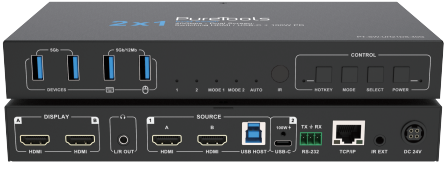


User Manual

40G 2x1 Dual Screen KVM Switcher with USB-C and HDMI™ Inputs

Model PT-SW-UH21DS-40G

Designed in Germany

Version V1.0

Preface

Read this user manual carefully before using this product. Pictures shown in this manual are for reference only. Different model layouts and specifications are subject to the physical product.

This manual is for operation instructions only, not for any maintenance usage.

In the constant effort to improve our product, we reserve the right to make changes in functions or parameters without prior notice or obligation.

Trademarks

FCC Statement

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation.

Operation of this equipment in a residential area is likely to cause interference, in which case the user at their own expense will be required to take whatever measures may be necessary to correct the interference.

Any changes or modifications not expressly approved by the manufacture would void the user's authority to operate the equipment.

PureTools

REACH | 1907/2006/EU

ROHS | 2011/65/EU

PureLink hereby declares that this product PureTools PT-SW-UH21DS-40G complies with Directives 1907/2006/EU and 2011/65/EU.

EMC / LVD (Electro Magnetic Compatibility / Low Voltage Directive)

PureLink GmbH hereby declares that this product PureTools PT-SW-UH21DS-40G complies with Directives 2014/30/EU and 2014/35/EU. The full text of the EU Declaration of Conformity is available at the following Internet address:

http://www.purelink.de/ce/ 4251364745175_CE.pdf

SAFETY PRECAUTIONS

To ensure the best from the product, please read all instructions carefully before using the device. Save this manual for further reference.

- Unpack the equipment carefully and save the original box and packing material for possible future shipment.
- Follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- Do not dismantle the housing or modify the module. It may result in electrical shock or burn.
- Using supplies or parts not meeting the products' specifications may cause damage, deterioration or malfunction.
- Refer all servicing to qualified service personnel.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Do not put any heavy items on the extension cable in case of extrusion.
- Do not remove the housing of the device as opening or removing housing may expose you to dangerous voltage or other hazards.
- Install the device in a place with fine ventilation to avoid damage caused by overheat.
- Keep the module away from liquids.
- Spillage into the housing may result in fire, electrical shock, or equipment damage. If an object or liquid falls or spills on to the housing, unplug the module immediately.
- Do not twist or pull by force ends of the optical cable. It can cause malfunction.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.
- Unplug the power cord when left unused for a long period of time.
- Information on disposal for scrapped devices: do not burn or mix with general household waste, please treat them as normal electrical wastes.

Content

1. Product Introduction

1.1 Introduction

The 40G 2×1 KVM meeting room switcher enables fast video and device switching, allowing 2 dual screen computers (USB-C or HDMI + USB-B) to connect to a dual screen monitor setup and peripherals such as a mouse, keyboard, and camera. The USB-C inputs also provide 100W power delivery. 2 modes are available - either dual screen extended desk top MST mode, or single screen side by side mode for collaboration. It supports automatic switching or manual control via the front panel button, hotkeys, mouse, RS-232, TCP/IP, and GUI. Ideal for meeting rooms and huddle spaces, it enables multiple PCs to share a single set of displays and USB peripherals.

1.2 Features

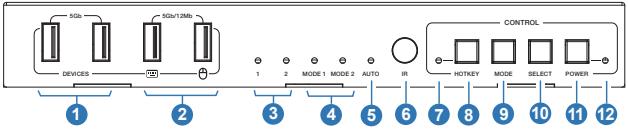
- HDCP 2.3 compliant
- Support ultra-wide screen and video resolution up to 8K@60Hz, as specified in HDMI 2.1
- USB-C ports support DP Alt-mode, DP MST, USB 3.0 and 100W charging
- Support switching and KVM switching
- Built-in EDID emulators on each input port ensure PCs get correct information
- Two modes are available - either dual screen extended desk top MST mode, or single screen side by side mode for collaboration
- Support hot plug, to disconnect or connect devices to the KVM at any time
- Support auto switching to monitor computers in a specified time interval
- Support manual switching via front panel buttons, keyboard hotkeys, IR remote, mouse gestures, API commands and Web GUI
- Video and audio zero latency
- The integrated USB 3.0 ports allow you to share USB peripherals like printer, scanner, webcam and hard drive between computers with data transfer rate up to 5Gbps

1.3 Package List

- 1× 8K60 2x1 Dual Screen KVM Switcher
- 1× 24V/8A Power Supply with US/EU/UK/AU Power Cord (1.5m)
- 1× USB Cable (USB 3.0, Type A Male to Type B Male, 1.8m)
- 1× 3pin-3.5mm Phoenix Connector (male)
- 1× IR Wideband Receiver Cable (1.5m)
- 1× IR Remote
- 4× Machine Screw (KM3*4)
- 2× Mounting Ear
- 1× User Manual

2. Panel Description

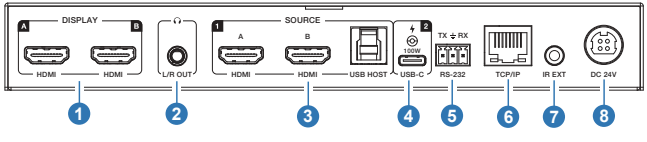
2.1 Front Panel



No.	Name	Function Description
1	USB 3.0	Two USB 3.0 device ports, with 5V/1A power output and 5Gbps data rate. Connect to USB 3.0/2.0/1.1 devices.
2	USB 3.0 (mouse & keyboard)	Two USB 3.0 device ports, with 5V/1A power output and 5Gbps data rate. Connect to USB 3.0/2.0/1.1 devices. KVM function will be enabled or disabled when pressing the HOTKEY button. **Note:** If KVM is enabled, only USB 1.1 is supported now.
3	IN 1/2 LED	When PC 1/2 is selected, the corresponding LED will be on.

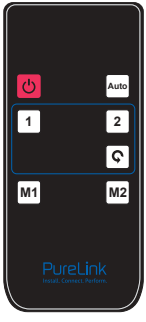
No.	Name	Function Description
4	MODE 1/2 LED	When MODE 1/2 is selected, the corresponding LED will be on.
5	AUTO LED	When auto switching is enabled, the LED will be on.
6	IR	38KHz IR receiver, no support for wideband.
7	HOTKEY LED	When HOTKEY function is enabled, the LED will be on.
8	HOTKEY button	Press to enable or disable the HOTKEY function. Note: HOTKEY is enabled by default.
9	MODE button	Press to select MODE 1/2 circularly. For more details, please refer to "Dual-mode Function".
10	SELECT button	Press to select the PC 1/2 circularly.
11	Power button	Press to enter working mode. Press and hold to enter standby mode.
12	Power LED	When the unit is powered on, the power LED is green; When the unit is standby, the power LED is red.

