User Manual of T807 (Sub-Controller)

Brief Introduction:

T807 is an online and offline single controller with 8-port output, which controls up to 8192 pixels. It supports Art-Net protocol and it can connect to DMX console and set the address for DMX chips. DAT files can be added or deleted through LAN.

So far, the controllable chips include as below:

DMX512,HDMX,DMX512_RDM,APA102,APA102-65536,WS2801(WS2815),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 etc.

Features:

1. With 8 output ports, max. control up to 8192 pixels, each port controls max.1024 pixels.

2. The SD card supports FAT32 and FAT16 formats and allows the storage up to 64 DAT files.

3. Multiple T807 controllers can be synchronized via LAN. It can switch files by transmitting UDP data to the Net 2 Port.

4. It can be connected to a DMX console and supports RGBW color. It is capable of replacing files, adjusting speed and brightness, also with fast response.

5. It supports art net protocol, i.e., which can use the software supporting Artnet such as Madrix and Jinx.

6. It supports the encryption function with limiting power-on times.

7. It supports setting the address of DMX chips, with the functions of counting pixels and testing of

internal control.

8. It can work online or offline. It can be directly connected to computer networks, routers, or a main controller of T801.

9. It supports for online firmware upgrade.

10. DAT files of sculpt can be configured with different modelings.

11. W can be inserted to realize the control of RGBW lights.

12. TM1812 and other chips of simultaneous sequence chip can be output with 16 ports.

Instructions:

1. The SD card needs to be formatted into FAT32 or FAT16 formats after adding and deleting files many times. Supports for SDHC (high capacity SD card) , up to 64G bytes or more. Up to 64 DAT files are allowed on the SD card, which is played alphabetically by file name.

2. With 8 output ports, max. control of 8192 pixels. The max. number of pixels is 1024 pixels per port. It can also be set to 1, 2, or 4 output ports, with each port controlling a max. of 2048 pixels, and the remaining ports can be used as backup ports. The actual max. output is 1600 pixels per port, total 12800 pixels.

   For QED3110 chips, 8 output ports should be chosen. As for D986X chips, 8 or 1 output ports should be applied.

   TM1812 and the chips of simultaneous sequence support output of 16 ports of. When 16 lines and a sub-controller are selected in the computer software, the max. output of each port is 800 pixels. Ports 1-8 are output by DAT and ports 9-16 are output by CLK. This function works when it is online, offline and in Artnet.

3. When the LCD is powered-on, the 1st line shows the controller's model, the 2nd line shows the version no. Press the "MENU" key first and turn the power on, the controller will automatically upgrade the firmware.

4. Press the MENU key, press '-' or '+' key to switch the menu. Long press '-' or '+' key to accelerate the adjustment of parameters, and press "OK" to save the parameters or enter the submenu.

5. Set Password in the Sculpt window of "LED Build": Click the menu "Settings" – "Controller Password", the encryption dialog will be popped up. Select the controller first and do the encryption with limiting the number of power-on. After the first encryption, a second encryption can be performed without decryption to extend the number of uses.

Controller Operations:

1. After powered on, the file menu (File01) is displayed with the sequence no., and the file name (01) is displayed on the second line.

2. Press the Menu key to switch to the Speed Menu whose adjustable range is 1 – 100 frames/second.

3. The next menu is the Bright Menu whose adjustable range is 0-16 level.

4. The 4th menu is the menu of Play Mode.

   There are 3 modes: All, Single and Timed Playback.

   When receiving the signal from the DMX console, it will be automatically locked to the Single mode.

5. The 5th menu is to set IP address. The first 3 bytes will be generated adaptively. There should not be same IP address in the same LAN.

6. The 6th menu is to choose the IC type. If the chip model is not specified (Do not choose), it will be controlled by the chip model specified in the DAT file; if the chip model has been specified, the

chip model in the DAT file will be invalid.

In the Artnet control, if the chip model is not specified (Do not choose), it will be controlled by the chip model of the 1st Sub-controller or will be subject to your setting.

7. The 7h menu is to choose the Port Out Mode: 245 or 485.
8. The 8th menu is to set the initial channel address of DMX whose range is 1-512. When the number of color components is 4, each controller occupies 8 channels, otherwise, occupies 7 channels.

   The initial address is 1 by default, i.e., it occupies the channels 1-7. If the initial address is 2, it occupies the channels 2-8.

Channel 1 is for Brightness.

The brightness channel values 0-3 correspond to 0 (dark), the value 4-7 corresponds to 1,the values 8-11 correspond to 2, the values 252-255 correspond to 63.

Channel 2 is for red color.

Channel 3 is for green color.

Channel 4 is for blue color.

When the number of color component is less than 4, total 7 channels are occupied

Channel 5 is for the sequence no. of DAT file.

The four values of DMX Channel No. correspond to one file, i.e., the values “0”-“3” correspond to the 1st file, the values “4”-“7” correspond to the 2nd file, “252-255” correspond to the 64th file.

