

DH3208

Receiving Card



Specifications

Change History

Document Version	Release Date	Description
V1.2.6	2025-05-15	<ul style="list-style-type: none">• Added support for multi-batch adjustment.• Updated descriptions for load capacity.• Updated the dimensions diagram.• Updated the storage environment temperature range.
V1.2.5	2023-12-30	Updated product feature descriptions.
V1.2.4	2022-12-27	<ul style="list-style-type: none">• Updated the description of the maximum resolution.• Updated the dimensions diagram.
V1.2.3	2022-08-31	<ul style="list-style-type: none">• Added color management and 18bit+ to product features.• Added the table of appearance description.• Updated the input voltage.• Updated the packing Information.
V1.2.2	2022-03-02	<ul style="list-style-type: none">• Added a description for the dimensions diagram.• Updated the appearance diagram.

Introduction

The DH3208 is a general receiving card developed by NovaStar Tech Co., Ltd. (hereinafter referred to as NovaStar). Supporting various functions such as Color Management, 18bit+, Pixel Level Brightness and Chroma Calibration, Quick Adjustment of Dark or Bright Lines, Multi-batch Adjustment, 3D, Individual Gamma Adjustment for RGB, and 90° Image Rotation, the DH3208 can significantly improve the display effect and user experience.

The DH3208 uses 8 HUB320 connectors for communication. It supports up to 32 groups of parallel RGB data or 64 groups of serial data. Thanks to its EMC compliant hardware design, the DH3208 has improved electromagnetic compatibility and is suitable to 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

- Color Management

Support standard (Rec.709 / DCI-P3 / Rec.2020) and custom color gamuts, enabling more precise colors on the screen.

- 18bit+

Improve the LED display grayscale by 4 times to avoid grayscale loss due to low brightness and allow for a smoother image.

- Pixel Level Brightness and Chroma Calibration

Work with NovaStar's 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.

- 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

- 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.

- Settings of a Stored Image in the Receiving Card

The image displayed during startup, or displayed when the Ethernet cable is disconnected or there is no video signal can be customized.

- 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

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 Backup of Configuration Parameters

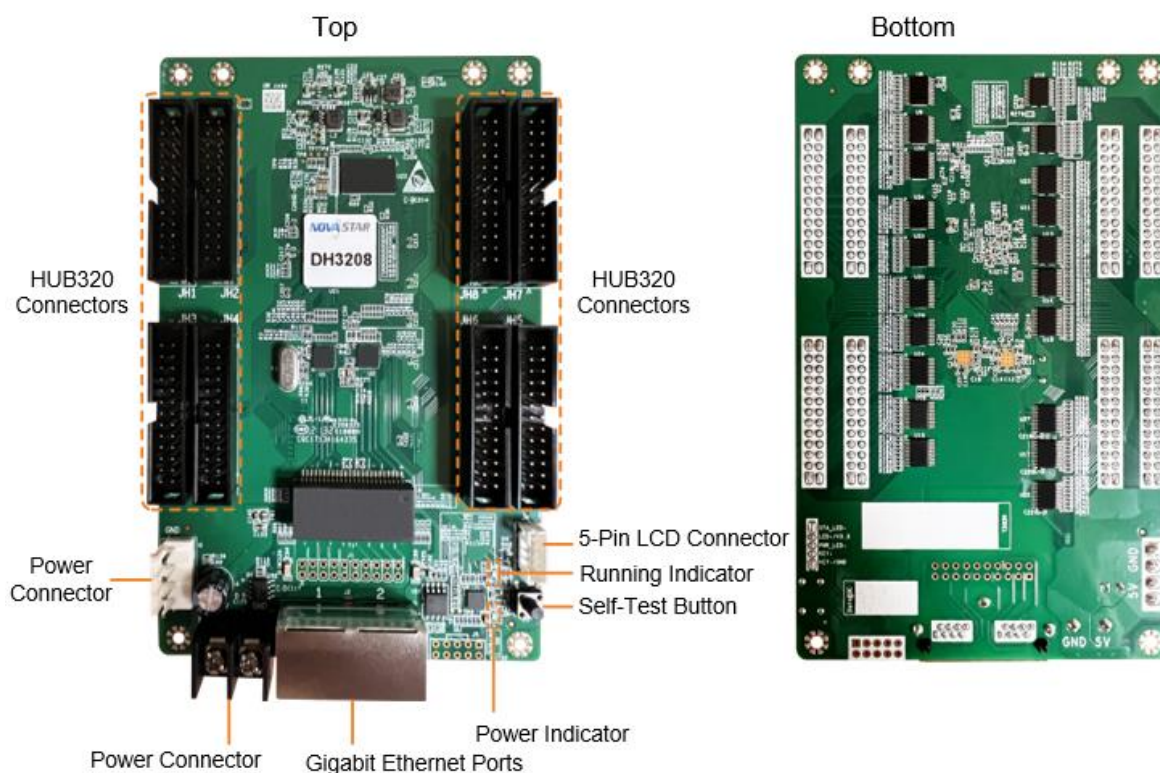
The receiving card configuration parameters are stored in the application area and factory area of the receiving card at the same time. Users usually use the configuration parameters

