



# SW-301U MANUAL

Model: D2  
Addressing Chip: UCS512C0

2017-6



# Contents

01. INTRODUCTION .....	1
02. TECHNICAL PARAMETERS.....	1
03. ERROR CODE .....	1
04. CONNECTION MODE .....	2
05. BASIC OPERATION .....	3
05.1 SPEED SELECTION.....	3
05.2 MODE SELECTION .....	3
06. ADDRESS SETTING .....	4
07. UNSUCCESSFUL ADDRESSING .....	5
08. ADDRESSING .....	5
08.1 ADDRESSING SETTING.....	5
08.2 ADDRESSING SENT-OUT.....	7
09. ADDRESS EXAMINATION .....	8
10. SD CARD COPY.....	9

## 01. INTRODUCTION

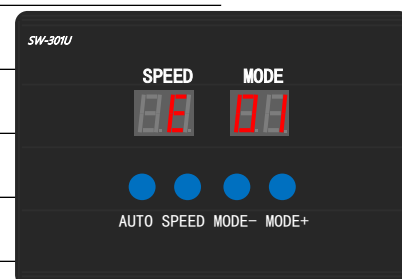
1. It can controller and address some DMX512 lighting fixtures. This manual only introduces UCS512C0 chip ([Addressing Options U05](#)). If need to address the other DMX512 chips, please refer to manual of corresponding chips.
2. Lighting fixtures with DMX chip can be addressed easily. All lighting fixtures just need to be addressed once. Channels of lighting fixtures with DMX chip can be set according to actual need. Address of the first lighting fixtures can be set by user. Address of first lamp can be set by user, but the value cannot exceed 4095.
3. Accompany with professional effect production software. User can make any effects for merging and put into SD card.
4. Select effect automatically or manually; can adjust speed and select AC sync.

## 02. TECHNICAL PARAMETERS

Size:	192L×122W×45H (mm)																
Input voltage:	AC 100V - 240V																
Output signal:	RS-485×5 ports (data of 5 channels are the same.)																
Pixel quantity drove:	standard DMX512: 168 points /each channels, extensible DMX512: 336 points /each channels,																
Output power:	<3W																
Working temperature:	-15℃~60℃																
Relative humidity:	≤50% RH																
Ingress protection:	IP0 (non dustproof, non waterproof)																
Working environment:	Please install under dry indoor condition, avoid any dust, moist and rain.																
Weight:	710g (N.W. 600g)																
Fittings:	 * 1pc,  * 10pcs (5pcs of 4P terminal blocks)																
Type of chip:	<table border="1"> <tr><td>U01</td><td>UCS512A/UCS512B/SW-U series</td></tr> <tr><td>U02</td><td>DMX512AP/SM512</td></tr> <tr><td>U03</td><td>SW-D series (3 Channels / 4 Channels)</td></tr> <tr><td>U05</td><td>UCS512C0</td></tr> <tr><td>U06</td><td>3 Channels (SM16511/SM16512/SM16520)</td></tr> <tr><td>U07</td><td>4 Channels (SM16511/SM16512/SM16520)</td></tr> <tr><td>U08</td><td>3 Channels (UCS512C4)</td></tr> <tr><td>U09</td><td>4 Channels (UCS512C4)</td></tr> </table>	U01	UCS512A/UCS512B/SW-U series	U02	DMX512AP/SM512	U03	SW-D series (3 Channels / 4 Channels)	U05	UCS512C0	U06	3 Channels (SM16511/SM16512/SM16520)	U07	4 Channels (SM16511/SM16512/SM16520)	U08	3 Channels (UCS512C4)	U09	4 Channels (UCS512C4)
U01	UCS512A/UCS512B/SW-U series																
U02	DMX512AP/SM512																
U03	SW-D series (3 Channels / 4 Channels)																
U05	UCS512C0																
U06	3 Channels (SM16511/SM16512/SM16520)																
U07	4 Channels (SM16511/SM16512/SM16520)																
U08	3 Channels (UCS512C4)																
U09	4 Channels (UCS512C4)																

