



User Manual

4K60 4x1 Multiview Seamless UHD Video Switcher

Model PT-SW-HD41MV

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

Product model and logo are trademarks. Any other trademarks mentioned in this manual are acknowledged as the properties of the trademark owner. No part of this publication may be copied or reproduced without the prior written consent.

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 manufacturer would void the user's authority to operate the equipment.



REACH | 1907/2006/EU

ROHS | 2011/65/EU

PureLink hereby declares that this product PureTools PT-SW-HD41MV 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-HD41MV 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/4251364754269_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.
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Content

1. Product Introduction.....	2
1.1 Introduction.....	2
1.2 Features.....	2
1.3 Package List.....	3
2. Panel Description.....	4
3. IR Remote.....	6
3.1 IR Receiver.....	7
4. Multiview.....	8
5. Specification.....	9
6. WEBGUI User Guide.....	12
7. API Commands.....	21
8. System Diagram.....	35
9. Firmware Upgrade.....	36
10. After-Sales Service.....	38
Asking for Assistance.....	39

1. Product Introduction

1.1 Introduction

This 4K60 4x1 Multiview Seamless UHD Video Switcher was designed for supporting higher output resolution (4K@60) for multiple sources on a single screen. It can combine up to four video signals into a single UHD or HD display. Users can manage each input, and create combinations of the four inputs on a single display, as well as adjusting the position of any input.

This product supports 9 display modes, users can freely switch 4-channel input signals within the mode range. It can realize a single screen display and multiview display on a single screen.

This device supports full range of input video resolutions up to 4K@60. Balanced audio or optical audio de-embedding is supported for external audio distribution systems.

This device can be controlled via front panel buttons, IR remote, API commands and WebGUI.

1.2 Features

- HDCP 2.2/1.x compliant
- Supports 18Gbps video bandwidth
- Supports video resolution up to 4K@60Hz, as specified in HDMI™ 2.0b
- Seamless switching among input channels and combining multiple images to display on a single UHD screen
- Supports LPCM, AC3, DD+, DTS, DTS-HD, up to 7.1 audio channel
- Up to 9 display modes: Single, PIP, PBP (1), PBP (2), Triple (1), Triple (2), Triple (3), Quad (1), Quad (2)

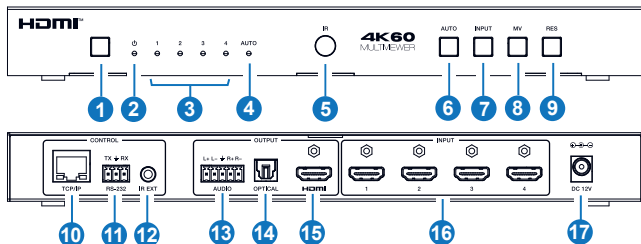
(Continued)

- Seamless switching in single screen display mode and fast switching in multiview display mode
- Audio de-embedding output via analog and optical fiber audio ports
- Supports volume control and independent audio selection
- Advanced EDID management with a fixed EDID library
- Control via front panel buttons, IR remote, API commands and WebGUI
- Compact design for easy and flexible installation

1.3 Package List

- 1× 4K60 4×1 Multiview Seamless UHD Video Switcher
- 1× 12V/2.5A Multinational Locking Power Adapter
with US/EU/EN/AU Conversion Plug
- 1× IR Remote
- 1× IR Receiver Cable (1.5m)
- 1× 3pin-3.5mm Phoenix Connector (male)
- 1× 5pin-3.5mm Phoenix Connector (male)
- 2× Mounting Ear
- 4× Machine Screw (KM3*6)
- 1× User Manual

2. Panel Description



No.	Name	Function Description
1	Power button	- Short press to power on. - Long press for 1 second to be standby.
2	Power LED	When the device is powered on, the power LED is green; When the device is standby, the power LED is red.
3	Input 1~4 LED	HDMI input signal indicator (Green). - Single screen mode: When the input 1/2/3/4 is selected as the input channel, the corresponding LED will light up. - Multiview mode: All LEDs light up.
4	AUTO LED	When the auto switching is enabled, the green LED will light up.
5	IR window	IR signal receiving window.
6	AUTO button	Press to enable or disable the auto switching function. It is available in single screen mode only.
7	INPUT button	Press to switch the input channels circularly. It is available in single screen mode only.
8	MV button	Press to switch the multiview modes circularly: Single, PIP, PBP (1), PBP (2), Triple (1), Triple (2), Triple (3), Quad (1), Quad (2)

No.	Name	Function Description
9	RES button	- Short press the RES button, the OSD will display the current output resolution of the HDMI OUTPUT port. Short press the RES button again before the OSD disappears to circularly switch the output resolution (Please refer to the output resolution list in "Specification"). - Long press the RES button for 3 seconds to switch the output resolution to 720P60. Note: The resolution selection is based on the EDID of the connected TV. The unavailable resolution can not be selected.
10	TCP/IP	TCP/IP control port, connected to PC.
11	RS-232	3-pin phoenix connector, connected to a PC or control system for serial command control. Note: RS-232 control must add CR/LF.
12	IR EXT	IR signal receiving port, connected with IR Receiver cable. If the IR signal receiving window of the unit is blocked or the unit is installed in a closed area out of infrared line of sight, the IR receiver cable can be inserted to the "IR EXT" port to receive the IR remote signal.
13	L/R AUDIO	Analog audio output port, supporting balanced audio output (with a maximum support of 2Vrms) and unbalanced audio output (with a maximum support of 1Vrms). Balanced connection method: L+, L-, GND, R+, R Unbalanced connection method: L+, GND, R+
14	OPTICAL AUDIO	Optical audio output port, connected to an audio device.
15	HDMI OUTPUT	HDMI output port, connected to a display device such as TV.
16	HDMI INPUT	HDMI signal input port, connected to a source device such as PC or PS5.
17	DC 12V	Connects to the included power adapter.

