

H807SA Instruction Manual



1. Controller Introduction

(1)H807SA is a stand-alone controller with 8-port output that can be connected or disconnected, and it can control 8192 points at most. Supports Art-Net protocol, supports addressing of DMX chips, can connect to DMX console, and can add and delete DAT files through LAN.

(2)Support chips:DMX512、HDMX、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、UCS9812、UCS2603、SK9816、SK6812、SM16716、SM16703、SM16709、SM16712、SM16704、SM16714、LPD6803、LPD8806、LPD1882、LPD1889、LPD1883、INK1003、APA104、P943、LC8812、GW6205、QED3110、D9866E、D9866B、D9865C、D9865E、D9865F、D9864B、D9864C、MBI6023、MBI6024、ADT6610、TLC5971、JCS0104 etc

(3)LD1510, LD1512, LD153X (only supports 8bit mode)

(4)The matching software is "LED Programming Software" V4.47 and above

2. Controller Features

(1)8 output ports, can control up to 8192 pixels. Each port controls 1024 points at

most.

- (2)The SD card supports FAT32 and FAT16 formats, allowing up to 64 DAT files.
- (3)Multiple synchronous control can be realized through LAN.
- (4)You can switch files by sending UDP commands to the network port 2, or obtain the serial number of the current playing file, etc.
- (5)Can be connected to DMX console, support RGBW, can replace files, adjust speed and brightness, and respond quickly.
- (6)Support Art-Net protocol, can directly use MADRIX, jinx and other software that supports Artnet.
- (7)Support the encryption function of limiting the number of power-on times.
- (8)Supports addressing of DMX chips, with built-in counting and internal control testing functions.
- (9)It can be online or offline, and can be directly connected to the computer network card, router, or to the main controller.
- (10)Support online firmware upgrade.
- (11)W can be inserted.
- (12)The timing playback function can be customized.

3. Controller Instruction

- (1)The 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 32G bytes or more. 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, up to 8192 pixels can be controlled. The maximum number of control points for each port is 1024. It can also be set as one, two or four output ports, each port can control up to 2048 points, and the remaining ports can be used as backup ports.

Note:QED3110 chip can only choose 8-port output, and D986X can only choose 8-port or 1-port output.

(3)When power on, the first line of the LCD will display the controller model, and the second line will display the version number, press and hold the "MENU" button and then power on, the controller will automatically upgrade the firmware.

(4)Press the MENU key to switch the menu, press the '-' or '+' key to set, long press the '-' or '+' key to speed up the parameter setting, press the OK key to save the parameter or enter the sub-menu.

(5)To set a password, click the menu "Settings" - "Controller Password" in the lighting modeling window of "LED programming software", and the encryption dialog box will pop up, select the controller encryption, and the encryption method is to limit the number of power-on times. After the first encryption, the second encryption can be performed without decryption to prolong the number of times of use.



(6)To use the timer playback function, the *.tab file must be placed in the SD card, and it must be stated when placing an order.

4. Controller Button Operation

(1)After power-on, the file menu (File01) will be displayed, followed by the serial number of the file, and the file name will be displayed on the second line.



(2) Press the MENU button to switch to the speed menu (Speed), the range is 1-100 frames per second.



(3) The next menu is Brightness (Bright), the range is 0-63.



(4) The fourth menu is the playback mode (Play Mode): all files loop (All), single file playback (Single). When receiving a DMX console signal, it will automatically lock to play a single file.



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



(6) The sixth menu is the working mode of the network port 2, generally select (Net2 Input), and when LAN synchronization is required, one of the controllers must be set to (Net2 Send Sync), and the others must be set to (Net2 Input).



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



(8)The eighth menu is the DMX start channel address (DMX Address), the range is 1-512, when the number of color components is 4, each controller occupies 8 channels, otherwise each controller occupies 7 channels.

The initial address is 1 by default, that is to occupy channels 1-7, and if the initial channel address is 2, channels 2-8 will be occupied.



The first channel is brightness, the brightness channel value 0-3 corresponds to 0 (not bright), 4-7 corresponds to 1, 8-11 corresponds to 2, ..., 252-255 corresponds 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, it occupies 7 channels:

The fifth channel is the serial number of the DAT file. The relationship between the DMX512 console channel value and the file is as follows: four values correspond to one file, that is, 0-3 corresponds to the first file, 4-7 corresponds to the second file, ..., 252- 255 corresponds to the 64th file.

The sixth channel is the playback speed, and the corresponding speed relationship is: (the speed set by the button) multiplied by (the value of the speed channel) and then

divided by 255, that is, the maximum value of the console is 255, which corresponds to the speed set by the button.

The 7th channel is the direction, 0-127 is forward, other values are reverse.

When the number of color components is equal to 4, it occupies 8 channels:

The 5th channel is the white component.

