

WPNET4KV & WPNET8K

REMOTE CONTROLLERS AND INTERFACES

Digital wall control



COMPATIBILITY WITH:

- MIMO88
- MIMO88SG
- MIMO1212SG
- NXA series

USER MANUAL

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1. INTRODUCTION

WPNET4KV, WPNET8K and WPNETEX are digital wall panels designed to obtain their maximum performance when working together with the MIMO4040DN Dante digital matrix as the host device (taking remote control of some of its working parameters).

However, a new firmware version (JUNE 2019 onwards) **for the WPNET4KV and WPNET8K models** (**attention:** but not for the WPNETEX) has been developed to make them as well compatible with many other EclerNet hardware devices: MIMO88, MIMO88SG, MIMO1212SG digital matrices and NXA series Digital Audio Managers.

The new firmware version is identified, within the usual EclerNet software and firmware pack available from www.ecler.com, with an “R” suffix, **R** standing for “**R**etro-compatible”. Examples:

- **firmware_WPNET_R_v1_00r2.bin** : this is a firmware file for the WPNET4K and WPNET8K, making them compatible with a MIMO88, MIMO88SG, MIMO1212SG or NXA series unit as the host device
- **firmware_WPNET_v1_02r7.bin** : this is a firmware file for WPNET series (full series, including WPNET4KV, WPNET8K and WPNETEX), making them compatible just with MIMO4040DN as the host device

Important note: a WPNET4KV or WPNET8K can carry just one of the above 2 firmware possibilities:

- the one that works with MIMO4040DN (but not with MIMO88, MIMO88SG, MIMO1212SG and NXA series)
- or**
- the one “retro-compatible” that works with MIMO88, MIMO88SG, MIMO1212SG or NXA series (but not with MIMO4040DN).

WPNET4KV and WPNET8K hardware units can be upgraded with any of these two firmware profiles, at any time.

Note: It is possible to use an adjacent pair of panels, consisting of a WPNET4KV unit and a WPNET8K unit, **becoming a new single panel of greater dimensions and number of available controls, model WPNET12KV.** A double WPa2FMBOX box is required to flush mount both devices together, or a double WPa2SMBOX box for surface mounting. Both, the WPa2FMBOX and WPa2SMBOX are sold separately.

Note: when a **WPNET4KV** and a **WPNET8K**, both upgraded with the same “retro compatible” firmware version, are merged to become a **WPNET12KVR** unit, this one can be used as well to control MIMO88, MIMO88SG, MIMO1212SG and NXA series hardware devices.

See the WPNET4KV, WPNET8K and WPNETEX user manual for more details about getting a WPNET12KV device from two isolated WPNET4KV and WPNET8K units.

2. RETRO-COMPATIBILITY & CONTROL TABLE

These are the control options that WPNET4KV, WPNET8K and WPNET12KV models can have over EclerNet hardware host devices in retro-compatible mode, and the maximum of WP units that can be used in each case, simultaneously connected to a single host device:

Hardware HOST device	WPNET model	WPNET4KV	WPNET8K	WPNET12KV
MIMO88 / MIMO88SG	Maximum number of units *	8 (combined WPNET4KV and/or WPNET8K and/or WPNET12KV)		
	Control options	<ul style="list-style-type: none"> ●Preset or source selection ●Volume control ●MUTE control 	<ul style="list-style-type: none"> ●Preset or source selection 	<ul style="list-style-type: none"> ●Preset or source selection ●Volume control ●MUTE control
MIMO88 CONFERENCE / MIMO88SG CONFERENCE	Maximum number of units *	6 (combined WPNET4KV and/or WPNET8K and/or WPNET12KV)		
	Control options	<ul style="list-style-type: none"> ●Preset or source selection ●Volume control ●MUTE control 	<ul style="list-style-type: none"> ●Preset or source selection 	<ul style="list-style-type: none"> ●Preset or source selection ●Volume control ●MUTE control
MIMO1212	Maximum number of units *	12 (combined WPNET4KV and/or WPNET8K and/or WPNET12KV)		
	Control options	<ul style="list-style-type: none"> ●Preset or source selection ●Volume control ●MUTE control 	<ul style="list-style-type: none"> ●Preset or source selection 	<ul style="list-style-type: none"> ●Preset or source selection ●Volume control ●MUTE control
MIMO1212SG CONFERENCE	Maximum number of units *	10 (combined WPNET4KV and/or WPNET8K and/or WPNET12KV)		
	Control options	<ul style="list-style-type: none"> ●Preset or source selection ●Volume control ●MUTE control 	<ul style="list-style-type: none"> ●Preset or source selection 	<ul style="list-style-type: none"> ●Preset or source selection ●Volume control ●MUTE control
NXA4-80 NXA4-200 NXA4-400 NXA6-80 NXA6-200	Maximum number of units *	8 (combined WPNET4KV and/or WPNET8K and/or WPNET12KV)		
	Control options	<ul style="list-style-type: none"> ●Source selection ●Volume control 	<ul style="list-style-type: none"> ●Source selection 	<ul style="list-style-type: none"> ●Source selection ●Volume control

* **Note:** regarding the Maximum number of WPNET units:

Each WPNET unit establishes and “spends” one TP-NET client connection with the host hardware (being it a MIMO or NXA series unit) to take the control of some of its parameters. The above figures regarding maximum number of WPNET units (8, 6, 12, 10 and 8), for each kind of host device, really indicate the maximum number of TP-NET client connections it can support. In other words: if an external, third-party device (like Crestron®, Extron®, Neets®, AMX®, etc. control units) has to be as well taking the control of the same host device, it will “spend” as well one of these available client connections.

Example:

- a MIMO88SG CONFERENCE can support a maximum of **6** WPNET4K / WPNET8K / WPNET12KV units in total and **zero** additional TP-NET client connections
- a MIMO88SG CONFERENCE can support a maximum of **5** WPNET4K / WPNET8K / WPNET12KV units in total and **1** additional TP-NET client connection
- etc...

