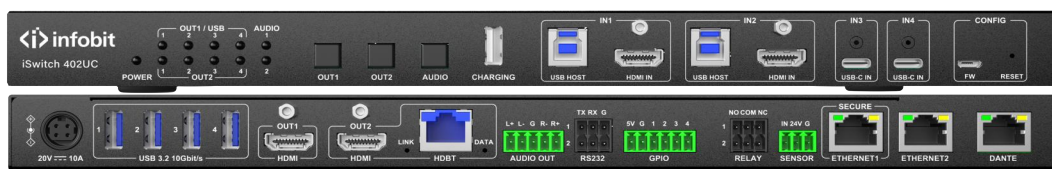


iSwitch 402UC

4K60 4x2 UC Switcher with Dante

User Manual V1.0



iSwitch 402UC (TX)



iSwitch 402UC (RX)

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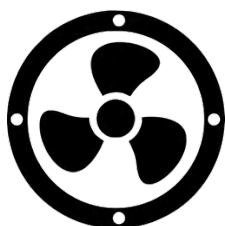


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SAFETY INSTRUCTIONS



- The equipment should be operated only from the power source indicated on the product.
 - To disconnect the equipment safely from power, remove the power cord from the rear of the equipment or from the power source. The plug is used as the disconnect device, the disconnect device shall remain readily operable.
 - There are no user-serviceable parts inside of the unit. Removal of the cover will expose dangerous voltages. To avoid personal injury, do not remove the cover. Do not operate the unit without the cover installed.
 - The appliance must be safely connected to multimedia systems.
 - Follow instructions described in this manual.
-



- For the correct ventilation and to avoid overheating, ensure enough free space around the appliance. Do not cover the appliance, leave the ventilation holes free and never block or bypass the ventilators (if there are any).
-



- The devices shall not be exposed to dripping or splashing, and no objects filled with liquids, such as vases, shall be placed on the devices.
-



1. ISWITCH 402UC (TX)

1.1 OVERVIEW

The **iSwitch 402UC** enhances and extends the possibilities of a meeting room and allows meeting participants to easily use their own devices such as laptops and preferred video conference platforms, while also utilizing the available assets of the meeting space, for example HDMI displays, room cameras and other USB peripherals.

The **iSwitch 402UC (TX)** is a 4x2 conference presentation switcher, it is specially designed for conference room scenarios, featuring various models and specifications to meet diverse user needs. It supports 4x2 matrix switching and optional long-distance video, audio, and USB transmission via HDBT 3.0 technology.

Equipped with dual USB-C full-featured and dual HDMI+USB 3.0 inputs, it can connect multiple laptops or desktop computers. It supports 4 local USB 3.0 device ports, enabling connection to various USB conference devices such as USB cameras, audio-bars, and USB speakers, and can extend USB connectivity over long distances via HDBT. The USB-C connectivity for a simplified transmission of 4K video, audio, control signals and power, and allows data speeds of up to 5 Gbps under the USB 3.1 Gen1 and allowing video resolution capabilities up to 4K@60Hz at 4:4:4.

The **iSwitch 402UC** is designed to be a centerpiece of any collaboration space and can be connected to USB peripherals via USB-A type connectors. The series allows the hosts to be connected to the system and also ensures quick and easy switching between these hosts, making this universal switcher a perfect fit for small to large meeting rooms.

The **iSwitch 402UC (TX)** offers flexible audio configuration, allowing HDMI audio, USB audio, and Dante audio to be output through a local balanced audio output port, also with the option to output conference audio to remote Dante-supported devices through the Dante port.

It supports multiple control interfaces, including RS232, GPIO, RELAY, and Sensor interfaces, for seamless integration with various controlled devices. With complete network functionality, it provides 2 independent RJ-45 interfaces and supports USB-to-Ethernet functions. Through the VLAN division and 802.1x setting, switcher and USB networks can be separated to meet security requirements.

It also thrives when it comes to audio capabilities, offering analog audio de-embedding feature, as well as support for DANTE/AES67 network connection to send DANTE/AES67 audio stream directly to a dedicated audio system.

It provides multiple switching options, including automatic switching, manual switching, and configuration priority switching. It also supports HTTP and HTTPS configuration, 802.1x security, CEC and RS232 configuration, customized GPIO function, and comes with built-in Web UI and API control.

Note: Dante® is a registered trademark of Audinate Pty Ltd.

1.2 FEATURES

- **4K Video:** High bandwidth allows extension of resolutions up to 4K60Hz 4:4:4.
- **4x2 conference presentation switch**, integrating video, audio, USB, control and ethernet.
- **Dual USB-C and dual HDMI + USB Host** inputs, and all ports support cable lock connections.
- **Full-featured USB-C inputs**, supports 4K video, USB 3.2 data, USB ethernet and 60W charging. USB Type C port ensures USB-C connectivity to the source device with USB 3.1 data and Displayport Alternate mode for video. It provides power delivery (PD) of up to 60 W for the connected device (e.g. BYOD laptop or smartphone).
- **One USB-C input supports MST** for dual-screen conferencing applications.
- **Supports automatic switching**, USB and video independent switching, priority switching, and other switching methods. The Auto-switching feature can sense the port status on the video input and USB Host ports and select them automatically. Priority number can be set for each input port, and the feature allows to set various modes for the automatic input selection.
- **Provides four USB 3.2 device ports** for connecting conference equipment, such as cameras and speakerphone.
- **Provides one balanced audio out** for connecting audio equipment, and supports audio de-embedding, UAC, and Dante. The analog audio can be **de-embedded** from HDMI inputs and it can be routed to the analog audio output.
- **Provides 100m HDBT 3.0 output** for video and USB extension applications in medium and large conference rooms.
- **Bi-directional RS232:** AV systems can also contain serial port controllers and controlled devices. Serial transmission supports any unit that works with standard RS-232.
- **GPIO, RELAY, and OCS Sensor** (Occupancy Sensor Connectors) ports to connect various control and controlled devices. Six GPIO pins operating at TTL digital signal levels that can be controlled with LW3 commands. 5V is supplied over the 7th pin constantly, up to 500 mA.
- One **USB charge-only port** is connected to the conference table to provide a charging function for mobile phones.
- Each input port provides an **independent USB to Ethernet bridge**, providing a 1G ethernet connection to the connected computer.
- **Provides two independent RJ-45 ports** for ethernet switch or VLAN Setting. help prevent unauthorized access to the INFOBIT device. Ensure company network and guest network are separate.
- Supports one RJ-45 port for 2x2 **Dante**.
- **Supports ethernet control**, multiple simultaneous TCP/IP connections are available with a simple ASCII-based protocol for controlling or configuring the product, or to perform a firmware update.
- **IT security:** supports HTTP and HTTPS and supports 802.1x authentication.



- **The switcher fulfills the HDCP standard.** HDCP capability on the digital video inputs can be disabled when non-protected content is used.

1.3 PACKAGE CONTENTS

(Note: The Rx and Tx are in one box by default.)

- 1 x iSwitch 402UC (Tx and Rx)
- 1 x DC 20V/10A Power Adapter
- 1 x AC Power Cord with US Pins
- 2 x USB 3.2 Type-C to Type-C Cable (L = 2m)
- 2 x USB 3.0 Type-A to Type-B Cable (L = 1.8m)
- 1 x 3.5mm 3-Pin Phoenix Male Connector
- 2 x 3.5mm 3-Pin Phoenix Male Connector (Double Layer)
- 1 x 3.5mm 5-Pin Phoenix Male Connector
- 1 x 3.5mm 6-Pin Phoenix Male Connector
- 4 x Mounting Brackets (with Screws)

1.4 SPECIFICATIONS

| | |
|--------------------------|---|
| Model | iSwitch 402UC (Tx) |
| Name | 4K60 4x2 UC Switcher with Dante |
| Input/Output Port | 2 x HDMI IN, 2 x USB-C IN, 2 x HDMI OUT, 1 x HDBT, 2 x USB HOST (USB Type-B), 1 x AUDIO OUT (3.5mm, 5-pin phoenix connector), 4 x USB DEVICE (USB Type-A), 2 x RS232, 1 x GPIO (3.5mm, 6-pin phoenix connector), 2 x RELAY, 1 x SENSOR, 2 x ETHERNET (RJ45), 1 x DANTE (RJ45), 1 x DC 20V |
| Input/Output Signal Type | Supports HDMI 2.0 standard, up to 4K@60Hz 4:4:4 8bit or 4K@60Hz 4:2:2 12bit. Supports HDCP 2.2/1.4. |
| USB HOST IN 1 & 2 | Supports USB 3.2 Gen 2x1 standard, up to 10Gbit/s |

| | |
|-----------------------------------|---|
| USB-C IN 3 & 4 | <p>USB-C IN 3: USB-C supports USB 3.2 Gen 2x1 standard, and supports: Video: DP alt mode, SST only, up to 4K@60Hz. USB data: Up to 10Gbit/s. Charging: 60W.</p> <p>USB-C IN 4: USB-C supports USB 3.2 Gen 2x1 standard, and supports: Video: DP alt mode, MST dual output, up to 4K@60Hz. USB data: Up to 10Gbit/s. Charging: 60W.</p> |
| USB DEVICE | Maximum supports USB 3.2 Gen 2x1 standard, up to 10Gbit/s. 5V/1.5A output per port. |
| Input/Output Resolution Supported | VESA (60Hz): 800 x 600, 1024 x 768, 1280 x 768, 1280 x 800, 1280 x 960, 1280 x 1024, 1360 x 768, 1366 x 768, 1440 x 900, 1600 x 900, 1600 x 1200, 1680 x 1050, 1920 x 1200, 2048 x 1152, 2560 x 1440, 3440 x 1440 CTA: 1280x720P50Hz/60Hz, 1920x1080P24/25/30/48/50/60Hz , 3840x2160P24/25/30/48/50/60Hz, 4096x2160P24/25/30/48/50/60Hz |
| HDR | All HDR formats, including HDR 10, HLG, HDR 10+ and Dolby Vision |
| Audio Format | USB-C IN/HDMI IN/ HDMI OUT: 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 de-embedding: Stereo only. Dante: Stereo only. |
| ETHERNET | 1,000M/100M adaptive network |
| Maximum Data Rate | USB-C IN: 10Gbit/s (per lane) HDMI: 18Gbps USB 3.2: 10Gbit/s |
| Control Method | Front Panel Buttons, RS232, LAN (Telnet & Web UI) |
| Operating Temperature | 0°C to 45°C (32°F to 113°F) |
| Storage Temperature | -20°C to 70°C (-4°F to 158°F) |
| Humidity | 10% to 90%, non-condensing |
| ESD Protection | Human-body Model: ±8kV (Air-gap discharge)/±4kV (Contact discharge) |
| Power Supply | DC 20V, 10A |

| | |
|------------------------------|---|
| Power Consumption (Max) | Without USB and Charging: 13.1W With USB + Charging: 155.6W |
| Device Dimension (W x H x D) | 325mm x 25mm x 180.2mm / 12.80" x 0.98" x 7.09" (without mounting brackets) |
| Product Weight | 1.45kg/3.20lbs |

1.5 TRANSMISSION DISTANCE

Note:

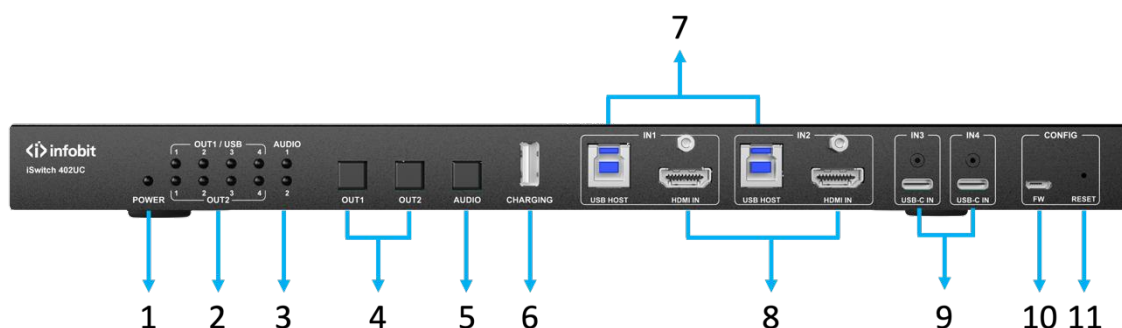
- T568B straight-through category cable is recommended.
- Please use F/FTP or U/FTP cable, and don't use UTP, F/UTP, or U/UTP cables.

| Port | Cable Type | Range | Supported Video |
|-----------------|-------------------------------------|---------------------------|--|
| HDBT 3.0 | Cat 6A/7 (U/FTP, F/FTP or S/FTP) | 100m/330ft | 4K@60Hz (All) 4K@30Hz (All) 1080P@60Hz (All) |
| | Cat 5E/6 | 70m/230ft | 4K@60Hz 4:2:0 24bpp 4K@30Hz (All) 1080P@60Hz (All) |
| | | 40m/131ft | 4K@60Hz 4:4:4 24bpp 4K@60Hz 4:2:2 36bpp |
| USB-C | USB C to C | 2m/7ft | 4K@60Hz (All) 4K@30Hz (All) 1080P@60Hz (All) |
| HDMI | HDMI cable | Input/Output: 10m/33ft | 4K@60Hz 4:2:0 24bpp 4K@30Hz (All) 1080P@60Hz (All) |
| | | Input/Output: 5m/16ft | 4K@60Hz 4:4:4 24bpp |

| Port | Cable Type | Range | Supported Video |
|------|------------|-------|---------------------|
| | | | 4K@60Hz 4:2:2 36bpp |

