DELTA HVAC

89LDS-100A
REMOTE MONITORING SOFWARE

INSTRUCTION MANUAL

WARNING!
Read and follow all safety precautions in Instruction Manual - improper use can cause serious injury.

Welcome To Use 89LDS Monitoring Software 2013

Welcome to use 89LDS Monitoring Software 2013. 89LDS Monitoring Software 2013 is a remote control system newly introduced by DELTA COMFORT TECHNOLOGIES for monitoring and controlling air conditioners. Different from the former single-to-single monitoring system (a system can only monitor a single type of air conditioner), this system is able to monitor different types of air conditioners, with the capability of a system being compatible with all types of air conditioners. 89LDS Monitoring Software 2013 has more functions and it is much suitable for users. The system support users' management of different levels, multiple bus monitor, real time control, control in fixed time, unit control and automatic examination. With this system, users will reach a more intelligent and easier remote control of air conditioners.

89LDS Monitoring Software 2013 adopts multithreading, database and COM components and so on to make the procedure structure more flexible and reliable. The related components of the unit can be explored by a third party for easy expansion.

89LDS Monitoring Software 2013 enables remote control product to reach another height, and it will bring you a convenient experience.

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Function Introduction

With 89LDS Monitoring Software 2013, the following functions are available.

Traditional functions:

- Check the state of AC running and malfunction information;
- Set the parameter of AC remotely without the need to stay in the machinery room all the time;
- Users management of different levels;
- Intelligent timer control simplifies schedule management of equipment.

New functions:

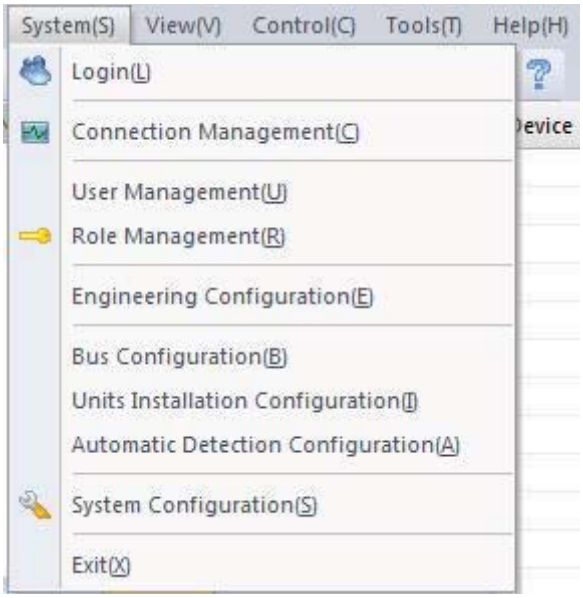
- Management of multiple users and roles meet the needs of various customers;
- Bring in engineering concept so as to visualize the operation from an abstract one.
- Monitor with COMs and multithreading help you monitor various unit through different COMs at the same time;
- Automatic examination enables you to monitor the unit fast under the state of being unfamiliar with the concept such as equipment, protocol and model;
- Vivid network structure helps you understand the physical structure of the equipment intuitively;
- Vivid location structure helps you decide the location of equipment installation without the need to understand complicated physical structure;
- Real time record of operation and history enable you to know each operation of users for easy management.

Main Menu

This unit will give a specific introduction to the function of procedure menu. The main menu is divided into five submenus, "System" menu, "View" menu, "Control" menu, "Tools" menu and "Help" menu.

System Menu:

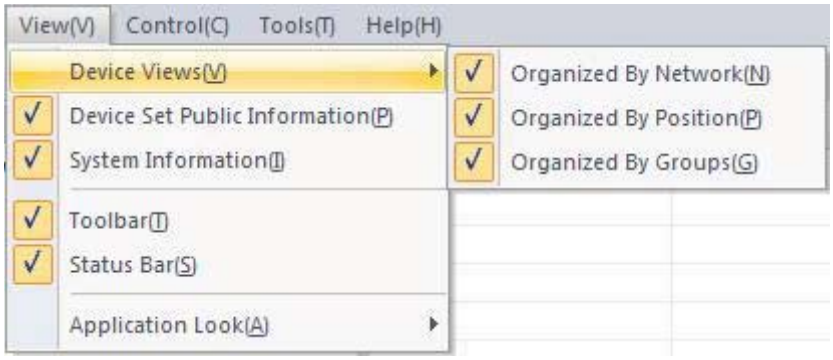
Each item of the system menu has realized some configuration function of this software system.



- Login: to enter into the interface for login. Users can log in and access related operation.
- Connection Management: to manage the bus and decide using which bus for monitoring in the running.
- User Management: to enter into the interface of customer management, where you can add, delete and renew all users.
- Role Management: to add and delete character.
- Engineering Configuration: users can configure project information through this menu.
- Bus configuration: to add and delete main wire for the system.
- Units Installation Configuarion: define the specific location of added equipment.
- Automatic Detection Configuration: configure automatic examination through this menu.
- System Configuration: configure the system information such as protocol and COM supported by the system.
- Exit: to exit from the procedure.

View Menu:

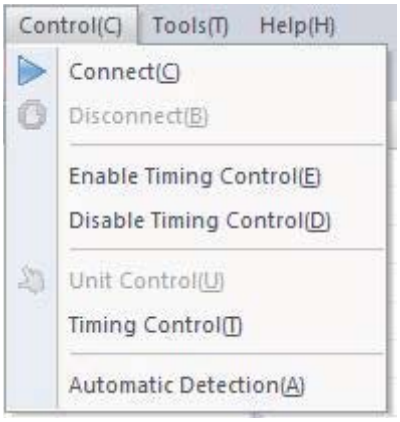
Each item of the view menu controls the layout and appearance of the interface.



- Organized By Network: the equipments are displayed in the interface according to the physical structure.
- Organized By Position: the equipments are displayed in the interface according to the actual location.
- Organized By Groups: the equipments are displayed according to groups.
- Device Set Public Information: decide whether the list of parameter to be displayed or not.
- System Information: decide whether the figure will be displayed on the interface.
- Toolbar: decide whether toolbar is displayed or not.
- Status Bar: decide whether the state bar is displayed or not.
- Appearance Look: different appearance of applied procedure can be selected.

Control Menu:

Each item of control menu is used for certain control of equipment.



- Connect: enable the unit to communicate with the system.
- Disconnect: stop communicating with the unit.
- Enable Timing Control: to turn on the Timer function.
- Disable Timing Control: the system will not deal with any timer order.
- Unit Control: set the parameter of unit.
- Timing Control: set timer order so that system will automatically order a control at certain moment.
- Automatic Detection: to execute the function of automatic detecting.

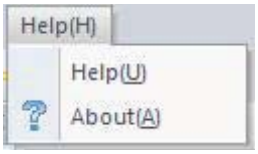
Tools Menu:

In the tools menu, it shows some extended functions of the system.

- Group Configuration: add or delete groups, and manage the devices in the group.
- Group Control: integrally control the devices in the group.
- Group Detection: to write all the information of groups into corresponding modules. Before this operation, please run automatic detection first.

Help:

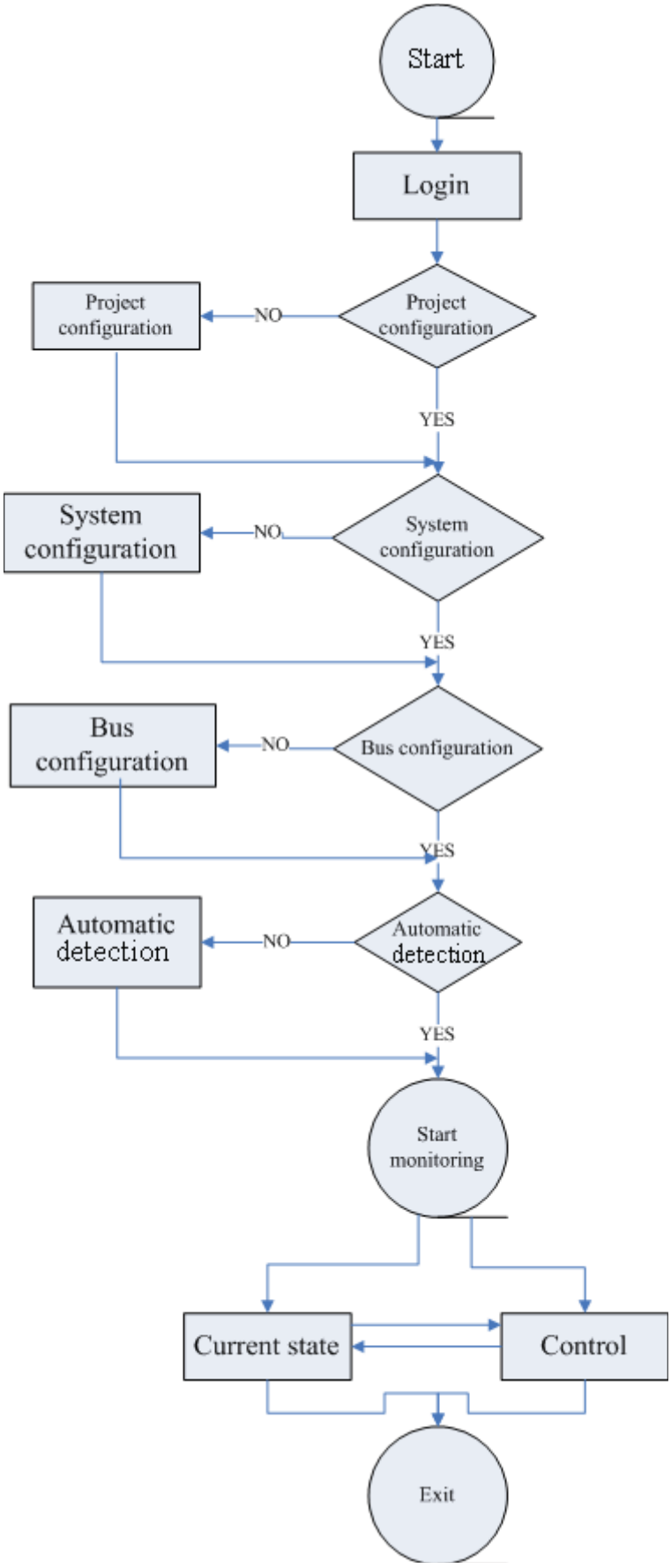
The Help menu offers some information about the system.



- Help: documents used for entering the system.
- About: information such as the version of the system is displayed.

Operation Steps

The unit will introduce system operation steps so that users can intuitively understand the logical relation among each function of the system and can operate the system more easily and rapidly. The system operation steps are as follows:


Start
Login
Project configuration
NO
Project configuration
YES
System configuration
NO
System configuration
YES
Bus configuration
NO
Bus configuration
YES
Automatic detection
NO
Automatic detection
YES
Start monitoring
Current state
Control
Exit

... If users operate this system for the first time, each step should be operated. Otherwise, you can start monitoring after logging in without the needs of configuration.

Introduction

This unit takes monitoring VRF as an example, presenting how to configure system rapidly when first using it so that the air conditioner is monitored. Users can simulate step by step and understand each step.

