HDL-MPTLC43.46 User Manual

Version：V1.0.0

Release Date：2020/06/23

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GZ HDL Technology Co., L

Modification Record

This record accumulates instructions for each document update. The latest version of the document contains updates from all previous document versions。

Num	Version	Modification Content	Date
1	V1.0.0	First official release	2020/06/23

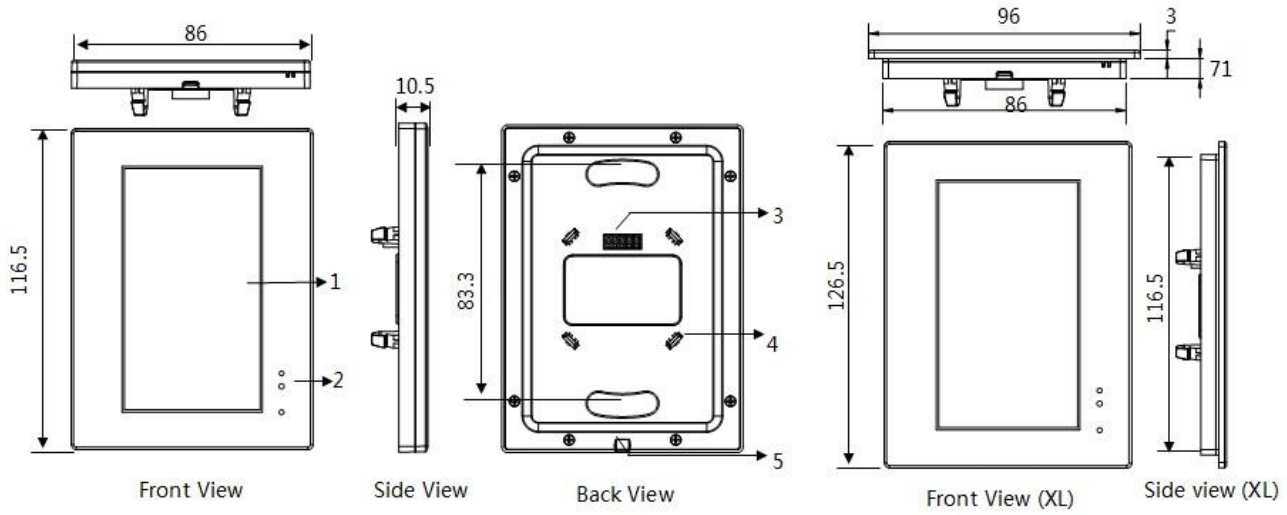
1 Overview

1.1 General Information

1.1.1 Description

HDL-MPTLC43.46 Muti-function touch LCD panel, it has normal version and XL version. There are 10 pages totally, user can customize each page interface personally. Moreover, AC function support UV switch control, can work with SB-IR-EM, 8in1 sensor, 12in1 sensor.

1.1.2 Device Description



1: LCD screen: display the icon and control

2: Wake up function: IR detection, when people close to the panel, the screen will light up.

3/4: Signal interface and fastener: Connect to panel power interface (HDL-MPPI.46); it needs supply the power from panel power interface.

5: Split gap: Insert a slotted screwdriver to split gap, separate the panel and power module (HDL-MPPI.46) .

1.2 Functionalities

- UI customized.
- Built-in temperature sensor.
- Adjustable LCD backlit.
- Wake up function
- According to the time, will change standby interface automatically, the screen will be dark and enter the power saving mode.
- Normal control: light icons for lighting/curtain/scene control, support 60 buttons.
- AC control: support 9 areas independently, only the first 3 ACs support UV switch control.
- Floor heating control: support 9 areas independently.
- Music control: support 9 zones independently.
- Support 10 pages, can assign the lighting/AC/floor heating/music/setup/timer button to each page.
- Password protection, one password for whole panel.
- Supports more SETUP buttons and more TIMER buttons.
- TIMMER function: can display the date, time, temperature, etc.
- Key mode: Invalid, Single on/off, Single on, Single off, Combination on, Combination off, Combination on/off, Short press/Long click, Short press/Long press.
- Key control mode: Scene, Sequence, Timer switch, Single channel on-off, Broadcast scene, Broadcast channel, Curtain, GPRS control, Panel control, Broadcast Scene, Broadcast Channel, Security Module, Link Page, Logic Light Adjust, Logic Scene, LCD&LED Sleep, etc.
- Panel functions: Lock, Turn on/off AC, cooling & heating for AC, Auto temperature setting, Fan Speed regulating, AC Mode setting, AC Temperature regulating, backlight adjusting, AC Lock, Backlight and status' indicator light setting, floor heating temperature and mode setting etc.

- Support to change the button position/button remark/button icon/background picture Support online upgrading.

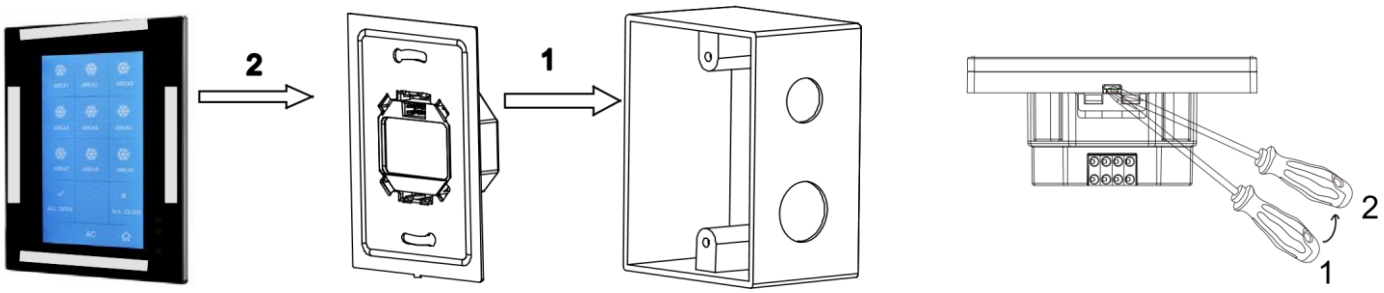
1.3 Connections

Notes

- It must work in conjunction with HDL-MPPI.46.
- Buspro connection-Series connection (hand-in-hand).
- Installation-US wall box.

Installation Steps

- Mount the HDL-MPPI.46 in the wall box
- Connect bus cables. Make sure the color of wire complies with the definition
- Make sure the Buspro cable type is correct and has no short circuit Put this device into HDL-MPPI.46



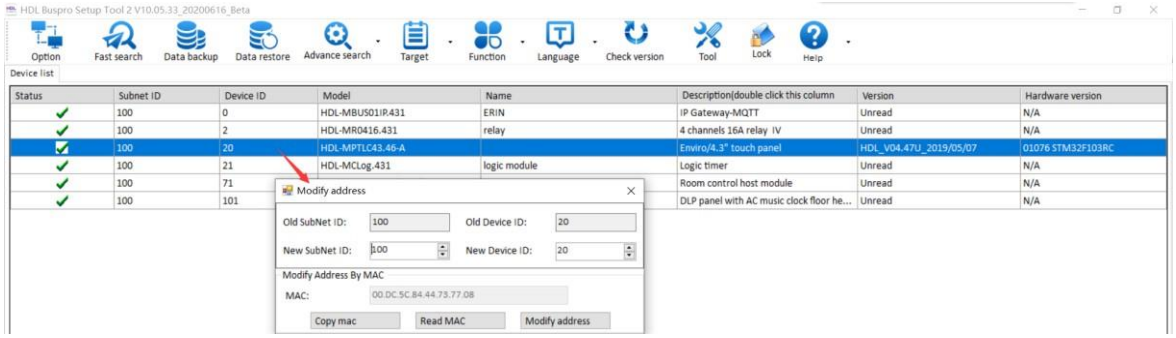
Panel Panel interface US box Separate panel and power interface

Installation: Hold the edge of the panel (shown as above grey area), insert the power interface module vertically. Do not push the panel too hard.

Split: Insert a 2.5mm-screwdriver to the split gap, pry up from Position 1 to 2, then the wiring hole will be open. Then separate the panel and MPPI.46.

2 Software Configurations

2.1 Device Information



Double click Address: Read MAC and modify address. Subnet ID must same with gateway's subnet ID. Device ID must be unique.

Double click Model/Description: Enter to setup page.

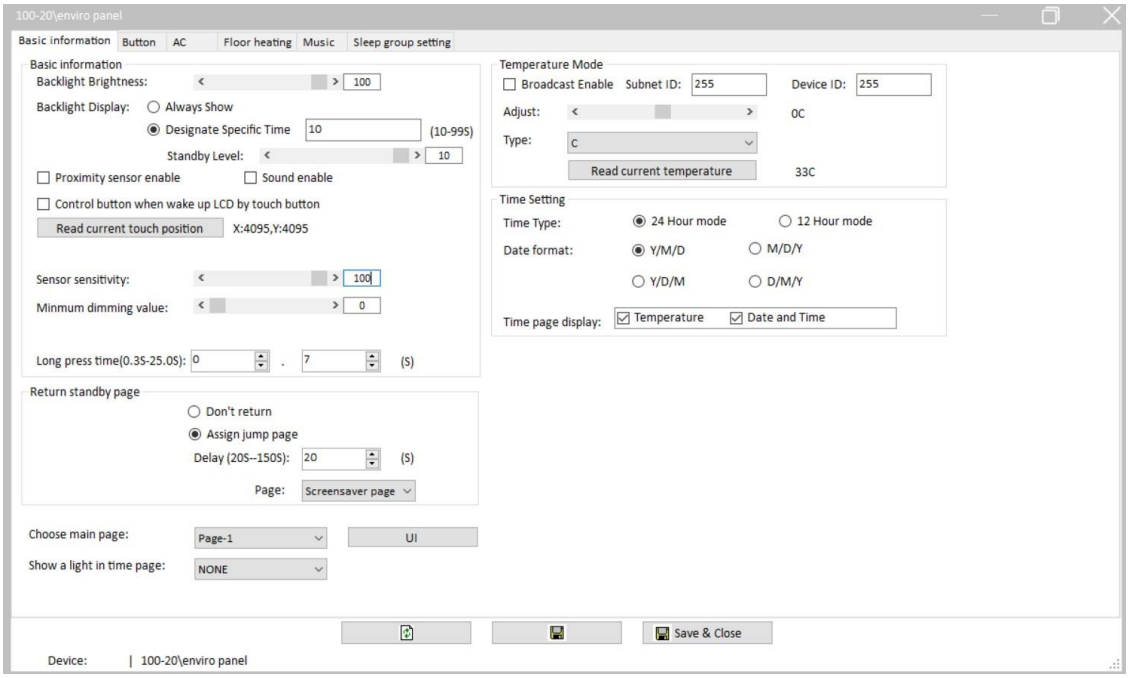
Double click Name: Modify remark of module.

Double click Version: Read firmware version of module.

Double click Hardware Version: Read hardware version of module.

2.2 Basic Information

Double click the Model name or Description name, it will enter to the setting page.



Basic information:

- Backlight Brightness: Can set the backlight brightness.
- Backlight Display: Can set the backlight always display; or enter to the standby mode in designate specific time when there is no operation.
- Proximity sensor enable: When the panel in standby mode. If enable this function, the backlight will be on when your hand close to the panel. If not enable this function, the backlight will be on when you click the panel.
- Sounds enable：After enable it, it will come with sound when touch the panel to control targets.
- Control button when wake up LCD by touch button: If you set the Backlight Display, after it go to Standby mode. It will control the button when wake up LCD by touch button.
- Read current touch position: Read the current touch position, it is used for check the position in panel.
- Sensor sensitivity: Can set the Sensor Sensitivity of panel in the software.
- Minimum Dimming Value：Set the dimming lower limit. The lower limit is useful if you would like to skip the lower level segment and dim from a certain level, say 40%. You

want to skip it because maybe lower than 40% is impractical for you or maybe the load quality is not so good and trembles when at low level segment.

Suggested set it as 0.

- Long press time: Define the long press time.

Return standby page:

- Assign jump page: Return to specific page when there is no operation after a delay time.

Choose main page:

- Choose one page shows in main page.

UI:

- Customized the content for each page before you use it.

Show a light in time page:

- Select one light and it will show in time page.

Temperature Mode:

- Broadcast Enable: This panel built-in temperature sensor, it will broadcast the time after you enable it. 255-255 means broadcast to Bus.
- Adjust: If the detected temperature has error, you can adjust it on the software.
- Type: Set the format of the temperature.

