

## 1 System Features

1. Support music control, the lighting effect can follow the music rhythm.
2. Support voice-activated and non-voice-activated switching.
3. Support voice-activated sensitivity control.
4. After the music ends, the gap time is darkened.
5. 32-level-65536-level grayscale control, software Gamma correction processing.
6. Support various point, line and area light sources, support various rules and special-shaped processing.
7. The controller has single-port output, with a maximum of 2048 pixels.
8. Offline control, the playback content is stored in the SD card.
9. M-1000 can store up to 16 files, just copy multiple files to SD card in turn.
10. The effects stored in the SD card should be named as: XX\_00.BIN, XX\_01.BIN, XX\_02.BIN.

11. Compatible with single- and double-wire ICs. When connecting lamps with single-wire ICs, there is no need to connect the CLK clock line.

Note: 1. When the M-1000 port is loaded with 512 lights, the playback speed can reach 30 frames/second. When the port is loaded with more than 512 lights, the frame rate will automatically decrease with the increase of the number of lights.

## 2 support chips

Support IC	LedStudio Software corresponding model	MAX Pixel	Remark
UCS1903	UCS1903,UCS1903B,UCS1909,UCS1912	2048 pixel	
UCS1903B	UCS1903,UCS1903B,UCS1909,UCS1912	2048 pixel	
UCS1909	UCS1903,UCS1903B,UCS1909,UCS1912	2048 pixel	
UCS1912	UCS1903,UCS1903B,UCS1909,UCS1912	2048 pixel	
UCS2903,	UCS2903, UCS2909, UCS2912	2048 pixel	
UCS2909	UCS2903, UCS2909, UCS2912	2048 pixel	
UCS2912	UCS2903, UCS2909, UCS2912	2048 pixel	
WS2811	WS2811	2048 pixel	
INK1003	INK1003	2048 pixel	
LDP6803	LDP6803	2048 pixel	
WS2818	WS2818	2048 pixel	

SM16703P	SM16703P	2048 pixel	
P9883	P9883	2048 pixel	
LX3203	LX3203	2048 pixel	
LX1603	LX1603	2048 pixel	
GS8205,GS8206	GS8205,GS8206	2048 pixel	
GS8206	GS8205,GS8206	2048 pixel	
QED6011	QED6011/QED3110	512 pixel	
QED3110	QED6011/QED3110	512 pixel	
TM1914A	TM1914A	2048 pixel	
UCS512B3	UCS512B3	1365 pixel	

### 3 meaning

#### 3.1 button:

Key	Meaning	Supplementary Instructions	
SPEED+	speed up	Speed up effect playback (up to 30fps)	Press SPEED+ and SPEED- at the same time to enter the file loop playback mode
SPEED-	slow down	Reduced effect playback speed (minimum 4fps)	
MOD	effect toggle	Switch effect files, if there are multiple files in the SD card, the MOD key can switch files in sequence	Press MOD and SET at the same time to enter the DMX512 automatic address writing. After writing the address, the effect in the SD card will be automatically loaded.
SET	save	After modifying the speed and effect files, press the SET key to save the speed and files after power off. After the next power-on, the current file can continue to be played at	

		the current speed.	
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### 3.2 Signal :

	Button	Meaning			
indicator light	POWER	Power indicator light, always on when the power supply is normal	SD card slot	SD CARD	SD card slot
	ERROR	Error light, flashes when there is no SD card or card reading error			
Voice control module	MIC SWITCH	Voice switch. When the switch is turned to +, the controller works in voice control mode; when the switch is turned to -, the controller works in normal (non-voice control mode)	Data output port	CLK	clock line
	MIC REG	Voice-activated recording can be adjusted per degree. + direction rotation, the sensitivity increases; - direction rotation, the sensitivity decreases. In field application, the appropriate sensitivity can be adjusted according to the surrounding noise and music volume		DAT	data line
	MIC	Voice-activated microphone port, voice-activated voice input port		GND	ground wire
5V power input port	DC(5V)	5V power input			

**Note:** For TTL signal output, the controller must share the ground with the lamp (that is, connect the ground wire GND output of the controller and the ground wire GND of the lamp together).

## 4 Wiring

**Note:**

1. M-1000 is a single-port output, with a maximum of 2048 pixels;

2. When controlling a single-wire IC, just connect the DAT and GND of the controller to the DAT and GND of the lamp correspondingly. When controlling a two-wire IC, the DAT, CLK of the controller should be , GND and DAT, CLK and GND of the lamp can be connected correspondingly.
3. When creating a new project in the effect editing software, select the control model as: M-1000 model. When exporting the effect file .bin, select the corresponding IC model according to the lamp (for example: UCS1903 lamp, please select the UCS1903 chip).

## **5. Voice control mode**

MIC SWITCH is a switch for voice control and normal mode, as shown in the figure below

### **5.1 Normal Mode**

With the toggle switch to the MIC SWITCH – Orientation position, the controller handles normal mode. In this mode, the lighting effect is played at the speed set by the keyboard's SPEED+ and SPEED-. The voice control function does not work.

### **5.2 Voice control mode**

When switched to voice-activated mode, the lighting effect changes with the rhythm of the sound.

