2012

Programming Manual

Gang Switch

V2.1

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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

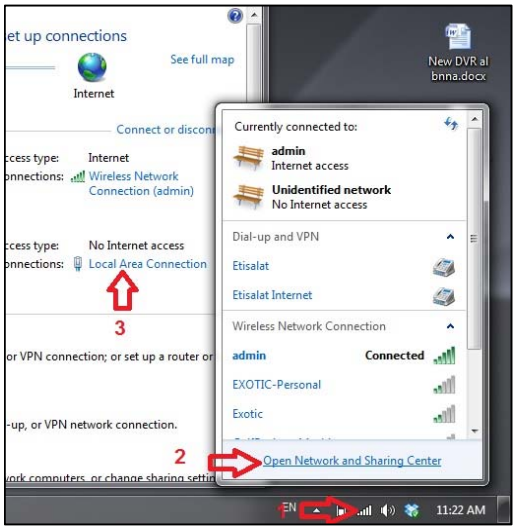
You need on this lesson: to have your computer with you. Running on windows Operating system, Smart Cloud **G4** software, Programming port SB-DN-1IP, that enable you to search for all the devices that connected to the bus network.

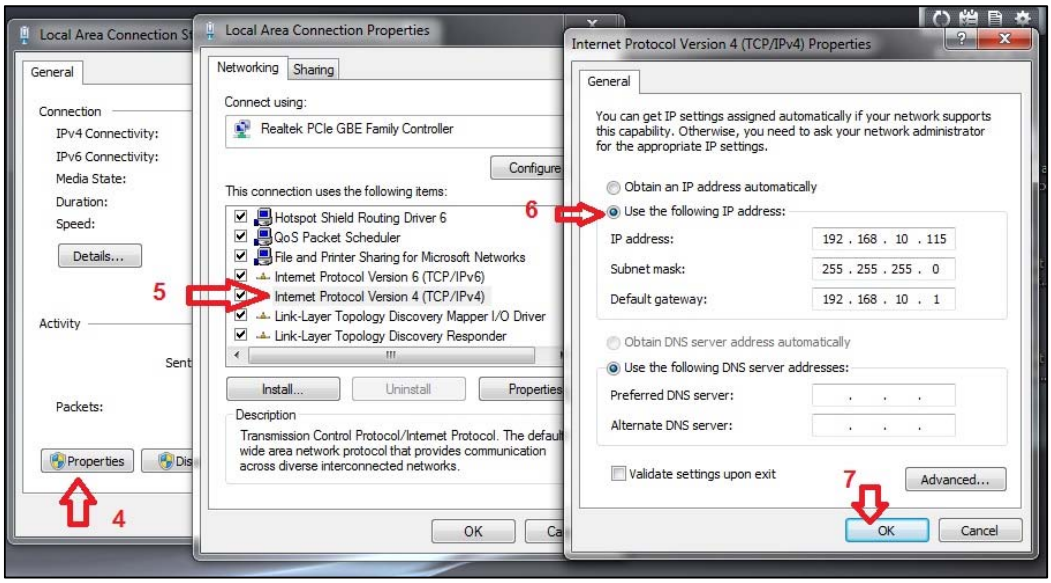
1- Install your S-bus configuration software in your Computer by pressing the **Setup** icon and follow the installation steps windows

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

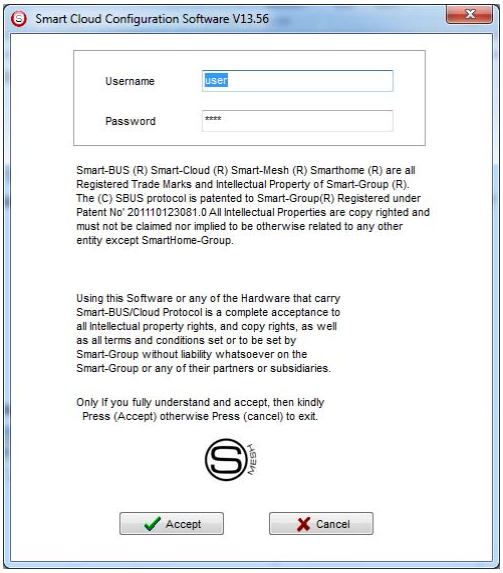
⚠ The default address for S-bus Product is **192.168.10.xxx**



