HDL®

User Manual

HDL bus gateway

SB-DN-1IP

MBUS01IP.431

(4ᵗʰ generation)

SB-DN-1IP

buspro

www.hdlautomation.com

Index

1 Overview

1.2 Basic information

SB-DN-IP is the HDL's typical gateway between HDL system and Ethernet; it can establish a bidirectional communication between HDL system and Ethernet.

1.2 Functionalities

➤ Bidirectional data exchange between HDL and Ethernet

➤ Support local network, remote control and P2P, the default is Local network.

➤ About 4 devices can connect to this device remotely at once such as ILife (ipad, iphone, android), HDL bus pro software and so on.

➤ Smart data exchange, minimize the data traffic.

➤ Site license for ILife (only for 4th generation)

➤ Auto-IP

1.3 Mounting
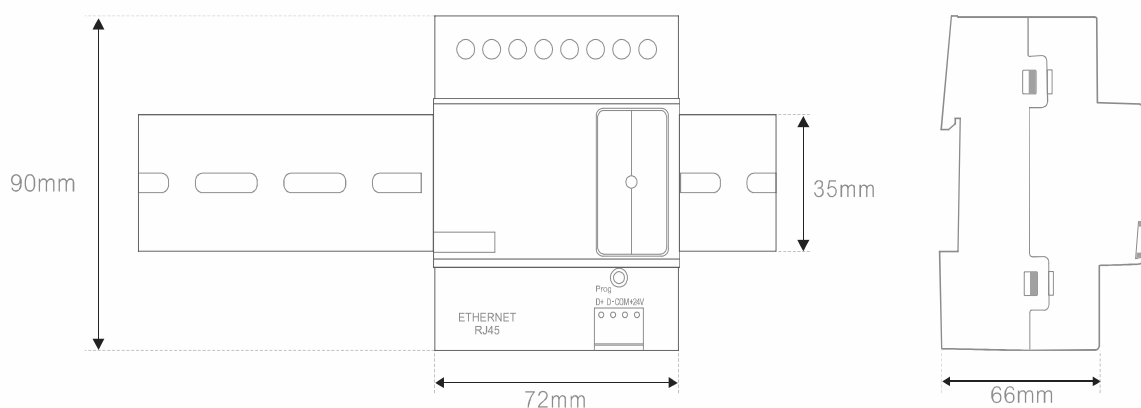
1.4 Technical data

Electric parameters	
Power input	Bus power supply: DC24
BUS Power consumption	40mA/DC24V
Installation mode	standard 35mm DIN Rail Mount
Dimension	72x90x66(mm)
HMI	128x64 raster graphic LCD
RJ-45	UDP/IP network interface
Working environment	
Working relative humidity	0℃~45℃
Working temperature	20%~90%(40C)
Storage temperature	-20℃~+55℃
Storage relative humidity	10%~93%(40C)
Working Voltage	DC12-30V
Protection	IP20
Approval	
Approved by CE	

2 installations

2.1 Wiring
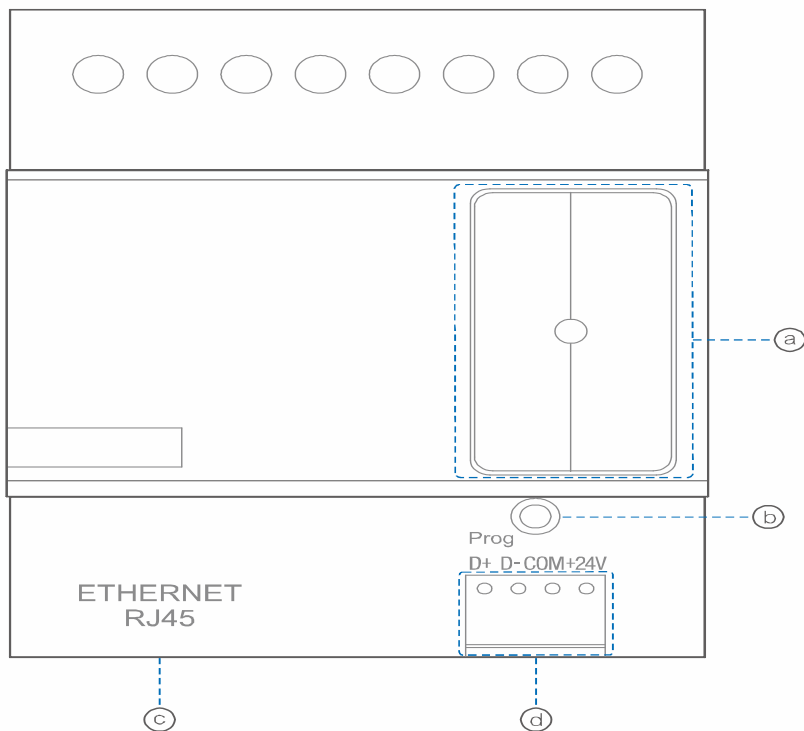
a) LED indicator

b) Programming button

c) Ethernet RJ45: UDP/IP interface

d) HDL interface

2.2 connector Info

Connector Information

| BusPro	
DC24V	Red
COM	Black
DATA-	White
DATA+	Yellow

3 Software configurations

3.1 Basic settings

3.1.1 Change the ID

Each HDL-device has subnet and Device ID and each module's Device ID must be unique and different from other devices on the same Bus, the subnet ID should be the same as the HDL-Bus gateway (typically the SB-DN-1IP or HDL-MBUS01IP.431).

Method One:

1. Run the HDL-BUS Pro Setup tool.

2. Long press the "programming button" and keep pressing it for 3 seconds until it turns to a red color.

3. On the software, click ton "Address management", and select
 "Modify address (when device button is pressed)" option, it will show a window like below:
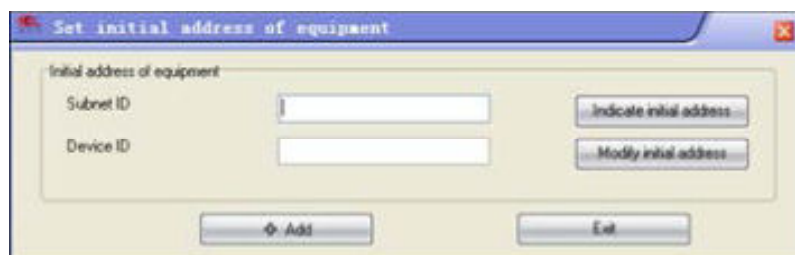
4. click on "Indicate initial address", then it will show the current subnet/device ID of this module. to modify the address, fill in the new address, and click the "Modify initial address "Click the "+Add" button, the device will be added to "ON-line devices "list.

