

2012

Programming Manual

IR MACRO
(For Media Control)



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Before you begin this course

Before you begin this course, you should have:

- Understand the basic bus Diagram Connection Topology
- Understand the Lighting and HVAC Connections Diagram
- Basic Knowledge about IP setting. (please see 2-2)
- Basic Knowledge of using Windows operating system.
- Basic Knowledge of using Windows Painter.




Prerequisites

Either

- Products overview course.
- Installation Course.

How this course is organized

Lighting and HVAC Programming Guide Course Organized in Simple way of

Product overview, Example Picture, ( Notices) , ( Advices),
( Example) .

For Training Course Request Please apply online www.smarthomebus.com



1- Introduction

Welcome to S-BUS manual Programming Guide, you are now a Beginner Programmer who will know soon how the S-bus Programming is simple.

1-1 Objective:

After this course you will be able to program the media as well as AC or any IR enabled control system. Examples: TV, DVD, Set Top Boxes, Stereo, Split AC, Projector, Apple TV, AV Receivers and Amplifiers .. etc. Triggering the IR Macro can be achieved using any DDP panel, Touch screen, PC, Android or IOS additional to several other logic enabled or event enabled ++.

1-2 S-Bus products:

S-BUS Products is vary with its powerful and multi functions, it have the high power dimmer and relay, Curtain, DMX and LED controller, Wall switches and Dynamic Display Panel "DDP", HVAC2 Air condition control and different type of sensors, like Motion sensor, light intensity sensor, Ultrasonic sensor, Dry input sensor, Analog input, current sensor, Power meter, Infrared receivers and transmitter, Security and Automation, Audio Module, Rs232, Programming and integrations Module

1-3 IR Macro Features:

The IR Macro is S-BUS G4 Product. It Has ability to Learn up to 250 IR Codes then to use them as Part of IR macros. Total of 10 macros can be created, each can consist of 50 IR Commands. The delay can be added between the commands wishfully and can vary from .1 second to 10 Hours.

The IR Macro can detect up to max of 2 Devices to decide if they are working or not based on built in 2A Current sensor.

*Note: (the Range of Current range difference between devices must be at least 50 watts Different in order for 2 devices to be monitored for On/Off status)

1-4 IR Macro Control Examples:

The Programmer can create many Macro Ideas like:

- a) Watch TV (Cable TV Input)
- b) Play games (Xbox input)
- c) Brows Internet (PC or android TV Input)
- d) Watch Movie (DVD Input)
- e) Stream Video (Apple TV Input)
- f) Pause
- g) Goodbye ..etc.



2- Start Programming

In smart home G4 there are two ways For Programming: 🚧 Manual Way (For Basic Programming).

🚧 Pc /Laptop Way (For Basic and Advanced Programming).

2-1 S-Bus Programming Software overview

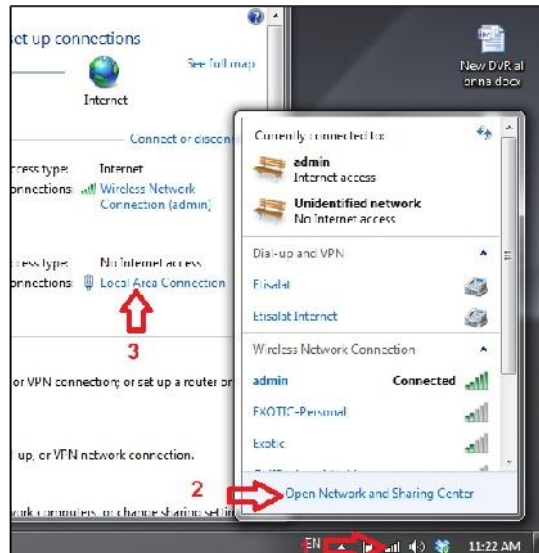
You need on this lesson: to have your computer with you. Running on windows Operating system, Smart Cloud **G4** software, Programming port SB-DN-1IP, that enable you to search for all the devices that connected to the bus network.

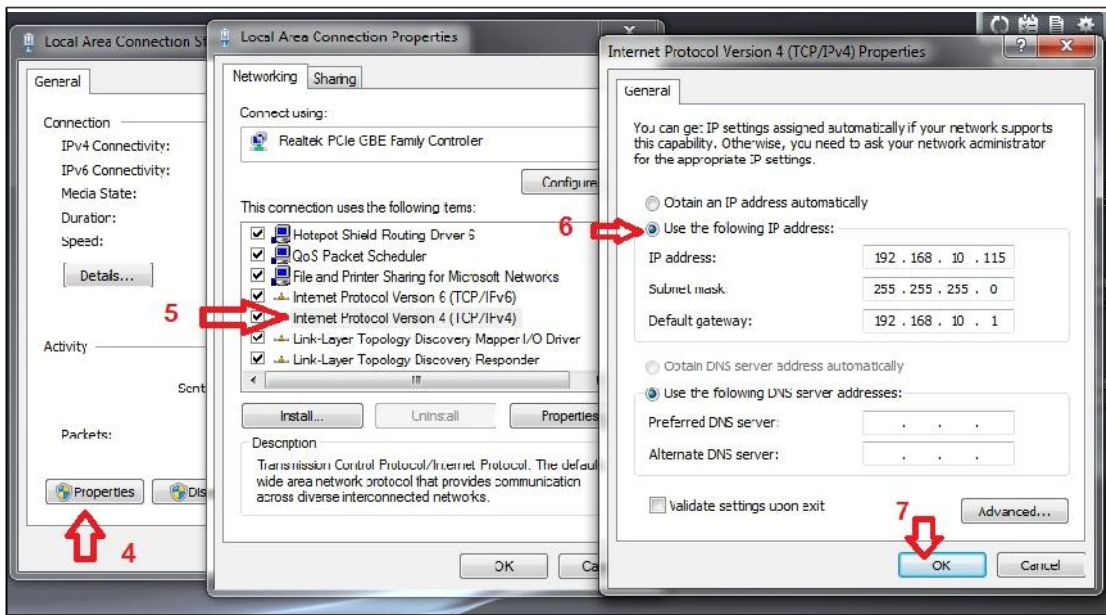
1- Install your S-bus configuration software in your Computer by pressing the **Setup** icon and follow the installation steps windows

2- Plug in your Ethernet cable (Rj45) in your pc and the other end in the **RSIP** module or **Zaduo** module then **Set** your computer IP Address, for example

