



Specifications

Receiving Card MRV410

Overview

MRV410 is the EMC version of MRV210 with its effective reduction of the electromagnetic radiation of the whole system.

Features

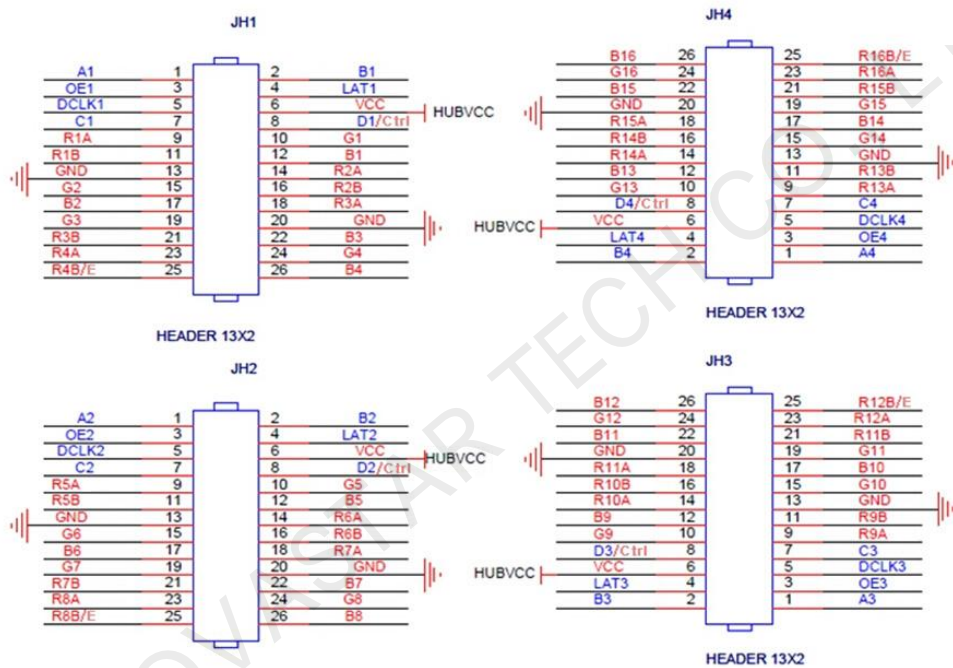
- 1) Single card outputs 16-group of RGBR 'data;
- 2) Single card outputs 20-group of RGB data;
- 3) Single card outputs 24-group of RGB data;
- 4) Single card outputs 64-group of serial data ;
- 5) Single card supports resolution of 256x226;
- 6) Configuration file read back;
- 7) Temperature monitoring;
- 8) Ethernet cable communication status detection;
- 9) Power supply voltage detection;
- 10) High gray-scale and high refresh rate;
- 11) Pixel-by-pixel brightness and chromaticity calibration Brightness and chromaticity calibration coefficients for each LED;
- 12) Each of the ports has VCC PIN and the module can provide power supply to the control system;
- 13) Comply with EU CE-EMC standard;
- 14) Comply with EU CE-EMC CClass B standard.

Output interface definition

Under all the four different working modes of it, four 26P interfaces can output different data; interface is defined as follows:

1) 16-group data mode (With virtual output)

Supporting 16-group of RGBR 'parallel data, defined as follows:



It support 1/32 scan mode in 16-group data mode, and R4B ,R8B ,R12B ,R16B are decoding signal E.

Pin 9 is decoding signal Ctrl below 1/16 scan mode(contain 1/16 scan). Pin 8 is decoding Ctrl signal in 1/8 scan and below.