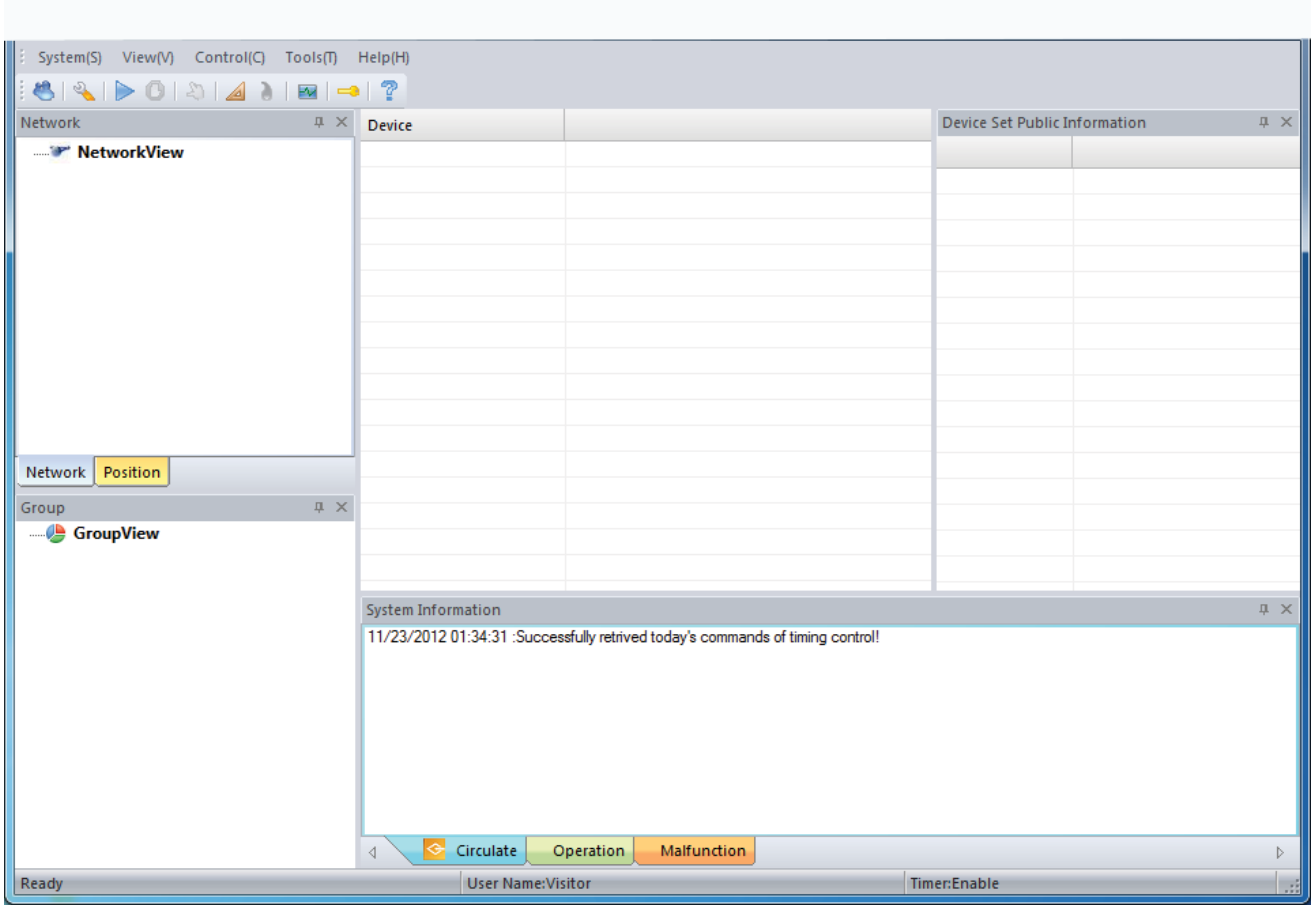
Notice: As an example, this unit helps users configure this system easily and rapidly. Some integrant functions are shown here and each step is explained in detail. For the meanings of each function and operation, please refer to the following chapter. In the actual application, operation is subject to actual engineering.

Please read each section of this chapter in order. The whole process is presented in sequence.

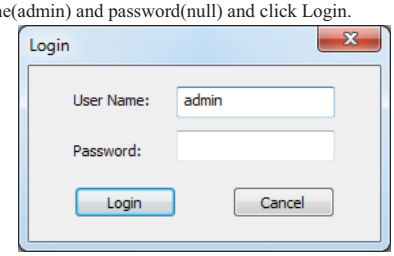
Login

1.Run 89DLS Monitoring Software 2013.exe as an administrator in the installation catalogue. (The shortcut of "89LDS Monitoring Software 2013" can be found in Start Menu or desktop)

2.The pop-up interface of the software will be as below:

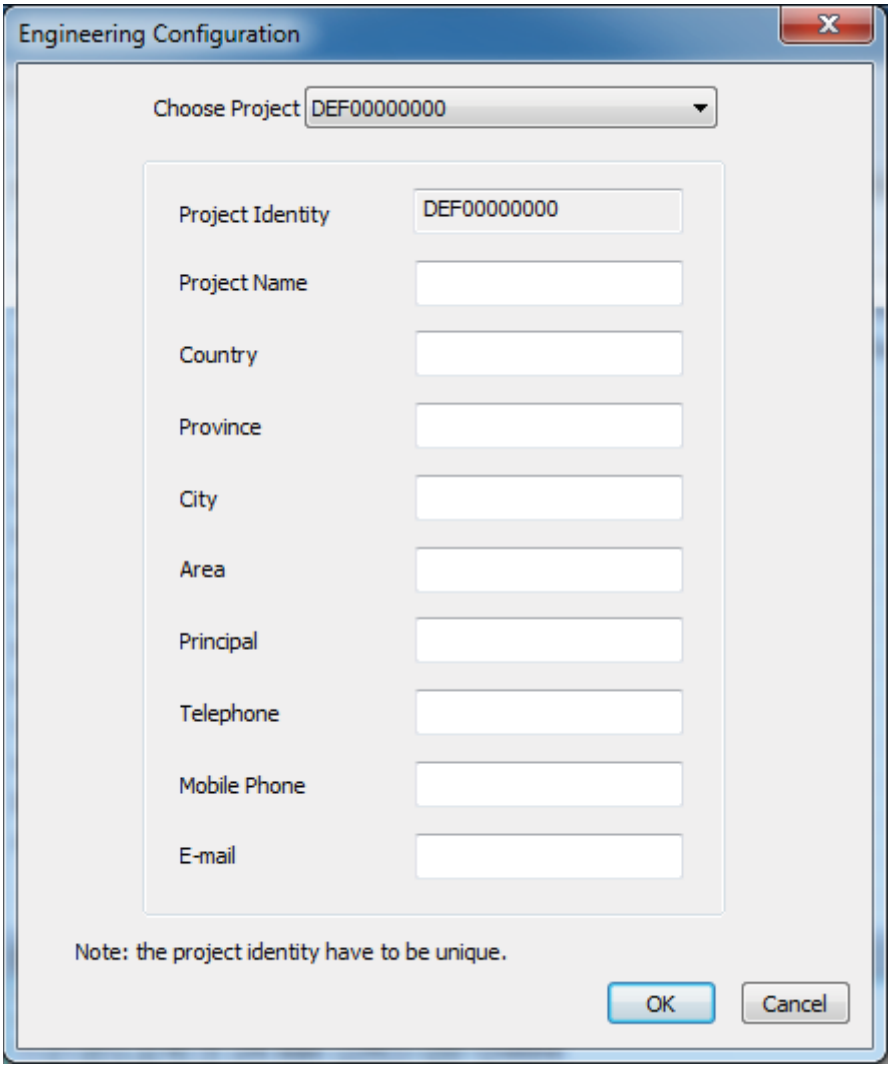


3.Click Main Menu->System ->Login. Then input user name(admin) and password(null) and click Login.



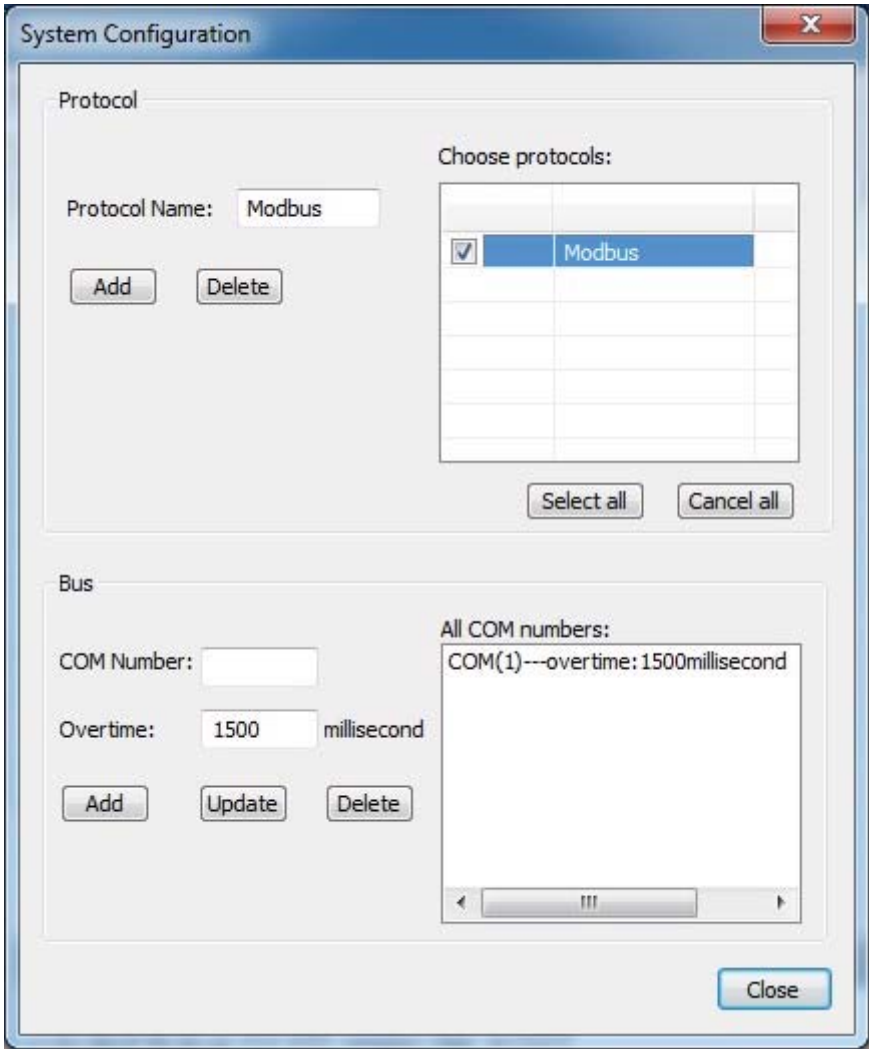
Engineering Configuration

Click Main Menu->System->Engineering Configuration, and then fill in the engineering information. Click "OK" to finish the configuration.

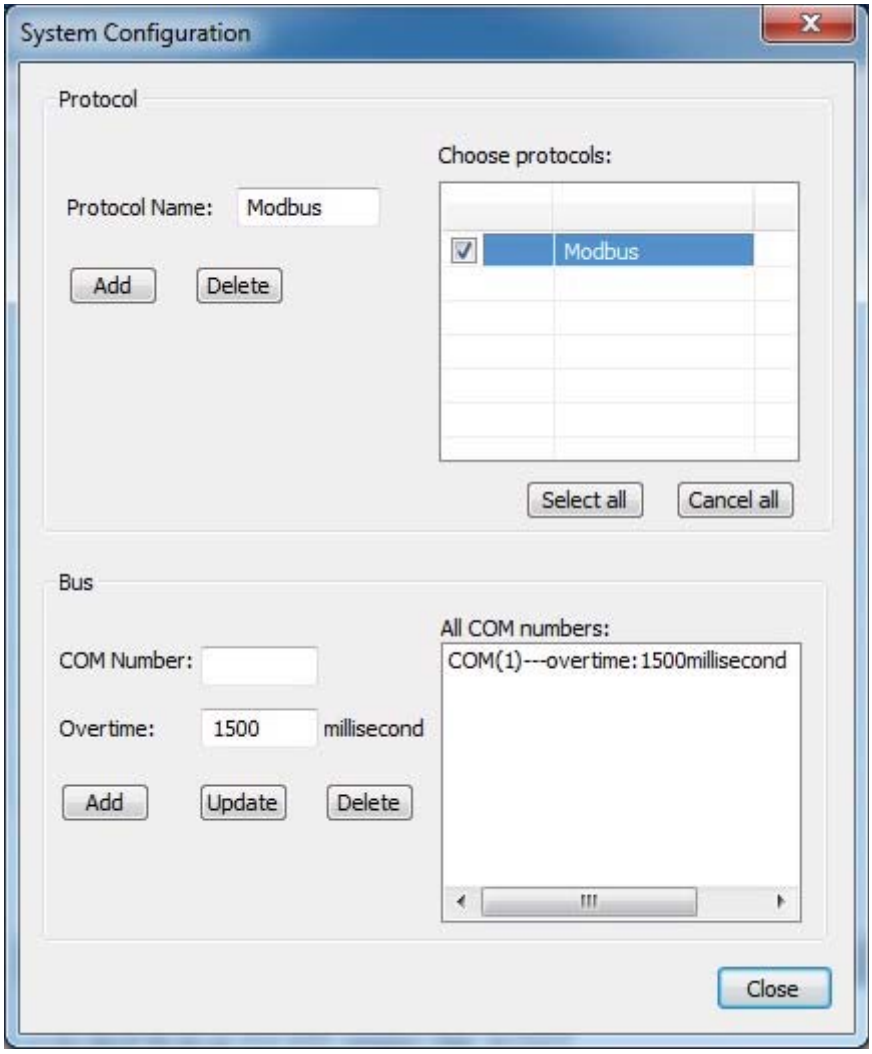


System Configuration

Click Main Menu->System->System Configuration and the following interface will show.



