SW301U MANUAL

Version: 4.6.1

Model: SW-301U-K13

2024-5

Contents

1. INTRODUCTION

1. It can control and address some DMX512 luminaires.
2. Luminaires with DMX chip can be addressed easily. All luminaires just need to be addressed once. Channels of luminaires with DMX chip can be set according to actual need. Address of the first luminaires can be set by user. Address of first luminaire can be set by user, but the value cannot exceed 4096.
3. Built-in multiple animations.
4. Own operation memory and one key to achieve repeated write address parameters.
5. Supports reading the SD card parameters to address when put into SD card. The default start address is 001 which cannot be changed.
6. SD card with 32Gb capacity (3.5Gb maximum for material files) can be used. LED Player software is suitable for 3.2.9 or later.

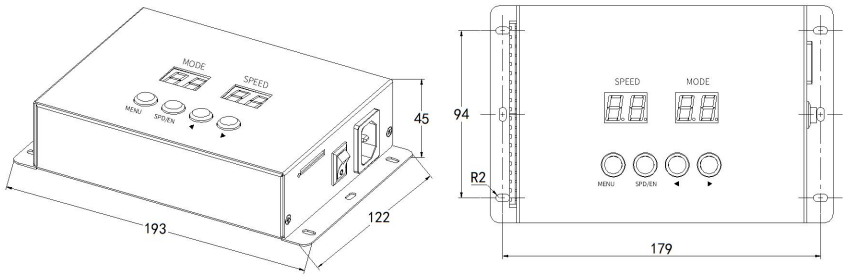
2. TECHNICAL PARAMETERS

2.1. PRODUCT INFORMATIONS

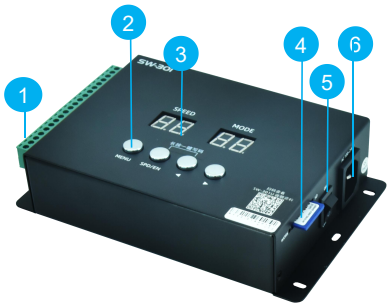
Cover material:	Iron
Input voltage:	AC 100V - 240V
Output signal:	RS-485×5 ports (data of 5 channels are the same.)
Pixel quantity drove:	Standard DMX512: 512 channels, Extensible DMX512: 512 channels
Output power:	<3W
Working temperature:	-15oC ~ 60oC
Relative humidity:	≤50 % RH
Ingress protection:	IP20 (Prevent people from touching the components inside electrical appliance, prevent object which diameter is more than 12.5mm from getting in, no special protection to water or moisture.)
Working environment:	1. Please do not install the controller in magnetic, high pressure, high temperature or seriously wet environment. 2. Please do connect the earth safely in order to reduce risks of fire and damage which cause by short circuit. 3. Please ensure AC100-240V power supply is used, and same polarity is connected between transformer and controller in order to guarantee the proper supply voltage. 4. No waterproof function in the control system, please pay attention on rainproof and waterproof during installing.
Function to guide:	U-**: Address after setting all parameters. H-**: Read the SD card parameters to address. C-**: The animation library for verifies the correct address. d--3/4: The bulit-in animation for three / four channels of DMX512 luminaire. p--3: Reserved.
Net weight:	0.6 Kg

Size: L192*W122*H45

(Unit mm)

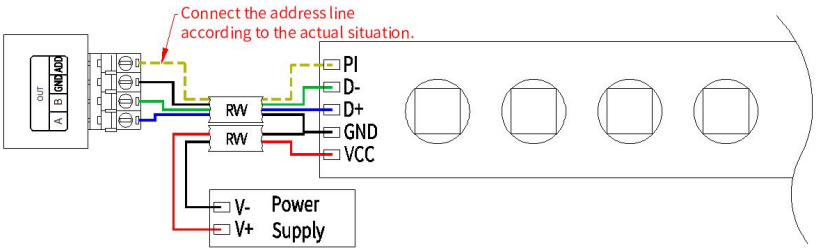


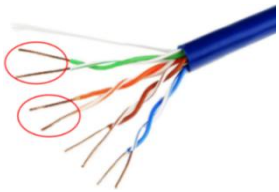
2.2. COMPONENT



① Output control luminaire
② Control button
③ Nixie tube display
④ SD card port
⑤ Power switch
⑥ Power input AC100-240V

3. CONNECTION MODE





★ 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 luminaire. Cannot connect with luminaire 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	Signals	Media	Distance (M)	Notes
Master control → slave control	light coupling	UTP - Unshielded Twisted Pair	50-100	
Master/slave control → DMX luminaire	RS-485	UTP - Unshielded Twisted Pair	30-50	The address wire must be within 5m.
		Three core wire	1-20	
		Four core wire	1-20	

4. BASIC OPERATION

4.1. BUTTON INTRODUCTION

Button	Operation	Introduction
MENU	Press	Material interface: switch to play all animations in full loop. Parameter settings: select C** address check, d/p built-in animation, Quit.
SPD/EN	Press	Material interface: select speed. Parameter settings: confirm.
	Long press	Parameter settings: send out the address parameters.
◄	Press	Decreasing value.
	Long press	Rapid decline value.
►	Press	Increasing value.
	Long press	Rapidly increase value.
◄ + ►	Long press	Into or quit generic addressing.
MENU + ◄	Long press	Into or quit the parameter settings.
SPD/EN + ◄	Long press	Into or quit the configurated addressing.
MENU + SPD/EN	Long press	Send out the last address parameters.

