



Specifications

Receiving Card MRV420

Overview

MRV420 is the EMC version of MRV220 with its effective reduction of the electromagnetic radiation of the whole system.

Features

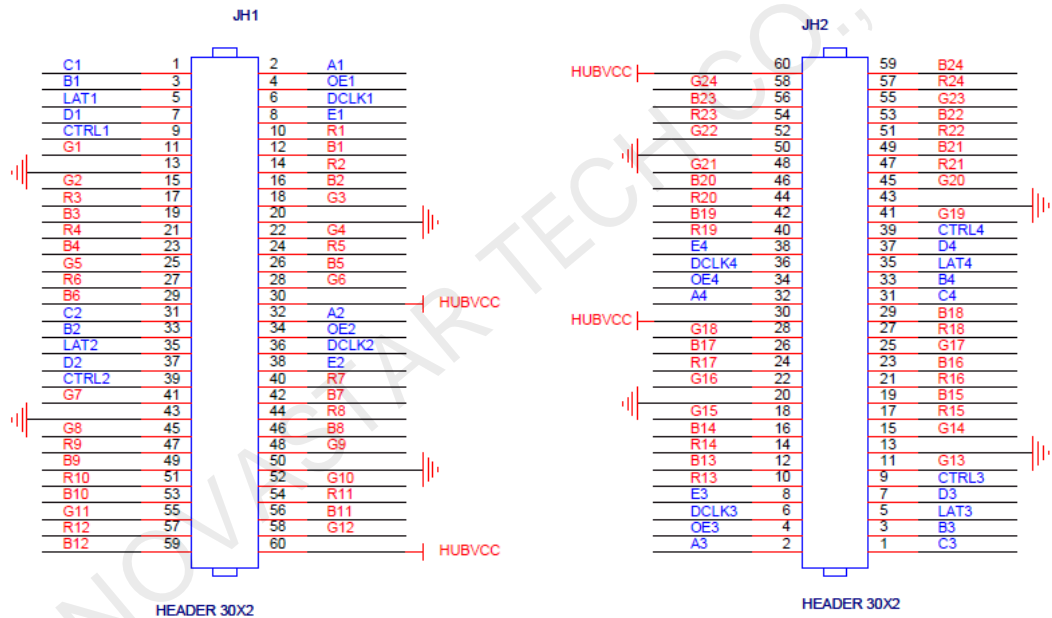
- 1) Single card outputs 24-group of RGB data;
- 2) Single card outputs 28-group of RGB data;
- 3) Single card outputs 64-group of serial data;
- 4) Single card supports resolution of 256x226;
- 5) Configuration file read back;
- 6) Temperature monitoring;
- 7) Ethernet cable communication status detection;
- 8) Power supply voltage detection;
- 9) High gray scale and high refresh rate;
- 10) Pixel-by-pixel brightness and chromaticity calibration, Brightness and chromaticity calibration coefficients for each LED;
- 11) Comply with EU CE-EMC Class B standard;
- 12) Comply with RoHS standard.

Output Interface Definition

Under all the two different working modes of it, two 60P interfaces can output different data. Each 60p contains two 30P with the same definition. Interfaces are defined as follows:

1) 24-group data mode

Supporting 24 sets of parallel data ,defined as follows:

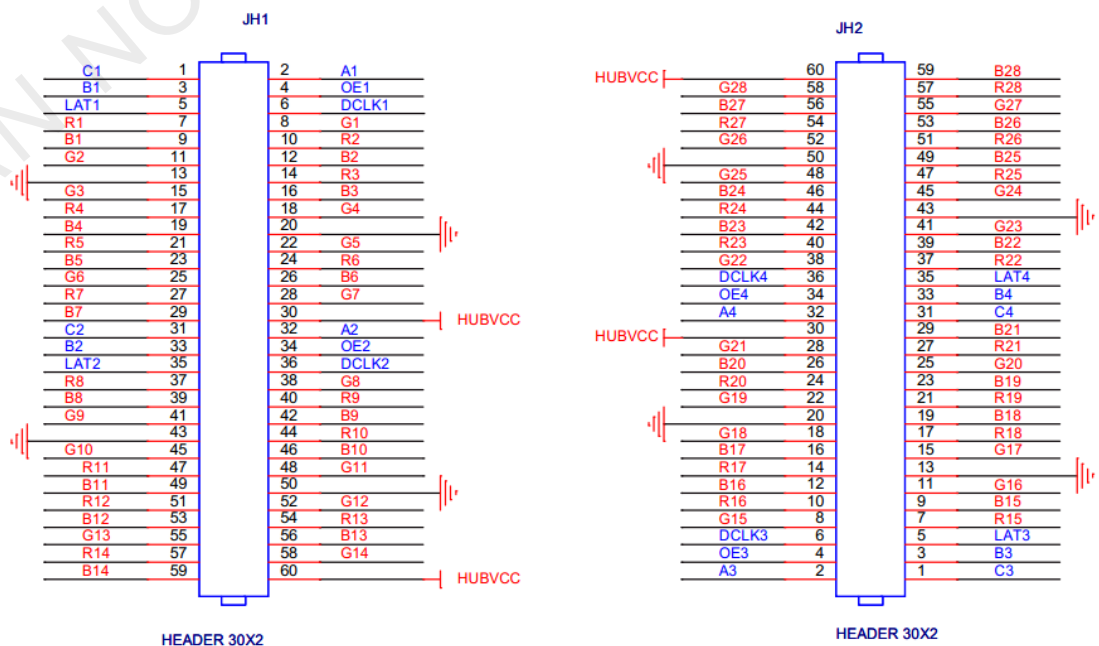


| JH1 | | | | JH2 | | | |
|-----|-------|-------|----|-----|-------|-------|----|
| 1 | C1 | A1 | 2 | 1 | C3 | A3 | 2 |
| 3 | B1 | OE1 | 4 | 3 | B3 | OE3 | 4 |
| 5 | LAT1 | DCLK1 | 6 | 5 | LAT3 | DCLK3 | 6 |
| 7 | D1 | E1 | 8 | 7 | D3 | E3 | 8 |
| 9 | CTRL1 | R1 | 10 | 9 | CTRL3 | R13 | 10 |
| 11 | G1 | B1 | 12 | 11 | G13 | B13 | 12 |
| 13 | GND | R2 | 14 | 13 | GND | R14 | 14 |
| 15 | G2 | B2 | 16 | 15 | G14 | B14 | 16 |
| 17 | R3 | G3 | 18 | 17 | R15 | G15 | 18 |
| 19 | B3 | GND | 20 | 19 | B15 | GND | 20 |
| 21 | R4 | G4 | 22 | 21 | R16 | G16 | 22 |
| 23 | B4 | R5 | 24 | 23 | B16 | R17 | 24 |
| 25 | G5 | B5 | 26 | 25 | G17 | B17 | 26 |
| 27 | R6 | G6 | 28 | 27 | R18 | G18 | 28 |

| | | | | | | | |
|----|-------|-------|----|----|-------|-------|----|
| 29 | B6 | VCC | 30 | 29 | B18 | VCC | 30 |
| 31 | C2 | A2 | 32 | 31 | C4 | A4 | 32 |
| 33 | B2 | OE2 | 34 | 33 | B4 | OE4 | 34 |
| 35 | LAT2 | DCLK2 | 36 | 35 | LAT4 | DCLK4 | 36 |
| 37 | D2 | E2 | 38 | 37 | D4 | E4 | 38 |
| 39 | CTRL2 | R7 | 40 | 39 | CTRL4 | R19 | 40 |
| 41 | G7 | B7 | 42 | 41 | G19 | B19 | 42 |
| 43 | GND | R8 | 44 | 43 | GND | R20 | 44 |
| 45 | G8 | B8 | 46 | 45 | G20 | B20 | 46 |
| 47 | R9 | G9 | 48 | 47 | R21 | G21 | 48 |
| 49 | B9 | GND | 50 | 49 | B21 | GND | 50 |
| 51 | R10 | G10 | 52 | 51 | R22 | G22 | 52 |
| 53 | B10 | R11 | 54 | 53 | B22 | R23 | 54 |
| 55 | G11 | B11 | 56 | 55 | G23 | B23 | 56 |
| 57 | R12 | G12 | 58 | 57 | R24 | G24 | 58 |
| 59 | B12 | VCC | 60 | 59 | B24 | VCC | 60 |

