



Specifications

Receiving Card MRV360

Overview

Nova M3 MRV360 is one model of Nova receiving card. It has the interface of MOM(Memory On Module).

Features

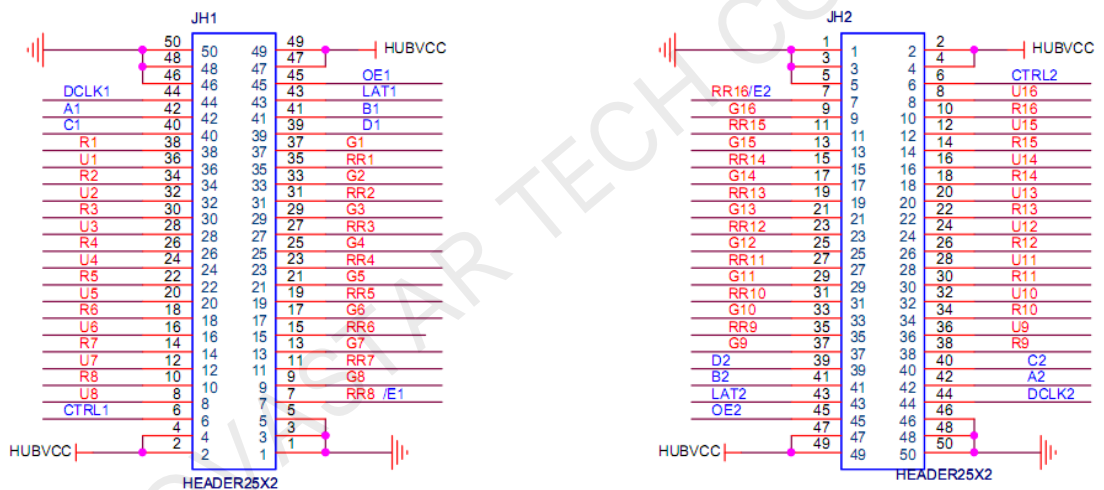
- 1) Single card outputs 16-group of RGBR 'data;
- 2) Single card outputs 20-group of RGB data;
- 3) Single card outputs 64-group of serial data;
- 4) Supporting MOM management, MOM can store calibration coefficient and the LED module information;
- 5) Single card supports resolution of 256x226 ;
- 6) Configuration file readback;
- 7) Temperature monitoring ;
- 8) Ethernet cable communication status detection;
- 9) Power supply voltage detection;
- 10) Support high gray scale and high refresh rate;
- 11) Pixel-by-pixel brightness and chromaticity calibration.
Brightness and chromaticity calibration coefficients for each LED;
- 12) Pre-store picture setting;
- 13) Able to connect monitoring card;
- 14) Comply with EU RoHs standard;
- 15) Comply with EU CE-EMC standard.

Output Interface Definition

Under all the three different working modes of it, two 50P interfaces can output different data, and only one common program and software are required. No customized program is needed. Interfaces are defined as follows:

1) 16-group data mode

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



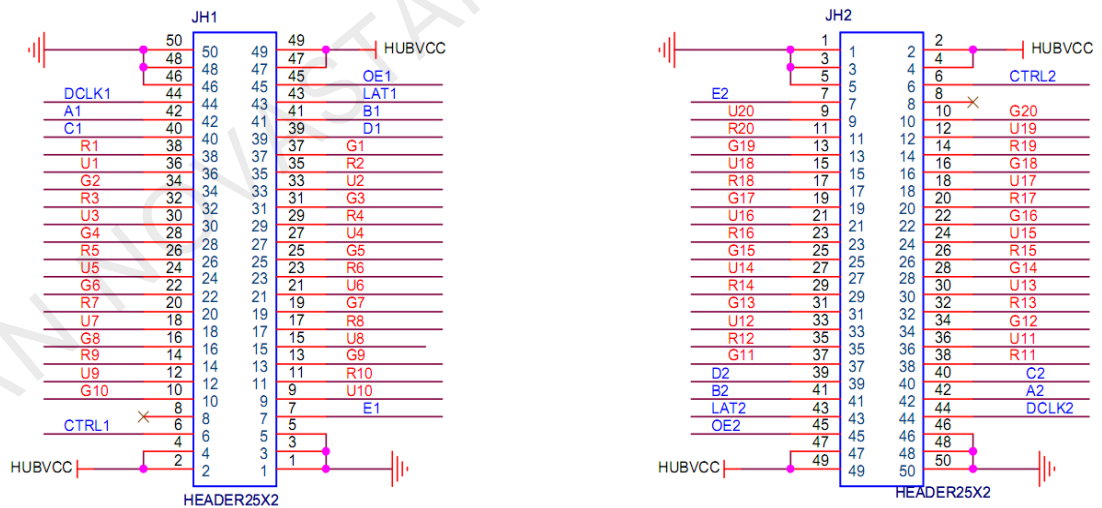
Virtual R signal in the last data group of each 50pin hub is decoding signal E at 1/32 scan mode.

