Manuals+ — User Manuals Simplified.

WORK WPE 44 Digital Audio Processor User Manual

WPE 44
User Manual
Version1.5

Contents

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 WPE 44 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/**

INTRODUCTION

WPE 44 is a digital signal processor with external control capability. Its compact design and format make it perfect for use by audiovisual integrators.

The device has balanced inputs and outputs to give them greater immunity against electromagnetic interference.

The external control of this device is done thanks to its Ethernet connectivity, which can be done through the dedicated WorkCAD3 software or through OSC commands by third-party devices.

FEATURES

| Audio analog inputs	
Number of inputs	4 balanced inputs
Audio connector	Euroblock, 3 pin 3.81mm
Input sensitivity	14 dBu (balanced) (3.88 Vrms)
Audio process per-input	4 filters Gain control Mute control and Invert

Audio analog outputs	
Number of outputs	4 servo-balanced outputs
Audio connector	Euroblock, 3 pin 3.81 mm
Input sensitivity	+10 dBu (balanceado) (2.45 Vans)
Audio process per-output	15 filters 2 crossover filters (High pass, Low Pass) Weighted matrix of sum of inputs Delay up to 8.19 ms Compressor/Limiter/Noise gate

General	
SNR	> 100 dB
THD + N	<0.01 %
Bandwidth	20 Hz — 24000 Hz
Sampling frequency	48000 Hz
Input/output filter types	Low pass, High pass, Low Shelving, High Shelving, Band pass, Peak, Notch y All pass.
Number of memories	8
Dimensions	109mmx133.75mmx40.45 mm
Weight	360 g

Neiwork	
Connector	RJ-45
Control Protocol	OSC over UDP y RUDP
Ports	UDP 9000 / RUDP 9002
Ethernet	100 base TX

| Main Supply	
External main supply	24 Vdc / 500 mA (Not incluided)
PoE Class	Class 0 802.3af
Consumption	3.6 W

PRODUCT DESCRIPTION
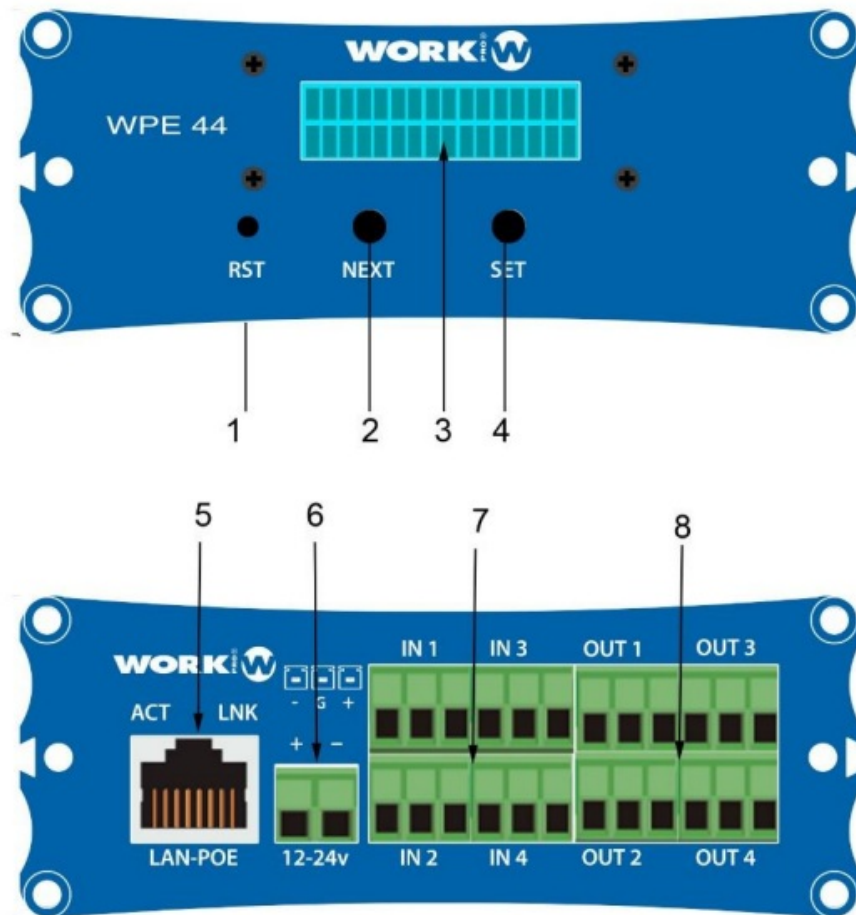
1. Reset button. Take the device to its factory configuration
2. Next button. It allows to advance between and through the different screens of the display.
3. Display. It shows different features of the device.
4. Set button. It allows access to a certain display screen and set the digits of the different screens.
5. LAN port. Connection port to the local network, RJ45.
6. Main supply input. 12/24 Vdc
7. Analog audio input. Balanced inputs. Euroblock 3 pins, 3.81 mm per input. WPE 44 (4 INPUTS)
8. Analog audio output. Balanced outputs. Euroblock 3 pins, 3.81 mm per output. WPE 44 (4 OUTPUTS).