IP 192.168.**10**.115
Subnet 255.255.255.0
Gateway 192.168.**10**.1

The default address for S-bus Product is **192.168.10.xxx**

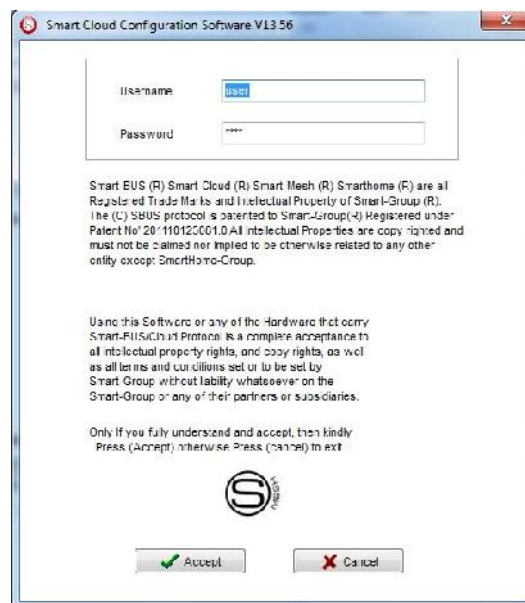




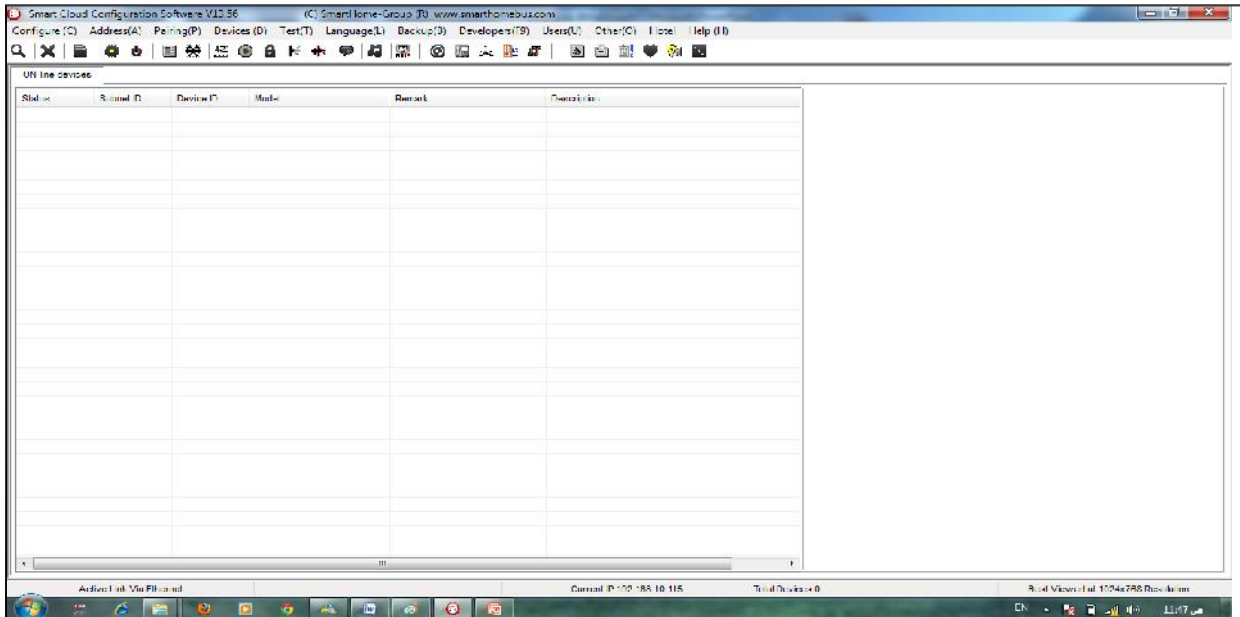
3- Run your S-bus smart cloud Software



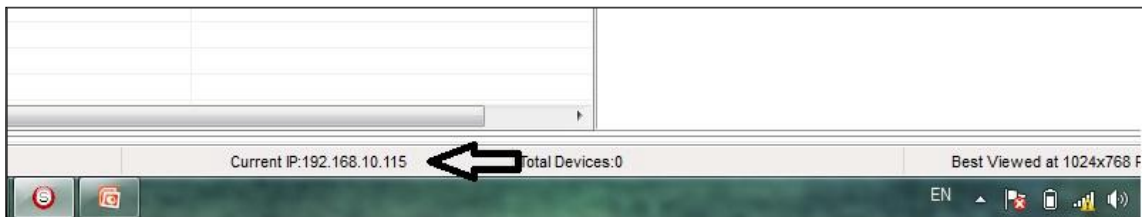
4- The Password window will open, type the default password is **user**



5- Your software will start



6- You can see your current IP on the footer of the software as 192.168.10.115 then your IP setting is ok.



! Set your computer IP setting before starting the S-BUS Smart Cloud. **!** You

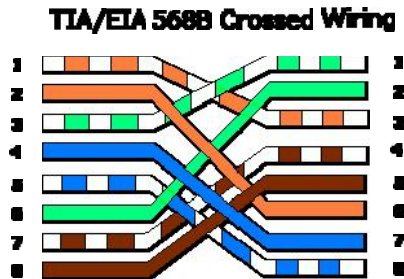
should always reset your Module every time you change the IP Address in order the new setting to be Active.

After you set your Module IP Address now you should connect the module to Your Computer Network in order to communicate. The connection can be in two ways

1- Connect the 1Port IP/RSIP Module to the HUB or Data Switch and connect your Computer to the same data Switch as

standard straight cable Network wiring.

2- Without using the HUB or data switch you can use the cross cable to connect your computer directly to the IP Module, see the next cross wiring diagram of TIA/EIA 568B crossed wiring



*You can use the Line command **Ping** to check your connection.*

On your Computer, Go to start/ Run/ CMD then type Ping 192.168.10.xxx

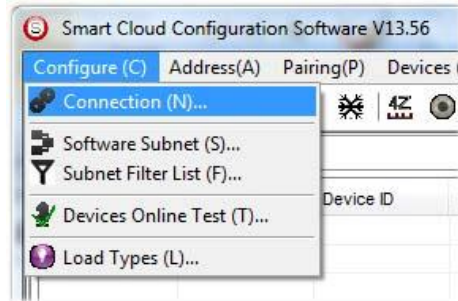
If you see the following results similar to this Picture then your connection is successful



Always the Programmer should carry with his programming kit the cross cable for programming without needs of the Data Switch or HUB.