JH1				JH2			
1	GND	VCC	2	1	GND	VCC	2
3	GND	VCC	4	3	GND	VCC	4
5	GND	CTRL1	6	5	GND	CTRL2	6
7	RR8/E1	U8	8	7	RR16/E2	U16	8
9	G8	R8	10	9	G16	R16	10
11	RR7	U7	12	11	RR15	U15	12
13	G7	R7	14	13	G15	R15	14
15	RR6	U6	16	15	RR14	U14	16
17	G6	R6	18	17	G14	R14	18
19	RR5	U5	20	19	RR13	U13	20

21	G5	R5	22	21	G13	R13	22
23	RR4	U4	24	23	RR12	U12	24
25	G4	R4	26	25	G12	R12	26
27	RR3	U3	28	27	RR11	U11	28
29	G3	R3	30	29	G11	R11	30
31	RR2	U2	32	31	RR10	U10	32
33	G2	R2	34	33	G10	R10	34
35	RR1	U1	36	35	RR9	U9	36
37	G1	R1	38	37	G9	R9	38
39	D1	C1	40	39	D2	C2	40
41	B1	A1	42	41	B2	A2	42
43	LAT1	DCLK1	44	43	LAT2	DCLK2	44
45	OE1	GND	46	45	OE2	GND	46
47	VCC	GND	48	47	VCC	GND	48
49	VCC	GND	50	49	VCC	GND	50

2) 20-group parallel data mode

Supporting 20 sets of parallel data, defined as follows:

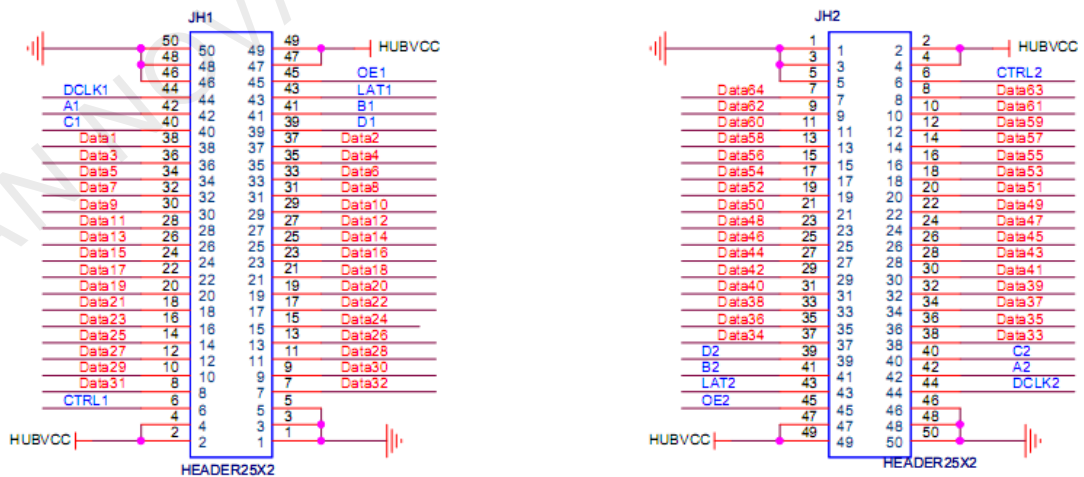


JH1				JH2			
1	GND	VCC	2	1	GND	VCC	2
3	GND	VCC	4	3	GND	VCC	4
5	GND	CTRL1	6	5	GND	CTRL2	6
7	E1	NC	8	7	E2	NC	8
9	U10	G10	10	9	U20	G20	10
11	R10	U9	12	11	R20	U19	12
13	G9	R9	14	13	G19	R19	14

