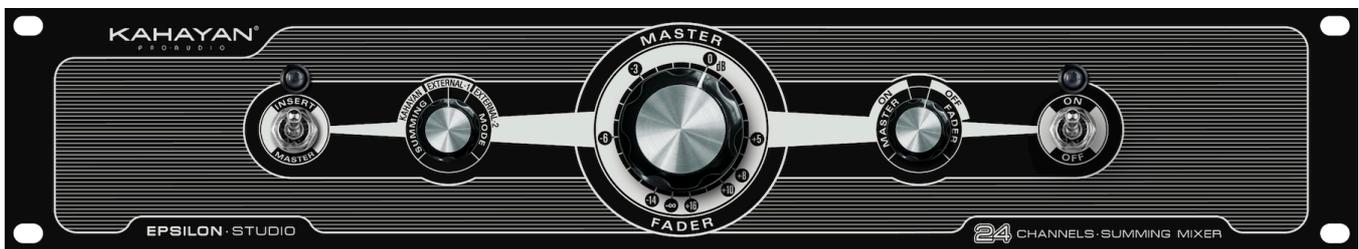


# EPSILON STUDIO

24 IN/2 OUT SUMMING MIXER



# OPERATOR'S MANUAL

Version 3.1

**KAHAYAN**<sup>®</sup>  
P R O A U D I O

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## IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions
2. Keep these instructions
3. Heed all warnings
4. Follow all instructions
5. Do not use this apparatus near water
6. Clean only with dry cloth
7. Install in accordance with the manufacturer's instructions
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat
9. Protect the power cord from being walked on or pinched particularly at plugs and the point where they exit from the apparatus
10. Unplug this apparatus during lightning storms or when unused for long periods of time
11. 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

## INTRODUCTION

The **Epsilon Studio** is a 24 channels summing mixer **unique** in the mixing market. It's capable of **combining 3 summing styles using only 1 machine**. This means 3 different "analog consoles" in 1 summing mixer. The 3 summing modes are: Kahayan, Passive (External) 1 and Passive (External) 2 (see page 7).

The Passive modes gives to Epsilon Studio the possibility to expand through the use of external modules. These modules can add new summing styles. We recommend our EPSILON EXPANSIONS (solid 4000 and Vintage 12K72). Our equipment possesses the ability of expansion meaning it is in constant evolution.

All components are hand-selected one by one. The Assembly is completely handmade. The Rack consists of 2 rack units of 28 cm depth. Furthermore the unit was conceived as a Summing Bus and can be used as mastering equipment using only two channels.

