Mooncell

M10D Receiving card

Specification V3.4

Shenzhen Mooncell Electronics Co., Ltd

1 Product Overview

Product Introduction

M10D is a product designed for movie LED display, which is independently developed and launched by Mooncell; it adopted the high-precision 120 PIN connector; it can supports the maximum 32 groups of the parallel connection data;the maximum loading capacity could reach up to 512*512 pixels; with strong processing ability, supper reliability and high competitive price.

Product Features

- It features the small size and thickness, saving a lot more space for the narrow cabinet and
- space of the led strip(bar).
- It features high precision connector, which is dust-proof & shock proof; with high reliability and stability.
- Integrated network transformer to simplify design and improve electromagnetic
- compatibility
- Support 12BIT video input
- It has an internal frequency doubling function that can multiply the movie format 3D 48HZ to 144HZ.

- **Can control 3D glasses transmitter**

Application Scenarios

It can be applied to LED movie display.

2 Function Introduction

Displaying Effect

It supports pixel level brightness and Chroma Calibration	Using it with the Mooncell Calibration Software to calibrate each one of the pixels on its brightness and Chroma. It can effectively eliminate the Chromatic aberration so as to enhance its consistency of the brightness and Chroma to a high level and result in a better displayed effects.
Support low brightness and high gray (18bit +)	Improve the effect of low gray display, smoother screen transition
Support low latency	Support low-delay control and display of the receiving card, that is, on the basis of using the sending card, the time delay between the output of the signal source and the display of the light board is 2 frames
Support RGB standalone gamma	Can independently customize the GAMMA value of RGB
Frequency doubling function	Double the frequency of 3D video in movie format from 48HZ to 144HZ
Automatically switch display effects	Automatically recognize 24HZ or 48HZ video input and switch between different display schemes.
Support 12BIT	Support 12BIT video source input

Enhanced Operability:

The Receiving Card is Supported to detect its own Sequence number	Using the Network Port testing function on Mooncell AutoLED Software, the receiving card serial number and the Network Port Information will be displayed on the target cabinet. Users will be able to get to know the locations of the receiving cards as well as its Connection diagram.
Data Port User-Defined is supported	Using it with the Mooncell AutoLED Software, you can detect and edit the output data of the receiving cards.
To build up a complicated cabinet is supported	On AutoLED Software, there is an ‘Advanced Setting’, from here you can quickly arrange or structure the modules at your option.
To structure a complicated Led Screen is supported	On AutoLED Software, there is a “Complicated Led Screen Connection”, from here you can quickly arrange or structure the cabinet modules on your option.
IntelligentModule is supported (Customized)	The Intelligent Module consists of Flash and MCU.The Flash can reserve the calibration data and information of the PCB Board. The MCU can be communicated with the receiving cards so as to detect the temperature, voltage and wiring connectivity of each module (on a module-level: module by module). With Intelligent Module, the monitor cards are not necessary for the Monitor Users, which means you can save a lot more space on the cabinets.

Module Self-Calibrated is supported (Customized)	When a module is replaced, the receiving card will automatically read the ID and its calibration data of the new one once the electricity power is connected, and the data will be reserved to the Flash.

Hardware Stability

Ethernet Cable Backup(Hot Backup)	The main cable will be having the loop connection. If there's one cable breaks then still there will have another one to make sure the led display work properly.
	Dual receiving cards backup is supported(Dual Circuit backup design) Customized :when the main working receiving card fails, the other one (backup) will take its job to keep the led display working properly.
It supports to detect the voltage(customized)	It will detects the voltage status of the receiving cards.
It supports to detect the temperature(customized)	The operating temperature of the receiving cards could be detected.
It supports to detect the power status(customized)	The power status of the power supplies could be detected.
Support for power supply detection	Supports detection of power supply operation.
Support for LCD modules (customized)	The LCD module is attached to the HUB board and is used to display the temperature, voltage, single run time and total run time of the receiving card.