3. IR Remote



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

HDMI 1/2/3/4 (VIDEO): Press the buttons to select the corresponding input source.

◀ ▶ : Press the buttons to circularly select the previous or next input source in single screen display mode.

 : Press the button to select single screen mode.

 : Press the button to select the PBP mode, and then circularly switch the submode in PBP mode.

 : Press the button to select the Triple mode, and then circularly switch the submode in Triple mode.

 : Press the button to select the Quad mode, and then circularly switch the submode in Quad mode.

 : Press the button to select the PIP mode.

16:9: Press this button to switch the aspect ratio between 16:9 and full screen. It is available in PBP, Triple and Quad mode only.

SIZE: Press this button to circularly select PIP size: small, middle and large. It is available in PIP mode only.

POS: Press this button to circularly select PIP position: right top, right bottom, left top, left bottom. It is available in PIP mode only.

PRESET: Press this button to circularly select the eight saved presets. The presets are set via WEBGUI or API commands.

RES: Output resolution switching button.

- Short press the RES button to circularly switch the output resolution of the HDMI OUTPUT port (Please refer to the output resolution list of "Specification").
- Long press the RES button for 5 seconds to switch the output resolution to 720P60.

AUTO: Press this button to enable or disable the auto switching function.

FREEZE: Press this button to freeze the image.

HDMI 1/2/3/4 (AUDIO):

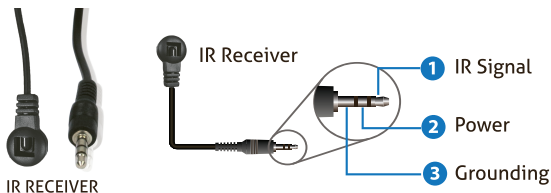
Press the buttons to select the corresponding input source.

WIN1: Press this button to make the output audio follow WIN1.

MUTE: Press this button to mute or unmute the audio.

VOL-, VOL+: Press the buttons to increase / decrease the output volume.

3.1 IR Receiver



4. Multiview

The switcher supports 9 categories of multiview display modes:

Single, PIP, PBP (1), PBP (2), Triple (1), Triple (2), Triple (3), Quad (1), Quad (2)

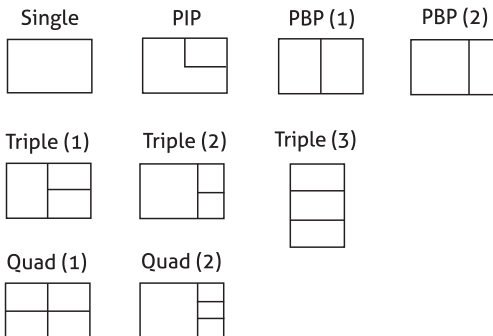
Users can select different operations for different multiview modes as follow:

Single: Inputs selection

PIP: Inputs selection, Sub window size and position selection

PBP (1), PBP (2), Triple (1), Triple (2), Triple (3), Quad (1), Quad (2): Inputs selection, Display mode selection, Display aspect selection

Multiview window distributions are as follow:



User can select multiview display modes via API commands, IR remote or WEBGUI.

