DH7516-S

Receiving Card

Specifications

Change History

Document Version	Release Date	Description
V1.2.3	2025-05-15	Updated the load capacity information.
V1.2.2	2025-03-31	• Added support for multi-batch adjustment. • Updated the description for upload coefficients. • Updated the dimensions diagram. • Updated the storage environment temperature range. • Deleted seam correction with mobile phones from product features.
V1.2.1	2024-07-25	Added support for 3D.
V1.2.0	2024-07-05	• Added seam correction with mobile phones. • Updated the load capacity information. • Deleted 3D.
V1.1.0	2024-06-14	Deleted support for settings of a stored image in the receiving card.

Introduction

The DH7516-S is a general receiving card developed by Xi'an NovaStar Tech Co., Ltd. (hereinafter referred to as NovaStar). Supporting various functions such as Brightness Calibration, Quick Adjustment of Dark or Bright Lines, Multi-batch Adjustment, 3D, Individual Gamma Adjustment for RGB, and 90° Image Rotation, the DH7516-S can significantly improve the display effect and user experience.

The DH7516-S uses 16 standard HUB75E connectors for communication, resulting in high stability. It supports up to 32 groups of parallel RGB data and is suitable for various on-site setups.

- For PWM driver ICs, the maximum load capacity per card is 512×512@60Hz
- For common driver ICs, the maximum load capacity per card is 512×384@60Hz

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

- Brightness Calibration

  Work with NovaStar's calibration system to calibrate the brightness of each pixel, effectively removing brightness differences and enabling high brightness consistency.

- 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.

- Multi-batch Adjustment

  Adjust the brightness of cabinets or modules to minimize display discrepancies caused by variations in production batches.

- 3D

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

- Individual Gamma Adjustment for RGB

  Working with NovaLCT 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

- Uploading Calibration Coefficients

  Upload calibration coefficients to the receiving card in a stable manner, with acceleration support if needed.

- Mapping 1.1

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

- Temperature and Voltage Monitoring

  The receiving card temperature and voltage can be monitored without using 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

  Real-time monitoring of the communication of the Ethernet port on the receiving card which helps users 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

