灰度科技
HUIDU TECHNOLOGY

PRODUCT SPECIFICATION

All-in-one LED Controller

HD-VP12

V1.0

Update history:

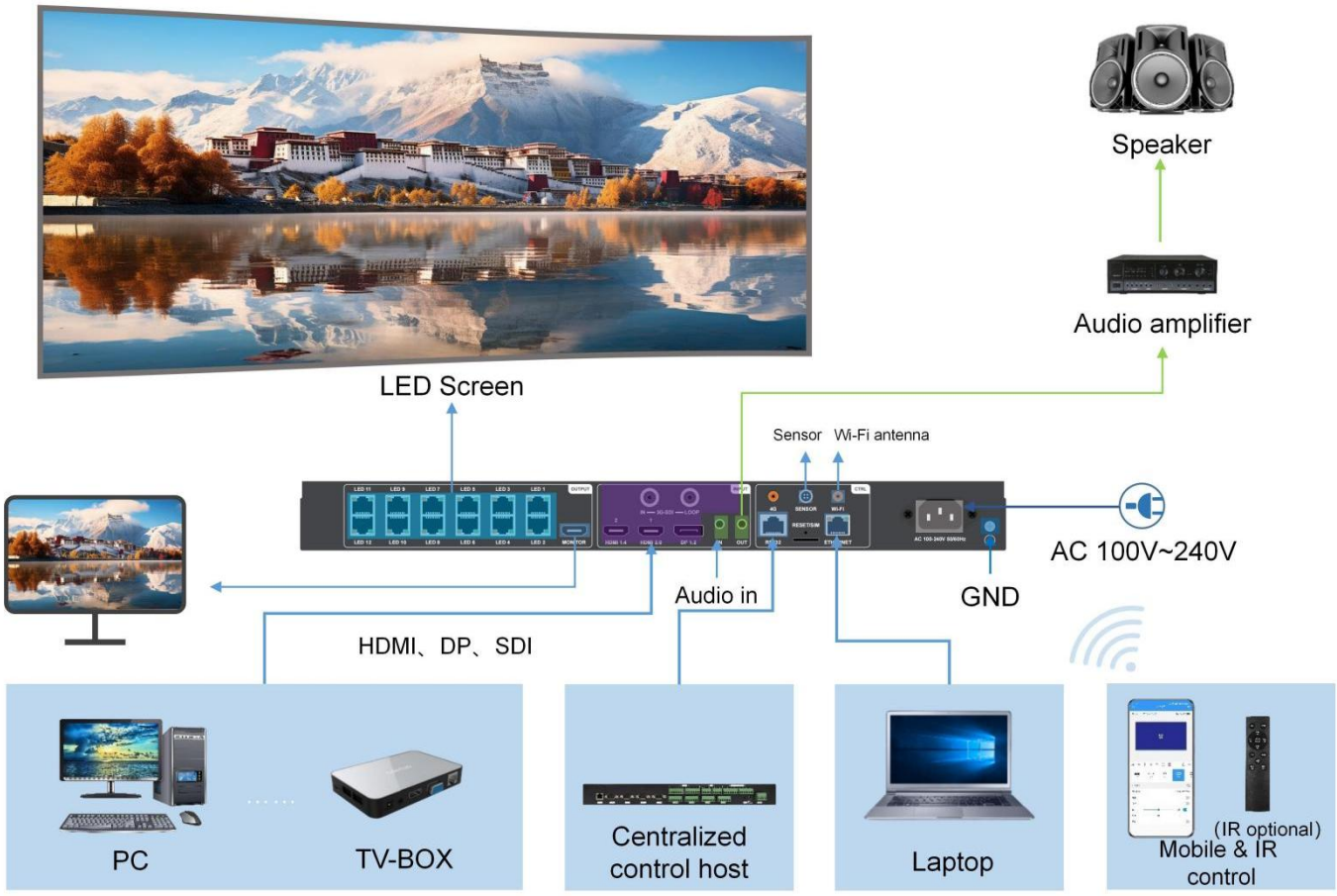
Release version	Release time	Release Notes
V1.0	Apr. 15th, 2026	First release

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1. System Overview

HD-VP12 is a 2-in-1 video processor, integrating traditional video processor and 12-channel Gigabit Ethernet port output.It not only simplifies the on-site environment construction, but also improves the reliability of the product. It supports 4- channel synchronous signal input and can be used in various occasions that require synchronous playback, such as hotels, shopping malls, conference rooms, exhibitions, studios, etc. In addition, the device also supports point-to-point input/output, allowing the LED display to display clearer images.