Display
On the front of the device you will find a display through which you can view or modify different parameters of the unit.
To navigate between the different parameters press the NEXT button. If you want to edit any of these parameters, press the SET button to access it. Next, specify which parameters are editable and which are not:

LEVELS, not editable
STATIC IP, editable
DYNAMIC IP, not editable
MAC, not editable
ACTIVE PRESET, editable.
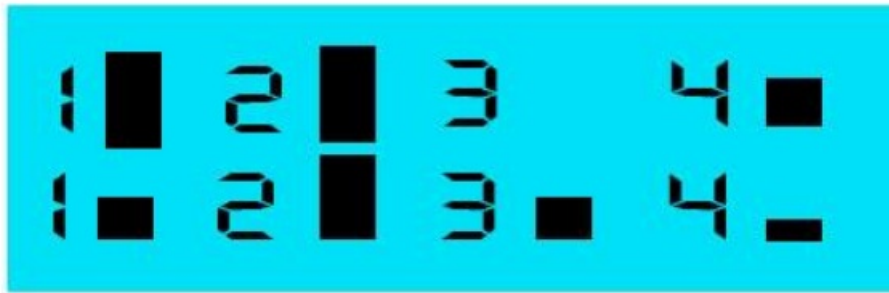
LEVELS, It shows the signal level present in the inputs and outputs. It is the default screen of the device and to which it returns after 10 seconds without editing a screen. Next to each input/output a bar will appear, marking the level according to the attached chart:

Number of bars	Level (dBFS)
8	-3 dBs/ 0 dBs
7	-6 dBs/ -3 dBs
6	-9 dBs / -6 dBs
5	-18 dBs / -9 dBs
4	-26 dBs / -18 dBs
3	-40 dBs / -26 dBs
2	-60 dBs / -40 dBs
1	-80 dBs / -60 dBs
None	< 80 dBs

STATIC IP, this is the static IP address. The device has a static IP address by default in the subnet 10.0.0.0/8. For editing, use the buttons SET (to select and set the digit) and
NEXT (for editing upwards).

NOTE: After a change, the device restarts to confirm the value.
NOTE: ENABLED by default

DYNAMIC IP, this is the dynamic IP address of the device, which is assigned by a DHCP server.
NOTE: DISABLED by default. Only displayed when selecting this mode by software.
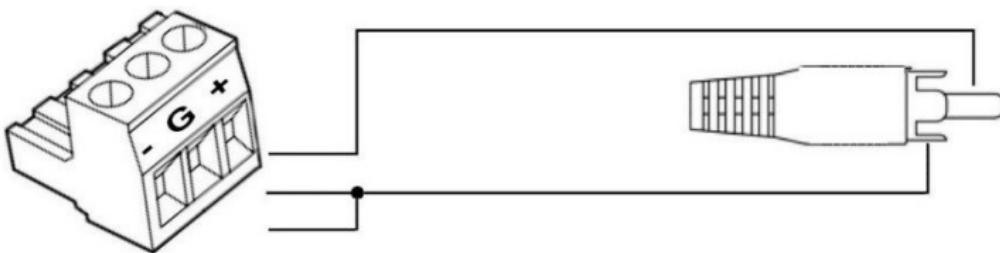

MAC. this is the physical address of the device.

ACTIVE Preset. Allows to select one of the 8 presets available.
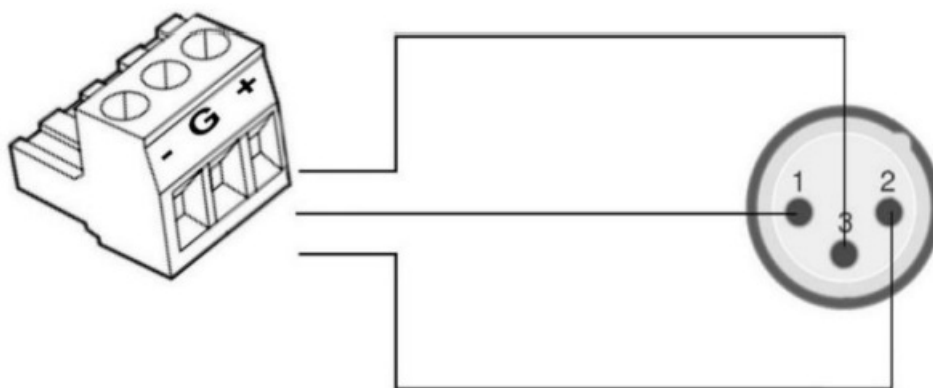
3.1 Analog audio input

The connection of the input signal to the device can be balanced or unbalanced. Keep in mind that balanced signals provide 6 dB more level than unbalanced signals of equal amplitude.
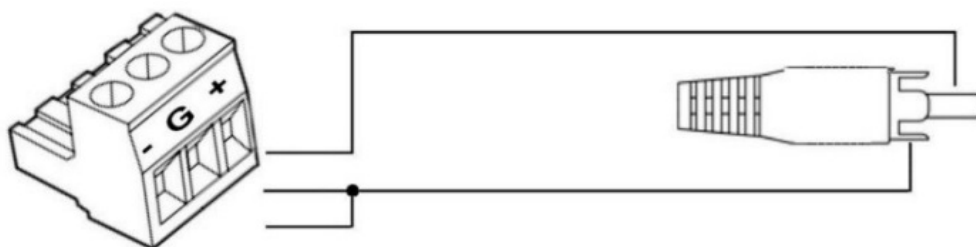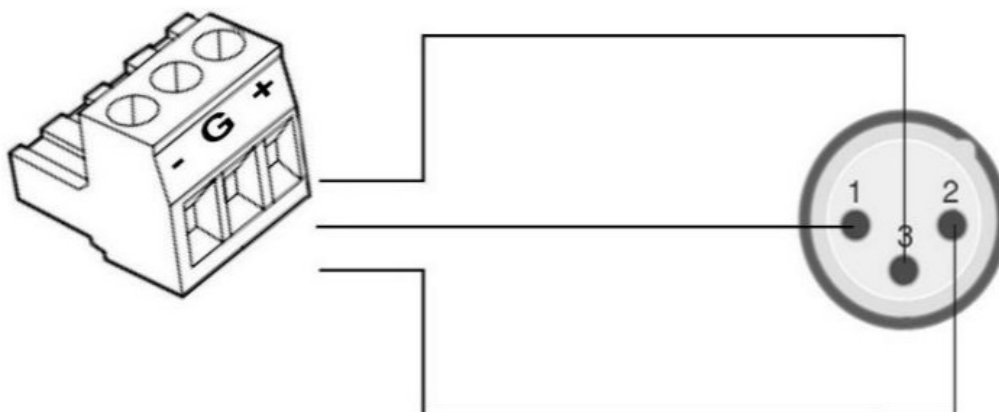
UNBALANCED

BALANCED

3.2 Analog audio output
The analog audio output of the device can be balanced or unbalanced according to the selected extraction mode. To do this, keep in mind the following types of connection:

UNBALANCED

BALANCED

3.3 LAN Port
RJ45 port for LAN connection. Allows PoE power (Class 0 802.3af)
Next to the RJ45 connector you will find two LEDs indicating the status of the device:

LINK (green)	Indicates that the WPE 44 is connected to the LAN
ACT (orange)	Indicates that packets are being sent or received

3.4 Main supply input
Power input for external source. The admitted voltage can be between 12/24 Vdc, with a minimum current of 500 mA.

