

**LOPTROTTER**  
**AUDIO ENGINEERING**

**SATUR-8/24**

24-channel Summing mixer  
with  
8 channel saturation modules

# SATUR-8/24

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## Introduction

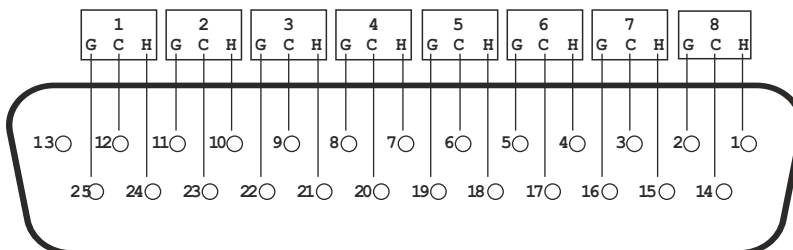
Thank you for choosing Looptrotter SATUR-8/24. This device can be used as 8 independent saturation modules, applied either during recording or mixing. SATUR-8/24 is also a 24-channel summing unit. Thanks to the independent control of the main output and monitoring, it can be utilized as a monitor controller in your studio.

The saturation modules resemble the sound of old tube mixing consoles and tape recorders. However they are built entirely with the use of semiconductor technology, which guarantees endurance and reliability. The summing module is an original combination of active summing, run by operational amplifiers and passive summing based on transformers. The mixed signal is amplified by a transistor preamplifier operating in pure class A, built of discrete elements, inspired by the early designs of transistor preamps from the 60's. Additionally the summing circuit is fitted with a "Magic" module, which magically nears, widens and thickens the whole mix, giving it a vivid, analog sound.

## Installation

Looptrotter SATUR-8/24 is set by default to match the mains power voltage in a given country. Check the settings on the rear panel.

The incoming signal is inputted with the DB-25 multi pin connectors in Tascam standard.



C = COLD -

G = GROUND

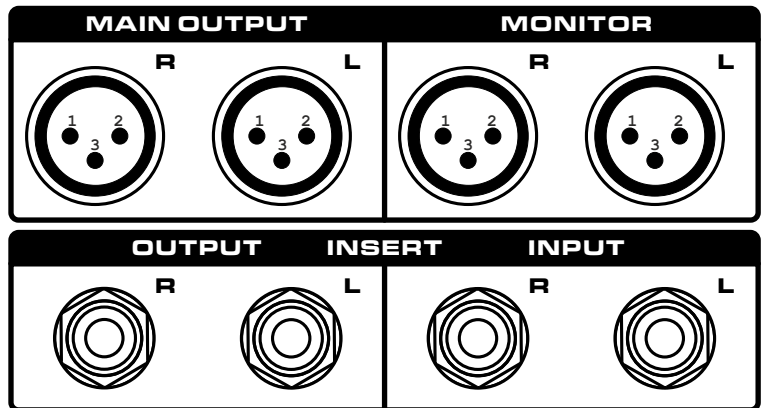
H = HOT +

# SATUR-8/24

MAIN and MONITOR outputs are balanced XLR.  
INSERT inputs and outputs are balanced Jack TRS.

