

STEREO ANALOG  
AMBIENT PROCESSOR

**USER  
GUIDE**

BEFORE PROCEEDING WITH INSTALLATION AND SETUP, PLEASE  
READ THESE INSTRUCTION PAGES

## Introduction

Congratulations on your purchase of this MCAudioLab LUNA Vari-Amb analog processor.

The nominal input and output level are +4 dBu on every XLR/Jack audio connector on the back of the unit.

### The MCAudioLab's LUNA concept

The idea behind the **LUNA** project is changing the acoustics of an ambient processing a stereo or mid-side track. Unlike digital plugins, we developed a fully analog audio gear to do that: LUNA.

The LUNA accepts two input channel in Stereo or Mid-Side mode. An internal encoder converts the input signal to M-S while a decoder converts the output signal back to Stereo. The encoder is of course bypassed when LUNA is in M-S mode. The audio output is in stereo mode only and the Master Volume controls it. We have implemented an additional M-S output as well.

The heart of the LUNA is its Analog Ambient Processor. The LUNA takes information from the track plus two additional parameters: **MONO** and **DEPTH**. The Analog Processor implements all the informations and through a complex audio matrix it returns a processed stereo signal.

The two MONO and DEPTH are key controls on LUNA. More in detail, the MONO manages all those signal components that have no remarkable phase difference between Left and Right. The DEPTH control, conversely, manages all those signal components that have a remarkable phase difference between Left and Right. The result is the creation of two layers: a foreground managed by the Mono control and a background managed by the Depth control. Those two layers can be managed independently.

The MONO pushes "in your face" - for instance the voice of the frontman - and the DEPTH extends the Left-Right - for instance the band playing. You deal with the foreground and/or background separately and benefit of an high degree of independance. Unlike a SIDE standard control, you do not artificially stretch the whole stereo loosing the focus of every single elements.

If you are able to move the foreground back and forth and to extend the background (its L-R boundaries), you get a kind of three-dimensional sound. The foreground elements are more focused and detailed while the background elements surround the L-R sonic stage, extending it. It's like drawing on a paper sheet with perspective.

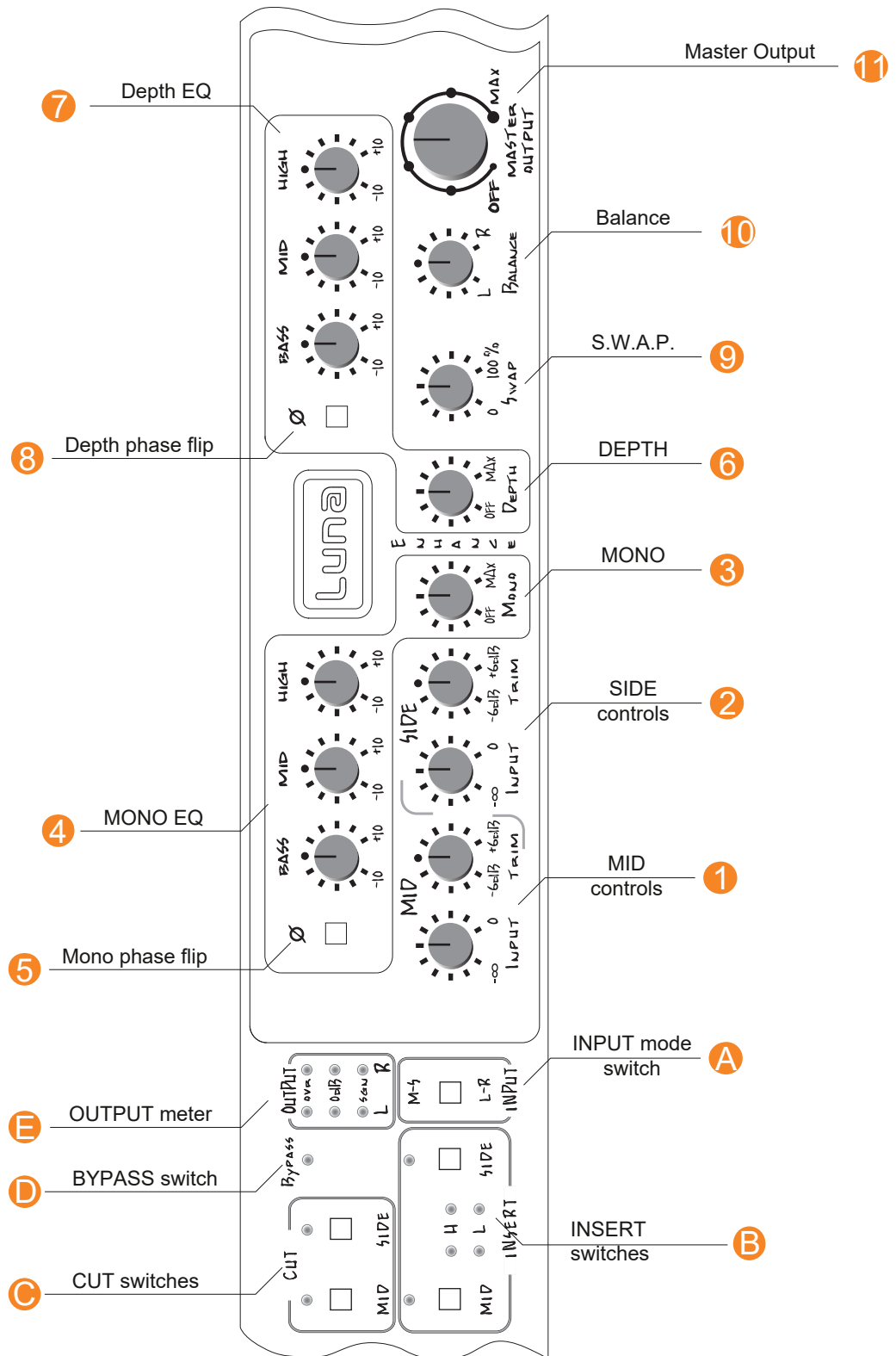
For the reason explained above, we named our LUNA 'Vari-Amb' as it stands for VARIABLE AMBIENT.