4.2. SPEED SELECTION

Press “SPD/EN” button on controller panel to adjust playing speed.

	Speed value									Remark
Speed	4	5	6	7	8	9	10	11	12	Independent speed
	24	26		28		30		32		Synchronous speed
Frame/second	25	20	17	14	13	11	10	9	8	

- Independent speed: Decided by the meters of user’s hurdle light; the data won not display if it is 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.

5. ADDRESS SETTING

5.1. CHIP SUPPORTED

Selection	Chip
U-01	SW-D
U-02	UCS512A
U-03	DMX512AP/SM512
U-04	UCS512C4
U-05	SM16512/SM16511/SM16520
U-06	UCS512D
U-07	GS8512
U-08	SM17512P
U-09	SM17522P
U-10	SM17500P

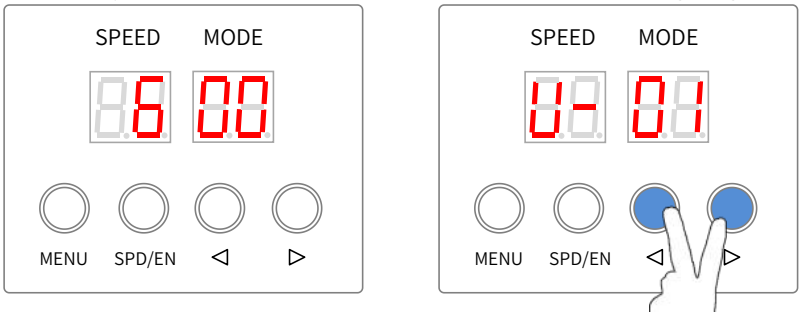
Selection	Chip
U-16	TM512AD
U-17	QED512P
U-18	Hi512A0
U-19	Hi512A4
U-20	Hi512A6
U-21	Hi512D/HI512E
U-22	UCS512CN
U-23	GS8513
U-24	GS8515
U-25	SM18522P

Selection	Chip
U-12	SM16500P
U-13	UCS512C0
U-14	TM512AB3/TM512AL1
U-15	TM512ACx

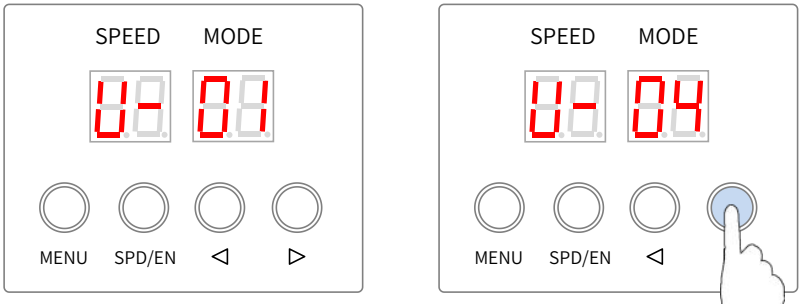
Selection	Chip
U-26	SM18522PH
U-27	GS8511
U-28	UCS512G
U-29	UCS512E

5.2. GENERIC ADDRESSING

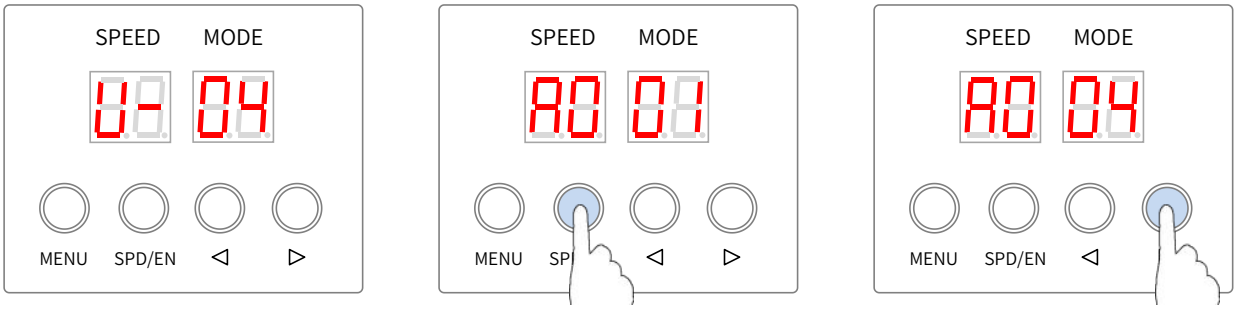
1. In the material interface, long press “◀” and “▶” to enter in the addressing interface. The nixie display shows “U- **”. U- ** is the chip option we're going to address.



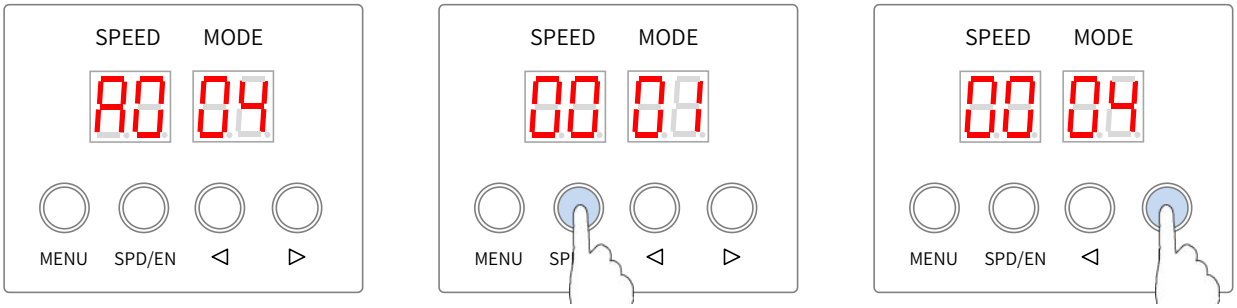
2. Press “◀” or “▶” to select the chip option when nixie display shows “U- **”.
The chip supported refer to CHIP SUPPORTED.



