

## User Manual

# **SY-HS14E-18G**

### **1x4 HDMI 2.0 (18Gbps) Splitter With 4K → 1080p Scaling**

Can use mix of 4K and 1080P displays  
Active HDMI cables and AOC supported

This HDMI 2.0 1x4 splitter supports all HDMI signals up to 18Gbps (4K60 4:4:4) with HDR, EDID and CEC pass-through. It can split the HDMI input signal to a maximum of four separate display devices.

Each output can automatically scale down a 4K input video to 1080p to ensure compatibility with 1080p display. Hence accommodating a mix of 4K and 1080p displays.

This HDMI splitter will be useful for any situation where the HDMI signal needs to be displayed at multiple locations and can handle all HDMI resolutions, including the growing 18G sector.

## Features

- 18G 4K60 4:4:4 maximum HDMI input resolution
- Automatically **down scales** 4K HDMI to 1080p per output as required
- Each HDMI output connector can power Active HDMI cables (Max. 500mA)
- EDID management
- HDCP management - Supports HDCP 1.4, 2.2, 2.3 and Cascade Mode
- Supports HDR
- Provides CEC pass-through

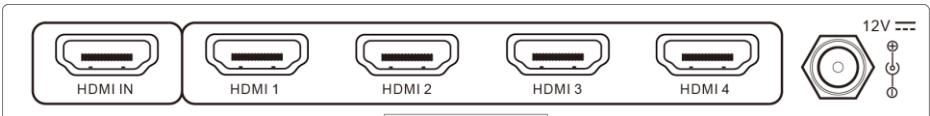
## Panel Descriptions

### Front



Name	Description
<b>Power LED</b>	RED when powered
<b>IN</b>	Blue when HDMI input signal present
<b>1 ~ 4</b>	Blue when HDMI present on the respective output
<b>EDID</b>	EDID / HDCP Options
<b>SERVICE</b>	Micro-USB for service use only

### Rear



Name	Description
<b>HDMI IN</b>	HDMI Input connector from HDMI source
<b>HDMI 1 ~ HDMI 4</b>	HDMI Output connectors to HDMI display devices
<b>12V DC</b>	12V DC PSU Input connector

## System Connection

The SY-HD14E-18G can be located anywhere in the HDMI cabling, the following diagram is only an installation example. The larger screens represent 4K displays and the smaller screens represent 1080p displays.

