

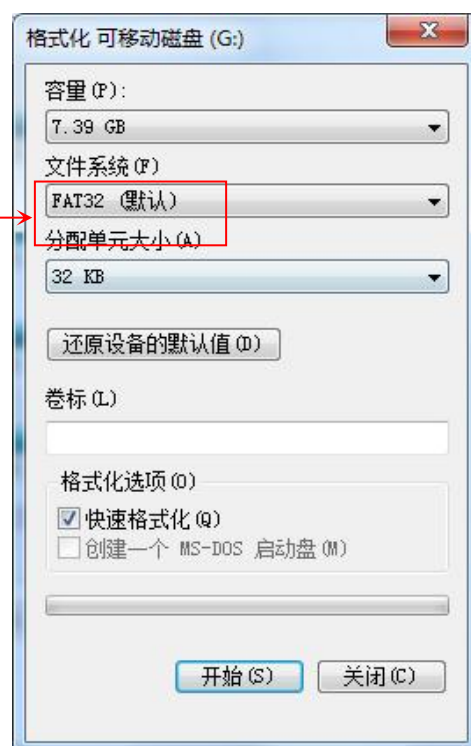
H2-AC Controller

一、Controller Introduction:



Datesheet:

1. Power supply voltage: AC220V
2. Control mode: TTL signal
3. Synchronization mode: AC synchronization
4. Dimensions: 162×127×42 (mm)
5. Weight: 0.85Kg
6. SD format: FAT32 format
7. SD capacity: 256M



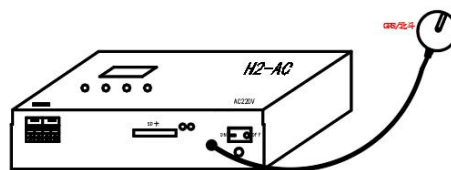
二、GPS product features:

- 1、Solve the problem of controller synchronization failure due to the inability to install cables between buildings.
- 2、GPS timing method is adopted. As long as the satellite signal can be received, the synchronization between controllers can be achieved. It is available worldwide.
- 3.External antenna separates the antenna from the GPS synchronization mode, which can receive satellite signals better, faster and more stably.

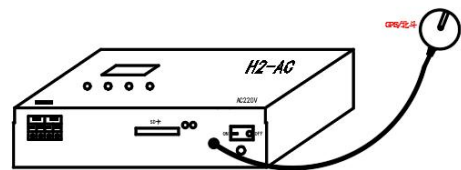
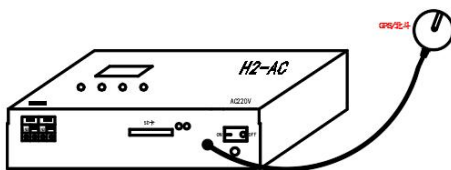
Note: The antenna of the GPS global synchronization module must be placed outdoors, not in a confined space indoors.

三、How it works:

GPS+H8-TTL+H8-TTL offline control system, or GPS+H8TTL, GPS+H8TTL, GPS+H8TTL independent offline master synchronization, uses software to automatically split the screen, each controller runs independently and uniformly, and the controllers only need to realize the time synchronization function to realize frame synchronization to realize the entire screen, which provides a reliable theoretical premise for H8TTL to use GPS synchronization. The H8TTL offline controller continuously receives the world time collected from the satellite in the GPS module, thereby realizing frame synchronization between controllers.



Speed and mode are consistent



Common Problem Solving:

Problem 1: After power-on, two or more PCS GPS Controller are out of sync

Answer: 1) The antenna of the GPS global synchronization module is not pulled outdoors, and the synchronization module cannot receive the satellite synchronization signal.

- 2) Because the controller has too many pixels, the frame rate cannot be synchronized with the GPS global synchronization module.