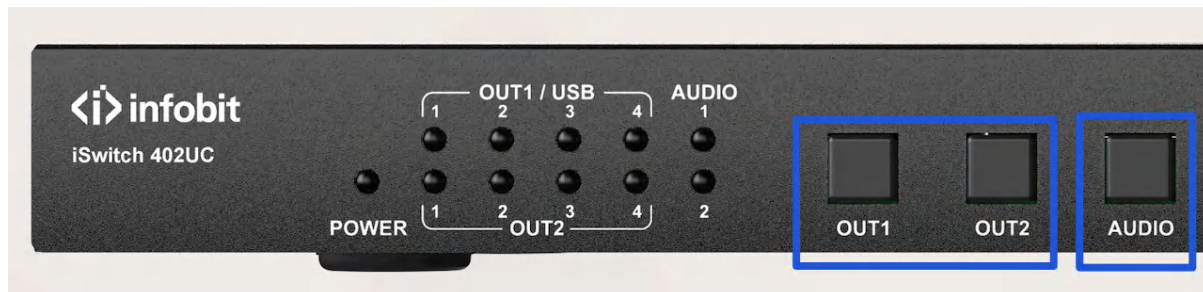
1.6 PANEL DESCRIPTION

1.6.1 FRONT PANEL



| ID | Name | Description |
|----|---------------------------------------|---|
| 1 | POWER LED | On: The device is powered on. Off: The device is powered off. |
| 2 | OUTPUT 1 / USB LEDs and OUT 2 LEDs | Red: USB devices are connected to the corresponding USB host. Green: The corresponding video input is selected or the corresponding video input and USB host are selected. Off: The corresponding input are not selected. |
| 3 | AUDIO 1&2 LEDs | On: The corresponding de-embedded audio from HDMI OUT 1/2 is selected as source. Off: The corresponding de-embedded audio from HDMI OUT 1/2 is not selected as source for AUDIO OUT. |
| 4 | OUTPUT 1&2 Selection Button | Press the button to select input source for HDMI OUT 1/2. |
| 5 | AUDIO OUT Selection Button | Press the button to switch the audio source between the de-embedded audio from HDMI OUT 1 and HDMI OUT 2 for AUDIO OUT port. |

| | | |
|----|----------------------|--|
| 6 | Charging | USB 2.0 Type-A port. 5V/2A USB charging. |
| 7 | USB HOST 1&2 | <p>USB 3.2 type-B ports. Connect to USB HOST devices. USB HOST 1 and USB HOST 2 are bound with HDMI IN 1 and HDMI IN 2 respectively.</p> <p>The two ports support Ethernet bridge, the laptop connected to the two ports can access the network the ETHERNET ports connected. The two USB Host ports and two USB type-C ports share 1G network.</p> |
| 8 | HDMI IN | Connect to HDMI sources. |
| 9 | INPUT 3&4 (USB-C IN) | <p>USB 3.2 type-C ports. Connect to USB-C sources. The two full-featured USB-C ports support the following three functions:</p> <p>Supports audio, video and USB signal transmission, maximum 10Gbit/s data rate.</p> <p>USB-C IN 3 and 4 support DP SST, one video output with 4K signal transmission;</p> <p>USB-C IN 4 supports DP MST, two video outputs with 4K signal of each channel transmission;</p> <p>Supports PD 3.0, and can supply up to 60W power for the connected device;</p> <p>Supports 1G network connection, the laptop connected with these ports can access the ethernet the matrix connected;</p> <p>The following cable are recommended to use: USB Type-C to Type-C cable (USB 3.2 Gen 1x1 or above)</p> |
| 10 | FW | Micro-USB port. For ARM firmware upgrade. |
| 9 | RESET | <p>Insert a tool such as a needle.</p> <p>Press and hold it for about 5s: Reset the IP settings, including reset the IP mode to DHCP, and reset the login password to “admin”.</p> <p>Press and hold it for about 15s: Reset the device to factory defaults.</p> |



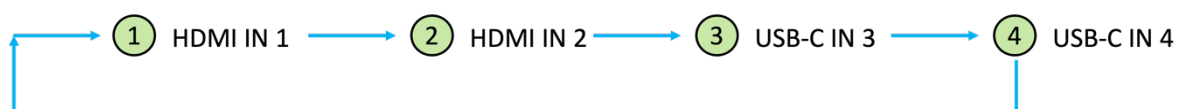
Push **OUT1** to select the video input for the HDMI OUT1 port.

Push **OUT2** to select the video input for the HDMI OUT2 port.

Push **OUT3** to select the video input for the HDMI OUT3 port.





Push **AUDIO** to set the audio source of the analog audio output.

The sequence is the following (both for the video and audio switching):



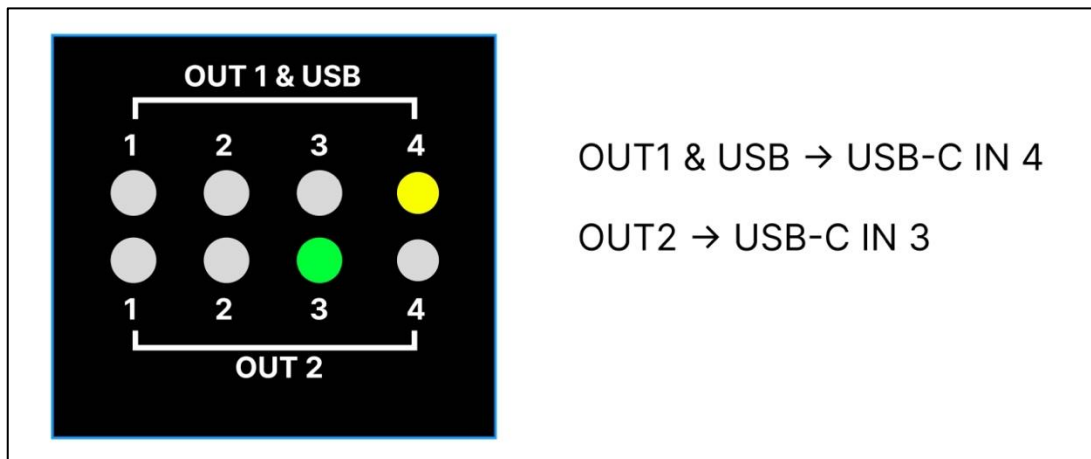
The **iSwitch 402UC** supports 2 rows and 4 columns of video & USB indicator LEDs on the front panel. **MS42** supports 2 rows and 1 column of audio indicator LEDs on the front panel.

- All LED lights support Three colors: green, red and yellow.
- The color of the LED **indicator** is as follows:

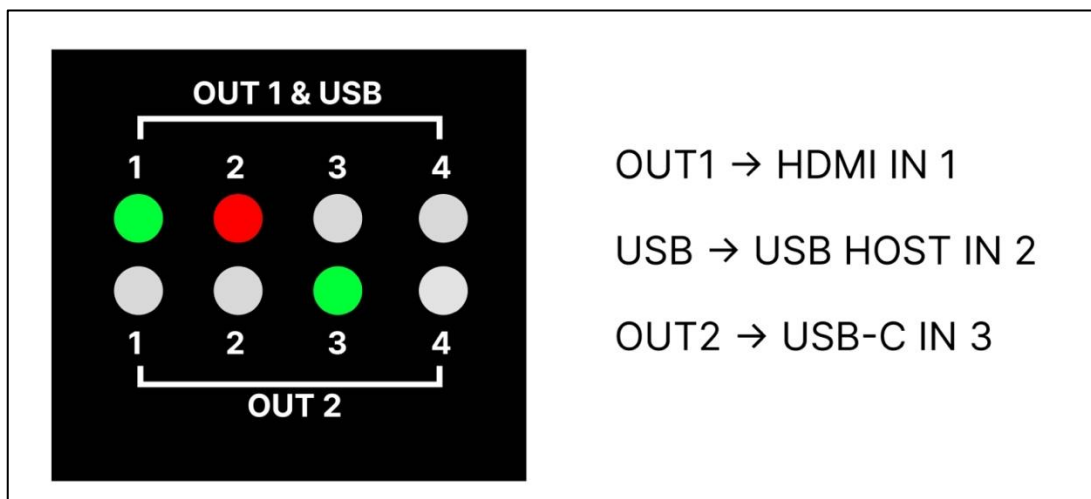
| | |
|---|--------------------------------------|
|  | Red: Selected USB input |
|  | Green: Selected video/audio input |
|  | Yellow: Selected video and USB input |
|  | White: Unselected input |

Note: USB Switch does not have independent switch button. When USB follows video, USB will use the video button to switch.

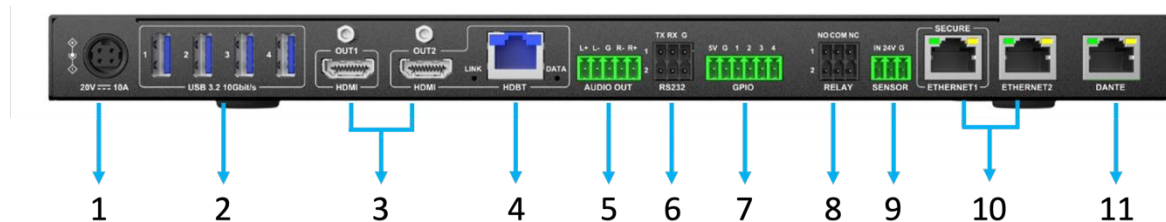
- Example 1: USB Follow HDMI OUT 1.



- Example 1: USB Follow HDMI OUT 1.



1.6.2 REAR PANEL



| ID | Name | Description |
|----|-------------------------|---|
| 1 | 20V/10A | Connect to the power adapter provided. |
| 2 | USB DEVICE | USB 3.2 type-A ports, 5V/1.5A output per port. Connect to USB devices such as camera and speakerphone. |
| 3 | HDMI OUT (1~2) | Connect to the HDMI display devices. HDMI OUT 2 is mirrored with HDBT port. |
| 4 | HDBT | Connect to an HDBT 3.0 receiver (iSwitch 402UC-Rx) |
| 5 | AUDIO OUT | Connect to an audio receiver. |
| 6 | RS232 1 & 2 | RS232 1: Connect to a RS232 control device for API control or connect to a 3rd party device for RS232 routing. RS232 2: Connect to a RS232 3rd party device for RS232 routing. |
| 7 | GPIO | Connect to GPIO devices. The device supports connecting to 6 GPIO devices. |
| 8 | RELAY 1 & 2 | Connect to relay devices for relay control. |
| 9 | ETHERNET 1 (SECURE) & 2 | Connect to a network device (e.g., network switch, router, computer, etc.) for LAN control (Web UI & Telnet). VLAN function can be configured via API commands and web UI, please refer to the separate document “API Command Set_iSwitch 402UC” or “Network” part in “Web UI Control” section. |

| | | |
|---|-------|---|
| | | Green (LED): - Lighting: The connection speed is 1000Mb/s. - OFF: The connection speed is 100Mb/s or 10Mb/s. Yellow (LED): - Blink: Data transmission. |
| 7 | Dante | Connect to the network for Dante audio connection. |

2. ISWITCH 402UC (RX)

2.1 OVERVIEW

The iSwitch 402UC (Rx) is an HDBT 3.0 extender based on the new generation of HDBT 3.0 platform, which can transmit the uncompressed HDMI2.0 video signal up to 4K@60Hz 4:4:4 8-bit over 100m Cat 6a cable.

2.2 FEATURES

- **Transceiver design.** It can be arbitrarily set as a transmitter or a receiver and can be switched at any time, making the installation easier.
- **Uncompressed video.** It transmits 4K@60Hz 4:4:4 8-bit signal without compression and supports any HDR format, including Dolby Vision and HDR10+.
- **KVM.** Supports USB 2.0 & analog audio pass through with variable direction.
- **HDMI loop-out.** It supports local HDMI loop-out when it is set as transmitter mode.
- **Audio de-embedding.** Supports audio de-embedding at both ends.
- **1G/100Mbps network.** Supports 1G/100M adaptive network transparent transmission.
- **Multiple signals** transmission support (e.g. IR, RS232).
- **Two-way PoC/PoH.** Supports two-way PoC/PoH function, only need to connect one power adapter at one end, making the installation more flexible.

2.3 PACKAGE CONTENT

(Note: The Rx and Tx are in one box by default.)