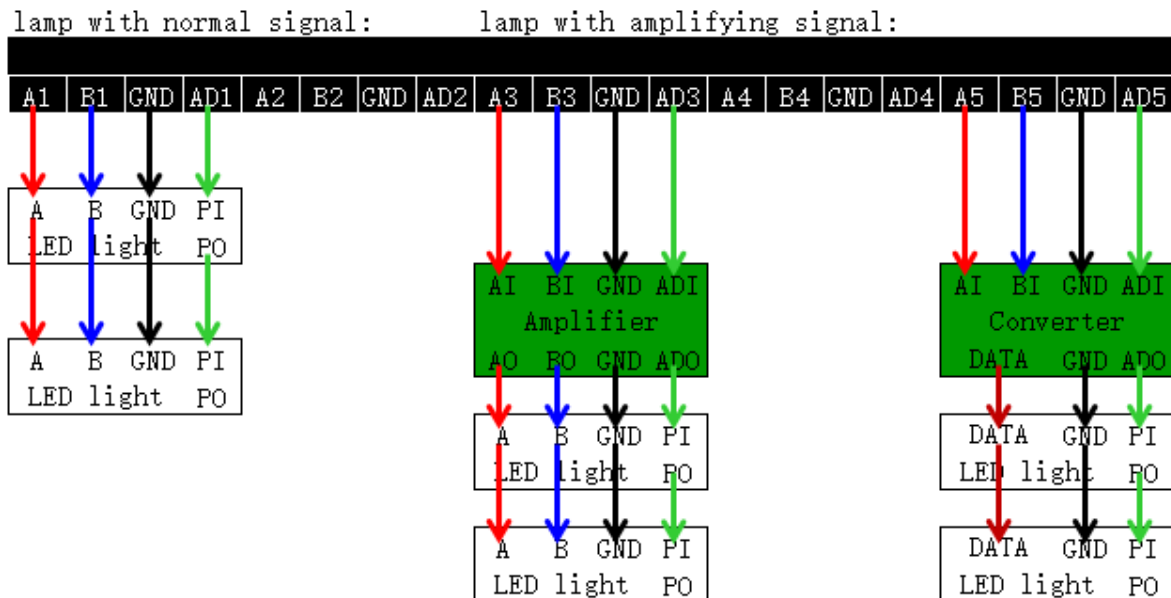
## 03. ERROR CODE

Er	Introduction	Reason
01	No SD card	Poor seat connection. / No SD card.
02	SD card no response	Card is broken. / Card cannot be read sequentially.
03	Cannot reset SD card	Card is broken. / Card cannot be read sequentially.
04	Cannot activate SD card	Card is broken. / Card cannot be read sequentially.
05	Cannot read SD card	Cannot read part of the card. / Bad connection.
06	Cannot find feature code	Card is unformatted. / No files.
07	SD card file sequence doesn't match the controller	SD card file error. / Unfinished video synthesis.
09	Control sequence doesn't match file sequence	Player setting does not match the cover number.



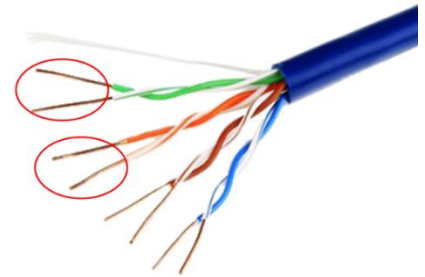
## 04. CONNECTION MODE

The circuit should be adjusted in different applications. It is well set in accordance with actual project before delivery. User cannot change the application optionally. Please connect the cables in accordance with silk print on lighting fixtures.



### ★ Signal cables connection notes:

1. Use UTP—Unshielded Twisted Pair(resistance per 100M<10Ω), low quality Ethernet cables and telephone cable are unavailable.
2. Use one group twisted pair, suggest **green + green white** or **orange + orange white**. The quality and color of the cable are very important. Blue and brown wires greatly influence the signal transmission. Please don't use several groups of twisted pairs together.
3. Controller signal output GND must connect directly with input GND of lamp. **Cannot connect with lamp through power switch.**
4. Switch on the controller after all hardware signal cables and wires are connected. Please *don't CONNECT / DISCONNECT* the signal cables while the controller is power on; avoid bad output by reverse current and protect the circuit and components.



### ★ Transmission distance:

transmission type	Transmission Signals	transmission media	transmission distance (m)	Notes
Master control-> slave control	RS-485	UTP-Unshielded Twisted pair	50 ~ 100	
		three core wire	1 ~ 5	
Master control/slave control->Light fixture	RS-485	UTP-Unshielded Twisted pair	30 ~ 50	
		three core wire	5 ~ 30	
Light fixture-> Light fixture	RS-485	UTP-Unshielded Twisted pair	5 ~ 20	meters controlled less if over 5 meter
		three core wire	1 ~ 5	
Other Light-> Other Light	Addressing wire	UTP-Unshielded Twisted pair	1 ~ 5	<b>It must be in 5 meters when addressing.</b>
		three core wire	1 ~ 2	

## 05. BASIC OPERATION

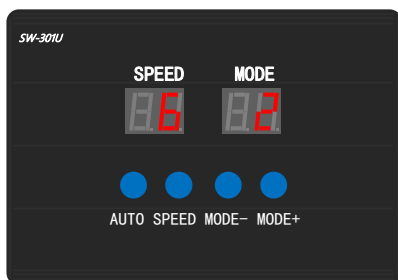
### 05.1 SPEED SELECTION

Press “Speed” button on controller panel to adjust playing speed. The larger the value is, the slower the speed will be.

