



## User Manual

### 8K HDMI 1x4 Splitter

**Model PT-SP-HD14-48G**

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-SP-HD14-48G complies with Directives 1907/2006/EU und 2011/65/EU.

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

PureLink GmbH hereby declares that this product PureTools PT-SP-HD14-48G 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/4251364741566\\_CE.pdf](http://www.purelink.de/ce/4251364741566_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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## 1. Product Introduction

### 1.1 Introduction

This 8K HDMI 1x4 Splitter can distribute one HDMI source signal to any four display devices. It supports video resolution up to 8K@60Hz 4:2:0 12bit. It includes several features for ease of integration, such as EDID management and cable equalization. Resolution downscaling is also supported. It is an easy-to-use solution for HDMI installation, and can transmit the audio signal to any sound system with 7.1/5.1/2.0CH.

This multi-functional product can be widely applied in scenarios of demonstration, video conference, multimedia teaching and other occasions.

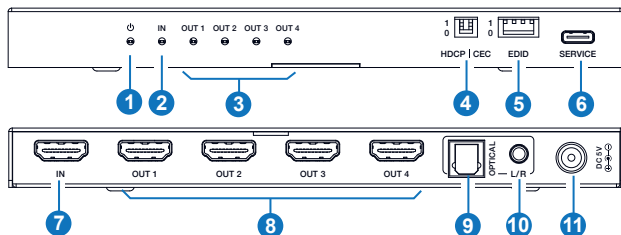
### 1.2 Features

- HDMI 2.1 and HDCP 2.3 compliant
- Supports 48Gbps FRL and 18Gbps TMDS video bandwidth
- Supports video resolution up to 8K@60Hz 4:2:0 12bit, 4K@120Hz 4:4:4 12bit
- VRR, ALLM, QMS, QFT, SBTM supported
- Supports HDR, HDR10, HDR10+, Dolby Vision, HLG pass through
- Supports HDMI audio formats: LPCM 7.1CH, Dolby TrueHD, Atmos, DTS-HD Master Audio
- Supports resolution downscaling and converting on each output port
- Advanced EDID management

## 1.3 Package List

- 1 × 8K HDMI 1x4 Splitter
- 1 × 5V/2A Multinational Power Supply
- 2 × Mounting Ear
- 4 × Machine Screw (KM3\*4)
- 1 × User Manual

## 2. Panel Description



No.	Name	Function Description
1	Power LED	The power LED lights in red when the device is powered on.
2	IN LED	When the HDMI IN port connects an active source device, the green LED will be on.
3	OUT LED (1-4)	When the HDMI OUT 1/4 port connects a display device and outputs signal, the corresponding green LED will be on.
4	HDCP DIP switch	Use this DIP switch to set HDCP. 1 - Pass-through mode: The output HDCP follows the source. 0 - Managed mode: If the source has HDCP, the output will be set to HDCP 1.4; if the source has no HDCP, the output will be set to no HDCP.

No.	Name	Function Description
4	CEC DIP switch	Use this DIP switch to enable or disable CEC. 1 - CEC disable: Prevent CEC communication between source and sink devices. 0 - CEC enable: Allow CEC communication between source and sink devices.
5	EDID DIP switch	Use the DIP switch to set EDID. [DIP]=1111: Copy OUT1 port sink EDID [DIP]=1110: FRL12G_8K_HDR,2.0CH [DIP]=1101: FRL12G_8K_HDR,5.1CH [DIP]=1100: FRL12G_8K_HDR,7.1CH [DIP]=1011: FRL10G_8K_HDR,2.0CH [DIP]=1010: FRL10G_8K_HDR,5.1CH [DIP]=1001: FRL10G_8K_HDR,7.1CH [DIP]=1000: 4K120(420)_HDR,2.0CH [DIP]=0111: 4K120(420)_HDR,5.1CH [DIP]=0110: 4K120(420)_HDR,7.1CH [DIP]=0101: 4K60(444)_HDR,2.0CH [DIP]=0100: 4K60(444)_HDR,5.1CH [DIP]=0011: 4K60(444)_HDR,7.1CH [DIP]=0010: 1080P120(444)_HDR,2.0CH [DIP]=0001: 1080P60(444), 2.0CH [DIP]=0000: Custom EDID Upload
6	SERVICE	Firmware update port.
7	IN port	HDMI signal input port, connecting to HDMI source device such as DVD or PS5 with an HDMI cable.
8	OUT port (1~4)	HDMI signal output port, connecting to HDMI display device such as TV or Monitor with an HDMI cable.
9	OPTICAL	Optical fiber audio output port, connecting to an audio output device such as an amplifier. (Max bandwidth: 24.57M)
10	L/R	Analog audio output port, connecting to an audio output device such as a speaker.
11	DC 5V	DC 5V/2A Power input port.