Channel 6 is about the setting of Playback Speed.

The speed set by keys multiplied by the value of Speed Channel and divided by 255, i.e., the maximum value 255 of DMX console corresponds to the speed set by keys.

Channel 7 is about the setting of direction. “0”-“127” correspond to the forward direction, and

other values for the reverse direction.

When the number of color component is equal to 4, total 8 channels are occupied

Channel 5 is for white color.

Channel 6 is for the sequence no. of DAT files.

The four values of DMX Channel No. correspond to one file, i.e., the values “0”-“3” correspond to the 1st file, the values “4”-“7” correspond to the 2nd file, “252-255” correspond to the 64th file.

Channel 7 is about the setting of Playback Speed. The speed set by keys multiplied by the value of Speed Channel and divided by 255, i.e., the maximum value 255 of DMX console corresponds to the speed set by keys.

Channel 8 is about the setting of direction. “0”-“127” correspond to the forward direction, and other values for the reverse direction.

9. The 9th menu is to set the number of Pixel Channel whose range is 1-4.

The channel number is “3” for RGB pixels; for RGBW, the channel number is 4.

10. The 10th menu is the folding menu.

Press “▲” “▼” key to choose the menu (Change menu), press "OK" to enter the submenu. After entering the submenu, continue to press the MENU to switch to the submenu.

(1) Addressing menu

a) Choose the IC type of DMX

b) Number of Light Channels, set the number of channels occupied by a lamp or transcoding board. In the case of pixel lights, this value is the same as the number of color components.

c) Some DMX chips need to set the color value when they are powered-on, including red, green and blue (powered-on R, powered-on G, powered-on B), and some chips do not need to set it.

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

e) Some DMX chips need to set the output format (Output:RZ or Output:DMX512).

f) Initial channel (address): Input the initial channel and press OK key, and wait for a few seconds before the coding.

(2) Internal control of counting pixels

a) Count the pixels, press and hold to accelerate.

b) Internal control

(3) Artnet Setting Menu

The chip model should be selected in the 7th menu. The first sub-controller can also be set via PC software, the latter sub-controller should choose the option of "Do not choose"; if the chip has been specified then use your settings, otherwise to use what the first sub-controller chooses.

a) Set the initial space

b) Set how many channels a port carries.

c) Set the number of Artnet Sub-controller

How many sub-controllers are connected in the same circuit.

(4) Timing Clock Setting:

The function is available only when the cylindrical crystal oscillator and batteries are welded. The format is year, month, day, hour, minute and second (201026 09:30:01). The year should be input with the last two digits. The setting will be saved with pressing the OK key.

(5) Other settings

a) Slave NO.(Sub-controller No.):

When you use a router or switch to form a multi-branch network, you need to set the branch control number. If the number is 1, please select automatic. Cascade in the back of the sub-control can be set to automatic, factory default is automatic.

When a router or a switch is used to form a multi-branch network, the slave no. should be set. When the number is 1, please choose auto. Cascade in the back of the sub control can be set to automatic, factory default is automatic.

b) Insert W:

To realize the control of RGBW lights via inserting W to the original RGB format, which includes 3 modes: No, W in front , W at back.

c) Output 16 ports (tm1812 8Port - > 16). When using tm1812 and simultaneous sequence chip to control 8 ports, set "yes" here. The first half of DAT output of each port and the second half of DAT output are changed from CLK output to 16 port output. This feature works online, offline and artnet.

d) If the number of ports is not 8, this function is invalid.

e) If this function is enabled during modeling, the port length is 1024 pixels by default, 1-512 pixels are output by DAT, and 513-1024 pixels are output by CLK.

f) Whether the dat file in SD card corresponds to the same sculpt of DAT, the same means the same sculpt, not the same means different sculpts.

g) Press the + key to restore the factory settings (+ - > reset).

LAN synchronization:

1. Multiple T807 controllers (≤5 pcs) can be connected together to form a LAN with routers and switches, whose IP address should be set in the same network segment.

   Controllers that support this function can also be synchronized when mixed with different models and the settings should be as below:

   One controller set to“NET2 Send Sync” and the others set to“NET2 Input”.

   Besides, the number of DAT files and the frame number of each DAT file should be exactly the same.

2. When a T807 controller is set to "Net2 Send Sync" and the other controllers of T807 are set to "Net2 Input", the synchronization could be realized when offline.

3. When a computer are connected to this LAN, multiple T807 controllers (≤5 pcs) can be controlled either offline or online.

UDP communication of LAN

Files can be switched via UDP protocol, and the UDP port of T807 is 8216 (0x2018).

