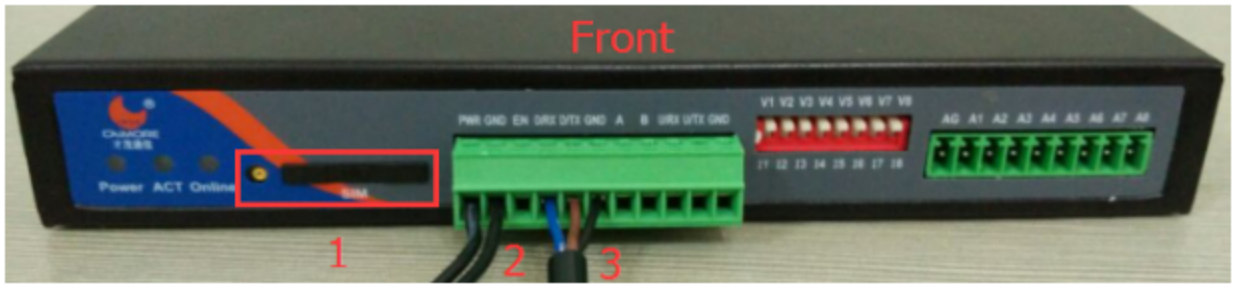
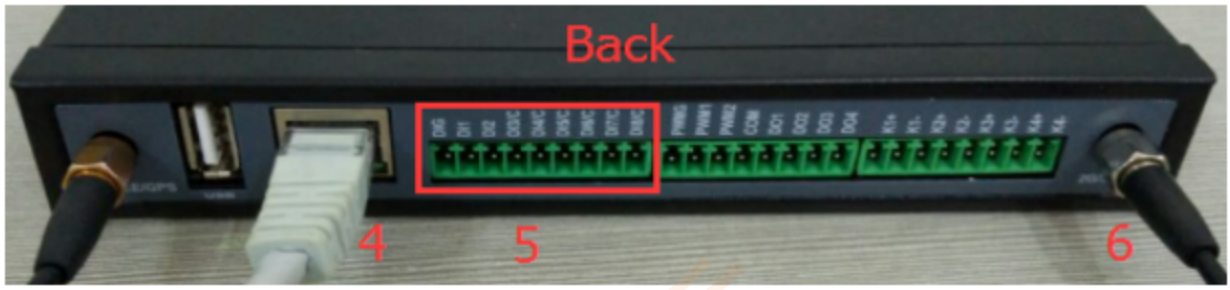
RTU Digital Input Quick Operation Guide

Catalog

1. RTU Cable Connection





1. SIM card slot: Please ensure the RTU is powered off before pulling or plunging SIM card;
2. Power wire (PWR——black with white，GND——black);
3. RS232(D/RX——blue，D/TX——brown，GND——black): Please use this RS232 serial port to connect PC; USD forwarder to RS232 can be instead of if there is no RS232 serial port on PC;
4. The cable connected to PC;
5. Digital input DIG (same as counter input) and 8 digital inputs (low level input range from 0-3.3V, high level input range from 5-24V). Those 6 roads inputs can be valued as counter inputs (the counter frequency is 1KHZ) or digital input DIG.
6. 2G/3G/4G antenna;

Please power on RTU after connection.