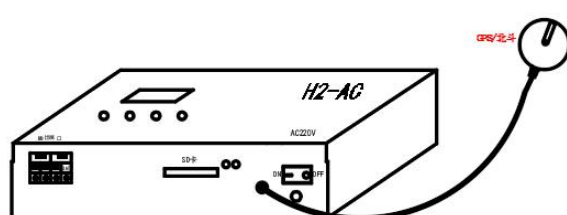
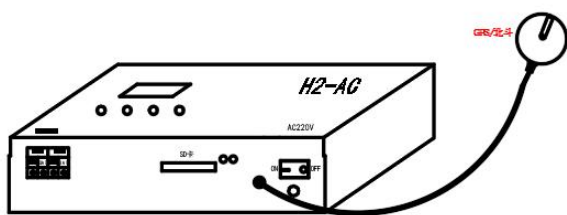
四、Operation method (GPS synchronization is divided into two schemes)

Solution 1: Set different ID numbers for the same effect file and copy the files to the SD

Card

without

distinction



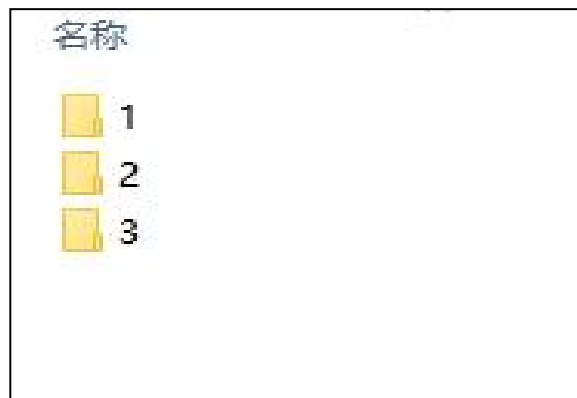
Speed and mode are consistent

ID: 001

ID: 002

How to set specific ID number? The following controller operation steps

Solution 2: Same ID number Different effect files (program partitions) are copied separately to the SD card



Copy the corresponding files to the controller SD card:

Controller 1-----Folder 1-----OFF001.arm

Controller 2-----Folder 2---OFF001.arm

Controller 3-----Folder 3-----OFF001.arm

五、H2-AC System Features

- 1、 32-level to 65536-level grayscale control, software gamma correction processing.
2. Support various point, line and surface light sources, support various rules and special-shaped processing.
3. The controller can only control lamps with TTL signals. Each port has independent output and each port can carry 1024 lamps.
4. Use AC220V power, each unit has an independent program, and there is no need to set an ID number for each unit.
5. The controller uses the Simple LED program software. The program exports the partition file and can be copied to the corresponding controller when copying the file.
- 6.The maximum capacity of the controller SD card is 8G. The two ports have independent output and do not interfere with each other.
7. The controller must be equipped with an SD card when used alone or in parallel.
- 8.Supports regular RGB lamps and RGBW lamps (UCS2904, SK6812, TM1814).
9. Added the loop selection function, which allows you to select multiple effect loops.
- 10.The controller has a new one-button reset function. Press  and hold the Cycle/OK button and  the Speed+Up button at the same time to power off and restart.

六、Main interface display instructions

**The first three digits
represent the mode**

**The last digit
represents the speed**



F: Represents a single built-in mode run; Press ● the Cycle/OK key to switch to E: represents all built-in cycles.

d: represents a single SD card file running; press ● the Cycle/OK key to switch to A: represents the entire SD card cycle. Long press ● the Cycle/OK key to switch between built-in mode and SD card mode.

七、Meaning of digital display:

Menu Display	Digital Display	LCD display	English Translation
①	1-c P	Set Chip x x x x	Setting up the chip
②	2-b r、 g-22	Set Bright 100%	Set brightness and gamma value
③	3-r g b	Set RGB Mode	Set the lighting channel
④	4-A024	THE Points	Set Points
⑤	5-S100	Set the refresh rate	Set the refresh rate
⑥	6-C000	AC Delay: 150MS	AC frequency

八、Button meaning:

Bottom name	Means
speed+ / speed-	Up and down key selection, digital up and down switching, channel up and down selection
mode+ / mode-	Program switching
Select Cycle	You can choose to play single or multiple files in a loop

test (Test)	There are three test effects in total, to detect whether the signal is smooth and whether the power supply is sufficient. Press this button to switch
mean (MENU)	Settings: Chip, Brightness, Channel, Pixels, Refresh Rate, AC Frequency
cycle (OK)	Cycle (OK) After setting the above items, press the Cycle/OK key to save and switch the cycle mode

九、The detailed steps are as follows:

1、Setting up the chip (CHIP) :

The chip is the model of the lamp used. Common chips on the market can control:

RGB lamps are controlled by chips. No matter what RGB lamps are used, they all have models, so when using them, you must first clarify the specific chip model of the lamp, and then operate the controller after knowing the model.

