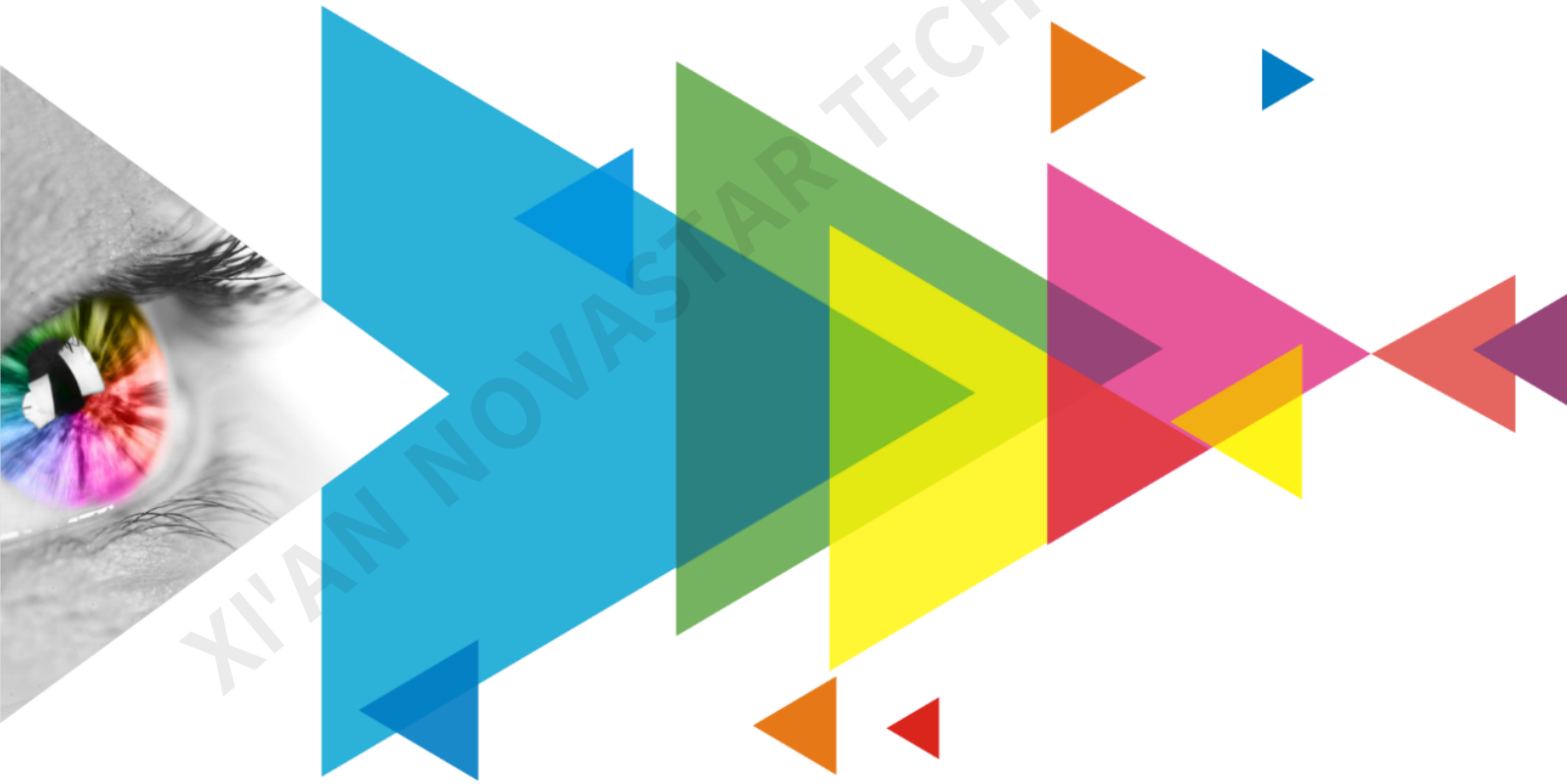
MRV416

Receiving Card



Specifications

Change History

Document Version	Release Date	Description
V1.0.2	2021-12-03	• Updated the certification description. • Updated the description of features.
V1.0.1	2021-05-28	Added the certification related description.
V1.0.0	2021-05-19	First release

Introduction

The MRV416 is a general receiving card developed by NovaStar. Working with NovaLCT V5.3.0 or later, a single MRV416 loads up to 512×384 pixels. Supporting various functions such as the brightness calibration, quick adjustment of dark or bright lines, 3D, and individual Gamma adjustment for RGB, the MRV416 can greatly improve the display effect and user experience.

The MRV416 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.

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 the high-precision calibration system to perform brightness calibration on each LED to effectively remove brightness differences, enabling high brightness 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 can be easily made and takes effect immediately.
- 3D function
  Working with the sending card that supports 3D function, the receiving card supports 3D output.
- Individual Gamma adjustment for RGB
  Working with NovaLCT (V5.2.0 or later) and the sending card 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 under low grayscale and white balance offset, allowing for a more realistic image.

Improvements to Maintainability

- Quick uploading of calibration coefficients
  Upload the calibration coefficients quickly to the receiving cards to improve efficiency.
- 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.
- Bite 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.

