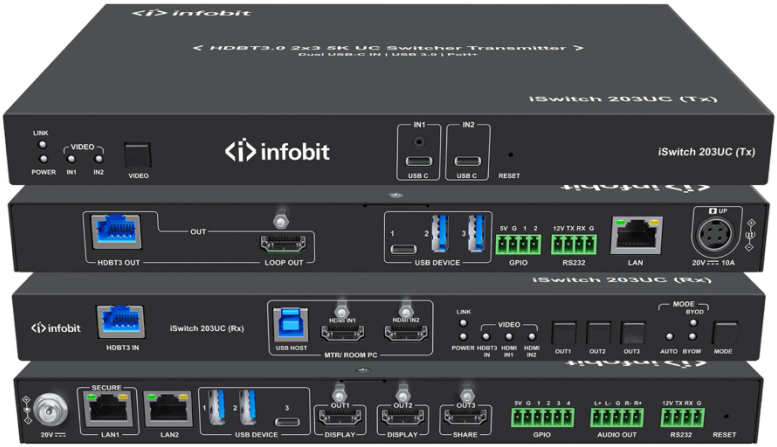
iSwitch 203UC

HDBT 3.0 2x3 5K UC Switcher with Dual USB-C IN, USB 3.0 and PoH+

User Manual V1.0



CONTENTS

IMPORTANT SAFETY INSTRUCTIONS 3

1. INTRODUCTION 4

1.1 Overview 4

1.2 Features 4

1.3 Package Contents 5

1.4 Specifications 6

2. PANEL OVERVIEW 9

2.1 Transmitter 10

2.2 Receiver 12

3. INSTALLATION 14

4. TYPICAL APPLICATIONS 15

4.1 BYOM Conference Mode 15

4.2 BYOD Conference Mode 16

4.3 Additional Connection Options 16

5. CHARGING POWER ALLOCATION FOR USB-C INPUTS 17

6. AUTO SWITCHING 18

7. RS232 OPERATION 19

7.1 Device Control 19

7.2 Control 3RD-party Device 20

8. LAN CONTROL 21

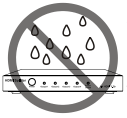
8.1 Obtain IP Address 21

8.2 Telnet 21

8.3 WEB UI CONTROL 22
8.3.1 Accessing the Web UI 22
8.3.2 Web UI Introduction 24

infobit

Important Safety Instructions



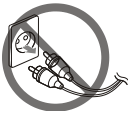
1. Do not expose this apparatus to rain, moisture, dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.

6. Clean this apparatus only with dry cloth.

2. Do not install or place this unit in a bookcase, built-in cabinet or in another confined space. Ensure the unit is well ventilated.

7. Unplug this apparatus during lightning storms or when unused for long periods of time.

3. To prevent risk of electric shock or fire hazard due to overheating, do not obstruct the unit's ventilation openings with newspapers, tablecloths, curtains, and similar items.



8. Protect the power cord from being walked on or pinched particularly at plugs.

4. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9. Only use attachments / accessories specified by the manufacturer.

5. Do not place sources of naked flames, such as lighted candles, on the unit.

10. Refer all servicing to qualified service personnel.

1. Introduction

1.1 Overview

The **iSwtich 203UC** is a flexible **BYOD/BYOM** conference presentation switcher and extender kit designed for modern meeting rooms. The system consists of a transmitter and a receiver, providing USB-C, HDMI, USB, HDBT, network, and control interfaces for integration with **laptops**, **Room PCs**, **MTRs**, displays, and other AV devices.

The transmitter provides two full-featured USB-C inputs for connecting laptops and other USB-C devices, supporting high-resolution video, USB 3.2 data, Ethernet bridge, and up to **100W charging**. The receiver provides HDMI inputs and outputs, USB Host and Device interfaces, and flexible video and USB routing for conference room applications.

The system supports multiple auto switching modes, including Last Connected, BYOD, BYOM, and Priority, as well as manual switching via front panel buttons, **Web UI**, and API commands. It also supports multiple control options, including front panel buttons, RS232, and LAN (RESTful and Telnet APIs & Web UI).

The transmitter and receiver communicate through HDBT for long-distance video and USB transmission up to 330ft/100m. They can be used together as a complete conference room system or independently with other compatible AV devices. The kit supports one-way PoH+ function, requiring only one power source connected to the transmitter to power both units.

1.2 Features

- Provides 2 full-featured USB-C inputs on the transmitter, supporting high-

resolution video up to 5120×2160@30Hz 4:4:4 8bit and 5120×1440@60Hz 4:4:4 8bit, USB 3.2 data, Ethernet bridge, and up to 100W charging per port, with a total charging budget of 145W dynamically shared between both ports.

- Supports HDMI 2.0b and HDBT 3.0, with video resolutions up to 5120×2160@30Hz 4:4:4 8bit and 5120×1440@60Hz 4:4:4 8bit.
- Supports HDCP 2.3/1.4.
- Supports HDBT transmission up to 330ft/100m for long-distance video and USB 2.0 transmission.
- Provides HDMI Loop Out on the transmitter and 3 HDMI outputs on the receiver for local and remote displays.
- Supports multiple auto switching modes, including Last Connected, BYOD, BYOM, and Priority.
- Supports BYOD/BYOM with video switching and content presentation, along with automatic routing of local USB 3.0 and remote USB 2.0 peripherals to the active host.
- Supports USB Host and Device connections for USB peripheral integration.
- Supports multiple control methods, including front panel buttons, RS232, and LAN (RESTful and Telnet APIs & Web UI).
- Supports one-way PoH+ to power the receiver from the transmitter, requiring only one power source.
- Supports stable network integration with network switching, network pass-through, and USB-to-Network Bridge to ensure a reliable and prioritized meeting connection.
- Supports customized welcome screen.

1.3 Package Contents

- 1 x iSwitch 203UC (Transmitter)
- 1 x iSwitch 203UC (Receiver)
- 1 x DC Power Adapter (DC 20V/10A) with US, UK, EU and AU Pins
- 2 x USB 3.2 Type-C to Type-C Cables (L = 2m)

- 1 x USB 3.2 Type-A to Type-B Cable (L = 1.8m)
- 4 x Mounting Brackets (with Screws)

1.4 Specifications

<table>
<tr><th colspan="2">Technical</th></tr>
<tr><td>Input/Output Signal Type</td><td>USB-C IN:
USB-C supports the USB 3.2 Gen 2x1 standard and supports:
• Video: DP alt mode, up to 5120x2160@30Hz and 5120x1440@60Hz video.
• USB data: Up to 5Gbps.
• Charging: 100W.
• Two USB-C ports share a 1G Ethernet connection.
Note: The charging power of USB-C IN 1 and USB-C IN 2 supports the following allocation modes:
• Dynamic Allocation;
• 100W (USB-C IN 1) + 45W (USB-C IN 2);
• 45W (USB-C IN 1) + 100W (USB-C IN 2);
• 60W + 60W.
Refer to the “Charging Power Allocation for USB-C Inputs” section to get detailed information.
HDMI IN/HDMI OUT/HDBT IN/ HDBT OUT:
Supports the HDMI 2.0b standard;
Supports HDCP 2.3 and 1.4.
Supports the following resolutions:
4K@60Hz 4:4:4 8bit
4K@60Hz 4:2:2/4:2:0 12bit
5120x2160@60Hz 4:2:0 8bit
5120x2160@30Hz 4:4:4 8bit
5120x1440@60Hz 4:4:4 8bit</td></tr>
<tr><td>Input / Output Resolutions Supported</td><td>USB-C IN / HDBT OUT /HDMI LOOP OUT:
<table>
<tr><th>Resolution</th><th>Frame Rate</th><th>Color Sampling</th><th>Color Depth</th></tr>
<tr><td>5120x2160 5K Ultra-Wide</td><td>30Hz</td><td>4:4:4</td><td>8bit</td></tr>
<tr><td>5120x1440 5K Super-Wide</td><td>60Hz</td><td>4:4:4</td><td>8bit</td></tr>
<tr><td>4096x2160 DCI 4K and 3840x2160 UHD 4K</td><td>60Hz</td><td>4:2:2/4:2:0</td><td>12bit</td></tr>
<tr><td>4096x2160 DCI 4K and 3840x2160 UHD 4K</td><td>30Hz</td><td>4:4:4</td><td>12bit</td></tr>
<tr><td>4096x2160 DCI 4K and 3840x2160 UHD 4K</td><td>60Hz</td><td>4:2:2/4:2:0</td><td>12bit</td></tr>
<tr><td>4096x2160 DCI 4K and 3840×2160 UHD 4K</td><td>60Hz</td><td>4:4:4</td><td>8bit</td></tr>
<tr><td>2560x1600 WQXGA Reduced Blanking</td><td>60Hz</td><td>4:4:4</td><td>12bit</td></tr>
<tr><td>2560x1440 WQHD Reduced Blanking</td><td>120Hz/60Hz</td><td>4:4:4</td><td>8bit</td></tr>
<tr><td>2560x1080</td><td>60Hz</td><td>4:4:4</td><td>8bit</td></tr>
</table></td></tr>
</table>

Technical

UWFHD			
2048x1152 QWXGA	60Hz	4:4:4	12bit
2048x1080 DCI 2K	60Hz	4:4:4	12bit
1600x1200 UXGA	60Hz	4:4:4	12bit
1920x1200 WUXGA	60Hz	4:4:4	12bit
1920x1080 FHD 1080p	60Hz	4:4:4	12bit
1920x1080 FHD 1080p	240Hz/120Hz	4:4:4	8bit

HDMI IN / HDBT IN / HDMI OUT:

Resolution	Frame Rate	Color Sampling	Color Depth
5120x2160 5K Ultra-Wide	60Hz	4:2:0	8bit
5120x2160 5K Ultra-Wide	30Hz	4:4:4	8bit
5120x1440 5K Super-Wide	60Hz	4:4:4	8bit
4096x2160 DCI 4K and 3840x2160 UHD 4K	60Hz	4:2:2/4:2:0	12bit
4096x2160 DCI 4K and 3840x2160 UHD 4K	30Hz	4:4:4	12bit
4096x2160 DCI 4K and 3840x2160 UHD 4K	60Hz	4:2:2/4:2:0	12bit
4096x2160 DCI 4K and 3840×2160 UHD 4K	60Hz	4:4:4	8bit
2560x1600 WQXGA Reduced Blanking	60Hz	4:4:4	12bit
2560x1440 WQHD Reduced Blanking	120Hz/60Hz	4:4:4	8bit
2560x1080 UWFHD	60Hz	4:4:4	8bit
2048x1152 QWXGA	60Hz	4:4:4	12bit
2048x1080 DCI 2K	60Hz	4:4:4	12bit
1600x1200 UXGA	60Hz	4:4:4	12bit
1920x1200 WUXGA	60Hz	4:4:4	12bit
1920x1080 FHD 1080p	60Hz	4:4:4	12bit
1920x1080 FHD 1080p	240Hz/120Hz	4:4:4	8bit

