2014

# Programming Manual
## SMS
## V2.00

**G4**

**Interface of SMS module (SB-SMS-FL)**



Work flow
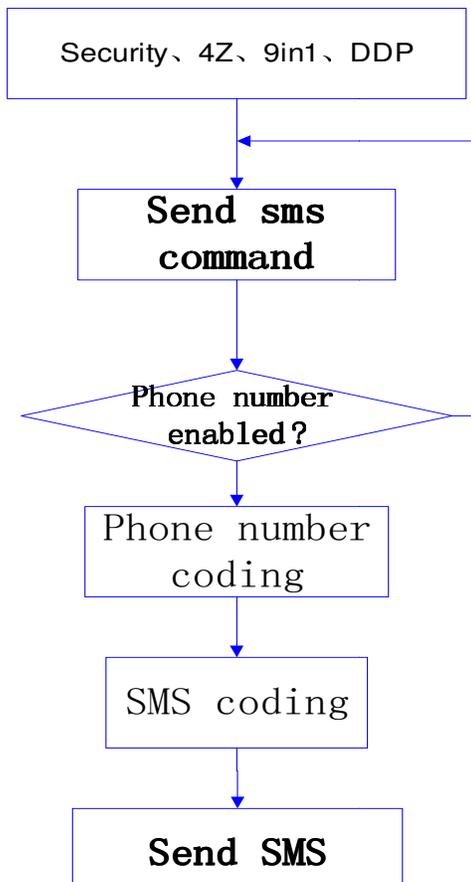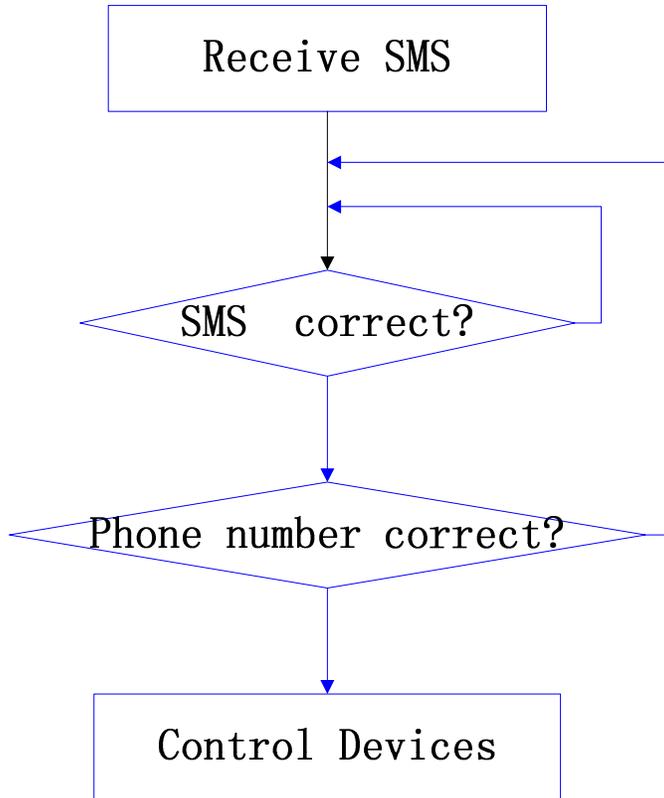
```
          ┌─────────────────────────┐
          │      Receive SMS        │
          └─────────────────────────┘
                      │
                      ▼
              ╱─────────────╲
             ╱  SMS  correct? ╲
             ╲               ╱
              ╲─────────────╱
                      │
                      ▼
          ╱───────────────────────╲
         ╱  Phone number correct?  ╲
         ╲                         ╱
          ╲───────────────────────╱
                      │
                      ▼
          ┌─────────────────────────┐
          │     Control Devices     │
          └─────────────────────────┘
```

## Contents

## 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 DDP 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- <u>Introduction</u>

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, Security control, SMS reports, 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, Security Module，Rs232, Programming and integrations Module

# 2- <u>Start Programming</u>

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  <u>S-Bus Programming Software overview</u>

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**
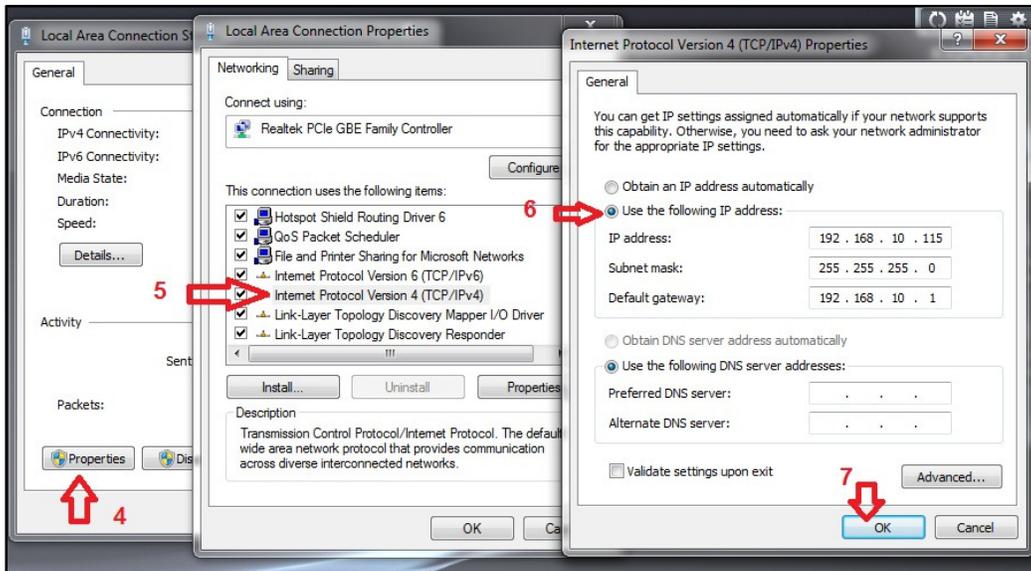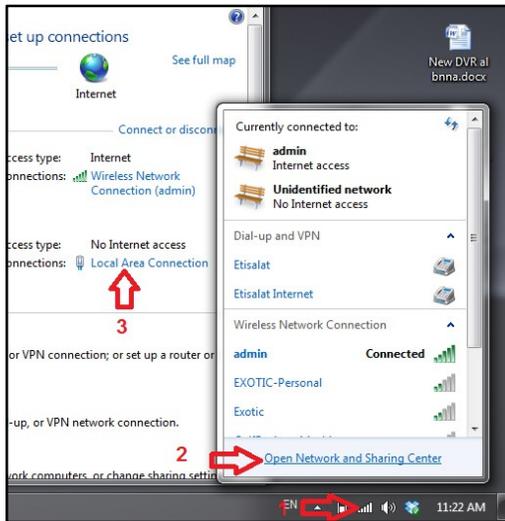
3- Run your S-bus smart cloud Software 