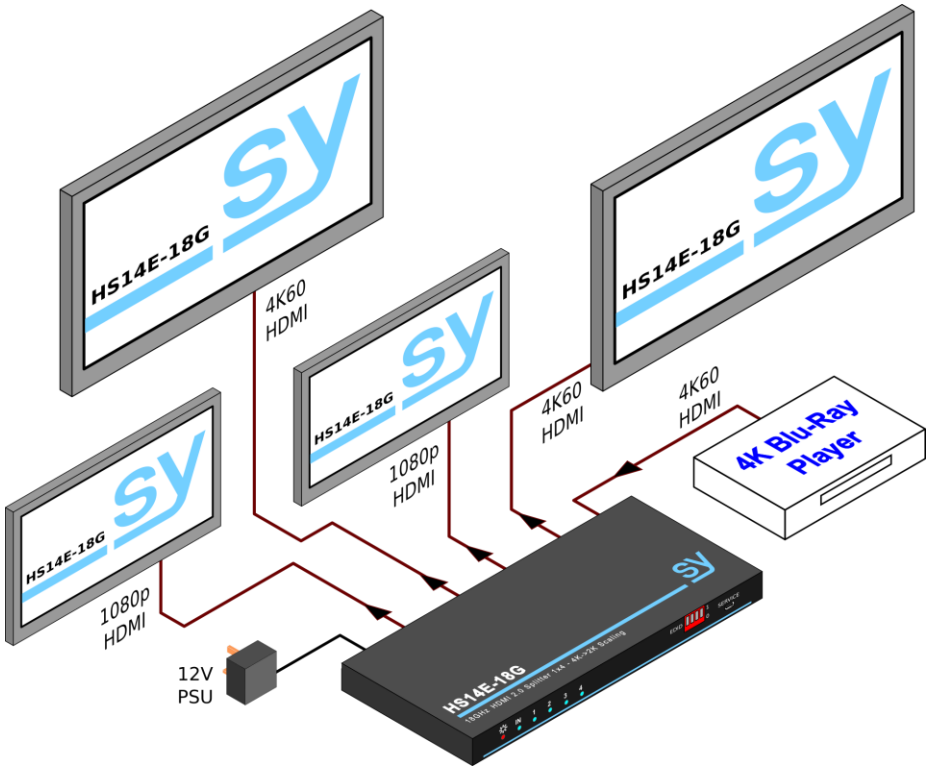


Figure 1 - SY-HS14E-18G Connection

### Connecting to the SY-HS14E-18G

1. Connect the HDMI source device to HDMI IN.
2. Connect any required HDMI display devices to HDMI 1 to HDMI 4 connectors.
3. Connect the 12V DC PSU to the 12V input connector.
4. If needed, set the EDID switches to the desired setting.

### Red Power LED

The red front panel power LED will be lit when the splitter is powered.

### Blue Signal LEDs

The five blue signal LEDs indicate the presence of the HDMI signal at the respective input and outputs connectors.

## Switch Settings

The four-way DIP switch provides EDID options on switches 1 to 3 and HDCP options on switch 4, as described in the following sections.

### EDID Settings

Switch positions 1 to 3 provide EDID options in the following table. A 0 indicates that the switch is in its down position and 1 indicates that the switch is in the up position.

SW1	SW2	SW3	Video Resolution	Audio Format
0	0	0	EDID Bypass – with priority given to the connected output with the highest number	
0	0	1	1080p	LPCM 2.0ch
0	1	0	1080p	LPCM 7.1ch
0	1	1	1080p	DTS/Dolby 5.1ch
1	0	0	3840x2160 30Hz HDR	LPCM 7.1ch
1	0	1	3840x2160 30Hz HDR	DTS/Dolby 5.1ch
1	1	0	3840x2160 60Hz HDR	LPCM 7.1ch
1	1	1	3840x2160 60Hz HDR	DTS/Dolby 5.1ch

### HDCP Setting

Switch position 4 provides management of the HDCP setting:

SW4	HDCP Mode
0	HDCP Bypass – Output HDCP same as input HDCP
1	Cascade Mode – Used when there are several devices in a chain. (Off)

## Output Scaling

When a 4K HDMI signal is provided at the input, but the display can only display 1080p, that output will be automatically downscaled to 1080p to ensure that an image will be displayed. The following table gives the input signal requirements to ensure that the scaling will be successful. Since the scaling is per output, any display that does support the 4K HDMI input signal will always display at the same 4K resolution supplied at the HDMI input connector of the SY-HS14E-18G.

Input Resolution	Can Downscale	Output Resolution
3840x2160 60Hz 4:4:4	Yes	1080p 60Hz 4:4:4
3840x2160 30Hz 4:4:4	Yes	1080p 30Hz 4:4:4
3840x2160 24Hz 4:4:4	Yes	1080p 24Hz 4:4:4
3840x2160 60Hz 4:2:0	Yes	1080p 60Hz 4:4:4
3840x2160 30Hz 4:2:0	Yes	1080p 30Hz 4:4:4
3840x2160 24Hz 4:2:0	Yes	1080p 24Hz 4:4:4
3840x2160 60Hz 4:2:2	Not Supported	N/A
3840x2160 30Hz 4:2:2	Not Supported	N/A
3840x2160 24Hz 4:2:2	Not Supported	N/A

## Powering Active HDMI Cables

Each HDMI output is capable of powering active HDMI cables, including Active Optical Cables (AOC).

Up to 500mA of current can be supplied by the 5V pin (pin 18) per output port. This ensures stable and reliable use of Active HDMI cables without any need for external PSU. Care should be taken to ensure that the total current for all outputs as a whole does not exceed 1A.

## Troubleshooting

Use of high quality High-Speed HDMI cables are recommended. Maximum HDMI cable length depends on cable quality, the source and the sink capabilities.

