



Instruction Manual for Smart Move Motorized screen



Technical Assistance

If you need help with installing this screen please visit
www.sapphireav.com



Thank you for purchasing a sapphire projection screen.

Before use, please read instructions carefully. After installation, store instructions for future reference.

Trouble shooting

1. Screen does not work properly even after installing.

Causes	Solutions
Controller is short of power, or the anode and cathode on the batteries are not aligned.	Follow manual instruction and reassemble the batteries. Tighten the power plug with reference to the instruction manual.
The power plug is loosen.	Tighten the power plug with reference to the instruction manual.
The carriage wheel gets stuck.	Manually adjust the carriage wheel to make it back to proper position.

2. The housing can be descended but not ascended.

Causes	Solutions
Secure positioning executive device is stuck without retracting to proper position.	Manually adjust the device to normal situation.

Installation Safety Information

Point 1: It is crucial that the belt or wire straps are installed vertically at the same distance on the ceiling as they are on the casing, this is to ensure the belt or wire has proper alignment and they are completely straight/parallel with each other

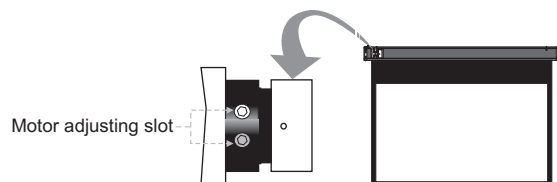
Point 2: If using 3.5m screens and over with the belt it is important that the buckles at the top are hanging free so the belt is not twisted as per the image on our website.

Point 3: The screen must never be operated without tension on both wires / belts.

Point 4: The straps and belts should be checked over annually by a competent person.

Warnings

- Ensure the screen fabric is clean and free from odds and ends before operation. The motor will automatically stop if being continually operated the over 4 minutes at a time. Another 2 minutes is needed to cool down the motor before another operation. No lubricant is required. Please do not personally adjust the drop and retract limits of the screen since they have been properly pre-set. Any problem please ask your local dealer or professionals for advise.



- The ceiling used for fixture installation must be secure to prevent the screens from falling.
- Appointed professional is required for the installation of the motor in case that a mis-connection may lead to fire or leaks.
- Make sure the screen is at the situation of load when operating it.
- To guarantee a perfect performance, please be noted:
 - Do not touch the screen surface with hands as it may cause scratches or tears.
 - Do not write or draw on the surface.
 - Clean the screen with a soft cloth and lukewarm water. Do not use any detergent or cleaning chemicals.
- Roll up the screen after every use.
- To prevent unnecessary damage, the operating and maintaining works of the screen should be done by adults.

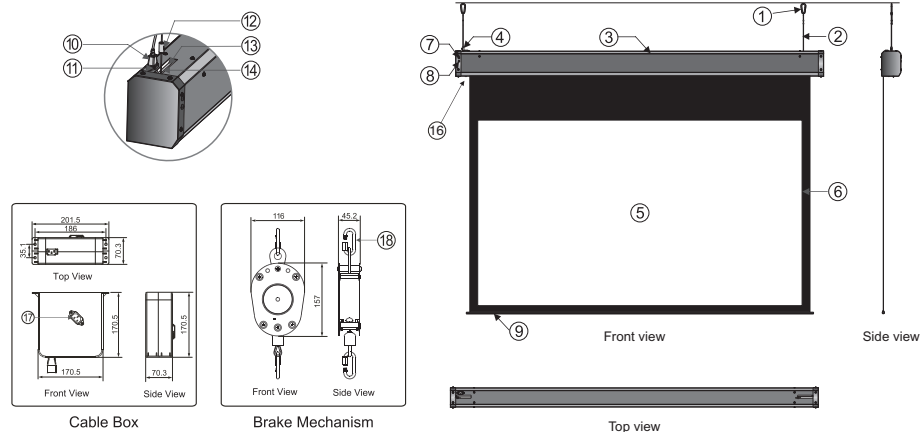
	Ignoring the safety warnings may lead to injuries and/or damaging the product.		Fixtures should be installed in a secure place to avoid accidents or the screen falling.
	Do not operate the screen while connecting any power source or remote controls.		After operation, retract the fabric to housing to keep it clean and durable.
	Please contact your local dealer for repairs or maintenance. Avoid taking apart the fixtures yourself. Loose parts may cause the screen to fall.		Refrain from hanging anything on the screen as it may cause the screen to fall.

