Zigbee to RS485 Repeater, 3 Input Module

Description

Zigbee to RS485 repeater is a kind of lowcost, low consumption, and wireless mesh network targeted at wide development of long life devices in wireless control and monitoring applications. It applies wireless controlling and wireless data transmission. One zigbee to RS485 repeater can work with another or others as one network. As one solution to replace wire connection, it can connect with computer.
The unit can implement the wireless transmission based on RS485,while 3 Input Module connected with equipments such as temperature sensor,power meter,etc.One word,they work together to provide a simple way to integrate mesh technology into application.

Zigbee to RS485 Repeater

Specifications

Supple Voltage	2.1 to 3.6V
Communication	RS485, Zigbee
Antenna	RPSMA Connector,50Ω
Transmission Range	Penetrate a wall inside room; 200m wide open outside space
Max Current	<20mA @24VAC
Transmit Power	100mW(+20dBm)
Receiver	-101 dBm
Data Rate	RF 250 Kbps,Serial up to 1Mbps
Frequency Band	ISM 2.4 GHz
Operating Temperature	-40º C to +85º C
Memory	Standard: N/A Programmable: 256KB Flash/4 KB RAM
IDS	PAN ID and addresses, cluster IDs and endpoints
Channels	16 channels
Transmit Current	Standard: 120 mA @ 3.3 VDC Programmable: 120 mA @ 3.3 VDC
Receive Current	Standard: 31 mA @ 3.3 VDC Programmable: 45 mA @ 3.3 VDC
Power-down Current	<3 µA at 25º C