2.2 Rear Panel



No.	Name		Function Description
1	DISPLAY HDMI A		HDMI signal output port, connected to HDMI display device such as TV or monitor with HDMI cable. The signal is from PC1 USB-C A or PC2 HDMI A input port in MODE 1; The signal is from PC1 USB-C A input port in MODE 2.
	DISPLAY HDMI B		HDMI signal output port, connected to HDMI display device such as TV or monitor with HDMI cable. The signal is from PC1 USB-C B or PC2 HDMI B input port in MODE 1; The signal is from PC2 HDMI A input port in MODE 2.
2	LINE OUT		Analog audio output port, connected to an earphone or speaker. The signal follows Display HDMI A output port.
3	SOURCE	HDMI A/B	HDMI signal input ports, connected to HDMI source devices such as PCs with HDMI cable.
		USB HOST	USB 3.0 signal input port, connected to PC or host. supporting bandwidth up to 5Gbps.
4	USB-C (100W)		USB-C signal input ports, connected to PC or host. Supporting fast charge (100W) and Multi-Stream Transport. **Note:** This port is integrated with three channels: USB-C A, USB-C B, USB-C Host.
5	RS-232		3-pin phoenix connector, connected to a PC or control system for upgrade, debug and API commands transmission.
6	TCP/IP		Network interface.
7	IR EXT		IR signal receiving port, connected with IR receiver cable. Supporting 20K-60KHz wideband IR input.
8	DC 24V		DC 24V/8A power input port.

3. IR Remote



⏻:
Press this button to power on the switcher or set it to standby mode.

Auto:
Press this button to enable/disable the auto switching function.

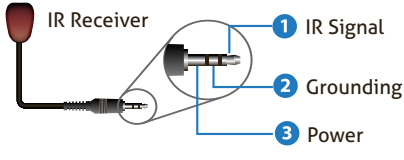
1/2:
Press 1/2 button to select the PC 1/2, and the corresponding LED on the front panel will light in green.

↻:
Press this button to select the PC 1/2 circularly.

M1/M2:
Press button to select the MODE 1/2.

3.1 IR Receiver

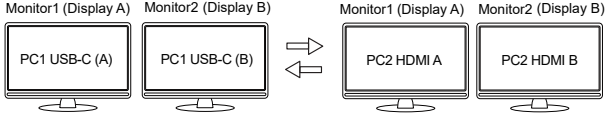
IR RECEIVER



4. Dual-mode Function

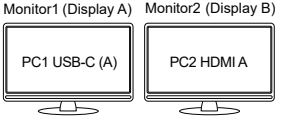
MODE 1: Single PC mode

In this mode, Display A/B select the PC1 USB-C A/B input or the PC2 HDMI A/B input correspondingly, and the USB DEVICE 3.0 ports follow the corresponding PC1 HOST or PC2 HOST. You can press the SELECT button on the front panel or the 1/2 button on the IR Remote, or use keyboard/mouse hotkeys to switch the input source.



MODE 2: Dual PC mode

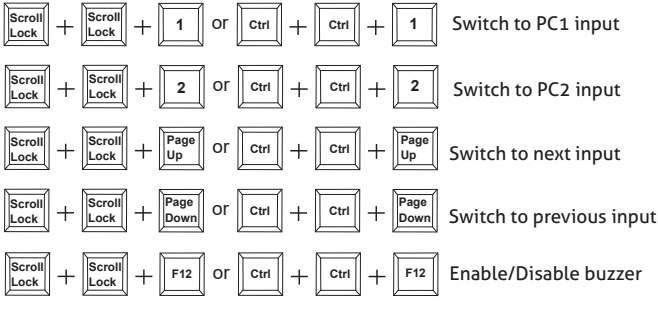
In this mode, Display A is fixed to select PC1 USB-C A input, and Display B is fixed to select PC2 HDMI A input. You can press the SELECT button on the front panel or the 1/2 button on the IR Remote, or use keyboard/mouse hotkeys to switch USB DEVICE to follow the corresponding PC2 HOST or PC1 HOST (USB-C).



5. Keyboard & Mouse Hotkey Function

The HOTKEY button on the front panel allows you to enable/disable the hotkey switching function.
When the hotkey switching function is enabled, the two USB 3.0 ports (mouse and keyboard) only support USB 1.1 mouse and keyboard, which can be used for hotkey switching.
When the hotkey switching function is disabled, the two USB 3.0 ports (mouse and keyboard) support USB 3.2 Gen 1 device.

(1) Keyboard hotkeys are defined by default as follow:



NOTE: Do not use the keypad on the right of the keyboard.

(2) Mouse hotkeys are defined by default as follow:

Double-Click Middle-Right (Double-click the mouse scroll wheel, and then click the right button): Switch to next input
Double-Click Middle-Left (Double-click the mouse scroll wheel, and then click the left button): Switch to previous input

6. Specification

Technical	
HDMI Compliance	HDMI 2.1
HDCP Compliance	HDCP 2.3
Video Bandwidth	HDMI: 40Gbps USB-C: 18Gbps
USB Bandwidth	USB 3.0 Devices TO HOST/USB-C: 5Gbps USB 2.0 Devices TO HOST/USB-C: 480Mbps USB 1.1 Devices TO HOST/USB-C: 12Mbps
Video Resolution	Up to 8K@60Hz
Color Space	RGB, YCbCr_4:4:4, YCbCr_4:2:2, YUV_4:2:0
Color Depth	8/10/12-bit, 8/10-bit (8K/60Hz 4:2:0)
HDR	HDR, HDR10, HDR10+, Dolby Vision, HLG
Audio Format	LPCM 2.0 only
Audio Latency	No Latency
Video Latency	No Latency
IR Level	12Vp-p
IR Frequency	20K-60KHz
Sample Rate	32-192KHz (according to input signal)
Transmission Distance	3m/9.8ft over HDMI 8K passive cable 1m/3.3ft over USB 3.2 Gen 1 5Gbps passive cable
ESD Protection	IEC 61000-4-2: ±8kV (air-gap discharge) & ±4kV (contact discharge)

