

TU-HUC42-TX/RX Owner's Manual

**TeamUp+ Series 18G BYOM
Collaboration Switcher / Extender / Hub
with uncompressed 4K60 over HDBaseT
3.0**



Liberty

www.libav.com

800.530.8998

Thank you for purchasing this product

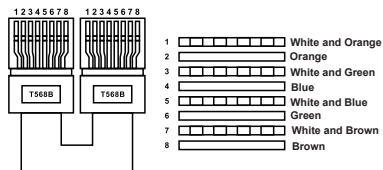
For optimum performance and safety, please read these instructions carefully before connecting, operating or adjusting this product. Please keep this manual for future reference.

Surge protection device recommended

This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lighting strikes, etc. Use of surge protection systems is highly recommended in order to protect and extend the life of your equipment.

Caution

The product requires the use of UTP connectors. Please connect in direct interconnection method and do not cross connect.



Direct Interconnection Method

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1. Introduction

This is a 2x1+1 (TX only) or 4x2 (TX/RX kit) multi-format A/V matrix with HDBaseT 3.0 extension that supports uncompressed video resolutions up to 4K@60Hz 4:4:4 8bit deep color. It is HDCP 2.2 / 2.3 compliant and has a built in USB 3.0 switching hub with 8 total USB 3.0 client ports and 3 USB host ports for control and integration of USB devices such as USB cameras/mic.

The transmitter features two video inputs: one HDMI and one USB-C. The USB-C input supports video, data (USB host), and power charging up to 60W (for charging, the included power supply must be connected on the TX side). There is a 4-port USB 3.0 client hub built with 2 USB 3.0 host ports (one is USB-C port). Ourputs include HDBaseT3.0 & mirrored HDMI.

The receiver features 3x2 matrix outputs: one HDBaseT 3.0 input, two local HDMI inputs and two HDMI outputs. The built-in HDBaseT 3.0 extension supports long distance transport of audio, video, RS-232 and High-Speed USB 2.0 signals up to 300Mbps up to 70 meters using one category cable. The receiver also includes a USB 3.0 switching hub with 4 USB 3.0 clients. This product is ideal for software-based video teleconference rooms that require the consolidation and sync of A/V and USB signals from a laptop or room PC.

The product can be controlled via top panel buttons or API commands using RS-232 or TCP/IP. A web server / GUI is built into the TX unit that features A/V and USB switching control, display control, input EDID & HDCP management. Control options include the ability to automate the display power by using RS-232/CEC commands whenever a video signal is introduced using any A/V input and display power OFF after a specified amount of time has passed when no video signal or switching activity is present. For a complete list of programming commands, please refer to page 17 of this manual.

2. Features

- HDMI 2.0b and HDCP 2.2 compliant
- HDBaseT 3.0 VS300R chipset
- Uncompressed video signal transmission distance can be extended up to 230ft/70m for 4K@30Hz, or 131ft/40m for 4K@60Hz
- HDR, HDR10, HDR10+, Dolby Vision LLM, HLG pass-through
- TX: HDMI and USB-C 2x1 inputs, two USB 3.0 hosts and four USB 3.0 clients

- RX: HDBaseT and 2 local HDMI inputs, 3x2 matrix outputs with one USB 3.0 host and four USB 3.0 clients
- 1x8 USB 3.0 hub with 8 USB 3.0 clients, each client output power can be on/off control independently
- USB-C supports ALT-DP mode for A/V, USB 3.0 data and power charging up to 60W
- Supports bidirectional POC (power over cable), when TX or RX gets power, the other end does not need an external power supply
- Supports 3.5mm analog audio de-embedding at TX and RX
- Supports 4K to 1080p downscaling features on all HDMI outputs, no frame rate conversion
- RS-232 passthrough and guest-mode control
- CEC and RS-232 control external display device ON/OFF
- Advanced EDID management
- Top panel buttons, RS-232 and TCP/IP control (TX built-in TCP/IP port for API and Web GUI)

3. Package Contents

Qty	Item
1	HDBT 3.0 4K60 Extender (Transmitter)
1	3-pin Phoenix Connector (3.81mm, male)
4	Machine Screw (KM3, 4mm)
2	Mounting Ear
1	24V/3.75A Desktop Power Supply (Locking)
1	AC Power Cord (UK Standard)
1	AC Power Cord (EU Standard)
1	AC Power Cord (AU Standard)
1	AC Power Cord (US Standard)
1	User Manual

or

Qty	Item
1	HDBT 3.0 4K60 Extender (Receiver)
1	3-pin Phoenix Connector (3.81mm, male)
4	Machine Screw (KM3, 4mm)
2	Mounting Ear
1	24V/2.7A Desktop Power Supply (Locking)
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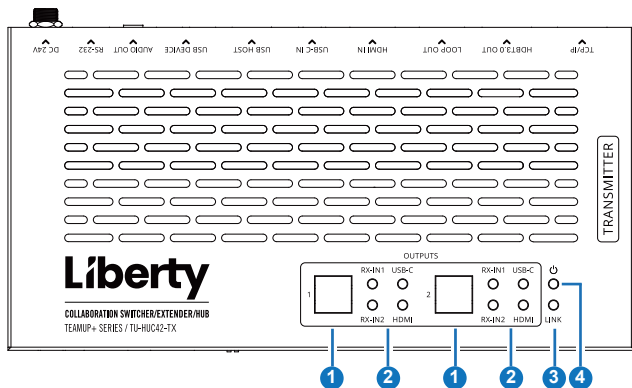
4. Specifications