4- The Password window will open, type the default password is **user**
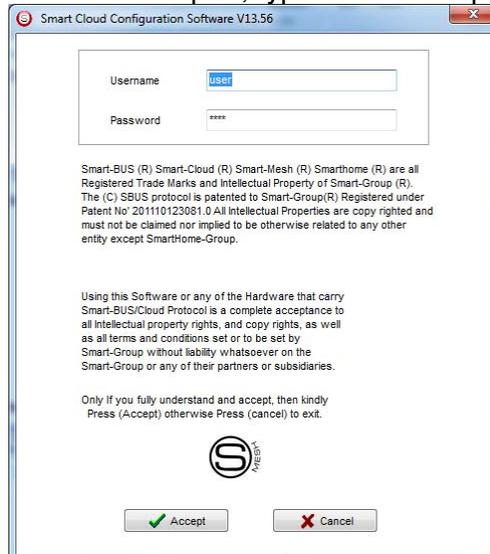
5- Your software will start
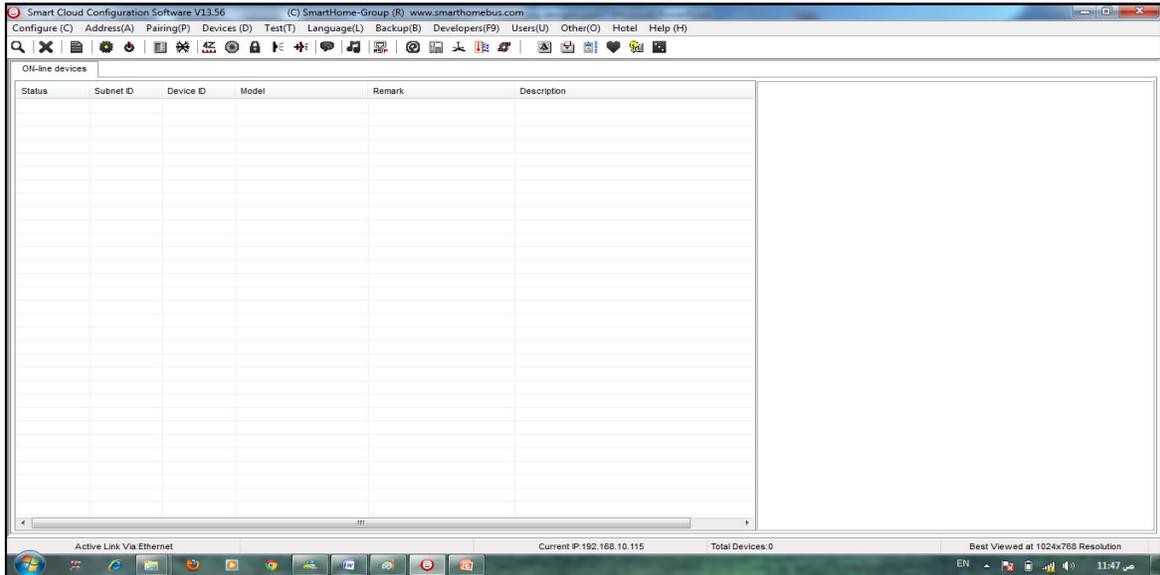


6- You can see your current IP on the footer of the software as 192.168.**10**.115 then your IP setting is ok.
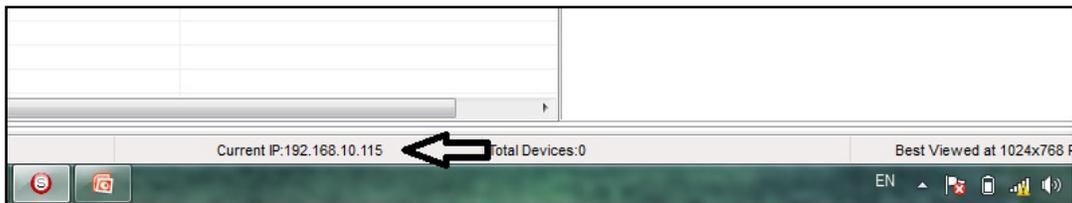


⚠️ *Set your computer IP setting before starting the S-BUS Smart Cloud.*

⚠️ *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



TIA/EIA 568B Crossed Wiring
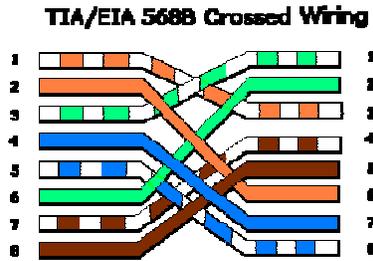
*You can use the Line command **Ping** to check your connection.*
*On your Computer, Go to start/ Run/ CMD then type Ping 192.168.10.xxx*
*If you see the following results similar to this Picture then your connection is successful*