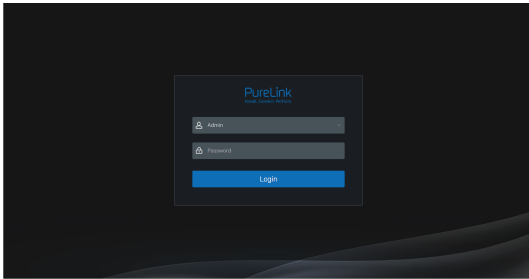
5. Specification

Technical	
HDMI™ Compliance	HDMI™ 2.0b
HDCP Compliance	HDCP 2.2
Video Bandwidth	18Gbps
Video Input Resolution	640x480p 60Hz, 800x600p 60Hz, 1024x768p 60Hz, 1280x1024p 60Hz, 1360x768p 60Hz, 1440x900p 60Hz, 1440x1050p 60Hz, 1600x1200p 60Hz, 720x480i 59.94Hz (480i59), 720x480p 59.94Hz (480p59), 720x576i 50Hz (576i50), 720x576p 50Hz (576p50), 1280x720p 50Hz (720p50), 1280x720p 59.94Hz (720p59), 1280x720p 60Hz (720p60), 1920x1080i 50Hz (1080i50), 1920x1080i 59.94Hz (1080i59), 1920x1080i 60Hz (1080i60), 1920x1080p 23.98Hz (1080p23), 1920x1080p 24Hz (1080p24), 1920x1080p 25Hz (1080p25), 1920x1080p 29.97Hz (1080p29), 1920x1080p 30Hz (1080p30), 1920x1080p 50Hz (1080p50), 1920x1080p 59.94Hz (1080p59), 1920x1080p 60Hz (1080p60), 3840x2160p 23.98Hz (2160p23), 3840x2160p 24Hz (2160p24), 3840x2160p 25Hz (2160p25), 3840x2160p 29.97Hz (2160p29), 3840x2160p 30Hz (2160p30), 3840x2160p 50Hz (2160p50), 3840x2160p 59.94Hz (2160p59), 3840x2160p 60Hz (2160p60), 4096x2160p 23.98Hz, 4096x2160p 24Hz, 4096x2160p 25Hz, 4096x2160p 29.97Hz, 4096x2160p 30Hz, 4096x2160p 50Hz, 4096x2160p 59.94Hz, 4096x2160p 60Hz
Video Output Resolution	4096x2160p 60Hz, 4096x2160p 50Hz, 3840x2160p 60Hz, 3840x2160p 50Hz, 3840x2160p 30Hz, 3840x2160p 25Hz, 1920x1200p 60Hz RB, 1920x1080p 60Hz, 1920x1080p 50Hz, 1360x768p 60Hz, 1280x800p 60Hz, 1280x720p 60Hz, 1280x720p 50Hz, 1024x768 60Hz, AUTO

Technical	
Color Depth	Input: 8/10/12-bit Output: 8-bit
Color Space	Input: RGB, YCbCr_4:4:4, YCbCr_4:2:2, YCbCr_4:2:0 Output: RGB
IR Level	12Vp-p
IR Frequency	Wideband 20K-60KHz
Audio Format	HDMI™ input/output: PCM 2.0/5.1/7.1CH, Dolby Digital/Plus/EX, Dolby True HD, DTS, DTS-EX, DTS-96/24, DTS High Res, DSD Audio de-embedding output: Optical: LPCM/Dolby/DTS 5.1CH Analog: PCM 2.0 Note: It does not support HBR audio.
ESD Protection	IEC 61000-4-2: ±8kV (air-gap discharge) & ±4kV (contact discharge)
Connection	
Input	4× IN [HDMI™ type A, 19-pin female]
Output	1× OUT [HDMI™ type A, 19-pin female] 1× OPTICAL [S/PDIF] 1× L/R [5pin-3.5mm phoenix connector]
Control	1× TCP/IP [RJ45] 1× IR EXT [3.5mm stereo mini-jack] 1× RS-232 [3pin-3.5mm phoenix connector]
Mechanical	
Housing	Metal Enclosure
Color	Black
Dimensions	278mm [W] x 104.5mm [D] x 30mm [H]
Weight	743g

Power Supply	Input: AC 100 - 240V 50/60Hz Output: DC 12V/2.5A (US/EU standard, CE/FCC/UL certified)
Power Consumption	11.9W (Max)
Operation Temperature	32°F ~ 104°F / 0°C ~ 40°C
Storage Temperature	-4°F ~ 140°F / -20°C ~ 60°C
Operating Humidity	20%~80% relative humidity, non-condensing
Storage Humidity	10%~90% relative humidity, non-condensing

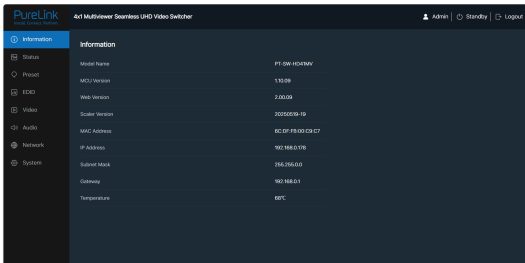
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Select the Username and enter the password. The default passwords are:

Username	Password
User	user
Admin	admin

■ Information Page

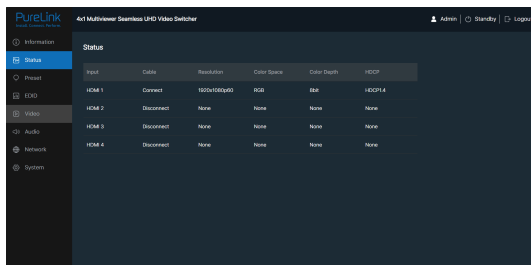


The Information page provides basic information about the model name, software version, IP information and current machine temperature.

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

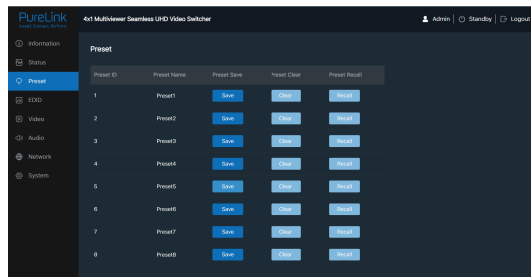
- Clicking the Logout button will log out of current user.
- Clicking the Standby button will set the switcher to standby mode.

■ Status Page



The Status page provides the current status of each HDMI input port and some information of the input source.

