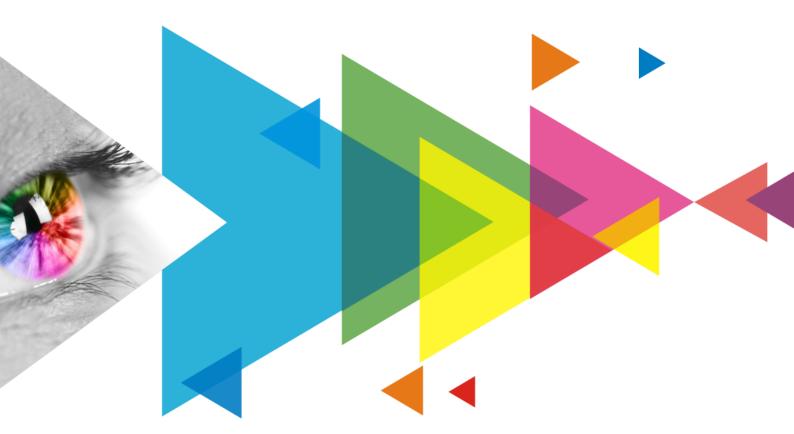


A10s Pro

Receiving Card



Specifications

Change History

Document Version	Release Date	Description
V1.2.1	2023-12-21	Added thermal compensation 3.0.Updated product feature descriptions.
V1.2.0	2023-07-19	 Added the features of display mode switching, brightness overdrive, and seam correction. Deleted the feature of current dimming
V1.1.4	2022-12-27	 Added the feature of current dimming. Updated the dimensions diagram. Updated the current and power consumption. Updated the packing box dimensions.
V1.1.3	2022-07-09	 Added the features of frame rate adaptive, Shutter Fit, calibration coefficient management, and one-click firmware program learning. Updated some feature description.

Introduction

The A10s Pro is a fully-featured high-end small receiving card developed by Xi'an NovaStar. Tech Co., Ltd. (hereinafter referred to as NovaStar). A single A10s Pro supports resolutions up to 512×512@60Hz.

This receiving card supports the exclusive Thermal Compensation 3.0, Dynamic Booster, Full Grayscale Calibration and LED Image Booster technologies of NovaStar. It also supports features such as display mode switching, brightness overdrive, seam correction, frame rate adaptive 3.0, shutter fit, HDR, pixel level brightness and chroma calibration, quick adjustment of dark or bright lines, low latency, 3D, individual gamma adjustment for RGB, image rotation in 90° increments, and image rotation at any angle, greatly improving the brightness, grayscale and color performance from every aspect and offering users an ultimate visual experience with a uniform, smooth and lifelike image.

The A10s Pro uses high-density connectors for communication to limit the effects of dust and vibration, resulting in high stability. It supports up to 32 groups of parallel RGB data or 64 groups of serial data (expandable to 128 groups of serial data). Its reserved pins allow for custom functions of users. Thanks to its EMC Class B compliant hardware design, the A10s Pro has improved electromagnetic compatibility and is suitable for various on-site setups that have high requirements.

Certifications

RoHS, EMC Class B

If the product does not have the relevant certifications required by the countries or regions where it is to be sold, please contact NovaStar to confirm or address the problem. Otherwise, the customer shall be responsible for the legal risks caused or NovaStar has the right to claim compensation.

Features

Improvements to Display Effect

Thermal Compensation 3.0

Dynamically adjust the thermal compensation coefficients of the screen to address the issue of color cast caused by uneven heat dissipation across the screen.

Dynamic Booster

Real-time analysis and dynamic adjustment are made to each frame to significantly improve the display contrast and image details for better visual experience, and effectively control and lower the display power consumption, extending the service life of the LED screen.

Full Grayscale Calibration
 Work with NovaStar's high-precision calibration
 system and the C3200 scientific-grade camera
 to generate unique calibration coefficients for
 each grayscale, ensuring uniformity of each
 grayscale and dramatically improving the image
 quality.