2-2 S-bus Smart cloud Software basic setting

Configure

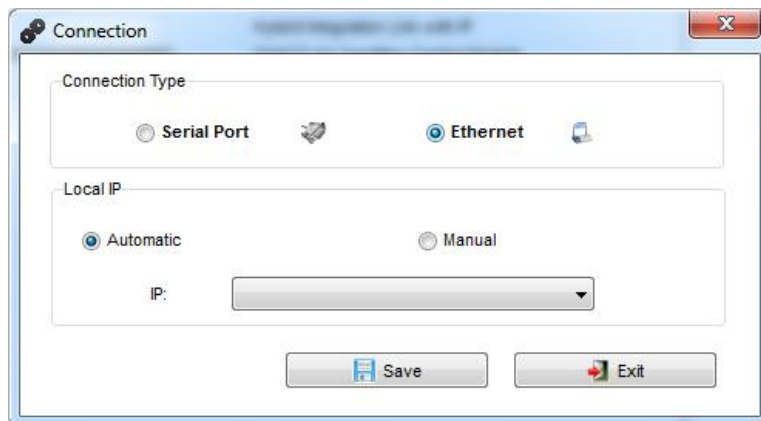


- **1- Connection**

You can change between Ethernet Connection and Serial Port connection,



the Serial Port connection is old, slow and no longer use. Always Keep the setting on Ethernet connection



Also you can choose between **obtain Local IP Automatically** (Default) , or to **input local IP Manually**.



Input local IP manually you can use it for example, if you are using in your laptop or computer Wireless and wired Network with different IP setting, and you want to choose the right one of it for programming, and don't want your S-bus software to detect your other IP address Automatically.

- **2- Software Subnet ID**

The S-bus configuration software have fixed Device ID (254), but you can change its subnet ID only, the default software subnet is (Default = 254)



The software default subnet ID address is 254, Device ID 254, this address must be unique, in case other Device has the same address you will not be able to find that Device unless you change the Subnet of the software.

- **3- Subnet Filter List:**

Here you can filter your subnet ID's that mean you can add more ranges if you have more than 254 devices so you can add another subnet ID

- **4- Devices On-Line test**

You can Deactivate or activate the auto test of Online devices (Activate is Default).

- **5- Load type**

You can add some Remarks to your Load type to use it as reference and print it out later on the excel sheet.

Address

Here you can search for the Device Addresses and load the Network and solve any conflict in the address. (For more Information see 3-2)

Pairing

You can enable pairing or disable either for one device or for all devices, disable meaning you can't program S-bus modules in manual anymore until you enable it again.

Devices

You can go here directly to Devices setting Categorized by type

Test

This is important Function to check your Lights Circuit by flashing the lights ON/OFF and then you can give it name (for more information see 3-3 section). **Language**

You can change the Language between English and Chinese, and other Languages

Backup

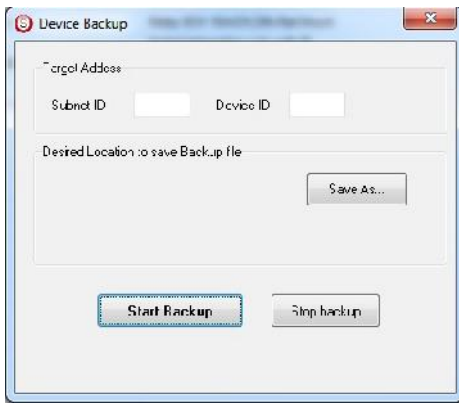
Important to backup and restore your Devices address and setting.

f For Backup: put the subnet and device ID for desire device , choose the location for the backup file then click "Start backup" ,

f For Restore: put the subnet and device ID for desire device, choose the backup which you already made then click "Restore".

f





2-3 Devices address and Search:

Each of S-bus Devices must have its own Address in the Network, the Address for each Device consist of 2 parts:

TM **Subnet ID**

TM **Device ID**

The subnet ID can be from 0 – 254

And the Device ID can be from 1 – 254

So you can put up to 65024 Deferent Devices in the same network with deferent subnet and device ID Address

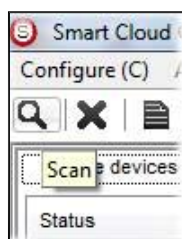
For example one of Dimmer Module Address is (Subnet 1, Device ID 5)

There is 5 ways to Search for the Devices in the Smart cloud Software

- 1- Fast Search
- 2- Advanced Search
- 3- Manually Search
- 4- Broadcast Address Device Search
- 5- Solve Conflict address search

Fast Search

The Fast search is very useful tools to test your communication and search your devices Fast , the Fast search take around 2-15 seconds to finish load the devices information in your network.



- Click on the **Scan** button
- Click on the **Fast search Button**
- Click **add all**
- Click **Exit** to exit the Window




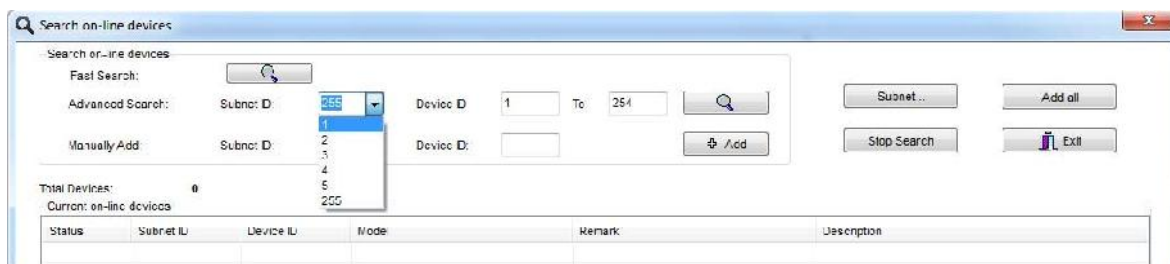
Fast search can't load all the Network Devices, it is only load part of the devices, it is only good for small project that contain around 10 devices, and to check the network communication with your PC.

Advanced Search

The Advanced Search is a powerful tool for searching your Devices in the network. You can set the Subnet ID you like to search on it and select the range of device ID you want to search for.

Advanced search take 0.3 seconds for each device to load and total of 80 seconds to finish the search and load for 255 devices totally in each subnet.

