HARDWARE REFERENCE MANUAL
VERSION: V1.0.1

Precis 4x1+1 4K60 Windowing Processor

Precis 4K60 HDMI Switcher / Windowing Processor

AV FOR AN IT WORLD®

IMPORTANT SAFETY INSTRUCTIONS

1. READ these instructions.
2. KEEP these instructions.
3. HEED all warnings.
4. FOLLOW all instructions.
5. DO NOT use this apparatus near water.
6. CLEAN ONLY with dry cloth.
7. DO NOT block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. DO NOT install near any hear sources such as radiators, hear registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. DO NOT defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wider blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. PROTECT the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11. ONLY USE attachments/accessories specified by the manufacturer.
12. USE ONLY with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. UNPLUG this apparatus during lightning storms or when unused for long periods of time.
14. REFER all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. DO NOT expose this apparatus to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the apparatus.
16. To completely disconnect this apparatus from the AC Mains, disconnect the power supply cord plug from the AC receptacle.
17. Where the mains plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.
18. DO NOT overload wall outlets or extension cords beyond their rated capacity as this can cause electric shock or fire.

The exclamation point, within an equilateral triangle, is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electrical shock to persons.

ESD Warning: The icon to the left indicates text regarding potential danger associated with the discharge of static electricity from an outside source (such as human hands) into an integrated circuit, often resulting in damage to the circuit.

WARNING: To reduce the risk of fire or electrical shock, do not expose this apparatus to rain or moisture.
WARNING: No naked flame sources - such as candles - should be placed on the product.
WARNING: Equipment shall be connected to a MAINS socket outlet with a protective earthing connection.
WARNING: To reduce the risk of electric shock, grounding of the center pin of this plug must be maintained.

AMX WARRANTY AND RETURN POLICY

The AMX Warranty and Return Policy and related documents can be viewed/downloaded at www.amx.com.

ESD WARNING

To avoid ESD (Electrostatic Discharge) damage to sensitive components, make sure you are properly grounded before touching any internal materials.

When working with any equipment manufactured with electronic devices, proper ESD grounding procedures must be followed to make sure people, products, and tools are as free of static charges as possible. Grounding straps, conductive smocks, and conductive work mats are specifically designed for this purpose. These items should not be manufactured locally, since they are generally composed of highly resistive conductive materials to safely drain static discharges, with-out increasing an electrocution risk in the event of an accident.

Anyone performing field maintenance on AMX equipment should use an appropriate ESD field service kit complete with at least a dissipative work mat with a ground cord and a UL listed adjustable wrist strap with another ground cord.

WARNING: Do Not Open! Risk of Electrical Shock. Voltages in this equipment are hazardous to life. No user-serviceable parts inside. Refer all servicing to qualified service personnel.
Place the equipment near a main power supply outlet and make sure that you can easily access the power breaker switch.

WARNING: This product is intended to be operated ONLY from the voltages listed on the back panel or the recommended, or included, power supply of the product. Operation from other voltages other than those indicated may cause irreversible damage to the product and void the products warranty. The use of AC Plug Adapters is cautioned because it can allow the product to be plugged into voltages in which the product was not designed to operate. If the product is equipped with a detachable power cord, use only the type provided with your product or by your local distributor and/or retailer. If you are unsure of the correct operational voltage, please contact your local distributor and/or retailer.

FCC AND CANADA EMC COMPLIANCE INFORMATION:

This device complies with part 15 of the FCC Rules.
Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Approved under the verification provision of FCC Part 15 as a Class A Digital Device. Caution
Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this device. CAN ICES-3 (B)/NMB-3(B)

EU COMPLIANCE INFORMATION:

Eligible to bear the CE mark; Conforms to European Union Low Voltage Directive 2006/95/EC; European Union EMC Directive 2004/108/EC; European Union Restriction of Hazardous Substances Recast (RoHS2) Directive 2011/65/EU; European Union WEEE (recast) Directive 2012/19/EU; European Union Radio and Telecommunications Terminal Equipment (R&TTE) Directive 1999/5/EC

WEEE NOTICE:

This appliance is labeled in accordance with European Directive 2012/19/EU concerning waste of electrical and electronic equipment (WEEE). This label indicates that this product should not be disposed of with household waste. It should be deposited at an appropriate facility to enable recovery and recycling.

Table of Contents

Overview

PR-WP-412

The AMX PR-WP-412 is a high performance HDMI switch with integrated scaling and multi-windowing technology which can connect up to four 4K UHD+ HDMI sources to up to two 4K UHD+ HDMI displays and freely switch between them. A solution for monitoring or displaying multiple sources simultaneously for use in control rooms, conference rooms or classrooms. With multi-windows display, the AMX PR-WP-412 is able to build up serval layout set up for different scenarios such as PiP (Picture in Picture) and PoP (Picture outside of Picture) as well as fully customizable quad-window modes.

Features

- 4K60 4:4:4 Support – Experience pixel-for-pixel video reproduction of 4K60 source video with full 4:4:4 color space
- HDCP 2.2 Support – Support the latest source devices
- Seamless Switch – No pausing time between full-screen video switching.
- Audio De-embed capabilities – Flexible design for use in more applications
- High Dynamic Range (HDR) Support – Support HDR10 in matrix mode
- Network Security – Support IPv4 & IPv6 networks. Support HTTPS, SSH
- Various Audio Format – PCM 2-Channel, PCM Multi-Channel, Dolby Digital, Dolby Digital Plus, Dolby Atmos, Dolby True HD, DTS, DTS HD MA

Package Contents

- 1x PR-WP-412
- 1 x 12V/3A DC Power Adapter
- 1 x US Pins
- 1 x EU Pins
- 1 x UK Pins
- 1 x AU Pins
- 3 x 3-Pin Terminal Blocks
- 4 x Shockproof Feet

Specifications

Technical	
Input	4 x HDMI IN
Input Resolution Supported	VESA 640 x 480p @ 60, 72, 75 Hz 720 x 400p @ 70, 85 Hz 800 x 600p @ 56, 60, 72, 75, 85 Hz 848 x 480p @ 60 Hz 1024 x 768p @ 60, 70, 75, 85 Hz 1152 x 864p @ 75 Hz 1280 x 768p @ 60 Hz, 75 Hz 1280 x 800p @ 60 Hz (Reduce Blanking) 1280 x 960p @ 60 Hz 1280 x 1024p @ 60, 85 Hz 1360 x 768p @ 60, 75, 85 Hz 1366 x 768p @ 60 Hz (Reduce Blanking) 1400 x 1050p @ 60 Hz (Reduce Blanking), 75 Hz 1440 x 900p @ 60 Hz (Reduce Blanking), 75, 85 Hz 1600 x 900p @ 60 Hz (Reduce Blanking) 1600 x 1200p @ 60 Hz 1680 x 1050p @ 60 Hz (Reduce Blanking) 1920 x 1200p @ 60 Hz (Reduce Blanking) 2048 x 1080p @ 50, 60 Hz 2560 x 1440p @ 60 Hz (Reduce Blanking) CEA Information Code (VIC) Formats 720 x 480i @ 59.94, 60 Hz 720 x 576i @ 50 Hz 720 x 480p @ 59.94, 60 Hz 720 x 576p @ 50 Hz 1280 x 720p @ 50, 59.94, 60 Hz 1920 x 1080i @ 50, 59.94, 60 Hz 1920 x 1080p @ 24, 25, 29.97, 30, 50, 59.94, 60 Hz 3840 x 2160p @ 24, 25, 29.97, 30, 50, 59.94, 60 Hz 4096 x 2160p @ 24, 25, 29.97, 30, 50, 59.94, 60 Hz
Input Audio Supported	PCM 2-Channel, PCM Multi-Channel, Dolby Digital, Dolby Digital Plus, Dolby Atmos, Dolby True HD, DTS, DTS HD MA
Output	2 x HDMI Out

Specifications

Technical	
Output Scaling	Yes, Auto or Manual
Output Scaling Resolutions	640 x 480p @ 60 Hz 720 x 480p @ 60 Hz 720 x 576p@ 50 Hz 800 x 600p @ 60 Hz 1280 x 720p @ 50/60 Hz 1024 x 768p @ 60 Hz 1280 x 768p, @ 60 Hz 1280 x 800p @ 60 Hz 1280 x 960p @ 60 Hz 1280 x 1024p @ 60 Hz 1360 x 768p @ 60 Hz 1366 x 768p @ 60 Hz 1400 x 1050p @ 60 Hz 1440 x 900p @ 60 Hz 1600 x 900p @ 60 Hz (Reduce Blanking) 1600 x 1200p @ 60 Hz 1680 x 1050p @ 60 Hz 1920 x 1080p @ 24, 25, 30, 50, 60 Hz 1920 x 1200p @ 60 Hz (Reduce Blanking) 3840 x 2160p @ 24, 25, 30, 50, 60 Hz 4096 x 2160p @ 24, 25, 30, 50, 60 Hz
Analog Audio Output Level(Max)	+1.6 dB, unbalanced; ≥2 kohm load
Analog Audio Output Frequency Response	< -0.5 dB to +0.2 dB, 30 Hz to 20 kHz or < -0.8 dB to +0.2 dB, 20 Hz to 20 kHz
Analog Audio Output THD+N	<0.06%, 1 kHz, -10 dB to +2 dB
Analog Audio Output SNR	>103 dB, 20 Hz to 20 kHz Vin = +2 dB
Maximum Data Rate	18Gbps
Control Method	Front panel, IR, RS232 and Web GUI

Specifications

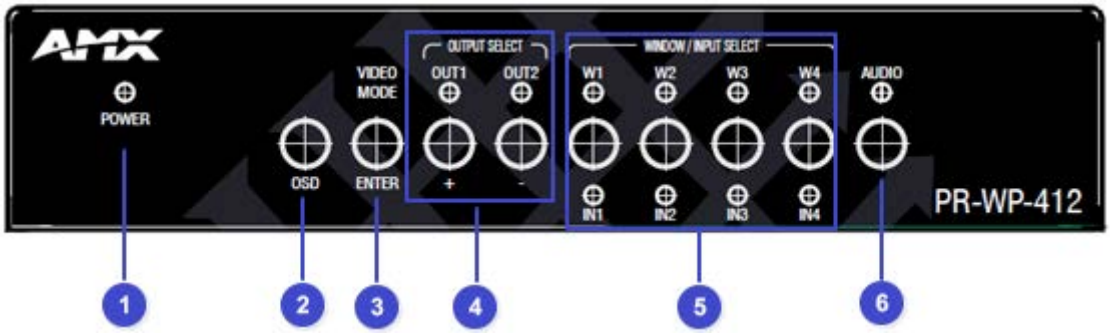
General	
Operating Temperature	32℉ (0℃) to 104℉ (40℃)
Storage Temperature	-4°F (-20°C) to 140°F (60°C)
Humidity	5% to 90% (RH (non-condensing)
Power Supply	Voltage, DC: 12V/7.5A
Power Consumption (Max)	36W
Protection	Human-body Model: ±10kV(Air-gap discharge)/±5kV(Contact discharge)
Device Dimension (W x H x D)	213mm ×44mm × 205mm/ 18.97” x 1.73” x 8.07”
Product Weight	Approx. 3.1 lbs (1.4 kg)
Certification	FCC Part 15 Class B EN 55032 EN 55035 CB IEC/EN 60950 CB IEC/EN 62368-1 UL 62368-1 RoHS/REACH EMC (Australia) EMC (Canada) EMC (UKCA) Prop65

Transmission Distance

Note: Straight-through Ethernet cable of T568B is recommended.

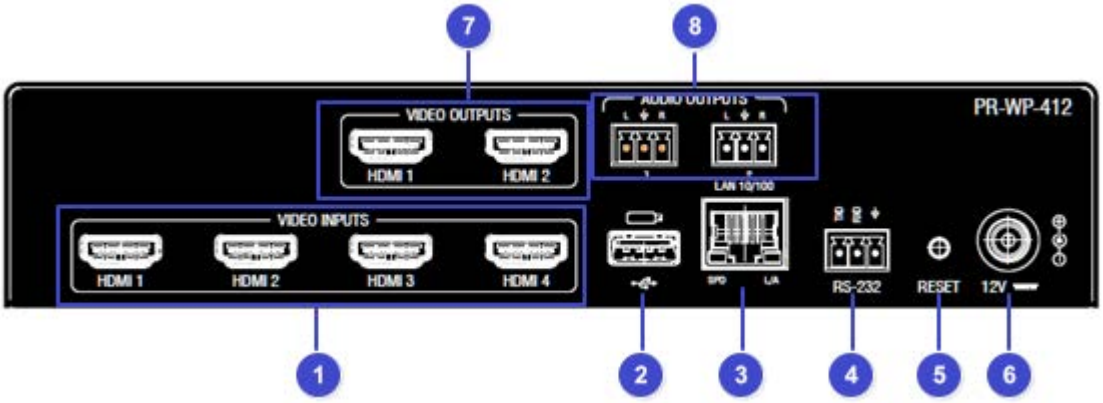
General	Range	Supported Video
HDMI Output	15m/49ft	1080P@60Hz
	10m/33ft	4K@60Hz 4:2:0
	5m/16ft	4K@60Hz 4:4:4

Front Panel Description



No.	Name	Description
1	POWER LED	Indicates the power On/Off.
2	OSD Button	Press to enable the OSD menu, or to return from menu items.
3	VIDEO MODE/ENTER Button	Press to select Video Mode between Matrix/P-in-P/3-Stack/Quad mode When the OSD Menu is enabled, press as to select a menu item.
4	OUTPUT SELECT /+ - Button with LED	Press to select output port. The according LED will turn on when selected. When the OSD Menu is enabled, press as to navigate the menu items.
5	WINDOW/INPUT SELECT Button with LED	When in Windowing Processor mode, press to select window W1~W4. Subsequent presses will cycle the input routed to that window. When in Matrix mode, press to select input IN1~IN4 The according LED will turn on when selected.
6	Audio Button with LED	Press to enter audio select mode. When the LED is on, first select and output, then an input to route audio. If the unit is in Windowing Processor mode, subsequent presses of a window/input button will toggle between selecting audio from the source routed to the related window or the source connected to the related input. When the LED is off, the unit will operate in Auto mode and audio will follow video.

