A308

Receiving card

User Manual

Document version:： V2.0

CONTENT

1 Update Records

Document Version	Hardware Version	Release Time	Update Record
V4.0	A308（V1.0.0）	June 18(th), 2025	First release

2 Product Introduction

A75EL308 is a standard receiving card independently developed by Mooncell, with a maximum on-board resolution of 512 × 512@60Hz（PWM）;

Support 18-bit, pixel-by-pixel chromaticity correction, low delay, RGB independent Gamma adjustment, 90 multiple rotation of the screen, serial number detection of the receiving card, configuration parameter readback and other functions to improve the screen display effect and user experience;

It uses 8 standard HUB320（26Pin）interfaces for communication, and supports up to 32 sets of RGB parallel data. It has powerful processing power, ultra-stable performance, and high cost performance.

3 Product Characteristics

3.1 Improve the display effect

- 18bit

  Enabling 18bit in the software can increase the gray scale of LED display screen by 4 times, effectively deal with the gray scale loss caused by brightness reduction of LED display screen, optimize the pitting problem caused by low gray, make the low gray transition natural, and make the image display more delicate.

- Brightness correction by pixels

  With the correction software, the brightness and chromaticity of each pixels of the large screen are corrected, which effectively eliminates the color difference, makes the brightness and chromaticity of the display screen highly consistent, and improves the image quality of the display screen.

- Low delay

  Reduce the delay of the video source at the receiving card end, and the delay is as low as 1 frame (for the lamp board of the driving IC using built-in RAM).

- RGB independent Gamma adjustment

  With the independent master control and software supporting RGB independent Gamma adjustment, the problems such as uneven low gray and white balance drift of the display screen are effectively controlled by adjusting "red", "green" and "blue" respectively, making the picture more realistic.

- 90 multiple rotation of the picture.

  With the help of AutoLED software, the picture is displayed in multiples of 90 (0, 90, 180, 270).

- Picture scaling

  With the help of AutoLED software, the pixels loaded on the receiving card can be scaled multiple times, and the display screen can be enlarged and reduced.

3.2 Improve Maintainability

- Receiving card serial number detection

  With the network port debugging function in AutoLED software, the receiving card number and network port information will be displayed on the target box, and the user can know the position serial number and connection line of the receiving card.

- Data interface customization

  With AutoLED software, the output data of the receiving card can be detected and edited.

- Complex structure box

  In the advanced layout of AutoLED software, boxes can be arranged and constructed at will quickly.

- Construct complex large screen

  In the complex display screen connection of AutoLED software, boxes can be arranged and constructed at will quickly.

- Communication monitoring

  Monitor the working state of receiving card in real time on AutoLED.

- Error detection

  On the AutoLED, the communication signal quality of the network cable connected with the system hardware can be monitored in real time, so as to quickly judge the quality of the network cable and troubleshoot.

- Configuration parameter readback

  The configuration parameters of the current receiving card can be read back on the AutoLED. Read back the configuration parameters of the receiving card and save them locally.

- Loop backup

  The network port is connected through the loop of the main and standby network cables to increase the reliability of the serial connection of the receiving cards. When one of the main and standby series lines fails, the other one can ensure the normal display of the screen.

- FPGA dual program startup

  When the FPGA main program configuration is unsuccessful, it enters the standby BOOT program to work and realize normal communication.

3.3 Function Customization

- Support voltage detection (need to be customized)

  Support detecting the operating voltage of the receiving card.

- Support temperature detection (need to be customized)

  Support detecting the operating temperature of the receiving card.

- Support power status detection (need to be customized)

  The hardware has a power detection interface for detecting the working state of the power supply.