*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
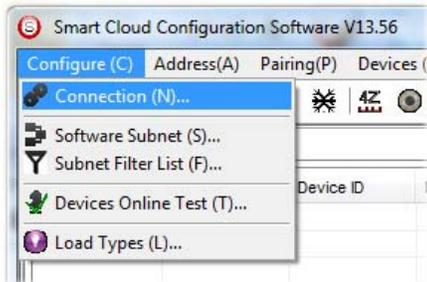


- **1**- *Connection*

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
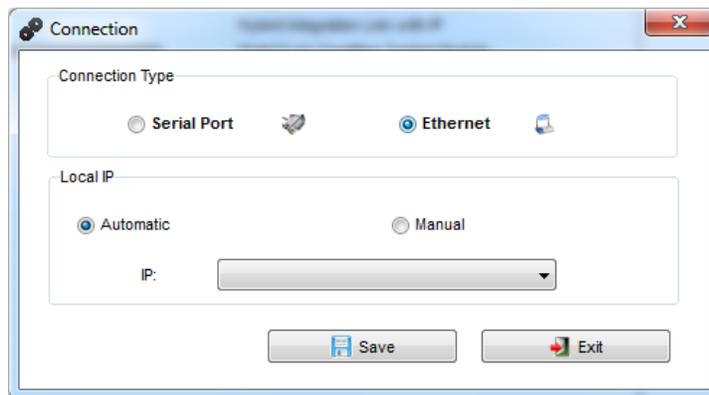


Also you can choose between **obtain Local IP Automatically** (Default) ，
or to **input local IP Manually**.

*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 <u>unique</u>, 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.

## <u>Address</u>
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)

## <u>Pairing</u>
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.

## <u>Devices</u>
You can go here directly to Devices setting Categorized by type

## <u>Test</u>
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).

## <u>Language</u>
You can change the Language between English and Chinese, and other Languages

## <u>Backup</u>
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".

■
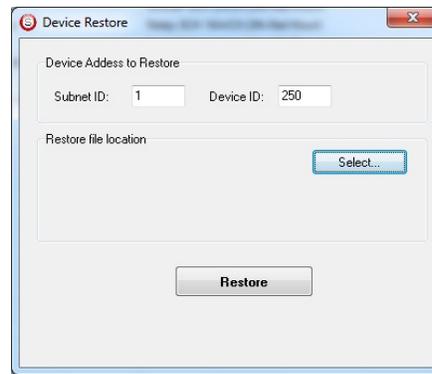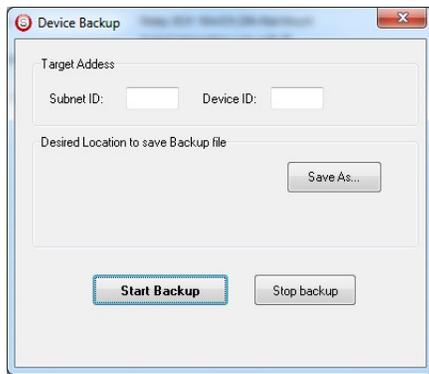
## 2-3 Devices address and Search:

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)

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

1- Fast Search

2- Advanced Search

3- Manually Search

4- Broadcast Address Device Search

5- Solve Conflict address search

*Fast Search*

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

- Click on the **Scan** button
- Click on the **Fast search Button**
- Click **add all**

11

- 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
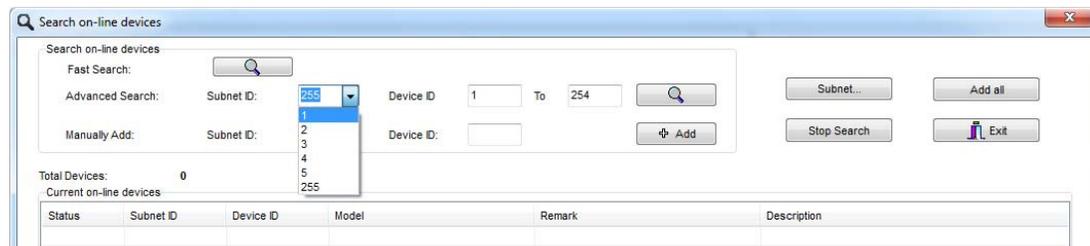


- Click **search ICON**
- Click **ADD ALL** after the search finish
- Click **Exit** to exit from the window
- click **stop** to stop the search
- Click **subnet** to add new subnet to the popup Menu subnet list

🖥️ *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

| Manually Add: | Subnet ID: | | Device ID: | | ➕ Add |
|---|---|---|---|---|---|

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

## *Broadcast Address Device Search*

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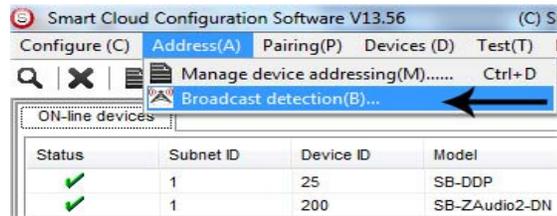