- 1 x iSwitch 402UC (Rx)
- 1 x DC 12V Power Adapter

- 1 x AC Power Cord (with US Pins)
- 1 x IR Emitter
- 1 x Broadband IR Receiver (30kHz-50kHz)
- 2 x Phoenix Male Connectors (3.5mm, 3 Pins)
- 2 x Mounting Brackets (with Screws)

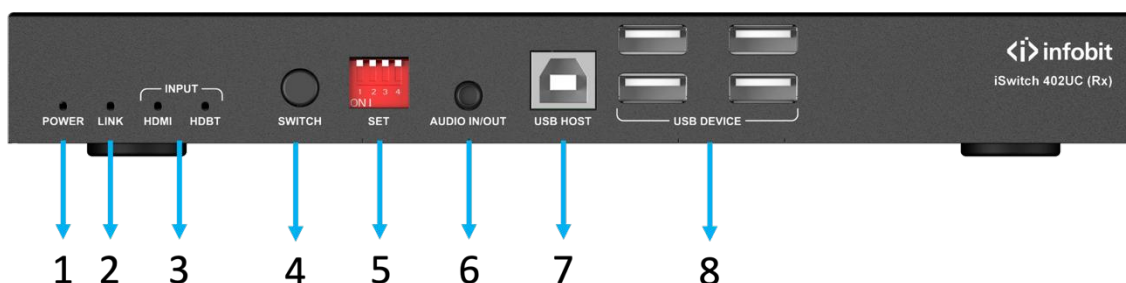
2.4 SPECIFICATIONS

| | |
|--------------------------|--|
| Model | iSwitch 402UC (Rx) |
| Name | 4K60 4x2 UC Switcher Rx |
| Video Input | Receiver mode: 1 x HDMI, 1 x HDBT Transmitter mode: 1 x HDMI |
| Input Video Signal | HDMI with 4K@60 YUV 4:4:4, HDCP 2.2 |
| Video Output | Receiver: 1 x HDMI Transmitter: 1 x HDMI, 1 x HDBT |
| Output Video Signal | HDBT, HDMI |
| Input/Output Resolutions | 4096 x 2160(24/30/50/59.94/60Hz, YUV 4:4:4), 3840 x 2160(24/30/60Hz, YUV 4:4:4), 2560x1600/60Hz, 2560x1440/60Hz, 1920x1200/60Hz, 1920x1080P/60Hz, 1680x1050/60Hz, 1600x1200/60Hz, 1600x900/60Hz, 1440x900/60Hz, 1366x768/60Hz, 1360x768/60Hz, 1280x1024/60Hz, 1280x960/60Hz, 1280x800/60Hz, 1280x768/60Hz, 1280x720/60Hz, 1024x768/60Hz, 800x600/60Hz. |
| Audio Input | 1x analog audio (pass-through) |
| Audio Output | 1x analog audio (pass-through) 1x analog audio (audio de-embedding) |
| Audio Format | Audio In/Out: Stereo HDMI In/Out: Fully supports audio formats in HDMI 2.0 specification, including PCM 2.0/5.1/7.1, Dolby TrueHD, Dolby Atmos, DTS-HD Master Audio and DTS:X HDBT: Same as HDMI In/Out |
| Maximum Pixel Clock | 600MHz |
| Maximum Data Rate | 18Gbps |

| | |
|------------------------------|---|
| USB Spec | USB 2.0 and backward compatible with USB 1.1/1.0 |
| USB Port | 1x USB 2.0 host port (type-B) 4x USB 2.0 device ports (type-A) |
| Control Method | RS232 |
| Transmission Distance | 1080P: 100m 4K@60Hz 4:2:0: 100m 4K@60Hz 4:4:4: 100m over Cat 6a/7 cable |
| Operating Temperature | 0°C to 45°C (32°F to 113°F) |
| Storage Temperature | -20°C to 70°C (-4°F to 158°F) |
| Humidity | 10% to 90%, non-condensing |
| ESD Protection | Human-body Model: ±8kV (Air-gap discharge)/±4kV (Contact discharge) |
| Power Supply | DC12V 3A |
| Power Consumption (Max) | TBD |
| Device Dimension (W x H x D) | 215mm x 25mm x 120mm/8.46" x 0.98" x 4.72" |
| Product Net Weight | 0.60kg/1.32lbs |

2.5 PANEL DESCRIPTION

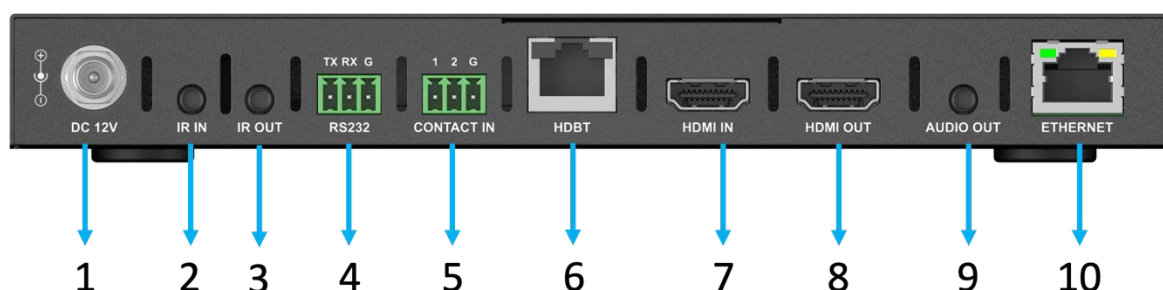
2.5.1 FRONT PANEL



| ID | Name | Description |
|----|------|-------------|
|----|------|-------------|

| | | |
|---|--------------|---|
| 1 | Power LED | On: The device is powered on. Off: The device is powered off. |
| 2 | Link LED | On: The HDBT ports between this device and another transceiver are connected. Off: The HDBT ports between this device and another transceiver are not connected. |
| 3 | Input | HDMI LED On: The HDMI In is selected as input video source. HDBT LED On: The HDBT is selected as input video source. Note: These two LED indicators indicate the input source selection status of receiver only. |
| 4 | Switch | Press this button to select the input video source between HDMI In and HDBT In for receiver. |
| 5 | Set | 4-Pin DIP Switch for settings of transceiver's working mode (transmitter/receiver), USB mode (USB Host/USB Device), Audio In/Out and RS-232 working mode (RS232 pass-through, API control or firmware update). For more information, see "DIP Switch Settings" section. |
| 6 | Audio In/Out | This port can be configured as Audio Input or Audio Output port. For more information, see "DIP Switch Settings" section. |
| 7 | USB Host | USB 2.0 Type-B port. Connect to a USB host device (e.g. PC). |
| 8 | USB Device | USB 2.0 Type-A port. Connect to USB slave devices (e.g. keyboard, mouse, etc.). |

2.5.2 REAR PANEL



| ID | Name | Description |
|----|------------|---|
| 1 | DC 12V | Connect to the power adapter provided. |
| 2 | IR In | Connect to the IR receiver provided. |
| 3 | IR Out | Connect to the IR emitter provided. |
| 4 | RS232 | Connect to a RS232 device for bi-directional RS232 pass-through, API control or firmware upgrade. The default baudrate of this port is 115200. |
| 5 | Contact In | Connect to a keypad or push button to select the input video source between HDMI In and HDBT In for receiver. |
| 6 | HDBT | Connect to another transceiver for HDBT transmission. |
| 7 | HDMI In | Connect to an HDMI source device. |
| 8 | HDMI Out | Connect to an HDMI display device. |
| 9 | Audio Out | Connect to an audio receiver (e.g. speaker) for audio de-embedding output. |
| 10 | Ethernet | Connect either side to the wireless router for Ethernet pass-through. |

3. DIAGRAMS

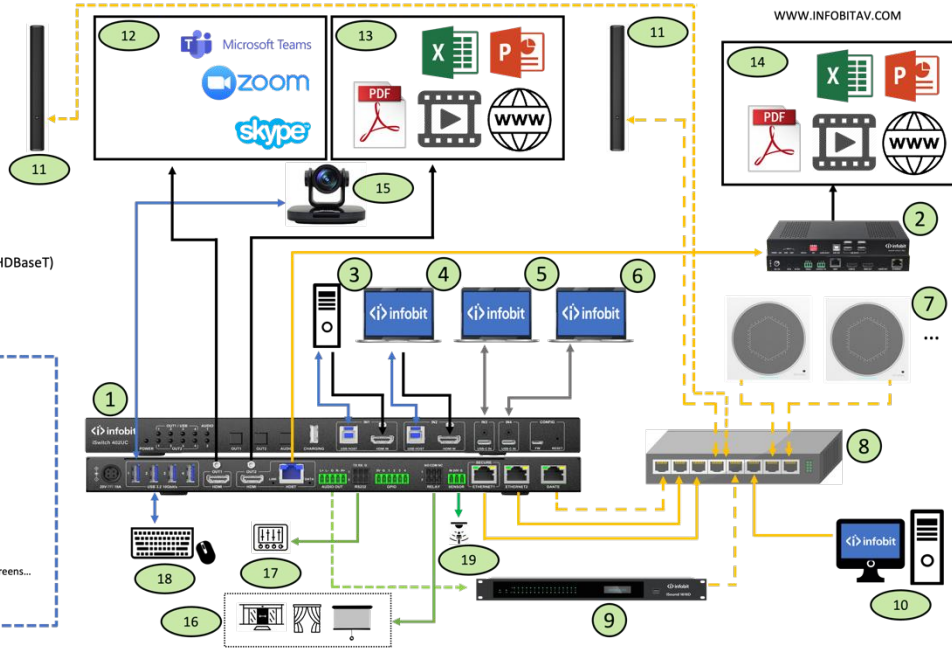
3.1 DIAGRAM #1

With Room PC, laptops, PTZ camera and Dante audio.

infobit
CONFERENCE SOLUTIONS

- USB A
- HDMI
- USB C
- Ethernet (Network or HDBaseT)
- - - Ethernet (Dante)
- Control
- - - Audio (optional)

- 1: iSwitch 402UC (Tx)
- 2: iSwitch 402UC (Rx)
- 3: iMeeting A7: Room PC (BYOM)
- 4: Laptop (BYOM)
- 5: Laptop (BYOM)
- 6: Laptop (BYOM)
- 7: iSpeaker CM360 (Dante)
- 8: PoE Network Switcher
- 9: iSound DSP (Dante)
- 10: Control PC (Web GUI)
- 11: iSpeaker DC560 (Dante)
- 12: Display #1
- 13: Display #2
- 14: Side Display #3 (mirror Display #2)
- 15: iCam P20 (PTZ Camera)
- 16: Automatic doors, curtains, projection screens...
- 17: Central Control Device
- 18: Keyboard/ Mouse (Printers, storage..)
- 19: OCC sensor (human detect)



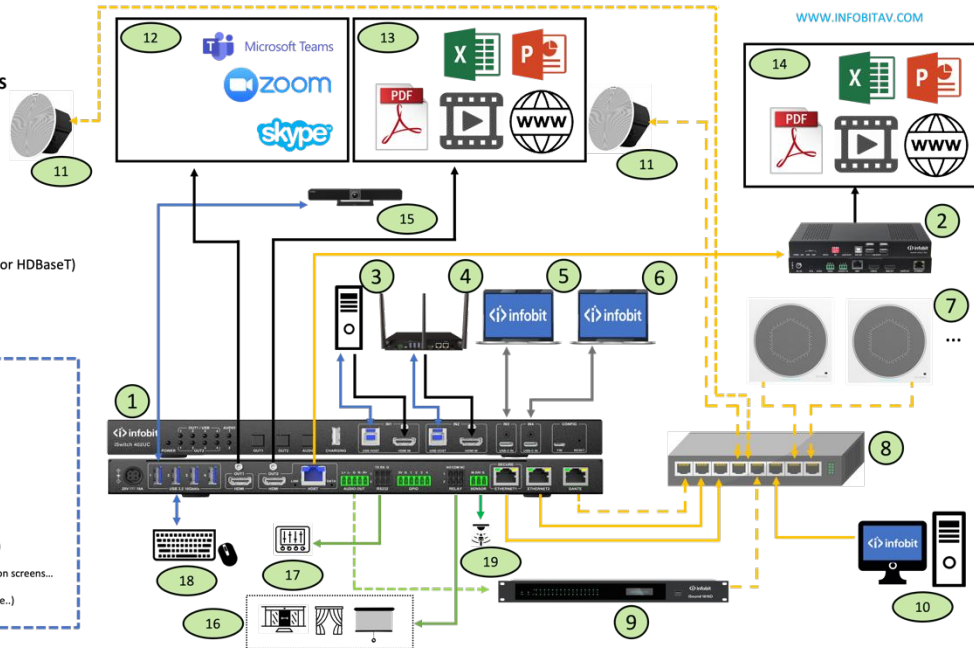
3.2 DIAGRAM #2

With Room PC, iShare X400 (BYOD/BYOM), laptops, camera videobar and Dante audio.

infobit
CONFERENCE SOLUTIONS

- USB A
- HDMI
- USB C
- Ethernet (Network or HDBaseT)
- - - Ethernet (Dante)
- Control
- - - Audio (optional)

- 1: iSwitch 402UC (Tx)
- 2: iSwitch 402UC (Rx)
- 3: iMeeting A7: Room PC (BYOM)
- 4: iShare X400 (BYOD/BYOM)
- 5: Laptop (BYOM)
- 6: Laptop (BYOM)
- 7: iSpeaker CM360 (Dante)
- 8: PoE Network Switcher
- 9: iSound DSP (Dante)
- 10: Control PC (Web GUI)
- 11: iSpeaker DAC6S (Dante)
- 12: Display #1
- 13: Display #2
- 14: Side Display #3 (mirror Display #2)
- 15: iCam VB80 (Camera Videobar)
- 16: Automatic doors, curtains, projection screens...
- 17: Central Control Device
- 18: Keyboard/ Mouse (Printers, storage..)
- 19: OCC sensor (human detect)



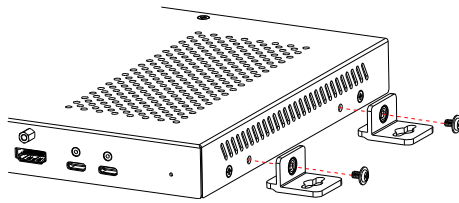
4. INSTALLATION

4.1 INSTALL ISWITCH 402UC TX

Warnings:

- Before installation and wiring, disconnect power from the device.
- During wiring, connect and disconnect the cables gently.

1. Attach the bracket to one side of the enclosure using the screws provided. The bracket is attached to the enclosure as shown.



2. Repeat step 1 for the other side of the enclosure.

3. Attach the brackets to the surface or location desired using screws (not included in the package).

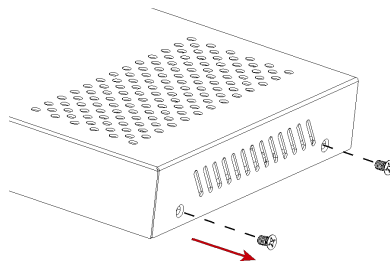
4.2 INSTALL ISWITCH 402UC RX

Warnings:

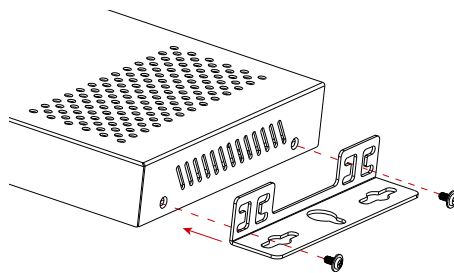
- Before installation and wiring, disconnect power from the device.
- During wiring, connect and disconnect the cables gently.