Method two:

1- Run HDL-bus pro tool
2- Search for the online devices by clicking on search button and the device will be displayed on "online device list"

3.1.2 Remark

 To give a name to the module, so you can recognize it from other modules.

3.1.3 DHCP (Auto IP)

Selecting this option allows your 1IP module to assign a dynamic IP address to it from DHCP server. Instead of manually entering the IP settings, which is time consuming, performing this procedure will ensure that the module will get the correct TCP/IP settings automatically. This process is useful when connecting the 1IP module to a network with a DHCP server

Configuration steps:

a) On the Basic settings tab, check the option "DHCP (auto IP" and save.

b) After that, the module will reboot its self for about two seconds and it will be obtain a new IP address from the DHCP server.

3.2 Communication modes.

If the firmware of SB-DN-1IP is HDL_V04.02N_2013/05/30 or newer, it supports three modes, i.e., Local Network mode, P2P mode, and Remote Server mode.

(Tips: when the firmware upgrade finished, better to power off this module for several seconds and power on this module, then initialize the IP by pressing its button, then power off and power on again.)

After update the SB-DN-1IP, its MAC may reset to "00.00.00.00.00.00.00.00", so needed change manually. To avoid the possible conflict, there is a suggestion: input its own Machine Code (in total 13 digits) as the front numbers of MAC, and the remaining 3

numbers can be set arbitrarily.

Machine Code
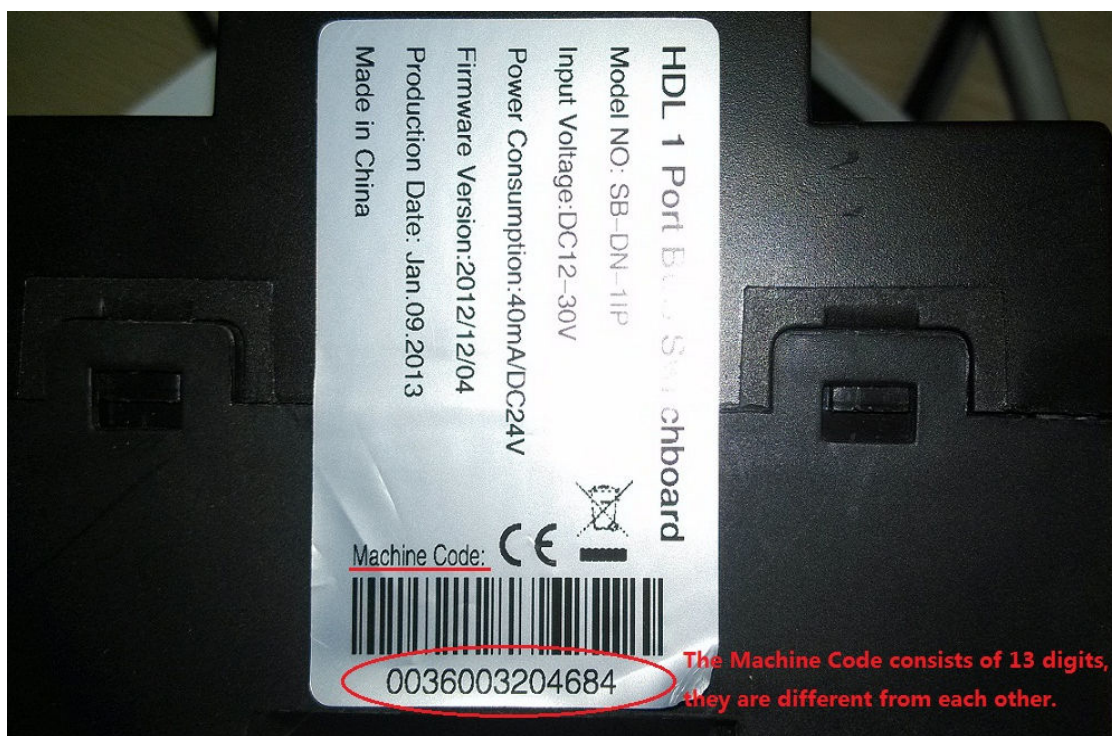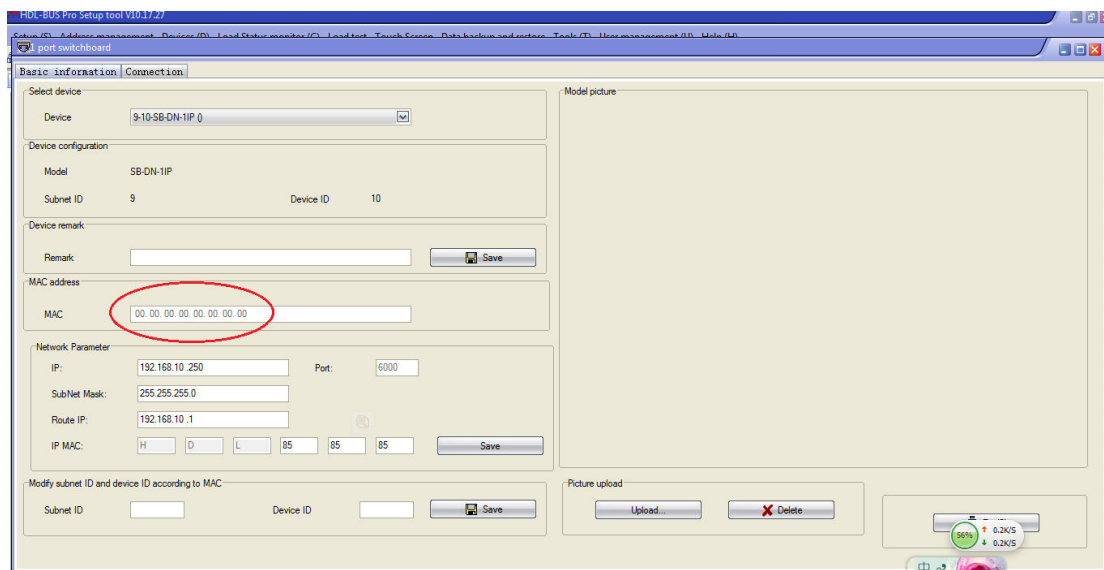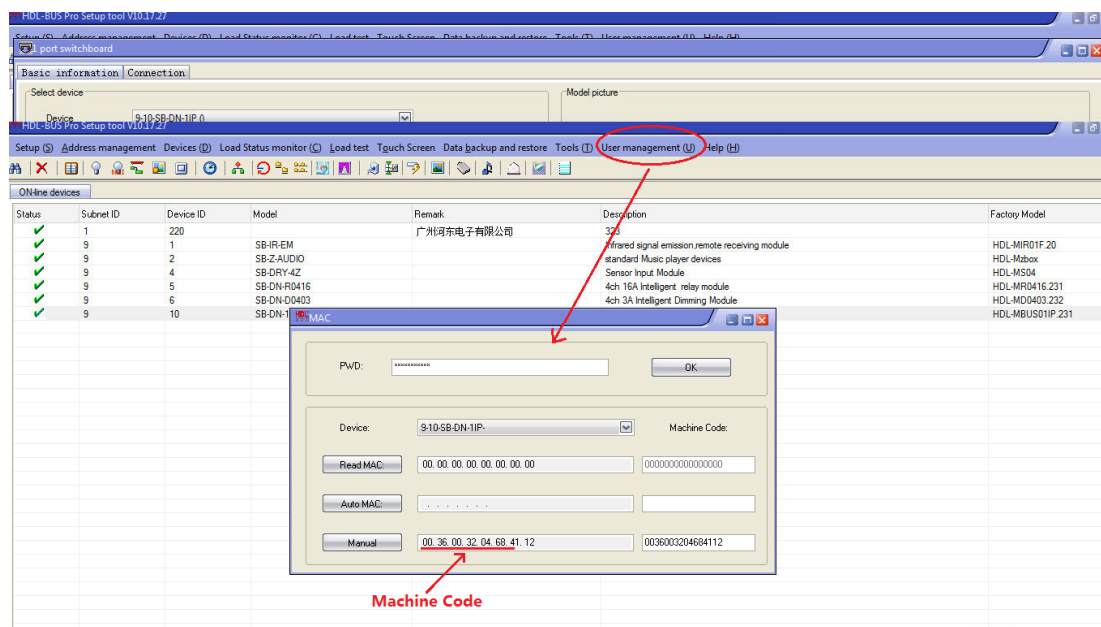
3.2.1 Local Network mode:

Works as a normal SB-DN-1IP as it always is. a gateway between HDL-BUS and local Ethernet. This mode does not have remote function.

Configuration steps:

1. Change the default IP and IP MAC, to avoid possible conflict.

Default IP: 192.168.10.250, Default IP MAC: H-D-L-85-85-85
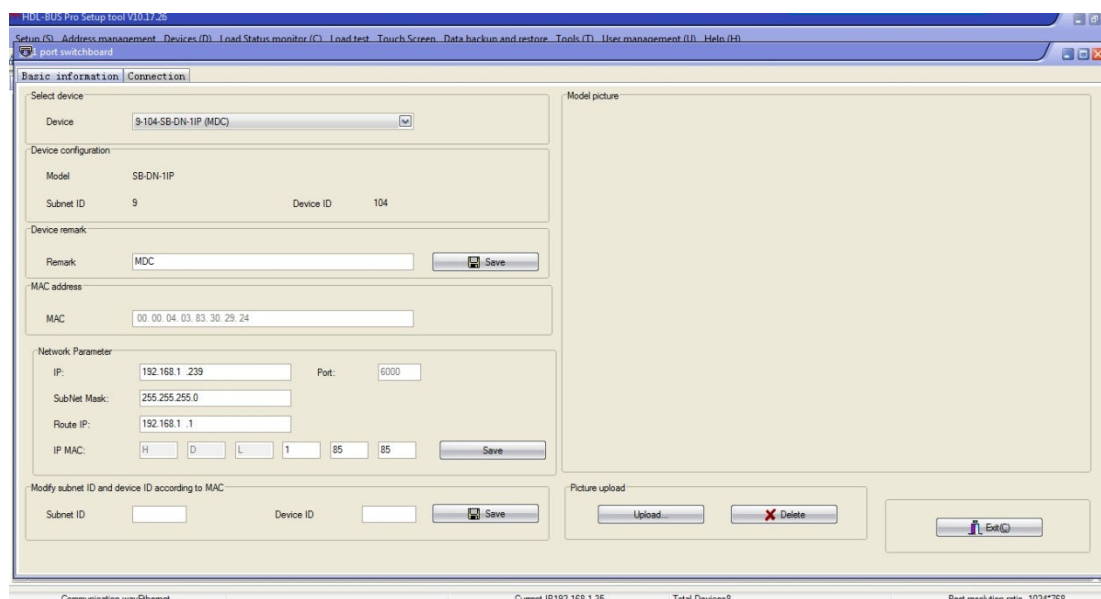
2. Select "Local Network" (all other tables will not be available.) and click Apply.

3.2.2 P2P mode

In this mode, you are able to access the HDL-BUS system directly through Internet, using HDL-BUS Pro software.

This mode requires fixed static public IP for both ends, so this mode is suitable for installation company to configure the HDL-BUS system remotely, but not suitable for commuting end user to control the HDL-BUS system in their home from, e.g., their IPad, because the IPad will have different public IP when end user is in office, bus, subway/metro, home…

PS: For Installation Company, this mode is more secure than Remote Server mode, since no server saves your password and the SB-DN-1IP only transfers the data to the installation company, so even somebody knows the password, it is useless.

Schematic diagram:
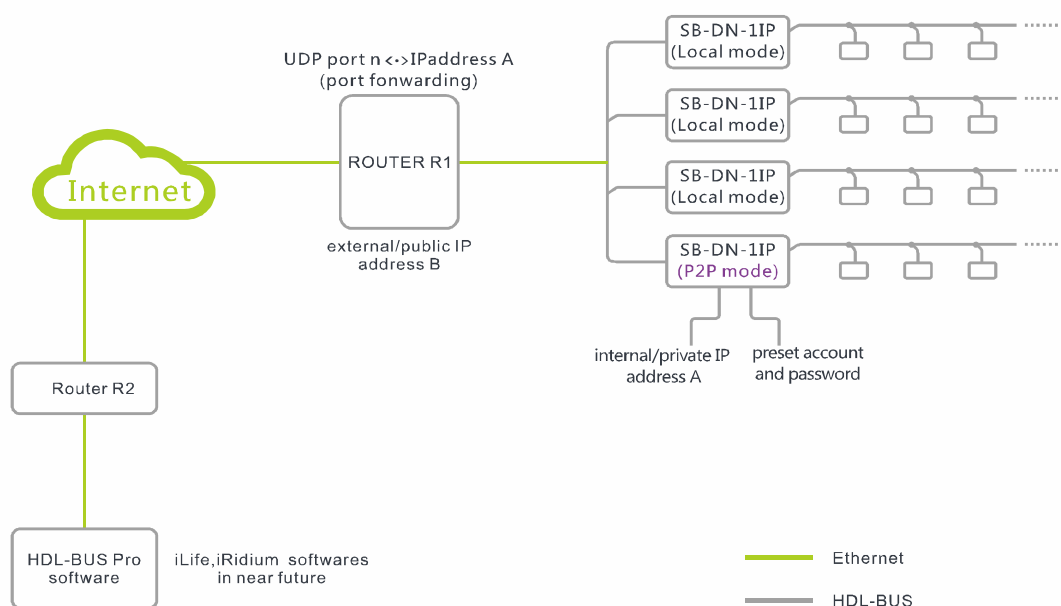
Configuration steps:

1. Change the default IP and IP MAC, to avoid possible conflict.

Default IP: 192.168.10.250, Default IP MAC: H-D-L-85-85-85
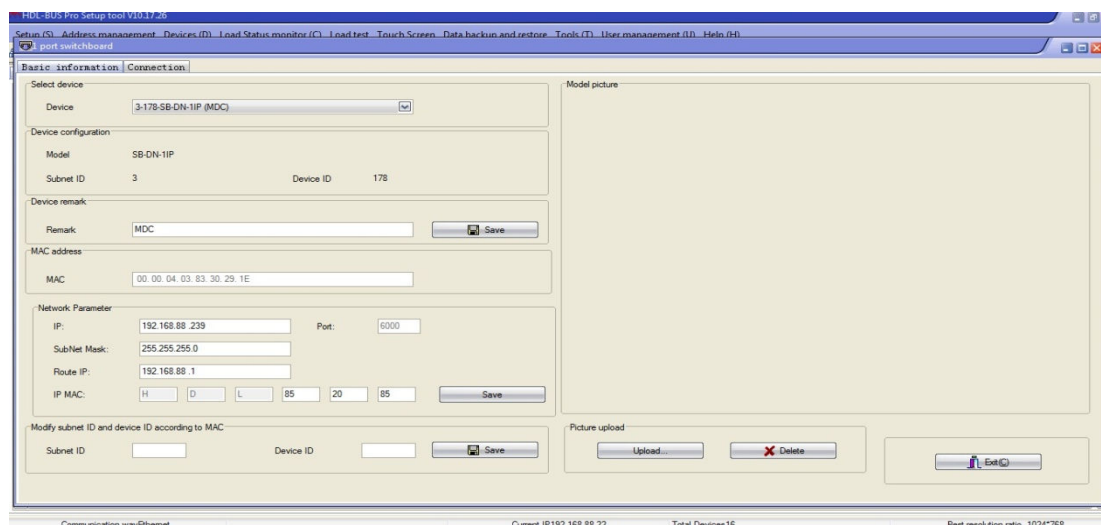
2. Select "P2P", fill in "Project Name", "Group Name", "User", "PWD". The "User IP" is the public IP of Router R2 (see diagram above), the "Port" is the one you are going to fill in the Router R2 when setting up port forwarding. Some routers support Internal port and External port mapping, some do not(the example below is this kind), there is only one port, or you can take it as External port equals Internal port, to simplify, we suggest to use the port 6000 for all ports.
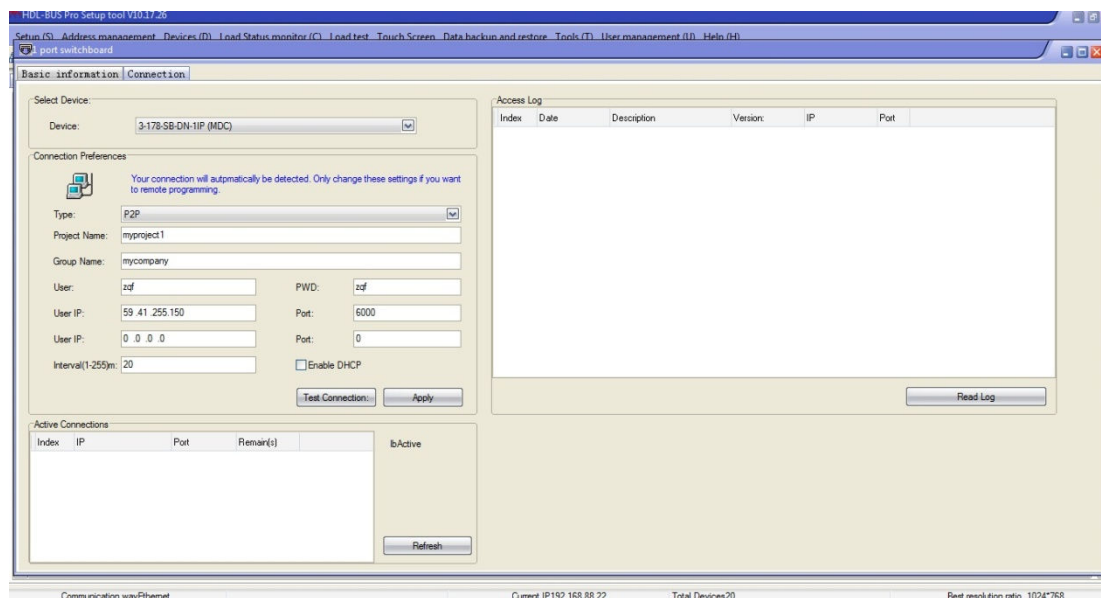
3. Configure port forwarding in Router R1

Map UDP port 6000 to the IP of SB-DN-1IP,
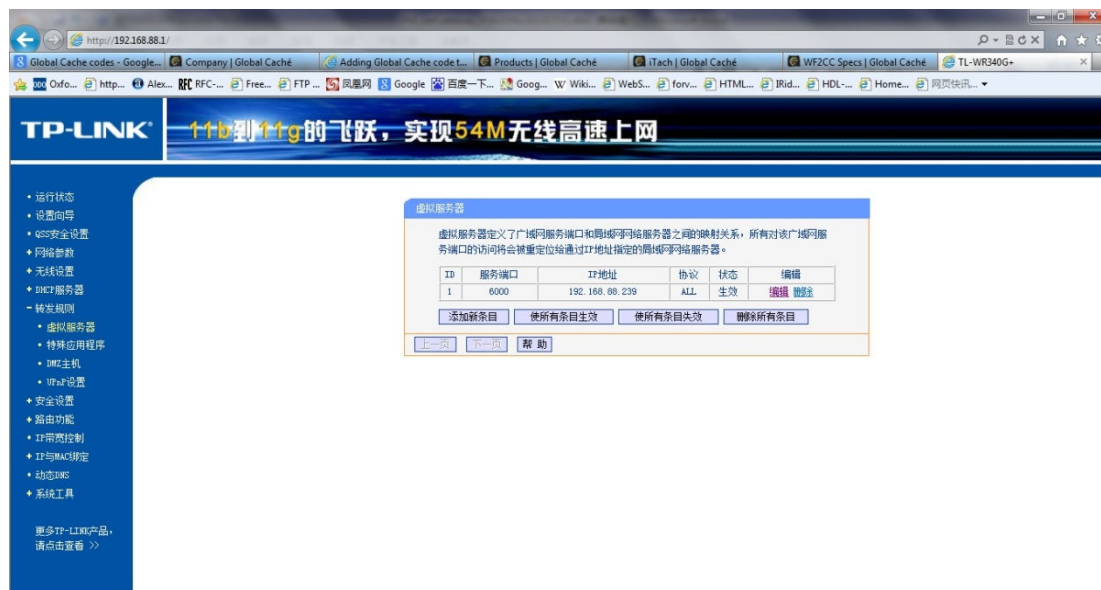
PS: Different brands may have different name to express the functionality - "port forwarding", here in the example, it is literally "virtual machine".

