmonized European Norms:

- EN 60065:2014.- Audio, video and similar electronic apparatus. Safety requirements.
- EN 55032:2012.- Electromagnetic compatibility of multimedia equipment. Emission requirements.
- EN 55103-2:2009.- Electromagnetic compatibility. Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use. Part 2:Immunity.
- EN 50581:2012.- Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances.
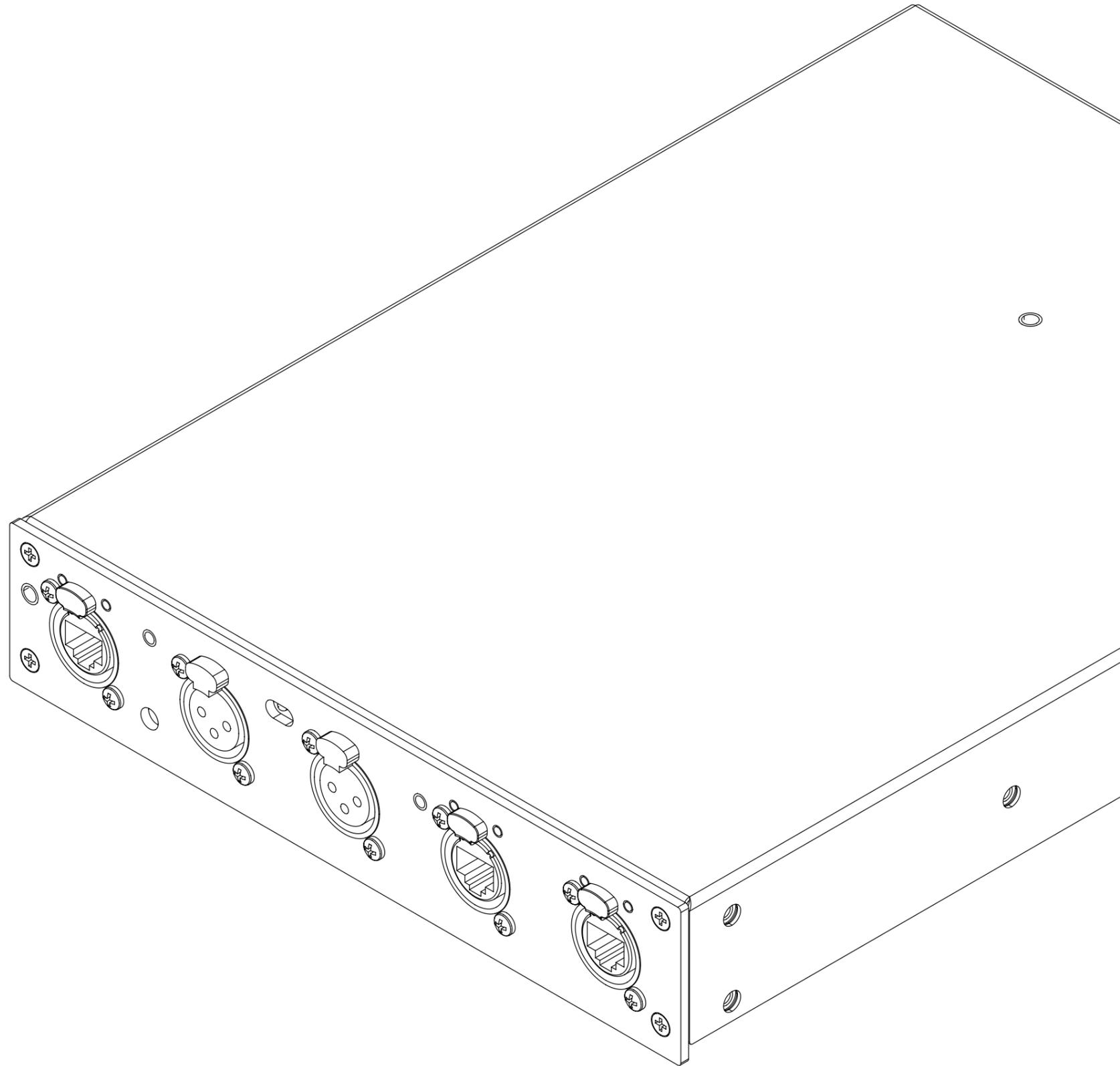
MATRIX-22
Description

The Matrix-22 is a 1U 19" half rack-mount, dual input, dual output channel breakout box intended to distribute analog audio signals and monitoring & control (ALMA) data to the ARA-P sound systems. It incorporates an integrated 1 Gbit 4-port Ethernet switch.

It is the most convenient solution when using ARA-P systems because of its simplicity and ease of use.

