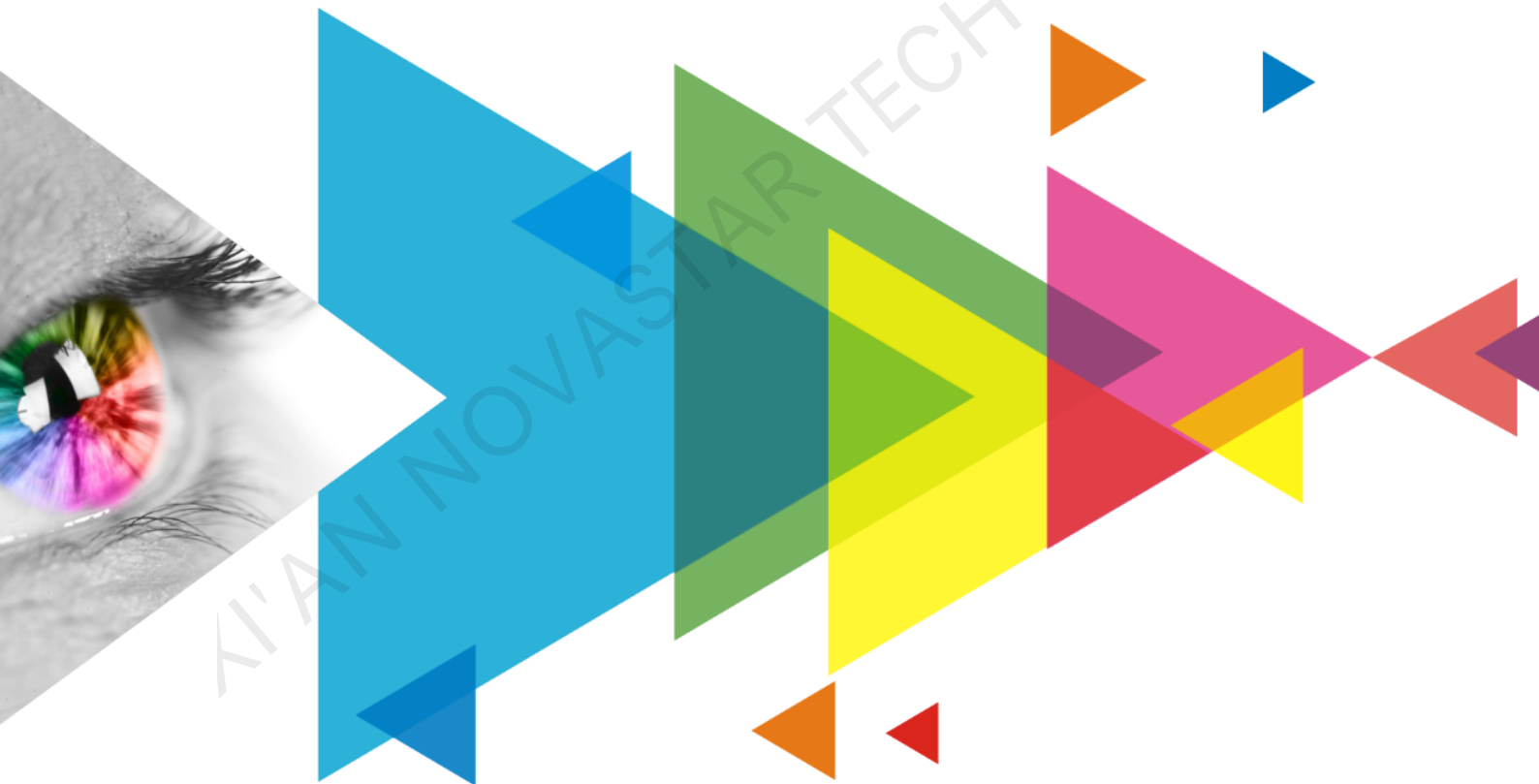


MRV216

Receiving Card



Specifications

Change History

Document Version	Release Date	Description
V1.1.3	2022-08-31	<ul style="list-style-type: none"> Added the table of appearance description. Updated the input voltage. Updated the packing information.
V1.1.2	2022-03-26	<ul style="list-style-type: none"> Added the certifications description. Added the dimensions diagram description. Updated some feature descriptions. Updated the pins section.
V1.1.1	2020-09-11	<ul style="list-style-type: none"> Optimized the feature description. Optimized the legends in the appearance diagram. Optimized the indicator description. Optimized the dimensions diagram.
V1.1.0	2020-04-10	<ul style="list-style-type: none"> Updated the maximum loading capacity. Updated the feature description.
V1.0.0	2020-01-06	First release

Introduction

The MRV216 is a general receiving card developed by NovaStar. A single MRV216 supports resolutions up to 512x384@60Hz (NovaLCT V5.3.0 or later required). Supporting various functions such as the brightness calibration, quick adjustment of dark or bright lines, 3D, and individual gamma adjustment for RGB, the MRV216 can significantly improve the display effect and user experience.

