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## TECHNOLOGIES

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# HT-Gemini

4K 6 Multiformat Input Extender Switch with USB Extension for Soft Codec

## User Manual

Version: 1.0

CE ♲ ⌧ FCC RoHS Compliant

HT-GEMINI-RX

HT-GEMINI-TX

# 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.

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.

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.

4. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
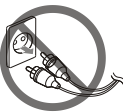
5. Do not place sources of open flames, such as lighted candles, on the unit.

6. Clean this apparatus only with dry cloth.

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

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

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

10. Refer all servicing to qualified service personnel.

# Table of Contents

# Introduction

## OVERVIEW

This product is a 4K 6 Multi-format Inputs Extender Switch with USB Extension for a soft codec, which provides AV switching, USB, HDMI, DP, VGA, and USB-C extension, plus system control for meeting spaces using PC-based conferencing codecs such as Microsoft Skype, Webex by Cisco and Citrix GoTo Meeting. The kit offers six video inputs shared between both devices for HDMI, Display Port, VGA plus analog audio in and USB-C video signals. To simplify conference room device management, the kit provides four USB Type-B connectors for host computers. Six built-in USB hubs, three on the transmitter and three on the receiver, allow for numerous Human Interface Devices (HID) as well as USB cameras and microphones.

The kit is compatible with Ultra High-Definition source up to 4K/UHD@60 Hz with 4:2:0 color subsampling. All audio, video, data, control, USB, and Ethernet transmission between the two devices is carried over a single, Ethernet-enabled HDBaseT link up to 100m/330ft.

It simplifies classroom and small office system integration, for installation beneath conference tables and in lecterns, to provide localized presentation switching support.

## FEATURES

- HDMI 2.0 with 4k@60Hz (Chroma sub-sampling 4:2:0 8-bit only) and HDCP 2.2 compliance, VGA input up to 1920x1200@60Hz.

- Provides a variety of interfaces including USB-C to simplify meeting room devices management.

- Inputs connected to either the transmitter or the receiver can be displayed on the HDMI out on either the transmitter or the receiver or both simultaneously.

- Automatically detects active inputs when sources are connected.

- Supports USB hosts such as Desktop and Laptop, and peripheral USB devices such as keyboard, mouse, microphone, speaker, camera, and whiteboard for a conference system.

- Ethernet can be connected into either the receiver or the transmitter, providing LAN accessibility for users.

- Allows connected displays to be controlled via CEC commands or front panel buttons.

- Relay commands can be triggered to control relay devices such as projection screens.

- RS232 pass through; IR pass through from TX to RX.

- API Control via LAN interface and RS232-C.

- De-embedded audio can be routed out of the Receiver to an external amplifier.

# Package Contents

**TRANSMITTER:**

- 1 x Transmitter
- 1 x DC 12V Power Adapter with US Pins
- 1 x DC 12V Power Adapter with UK Pins
- 1 x DC 12V Power Adapter with EU Pins
- 1 x DC 12V Power Adapter with AU Pins
- 2 x Phoenix Male Connector (3.5 mm, 3 pins)
- 1 x IR Receiver Cable
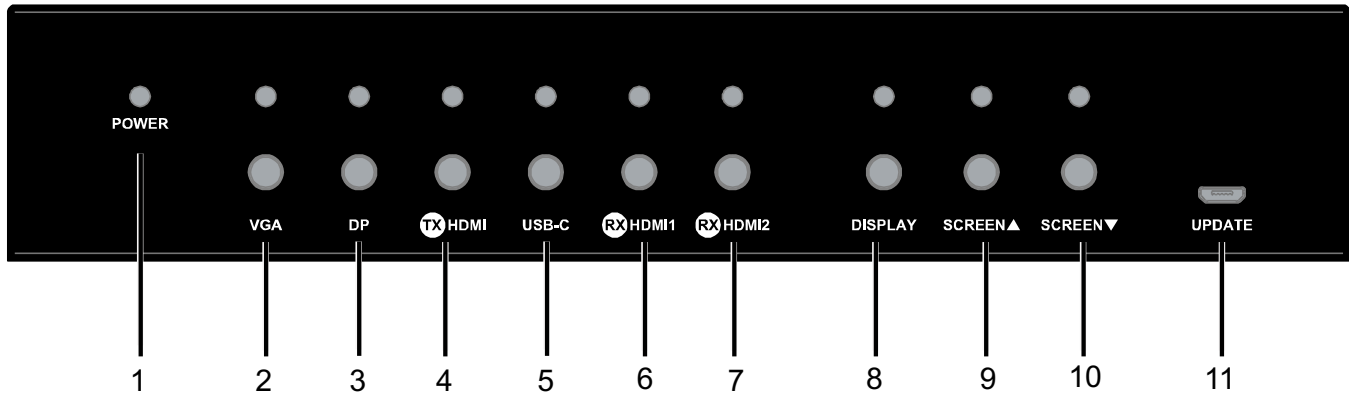- 2 x Mounting Brackets (with Screws)

**RECEIVER:**

- 1 x Receiver
- 1 x DC 12V Power Adapter with US Pins
- 1 x DC 12V Power Adapter with UK Pins
- 1 x DC 12V Power Adapter with EU Pins
- 1 x DC 12V Power Adapter with AU Pins
- 5 x Phoenix Male Connector (3.5 mm, 3 pins)
- 1 x IR Emitter Cable
- 2 x Mounting Brackets (with Screws)
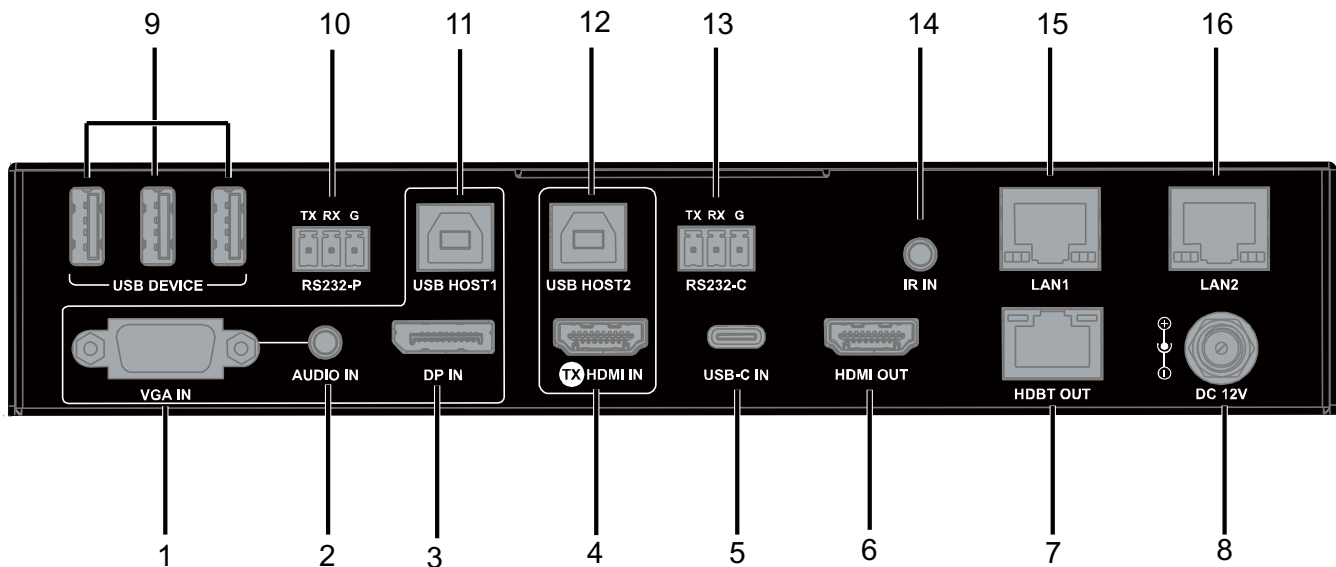
# Panel Description

