

SAMI-603

ANALOGUE PREAMPLIFIERS & MIXERS
Installation Mixers



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USER MANUAL

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1. PRECAUTIONS

1.1 Important Notice



WARNING: SHOCK HAZARD - DO NOT OPEN

AVIS: RISQUE DE CHOC ÉLECTRIQUE - NE PAS OUVRIR



The flashing light with an arrowhead symbol inside an equilateral triangle on it is intended to alert the user of the presence of non-insulated “dangerous voltage” within the enclosure, which might be of sufficient magnitude to pose a risk of electric shock to users.



The exclamation mark within an equilateral triangle is intended to alert the user of the requirement for important operating and maintenance (servicing), for which instructions may be found in the literature accompanying the appliance.

WARNING (If applicable): Terminals marked with symbol “” may be of sufficient magnitude to pose a risk of electric shock. The external wiring connected to terminals requires installation by a technician, or the use of ready-made leads or cords.

WARNING: To prevent fire or shock hazard, do not expose this equipment to rain or humidity.

WARNING: A device with Class I manufacturing ought to be connected to a mains socket outlet with a protective earthing connection.



WARNING: Ecler products have a long lifetime of more than 10 years. This product must never be discarded as unsorted urban waste, but must be taken to the nearest electrical and electronic waste treatment centre.



This equipment has been tested and found to comply with the limits of a Class A digital device, pursuant to part 15 of the FCC Rules. Such limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference in radio communications. Operation of this equipment in a residential area might cause harmful interference, in which case, the user will be required to correct the interference at his own expense.

1.2 Key Safety Directions

1. Read the following directions.
2. Keep the following directions.
3. Heed all warnings.
4. Follow all directions.
5. Do not use this device in proximity to water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other devices (including amplifiers) that may release heat.
9. Do not defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades, being one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, contact a qualified electrician for a replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at the plugs, convenience receptacles, and at the point of exit from the device.
11. Only use attachments/accessories specified by the manufacturer.
12. Unplug the device during lightening sorts or when unused for long periods of time.
13. Refer all servicing to qualified personnel. Servicing is required when the device has been damaged in any way, such as power supply cord or plug damage, liquid spillage or objects onto the device, the device has been exposed to rain or humidity, does not operate normally, or has been dropped.
14. Disconnecting from mains: When switching off the POWER switch, all the functions and light indicators of the unit will be stopped, but fully disconnecting the device from mains is done by unplugging the power cable from the mains input socket, therefore, it should always remain easily accessible
15. Equipment is connected to a socket-outlet with an earthing connection by means of a power cord.
16. The marking information is located at the bottom/rear of the unit.
17. The device shall not be exposed to dripping or splashing liquids, and no liquid-filled objects, such as a filled up glass, shall be placed on top of the device.

1.3 Cleaning Directions



Clean the unit with a soft, dry clean cloth or slightly wet with water and neutral liquid soap only, then dry it with a clean cloth. Be careful that water never gets into the unit through any hole. Never use alcohol, benzine, solvents or abrasive substances to clean this unit.

NEEC AUDIO BARCELONA, S.L. accepts no liability for any damage that may be caused to people, animal, or objects due to failure to comply with the warnings above.

2. WARRANTY & ENVIRONMENT

Thank you for choosing our Ecler SAMI-603!

We greatly value your trust.

It is **VERY IMPORTANT** to carefully read this manual and to fully understand its **contents before any connecting takes place** in order to make the best use of this equipment, as well as to get the best performance from it.

To ensure optimal operation of this device, **we strongly recommend that its maintenance be carried out by our authorised Technical Services.**

All ECLER products are covered by warranty, please refer to www.ecler.com or the warranty card included with this product for the period of validity and conditions.



Ecler is truly committed with the environment and planet sustainability, energy saving and CO₂ emission reduction. Recycling materials and using non-contaminant components are also top priorities in our green crusade.

Ecler has deeply evaluated and analyzed the environmental impacts of all the processes involved in the production of this product, including packaging, and has alleviated, reduced and/or compensated for them.

3. PACKAGE CONTENTS

- $\pm 17.5\text{VDC}$ external multi-plug PSU.
- EuroBlock connectors.
- Rubber Feet.
- Mini Jumpers.
- First Steps Guide.
- Warranty card.



