Flex dot Installation and Safety Manual

Welcome to use Flex Dot. In order to use Flex Dot with convenience，**please read the safety precautions in this section before installing, powering, operating or servicing this product.**

Features

Flex dot strip is a multi-purpose, high-intensity strip of 40 full-color LED dots generating extraordinary effects without the constraints of fixture size or shape. Flex dot enables patterns and video on almost any interior or exterior surface, including ceilings, floors, three-dimensional objects, sculptures, and more. Its small node size allows installation in tighter spaces and various shipe, which create perfect image effect.

1. Quickly deploy video over large spaces in creative ways with Flex-Dot, a flexible LED pixel strip. It can bend, wrap, drape, and fold to conform to even most demanding designs.
2. Create an LED screen out of uncommon surfaces and shapes, which widely apply to stage sets, clubs, retail, even outdoor environments, enabling unique display solutions to be realized without the long lead times or costs associated with a 'from scratch' design. A cable-like construction gives flexibility for even the most arbitrary shapes.
3. Flex-dot strips are merged into one seamless video display.
4. Individually controllable, bright, RGB pixels
5. Excellent image quality
6. IP65 for use indoors or out

Safety caution

1. While getting new purchased Flex Dot, please make sure every device is not damaged during the transportation, if finding anything damaged, please contact local distributor or your supplier.
2. Do not connect Flex dot strip with AC power directly, which will damage Flex dot strip. Please check the connection drawing in the instruction for correct installation method.
3. Please install Flex dot far away from the place where is flammable and tend-exploding.
4. Do not install Flex Dot where the child can easily touch.
5. Once finding the scarfskin of the wire is damaged, the broken wire should be protected or replaced;
6. If cutting Flex Dot from the middle of the strip, the terminal should be sealed, stop it from short circuit.
7. when using at outdoor, the device of the output of signal and power should be protected from water washing.
8. comply your local regulation of electric equipment usage.

Flex Dot strip specifications

|	
Resolution	Pitch 75mm, 100mm, 150mm, 200mm (pitch can be customized)
Pixel	RGB 3-in-1 LED
Pixel size	23mm (Width) **x**30mm(Depth) **x**13mm(Height)
Packaging	Clear Housing/Black wires
Whether rating	IP 44(IP 65 optional)
Bit depth per color	16bit
Bit depth per pixel	48bit
Viewing angle	120º × 120º
Service life	80000 hours
Brightness (white)	2.5 candela per pixel
Pixels per strip	40 pc
Input voltage	DC 12V
Power consumption per pixel(White)	0.7Watts
Maximum ambient temperature (Ta max.):	50°C (122° F)
Minimum ambient temperature (Ta min.)	-20°C (-4° F)
Control protocol	TCP/IP
Control system	HC-105 LED Video Controller HC-104 Easy Media Player