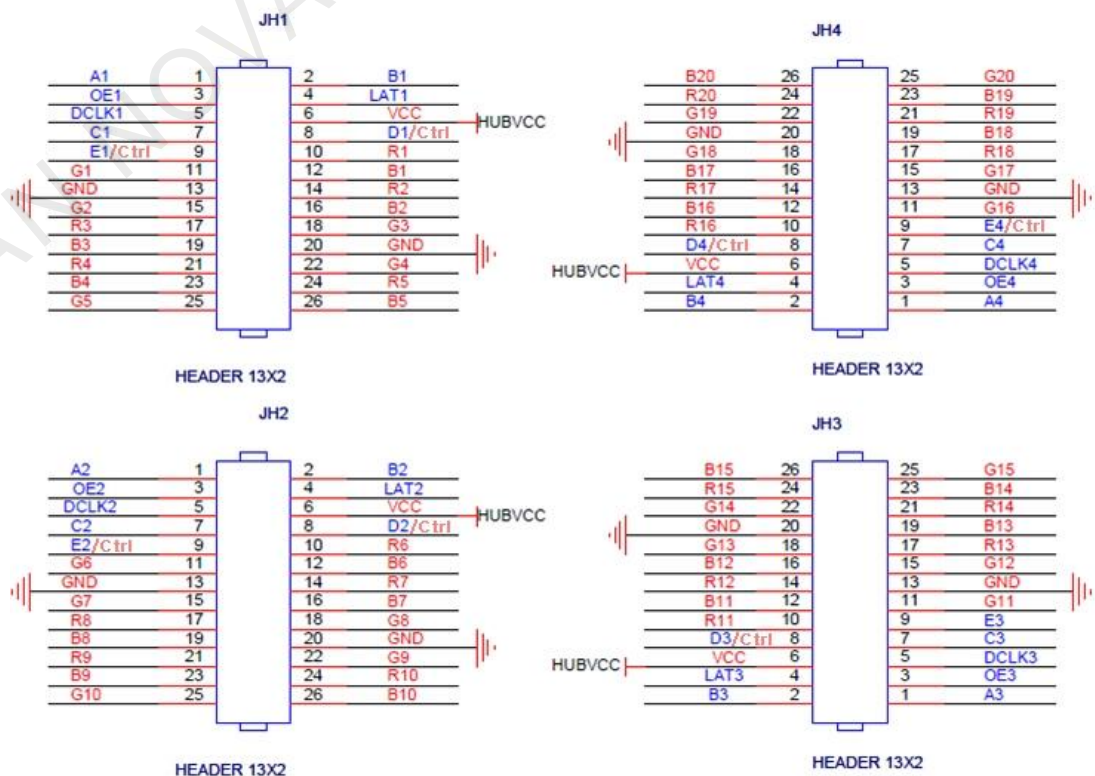
| JH1 | | | | JH2 | | | |
|-----|-------|------|----|-----|-------|------|----|
| 1 | A1 | B4 | 2 | 1 | A2 | B2 | 2 |
| 3 | OE1 | LAT1 | 4 | 3 | OE2 | LAT2 | 4 |
| 5 | DCLK1 | VCC | 6 | 5 | DCLK2 | VCC | 6 |
| 7 | C1 | D1 | 8 | 7 | C2 | D2 | 8 |
| 9 | R1A | G1 | 10 | 9 | R5A | G5 | 10 |
| 11 | R1B | B1 | 12 | 11 | R5B | B5 | 12 |
| 13 | GND | R2A | 14 | 13 | GND | R6A | 14 |
| 15 | G2 | R2B | 16 | 15 | G6 | R6B | 16 |
| 17 | B2 | R3A | 18 | 17 | B6 | R7A | 18 |
| 19 | G3 | GND | 20 | 19 | G7 | GND | 20 |
| 21 | R3B | B3 | 22 | 21 | R7B | B7 | 22 |

| | | | | | | | |
|----|-----|----|----|----|-----|----|----|
| 23 | R4A | G4 | 24 | 23 | R8A | G8 | 24 |
| 25 | R4B | B4 | 26 | 25 | R8B | B8 | 26 |

