2012

Programming Manual

V 2.1

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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 well know soon how the S-bus Programming is simple.

1-1 Objective:

After this course you will be able to program the Lights Dimmers ad relays with the switches Panel, Program curtain shades control, program the Air condition setting and DDP panel, create and download different Picture on the LCD, and start with Motion sensor and Automate your Project and many more…

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

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

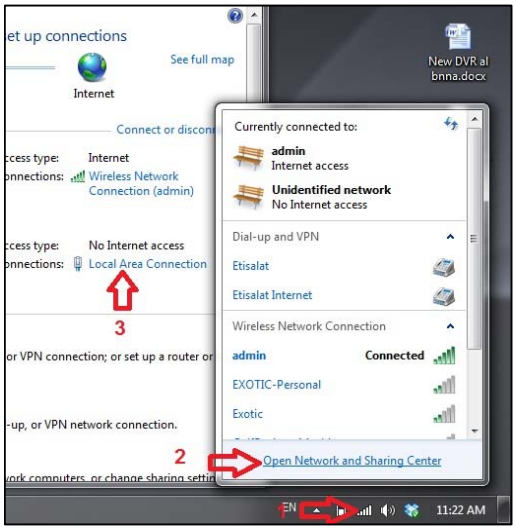
You need on this lesson: to have your computer with you. Running on windows Operating system, Smart Cloud **G4** software, Programming port SB-DN-1IP, that enable you to search for all the devices that connected to the bus network.

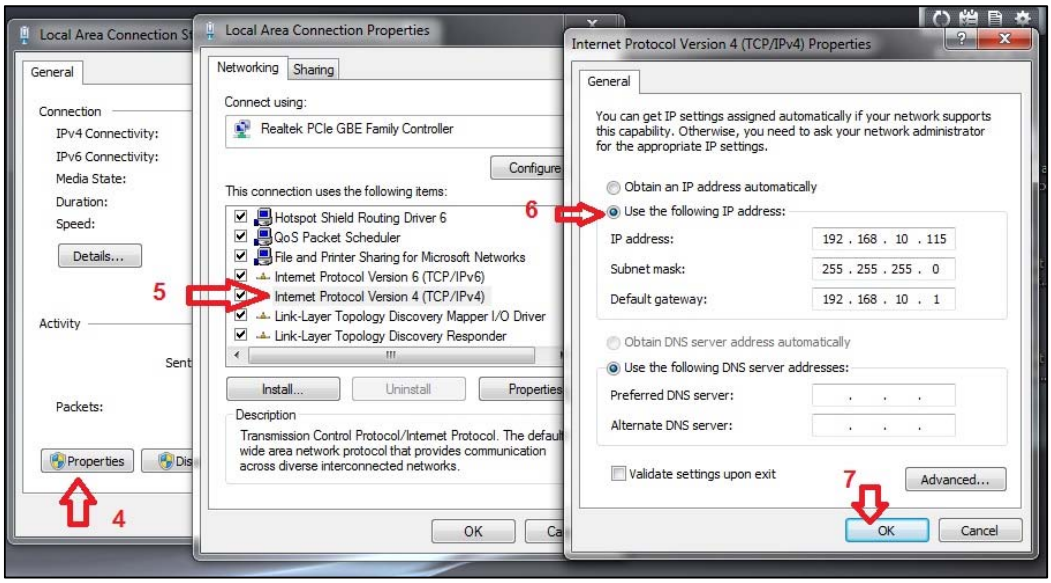
1- Install your S-bus configuration software in your Computer by pressing the **Setup** icon and follow the installation steps windows

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

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

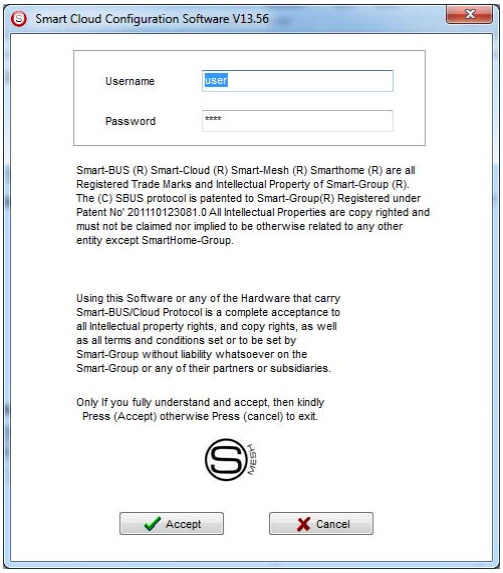
⚠ The default address for S-bus Product is **192.168.10.xxx**



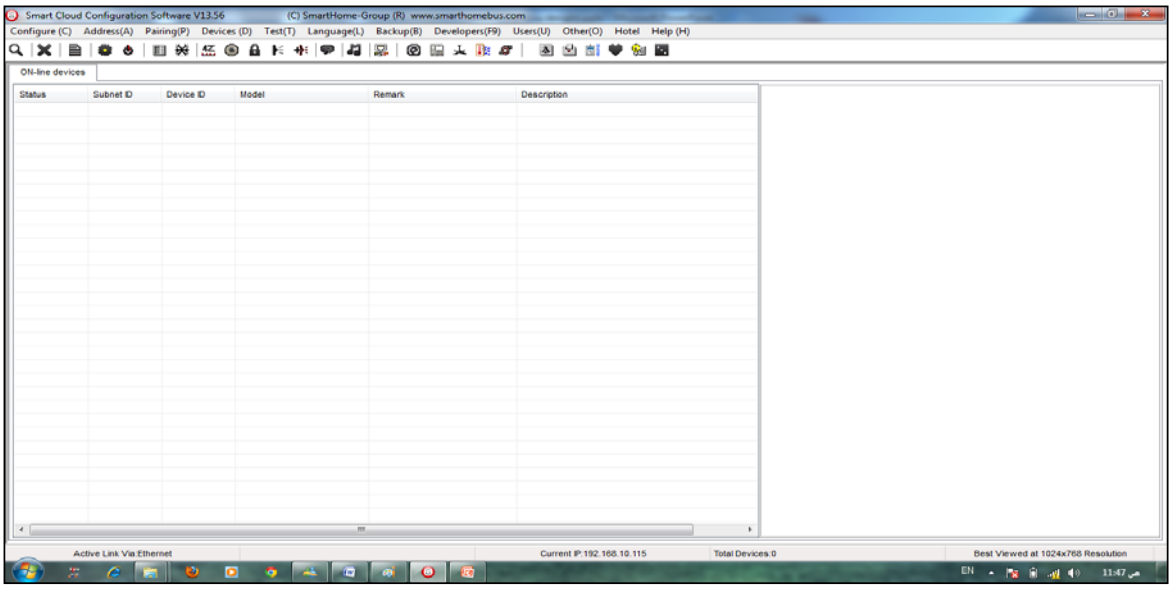


3- Run your S-bus smart cloud Software

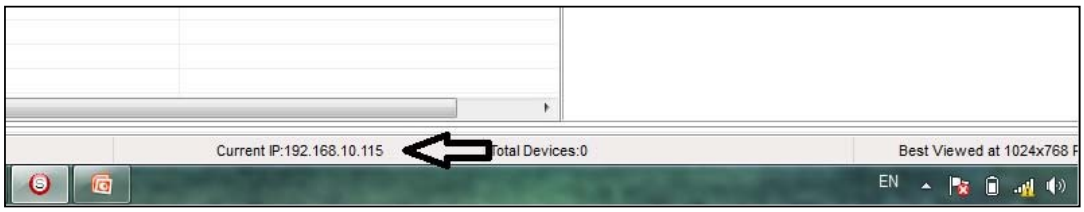
4- The Password window will open, type the default password is **user**



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.



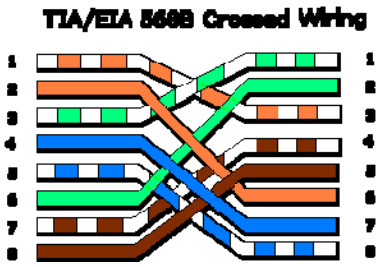
Set your computer IP setting before starting the S-BUS Smart Cloud.

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

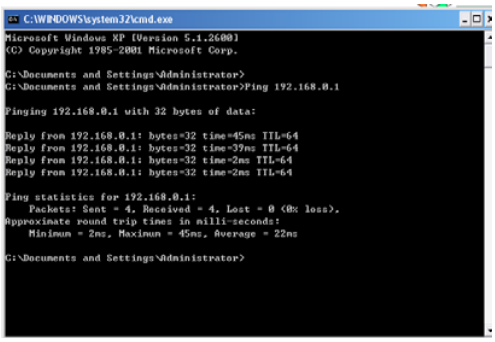
After you set your Module IP Address now you should connect the module to Your Computer Network in order to communicate. The connection can be in two ways

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



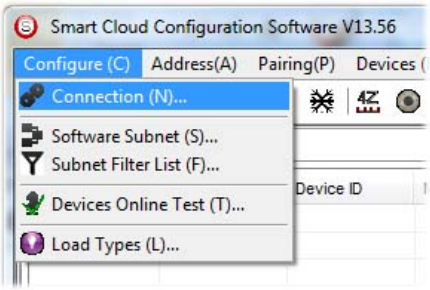
*You can use the Line command **Ping** to check your connection.*
On your Computer, Go to start/ Run/ CMD then type Ping 192.168.10.xxx
If you see the following results similar to this Picture then your connection is successful



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

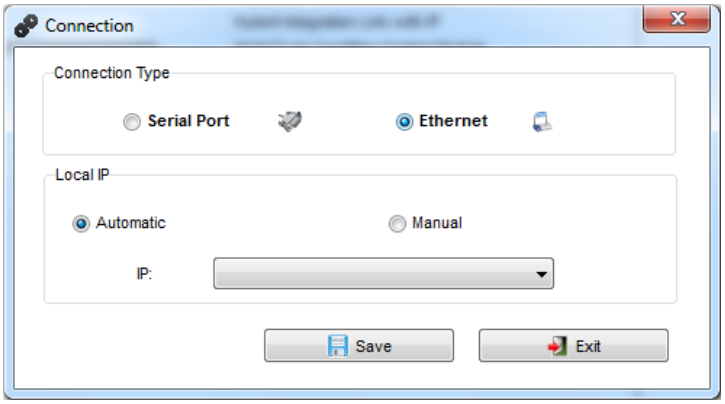
Configure



- ***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 devicess 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).

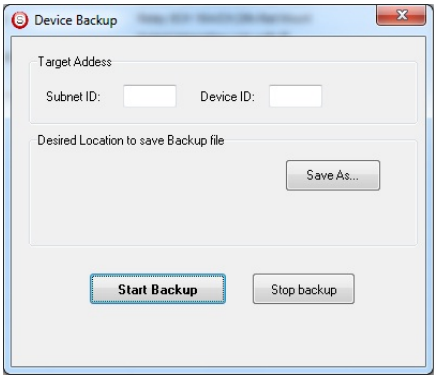
Language

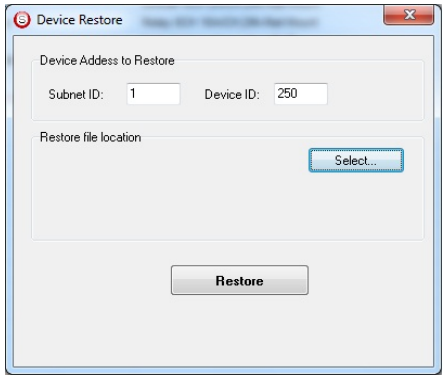
You can change the Language between English and Chinese, and other Languages

Backup

Important to backup and restore your Devices address and setting.

- For Backup: put the subnet and device ID for desire device , choose the location for the backup file then click "Start backup" ,
- For Restore: put the subnet and device ID for desire device, choose the backup which you already made then click "Restore".
-





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:

- **Subnet ID**
- **Device ID**

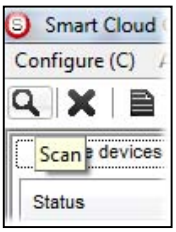
The subnet ID can be from 0 – 254
And the Device ID can be from 1 – 254
So you can put up to 65024 Deferent Devices in the same network with deferent subnet and device ID Address
For example one of Dimmer Module Address is (Subnet 1, Device ID 5)

<u>There is 5 ways to Search for the Devices in the Smart cloud Software</u>

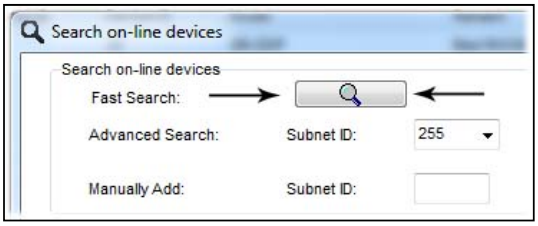
1- Fast Search
2- Advanced Search
3- Manually Search
4- Broadcast Address Device Search
5- Solve Conflict address search

<u>Fast Search</u>

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.

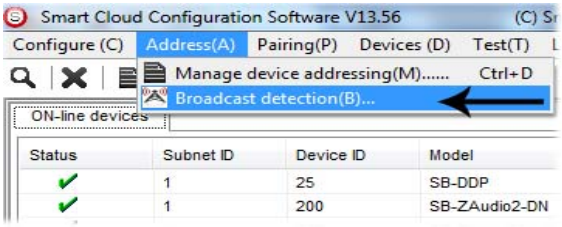
Manual Search

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

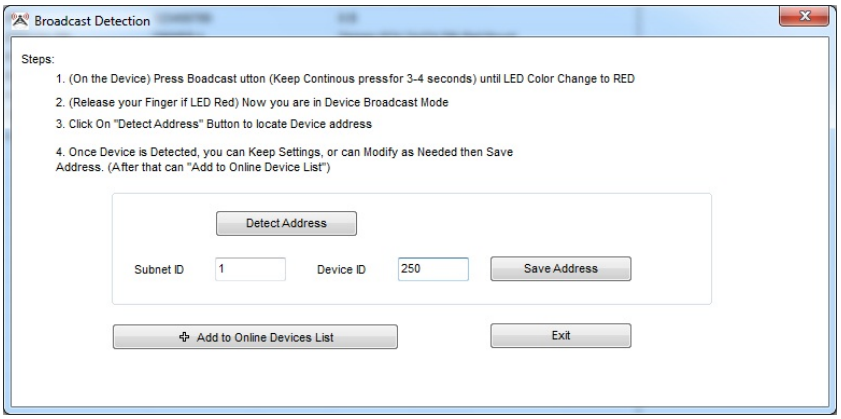
- Type the subnet and device ID that you know
- Click ADD
- Exit the Menu

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.



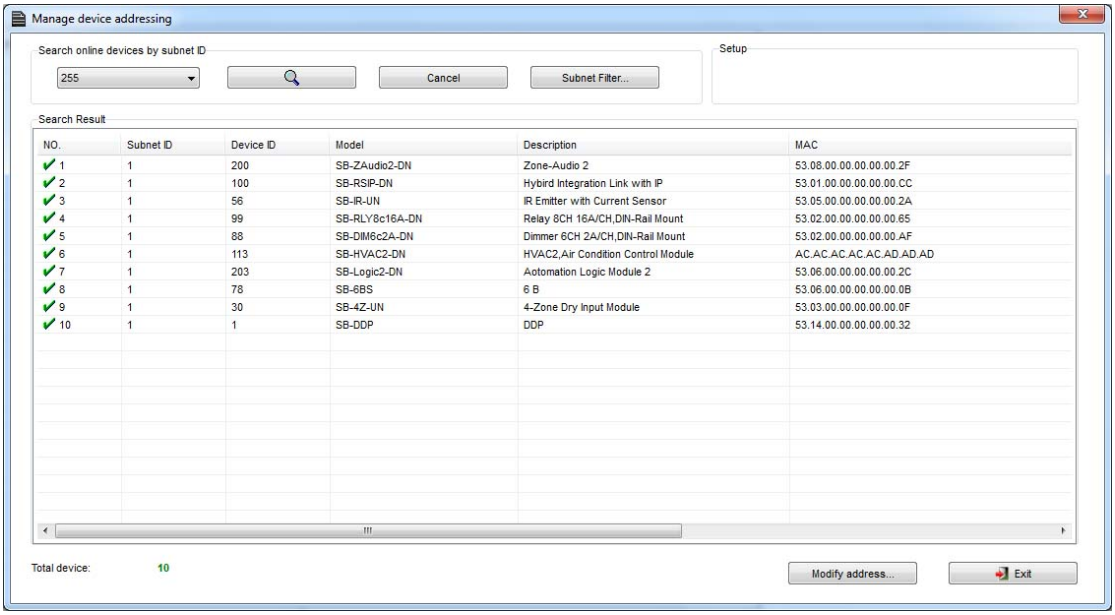
- On your software Click **Address** then **broadcast detection**
- Go to your device like Dimmer / Relay / sensor or Panel and keep pressing the **broadcast Address button** for 2 ~ 4seconds until the button LED color change to **RED**.
- In your software in the Broadcast Detection window click the **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



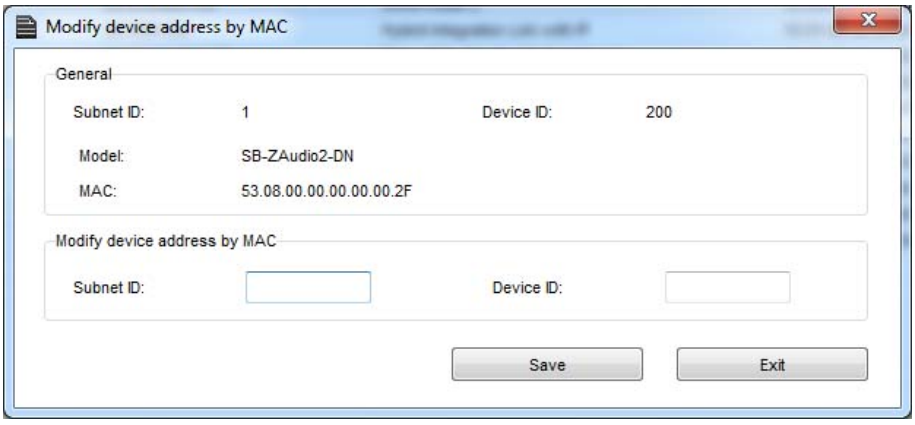
Solve Conflict address search

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.

Modify button function configuration

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 uniqe 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

Modify button function configuration

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	N/A	N/A	N/A
Scene Switch	Area Number	Scene Number	N/A
Sequence Switch	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	Invalid	N/A	N/A
Panel	IR Receiver	ON / OFF	N/A
Panel	Lock	ON / OFF	N/A
Panel	AC Power	ON / OFF	N/A
Panel	AC Cooling	0-30 C , 32- 86F	N/A
Panel	ACFan Speed	Auto/high/med/slow	N/A
Panel	AC Mode	Auto/Cooling/Heating/FA	N/A
Panel	AC Heating	0-30 C , 32- 86F	N/A
Panel	Rise temp	0-30 C , 32- 86F	N/A
Panel	Reduse temp	1-5 C/F	N/A
Panel	LCD Backlit	ON / OFF	N/A
Panel	LCD status ligh	1~100	N/A
Panel	Floor heating power	ON / OFF	N/A
Panel	Floor 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 2	Source Control	SD 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 2	Volume	VOL	0-100
Zone-audio 2	Volume	TREBLE	Reduce/increase
Zone-audio 2	Volume	BASS	Reduce/increase
Zone-audio 2	Play Specify Song	Folder No.	Song No.

3- DDP LCD Panel (Dynamic Display Panel)

In this lesson we will learn about some of the function of the DDP that will cover the Lighting, scenes and HVAC setting.

3-1 DDP Overview

The wall **Dynamic Display Panel** DDP is the first LCD panel in the world that can control lights, shade, security ,Gate Motor, Air-condition, music, infrared. With built in temp. sensor.
The DDP has (4 commands button + 1 button to change between pages) of 4 multi usage pages with AC master page and 8 slave AC pages, music page, password page, and the settings pages.
Each button can be used as single press, keep press, double click, right and left pressing, momentary pressing function ++

3-2 DDP Address Page Password and Language Setting

The DDP panel Address setting can be set by S-bus configuration software, or manually from the DDP panel setting

To set the Address manually, please do the following:

- On your DDP panel keep pressing on the **buttons (4 and 1)** together for couple of second
- Setting page will appear for you as you can see

- As you can see from the menu the 4 button function will be (button 1 confirm, button 2 Arrow up, button 3 Arrow down, button 4 back)
- Go to **system** and press button1 confirm
- Another list menu will appear as you see

- You can see the **address** consist of 2 number which refer to the subnet ID, and device ID
- change the address by using button2,3 for arrow up+ arrow down- , press button 1 to confirm, and to go to the next setting , press button 4 back to exit the setting
- Also in the system list menu you can change the **Backlight** brightness level from 0-10, **IR** receiving function by enabling or disabling it.
- Also you have the **power save** setting , to set the Delay time by seconds to dim the Backlight to the specify Level as you can see on the **Delay** and **LEVEL** setting
- **Page to** setting to let the DDP LCD to show the default page after the delay time finish.
- After you finish your setting you can press button 4 back and exit.

*Changing the Address manually is **more** convenience and faster for programmer to assign the panels by its address in any new project*

Also you can use the password setting to lock the pages by protected password

To set the password settings, do the following:

- On your DDP panel keep pressing on the **buttons (4 and 1)** together for couple of second.
- Setting page will appear for you as you can see.

- Go to **password** by pressing button 3 arrow down then press buttun1 confirm
- The password page will appear as following

- In the **PAGE** setting you can select the page number you need to lock by password, then press button 1 confirm
- In the **USED** you can use the arrow up to enable or disable the password page protection then press button 1 confirm

- In the **PASSWORD** you can press button 3 Arrow down to change the password the following menu will appear

- To change the password you should enter your old password and then your new password, the **default password is 0000**
- In the **OLD** type your password by using button 2, 3 to change the number and button 1 confirm to go to the next number digit
- In the **NEW** use the same buttons to type your new password
- After you finish press button 4 back
  The following page will appear to confirm the password new setting

- Select between YES or NO by pressing button 2,3.

- To **save** the change select yes and press button 1 confirm
- The page that protected by password will be locked after 20 seconds automatically and cannot be open unless you type your right password

To change the setting menu language, do the following

- On your DDP panel Keep pressing on the **buttons (4 and1)** together for couple of second
- Setting page will appear for you as you can see
- Go to Language setting and press button 1
- Chose between the language you have then press confirm button 1

The DDP Language setting will affect the default picture showing on the AC page.

