S208E

S208

S208 MANUAL

Version: 1.0

Model: S208-A1

S208E-A1

2024-9

CONTENTS

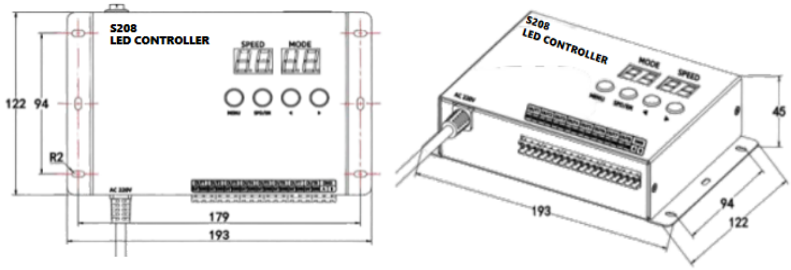
1. FUNCTION OVERVIEW

1. 8-channel output signal (data-independent). Apply to small project. Support several controllers cascade using
2. Specialized software of making animation is included, user can make their own effects.
3. Control variety of regular chips in LED digital tube screen, LED pixel light screen, and etc
4. supports a maximum of 64G SD card.

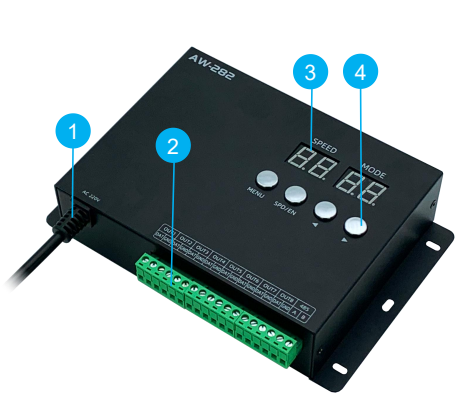
2. TECHNICAL PARAMETERS

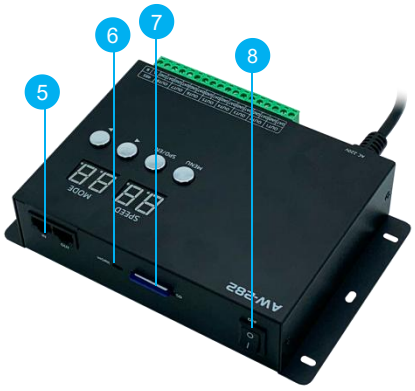
2.1. PRODUCT INFORMATION

Cover material:	Iron
Input voltage:	AC 220V
Output signal:	S208E, TTL * 8 ports and RS485 * 1 ports S208, RS485 * 8 ports
Pixel driven:	Single chip: 960 pixels ×8 channels, Single-wire: 1024 pixels ×8 channels standard DMX512: 168 pixels ×8 channels, extensible DMX: 336 pixels ×8 channels, Breakpoint resume: 960 pixels ×8 channels.
Output power:	＜3W
Working temperature:	-15℃～60℃
Relative humidity:	≤50% RH
IP grade:	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 instal 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.
Net weight:	0.83 kg
Size:	L193*W122*H45
(Unit mm)	