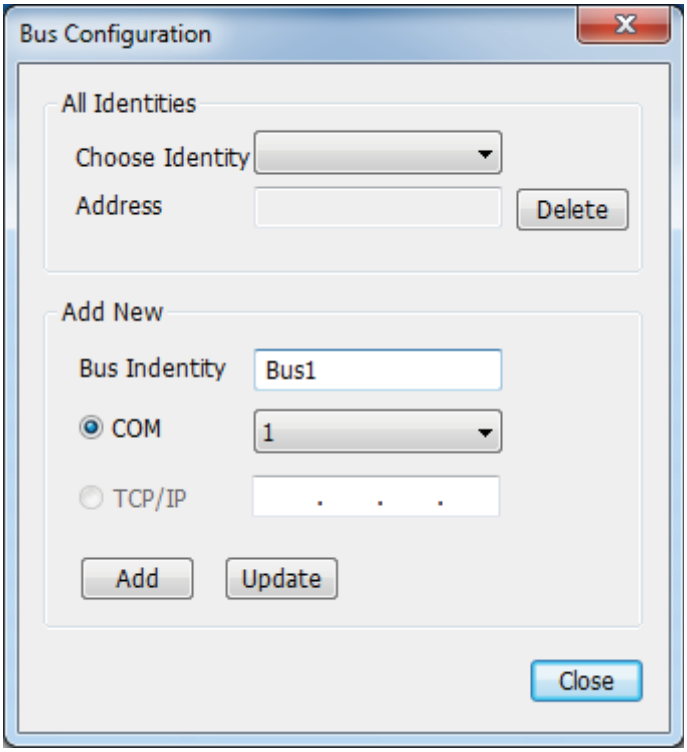
Set parameters as the following interface.(Overtime means after software sending a request command,communication module should give a response in 1500ms.)



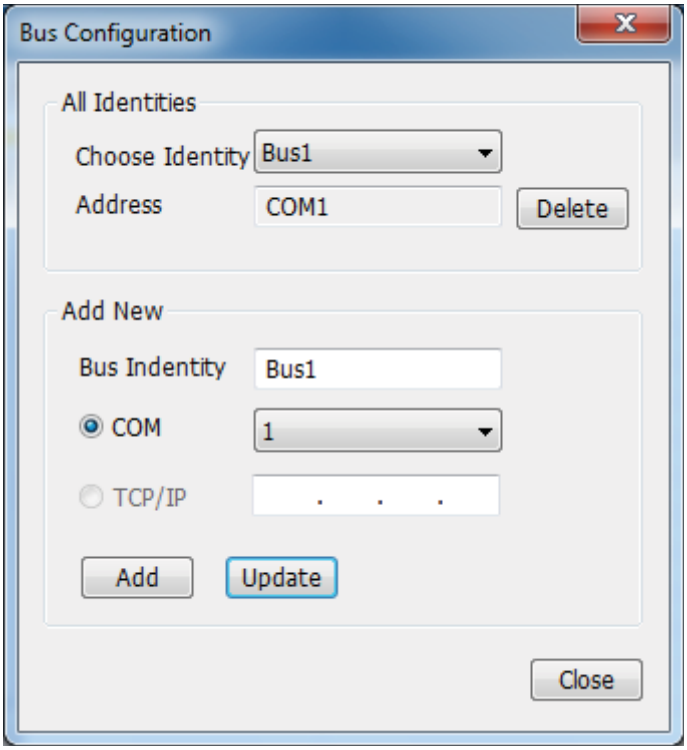
Now,the system support Com1 and Modbus.

Bus Configuration

Click Main Menu->System->Bus Configuration and the interface of bus configuration will show.

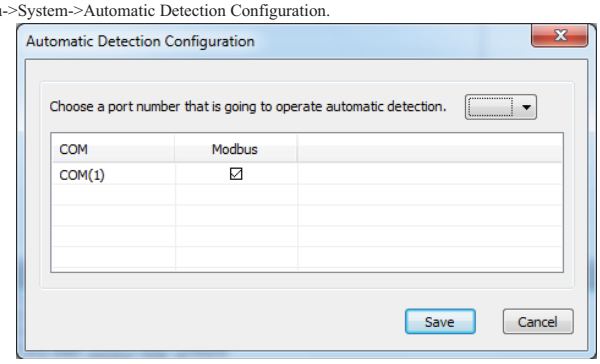


Select the COM number in "COM". COM1 is used in this example. Then input "Bus1" in "Bus Identity" (the name is decided by yourself) and click Add as the following figure. Click "Close" to finish adding the bus.


Bus Configuration
All Identities
Choose Identity
Bus1
Address
COM1
Delete
Add New
Bus Indentity
Bus1
COM
1
TCP/IP
Add
Update
Close

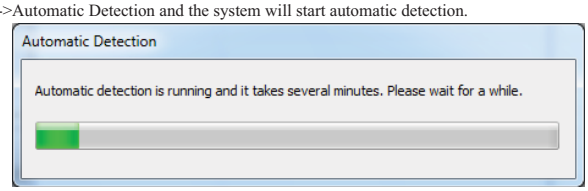
Automatic Detection

1.Configure automatic detection: click Main Menu->System->Automatic Detection Configuration.

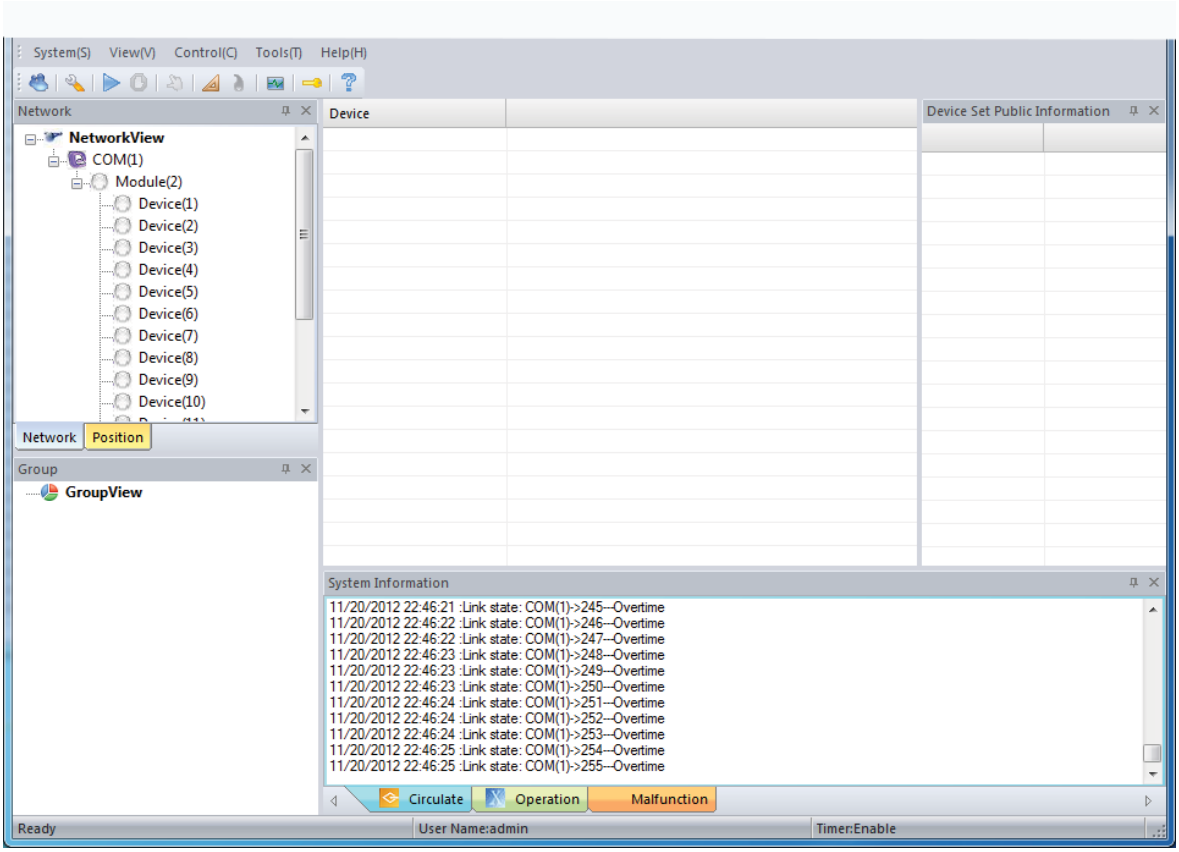


In this example, COM(1) and Modbus are selected as the above figure and then click Save.

2.Automatic Detection: click Main Menu->Control->Automatic Detection and the system will start automatic detection.



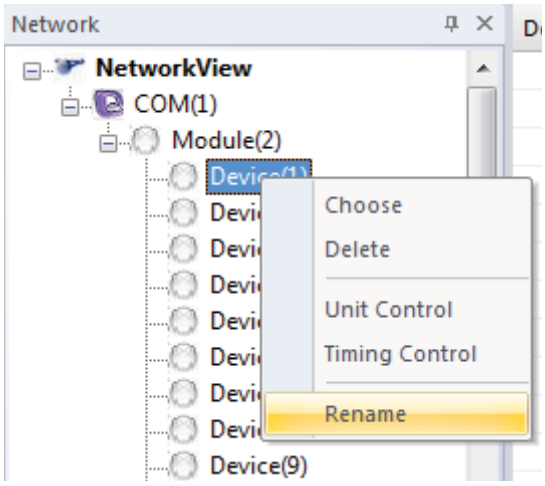
3.The result of devices in the example is as below (pay attention to the NetworkView on the left):



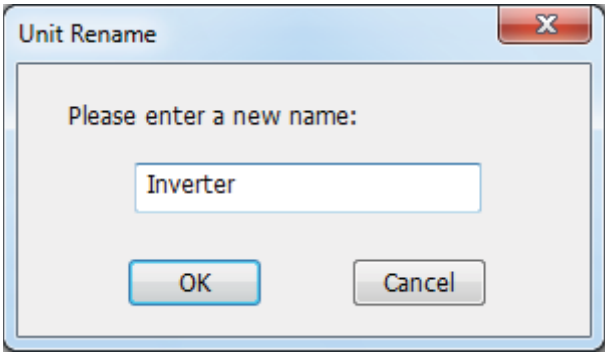
So far, the equipment is added successfully.