Connection	
Input	1× USB-C [USB-C, 24-pin female, USB tier 1] 1× USB HOST [USB-B, 9-pin female, USB tier 1] 2× HDMI [HDMI Type A, 19-pin female]
Output	4× USB DEVICE [USB-A, 9-pin female, USB tier 2] 2× HDMI [HDMI Type A, 19-pin female] 1× AUDIO OUT [3.5mm audio jack]
Control	1× RS-232 [3pin-3.5mm phoenix connector] 1× TCP/IP [RJ45 connector] 1× IR EXT [3.5mm audio jack]
Mechanical	
Housing	Metal Enclosure
Color	Black
Dimensions	220mm [W] × 118mm [D] × 30mm [H]
Weight	855g
Power Supply	Input: AC 100-240V 50/60Hz, Output: DC 24V/8A (US/EU standard, CE/FCC/UL certified)
Power Consumption	160W (Max)
Operation Temperature	0°C ~ 40°C
Storage Temperature	-20°C ~ 60°C
Operating Humidity	20%~80% relative humidity, non-condensing
Storage Humidity	10%~90% relative humidity, non-condensing

7. Web GUI User Guide

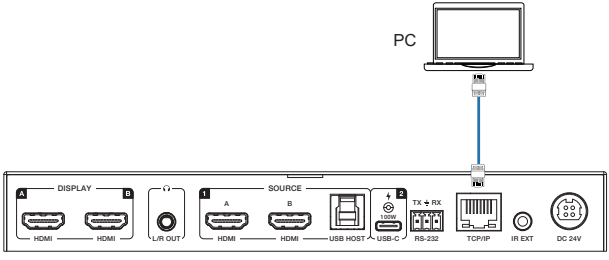
This product can be controlled by Web GUI. The operation method is shown as below:

Step 1: Get current IP Address.

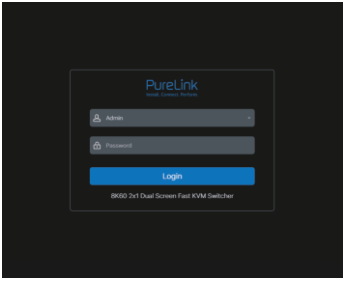
The default IP address is 192.168.0.178 (when the system is not connected to a router). You can get the current IP address via RS-232 command control. Send the ASCII command "r ip addr" through a Serial Command tool, then you'll get current IP address (The IP address is variable, depending on what the specific machine returns).

For the details of RS-232 control, please refer to "RS-232 Control Command".

Step 2: Connect the TCP/IP port of the switcher 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 switcher.



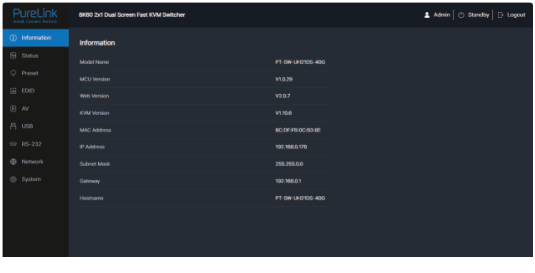
Step 3: Enter current IP address in your browser on the PC to visit Web GUI page. There will be a login page, as shown below:



Select the Username and enter the password. The default passwords are:

Username	Password
User	user
Admin	admin

■ **Information Page**

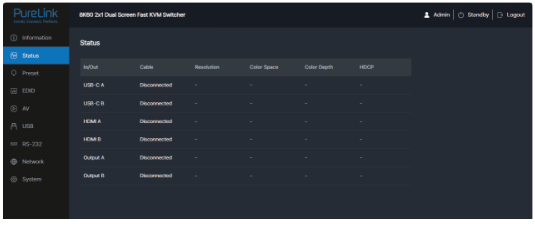


The Information page provides basic information about the model name, software version, IP information and current machine temperature.

The buttons at the top right of the web interface are always available:

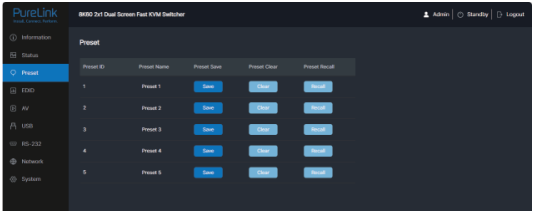
- Clicking the Logout button will log out of current user.
- Clicking the Standby button will set the switcher to standby mode.

- **Status Page**



The Status page displays the input & output port connection status, resolution, color space, color depth and HDCP.

- **Preset Page**



You can set up to 5 preset scenes on the Preset page.

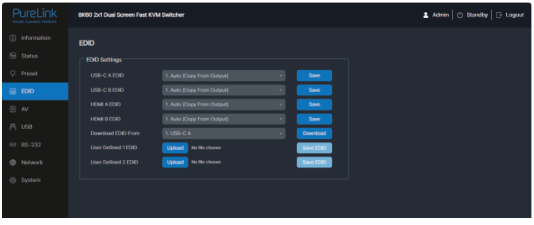
① **Preset Name:** You can name the preset scene.

② **Preset Save:** Click the Save button to save the scene.

③ **Preset Clear:** Click the Clear button to clear the saved scene.

④ **Preset Recall:** Click the Recall button to recall the saved scene.

■ EDID Page



You can do the following operations on the EDID page.

① **EDID list:** Click the drop-down list to set EDID for each input port.

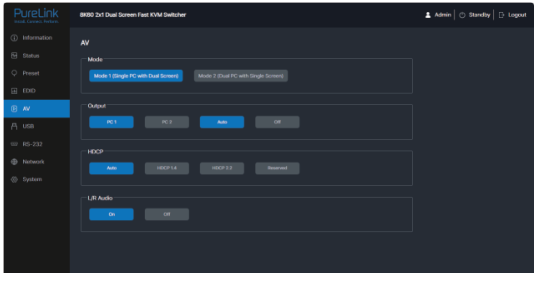
The EDID list is as below.

No.	EDID Mode	No.	EDID Mode
1	Copy EDID from HDMI output (default)	12	4096x2160p120Hz 4:4:4, Audio 2CH PCM
2	1920x1080p60Hz 4:4:4, Audio 2CH PCM	13	5120x2160p50Hz 4:4:4, Audio 2CH PCM
3	3840x2160p30Hz 4:4:4, Audio 2CH PCM	14	5120x2160p60Hz 4:4:4, Audio 2CH PCM
4	4096x2160p30Hz 4:4:4, Audio 2CH PCM	15	7680x4320p30Hz 4:4:4, Audio 2CH PCM
5	3840x2160p50Hz 4:4:4, Audio 2CH PCM	16	7680x4320p50Hz 4:2:0, Audio 2CH PCM
6	4096x2160p50Hz 4:4:4, Audio 2CH PCM	17	7680x4320p60Hz 4:2:0, Audio 2CH PCM
7	3840x2160p60Hz 4:4:4, Audio 2CH PCM	18	WUXGA 1920x1200p60Hz, Audio 2CH PCM
8	4096x2160p60Hz 4:4:4, Audio 2CH PCM	19	DVI 1280x1024p60Hz, Audio None
9	3840x2160p100Hz 4:4:4, Audio 2CH PCM	20	DVI 1920x1080p60Hz, Audio None
10	4096x2160p100Hz 4:4:4, Audio 2CH PCM	21	DVI 1920x1200p60Hz, Audio None
11	3840x2160p120Hz 4:4:4, Audio 2CH PCM	22	User Defined 1
		23	User Defined 2

② **EDID download:** Click the drop-down list to select USB-C A\USB-C B\HDMI A\HDMI B\HDMI OUT A\HDMI OUT B for EDID download. Then click the Download button and generate a .bin file.