The sixth channel is the serial number of the DAT file. The relationship between the DMX512 console channel value and the corresponding file is as follows: four values correspond to one file, that is, 0-3 corresponds to the first file, 4-7 corresponds to the second file, ..., 252-255 corresponds to the 64th file.

The 7th channel is the playback speed, and the relationship of the corresponding speed is: (the speed set by the button) multiplied by (the value of the speed channel) and then divided by 255, that is, the maximum value of the console is 255 corresponding to the speed set by the button.

The 8th channel is the direction, 0-127 is forward, other values are reverse.

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



(10)The tenth menu is a folding menu, press '▲' '▼' to select the menu (Change menu), press "OK" to enter the sub-menu, after entering the sub-menu, continue to press MENU to switch the sub-menu.



- Addressing menu

- I . Select the DMX chip type (DMX IC Type).
- II . Light Channel Number (Light Channel), set the number of channels occupied by a light fixture or trans-coding board. For point lights, this value is the same as the number of color components.
- III. Some DMX chips need to set the color value when power on, including red, green and blue (Power On R, Power On G, Power On B), some chips do not need to be set.
- IV. Some DMX chips need to set the current (Current gain), the range is 1-64.
- V . Some DMX chips need to set the output format (Output: RZ or Output: DMX512).
- VI. Initial channel (Address), enter the initial channel and press the OK button, please wait for a few seconds for the encoding to complete.

- Count pixel

- I. Count the pixel, press and hold to accelerate.
- II. Internal control

- Artnet settings menu

The chip model is selected in other setting menus on the controller. The first sub-control can also be set through the computer software, and the subsequent sub-control must be selected (Do not choose). If you choose the chip, use your own, otherwise use the first one. Selected by sub-control.

- I . Set up the starting space.
- II . Set how many channels a port carries.
- III. Set the number of Artnet sub-controllers, how many sub-controllers are connected in this way.

Timing clock setting

The cylindrical crystal oscillator and battery need to be welded. Only put *.tab file in the SD card to activate this function. The format is year, month, day, hour, minute, second (201026 09:30:01). Only enter the last two digits of the year, and you must press the OK button to save.

- Other Set

I . Slave number (Slave No.), when using routers or switches to form a multi-branch network, you need to set the slave number,when the number is 1, please select automatic. The sub-controls cascaded behind can be set to automatic, and the factory default is automatic.

II . Insert W (Insert W), control RGBW lamps by inserting W in RGB format, including none (No), W in front (Front), and W in back (Back).

III. Chip type selection (IC Type), if the chip type is not specified (Do not choose), the chip type specified in the DAT file will be used for control; if the chip type is specified, the chip type in the DAT file will be invalid.

Note:When controlling with Artnet, if you do not specify the chip model (Do not choose), then the chip model of the first sub-control will be used for control, otherwise, the one set by yourself will prevail.



IV. Test the frame rate of the input data of network port 2.

V . Press the + key to restore the factory settings (+->Reset).

5. DMX Console Channel Definition

Channel	3 Color	Name	Description
1	1	Brightness	0-3 corresponds to 0 (no light), 4-7 corresponds to 1, 8-11 corresponds to 2, ..., 252-255 corresponds to 63
2	2	Red	0-3 corresponds to 0 (no light), 4-7 corresponds to 1, 8-11 corresponds to 2, ..., 252-255 corresponds to 63
3	3	Green	0-3 corresponds to 0 (no light), 4-7 corresponds to 1, 8-11 corresponds to 2, ..., 252-255 corresponds to 63
4	4	Blue	0-3 corresponds to 0 (no light), 4-7 corresponds to 1, 8-11 corresponds to 2, ..., 252-255 corresponds to 63
5		White	0-3 corresponds to 0 (no light), 4-7 corresponds to 1, 8-11

			corresponds to 2, ..., 252-255 corresponds to 63
6	5	Document	0-3 corresponds to the first file, 4-7 corresponds to the second file, ..., 252-255 corresponds to the 64th file
7	6	Speed	(the speed set on the controller) multiplied by (the speed channel value) and then divided by 255, that is, the maximum value of the console is 255 corresponding to the speed set on the controller
8	7	Direction	0-127 is forward, 128-255 is reverse

6. LAN synchronization

(1) A number of H807SAs form a LAN through routers and switches. Note that the IP addresses must 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 of the H807SA is set to "Net2 Send Sync", and the other H807SA is set to "Net2 Input", which can be synchronized when offline.

(3) Connecting the computer to this local area network can realize control that can be connected or disconnected.

7. LAN UDP communication

Files can be switched via UDP protocol, and the UDP port of H807SA is 8216 (0x2018).

(1) Switch files, file is the program serial number, starting from 0.