HDR	All HDR formats, including HDR 10, HLG, HDR 10+ and Dolby Vision
Audio Format	USB-C IN/HDMI IN/ HDMI OUT/HDBT OUT/HDBT IN: Up to 7.1ch, including PCM 2.0/5.1/7.1ch, Dolby Digital, Dolby Digital Plus, Dolby TrueHD, Dolby Atmos, DTS 5.1, DTS-HD Master Audio and DTS:X. AUDIO OUT: PCM 2.0
Maximum Data Rate	USB-C IN: 5Gbps (per lane). HDMI: 18Gbps.
Control Method	Front panel buttons, RS232, LAN (RESTful and Telnet APIs & Web UI)

General	
Operating Temperature	0°C ~ 45°C (32°F ~ 113°F)
Storage Temperature	-20°C ~ 70°C (-4°F ~ 158°F)
Humidity	10% ~ 90%, non-condensing
ESD Protection	Human-body model: ±8kV (air-gap discharge) / ±4kV (contact discharge)
Power Supply	Transmitter: 20V/10A Receiver: 20V/3A
Power Consumption (max)	• Without USB and Charging:32.26w (RX powered via POE) • With USB + Charging:165w
Dimensions (W x H x D)	Transmitter: 250mm x 25mm x 160.2mm/9.84” x 0.98” x 6.31” (Brackets not included) Receiver: 260mmx25mmx170.2mm/10.24” x 0.98” x 6.7”
Weight	Transmitter: 1.08kg / 2.38lbs Receiver: 1.11kg / 2.45lbs

Transmission Distance

Note:

- T568B straight-through category cable is recommended.
- Please use F/FTP or U/FTP cable, and don’t use UTP, F/UTP, or U/UTP cables.

Cable Type	Range	Supported Video
Cat 5e/6	70m/230ft	4K@60Hz 4:2:0 24bpp 4K@30Hz 1080P@60Hz
	40m/131ft	5120x1440@60Hz 4:4:4 5120x2160@60Hz 4:2:0 4K@60Hz 4:4:4 24bpp 4K@60Hz 4:2:2 36bpp
Cat 6A/7 (U/FTP, F/FTP or S/FTP)	100m/330ft	5120x1440@60Hz 4:4:4 5120x2160@60Hz 4:2:0 4K@60Hz 4K@30Hz 1080P@60Hz

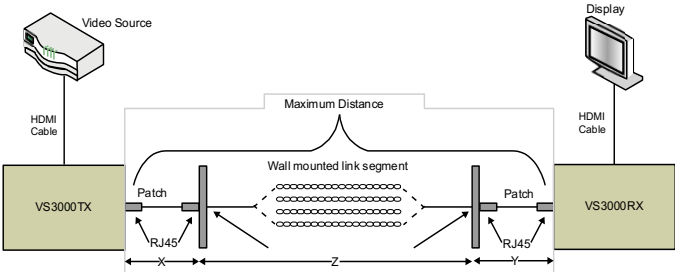
Use Patches

Note:

Patches may be used in the installation, and the patches will obviously affect the transmission distance. Limits and distances are as follows:

- Supports up to 2 patch cables, each not exceeding 5m.
- Patches must be installed on both ends of the device. Refer to the following

pictures:



The standard specifies the following lengths for the three-segment cable installation:

- X = Left-side patch cable length ≤ 5 [meter]
- Y = Right-side patch cable length ≤ 5 [meter]
- Z = Wall segment ≤ Maximum Distance – X – Y [meter]

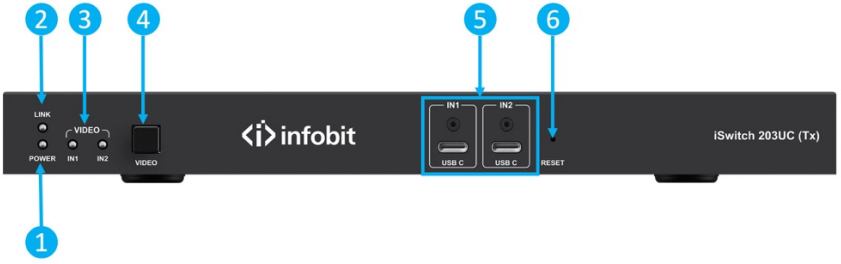
Cable Type	Range	Supported Video
Cat 5e/6	70m/230ft (with Patches)	4K@60Hz 4:2:0 24bpp 4K@30Hz 1080P@60Hz
	30m/100ft (with Patches)	4K@60Hz 4:4:4 24bpp 4K@60Hz 4:2:2 36bpp
Cat 6A/7 (U/FTP, F/FTP or S/FTP)	70m/230ft (with Patches)	4K@60Hz 4:4:4 24bpp 4K@60Hz 4:2:2 36bpp
	100m/330ft (with Patches)	4K@60Hz 4:2:0 24bpp 4K@30Hz 1080P@60Hz

Cable Type	Range	Supported Video
USB Type-C to USB Type-C Cable (USB 3.2 Gen 2, 5Gbps per lane)	2m/7ft	1080P@60Hz 24bpp 4K@30Hz 4:4:4 24bpp 4K@60Hz 4:2:0 24bpp 4K@60Hz 4:4:4 24bpp
HDMI	Input/Output: 10m/33ft	1080P@60Hz 24bpp 4K@30Hz 4:4:4 24bpp 4K@60Hz 4:2:0 24bpp
	Input/Output: 5m/16ft	4K@60Hz 4:4:4 24bpp

2. Panel Overview

2.1 Transmitter

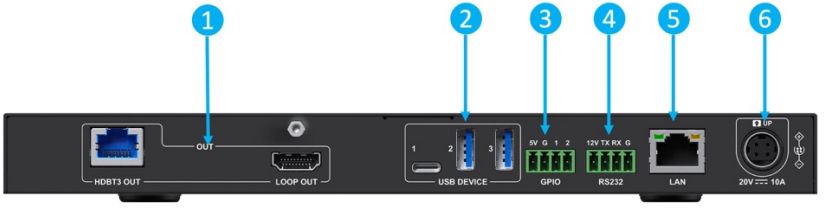
Front Panel



#	Name	Description
1	POWER LED	On/Off: The device is powered on/off.
2	LINK LED	• On: HDBT link is normal. • Off: No HDBT link or link error.
3	VIDEO LED	IN1/2 LEDs: • Green: The corresponding USB-C input is connected to a source device and an active signal is detected. • Red: The corresponding USB-C input is connected to a source device, but no active signal is detected. • Off: The corresponding USB-C input is not connected to a source device. When switching sources, the indicator light corresponding to the selected source blinks, then returns to its previous status.
4	VIDEO Button	Press to switch input source between IN1 and IN2.
5	USB-C IN 1 & 2	Two full-featured USB type-C ports. • Supports the USB 3.2 Gen 2x1 standard, with a maximum signal transmission rate of 5Gbps per lane. • Supports video output with 5K/4K signal transmission. • Supports PD 3.0 and can supply up to 100W power for the connected device; • Supports sharing 1G network connection, the laptop connected with these ports can access the Ethernet the transmitter/receiver connected; The following cable is recommended: USB type-C to type-C cable (USB 3.2 Gen 2x1 or

#	Name	Description
		above). **Note**: Refer to "Charging Power Allocation for USB-C Inputs" section to get detailed charging power allocation for the two USB-C inputs.
6	RESET	Insert a tool such as a needle. • Press and hold it for about 5s: Reset the IP settings, including resetting the IP mode to DHCP and resetting the HTTPS/TelnetS/web UI login password to "admin". When the operation is done, all LEDs will slowly blink. After that, all LEDs will return to their previous states. At this point, all IP settings and HTTPS / TelnetS / web UI login passwords are reset to default settings. • Press and hold it for about 15s: Reset the device to factory defaults. All LEDs will blink green quickly. Then all LEDs will returnto their previous states. At this point, all settings are reset to factory defaults.

Rear Panel

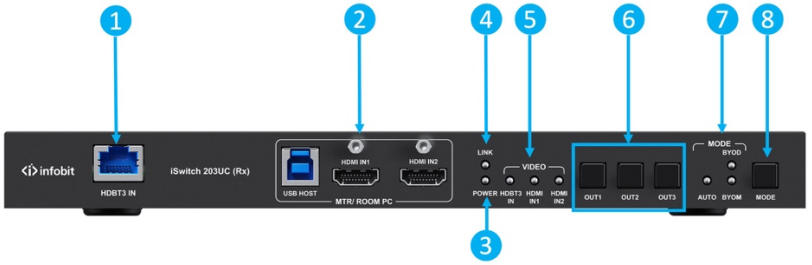


#	Name	Description
1	OUT	• HDBT3 OUT: Connect to the receiver. • LOOP OUT: Connect to an HDMI display for outputting the same video as HDBT3 OUT.
2	USB DEVICE	1 x USB 3.0 type-C port and 2 x USB 3.0 type-A ports. Connect to USB devices, such as USB speakerphone, USB keyboard & mouse.
3	GPIO	Connect to GPIO devices. The device supports connecting to 2 GPIO devices.
4	RS232	Connect to an RS232 device for RS232 control and bi-directional serial communication.
5	LAN	Connect to an Ethernet device such as an Ethernet switch for LAN control (RESTful and Telnet APIs & web UI) or or Ethernet pass-through.