Time Setting:

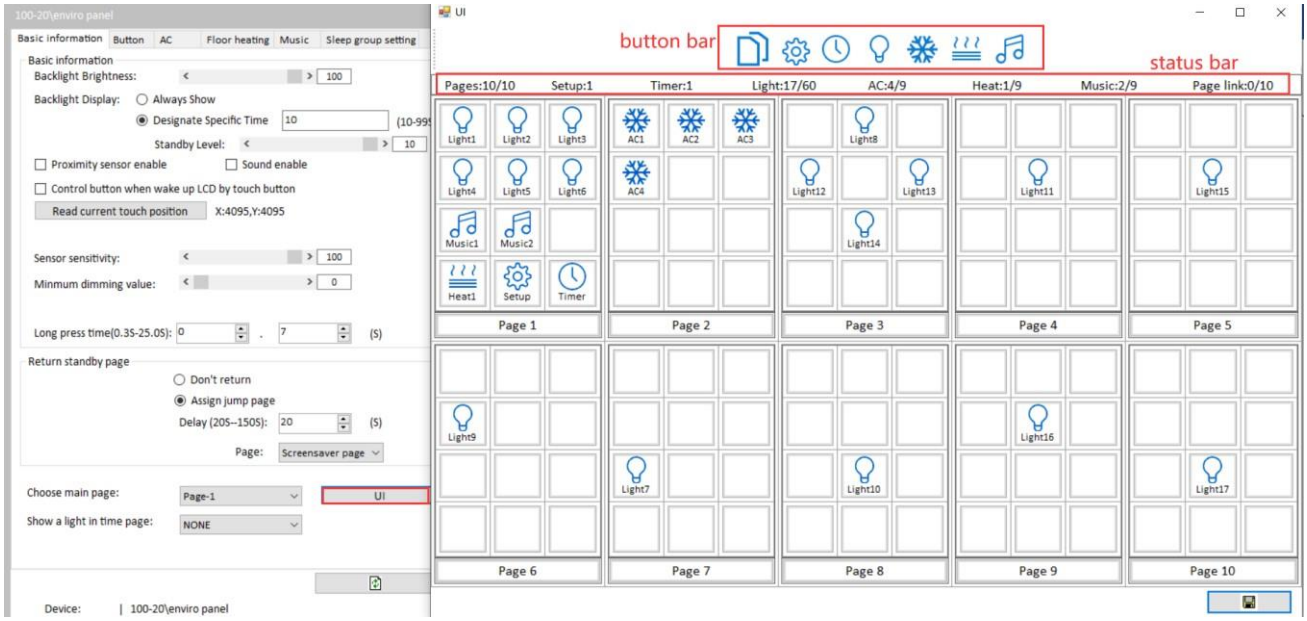
- Time Type：Set the format of time.
- Date Format: Set the format of day.
- Time page display: Display/hide the temperature/Date and Time in panel.

Notice: This panel does not have real time clock chip, it only can receive the time from other module (like logic module, security module) on the BUS, then display it.

2.3 UI Customized

Enviro panel has 10 pages, and user can customize the content for each page. You need to design the interface before you program it.

After searched the enviro panel on software, go to 'Basic Information' page, there has 'UI' option. It is for UI design.



Button bar:

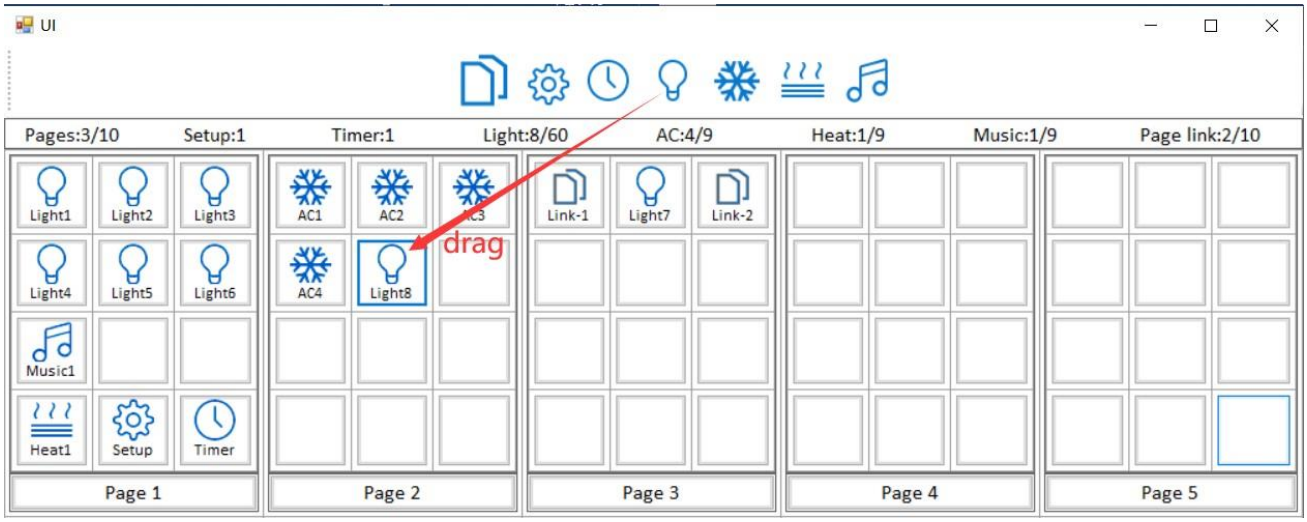
- There has 'Link page, SETUP, TIMER, LIGHT, AC, FLOOR HEATING, MUSIC' buttons.
- Link page: This button is used for link page, no need to program it.
- Setup button: After add this function in panel, so you can long pressing the Setup button in panel, it will go to System setting page. You can check its address, set the brightness, switch the language, set the password for page.

Status bar：

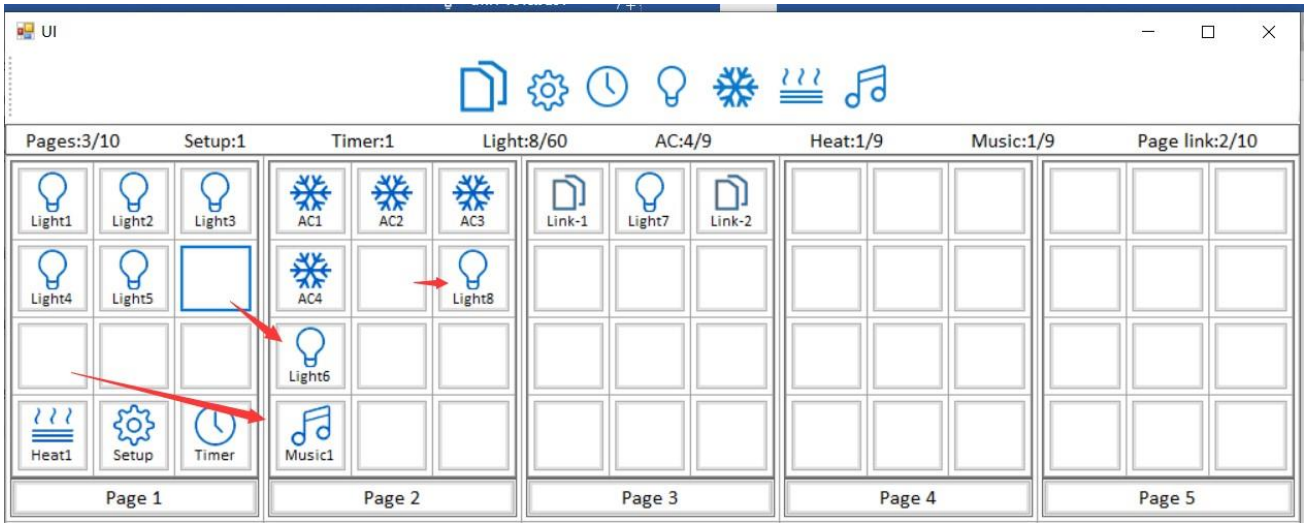
- Pages:10/10: Total 10 pages, currently using 10 pages.
- Setup:1/Timer:1: Total one SETUP/TIMER button, but you can put it in more pages.
- Lights：17/36 ： Total 36 buttons, currently using 17.
- AC:4/9: Total 9 AC button, currently using 4 ACs.
- Heat:1/9: Total 9 Floor heating button, currently using 1 Floor heating.
- Music:2/9：Total 9 music button, currently using 2 Music.

Steps for UI design:

1: Select the button on Button Bar, and drag it to the page. Right click to delete the existing one.



2: Also you can drag the button in the page. **After dragged the button, the control target of this button will be moved together.**



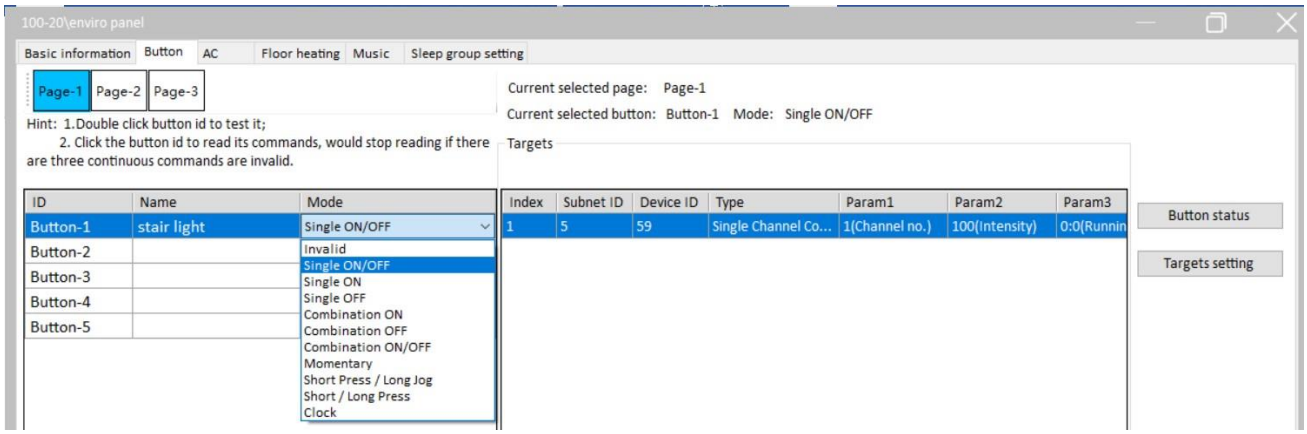
3: Click ‘Save’ button.

4: Done.

2.4 Button Page

If you want to program the setting for button, please go to Button page.

Select the page which you want to program. The Button ID is same with the Light ID which you add in UI page.



Mode：

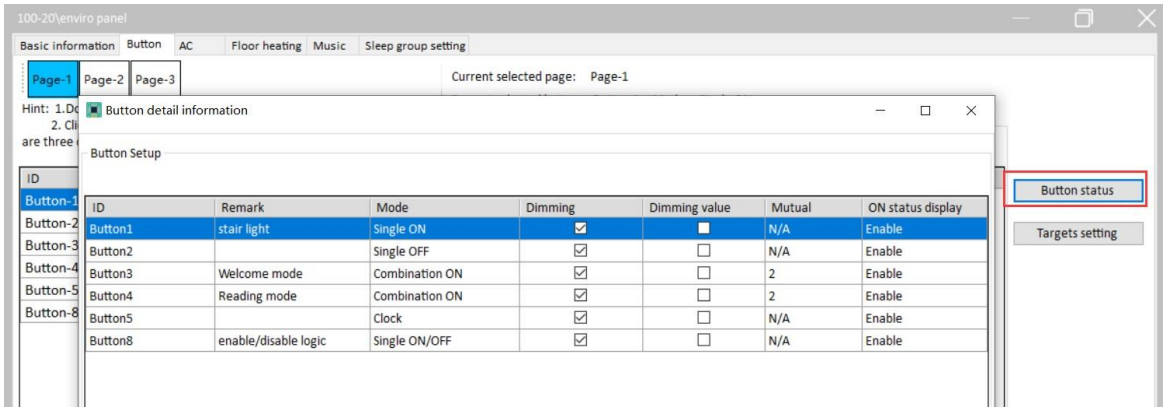
- Invalid: If this is assigned the Switch can not be used.
- Single on: If this is assigned the Switch can turn on one target only (one channel, one scene, one sequence, etc.).
- Single off: If this is assigned the Switch can turn off one target only (one channel, one scene, one sequence, etc.).

- Single on/off: If this is assigned the Switch can turn on/off one target only (one channel, one scene, one sequence, etc.).
- Combination on: If this is assigned the Switch can turn on multiple targets (channels, scenes, sequences, etc.).
- Combination off: If this is assigned the Switch can turn off multiple targets (channels, scenes, sequences, etc.).
- Combination on/off: If this is assigned the Switch can turn on/off multiple targets (channels, scenes, sequences, etc.).
- Short Press/Long Jog: Both can control up to 49 targets.

  Press one time, trigger the Short Press targets.

  Long press triggers the ON status, release the finger trigger the OFF status.
- Short/Long Press: Both can control up to 49 targets.
- Clock: Set time to trigger target automatically (double click the panel key to enable/disable the clock function first). And it needs to read time from BUS. Pls go to Targets Setting page to set the clock time or set the time in panel.

Button status:



- **Dimming：**

Valid: Enable dimming when long pressed.

Invalid: Disable dimming, just on/off.

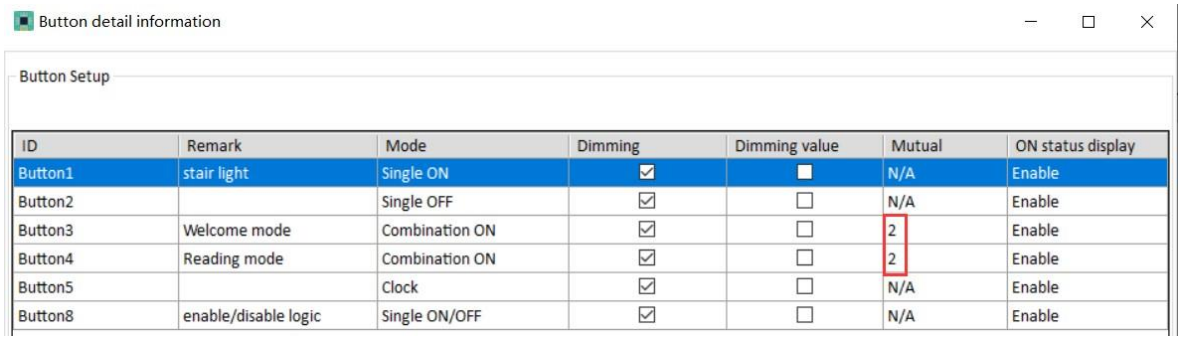
- **Dimming Value：**

Toggle: If selected, when turn on light, the brightness will go to 100%.

