

DH7512-S

Receiving Card



Specifications

Change History

Document Version	Release Date	Description
V1.2.0	2024-06-14	• Updated the load capacity information. • Deleted support for settings of a stored image in the receiving card.
V1.1.5	2023-12-30	Updated the feature description.
V1.1.4	2022-12-27	• Updated the description of the maximum resolution. • Updated the dimensions diagram.
V1.1.3	2022-08-31	• Added the table of appearance description. • Updated the input voltage. • Updated the packing Information.
V1.1.2	2022-07-12	Updated the appearance diagram.

Introduction

The DH7512-S is a general receiving card developed by Xi'an NovaStar Tech Co., Ltd. (hereinafter referred to as NovaStar). For PWM driver ICs, a single DH7512-S supports resolutions up to 512×512@60Hz. For common driver ICs, a single DH7512-S supports resolutions up to 512×384@60Hz. Supporting various functions such as Pixel Level Brightness and Chroma Calibration, Quick Adjustment of Dark or Bright Lines, 3D, Individual Gamma Adjustment for RGB, and 90° Image Rotation, the DH7512-S can significantly improve the display effect and user experience.

The DH7512-S uses 12 standard HUB75E connectors for communication and supports up to 24 groups of parallel RGB data. On-site setup, operation, and maintenance were all taken into account

when designing the hardware and software of the DH7512-S, allowing for an easier setup, more stable operation, and more efficient maintenance.

Certifications

RoHS, EMC Class A

If the product does not have the relevant certifications required by the countries or regions where it is to be sold, please contact NovaStar to confirm or address the problem. Otherwise, the customer shall be responsible for the legal risks caused or NovaStar has the right to claim compensation.

Features

Improvements to Display Effect

- Pixel Level Brightness and Chroma Calibration

Work with NovaStar's high-precision calibration system to calibrate the brightness and chroma of each pixel, effectively eliminating differences and enabling high consistency for both brightness and chroma.

- Quick Adjustment of Dark or Bright Lines

The different brightness of seams caused by splicing of modules or cabinets can be corrected to improve the visual experience. The correction is easy and takes effect immediately.

- 3D

Work with the controller that supports 3D function to enable 3D output.

- Individual Gamma Adjustment for RGB

Working with NovaLCT (V5.2.0 or later) and the controller that supports this function, the receiving card supports individual adjustment to red gamma, green gamma and blue gamma, which can effectively control image non-uniformity at low grayscale conditions and white balance offset, allowing for a more realistic image.

- 90° Image Rotation

The display image can be rotated in multiples of 90° (0°/90°/180°/270°).

Improvements to Maintainability

- Mapping 1.0

The cabinets can display the receiving card number and Ethernet port information, allowing users to easily obtain the locations and connection topology of receiving cards.

- Temperature and Voltage Monitoring

Real-time monitoring of the temperature and voltage of the receiving card, without the need for other external devices.

- Cabinet LCD

The LCD module of the cabinet can display the temperature, voltage, single run time and total run time of the receiving card.

- Bit Error Detection

The Ethernet port communication quality of the receiving card can be monitored and the number of erroneous packets can be recorded to help troubleshoot network communication problems.

- Firmware Program Readback

The receiving card firmware program can be read back and saved to the local computer.

- Configuration Parameter Readback

The receiving card configuration parameters can be read back and saved to the local computer.