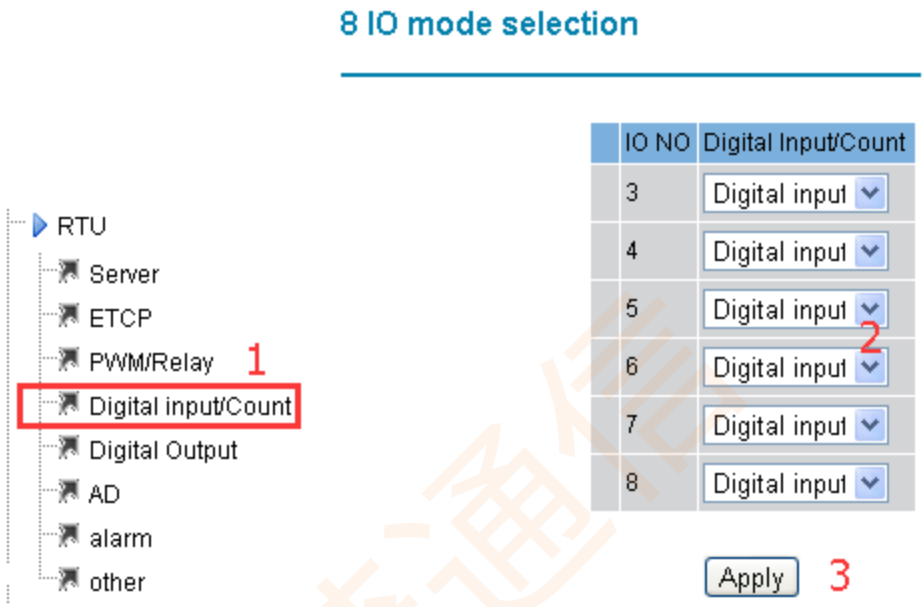
2. RTU Digital input configuration

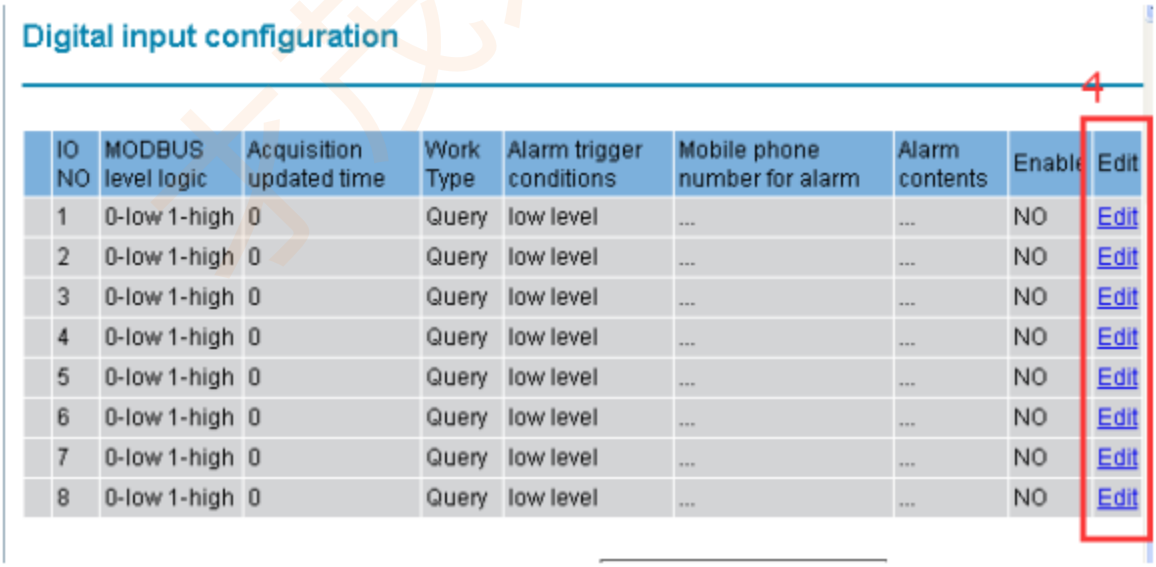
2.1. RTU WEB Page configuration

2.1.1. Login RTU local web-based page

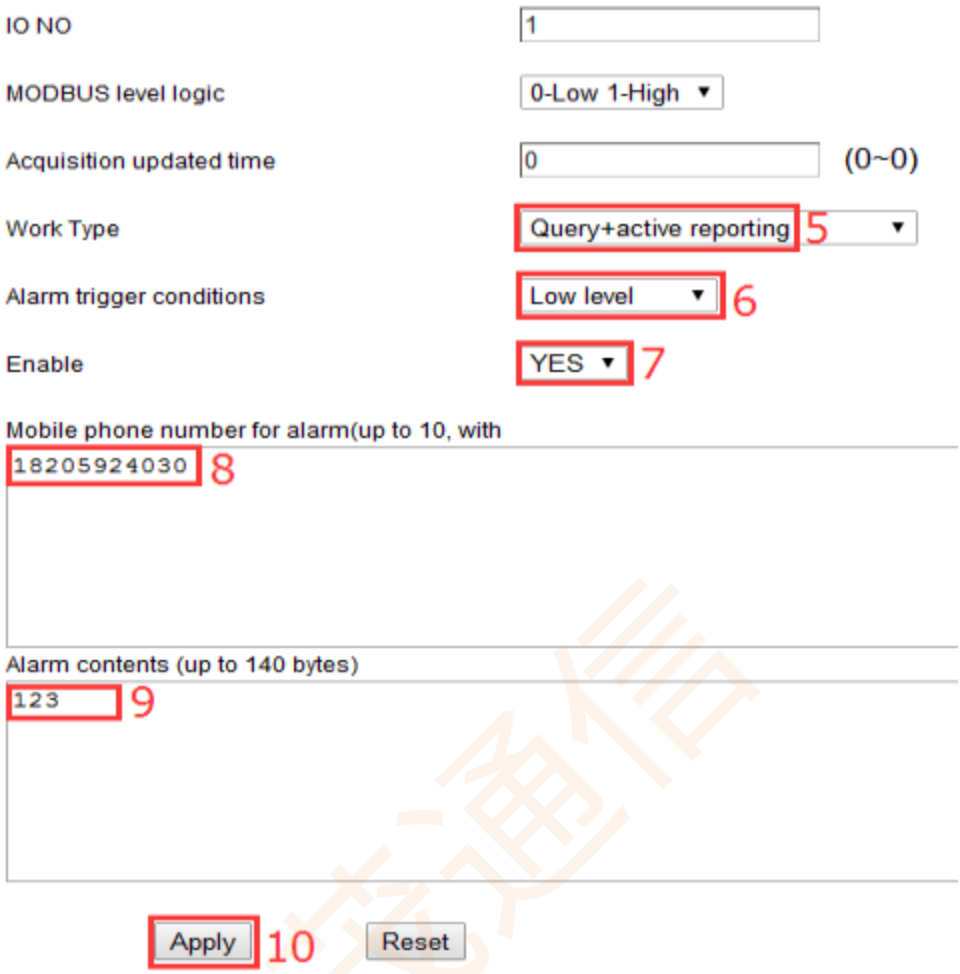
1. Open the browser and enter into the default IP address: 192.168.1.2; then fill in account name: admin, password: admin。
2. To choose English version on the left;
3. RTU IP address: Please change RTU's IP address to avoid conflicts when you use cable connect RTU with digital.