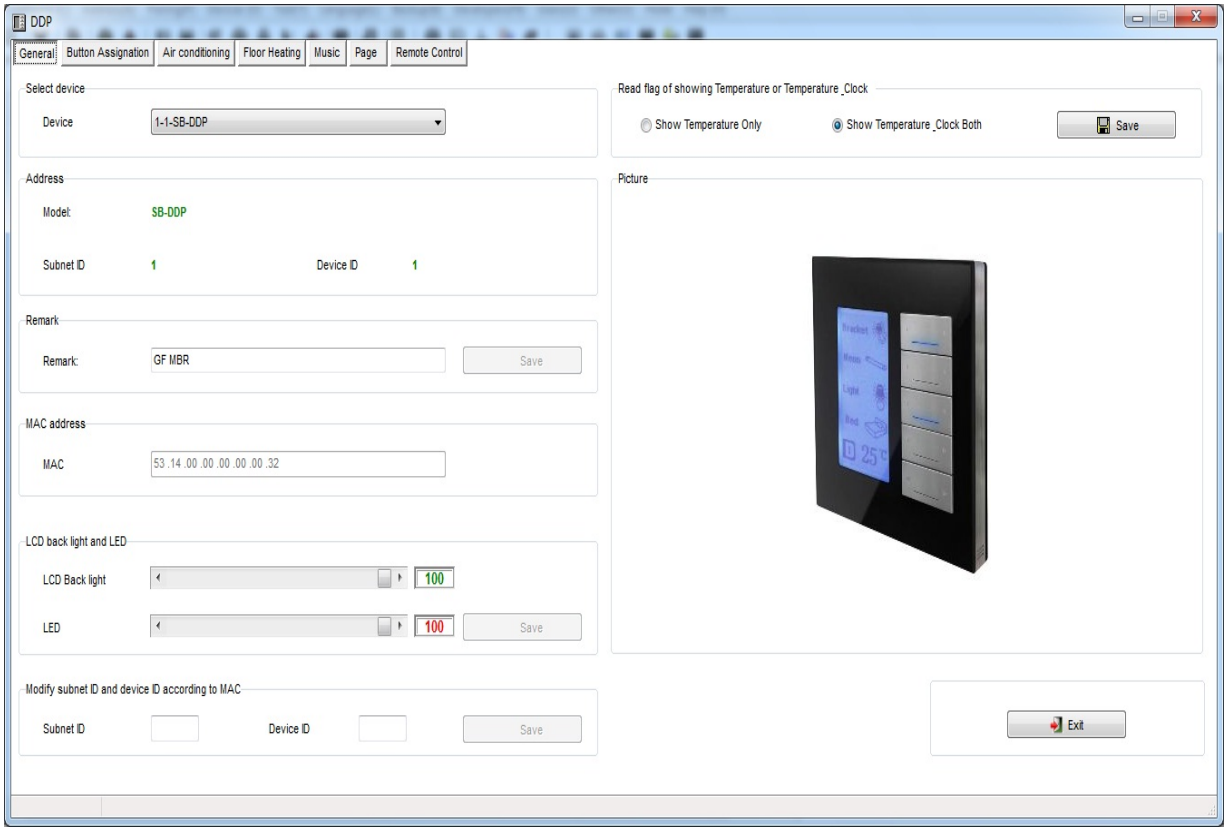
In case you forget your password you use the Master password which is **8465**

3-3 DDP Basic setting

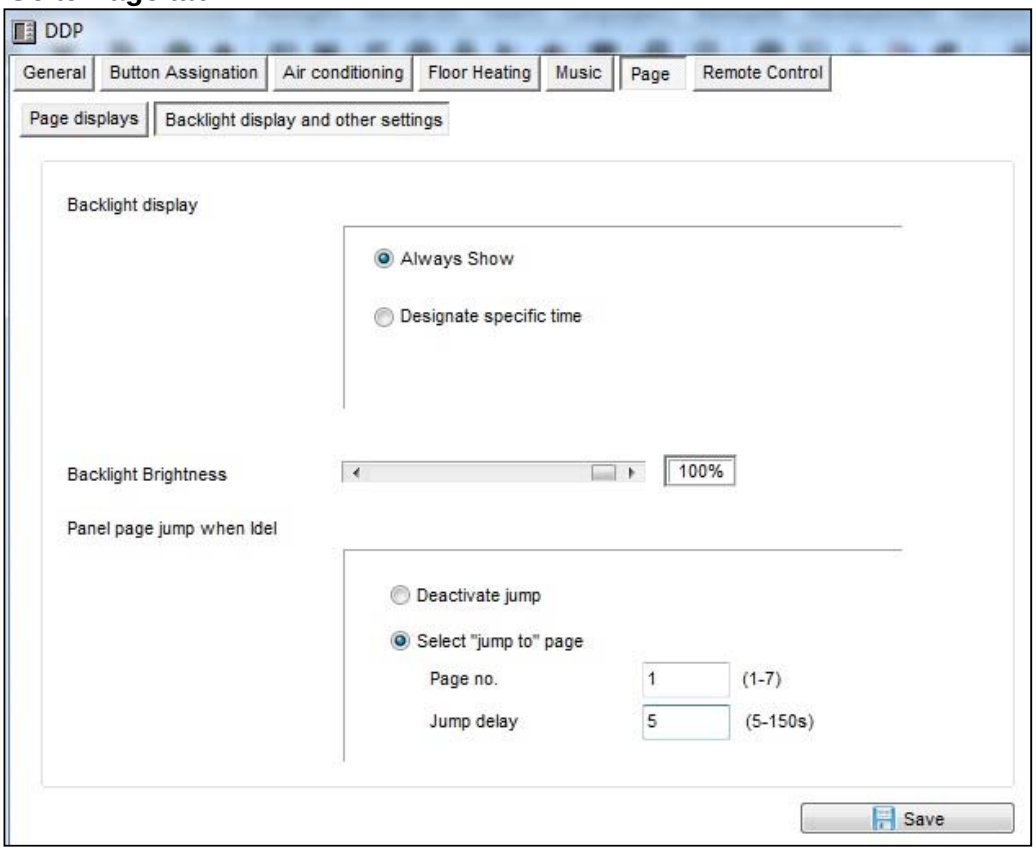
Double click on the Panel (DDP) on the search List
You can type the Name of the Panel Location in the **Remarks**
In the **LCD Backlight** you can

- Adjust the Backlight of the LCD from 0-100%
- Adjust the LED statues Brightness from 0-100%

Also from General you can Change the subnet and device ID of the Panel



Go to **Page** tab



Backlight Display and Other Settings

In this page you can make the Backlight Display setting

You have two options

- Always Show: will keep the Backlight ON all the time
- Designate specific time: to put timeout from10-99 seconds to go to the Save mode of Backlight brightness level

It is recommended always to set the Backlight to 0% after time in all bed rooms so the Backlight will not disturb the user while he is sleeping

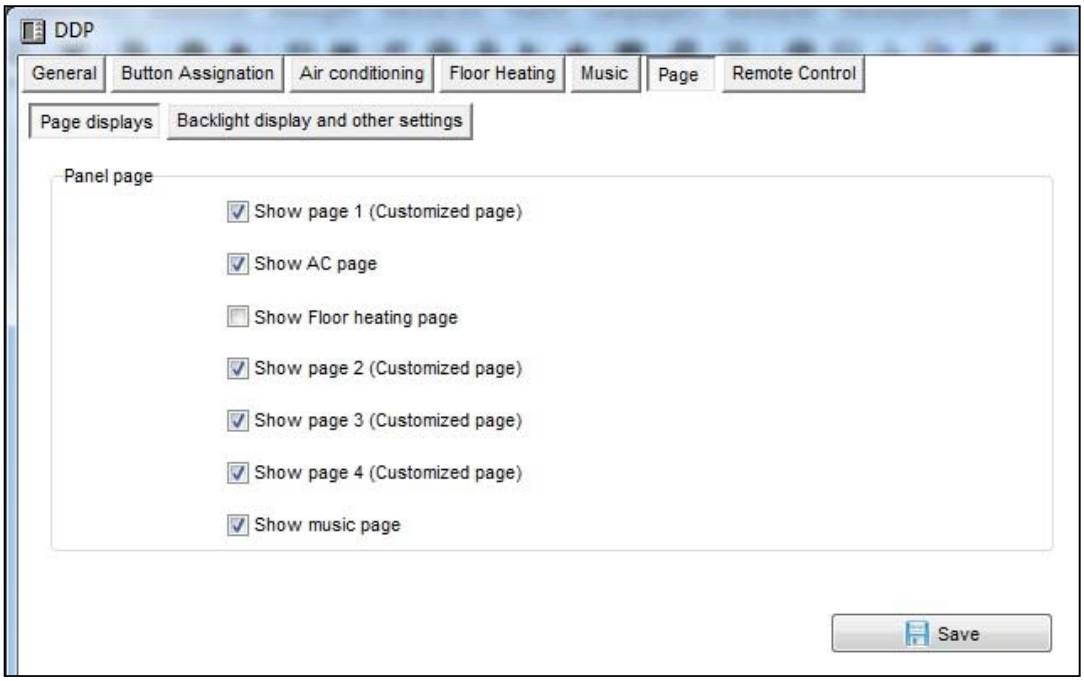
Page jump setting

You have two options for this setting

- Never jump: the page will remain and will never change automatically, for example if the user put the DDP panel to page 3 it will remain on page 3 until he change the page by himself
- Designate jump page: the DDP panel will jump to page Number(*) after Jump delay from 5-150 seconds

It is recommended always to put the Jumping page to Default lighting page for example page 1, cause the user will use his lighting mostly in his room more than Air-condition or music or other function

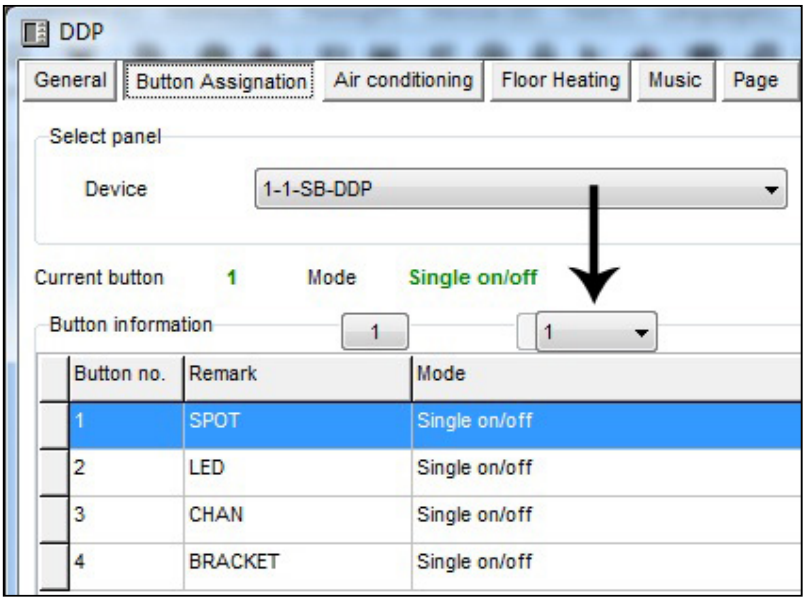
Page displays
In this tab you can enable or disable showing the page in the panel



Always disable the page that you don't need in your panel to make your Pages more friendly use and save time to navigate between the needed pages only.

3-4 DDP 4 Pages Button Remarks and Modes

Go to **Button Assignation** tab on the DDP Panel setting
You have total 4 pages in you LCD Panel you can configure it according to your needs, to move between pages use the **Combo box** as shown on this Picture

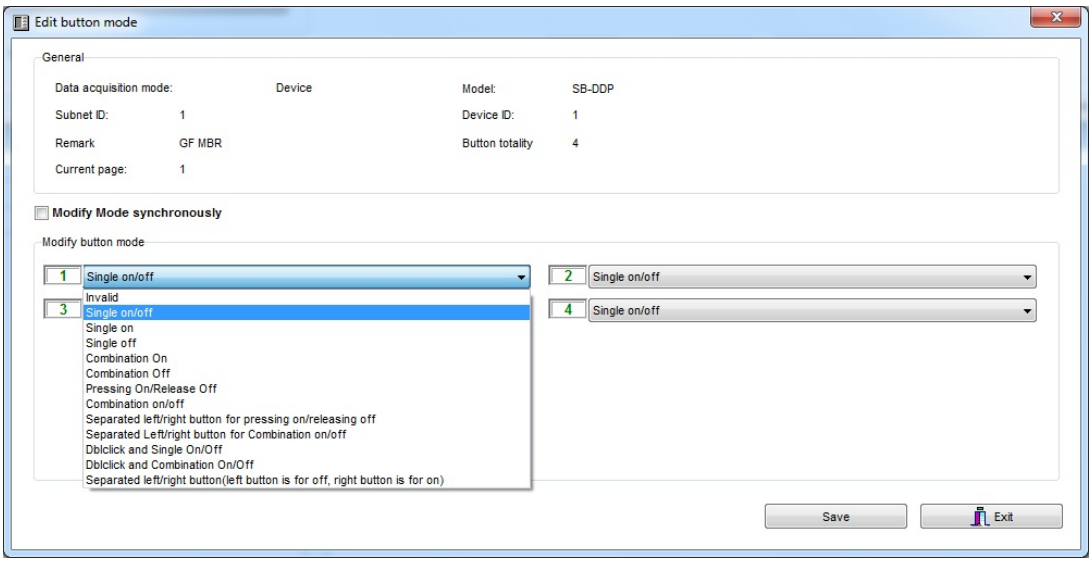


Remarks Edit

- Press on **Remarks** Button
- Type your Remarks for each button
- Press **save**
- Go to the next page and do the same for each button

Mode Edit

- Press on **Mode** button
- Edit your button mode for each button
- Press save
- Repeat it for each page you need to configure its button



Mode	How to use	Where to use example	Function
Invalid	No use	When you have extra button that you don't need to use it	No function
Single OFF	Single Press	In room off mode to close the Light channel	To OFF Light or scene,
Single ON	Single Press	Usually used to trigger scene like visitor, meeting mode etc...	To run scene ON , or Lights on every time
Single ON/OFF	Single Press ON , Single Press OFF,	Widely use for ON/OFF light , scene by single press	The classical use of toggling of
Combination ON	Single Press	to Run complex mode that required more than 1 scene and mode by single press	To trigger up to 99 different commands every time
Combination OFF	Single Press	To OFF complex mode that required more than 1 scene and mode by single press	To OFF up to 99 commands every time the button
Combination ON/OFF	Single Press ON, Single Press OFF	To run ON and OFF complex mode that required more than 1 scene	toggling between ON/OFF up to 99
Separated Single	Press on the Right side ON, Left side OFF	Used to open close curtain, Lights,	To trigger single command ON/OFF
Separated Combination on	Press on the Right side ON 50 commands, Left side OFF other 50	Used to trigger different IR, as CH+,CH- , VOL+ , VOL-, curtain Open close , different IR codes triggering	To trigger 50 commands by pressing Right side, other 50 commands

Double fast click on the right button side to trigger double click function, Single Press ON, Single Press OFF, keep pressing Dim/ keep pressing Ramp	Used as extra function to trigger any other scenes on double click of the same button, like Double click can trigger ALL room off	To use the double click to run up to 49 commands while single press will toggle between ON/OFF of different commands	**Double click, single switch**
Double fast click on the right button side to trigger double click function, Single Press ON, Single Press OFF	Used as extra function to trigger any other scenes on double click and different one for single Press	To use the double click to run up to 49 commands while single press will toggle between 50 commands ON/OFF	**Double click, Combinati on switch**
Keep pressing to keep sending on command, On release the OFF command will trigger	Used for example in Bell, gate motor , some IR commands	To run 1 command as momentary pressing	**Momentary**
Keep pressing to go to Alarm setting, double click to Active and inactive	Used for remainders for meetings, or get up daily, or medicine remainders	To have clock alarm to run many commands on time	**Clock**

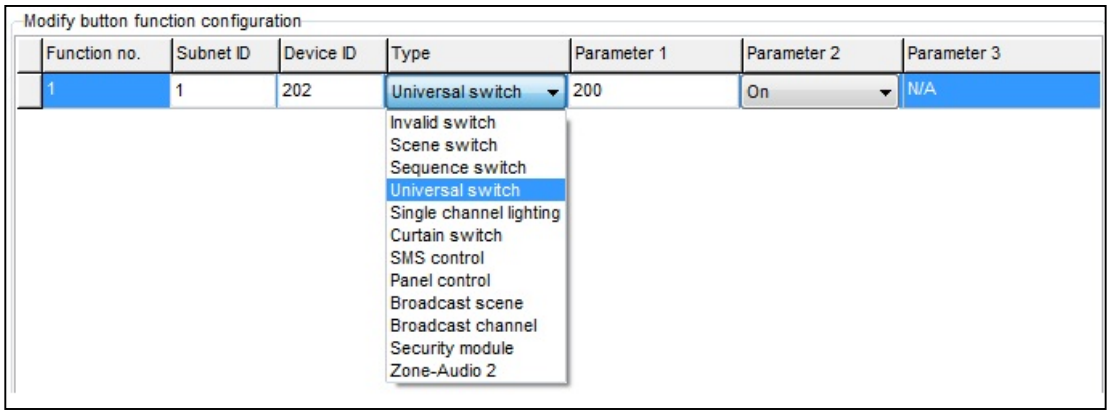
It is recommended using separated Mode always to send IR like TV CH +, CH - , or to open close the Curtain.

It is not recommended to use Separated Mode for Lighting Purpose, because the button is small and will confuse the user in darkness and in using; it is recommended to use the Single ON/OFF Mode for Lighting

3-5 DDP buttons function setting

For each button you can make different functions of different commands

- On the panel window go to **button assignation**
- Press on the **Function** button
- Press on type popup menu and you can select the function you want as you can see on the picture



- Press Save and Exit.

The Button Function of the DDP panel you can make is listed down on this table

Function type	Parameter 1	Parameter 2	Parameter 3
Invalid	N/A	N/A	N/A
Scene	Area	Scene Number	N/A
Sequence	Area	Sequence Number	N/A
Universal	Switch	ON / OFF	N/A
Single channel	Channel Number	Brightness 0-100%	Fade time 0S - 60 M
Curtain	Switch	Stop / ON/ OFF	N/A
GPRS	Message	Message SMS Number	N/A
Panel	IR Function	ON / OFF	N/A
Panel control	Lock key of	ON / OFF	N/A
Panel	AC Power	ON / OFF	N/A
Panel	Cooling	0-30 C , 32- 86F	N/A
Panel	FAN Speed	Auto/high/med/slow	N/A
Panel	AC Mode	Auto/Cooling/Heating/FAN	N/A
Panel	Heating	0-30 C , 32- 86F	N/A
Panel	Auto temp	0-30 C , 32- 86F	N/A
Panel	Rise temp	1-5 C/F	N/A
Panel	decrease	1-5 C/F	N/A

Panel	LCD Backlit	ON / OFF	N/A
Panel	Lock key of	ON/OFF	N/A
Broadcast	All Area	Scene Number	N/A
Broadcast Channel	ALL Channel	Brightness 0-100%	Fade time 0S - 60 M
Security	Area	Arming Mode	N/A

Each Function type is necessary for different Action

Example of each one as the table below

Example of using	Function Type
Is to disable the function	Invalid
Used to trigger the Scene that you create on the Dimmer or Relay Area	Scene Switch
Used To trigger the Sequence that you create on the Dimmer or relay Area	Sequence Switch
Used to send infrared code number, play show control list , set logic flag On or Off, set the hotel door bell services , disable or enable (Motion sensor, light intensity, zone port automation)	Universal Switch
Used to turn one channel lights on./off with special level and running fade time	Single channel Lights
Used to open, close or stop the curtain channel	Curtain Switch
Used to send SMS as alert, Help, Emergency , or information	GPRS Control
Used to turn the Air condition , ON/OFF	Panel control , AC Power
Used to set the Air condition cooling desired temperature to 0-30 C , 32- 86F	Panel control Cooling Temp
Used to set the Fan type between Auto, High , Medium , Low	Panel control FAN Speed
Used to set the AC mode to run as Auto, Cooling, Heating , Fan only	Panel control AC Mode
Used to set the Air condition heating desired temperature to 0-30 C , 32- 86F	Panel control Heating Temp
Used to set the Air condition Auto mode desired temperature to 0-30 C , 32- 86F	Panel control Auto temp
Used to Rise the Temperature by 1-5 C	Panel control Rise temp
Used to Lower the Temperature by 1-5 C	Panel control Decrease Temp
Used to set the Backlightof LCD ON / OFF	Panel control LCD Backlit
Used to Hold your AC, so no one can control it, or to lock other room AC. Like children room AC	Lock key of AC
Used to trigger same scene number for all the Areas of the dimmer or relay	Broadcast scene
Used to turn ON/OFF or set channel to brightness level for the all channel of Dimmer or relay	Broadcast Channel
Use to Arm your home in deferent level, like Vacation Away Night, or Disarm, also used to trigger panic , Fire, Emergency	Security Module

3-6 DDP Buttons Memory, Dimming, and LED Setting

Beside the Button mode and function there are three important setting for each button

We can categorize it as:

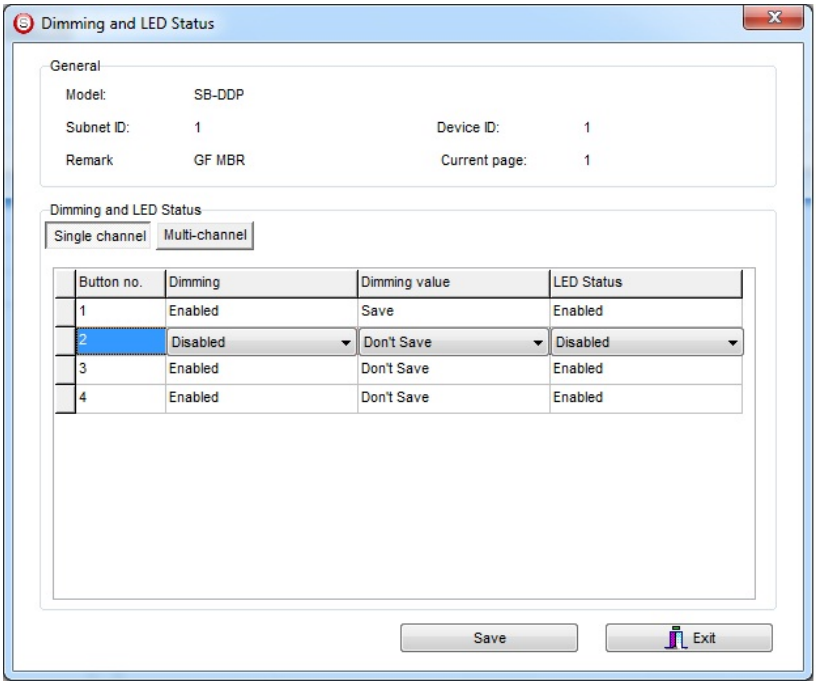
- **Save/Don't save:** the **Save** will save the last Dimming value, every time you switch ON the light channel it will go to the last lights brightness Level you set before switching it OFF, while the **Don't save** will turn the lights brightness to the maximum level and not save the last statues.

- **Dimming / not Dimming setting:** it is simple setting you can use **Enabled** when your target light is dimmable, while using **Disabled** when your target is not Dimmable Lights.

- **LED enable / Disable Setting**, you can enable your 2 way Button LED Statues, while in some situation you need always to disable the button LED.

How to make LED, Dimming, Memory/toggling setting

- Go to **Button assignation** tab on the panel setting
- Press on **Dimming and LED**
- Select the setting for each button you need



Always make the button diming setting Invalid if you control ON/OFF Relay channel, so the user will not confuse in dimming it without any response from the Channel.

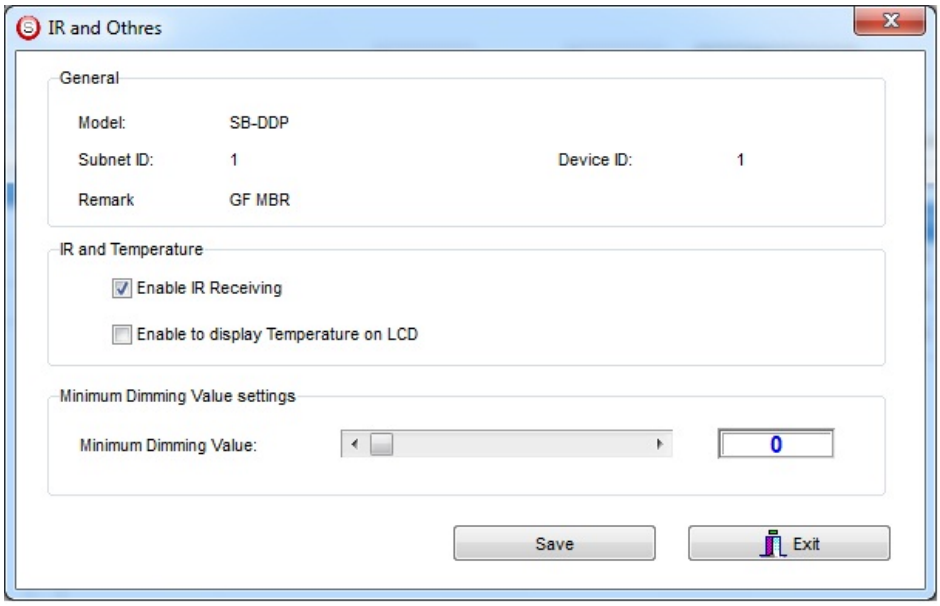
3-7 DDP Setup (Minimum Diming Value and Infrared)

Minimum Dimming value: is used to force the panel not to dim the light from the button by keep pressing it in order not to go below the minimum level of dimming

Infrared function: is used to enable or disable the IR receiving function on the panel,

To make the setting of the of the Minimum Level and IR setting

- Go to **Button Assignation** tab
- Press **IR AND OTHERS** button
- Adjust the Minimum Dimming Value from 0% - 50%
- Uncheck the **Infrared receiving** function to disable or check the box to enable it
- Uncheck the **Display Temp on LCD** function to disable or check the box to enable it



be careful when you make the Dimming function valid and Memory, sometimes the user will keep pressing on the button to dim the light to 7% Level and then he will turn it off and on by single press and the Light will change from 0% to 7%, then the user will think the lights is not working. To solve this problem use the minimum dimming value to prevent the user to dim less than the minimum dim level.