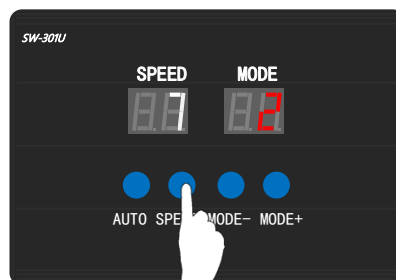
	Speed value												Remark
Main controller speed	1	2	3	4	5	6	7	8	9	10	11	12	Independent speed
	26						28		30		32		Synchronous speed

※ Independent speed: Decided by the meters of user’s hurdle light; the data won’t display if it’s less than actual speed.

※ Synchronous speed: Turn on the power of controllers together. The controllers can achieve synchronization only if their speeds(over 26) and modes are set to be the same.



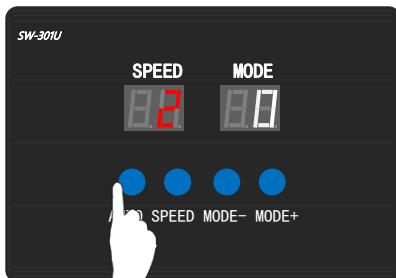
Speed = 6



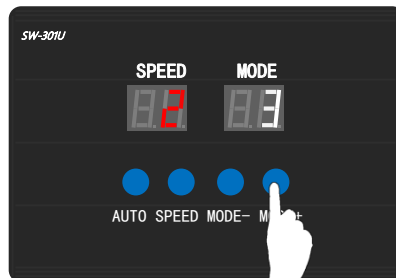
Press “Speed” once, Speed = 7.

### 05.2 MODE SELECTION

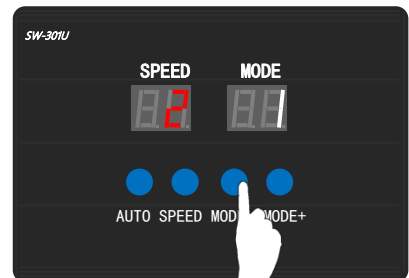
Press “Mode+” and “Mode-” buttons to select pattern mode.



Press “AUTO” once, Mode = 0  
(Auto mode).



Press “Mode+” 3 times, Mode = 3.



Press “Mode-” once, Mode = 1.

## 06. ADDRESS SETTING

※ "A\* \*\*#" means entering "auto addressing" mode, e.g. #1, #2, #3 ..... #999.

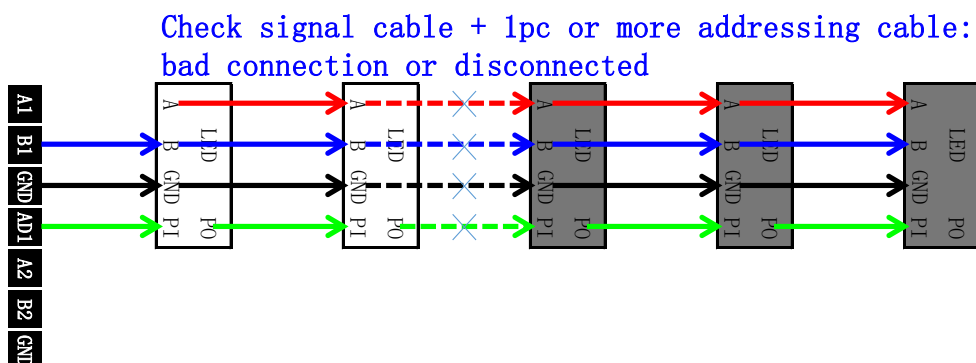
"A0 00" means entering "fixed addressing" mode, e.g. #6, #6, #6 ..... #6.

Number of channels in single chip: number of lighting fixture pixel ÷ number of DMX chips × Number of Channels.

The first address of N<sup>th</sup> lighting fixture is X\*(N-1) where X is the number of channels in each lighting fixture.

Color of LED	Number of Channels	Number of Lighting fixture Pixels	Number of DMX chips in each lighting fixture	Number of channels in single chip	First Add. Of Each Chip					Type of control signal	Color display when addressing successfully
					Chip 1	Chip 2	Chip 3	Chip 4	Chip 5		
UCS512C0	1	1	1	1	0	1	2	3	4	485 differential signal	White
		8	1	8	0	8	16	24	32		
			8	1	0	8	16	24	32		
		12	1	12	0	12	24	36	48		
			12	1	0	12	24	36	48		
		16	1	16	0	16	32	48	64		
			16	1	0	16	32	48	64		
	2	1	1	2	0	2	4	6	8		
		8	1	16	0	16	32	48	64		
			8	2	0	16	32	48	64		
		12	1	24	0	24	48	72	96		
			12	2	0	24	48	72	96		
		16	1	32	0	32	64	96	128		
			16	2	0	32	64	96	128		
	3	1	1	3	0	3	6	9	12		
		8	1	24	0	24	48	72	96		
			8	3	0	24	48	72	96		
		12	1	36	0	36	72	108	144		
			12	3	0	36	72	108	144		
		16	1	48	0	48	96	144	192		
			16	3	0	48	96	144	192		
	4	1	1	4	0	4	8	12	16		
		8	1	32	0	32	64	96	128		
			8	4	0	32	64	96	128		
		12	1	48	0	48	96	144	192		
			12	4	0	48	96	144	192		
		16	1	64	0	64	128	192	256		
			16	4	0	64	128	192	256		