Improvements to Reliability

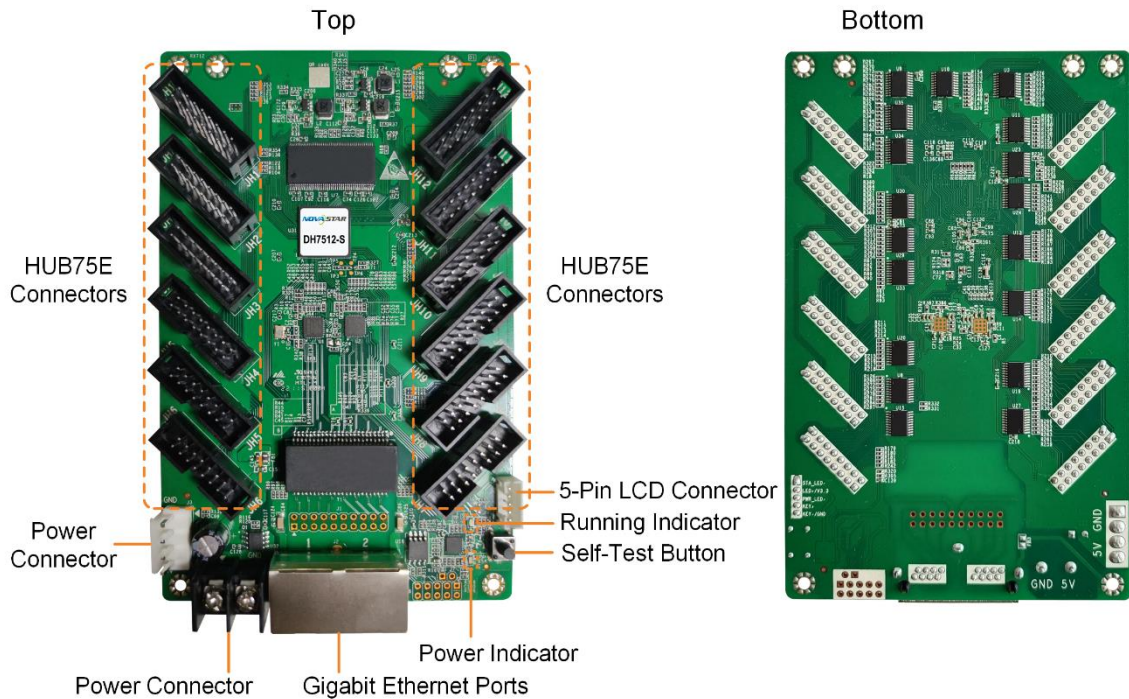
- Loop Backup

The receiving card and controller form a loop via the primary and backup line connections. When a fault occurs at a location of the lines, the screen can still display the image normally.

- Dual Program Backup

Two copies of firmware program are stored in the receiving card at the factory to avoid the problem that the receiving card may get stuck abnormally during program update.

Appearance



All product pictures shown in this document are for illustration purpose only. Actual product may vary.

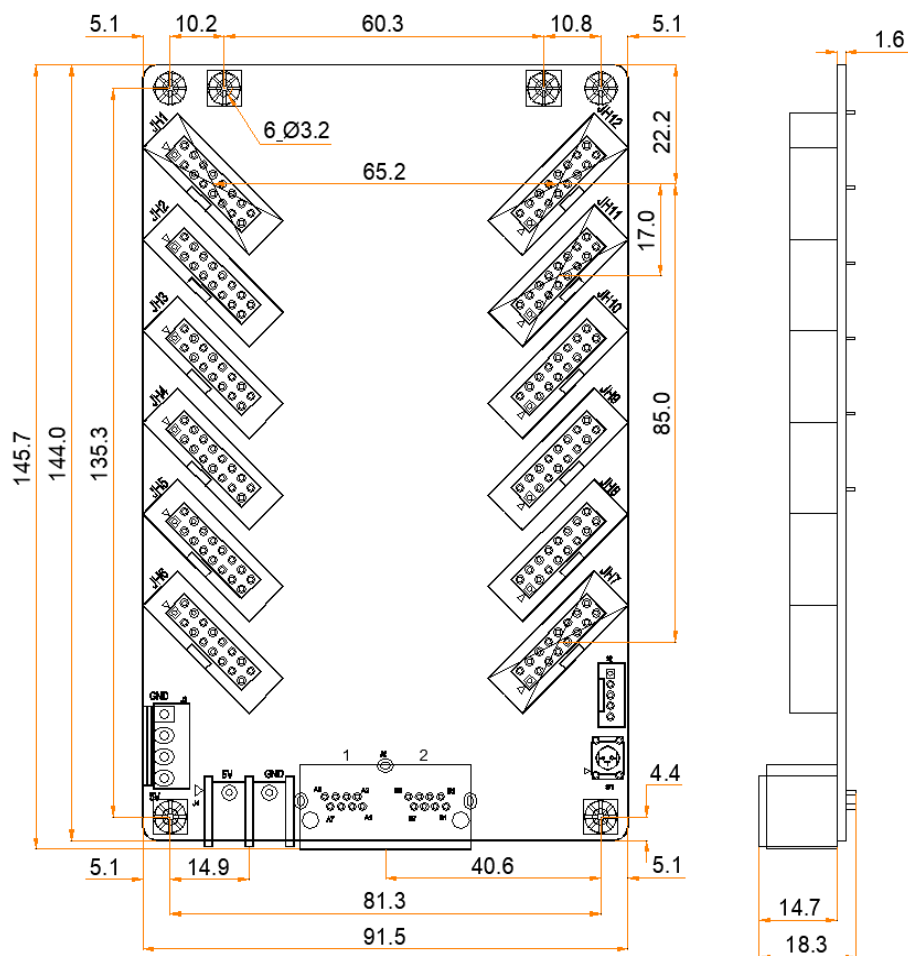
Name	Description
HUB75E Connector	Connect to the module.
Power Connector	Connect to the input power. Either of the connectors can be chosen.
Gigabit Ethernet Port	Connect to the sending card, and cascade other receiving cards. Each connector can be used as input or output.
Self-test Button	Set the test pattern. After the Ethernet cable is disconnected, press the button twice, and the test pattern will be displayed on the screen. Press the button again to switch the pattern.
5-Pin LCD Connector	Connect to the LCD.