Equipment Management

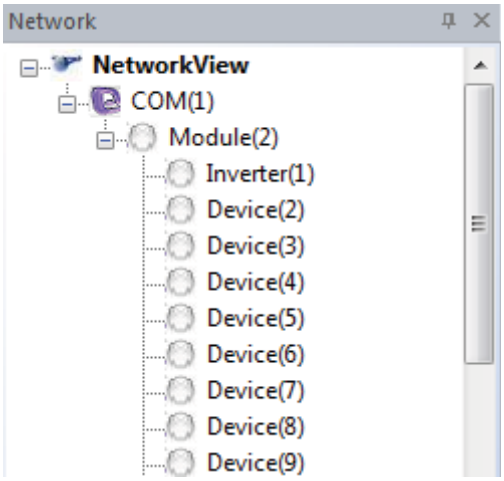
1.Rename the equipment: left click Equipment to select "Rename".



2.Fill in the name.

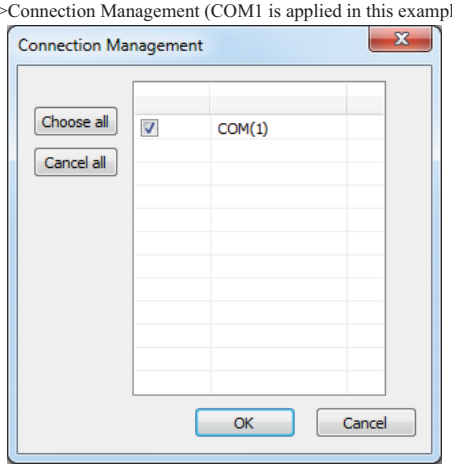


The result is as below:

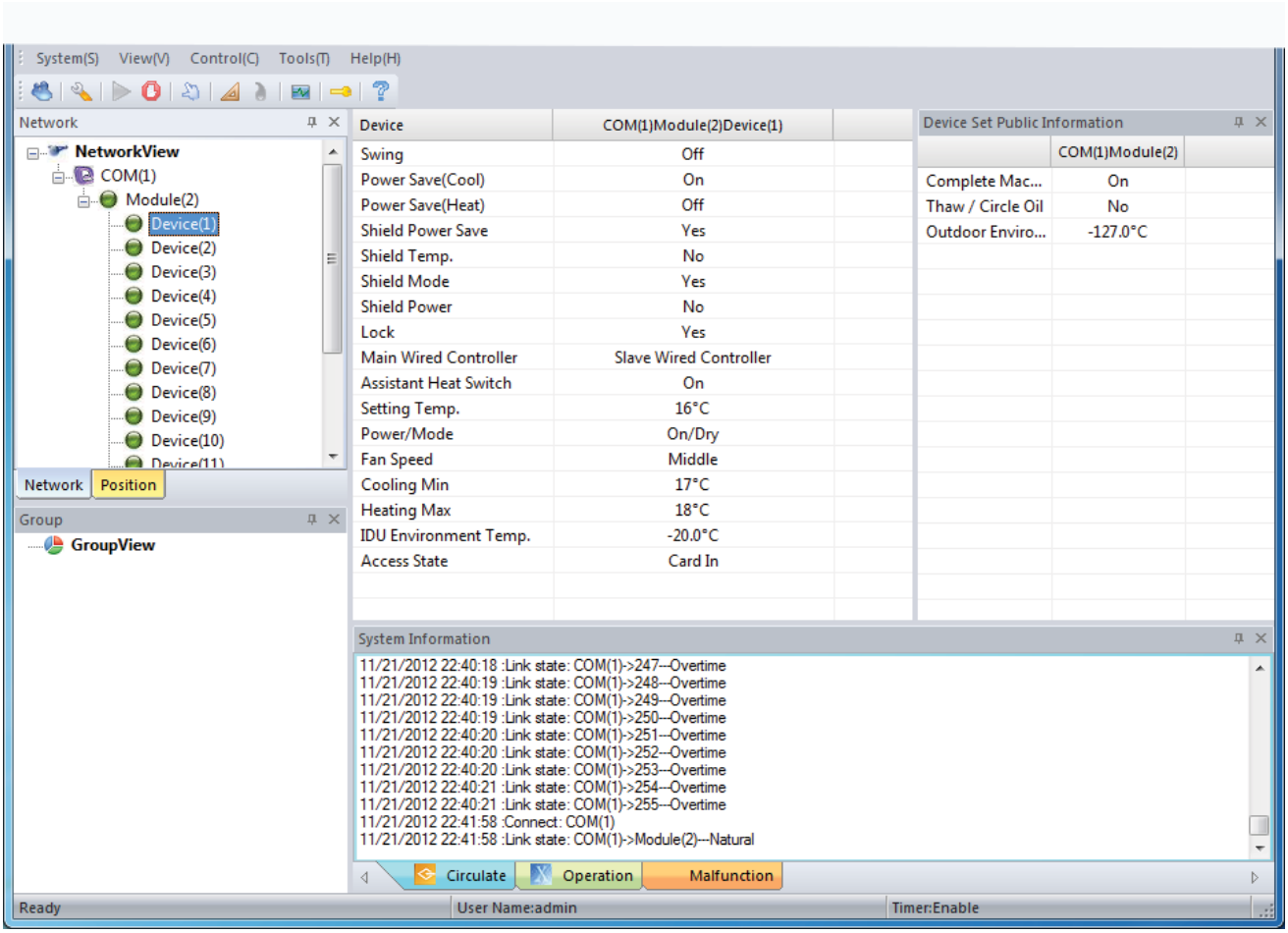


Connect Equipments

1.Connection Management: Click Main Menu->System->Connection Management (COM1 is applied in this example) and then click "OK".

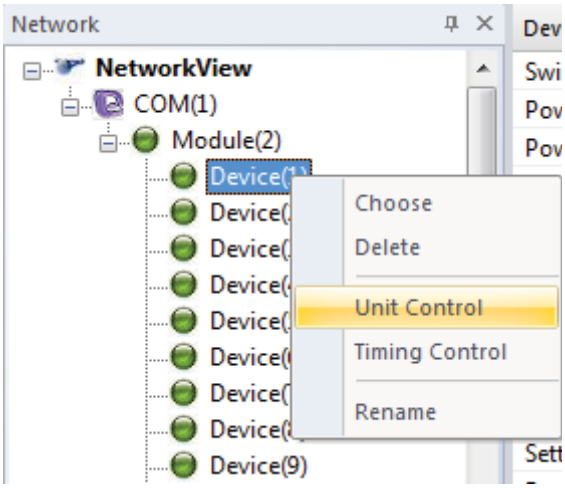


2.Start Communicating: Click Main Menu->Control->Connect and the system can communicate with the unit. In this case, you can check the data of units.

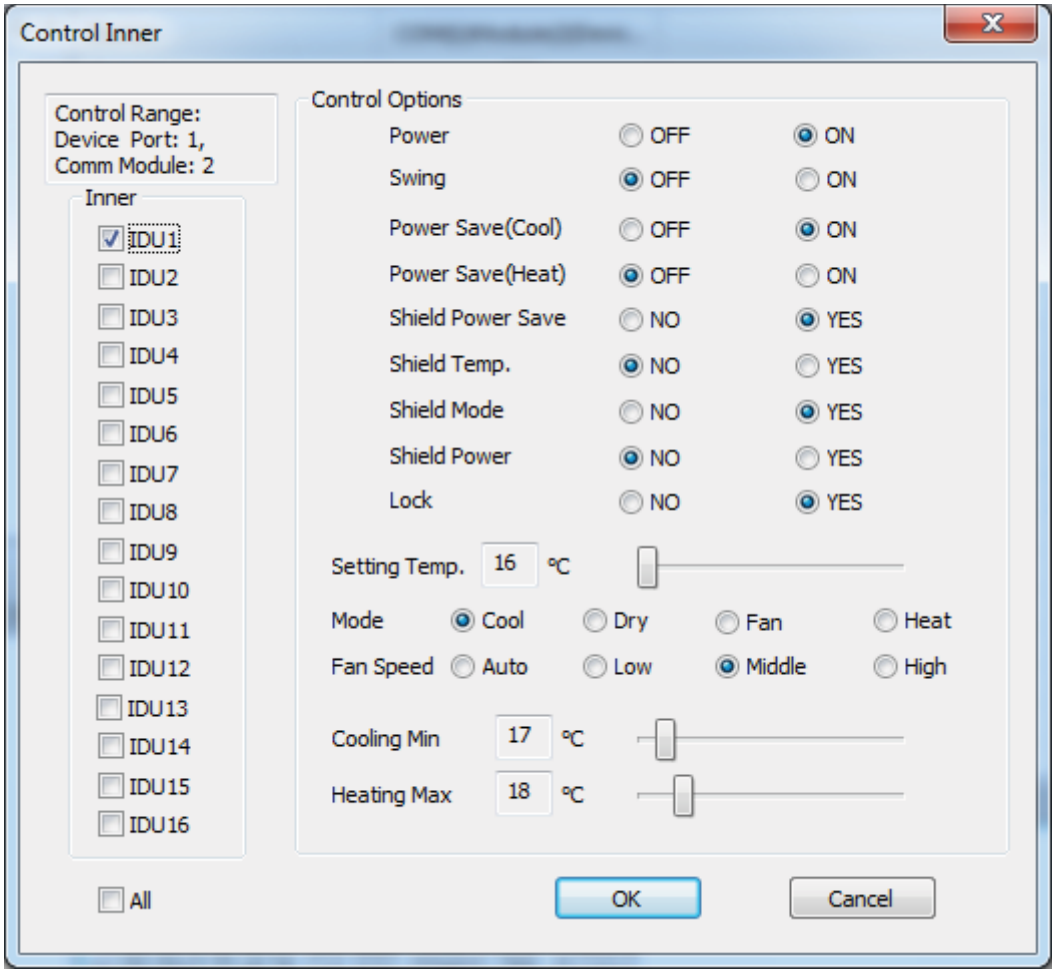


Control Unit

Right click Equipment and select "Unit Control" in the menu as the following figure.



After setting the parameter in control interface, click "OK" to start operation as the figure below.