Technical	
HDMI Compliance	HDMI 2.0b
HDCP Compliance	HDCP 2.2
Video Bandwidth	18Gbps
Video Resolution	Up to 4K@60Hz 4:4:4
USB Bandwidth	Up to 300Mbps
Color Space	RGB, YCbCr 4:4:4, YCbCr 4:2:2, YCbCr 4:2:0
Color Depth	8/10/12bit
HDR	HDR, HDR10, HDR10+, Dolby Vision, HLG
Audio Formats	HDMI/USB-C Pass-through: LPCM, Dolby Digital/Plus/EX, Dolby True HD, DTS, DTS-EX, DTS-96/24, DTS High Res, DTS-HD Master Audio, DSD Audio De-embedding: LPCM 2CH only
Transmission Distance	4K60: 131ft/40m (CAT6A/7) 4K30: 230ft/70m (CAT6A/7)
ESD Protection	Human body model — ±8kV (Air-gap discharge) & ±4kV (Contact discharge)
Connection	
Transmitter	Input: 1 x HDMI IN [Type A, 19-pin female] 1 x USB-C IN [USB Type C, 24-pin female] Output: 1 x HDMI LOOP OUT [Type A, 19-pin female] 1 x HDBaseT OUT [RJ45, 8-pin female] 1 x AUDIO OUT [3.5mm audio jack] Control: 1 x RS-232 [3pin-3.81mm Phoenix jack] 1 x F/W [Micro USB, 5-pin female] 1 x HOST [USB 3.0 Type B, 9-pin female] 4 x USB DEVICE [USB 3.0 Type A, 9-pin female] 1 x TCP/IP [RJ45]
Receiver	Input: 2 x HDMI IN [Type A, 19-pin female] 1 x HDBaseT IN [RJ45, 8-pin female] Output: 2 x HDMI OUT [Type A, 19-pin female] 1 x AUDIO OUT [3.5mm audio jack] Control: 1 x RS-232 [3pin-3.81mm Phoenix jack] 1 x F/W [Micro USB, 5-pin female] 1 x HOST [USB 3.0 Type B, 9-pin female] 4 x USB DEVICE [USB 3.0 Type A, 9-pin female]

Mechanical			
Housing	Metal Enclosure		
Color	Black		
Dimensions	Transmitter / Receiver: 208mm [W] x 107mm [D] x 27mm [H]		
Weight	Transmitter: 616g, Receiver: 585g		
Power Supply	Input: AC 100 - 240V 50/60Hz Output: TX: DC 24V/3.75A; RX: DC 24V/2.7A (US/EU standard, CE/FCC/UL certified)		
Power Consumption (Max)	TX: 97.6W (60W USB-C charging and full power supply to 4x USB devices) RX: 31.12W (full power supply to 4x USB devices)		
Operating Temperature	32 - 104°F / 0 - 40°C		
Storage Temperature	-4 - 140°F / -20 - 60°C		
Relative Humidity	20 - 90% RH (no condensation)		
Resolution / Cable Length	4K60 - Feet / Meters	4K24 - Feet / Meters	1080P60 - Feet / Meters
HDMI IN / OUT	26ft / 8M	39ft / 12M	50ft / 15M
The use of "Premium	High Speed HDMI" cable is highly recommended.		

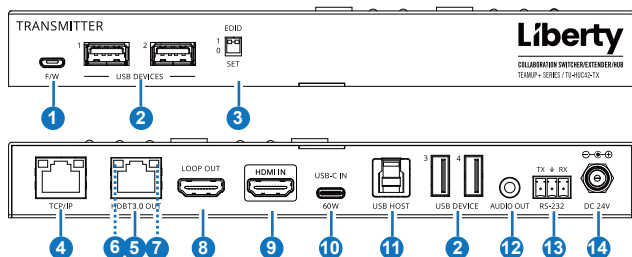
5. Operation Controls and Functions

5.1 Transmitter Top Panel



No.	Name	Function Description
1	OUTPUTS 1/2 selection button	Input source selection button for the HDMI OUT 1/2 port of the Receiver. Note: There is a linkage relation between the HDMI IN and USC-C IN port, when one of them is selected as the input channel for HDMI OUT 1/2. For example, when HDMI OUT 1 selects USB-C IN as the input channel, HDMI OUT 2 will switch to USB-C IN simultaneously.
2	OUTPUTS 1/2 LEDs (Green)	HDMI LED: When the HDMI IN port of Transmitter is selected as the input channel for HDMI OUT 1/2, the HDMI LED will be on. USB-C LED: When the USB-C IN port of Transmitter is selected as the input channel for HDMI OUT 1/2, the USB-C LED will be on. RX-IN1 LED: When the HDMI IN 1 port of Receiver is selected as the input channel for HDMI OUT 1/2, the RX-IN1 LED will be on. RX-IN2 LED: When the HDMI IN 2 port of Receiver is selected as the input channel for HDMI OUT 1/2, the RX-IN1 LED will be on.
3	LINK LED (Green)	- Light on: Transmitter and Receiver have good connection status. - Light flashing: Transmitter and Receiver have poor connection status or connected to the same device. - Light off: Transmitter and Receiver are not connected, or the system is powered off.
4	Power LED	Red LED indicates that the Transmitter is powered on.