2.2. COMPONENT



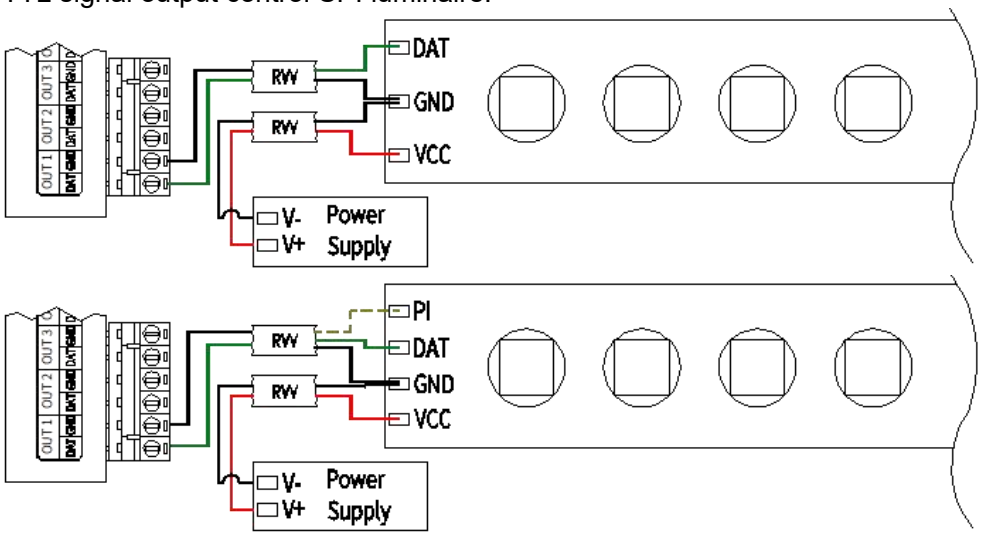


① Power code ② Output control luminaires ③ Nixie tube screen
④ Control button ⑤ Uplink port ⑥ Working light
⑦ SD card socket ⑧ Power switch

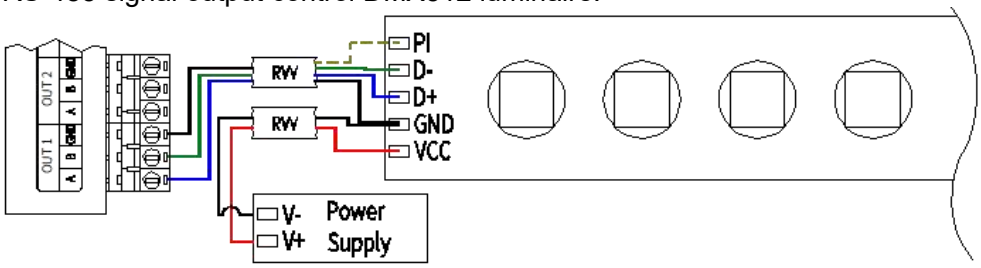
3. CONNECTION INSTRUCTION

3.1. OUTPUT CONTROL LUMINAIRE

TTL signal output control SPI luminaire.

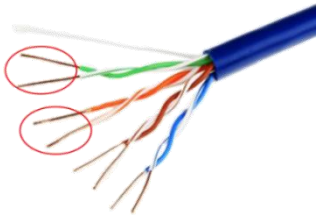


RS-485 signal output control DMX512 luminaire.



★ Signal cables connection cautions:

1. Use UTP—Unshielded Twisted Pair (resistance per 100M<10Ω), low quality Ethernet cables, telephone cables and copper wires 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 lighting fixture. ***Cannot connect with lighting fixture through power supply***.

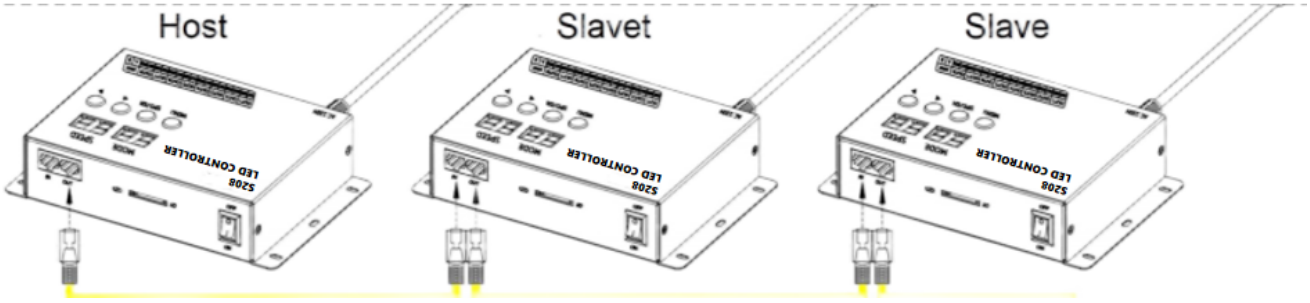
4. Switch on the controller after all hardware signal and power cables are connected. Please *don't CONNECT / DISCONNECT* the signal cables while the controller is power on;avoid back-flow current burning circuit and components of output port.

