MRV432

Receiving Card

Specifications

Change History

Document Version	Release Date	Description
V1.0.1	2021-07-30	Added the certification related description.
V1.0.0	2021-03-25	First release

Introduction

The MRV432 is a general receiving card developed by NovaStar. A single MRV432 loads up to 512×512 pixels. Supporting various functions such as 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 MRV432 can significantly improve the display effect and user experience.

The MRV432 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 MRV432 has improved electromagnetic compatibility and is suitable for various on-site setups.

Features

Improvements to Display Effect

- Pixel level brightness and chroma calibration
  Working with NovaLCT and NovaCLB, the receiving card supports brightness and chroma calibration on each LED, which can effectively remove color discrepancies and greatly improve LED display brightness and chroma consistency, allowing for better image quality.
- 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.
- 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 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.

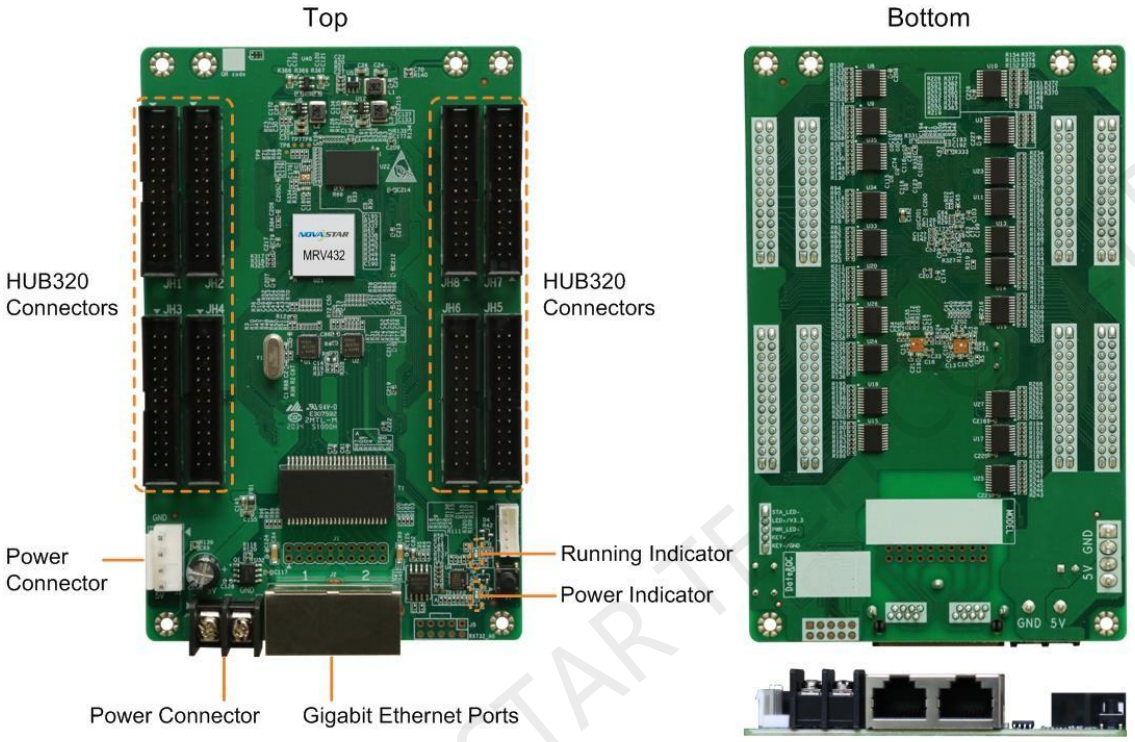
  NovaLCT V5.2.0 or later is required.
- Configuration parameter readback
  The receiving card configuration parameters can be read back and saved to the local computer.

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 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