XLR:  
PIN 1: ground  
PIN 2: positive  
PIN 3: negative

TRS:  
Tip : Hot(+)  
Ring : Cold(-) Sleeve  
: GND

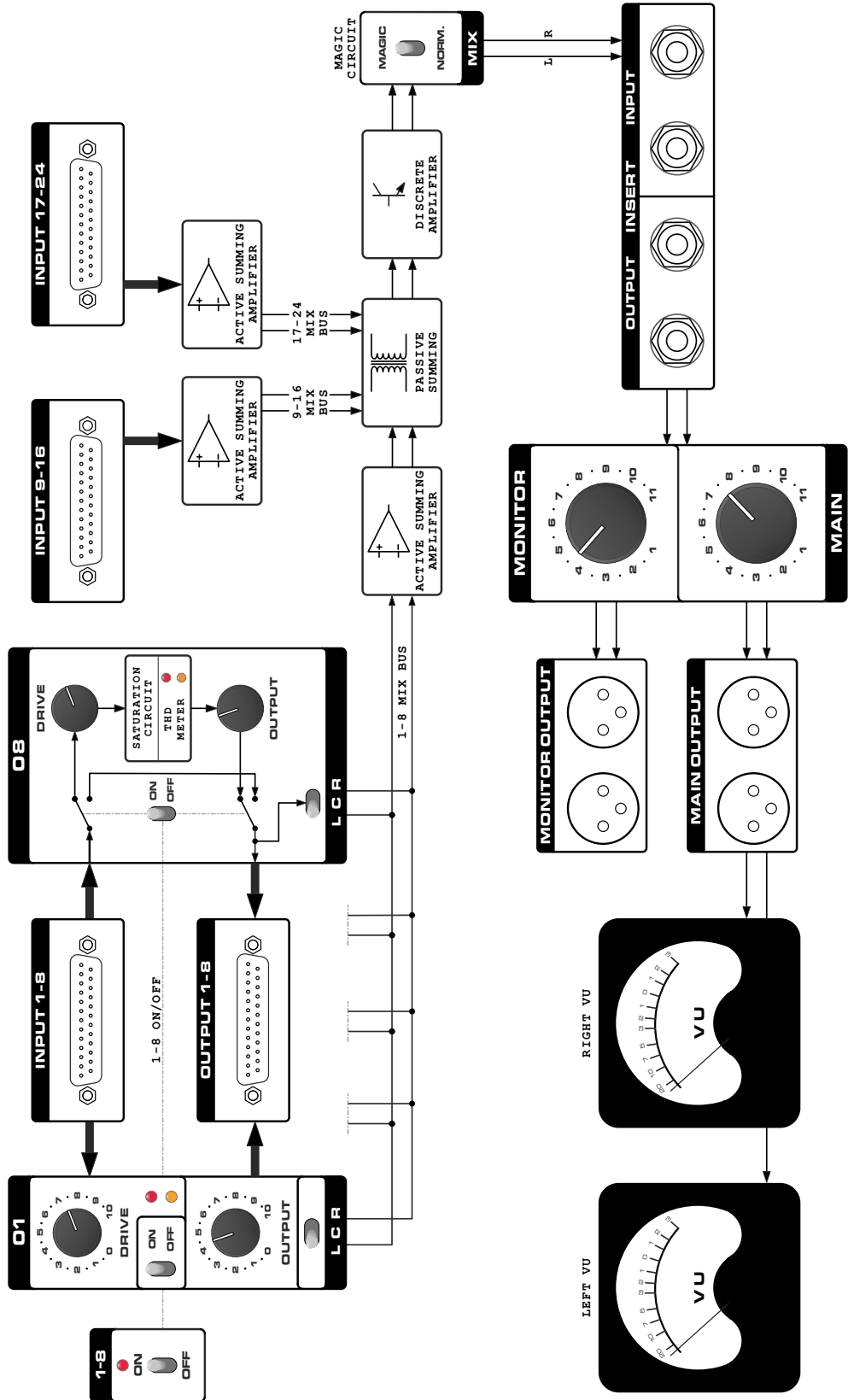


## Signal path

SATUR-8/24 has 24 input channels. Signal incoming to channels 1-8 flows directly on 8 saturation circuits. Signal incoming to channels 9-24 inputs directly the summing bus. Channels with odd numbers (9-23) are assigned to the left channel. Channels with even numbers (10-24) are assigned to the right channel.

Within the saturation circuits (channels 1-8) the incoming signal enters the DRIVE potentiometer, next it flows through the preemphasis module, which decreases the low frequencies level. Following, the signal goes to the saturation circuit. The saturation level - the amount of added harmonics - depends directly on the input level, controlled with the DRIVE knob. After the saturation circuit there is deemphasis module, which boosts low frequencies, next the processed signal goes through OUTPUT potentiometer. Having gone through the OUTPUT knob the signal is split and directed to outputs 1-8 and LCR switches, which allow to pan the signal.

The signals from channels 1-8, 9-16 and 17-24 are being summed independently by operational amplifiers (active summing) and then they go to summing transformers (passive summing). Following the transformers the signal is amplified with 30dB by transistor amplifiers. Totally summed signal split into left and right channel flows through the "magic" circuit. This circuit can be engaged with a switch on the front panel. There is an option to insert an external device, such as equalizer or compressor, on the summing bus, via the INSERT connectors on the rear panel. After the INSERT connectors the signal is split and goes to potentiometers controlling the MAIN and MONITOR output levels. Two VU meters on the front panel indicate the signal MAIN OUTPUT levels of the left and right channel.



## Controls - Front Panel

**DRIVE** - this knob controls the level of the signal entering the saturation circuit. Increasing the DRIVE level results in stronger signal saturation, giving the ear friendly distortion and audibly higher RMS level, thus loudness. Note that the saturation level depends also on the input signal level.

**ON/OFF** - Turns the saturation module on and off. With the saturation module engaged the DRIVE and OUTPUT knobs are inactive.

**LED METER** - indicates the amount of added harmonics - the depth of saturation. The orange LED lights on above the 4% THD, red LED lights on above the 8% THD. Above 8% THD the signal saturation is clearly audible.

**OUTPUT** - this knob controls the level of the signal leaving the saturation circuit. In position 0 the signal is muted.