The specific steps are as follows:

Step 1: Press  the MENU button once to enter



Step 2 : Press  the Cycle/OK key again to enter the chip selection interface



Step 3: Press Speed +/Speed- to switch chip models and select the model corresponding to the lamp.

Chip selection table			
01: 1903	02: 6812	03: 6703	04: 1804
05: 2904	06: 2811	07: 2812	08: 1914
09: 9883	10: 8206	11: 8205	12: 5603

13: 1923	14: 1814	15: 2603	
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Step 4: Press  the Cycle/OK button to save the settings to the controller, and the lights will start to work.

2、Adjust brightness (Bright):

When the actual brightness of the lamp is too bright or too low, you can adjust the brightness value appropriately. You can only adjust the overall brightness, with a level of 5%---100%. The higher the percentage, the higher the brightness.

Step 1: Press the  MENU button twice, the interface will be displayed as follows



Step 2: Press  the Cycle/OK key to enter the brightness adjustment interface.



Step 3: Press the Speed  +/- key (in 1) or Mode  +/- key (in 10) to switch the digital level and select the appropriate lamp brightness 005-100. The larger the number, the higher the brightness.

Step 4: Press the Cycle/OK button to save to the controller, and the light will adjust to the corresponding brightness selected.

2.1、Set the gamma value:

Step 1: Press  the MENU button twice, the interface displays



Step 2: Press the  Cycle/OK button twice to enter the gamma value adjustment interface.



Step 3: Press the Speed  +/- key (1-bit) or Mode  +/- key (10-bit) to switch the gamma value and adjust the value (1.0-5.0)

Step 4: Press the  Cycle/OK key to save and return to the main interface.

3、Channel Switching:

Channel refers to the order of R, G, and B of the lamp, and there are 7 orders in total; when there is a deviation between the designed program file and the color of the actual lamp, it must be that the order of RGB is misplaced, so the order of R G B must be adjusted through the controller.

The specific steps are as follows:

Step 1: Press  the MENU button 3 times, the interface will be displayed as follows



Step 2: Press  the Cycle/OK key again to confirm and enter the channel selection interface.



Step 3: Press  the speed +/- key to switch channels (RGB, RBG, GBR, GRB, BGR, BRG, RGBW) and select the channel corresponding to the lamp.

Step 4: Press  the Cycle/OK key to save and return to the main interface.

4、Set the number of points:

Step 1: Press  the MENU button 4 times, the interface will be displayed as follows



Step 2: Press  the Cycle/OK key again to confirm and enter the points setting interface.



Step 3: Press  the Speed +/- key to switch the number up to 1024 points and select the required number.

Step 4: Press  the Cycle/OK key to save and return to the main interface.

5、Set the refresh rate:

Step 1: Press  the MENU button 5 times, the interface will be displayed as follows



Step 2: Press  the Cycle/OK button again to confirm and enter the refresh rate setting interface.



Step 3: Press  the Speed +/- key to switch the numbers (50-300) and select the desired refresh rate value.

Step 4: Press  the Cycle/OK key to save and return to the main interface.

6、Synchronous delay setting:

Step 1: Press  the MENU button 6 times, the interface will be displayed as follows



Step 2: Press  the Cycle/OK key again to confirm and enter the synchronization delay setting



interface.

Step 3: Press  the Speed +/- key to switch the numbers (0-999) and select the desired value

Step 4: Press  Cycle/OK key to save and return to the main interface.

7、Switching Mode (MODE):

It can be divided into SD card program mode and built-in effect mode. The two modes can be switched between each other. Press and hold the loop/OK button for 3 seconds to switch between the two modes. If you don't like the built-in effects that come with the controller, you need a programmer to design a program and copy it to the SD card; if the simple outline effect does not require too many changes, you can directly use the built-in effects, a total of 130 types.

7.1、SD card program mode: It is designed by program software, according to customer requirements or designed by designers themselves.

The specific steps are as follows:

Step 1: Press  Cycle/OK button for 3 seconds to switch between the SD card program and the built-in program. The interface will display as follows



d: SD card program mode; 01: 1st program; 5: speed 5

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



Step 3: Press  the Speed +/- key to adjust the controller speed (1-8). The larger the number, the



faster the speed.

Press  the Cycle/OK key once to switch between a single program cycle and all program cycles.



d: represents a single cycle of the SD card program;

A: represents the full cycle of the SD card program.