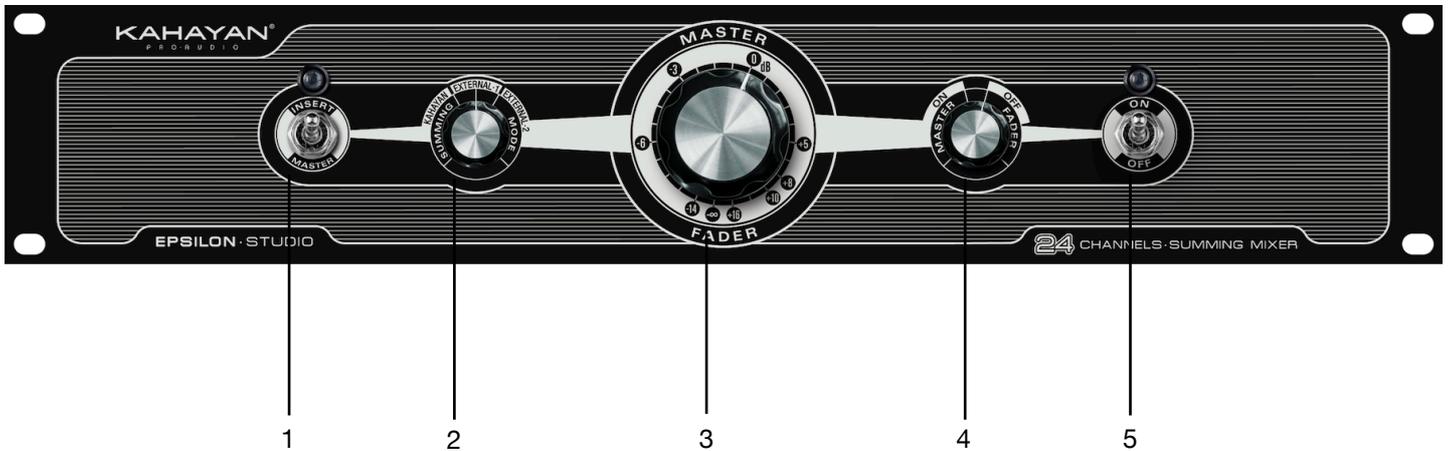
### HEATING AND WARM-UP

It is advisable to wait a minute after turning it on, to modify the gain and output levels, this way avoiding any noise generated by the lack of capacitor charging. An effect that may damage the reference speakers.

For more information please visit: [www.kahayan.es](http://www.kahayan.es)

## SETUP AND BASIC ASPECTS

Front panel:



**1. Master Insert switch:** Allows you to activate the stereo mix insert. This insert is a pre-master fader.

**2. Summing mode switch:** Allows you to choose 3 different summing styles.

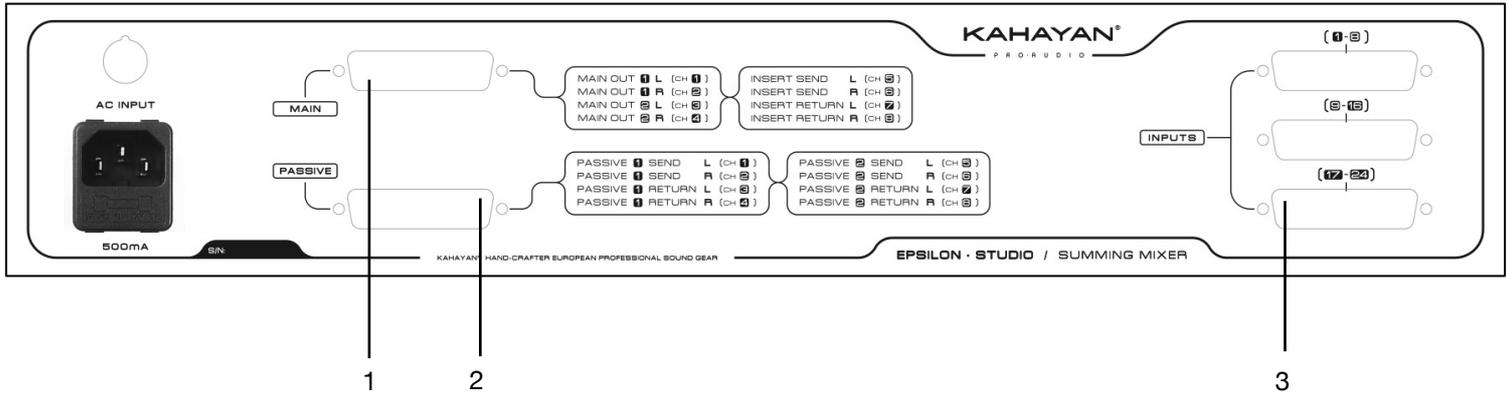
**3. Master fader:** The Master Fader allows to attenuate or enhance the stereo mix at  $-\infty$  dB to +16 dB. This Master Fader has an on/off switch.

**4. On/off fader switch:** Allows you to activate the Master fader function.

**5. On/off power switch:** Switches the power on or off.

**PAN:** Channels from 1 to 24 consist of odd and even numbers: The odd numbers face **left** and the even numbers face **right**.

Rear panel:

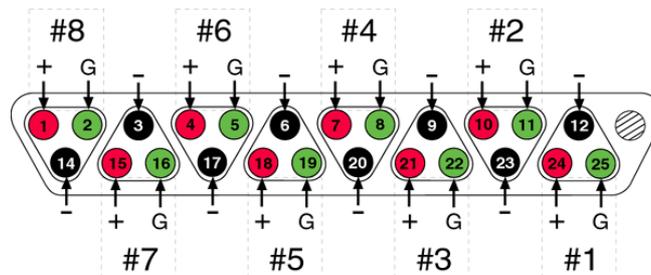


- 1. Main outputs/ master insert:** This DB25 connector is split into the following sections:
- 1-2: Main out
  - 3-4: Monitor out. It has the same signal as the main out but you can use it for other applications.
  - 5-6: Master insert send.
  - 7-8: Master insert return.