The internal ethernet switch combines the control data and analog audio in two etherCON outputs dedicated to connect the audio systems. Also included on the rear panel are two XLR audio outputs and an Ethernet jack, designed to send audio and data to other systems.
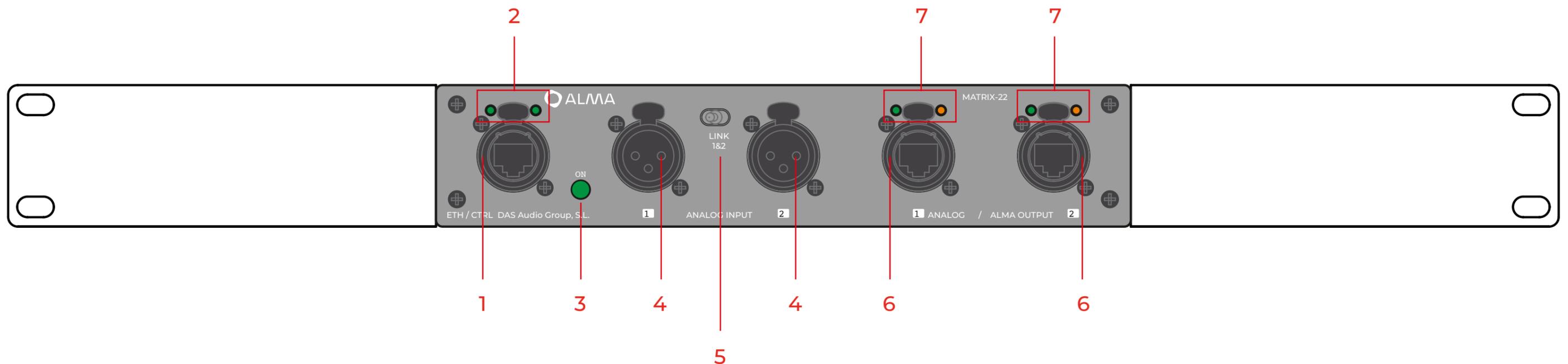
MATRIX-22
Package content

|	Qty	Description	Code
A	1	Audio and Network Data Distributor	11106140
B	1	Rack Mount Angle Brackets (2 units)	30007675
C	1	Linking Plates (2 units)	30007676
	1	PowerCord (not shown below)	
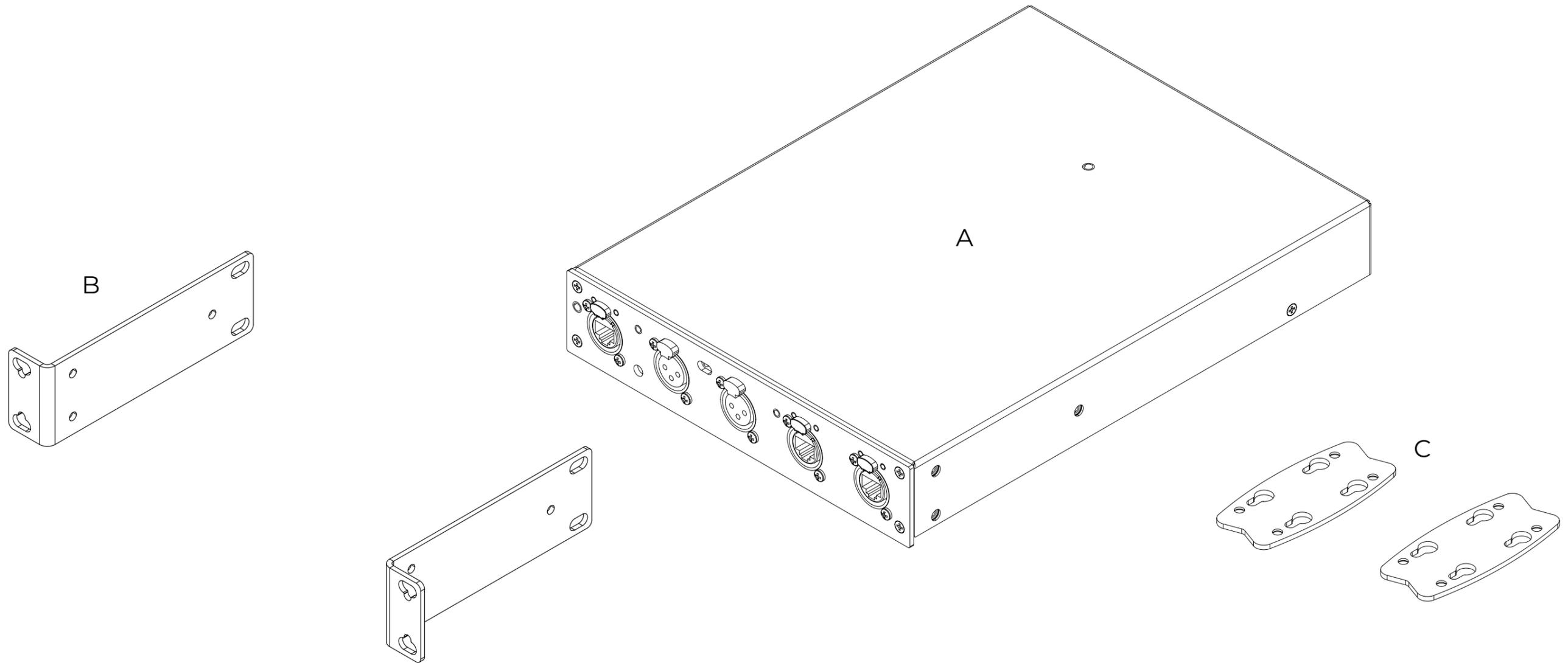
MATRIX-22
Front panel

1. Front etherCON Ethernet Switch port intended for ALMA network connection.

2. Ethernet ALMA Indicators. Ethernet link / Activity indicator.
   Left Green LED ON: 100Mbit connection
   Both LEDs (Green) ON: 1Gbit connection
   Blinking with traffic

3. Power / ON Led.

4. Balanced Analog Audio Inputs 1 & 2. 2x Female XLR.

5. Audio Link Switch. To copy Analog Audio from Input 1 to the two etherCON outputs.

6. Ethernet switch etherCON ports for connecting ARA sound systems. These etherCON outputs combine analog audio from inputs 1 and 2, and control/monitoring data from the ETH / CTRL input. If separate audio inputs are required, the Audio Link selector must be disabled (left position).