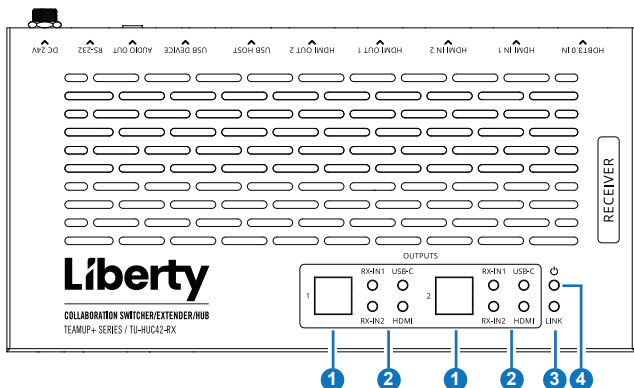
5.2 Transmitter Front & Rear Panel



No.	Name	Function Description
1	F/W port	Firmware upgrade port, which can be used to upgrade the MCU (default) or Valens firmware through API commands switching. Note: The RS module requires approximately 40s~50s to start, and the MCU version number can only be read after startup.
2	USB DEVICES	Four USB extension ports, connected to mouse, keyboard, USB camera or other USB devices. Note: The local end supports USB 3.0 transfer rate, but the remote end only supports USB 2.0 transfer rate.
3	EDID DIP switch	Used for EDID setting: 00- Copy HDMI OUT 1 port sink EDID (as factory default) 01- 4K30 4:4:4 2CH 10- 1080p60 4:4:4 2CH 11- 1200p60 4:4:4 2CH Note: The DIP switch operation is available only after switching to the DIPSWITCH mode through API commands or Web operation.
4	TCP/IP port	TCP/IP port, connected to PC or router. By default, the dynamic IP address is used, and the IP address can be obtained by command.
5	HDBT3.0 OUT port	HDBaseT output port, connected to the HDBT3.0 IN port of Receiver with a CAT 6A/7 cable. It is used for various signals pass-through.
6	Data Signal Indicator (Yellow)	- Illuminating: HDMI signal with HDCP. - Flashing: HDMI signal without HDCP. - Dark: No HDMI signal.

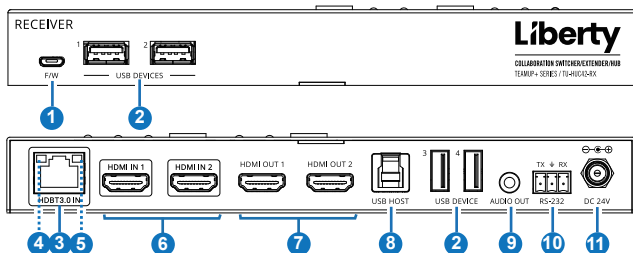
No.	Name	Function Description
7	Link Signal Indicator (Green)	• Illuminating: Transmitter and Receiver have good connection status. • Flashing: Transmitter and Receiver have poor connection status. • Dark: Transmitter and Receiver are not connected.
8	LOOP OUT port	HDMI signal loopout port, connected to HDMI display device, such as TV or monitor. Through API commands or Web GUI operation, users can set this port to loopout the signals from HDMI IN port or USB-C IN port, and control the connected TV to power on/off or increase/decrease the volume.
9	HDMI IN port	HDMI signal input port, connected to HDMI source device. Users can control the operation of the connected source device through API commands.
10	USB-C IN port	(1) USB-C signal input port, connected to source device, with the highest resolution of 4K30. (2) USB-C HOST port, connected to PC for extending the USB ports of TX or RX. (3) Charging port for external USB-C devices, with a maximum power supply of 60W.
11	USB HOST port	USB HOST port, connected to PC for extending the USB ports of TX or RX.
12	AUDIO OUT port	Analog audio output port, which is used for audio de-embedding output.
13	RS-232 port	RS-232 serial port with following three functions: (1) Pass through external serial port commands to the RS-232 port of the HDBaseT Receiver. (2) Receive API commands to control the Extender. (3) Send API commands to control external devices (when the Transmitter is used alone). Note: The above points 1 and 2 can be used simultaneously, while points 3 is used separately.
14	DC 24V	Power input port, connected to 24V DC power supply. Note: (1) The USB-C IN port can provide power for the connected USB-C device only when the Transmitter is connected to power supply. (2) When TX/RX is fully loaded, the Receiver also needs to be connected to a 24V/3.75A power supply.

5.3 Receiver Top Panel



No.	Name	Function Description
1	OUTPUTS 1/2 selection button	Input source selection button for the HDMI OUT 1/2 port of the Receiver. Note: There is a linkage relation between the HDMI IN and USC-C IN port, when one of them is selected as the input channel for HDMI OUT 1/2. For example, when HDMI OUT 1 selects USB-C IN as the input channel, HDMI OUT 2 will switch to USB-C IN simultaneously.
2	OUTPUTS 1/2 LEDs (Green)	HDMI LED: When the HDMI IN port of Transmitter is selected as the input channel for HDMI OUT 1/2, the HDMI LED will be on. USB-C LED: When the USB-C IN port of Transmitter is selected as the input channel for HDMI OUT 1/2, the USB-C LED will be on. RX-IN1 LED: When the HDMI IN 1 port of Receiver is selected as the input channel for HDMI OUT 1/2, the RX-IN1 LED will be on. RX-IN2 LED: When the HDMI IN 2 port of Receiver is selected as the input channel for HDMI OUT 1/2, the RX-IN1 LED will be on.
3	LINK LED (Green)	- Light on: Transmitter and Receiver have good connection status. - Light flashing: Transmitter and Receiver have poor connection status or connected to the same device. - Light off: Transmitter and Receiver are not connected, or the system is powered off.
4	Power LED	Red LED indicates that the Receiver is powered on.

5.4 Receiver Front & Rear Panel



No.	Name	Function Description
1	F/W port	Firmware upgrade port, which can be used to upgrade the MCU (default) or Valens firmware through API commands switching.
2	USB DEVICES	Four USB extension ports, connected to mouse, keyboard, USB camera or other USB devices. Note: The local end supports USB 3.0 transfer rate, but the remote end only supports USB 2.0 transfer rate.
3	HDBT3.0 IN port	HDBaseT input port, connected to the HDBT3.0 OUT port of Transmitter with a CAT 6A/7 cable. It is used for various signals pass-through.
4	Data Signal Indicator (Yellow)	▪ Illuminating: HDMI signal with HDCP. ▪ Flashing: HDMI signal without HDCP. ▪ Dark: No HDMI signal.
5	Link Signal Indicator (Green)	▪ Illuminating: Transmitter and Receiver have good connection status. ▪ Flashing: Transmitter and Receiver have poor connection status. ▪ Dark: Transmitter and Receiver are not connected.
6	HDMI IN 1/2 port	HDMI signal input port, connected to HDMI source device.
7	HDMI OUT 1/2 port	HDMI signal output port, connected to HDMI display device, such as TV or monitor. The input source can be selected through top panel buttons, API commands or Web GUI operation. Beside, through API commands or Web GUI operation, users can control the connected TV to power on/off or increase/decrease the volume.
8	USB HOST port	USB HOST port, connected to PC for extending the USB ports of TX or RX.