Rear Panel Description



No.	Name	Description
1	VIDEO INPUTS (HDMI 1-4)	Connect to HDMI sources.
2	USB	Only for firmware update
3	LAN 10/100	Connect to network, used for Web GUI, Telnet control.
4	RS232	3-pin terminal block, connect to control system for RS232 control.
5	RESET	Reset pin hole, press to reset unit.
6	DC 12V	DC 12V power supply input.
7	VIDEO OUTPUTS (HDMI 1-2)	Connect to HDMI display devices.
8	AUDIO OUTPUTS	Audio de-embedded outputs: 3 Pins Phoenix port: L/R analog audio output.

Installation and Wiring

Brackets Installation

Warning: Before installation, ensure the device is disconnected from the power source.

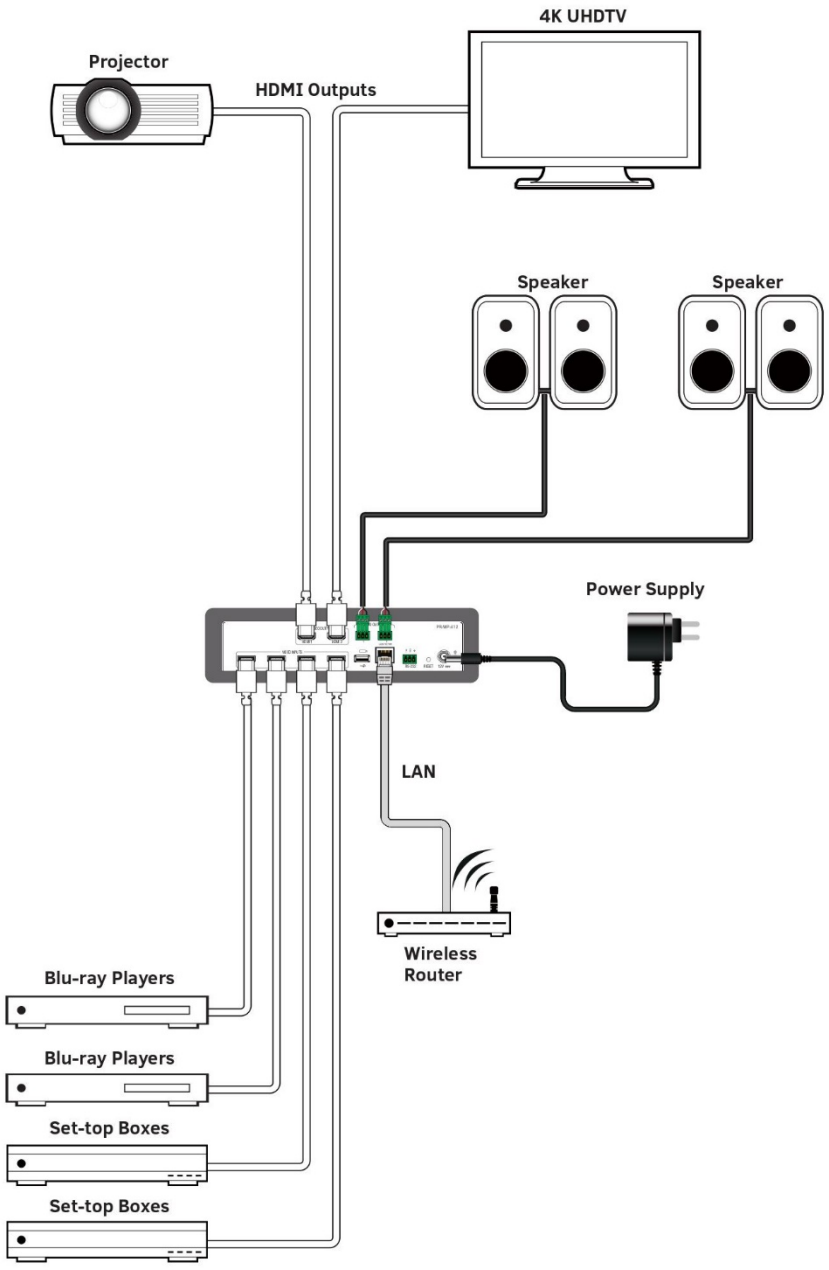
The PR-WP-412 can be mounted using V Style Surface Mounting Brackets, V Style Single Module Pole Mounting Kit, or the NMX-VRK V-Style Rack Shelf. For details, see www.amx.com.

Wiring

Warning:

Before wiring, disconnect the power from all devices. Connecting or disconnecting cables while powered, may cause damage to circuitry or possible injury. Connect and disconnect the cables with care.

1. Using high quality HDMI cables, firmly connect 4K or HD source devices (such as: Blu-Ray, computer, games console, satellite/ cable, music streaming device, CCTV etc.) to the HDMI input ports 1-4 of the processor.
2. Securely connect HDMI OUT 1-4 of the processor to HDMI IN of 4K or HD display devices, make sure all sources and displays are compatible and correctly configured.
3. Securely connect AUDIO OUT 1-2 of the processor to audio devices such as amplifier.
4. Insert the processor DC power cord. The front panel LEDs will lit on to indicate that the processor is ready for operation.
5. Warning: Always power off the processor before unplugging any HDMI cables following Last On, First Off protocol.
6. Switch between sources and displays using the processor front panel buttons, through serial RS232 or LAN.


4K UHDTV
Projector
HDMI Outputs
Speaker
Speaker
Power Supply
LAN
Wireless
Router
Blu-ray Players
Blu-ray Players
Set-top Boxes
Set-top Boxes

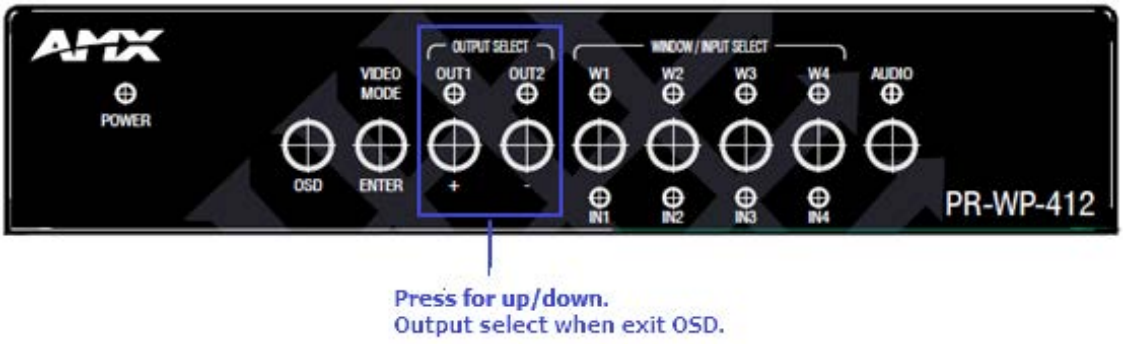
Front Panel Control

The PR-WP-412 4x2 Matrix with Windowing Processor is designed with ease of connection and control in mind. Basic switching of input sources to output displays can be achieved by pressing the front panel buttons with the front panel LEDs indicating the current input and output status of the matrix.

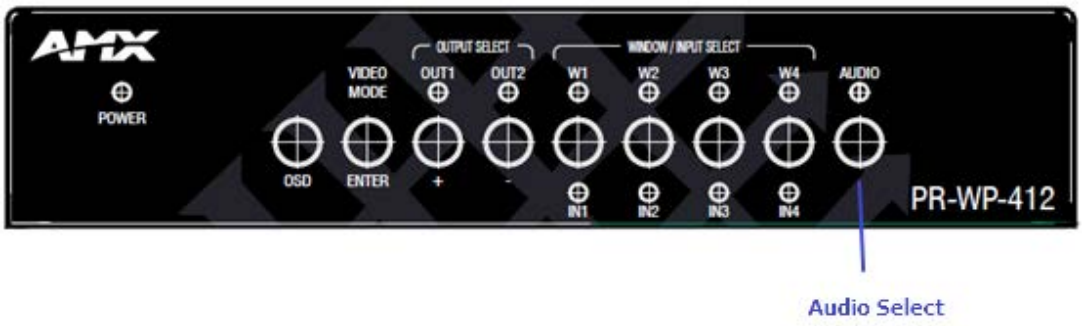
After powering up, the front panel Power LED will indicating the matrix is ready for operation.

Press the OSD Menu Button.

Press the button to select video mode, or pass it as confirm when entering OSD menu.



Press to select input or press to select the current window layout display when on Multiview mode.



Audio Select

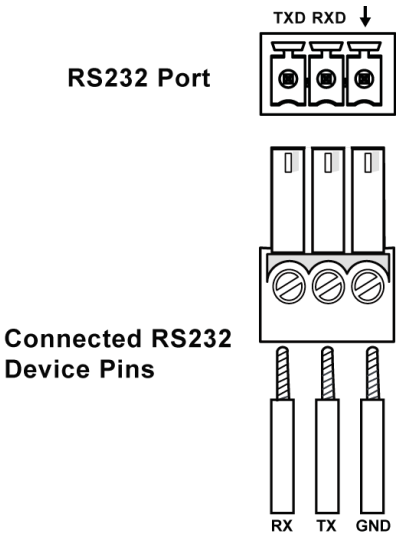
Press to toggle between Audio Select mode (LED on) and Auto mode (LED off).

Select input
Select window layout when on Multivew mode

RS232 Operation

RS232 Control

RS232 Phoenix Connector Pinout
The following figure shows the RS232 Phoenix Connector pinout. Connect with the Phoenix Connectors provided.



RS232 port is used to control the processor through RS232 serial communication.

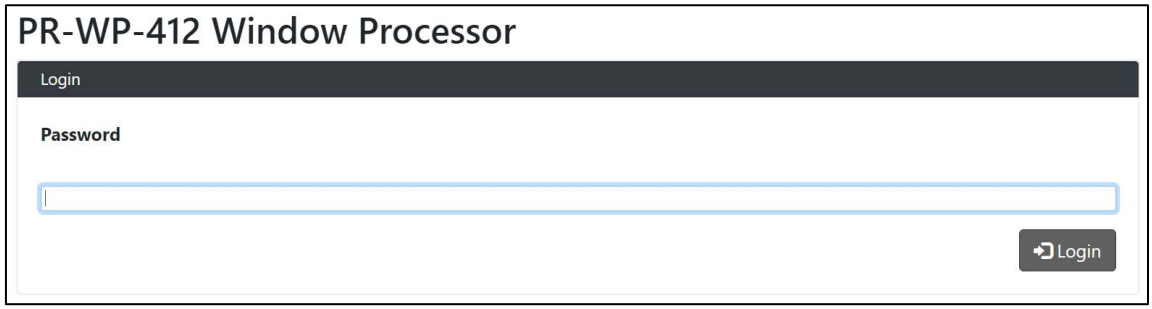
API commands for RS232 control are available in **Appendix: API Command List Instructions**.

Parameters	Value
Baud Rate	9600
Data Bits	8 bits
Parity	None
Stop Bits	1 bit
Flow Control	None

WebGUI Control

Identify the IP address of the PR-WP-412

Press the OSD button to enter the main menu, then press the ENTER button once to enter the “NETWORK STATUS” page. The current IP address will be presented on the displays connected to the HDMI OUT port.



Access the Web Interface

To access the WebGUI:

1. Connect your PC and the LAN port of the PR-WP-412 or to the same local area network.
2. Type the IP address of the unit into the address bar of the browser. The following page will pop up. Enter the default password “admin” and click “Login”. After logging in, the main screen appears.