To install the device to a suitable location, perform the following:

1. Remove the two screws on one side of the enclosure.



2. Attach the installation bracket to the enclosure using the screws provided. The bracket is attached to the enclosure as shown.



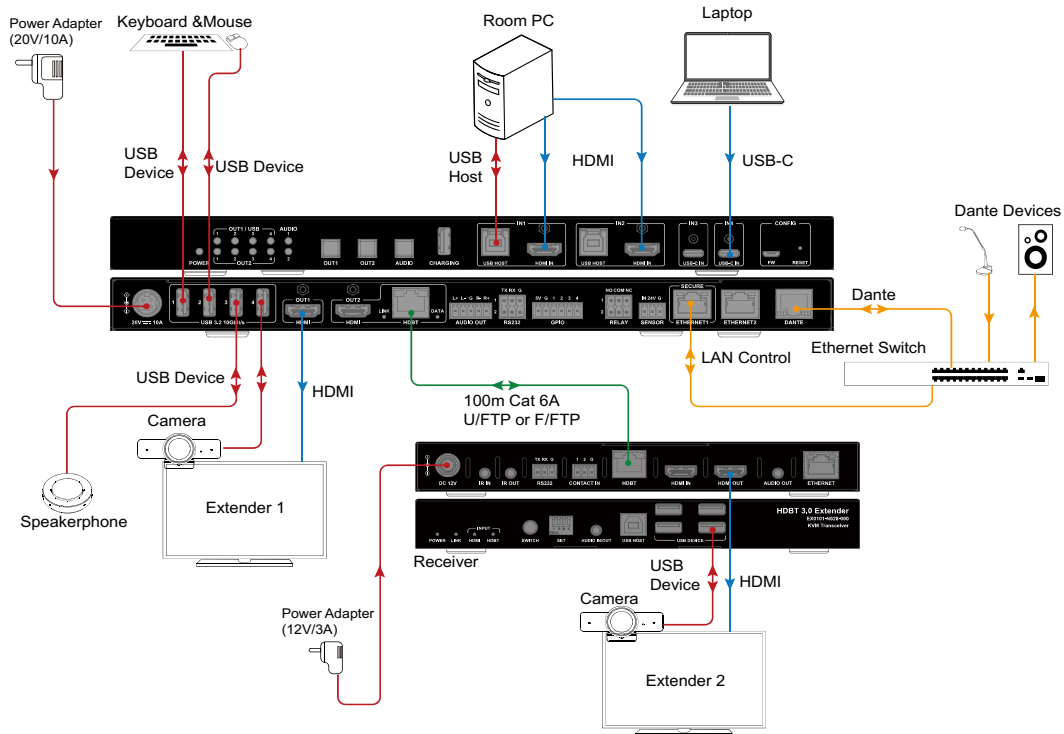
3. Repeat steps 1-2 for the other side of the device.

4. Attach the brackets to the surface you want to hold the device against using the screws (not included).

5. WIRING

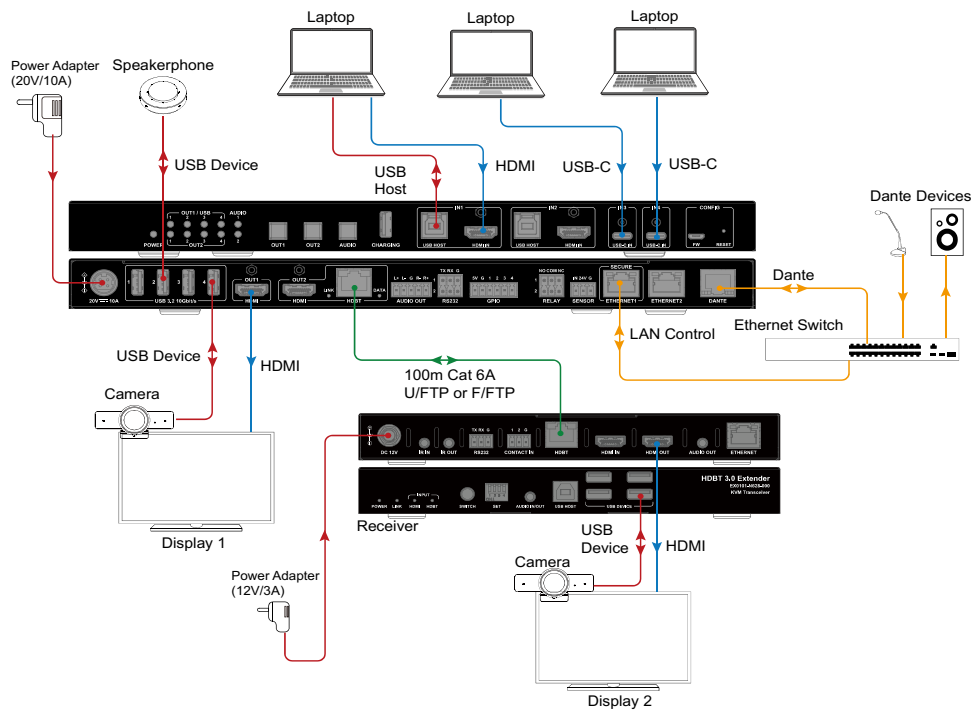
5.1 INSTALL ISWITCH 402UC TX & RX

Wiring 1: 4x2 Presentation Switch with Dual Screen mode



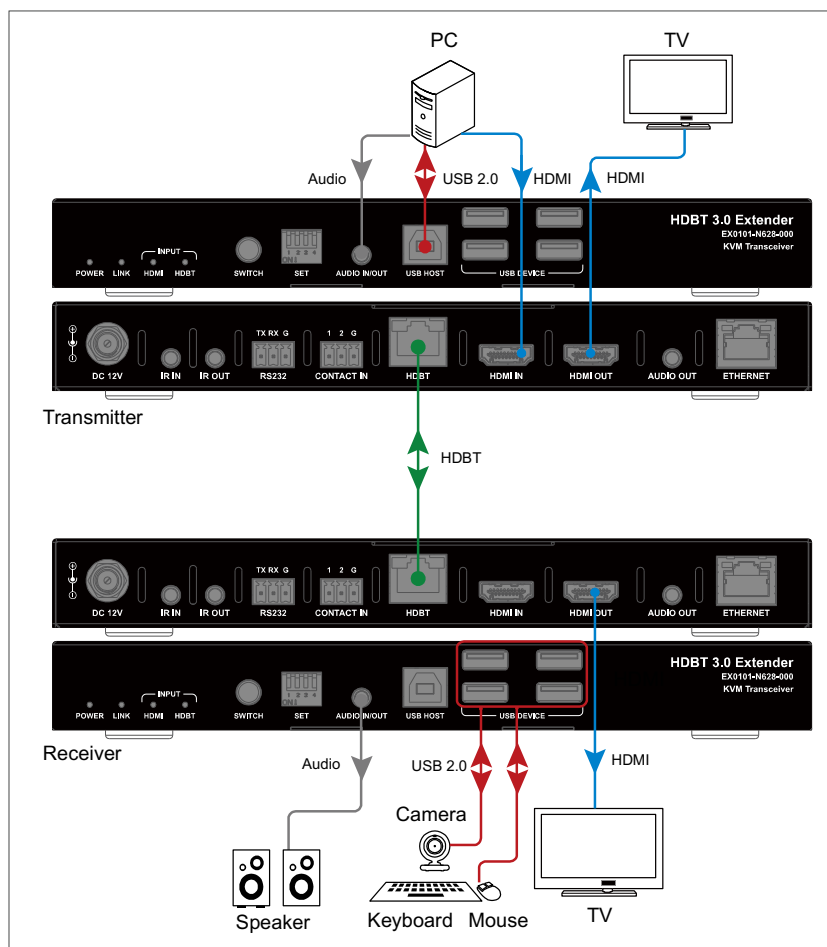
Note: In this mode, the USB-C IN 4 can transmit two video signals with 4K each to the two HDMI outputs respectively. (Only USB-C IN 4 support DP MST, no available for macOS devices).

Wiring 2: 4x2 Presentation Switch with matrix mode



5.2 INSTALL ISWITCH 402UC RX ONLY

The iSwitch 402UC Rx is HDMI 4K60 over HDBaseT 3.0 Transceiver, which can be used standalone as extenders.



5.3 DIP SETTINGS (ISWITCH 402UC RX)

The **iSwitch 402UC Rx** equips a 4-pin DIP switch for settings of working mode (transmitter/receiver), USB mode (USB Host/USB Device), Audio In/Out and RS-232 working mode (RS232 pass-through, API control or firmware update).

By default, all the four switches are set in (up, up, up, up) positions.



The following table shows how the DIP Switch functions:

| DIP Position | | | | Function |
|--------------|------|------|------|--|
| 1 | 2 | 3 | 4 | |
| up | | | | Set as Transmitter |
| down | | | | Set as Receiver |
| | up | | | Set as USB Host and Audio In (analog audio pass through) |
| | down | | | Set as USB Device and Audio Out (analog audio pass through) |
| | | up | up | RS232 pass through |
| | | down | up | RS232 for API and MCU update |
| | | up | down | RS232 for HDBT update |
| | | down | down | Reserved |

When connect to **iSwitch 402UC Tx**, please set the DIP as **UP-UP-DOWN-DOWN**.

6. CONTROL

6.1 AUTO SWITCHING

The device supports automatic switching (HDMI and USB-C video and USB) and provides two modes:

- **LIFO (Last IN, First OUT) mode.**
- **Priority mode.**

This function can be enabled/disabled through Web UI or API Commands.

Note:

1. Please refer to “**Switch**” part in the “**Web UI Control**” section or separate document “API Command Set_iSwitch 402UC” to get detailed configuration information.
2. Video switching to detect valid signals, and USB switching to detect VBUS.

6.2 BUTTONS CONTROL

Users can perform basic switching of input sources to outputs and audio source selection.

- **OUT 1 button:** Press the button continuously to switch the input source for HDMI 1 output. The LED will light when the corresponding source is selected.

Note: The default mode of the USB switch is "**Follow video out 1**", using the "**OUT 1**" button will switch the video out 1 and the USB device at the same time.

OUT 2 button: Press the button continuously to switch the input source for output 2, including HDMI 2 and HDBT 3.0 outputs. The LED will light when the corresponding source is selected.

AUDIO button: Select the audio de-embedding from which output, OUT 1 or OUT 2. The LED will light when the corresponding audio source is selected.

6.3 RS232 CONTROL

Provides two RS232 ports for device control or control of 3rd-party devices.

Supported functions are as follows:

- **RS232-1:**
 - Device control (API).
 - Control 3rd-party device.
 - TCP to RS232 routing.
- **RS232-2:**
 - Control 3rd-party device.
 - TCP to RS232 routing.

6.3.1 DEVICE CONTROL (RS232-1)

Users may need to control the device via API commands. Connect an RS232-enabled device (such as a PC) to the **RS232-1** port. For detailed command information, please refer to the separate document "**API Command Set_iSwitch 402UC**").

Before sending API commands to control the device, ensure the serial ports between this device and the PC are configured correctly. A professional RS232 serial interface software (e.g., Serial Assist) may be needed as well.

| Parameters | Default Value |
|------------|---------------|
| Baud Rate | 115200 bps |
| Data bits | 8 bits |

| | |
|--------------|-------|
| Parity | None |
| Stop bits | 1 bit |
| Flow control | None |

6.3.2 CONTROL THE 3RD-PARTY DEVICES (RS232-1 & 2)

Advanced users may need to control the 3rd-party device to perform automated operations, such as automatically turning the projector on/off. The **iSwitch 402UC** 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.**
- **Volume MUTE/UNMUTE.**
- **Volume UP/DOWN.**

- Supports RS232 automatic sending the power on/off command.
 - Send power on command:
 - Send power off command:

- This feature is disabled by default, and can be enabled via the web UI and API.

- Auto-RS232 trigger conditions:
 - When a valid input video signal is detected.
 - The user sets a GPIO port to trigger the Auto-RS232 function.

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 402UC**" to get detail command information.

6.3.3 TCP TO RS232 ROUTING (RS232-1 & 2)

The TCP to RS232 routing function provides a tunnel from the network to the RS232 port, which can bypass the network control commands to the RS232 port. This function makes it easier for third-party devices such as a central-control device to control other devices connected to **iSwitch 402UC**.

TCP port number:

- **RS232-1:** 5000.
- **RS232-2:** 5001.
- **RS232-HDBT:** 5002.

6.4 LAN CONTROL

6.4.1 OBTAIN THE IP ADDRESS

The default IP mode: **DHCP**.

The user can obtain an IP address in the following ways:

- Send API command via RS232-1 port.

Send API command "**GET IPADDR<CR><LF>**" to get the IP address, for example:

Input:

```
GET IPADDR<CR><LF>
```

Response:

```
IPADDR 172.16.18.173 MASK 255.255.255.0 GATEWAY 172.16.18.1
```

- Use the tool "**SmartSetGUI**" to search the IP address.
- Check the IP address in the DHCP server.

6.4.2 TELNET

Telnet port: 23.

6.5 LOG IN TO THE WEB UI

The Web UI designed for this device allows for basic controls and settings. It can be accessed through a modern browser with the latest version, e.g., Chrome, Safari, Firefox, IE10+, etc.