2.1.2. Digital input configuration





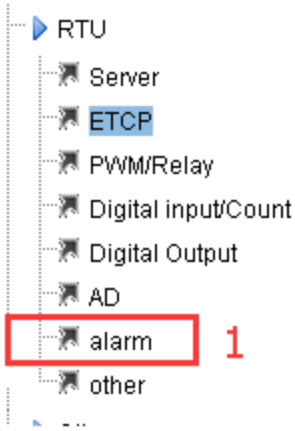
IO NO	MODBUS level logic	Acquisition updated time	Work Type	Alarm trigger conditions	Mobile phone number for alarm	Alarm contents	Enable	Edit
1	0-low 1-high	0	Query	low level	...	...	NO	Edit
2	0-low 1-high	0	Query	low level	...	...	NO	Edit
3	0-low 1-high	0	Query	low level	...	...	NO	Edit
4	0-low 1-high	0	Query	low level	...	...	NO	Edit
5	0-low 1-high	0	Query	low level	...	...	NO	Edit
6	0-low 1-high	0	Query	low level	...	...	NO	Edit
7	0-low 1-high	0	Query	low level	...	...	NO	Edit
8	0-low 1-high	0	Query	low level	...	...	NO	Edit



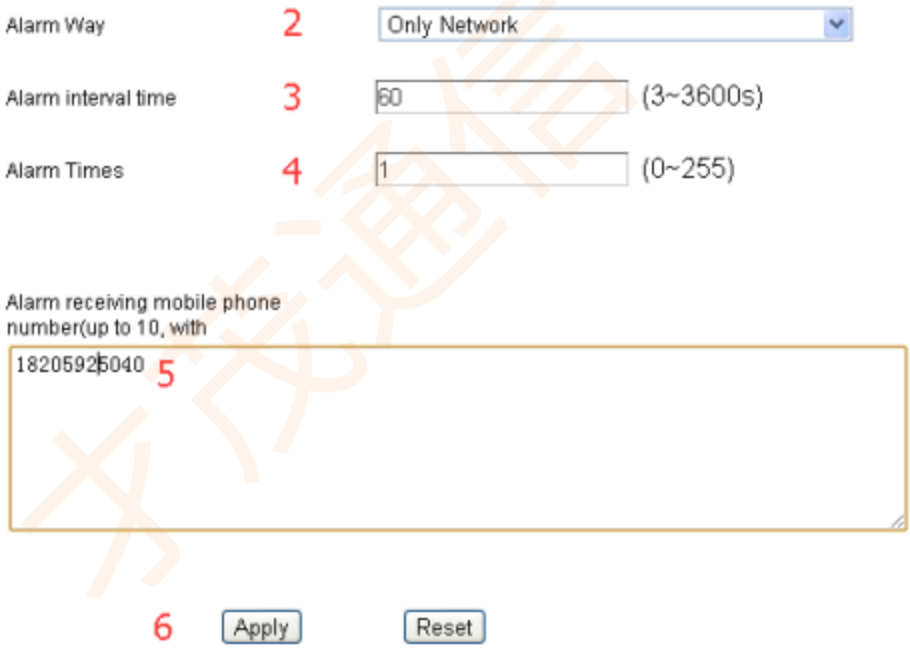
1. Click "Digital/Count" option on the left menu bar;
2. Select "Digital" from the "Digital/Count" option;
3. Click "Apply";
4. Click "Edit" to edit the relative digital input parameters;
5. Work type: To select the relative alarming mode, otherwise, no alarming. Alarming/ active report's configure see as 2.1.3.
6. To set the alarm trigger conditions: Only valid for alarming. For active report, it will trigger an alarm when the time is up;
7. To enable this current count input interface;
8. The mobile phone number for alarming: up to 10 number, separated by ",".
9. Enter the alarm contents (no more than 140 bytes).
10. Click"Apply"; and then power off RTU first and power on again to reboot, or click " reboot", which is on the top right of this page.