7. ALMA Ethernet Indicators. Ethernet link / Activity indicator.
   Left Green LED: link indicator
   Right Orange LED: activity indicator
   Blink with traffic

MATRIX-22
Rear panel

8. Rear etherCON Ethernet Switch port intended for ALMA network connection. To be used to link extra Matrix-22 units.

9. Balanced Analog Audio Outputs 1 & 2. Audio copies of the front Analog Audio Inputs. Male XLR.
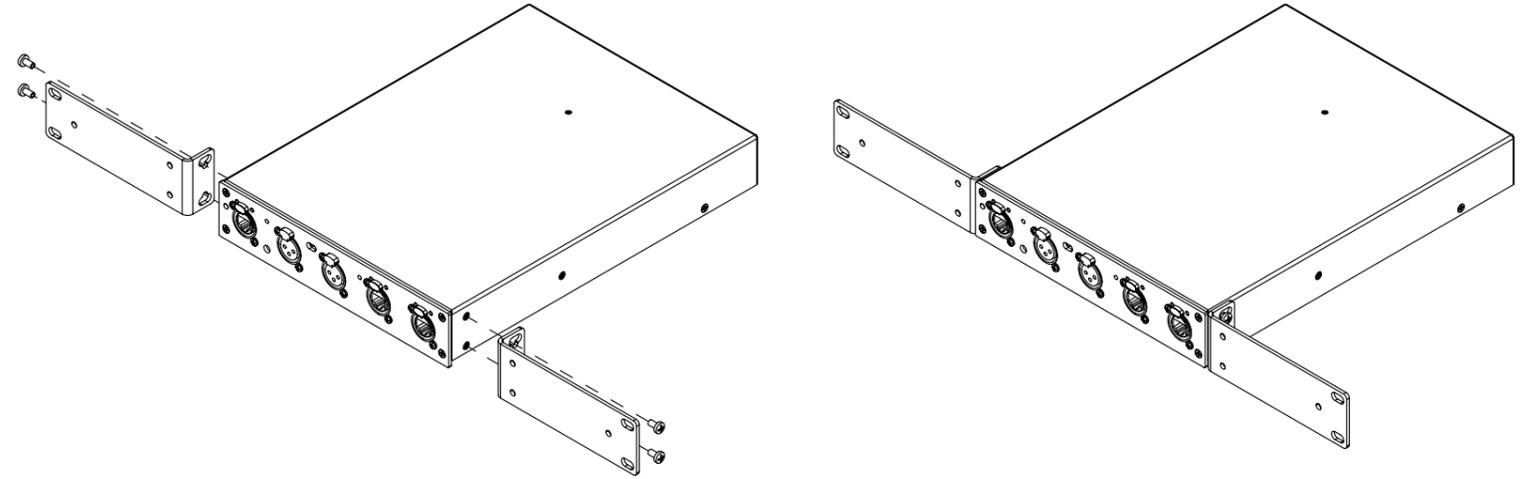
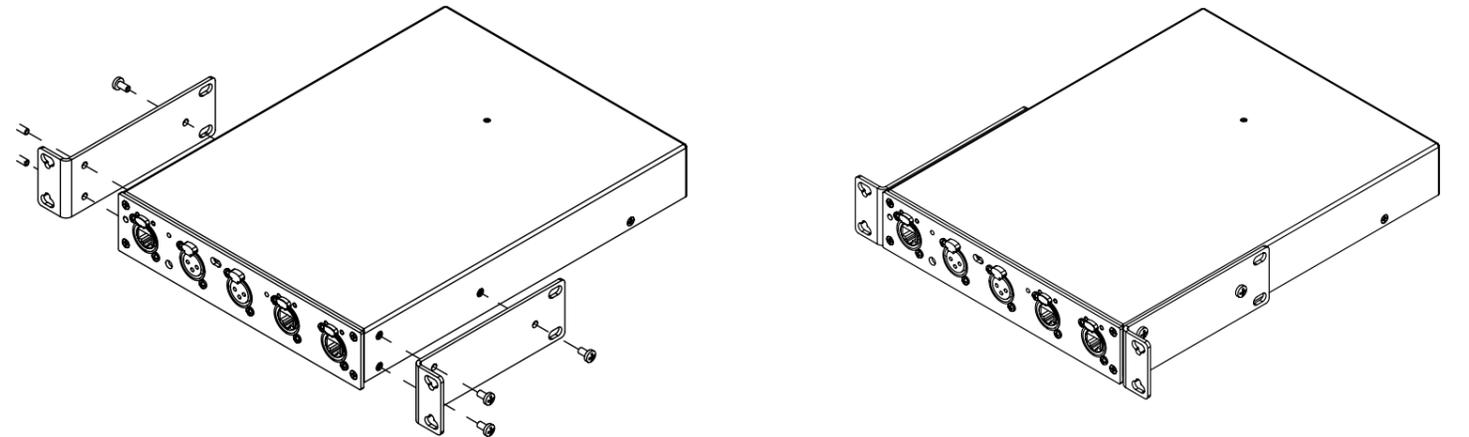10. PowerCON TRUE1 Mains connector socket.
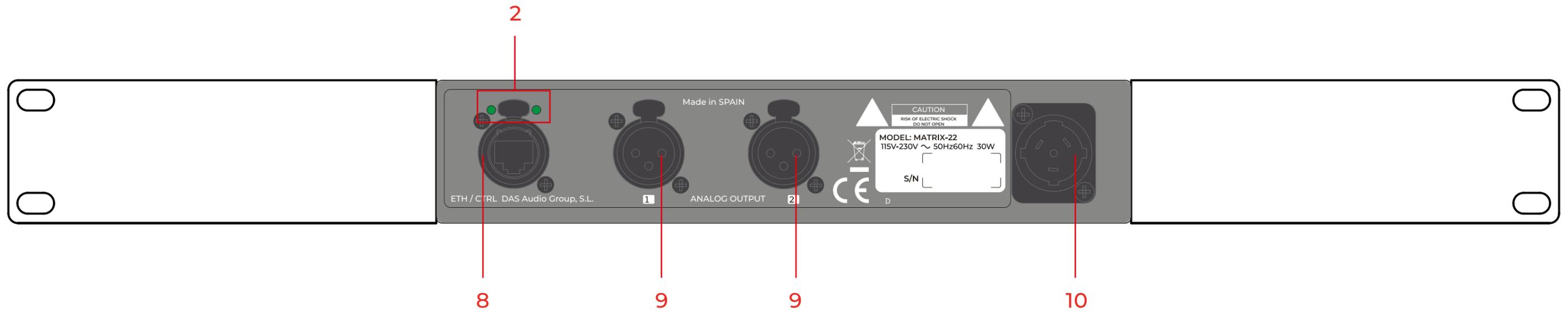
MATRIX-22
Rack mounting

