AW-210 MANUAL

Version: 4.0

Model: AW-210-C1

2024-9

CONTENTS

1. FUNCTION OVERVIEW

1. Control variety of regular SPI chips in luminaire.

UCS:	UCS1903, UCS1904, UCS1909, UCS1912, UCS2903, UCS2904, UCS2909, UCS2912, UCS5603, UCS8903, UCS8904, UCS9812
Titan:	TM1804, TM1809, TM1812, TM1814, TM1903, TM1913, TM1914, TM1934
Sunmoon:	SM16703, SM16704, SM16813, SM16714
Worldsemi:	WS2811, WS2812, WS2813, WS2818
Leixin:	LX1003
Baicheng:	P9883

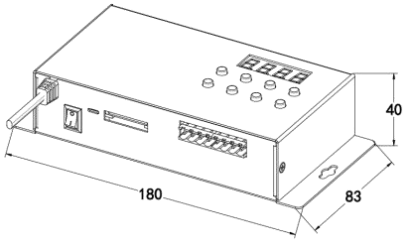
2. Built-in 99 animations to avoid the phenomenon of black screen caused by SD card bad.
3. SD card with a maximum capacity of 32 GB (effect file limit is 3.5 GB).
4. Support secondary setting chip, foot, 100-level brightness, and Gamma 1.0-5.0 curve adjustment. Lifting the limitation caused by software program setting error can not effectively control the luminaire.
5. Support automatic/manual point-by-point test to verify the problem of luminaire failure.
6. Support AC synchronization and fine tuning of power-on delay time to realize the animation synchronization of multiple controllers
7. Support with or Bluetooth control function (remote, small program or APP) to achieve a certain distance wireless signal control.

2. TECHNICAL PARAMETERS

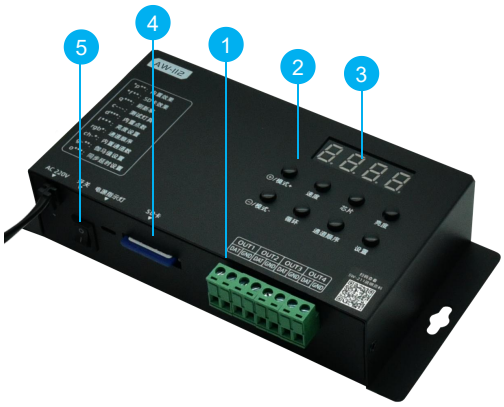
2.1. PRODUCT INFORMATION

Cover material:	Iron
Input voltage:	AC 220V - 240V
Output port:	TTL * 4 channels (Same output data)
Pixel driven:	≤ 960 pixels (native program) / 1280 pixels (SD card program)
Output power:	<3W
Working temperature:	-20℃ ~ 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 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 AC220-240V power supply is used. 4. No waterproof function in the control system, please pay attention on rainproof and waterproof during installing.
Net weight:	0.6 Kg

Size: L180*W83*H40
(Unit mm)



2.2. COMPONENT



① Output control lighting fixture
② Button
③ Nixie tube screen
④ SD card port
⑤ Power switch

3. BASIC OPERATION

3.1. BUTTONS FUNCTION

Button	Operation	Function
⊕/模式+ (mode +)	Short / long press	Switch / Quickly switch to the next data or animation.
⊖/模式- (mode -)	Short / long press	Switch / Quickly switch to the previous data or animation.
速度 (Speed)	Short / long press	Set the speed.
循环 (Playback mode)	Short / long press	Set the full loop, random, and single loop playback mode.
芯片 (Chip)	Short press	(1) Enter into the chip settings menu. (2) Confirm the selected chip.
通道顺序 (Channel sequence)	Short press	(1) Enter into the channel sequence settings menu. (2) Confirm the set channel sequence. (3) Set the test effect mode.
亮度 (Brightness)	Short press	(1) Enter into the brightness settings menu. (2) Confirm the set brightness.
设置 (Settings)	Short press	(1) Enter into the next setting display. (2) Switch between manual and automatic test modes.
	long press	Confirm setup and enter into the test function.

3.2. SPEED SELECTION

Press button “速度(Speed)” to select play speed, the less the rate, the quicker the speed.