2. Connection Diagram



3. Product Features

Input

- Supports maximum 4096×2160@60Hz synchronized signal input;
- Supports 1-way DP1.2, 1-way HDMI2.0, 1-way HDMI1.4,1-way 3G-SDI（IN&LOOP, optional）, multi-channel video signal switching at will;
- Supports 1-way USB 3.0 port and supports mixed playback of images and videos;
- Supports 1 TRS 3.5mm standard dual-channel audio input and HDMI/DP audio input.
- Supports one sensor input port for connecting an external light sensor.

Output

- Comes standard with 12-channel Gigabit network port and direct cascade receiver card;
- Maximum control of 7.8 million pixels, horizontal maximum support for 16,000 pixels, vertical maximum support for 8,000 pixels;
- 1-way HDMI output port, for displaying the monitor feed;
- Supports two-screen layout and maximum 2×4K size window;
- 1-way TRS 3.5mm standard dual-channel audio output.

Features

- Supports arbitrary overlapping of network ports and non-rectangular loading;
- Supports network port backup;

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- Video signal arbitrary switching, cropping, scaling;
- Supports brightness and colour temperature adjustment, as well as button lock functionality;
- Supports adjustment of contrast, saturation, hue and sharpness;
- Support 256 scene presets and call;
- Support RS232/RS485 serial port protocol control, docking center control equipment;
- Supports LAN port communication debugging;
- Support Wi-Fi Station mode, AP mode,;
- Supports cell phone APP wireless control;
- Supports EDID import and export;
- Supports SDI (optional);
- Supports 4G modules and 4G antennas (optional);
- Supports infrared remote control (optional).

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4. Appearance Description

Front panel:



Key Description		
No.	Button	Description
1	Power switch	Controls AC power input
2	LCD DISPLAY	Debugging display menus, screen parameters and other information
3	IR	Receive infrared remote control
4	MENU KNOB	Press the knob to enter a sub-menu or to confirm a selection
5	BACK	Exit key /Back key
6	WIN1	Selection of opened screen windows / Play a programme file from a U-Disk Function key: key multiplexing function for digital selection, generally used when setting resolution
	WIN2	Selection of opened screen windows Function key: key multiplexing function for digital selection, generally

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		used when setting resolution
	HDMI 1	Select HDMI 1 signal to play / Pause or play content from a U-Disk Function key: key multiplexing function for digital selection, generally used when setting resolution
	HDMI 2 (SDI)	Select HDMI 2 (SDI) signal to play / Play the next programme file on the U-Disk Function key: key multiplexing function for digital selection, generally used when setting resolution HDMI2/SDI button is a toggle; when the input source is HDMI2, pressing the button again switches to SDI
	DP	Select DP signal playback Function key: key multiplexing function for digital selection, generally used when setting resolution
	U-DISK	Select U-Disk signal playback Function key: key multiplexing function for digital selection, generally used when setting resolution
	BRIGHT	Quickly recall the brightness setting button
	MODE	Quickly call up the preset mode recall menu Function key: key multiplexing function for digital selection, generally used when setting resolution
	FREEZE	One-touch freeze button

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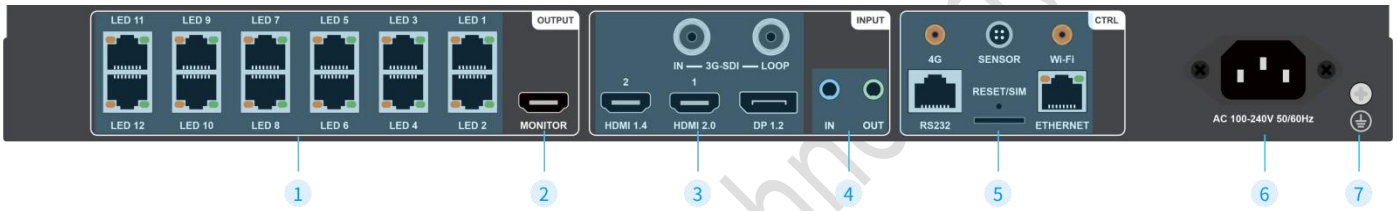
		Function key: key multiplexing function for digital selection, generally used when setting resolution
	BLACK	One Touch Black Screen Button Function key: key multiplexing function for digital selection, generally used when setting resolution