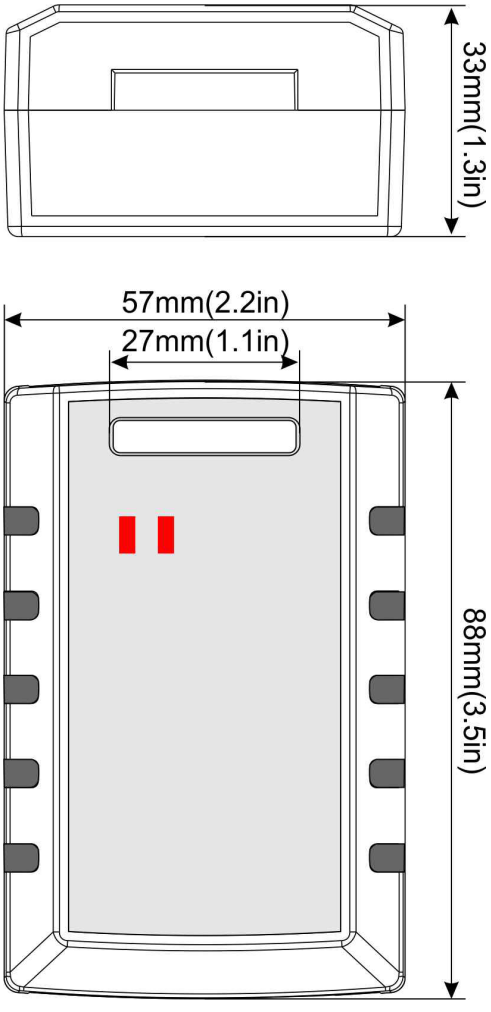
3 Input Module

Zigbee to RS485 Repeater, 3 Input Module

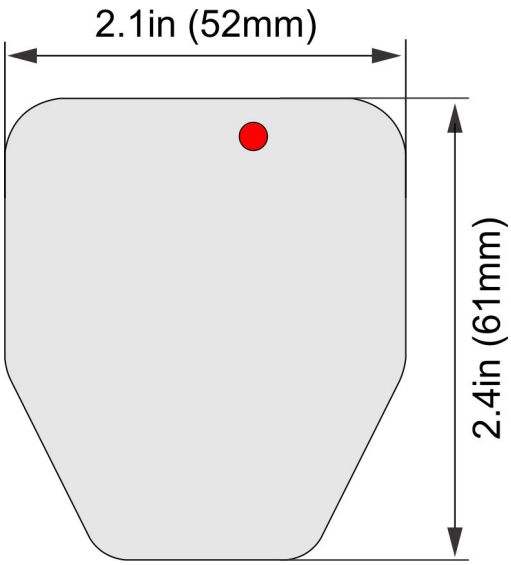
Highlight

Dimension

Zigbee to RS485 Repeater