Do not take apart and replace with unknown parts. If there are any problems, please contact your local dealer. Product specifications are subject to change.

Sapphire Smart Move screen provides solution for halls with high ceiling. It provides easy installation and ideal viewing angle. This screen is suitable for venues with high ceiling from 5 to 8 metres such as hotels, boardrooms, banquet halls, churches and amphitheatre..

Description

Illustration



Screen parts

①	Hook	⑩	Cable box plug
②	Sling Wire	⑪	Motor Socket
③	Housing	⑫	Secure positioning screw
④	Secure positioning piece	⑬	Carriage wheel
⑤	Screen fabric	⑭	Secure position executive device
⑥	Black border	⑮	Socket on cable box
⑦	Retract limit hole for wire-rolling motor	⑯	LED Indication Light
⑧	Drop limit hole for wire-rolling motor	⑰	Cable Box Socket
⑨	Bottom bar	⑱	Buckle

Accessories

- Cable box (1 pc)
- Brake Mechanism (2 pcs)
- φ5 x 40mm Tapping screws and caps (4 sets)
- Cable lock (1pc)
- Allen key (1pc)
- Flat Network Control Cable Lock (1pc)
- Remote controller (1pc)
- Cable (1 pc)
- φ4x10 Screw (1 pc)
- Batteries (1set)
- Instruction manual (1pc)

Optional Accessories

- Ethernet Cable Box ■ Multimedia Cable Box ■ Wall Switch ■ Ceiling Installation Part ■ Synchro Power Relay



Installation

Take out all the parts from the packaging and follow the accessories guideline to ensure you have all the parts. Installing is as below.

1. To drill 6 proper holes according to the distance between two hooks, and then hammer the screws (not provided) into the holes, as well as fasten the round flying rings (not provided, make sure each of them can endure at least 100Kg weight to avoid falling down). (Figure 1)

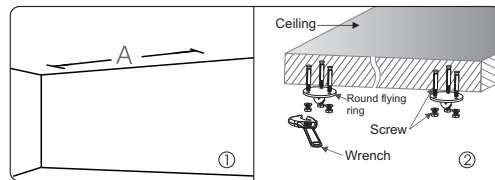


Figure 1

2. To drill 4 holes to match with the holes on the cable box, and then hammer the tapping caps into the holes, as well as fixing the cable box onto the ceiling with the tapping screws. (Cable box is strongly suggested to mount at the left side of the screen)(Figure 2-3)