- On your software Click **Address** then **broadcast detection**
- Go to your device like Dimmer / Relay / sensor or Panel and keep pressing the **broadcast Address button** for 2 ~ 4seconds until the button LED color change to **RED**.
- In your software in the Broadcast Detection window click the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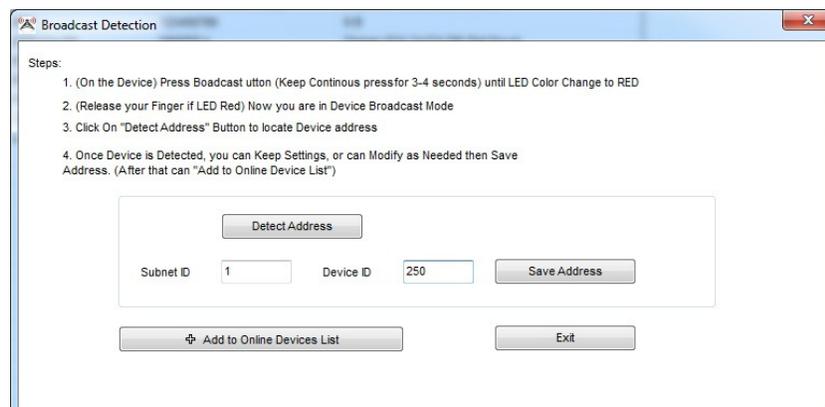
💡 *Solve Conflict address search*

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

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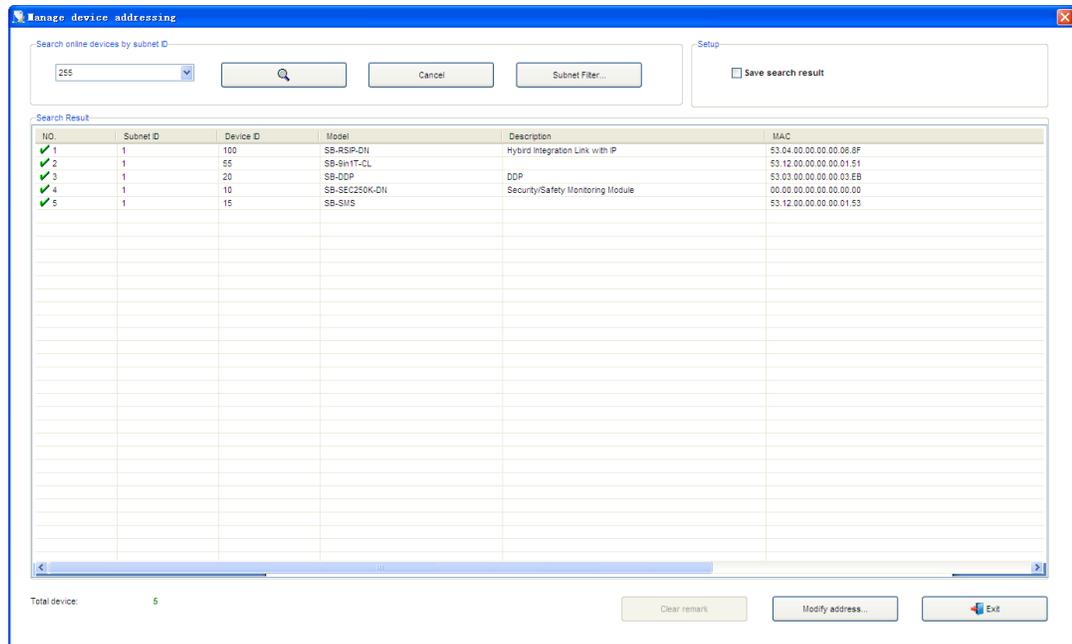


- Select Subnet **255 (recommended)** or any desired subnet then click the search icon.
- Select the device you want to modify its address then click **modify Address** or double click on it
- New window will open, and then type the new Subnet ID and Device ID, then Click **Save**

S-BUS - Smart Home Programming Guide Ver: 2.1
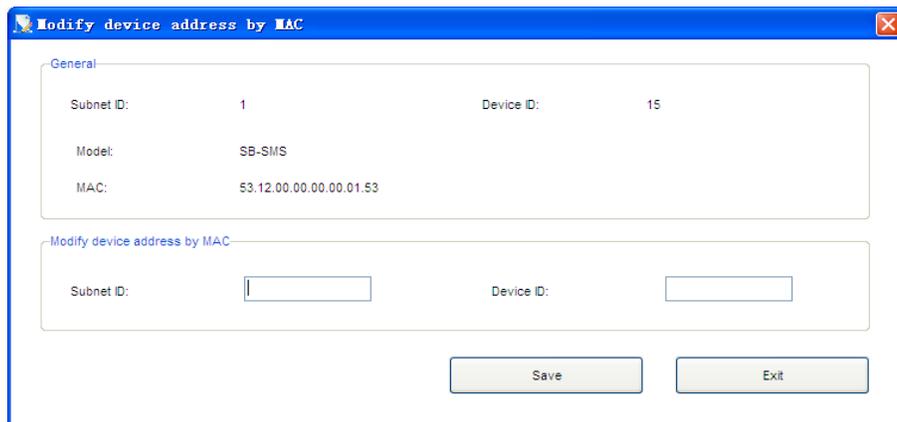
## 2-4 Steps of Basic Programming

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.



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

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-SMS Module:

### 3-1 SMS Overview:

SMS Module is an automation control system based on GSM communication. It can be connected on the S-BUS as a brand. And it also can be used as a third party product for customers for secondary development. Independent 12 V power supply and internal 3.7V battery, 2R relay and 3R dry contact. So it can also be used alone.