To get access the Web UI:

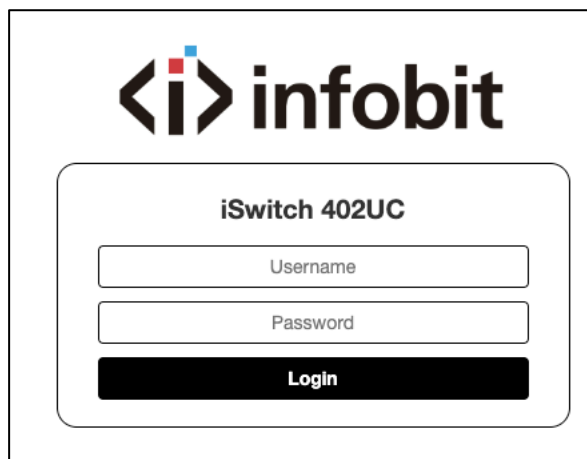
1. Connect one of the two ETHERNET ports of the device to a local area network. (Ensure there's a DHCP server in the network so that the device can obtain a valid IP address.)

Note: When VLAN is set to “Separate”, please connect **ETHERNET-1** to the local area network for web UI control.

2. Connect the PC to the same network.

3. Input the device's IP address in the browser and press Enter, the following window will pop up. (Refer to [6.4.1 Obtain IP Address](#) to get the device's IP address quickly).

4. The following window pops up. Input the password (default password: **admin**) and click “Login”.



The screenshot shows the login interface for the infobit iSwitch 402UC. At the top is the infobit logo. Below it, the device name "iSwitch 402UC" is displayed. There are three input fields: "Username", "Password", and a "Login" button. The "Login" button is black with white text.

5. Input a new password in the dialog box and click “Apply” to enter the main page. The password must be 4 to 16 characters long, alphanumeric, and include at least one uppercase letter, one lowercase letter, and one number.

Please change your username and password to continue

Old password:

New password:

Verify password:

Note: Password must be 4 to 16 characters in length and must contain upper and lower case letters and numbers.(alphanumeric only)

6.6 RESET PASSWORD AND IP ADDRESS

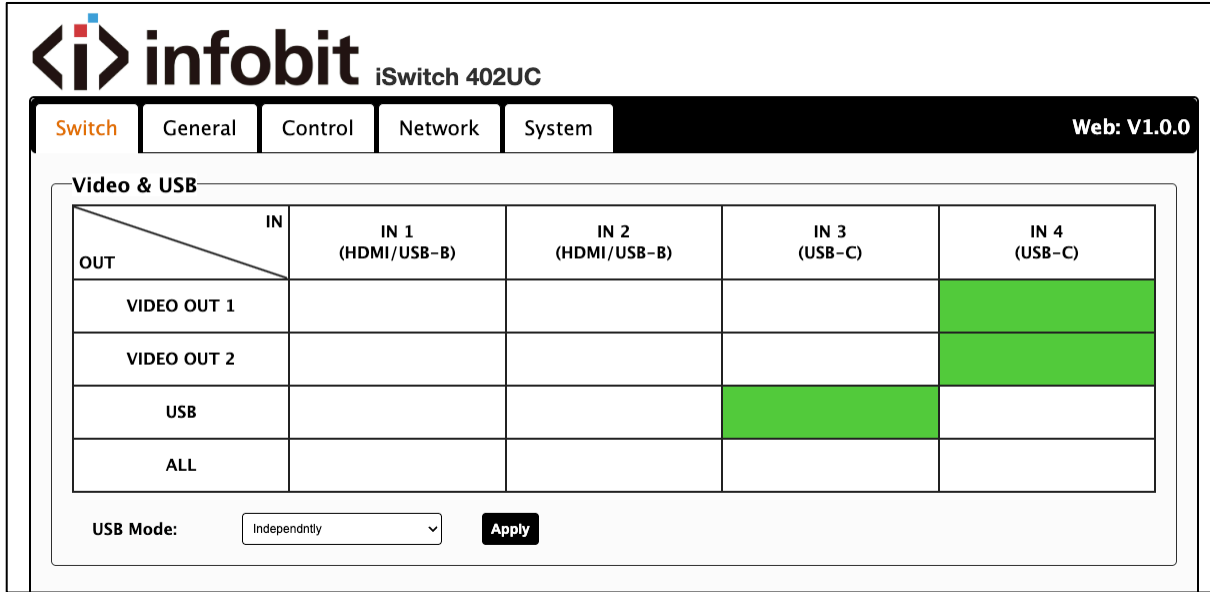
If users forget the login password, the following ways can be used to restore the default password:

- Hold the “**RESET**” hole on the front panel for about **5s** to reset the IP mode to DHCP and login password to “**admin**”.
- Hold the “**RESET**” hole on the front panel 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.

6.7 WEB UI

6.7.1 MAIN PAGE

The main page consists of five tabs: **Switch**, **General**, **Control**, **Network** and **System**.



infobit iSwitch 402UC

Switch | General | Control | Network | System | Web: V1.0.0

Video & USB

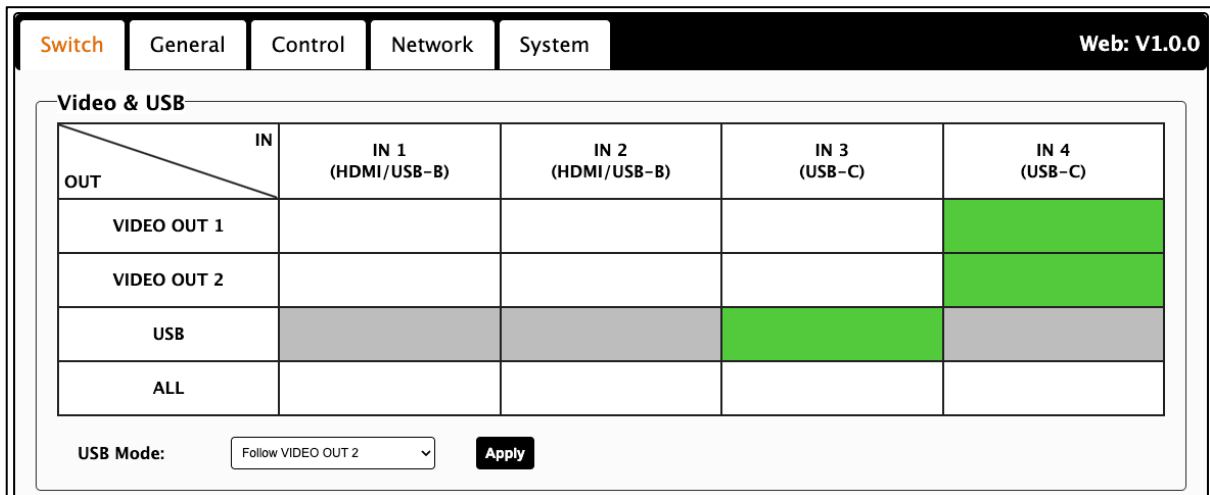
| OUT \ IN | IN 1 (HDMI/USB-B) | IN 2 (HDMI/USB-B) | IN 3 (USB-C) | IN 4 (USB-C) |
|-------------|-------------------|-------------------|--------------|--------------|
| VIDEO OUT 1 | | | | |
| VIDEO OUT 2 | | | | |
| USB | | | | |
| ALL | | | | |

USB Mode:

6.7.2 SWITCH

This page mainly contains switching settings.

1. Switch



infobit iSwitch 402UC

Switch | General | Control | Network | System | Web: V1.0.0

Video & USB

| OUT \ IN | IN 1 (HDMI/USB-B) | IN 2 (HDMI/USB-B) | IN 3 (USB-C) | IN 4 (USB-C) |
|-------------|-------------------|-------------------|--------------|--------------|
| VIDEO OUT 1 | | | | |
| VIDEO OUT 2 | | | | |
| USB | | | | |
| ALL | | | | |

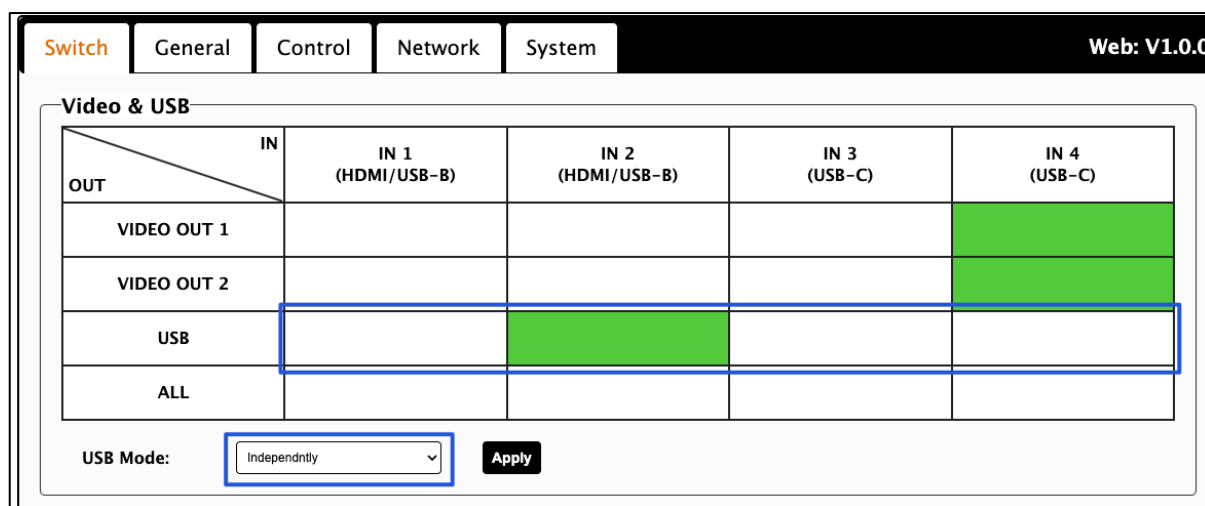
USB Mode:

| | | |
|-----------|--|--------------------------------------|
| ALL | | |
| USB Mode: | <input checked="" type="checkbox"/> Follow VIDEO OUT 1 <input type="checkbox"/> Follow VIDEO OUT 2 <input type="checkbox"/> Independntly | <input type="button" value="Apply"/> |

This section allows users to switch video/USB input for output and set USB modes.

- **VIDEO OUT 1/2:** Click the button in the table to switch one input source for VIDEO OUT 1 / VIDEO OUT 2 (button turns from white to green when the selection is done).
- **USB Mode:** Click to select USB-A devices switching modes in the dropdown list (**Follow VIDEO OUT 1, Follow VIDEO OUT 2, and Independently**), and click **“Apply”** to take effect.
- **Default setting:** Follow VIDEO OUT1 is by default, the USB-A devices switching will always follows the VIDEO OUT 1 switching.

When set USB Mode to **“Independently”**, users can manually switch the USB host for the USB devices to be connected to by clicking the corresponding button in the table.

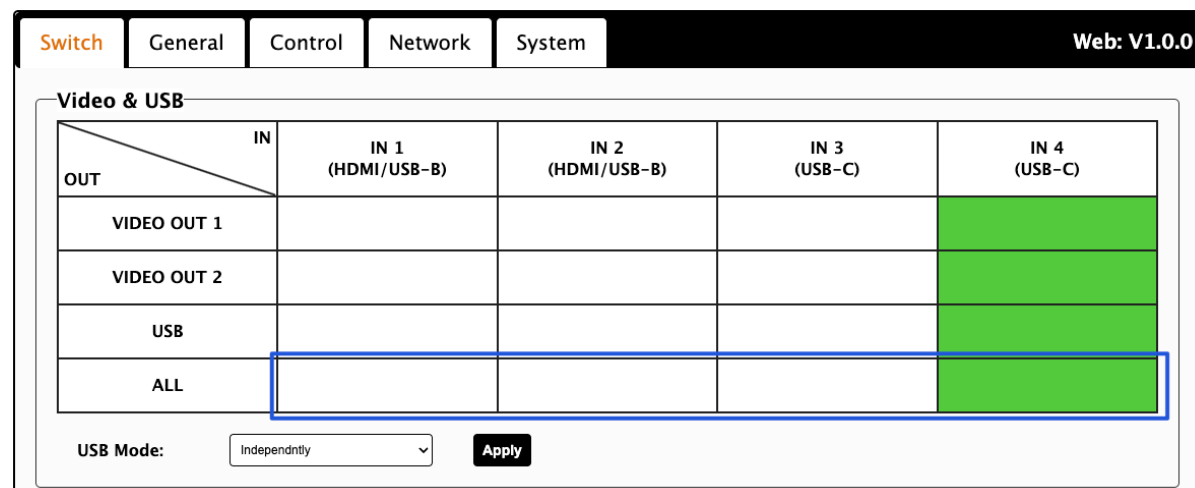


The screenshot shows the 'Video & USB' configuration page. The 'USB' row in the table is highlighted with a blue border, indicating it is the selected input source. The 'USB Mode' dropdown is set to 'Independently'.

| OUT \ IN | IN 1 (HDMI/USB-B) | IN 2 (HDMI/USB-B) | IN 3 (USB-C) | IN 4 (USB-C) |
|-------------|-------------------|-------------------|--------------|--------------|
| VIDEO OUT 1 | | | | |
| VIDEO OUT 2 | | | | |
| USB | | | | |
| ALL | | | | |

USB Mode:

- **ALL:** Click to select one input for all Video outputs and USB-A devices.