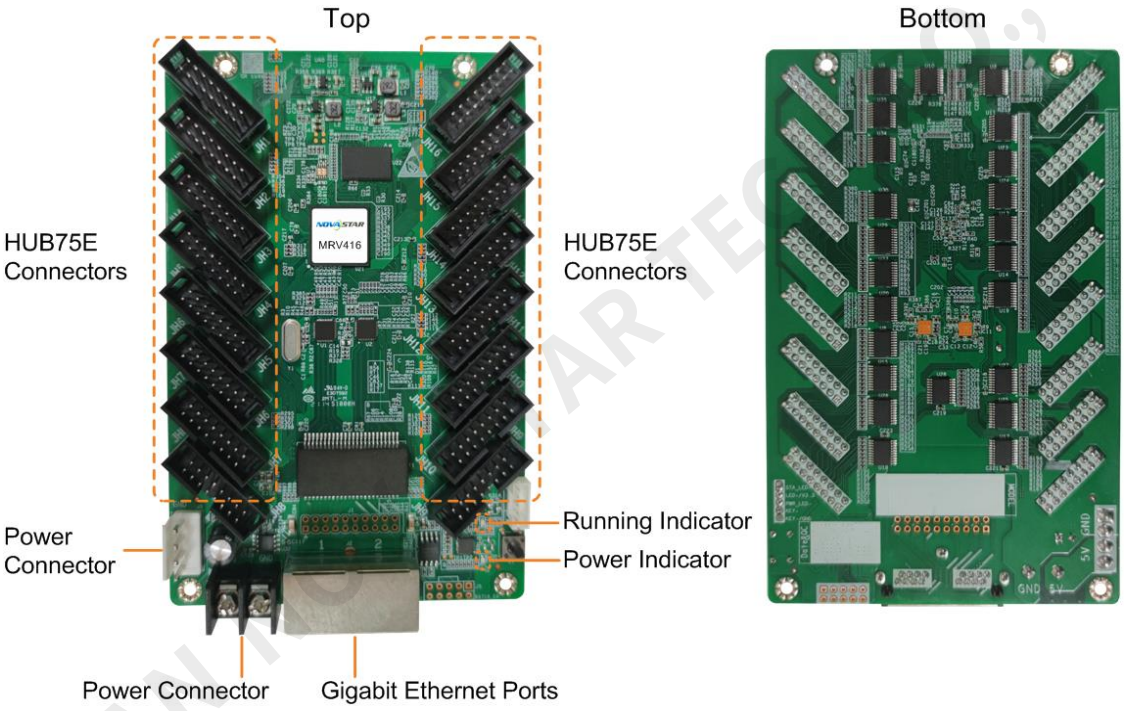
- Firmware program readback
  The receiving card firmware program can be read back and saved to the local computer.

  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 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 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.

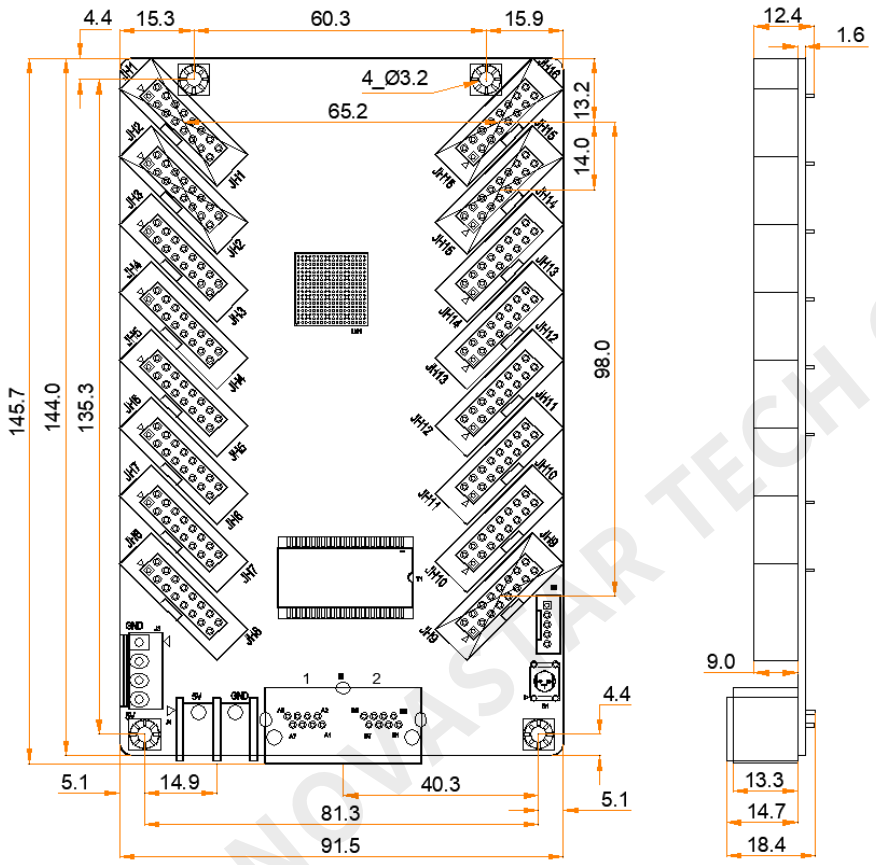
Indicators

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

Indicator	Color	Status	Description
			and the loop backup has taken effect.
Power indicator	Red	Always on	The power input is normal.