Input interface			
No.	Interface name	Quantity	Description
7	U-DISK	1	USB 3.0 input port, supports FAT32, NTFS and exFAT file systems on USB drives Supports playback of videos and images from a USB flash drive Video file formats: mp4, avi, mpg, mkv, mov, vob and rmvb Video decoding specifications: MPEG-1/2, MPEG-4, H.264/AVC, MVC, H.265/HEVC, Google VP8, Google VP9, H.263, VC-1, Motion JPEG Image file formats: JPG, JPEG, GIF, PNG and BMP Video resolution: Maximum supported resolution 4096×2160@60Hz Image resolution: Maximum supported resolution 4096×2160@60Hz

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控制接口			
No.	Interface name	Quantity	Description
8	USB-B	1	Connect to a computer for device debugging

Rear panel:



Output Interface			
No.	Interface name	Quantity	Description
1	Gigabit Ethernet	12	For use with cascaded receiver cards; each network port supports the transmission of 650,000 pixels; LED 1 supports connection to Multifunction Card 1
2	MONITOR	1	HDMI 1.3 output port Connector type: HDMI-A Used for monitor output; the output resolution is fixed at 1920×1080@60Hz Does not support audio output

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Input Interface			
No.	Interface name	Quantity	Description
3	DP1.2	1	DP input interface Interface type: DP Signal standard: DP 1.2 Backward Compatibility Resolution: VESA standard, ≥720×480@60Hz, ≤4096×2160@60Hz Support color space: RGB4:4:4/YCbCr4:4:4 Support color depth: 8bit/10bit Support limit width: 4096 Limit height: 4096 Supports accompanying audio
	HDMI1	1	HDMI 2.0 input interface × 1 Interface type: HDMI-A Signal standard: HDMI 2.0 backward compatible Resolution: VESA standard, ≥800×600@60Hz, ≤4096×2160@60Hz Support color space: RGB4:4:4/YCbCr4:4:4 Support color depth: 8bit/10bit Support limit width: 4096 Limit height: 4096 Supports accompanying audio

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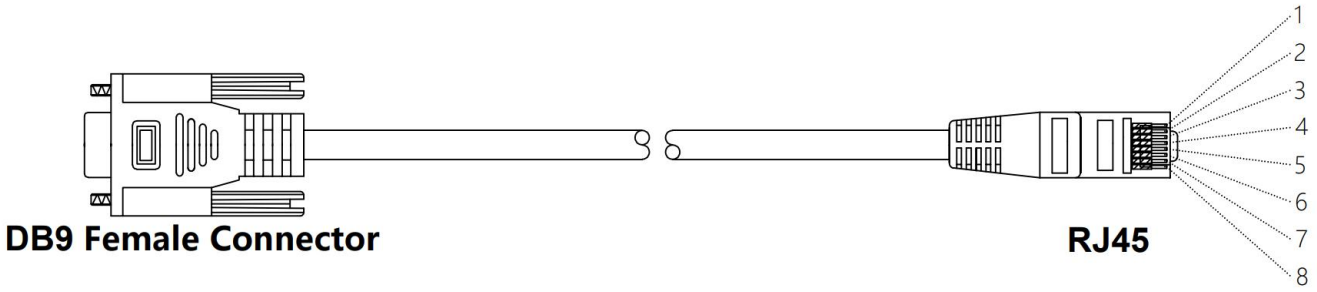
	HDMI2	1	Interface type: HDMI-A Signal standard: HDMI 1.4 backward compatible Resolution: VESA standard, ≥800×600@60Hz, ≤4096 × 2160@30Hz Support color space: RGB4:4:4/YCbCr4:4:4 Support color depth: 8bit/10bit Support limit width: 4096 Limit height: 4096 Supports accompanying audio
	3G-SDI IN	1	3G-SDI input interface (optional) Interface type: BNC Signal standards: SD-SDI, HD-SDI, 3G-SDI Resolution: VESA standard, ≤1920×1080@60Hz
	3G-SDI LOOP	1	SDI Signal Loop-Out Interface (optional) Connector type: BNC Signal standards: SD-SDI, HD-SDI, 3G-SDI Resolution: VESA standard, ≤1920×1080@60Hz
4	AUDIO IN	1	TRS 3.5mm dual channel audio input interface
	AUDIO OUT	1	TRS 3.5mm stereo audio output jack Connects to an audio amplifier for high-power external sound reproduction

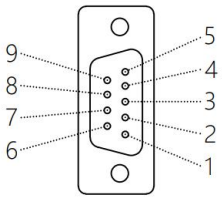
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Control interface			
No.	Interface name	Quantity	Description
5	4G	1	Connect the 4G antenna
	SENSOR	1	Supports the S107 external light sensor (optional)
	Wi-Fi antenna interface	1	Connect a Wi-Fi antenna to enhance Wi-Fi signal
	RS232	1	RJ45 interface, connected to the central control device
	RESET	1	Supports factory reset
	SIM	1	Micro SIM card slot, providing 4G connectivity for remote control
	ETHERNET	1	Connect to the local area network for device debugging
Power supply			
No.	Interface name	Quantity	Description
6	Power supply	1	AC 100~240V 50/60Hz
7	Grounding interface	1	Anti-static/leakage protection, personal safety and equipment normal operation

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* The RJ 45 to DB9 cable diagram is as follows. It is optional. If you need it, please contact Huidu sales or technical support in advance.