- 2. Passive send/ return:** This DB25 connector is split into the following sections:
- 1-2: Passive 1 send.
  - 3-4: Passive 1 return.
  - 5-6: Passive 2 send.
  - 7-8: Passive 2 return.

**3. Inpust 1-24:** 3 DB25 connectors that received the 24 channels.

**Note:** All the DB25 connectors use the Tascam® format with the following configuration:



## SUMMING MODES

The Epsilon Studio has 3 summing modes:



Summing mode switch

**1- Summing by KAHAYAN system.** Extremely clear and colorless. You get the exact amount of what comes out of the DAW but with the benefits of analog summing: Transparent and open in the stereo image.

**2-EXTERNAL Summing 1 (Passive).** The signal does not pass through any active circuit and has a drop of about -34 dB thus must connect a preamp of two channels or Epsilon Expansions to enhance the output level. In this way, it is added with the color of the previous contribution. Here we open up infinite possibilities in color, timbre and response; You can introduce pre-valves, the latest generation of discrete concept, etc. We recommend Epsilon Expansions (Solid 4000 and Vintage 12K72).

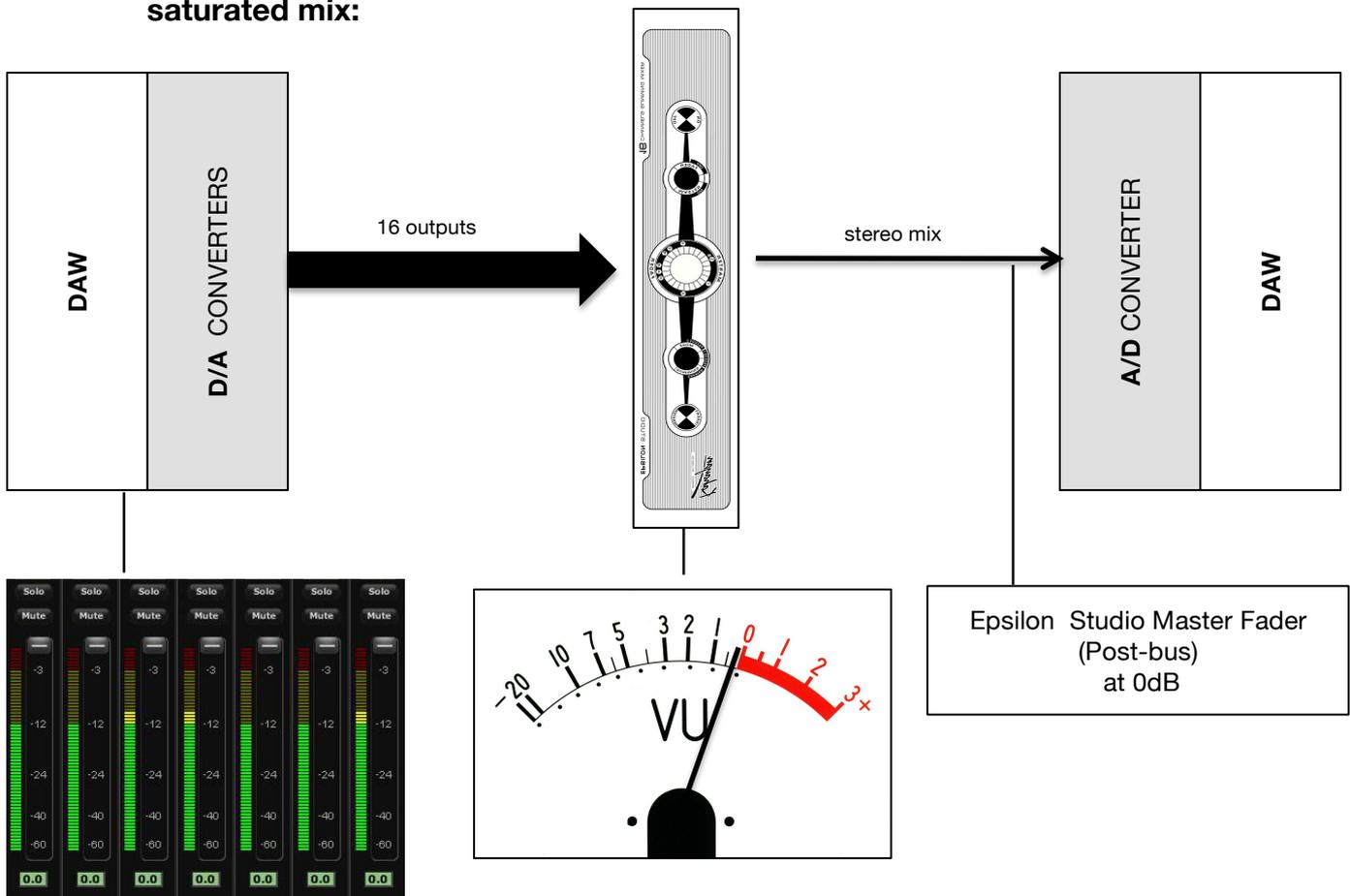
**3- EXTERNAL Summing 2 (Passive).** Exactly the same mode than the 1.