Transmission distance:

Transmission Type	Signals	Medium	Distance (M)	Remark
Master control → slave control	RS-485	UTP-Unshielded Twisted Pair	50-100	
Master/slave control → SW lighting fixture	TTL	UTP-Unshielded Twisted Pair	30-50	
		Two core wire	5-30	
Master/slave control → Single-wire lighting fixture	TTL	UTP-Unshielded Twisted Pair	5-20	
		Two core wire	1-5	
Master/slave control → DMX lighting fixture	RS-485	UTP-Unshielded Twisted Pair	30-50	The address cable must be no more than 5m.
		Three core wire	1-20	
		Four core wire	1-20	
Master/slave control → SW lighting fixture Master/slave control → DMX lighting fixture	TTL	UTP-Unshielded Twisted Pair	5-20	Controllable pixels reduce if wire is over 5m.
		Two core wire	1-5	
		Three core wire	1-5	
Single-wire lighting fixture → Single-wire lighting fixture	TTL	UTP-Unshielded Twisted Pair	1-2	Controllable pixels reduce if wire is over 1m.
		Two core wire	0.1-1	

3.2. CASCADE CONNECTION

When the project needs to be controlled by multiple cascading controllers, connect the host with slave controllers by cables to make the whole project synchronous. The distance must be no more than 50M, and the total controller less than 32 pieces. (Please select the other scheme if exceeding 50 meters.) User can extend the cables based on real requirement (cable extension should follow T568B method).



4. BASIC OPERATION

4.1. BUTTONS FUNCTION

Button	Operation	Function
MENU	Short press	Switch between Master and slave Settings and Brightness Settings.
	Long press	Enter into the Parameter settings.
SPD/EN	Short press	Set the speed.
◄	Short press	Decrease the mode or the parameter setting value.
	Long press	Decrease quickly the mode.
►	Short press	Increase the mode or the parameter setting value.
	Long press	Increase quickly the mode.

4.2. SPEED SELECTION

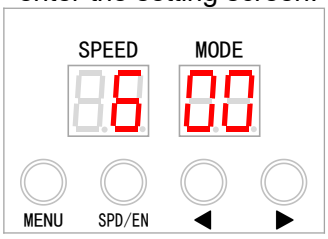
Press button “SPD/EN” on control panel to select play speed, the less the rate, the quicker the speed.

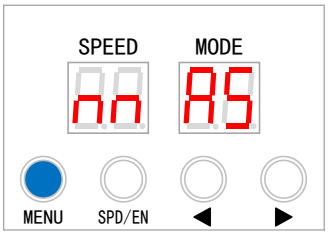
Parameters	Speed																
Interface	2	3	4	5	6	7	8	9	10	11	12	15	20	30	50	80	99
SYNE	2.	/	4.	/	6.	/	8.	/	10.	/	12.	/	20.	/	50.	/	99.
(fps)	50	33	25	20	17	14	13	11	10	9	8	7	5	3	2	1	0.5

4.3. CASCADE CONTROL SETTINGS

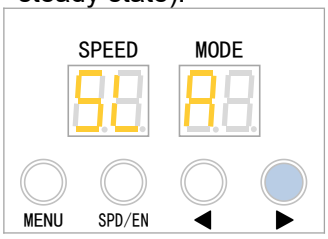
4.3.1. SETTING TO SLAVE

1. The controller (host) is in the control state (display speed and mode), press and hold [MENU] to enter the setting screen.

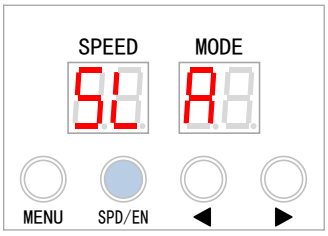




2. Press [◀] or [▶] to switch to the nixie screen display. The blink "SL A" indicates the controller is in the "slave" and controlled by host. ("nn AS" indicates it is the Host and controling the others.) After we press [SPD/EN] to confirm the Settings, it is set from the host to the slave (" SLA "is in the steady state).



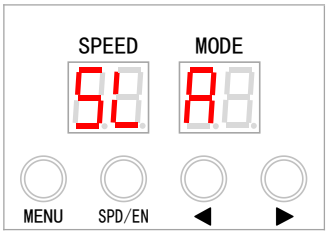
The blink “SL A”



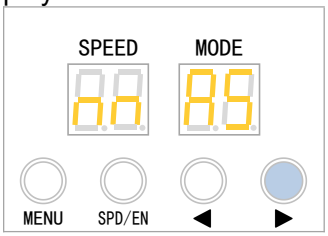
The steady “SL A”

4.3.2. SETTING TO HOST

1. When the controller is slave ("SL A" is displayed on the nixie tube), press [◀] or [▶] to switch "SL A" to "nn AS" on the nixie tube display.