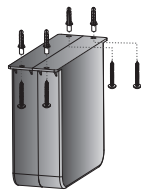


Figure 2

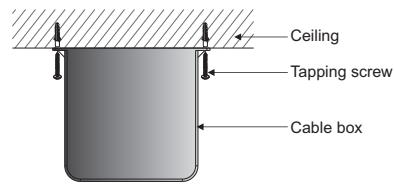


Figure 3

3. To hang the hooks over the round flying rings, at least 2 persons are needed for this operation. (Figure 4-5)

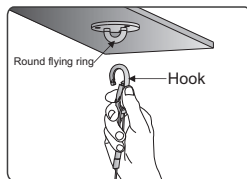


Figure 4

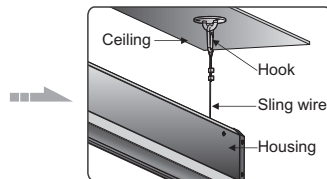
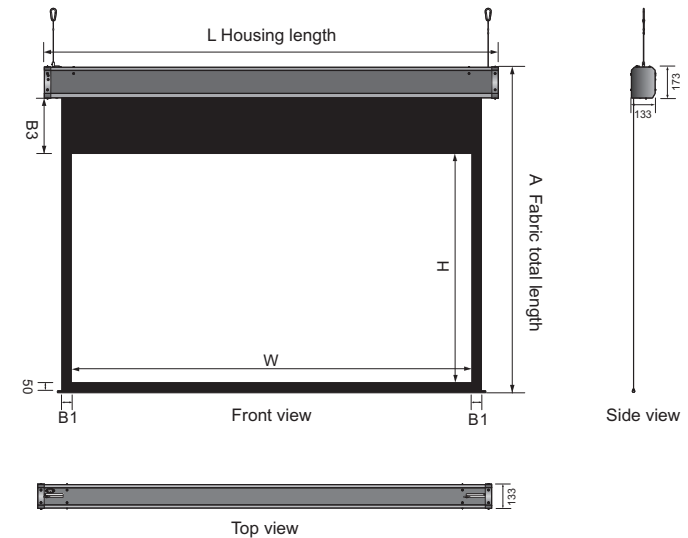


Figure 5

Specifications

Format	Model	Size (in)	Viewing area		L (mm)	A (mm)	B1(mm)	B3(mm)	Net weight (Kg)
			W (mm)	H (mm)					
1:1	SSM180RADS	70"	1780	1780	2013	2129	23	80	29.0
	SSM200RADS	84"	2030	2030	2317	2373	50	80	33.5
	SSM240RADS	96"	2338	2338	2625	2681	50	80	38.8
	SSM250RADS	100"	2540	2540	2827	2883	50	80	42.9
4:3	SSM200RADV	100"	2030	1520	2317	1863	50	80	34.3
	SSM240RADV	120"	2338	1755	2625	2098	50	80	38.7
	SSM300RADV	150"	3048	2286	3335	2629	50	80	50.2
16:9	SSM180RAD-WSF	77"	1710	958	1997	1301	50	80	28.1
	SSM200RAD-WSF	92"	2030	1145	2317	1808	50	200	33.4
	SSM240RAD-WSF	106"	2338	1320	2625	1983	50	200	38.3
	SSM266RAD-WSF	120"	2656	1494	2943	2157	50	200	43.7
	SSM300RAD-WSF	136"	3048	1715	3335	2378	50	200	50.1

Remarks: Housing length will change upon different screen sizes, above specifications are subject to change without informing. (The tolerance for L is 3mm.)



Motor specifications

Motors	Voltage (V)	Frequency (Hz)	Power (W)	Application
Motor for fabric	230V/120V/100V	50Hz/60Hz	85W/85W	Applicable for all Skyshow screens
Motor for wires	230V/120V/100V	50Hz/60Hz	250W/220W	Applicable for all Skyshow screens

1. Retract limit adjusting. Take off the knob from the whole and then use the provided allen key to adjust. If it goes clockwise the housing would raise, to adjust anticlockwise the housing would lower down. (Figure 23)
2. Retract drop adjusting. Take off the knob from the whole and then use the provided allen key to adjust. If it goes clockwise, the housing would lower down, to adjust anticlockwise the housing would raise. (Figure 24)

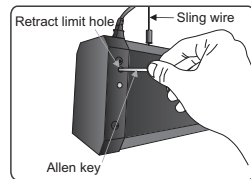


Figure 23

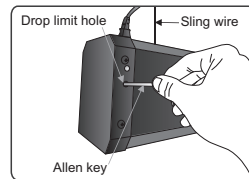


Figure 24

Remarks: default setting should be kept. If it is special situation, the remote localizer is recommended.

Housing retract limit

For the cause of safety, there is also Secure positioning executive piece besides Remote localizer.

1. Housing retract limit uses touching switch, consists of secure positioning piece and secure positioning system.(refer to description at page 1) You just need to loosen the screw on the position piece and then fasten again after moving it to your desired position. (Figure 25)

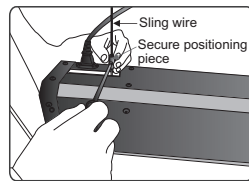


Figure 25

Remarks: Secure positioning piece would always need to be at least 10cm lower than the position you set for highest retract limit of remote localizer.

