User Manual

ALTIMIUM

SP4EH2-4K
HDMI 2.0 1x4 Splitter with 4K to 1080p Down-scaling

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Statement

Thanks for purchasing this product, please read this user manual carefully before using this product. The functions described in this version are updated till November, 2019. In the constant effort to improve our product, we reserve the right to make functions or parameters changes without notice or obligation.

Safety Precaution

- Do not dismantle the housing or modify the module to avoid electrical shock or burn.
- Using supplies not meeting the products' specifications may cause damage, deterioration or malfunction.
- Do not expose the unit to rain, moisture or install this product near water.
- Install the device in a place with fine ventilation.
- 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 when not used for a long period of time.
- Refer all servicing to qualified service personnel.

After-sales Service

We provide limited warranty for the product within three years.

Packing List

- 1x HDMI 2.0 1x4 Splitter
- 4x Plastic Cushions
- 1x Power Adapter (5V DC 1A)
- 1x User Manual

Note: Please contact your distributor immediately if any damage or defect in the components is found.
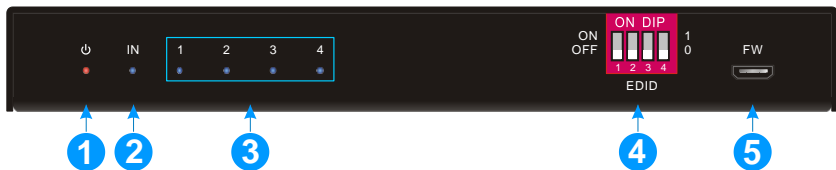
Product Introduction

Thanks for choosing the HDMI 2.0 1x4 Splitter, which can distribute one HDMI input to four outputs. The splitter supports HDMI video resolution up to 4K@60Hz 4:4:4, 1080p 3D, and multichannel audio formats. Besides passing EDID information from the display, there are multiple built-in EDID settings can be selected by the 4-pin DIP switch on the front panel. Moreover, the splitter supports convenient firmware upgrade through Micro-USB port.

Features

- Supports HDMI 2.0 and the video resolution up to 4K@60Hz 4:4:4.
- HDMI input supports HDCP 2.3 and the outputs support HDCP Active or HDCP Passive mode.
- Supports video resolution down-scaling, the 4K input can be automatically degraded to 1080p output for compatibility with 1080p display.
- 18Gbps high bandwidth.
- Advanced EDID management: multiple built-in EDID settings can be selected.
- Built-in equalizer for signal enhancement to avoid signal attenuation in transmission.
- Supports CEC pass-through.
- Provides LEDs to indicate the current operating status.
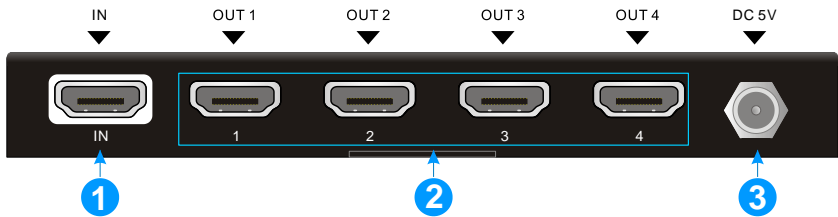- Firmware upgrade by Micro-USB port.

Panel Description

Front Panel

① **POWER LED:** The LED illuminates red when power is applied.

② **INPUT LED:** The LED illuminates blue when there is HDMI input.

③ **OUTPUT LEDs:** The LED illuminates blue when there is HDMI output on the corresponding channel.

④ **EDID:** 4-pin DIP switch for EDID setting and HDCP mode selection. Please refer to the *__EDID Management__* for more details.

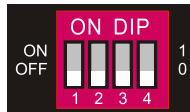⑤ **FW:** Micro-USB port for firmware upgrade.

Rear Panel

① **INPUT:** Type-A female HDMI input port to connect a HDMI source.

② **OUTPUTS:** Four type-A female HDMI output ports to connect HDMI displays.

③ **DC 5V:** DC barrel port to connect an AC power adapter.
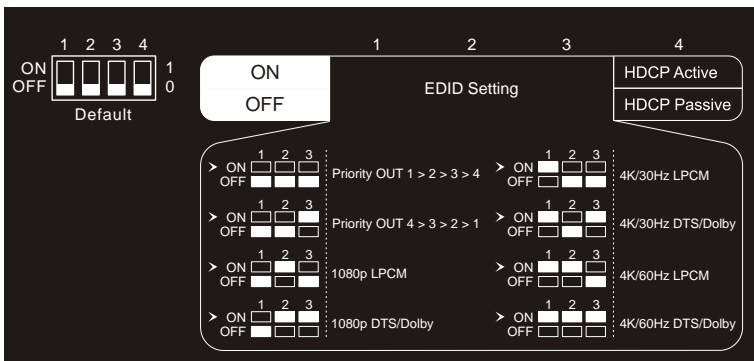
DIP Switch Operation

EDID Management

The Extended Display Identification Data (EDID) is used by the source device to match its video resolution with the connected display. By default, the source device obtains its EDID from the first connected display. Meanwhile, since the displays with different capabilities are connected to the splitter, the DIP switch on the front panel can be used to set the EDID to a fixed value to ensure the compatibility in video resolution.

The switch represents "**0**" when in the lower (**OFF**) position, and it represents "**1**" while putting the switch in the upper (**ON**) position.

Switch 1~3 are used for EDID setting. The DIP switch status and its corresponding setting are shown at the back of the product.