The screenshot shows the 'Video & USB' configuration page. The 'ALL' row in the table is highlighted with a blue border, indicating it is the selected input source for all outputs. The 'USB Mode' dropdown is set to 'Independently'.

| OUT \ IN | IN 1 (HDMI/USB-B) | IN 2 (HDMI/USB-B) | IN 3 (USB-C) | IN 4 (USB-C) |
|-------------|-------------------|-------------------|--------------|--------------|
| VIDEO OUT 1 | | | | |
| VIDEO OUT 2 | | | | |
| USB | | | | |
| ALL | | | | |

USB Mode:

2. Audio

Audio

Audio Routing

| | FROM | USB HOST AUDIO | AUDIO DE-EMBED | DANTE IN |
|-----------------------|------|----------------|----------------|---|
| TO | | | | |
| AUDIO OUT / DANTE OUT | | | | |
| EMBED VIDEO OUT 1&2 | | | | <input checked="" type="checkbox"/> ON <input type="checkbox"/> OFF |
| USB HOST AUDIO | | | | <input checked="" type="checkbox"/> ON <input type="checkbox"/> OFF |

Audio De-embed Follow VIDEO OUT 1

Audio Mute

| | | | |
|-------------|---|-----------------|---|
| All: | <input checked="" type="checkbox"/> ON <input type="checkbox"/> OFF | | |
| HDMI OUT 1: | <input checked="" type="checkbox"/> ON <input type="checkbox"/> OFF | HDBT OUT 2: | <input checked="" type="checkbox"/> ON <input type="checkbox"/> OFF |
| HDMI OUT 2: | <input checked="" type="checkbox"/> ON <input type="checkbox"/> OFF | ANALOG OUT: | <input checked="" type="checkbox"/> ON <input type="checkbox"/> OFF |
| DANTE OUT: | <input checked="" type="checkbox"/> ON <input type="checkbox"/> OFF | USB HOST AUDIO: | <input checked="" type="checkbox"/> ON <input type="checkbox"/> OFF |

Audio De-embed ✓ Follow VIDEO OUT 1

Follow VIDEO OUT 2

This section allows users to switch audio input to output.

Note: Gray-colored table means not applicable.

- **AUDIO OUT/DANTE OUT:** Three audio sources can be selected.
- **EMBED VIDEO OUT1&2:** the user can choose whether to embed the audio from DANTE IN into the HDMI streaming. Note that turning on this function will cause the original audio in HDMI streaming to be replaced.
- **USB HOST AUDIO:** the user can choose whether to routing the audio from DANTE IN to the USB Host port.
- **Audio De-embed:** Select the current de-embedded audio from which source in the drop-down menu (**From VIDEO OUT 1** and **From VIDEO OUT 2**) and click **“Apply”** to take effect. **Default setting:** From VIDEO OUT 1.
- **Audio Mute (ON/OFF):** Click to set the corresponding audio output to mute/unmute.

3. USB-C MST

What is the MST?

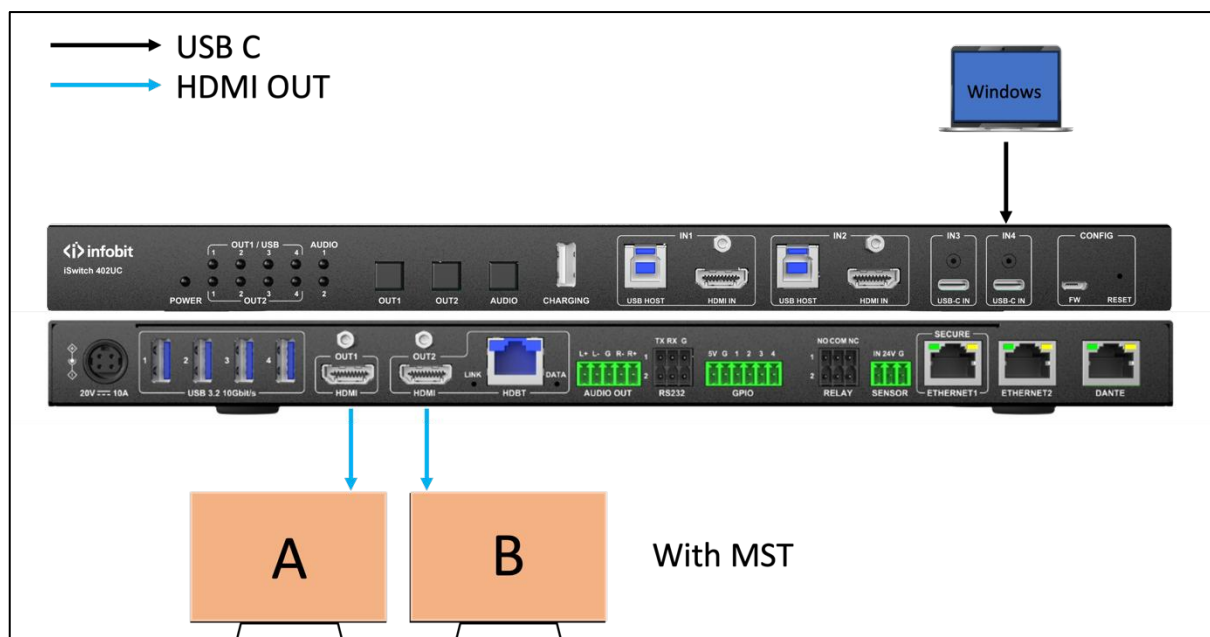
MST stands for **Multi-Stream Transport** and is based on DisplayPort Technology, allowing multiple uncompressed video streams to be delivered over a single DisplayPort connection (a process known as multiplexing). MST can be used over several different video port mediums, such as DisplayPort, Mini DisplayPort, Thunderbolt 3 or 4, and USB-C ports that support DisplayPort (Alt-Mode).

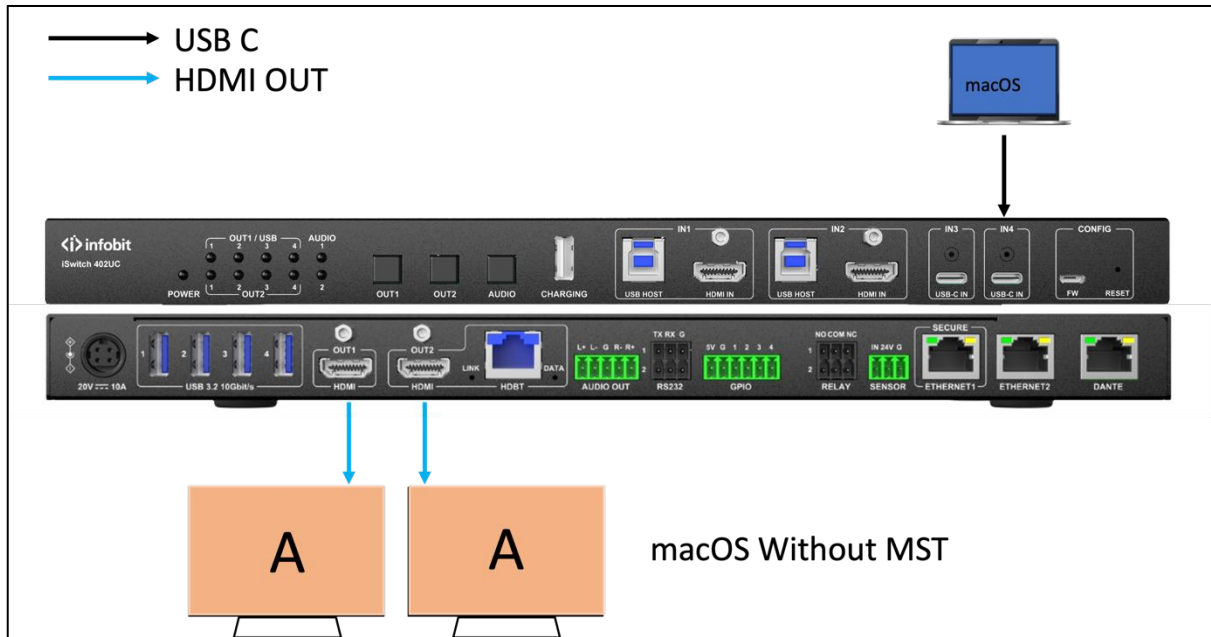
Two types of connections can be made when using MST. A “daisy-chain” connection where you can link multiple monitors together or an “MST Hub” configuration that can split one DisplayPort cable into multiple video outputs.

For MST to work in a daisy-chain or MST Hub configuration, monitors must support either DisplayPort 1.2 connection (or higher) or Thunderbolt, provide a video “out” port on the monitor, and have MST mode enabled in order for the monitors to work together. Note that HDMI is not supported.

In many cases, a monitor will not have a video “out” option; this is where an MST Hub will become necessary to break out the video signal to each monitor individually.

- MST is supported by Windows 11, 10, Windows 8/8.1, Windows 7, and Chrome OS.
- MST is currently not supported by macOS or Mac OS X.





USB-C MST

USB-C IN 4 MST ON OFF

> Only USB-C IN 4 support MST.
 > Enable the USB-C IN 4 MST function will occupy another input, witch can be selected through the settings below.

Disabled USB-C IN 3 Input
 Disabled HDMI IN 2 Input

This section allows users to enable the **USB-C IN4 MST** function.

- **USB-C IN 4 MST:** Click to enable the MST function of USB-C IN 4 to ON/OFF.

Default setting: OFF. When enabling this function, the USB-C IN 4 will occupy another input channel (USB C IN 3 or HDMI IN 2), check the box from the following inputs to set which input channel is occupied.

USB-C MST

USB-C IN 4 MST ON OFF

> Only USB-C IN 4 support MST.
 > Enable the USB-C IN 4 MST function will occupy another input, witch can be selected through the settings below.

Disabled USB-C IN 3 Input
 Disabled HDMI IN 2 Input

3. Auto-Switch

Auto-Switching

Auto-Switch ON OFF

LIFO Mode
> Last in first out.

Priority Mode

Priority Setting

VIDEO OUT 1: USB-C IN 3 > USB-C IN 4 > HDMI IN 1

| | |
|--|--|
| HDMI IN 1: <input type="text" value="3"/> | HDMI IN 2: <input type="text" value="0"/> |
| USB-C IN 3: <input type="text" value="1"/> | USB-C IN 4: <input type="text" value="3"/> |

VIDEO OUT 2: USB-C IN 4 > USB-C IN 3 > HDMI IN 2 > HDMI IN 1

| | |
|--|--|
| HDMI IN 1: <input type="text" value="4"/> | HDMI IN 2: <input type="text" value="3"/> |
| USB-C IN 3: <input type="text" value="3"/> | USB-C IN 4: <input type="text" value="1"/> |

USB: USB-C IN 4 > USB-C IN 3 > HDMI IN 2 > HDMI IN 1

| | |
|--|--|
| USB-B IN 1: <input type="text" value="4"/> | USB-B IN 2: <input type="text" value="4"/> |
| USB-C IN 3: <input type="text" value="4"/> | USB-C IN 4: <input type="text" value="4"/> |

Note: 1 - Highest priority 4 - Lowest priority 0 - Ignored

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

Default: ON.

When the function is set to on, users can select auto switch mode between **LIFO Mode** and **Priority Mode**.

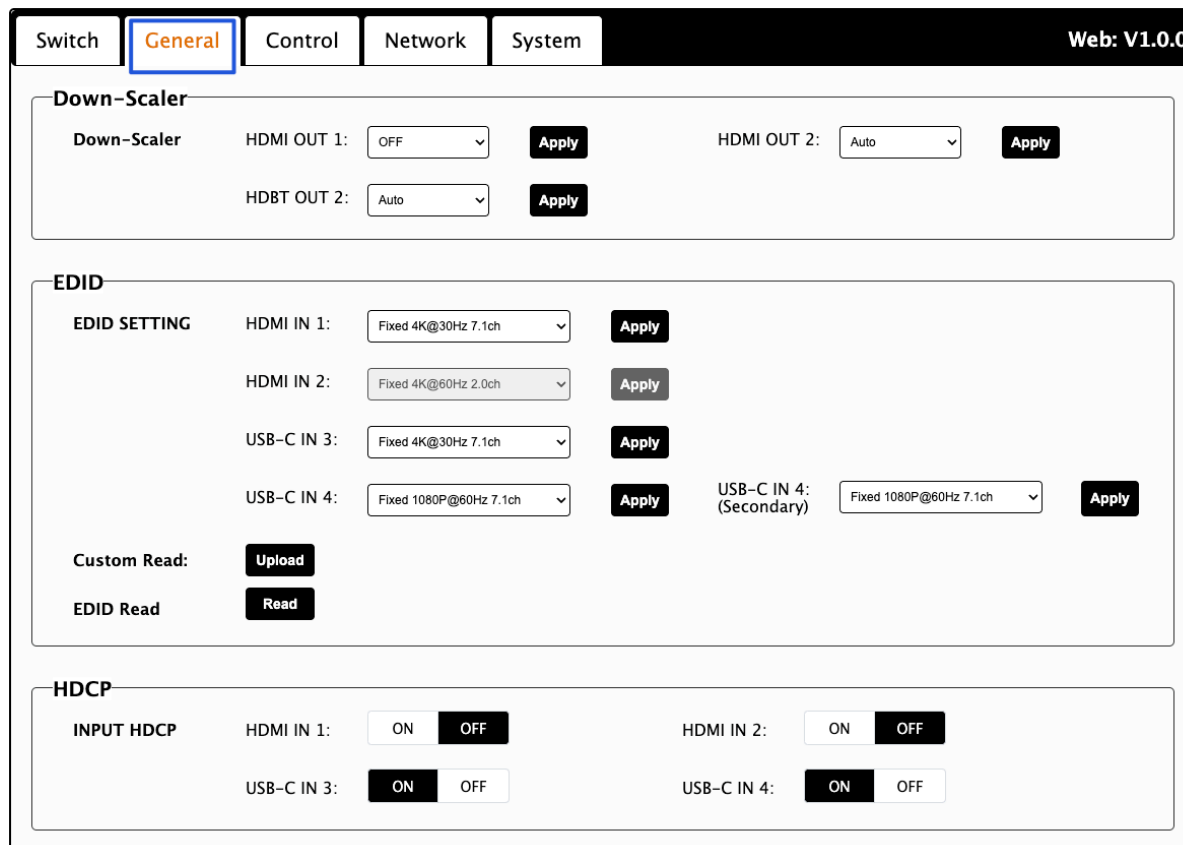
- **LIFO Mode (Default):** Last-in first-Out, when inserting a new active input, all outputs will switch to this input automatically. When removing the current selected input, all outputs will switch to the previously active input.
- **Priority Mode:** When set to this mode, users can set input switching priority for VIDEO OUT1, VIDEO OUT 2 and USB from each zone.