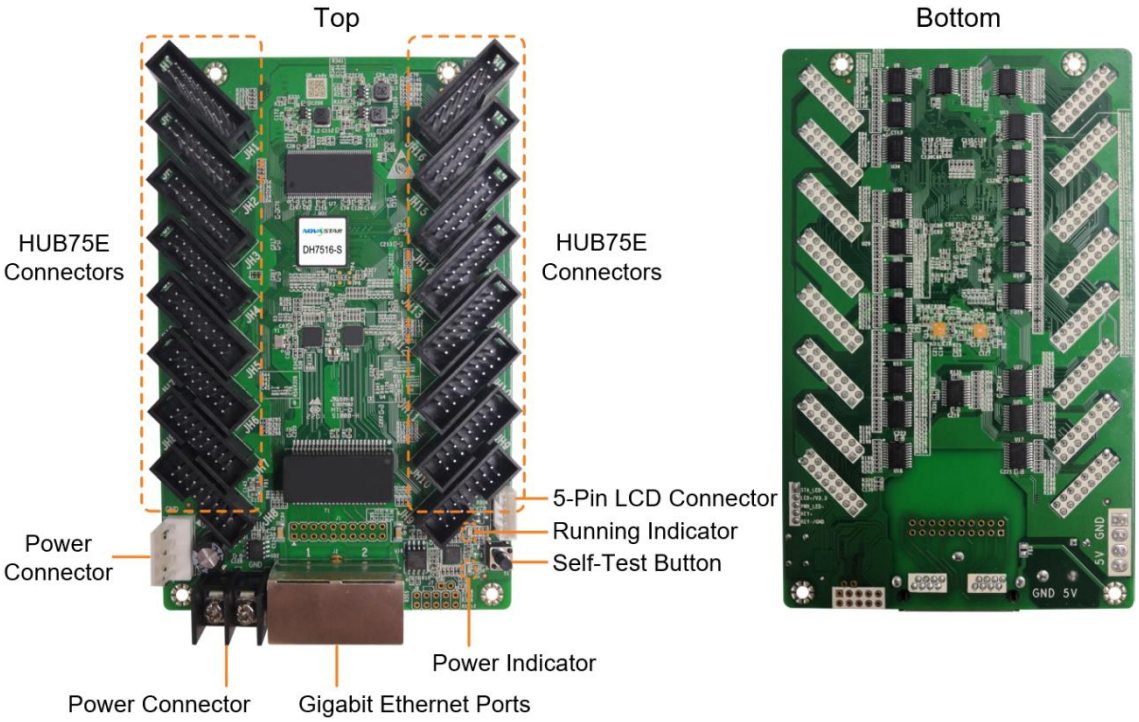
- Loop Backup

  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.

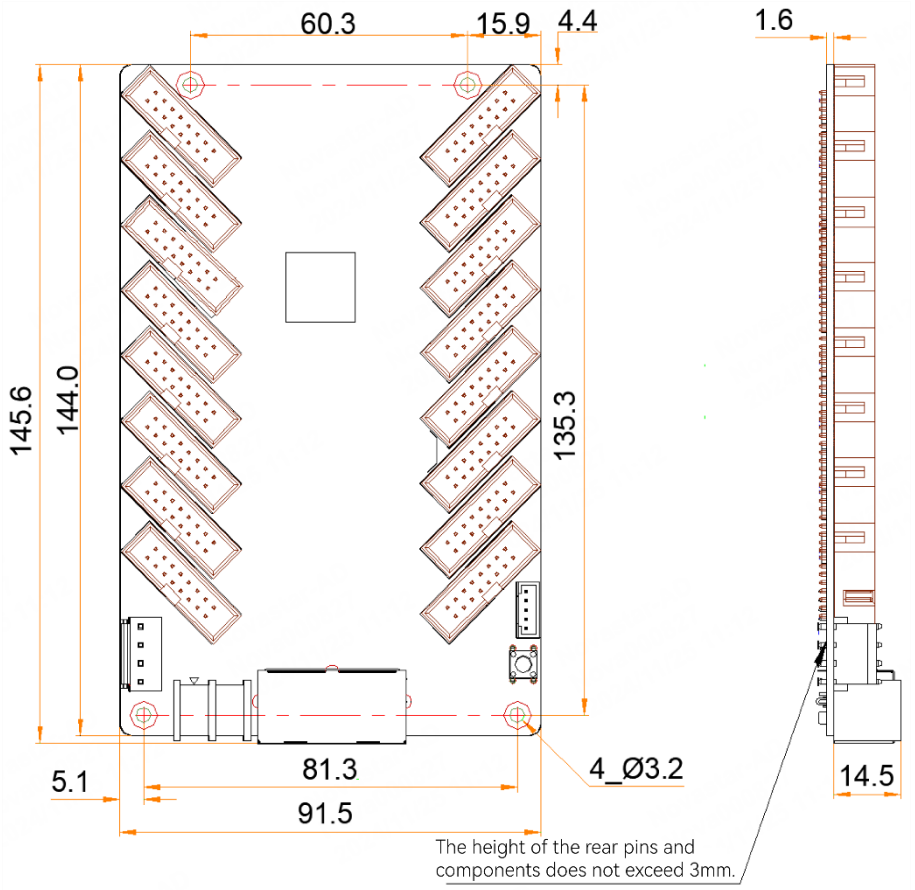
Name	Description
HUB75E Connectors	Connect to the module.
Power Connector	Connect to the input power. Either of the connectors can be chosen.
Gigabit Ethernet Ports	Connect to the sending card, and cascade other receiving cards. Each connector can be used as input or output.
Self-Test Button	Set the 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.

Indicator

Indicators	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 19.5 mm.