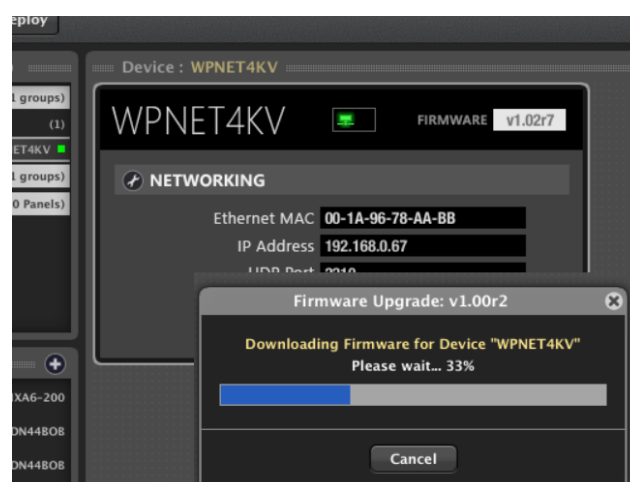
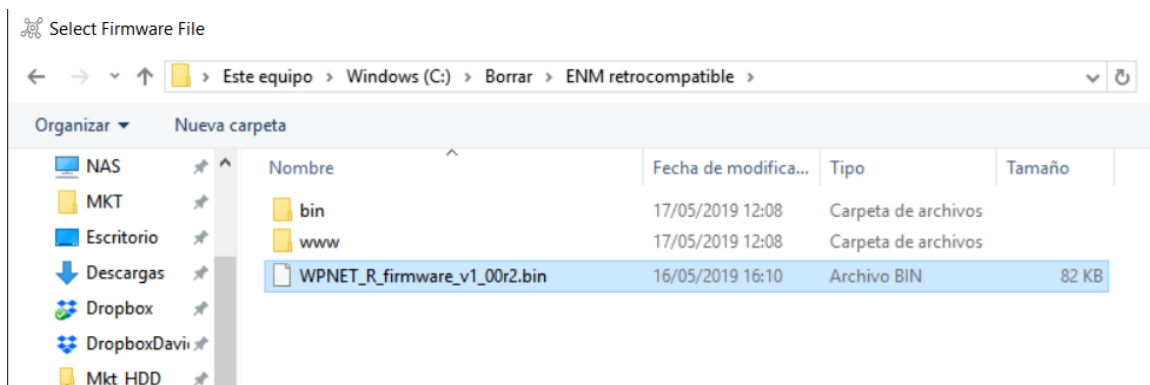
3. WPNET “R” firmware upgrade

Firstly, it is important to note the software and firmware versions that started to include these retro-compatibility features:

- EclerNet Manager application: **v5.03r9 and later**
- WPNET4KVR and WPNET8KR (retro-compatible versions): **firmware version 1.00r3 and later**
- MIMO88, MIMO88SG, MIMO1212SG, MIMO88 CONFERENCE, MIMO88SG CONFERENCE and MIMO1212SG CONFERENCE: **firmware version 2.02r1 and later**
- NXA4-80, NXA4-200, NXA4-400, NXA6-80 and NXA-6-200: **firmware version 2.02r1 and later**

The process to upgrade a WPNET4KV or WPNET8K hardware unit with a retro-compatible firmware version is the same as with any other EclerNet hardware unit firmware upgrade.

Once a standard WPNET unit is under ENM control, an “R” firmware version must be uploaded. Example with a WPNET4KV model:



When the upgrade process is finished, the unit will appear again with a new model name, WPNET4KVR (R standing for Retro-compatible), and additional parameters in its detailed view window:



4. WPNET4KVR-WPNET8KR-WPNET12KVR & MIMO88 series

MIMO series and WPNET retro-compatible units make use of **Virtual Controls** to communicate and operate. A set of virtual controls (in a range from 1 to 64) must be selected in each WPNET R unit, and also **Virtual Remote Controls** must be adjusted accordingly in the configuration of the MIMO host device to make it work.

This guide provides the basic knowledge about them both regarding WPNET R programming and use. Refer to the EclerNet user manual for further general information about Virtual Controls, Virtual Remote Controls and sources/presets carrousel.

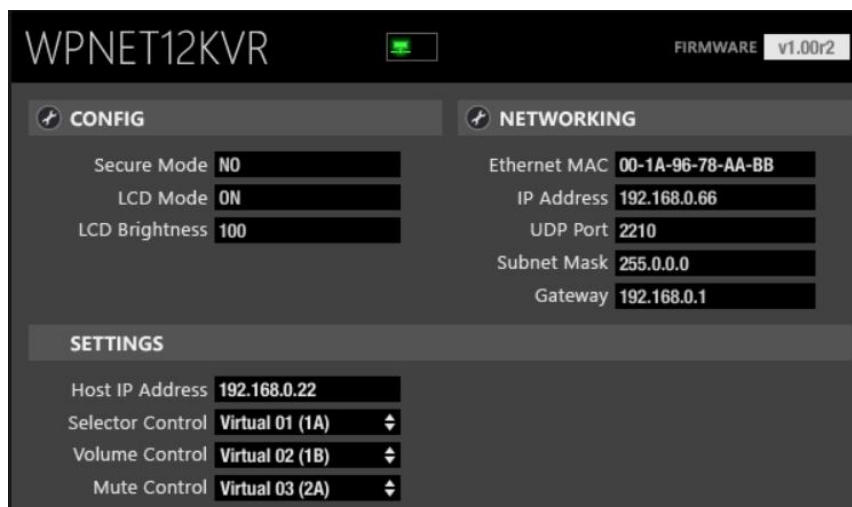
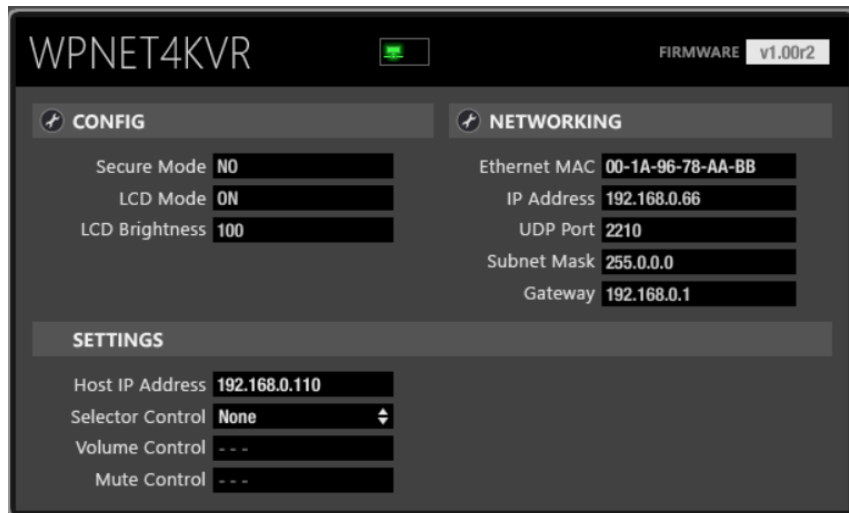
Once a WPNET4KV or WPNET8K (or WPNET12KV) has been upgraded with the retro-compatible firmware version, and it becomes a WPNET4KVR or WPNET8KR (or WPNET12KVR) unit, it must be added to the same project file as the rest of the hardware devices in the EclerNet system:



In the above example one MIMO88 unit, one WPNET4KVR and one WPNET8KR unit have been included in the same project file.