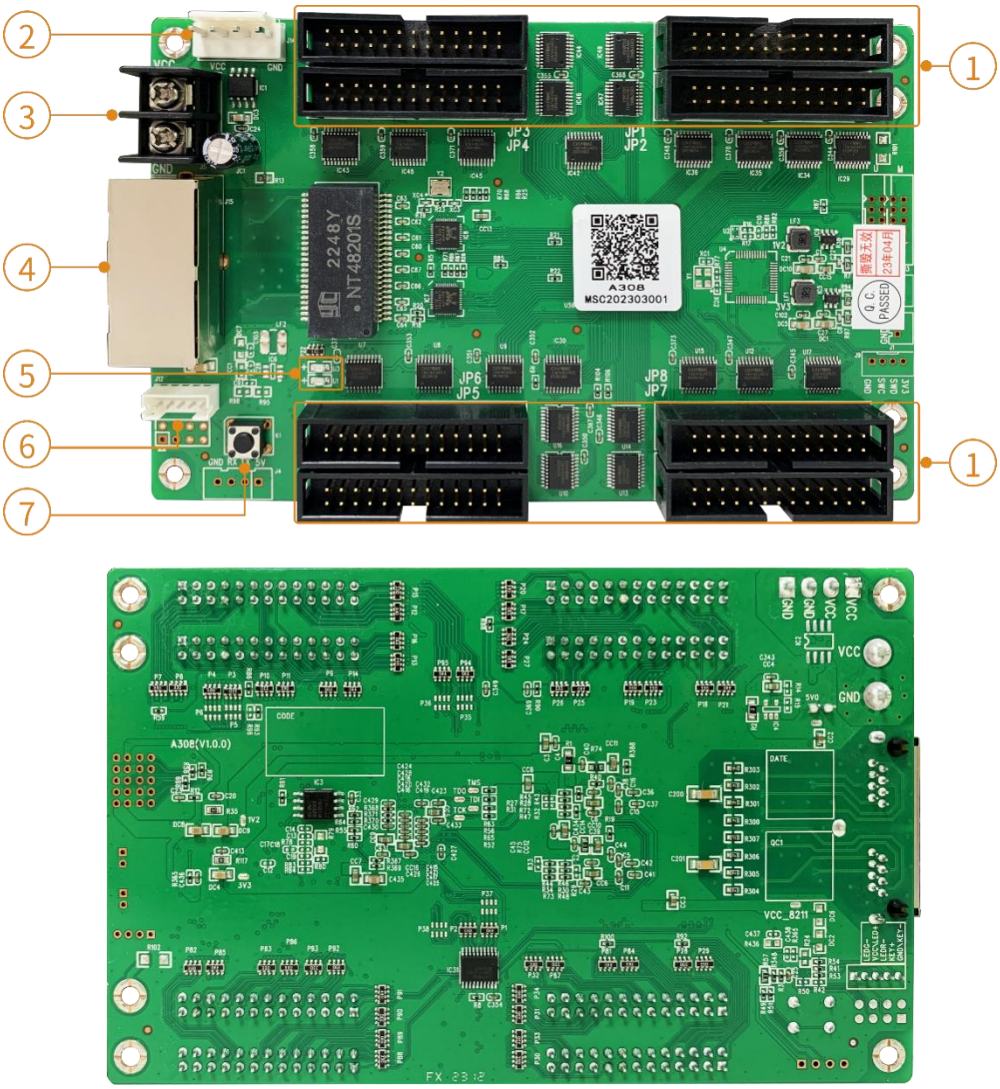
- Record of power-on times (need to be customized)

  Record the number of times the receiving card is powered on and calculate cumulatively.

- Running time record (need to be customized)

  Receiving card running time record, software can view the time record.

