M807SA



SPI LED DRIVER

V1.1

Table of contents

1. Introduction 4
2. Features 4
3. Instructions 4
4. Operating instructions 5
5. LAN synchronization 9
6. LAN UDP communication 9
7. Firmware update 10
8. Controller interface definition 10
9. Specification parameters 10
10. Contact 10

1. Introduction

M807SA has 8 outputs, supports maximum 8196 pixels, it Support Art-Net protocol and can work with DMX console or set address for DMX chips. M807SA also can add or delete DAT files through the LAN. M807SA can control IC drivers: DMX512、HDMX、DMX512_RDM、APA102、APA102-65536、WS2801、WS2811、WS2812、WS2813、TM1812、TM1809、TM1804、TM1923, TM1934、TM1925D、TM1926D、TM1803、TM1814、TM1913、TM1914、TM1926、UCSUCS1903、UCS1909、UCS1912、UCS2903、UCS2909、UCS2912、UCS8904、UCS5603、SK9816、SK6812、SM16716、SM16703、SM16709、SM16712、SM16704、LPD6803、LPD8806、LPD1882、LPD1889、LPD1883、INK1003、APA104、P943、LC8812, GW6205、QED3110、D9866E、D9866B、D9865C、D9865E、D9865F、D9864B、D9864C. **The support software is Modus Art LED Studio V4.47 or above.**

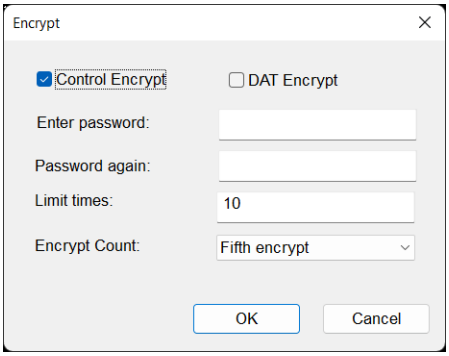
2. Features

1. Eight output ports to control up to 8192 pixels. The maximum control point per port is 1024.
2. The SD card supports FAT32 and FAT16 formats and allows up to 64 DAT files.
3. It can be controlled synchronously by the LAN. You can switch files by sending UDP instructions to the network port 2, or obtain the serial number of the current playing file.
4. It can connect to DMX console, support RGBW, replace files, adjust speed and brightness, and respond quickly.
5. Support art net protocol, and can directly use madrix, jinx and other software supporting art net.
6. Support the encryption function of limiting power on times.
7. DMX chip addressing is supported, with counting points and internal control test functions.
8. It can be connected and detached. It can be directly connected to computer network card, router or main controller.
9. Support online firmware upgrade.
10. Set sculpt of DAT to support DAT files of different shapes.
11. W can be inserted.

3. Instructions

1. SD card needs to be formatted into FAT32 or FAT16 format after adding and deleting files many times. Support SDHC (High Capacity SD card), up to 64g bytes. Up to 64 DAT files are allowed in the SD card, and the playback order is sorted alphabetically according to the file name.

2. Eight output ports to control up to 8192 pixels. The maximum number of control points per port is 1024. It can also be set as one, two or four output ports. Each port can control 2048 points at most, and the remaining ports can be used as a backup of the used ports. Actually, the maximum output of each port is 1600 points, a total of 12800 points. Qed3110 chip can only select eight port output, and d986x can only select eight port or one port output. Tm1812 and simultaneous sequence chip support 16 ports. Select 16 lines and one sub control in the computer software, and each port can output 800 points at most. Ports 1-8 are output by DAT and ports 9-16 are output by CLK. This function works online, offline and artnet.
3. When powered on, the first line of LCD displays the controller model, and the second line displays the version number. Press and hold the "menu" key before power on, and the controller will automatically upgrade the firmware.
4. Press menu key to switch menu, press' - 'or' + 'key to set, long press' -' or '+' key to accelerate parameter setting, press OK key to save parameters or enter submenu.
5. Set the password. You can set the password in the light modeling window of LED Build software, click the menu "setting" -- "Crypto Controller" to pop up the encryption dialog box. Select the controller encryption. The encryption method is to limit the number of power on. After the first encryption, the second encryption can be performed without decryption to prolong the use times.