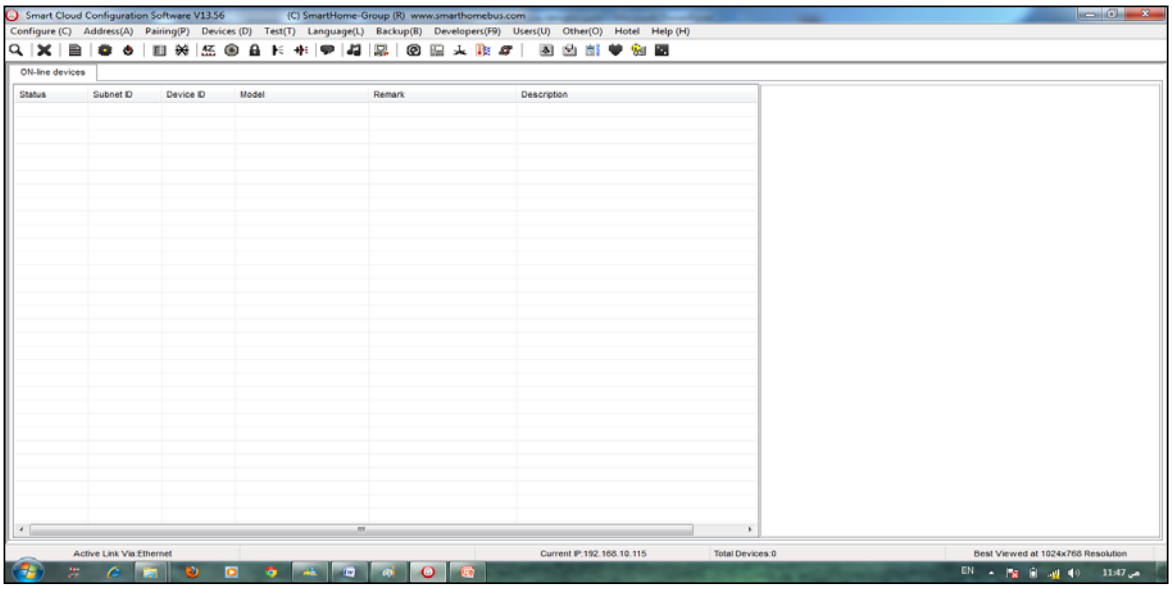


3- Run your S-bus smart cloud Software 

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.

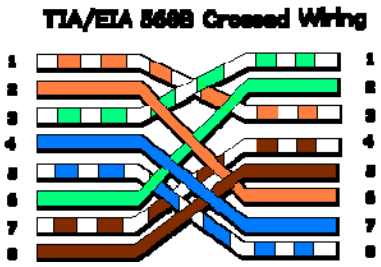
Set your computer IP setting before starting the S-BUS Smart Cloud.

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

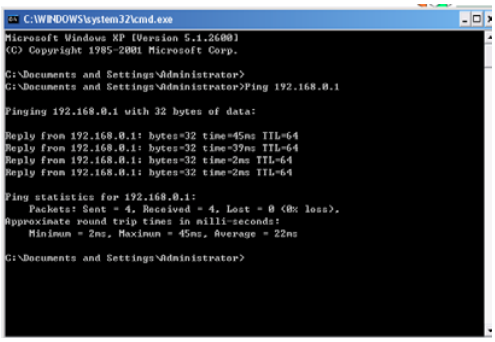
After you set your Module IP Address now you should connect the module to Your Computer Network in order to communicate. The connection can be in two ways

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



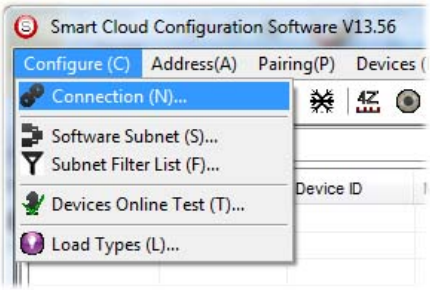
*You can use the Line command **Ping** to check your connection.*
On your Computer, Go to start/ Run/ CMD then type Ping 192.168.10.xxx
If you see the following results similar to this Picture then your connection is successful