## 07. UNSUCCESSFUL ADDRESSING



## 08. ADDRESSING

For addressing operations please refer to following example. (The whole process should be conducted with plugging card. Please switch off the controller first if need to remove the card.)

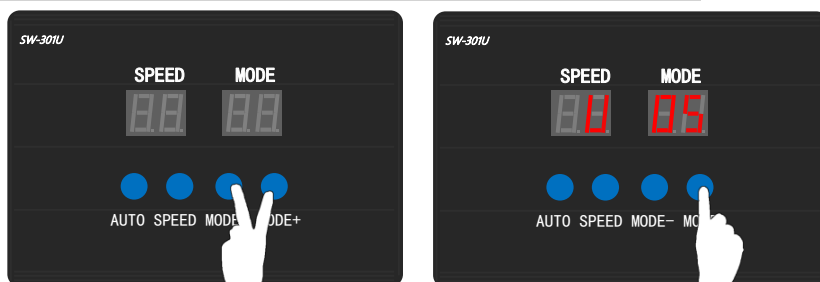
### 08.1 ADDRESSING SETTING

- ① Press “MODE-” and “MODE+” together, press power switch and don’t release the button until it shows “U 0\*”.

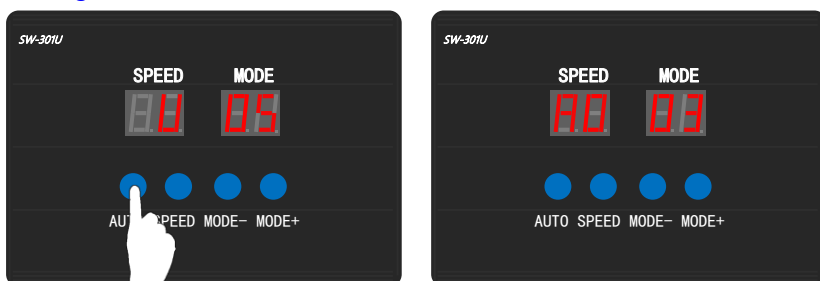
“U 0\*” means to select type of chip which need to be addressed.

The UCS512C0 lighting fixture is “U05”.

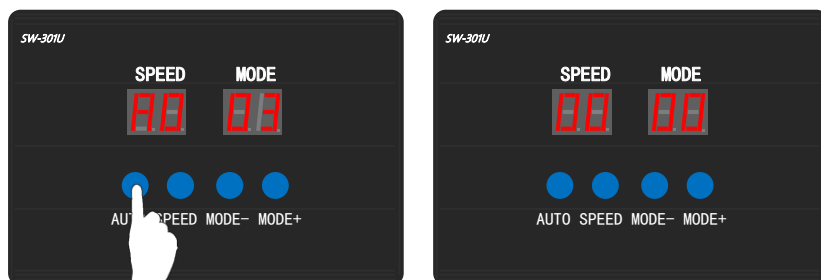
☺ For switching type of chip, please press “MODE+” to operate.



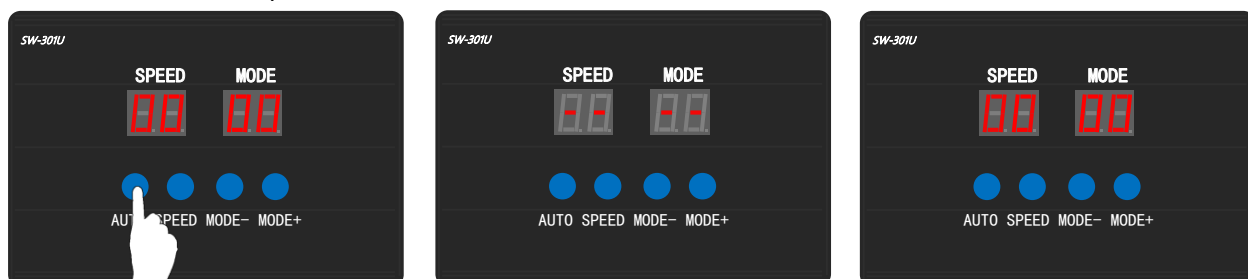
- ② Long press “AUTO” and don’t release the button until it shows “A 0 0 3”. It’s the status of entering address increment. (It will memorize previous address increment data.) “A\* \*\*” means need to enter the number of channels in single chip. If the address increment of lighting fixture is different, please refer to Step 6 in this chapter for setting it.