#	Name	Description
6	20V/10A	Connect to the provided power adapter.

2.2 Receiver

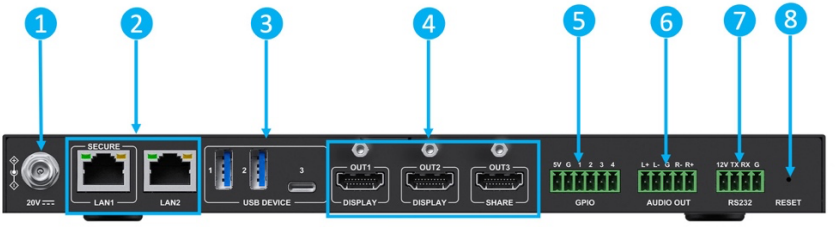
Front Panel



#	Name	Description
1	HDBT3 IN	Connect to the HDBT transmitter.
2	Room PC	• USB HOST: USB 3.2 Gen 1x1 Type-B port. Connect a host device. • HDMI IN 1/2: Connect to the HDMI OUT port of the HDMI source such as a Room PC.
3	POWER LED	On/Off: The device is powered on/off.
4	LINK LED	• On: HDBT link is normal. • Off: No HDBT link or link error.
5	VIDEO LED	• Green: The corresponding USB-C input is connected to a source device and an active signal is detected. • Red: The corresponding USB-C input is connected to a source device, but no active signal is detected. • Off: The corresponding USB-C input is not connected to a source device. When switching sources, the LED corresponding to the selected source blinks green, then returns to its previous status.
6	OUT 1/2/3 Buttons	Press to switch input source among HDBT IN, HDMI IN 1 and HDMI IN2.
7	MODE LEDs	**Mode LEDs** / **Description** **AUTO** / **BYOD** / **BYOM** Green / Off / Off — Auto-switching function is enabled. The auto-switching mode is last-

#	Name	Description			
					connected.
		Red	Green	Off	Auto-switching function is enabled. The auto-switching mode is BYOD.
		Red	Off	Green	Auto-switching function is enabled. The auto-switching mode is BYOM.
		Red	Off	Off	Auto-switching function is enabled. The auto-switching mode is priority.
		Off	Off	Off	Auto-switching function is disabled.
8	Mode	Press to switch auto-switching mode among Last Connected, BYOD, BYOM, Priority and OFF.			

Rear Panel



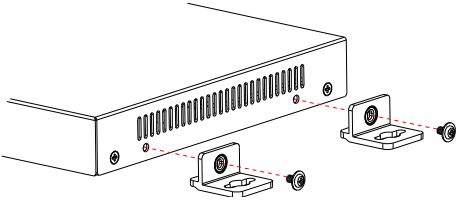
#	Name	Description
1	20V	Connect to a 20V/3A power adapter for local power. The receiver can also be powered from the transmitter via one-way PoH+ (TX to RX), so a separate power adapter for the receiver is not included with the kit.
2	LAN 1/2	Connect to an Ethernet device such as an Ethernet switch for LAN control (RESTful and Telnet APIs & web UI) or Ethernet pass-through.
3	USB DEVICE	1 x USB 3.0 type-C port and 2 x USB 3.0 type-A ports. Connect to USB devices, such as USB speakerphone, USB keyboard or mouse.
4	OUT 1/2/3	Connect to the HDMI IN port of an HDMI display.
5	GPIO	Connect to GPIO devices. The device supports connecting to 4 GPIO devices.
6	AUDIO OUT	Connect to an audio receiver for outputting de-

#	Name	Description
		embedded audio from HDMI OUT 1/2/3.
7	RS232	Connect to an RS232 device for RS232 control, bi-directional serial communication, or control of the 3rd-party device.
8	RESET	Insert a tool such as a needle. • Short press it for 5 times continuously (The duration of each press-and-release action is less than 1s, and the interval between two short presses is less than 3s): Reset the IP settings, including resetting the IP mode to DHCP and resetting the HTTPS/TelnetS/web UI login password to “admin”. When the operation is done, all LEDs will slowly blink. After that, all LEDs will return to their previous states. At this point, all IP settings and the HTTPS / Telnet / web UI login password are reset to default settings. • Press and hold it for more 10s: Reset the device to factory defaults. All LEDs will blink green quickly. Then all LEDs will return to their previous states. At this point, all settings are reset to factory defaults.

3. Installation

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

1. Position and secure the mounting brackets to the panels on two sides with the screws provided.



2. Screw the unit to the equipment rack (screws are not included in the package).

The mounting method for the mounting brackets is the same for both the transmitter and the receiver.

4. Typical Applications

Warnings:

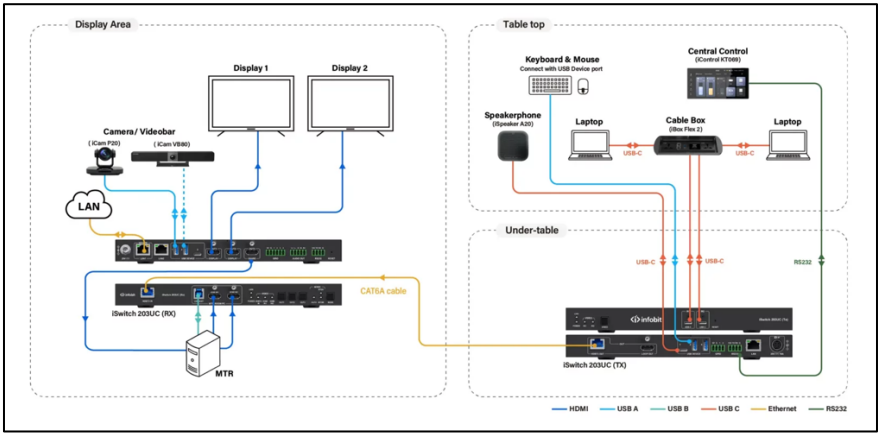
- Before wiring, disconnect the power from all devices.
- During wiring, connect and disconnect the cables gently.

Typical applications include BYOM and BYOD meeting modes.

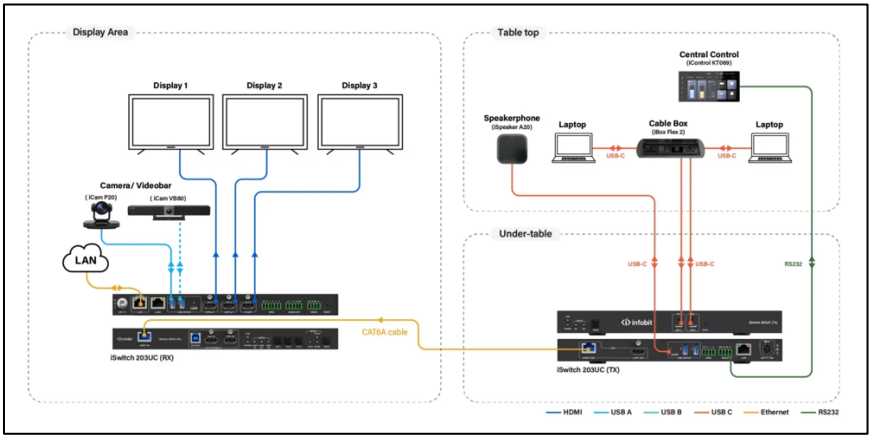
Mode	Meeting Host	USB Host	Video Source	Laptop
BYOM	Laptop	Laptop	Laptop	Meeting Host
BYOD	Room PC	Room PC	Room PC + Laptop Content	Content Source

You can refer to "Auto Switching" section to get detail information.

4.1 BYOM Conference Mode



4.2 BYOD Conference Mode



Note: Enable BYOM mode via the button or API command to switch the meeting host from the MTR to the user's laptop. The user's laptop will host the meeting and use the room peripherals.

4.3 Additional Connection Options

1. Ethernet pass-through: Connect a laptop to the LAN port of the transmitter or one LAN port of the receiver, and connect a local area network to one LAN port of the receiver or the LAN port of the transmitter. The laptop can access the network the receiver or the transmitter connected.
2. RS232 Operations: See “RS232 Operations” section to get detail information.
3. LAN Control: See “LAN Control” section to get detail information.

5. Charging Power Allocation for USB-C Inputs

The charging power of USB-C IN 1 and USB-C IN 2 supports the following allocation modes:

- Dynamic Allocation;
- 100W (USB-C IN 1) + 45W (USB-C IN 2);
- 45W (USB-C IN 1) + 100W (USB-C IN 2);
- 60W + 60W.

Dynamic power allocation means that the charging power of the two USB-C ports is allocated based on the number of connected USB-C input laptops. The detailed requirements are as follows:

- When only one USB-C IN is connected, 100W charging is supported.
- When two USB-C IN ports are connected, each port supports 60W charging (60W + 60W).
- If the USB-C IN 1 is connected and configured for 100W charging, and then a USB-C IN 2 is connected, the system must notify the first connected laptop to dynamically reduce the charging power to 60W:
    - If the first laptop accepts the power reduction, the charging power of the USB-C IN 1 is reduced to 60W, and the USB-C IN 2 port is notified that 60W charging is available.
    - If the first laptop does not accept the power reduction, the USB-C IN 2 port is notified that the maximum supported charging power is 45W.

In the remaining modes, USB-C IN 1 and USB-C IN 2 are configured with fixed charging power values.

The charging power allocation for the two USB-C inputs can be configured via the Web UI or API (for detailed information, please refer to the “Web UI Control” sectionor the separate document “*API Command Set_ ISwitch 203UC”)*.

6. Auto Switching

The kit supports automatic switching (TX USB-C IN 1/2, RX HDMI IN 1/2, and USB) and provides four modes:

- **Last Connected mode.**

  When enabled, RX HDMI OUT 1/2/3 will switch to the active source last connected (among RX HDMI IN1, RX HDMI IN2, and HDBT IN (TX USB-C IN 1/2)).

- **BYOD Mode**

  Preset for Bring Your Own Device (BYOD): The laptop is used for content sharing, while the meeting is controlled by the room PC/MTR.

  In BYOD mode, the RX is designed to work with a Room PC or MTR. The system uses predefined video and USB routing rules as follows:

  - SHARE Output: The RX HDBT IN is routed to HDMI OUT 3 (SHARE) by default. When HDMI OUT 3 is connected to the HDMI input of a Room PC or MTR, the content from the user's laptop can be shared with the meeting system.
  - RX Local Inputs: When a Room PC or MTR is detected on HDMI OUT 3, the RX HDMI IN 1 and HDMI IN 2 are routed to HDMI OUT 1 and HDMI OUT 2 respectively. This allows the two video outputs from the MTR to be displayed on the local displays.
  - No Room PC/MTR Connected to HDMI OUT3: If no Room PC or MTR is detected on HDMI OUT 3, HDMI OUT 1 and HDMI OUT 2 follow the LIFO switching logic of the RX HDMI inputs and display the same active input.
  - USB Routing: The RX USB-B HOST is routed to the USB device ports on both the TX and RX, allowing the Room PC or MTR to access the connected USB peripherals.