Dimensions and stucture

All dimensions are in millimeters

Figure 1 is Flex dot strip structure overview
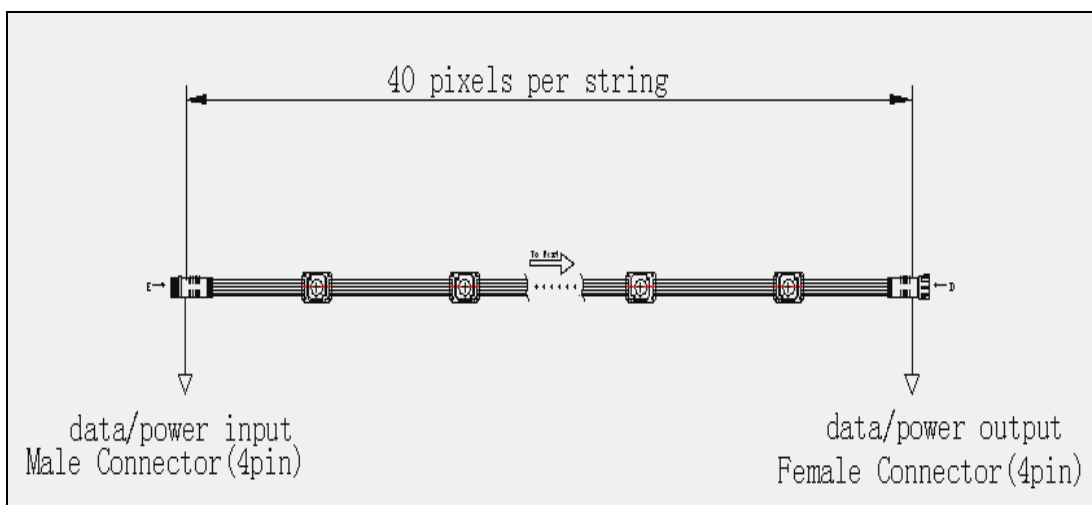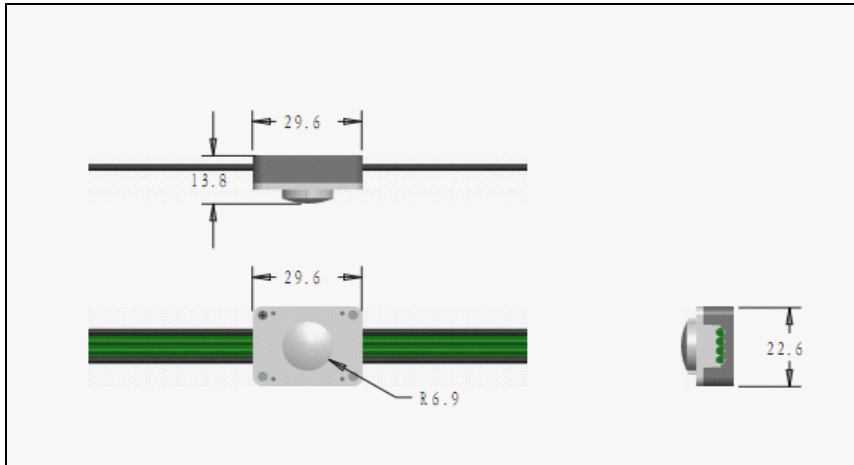
Pixel size (A type, without fixing ear)
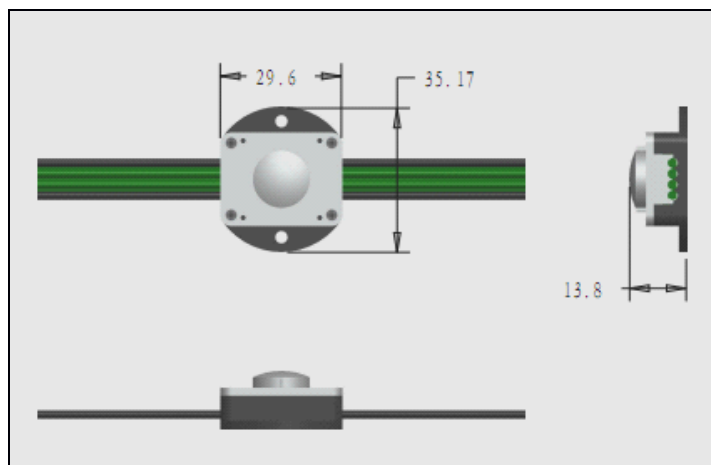
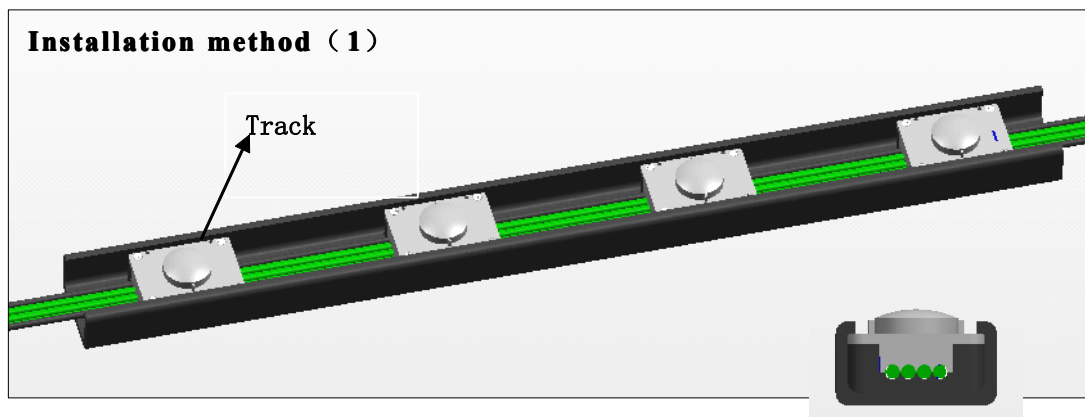Pixel size (B type， with fixing ear)