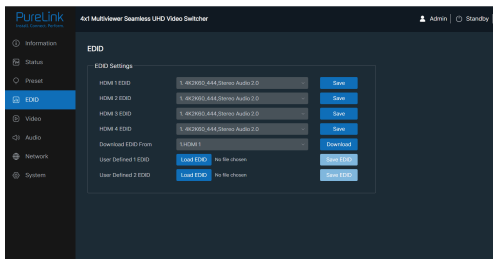
■ Preset Page



You can set up to 8 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



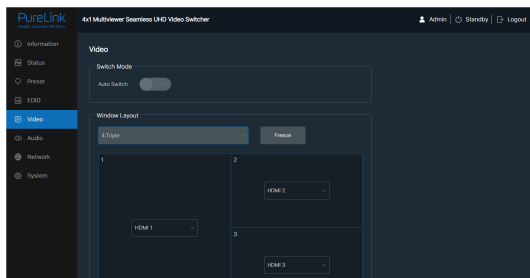
You can do the following operations on the EDID page.

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

No.	EDID Mode	No.	EDID Mode
1	4K2K60_444, Stereo Audio 2.0	11	1680x1050, Stereo Audio 2.0
2	4K2K60_444, Dolby/DTS 5.1	12	1600x1200, Stereo Audio 2.0
3	4K2K60_444, HD Audio 7.1	13	1440x900, Stereo Audio 2.0
4	4K2K30_444, Stereo Audio 2.0	14	1360x768, Stereo Audio 2.0
5	4K2K30_444, Dolby/DTS 5.1	15	1280x1024, Stereo Audio 2.0
6	4K2K30_444, HD Audio 7.1	16	1024x768, Stereo Audio 2.0
7	1080P, Stereo Audio 2: 0	17	720p, Stereo Audio 2.0
8	1080P, Dolby/DTS 5.1	18	AUTO
9	1080P, HD Audio 7.1	19	User Defined 1
10	1920x1200, Stereo Audio 2.0	20	User Defined 1

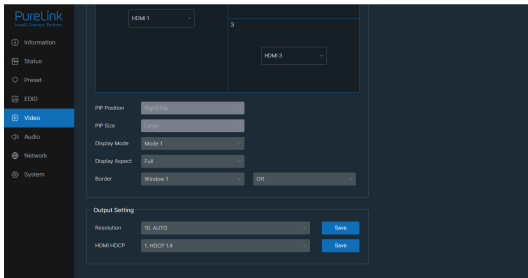
- ② **EDID download:** Click the drop-down list to select HDMI 1\HDMI 2\HDMI 3\HDMI 4\HDMI OUT for EDID download. Then click the Download button and generate a .bin file.
- ③ **User-defined EDID:** Click the Upload EDID button to upload the defined EDID. Please note that only two user-defined EDID and .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.

■ Video Page



You can do the following operations on the Video page.

- ① **Switch Mode:** Click to enable or disable the auto switching function. It is available in single-screen mode only.
- ② **Window Layout:** Click the drop-down list to select one of the multiview display mode: Single, PIP, PBP, Triple, Quad. Then set the display parameters below. You can see the result is displayed in the simulation screen. Click "Freeze" to freeze the current image if required.



PIP Position: Set the position of the window: right top, right bottom, left top, left bottom. It is available in PIP mode only.

PIP Size: Set the size of the window: small, middle and large. It is available in PIP mode only.

Display Mode: When the display mode is PBP, Triple or Quad, select the corresponding submode:

- PBP: Mode 1 (PBP1), Mode 2 (PBP2)
- Triple: Mode 1 (Triple1), Mode 2 (Triple2), Mode 3 (Triple3)
- Quad: Mode 1 (Quad1), Mode 2 (Quad2)

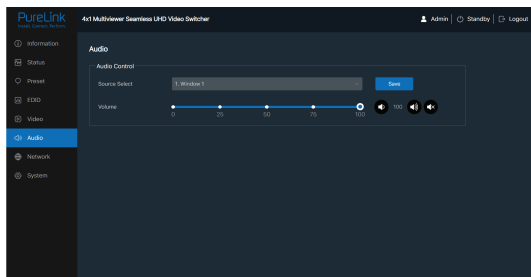
Display Aspect: When the display mode is PBP, Triple or Quad, set the aspect ratio: 16:9 or Full Screen.

Border: Set the border and border color of the window or not. It is available in PIP, PBP, Triple, Quad mode only.

③ **Output Setting:** Set the resolution and HDCP version for the output and then click "Save".

More detail of the resolution list refers to "**Specification**".

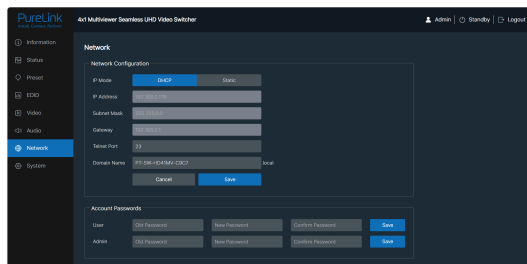
■ Audio Page



You can do the following operations on the Audio page.

- ① **Source Select:** Click the drop-down list to select the audio source: Window 1, HDMI 1, HDMI 2, HDMI 3, HDMI 4. Then click "Save".
- ② **Volume:** Used to adjust the volume, mute or unmute the audio.

■ Network Page



① Network:

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.

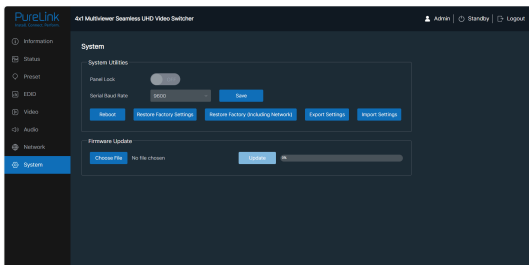
② Account Passwords:

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.