Smart Software and Hardware Stability

The receiving card can read the configuration data back from where it has been stored	You will be able to do this on Mooncell AutoLED Software.
It supports to detect the error rates of the network cable	On the Mooncell AutoLED Software, you can detect the network cable connectivity in real time to tell the condition of the network cables, so that you can get rid of any errors immediately.
Communication Monitoring Function	On Mooncell AutoLED Software, you can monitor the Working Status of the receiving cards in real time.

3 Product Parameters

Basic Parameters

Conventional loading Capacity (no frequency multiplication bandwidth)

RGB Parallel	Maximum Loading Capacity	Loading Capacity After lightness Calibrating （Pixels）	Loading Capacity after Color Calibrating
32	512*512	512*512	384*512

Single Network Pot Cascading Quantity	Scanning Lines Supported		
≤1000PCS	1-64 Scan		

Frequency multiplication bandwidth

RGB Parallel	Maximum Loading	Loading Capacity After lightness Calibrating	Loading Capacity after Color
32	512*512	512*512	384*512

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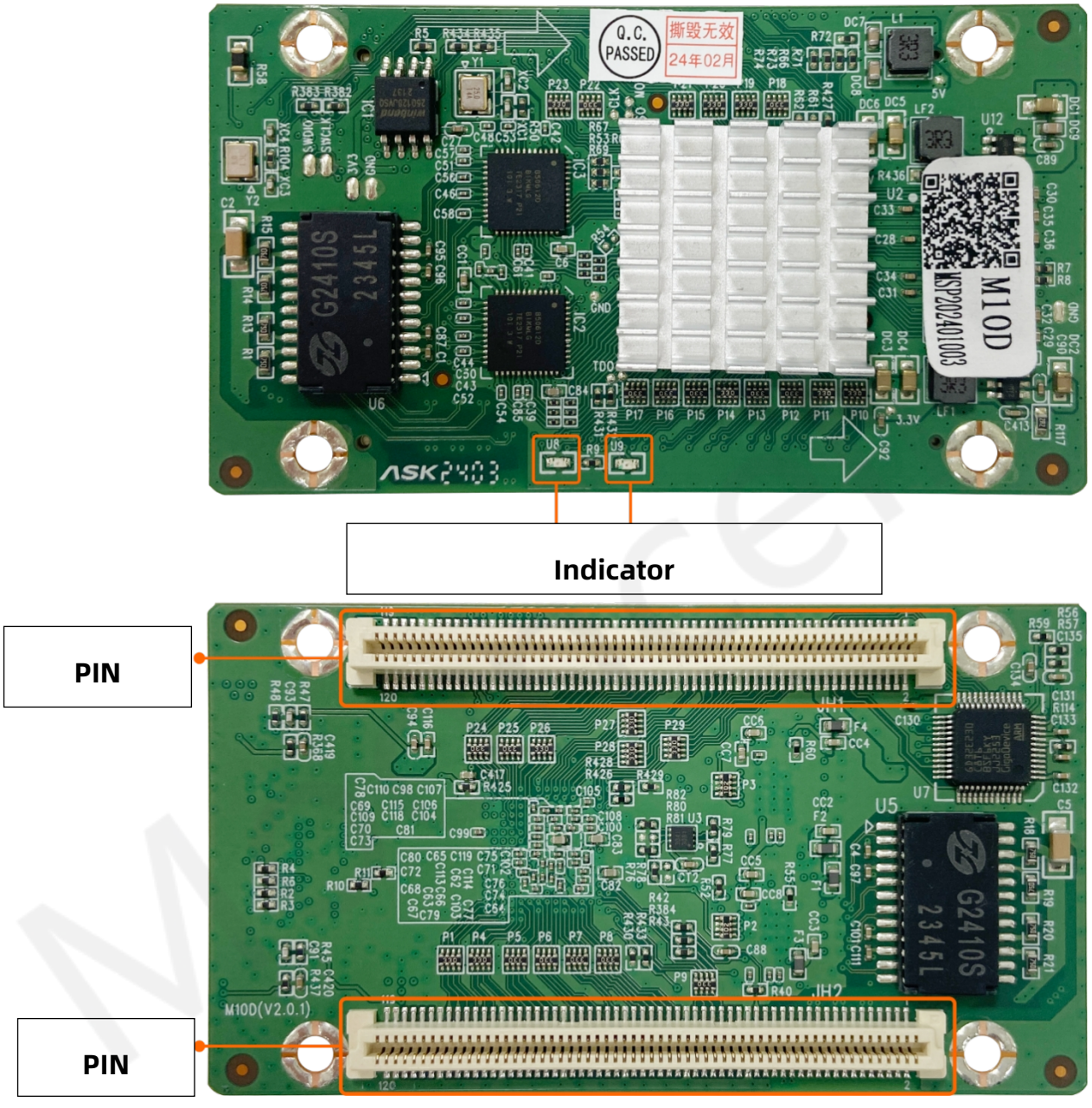
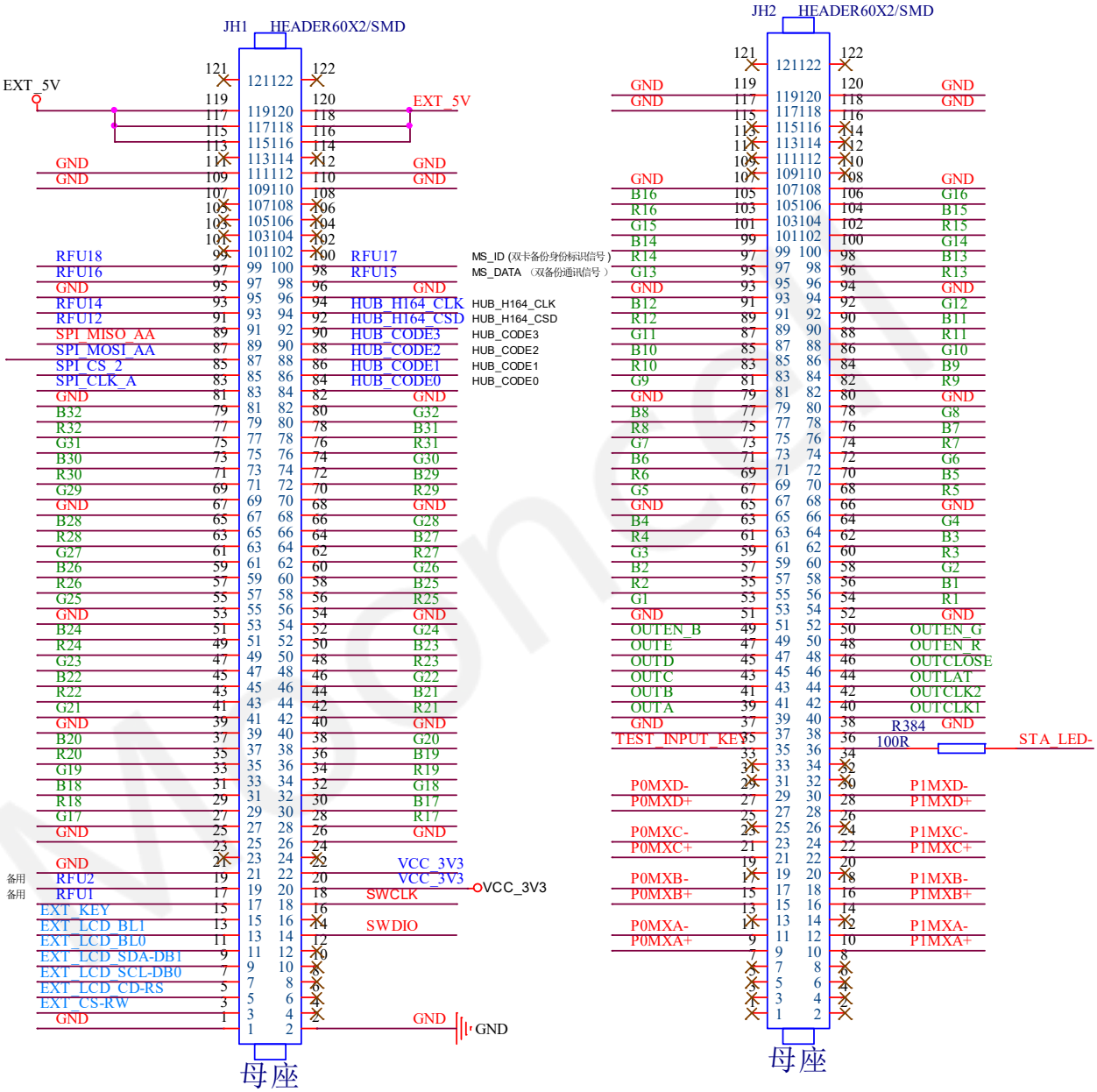
Hardware Introduction