A dedicated three-band EQ has been implemented for each MONO and DEPTH controls to offer a further flexibility to the engineer. The management of the Inserts, an independent listening of the Mid and Side (the Cut switches) along with a true bypass - for an easy A/B comparison - integrate the LUNA features.

The MCAudioLab's **LUNA goes beyond a normal Mid-Side processor**. It is used in recording (between the preamp and the converter), as well as in mixing and mastering. An excellent analog tool full of controls that helps the engineer to give color and get airy tracks. An excellent analog tool full of controls that helps the producer to add that touch of creativity.

## Operation

Please refer to the illustrations on the following pages.



### 1 **MID control**

It is a set of two controls: Input and Trim. The first of the two controls is an attenuator. Usually it stays all the way right (position '0' - no attenuation). The Trim control is an active gain with a range of +-6dB. In the vertical position there is no gain. Consider the input as a coarse control while the Trim as a fine control. Both MID Input and Trim knobs control the MID channel level.

### 2 **SIDE control**

It is a set of two controls: Input and Trim. The first of the two controls is an attenuator. Usually it stays all the way right (position '0' - no attenuation). The Trim control is an active gain with a range of +-6dB. In the vertical position there is no gain. Consider the input as a coarse control while the Trim as a fine control. Both SIDE Input and Trim knobs control the SIDE channel level.

### 3 **MONO**

Rotating this potentiometer clockwise we send the signal to the LUNA Analog Processor. All those signal components that occupy the central position between the left and right channels are called MONO. When in the OFF position, no signal is fed to the LUNA Analog Processor.

### 4 **Mono eq**

The EQ has three controls: Bass, Mid and High. Each control cuts or boosts the frequency by 6dB. The vertical position forces the eq in flat mode. This EQ is connected to the MONO control. The effectiveness of the EQ is therefore proportional to the level of the MONO parameter.

### 5 **Mono phase flip**

This switch reverses the phase of the MONO signal by 180 degrees. When the switch is active the Analog Processor gets the flipped-phase MONO signal at its input. This control allows you to solve serious phase issues or can be used as a pure creative effect. Beware of phase cancelling!

### 6 **DEPTH**

Rotating this potentiometer clockwise we send the signal to the LUNA Analog Processor. With the Depth parameter you regulate all those sound components that are in the background with respect to the MONO signal. When in the OFF position, no signal is fed to the LUNA Analog Processor.

### 7 **Depth eq**

The EQ has three controls: Bass, Mid and High. Each control cuts or boosts the frequency by 6dB. The vertical position forces the eq in flat mode. This EQ is connected to the DEPTH control. The effectiveness of the EQ is therefore proportional to the level of the DEPTH parameter.

### 8 **Depth phase flip**

This switch reverses the phase of the MONO signal by 180 degrees. When the switch is active the Analog Processor gets the flipped-phase MONO signal at its input. This control allows you to solve serious phase issues or can be used as a pure creative effect. Beware of phase cancelling!