Memory: If selected, when turn on light, the brightness will go to last brightness before turn off.

- **Mutual exclusion：**

There are 20 mutual exclusion groups available, they only work for combination mode button. After a mutual exclusion group has been set, only the last key controlled can indicate its status (on), the status of other keys in mutual exclusion group will be off.



ID	Remark	Mode	Dimming	Dimming value	Mutual	ON status display
Button1	stair light	Single ON	☑	☐	N/A	Enable
Button2		Single OFF	☑	☐	N/A	Enable
Button3	Welcome mode	Combination ON	☑	☐	2	Enable
Button4	Reading mode	Combination ON	☑	☐	2	Enable
Button5		Clock	☑	☐	N/A	Enable
Button8	enable/disable logic	Single ON/OFF	☑	☐	N/A	Enable

The mutual exclusion groups can enable the scenarios described below:

Key4 control (combination on) channel1 and channel2 with a dimming level of 100%.

Key5 control (combination on) channel1 and channel2 with a dimming level of 60%.

When no mutual exclusion:

Press key4, and then press key5, two channels are go to 60%, But both led indicators will turn on.

When has mutual exclusion:

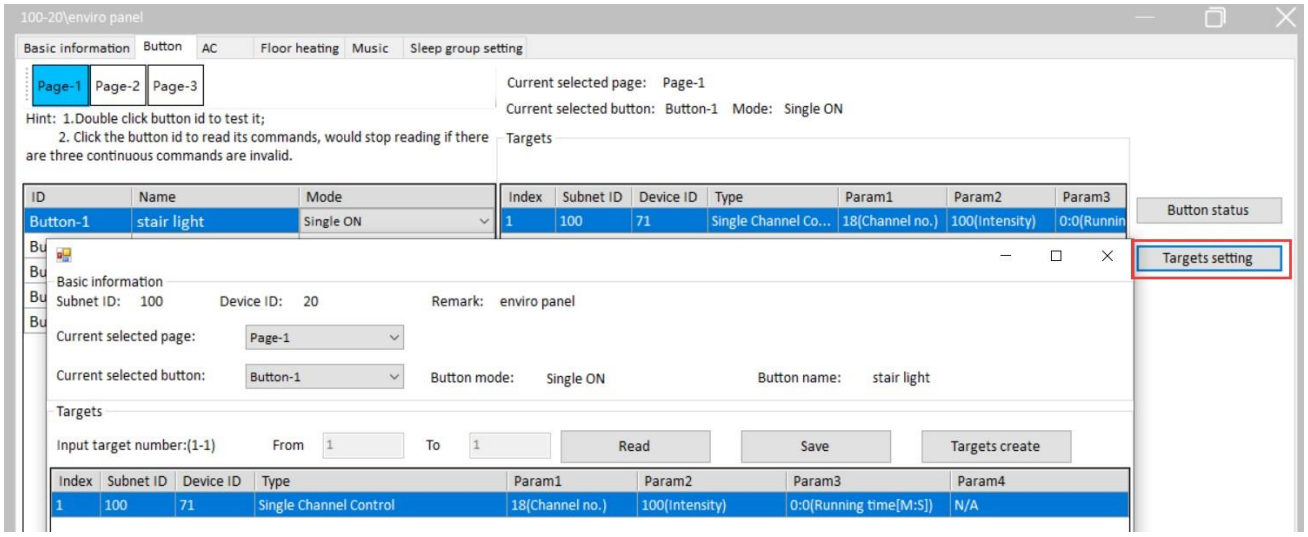
Press key4, and then press key5, two channels are go to 60%, And just the key5 led indicator will stay on.

- **ON status display:**

After enable, the button will show the ON status.

Targets setting:

It used for set the targets for button.



Type

- Scene：Enables a user to turn a scene on or off.
- Sequence：Enables a user to turn a sequence on or off.
- Timer Switch: This is use for enable/disable logic module.

- Universal Switch：Send the UV command.
- Single Channel Lighting Control：Enables a user to turn a channel on or off.
- Curtain Switch：Enables a user to control the curtain module.
- GPRS Control：Enables a user to send message via SMS module.
- Panel Control：Shield button/page, control the AC and floor heating module, etc.
- Broadcast Scene：Enables a user to control the same scene in all area.
- Broadcast Channel：Enables a user to turn on/off all the channels in one Dimmer, Relay, etc.
- Security Module：Enables a user to control the security module.
- Music Control：Used to send command to music module.
- Universal Control：Enables a user to modify the basic settings of a device from a panel. This feature makes the system more flexible for end-users. For more information,

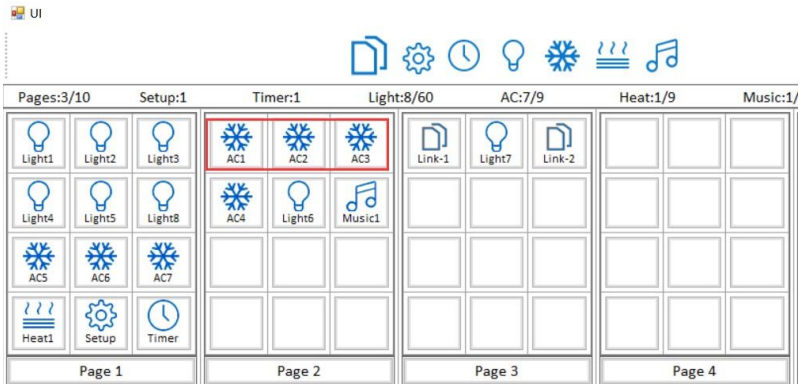
please refer to the ‘universal control command_12in1.xls’, you can download it from FTP:

ftp://59.41.255.150/en(enlish)/HDL%20Buspro/HDL%20Buspro%20Products/Sensors/SB-CMS-12in1/

- Link Page：Enables a user to turn immediately to a designated page.
- Infrared Control：Work with new generation IR emitter HDL-MIRC04.40.
- Logic Light Adjust：Works with DMX48 module.
- LCD&LED Sleep：Enables a user to control the brightness of LCD and LED.

2.5 AC Page

Supports 9 areas independently, only the first 3 ACs support UV switch control, means AC1/AC2/AC3 can work with old IR emitter module (SB-IR-EM), 8in1, 12in1.



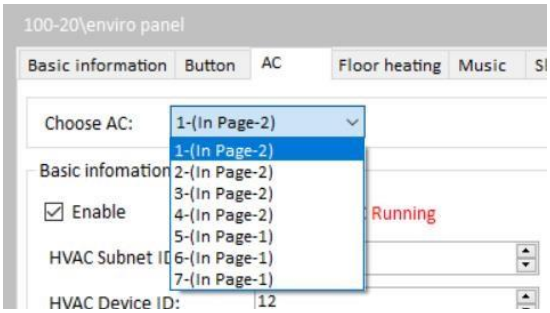
Choose AC：

Take below picture as an example

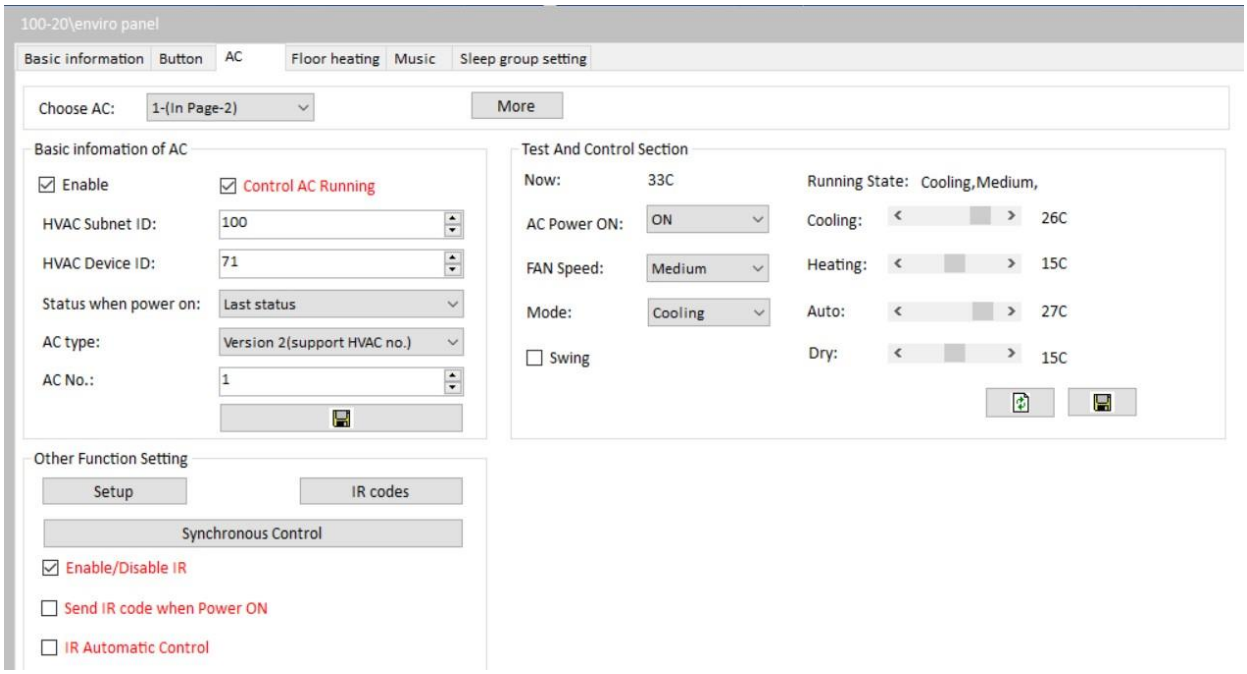
1-(In Page-2) means AC1 in page2.

3-(In Page-2) means AC3 in page2.

6-(In Page-1) means AC6 in page1.



2.5.1 AC Setting Page:



Enable：Enable/disable AC function.

Control AC running：After selected, panel in fully control mode, in charge of the controlling, and the HVAC is just a simple actuator.

When HVAC in ‘Slave control’, panel must enable ‘Control AC running’.

When HVAC in ‘Fully control’, panel must disable ‘Control AC running’.

If use HDL-MIRC04.40, no need to enable ‘Control AC running’.

AC power on state：After power on again, can restore to the last status before power off, or Close it.

HVAC subnet ID/device ID：Fill in the ID of HVAC module。

AC type：If control MAC01.431, HDL-MIRC04.40, or RS232(AC version), then need to select ‘NEW’. For old HVAC, select ‘OLD’.

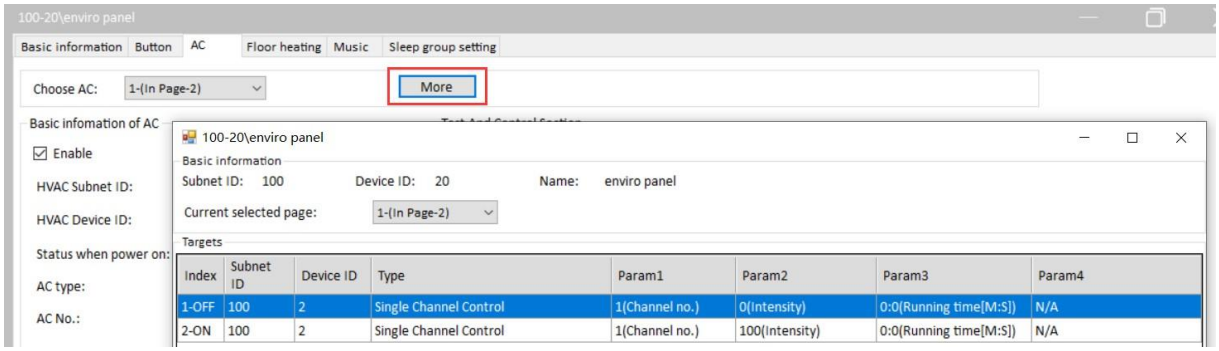
AC No：MAC01.431 just can control one AC, so the AC number is 1. But for HDLMIRC04.40, or RS232(AC version) can control more ACs, so need to fill in the corresponding AC number.

Enable/Disable IR: After enable, then this panel can use 'IR codes' function, means use UV switch command to control AC.

Send IR code when Power ON: If enable, panel will send out the last IR codes after power on.

IR Automatic Control: If enable, the panel will work in Fully mode and send out the IR codes according to its calculation. If you want to use this function, must enable 'Control AC Running' fist. You only need to use it when the AC is not built-in algorithm, can not work in smart way. But mostly no need to use.

More: It can send out one command when AC is ON/OFF.