2.1.3. Alarming/Active reporting configuration

2.1.3.1. Alarming configuration



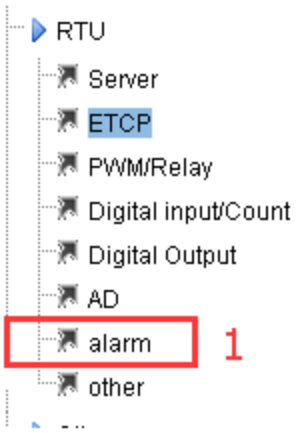
Alarm configuration

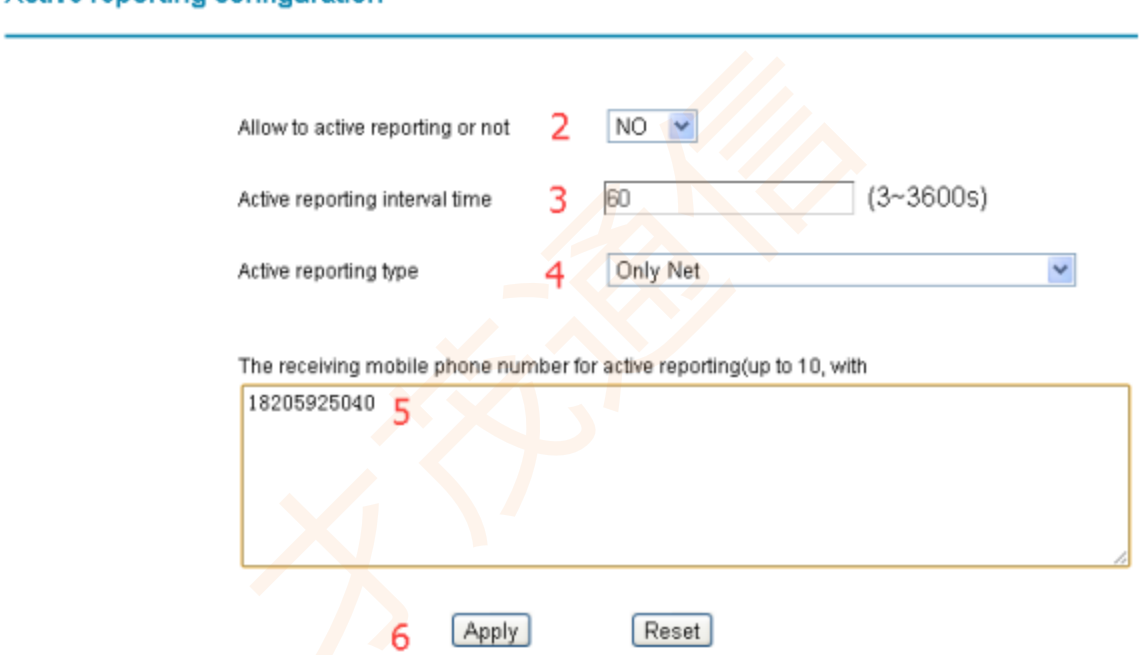


1. Click" RTU--Alarm" on the left of menu bar on the page;
2. Alarm Way: Network alarming and SMS alarming. (currently, the module of MC2716, mu609, M305 support SMS alarming; the others are only support network alarming, 2G communication module can not support SMS due to no SMS port);
3. To set the alarm interval time;
4. Alarm times: if the value is 0, then RTU will send alarming info once time is up;
5. The mobile phone number for alarming: up to 10 number, separated by ",";
6. Click "Apply".

Note: You can not query the alarm info according to RTU WEB page, but by RTU management platform. For more details, refer to 2.2.8.1.

2.1.3.2. Active report configuration





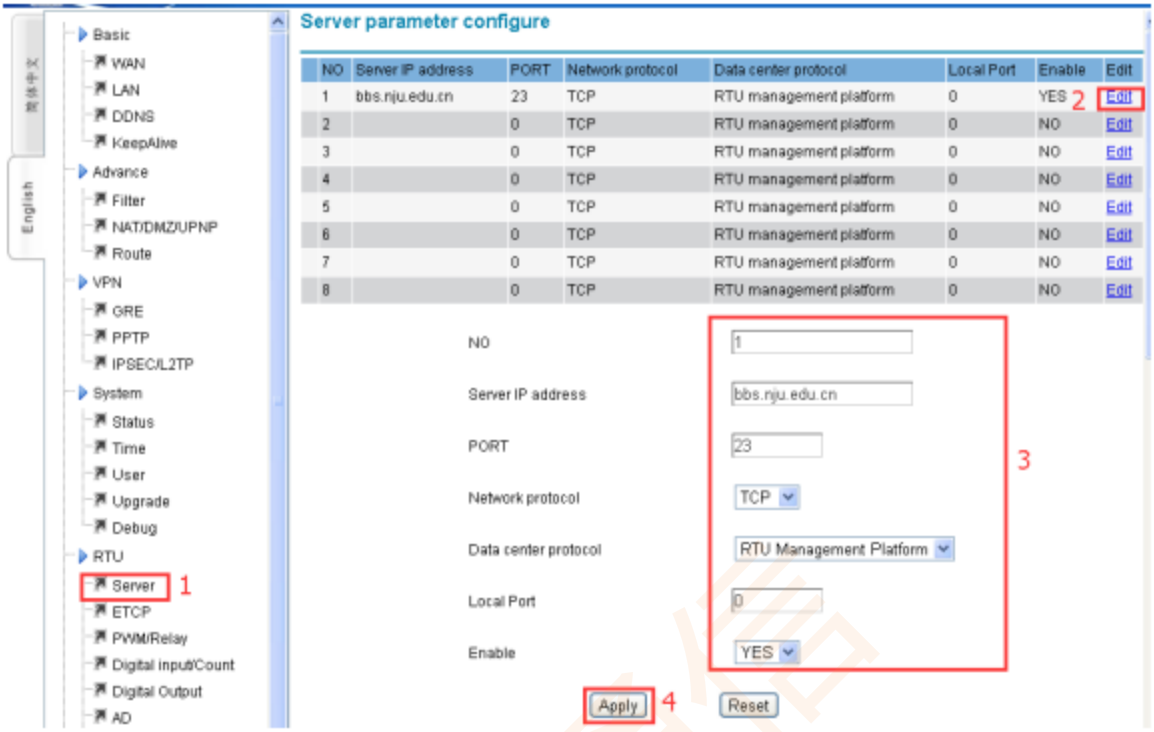
1. Click" RTU--Alarm" on the left of menu bar on the page;
2. Enable "Allow to active reporting or not";
3. To set the alarm interval time;
4. Alarm Way: Network alarming and SMS alarming. (currently, the module of MC2716, mu609, M305 support SMS alarming; the others are only support network alarming, 2G communication module can not support SMS due to no SMS port);
5. The mobile phone number for alarming: up to 10 number, separated by ",";
6. Click "Apply".

Note: You can not query the active report info according to RTU WEB page, but by RTU management platform. For more details, refer to 2.2.8.2

2.2. Configure RTU management platform

2.2.1. Configure RTU server

Please refer to 2.1.1 to enter into RTU WEB page.



1. Click " RTU-->Sever" on the left menu bar, see as below picture;
2. Click "Edit;
3. Setting the parameters of RTU sever as below:

   NO.: The number of server IP address

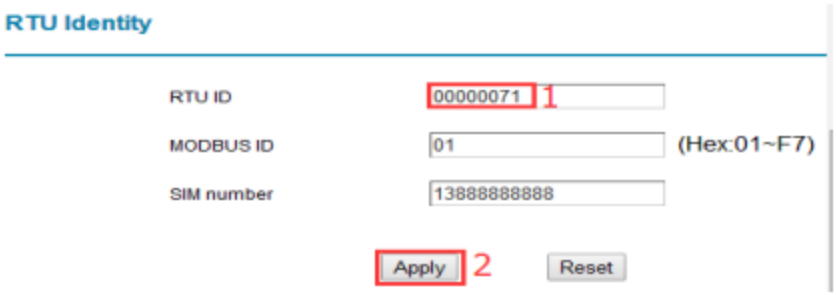
   Sever IP address: To enter RTU server's IP address: 27.154.56.174 (Caimore RTU management platform)

   Port number:18000,

   Data center protocol: RTU management platform

   Enable server: select"YES"
4. Click "Apply" to finish.

