Prestel

Prestel MFCP-6

Milti-function control panel

USER MANUAL

Thank you for purchasing this product. For optimum performance and safety, please read these instructions carefully before connecting, operating or adjusting this product. Please keep this manual for future reference.

SURGE PROTECTION DEVICE RECOMMENDED

This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lightning strikes, etc. Use of surge protection systems is highly recommended in order to protect and extend the life of your equipment.

Table of Contents

Dear Customer

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1. Features

- Work with customized control APP
- RS232, RS485, IR Control and Relay
- Smart IR learning
- Page, toggle, compare and delay setting
- ID loop function multi-level cascade
- USB firmware update

2. Package Contents

1). 1x Main Unit (HDBaseT Matrix)
2).1x Power Cable (for Main Unit and POC)
3). 1x Remote control
4). 1xIR Extension cable
5). 1x mounting kit
6). 1x CD for control software & user manual

3. Specifications

Operating Temperature Range	-5 to +35°C(-41 to +95 °F)
Operating Humidity Range	5 to 90 % RH (no condensation)
Input Video Signal	0.5-1.0 volts p-p
Input DDC Signal	5 volts p-p (TTL)
Signaling Rate	3.0Gbit/s
Video Format Supported	4K@60,YUV420 4k@30/1080P/1080i/720P/576P/480P/576i/480i
HDCP Compliant	HDCP2.2 and HDCP1.4
Output Video	HDMI2.0 and HDMI 1.4 (over HDBaseT)
Audio Format Supported	DTS-HD、Dolby trueHD
Power Consumption	9wtts (Max.)
Dimensions	L86 x W86 x H40 mm
Mass (Main Unit)	0.12kg

4. Panel Descriptions
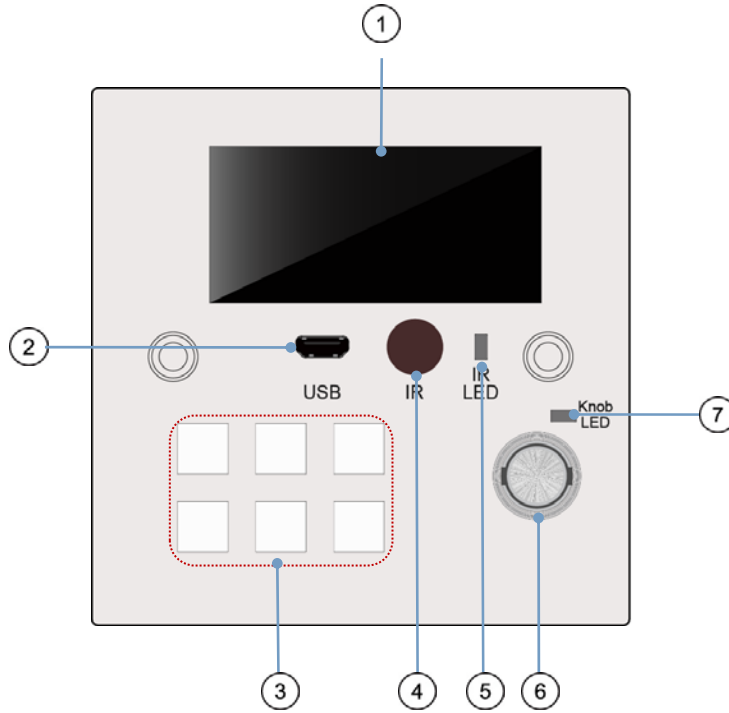
① LED   ② USB Update   ③ Key(Button)
④ IR in   ⑤ IR LED   ⑥ Knob
⑦ Knob LED
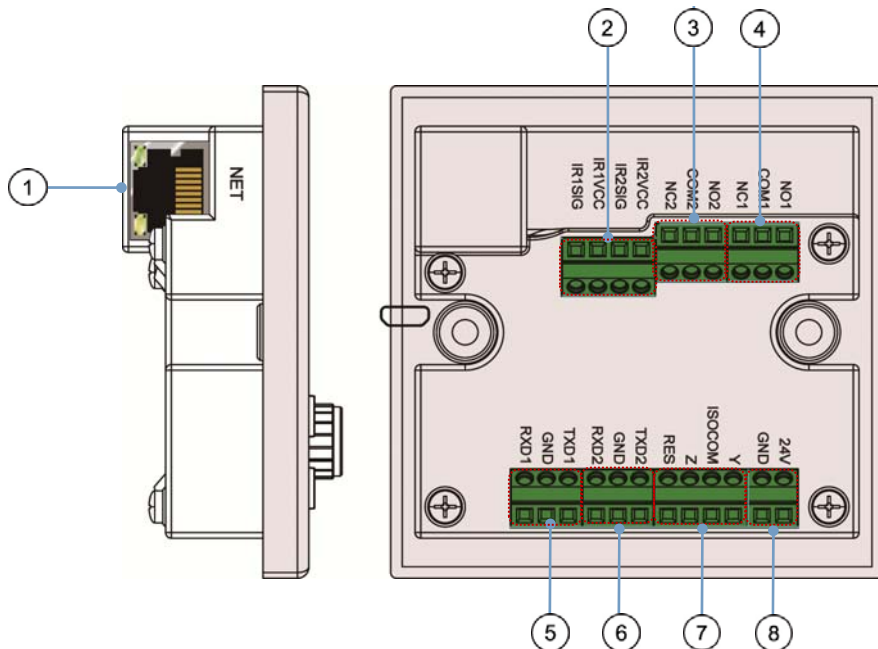
① Ethernet   ② IR-TX   ③ Relay 1
④ Relay 2   ⑤ RS232-1.   ⑥ RS232-2
⑦ RS485   ⑧ DC power 24V.

3.2 USB Driver installation

Before connecting the product, you need to copy "STM32 USB transfer serial Port Driver Virtual COM Port Driver (V1.3.1", double-click the software running in the installation package (as shown in figure 1 below), and install the Driver on the computer.