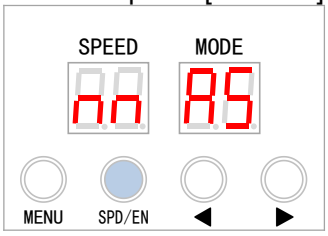


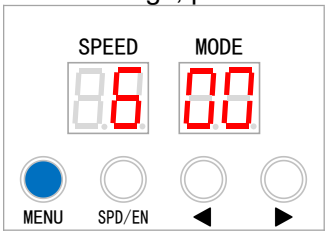
The steady “SLA”



The blink “nnAS”

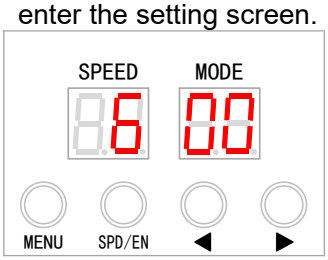
2. After we press [SPD/EN] to confirm the Settings, press and hold [MENU] to enter the control state.

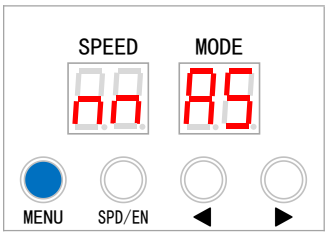




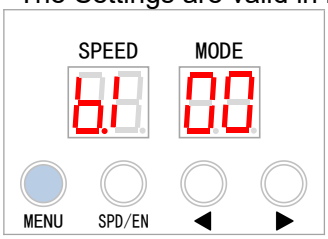
4.4. SETTING THE BRIGHTNESS

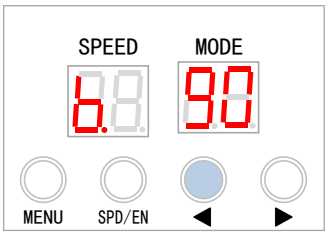
1. The controller (host) is in the control state (display speed and mode), press and hold [MENU] to enter the setting screen.



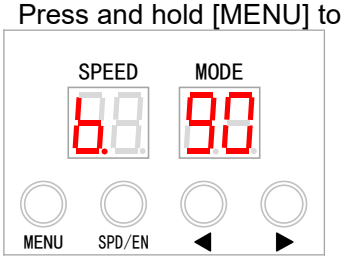


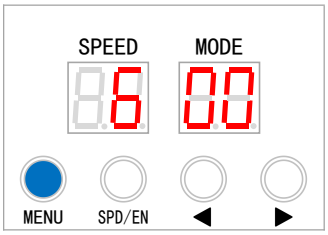
2. Press [MENU] to switch the Nixie tube display to “b.* **”. The value is the brightness of luminaires. Press [◀] or [▶] to set the value. 0% is black and 100% is the brightest.
The Settings are valid in real time.





3. Press and hold [MENU] to enter the control state after the setting is complete.



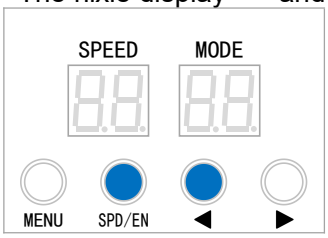


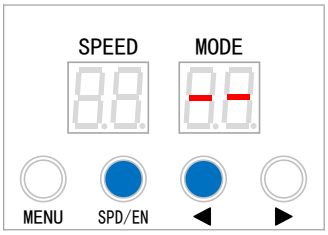
5. ADDRESSING WITH THE CONFIGURATION FILES

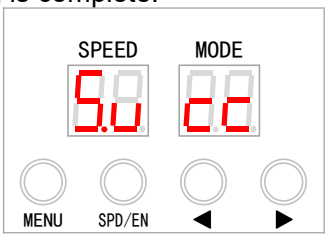
S208support addressing with the configuration files for DMX512 chips.
Note: The configuration is only supporting for addressing, and out of configure the parameters.