The following table lists some of the basic checks that should be performed if no video is displayed:

Problem	Possible cause	Solutions to try first
<b>Power LED off</b>	PSU problem	<ul style="list-style-type: none"><li>• Check that PSU output voltage is correct, and the current rating is sufficient to power the system.</li><li>• Check that connection polarity is correct, this product uses a centre positive connection.</li></ul>
<b>IN LED off</b>	No HDMI Input	<ul style="list-style-type: none"><li>• Check that the HDMI source is outputting an image.</li><li>• Check that the HDMI cables are properly connected.</li></ul>
<b>Output LED off</b>	No HDMI output	<ul style="list-style-type: none"><li>• Check that the HDMI display is on.</li><li>• Check that correct input is selected on the HDMI sink device (display).</li><li>• Check that the HDMI cables are properly connected.</li><li>• Any unused outputs will always be indicated by its LED being in the OFF state.</li></ul>

## Packing List

- 1x SY-HS14E-18G (1x4 Splitter)
- 2x Side brackets
- 1x PSU (12V 1A)
- 4x Rubber pads
- 1x User Manual

# Specifications

## General

<b>HDMI Video Support</b>	VESA and SMPTE 480p to 2160p with 3D and HDR. All HDMI resolutions to 3840x2160 @60Hz 4:4:4 (Max. of 18 Gbps) All PC resolutions to 1920x1200 @60Hz
<b>HDMI Version</b>	2.0 – All HDMI versions to 2.0
<b>HDCP Version</b>	1.4, 2.2 and 2.3
<b>CEC</b>	Supported
<b>Audio format</b>	LPCM 2ch or 7.1ch, Dolby Digital 2 or 5.1ch, DTS 2 or 5.1ch
<b>Input Connectors</b>	1x HDMI Type A 1x 2.1mm barrel connector 1x Micro USB
<b>Output Connectors</b>	4x HDMI Type A
<b>Power Supply</b>	12V DC @ 1A max.
<b>Power Consumption</b>	2.5W max. (SY-HS14E-18G only)
<b>Switches</b>	4-way DIP switch for EDID and HDCP control
<b>Max. HDMI Cable Length</b> (High quality High-Speed HDMI cable)	4K60 4:4:4 ≤ 5m 4K60 4:2:0 ≤ 12m 1080p ≤ 18m

## Environmental

<b>Operating Temperature</b>	-10 to +55°C (+14 to +131°F)
<b>Operating Humidity</b>	10 to 90 % RH (non-condensing)

## Physical

<b>Dimensions (WxHxD)</b>	142 x 17.5 x 70.5 mm
<b>Case Material</b>	Steel chassis
<b>Weight</b>	260g

## Part Number

<b>SY-HS14E-18G</b>	1x4 HDMI 2.0 Splitter with 4K → 1080p Scaling
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## Safety Instructions

To ensure reliable operation of this product as well as protecting the safety of any person using or handling this device while powered, please observe the following instructions.

1. Use the power supply provided. If an alternate supply is required, check the voltage, polarity and that it has sufficient power to supply the device it is connected to.
2. Do not operate this product outside the specified temperature and humidity range given in the above specifications.
3. Ensure there is adequate ventilation to allow this product to operate efficiently.
4. Repair of this equipment should only be carried out by qualified professionals as this product contains sensitive devices that may be damaged by any mistreatment.
5. Only use this product in a dry environment. Do not allow any liquids or harmful chemicals to come into contact with this product.

## After Sales Service

1. Should you experience any problems while using this product, firstly refer to the Troubleshooting section in this manual before contacting SY Technical Support.
2. When calling SY Technical Support, the following information should be provided:
  - Product name and model number
  - Product serial number
  - Details of the fault and any conditions under which the fault occurs.
3. This product has a two year standard warranty, beginning from the date of purchase as stated on the sales invoice. For full details please refer to our Terms and Conditions.
4. SY Product warranty is automatically void under any of the following conditions:
  - The product is already outside of its warranty period
  - Damage to the product due to incorrect usage or storage
  - Damage caused by unauthorised repairs
  - Damage caused by mistreatment of the product
5. Please direct any questions or problems you may have to your local dealer before contacting SY Electronics.

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