The MRV216 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 NovaStar's high-precision 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 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 function
 Working with the sending card 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 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

- Mapping function
The cabinets display the 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 temperature and voltage of the receiving card can be monitored without using peripherals.
- 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.

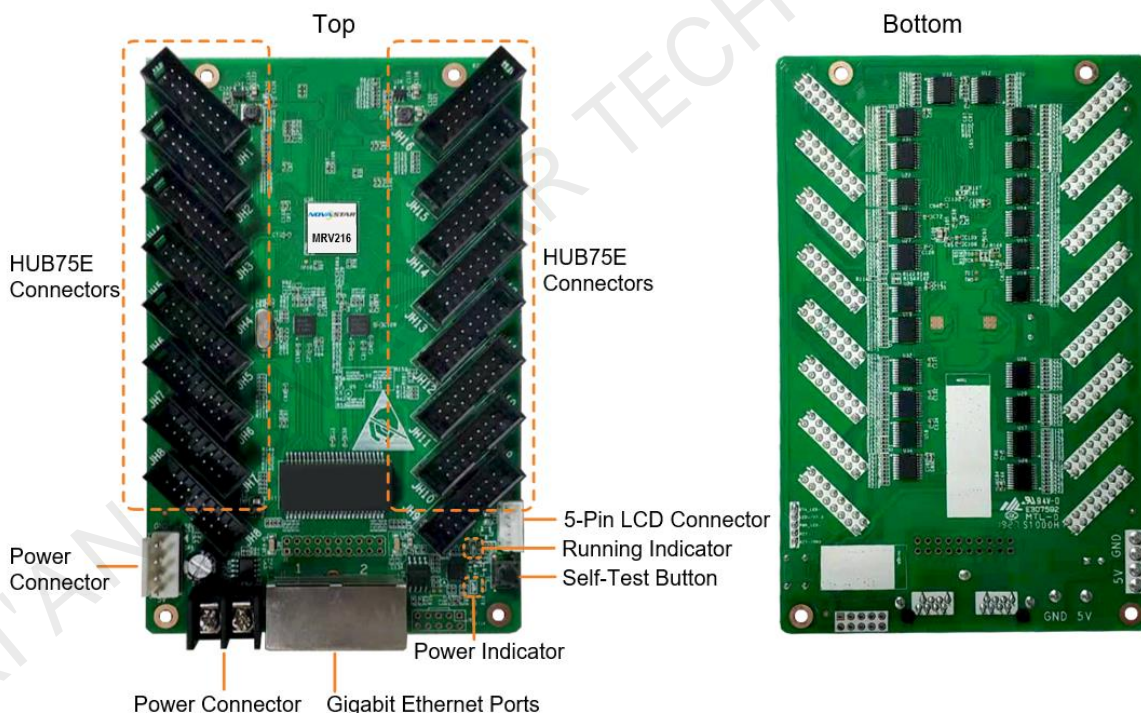
NovaLCT V5.2.0 or later is required.

- 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 main and backup line connections. If 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 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.