5.1. OPERACTION

1. In the case where the SD card contains a configuration file, press the [SPD/EN] and [◀] at the same time to power on.
2. The nixie display “--” and “S.u cc”. It shows “S.u cc” when addressing is complete.







5.2. CHIP SUPPORTED

Chip	Address	Custom Channel	Chip	Address	Custom Channel
UCS512A	√	×	SM16522P	√	×
UCS512B	√	×	SM16522PS	√	×
UCS512C0	√	×	SM19522PS	√	×
UCS512C4	√	×	SM19522PH	√	×
UCS512CN	√	×	SM19522PHG	√	×
UCS512D	√	×	SW-D	√	×
UCS512E0	√	√	Hi512A0	√	√
UCS512G4	√	×	Hi512A4	√	×

Chip	Address	Custom Channel	Chip	Address	Custom Channel
UCS512G6	√	×	Hi512A6	√	×
UCS512H	√	×	Hi512D	√	×
UCS512H4	√	×	Hi512E	√	×
UCS512H4L	√	×	Hi512B4L	√	×
UCS512KH	√	√	TM512AB3	√	×
UCS512KL	√	√	TM512AL1	√	×
UCS512C1	√	×	TM512ACx	√	×
UCS512C1L	√	×	TM512AD	√	×
UCS512C2	√	×	QED512P	√	×
UCS512C2L	√	×	GS8511	√	×
UCS512CBL	√	×	GS8512	√	×
DMX512AP	√	×	GS8513	√	×
SM512	√	×	GS8515	√	×
SM16511	√	×	GS8516	√	×
SM16512	√	×	GS8516B	√	×
SM16500P	√	×	GS8523	√	×
SM16520P	√	×	GS8524	√	×
SM17500P	√	√	GS8525	√	×
SM17512P	√	×	GS8525T2	√	×
SM18522PH	√	×	GS8526	√	×
SM18512P	√	×	A512D4	√	×
SM18512PK	√	×			

5.3. SUCCESSFULLY ADDRESSED AND SETTING PARAMETERS

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
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	-	-
SM18522P	Custom	Red	Green	Blue	Blue	-	-	-	-

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
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	-	-
GS8511	-	Red	Cyan	-	-	-	-	-	-
GS8512	Custom	Red	Cyan	-	-	-	-	-	-
GS8513	Red+Cyan	Red	Cyan	-	-	-	-	-	-
GS8515	Red+Cyan	Red	Cyan	-	-	-	-	-	-

6. THE BUILT IN ANIMATION

The controller has 50 built-in animations that can be played when there is no SD card or when the SD card is damaged.

6.1. ANIMATION DETAIL

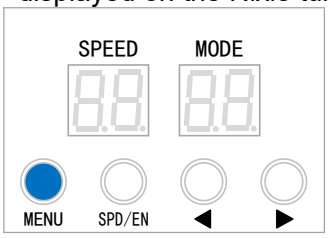
Mode	Animation	Preview	Mode	Animation	Preview
01	Always light		26	Roller / wave	
02	Always light		27	Roller / wave	
03	Always light		28	Roller / wave	
04	Always light		29	Roller / wave	
05	Always light		30	Roller / wave	
06	Always light		31	Roller / wave	
07	Always light		32	Roller / wave	
08	Flicker		33	Wave	
09	Flicker		34	Roller / wave	
10	Flicker		35	Trailing	
11	Gradually turn		36	Roller / wave	
12	Gradually turn		37	Wave	
13	Gradually turn		38	Roller / wave	
14	Trailing		39	Breath (black)	
15	Trailing		40	Breath (black)	
16	Trailing		41	Breath (black)	
17	Trailing		42	Breath (black)	
18	Trailing		43	Breath (duskiness)	
19	Trailing		44	Breath (duskiness)	

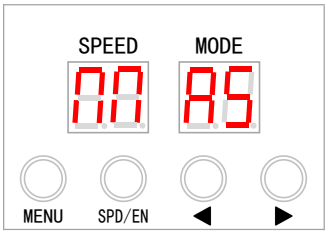
Mode	Animation	Preview	Mode	Animation	Preview
20	Trailing		45	Breath (duskiness)	
21	Trailing		46	Breath (duskiness)	
22	Trailing		47	Breath (duskiness)	
23	Roller / wave		48	Breath (duskiness)	
24	Roller / wave		49	Breath (duskiness)	
25	Roller / wave		50	Black	