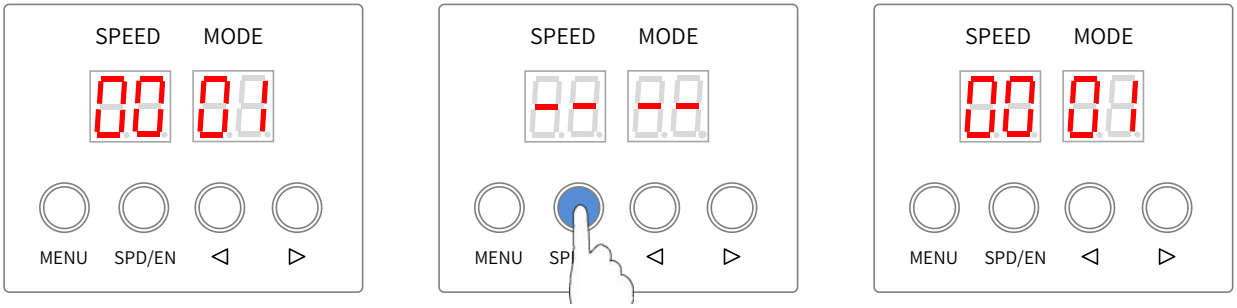
3. Enter into address statue.
Press “SPD/EN” after the selected chip and nixie display shows “A* **”. It means need to enter the number of channels in single chip and the maximum value cannot exceed 192.
Press “◀” or “▶” to set the value.



4. Press “SPD/EN” to enter into the setting address data interface, and the nixie display shows “** **”. It means the first channel value for first chip and the maximum value cannot exceed 4096. The first channel value for the first chip is 1. Press “◀” or “▶” to set the value. Press “SPD/EN” to shift.

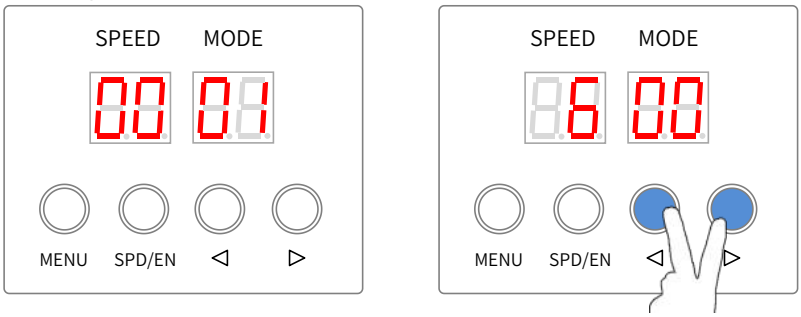


5. Long press “SPD/EN” until the nixie display shows “-- --”. Then the data is sent out by controller.



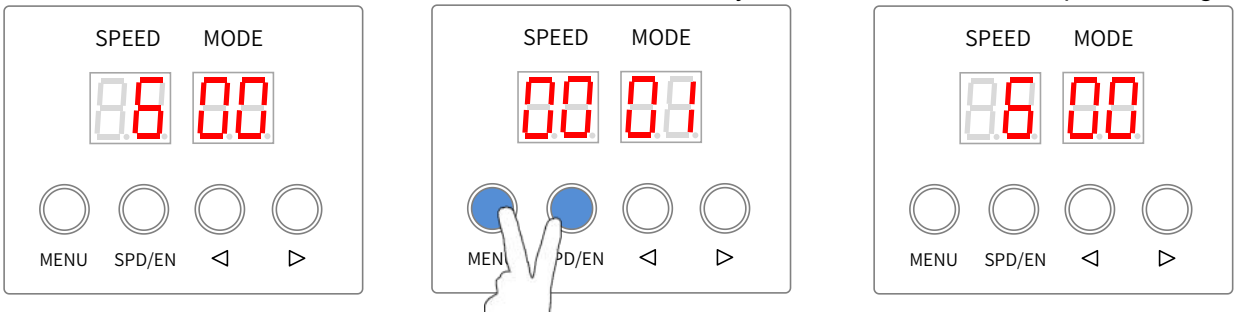
The buttons are useless for sending the address.