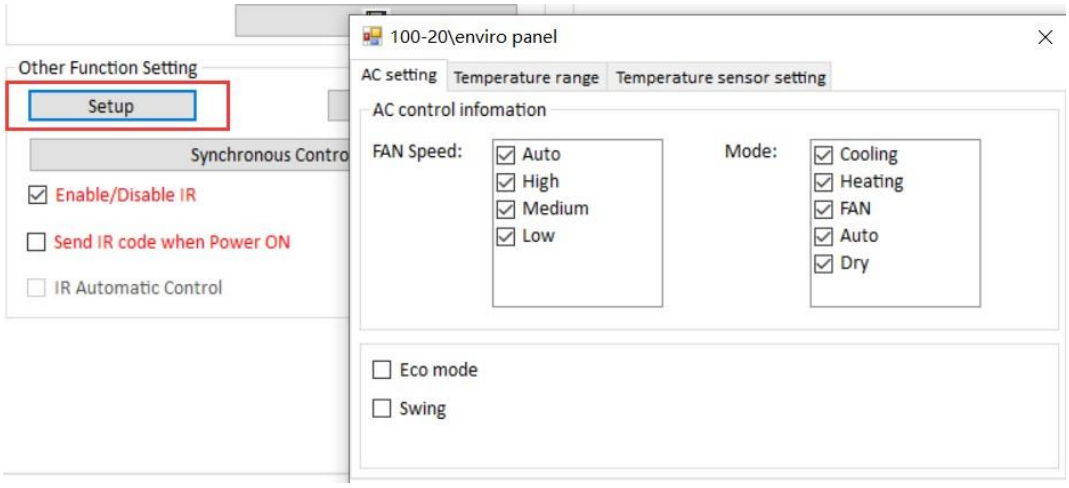


Other Function Setting:

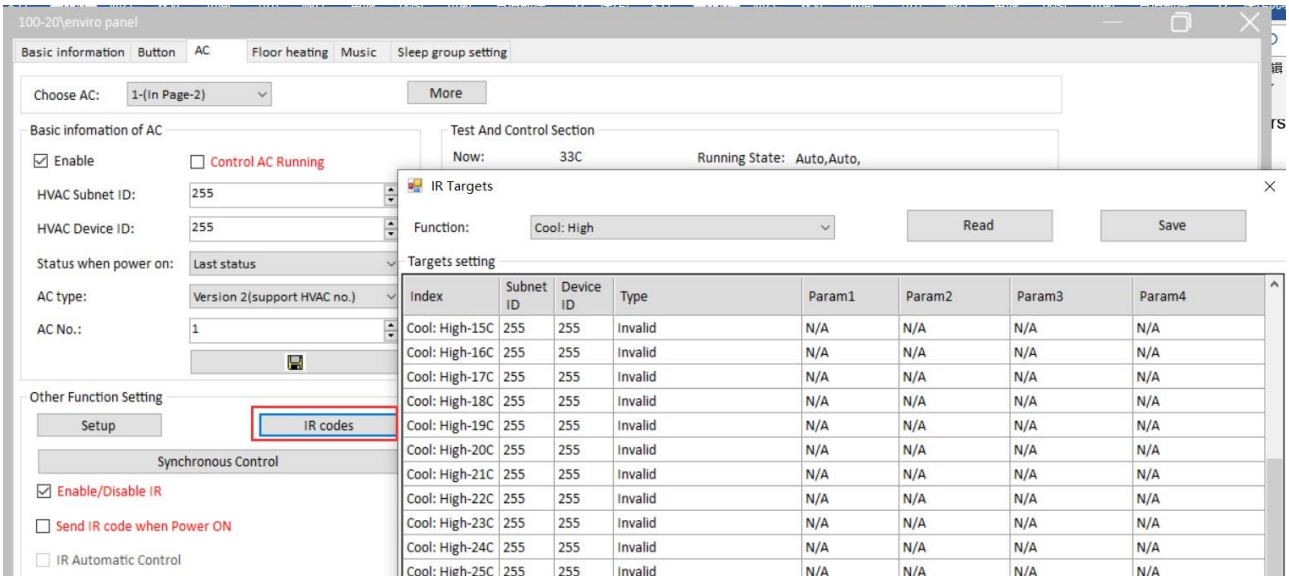
Setup: Set the AC mode and temperature/sensor information. You can use temperature sensor which built inside or temperature from another device.

Eco mode：When the room temperature reach to the set point, then FAN relay channels will be off.

Swing：Enable/disable the wind sweeper. After selected, the wind sweeper icon will display on the panel AC page.



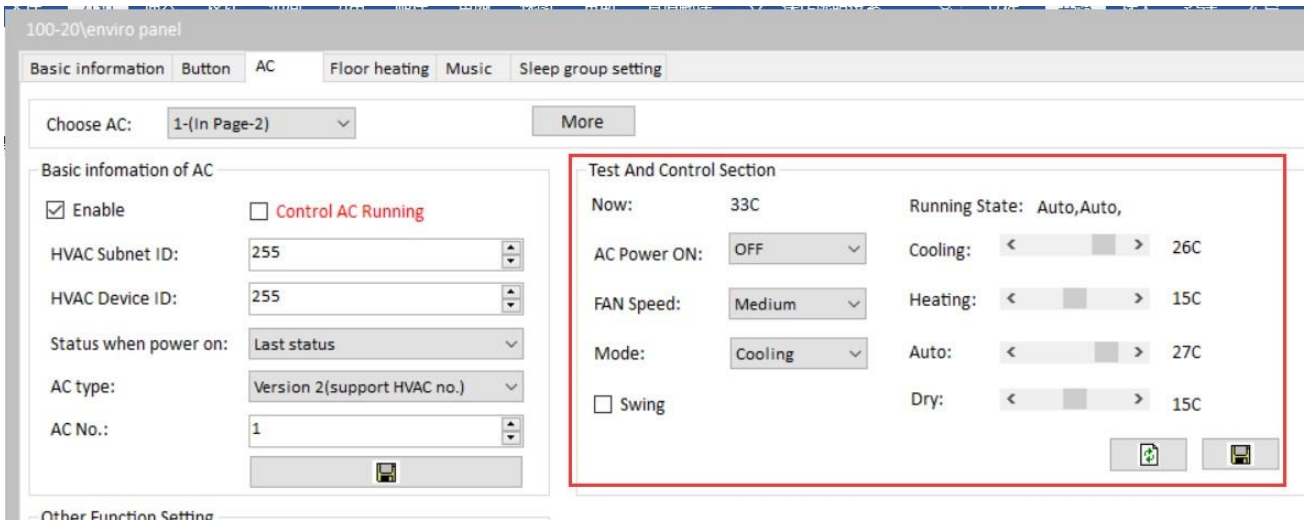
IR codes: It is used for IR AC, and you leant the AC code by yourself. It must works with IR EM module. You need to enable the IR function in panel first.



Test And Control Section:

It is use for test the AC control in software.

Wind: After selected, will display the wind button on the AC page.

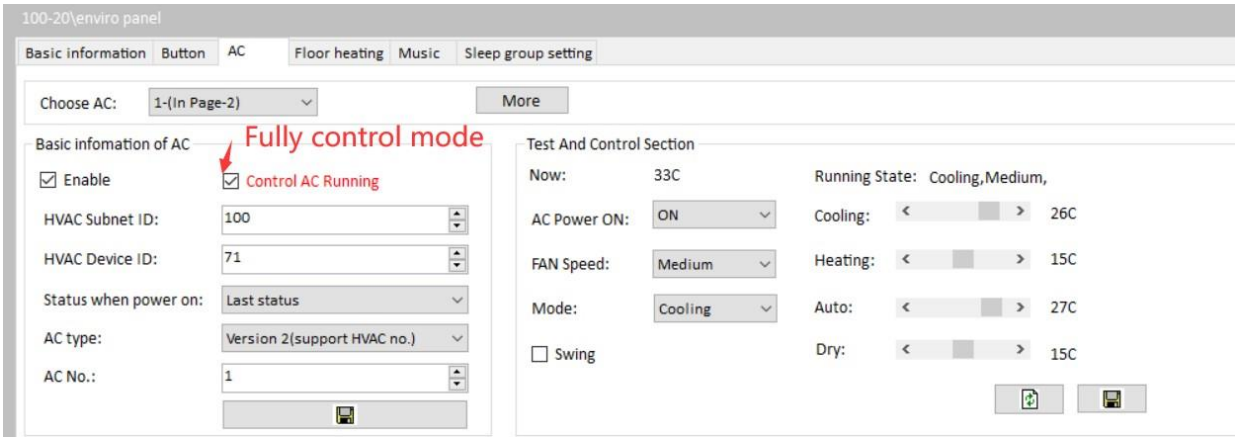


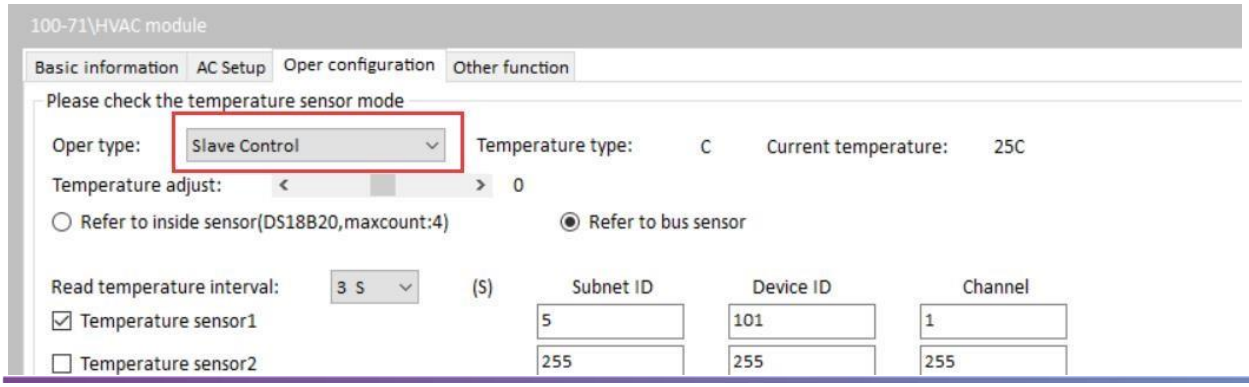
2.5.2 Application for AC Control:

HVAC control mode:

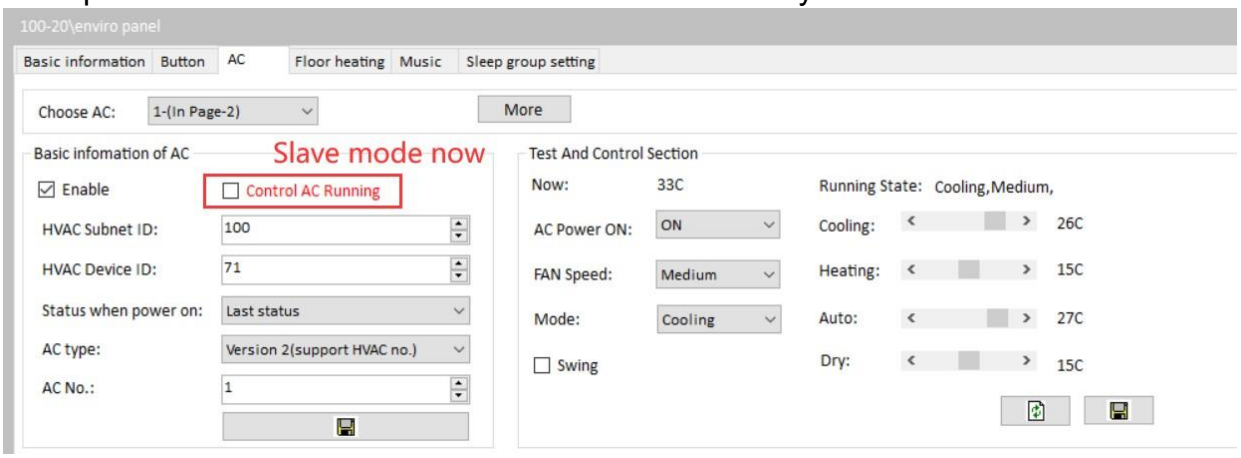
If you want to use panel to control fan coil unit (like MAC01.431), just set the address of MAC01.431, AC type must set it as Version2, and AC Number is 1.

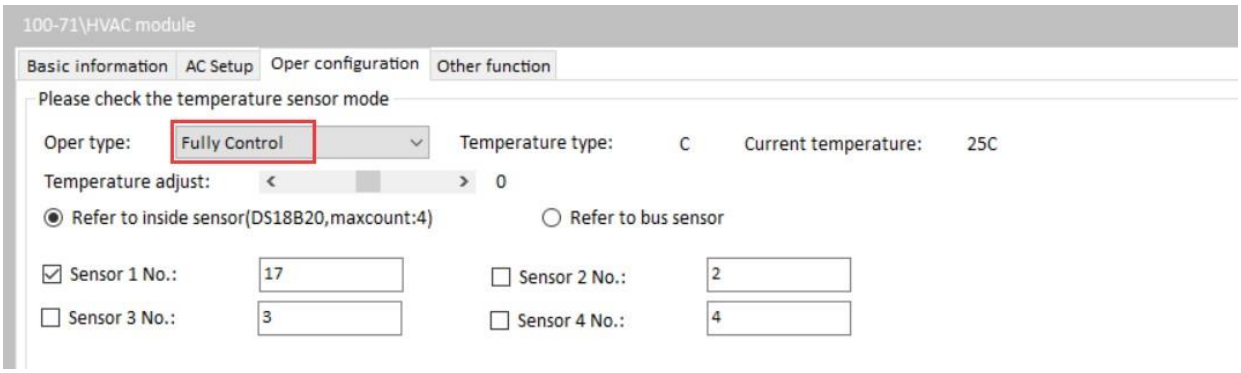
Example1: Panel in Fully control mode and MAC01.431 in Slave mode. (suggested use this one)





Example2: Panel in Slave mode and MAC01.431 in Fully control mode.





IR control mode:

Control the AC via IR codes. Works with old IR emitter (SB-IR-EM), 8in1, 12in1.

Notice:

1：Only AC1, AC2, AC3 can use UV switch command to control AC via IR codes.

