

M-A2 controller manual

Picture (summary):



I. Specific parameters:

Note: Format before

1. Power supply voltage: AC220V
2. Number of loads: DMX 2*512; TTL2*1024 points
3. Synchronization mode: offline, GPS synchronization rainproof
4. Load mode: SD card program;
5. SD card format: FAT326. SD card capacity: 4G
7. Size: 163*130*45 unit (mm)
- 8, weight: 0.85Kg



Ii. Features of M-A2 system

1. Gray control from level 32 to level 65536, software Gamma correction processing.
2. Support various point, line and surface light sources, support various rules, irregular processing.
3. The controller port can carry DMX 2*512pixels; SPI 2*1024 lights.
4. Use AC220V AC power, set the corresponding controller ID number, and cascade multiple controllers synchronously. When cascading synchronously, only operate the first controller, and the subsequent controllers are equivalent to sub-controllers. Use Simple LED program software, and export multiple program files when multiple controllers are used synchronously,

The last digit of the file name is sequentially copied to the corresponding controller, and the controller identifies the corresponding program content in the file according to the ID number.

5. M-A2 can store files without restriction, but it cannot exceed the storage capacity of SD card. It is recommended to make the program as much as possible to put the program text

The components are compressed to the minimum range, and the two ports are independently output without interference.

6. When the GPS satellite signal is synchronized, both single use and multi-use of the controller must be equipped with SD card. The SD card on which the program is copied needs to be copied into the controller, and then the corresponding ID number of the controller needs to be set. The controller automatically reads the corresponding part of the program content in the program.

7. Support conventional RGB lamps (serial, DMX512) and RGBW lamps (UCS2904, SK6812, DMX512).

8. The controller has added a one-click reset function. Hold down the ● loop/OK key and the ● speed + key on the main interface at the same time.

3. Meaning of digital display and buttons:

Menu displayed	Digital display	liquid-crystal	Chinese translation
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		display	
①	1-c P	Set Chip x x x x	Set the chip
②	2-br、 g-22	Set Bright100%	Set the brightness and gamma value
③	3-r F	Set RF Mode	Set RF band
④	4-r g b	Set RGB Mode	Set up the lighting channel
⑤	5-R T C	RTC:1970-00-00	Scheduled function
⑥	6:d-0 1	ID:01	Set ID number
⑦	7: c 150	AC Delay: 150MS	a-c cycle
⑧	8:50 HZ	WorkMode:50HZ	service frequency
⑨	9: V 605	VER 6.05	Version sequence

4. Main interface display instructions:



F: represents a single built-in mode run; press ● loop / OK key to switch to E:

represents all built-in loops.

D: represents a single SD card file running; press ● loop /OK key to switch to A:

represents all SD card loop

Key name	meaning
velocity +/-	Switch the speed directly on the main screen, and use the up and down selection buttons in other states.
pattern +/-	Directly switch the controllers built-in program on the main interface, as well as the SD card program switch.
coding (ADR)	Compile the address of the lamp to make the lamp sequence normal.
test (Test)	There are five kinds of test effects in total, to check whether the signal is smooth and whether the power supply is sufficient, and whether the code is correct.
recurrence (OK)	After setting the above items, you must press the OK key to confirm, save, return and exit.
Menu (MENU)	Settings: chip, brightness, RF band, channel, time, ID number, synchronization frequency, operating frequency, version number

5. Operation steps

1. Set the chip (CHIP):

The chip is the model of the lamp used. The commonly used chip models in the market are as follows:

UCS1903、UCS1904、UCS2909、UCS2903、UCS1912、TM1803、T M1804

TM1809, TM1914 (continue at breakpoint), WS2811, WS2812, WS2818 (continue at breakpoint)

SM16703, SK6812, SK6814, GS8206 (continue at breakpoint), GS8205 (continue at breakpoint)

UCS5603 (Resume at breakpoint) and P9883 (Resume at breakpoint) Each controller needs to select the chip model UCS512C series, B series, D series; SM16512, TM512AC

The full-color lamp is controlled by the chip. No matter what kind of full-color lamp is used, there are models. Therefore, when using the lamp, we should first identify the specific chip model of the lamp and operate the controller after knowing the model.

