

# T-8000A-TTL CONTROLLER MANUAL



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The T-8000 is the boss of the T-Series offline Pixel LED Controllers. There are four main T-8000 series controllers, namely the T-8000, T-8000AC, T-8000C, and T-8000A-TTL. Keep in mind that the same model has different versions because every controller gets updated all the time. This controller is more expensive than the T-1000 series controllers, but it has some improved features. In this tutorial, we will look into the specifications, features, wiring methods, software setup, programming, and debugging of the T-8000 pixel LED controller.

## **T-8000A-TTL Pixel LED Controller Specifications**

- Supply Voltage: DC7.5-24V
- Working voltage: DC5V
- Working temperature: -30°C ~ +85°C
- Working power: 3W
- Product Size: L170mm×W91mm×H31mm
- Max. LEDs: 8192
- Memory card type: SD card
- Memory card capacity: 128MB-2GB
- Memory card format: FAT

T-8000A-TTL Pixel LED controllers can drive up to 8192 LEDs or pixels. It has eight ports for LED strings or strips. Each port can drive up to 1024-pixel LEDs. It has controller networking capability, as in the T-1000S Pixel LED controller. Supports both 3 wire Pixel LED strings or strips (VC, Data, and GND) and 4 wire LED strings or strips (VC, Data, Clock, and GND). Also supports RS485-based Pixel LED strips or strings.

## Frame Rate:

Frame rate is an important thing when it comes to Pixel LED programming. The higher the frame rate, the smoother the frame transition. A low frame rate means a rough transition, and you will start to see the frame-by-frame transition.

If you are using less than 512 LEDs or pixels per port, you can use 30 frames per second. If you are using more than 512 LEDs or pixels per port, the frame rate will automatically reduce.

## Software:

Software plays the most important part when it comes to Pixel LED programming. LedEdit is the most advanced and most developed Pixel LED programming software today. In order to program the T-8000A-TTL LED Pixel Controller, you need **LEDEdit 2014** or later software. Please download the latest LEDEdit software version from the below link.

When you are selecting the controller from the list, please follow this method.

**Controller Name in the list = Controller Name + Drive Chip Name**

If your controller's name is T-8000 and your drive chip name is WS2811, you should select T-8000-WS2811 from the list.

If you are using T-8000S or T-8000A controllers, please select T-8000 as your controller. They are not listed due to the fact that they are based on the T-8000 controller (different versions).

## Supported LED driver chips:

Chip type	Software code& Controller type	Lamps/(MAX)	Note
LPD6803, D705, 1101, 6909, 6912	T-8000-6803	8192	
LPD8806, LPD8809	T-8000-8806	8192	
TM1803, TM1804, TM1809, TM1812	T-8000-TM	8192	TM1804 and TM1809 are divided into high speed and low speed
TM1903, TM1904, TM1909, TM1912	T-8000-TM19	8192	
UCS6909, UCS6912, UCS7009, UCS5903	T-8000-UCS-32	8192	
UCS1903, UCS1909, UCS1912	T-8000-UCS-256	8192	divided into high speed and low speed

UCS3903	T-8000-UCS-1024	8192	
DMX512	T-8000-DMX	1360/4096	Compatible with standard DMX512
WS2801, WS2803	T-8000-WS	8192	
WS2811	T-8000-WS2811	8192	divided into high speed and low speed
DS189	T-8000-DS189	8192	
TLS3001, TLS3002, TLS3008	T-8000-TLS	8192	
P9813	T-8000-P9813	8192	
SM16715	T-8000-SM16715	8192	divided into high speed and low speed
SM16716	T-8000-SM16716 8192	8192	
BS0901, BS0902	T-8000-0901 T-	8192	
BS0815	8000-BS0815	8192	

## Pin-Out T-8000 Controller:

Please refer to the above picture for pin output definitions.

- **DC 5V:** DC Power connector input (5VDC)
- **DC 7.5–24 V:** DC Power Connector Input (7.5–24 V)

## Port Pins ( Communication )

- **CLK:** Clock Out (for 4 wire strings)
- **DAT:** Data Out (for 3 wire and 4 wire strings)
- **GND:** Data Ground (Common)

## Network Mode (Synchronized)

- **IN A:** A input line from the previous controller.
- **IN B:** B Input line from the previous controller.
- **Output:** A Output for the Next Controller.
- **OUT B:** B Output for Next Controller.
- **NC:** Not Connected

## Button Functions

Button functions are the same as for the T-1000S Pixel LED controller. Here are the button functions.