**TRANSMITTER:**

**FRONT PANEL**



| No. | Name | Description |
|---|---|---|
| 1 | POWER LED | Lights on when the device is powered on. |
| 2 | VGA IN Selection Button and LED | **VGA IN selection button:** press the button to select the VGA source as the input.<br>**LED:** The LED is located directly above the button.<br>• **LED On:** VGA source is selected as the input.<br>• **LED Off:** VGA source is not selected. |
| 3 | DP IN Selection Button and LED | **DP IN selection button:** press the button to select the DisplayPort source as the input.<br>**LED:** The LED is located directly above the button.<br>• **LED On:** DP source is selected as the input.<br>• **LED Off:** DP source is not selected. |
| 4 | TX HDMI IN Selection Button and LED | **TX HDMI IN selection button:** press the button to select the HDMI source on the transmitter side as the input.<br>**LED:** The LED is located directly above the button.<br>• **LED On:** HDMI source on the TX is selected as the input.<br>• **LED Off:** HDMI source on the TX is not selected. |
| 5 | USB-C IN Selection Button and LED | **USB-C IN selection button:** press the button to select the USB-C source as the input.<br>**LED:** The LED is located directly above the button.<br>• **LED On:** USB-C source is selected as the input.<br>• **LED Off:** USB-C source is not selected. |
| 6 | RX HDMI IN 1 Selection Button and LED | **RX HDMI 1 selection button:** press the button to select the HDMI source on the receiver side  as the input.<br>**LED:** The LED is located directly above the button. |

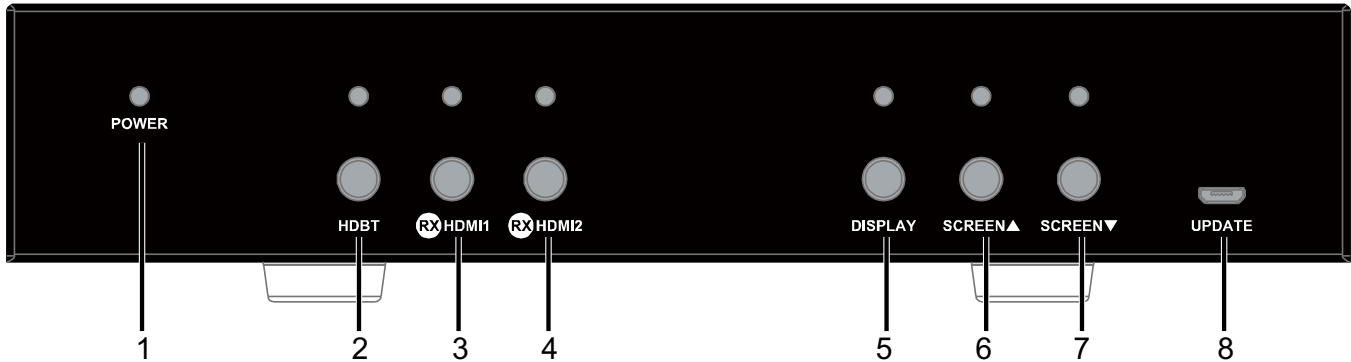| No. | Name | Description |
|---|---|---|
| | | • **LED On:** HDMI 1 source on the RX is selected as the input.<br>• **LED Off:** HDMI 1 source on the RX is not selected. |
| 7 | RX HDMI IN 2 Selection Button and LED | **RX HDMI 2 selection button:** press the button to select the HDMI source on the receiver side as the input.<br>**LED:** The LED is located directly above the button.<br>• **LED On:** HDMI 2 source on the RX is selected as the input.<br>• **LED Off:** HDMI 2 source on the RX is not selected. |
| 8 | Display Control Button and LED | **Display control button:**<br>• Single press button—turn all displays on;<br>• Hold button for 3s—turn all displays off.<br>**LED**: The LED is located directly above the button and lights up when the button is pressed. |
| 9 | Screen ▲ Button and LED | **Screen ▲ Button:** press to raise a projection screen or open window shades.<br>**LED:** The LED is located directly above the button and lights up when the button is pressed. |
| 10 | Screen ▼ Button and LED | **Screen ▼ Button:** press to lower a projection screen or close window shades.<br>**LED:** The LED is located directly above the button and lights up when the button is pressed. |
| 11 | Update | Connection for updating firmware with the update software tool. (Reserved) |

## REAR PANEL



| No. | Name | Description |
|---|---|---|
| 1 | VGA IN | Connect to a VGA source. |
| 2 | AUDIO IN | Connect to an audio source. Audio follows the VGA input source. |
| 3 | DP IN | Connect to a DisplayPort source. |

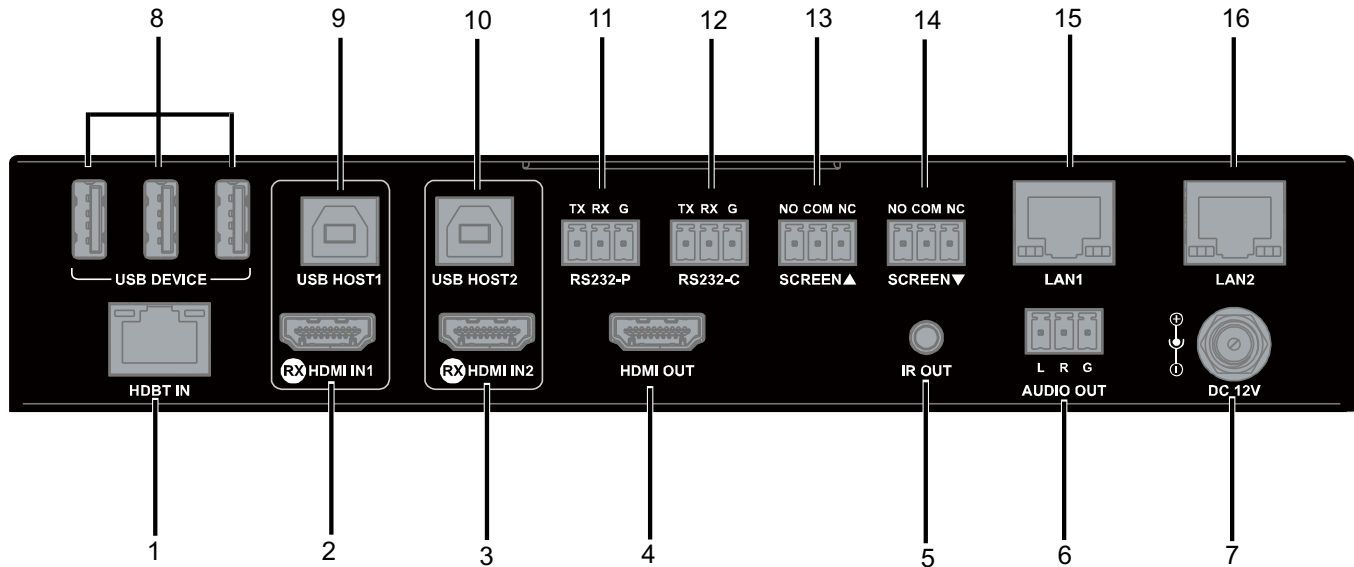| No. | Name | Description |
|---|---|---|
| 4 | TX HDMI IN | Connect to an HDMI source., |
| 5 | USB-C IN | USB Type-C port (USB 3.1 Gen1, 5Gbps, support DisplayPort Alternate Mode)<br>The following cables are recommended:<br>• USB Type-C to Type-C cable (USB 3.1 Gen 1 or above).<br>Connect to a USB-C source. |
| 6 | HDMI OUT | Connect to an HDMI display. |
| 7 | HDBT OUT | Connect to the HDBT IN port of the receiver. |
| 8 | DC 12V IN | Connect to the DC 12V power adapter. |
| 9 | USB DEVICE | Connect to USB peripheral devices. |
| 10 | RS232-P | Connect to an RS232 controller or RS232 controllable device for RS232 pass through. |
| 11 | USB HOST 1 | Connect to the PC. This USB follows VGA IN and DP IN ports when either of thosesources are selected, and the USB devices (on TX and RX) can be connected to the host PC. |
| 12 | USB HOST 2 | Connect to a PC. This USB follows HDMI IN port when the source is selected, and the USB devices (on TX and RX) can be connected to the host PC. |
| 13 | RS232-C | Connect to an RS232 enabled device for API controlling.<br>**Note:** This is disabled on TX to control a projector.. |
| 14 | IR IN | Connect to the IR Receiver cable for passing through the remote signal to RX. |
| 15 | LAN 1 | Connect to an Ethernet device. |
| 16 | LAN 2 | Connect to an Ethernet device. |