- **BYOM Mode**

  Preset for Bring Your Own Meeting (BYOM): The laptop hosts the meeting (Zoom/Teams), while room peripherals are routed to the laptop.

In BYOM mode, the TX USB-C inputs have equal priority, while the RX inputs have lower priority in auto switching. When a TX USB-C source is active, its video content is displayed on the TX HDMI Loop Out and all three HDMI outputs of the RX. The user's laptop provides the meeting software and USB devices for the conference.

- **Priority mode.**
  When enabled, TX USB-C IN1, TX USB-C IN2, RX HDMI IN1 and RX HDMI IN 2 will switch source according to the priority set via web UI or API commands.

This auto switching function can be enabled/disabled through Web UI or API Commands, and the auto switching mode can be switched via the Mode button on the front panel, through web UI or API Commands.

Note:

1. Please refer to “General” part in the “Web UI Control” section or separate document “*API Command Set_ iSwitch 203UC*” to get detailed configuration information.
2. Video switching is based on detecting valid signals, and USB switching is based on detecting VBUS.

7. RS232 Operation

The transmitter and receiver units of this system are each equipped with an RS232 port. Both RS232 ports support API control (control the transmitter and receiver) and control of third-party devices.

7.1 Device Control

Advanced users may need to control the device via API commands. Connect an RS232-enabled device such as a PC to the RS232 port of the transmitter or receiver.For detailed command information, please refer to the separate document

“API Command Set_iSwitch 203UC”. Before sending API commands to control the device, ensure the serial ports between this device and the PC are configured correctly. Professional RS232 serial interface software (e.g., Serial Assist) may be needed as well.

Parameters	Default Value
Baud Rate	115200bps
Data bits	8bits
Parity	None
Stop bits	1bit
Flow control	None

7.2 Control 3rd-party Device

Advanced users may need to control the 3rd-party device to perform automated operations, such as automatically turning the projector on/off. The kit provides "**RS232 automatic/manual control**".

RS232 automatic/manual control

RS232 control is performed by pre-stored instructions in the device. When the trigger condition is met, the configuration command is automatically sent out through the RS232 port.

Users can store the following instructions in settings:

- Display ON/OFF.

Users can set these instructions through the Web UI or API and turn on the Auto-RS232 function to automatically execute, or perform these operations by manually sending APIs.

Auto-RS232 conditions:

- Display ON: When any active source is connected to the device.
- Display OFF: When all sources are disconnected from the device and after the "Delay Time" set.

Please refer to the "RS232" part in the “Web UI Control” section or separate document “*API Command Set_iSwitch 203UC*” to get detailed command information.

8. LAN Control

8.1 Obtain IP Address

1. Connect a control PC to the RS232 port of the transmitter or receiver.
2. Configure RS232 parameters for the PC's serial port correctly through an RS232 serial port tool, such as Serial Assist.
3. Input the command GET IPADDR<CR><LF> and send it. You will get a response with the IP address. See the following example:

   Input:

   `GET IPADDR<CR><LF>`

   Response:

   `IPADDR 172.16.18.173 MASK 255.255.255.0`

   `GATEWAY172.16.18.1`

   Note: When all is configured properly, users can control the device through commands, which are available in the separate document "API Command Set_iSwitch 203UC".

8.2 Telnet

Connect a control PC to the LAN port of the transmitter or LAN1/LAN2 of the receiver. Before you intend to control the device through telnet API, you shall establish a connection between this device and your computer.

The form of the command for telnet connection is below:

`telnet ip (port)`

- `ip`: The device's IP address.
- `port`: The device's port number. This is not required for some Telnet control tools. Default setting is 23.

For example, if the device's IP address is 192.168.11.143, the command for telnet

connection shall be the following:

```
telnet 192.168.11.143
```

8.3 Web UI Control

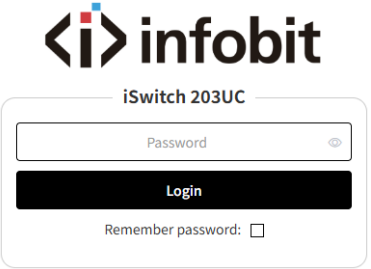
The Web UI is an intuitive software interface for users to manage and control the device with ease through a browser. The latest version of Chrome, Safari, Microsoft Edge, or Firefox is recommended.

8.3.1 Accessing the Web UI

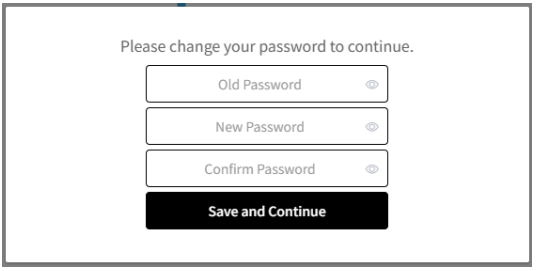
By default, the device's IP addressing mode is DHCP.

To access the Web UI:

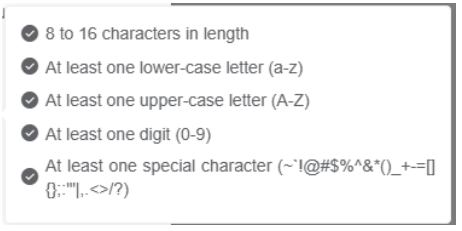
1. Connect one LAN port of the receiver to a local area network. Ensure there's a DHCP server on the network so that the device can obtain a valid IP address.
2. Connect a PC to the same network as the device.
3. Input the device's IP address in the browser (see the "Obtain IP Address" section to get detailed information)and press Enter. The following page appears.



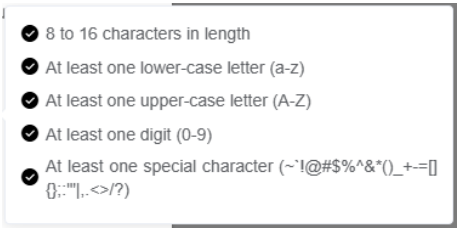
4. Input the Password and click "Login". Default password is **admin**.
   When you log in to the web UI for the first time, you need to change the password before entering the control page.



Clicking the blank box to enter a new password will prompt you to enter the password requirements, as shown in the image below.



When all the checkmarks next to the requirements turn black, it means the entered password meets the requirements.



Tips:

Reset password and IP mode:

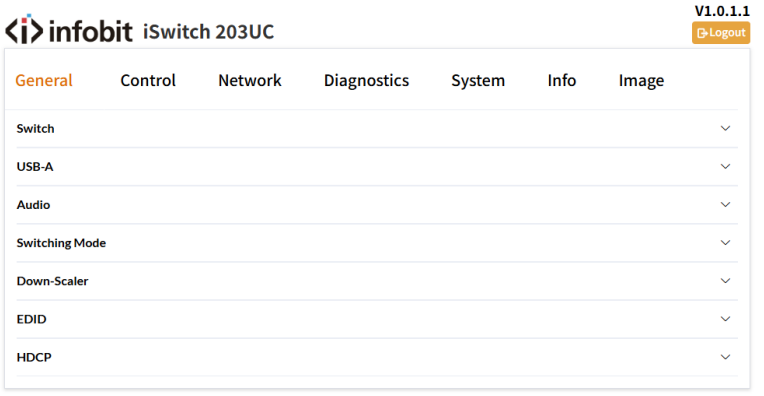
If users forget the login password, the following ways can be used to restore the default password:

- Hold the "**RESET**" hole on the rear panel of the receiver for about 5s to reset the IP mode to DHCP and login password to "admin".
- Hold the "**RESET**" hole on the rear panel of the receiver for about 15s to reset the device to factory defaults, which includes resetting the

password.

- Send the API command “RESET<CR><LF>” to reset the device to factory defaults, which includes resetting the password.

5. Click “Save and Continue” to enter the following page:



8.3.2 Web UI Introduction

Logout : Click to log out of the web UI and return to the login page.

1. General

1) Switch

This section allows users to switch input for output.

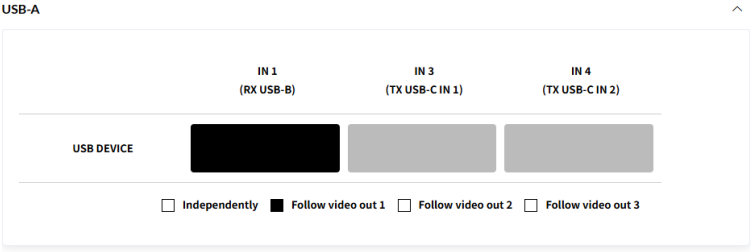
Click the button in the table to switch one input source for VIDEO OUT 1/2/3 (Button turns from grey to black when the selection is done).

- **RX HDBT IN1/IN2**: Users can select IN1 or IN2 source on the transmitter from the drop down menu as the HDBT IN source.

- **ALL**: Click to route a certain input to all outputs.

By default, VIDEO OUT 1/2/3 selects RX HDMI IN1 as input source. RX HDBT IN selects TX IN1 as input source.

2) USB-A



Independently/Follow video out 1/2/3: Check the box before the option to set the USB-A switching rules.

Default Setting: Follow video out 1.

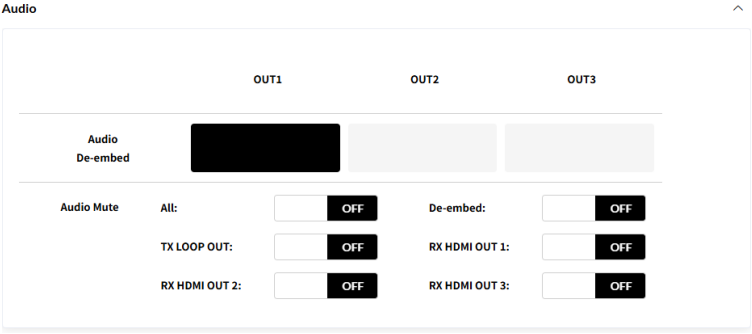
When selecting “Independently” mode, users can manually switch the USB host for the USB devices to be connected to by clicking the corresponding button in the table (button turns from white to blue when the operation is done).

When selecting “Follow video out 1/2/3” mode, the USB host switching will follow

the video switching. The selected USB host button is black, and the other buttons are dark grey, and can't be selected.

For example, when selecting "Follow video out 1", if video out 1 selects RX HDMI IN 1 as the input source, the connected USB devices will be routed to the USB HOST port.

