

H803TC Instructions



1. Introduction

H803TC works online or offline and switch automatically.

When it's offline, it reads data from SD card to control slave controllers and synchronized with AC power supply.

When it's online, port1 transmit data that port2 received from "LED Studio Software". When software stops sending data, H803TC can detect it automatically, and read data from SD card and send it instantly.

Auxiliary slave controller is H801RA and H801RC, auxiliary online software is "LED Studio software", auxiliary offline software is "LED Build Software".

2. Performance

(1). Works online or offline and switches automatically.

(2). Drives maximum 170000 pixels, 2 output ports, connects maximum 255 slave controllers.

(3). When it's offline, multiple master controllers synchronize with AC power supply, achieves controlling hundreds of thousands to millions pixels.

(4).SD card supports FAT32, FAT16 format. The maximum capacity is 64G bytes.

(5).H803TC can connect to DMX console, supports encryption on number of power-on times.

(6).Supports single file playback and all files playback. Playing speed adjustable range is 1-100 frames per second, brightness adjustable range is 0-15.

(7).Transmit signal based on Ethernet protocol. The nominal transmission distance is 100 meters and it can reach to more than 25 kilometers by using a photoelectric converter.

(8).Electrical isolation and high anti-interference ability.

(9).Flexible engineering configuration, each slave controller can control different lamps.

3. Operation Instructions

(1). LCD screen can display model of controller and setting information. Press “MODE” button, LCD screen will display version number in the upper right corner of the brightness interface, in the upper right corner of the playing speed interface displays input power: “AC” or “DC”. Without inserting SD card, it displays “AC” no matter what the input is “AC” or “DC”. After inserting SD card and reading data successfully, the controller will detect the power supply type. Power supply synchronization function is failed if it displays “DC”.

(2). SD card must be formatted into FAT16 or FAT32. SDHC (high capacity SD card) is supported. DAT file in SD card is played based on the file name in alphabetical order

(3). After self-check passed, the first row in the screen displays model of controller. If port2 detects input data, it will retransmit data to port1 to control slave controller, this is called retransmission pattern or online pattern. The data source could come from computer, digital switch or other controllers' port. If port2 detects no data input, H803TC will read SD card and play automatically, the second row in the screen displays file name and serial number, this is called offline pattern. Online pattern can break the process of offline pattern, which means when the controller is working in offline pattern, it could turn to online pattern automatically when port2 receives input data and when the data is gone, controller will turn back to offline pattern.

(4). When port2 of H803TC is used as input interface, it could connect to computer、 digital switch、 photoelectric converter or other controllers' output interface, and the parameters of Net2StartNo are effecting port1, the value of data of slave controller that less than the parameters will be shielded off. The slave controller behind will be renumbered from number 1. H803TC can retransmit maximum 239 data from slave controller, using this point, we can use digital switch to accomplish multiple ports output, please refer to the Network and Optical fiber

connecting diagram. For example: We can set 40 slave controllers in computer, send data to switch, connect switch to 4 H803TCs and connect each H803TC to 10 slave controllers. The data that switch output is consistent with computer's. We can set Net2StartN. to 1 for the first H803TC, set 11 for the second one, set 21 for the third one and set 31 for the fourth one. Then, each slave controller connected to H803TC is corresponding to each slave controller we set in computer.

(5). Port1 of H803TC can only be used as output port and it can output to switch、photoelectric converter and slave controller. Port2 can only output to slave controller when it's used as output interface, but it can connect to photoelectric converter through IP converter. Cross cable must be used when H803TC is connected to computer.

(6). Three buttons are “mode”, “-” and “+”. You can choose different files、brightness adjustment、playing speed control、different colors and so on. You can switch among these functions by pressing “mode” button and LCD will show some tips for you. Press “-” or “+” to set and hold it for 0.6 second is to press again. Eight seconds after stop pressing the button, LCD will go back to show the file name. Three seconds after stopping pressing the button, parameters will be saved in the controller automatically.

① FileX:

X is the serial number and refers to the playing DAT file name. Press “+”

to jump to the next file, press “-” to jump to the front file.

② Bright:

Brightness setting: range is 0-15. You can adjust brightness on the premise of not inverting the color in “LED Control Software”, otherwise the brightness must be set to 15. Specifically, brightness must be set to 15 for P9813 and LPD6812.

③ Speed:

Playing speed ranges from 1 to 100 frames per second

④ Invert Colors:

Do not invert color in controller; otherwise brightness setting is not working if you invert color in the software.

⑤ Cycle Mode:

“All”: Play all files, “Single”: Play one file

⑥ Net2StartNo:

Start number of port2. For example: There are 40 slave controllers, if you set Net2StartNo to 31 in computer, then port1 will output data to the first 30 slave controllers and port2 will output data to the last 10 slave controllers. If you set Net2StartNo to 1, then two ports will output same data to all slave controllers.

⑦ DMX Address

DMX initial address: default value is 1, that is to say channel1 is the serial number of DAT file, channel2 is brightness and channel3 is playing

speed.

(7) Saved parameters include brightness, playing speed, color inverse, cycle model, Net2StartNo, DMX Address and controller will save file number when “Cycle Mode” is single.

(8) Control type、clock frequency and other parameters must be properly set in “LED Control Software”, each slave controller can control diverse lamps, drive different IC. So the parameters could be different.