4 Product Appearance

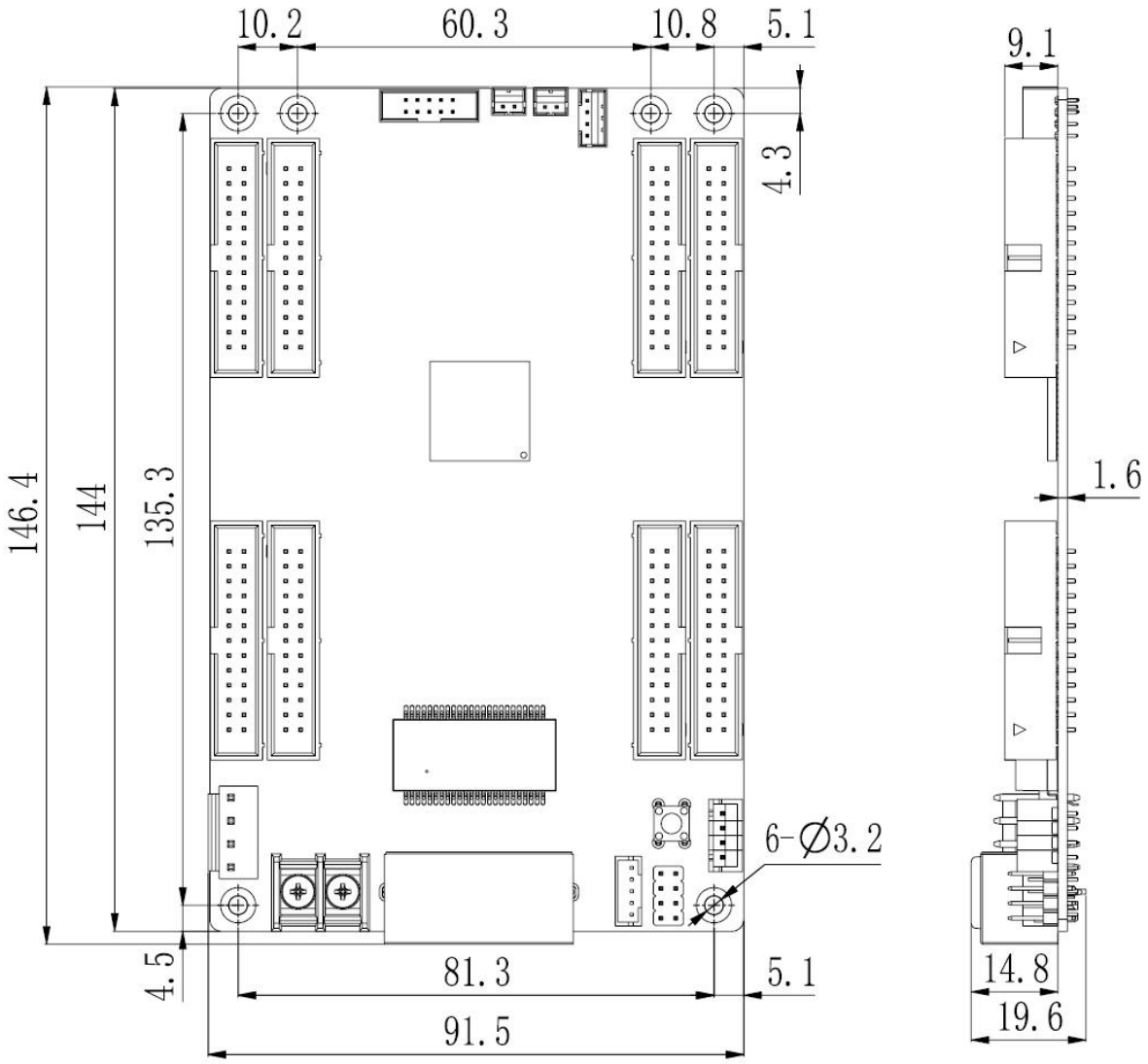


* Product photos are for reference only, please refer to the products actually purchased.

4.1 Data Interface Description

#	Interface Name	Interface Description	
1	HUB320 Interface	Connect the lamp board	
2	Power Input 1	Connect the DC3.5~ 5.5V power supply to power the receiving card, use only one of them.	
3	Power Input 2		
4	Gigabit Ethernet port	Connect the sending card and cascade other receiving cards, the two interfaces can enter and exit at will	
5	Status Indicator U3	Uniform slow flash	The receiving card works normally, the network cable is connected normally, and no DVI signal is input.
		Uniform flash	The receiving card works normally, the network cable is connected normally, and there is DVI signal input.
		Constant extinction	No gigabit network signal
		Flash 3 times at intervals	The receiving card works normally, the network cable loop is connected, and there is DVI signal input.
5	Power indicator U1	The red light is always on, which means the power supply is normal.	
7	Test Button	Set up the test screen	
6	Indicator Interface	Indicator external interface	