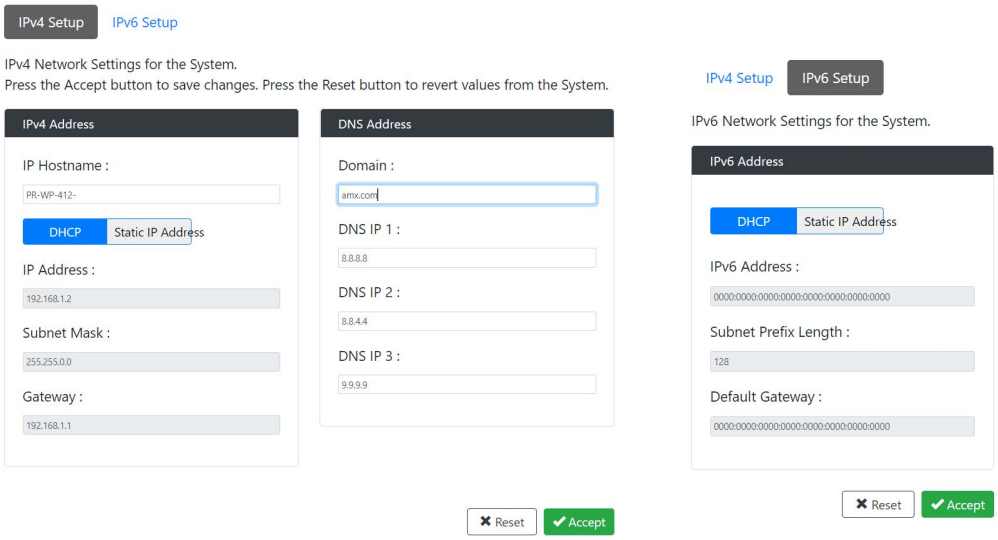
Note: Select Launch Web UI Control Page via Default Browser or type the IP address into a web browser. Chrome, Safari, Firefox, Opera and IE10+ browsers are supported. Make sure the web browser is the latest version.

Web Interface Introduction

Network

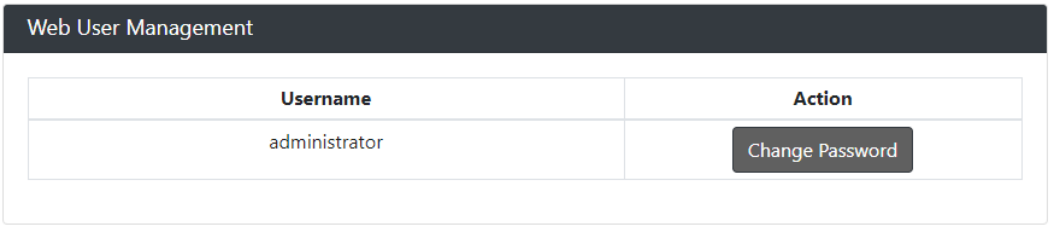
In the Network Column, users can set up the IPv4 and IPv6 environments with the following IP mode settings:

- **DHCP**: When enabled, the IP address of the PR-WP-412 will be assigned automatically by the connected DHCP server.
- **Static**: When the PR-WP-412 fails to obtain or detect an IP address from the network to which it is connected, select “Static” to set up the IP address manually.
- **Accept**: Click Apply to initiate the network setting.



Security

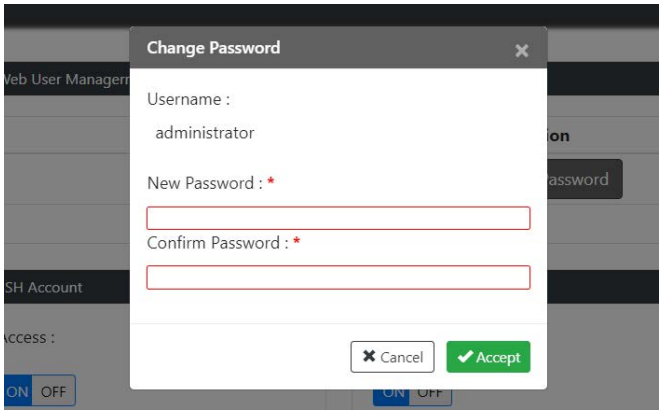
In the Security Column, modification can be made for the Login Password.



- **Web User Management**: The Login Password default is **admin**.

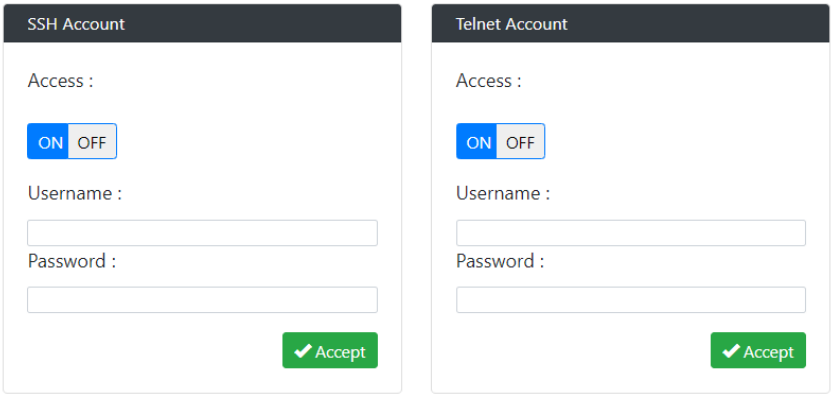
  1. Click the "**Change Password**" button and the following window pops up for new password verification.
  2. Click the "**Save**" button to save the changes.

  Note: Passwords must be 4 to 16 characters in length (alphanumeric only).



- **SSH/Telnet Account**: SSH/Telnet Account is used to configure the user name and password of the account. For SSH Account, the default user name is **admin**, the default password is **password**. For Telnet Account, the default user name and password are null.

  Note: Reboot the device for the SSH changes to take effect.



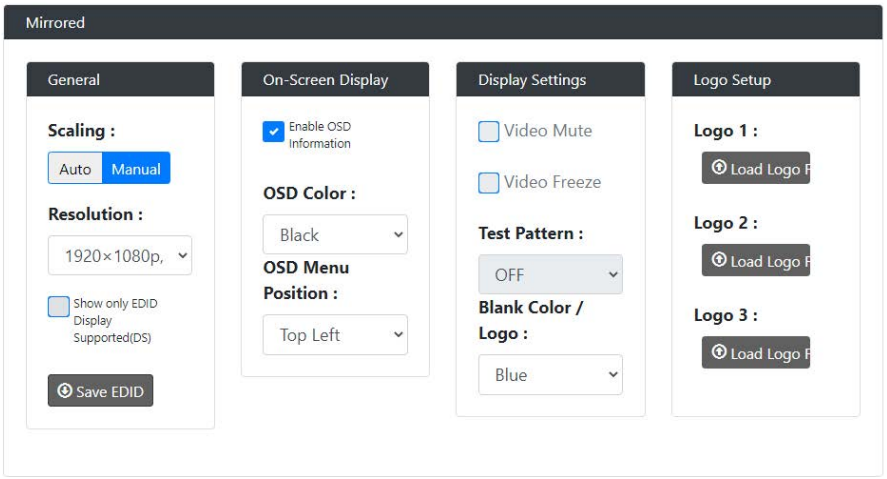
- **Certification Management**: In the Certification Management column,
  - **Private Key:** Click on the "**Browse**" button and locate the Private Key file on your local PC then click "**Open**" to install the key in the unit.
  - **Certificate:** Click on the "**Browse**" button and locate the Certificate file on your local PC then click "**Open**" to install the certificate in the unit.

- **Password:** Set the password used to encrypt the content stream. After entering the password press the "**Accept**" button to store the settings

Switcher

In the Switcher Column, 3 submenus are used to perform the settings of routing.

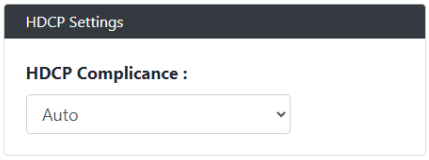
- **Configuration**:
  - **Output**:
    - **Mirrored:** This column provides control and settings of mirrored window in the Windowing mode.



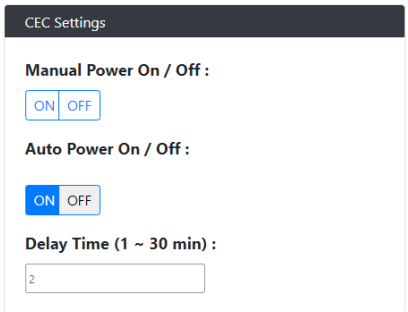
1. **General:** Set Scaling as “Auto” or “Manual”, and the resolutions of output sources from the drop-down menu.
2. **On-Screen Display:** Enable and disenable OSD information and further define its color and position.
3. **Display Settings:** Click to Mute or Freeze the output video sources. Set Blank Color/Logo from the drop-down menu.
4. **Logo Setup:** Upload at the maximum of 3 logos.

   Note: The format RGB is 8bits (256 colors) bitmap and the size is up to 960x540.

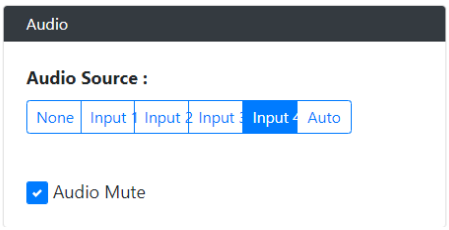
   - **HDCP Settings:** HDCP support of HDMI Input 1-4 ports can be set.



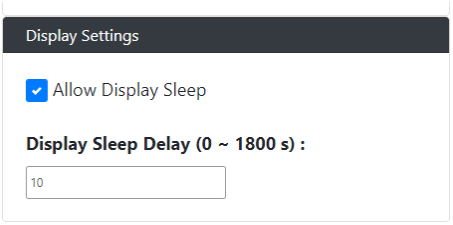
   - **CEC Settings:** Click Manual Power On/Off to execute a display manual control on/off. Click Auto Power On/Off to define a display control automatically.



- **Audio:** Select Audio Sources from “None”, “Input 1~4” and “Auto”.

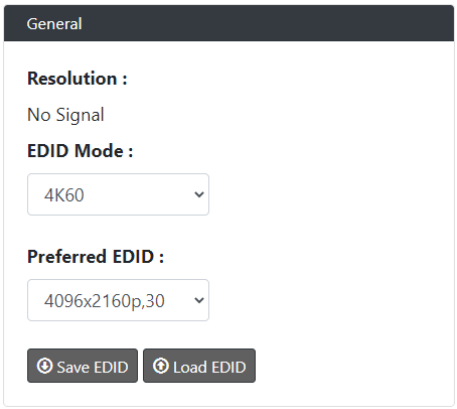


- **Display Settings:** Select whether to allow display sleep, and Display Sleep Delay from 1~1800 seconds.

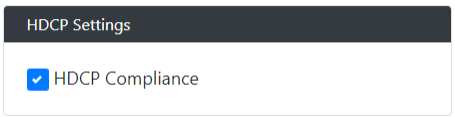


■ **Input**: This column provides control and settings of the four inputs in the Windowing mode.

- **General:** Set EDID Mode and the Preferred EDID from the drop-down menu.



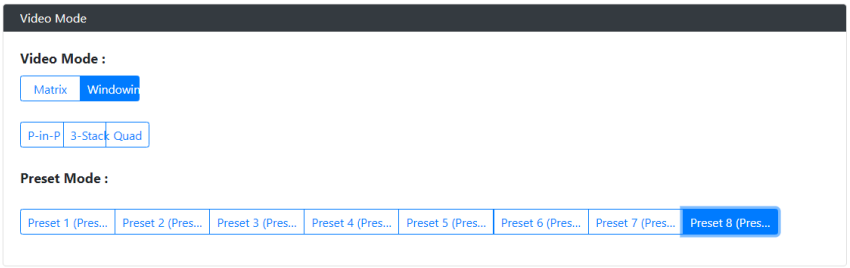
- **HDCP Settings:** Select whether to exercise HDCP Compliance.



- **Image Adjustments:** Adjust the brightness, contrast, saturation, hue and sharpness H/V.

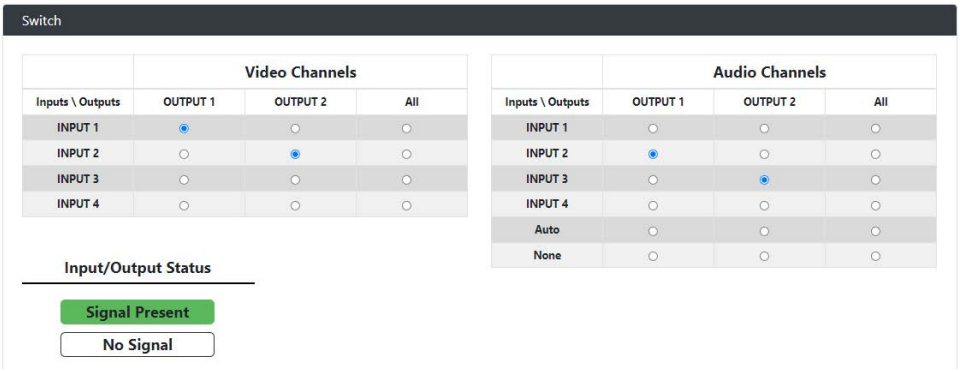
- **Switching**

- **Video Mode**: Users can freely switch between Matrix and Windowing mode (**P-in-P/3-Stack/Quad**), and a total of 8 preset modes can choose from.