F: represents a single cycle of the built-in program;

E: represents the full cycle of the built-in program

7.2、 Built-in Effects Mode: (The built-in effects can be called up with or without a card inserted in the controller. In short, it has nothing to do with the SD card.)

The controller itself comes with effect programs. These built-in effect programs are relatively simple and are mainly used to test whether the lamps are smooth and whether the controller is working properly. If you want more gorgeous effects, you need to write program files and put them in the SD card. For some simple outlines, you can use the built-in effects.

The specific steps are as follows:

Step 1: Press  and hold the OK button for 3 seconds until the interface displays



F: Controller built-in program mode; **01:** first program; **5:** speed 5

Step 2: Press  the Mode +/- key to switch programs. There are 86 modes in total.



Step 3: Press  the speed +/- key to switch the program speed (1-8).



Press  the Cycle/OK key once to switch between a single program cycle and all program cycles.



d: represents a single cycle of the SD card program; A: represents all SD card program cycles.
F: represents a single cycle of the built-in program; E: represents all built-in program cycles.

8、Setting up the test (Test):

The test function is needed in the following situations: ① The number of lamps is unknown ② The channel order of the lamps is unknown (RGB, RBG, GRB, GBR, BRG, BGR) ③ Whether the lamps have bad points ④ Whether the lamps are powered sufficiently ⑤ Whether the DMX512 lamps write code normally or garbled) The above-mentioned problems can be tested through the test function.

Step 1: Press  the Test button to enter the test interface



Step 2: Press  the speed +/- key to switch the 3/4 channel lights. Take channel 3 as an example.

Step 3: Press  the Cycle/OK button and the interface will display



Step 4: Press  the speed +/- key to switch the number to select the corresponding port test



Step 5: Press  the Cycle/OK key to enter the manual measurement point interface



Step 6: Press  the Speed+/-key to manually test one by one (1-1024).



Step 7: Press  the MENU button to automatically measure points, and press this button again to

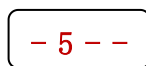
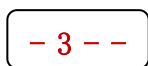
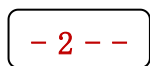
return to the manual measurement point interface.



To test the RGB channels of the lamp, press ● the Test button in the manual test point interface.



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



Solid red Solid green Solid blue Solid white

The order in which the colors of the lamps light up is the channel order of the lamps

Step 8: After the test is completed, press ● the Cycle/OK key to return to the main interface.

9、 New feature: Selective loop, you can choose any effect file to loop

For example: select mode 2 and mode 5 to cycle through two files. The operation is as follows

Step 1: Press ● the Mode +/- key to select the corresponding file mode d02 Mode 2



Step 2: Press ● the Select Cycle button to confirm adding this mode cycle. A dot will appear on the screen, as shown below:



Press the selection cycle again to cancel the selection

Step 3: Press ● the Mode +/- key to select the corresponding file mode d05 Mode 5



Step 4: Press  the Select Cycle button to confirm adding this mode cycle. A dot will appear on the screen, as shown below:



Press the selection cycle again to cancel the selection

Step 5: Long press  the button to select the loop mode.



Step 6: Press  the Mode +/- key to cancel the cycle.

The operation mode of built-in effects is the same as that of SD card:

Fxxx single mode C.xxx built-in effects selective loop

dxxx single SD card mode A.xxx SD card effects selective loop

十、 Synchronization diagram:

Synchronization conditions:

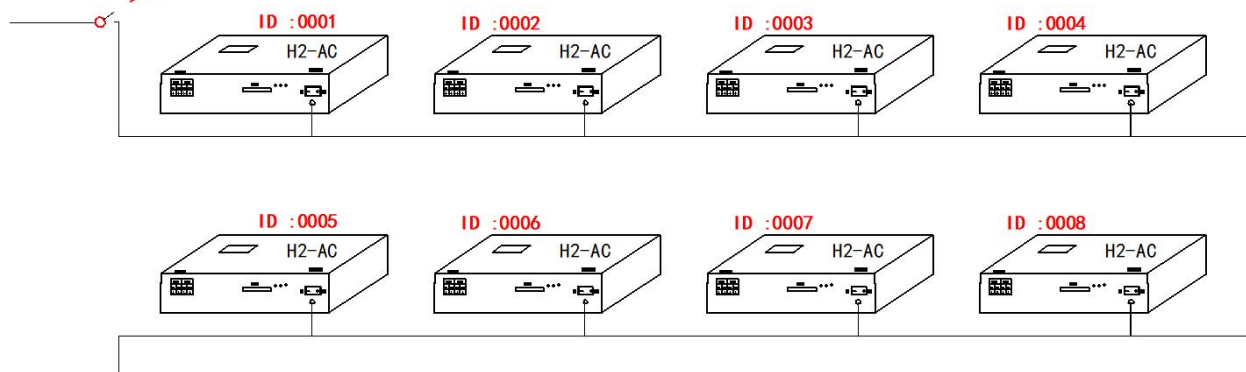
1. Power on at the same time (all controllers are on one main line to ensure simultaneous startup)
2. The speed values of all controllers are consistent.
3. The modes of all controllers are set to the same value/single/cycle.
4. The SD card capacity of all controllers is consistent.
5. The brightness value and channel order are consistent.