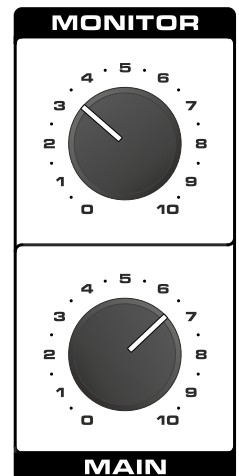
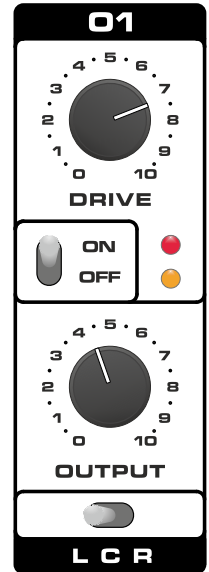
**LCR** - this switch sets signal panning. L- left channel; C - central - mono; R - right channel. The LCR switch acts independently from the saturation module and is active even when the latter is disengaged.

**1-8 - ON/OFF** - this switch turns on and off all the 8 saturation channels simultaneously. In the OFF position the LED flashes red.

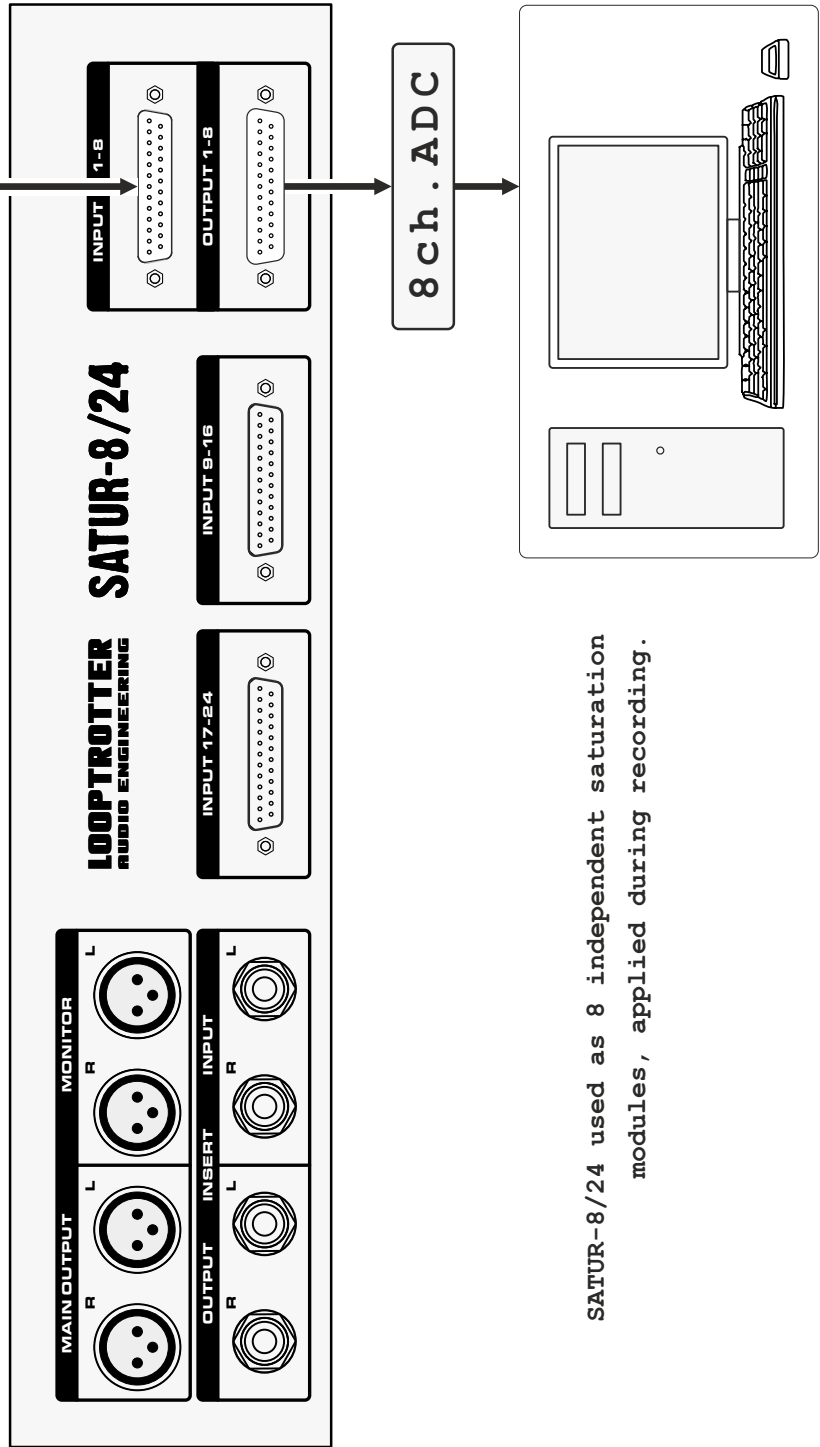
**MIX - MAGIC/NORMAL** -this switch activates the „MAGIC“ module. In NORMAL position the module is inactive and does not influence the mixed signal.