The specific operation steps are as follows:

Step 1: Enter by pressing the ● menu (MENU) key



Step 2: Press the ● loop / OK key to enter the chip selection interface



Step 3:
Press

● Speed+/Speed-Switch the chip model and select the corresponding model of the lamp.

Chip selection correspondence table			
01: 512H	02: 512L	03: 1903	04: 6812
05: 6703	06: 1804	07: 2904	08: 2811
09: 2812	10: 1914	11: 9883	12: 8206
13: 8205	14: 5603	15: 512P	16: 1923
17: 1814			

Step 4: Press

● Press the loop /OK key, save to the controller, and the lamp will start to work.

2. Switch mode (MODE):

It can be divided into SD card program mode and built-in effect mode, which can switch between the two. Holding down the ● loop/OK key for 3 seconds will switch between the two modes. If you don't like the built-in effects on the controller, you need to have a programmer design and copy the program to the SD card; if simple outline effects don't require much variation, you can use the built-in effects directly, totaling 86 types.

SD card program mode: it is designed through program software, according to the requirements of customers or designed by designers themselves.

The specific operation steps are as follows:

Step 1: Press

- Cycle / OK key for 3 seconds,



d: SD card program mode; 01: the first program; 5: speed 5

Step 2: Press ● Mode +/-key to switch mode files up and down.



Step 3: Press

● Speed +/-key, adjust the controller speed.



press ● Cycle / OK key once, switch between single program cycle and all program cycle.



D: represents a single loop of SD card program; A: represents a full loop of SD card program.

F: represents a single loop of the built-in program; E: represents the whole loop of the built-in program

Built-in effect mode: (The built-in effect can be called out with or without the controller card. Simply put, it has nothing to do with the SD card.)

The controller itself has built-in effect programs, which are relatively simple and are mainly used to test whether the lamp is smooth and whether the controller is working normally. If you want more gorgeous effects, you need to write a program file and place it on the SD card. Some simple contours can be used with the built-in effects.

The specific operation steps are as follows:

Step 1: Long press the ● cycle (OK) key for 3 seconds until the interface is displayed



F: Built-in program mode of the controller; 01: The first program; 5: Speed 5 Step 2: Press the ● mode +/-key to switch the program, a total of 86 modes



Step 3: Press the ● speed +/-key to switch the program speed.



press ● Cycle / OK key once, switch between single program cycle and all program cycle.



D: represents a single loop of SD card program; A: represents a full loop of SD card program.

F: represents a single loop of the built-in program; E: represents the loop of all built-in programs.

3. Channel switching:

The channel refers to the front and back order of R, G and B of the lamp, and there are a total of 7 kinds of order; when there is a deviation between the designed program file and the actual color of the lamp, it is certain that the order of RGB is wrong, so the order of R, G and B should be adjusted through the controller.

The specific operation steps are as follows:

Step 1: Press the ● menu (MENU) key four times. The interface shows as follows



Step 2: Press the loop /OK key to confirm that you have entered the channel selection interface.

The corresponding channel.

Step 4: Press

Step 3: Press



switch channels (rgb, rbg, gbr, grb, bgr, br g, rgbw) and select lamps for pairs

- Speed
+/-key
to

- Cycle / OK key, save and return to the main interface.

4. Set ID:

When multiple controllers are used simultaneously, users can choose to set the ID number of each controller themselves, or write a program to separate each controller

The procedure of the controller, such as the need to set the ID number, should be set in sequence. When using a single unit, the ID number is 0001, because the drawing port number will be set when making the program, such as: the port in the range of 1-2 is definitely the first controller.

Step 1: Press the ● menu (MENU) key 6 times, and the interface is displayed as follows



Step 2: Enter the ID Settings screen by pressing the ● loop /OK key.



Step 3: Press the ● speed +/-key to switch the number and select the corresponding number of the controller.

Step 4: Press the ● loop /OK key to return to the home screen.

5. Adjust brightness (Bright):

When the actual brightness of the lamp is too bright or too low, you can adjust the brightness value appropriately. Only the overall brightness can be adjusted, 5%—100%, the higher the percentage, the higher the brightness.