2. When housing retracts to a certain height and reach the secure positioning piece, the touching switch would be off by being pressed by secure positioning piece onto the secure positioning executive piece. The housing won't raise any more but can only lower down. (Figure 26-27)

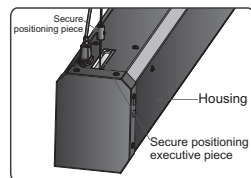


Figure 26

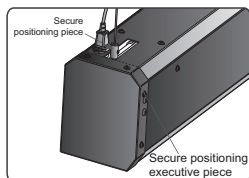


Figure 27

- 3.To hang the strap on the rings (note: do not operate after pull out the cable from cable box) (figure 3-4).

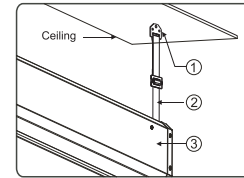


Figure 3

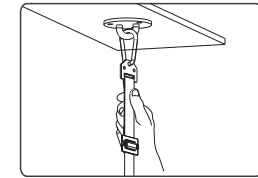


Figure 4

Note: the screen needs to be hanging if you want to adjust the length of strap (the drive mechanism can be opened when the strap is carrying and power on), and the use the controller for adjusting the length of strap.

4. Hook the buckles ⑱ of brake mechanism on the rings, and then fasten the buckles (figure 5-6)

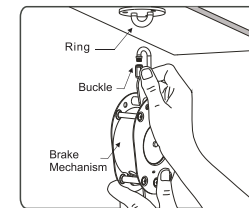


Figure 5

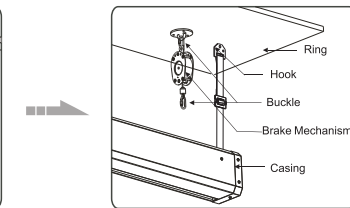


Figure 6

5. Hook the low buckles of brake mechanism on the hanging pieces, and then fasten the buckles (figure 7-9)

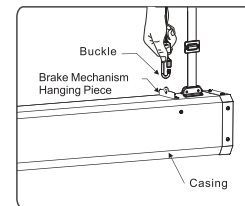


Figure 7

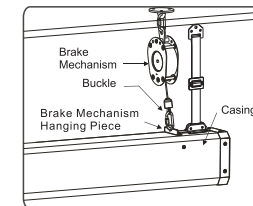


Figure 8

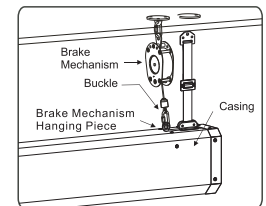


Figure 9

6. There are two parts of cable, cable from Cable box and Main cable. Please insert the plug into the motor socket.
(Figure 6-7)

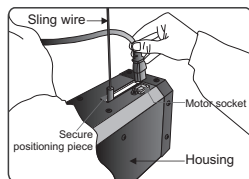


Figure 6

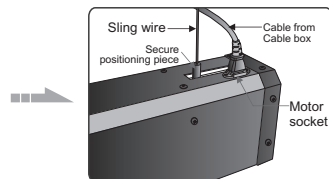


Figure 7

7. To loop the cable with the Cable lock, and then fasten it onto the housing top via screw 4x10mm.

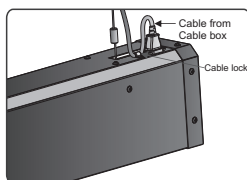


Figure 8

8. Insert the plug from Main cable into the socket on the Cable box. (Figure 9-10)

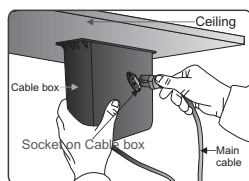


Figure 9

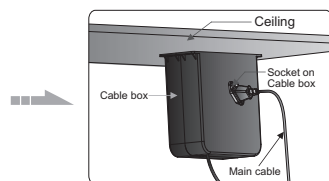


Figure 10

Hidden Installation

The screen can be hiddenly installed on ceiling, with reference to the above-mentioned steps 1-6.

Hidden Installation Illustration

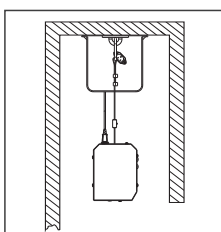


Figure 11

Screen position instructions

There are totally 3 solutions to position the screen, Remote localizer, Retract/drop limit holes for sling wires and Secure positioning piece.