- LED Image Booster (Effects depend on driver IC)
 - Color Management: Support the standard color gamuts (Rec.709, DCI-P3 and Rec.2020) and custom color gamuts, enabling more precise colors on the screen.
 - Precise Grayscale: Individually correct the 65,536 levels of grayscale (16bit) of the driver IC to fix the display problems at low grayscale conditions, such as brightness spikes, brightness dips, color cast and mottling. This function can also better assist other display technologies, such as 22bit+ and individual gamma adjustment for RGB, allowing for a smoother and uniform image.
 - 22bit+: Improve the LED display grayscale by 64 times to avoid grayscale loss due to low brightness and allow for a smoother image with more details in dark areas.
- Display mode switching Switch to the appropriate display mode for different scenarios to ensure optimal display quality on the LED screen in various situations.

Brightness overdrive

Enhance the maximum brightness of the screen by balancing the uniformity, thus increasing the dynamic range and improving image contrast.

Seam correction

Calibrate the dark or bright lines caused by splicing of cabinets or modules to improve the visual experience.

Frame rate adaptive 3.0
 Adjust the receiving card parameters in real time according to the input frame rate, so that the display effect at different frame rates (23 Hz to 240 Hz) is the best.

Shutter fit

Automatically adjust the driver IC parameters according to the camera shutter angle to fix problems of black lines, grayscale addition, and grayscale loss during camera shooting in xR scenarios.

- HDR function
 - Support HDR10 and comply with the SMPTE ST 2084 and SMPTE ST 2086 standards.
 - Support HLG.
- Pixel level brightness and chroma calibration
 Work with NovaStar's high-precision calibration
 system to calibrate the brightness and chroma of
 each pixel, effectively eliminating differences and
 enabling high consistency for both brightness
 and chroma.
- Quick adjustment of dark or bright lines
 The dark or bright lines caused by splicing of
 cabinets or modules can be adjusted to improve
 the visual experience. The adjustment is easy
 and takes effect immediately.
- Low latency

The latency of video source on the receiving card end can be reduced to 1 frame (only when using modules with driver IC with built-in RAM).

• 3L

Work with the controller that supports 3D function to enable 3D output.

Individual gamma adjustment for RGB
Working with NovaLCT (V5.2.0 or later) and the
controller that supports this function, the
receiving card supports individual adjustment to
red gamma, green gamma and blue gamma,
which can effectively control image nonuniformity at low grayscale conditions and white
balance offset, allowing for a more realistic
image.

Improvements to Maintainability

- Calibration coefficient management
 The calibration coefficients can be uploaded quickly, read back, and saved to hardware.
- Automatic module calibration
 After a new module with flash memory is installed to replace the old one, the calibration coefficients stored in the flash memory can be automatically uploaded to the receiving card when it is powered on, which ensures unchanged uniform display brightness and chroma.
- Module Flash management
 For modules with flash memory, the information stored in the memory can be managed. The calibration coefficients and module ID can be stored and read back.
- Quick uploading of calibration coefficients
 Upload the calibration coefficients quickly to the receiving cards to improve efficiency.
- One-click application of calibration coefficients in module Flash
 For modules with flash memory, when the Ethernet cable is disconnected, users can hold down the self-test button on the cabinet to upload the calibration coefficients in the memory of the module to the receiving card.
- Mapping 2.0
 The cabinets can be marked on the screen by the color, Ethernet port number and receiving card number, allowing users to easily obtain the locations and connection topology of receiving cards and quickly complete screen configuration and other operations.

Improvements to Reliability

Dual card backup and status monitoring
In an application with requirements for high
reliability, two receiving cards can be mounted
onto a single hub board for backup. When the
primary receiving card fails, the backup card can
serve immediately to ensure uninterrupted
operation of the display.

The working status of the primary and backup receiving cards can be monitored in NovaLCT V5.2.0 or later.