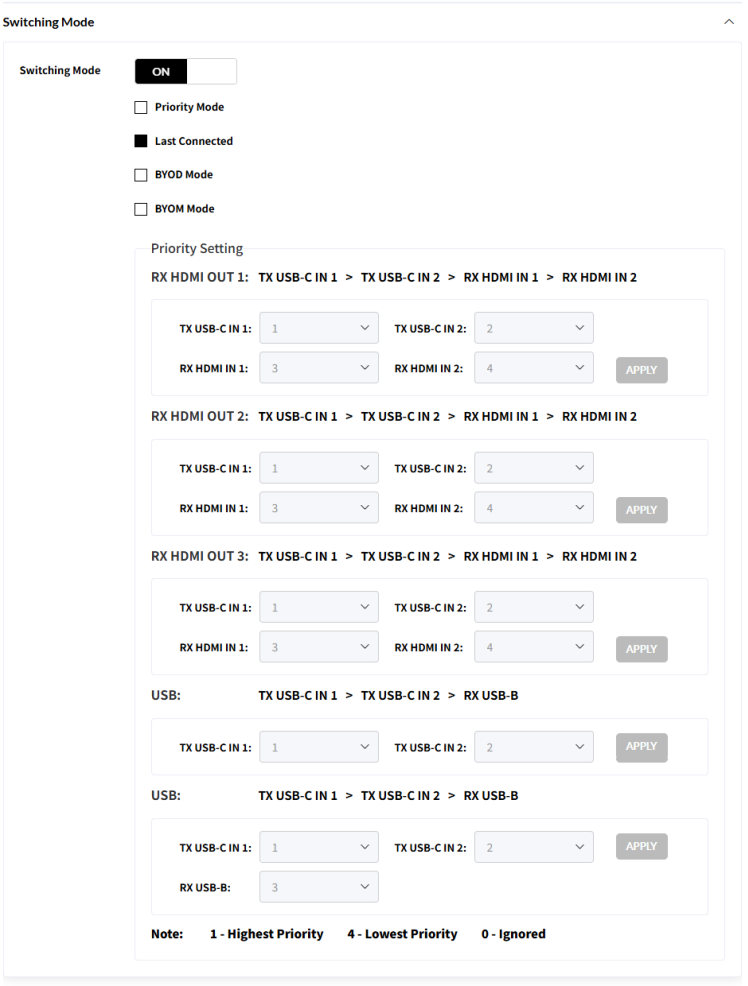
3) Audio



- **Audio De-embed**: Click to select de-embedded audio from OUT 1/2/3 for the AUDIO OUT port (button turns from grey to dark when the selection is done). Default Setting: HDMI OUT 1.
- **Audio Mute**: Click to set to mute/unmute the corresponding output audio. Default Setting: OFF (unmute).

  All: Click to mute all output audio.

4) Switching Mode



This section allows users to set the auto-switch function to ON/OFF, and select an auto-switching mode.

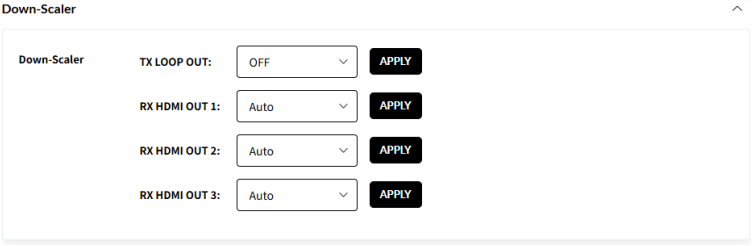
- **Switching Mode**: Click to enable or disable auto-switching mode.
  Default: ON.

When the function is set to ON, users can select an auto-switching mode among Last Connected, Priority Mode, BYOM Mode, and BYOD Mode.

- **Last Connected** (Default): When inserting a new active input, all outputs will switch to this input automatically. When removing the currently selected input, all outputs will switch to the previously active input.
- **Priority Mode**: When set to this mode, users can set input switching priority for RX HDMI OUT 1/2/3 and USB from each zone.

  Note:
  - "1" indicates the highest priority, "4" indicates the lowest priority, and "0" means this port will be ignored in automatic switching.
  - When two inputs are set to the same priority, will follow the sequence of priority is TX USB-C IN 1 >. TX USB-C IN 2 > RX HDMI IN 1 > RX HDMI IN 2.
  - When the USB Switch mode is set to follow video, it will follow the corresponding video output to switch.
  - When the USB Switch mode is set to independently, USB device switching also follows LIFO mode, and can set priority.
- **BYOM Mode**: Set auto switching mode to BYOM mode (see the “Auto Switching” section to get detailed information).
- **BYOD Mode**: Set auto switching mode to BYOD mode (see the “Auto Switching” section to get detailed information).

5) Down-Scaler



This section allows users to set the down-scaler function for each output.

Select the mode from the drop-down menu for TX LOOP OUT and RX HDMI OUT 1/2/3, and click “APPLY” to take effect.

- **Auto**: Automatically converts the input 4K resolution to 1080P when

connected to a 1080P display.

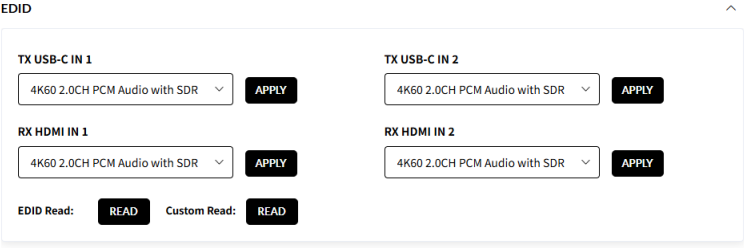
- **Forced 1080P**: Forcefully converts the input 4K resolution to 1080P regardless of the connected display capabilities.
- **OFF: Disables the down-scaler function.**

Default setting:

TX LOOP OUT: OFF;

RX HDMI OUT 1/2/3: Auto

6) EDID



This section allows users to set EDID for inputs, read EDID of outputs, and set customized EDID.

Select an EDID for the corresponding input port, and click "**APPLY**" to take effect.

Default setting for all inputs: Fixed 4K@60 2.0CH Audio with SDR.

The selectable EDID options include:

Copy from hdmi output 1

Copy from hdmi output 2

Copy from hdmi output 3

Copy from hdmi TX LOOP output

5120x2160P60 2.0CH PCM Audio with SDR

5120x1440P60 2.0CH PCM Audio with SDR

4K60 2.0CH PCM Audio with SDR

4K60 7.1CH Encoded Audio with SDR

4K30 7.1CH Encoded Audio with SDR

1080P60 2.0CH PCM Audio with SDR

1080P60 5.1CH Encoded Audio with SDR

1080P60 7.1CH Encoded Audio with SDR

Custom EDID 1

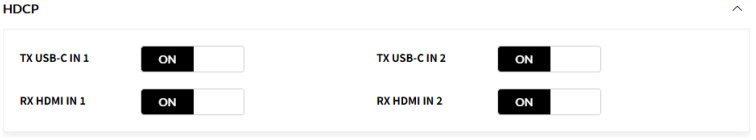
Custom EDID 2

- **EDID Read**: Click “READ” to enter the following page:

  - **Select Port**: Click to select an output port from the drop-down menu.
  - **Read**: Click to read the EDID of the selected output. The result is shown in the table on the page.
  - **Save As**: Click to save the read EDID as a bin file to the local PC.
  - **Status**: Shows the status of reading EDID.
- **Custom EDID**: Click “**READ**” to enter the following page:

- **Custom EDID**: Select a customized EDID from the drop-down menu.
- **Read**: Click to read the selected customized EDID. The result is shown in the table on the page.
- **Write**: Click to write the opened EDID to the selected customized EDID.
- **Save As**: Click to save the read customized EDID to the local PC.
- **Open**: Click to select and open an EDID bin file from the local PC.

7) HDCP

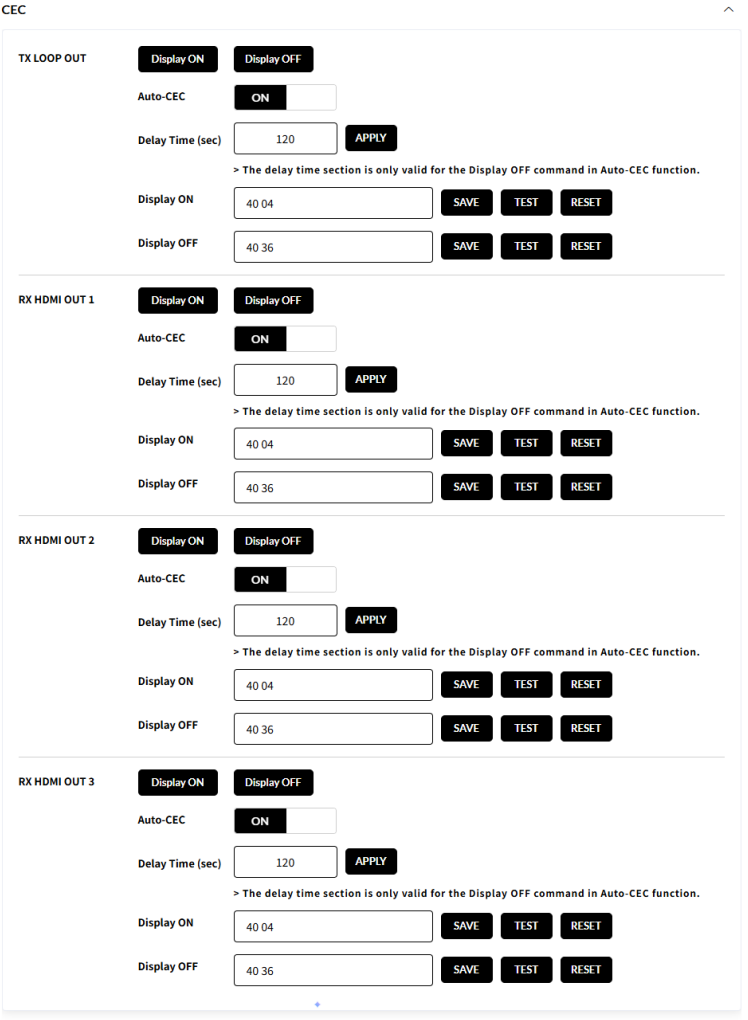


This section allows users to set HDCP function of inputs to ON/OFF. Click the

button to enable/disable HDCP encryption of each input port. The default setting is “ON”.