Parameters	Speed (AC synchronous)								
Interface	0	1	2	3	4	5	6	7	8
(fps)	Stop	1	5	10	12	20	25	33	50

4. FUNCTION OPERACTION

4.1. INTERFAE INTRODUCTION

Nixie tube screen display description.

<table>
<tr><th>Tube display</th><th>Function</th><th>Entry mode</th><th>Specification</th></tr>
<tr><td>  </td><td>Main interface</td><td>Press ”速度” or ”循环”</td><td>The first digit is speed value.
The second digit shows the animations played at that time came from the built-in (P) or SD card (F).
The third and forth digit show the animation sequence number. “00” is full loop, “0.0.” is random.</td></tr>
<tr><td>  </td><td>Chip settings</td><td>Press ”芯片”</td><td>Chip details,
<table>
<tr><th>Tube</th><th>Chip</th><th>Tube</th><th>Chip</th><th>Tube</th><th>Chip</th></tr>
<tr><td>1804</td><td>TM1804</td><td>1909</td><td>UCS1909</td><td>6703</td><td>SM16703</td></tr>
<tr><td>1809</td><td>TM1809</td><td>1912</td><td>UCS1912</td><td>6704</td><td>SM16704</td></tr>
<tr><td>1812</td><td>TM1812</td><td>2903</td><td>UCS2903</td><td>6813</td><td>SM16813</td></tr>
<tr><td>1913</td><td>TM1913</td><td>2904</td><td>UCS2904</td><td>6714</td><td>SM16714</td></tr>
<tr><td>1914</td><td>TM1914</td><td>2909</td><td>UCS2909</td><td>2811</td><td>WS2811</td></tr>
<tr><td>1934</td><td>TM1934</td><td>2912</td><td>UCS2912</td><td>2812</td><td>WS2812</td></tr>
<tr><td>1814</td><td>TM1814</td><td>5603</td><td>UCS5603</td><td>2818</td><td>WS2818</td></tr>
<tr><td>1903</td><td>TM1903</td><td>8903</td><td>UCS8903</td><td>2813</td><td>WS2813</td></tr>
<tr><td>1903</td><td>UCS1903</td><td>8904</td><td>UCS8904</td><td>1003</td><td>LX1003</td></tr>
<tr><td>1904</td><td>UCS1904</td><td>9812</td><td>UCS9812</td><td>9883</td><td>P9883</td></tr>
</table></td></tr>
<tr><td>  </td><td>Channel sequence settings</td><td>Press ”通道顺序”</td><td>The sequence details,
<table>
<tr><th>Tube</th><th>Sequence</th><th>Tube</th><th>Sequence</th><th>Tube</th><th>Sequence</th></tr>
<tr><td>rgb</td><td>RGB</td><td>gbr</td><td>GBR</td><td>bgru</td><td>BGRW</td></tr>
<tr><td>grb</td><td>GRB</td><td>brg</td><td>BRG</td><td>rbgu</td><td>RBGW</td></tr>
<tr><td>bgr</td><td>BGR</td><td>rgbu</td><td>RGBW</td><td>gbru</td><td>GBRW</td></tr>
<tr><td>rbg</td><td>RBG</td><td>grbu</td><td>GRBW</td><td>brgu</td><td>BRGW</td></tr>
</table></td></tr>
<tr><td>  </td><td>Brightness settings</td><td>Press ”亮度”</td><td>L000 ~ L100. L000 is black.</td></tr>
<tr><td>  </td><td>Luminaire channel setting</td><td>Press ”设置” 1 time</td><td>CH-3 is 3 channels and CH-4 is 4 channels.</td></tr>
<tr><td>  </td><td>Test pixel settings</td><td>Press ”设置” 2 times</td><td>C000 ~ C960. C000 is black and C960 is all light.</td></tr>
</table>