- ③ Long press “AUTO” and don’t release the button until it shows “0 0 0 0”. It’s the status of entering address. (It will memorize previous address setting data.) “0000” means entering “Automatic” addressing mode. If the address of the lighting fixture is different, please refer to Step 7 in this chapter for setting address value.



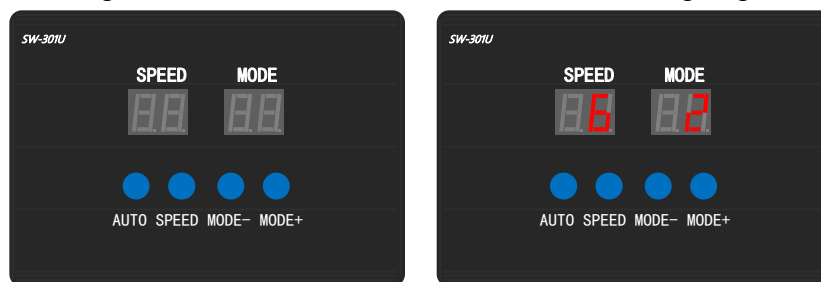
- ④ If the address is confirmed, please long press “AUTO” and don’t release the button until the screen shows “- - - -”. Then the data is sent out by controller.



When DMX lighting fixture is addressed successfully, the lighting fixture will be the particular light. When the other color occurs, that means this lighting fixture is addressed unsuccessfully. The buttons are useless for sending the address. After addressing is finished, controller will send the effect (first light is yellow, the others will be green) to the lighting fixture. Please note this effect does not mean it is addressed successfully.

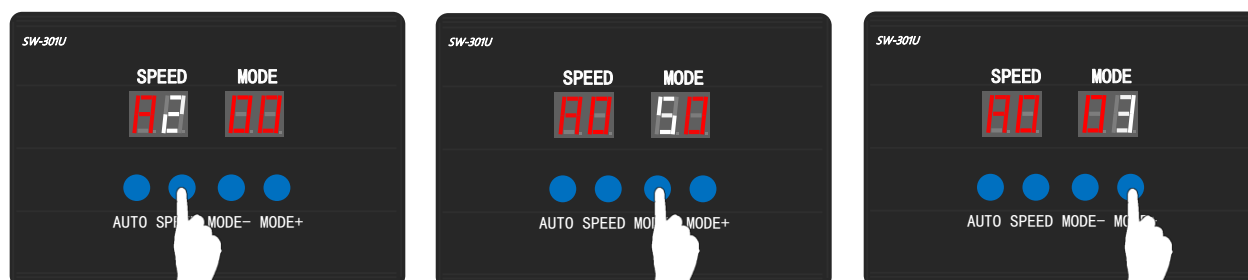
- ✂ At this time (controller can be power on), directly connect to DMX lighting fixture with the same specification and chip which need to be addressed. Then repeat Step 4 for addressing.  
If the address is found to be wrong after sending out the data, please repeat Step 7 and Step 4 to re-address the lighting fixture.  
If fail to set the address, please check connection of the lighting fixture again. Please repeat Step 4 to send the data one more time.

- ⑤ It has memory function that only needs to set the address once. When the controller and lighting fixture are power on again, controller enters normal control mode and the lighting fixture plays effect properly.



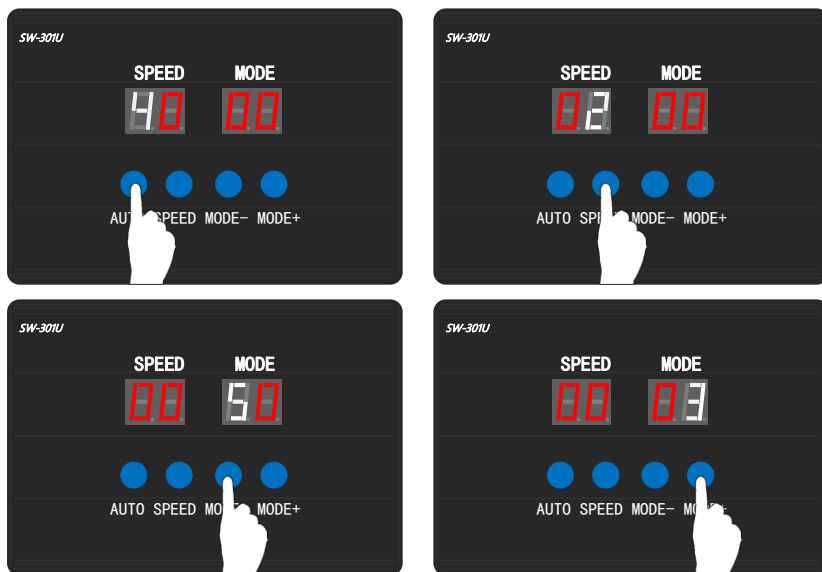
- ⑥ Address Increment modification. Press “SPEED” to increase the 2<sup>nd</sup> value.  
Press “MODE-” to increase the 3<sup>rd</sup> value. Press “MODE+” to increase the 4<sup>th</sup> value.