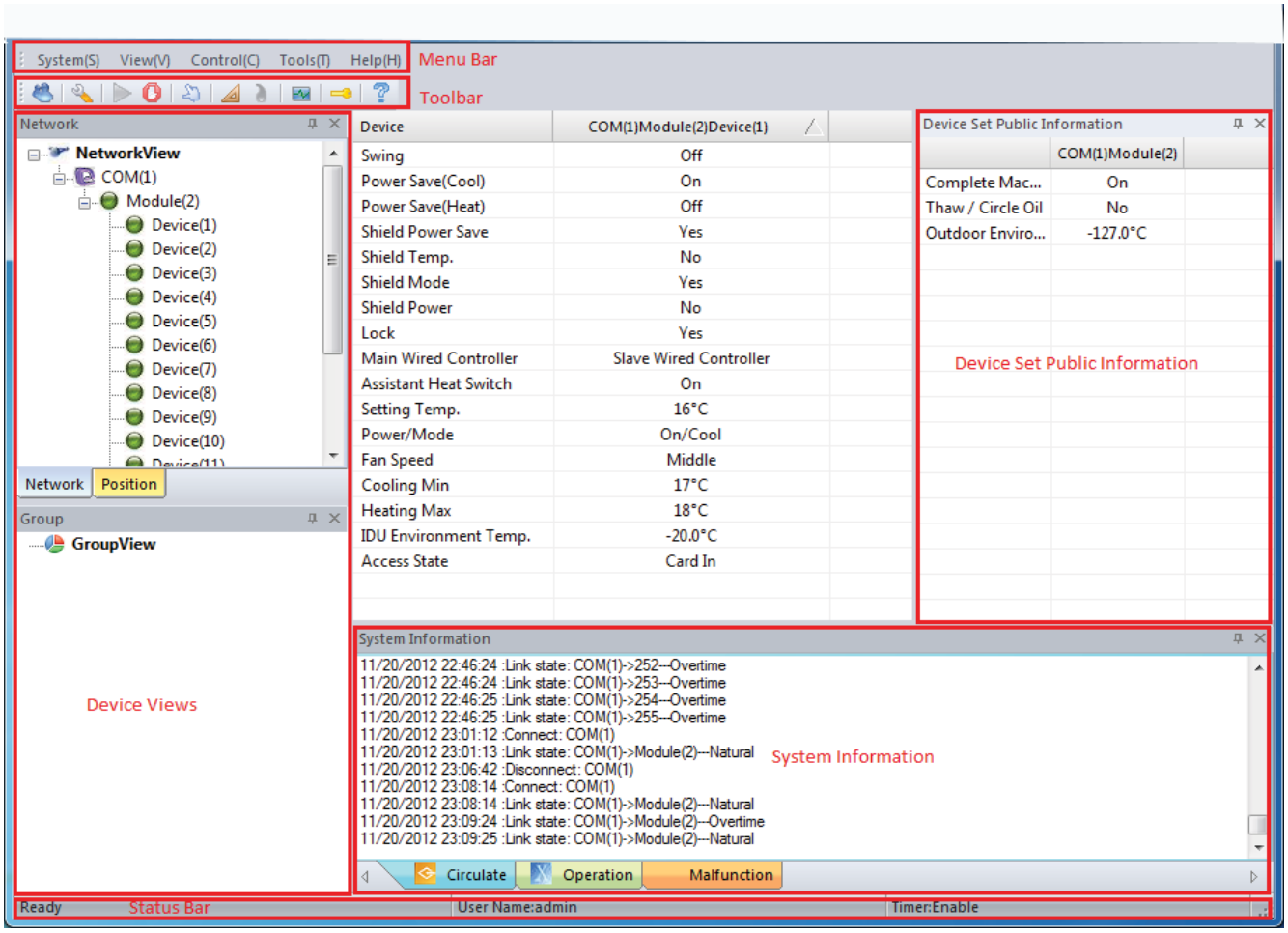


Check whether the modification is success or not by returning to the main interface.

So far, the basic monitor configuration of devices is finished. By finishing each step of the example, users can use the basic function of equipment monitor and control. If more detailed functions and helps are needed, please refer to the following chapters.

System Interface

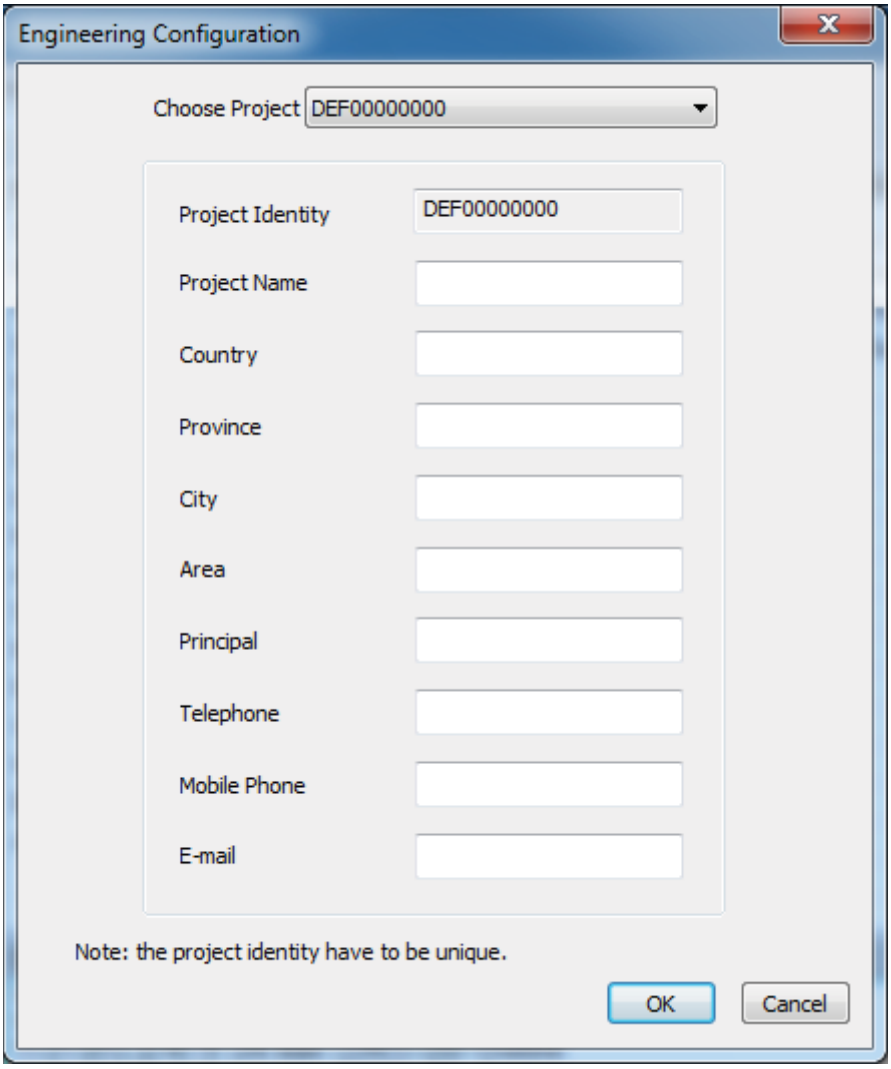
Click 89FBM Monitoring Software 2013.exe in the installation catalogue to start the system (only one procedure can be applied in each computer). The procedure interface is as below.(Note: The software would not run effectively when the computer is hibernating or stand by.)



The interface is composed of 6 parts: Menu bar, toolbar, device views, device set public information, system information and status bar.
Menu bar: Menu bar is a way to operate the whole system. With it, you can configure and manage the system as well as read the helps document.
Toolbar: Buttons in the toolbar are some configurations and operations used most frequently in the main menu. They are convenient for it is not necessary to switch to menu frequently.
Device Views: It is divided into 3 kinds of display, "Network", "Position" and "Group", presenting the engineering structure clearly and logically. Select "Network" and you will reach physical structure of engineering; Select "Position" and you will reach actual location of engineering (e.g. floors and rooms where units are located); Select "Group" and you will see all the groups and the devices inside.
Device Set Public Information: It displays the current running state of the selected equipment.
System Information: It displays the information of running, information of users' operation and malfunction information.
Status bar: It displays the current state of the system, such as name of user, timer and so on.

Engineering Configuration

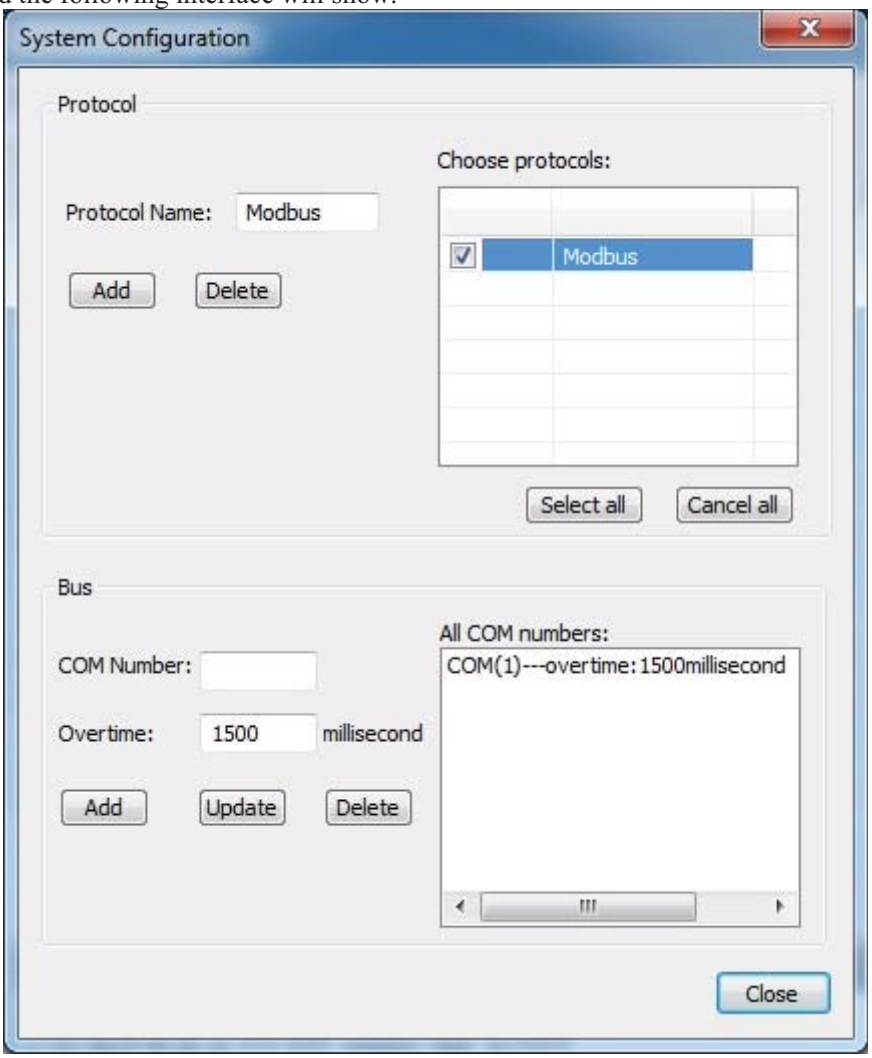
Before monitoring, users have to select a project. Click Main Menu->System->Engineering Configuration and the following interface will show.



Select a project in the list of "Choose Project" and click "OK" to finish the operation.
If a project needs to be changed, select the project to modify related information and then click "OK".
After a project is selected, it is necessary to add equipments to the project. Users can examine the equipment by themselves. For details of adding equipment, please refer to the next chapter.
If users have chosen a project before, the system will record it automatically. It is not necessary to select a project again.

System Configuaration

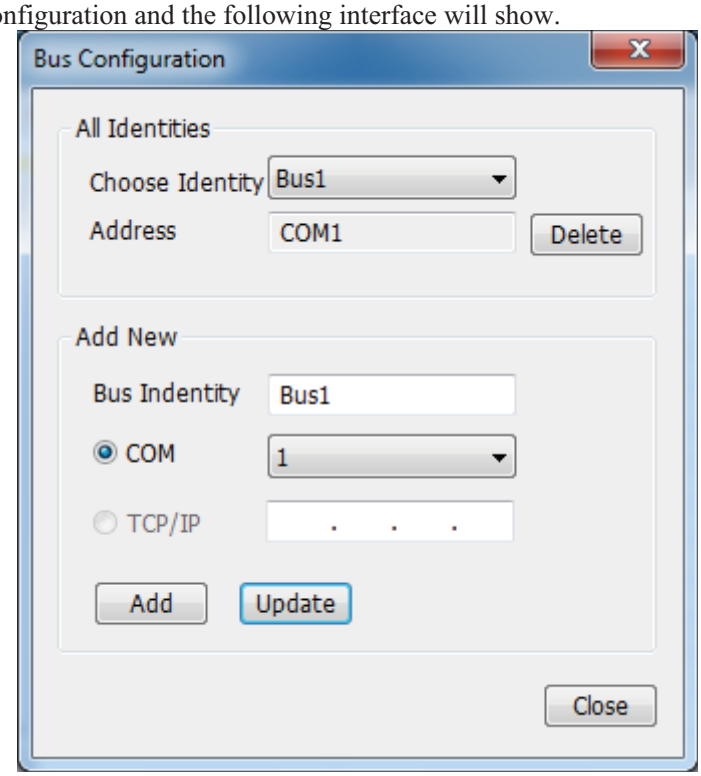
Configure the protocol and bus supported by the system. Only when the supported protocol is selected in the system configuration and the bus is added, there will be resource available for "Bus Configuration". Click Main Menu->System->System Configuration and the following interface will show.



Protocol configuration: Select the protocol to be supported in the list of "Choose protocols" and the selected protocol will be used for automatic detection configuration. Users can add protocol and fill in the protocol name in the editing interface of "Protocol Name".
Bus configuration: List of "All COM number" will display the COM supported by the system currently and the corresponding overtime interval. Overtime interval is a standard used for judging whether there is communication malfunction between computer and the unit.

