



## MCM-8

# PRELIMINARY USER GUIDE v1.0



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## INTRODUCTION

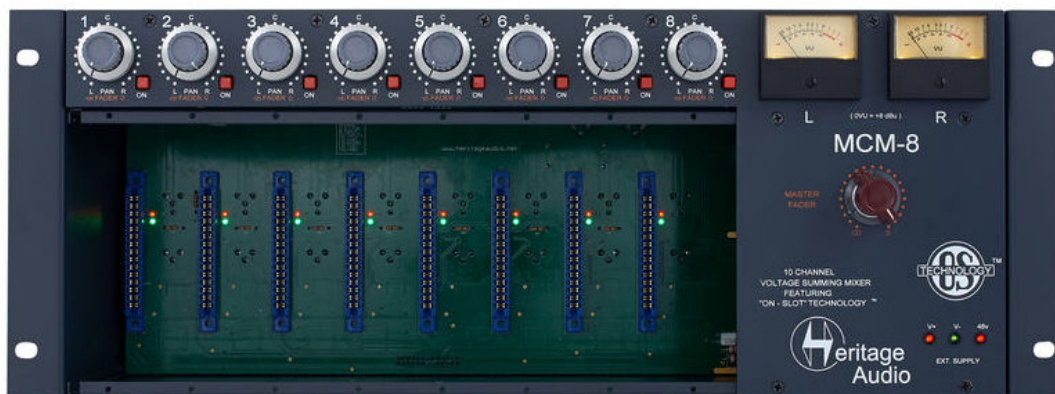
The MCM-8 is an OST™ 8 channel 500 Series Enclosure WITH mixer functions.

OST is a Heritage Audio proprietary technology which eliminates module's interaction through the power supply feeding each slot with independent supply stages.

The mixer follows a passive voltage summing topology, having the gain loss restored by a classic 1073 type class A output stage.

The outputs of the 8 slots are hardwired to the 8 summing mixer's main inputs, therefore independent use of the 500 series modules and summing mixer features is not possible.

## FRONT PANEL OVERVIEW



Upper row on the front panel is dedicated to the 8 mixer's main inputs.

Controls per channel are as follows:

- ON: When pressed, the output of the slot is added to the mix bus. When depressed, it's muted.
- FADER: Attenuates the signal sent to the mix bus from unity to minus infinity. Fader all clockwise means unity gain, whilst 12 o'clock means an approximate 20 dB of attenuation. (or -20dB of gain ).
- PAN: Places the signal within the stereo spectrum, left, center, right or any intermediate setting. The panoramic law follows a standard in which if a 0dB signal is hard panned, it is -3dB when center panned.

Lower zone is dedicated to the 500 series modules. Any module following the API protocol (both mechanically and electrically) will be compatible with the unit.

Right part of the unit is dedicated to the mixer's center section, as follows:

- VU Meters: Measuring the average level at the master outputs.
- Master Fader: Attenuates the Mix's output from unity to minus infinity. The control has a stepped feel for easy recall of settings. Fader all clockwise means unity gain, whilst 12 o'clock means an approximate 20dB of attenuation.

At the bottom right there are LEDs showing the correct status of the external power source.

## BACK PANEL OVERVIEW



Upper row on the back panel corresponds to the individual XLR and combined DSUB channel outputs.

Lower row corresponds to the individual XLR and combined DSUB channel inputs.

Both DSUB connectors are wired following the TASCAM protocol.