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## SATURATION

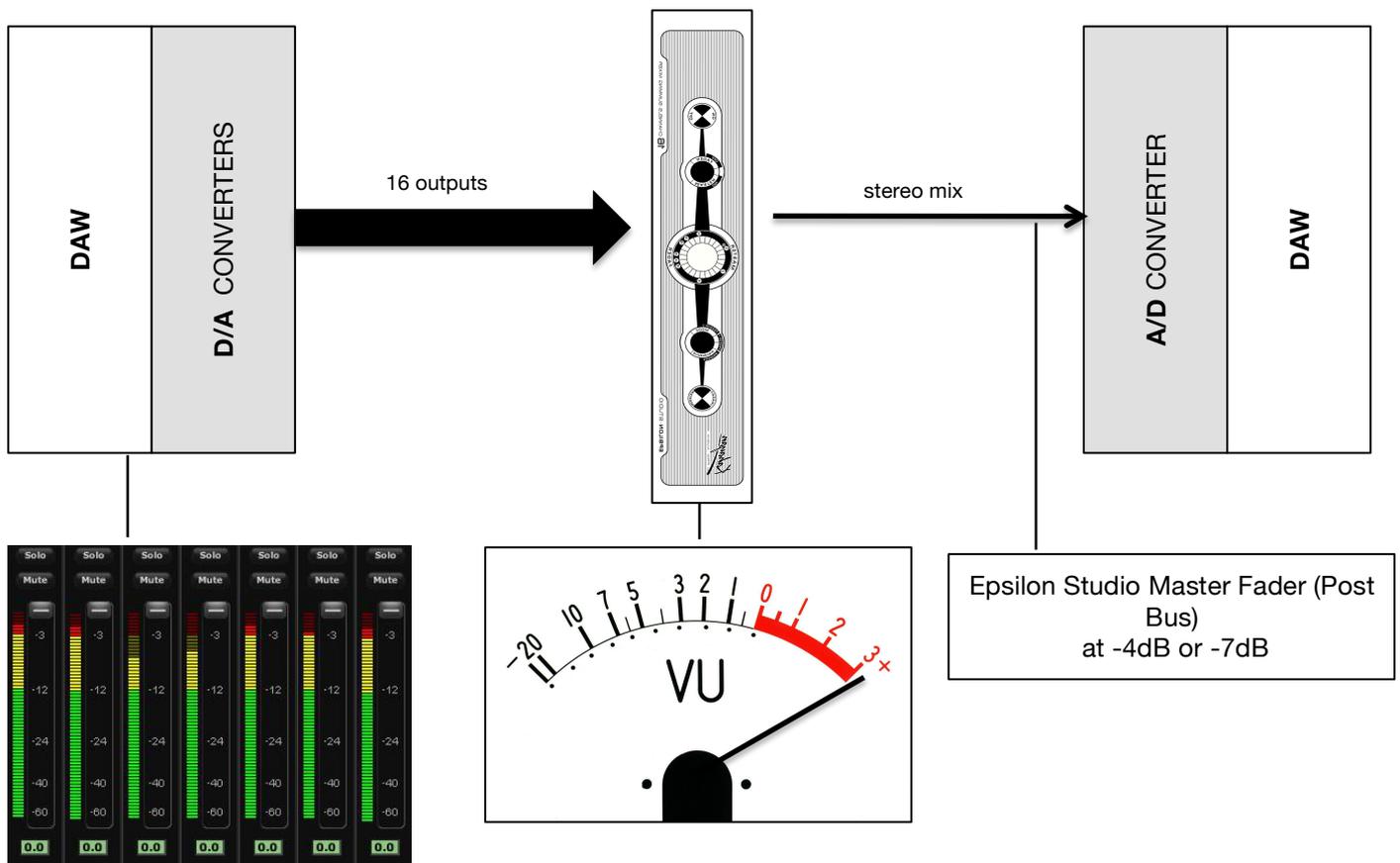
Many important mixing engineers use analog consoles for comfort and also for the capacity to saturate the console summing bus. When we speak about creating a mix with “punch”, “glue” or “impact, we are speaking largely about the effects of the console analog saturation. So, exactly the same occurs with the Epsilon summing mixers. When we saturate an Epsilon summing bus the same effects appear as when using an analog console.