⚡ Check the current polarity before connecting the main supply

ℹ️ The external power supply is not provided with the device.

DEVICE SETUP

The configuration of the device can be done by software (WorkCAD3 configurator) or through display. The most comfortable way for the user is through WorkCAD3 configurator, since it will have access to all the functionalities of the device and you can also see the interaction of your device with the rest of the BlueLine Digital MKII network elements.

4.1.1. Setup through WorkCAD3 Configurator

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

If you click with the left mouse button on the device, the configuration interface will open where the following parameters appear:
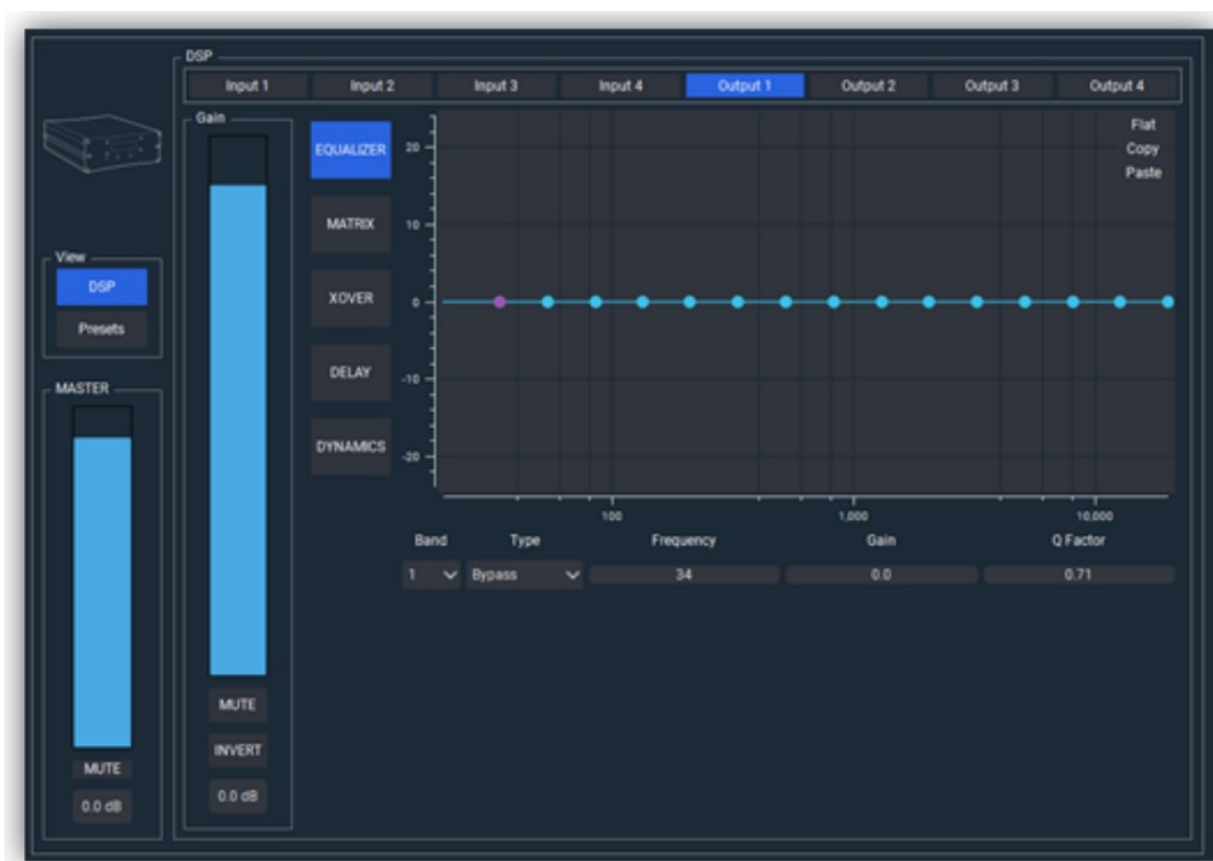
– VIEW

- DSP. It allows to choose the visualization of the processing fields.
- Preset button. It allows to manage the presets and the starting mode of the device.

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

– DSP Area: It is the area where the processing of the inputs and outputs of the device is configured

- Input and output selection field. It allows to choose the I/O on which you want to work. The parameters to control will vary depending on whether an input or Output has been chosen

- Gain. Field that allows controlling the volume or inverting the polarity of the selected I/O.

Inputs processor:

- EQUALIZER. It has 4 filters applicable to each of the entries. 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 represent the 4 available filters.
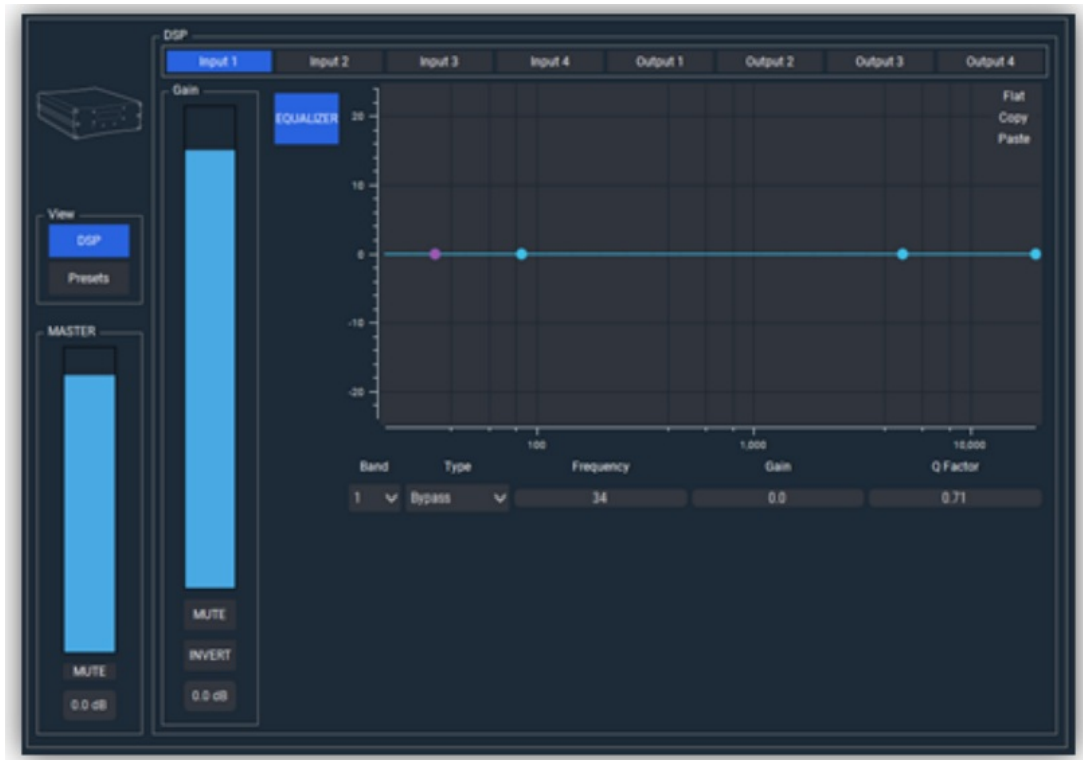

-Output processor:

- EQUALIZER. It has 15 filters applicable to each of the outputs. To apply them, select the band (filter number), the type of filter, the frequency, the gain and the Q factor. It It is also possible to apply a filter by using the mouse and acting on the points that appear in the image and represent the 15 available filters.
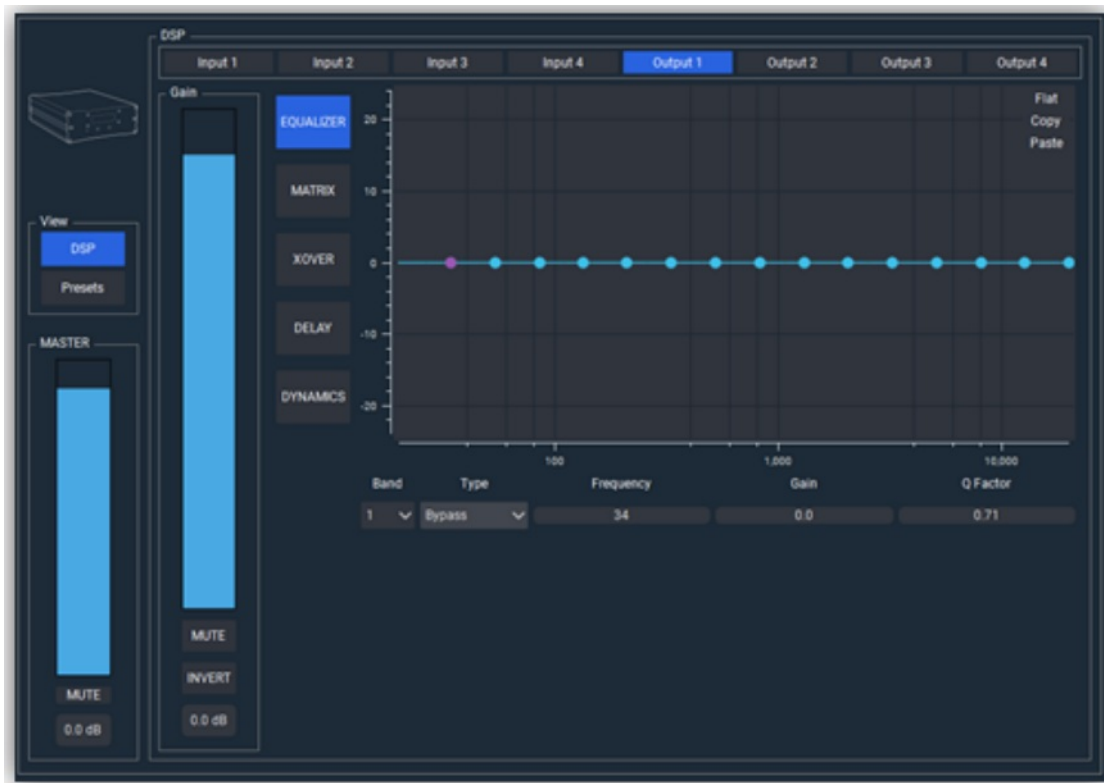
MATRIX. In this section you can choose the weighted sum of the inputs to be sent to each output. The input of each input can be entered both graphically and numerically.