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4. DESCRIPTION & FEATURES

SAMI-603 is an installation audio mixer in standard rack format, featuring 1 MIC input + 4 MIC/LINE Stereo inputs + 1 LINE Stereo input and 3 outputs that can be configured as 1 stereo couple + 1 mono or 3 independent mono.

Each output can get a dedicated mix from the available inputs and has a 3-band tone control. Talkover (priority) function is assignable to each input from IN1 to IN5 over the mix output buses. ST/MONO mix switch for the A/B outputs and MUTE port for external dry contact triggering.

4.1 Main Features

- 6 input channels, 3 outputs 19" installation mixer
- 4 MIC/LINE stereo inputs
- 1 LINE stereo input
- 1 MIC input
- 1 stereo output or 2 x mono output (A and B outputs)
- 1 mono output (C output)
- Independent inputs routing for zones A, B, C
- 1 AUX/REC output
- Independent 3-band EQ control for outputs A/B and output C
- MUTE remote control input enabled by external dry contact closure that allows connection of fire detection systems and other safety devices that have to mute the mixer by using this control signal.
- Switchable talkover function, from IN1 to IN5 over A, B, C outputs
- Universal external power supply (multi-plug)


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5. INSTALL & CONNECT

The SAMI-603 mixer has been specially designed to be installed in a standard 19" rack, taking up 1U.

Due to its low power consumption and heat sink, the SAMI-603 **does not need any fan cooling**. However, avoid installing it in dusty environments and/or in a location with extreme temperature and moisture.

The mixer should be kept apart from noise and interference sources (dimmers, motors, etc...) as well as from power cables.

The SAMI-603 is powered by alternating current through its external power supply: 100-240 VAC and 50-60 Hz. This **external PSU has interchangeable connectors**: American, European, British and Chinese.

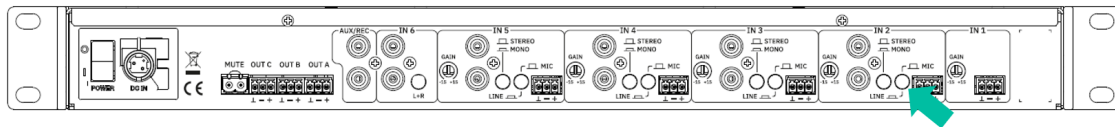

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6. START-UP & OPERATION

6.1 Connections

6.1.1 Inputs

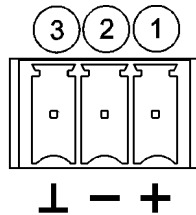
The SAMI-603 inputs **accept two types of audio signals (mono microphone and/or stereo line)**. For inputs accepting both types of signals, the selection is done using a MIC/LINE switch located on the rear panel.



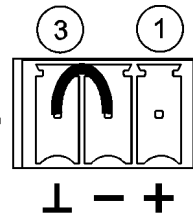
Microphone signal: Euroblock connector and a nominal input level from 50dBV (3.16mV) to 20dBV (0.1V), with a GAIN control on the rear panel to adjust the gain.

Wiring diagram for microphones:

Balanced
1. Live (+18V)
2. Cold (+18V)
3. Ground (0V)
(Phantom ON)

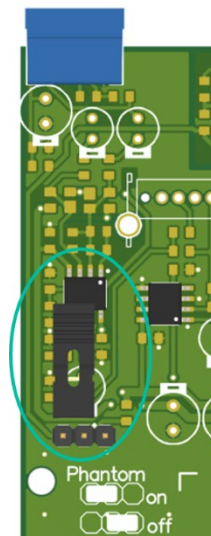


Unbalanced
1. Live (+18V)
2-3. Ground (0V)
(Phantom ON)



Microphones must be low impedance (200 to 600 Ω) and monophonic.

The SAMI-603 supplies **phantom power for condenser microphones**; it is **enabled by an internal jumper**.



By default, phantom power is disabled (factory setting).