### 3. Specification

Technical	
HDMI Compliance	HDMI 2.1
HDCP Compliance	HDCP 2.3 / 1.4
Video Bandwidth	48Gbps
Video Resolution	Up to 8K@60Hz 4:2:0 12bit, 4K@120Hz 4:4:4 12bit, 8K@30Hz 4:4:4 12bit
Color Depth	8/10/12bit
Color Space	RGB, YCbCr_4:4:4, YCbCr_4:2:2, YCbCr_4:2:0
HDR	HDR, HDR10, HDR10+, Dolby Vision, HLG
Audio Format	<b>HDMI input/output:</b> LPCM, Dolby Digital/Plus/EX, Dolby True HD, Dolby Atmos, DTS, DTS-EX, DTS-96/24, DTS High Res, DTS-HD Master Audio, DSD <b>Auido de-embedding output:</b> Optical: LPCM/Dolby/DTS 5.1CH Analog: LPCM 2CH
ESD Protection	Human body model — ±8kV (air-gap discharge) & ±4kV (contact discharge)
Connection	
Input	1 × HDMI IN [Type A, 19-pin female]
Output	4 × HDMI OUT [Type A, 19-pin female] 1 × OPTICAL [S/PDIF] 1 × L/R [3.5mm Stereo Mini-jack]
Control	1 × SERVICE [USB Type C, Update port]

Mechanical				
Housing	Metal Enclosure			
Color	Black			
Dimensions	176mm(W) × 68mm(D) × 18mm(H)			
Weight	295g			
Power Supply	Input: AC 100-240V 50/60Hz, Output: DC 5V/2A (US/EU standards, CE/FCC/UL certified)			
Power Consumption	6W (Max)			
Operation Temperature	32 ~ 104°F / 0 ~ 40°C			
Storage Temperature	-4 ~ 140°F / -20 ~ 60°C			
Relative Humidity	20 ~ 90% RH (no condensation)			
Recommended HDMI Cable				
Video Resolution	8K	4K60	4K24	1080P
HDMI Cable Type	Ultra HDMI 2.1	HDMI 2.0	HDMI 1.4	HDMI 1.4
HDMI Cable Length (HDMI IN / OUT)	3m/10ft	8m/26ft	12m/39ft	15m/49ft
The use of "Premium High Speed HDMI" cable is highly recommended.				

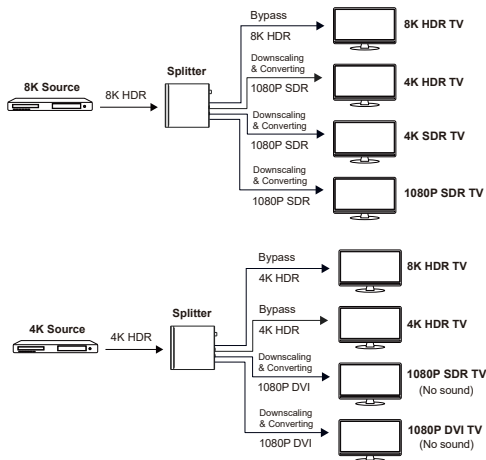
\* All the input/output resolutions in the following list have been fully tested in lab conditions. Other resolutions may also function without issues.

No.	Resolution	No.	Resolution
1	640x480p60Hz	2	800x600p60Hz
3	1024x768p60Hz	4	1280x1024p60Hz
5	1360x768p60Hz	6	1440x900p60Hz
7	1440x1050p60Hz	8	1600x1200p60Hz