For each input the option of Mute and Invert is available.
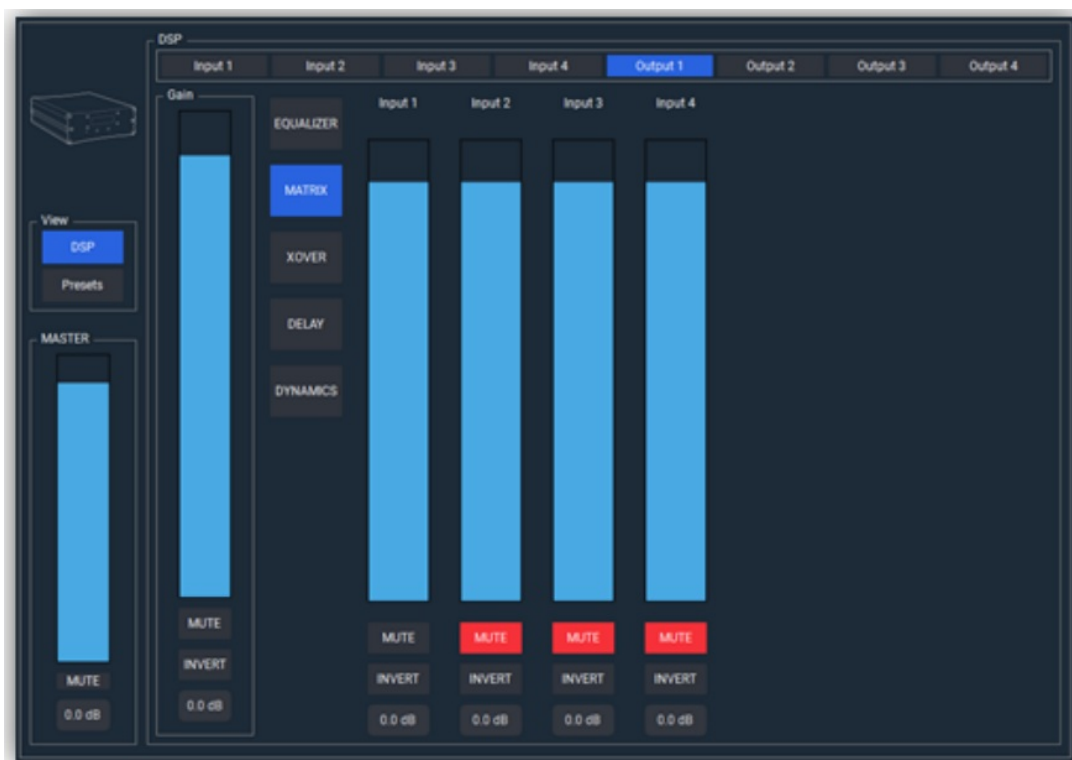
- XOVER: In this section you can apply crossover filters on the selected output. We have high pass filter and low pass. We must select the cut-off frequency (20Hz-20KHz), filter order (eighth maximum) and filter type (Butterworth, Linkwitz-Riley, Bessel). For Linkwitz-Riley filters the orders increase by two.
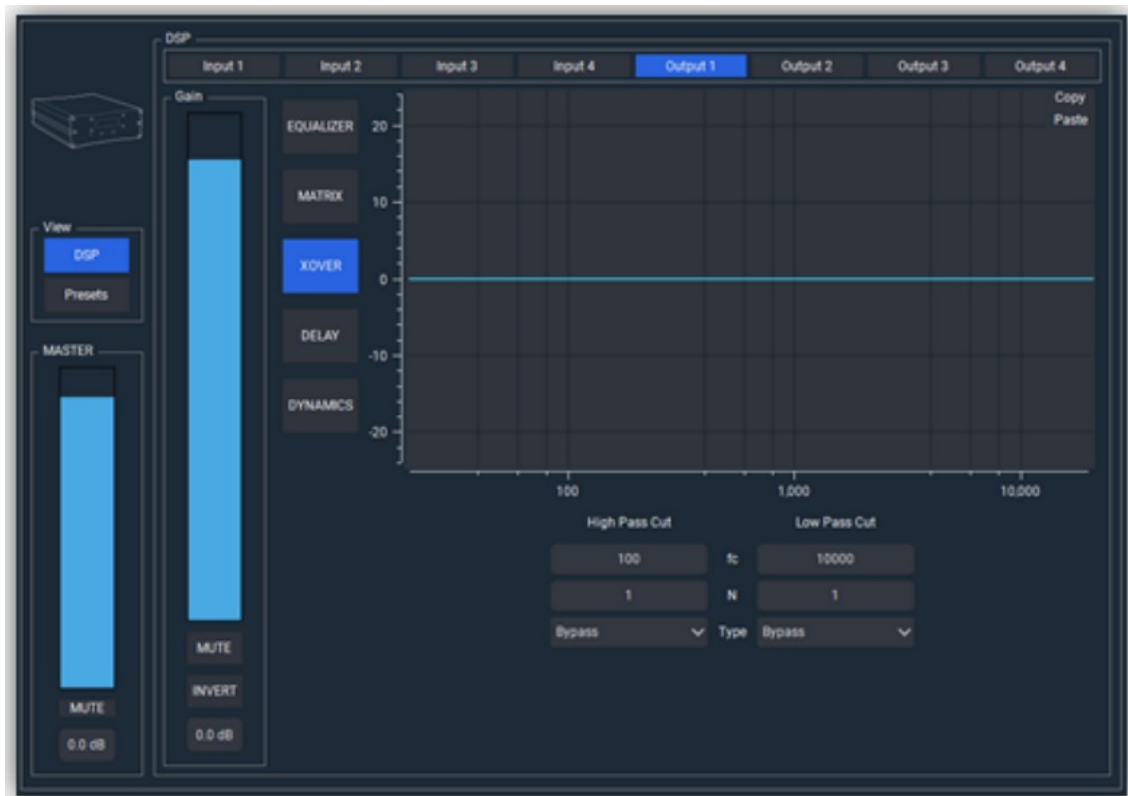
- DELAY. In this section a delay of up to 8.19 ms can be applied to the selected output.
  This value can be entered both graphically and numerically. The units of measurement can be samples, ms, meters and feet.
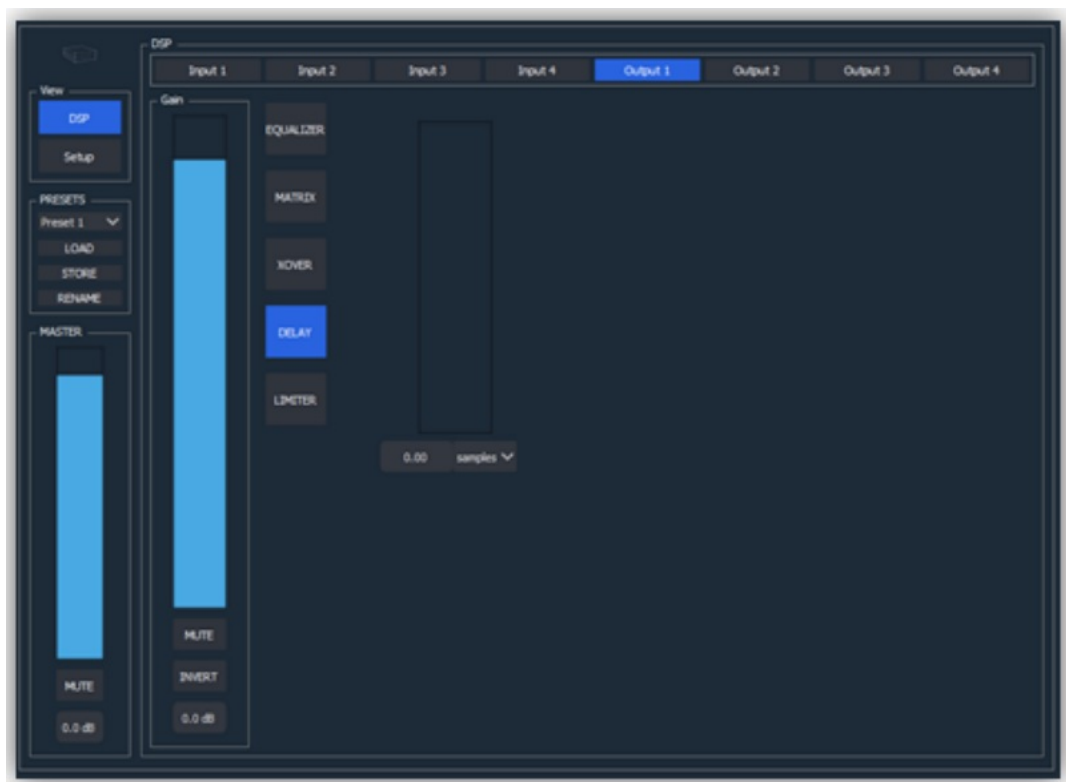

