SAMI-612

ANALOGUE PREAMPLIFIERS & MIXERS

Installation Mixers

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-612!
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 CO_2 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

- ±17.5VDC external multi-plug PSU.
- EuroBlock connectors.
- Rubber Feet.
- Mini Jumpers.
- First Steps Guide.
- Warranty card.

4. DESCRIPTION & FEATURES

SAMI-612 is an installation audio mixer in standard rack format, featuring 6 MIC/LINE Stereo inputs, 1 Stereo MIX input and 1 Stereo MAIN output + 1 Stereo REC output.

Each input has a dedicated 3-band tone control, a feature which is fundamental to get a perfect microphone mix in an installation. Input 1 includes talkover (priority) function over the mix bus and additional front panel jack connector. Main output ST/MONO mode switch and MUTE port for external dry contact triggering.

4.1 Main Features

- 6 input channels, 2 main outputs 19" installation mixer.
- Micro sensitivity level can be adjusted on the back panel.
- +18V Phantom Power available in all "MIC" inputs.
- Direct micro input on front panel, channel 1.
- Includes a talkover assigned to "INPUT 1" with internal release time adjustment.
- Three-band tone controls for each channel, accessible with a screwdriver.
- Vu-meter for the mix signal.
- Two internally adjustable output levels.
- Recording output.
- Direct access to the mixing bus allowing you to connect another mixer and increase the number of inputs.
- 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.
- Mono/stereo switch.
- Universal external power supply (multi-plug).

5. INSTALL & CONNECT

SAMI-612 **has been specially designed to be installed in a standard 19" rack, taking up 1U.** It has been designed to be operated by non-technical users. This is the reason why its tone controls are adjustable only with a screwdriver. On the opposite, input and output level controls use classic and easily accessible rotary knobs.

Due to its low power consumption and heat sink, the SAMI-612 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.

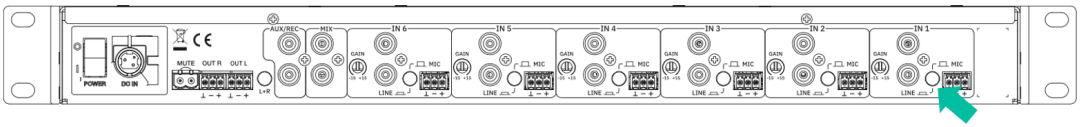
The SAMI-612 is powered by alternating current through its external power supply: 100-240 VAC and 50-60 Hz. T**his external PSU has interchangeable connectors: American, European, British and Chinese.**

6. START-UP & OPERATION

6.1 Connections

6.1.1 Inputs

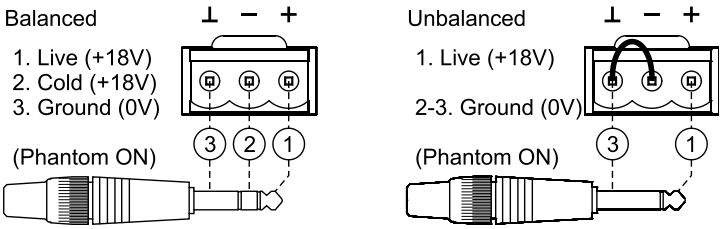
Each **SAMI-612 channel has two input types (MIC/mono, LINE/stereo), selectable using a switch on the back panel.**



Microphone signal: the 6 mixing channels are provided with screw terminal strips and accept a nominal input level from 50dBV (3.16mV) to –20dBV (0.1mV), ± 15dB gain to be adjusted on the back panel.

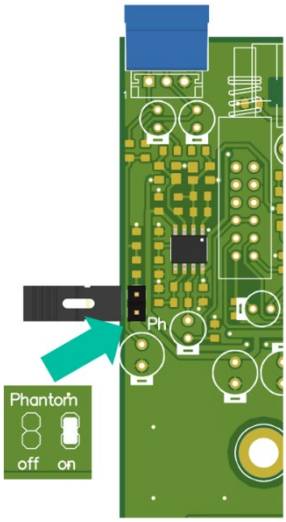
There is also another jack input for microphone on the front panel, connected in parallel with the one for the same channel on the back panel.