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

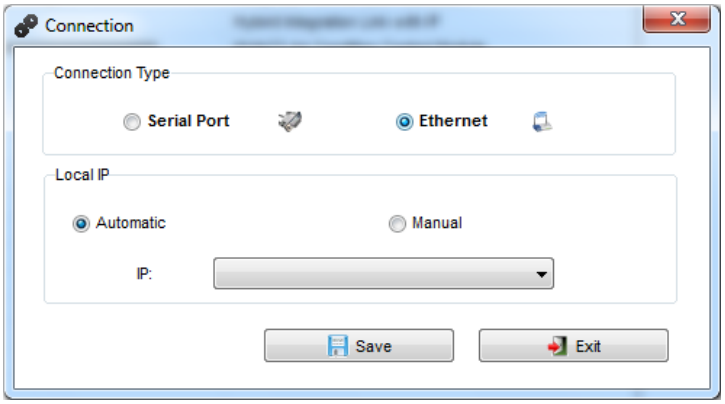
Configure



- ***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).

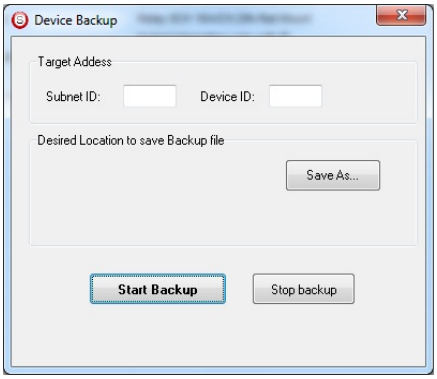
Language

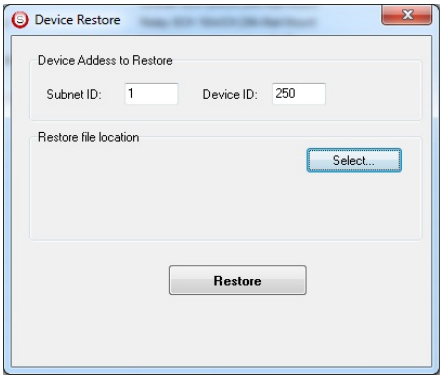
You can change the Language between English and Chinese, and other Languages

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**

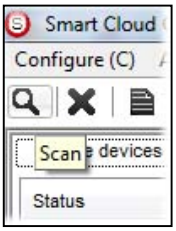
The subnet ID can be from 0 – 254
And the Device ID can be from 1 – 254
So you can put up to 65024 Deferent Devices in the same network with deferent subnet and device ID Address
For example one of Dimmer Module Address is (Subnet 1, Device ID 5)

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

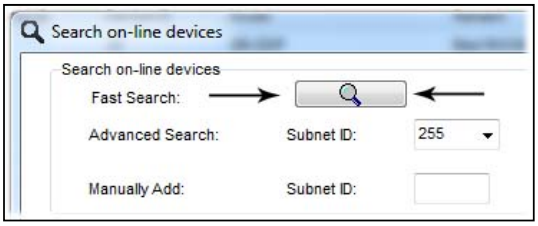
1- Fast Search
2- Advanced Search
3- Manually Search
4- Broadcast Address Device Search
5- Solve Conflict address search

<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.