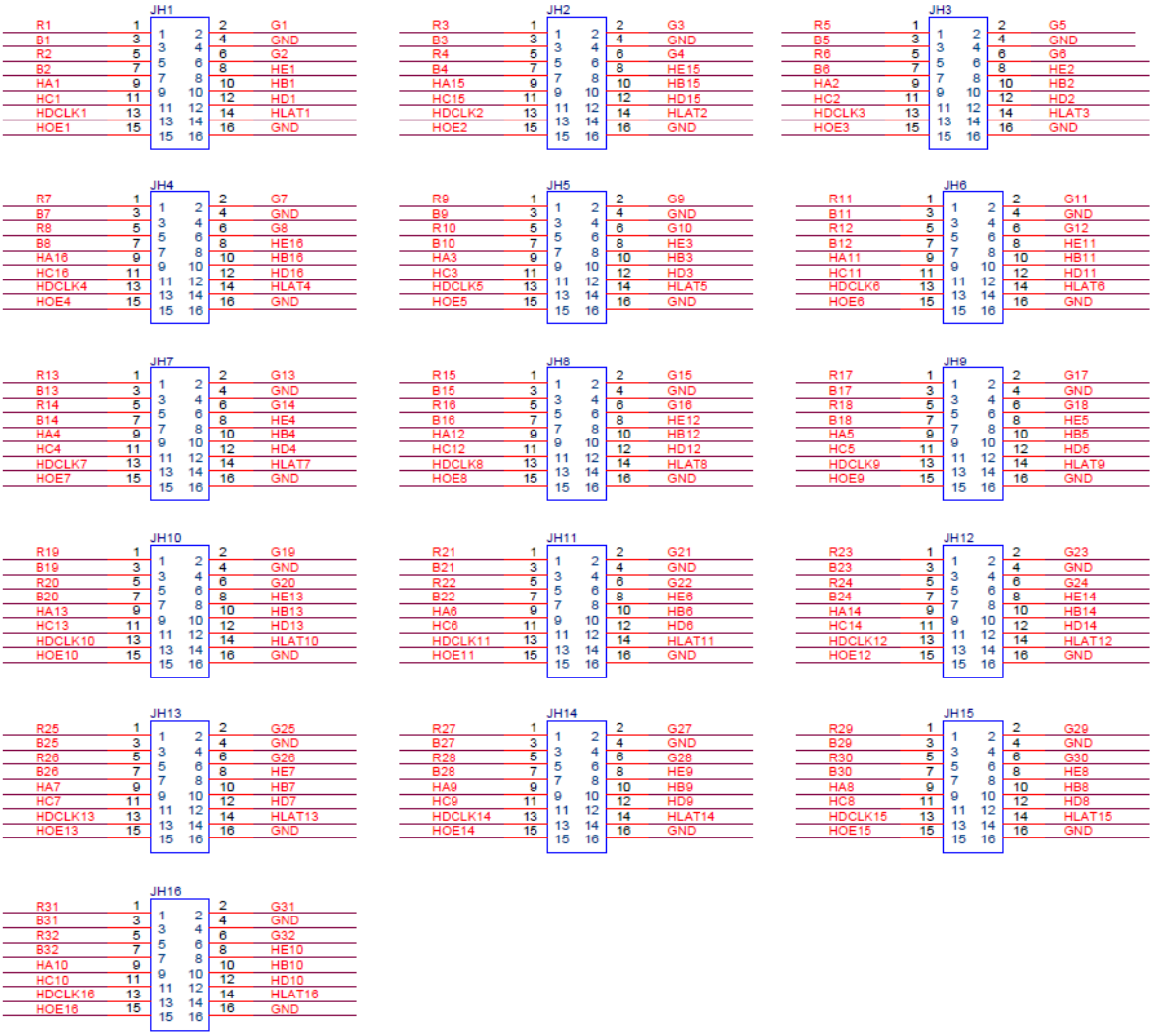


Tolerance: ±0.3 Unit: mm

Note

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

Pins



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	
	HC1	11	12	HD1	
Shift clock	HDCLK1	13	14	HLAT1	Latch signal
Display enable signal	HOE1	15	16	GND	Ground

Specifications

Maximum Resolution	• For PWM driver ICs, the maximum load capacity per card is 512×512@60Hz • For common driver ICs, the maximum load capacity per card is 512×384@60Hz	
Electrical Parameters	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	–40°C to +85°C
	Humidity	0% RH to 95% RH, non-condensing
Physical Specifications	Dimensions	145.6 mm × 91.5 mm × 19.1 mm
	Net weight	100.9 g Note: It is the weight of a single receiving card only.
Packing Information	Packaging	Each receiving card is packaged in a blister pack. Each packing box contains 100 receiving cards.
	Packing box	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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