No.	Name	Function Description
9	AUDIO OUT port	Analog audio output port, which is used for audio de-embedding output.
10	RS-232 port	RS-232 serial port with following two functions: (1) Pass through external serial port commands to the RS-232 port of the HDBaseT Transmitter. (2) Send API commands to control external devices (when the Transmitter and Receiver is used together). Note: The above points 1 and 2 can be used simultaneously.
11	DC 24V	Power input port, connected to 24V DC power supply. Note: When TX/RX is fully loaded, the Receiver also needs to be connected to a 24V/2.7A power supply.

6. Web GUI Operation Guide

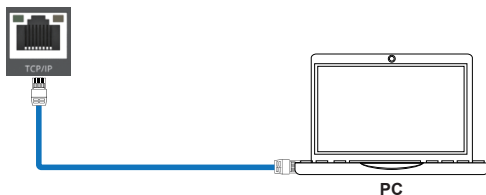
The extender can be controlled & settings modified by Web GUI. The operation method is shown as below:

Step 1: Get the current IP Address.

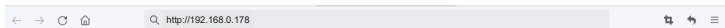
The default IP address of the extender is 192.168.0.178 (when the system is not connected to a router). You can get the current extender IP address via API command control. Send the ASCII command "GetIPv4Address" through a Serial Command tool, then you'll get the current IP address (The IP address is variable, depending on what the specific machine returns).

For the details of API command control, please refer to page 18.

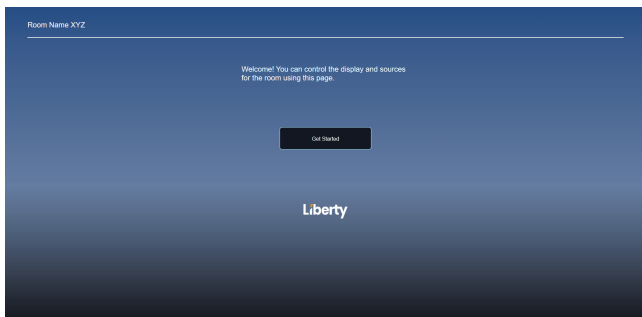
Step 2: Connect the TCP/IP port of the extender to a PC with an UTP cable (as shown in the following figure), and set the IP address of the PC to be in the same network segment with the extender.



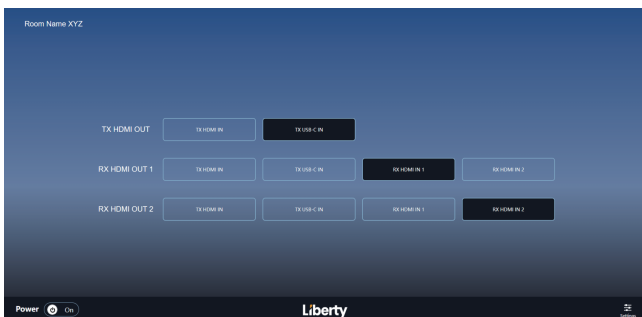
Step 3: Input the current IP address of extender into your browser on the PC to enter Web GUI interface.



After entering the Web GUI page, there will be a visitor interface, as shown below.



Click “Get Started” or wait for 3 seconds to enter the operation interface, as shown below.

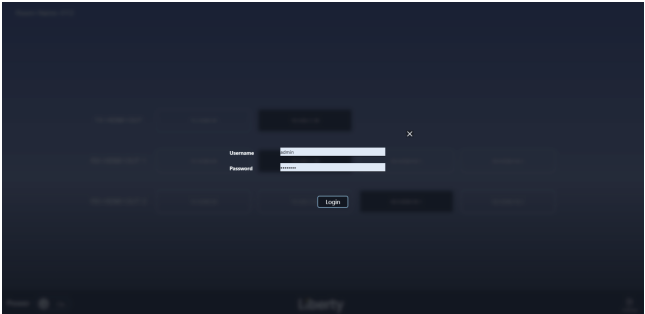


You can do the following operations on this page:

① **TX HDMI OUT:** Click to select the signal source for the loop output of transmitter.

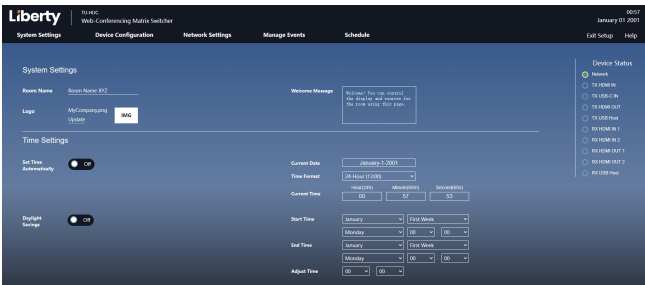
- ② **RX HDMI OUT 1:** Click to select the signal source for the output of receiver's HDMI OUT 1 port.
- ③ **RX HDMI OUT 2:** Click to select the signal source for the output of receiver's HDMI OUT 2 port.
- ④ Click the Power button to power on/off the extender.
- ⑤ Click the Settings icon to enter the login interface.

Step 4: Click the Settings icon to enter the login interface, as shown below.



Input the default username “admin” and password “password”, then click “Login” to enter the operation interface.