## RECEIVER:

## FRONT PANEL



| No. | Name | Description |
|---|---|---|
| 1 | POWER LED | Lights on if the device is powered on. |
| 2 | HDBT Button and LED | **HDBT signal selection button:** press the button to select the HDBT signal as the input.<br>**LED:** The LED is located directly above the button.<br>• **LED On**: HDBT source is selected as the input.<br>• **LED Off**: HDBT source is not selected. |
| 3 | RX HDMI IN 1 Selection Button and LED | **RX HDMI IN 1 selection button:** press the button to select the HDMI source on the receiver side as the input.<br>**LED:** The LED is located directly above the button.<br>• **LED On:** Select HDMI 1 source on the RX is selected as the input.<br>• **LED Off:** HDMI 1 source on RX is not selected. |
| 4 | RX HDMI IN 2 Selection Button and LED | **RX HDMI IN 2 selection button:** press the button to select the HDMI source on the receiver side as the input.<br>**LED:** The LED is located directly above the button.<br>• **LED On:** HDMI 2 source on the RX is selected as the input.<br>• **LED Off:** HDMI 2 source on RX is not selected. |
| 5 | Display Control Button and LED | **Display control button:**<br>• Single press button—turn all displays on;<br>• Hold button for 3s—turn all displays off.<br>**LED**: The LED is located directly above the button and lights up when the button is pressed. |
| 6 | Screen ▲ Button and LED(Blue) | **Screen ▲ Button:** press to raise a projection screen or open window shades.<br>**LED:** The LED is located directly above the button and lights up when the button is pressed. |
| 7 | Screen ▼ Button and LED(Blue) | **Screen ▼ Button:** press to lower a projection screen or close window shades.<br>**LED:** The LED is located directly above the button and lights up when the button is pressed. |
| 8 | Update Port | Connection for updating firmware with the update software tool. (Reserved) |

# REAR PANEL



| No. | Name | Description |
|---|---|---|
| 1 | HDBT IN | Connect to the HDBT OUT port of the transmitter. |
| 2 | RX HDMI IN 1 | Connect to an HDMI source. |
| 3 | RX HDMI IN 2 | Connect to an HDMI source. |
| 4 | HDMI OUT | Connect to an HDMI display. |
| 5 | IR OUT | Connect to the provided IR emitter cable for emitting remote signal from TX. |
| 6 | AUDIO OUT | Connect to an audio system with the phoenix connector. |
| 7 | DC 12V | Connect to the DC 12V power adapter. |
| 8 | USB DEVICE | Connect to USB peripheral devices. |
| 9 | USB HOST 1 | Connect to the PC. This USB follows VGA IN and DP IN ports when either of thosesources are selected, and the USB devices (on TX and RX) can be connected to the host PC. |
| 10 | USB HOST 2 | Connect to a PC. This USB follows HDMI IN port when the source is selected, and the USB devices (on TX and RX) can be connected to the host PC. |
| 11 | RS232-C | Connect to a projector for API controlling. |
| 12 | RS232-P | Connect to an RS232 controller or RS232 controllable device for RS232 pass through. |
| 13 | Screen△ | **Screen ▲ Button:** press to raise a projection screen or open window shades. <br> **LED:** The LED is located directly above the button and lights up when the button is pressed. |
| 14 | Screen▽ | **Screen ▼ Button:** press to lower a projection screen or close window shades. <br> **LED:** The LED is located directly above the button and lights up when the button is pressed. |
| 15 | LAN 1 | Connect to an Ethernet device. |
| 16 | LAN 2 | Connect to an Ethernet device. |

# Installation and Wiring

## INSTALLATION

**Note:** Before installation, please ensure the devices are disconnected from the power source.

**Steps to installing the device:**
1. Attach the included installation bracket to the enclosure using the screws provided. The bracket height can be adjusted up or down, or the bracket can face up or down depending on the location.
2. Repeat the step for the other side of the device.
3. Attach the brackets to the desired install surface (installation hardware not included).
4. Repeat steps 1~3 to install the receiver.
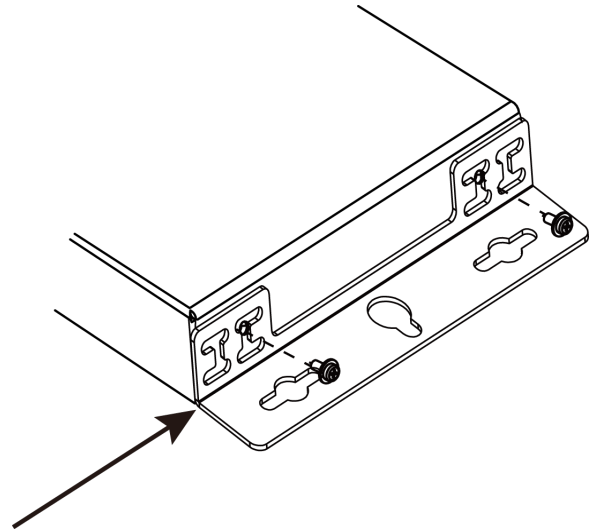
## WIRING

1. Connect the HDMI/VGA/DP/USB-C sources to the HDMI IN/VGA IN/DP IN/USB-C IN ports of TX or RX.
   **Note:** The soft codec provides users the ability to connect a BYOD wireless system to the HDMI IN as a source.
2. Properly connect displays or projectors to the HDMI OUT ports of the TX and RX, ensuring both source and displays are compatible.
3. Connect a well-terminated Cat 5e/6/6a/7 cable with an RJ45 connector wired to 568B standard at both ends from the HDBT OUT ports of the TX to the HDBT IN ports of the RX.
   **Note:** For more information about the cable, please refer to the "Specifications" section.
4. Connect a PC to USB HOST ports with USB cables.
5. Connect USB peripheral devices to the USB DEVICE ports of the TX and the RX.
   Combining above 4 and 5 steps: the PC and all USB peripheral devices connected to the TX and the RX can be connected to the host PC
   **Note:** For more information, please refer to "USB Control" section.
6. Connect an audio system such as an amplifier to the AUDIO OUT phoenix connector on the RX.
7. Plug the IR emitter into the IR OUT port of the RX and plug the IR broadband receiver into the IR IN port of the TX. With this, users can control the projector with its remote.
8. Connect one of the LAN ports to an Ethernet device such as an Ethernet switch.