6. Long press “◀” and “▶” to enter into the material interface.



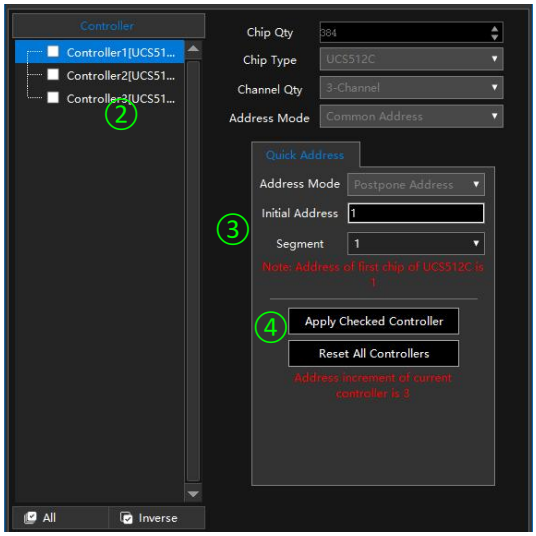
5.3. ADRESSING SENT-OUT

The controller can read back to the previous address parameters, and directly send the address parameters to the luminaires. The addressing chip setup must be the same with the luminaire.
If you need to modify the chip and address, please refer to ADDRESS AFTER SETTING ALL PARAMETERS.
In the material interface, long press “MENU” and “SPD/EN”. The nixie display shows the previous address data. When DMX luminaire is addressed successfully, the luminaire will be the particular light.



5.4. CONFIGURATED ADDRESS AND WRITE PARAMETER

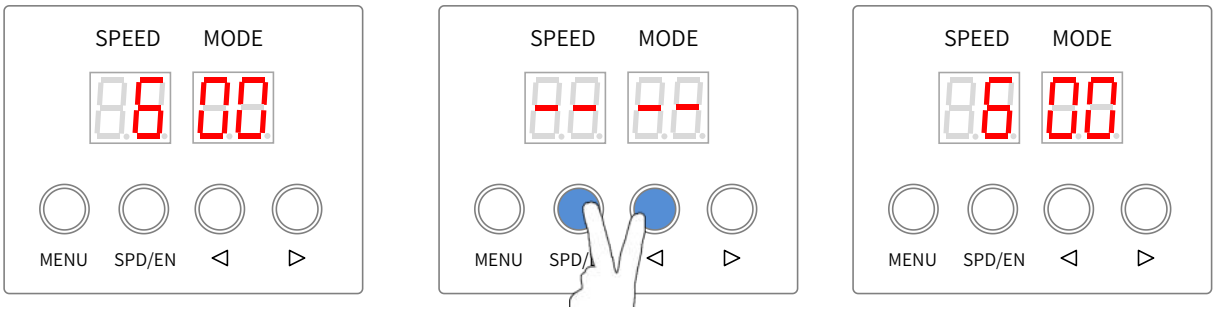
5.4.1. SETTING THE ADDRESSING IN LED PLAYER



1. Click “Quickly Addressing” of Debug, and open the setting windows.
2. Select the controller be set.
3. Set the initial address and segment.
4. Click “Apply Checked Controller” to save.
5. Close and quit.
6. Output and copy the SD card. (Please refer to OUTPUT AND COPY THE SD CARD FILE.)

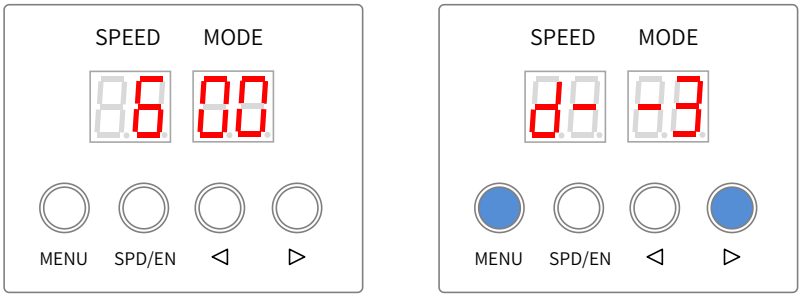
5.4.2. OPERATION ON THE CONTROLLER

In the material interface, long press “SPD/EN” and “◄” to enter in the configuration addressing. The nixie display shows “-- --”. Then the controller would read the KeyAddress.bin file of SD card and send the address parameter to luminaires.