- Click on the Online Search button 
- Go to **advanced search** , put the subnet ID and the range of device ID search



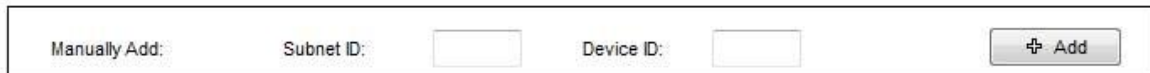
- Click **search ICON**
- Click **ADD ALL** after the search finish
- Click **Exit** to exit from the window
- click **stop** to stop the search
- Click **subnet** to add new subnet to the popup Menu subnet list



Use the Advanced Search Always as your standard way to Load the Devices in the Network to your computer before you program in any new project.

Manual Search

Manual Search is a very fast and useful way to add known Device ID and subnet to your network

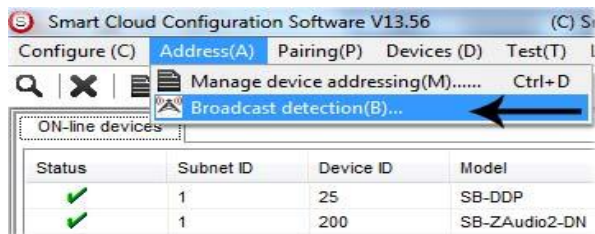


A dialog box for manual search. It contains three input fields: "Manually Add:", "Subnet ID:", and "Device ID:". To the right of the "Device ID" field is a button with a plus sign and the text "Add".

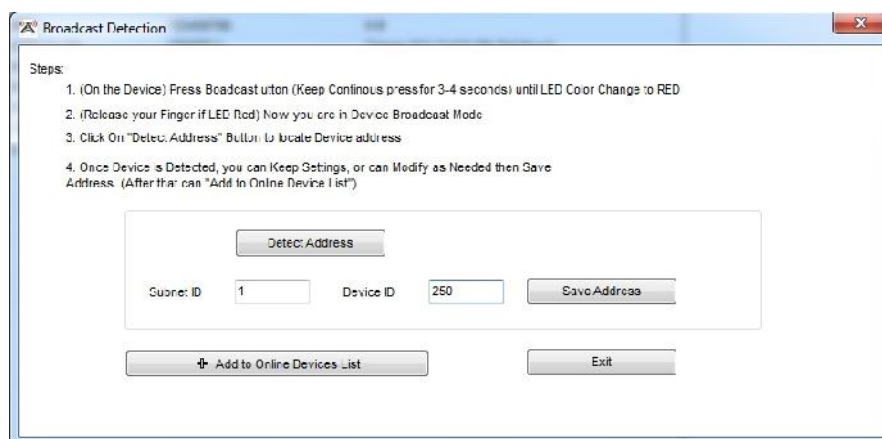
- Type the subnet and device ID that you know
- Click ADD
- Exit the Menu

Broadcast Address Device Search

This tool is important when you add new devices or you start your new Project installation, many devices could have the same Address or the communication is not yet tested, this tool is important to check the communication between your device and the bus network and to change its initial address in the first time installation.




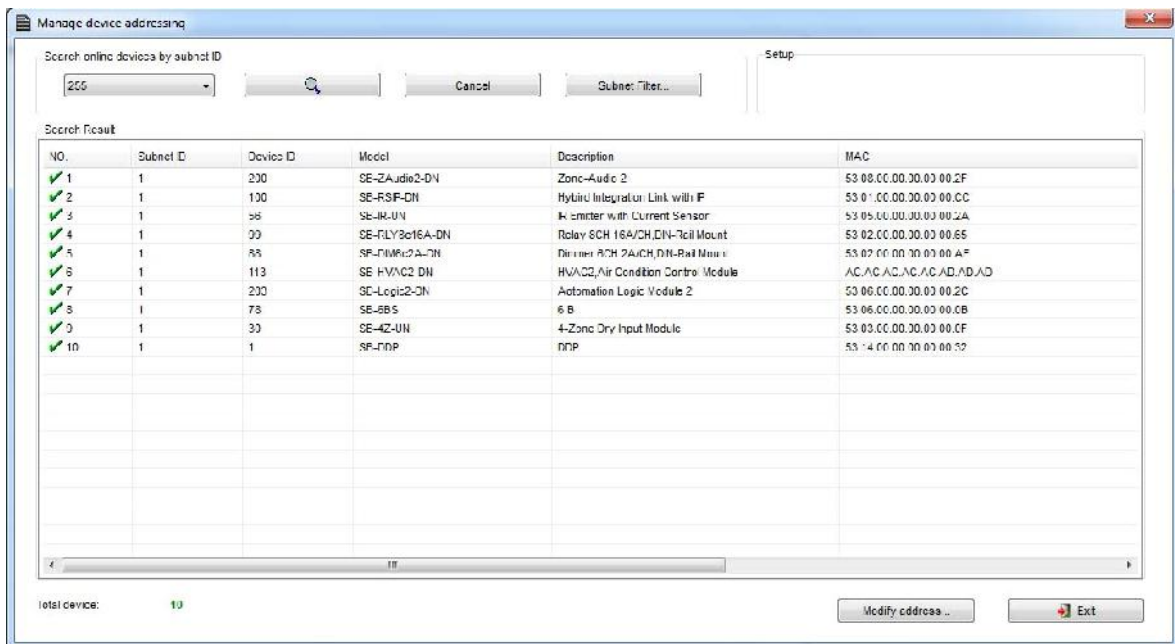
- On your software Click **Address** then **broadcast detection**
- Go to your device like Dimmer / Relay / sensor or Panel and keep pressing the **broadcast Address button** for 2 ~ 4seconds until the button LED color change to **RED**.
- In your software in the Broadcast Detection window click the **Detect Address Button**.
- Your Device ID and Subnet well appear automatically
- To change the address just type the new subnet ID or device ID you want then click **Save Address**
- Click **ADD to online device list** to load your device in the Devices Network List.
- Click **Exit** to Close the Window