- Image rotation in 90° increments
 The display image can be set to rotate in multiples of 90° (0°/90°/180°/270°).
- Image rotation at any angle
 Working with SmartLCT and the MCTRL R5 LED
 display controller, the receiving card supports
 image rotation at any angle.
- Setting of a pre-stored image in receiving card
 The image displayed during startup, when the
 Ethernet cable is disconnected or there is no
 video signal can be customized.
- Temperature and voltage monitoring Real-time monitoring of the temperature and voltage of the receiving card, without the need for other external devices.
- Bit error detection
 Real-time monitoring of the communication of
 the Ethernet port on the receiving card. It
 records the number of error data packets, which
 helps users identify faults and troubleshoot
 network communication issues.
- Status detection of dual power supplies
 When two power supplies are used, their working status can be detected by the receiving card.
- Firmware program readback
 The receiving card firmware program can be read back and saved to the local computer.
- Configuration parameter readback
 The receiving card configuration parameters can be read back and saved to the local computer.
- LVDS transmission (dedicated firmware required)
 Low-voltage differential signaling (LVDS)
 transmission is used to reduce the number of
 data cables from the hub board to module,
 increase the transmission distance, and improve
 the signal transmission quality and
 electromagnetic compatibility (EMC).

Loop backup

The receiving card and controller form a loop via the primary and backup line connections. When 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 program backup
 Two copies of the firmware program are stored
 in the receiving card at the factory. This is done
 to prevent the receiving card from getting stuck
 abnormally during a program update.
- Dual backup of calibration coefficients
 The brightness and chroma calibration
 coefficients are stored in the application area
 and factory area of the receiving card at the
 same time. Users usually use the calibration
 coefficients in the application area. If necessary,
 users can restore the calibration coefficients in
 the factory area to the application area.
- One-click firmware program learning
 The cabinet firmware program and configuration file can be coped to other cabinets with one click to help quickly complete cabinet configuration.



The Full Grayscale Calibration function supports the MX40 Pro, MCTRL4K, MCTRL600, H15, H9, H5 and H2 devices.

Appearance

Top



Indicator

Bottom



High-Density Connectors

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

Indicators

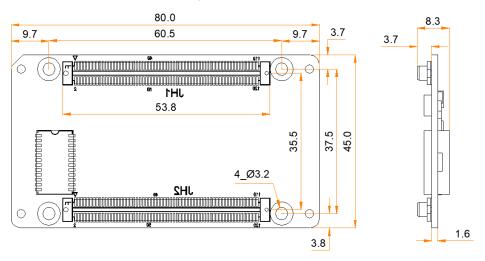
Indicator

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.

Indicator	Color	Status	Description
		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 8.7 mm. Ground connection (GND) is enabled for mounting holes.



Tolerance: ±0.3 Unit: mm



The distance between outer surfaces of the A10s Pro and hub boards after their high-density connectors fit together is 5.0 mm. A 5-mm copper pillar is recommended.

To make molds or trepan mounting holes, please contact NovaStar for a higher-precision structural drawing.

Pins

32 Groups of Parallel Data

			JH1			
GND	1	1	2	2	GND	
	× 3	3	4	4 6 X		
	$\times \frac{5}{7}$	5	6	8 X		
	$\frac{\times}{9}$	7	8	10		
	€ 11	9 11	10	12 💸		
	2 13	13	12 14	14		
RFU1		15	16	16 🗘		
RFU2	19	17	18	20 ×		
GND	21	19	20	22 ×		
	23	21 23	22 24	24 ×		
GND	25	25	26	20	GND	
G17 R18	27 29	27	28	28 30	R17 B17	
B18	31	29	30	32	G18	
G19	33	31	32	34	R19	
R20	35	33 35	34 36	36	B19	
B20	37	37	38	38	G20	
GND G21	39 41	39	40	40 42	GND R21	
R22	43	41	42	44	B21	
B22	45	43	44	46	G22	
G23	47	45 47	46 48	48	R23	
R24	49	49	50	50	B23	
B24 GND	51 53	51	52	52 54	G24 GND	
G25	55 55	53	54	56	R25	
R26	57	55	56	58	B25	
B26	59	57	58	60	G26	
G27	61	59 61	60 62	62	R27	
R28	63	63	64	64	B27	
B28 GND	65 67	65	66	66 68	G28 GND	
G29	69	67	68	70	R29	
R30	71	69	70	72	B29	
B30	73	71 73	72 74	74	G30	
G31	75	75	76	76	R31	
R32 B32	77 79	77	78	78 80	B31 G32	
GND	81	79	80	82	GND	
RFU4	83	81	82	84	RFU3	
RFU6	85	83 85	84 86	86	RFU5	
RFU8	87	87	88	88	RFU7	
RFU10 RFU12	89 91	89	90	90 92	RFU9 RFU11	
RFU14	93	91	92	94	RFU13	
GND	95	93	94	96	GND	
RFU16	97	95 97	96 98	98	RFU15	
RFU18	99		100	100	RFU17	
	× 101		102	102 104		
	× 103	103	104	106		
	× 103		106	108		
GND	× 109		108	110 ×	GND	
GND	111		110 112	112	GND	
	× 113		114	114 ×		
1	^ 115 117		116	116 ^ 118	_	
	119		118	120	→	
		119	120		•	
EXT_5V				•	EXT_5V	
LX1_0V					LX 1_0V	

