



DIGILINE MX MKII

User Manual
Version 1.1



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SAFETY INSTRUCTIONS

1. Read this manual carefully.
2. Follow all instructions and warnings.
3. Only use accessories specified by WORK PRO.
4. Follow the safety instructions of your country.
5. Be careful with sound levels.

SYMBOLS

The following symbols are used in this document:



This symbol indicates a potential risk of harm to a person or damage to the product. You can also notify the user of the instructions that must be followed strictly to ensure the installation or safe operation of the product.



This symbol notifies the user about the instructions that must be followed strictly to ensure the correct installation or operation of the product.



This symbol notifies the user about additional information or optional instructions.

WELCOME TO WORK PRO

Thank you for choosing the WORK PRO DIGILINE MX MKII system.

This document contains essential information on the use of the system. Read this document carefully to become familiar with the system.

Please check the WORK PRO website regularly to download the latest version of the document and software updates: <https://www.workpro.es/>

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1. INTRODUCTION

Digiline MX MKII is an 8x8 audio matrix with DSP, adaptable to most of your needs. The device has balanced inputs and outputs to provide it with greater immunity against electromagnetic interference.

Digiline MX MKII is a versatile device supporting control through its APIs, dedicated wall controls like the WNC1, custom layouts with WorkCAD3 Editor or third-party systems. Also, it supports control by both UDP and RS232 commands.

2. FEATURES

Analogical audio inputs	
Number of inputs	8 balanced Mic or Line inputs
Audio connector	4 x Euroblock, 12 pin 3.81 mm
Input sensitivity (Line)	-6 dBu
Mic fixed gain	43.5 dB

Analogical audio outputs	
Número de salidas	8 balanced outputs
Conector de audio	2 x Euroblock, 12 pin 3.81 mm
Audio processing	8 filters. 2 High pass crossover filters, Low Pass. Weighted matrix of sum of inputs inputs Compressor / Limiter / Noise Gate

General	
SNR	> 100 dB
THD + N	< 0.01 %
DSP Architecture	32 bit processing with 40 bits of precision.
Sample frequency	48000 Hz
Filter types (input/output)	Low pass, High pass, Low Shelving, High Shelving, Band pass, Peak, Notch y All pass.
Crossover filter types	Butterworth, Linkwith-Riley, Bessel
Memories	8 memories
Thir-party control	UDP , RS232

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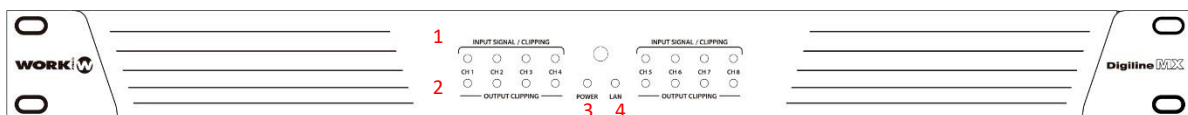
Network	
Connector	RJ-45
Protocol of control	OSC over UDP and RUDP
Ports	UDP 9000 / RUDP 9002
Ethernet	100 base TX

GPIO	
GPI	Pull Up resistor, 5 Vdc max
GPO	TTL 3.3V, 30mA

Others	
Main supply	AC 90-264 V
Consumption	50 W
Dimensions	109mm×133.75mm×40.45 mm
Weight	360 g

3. DEVICE DESCRIPTION

3.1. Front Panel

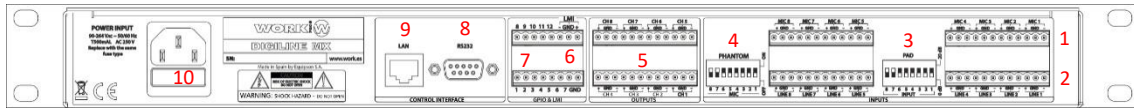


1. **Input Signal/Clipping.** LEDs indicating the signal level at the input.
2. **Output/Clipping.** LEDs indicating the signal level at the output.
3. **Power.** LED indicating that the device is on.
4. **LAN.** LED indicating that there is an Ethernet connection.

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3.2. Rear Panel



1. MIC 1-8 inputs. MIC level balanced inputs.
2. LINE 1-8 inputs. LINE level balanced inputs.
3. PAD Selection. 20 dB attenuator for each input.
4. PHANTOM Power. 15V phantom power.
5. 1-8 Outputs. Balanced outputs.
6. LMI. **Level Measurement Input**. Mic level input that allows actions to be taken when a certain threshold is exceeded.
7. GPIOs. General purpose digital inputs and outputs.
8. RS 232 Port. Serial port for third-party control.
9. RJ45 connector for LAN. TCP/IP connection through ethernet.
10. AC Main supply. 90V-264V.

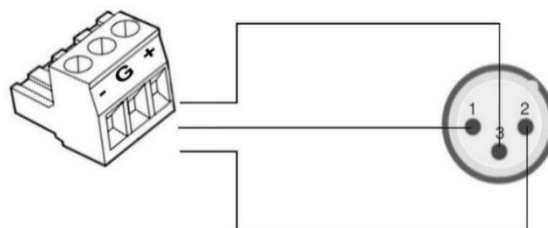
3.3. Connections

3.3.1. Inputs

Digiline MX consists of 8 Line level inputs and 8 Mic level inputs, which are summed by hardware.

The following shows how to make the connections depending on the type of source.