<table>
<tr><th>Tube display</th><th>Function</th><th>Entry mode</th><th>Specification</th></tr>
<tr><td>  </td><td>Test effect settings</td><td>In the test pixel settings to press ”通道顺序”</td><td>
<table>
<tr><th>Display</th><th>Instruction</th><th>Remark</th></tr>
<tr><td>ALL</td><td>RGBW light up</td><td></td></tr>
<tr><td>CH1</td><td>R</td><td></td></tr>
<tr><td>CH2</td><td>G</td><td></td></tr>
<tr><td>CH3</td><td>B</td><td></td></tr>
<tr><td>CH4</td><td>W</td><td>The luminaire channel must be CH-4.</td></tr>
</table>
</td></tr>
<tr><td>  </td><td>Built-in effect length settings</td><td>Press ”设置” 3 times</td><td>d032~d960.
Each time you press ⊕ or ⊖, the pixels increase / decrease by 8.</td></tr>
<tr><td>  </td><td>Built-in effects refresh rate settings</td><td>Press ”设置” 4 times</td><td>q000 or q030~q300.
Built-in effect output interval, in mS. Advised to set q000 (adaptive).</td></tr>
<tr><td>  </td><td>Built-in effects gamma settings</td><td>Press ”设置” 5 times</td><td>g-10~g-50.
10 is 1.0 and 50 is 5.0.</td></tr>
<tr><td>  </td><td>Synchronous setting</td><td>Press ”设置” 6 times</td><td>o000~o999.
Power-on delay (unit: 10mS). o000 is recommended.</td></tr>
<tr><td>  </td><td>Restore</td><td>On the main to hold down “+” and “Settings”</td><td>Restore factory Settings: speed, mode, chip, brightness, channel sequence, built-in points, built-in refresh rate, synchronization delay Settings.</td></tr>
<tr><td>  </td><td>Abnormal</td><td></td><td>E01: Abnormal operation of the card. And the lunimaire will show to red, green and blue 3 color overall gradient.</td></tr>
</table>

4.2. FUNCTION OPERATIONAL SPECIFICATION

<table>
<tr><th rowspan="2">Function</th><th rowspan="2">Tube display</th><th rowspan="2">Interface</th><th colspan="3">Operation</th><th rowspan="2">Remark</th></tr>
<tr><th>Button</th><th>Press</th><th>Specification</th></tr>
<tr><td>Animation</td><td>  </td><td>Main</td><td>⊕/模式+
⊖/模式-</td><td>Short / long</td><td>Select animation</td><td>Automatically exit loop state.</td></tr>
<tr><td>Loop mode</td><td>  </td><td>Main</td><td>循环</td><td>Short / long</td><td>Select loop mode</td><td></td></tr>
<tr><td>Speed</td><td>  </td><td>Main</td><td>速度</td><td>Short / long</td><td>Select speed</td><td></td></tr>
<tr><td rowspan="2">Chip</td><td rowspan="2">  </td><td rowspan="2">Chip settings</td><td>⊕/模式+
⊖/模式-</td><td>Short / long</td><td>Select chip</td><td rowspan="5">10 seconds No operation exits</td></tr>
<tr><td>芯片</td><td>Short</td><td>Save</td></tr>
<tr><td rowspan="2">Channel sequence</td><td rowspan="2">  </td><td rowspan="2">Channel sequence settings</td><td>⊕/模式+
⊖/模式-</td><td>Short / long</td><td>Select channel sequence</td></tr>
<tr><td>通道顺序</td><td>Short</td><td>Save</td></tr>
<tr><td>Brightness</td><td>  </td><td>Brightness settings</td><td>⊕/模式+
⊖/模式-</td><td>Short / long</td><td>Set brightness</td></tr>
</table>

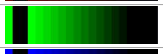
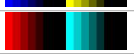
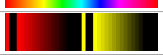
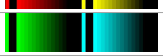
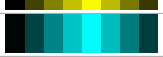
Function	Tube display	Interface	Operation			Remark
			Button	Press	Specification	
			亮度	Short	Save	
Luminaire channel		Luminaire channel setting	⊕/模式+ ⊖/模式-	Short / long	Set channel	
			设置	Long	Save	
Test pixel		Test pixel settings	⊕/模式+ ⊖/模式-	Short / long	Set pixel	
			设置	Short	Set auto or manual	
				Long	Save and return	
			通道顺序	Short	Enter into the test status.	
Test effect		Test effect settings	通道顺序	Short	Set effect	1 second No operation exits
Built-in effect length		Built-in effect length settings	⊕/模式+ ⊖/模式-	Short / long	Set length	
			设置	Long	Save and return	
Built-in effects refresh rate		Built-in effects refresh rate settings	⊕/模式+ ⊖/模式-	Short / long	Set refresh rate	
			设置	Long	Save and return	10 seconds No operation exits
Built-in effects gamma		Built-in effects gamma settings	⊕/模式+ ⊖/模式-	Short / long	Set gamma value	
			设置	Long	Save and return	
Synchronous		Synchronous setting	⊕/模式+ ⊖/模式-	Short / long	Set synchronous value	
			设置	Long	Save and return	

5. BUILT-IN ANIMATION

It has 99 built-in animations that can be played when there is no SD card or when the SD card is damaged.

