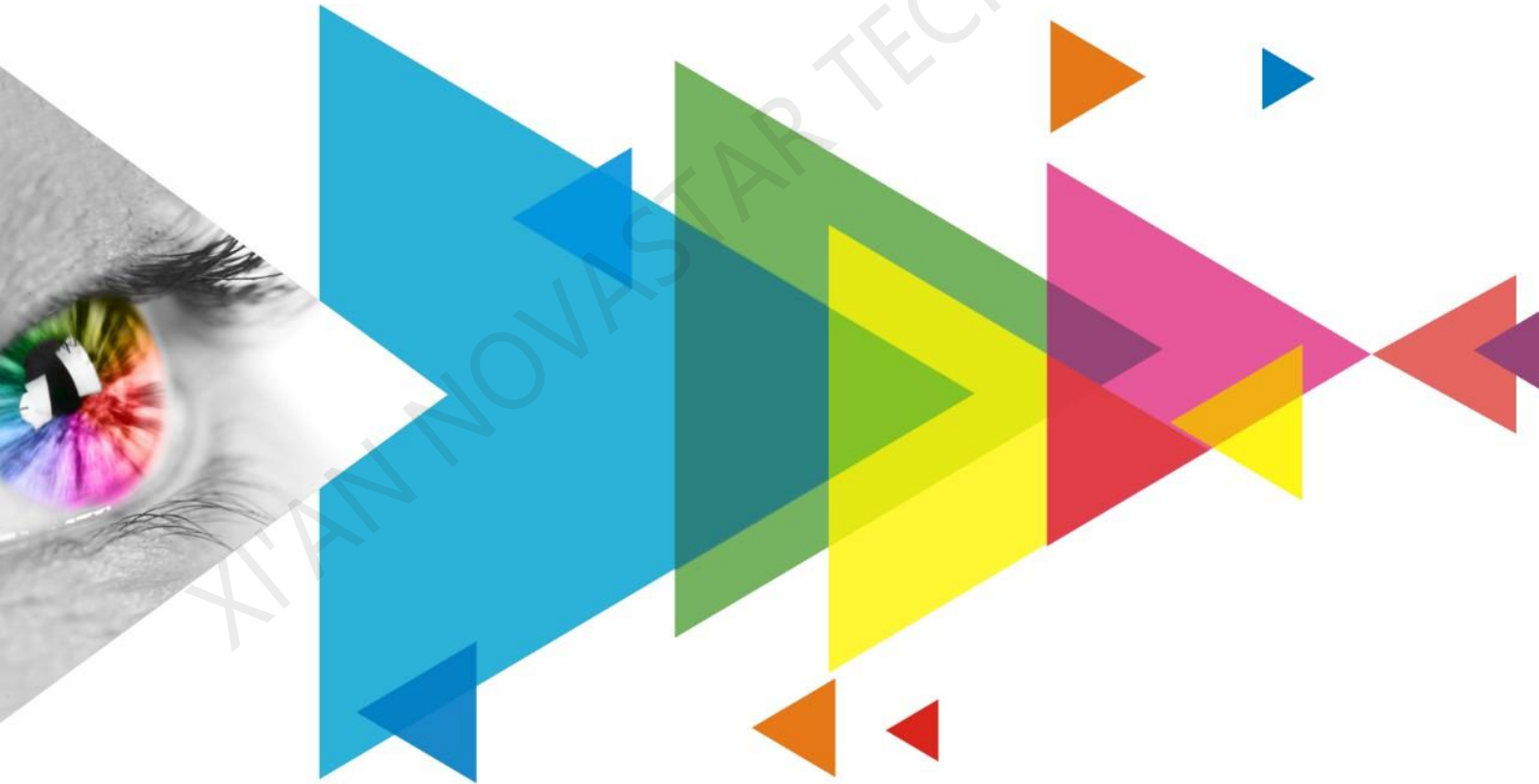


# MRV216

## Receiving Card

V1.1.1



**Specifications**

## Change History

Document Version	Release Date	Description
V1.1.1	2020-09-11	<ul style="list-style-type: none"> <li>Optimized the feature description.</li> <li>Optimized the legends in the appearance diagram.</li> <li>Optimized the indicator description.</li> <li>Optimized the dimensions diagram.</li> </ul>
V1.1.0	2020-04-10	<ul style="list-style-type: none"> <li>Updated the maximum loading capacity.</li> <li>Updated the feature description.</li> </ul>
V1.0.0	2020-01-06	First release

## Introduction

The MRV216 is a general receiving card developed by NovaStar. A single MRV216 loads up to 512×384 pixels (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 greatly 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 to various on-site setups.