DYNAMICS. A Limiter / Compressor / Noise Gate is available for each output.

- Enables. Field dedicated to the activation of the Limiter, Compressor and Noise Gate.
- Limiter Threshold. Limiter threshold.

- Compressor Times. Attack and Release times for the Compressor.
- Ratios. Ratios for Noise Gate and Compressor.

- Presets. Allows to manage the presets and the starting mode of the device.
- RENAME. Allows to rename the preset selected previously.
- RECALL. Allows to load the selected preset
- SAVE. Allows to save the configuration of the selected preset.
  EXPORT. Allows to export all presets to a file with the .wpf3_wpe_preset extension. The information not saved in a preset will not be exported.
- IMPORT. Allows to import all presets from a file with .wpf3_wpe_preset
- Startup preset. Allows to manage the starting method of the device.
- Last Loaded. The device will start from the last load preset.
- Last LIVE. The device will stsart with the configuration when it was turned off.
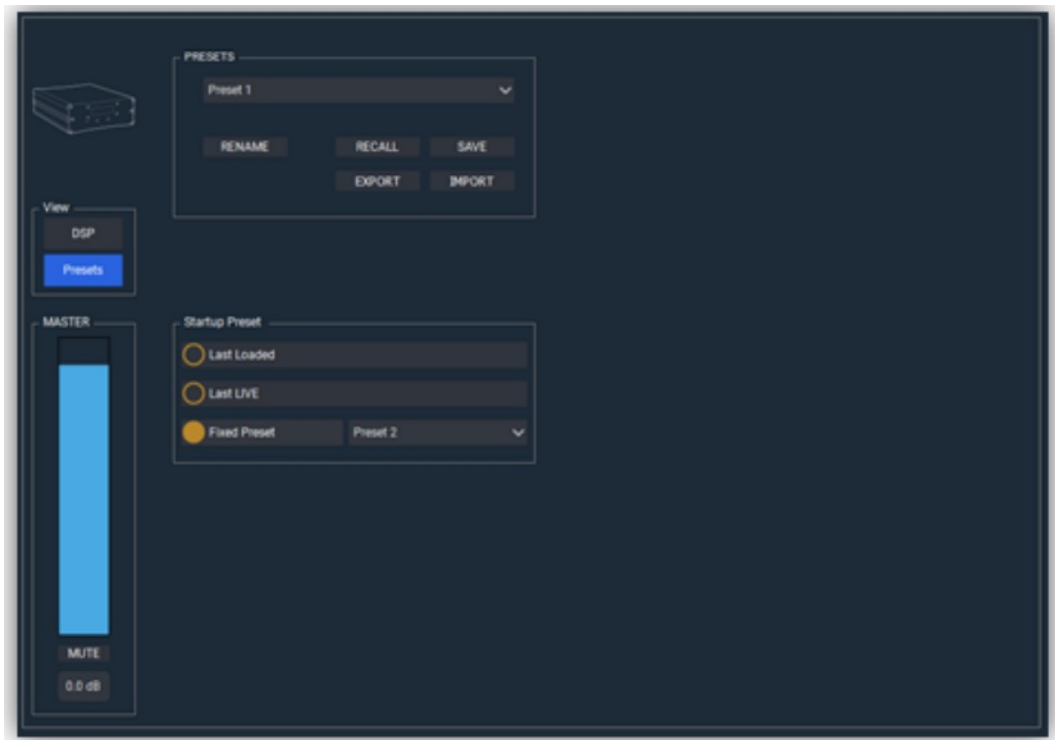
4.2 Project saving and synchronization with the devices
For the offline or online project creation and synchronization with the device, go to Synchronization device in the WorkCAD3- Configurator:
Link: WORKCAD 3 CONFIGURATOR