Step 1:
Press

● Press the MENU (MENU) key twice to display the following



Step 2:
Press

● Cycle /OK to enter the brightness adjustment interface.



Step 3: Switch the digital level according to the ● speed +/-key, and select the appropriate lamp brightness 005-100, the larger the number, the higher the brightness.

Step 4: Save to the controller by pressing the ● loop /OK key, and the lamp will be adjusted to the selected corresponding brightness.

6. Set the gamma value:

Step 1: Press the ● menu (MENU) key twice, and the interface will be displayed



Step 2:
Press

- Cycle / OK twice to enter the gamma value adjustment interface.

Step 4:
Press



- Speed +/-key, switch the gamma value, adjust the number and press it

- Cycle / OK to save and return to the home screen.

7. Coding Operation: (For DMX512 lamps, manufacturers may assign individual address codes to each lamp during production testing. However, in actual construction sites, differences in installation methods and sequences can cause the original address codes to repeat or shift. Therefore, it is necessary to use a controller to uniformly code the installed lamps):

Before operation, you need to determine the chip model of the lamp, the chip writing channel, and check whether the wiring of the controller is correct, and whether the direction of the lamp is correct. After determining these, start the operation writing code.

The specific coding operation steps are as follows:

Step 1:
Press

- Write the code (ADR) key to enter the chip selection state



Step 2:
Press

● Speed +/-, key, switch chip

Write the code chip selection table		
01: UCS512B3	07: Hi512A4	13: SM16512P
02: UCS512C*	08: Hi512D	14: SM17500
03: UCS512D	09: TM512AC	15: SM17512
04: UCS512E	10: TM512AD	16: SM17522
05: UCS512F	11: TM512AL	17: GS8512

06: Hi512A0	12: SM16512	18: GS8512 Clear address
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Step 3:
Press

- Cycle /OK key to enter the channel selection interface



Step 4:
Press

- Speed +/-key switch channel number, press
- The Write Code (ADR) key returns to the previous level of operation.

Step 5: After confirming that there is no error, press the LOOP/OK key to enter the port selection interface



Write code for all ports at once

Step 6:
Press

- Speed +/-Key Select the port to write the address code



Write code for the first port

In turn, there are a total of 2 ports.

In the case of cascaded synchronization, all the controllers behind the first controller are selected according to the first controller. Press the ● write code (ADR) key to return to the upper level operation.

Step 7: After the channel and port are confirmed to be correct:

Start writing code by pressing the ● cycle /OK key

Display content: IC: 0X Channel: CH0X Port: POAL/PO-X



The representative is writing code

The representative has finished writing the code

In the process of writing code, pay attention to whether the lamp has a change in writing interface and manually switch to the measurement point.



This interface is consistent with the measurement point operation below

Step 8: After the above writing operation is completed, if there is no need to reset the chip channel after changing the lamp or repairing,

The controller has added a one-click writing function: long press Write code (ADR) key for 3 seconds, the controller interface will automatically display the last write code operation



The entire content and it will automatically start writing code.

Note: Check whether the lamp is running down point by point in order or manually switching point by point. If the order is normal, it is successful; if the order is not normal, you should continue to write code or find out the reason for the failure of writing code

Common reasons for writing code unsuccessfully:

- ①. The direction of the lamp is wrong. Although DMX512 is parallel bidirectional signal transmission, the direction of coding is unidirectional.
- ②. The wiring of the lamp is wrong. Check the wiring of the controller port and the lamp.
- ③. The power supply of the lamp is insufficient, resulting in the inability to drive the chip to write code.
4. The signal line of the lamp is too long, exceeding the effective distance range of the chip.

8. Set up test (Test):

The following situations require the use of the testing function: ① Not knowing the number of lights ② Not knowing the channel order of lights RGB, RBG, GRB, GBR, BRG, BGR ③ Whether there are any faulty lights ④ Whether the power supply to the lights is sufficient ⑤ Whether the coding of the lights is normal or if it is garbled) All the issues mentioned above can be tested using the testing function.