Wiring diagram for microphones:



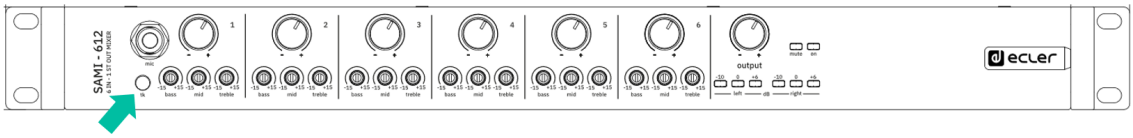
Microphones must be low impedance (200 to 600Ω) and monophonic.

SAMI-612 **has a Phantom power supply for condenser microphones, individually switchable by internal jumpers (for each microphone**).



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

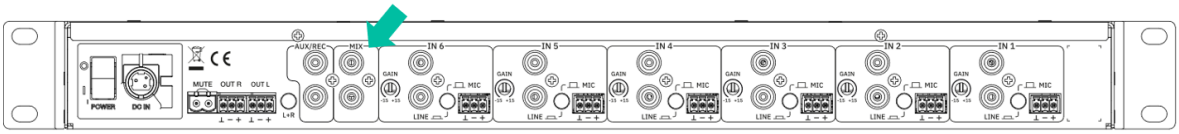
The **Talkover function is activated when a signal presence is detected on Input 1**. Then it attenuates the other unit inputs. It can be activated/deactivated by the "tk" switch, located on the front panel.



Given the important level differences between usual LINE and CD sources, SAMI-612 **provides ±15dB gain for each source**. CD Players, DAT, MP3, and DVD Audio should be connected to the "LINE" inputs.

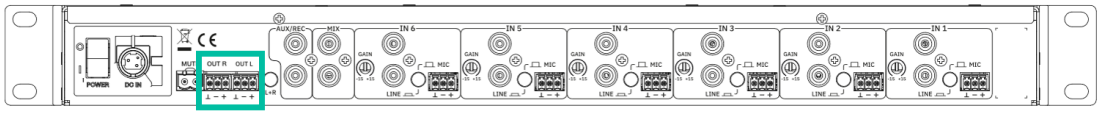
Turntables cannot be directly connected to this unit, because SAMI-612 has no RIAA preamp equipped input.

In addition, **MIX IN input directly access to the main mixing bus**. It is **especially useful to connect a second SAMI-612 or another mixer** in order to increase the number of mixing channels and inputs.

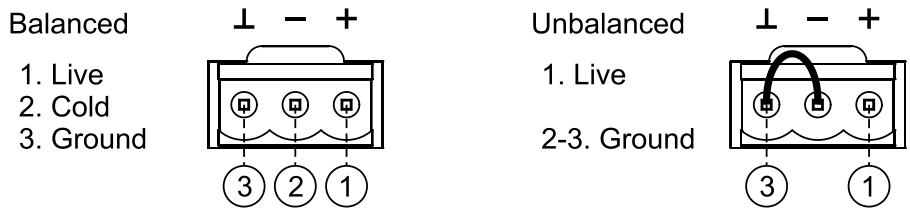


6.1.2 Outputs

SAMI-612 **has two main outputs**, with their type of connector as only difference: electronically balanced screw terminal strips and unbalanced RCA connectors.