4.1 WPNET4KVR / WPNET12KVR configuration

This is the detailed view these panels do have in ENM:



The CONFIG section shows these general parameters:



- **Secure Mode:** when active, a selection of Sources or Presets needs a press & hold action (>3 seconds) of a key in the WPNET4KVR / WPNET12KVR hardware unit to make it effective. Otherwise (unmarked) the selection is effective right after pressing the key once
- **LCD Mode:** LCD brightness mode (ON, DIMMED or TOTALLY OFF) when the panel becomes idle, after several seconds with no user interaction
- **LCD Brightness:** Screen brightness level during normal operation, when the panels is not in idle mode

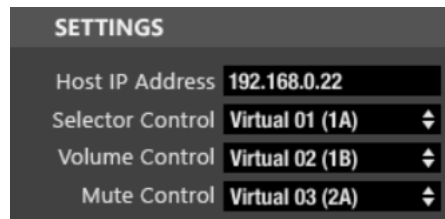
4.2 WPNET4KVR / WPNET12KVR & MIMO series matrix as a host

The parameters (SETTINGS section) that must be configured for the WPNET4KVR or WPNET12KVR in ENM, to define its remote control functions over a MIMO host unit, are:

- **Host IP Address:** IP address of the MIMO hardware unit that the WPNET4KVR / WPNET12KVR wants to remotely control
- **Selector Control (range 1-64):** Virtual Control in the host unit that will be used for source or preset selection, thus pointing to a source or preset carousel in the host unit. It will be triggered by pressing the selection keys in the WPNET4KVR / WPNET12KVR hardware unit.
- **Volume Control (range 1-100):** Virtual Control in the host unit that will be used for volume control, thus pointing to an individual input, output or crosspoint level in the host unit. It will be triggered by rotating the digital knob in the WPNET4KVR / WPNET12KVR hardware unit.
- **Mute Control (range 1 or 100, 2 possible states):** Virtual Control in the host unit that will be used as a MUTE control, thus pointing to an individual input, output or crosspoint MUTE in the host unit. It will be triggered by pressing the digital knob in the WPNET4KVR / WPNET12KVR hardware unit.

All these 3 Virtual Controls can be used, or just some of them, in case that not all 3 functions will be allowed for the profile of end user that will manage the WPNET4KVR / WPNET12KVR unit.

In the following example, these are the selected Virtual Controls (1, 2 and 3):



Then, in the host unit, in our example case a MIMO88, these Virtual Controls must be linked to actions.


This first example shows how to link the Virtual Controls assigned to the WPNET4KVR / WPNET12KVR unit to a source selector + volume control + MUTE function in the MIMO88 unit:

1. Add a new VIRTUAL REMOTE PANEL (REMOTES tab in MIMO unit)



2. Configure it with:

- source selection function, from a previously created carousel of options
- volume control of the selected source (or crosspoint level)
- MUTE control of the selected source (or crosspoint MUTE)



The image shows a dialog box titled "Edit Remote: VIRTUAL" with a close button (X) in the top right corner. The dialog is divided into three sections: SELECTOR, VOLUME, and MUTE. Each section contains several configuration options, each with a dropdown arrow on the right.

SELECTOR

- Control: VIRTUAL1
- Type: CAROUSEL
- Polarity: DIRECT
- Carousel: 01 - SOURCES1 (INPUTS)
- Output: OUT 3 : OUTPUT 3

VOLUME

- Control: VIRTUAL2
- Type: X-FOCUS VOLUME
- Polarity: DIRECT

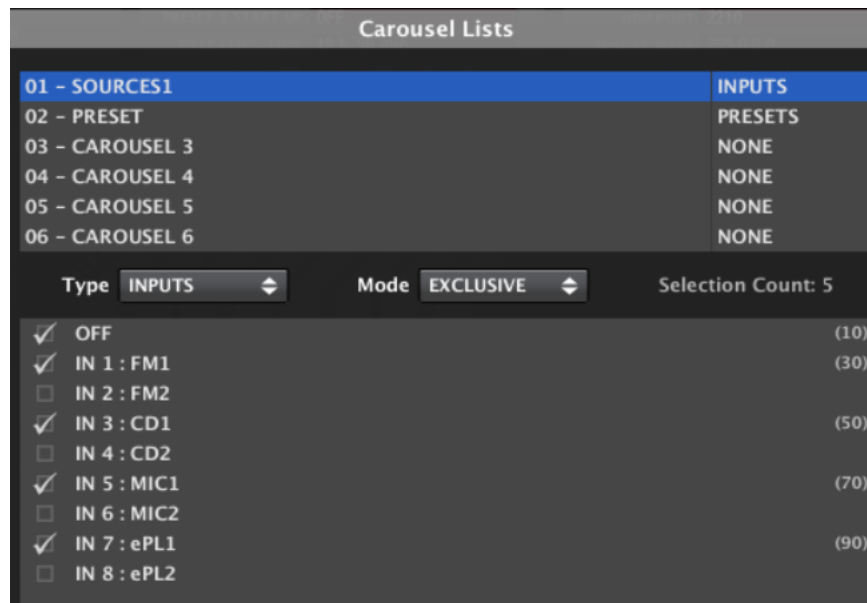
MUTE

- Control: VIRTUAL3
- Type: X-FOCUS MUTE
- Polarity: DIRECT
- Mode: TOGGLE

At the bottom of the dialog, there are two buttons: "OK" and "Cancel".

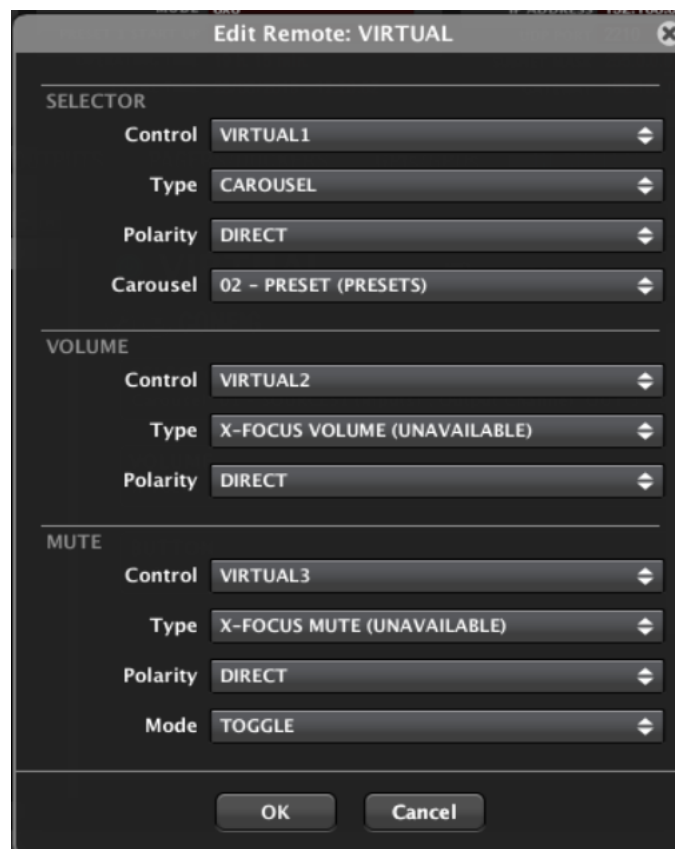
3. Note in the above example:

- Virtual Control 1 points to the SELECTOR function, always associated to a carousel list of options. The chosen carousel is a **SOURCES** (inputs) carousel, meaning this that the WPNET4KVR / WPNET12KVR will be allowed to select among the sources included in this carousel, that will be routed to output #3



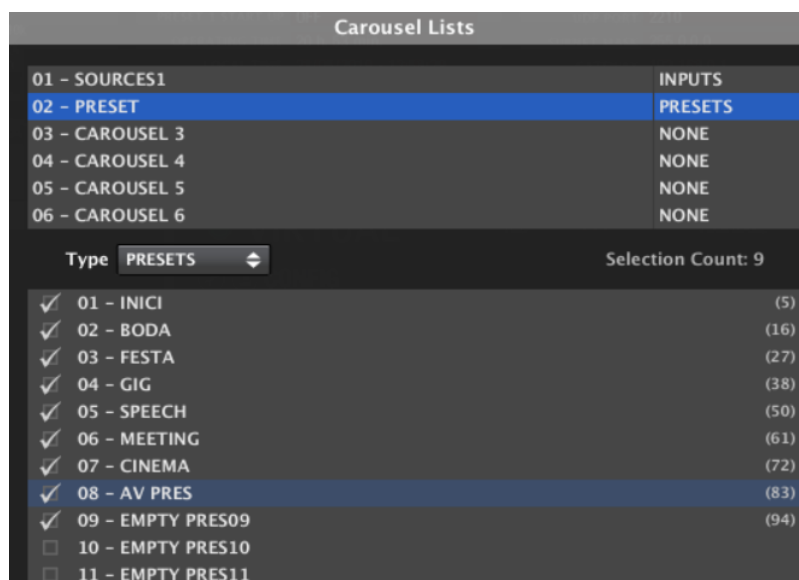
- Virtual Control 2 points to the Cross-Focus Volume: the crosspoint LEVEL control between the selected input and output #3. Turning the digital encoder in the WPNET4KVR / WPNET12KVR unit will define the volume at which the selected input will be sent to output #3
- Virtual Control 3 points to the Cross-Focus MUTE: the crosspoint MUTE control between the selected input and output #3. Pressing the digital encoder in the WPNET4KVR / WPNET12KVR unit will MUTE / UNMUTE the selected input signal that is sent to output #3. **Warning: TOGGLE mode must be selected** to allow MUTE / UNMUTE actions with consecutive encoder press actions

The next example shows how to link the Virtual Controls assigned to the WPNET4KVR / WPNET12KVR unit to a **PRESETS** selector:



Note in the above example:

- Virtual Control 1 points to the SELECTOR function, always associated to a carousel list of options. The chosen carousel in this case is a **PRESETS** carousel, meaning this that the WPNET4KVR / WPNET12KVR will be allowed to select among the PRESETS included in this carousel

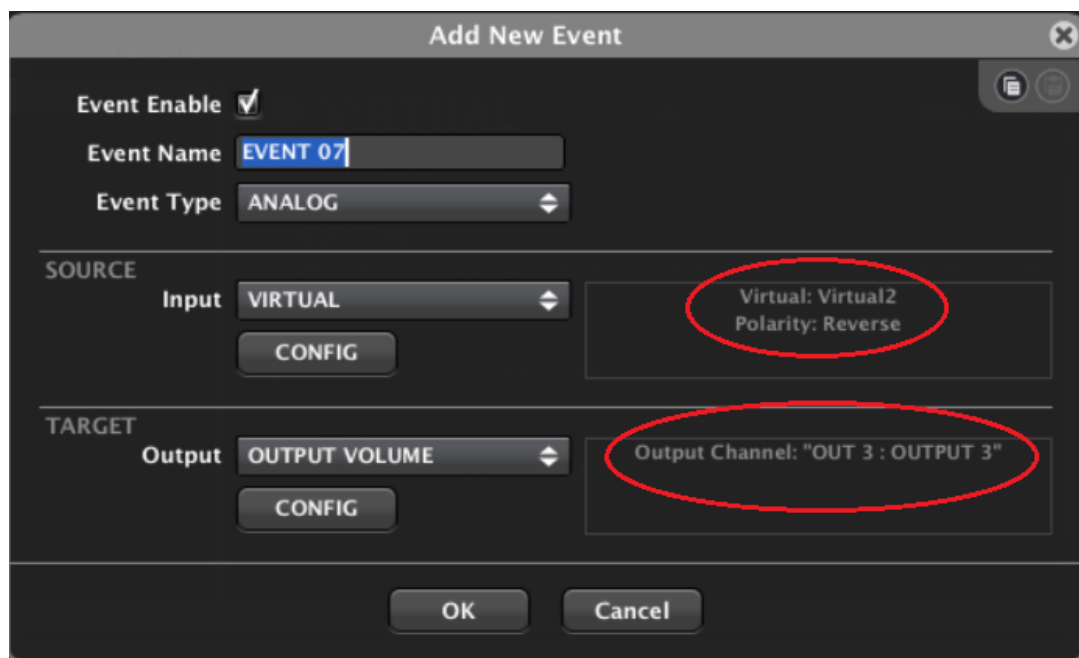


Note in the above example:

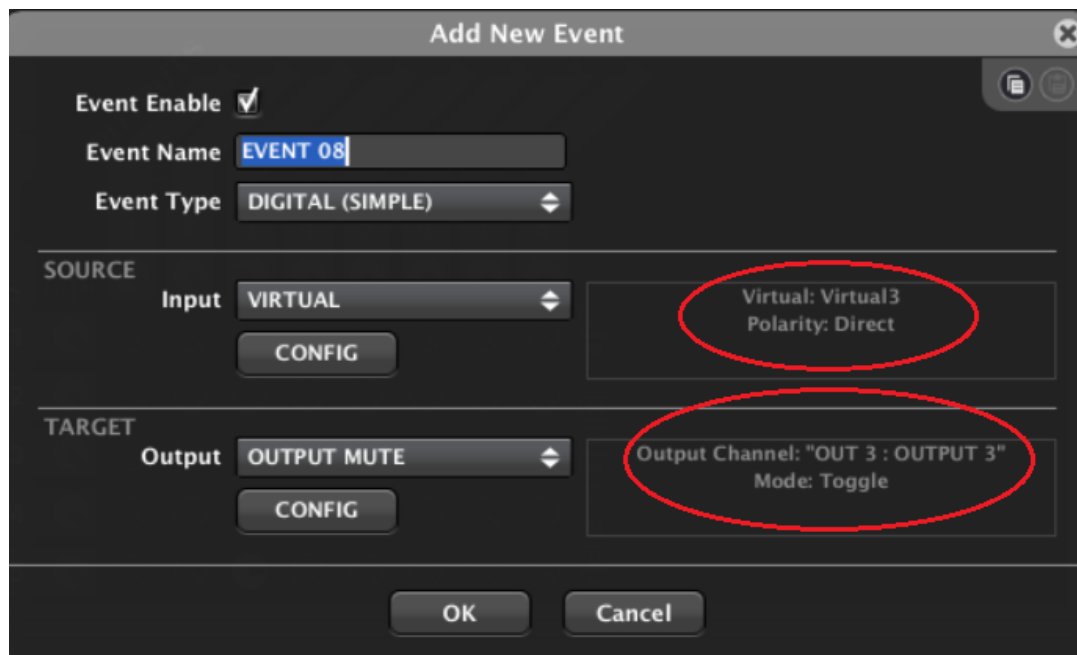
- Virtual Controls 2 and 3 **cannot point to the Cross-Focus VOLUME and/or Cross-Focus MUTE**, as there is no notion of a selected source involved when the selection affects to PRESETS and not to SOURCES. That's why these options are shown as X-FOCUS VOLUME (UNAVAILABLE) and X-FOCUS MUTE (UNAVAILABLE)