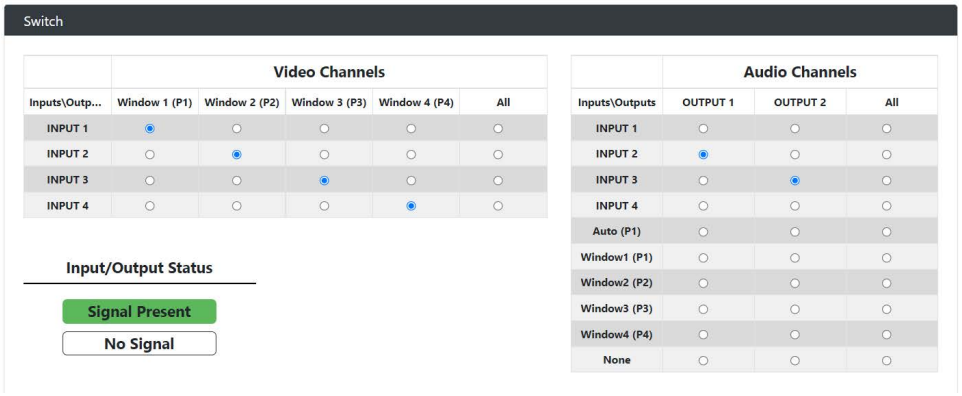


- **Switch**: The Switch manages the connection configurations of displays and sources.

  - **Matrix**



  - **Windowing**



The input/output switch allows selection of output port (display) and input port (source) for specific combinations of displays and sources within the matrix.

Click the white button, it will become blue, which represents that the input and output are routed.

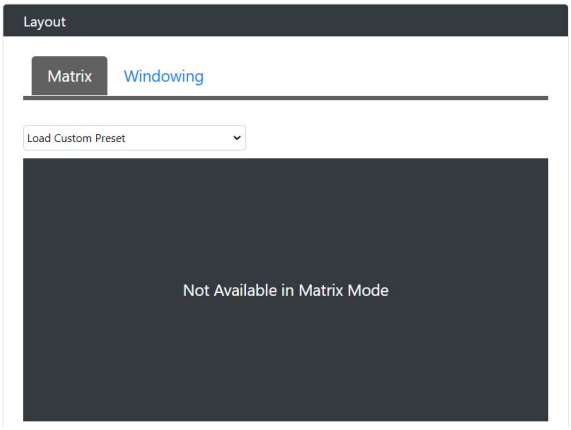
All: Route all outputs to one input.

None: Route output to none (turn off output)

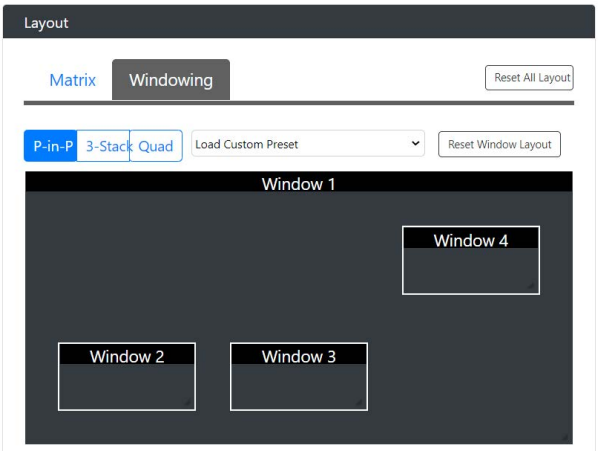
- **Windowing**

- **Layout:** This column provides control over the output layouts. When the unit is in the Matrix or Auto modes, only a limited selection of controls are available.

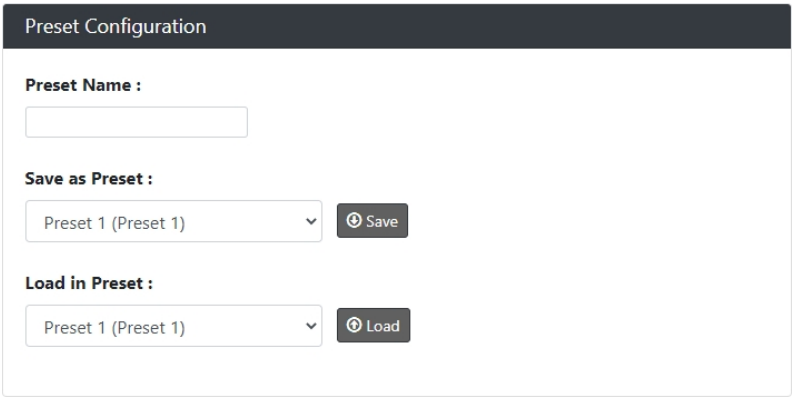
  - **Matrix**



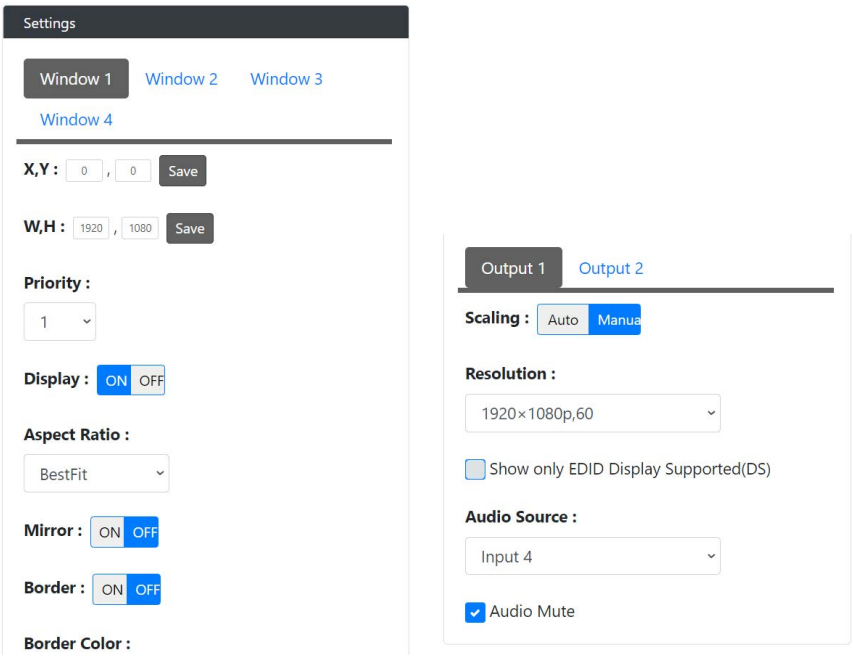
  - **Windowing**



- **Preset Configuration:** This column allows users to define presets themselves.



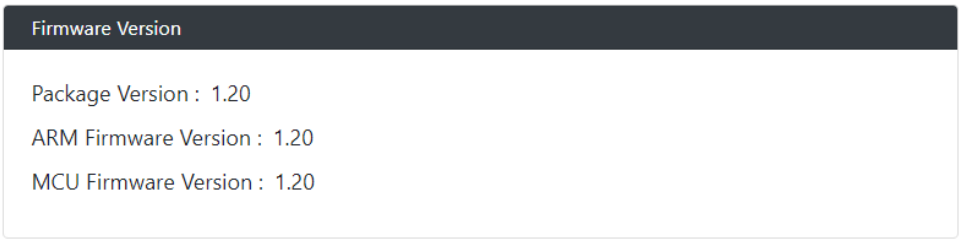
■ **Settings:** This column allows users to respectively define settings of each Input & Output in Matrix mode, and each Window & Output in Windowing mode.



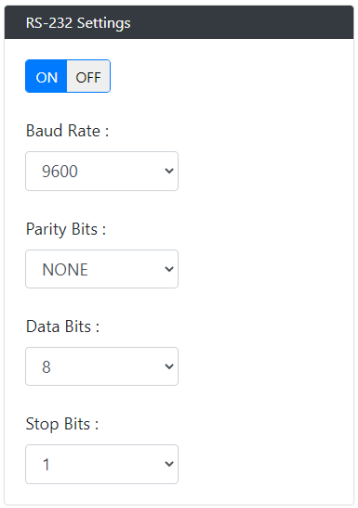
System

In the System Column, users can set up following settings:

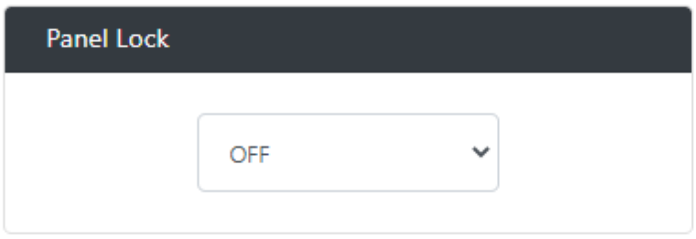
- **Firmware Version**: In the Firmware Version column, the firmware version can be checked.



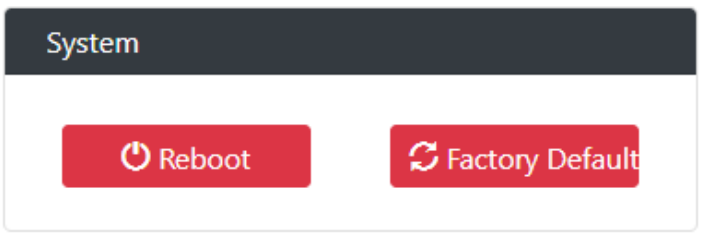
- **RS-232 Settings**: In the RS-232 Settings column, users can choose to turn "**ON**" or "**OFF**" the RS-232 stream and set the following configuration:
  - **Baud Rate**: Set the baud rate. The available range is from 2400 to 115200 baud.
  - **Parity Bits**: Set the connection parity bit. The available options are: none, odd, and even.
  - **Data Bits**: Set the number of data bits. The available range is from 7 to 8.
  - **Stop Bits**: Set the number of stop bits. The available range is from 1 to 2.



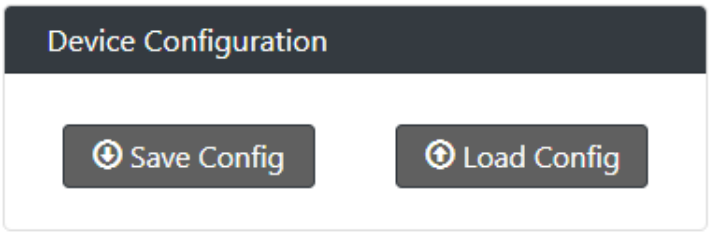
- **Panel Lock**: In the Panel Lock column, the front panel lock can be set as **"OFF"**, **"Menu"** or **"ALL"**.



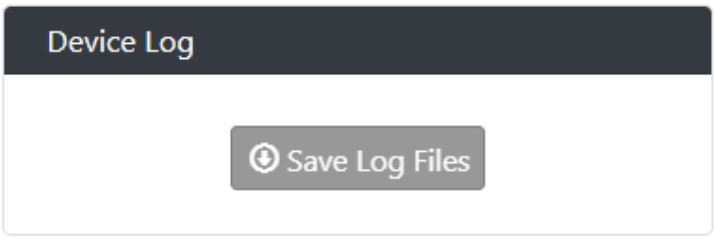
- **System**: In the System column, the unit can be set to "**Reboot**" and "**Factory Default".**



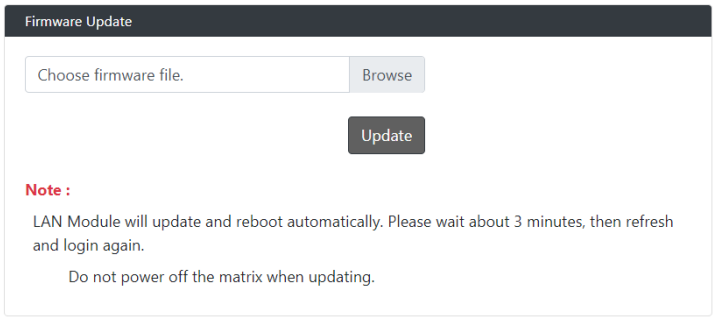
- **Device Configuration**: In the Device Configuration column, the current configuration can be saved and saved settings can be loaded.
  - **Save Config**: Save current settings as a setting file to be saved to a PC.
  - **Load Config:** Click to load a setting file from PC to Matrix.



- **Device Log**: In the Device Log column, log files can be saved to a PC.



- **Firmware Update**: In the Firmware Update column, the firmware can be upgraded.



Firmware Upgrade

The PR-WP-412 uses KIT files for firmware upgrade.

Before Starting

1. Download the latest firmware (KIT) file to your PC. (Place KIT files on a local drive for the fastest throughput.)
2. Verify the following:
   - Verify that an Ethernet/RJ-45 cable is connected from the PR-WP-412 to the same network as the control system.
   - Verify the PR-WP-412 unit is powered ON.
3. Launch WebGUI page before you upgrade firmware to know the status of upgrading. More information, please refer to **UPGRADE STATUS** part in **WebGUI Control** section.

Firmware Upgrade through WebGUI

The system will be non-operational during the upgrade procedure below.