Figure 1: Flex Dot strip overview

Installation

Installation of Flex dot strip

Unfold Flex Dot strip, fix Flex Dot strip to the track with binding tape and screw with following methodes:
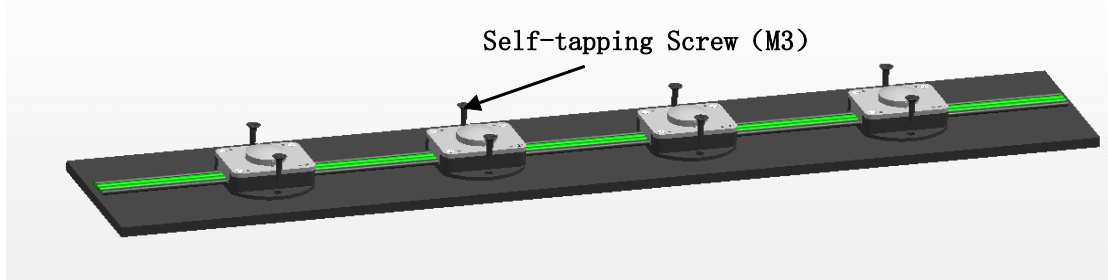
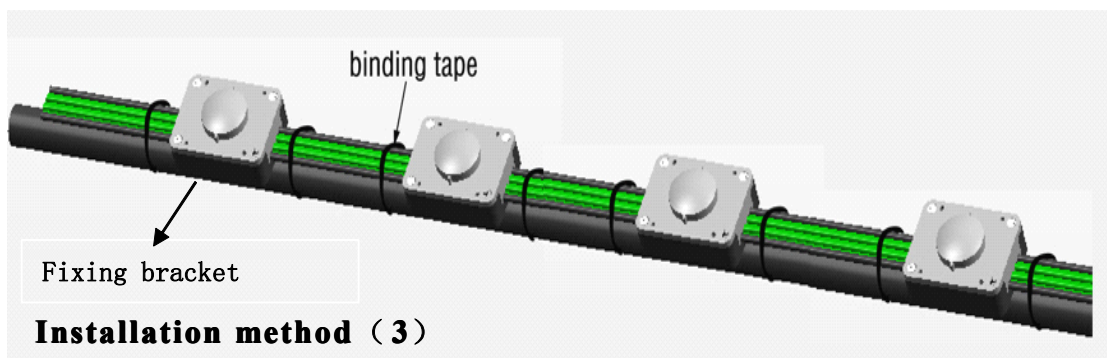**Method 1:** install Flex Dot strip into special track:

Figure 2: Fixing Flex dot strip in track

Method 2: Fix the flex dot strip on the flat object:

Installation method（2）

Self-tapping Screw (M3)

Figure 4: Fixing Flex dot strip with self-tapping screw


binding tape

Fixing bracket

Installation method（3）

Figure 5: Fixing Flex dot strip with binding tape

The connection of Flex dot strip and HC-105 Controller

1) Connect input of Flex Dot strip with output port of FLC-105 video controller (there are four output on the FLC-105 video controller), fasten lock nut.
2) Several Flex Dot strip can be connected in series, after series connection, the maximum pixel cannot be larger than 680 pixels.
3) A long Flex dot strip can be retraced. **See Figure 5.**

data/power input
Male Connector(4pin)

data/power output
Female Connector(4pin)
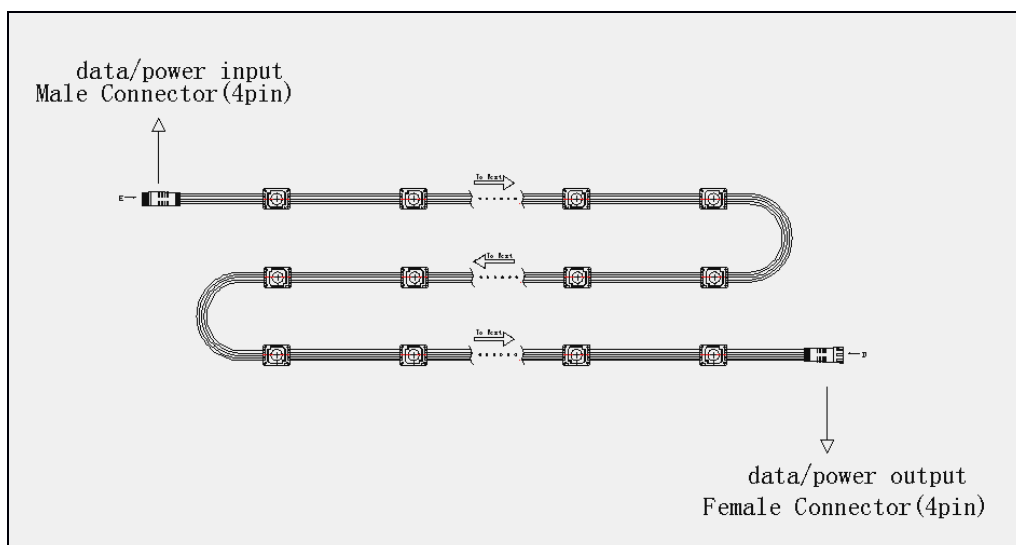
Figure 5: Retrace installation drawing of Flex dot strip

