

# DS40

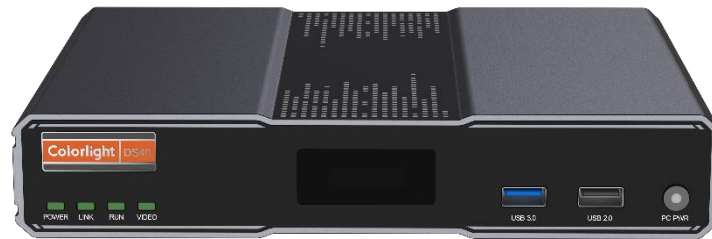
4K Distributed KVM Controller

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Specification



# 1 Overview



DS40 is a 4K distributed KVM controller that boasts networked and server-less characteristics. As an IP KVM device, it integrates functions like video splicing, KVM operator collaboration, and video matrix. In addition to 4K@60Hz input and output, it enables seamless switching, windowing, scaling, and cross-screen display on LED/LCD video walls.

Equipped with multiple control ports, DS40 supports control of IR devices and relays. It also offers management for IoT devices such as air conditioners via the RS232 or RS485 protocol. DS40 offers easy deployment, visualized control, information sharing, collaborative working, and centralized management, making it an ideal solution for scenarios like command centers, data centers and smart campuses.

## 2 Features

### Input

- Input ports:
  - ✧ 1\*HDMI 2.0
  - ✧ 3\*USB 3.0, 1\*USB 2.0
  - ✧ 1\*RJ45(GbE), 1\*FIBER (Gigabit)
  - ✧ 1\*3.5mm audio input
- Maximum input resolution: 4096\*2160@60Hz
- 8-bit/10-bit video signal input
- Supports HDCP 2.2/1.4 (High-bandwidth digital content protection technology)
- Supports frame rates from 24Hz to 60Hz

### Output

- 1\*RJ45(GbE), 1\*FIBER (Gigabit)
- 1\*3.5mm audio output, 1\*3.5mm audio loop-out
- 1\*HDMI 2.0 output, 1\*HDMI 2.0 loop-out
- Supports frame rates from 24Hz to 60Hz

### Video Processing

- Supports 8-bit/10-bit signal processing
- Supports video signal cropping, switching, and broadcast-grade scaling
- The latency for KVM video output to the host is approximately 30ms.

- Supports simultaneous decoding and display of multi-channel videos; up to 16 layers per screen; image size and position adjustable

### Audio

- Supports HDMI audio input and output
- 3.5mm audio input/output/loop-out
- Maximum sample rate and bit depth: 192kHz/24-bit
- 2-channel stereo

### Working Mode

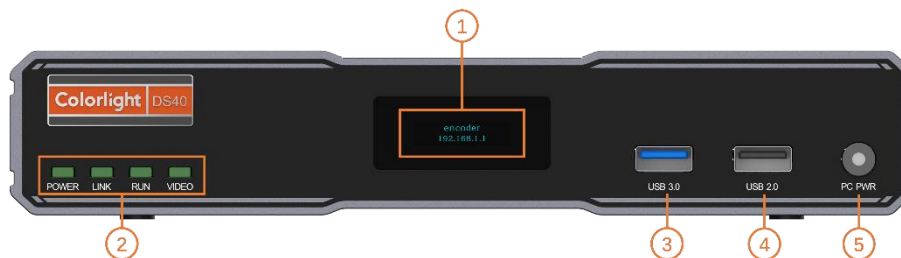
- Encoder: Encoding mode
- Decoder: KVM mode, Screen mode, Matrix mode

### Device Control

- Supports protocols such as RS232/RS485 (serial communications) and IR/Relay
- TCP/IP via LAN port

## 3 Appearance

### Front Panel



No.	Name	Description
1	LCD screen	Displays the device node name and IP address.
2	Indicators	<ul style="list-style-type: none"> <li>• POWER: Displays the power status.                             <ul style="list-style-type: none"> <li>- ON: The power supply is normal.</li> <li>- OFF: The power supply is abnormal.</li> </ul> </li> <li>• RUN: Displays the device running status.                             <ul style="list-style-type: none"> <li>- ON: The device is functioning normally.</li> <li>- OFF: The device is functioning abnormally.</li> </ul> </li> <li>• LINK: Displays the network connection status.                             <ul style="list-style-type: none"> <li>- ON: The network connection is normal.</li> <li>- OFF: The network connection is abnormal.</li> </ul> </li> <li>• VIDEO: Displays the video transmission and processing status.                             <ul style="list-style-type: none"> <li>- ON: The video stream processing is normal.</li> </ul> </li> </ul>

		- OFF: The video stream processing is abnormal or there is no video stream.
3	USB 3.0	<ul style="list-style-type: none"> <li>For <b>Decoder-KVM</b>: Connects to the keyboard and mouse for transmitting control signals or to a USB drive for data transfer.</li> <li>Voltage/Current: 5V/0.9A.</li> <li>Transfer speed: 2.4Gbps.</li> </ul>
4	USB 2.0	<ul style="list-style-type: none"> <li>For <b>Decoder-KVM</b>: Connects to the keyboard and mouse for transmitting control signals or to a USB drive for data transfer.</li> <li>Voltage/Current: 5V/0.5A.</li> <li>Transfer speed: 240Mbps.</li> </ul>
5	PC PWR	Power button, used to power the PC connected via PC CTRL port on/off.