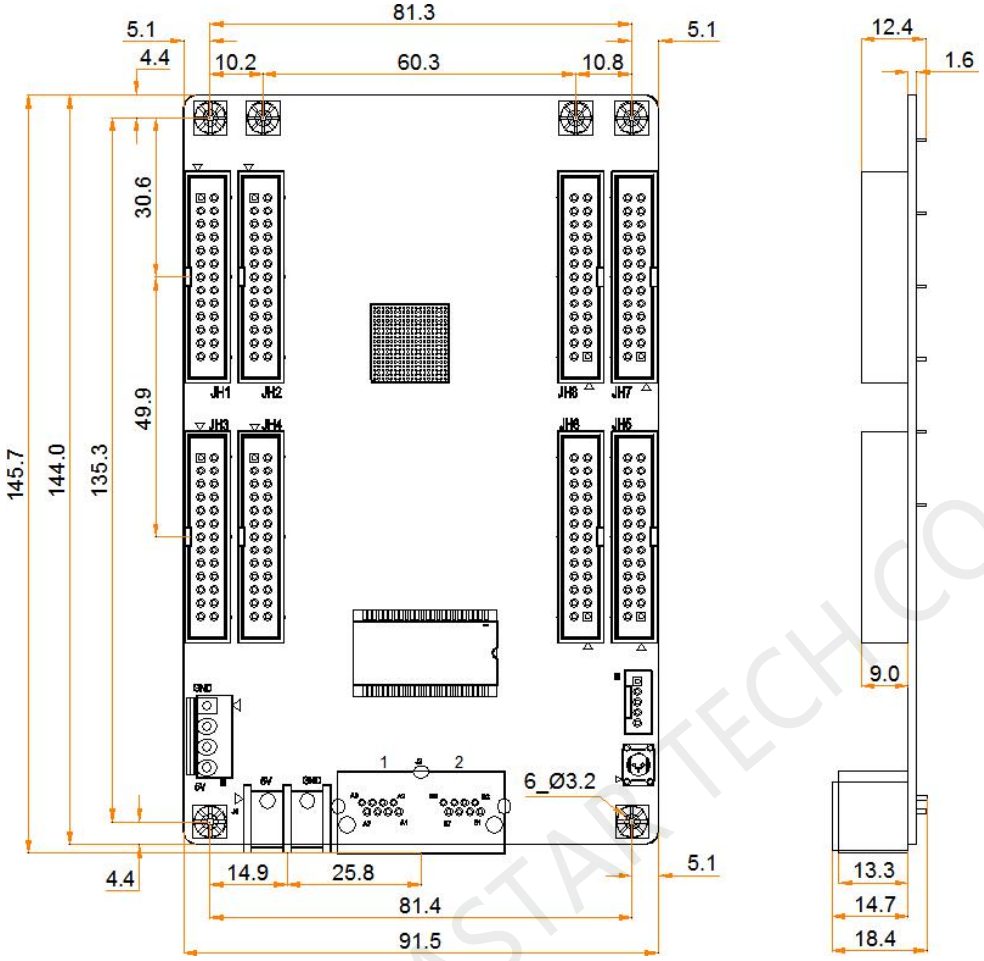
All product pictures shown in this document are for illustration purpose only. Actual product may vary.

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 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

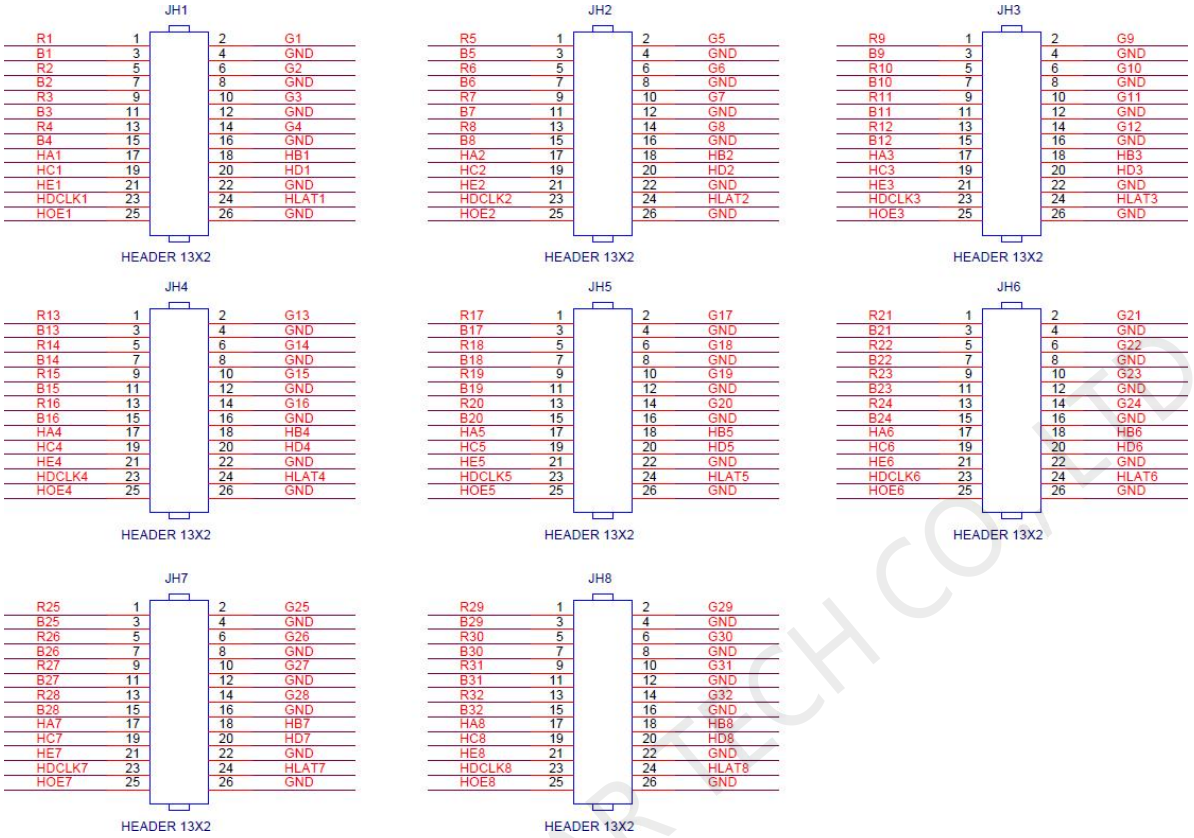
The board thickness is not greater than 2.0 mm, and the total thickness (board thickness + thickness of components on the top and bottom sides) is not greater than 19.0 mm. Ground connection (GND) is enabled for mounting holes.



