

H803SA Instructions



I. Introduction

H803SA has eight output ports, controls maximum 8192 pixels. Three buttons and LCD screen are convenient for operation. Can be synchronized with AC power supply and connected to DMX console.

H803SA can drive the following chips: LPD6803, LPD8806, LPD6812, LPD6813, LPD1882, LPD1889, LPD1883, LPD1886, DMX512, HDMX, APA102, APA104, P9813, P9823, LD1510, LD1512, LD1530, LD1532, UCS6909, UCS6912, UCS1903, UCS1909, UCS1912, WS2801, WS2803, WS2811, DZ2809, SM16716, TLS3001, TLS3002, TM1812, TM1809, TM1804, TM1803, TM1914, TM1926, TM1829, TM1906, INK1003, BS0825, BS0815, BS0901, LY6620, DM412, DM413, DM114, DM115, DM13C, DM134, DM135, DM136, 74HC595, 6B595, MBI6023, MBI6024, MBI5001, MBI5168, MBI5016, MBI5026, MBI5027, TB62726, TB62706, ST2221A, ST2221C, XLT5026,

ZQL9712, ZQL9712HV, etc.

Auxiliary software is “LED Build Software”.

For three lines and four lines chips, H803SA can only output four ports, each port controls maximum 2048 pixels. For single line and double lines chips, H803SA can output eight or four ports, each port controls maximum 1024 pixels when output eight ports, but control 768 pixels when control P9813 and LPD6813; each port controls maximum 2048 pixels when output four ports, but control 1536 pixels when control P9813 and LPD6813.

Note: the maximum pixel number that each port can control only means the output ability of controller, whether actual signal can transmit to the end or not depends on the performance of lamp, EMI of switch power supply and the total interference of engineering field.

II. Performance

1. Eight output ports, controls maximum 8192 pixels, each port controls maximum 1024 pixels.
2. SD card supports FAT32, FAT16 format; the maximum capacity is 64G bytes, stores up to 64 DAT files.
3. Many controllers can be synchronized with AC power supply.
4. Can connect to DMX console, replace file, and adjust speed and brightness and responses quickly.
5. The buttons and LCD screen are convenient to set the parameters.

6. Support encryption by limiting the number of power-on time.

III. Operation Instructions

1. SD card must be formatted into FAT32 or FAT16 after times of deleting or adding files. Supports SDHC (high capacity SD card), the maximum capacity is 64G bytes, stores up to 64 DAT files, which are played based on the file name in alphabetic order.
2. Eight output ports, controls maximum 8192 pixels. Each port controls maximum 1024 pixels. Or output four ports, each port controls maximum 2048 pixels, port 5 to 8 are backup of port 1 to 4.
3. In “LED Build Software”, choose “SA” controller type. The line number is the number of actual using ports. Select “eight lines share a slave controller”, each port controls maximum 1024 pixels. Select “four lines share a slave controller”, each port controls maximum 2048 pixels. Notice: The number of controllable pixels is just the theoretical value; it’s also related to the transmission capacity of lamps and driver chips.
4. The first row of LCD screen displays the controller model; the second row displays the playing file name and sequence number.
5. Three buttons are “mode”, “-” and “+”. Press “mode” to switch mode, press “-” or “+” to set. Two seconds after pressing buttons, parameters will be saved in controller, eight second later, backlight will be off.

1) **FileX:**

X is the sequence number and refers to the playing DAT file name. Press “+” to jump to the next file, press “-” to jump to the previous file.

2) **Clk Rate:**

Refers to the clock scanning frequency, the range is 0.1M—12.5M.

3) **Speed:**

Play speed ranges from 1 to 100 frames per second, the playing speed must be set to the same when multiple controllers are synchronized with AC power supply.

4) **Bright:**

The brightness range is 0—15. For P9813, LPD6813, the brightness can not be adjusted.

5) **CycleMode**

“All” refers to playing all DAT files in SD card circularly; “Single” refers to playing the current file and can be switched by “+” or “-”

6) **Port Out Mode: \ Invert Colors:**

For single line chip, Port Out Mode: Select 245 or RS485 output

Invert Colors: Invert color or not

7) **DMX Address**

The default initial value of DMX address is 1, occupies three channels, the three channels are respectively file, speed and brightness and

range from 0 to 255.

6. Set password, in “LED Build Software” light sculpt window, click “Setting”—“encrypt controller ”, pop up the encryption dialog box, the encryption method is to limit the number of power-on time.



IV. Special Explanation

1. For P9813 and LPD6813, H803SA controls maximum 6144 pixels. Output eight ports, each port controls maximum 768 pixels; output four ports, each port controls maximum 1536 pixels.
2. Port number must be eight or four, which means select “eight line with a slave” or “four line with a slave” in software.
3. LD151x and LD153x only support 8-bit mode.
4. For chips that grayscale level is more than 256, controller has executed GAMMA disposal, for chips that grayscale level is less than 256, you must set GAMMA in software. LPD6812 is 1024 grayscale level; LPD1886, TLS3001, BS0901 and BS0815 are 4096 grayscale level; DM412 and MBI6024 are 65535 grayscale level.

5. Clock of LPD6812, LPD1883, and LPD1886 must be set to 1.13M or 1.04M; clock of TM1812, LPD1882, WS2811, TM1829, TM1926 and TM1914 and some other same time sequence chips must be set to 0.78M, 0.73M or 0.39M.

V. Special function and LCD prompt

1. Encode for DMX512 lamp. Clock is fixed and standard clock, so LCD doesn't display clock setting, but display “— Stop + Encode”, means press “+” to start encoding, press “—” to stop encoding.
2. For single line chip, “Port Out Mode: 485” means using RS485 to output differential signal, “Port Out Mode: 245” means using 245 to output TTL signal.
3. When output four ports, ports 5 to 8 are backup of port 1 to 4.
4. On the lower right corner of brightness display page, “AC” means AC power supply, has synchronization function; “DC” means DC power supply.
5. Displaying “Please insert SD” means didn't insert SD card, or didn't insert properly.
6. “Reading.....” means reading SD card.
7. “Not DAT File” means SD card doesn't have valid DAT file inside.
8. “Used time over” means controller has been encrypted and use time is over.
9. “Port number err” and “Pixel is too much” display together, means

port number error or pixel number is too much.

10. “Init.....” means reading SD card successfully and initiating.

VI. Interface Definition

Single line and double line chips output eight ports, three line and four line chips output four ports.

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
GND CLK1 DAT1 GND LAT1 OE1	GND CLK2 DAT2 GND LAT2 OE2	GND CLK3 DAT3 GND LAT3 OE3	GND CLK4 DAT4 GND LAT4 OE4				