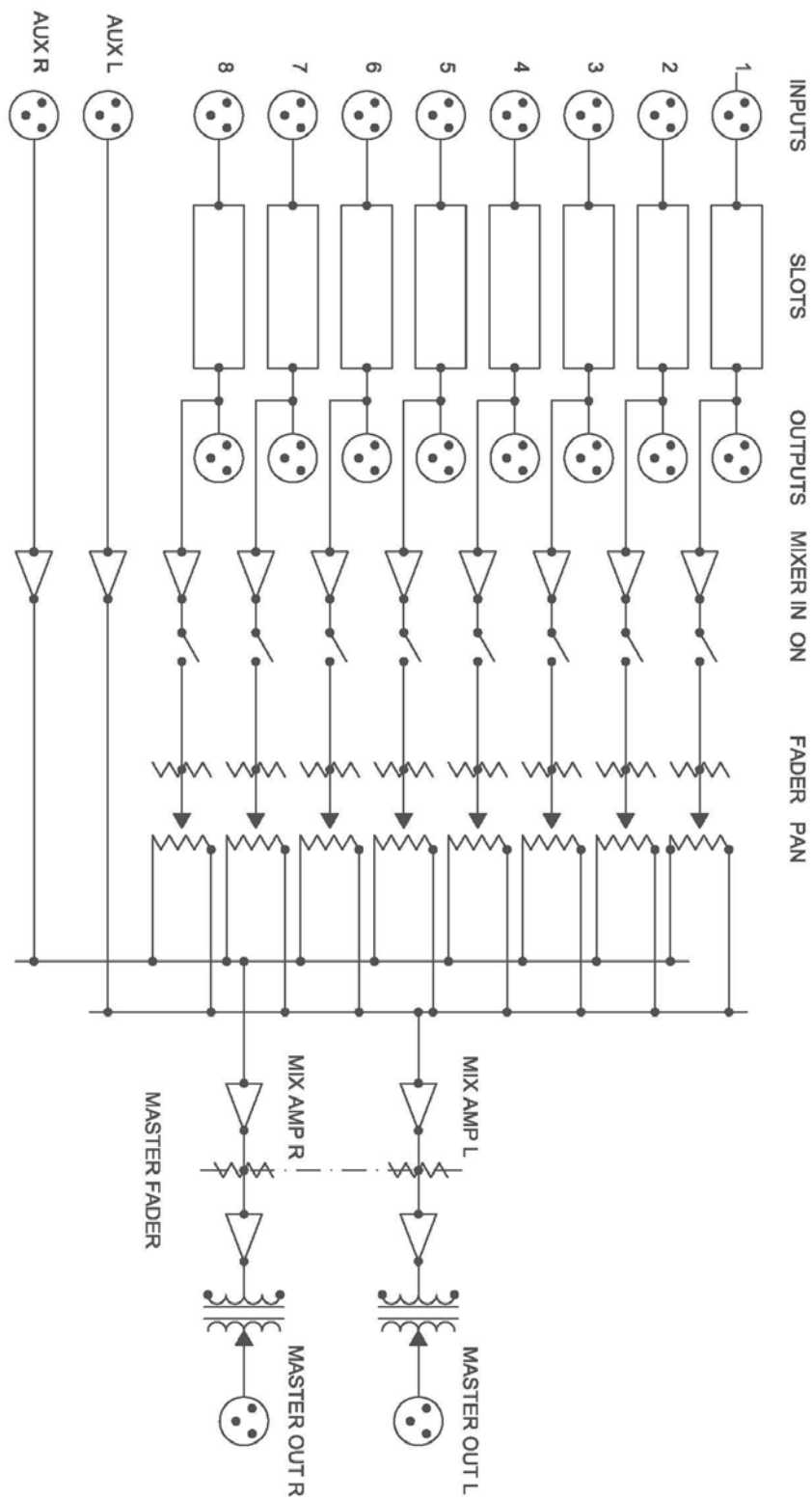
Stereo Mix output is located far left, on a pair of male XLR connectors.

Aux Inputs are located above the 8 inputs, on a pair of female XLR connectors. They're hardwired Left and Right and are unity gain.

