DH7508

Receiving Card

Specifications

Change History

Document Version	Release Date	Description
V1.1.0	2023-05-22	• Updated the appearance diagram. • Updated the net weight information.
V1.0.5	2022-12-27	• Updated the description of the maximum resolution. • Updated the dimensions diagram.
V1.0.4	2022-08-31	• Added the table of appearance description. • Updated the input voltage. • Updated the packing information.
V1.0.3	2022-03-26	• Added the dimensions diagram description. • Updated the pins section.
V1.0.2	2021-12-03	• Updated the certifications description. • Updated the feature description.
V1.0.1	2021-08-03	Updated the feature description.
V1.0.0	2021-07-16	First release

Introduction

The DH7508 is a cost-effective receiving card developed by Xi'an NovaStar Tech Co., Ltd. (hereinafter referred to as NovaStar). For PWM driver ICs, a single DH7508 supports resolutions up to 256×256@60Hz. Supporting various functions such as pixel level brightness and chroma calibration, quick adjustment of dark or bright lines, and 3D, the DH7508 can significantly improve the display effect and user experience.

The DH7508 uses 8 standard HUB75E connectors for communication, resulting in high stability. It supports up to 16 groups of parallel RGB data. Thanks to its EMC compliant hardware design, the DH7508 has improved electromagnetic compatibility and is suitable for various on-site setups.

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 removing brightness differences and chroma differences, and enabling high brightness consistency and chroma consistency.

- Quick adjustment of dark or bright lines

  The dark or bright lines caused by splicing of modules or cabinets can be adjusted to improve the visual experience. The adjustment is easy and takes effect immediately.

- 3D function

  Working with the sending card that supports 3D function, the receiving card supports 3D output.

  Loading capacity:

  − 192×256 pixels (PWM IC)

  − 176×256 pixels (Common IC)

Improvements to Maintainability

- Quick uploading of calibration coefficients
  The calibration coefficients can be quickly uploaded to the receiving card, improving efficiency greatly.
- Mapping function

  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.
- Setting of a pre-stored image in receiving card

  The image displayed on the screen during startup, or displayed when the Ethernet cable is disconnected or there is no video signal can be customized.
- Temperature and voltage monitoring

  The receiving card temperature and voltage can be monitored without using peripherals.
- 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.