But there's still an option to make use of Virtual Controls 2 and 3 with a WPNET4KVR / WPNET12KVR panel, controlling a couple of predetermined VOLUME and MUTE controls. This can be achieved **by using two MIMO Events**:

- An analogue event to control a given Volume using Virtual Control 2 (in the example, Output #3 Volume):

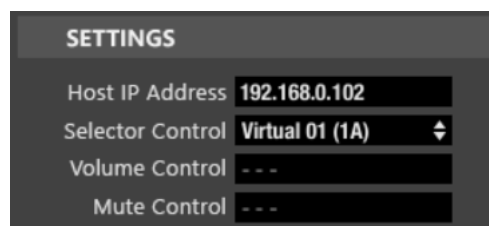


- And a digital event to control a MUTE function using Virtual Control 3 (in the example Output #3 MUTE). **Warning: TOGGLE mode must be selected** to allow MUTE / UNMUTE actions with consecutive encoder press actions:



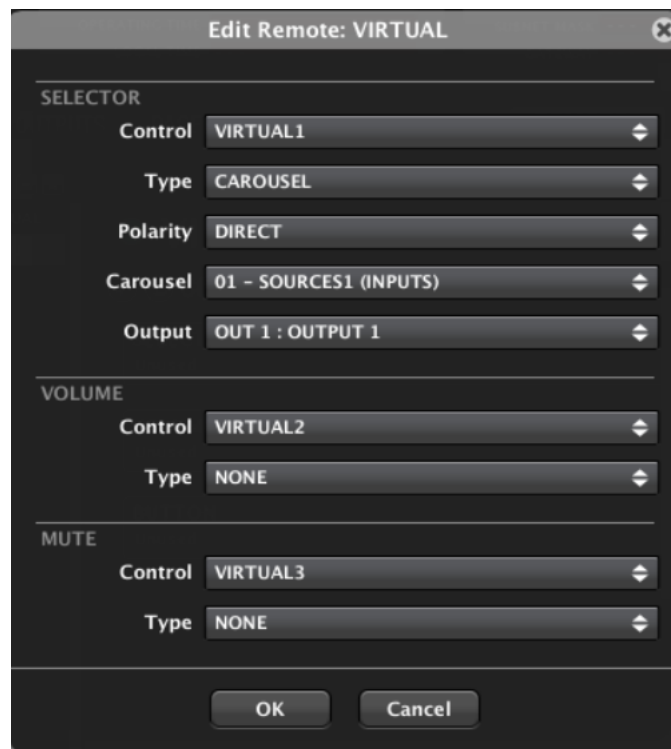
4.3 WPNET8KR & MIMO series matrix as a host

In the case of a WPNET8KR unit the control possibilities over a MIMO host unit are just limited to **source or preset selection**, as just one virtual control can be used, the one associated with the 8 available front panel keys:



In the WPNET8KR front panel there is no encoder with rotation and push actions available, thus no volume control or MUTE functions can be triggered from it. That's why Volume Control and Mute Control have their selection drop-down menus disabled.

The Virtual Remote Control created in the MIMO unit this time just needs the SELECTOR setup, pointing to the Selector Control used in the WPNET8KR unit (Virtual 1 in the following example):

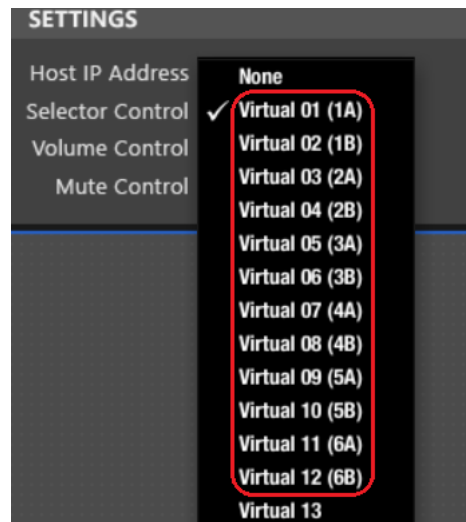


VOLUME and MUTE functions will be set to Type = NONE, thus not making use of any additional Virtual control (even VIRTUAL 2 and 3 are shown in the above example, as Type = NONE for both).

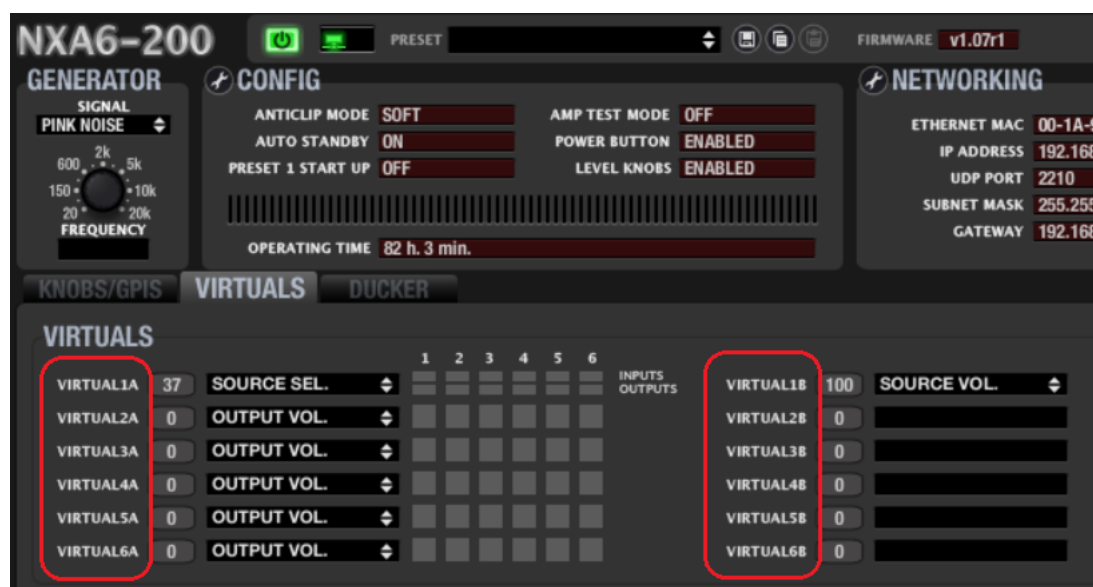
5. WPNET4KVR-WPNET8KR-WPNET12KVR & NXA series

NXA series and WPNET retro-compatible units make use of Virtual Controls to communicate and operate. A set of virtual controls must be selected in each WPNET R unit, and also Virtual Remote Controls must be adjusted accordingly in the configuration of the NXA host device to make it work.