1. In the **Switcher Configuration** menu, enter the “System” page and then click “Browse” in the **Firmware Update** Column to open the file selection window.
2. Select the appropriate KIT file from the target directory.
3. Click “Update” to start firmware upgrading. The “Power” LED turns RED and keeps flashing.
4. Once the "Power" LED turns GREEN and stop flashing, the unit finishes upgrading and auto reboots to active.

Firmware Upgrade through USB

The system will be non-operational during the upgrade procedure below.

1. Copy firmware file to folder in USB original disk
2. Insert USB Disk to USB Type A program port
3. Press ID button on the rear panel 5 times in a row, and the unit starts upgrading when the “Power” LED turns RED and keeps flashing.
4. Once the "Power" LED turns GREEN and stop flashing, the unit finishes upgrading and auto reboots to active.

Troubleshooting

1. Power: Ensure all devices are powered on (sources, transmitter, receiver and display).
2. Indicator: Please make sure all LED indicators of the receiver is normal according to the user manual.
3. Devices: Ensure picture can be shown normally when directly connecting a source to a display device.
4. Cable: Plug in and out HDMI cable or try another HDMI cable.
5. Ensure the cable length being used is within available transmission range according to the Specification Section.
6. Compatibility: Test other source and display devices to determine correct compatibility.

Appendix: API Command List Instructions

System Commands

No.	Command	Description	Variables	Example
1.	? Or help	Display the commands listed in the table		**Command sent:** >? **Response:** ---------- Help ---------- ---System Commands--- ? Or help This list ping ping to specified IP address fwversion Request the firmware version of the device ….
2.	?<*command*>	Show details about the specified command function		**Command sent:** >?set vidin hdcp **Response:** --- Description: Set the HDCP mode for the specified input Example: Command send: set vidin hdcp:1,off response: set HDCP compliance off for input port 1 ---
3.	ping	Ping to specified IP address		**Command sent:** >ping 192.168.1.2 **Response:** ping 192.168.1.2 is alive.
4.	fwversion	Request the firmware version of the device ***NOTE: Command response shall list all upgradable components firmware version***		**Command sent:** >fwversion **Response:** Package: 1.39 ARM: 1.39 MCU: 1.39
5.	fwupdatestatus	Report device's firmware update status with node		**Command sent:** >fwupdatestatus **Response:**

		number		device firmware update status -100% Firmware update status: copying file from web finish device firmware update status -99% Firmware update status: Updating MCU device firmware update status -97% device firmware update status -94% device firmware update status -90% device firmware update status -70% Firmware update status: Updating APP device firmware update status -60% device firmware update status -19% device firmware update status -0% Firmware update status: Update complete Firmware update status: Please wait system reboot, do not power off device
6.	reboot	Reboot the device		**Command sent:** >reboot **Response:** Rebooting……
7.	reset factory	Force the unit to a factory state (except for IP Settings)		**Command sent:** >reset factory **Response:** Resetting device to factory default parameters. Device will automatically reboot shortly. Do NOT power off.
8.	factoryfwimage	Restore device to factory firmware image		**Command sent:** >factoryfwimage **Response:** Are you sure you wish to reset factory parameters, and load the factory firmware image of Version <factory image fw version> (Y/N) ->y --Notice:it will take some time, please keep device power on-- Start restore to factory firmware image……
9.	get sn	Get device serial number		**Command sent:** >get sn **Response:** Serial Number:123456789
10.	set serial <on/off>	Set serial port on or off		**Command sent:** >set serial on **Response:** Serial port is on

11.	get baud	Get serial port current communicate parameters		**Command sent:** >get baud **Response:** --Current serial setting-- baud rate:9600 data bit:8 parity:none stop bit:1
12.	set baud	Set serial port communicate parameters		**Command sent:** >set baud **Response:** --Serial port setting-- Enter baud rate(115200,57600,38400,19200,9600,4800,2400):115200->115200 Enter data bit(8 or 7):8->8 Enter parity (E for Even, O for Odd, N for none):N->O Enter stop bit (1 or 2):1->1 --You have entered: Baud rate:115200 Data bit:8 Parity:odd Stop bit:1 Would you like to save the new settings? Y/N ->y New settings were saved >--Current serial port baud rate: 115200 >--Current serial port data bit: 8 >--Current serial port parity: odd >--Current serial port stop bit: 1
13.	get key lock	Get front panel key lock state		**Command sent:** >get key lock **Response:** --Current key lock level state:off
14.	set key lock	Set front panel key lock level, all for lock all front panel key button, menu for only lock menu key button		**Command sent:** >set key lock **Response:** --Front panel key lock level Setting-- Enter key lock level (All for all key button, Menu for only menu button, Off for no key button) ->menu Key lock is set to menu

				>--Current key lock level state:menu
15.	exit	Close telnet/ssh window session ***<u>NOTE: The command sent by Serial port is not supported</u>***		**Command sent:** >exit

Network Commands

No.	Command	Description	Variables	Example
1.	get friendly	Get device's hostname		**Command sent:** >get friendly **Response:** --Current device friendly name:PR-WP-412
2.	set friendly	Set device's hostname		**Command sent:** >set friendly **Response:** Please input friendly name: Old friendlyname: PR-WP-412 New friendlyname: PR-WP-412 Would you like to save this setting(Y/N)y Setting is ok , you should reboot that make it effective >--Current device friendly name:PR-WP-412
3.	get ip	Show the IP configuration of this device		**Command sent:** >get ip **Response:** IP Settings ---------- HostName: PR-WP-412 Type: dhcp IP Address: 192.168.5.149 Subnet Mask: 255.255.255.0 Gateway IP: 192.168.5.254 MAC Address: f8:22:85:00:14:72
4.	set ip	Setup the IP configuration of this device		**Command sent:** >set ip **Response:** Enter Host Name: PR-WP-412 Enter IP type. Type D for DHCP, or S for Static IP and then Enter:S Enter IP Address: 192.168.1.20->192.168.1.20 Enter Subnet Mask: 255.255.255.0->255.255.255.0 Enter Gateway IP: 0.0.0.0->0.0.0.0 --You have entered: Host Name PR-WP-412 Type Static IP IP Address 192.168.1.20 Subnet Mask 255.255.255.0 Gateway IP 0.0.0.0

				Is this correct? Type Y or N and Enter ->y Settings written. Device must be rebooted to enable new settings. >Current device friendly name:PR-WP-412 >--Current IP mode: static >--Current IP Address: 192.168.1.20 >--Current Subnet Mask: 255.255.255.0 >--Current Gateway IP: 0.0.0.0
5.	get dns	Get device's DNS address		**Command sent:** >get dns **Response:** DNS Servers ---------- Domain suffix: www.amx.com Entry 1: 8.8.8.8 Entry 2: 8.8.4.4 Entry 3: 9.9.9.9
6.	set dns	Set device's DNS address		**Command sent:** >set dns **Response:** Enter Domain Suffix: www.amx.com Enter DNS Entry 1 : 8.8.8.8 Enter DNS Entry 2 : 8.8.4.4 Enter DNS Entry 3 : 9.9.9.9 You have entered: Domain Name: www.amx.com DNS Entry 1: 8.8.8.8 DNS Entry 2: 8.8.4.4 DNS Entry 3: 9.9.9.9 Is this correct? Type Y or N and Enter ->Y Settings written. Device must be rebooted to enable new settings. >--Current Domain Name: www.amx.com >--Current DNS Entry 1: 8.8.8.8 >--Current DNS Entry 2: 8.8.4.4 >--Current DNS Entry 3: 9.9.9.9
7.	get ethernet mode	Get ethernet mode		**Command sent:** >get ethernet mode **Response:** --Current ethernet mode : auto
8.	set ethernet mode	Set ethernet mode		**Command sent:**

		to auto, 100full or 10 half		>set ethernet mode **Response:** Current ethernet mode : auto Enter new ethernet mode(Auto, 100 full or 10 half) ->10 half --Warning: When setting ethernet mode to 10 half, it must reset device to factory default if need change etherment mode to be Auto/100 full.-- Would you like to set the ethernet mode (y/n):y New ethernet mode set, reboot the device for the change to take effect. >--Current ethernet mode : 10 half
9.	renew dhcp	Renew the DHCP lease (may cause telnet disconnection)		**Command sent:** >renew dhcp **Response:** You may need to re-establish the telnet session since the device will re-acquire an IP address lease. >--Current IP Address: 0.0.0.0 >--Current Subnet Mask: 0.0.0.0 >--Current Gateway IP: 0.0.0.0 >--Current Domain Name: cypress.local >--Current DNS Entry 1: 10.10.10.5 >--Current DNS Entry 2: 10.10.10.2 >--Current DNS Entry 3: 0.0.0.0 >--Current IP Address: 192.168.5.149 >--Current Subnet Mask: 255.255.255.0 >--Current Gateway IP: 192.168.5.254 >--Current Domain Name: www.amx.com >--Current DNS Entry 1: 8.8.8.8 >--Current DNS Entry 2: 8.8.4.4 >--Current DNS Entry 3: 9.9.9.9

Security Commands

No.	Command	Description	Variables	Example
1.	set telnet port	Set the device's IP port listened to for Telnet connections ***NOTE: This command requires a reboot to enable new settings*** ***IMPORTANT: If you set the Telnet port to "0" to disable it, you will need to reset it in WebGUI***		**Command sent:** >set telnet port **Response:** Current telnet port number = 23 Enter new telnet port number(0 = disable telnet) ->23 Setting telnet port number to 0 New telnet port number set, reboot the device for the change to take effect. >--Current telnet port: 23
2.	set telnet username	Set the Username for a secure Telnet session Default = blank (no username required)		**Command sent:** >set telnet username **Response:** Enter Telnet new username ->123 Would you like to set this username (y/n) ->y (please set telnet password) Changed && Saved
3.	set telnet password	Set the Username for a secure Telnet session Default = blank (no username required)		**Command sent:** >set telnet password **Response:** Enter Telnet new password ->123 Would you like to set this password (y/n) ->y Changed && Saved
4.	set ssh port	Set the device's IP port listened to for SSH connections ***NOTE: This command requires a reboot to enable new settings.*** ***IMPORTANT: If you set the SSH port to "0" to disable it,***		**Command sent:** >set ssh port **Response:** Current SSH port number = 22 Enter new SSH port number(0 = disable ssh) ->22 Setting SSH port number to 22 New SSH port number set, reboot the device for the change to take effect. >--Current SSH port: 22

		<u>you will need to reset it in WebGUI</u> ***<u>NOTE: This command is supported by SSH only, not by telnet</u>***		
5.	set ssh username	Set the Username for a secure SSH session ***<u>NOTE: This command is supported by SSH only, not by telnet</u>***		**Command sent:** >set ssh username **Response:** Enter SSH new username ->123 Would you like to set this username (y/n) ->y (please set SSH password) Changed && Saved
6.	set ssh password	Set the Username for a secure SSH session ***<u>NOTE: This command is supported by SSH only, not by telnet</u>***		**Command sent:** >set ssh password **Response:** Enter SSH new password ->123 Would you like to set this password (y/n) ->y Changed && Saved

Configuration Commands-Input

No.	Command	Description	Variables	Example
1.	get vidin portname:*<input channel>*	Get the name of the specified input	*<input channel>= 1~4*	**Command sent:** >get vidin portname:1 **Response:** get input port 1 named as meeting room 1
2.	set vidin portname:*<input channel>,<name>*	Set the name of the specified input	*<input channel>= 1~4* *<name= name string*	**Command sent:** >set vidin portname:1,123 **Response:** set input port 1 named as meeting room 2
3.	get vidin hdcp:*<input channel>*	Get the HDCP mode for the specified input	*<input channel>= 1~4*	**Command sent:** >get vidin hdcp:1 **Response:** get HDCP compliance on for input port 1
4.	set vidin hdcp:*<input channel>,<hdcp_compliance>*	Set the HDCP mode for the specified input	*<input channel>= 1~4* *<hdcp_compliance> = on/off*	**Command sent:** >set vidin hdcp:1,on **Response:** set HDCP compliance on for input port 1
5.	get vidin res*:<input channel>*	Get input video resolution for the specified input	*<input channel>= 1~4*	**Command sent:** >get vidin res:1 **Possible response message includes:** ▪ get 1920x1080p,60 video input 1 ▪ get no video input 1
6.	get vidin edidmode:*<input channel>*	Get edid mode for the specified input	*<input channel>= 1~4*	**Command sent:** >get vidin edidmode:1 **Response:** get input 1 edid mode set to all hd resolutions
7.	set vidin edidmode:*<input channel>,<edid_mode>*	Set edid mode for the specified input	*<input channel>= 1~4* *<edid_mode=* *{* *Auto* *All HD RESOLUTIONS* *HD WIDE SCREEN* *HD FULL SCREEN* *4K* *4K60* *Custom* *MIRROR OUTPUT1* *MIRROR OUTPUT2* *MIRROR OUTPUT3* *MIRROR OUTPUT4*	**Command sent:** >set vidin edidmode:1,MIRROR OUTPUT1 **Response:** set input 1 edid mode to MIRROR OUTPUT1