In the S-BUS control system, 4Z sensor、Voltage current detector（I/O module）、Logic module、security module and DDP etc. All can enable SMS module send the warning massage to users. And massages can be sent to multi people at the same time. Sending massages to SMS module ,then SMS control devices on the S-BUS，such as security protection and removal etc.
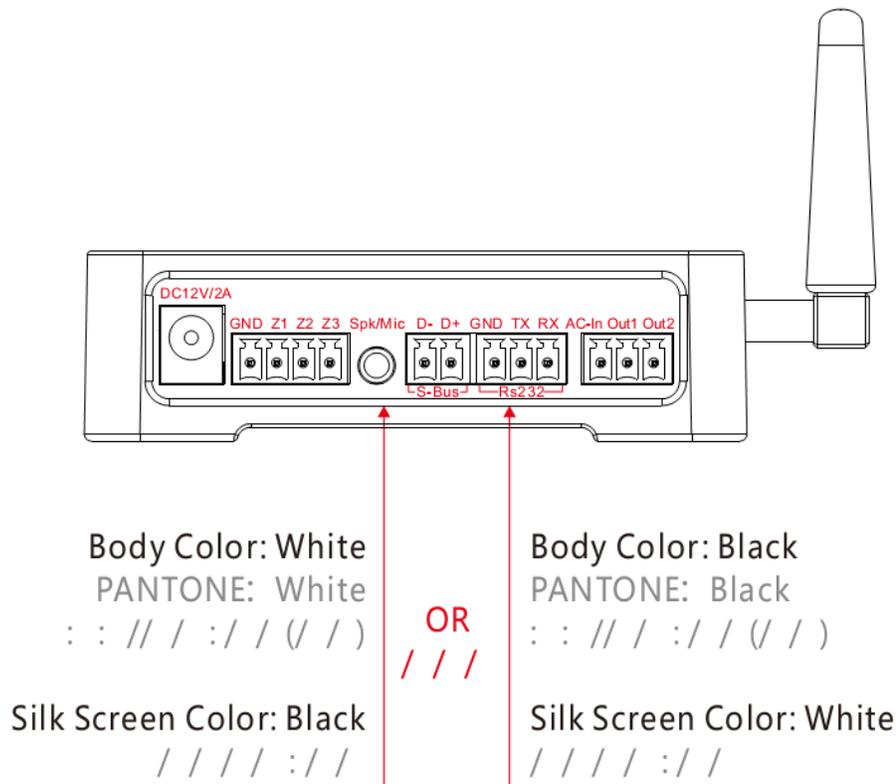


Mcu  and broadcast led: Normal blinking.

Battery LED：When external power on，the yellow led normally on lighting. When external power off，the red led normally on lighting. And when the battery is remaining20%.The red led blinking with frequency of 0.5 HZ（ON for 1s switch to OFF for 1s and switch again）。

GSM LED：Insert SIM card , connect the antenna，then apply power(The battery switch and external 12VDC).The LED lights blinking with the status of green network, blinking frequency for 64ms lighting to 800ms off. If your SIM card is inserted and valid, about 20 seconds the flashing frequency of the green LED indicator lights will change to be 64ms ON to 3000ms OFF. It indicate that you have successfully accessed to the GSM

network. And also it means the module initialization has been carried out so you can work on it normally then.

Buzzer：The buzzer beeping when power switched, messages sent or received. And when 8 seconds after power on the buzzer beeping last 1 second, it means GSM communication begin to initialize.



## 3-2 Basic setting:

S-BUS - Smart Home Programming Guide Ver: 2.1
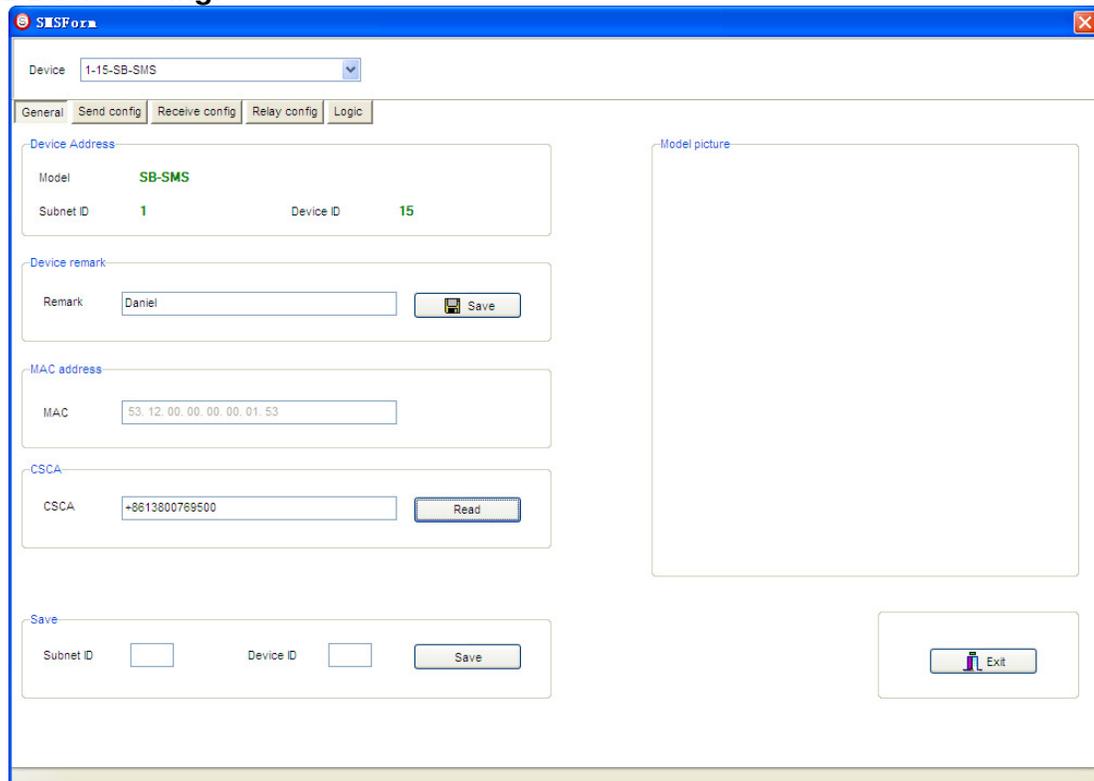
## 3-3 SMS report setup

Message report group: Setting up the module for some situations (such as the current is overlarge or gas leakage etc.) that it can send messages to inform users automatically. It can set 24 groups in all, each of them corresponds to a situation, you can set 24 different situations.