		JH2		
	1 1	2	2	Eth_Sheild
	1 3 3	4	4	Eth_Sheild
	5 _	6	6 X	
<u> </u>	7	8	8	
Port1_10+	9	10	10	Port2_T0+
Port1_T0- 1	11	12	12	Port2_T0-
Dortd Td x X 1	3 42	14	14 16 ×	
Porti_11+ 1	15	16	10	Port2_T1+
Port1_T1- 1	17	18	18	Port2_T1-
D-14 TO: X 1	40	20	20 ×	
Port1_12+ 2	24	22	22	Port2_T2+
Port1_T2- 2	3 23	24	24	Port2_T2-
D X 2	25	26	26 X	
Port1_13+ 11 2	27	28	28	Port2_T3+
Port1_T3- 2	20	30	30	Port2_T3-
0T4 LEDD × 3	24	32	32 ×	
STA_LEDB- 3	22	34	34	STA_LEDR-
Input_KEY_IN 3	25	36	36	STA_LEDG-
GND 3	27	38	38	GND
A 3	30	40	40	DCLK1
B 4	44	42	42	DCLK2
C 4	3 42	44	44	LAT
D 4	0 45	46	46	CTRL
E 4	47	48	48	OE_R
OE_B 4	40	50	50	OE_G
GND 5	E 4	52	52	GND
G1 5	5 50	54	54	R1
R2 5	5	56	56	B1
B2 5	<i>F</i> 7	58	58	G2
G3 5	50	60	60	R3
R4 6	64	62	62	B3
B4 6	3 63	64	64	G4
GND 6	65	66	66	GND
G5 6	67	68	68	R5
R6 6	9 60	70	70	B5
B6 7		72	72	G6
G7 7.		74	74	R7
	5 75	76	76 78	B7
	77	78		G8
GND 79 G9 8		80	80 82	GND R9
G9 8 R10 8		82	84	B9
		84		
B10 8 G11 8	05	86	86 88	G10
	07	88	90	R11
R12 8 B12 9	9 00	90	90	B11 G12
GND 9	0.1	92	94	GND
G13 9		94	96	R13
R14 9	0.5	96	98	B13
B14 9		98	100	G14
G15 10		100	100	R15
R16 10		1102	104	B15
B16 10		3104	104	G16
GND 10		5106	108	GND
		7108	110	GND
× 10		9110	110 ×	
× 11	44.	1112	114 ×	
X 11		3114	116 X	
		5116	118 ×	GND
GND 11	117	7118	120	GND GND
SIND II	119	9120	120	GND
			1	

	JH1										
	GND	1	2	GND							
	NC	3	4	NC							
	NC	5	6	NC							
	NC	7	8	NC							
	NC	9	10	NC							
	NC	11	12	NC							
	NC	13	14	NC							
	NC	15	16	NC							
/	RFU1	17	18	NC							
1	RFU2	19	20	NC							
	GND	21	22	NC							