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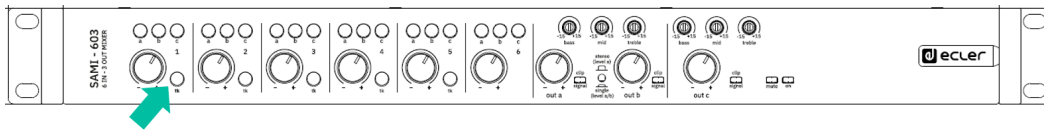
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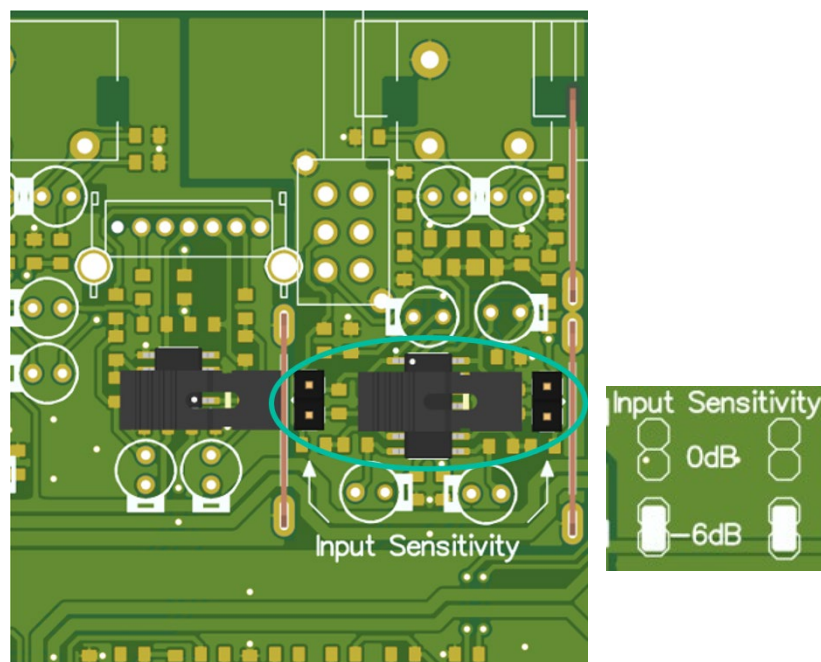
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The **Talkover (priority)** function operates when a signal is detected at the inputs 1 to 5 this function is assigned to; it attenuates the other inputs of the unit that don't have priority. Turn it on/off for each input channel with the "tk" switch on the front panel.



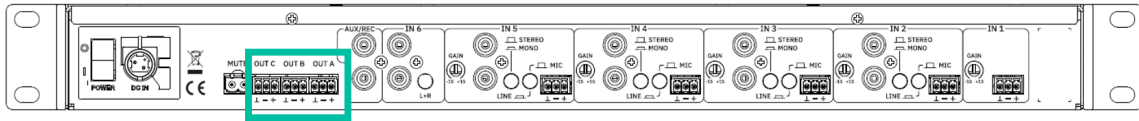
Line level signals: to manage the important level differences existing between conventional CD and LINE sources and other devices capable of producing audio signals, **the LINE inputs 2-5 of the SAMI-603 are standard line inputs (0dBV) and the sensitivity of the LINE input #6 can be selected (0/-6dBV) by internal jumper (the default position is 0dBV).** A sensitivity of -6dBV is ideal for low-level sound sources such as media players, portable MP3 players, tablets, computers, mobile phones, etc.



! Turntables cannot be directly connected to this unit, because SAMI-603 has no RIAA preamp equipped input.

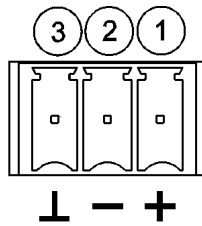
6.1.2 Outputs

SAMI-603 has three electronically balanced outputs with Euroblock connectors

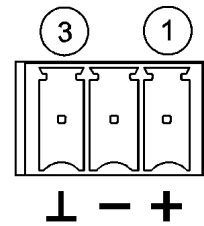


Connection is made according to the following diagram:

Balanced
1. Live
2. Cold
3. Ground



Unbalanced
1. Live
3. Ground

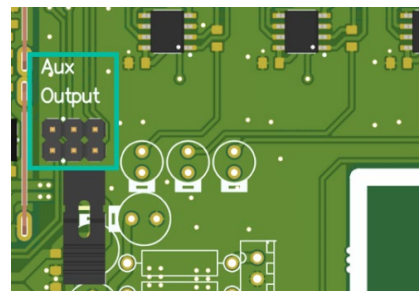
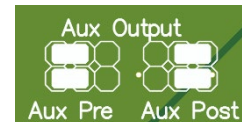


The master level of each mixer output (OUT A, B or C) must be adjusted so that the overload indicators (CLIP) are not permanently lit on the system amplifiers, but at most on the lowest frequencies marking the rhythm.