**Note:** Only one LAN port is needed on the Ethernet switch, on either the TX or the RX.

9. Connect the power adapters to the TX and the RX.
10. Power on all attached devices.
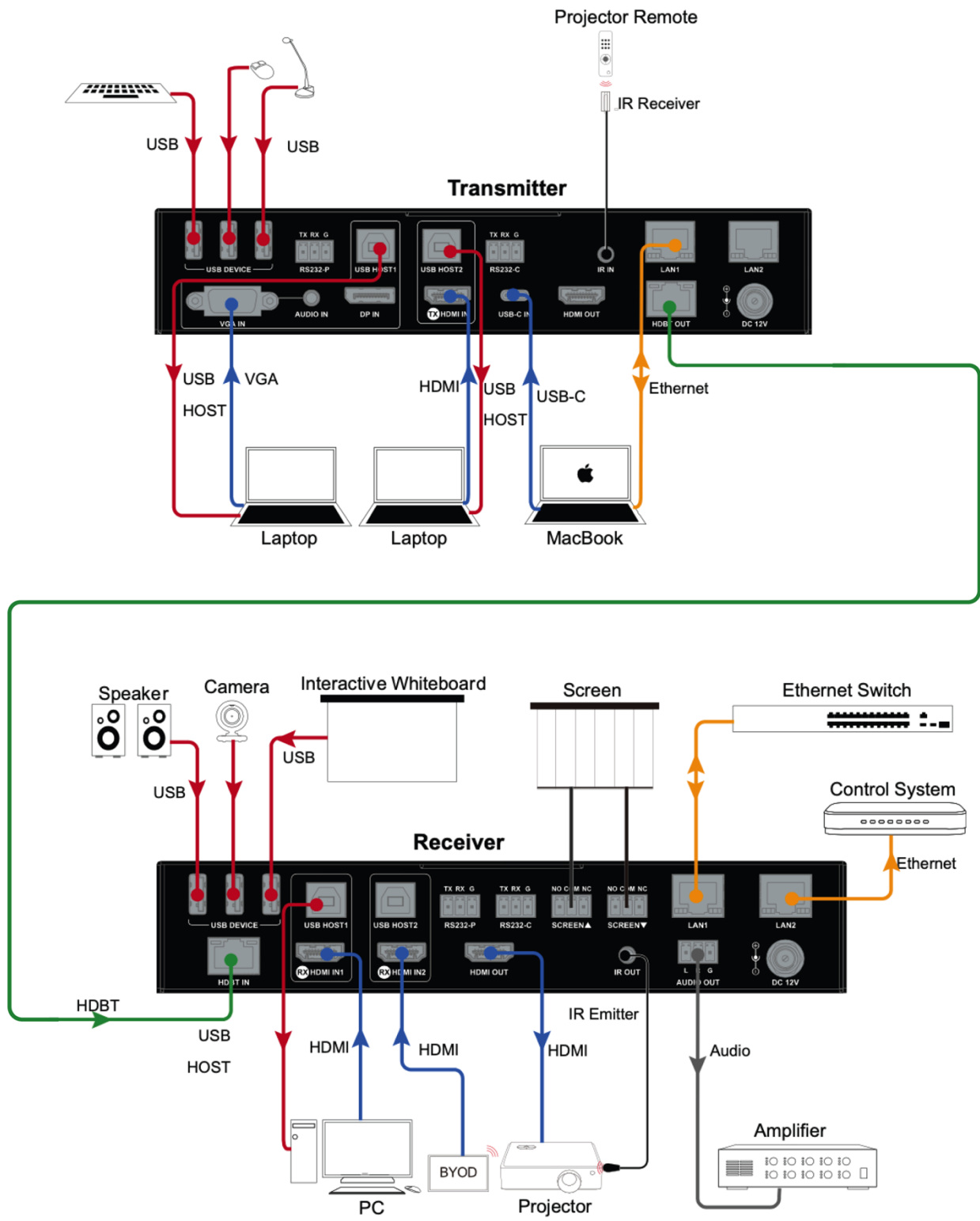
# Key Functions

## AUTO SWITCH

Auto Switch can be enabled or disabled using either the Web UI or by sending the API command to the device. (For more information, please refer to "Web UI Control" section and the separate document "API Command Set for HT-GEMINI")

**WHEN THE AUTO SWITCH IS ON (DEFAULT):**
- When the HT-GEMINI powers up, if the source selected before HT-GEMINI being powered off is still active, the HT-GEMINI will automatically switch to this source. If the previously selected source is not active and there is more than one input source connected, the HT-GEMINI will output signal following the auto switch priority order: VGA > DP > TX HDMI IN > USB-C > RX HDMI1> RX HDMI2.
- When a new input source is connected, the HT-GEMINI will automatically switch over to this source.
- When the currently selected source is disconnected, the HT-GEMINI will switch to the next active input source with highest priority, and if there is no other active input source the HT-GEMINI will keep the currently selected source.

**WHEN THE AUTO SWITCH IS OFF:**
- When a new source is connected, the HT-GEMINI will not automatically switch to that source. Users will need to switch to the desired source manually by pressing the appropriate input button on either the TX or the RX.

## USB CONTROL

Prior to operation make sure the PC and all other peripheral USB devices are connected.

- Connect a PC to the USB HOST ports with USB cables.
- Connect peripheral USB devices to the USB DEVICE ports of the TX and the RX.

The white outline on the back panel of the transmitter and receiver represents one group.

When the input source in the same group is selected, the peripheral USB devices (on both the TX and the RX) can be connected to the host PC. Please refer to the following diagrams.

**Note:** The USB-C input already has a built-in recognizable function, which means that when you select the USB-C input, the PC can be connected to another peripheral USB device directly.