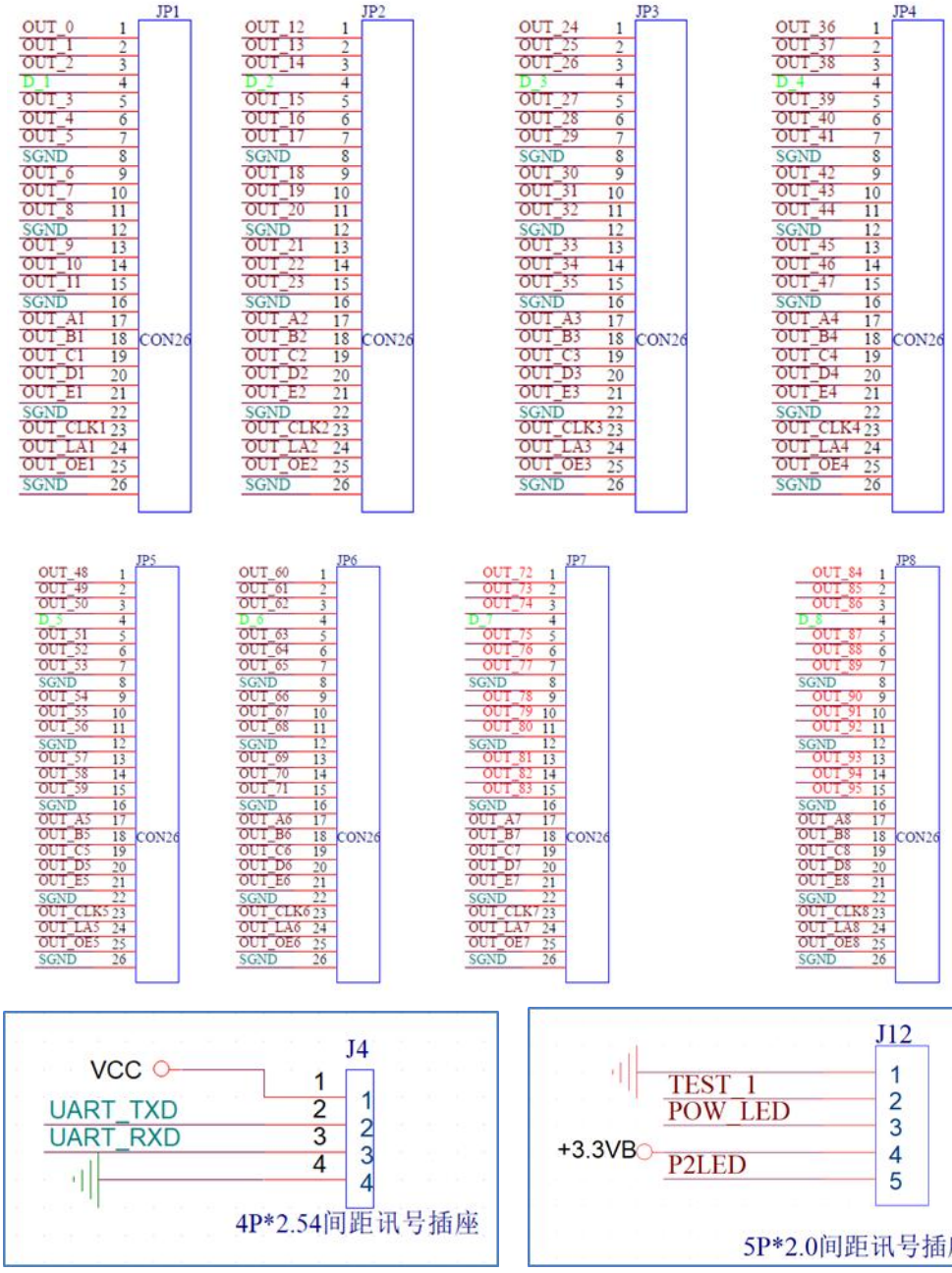
4.2 Product Dimensions



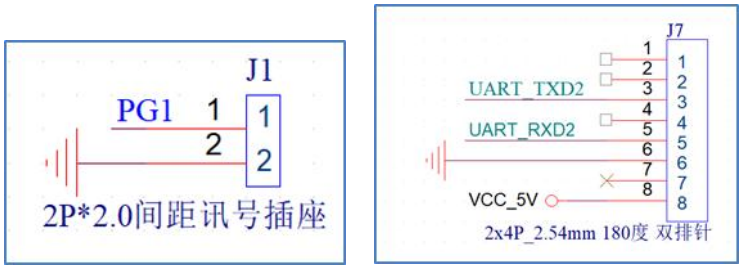
Tolerance: 0.3 Unit: mm

4.3 Definition of Output Interface

32 groups of parallel data interface definitions



Serial port interface.....external indicator light, button interface



Power detection interface.....external LCD interface

JP1-JP8 Data Interface Definition

Definition	Pin	Pin	Definition
R	1	2	G
B	3	4	GND
R	5	6	G
B	7	8	GND
R	9	10	G
B	11	12	GND
R	13	14	G
B	15	16	GND
OUT_A1	17	18	OUT_B1
OUT_C1	19	20	OUT_D1
OUT_E1	21	22	GND
OUT_CLK1	23	24	OUT_LA1
OUT_OE1	25	26	GND

