LOOPTROTTER
AUDIO ENGINEERING

MODULAR CONSOLE

CONSOLE - OWNER'S MANUAL

INTRODUCTION:

The Looptrotter Modular Console is the answer to the needs of many recording studios, where, in addition to the highest audio quality, personalization is important. This is made possible by the use of interchangeable 500-series modules, allowing for convenient customization of the console's configuration to the needs of the studio, or even a specific recording or mix. Regardless of the installed modules, the console integrates a range of functions essential for recording, such as an advanced Talkback/Listen section and four Aux tracks, as well as for mixing, offering top-class analog summing of signals. Modules and external inserts can be easily True Bypassed. The outputs of individual channels and four additional stereo tracks can be sent to the stereo mix or to four groups. The mix and all groups include slots for 500-series modules with True Bypass and a detachable Insert. Each channel is equipped with two slots for 500-series modules, four Aux Send potentiometers, Mute and Solo buttons, and a To Tape potentiometer, which determines the level of the signal sent for recording and allows for convenient retracking using analog devices without leaving the console. Four additional stereo inputs, with the ability to route to the LR mix or to groups, expand the possibilities for summing or adding returns from hardware effects and MIDI instruments. The Monitor panel allows for switching the signal selected from three adjustable sources: the LR mix, the return from the DAW, and the external EXT connector to three speaker sets and a headphone output. All monitor outputs are equipped with their own volume controls, independent of the global Level potentiometer and the auxiliary Dim.

The features listed above, combined with the exceptional build quality of the Looptrotter console, will make your work in the studio more comfortable and enjoyable, undoubtedly adding positive energy to your productions and raising their quality to an even higher level.
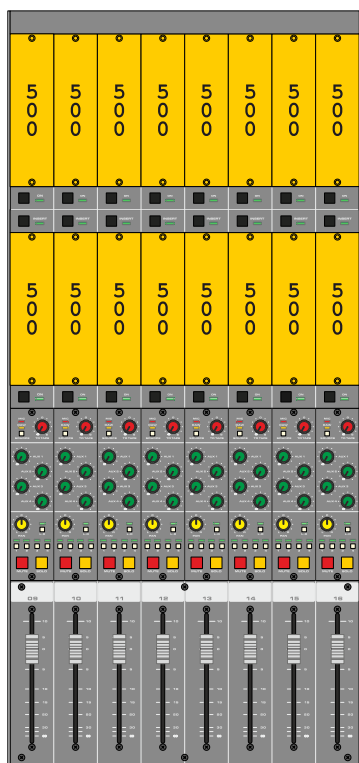
The modular design means that it is possible to configure the console as desired from the following modules:
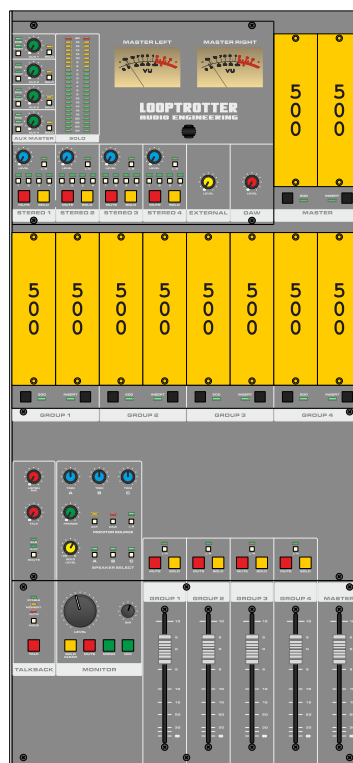- Master
- Channels
- Rack
- Producer Desk
The dimensions of the modules can be found at the end of the manual.

By default, the console has a wooden finish but you can choose the finish from a wide range of veneers.
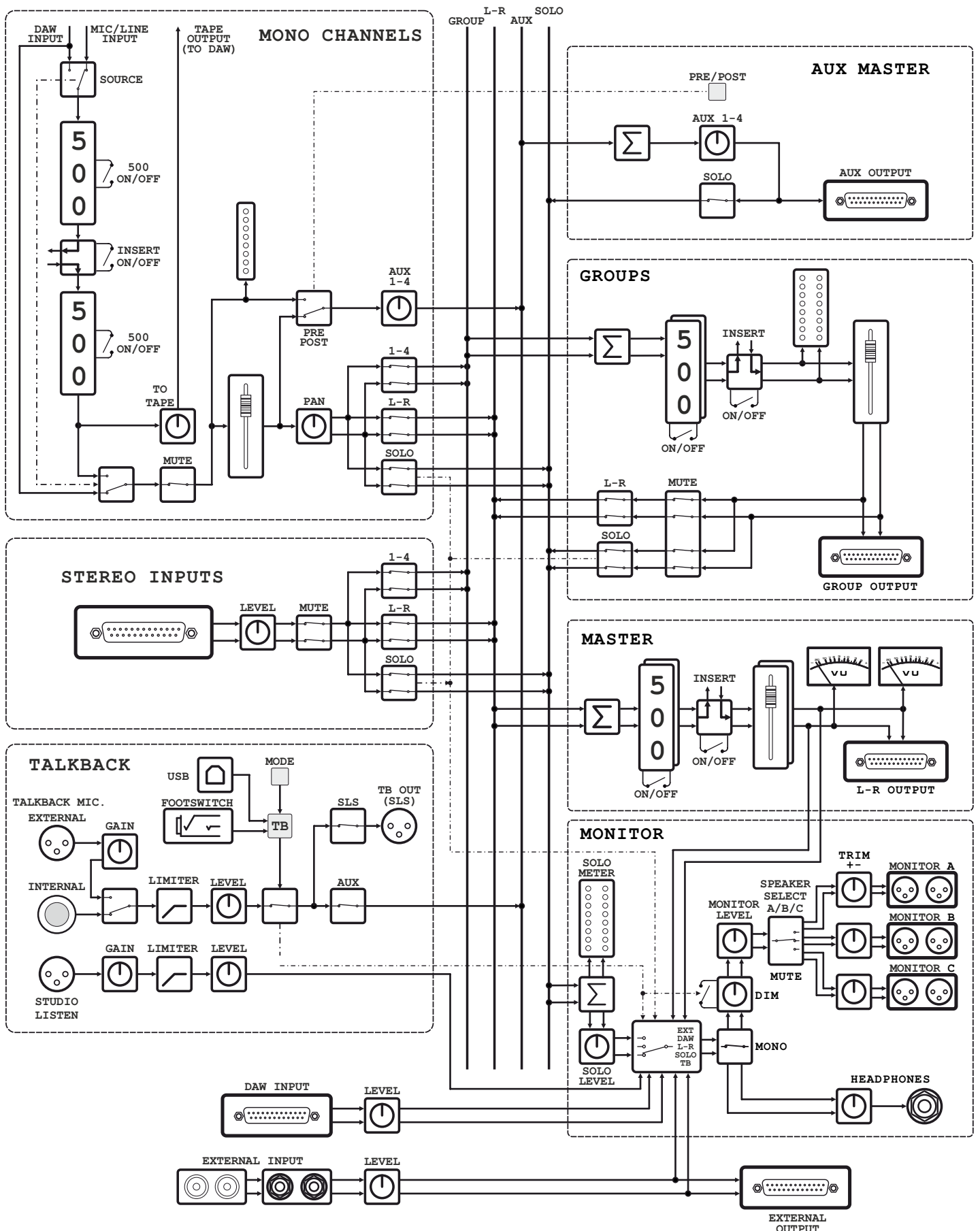
CHANNELS MODULE   MASTER MODULE

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SIMPLIFIED BLOCK DIAGRAM

MONO CHANNELS

DAW INPUT · MIC/LINE INPUT · TAPE OUTPUT (TO DAW)

SOURCE · 500 · 500 ON/OFF · INSERT ON/OFF · 500 · 500 ON/OFF · TO TAPE · MUTE · PRE POST · PAN · AUX 1-4 · 1-4 · L-R · SOLO

STEREO INPUTS

LEVEL · MUTE · 1-4 · L-R · SOLO

TALKBACK

TALKBACK MIC. · EXTERNAL · GAIN · INTERNAL · LIMITER · LEVEL · USB · FOOTSWITCH · MODE · TB · SLS · TB OUT (SLS) · AUX · STUDIO LISTEN · GAIN · LIMITER · LEVEL

DAW INPUT · LEVEL

EXTERNAL INPUT · LEVEL

AUX MASTER

PRE/POST · AUX 1-4 · SOLO · AUX OUTPUT

GROUPS

INSERT · 500 · 500 ON/OFF · L-R · MUTE · SOLO · GROUP OUTPUT

MASTER

500 · 500 ON/OFF · INSERT ON/OFF · VU · VU · L-R OUTPUT

MONITOR

SOLO METER · SOLO LEVEL · MONITOR LEVEL · SPEAKER SELECT A/B/C · MUTE · DIM · TRIM +- · MONO · MONITOR A · MONITOR B · MONITOR C · EXT DAW L-R SOLO TB · HEADPHONES · EXTERNAL OUTPUT

GROUP · L-R · AUX · SOLO

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CHANNELS:

The console has no built-in preamplifiers or equalisers. Instead, there are two 500-series slots in each channel in which any preamplifiers, equalisers or other devices can be installed. On each channel it is possible to achieve any sound you want, which can be modified at any time by simply swapping 500-series modules.