The * in front of the P letter indicates the speed value.

Mode	Animation	Preview	Mode	Animation	Preview
*P00	Loop full (mode 1-98)		*P50	Leftward wave (20 px)	
*P0.0.	Random (mode 1-98)		*P51	Leftward wave (20 px)	
*P01	Always light (5 s)		*P52	Leftward wave (20 px)	
*P02	Always light (5 s)		*P53	Leftward wave (20 px)	
*P03	Always light (5 s)		*P54	Leftward wave (20 px)	
*P04	Always light (5 s)		*P55	Leftward wave (20 px)	
*P05	Always light (5 s)		*P56	Leftward wave (20 px)	
*P06	Always light (5 s)		*P57	Rightward wave (20 px)	
*P07	Always light (5 s)		*P58	Rightward wave (20 px)	

Mode	Animation	Preview	Mode	Animation	Preview
*P08	Flicker		*P59	Rightward wave (20 px)	
*P09	Flicker		*P60	Rightward wave (20 px)	
*P10	Flicker		*P61	Rightward wave (20 px)	
*P11	Gradually turn		*P62	Rightward wave (20 px)	
*P12	Trailing (96 px)		*P63	Rightward wave (20 px)	
*P13	Trailing (96 px)		*P64	Leftward trailing (20 px)	
*P14	Trailing (96 px)		*P65	Leftward trailing (20 px)	
*P15	Leftward trailing (8 px)		*P66	Leftward trailing (20 px)	
*P16	Leftward trailing (8 px)		*P67	Leftward trailing (20 px)	
*P17	Leftward trailing (8 px)		*P68	Leftward trailing (20 px)	
*P18	Leftward trailing (8 px)		*P69	Leftward trailing (20 px)	
*P19	Leftward trailing (8 px)		*P70	Leftward trailing (20 px)	
*P20	Leftward trailing (8 px)		*P71	Rightward trailing (20 px)	
*P21	Leftward trailing (8 px)		*P72	Rightward trailing (20 px)	
*P22	Leftward trailing (20 px)		*P73	Rightward trailing (20 px)	
*P23	Leftward trailing (20 px)		*P74	Rightward trailing (20 px)	
*P24	Leftward trailing (20 px)		*P75	Rightward trailing (20 px)	
*P25	Leftward trailing (20 px)		*P76	Rightward trailing (20 px)	
*P26	Leftward trailing (20 px)		*P77	Rightward trailing (20 px)	
*P27	Leftward trailing (20 px)		*P78	Leftward trailing (40 px)	
*P28	Leftward trailing (20 px)		*P79	Leftward trailing (40 px)	
*P29	Two-way trailing (8 px)		*P80	Leftward trailing (40 px)	
*P30	Two-way trailing (8 px)		*P81	Leftward trailing (16 px)	
*P31	Two-way trailing (8 px)		*P82	Leftward trailing (16 px)	
*P32	Two-way trailing (8 px)		*P83	Leftward trailing (16 px)	
*P33	Two-way trailing (8 px)		*P84	Leftward trailing (120 px)	
*P34	Two-way trailing (8 px)		*P85	Leftward trailing (40 px)	
*P35	Two-way trailing (8 px)		*P86	Leftward trailing (40 px)	
*P36	Leftward trailing (8 px)		*P87	Leftward trailing (40 px)	
*P37	Leftward trailing (8 px)		*P88	Breath (black) (128 gray)	
*P38	Leftward trailing (8 px)		*P89	Breath (black) (128 gray)	
*P39	Leftward trailing (8 px)		*P90	Breath (black) (128 gray)	
*P40	Leftward trailing (8 px)		*P91	Rightward trailing (160 px)	
*P41	Leftward trailing (8 px)		*P92	Breath (duskiness)	
*P42	Leftward trailing (8 px)		*P93	Breath (duskiness)	
*P43	Rightward trailing (8 px)		*P94	Breath (duskiness)	
*P44	Rightward trailing (8 px)		*P95	Breath (duskiness)	
*P45	Rightward trailing (8 px)		*P96	Breath (duskiness)	
*P46	Rightward trailing (8 px)		*P97	Breath (duskiness)	
*P47	Rightward trailing (8 px)		*P98	Breath (duskiness)	
*P48	Rightward trailing (8 px)		*P99	Black	
*P49	Rightward trailing (8 px)				