3 Input Module



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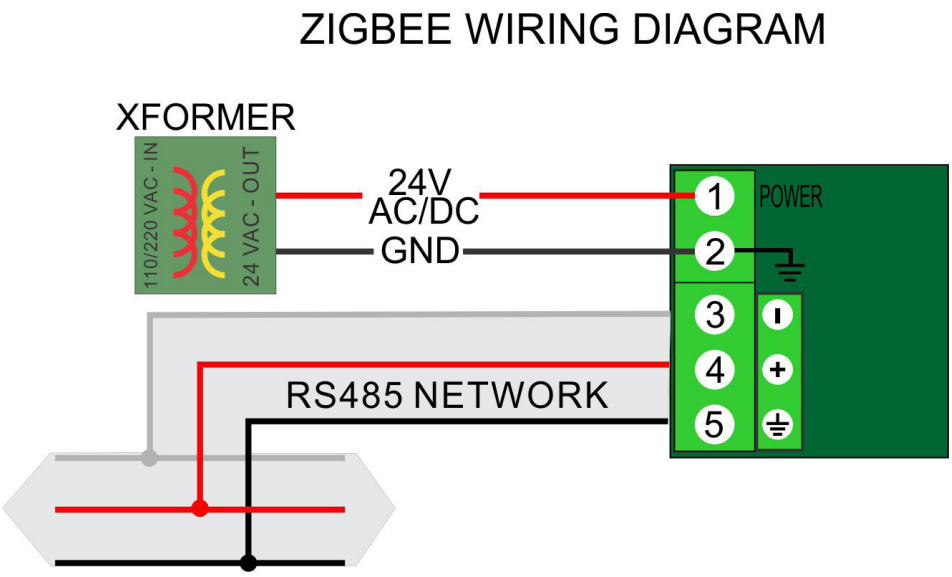
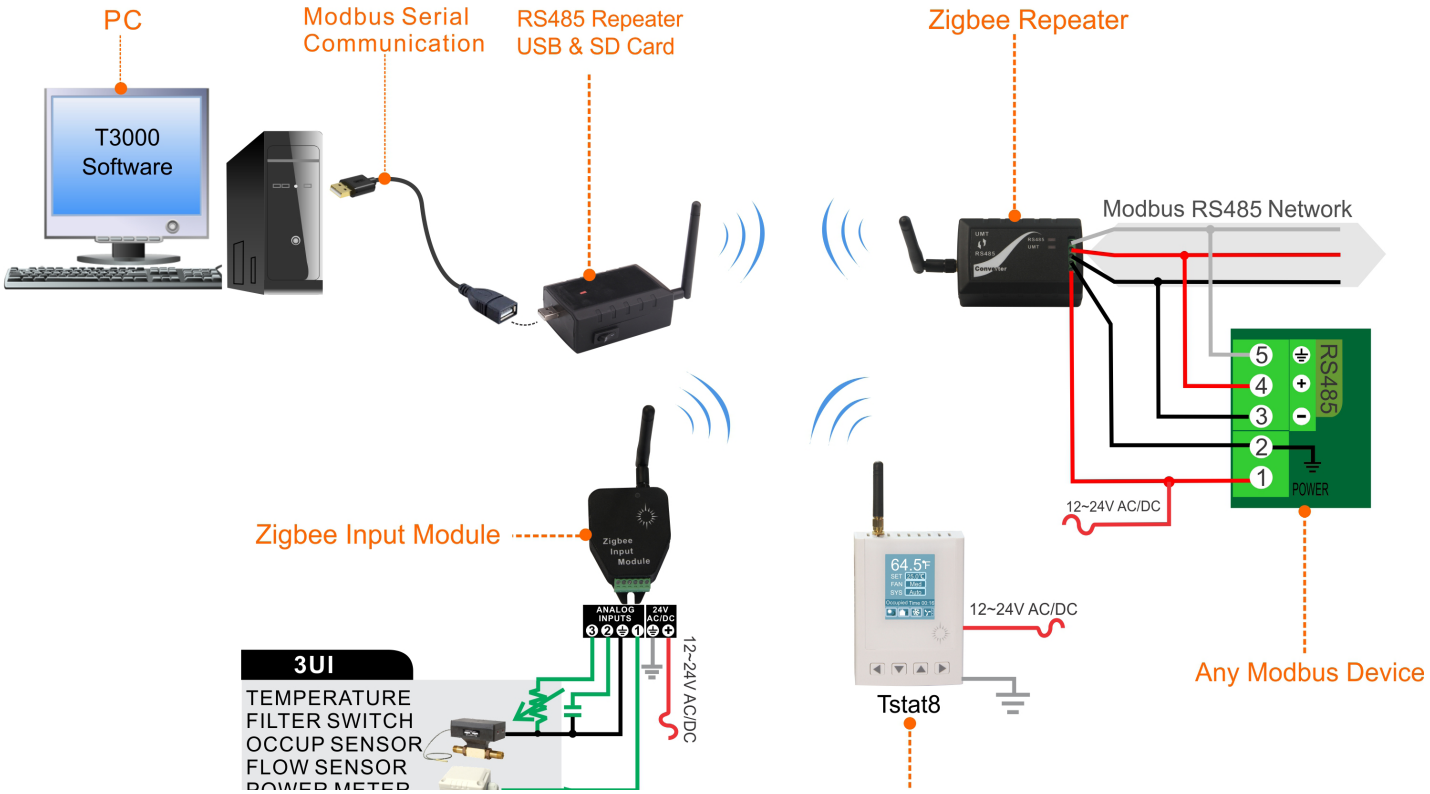
Wiring Diagram