4) The AC power wire between several controller can be connected in series.
5) Using LAN cable to connect HC-105 controller in order to transmit signal, the maximum number of the HC-105 connected in series can not be larger than 20.
   The following drawing is the mathod of making LAN cable，**See Figure 6**。
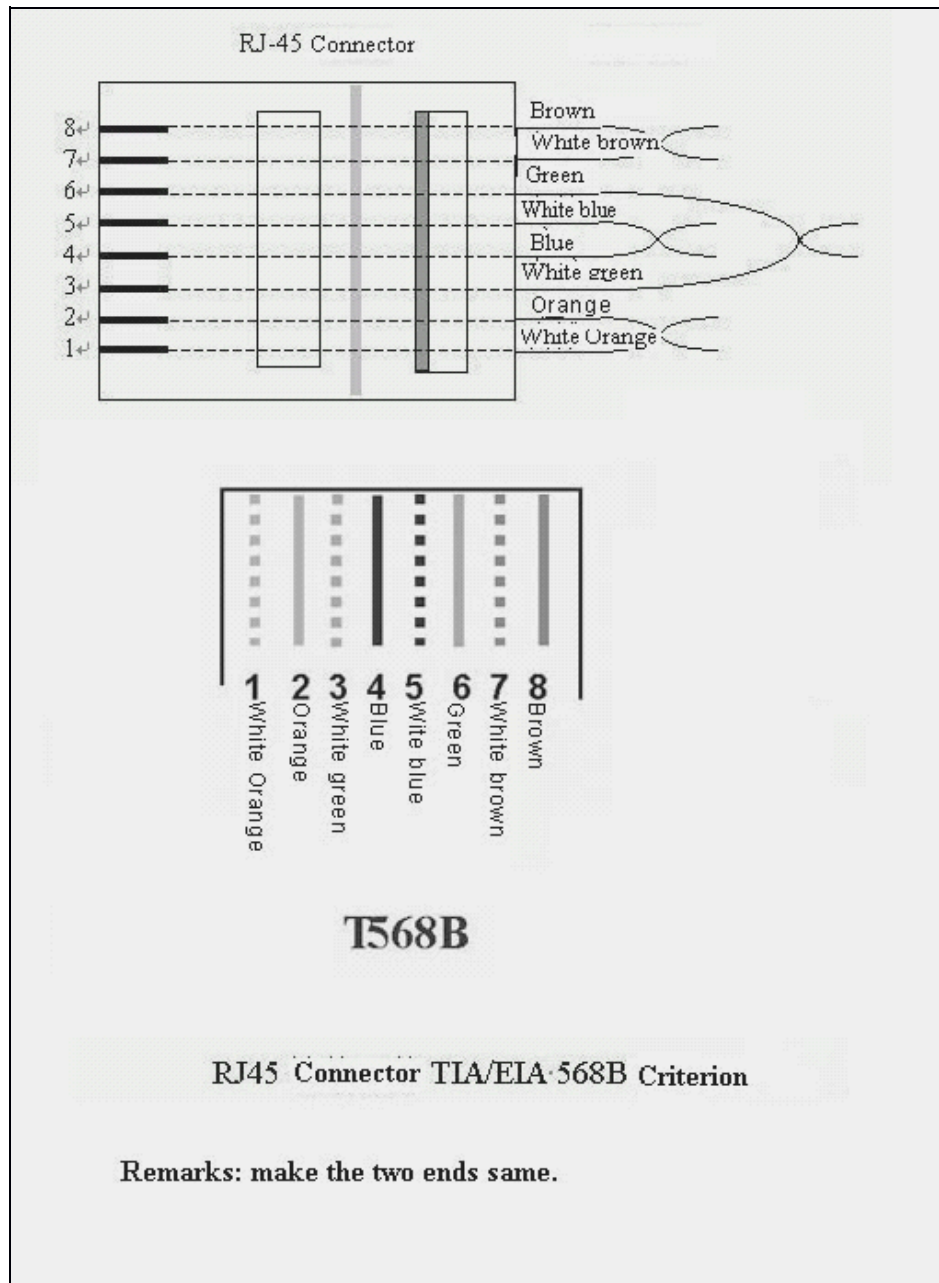
Figure 6: The mathod of making LAN cable