NC 23 24 NC GND 25 6 GND 7 7 7 7 7 7 8 8 7 7	JH1										
GND		NC			NC						
R18		GND			GND						
	/	G17	27	28	R17	/					
	/	R18				/					
G19 33 34 R19	/	B18			G18	/					
R20	/					/					
Second S	/					/					
GND 39 40 GND	/					/					
G21		GND	39	40	GND						
	/					/					
G23	/	R22	43	44	B21	/					
G23	/	B22	45	46	G22	/					
R24	/					/					
B24	/		49			/					
GND	/					/					
G25 S5 S6 R25 / R26 S7 S8 B25 / R26 S9 60 G26 / G27 61 62 R27 / R28 63 64 B27 /											
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/ B26 59 60 G26 / // G27 61 62 R27 / // R28 63 64 B27 / // B28 65 66 G28 / GND 67 68 GND // R30 71 72 B29 / // B30 73 74 G30 / // G31 75 76 R31 / // R32 77 78 B31 / // B32 79 80 G32 / GND 81 82 GND // RFU4 83 84 RFU3 / // RFU6 85 86 RFU5 / // RFU8 87 88 RFU7 / // RFU10 89 90 RFU9 / // RFU14 93 94 RFU13 / // RFU16 97 98 RFU17 / RFU18 99 100 RFU17 / RFU19 NC 101 102 NC NC 103 104 NC RC GND 109 110 GND GND GND 111 112 GND NC 113 114 NC EXT_5V 115 116 EXT_5V EXT_5V 115 116 EXT_5V EXT_5V 115 116 EXT_5V	1					1					
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EXT_5V 115 116 EXT_5V EXT_5V 117 118 EXT_5V											
EXT_5V 117 118 EXT_5V											

JH2										
Chassis ground	Eth_Sheild	1	2	Eth_Sheild	Chassis ground					
Chassis ground	Eth_Sheild	3	4	Eth_Sheild	Chassis ground					
	NC	5	6	NC						
	NC	7	8	NC						
	Port1_T0+	9	10	Port2_T0+						
Gigabit Ethernet port	Port1_T0-	11	12	Port2_T0-	Gigabit Ethernet port					
	NC	13	14	NC						

		JH2)		
	Port1_T1+	15	16	Port2_T1+	
	Port1_T1-	17	18	Port2_T1-	
	NC	19	20	NC	
	Port1_T2+	21	22	Port2_T2+	
	Port1_T2-	23	24	Port2_T2-	
	NC	25	26	NC	
	Port1_T3+	27	28	Port2_T3+	
	Port1_T3-	29	30	Port2_T3-	
	NC	31	32	NC	
Tri-color LED (Reserved)	STA_LEDB-	33	34	STA_LEDR-	Tri-color LED (Reserved)
					Running indicator (active low)
Test button	Input_KEY_IN	35	36	STA_LEDG-	Tri-color LED (Reserved)
	GND	37	38	GND	
Line decoding signal	Α	39	40	DCLK1	Shift clock output 1
Line decoding signal	В	41	42	DCLK2	Shift clock output 2
Line decoding signal	С	43	44	LAT	Latch signal output
Line decoding signal	D	45	46	CTRL	Afterglow control signal
Line decoding signal	E	47	48	OE_R	Display enable signal
Display enable signal	OE_B	49	50	OE_G	Display enable signal
	GND	51	52	GND	
/	G1	53	54	R1	/
/	R2	55	56	B1	/
/	B2	57	58	G2	/
/	G3	59	60	R3	/
/	R4	61	62	B3	/
/	B4	63	64	G4	/
,	GND	65	66	GND	,
/	G5	67	68	R5	/
/	R6	69	70	B5	/
/	B6	71	72	G6	/
/	G7	73	74	R7	/
/	R8	75	76	B7	/
/	B8	77	78	G8	/
1	GND			GND	1
,	G9	79	80 82	R9	,
/		81			/
/	R10	83	84	B9	/
/	B10	85	86	G10	/
/	G11	87	88	R11	/
/	R12	89	90	B11	/
/	B12	91	92	G12	/
,	GND	93	94	GND	,
/	G13	95	96	R13	/
/	R14	97	98	B13	/
/	B14	99	100	G14	/
/	G15	101	102	R15	/
/	R16	103	104	B15	/
/	B16	105	106	G16	/
	GND	107	108	GND	
	NC	109	110	NC	
	NC	111	112	NC	
	NC	113	114	NC	
	NC	115	116	NC	
	GND	117	118	GND	
	GND	119	120	GND	