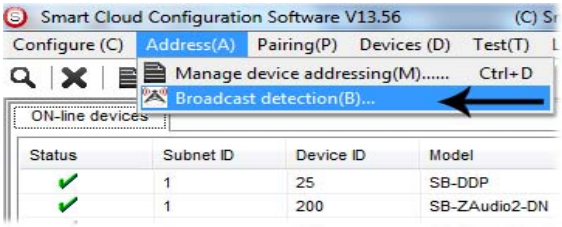
Manual Search

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

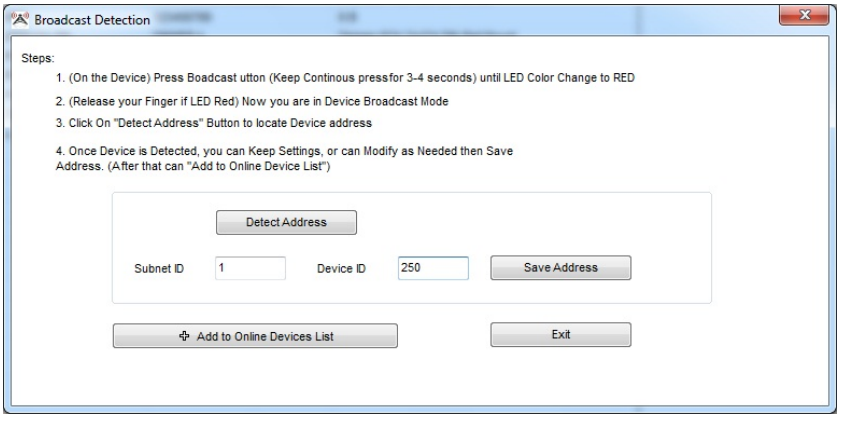
- Type the subnet and device ID that you know
- Click ADD
- Exit the Menu

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.



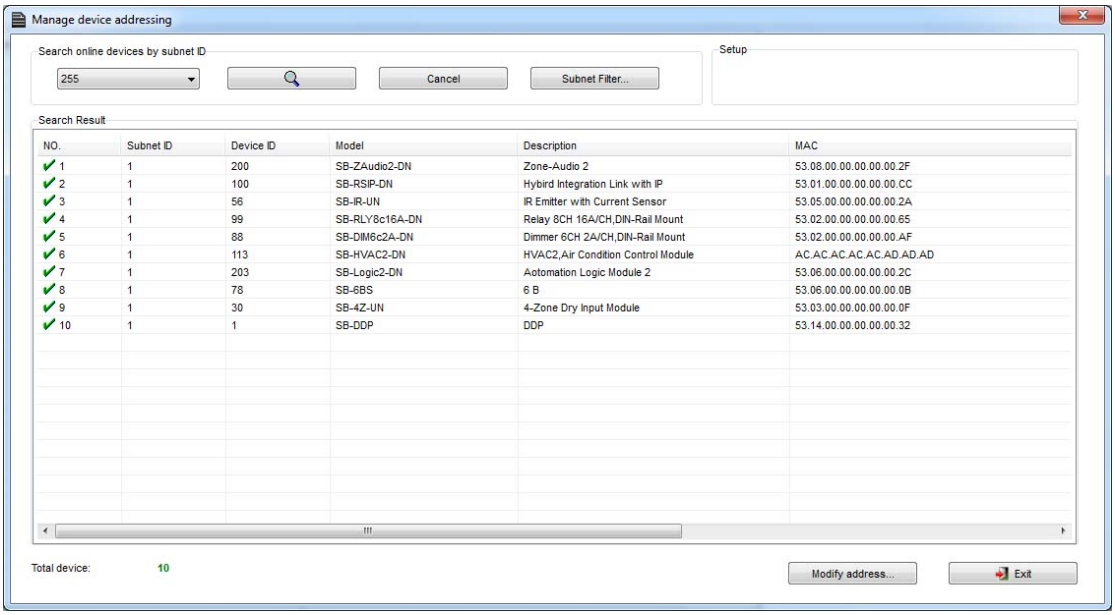
- On your software Click **Address** then **broadcast detection**
- Go to your device like Dimmer / Relay / sensor or Panel and keep pressing the **broadcast Address button** for 2 ~ 4seconds until the button LED color change to **RED**.
- In your software in the Broadcast Detection window click the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