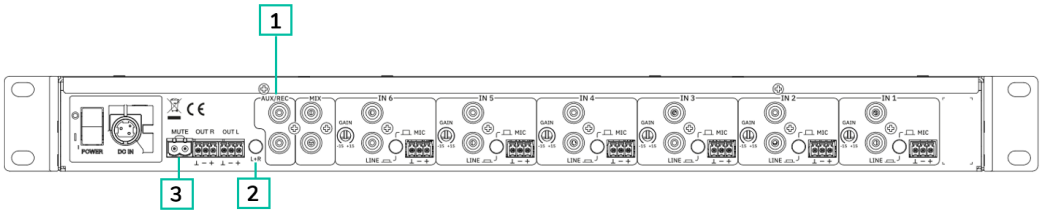
Connection is made according to the following diagram:



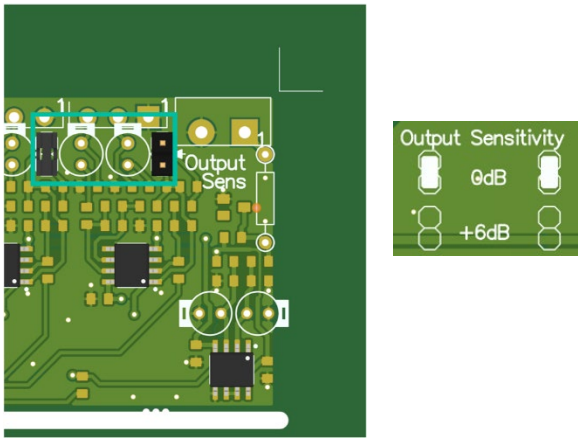
In order **to use an unbalanced output, you need to short pin 2 and pin 3**, as indicated in the previous diagram. Otherwise, the output signal will not have the right level and quality.

The mixer's main output level (OUTPUT VOL) must be set in order to avoid your system power amp clipping indicators (CLIP) to be permanently lit. Only the most powerful lower frequencies must light them.

6.1.3 Other connections on the back panel



1. **AUX/REC output** 0dBV nominal, 10kΩ. and an e**xtra gain setting of +6dB, enabled by internal jumper (0dBV is the default position).**

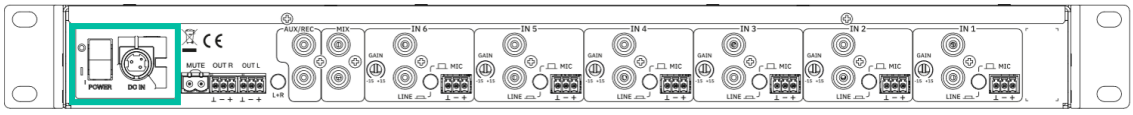


Please note that the "Output Sensitivity" selector always affects the main output.

2. **L+R switch**: convert output signals in a mono signal.
3. **MUTE remote control input**: external contact closure input. Allows connection of fire detection systems or any other safety device that have to mute the mixer by activating this control signal.

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.



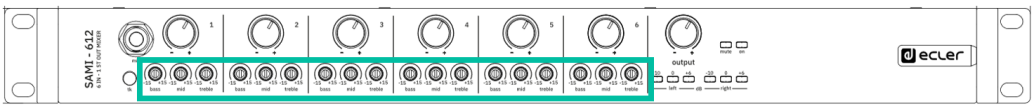
Even the power-up noise of **SAMI-612** is minimal, **we highly recommend to power up all equipment in the following order**:

4. sound sources,
5. mixing units,
6. equalizer,
7. processors and finally
8. power amplifiers.

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

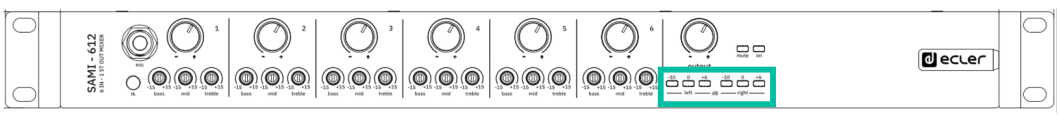
6.3 Equalization

Tone controls provide ±15 dB gain/attenuation for each of the three bands, centered on 100Hz, 2kHz and 10kHz.



6.4 VU-Meter

The SAMI-612 **has a VU-meter to show the main mixing signal.**



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.