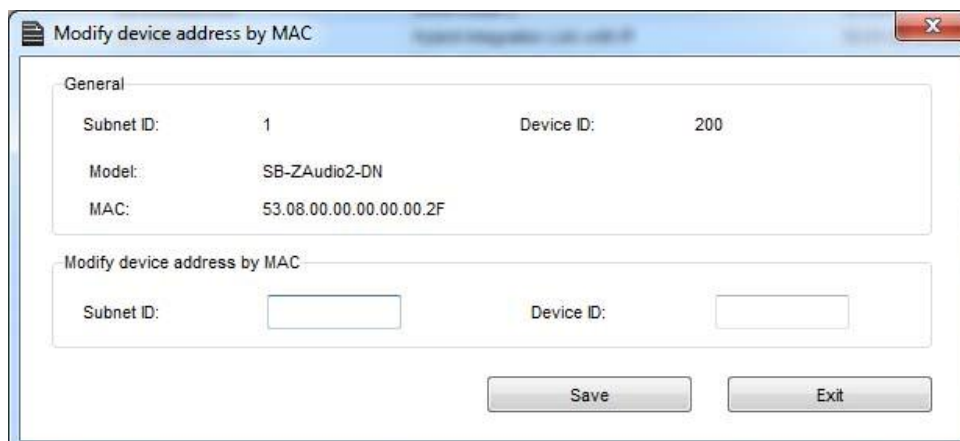
Solve Conflict address search

This type of search used to solve the conflict address, for example if 2 devices have the same address, then you can easily change the address of it without the need of disconnecting its wires from the network.

- Click **Address** or click the Address Shortcut icon 



- Select Subnet **255 (recommended)** or any desired subnet then click the search icon.
- Select the device you want to modify its address then click **modify Address** or double click on it
- New window will open, and then type the new Subnet ID and Device ID, then Click **Save**



2-4 Steps of Basic Programming

The Basic Programming for Lighting Motor and HVAC of S-bus Products has procedure of Basic Steps as following

- A- Check the communication between your computer and the Bus
- B- Broadcast each Dimmer, Relay, Motor curtain HVAC control++ initial Address
- C- Change the initial addresses to the desired one (**kindly check 2.5 for addresses range**).
- D- Give name of each Dimmer, Relay Module (Remark).
- E- Check each Lighting channel circuit if working and connected good
- F- Give name for each channel (remark).
- G- Make an excel sheet for all your Dimmers, relays, other module address and circuit name.
- H- Make Area for each Dimmer, Relay module if required .
- I- Make Scene and Sequence for each Module if required .
- J- Make safety power restore and delay time for scenes and safety as required.
- K- Check the curtain module gives it address and name.
- L- Set the channel name, the running time open and close running time.
- M- Give the switch (6 gangs) and panel (DDP) its addresses and Name.
- N- Assign the panel button to the corresponding scene or channel.
- O- Set the button graphic picture for the DDP for each button.
- P- Check the HVAC address give it address and name.
- Q-Set on off relay sequence.
- R- Set the VAV Voltage output if required.
- S- Set the safety HVAC running sequence
- T- assign the DDP Panel to its HVAC unit.
- U- Set the FAN speed, cool set point, type, adjust temperature sensor on the panel setting.
- V- Set the required graphic for AC, and panel basic setting
- W- Search for PIR motion sensor and give it address and name
- X- Set the sensitivity, way of triggering, motion, no movement delay and commands
- Y-connect the Z-audio 2 to the s-bus And address it
- Z-Test and enhance your programming.



Following the basic Programming steps procedure will save the programmers time and effort.

2-5 What is The Magic Line In our software ? :

In programming in all S-bus Modules you will find the same line with same fields that's why we called it "Magic Line" .

If you want to send any command you have to use this magic line.

Function no.	Subnet ID	Device ID	Type	Parameter 1	Parameter 2	Parameter 3
1	1	50	Invalid switch	1	2	N/A
2	10	11	Invalid switch	12	13	N/A
3	255	255	Invalid switch	255	255	N/A
4	255	255	Invalid switch	255	255	N/A
5	255	255	Invalid switch	255	255	N/A

If you notice the Command Line is contained of :

Function No. : indicated to Order/Function Number , the maximum order you can put is depend of the module .

Subnet ID : each device has subnet ID in our software you can put up to 254 subnet ID.

Device ID : additional to the Subnet ID also each device must has unique ID to avoid the conflict . and the range is 254.



Each Subnet ID can cover 254 devices and we have 254 subnet ID that means the total Number is 64516 devices.

Type : What type of order you want to send, if you notice in the following pic the system has many types depend on the module

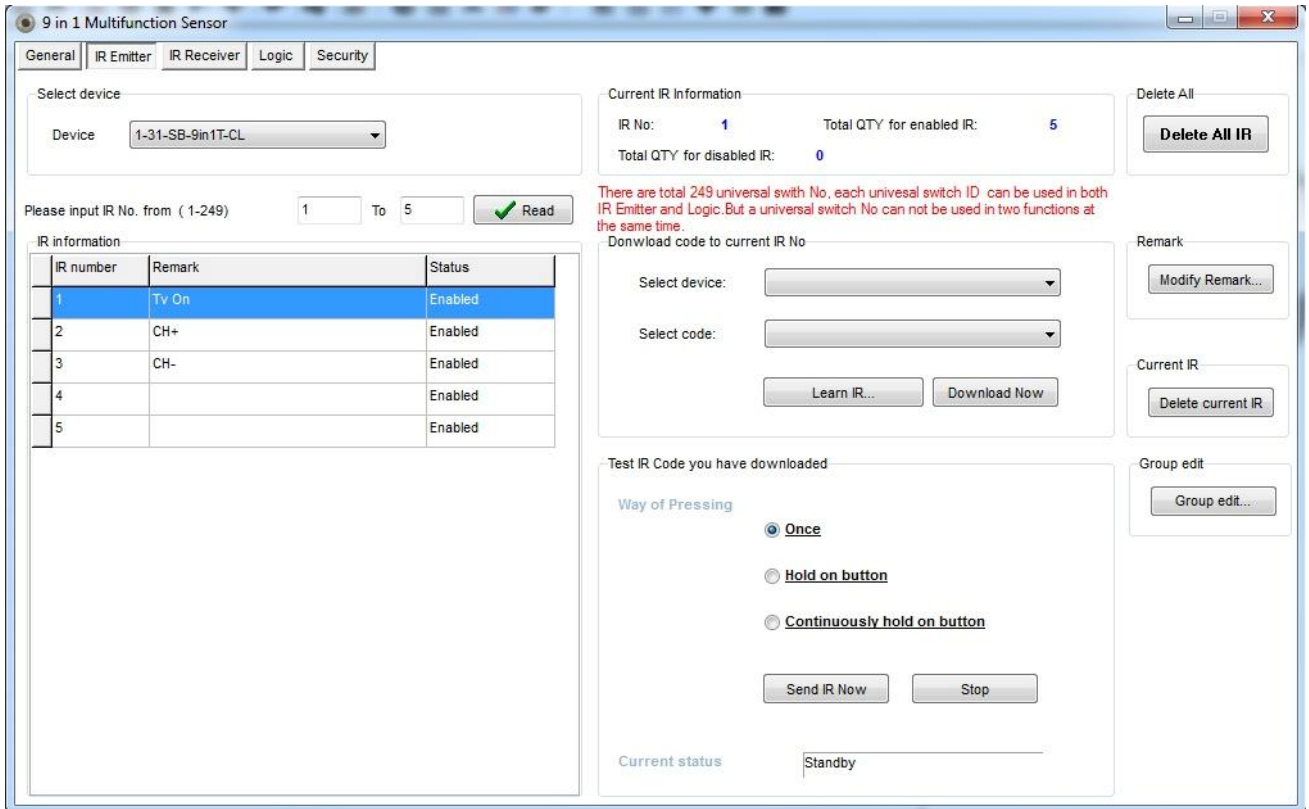
Function no.	Subnet ID	Device ID	Type	Parameter 1	Parameter 2	Parameter 3
1	1	50	Scene switch	1	2	N/A
2	10	11	Invalid switch	12	13	N/A
3	255	255	Scene switch	255	255	N/A
4	255	255	Sequence switch	255	255	N/A
5	255	255	Universal switch	255	255	N/A
			Single channel lighting			
			Curtain switch			
			SMS control			
			Panel control			
			Broadcast scene			
			Broadcast channel			
			Security module			
			Zone-Audio 2			