Bus Configuration

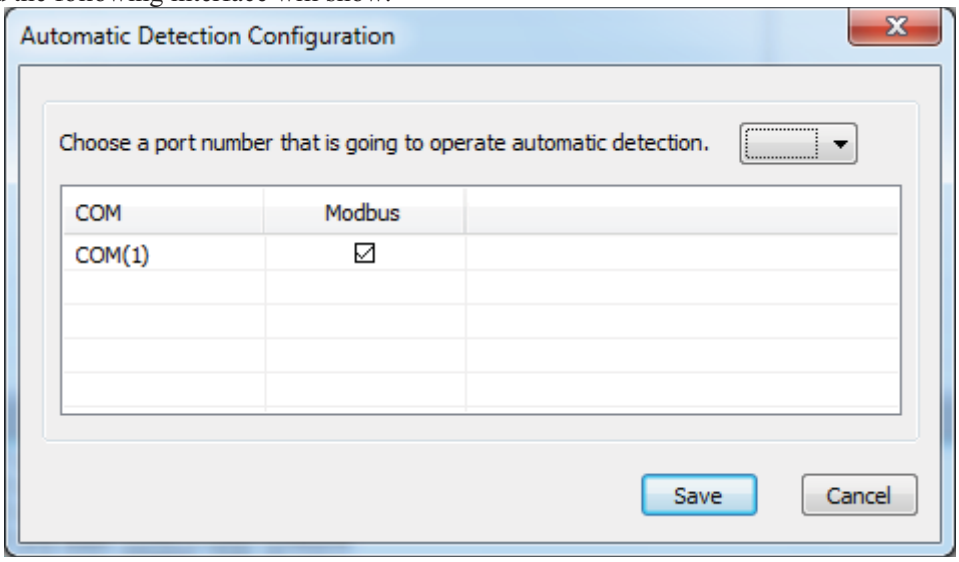
Bus: it refers to the communication link between system and equipment for data exchange. For example, a COM is a bus. The equipment must connect to the bus before it is monitored by the system.
Bus identity: the name used for identifying a bus.
Click Main Menu->System->Bus Configuration and the following interface will show.



Add bus: Name a "Bus Identity", then choose a COM and click "Add".
Renew bus: fill in the bus identity to be renewed in the editing box of "Bus Identity". Select a COM and click "Update".
Delete bus: Select the bus to be deleted in the list of "Choose indentity" and click "Delete".
Notice: if equipment is added to the bus, the deletion of bus will lead to deletion of related equipment.

Automatic Detection Configuration

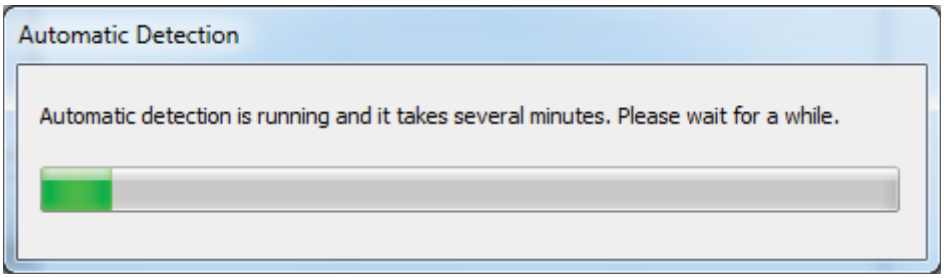
If users are not familiar with the physical structure of the equipment, he can get the information such as with which units are computer connected and the quantity by automatic detection. Users can monitor the unit directly with the result examined. It is necessary to configure before automatic detection. Click Main Menu->Automatic Detection Configuration, and the following interface will show.



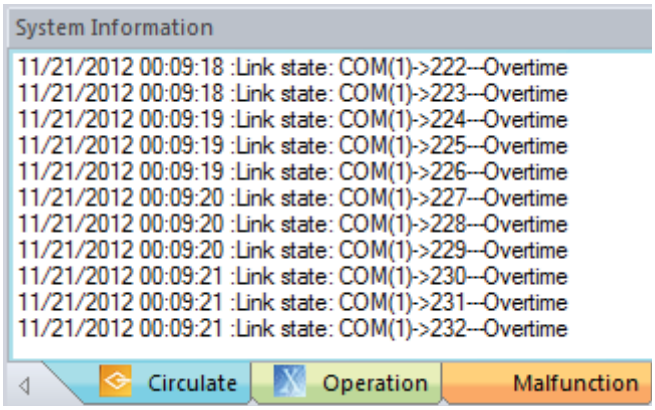
Users select the COM to be examined, and then select the protocol to be examined in the list. Click "Save" to finish the operation.

Automatic Detection

Menu->Control->Automatic Detection and the system will examine the equipment according to the configuration. If more than one COM and protocol are selected in the automatic detection configuration, the process display will circulate several times.

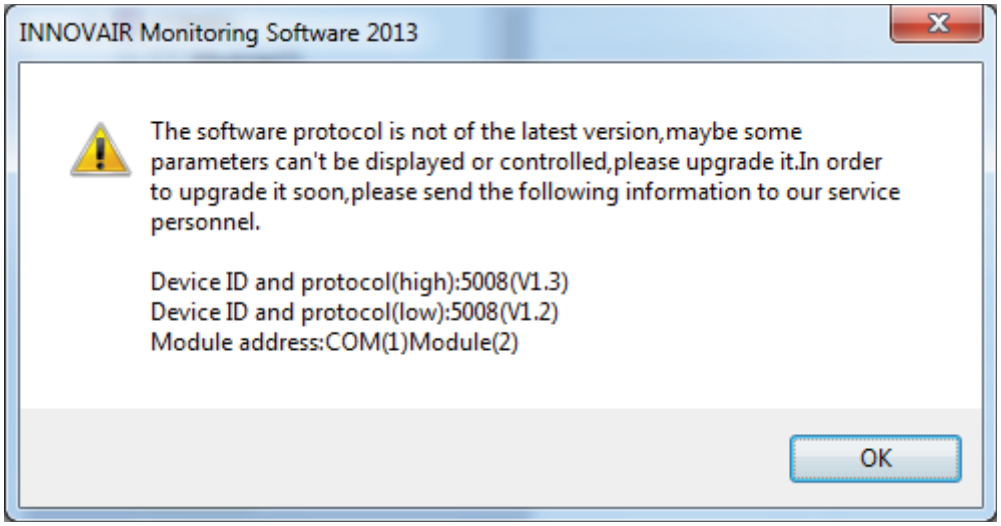


When the automatic detection is working, the software will show the results of automatic detection in circulation. For example:

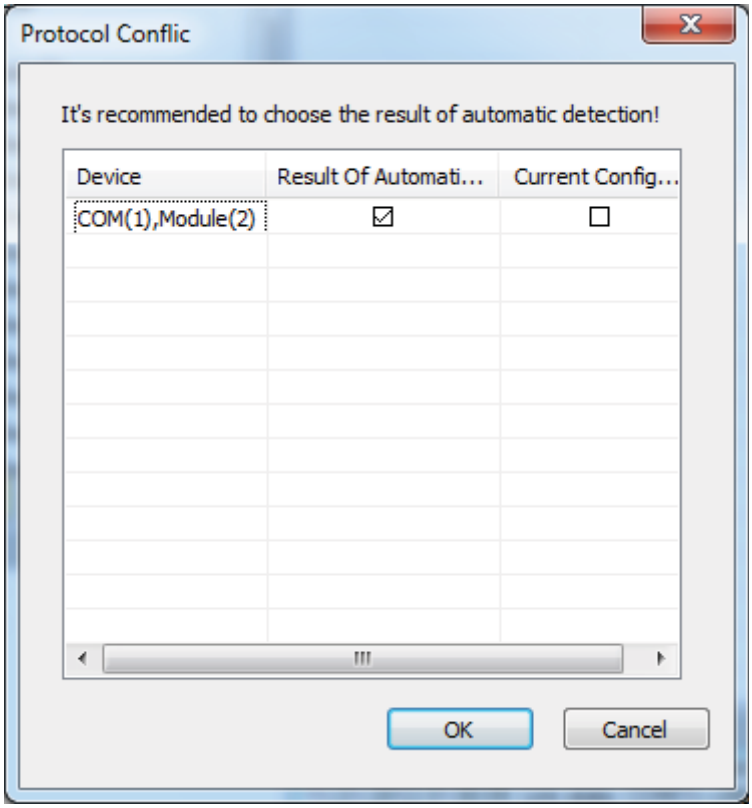


"COM1->Module(1)---Natural" means the software can detect Module 1 successfully via COM1,"COM1->Module(2)---Overtime" means the software can't detect Module 2 via COM1.

After the automatic detection is finished, system will display the result on "Network". Suppose the detected software version is higher than the current one, the latter will still prevail for data processing. Meanwhile, the user will be notified of updating the software as well as of the communication module address for the current-version software protocol and so on.

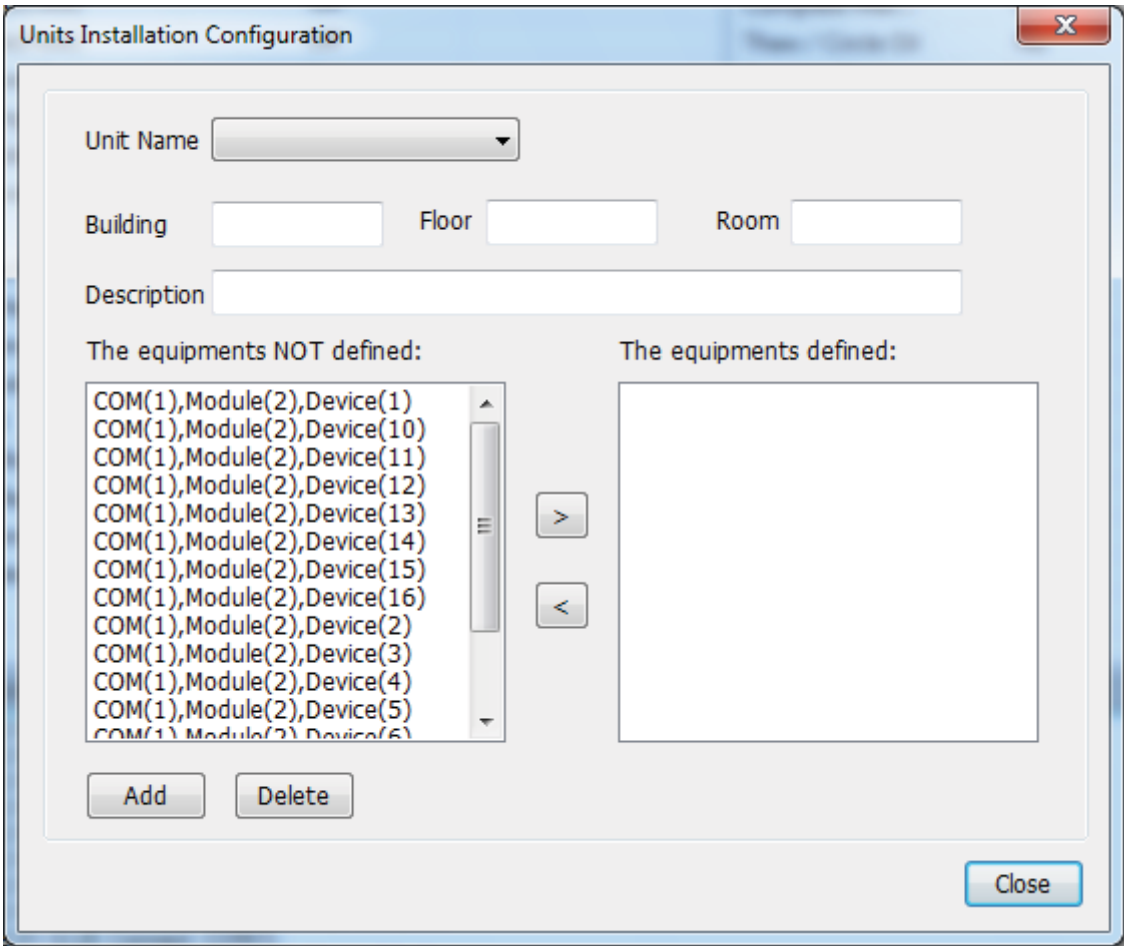


If the result conflicts with the equipment added by users manually (e.g. The user connects VRF to the communication modular 1 of COM1, but the result of automatic detecting is "water-cooled screw chiller"), the following interface will show up. The user has to decide which result to be chosen as the standard. (It is recommended to select the result of automatic examination by default.)