**MONITOR** - this knob controls the signal level on the monitor output.

**MAIN** - this knob controls the signal level on the main output. The main output level is indicated by two VU meters.



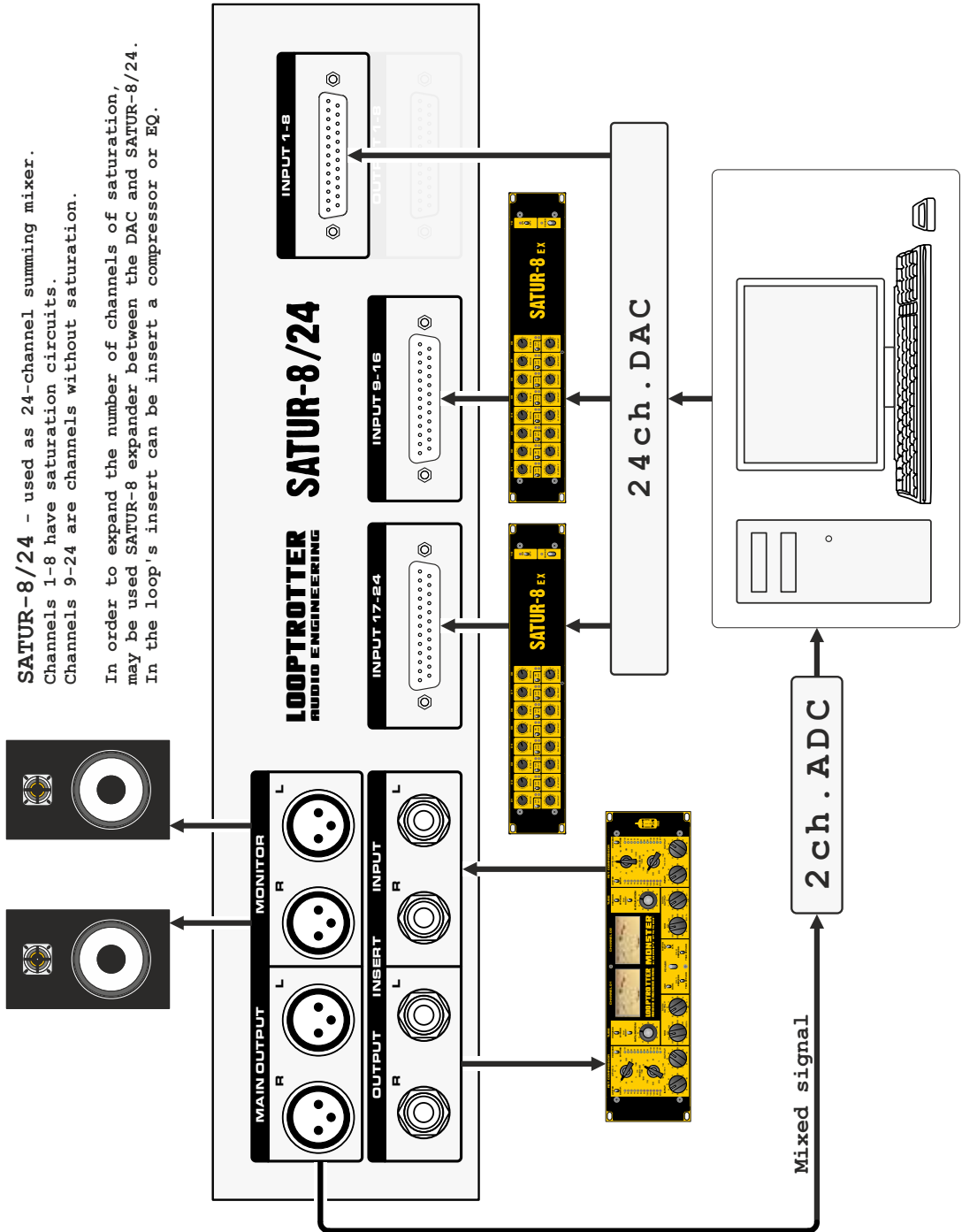
8 x  
SATURAMP



SATUR-8/24 used as 8 independent saturation modules, applied during recording.

**SATUR-8/24** - used as 24-channel summing mixer.  
Channels 1-8 have saturation circuits.  
Channels 9-24 are channels without saturation.

In order to expand the number of channels of saturation,  
may be used SATUR-8 expander between the DAC and SATUR-8/24.  
In the loop's insert can be insert a compressor or EQ.



**SATUR-8/24**