OSC COMMANDS

WPE 24/44 accepts OSC commands and ASCII commands via UDP, if you need moreinformation about OSC protocol you can click on the next link.
http://opensoundcontrol.org/introduction-osc
The next list shows OSC and ASCII commands, for the OSC commands the form to send themwill depend on the App that be used, on the list bellow you can see all the OSC commandswith its syntax: path, type of data and data.
For the ASCII commands we use the same syntax that OSC commands, with the differencethat the commands begin with "//", and the separation between path, type of data and datais ";".
For the selection of input and outputs through OSC/ASCII commands you should use the waybelow:

Single selection ➡ x
Group selection, one by one ➡ [x,y,z,…]
Group selection, from-to ➡ [x-y]

Default UDP port (Foreign/Local) = 9000

Method	OSC / ASCII Command	Type of Data	Data	Use
Register Listener	/osc/add,[x] //osc/add;i;[x];	i	[x] = UDP port[1]	Register communication, it give feeback of any parameter change.
Unregister Listener	/osc/del,[x] //osc/del;i;[x];	i	[x] = UDP port[1]	Unregister communication
Parameters status	/osc/all,1 //osc/all;i;1;	i		Status parameters feedback
Push	/presets/live/push //presets/live/push;;			Save state
Pop	/presets/live/pop //presets/live/pop;;			Load state saved with Push
Output Gain	/out[x]/gain,[y][z][a] //out[x]/gain;f[y][z];[a];	f, T/F, T/F	[x] = Output channel [y] = Mute channel (Muted=T / Unmuted=F) [z] = Invert channel (Inverted=T / Not inverted=F) [a] = Gain value (dBs)	Gain, mute and invert of the output.
Output Gain: Value	/out[x]/gain/value,[y] //out[x]/gain/value;f;[y];	f	[x] = Output channel [y] = Gain value (dBs)	Gain value of the output.

Output Gain Status	/out[x]/gain/value //out[x]/gain/value;;		[x] = Output channel	Output gain feeback
Output Gain: Mute	/out[x]/gain/mute,[y] //out[x]/gain/mute;[y];	T,F	[x] = Output channel [y] = Mute channel (Muted=T / Unmuted=F)	Mute selected output
Output Mute Status	/out[x]/gain/mute //out[x]/gain/mute;;		[x] = Output channel	Output mute feedback
Output Gain: Mute with Fade	/out[x]/gain/fade,[y] //out[x]/gain/fade;f;[y];	f	[x] = Output channel [y] = fade (in=0.00, out=1.00)	Output fade in / fade out
Output Gain: Increment	/out[x]/gain/value/inc,[y] //out[x]/gain/value/inc;f;[y];	f	[x] = Output channel [y] = Gain steps (dBs)	Increment output gain by steps
Mixer	/out[x]/matrix/in[y],[z][a][b] //out[x]/matrix/in[y];f[z][a];[b];	f	[x] = Output channel [y] = Input channel [z] = Mute channel (Muted=T / Unmuted=F) [a] = Invert channel (Inverted=T / Not inverted=F) [b] = Input gain value (dBs)	Mix the selected inputs to the selected output, and inputs set up (mute, invert)

Mixer: Value	/out[x]/matrix/in[y]/value,[z] //out[x]/matrix/in[y]/value;f;[z];	f	[x] = Output channel [y] = Input channel [z] = Input gain value (dBs)	Mix the selected inputs to the selected output
Mixer: Value Status	/out[x]/matrix/in[y]/value //out[x]/matrix/in[y]/value;;		[x] = Output channel [y] = Input channel	Mixer status
Mixer: Mute	/out[x]/matrix/in[y]/mute,[z] /out[x]/matrix/in[y]/mute;[z];	T,F	[x] = Output channel [y] = Input channel [z] = Mute input channel (Muted=T / Unmuted=F)	Mute the selected inputs to the selected output
Mixer: Mute with Fade	/out[x]/matrix/in[y]/fade,[z] //out[x]/matrix/in[y]/fade;f;[z];	f	[x] = Output channel [y] = Input channel [z] = fade (in=0.00, out=1.00)	Fade in / fade out of the selected inputs to the selected output
Mixer: Increment	/out[x]/matrix/in[y]/value/inc, [z] //out[x]/matrix/in[y]/value/inc;f; [z];	f	[x] = Output channel [y] = Input channel [z] = Input gain steps (dBs)	Mix the selected inputs to the selected output by steps
Equalizer Output	/out[x]/eq/[y],[z][a][b][c] //out[x]/eq/[y];ifff;[z];[a];[b];[c];	ifff	[x] = Output channel [y] = Band Index [z] = Filter Type[2] [a] = frequency (Hz) [z] = Gain (dBs)	Set output equalizer

|			[z] = Quality factor [0.01 ,10]	
CrossOver	/out[x]/xover,[y][z][a][b][c][d] //out[x]/xover;iiiiff;[y];[z];[a]; [b];[c];[d];	iiiiff	[x] = Output channel [y] = High pass type [z] = Low pass type [a] = High pass Type ord er [b] = Low pass Type ord er [c] = High pass cut frequ ency [d] = Low pass cut frequ ency	Set outputs crossov er filters
Limiter / Comp ressor	/out[x]/Dynamic,[y][z][a][b][c] [d][e][f][g][h][i][j][k][l][m][n] //out[x]//dynamic;ffffffffffffFFF F;[y];[z];[a];[b];[c];[d];[e];[f];[g];[h];[i];[j];[k]; [l];[m];[n];	f, f, f, f, f, f, f, f, f, f, f, f, T /F, T/F, T/F, T/F	[x] = Output channel [y] = Attack time [z] = Release time [a] = Gain [b] = Noise gate ratio [c] = Lineal threshold [d] = Compression ratio [e] = Compression thres hold [f] = Limiter threshold [g] = Box impedance	Set outputs dynamic s