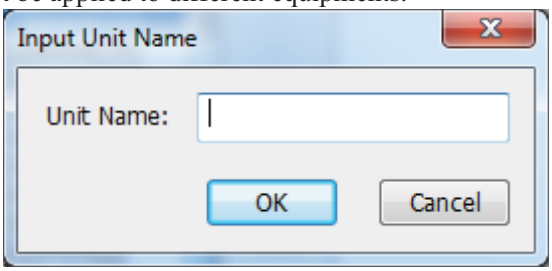


Units Installation Configuration

Unit Name: Name of unit where air conditioner is located, such as living room and bedroom. Users define the name according to the unit where AC is actually installed.
After adding the equipment, users can define in which building, which floor and which room it is installed so as to monitor the equipment intuitively. After the unit information is added, it will be shown on "Location" in "Device Views" of the main interface. Click Menu->System->Units install Configuration and the following interface will appear.



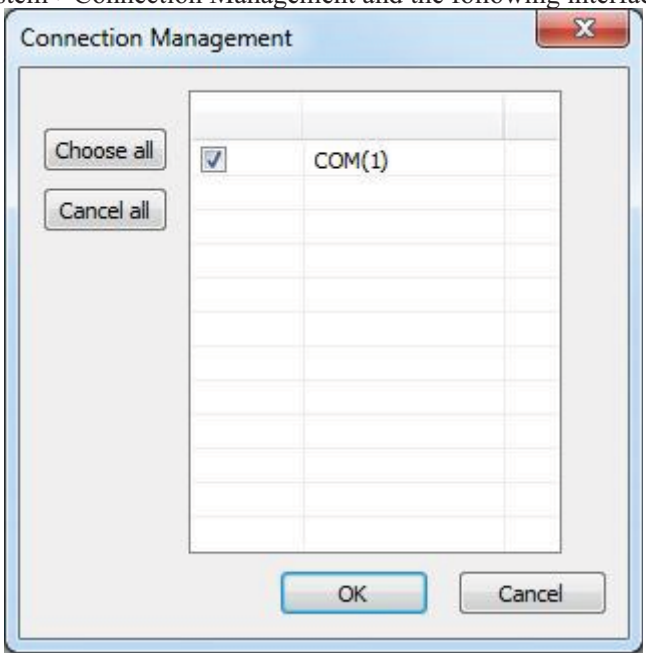
Add unit: after filling in the information such as building, floor, room and description, select the equipment to be added in the list of "The equipments NOT defined", and then click button > , the following interface will show. Fill in the unit name and click Confirm. In this case, the equipment will be displayed in "The equipment defined". Click Add to finish the operation.
Notice: the same unit name could not be applied to different equipments.



Delete unit: select the unit to be deleted in the "Unit Name", and then click Delete.

Connection Management

After users add bus and equipment to the engineering, he must define which bus is used for communication in certain monitor. Click Main Menu->System->Connection Management and the following interface will appear.



Select the COM to be linked in the list of all COMs of current engineering and then click "OK".

Connect Equipments

Connection

Click Main Menu->Control->Connect or button in Toolbar and the system will examine the equipment according to the saved link.

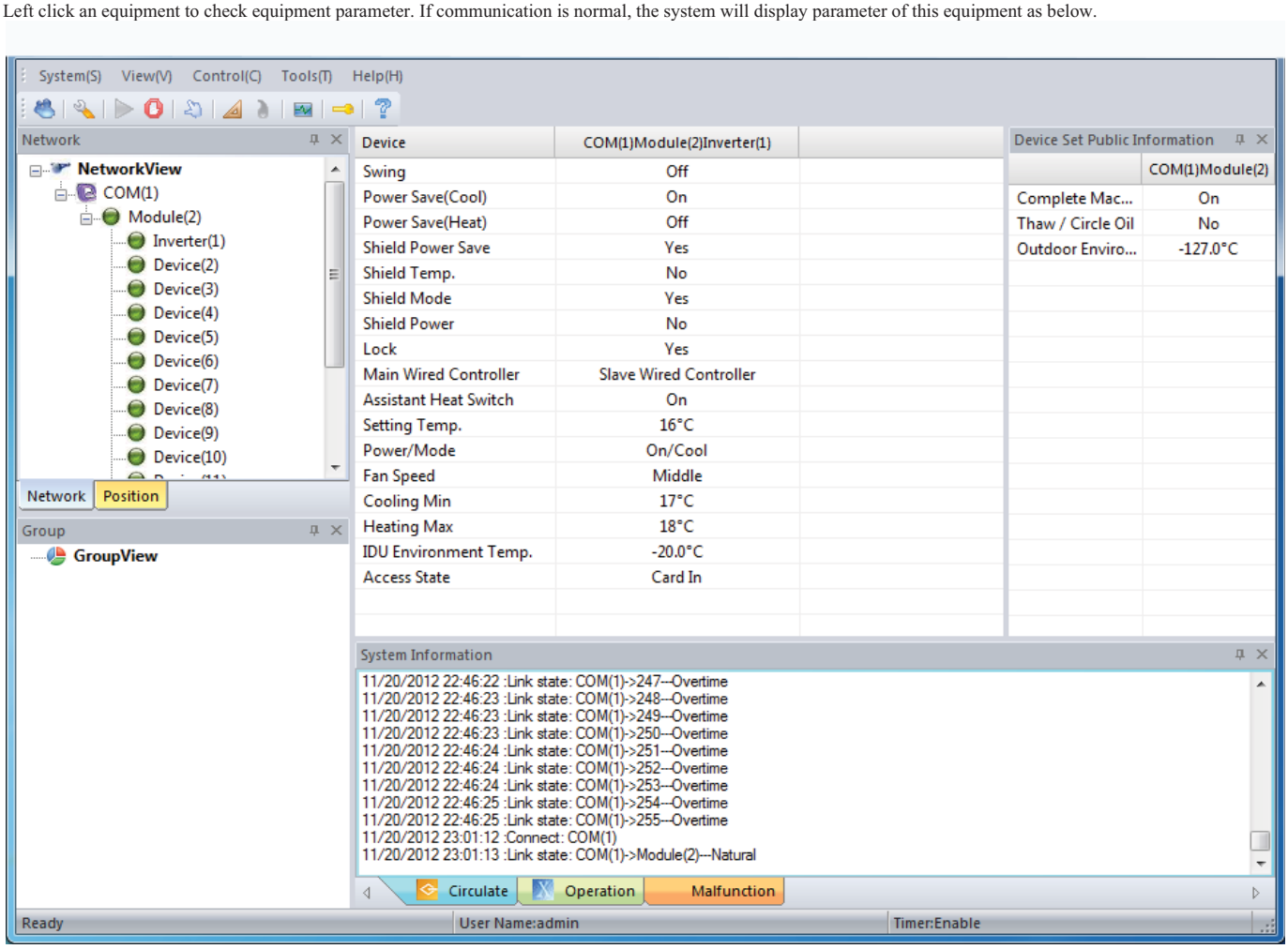
If communication is normal, the area of device set public information will display parameter of related equipment.

Disconnection

Click Main Menu->Control->Disconnect or button in Toolbar and the system will stop monitoring all the equipments.

Equipment Parameters

Left click an equipment to check equipment parameter. If communication is normal, the system will display parameter of this equipment as below.

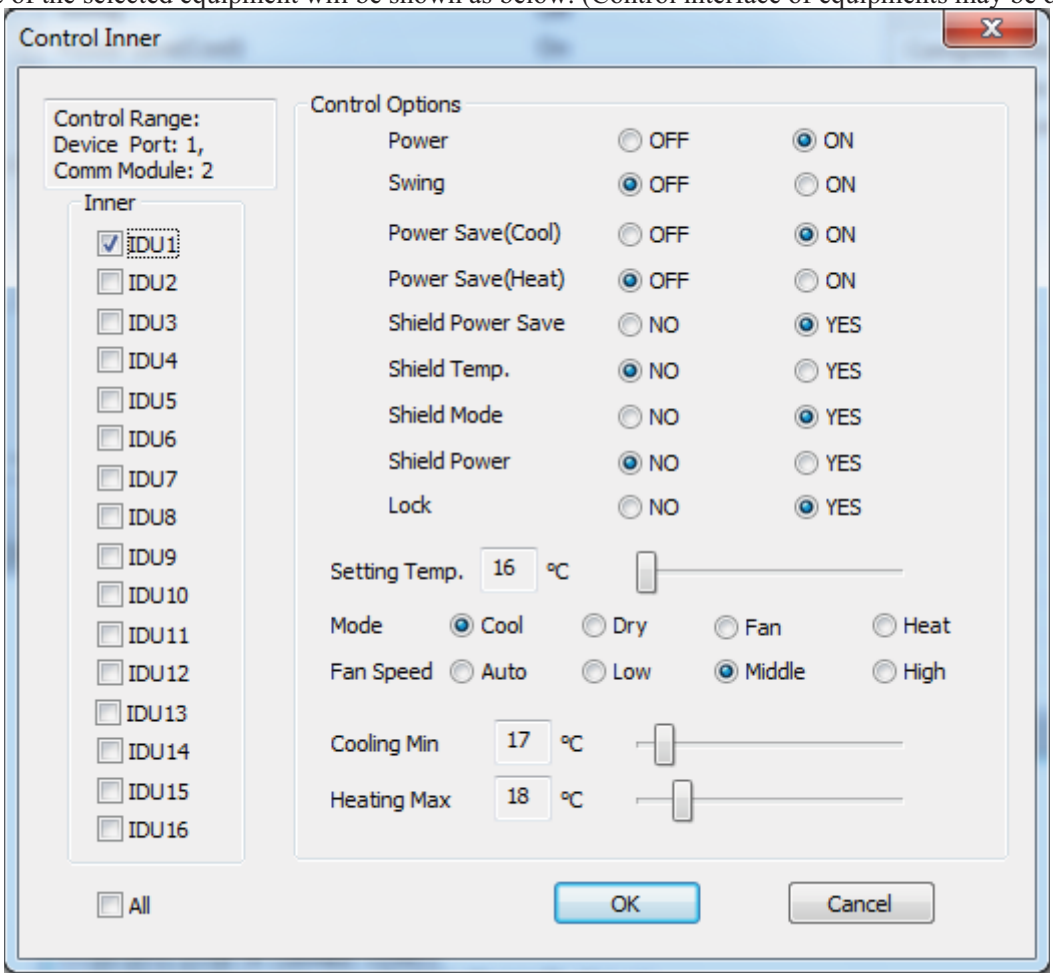


The lamp beside the device have three state:
1.green--normal
2.red--malfunction
3.yellow--overtime,unwonted response.

Notice: It may happen that the system cannot auto exam normally because of the overtiming state of the equipments, or "Normal" and "Overtime" appear in turn. In this kind of situation, please turn to the menu, System-The system install, and enlarge the "Overtime" to 2000-3000 millisecond. Then it can be fixed.