2. Control

1) CEC



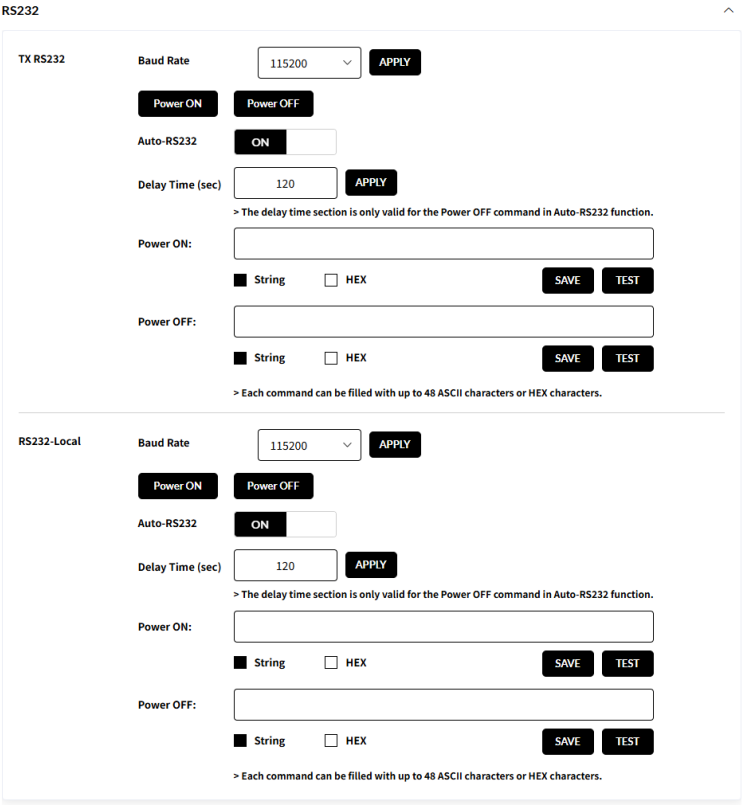
This section allows users to control the CEC-enabled display connected to the

transmitter and receiver to power on/off, and set the auto-CEC function.

- **Display ON/OFF**: Click to control the corresponding CEC-enabled display to power on/off immediately.
- **Auto-CEC**: Click to set the auto-CEC function of the corresponding output to ON/OFF. Default setting: ON.
- **Display Time (sec)**: Select the time for the display to power off automatically when no signal is present. For example, if Auto-CEC is set to ON and the time is set to 30s, the selected output display will power off automatically when there's no signal at the display for 30s.
  Default setting: 120s. Range: 30s~1800s.
- **Display ON/OFF**: Input the display on/off command to control the corresponding display.
  - **SAVE**: Click to save the input command.
  - **TEST**: Click to send the input command to test it.
  - **RESET**: Click to reset the command to the default value.

  Note: Please get the commands from the display's manufacturer, supplier or user manual.

2) RS232



This section allows users to set parameters for RS232 control and set the auto-RS232 function.

- **Baud Rate**: Select a baud rate from the drop-down menu and click “APPLY” to take effect. Default setting: 115200.
- **POWER ON/OFF**: Click the button to set the third-party device RS232 port connected to power on/off immediately.
- **Auto-RS232**: Click to set the auto-RS232 function to on/off. Default setting: ON.
- **Delay Time (sec)**: Select the time for the third-party device RS232 port

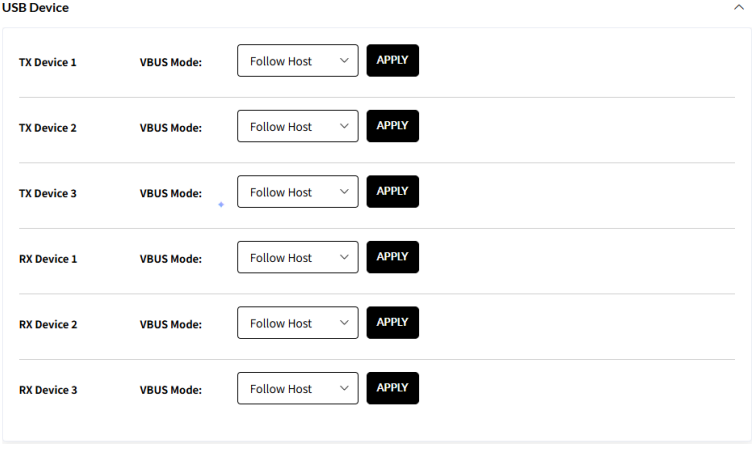
connected to power off automatically when no signal is present. For example, if Auto-RS232 is set to ON and the time is set to 1 minute, the third-party device RS232 port connected will power off automatically when there's no signal at the display for 1 minute.

Default setting: 120s. Range: 30s~1800s.

- **RS232 Command:**
  - **Display ON/OFF**: Input the Display ON/OFF commands for the 3rd party device in the corresponding field. The serial commands for displays and projectors are provided by their manufacturer and can be found in the instructional documentation.
  - **String/HEX**: If the command for display on/off is only available in Hex format, check the box before "HEX" and input the Hex command in the field; otherwise, check the box before "String".
  - **SAVE**: Click to save the input command to the matrix.
  - **TEST**: Click to send the input command to the 3rd device directly to test it.

Note: The RS232 command must be set before use, otherwise the RS232 port will not send anything.

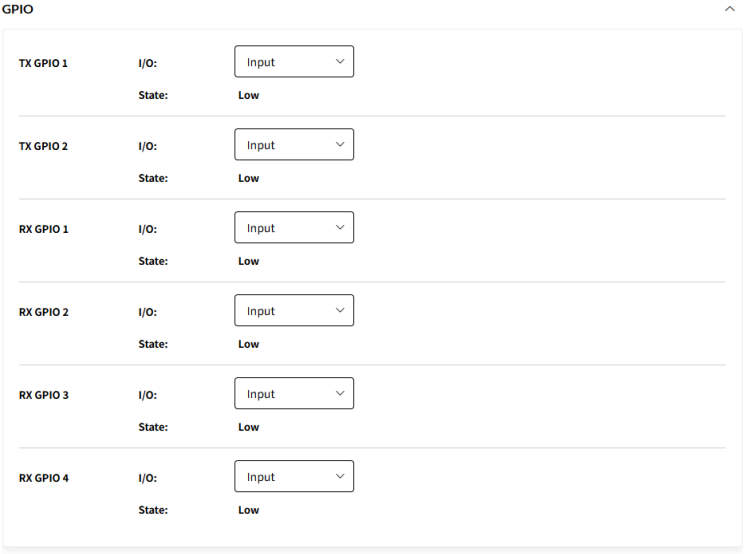
3) USB Device



This section allows users to set VBUS mode for USB device ports on the transmitter and the receiver.

- **Follow Host** (default): The USB Device Vbus follows the status of the USB Host Vbus: when the USB Host device is connected, the USB Device Vbus is high; when the USB Host is disconnected, the USB Device Vbus is low.
- **Always On:** The Vbus (5V) on the corresponding USB Device port is always enabled and remains powered on, regardless of the USB Host connection status.
- **Always Off:** The Vbus (5V) on the corresponding USB Device port is always disabled and no power is supplied to the connected USB device.

4) GPIO

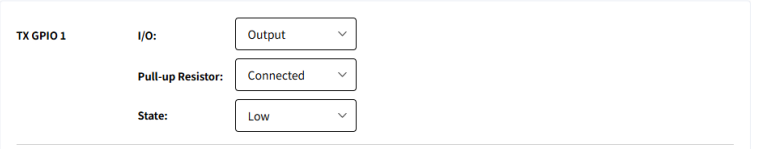


This section allows users to configure each GPIO port independently.

I/O: Select the GPIO type between “Output” and “Input”.

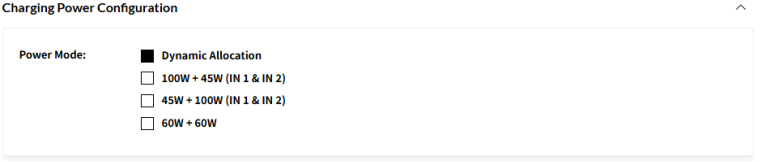
- When selecting "Input":

  State: Shows the current GPIO status.
- When selecting "Output":



- **Pull-up Resistor**: Enable/disable the Pull-up Resistor.
- **State**: Set GPIO output state to “High” or “Low”.

5) Charging Power Configuration



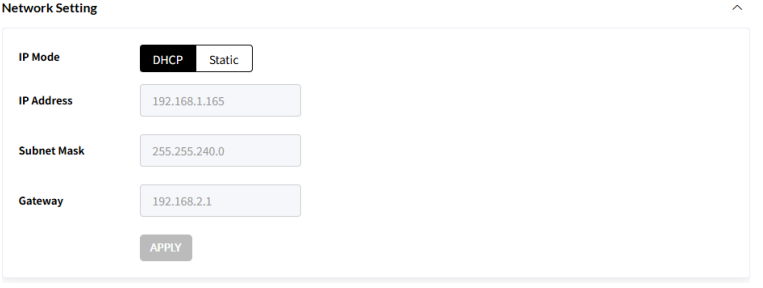
This section allows users to configure the charging power.

Power Mode: Click the checkbox in front of the corresponding option to select the charging power configuration for USB-C IN 1 and USB-C IN 2.

Default setting: Dynamic Allocation.

3. Network

1) Network Setting



This section is used to select between static and dynamic IP addressing.

- **IP Mode**:
  - **DHCP**: When enabled, the IP address of the Matrix is assigned automatically by the connected DHCP server.
  - **Static**: When enabled, you need to set up the IP address manually.

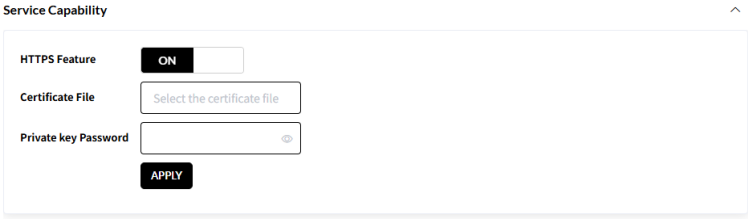
Default setting: DHCP

- **APPLY**: Click to save and perform the network setting, and the setting change will take effect immediately.