1. Switch the file (“file” represents the sequence no. of files, starting from 0)

   PC sends: 0xA8,0x20, file (3 bytes)

   T807 replies: 0 xA 8,0x21, file

2. Adjust the brightness and color component (the value range: 0-63)

   PC sends: 0xA8, 0x22, bright, red, green,blue,white

   T807 replies: 0xA8, 0x23, bright, red, green,blue,white

3. Check the current sequence no. of T807

   (“file” is the sequence no., starting from “0”: “0” represents file 1, “1” represents file 2…)

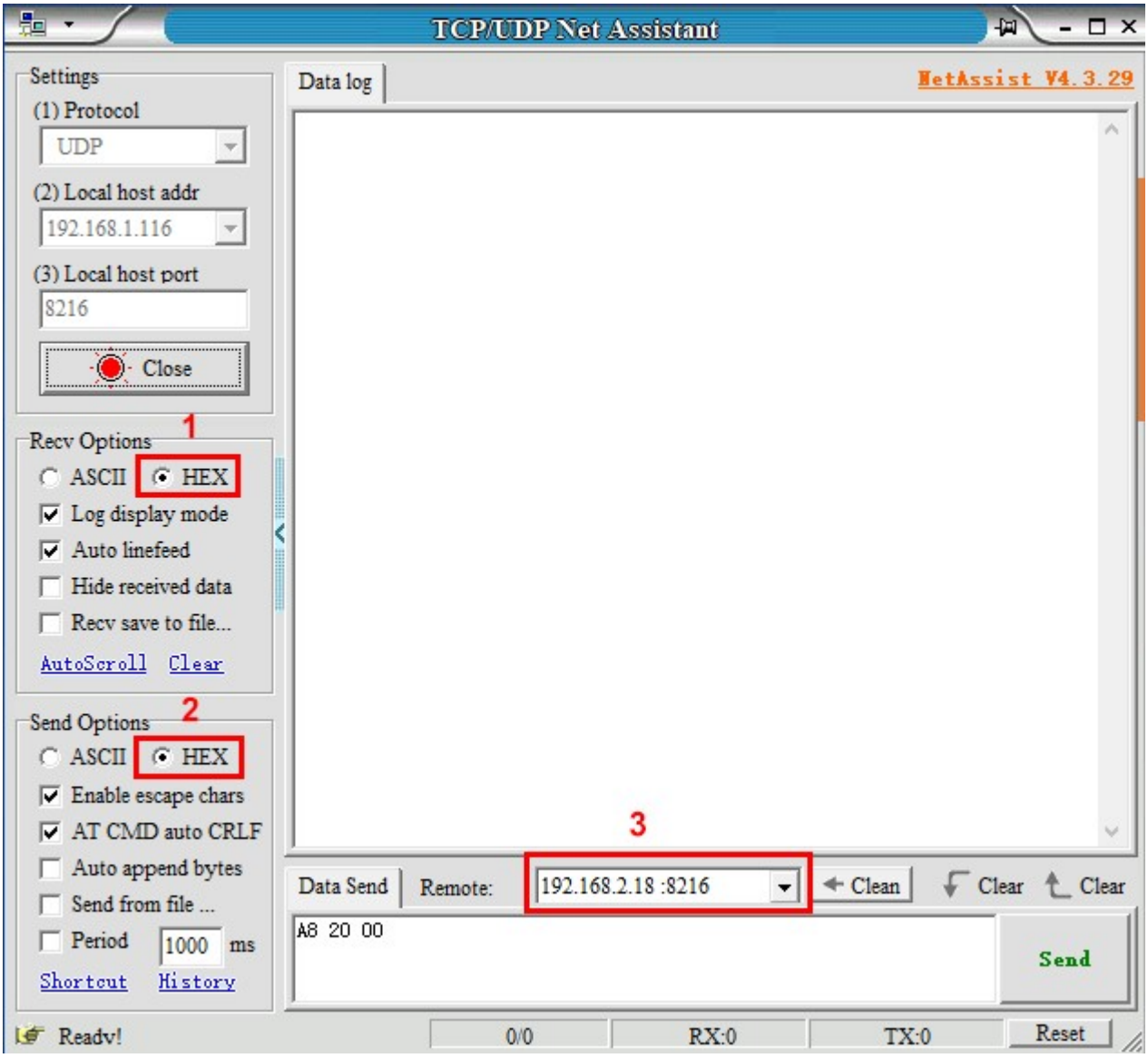
   PC sends: 0xA8, 0x30

   T807 replies:0xA8, 0x31,file

4. Refer to the setting as below:

   Red Box 1& 2: select HEX; Red Box 3: set the IP address and the port;

   send the hexadecimal “A8 20 00” to switch to “file 1”



Firmware Upgrade

Save the upgrade package in the SD card first, press & hold the "menu" key and then power on.

The controller will upgrade automatically, which restarts automatically after the upgrade, and the version no. will be updated.

Definition of Controller Interface

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

Specifications

Input Voltage	AC100-240V
Power Consumption	1.5W
Max. Control Pixels	8192 pixels
Weight	1.1KG
Work Temp.	-20°C -- 75°C
Product Dimension (mm)	L208 x W130 x H40