			MIRROR OUTPUT5 *MIRROR OUTPUT6* *MIRROR OUTPUT7* *MIRROR OUTPUT8* *}*	
8.	get vidin prefedid:*<input channel>*	Get preferred resolution in the current edid used for the specified input, no matter it is under which EDID mode	*<input channel>= 1~4*	**Command sent:** >get vidin prefedid:1 **Response:** get preferred edid set to 1920x1080p,60 for input 1
9.	set vidin prefedid:*<input channel>,<edid>*	Set preferred edid for the specified input	*<input channel>= 1~4* *<edid>= <H>x<V><i/p>,<Rate><Specific Info>* *{* *(refer to AMX EDID Library)* *640x400,85* *640x480,60* *640x480,72* *640x480,75* *640x480,85* *720x400,85* *720x480p,60* *720x480p,120* *720x480p,240* *720x576p,50* *720x576p,100* *720x576p,200* *800x600,56* *800x600,60* *800x600,72* *800x600,75* *800x600,85* *848x480,60* *848x480,75* *848x480,85*	**Command sent:** >set vidin prefedid:1,1920x1080p,60 **Response:** set preferred edid to 1920x1080p,60 for input 1

			1024x640,60 *1024x768,60* *1024x768,70* *1024x768,75* *1024x768,85* *1152x864,75* *1280x720,50* *1280x720,60* *1280x720p,60* *1280x720p,100* *1280x720p,120* *1280x768,59* *1280x768,60* *1280x768,74* *1280x768,75* *1280x768,85* *1280x800,60* *1280x960,60* *1280x960,85* *1280x1024,60* *1280x1024,75* *1280x1024,85* *1360x764,60* *1360x768,60* *1440x900,60* *1440x900,75* *1440x900,85* *1400x1050,60* *1400x1050,75* *1600x1200,60* *1680x1050,60* *1920x1080i,50* *1920x1080i,60* *1920x1080p,24* *1920x1080p,25* *1920x1080p,30* *1920x1080p,50* *1920x1080,60* *1920x1080p,60* *1920x1200,59*	

			1920x1200,60 *3840x2160p,24* *3840x2160p,25* *3840x2160p,30* *4096x2160p,24* *4096x2160p,25* *4096x2160p,30* *3840x2160p,50* *3840x2160,50* *3840x2160p,60* *3840x2160p,60CVR* *4096x2160p,50* *4096x2160p,60* *}*	
10.	get vidin ediddata:*<input channel>*	Get the current edid data used for the specified input port	*<input channel>= 1~4*	**Command sent:** >get vidin ediddata:1 **Response:** >get vidin ediddata:1 get ediddata for input 1 is: 00 FF FF FF FF FF FF 00 05 B8 00 18 02 00 00 00 20 1E 01 03 80 00 00 78 0E EE 95 A3 54 4C 99 26 0F 50 54 FF FF 80 D1 00 B3 00 A9 40 81 00 81 C0 81 80 8B C0 95 00 02 3A 80 18 71 38 2D 40 58 2C 45 00 40 84 63 00 00 1E 02 3A 80 18 71 38 2D 40 58 2C 45 00 40 84 63 00 00 1E 00 00 00 FD 00 17 78 0F 87 3C 00 0A 20 20 20 20 20 20 00 00 00 FC 00 41 4D 58 5F 48 44 4D 49 31 30 76 32 0A 01 92 02 03 3A 70 6E 03 0C 00 11 00 80 3C 20 00 80 01 02 03 04 67 D8 5D C4 01 78 80 00 57 61 60 5F 5E 5D 64 62 63 10 20 22 1F 21 05 14 04 03 13 07 12 16 27 01 E2 0F 03 23 09 07 07 D1 3D 80 80 72 B0 26 40 78 C8 36 00 40 E8 63 00 00 1C 28 3C 80 A0 70 B0 23 40 30 20 36 00 40 E8 63 00 00 1A 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7A
11.	set vidin ediddata:*<input channel>,<edid_data>*	Set edid data for the specified input channel as custom edid ***NOTE: EDID mode will be set to Custom***	*<input channel>= 1~4* *<edid_data>= 256byte EDID Data*	**Command sent:** >set vidin ediddata:1,256byte EDID Data **Response:** set input 1 to custom edid mode and custom edid data to be: 0E 0D DA 10 00 00 01 00 00 00 7C 00 00 00 00 00 00 00 77 00 00 00 30 11 B6 7E DC 97 EE 76 20 7C EE 76 00 90 EE 76 00 00 00 00 00 02 00 00 50 71 D4 01 E8 74 D4 01 70 00 00 00 50 71 D4 01 E8 74 D4 01 FF FF FF FF

		automatically when uploading edid by the command		F0 AF D4 01 02 00 00 00 84 60 07 00 02 5E 05 00 08 00 00 00 18 57 02 00 F3 D8 0F 60 60 11 B6 7E F3 D8 0F 60 BE 66 07 00 06 00 00 00 26 00 00 00 26 00 00 00 06 00 00 00 26 00 00 00 15 00 00 00 D4 7C 02 00 07 5E 05 00 26 00 00 00 18 D0 01 00 00 00 00 00 44 2C 20 20 2C 20 44 2C 20 61 2C 20 74 2C 20 61 2C 20 00 2C 20 00 2C 20 62 2C 20 79 2C 20 74 2C B0 11 B6 7E 01 00 00 00 54 54 01 00 00 00 00 00 C8 55 01 00 BC 11 B6 7E 34 32 39 34 39 36 37 32 39 35 00 00 01 00 00 00 6C 51 01 00 F3 D8 0F 60 31 11 B6 7E F3 D8 0F 60 8F 64 07 00 00 00 00 00 00 00 00 00 >set input 1 to custom edid mode >get ediddata for input 1 is: 25 0B 0E 0D DA 10 00 00 01 00 00 00 7C 00 00 00 00 00 00 00 77 00 00 00 30 11 B6 7E DC 97 EE 76 20 7C EE 76 00 90 EE 76 00 00 00 00 00 02 00 00 50 71 D4 01 E8 74 D4 01 70 00 00 00 50 71 D4 01 E8 74 D4 01 FF FF FF FF F0 AF D4 01 02 00 00 00 84 60 07 00 02 5E 05 00 08 00 00 00 18 57 02 00 F3 D8 0F 60 60 11 B6 7E F3 D8 0F 60 BE 66 07 00 06 00 00 00 26 00 00 00 26 00 00 00 06 00 00 00
12.	get vidin brightness:*<input channel>*	Get brightness setting for the specified input	*<input channel>= 1~4*	**Command sent:** >get vidin brightness:1 **Response:** get brightness set to 100 for input 1
13.	set vidin brightness:*<input channel>,<brightness>*	Set brightness for the specified input	*<input channel>= 1~4* *<brightness= 0~100 (50 is bypass)*	**Command sent:** >set vidin brightness:1,50 **Response:** set brightness to 50 for input 1
14.	get vidin contrast:*<input channel>*	Get contrast setting for the specified input	*<input channel>= 1~4*	**Command sent:** >get vidin contrast:1 **Response:** get contrast set to 100 for input 1
15.	set vidin contrast:*<input channel>,<contrast>*	Set contrast for the specified input	*<input channel>= 1~4* *<contrast= 0~100 (50 is bypass)*	**Command sent:** >set vidin constrast:1,50 **Response:** set contrast to 50 for input 1
16.	get vidin saturation:*<input channel>*	Get saturation setting for the specified input	*<input channel>= 1~4*	**Command sent:** >get vidin satuation:1 **Response:** get saturation set to 50 for input 1
17.	set vidin	Set saturation for	*<input channel>=*	**Command sent:**

	saturation:*<input channel>,<saturation>*	the specified input	*1~4* *<saturation= 0~100 (50 is bypass)*	>set vidin satuation:1,100 **Response:** set saturation to 100 for input 1
18.	get vidin hue:*<input channel>*	Get hue setting for the specified input	*<input channel>= 1~4*	**Command sent:** >get vidin hue:1 **Response:** get hue set to 50 for input 1
19.	set vidin hue:*<input channel>,<hue>*	Set hue for the specified input	*<input channel>= 1~4* *<hue= 0~100 (50 is bypass)*	**Command sent:** >set vidin hue:1,100 **Response:** set hue to 100 for input 1
20.	get vidin sharpnessh:*<input channel>*	Get sharpness h setting for the specified input	*<input channel>= 1~4*	**Command sent:** >get vidin sharpnessh:1 **Response:** get sharpnessh set to 10 for input 1
21.	set vidin sharpnessh:*<input channel>,<sharpnessh>*	Set sharpness h for the specified input	*<input channel>= 1~4* *<sharpnessh= 0~20 (10 is bypass)*	**Command sent:** >set vidin sharpnessh:1,20 **Response:** set sharpnessh to 20 for input 1
22.	get vidin sharpnessv:*<input channel>*	Get sharpness v setting for the specified input	*<input channel>= 1~4*	**Command sent:** >get vidin sharpnessv:1 **Response:** get sharpnessv set to 10 for input 1
23.	set vidin sharpnessv:*<input channel>,<sharpnessv>*	Set sharpness v for the specified input	*<input channel>= 1~4* *<sharpnessv= 0~20 (10 is bypass)*	**Command sent:** >set vidin sharpnessv:1,20 **Response:** set sharpnessv to 20 for input 1
24.	get vidin aspect ratio:*<input channel>*	Get aspect ratio setting for the specified input	*<input channel>= 1~4*	**Command sent:** >get vidin aspect ratio:1 **Response:** get aspect ratio set to best fit for input 1
25.	set vidin aspect ratio:*<input channel>,<aspect ratio>*	Set aspect ratio for the specified input	*<input channel>= 1~4* *<aspect ratio>= {* *full,* *best fit,* *16:9,* *16:10,* *4:3,* *user*	**Command sent:** >set vidin aspect ratio:1,user **Response:** set aspect ratio to user for input 1 >set position y of window 1 to 0 >set the height size for window 1 to 480 >set aspect ratio to user for input 1

			}	
26.	get vidin border:*<input channel>*	Get the border on or off for the specified input ***NOTE: The command is only supported for PR-WP-412 under Matrix Mode***	*<input channel>= 1~4*	**Command sent:** >get vidin border:1 **Response:** get the border on for input 1
27.	set vidin border:*<input channel>, <state>*	Set the border on or off for the specified input ***NOTE: The command is only supported for PR-WP-412 under Matrix Mode***	*<input channel>= 1~4* *<state>= on/off*	**Command sent:** >set vidin border:1,off **Response:** set the border off for input 1
28.	get vidin border color*:<input channel>*	Get the border color setting for the specified input ***NOTE: The command is only supported for PR-WP-412 under Matrix Mode***	*<input channel>= 1~4* *<color>=* *{* *bk for Black,* *r for Red,* *g for Green,* *b for Blue,* *y for Yellow,* *m for Magenta,* *c for Cyan,* *w for White,* *dr for Dark Red,* *dg for Dark Green,* *db for Dark Blue,* *dy for Dark Yellow,* *dm for Dark Magenta,* *dc for Dark Cyan,* *gr for Gray* *}*	**Command sent:** >get vidin border color:1 **Response:** get the border color black for input 1

29.	set vidin border color:*<input channel>,<color>*	Set the border color setting for the specified input ***NOTE: The command is only supported for PR-WP-412 under Matrix Mode***	*<input channel>= 1~4* *<color>=* *{* *bk for Black,* *r for Red,* *g for Green,* *b for Blue,* *y for Yellow,* *m for Magenta,* *c for Cyan,* *w for White,* *dr for Dark Red,* *dg for Dark Green,* *db for Dark Blue,* *dy for Dark Yellow,* *dm for Dark Magenta,* *dc for Dark Cyan,* *gr for Gray* *}*	**Command sent:** >set vidin border color:1,g **Response:** set the border color green for input 1
30.	get vidin mirror:*<input channel>*	Get the video mirror state from specified input ***NOTE: The command is only supported for PR-WP-412 under Matrix Mode***	*<input channel>= 1~4*	**Command sent:** >get vidin mirror:1 **Response:** get the video mirror off for input 1
31.	set vidin mirror:*<input channel>,<state>*	Set the video mirror on or off state for specified input ***NOTE: The command is only supported for PR-WP-412 under Matrix Mode***	*<input channel>= 1~4* *<state>= on/off*	**Command sent:** >set vidin mirror:1,on **Response:** set the video mirror on for input 1