4. Configure port forwarding in Router R2

Map UDP port 6000 to the IP of PC/laptop that runs HDL-BUS Pro Setup Tool.
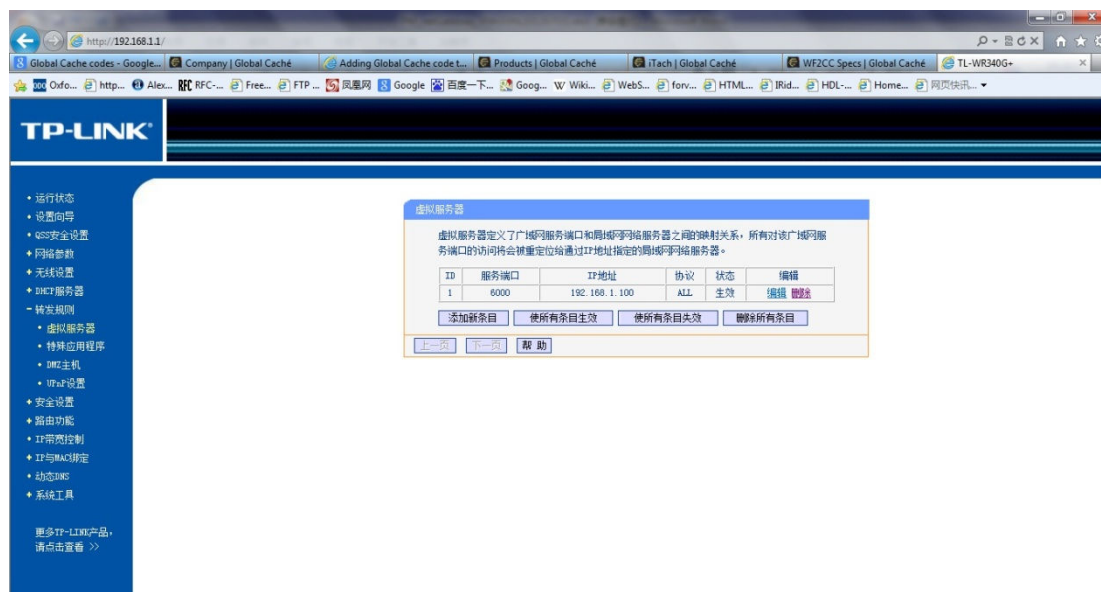
5. Run HDL-BUS Pro Setup Tool on the PC/laptop with the IP set in the Router R2, in this doc, it is 192.168.1.100.
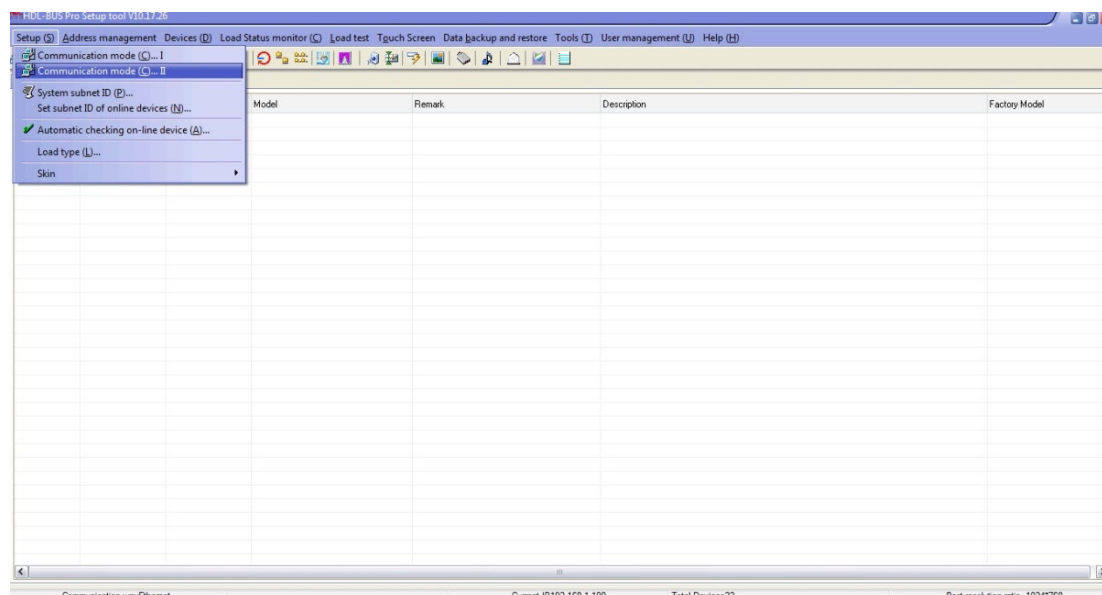
6. Select "Communication mode(C)…II", in the pop up window below select "P2P" and fill in the "Group Name", "Project Name", "User", "Password". The "IP" is the public IP of Router R1, the "Port" is the one set in Router 1, the UDP 6000.
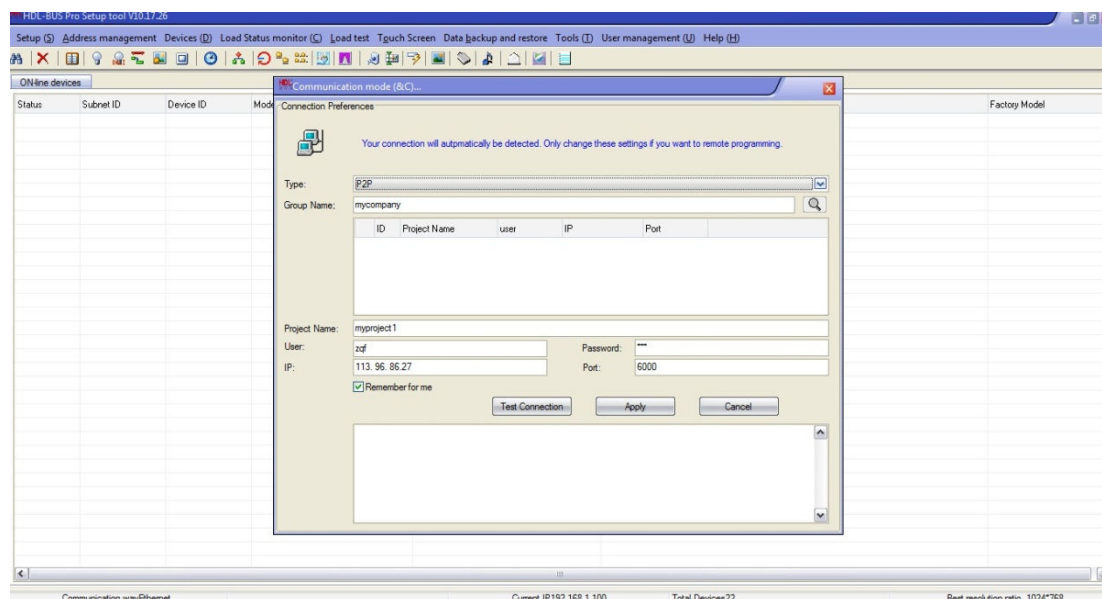
7. Click "Apply", this pop up window will disappear when you connect to the remote SB-DN-1IP successfully, then you can search for devices and configure them as usual.