Button	Function	
SET	To save current settings .	
MODE	Change the program ( Shift through programs )	
SPEED +	Speed Up of the current playback	Pressing both at same time will cause the Programs to be played one after another
SPEED -	Speed Down of the current playback	

If you want one program to be played, press and release the mode button quickly to skip to the next program. Keep tapping on the mode button until you get the program you want to play, and then press the "SET" button to save those settings.

If you need to change the speed of the playback, use the "SPEED+" button to increase the speed of the playback, and use "SPEED-" to reduce the speed of the playback. Once you reach the speed that you want, press the "SET" button to save the settings.

If you want the program to play one file after another, press both the "SPEED+" and "SPEED-" buttons together and release them. Then press the "SET" button to save the settings.

Make sure you press the "SET" button after every setting change. If not, upon the next powerup of the controller, you won't get the playback as you wanted.

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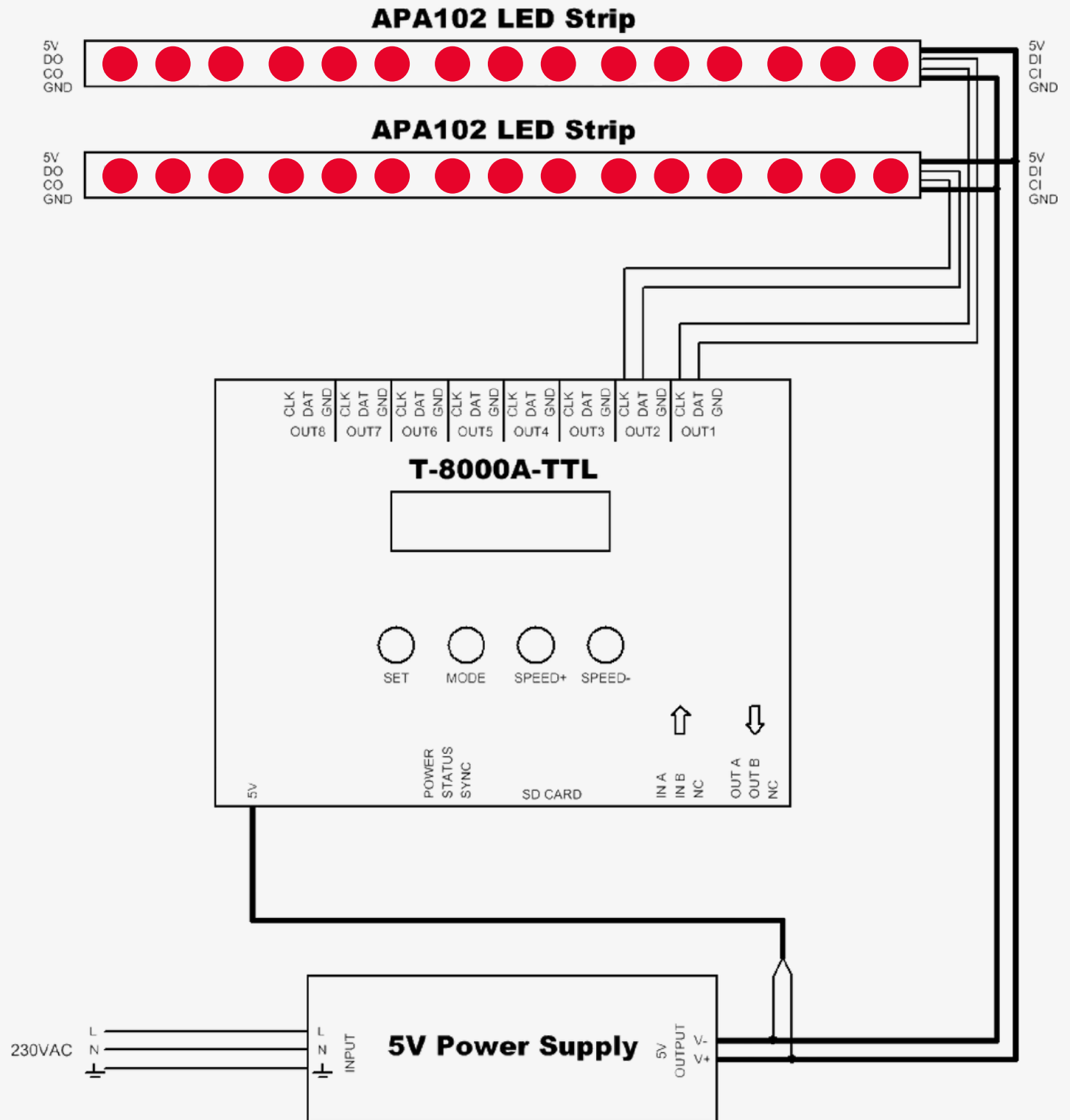
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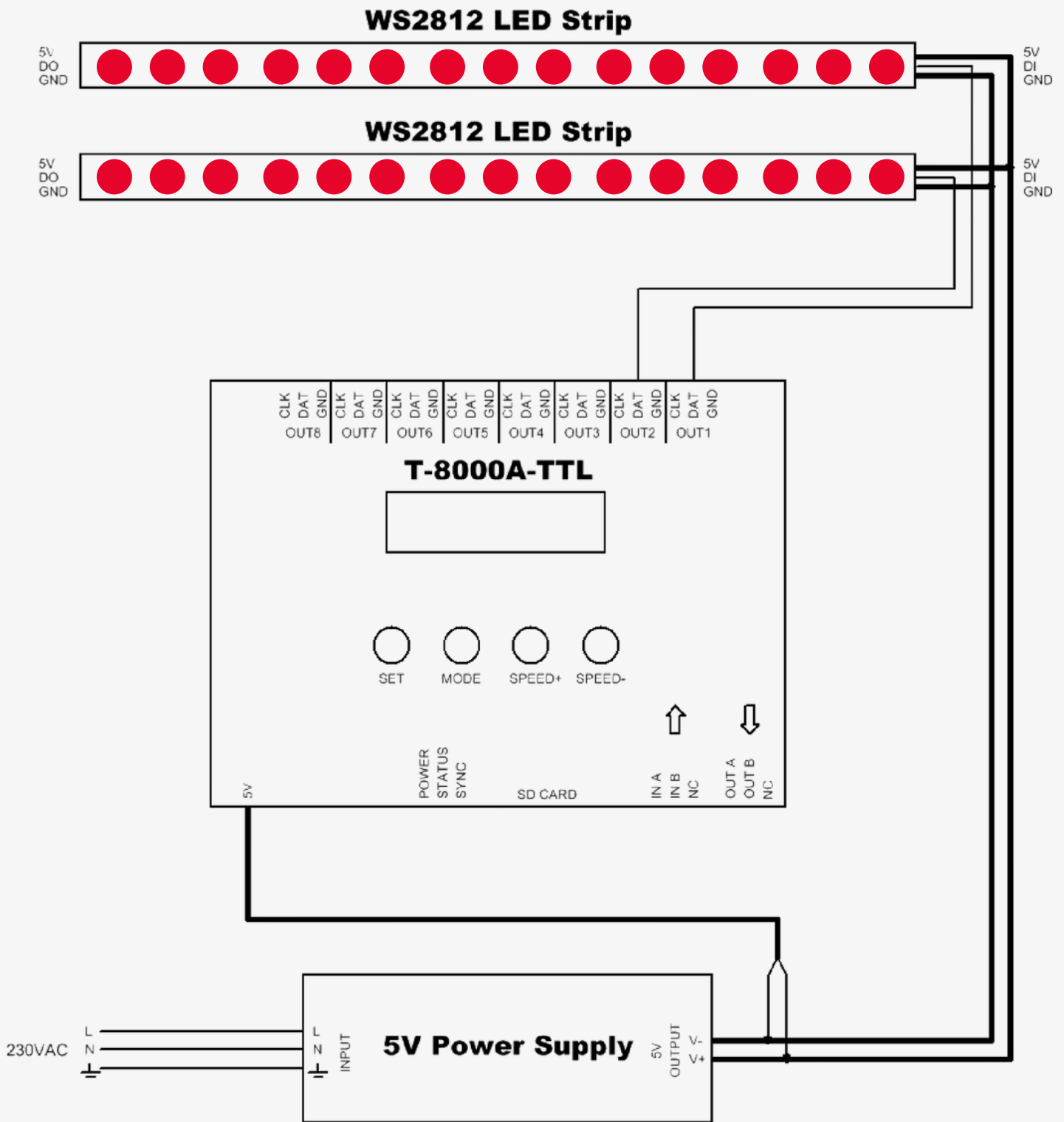