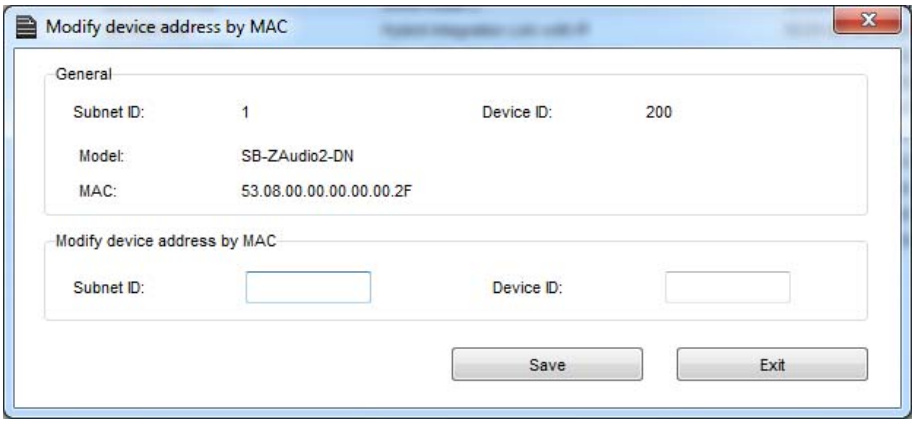
Solve Conflict address search

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

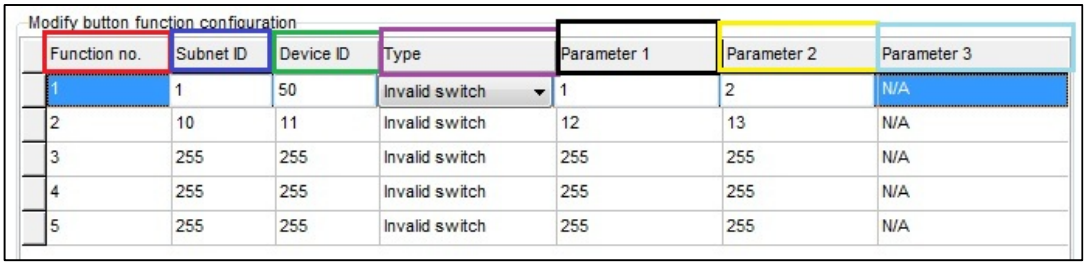
Z-Test and enhance your programming.

 *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 :

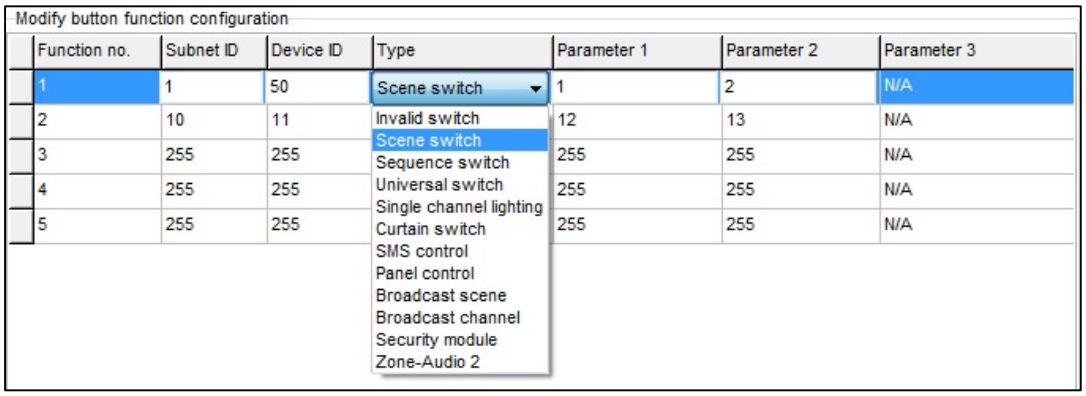
Function No. : indicated to Order/Function Number , the maximum order you can put is depend of the module .

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

3-1 Panel Switch Type Overview

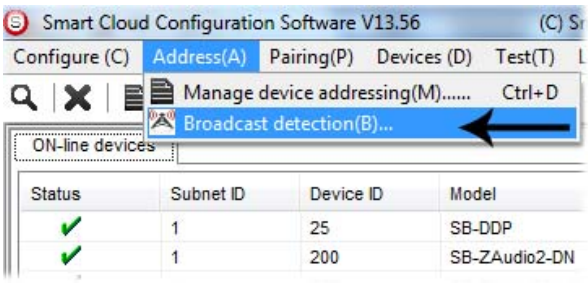
The Switch panel in the wall is your interface to control your lights, curtain and other application
The S-bus button switch panels have many types, including the 6 button panel, 4 button panel. 3 buttons panel, 2 buttons panel, and 1 button panel.

