

DH3208

Receiving Card



Specifications

Change History

| Document Version | Release Date | Description |
|------------------|--------------|---|
| V1.2.5 | 2023-12-30 | Updated 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 the Color Management and 18bit+ 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 the dimensions diagram description. Updated the appearance diagram. |
| V1.2.1 | 2021-12-03 | <ul style="list-style-type: none"> Updated the certifications description. Updated the feature description. |

Introduction

The DH3208 is a general receiving card developed by NovaStar. For PWM driver ICs, a single DH3208 supports resolutions up to 512x512@60Hz. For common driver ICs, a single DH3208 supports resolutions up to 512x384@60Hz. Supporting various functions such as color management, 18bit+, pixel level brightness and chroma calibration, quick adjustment of dark or bright lines, 3D, individual gamma adjustment for RGB, and image rotation in 90° increments, 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 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

- Color Management
 Support the standard color gamuts (Rec.709, DCI-P3 and Rec.2020) and custom color gamuts, enabling more precise colors on the screen.
- 18bit+
 Improve the LED display grayscale by 4 times to effectively deal with grayscale loss due to low brightness and allow for a smoother image.
- 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 and cabinets can be adjusted to improve the visual experience. The adjustment can be easily made and takes effect immediately.
- 3D
 Working with the LED controller that supports 3D function, the receiving card supports 3D image output.

- Individual gamma adjustment for RGB
Working with NovaLCT (V5.2.0 or later) and the LED controller that supports this function, the receiving card supports individual adjustment of 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.
- Image rotation in 90° increments
The display image can be set to rotate in multiples of 90° (0°/90°/180°/270°).

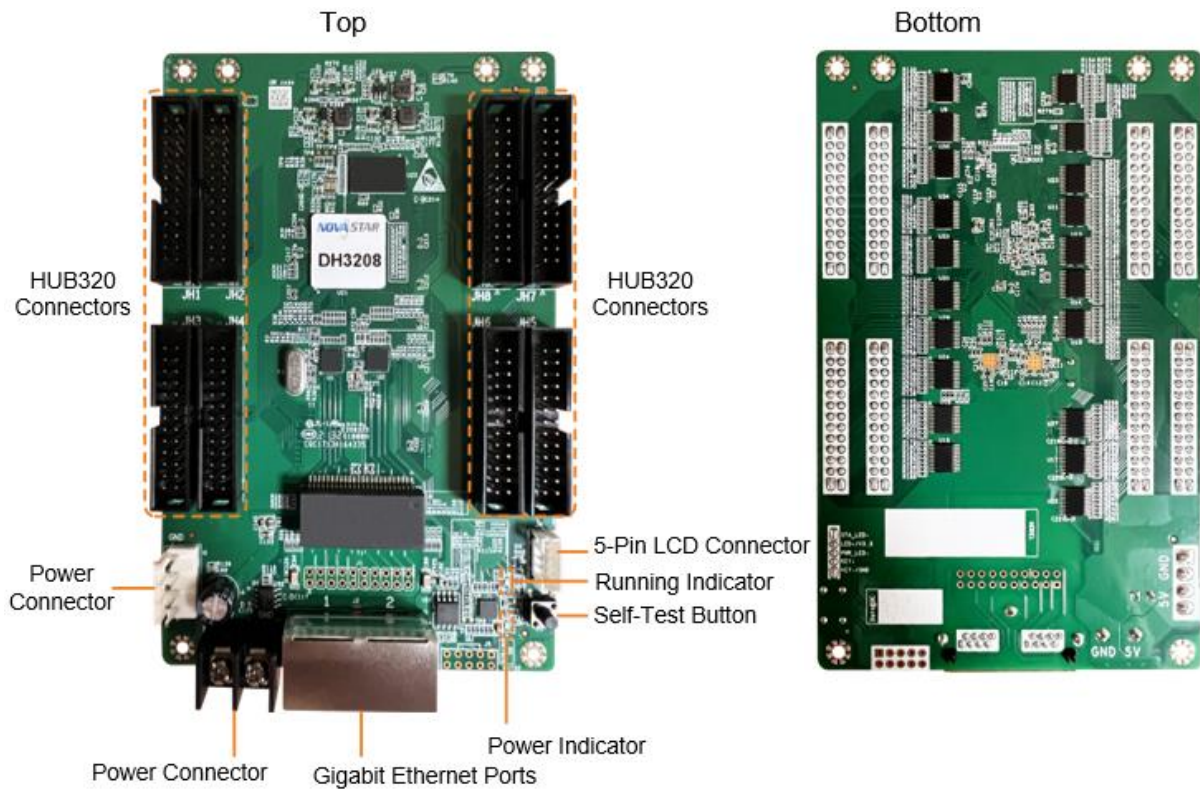
Improvements to Maintainability

- 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.
- 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.
- 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 LED controller form a loop via the main 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 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.