Parameter 1 ,Parameter 2 and Parameter 3 are related to "TYPE" field like this Table :

Function type	Parameter 1	Parameter 2	Parameter 3
Invalid Scene Switch Sequence Switch	N/A	N/A	N/A
	Area Number	Scene Number	N/A
	Area Number	Sequence Number	N/A
Universal Switch	Switch Number	ON / OFF	N/A
Single channel	Channel Number	Brightness 0-100%	Fade time 0S - 60 M
Curtain Switch	Switch Number	Stop / ON/ OFF	N/A
SMS	Message	Message SMS Number	N/A
Panel Panel Panel	Invalid	N/A	N/A
	IR Receiver	ON / OFF	N/A
	Lock	ON / OFF	N/A
Panel Panel Panel Panel Panel Panel Panel Panel Panel Panel	AC Power	ON / OFF	N/A
	AC Cooling	0-30 C , 32- 86F	N/A
	ACFan	Auto/high/med/slow	N/A
	AC Mode	Auto/Cooling/Heating/FA	N/A
	AC Heating	0-30 C , 32- 86F	N/A
	Rise temp	0-30 C , 32- 86F	N/A
	Reduse temp	1-5 C/F	N/A
	LCD Backlit	ON / OFF	N/A
	LCD status	1~100	N/A
	oor heating power	ON / OFF	N/A
Panel	oor heating mode	Normal-day-night -away	N/A
Panel	Goto page	1~7	N/A

Function type	Parameter 1	Parameter 2	Parameter 3
Broadcast scene	All Areas	Scene Number	N/A
Broadcast Channel	ALL Channel	Brightness 0-100%	Fade time 0S - 60 M
Security Module	Area Number	Arming Mode	N/A
Zone-audio 1	Source Control	D Card/Audio In/FTP Server/FM Radio	N/A
Zone-audio 2	Play Mode	No Repeat/ Repeat Song/ Continued/ Repeat all	N/A
Zone-audio 2	Play List/Radio Channel	PREV Play List/Next Play ListSpecify Play List No/PREV	N/A
Zone-audio 2	Play Control	PREV Song/Next Song/Play/Stop	N/A
Zone-audio	Volume	VOL	0-100
Zone-audio	Volume	TREBLE	Reduce/increase
Zone-audio	Volume	BASS	Reduce/increase
Zone-audio 2	Play Specify Song	Folder No.	Song No.

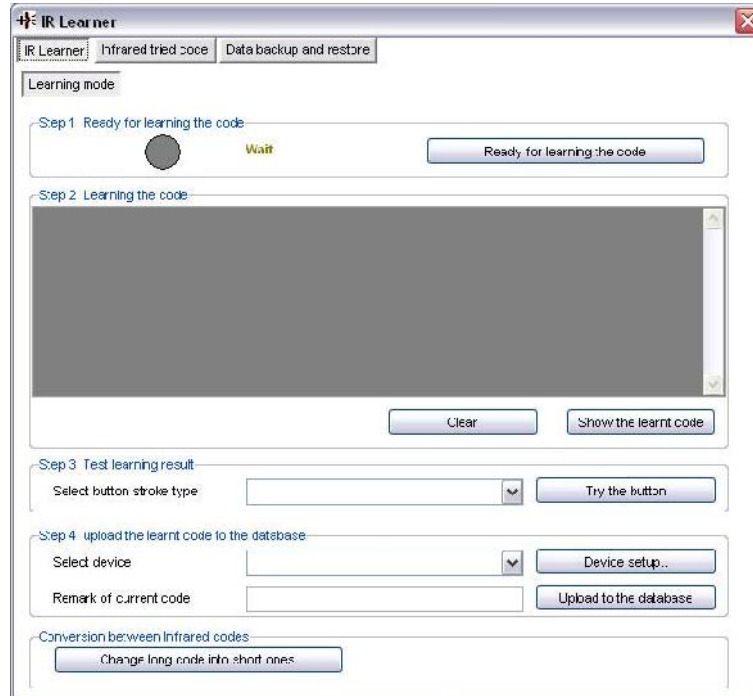
3-1 Learning and send IR codes :



If you want to control any devices has a remote you need first to save its IR codes, For that, connect your IR Learner install the driver (WIN XP):



- Press **Learn IR** button you will get this window :



- Click on **Ready for Learning** button the grey circle it will be green :



- Put your Remote in front of IR learner and press the desire button you want to its code.
- Once you press you will get the success notification :



- Now Select single press then go to Device setup

Step 3 Test learning result

Select button stroke type: Single press

Step 4 upload the learnt code to the database

Select device: AUX AC

Remark of current code:

- Create new device with remark then click on add :

Device setup

ID	Remark
1	Smart IR Remote(Big)
2	AUX AC

Add device

Remark: TV REMOTE

Edit device

ID: 2
Remark: AUX AC

- Click Exit
- after you create your device you can choose it from **select device** (I choose T.V remote)
- Remark your code to recognize it later Ex : **CH+**
- Click **upload to data base** button.