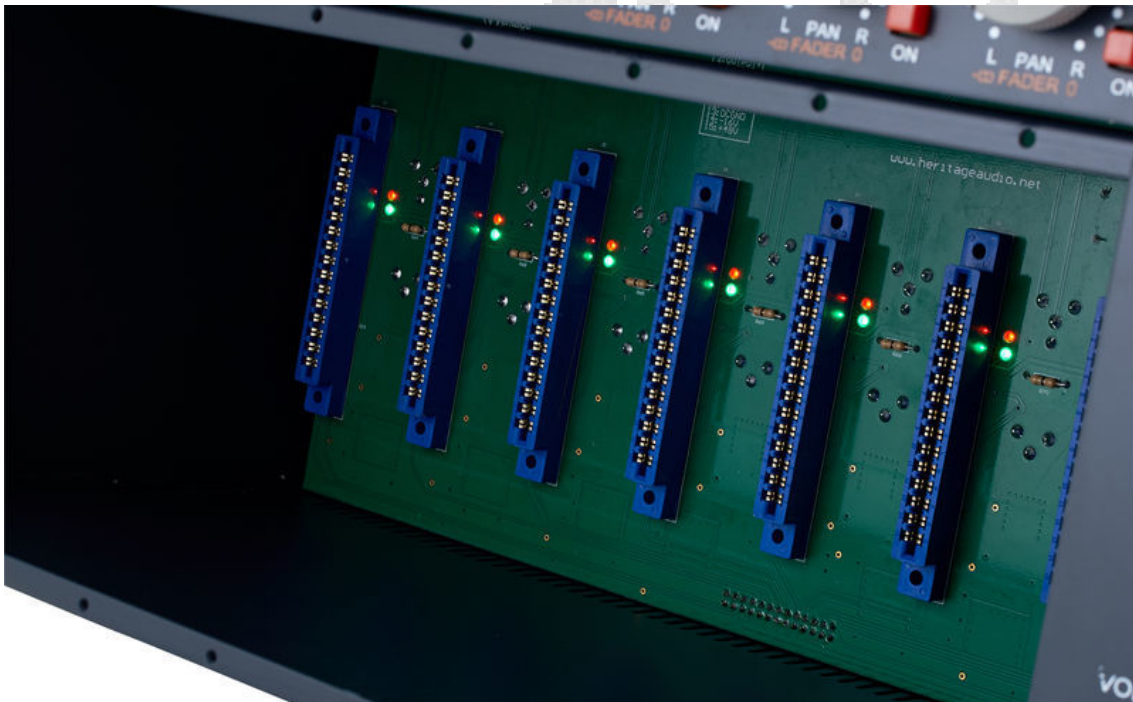
External Power Supply connector is located on the bottom left corner.

## SIGNAL FLOW AND BLOCK DIAGRAM

(Dsubs omitted for clarity)



## ON SLOT TECHNOLOGY ( OST™ )



The MCM-8 is also a 500 Series enclosure in a 4U Rack format, able to accommodate up to 8 modules. As the rest of the new Heritage Audio line of 500 Series enclosures, it features “ON SLOT” Technology (OST).

“ON SLOT TECHNOLOGY” takes advantage of last generation power electronics to handle power supply on a “per slot” basis. Each slot has its own power supply linear regulation stages, therefore modules are isolated from the rest. They just share the metal enclosure.

With literally hundreds of brands making 500 series modules, we at Heritage Audio think this is the professional way of handling this reliably, eliminating issues often associated with sharing power between different modules of different brands and natures.

Each slot features test LEDs for checking correct power operation (red for +16v, green for -16v), located aside of the slot connector.

Thanks to the use of OST, the power capability of the OST-10 is 400mA per rail per slot maximum, with an overall of 1.4A (1.6A non continuous) per rail, whichever is reached first.

## SUMMING MIXER DESCRIPTION

The MCM-8 features a passive voltage summing topology, similar to that found in the vintage Rupert Neve era discrete consoles.

Passive voltage mixing requires its gain loss to be restored back to line level. Again, following the vintage topology, a stereo transformer coupled class A output amplifier is employed for this task. This amplifier is the same one used in the 1073 module.