★ Num of channels in single chip can be found in green column of reference table.



- ⑦ Address modification. Press “AUTO” to increase the 1<sup>st</sup> value. Press “SPEED” to increase the 2<sup>nd</sup> value. Press “MODE-” to increase the 3<sup>rd</sup> value. Press “MODE+” to increase the 4<sup>th</sup> value.

★ The first address of Nth lighting fixture is  $X(N-1)$  where X is the number of channels in each lighting fixture.



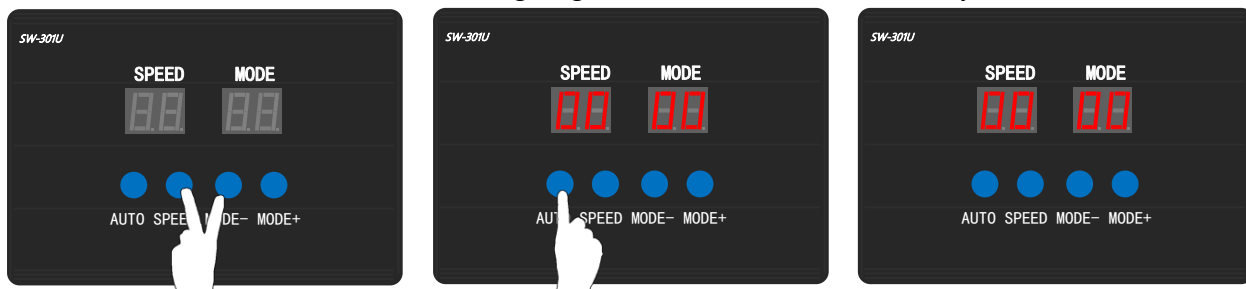
★ After modifying the address, please repeat Step 4 to send the data one more time.

## 08.2 ADDRESSING SENT-OUT

The controller can send out the address data to lighting fixture direct when it power-on.

The addressing chip setup must be the same with the lighting fixture.

- ① Press “SPEED” and “MODE-” together, press power switch and don’t release the button until it shows “\*\*”. “\*\* \*\*” is the address data last time setup.
- ② Long press “AUTO” and don’t release the button until the screen shows “- - -”. Then the data is sent out by controller. **When DMX lighting fixture is addressed successfully, the lighting fixture will be the particular light. When the other color occurs, that means this lighting fixture is addressed unsuccessfully.**



✘ If the address of the lighting fixture is be changed, please refer to 08.1 ADDRESSING SETTING for setting address value.

## 09. ADDRESS EXAMINATION

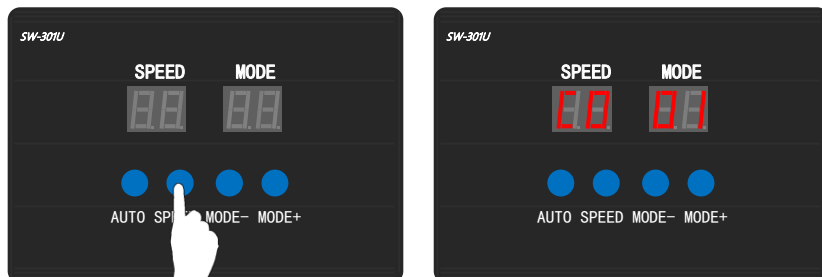
After addressing is finished, please follow the operations below to examine address of lighting fixture.

1. Long press "SPEED" to power on, don't release the button until it shows "C0 01". "C0 01" means to turn on the first chip.

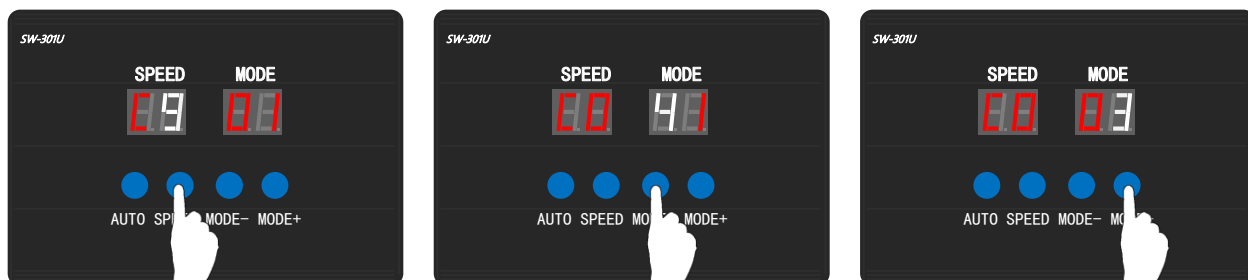
Controller will automatically calculate which lighting fixture (what distance) needs to be turned on according to chip type and increment set in the last addressing.