When the toggle switch is switched to the MIC SWITCH + direction position, the controller handles the voice control mode. In this mode, the lighting effect changes with the rhythm of the sound. SPEED+, SPEED- buttons do not work. The user needs to adjust the voice control sensitivity according to the site conditions. The sensitivity is adjusted to MIC\_REG, MIC\_REG + direction adjustment, the sensitivity increases, MIC\_REG- direction adjustment, the sensitivity decreases. The sensitivity adjustment port is shown in the figure below.

The effective distance between the sound source and the controller is proportional to the volume of the sound source, and the effective distance is from 0 to tens of meters (related to the volume and sensitivity of the sound source). If the sound source is small and the distance between the sound source and the controller is far, it is necessary to appropriately increase the sensitivity, and the effective adjustment of the sensitivity is 1-10 times.

The controller is mainly sensitive to bass and is especially suitable for use in environments with subwoofers. If the bass effect is not obvious, you need to choose a Led audio controller.

## 6 SD card files

File naming rules:

Single Controller Effect Naming Rules

"XX\_00.BIN" ----- 1st effect

"XX\_01.BIN" ----- 2nd effect

"XX\_02.BIN" ----- 3rd effect

"XX\_03.BIN" ----- 4th effect

Precautions:

Before copying files to the SD card, the SD card must be formatted first. Note that the format must be formatted before each copy.

The SD card must be formatted in "FAT" format. As shown below.

Note: The SD card on the controller cannot be hot-swapped, that is, each time the SD card is inserted or removed, the power of the controller must be disconnected.

## 7 specific parameters 7.1 Product Specifications

Function description		Specifications
Controller technical parameters	Input voltage (V)	5V
	Support IC mode	single wire, double wire
	Number of output terminals	1
	Number of output terminal lines	3 lines (ground line GND, data line DAT, clock line CLK)
	Frame rate range	normal mode 4fps~30fps, voice control mode 0fps~60fps
	Fault protection function	Provide output terminal short-time short-circuit protection function
	The operating ambient temperature	-30~85°C. If it exceeds the temperature range, please take heating and cooling measures
	Cooling method	Self-cooling
	Protection class	IP20
	Power consumption	1W
	Weight	0.25Kg with outer packaging

## 7.2 Packing list

Accessories List		Quantity
Accessories List 1	SD card	1 SD card (128MB—2GB, FAT format, storage file: *.BIN)
	power adapter	1
	3pin terminal block	1
	Smallscrewdriver	1
	carton	1

## 8 FAQ

Problem		Solution
FAQ	1. After power on, it is found that the error indicator ERROR keeps flashing, and the lamp has no effect output	<p>The error indicator ERROR keeps flashing to prove that the controller does not read the card correctly. The possible problems are:</p> <p>① The SD card is empty, and there is no effect file.</p> <p>②The effect file *.BIN file in the SD card does not match the controller model and lamp IC, please select the correct model M-1000 of the controller in the latest version of LedStudio; at the same time, when exporting the *.BIN file, select the correct lamp IC model , and recreate the effect file *.BIN.</p> <p>③ SD card is not formatted to FAT format before copying effect files.</p> <p>④Please check the power supply voltage of the controller, you can supply power to the controller alone to rule out the reason for the power supply.</p> <p>④Re-test after changing the SD card to rule out the possibility of the SD card being damaged.</p> <p>⑥If the file name may be wrong, change it to XX_00.BIN.</p>

	<p>2. After the controller is powered on, the indicator light is normal, but the lamp has no effect.</p>	<p>①Please check whether the signal line of the lamp and the controller are properly connected.  ②The lamp and the controller must be grounded together, that is, the ground wire of the lamp and the controller ground wire must be connected together.  ③Please check whether the model selected when making the effect file *.BIN in the SD card is consistent with the chip used by the current lamp.</p>
	<p>3. After the controller is connected to the lamp, the lamp strobos and the effect changes, and the indicator light of the controller shows normal.</p>	<p>①The ground wire between the controller and the lamp is not connected.  ②The effect made in the SD card is wrong, and the lamp chip selected when doing the effect does not match the actual lamp chip.  ③ The power supply voltage of the lamps is insufficient.</p>
	<p>4. The SD card cannot be formatted.</p>	<p>①First, confirm whether the protection switch on the side of the SD card has been unlocked. The direction of unlocking is the end of the SD card gold pin.  ②The SD card write protection lock has been opened, but it still cannot be formatted. If this happens, the SD card reader is mostly broken, please replace the SD card reader.  ③If the above operations cannot solve the formatting problem, please replace the SD card and test again.</p>
	<p>5. The voice control does not work, and the lamps do not light up.</p>	<p>①First confirm whether the voice switch is turned on and the controller is in voice mode (+ position).  ②Adjust the sensitivity, the sensitivity may be too small. .</p>
	<p>6. The voice control does not work, the lighting pattern is normal, but it does not</p>	<p>①In the normal mode (disable voice control, the voice control switch is in the - position), the controller can work normally, and the lighting effect is normal.  ②First confirm whether the voice control</p>

	follow the sound rhythm.	switch has been turned on and whether the controller is in the voice control mode (+ position). ②Adjust the sensitivity, the sensitivity may be too large.
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