## Features

### Improvements to Display Effect

- Brightness calibration**  
 Working with NovaLCT and NovaCLB, the receiving card supports brightness calibration on each LED, which can greatly improve LED display brightness consistency, allowing for better image quality.
- 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 rate monitoring**  
 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.

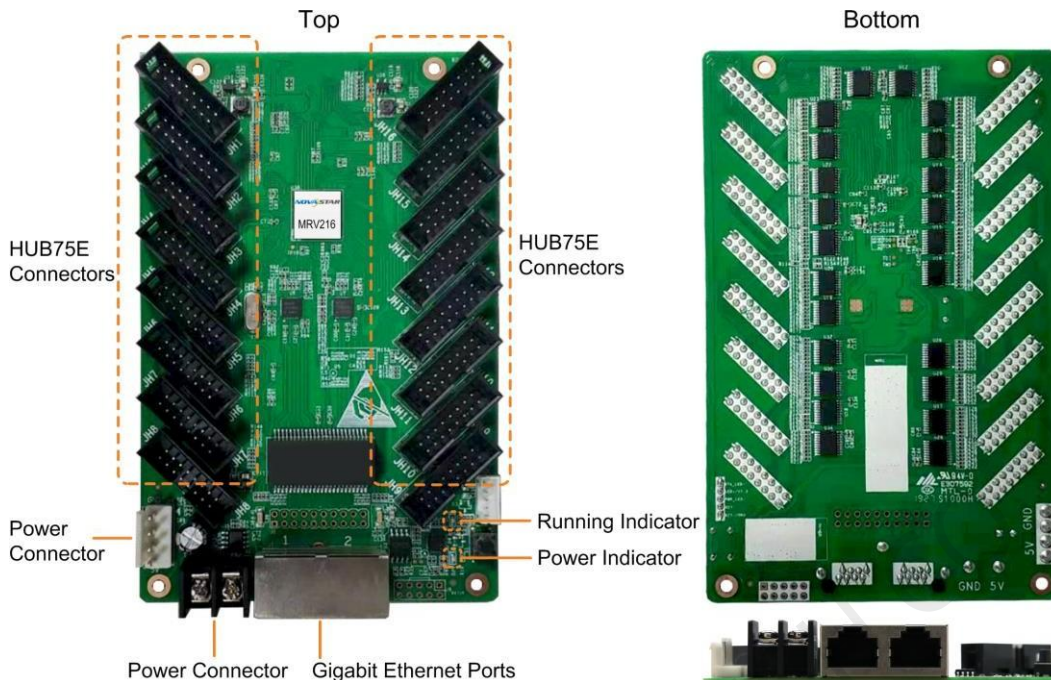
### Improvements to Reliability

- 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 the application program

Two copies of the application program are stored in the receiving card at the factory to avoid the

problem that the receiving card may get stuck due to program update exception.