Rear Panel



No.	Name	Description
1	PC CTRL	4-pin phoenix connector: PC control port, connects to PC for transmitting power on/off control signals.
2	RELAY/IR	<ul style="list-style-type: none"> <li>4-pin phoenix connector: Connects to a control device.</li> <li>- RELAY: Connects to a relay for transmitting level control signals.</li> <li>- IR: Connects to an IR device for transmitting IR control signals.</li> </ul>
3	RS485/RS232	5-pin phoenix connector: Serial port, connects to a control device for transmitting control signals.
4	VIDEO	<ul style="list-style-type: none"> <li>HDMI 2.0:                             <ul style="list-style-type: none"> <li>- HDMI IN: 19-pin female connector, for video signal input.</li> <li>- HDMI LOOP: 19-pin female connector, for video signal loop-out.</li> <li>- HDMI OUT: 19-pin female connector, for video stream output.</li> </ul> </li> <li>Supports custom resolution:                             <ul style="list-style-type: none"> <li>- Maximum input resolution: 4096*2160@60Hz.</li> <li>- Maximum width: 8192 pixels (8192*1024@60Hz).</li> <li>- Maximum height: 8192 pixels (1024*8192@60Hz).</li> </ul> </li> <li>Supports HDCP 2.2/1.4 compliant.</li> <li>Supports audio input.</li> </ul>

5	AUDIO	<ul style="list-style-type: none"> <li>• 3.5mm standard audio I/O port:                             <ul style="list-style-type: none"> <li>- IN: For audio signal input.</li> <li>- LOOP: For audio signal loop-out.</li> <li>- OUT: For audio stream output.</li> </ul> </li> </ul>
6	USB	<ul style="list-style-type: none"> <li>• USB 3.0 port (left):                             <ul style="list-style-type: none"> <li>- For <b>Encoder</b>: Connects to the host for transmitting control signals.</li> <li>- For <b>Decoder-KVM</b>: Connects to the keyboard and mouse for transmitting control signals.</li> </ul> </li> <li>• USB 3.0 port (right):                             <ul style="list-style-type: none"> <li>- For <b>Decoder-KVM</b>: Connects to the keyboard and mouse for transmitting control signals or to a USB drive for data transfer.</li> </ul> </li> <li>• Voltage/Current: 5V/0.9A.</li> <li>• Transfer speed: 2.4Gbps.</li> </ul>
7	ETH	<ul style="list-style-type: none"> <li>• LAN(POE):                             <ul style="list-style-type: none"> <li>- 1G LAN port (RJ45 connector), 10/100/1000Mbps adaptive.</li> <li>- Supports POE power supply (12V/2A).</li> </ul> </li> <li>• FIBER:                             <ul style="list-style-type: none"> <li>- 1G fiber port, 1G/2.5G/5G/10G optical modules supported.</li> <li>- Supports Fiber-LAN backup: It can be used as a backup port for LAN(POE) when used together.</li> </ul> </li> </ul>
8	12V/2A	Connects to an external 12V/2A DC power supply.

## 4 Signal Specifications

HDMI 2.0					
Input	Color Space	Sampling	Color Depth	Maximum Resolution	Frame Rate
4K	YCbCr	4:2:0	8-bit/10-bit	4096*2160@60Hz	24, 25, 30, 50, 59.94, 60
	YCbCr	4:2:2	8-bit/10-bit	4096*2160@60Hz	
	YCbCr/RGB	4:4:4	8-bit	4096*2160@60Hz	
	YCbCr/RGB	4:4:4	10-bit	4096*2160@30Hz	
2k	YCbCr	4:2:0	8-bit/10-bit	1920*1200@60Hz	24, 25, 30, 50, 59.94, 60
	YCbCr	4:2:2	8-bit/10-bit	1920*1200@60Hz	
	YCbCr/RGB	4:4:4	8-bit/10-bit	1920*1200@60Hz	
Note: Only a part of supported resolutions are listed above.					