The connection of Flex dot strip and power repeater

When several pieces of Flex dot strip connected in serial，the power repeater should be added between each Flex dot strip. Connect power repeater as per **Figure 7**:
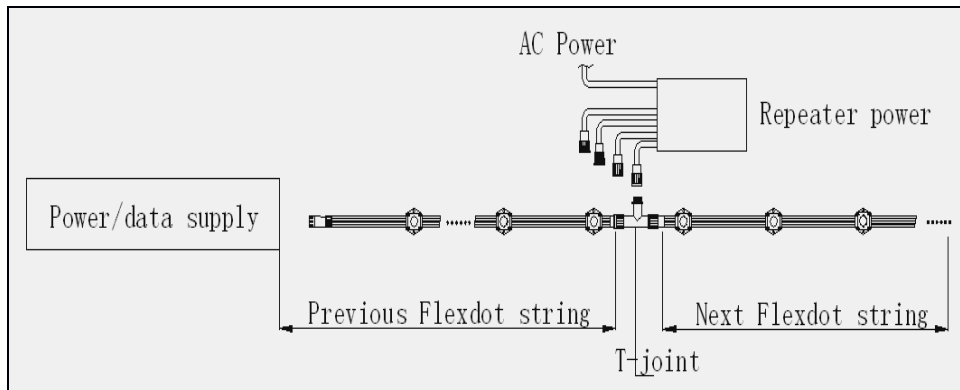
Figure 7: Connection of power repeater and Flex dot strip

How to control Flex dot strip

There are two method to control Flex dot strip

The first method is synchronized control:

Connect Flex dot strip to Signal output 1,2,3,4 port on HC-105 LED Video Controller；
Between several HC-105 LED Video Controller，HC-105 LED Video Controller and PC，
they are connected together through Good-quality CAT 5 UTP (unshielded twisted pair)
cable，which play and transmit video file synchronously.

See Figure 8. The Flex dot strip connection system overview, connect Flex dot strip,
HC-105LED Video controller and PC as per **Figure 8**:
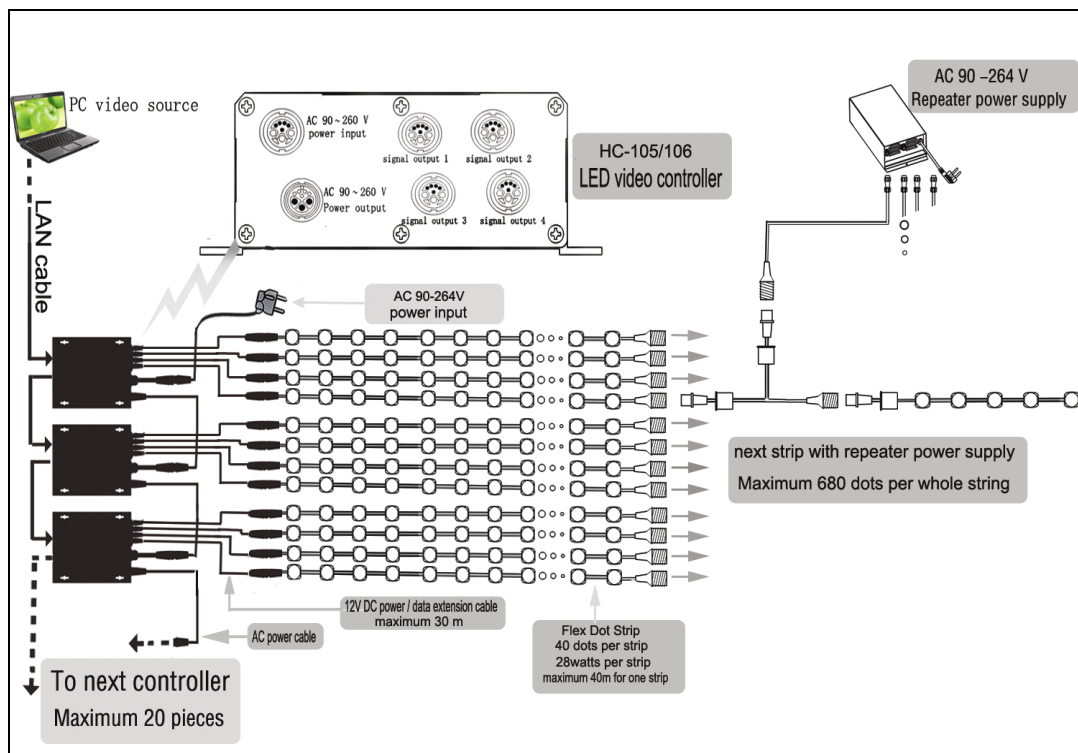
Figure 8: Drawing of synchronous control system