The Aux Output has a jumper allowing to select between Aux Pre or Aux Post mode:

- Aux PRE mode:** the Aux Output is a copy only of the MAIN output content. It means that the output level will always be 0dBV, regardless of whether the "Output Sensitivity" jumper is activated or not.
- Aux POST mode:** the Aux Output is an exact copy of the MAIN output and both will have the same output level, i.e. 0dBV if the "Output Sensitivity" jumper is not activated or with an increase of +6db if it is activated.



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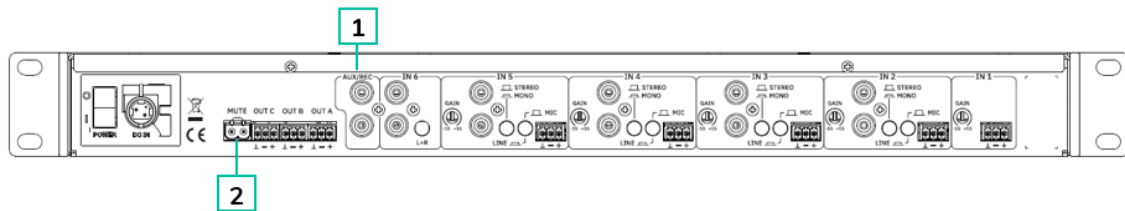
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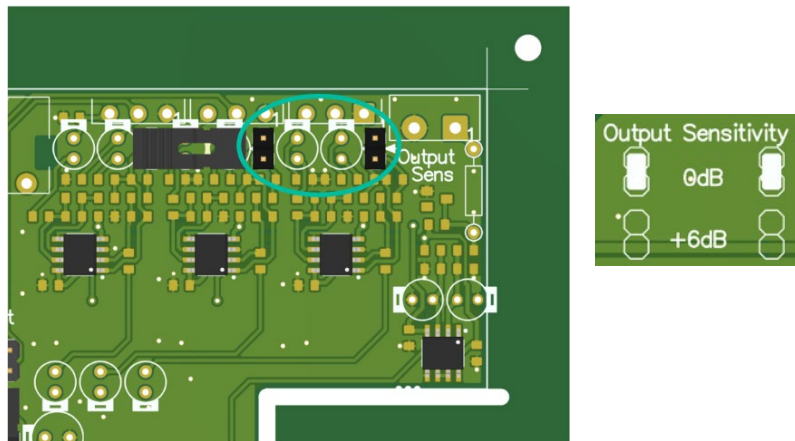
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6.1.3 Other connections on the back panel



1. **AUX/REC output** with a nominal output of 0dBV (10k Ω load) and an **extra gain setting** of +6dB, enabled by internal jumper (0dBV is the default position).

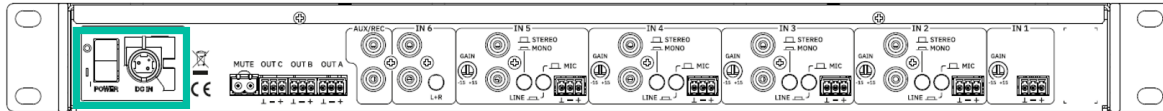


! Please note that the “Output Sensitivity” selector always affects the main output.

2. **MUTE remote control input:** enabled by external dry contact closure. It allows connection of fire detection systems and other safety devices that have to mute the three mixer outputs by using this control signal. The mode of operation is "NO" (normally open).

6.2 Starting-up

Plug the external PSU to the DC IN connector located on the rear panel and then, after connecting it to the power outlet, press the on/off switch to power the unit.



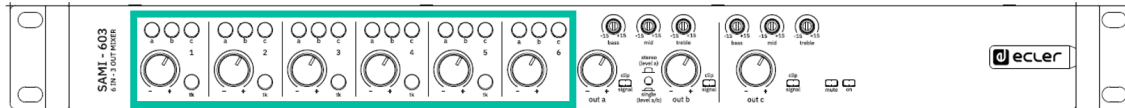
 Even the power-up noise of **SAMI-603** is minimal, **we highly recommend to power up all equipment in the following order:**

1. sound sources,
2. mixing units,
3. equalizer,
4. processors and finally
5. power amplifiers.

The power down sequence is the inverse of the power up one.