If chip type/increment set in the controller are different from actual lighting fixture, the examination will be not accurate.

If chip type/increment need to be modified, please set according to "08.1 ADDRESSING SETTING".



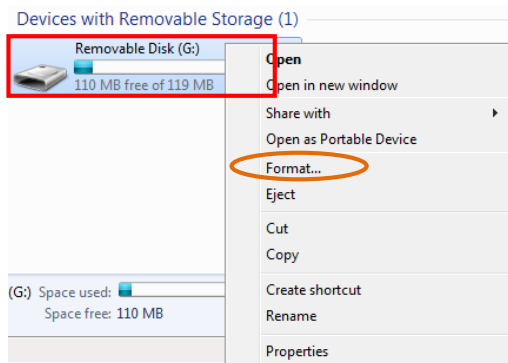
2. Press "SPEED" to increase the 2<sup>nd</sup> value.  
Press "MODE-" to increase the 3<sup>rd</sup> value.  
Press "MODE+" to increase the 4<sup>th</sup> value.  
Release the button, the lighting fixture in corresponding distance will be on. Maximum value can be set as 999.



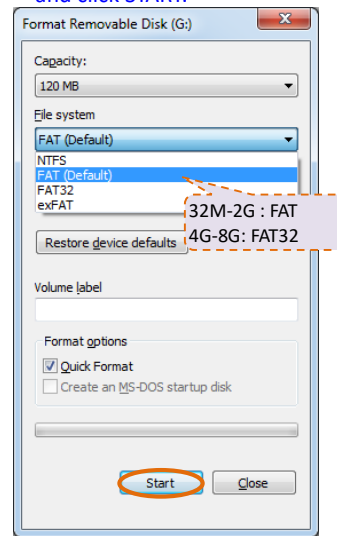
## 10. SD CARD COPY

### SD-Card Copy Method 1:

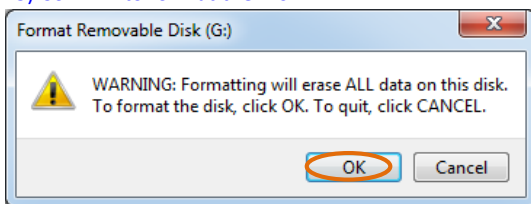
1) Right click the disk where the SD card locates.



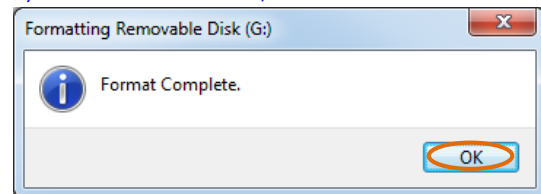
2) Select –FAT (Can tick off “Quick Format”) and click START.



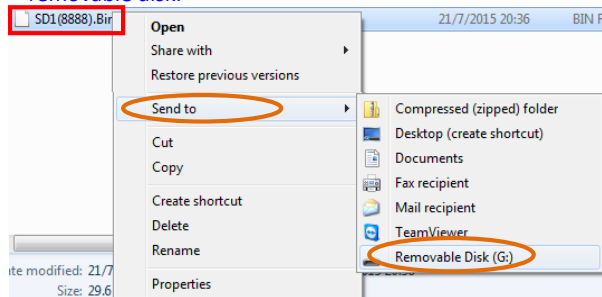
3) Confirm to format the Disk.



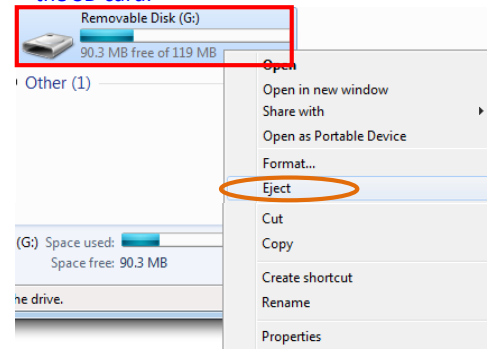
4) Finished the formatted, click confirm to exit.



5) Right click SD1(8888).Bin file, send the file to removable disk.