Output Port Definition

Port Definition of the 32 Groups of parallel connection data



JH1 Definition

Illustration	Definition	PIN	PIN	Definition	Illustration
	GND	1	2	GND	
LCD Data Signal	EXT_LCD_SDA	9	10	NC	
LCD Backlight Signal 1	EXT_LCD_BL0	11	12	NC	
LCD Backlight Signal 2	EXT_LCD_BL1	13	14	SWDIO	
LCD Control Key	EXT_LCD_KEY	15	16	NC	
Extension Ports	RFU1	17	18	SWCLK	
	RFU2	19	20	VCC_3.3V	3.3V Subsidiary
	GND	21	22		
	NC	23	24	NC	
	GND	25	26	GND	
	G17	27	28	R17	
	R18	29	30	B17	
	B18	31	32	G18	
	G19	33	34	R19	
	R20	35	36	B19	
	B20	37	38	G20	
	GND	39	40	GND	
	G21	41	42	R21	
	R22	43	44	B21	
	B22	45	46	G22	
	G23	47	48	R23	
	R24	49	50	B23	
	B24	51	52	G24	
	GND	53	54	GND	
	G25	55	56	R25	
	R26	57	58	B25	
	B26	59	60	G26	
	G27	61	62	R27	
	R28	63	64	B27	
	B28	65	66	G28	
	GND	67	68	GND	
	G29	69	70	R29	
	R30	71	72	B29	
	B30	73	74	G30	

	G31	75	76	R31	
	R32	77	78	B31	
	3D OUT	79	80	G32	
	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	
	GND	95	96	GND	
	RFU16	97	98	RFU15	
	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	
	VCC	115	116	VCC	
	VCC	117	118	VCC	
	VCC	119	120	VCC	
	NC	121	122	NC	
	NC	113	114	NC	
	VCC	115	116	VCC	
	VCC	117	118	VCC	
	VCC	119	120	VCC	
	NC	121	122	NC	

JH2 Definition:

Illustration	Definition	PIN	PIN	Definition	Illustration
	NC	1	2	NC	
	NC	3	4	NC	
	NC	5	6	NC	
	NC	7	8	NC	
Gigabyte Ethernet Ports	P0 MXA+	9	10	P1 MXA+	Gigabyte Ethernet Ports
	P0 MXA-	11	12	P1 MXA-	
	NC	13	14	NC	
	P0 MXB+	15	16	P1 MXB+	
	P0 MXB-	17	18	Port2_B-	
	NC	19	20	NC	
	P0 MXC+	21	22	P1 MXC+	
	P0 MXC-	23	24	P1 MXC-	
	NC	25	26	NC	
	P0 MXD+	27	28	P1 MXD+	
	P0 MXD-	29	30	P1 MXD-	
	NC	31	32	NC	
	NC	33	34	NC	
Testing Key	TEST_INPUT_KEY	35	36	STA_LED-	Operating Indicator(ACTIVE LOW)
	GND	37	38	GND	
Line Decoding Signal	OUTA	39	40	OUTCLK_1	First Shift Clock Output
Line Decoding Signal	OUTB	41	42	OUTCLK_2	Second Shift Clock output