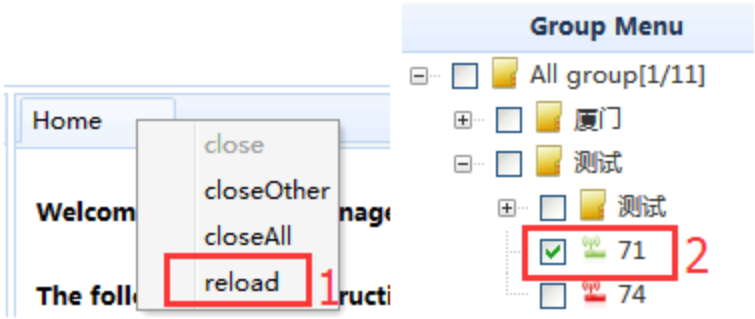
2.2.2. Setting RTU Identity



1. RTU ID: To enter the distribute ID No. (i.e: 71). This ID can be got after registering on RTU software management platform, if there is no distribute ID. For more details, see as 2.2.4.
2. Click "Apply" to finish, then power off RTU first and then reboot it again.

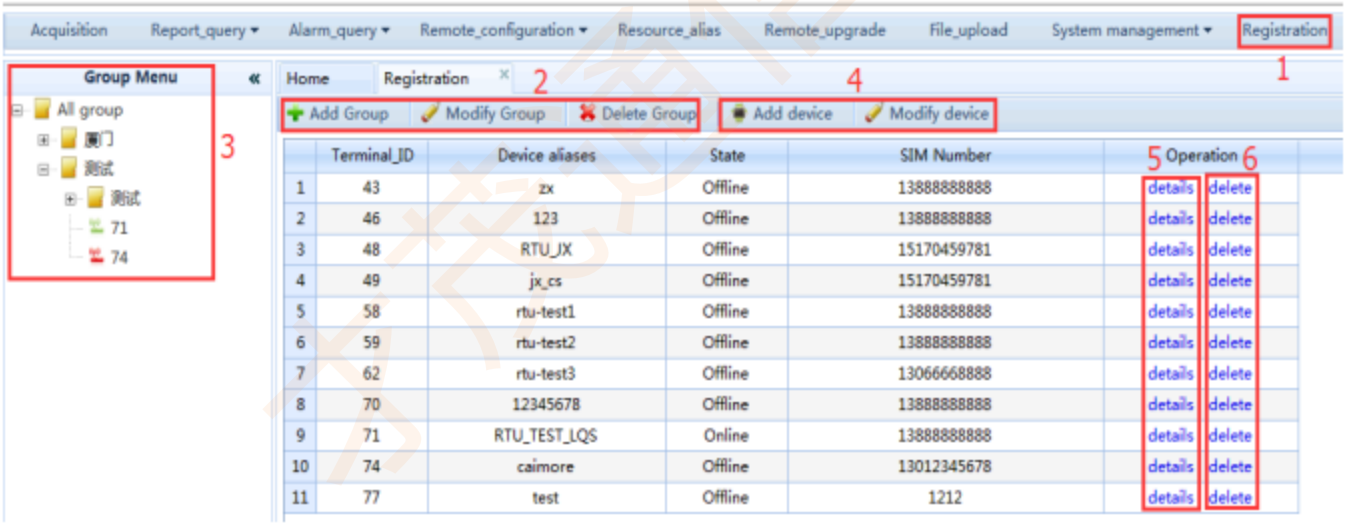
2.2.3. Login to RTU software management platform

Enter the RTU software management platform's IP address into the browser: http://27.154.56.174:8091/LoginEnglish.aspx , filled the user name and password that be distributed by Caimore to enter into the RTU software management platform.



1. Please push F5 or click "Home" or right click "home" to select "reload" to refresh continuously, till the icon of the relative RTU ID turn to green;
2. Select the relative RTU ID.