500 ON/OFF - Enables or disables the signal flow through the 500-series modules. In the OFF position, the signal is routed around the 500-series module (True Bypass).

INSERT ON/OFF - Switches the INSERT RETURN signal into and out of the signal path. The INSERT SEND is always driven by the signal after the first 500-series slot.

SOURCE - Switches the input and operating mode of the channel.
• **MIC** Mode: The signal from the MIC/LINE input flows through the 500-series modules, the INSERT point, and into the TAPE OUTPUT. The remaining elements of the signal path process the signal returning from the DAW.
• **DAW** Mode: The signal from the DAW INPUT flows through the 500-series modules, the INSERT point, and through the signal path.

TO TAPE - Adjusts the level of the signal sent to the TAPE OUTPUT on the rear panel, which is connected to the DAW input (ADC).

Auxiliary Sends - Control the signal levels for mono sends 1-4. In the AUX MASTER section, there are PRE/POST fader switches.

PAN - Adjusts the mono signal between the left and right channels. The gain is zero in the center position and +3 dB at the extreme left or right positions.

L-R - Routes the channel to the stereo mix bus.

1, 2, 3, 4 - Routes the channel to the selected stereo group.

MUTE - Mutes the channel output. This also affects SOLO and AUX sends.

SOLO - Routes the channel to the SOLO bus. The MONITOR SECTION automatically switches to monitor this bus. The signal is post-fader (AFL mode).
In the MASTER section, there is a 24-LED SOLO peak meter, which can be reset using the SOLO CLEAR button located in the MONITOR section.

METER - Each channel is equipped with a 24-LED peak meter located pre-fader. The meter is calibrated to display analog levels - 0 = 0dBu.
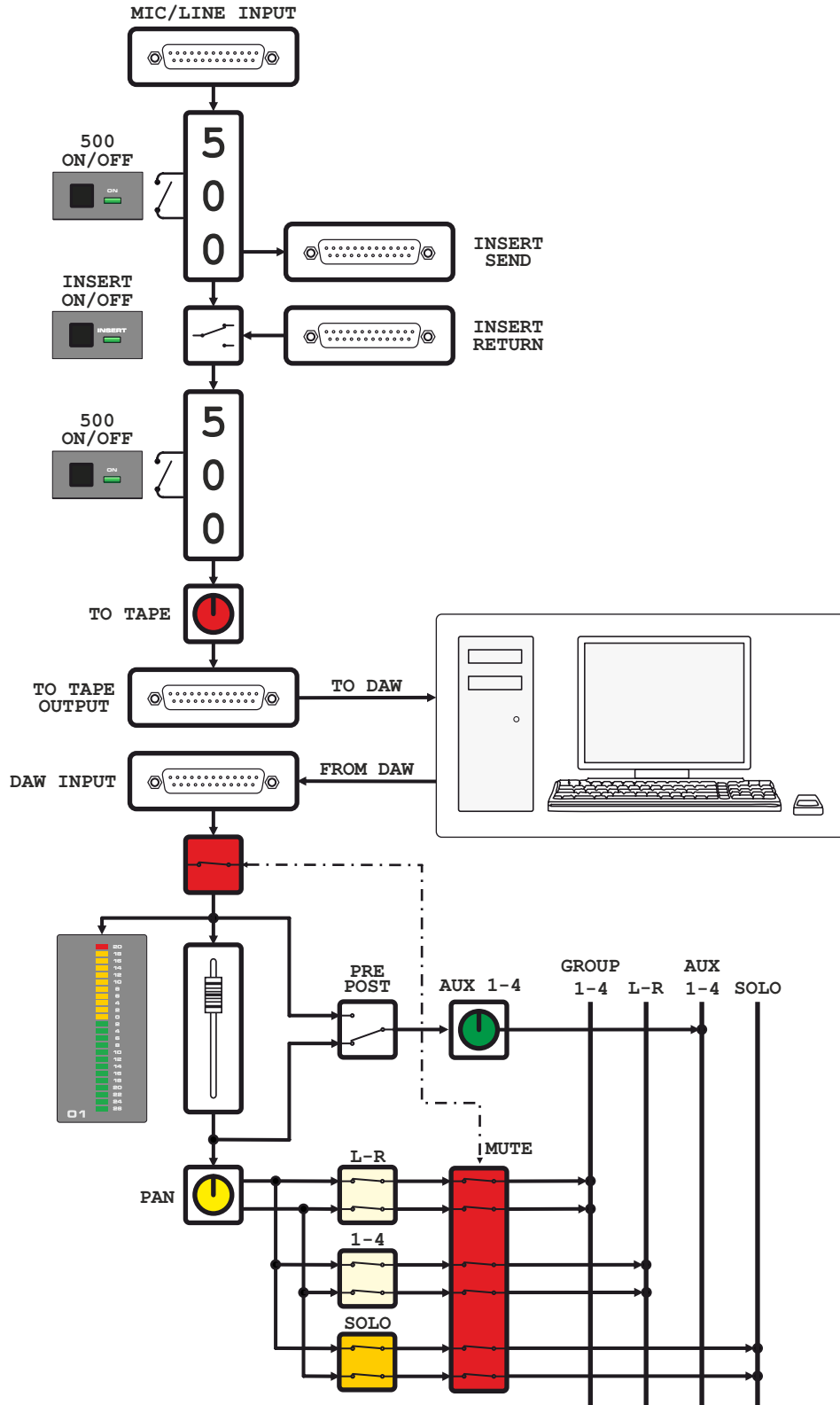
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CHANNEL in RECORD Mode - selected SOURCE - MIC:

In RECORD mode the signal flows from the MIC/LINE input directly to the first 500-series slot, then to the INSERT point, and then to the second 500-series slot. The signal is then sent to the TAPE OUTPUT connector, which is connected to the DAW input (ADC).
A unique feature of the Looptrotter Modular Console is that the remaining elements of the signal path process the signal returning from the DAW via the DAW INPUT. This allows the mixing section to be used with previously recorded tracks, facilitating tasks such as monitoring.

MIC/LINE INPUT

500
ON/OFF

500

INSERT
SEND

INSERT
ON/OFF

INSERT
RETURN

500
ON/OFF

500

TO TAPE

TO DAW

TO TAPE
OUTPUT

DAW INPUT

FROM DAW

PRE
POST

AUX 1-4

GROUP
1-4   L-R

AUX
1-4   SOLO

MUTE

PAN

L-R

1-4

SOLO

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CHANNEL in MIX Mode - selected SOURCE - DAW:

In MIX mode, the MIC/LINE input is disconnected, and the signal flows from the DAW INPUT directly to the first 500-series slot, then to the INSERT point, and then to the second 500-series slot. From there, the signal is sent to the mixing panel and the TAPE OUTPUT connector, which is connected to the DAW input (ADC).
The DAW INPUT is protected from 48V phantom power from the 500-series preamps.
However, the TAPE OUTPUT remains active, allowing for retracking (printing) of tracks processed through the 500-series modules and external devices connected to the INSERT SEND / RETURN.
Avoid potential feedback loops. Tracks in the DAW should not remain in IN or REC mode when the console is in MIX mode.
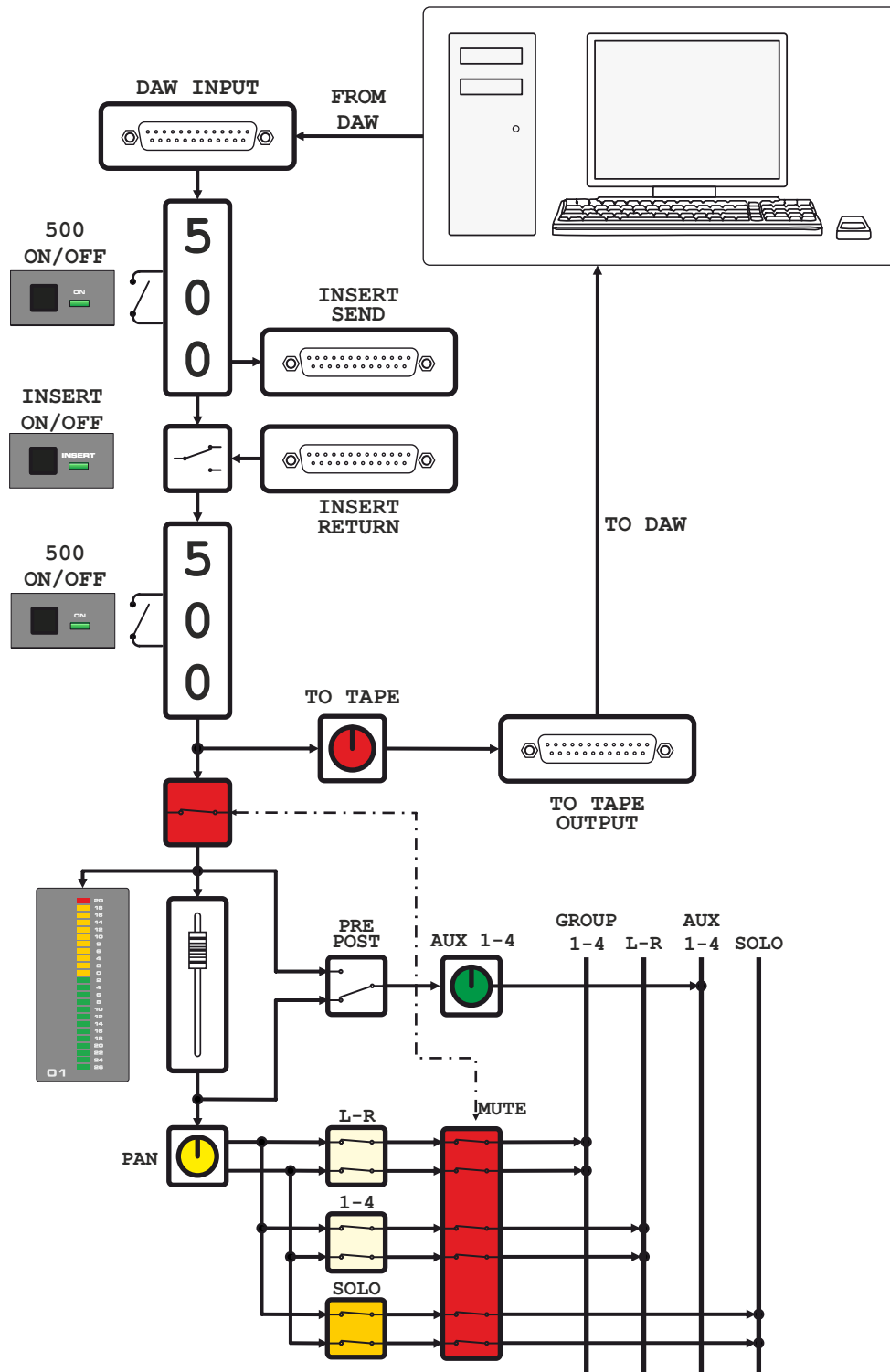
STEREO INPUTS:

In the Master section, there are 4 stereo inputs that can be routed to the L-R mix bus or to stereo groups 1, 2, 3, or 4. SOLO and MUTE buttons are available.

• **LEVEL** – This stereo potentiometer adjusts the volume level.

• **L-R** – Routes the channels to the stereo mix bus.

• **1, 2, 3, 4** – Routes the channels to the selected stereo subgroup.

• **MUTE** – Mutes the channel outputs.

• **SOLO** – Functions identically to the SOLO function in individual channels.
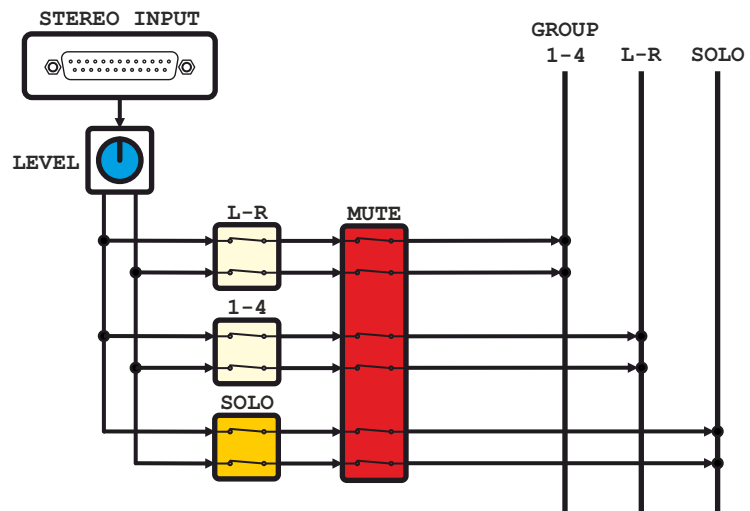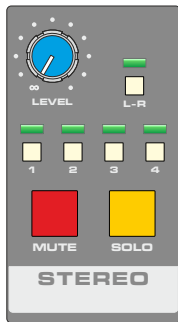
AUX MASTER:

Controls the main levels for Auxiliary 1-4. Each AUX has global **PRE/POST** fader switching and a **SOLO** switch.
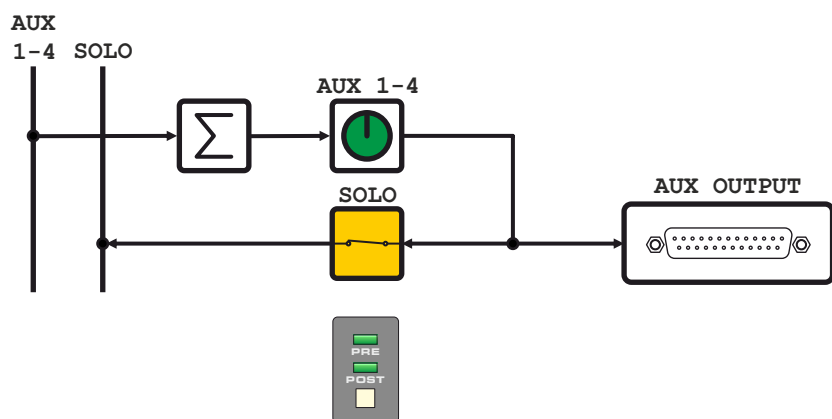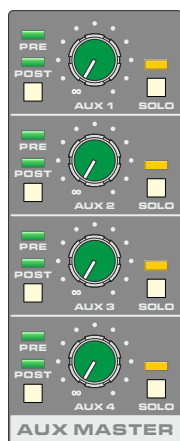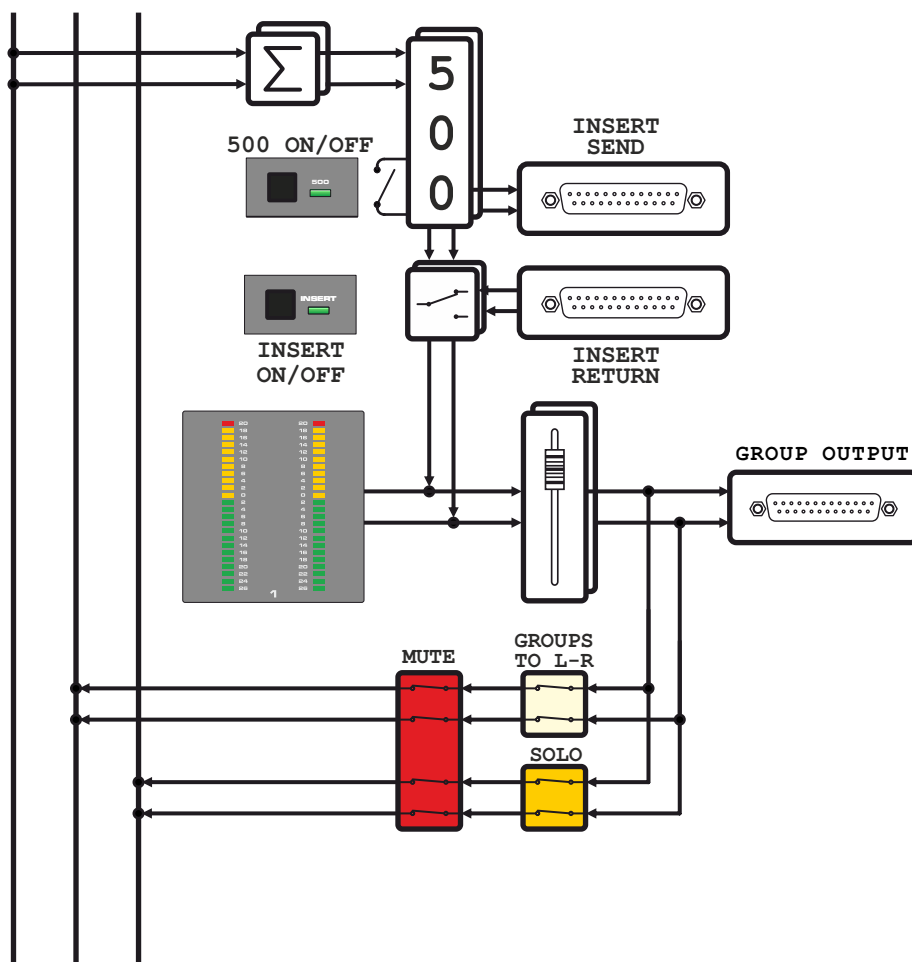
GROUPS:

There are 4 stereo groups available, each with the option to use 500-series modules and INSERT points.

• The 500-series slots on each group have a stereo sidechain link.

• Like the channels, the groups are also equipped with:
500 ON/OFF, INSERT ON/OFF, L-R, MUTE, and SOLO buttons.

• Each group has a stereo fader.

• On the rear panel, there is a GROUP OUTPUT connector where the signal is available after the 500-series modules, INSERT, and fader.

GROUPS

GROUP
1-4 L-R SOLO

500 ON/OFF

INSERT
SEND

INSERT
ON/OFF

INSERT
RETURN

GROUP OUTPUT

MUTE

GROUPS
TO L-R

SOLO
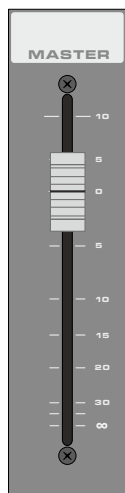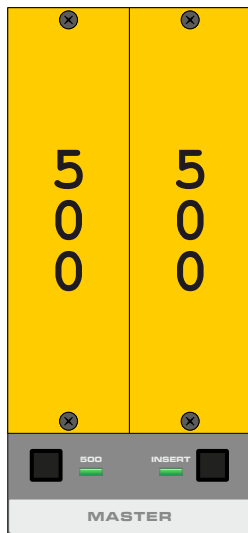
GROUP 1

MUTE SOLO
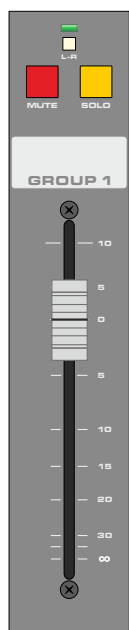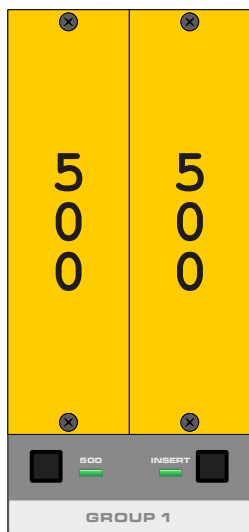
GROUP 1

MASTER SECTION:

The Looptrotter Modular Console features an original summing circuit.
The L-R bus and group buses are summed on separate summing amplifiers (active summing). The signal from these amplifiers is summed via transformers (passive summing) and amplified by a two-stage transistor amplifier in pure Class A.

After the summing circuit, there is a 500-series slot, an INSERT point, and a stereo fader.
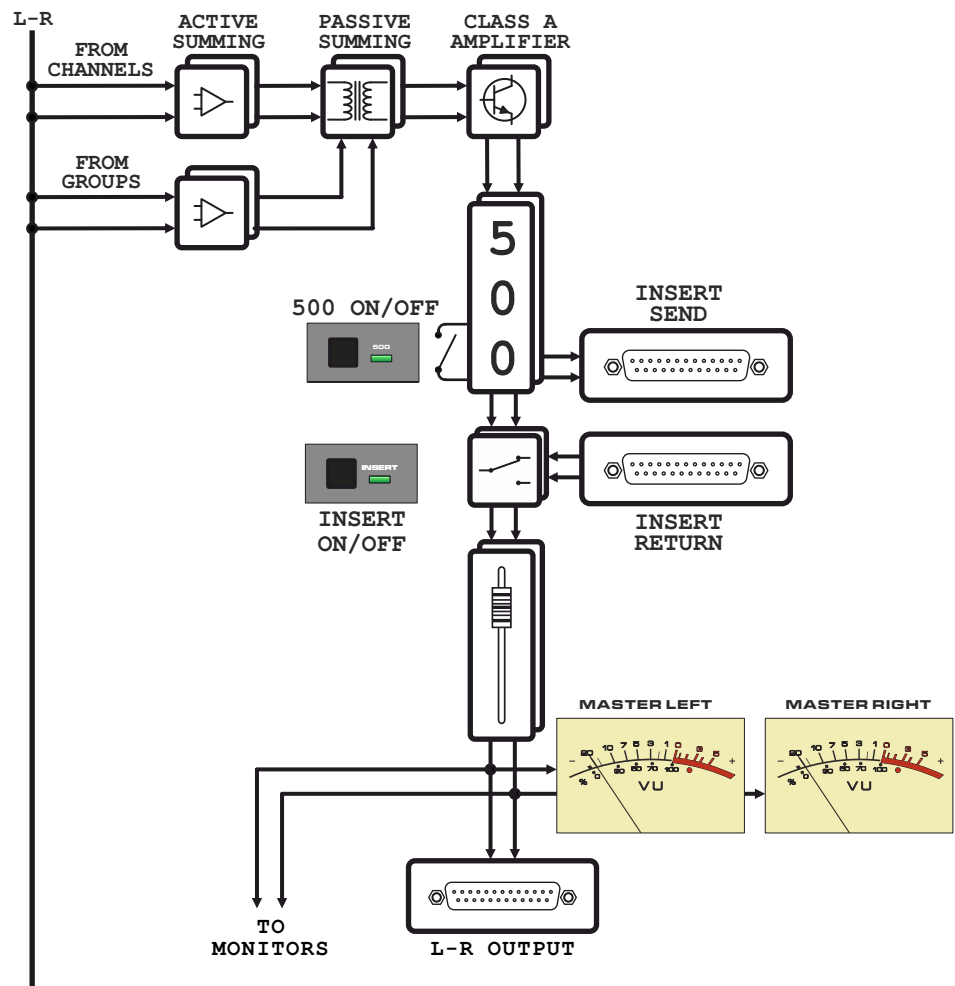
The 500-series slots have a stereo sidechain link.

The main L-R output is typically used to send the final mix back to the DAW.

VU meters – Indicate the L-R OUTPUT signal level after the MASTER fader. 0dB = +4dBu.
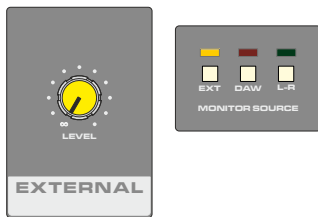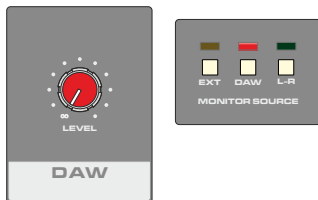
L-R OUTPUT

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EXTERNAL INPUTS
MONITOR SOURCE - EXT

LEVEL

EXTERNAL

DAW INPUT
MONITOR SOURCE - DAW

LEVEL

DAW

TRIM
A   B   C

PHONES

EXT DAW L-R

SOURCE

SOLO
LEVEL

A   B   C

SPEAKER SELECT

LEVEL

DIM

SOLO
CLEAR   MUTE   MONO   DIM

MONITOR

MONITOR SECTION:

The monitor section offers 5 signal sources:
Three of them are selectable under the **MONITOR SOURCE** buttons:
• **EXT** – External additional inputs. Two connectors are available and can be used simultaneously. RCA connectors are available on the front of the console, while ¼" TRS jacks are located on the rear panel. The level of this signal can be adjusted using the **EXTERNAL LEVEL** knob at the top of the Master module.
• **DAW** – Enables monitoring of the final mix returning from the DAW. The level of this signal can be adjusted using the DAW LEVEL knob at the top of the Master module.
• **L-R** – The monitoring source is the main L-R summing bus.