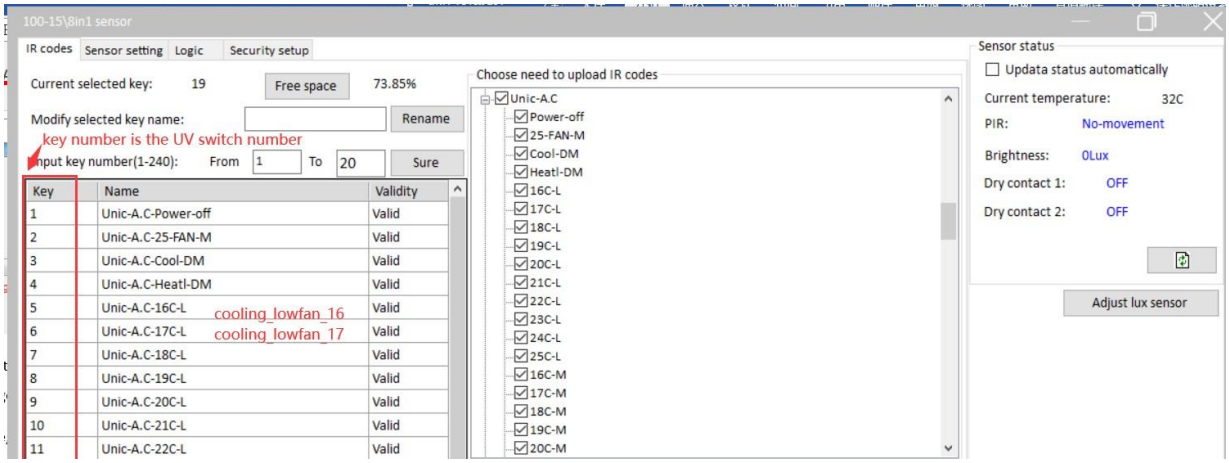
2：Need to enable AC function and enable IR control function.

Steps:

Fill in the corresponding target in each AC state position.

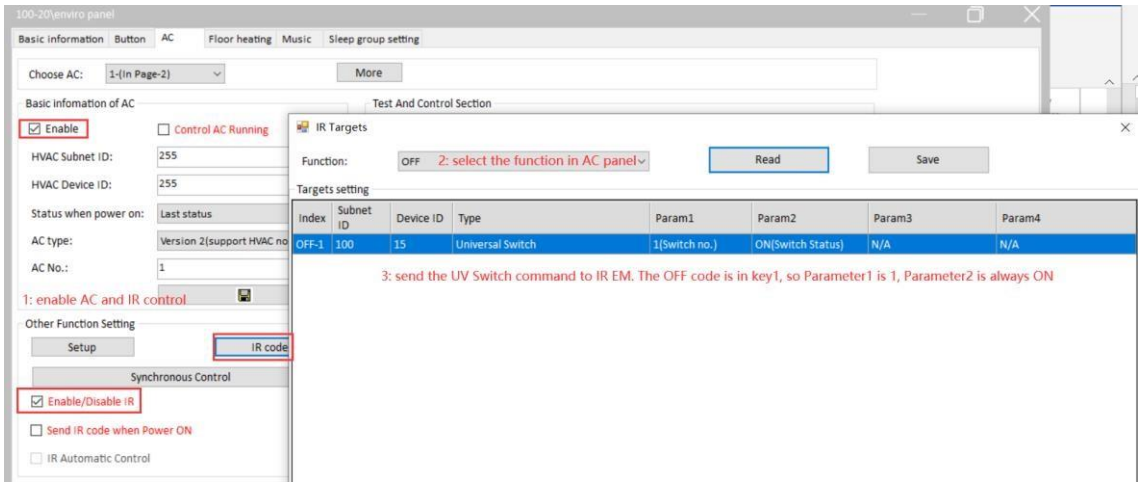
Take the old IR emitter (8in1 sensor) as an example:

1- Upload the IR codes to IR emitter module.

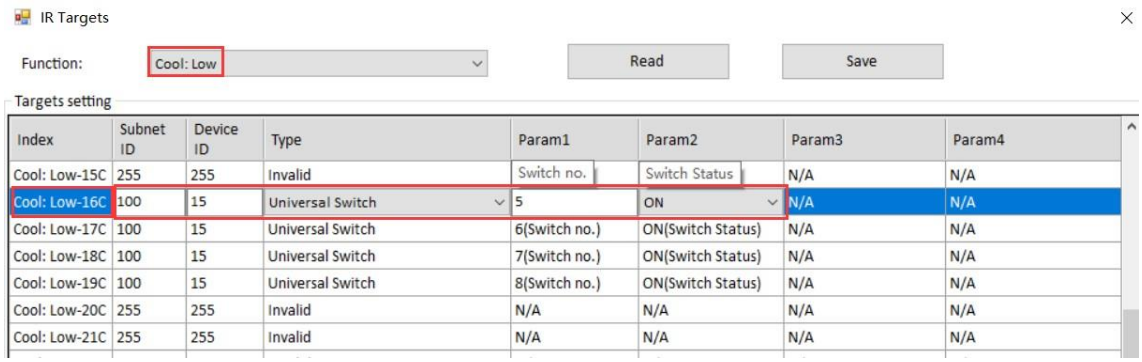


2- In panel AC setting page, click ‘IR control targets configuration’. Find the AC status, for example ‘OFF’. And fill in the target.

See above picture, the OFF code is in Key1, so in the panel setting, Parameter1 is 1, and Parameter2 always is ON.



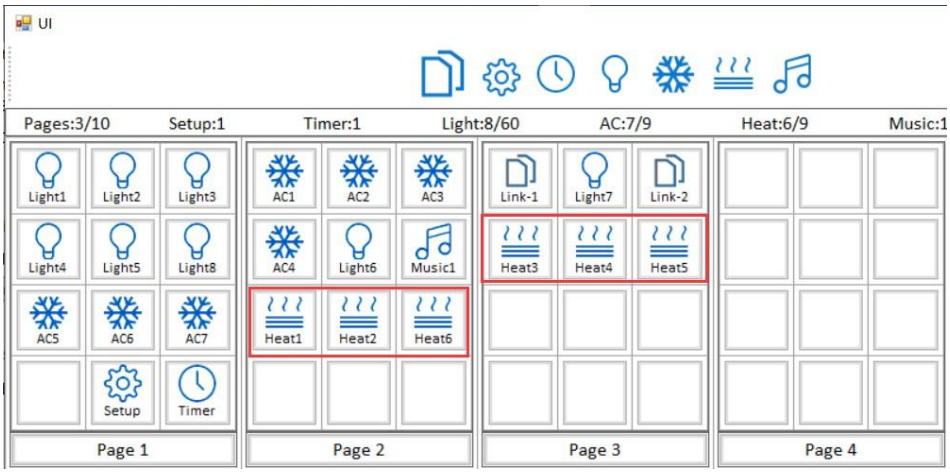
3- For example ’cooling, low fan, 16 degree’.



4- Do the same steps to set other codes.

2.6 Floor Heating Page

Enviro panel supports 9 areas of floor heating, and each area can work independently.

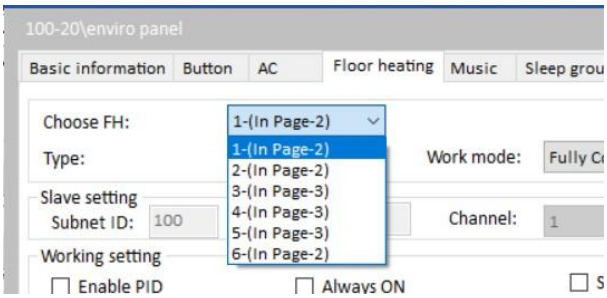


Choose FH:

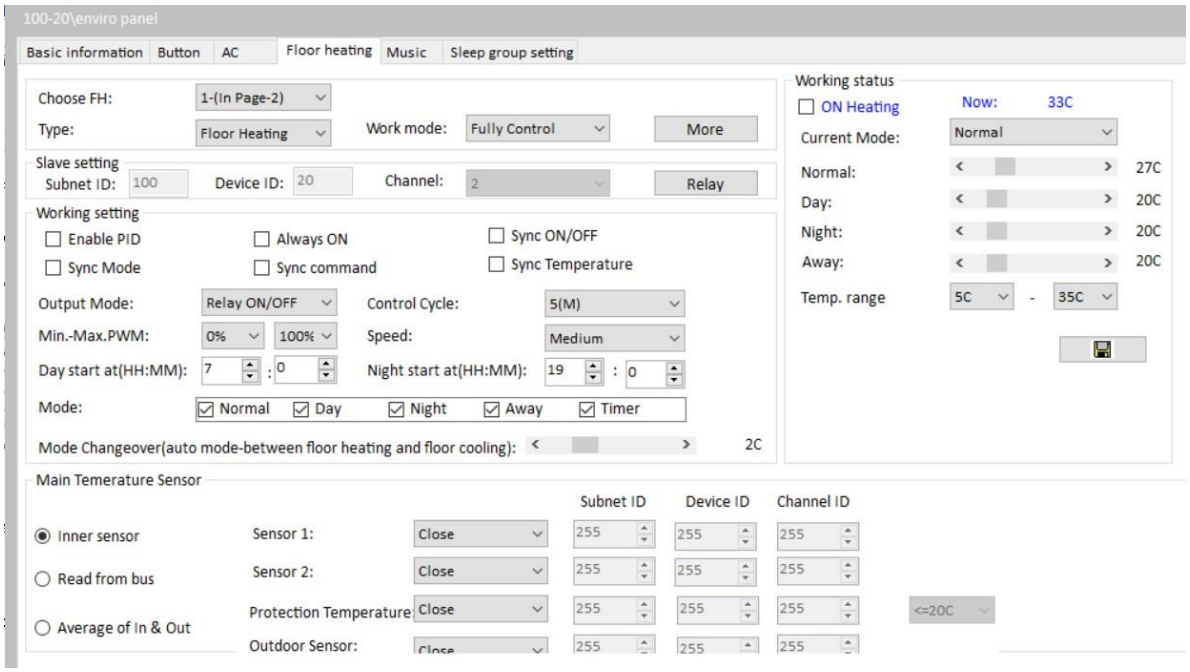
1-(In Page-2) means heat1 in page2.

3-(In Page-3) means heat3 in page3.

6-(In Page-2) means heat6 in page2.



2.6.1 Floor Heating Setting page:



More: It can send out one command when Floor Heating is ON/OFF.

Slave Setting: Set the target for panel when panel in Slave control mode.

Relay: Set the target for panel when panel in Fully control mode.

Enable PID: Enable/disable the PID arithmetic for Fully control mode.

Always ON: The Floor Heating is always ON, can not control it to OFF.

Sync ON/OFF: Synchronous control all Floor Heating panel which in the BUS to ON/OFF.

Sync Mode: Synchronous control all Floor Heating panel which in the BUS to same mode.

Sync Command: Synchronous control all Floor Heating panel which in the BUS.

Sync Temperature: Synchronous control all Floor Heating panel which in the BUS to same setpoint temperature.

Output mode: “relay on/off” type or “PWM” type, if panel is controlling general relay module, not FH06, then have to select “relay on/off” type.

Control Cycle: Recommend to use 5 minutes (turning on and off frequently is not good for relay)

Sensor1/Sensor2: This is the temperature source from Bus.

Protection Temperature: Used to shut down floor heating if floor is overheated to certain temperature point, so as to protect the floor.

Outdoor sensor: Set the temperature source for Outdoor, and this temperature will show in main page of enviro panel.

Working Status: It used for test in software, but the panel must work in Fully control mode.

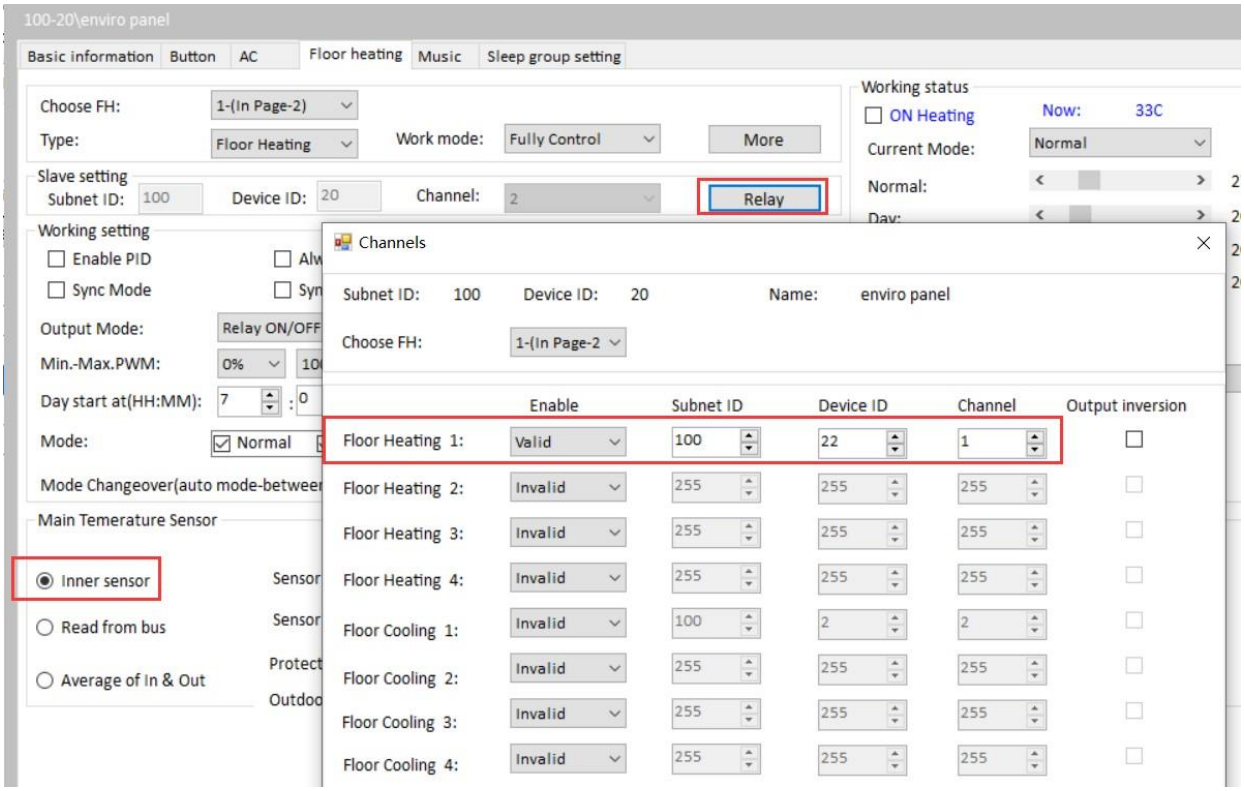
Floor heating page display in panel:

2.6.2 Application for Floor Heating Control

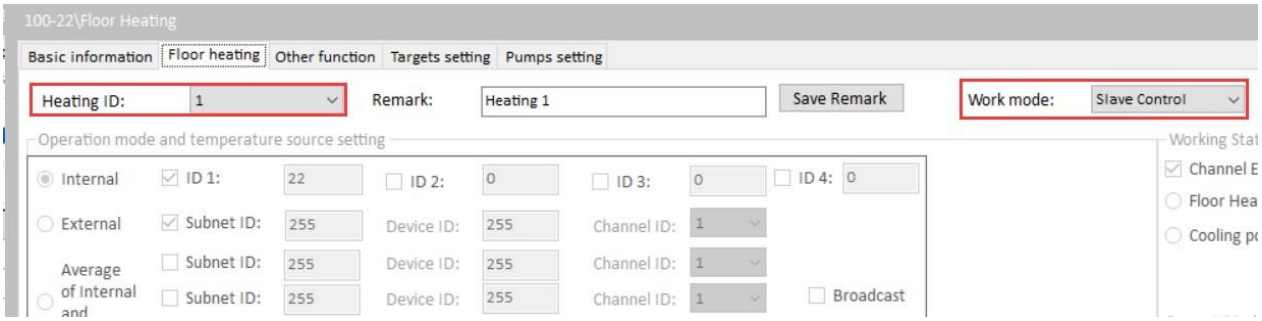
There are two ways to control the floor heating:

Way1: Panel in 'Fully Control' mode, and control the floor heating channel which in the Slave Control mode or relay module channel.

1- Fill in the control target (floor heating/relay), for example channel 1 of 100-20. And panel use inner sensor.

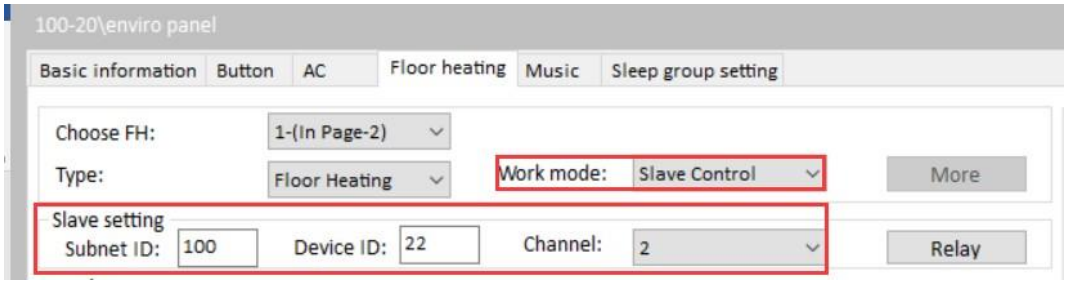


2- If control the floor heating module, floor heating module must in Slave Control mode.

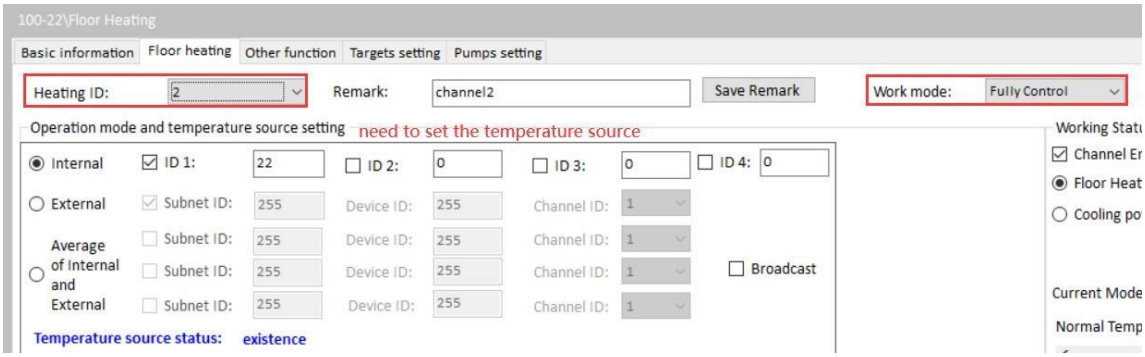


Way2：Panel in Slave Control mode. And the floor heating module must in ‘Fully Control’ mode.

1- Panel select ‘Slave control’ mode, and fill in the ID/channel of floor heating module, for example channel 2 of 100-20.

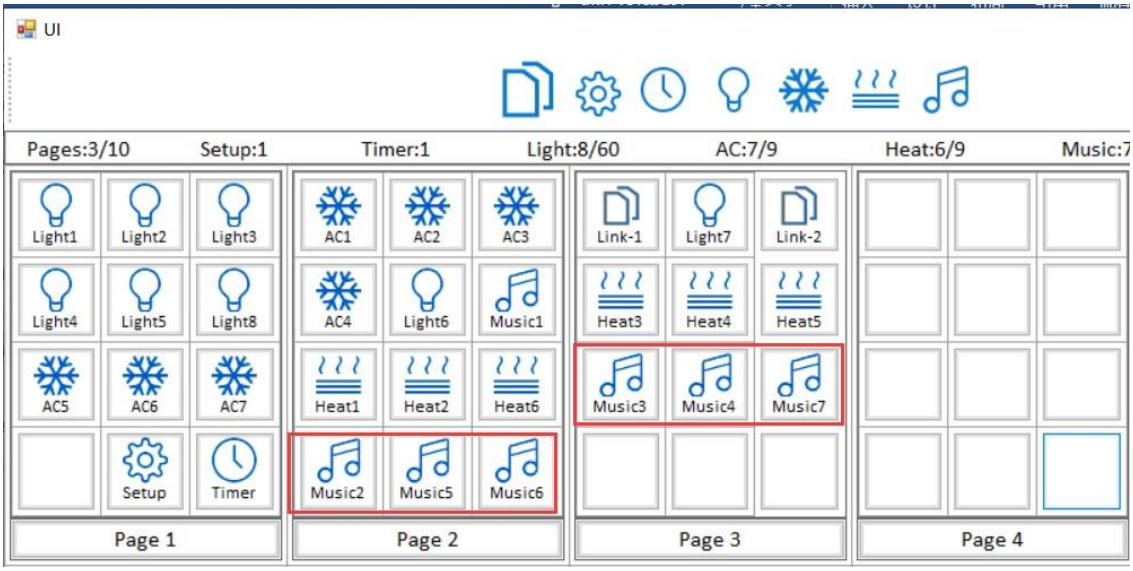


2- Floor heating module select 'Fully control' mode. For more settings in floor heating module, please refer to its user manual.



2.7 Music Page

Enviro panel supports 9 areas of music, and each area can work independently.



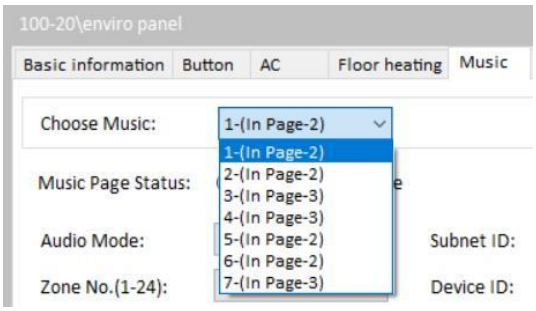
Choose music：

1-(In Page-2) means Music1 in page2.

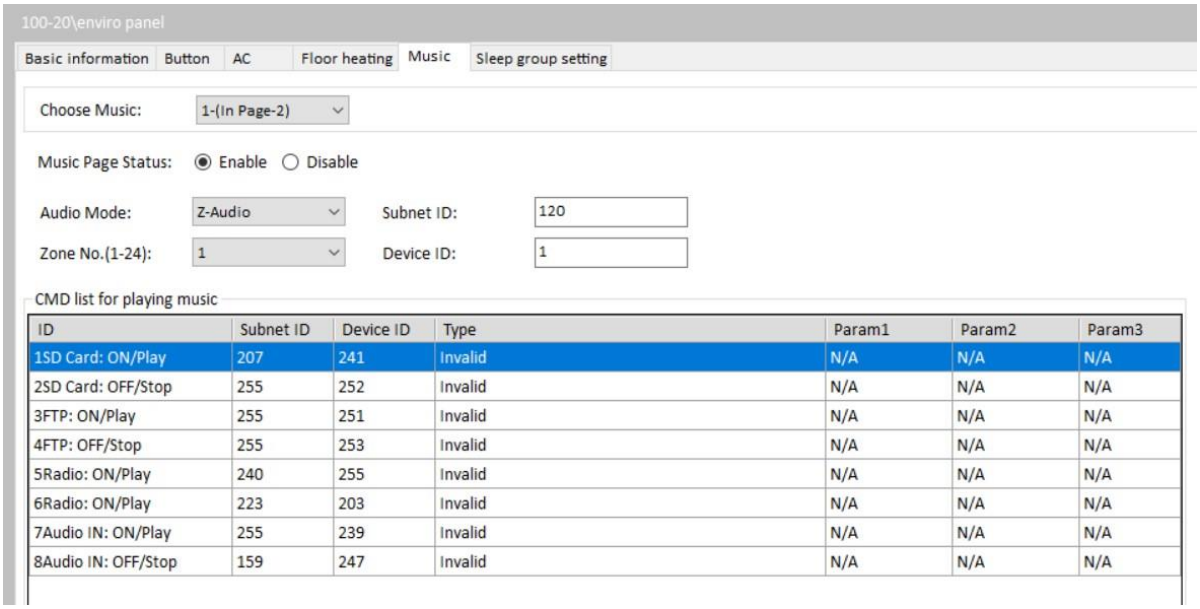
3-(In Page-3) means Music3 in page3.

5-(In Page-2) means Music5 in page2.

6-(In Page-2) means Music6 in page2.



Music Settings:



ID	Subnet ID	Device ID	Type	Param1	Param2	Param3
1SD Card: ON/Play	207	241	Invalid	N/A	N/A	N/A
2SD Card: OFF/Stop	255	252	Invalid	N/A	N/A	N/A
3FTP: ON/Play	255	251	Invalid	N/A	N/A	N/A
4FTP: OFF/Stop	255	253	Invalid	N/A	N/A	N/A
5Radio: ON/Play	240	255	Invalid	N/A	N/A	N/A
6Radio: ON/Play	223	203	Invalid	N/A	N/A	N/A
7Audio IN: ON/Play	255	239	Invalid	N/A	N/A	N/A
8Audio IN: OFF/Stop	159	247	Invalid	N/A	N/A	N/A

Audio mode：

Z-Audio：If control HDL music player, need to select Z-Audio.

NUVO: If control 3rd party music player, need to select NUVO.

Casatunes: It is used for control casatunes player.

Zone NO. (1-24):

Total 24 zones, for normal we use zone1 to control HDL music player.

Subnet ID/Device ID: Set the music player's address.

IR control when playing music：

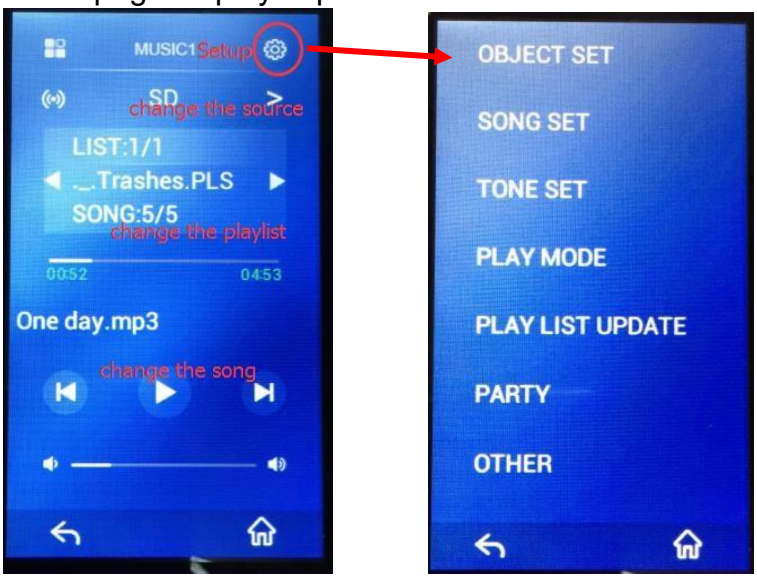
Set the additional targets when playing music. If no need, ignore this setting.

For example:

When playing SD card music, can trigger the targets in '1SD card: on/play'.