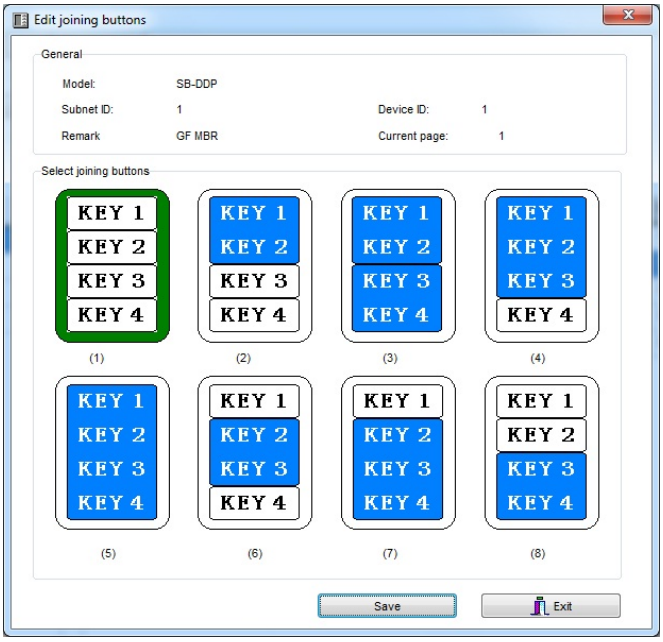
It is recommended always to set the minimum Dim level for all panels that control the Dimmers to 20% - 30%. .

3-8 DDP Combination Way

DDP Combination way is very useful for giant people whom have big Fingers, and old people who can't see the small buttons
You can combine two buttons or more to make it as one button

To make the combination in the Button Assignationtab

- Press on **Joining** button
- Select the way you want to combine your button
- Press **save.**



3-9 DDP Button Picture Edit and Download

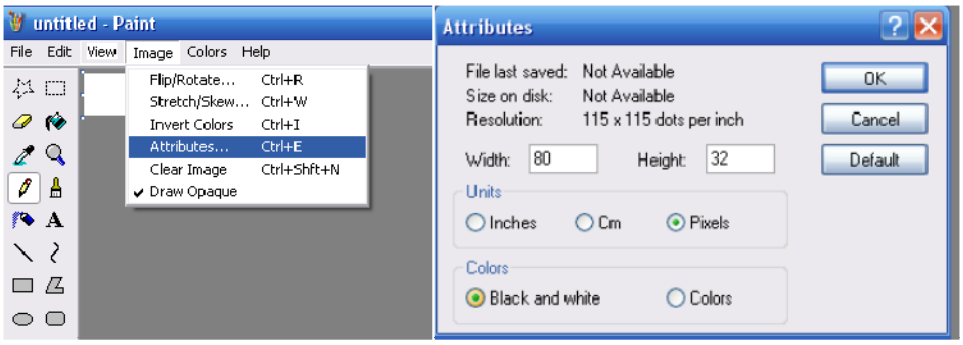
You can download bmp Format Picture for each button for both normal Statues and ON statues

To download the Picture

- In the Button Assignationtab select the page you want to download the picture to it from 1-4
- Press on **Pic downloads** button
- Select **Normal Statues or On Statues** for the Picture you want to download.
- **Double click** on the white square
- Brows where the Picture file you need to download then press **open**
- Press **download button** for this picture or you can select all the picture you need in this page then press **Download all in the current statues** button
- You can see the download bar running from 0-100%.

⚠ *You have to be careful for the size of the picture that is written near each button for example, Size W= 80, H= 32 , you can see deferent size you have depend on the combination way*

⚠ *All pictures should be black and white setting and bmp format, to do that in simple way go to windows paint program and set the Image/Attribute and set the Pixels size and the black and white setting then save your picture as bmp.*

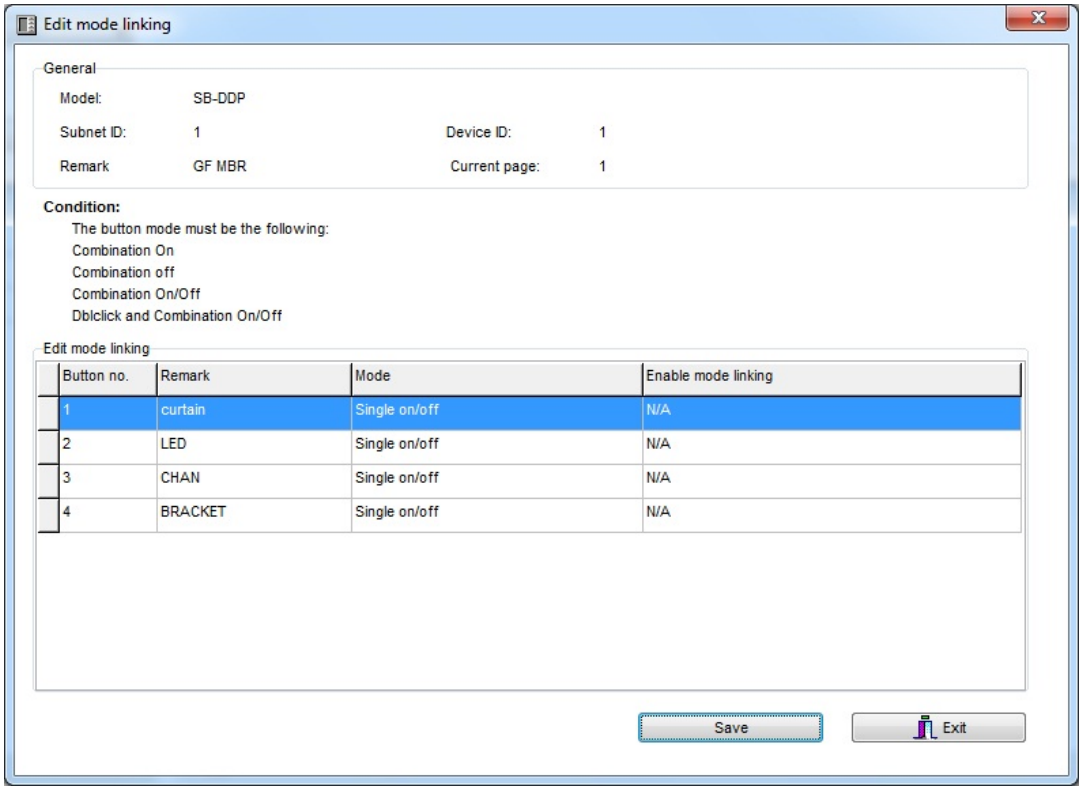


3-10 DDP Mutual Exclusion Function

Mutual Exclusion Function

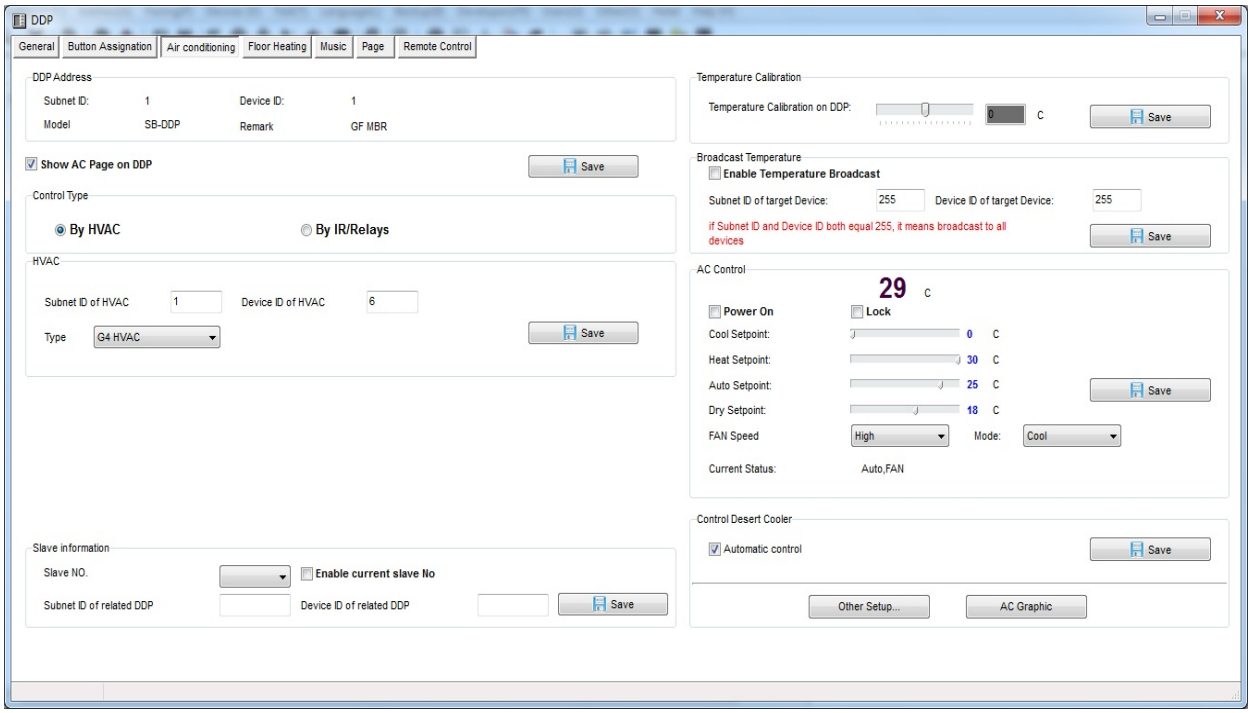
This function is used on switch panel to link between two or more combination ON/OFF button mode to consider them as 1 group, and to prevent the confusion of using 2 related macros scenes together.

- On the **Button Assignation** press on the **mode linking** button
- Set the value to **YES** for all the buttons of combination mode, or double click mode to be as 1 group together



3-11 DDP Air condition Basic Setting and testing

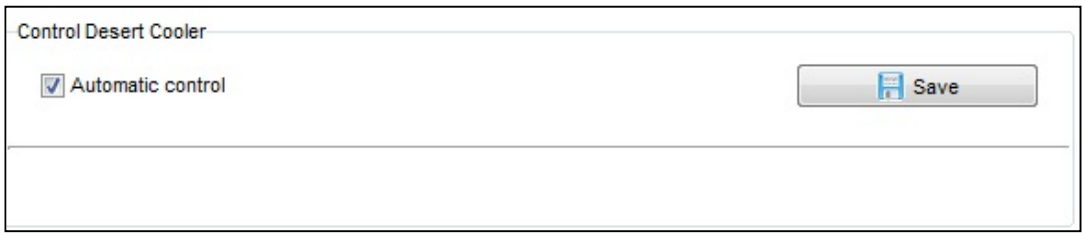
Go to Air condition tab, you can in this page enable or disable the AC function of the LCD DDP panel, and make all the other AC setting



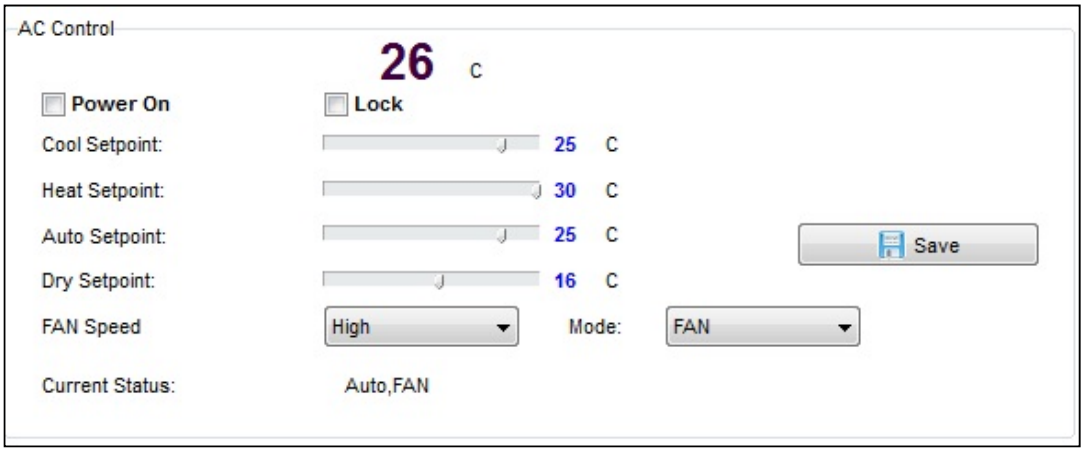
In the **basic information** of Air condition edit the Subnet and device ID for the HVAC Module that related to the panel room then press **save**

For Example if your HVAC Module address is subnet 1 , device ID 113 then type that in the Air condition panel setting and save

Also you must enable the DDP to control the normal HVAC module by activate the **Automatic Control**



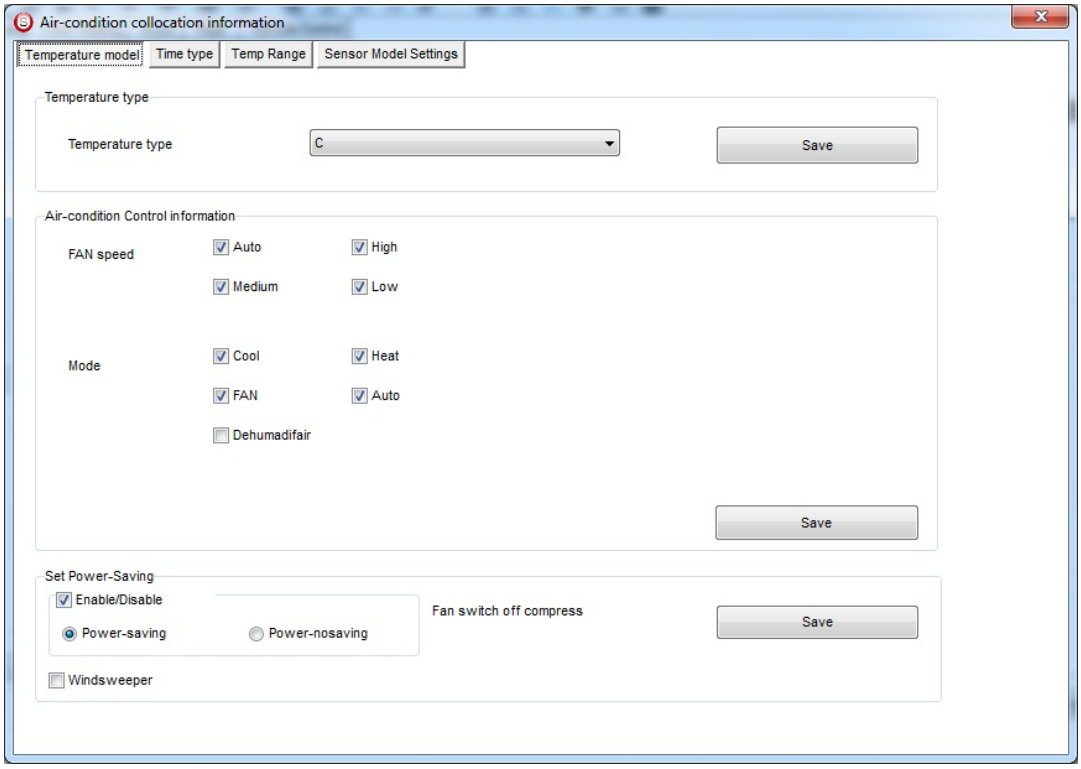
Also you can test your AC control in the **Ac control** section



3-12 DDP AC Page control Setup

On the Air condition tab press **other Setup** button

In the temperature Type you can change the function and display settings
Temperature Type: can be (C) Celsius or (F) Fahrenheit
AC control information: you can enable or disable the options of Fan speed

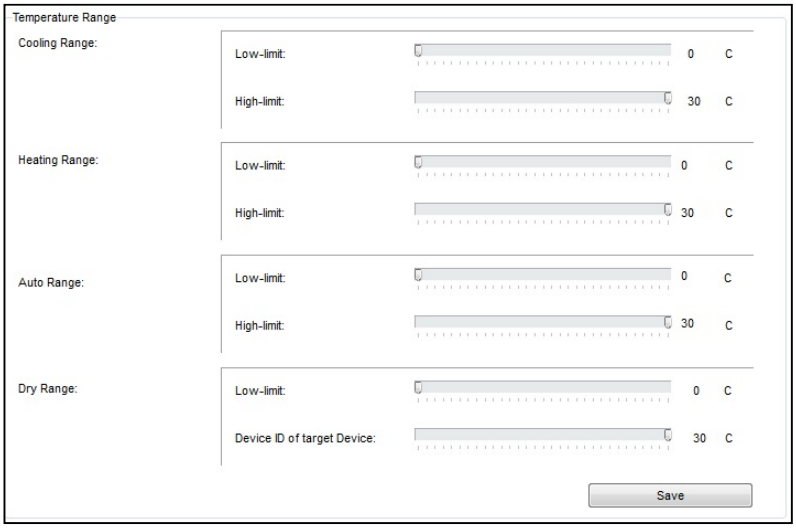


Like **High low Medium**, and Mode type like **cooling**, **fan, heating**, and **Auto**, to disable it to appear as option on the DDP panel

Power saving: if enable then the Fan will stop with the compressor when the room temperature become equal or below the desired temperature when FAN mode on Auto.

Time type you can set your time display format.

Temperature range you can set your higher and lower set point for each mode (cool, heat, Auto) so the user can not go above the higher limit, or below the lower limit.



It is recommended always to set the Limit for Cooling, heating and auto, so the user will not make the desired to freezing or very hot level for each mode and to prevent children to do so.

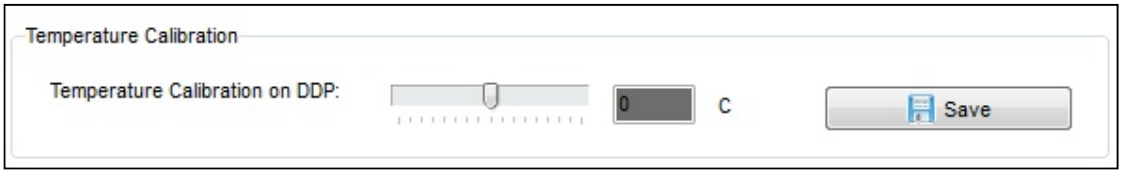
Sensor Model setting: to refer to the Indoor temp sensor (DDP temp sensor), Outside sensor (Pro HVAC temp sensor). Or Average between both sensors

3-13 DDP Temp Calibration and Lock function

You can Calibrate your DDP temp sensor to give you exact room temperature, for example: sometimes the DDP installed in place where the sun striking it or near heat or cold source, or if the temperature near the wall is not as the temp in the room, then you have to adjust the temp sensor level to be as the reasonable room temperature where the people set or sleep

To do that

- Go to **Air-condition tab** then go to **temperature calibration** section, you can adjust it (-8 to +8 degree).
- Press **save**



Another function is to lock the AC page, you need this function in public area that no need for user to play with Air-condition and the whole control will be centralized from the Automation controller

- Go to **AC control** section, and enable the **Lock** or disable it
- Press **save**

3-14 DDP Slave to other DDP AC setting

One of the unique functions of the DDP is that can control up to 8 other AC Of other panel.

To set the AC Panel slave on the Air condition tab

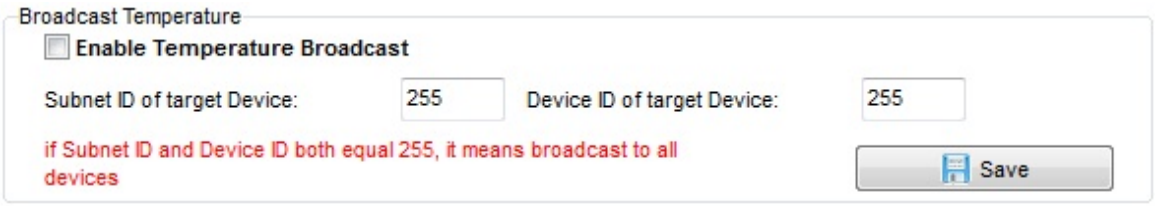
- go to **slave information** section
- Select **Slave NO** from 1-8
- Type the slave DDP **Subnet , and Device ID** no
- check **Enable**
- Press **save**
- Do the same steps for the other slaves up to 8

To navigate between slaves AC, on the DDP panel when you are in the AC Page5, go back by Arrow back then you will see the slave AC, press Arrow back again to see more slave AC

3-15 DDP Broadcast Function

This function is important to update the others Devices in the network about the current room temperature
It is useful for Automation and BMS system

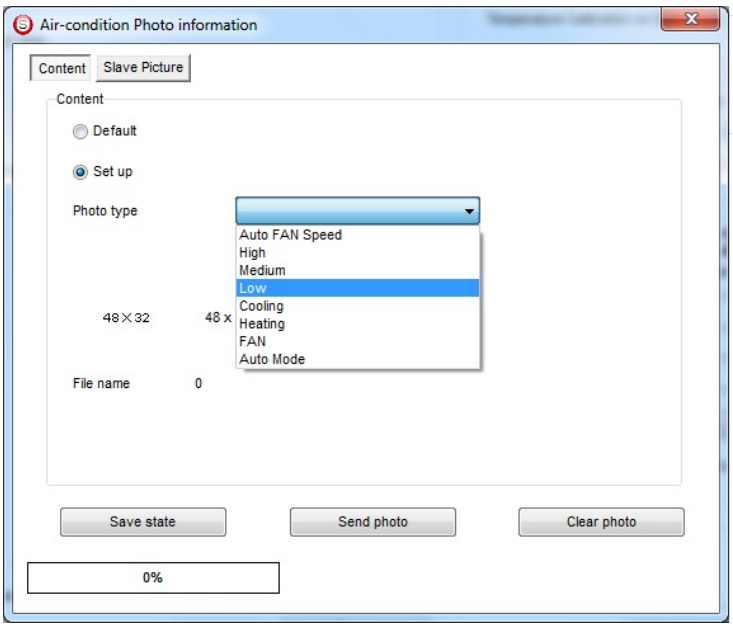
Setting broadcast temp to subnet 255, device ID 255 will update all the devices in the Network



3-16 DDP AC Graphic setting

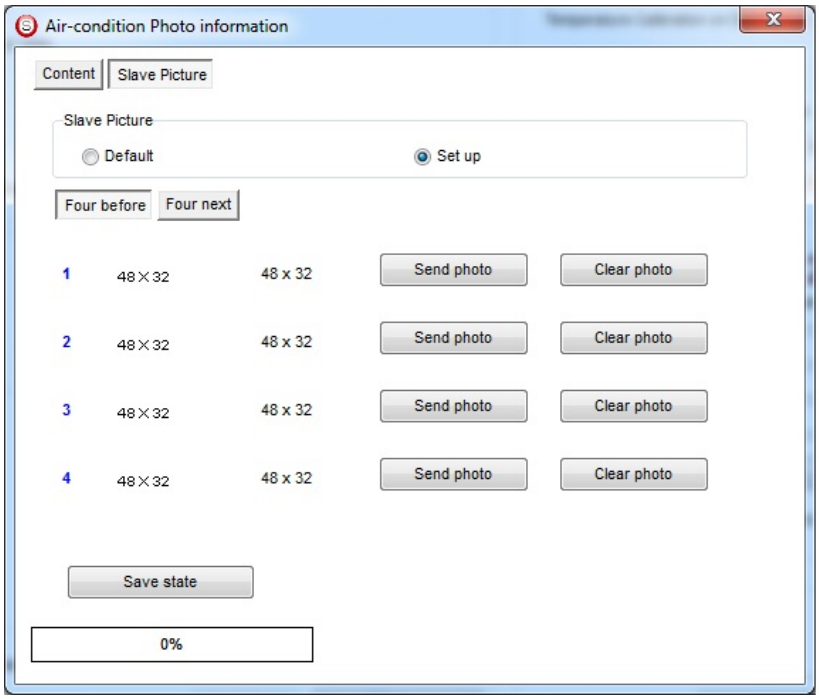
In the AC Graphic you can put new Icon for cooling, Heating, Fan, also you can change the English text to any language by downloading bmp file, and to put Room names Picture for all the 8 slaves AC

- Press on the **AC Graphic** button
- In the Content tab you can keep your icon as a default or change it by set up option
- Select the **photo type** and press on the picture
- Brows and open the bmp picture you want picture should be 48 *32 pixel size
- Press **send photo** button to download the picture
- Press **save statues**



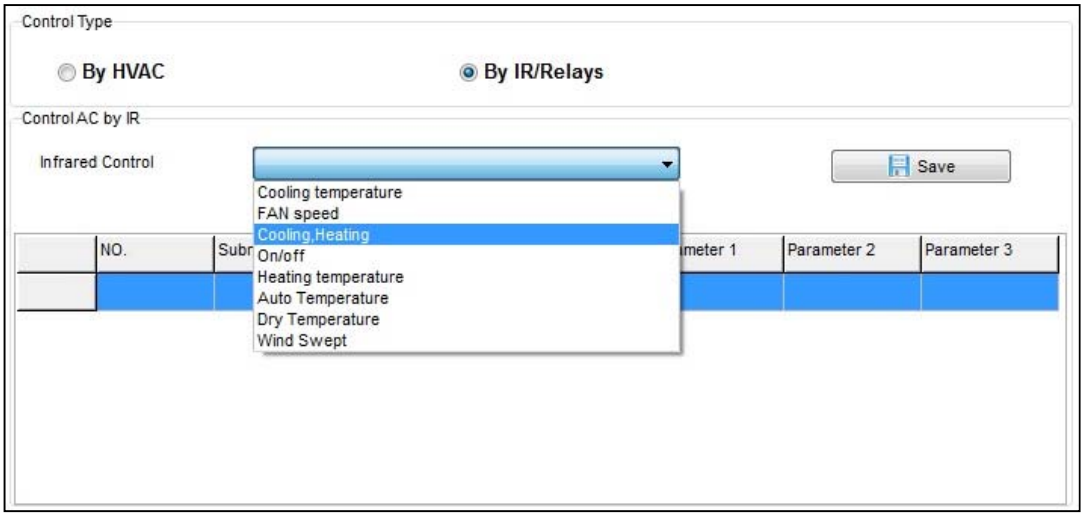
Also you can put picture for the room for the 1-8 AC slave control

- Go to slave Picture
- Select set up
- Select the tab of 1-4 slave and the other tab for 5-8 rooms picture
- Brows the picture and press on send photo picture to upload it.
- Press **save states**



3-17 DDP Infrared Function overviews.