Single 19" rack mount

With the two Angle Brackets Provided it is possible to assembly the unit in a 19" rack:

Single half rack mount

With the two Angle Brackets Provided it is possible to assembly the unit in a half width rack:
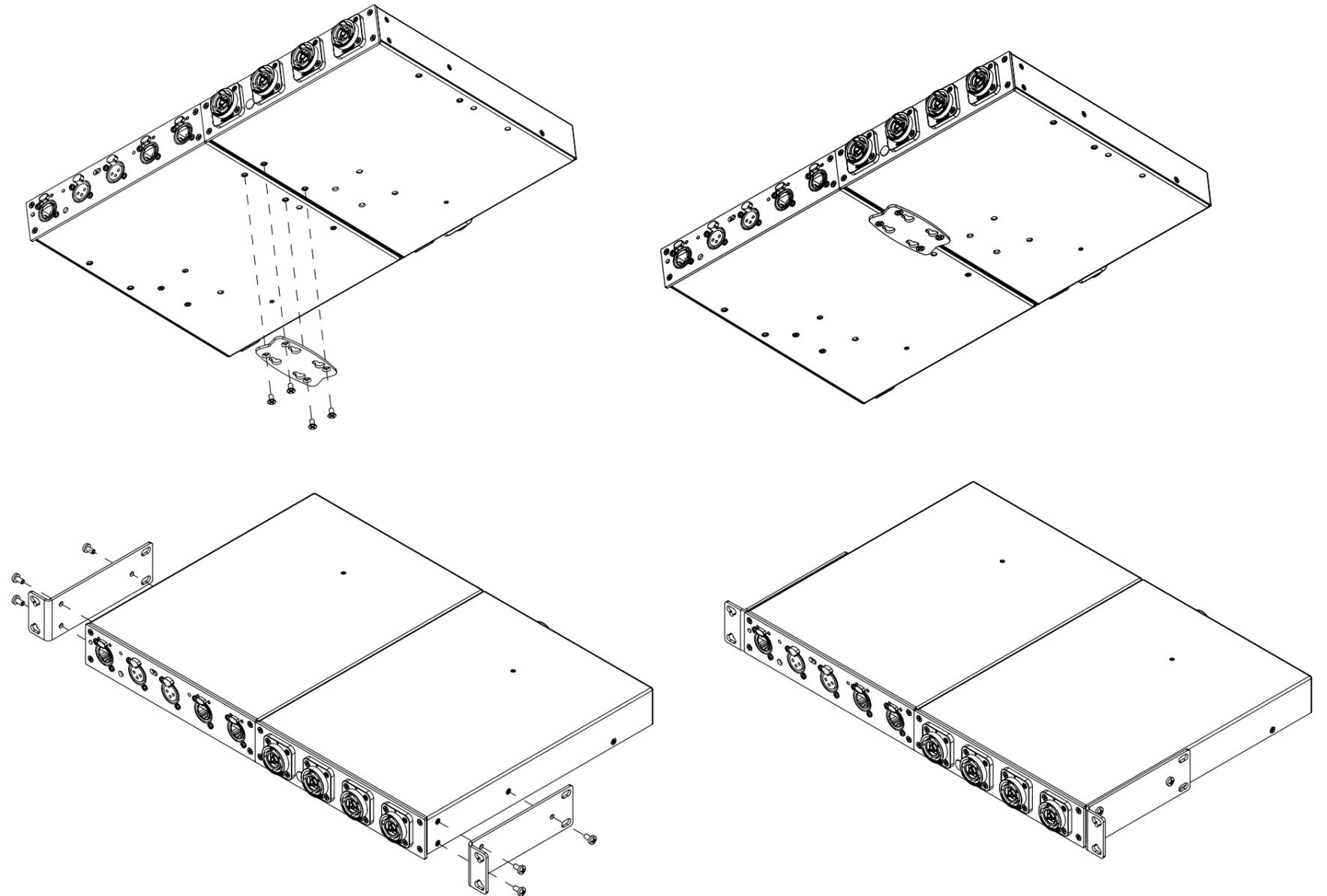
MATRIX-22
Rack mounting