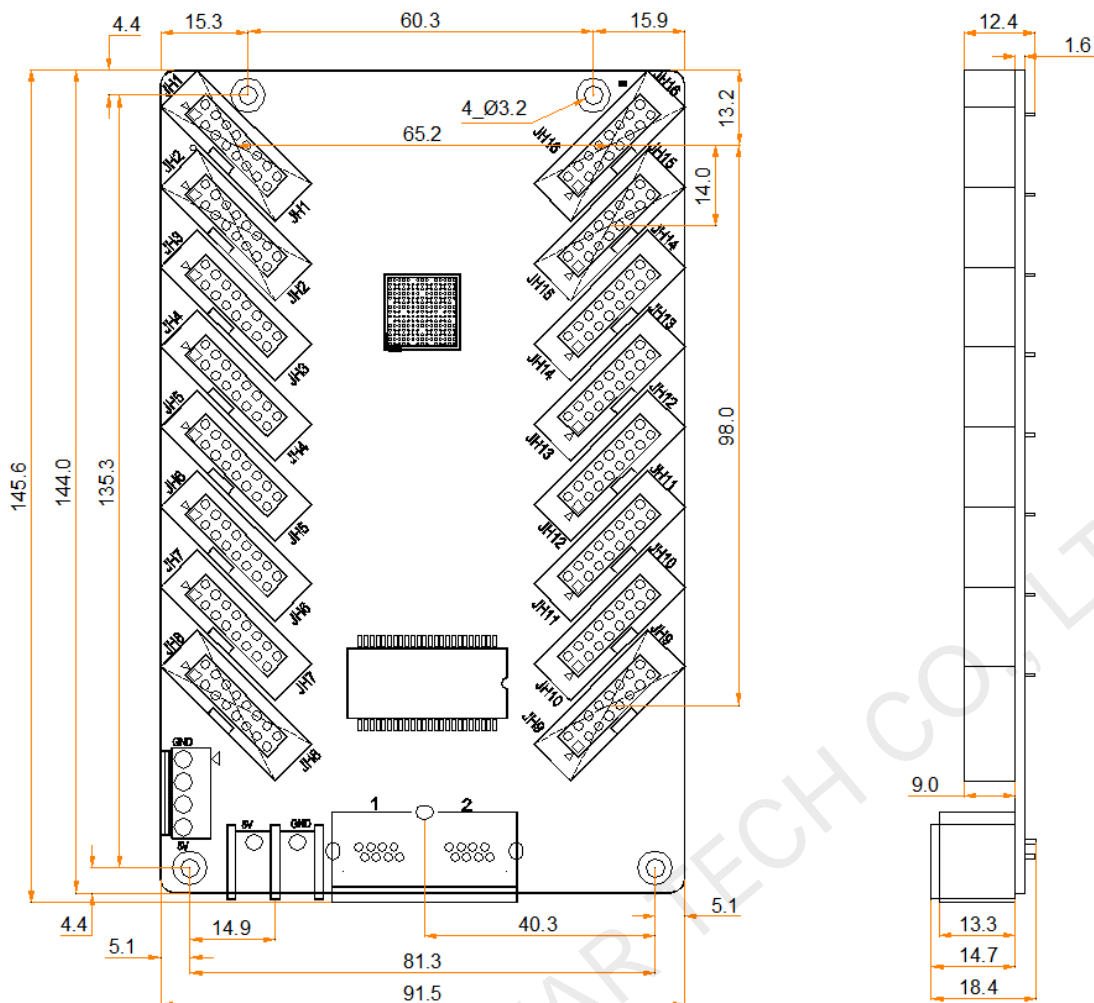
Name	Description
	After the Ethernet cable is disconnected, press the button twice, and the test pattern will be displayed on the screen. Press the button again to switch the pattern.
5-Pin LCD Connector	Connect to the LCD.