The diagram below will show you how to properly set up a zigbee repeater.



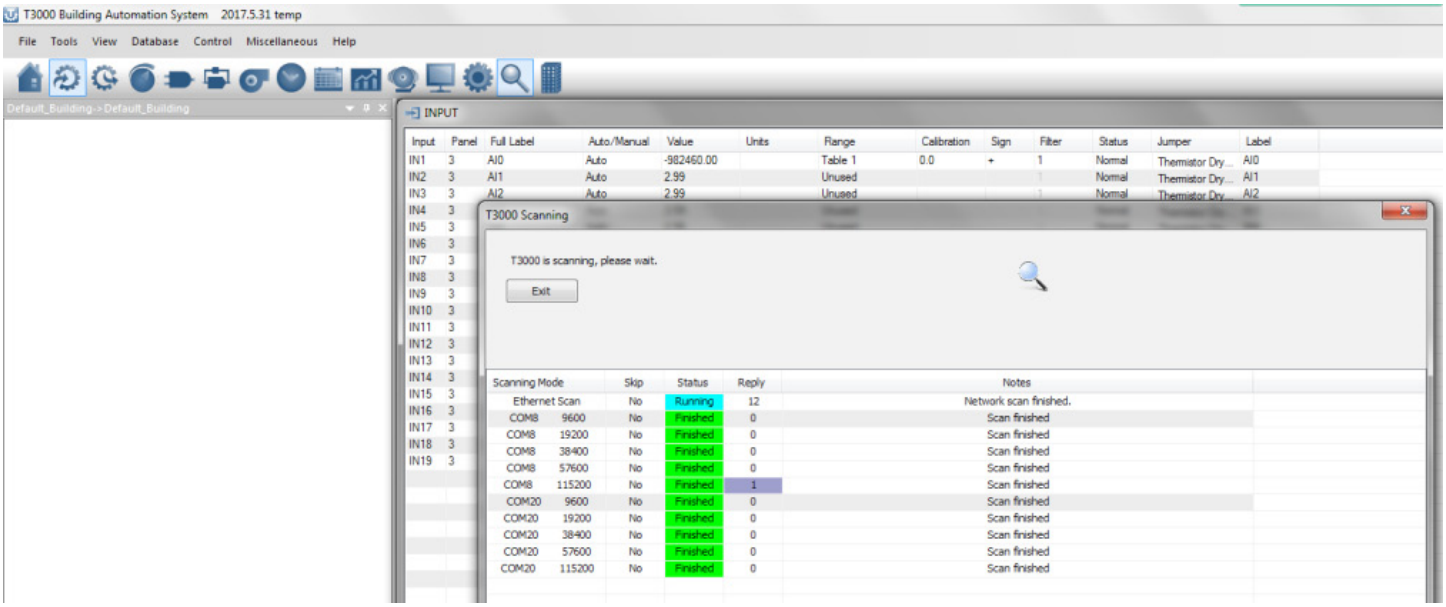
T3000 Operation

This example will show you how the unit will properly work with T3000 software when connecting any Modbus module to a zigbee repeater.