Note:

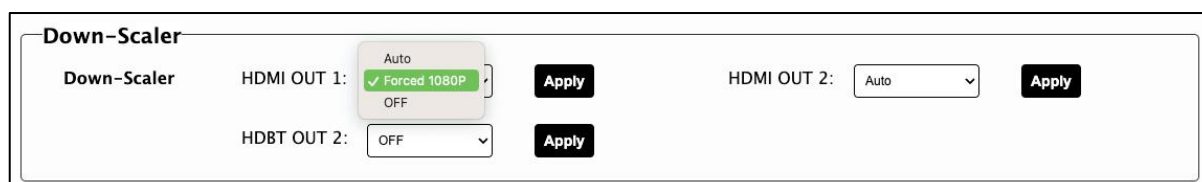
- "1" indicates the highest priority, "4" indicates the lowest priority, and "0" means this port will be ignored in automatic switching.
- When two inputs are set to the same priority, will follow the sequence of priority is **USB IN 4 > HDMI IN 1 > USB IN 3 > HDMI IN 2.**
- When the USB Switch mode is set to follow video out 1/2, 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.

6.7.3 GENERAL

This page mainly contains general settings, such as **Down-Scaler**, **EDID** and **HDCP**.



1. Down-Scaler



- HDMI OUT 1 and HDMI OUT 2/HDBT OUT support 4K to 1080P down-scaler.
- This feature is enabled by default, and can be disabled via the Web UI and API.
- Down-scaler can only support resolution conversion, not frame rate conversion.

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

- **Down-Scaler:** Select the mode from the drop-down menu, and click “Apply” to take effect.
- **Auto (Default):** Automatically convert 4K resolution to 1080P when connected to a 1080P display.

- **Forced 1080P:** Forcely converts the input 4K resolution to 1080P regardless of the connected display's capabilities.
- **OFF:** Disabled down-scaler function.

2. EDID

EDID

| | | | | |
|---------------------|-------------|------------------------|--------------|---|
| EDID SETTING | HDMI IN 1: | Fixed 4K@30Hz 7.1ch | Apply | |
| | HDMI IN 2: | Fixed 4K@60Hz 2.0ch | Apply | |
| | USB-C IN 3: | Fixed 4K@30Hz 7.1ch | Apply | |
| | USB-C IN 4: | Fixed 1080P@60Hz 7.1ch | Apply | USB-C IN 4: (Secondary) Fixed 1080P@60Hz 7.1ch Apply |
| Custom Read: | | Upload | | |
| EDID Read | | Read | | |

This section allows users to set the EDID for each input and read the EDID of each output.

- **EDID Setting:** Select EDID for the input port and click “APPLY” to take effect. The default setting for all inputs: **Fixed 4K@60Hz 2.0ch**.

EDID

| | | | | |
|---------------------|-------------|---|--------------|---|
| EDID SETTING | HDMI IN 1: | <div style="border: 1px solid gray; padding: 5px;"> <ul style="list-style-type: none"> ✓ Fixed 4K@60Hz 2.0ch Copy from the HDMI OUT 1 Copy from the HDMI OUT 2 Copy from the HDBT OUT 2 Fixed 4K@60Hz 7.1ch Fixed 4K@30Hz 2.0ch Fixed 4K@30Hz 7.1ch Fixed 1080P@60Hz 2.0ch Fixed 1080P@60Hz 5.1ch Fixed 1080P@60Hz 7.1ch Custom EDID 1 Custom EDID 2 </div> | Apply | |
| | HDMI IN 2: | | Apply | |
| | USB-C IN 3: | | Apply | |
| | USB-C IN 4: | | Apply | USB-C IN 4: (Secondary) Fixed 1080P@60Hz 7.1ch Apply |
| Custom Read: | | Upload | | |
| EDID Read | | Read | | |

- **Custom Read:** Click “Upload” 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 on the table of the page.
 - **Write:** Click to write the opened EDID to the selected customized EDID space.

- **Save As:** Click to save the customized EDID to the local PC.
- **Open:** Click to select an EDID bin file from the local PC.

Down-Scaler

Down-Scaler

EDID

EDID SETTING

Custom Read:

EDID Read

HDCP

INPUT HDCP

Custom Edid ✕

Custom Edid **Read** Write Save As **Open**

Status:

| | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 01 | | | | | | | | | | | | | | | | |
| 02 | | | | | | | | | | | | | | | | |
| 03 | | | | | | | | | | | | | | | | |
| 04 | | | | | | | | | | | | | | | | |
| 05 | | | | | | | | | | | | | | | | |
| 06 | | | | | | | | | | | | | | | | |
| 07 | | | | | | | | | | | | | | | | |
| 08 | | | | | | | | | | | | | | | | |
| 09 | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | |

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

Down-Scaler

Down-Scaler

EDID

EDID SETTING

Custom Read:

EDID Read

HDCP

INPUT HDCP

EDID Setting ✕

Select Port: HDMI OUT1 **Read** Save As

Status:

| | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 01 | | | | | | | | | | | | | | | | |
| 02 | | | | | | | | | | | | | | | | |
| 03 | | | | | | | | | | | | | | | | |
| 04 | | | | | | | | | | | | | | | | |
| 05 | | | | | | | | | | | | | | | | |
| 06 | | | | | | | | | | | | | | | | |
| 07 | | | | | | | | | | | | | | | | |
| 08 | | | | | | | | | | | | | | | | |
| 09 | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | |

3. HDCP

HDCP

INPUT HDCP

HDMI IN 1: **ON** OFF

USB-C IN 3: ON **OFF**

HDMI IN 2: **ON** OFF

USB-C IN 4: ON **OFF**

This section allows users to enable/disable the HDCP capability.

6.7.4 Control

This page mainly contains control settings, such as **CEC**, **RS232**, **RELAY**, **SENSOR**, **USB device control** and **GPIO**.

Captured with Xnip

Switch General **Control** Network System Web: V1.0.0

CEC

CEC port:

Auto-CEC: ON OFF Delay Time (sec):
> The delay time is only valid for the Display OFF command.

CEC Command
 Display ON:
 Display OFF:

RS232

RS232 Port:

Baud Rate:

Auto-RS232: ON OFF Delay Time (sec):
> The delay time is only valid for the Display OFF command.

RS232 Command Power ON:
 String HEX

Power OFF:
 String HEX

RELAY

RELAY Mode:

Trigger Time (1~30 sec):

SENSOR

24V Power: ON OFF

I/O Status: High

USB Device Control

Device Control VBUS Mode:

GPIO

GPIO:

GPIO Setting
 I/O:
 Pull-up Resistor:
 State:

GPIO Status:

| | | | | | | | | |
|---------|--------|------|---------|--------|------|---------|--------|------|
| GPIO 1: | Output | High | GPIO 2: | Output | Low | GPIO 3: | Output | Low |
| GPIO 4: | Output | High | GPIO 5: | Output | High | GPIO 6: | Output | High |

1. CEC

CEC

CEC port:

Auto-CEC: ON OFF Delay Time (sec):

> The delay time is only valid for the Display OFF command.

CEC Command Display ON:

Display OFF:

- Support Auto-CEC trigger on all outputs. HDBT OUT and HDMI OUT 2 will trigger at the same time.
- The auto-CEC function is enabled by default, and users can disabled through the Web UI and API.
- Auto-CEC trigger conditions:
 - When a valid input video signal is detected.
 - The user sets a GPIO port to trigger the Auto-CEC function.

This section allows users to control the connected CEC-enabled displays to power on/off and set the Auto-CEC function.

- **CEC port:** Select the output port to control.
- **Display ON/ Display OFF:** Click to control the corresponding CEC-enabled display to power ON or OFF.
- **Auto-CEC:** Enable/disable the auto-CEC function of the selected output.
- **Delay Time:** Delay time for CEC "Display OFF" command. When the CEC display-off conditions are met, the command will not be issued until the set time arrives. Default setting: **2 minutes**.

2. RS232

RS232

RS232 Port:

Baud Rate:

Auto-RS232: ON OFF Delay Time (sec):

> The delay time is only valid for the Display OFF command.

RS232 Command Power ON:
 String HEX

Power OFF:
 String HEX

This section allows users to set parameters for the RS232 port, set the **Auto-RS232** function and set the RS232 pre-stored command.

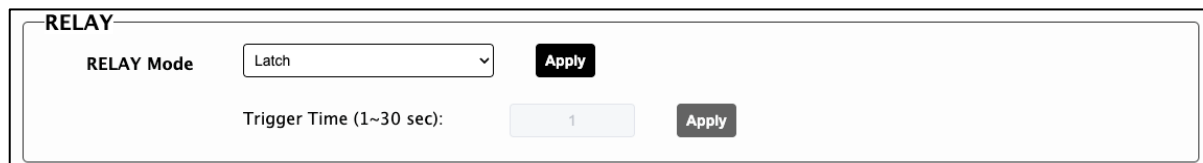
- **RS232 Port:** Select RS232 port to set from the drop-down menu.
 - **Power ON/ Power OFF:** Click to send the saved display on/off command to power on/off the 3rd device connected to the selected RS232 port.
 - **Baud Rate:** Select the baud rate from the drop-down menu and click “APPLY” to take effect. It supports **9600, 14400, 19200, 38400, 57600, Default setting: 115200.**
 - **Auto-RS232:** Enable/disable the auto-RS232 function of the selected output.
 - **Delay Time:** Delay time for CEC “**Display OFF**” command. When the CEC display-off conditions are met, the command will not be issued until the set time arrives. **Default setting: 30s. Range: 30s~1800s.**
 - **RS232 Command- Power 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 “HEX” button and input the Hex command in the field, otherwise, check the “String” button.
- **Save:** Click to save the input command to the **iSwitch 402UC.**
- **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.

It supports routing TCP-UDP commands through specific ports to the RS232 port.

- **TCP port number: 9001 (RS232-1) and 9002 (RS232-2), 9003 (HDBT-RX).**

3. RELAY



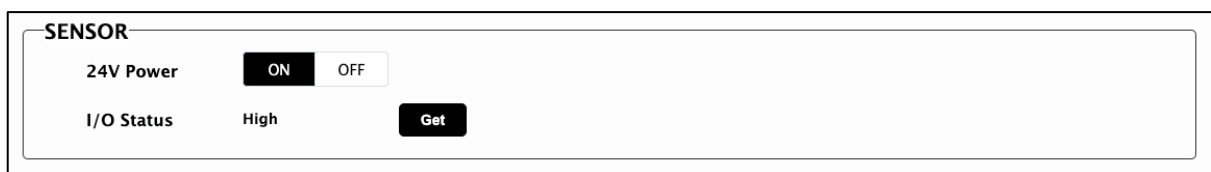
2x 3-pin 3.5mm phoenix female connector, vertically.

Supports "LATCH" and "MOMENTARY" mode, 0-30V.

This section allows users to configure the **RELAY**.

- **RELAY Mode:** Select relay mode from the drop-down menu (Latch or Momentary) and click “Apply” to take effect. **Default setting: Latch.**
 - **Latch:** Level mode.
 - **Momentary:** Pulse mode.
- **Trigger Time:** When setting relay mode to momentary, input the trigger time in this field, and click “Apply” to take effect. **Default setting: 3s. Range: 1s~30s.**

4. SENSOR



The screenshot shows a control panel titled "SENSOR". It contains two rows of controls. The first row is labeled "24V Power" and has two buttons: "ON" (highlighted in black) and "OFF". The second row is labeled "I/O Status" and has the text "High" followed by a "Get" button (highlighted in black).

- 1x 3-pin 3.5mm phoenix female connector.
- 24V/100mA output.

This section allows users to set 24V output voltage of the sensor to on/off and get I/O status.

- **24V Power:** Enabled/disable the 24V power out for the sensor port.
- **I/O Status:** Click “Get” to get the current I/O status of the sensor port.

5. USB Device Control



The screenshot shows a control panel titled "USB Device Control". It contains a row with the text "Device Control" followed by "VBUS Mode:" and a dropdown menu currently set to "Always High". To the right of the dropdown is an "Apply" button (highlighted in black).

This section allows users to set VBUS mode for USB device ports.

- **VBUS Mode:** Select VBUS mode.
 - **Pass-through:** If the selected USB Host is not connected, all USB device ports will have no VBUS output.
 - **Always High:** The USB device ports always provide VBUS output.

6. GPIO

GPIO

GPIO All

GPIO Setting I/O: Output Apply

Pull-up Resistor: Connected Apply

State: High Apply

GPIO Status:

| | | | | | | | | | |
|--|---------|--------|------|---------|--------|------|---------|--------|------|
| | GPIO 1: | Output | High | GPIO 2: | Output | Low | GPIO 3: | Output | Low |
| | GPIO 4: | Output | High | GPIO 5: | Output | High | GPIO 6: | Output | High |

This section allows users to configure GPIO.

- **GPIO:** Select the GPIO port from the drop-down menu to configure.
- **GPIO Settings:**

I/O: Select the GPIO type between “Output” and “Input” and click “Apply” to take effect.