③ **User-defined EDID:** Click the Upload EDID button to upload the defined EDID. Please note that only two user-defined EDID and .bin files are supported. Click the Save EDID button to save the user-defined EDID. Then it will be displayed in the EDID drop-down list, corresponding to the User Defined 1/ User Defined 2.

■ **AV Page**



You can do the following operations on the AV page.

① **Mode:** Click to select single PC or dual PC mode.

For more details, please refer to "Dual-mode Function".

② **Output:**

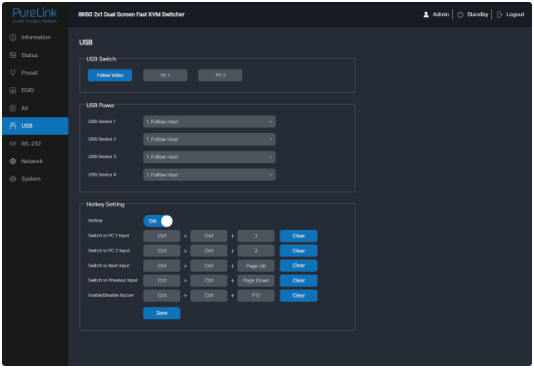
PC 1/2: Select PC 1/2 as the input source.

Auto: Click Auto to enable or disable the auto switching function.

Off: Click Off to turn off the HDMI output channel.

③ **HDCP:**
Auto: HDCP version follows the corresponding display device.
HDCP 1.4: HDCP 1.4 compliant.
HDCP 2.2: HDCP 2.2 compliant.
Reserved: User-defined mode.
④ **L/R Audio:** Click On/Off button to turn on or turn off the audio output.

■ **USB Page**



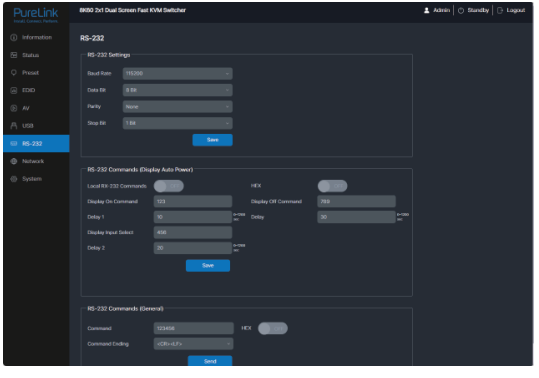
You can do the following operations on the USB page.
① **USB Switch:**
Follow Video: Click this button to set the USB devices follow the video.
PC1/PC2: Select PC1/PC2 as the HOST for USB device.
② **USB Power:** You can set 5V detection for each USB device:
Follow Host: 5V detection of the USB device follows the connection status of the selected host.

Force 5V Always Output: 5V detection of the USB device is forced to be enabled.
Disable 5V Output: 5V detection of the USB device is forced to be disabled.

③ **Hotkey Setting:**

Hotkey: Click On/Off button to enable or disable the hotkey function.
You can define any three keyboard values for the actions. Click Save to save the defined value. Click Clear to delete the defined value and set a new one. Note that it can't conflict with the setting of other hotkeys.

■ **RS-232 Page**



You can do the following operations on the RS-232 page.

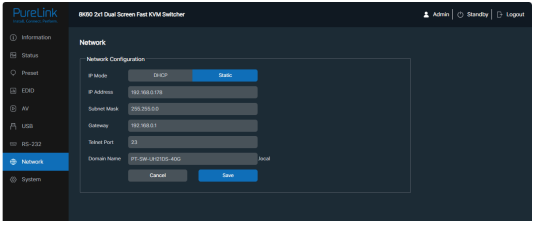
① **RS-232 Settings:**

Set baud rate, data bit, parity and stop bit, and then click "Save" to take effect.

② **RS-232 Commands (Display Auto Power):**
RS-232 Commands: Turn on or turn off RS-232 commands control.
If it is turned on, "Display On Command" will be sent after the Delay 1 time, and "Display Input Select" command will be sent after the Delay 2 time when the device is powered on. "Display Off Command" will be sent after the Delay time when the device is powered off.
Note: It is available when **Display Auto Power** is enabled and **Control Type** is selected as RS-232 or RS-232 and CEC on System page.
HEX: Turn on or turn off the HEX format. If it is turned off, the commands will be sent in ASCII format.

③ **RS-232 Commands (General):**
Command: Enter a RS-232 command.
HEX: Turn on or turn off the HEX format. If it is turned off, the command will be sent in ASCII format.
Command Ending: Select a symbol used to end the command.
Then Click "Send" to send the RS-232 command.

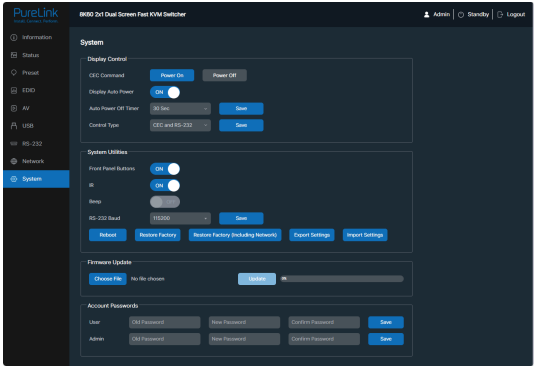
■ **Network Page**



You can modify the IP Mode/IP Address/Gateway/Subnet Mask/Telnet Port/ Domain Name as required on the Network page. Click "Save" to save the settings, and then it will come into effect.

If the Mode is "Static", you can set manually the IP Address/Gateway/Subnet/ Telnet Port/Domain Name as required.
If the Mode is "DHCP", it will search and be filled with the IP Address assigned by the router automatically. You can't modify it now.

■ System Page



You can do the following operations on the System page.

① **Display Control:**

CEC Command: Enable or disable CEC control on the TV.

Display Auto Power: Set to turn on or turn off the TV via the power switch.