■ System Page



You can do the following operations on the System page.

① **System Utilities:**

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

Serial Baud Rate: Set and save the baud rate:

115200 / 57600 / 38400 / 19200 / 9600 / 4800.

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

② **Firmware Update:** Support update for MCU, Web and Video. Choose the update file first, and then click Update.

7. API Commands

The product also supports API command control. Connect the RS-232 port of the PT-SW-HD41MV to the appropriate cable and your control device. We recommend the terminal software known as docklight which can be downloaded from the link below. If you require further help, please contact one of our service representatives for more information: <https://docklight.de/download/Docklight.zip>

Open Terminal tool on your PC to send ASCII commands to control the product. The ASCII command list of the product is shown below.

(Note: RS-232 control must add CR/LF.)

ASCII Command				
RS-232 Baud rate: 9600, Data bit: 8, Stop bit: 1, Parity bit: none, TCP/IP Port: 4001 The end mark of command is "<CR><LF>"				
x,y,z, xxx are parameters				
Error Code describe: E00-command format incorrect, E01-parameter out of range, E02-get the error edid data, E04-functional mismatch				
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-HD41MV	
status	Get device current status	status	Please see "Status Feedback" sheet	
get version	Get firmware version	get version	BOOT: Vx.xx.xx MCU: Vx.xx.xx SCALER: xxxxxxxx-xx WEB: Vx.xx.xx	
power on	Power on the device	power on	Power: on	
power off	Power off the device	power off	Power: off	

Command	Function	Example	Feedback	Default
System Setting				
get power	Get current power state	get power	Power: on	
reboot	Reboot the device	reboot	Reboot...	
reset	Reset universal settings to default (Should type "Yes" to confirm, "No" to discard)	reset	Sure to reset universal settings to default? Type "Yes" after next prompt to confirm...	
reset all	Reset all settings to default (Should type "Yes" to confirm, "No" to discard)	reset all	Sure to reset all settings to default? Type "Yes" after next prompt to confirm...	
set front button x	Set front button locked on/off (x=0~1) x=0: Unlocked x=1: Locked	set front button 0	Button: unlocked	0
get front button	Get front button locked on/off status	get front button	Button: unlocked	
set ir x	Set IR on/off (x=0~1) x=0: Off x=1: On	set ir 1	IR: on	1
get ir	Get IR on/off status	get ir	IR: on	
get temp	Get device internal temperature	get temp	65°C	
get uptime	Get device running time (Day:Hour:Min:Sec)	get uptime	000:00:13:04	

Command	Function	Example	Feedback	Default
Input Setting				
set input x edid y	Set input (x=0~4) EDID (y=1~20) x=0: All Inputs x=1: HDMI Input 1 x=2: HDMI Input 2 x=3: HDMI Input 3 x=4: HDMI Input 4 y=1: 4K2K60_444, Stereo Audio 2.0 y=2: 4K2K60_444, Dolby/DTS 5.1 y=3: 4K2K60_444, HD Audio 7.1 y=4: 4K2K30_444, Stereo Audio 2.0 y=5: 4K2K30_444, Dolby/DTS 5.1 y=6: 4K2K30_444, HD Audio 7.1 y=7: 1080P, Stereo Audio 2: 0 y=8: 1080P, Dolby/DTS 5.1 y=9: 1080P, HD Audio 7.1 y=10: 1920x1200, Stereo Audio 2.0 y=11: 1680x1050, Stereo Audio 2.0 y=12: 1600x1200, Stereo Audio 2.0 y=13: 1440x900, Stereo Audio 2.0 y=14: 1360x768, Stereo Audio 2.0 y=15: 1280x1024, Stereo Audio 2.0 y=16: 1024x768, Stereo Audio 2.0 y=17: 720p, Stereo Audio 2.0 y=18: Auto y=19: User Defined 1 y=20: User Defined 2	set input 0 edid 1	HDMI input 1 EDID: 4K2K60_444, Stereo Audio 2.0 HDMI input 2 EDID: 4K2K60_444, Stereo Audio 2.0 HDMI input 3 EDID: 4K2K60_444, Stereo Audio 2.0 HDMI input 4 EDID: 4K2K60_444, Stereo Audio 2.0	1
get input x edid	Get input (x=0~4) EDID mode x=0: All Inputs x=1: HDMI Input 1 x=2: HDMI Input 2 x=3: HDMI Input 3 x=4: HDMI Input 4	get input 0 edid	HDMI input 1 EDID: 4K2K60_444, Stereo Audio 2.0 HDMI input 2 EDID: 4K2K60_444, Stereo Audio 2.0 HDMI input 3 EDID: 4K2K60_444, Stereo Audio 2.0 HDMI input 4 EDID: 4K2K60_444, Stereo Audio 2.0	