1) The above selection of the computer adaption-driven solution installation as follows.
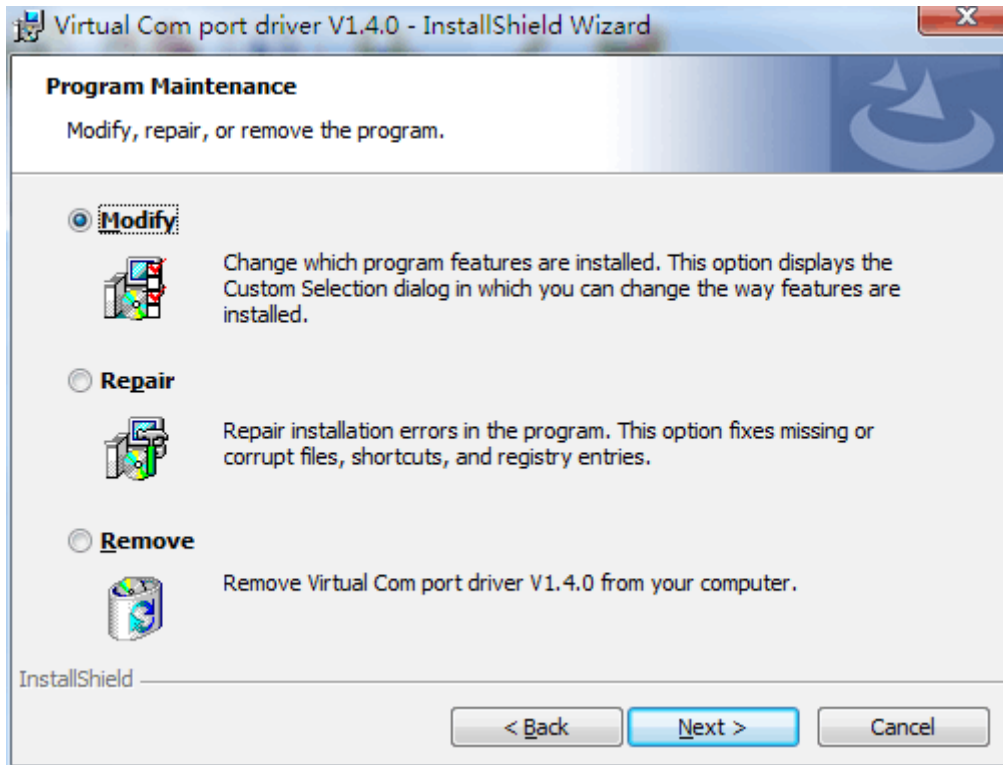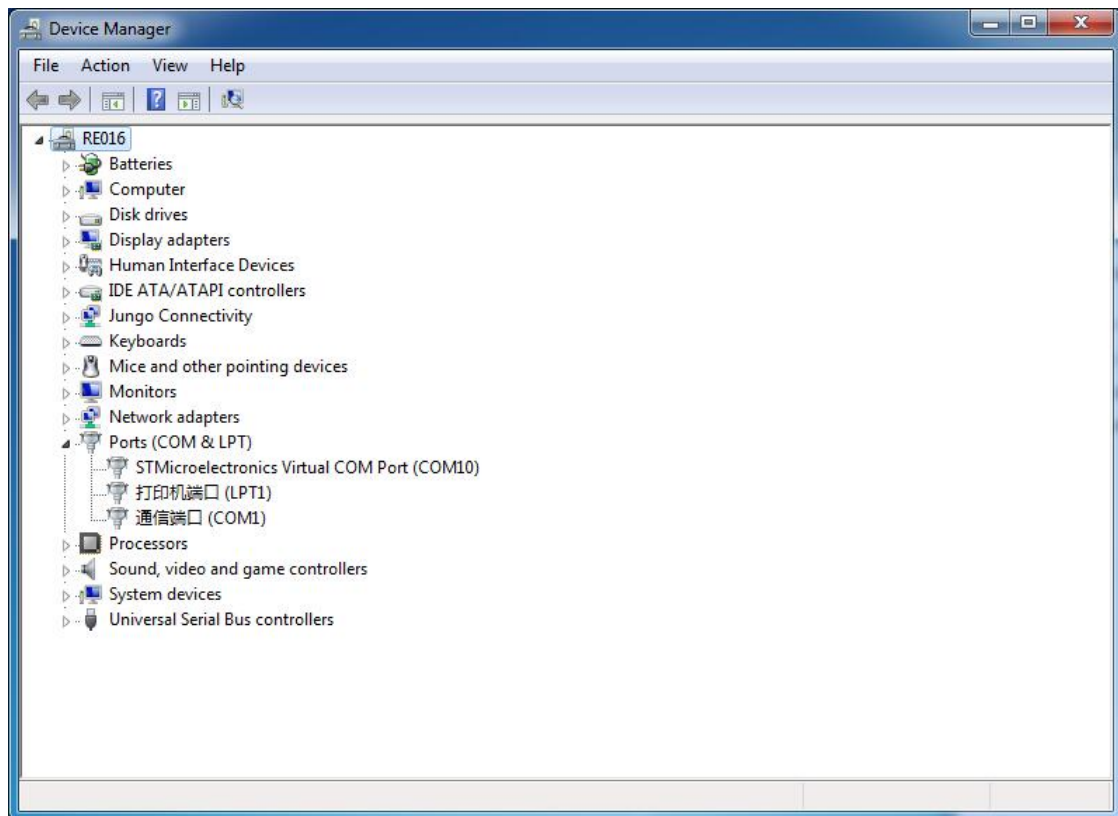

2) Then pops up the following window:
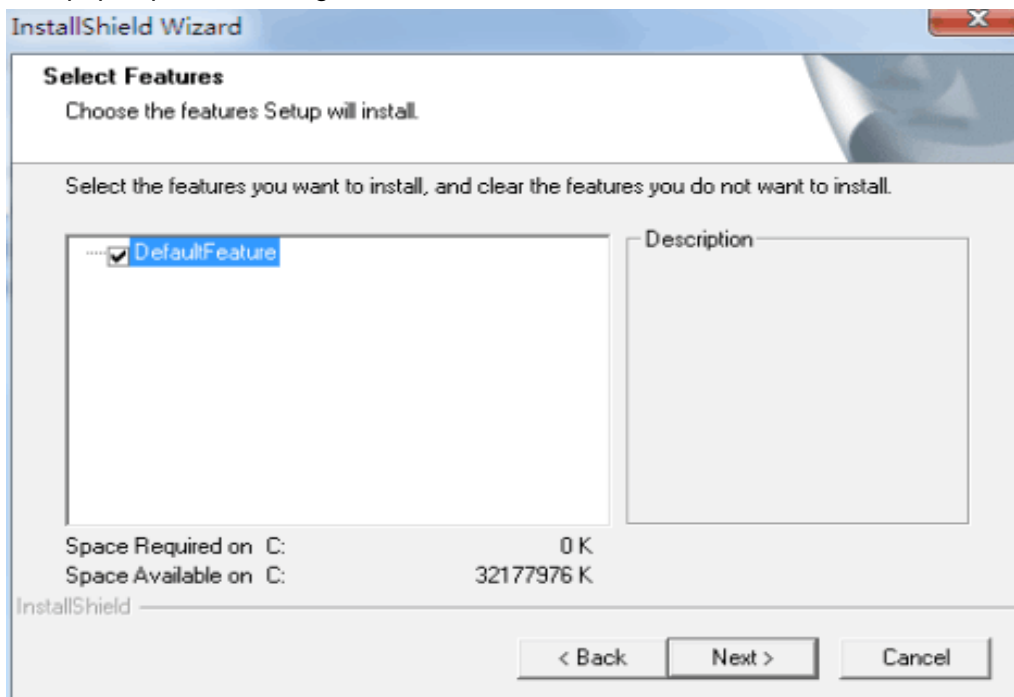
3) Once again, click the next step, and the computer starts to install the driver. After the installation, the instructions are as follows.

4) After the installation is completed, it will be used as the above prompt to access the device manager to check the correct identification of the device.As shown in the figure below.

3.3.0 Native mode introduction

1). LCD is divided into two parts, as below picture:

A) Left side show the information about the Trigger source and the action of the binding execution. (S= Source; A=Action）

① S: Trigger source. External trigger: including key, infrared reception, RS232 reception, etc

② A: Action. The reaction of device, including RS232 transmission, infrared emission, relay control, etc.

B). Right side show the mode description and some basic Settings information

2). Introduction of the Right Side:
A). M0: Main mode (divided into: run; ctrl; set; study)
B). M1: Auxiliary mode (divided into: normal; extend0; extend1; studyuse)
C). Action count: (The action count currently being performed/Total action number)
D). L0: LED brightness level (0=off; 4=max)
E). L1: LCD back light's brightness level (0=off; 4=max)
F). ID0: Local ID
G). ID1: Remote ID
H). B0: RS232's baud rate (include: 115200-57600-38400-19200-14400-9600)
I). B1: RS232's baud rate (include: 115200-57600-38400-19200-14400-9600)
J). B2: RS485's baud rate (include: 115200-57600-38400-19200-14400-9600)

3.3.1: Main mode introduction
1). Long press Rotating encoder: can switch the main mode in sequence
A). Run = Execution mode, in this mode, auxiliary mode + trigger source can generate triggering events, and device performs binding actions
B). Ctrl = Mapping mode, If more than one device access to a local area net by UTP cables, then device mapping can be done. When a device enters this mode, All of the triggering event through the device (host) can be forwarded to the corresponding device's remote ID , so as to achieve the remote mapping. In this mode, device, as the host, will no longer execute the trigger event, only a forwarding action.
C). Set = Setting mode, device includes RS232, RS485, Infrared emission, etc., with some adjustable Settings. In the Setting mode, there are two pages, and the second page displays some information such as IP.
Note: under the second page of this mode, the long press KEY1 will be soft restart device to facilitate users to continuously upgrade the firmware

D). Study = Infrared Study Mode
1). Under this mode, the auxiliary mode does not work and cannot be switched
2). Under this mode, the trigger source fails, only the infrared waveform can be captured and the waveform is stored locally.