| JH3 | | | | JH4 | | | |
|-----|-------|------|----|-----|-------|------|----|
| 1 | A3 | B3 | 2 | 1 | A4 | B4 | 2 |
| 3 | OE3 | LAT3 | 4 | 3 | OE4 | LAT4 | 4 |
| 5 | DCLK3 | VCC | 6 | 5 | DCLK4 | VCC | 6 |
| 7 | C3 | D3 | 8 | 7 | C4 | D4 | 8 |
| 9 | R9A | G9 | 10 | 9 | R13A | G13 | 10 |
| 11 | R9B | B9 | 12 | 11 | R13B | B13 | 12 |
| 13 | GND | R10A | 14 | 13 | GND | R14A | 14 |
| 15 | G10 | R10B | 16 | 15 | G14 | R14B | 16 |
| 17 | B10 | R11A | 18 | 17 | B14 | R15A | 18 |
| 19 | G11 | GND | 20 | 19 | G15 | GND | 20 |
| 21 | R11B | B11 | 22 | 21 | R15B | B15 | 22 |
| 23 | R11A | G12 | 24 | 23 | R16A | G16 | 24 |
| 25 | R12B | B12 | 26 | 25 | R16B | B16 | 26 |

2) 20-group data mode

Supporting 20 sets of parallel data, defined as follows:



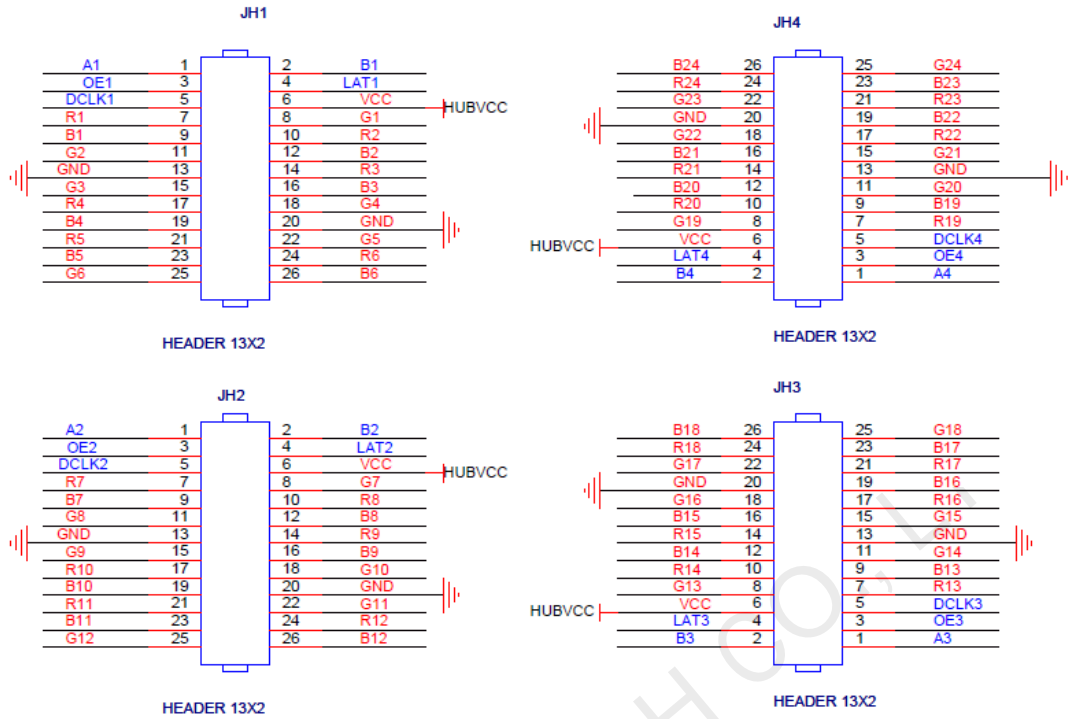
Pin9 is Ctrl signal in 1/16 scan and below, and Pin 8 is decoding Ctrl signal in 1/8 scan and below.