6.2. UPDATE THE BUILT-IN ANIMATION

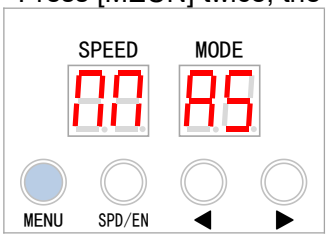
The built-in animations of the controller can be replaced by ourselves. The procedure for replacing is as follows.

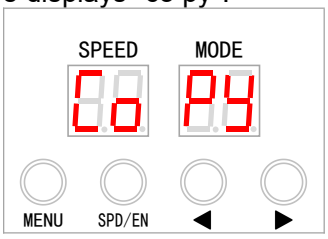
1. Edit the animation in Magic Player. Output the animation file and copy it to the SD card according to OUTPUT AND COPY THE SD CARD FILE. Note: The output file size must be within 238MB.
2. Insert the SD card into the controller and power on. Press and hold [MENU] and “nn AS” is displayed on the Nixie tube.



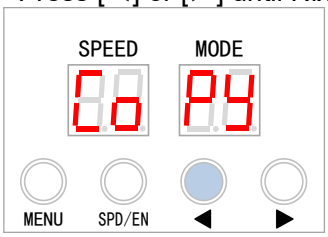


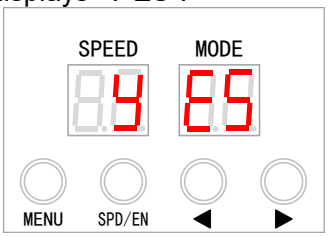
3. Press [MEUN] twice, the Nixie tube displays "co py".



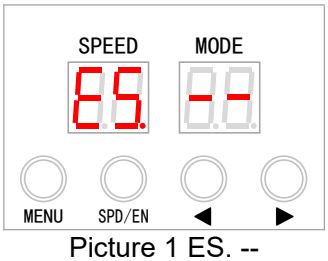


4. Press [◀] or [▶] until Nixie tube displays “Y ES”.

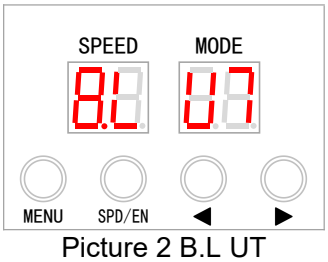




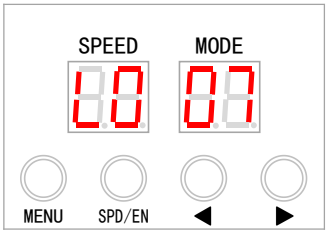
5. Press [SPD/EN] to confirm. And the Nixie tube display in sequence Picture 1 “ES. --” ⇨ Picture 2 ”B.L UT” ⇨ Picture 3 “L* **” ⇨ Picture 4 “Su cc”. “Su cc” is copy complete.