Switch Status	Video Resolution	Audio Format
000	Obtains EDID from the first detected display starting at HDMI output 1>2>3>4.	
001	Obtains EDID from the first detected display starting at HDMI output 4>3>2>1.	
010	1080p	LPCM
011	1080p	DTS/Dolby
100	3840x2160@30Hz HDR	LPCM
101	3840x2160@30Hz HDR	DTS/Dolby
110	3840x2160@60Hz HDR	LPCM
111	3840x2160@60Hz HDR	DTS/Dolby

HDCP Mode

Put switch 4 on "**ON**" position to select **HDCP Active** mode, or to "**OFF**" for **HDCP Passive** mode.

Switch Status	Mode	HDCP
OFF (0)	Passive (Default)	Automatically follows the display's HDCP version.
ON (1)	Active	Automatically removes the HDCP content of HDMI output for broader video solution.

Video Resolution Down-scaling

The product supports video resolution down-scaling, the 4K input can be automatically degraded to 1080p output for compatibility with 1080p display, shown in the below chart.

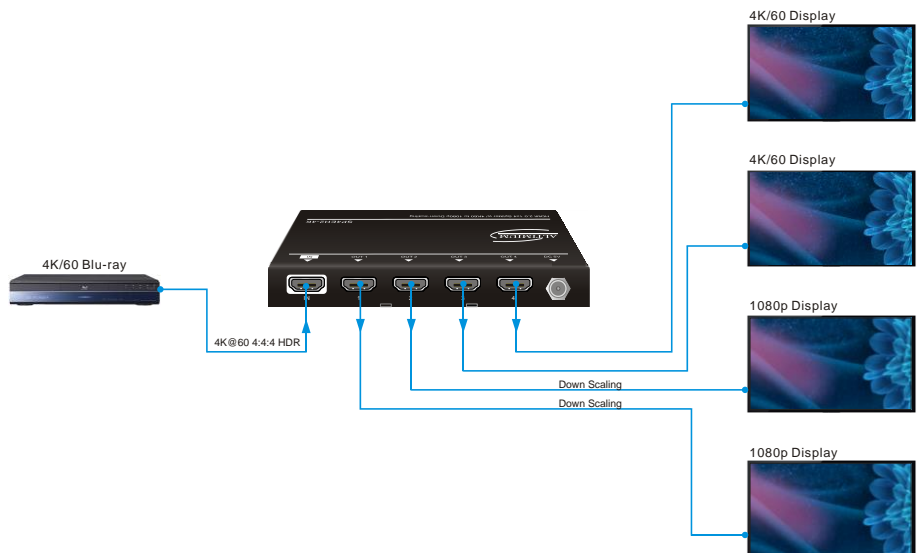|	Input			Output	
#	Resolution	Refresh	Color Space	Downscale	1080p Specs
1	3840x2160	60	4:4:4	Support	1080p@60Hz 4:4:4
2	3840x2160	30	4:4:4	Support	1080p@30Hz 4:4:4
3	3840x2160	24	4:4:4	Support	1080p@24Hz 4:4:4
4	3840x2160	60	4:2:0	Support	1080p@60Hz 4:4:4
5	3840x2160	30	4:2:0	Support	1080p@30Hz 4:4:4
6	3840x2160	24	4:2:0	Support	1080p@24Hz 4:4:4
7	3840x2160	60	4:2:2	Not Support	N/A
8	3840x2160	30	4:2:2	Not Support	N/A
9	3840x2160	24	4:2:2	Not Support	N/A

Firmware Upgrade

Please follow the below steps to upgrade firmware by the Micro-USB port:

1) Connect the splitter to the PC with USB cable.

2) Power on the splitter, and then the PC will automatically detect a U-disk named of "BOOTDISK".

3) Double-click to open the U-disk, a file named of "READY.TXT" will be showed.

4) Copy the latest upgrade file (.bin) to the "BOOTDISK" U-disk directly.

5) If the filename "READY.TXT" automatically turns to "SUCCESS.TXT", the firmware was upgraded successfully. If the firmware upgrade failed, please check the file (.bin) and then follow the above procedure to operate again.

6) Remove the USB cable after firmware upgrade.

System Connection

The following diagram illustrates the typical input and output connection of the splitter:

Technical Specification

Video Input	
Input	(1) HDMI
Input Connector	(1) Type-A female HDMI
HDMI Input Resolution	Up to 4Kx2K@60Hz 4:4:4 8bit
HDMI Standard	2.0
HDCP Version	2.3, 1.4 compliant
CEC	Supported
Video Output	
Output	(4) HDMI
Output Connector	(4) Type-A female HDMI
HDMI Output Resolution	Up to 4Kx2K@60Hz 4:4:4 8bit
HDMI Standard	2.0
HDCP Version	2.3, 1.4 compliant
CEC	Supported
Control	
Control Part	(1) EDID 4-pin DIP switch, (1) Micro-USB port
General	
Bandwidth	18Gbps
HDMI 2.0 Cable Length	4K@60Hz 4:4:4 ≤ 5m, 4K@60Hz 4:2:0 ≤ 15m, 1080p ≤ 20m
Operation Temperature	-10℃ ~ +55℃
Storage Temperature	-25℃ ~ +70℃
Relative Humility	10%-90%
Power Supply	Input:100V~240V AC, Output: 5V DC 1A
Power Consumption	2.5W (Max)
Dimension (W*H*D)	142.0mm x 17.6mm x 70.4mm
Net Weight	260g

Note: *Please adopt high-qualified HDMI cable fully compliant with HDMI 2.0 for reliable transmission and connection.*

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