The second method is asynchronous control.

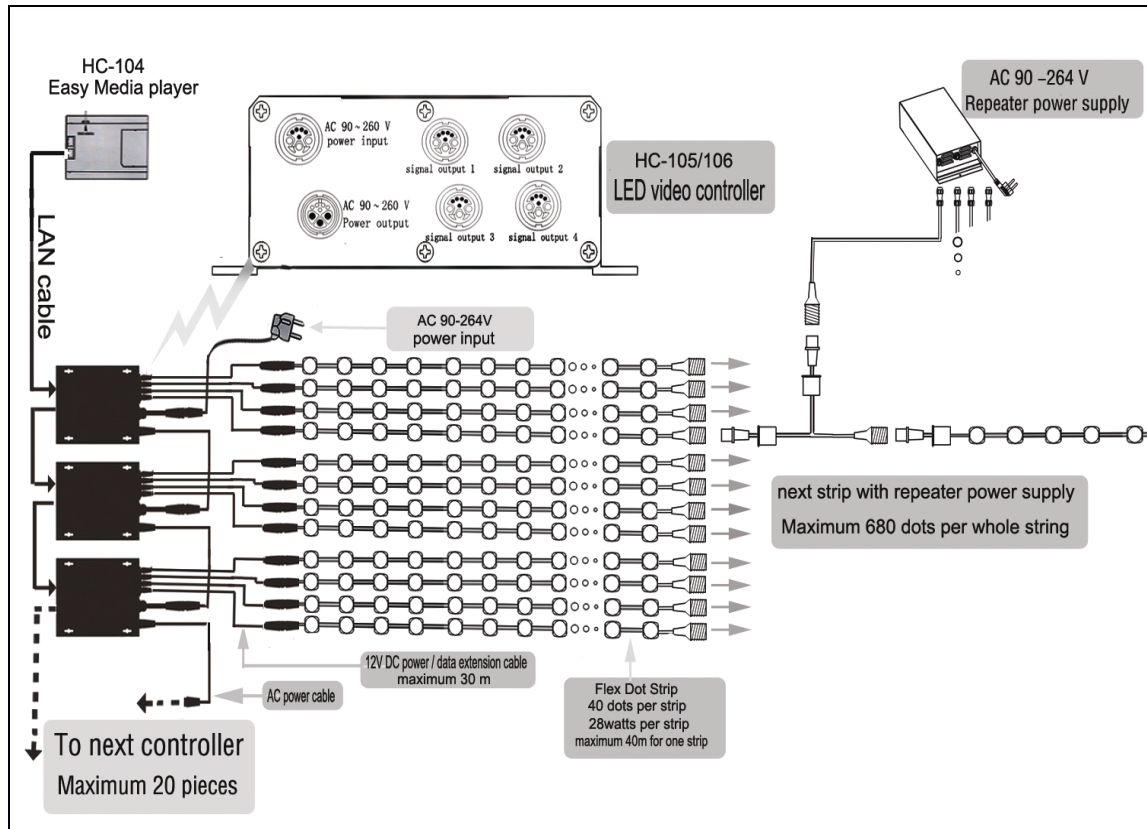Connect Flex dot strip to Signal output 1,2,3,4 port on HC-105 LED Video Controller；Between several HC-105 LED Video Controller，HC-105 LED Video Controller and HC-104 Easy Media Player，they are connected together through Good-quality CAT 5 UTP (unshielded twisted pair) cable，which play and transmit video file deposited in the CF card of HC-104 Easy Media Player；

See Figure 9. the system overview of HC-104 Easy Media Player, connect Flex dot strip, HC-105 LED Video controller and HC-104 Easy Media Player as per **Figure 9**:

Figure 9: Drawing of asynchronous control system

The operation and configure of HC-105 LED video controller and HC-104 Easy Media Player refer to the user manual of HC-105 LED video controller and HC-104 Easy Media Player

Service and maintenance

The inner installed test programme，with **Test mode** function on HC-105 LED video controller to test whether every function of Flex dot strip is in order.