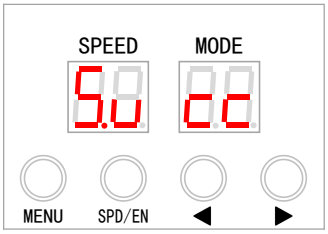
Picture 1 ES. --



Picture 2 B.L UT



Picture 3 progress

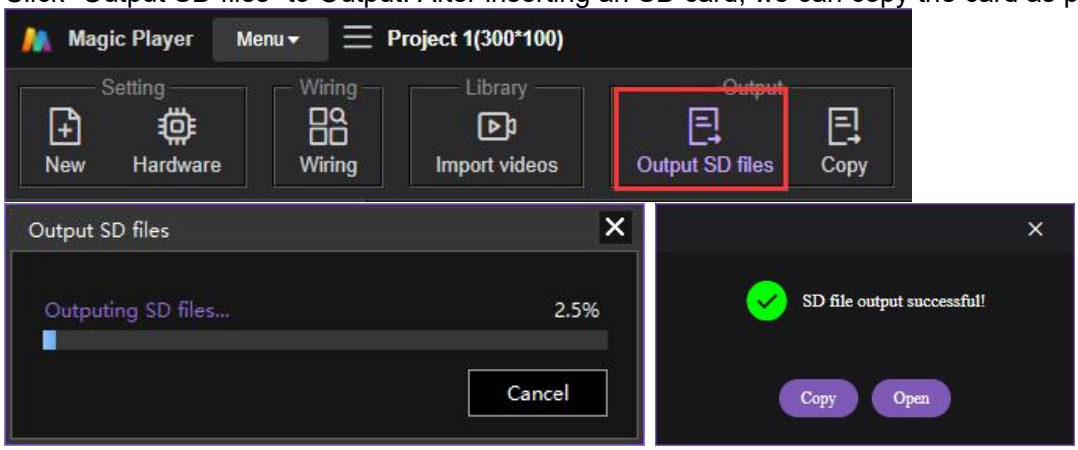


Picture 4 copy complete

7. OUTPUT AND COPY THE SD CARD FILE

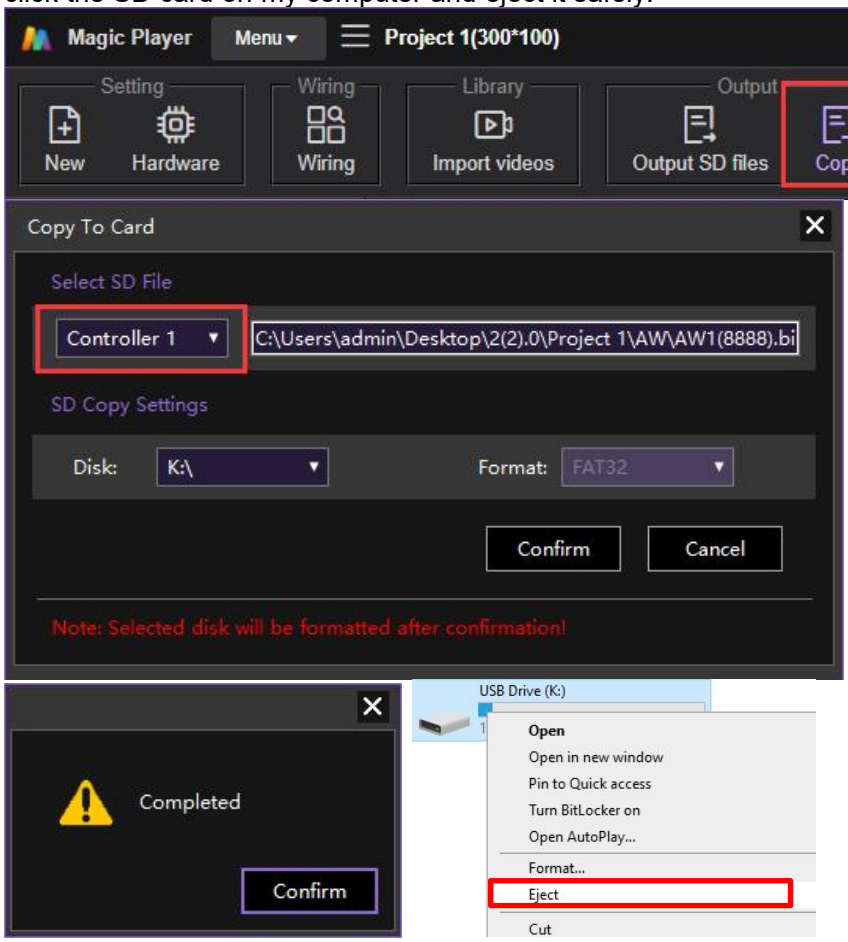
7.1. OUTPUT THE SD CARD FILE

Click “Output SD files” to Output. After inserting an SD card, we can copy the card as prompted.



