H801SB instructions

1. Abstract

H801SB is a high-efficiency controller with one port. It has four kinds of working modes, supports multiple single-line and double-line driver chips and controls maximum 2048 pixels. Software is "LED Build Software"(download at www.huacanxing.com).

2. Support Driver chips

LPD6803, LPD8806, LPD1882, LPD1889, LPD6812, LPD1883, LPD1886, DMX512, HDMX, APA102, MY9221, UCS6909, UCS6912, UCS1903, UCS1909, UCS1912, UCS8904, WS2801, WS2803, WS2811, WS2812, TM1803, TM1804, TM1809, TM1812, TM1829, TA9912, TM1913, TM1914, TM1926, TM1814, INK1003, LX1003, LX2003, LX2006, TLS3001, P9813, P9816, SM16711, SM16716, LD151x, LD153x, MBI6021, MBI6023, MBI6024 and so on.

3. Features

(1). One port drives maximum 2048 pixels

(2). SD card supports FAT32 and FAT16 format, maximum capacity is 32GB, stores maximum 32 files. Playing order is based on the alphabet sequence of file names.

(3). Four modes: SD card control mode, internal control mode, DMX control driver chips mode and multiple controllers synchronization mode.

(4). Input voltage: DC12V.

(5). Switch files, adjust speed and choose loop playback or single playback by four buttons.

## 4. Button operation and indicator light status

Power controller on, with SD card inserted, green light is on and keep still, red light is flashing. Without SD card, green and red light are on and all keep still.

Button	Meaning	Indicator lights status
LOOP/SINGLE	Switch between loop playback and single playback	Loop playback: green light is on Single playback: green light is off
File	Switch files	Nothing changes
SPEED-, SPEED+	Set speed. Maximum speed is 100, minimum speed is 1.	Nothing changes
LOOP/SINGLE + SPEED+	Press and hold "LOOP/SINGLE", then press "SPEED+" to address for TM or UCS DMX driver chips.	Red light is off, green light is on.

5. Four working modes:

SD card control mode

(1). Insert SD card first, then power on.

(2). SD card must be formatted into FAT32 or FAT16 after many times of files deletion. SD card stores maximum 32 programs inside.

(3). One port drives maximum 2048 pixels.

(4). In "LED Build Software", you must choose "A line with a slave". Controller type must be "SB".
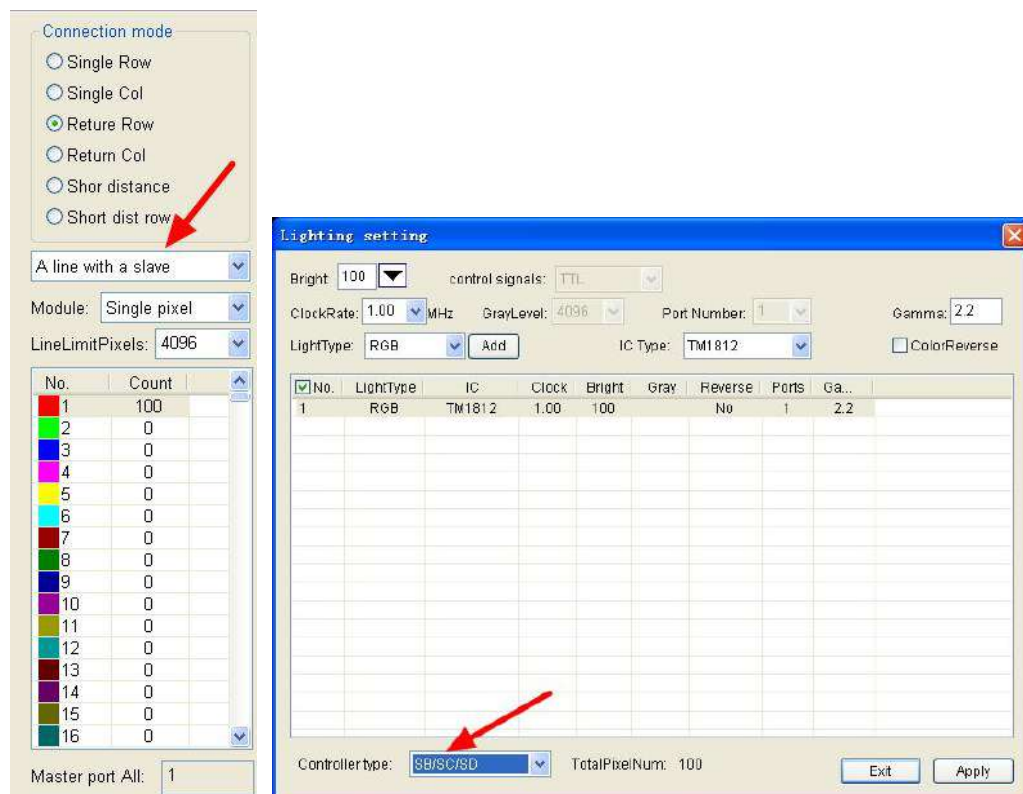
Multiple controllers synchronization mode:

The following item is required for this mode: The controlled lights are not DMX

lights, which means in this mode H801SB only supports single-line and double-line driver chips.

Wiring: Firstly, connect lights to controller(for single-line chips,such as WS2812,connect GND,DAT. For double-line chips, such as LPD6803, connect GND,CLK,DAT). Secondly, connect GND, D-, D+ of each controller together.

Internal control mode

(1). The internal mode means controller works without SD card. There are 18 effects built-in.

(2). You must plug SD card in first so that controller can obtain chip type, clock rate, pixel number from DAT files inside SD card. After that, you can unplug SD card.

DMX control driver chips mode

(1). This mode works on premise of two conditions:1. Without SD card when controller is powered on. 2. D-, D+, GND are connected to, for example, DMX console, or other DMX output devices.

(2). In this mode, controller supports the following chips:

LPD6803, LPD8806, LPD1882, LPD1889, LPD1883, UCS6909, UCS6912, UCS1903, UCS1909, UCS1912, WS2801, WS2811, WS2812, TM1803, TM1804, TM1809, TM1812, TM1913, TM1914, TM1926, TM1814, INK1003, LX1003, LX2003, LX2006, TLS3001, P9813, P9816, SM16711 and so on.

Controller obtains chip type, clock rate from DAT file in SD card plugged last time.

(3). DMX address is set by DAT file name. (DMX address here is the starting DMX address). As we know, one pixel contains three channels or four channels(normally). For three channels: if you want to output data from the 3th pixel, the name of DAT file should be ADDR7.DAT(2x3+1). If starts from 9 pixel, the name of DAT file is ADDR25.DAT(8x3+1). For four channels: output from the 4th pixels: DAT file name is ADDR13.DAT(3x4+1), output from the 7th pixel: DAT file name is ADDR25(4x6+1).

6. Use H801SB to address for TM&UCS DMX driver chips

The DMX chips include TM512, UCS512 and so on.
Wiring(connect lights to controller):

Lights	Controller
D-	D-
D+	D+
GND	GND
PI(address line)	CLK or DAT

Operation: Press and hold "LOOP/SINGLE",then press "SPEED+", then loose them all. After a few seconds, lights will turn red then green. Controller can address for 1024 pixels each time. Address will be updated when lights are powered on next time.

During addressing, red indicator light is off, green indicator light is on.

7. Ports definition

For single-line driver chips, connect GND, DAT.
For double-line driver chips, connect GND, CLK, DAT.

For DMX512, connect GND, D-, D+.

8. Specifications

Input Voltage	DC5V or DV9-24V
Consumption	0.3W
Drive Pixels	2048
Weight	0.1Kg
Working temperature	-20C°--75C°
Dimension	L150 x W82 x H38