1. VGA / DP source input on the TX is selected:
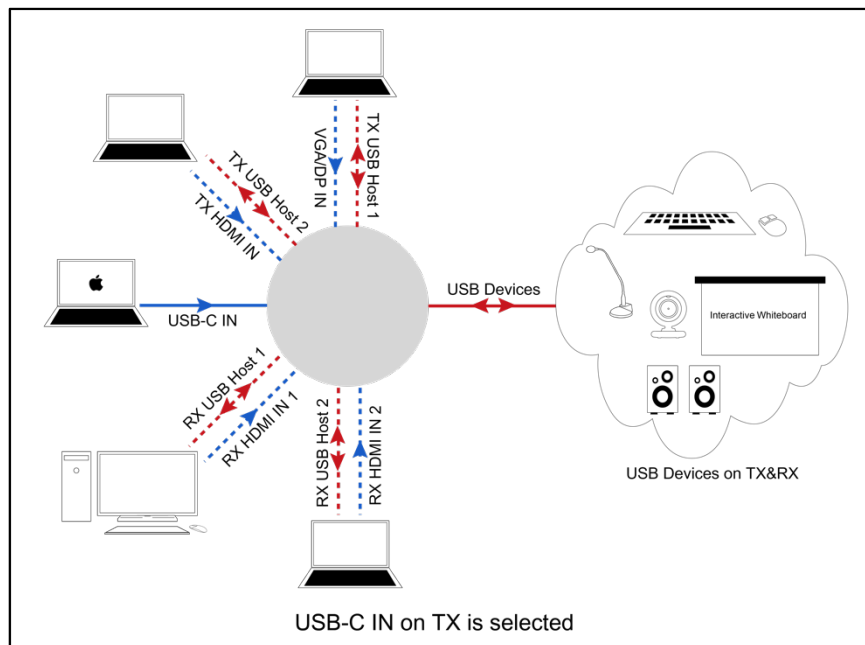


VGA / DP input on TX is selected
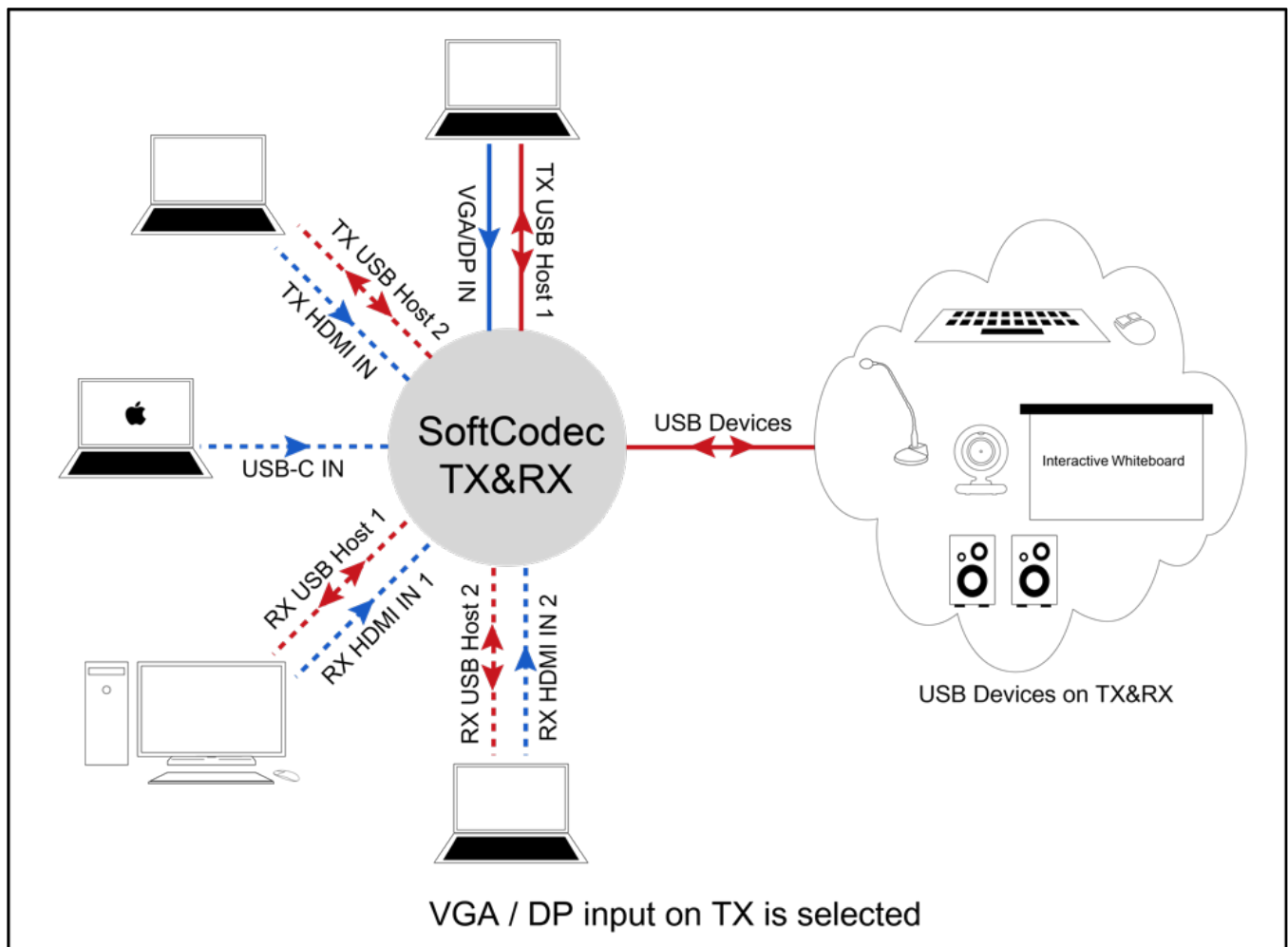
In this connection method, the VGA IN, AUDIO IN and TX USB HOST 1 are in a group. When the VGA input is selected, the peripheral USB devices (on both the TX and the RX) can be connected to the PC which is connected to the USB HOST 1.

2. TX HDMI IN source on TX is selected:



TX HDMI IN is selected
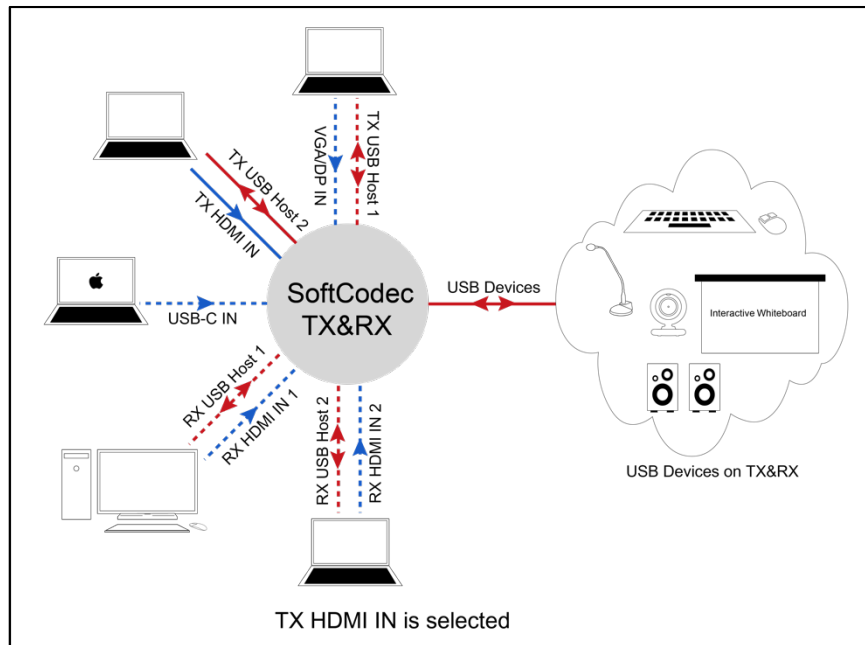
In this connection method, the TX HDMI IN and TX USB HOST 2 are in a group. When the TX HDMI IN is selected, the peripheral USB devices (on both the TX and the RX) can be connected to the PC which is connected to USB HOST 2.

3. USB-C source on TX is selected:



USB-C IN on TX is selected

In this connection method, when the USB-C input is selected, the peripheral USB devices (on both the TX and the RX) can be connected to the PC, which connected to USB-C port directly.

4. RX HDMI IN 1 on RX is selected:



RX HDMI IN 1 is selected

In this connection method, the RX HDMI IN 1 and RX USB HOST 1 are in a group. When the RX HDMI IN1 is selected, the peripheral USB devices (on both the TX and the RX) can be connected to the PC connected to RX USB HOST 1.