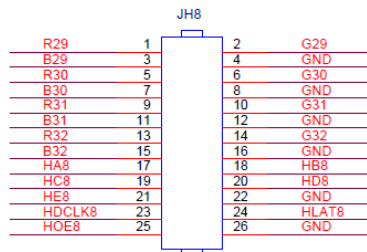
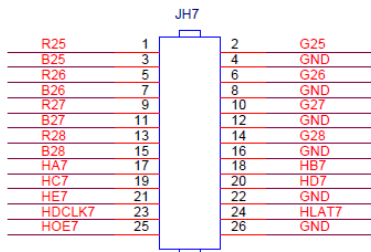
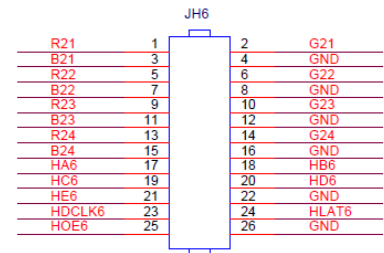
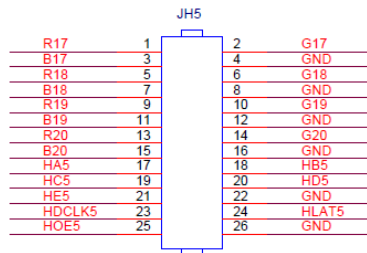
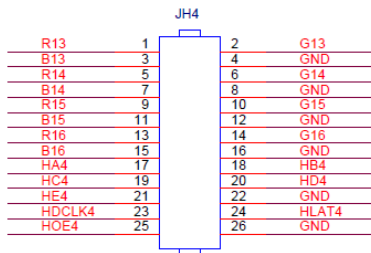
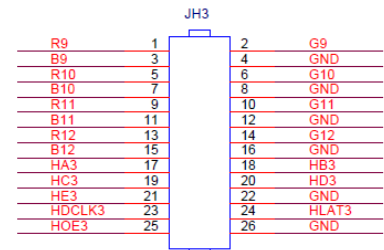
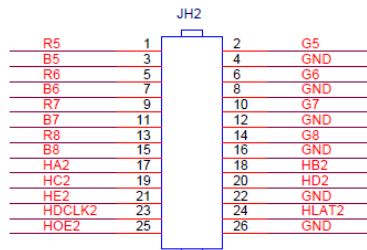
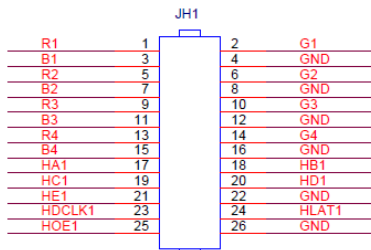
| Name | Description |
|------------------------|--|
| HUB320 Connectors | Connect to the module. |
| Power Connector | Connect to the input power. Either of the connectors can be chosen. |
| Gigabit Ethernet Ports | Connect to the sending card, and cascade other receiving cards. Each connector can be 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. |
| 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. |

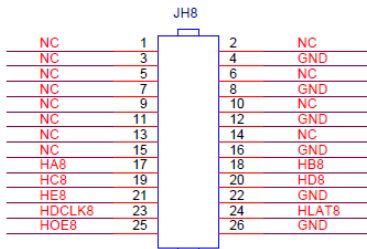
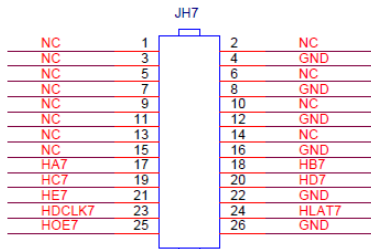
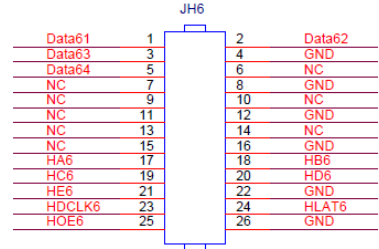
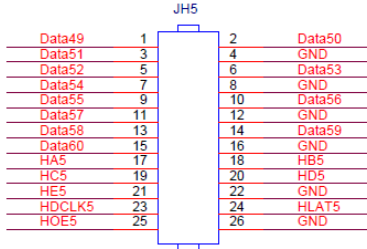
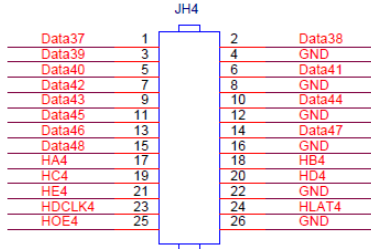
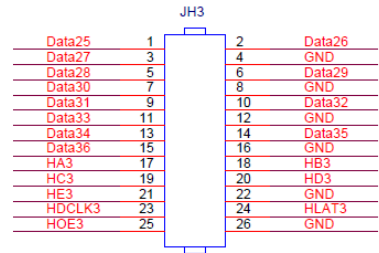
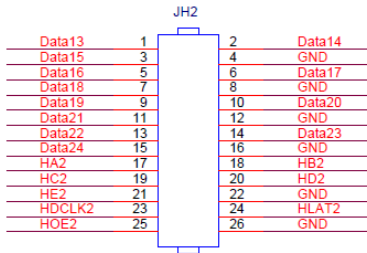
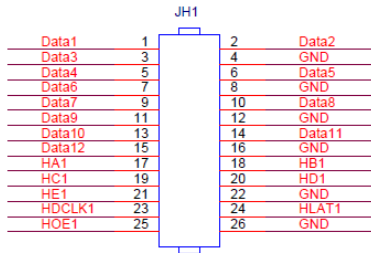
Pins

32 Groups of Parallel RGB Data



| JH1 to 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 |
| Display enable signal | HOE | 25 | 26 | GND | Ground |

64 Groups of Serial Data



| JH1 to 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 | |
| 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 | 512×512@60Hz (PWM driver ICs) 512×384@60Hz (Common 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 | 145.7 mm × 91.5 mm × 18.3 mm |
| | Net weight | 100.0 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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