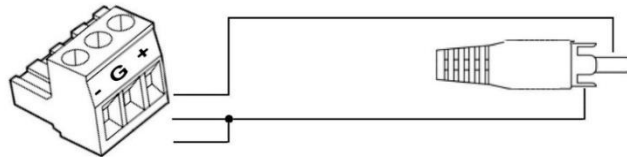
BALANCED



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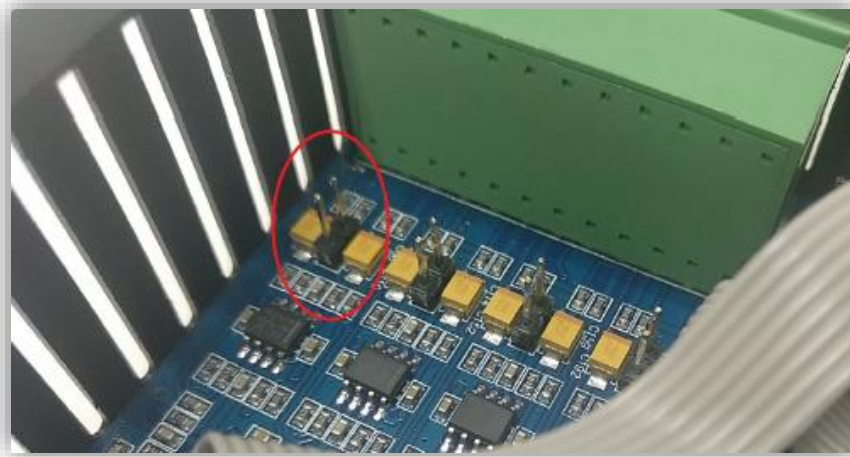
UNBALANCED



3.3.2. Enabling MIC inputs

In order to avoid unwanted noise, the Mic inputs are disabled, if you want to use them, they must be enabled with the jumpers supplied with your Digiline MX MKII.

To do this, unscrew the top cover of your Digiline MX and include the necessary jumpers according to the inputs you want to enable.



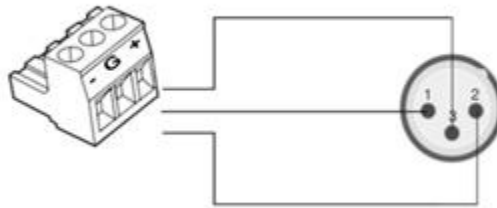
3.3.1. Outputs

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The following point shows how to make the connections depending on the type of device to be connected.

BALANCED



UNBALANCED



4. SETTING THE DEVICE

Device configuration must be done using the WorkCAD3 Configurator software, which you can download at the following link.

<https://www.equipson.es/productos/workcad-3>

4.1. Setting through WorkCAD3 Configurator

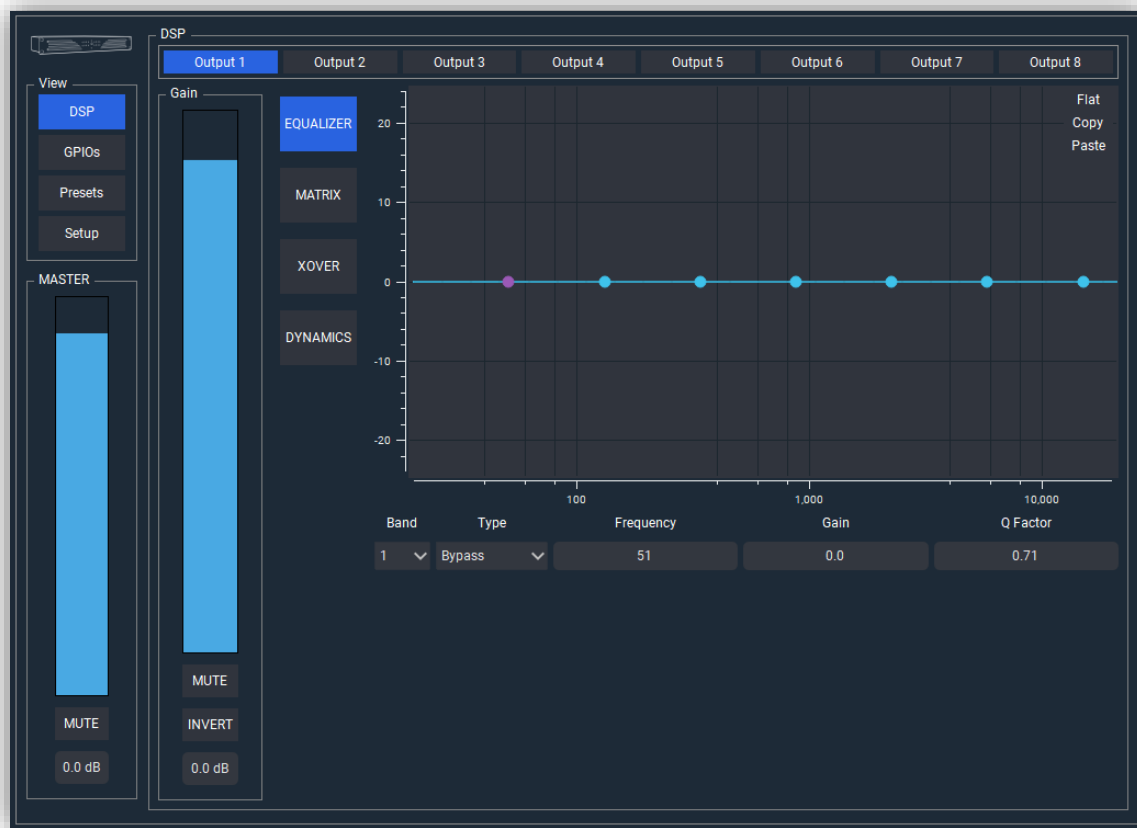
After configuring the device at the IP level and updating it if necessary (see WorkCAD3 Configurator manual), proceed with its configuration.