15	U8	G8	16	15	U18	G18	16
17	R8	U7	18	17	R18	U17	18
19	G7	R7	20	19	G17	R17	20
21	U6	G6	22	21	R16	G16	22
23	R6	U5	24	23	R16	U15	24
25	G5	R5	26	25	G15	R15	26
27	U4	G4	28	27	U14	G14	28
29	R4	U3	30	29	R14	U13	30
31	G3	R3	32	31	G13	R13	32
33	U2	G2	34	33	U12	G12	34
35	R2	U1	36	35	R12	U11	36
37	G1	R1	38	37	G11	R11	38
39	D1	C1	40	39	D2	C2	40
41	B1	A1	42	41	B2	A2	42
43	LAT1	DCLK1	44	43	LAT2	DCLK2	44
45	OE1	GND	46	45	OE2	GND	46
47	VCC	GND	48	47	VCC	GND	48
49	VCC	GND	50	49	VCC	GND	50

3) 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.

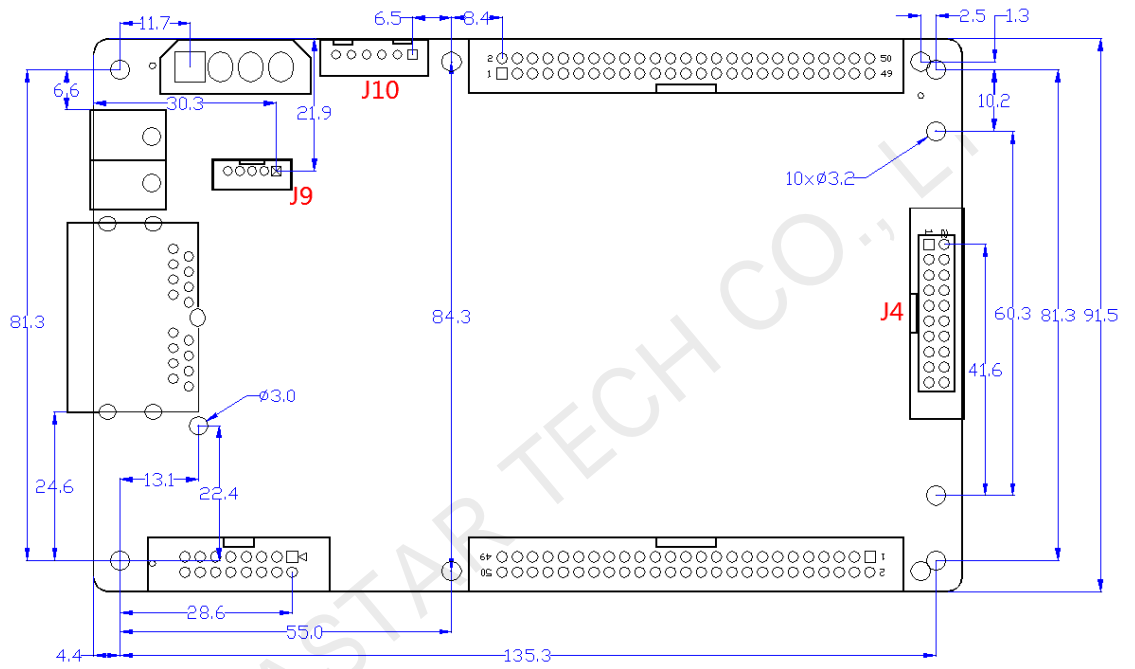
In case of horizontal LED bar, the default is that Data1 drives the first row from the top, and Data64 drives the 64th row. (front view).

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. (front view).