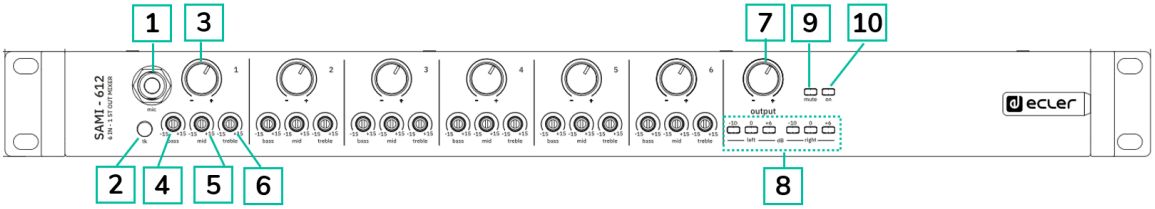
⚠ **Cable shields, when connected to the chassis, must never be linked together**. This will avoid ground loops.

SAMI-612 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.

💡 **i.e.:** setting a channel VOL to "2" and the output to "10" is not the same as the other way round. In the first case, the signal coming to the mixing amplifier - which has got its own noise - is low, and so is the signal-to-noise ratio (low signal). When the output amplifier boosts the whole signal we will get a very high background noise. In the second case - with the channel fader at maximum - the mixing level is high, and so is the signal-to-noise ratio. When the signal reaches the VOL OUTPUT and is boosted, it will keep a much better signal-to-noise ratio than in the preceding case.

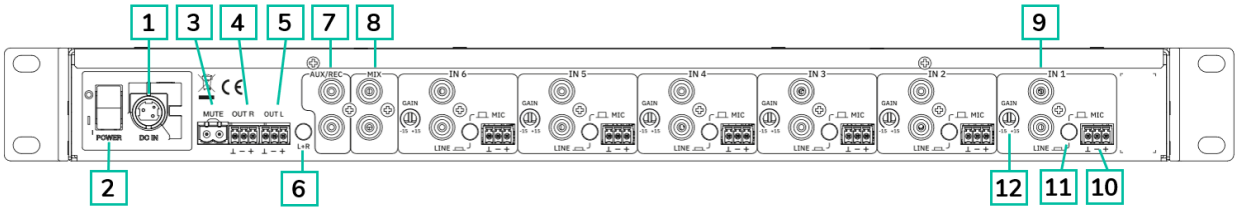
7. PANEL FUNCTIONS

7.1 Front Panel



1. Micro input, MIC
2. Talkover switch, tk x1
3. Channel volume control, VOL x6
4. Bass control, BASS x6
5. Midrange control, MID x6
6. Treble control, TREBLE x6
7. Output main volume control, OUTPUT VOL
8. Led Vu-meter, MIX
9. LED indicator, MUTE
10. LED indicator, ON

7.2 Rear Panel



1. Mains socket
2. Mains switch, POWER
3. Screwable terminal for remote mute, MUTE
4. Main output, right channel, OUTPUT R
5. Main output, right channel, OUTPUT L
6. Mono-stereo switch, L+R
7. Recording output, AUX/REC
8. Mix input, MIX
9. Line input, LINE x6
10. Micro input, MIC x6
11. Micro line selector x6
12. Microphone input sensitivity adjust, GAIN x6