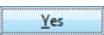


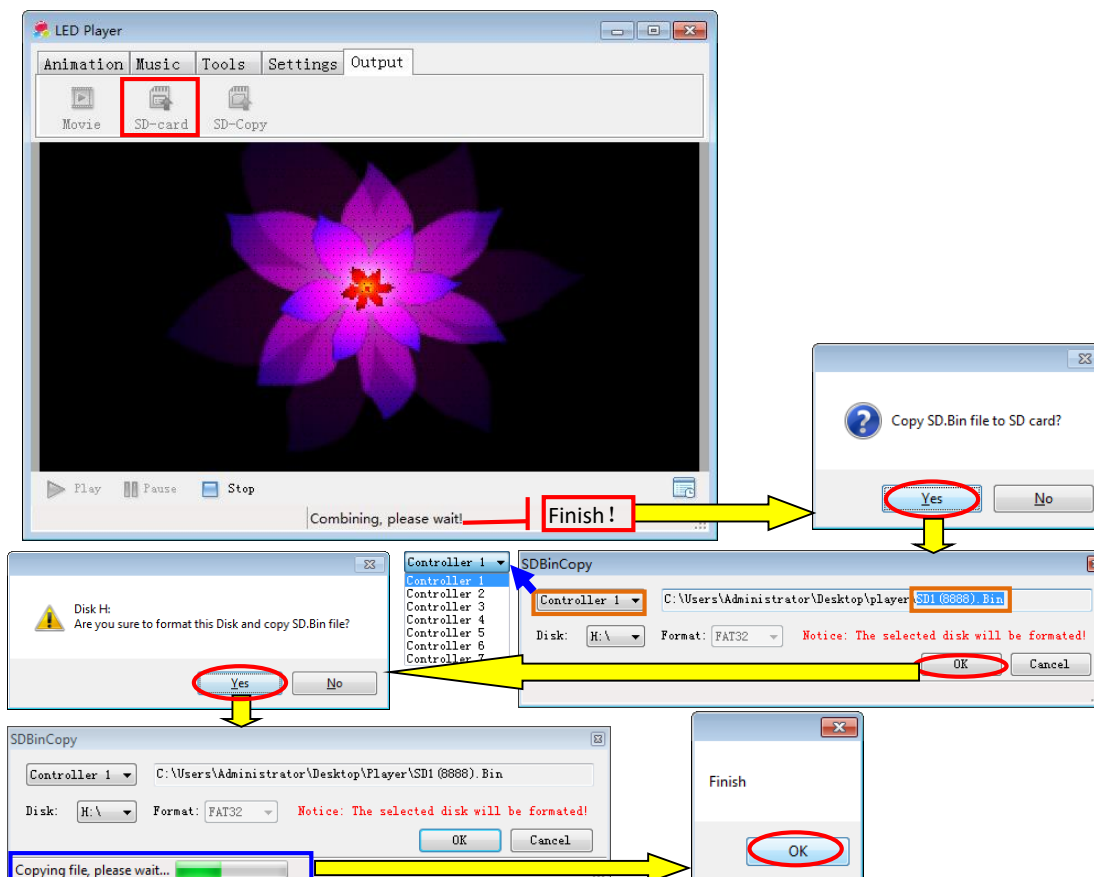
6) Right click removable disk and select pop to pop the SD card.



7) Put the SD-card into controller. When start the equipment the SD- card can use. (There is only one bin file in the card.)

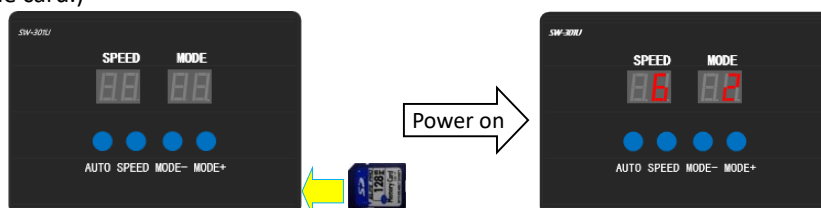
## SD-Card Copy Method 2:

1. Insert SD card.
2. Click . It will pop the Information Frame "Copy SD. Bin file to SD card?". Click . Select required controller. (SD.Bin file will automatically change according to selected controller.) Controller 1 corresponds to SD1, Controller 2 corresponds to SD2, and so on.....
3. Copy the file into SD card according to hints (all copying steps into SD card are the same).

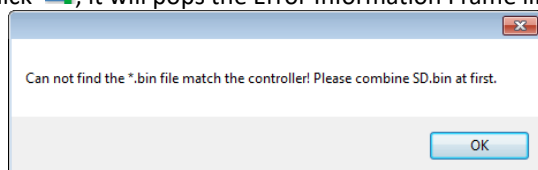


Please use the first method to copy SD Card in WIN 10 system.



At last, put the SD-card into controller. When start the equipment the SD-card can use. (There is only one bin file in the card.)



Click , it will pop the Error Information Frame like the follow picture?



## SOLUTION:

Click  to exit the information reminder. Then click  to re-merge the effect once again and copy into SD card.