When stopping SD card music, can trigger the targets in ‘1SD card: off/stop’

Music page display in panel:



OBJECT SET：Can check/change the playing zone and music address.

SONG SET：Play the specific song.

TONE SET：Can set the value of Bass/Treble.

PLAY MODE：Set play mode, they are Continued/Repeat all/Play one/Repeat one. It depends on player.

PLAY LIST UPDATE：Use for updating the playlist. It depends on player.

PARTY：Enable/disable the party mode, this function is for old HDL player.

OTHER：Set the control way, PLAY/STOP or PLAY/PAUSE. For old music player (SB-ZAudio), just supports PLAY/STOP mode.

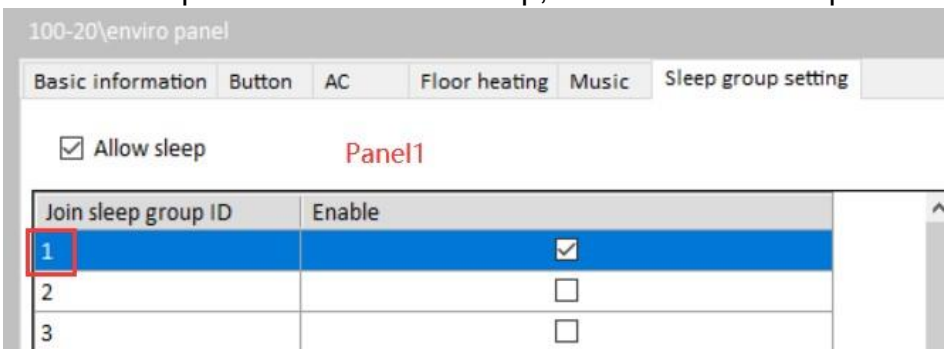
2.8 Sleep Group Setting

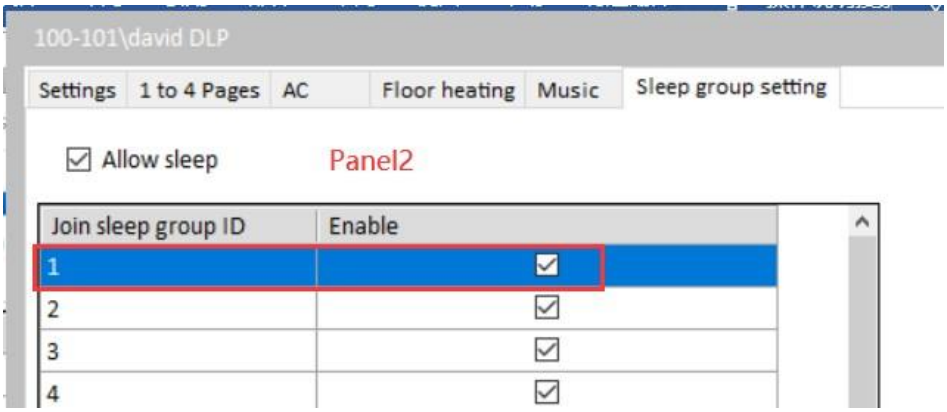
This function is used for make the panel in Sleep mode.

For example, if two panels enable Sleep mode in Group 1. The ‘All OFF’ button control one of them go to sleep mode (turn off the backlight/buttons’ indicator), then both panel which enable Sleep mode in group1 will turn off backlight/buttons’ indicator. When you touch one of them, both panels will wake up (turn on the backlight, and restore the buttons’ indicator).

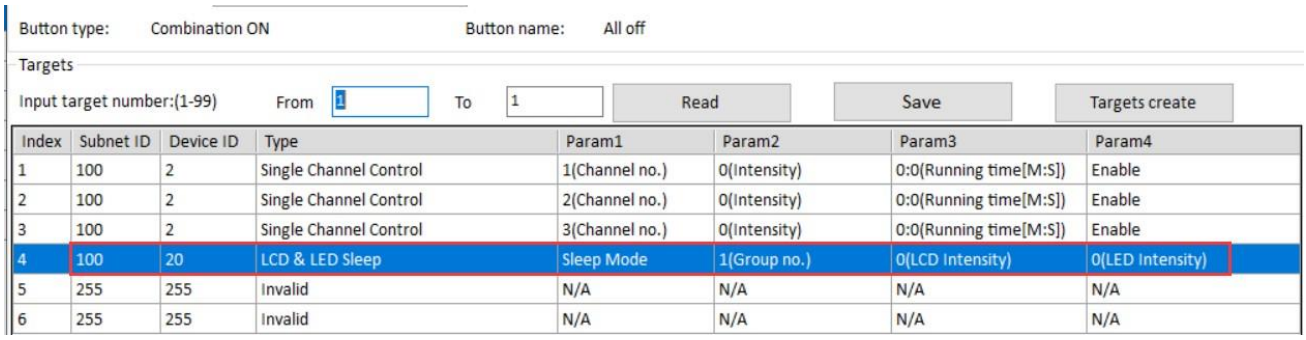
Steps：

1- Two LCD panel enable Allow Sleep, and enable in Group1.





2- Set the targets in All OFF button, if you want to make the panel in Sleep mode, pls send 'LCD&LED Sleep--Sleep Mode--Group number--LCD intensity' to one of the panels.



Index	Subnet ID	Device ID	Type	Param1	Param2	Param3	Param4
1	100	2	Single Channel Control	1(Channel no.)	0(Intensity)	0:0(Running time[M:S])	Enable
2	100	2	Single Channel Control	2(Channel no.)	0(Intensity)	0:0(Running time[M:S])	Enable
3	100	2	Single Channel Control	3(Channel no.)	0(Intensity)	0:0(Running time[M:S])	Enable
4	100	20	LCD & LED Sleep	Sleep Mode	1(Group no.)	0(LCD Intensity)	0(LED Intensity)
5	255	255	Invalid	N/A	N/A	N/A	N/A
6	255	255	Invalid	N/A	N/A	N/A	N/A

3- If you touch/press one of that panel, all panels which in same group will wake up together.

2.9 Modify the Icon and Remark

Take below UI as example, we can modify the icon/remark which display on the panel.

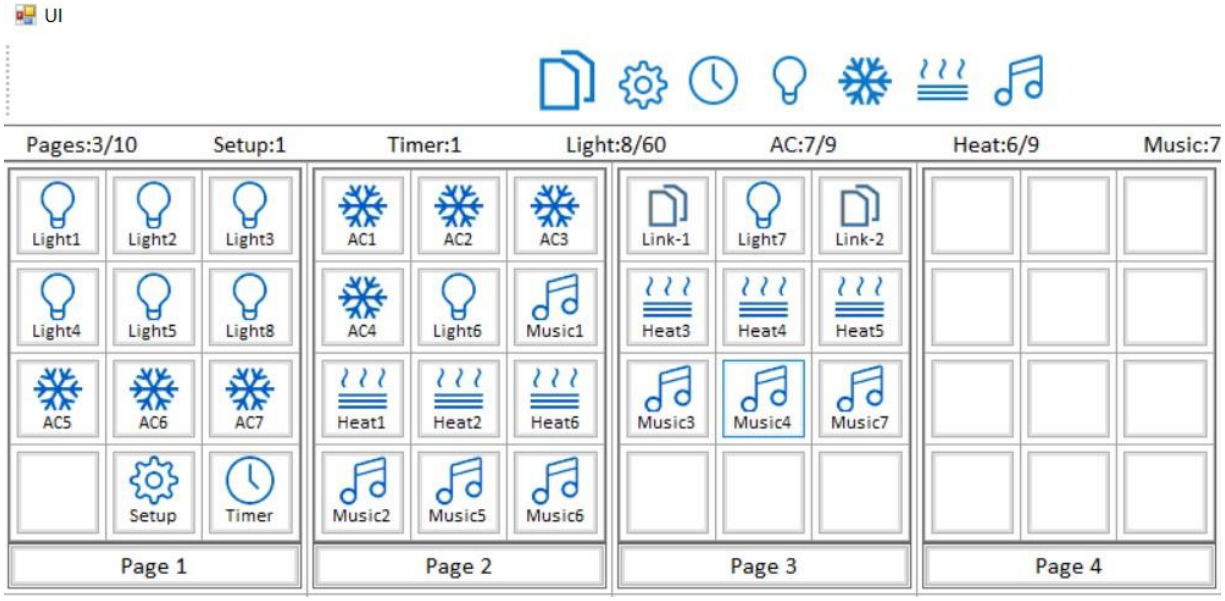


Image format is png, icon size is 46×46mm, background picture side is 272×480mm.

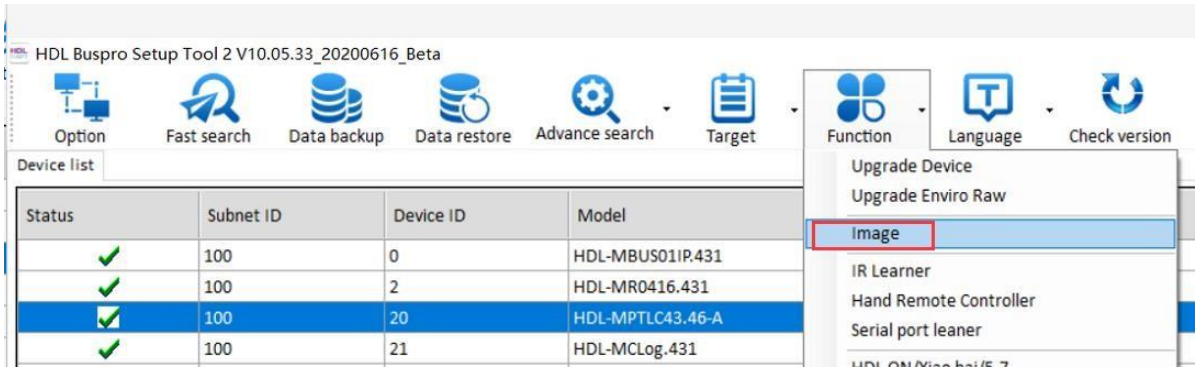
Notice：

We can change the icon/remark which display on the panel, but it will not affect the UI design page. The ID/position in UI page is unchangeable.

Steps：

1- Searched the enviro panel.

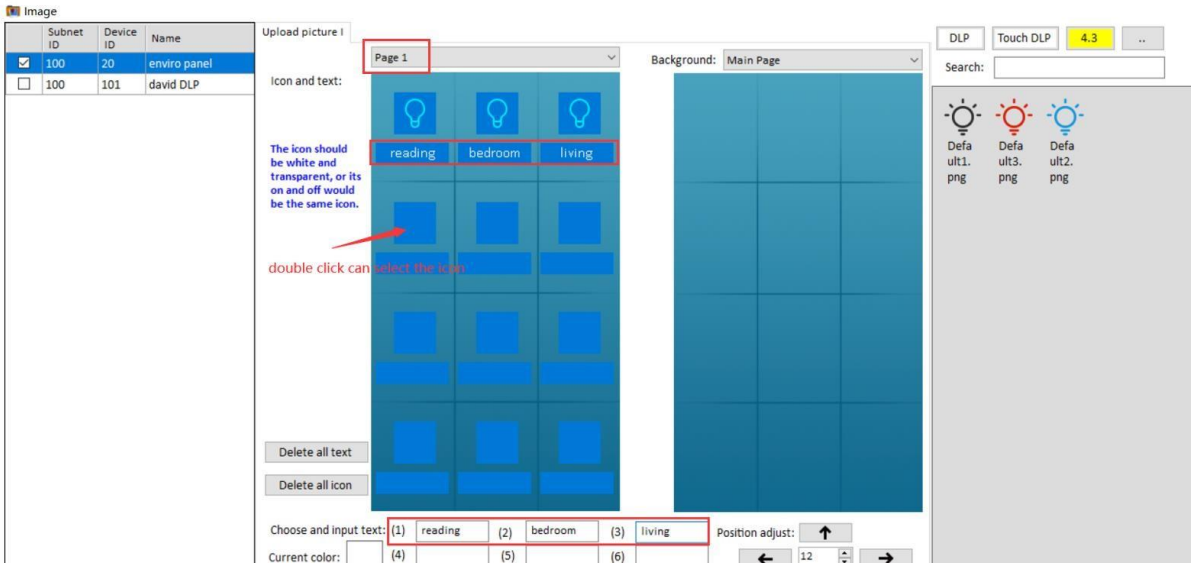
2- Click ‘Function--Image’, enter to the setup page.