https://www.eafg.es/productos/Docs/Manuales/WorkCAD3_Configurator_Manual_EN_1_2_20190325181306.pdf

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If you click with the left button of the mouse on the device, the configuration interface will open where the following parameters to configure appear.

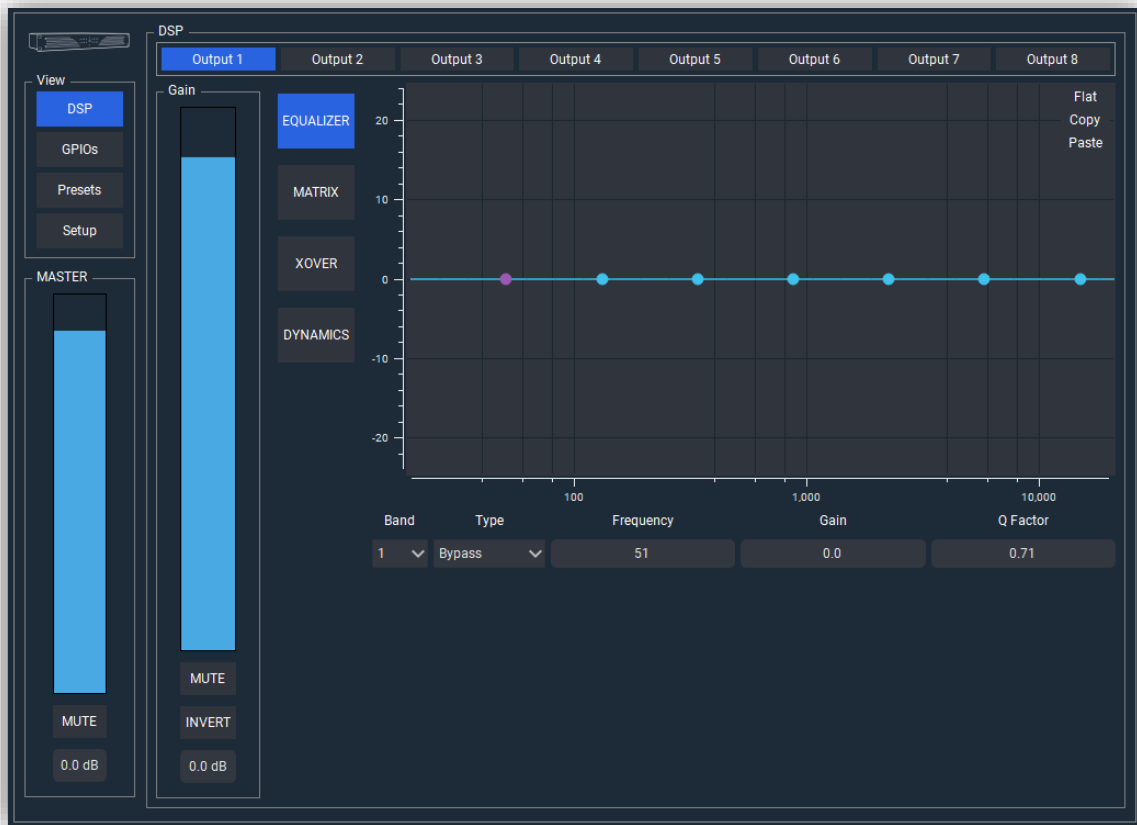


- **VIEW**
 - **DSP button.** Allows you to choose the display of the processing fields.
 - **GPIOs.** Allows you to access to GPIOs setup.
 - **Presets button.** Allows the management of presets and device boot mode.
 - **Setup.** It allows access to the configuration of certain functions other than audio management.

- **MASTER:** It allows the modification both graphically and numerically of the general volume control of the device. In addition, it has a MUTE button.