### 9 **S.W.A.P.**

It's an acronym and stands for **Share With the Analog Processor**. This control sets the level of the signals feeding the Analog Processor. In the signal path it is located between the MONO and DEPTH controls on one side and the Analog Processor on the other side. Think of the SWAP control as a master volume for the MONO and DEPTH. Before setting the MONO and/or DEPTH controls, the SWAP knob should be turned all the way right (100%). After you set the MONO and DEPTH levels, turn the SWAP knob counterclockwise to get the desired amount of effect. Using only one control to raise or lower the signal not changing the MONO/DEPTH ratio. That's why the LUNA features the SWAP control.

### 10 **BALANCE**

It is crucial the sound from the left and right channels to arrive at your listening position at the same time. But if you want to balance differently this "standard" setup or if you just need to move the sweet spot, then the Balance control is there for those reasons. The central position (upright knob mark) is set to the center. This is a standard stereo balance control.

## 11 MASTER OUTPUT

it is a stereo master volume. It's an active control and can be set from from -inf (sound off) to +6dB. The '0' position is at 2 o'clock. The Master Output feeds the stereo signal directly to the XLR out on the back of the unit.

## A INPUT Mode switch

This command allows you to adapt the machine input to the type of track you want to process. The L-R mode refers to a stereo track. The M-S mode refers to a Mid-Side track. When in M-S mode, the rear Left input becomes the Mid channel and the rear Right input becomes the Side channel.

### INSERT switches

B Allows you to send the LUNA's signal externally. It consists of two separate switches, one for the Mid channel and the other for the Side channel. Whatever the source (Stereo or Mid-Side) the LUNA always operates in M-S mode internally. By activating at least one of the two switches, the MID and SIDE return inputs on the rear panel are activated. The Send Outputs always work even if the Insert switches are turned off. The Send output is post-fader with respect to the front panel Mid Input and Side Input controls. A LED light turn on when the switch is active. Two further LED lights 'L' and 'H' show when the signal at the return input is respectively lower or higher than the corresponding Send signal. Send and return signal level is the same when both L and H lights are turned on.

## C CUT switches

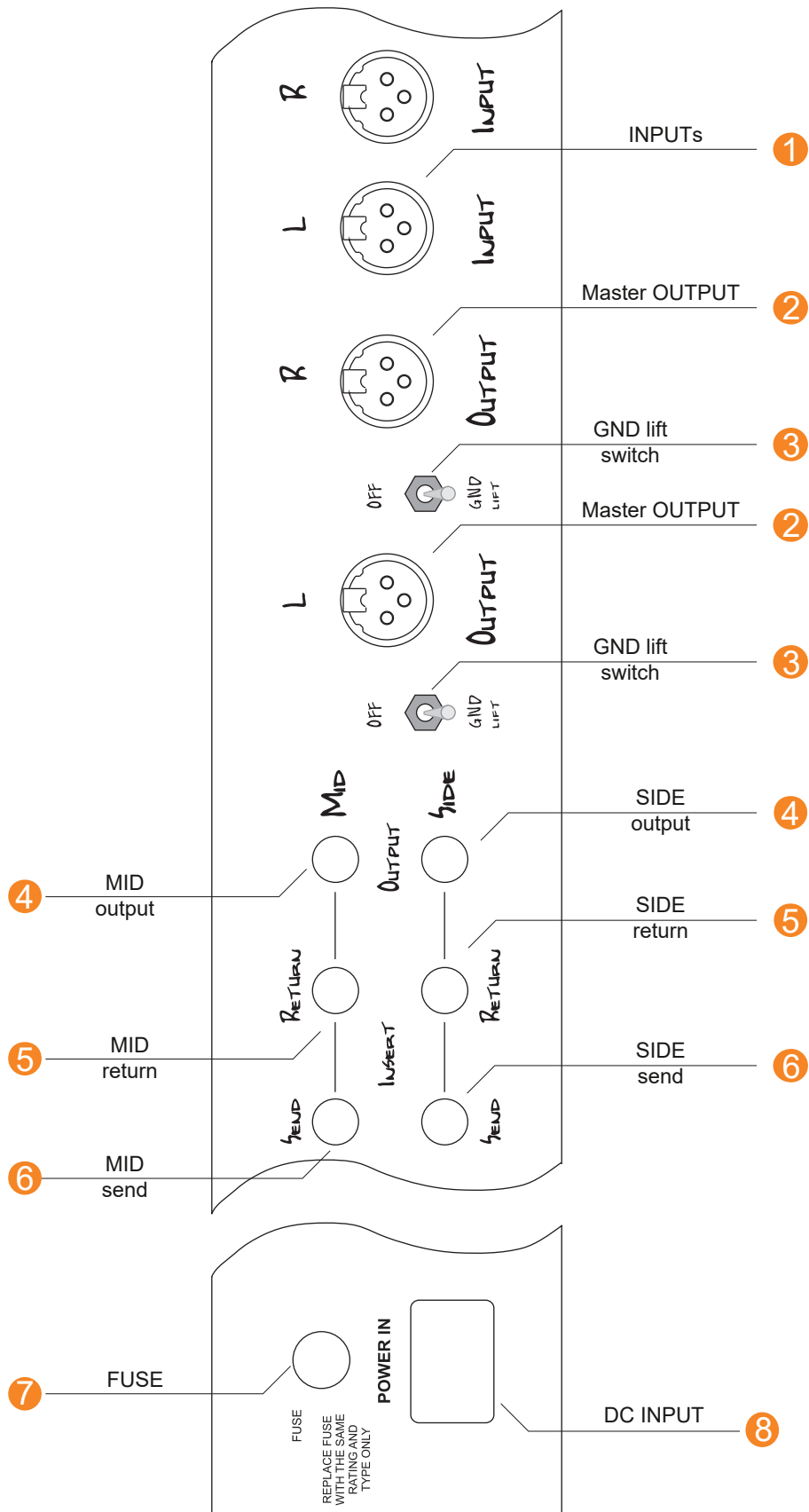
Allows you to exclude a channel from listening. When the control is active mutes the corresponding channel. The light turns on when the switch is active. This command affects the master output.