  NovaLCT V5.2.0 or later is required.
- Firmware program readback

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

  NovaLCT V5.2.0 or later is required.
- Configuration parameter readback

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

Improvements to Reliability

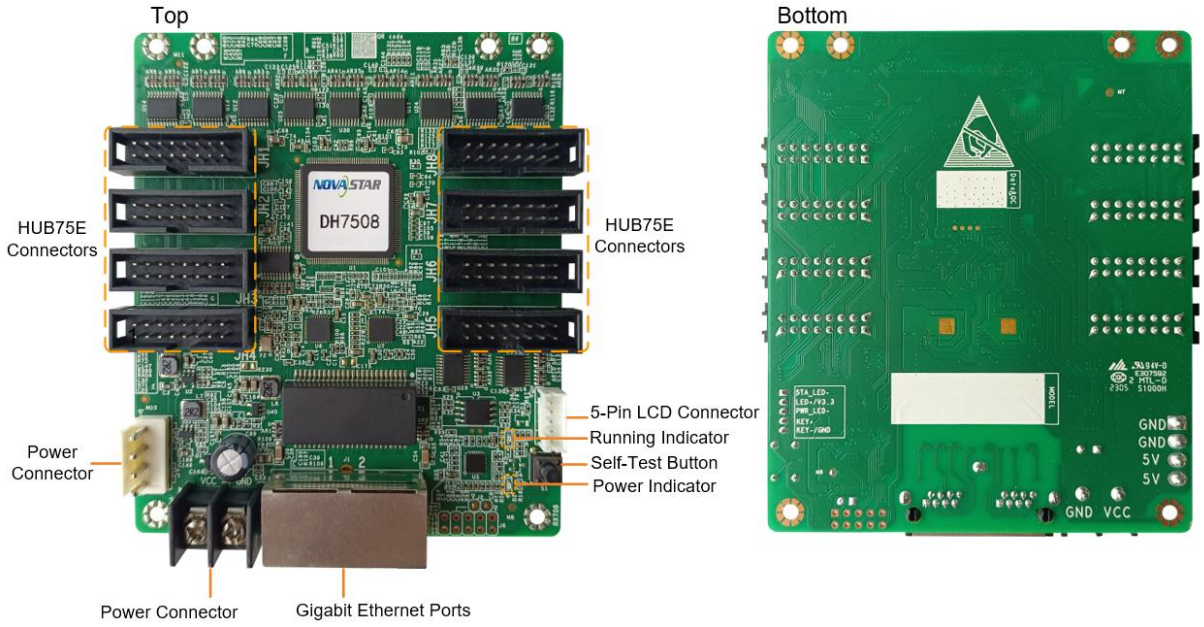
- Loop backup

  The receiving card and sending card form a loop via the primary and backup line connections. If a fault occurs at a location of the lines, the screen can still display the image normally.
- Dual backup of configuration parameters

  The receiving card configuration parameters are stored in the application area and factory area of the receiving card at the same time. Users usually use the configuration parameters in the application area. If necessary, users can restore the configuration parameters in the factory area to the application area.
- Dual program backup

  Two copies of firmware program are stored in the application area of 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.

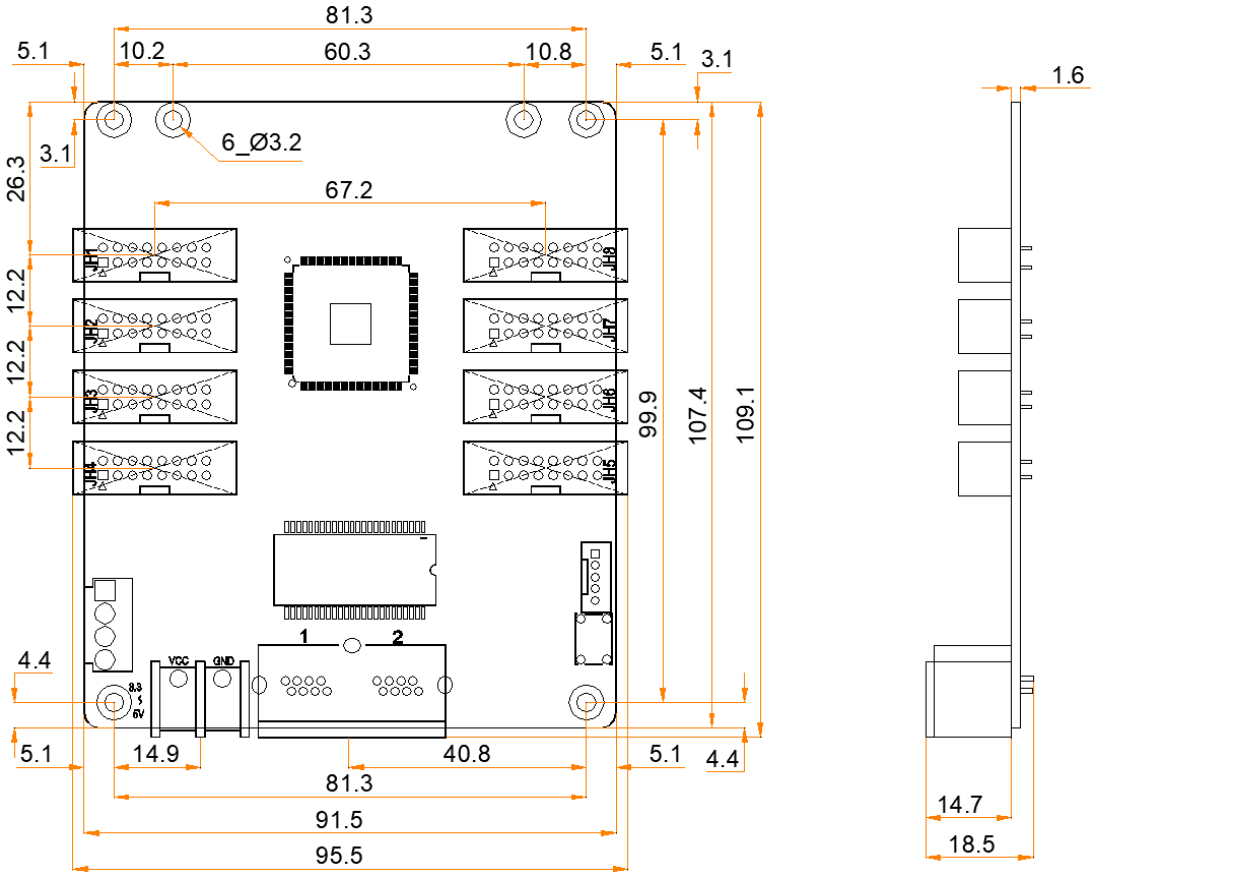
Name	Description
HUB75E Connectors	Connect to the module.
Power Connector	Connect to the input power. Either of the connectors can be chosen.
Gigabit Ethernet Ports	Connect to the sending card, and cascade other receiving cards. Each connector can be used as input or output.
Self-Test Button	Set the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