In the following diagram we have showed an example of a “clean” non-saturated mix:



In a “clean” mix the DAW output levels are normal or “low”. Inside our summing bus the signal levels will be close to 0VU=+4dBu and the Epsilon Studio master fader doesn’t require attenuation, it’s positioned at 0dB. **Remember:** the master fader is post-summing bus.

In the following diagram we have showed an example of a “saturated” mix:



In a “saturated” mix the DAW output levels are “high”. Inside our summing bus the signal levels will be off the scale and the Epsilon Studio master fader requires attenuation. This is the same situation when using an analog console the master vumeters are off scale. The Epsilon Studio requires that the master fader attenuate the output levels to send the mix to DAW or other analog gear.

**Note:** To saturate Epsilon Studio with a higher dBu level we recommend 3 options available to the user:

- 1-Calibrate the D/A converters to produce a higher level=change the dBFs/dBu relation.
- 2-Force the digital levels inside the DAW.
- 3-Insert analog gear that provides more volumen to the Epsilon inputs.

**Conclusion:** Use the “saturation mode” that sounds best in your opinion...

## SPECIFICATIONS

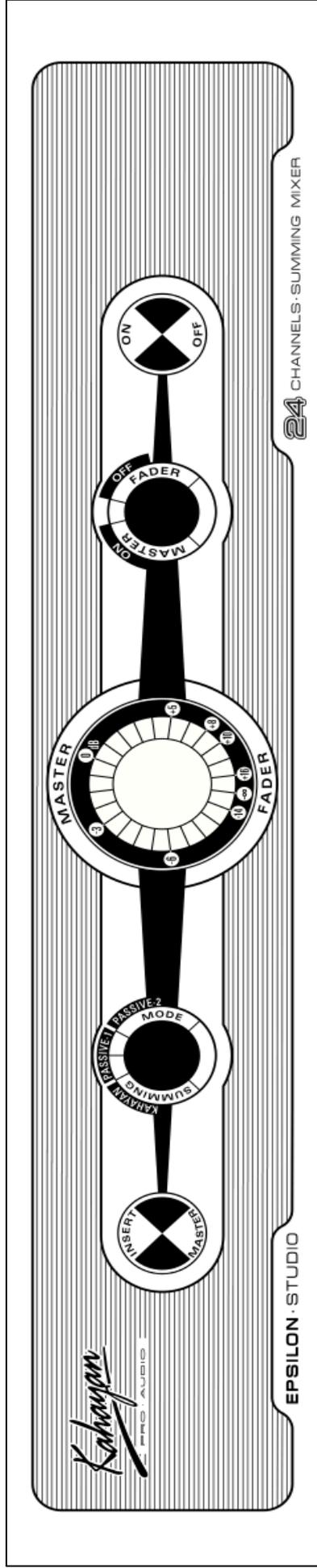