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 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
HUB320 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.

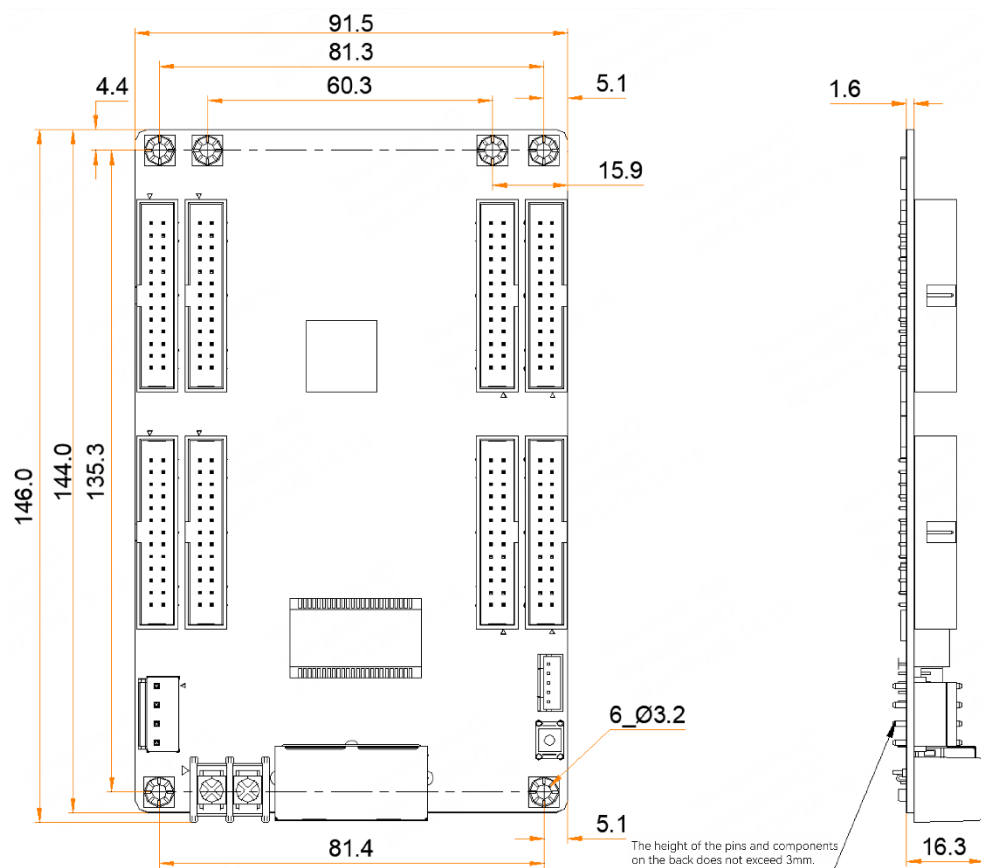
Name	Description
5-Pin LCD Connector	Connect to the LCD.

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 20.0 mm.