Schematic

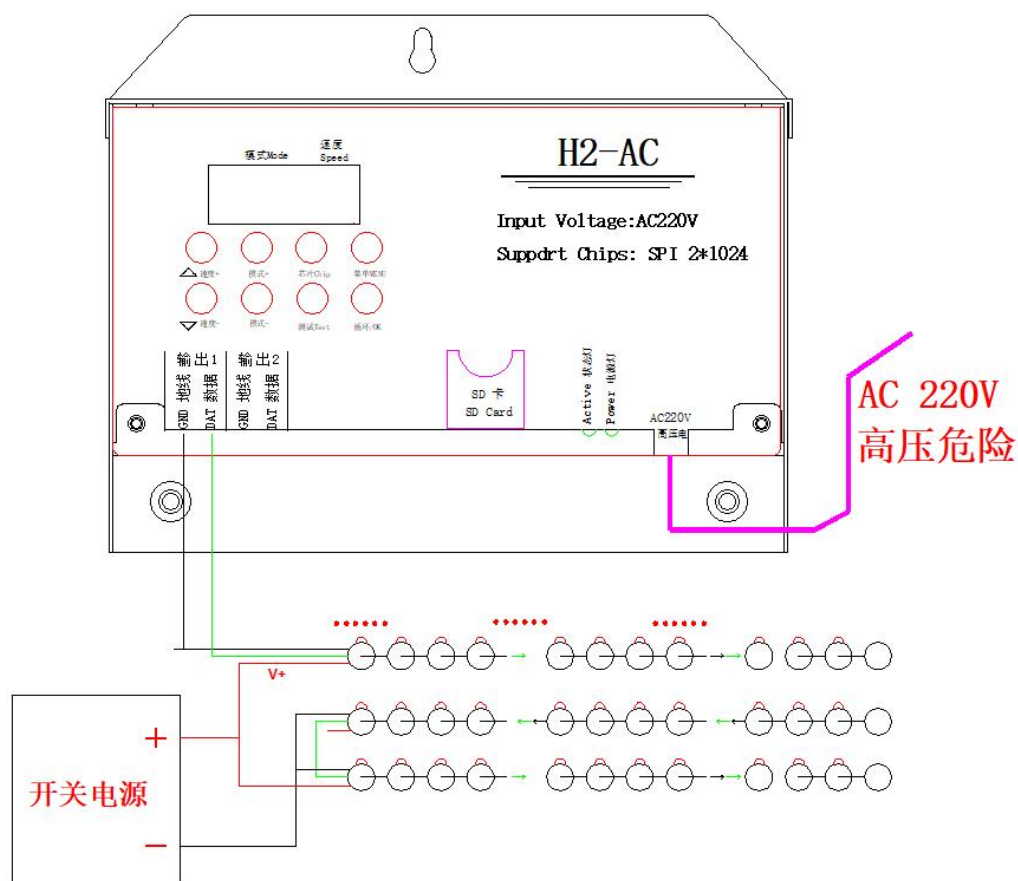
diagram:

AC220V 交流电开关

注：以下各项除ID编号不一致，其他项全部调成一致。最后同时开电



十一、H2-AC wiring diagram:



Requirements: 1. GND must be connected to ensure the same ground wire.

2. Distinguish the data lines. The data lines of different chips are different: one data line for normal transmission and two data lines for breakpoint transmission.

3. The positive and negative poles of the power supply and the positive and negative directions of the signal must be clearly marked.