Auto Power Off Timer: Set the auto power-off time, and then click "Save" to take effect.

Control Type: Set and save the control type as required: CEC, RS-232, CEC and RS-232.

② **System Utilities:**

Front Panel Buttons: Turn on or turn off the functions of the front panel buttons.

IR: Turn on or turn off the functions of IR function.

Beep: Turn on or turn off the functions of beep.

RS-232 Baud: Set and save the baud rate: 4800/9600/19200/38400/115200.

You can also reboot, restore factory, export settings or import settings via clicking the corresponding buttons.

③ **Firmware Update:** Support update for MCU, Web and Video. Choose the update file first, and then click Update.

④ **Account Passwords:**

Enter the correct Old Password, New Password, and Confirm Password, and then click "Save".

Note: Input rules for changing passwords:

(1) The password can't be empty.

(2) New Password can't be the same as Old Password.

(3) New Password and Confirm Password must be the same.

8. API Commands

The product also supports API command control. Connect the RS-232 port of the PT-SW-UH21DS-40G to the appropriate cable and your control device. Then open a Serial Command tool on PC to send ASCII commands to control the product. The ASCII command list of the product is shown below.

ASCII Command				
Communication Protocol: RS-232 Baud rate: 115200; Data bit: 8; Stop bit: 1; Parity bit: none; TCP/IP Port: 8000 The end mark of command is "<CR><LF>"				
x - Parameter 1. y - Parameter				
Command	**Function**	**Example**	**Feedback**	**Default**
System Setting				
?	Get the list of all commands	?		
help	Get the list of all commands	help		
get model	Get device model	get model	PT-SW-UH21DS-40G	
status	Get device current status	status	Please refer to the note at the end of the list.	
get version	Get firmware version	get version	FW v1.1.0 KVM v1.1.0	
power on/off	Power on/off the device	power on	Power on... System Initializing... Initialization Finished! FW v1.1.0 KVM v1.1.0	
get power	Get current power state	get power	Power on	

Command	Function	Example	Feedback	Default
System Setting				
reboot	Reboot the device	reboot	Reboot... System Initializing... Initialization Finished! FW v1.1.0 KVM v1.1.0	
reset	Reset system settings to default (Should type "Yes" to confirm, "No" to discard)	reset	Sure to Reset System Settings To Default? Type "Yes" after next prompt to confirm...	
reset all	Reset system and network settings to default (Should type "Yes" to confirm, "No" to discard)	reset all	Sure to Reset System and Network Settings To Default? Type "Yes" after next prompt to confirm...	
set key on/off	Set front panel key on/off	set key on	Set key on	on
get key	Get front panel key on/off status	get key	On	
set ir on/off	Set IR on/off	set ir off	Set IR on	on
get ir	Get IR on/off status	get ir	On	
set beep on/off	Set buzzer on/off	set beep off	Set beep off	off
get beep	Get buzzer on/off status	get beep	Off	
set hotkey on/off	Set hotkey function on/off	set hotkey on	Set hotkey on	on
get hotkey	Get hotkey function on/off status	get hotkey	On	

Command	Function	Example	Feedback	Default
System Setting				
set hotkeys x	Set hotkeys (x=1~5) x=1: PC1 input hotkeys x=2: PC2 input hotkeys x=3: Next input hotkeys x=4: Previous input hotkeys x=5: Enable/disable buzzer	set hotkeys 1	Type hotkeys...	
get hotkeys x	Get hotkeys (x=1~5) settings x=1: PC1 input hotkeys x=2: PC2 input hotkeys x=3: Next input hotkeys x=4: Previous input hotkeys x=5: Enable/disable buzzer	get hotkeys 1	"Ctrl" + "Ctrl" + "1"	
set baud x	Set RS-232 baud rate to x bps x=1: 4800 x=2: 9600 x=3: 19200 x=4: 38400 x=5: 57600 x=6: 115200	set baud 6	Set baud rate 115200	115200
get baud	Get RS-232 baud rate	get baud	115200	
Input Setting				
set input x	Set input from (x=1~2) x=1: PC1 input x=2: PC2 input	set input 1	Set PC1 input	1
get input	Get PC input	get input		PC1
set usb x	Set USB from (x=0~2) x=0: Follow video input x=1: PC1 USB host x=2: PC2 USB host	set usb 0	Set USB follow video input	0
get usb	Get USB input	get usb	Follow video input	

Command	Function	Example	Feedback	Default
Input Setting				
get usb5v	Get USB host input 5V	get usb5v	PC1 USB: 5V PC2 USB: None	
set autoswitch on/off	Set auto-switching on/off	set autoswitch on	Set autoswitch on	on
get autoswitch	Get auto-switching on/off status	get autoswitch	On	
set autoswitch mode x	Set auto-switching detection mode x=0: 5V detection x=1: Signal detection	set autoswitch mode 1	Set autoswitch mode to signal detection	signal detection
get autoswitch mode	Get auto-switching detection mode	get autoswitch mode	Signal detection	
set edid x to y	Set input ports (x=0~4) EDID to (y=0~22) x=0: All inputs x=1: USB-C A input x=2: USB-C B input x=3: HDMI A input x=4: HDMI B input y=00: Copy EDID from HDMI output (default) y=01: 1920x1080p60Hz 4:4:4, Audio 2CH PCM y=02: 3840x2160p30Hz 4:4:4, Audio 2CH PCM y=03: 4096x2160p30Hz 4:4:4, Audio 2CH PCM y=04: 3840x2160p50Hz 4:4:4, Audio 2CH PCM y=05: 4096x2160p50Hz 4:4:4, Audio 2CH PCM	set edid 0 to 0	Set all inputs EDID to 00: Copy EDID from HDMI output (default)	0

Command	Function	Example	Feedback	Default
Input Setting				
set edid x to y	(Continued) y=06: 3840x2160p60Hz 4:4:4, Audio 2CH PCM y=07: 4096x2160p60Hz 4:4:4, Audio 2CH PCM y=08: 3840x2160p100Hz 4:4:4, Audio 2CH PCM y=09: 4096x2160p100Hz 4:4:4, Audio 2CH PCM y=10: 3840x2160p120Hz 4:4:4, Audio 2CH PCM y=11: 4096x2160p120Hz 4:4:4, Audio 2CH PCM y=12: 5120x2160p50Hz 4:4:4, Audio 2CH PCM y=13: 5120x2160p60Hz 4:4:4, Audio 2CH PCM y=14: 7680x4320p30Hz 4:4:4, Audio 2CH PCM y=15: 7680x4320p50Hz 4:2:0, Audio 2CH PCM y=16: 7680x4320p60Hz 4:2:0, Audio 2CH PCM y=17: WUXGA 1920x1200p60Hz, Audio 2CH PCM y=18: DVI 1280x1024p60Hz, Audio None y=19: DVI 1920x1080p60Hz, Audio None y=20: DVI 1920x1200p60Hz, Audio None y=21: User Defined 1 y=22: User Defined 2	set edid 0 to 0	Set all inputs EDID to 00: Copy EDID from HDMI output (default)	0