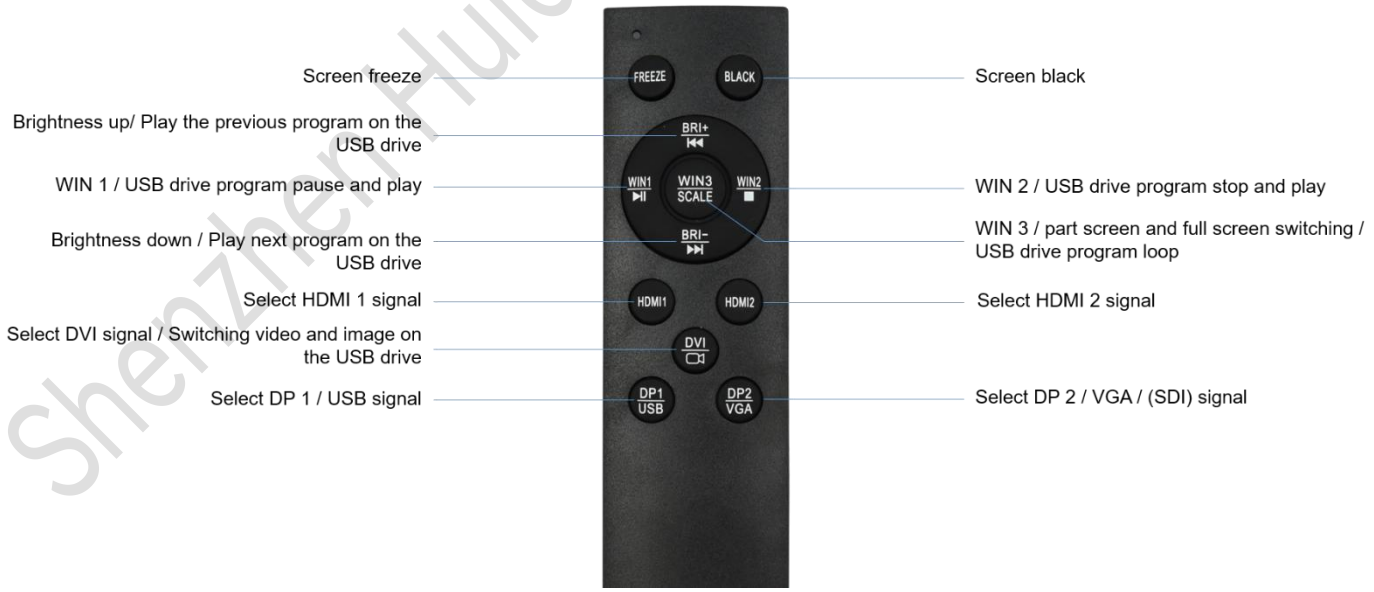




Line Ordering:

DB9 female connector	RJ45 connector
2-RX	TX-1(Red)
3-TX	RX-2(Blue)
5-GND	GND-3(Black)

* The schematic diagram of the remote control is as follows. It is optional. If you need it, please contact Huidu sales or technical support in advance.



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5. Basic Parameters

1. Product Specifications:

Parameters		Parameter Value
Chassis specifications		1U Standard
Electrical Specifications	Power supply	AC 100 ~ 240V 50/60Hz
	Power consumption	50W
Work Environment	Working temperature (℃)	-20 ℃ ~55 ℃
	Working humidity (RH)	20%RH~90%RH (no condensation)
Storage Environment	Storage temperature (℃)	-20 ℃ ~60 ℃
	Storage humidity (RH)	10%RH~95%RH (no condensation)
Equipment Specifications	Size	W×H×D/482mm×44mm×240mm
	Net weight	3.10KG
Packing specifications	Packing size	W×H×D/ 515mm×82mm×355mm
	Packing weight	4.15KG
Packing List	HD-VP12	1PCS
	USB cable	1PCS
	HDMI cable	1PCS
	Wi-Fi Antenna	1PCS
	Power cord	1PCS
	Certificate	1PCS