8. TECHNICAL DATA

8.1 Technical Specifications

SAMI-612

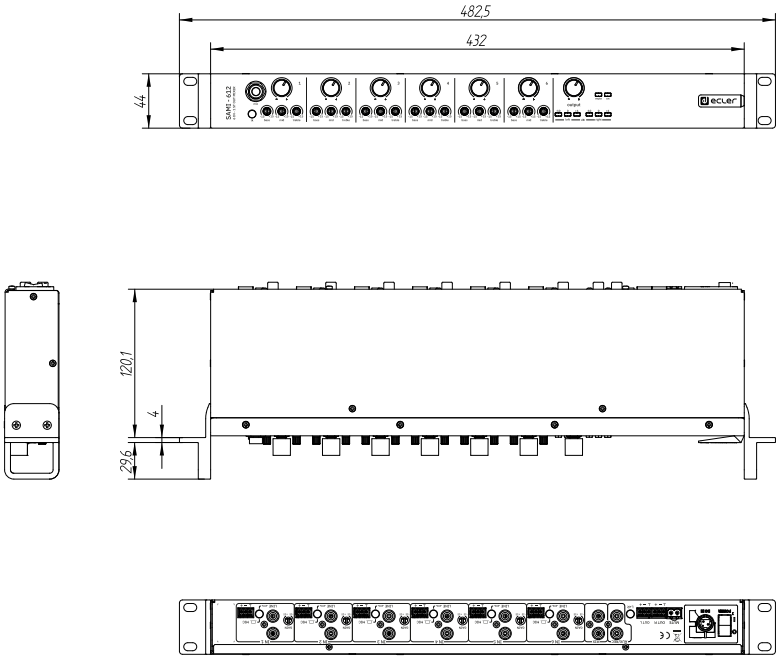
ANALOGUE AUDIO INPUT PORTS	
Number of input ports	6, MIC/LINE (1 STEREO direct MIC input on front panel)
	1, MIX LINE
Connection type	MIC: 3-pin Euroblock
	LINE/MIX: RCA
Input sensitivity	LINE 2-5: 0dB
	LINE 6: 0dB/-6dB (internally selectable)
	MIC 1-5 BAL: -35dB
Input sensitivity adjust	MIC/LINE: ±15dB
Input impedance	LINE 1-6: 50kΩ
	MIX LINE: 10kΩ
	MIC 1-6 BAL: >1kΩ
CMRR	MIC: >60dB @ 1 kHz
Phantom voltage	+18VDC
ANALOGUE AUDIO OUTPUT PORTS	
Number of output ports	1 main mix output
	1 AUX/REC output
Connection type	Main: 3-pin Euroblock
	AUX/REC: RCA
Output type	1 STEREO/2 MONO main mix output
	1 STEREO AUX/REC
Nominal output level	OUT: 0dB/+6dB (internally selectable)
	AUX/REC: 0dB/+6dB (follows MAIN OUT)
Output impedance	OUT: 600Ω
	AUX/REC: 10kΩ
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	3-way tone control (For all inputs)
Tone Frequency Cut	BASS: 100Hz ±15dB
	MID: 2kHz ±15dB
	TREBLE: 10kHz ±15dB
Talkover	TIME: 2 seconds
	EFFECT: -30dB
Control Buttons	Power ON, Talkover, LINE/MIC, L+R (output), Gain knob, Volume knob
Status Indicators	Power ON LED, MUTE LED, Vu-meter LEVEL LEDs
REMOTE CONTROL CONNECTIONS	
GPIs	MUTE control port NO/NC

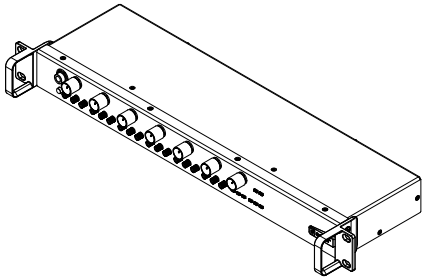
ELECTRICAL	
Power supply	±17.5VDC External PSU
AC mains requirement	100-240 V @ 50-60Hz (External PSU: 17.5VDC)
AC mains connector	IEC inlet connector
Power consumption	14.5VA / 6.8W
Cooling	Passive
PHYSICAL	
Operating temperature	Min: -10°C ; 14°F Max: 40°C ; 104°F
Operating humidity	<85% HR
Storage 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	1.9 kg / 4.19 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

8.2 Mechanical Diagram

All **measurements in mm.**

Ecler SAMI-612 Mechanical Diagram





All the measurments 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.

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