Tandem 19" rack mount

The ideal combination in a lot of cases would be assembling one Matrix-22 unit together with one PP-4 power distributor, side by side. To do so, use the Angle Brackets supplied with the product and the linking plates as follows:
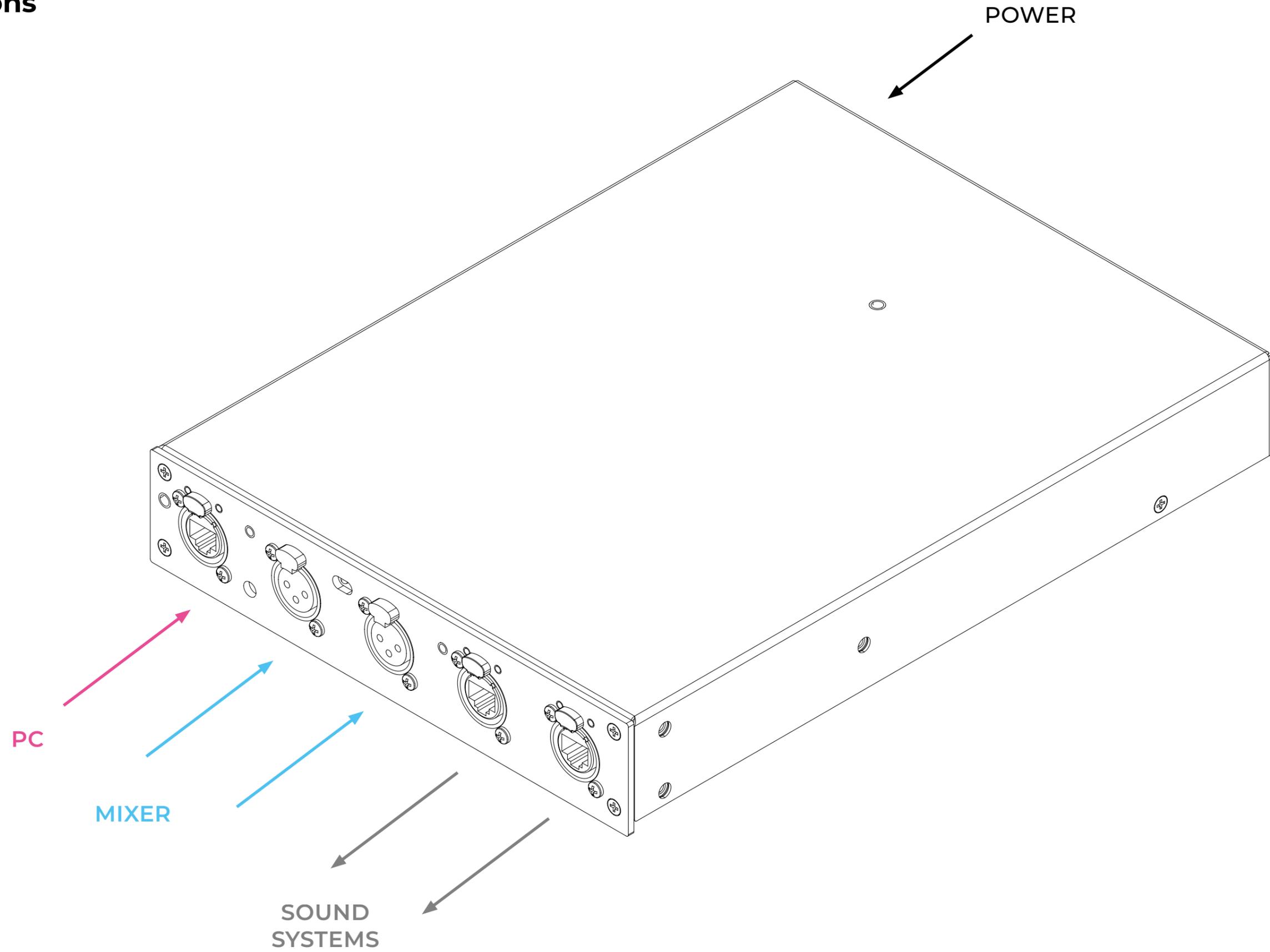
MATRIX-22
Technical specifications