			[h] = Box power [i] = Amplier power [j] = Amplier gain [k] = Enable noise gate [l] = Enable Lineal [m] = Enable compressi on [n] = Enable Limiter	
Presets: Exec ute	/presets/edit/exec,[x] //presets/edit/exec;i;[x];	i	[x] = Preset to execute	Executed preset
Presets: Exec ute Status	/presets/edit/exec //presets/edit/exec;;			Preset status
Presets: Copy to preset	/presets/live/store,[x] //presets/live/store;i;[x];	i	[x] = Preset number	Save to preset
Presets: Get e x	/presets/get,[x][y] //presets/get;i[x];[y];	i,T/F	[x] = Live or Preset to g et (live=T,preset=F) [y] = Part to get (all = -1)	Get live or preset inf o

ACCESSORIES

The WPE 44 includes a series of accessories for mounting on a wall or with the rack accessory BL AR 19 (not

included):
– 2x Wings for mounting in a wall.
– 4 screws.
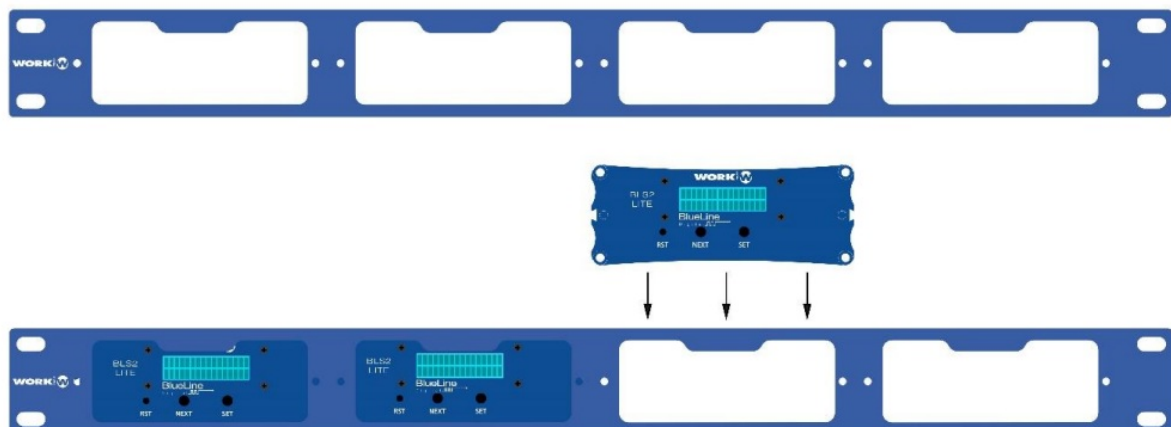– 1x Bar to joint two devices.
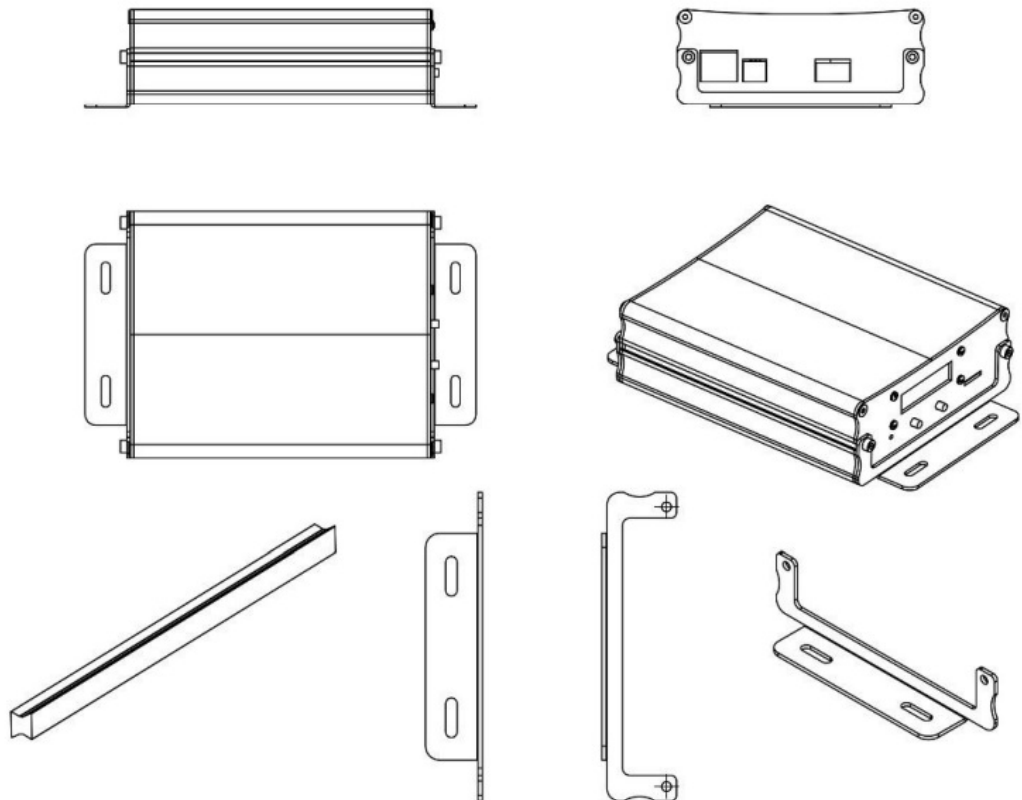
1x Fixation bar to joint two WPE devices (WPE24/WPE44)
1x Barra de fijación para unir dos dispositivos WPE (WPE 24/WPE44)

2x Wings for mounting on a wall
2x Aletas para montaje en pared

– Optional –

BL AR 19
Fixing accessory for standard rack 19″ 1 HU to accommodate up to 4 devices of the WPE Series /WPE 24/WPE 44) series.

Documents / Resources

WORK WPE 44 Digital Audio Processor [pdf] User Manual
WPE 44 Digital Audio Processor, WPE 44, Digital Audio Processor, Audio Processor, Digital Processor, Processor

References

- **WorkPro**
- **E WorkCad3**
- **WorkPro**