■ System Settings Page



The screenshot shows a web interface with two main sections. The top section, titled 'Update Password', contains three input fields: 'Username' (with 'admin' entered), 'New Password', and 'Confirm Password'. The bottom section, titled 'System Configuration', contains a table for 'Configuration Name' with columns for 'Default', 'Update', and 'Download'. Below this table is a 'Factory Reset' button. To the right of the table is a 'Firmware' section showing 'TX Version: v1.18.11', 'RX Version: v1.0.1', and 'GUI Version: v1.0.20', with an 'Update' button below it. A 'Save' button is located at the bottom left of the 'System Configuration' section.

Configuration Name	Default	Update	Download

Factory Reset [Reset All Settings](#)

Save

Firmware

TX Version: v1.18.11
RX Version: v1.0.1
GUI Version: v1.0.20

Update

System Settings

- ① **Room Name:** You can modify the name.
- ② **Logo:** Click “IMG” to import an image to the welcome interface.
- ③ **Welcome Message:** You can modify the slogan of the welcome interface.
- ④ **Device Status:** System status, displaying each port’s connection status.

Time Settings

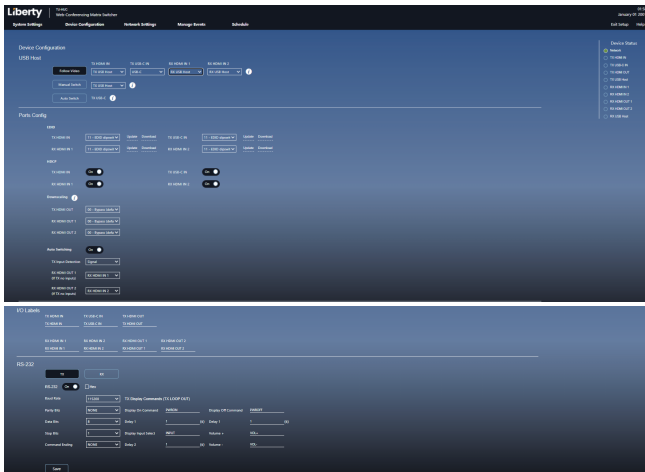
- ① **Set Time Automatically:** You can turn on/off the function of “Set time automatically”. When the function is turned on, you can get the date and time through the server. When the function is turned off, you can set the date and time of the system through the options on the right.
- ② **Daylight Savings:** You can turn on/off the function of “Daylight Savings”. When the function is turned on, you can set the daylight time through the options on the right.

Update Password: You can modify the username and password.

System Configuration

- ① **Configuration Name:** You can name the configuration table.
- ② **Update:** Click to import the configuration table to the Manage Events interface.
- ③ **Download:** Click to export the configuration table from the Manage Events interface.
- ④ **Firmware:** Display the firmware version. You can click “Update” to update the firmware.
- ⑤ **Factory Reset:** Click to restore all settings to factory default settings. After setting up, click “Save” to take effect.

■ Device Configuration Page



USB Host

- ① **Follow Video:** You can set the Host port to follow video mode for each input channel.
 - ② **Manual Switch:** You can manually select the Host port.
 - ③ **Auto Switch:** When “Auto Switch” is selected, the system will detect the connection status of the Host port, and select the Host port automatically.
- Note:** The  icon is used for function annotation.

Ports Config

- ① **EDID:** You can set the EDID of each input channel.
 - ② **HDCP:** You can turn on/off the HDCP of each input channel. *Note.. HDCP protected content or devices will not pass when HDCP is turned off
 - ③ **Downscaling:** You can set the output mode (Bypass/4K to 1080P/Auto) of each output channel.
 - ④ **Auto Switching:** You can turn on/off the auto switching function.
- TX input Detection: Set the TX input to be signal detection or 5V detection.

RX HDMI OUT1(if TX no inputs): Configure the signal source for RX OUT 1. When there is no signal input for TX, RX OUT 1 will automatically output the input signal from RX.

RX HDMI OUT2(if TX no inputs): Configure the signal source for RX OUT 2. When there is no signal input for TX, RX OUT 2 will automatically output the input signal from RX.

I/O Labels: You can change the input & output names which are displayed on the operation interface.

RS-232 Serial Port Configuration: You can configure the TX's/RX's RS-232 serial port with Baud Rate, Parity Bits, Data Bits, Stop Bits and Command Ending, power on/off TV, and increase/decrease the TV audio volume.
Note: When Hex option is selected, the string must be hexadecimal, otherwise it cannot take effect. For example, HEX format: 11 22 33 44 55 66.
After setting up, click “Save” to take effect.

■ Network Settings Interface

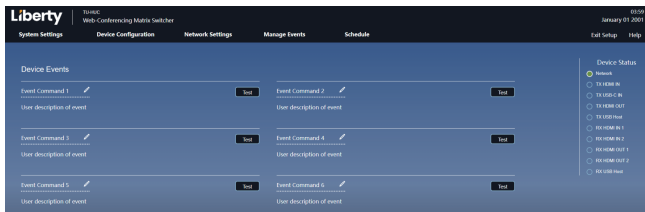
The screenshot shows the 'Network Settings' page of the Liberty Web-Conferencing Matrix Switcher. The interface has a dark blue header with the 'Liberty' logo and navigation tabs: System Settings, Device Configuration, Network Settings (active), Manage Events, and Schedule. The top right shows the date 'January 01, 2021' and links for 'Exit Setup' and 'Help'. The main content area is divided into two columns. The left column, titled 'Network Settings', contains a 'Configure IPv4' dropdown menu set to 'DHCP', and fields for 'IPv4 Address' (192.168.0.178), 'Subnet Mask' (255.255.255.0), 'Router' (192.168.0.1), and 'DHCP Client ID' (T0-86C-40708). Below these is a 'Renew DHCP Lease' button. The right column, titled 'Device Status', shows a list of device status options: 'Network' (selected), 'TX HDMI IN', 'TX LOGIC IN', 'TX HDMI OUT', 'TX LOGIC OUT', 'RX HDMI IN 1', 'RX HDMI IN 2', 'RX HDMI OUT 1', 'RX HDMI OUT 2', and 'RX USB Host'. At the bottom left, there is a 'Reset Network' button and a 'Save' button.