3-2 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**

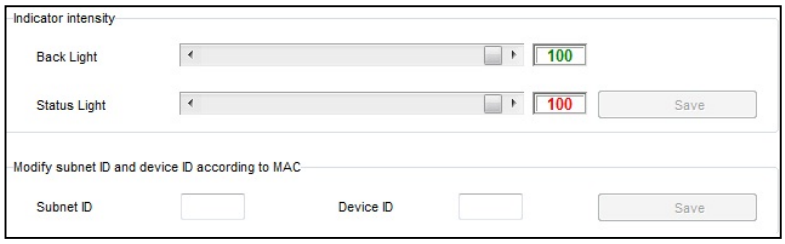


- On your Panel keep pressing the broadcast Address button for 4-5 seconds until LED turn ON
- In your software in the set broadcast detection window press the **Detect Address**
- Your Device ID and Subnet well appear Automatically

- 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

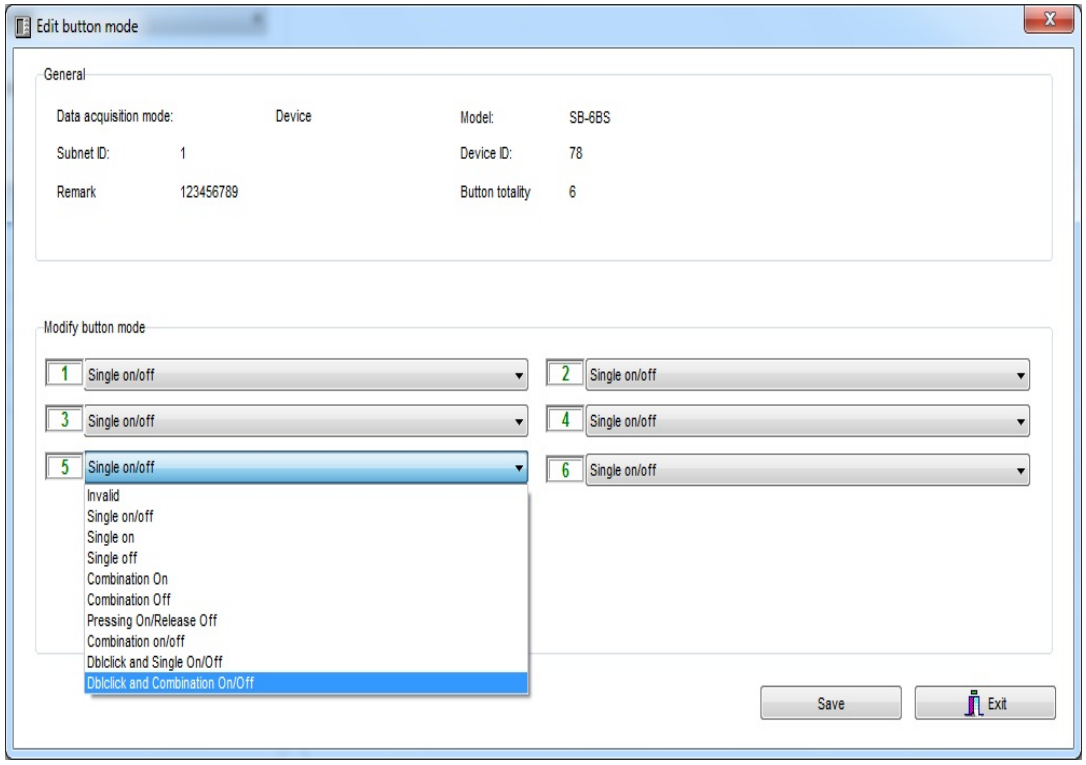
After you load the Panel to the network, double click on it.

- 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



3-3 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.

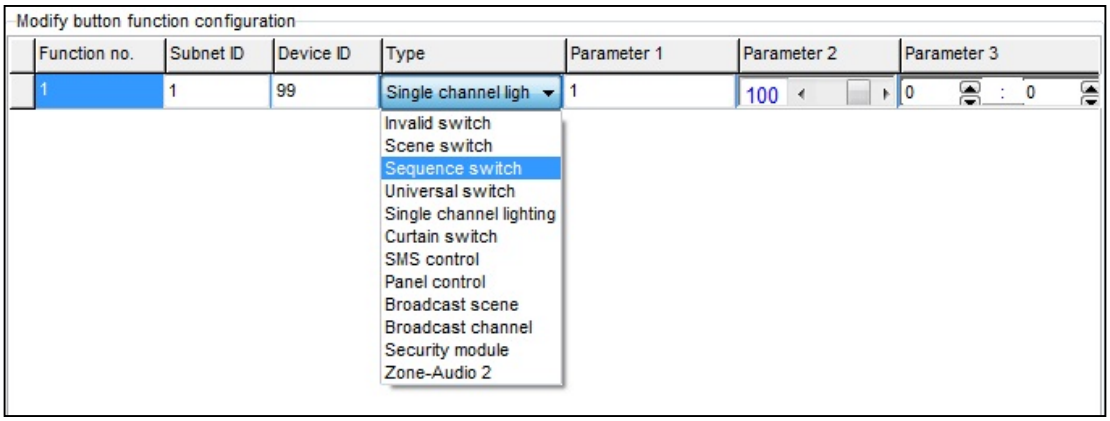
 Try always to use Single ON/OFF, cause its 2 way updated and simple friendly use for the end user.