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 no video source input is available.
		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 supply is normal.

Dimensions

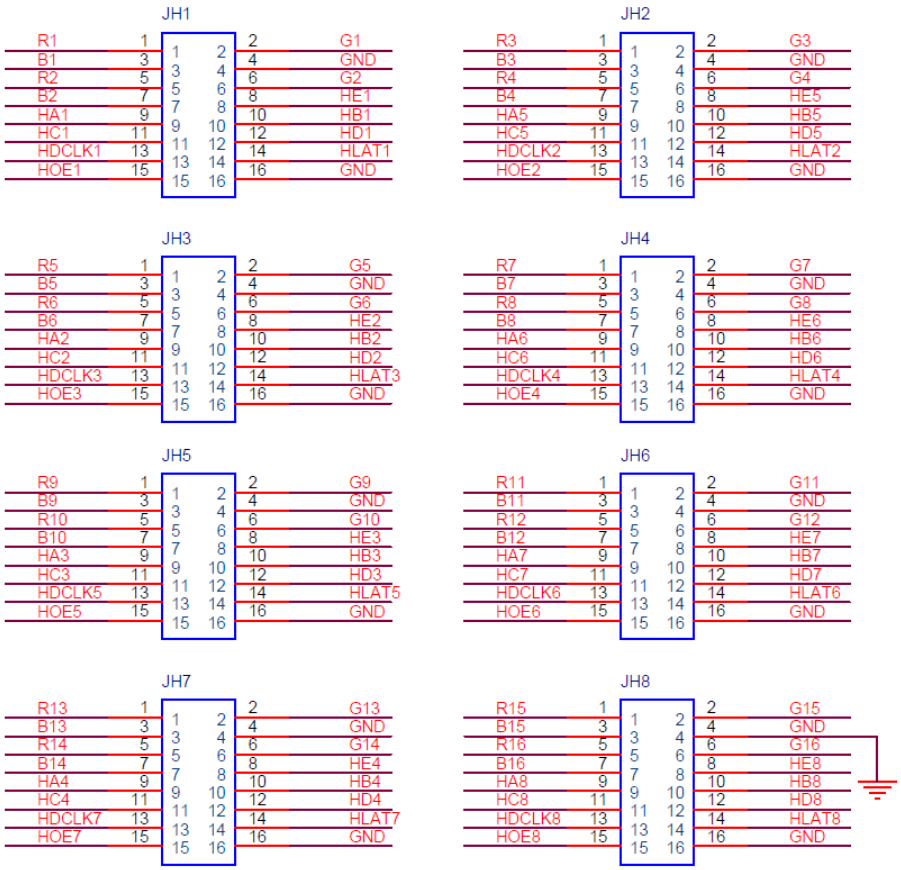
The board thickness is not greater than 2.0 mm, and the total thickness (board thickness + thickness of components on the top and bottom sides) is not greater than 19.0 mm.



Tolerance: ±0.3 Unit: mm

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

Pins



Pin Definitions (Take 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	256×256@60Hz (PWM driver ICs)	
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	95.5 mm × 109.1 mm × 18.5 mm
	Net weight	71.7 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.

Trademark

NOVASTAR is a trademark of Xi'an NovaStar Tech Co., Ltd.

Statement

Thank you for choosing NovaStar's product. This document is intended to help you understand and use the product. For accuracy and reliability, NovaStar may make improvements and/or changes to this document at any time and without notice. If you experience any problems in use or have any suggestions, please contact us via the contact information given in this document. We will do our best to solve any issues, as well as evaluate and implement any suggestions.

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