Also you can use the AC Page to send different Infrared command to control your split AC, or any new models of dry contact



4- Relays and Dimmers Programming

Relays and Dimmers are the main modules for every lighting control system, the Leading Edge Dimmer, and smart relay save 30-70% of your lighting Energy consumption.

4-1 Relays and Dimmers type overview

S-bus Dimmers and Relay have many types that you can install in any project

1- Dimmers

- DIN-Rail Mount Dimmer 2ch 6A
- DIN-Rail Mount Dimmer 4ch 3A
- DIN-Rail Mount Dimmer 6ch 2A
- DIN-Rail Mount Dimmer 8ch ~ 1.5A
- DIN-Rail Mount Dimmer 12ch 1A

2- Relay ON/OFF controller

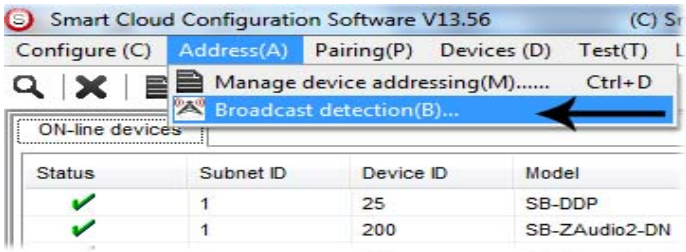
- DIN-Rail Mount, Relay Module 3CH, 1A
- DIN-Rail Mount, Relay Module 4CH, 20A
- DIN-Rail Mount, Relay Module 4CH, 16A
- DIN-Rail Mount, Relay Module 6CH, 16A
- DIN-Rail Mount, Relay Module 8CH, 10A
- DIN-Rail Mount, Relay Module 12CH, 10A

4-2 Setting Relay and Dimmers Address

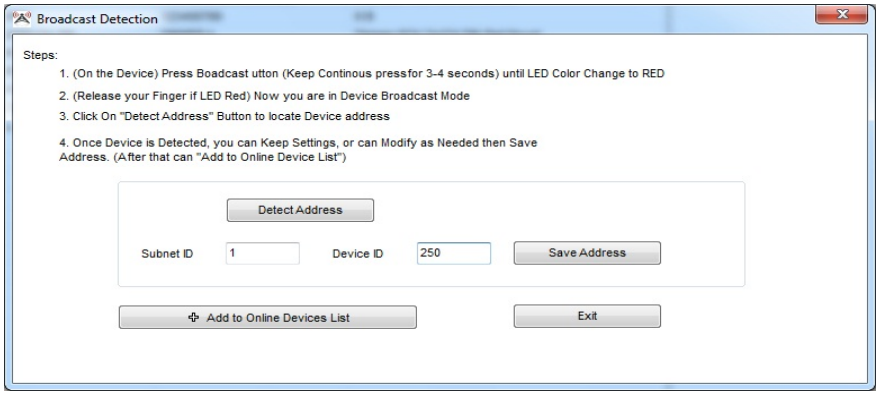
When you install the Dimmer or relay first time, it takes default address as Subnet ID 1, Device ID 6. To change the address and check the communication you should use the *Broadcast Address Device Search as you see in the section 2-5 before)*

Every Din rail Module have Broadcast button as you can see in this Picture

- On your software Click **Address**



- Go to your device like Dimmer or Relay then keep pressing the broadcast Address button for 3-4 seconds until LED color change to RED.
- In your software in the Broadcast Detection window click the **Detect Address** Button.

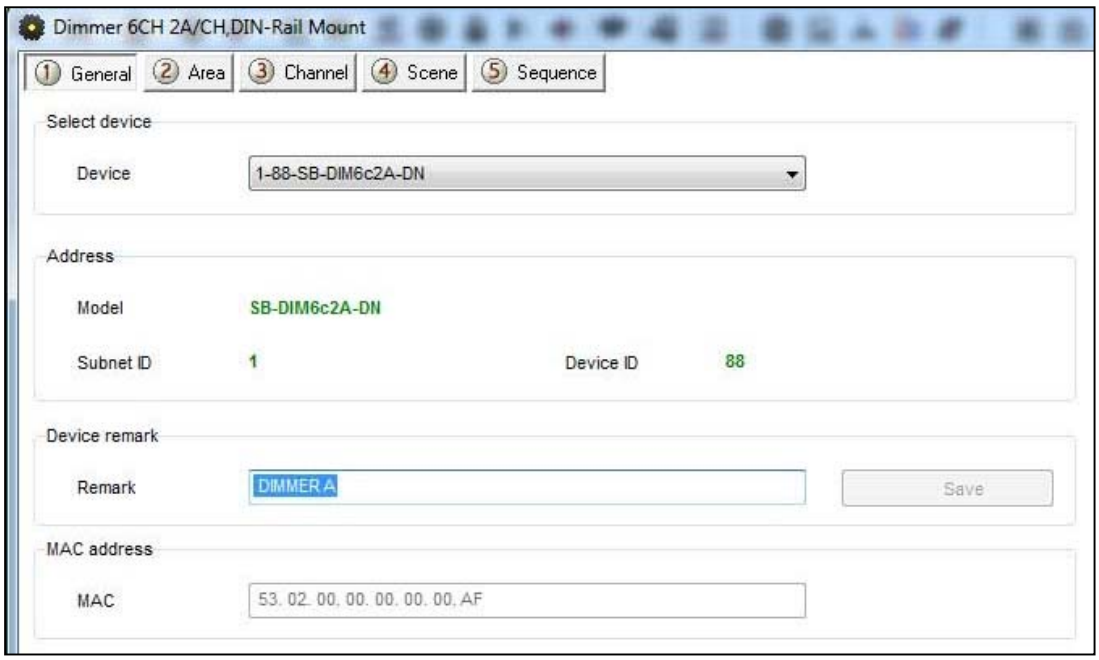


- Your Device ID and Subnet well appear Automatically
- To change the address just type the new subnet ID or device ID you want, then click **Save Address**
- Click **Add to Online Devices list** to load your device in the Devices Network List.
- Click **Exit** to Close the Window

4-3 Channels search and Remarks

After you finish editing the initial Address for each Dimmer and Relay, Search for all Modules in the network using the Advanced Search, after that you can start giving different Name in the remarks for each Module.

- Double click on the Module that you see on the List after searching to open it for editing
- In the Remarks field type the name of the Module
- Click save after you type the name



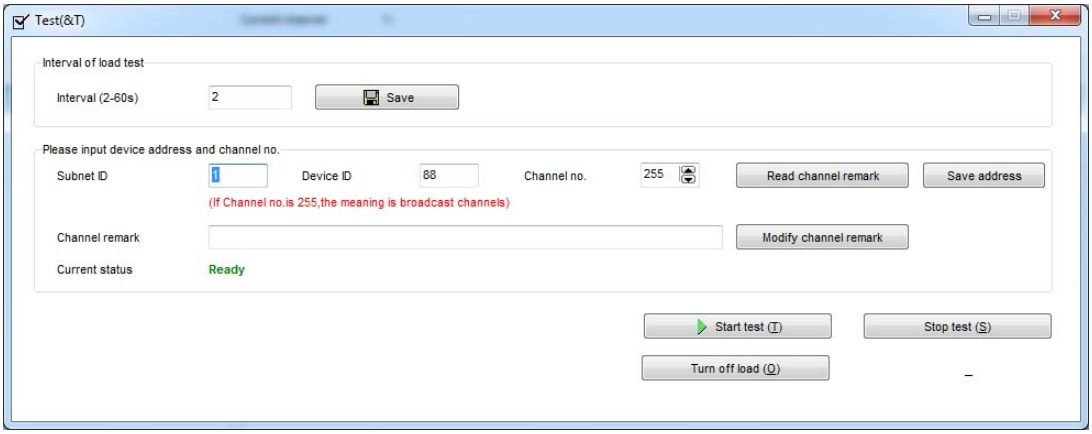
Without giving name to the Dimmers or Relays in your Project, the program will be hard for any programmer to understand, troubleshoot, and enhance the program in the future; name and remarks always will help every programmer to do the programming

Always Give the Dimmers and Relay name that refer to its Location, for example if the Dimmer install in the floor 10 Apartment 20 then you can give it name for example DIM-10-20-A the next Dimmer in the same apartment can be DIM-10-20-B and so on and sticker Labeling can be stick on the dimmer Module itself with the same name

Testing Channels online:

After we gave Address and name to the Dimmer, now we must test it channel and gave it name.

- In your software Menu go to **Test**
- set the Interval of seconds that will be flash the Light channel ON/OFF within this time (2 seconds is Default) after Editing it Click Save
- Edit the Subnet ID, Device ID of your Dimmer or Relay and Its Light Channel you want to test then click save

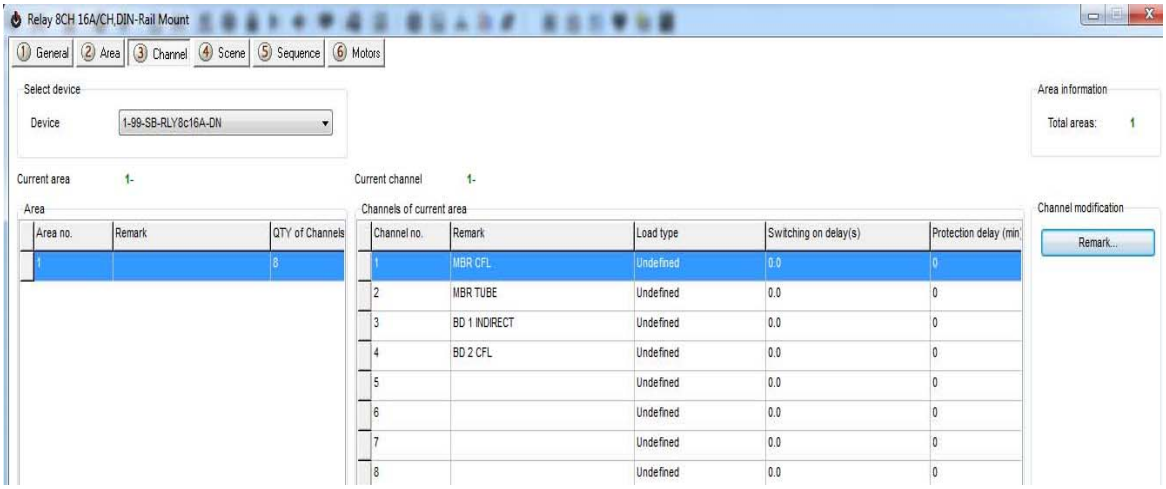


- Click start test button, than light icon will start Flashing ON/OFF
- Go to the channel light in your project that connect to this channel and see if the light is flashing or not.
- If the light channel is flashing ON/OFF that mean your connection is fine, then you can click stop test.
- Give the name of this Light channel in the channel remarks field then click save
- Go for the next light channel test, click save and follow the same steps for each module channels in your project.

Channel Remarks is very important for any programming, Programmer should edit all the remarks in simple and clear way to refer to the lights Channel name.

4-4 Relay Channels Setting

Relay channel setting will allow you to edit the channel remarks in faster way if you have the List of your connected channels on your relay before testing it, also you can edit for each channel the load type remarks, Switch On Delay (Seconds), and Protection ON Delay (Minutes)



Double click on any relay Module on the List the relay setting window will appear go to the Channel tab, and start editing

Channel Remarks: it is another fast way to type your channels of your module in simple way.

Load type: to edit every channel load type as reference remarks

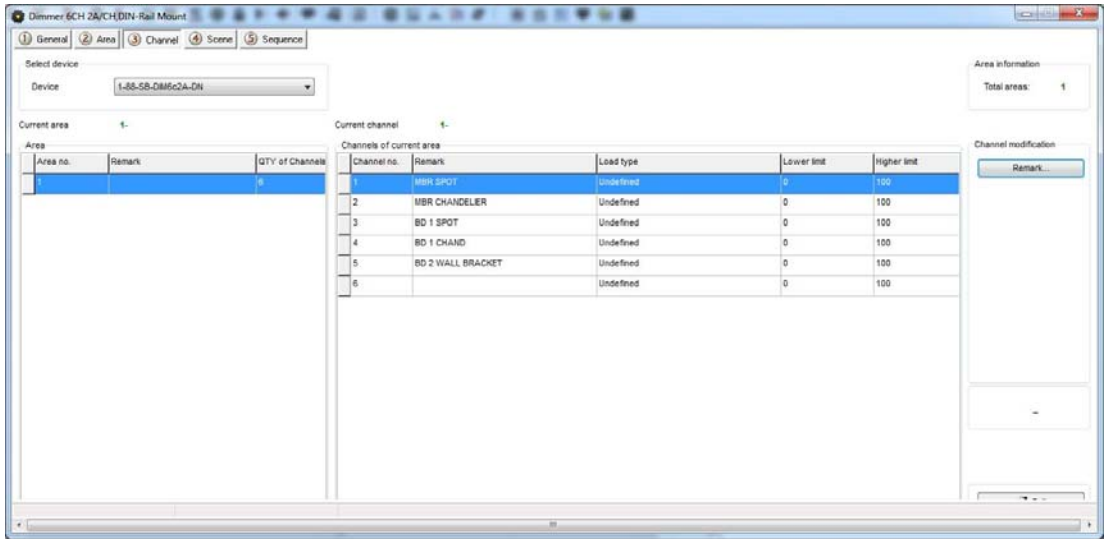
Switching On Delay: for industry and some motors connection needs to delay the Relay to be ON from (0 to 25 seconds) for each channel

Protection Delay: is used for industry use mainly and some heavy duty Machines for safety ON by long time delay range from (0 – 60 Minutes)

4-5 Dimmer Channel Setting

In the Dimmer channel setting you can edit your Dimmer Lighting channel Remarks, Load type remarks, Lower Limit, Higher Limit.

Double click on any Dimmer Module on the List then the Dimmer setting window will appear go to the Channel tab, and start editing



Channel Remarks: it is another fast way to type your channels of your module in simple way.
Load type: to edit every channel load type as reference remarks
Lower Limit: in this setting you can sit the lower Limit that you can dim to, beyond this level the Light will turn off totally.

Lower Limit Option is useful when you connect a florescent Light that can't be dimmable to Dimmer module channel and you don't want it to be flickering when low voltage supply the florescent

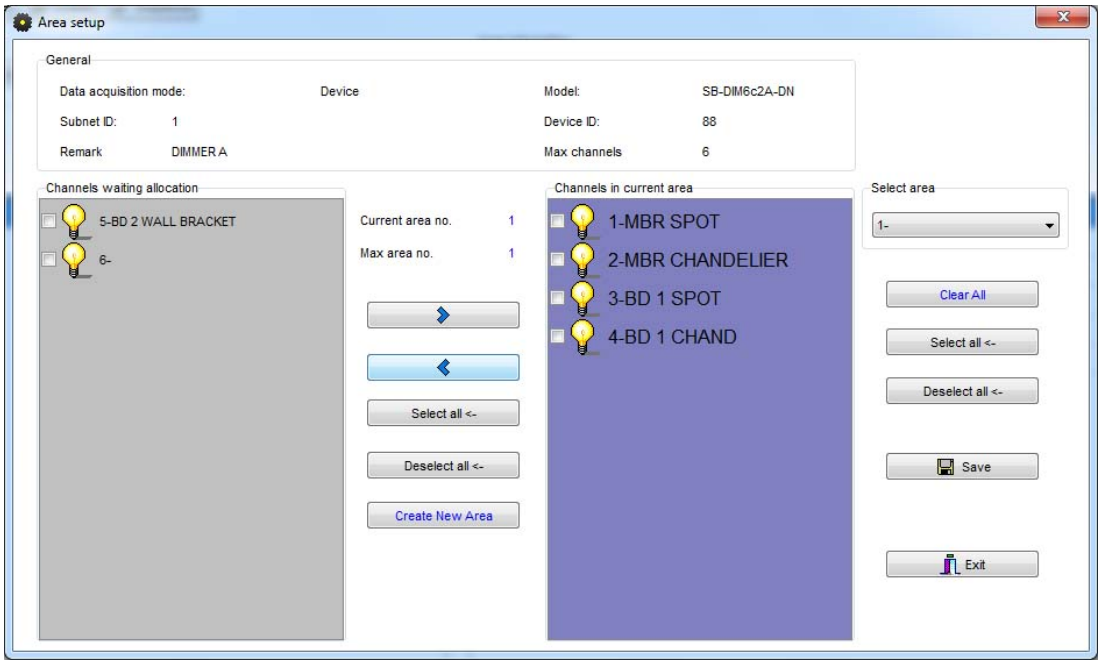
if you don't want the florescent light to be ON while you make diming with fade time for all your channels than you can set the channel Lower Limit as 90% if connected to florescent or not dimmable light

Higher Limit: in this setting you can sit the Higher Limit that you can Ramp to, Beyond this level the Light will turn ON to the maximum level.

4-6 Area Setting

In the Area setting you will divide your dimmer or Relay channels to different Area according to your project installation, each Area will have its scenes and sequences.
For example: if you have an apartment of 2 bed rooms, all its channels connected to the same dimmer, that mean you can divide the dimmer channels into 2 areas , type name for each area and later you can set the scenes and sequences of each Area separately.

- Double click on any Dimmer or relay on the List
- Got to **Area** Tab
- Click **Area Setup**
- By default all channels is included in Area 1, Remove the channel that not belong to this area by checking them and click the **Left Arrow**.

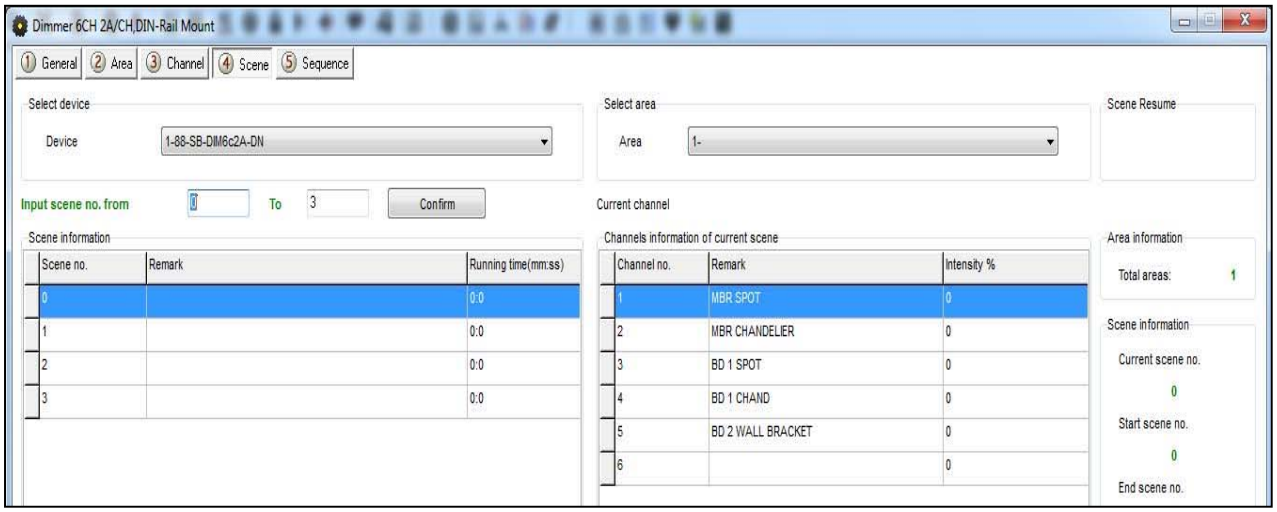


- Click **Create Area** to Add new Area
- Insert the remaining channels on this Area by pressing the **Right Arrow**
- When you create all you Area and assign Channels to it, Click **Save** and Click **Exit** to close your Area Setting
- Click **Area Remarks** and edit your Area names, then Click **Save** then **Exit**.

4-7 Scene Setting

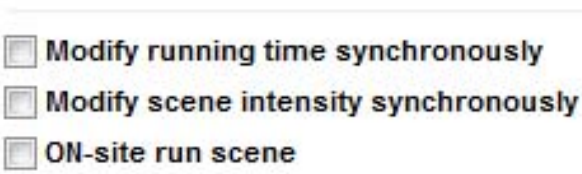
After you complete your Area setting, then you can assign Different Scenes for Each Area you create

- Click on the **scene** tab
- **Select the Area** on the select Area section
- Input the scene number you want to edit From … To then click **confirm**
- Click **scene setup** to edit your scenes



- Edit the scene by modifying the output brightness and then click the next scene on the right list to edit it.
- Edit the scene running fade time on Minutes and seconds
- After you finish editing your scenes, click **save** and **exit**.
- Click **Remarks** to give the hint name for your scenes, click **save** and **exit**

You have many tools to help you editing the scenes



- **Modify Running time Synchronously** to apply the change effect for all the scenes running time together
- **Modify scene intensity Synchronously**, to modify all channels output level together
- **On-site Output scene**, to see the effect Live on your room before saving the scene.

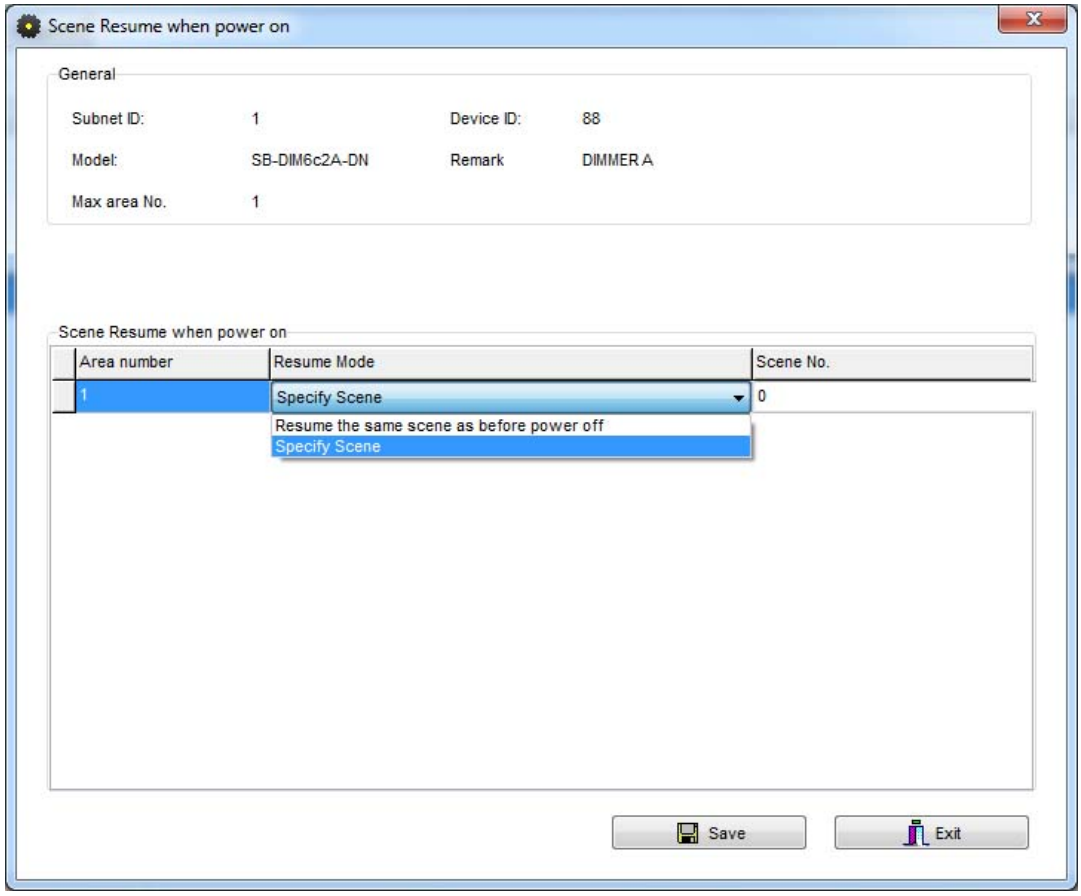
Creating Area and scenes in the Modules is recommended for faster respond that control many channels in the same command.