Indicators

Indicator	Color	Status	Description
Running indicator	Green	Flashing once every 1s	The receiving card is functioning normally. Ethernet cable connection is normal, and video source input is available.
		Flashing once every 3s	Ethernet cable connection is abnormal.
		Flashing 3 times every 0.5s	Ethernet cable connection is normal, but video source input is unavailable.
		Flashing once every 0.2s	The receiving card failed to load the program in the application area and is now using the backup program.
		Flashing 8 times every 0.5s	A redundancy switchover occurred on the Ethernet port and the loop backup has taken effect.
Power indicator	Red	Always on	The power input is normal.

Dimensions

The board thickness is not greater than 2.0 mm, and the total thickness (board thickness + thickness of components on the top and bottom sides) is not greater than 19.0 mm.



Tolerance: ± 0.3 Unit: mm

Note

To make molds or trepan mounting holes, please contact NovaStar for a higher-precision structural drawing.

Pins

JH1 R1 1 2 G1 B1 3 4 GND R2 5 6 G2 B2 7 8 HE1 HA1 9 10 HB1 HC1 11 12 HD1 HDCLK1 13 14 HLAT1 HOE1 15 16 GND	JH2 R3 1 2 G3 B3 3 4 GND R4 5 6 G4 B4 7 8 HE15 HA15 9 10 HB15 HC15 11 12 HD15 HDCLK2 13 14 HLAT2 HOE2 15 16 GND	JH3 R5 1 2 G5 B5 3 4 GND R6 5 6 G6 B6 7 8 HE2 HA2 9 10 HB2 HC2 11 12 HD2 HDCLK3 13 14 HLAT3 HOE3 15 16 GND
JH4 R7 1 2 G7 B7 3 4 GND R8 5 6 G8 B8 7 8 HE16 HA16 9 10 HB16 HC16 11 12 HD16 HDCLK4 13 14 HLAT4 HOE4 15 16 GND	JH5 R9 1 2 G9 B9 3 4 GND R10 5 6 G10 B10 7 8 HE3 HA3 9 10 HB3 HC3 11 12 HD3 HDCLK5 13 14 HLAT5 HOE5 15 16 GND	JH6 R11 1 2 G11 B11 3 4 GND R12 5 6 G12 B12 7 8 HE11 HA11 9 10 HB11 HC11 11 12 HD11 HDCLK6 13 14 HLAT6 HOE6 15 16 GND
JH7 R21 1 2 G21 B21 3 4 GND R22 5 6 G22 B22 7 8 HE5 HA6 9 10 HB6 HC6 11 12 HD6 HDCLK11 13 14 HLAT11 HOE11 15 16 GND	JH8 R23 1 2 G23 B23 3 4 GND R24 5 6 G24 B24 7 8 HE14 HA14 9 10 HB14 HC14 11 12 HD14 HDCLK12 13 14 HLAT12 HOE12 15 16 GND	JH9 R25 1 2 G25 B25 3 4 GND R26 5 6 G26 B26 7 8 HE7 HA7 9 10 HB7 HC7 11 12 HD7 HDCLK13 13 14 HLAT13 HOE13 15 16 GND
JH10 R27 1 2 G27 B27 3 4 GND R28 5 6 G28 B28 7 8 HE9 HA9 9 10 HB9 HC9 11 12 HD9 HDCLK14 13 14 HLAT14 HOE14 15 16 GND	JH11 R29 1 2 G29 B29 3 4 GND R30 5 6 G30 B30 7 8 HE8 HA8 9 10 HB8 HC8 11 12 HD8 HDCLK15 13 14 HLAT15 HOE15 15 16 GND	JH12 R31 1 2 G31 B31 3 4 GND R32 5 6 G32 B32 7 8 HE10 HA10 9 10 HB10 HC10 11 12 HD10 HDCLK16 13 14 HLAT16 HOE16 15 16 GND

Pin Definitions (JH1 as an example)

/	R1	1	2	G1	/
/	B1	3	4	GND	Ground
/	R2	5	6	G2	/
/	B2	7	8	HE1	Line decoding signal
Line decoding signal	HA1	9	10	HB1	Line decoding signal
Line decoding signal	HC1	11	12	HD1	Line decoding signal
Shift clock	HDCLK1	13	14	HLAT1	Latch signal.
Display enable signal	HOE1	15	16	GND	Ground

Specifications

Maximum Resolution

512×512@60Hz (PWM driver IC)

	512×384@60Hz (common driver IC)	
Electrical Specifications	Input voltage	DC 3.8 V to 5.5 V
	Rated current	0.5 A
	Rated power consumption	2.5 W
Operating Environment	Temperature	−20°C to +70°C
	Humidity	10% RH to 90% RH, non-condensing
Storage Environment	Temperature	−25°C to +125°C
	Humidity	0% RH to 95% RH, non-condensing
Physical Specifications	Dimensions	145.7 mm × 91.5 mm × 18.3 mm
	Net weight	93.1 g Note: It is the weight of a single receiving card only.
Packing Information	Packing specifications	Each receiving card is packaged in a blister pack. Each packing box contains 100 receiving cards.
	Packing box dimensions	625.0 mm × 180.0 mm × 470.0 mm

The amount of current and power consumption may vary depending on various factors such as product settings, usage, and environment.

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