## Wiring diagram:

### With APA102 LED Strip:



With WS2812 LED Strip:

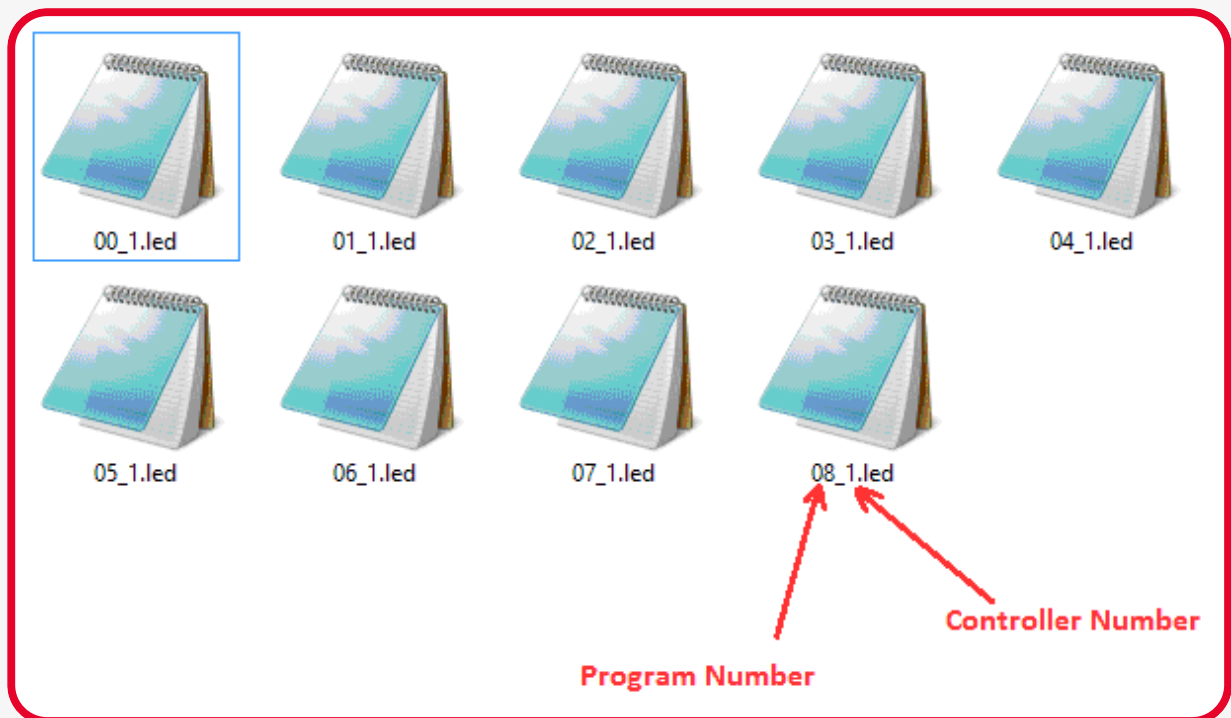


## Program File placement:

The program file placement inside the SD card depends on the controller usage.

### Single Controller:

Single T-8000A-TTL controller file placement



If you are using a single controller or multiple controllers without networking them (in this case, every controller has an individual SD card), the file placement for each controller SD card would be like this: the first two digits stand for program number (00 to 16). Since we use a single SD card for each controller, the last digit is always "1".

## Multiple Controllers Networked:



If you are using multiple controllers networked together, you only need a single SD card inserted into the first controller in the network. You can place each controller's programs inside that SD card.

The above picture shows how to place those program files. The first two digits stand for program number (00 to 16). The digits after the "\_" character are the controller number, starting from "1".