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4.1.1. DSP

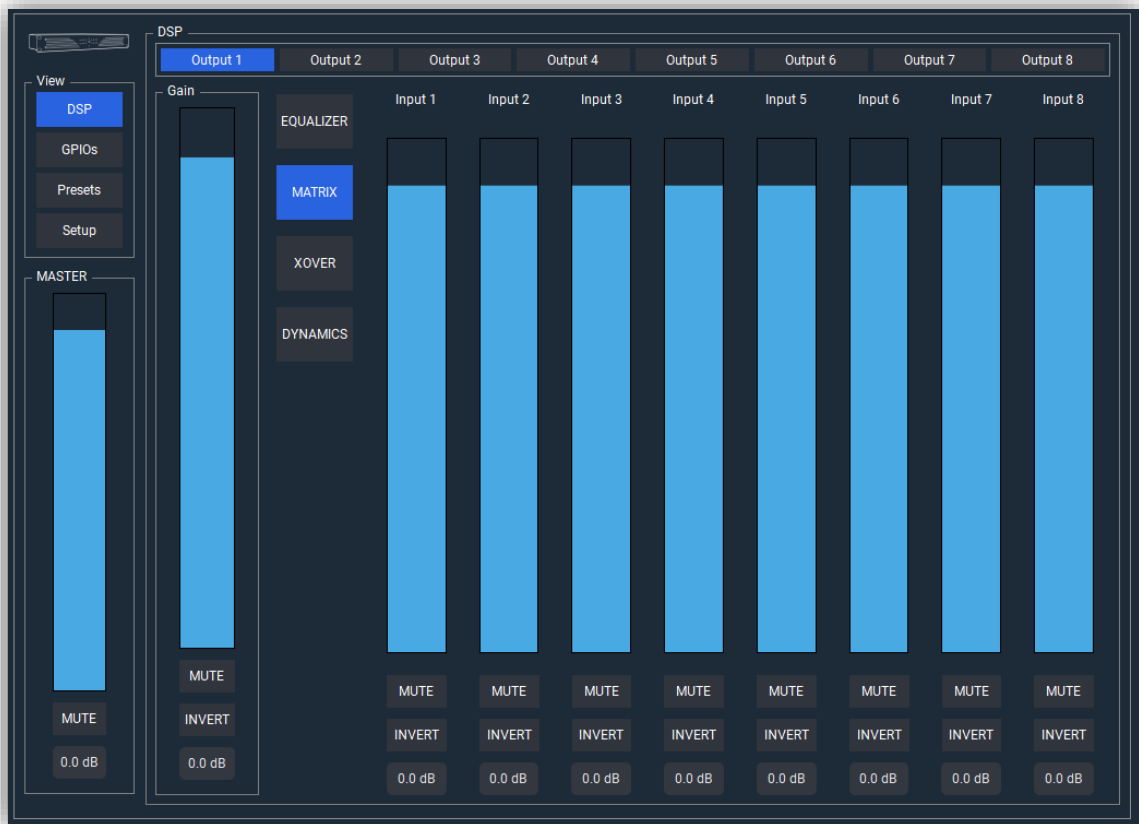


- **DSP Area:** It is the area where the processing of the device's outputs is configured.
 - **Output selection field.** Allows you to choose the output you want to work on. The parameters to be controlled will vary depending on whether an input or an output has been chosen.
 - **Gain.** Allows you to control the volume or reverse the polarity of the selected output.
 - **EQUALIZER.** There are 8 filters applicable to each of the outputs. To apply them, we must select the band (filter number), the type of filter, the frequency, the gain and the Q factor. It is also possible to apply a filter using the mouse and acting on the points that appear in the image and that represent the 8 available filters.

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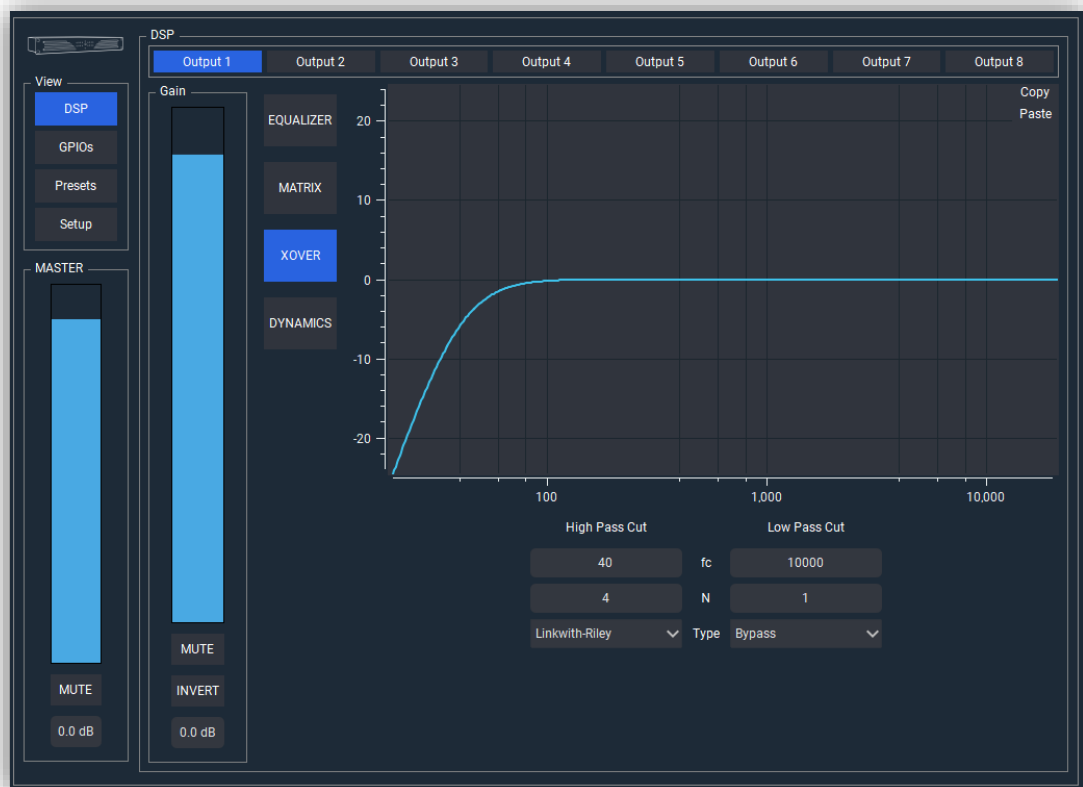
- **MATRIX.** In this section you can choose the weighted sum of inputs to be sent to each output. The value of each entry can be entered both graphically and numerically. For each input there is a Mute and Invert option.