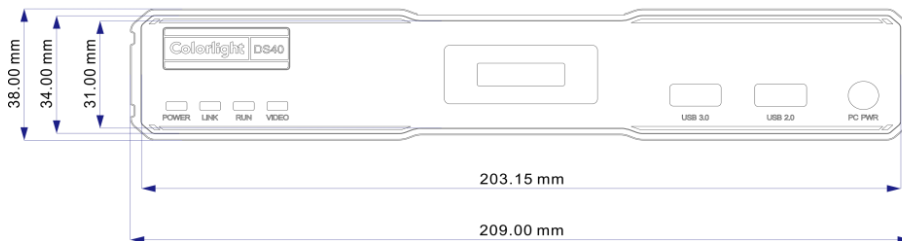
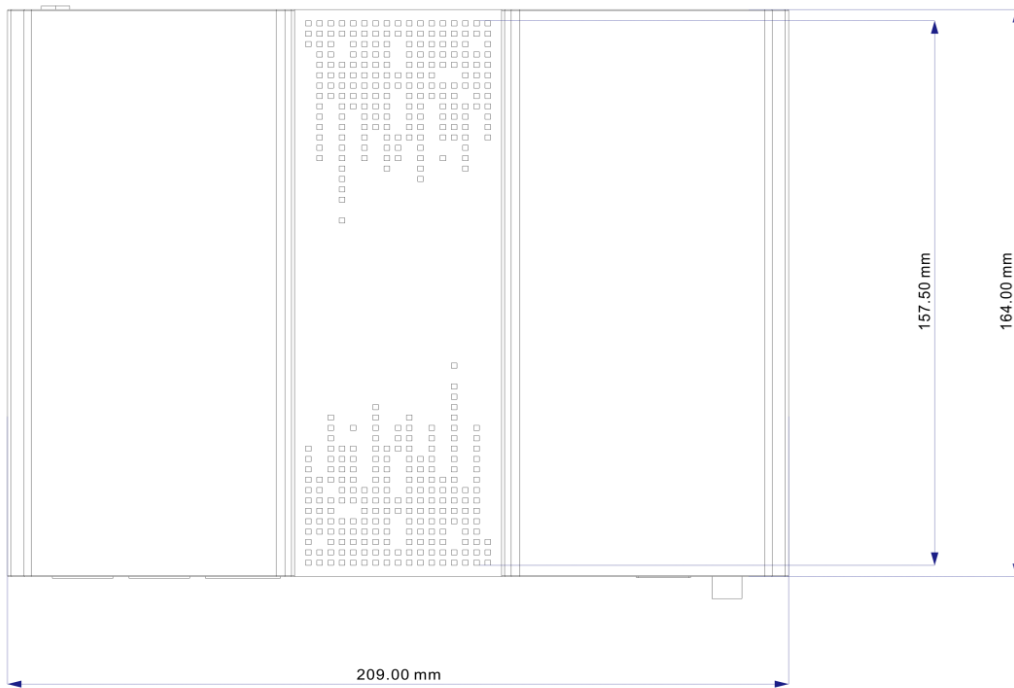
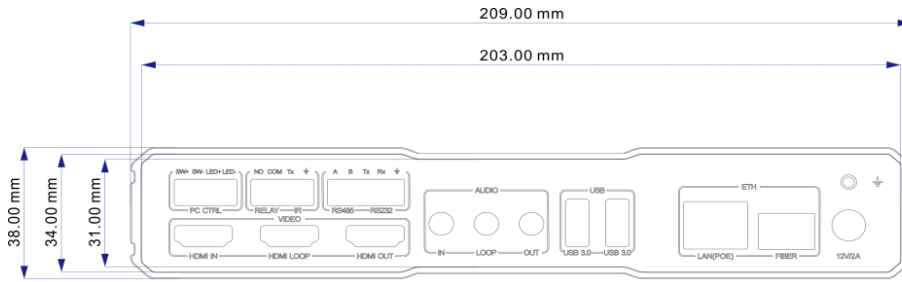
3.5mm Audio Port			
I/O	Maximum Sample Rate and Bit Depth	Encoding/Decoding Protocol	Channel
Analog signal	192kHz, 24-bit	AAC, G.711A, G.711U, G.726	2-channel stereo

## 5 Specifications

Video codec	Standard	H.264/H.265
	Bit rate	4Mbps~40Mbps
	Frame rate	24Hz~60Hz
Audio codec	Standard	AAC/G.711A/G.711U/G.726
Protocol	Streaming	RTSP/SIP/RTMP/ONVIF
	Internet	TCP/IP
	Transmission	TCP, UDP
Electrical parameters	Power supply	12V/2A DC
	Power consumption	≤ 10W
Operating environment	Temperature	-20°C~70°C
	Humidity	0%~90%, non-condensing
Storage environment	Temperature	-20°C~70°C
	Humidity	0%~90%, non-condensing
Physical parameters	Dimension (L*W*H)	209mm(8.23")*164mm(6.46")*38mm(1.50")
	Net	0.9kg
Packaging	Packing box	295mm(11.61")*240mm(9.45")*114mm(4.49")

# 6 Dimensions

Unit: mm



# Statement

## Certifications

CE, FCC, IC, UKCA

- **Note:** If the product does not have the relevant certifications required by the countries or regions where it is to be sold, please contact Colorlight to confirm or address the problem as soon as possible. Otherwise, the customer shall be responsible for the legal risks or Colorlight has the right to claim compensation.

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