Every area has Scene 0 and it is not modifiable, and always Pre-Programmed as scene Off that set all the channels Lights of the area to 0%.

4-8 Scene Resume

This setting is very important for the dimmer in case of Power failure.
The scene restore is the specified scene that the dimmer module will run it once the Power restore after the electricity down.

- Click **scene** tab then click on scene Resume
- Select one of 2 options,
- **1- Resume the same scene before power off,**
- **2- specify scene**



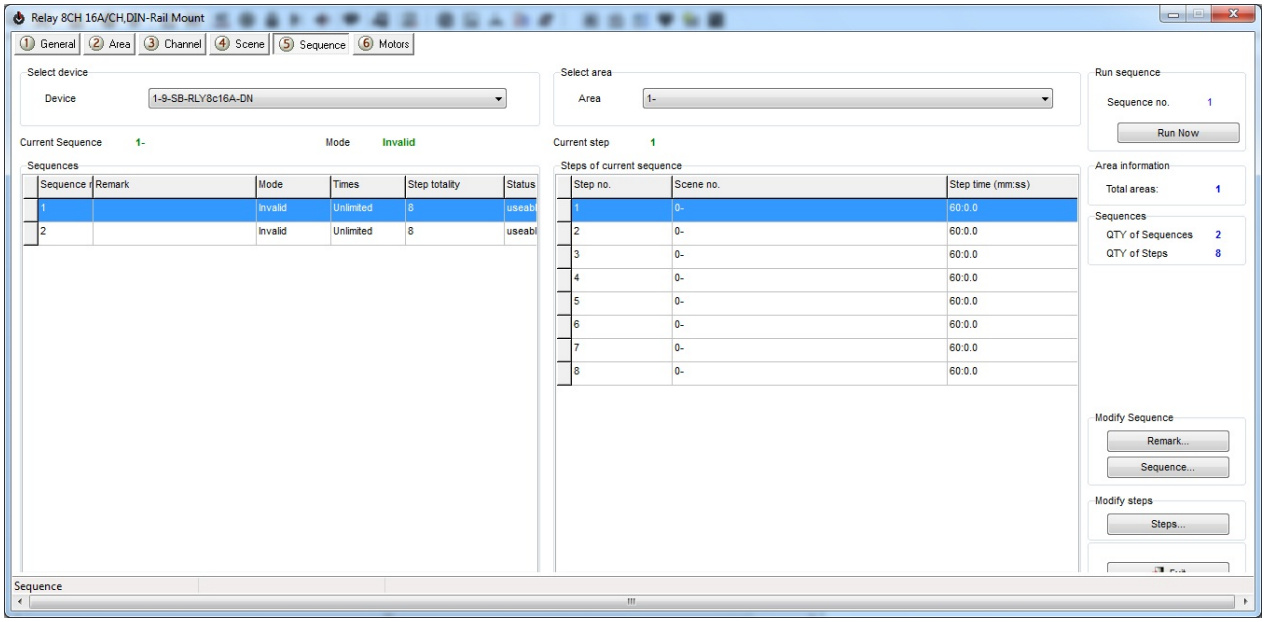
- Remember Scene **0** it mean all Lights on the Area will be OFF when the Power restores.

Restore to scene 0 is useful for many applications to save the Electrical parts when the power came in higher load from the main usually.

4-9 Sequence Setting

Sequence setting is used to make Lights show and some other needed application in industry, security and others.

- Click on the Sequence tap



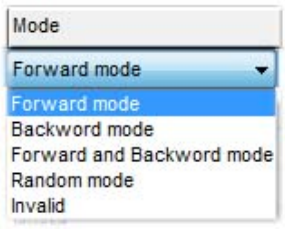
- Click on **sequence** Button to edit the sequence
- Select the mode you want

  Invalid: not used

  Random: well run the sequence scenes in random way **Forward, and backward:** will run the scenes from first scene to last one then from last to first

  Backward: will run the sequence scene from last to first

  Forward: will run the sequence scene from first to Last

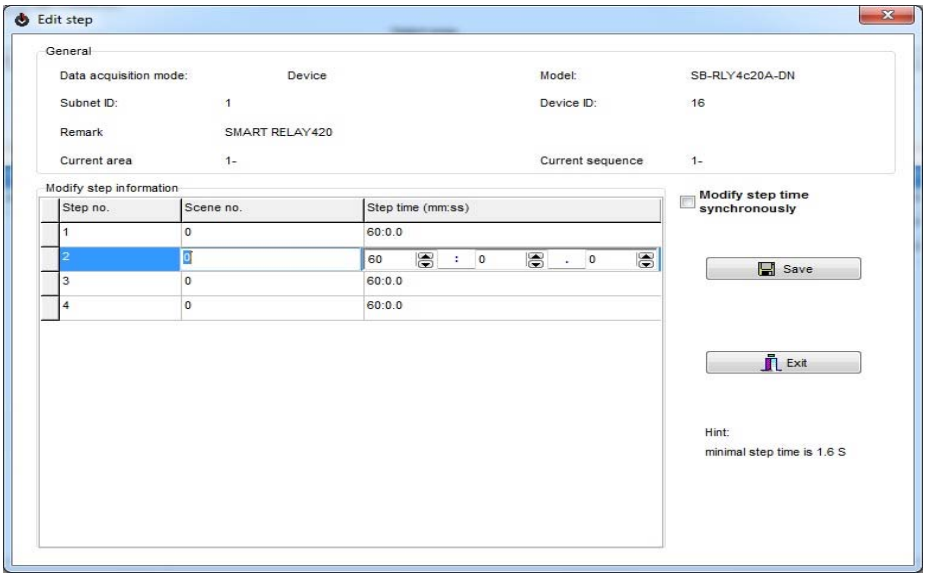


  Times: the sequence can be **Unlimited** forever running, or will run from 1 time to 99 times.

  Step totally: is the sequence scenes steps number that

want to be include it in the Sequence

- After you finish editing your sequence setting, Click **save** and **exit**.



- Click Remarks to edit your Sequence name
- Click **Steps** to edit your sequence steps
- Edit your **scene number** in each step
- Edit your step time **interval on** Minutes, seconds and part of seconds
- Click **Save** and **exit**

⚠ Relay Module that support the sequence like SB-DN-R0816 and

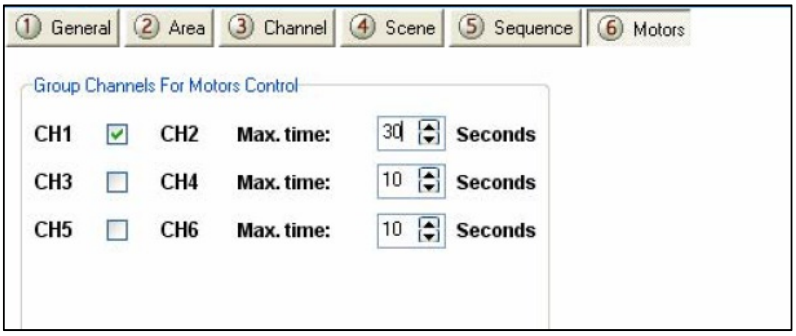
4-10 Motor Setting

1. Version Needed

Firmware version of relays: V2.17 or above
Smart-Cloud configuration software version: V13.61 or above

2. Motor Max. Time Settings

Max. Time is the time that motor fully open or close



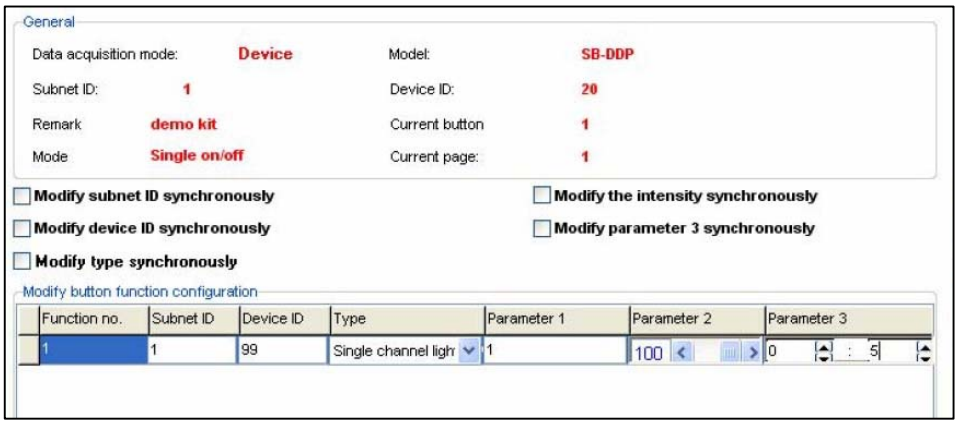
3. Running time

Command Type: Single Channel Control

Parameter 1: it's the channel No

Parameter 2: it's always be 100 Parameter 3: it is running time of motor, the scope of running time is 0 ~ MAX. Time

If running time equal 0, it means MAX. time. If you set the running time 5 seconds, the motor will run only 5 seconds then stop.



5- Panel Switch Programming (6/4/2 gang)

5-1 Panel Switch Type Overview

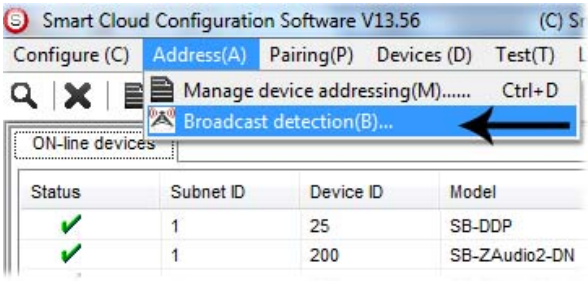
The Switch panel in the wall is your interface to control your lights, curtain and other application
The S-bus button switch panels have many types, including the 6 button panel, 4 button panel. 3 buttons panel, 2 buttons panel, and 1 button panel.

5-2 Panel Switch Address and basic setting

To change the address and check the communication you should use the *Broadcast Address Device Search as you see in the section 2-5 before) Every Switch Panel has broadcast button inside it*

Just click first button and keep pressing until red color coming.

- On your software Click **Address**

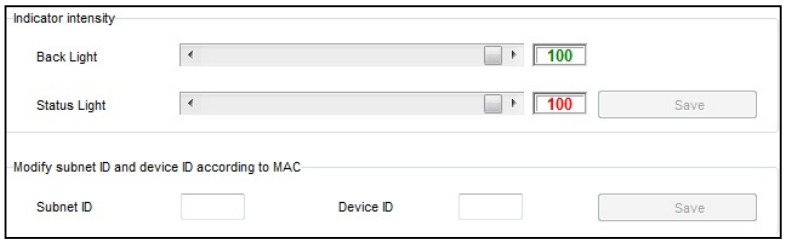


- On your Panel keep pressing the broadcast Address button for 4-5 seconds until LED turn ON
- In your software in the set broadcast detection window press the **Detect Address**
- Your Device ID and Subnet well appear Automatically

- To change the address just type the new subnet ID or device ID you want then press **Save Address**
- Press **ADD** to load your device in the Devices Network List
- Press **Exit** to Close the Window

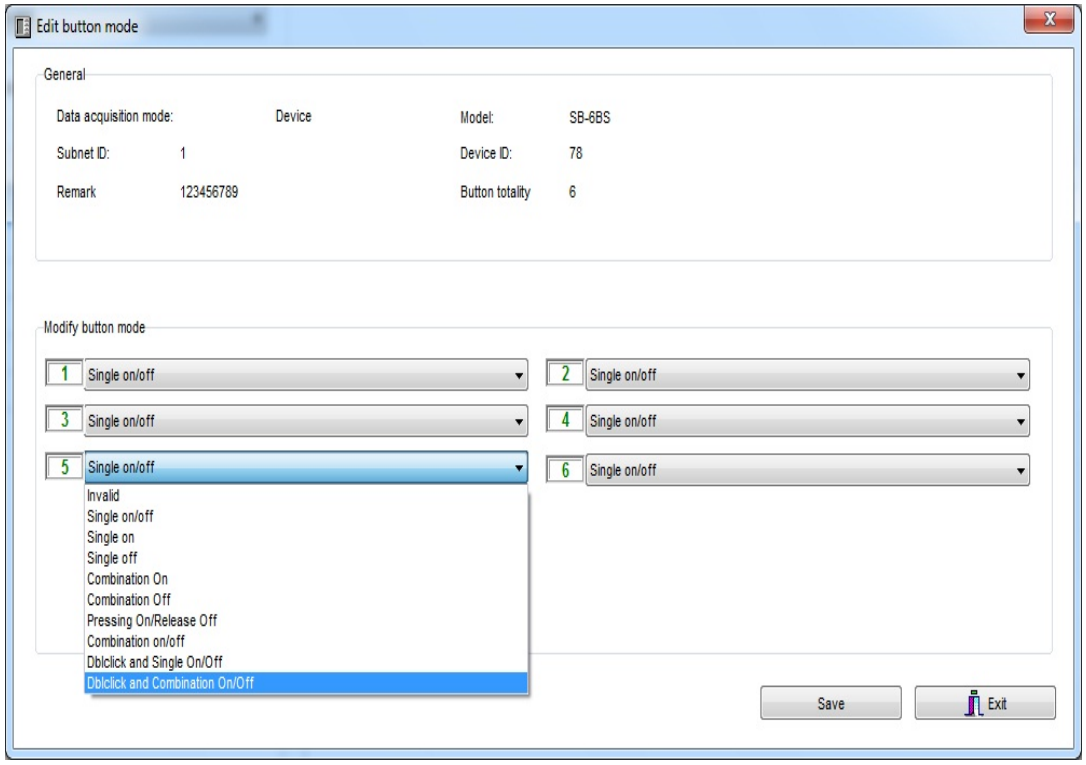
After you load the Panel to the network, double click on it.

- In the basic setting you can type the panel name **remarks**, change its address subnet, and device ID
- Also you can change the **Backlight** brightness and **LED** indicator brightness of the Buttons



5-3 Panel Switch button Remarks and Modes

When we go to the Panel setting tab we will see all the buttons listed on the screen, by pressing the **mode** button we can change the Button function as you can see on this picture



Panel Switch Button Mode Setting

How to use	Where to use example	Function	Mode
No use	When you have extra button that you don't need to use it	No function	**Invalid**
Single Press	In room off mode to close the Light channel	To OFF Light or scene, every time you press it	**Single OFF**
Single Press	Usually used to trigger scene like visitor, meeting mode etc..	To run scene ON , or Lights on every time you press	**Single ON**
Single Press ON , Single Press OFF, keep pressing Dim/ keep pressing Ramp	Widely use for ON/OFF light , scene by single press	The classical use of toggling of single press ON/OFF	**Single ON/OFF**
Single Press	to Run complex mode that required more than 1 scene and mode by single press	To trigger up to 99 different commands every time the button pressed	**Combination ON**
Single Press	To OFF complex mode that required more than 1 scene and mode by single press	To OFF up to 99 commands every time the button pressed	**Combination OFF**
Single Press ON commands, Single Press OFF commands	To run ON and OFF complex mode that required more than 1 scene and mode by single press	To trigger up to 99 commands toggling between ON/OFF each time the button pressed	**Combination ON/OFF**
Double fast click on the right button side to trigger double click function, Single Press ON, Single Press OFF, keep pressing Dim/ keep pressing Ramp	Used as extra function to trigger any other scenes on double click of the same button, like Double click can trigger ALL room off	To use the double click to run up to 49 commands while single press will toggle between ON/OFF of different commands	**Double click, single switch**

Double fast click on the right button side to trigger double click function, Single Press ON, Single Press OFF	Used as extra function to trigger any other scenes on double click and different one for single Press	To use the double click to run up to 49 commands while single press will toggle between 50 commands ON/OFF	**Double click, Combination switch**
Keep pressing to keep sending on command, On release the OFF command will trigger	Used for example in Bell, gate motor , some IR commands	To run 1 command as momentary pressing	**Pressing on release off**

- To edit Button Remarks press **Remark** edit then **Save** and **Exit**

be careful when using Combination mode, the button will not have 2 way feedback statues , then the panel LED cannot be updated if the lights channel ON or OFF from other devices.

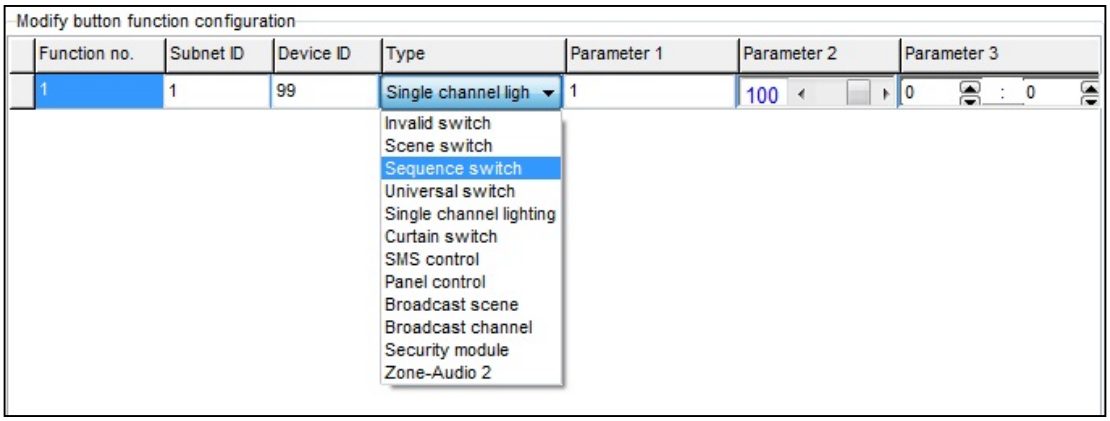
Try always to use Single ON/OFF, cause its 2 way updated and simple friendly use for the end user.

5-4 Panel Switch button Function settings

For each button you can make different functions of different commands

(Reference to the Magic Line 2-5)

- On the panel window go to key assignment
- Press on the Function button
- Press on type popup menu and you can select the function you want as you can see on the picture



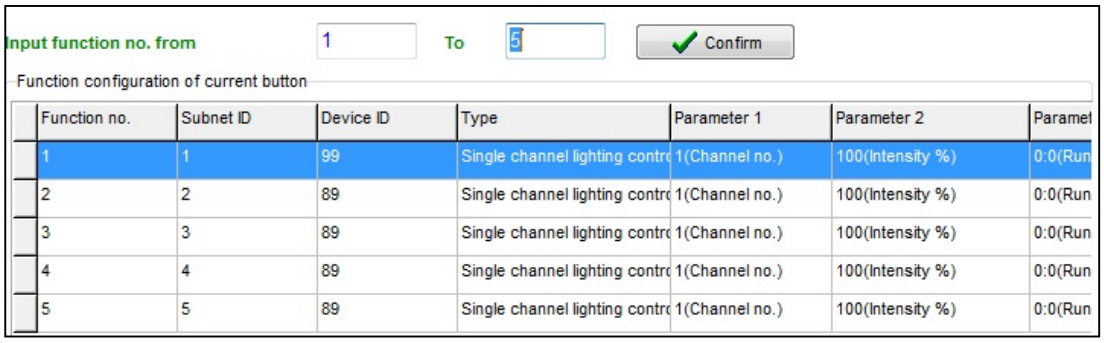
- Press Save and Exit.

Each Function type is necessary for different Action

Example of each one as the table below

Example of using	Function Type
Is to disable the function	Invalid
Used to trigger the Scene that you create on the Dimmer or Relay Area	Scene Switch
Used To trigger the Sequence that you create on the Dimmer or relay Area	Sequence Switch
Used to send infrared code number, play show control list , set logic flag On or Off, set the hotel door bell services , disable or enable (Motion sensor, light intensity, zone port automation)	Universal Switch
Used to turn one channel lights on./off with special level and running fade time	Single channel Lights
Used to open, close or stop the curtain channel	Curtain Switch
Used to turn the Air condition , ON/OFF	Panel control , AC Power
Used to set the Air condition cooling desired temperature to 0-30 C , 32- 86F	Panel control Cooling Temp
Used to set the Fan type between Auto, High , Medium , Low	Panel control FAN Speed
Used to set the AC mode to run as Auto, Cooling, Heating , Fan only	Panel control AC Mode
Used to set the Air condition heating desired temperature to 0-30 C , 32- 86F	Panel control Heating Temp
Used to set the Air condition Auto mode desired temperature to 0-30 C , 32- 86F	Panel control Auto temp
Used to Rise the Temperature by 1-5 C	Panel control Up temp
Used to Lower the Temperature by 1-5 C	Panel control Down Temp
Used to set the Backlightof LCD ON / OFF	Panel control LCD Backlit
Used to trigger same scene number for all the Areas of the dimmer or relay	Broadcast scene
Used to turn ON/OFF or set channel to brightness level for the all channel of Dimmer or relay	Broadcast Channel

*When choosing **Combination or double click** mode you have to input the function target number **from … to** then press **confirm***



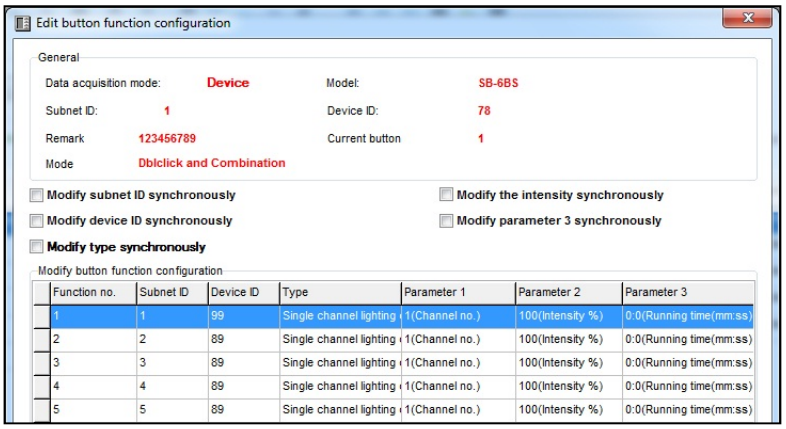
*When using **double click / Combination** you can change between each function setting in the radio log as the picture below*

Double click always will save the commands from 51 to 99, be careful when you change the button mode from double click to Combination mode
only then the old setting of commands from 51 to 99 will remain Active.

*Try always to refresh the page, to make sure not old wrong setting appears on the page, to refresh the page press right click on the mouse then press on **Refresh (Clear buffer memory, reread data from device)***

Useful tools for editing your Functions

There are some useful tools to help you while you are making setting for multi functions together like the one in Combination and double click mode



Modify Subnet ID synchronously: to modify all subnet ID together and save the time of editing each one alone
Modify Device ID synchronously: to modify all Device ID together and save the time of editing each one alone
Modify type synchronously: to modify all function type together and save the time of editing each one alone
Modify the intensity synchronously: to modify all Level brightness intensity together and save the time of editing each one alone
Modify parameter 3 synchronously: to modify all the parameter 3 together and save the time of editing each one alone which is depend on the type.

5-5 Panel Switch button Memory, Dimming, and LED Setting

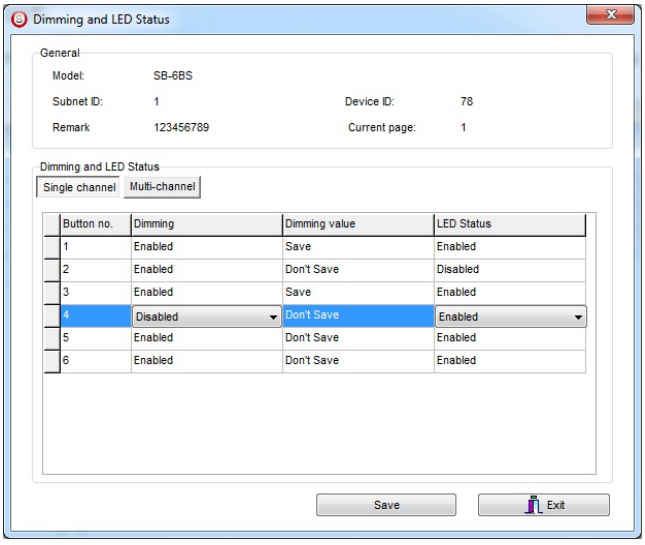
Beside the Button mode and function there are three important setting for each button.
We can categorize it as:

1- **Dimming Enable / Disable:** it is simple setting you can use Dimming when your target lights is dimmable, while using not dimmable when your target is not Dimmable Lights.
2- **Save / Don't save :** the **save** will save the last Dimming value, every time you switch ON the light channel it will go to the last lights brightness Level you set before switching it OFF, while the **Don't save** will turn the lights brightness to the maximum level and not save the last statues.