**Eg:**

- Controller 1 program files - 00\_1.led ,01\_1.led,02\_1.led,03\_1.led,04\_1.led
- Controller 2 program files - 00\_2.led ,01\_2.led,02\_2.led,03\_2.led,04\_2.led
- Controller 3 program files - 00\_3.led ,01\_3.led,02\_3.led,03\_3.led,04\_3.led
- Controller 4 program files - 00\_4.led ,01\_4.led,02\_4.led,03\_4.led,04\_4.led

## Troubleshooting T-8000A-TTL LED Pixel Controller

### Question 1:

Controllers after electrifying, the indicator light is normal, but the lamps have no effect.

### Answer:

The reasons for this are the following:

1. Please check that the lamp signal and controller have the correct connection.
2. If it is a TTL signal, lamps, lanterns, and controllers must be together, namely the lamps GND (ground) to the GND and controller (ground) got together.
3. Please check the effect file of the SD card, the selected models, and whether current lamps and used the chip consistently.

### Question 2:

After power, the T-8000S error indicator has been flashing without display output.

### Answer:

The error indicator has been flashing, which means the controller did not read the card correctly. Possible problems:

1. SD card is empty, with no effect file.
2. The effect file on the SD card and the controller model do not match; please choose correct controller model in LedEdit, and then re-create the effect file \*.led.
3. SD cards were not formatted to FAT before copying effect files.
4. Please check the supply power voltage; the controller can be individually powered to exclude power reasons.
5. Change the SD card and then test to exclude the possibility of a bad SD card.

### Question 3:

The controller is powered on, the indicator is normal, but the lamps have no effect change.

### Answer:

The reasons for this are as follows:

1. Checking if the lamp's signal line and the controller connected correctly.
2. If the TTL signal is received, the lamp and the controller must have common grounding, which means connecting the lighting and the controller's ground wires together.
3. Check if the model chosen when making display files on the SD card matches the chips used in the lighting.

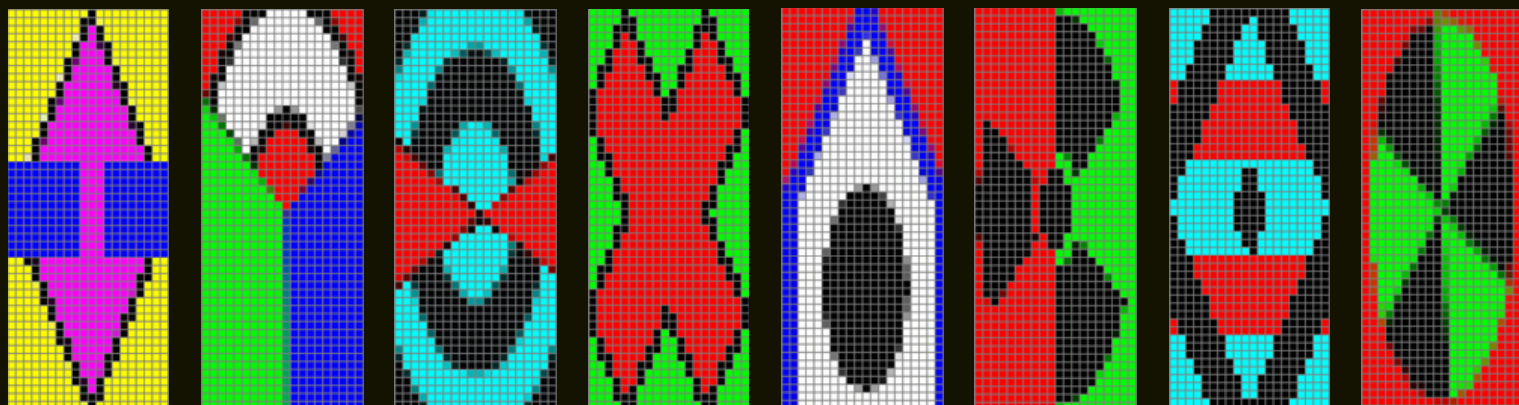
## T-8000A TTL LED Controller SD Card 8192 Pixels for LED Strip Lights

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- **WORKING POWER:** 3 W
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- **MEMORY CARD CAPACITY:** 128 MB TO 2 GB
- **MEMORY CARD FORMAT:** FAT

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