Command	Function	Example	Feedback	Default
Input Setting				
get edid x	Get input ports (x=0~4) EDID x=0: All inputs x=1: USB-C A input x=2: USB-C B input x=3: HDMI A input x=4: HDMI B input	get edid 0	USB-C A EDID 00: Copy EDID from HDMI output (default) USB-C B EDID 00: Copy EDID from HDMI output (default) HDMI A EDID 00: Copy EDID from HDMI output (default) HDMI B EDID 00: Copy EDID from HDMI output (default)	
get edid data x	Get input ports (x=0~4) EDID data x=0: All inputs x=1: USB-C A input x=2: USB-C B input x=3: HDMI A input x=4: HDMI B input	get edid data 0	USB-C A EDID <00 FF FF FF....> USB-C B EDID <00 FF FF FF....> HDMI A EDID <00 FF FF FF....> HDMI B EDID <00 FF FF FF....>	
set user edid x <y>	Set user defined EDID (x=0~2) to y x=0: User Defined 1 and User Defined 2 x=1: User Defined 1 x=2: User Defined 2 y=00 FF FF FF ..... (y is 256 bytes EDID data)	set user edid 1 <00 FF FF FF....>	User Defined 1 EDID is loaded	
get user edid x	Get user defined EDID (x=0~2) data x=0: User Defined 1 and User Defined 2 x=1: User Defined 1 x=2: User Defined 2	get user edid 1	<00 FF FF FF....>	

Command	Function	Example	Feedback	Default
Output Setting				
set output mode x	Set output mode to (x=1~2) x=1: Output mode 1 x=2: Output mode 2	set output mode 1	Set output to mode 1	1
get output mode	Get output mode	get output mode	Mode 1	
set output x stream on/off	Set output (x=0~2) stream on/off x=0: All outputs x=1: Output A x=2: Output B	set output 0 stream off	Set All outputs off	on
get output x stream	Get output (x=0~2) stream on/off status x=0: All outputs x=1: Output A x=2: Output B	get output 0 stream	Output A on Output B on	
set output hdcp y	Set output HDCP mode to (y=0~3) y=0: Reserved y=1: Auto y=2: HDCP 1.4 y=3: HDCP 2.2	set output hdcp 1	Set output HDCP to auto	1
get output hdcp	Get output HDCP mode	get output hdcp	Auto	
set audio mute on/off	Set de-embedding audio mute on/off	set audio mute on set audio mute off	Set de-embedding audio mute on Set de-embedding audio mute off	off
get audio mute	Get de-embedding audio mute on/off status	get audio mute	Mute on	

Command	Function	Example	Feedback	Default
Output Setting				
set output x usb5v y	Set USB device port output (x=0~4) 5V to y x=0: All USB device ports x=1: USB-A device 1 x=2: USB-A device 2 x=3: USB-A device 3 x=4: USB-A device 4 y=0: Disable 5V output y=1: Follow host y=2: Force 5V always output	set output 0 usb5v 1	Set all USB device output 5V follow host.	1
get output x usb5v	Get USB device port output (x=0~4) 5V status	get output 0 usb5v	USBA_1 5V: follow host USBA_2 5V: follow host USBA_3 5V: follow host USBA_4 5V: follow host	
Display Control Setting				
set cec power on/off	Set CEC power on/off command	set cec power on set cec power off	CEC power on CEC power off	
set auto power feature on/off	Set display auto power feature on/off	set auto power feature on	Set auto power on	off
get auto power feature	Get display auto power feature on/off status	get auto power feature	Auto power on	
set auto power off timer x	Set auto power off command will be sent out after x (x=1~6) x=1: 5 sec x=2: 10 sec x=3: 30 sec x=4: 1 min x=5: 5 min x=6: 10 min	set auto power off timer 1	Set auto power off timer: 5 sec	5 sec
get auto power off timer	Get auto power off timer	get auto power off timer	5 sec	

Command	Function	Example	Feedback	Default
Display Control Setting				
set auto power control x	Set auto power feature control via (x=1~3) x=1: CEC x=2: RS-232 x=3: CEC and RS-232	set auto power control 1	Set auto power control: CEC	CEC
get auto power control	Get auto power feature control type	get auto power control	CEC	
set RS-232 setting x	Set RS-232 setting to x x= 115200-8n1 Baud rate: 115200/57600/56000/38400/19200/9600/4800/2400 Data bits: 7/8 Parity: n(None)/ o(Odd) / e(Even) Stop bits: 1/2	set RS-232 setting 115200-8n1	Set RS-232: 115200-8n1	115200-8n1
get RS-232 setting	Get RS-232 setting	get RS-232 setting	115200-8n1	
set RS-232 command on/off	Set RS-232 command on/off	set RS-232 command on set RS-232 command off	Set RS-232 command on Set RS-232 command off	off
get RS-232 command	Get RS-232 command on/off status	get RS-232 command	On	
set RS-232 HEX/ASCII power on <y1> delay1 <y2> input <y3> delay2 <y4>	Set RS-232 HEX/ASCII power on <y1> delay1 <y2> input <y3> delay2 <y4> Command format is HEX or ASCII y1= RS-232 power on command y2= 0~1200sec y3= RS-232 input port selection y4= 0~1200sec NOTE: delay1 <y2> input <y3> delay2 <y4> can be NULL	set RS-232 ASCII power on <PWRON> delay1 <10> input <INPUT1> delay2 <10> set RS-232 ASCII power on <PWRON> set RS-232 HEX power on <11 22 33 44> delay1 <10> input <55>	Set RS-232 ASCII power on <PWRON> delay1 <10> input <INPUT1> delay2 <10> Set RS-232 ASCII power on <PWRON> Set RS-232 HEX power on <11 22 33 44> delay1 <10> input <55>	