6. WIRELESS CONTROL

6.1. BLUETOOTH REMOTE CONTROL

When the controller supports the Bluetooth remote control function, it can use the remote control of Bluetooth signal to call effect and speed within 10 meters.

Button	Operation	Result
A	Short press	Effect increase 1.
B	Short press	Effect decrease 1.
C	Short press	Set speed.
D	Short press	Tap to switch play SD card file or built-in file.

If the remote control indicator is not on during operation, replace the battery

6.2. CONTROLLED BY BLUETOOTH APP

When the controller enables the Bluetooth signal, the effect, speed and other operations of the controller can be called through the Eseeker app of the phone. The operation below.

1. Open the app store and search “Eseeker” to install.
   Note, the name extension must be .apk.
2. Power on the controller.
3. Select the device to connect on App.

For more details, please refer to ESEEKER INSTRUCTION.

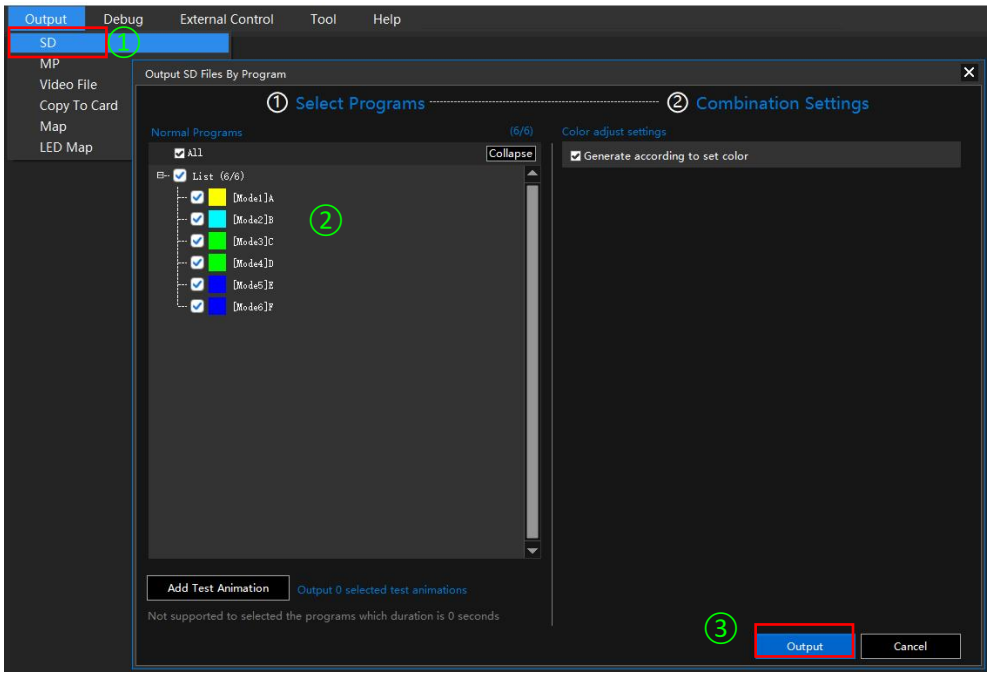
7. UPDATE FIRMWARE PROGRAMS

The controller can read the firmware file of the SD card to upgrade the hardware program. The operation is as follows.

1. Copy the xxxxxx.bin file (generate it according to SeekwayID.bin.) into the SD card refer to MANUAL FORMAT AND COPY CARD.
2. Pug SD card into the controller and power on. The nixie tube displays "UP-", and the controller firmware is being upgraded. When UP-” disappears and no E21 error is reported, the upgrade is complete.
3. After the upgrade is complete, power off and replace the SD card with the effect file.