① **Network Settings:** The IP mode of Network can be configured to DHCP or Manual. When it is set to DHCP, the IP address will be assigned by DHCP server. When it is set to Manual, the IP address can be set manually.

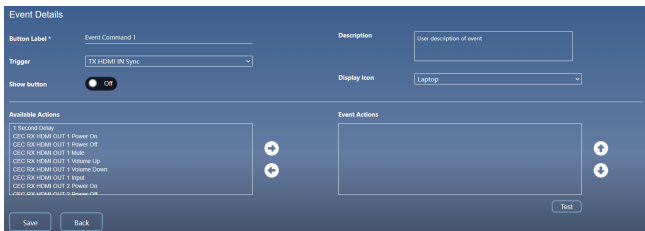
② **DHCP Client ID:** You can renew DHCP lease.

③ **Reset Network:** You can reset the Network settings.
After setting up, click “Save” to take effect.

■ Manage Events Interface



Up to 6 events management are supported, and each event can be edited separately, as shown in the figure below.



Event Details

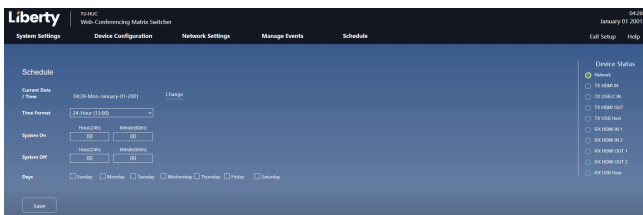
- ① **Button Label*:** You can change the button label.
- ② **Description:** You can add description.
- ③ **Trigger:** Click the drop-down list to select the trigger method.
- ④ **Show button:** You can switch event display button (displayed on the operation interface, as shown in the following figure).
- ⑤ **Display Icon:** Click the drop-down list to select the display icon (displayed on the operation interface, as shown in the following figure).
- ⑥ **Available Actions:** Display all available action commands. You can move the commands to the “Event Actions” box by clicking the right arrow.
- ⑦ **Event Actions:** Display the action commands to be executed. You can click the up and down arrows to adjust the sequence of the commands, or click the left arrow to delete the commands.

After setting action commands, click “TEST” to send commands.
After setting up, you can click “Save” to save the settings, or click “Back” to go back to the previous level.



■ Schedule Interface

After turning off the function of “Set time automatically” on the System Settings interface, you can set the system time in 12-hour or 24-hour hours on this interface.



7. API Commands

The product also supports API commands for control. Connect the RS-232 port of the product to a PC with a 3-pin phoenix connector cable. Then, open a Serial Command tool on PC to send ASCII commands to control the product. The ASCII command list about the product is shown as below.

ASCII Commands		
RS-232 Communication Protocol Baud rate: 115200; Data bit: 8; Stop bit: 1; Parity bit: none. The end mark of command is "<CR><LF>". TCP/IP Communication Protocol Port: 8000		
Command Code	Function Description	Command & Feedback Example
Help	Get the list of all commands	>Help ===== TU-HUC Help Info FW Version: TX 1.0.0 RX 1.0.0 GUI 1.0.0 Help Get the list of all commands GetFirmwareVersion Get the firmware version =====
GetFirmwareVersion	Get the firmware version	>GetFirmwareVersion < TX 1.0.0 RX 1.0.0 GUI 1.0.0
SetPower Param	Enter/exit standby mode Param = ON, OFF	>SetPower ON <Power ON >SetPower OFF <Power OFF
GetPower	Get the standby status	>GetPower <PON <POFF
FactoryReset	Factory Default	>FactoryReset <Sure to RESET system and network to default settings? Type "Yes" after next prompt to confirm... >Yes
SetAV Param1 From Param2	Set output switching Param1 = LOOP, RXOUT1, RXOUT2 Param2 = USBC, HDMI, RXHDMI1, RXHDMI2, AVMUTE, OFF	>SetAV LOOP From USBC <AV LOOP From USBC >SetAV RXOUT1 From AVMUTE <AV RXOUT1 From AVMUTE
GetAV Param	Get output switching status Param = LOOP, RXOUT1, RXOUT2	>GetAV RXOUT1 <USBC

Command Code	Function Description	Command & Feedback Example
SetTxLoopFollowHdbt Param	Set TX LOOP follow HDBT source Param = ON, OFF	>SetTxLoopFollowHdbt ON <TxLoopFollowHdbt ON
GetTxLoopFollowHdbt	Get TX LOOP follow HDBT source	>GetTxLoopFollowHdbt <ON
SetTxAutoSwitchOn Param	Enable/Disable TX auto-switching mode Param = ON, OFF	>SetTxAutoSwitchOn ON <TxAutoSwitchOn ON
GetTxAutoSwitchOn	Get TX auto-switching mode status	>GetTxAutoSwitchOn <ON
SetTxAutoSwitchMode Param	Set TX auto-switching mode Param = 0: 5V detection 1: signal detection	>SetTxAutoSwitchMode 1 <TxAutoSwitchMode 1
GetTxAutoSwitchMode	Get TX auto-switching mode status	>GetTxAutoSwitchMode <1
GetTxHdbtSource	Get TX HDBT source from which input	>GetTxHdbtSource <USBC
SetDownScale Param1 To Param2	Set downscaling mode Param1 = LOOP, RXOUT1, RXOUT2 Param2 = AUTO: automatically according to display's capability ON: force 4K to 1080p OFF: bypass video	>SetDownScale RXOUT1 To AUTO <DownScale RXOUT1 To AUTO
GetDownScale Param	Get downscaling mode Param = LOOP, RXOUT1, RXOUT2	>GetDownScale RXOUT1 <AUTO
SetTxAudioMute Param	Enable/Disable TX de-embedding audio mute Param = ON, OFF	>SetTxAudioMute ON <TxAudioMute ON
GetTxAudioMute	Get TX de-embedding audio mute status	>GetTxAudioMute <ON
SetRxAudioMute Param	Enable/Disable RX de-embedding audio mute Param = ON, OFF	>SetRxAudioMute ON <RxAudioMute ON
GetRxAudioMute	Get RX de-embedding audio mute status	>GetRxAudioMute <ON