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- XOVER:** In this section you can apply crossover filters on the selected output. We have high pass and low pass filter. We must select the cutoff frequency (20Hz-20KHz), filter order (eighth maximum) and filter type (Butterworth, Linkwitz-Riley, Bessel). For Linkwitz-Riley filters the orders increase two by two.



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- **DYNAMICS.** A Limiter / Compressor / Gate is available for each output.



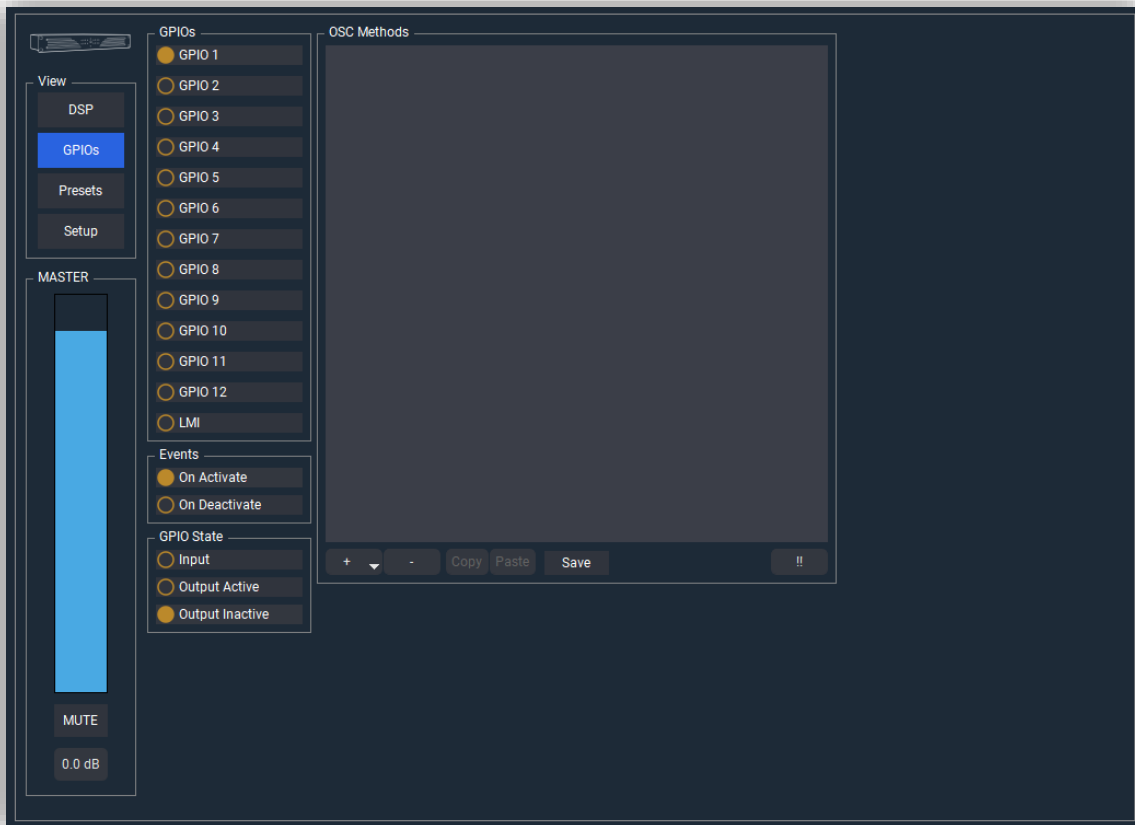
- **Enables.** Dedicated to the activation of the Limiter, Compressor and Noise Gate
- **Limiter Threshold.**
- **Compressor Times.** Attack and Release times for the Compressor.
- **Ratios.** Ratios for Noise Gate and Compressor.

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4.1.2. GPIOs

Through the following window you can access the GPIOs configuration.

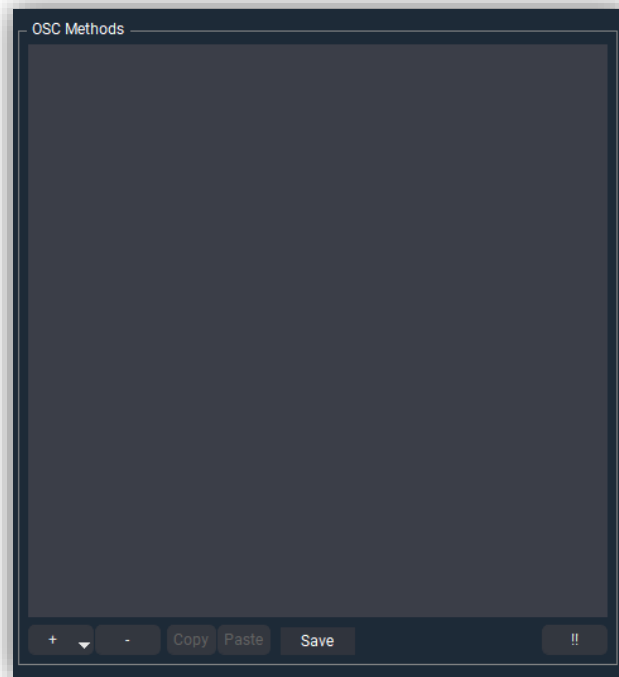








- **GPIOs.** Allows you to select the GPIO to configure.
- **LMI.** Level Measure Input. Allows you to configure the LMI input.
- **Events.** Actions that will occur when the GPIO is enabled or disabled. Its use is associated with settings such as GPIs and LMI.
- **GPIO State.**
 - **Input.** GPIO is configured as GPI.
 - **Output Active.** GPIO is configured as GPO with an initial state of 0V.
 - **Output Inactive.** GPIO is configured as GPO with an initial state of 3.3V