Text messaging target：Mobile phone numbers of users who can received message information. A total of ten numbers can be set up.

⚠️Mobile phone number specification: In the text configuration，such as"18929267996"and "+8618929267996",both of them are correct. You can set any one of them at will.
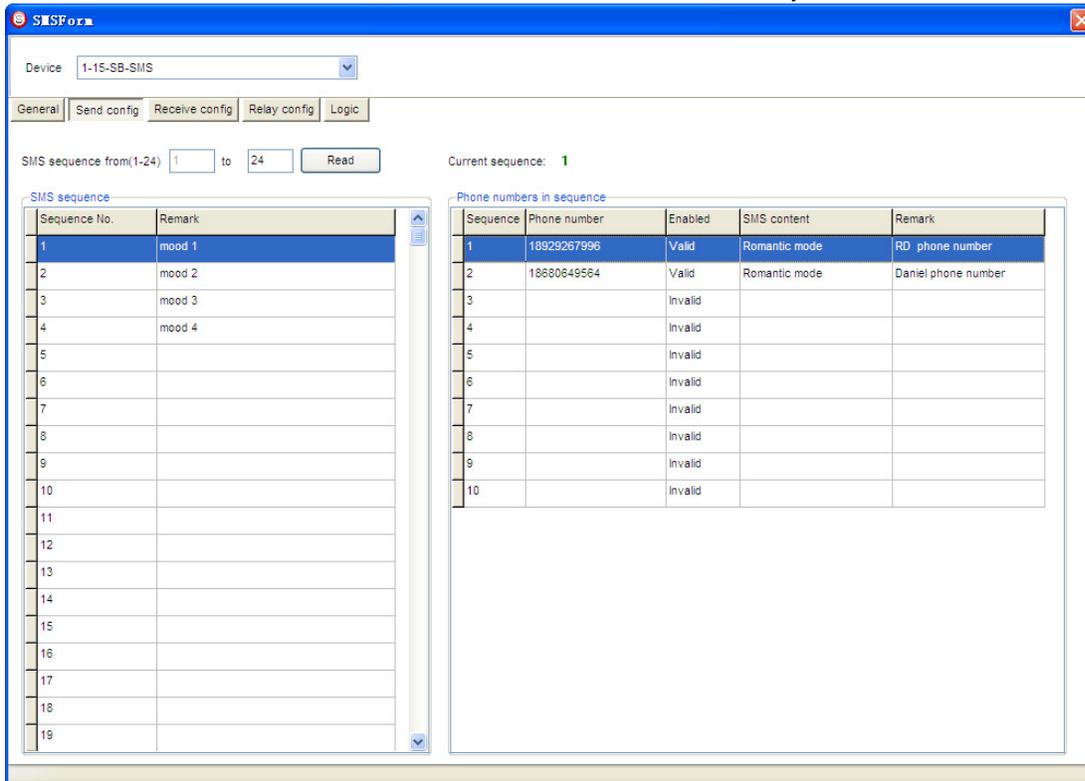


Other controllers（Security、4Z、9in1、DDP etc.）

The following figure about setting：

General

| | | | |
|---|---|---|---|
| Data acquisition mode: | **Device** | Model: | **SB-SEC250K-DN** |
| Subnet ID: | **1** | Device ID: | **10** |
| Remark | **SEURITY1** | Current button No. | **1** |
| Current group | **1** | | |

☐ Modify subnet ID synchronously      ☐ Modify the intensity synchronously

☐ Modify device ID synchronously      ☐ Modify parameter 3 synchronously

☐ **Modify type synchronously**

| Command NO | Subnet ID | Device ID | Type | Parameter 1 | Parameter 2 | Parameter 3 |
|---|---|---|---|---|---|---|
| 1 | 1 | 15 | SMS Control | Message | 1 | N/A |
| 2 | 0 | 0 | Invalid | 1 | 255 | N/A |
| 3 | 0 | 0 | Invalid | 1 | 255 | N/A |
| 4 | 0 | 0 | Invalid | 1 | 255 | N/A |
| 5 | 0 | 0 | Invalid | 1 | 255 | N/A |
| 6 | 0 | 0 | Invalid | 1 | 255 | N/A |
| 7 | 0 | 0 | Invalid | 1 | 255 | N/A |
| 8 | 0 | 0 | Invalid | 1 | 255 | N/A |
| 9 | 0 | 0 | Invalid | 1 | 255 | N/A |
| 10 | 0 | 0 | Invalid | 1 | 255 | N/A |

Addr of SMS module

Save      Exit

## 3-4 SMS control configuration:

Select group number，for example, choose number 1.double click and then input remarks and message



information.

Allowing 10 mobile phone numbers to control the devices which all already set up. Clicking the option on the

right side  ，input phone number below.

Message information received as same as the configuration of the message content&&Mobile phone number to verify and correct=➔Can control the devices which already set up.

⚠️Attention：Mobile phone number specification：In the text control configuration. Such as "18929267996" and "+8618929267996". Just one of them is correct. Also both of the two different forms can be configured out together to show the same result. All the configurations should according to the actual situation of each country.

For instance: SMS is installed "China Unicom SIM card"，the correct configuration form is: "18929267996"

For instance: SMS is installed "China Mobile SIM card", the correct configuration form is: "+8618929267996 "

Therein to "+86" is Chinese ID in the SMS code form.