Step 1: Press Test The Test key to enter the test interface



Speed +/-key switch 3/4 channel lights,

Step 2: Press for example, the 3-channel loop/OK key,



the interface displays

Step 3: Press



Speed +/-key switch to select the corresponding port for testing

Step 4: Press



Cycle /OK to enter the manual measurement interface

Step 5: Press



Speed +/-key manually test one by one, 001-1024.



Step 6: Press



The menu (MENU) key is automatically measured. Press this key again to return to the manual measurement interface

Step 7: Press





To test the order of RGB channels of a lamp, press the Test key on the manual test point interface



Press the ● Test Test key again to jump to the next color

- 2 -
- 3 -
- 4 -
- 5 -

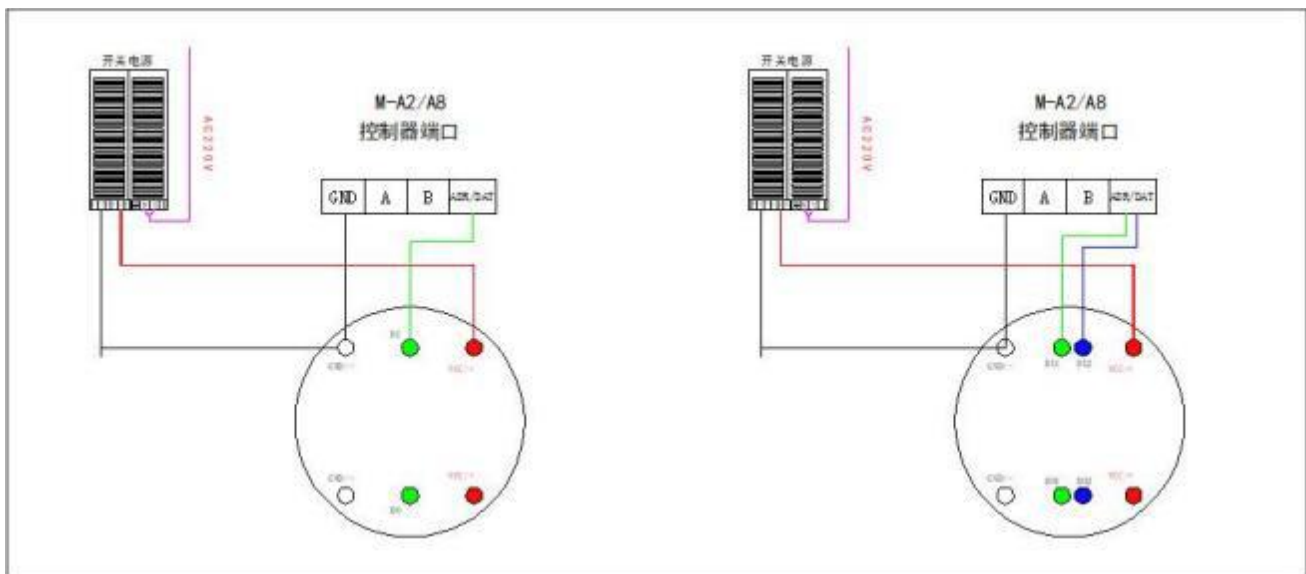
Always red always green always blue always white