Command Code	Function Description	Command & Feedback Example
SetEDID Param1 To Param2	Set the EDID mode Param1 = USBC, HDMI, RXHDMI1, RXHDMI2 Param2 = 00 - 1920x1080@60 8bit Stereo (default) 01 - WUXGA 1920x1200 02 - 1920x1080@60 8bit High Definition Audio 03 - 3840x2160@60Hz 4:2:0 Deep Color Stereo Audio 04 - 3840x2160@60Hz Deep Color Stereo Audio 05 - 3840x2160@30Hz 8bit Stereo Audio 06 - 3840x2160@60Hz Deep Color High Definition Audio 07 - 3840x2160@60Hz Deep Color HDR LPCM 6CH 08 - copy EDID from TX HDMI output 09 - copy EDID from RX HDMI output 1 10 - copy EDID from RX HDMI output 2 11 - EDID dipswitch 12 - User Defined	>SetEDID HDMI To 01 <EDID HDMI To 01
GetEDID Param	Get the EDID mode Param = USBC, HDMI, RXHDMI1, RXHDMI2	>GetEDID HDMI <01
SetHDCP Param1 To Param2	Set input port HDCP ON/OFF Param1 = USBC, HDMI, RXHDMI1, RXHDMI2 Param2 = ON, OFF	>SetHDCP USBC To OFF <USBC HDCP OFF
GetHDCP Param	Get input port HDCP ON/OFF status Param = USBC, HDMI, RXHDMI1, RXHDMI2	>GetHDCP USBC <USBC HDCP OFF

Command Code	Function Description	Command & Feedback Example
SetUsbSwitchMode Param	Set USB switch mode Param = AUTO: USB 5V detection then switch MANUAL: manual switch FOLLOW: follow video switch	>SetUsbSwitchMode AUTO <UsbSwitchMode AUTO
GetUsbSwitchMode	Get USB switch mode	>GetUsbSwitchMode <AUTO
GetUsbSwitchStatus	Get USB switch status	>GetUsbSwitchStatus <USB-C
SetUsbManual Param	Set USB manual Param = USB-C, TXHOST, RXHOST	>SetUsbManual USB-C <UsbManual USB-C
GetUsbManual	Get USB manual status	>GetUsbManual <USB-C
SetUsbFollow Param1 To Param2	Set USB follow Param1 = HDMI, RXHDMI1, RXHDMI2 Param2 = TXHOST, RXHOST	>SetUsbFollow HDMI To TXHOST <UsbFollow HDMI TXHOST
GetUsbFollow Param	Get USB follow status Param = HDMI, RXHDMI1, RXHDMI2	>GetUsbFollow HDMI <TXHOST
SetPortLabel Param1 To Param2	Set port label Param1 = USBC, HDMI, LOOP, RXHDMI1, RXHDMI2, RXOUT1, RXOUT2 Param2 = xxxx	>SetPortLabel USBC To AIRBOOK <PortLabel USBC To AIRBOOK
GetPortLabel Param	Get port label Param = USBC, HDMI, LOOP, RXHDMI1, RXHDMI2, RXOUT1, RXOUT2	>GetPortLabel USBC <AIRBOOK
SetTimeSystem Param	Set time system is 12-hour or 24-hour Param = 12, 24	>SetTimeSystem 12 <TimeSystem 12
GetTimeSystem	Get time system	>GetTimeSystem <TimeSystem 12

Command Code	Function Description	Command & Feedback Example
SetSchedule <Param1,Param2,Param3,Param4,Param5,Param6,Param7,Param8,Param9,Param10,Param11>	Set Schedule time Param1 = 0 ~ 23(hour) (Param1= 8 or 8AM, 20 or 8PM) Param2 = 0 ~ 59(min) Param3 = 0 ~ 23(hour) (Param3 = 8 or 8AM, 20 or 8PM) Param4 = 0 ~ 59(min) Param5 = 0 ~ 1(Sun) Param6 = 0 ~ 1(Mon) Param7 = 0 ~ 1(Tues) Param8 = 0 ~ 1(Wed) Param9 = 0 ~ 1(Turs) Param10 = 0 ~ 1(Fri) Param11 = 0 ~ 1(Sat)	>SetSchedule <8,0,10,0,0,1,1,1,1,1,1> <Schedule <8,0,10,0,0,1,1,1,1,1,1> >SetSchedule <8PM,0,13,0,0,1,1,1,1,1,1> <Schedule <8PM,0,1PM,0,0,1,1,1,1,1,1>
GetSchedule	Get Schedule time	>GetSchedule <<8,0,10,0,0,1,1,1,1,1,1> <<8AM,0,1PM,0,0,1,1,1,1,1,1>
SetTimeAutoOn Param	Enable/Disable auto time Param = ON, OFF	>SetTimeAutoOn ON <TimeAutoOn ON
GetTimeAutoOn	Get auto time status	>GetTimeAutoOn <ON
GetAutoTime	Get auto time	>GetAutoTime <Time <2020,1,1,1,1,1> <Time <2023,5,6,4PM,19,56>
SetLocalTime <Param1,Param2,Param3,Param4,Param5,Param6>	Initialize the time setting Param1 = 2001 ~ 2037(year) Param2 = 1 ~ 12(month) Param3 = 1 ~ 31(date) Param4 = 0 ~ 23(hour) (Param4 = 8 or 8AM, 20 or 8PM) Param5 = 0 ~ 59(min) Param6 = 0 ~ 59(sec)	>SetLocalTime <2020,1,1,1,1,1> <Time <2020,1,1,1,1,1> >SetLocalTime <2020,1,1,1PM,1,1> <Time <2020,1,1,1PM,1,1>
GetLocalTime	Get current time	>GetLocalTime <<2020,1,1,1,1,1> <<2050,5,13,6AM,36,49>
SetDaylightOn Param	Set Daylight on/off Param = ON, OFF	>SetDaylightOn ON <DaylightOn ON
GetDaylightOn	Get Daylight on/off	>GetDaylightOn <ON