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- **OSC Methods.** It allows the programming of actions associated with the state of the GPI. They are commands that Digiline sends itself.

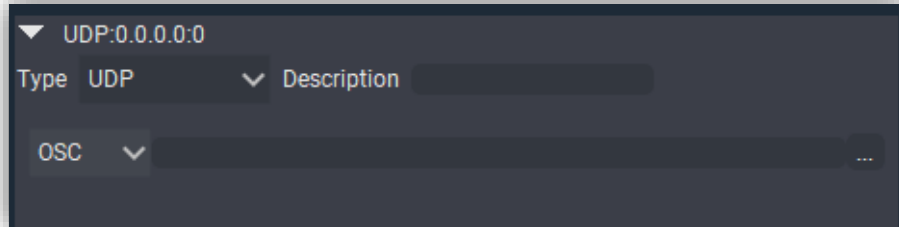



- **Button to add command** . Add UDP/OSC command.
- **Button to eliminate command** . Eliminate UDP/OSC command previously selected.
- **Button to copy command** . Copy the selected command to the clipboard.
- **Button to paste command** . Paste the command copied in the clipboard to the OSC command list or overwrite the selected command.
- **Button to save commands** . Save the commands programation. If you do not save the commands, they cannot be executed later.
- **Test button** . Execute the commands included in the OSC Methods field.

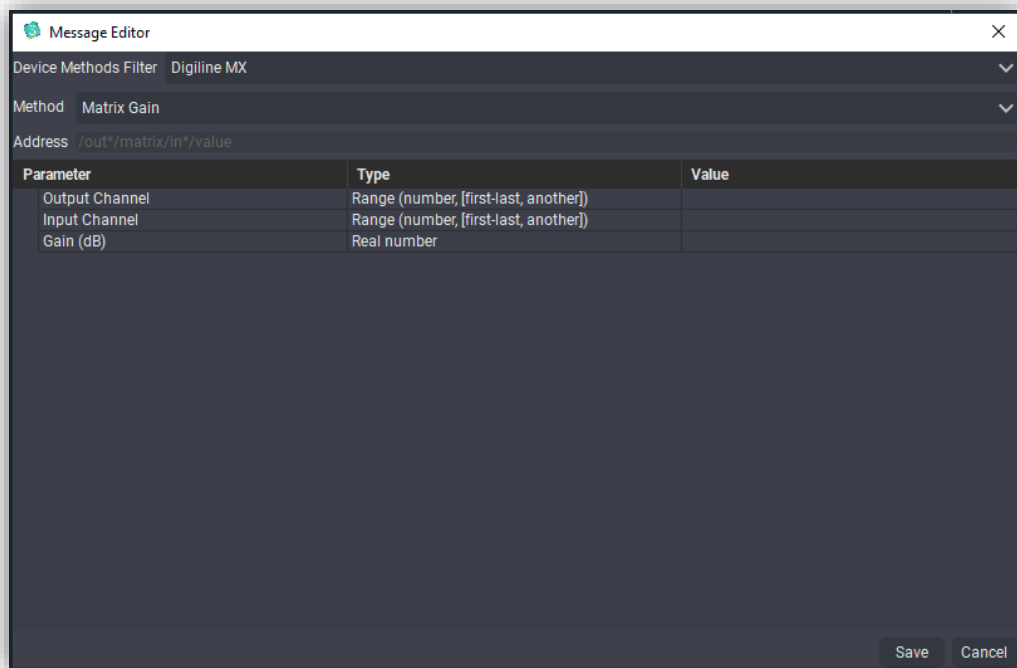
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Once the command is included with the add button, the action we want to perform is selected.



- **Type:** Transport protocol. Currently only UDP mode is available.
- **Description:** Description of the UDP / OSC command. Information that will appear when we close the command edit drop-down.
- **OSC,** command that complies with the Open Sound Control protocol. Pressing over  button, you can access to OSC command editor.



- **Device Method Filter.** Commands associated with the selected device. In this case select Digiline MX.
- **Method.** Field to select the type of OSC command you want to execute.
- **Address.** OSC command path. This field is automatically populated based on the selected method and the entered values.