3.2.3 Remote Server mode

This mode is suitable for both travelling programmer and end user to configure and control HDL-BUS system via Internet. Since a server is getting involved in this mode, no static

public IP is needed for HDL-BUS system because the SB-DN-1IP in Remote Server mode will keep updating itself to the server, programmer and end user can always get info of the remote SB-DN-1IP from the server and later access the HDL-BUS system directly. Schematic diagram:
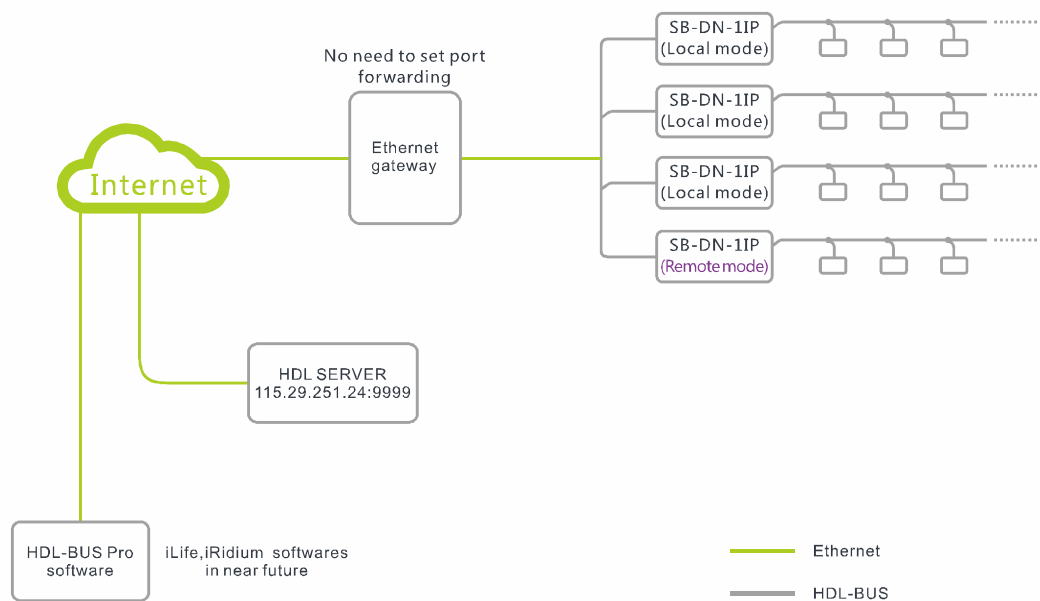
Configuration steps:

1. Change the default IP and IP MAC, to avoid possible conflict.
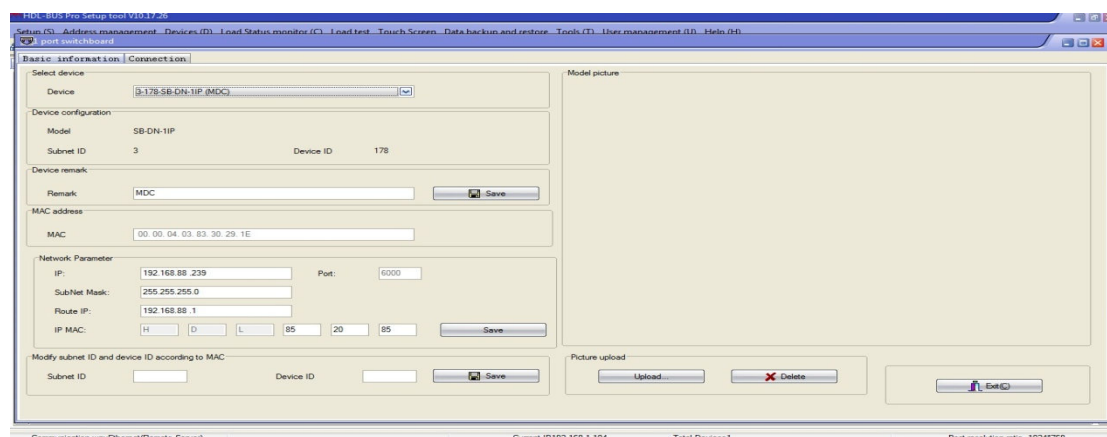
2. Set your Project Name, Group Name, User, PWD and click Apply.