5. RX HDMI IN 2 on RX is selected:



RX HDMI IN 2 is selected

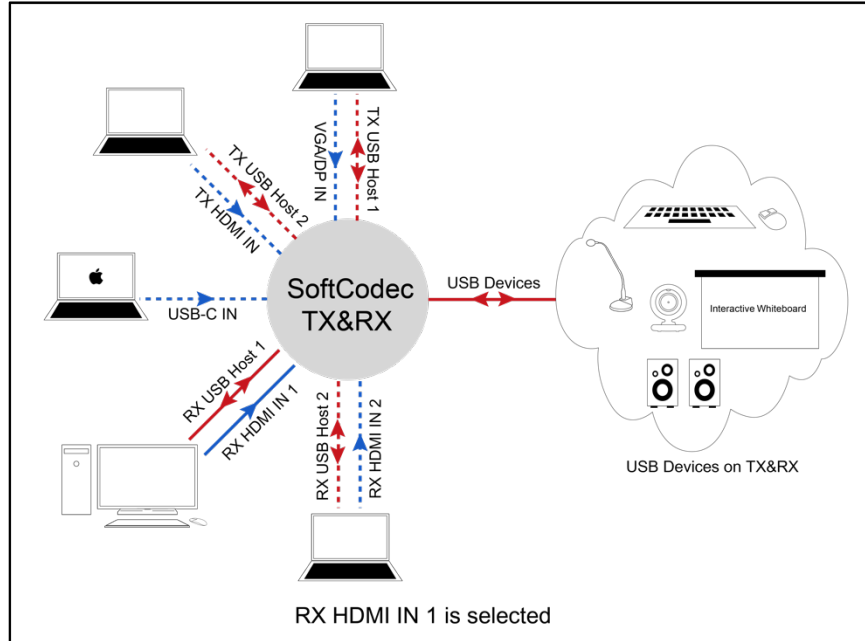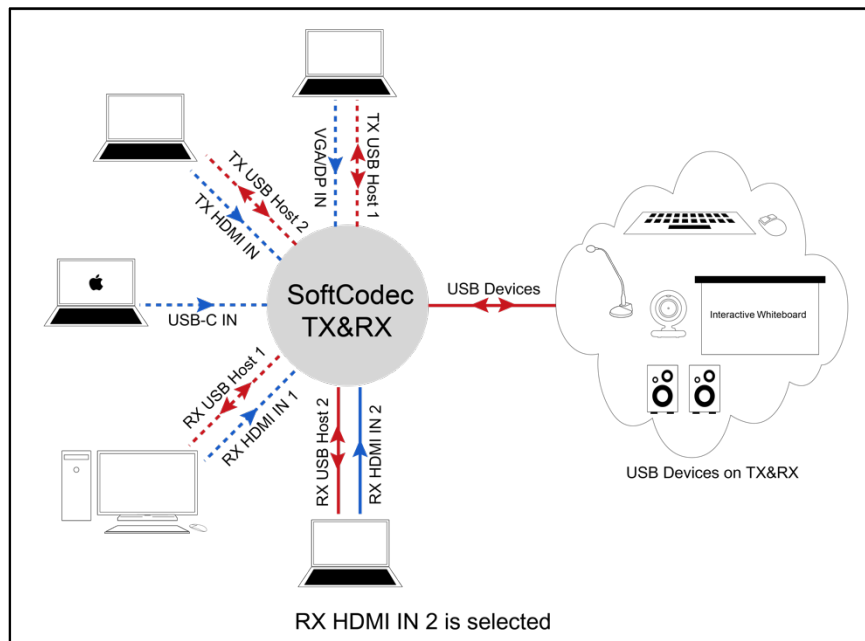In this connection method, the RX HDMI IN 2 and RX USB HOST 2 are in a group. When the RX HDMI IN 2 is selected, the peripheral USB devices can be connected to the PC which is connected to RX USB HOST 2.

## RS232 CONTROL

Advanced users may choose to control the HT-GEMINI through the RS232 control port. A UART cable is needed to connect a PC or control system. The API command for RS232 control is available in the separate document "API Command Set HT-GEMINI". To properly execute API commands connected with RS232, please ensure the RS232 interface and the control PC are configured correctly.

| Parameters | Value |
|---|---|
| Baud Rate | 115200 bps |
| Data Bits | 8 bit |
| Parity | None |
| Stop Bits | 1 bit |
| Flow Control | None |

# Web GUI

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

**To get access the Web UI:**

1. Connect the LAN port of the switcher to a local area network. The HT-GEMINI by default is set to DHCP. Ensure there's a DHCP server in the network so that the device can obtain a valid IP address. (If there is no DHCP server the switcher will revert to a 169.254.x.x address. An "arp -a" command in the command window can help locate the device.)

2. Connect the PC to the same network as the switcher.

3. Input the switcher's IP address in the browser and press Enter, the following window pops up. (See OSD section to easily view the IP address)
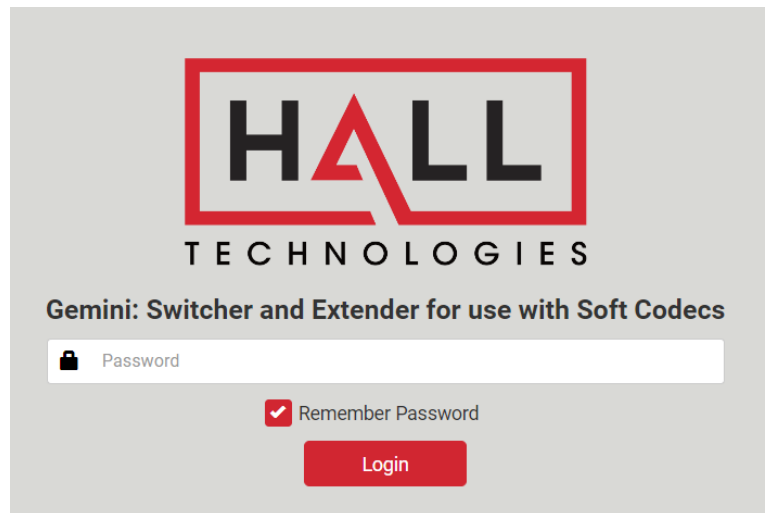
4. Input the password (default password: **admin**) and click **Login** to enter the main page.
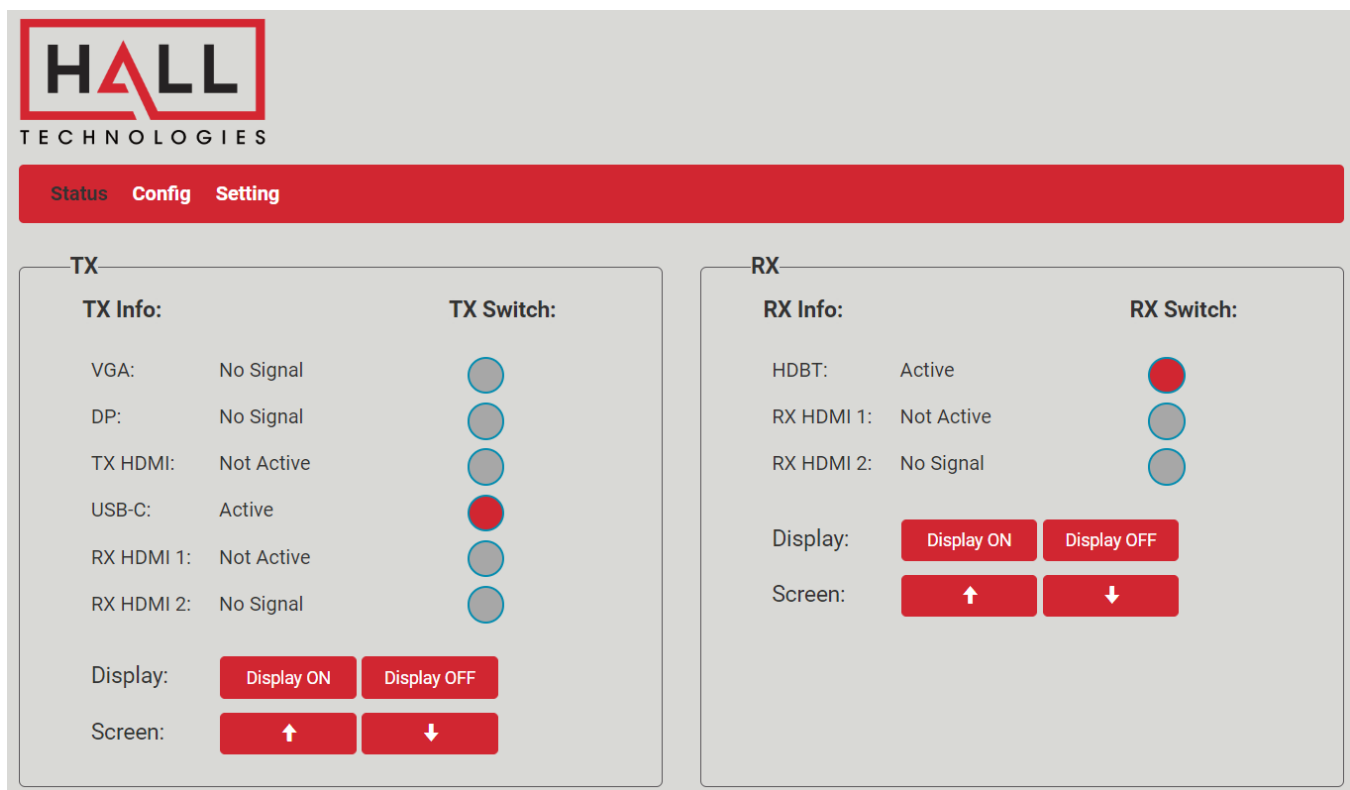