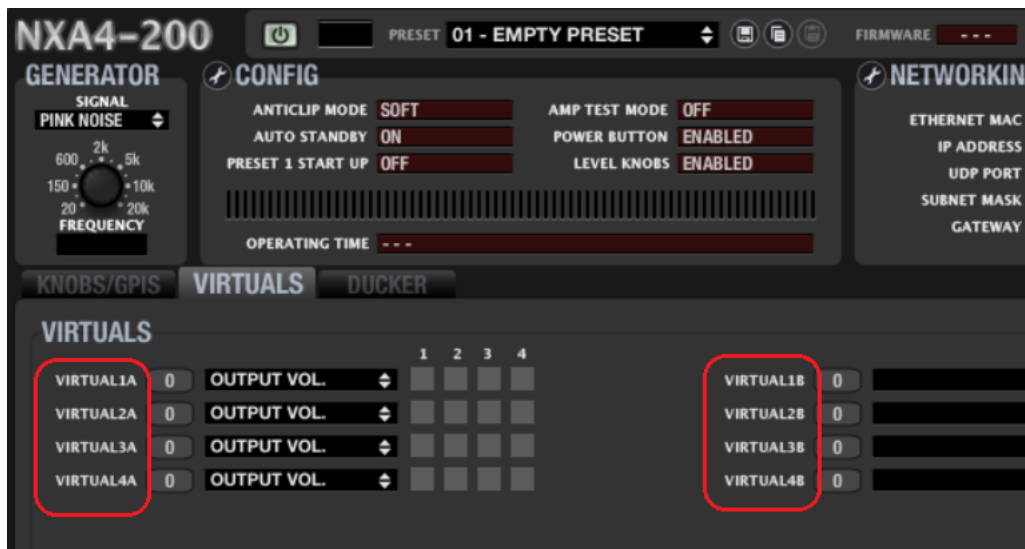
In the case of an NXA series unit as a host, these are the possible Virtual Controls that can be used in a WPNET4KVR, WPNET8KR or WPNET12KVR:



...as these are the ones available for remote control in the NXA hardware devices, from 1A to 6B, in the bellow example for a 6-channel NXA unit:



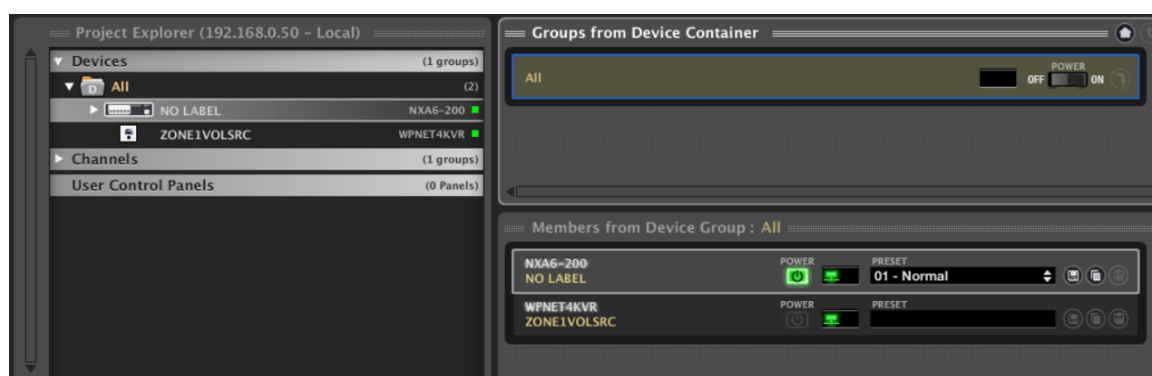
And these are the ones (1A to 4B) available for a 4-channel NXA unit:



This guide provides the basic knowledge about them both regarding WPNET R programming and use. Refer to the EclerNet user manual for further general information about Virtual Controls, Virtual Remote Controls and sources/presets carrousel.

A WPNET4KVR or WPNET12KVR can be used to remotely manage an NXA host unit in terms of just source selection and volume control of the selected source.

Once a WPNET4KV or WPNET8K (or WPNET12KV) has been upgraded with the retro-compatible firmware version, and it becomes a WPNET4KVR or WPNET8KR (or WPNET12KVR) unit, it must be added to the same project file as the rest of the hardware devices in the EclerNet system:



In the above example one NXA6-200 unit and one WPNET4KVR unit have been included in the same project file.

5.1 WPNET4KVR / WPNET12KVR configuration

This is the detailed view these panels do have in ENM:

WPNET4KVR
FIRMWARE v1.00r2

CONFIG

Secure Mode NO

LCD Mode ON

LCD Brightness 100

NETWORKING

Ethernet MAC 00-1A-96-78-AA-BB

IP Address 192.168.0.66

UDP Port 2210

Subnet Mask 255.0.0.0

Gateway 192.168.0.1

SETTINGS

Host IP Address 192.168.0.110

Selector Control None ▾

Volume Control - - -

Mute Control - - -

WPNET12KVR
FIRMWARE v1.00r2

CONFIG

Secure Mode NO

LCD Mode ON

LCD Brightness 100

NETWORKING

Ethernet MAC 00-1A-96-78-AA-BB

IP Address 192.168.0.66

UDP Port 2210

Subnet Mask 255.0.0.0

Gateway 192.168.0.1

SETTINGS

Host IP Address 192.168.0.22

Selector Control Virtual 01 (1A) ▾

Volume Control Virtual 02 (1B) ▾

Mute Control Virtual 03 (2A) ▾

The CONFIG section shows these general parameters:



- **Secure Mode:** when active, a selection of Sources needs a press & hold action (>3 seconds) of a key in the WPNET4KVR / WPNET12KVR hardware unit to make it effective. Otherwise (unmarked) the selection is effective right after pressing the key once
- **LCD MODE:** LCD brightness mode(ON, DIMMED or TOTALLY OFF) when the panel becomes idle, after several seconds with no user interaction
- **LCD Brightness:** Screen brightness level during normal operation, when the panels is not in idle mode