Step 4 upload the learnt code to the database

Select device: TV REMOTE

Remark of current code: CH+

- High light on any row in **IR Information** table (I chose No.1)
- Go to **Download code** section choose your device and code
- Click **download now**.

Please input IR No. from (1-249) 1 To 5

IR number	Remark	Status
1	TV REMOTE_CH+	Enabled
2	CH+	Enabled
3	CH-	Enabled
4		Enabled
5		Enabled

Download code to current IR No-

Select device: TV REMOTE

Select code: 1-CH+

-) to send this code through **DDP** just choose any button :

Function no.	Subnet ID	Device ID	Type	Parameter 1	Parameter 2	Parameter 3
1	1	31	Universal switch	1	On	N/A

Device ID= 31 **↑** your **9 in 1** ID
 Type = Universal **↑** must be to send IR code Parameter 1 = 1 **↑** where we save our code (CH+) Parameter 2 = on **↑** to execute the command

For more info please check out these links :

<http://www.youtube.com/watch?v=z5PuMgv3v5Y&feature=plcp>

<http://www.youtube.com/watch?v=nUoF1VptuJM&feature=plcp>

http://www.youtube.com/watch?v=r_QaBCXIVD0&feature=plcp

3-2 IR MACRO Programming:

Now, the remote control commands are stored in the IR Emitter module.

The screenshot displays the 'IR Macro' software interface. The 'IR Emitter' tab is active, showing a 'Select device' dropdown menu with '1-41-SB-IRMacro-UN' selected. Below this, there are input fields for 'Macro # from (1-10)' (1) and 'To' (10), and 'Command # from (1-50)' (1) and 'To' (50), both with 'Confirm' buttons. A table titled 'Macro' lists 10 macros with their respective modes. A second table titled 'Commands of Current Macro' lists 15 commands with their IR codes, control status, and delays. A red circle highlights the 'Device' dropdown and the 'Macro #' and 'Command #' input fields in both screenshots.

Macro#	Remark	Mode
1		Not Exclusive
2		Exclusive
3		Exclusive
4		Exclusive
5		Exclusive
6		Exclusive
7		Exclusive
8		Exclusive
9		Exclusive
10		Exclusive

Cmd#	IR#	Remark of IR#	Control Status	Delay(hh:mm:ss)
1	1		On	0:00:00.10
2	2		On	0:00:00.10
3	5		On	0:00:00.10
4	7		On	0:00:00.10
5	8		On	0:00:00.10
6	3		On	0:00:00.10
7	9		On	0:00:00.10
8	10		On	0:00:00.10
9	1		On	0:00:00.10
10	0		On	0:00:00.10
11	0		On	0:00:00.10
12	0		On	0:00:00.10
13	0		On	0:00:00.10
14	0		On	0:00:00.10
15	0		On	0:00:00.10

Step 1: Set the macro is mutually **exclusive** or not. Each macro can be set whether mutually exclusive with others. If mutually exclusive with other macro, the starting macro will close the other actually running macro, otherwise it will co-exist with other macro.

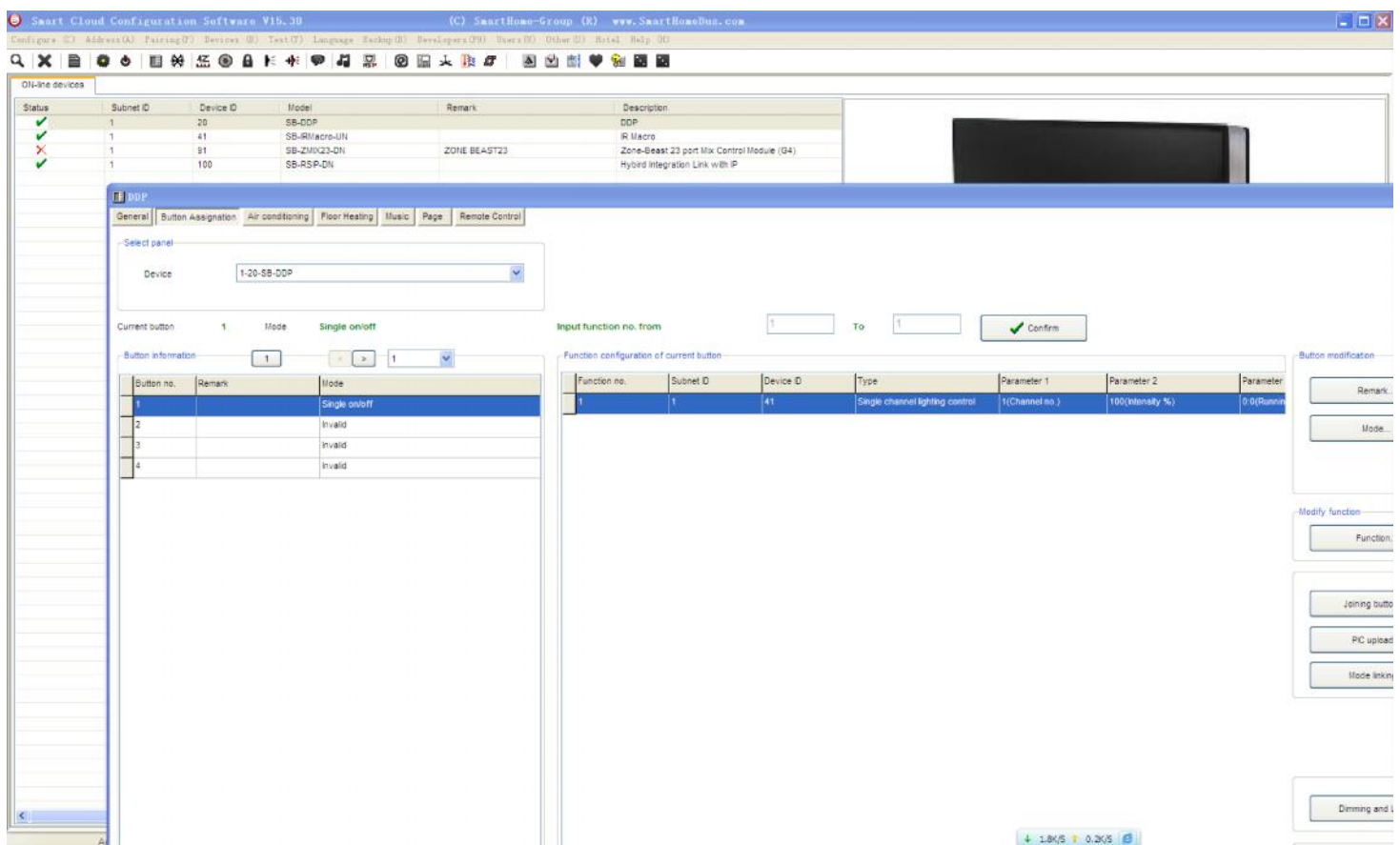
*(Allowing multiple macro is running in the same time.)