Command	Function	Example	Feedback	Default
Input Setting				
set user edid x <y>	Set user defined EDID (x=1~2) 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 successfully	
get edid data x	Get EDID data (x=0~4) x=0: All Inputs x=1: HDMI Input 1 x=2: HDMI Input 2 x=3: HDMI Input 3 x=4: HDMI Input 4	get edid data 0	HDMI 1 input EDID data <00 FF FF FF....> HDMI 2 input EDID data <00 FF FF FF....> HDMI 3 input EDID data <00 FF FF FF....> HDMI 4 input EDID data <00 FF FF FF....>	
Output Setting				
set output res x	Set output resolution (x=1~15) x=1: 4096x2160p60 x=2: 4096x2160p50 x=3: 3840x2160p60 x=4: 3840x2160p50 x=5: 3840x2160p30 x=6: 3840x2160p25 x=7: 1920x1200p60RB x=8: 1920x1080p60 x=9: 1920x1080p50 x=10: 1360x768p60 x=11: 1280x800p60 x=12: 1280x720p60 x=13: 1280x720p50 x=14: 1024x768p60 x=15: Auto	set output res 1	Output resolution: 4096x2160p60	15
get output res	Get output resolution	get output res	Output resolution: 4096x2160p60	

Command	Function	Example	Feedback	Default
Output Setting				
set output htcp x	Set output htcp mode (x=1~2) x=1: HDCP 1.4 x=2: HDCP 2.2	set output htcp 1	Output HDCP: HDCP 1.4	1
get output htcp	Get output htcp mode	get output htcp	Output HDCP: HDCP 1.4	
set output vka x	Set output video keep active pattern (x=1~2) x=1: Black Screen x=2: Blue Screen	set output vka 1	Output VKA pattern: black screen	1
get output vka	Get output video keep active pattern	get output vka	Output VKA pattern: black screen	
set output itc x	Set output video mode(x=1~2) x=1: Video Mode x=2: PC Mode	set output itc 1	Output ITC: video mode	1
get output itc	Get output video mode	get output itc	Output ITC: video mode	
set output freeze x	Set output freeze on/off (x=0~1) x=0: Off x=1: On	set output freeze 1	Output freeze: on	0
get output freeze	Get output freeze on/off status	get output freeze	Output freeze: on	
Video Setting				
set auto switch x	Enable/disable auto switch feature (x=0~1) x=0: Off x=1: On	set auto switch 0	Auto switch: off	0
get auto switch	Get auto switch feature	get auto switch	Auto switch: off	

Command	Function	Example	Feedback	Default
Video Setting				
set in source x	Route input source to output (1~4) x=1: HDMI Input 1 x=2: HDMI Input 2 x=3: HDMI Input 3 x=4: HDMI Input 4	set in source 1	Output: HDMI input 1	1
get in source	Get output of single screen mode selected input source	get in source	Output: HDMI input 1	
set multiview x	Set multi-viewer display mode (x=1~5) x=1: Single Screen x=2: PIP x=3: PBP x=4: Triple Screen x=5: Quad Screen	set multiview 1	Multiview: single screen	1
get multiview	Get multi-viewer display mode	get multiview	Multiview: single screen	
set window x in y	Select one input (y=1~4) for one display window (x=1~4) for the current Multiview mode x=1: Window 1 x=2: Window 2 x=3: Window 3 x=4: Window 4 y=1: HDMI Input 1 y=2: HDMI Input 2 y=3: HDMI Input 3 y=4: HDMI Input 4	set window 1 in 1	Window 1 select: HDMI input 1	
get window x in	Get windows selected input source (x=0~4) x=0: All x=1: Window 1 x=2: Window 2 x=3: Window 3 x=4: Window 4	get window 1 in	Window 1 select: HDMI input 1	

Command	Function	Example	Feedback	Default
Video Setting				
set window x border y	Set the border mode of window (x=0~4, y=0~9) x=0: All x=1: Window 1 x=2: Window 2 x=3: Window 3 x=4: Window 4 y=0: Off y=1: Black y=2: Red y=3: Green y=4: Blue y=5: Yellow y=6: Magenta y=7: Cyan y=8: White y=9: Gray	set window 1 border 0	Window 1 border: off	0
get window x border	Get the border mode of window (x=0~4) x=0: All x=1: Window 1 x=2: Window 2 x=3: Window 3 x=4: Window 4	get window 1 border	Window 1 border: off	
set window source osd x	Set window source osd switch (x=0~1) x=0: Off x=1: On	set window source osd 1	Window source osd: on	0
get window source osd	Get window source osd switch	get window source osd	Window source osd: on	
set PIP position x	Set PIP window position (x=1~4) x=1: Left Top x=2: Left Bottom x=3: Right Top x=4: Right Bottom	set PIP position 3	PIP position: right top	3

Command	Function	Example	Feedback	Default
Video Setting				
get PIP position	Get PIP window position	get window source osd	PIP position: right top	
set PIP size x	Set PIP window size (x=1~3) x=1: Small x=2: Middle x=3: Large	set PIP size 3	PIP size: large	3
get PIP size	Get PIP window size	get PIP size	PIP size: large	
set PBP mode x	Set PBP windows display mode (x=1~2) x=1: PBP Mode 1 x=2: PBP Mode 2	set PBP mode 1	PBP mode 1	1
get PBP mode	Get PBP windows display mode	get PBP mode	PBP mode 1	
set PBP aspect x	Set PBP windows display aspect ratio (x=1~2) x=1: Full Screen x=2: 16:9	set PBP aspect 1	PBP aspect: full screen	1
get PBP aspect	Get PBP windows display aspect ratio	get PBP aspect	PBP aspect: full screen	
set triple mode x	Set triple windows display mode (x=1~3) x=1: Triple Mode 1 x=2: Triple Mode 2 x=3: Triple Mode 3	set triple mode 1	Triple mode 1	1
get triple mode	Get triple windows display mode	get triple mode	Triple mode 1	
set triple aspect x	Set triple windows display aspect ratio (x=1~2) x=1: Full Screen x=2: 16:9	set triple aspect 1	Triple aspect: full screen	1