When the **SOLO** switch is active anywhere, the monitor section switches to monitor that bus. A **SOLO LEVEL** knob is available to adjust the attenuation of this signal from -30dB to 0dB.

Another signal source for the monitor section is **STUDIO LISTEN,** which is audible when TALKBACK is enabled.
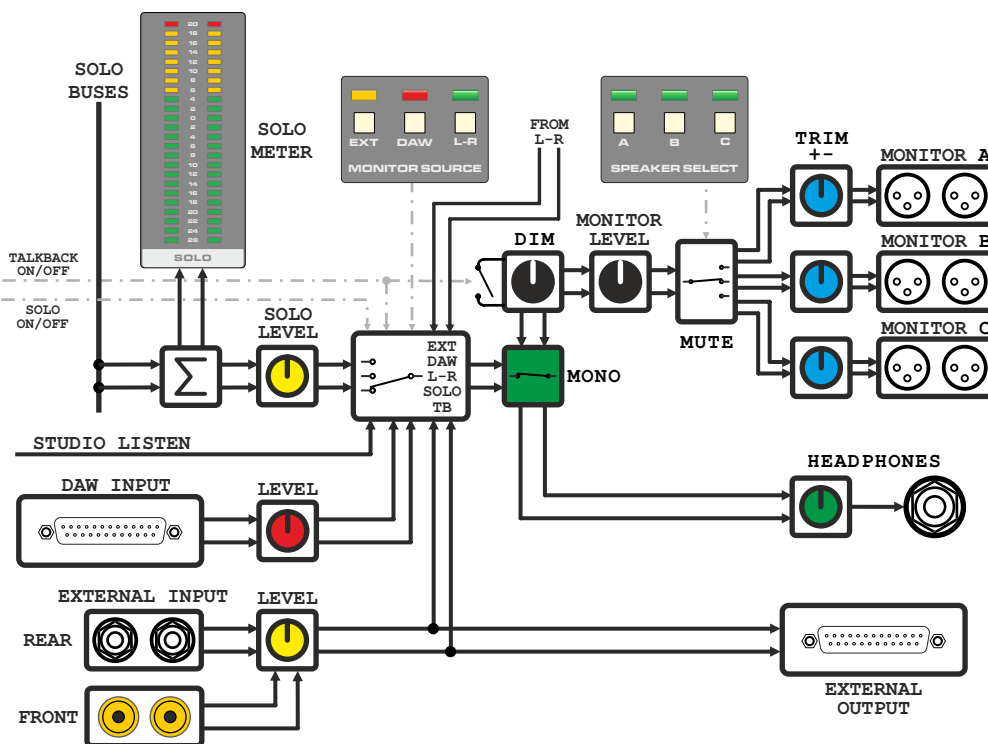
The following control buttons are available:
• **SOLO CLEAR** – Resets all SOLO buttons.
• **MUTE** – Mutes the monitor outputs.
• **MONO** – Sums the stereo signal and sends it to both speakers.
• **DIM** – Reduces the monitor volume. A DIM knob is available to adjust the attenuation from -30dB to 0dB.
• **SPEAKER SELECT** – Switches A, B, C to select one of the three available monitor outputs. The outputs are available on the rear panel as XLR connectors.

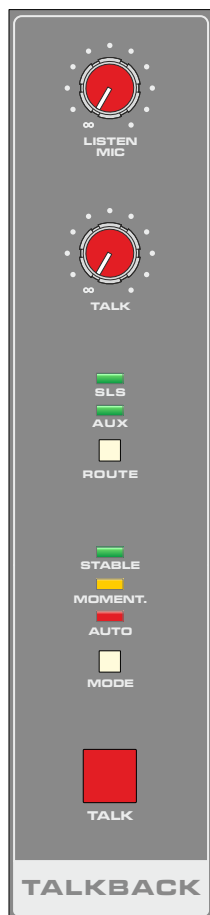**TRIM A, B, C** – Knobs to adjust the volume of each monitor output independently.

PHONES – A knob to adjust the headphone volume. A ¼" TRS jack is located under the Master module.

EXTERNAL OUTPUT – The signal from the EXTERNAL inputs is available on a connector on the rear panel.

SOLO
BUSES

SOLO
METER

EXT DAW L-R

MONITOR SOURCE

FROM
L-R

A   B   C

SPEAKER SELECT

TRIM
+-

MONITOR A

MONITOR B

MONITOR C

DIM

MONITOR
LEVEL

MUTE

TALKBACK
ON/OFF

SOLO
ON/OFF

SOLO
LEVEL

EXT
DAW
L-R
SOLO
TB

MONO

STUDIO LISTEN

HEADPHONES

DAW INPUT

LEVEL

EXTERNAL INPUT

LEVEL

REAR

FRONT

EXTERNAL
OUTPUT

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TALKBACK:

The Looptrotter Modular Console features an advanced talkback module with two-way communication. The built-in microphone or an external microphone can be used to communicate with the artists, while the Studio Listen input allows communication with the sound engineer.

The talkback microphone **selector switch**, located on the rear panel, has three positions:
• **INT** – Uses the built-in condenser microphone, which is located at the top of the Master module, under the VU meters.
• **MIX** – Uses a mix of the built-in and external microphones.
• **EXT** – Uses an external microphone.

Talkback can be activated in two ways:
• By pressing the red **TALK** switch on the front of the console.
• By using an external switch (e.g., a footswitch) connected to the rear panel input.

The **TALK** switch has three modes, selected via the **MODE** button:
• **STABLE** – A single press activates talkback; pressing it again deactivates it.
• **MOMENTARY** – Talkback is active only while the button is pressed.
• **AUTO** – Talkback is controlled by the Timecode signal from the DAW. A USB port on the rear panel houses a MIDI module for this function. To enable AUTO mode, set the DAW to send Timecode via MIDI during playback. This will automatically deactivate talkback in Play mode and activate it in Stop mode.

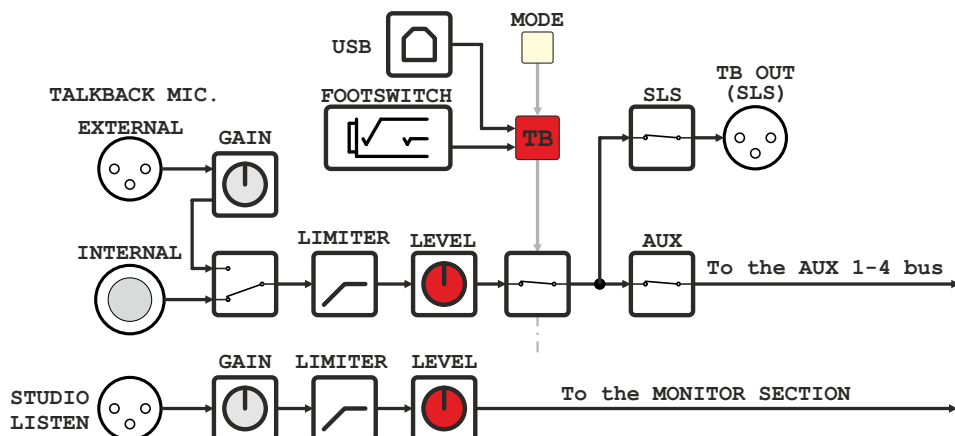**TALK** knob – Adjusts the talkback microphone level.

The signal can be routed to all **AUX** outputs and a separate **SLS** (Studio Loudspeaker) output.