8. OUTPUT AND COPY THE SD CARD FILE

8.1. OUTPUT THE SD CARD FILE

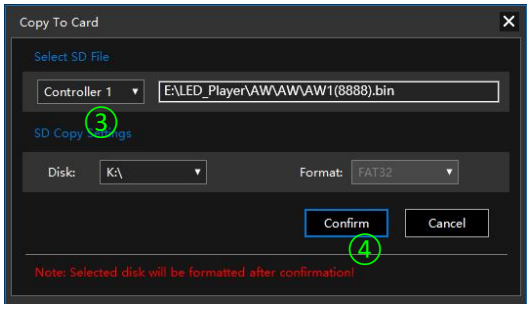


① Click “SD” of “Output” in LED Player.

② Select the program need to output. The total number of selected programs must be less than 96.

③ Click “Output”.

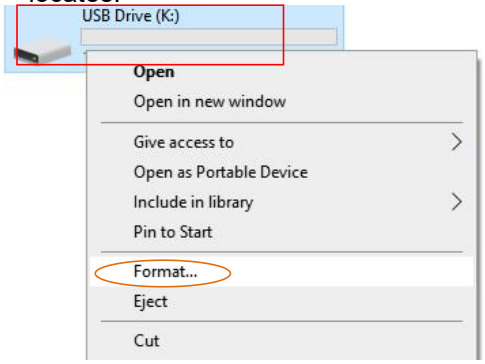
8.2. COPY THE SD FILE BY LED PLAYER



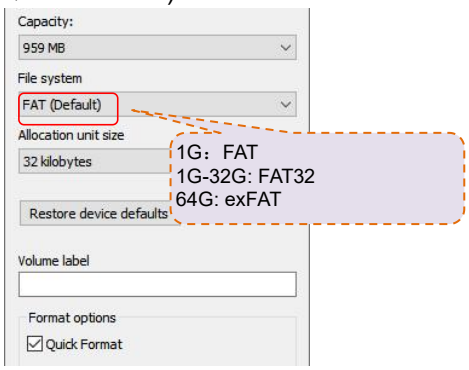
1. Input the SD card.
2. Click “Copy to SD” of Output, and open the windows.
3. Select the controller number be copied.
4. Click Confirm.

8.3. MANUAL FORMAT AND COPY CARD

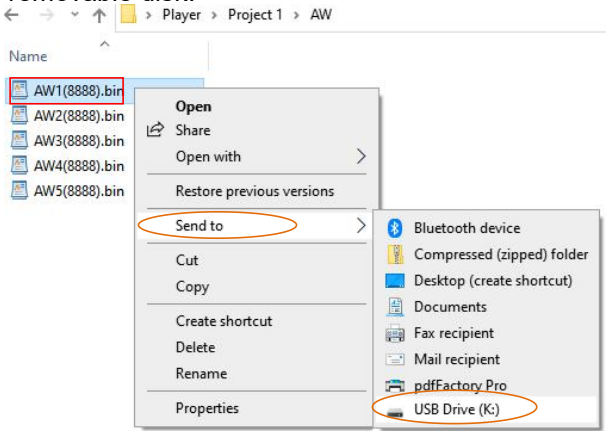
1) Right click the disk where the SD card locates.



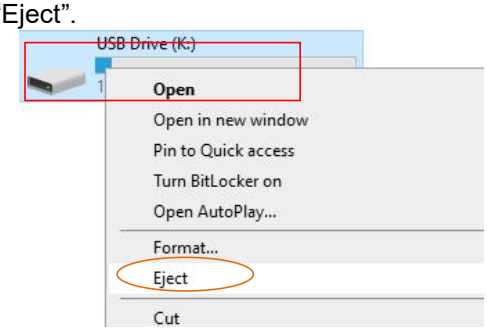
2) Select File systerm and 32KB (can check "Quick Format") and click START.



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



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



9. ERROR CODE AND TROUBLE SHOOTING

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.
E21	Fail to update firmware.	Please use the correct updated file to update.
E22	There is a problem updating the file.	Contact us.
E23	Accidental loss of firmware.	Contact us.

10. FITTINGS

Shows	Item	Number	Remark
	SD Card	1	The 128M-32GB card is configured randomly. It does not affect the actual use.
	2P Terminal	4	
	Bluetooth remote controller	1	Only use with corresponding functions.