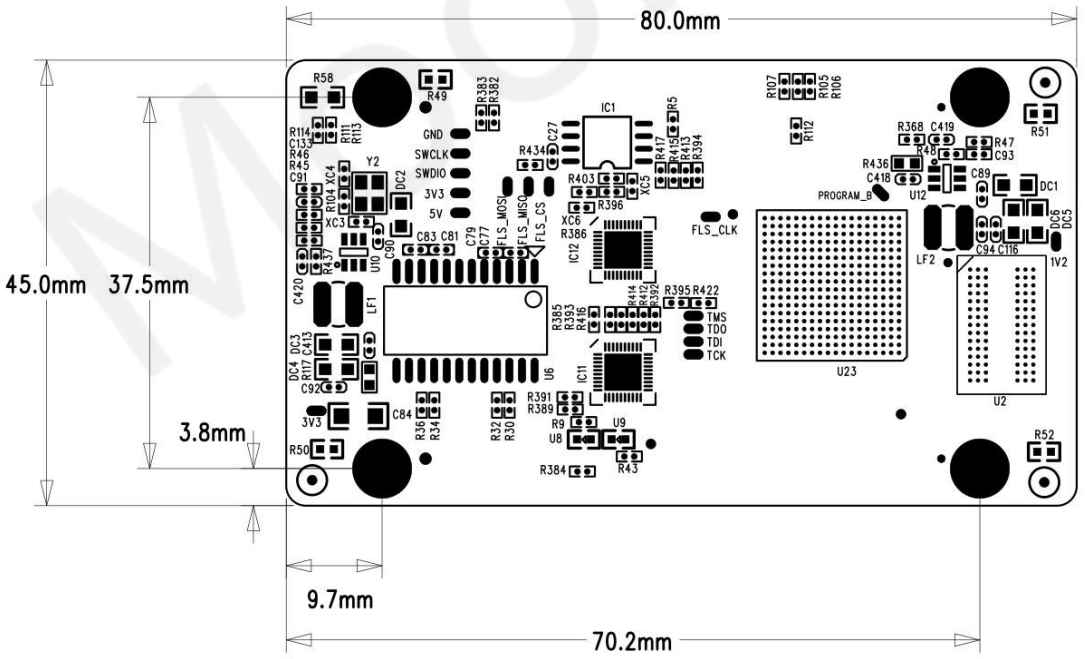
Line Decoding Signal	OUTC	43	44	OUTLAT	Latch Signal output
Line Decoding Signal	OUTD	45	46	OUTCLOSE	Blanking Control Signal
Line Decoding Signal	OUTE	47	48	OUTEN_R	Display enable (when OE_R, G, B are not controlled separately, use OE_R)
Display enable (when OE_R, G, B are not controlled separately, use OE_R)	OUTEN_B	49	50	OUTEN_G	
	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	
	GND	79	80	GND	
	G9	81	82	R9	
	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	
	NC	121	122	NC	

Indicator Illustration

Indicator	Position	Status	Illustration
Status Indicator (Green)	U9	Flickering Slowly at a	The receiving card is working properly, The Ethernet Cable
		Flickering Fast at a constant	The receiving card is working properly, The Ethernet Cable
		It goes out	No Gigabit Ethernet Signal
		Fast Flickering 3 Tunes	The receiving card is working properly, The Ethernet Cable
Status Indicator	U8	Long Lasting On	Power is On

Dimensions



4 Product Specifications

Specifications

Electric Parameters	Input Voltage	DC3.5-5.5V
	Rated Current	0.6A
	Rated Power	3W
Operating Environment	Operating Temperature	-20℃ - 70℃
	Operating Humidity	10%RH-90%RH
Storage Environment	Temperature	-25℃～125℃
Dimensions	80mmX45 mm	
Net Weight	22.8 g	
Certifications	It conforms to RoHS and CE-EMC standards.	

Precautions

1. **The testing (debugging) and installation should be done by the qualified professionals**
2. **Anti-Static, Water-Proof and Dust-Proof Required**