Remote localizer (Recommended)

(The matching between controller and screen is already done in factory pre-setting)

1. When the screen is at loading situation, you can adjust the retract/drop limit via the remote controller. (Retract position is larger than 30cm to the installing point, drop position is smaller than 495cm to the installing point.)
2. Press the Localizer hole at the back of the remote control with one small clip or equivalence, and then press the button "Up for sling wires". When the Red LED is illuminated, press the "Up for sling wires" to make the screen stop at desired position, and then press the Localizer again. Then the LED is off and screen stops running. That is the way to set the upper limit for the screen.(Figure 17-18)

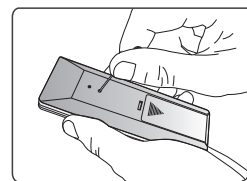


Figure 17



Figure 18

3. Press the Localizer hole at the back of the remote control with one small clip or equivalence, and then press the button "Down for sling wires". When the Red LED is illuminated, press the "Down for sling wires" to make the screen stop at desired position, and then press the Localizer again. Then the LED is off and screen stops running. That is the way to set the lower limit for the screen.(Figure 19-20)

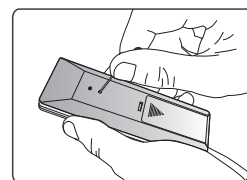


Figure 19

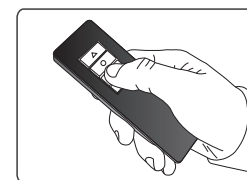


Figure 20

⚠ Attention: For the safety effectiveness for the remote localizer, make sure the distance between the localizer and the Secure Positioning Piece is 10cm.

Retract/drop limit holes for sling wires(Do not adjust the allen keys without advise from manufacturer.)

The retract / drop limit are pre-setted in factory already, the retract limit is 30cm from top of housing to installing point, (Figure 21) drop limit is 495cm. (Figure 22) (Please call your local dealer for assistance for limit adjusting, since no professional operation would lead to the damage of screen.)

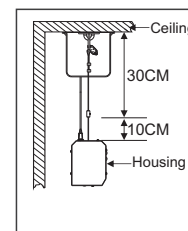


Figure 21

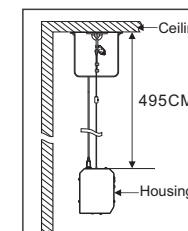


Figure 22

Operation instructions

Power connecting

1. Insert the plug from Main cable into socket of power. (Figure 12)

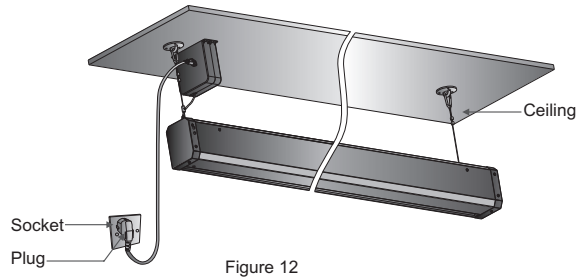


Figure 12

Load device

1. There is Load protection device in this screen, assuring screen to work only after being properly installed. When hanging the screen onto flying rings, screen gravity would turn the bar wheel via sling wires, which connects the load switch automatically. (Figure 13-14)

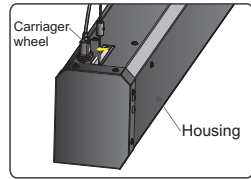


Figure 13

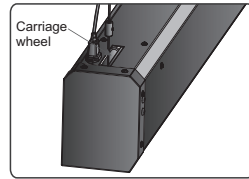


Figure 14

Remote controller instructions

There is matching function between controller and screen, the controller needs to be programmed before using.

1. Screen is at the situation of load.
2. Press buttons of "Up for screen fabric" and "Stop for both" simultaneously, then connect the screen to power electricity(according to your local voltage). After 5 seconds, release the pressed buttons. (Figure 15)
3. Press the button of "DOWN for screen fabric" to test whether this programming works. (Figure 16)

Remarks: If it fails then repeat steps 2 and 3.