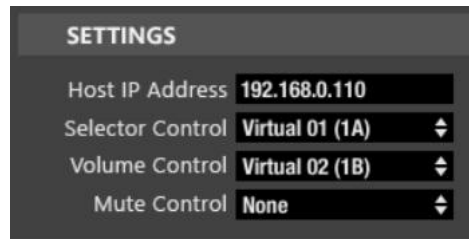
5.2 WPNET4KVR / WPNET12KVR & NXA series unit as a host

The parameters (SETTINGS section) that must be configured for the WPNET4KVR or WPNET12KVR in ENM, to define its remote control functions over an NXA host unit, are:

- **Host IP Address:** IP address of the NXA hardware target unit that the WPNET4KVR / WPNET12KVR wants to remotely control
- **Selector Control** (range 1A to 6B (6 ch. NXA units) or 1A to 4B (4 ch. NXA units)): Virtual Control in the host unit that will be used for **source selection**, thus linked to the selection options programmed in the target NXA unit. It will be triggered by pressing the selection keys in the WPNET4KVR / WPNET12KVR hardware unit.
- **Volume Control** (range 1-100): Virtual Control in the host unit that will be used for volume control, thus pointing to the “crosspoint” level of the selected source to the desired output(s) in the host unit. It will be triggered by rotating the digital knob in the WPNET4KVR / WPNET12KVR hardware unit.

These 2 Virtual Controls can be used for source selection and volume control, or just the one for the source selection one (and no volume control allowed), depending on the application and end user profile that will manage the WPNET4KVR / WPNET12KVR unit.

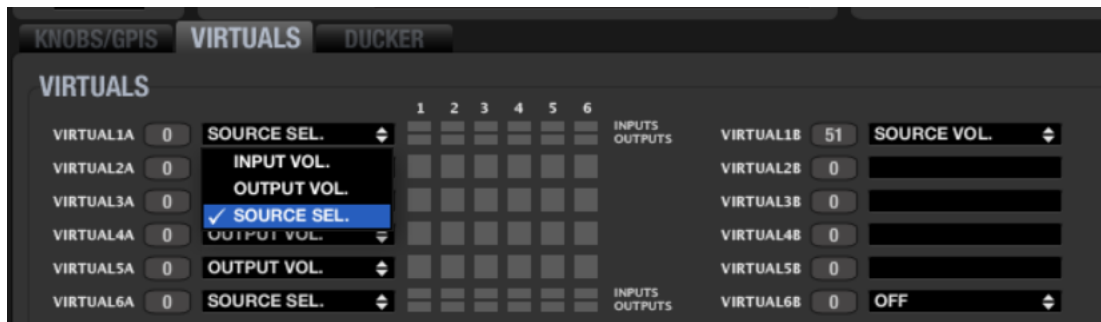
In the following example, these are the selected Virtual Controls (1A and 1B):



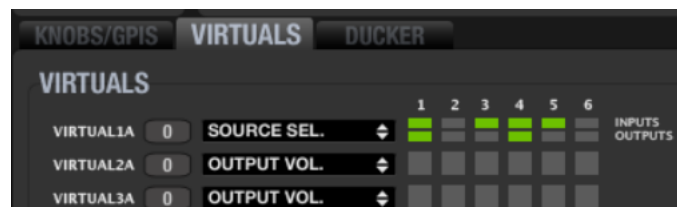
Then, in the host unit, in our example case an NXA6-200, these Virtual Controls must be linked to actions.

The next example shows how to link the Virtual Controls assigned to the WPNET4KVR / WPNET12KVR unit to a source selector + volume control in the NXA6-200 unit:

1. Select the function of Virtual 1A to SOURCE SELECTION:

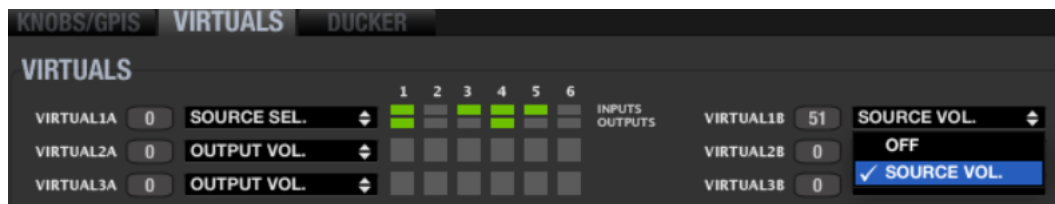


2. Decide which are the available sources for selection (INPUTS, green LEDs = available) and which are the destination outputs for them (OUPUTS, green LEDs = destinations):

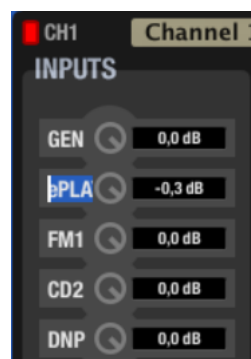


In the above example, inputs # 1, 3, 4 and 5 are available for selection, and the selected one is simultaneously sent to outputs 1 and 4.

- Virtual 1B can be used for the volume control of the selected source: the amount of signal of the selected source that is being sent to the destination outputs (SOURCE VOL option):



Once configured in this way, the WPNET4KVR or WPNET12KVR wall panel will show on its LCD screen the available sources for selection, showing their names (labels). These labels can be edited from EclerNet Manager, clicking on top of each of them:



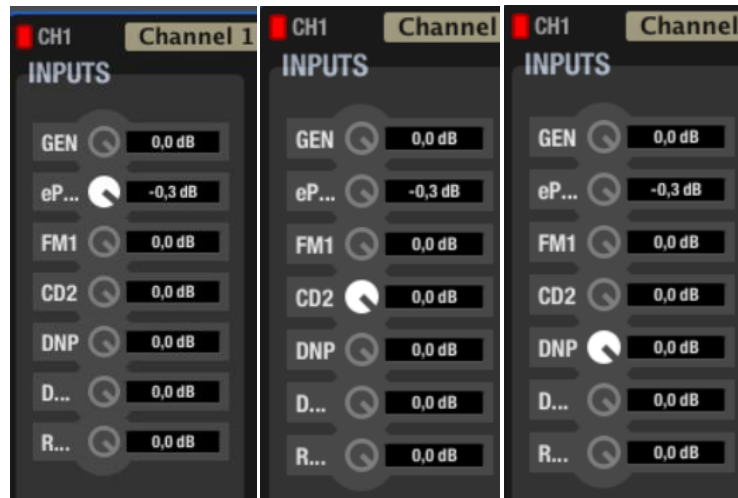
Once a label is edited, it will show in ENM a maximum of 3 characters, but will show more of them in the WPNET4KR LCD screen, as there is more room (characters) available for labels texts in it.