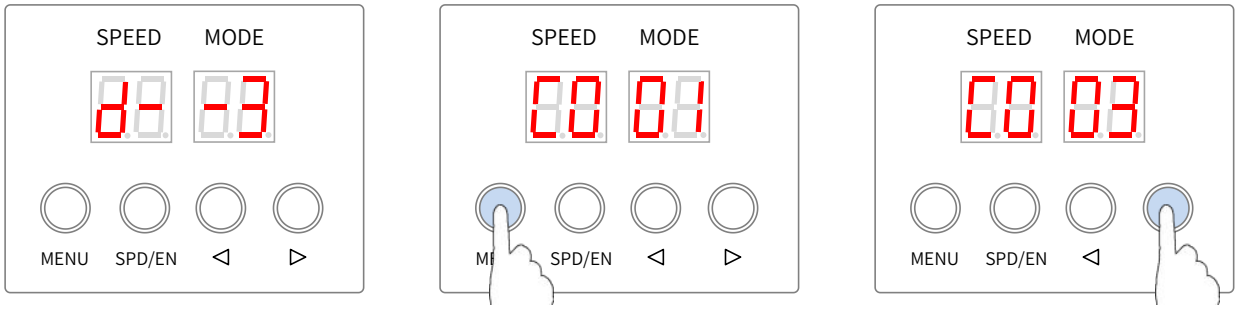


5.5. VERIFY THE CORRECTNESS OF THE ADDRESS BY ANIMATIONS

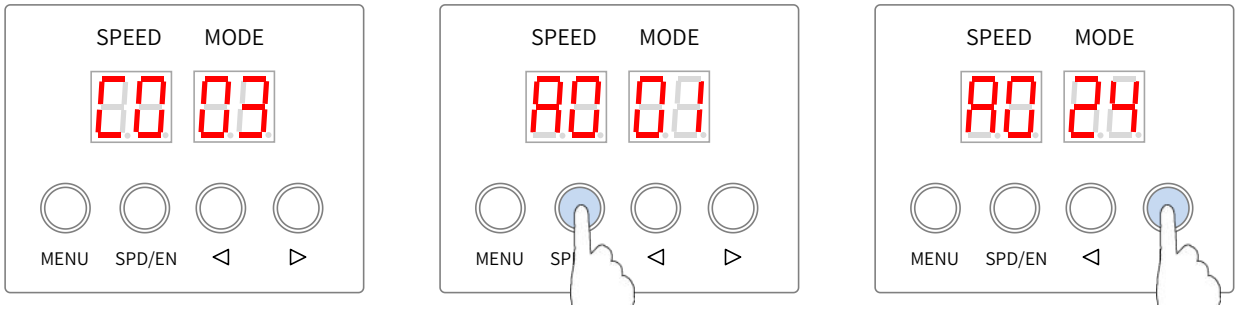
1. In the material interface, long press “MENU” and “►” to enter in Parameter settings. The nixie display shows “C/d/p- **” which the last address operation parameters.



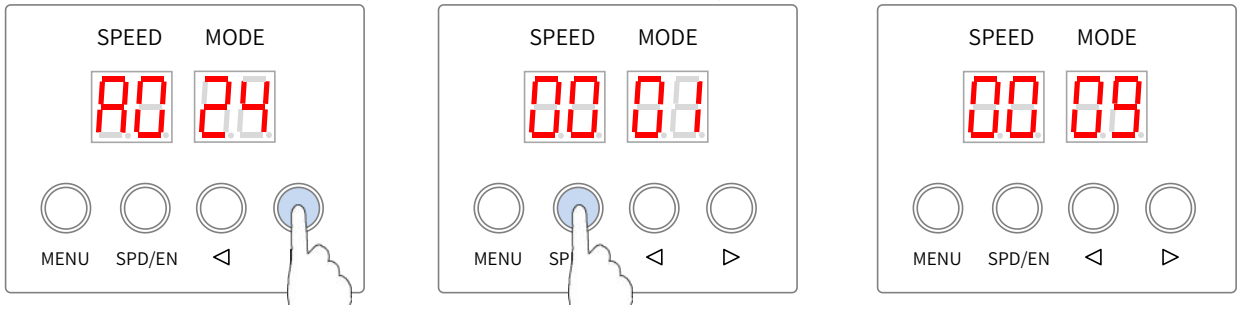
2. Press “MENU” to switch U/H/C/d/p until the nixie display shows “C- **”.
   C-01 is manually press the button to light a pixel effect.
   C-02 is automatically light a pixel effect.
   C-03 is manually press the button to overlay a pixel effect.
   C-04 is automatically overlay a pixel effects.
   Press “◀” or “▶” to select the animation.



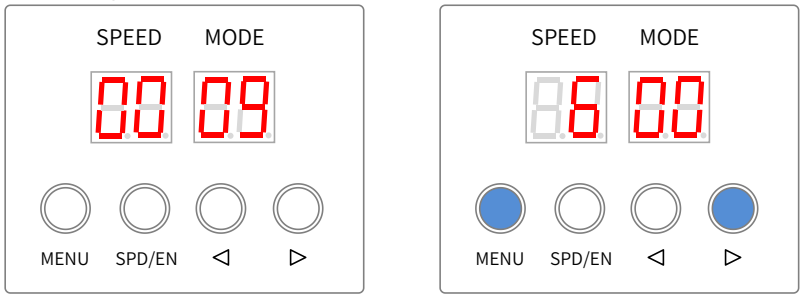
3. Press “SPD/EN” after the selected chip and nixie display shows “A* **”. It means need to enter the number of channels in single chip and the maximum value cannot exceed 192.
   Press “◀” or “▶” to set the value.



4. Press “SPD/EN” to start verifying. Press “◀” or “▶” to set the value. Press “SPD/EN” to reset the value is 1.
   Press the two “MODE” key to pause and press “▶” key to resume in the C-02 and C-04 options.