Figure 15

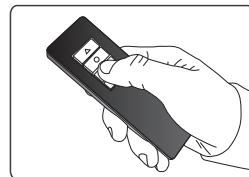


Figure 16

Remote controllers instruction

Remote controller instruction:

1. To retract screen, press "UP for screen fabric".
2. To stop sling wires or screen fabric, press "STOP for both".
3. To lower down screen, press "DOWN for screen fabric".
4. To retract sling wires, press "UP for sling wire".
5. To lower down sling wires, press "DOWN for sling wire".

Remote controller guideline:

1. Working temperature: -20°C - +80°C.
2. Protection index: IP30.
3. Batteries: 1.5V x 2pcs, model # AAA.
4. Working under normal polluted environment.
5. Take out batteries if the controller will not be used for a long time.
6. Please change the batteries when signal is weak.

How to install the batteries:

Please change the batteries as below when signal is weak.

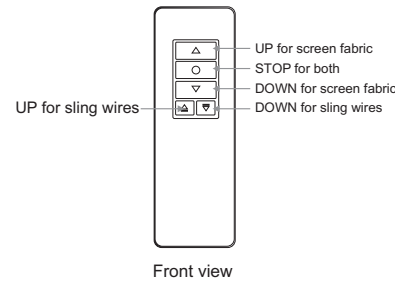
1. Turn around the controller, push to pen the cover as guiding arrow.
2. Put the batteries in according to the guide of anode and cathode.
3. Close the cover.

Caution

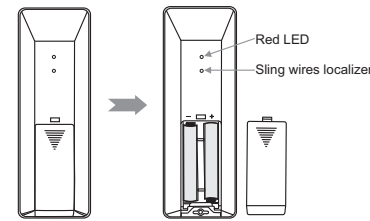
The controller does not work if mistaking the anode and cathode of batteries, please correct the direction according to the figure on the left.

LED Indication Light

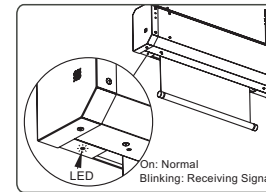
Under the casing on the left side, the LED light can indicate the status of the screen.
When the light is on, it means the power supply is normal.
When the light is blinking, it means the screen is receiving signals.



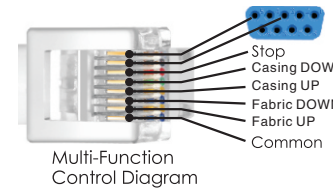
Front view



Back view



Central Control Instruction



Multi-Function Control Diagram

Emitter Function:

1	RS232 GND /RS485 A	5	Casing UP
2	RS232 TXD /RS485 B	6	Fabric DOWN
3	Stop	7	Fabric UP
4	Casing DOWN	8	Common Line

Central Control Format Agreement

1)Communication Agreement Setting:
data bits: 8 bits, start bits: 1 bit, stop bits: 1 bit, Baud Ratio: 2400.

Function	Hexadecimal System	decimal System
Stop	FF EE EE EE CC	1099225296588
Casing DOWN	FF EE EE EE E9	1099225296617
Casing UP	FF EE EE EE C9	1099225296585
Fabric DOWN	FF EE EE EE EE	1099225296622
Fabric UP	FF EE EE EE DD	1099225296605

RS485 Custom Setting Address:

1、RS-485, RS-232 input
A continuous data sends two times, each time interval of 200 ms.
3 bytes of studying address directive are custom setting address directive.
Central Control Format Agreement
1) Communication Agreement Setting
Data Bits: 8 bits
Start Bits: 1 bit
Stop Bits: 1 bit
Baud Ratio: 2400
Common directives are in chip of screen and can not be changed.