The content of auto-test function of HC-105 LED video controller

Test mode button	Flex dot strip effect
The first time press	Full red
The second time press	Full green
The third time press	Full blue

The fourth time press	Full white
The fifth time press	Chase(white)

Operation steps:

1. Connect Flex dot strip to signal port 1,2,3,4 on HC-105 LED video controller, turn on the power for controller.

2. Press **Test mode** button. With every press, Flex dot strip will change a effect. If the result of auto test of some LED dot strip or some dots is not consistant with effect described above, so such Flex Dot Strip is out of order, which need to check and maintain, sign marks on the bad Flex Dot.

Troubleshooting

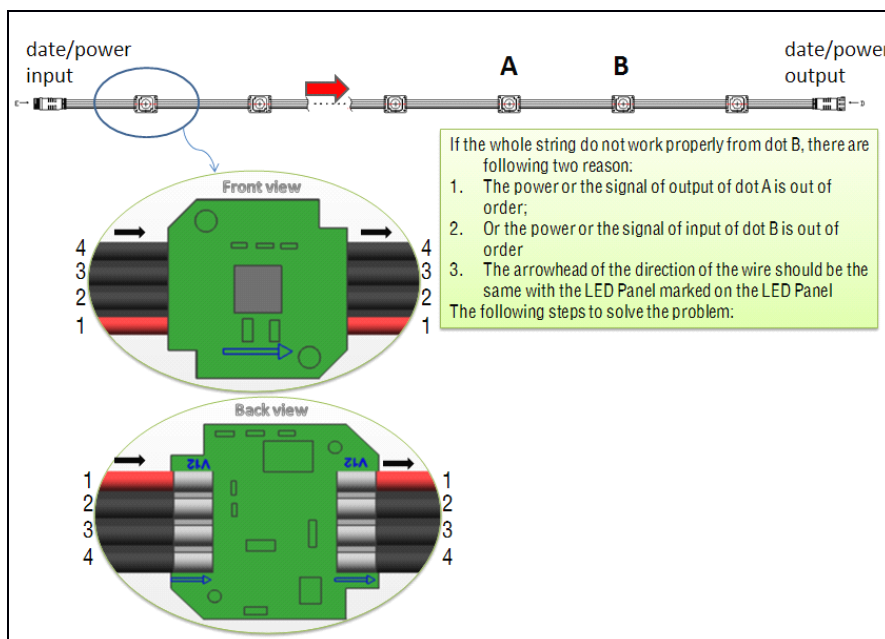| Problem	Probable cause(s)	Remedy
The whole Flex dot strip is not working	The controller have not signal or power output	Check controller，repair or change a new controller
	The connector between Flex dot strip and controller is not completely contacted	Check the connector between Flex Dot strip and controller, fasten the connector or check the wire connection on the connector
The color of the whole Flex dot strip without changing	The mistake of output signal of the controller	Check controller，repair or change a new controller
	The mistake of the configure of the controller	Configure the controller once again
The color of One dot or several dot in one Flex dot strip is out of order, remains are working correctly	The LED panel of this dot is damaged	Check wire connection and all the device on the damaged LED dot, or replace with a new one, The method as per **Figure 10**
From some point, the remains is not work, or do not change color	This dot is damaged, without signal or power out	Change the damaged dot LED panel The method as per **Figure 10**
	The former dot is damaged, without signal or power output	
	The Flat cable and LED panel is not well contacted, the signal or power cannot be transmitted to the next Dot	Check this Dot, make sure all the wire is well contacted The method as per **Figure 10**
Flex Dot strip controlled by One or several controller displays video incorrectly or does not display video at all.	Controller defective	Replace with a Controller known to be operating correctly. Have faulty controller tested and serviced.
	The LAN cable between controller is not well contacted	Inspect connections and LAN cables.Correct poor connections. Repair or replace damaged cables
	Wrong configuration	Correct the confuguration as per software user manual