2) 28-group data mode

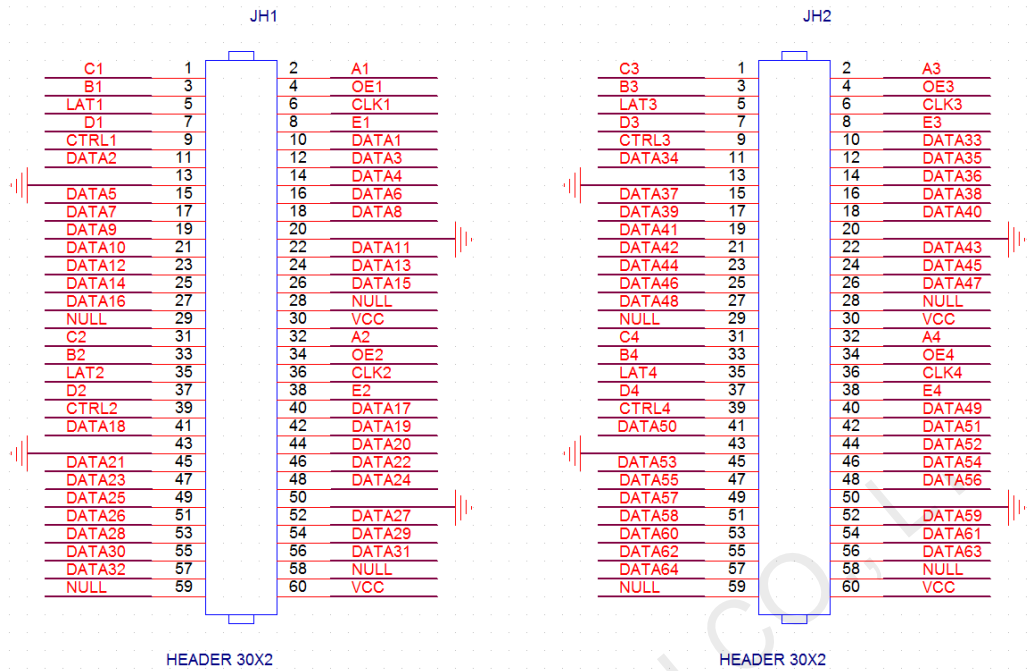
Supporting 28 sets of parallel data, Serial data decoding is required for scan mode above 1/8 scan (Serial data decoding circuit in the appendix), defined as follows:



| JH1 | | | | JH2 | | | |
|-----|------|-------|----|-----|------|-------|----|
| 1 | C1 | A1 | 2 | 1 | C3 | A3 | 2 |
| 3 | B1 | OE1 | 4 | 3 | B3 | OE3 | 4 |
| 5 | LAT1 | DCLK1 | 6 | 5 | LAT3 | DCLK3 | 6 |
| 7 | R1 | G1 | 8 | 7 | R15 | G15 | 8 |
| 9 | B1 | R2 | 10 | 9 | B15 | R16 | 10 |
| 11 | G2 | B2 | 12 | 11 | G16 | B16 | 12 |
| 13 | GND | R3 | 14 | 13 | GND | R17 | 14 |
| 15 | G3 | B3 | 16 | 15 | G17 | B17 | 16 |
| 17 | R4 | G4 | 18 | 17 | R18 | G18 | 18 |
| 19 | B4 | GND | 20 | 19 | B18 | GND | 20 |
| 21 | R5 | G5 | 22 | 21 | R19 | G19 | 22 |
| 23 | B5 | R6 | 24 | 23 | B19 | R20 | 24 |
| 25 | G6 | B6 | 26 | 25 | G20 | B20 | 26 |
| 27 | R7 | G7 | 28 | 27 | R21 | G21 | 28 |
| 29 | B7 | VCC | 30 | 29 | B21 | VCC | 30 |
| 31 | C2 | A2 | 32 | 31 | C4 | A4 | 32 |
| 33 | B2 | OE2 | 34 | 33 | B4 | OE4 | 34 |
| 35 | LAT2 | DCLK2 | 36 | 35 | LAT4 | DCLK4 | 36 |
| 37 | R8 | G8 | 38 | 37 | R22 | G22 | 38 |
| 39 | B8 | R9 | 40 | 39 | B22 | R23 | 40 |
| 41 | G9 | B9 | 42 | 41 | G23 | B23 | 42 |
| 43 | GND | R10 | 44 | 43 | GND | R24 | 44 |
| 45 | G10 | B10 | 46 | 45 | G24 | B24 | 46 |
| 47 | R11 | G11 | 48 | 47 | R25 | G25 | 48 |
| 49 | B11 | GND | 50 | 49 | B25 | GND | 50 |
| 51 | R12 | G12 | 52 | 51 | R26 | G26 | 52 |
| 53 | B12 | R13 | 54 | 53 | B26 | R27 | 54 |
| 55 | G13 | B13 | 56 | 55 | G27 | B27 | 56 |
| 57 | R14 | G14 | 58 | 57 | R28 | G28 | 58 |
| 59 | B14 | VCC | 60 | 59 | B28 | VCC | 60 |