When select "Output": (See above picture)

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

The GPIO is designed with a 6-pin 3.5mm phoenix female connector. Includes 5V, GND and 4x GPIO pins. Each GPIO can be independently set as Digital Input or Digital Output, and the default is Digital Input. GPIO output limitations:

| GPIO | Voltage & Current |
|------|-------------------|
| 5V | 5V/500mA |
| GPIO | 5V/50mA (each) |

When select "Input":(See below picture)

GPIO

GPIO All

GPIO Setting I/O: Input Apply

GPIO Status:

| | | | | | | | | | |
|--|---------|--------|------|---------|--------|------|---------|--------|------|
| | GPIO 1: | Output | High | GPIO 2: | Output | High | GPIO 3: | Output | Low |
| | GPIO 4: | Input | Low | GPIO 5: | Output | High | GPIO 6: | Output | High |

- **GPIO Status:** Shows the current GPIO type and status.

6.7.5 Network

This page mainly contains **Network Setting**, such as IP mode, **Service Capability**, **USB NIC**, **VLAN Mode** and **802.1x**.

Switch
General
Control
Network
System

Web: V1.0.0

Network Setting

IP Type: Static DHCP

IP Address:

Subnet Mask:

Default Gateway: Apply

Note: After changing network configuration, please reopen the web page with the new network settings.

Service Capability

Web Service HTTP: ON OFF

HTTPS: ON

USB NIC

USB NIC All: ON OFF

USB-B IN 1: ON OFF USB-B IN 2: ON OFF

USB-C IN 3: ON OFF USB-C IN 4: ON OFF

VLAN Mode

VLAN Mode: Apply

> Transparent: Network interconnection of all devices.
> Separated: The secure network port (Ethernet 1) is only used to log in to the Web UI. Other networks are connected to Ethernet 2.

802.1x

802.1x: ON OFF

Authentication Method:

Username: *

Client Certificate:* Browse

Private Key:* Browse

Private Key Password:*

Serve Certificate: ON OFF

CA Certificate:* Browse

Apply

1. Network Setting

Network Setting

IP Type: Static DHCP

IP Address:

Subnet Mask:

Default Gateway:

Note: After changing network configuration, please reopen the web page with the new network settings.

The network is used to set the IP mode.

Note:

- When "**Static**" is selected, please ensure your PC is in the same network segment as the iSwitch 402UC.
- Please wait for 2-3 minutes for the LAN module to reboot and reconnect after the network setting is changed.

2. Service Capability

Service Capability

Web Service HTTP: ON OFF

HTTPS: ON

This section allows users to set HTTP and HTTPS.

- **HTTP:** Enable/disable the HTTP connection.
- **HTTPS:** HTTPS is supported, and CAN NOT disabled.

3. USB NIC

USB NIC

USB NIC All: ON OFF

USB-B IN 1: ON OFF USB-B IN 2: ON OFF

USB-C IN 3: ON OFF USB-C IN 4: ON OFF

What is USB NIC?

USB NIC refers to the USB Network Interface Controller, that provide network connections through a device plugged into the USB port. By this function all PCs connected to USB-B and

USB C ports of the **iSwitch 402UC** will have ethernet access without need to connect other ethernet cables or WiFi connections.

The **iSwitch 402UC** provides four USB network cards on USB-C and USB-B ports.

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

The **iSwitch 402UC** provides four USB to Ethernet Bridge modules.

- Computers connected to USB-C/USB-B ports can connect to the network via the USB to Ethernet Bridge.
- Each USB to Ethernet Bridge can be enabled/disabled independently.
- Four USB to Ethernet Bridge share 1G network bandwidth.

4. VLAN

VLAN Mode

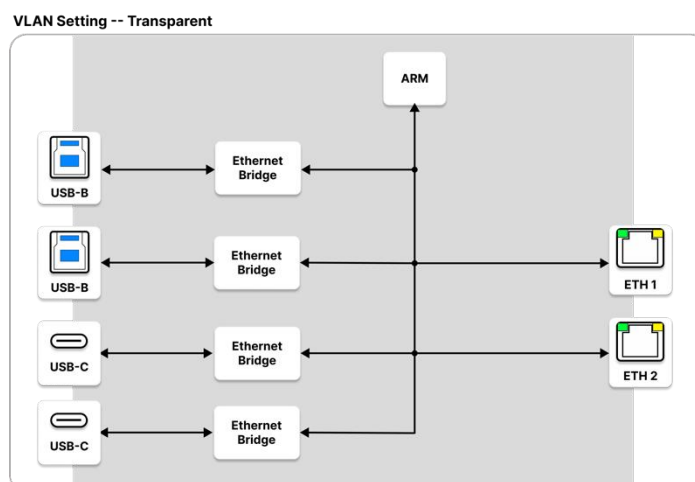
VLAN Mode

> Transparent: Network interconnection of all devices.
> Separated: The secure network port (Ethernet 1) is only used to log in to the Web UI. Other networks are connected to Ethernet 2.

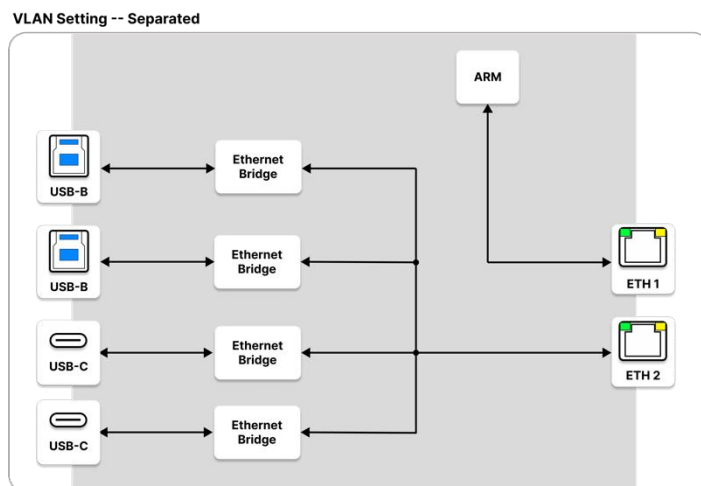
VLAN settings can help administrators isolate the internal network and the guest network to protect the network security.

The **iSwitch 402UC** 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. See below diagram.



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



5. 802.1x

802.1x

802.1x ON OFF

Authentication Method:

Username: *

Client Certificate:*

Private Key:*

Private Key Password:*

Serve Certificate: ON OFF

CA Certificate:*

- **802.1x:** Click to enable/disable 802.1x Authentication service. supports "EAP-TLS" and "EAP-MSCHAP V2" two mode.

6.7.6 System

This page mainly contains system settings such as **Login Password**, **FW Update**, **Configuration import and export**, **Restore Factory**, **Log**.

Switch
General
Control
Network
System

Web: V1.0.0

Login Password

| | |
|----------------------|---|
| Old UserName | <input type="text"/> |
| Old Password | <input type="password"/> |
| New UserName | <input type="text"/> |
| New Password | <input type="password"/> |
| Confirm New Password | <input type="password"/> Apply |

Note: Password must be 4 to 16 characters in length and must contain upper and lower case letters and numbers.(alphanumeric only)

FW Update

File: Browse

Upgrade

Configuration import and export

Export Settings
Import Settings

Restore Factory

Factory Default
Reboot

Version

| | | |
|------------------|---------------------|--------------|
| ARM: V1.0.0 | USB-C VIDEO: V1.3.0 | CPLD: V1.9.0 |
| Main: V1.1.0 | HDMI: V1.4.0 | |
| USB-C CC: V1.2.0 | HDBT 3.0: V1.6.0 | |

Log

Export Log

Note: Please wait a few moments for log retrieval.

```

14:49:59 Receive : HDBT_3 V1.6.0
14:49:59 Receive : USB_C_VIDEO V1.3.0
14:49:59 Receive : MAIN V1.1.0
14:41:50 Receive : USBNIC all on
14:34:39 Receive : USBNIC IN4 OFF
14:34:39 Receive : USBNIC IN2 OFF
14:34:39 Receive : VLAN_ENABLE On
14:34:39 Receive : IP MODE dhcp
                    
```

1. Login Password

Login Password

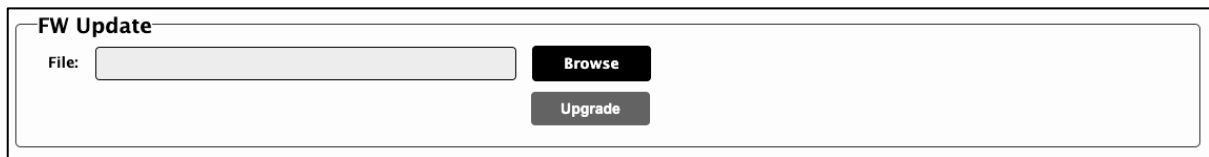
| | |
|----------------------|---|
| Old UserName | <input type="text"/> |
| Old Password | <input type="password"/> |
| New UserName | <input type="text"/> |
| New Password | <input type="password"/> |
| Confirm New Password | <input type="password"/> Apply |

Note: Password must be 4 to 16 characters in length and must contain upper and lower case letters and numbers.(alphanumeric only)

Default Username & Password: "admin"

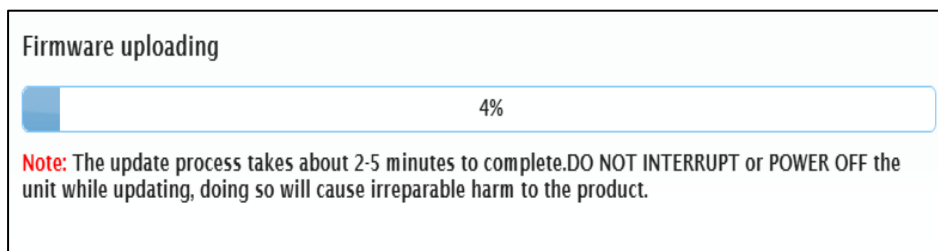
Note: The password must be 4 to 16 characters long, alphanumeric, and include at least one uppercase letter, one lowercase letter, and one number.

2. FW Update




The screenshot shows a web interface titled "FW Update". It contains a "File:" label followed by a text input field. To the right of the input field is a black button labeled "Browse". Below the input field and the "Browse" button is a grey button labeled "Upgrade".

- Click "**Browse**" to select the update file from local PC.
- Click "**Upgrade**" to start the upgrading.



The screenshot shows a window titled "Firmware uploading". It features a progress bar with a blue fill and the text "4%" in the center. Below the progress bar is a red note: "Note: The update process takes about 2-5 minutes to complete. DO NOT INTERRUPT or POWER OFF the unit while updating, doing so will cause irreparable harm to the product."

- When the upgrade is successful, the following window pops up. Click "OK" and refresh the web page to re-login web UI.



The screenshot shows a dialog box with a large green checkmark icon at the top. Below the icon, the text reads "Upgrade complete, please reopen the web page!". At the bottom of the dialog box is a button labeled "OK".

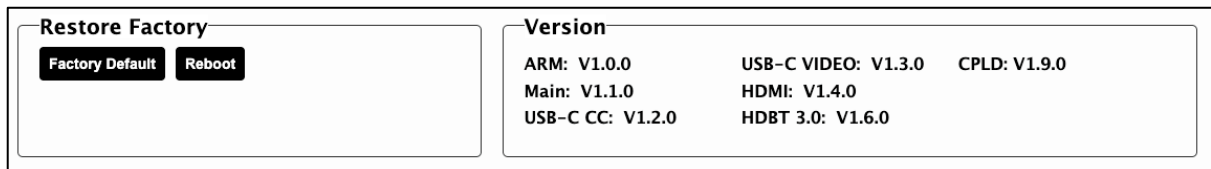
Note: DO NOT power off the device during the updating process.

3. Configuration import and export



- **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.

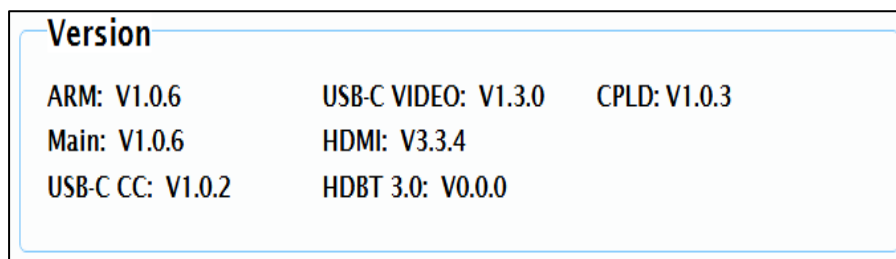
4. Restore Factory



Factory Default: Click to set the device to factory defaults.

Reboot: Click to reboot the device.

5. Version



This section shows the device's firmware version information.

6. LOG

Log

Export Log

Note: Please wait a few moments for log retrieval.

14:49:59 Receive : HDBT_3 V1.6.0
14:49:59 Receive : USB_C_VIDEO V1.3.0
14:49:59 Receive : MAIN V1.1.0
14:41:50 Receive : USBNIC all on
14:34:39 Receive : USBNIC IN4 Off
14:34:39 Receive : USBNIC IN2 Off
14:34:39 Receive : VLAN_ENABLE On
14:34:39 Receive : IP MODE dhcp

This section displays system setting change records.

- **Export Log:** Click to download the log file to the local PC.

Note: Please wait for a few moments for log retrieval.

7. Dante

The **iSwitch 402UC** supports a 2x2 Dante audio transmission.

Before using the Dante function, please:

- Connect all Dante devices to the same network.
- Use "**Dante Controller**" to pair Dante devices.
- To download Dante Controller software or user manual, please visit Audinate website: <https://www.audinate.com/products/software/dante-controller>

Note: Some network switches may cause "Dante controller" to be unable to recognize Dante devices. Please replace the switch.