- 2) Directive for retracting the fabric: 0xFF 0xEE 0xEE 0xEE 0xDD
- 3) Directive for stopping the screen: 0xFF 0xEE 0xEE 0xEE 0xCC
- 4) Directive for extending the fabric: 0xFF 0xEE 0xEE 0xEE 0xEE
- 5) Directive for retracting the casing: 0xFF 0xEE 0xEE 0xEE 0xC9
- 6) Directive for extending the casing: 0xFF 0xEE 0xEE 0xEE 0xE9
- 7) Studying address directive: 0xFF 0xFF 0xFF 0xFF 0xAA

Directive Composing Instruction:

0xFF is only bit; 0x stands for 16 hexadecimal system; FF is effective bit; a directive is composed by 5 bits.
Studying directive 0xFF 0xFF 0xFF 0xFF 0xAA
0xFF and 0xAA can not be changed, but 0xFF 0xFF 0xFF can be changed to any 16 hex data, which stand for address bit.

- The changed working directive
- 1) Directive for retracting the fabric: 0xFF 0xFF 0xFF 0xFF 0xDD
 - 2) Directive for stopping the screen: 0xFF 0xFF 0xFF 0xFF 0xCC
 - 3) Directive for extending the fabric: 0xFF 0xFF 0xFF 0xFF 0xEE
 - 4) Directive for retracting the casing: 0xFF 0xFF 0xFF 0xFF 0xC9
 - 5) Directive for extending the casing: 0xFF 0xFF 0xFF 0xFF 0xE9
 - 6) Studying address directive: 0xFF 0xFF 0xFF 0xFF 0xAA

Example: the studying directive is 0xFF 0x10 0x11 0x12 0xAA which can be changed to:

- 7) Directive for retracting the fabric: 0xFF 0x10 0x11 0x12 0xDD
- 8) Directive for stopping the screen: 0xFF 0x10 0x11 0x12 0xCC
- 9) Directive for extending the fabric: 0xFF 0x10 0x11 0x12 0xEE
- 10) Directive for retracting the casing: 0xFF 0x10 0x11 0x12 0xC9
- 11) Directive for extending the casing: 0xFF 0x10 0x11 0x12 0xE9
- 12) Studying address directive: 0xFF 0x10 0x11 0x12 0xAA

Studying Directive and Operation

After connecting power, studying status will operate within the first 10 seconds. The studying directive is 0xFF 0xFF 0xFF 0xFF 0xAA. The screen can be used normally after study completed, but the screen can not be used normally after the address bit changed, so that one port can be used to control many screens.
Example:

Screen A and screen B with RS-485 port, if need to control these two screens synchronously that the directive 0xFF 0xEE 0xEE 0xEE 0xDD will be sent out from the port. If need to control these two screens in different movement, such as screen A goes down and screen B goes up, common directive can not be used and separated by address bit at this time.
Connect the power for screen A, and send out directive 0xFF 0x10 0x11 0x12 0xAA. At the same time, the address of screen A is 0x10 0x11 0x12. Entering the operating address of screen A can control the screen.

Directive for retracting the fabric: 0xFF 0x10 0x11 0x12 0xDD
Directive for stopping the screen: 0xFF 0x10 0x11 0x12 0xCC
Directive for extending the fabric: 0xFF 0x10 0x11 0x12 0xEE
Directive for retracting the casing: 0xFF 0x10 0x11 0x12 0xC9
Directive for extending the casing: 0xFF 0x10 0x11 0x12 0xE9
Completed the studying in screen A, and then disconnect the power in screen A. Please operate the screen B in same way and change the address to 0xAA 0xAA 0xAA. Entering the operating address of screen B can control the screen.
Directive for retracting the fabric: 0xFF 0x10 0x11 0x12 0xDD
Directive for stopping the screen: 0xFF 0x10 0x11 0x12 0xCC
Directive for extending the fabric: 0xFF 0x10 0x11 0x12 0xEE
Directive for retracting the casing: 0xFF 0x10 0x11 0x12 0xC9
Directive for extending the casing: 0xFF 0x10 0x11 0x12 0xE9
This studying is one address bit for a long time until next address bit change to update.
After studying address bit, the common directive is still effective, so the address bit can not be 0xEE 0xEE 0xEE.

Attachment 1
Compare 16 hexadecimal system to 10 hexadecimal system

16 hexadecimal system	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
10 hexadecimal system	1	2	3	4	5	6	7	8	9	10	12	13	14	15	16