3- **LED enable / Disable Setting**, you can enable your 2 way Button LED statues, while in some situation you need always to disable the button LED.

How to make LED, Dimming, Save /don't save setting

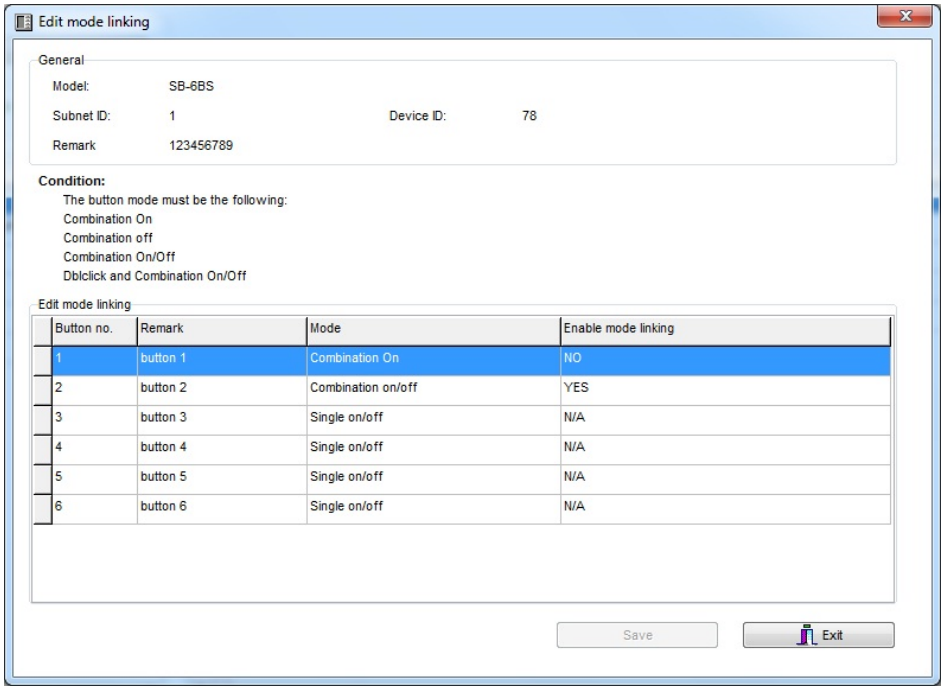
- Go to **Button Assignation** tab on the panel setting
- Press on **Set button**
- Select the setting for each button you need



Mutual Exclusion Function

This function is used on switch panel to link between two or more combination ON/OFF button mode to consider them as 1 group, and to prevent the confusion of using two related macros together.

- On the **Button Assignation** press on the **Mode linking** button
- Set the value to **YES** for all the buttons of combination ON/OFF to be as 1 group together



Try to make two buttons as combination ON/OFF with many commands and set them mutual exclusion to YES and recognize the difference

*Mutual exclusion is active only on Combination ON/OFF for the **6button panel**, while its active on all combination modes and double click modes of the DDP and new series of Wall switch panels).*

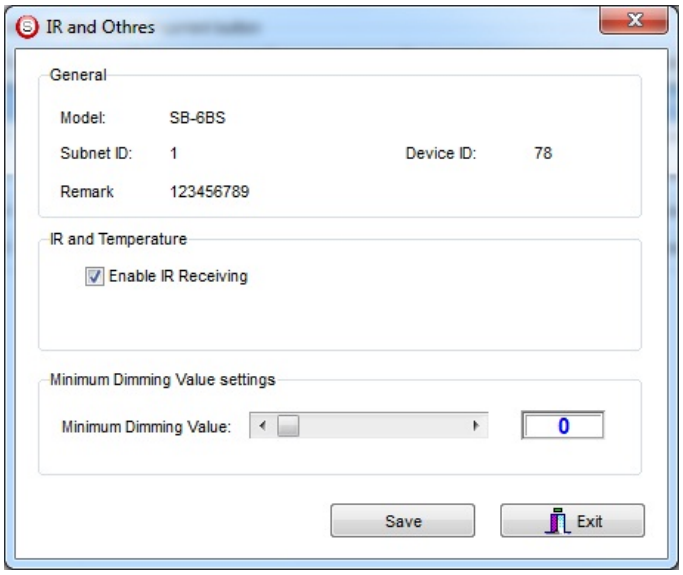
5-6 Panel Switch Setup (Minimum Dimming Value and Infrared)

Minimum Dimming value: is used to force the panel not to dim the light from the button by keep pressing it in order not to go below the minimum level of dimming

Infrared function: is used to enable or disable the IR receiving function on the panel,

To make the setting of the of the Minimum Level and IR setting

- Go to **Button Assignation** tab
- Press **setup** button
- Adjust the Minimum Dimming Value from 0% - 50%
- Uncheck the Infrared receiving function to disable or check the box to enable it



*Minimum level is very important and useful function to avoid the confusion for the user when he dims some **SAVE VALUE** button to 10% and the spot lights will appear as OFF while it is 10% dimming, when the user press the button single press it will toggle between 10% and 0% and the user will think the lights is burned cause he will not notice the 10%.*

*Minimum level recommended being as **20%** so the lights will not go below this level when the user keep pressing the button.*

IR disabling is useful when 2 panel near each other in 1 room and the remote control sending to the both panel and the functions is confusing the user, disabling 1 panel IR is recommended on this situation.

6- HVAC2 Programming

HVAC module is the main module that control most of central air condition types, like AHU, FCU, VAV

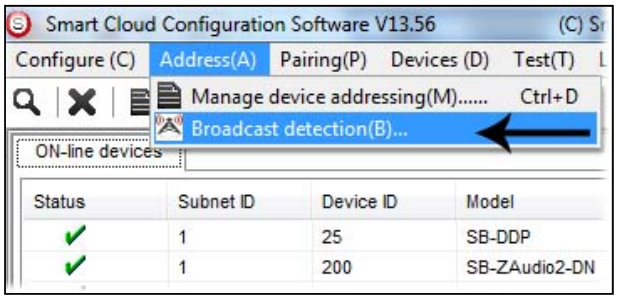
6-1 Introduction of HVAC Module

The HVAC module have 3 Mode relay type you can configure it as your requirement, each relay can be (Cool, heat, Aux (humidifier, dehumidifier))
with 2 FAN speed relays as slow and fast, with VAV control DC 0-10 V for 3 air speed as Slow, Medium and high

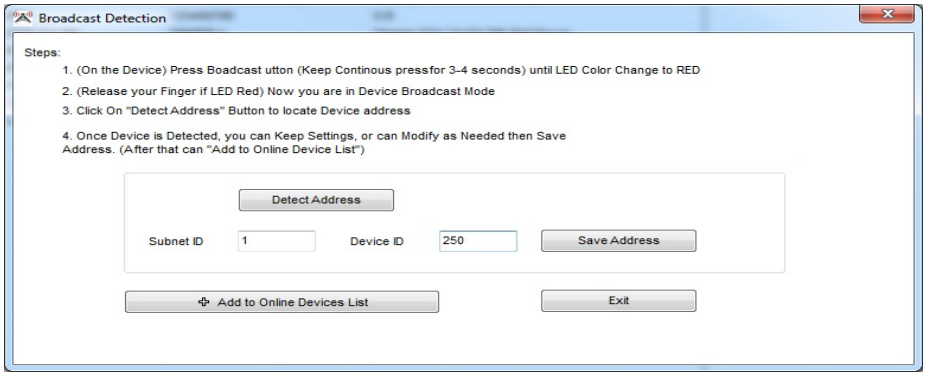
6-2 HVAC Address and Testing

Like all Din Rail Mount Modules, the HVAC module has its Broadcast Address button; to get the HVAC address you can do the following

- On your software Press **Address Management/ Modify Address**



- Go to your HVAC Module device, and then keep pressing the broadcast Address button for 3-4 seconds until its LED color change to RED
- In your software in the Broadcast detection window press 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 press **Save Address**

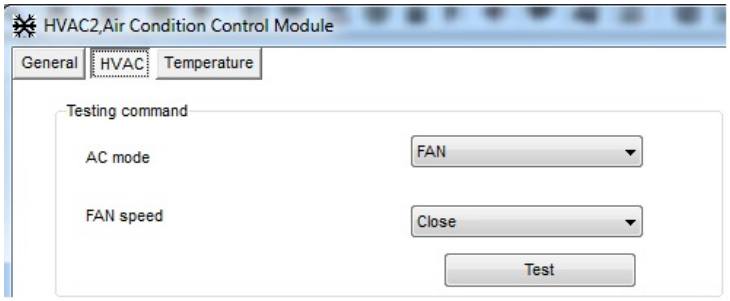
- Press **ADD** to load your device in the Devices Network List
- Press **Exit** to Close the Window

After you load the device to your list, double click on the Module to open its configuration
On the basic information, you can add the name Remarks of your HVAC,

It is recommended to give the name of the room or place that the HVAC is installed or running its AC, for example you can type the remarks of the HVAC as Living AC

After you give the Address and name remarks for your HVAC module, it is the time to start checking the connection of the module to the unit.
To test the commands and see if the AC unit responding do the following

- On the HVAC page go to the **HVAC** tab
  - In the test command section Select the fan speed you want to test it
- Press test then the relay of HVAC Fan should respond



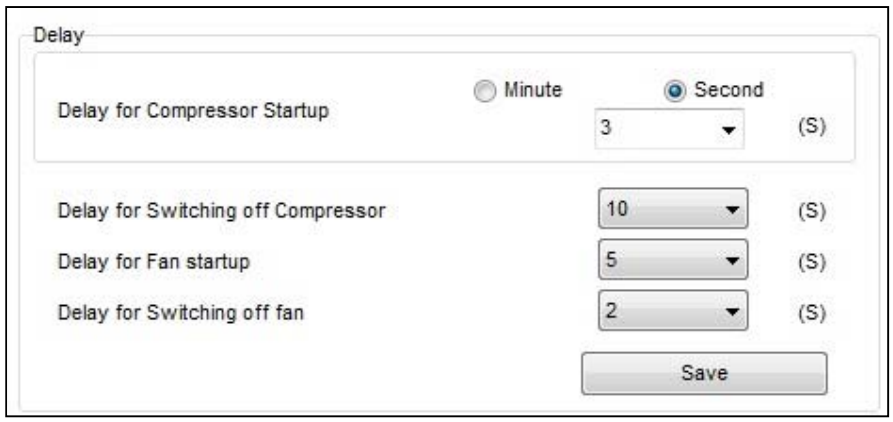
Before you test the AC Mode cooling heating Modes or 0-10V output, you should configure the AC Mode and VAV setting (see 6-4, 6-5)

6-3 HVAC Startup and Switch off Safety Delay

Compressor Startup safety Delay is one of the most important settings you should take care about when you make the setting of the HVAC module
The compressor delay will prevent the HVAC Module to turn the compressor ON directly after it Turned off , Delay time of minutes or seconds always preventing the Direct ON after OFF operation, that will keep your Central unite safe, without damaging your compressors and unites.
To do the AC delay setting

- On the HVAC page go to **HVAC**
- Go to **Delay** section
- Set the **delay for compressor startup**, select (Minutes 1-10) or (seconds 3-127), this setting will prevent the compressor to ON after OFF by this delay Minutes / seconds.

Compressor startup delay is the most important safety setting to protect your AC unit



Beside the compressor startup delay there is other function you can set in the Air condition delay section as following

Delay for switching OFF compressor: every time you switch your AC unite, the HVAC will give 0-10 seconds delay time to off your compressor.

Delay for FAN startup: every time you start your Fan, the HVAC will give 0-10 seconds delay time to start your Fan.

Delay for switching OFF Fan: every time you stop your fan, the HVAC will give 0-10 seconds delay time to stop your Fan.

Press **save** when you finish your setting

it is highly recommended to set your compressor switch off delay to 10 seconds to give more time for the user to change his AC mode between FAN ,Heat, Cool, and make sure he select his mode, that will prevent switching OFF the compressor while the user still selecting his AC mode.

it is recommended to give different OFF time for both compressor and FAN, for example if your compressor OFF delay is 10 seconds, make your Fan OFF delay is 8 seconds, this will be better for relay action and power consumption by gradually OFF Process.

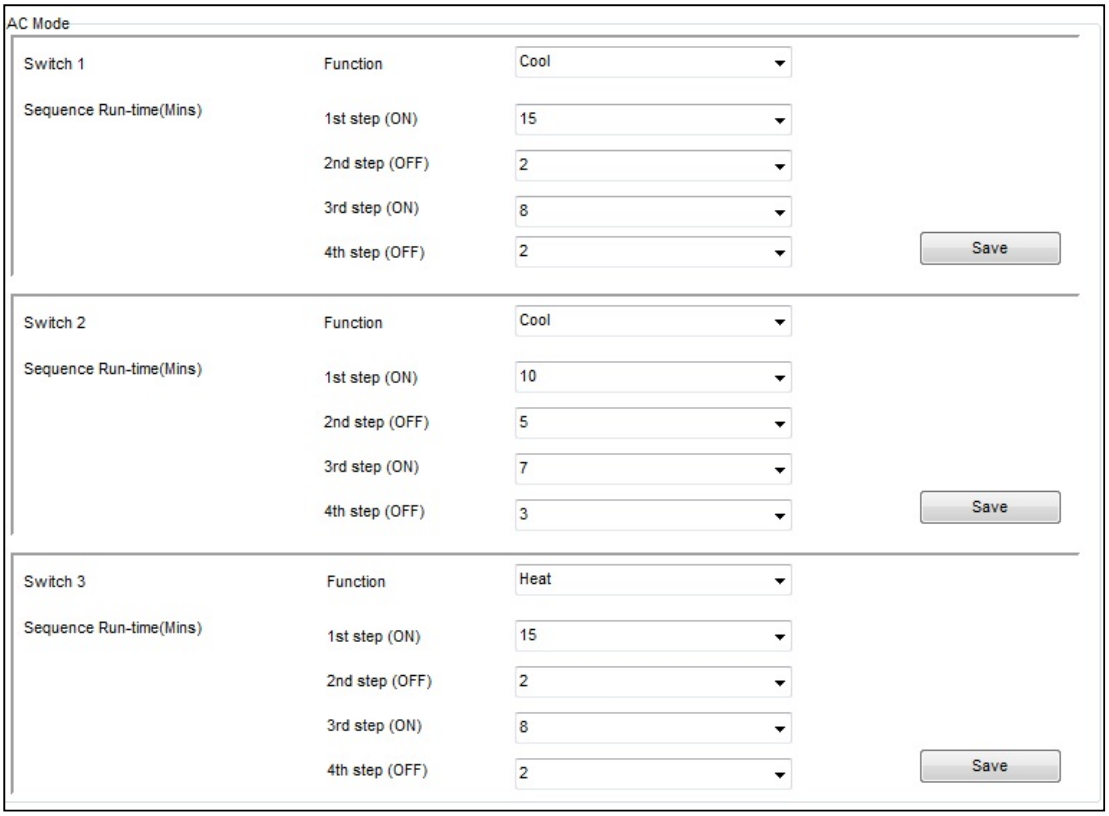
In case of power down, when the power restore to the HVAC module, the HVAC will return to its last Running mode.

Always Read the AC unit instruction and installation manuals before any installation or programming to fit the best requirement for your AC control

6-4 HVAC Mode Configuration and safety Running Sequence

In this setting you will configure the HVAC Mode compressor Relays (M1 M2 M3).

Each one can be as (cool, Heat, Auxiliary or disable),



In the AC Mode configuration you can set the function mode for each relay switch, this module support single stage and multi stage Unites, for example if you have a big unit of 2 cool compressors , then you can set the switch1 and switch 2 as cool.
The table below shows you the setting and function table of your HVAC mode configuration

Setting	Usage of this Function
Function Cool	Used to configure the relay switch that will be connecting to the central AC unit cooling compressor wire
Function Heat	Used to configure the relay switch that will be connecting to the central AC unit Heating compressor wire
Function Auxiliary	Used to configure the relay switch that will be connecting to the Humidifier, dehumidifier, fresh air motor wires, FAN
Function Disable	To Disable the Relay switch , it is used when there is no connection to the relay, and it is important to disable it to save the unnecessary consumption
Sequence Running time 1st step ON, 2nd step OFF	Used for safety startup sequence to rest the compressor after couple of minutes of starting by 2nd step OFF minutes
Sequence Running time 3rd step ON, 4th step OFF	Used for safety running sequence to rest the compressor after couple of minutes of running by 4th step OFF minutes especially in case of multi stage compressor to let one rest while the other is starting and vice versa

Example of double stage cooling unit safety running sequence setting This setting will let the both compressor to run as startup sequence together for 20 minutes (1st , 2nd steps) while in the running time (3rd, 4th steps) , each compressor will (start and stop) in different times to rest and save the Consumption of AC

Cool	Function	
20	1st step ON	**Switch 1**
0	2nd step OFF	
9	3rd step ON	
3	4th step OFF	
Cool	Function	
20	1st step ON	**Switch 2**
5	2nd step OFF	
12	3rd step ON	
4	4th step OFF	

*Value **0** Minute will disable the step in the safety sequence settings*

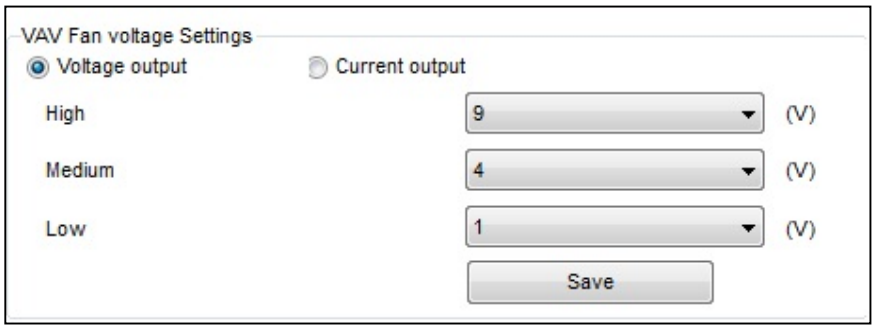
Safety running sequence is important to keep and extend the life of your Central AC unit.

It is recommended for every long running time to set the off step at least to 3 minutes to make the unit rest

HVAC VAV Fan Voltage Output Setting 6-5

VAV setting is to set the Variable DC Voltage output for each fan speed from 0-10 VDC

- Go to **HVAC** on the AC page
- Go to **VAV fan voltage setting**
- Set the Value of **Voltage you** want to give in each Fan speed Mode



Some VAV unit use 0-5 V, also you can modify your HVAC module VAV voltage setting to adapt with 0-5 V, for example you can set it as (Low 1V, Medium 3V, high 5V).

7- Z-audio 2 (Music system) :

7-1 Z-Audio Overview:

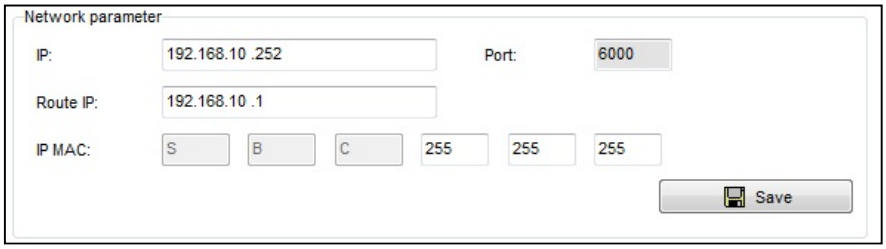
Distributed Audio Zone Player and Amplifier. Can Deliver up to RMS 48 Watts of Stereo. With Balanced Out to connect to Pre-Amplifier Booster. With Built in FM Radio Tuner, Built in SD Card Reader slot. Can Stream Digital Audio through LAN/FTP from any PC or NAS on the Network. Advanced PA Port that can detect Audio Announcement Automatically mute current playing source, then switch back to the same music source again once announcement is completed. Additional RCA Stereo Input from Direct Local Source Feed to allow local Music ports to connect direct from TV, DVD, IPod Dock or any other Source.

7-2 Z-audio basic setting:

Z-Audio2 is an IP based and also is smart-bus G4 enabled, thus you can connect 1470 devices.

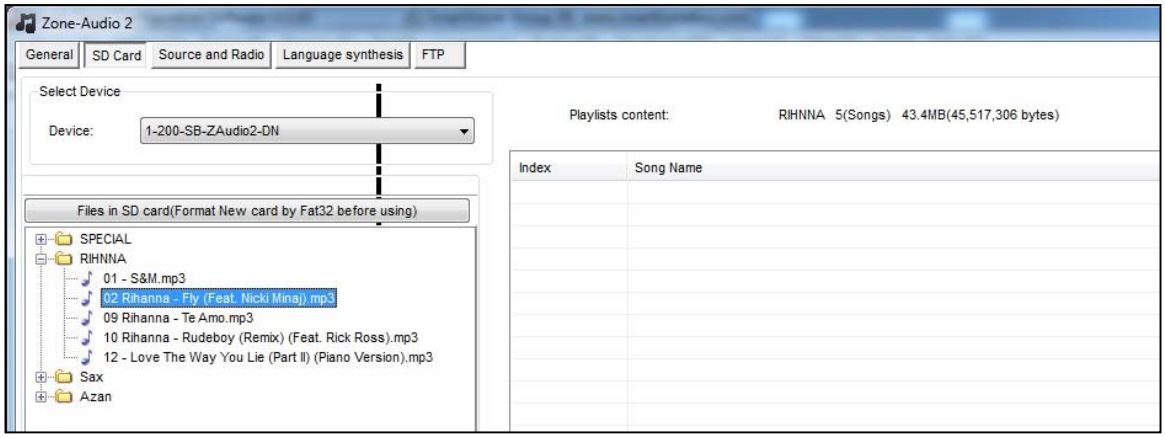
In General tab you can notice "network parameter" section which you can change the Z-audio IP.

if you want to use the Zone audio wirelessly make sure to put the same gateway for your router in " Router IP" , ex:192.168.**10.1**



- In Z-Audio you will see "SD-CARD" tab where you can modify your SD-cards Files

⚠ When you put the SD-cards for first time the Z-audio Automatically will create empty folder called "Special " DO NOT delete this folder.



- In " Source and Radio " tab you can enable or disable what kind of source do you want to show it on **DDP**

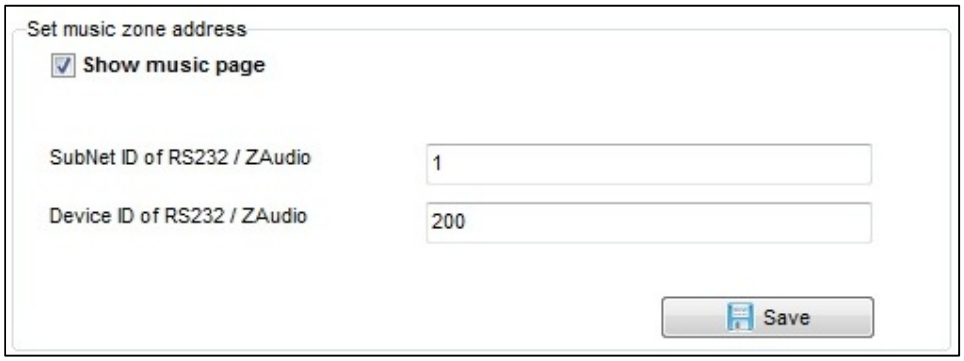
1. SD-card
2. Audio In
3. PA in
4. Radio
5. FTP

7-3 How to control from DDP:

To make pairing between Z-audio and DDP there are three ways :

1- By software :

- Double Click on DDP on smart cloud software
- Go to " Music" tab
- Put the the Device ID and sub net ID for the Z-audio
- Click save



2- **By DDP :**

- Go to music page on DDP.
- Press the first button **left corner** and keep pressing for 3 sec.
- Choose "Zone".
- Put the device ID and subnet ID.
- Press exit button to save (button No 4).

3- **By manual programming (pairing):**

- On the Z-audio keep pressing Broadcast Button For 7 sec (till the Blue light is blinking)
- Go to music page on DDP , one click on first button Wait for max 15 sec , Now the pairing is done.