64 Groups of Serial Data

			JH1							JH2		
GND	1	4	0	2	GND	_	Eth_Sheild	1	4	_	2	Eth_Sheild
	_~ 3	1 3	2 4	4		_	Eth_Sheild	3	1	2 4	4	Eth_Sheild
	<u> 5</u>	5	6	6				× 5	5	6	6 ×	
	ŷ 7	7	8	8 2			Dortd TO		7	8	8 🗘	D-40 TO
	× 9	9	10	10 ^			Port1_T0+	^ 9	9	10	10	Port2_T0+
	<u>2 11</u>	11	12	12			Port1_T0-	11 . 13	11	12	12 14	Port2_T0-
	× 15	13	14	16			Port1 T1+	× 15	13	14	16 ×	Port2 T1+
RFU1	× 17	15	16	18 X			Port1 T1-	17	15	16	18	Port2 T1-
RFU2	19	17	18	20				19	17	18	20	
GND	21	19	20	22			Port1_T2+	× 21	19	20	22 ×	Port2_T2+
	× 23	21 23	22 24	24			Port1_T2-	23	21 23	22	24	Port2_T2-
GND	25	25	26	26	GND	_		× 25	25 25	24 26	26 ×	
Data50	27	27	28	28	Data49	_	Port1_T3+	21	27	28	20	Port2_T3+
Data52	29	29	30	30	Data51	_	Port1_T3-	29	29	30	30	Port2_T3-
Data54	31 33	31	32	32	Data53	_	STA LEDB	× 31	31	32	32 ×	CTA LEDD
Data56 Data58	35	33	34	34 36	Data55 Data57	_	Input KEY	- 33 IN 35	33	34	34 ^ 36	STA_LEDR- STA_LEDG-
Data60	37	35	36	38	Data57	_	GND	37	35	36	38	GND
GND	39	37	38	40	GND	_	A	39	37	38	40	DCLK1
Data62	41	39	40	42	Data61	_	B	41	39	40	42	DCLK2
Data64	43	41	42	44	Data63	_	C	43	41	42	44	LAT
NC	45	43	44	46	NC		D	45	43	44	46	CTRL
NC	47	45	46	48	NC		E	47	45	46	48	OE_R
NC	49	47 49	48 50	50	NC		OE_B	49	47 49	48 50	50	OE_G
NC	51	51	52	52	NC	_	GND	51	51	52	52	GND
GND	53	53	54	54	GND	_	Data2	53	53	54	54	Data1
NC NC	55	55	56	56	NC NC	_	Data4	55 57	55	56	56	Data3
NC NC	57 59	57	58	58 60	NC NC	_	Data6	57 59	57	58	58 60	Data5 Data7
NC NC	61	59	60	62	NC NC	_	Data8 Data10	61	59	60	62	Data 7 Data 9
NC NC	63	61	62	64	NC	_	Data12	63	61	62	64	Data11
NC NC	65	63	64	66	NC	_	GND	65	63	64	66	GND
GND	67	65	66	68	GND	_	Data14	67	65	66	68	Data13
NC	69	67	68	70	NC	_	Data16	69	67	68	70	Data15
NC	71	69	70 72	72	NC		Data18	71	69	70	72	Data17
NC	73	71 73	72 74	74	NC		Data20	73	71 73	72 74	74	Data19
NC NC	75	75	76	76	NC	_	Data22	75	75	76	76	Data21
NC NC	77	77	78	78	NC	_	Data24	77	77	78	78	Data23
NC CND	79 81	79	80	80 82	NC	_	GND	79 81	79	80	80 82	GND
GND RFU4	83	81	82	84	GND RFU3	_	Data26 Data28	83	81	82	84	Data25 Data27
RFU6	85	83	84	86	RFU5	_	Data30	85	83	84	86	Data29
RFU8	87	85	86	88	RFU7	_	Data32	87	85	86	88	Data31
RFU10	89	87	88	90	RFU9	_	Data34	89	87	88	90	Data33
RFU12	91	89	90	92	RFU11	_	Data36	91	89	90	92	Data35
RFU14	93	91	92 94	94	RFU13	_	GND	93	91	92	94	GND
GND	95	93 95	94 96	96	GND	_	Data38	95	93 95	94 96	96	Data37
RFU16	97	95	98	98	RFU15	_	Data40	97	95	98	98	Data39
RFU18	99		100	100	RFU17	_	Data42	99		100	100	Data41
	× 101		1102	102 ×			Data44	101		102	102	Data43
	2 103 105		3104	104 C			Data46	103 105		104	104 106	Data45
	× 105		5106	108			Data48 GND	105		106	108	Data47 GND
GND	× 107	107	7108	110 ×	GND		GIND	. 109	107	108	110	GND
GND	111		9110	112	GND			× 103		110	112	
OHD	112		1112	114	5110			× 113		112	114	
	× 113		3114	116 ×				2 115		114	116	
1	117		5116	118	1		GND	^ 117		116	118	GND
I	119		7118 9120	120	<u> </u>		GND	119		118 120	120	GND
		118	9120		•				119	120		
EXT_5V					EXT 5V							