5 Product Parameters

5.1 Basic Parameters

Three-wire Parallel (RGB)	Data Interface	Maximum Load (pixels)	Brightness Correction Band Load (pixel)	Chromaticity Correction Band Load (pixel)	Chroma Correction With Load (pixels)
32 Groups	HUB75E	Conventional	384×512	384×512	256×320
	8	PWM	512×512	512×512	256×320
Number of cascaded cards			Support scanning lines		
≤1000PCS			1-128 sweep		

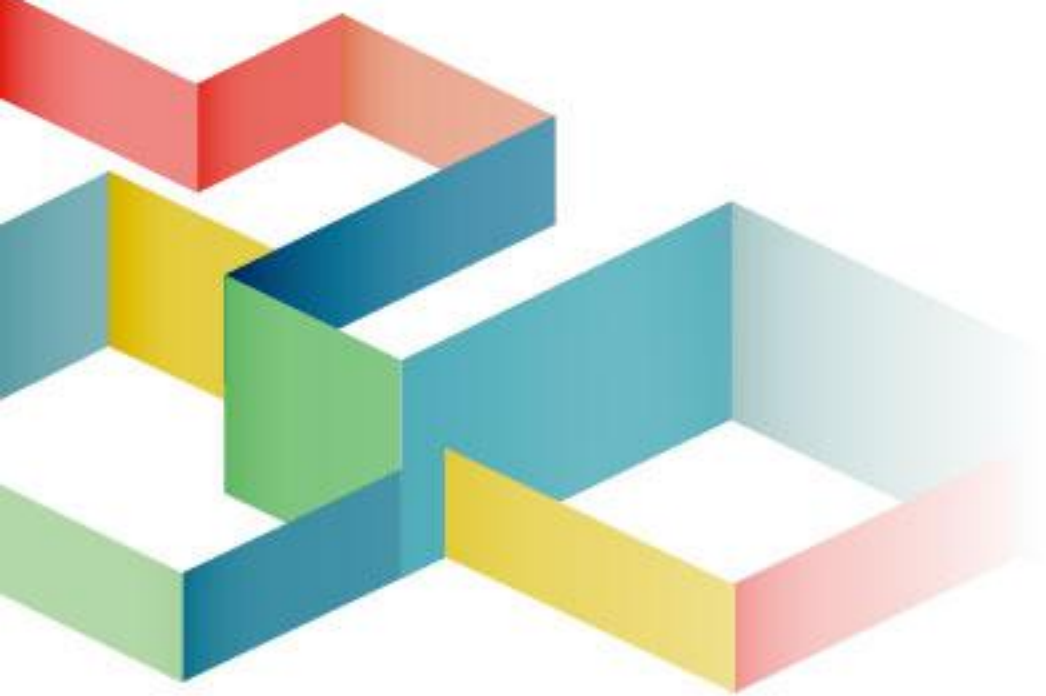
5.2 Specification Parameters

Electrical parameters	Input voltage	DC3.5~5.5V
	Rated current	0.6A
	Rated power	3W
Working environment	Working temperature	-20℃~70℃
	Working humidity	10%RH~90%RH has no condensation.
Storage environment	Temperature	-40℃~85℃
Board size	146.2mm×91.5mm	
Net weight	99.6g Description: Weight of single card	
Outer packing size	690×440×190mm	
Gross weight of product	13.2Kg Description: Including wire, accessories	
Single Card with plastic Holder	111.8g	
Pack Mode	100PCS /box	
Certificate Information	Comply with RoHS standards and CE-EMC standards.	

* Current and power consumption may vary according to different factors such as product usage, environment and settings.

6 Precautions

- The installation process must be completed by professionals.
- Must be antistatic.
- Please pay attention to waterproof and dust removal.



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