7-4 Z-audio adding radio channels

In the Z-audio you can add your Radio channel and save it .
To do that :

-Open your Z-audio and choose "Source and Radio".
-On the Right side you will find "Radio channels" table

Radio Channels

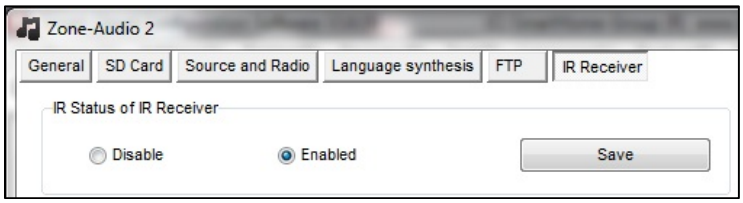
No	Frequence	Remark
1	88.5	MTV
2	100.8	UAE RADIO
3	107.5	CNN
4	87.0	
5	87.0	
6	87.0	

- Just put your channel frequency and Remark then click save

7-5 Z-audio enable and disable IR receiver

IR receiver feature is used when you have Z-audio and Handel remote without DDP, but if you have a DDP no need to enable the IR feature.
You can easily disable or enable the IR receiver Feature by the following:

-Go to "IR Receiver" tab

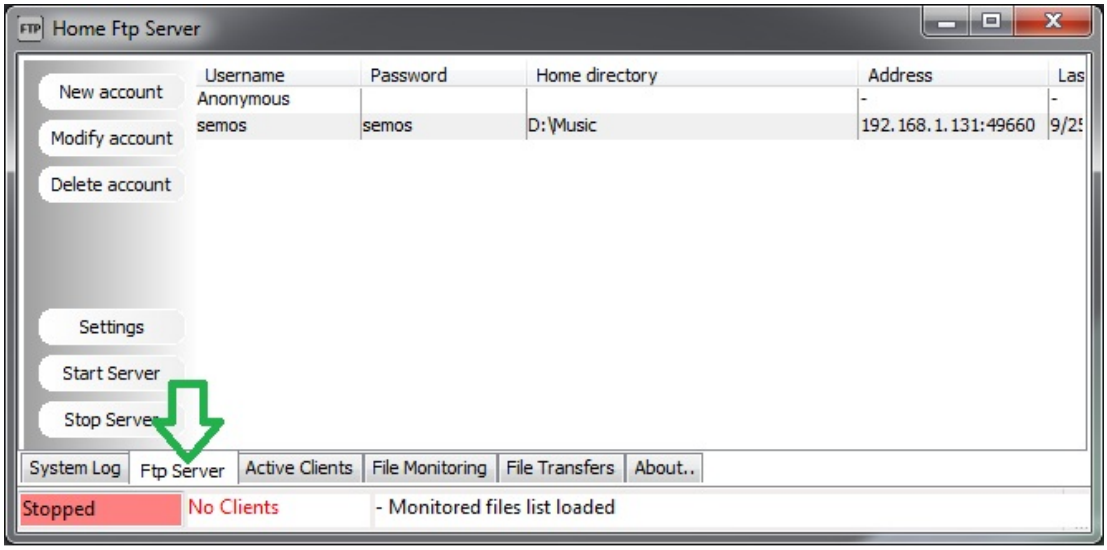


-After you choose click save.

7-6 Z-audio How to do FTP server on Pc

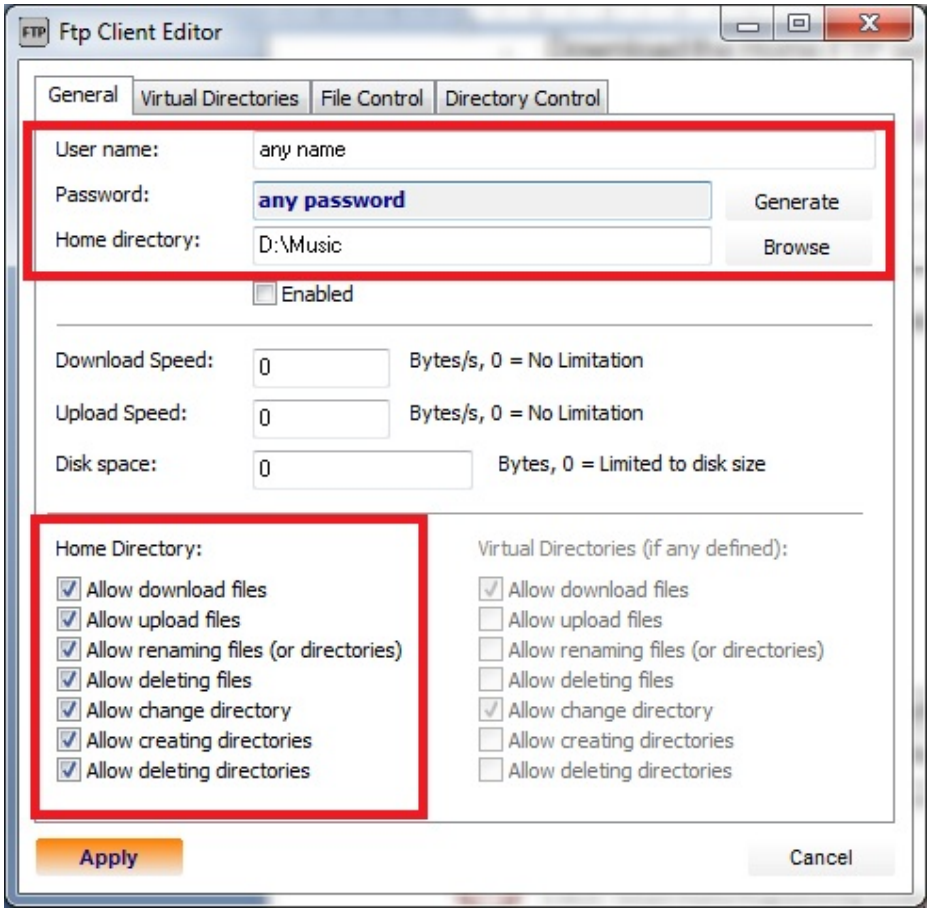
- Download the Home FTP server from our website "www.Smarthomebus.com"
  Click Here To download From Internet

- After you install Home ftp app Run it the click on "FTP server"



- Cretae an account by clicking "New account "
- Put any user name , any password locat your music folder
- Check all the checked box

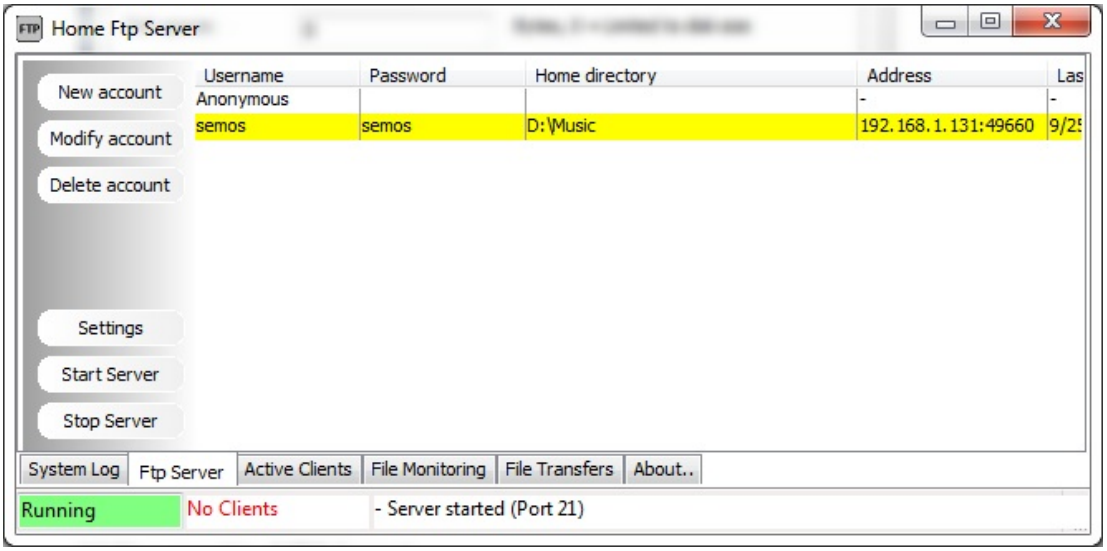
- Click on "Apply"



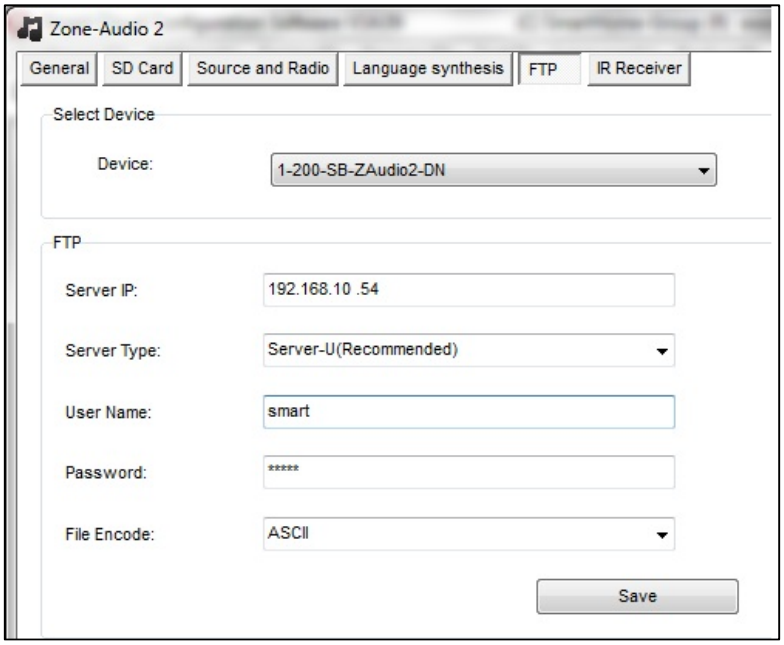
⚠ When you are locating your music folder please do the following :

- All filse **must** be MP3 format.
- Its better to put all your songs in **subfolders** then put all these folders in the **root folder** like this pic :

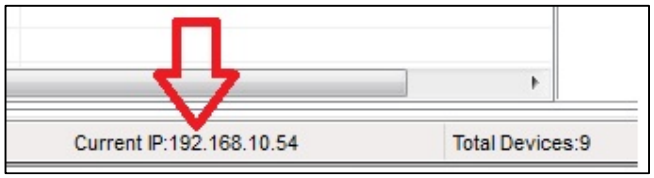
-High light your new account the click on "**Start server**", to make sure your serve is running you will get like this green pic :



- Go back to smart cloud software
- Open your Z-audio , go to "FTP" tab
- Put your account and password that you created in Prevouse step.
- Put your PC Ip , PC that you want to play songs from.
- Click save.



If you want to know your PC IP ,from main screen of smart cloud software at bottom you will find it :



- Go to the DDP , find the music page .
- Change to **FTP** source by pressing the first button **left corener.**
- Press and keep pressing the first button **left corner** for 3 sec
- Choose "**play list"** by pressing the **second** or the **third** button on DDP
- Chose update by pressing the **first** button.
- Wait a second till you get a "Finish" message.
- Your done.

8- 9in 1 Sensor PIR Programming

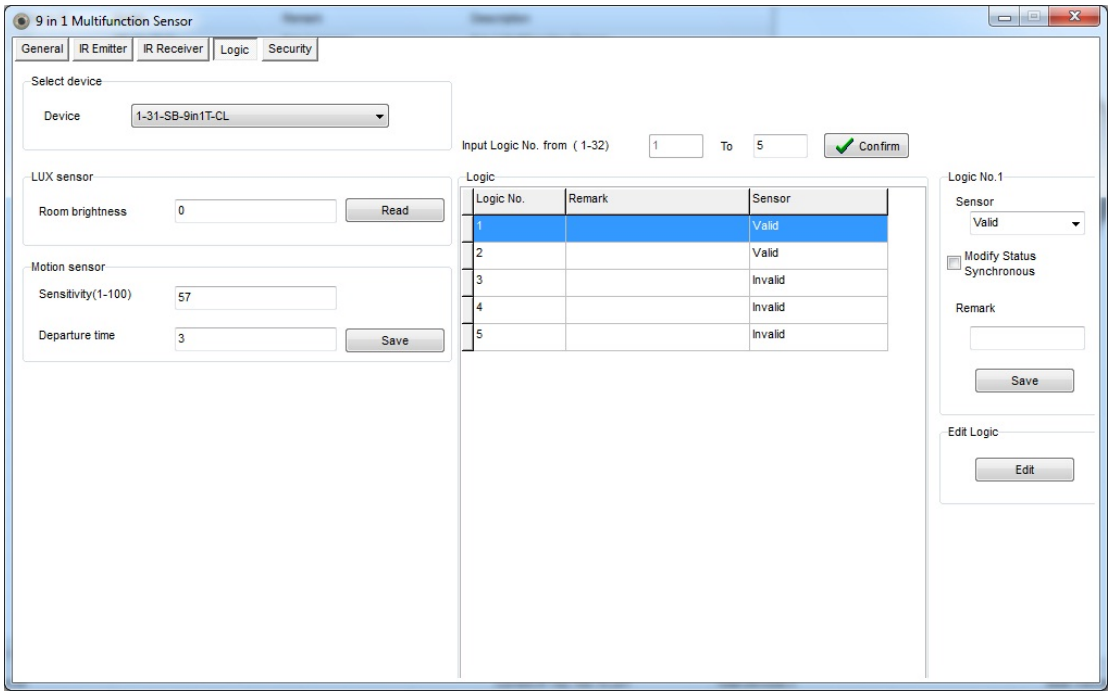
8-1 S-BUS 9 in 1 sensor Overview

Smart bus have perfect sensor for ceiling and wall type, this sensor is used multi function one of them for trigger the lights on automatically and to turn the lights off if no movement for desired minutes for saving energy

8-2 PIR 9 in 1 sensor setting

Double click on the 9 in 1 sensor on the List

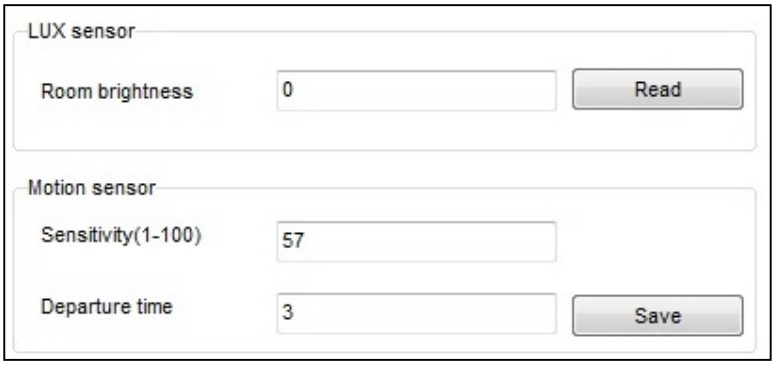
- Go to "Logic" tab.



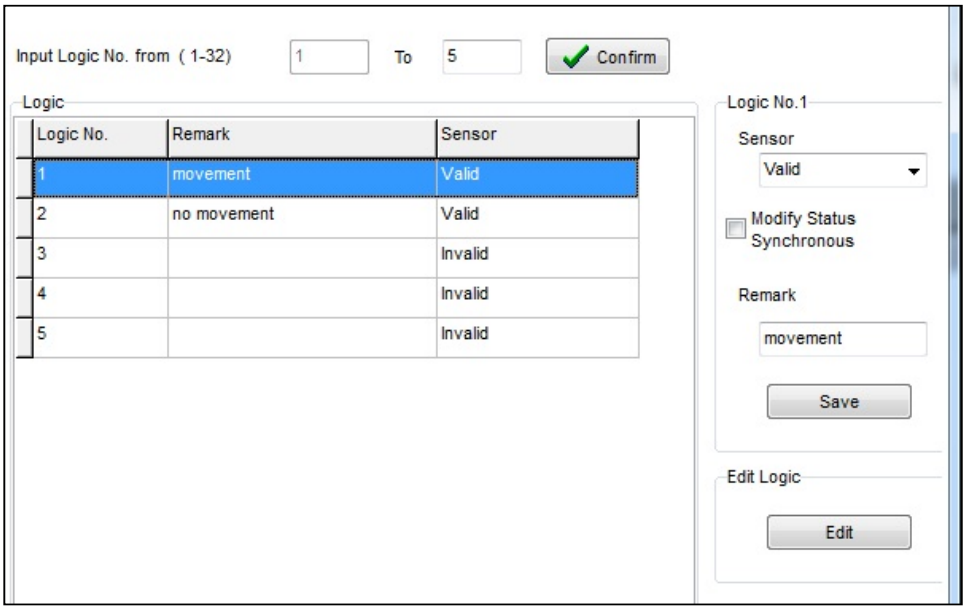
- You will find on the left side the "Lux" sensor section which is measure the brightness for this area.

To read the current value just press "**Read**" button.

- You will find also "Motion" Sensor section , here you can change the **sensitivity** for the sensor and the **Departure** time which is the time you want to switch off the Light of sensing .



In the middle you have the events list:



For example logic No.1 for " **movement "** event that mean when is there any movement the "X" of commands will execute.

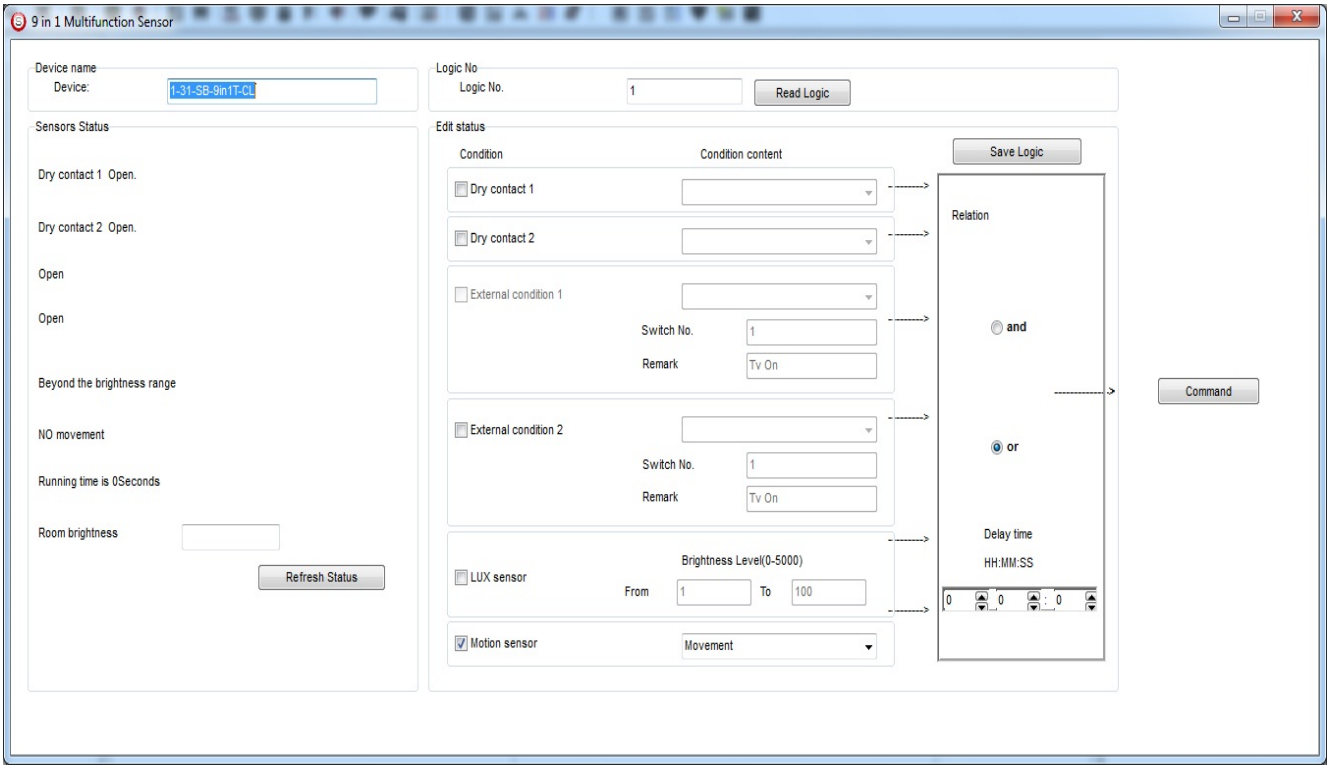
"**Movement "** it's just a name , you can put any remark you want from "remark" field .

You can create up to 32 events .

In the previous picture we create two events **movement , no movement**

To create any event must **valid** it from the same window in sensor section, then remark it, if you don't want this event any more you can easily **invalid** it .

- To Edit the event press **Edit** button from edit logic section

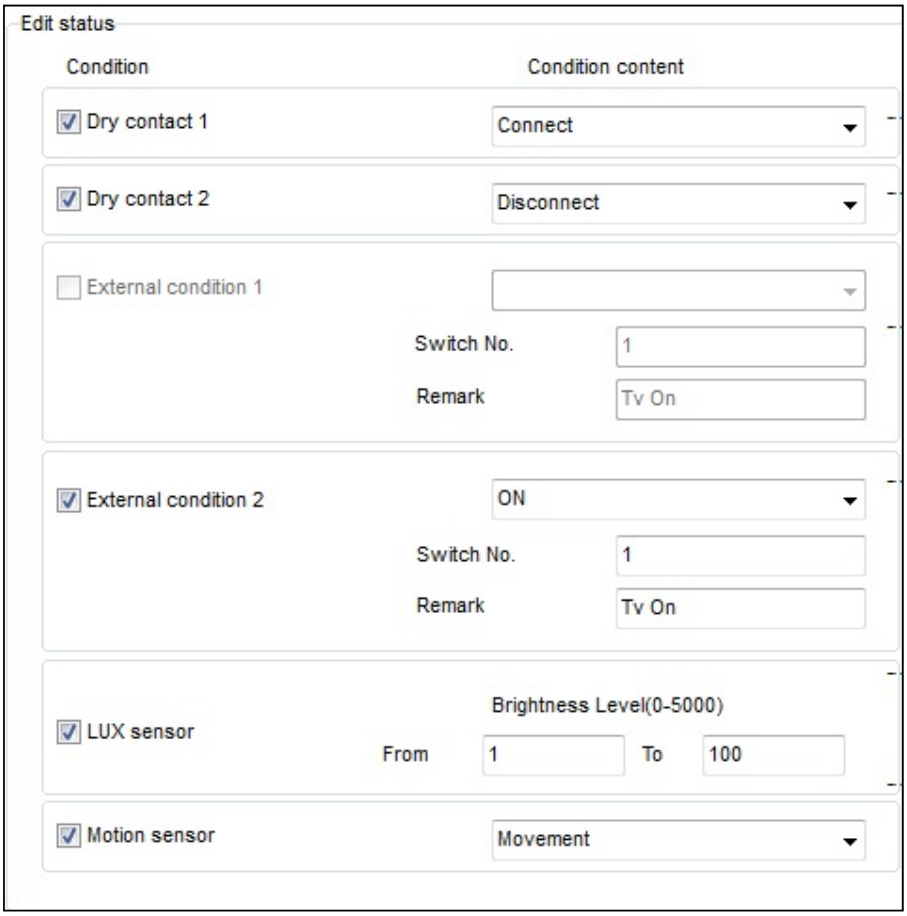


All what you see now just for event No.1, double click on Event 2 from the events list then you will see deferent window.

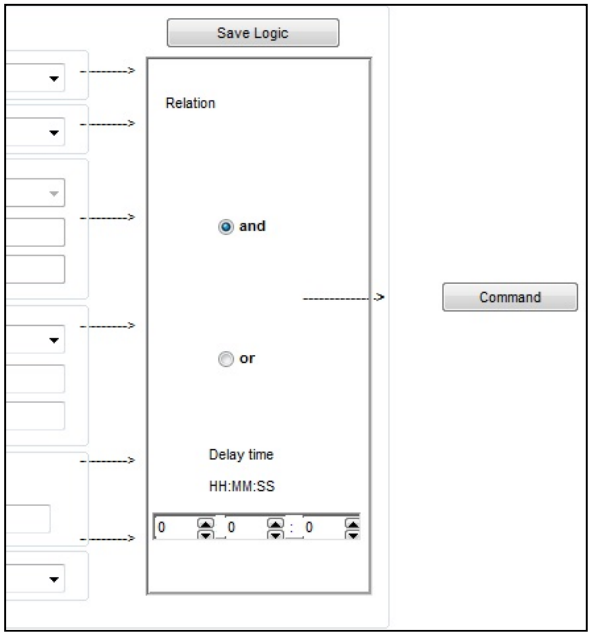
This window it's divided for two section : **status** and **Edit** section.

In **status** section you can check:
-Two dry contact status (built in **9in1).**
- Two external conditions status (for more info check **(Logic Module** programming manual).
-Motion sensor status.
-Room brightness value.

In **Edit** section you can configure:
- Two dry contact.
- Two external conditions.
- LUX sensor (Brightness sensor).
-motion sensor.