Command Code	Function Description	Command & Feedback Example
SetDaylightTime <Param1,Param2, Param3,Param4, Param5,Param6, Param7,Param8, Param9,Param10, Param11,Param12>	Set Daylight Time Param1 = 1 ~ 12(start month) Param2 = 1 ~ 6(start week) Param3 = 0 ~ 6(start day) Param4 = 0 ~ 23(start hour) (Param4=8 or 8AM, 20 or 8PM) Param5 = 0 ~ 59(start min) Param6 = 1 ~ 12(end month) Param7 = 1 ~ 6(end week) Param8 = 0 ~ 6(end day) Param9 = 0 ~ 24(end hour) (Param9=8 or 8AM, 20 or 8PM) Param10 = 0 ~ 59(end min) Param11 = 0 ~ 23(adjust hour) Param12 = 0 ~ 59(adjust min)	>SetDaylightTime <8,1,1,10,0,12,1,1,10,0,1,0> <DaylightTime <8,1,1,10,0,12,1,1,10,0,1,0> >SetDaylightTime <1,2,0,1PM,0,1,2,0,14,0,0,0> <DaylightTime <1,2,0,1PM,0,1,2,0,2PM,0,0,0>
GetDaylightTime	Get Daylight time	>GetDaylightTime <<8,1,1,10,0,12,1,1,10,0,1,0> <<1,2,0,1PM,0,1,2,0,2PM,0,0,0>
GetIPv4Address	Get the IP to access GUI	>GetIPv4Address <192.168.0.178
SetIPv4 <XXX.XXX.XXX.XXX> <YYY.YYY.YYY.YYY> <ZZZ.ZZZ.ZZZ.ZZZ>	Set the GUI IP address XXX = 0 ~ 255(IP ADDRESS) YYY = 0 ~ 255(MASK) ZZZ = 0 ~ 255(GATE)	>SetIPv4 <192.168.0.178> <255.255.255.0> <192.168.0.1> <IP <192.168.0.178> <255.255.255.0> <192.168.0.1>
SetCecSrcMenu	Send CEC MENU command to TX HDMI source device	>SetCecSrcMenu <CecSrcMenu
SetCecSrcUp	Send CEC UP command to TX HDMI source device	>SetCecSrcUp <CecSrcUp
SetCecSrcDown	Send CEC DOWN command to TX HDMI source device	>SetCecSrcDown <CecSrcDown
SetCecSrcLeft	Send CEC LEFT command to TX HDMI source device	>SetCecSrcLeft <CecSrcLeft
SetCecSrcRight	Send CEC RIGHT command to TX HDMI source device	>SetCecSrcRight <CecSrcRight
SetCecSrcBack	Send CEC BACK command to TX HDMI source device	>SetCecSrcBack <CecSrcBack
SetCecSrcEnter	Send CEC ENTER command to TX HDMI source device	>SetCecSrcEnter <CecSrcEnter
SetCecSrcOn	Send CEC ON command to TX HDMI source device	>SetCecSrcOn <CecSrcOn

Command Code	Function Description	Command & Feedback Example
SetCecSrcOff	Send CEC OFF command to TX HDMI source device	>SetCecSrcOff <CecSrcOff
SetCecSrcStop	Send CEC STOP command to TX HDMI source device	>SetCecSrcStop <CecSrcStop
SetCecSrcPlay	Send CEC PLAY command to TX HDMI source device	>SetCecSrcPlay <CecSrcPlay
SetCecSrcPause	Send CEC PAUSE command to TX HDMI source device	>SetCecSrcPause <CecSrcPause
SetCecSrcPrev	Send CEC PREV command to TX HDMI source device	>SetCecSrcPrev <CecSrcPrev
SetCecSrcNext	Send CEC NEXT command to TX HDMI source device	>SetCecSrcNext <CecSrcNext
SetCecSrcRewind	Send CEC rewind command to TX HDMI source device	>SetCecSrcRewind <CecSrcRewind
SetCecSrcFast Forward	Send CEC fast-forward command to TX HDMI source device	>SetCecSrcFastForward <CecSrcFastForward
SetCecDisplayOn Param	Send CEC ON command to display Param = LOOP, RXOUT1, RXOUT2	>SetCecDisplayOn LOOP <CecDisplayOn LOOP
SetCecDisplayOff Param	Send CEC OFF command to display Param = LOOP, RXOUT1, RXOUT2	>SetCecDisplayOff LOOP <CecDisplayOff LOOP
SetCecDisplaySource Param	Send CEC SOURCE command to display Param = LOOP, RXOUT1, RXOUT2	>SetCecDisplaySource LOOP <CecDisplaySource LOOP
SetCecDisplayMute Param	Send CEC MUTE command to display Param = LOOP, RXOUT1, RXOUT2	>SetCecDisplayMute LOOP <CecDisplayMute LOOP
SetCecDisplayVol Plus Param	Send CEC volume plus command to display Param = LOOP, RXOUT1, RXOUT2	>SetCecDisplayVolPlus LOOP <CecDisplayVolPlus LOOP
SetCecDisplayVol Minus Param	Send CEC volume minus command to display Param = LOOP, RXOUT1, RXOUT2	>SetCecDisplayVolMinus LOOP <CecDisplayVolMinus LOOP

8. Application Example