The color sequence of the lights is the channel sequence of the lights

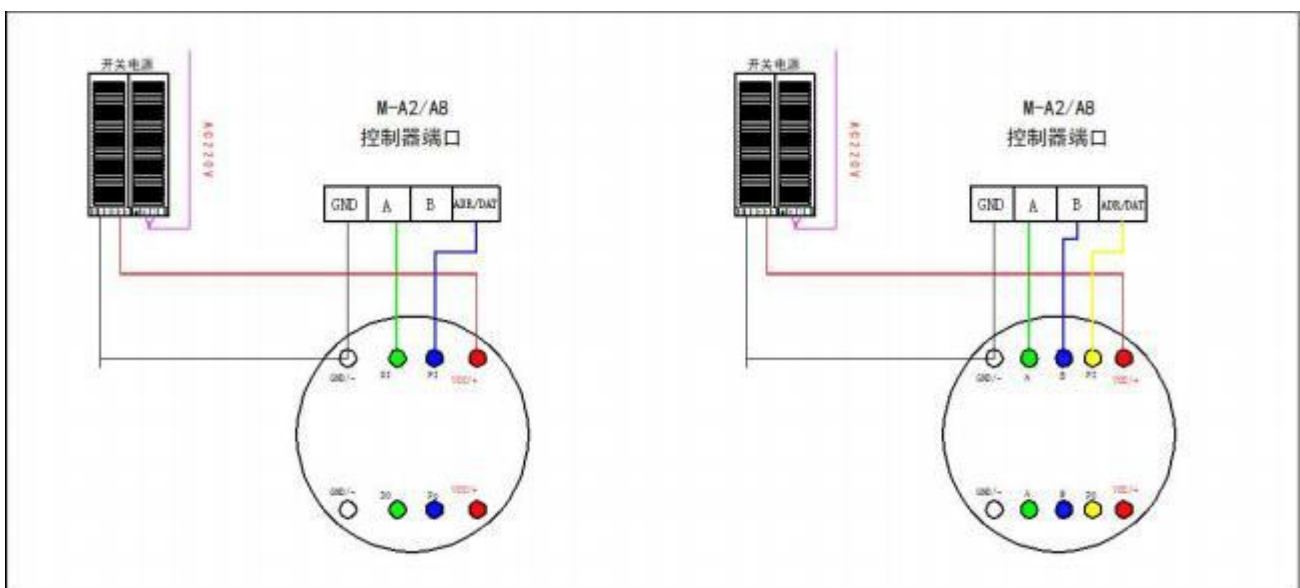
Step 2: Test completion

● Cycle / OK key, return to the main interface.

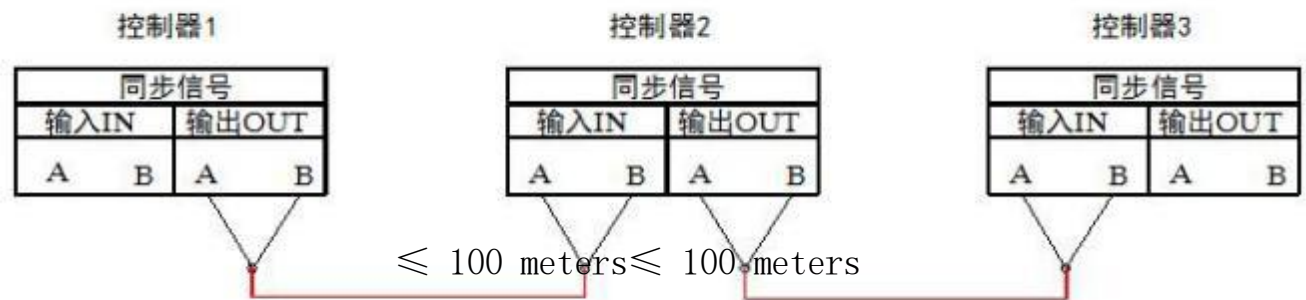
6. Wiring diagram: SPI series



DMX series:



The cascade diagram is as follows:



Line notes:

- ① Do not operate the lamp in the actual wiring process. Cut off the power before wiring, changing the wire or changing the lamp.
 - ② SPI signal lamps have directionality, so in the operation process, determine the direction of the lamp first, and then carry out the operation.
- Controller port → The input end of POPI at both ends of PI lamp is connected to the controller, and the output end of P0 is connected to the next lamp.
- I
- 3. The controller is powered by AC220V high voltage. Pay attention to safety when using it.
 - 4. The controller SD card has limited capacity. Pay attention to the file size when making programs, and try to keep it below 5000 frames.
 - ⑤ The controller is suspended vertically so that rainwater can be prevented from falling into the interior.
 - ⑥ The M-A2 controller is a combination of DMX512 and differential signals. The two output ports are independently controlled and do not interfere with each other. Depending on the different chips on the market, the transmission distance of the lamp is also different.
 - ⑦ The controller is GPS synchronized. The packaging box is equipped with a GPS antenna. Please take care to keep it



8. GPS is based on Beidou satellite positioning, so the GPS antenna needs to be placed outdoors in an open area without solid obstacles during testing.