Note:

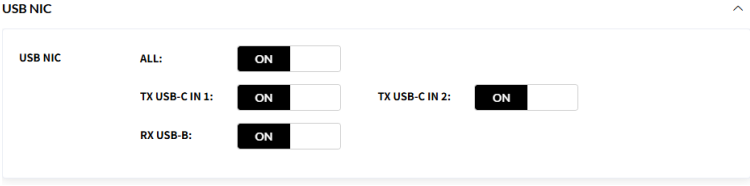
- When "Static" is selected, please ensure your PC is in the same network segment as the device.
- Please wait for 2-3 minutes for the Matrix's LAN module to reboot and reconnect after the network setting is changed.

2) Service Capability



- **HTTPS Feature**: Enable or disable HTTPS. Default setting: ON.
- **Certificate File: Select the certificate used**for HTTPS connections. This option is available only when HTTPS is enabled.
- Private Key Password: Input the private key password for HTTPS. Default password: admin.
- APPLY: Click “**APPLY**” to take effect.

3) USB NIC

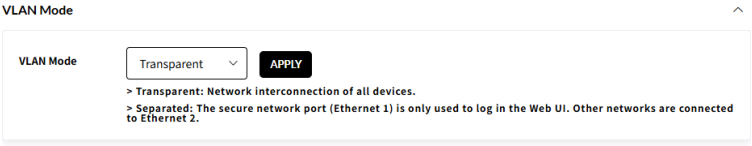


USB NIC refers to the USB Network Card.

This section allows users to enable/disable the USB NIC function for each port (on

the transmitter and receiver). Default setting: ON.

4) VLAN

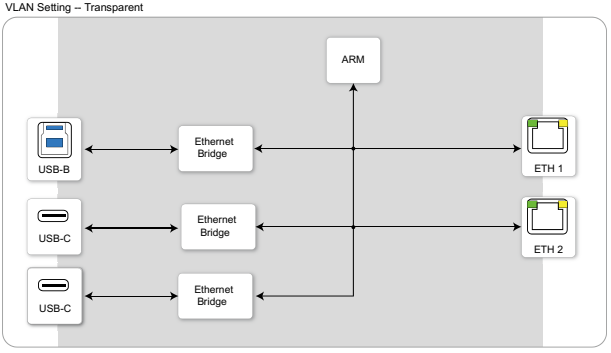


VLAN settings can help administrators isolate the internal network and the guest network to protect the network security.

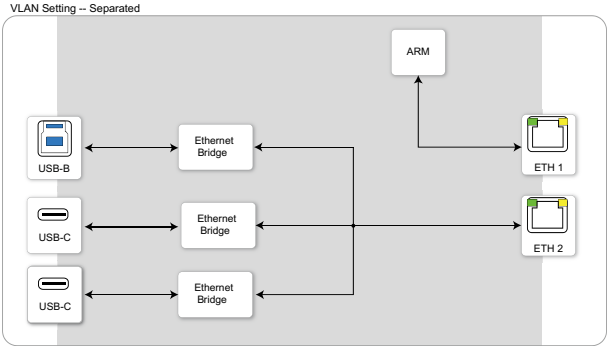
The receiver provides TWO Ethernet ports, which can be used for VLAN settings.

VLAN Mode: Select VLAN mode from the drop-down menu, and click “APPLY” to take effect.

- **Transparent**: Network interconnection of all devices.

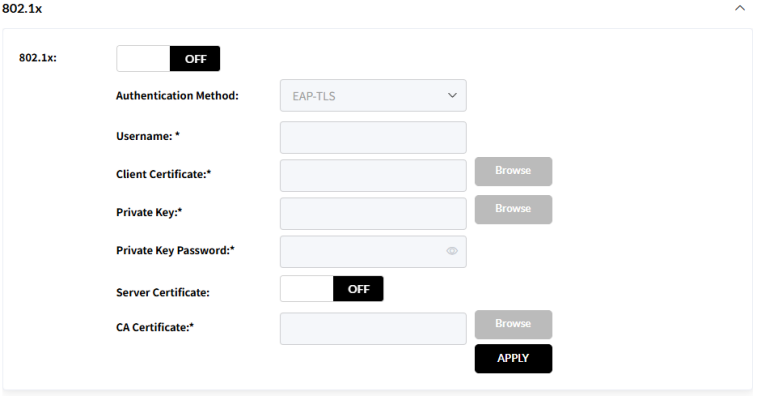


- **Separated**: Isolate the device network from the USB NIC network. Only the secure network port, LAN 1, can access the device's Web UI. Other USB NIC devices are connected to LAN 2.



- **APPLY**: Click to take effect.

5) 802.1x

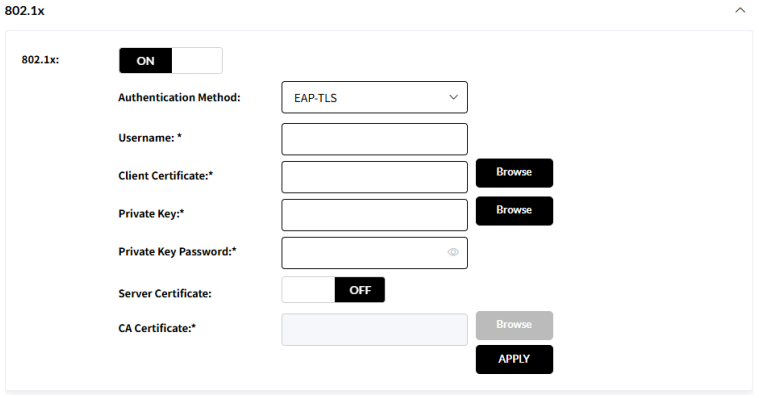


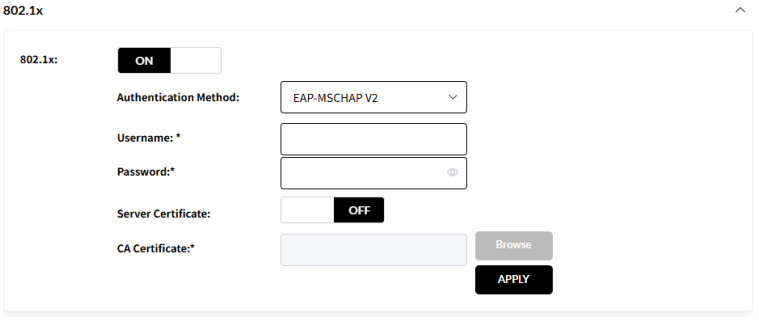
802.1x: Click to enable/disable 802.1x Authentication service. Default setting: OFF.

When 802.1x is set to ON:

802.1x supports authentication based on port and MAC address.

The two following authentication methods are offered:



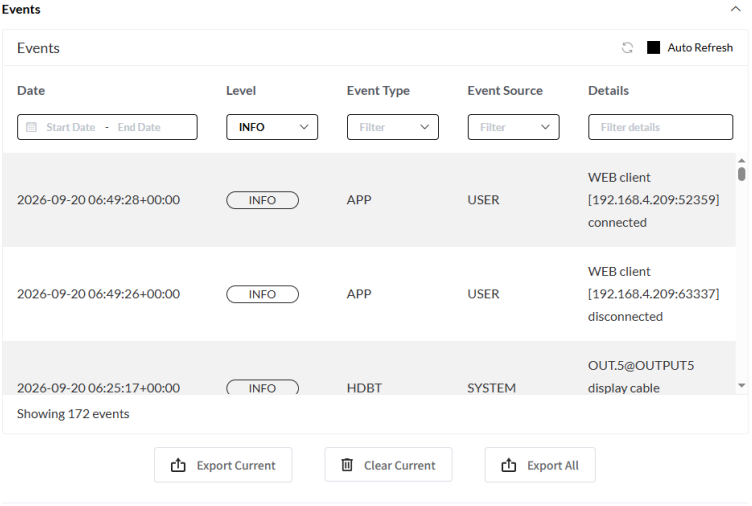


- **EAP-TLS**: This method requires a username, a CA certificate, a Client Certificate, a private key, and a private key password for authentication.
  - Username require alphanumeric, “-”, “_” and characters within length of 1 to 24 characters, “-“ and “_” cannot be at beginning or end.
  - Private Key Password require printable ASCII characters within length of 1 to 24 characters.
- **EAP-MSCHAP V2**: This method requires a username and a password for authentication.
  - Username require alphanumeric, “-”, “_” and characters within length of 1 to 24 characters, “-“ and “_” cannot be at the beginning or end.
  - Password require printable ASCII characters within length of 1 to 24 characters.
- **Server Certificate**: Click to set server certificate to on/off. Default setting: OFF.

When it is set to ON, users need to submit a CA certificate for authentication.

- **APPLY**: Click to perform the above settings and reboot the device.

4. Diagnostics



This section get events report information.

- **Auto Refresh**: By default, the information is refreshed automatically. If you want to retrieve the latest reported information manually, uncheck Auto Refresh and click the " " button to update and obtain the most recent data.
- **Date**: Click to set the start date and end date of the displayed report event information.
- **Level**: Select the displayed report event information level from the drop-down menu. Default setting: INFO.
- **Event Type**: Click to select the displayed report event information type from the drop-down menu. No default value.
- **Event Source**: Click to select an event source from the drop-down menu, USER or SYSTEM. No default value.

Note: For the above three blank boxes, move the mouse to the icon " ",

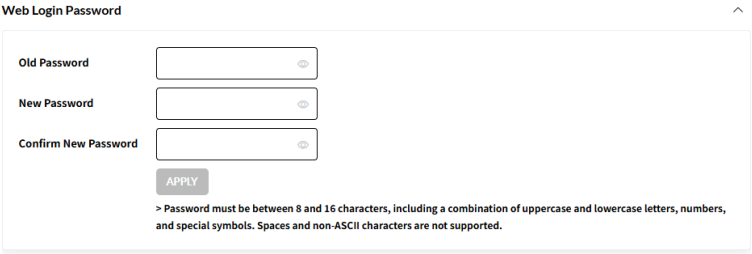
when the mouse cursor changes to a hand shape and an “ ” icon appears, click this symbol to delete the selected level.

- **Details**: Input report event details to filter. When inputting detail information, click the icon “ ” to delete it.
- **Export Current**: Click to export the current filtered event report information to the local PC.
- **Clear Current**: Click to clear all event report information.
- **Export All**: Click to export all event report information to the local PC.

Note: The event report export may take several minutes. Please wait. If you close this window, the export process will be cancelled.