2). Short press Rotating encoder: The auxiliary mode can be switched in turn
Note:
A). Auxiliary mode only works in the main mode: run and ctrl
B). Auxiliary mode is divided into normal, extend0, extend1, studyuse.
C). When the main mode is CTRL
The trigger event, including the auxiliary mode, is packaged and forwarded to other device, which no longer performs the action that triggers the binding event.
D). When the main mode is run
The auxiliary mode is studyuse. When the trigger event occurs, if the action has infrared emission, then the waveform of infrared emission is the waveform learned by the main mode "study"
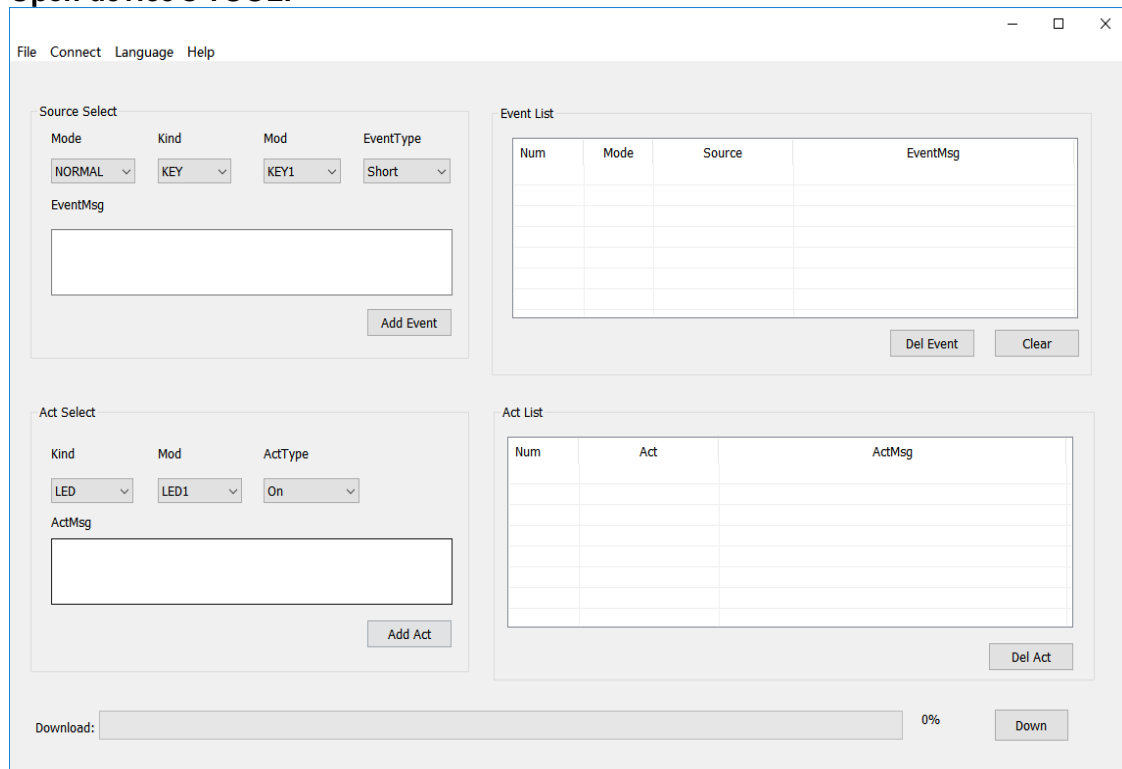E). Auxiliary mode is normal, extend0, extend1, so when the trigger event occurs, if the action has infrared emission, then the waveform of infrared emission is the key value waveform of matching remote control.

3). Double-Click The Rotating encoder: Page up and down and execution mode.
*The above mode, Rotating encoder's short press, double click, long press to be occupied, used as function button, unprogrammable.

3.3.2: Main mode Notice
Open device's TOOL:

1). When the Main mode switches to "run", the auxiliary mode's function and attention matters, as shown in the following table:

Auxiliary mode		Normal	Extend0	Extend1	Studyuse
Trigger source	KEY	Short/long press			
	RS232 Receive	Data length<1024bytes			
	RS485 Receive	Data length<1024bytes			
	Rotating encoder	20 steps			
	IR Receive	Remote control			
	LAN Receive	Receive specific protocol data			
Action	RS232 Send	Data length<1024bytes			
	RS485 Send	Data length<1024bytes			
	Relay	On/off Switchable			
	LED	On/off Switchable			
	Buzzer	On/off Switchable			
	IR Send	**Remote control**			**Send the learning remote signal**

2). When the Main mode switches to "set"

A). K1S (KEY 1 short press): In turn to adjust "L0"

B). K2S (KEY 2 short press): In turn to adjust "L1"

C). K3S (KEY 3 short press): In turn to adjust "B0"

D). K4S (KEY 4 short press): In turn to adjust "B1"

E). K5S (KEY 5 short press): In turn to adjust "B2"

F). K6S (KEY 6 short press): The cursor jumps between ID0, ID1, IR0FREQ, IR1FREQ.

① ID0: Adjustable: 0-99

② ID1: Adjustable: 0-99. 0 have a special function: When the Host ID1 set to 0, the Host will open the broadcast map, and under the CRTL mode, the Host forwards the trigger event to all device.

③ IR0FREQ: Adjustable: 20000-60000

④IR1FREQ: Adjustable: 20000-60000

G). K6L (KEY 6 Long press): Save the setting to Local

H). On the basis of "F)", Rotate the encoder to the left to reduce the value of the cursor

I). On the basis of "F)", Rotate the encoder to the right to add the value of the cursor

J). Under Set Mode. Double-click the rotary encoder to turn to page 2.

K). IP: In lan, device is assigned to IP through DHCP.
L). GW: Gateway on the LAN
M). MASK: Subnet mask of LAN
N). MAC: device's MAC Address
O). FONT: Under "RUN" and "CTRL"Model, the font size displayed on the left side.There are 8*6 and 16*8 fonts.Click the rotation encoder to switch, but cannot save to the local, and the default power is 8*6 font size.
P). VERSION: device's firmware version.

	Left-handed	Right-handed	Short press	Long Press
Rotating encoder	Adjust (-)	Adjust (+)	Switch Font	Switch Mode

*1. The left and right rotation encoder can only adjust the infrared carrier frequency, local and remote ID, RS232/RS485 baud rate;
*2. Click the change font only support in this mode, and the default power is 8*6 font size.
Note: Under set mode, the auxiliary mode is invalid, and the auxiliary mode cannot be switched. The action count is invalid.

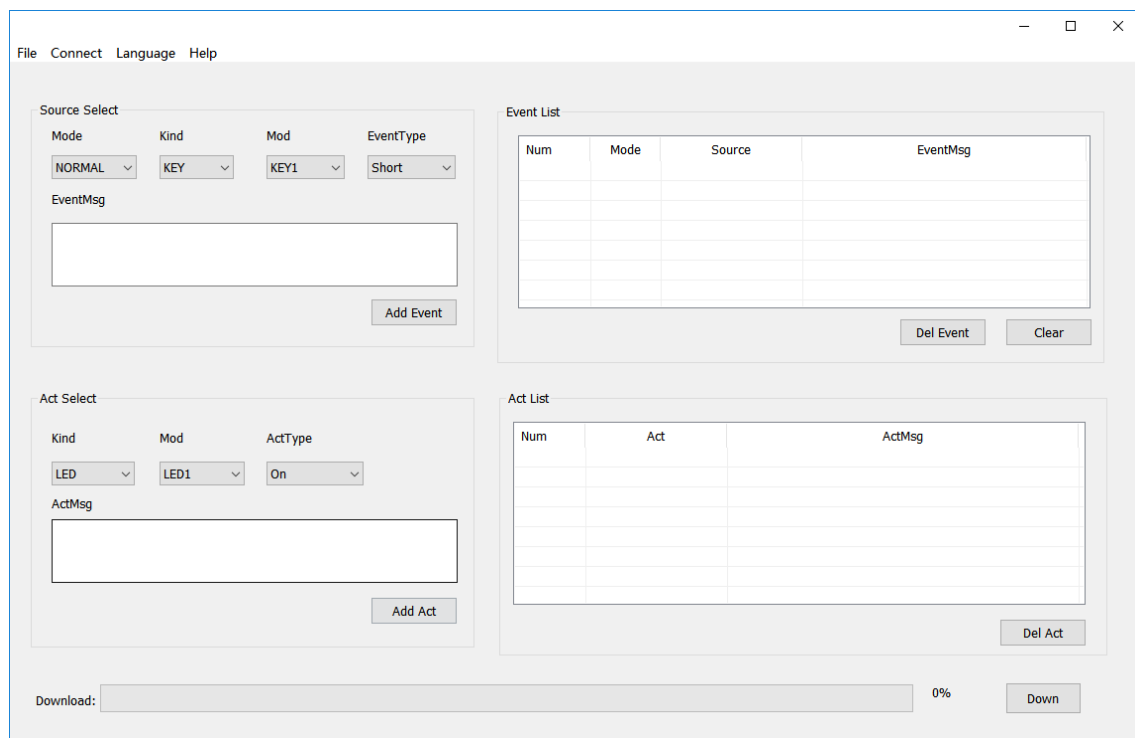**3). When the Main mode switches to "study"**
Except for infrared reception, all other trigger sources are blocked. The infrared received waveform is recorded and stored, waiting for the secondary mode studyuse to the use.