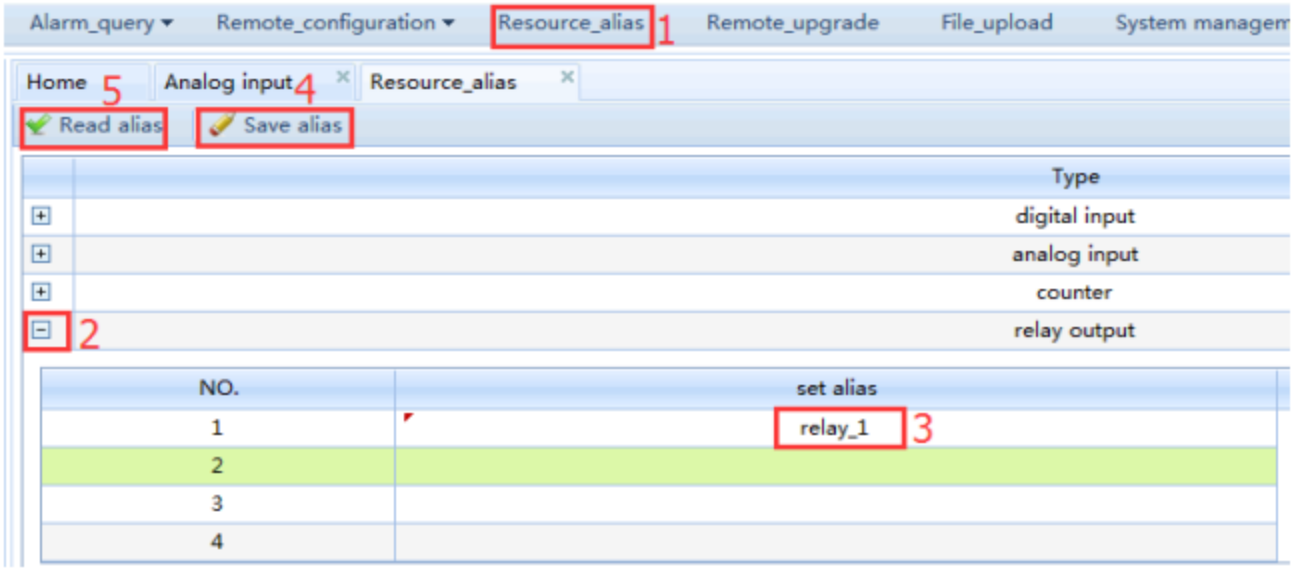
2.2.4. Register RTU ID



1. Click "Registration" on the top menu bar on the page.
2. You can manage the all the group by clicking"Add Group", "Modify Group", and "Delete Group".
3. All the details of current group can be displayed on the Group menu.
4. You will get a new RTU ID number when you click "Add device" and edit, also you can modify the device's parameters by clicking "Modify device".
5. You can find the details of RTU device if you click " details".
6. The RTU device will be deleted when you click "delete".

2.2.5. Setting connected interface

Each terminal device has multiple interface, which can be distinguished by name them. (for example: 1st relay):

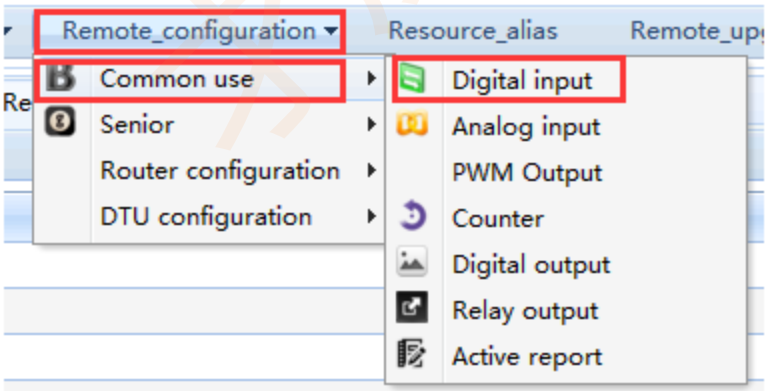


1. Click "Resource Alias";
2. Click "+" on replay output row;
3. Name each reply output in the table.
4. Click " Save alias";
5. Click "Read alias"to confirm or enter into remote configure page to check.

Note: a. the ball window will close automatically during the configuration. We don't suggest you to confirm it by manual.

B. You can check if all the operation has been done by clicking "system management" on the right top of the menu bar, and then click " status record".

2.2.6. Digital input parameters configuration



Home 1 Digital input × Resource_alias 8 ×

Synchronize configuration | Load configuration | 7 Save configuration

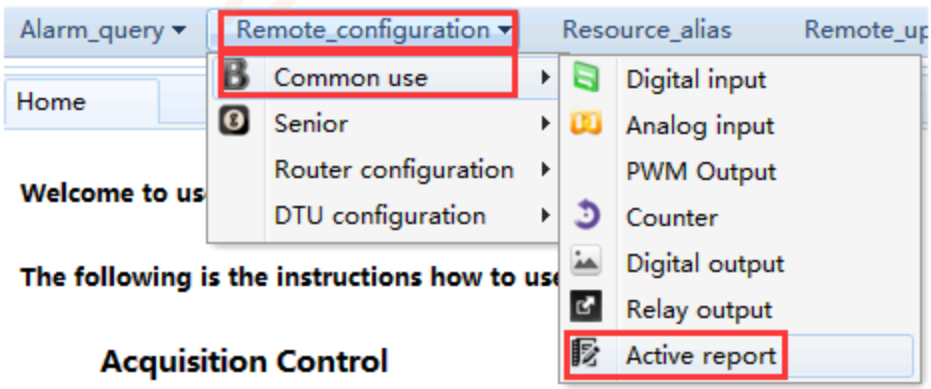
NO.	Alias	Enable or not	Working mode	Trigger Condition	Alarm content	Alarm Phone	Update Time(ms)	Level logic
1	digital_1	Yes 2	Query + alarm 3	Low level 4	123 5	18205925040 6	0	0-Low 1-High
2		No	Query	Low level			0	0-Low 1-High
3		No	Query	Low level			0	0-Low 1-High
4		No	Query	Low level			0	0-Low 1-High
5		No	Query	Low level			0	0-Low 1-High
6		No	Query	Low level			0	0-Low 1-High
7		No	Query	Low level			0	0-Low 1-High
8		No	Query	Low level			0	0-Low 1-High