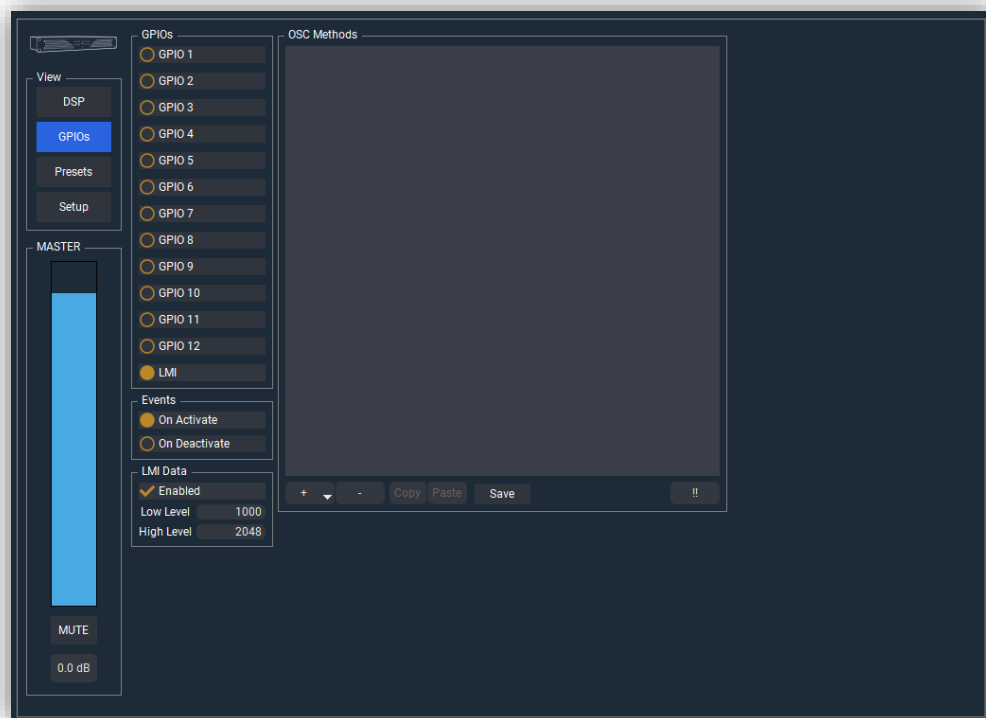
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- **Save.** Button to save the command.
- **Cancel.** Button to cancel and exit from the OSC command editor.

4.1.3. LMI input

The LMI input is a balanced microphone input (not phantom), which allows to execute commands, when the signal level is at a certain level.



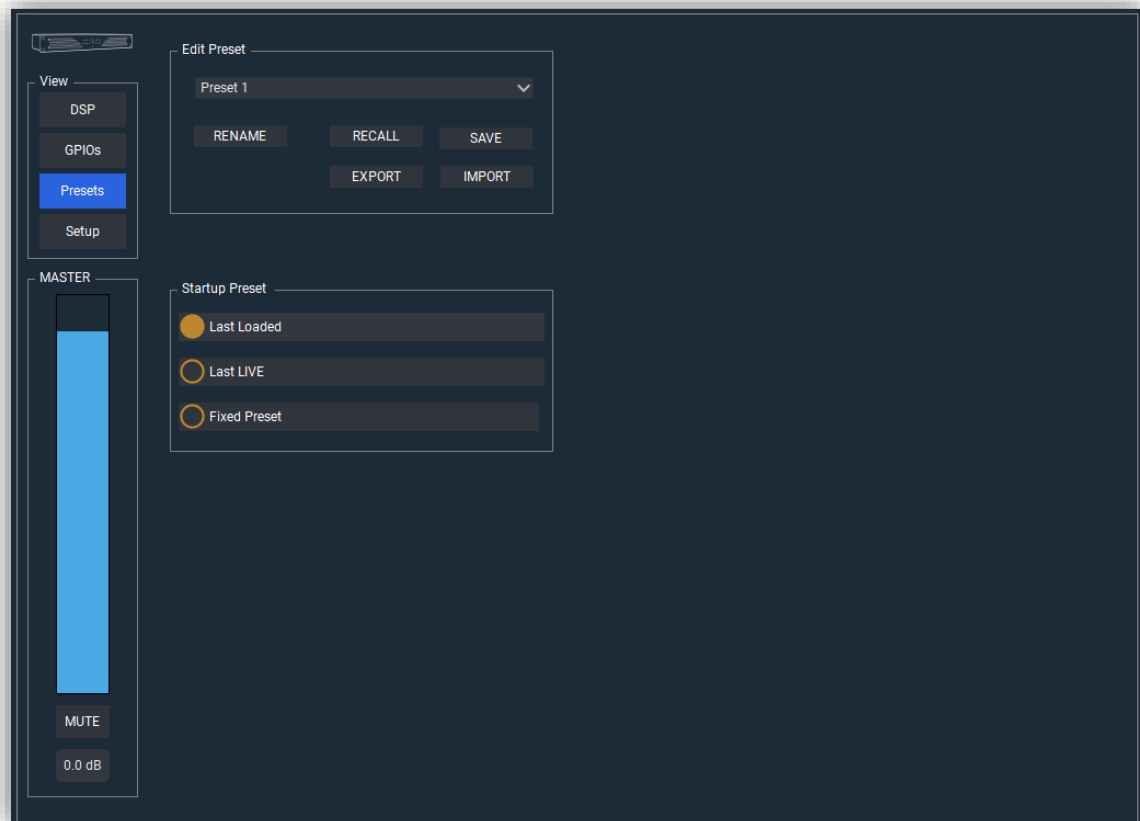
- **On activate.** Determines the commands that are sent when entering the threshold level.
- **On Deactivate.** Determines the commands that are sent when leaving the threshold level.
- **LMI. Level Measure Input.** Allows you to configure the LMI input.
- **Enable.** Allows you to enable or disable the LMI input.
- **Low level/High level.** Thresholds that determine the sending of programmed commands.
-

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4.1.4. Presets

In the next window you can access the configuration of the device presets, as well as the boot mode.