4). When the Main mode switches to "ctrl"
Enter the mapping mode, and the master-slave can achieve one-to-one control or one-to-many control. (See follow-up test method for details)

3.3 Software control and programming
The main interface of the software is divided into nine parts: mode, trigger type, trigger module, event type, event list, action type, action module, action type, action list. Each part of the configuration has the appropriate settings to meet different types of needs. The main interface is as follows:

3.3.1 menu bar

menu bar	file	Open (configuration file): directly import the written configuration file, the ini suffix.
		save (configuration file): save the current configuration to the location of the software.
		save as (configuration file): save the current configuration to another location.
		Close the program: click to close the program.
	Connection	Connection port: after the device is connected to computer through the USB upgrade port, click the connection, the pop-up window will prompt the connection is successful.
		Close the port: after downloading the program, click to close the port, otherwise it will not work.
		Download to device: click to download the currently configured file to device.
	Language	Chinese
		English

Help / About: view current version information.

3.3.2 trigger source selection

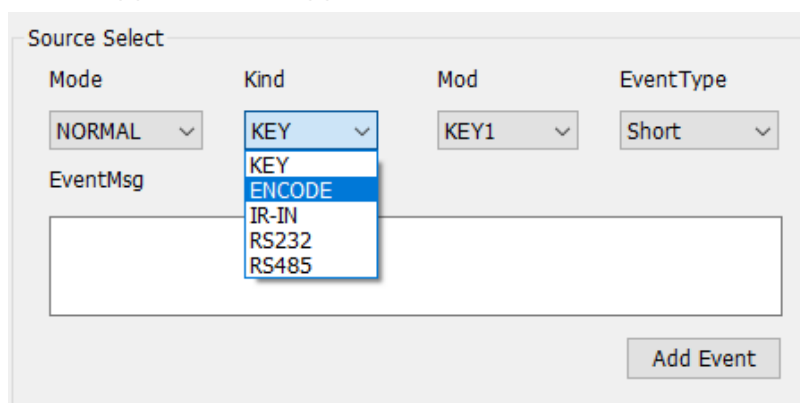Mode box can be divided into NORMAL, EXTEND0, EXTEND1, STUDYUSE, four modes.
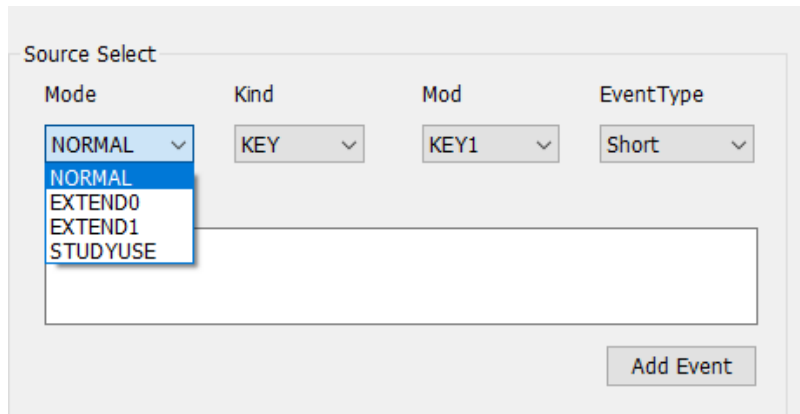
NORMAL: Normal mode (ie factory default configuration)
EXTEND0: Extended 0 mode
EXTEND1: Extended 1 mode
STUDYUSE: Learning - Using the Mode (Infrared Use Mode)

3.3.3 Trigger Type / Trigger Module / Event Type

KEY (button trigger)>>KEY KEY1-6 options Short / long press
ENCODE (Rotation Trigger): ENCODE>> ENCODE >> L / R

IR-IN (Infrared reception):

RS232 (232 trigger): RS232 >> RS232-0 / RS-232-1 >> receive command comparison
RS485 (485 trigger): RS485 >> RS485-0>>receive instruction comparison
RS232 and RS485 trigger include receiving external input and output to external device, when receiving preset trigger command. That is to implement this
A series of preset actions under a preset event.

3.3.4 Add event and event list
Select mode - Trigger type - Trigger module - Event type - Event additional information, click [Add event] to add all set trigger sources
Right event list box. Operation is as follows：

Trigger source KEY, ENCODE can add any format information, easy to remember.

When the trigger source is IR-IN, RS232 and RS485 need to be added according to the format (for example: RS232 receives the data as the character "123"

Additional information prefix format to be added asc: 123 or hex hex: 31 32 33)

Record trigger source list, number, mode, trigger source, additional information, the width of the text box can be adjusted. Mouse click on the corresponding event list

You can delete the event or clear the current operation. When there are multiple trigger sources, set the action selection, click the event in the event list, otherwise

Will be wrong.

3.3.5 action selection box

Action selection box corresponds to the type of action → action module → action type.

Action types include eleven kinds of action, followed by down, namely,

LED → IR-OUT → RS232 → RS485 → REALY →BUZZER → LED-RGB → LCD → LOOP, as shown below

LED (button light): LED1-6 action module corresponding button 1-6LED light, the action type corresponds to ON / OFF,

IR-OUT: In the same way, IR-IN (IR-IN in trigger source is receive instruction and IR-OUT in motion box is send instruction)

RS232 (232 action): There RS232_0 and RS232_1 corresponding to the product 1RS232 and 2RS232 terminals, action class

Choose to send. Note that in the action additional information box can only fill in the corresponding send string or baud rate

RS485 (485 action): The same reason RS232 (RS485 supports cascade on the basis of RS232, the transmission distance is tens of meters to the top of the kilometer)

REALY (relay action): RELAY_0 and RELAY_1 correspond to 1 relay and 2 relay on the device, respectively, to select whether it is closed or off

On, any additional information can be added in the action additional info box for easy memory.

DELAY (delay action): only the number of actions can be written in the action additional information box in ms, such as write 3000, representing 3s delay.

BUZZER (buzzer): open, close, add action Additional information in setting the frequency can only enter numbers, enter 1000, on behalf of the setting
BUZZER frequency of 1000. Add action Additional information When opened, closed, you can add other memorable information.

LED_RGB (colorful lights): colorful lights by the three LED lights, the color changes with the rotary encoder, click to close.

LCD (screen backlight): You can control the backlight on or off

LOOP (Loop): Loop current action list options

Specific settings are as follows,
1. Pre-set LOOPStat, action additional signal to add the number of cycles
2. Set the current action required
3. Set LOOPed, the end of this cycle

3.4 Key/rotary knob/LED testings
Connect the device to PC via USB, enter PC device manager, check if the PC can find the device with correct "STM Port Prefix". Again open device software, connect corresponding port, then enter user interface.
1). Set mode to "Normal", trigger type to "Key", trigger module to "KEY1-6", event to "Short click".

Remark: You can add any information in additional event information for memory and differentiation.

2). Add event to event list, click to choose the event.

3). Choose LED from Action type, LED1-6 from Action module, Open from Action type.

4). When completed, it'll show up on Action List, Action No. Is decided by the order they were added.