3-4 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



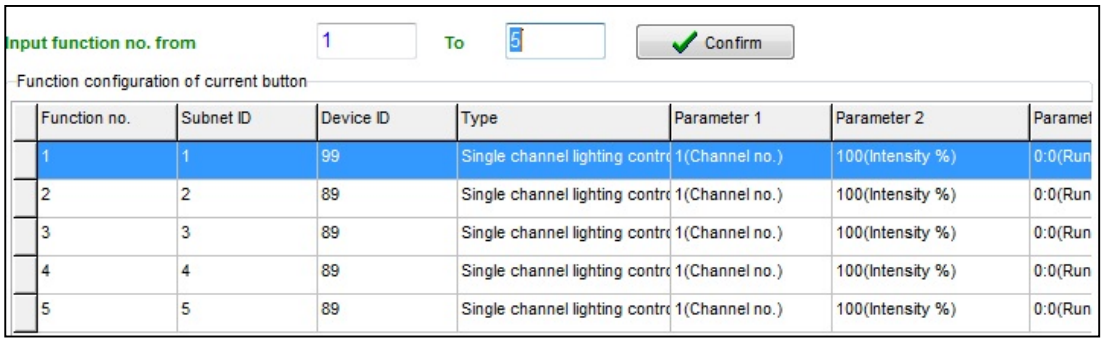
- Press Save and Exit.

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***



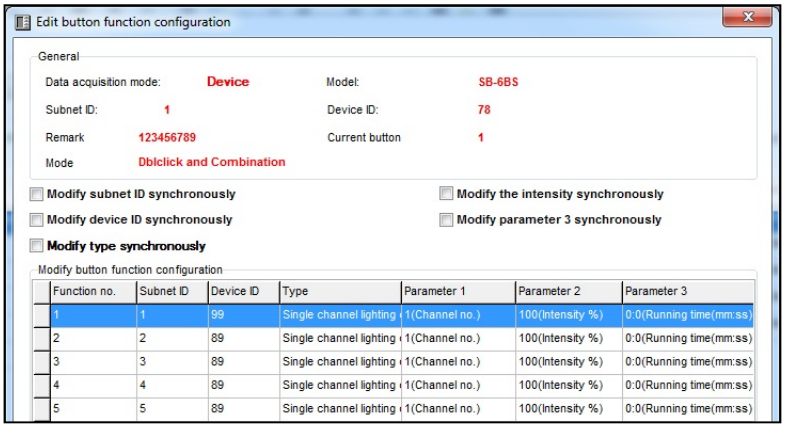
*When using **double click / Combination** you can change between each function setting in the radio log as the picture below*

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.

3-5 Panel Switch button Memory, Dimming, and LED Setting

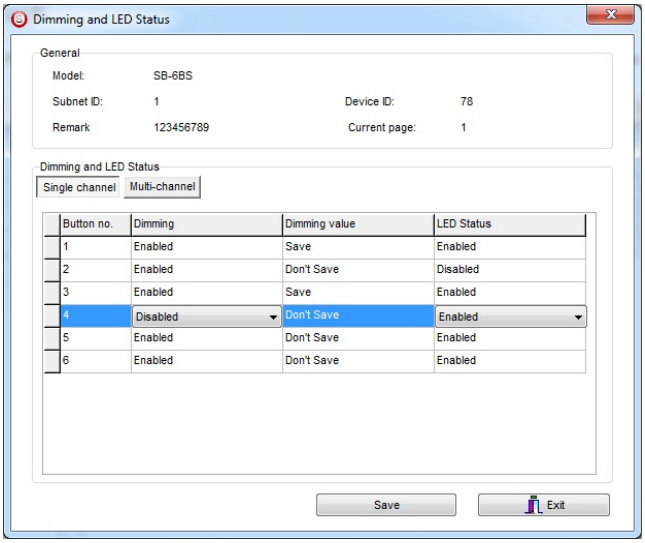
Beside the Button mode and function there are three important setting for each button.
We can categorize it as:

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

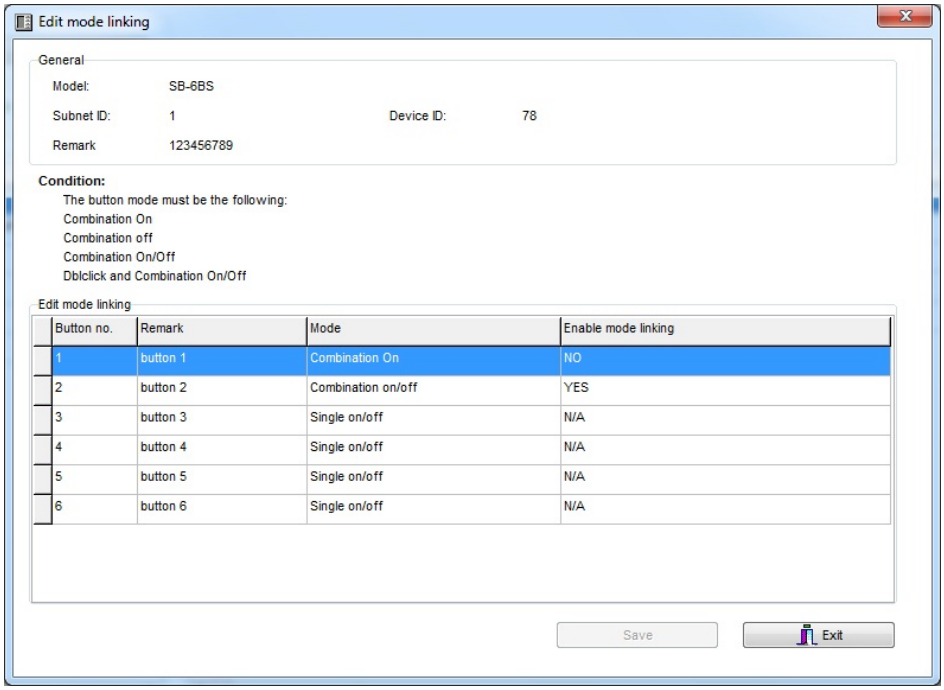
- Go to **Button Assignation** tab on the panel setting
- Press on **Set button**
- Select the setting for each button you need



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).*

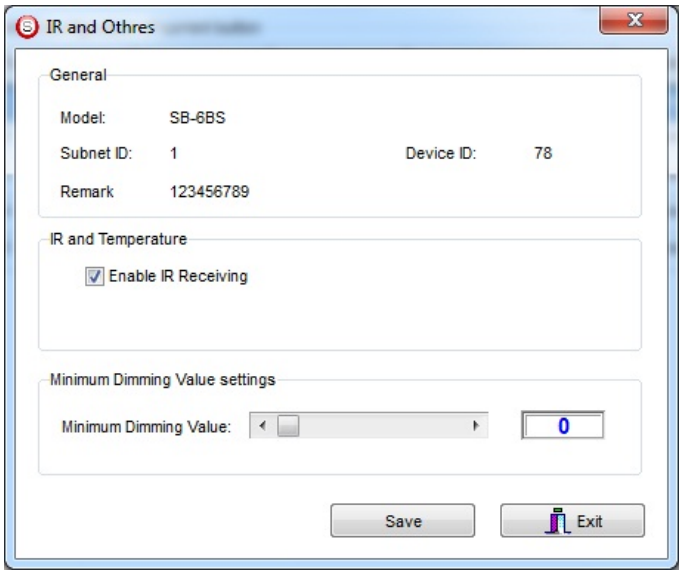
3-6 Panel Switch Setup (Minimum Dimming Value and Infrared)

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.