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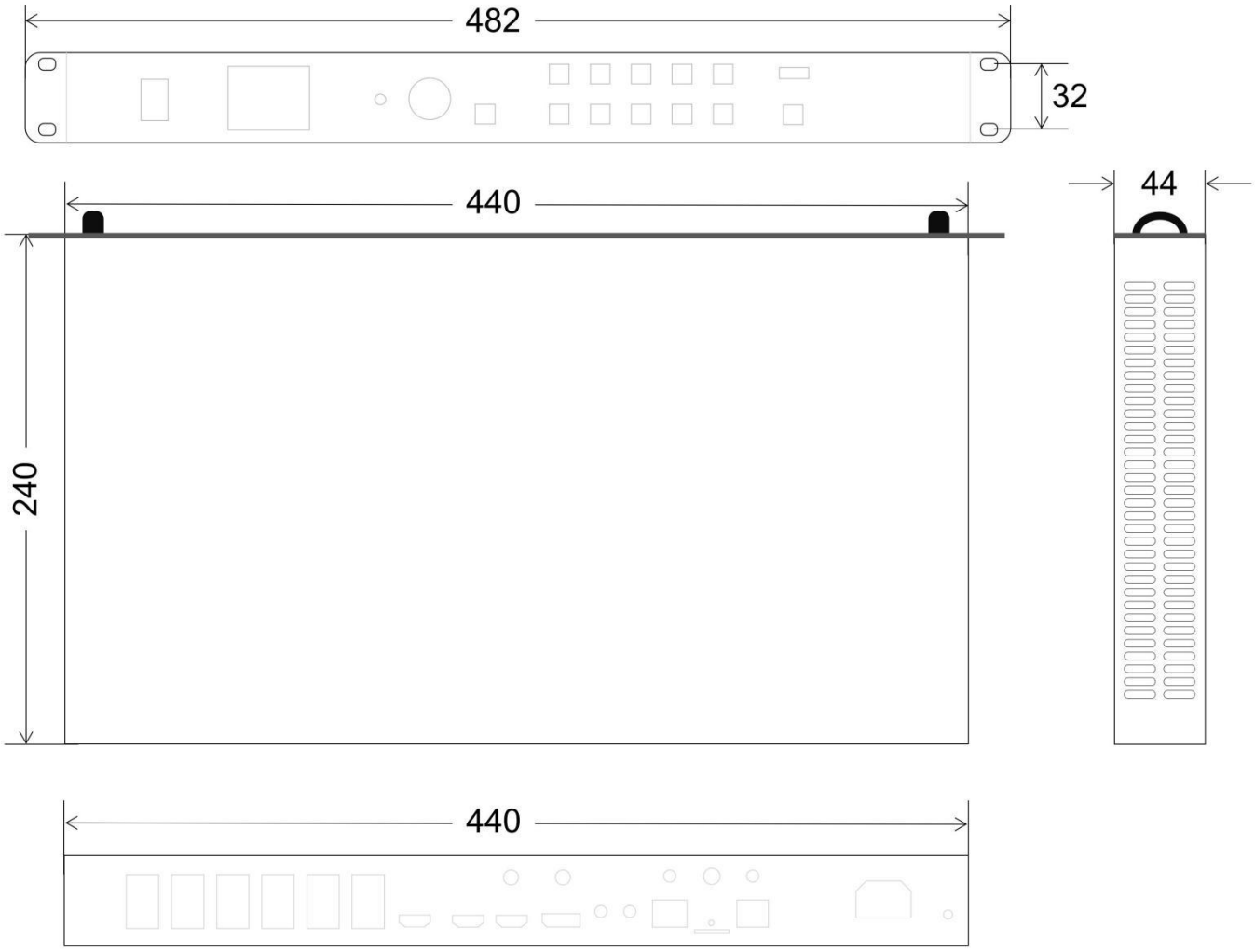
2. Options list:

Optional features/accessories	Description
3G-SDI module	3G-SDI Input/Output Interface Connector type: BNC Signal standards: SD-SDI, HD-SDI, 3G-SDI Resolution: VESA standard, ≤1920×1080@60Hz
4G module/4G antenna	Remote control
Light sensor	Connects to the LED display control system, enabling the brightness of the LED display to adjust in response to changes in ambient light levels
Infrared remote control	Switch input sources, switch between screens, adjust brightness, one-touch screen blackout/freeze

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6. Product Dimensions

Unit：mm



Illustrate:

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