*1：You can set LED2-6 following the steps above.
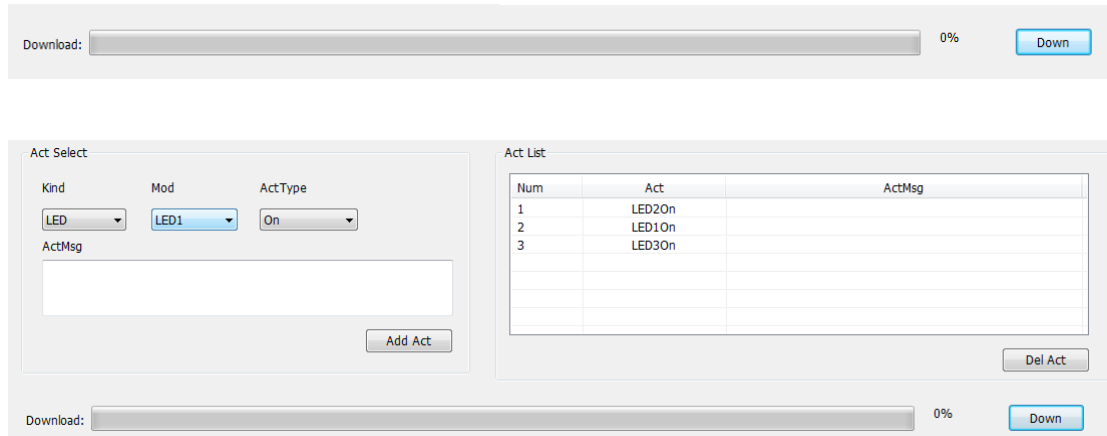
*1：If the host can close the port, restart the device.

*2：When download is completed, disconnect the port at the menu, plug out the USB.

Conclusion: See testing feedback summarizing at the end of the report.

3.5 Buzzer testings

Set the trigger source with a programmer , choose the buzzer as the action, on and off. Then check if the buzzer can respond to the commands.
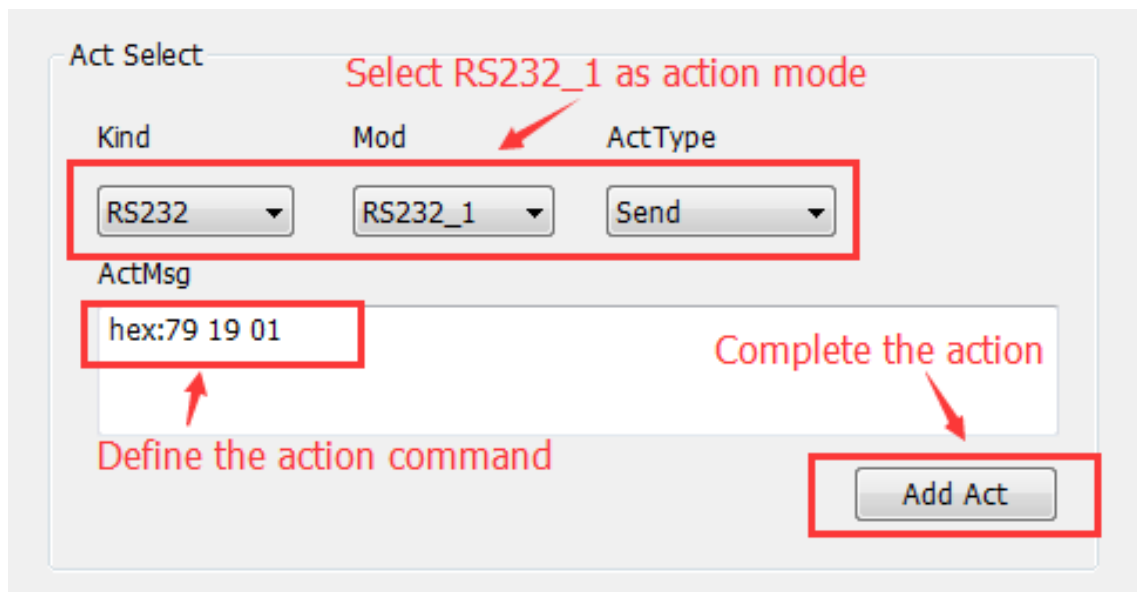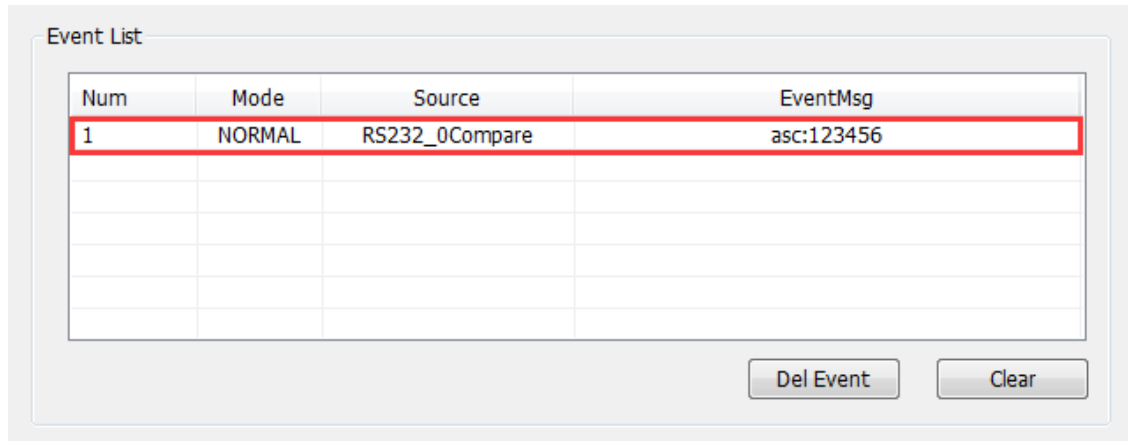
Conclusion: See testing feedback summarizing at the end of the report.

3.6 RS232 Pass through testings

Configure the trigger source with RS232-0 port, type in commands. Action: RS232-1 send command to control the devices which can receive an RS232 command and complete data transmission. Diagram as below:
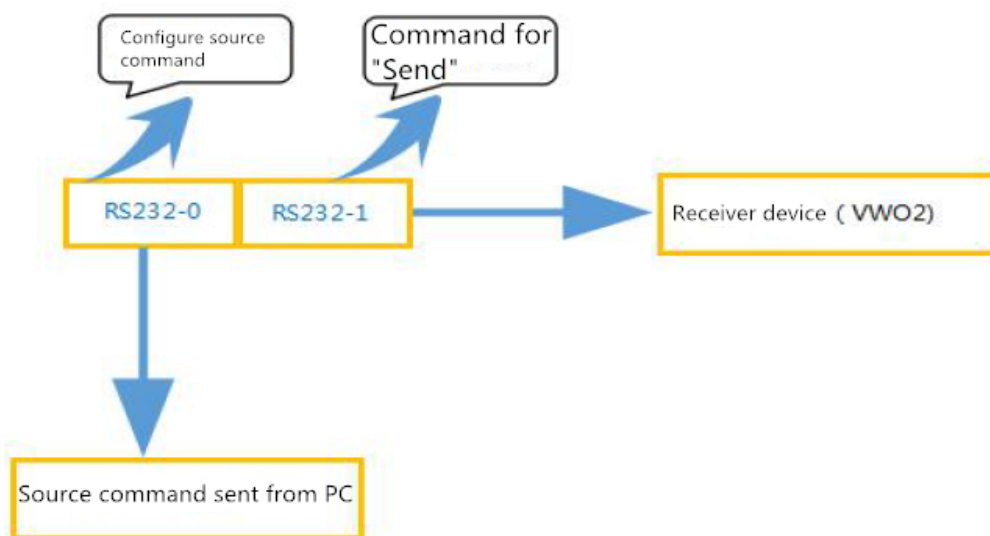
*1：The command should follow fixed format (Eg. If an RS232 command contains "123", then additional event information should be asc:123 or hex:31 32 33 in hex.)

*2：When configuration is completed, click download and send it to device.

Conclusion: See testing feedback summarizing at the end of the report.

3.6 RS485 pass through

Open device In Tool, Selet Mode "KEY1" , Select Event Type "short", write event thing, click"add Event".