(9) Playing speed of H803TC refers to number of frames that one port could send in one second and one frame is one image. Maximum playing speed= $100\text{M} \times (80\%) \div (\text{number of all pixels} \times 24)$, 100M is network bandwidth (100M=100000000bit), 80% is the approximate efficiency of network transmission, one pixel occupies 24bit, so (number of all pixels \times 24) is the bit number that one image requires. We can only get an approximate result from the above equation. If the playing speed we set is higher than the maximum playing speed, controller will play as the maximum playing speed, at the same time, power synchronization is not function. So the playing speed we set must be lower than the maximum speed. The playing speed is only limited by network transmission.

Specifically, each pixel of P9813 and LPD6812 occupies 32bits—4 bytes not 24 bits and total pixels decrease to 127500.

(10) H803TC can control maximum 170000 pixels and can connect to maximum 255 slave controllers. H801RA can control maximum 3412

pixels, maximum 4 ports output. Each port can control maximum 3412 divided by number of using ports pixels. H801RB can control maximum 8 ports and each port can control maximum 5120 divided by number of using ports pixels.

(11)When you are using “LED Control Software” to set model, you can connect the cable in software according to actual connecting situation.

Two ways are as follows:

① Choose a line for each port. For example: If you need three ports, you can choose “three lines of a slave controller” in the windows of software, connect 400 pixels of first port to first line, connect 600 pixels of second port to second line and connect 500 pixels of third port to third line.

② Choose a line for each slave controller. Connect all pixels of each port of a slave controller together. For instance, we use three ports of a slave controller, you can connect pixels of first port, connect pixels of second port, connect pixels of third port and length up another two ports with the longest port, if length is the same, do not need to add pixel.

You can choose either one from above two methods, connect all pixels and set parameters in brightness setting properly

4. Specification

Input Voltage	Customized
Power Consumption	1W
Control pixels number	170000
Weight	0.9Kg
Working Temperature	-20C° – 75C°
Dimension	L187 x W117 x H40
Installation Hole Distance	100mm
Carton Size	L205 x W168 x H69

5. Network and optical fiber connection diagram

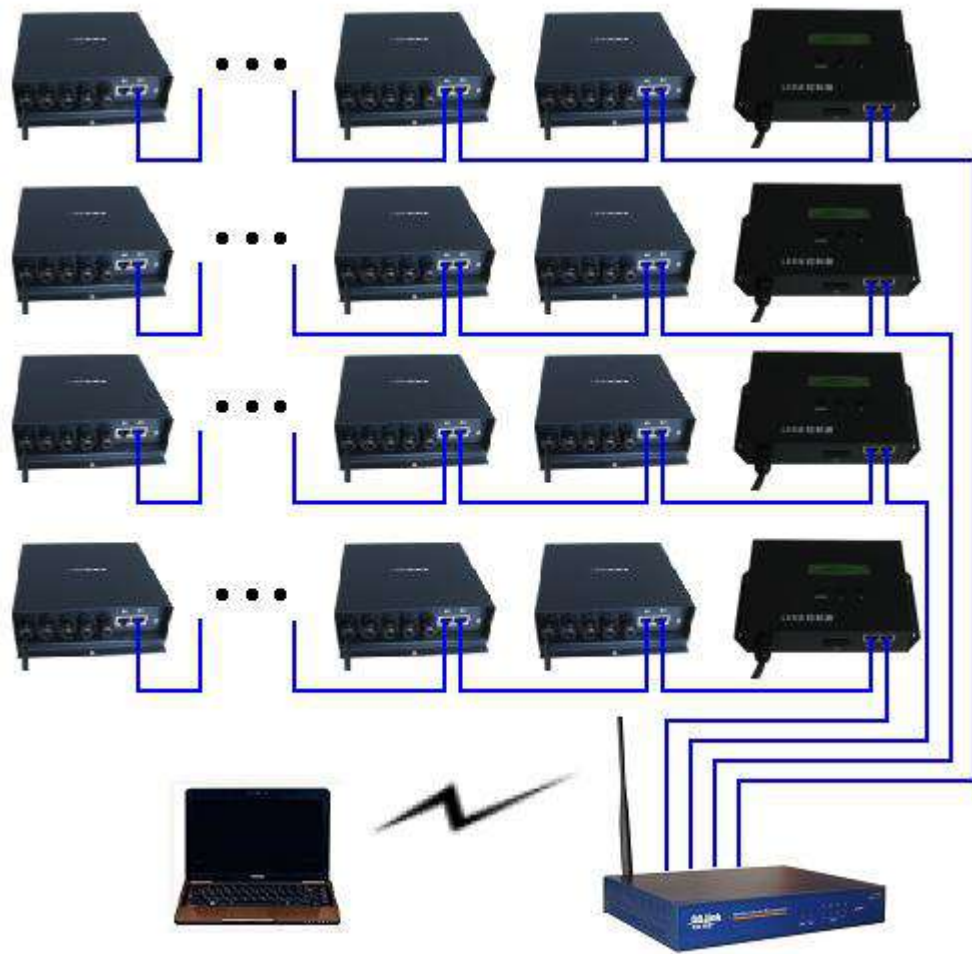
(1). Work offline. (Blue line is network cable)



(2). Work online, H803TC transmit data from computer to slave controller, if there is no data sent from computer, H803TC will read data from SD card and send it to slave controller automatically.



(3).Use switch to output to multiple network interfaces, the following picture illustrates the process: computer's wireless network card send data to wireless switch, and then transmit data to H803TC, you can also use the cable network card to send data, data is received by several H803TCs, the following picture only draws four H803TC receivers, you can use more according to actual needs.



(4).Using optical fiber to acquire further transmission distance. If slave control to slave control requires the use of optical fiber, you need to add a IP converter, the use of specific methods please refer to the slave control instructions.