Audio	
Inputs	2x Balanced Female XLR (front panel)
Outputs	2x Balanced Male XLR (rear panel)
Network (ALMA)	
	Ethernet Switch 100Mbit / 1Gbit (internal)
Input	1x etherCON (front panel)
Output	1x etherCON (rear panel)
Audio & ALMA Network	
Audio and ALMA Outputs	2x etherCON (front panel)
LEDS and Indicators	
Power	ON - Green
Network Connectors	Left LED only – Green, 100Mbit
	Right LED – Green, 1Gbit
ALMA Connectors	Left LED – Link indicator, Green
	Right LED – Activity indicator, Orange

Power	
AC Input Connector	PowerCon TRUE1
Power Supply	Universal Mains Switch Mode
Operating Range	90 – 250 VAC
Power Consumption	30 W
Dimensions - Weight	
Dimensions (H x W x D)	44 x 215 x 300 mm 1,7 x 8,5 x 11,8 in
Net Weight	2Kg (4,4 lb)
Shipping	
Carton Dimensions (H x W x D)	190 x 365 x 365 mm 7,5 x 14,4 x 14,4 in
Shipping Weight	3,7Kg (8,2 lb)

MATRIX-22
Connections

POWER

PC

MIXER

SOUND
SYSTEMS

MATRIX-22
Connections

ALMA network shall be connected to the front´s panel left etherCON (pink) named ETH / CTRL.

At the rear panel of the Matrix-22 there are two audio output connectors copies of the audio inputs to be used when having several Matrix-22 units. Besides the audio outputs one extra ALMA etherCON connector is available to "daisy chain" several units.

Small systems can combine the use of Matrix-22 units and the PP-4 power distributor in 1U rack space.

Two independent audios can be injected into the Matrix-22, Left and Right Channels.