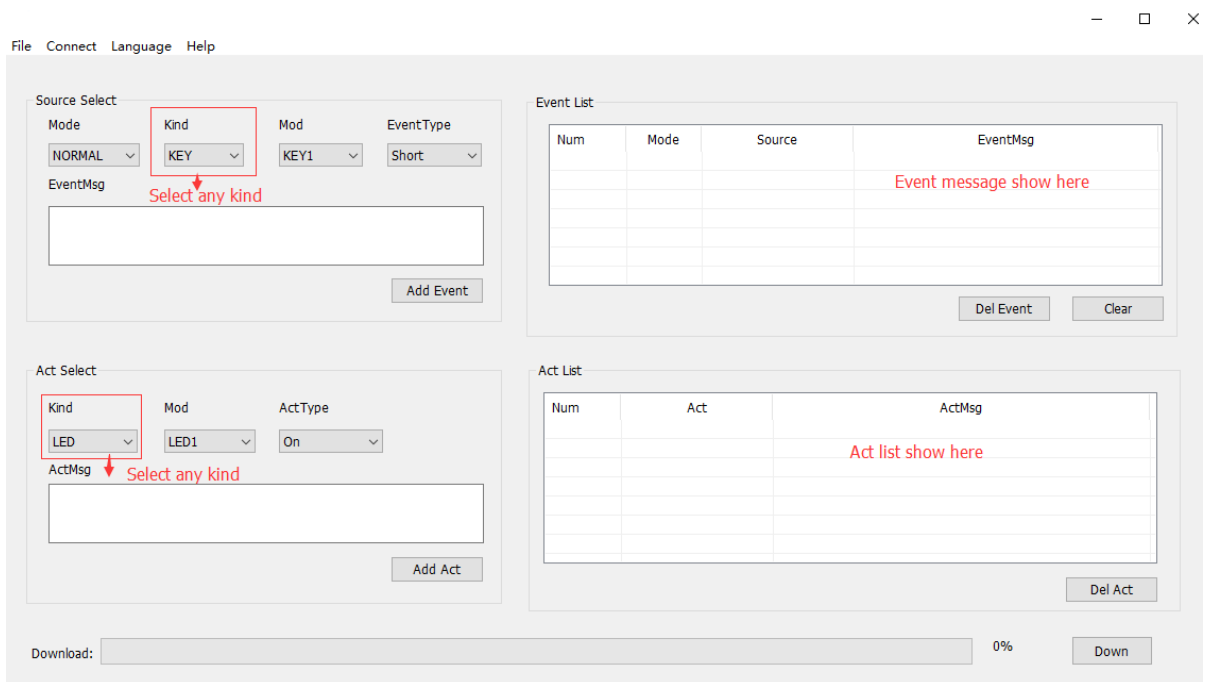you can see event contents will show in right frame.

Select Act kind "RS232", selt Mode"RS232-1", then ACT type "Send".

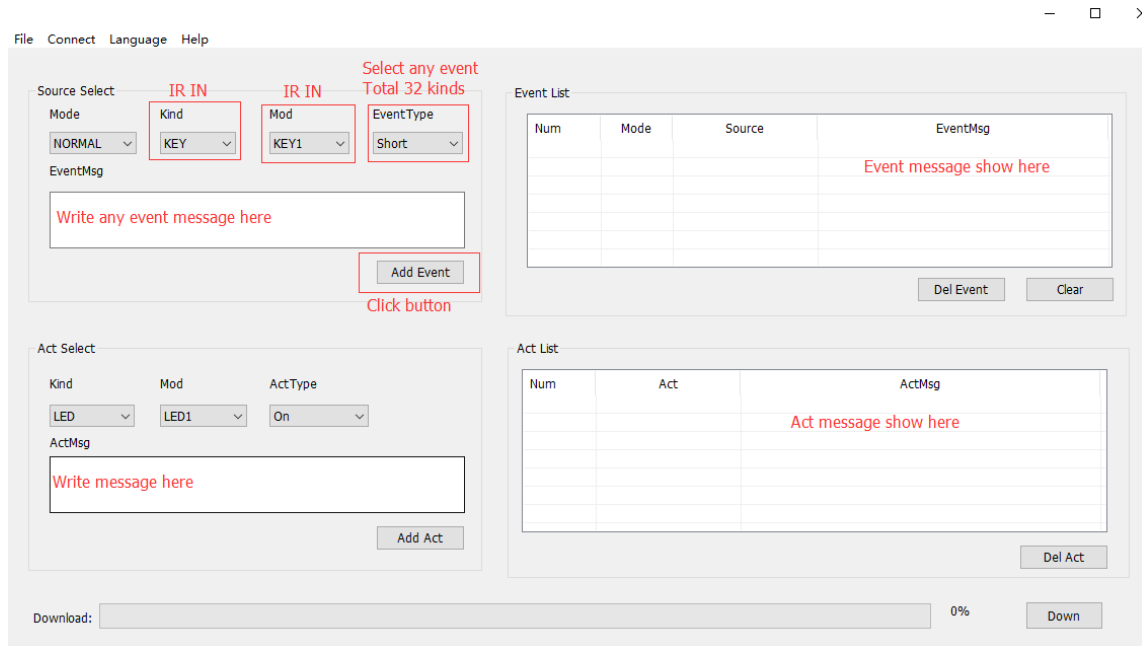Write act message, click "add act". you can see the act lists will show in right frame. (see as below)
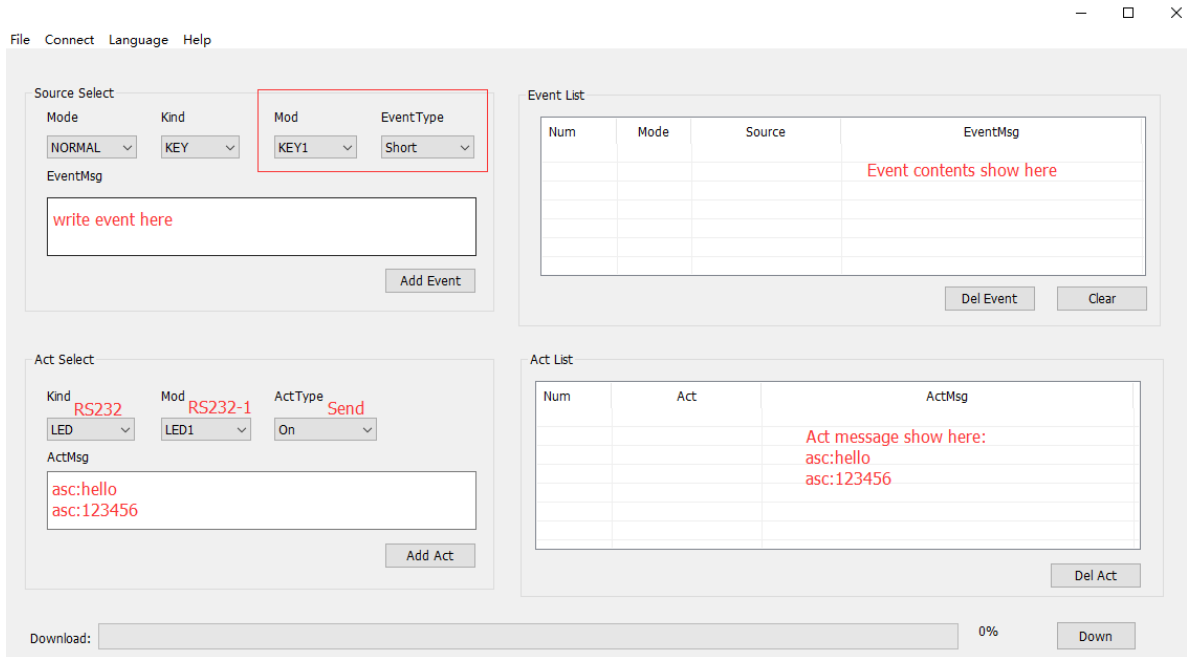
3.7 Relay switch

Select any kind, any mod, any event type and any act, you can verify the Relay is On or OFF according to command.