## D BYPASS switch

This switch reverses the phase of the MONO signal by 180 degrees. When the switch is active the Analog Processor gets the flipped-phase MONO signal at its input. This control allows you to solve serious phase issues or can be used as a pure creative effect. Beware of phase cancelling!

## E OUT meter

This is a three-LED peak meter monitoring the Stereo Master Output. The 0dB is referred to the +4dBu studio standard (1.23Vac).



## 1 INPUTs

Two balanced XLR connector provide the input signal. When the track is stereo, the L and R must be connected to their respective L and R channels. While a Mid-side track is provided, connect the Mid channel to the L connector and the Side channel to the R connector.

## 2 MASTER OUTPUT (L and R)

Those two balanced XLR connector provide the Master stereo Output. Their configuration is for stereo only.

## 3 GND lift switches

In order to avoid ground loop noises, every single output is provided with a GND lift switch. Lift the switch up to avoid ground loops when a 'hum-noise' affects the channel.

### MID-SIDE OUTPUTs

Output TRS balanced jack connectors. They carry the Mid and Side signal out respectively. These two output are after the Input-Trim controls - on the front panel - block respectively.

### MID-SIDE Returns

Input TRS balanced jack connectors. They receive the signal from an external source when the LUNA is in insert mode.

### MID-SIDE Sends

Output TRS balanced jack connectors. They send the signal to an external device when the LUNA is in insert mode.

### FUSE

The fuse is used to avoid damage to the LUNA electrical circuit in the case of a malfunction or problems with the electrical network. Please replace the fuse with the same type and rate only!

### DC INPUT

External Power supply. Please read the label before connect the power cord and turning the LUNA on. The voltage is factory set and cannot be changed by the user. A standard IEC power cord is used.

**Disclaimer:** The information in this manual has been carefully checked and is believed to be accurate at the time of publication. However, no responsibility is taken by us for inaccuracies, errors or omissions nor any liability assumed for any loss or damage resulting either directly or indirectly from use of the information contained within it.

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### **Health & Safety Notice**

For your own safety and the protection of others, please observe the safety instructions below:

- Read these instructions, follow all instructions and keep these instructions.
- Heed all safety warnings.
- Clean only with a dry cloth.
- Unplug when unused for long periods of time.
- Refer all servicing to qualified personnel only.

### **WARNING: High Voltage – Risk of electric shock.**

Do not open the chassis. If the device is damaged or does not work, please refer to qualified service staff only. Never use damaged power chords. Ensure LUNA is connected via grounded junction. Keep the device far away from water, moisture and other liquids. Do not use LUNA near water or in wet surroundings.

### **CAUTION: Temperature - The chassis may become hot during operation.**

Do not place LUNA close to any heat sources such as radiators or stoves. Avoid exposing it to direct sunlight. Do not block the circulation vents – heat from the device must be allowed to dissipate. Allow free space around the unit in your rack to let the unit cooling down. Do not install close to devices irradiating magnetic fields.

### **WARNING: Incorrect installation - Wrong connection may cause damage**

Do not connect power amp-outputs to LUNA audio inputs. Install the device on stable surfaces or properly mount it in an appropriate rack only.