	JH1										
	GND	1	2	GND							
	NC	3	4	NC							
	NC	5	6	NC							
	NC	7	8	NC							
	NC	9	10	NC							
	NC	11	12	NC							
	NC	13	14	NC							
	NC	15	16	NC							
/	RFU1	17	18	NC							
/	RFU2	19	20	NC							
	GND	21	22	NC							
	NC	23	24	NC							

JH1										
	GND	25	26	GND						
/	Data50	27	28	Data49	/					
/	Data52	29	30	Data51	/					
/	Data54	31	32	Data53	/					
/	Data56	33	34	Data55	/					
/	Data58	35	36	Data57	/					
/	Data60	37	38	Data59	/					
	GND	39	40	GND						
/	Data62	41	42	Data61	/					
/	Data64	43	44	Data63	/					
	NC	45	46	NC						
	NC	47	48	NC						
	NC	49	50	NC						
	NC	51	52	NC						
	GND	53	54	GND						
	NC	55	56	NC						
	NC	57	58	NC						
	NC	59	60	NC						
	NC	61	62	NC						
	NC	63	64	NC						
	NC	65	66	NC						
	GND	67	68	GND						
	NC	69	70	NC						
	NC	71	72	NC						
	NC	73	74	NC						
	NC	75	76	NC						
	NC	77	78	NC						
	NC	79	80	NC						
	GND	81	82	GND						
/	RFU4	83	84	RFU3	/					
/	RFU6	85	86	RFU5	/					
/	RFU8	87	88	RFU7	/					
/	RFU10	89	90	RFU9	/					
/	RFU12	91	92	RFU11	/					
/	RFU14	93	94	RFU13	1					
	GND	95	96	GND						
/	RFU16	97	98	RFU15	1					
/	RFU18	99	100	RFU17	/					
	NC	101	102	NC						
	NC	103	104	NC						
	NC	105	106	NC						
	NC	107	108	NC						
	GND	109	110	GND						
	GND	111	112	GND						
	NC	113	114	NC						
	EXT_5V	115	116	EXT_5V						
	EXT_5V	117	118	EXT_5V						
	EXT_5V	119	120	EXT_5V						

JH2					
Chassis ground	Eth_Sheild	1	2	Eth_Sheild	Chassis ground
Chassis ground	Eth_Sheild	3	4	Eth_Sheild	Chassis ground
	NC	5	6	NC	