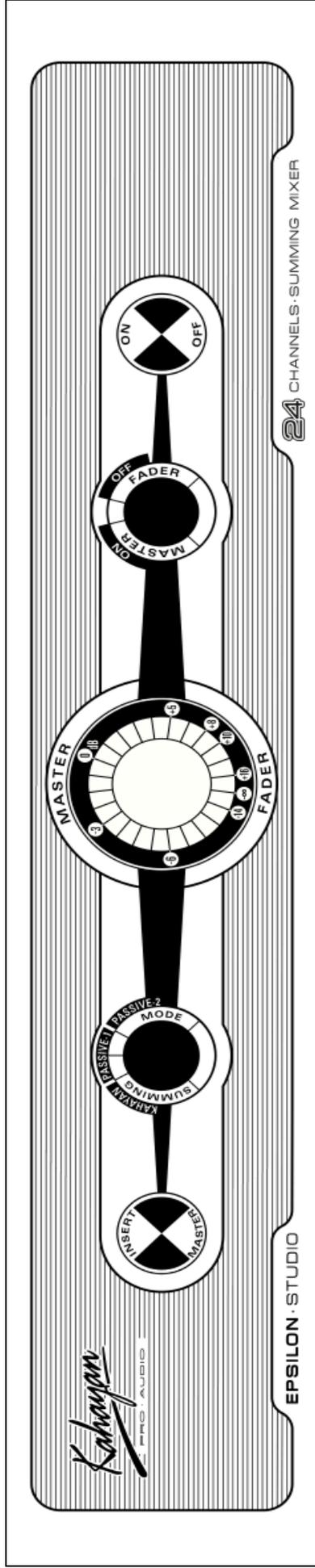
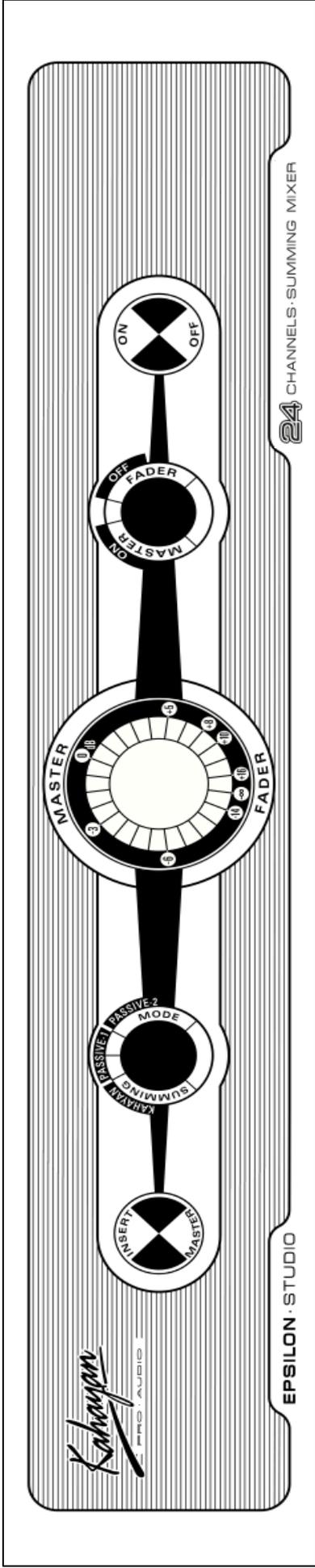
- Analog Summing 24 Channels
- 24 balanced inputs on DB25
- 2 Main balanced outputs on DB25
- Stereo pre-fader Insert with true-bypass
- The Master Fader allows to attenuate or enhance the stereo signal at  $-\infty$  dB to +16 dB
- Headroom: +24dBu
- Master fader on/off switch
- 220/110 volts and 50/60 Hz
- Power supply uses 250mA fuse at 220v and a 500mA fuse at 110v
- Weight: 2,5Kg
- The manufacturer reserves the right to change the technical specification of the product without prior notice.

## WARRANTY

These products are guaranteed for a period of two years from the date of shipment to the end user for countries of the European Union. For other countries, please refer to the law in effect.

During the warranty period Kahayan Pro-Audio will, at their discretion, either repair or replace products which prove to be defective, provided that the product is returned to an authorised Kahayan service facility.

Defects caused by unauthorised modifications, accident, negligence or any misuse are not covered by this warranty. For further information please contact your dealer or the distributor in your country.



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