Command	Function	Example	Feedback	Default
Display Control Setting				
get RS-232 power on command	Get RS-232 power on command	get RS-232 power on command	RS-232 ASCII power on <PWRON> delay1 <10> input <INPUT1> delay2 <10>	
set RS-232 HEX/ ASCII power off <y1> delay <y2>	Set RS-232 HEX/ASCII power off <y1> delay <y2> Command format is HEX or ASCII y1= RS-232 power off command y2= 0~1200sec NOTE: delay <y2> can be NULL	set RS-232 ASCII power off <PWROFF> delay <1> set RS-232 HEX power off <66 77 88 99>	Set RS-232 ASCII power off <PWROFF> delay <1> Set RS-232 HEX power off <66 77 88 99>	
get RS-232 power off command	Get RS-232 power off command	get RS-232 power off command	RS-232 ASCII power off <PWROFF> delay <1>	
set RS-232 HEX/ ASCII command <y> end z	Set RS-232 HEX/ASCII command <y> ending with (z=0~3) Command format is HEX or ASCII y= RS-232 command z=0: Null z=1: <CR> z=2: <LF> z=3: <CR><LF>	set RS-232 ASCII command <SET INPUT1> end 0 set RS-232 HEX command <66 77 88 99> end 3	Set RS-232 ASCII command <SET INPUT1> Set RS-232 HEX command <66 77 88 99>	
Preset Setting				
set preset save x	Save the current unit's settings to the specified preset (x=1~5) All settings except network setting. x=1~5: Preset 1 ~ Preset 5	set preset save 1	Set preset 1 save	
set preset recall x	Recall a specified preset into unit (x=1~5) All settings except network setting. x=1~5: Preset 1 ~ Preset 5	set preset recall 1	Set preset 1 recall	

Command	Function	Example	Feedback	Default
Preset Setting				
set preset clear x	Clear a specified preset into unit (x=1~5) All settings except network setting. x=1~5: Preset 1 ~ Preset 5	set preset clear 1	Set preset 1 clear	
set preset x name y	Set preset (x=1~5) name to y (16 characters max) x=1~5: Preset 1 ~ Preset 5	set preset 1 name Blueriver	Set preset 1 name Blueriver	
get preset x name	Get preset (x=1~5) name x=1~5: Preset 1 ~ Preset 5	get preset 1 name	Blueriver	
Network Setting				
get ipconfig	Get the Current IP Configauration	get ipconfig	IP Mode: DHCP IP: 192.168.62.106 Subnet Mask: 255.255.255.0 Gateway: 192.168.62.1 TCP/IP port: 8000 Telnet port: 23 MAC: 6C:DF:FB:0C:B3:8E (Static: 169.254.100.200 255.255.0.0 169.254.100.1)	default static IP is 192.168.0.178/ 255.255.0.0/192.168.0.1
get mac addr	Get network MAC address	get mac addr	MAC: 6C:DF:FB:0C:B3:8E	
set ip mode x	Set network IP mode to static IP or DHCP (x=0~1) x=0: Static x=1: DHCP	set ip mode 0	Set IP mode static (Please use "set net reboot" command or repower device to apply new config!)	1

Command	Function	Example	Feedback	Default
Network Setting				
get ip mode	Get network IP mode	get ip mode	DHCP	
set ip addr xxx.xxx.xxx.xxx	Set network IP address	set ip addr 192.168.1.100	Set IP address 192.168.1.100 (Please use "set net reboot" command or repower device to apply new config!) DHCP on, Device can't config static address, set DHCP off first.	
get ip addr	Get network IP address	get ip addr	192.168.62.106	
set subnet xxx.xxx.xxx.xxx	Set network subnet mask	set subnet 255.255.255.0	Set subnet mask 255.255.255.0 (Please use "set net reboot" command or repower device to apply new config!) DHCP on, Device can't config subnet mask, set DHCP off first.	
get subnet	Get network subnet mask	get subnet	255.255.255.0	
set gateway xxx.xxx.xxx.xxx	Set network gateway	set gateway 192.168.1.1	Set gateway 192.168.1.1 (Please use "sst net reboot!" command or repower device to apply new config!) DHCP on, Device can't config gateway, set DHCP off first.	

Command	Function	Example	Feedback	Default
Network Setting				
get gateway	Get network gateway	get gateway	192.168.1.1	
set tcp/ip port x	Set network TCP/IP port (x=1~65535)	set tcp/ip port 8000	Set TCP/IP port 8000	8000
get tcp/ip port	Get network TCP/IP port	get tcp/ip port	8000	
set telnet port x	Set network telnet port(x=1~65535)	set telnet port 23	Set telnet port 23	23
get telnet port	Get network telnet port	get telnet port	23	
set net reboot	Reboot network modules	set net reboot	Search for IP,Please wait ...! IP Mode: DHCP IP: 192.168.62.106 Subnet Mask: 255.255.255.0 Gateway: 192.168.62.1 TCP/IP port: 8000 Telnet port: 23 MAC: 6C:DF:FB:0C:B3:8E (Static: 169.254.100.200 255.255.0.0 169.254.100.1)	
Password Setting				
set admin password x	Set admin login password (x=[16 characters max])	set admin password admin	Set admin password admin	admin
get admin password	Get admin login password	get admin password	admin	
set user password x	Set user login password (x=[16 characters max])	set user password user	Set user password user	user
get user password	Get user login password	get user password	user	

Note: The feedback of the command of "status" is as following.

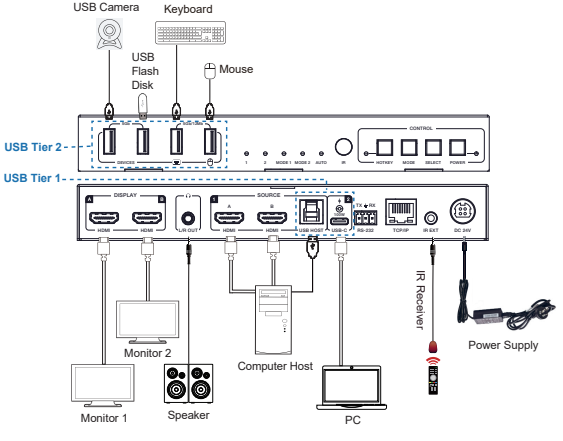
```
==================================================================
Status Info 8K60 2x1 Dual Screen KVM Switcher
FW v1.1.0 KVM v1.1.0

Key  IR  Beep  Hotkey  Baud    AutoSwitch  AutoSwitchMode  Audio_Breakout
On   On  Off   On      115200  On          Signal          Unmute

Input  Cable         EDID
PC1A   Disconnected  00: Copy EDID from HDMI output (default)
PC1B   Disconnected  00: Copy EDID from HDMI output (default)
PC2A   Disconnected  00: Copy EDID from HDMI output (default)
PC2B   Disconnected  00: Copy EDID from HDMI output (default)

Output  FromIn  Cable      Resolution      ColorSpace  ColorDepth  HDCP  On/Off
HDMI_A  PC1     Connected  3840x2160p60Hz  YUV 4:4:4   8bit        Sink  On
HDMI_B  PC1     Connected  3840x2160p60Hz  YUV 4:4:4   8bit        Sink  On

Output  USB_5V
USBA_1  Follow_host
USBA_2  Follow_host
USBA_3  Force_5V
USBA_4  Force_5V

TCP/IP  Telnet  MAC
8000    0023    6C:DF:FB:0C:B3:8E

DHCP     IP              Gateway          SubnetMask
On       192.168.062.111 192.168.062.001  255.255.000.000
(Static: 192.168.0.178   192.168.000.001  255.255.000.000)
==================================================================
```

9. System Diagram

Usage Precaution

- Make sure all components and accessories included before installation.
- System should be installed in a clean environment with proper temperature and humidity.
- All of the power switches, plugs, sockets, and power cords should be insulated and safe.
- All devices should be connected before power on.