LISTEN MIC knob – Adjusts the level of the Studio Listen microphone input, located on the rear panel. This input is used for monitoring from the live room and is routed to the monitor section.
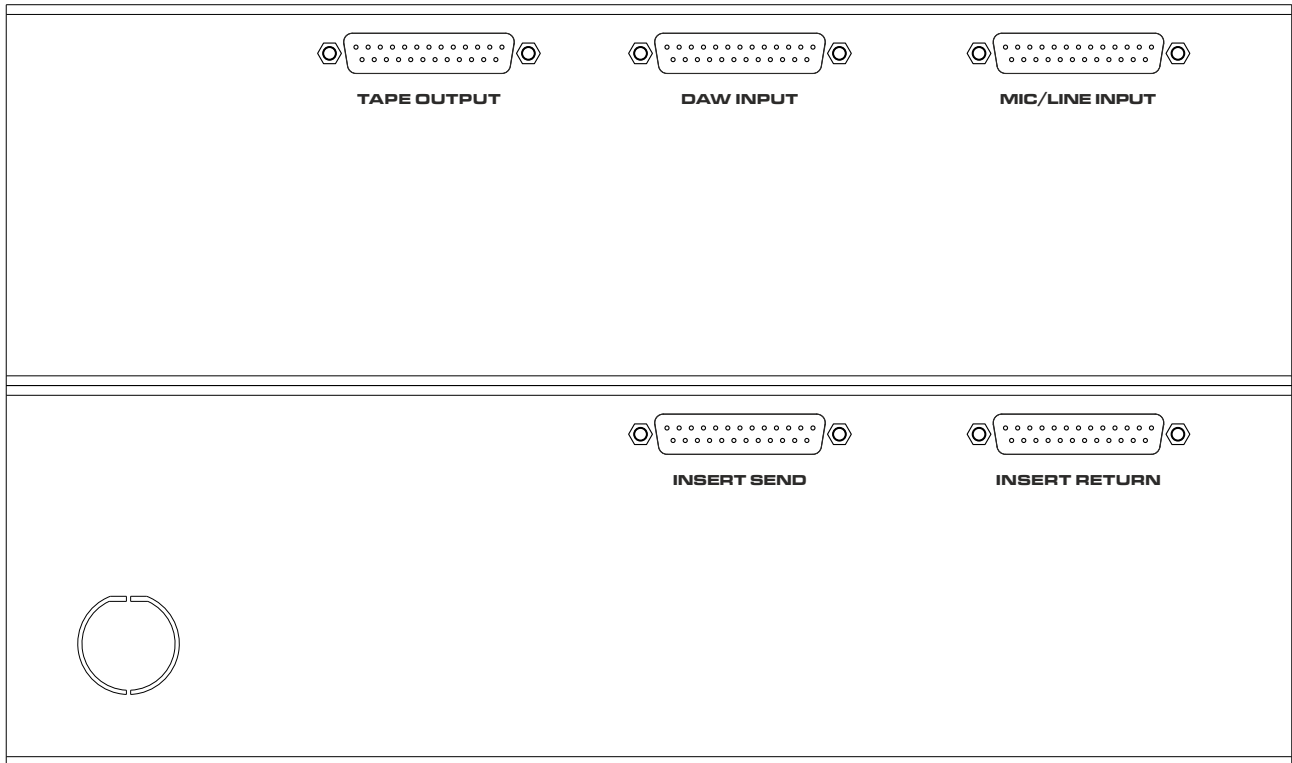
When talkback is enabled, the **DIM** function is automatically activated.

Both the talkback and Studio Listen microphones are protected by brickwall limiters, which are placed before the TALK and LISTEN MIC level controls. These limiters prevent loud sounds from the studio and control room from overloading the system.
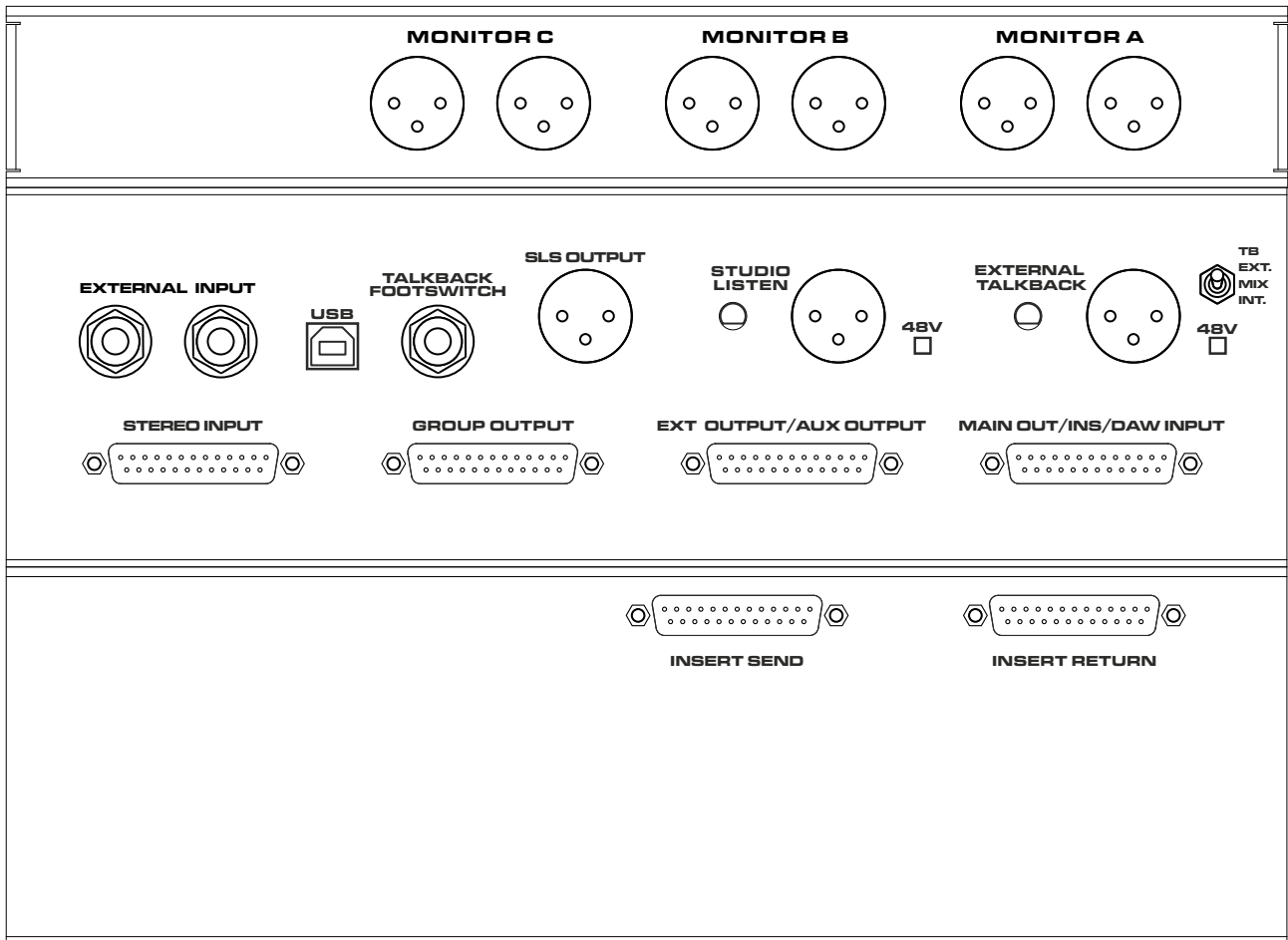
GAIN knobs and **48V** switches for EXTERNAL TALKBACK and STUDIO LISTEN inputs are located on the rear panel near the XLR inputs.

REAR PANEL CONNECTIONS
CHANNELS MODULE

TAPE OUTPUT

DAW INPUT

MIC/LINE INPUT

INSERT SEND

INSERT RETURN

MASTER MODULE

MONITOR C

MONITOR B

MONITOR A

EXTERNAL INPUT

USB

TALKBACK FOOTSWITCH

SLS OUTPUT

STUDIO LISTEN

48V

EXTERNAL TALKBACK

TB
EXT.
MIX
INT.