Tolerance: ±0.1 Unit: mm

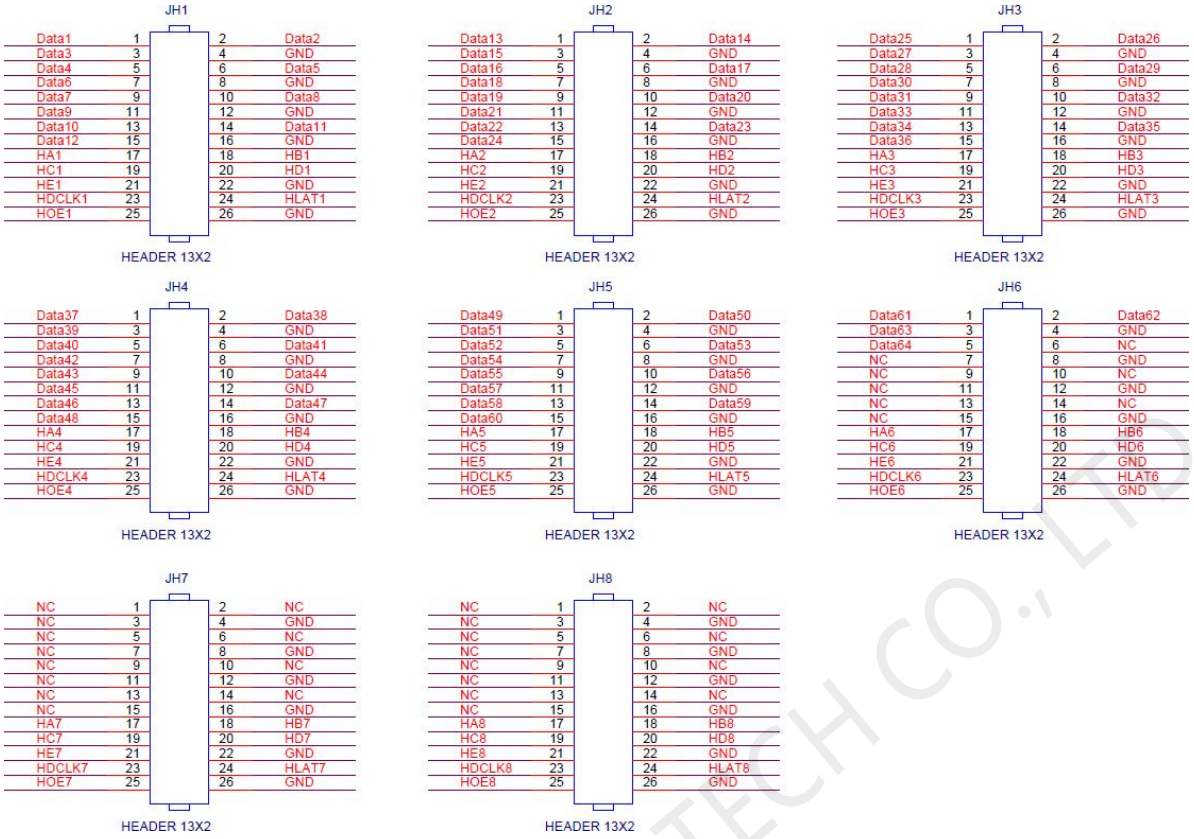
Pins

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
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
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 Loading Capacity	512×512 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	100.0 g Note: It is the weight of a single receiving card only.
	Gross weight	12.1 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
Certifications	RoHS, EMC Class A Note: If the product does not have the relevant certifications required by the countries or regions where it is to be sold, please apply for the certifications yourself or contact NovaStar to apply for them.	

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

Trademark

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