Edit Preset. Allows the management of presets.

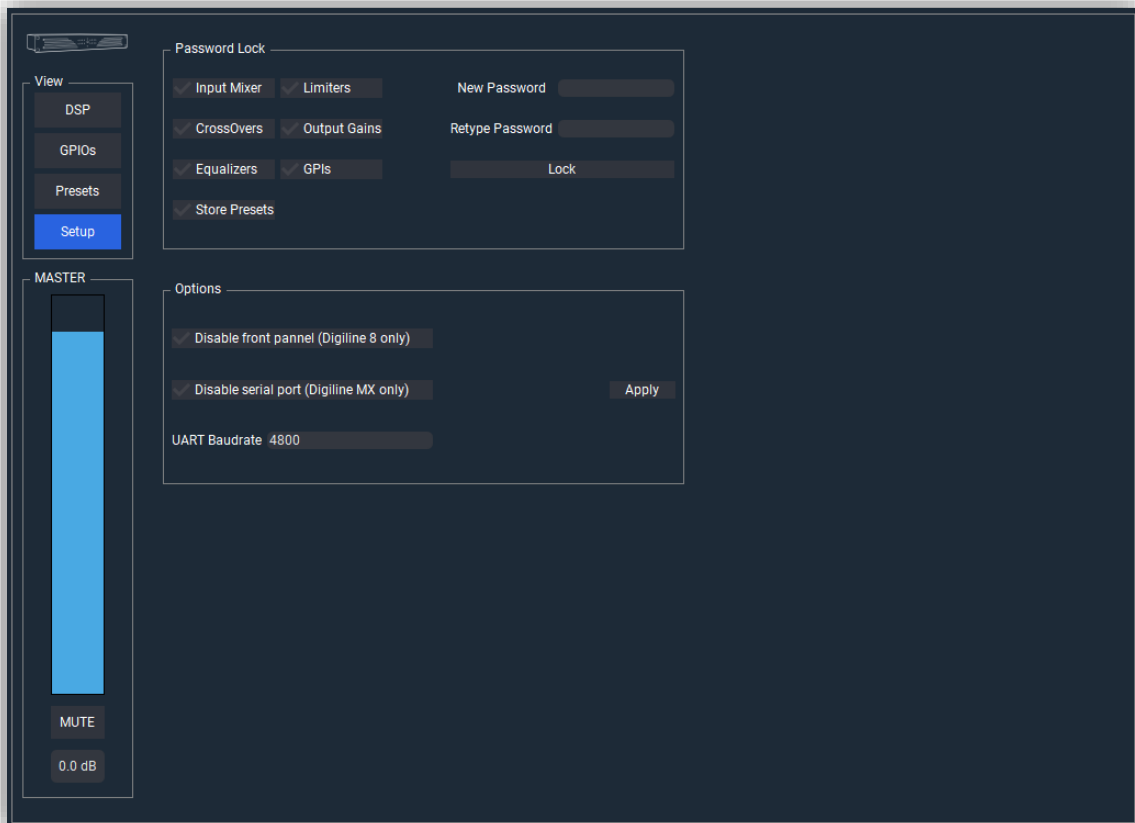
- **RECALL.** Allows you to load the selected preset.
 - **RENAME.** Lets you rename the previously selected preset.
 - **SAVE.** Allows you to save the configuration in the selected preset.
 - **EXPORT.** Allows you to export all presets to a file with the extension `.wpf3_dig_preset`. Information that is not stored in a preset will not be exported.
 - **IMPORT.** It allows importing all presets from a file with the extension `.wpf3_dig_preset`.
- **Startup preset.** Allows you to manage the boot mode of the device.
 - **Last Loaded.** The device will boot from the last preset that was loaded.
 - **Last LIVE.** The device will start up with the configuration it had when it was turned off.
 - **Fixed Preset.** The device will boot from a set preset.

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4.1.5. Setup

Through this window you can access the configuration of options other than signal processing.



- **Password Lock.** Allows you to configure the locking options.
 - **Input Mixer.** Lock the mixer.
 - **Limiters.** Lock the Dinamic section.
 - **Crossovers.** Lock the CrossOve filter sectionr.
 - **Output Gains.** Lock the output gain.
 - **Equalizers.** Lock the equalizer.
 - **GPIOs.** Lock GPIOs section.
 - **Store Presets.** Lock Presets section.

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- **New Password.** Allows you to enter a Password to activate the lock.
 - **Retype Password.** Field to verify the Password previously included.
 - **Lock/Unlock.** Allows you to lock / unlock the device.
- **Options.**
- **Disable front panel (Digiline 8 only).** Option only suitable for Digiline 8.
 - **Disable Serial Port.** Allows you to disable the Serial Port.
 - **UART Baudrate.** Allows you to change the serial port speed.
 - **Apply.** Button to apply the entered changes.

4.2. Project saving and device syncing.

For the creation of offline or online projects and their subsequent synchronization with the device, go to the section 'Device synchronization'. From the WorkCAD3_Configurator manual.

https://www.eafg.es/productos/Docs/Manuales/WorkCAD3_Configurator_Manual_ES_1_2_20190325181343.pdf

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