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



Tolerance: ±0.3 Unit: mm

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

Pins

JH1 R1 1 1 2 4 G1 B1 3 3 4 4 GND R2 5 5 6 6 G2 B2 7 7 8 8 HE1 HA1 9 9 10 10 HB1 HC1 11 9 10 12 HD1 HDCLK1 13 11 12 14 HLAT1 HOE1 15 13 14 16 GND	JH2 R3 1 1 2 4 G3 B3 3 3 4 4 GND R4 5 5 6 6 G4 B4 7 7 8 8 HE9 HA9 9 9 10 10 HB9 HC9 11 9 10 12 HD9 HDCLK2 13 11 12 14 HLAT2 HOE2 15 13 14 16 GND	JH3 R5 1 1 2 4 G5 B5 3 3 4 4 GND R6 5 5 6 6 G6 B6 7 7 8 8 HE2 HA2 9 9 10 10 HB2 HC2 11 9 10 12 HD2 HDCLK3 13 11 12 14 HLAT3 HOE3 15 13 14 16 GND	JH4 R7 1 1 2 4 G7 B7 3 3 4 4 GND R8 5 5 6 6 G8 B8 7 7 8 8 HE10 HA10 9 9 10 10 HB10 HC10 11 9 10 12 HD10 HDCLK4 13 11 12 14 HLAT4 HOE4 15 13 14 16 GND
JH5 R9 1 1 2 4 G9 B9 3 3 4 4 GND R10 5 5 6 6 G10 B10 7 7 8 8 HE3 HA3 9 9 10 10 HB3 HC3 11 9 10 12 HD3 HDCLK5 13 11 12 14 HLAT5 HOE5 15 13 14 16 GND	JH6 R11 1 1 2 4 G11 B11 3 3 4 4 GND R12 5 5 6 6 G12 B12 7 7 8 8 HE11 HA11 9 9 10 10 HB11 HC11 11 9 10 12 HD11 HDCLK6 13 11 12 14 HLAT6 HOE6 15 13 14 16 GND	JH7 R13 1 1 2 4 G13 B13 3 3 4 4 GND R14 5 5 6 6 G14 B14 7 7 8 8 HE4 HA4 9 9 10 10 HB4 HC4 11 9 10 12 HD4 HDCLK7 13 11 12 14 HLAT7 HOE7 15 13 14 16 GND	JH8 R15 1 1 2 4 G15 B15 3 3 4 4 GND R16 5 5 6 6 G16 B16 7 7 8 8 HE12 HA12 9 9 10 10 HB12 HC12 11 9 10 12 HD12 HDCLK8 13 11 12 14 HLAT8 HOE8 15 13 14 16 GND
JH9 R17 1 1 2 4 G17 B17 3 3 4 4 GND R18 5 5 6 6 G18 B18 7 7 8 8 HE5 HA5 9 9 10 10 HB5 HC5 11 9 10 12 HD5 HDCLK9 13 11 12 14 HLAT9 HOE9 15 13 14 16 GND	JH10 R19 1 1 2 4 G19 B19 3 3 4 4 GND R20 5 5 6 6 G20 B20 7 7 8 8 HE13 HA13 9 9 10 10 HB13 HC13 11 9 10 12 HD13 HDCLK10 13 11 12 14 HLAT10 HOE10 15 13 14 16 GND	JH11 R21 1 1 2 4 G21 B21 3 3 4 4 GND R22 5 5 6 6 G22 B22 7 7 8 8 HE6 HA6 9 9 10 10 HB6 HC6 11 9 10 12 HD6 HDCLK11 13 11 12 14 HLAT11 HOE11 15 13 14 16 GND	JH12 R23 1 1 2 4 G23 B23 3 3 4 4 GND R24 5 5 6 6 G24 B24 7 7 8 8 HE14 HA14 9 9 10 10 HB14 HC14 11 9 10 12 HD14 HDCLK12 13 11 12 14 HLAT12 HOE12 15 13 14 16 GND
JH13 R25 1 1 2 4 G25 B25 3 3 4 4 GND R26 5 5 6 6 G26 B26 7 7 8 8 HE7 HA7 9 9 10 10 HB7 HC7 11 9 10 12 HD7 HDCLK13 13 11 12 14 HLAT13 HOE13 15 13 14 16 GND	JH14 R27 1 1 2 4 G27 B27 3 3 4 4 GND R28 5 5 6 6 G28 B28 7 7 8 8 HE15 HA15 9 9 10 10 HB15 HC15 11 9 10 12 HD15 HDCLK14 13 11 12 14 HLAT14 HOE14 15 13 14 16 GND	JH15 R29 1 1 2 4 G29 B29 3 3 4 4 GND R30 5 5 6 6 G30 B30 7 7 8 8 HE8 HA8 9 9 10 10 HB8 HC8 11 9 10 12 HD8 HDCLK15 13 11 12 14 HLAT15 HOE15 15 13 14 16 GND	JH16 R31 1 1 2 4 G31 B31 3 3 4 4 GND R32 5 5 6 6 G32 B32 7 7 8 8 HE16 HA16 9 9 10 10 HB16 HC16 11 9 10 12 HD16 HDCLK16 13 11 12 14 HLAT16 HOE16 15 13 14 16 GND

Pin Definitions (Take JH1 as an example)					
/	R1	1	2	G1	/
/	B1	3	4	GND	Ground

Pin Definitions (Take JH1 as an example)					
/	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	PWM IC: 512x384@60Hz	
	Common IC: 384x384@60Hz	
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	145.6 mm × 91.5 mm × 18.4 mm
	Net weight	100.1 g
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	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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