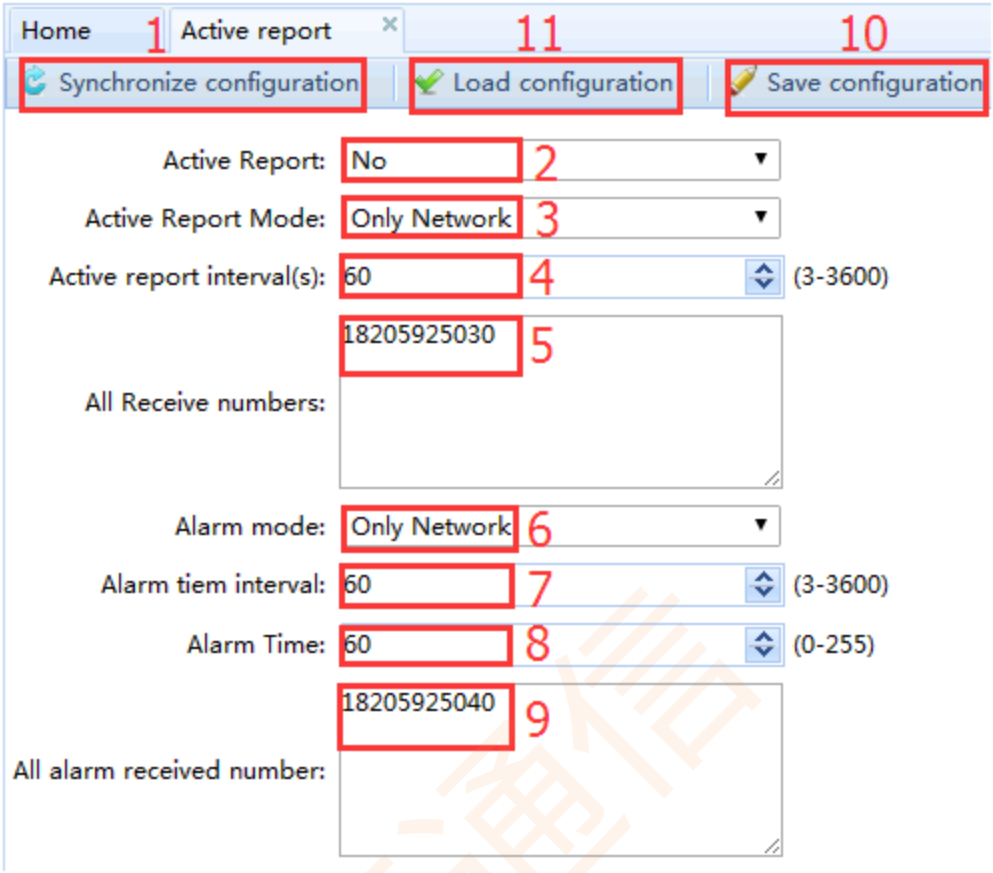
1. Click " Synchronize configuration", which will at least to synchronize configuration once enter into this platform;
2. Select "YES" from drop-down box of "Enable" option;
3. Work type: To select the relative alarming mode, otherwise, no alarming. Alarming/ active report's configure see as 2.2.7;
4. To set the alarm trigger conditions: Only valid for alarming. For active report, it will trigger an alarm when the time is up.
5. Enter the alarm contents.
6. The mobile phone number for alarming: up to 10 number, separated by ",".
7. Save the configuration parameters.
8. Click "Load configuration" to upload the configuration parameters or enter into RTU web-based management platform to ensure success.

Note: a. the ball window will close automatically during the configuration. We don't suggest you to confirm it by manual.

B. You can check if all the operation has been done by clicking "system management" on the right top of the menu bar, and then click " status record".

2.2.7. Alarming/Active reporting configuration





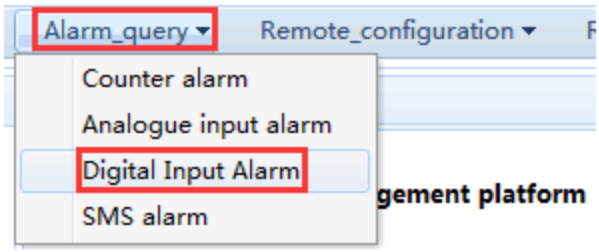
1. Click " Synchronize configuration", which will at least to synchronize configuration once enter into this platform.
2. Set "YES OR NO" from the drop-down box of "Active Report" option.
3. Alarm Report Mode: Network alarming and SMS alarming. (currently, the module of MC2716, mu609, M305 support SMS alarming; the others are only support network alarming, 2G communication module can not support SMS due to no SMS port);
4. To set active report interval time;
5. All receive numbers: All the serial data will be send for these mobile numbers.
6. Alarm Mode: Network alarming and SMS alarming. (currently, the module of MC2716, mu609, M305 support SMS alarming; the others are only support network alarming, 2G communication module can not support SMS due to no SMS port)。
7. To set alarm interval time;
8. Alarm times: if the value is 0, then RTU will send alarming info once time is up;
9. All alarm received numbers: All the serial alarm data will be send for these mobile numbers. By the way, each road count input has its own mobile NO. For alarming.

Note: a. the ball window will close automatically during the configuration. We don't suggest you to confirm it by manual.

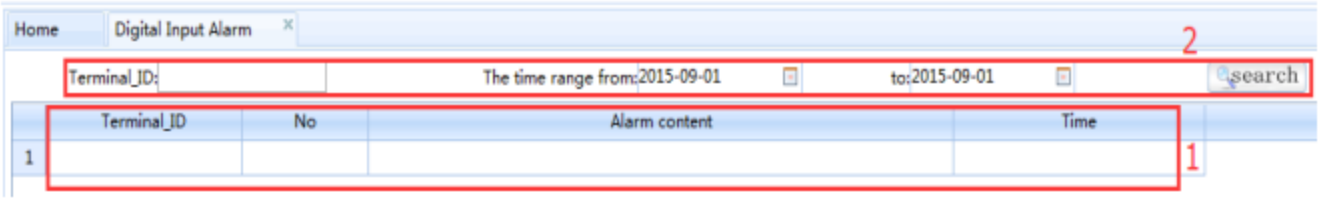
B. You can check if all the operation has been done by clicking "system management" on the right top of the menu bar, and then click " status record".