5. System

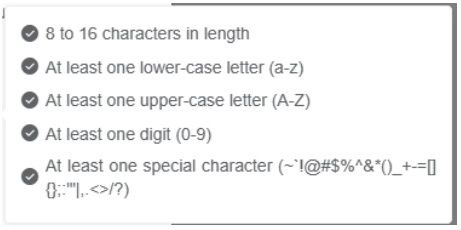
1) Web Login Password



This section is to change the login password.

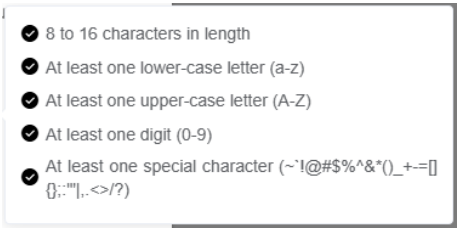
Default setting: admin

Click the blank box of “New Password” will prompt you to enter the password requirements, as shown in the image below.

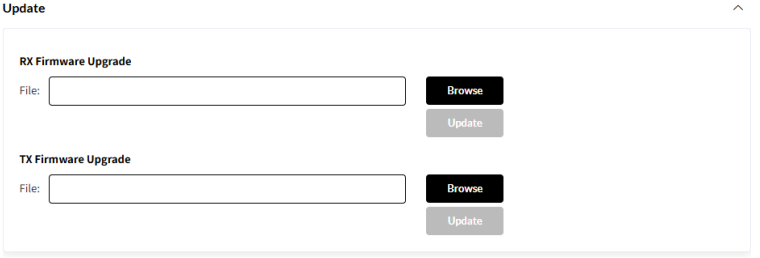


When all the checkmarks next to the requirements turn black, it means the entered

password meets the requirements.



2) Update



This section allows users to upgrade the firmware of the transmitter/receiver.

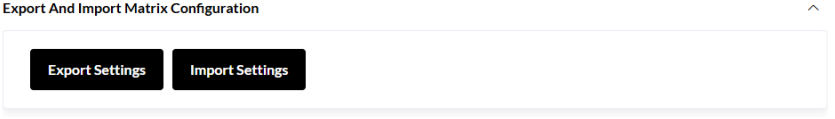
a) Click “Browse” to select the update file from the local PC.

b) Click “Update” to start the upgrade.

Note:

- The device will reboot automatically when the firmware update is completed successfully. Please wait for about 2-5 minutes, then refresh and log in again.
- DO NOT power off the device during the update process.

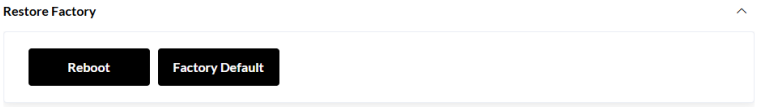
3) Export And Import Matrix Configuration



- **Export Settings**: Click to export the settings file to the local PC.
- **Import Settings**: Click to import the settings file from the local PC and apply

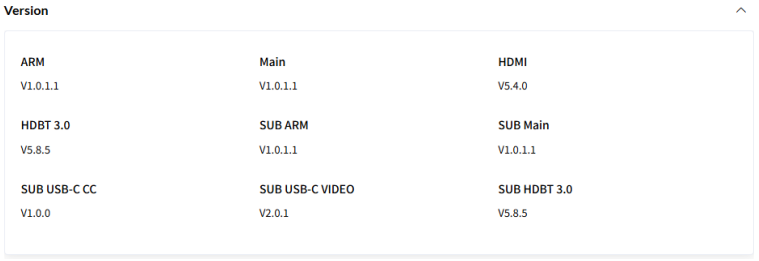
the imported settings.

4) Restore Factory



- **Reboot**: Click to reboot the device.
- **Factory Default**: Click to set the device to factory defaults.

5) Version



This section shows the current firmware version and SN of the device.

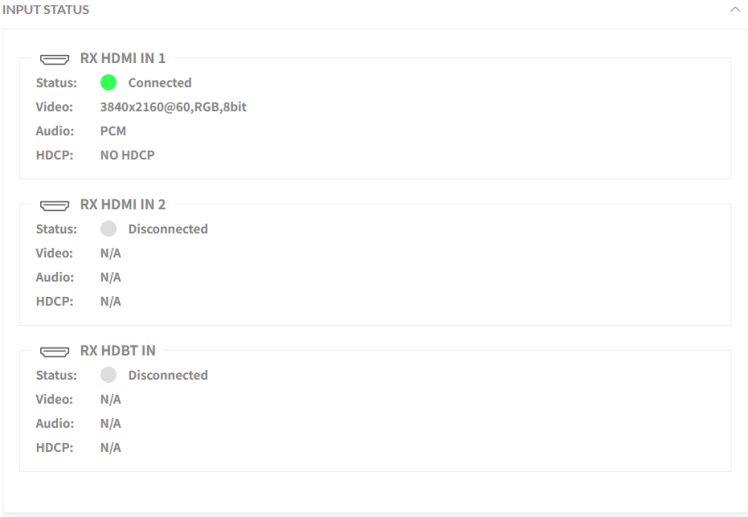
6) Log

This section displays system setting change records. Click “Export Log” to download the log to the local computer.

Note: When exporting the log, please wait for a few moments.

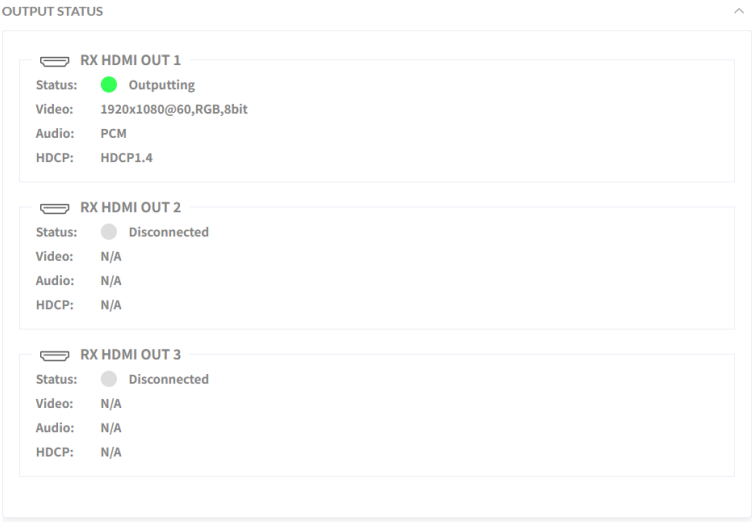
6. Info

1) INPUT STATUS



This section shows the connection status, video format, audio format and HDCP status of input ports.

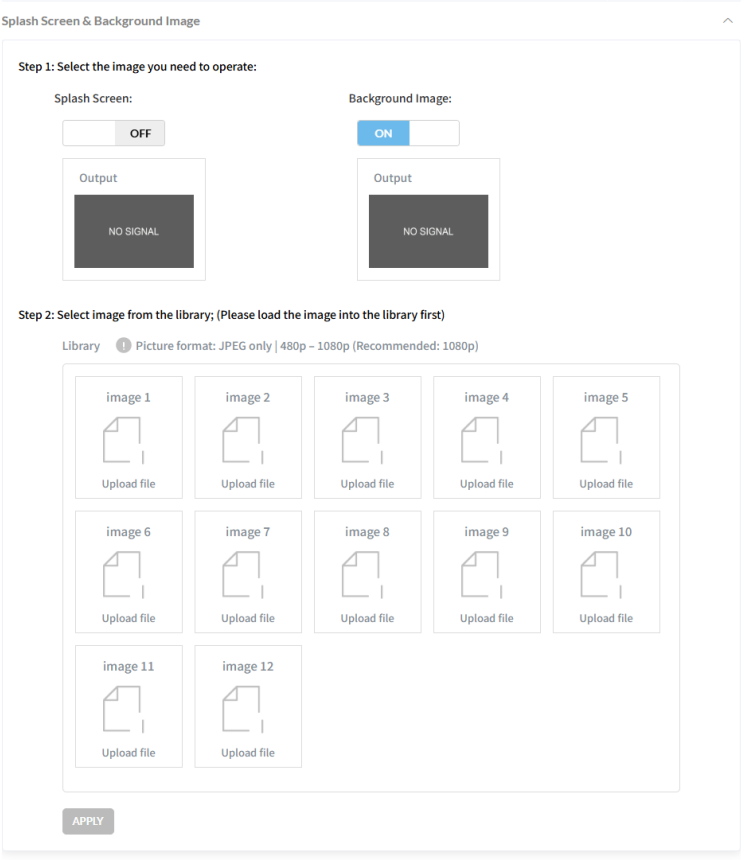
2) OUTPUT STATUS



This section shows the connection status, video format, audio format and HDCP status of output ports.

7. Image

Splash Screen & Background Image



This section allows users to upload images as splash screen or background image to set for output.

Steps to set a splash screen or a background image:

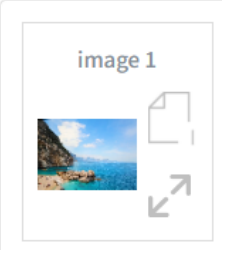
1. Move the mouse to the image 1/2…12 button on the **Library** area, when the mouse becomes the shape of a hand, click the and select one picture from the local PC to upload the image to the library.

   Note:

   - The uploaded image must be in JPEG only, and 480p-1080p (recommended: 1080p).

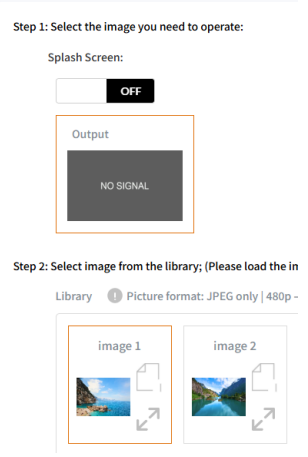
- Change the image name:
  Click the name of each image to display the following interface, then enter the new name directly there.

After the upload is complete, in the pane displaying the thumbnails:



- : Click to select a new image from the local PC to upload.
- : Click to view the large version of this image.

2. Click the diagram in the "Splash Screen/Background Image" area; a red border will appear around it, as shown below. Then, click the desired image in the "library" area; a red border will appear around that as well.



3. Click “APPLY” to take effect.
4. Set Splash Screen / Background Image to ON. The set image will be shown as splash screen / background.

Note:

- Splash Screen: Default setting: OFF;
  Background Image: Default setting: ON.
- When no image is set, both display "No Signal".