## The Web UI main page includes Status, Config, and Settings Tabs.

- **Status** – offers manual input selections as well as turning the display on/off and raising/lowering the projection screen.
- **Config** – offers settings of Auto Switch, HDCP, EDID, Display controls, and Relay Control.
- **Setting** – offers settings for Key Lock, Automatic Logout, Network settings, Password changes, Firmware Upgrade, and Factory reset.

# Config Page

## AUTO SWITCH

<div>
<strong>Auto Switch</strong>

[ **ON** ]
</div>

| UI Element | Description |
|---|---|
| **Auto Switch** | Auto Switch enabled "ON" or disabled "OFF". (See Auto Switch section above for more information.) |

## INPUT HDCP

<div>
<strong>Input HDCP</strong>

TX HDMI [ **ON** ]   USB-C [ **ON** ]   RX HDMI 1 [ **ON** ]

RX HDMI 2 [ **ON** ]
</div>

| UI Element | Description |
|---|---|
| **Input HDCP** | HDCP can be enabled/disabled on each of the inputs.<br>• ON: The input port supports HDCP<br>• OFF: The input port does not support HDCP |

## EDID

<div>
<strong>EDID</strong>

**VGA Input**
1920x1080@60Hz 2CH (Default) [ ✔ Apply ]

**DP Input**
1920x1080@60Hz 2CH (Default) [ ✔ Apply ]

**TX HDMI Input**
1920x1080@60Hz 2CH (Default) [ ✔ Apply ]

**USB-C Input**
1920x1080@60Hz 2CH (Default) [ ✔ Apply ]

**RX HDMI Input 1**
1920x1080@60Hz 2CH (Default) [ ✔ Apply ]

**RX HDMI Input 2**
1920x1080@60Hz 2CH (Default) [ ✔ Apply ]
</div>

| UI Element | Description |
|---|---|
| **EDID** | EDID settings can be applied to each of the inputs. Click "**Apply**" to save the selected EDID setting. |

# DISPLAY



| UI Element | Description |
|---|---|
| **Auto Display Control** | Used to enable "ON" or disable "OFF" display control when HT-GEMINI detects no input sources. |
| **Delay Time (min)** | Set the desired delay time between 1 and 30 minutes before the HT-GEMINI turns off a display when there is no signal input. |
| **UART Baud Rate** | Select the display's baud rate setting from the drop down. Available baud rates are 9600, 19200, 38400, 57600, and 115200. |
| **Hex or Text** | Select whether the power on/off commands are in hexadecimal format or character format. |
| **End Flag** | Select the end flag of the power on/off command. Options are NONE, \r, \n, or \r\n. |
| **Power On Code** | Enter the display's power on and power off commands. Click to save the command to the HT-GEMINI. |
| **Power Off Code** | |

# RELAY CONTROLLER



| UI Element | Description |
|---|---|
| **Relay Mode** | Select between Latch and Momentary for the relay mode.<br>• **Latch:** Level triggered.<br>• **Momentary:** Pulse triggered. Note, when momentary is selected, users can set the delay time between triggers between 1 and 10 seconds. |

# Setting Page

## GENERIC SETTING

Generic Setting

Key Lock:    OFF

| UI Element | Description |
|---|---|
| Key Lock | Key lock can be enabled "ON" or disabled "OFF".<br>• **ON:** The buttons on the front of the HT-GEMINI are locked and pushing the buttons will not do anything.<br>• **OFF:** The buttons are not locked. |

## AUTOMATIC LOGOUT

Automatic Logout

Enable:    OFF

Overtime (min):    5

| UI Element | Description |
|---|---|
| Automatic Logout | Automatic WEB UI logout can be enabled "ON" or disabled "OFF".<br>• **ON:** When there is no activity on the Web UI for the designated time (**Overtime**) the HT-GEMINI will automatically log the user out.<br>• **OFF:** The Web UI will not log the user out. |

## NETWORK

Network

IP Mode:    DHCP

IP Address:

Subnet Mask:    ✔ Apply

Note: LAN Module will automatically reboot after changing Network setting.

| UI Element | Description |
|---|---|
| Network | Used to modify network settings. |
| IP Mode | Select the desired IP mode between DHCP and Static. (Default is DHCP) |
| IP Address | Set the IP address manually if Static mode is selected. |
| Subnet Netmask | Set Subnet Mask manually if Static mode is selected. |
| Apply | Click to apply setting changes. **Note:** After the IP settings are changed, please refresh the Web UI page to re-login. |

# PASSWORD

**Password**

Old Password: [_____]

New Password: [_____]

Confirm New Password : [_____]    ✔ Apply

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

| UI Element | Description |
|---|---|
| **Old Password** | Enter the current password. |
| **New Password** | Set a new login password. |
| **Confirm New Password** | **Note:** The new password must be 4 to 16 characters in length, alphanumeric only. |
| **Apply** | Click to apply setting changes. |

# FIRMWARE UPGRADE

**Firmware Upgrade**

ARM File : [Choose file]    📁 Browse

☁ Upgrade

Note: Please upload the required file.

| UI Element | Description |
|---|---|
| **ARM File** | Browse the computer to find the latest ARM file to be uploaded to the HT-GEMINI. |
| **Upgrade** | When selected, click upgrade to perform the firmware update. |

# SYSTEM & FIRMWARE

**System**

Factory Default    Reboot

**Firmware Version**

| | |
|---|---|
| ARM | V1.45 |
| MCU ( TX ) | V2.4 |
| MCU ( RX ) | V2.3 |

| UI Element | Description |
|---|---|
| **Factory Default** | Restore HT-GEMINI to the factory default. **Note**: when pressed, a pop-up will confirm the desire to restore the HT-GEMINI to the factory default. |
| **Reboot** | Reboot HT-GEMINI. **Note**: when pressed, a pop-up will confirm the desire to reboot the HT-GEMINI. |
| **Firmware Version** | Displays the loaded firmware version. |