No.	Resolution	No.	Resolution
9	720x480i59.94Hz (480i59)	10	720x480p59.94Hz (480p59)
11	720x576i50Hz (576i50)	12	720x576p50Hz (576p50)
13	1280x720p50Hz (720p50)	14	1280x720p59.94Hz (720p59)
15	1280x720p60Hz (720p60)	16	1920x1080i50Hz (1080i50)
17	1920x1080i59.94Hz (1080i59)	18	1920x1080i60Hz (1080i60)
19	1920x1080p23.98Hz (1080p23)	20	1920x1080p24Hz (1080p24)
21	1920x1080p25Hz (1080p25)	22	1920x1080p29.97Hz (1080p29)
23	1920x1080p30Hz (1080p30)	24	1920x1080p50Hz (1080p50)
25	1920x1080p59.94Hz (1080p59)	26	1920x1080p60Hz (1080p60)
27	3840x2160p23.98Hz (2160p23)	28	3840x2160p24Hz (2160p24)
29	3840x2160p25Hz (2160p25)	30	3840x2160p29.97Hz (2160p29)
31	3840x2160p30Hz (2160p30)	32	3840x2160p50Hz (2160p50)
33	3840x2160p59.94Hz (2160p59)	34	3840x2160p60Hz (2160p60)
35	3840x2160p100Hz (2160p100)	36	3840x2160p120Hz (2160p120)
37	4096x2160p23.98Hz	38	4096x2160p24Hz
39	4096x2160p25Hz	40	4096x2160p29.97Hz
41	4096x2160p30Hz	42	4096x2160p50Hz
43	4096x2160p59.94Hz	44	4096x2160p60Hz
45	4096x2160p100Hz	46	4096x2160p120Hz
47	5120x2160p50Hz	48	5120x2160p60Hz
49	7680x4320p23.98Hz	50	7680x4320p24Hz
51	7680x4320p25Hz	52	7680x4320p29.97Hz
53	7680x4320p30Hz	54	7680x4320p50Hz
55	7680x4320p60Hz (4:2:0)		

## 4. Auto Downscaling & Auto Converting

This 8K HDMI splitter supports auto downscaling and auto converting on all outputs. Before downscaling it will compare all the EDID of the connected display devices and select the minimum resolution to downscale and output. For example:



**Note:**

1. If the source resolution is downscaled and converted to **1080P DVI** according to the EDID of display devices, it will be output without sound on TV.
2. Frame rate conversion and color rate conversion are not supported.

Downscaling will not work in the following conditions:

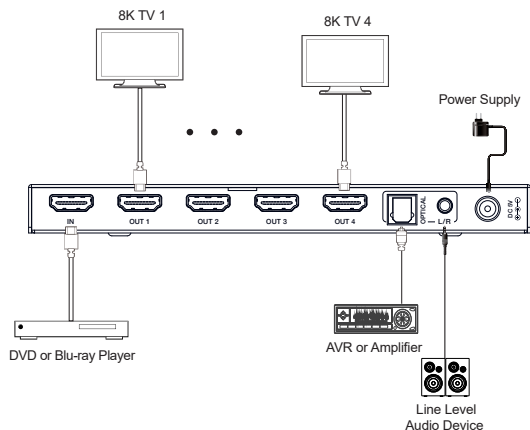
1. The input source is 8K DSC format.
2. The resolution of input source is not supported by the device.

## 5. 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:

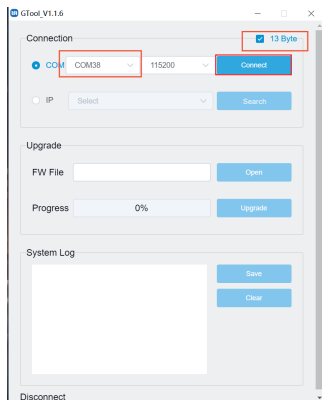


## 6. Firmware Upgrade

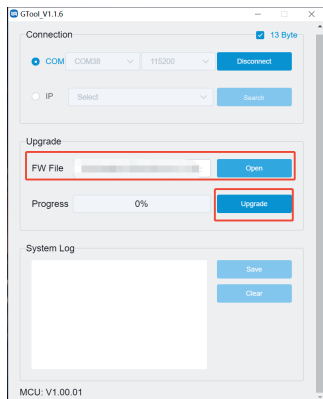
Please follow the steps as below to upgrade firmware by the Service port on the front panel:

1. Prepare the PC tool (.exe) and the latest upgrade file (.bin) on PC. Rename the upgrade file as "MCU\_MAIN\_PT-SP-HD14-48G\_Vxx.xx.xx.bin".
2. Connect the Service port on the splitter to the PC with USB cable.
3. Connect 5V power supply and power on the splitter.

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

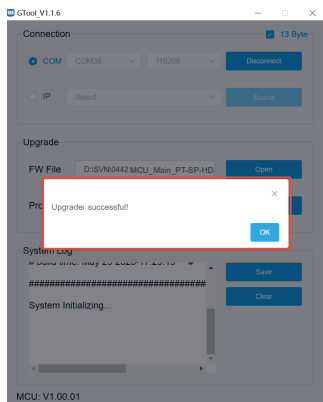


5. Click "Open" to select the upgrade file MCU\_Main\_PT-SP-HD14-48G\_Vxx.xx.xx.bin, then click "Upgrade".



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.

7. Remove the USB cable after firmware upgrade.



## 7. 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:

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