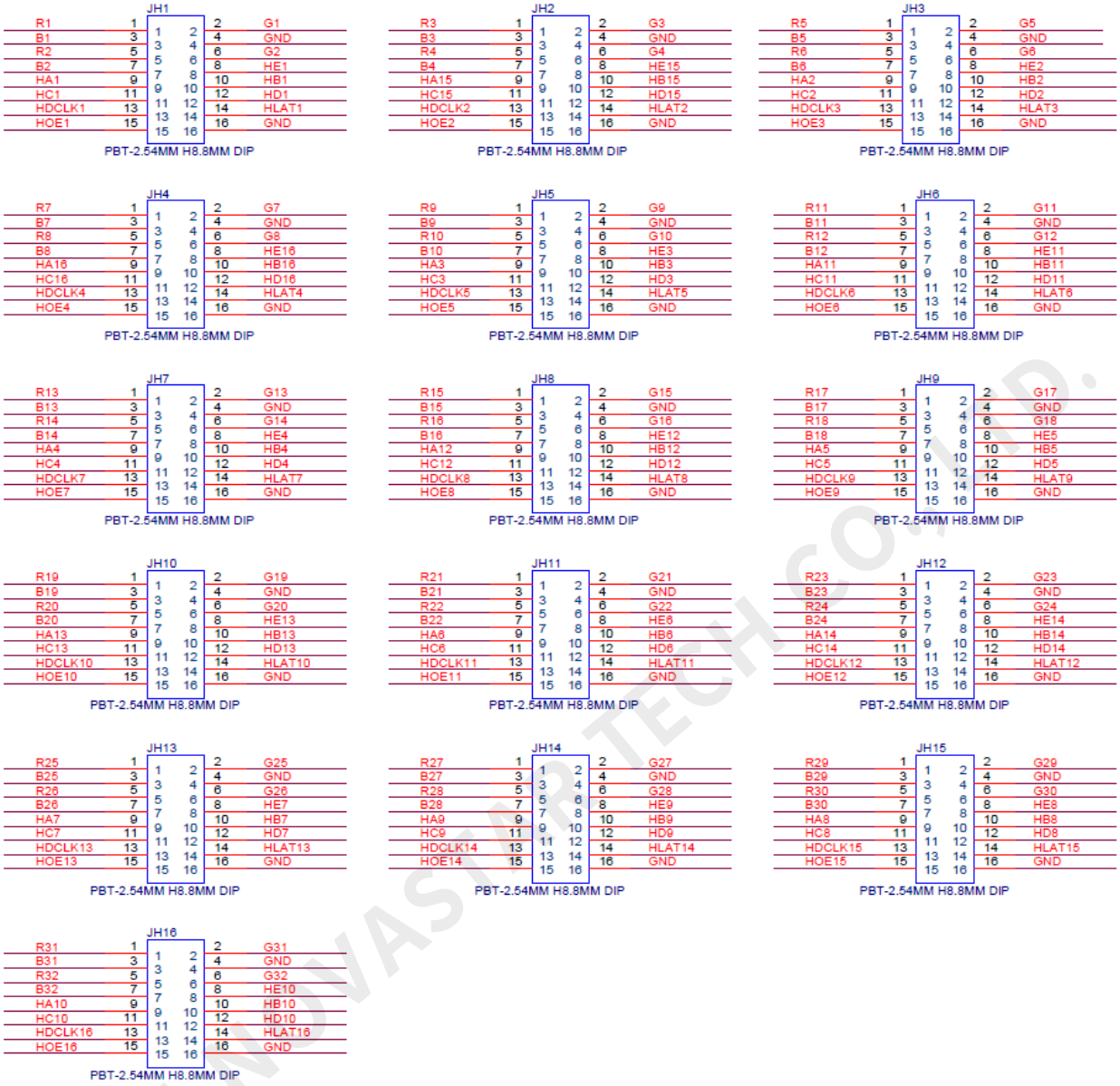
Dimensions

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. Ground connection (GND) is enabled for mounting holes.



Tolerance: ±0.3 Unit: mm

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

Specifications

Maximum Loading Capacity	PWM IC: 512×384 pixels Common IC: 384×384 pixels	
Electrical Specifications	Input voltage	DC 3.3 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 × 18.4 mm
	Net weight	101.9 g Note: It is the weight of a single receiving card only.
	Gross weight	13.78 kg Note: It is the total weight of the product, printed materials and packing materials packed according to the packing specifications.
Packing Information	Packing specifications	An antistatic bag and anti-collision foam are provided for each receiving card. Each packing box contains 100 receiving cards.
	Packing box dimensions	650.0 mm × 500.0 mm × 200.0 mm

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

Trademark

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Statement

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