NOTE:

HDL server has a fixed IP and port, 115.29 .251.24:9999 or 59.41.254.6:9999(for test), do not change it, it is editable because HDL may change the server or help installation companies to build their own servers in the future, in that case, the installation companies can fill in their own servers and ports.
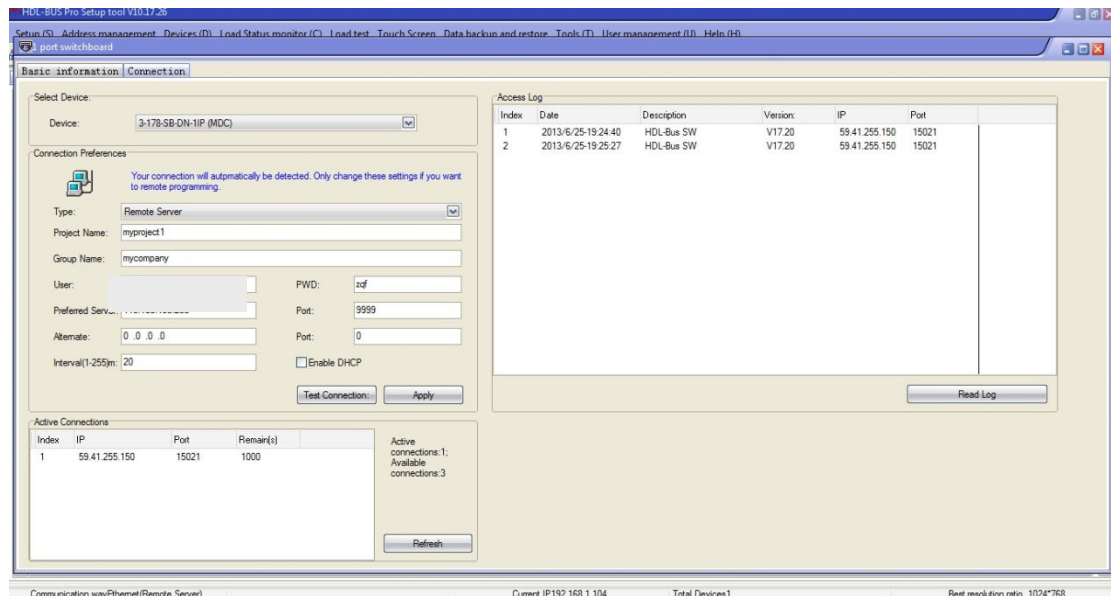
3. Exit HDL-BUS Pro Setup Tool and find another Internet access that has a different public IP for your PC/laptop, run the HDL-BUS Pro Setup Tool again and select Communication mode(C)…II.
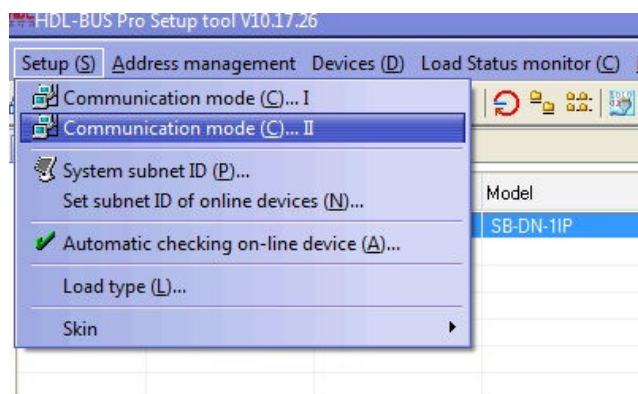
4. Fill the Group Name and sever IP , Click the search button on the pop up window, HDL server will feedback all projects in the same group (An installation company can have many projects in different sites) then select your project and fill in the password.
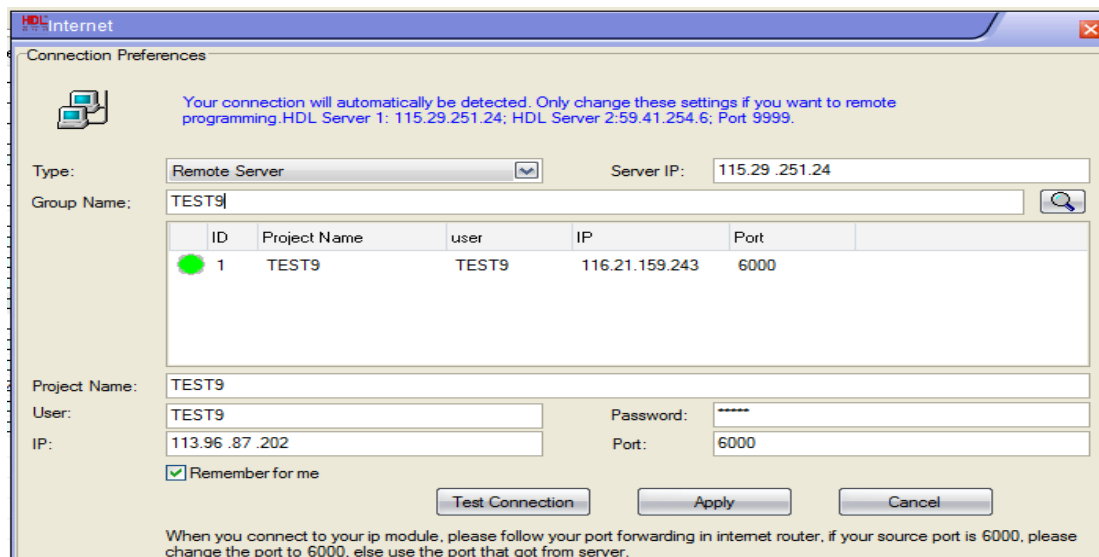
5. Or you can just click the Apply button; this pop up window will exit automatically if it communicates with remote HDL-BUS system successfully, now you can get start to program the HDL-BUS system.
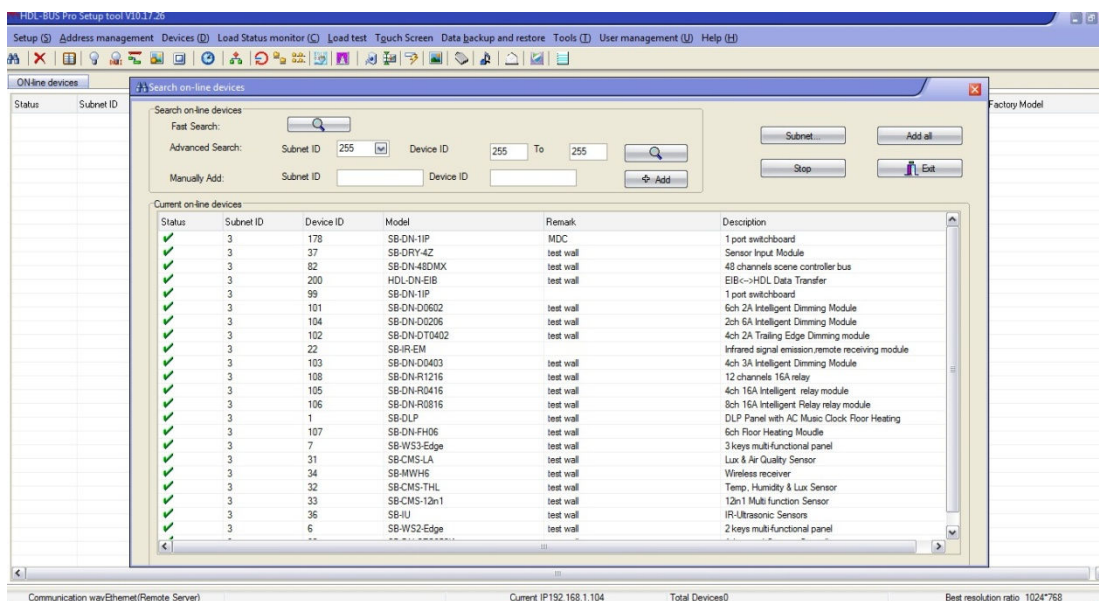
6. Get into the SB-DN-1IP, you can check the Access Log and connection status.