Phone numbers in sequence

| Sequence No. | Phone number | Remark |
|---|---|---|
| 1 | +8618929267996 | RD phone number |
| 2 | +8618680649564 | for Daniel |

⚠️**In the instance, SMS module was using "China Mobile SIM card" for demonstration. So all the SMS receiving part we added "+86".**

## SMS Form (Screenshot 1)

**Device:** 1-15-SB-SMS

Tabs: General | Send config | Receive config | Relay config | Logic

SMS sequence from(1-40) [1] to [5]  [Read]     Current sequence: 1

### SMS sequence

| Sequence | Remark | SMS content |
|----------|--------|-------------|
| 1 | mood 1 | Audio & light |
| 2 | mood 2 | party |
| 3 | mood 3 | |
| 4 | mood 4 | |
| 5 | | |

Tabs: Phone numbers | Commands

#### Phone numbers in sequence

| Sequence No. | Phone number | Remark |
|--------------|--------------|--------|
| 1 | +8618929267996 | RD phone number |
| 2 | +8618680649564 | for Daniel |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |
| 10 | | |

## SMS Form (Screenshot 2)

**Device:** 1-15-SB-SMS

Tabs: General | Send config | Receive config | Relay config | Logic

SMS sequence from(1-40) [1] to [40]  [Read]     Current sequence: 1

### SMS sequence

| Sequence | Remark | SMS content |
|----------|--------|-------------|
| 1 | mood 1 | Audio & light |
| 2 | mood 2 | party |
| 3 | mood 3 | |
| 4 | mood 4 | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |
| 10 | | |
| 11 | | |
| 12 | | |
| 13 | | |
| 14 | | |
| 15 | | |
| 16 | | |
| 17 | | |
| 18 | | |
| 19 | | |

Tabs: Phone numbers | Commands

Command NO from(1..32) [1] to [32]  [Read]

#### Target information of the current state of the current switch

| Command N | Subnet ID | Device ID | Type | Parameter 1 | Parameter 2 | Parameter 3 |
|-----------|-----------|-----------|------|-------------|-------------|-------------|
| 1 | 1 | 4 | Single channel light | 1(Channel no.) | 100(Intensity %) | 0:0(Running tin |
| 2 | 1 | 4 | Single channel light | 2(Channel no.) | 100(Intensity %) | 0:0(Running tin |
| 3 | 1 | 201 | Zone-Audio 2 | Play Control | Play | |
| 4 | 255 | 255 | Invalid | 255 | 255 | |
| 5 | 255 | 255 | Invalid | 255 | 255 | |
| 6 | 255 | 255 | Invalid | 255 | 255 | |
| 7 | 255 | 255 | Invalid | 255 | 255 | |
| 8 | 255 | 255 | Invalid | 255 | 255 | |
| 9 | 255 | 255 | Invalid | 255 | 255 | |
| 10 | 255 | 255 | Invalid | 255 | 255 | |
| 11 | 255 | 255 | Invalid | 255 | 255 | |
| 12 | 255 | 255 | Invalid | 255 | 255 | |
| 13 | 255 | 255 | Invalid | 255 | 255 | |
| 14 | 255 | 255 | Invalid | 255 | 255 | |
| 15 | 255 | 255 | Invalid | 255 | 255 | |

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3-5 built-in relay control:



⚠ Call control relay 1. SMS control relay 2.

Can setting up 99 mobile phone numbers at most. If the numbers are not enabled，any one of them will open relay arbitrary. As the following figure shows:



⚠Attention：In the relay control configuration, the number to call to control relay 1 can't add national ID, such as "18680649564". The form configuration of the phone number to control relay 2 is just as same as the description in "3-4 SMS control". With reference above, such as "18680649564" or "+8618680649564".

⚠Noteworthiness：In the relay configuration, if calling and texting phone number forms are the same. It's ok to configure just one，for instance as the following picture. And if the number forms are different, you need to follow the above method as the picture shows. All the configurations should according to the actual situation of each country.



The picture below is about time setup for relay delay shut down. It can be used as the GSM door control.



3-6 Logic 配置

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3 road dry contact. It can be connected to door magnetic switch or the gas sensor etc.
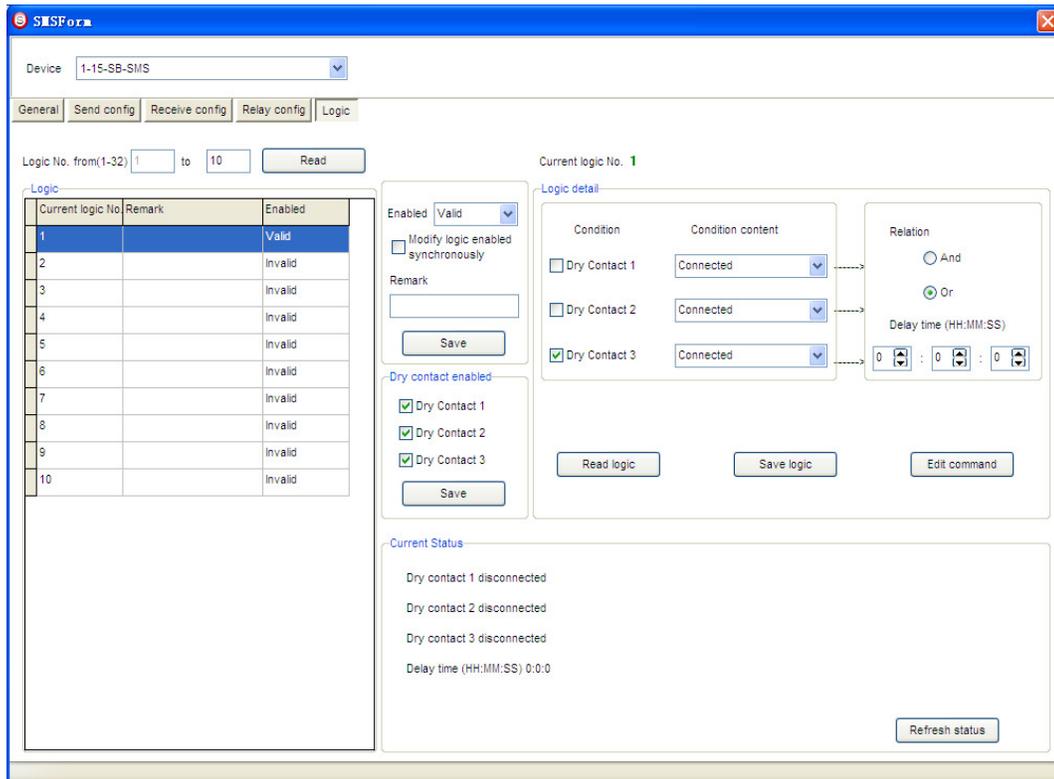