Tolerance: ± 0.3 Unit: mm

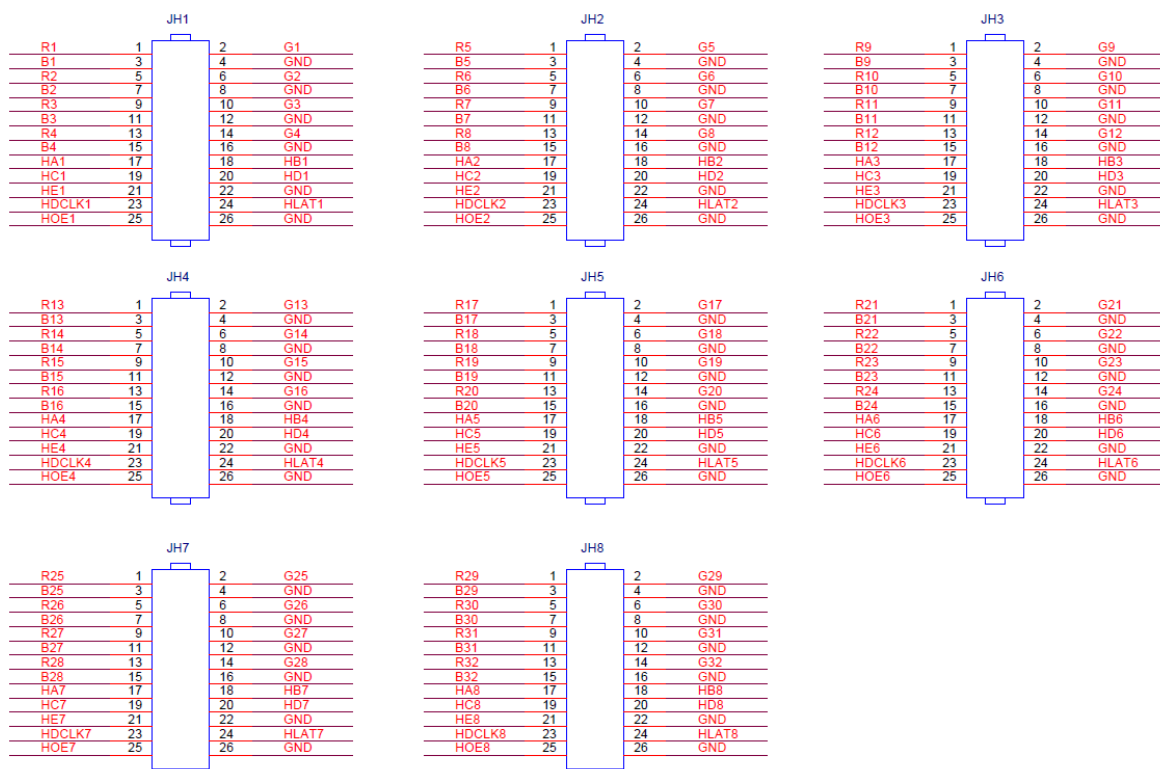


Note

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

Pins

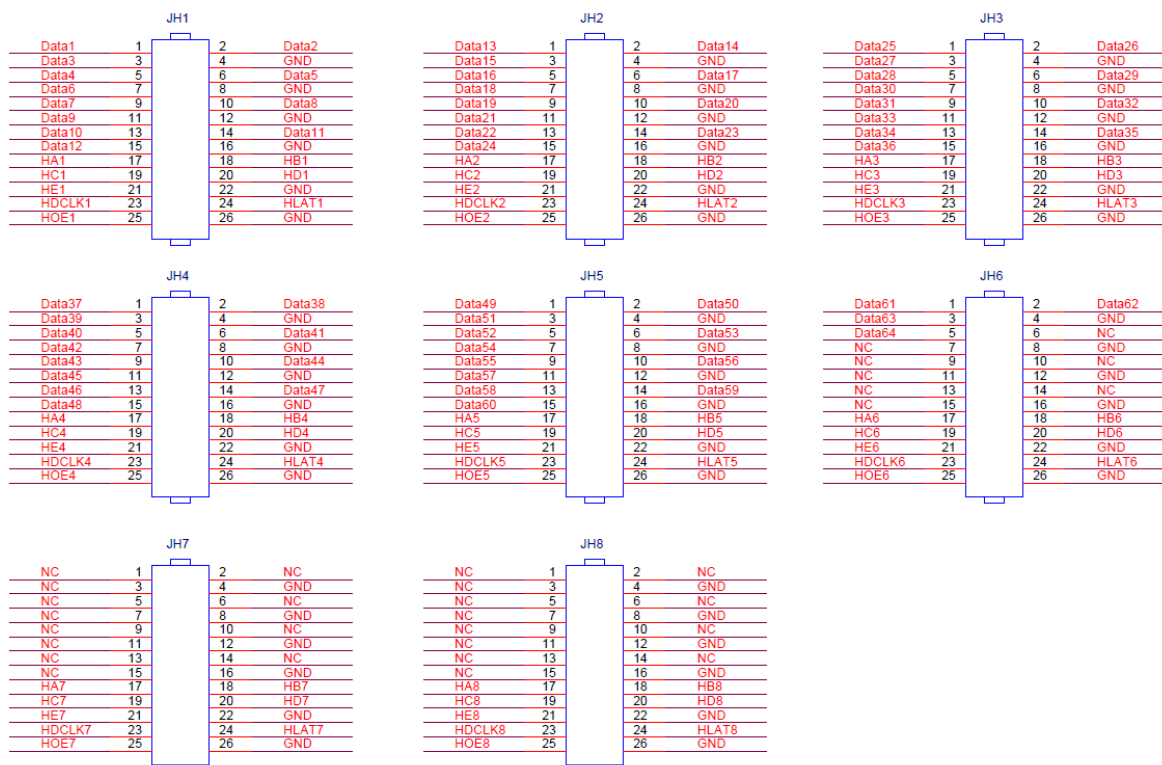
32 Groups of Parallel RGB Data



JH1~JH8					
/	R	1	2	G	/
/	B	3	4	GND	Ground
/	R	5	6	G	/
/	B	7	8	GND	Ground
/	R	9	10	G	/
/	B	11	12	GND	Ground
/	R	13	14	G	/
/	B	15	16	GND	Ground
Line decoding signal	HA	17	18	HB	Line decoding signal
Line decoding signal	HC	19	20	HD	Line decoding signal
Line decoding signal	HE	21	22	GND	Ground
Shift clock	HDCLK	23	24	HLAT	Latch signal

JH1~JH8					
Display enable signal	HOE	25	26	GND	Ground

64 Groups of Serial Data



JH1~JH5					
/	Data	1	2	Data	/
/	Data	3	4	GND	Ground
/	Data	5	6	Data	/
/	Data	7	8	GND	Ground
/	Data	9	10	Data	/
/	Data	11	12	GND	Ground
/	Data	13	14	Data	/
/	Data	15	16	GND	Ground
Line decoding signal	HA	17	18	HB	Line decoding signal
Line decoding signal	HC	19	20	HD	Line decoding signal
Line decoding signal	HE	21	22	GND	Ground

JH1~JH5					
Shift clock	HDCLK	23	24	HLAT	Latch signal
Display enable signal	HOE	25	26	GND	Ground
JH6					
/	Data	1	2	Data	/
/	Data	3	4	GND	Ground
/	Data	5	6	NC	/
/	NC	7	8	GND	Ground
/	NC	9	10	NC	/
/	NC	11	12	GND	Ground
/	NC	13	14	NC	/
/	NC	15	16	GND	Ground
Line decoding signal	HA	17	18	HB	Line decoding signal
Line decoding signal	HC	19	20	HD	Line decoding signal
Line decoding signal	HE	21	22	GND	Ground
Shift clock	HDCLK	23	24	HLAT	Latch signal
Display enable signal	HOE	25	26	GND	Ground

Specifications

Maximum Resolution	<ul style="list-style-type: none"> 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	Temperature	−40°C to +85°C

Environment	Humidity	0% RH to 95% RH, non-condensing
Physical Specifications	Dimensions	146.0 mm × 91.5 mm × 19.3 mm
	Net weight	100.0 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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