5. Long press “MENU” and “▶” to enter into the material interface.



6. COLOR OF SET PARAMETERS SUCCESSFULLY

Chip	Lighting color after power on	Addressed		Byte + No signal + No signal		Current parameter		Self-Channel Setting	
		First chip	Other chip	First chip	Other chip	First chip	Other chip	First chip	Other chip
UCS512A	White	Blue	Blue	-	-	-	-	-	-
UCS512A1	White	Blue	Blue	-	-	-	-	-	-
UCS512A2	White	Blue	Blue	-	-	-	-	-	-
UCS512B3	White	Blue	Blue	-	-	-	-	-	-
UCS512C	Custom	White	White	-	-	-	-	-	-
UCS512C0	-	White	White	-	-	-	-	-	-
UCS512C3	Custom	White	White	Red	Red	-	-	-	-
UCS512C4	Custom	White	White	Red	Red	-	-	-	-
UCS512CN	Custom	Yellow	White	Yellow	Power on	-	-	-	-
UCS512D	Custom	Yellow	White	Yellow	Power on	Yellow	Red	-	-
UCS512E0	Custom	Yellow	White	Yellow	Power on	-	-	Yellow	Green
UCS512EH	Custom	Yellow	White	Yellow	Power on	Yellow	Red	Yellow	Green
UCS512G4	Custom	Yellow	White	White (custom)	White (custom)	White	White	-	-
UCS512G6	Custom	Yellow (custom)	White (custom)	White (custom)	White (custom)	White	White	-	-
DMX512AP	-	White	White	-	-	-	-	-	-
SM16512	-	Green	Green	-	-	-	-	-	-
SM16511	-	Green	Green	-	-	-	-	-	-
SM16520	-	Green	Green	-	-	-	-	-	-
SM16500	Custom	Red	Green	Red	Power on	-	-	-	-
SM17500	Custom	Red	Green	Red	Power on	Red	Yellow	Red	Purple
SM17512	Custom	Red	Green	Blue	Blue	-	-	-	-
SM17522	-	Red	Green	Red	Blue	Red	Yellow	-	-
SM18522	Custom	Red	Green	Blue	Blue	-	-	-	-
SM18522PH	-	Red	Green	Red	Blue	Red	Yellow	-	-
SW-D	-	Yellow	Green	-	-	-	-	-	-
Hi512A4	Custom	Red	Green	Red_	Green	-	-	-	-
Hi512A6	Custom	Red	Green	Red	Green	-	-	-	-
Hi512A0	-	White	White	White	White	-	-	-	-
Hi512D	-	Red	Green	Green	Green	Green	Green	-	-
Hi512E	-	Red	Green	Green	Green	Green	Green	-	-
TM512AB3	White	Blue	Blue	-	-	-	-	-	-
TM512AL1	White	Blue	Blue	-	-	-	-	-	-
TM512AC0	-	White	White	-	-	-	-	-	-
TM512AC2	Custom	White	White	-	-	-	-	-	-
TM512AC3	Blue	White	White	-	-	-	-	-	-
TM512AC4	Blue	White	White	-	-	-	-	-	-
TM512AD	Blue	Yellow	White	Yellow	Power on	Yellow	Red	-	-
QED512P	Custom	wihte	wihte	wihte	wihte	wihte	wihte	-	-
GS8512	Custom	Red	Cyan	-	-	-	-	-	-
GS8513	Red+Cyan	Red	Cyan	-	-	-	-	-	-
GS8515	Red+Cyan	Red	Cyan	-	-	-	-	-	-

7. THE BUILT-IN ANIMATIONS

7.1. ENTER INTO PLAY BUILT-IN ANIMATIONS

In the material interface, the controller will play the built-in animations if it cannot read the SD file. The nixie display shows “d- **”.

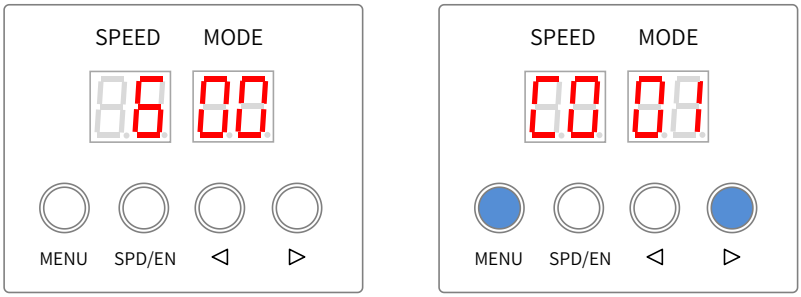
Mode	Animation
d-00	play all animations in full loop
d-01	Red
d-02	Green
d-03	Blue
d-04	Yellow
d-05	Cyan
d-06	Purple
d-07	White (only light the 4th channel)
d-08	Red eliminate tail
d-09	Green eliminate tail
d-10	Blue eliminate tail
d-11	Yellow eliminate tail
d-12	Cyan eliminate tail
d-13	Purple eliminate tail

Mode	Animation
d-14	White eliminate tail (only light the 4th channel)
d-15	Red to chase
d-16	Green to chase
d-17	Blue to chase
d-18	Yellow to chase
d-19	Cyan to chase
d-20	Purple to chase
d-21	White to chase (only light the 4th channel)
d-22	Bouncing color - Seven color
d-23	Seven color grayscale transformation
d-24	Seven color fluxion
d-25	Bouncing color - dark and white (only light the 4th channel)
d-26	Dark

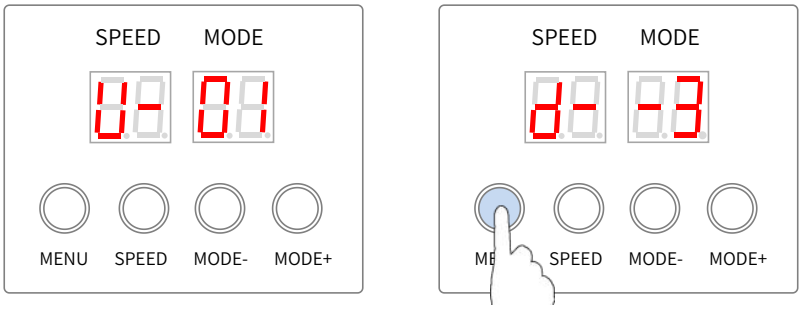
7.2. SWITCH THE CAHNNEL OF CHIP

The controller default output 3 channels animation. Refer the follow step to change 3 to 4.