1. COM: Common
2. NC: Normal close
3. NO: Normal open

3.8 IR remote

IR study operation:

1. Select "studyuse" In source select mode, change mode from "Normal" to "Study use".
2. Set Act Tpye "IR0-I OUT"
3. Press the button on the remote controller, device will study and remember IR.
4. Finish IR study, change to "Normal" mode, subsidiary mode switch to "Studyuse"
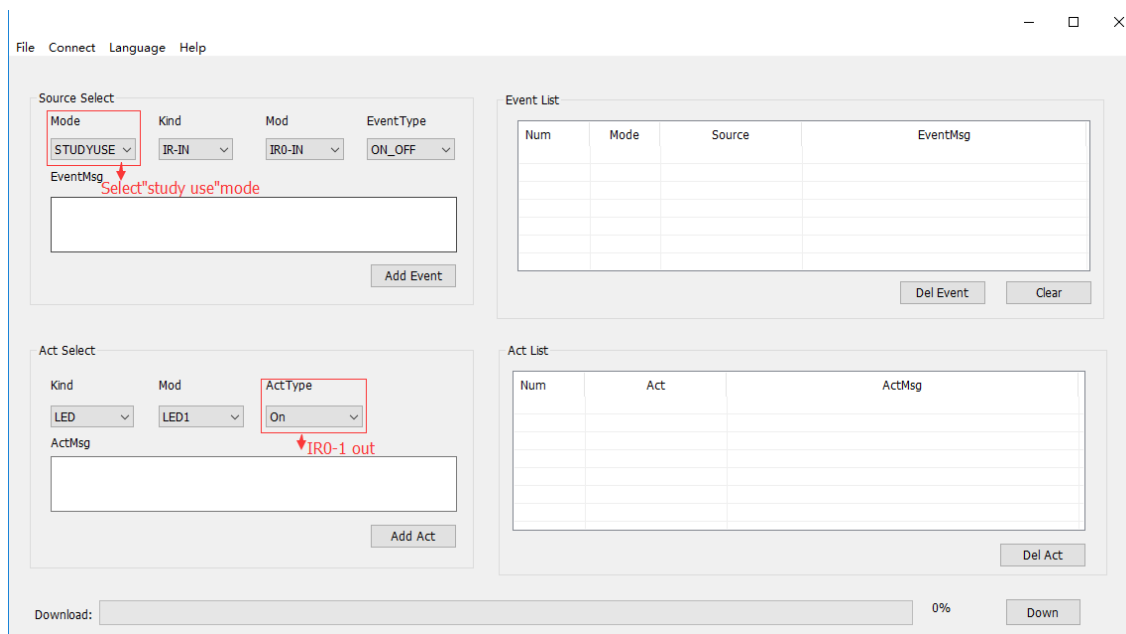
3.9 Source mode switching test

Pre programmed programming software is written in one of four modes of NORMAL, EXTEND0, EXTEND1 and STUDYUSE, and any switch mode is applied. The instructions in four modes will not affect each other.

Test conclusions: detailed summary of page tailing problems

4.0 Default configuration / user configuration switching test

Configuration mode: LED keylight 1-6 opens

User configuration: the parameters are programmed freely with the user. (LED button 1-6 turns off)

Switching configuration：switching in 2 modes

Verify the above three configurations, whether the parameters change with the mode switch (test with LED keylight as an example)

Test conclusion: three kinds of configuration can be switched at any time, and the parameter settings are not interfered with each other

5.0 Mapping pattern test

One to one single control:

**Detailed steps as below**

1. Set up programming software in advance 1#、2#device control instruction (Touching source and action)

2. After programming, close the port。1#、2#device Long press the rotary button to enter the set mode

3.The format of the related settings is as follows：

1# ID0 (Local): 3(1-99 can set flexible)   ID1 (the distal): 4(1-99 can set flexible)

2# ID0 (Local): 4(1-99 can set flexible)   ID1 (the distal): 3(1-99 can set flexible)

4. Open the DHCP after connect the router

5. 1#device long press the rotation key to"ctrl"(mapping mode), The auxiliary mode can be adjusted arbitrarily by preprogramming

6. 2#device long press the rotation key to "run"(normal mode), the auxiliary mode can be adjusted arbitrarily by preprogramming

＊1: To have controled must need 1 mapped model.

＊2: 1#2#can flexible switching

Verify the above operation to implement mapping control

One to multiple single item control：

Diagram as follow
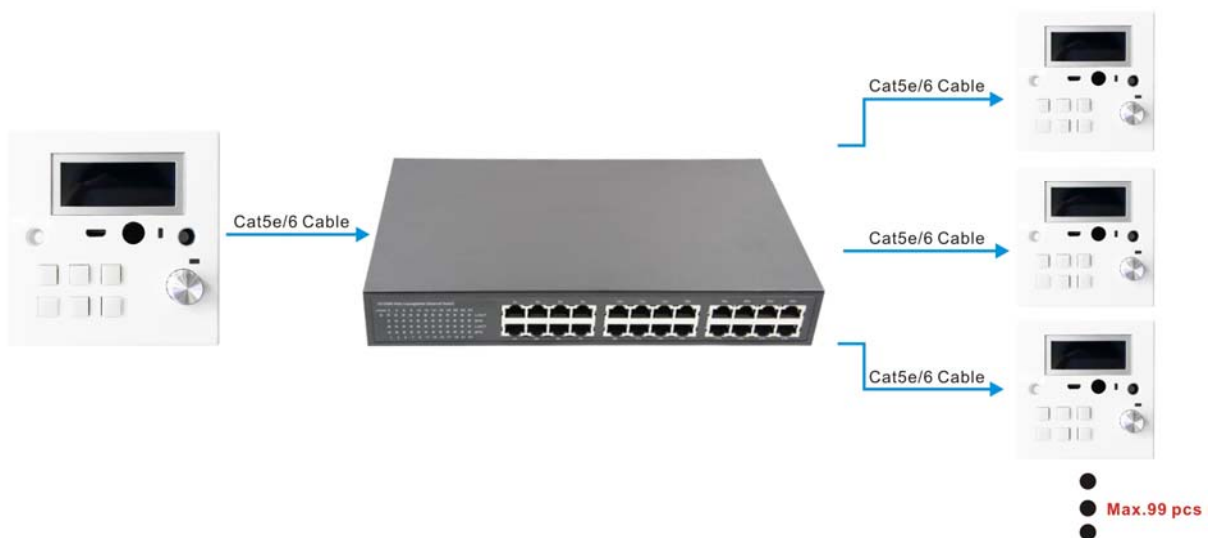
Setting steps can refer to the one to one mode

The one to multiple control settings are as follows：

1. As host of device ID0: xx(can any number but not 0)
   ID1: 0(must be 0, Control all other slave machines)

2. As host of device ID0：xx(can any number but not 0)
   ID1: xx(any but not 0)

To complete the above parameter setting, one to many controls can be achieved
（Maximum support for 99 units based on router bandwidth）

Distance of network cable：

Host Slave	40M	80M	100M	120M
40M	√	√	√	√
80M	√	√	√	√
100M	√	√	√	√
120M	√	√	√	√

Test conclusion: mapping mode can be transmitted normally

5.1 Upgrade firmware test
Product firmware updates, repair or functional changes, support program updates, provide the front panel firmware USB port upgrade system program

Deatiled steps as follow：

1.Download the upgrade file to the computer；

2.The firmware interface of the front panel is connected to the USB interface of the computer with the Micro USB line.

3.Running the upgrade software, double click the program upgrade icon, as shown in the following figure;