JH2					
	NC	7	8	NC	
	Port1_T0+	9	10	Port2_T0+	
	Port1_T0-	11	12	Port2_T0-	
	NC	13	14	NC	
	Port1_T1+	15	16	Port2_T1+	
	Port1_T1-	17	18	Port2_T1-	
Gigabit Ethernet port	NC	19	20	NC	Gigabit Ethernet port
Gigabit Ethernet port	Port1_T2+	21	22	Port2_T2+	Gigabit Ethernet port
	Port1_T2-	23	24	Port2_T2-	
	NC	25	26	NC	
	Port1_T3+	27	28	Port2_T3+	
	Port1_T3-	29	30	Port2_T3-	
	NC	31	32	NC	
Tri-color LED (Reserved)	STA_LEDB-	33	34	STA_LEDR-	Tri-color LED (Reserved)
				_	Running indicator (active low)
Test button	Input_KEY_IN	35	36	STA_LEDG-	Tri-color LED (Reserved)
	GND	37	38	GND	
Line decoding signal	A	39	40	DCLK1	Shift clock output 1
Line decoding signal	В	41	42	DCLK2	Shift clock output 2
Line decoding signal	С	43	44	LAT	Latch signal output
Line decoding signal	D	45	46	CTRL	Afterglow control signal
Line decoding signal	Е	47	48	OE_R	Display enable signal
Display enable signal	OE_B	49	50	OE_G	Display enable signal
	GND	51	52	GND	
/	Data2	53	54	Data1	/
	Data4	55	56	Data3	1
/	Data6	57	58	Data5	/
/	Data8	59	60	Data7	/
/	Data10	61	62	Data9	/
/	Data12	63	64	Data11	1
	GND	65	66	GND	
/	Data14	67	68	Data13	1
1	Data16	69	70	Data15	/
1	Data18	71	72	Data17	1
/	Data20	73	74	Data19	1
/	Data22	75	76	Data21	/
1	Data24	77	78	Data23	/
,	GND	79	80	GND	,
/	Data26	81	82	Data25	/
/	Data28	83	84	Data27	/
/	Data30	85	86	Data29	/
/	Data32	87	88	Data31	/
/	Data34	89	90	Data33	/
/	Data36	91	92	Data35	/
1	GND	93	94	GND	,
/	Data38	95	96	Data37	/
1	Data40	97	98	Data39	1
/	Data42	99	100	Data41	/
/	Data44	101	102 104	Data43 Data45	/
/	Data48				/
/	Data48	105	106	Data47	1
	GND	107	108	GND	
	NC NC	109	110	NC NC	
	NC	111	112	NC	

JH2					
	NC	113	114	NC	
	NC	115	116	NC	
	GND	117	118	GND	
	GND	119	120	GND	



The recommended power input is 5.0 V.

OE_R, OE_G and OE_B are display enable signals. When RGB are not controlled separately, use OE_R. When the PWM chip is used, they are used as GCLK signals.

In the mode of 128 groups of serial data, Data65–Data128 are multiplexed into Data1–Data64.

Reference Design for Extended Functions

Pins for Extended Functions					
Pin	Recommended Module Flash Pin	Recommended Smart Module Pin	Description		
RFU4	HUB_SPI_CLK	Reserved	Clock signal of serial pin		
RFU6	HUB_SPI_CS	Reserved	CS signal of serial pin		
RFU8	HUB_SPI_MOSI	/	Module Flash data storage input		
KFU6	/	HUB_UART_TX	Smart module TX signal		
RFU10	HUB_SPI_MISO	/	Module Flash data storage output		
RFU10	/	HUB_UART_RX	Smart module RX signal		
RFU1	Rese	A reserved pin for connection to MCU			
RFU2	Rese	A reserved pin for connection to MCU			
RFU3	HUB_C				
RFU5	HUB_C	Madula Flack BLIC control nin			
RFU7	HUB_CODE2		Module Flash BUS control pin		
RFU9	HUB_CODE3				
RFU11	HUB_H164_CSD		74HC164 data signal		
RFU12	1		/		
RFU13	HUB_H1	74HC164 clock signal			
RFU14	POWEF	Dual power supply detection signal 1			
RFU15	MS_[Dual card backup connection signal			
RFU16	POWEF	Dual power supply detection signal 2			
RFU17	MS.	Dual card backup identifier signal			
RFU18	HUB_C	Flash control pin 5			



The RFU8 and RFU10 are signal multiplex extension pins. Only one pin from either the Recommended Smart Module Pin or the Recommended Module Flash Pin can be selected at the same time.

Specifications

Maximum Resolution	512×512@60Hz			
Electrical Parameters	Input voltage	DC 3.8 V to 5.5 V		
raiameters	Rated current/power consumption	RGB data group: 0.6 A/3.0 W LVDS data group: 0.7 A/3.5 W		
Operating Environment	Temperature	-20°C to +70°C		
Environment	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	Dimensions	80.0 mm × 45.0 mm × 8.3 mm		
Specifications	Net weight	22.8 g Note: It is the weight of a single receiving card only.		
Packing Information	Packing specifications	An antistatic bag and anti-collision foam are provided for each receiving card. Each packing box contains 40 receiving cards.		
	Packing box dimensions	381.0 mm × 123.0 mm × 196.0 mm		

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

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