2.2.8. Alarming query /Active reporting query configuration

2.2.8.1. Active Alarming query

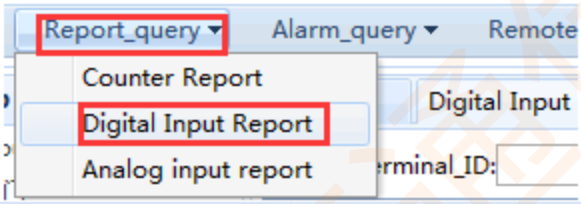


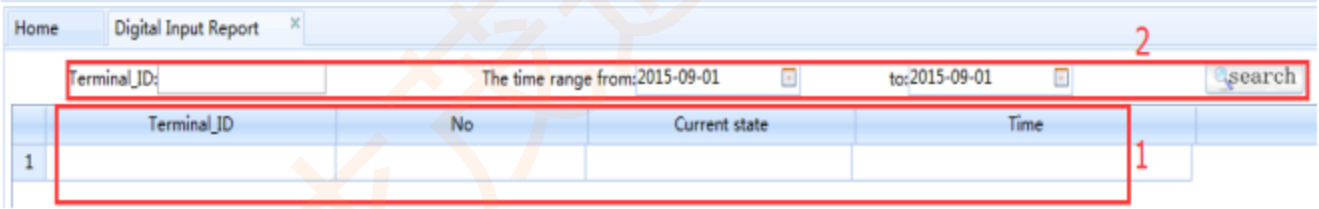
gement platform



1. All the alarm info of RTU will be displayed on this area.
2. To specific a certain time range that you query the alarm info of RTU ID device.

2.2.8.2. Active reporting query





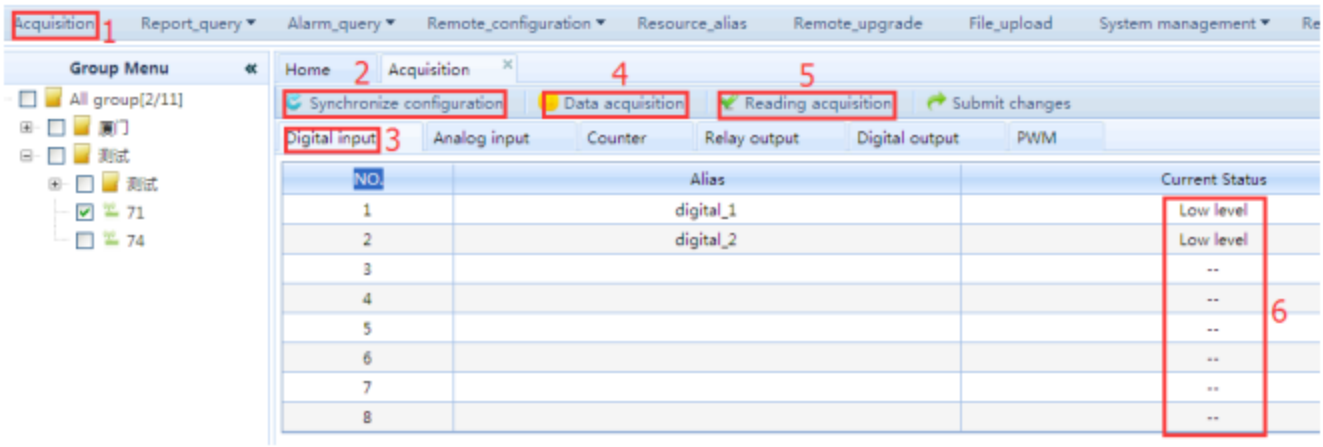
1. All the active report info of RTU will be displayed on this area。
2. To specific a certain time range that you query the active report info of RTU ID device.

3. Remote control the digital input on RTU management platform

3.1. Enter into RTU management platform

Please refer to 2.2.3.

3.2. Configuration Digital input



1. Click" Acquisition" on the left top of the page;
2. Click " Synchronize configuration", which will at least to synchronize configuration once enter into this platform;
3. Click " Digital";
4. Click " Data Acquistion";
5. Click" Reading acquisition", all the selected data will be displayed on the page. And each current value will not changed unless RTU recollect the data again;
6. To display current digital input interface's value. This value will increase if you rising the relative rising edge plug.

Note: a. the ball window will close automatically during the configuration. We don't suggest you to confirm it by manual.

B. You can check if all the operation has been done by clicking "system management" on the right top of the menu bar, and then click " status record".

Appendix 1: Indicator description

Indicator	Status	Description
Power	On	Powered on
	Off	Powered off
ONLINE	Off	Have not adsl
	One Flash in a second and off in the next one	Fail to find the SIM card
	Twice Flash in a second and off in the next one	Fail to dial-up
	Trip Flash in a second and off in the next one	Success to dial-up

	Light on in a second and off in the next one	Connecting to data center
	On	Success to connect the data center
ACT	Flash	Receive or send out data
	Off	No data be receive or send out

Appendix 2: Faulty analysis

4.1. Power indicator is off

Please ensure the cable be connected correctly, power supply meet the requirement and standards. Otherwise, it may will destroyed DTU.

4.2. Online indicator is off

Online indicator will not be on until RTU terminal access to network successfully. If it off, please ensure the network is normal, and check if SIM card be inserted correctly or data central server software can work normal, or the communication of TCP data is been intercepted by firewall.

4.3. ACT indicator is off

The ACT indicator of RTU with 3G network will never to flash. The others will turn on when there is some certain data be received or sent out.

4.4. All the indicators are normal, but it still can not to communicated.

Please check with local network operator that there is GPRS nework in your area, also please ensure that the configuration of IP address and communication port is correct.

4.5. Too slowly to enter into RTU WEB page

If it is too slowly to refresh the RTU WEB page and frequently to drop RTU packet when you use PING IP command to testing, please to modify the RTU MAC address first. As it maybe caused by there is the same MAC address of RTU.