4.Double click the program upgrade icon to enter the following interface；
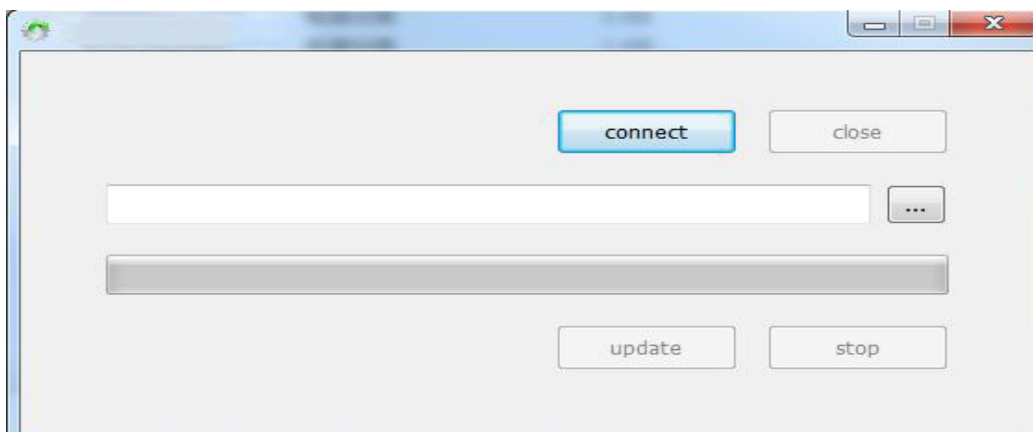
5.Click the software "connect" to find the connection，
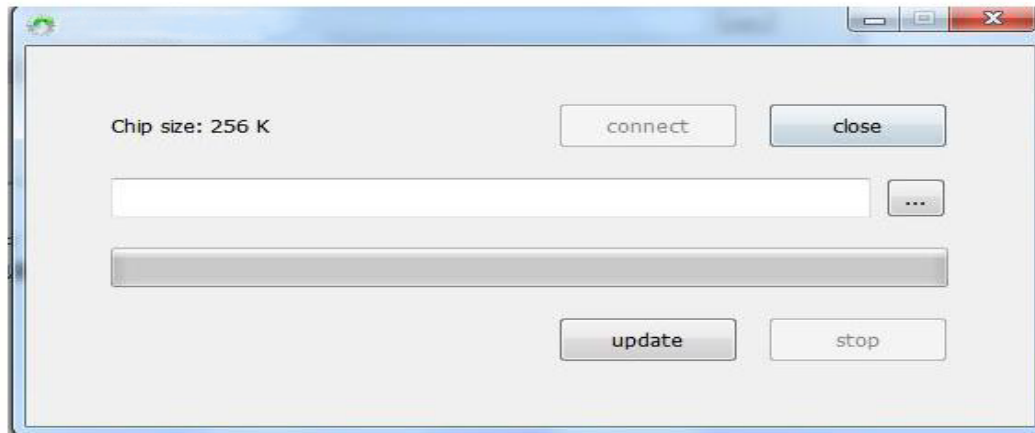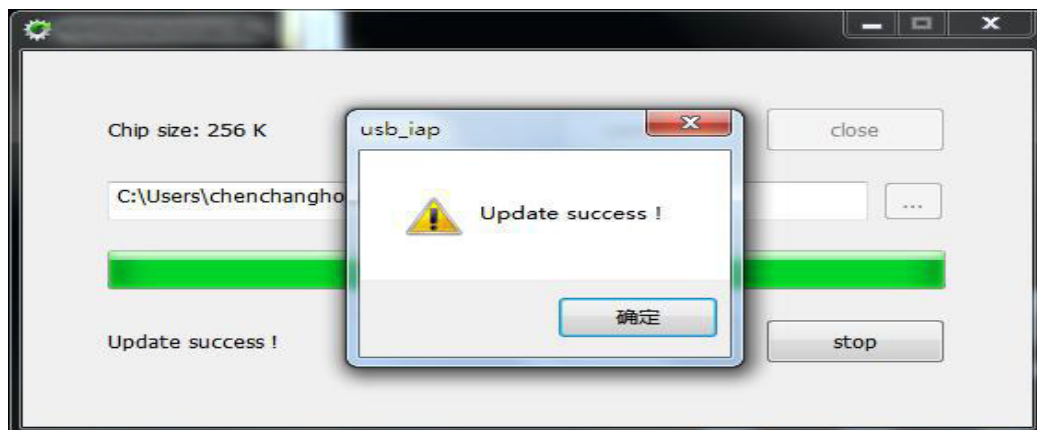
6.The mainframe power is restarted and the chip size can be found.

7.Click [...] Select the downloaded upgrade file。

8.Click"Update"，The system is beginning to upgrade；

9.After upgrated will have a"Update success"dialog box ，Upgrate success.

Noted：① If only upgrade to harf or stopped，you need off the power and restarted it.

Test conclusion: windows7 32/64-Bit can achieve firmware upgrade.

5.2 burn-in test

Presetting the touch source ，Corresponding action steps ten times。The computer launches the frequency of each 100S, working at normal temperature for 12 hours, no reboot, dead machine and so on. After the test, the function is normal.

Test results: device dead for more than three hours (restart can be recovered)

6. Problem summary (Second Edition)

Blue font for R & D response

upper monitor:

1.Unclick event list options, action settings will appear in the sequence of action lists recovered OK

2.After a period of time, the upper computer is dead. (ten times on the frequency test, two times the computer is dead.) Not reappearing

3.The host computer downloads the configuration complete, closes the connection, the machine key operation is invalid

(LCD backlight does not light, no feedback instructions in the event / action list, reboot can be restored)

The upper and lower pages are entered before the upper computer is connected. Only the rotary encoder can view the double click of the rotary encoder to exit.

4.The upper computer is not easy to connect to the device COM port recovered OK.

device：
1.After setting the font in the set mode, return the font random code in the run mode event list recovered OK

2.Single action set the number of cycles, the movement of the machine does not match the run out recovered OK

3.Set the mode button continuous operation, backlight lighting time not to screen.
recovered OK

4.RS485 Touching problem
recovered OK

Buzzer：
1.Buzzer volume is small (recommended as a chord ringtone)

There is no difference in sound quality between the volume of the chord and the volume of the sound of the chord.

Structure：
1.The Phoenix terminal interface of the whole machine is not divided into the female head, and the touch is easy to produce short circuit, the connection is easier to loose and fall off. Please consult the structure related

Infrared:
1.Infrared reception learning is vulnerable to external interference
recovered OK

2.The key value is invalid if the waveform instruction learning is more than one.Storage size limit temporarily unchanged

3.Infrared emission distance limited

The adjustment part of the hardware is currently available within 4-5 meters.

Network:
1.MAC Address is not open

In the set mode, open a page to display the handover tips of the font and the information needed for the MAC address.

2.Power failure restarts and mapping mode is invalid（The machine has a normal function, and the chance of reappearing is 80%.）
recovered OK

burn-in test:
Continuous work for more than 3 hours
Not reappearing again

MAINTENANCE

Clean this unit with a soft, dry cloth. Never use alcohol, paint thinner of benzine to clean this unit.

PRODUCT SERVICE

（1）**Damage requiring service:**

  The unit should be serviced by qualified service personnel if:

      (a) The DC power supply cord or AC adaptor has been damaged;

      (b) Objects or liquids have gotten into the unit;

      (c) The unit has been exposed to rain;

      (d) The unit does not operate normally or exhibits a marked change in performance;

  The unit has been dropped or the cabinet damaged.

（2）**Servicing Personnel:** Do not attempt to service the unit beyond that described in these operating instructions.Refer all other servicing to authorized servicing personnel.

（3）**Replacement parts:** When parts need replacing ensure the servicer uses parts specified by the manufacturer or parts that have the same characteristics as the original parts. Unauthorized substitutes may result in fire, electric shock, or other Hazards.

（4）**Safety check:** After repairs or service, ask the servicer to perform safety checks to confirm that the unit is in proper working condition.

WARRANTY

If your product does not work properly because of a defect in materials or workmanship, our Company (referred to as "the warrantor") will, for the length of the period indicated as below, **(Parts(2)Year, Labor(90) Days)** which starts with the date of original purchase ("Limited Warranty period"), at its option either(a) repair your product with new or refurbished parts, or (b) replace it with a new of a refurbished product. The decision to repair or replace will be made by the warrantor.

During the "Labor" Limited Warranty period there will be no charge for labor.

During the "Parts" warranty period, there will be no charge for parts. You must mail-in your product during the warranty period. This Limited Warranty is extended only to the original purchaser and only covers product purchased as new. A purchase receipt or other proof of original purchase date is required for Limited Warranty service.

MAIL-IN SERVICE

When shipping the unit carefully pack and send it prepaid, adequately insured and preferably in the original carton. Include a letter detailing the complaint and provide a day time phone and/or email address where you can be reached.

LIMITED WARRANTY LIMITS AND EXCLUSIONS

1) This Limited Warranty ONLY COVERS failures due to defects in materials or workmanship, and DOES NOT COVER normal wear and tear or cosmetic damage. The Limited Warranty ALSO DOES NOT COVER damages which occurred in shipment, or failures which are caused by products not supplied by warrantor, or failures which result from accidents, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty

installation, set-up adjustments, misadjustment of consumer controls, improper maintenance, power line surge, lightning damage, modification, or service by anyone other than a Factory Service center or other Authorized Servicer, or damage that is attributable to acts of God.

2) THERE ARE NO EXPRESS WARRANTIES EXCEPT AS LISTED UNDER "LIMITED WARRANTY COVERAGE". THE WARRANTOR IS NOT LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THIS PRODUCT, OR ARISING OUT OF ANY BREACH OF THIS WARRNTY. (As examples, this excludes damages for lost time, cost of having someone remove or re-install an installed unit if applicable, travel to and from the service, loss of or damage to media or images, data or other recorded content. The items listed are not exclusive, but are for illustration only.)

3) PARTS AND SERVICE, WHICH ARE NOT COVERED BY THIS LIMITED WARRANTY, ARE YOUR RESPONSIBILITY.