Unit Control

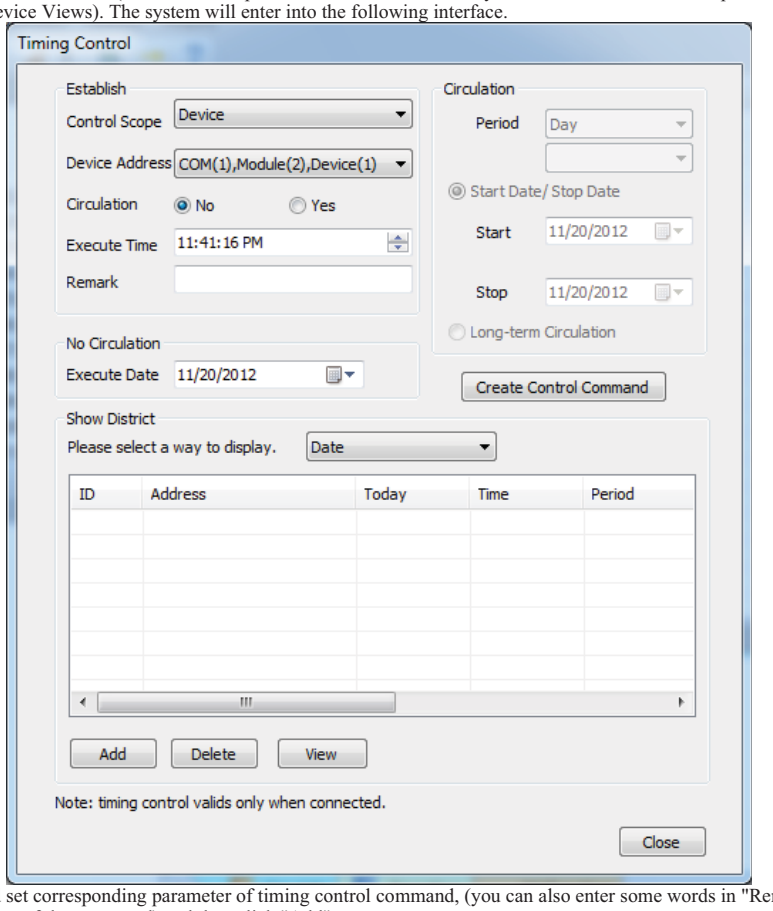
Users can control the unit with this system. Click Menu->Control->Unit Control (or right click the device views), then the control interface of the selected equipment will be shown as below. (Control interface of equipments may be different)



After each parameter is set, click "OK" to start controlling.

Timing Control

Users can control the equipment or group in fixed time (ATTENTION: please make sure the current system time is correct before operaion) by clicking Menu>Control->Timing Control (or use right click in Device Views). The system will enter into the following interface.



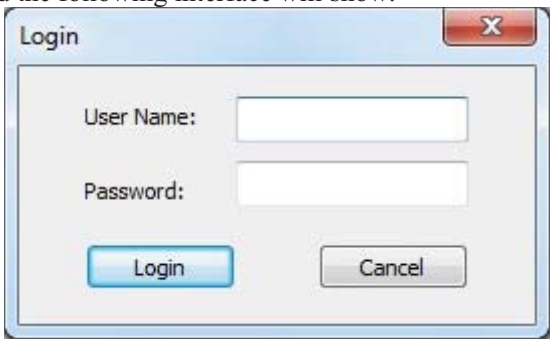
Add timing control command: create and set corresponding parameter of timing control command, (you can also enter some words in "Remark" column, which is no more than 15 characters, to mark down the usage of the command) and then click "Add".
Delete timing control command: Select an item in "Show District" and click "Delete".
Timing control commands can be seen in "Show district". If certain timing control command is overtime, it will be green. Users can check timing control commands according to date or equipment / group. To check the details of the command, select it and click "View", or just double-click on it.
Notice: To operate timing control, it is necessary to ensure that the system is communicating with the equipment and timer is enable at the moment of setting timing control command. The state of current timer is shown in the status bar as below.

Click Menu->Control->Enable Timing Control to make timer enable. Click Menu->Control->Disable Timing Control to make timer disable.
There are two modes to add timing control command. One is no circulation, the other is circulation.
(1)No circulation means you just can set a date to execute timing control command.
(2)At circulation mode, you can set timing control command to execute according to period or the long-term circulation.
a)At period mode, you can also set timing control command to execute according to day or week or month.
b)Long-term circulation means the timing control command works everyday, and the start date is initialized as 01/01/2000.

If some of COMs in Group aren't connected,then the timing control command doesn't work,by the way,it will be reminded in Circulate region.For example:

Login

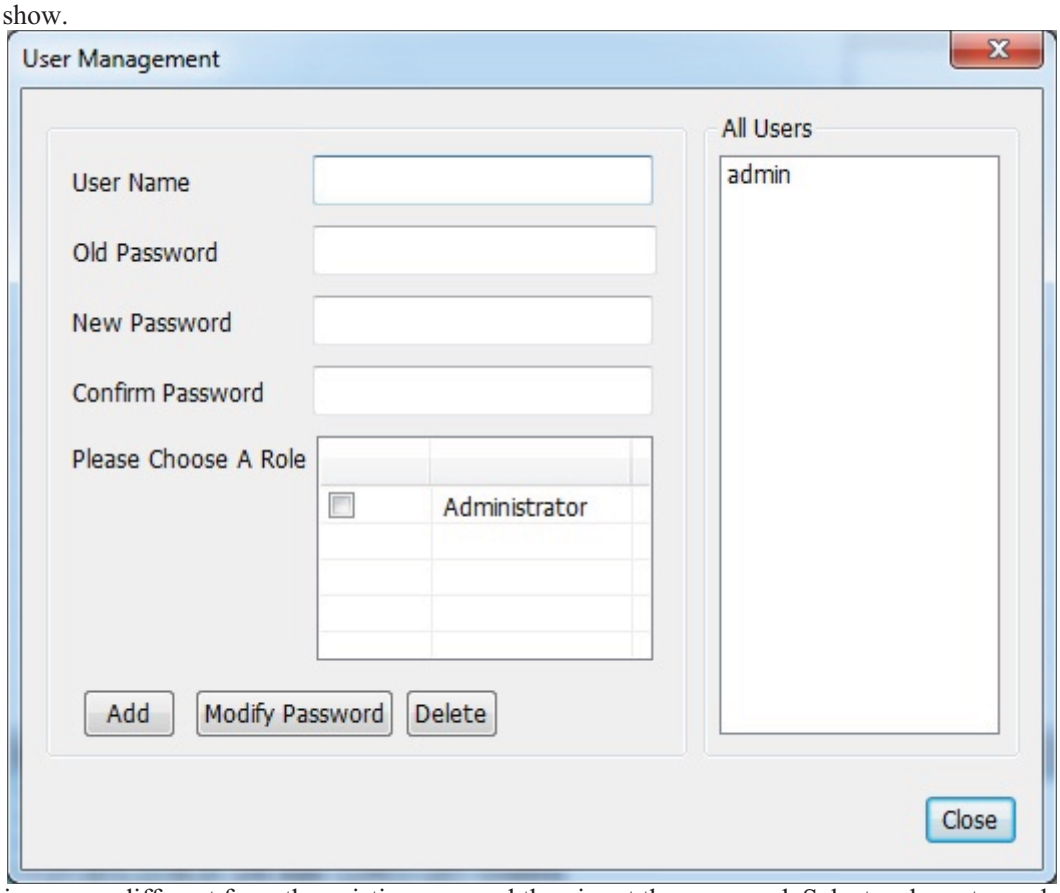
The defaulted user upon startup is "visitor", who has not any right of operation but the right to read users' interface and helps documents. As a result, it is necessary to login as a user with certain rights so that more operations are realized. Click Main Menu->System->Login and the following interface will show.



Fill in user name and password and click "Login" to finish the operation.
You can login with user name "admin" and empty password for the first time.

User Management

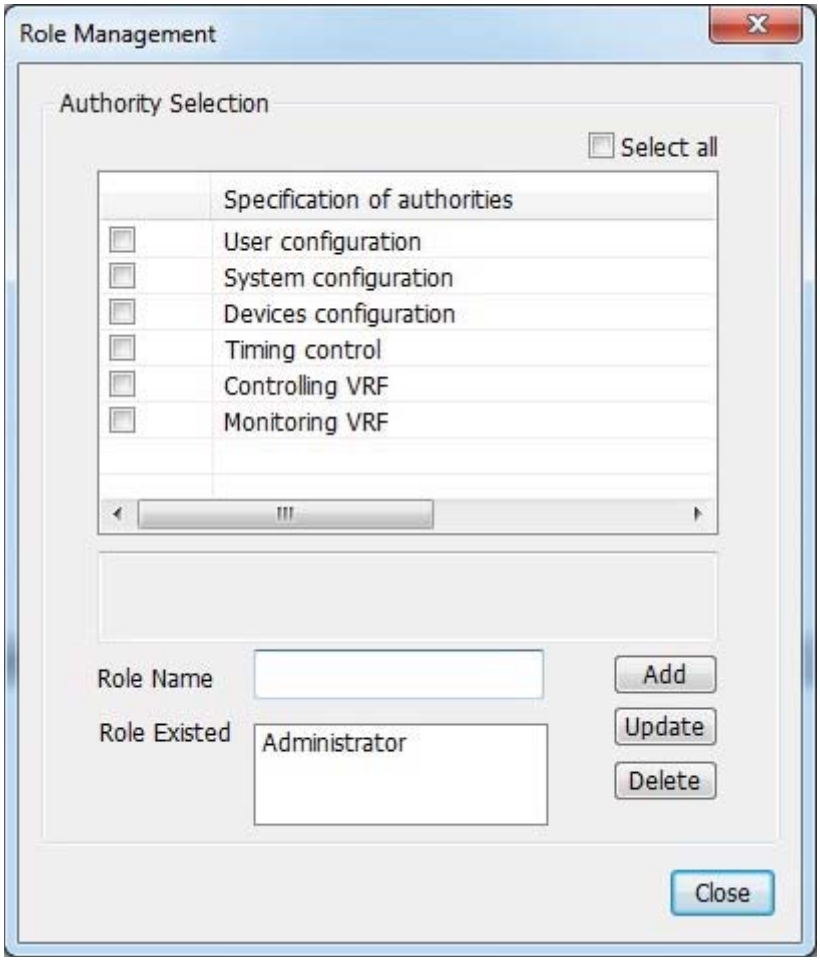
User: It refers to those who use it. A user can have several characters.
Role: the integration of certain rights.
User management can add, modify and delete user. Click Main Menu->System->User Management and the following interface will show.



Add user: fill in a name different from the existing user and then input the password. Select a character and click "Add" to finish the operation.
Modify password: Select user that needs to modify password in "All users" and then fill in the new password and click "modify password".
Delete user: Select the user to be deleted in "All Users", and click "Delete".

Role Management

Users having the rights of "User Management" can add and delete role. Click Menu->System->Role Management and the following interface will appear.



Add role: select a power in the list of Authority Selection and fill in the name of role. Next, click "Add".
Delete role: Select the role to be deleted in the list of Exist role and then click "Delete".
Notice: The role being used can not be deleted.

Special remarks

1. The default username for log-in is "admin" and the password is null. When it is suggested that the username does not exist, that is probably because database service, typically referred to SQL Server (SQLEXPRESS) is not started or database is not attached correctly. In this case, please contact the computer administrator or the sales agent.

2. "Automatic Detection" must be performed once the address DIP switch of the equipment, the communication module or the control has been reset.

3. When the bus is disconnected, the commands of "Timer Control" will fail. Therefore, in order to properly execute the Timer commands, please make sure communication between the monitoring system and the air conditioning system keeps normal and the "Timer Control" is enabled. (Menu->Control->Enable Timer Control)

4. Be sure the serial port is in normal communication before executing "Group Control" (including "Group Configuration", "Group Detection", and "Group Control"). If the monitoring system runs for the first time or the communication module is replaced or its address is reset, please execute "Group Detection" prior to "Group Control".

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