3)64-group serial data mode

Supporting 64 sets of serial data, defined as follows:

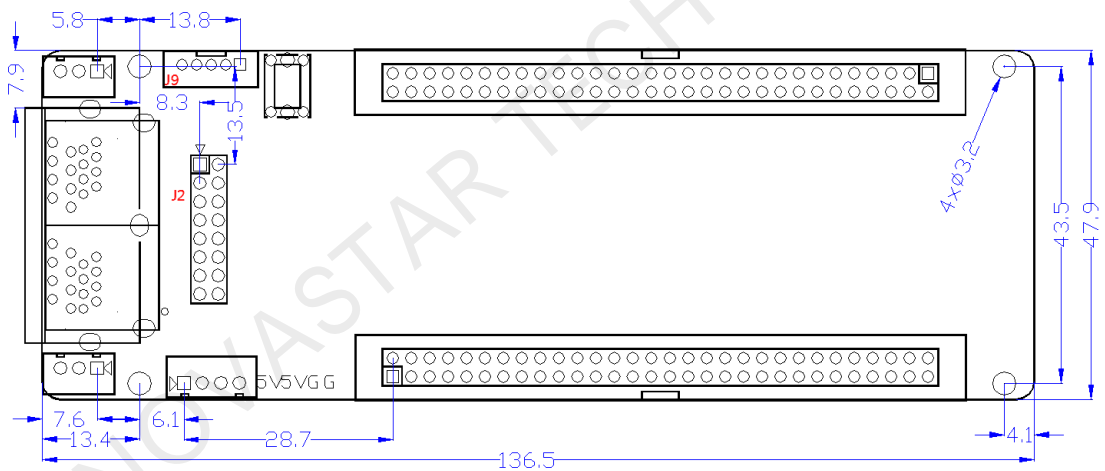


| JH1 | | | | JH2 | | | |
|-----|--------|--------|----|-----|--------|--------|----|
| 1 | C1 | A1 | 2 | 1 | C3 | A3 | 2 |
| 3 | B1 | OE1 | 4 | 3 | B3 | OE3 | 4 |
| 5 | LAT1 | CLK1 | 6 | 5 | LAT3 | CLK3 | 6 |
| 7 | D1 | E1 | 8 | 7 | D3 | E3 | 8 |
| 9 | CTRL1 | DATA1 | 10 | 9 | CTRL3 | DATA33 | 10 |
| 11 | DATA2 | DATA3 | 12 | 11 | DATA34 | DATA35 | 12 |
| 13 | GND | DATA4 | 14 | 13 | GND | DATA36 | 14 |
| 15 | DATA5 | DATA6 | 16 | 15 | DATA37 | DATA38 | 16 |
| 17 | DATA7 | DATA8 | 18 | 17 | DATA39 | DATA40 | 18 |
| 19 | DATA9 | GND | 20 | 19 | DATA41 | GND | 20 |
| 21 | DATA10 | DATA11 | 22 | 21 | DATA42 | DATA43 | 22 |
| 23 | DATA12 | DATA13 | 24 | 23 | DATA44 | DATA45 | 24 |
| 25 | DATA14 | DATA15 | 26 | 25 | DATA46 | DATA47 | 26 |
| 27 | DATA16 | NULL | 28 | 27 | DATA48 | NULL | 28 |
| 29 | NULL | VCC | 30 | 29 | NULL | VCC | 30 |
| 31 | C2 | A2 | 32 | 31 | C4 | A4 | 32 |
| 33 | B2 | OE2 | 34 | 33 | B4 | OE4 | 34 |
| 35 | LAT2 | CLK2 | 36 | 35 | LAT4 | CLK4 | 36 |
| 37 | D2 | E2 | 38 | 37 | D4 | E4 | 38 |
| 39 | CTRL2 | DATA17 | 40 | 39 | CTRL4 | DATA49 | 40 |
| 41 | DATA18 | DATA19 | 42 | 41 | DATA50 | DATA51 | 42 |
| 43 | GND | DATA20 | 44 | 43 | GND | DATA52 | 44 |