In this example the label is really ePLAYER1 for the first input, IN1 (GENERATOR not counted)



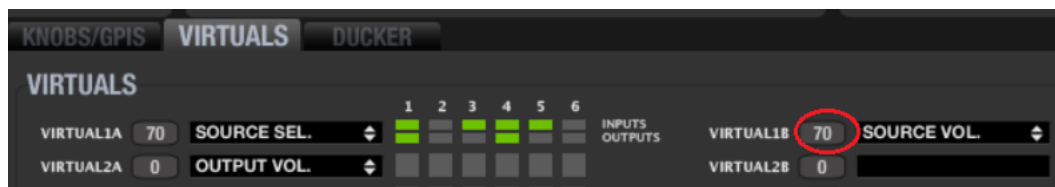
It just shows “eP...” in ENM, but will show the full “ePLAYER1” text in a WPNET4VKR LCD screen.

Pressing the front panel keys in a WPNET4KVR, at the right side of each source selection option, will make the selection effective in the NXA unit:



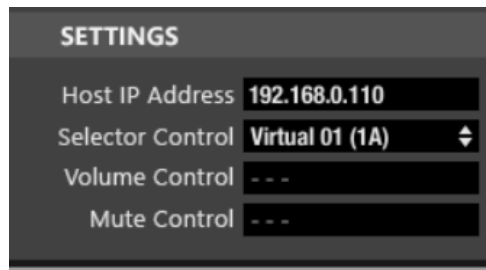
In the above example, the selections made after pressing the keys for the options ePLAYER1, CD2 and DNP shown in the WPNET4KVR screen.

When rotating the digital encoder in the WPNET4KVR, the selected source volume that is sent to the target NXA outputs will be accordingly adjusted. Even no real volume knob is visually affected (moved) in ENM, the value of the virtual control (1B in this case) will be modified, matching the value shown in the WPNET4KVR screen:



5.3 WPNET8KR & NXA series unit as a host

In the case of a WPNET8KR unit the control possibilities over an NXA host unit are just limited to **source selection**, as just one virtual control can be used, the one associated with the 8 available front panel keys:

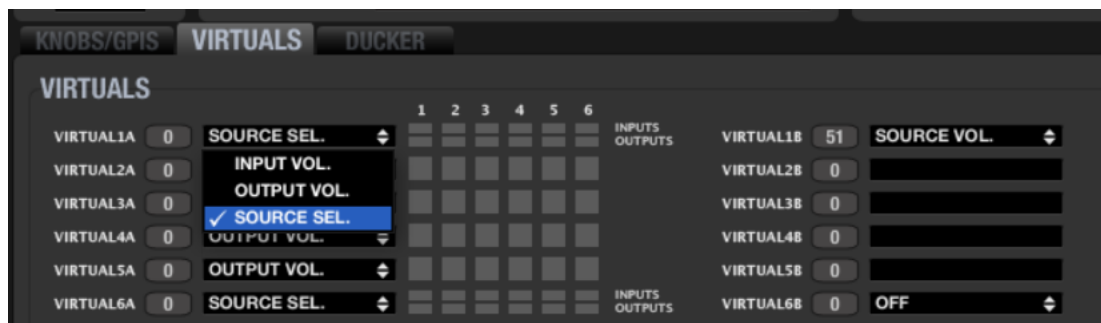


In the WPNET8KR front panel there is no encoder with rotation and push actions available, thus no volume control or MUTE functions can be triggered from it. That's why Volume Control and Mute Control have their selection drop-down menus disabled.

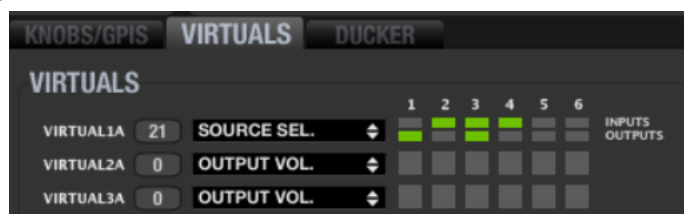
In the next example, the selected Virtual Controls for the Selector function is 1A.

Then, in the host unit, in our example case an NXA6-200, this Virtual Control must be linked to a source selection action:

1. Select the function of Virtual 1A to SOURCE SELECTION:



2. Decide which are the available sources for selection (INPUTS, green LEDs = available) and which are the destination outputs for them (OUTPUTS, green LEDs = destinations):



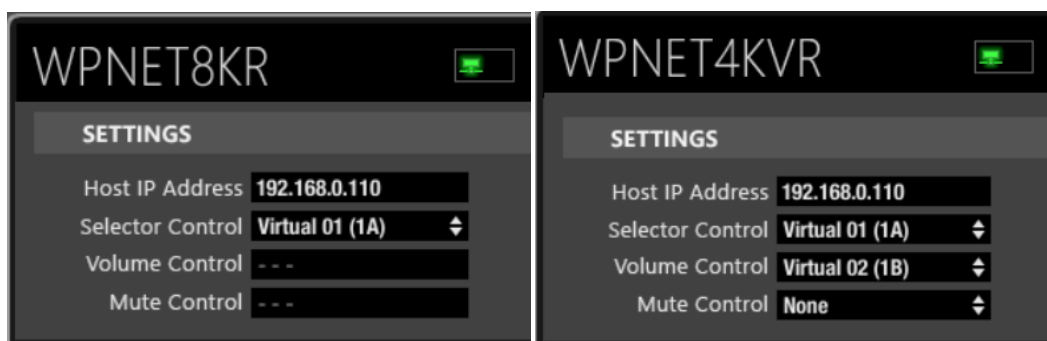
In the above example, inputs # 2, 3 and 4 are available for selection, and the selected one is simultaneously sent to outputs 1 and 3.

6. Q&A and GENERAL CONSIDERATIONS

Q: Can more than one WPNET R device control simultaneously the same remote functions in the same host device?

A: Yes. When 2 or more WPNET R units are programmed pointing to the same host device, and using the same virtual controls, both will behave as “copies” of each other, taking the control of the same parameters.

Example for a WPNET8KR and a WPNET4KV units controlling the same NXA6-200 host device, and sharing the same source selection function and options (Ins 2,3,4) over outputs 1 and 3:



Q: In the previous example (two panels controlling the same host device), is each WPNET R panel really “spending” one single communication session, or do both panels share the same one?

A: Each panel will spend by itself one communication session with its host device, no matter which controls it takes care of

Q: Can one WPNET R unit take the control of more than one host device?

A: No. A WPNET R unit uses a point to point communication session with a host device to take its control, and it can’t establish more than one of these sessions simultaneously.

All product characteristics are subject to variation due to production tolerances. **NEEC AUDIO BARCELONA S.L.** reserves the right to make changes or improvements in the design or manufacturing that may affect these product specifications.

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