Command	Function	Example	Feedback	Default
Video Setting				
get triple aspect	Get triple windows display aspect ratio	get triple aspect	Triple aspect: full screen	
set quad mode x	Set quad windows display mode (x=1~2) x=1: Quad Mode 1 x=2: Quad Mode 2	set quad mode 1	Quad mode 1	1
get quad mode	Get quad windows display mode	get quad mode	Quad mode 1	
set quad aspect x	Set quad windows display aspect ratio (x=1~2) x=1: Full Screen x=2: 16:9	set quad aspect 1	Quad aspect: full screen	1
get quad aspect	Get quad windows display aspect ratio	get quad aspect	Quad aspect: full screen	
Audio Setting				
set output audio vol+	Increase output audio volume	set output audio vol+	Output audio volume: 30	
set output audio vol-	Decrease output audio volume	set output audio vol-	Output audio volume: 30	
set output audio vol x	Set output audio volume value (x=0~100)	set output audio vol 30	Output audio volume: 30	
get output audio vol	Get output audio volume	get output audio vol	Output audio volume: 30	
set output audio mute x	Set output audio mute on/off (x=0~1) x=0: Off x=1: On	set output audio mute 0	Output audio mute: off	0
get output audio mute	Get output audio mute on/off	get output audio mute	Output audio mute: off	

Command	Function	Example	Feedback	Default
Audio Setting				
set output audio x	Set output audio source (x=0~4) x=0: Follow Window 1 Selected Source x=1: HDMI 1 Input Audio x=2: HDMI 2 Input Audio x=3: HDMI 3 Input Audio x=4: HDMI 4 Input Audio	set output audio 0	Output audio: follow window 1 video source	0
get output audio	Get output audio source	get output audio	Output audio: follow window 1 video source	
RS-232 Setting				
set baud x	Set RS-232 baud rate to x bps (x=115200/57600/38400/19200/9600/4800)	set baud 115200	Baud rate: 115200	9600
get baud	Get RS-232 baud rate	get baud	Baud rate: 115200	
Preset Setting				
set preset save x	Save the current unit's settings to the specified preset (x=1~8) x=1~8: Preset 1 ~ Preset 8	set preset save 1	Preset 1: save	
set preset recall x	Recall a specified preset into unit (x=1~8) x=1~8: Preset 1 ~ Preset 8	set preset recall 1	Preset 1: recall	
set preset clear x	Clear a specified preset into unit (x=1~8) x=1~8: Preset 1 ~ Preset 8	set preset clear 1	Preset 1: clear	
set preset x name y	Set preset (x=1~8) name to y (y=[32 characters max]) x=1~8: Preset 1 ~ Preset 8	set preset 1 name Preset 1	preset 1 name: Preset 1	
get preset x name	Get preset (x=1~8) name x=1~8: Preset 1 ~ Preset 8	get preset 1 name	preset 1 name: Preset 1	

Command	Function	Example	Feedback	Default
Network Setting				
get ipconfig	Get the current IP configuration	get ipconfig	Ip mode: DHCP IP address: 192.168.0.178 Subnet mask: 255.255.0.0 Gateway: 192.168.0.1 TCP/IP port: 8000 Telnet port: 23 MAC address: 6C:DF:FB:00:C9:C7 (Static: 192.168.0.178 255.255.0.0 192.168.0.1)	default static IP is (192.168.0.178 255.255.0.0 192.168.0.1) is (192.168.0.178 255.255.0.0 192.168.0.1)
get mac addr	Get network MAC address	get mac addr	MAC address: 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	IP mode: static (Please use "set net reboot" command to apply new config!)	1
get ip mode	Get network IP mode	get ip mode	IP mode: static	
set ip addr xxx.xxx.xxx xxx	Set network IP address	set ip addr 192.168.1.100	IP address: 192.168.1.100 (Please use "set net reboot" command 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	IP address: 192.168.1.100	

Command	Function	Example	Feedback	Default
Network Setting				
set subnet xxx.xxx.xxx. xxx	Set network subnet mask	set subnet 255.255.0.0	Subnet mask: 255.255.0.0 (Please use "set net reboot" command to apply new config!) DHCP on, device can't config subnet mask, set DHCP off first.	
get subnet	Get network subnet mask	get subnet	Subnet mask: 255.255.0.0	
set gateway xxx.xxx.xxx. xxx	Set network gateway	set gateway 192.168.1.1	Gateway: 192.168.1.1 (Please use "set net reboot" command to apply new config!) DHCP on, device can't config gateway, set DHCP off first.	
get gateway	Get network gateway	get gateway	Gateway: 192.168.1.1	
set tcp/ip port x	Set network TCP/IP port (x=1-65535)	set tcp/ip port 8000	TCP/IP port: 8000	4001
get tcp/ip port	Get network TCP/ IP port	get tcp/ip port	TCP/IP port: 8000	
set telnet port x	Set network Telnet port (x=1-65535)	set telnet port 23	Telnet port: 23	23
get telnet port	Get network Telnet port	get telnet port	Telnet port: 23	
set net reboot	Reboot network modules	set net reboot	Network reboot...	