## Appearance



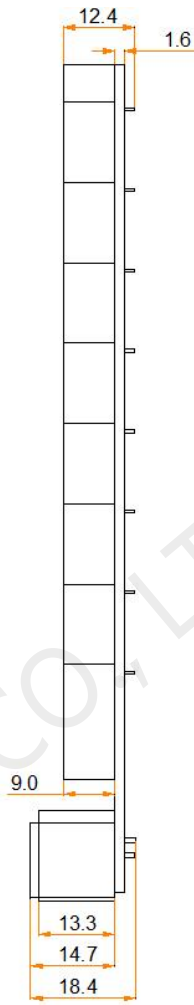
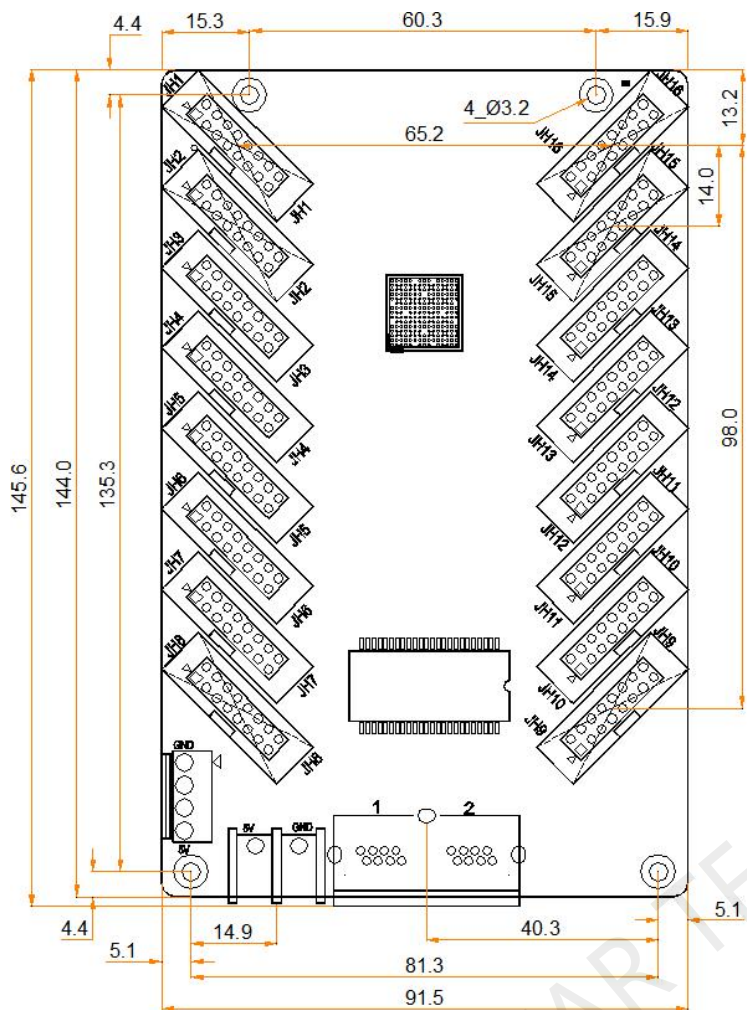
All product pictures shown in this document are for illustration purpose only. Actual product may vary.

## 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 now is 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:  $\pm 0.1$  Unit: mm

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## Pins

JH1					
GND	16	15	13	11	HOE1
HLAT1	14	14	13	11	HDCLK1
HD1	12	12	11	9	HC1
HB1	10	10	9	7	HA1
HE1	8	8	7	5	B2
G2	6	6	5	3	R2
GND	4	4	3	1	B1
G1	2	2	1		R1

JH2					
GND	16	15	13	11	HOE2
HLAT2	14	14	13	11	HDCLK2
HD1	12	12	11	9	HC1
HB1	10	10	9	7	HA1
HE1	8	8	7	5	B4
G4	6	6	5	3	R4
GND	4	4	3	1	B3
G3	2	2	1		R3

JH3					
GND	16	15	13	11	HOE3
HLAT3	14	14	13	11	HDCLK3
HD2	12	12	11	9	HC2
HB2	10	10	9	7	HA2
HE2	8	8	7	5	B5
G6	6	6	5	3	R6
GND	4	4	3	1	B5
G5	2	2	1		R5

JH4					
GND	16	15	13	11	HOE4
HLAT4	14	14	13	11	HDCLK4
HD2	12	12	11	9	HC2
HB2	10	10	9	7	HA2
HE2	8	8	7	5	B8
G8	6	6	5	3	R8
GND	4	4	3	1	B7
G7	2	2	1		R7

JH5					
GND	16	15	13	11	HOE5
HLAT5	14	14	13	11	HDCLK5
HD3	12	12	11	9	HC3
HB3	10	10	9	7	HA3
HE3	8	8	7	5	B10
G10	6	6	5	3	R10
GND	4	4	3	1	B9
G9	2	2	1		R9