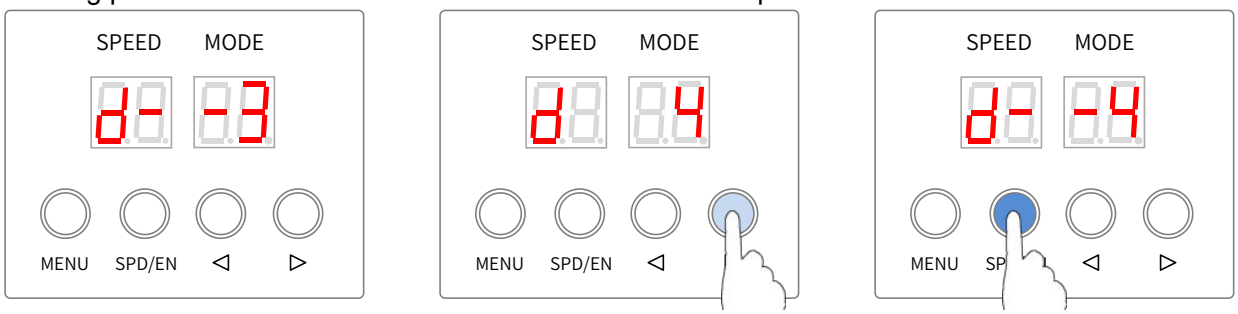
1. In the material interface, long press “MENU” and “►” to enter in Parameter settings. The nixie display shows “C/d/p- **” which the last address operation parameters.



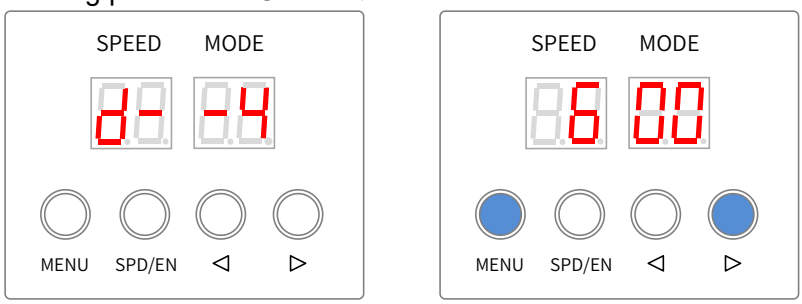
2. Press “MENU” to switch C/d/p until the nixie display shows “d- **”. d- -3 is output the 3 channels animation of RGB



3. Press “◄” or “►” to set the nixie display shows “d- -3” to “d 4”(the - is disappeared).
   Long press “SPD/EN” to confirm and the controller will output the 4 channels animation of RGBW.



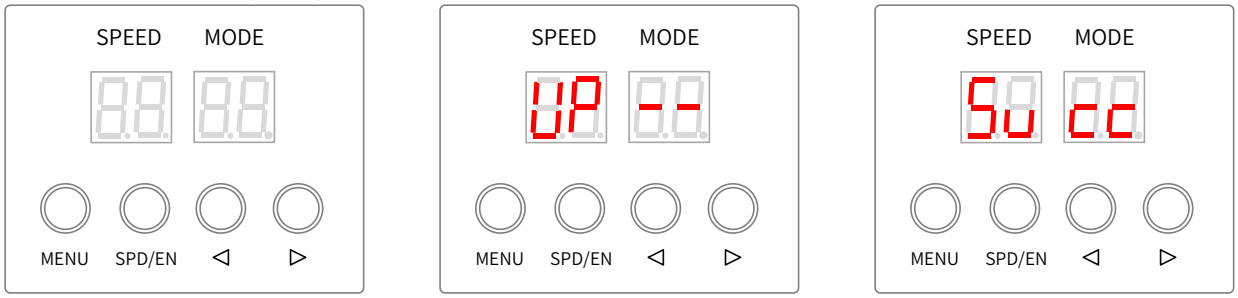
4. Long press “MENU” and “►” to enter into the material interface.



8. FIRMWARE UPDATE

The controller supports reading the SD card parameters file (T301_Nxx.bin) to update its procedure. Please refer to the follow steps.

1. Please refer to MANUAL FORMAT AND COPY CARD and copy the T301_Nxx.bin file into the SD card.
2. Power on the controller after inserting the SD card. The nixie display shows “UP --” and it will start to update.
3. The nixie display shows “Succ” when finishing update. Power off the controller and insert the SD card with the SD(8888).bin file into. After the controller is powered on, it can continue to work.



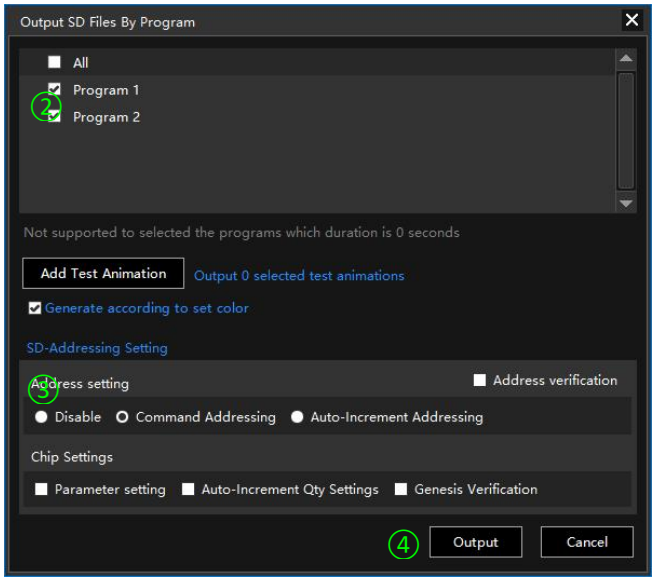
9. ERROR CODE AND TROUBLE SHOOTING

Error	Introduction	Reason
E 01	No SD card or SD card port is broken.	1. Insert the SD card. 2. If an error occurs when inserting the SD card, the SD card holder is damaged. Contact us.
E 02	SD card no response or breakdown.	1. Please replace the new SD card. 2. If an error occurs when inserting the SD card, the SD card holder is damaged. Contact us.
E 03	There is no file in the SD card or SD card is breakdown.	Copy SD card file again.