Two independent audio inputs (blue) are available at the front panel. If only one audio is used, this signal can be sent to the two etherCON outputs (grey) by changing the switch´s position to the right, as shown below:
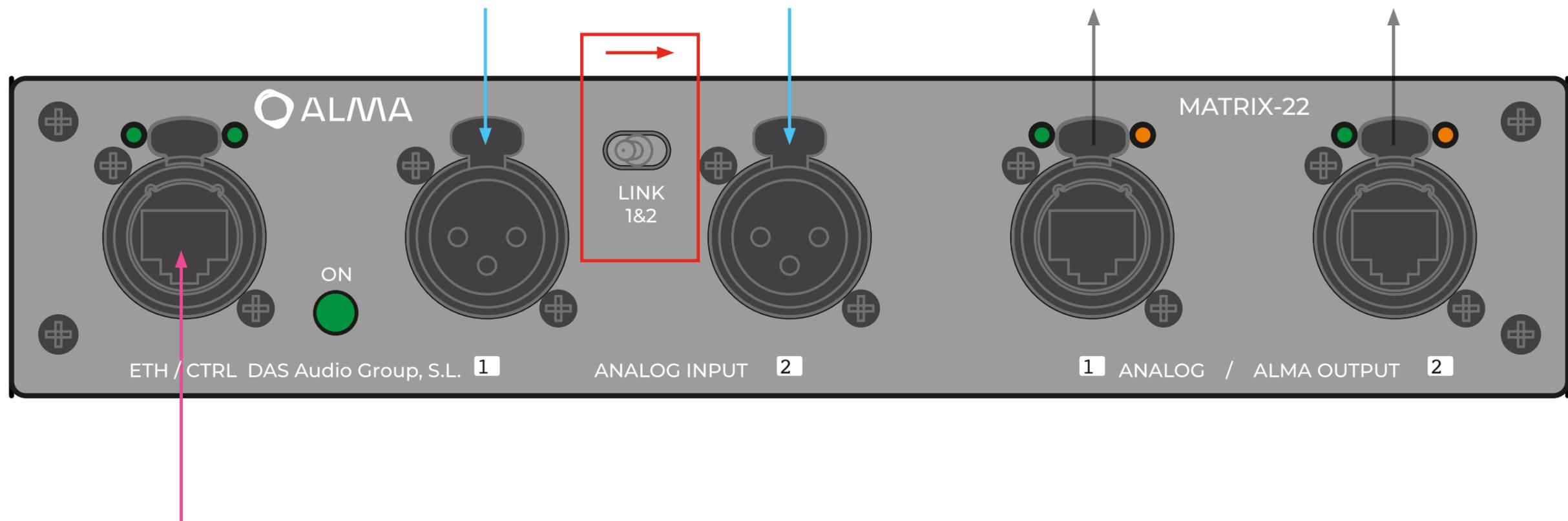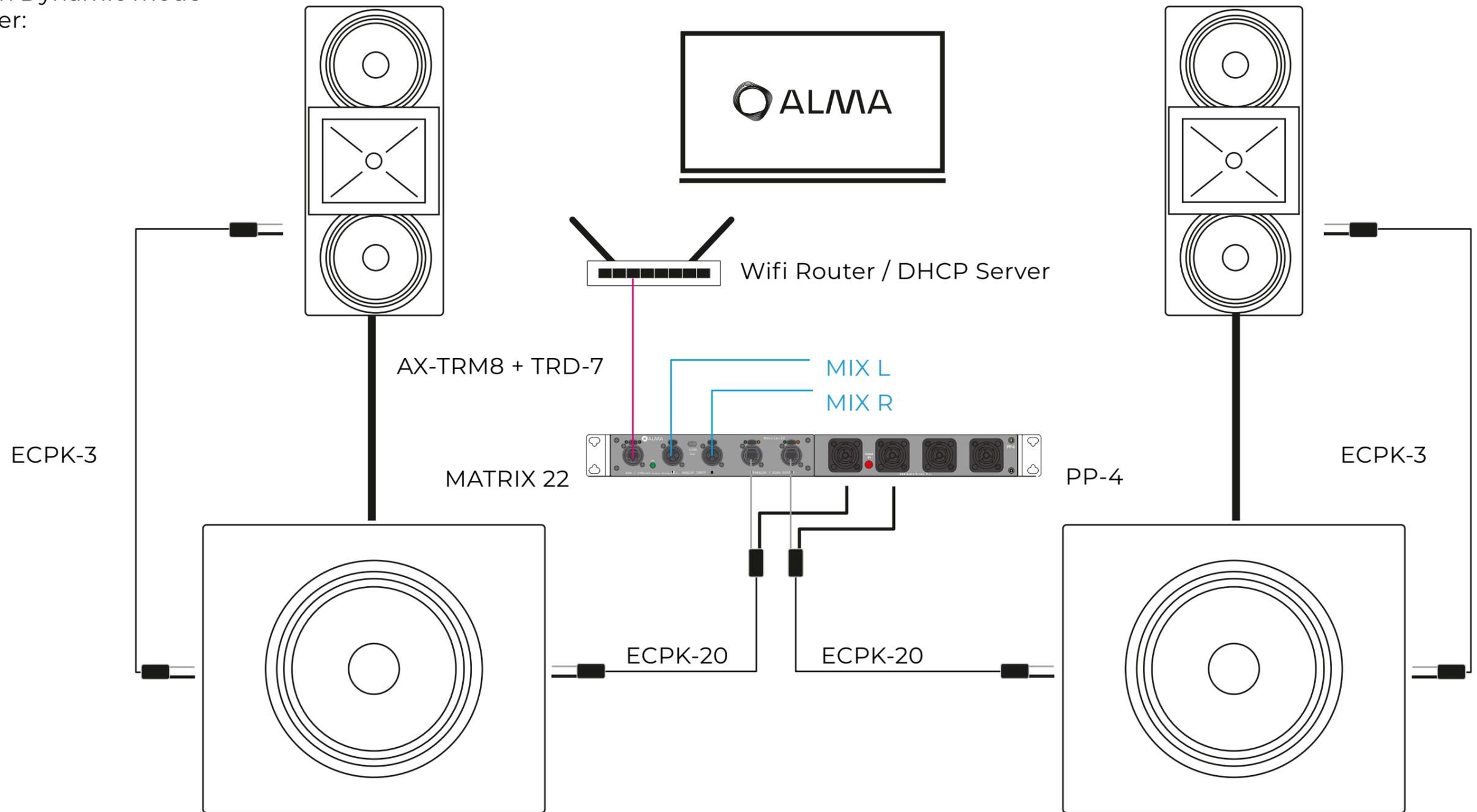
MATRIX-22
Connections

The IP addresses can be set on Static Mode as shown below. One direct CAT 6 /CAT 7 cable (pink) from the control computer will be used for the ALMA network:

ECPK-3

TRD-7

MATRIX 22

MIX L
MIX R

PP-4

ECPK-3

ECPK-20

ECPK-20
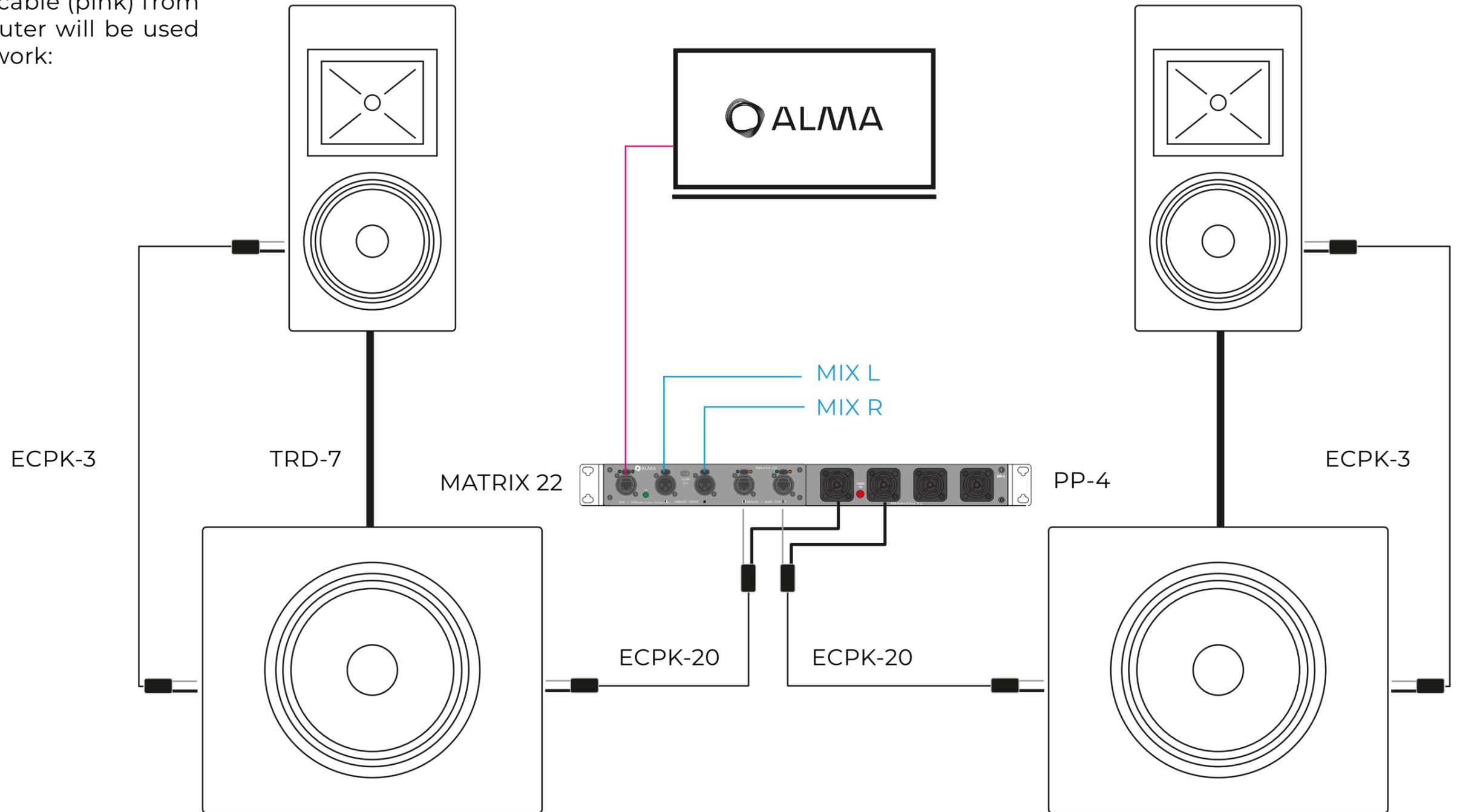
MATRIX-22
Connections

The same type of system can be configured with a WiFi router, and all ARA units set on Dynamic mode with a DHCP Server:

Wifi Router / DHCP Server

AX-TRM8 + TRD-7

MIX L

MIX R

ECPK-3

MATRIX 22

PP-4

ECPK-3

ECPK-20

ECPK-20

MATRIX-22
Troubleshooting

PROBLEM	CAUSE	SOLUTION
The ON LED does not light up when mains power is active.	1. Loose connector(s). 2. Defective cable wire. 3. Internal power supply damaged.	1. Check powercon true1 connector and both extremes of the power cord. Check connections on the system and power distribution panels. 2. Check the cables. Use another cable if possible. 3. Replace power supply.
No sound from the units	1. Signal cable with loose connector(s). 2. No audio from the source. 3. Defective signal cable. 4. Matrix-22 with no audio. 5. The unit is muted via ALMA.	1. Check both, XLR and Ethercon connectors on both extremes of the cable. 2. Unmute and turn on the audio source. Double check the signal path. 3. Check that there is no visible damage or cuts in the cable. Try to replace the unit. 4. Check the signal path. 5. Restore parameters in the display of the unit (reset).
No audio in the ANALOG/ALMA OUTPUT 2	1. Check LINK 1&2 switch´s position. 2. Check audio source.	1. In case you want to link audio channel from ANALOG INPUT 1 to 2, move the slider of the LINK 1&2 switch to the right. 2. Check the signal path.
The units are not connecting to ALMA	1. Check computer is connected on the same network than the Matrix-22. 2. LEDs of ETH/CRTL etherCON do not lit or blink. 3. LEDs of ALMA OUTPUT etherCONs do not lit or blink. 4. Check Communication preferences on ALMA. 5. Matrix-22 switch with no power. 6. Defective cable and / or connectors. 7. Unit is set on DHCP mode and there Is no router on the network. 8. Unit is set on static mode but the IP address doesn´t match the computer´s one. 9. Wrong sub-net mask.	1. Verify that the computer and the Matrix-22 are connected or directly, or through the same switch or router. 2. Check the direct connection to the computer in case of direct connection, or connection to the switch / router. Check the ethernet and ECPK cables. 3. Verify that the ARA systems are powered. Check the connection with the ECPK cables to the ARA systems. 4. Select the correct network adapter. 5. Turn on Matrix-22. 6. Check cables and connectors, make sure they are correctly inserted into the amplifier's input connector. 7. Set the unit on Static mode or include a DHCP / router on the network. 8. Use same range of IP addresses. For instance, computer 10.0.0.10, systems 10.0.0.20 - 10.0.0.100 9. Use 255.255.255.0 on both computer and devices.

SOUND WITH SOUL