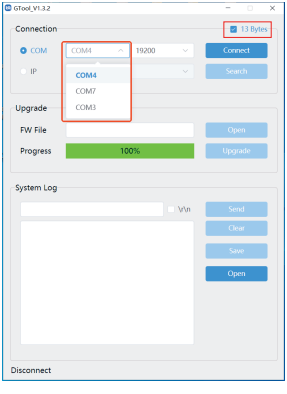
The following diagrams illustrate typical input and output connections that can be utilized with this device:

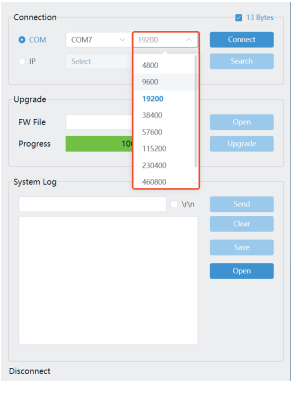


10. Firmware Upgrade

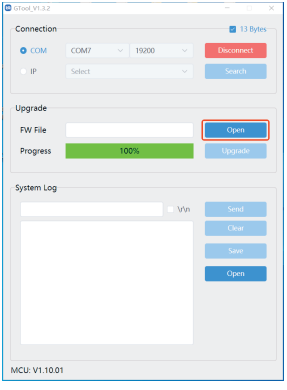
Please follow the steps as below to upgrade firmware via the USB-C Host port or WebGUI.

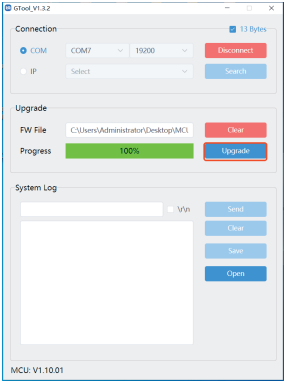
1. Prepare the PC tool (.exe) and the latest upgrade file (.bin) on PC. Rename the upgrade file as "MCU_MAIN_PT-SW-UH21DS-40G_Vxx.xx.xx.bin" .
2. Connect the USB-C port on the switcher to the PC with USB cable.
3. Connect the power supply to the switcher and power on.
4. Run GTool.exe on PC.
5. Select the connection port and baudrate, and then click "Connect". "13 Bytes" must be checked.



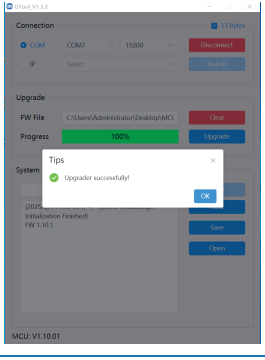


6. Click "Open" to select the prepared upgrade file, and then click "Upgrade".



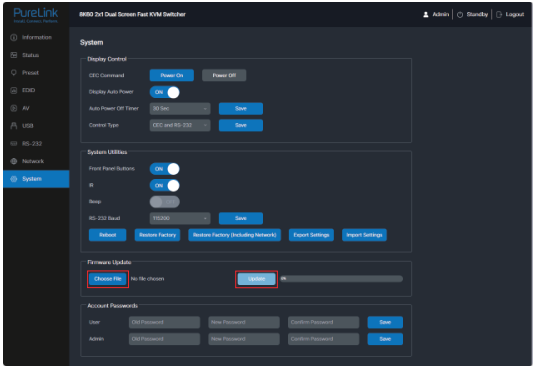


7. When the upgrade is completed, it will pop up "Upgrade successfully". If the firmware updating is fail, the name of upgrade file (.bin) should be confirmed, and then follow the above steps to update again.

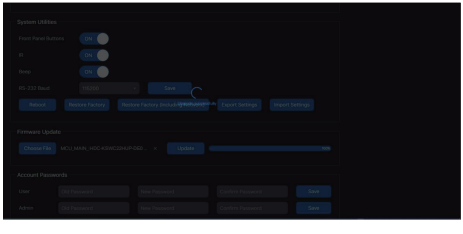


You can also update the firmware via WebGUI.

1. Prepare the PC tool (.exe) and the latest upgrade file (.bin) on PC. Rename the upgrade file as "MCU_MAIN_PT-SW-UH41-48G_Vxx.xx.xx.bin".
2. Log in Web GUI, and enter System page.



3. Click "Choose File" to select the prepared upgrade file, and then click "Upgrade". When completed, the progress bar shows 100% and "Upgrade successfully" will pop up.



11. After-Sales Service

If there appear some problems when running the product, please check and deal with the problems referring to this user manual. Any transport costs are borne by the users during the warranty.

1) Product Limited Warranty: This product will be free from defects in materials and workmanship for three years (The purchase invoice shall prevail).
Proof of purchase in the form of a bill of sale or receipted invoice which is evidence that the unit is within the Warranty period must be presented to obtain warranty service.

2) What the warranty does not cover (servicing available for a fee):

- Warranty expiration.
- Factory applied serial number has been altered or removed from the product.
- Damage, deterioration or malfunction caused by:
  - Normal wear and tear.
  - Use of supplies or parts not meeting our specifications.
  - No certificate or invoice as the proof of warranty.
  - The product model showed on the warranty card does not match with the model of the product for repairing or had been altered.
  - Damage caused by force majeure.
  - Servicing not authorized by distributor.
  - Any other causes which does not relate to a product defect.
  - Delivery, installation or labor charges for installation or setup of the product.

3) Technical Support: For any questions or problems, contact your distributor or reseller and tell them the respective product name and version, the detailed failure situation as well as the formation of the cases.

Asking for Assistance

Technical Support:

Phone: +49 5971 800299 - 0
Fax: +49 5971 800299 - 99

Technical Support Hours:

8:30 AM to 5:00 PM Monday thru Thursday
8:30 AM to 4:00 PM Friday

Write to:

PureLink GmbH
Von-Liebig-Straße 10
D - 48432 Rheine
www.purelink.de
info@purelink.de