# Troubleshooting

1. A display is connected to the HDMI out of the HT-GEMINI but there is no video shown on the display.
   a. Confirm the HDMI input of the display is correctly selected
   b. Confirm the connected source is sending video to the HT-GEMINI (i.e. verify laptop is in duplicate or extend mode)
2. The USB Type-C port of HT-GEMINI does not connect to a PC,
   a. The response time to output video of USB 3.0 and Type-C is typically 6-8 seconds, although the response time between PC's can differ
   b. To confirm if the USB port on PC can transmit video; install the DisplayLink device driver, click the link to download https://www.displaylink.com/downloads.
3. During a soft codec call (i.e. GoToMeeting, Meet, Teams, Zoom etc.) with the laptop connected to the HT-GEMINI the far end cannot hear the local room participants talk.
   a. Verify the microphone is connected to the HT-GEMINI.
   b. Verify the microphone selected in the soft codec is the HT-GEMINI
   c. Verify the soft codec microphone is not muted
4. The PC is connected to the HT-GEMINI with an HDMI cable with video working at the display however there is no audio being sent to the display.
   a. Verify the HT-GEMINI is selected as the desired speaker output in the laptop by clicking on the speaker icon to open the audio output.
   b. Verify the display is not muted
   c. Verify the levels are turned up on both the laptop and the display
5. When the PC is connected to the Type-C port on the HT-GEMINI a pop-up on the PC appears giving a charge reminder.
   a. This is normal since the HT-GEMINI charging power might be different than what the PC requires
   b. To ensure the PC doesn't lose power, connect the dedicated PC power supply.

# Specifications

## TRANSMITTER:

| Technical | |
|---|---|
| Input / Output Ports | 1 x VGA IN, 1 x Audio IN (followed with VGA IN),1 x HDMI IN, 1 x DP IN, 1 x USB-C IN, 1 x HDBT OUT, 1 x HDMI OUT, 2 x LAN, 1 x RS232-P, 1 x RS232-C, 2 x USB HOST, 3 x USB DEVICE, 1 x IR IN, 1 x DC 12V IN |
| Input Signal Type | HDMI 2.0 with 4k@60Hz (Chroma sub-sampling 4:2:0 8-bit only) DP/USB-C: DP 1.2 |
| Output Signal Type | HDMI2.0 with 4k@60Hz (Chroma sub-sampling 4:2:0 8-bit only); HDBT2.0 |
| Resolution Supported | HDMI: 800x600@60Hz, 1024x768@60Hz, 1280x768@60Hz, 1280x800@60Hz,1280x960@60Hz, 1280x1024@60Hz, 1360x768@60Hz, 1366x768@60Hz, 1440x900@60Hz, 1400 x 1050@60Hz, 1600x900@60Hz, 1600x1200@60Hz, 1680x1050@60Hz, 1920x1200@60Hz, 480p@60Hz, 576p@50Hz, 720p@50/60Hz, 1080p@24/25/30/50/60Hz, 1080i@50/60Hz, 4096 x 2160@24/25/30/50/60Hz, 3840 x 2160@24/25/30/50/60Hz<br><br>DP/USB-C: 800x600@60 Hz, 1024x768@60Hz, 1280x768@60Hz, 1280x800@60Hz, 1280x960@60Hz, 1280x1024@60Hz, 1360x768@60Hz, 1366x768@60Hz, 1440 x900@60Hz, 1600 x900@60Hz, 1600 x1200@60Hz, 1680 x1050@60Hz, 1920 x1080@60Hz, 1920 x1200@60Hz, 1280x720P@50Hz, 1280x720P@60Hz, 1920x1080P@50Hz, 1920x1080P@60Hz, 3840x2160@50Hz, 3840x2160@60Hz, 4096x2160@50Hz, 4096x2160@60Hz<br><br>VGA: 640 x 480@60Hz, 800 x 600@60Hz, 1024 x 768@60Hz, 1280 x 720@60Hz, 1280 x 768@60Hz,1280 x 800@60Hz, 1280 x 1024@60Hz,1360 x 768@60Hz, 1366 x 768@60Hz, 1400 x 1050@60Hz, 1440 x 900@60Hz, 1600 x 1200@60Hz, 1680 x 1050@60Hz, 1920 x 1080@60Hz, 1920 x 1200@60Hz<br><br>NOTE: 4096x2160/3840x2160@50Hz/60Hz is based on chroma sub-sampling 4:2:0 8-bit only |
| Maximum Pixel Clock | 297MHz |
| Audio Format Supported | HDMI: 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 AUDIO IN: PCM 2.0 |

| General | |
|---|---|
| Operating Temperature | 0°C to 45°C (32°F to 113°F) |

## General

| | |
|---|---|
| Storage Temperature | -20°C to 70°C (-4°F to 158°F) |
| Humidity | 10% to 90%, non-condensing |
| Surge Protection | Voltage: ±1 kV |
| ESD Protection | Human-body Model:<br>±8kV (Air-gap discharge)<br>±4kV (Contact discharge) |
| Power Supply | DC12V 2A |
| Power Consumption (Max) | 14.5W |
| Device Dimension<br>(W x H x D) | 220mm x 42mm x 150mm / 8.66" x 1.65" x 5.91" |
| Product Weight | 0.97kg / 2.14lb |

## RECEIVER:

## Technical

| | |
|---|---|
| Input/Output Ports | 1 x HDBT IN, 2 x HDMI IN, 1 x HDMI OUT, 1 x IR OUT,<br>1 x RS232-P, 1 x RS232-C, 2 x LAN, 3 x USB DEVICE,<br>2 x USB HOST, 1 x SCREEN UP, 1 x SCREEN DOWN,<br>1 x DC 12V IN |
| Input Signal Type | HDMI2.0 with 4k@60Hz (Chroma sub-sampling 4:2:0 8-bit only); HDBT2.0 |
| Output Signal Type | HDMI2.0 |
| Resolution Support | 800x600@60Hz, 1024x768@60Hz, 1280x768@60Hz, 1280x800@60Hz,<br>1280x960@60Hz, 1280x1024@60Hz,<br>1360x768@60Hz, 1366x768@60Hz, 1440x900@60Hz, 1400 x 1050@60Hz,<br>1600x900@60Hz, 1600x1200@60Hz, 1680x1050@60Hz,<br>1920x1200@60Hz, 480p@60Hz, 576p@50Hz, 720p@50/60Hz,<br>1080p@24/25/30/50/60Hz, 1080i@50/60Hz, 4096 x<br>2160@24/25/30/50/60Hz,<br>3840 x 2160@24/25/30/50/60Hz<br>NOTE: 4096x2160/3840x2160@50Hz/60Hz is based on chroma sub-sampling 4:2:0 8-bit only |
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| Humidity | 10% to 90%, non-condensing |
| Surge Protection | Voltage: ±1 kV |
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| Power Supply | DC12V 2A |
| Power Consumption (Maximum) | 16.5W |
| Device Dimension (W x H x D) | 220mm x 42mm x 150mm / 8.66" x 1.65" x 5.91" |
| Product Weight | 0.95kg/2.09lb |

## Transmission Distance

Note: T568B straight-through Category cable is recommended.

| Cable Type | Range | Supported Video |
|---|---|---|
| Cat 5e | 100m/330ft | Up to 1080p 60Hz 36bpp |
| | 90m/300ft | 1080p 60Hz 48bpp<br>1080p 60Hz 3D |
| Cat 6/6a/7 | 100m/330ft | 4K2K/30Hz/4:4:4 24bpp<br>4K2K/60Hz/4:2:0 24bpp |

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