Step 2: Set the macro sequence. Each macro can set 50 IR commands at most. Each command can be set to run after a delay, then send the next command. The delay can be selected with wide range: 0.1sec ~ 10hours. Each command can be set to ON/OFF. (Only supply for the POWER BUTTON)

Step3: IR macro start or stop.

For example, we use the first button in the first page of the DDP to control the first IR Macro in address 1-41 as below. That means using the single-channel control commands (similar to that of Light) as channel number here for the macro number. The intensity 0 is to close macro and intensity of 100 is to start the macro.

Note: Single IR MACRO can program 10 macros.



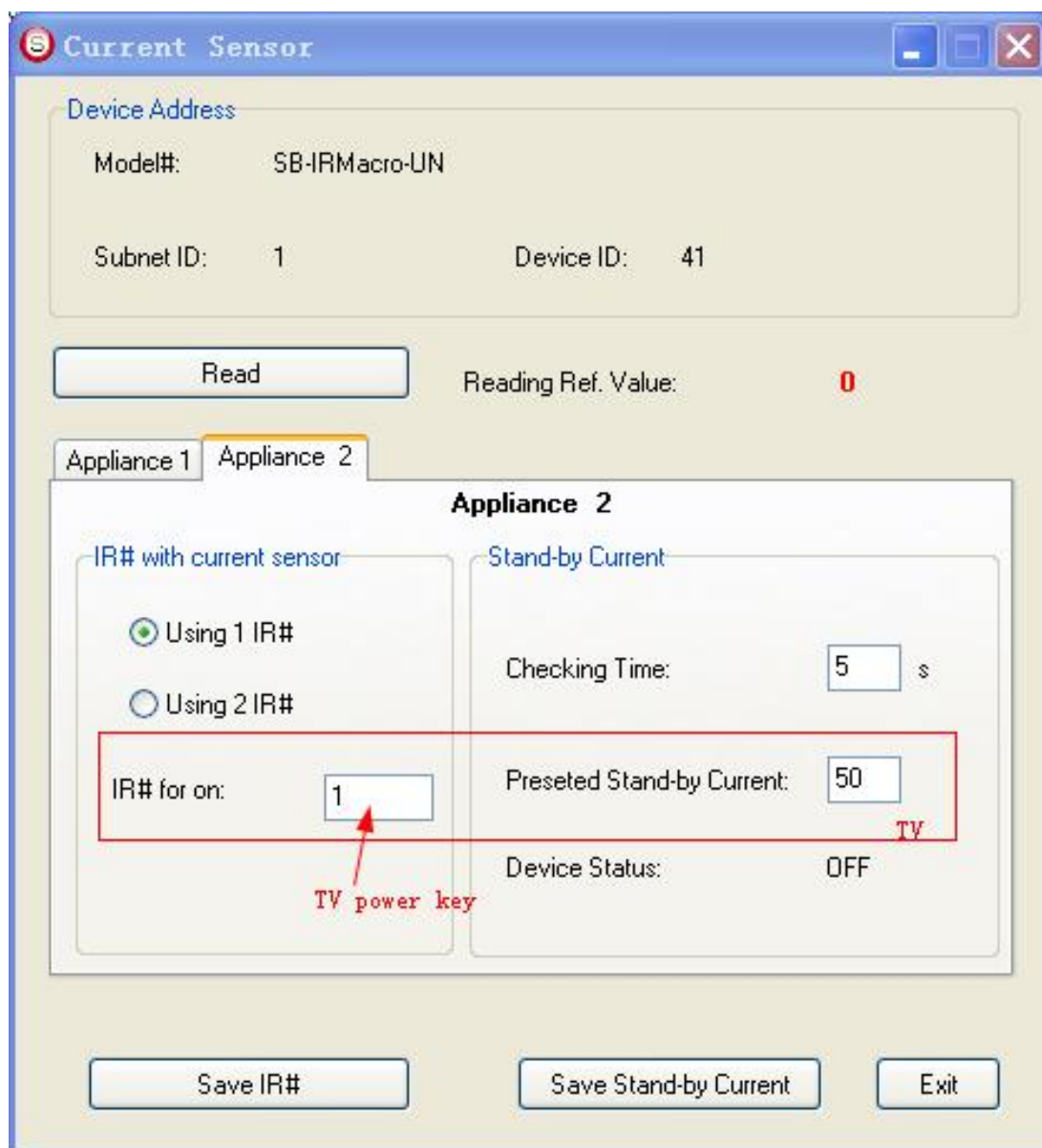
The current Sensor use in IR MACRO

The method for using the IR Macro current sensor

If the test value of current sensor is 29. That means the DVD is the only turned on. If the current sensor test is 50. That means the TV is the only turned on. If the value of current sensor is greater than sum of them ($> (29 + 50)$), means the two devices are turned on.

The screenshot shows a software window titled "Current Sensor". It contains the following fields and controls:

- Device Address:**
 - Model#: SB-IRMacro-UN
 - Subnet ID: 1
 - Device ID: 41
- Read** button
- Reading Ref. Value:** 0
- Appliance 1** and **Appliance 2** tabs
- Appliance 1** settings:
 - IR# with Current Sensor:**
 - Using One IR#
 - Using Two IR#
 - IR# for on/off:** 2 (with a red arrow pointing to it and the text "DVD power key" below)
 - Stand-by Current Settings:**
 - Checking Time: 5 s
 - Preseted Stand-by Current: 29 (with a red box around it and the text "DVD" to its right)
 - Device Status: OFF
- Save IR#**, **Save Stand-by Current**, and **Exit** buttons



Important Notes:

Command for activating macro:

To run use: single channel command

First PARA: =Macro no (from 1-20)

Second PARA: =run macro=100,
= stop macro=0 **third PARA:**

Delay time value =can be set (0s-10hours)