Configuration Commands-Output

No.	Command	Description	Variables	Example
1.	get vidout portname:*<output channel>*	Get the name of the specified output port	*<output channel>= 1~2*	**Command sent:** >get vidout portname:1 **Response:** output 1 is named as meeting room 1
2.	set vidout portname:*<output channel>,<name>*	Set the name of the specified output port	*<output channel>= 1~2* *<name= name string*	**Command sent:** >set vidout portname:1,Meeting Room 2 **Response:** output 1 is named as meeting room 2
3.	get vidout hdcp:*<output channel>*	Get HDCP mode for the specified output	*<output channel>= 1~2*	**Command sent:** >get vidout hdcp:1 **Response:** output 1 is set to AUTO HDCP mode
4.	set vidout hdcp:*<output channel>,<hdcp_mode>*	Set HDCP mode for the specified output	*<output channel>= 1~2* *<hdcp_mode= { AUTO, HDCP2.2, HDCP1.4, NO-HDCP }*	**Command sent:** >set vidout hdcp:1,hdcp2.2 **Response:** output 1 is set to HDCP2.2 mode
5.	get vidout res	Get video resolution for the specified output	*<output channel>= 1~2*	**Command sent:** >get vidout res:1 **Possible response message includes:** ▪ output 1 resolution is *1280x720p,50* ▪ output 1 resolution is no signal
6.	set vidout res:*<resolution>*	Set video solution for the specified output; it will change to manual scaling mode automatically if under Auto scaling mode	*<resolution>= <H>x<V<i/p>,<Rate> <Specific Info> { 640x480p,60 720x480p,60 720x576p,50 800x600p,60 1024x768p,60 1280x720p,50 1280x720p,60 1280x768p,60 1280x800p,60*	**Command sent:** >set vidout res:1,4096x2160p,60 **Possible response message includes:** ▪ output resolution is set to 4096x2160p,60 ▪ unsupported resolution

			1280x960p,60 *1280x1024p,60* *1360x768p,60* *1366x768p,60* *1400x1050p,60* *1440x900p,60* *1600x900p,60RB* *1600x1200p,60* *1680x1050p,60* *1920x1080p,24* *1920x1080p,25* *1920x1080p,30* *1920x1080p,50* *1920x1080p,60* *1920x1200p,60RB* *3840x2160p,24* *3840x2160p,25* *3840x2160p,30* *3840x2160p,50* *3840x2160p,60* *4096x2160p,24* *4096x2160p,25* *4096x2160p,30* *4096x2160p,50* *4096x2160p,60* *}*	
7.	get vidout scale	Get scale mode for video output		**Command sent:** >get vidout scale **Response:** get manual scale mode for video output
8.	set vidout scale:<*mode*>	Set scale mode for video output	<*mode*>= *auto/manual*	**Command sent:** >set vidout scale:manual **Response:** set manual scale mode for video output
9.	get vidout osd	Get osd enable state for video output		**Command sent:** >get vidout osd **Response:** get osd off for video output
10.	set vidout osd:<*state*>	Set osd enable state for video output	<*state*>= *on/off*	**Command sent:** >set vidout osd:on **Response:**

				set osd on for video output
11.	get vidout osd color	Get osd color setting for video output		**Command sent:** >get vidout osd color **Response:** get osd color set to blue
12.	set vidout osd color:*<color>*	Set osd color setting for video output	*<color>= black/blue*	**Command sent:** >set vidout osd color:blue **Response:** set osd color to blue
13.	get vidout osd pos	Get osd position for video output		**Command sent:** >get vidout osd pos **Response:** get osd pos set to top left
14.	set vidout osd pos:*<position>*	Set osd position for video output ***NOTE: The command is to set OSD Info position in Windowing Processor, not OSD Menu position in PR-WP-412***	*<position>=* *{* *TR (Top Right),* *TL (Top Left),* *BR (Bottom Right),* *BL (Bottom Left),* *C (Center)* *}*	**Command sent:** >set vidout osd pos:tr **Response:** set osd pos to top right
15.	get vidout cec power:*<output channel>*	Get current power status from the sink via CEC	*<output channel>= 1~2*	**Command sent:** >get vidout cec power:1 **Possible response message includes:** ▪ get cec on for sink on output 1 ▪ get cec fail for sink on output 1 ▪ No attached sink
16.	set vidout cec power:*<output channel>,<state>*	Set power status on/off for the sink device via CEC	*<output channel>= 1~2* *<state>=on/off*	**Command sent:** >set vidout cec power:1,on **Possible response message includes:** ▪ set cec on for sink on output 1 ▪ No attached sink
17.	set vidout cec standby:*<output channel>*	Set power standby for the sink device via CEC on specified output port	*<output channel>= 1~2*	**Command sent:** >set vidout cec standby:1 **Possible response message includes:** ▪ set cec standby for sink on output 1 ▪ No attached sink
18.	set vidout cec makeactive:*<outpu*	Make active for the sink device via CEC	*<output channel>= 1~2*	**Command sent:** >set vidout cec makeactive:1 **Possible response message includes:**

	t channel>	on specified output port		▪ make active for sink on output 1 ▪ No attached sink
19.	get vidout cec disp auto:*<output channel>*	Get cec display auto on/off state for specified output	*<output channel>= 1~2*	**Command sent:** >get vidout cec disp auto:2 **Response:** get cec display auto off for output 2
20.	set vidout cec disp auto:*<output channel>,<state>*	Set cec display auto on/off state for specified output	*<output channel>= 1~2* *<state>= on/off*	**Command sent:** >set vidout cec disp auto:2,on **Response:** set cec display auto on for output 2
21.	get vidout cec sleep timeout:*<output channel>*	Get cec display auto on/off delay time for specified output	*<output channel>= 1~2*	**Command sent:** >get vidout cec sleep timeout:2 **Response:** get cec sleep timeout set to 30mins for output 2
22.	set vidout cec sleep timeout:*<output channel>,<time>*	Set cec display auto on/off delay time for specified output	*<output channel>= 1~2* *<time>= 1~30 minutes*	**Command sent:** >set vidout cec sleep timeout:2,5 **Response:** set cec sleep timeout set to 5mins for output 2
23.	get vidout mute	Get video mute state for specified output		**Command sent:** >get vidout mute **Response:** get video mute off for output 1 and output 2
24.	set vidout mute:*<state>*	Set video mute for specified output	*<state>= on/off*	**Command sent:** >set vidout mute:on set video mute on for output 1 and output 2
25.	get vidout freeze	Get video freeze state for output		**Command sent:** >get vidout freeze **Response:** get video freeze off for output 1 and output 2
26.	set vidout freeze:*<state>*	Set vidout freeze for specified output	*<state>= on/off*	**Command sent:** >set vidout freeze:on **Response:** set vidout freeze on for specified output 1 and output 2
27.	get vidout blank	Get video blank setting for specified output		**Command sent:** >get vidout blank **Response:** get video blank set to black for output 1 and output 2
28.	set vidout blank: *<pattern>*	Set vidout blank setting for specified output ***NOTE: When select***	*<pattern>=* *{* *black (no blank color),* *red,*	**Command sent:** >set vidout blank:blue **Response:** set video test pattern to off for output 1 and output 2 >set video blank to red for output 1 and output 2

		<u>to LOGO, the LOGO is fixed in the center</u>	*green,* *blue,* *logo1,* *logo2,* *logo3* *}*	>set video mute off for output 1 and output 2
29.	get vidout testpat	Get vidout test pattern setting		**Command sent:** >get vidout testpat **Response:** get video test pattern set to off for output 1 and output 2
30.	set vidout testpat:*<pattern>*	Set vidout test pattern setting	*<pattern>=* *{* *off (no test pattern)* *red* *green* *blue* *}*	**Command sent:** >set vidout testpat:red **Response:** set video blank to black for output 1 and output 2 >set video test pattern to red for output 1 and output 2
31.	get vidout sleep:*<output channel>*	Get vidout tmds sleep on/off setting for specified output		**Command sent:** >get vidout sleep:1 **Response:** get video sleep on for output 1
32.	set vidout sleep:*<output channel>,<state>*	Set vidout tmds sleep on/off setting for specified output	*<output channel>=* *1~8* *<state>= on/off*	**Command sent:** >set vidout sleep:1,off **Response:** set video sleep off for output 1 >set vidout freeze off for specified output 1 and output 2 >set aspect ratio to user for input 1 >set aspect ratio to best fit for input 2 >set aspect ratio to best fit for input 3 >set aspect ratio to best fit for input 4
33.	get vidout sleep delay:*<output channel>*	Get vidout tmds sleep on/off delay time setting for specified output		**Command sent:** >get vidout sleep delay:1 **Response:** get video sleep off delay time set to 300 seconds for output 1
34.	set vidout sleep delay:*<output channel>,<time>*	Set vidout tmds sleep on/off delay time setting for specified output	*<output channel>=* *1~8* *<time>= 0~1800 seconds*	**Command sent:** >set vidout sleep delay:1,100 **Response:** set video sleep off delay time to 100 seconds for output

				1 >set video test pattern to off for output 1 and output 2
35.	get audout mute:<*output channel*>	Get audio mute state for the specified output		**Command sent:** >get audout mute:1 **Response:** get audio mute set to off for output 1
36.	set audout mute:<*output channel*>,<*state*>	Set audio mute for the specified output **Enable or disable audio muting on the ports specified by AUDOUT_FORMAT,** The mute state works as follows: **Setting: AUDOUT_MUTE = ENABLE** AUDOUT_FORMAT - HDMI (HDMI audio muted, AUDIO OUT audio off) AUDOUT_FORMAT - ANALOG (HDMI audio off, AUDIO OUT audio muted) AUDOUT_FORMAT - ALL (HDMI audio muted, AUDIO OUT audio muted) **Setting: AUDOUT_MUTE = DISABLE** AUDOUT_FORMAT - HDMI (HDMI audio plays , AUDIO OUT audio off) AUDOUT_FORMAT - ANALOG (HDMI audio off, AUDIO	*<output channel>= 1~8* *<state>= on/off*	**Command sent:** >set audout mute:1,on **Response:** set audio mute to on for output 1

		OUT audio plays) AUDOUT_FORMAT - ALL (HDMI audio plays, AUDIO OUT audio plays)		
37.	get vidout ediddata:<*output channel*>	Get edid data for the sink on specified output		**Command sent:** >get vidout ediddata:1 **Response:** get edid data from output 1: 00 FF FF FF FF FF FF 00 05 B8 00 11 04 00 00 00 1C 19 01 03 80 00 00 78 0E EE 95 A3 54 4C 99 26 0F 50 54 FF FF 80 D1 00 B3 00 A9 40 81 00 81 C0 81 80 8B C0 95 00 02 3A 80 18 71 38 2D 40 58 2C 45 00 40 84 63 00 00 1E 00 00 00 FC 00 41 4D 58 5F 48 44 4D 49 31 76 34 0A 20 00 00 00 FD 00 17 78 0F 66 11 00 0A 20 20 20 20 20 20 00 00 00 FA 00 D1 C0 A9 C0 90 40 81 40 01 01 01 01 0A 01 5F 02 03 30 70 67 03 0C 00 11 00 80 22 5F 10 20 22 1F 21 05 14 04 03 13 02 0E 0F 11 06 07 12 15 16 1D 1E 27 29 2A 2B 2C 2D 2F 30 31 01 23 09 07 07 1A 36 80 A0 70 38 1F 40 30 20 35 00 40 84 63 00 00 1A 46 37 80 70 72 38 22 40 70 C8 35 00 40 84 63 00 00 1C D1 3D 80 80 72 B0 26 40 78 C8 36 00 40 E8 63 00 00 1C 28 3C 80 A0 70 B0 23 40 30 20 36 00 40 E8 63 00 00 1A 00 00 00 00 00 00 00 45

Switching Commands

No.	Command	Description	Variables	Example
1.	load preset:<*preset mode*>	Load the specified preset mode for switcher setting	<*preset mode*>= 1~8	**Command sent:** >load preset:1 **Response:** loaded preset 1
2.	save preset:<*preset mode*>	Save current switcher setting as the specified preset mode	<*preset mode*>= 1~8	**Command sent:** >save preset:2 **Response:** saved current switcher as preset mode 2
3.	get preset name:<*preset mode*>	Get preset name for the specified preset mode	<*preset mode*>= 1~8	**Command sent:** >get preset name:2 **Response:** get Preset 2 as name for preset mode 2
4.	set preset name:<*preset mode*>,<*name*>	Set preset name for the specified preset mode	<*preset mode*>= 1~8 <*name*>= *name string*	**Command sent:** >set preset name:2,1toALL **Response:** set 1toAll as name for preset mode 2
5.	get switch VI<*input channel*>	Get which video outputs is switched to specified input or get which window is switched to specified video input (just for PR-WP-412 under Windowing mode)	<*input channel*>= 1~4	**Command sent:** >get switch VI1 **Possible response message includes:** ▪get switch video from input 1 for all output ▪get switch video from input 1 for no output ▪get switch video from input 1 for output 1,2 ▪get switch video from input 1 for window 1 ▪invalid

6.	get switch VO<*channel*>	Get which video input is switched to specified output
		or
		get which video input is switched to specified window (just for PR-WP-412 under Windowing mode)
			<*channel*>=
			{
			1~4 for PR-WP-412 Window Channel under Windowing mode,
			1~2 for PR-WP-412 Output Channel under Matrix Mode
			}
				Command sent:
				>get switch VO2
				Possible response message includes:
				▪get switch video from input 1 for output 2
				▪get switch no video from no input for output 2
				▪get switch video from input 1 for window 2
				▪get switch video from no video input for window 2
				▪invalid

7.	set switch VI<*input channel*>O<*channel*>	Set switch video for input port to the output port.	1~4 for PR-WP-412 }	**Possible command sent:** ▪set switch VI1OALL ▪set switch VI2O1