6.3 Mono/Stereo modes and Inputs-Outputs assignment

On the front panel, **each input channel has a master level control (VOL) and 3 buttons (A, B and C) to assign its signal to one or more outputs of the unit.** When one of these buttons is engaged, the signal is sent to the corresponding output.



Microphone inputs are always mono, so you can send the mono signal at the A, B and/or C destination output by pressing the corresponding button. Example for input 1:

Input (type)	Output A content (A button pressed)	Output B content (B button pressed)	Output C content (C button pressed)
IN1 (microphone, mono)	IN1	IN1	IN1

For line level signals, the output assignment depends whether these signals are in MONO or STEREO mode (MONO/STEREO switch on the rear panel for each MIC/LINE or LINE input). Example:

Input (type)	Output A content (A button pressed)	Output B content (B button pressed)	Output C content (C button pressed)
IN2 (LINE, switch in the STEREO position)	IN2 L (left channel)	IN2 R (right channel)	IN2 L+R (mono sum)
IN3 (LINE, switch in the MONO position)	IN3 L+R (mono sum)	IN3 L+R (mono sum)	IN3 L+R (mono sum)

 **The C output is always mono and therefore always receives a mono sum of L + R line inputs that have been assigned to this output, regardless of their MONO/STEREO setting.**

Additionally, the **STEREO/SINGLE** front panel switch allows you to choose between two ways to control the A and B output volume:

- **simultaneously and only with OUT A control**, OUT B control being disabled (switch in the STEREO position). This mode is suitable for the sound reinforcement of a stereo zone (A, left channel / B, right channel) and a mono zone (C)
- **independently**, using the A and B controls (switch in the SINGLE position). This mode is suitable for the sound reinforcement of three zones, A, B and C



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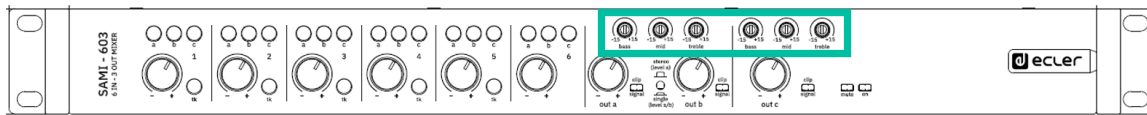
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6.4 Equalization

The tone controls of the A/B and C outputs provide a $\pm 15\text{dB}$ gain/attenuation for each of the three available bands, and their central operating frequencies are 100Hz, 2kHz and 10kHz.



6.5 Ground Loops, Background noise

! Please always make sure that the signal sources coming to the unit, as well as all devices connected to its outputs, do not have their grounds interconnected, that is; ground must never come from two different devices. Should this ever happen, noises could occur and seriously interfere the sound quality.

! Cable shields, when connected to the chassis, must never be linked together. This will avoid ground loops.

The **SAMI-603 mixer** has been designed to produce the lowest background noise. Independently from the electronic design, the resulting background noise directly relies on the correct use and installation of the mixing unit.

Adjust, where appropriate, the gain of each input for an adequate operating level and then adjust the VOL controls on the front panel to obtain the desired input mix.

Finally, **adjust the VOL control of the main mix output to get the relevant output volume for your installation**, and also enable the “tk” switches for priority inputs (a signal detection on these priority inputs will attenuate the signal of non-priority inputs).

! **Important note on mix level adjustment:** setting for example a channel VOL control to "2" and the output VOL control to "10" is not the same as the opposite. In the first case, the signal entering the mixing amplifier is weak, but even so it contains a background noise, so the signal/noise ratio is low (low signal). When the output amplifier equally amplifies both parts as a whole, the output has a very high background noise. In the second case, as the channel VOL control is set to the maximum, the signal received by the mixing amplifier has a high level and therefore also a high (good) signal/noise ratio, so when this signal reaches the output VOL control and is amplified, the signal/noise ratio remains better than in the previous case.