These are 3 road dry contact external input activation options, activated after tick and save.
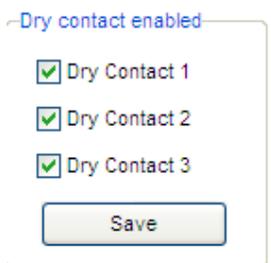


These are enabled input conditions, input conditions and the delay time setup of each logic.
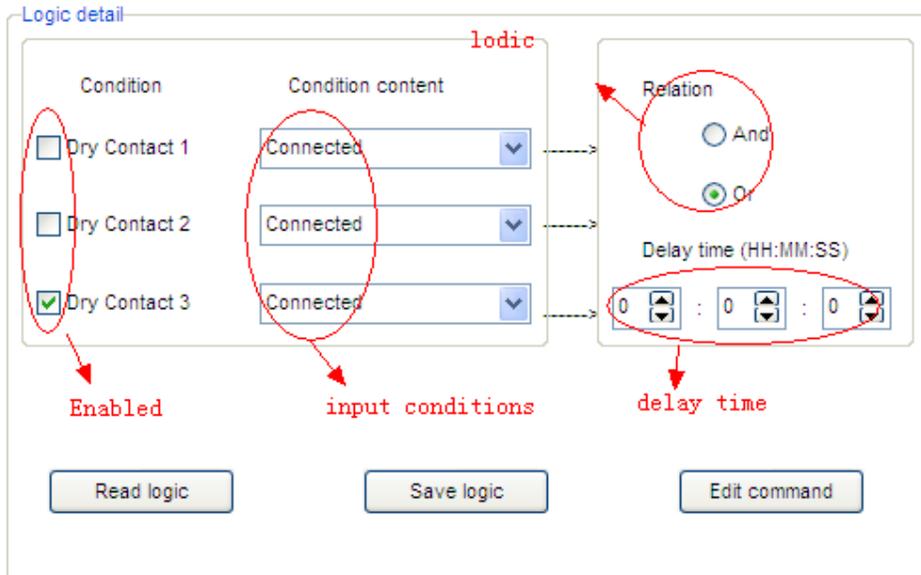
These are the settings for devices controlled by dry contact after the input conditions valid.
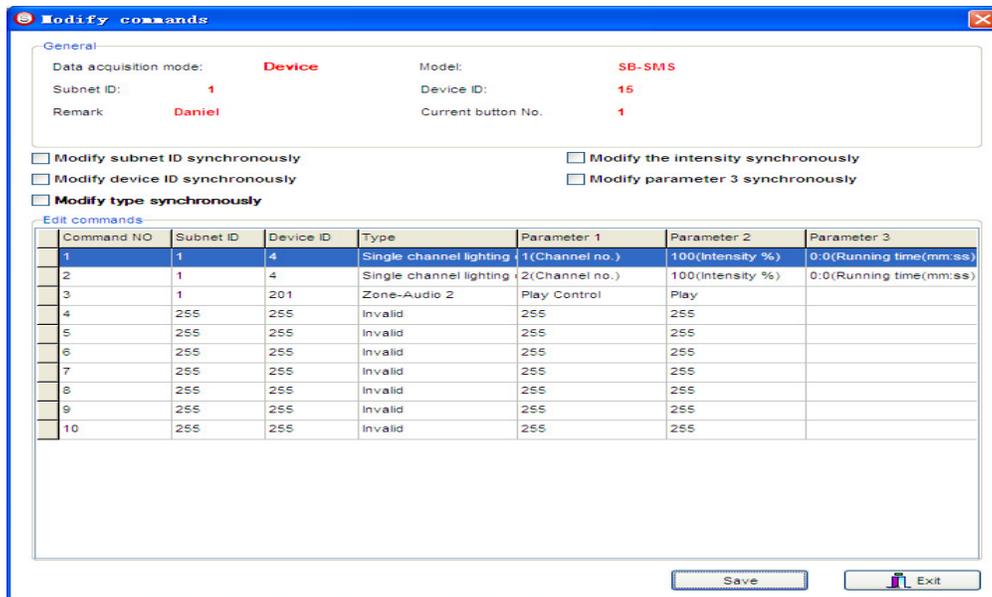


Advanced SMS Controller

Application example
1. Security module:
set targets(lamp/z-audio) for enter buzzer, exit buzze
alarm buzzer, indoor/outdoor siren，sms command;
enable area 1;
2. Security function programming of  8in1 sensor:

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select area 1

select mode: other security level

enable: AWAY/DAY/NIGHT/VACATION

enable: Delay

3. Set Away/Day/Night/Disarm security mode in DDP