4. Operating instructions

1. After power on, the file menu (file01) is displayed, followed by the file serial number, and the file name is displayed on the second line.



2. Press the menu key to switch to the speed menu (speed), the range is 1 – 100 frames per second.



3. The next menu is bright, ranging from 0 to 16.



4. The fourth menu is play mode: all, single, and timed playback. Automatically lock for single file playback when DMX console signal is received.



5. The fifth menu is to set the IP address (IP), and the first three bytes are adaptive. You cannot have the same IP address in the same LAN.



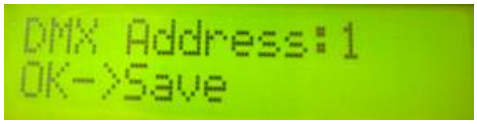
6. The sixth menu is chip type selection. If the chip type is not specified (do not choose), it is controlled by the chip type specified in dat file; If a chip model is specified, the chip model in the dat file is invalid. During artnet control, if the chip model (do not choose) is not specified, it shall be controlled by the chip model of the first sub control, otherwise it shall be subject to its own setting.



7. The seventh menu is to select the port output mode, 245 or 485.



8. The eighth menu is DMX address, ranging from 1 to 512. When the number of color components is 4, each director occupies 8 channels, otherwise each director occupies 7 channels.



The starting address is 1 by default.

When the number of color components is equal to 3 - 7 channels are occupied :

Channel 1 is brightness. The brightness channel values 0-3 correspond to 0 (not bright), 4-7 correspond to 1, 8-11 correspond to 2,..., and 252-255 correspond to 63.

Channel 2 is the red component.

Channel 3 is the green component.

Channel 4 is the blue component.

When the number of color components is less than 4, 7 channels are occupied:

Channel 5 is the dat file serial number. The relationship between the DMX512 console channel values and the file is that the four values correspond to a file, that is, 0-3 corresponds to the first file, 4-7 corresponds to the second file…, 252-255 corresponds to the 64th file.

Channel 6 is the file speed. The relationship between the corresponding speed is (the speed set by the key) multiplied by (the speed channel value) and divided by 255, that is, the maximum value of 255 on the console corresponds to the speed set by the key.

Channel 7 is the direction, 0-127 is the forward direction, and other values are the reverse direction.

When the number of color components is equal to 4, 8 channels are occupied:

Channel 5 is the white component.

Channel 6 is the dat file serial number. The relationship between the DMX512 console channel values and the file is that the four values correspond to a file, that is, 0-3 corresponds to the first file, 4-7 corresponds to the second file,..., 252-255 corresponds to the 64th file.

Channel 7 is the playback speed. The relationship between the corresponding speed is (the speed set by the key) multiplied by (the speed channel value) and divided by 255, that is, the maximum value of 255 on the console corresponds to the speed set by the key.

Channel 8 is the direction, 0-127 is the forward direction, and other values are the reverse direction.

9. The ninth menu is to set the number of pixel channels and the number of color components of a point. The default is 3, that is, RGB. The range is 1-4.



The tenth menu is the folding menu. Press' ▲ '▼' to select the change menu, press "OK" to enter the submenu, and then continue to press menu to switch the submenu.



1) Addressing menu

I. select DMX IC type.

II. Number of light channels: the number of channels occupied by a lamp or transcoding board. In the case of a point light, this value is the same as the number of color components.

III. some DMX chips need to set the color value when powered on, including red, green and blue (poweron R, poweron g and poweron b). Some chips do not need to be set.

Ⅳ. Some DMX chips need to set the current gain in the range of 1-64.

V. some DMX chips need to set the output format (output: RZ or output: DMX512).

VI. start channel (address). After entering the start channel, press OK. Please wait patiently for a few seconds to complete the coding.

(2) Internal control of counting points

I. count points and press and hold to accelerate.

II. Internal control

(3) artnet setting menu

The chip model is selected in the seventh menu on the controller. The first sub control can also be set through computer software. The later sub control should be selected (do not choose). If you select the chip, use your own, otherwise use the first sub control.