Error	Introduction	Reason
E 04	Cannot read part of the card or bad connection.	Please replace the new SD card .
E 05	SD card file sequence doesn't match the controller.	SD card file error. or unfinished video merging.Please open the corresponding code to output the SD card file and copy again.
E 06	Cannot find feature code	Card is unformatted. / No files.
E 07	SD card file sequence doesn't match the controller	SD card file error. / Unfinished video synthesis.
E 21	The updated operation is wrong.	Please update again.
E 23	The update file is lost.	Please contact us.
E 24	The updated operation is failed.	Please use the correct updated file to update.
E 27	The SD card has too many bad areas.	Please replace the new SD card.

10. OUTPUT AND COPY THE SD CARD FILE

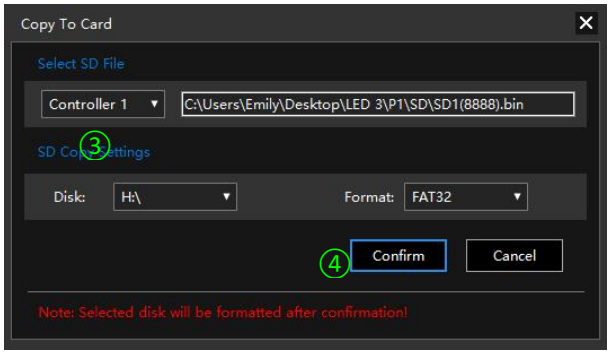
10.1. OUTPUT THE SD CARD FILE



1. Click “SD” of Output, and open the windows.
2. Select the program be out-put.
3. Select the Address setting.
4. Click Output.

Note: please don’t select the addressing setting and chip settings.

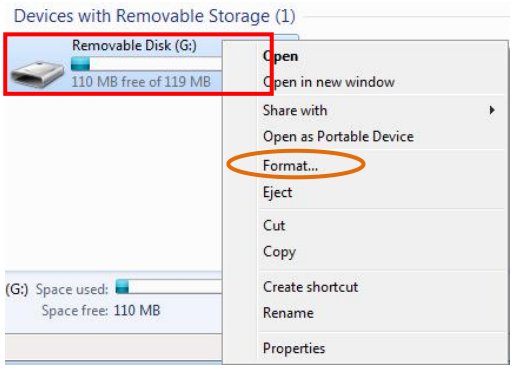
10.2. COPY THE SD FILE BY LED PLAYER



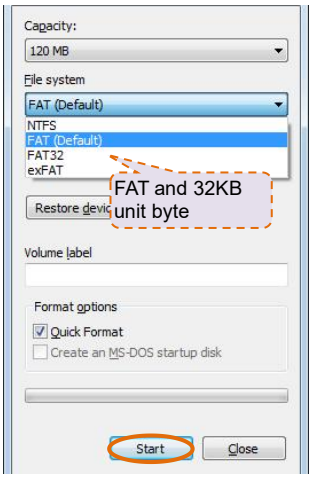
1. Input the SD card.
2. Click “Copy to SD” of Output, and open the windows.
3. Select the controller number be copied.
4. Click Confirm.

10.3. MANUAL FORMAT AND COPY CARD

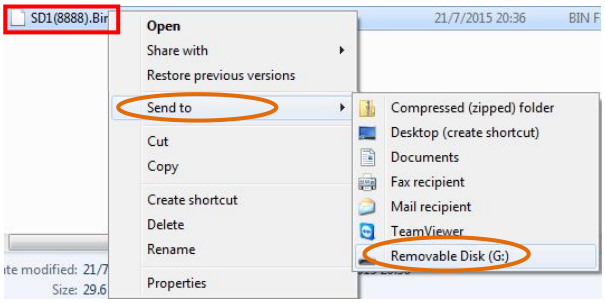
1) Right click the disk where the SD card locates.



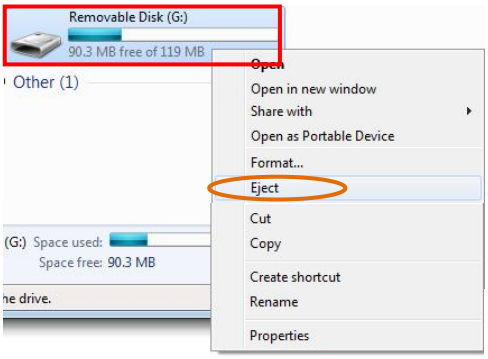
2) Select –FAT (Can tick off “Quick Format”) and click START.



3) Right click SD1(8888).bin and KeyAddress.bin file, send the file to removable



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



11. FITTINGS

Shows	Item	Number	Remark
	SD Card	1	
	Power line	1	
	5P terminal blocks	5	