| JH1 | | | | JH2 | | | |
|-----|-------|------|----|-----|-------|------|----|
| 1 | A1 | B1 | 2 | 1 | A2 | B2 | 2 |
| 3 | OE1 | LAT1 | 4 | 3 | OE2 | LAT2 | 4 |
| 5 | DCLK1 | VCC | 6 | 5 | DCLK2 | VCC | 6 |
| 7 | C1 | D1 | 8 | 7 | C2 | D2 | 8 |
| 9 | E1 | R1 | 10 | 9 | E2 | R6 | 10 |
| 11 | G1 | B1 | 12 | 11 | G6 | B6 | 12 |
| 13 | GND | R2 | 14 | 13 | GND | R7 | 14 |
| 15 | G2 | B2 | 16 | 15 | G7 | B7 | 16 |
| 17 | R3 | G3 | 18 | 17 | R8 | G8 | 18 |
| 19 | B3 | GND | 20 | 19 | B8 | GND | 20 |
| 21 | R4 | G4 | 22 | 21 | R9 | G9 | 22 |
| 23 | B4 | R5 | 24 | 23 | B9 | R10 | 24 |
| 25 | G5 | B5 | 26 | 25 | G10 | B10 | 26 |

| JH3 | | | | JH4 | | | |
|-----|-------|------|----|-----|-------|------|----|
| 1 | A3 | B3 | 2 | 1 | A4 | B4 | 2 |
| 3 | OE3 | LAT3 | 4 | 3 | OE4 | LAT4 | 4 |
| 5 | DCLK3 | VCC | 6 | 5 | DCLK4 | VCC | 6 |
| 7 | C3 | D3 | 8 | 7 | C4 | D4 | 8 |
| 9 | E3 | R11 | 10 | 9 | E4 | R16 | 10 |
| 11 | G11 | B11 | 12 | 11 | G16 | B16 | 12 |
| 13 | GND | R12 | 14 | 13 | GND | R17 | 14 |
| 15 | G12 | B12 | 16 | 15 | G17 | B17 | 16 |
| 17 | R13 | G13 | 18 | 17 | R18 | G18 | 18 |
| 19 | B13 | GND | 20 | 19 | B18 | GND | 20 |
| 21 | R14 | G14 | 22 | 21 | R19 | G19 | 22 |
| 23 | B14 | R15 | 24 | 23 | B19 | R20 | 24 |
| 25 | G15 | B15 | 26 | 25 | G20 | B20 | 26 |

3) 24-group data mode

Supporting 24 sets of parallel data, Serial data decoding is required for scan mode above 1/4 scan (Serial data decoding circuit in the appendix), defined as follows:



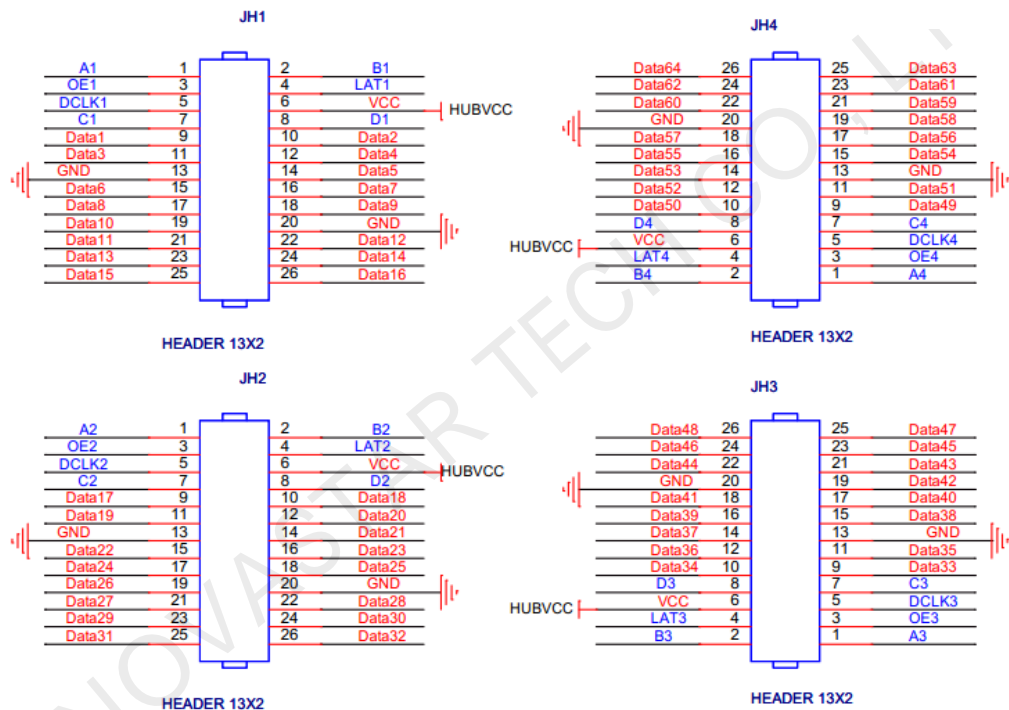
| JH1 | | | | JH2 | | | |
|-----|-------|------|----|-----|-------|------|----|
| 1 | A1 | B1 | 2 | 1 | A2 | B2 | 2 |
| 3 | OE1 | LAT1 | 4 | 3 | OE2 | LAT2 | 4 |
| 5 | DCLK1 | VCC | 6 | 5 | DCLK2 | VCC | 6 |
| 7 | R1 | G1 | 8 | 7 | R7 | G7 | 8 |
| 9 | B1 | R2 | 10 | 9 | B7 | R8 | 10 |
| 11 | G2 | B2 | 12 | 11 | G8 | B8 | 12 |
| 13 | GND | R3 | 14 | 13 | GND | R9 | 14 |
| 15 | G3 | B3 | 16 | 15 | G9 | B9 | 16 |
| 17 | R4 | G4 | 18 | 17 | R10 | G10 | 18 |
| 19 | B4 | GND | 20 | 19 | B10 | GND | 20 |
| 21 | R5 | G5 | 22 | 21 | R11 | G11 | 22 |
| 23 | B5 | R6 | 24 | 23 | B11 | R12 | 24 |
| 25 | G6 | B6 | 26 | 25 | G12 | B12 | 26 |

| JH3 | | | | JH4 | | | |
|-----|-------|------|----|-----|-------|------|----|
| 1 | A3 | B3 | 2 | 1 | A4 | B4 | 2 |
| 3 | OE3 | LAT3 | 4 | 3 | OE4 | LAT4 | 4 |
| 5 | DCLK3 | VCC | 6 | 5 | DCLK4 | VCC | 6 |
| 7 | R13 | G13 | 8 | 7 | R19 | G19 | 8 |
| 9 | B13 | R14 | 10 | 9 | B19 | R20 | 10 |
| 11 | G14 | B14 | 12 | 11 | G20 | B20 | 12 |
| 13 | GND | R15 | 14 | 13 | GND | R21 | 14 |

| | | | | | | | |
|----|-----|-----|----|----|-----|-----|----|
| 15 | G15 | B15 | 16 | 15 | G21 | B21 | 16 |
| 17 | R16 | G16 | 18 | 17 | R22 | G22 | 18 |
| 19 | B16 | GND | 20 | 19 | B22 | GND | 20 |
| 21 | R17 | G17 | 22 | 21 | R23 | G23 | 22 |
| 23 | B17 | R18 | 24 | 23 | B23 | R24 | 24 |
| 25 | G18 | B18 | 26 | 25 | G24 | B24 | 26 |

4) 64-group serial data mode

Supporting 64 sets of serial data, defined as follows:



Under serial mode, there are 64 data cables totally. Each cable can drive one LED bar independently.

In case of horizontal LED bar, the default is that Data1 drives the first row from the top, and Data64 drives the 64th row.