JH1				JH2			
1	GND	VCC	2	1	GND	VCC	2
3	GND	VCC	4	3	GND	VCC	4
5	GND	CTRL1	6	5	GND	DCTRL2	6
7	Data32	Data31	8	7	Data64	Data63	8
9	Data30	Data29	10	9	Data62	Data61	10
11	Data28	Data27	12	11	Data61	Data60	12
13	Data26	Data25	14	13	Data58	Data57	14
15	Data24	Data23	16	15	Data56	Data55	16
17	Data22	Data21	18	17	Data54	Data53	18
19	Data20	Data19	20	19	Data52	Data51	20
21	Data18	Data17	22	21	Data50	Data49	22
23	Data16	Data15	24	23	Data48	Data47	24
25	Data14	Data13	26	25	Data46	Data45	26
27	Data12	Data11	28	27	Data44	Data43	28
29	Data10	Data9	30	29	Data42	Data41	30
31	Data8	Data7	32	31	Data40	Data39	32
33	Data6	Data5	34	33	Data38	Data37	34
35	Data4	Data3	36	35	Data36	Data35	36
37	Data2	Data1	38	37	Data34	Data33	38
39	D1	C1	40	39	D2	C2	40
41	B1	A1	42	41	B2	A2	42
43	LAT1	DCLK1	44	43	LAT2	DCLK2	44
45	OE1	GND	46	45	OE2	GND	46
47	VCC	GND	48	47	VCC	GND	48
49	VCC	GND	50	49	VCC	GND	50

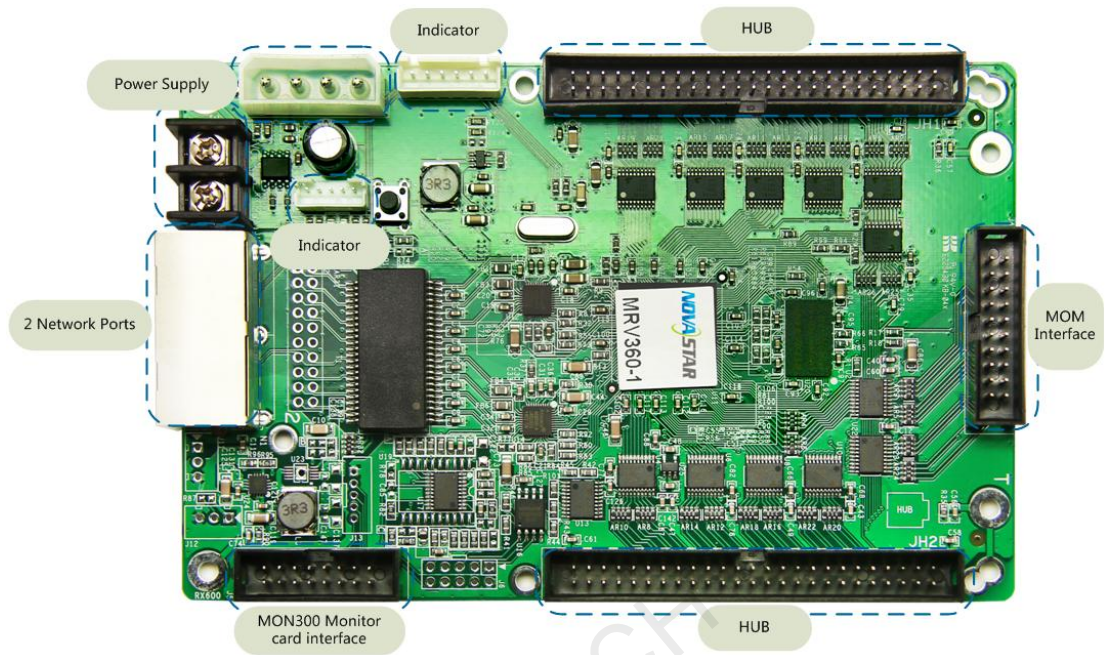
Dimensions

Thickness of the board is about 1.6mm. The overall thickness (board thickness + thickness of the components on front and back side) is about 18.5mm.



Unit: mm.

Appearance



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

J4 (MOM interface) definition :

GND	1	2	SPI_CS
SPI_CLK	3	4	SPI_MOSI
CODE0	5	6	H164_CSD
CODE1	7	8	H164_CLK
CODE2	9	10	
	11	12	CODE3
CODE4	13	14	
	15	16	SPI_MISO
	17	18	
	19	20	GND

J9 definition (Indicator light Socket)

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

J10 definition (Indicator Socket) :

1	2	3	4	5	6
KEY +	KEY -	PWR_LED+	PWR_LED-	STA_LED+	STA_LED-

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
MRV360 - 1	Standard model, male connector on top
MRV360 - 2	Male connector on bottom
MRV360 - 3	Female connector on top
MRV360 - 4	Female connector on bottom

Appendix

Serial data decoding circuit :