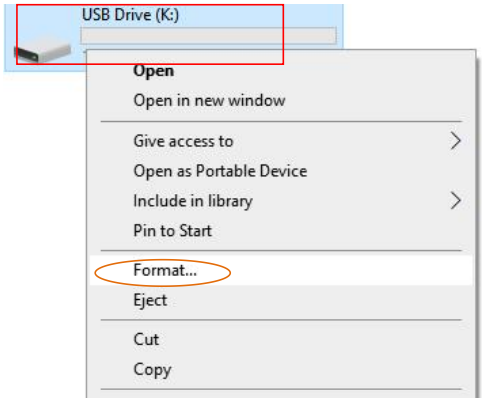
7.2. COPY THE SD FILE BY PLAYER

After the SD card is inserted, click [Copy] of Magic Player. Select the SD file to which the SD card belongs, and [Confirm] the card can be automatically copied. When the card is finished, please right-click the SD card on my computer and eject it safely.

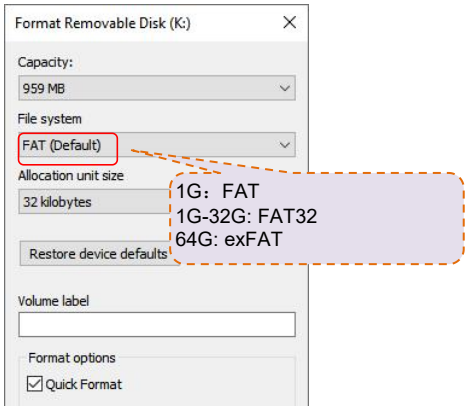


7.3. MANUAL FORMAT AND COPY CARD

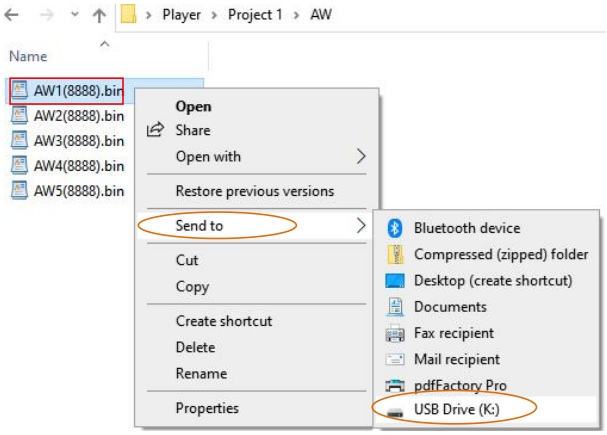
1) Right click the disk where the SD card locates.



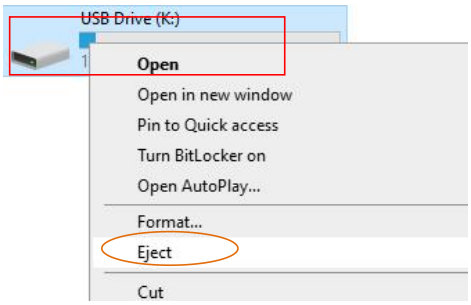
2) Select File systerm and 32KB (can check "Quick Format") and click START.



3) Right click AW*(8888).Bin file, send the file to removable disk.



4) Right click removable disk and click "Eject".



8. ERROR CODE

Error	Reason	Measure
E01.**.**	No SD card or SD card port is broken.	Insert the SD card. If an error occurs when inserting the SD card, the SD card holder is damaged. Contact us.
E02.**.**	SD card no response or breakdown.	Please replace the new SD card. If an error occurs when inserting the SD card, the SD card holder is damaged. Contact us.
E03.**.**	There is no file in the SD card or SD card is breakdown.	Copy SD card file again.
E05.**.**	Cannot read part of the card or bad connection.	Please replace the new SD card .
E07.**.**	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.
E18.**.**	The number of loaded pixels exceeds the upper limit.	Please reduce the number of project pixels.
E24.**.**	Fail to update firmware.	Please use the correct updated file to update.
E25.**.**	There is no update file in SD card.	Please copy the update file into SD card and operate again.
E26.**.**	Fail to generate UID confirmation.	Check whether an SD card is inserted into the controller; Please replace the SD card and generate the UID code again.

Error	Reason	Measure
E27.**.**	The SD card has too many bad areas.	Please replace the new SD card.

Description: The code is 6 digits. The first two digits are the fault code, and the last four digits are the subarea code to facilitate us to analyze the specific problem.

9. FITTINGS

Shows	Item	Number	Remark
	SD Card	1	Support 1G~64G
	2P Terminal	8	S208E equipment
	3P Terminal	8	S208 equipment
	straight screwdriver	1	