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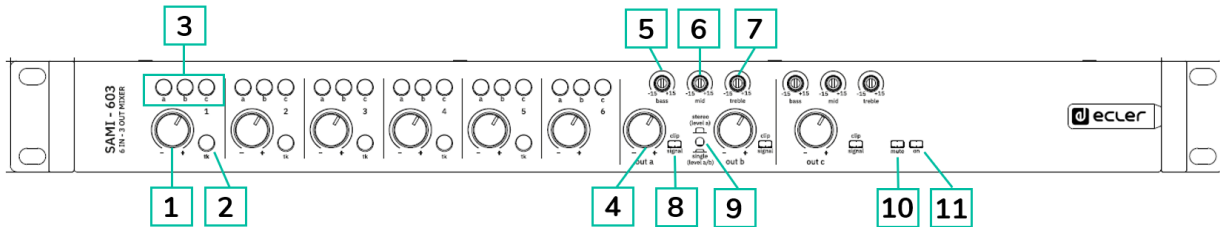
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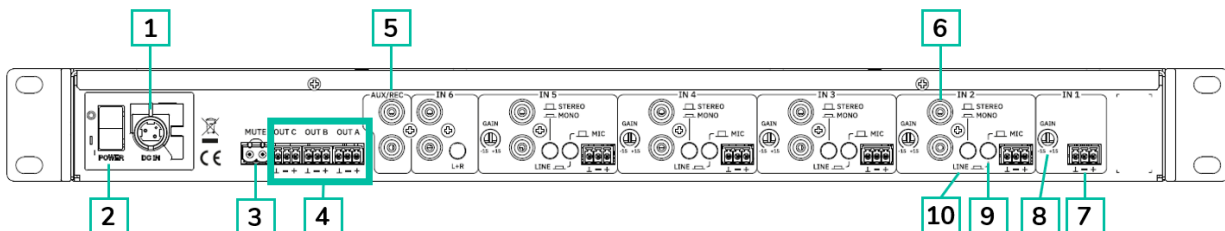
7. PANEL FUNCTIONS

7.1 Front Panel



- | | |
|--|---|
| 1. Channel volume control, VOL x6 | 6. Midrange control, MID x2 |
| 2. Talkover switch, tk x5 | 7. Treble control, TREBLE x2 |
| 3. Output destination switches, A, B, C x6 | 8. LED indicator, SP/CLIP x3 |
| 4. Output main volume control, OUT A / B / C | 9. STEREO (VOL A) / SINGLE (VOL A / VOL B) Switch |
| 5. Bass control, BASS x2 | 10. LED indicator, MUTE |
| | 11. LED indicator, ON |

7.2 Rear Panel



- | | |
|---|--------------------------------------|
| 1. Mains socket | 6. Line input, LINE x6 |
| 2. Mains switch, POWER | 7. Micro input, MIC x5 |
| 3. Screwable terminal for remote mute, MUTE | 8. Input sensitivity adjust, GAIN x4 |
| 4. Main output, OUT A, B, C | 9. Micro line selector |
| 5. Recording output, AUX/REC | 10. Mono-stereo switch, L+R |



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8. TECHNICAL DATA

8.1 Technical Specifications

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ANALOGUE AUDIO INPUT PORTS	
Number of input ports	4, MIC/LINE 1, MIC 1, LINE STEREO
Connection type	MIC: 3-pin Euroblock LINE: RCA
Input sensitivity	LINE 2-5: 0dB LINE 6: 0dB/-6dB (internally selectable) MIC 1-5 BAL: -35dB
Input sensitivity adjust	MIC/LINE: ± 15 dB
Input impedance	LINE 2-5: 50k Ω LINE 6: 50k Ω MIC 1-5 BAL: >1k Ω
CMRR	MIC: >60dB @ 1 kHz
Phantom voltage	+18VDC
ANALOGUE AUDIO OUTPUT PORTS	
Number of output ports	1 main mix output 1 main mono output 1 AUX/REC output
Connection type	Main: 3-pin Euroblock AUX/REC: RCA
Output type	1 STEREO/2 MONO main mix output 1 MONO main mix output 1 STEREO AUX/REC
Nominal output level	OUT: 0dB/+6dB (internally selectable) AUX/REC: 0dB/+6dB (follows MAIN OUT, when AUX OUT=POST)
Output impedance	OUT: 600 Ω AUX/REC: 10k Ω
SIGNAL	
Frequency response	LINE: 10Hz-50kHz -1dB MIC BAL: 10Hz-30kHz -1dB
THD + Noise	LINE: <0.005% MIC BAL: <0.04%
Signal noise ratio	LINE: >100dB MIC BAL: >85dB
DEVICE CONTROL	
Tone Control	2 x 3-way tone control (For section A/B and C)
Tone Frequency Cut	BASS: 100Hz ± 15 dB MID: 2kHz ± 15 dB TREBLE: 10kHz ± 15 dB
Talkover	TIME: 2 seconds EFFECT: -30dB
Control Buttons	Power ON, Talkover, LINE/MIC, L+R (input), Gain knob, Volume knob, Output destination switches, STEREO (level a)/Single (level a/b), MONO/STEREO