48V

STEREO INPUT

GROUP OUTPUT

EXT OUTPUT/AUX OUTPUT

MAIN OUT/INS/DAW INPUT

INSERT SEND

INSERT RETURN

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DB-25 CONNECTOR

MAIN OUT / INS / DAW INPUT

1 - INSERT LEFT SEND
2 - INSERT LEFT RETURN
3 - INSERT RIGHT SEND
4 - INSERT RIGHT RETURN

5 - DAW INPUT LEFT
6 - DAW INPUT RIGHT

7 - MAIN OUTPUT LEFT
8 - MAIN OUTPUT RIGHT

DB-25

EXT OUTPUT / AUX OUTPUT

1 - AUX 1 OUTPUT
2 - AUX 2 OUTPUT
3 - AUX 3 OUTPUT
4 - AUX 4 OUTPUT

5 - EXTERNAL OUTPUT LEFT
6 - EXTERNAL OUTPUT RIGHT

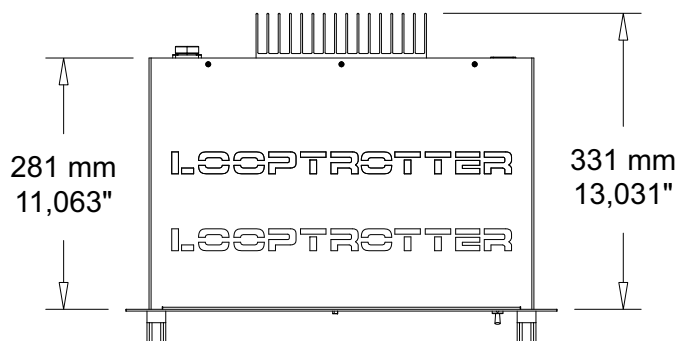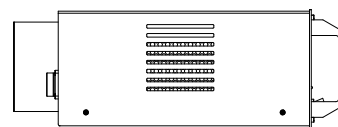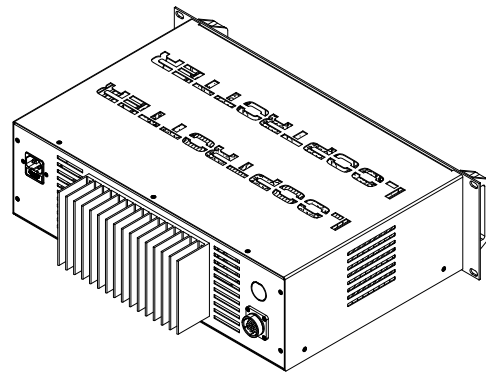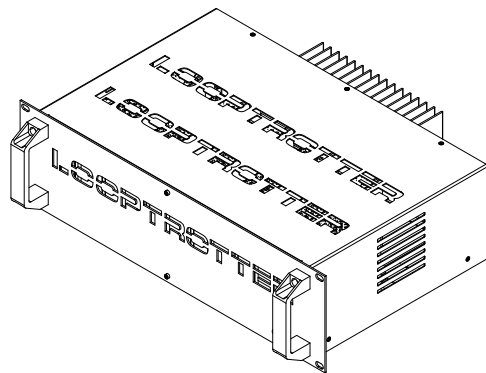7 - STUDIO LOUDSPEAKER (SLS)
8 - STUDIO LISTEN
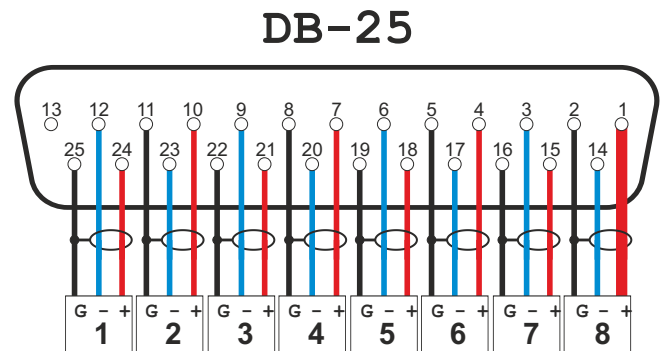
Power Supply

The power supply for the Console is a hybrid design. The current source is a set of switched-mode power supplies (SMPS). Following them are low-noise linear regulators that thoroughly "clean" the power rails.

The power rating of the supply is matched to the size of the console. Each power supply has a soft-start feature.
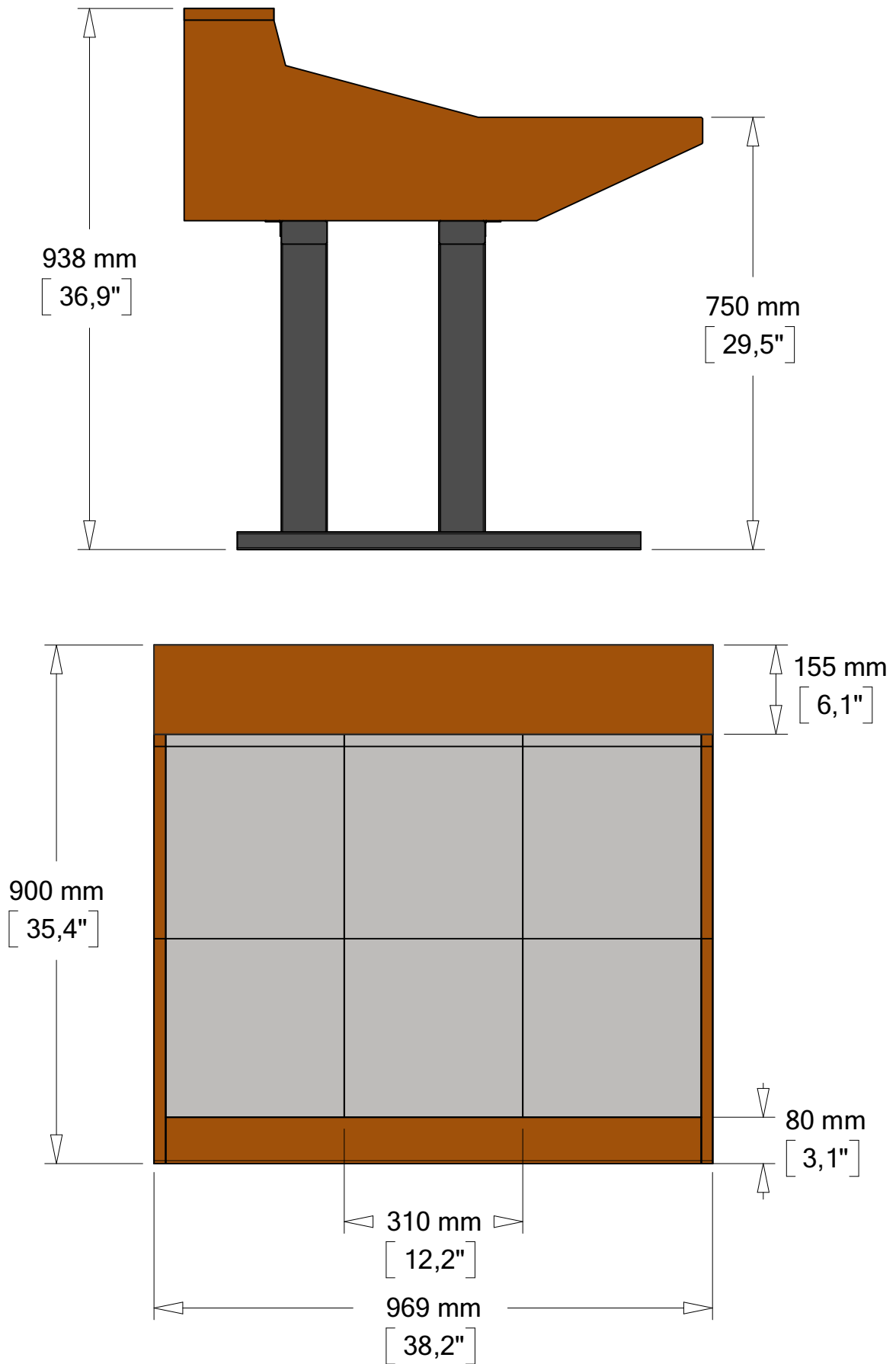
The power supply is housed in a standard 3U Rack enclosure.