		Or set switch video input to the specified window (just for PR-WP-412 under Windowing mode) ***<u>NOTE: The command is linked to "set win select" for PR-WP-412 in Windowing Mode</u>***	*<output channel>= {* *0 for Selection of No channel,* *1~4 for PR-WP-412 Window Channel under Windowing mode,* *1~2 for PR-WP-412 Output Channel under Matrix Mode,* *all for Selection of ALL channel* *}*	▪set switch VI4O2 ▪set switch VI2O1,2,3 ▪set switch VI2O0 **Possible response message includes:** ▪set switch video from input 1 for all output ▪set switch video from no input for output 1 ▪set switch video from no input for window 1 ▪set switch video from no input for output 1,2 ▪set switch video from input 2 for window 1,2,3 ▪set switch video from input 2 for no output ▪invalid switch
8.	get switch CI*<input channel>*	Get audio/video in specified input are switched to which outputs ***<u>NOTE: "get switch CI" command response as "get switch AI" and "get switch VI" for PR-WP-412 under Matrix Mode, as its audio and video can be routed independently</u>*** ***<u>NOTE: "get switch CI" command isn't supported for PR-WP-412 in Windowing Mode</u>***	*<input channel>= 1~4*	**Command sent:** get switch CI1 **Possible response message includes:** **For PR-WP-412, Matrix Mode** ▪get switch video from input 1 for all output ▪get switch audio from input 1 for all output ▪get switch video from input 1 for output 1 ▪get switch audio from input 1 for output 2 ▪get switch audio from input 1 for no output **For PR-WP-412, Windowing Mode** ▪no support in windowing video mode
9.	get switch CO*<output channel>*	Get audio/video in specified output are switched from which inputs	*<output channel>= 1~2 for PR-WP-412 Output Channel under Matrix Mode*	**Command sent:** >get switch CO2 **Possible response message includes:** **For PR-WP-412, Matrix Mode** ▪get switch video from input 1 for output 2 ▪get switch audio from input 1 for output 2

		NOTE: "get switch CO" command response as "get switch AO" and "get switch VO" for PR-WP-412 under Matrix Mode, as its audio and video can be routed independently ***NOTE: "get switch CO" command isn't supported for PR-WP-412 in Windowing Mode***		▪get switch video from no input for output 2 ▪get switch audio from input 1 for output 2 ▪get switch video from input 1 for output 2 ▪get switch audio from no input for output 2 **For PR-WP-412, Windowing Mode** ▪no support in windowing video mode
10.	set switch CI<*input channel*>O<*channel*>	Set switch both the audio and video input to the output port. ***NOTE: "set switch CI" command isn't supported for PR-WP-412 in Windowing Mode*** ***NOTE: "set switch CI" command isn't supported set input channel to None (input channel = 0) for PR-WP-412 in Matrix Mode***	*<input channel>=* *{* *0 for Selection of No input channel,* *1~4 for PR-WP-412 input channel* *}* *<output channel>=* *{* *0 for Selection of No channel,* *1~2 for PR-WP-412 Output Channel under Matrix Mode,* *all for Selection of ALL channel* *}*	**Possible command sent:** ▪set switch CI1OALL ▪set switch CI0O1 ▪set switch CI0O1,2 ▪set switch CI2O0 **Possible response message includes:** ▪set switch audio and video from input 1 for all output ▪set switch audio and video from no input for output 1 ▪set switch audio and video from no input for window 1 ▪set switch audio and video from no input for output 1,2 ▪set switch audio and video from input 2 for window 1,2,3 ▪set switch audio and video from input 2 for no output ▪invalid switch
11.	get switch AI<*input channel*>	Get which audio outputs is switched to specified audio input	*<input channel>=* *1~4*	**Command sent:** >get switch AI1 **Possible response message includes:** ▪get switch audio from input 1 for all output ▪get switch audio from input 1 for no output ▪get switch audio from input 1 for output 1 ▪invalid

12.	get switch AO<*output channel*>	Get which audio input is switched to specified audio output	*<output channel>= 1~2*	**Command sent:** >get switch AO2 **Possible response message includes:** ▪get switch audio from input 1 for output 2 ▪get switch audio from no input for output 2 ▪invalid
13.	set switch AI<*input channel*>O<*output channel*>	Switch the audio channel for the specified output or window ,both HDMI Embedded audio and analog audio output ***NOTE: The command is linked to "set audout priority" command***	*<input channel>=* *{* *0 for no channel,* *1~4 for input channel* *}* *<output channel>=* *{* *0 for Selection of No output channel,* *1~2 for* ***output channel (both Windowing and Matrix Mode),*** *all for selection of all output* *}*	**Possible command sent:** ▪set switch AI1OALL ▪set switch AI2O1,2 ▪set switch AI2O0 ▪set switch AI2O1 **Possible response message includes:** ▪set switch audio from input 1 for all output ▪set switch audio from input 2 for output 1,2 ▪set switch audio from input 2 for no output ▪set switch audio from input 2 for window 1 ▪invalid switch

Windowing Commands

No.	Command	Description	Variables	Example
1.	get video mode	Get video mode for video output		**Command sent:** >get video mode **Response:** get quad video mode for video output
2.	set video mode:*<mode>*	Set video mode for video output	*<mode>=* *{* *matrix,* *pip,* *3stack,* *quad,* *}*	**Command sent:** >set video mode:pip **Response:** set pip video mode for video output
3.	get win select:*<window channel>*	Get the video input to be used for the specified window ***NOTE: The command is only supported for PR-WP-412 under Windowing mode***	*<window channel>= 1~4*	**Command sent:** >get win select:1 **Response:** get video input 1 to be used for window 1
4.	set win select:*<window channel>,<input channel>*	Set the video input to be used for the specified window ***NOTE: The command is only supported for PR-WP-412 under Windowing mode***	*<window channel>= 1~4* *<input channel>= 1~4*	**Command sent:** >set win select:1,2 **Response:** set video input 2 to be used for window 1 >set switch video from input 2 for window 1
5.	get win pos x:*<window channel>*	Get the position x(horizontal) for the specified window ***NOTE: The command is only supported for PR-WP-412 under Windowing mode***	*<window channel>= 1~4*	**Command sent:** >get win pos x:1 **Response:** get position x of window 1 is 50
6.	set win pos	Set the position	*<window channel>=*	**Command sent:**

	x:*<window channel>,<value>*	x(horizontal) for the specified window ***NOTE: The command is only supported for PR-WP-412 under Windowing mode***	*1~4* *<value>= 0~Width of current output resolution*	>set win pos x:1,100 **Possible response message includes:** ▪ set position x of window 1 to 100 ▪ out of range
7.	get win pos y:*<window channel>*	Get the position y(vertical) for the specified window ***NOTE: The command is only supported for PR-WP-412 under Windowing mode***	*<window channel>= 1~4*	**Command sent:** >get win pos y:1 **Response:** get position y of window 1 is 50
8.	set win pos y:*<window channel>,<value>*	Set the position y(vertical) for the specified window ***NOTE: The command is only supported for PR-WP-412 under Windowing mode***	*<window channel>= 1~4* *<value>= 0~Height of current output resolution*	**Command sent:** >set win pos y:1,100 **Possible response message includes:** ▪ set position y of window 1 to 100 ▪ out of range
9.	get win size width:*<window channel>*	Get the width size for the specified window ***NOTE: The command is only supported for PR-WP-412 under Windowing mode***	*<window channel>= 1~4*	**Command sent:** >get win size width:2 **Response:** get the width size for window 2 is 300
10.	set win size width:*<window channel>,<value>*	Set the width size for the specified window ***NOTE: The***	*<window channel>= 1~4* *<value>= 0~Width of current output resolution*	**Command sent:** >set win size width:2,400 **Response:** set the width size for window 2 to 400

		command is only supported for PR-WP-412 under Windowing mode		
11.	get win size height:*<window channel>*	Get the height size for the specified window ***NOTE: The command is only supported for PR-WP-412 under Windowing mode***	*<window channel>= 1~4*	**Command sent:** >get win size height:2 **Response:** get the height size for window 2 is 300
12.	set win size height:*<window channel>,<value>*	Set the height size for the specified window ***NOTE: The command is only supported for PR-WP-412 under Windowing mode***	*<window channel>= 1~4* *<value>= 0~Height of current output resolution*	**Command sent:** >set win size height:2,400 **Response:** set the height size for window 2 to 400
13.	get win priority:*<window channel>*	Get the display layer priority for the specified window ***NOTE: The command is only supported for PR-WP-412 under Windowing mode***	*<window channel>= 1~4*	**Command sent:** >get win priority:1,4 **Response:** get display layer priority 4 for window 1
14.	set win priority:*<window channel>,<priority>*	Set the display layer priority for the specified window ***NOTE: The command is only supported for PR-WP-412 under Windowing mode***	*<window channel>= 1~4* *<priority>= 1~4*	**Command sent:** >set win priority:1,3 **Response:** set display layer priority 3 for window 1

15.	get audout priority:*<output channel>*	Get the audio source priority state for the specified Windowing output port	*<output channel>= 1~2* *<priority>=* *{* *auto,* *1~4,* *w1~w4 (under Windowing mode)* *}*	**Command sent:** >get audout priority:1 **Response:** get audio out priority for output 1 to auto
16.	set audout priority:*<output channel>,<priority>*	Set audio source priority for the specified Windowing output port Priority Mode Definitions **auto:** ▪Under Matrix mode, active audio source of certain output channel follow input channel routing to the output ▪Under Windowing mode, active audio source of certain output channel follow window set as first priority 1~4: set active audio source of certain output channel fixed in the specified input channel **w1~w4:** set active audio source of certain	*<output channel>= 1~2* *<priority>=* *{* *auto,* *1~4,* *w1~w4 (under Windowing mode)* *}*	**Command sent:** >set audout priority:1,w1 **Response:** set audio out priority for output 1 to window 1

		output channel fixed in the specified window channel, only work under Windowing mode ***NOTE: The command is linked to "set switch AI" command***		
17.	get win border:<*window channel*>	Get the border on or off for the specified window ***NOTE: The command is only supported for PR-WP-412 under Windowing mode***	*<window channel>= 1~4*	**Command sent:** >get win border:3 **Response:** get the border off for window 3
18.	set win border:<*window channel*>, <*state*>	Set the border on or off for the specified window ***NOTE: The command is only supported for PR-WP-412 under Windowing mode***	*<window channel>= 1~4* *<state>= on/off*	**Command sent:** >set win border:3,off **Response:** set the border off for window 3
19.	get win border color:<*window channel*>	Get the border color setting for the specified window ***NOTE: The command is only supported for PR-WP-412 under Windowing mode***	*<window channel>= 1~4* *<color>=* *{* *bk for Black,* *r for Red,* *g for Green,* *b for Blue,* *y for Yellow,* *m for Magenta,* *c for Cyan,* *w for White,*	**Command sent:** >get win border color:4 **Response:** get the border color black for window 4

			dr for Dark Red, *dg for Dark Green,* *db for Dark Blue,* *dy for Dark Yellow,* *dm for Dark Magenta,* *dc for Dark Cyan,* *gr for Gray* *}*	
20.	set win border color*:<window channel>,<color>*	Set the border color setting for the specified window ***NOTE: The command is only supported for PR-WP-412 under Windowing mode***	*<window channel>= 1~4* *<color>=* *{* *bk for Black,* *r for Red,* *g for Green,* *b for Blue,* *y for Yellow,* *m for Magenta,* *c for Cyan,* *w for White,* *dr for Dark Red,* *dg for Dark Green,* *db for Dark Blue,* *dy for Dark Yellow,* *dm for Dark Magenta,* *dc for Dark Cyan,* *gr for Gray* *}*	**Command sent:** >set win border color:4,g **Response:** set the border color green for window 4
21.	get win mirror:*<window channel>*	Get the video mirror state for the specified window ***NOTE: The command is only supported for PR-WP-412 under Windowing mode***	*<window channel>= 1~4*	**Command sent:** >get win mirror:1 **Response:** get the video mirror off for window 1
22.	set win	Set the video mirror	*<window channel>=*	**Command sent:** >set win mirror:1,on

	mirror:*<window channel>,<state>*	on or off state for the specified window ***NOTE: The command is only supported for PR-WP-412 under Windowing mode***	*1~4* *<state>= on/off*	**Response:** set the video mirror on for window 1
23.	get win display:*<window channel>*	Get the video display state for the specified window ***NOTE: The command is only supported for PR-WP-412 under Windowing mode***	*<window channel>= 1~4*	**Command sent:** >get win display:1 **Response:** get the video display on for window 1
24.	set win display:*<window channel>,<state>*	Set the video display on or off state for the specified window ***NOTE: The command is only supported for PR-WP-412 under Windowing mode***	*<window channel>= 1~4* *<state>= on/off*	**Command sent:** >set win display:1,off **Response:** set the video display off for window 1
25.	reset win layout:*<video mode>,<window channel>*	Reset the specified window layout of certain Video mode to default setting	*<video mode=* *{* *pip,* *3stack,* *quad,* *all* *}* *<window channel>=* *{* *1~4,* *all* *}*	**Command sent:** >reset win layout:all,all **Response:** reset all window layout of all video mode to default

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