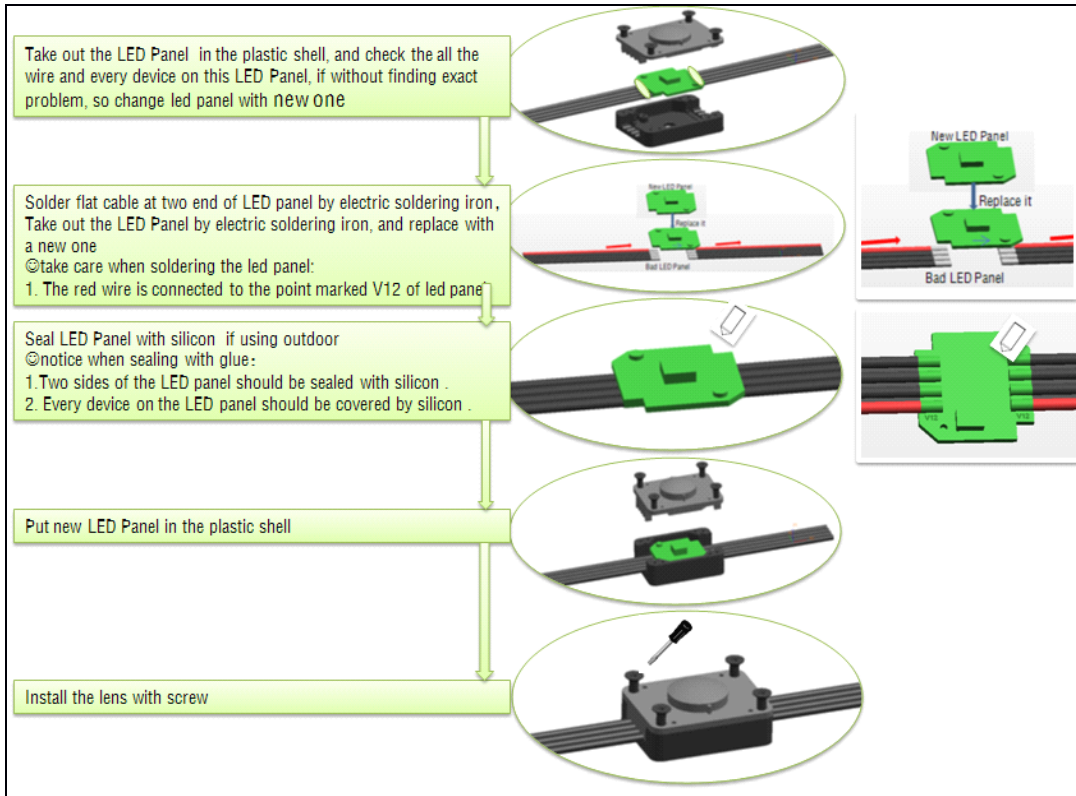|		
	Controller defective.	Have faulty controller serviced
	Fuse blown (located next to power input connector)	Disconnect power cable. Check fuse and replace.
	The AC cable connector is not well contacted between controllers	Fasten the AC power connector
All flex dot strip display video incorrectly or do not display video at all.	Unusable video signal or defective video source.	Check video source.
	The bad conection between PC and controller	Repair or replace damaged cables

How to maintain Flex dot strip.

1. Disconnect the power, take out the bad LED panel, take out the LED panel by screwdriver from the plastic housing, take off the wire with electric soldering iron, replace the bad LED panel, finally solder the flat cable on the LED panel.
2. Test with power on, if the Flex dot strip work again, turn off the power for controller.
3. Coat silicone on the front and back side of LED panel and at the end of flat wire, cover all the device except LED. After solidification, install the plastic shell with screw. The method as per **Figure 10**

 Caution:
1) When changing LED panel, takec care of the direction of arrowhead of the LED panel, the direction of the arrowhead should be the same with signal transmitting direction, from Data/power input point to Data/power output.
2) The sequence of four wire of Flat cable must be corresponded with serial position on LED panel. The sequence is as per **Figure 10**
3) When coating silicone on LED panel, all the devide and solder joint should be cover completely, in case the circuit is short caused by water.

Take out the LED Panel in the plastic shell, and check the all the wire and every device on this LED Panel, if without finding exact problem, so change led panel with new one

Solder flat cable at two end of LED panel by electric soldering iron, Take out the LED Panel by electric soldering iron, and replace with a new one
☺take care when soldering the led panel:
1. The red wire is connected to the point marked V12 of led panel

Seal LED Panel with silicon if using outdoor
☺notice when sealing with glue：
1.Two sides of the LED panel should be sealed with silicon .
2. Every device on the LED panel should be covered by silicon .

Put new LED Panel in the plastic shell

Install the lens with screw

Figure 10: Maintenance schematic diagram

End