- "Interval(1-255)m "

It is the parameter that decides how long the SB-DN-1IP will register its info to the HDL server again, e.g., if we set it as 5 minutes, that means every 5 minutes the SB-DN-1IP will register itself to the HDL server (so that HDL server knows where this SB-DN-1IP locates even if the public IP of the router is changed or private IP of the SB-DN-1IP is

changed.).

- "Remain(s)"

It is a fixed time, 1000 seconds, when there is no operation for 1000 seconds, the SB-DN-1IP disconnects the current connection and you will have to log in again. You can have 4 active connections, which means when you are configuring the HDL-BUS system, up to 3 people can operate the HDL-BUS system from iPad, android pad at the same time.
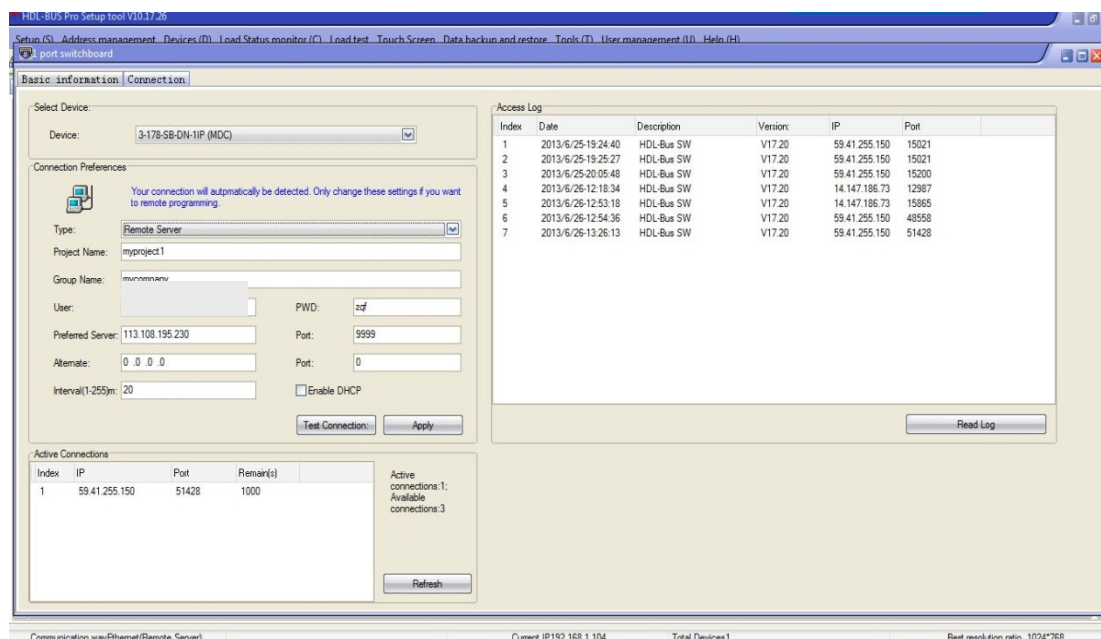
3.3 Site license

Site license is to used to register the 1ip module (MBUS01IP.431) on ILife so all devices(IPAD, IPHONE, ANDROID) can use one registration to control HDL-bus on ILife instead of registering each device one by one.
-this feature is used mostly in Home, showrooms and so on, where there are many devices(IPAD, IPHONE, ANDROID) to control HDL-bus through Ilife , its quite costly to register each device one by one, but with site-license feature you can just register the 1ip module to ilife so all devices can use that registration key because its more economic .
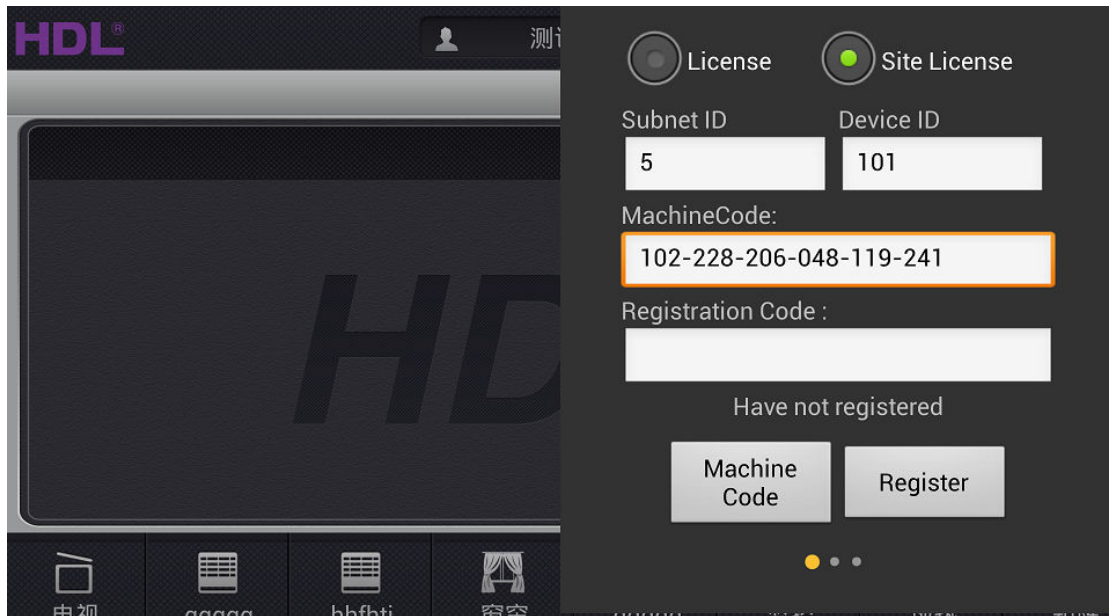
Configuration steps:-

1-make sure your IPAD, IPHONE or ANDROID connected to the same WIFI as 1ip module.

2- On Ilife, click on the gear button at the right-top and select site-license

3- Fill in the subnet ID and device ID of the IP module, and click on "machine code" and it will read the ID of the module and you can use that code for registration.

4 NOTES

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