| 45 | DATA21 | DATA22 | 46 | 45 | DATA53 | DATA54 | 46 |
| 47 | DATA23 | DATA24 | 48 | 47 | DATA55 | DATA56 | 48 |

| | | | | | | | |
|----|--------|--------|----|----|--------|--------|----|
| 49 | DATA25 | GND | 50 | 49 | DATA57 | GND | 50 |
| 51 | DATA26 | DATA27 | 52 | 51 | DATA58 | DATA59 | 52 |
| 53 | DATA28 | DATA29 | 54 | 53 | DATA60 | DATA61 | 54 |
| 55 | DATA30 | DATA31 | 56 | 55 | DATA62 | DATA63 | 56 |
| 57 | DATA32 | NULL | 58 | 57 | DATA64 | NULL | 58 |
| 59 | NULL | VCC | 60 | 59 | NULL | VCC | 60 |

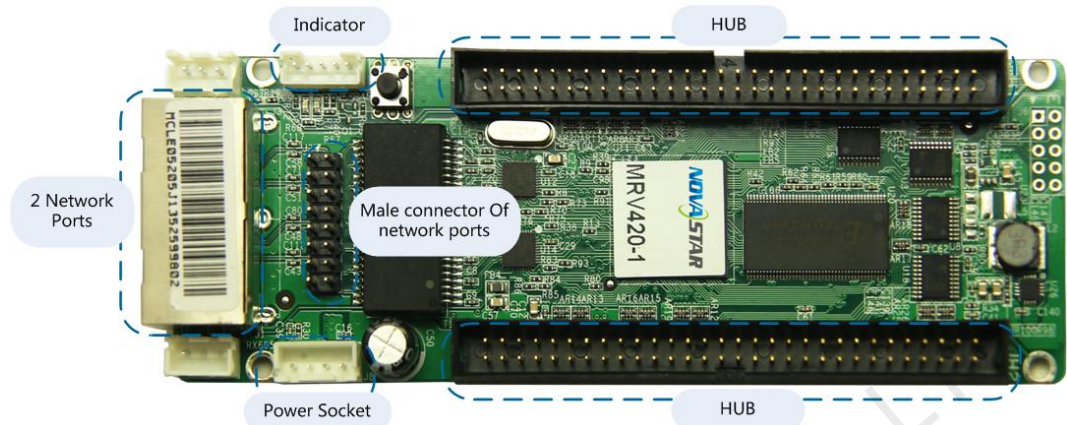
Dimensions

Thickness of the board is about 2mm. The overall thickness (board thickness + thickness of the components on front and back side) is about 18mm.



Unit: mm.

Appearance



Note: Pictures used in this manual are F version of the board card. The functions of different versions are basically the same. There are only a few small differences in their appearance.

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 | 0.5 | 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 |
|------------|---------------------------------------|
| MRV420 - 1 | Standard model, male connector on top |
| MRV420 - 2 | Male connector on bottom |
| MRV420 - 3 | Female connector on top |
| MRV420 - 4 | Female connector on bottom |

Appendix

Serial data decoding circuit :