Send: 0xA8,0x20,file (3 bytes in total)

H807SA reply: 0xA8,0x21,file

(2) Adjust brightness and color components, the value range is 0-63.

Send: 0xA8,0x22,bright,red,green,blue,white

H807SA reply: 0xA8, 0x23, bright, red, green, blue, white

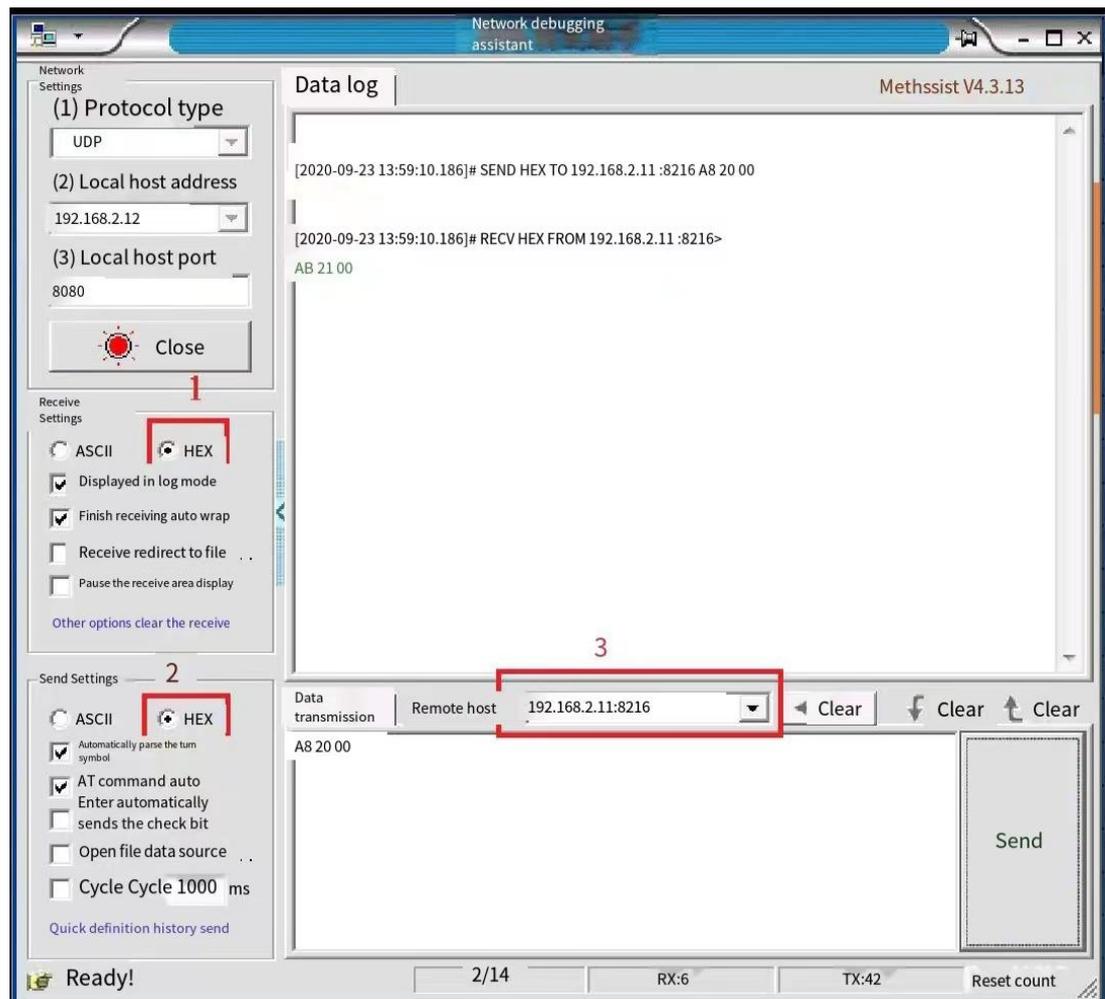
(3) Query the current program number of H807SA, file is the program number, starting from 0, that is, 0 means program 1, 1 means program 2,

Send: 0xA8, 0x30

H807SA reply: 0xA8,0x31,file

(4) See below:

Red box 1 and 2 should choose HEX, red box 3 set the IP and port of H807SA, send hexadecimal A8 20 00 means switch to program 1.



8. Firmware Upgrade

Put the upgrade package into the SD card, press and hold the "MENU" button and then power on, the controller will automatically upgrade, after the upgrade is completed, it will automatically restart, and the version number will also change.

9. 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

10. Specifications

Input Voltage	AC220V
Power Consumption	3W
Pixel carrying	8192 pixels
Weight	1.1Kg
Working Temperature	-20C°--85C°
Controller Dimension	L234 x W170x H41
Carton Dimensions	L260 x W185 x H58