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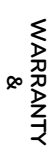
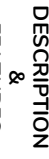
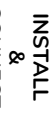
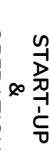
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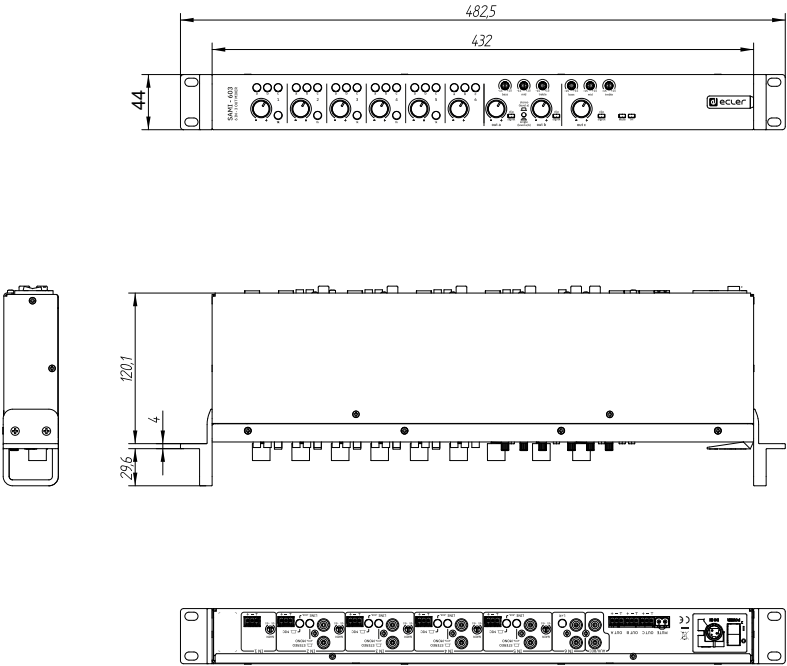
Status Indicators		Power ON LED, MUTE LED, SP/CLIP LEVEL LED
REMOTE CONTROL CONNECTIONS		
GPIOs		MUTE control port NO/NC
ELECTRICAL		
Power supply		±17.5VDC External PSU
AC mains requirement		100-240 V @ 50-60Hz (External PSU: 17.5VDC)
AC mains connector		IEC inlet connector
Power consumption		13.9VA / 6.3W
Cooling		Passive
PHYSICAL		
Operating temperature		Min: -10°C ; 14°F Max: 40°C ; 104°F
Operating humidity		<85% HR
Storage temperature		Min: -10°C ; 14°F Max: 40°C ; 104°F
Storage humidity		<90% HR
Installation options		19" rack format (1RU)
Included accessories		±17.5VDC multi-plug PSU, EuroBlocks, Rubber Foot, Mini Jumpers
Dimensions (WxHxD)		482.5 x 44 x 153.7 mm / 19 x 1.73 x 6.05 in
Weight		2 kg / 4.41 lb
Shipping dimensions (WxHxD)		560 x 60 x 295 mm / 22.05 x 2.36 x 11.61 in
Shipping weight		2.7 kg / 5.95 lb

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8.2 Mechanical Diagram

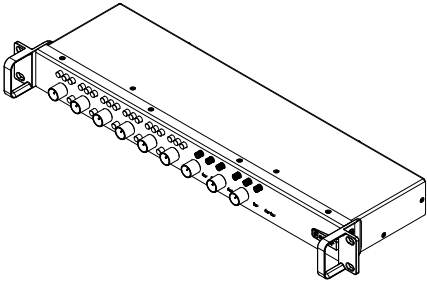
All measurements in mm.





6I-1137-0100

Ecler SAMI-603 Mechanical Diagram



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All the measurements are in mm


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All product characteristics are subject to variation due to production tolerances. **NEEC AUDIO BARCELONA S.L.** reserves the right to make changes or improvements in the design or manufacturing that may affect these product specifications.

For technical queries contact your supplier, distributor or complete the contact form on our website, in [Support / Technical requests](#).

Motors, 166-168 | 08038 Barcelona, Spain | Tel. (+34) 932238403 | information@ecler.com | www.ecler.com