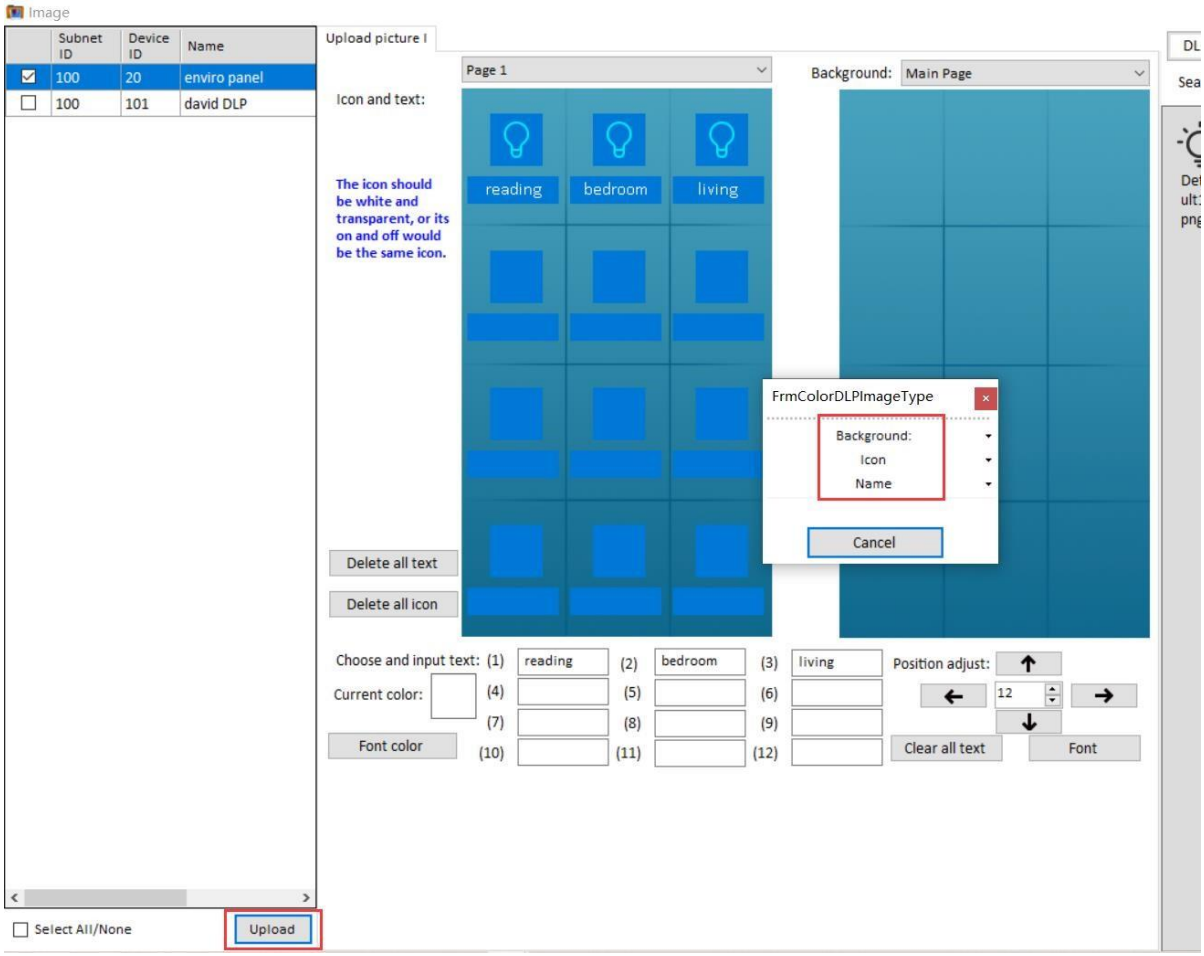
3- Select panel, and select which page need to modify.

4- Double click the icon frame, can add the new icon.

5- Add the remark in the text frame.



6- Click Upload.



Click ‘Icon image’, upload the icon.

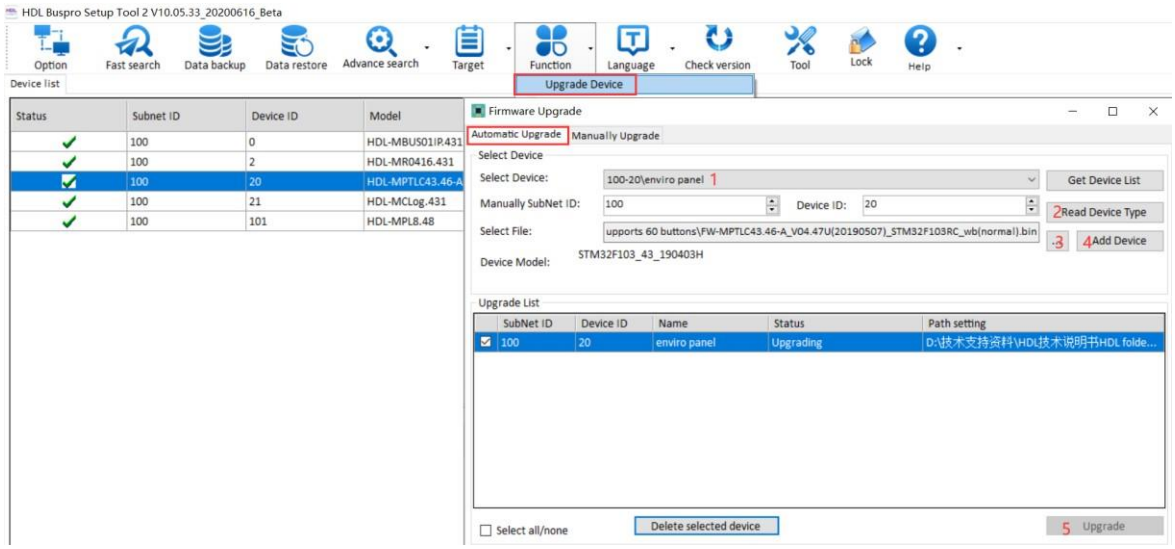
Click ‘Label image’, upload the label.

Click ‘Background image’, upload the background picture.

3 Firmware Upgrade

Enviro panel supports Automatic Upgrade and Manually Upgrade.

Automatic Upgrade: suitable for searched device.



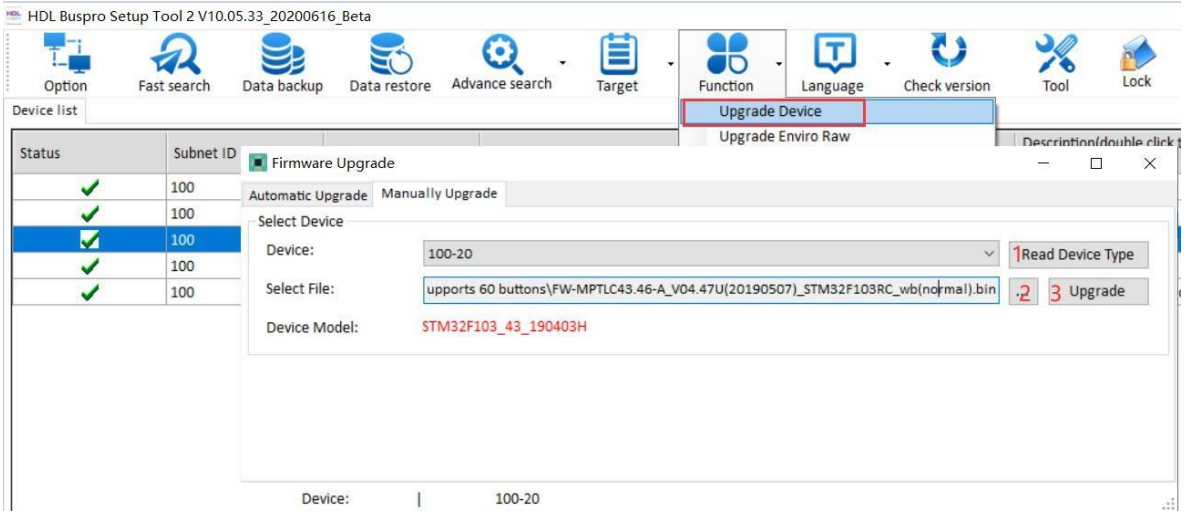
1- Select device which need upgrade firmware.

2- Read Device Type.

3- Select upgrade firmware file for current device.

4- Add it to upgrade list 5- Upgrade.

Manually Upgrade: You can switch to Manually Upgrade page when upgrade failed, if shows device's address, then select the upgrade file again and upgrade it.

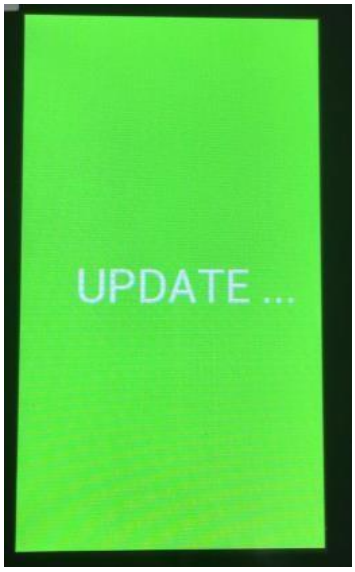


How to make device enter to manual upgrade mode?

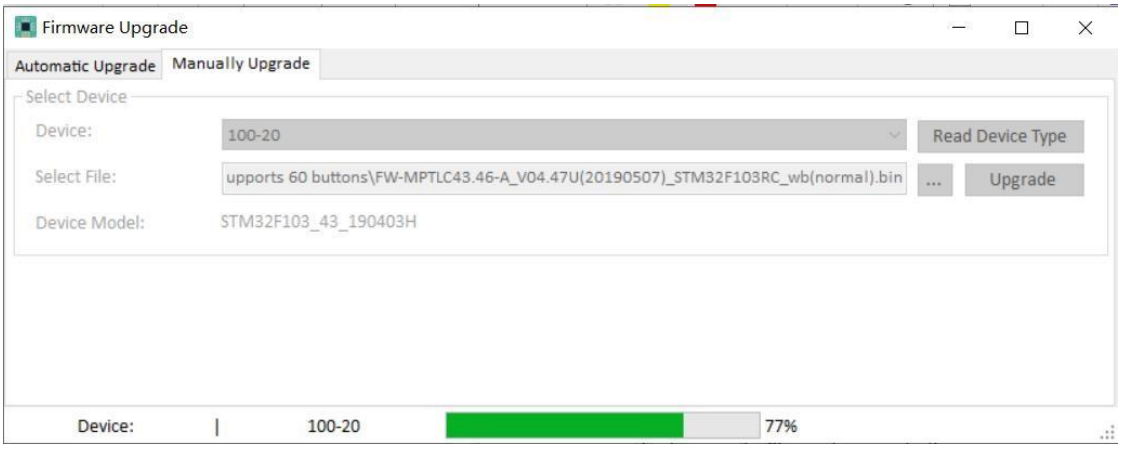
1- Go to Manually Upgrade page in software.

2- Power off the enviro panel.

3- Power on the enviro panel, it will show ‘WELCOME’ on the screen, and then long press the screen until it shows UPDATE…



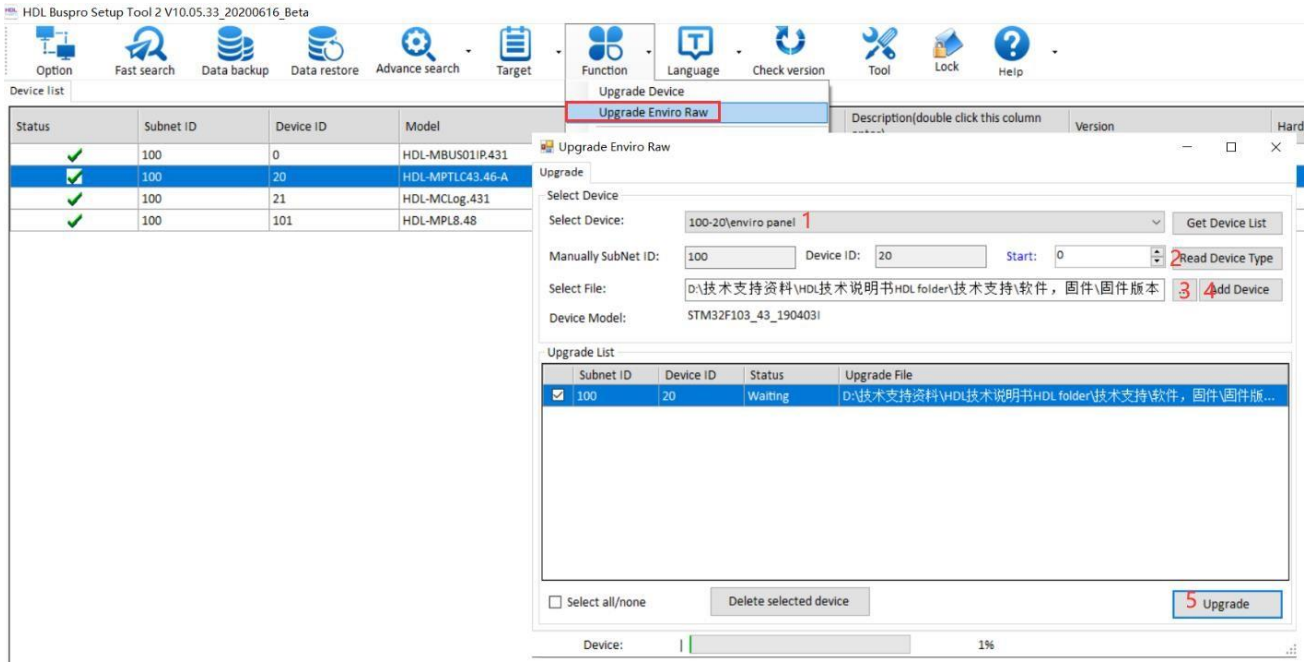
4- Go to manually upgrade page, Software will show its address in Manually Upgrade page, select upgrade file and upgrade it.



5- Done

4 UI Library Upgrade

If you want to change the UI Library in enviro panel, you need to upgrade firmware and UI Library file. (This is for special, normal no need to upgrade UI Library) **Steps:**



1- Search the panel first, and then select device which need upgrade firmware in ‘Upgrade Enviro Raw’

2- Read Device Type.

3- Select upgrade Raw file for current device.

4- Add it to upgrade list 5- Upgrade.

6- After upgraded the panel UI Library, need to repower the one port switch module and enviro panel.

Notice:

1: Pls use MBUS01IP.431 module as gateway to upgrade it.

2: The firmware of MBUS01IP.431 must newer than 20190101.

3: After upgraded, need to repower on the gateway and enviro panel.