I. set the starting universe.

II. Set how many channels a port carries.

III. set the number of artnet sub controls. How many sub controls are connected in series.

(4) timing clock setting requires welding cylindrical crystal oscillator and battery to have this function. The format is year, month, day, hour, minute and second (201026 09:30:01). Only the last two digits of the year can be entered and can be saved only by pressing OK.

(5) other settings

I. slave No. It is necessary to set the slave No. when forming a multi branch network with a router or switch. When the number is 1, please select automatic. The sub control cascaded at the back can be set to automatic, and the factory default is automatic.

II. Insert w to control the lamps of RGBW by inserting w in RGB format, including no, front and back.

III. The working mode of network port 2 is generally (net2 input). When LAN synchronization is required, one of the controllers must be set to (net2 send sync) and the other to (net2 input).



IV. Whether the dat file in the SD card corresponds to the same shape (sculpt of DAT). The same represents the same shape, and not the same represents different shapes.

V. press the + key to restore the factory settings (+ - > reset).

5. LAN synchronization

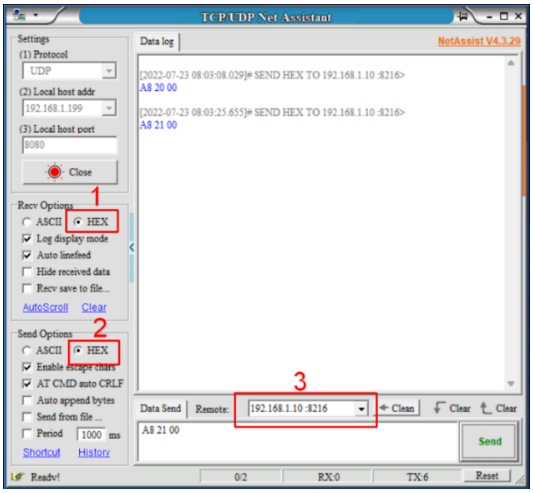
1. Several M807SAs form a LAN through routers and switches. Note that the IP address should be set in the same network segment. (for controllers that support this function, different models can be mixed and synchronized. Only one transmission is required, but the number of DAT files and the number of frames of each dat file must be the same).
2. One M807SA is set to "net2 send sync", and the other M807SA is set to "net2 input", which can be synchronized when offline.
3. Connecting the computer to this LAN can realize connection and disconnection control.

6. LAN UDP communication

Files can be switched through UDP protocol. The UDP port of M807SA is 8216 (0x2018).

1. Switch files. File is the program sequence number, starting from 0.
2. Send: 0xa8,0x20, file (three bytes in total)
3. M807SA reply: 0xa8,0x21, file
4. Adjust the brightness and color components, with a value range of 0-63.
5. Send: 0xa8, 0x22, bright, red, green, blue, white
6. M807SA reply: 0xa8, 0x23, bright, red, green, blue, white
7. Query the current program serial number of M807SA. File is the program serial number, starting from 0, that is, 0 represents program 1, 1 represents program 2.
8. Send: 0xa8, 0x30
9. M807SA reply: 0xa8,0x31, file
10. See the figure below:

11. To select Hex in red boxes 1 and 2, set the IP and port of M807SA in red box 3, and send hexadecimal A8 20 00 to switch to program 1.



7. Firmware update

Put the upgrade package into the SD card, press and hold the "menu" key and power on again. The controller will be upgraded automatically. After the upgrade, it will restart automatically and the version number will change.

8. Controller interface definition

GND CLK1 DAT1	GND CLK2 DAT2	GND CLK3 DAT3	GND CLK4 DAT4	GND CLK5 DAT5	GND CLK6 DAT6	GND CLK7 DAT7	GND CLK8 DAT8
GND D-1 D+1	GND D-2 D+2	GND D-3 D+3	GND D-4 D+4	GND D-5 D+5	GND D-6 D+6	GND D-7 D+7	GND D-8 D+8

9. Specification parameters

Input Voltage	AC220V
Power waste	2W
Load points	8192
Weight	1kg
Work temperature	-20C°--85C°
Overall dimension	L-230 x W-125 x H-44 mm
Carton size	L255x W18 x H55

10.Contact

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