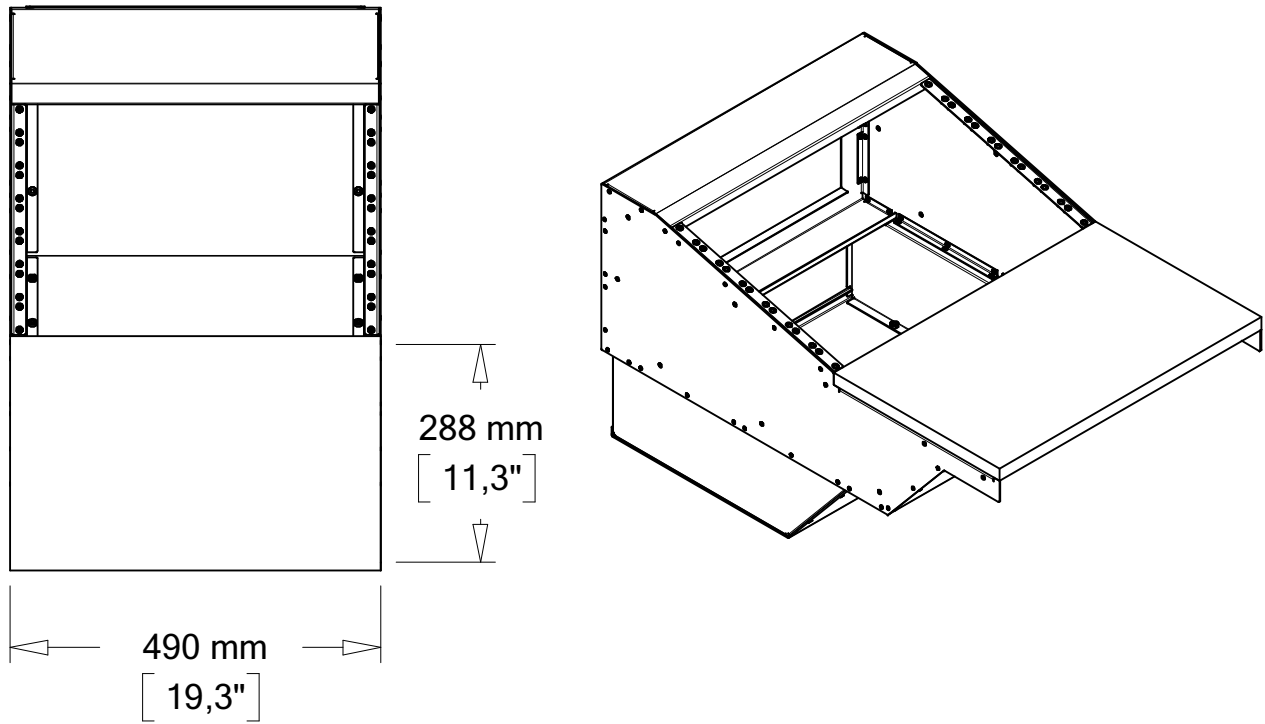It does not require any additional mechanical cooling.

281 mm
11,063"

331 mm
13,031"

Dimensions of an example 16-channel console:

938 mm
[36,9"]

750 mm
[29,5"]

155 mm
[6,1"]

900 mm
[35,4"]

80 mm
[3,1"]

310 mm
[12,2"]

969 mm
[38,2"]

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RACK module:

288 mm
[11,3"]

490 mm
[19,3"]

PRODUCER DESK module:

800 mm
[31,5"]
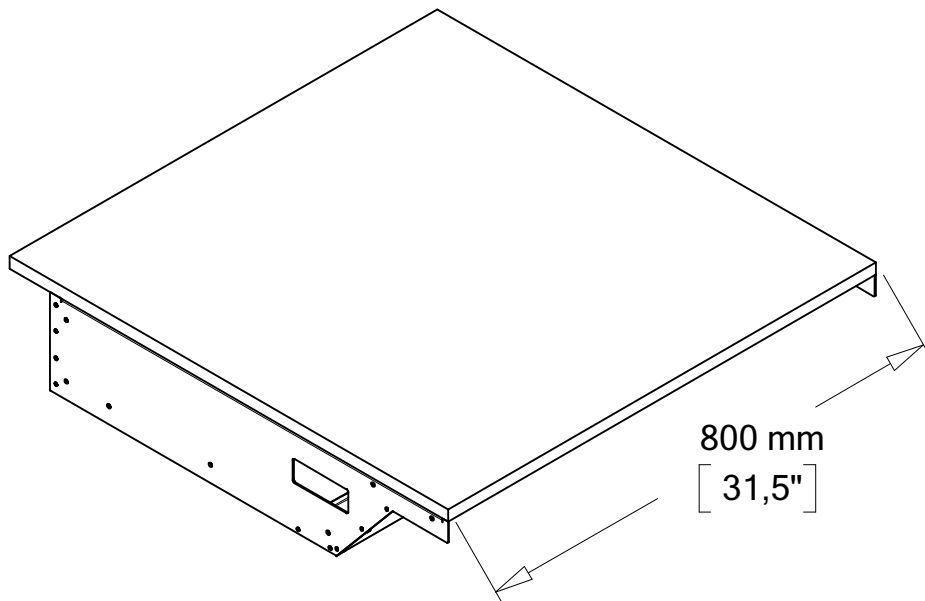
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Top view of an example configuration of a 32-channel console with Rack and Producer Desk.

Rack

490 mm
[19,3"]

Channels

620 mm
[24,4"]

Master

2879 mm
[113,4"]

Producer
Desk

800 mm
[31,5"]

Channels

929 mm
[36,6"]

900 mm
[35,4"]
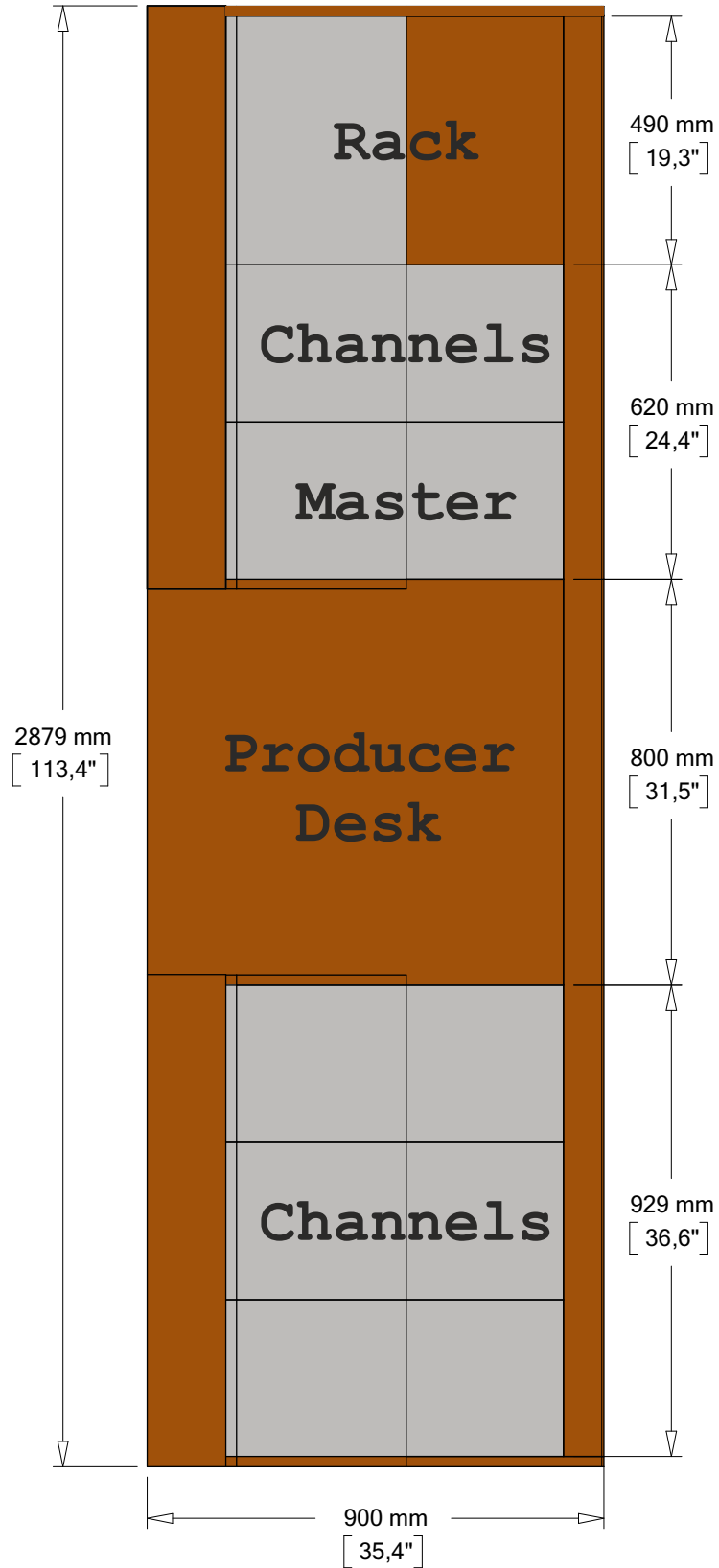
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