The stereo Master Fader is placed PRE output stage, so driving it to saturation is possible. (and the opposite too!).

Provision is made on each channel for attenuation and stereo placement (fader and pan) before sending to the mix bus, with the exception of the AUX inputs.

Maximum output level is greater than +26dBu (headroom for days... ).

## USING THE MIXER WITH EMPTY SLOTS

The MCM-8 mixing section is designed to be used with modules fitted. However it is possible to use it with empty slots by patching input signals into the MCM-8 slot's outputs. This trick will effectively bypass the slot with full signal integrity and no degradation.

To do this using the single XLRs, female to female adaptors may be used.

## USING THE MIXER BYPASSING FITTED MODULES

Although using the mixer section with empty slots is possible, trying to bypass a fitted module is highly avoidable, as serious signal degradation will happen due to the low output impedance of the module loading the input signal.

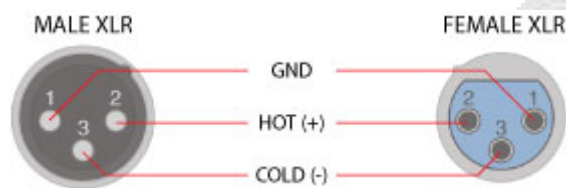
Whenever this situation is needed, module needs to be removed from the slot first, and follow the previous point's instructions, USING THE MIXER WITH EMPTY SLOTS.



## BACK PANEL CONECTIONS AND PROTOCOLS

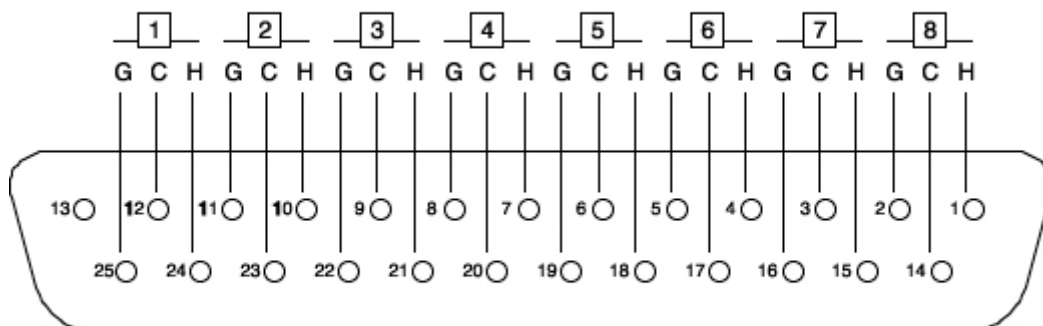
All XLRs are:

- Pin 1: GND
- Pin 2: Hot
- Pin 3: Cold



All DSUB 25 multi pin connectors are TASCAM protocol. This same protocol is also used by AVID amongst many others, and is as follows:

### Pin-out for TASCAM DB25 8 Channel Balanced Connector



H = HOT  
C = COLD  
G = GROUND



## 500 SERIES EDGE CONNECTOR PIN OUT

TERMINAL	FUNCTION
1	CHASSIS GROUND
2	OUTPUT + (+4 LEVEL)
3	NOT USED
4	OUTPUT -
5	COMMON
6	STEREO LINK
7	NOT USED
8	INPUT- (+4 LEVEL)
9	NOT USED
10	INPUT+ (+4 LEVEL)
11	NOT USED
12	+16VDC
13	POWER SUPPLY COMMON
14	-16VDC
15	+48VDC

## MIXER SECTION TECHNICAL SPECIFICATIONS

- Channel Input Impedance: 20 Kohm.
- Maximum level input: +22dBu
- Maximum output level: Greater than +26dBu into 600ohm.
- Frequency response:  $\pm 0.5$ dB 20Hz to 20kHz
- THD + N: Not more than 0.07% from 50Hz to 10kHz at +20dBu output (80kHz bandwidth) into 600 $\Omega$ .



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