In case of vertical LED bar, the default is that Data1 drives the first column of from the left, and Data64 drives the 64th column.

| JH1 | | | | JH2 | | | |
|-----|--------|--------|----|-----|--------|--------|----|
| 1 | A1 | B1 | 2 | 1 | A2 | B2 | 2 |
| 3 | OE1 | LAT1 | 4 | 3 | OE2 | LAT2 | 4 |
| 5 | DCLK1 | VCC | 6 | 5 | DCLK2 | VCC | 6 |
| 7 | C1 | D1 | 8 | 7 | C2 | D2 | 8 |
| 9 | Data1 | Data2 | 10 | 9 | Data17 | Data18 | 10 |
| 11 | Data3 | Data4 | 12 | 11 | Data19 | Data20 | 12 |
| 13 | GND | Data5 | 14 | 13 | GND | Data21 | 14 |
| 15 | Data6 | Data7 | 16 | 15 | Data22 | Data23 | 16 |
| 17 | Data8 | Data9 | 18 | 17 | Data24 | Data25 | 18 |
| 19 | Data10 | GND | 20 | 19 | Data26 | GND | 20 |
| 21 | Data11 | Data12 | 22 | 21 | Data27 | Data28 | 22 |
| 23 | Data13 | Data14 | 24 | 23 | Data29 | Data30 | 24 |
| 25 | Data15 | Data16 | 26 | 25 | Data31 | Data32 | 26 |

| JH3 | | | | JH4 | | | |
|-----|--------|--------|----|-----|--------|--------|----|
| 1 | A3 | B3 | 2 | 1 | A4 | B4 | 2 |
| 3 | OE3 | LAT3 | 4 | 3 | OE4 | LAT4 | 4 |
| 5 | DCLK3 | VCC | 6 | 5 | DCLK4 | VCC | 6 |
| 7 | C3 | D3 | 8 | 7 | C4 | D4 | 8 |
| 9 | Data33 | Data34 | 10 | 9 | Data49 | Data50 | 10 |
| 11 | Data35 | Data36 | 12 | 11 | Data51 | Data52 | 12 |
| 13 | GND | Data37 | 14 | 13 | GND | Data53 | 14 |
| 15 | Data38 | Data39 | 16 | 15 | Data54 | Data55 | 16 |
| 17 | Data40 | Data41 | 18 | 17 | Data56 | Data57 | 18 |
| 19 | Data42 | GND | 20 | 19 | Data58 | GND | 20 |
| 21 | Data43 | Data44 | 22 | 21 | Data59 | Data60 | 22 |
| 23 | Data45 | Data46 | 24 | 23 | Data61 | Data62 | 24 |
| 25 | Data47 | Data48 | 26 | 25 | Data63 | Data64 | 26 |

J2 definition (Connector interface of the network ports)

| | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 |
| A0+ | A1+ | A2+ | A3+ | B0+ | B1+ | B2+ | B3+ | GND | VCC |
| 1 | 3 | 5 | 7 | 9 | 11 | 13 | 15 | 17 | 19 |
| A0- | A1- | A2- | A3- | B0- | B1- | B2- | B3- | GND | VCC |

J9 definition (Indicator Light Socket)

| | | | | |
|---------|------------|-----------|-------|-----------|
| 1 | 2 | 3 | 4 | 5 |
| STA_LED | LED +/3.3V | PWR_LED - | KEY + | KEY -/GND |

Specifications

| | MIN | TYP | MAX | UNIT |
|------------------------------------|------------|------|------|------|
| Rated voltage | 3.3 | 5.0 | 5.5 | V |
| Rated current | 0.33 | 0.50 | 0.55 | A |
| Temperature of working environment | -20.0~70.0 | | | °C |
| Humidity of working environment | 10.0~90.0 | | | % |

Specific Model List

To meet the needs of different customers, Nova has provided more specific models of the products, including standard products in stock.

Other models need to be customized.

| Model | Specification |
|------------|---------------------------------------|
| MRV410 - 1 | Standard model, male connector on top |
| MRV410 - 2 | Male connector on bottom |
| MRV410 - 3 | Female connector on top |
| MRV410 - 4 | Female connector on bottom |

Appendix

Serial data decoding circuit :