Command	Function	Example	Feedback	Default
Network Setting				
set net hostname x	Set network hostname to x (x=[32 characters max])	set net hostname 1234	Hostname: 1234 (Please use "set net reboot" command to apply new config!)	PT-SW-HD41MV- (Mac [4], Mac[5])
get net hostname	Get network hostname	get net hostname	Hostname: 1234	
Password Setting				
set admin password x	Set admin login password to x (x=[16 characters max])	set admin password admin	Admin password: admin	admin
get admin password	Get admin login password	get admin password	Admin password: admin	
set user password x	Set user login password to x (x=[16 characters max])	set user password user	User password: user	user
get user password	Get user login password	get user password	User password: user	

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

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Status Info PT-SW-HD41MV

BOOT: V1.01.01 MCU: V1.10.09 SCALER: 20250519-19 WEB: V2.00.09

Input	Cable	Resolution	ColorSpace	ColorDepth	HDCP	EDID
HDMI 1	Disconnect	None	None	None	Off	4K2K60_444,Stereo Audio 2.0
HDMI 2	Disconnect	None	None	None	Off	4K2K60_444,Stereo Audio 2.0
HDMI 3	Disconnect	None	None	None	Off	4K2K60_444,Stereo Audio 2.0
HDMI 4	Disconnect	None	None	None	Off	4K2K60_444,Stereo Audio 2.0
Output	Cable	Resolution	ITC	VKA	Freeze	HDCP
HDMI OUT	Disconnect	Auto	Video	Black	Off	HDCP 1.4

Current Multiview	Source Osd	Auto	Window	Source	Border
Single Screen	Off	Off	Window 1	HDMI 1	Off
			Window 2	None	Off
			Window 3	None	Off
			Window 4	None	Off

Multiview	Position	Size	Window	Source
PIP	RightBottom	FULL	Window 1	HDMI 1
			Window 2	HDMI 2
			Window 3	None
			Window 4	None

Multiview	Mode	Aspect	Window	Source
PBP	Mode 1	FULL	Window 1	HDMI 1
			Window 2	HDMI 2
			Window 3	None
			Window 4	None

Multiview	Mode	Aspect	Window	Source
Triple Screen	Mode 1	FULL	Window 1	HDMI 1
			Window 2	HDMI 2
			Window 3	HDMI 3
			Window 4	None

Multiview	Mode	Aspect	Window	Source
Quad Screen	Mode 1	FULL	Window 1	HDMI 1
			Window 2	HDMI 2
			Window 3	HDMI 3
			Window 4	HDMI 4

Audio Source	Volume	Mute
Window 1	100	Off

Power	Key	Ir	Baud	Temp(C)	Uptime(Day:Hour:Min:Sec)
On	Unlocked	On	9600	56	000:00:10:19

TCP/IP	Telnet	MAC	HostName
4001	23	6C:DF:FB:00:C9:C7	PT-SW-HD41MV-C9C7

DHCP	IP	SubnetMask	Geteway
On	192.168.000.178	255.255.000.000	192.168.000.001
(Static	192.168.000.178	255.255.000.000	192.168.000.001)

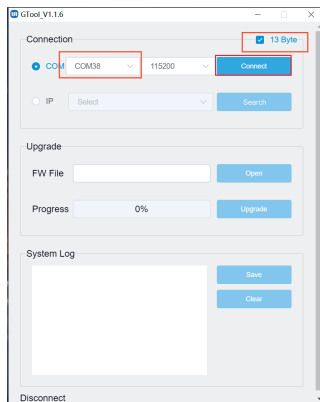
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9. Firmware Upgrade

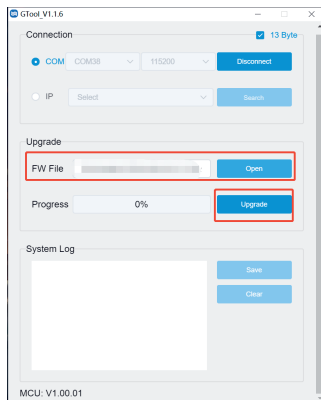
Please follow the steps as below to upgrade firmware by the RS-232 port. You can also upgrade the firmware on Network webpage.

1. Prepare the PC tool (.exe) and the latest upgrade file (.bin) on PC. Rename the upgrade file as "MCU_MAIN_PT-SW-HD41MV_Vxx.xx.xx.bin".
2. Connect the RS-232 port on the switcher to the PC.
3. Connect the power supply to the switcher and power on.

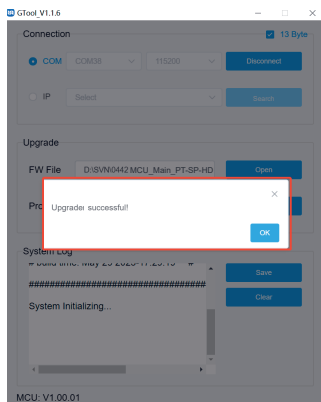
4. Click the channel on PC, check "13 Byte", and then click "Connect".



5. Click "Open" to select the upgrade file MCU_Main_PT-SW-HD41MV_Vxx.xx.xx.bin, then click "Upgrade".



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



10. 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