### **WARNING: Condensation may cause damage**

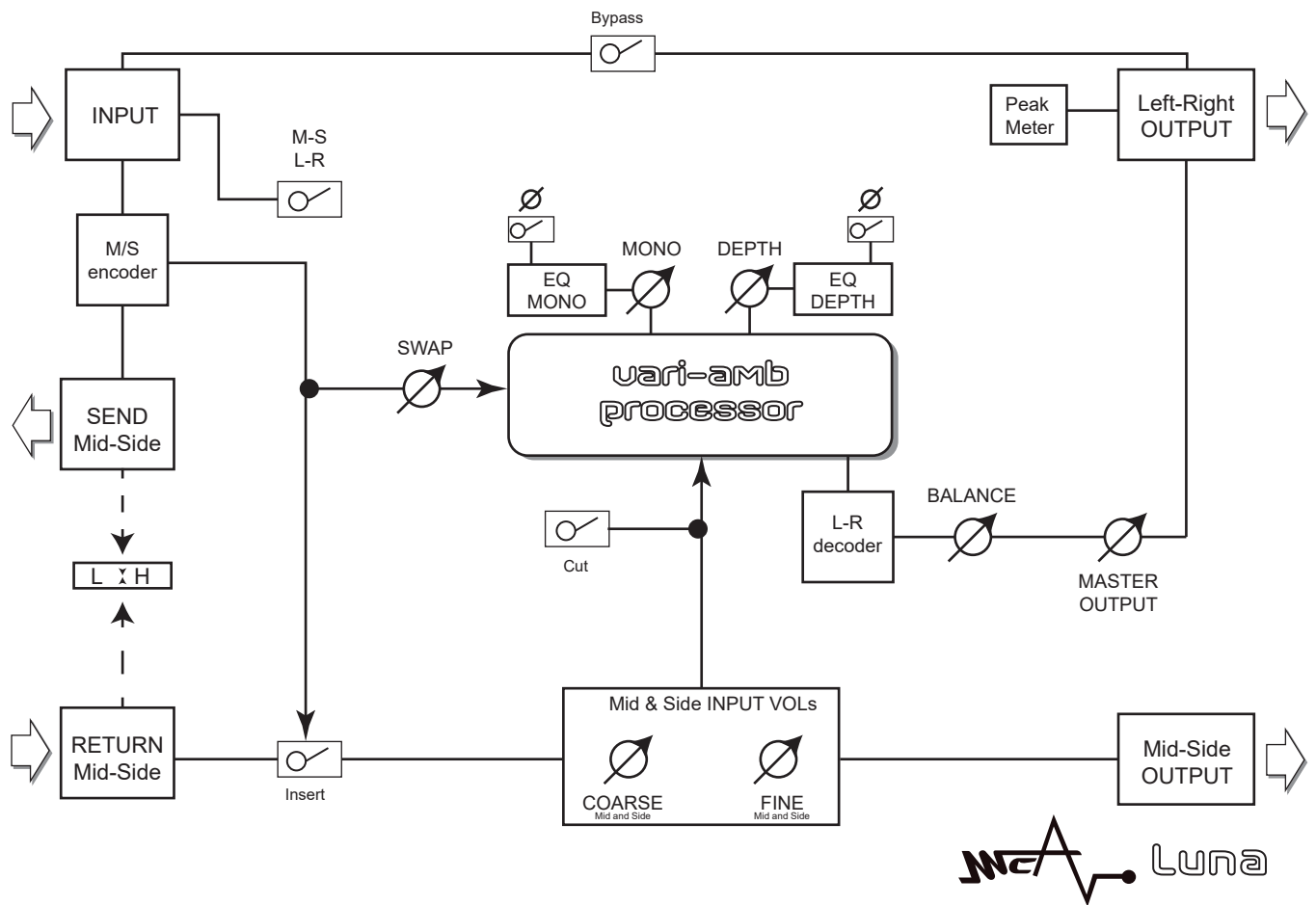
Condensation can form inside the device if you move it from warm to cold temperature. To avoid damaging LUNA always wait until the device has reached room temperature before switching it on.

### **WARNING: High sound volume level can damage your hearing**

Set the output master volume on zero position before monitoring the sound via headphones or loudspeakers. Increase the volume carefully. Pay also attention to the output levels of connected devices.



## The LUNA audio path schematics



### Tech Specs :

Frequency Response

20Hz – 22 kHz

Amplification (Output) -inf to +6 dB

Max Output level: +22dBu

Input electronically servo-balanced (all audio inputs)

Input resistance 10kOhm

Output electronically servo-balanced (all audio outputs)

Output resistance <500hm