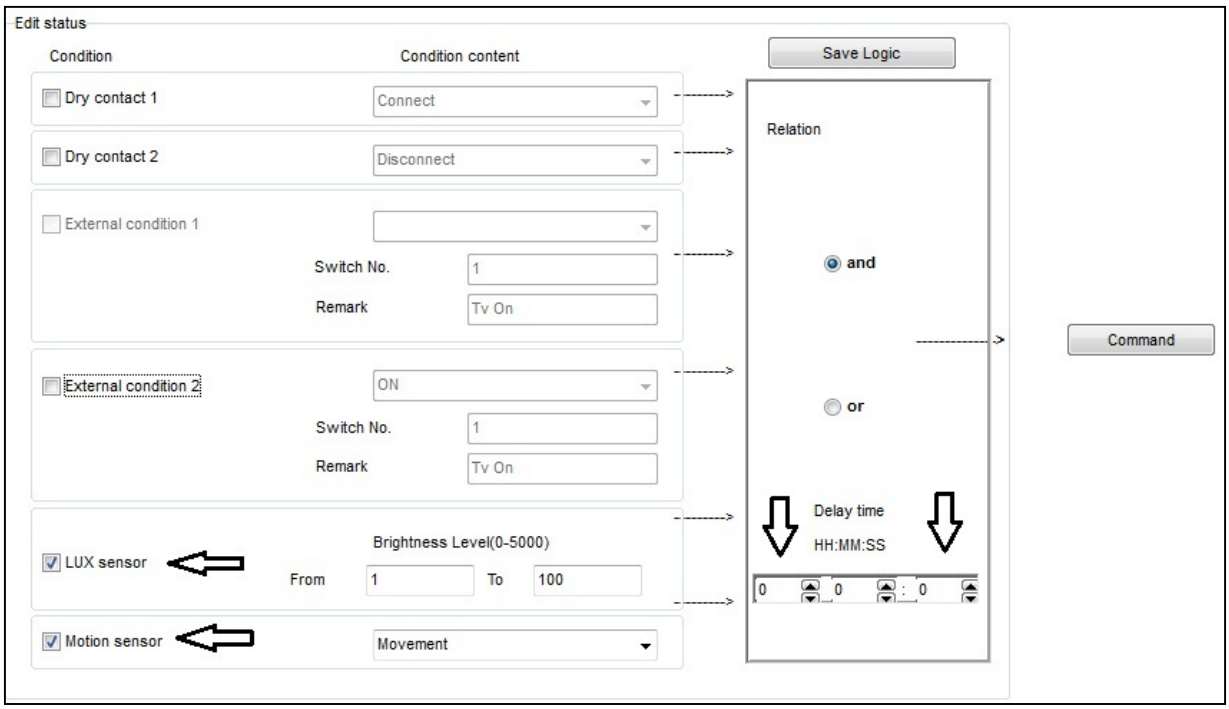


Also you will notice the **Relation** block, this is very important block:



Here you choose how many condition you want at the same time.

Example : If I put the conditions in the **Edit status** section like the following :



THAT mean : if the brightness in the room between **1** and **100**

AND

If there is **movement**

Then execute whatever you put in **command** button after **zero** delay time

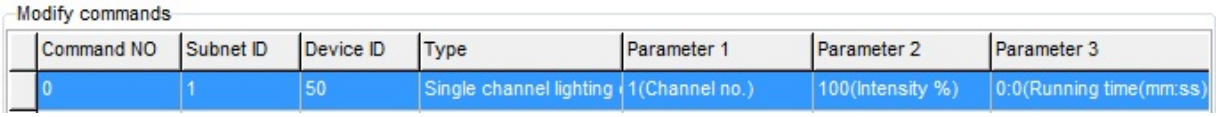
Movement here not remarks its fixed indicating if there is movement or not

EX2: what if I want to turn on light if there is **movement** and turn it off if **no movement** after 20 min ?

A- We have to create two events with any remark ,one for movement and one for no movement.

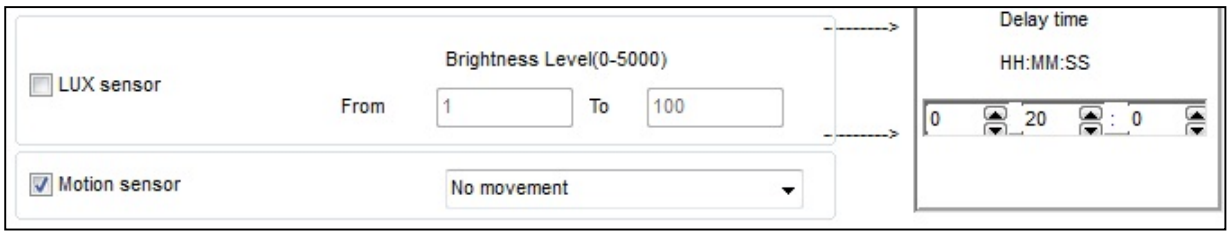
- For movement event we have to put check just on **motion sensor** and choose **movement.**

- Press **Command** button and put your Light address

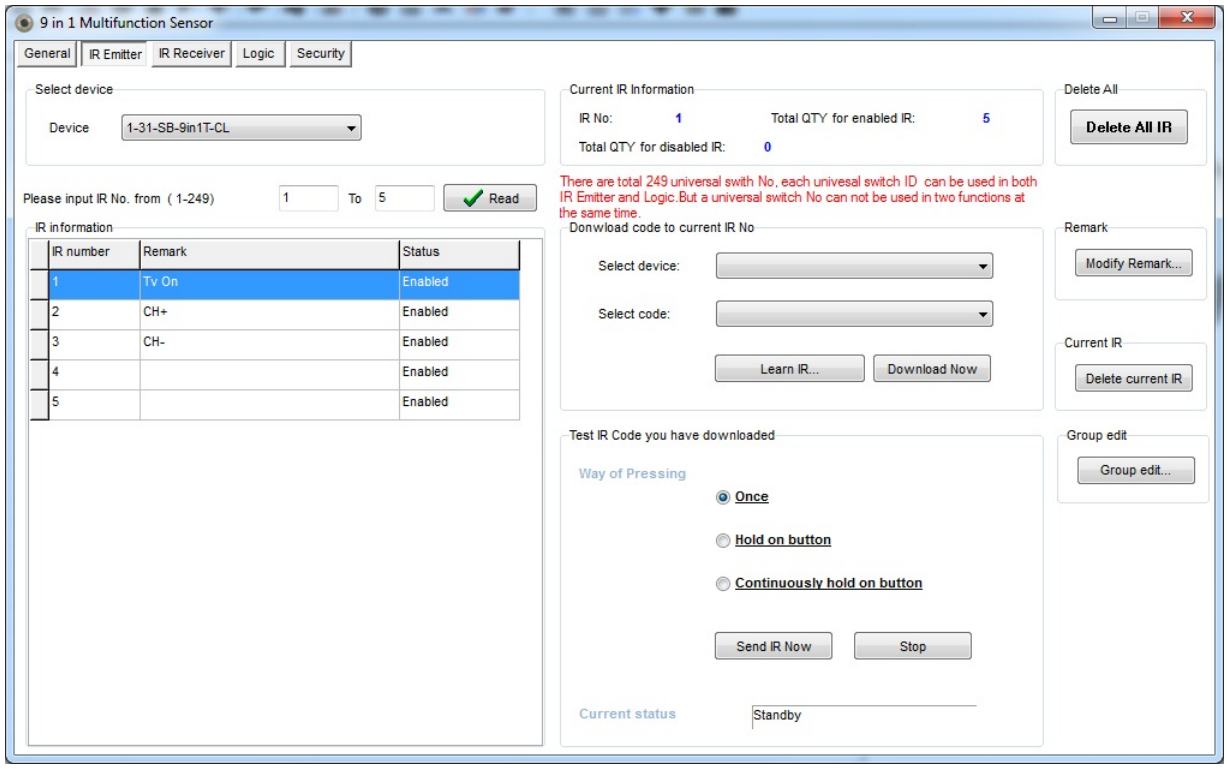


B- In the event No. 2 we have to assign it to switch off the light if there is no movement after 20 min.

Put check the motion sensor and choose **no movement** and in delay time put 20 on min field .

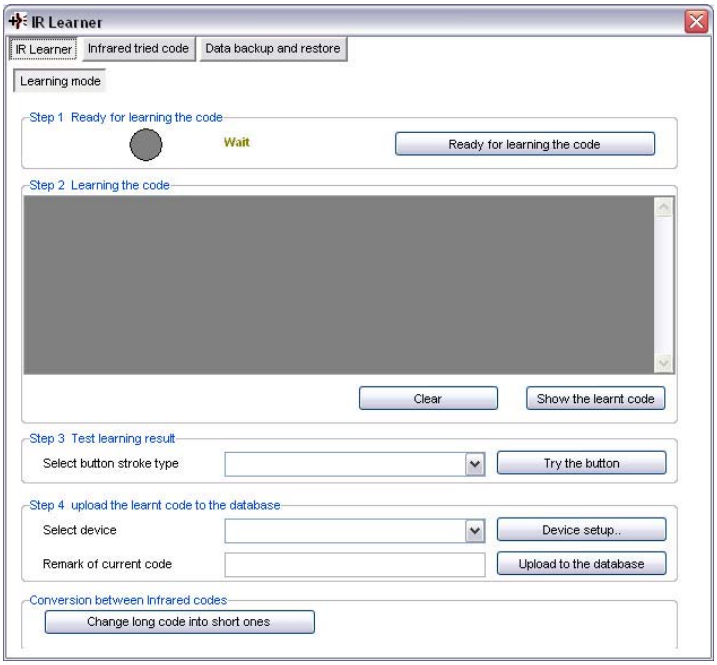


8-3 Learning and send IR codes :



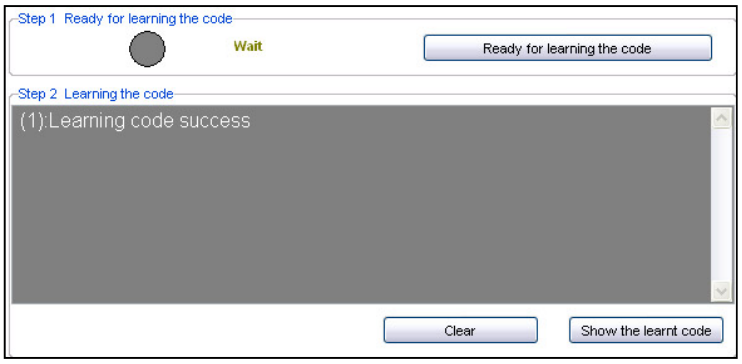
If you want to control any devices has a remote you need first to save its IR codes,
For that, connect your IR Learner install the driver (WIN XP):

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

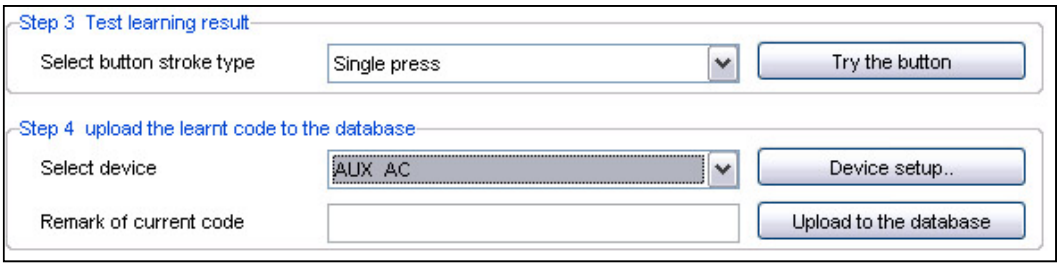


- Click on **Ready for Learning** button the grey circle it will be green :

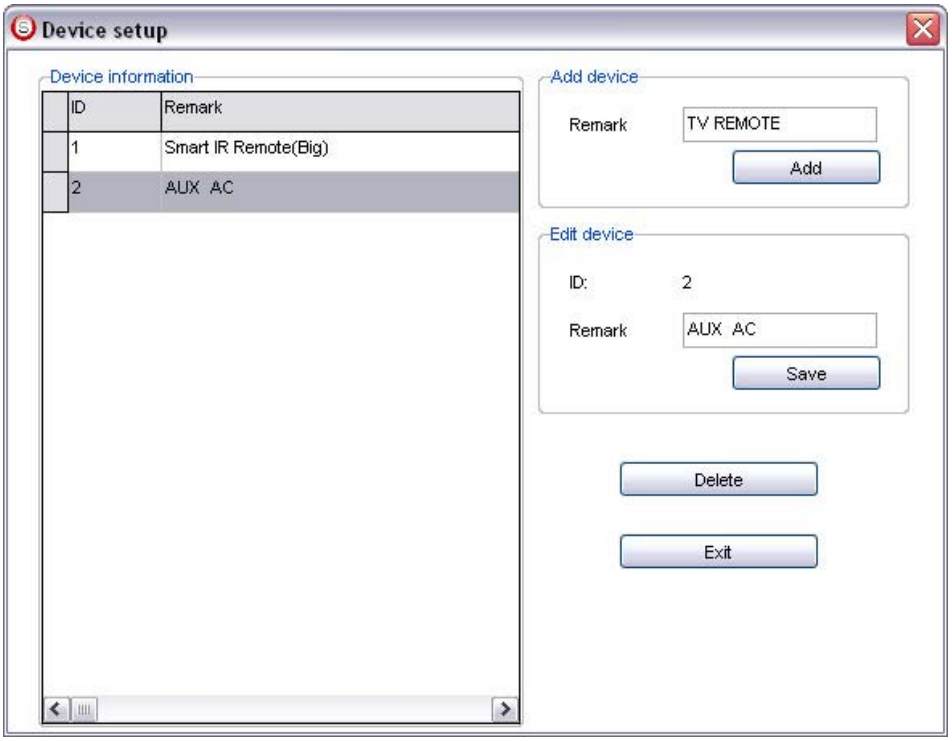
- Put your Remote in front of IR learner and press the desire button you want to its code.
- Once you press you will get the success notification :



- Now Select single press then go to Device setup



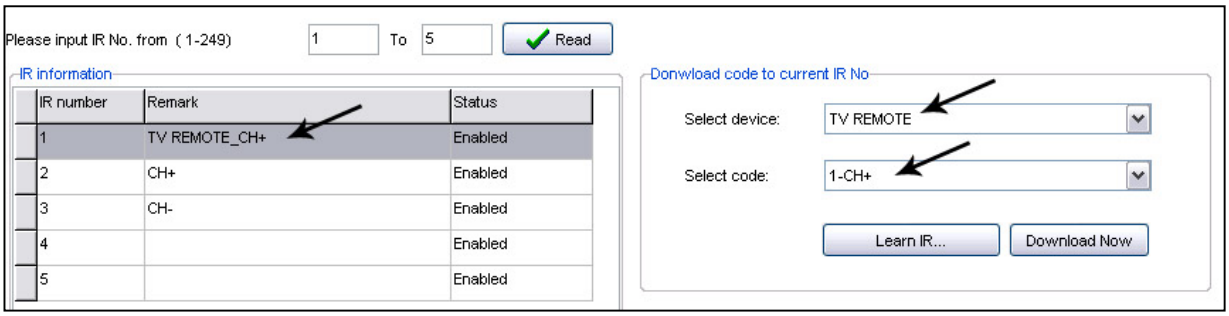
- Create new device with remark then click on add :



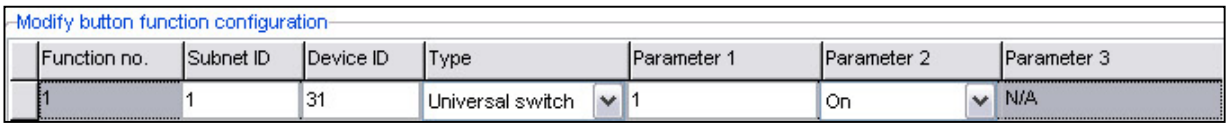
- Click Exit

- after you create your devise 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.

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



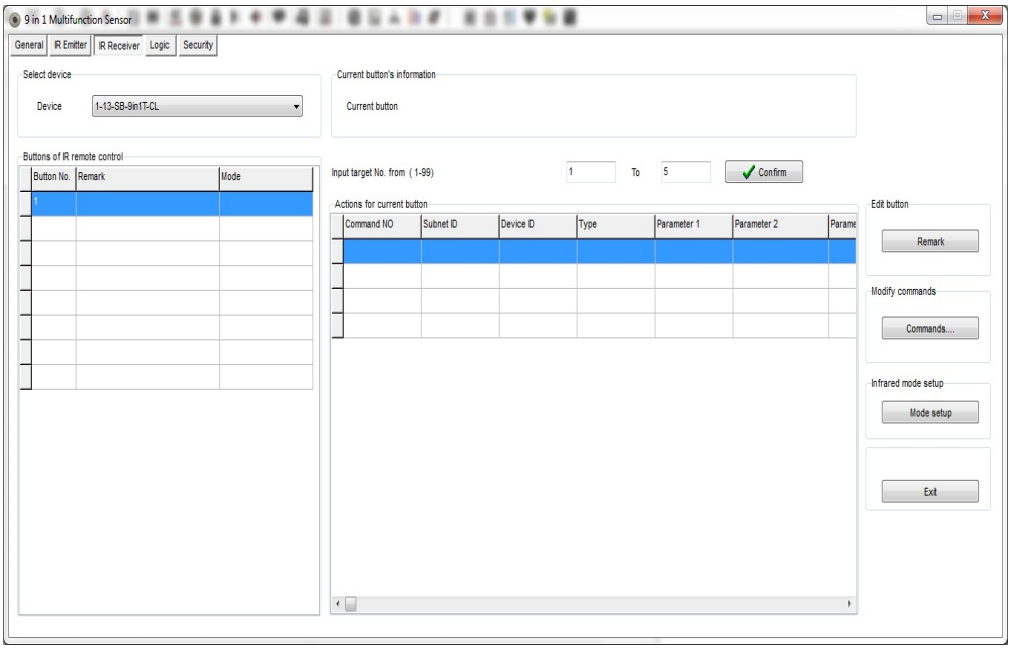
-) to send this code through **DDP** just choose any button :



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

8-4 IR Receiver Tab :

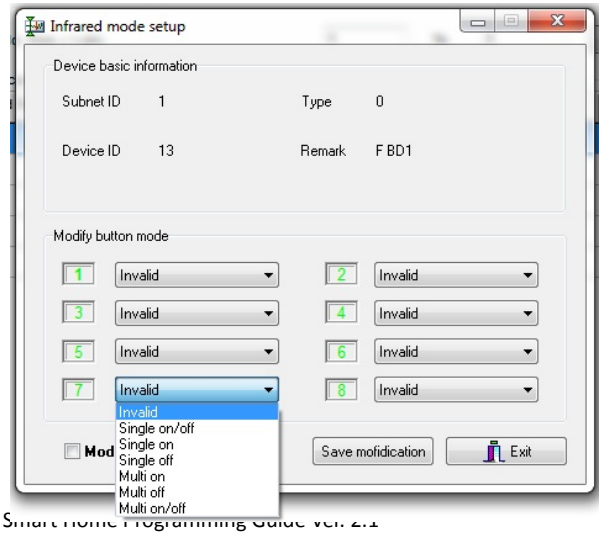
Here in this tab you can receive up to 8 deferent codes from our smart Remote . That mean if you press Button No.1 from smart home remote the 9 in 1 sensor well receive this order and execute whatever you program in field NO. 1 and the same for No2 …… No8

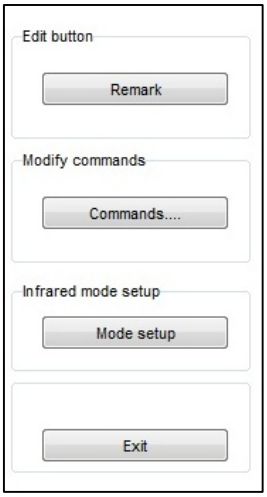


each Button can cover up to 99 commands.

- On the Right side you will find the Utility buttons:

  - Remark : as a programmer you can put remark for each button.
  - Commands : To modify the S-bus commands for each button.
  - Mode setup : you can change the mode for each Button like Multi on or single channel…etc

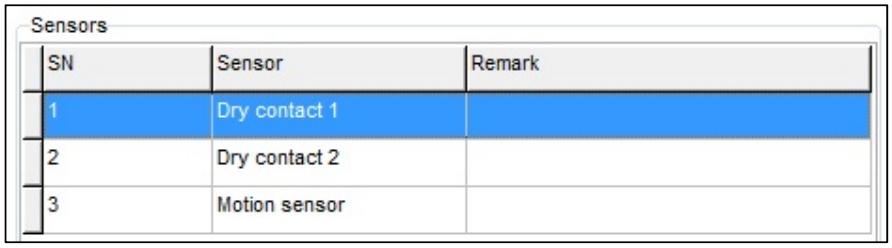




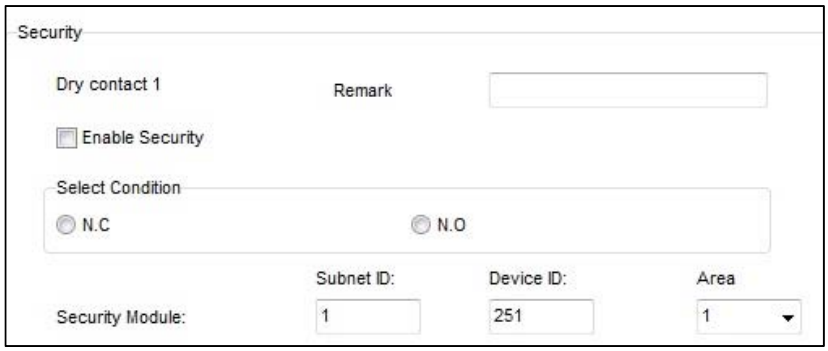
8-5 Security Tab:

You can use 9 in 1 sensors for security also , and because of these type sensors has also two dry contact you will notice in the **Sensor** section the options :

- Two dry contact that can connect any dry contact (indoor magnetic ,smoke detector …)
- Motion sensor.



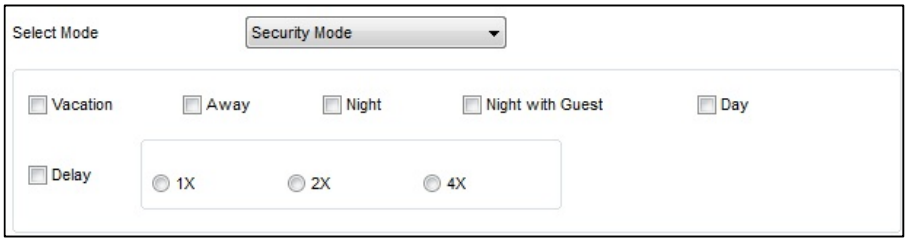
- For **each** type of sensors you have **Security** section like this :



- Remark : Just remark for you as programmer.
- Enable Security: to activate or deactivate the current sensor.
- Select condition :depend on you dry contact if **Normally open** for Ex like smoke detectors or **Normally close** like indoor magnetic.
- Security module : put the security module address that you install already in the same site.

-Also for each type of sensors there are two modes:

1- Security mode
2- 24 Hours active Zone.



1- Security mode

In security mode you have a lots of sub mode like :
Vacation-Away-Night-Night with Guest-Day

: you can choose any mode any apply it to your sensor.

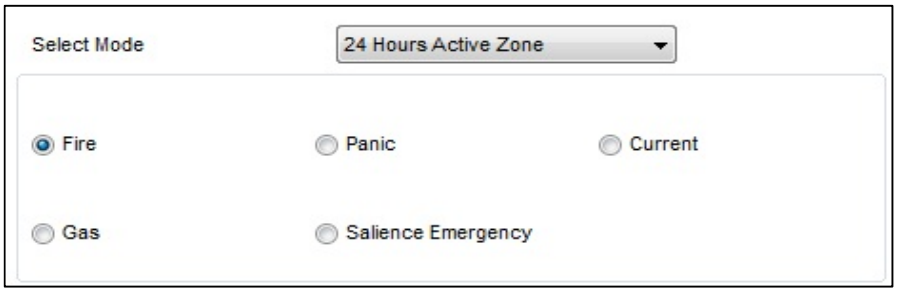
: If you want to active this sensor just for **Away** mode; that mean when you arm/ active the **Night** mode from DDP this sensor will be ignore unless you arm/active the **Away** mode.

- Delay : after how much time you want to let this sensor to trigger .

: if you choose 2x that mean 2 times of the value that you put in security module in basic setting.

2- 24 Hours active Zone.

In this mode you have a lots of sub mode like :
Fire-Panic-Gas-Salience Emergency



For More info please Enjoy our youtube channel : http://www.youtube.com/SmartG4/