JH6					
GND	16	15	13	11	HOE6
HLAT6	14	14	13	11	HDCLK6
HD3	12	12	11	9	HC3
HB3	10	10	9	7	HA3
HE3	8	8	7	5	B12
G12	6	6	5	3	R12
GND	4	4	3	1	B11
G11	2	2	1		R11

JH7					
GND	16	15	13	11	HOE7
HLAT7	14	14	13	11	HDCLK7
HD4	12	12	11	9	HC4
HB4	10	10	9	7	HA4
HE4	8	8	7	5	B14
G14	6	6	5	3	R14
GND	4	4	3	1	B13
G13	2	2	1		R13

JH8					
GND	16	15	13	11	HOE8
HLAT8	14	14	13	11	HDCLK8
HD4	12	12	11	9	HC4
HB4	10	10	9	7	HA4
HE4	8	8	7	5	B16
G16	6	6	5	3	R16
GND	4	4	3	1	B15
G15	2	2	1		R15

JH9					
GND	16	15	13	11	HOE9
HLAT9	14	14	13	11	HDCLK9
HD5	12	12	11	9	HC5
HB5	10	10	9	7	HA5
HE5	8	8	7	5	B18
G18	6	6	5	3	R18
GND	4	4	3	1	B17
G17	2	2	1		R17

JH10					
GND	16	15	13	11	HOE10
HLAT10	14	14	13	11	HDCLK10
HD5	12	12	11	9	HC5
HB5	10	10	9	7	HA5
HE5	8	8	7	5	B20
G20	6	6	5	3	R20
GND	4	4	3	1	B19
G19	2	2	1		R19

JH11					
GND	16	15	13	11	HOE11
HLAT11	14	14	13	11	HDCLK11
HD6	12	12	11	9	HC6
HB6	10	10	9	7	HA6
HE6	8	8	7	5	B22
G22	6	6	5	3	R22
GND	4	4	3	1	B21
G21	2	2	1		R21

JH12					
GND	16	15	13	11	HOE12
HLAT12	14	14	13	11	HDCLK12
HD6	12	12	11	9	HC6
HB6	10	10	9	7	HA6
HE6	8	8	7	5	B24
G24	6	6	5	3	R24
GND	4	4	3	1	B23
G23	2	2	1		R23

JH13					
GND	16	15	13	11	HOE13
HLAT13	14	14	13	11	HDCLK13
HD7	12	12	11	9	HC7
HB7	10	10	9	7	HA7
HE7	8	8	7	5	B26
G26	6	6	5	3	R26
GND	4	4	3	1	B25
G25	2	2	1		R25

JH14					
GND	16	15	13	11	HOE14
HLAT14	14	14	13	11	HDCLK14
HD7	12	12	11	9	HC7
HB7	10	10	9	7	HA7
HE7	8	8	7	5	B28
G28	6	6	5	3	R28
GND	4	4	3	1	B27
G27	2	2	1		R27

JH15					
GND	16	15	13	11	HOE15
HLAT15	14	14	13	11	HDCLK15
HD8	12	12	11	9	HC8
HB8	10	10	9	7	HA8
HE8	8	8	7	5	B30
G30	6	6	5	3	R30
GND	4	4	3	1	B29
G29	2	2	1		R29

JH16					
GND	16	15	13	11	HOE16
HLAT16	14	14	13	11	HDCLK16
HD8	12	12	11	9	HC8
HB8	10	10	9	7	HA8
HE8	8	8	7	5	B32
G32	6	6	5	3	R32
GND	4	4	3	1	B31
G31	2	2	1		R31

Pin Definitions					
Ground	GND	16	15	HOE	Display enable
Latch signal	HLAT	14	13	HDCLK	Shift clock
Line decoding signal	HD	12	11	HC	Line decoding signal
	HB	10	9	HA	
	HE	8	7	B	/
/	G	6	5	R	/
Ground	GND	4	3	B	/
/	G	2	1	R	/

## Specifications

Maximum Loading Capacity	PWM IC: 512 × 384 pixels Common IC: 384 × 384 pixels	
Electrical	Input voltage	DC 3.3 V to 5.5 V

Specifications	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	650.0 mm × 500.0 mm × 200.0 mm
Certifications	RoHS, EMC Class A	

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

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