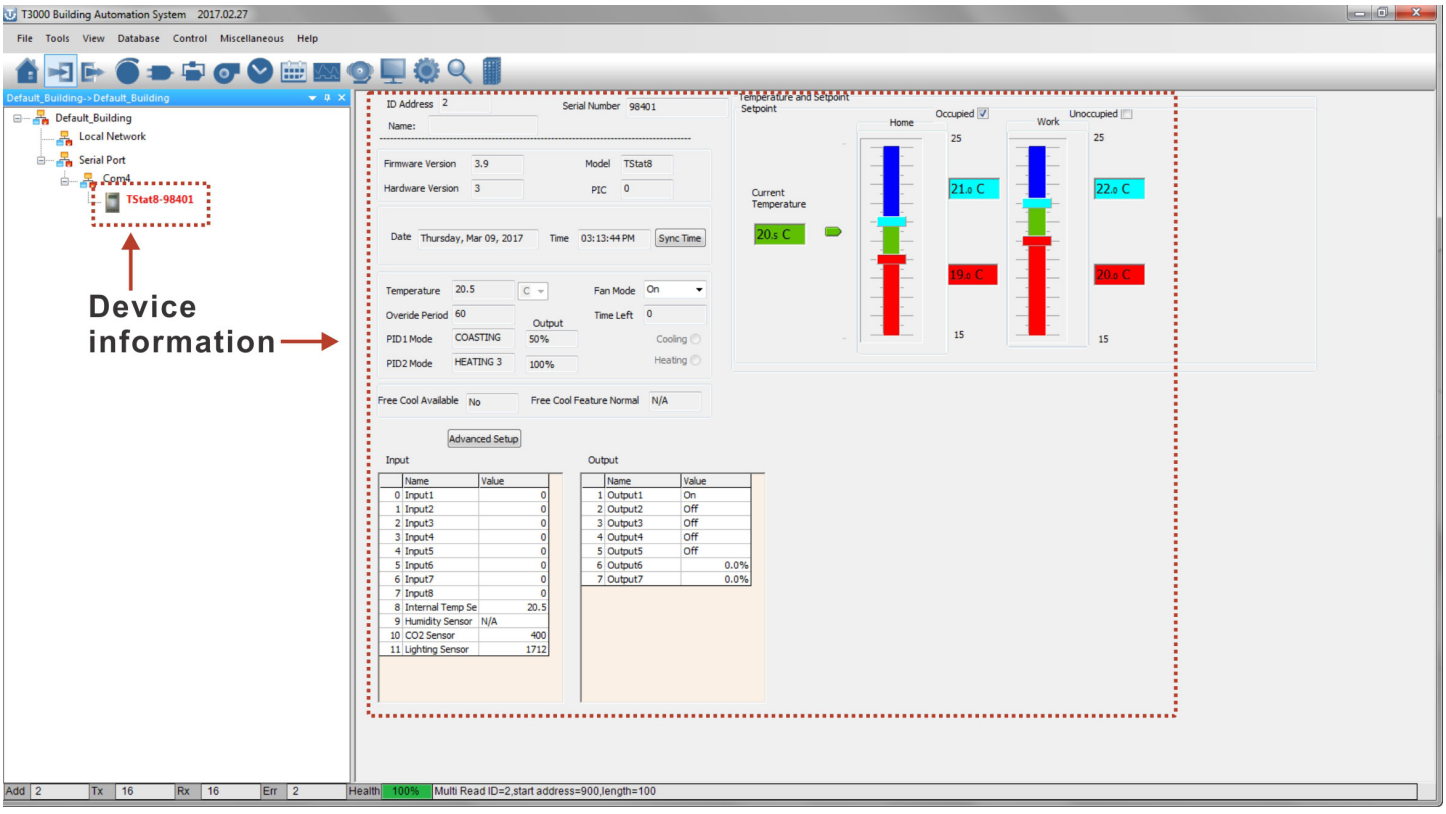


Zigbee to RS485 Repeater, 3 Input Module

Step1. Connect the Zigbee repeater and Zigbee input module 24VAC power.
Step2. Connect any modbus device and zigbee repeater by RS485 port.
Step3. Connect the Zigbee server to a PC USB port.
Step4. Visit https://temcocontrols.com/ftp/software/T3000.zip,download T3000 software.



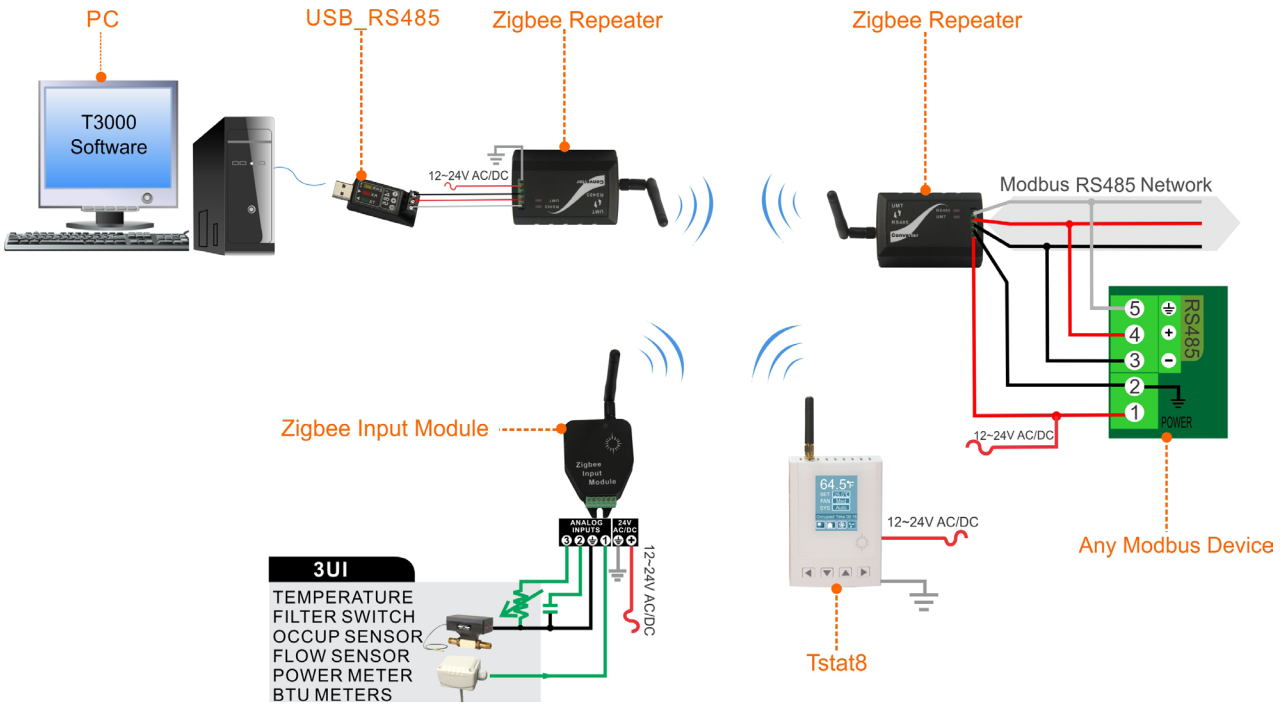
Step5. Start T3000 program, Click  to scan,then you can find the Modbus device connected.



Zigbee to RS485 Repeater, 3 Input Module

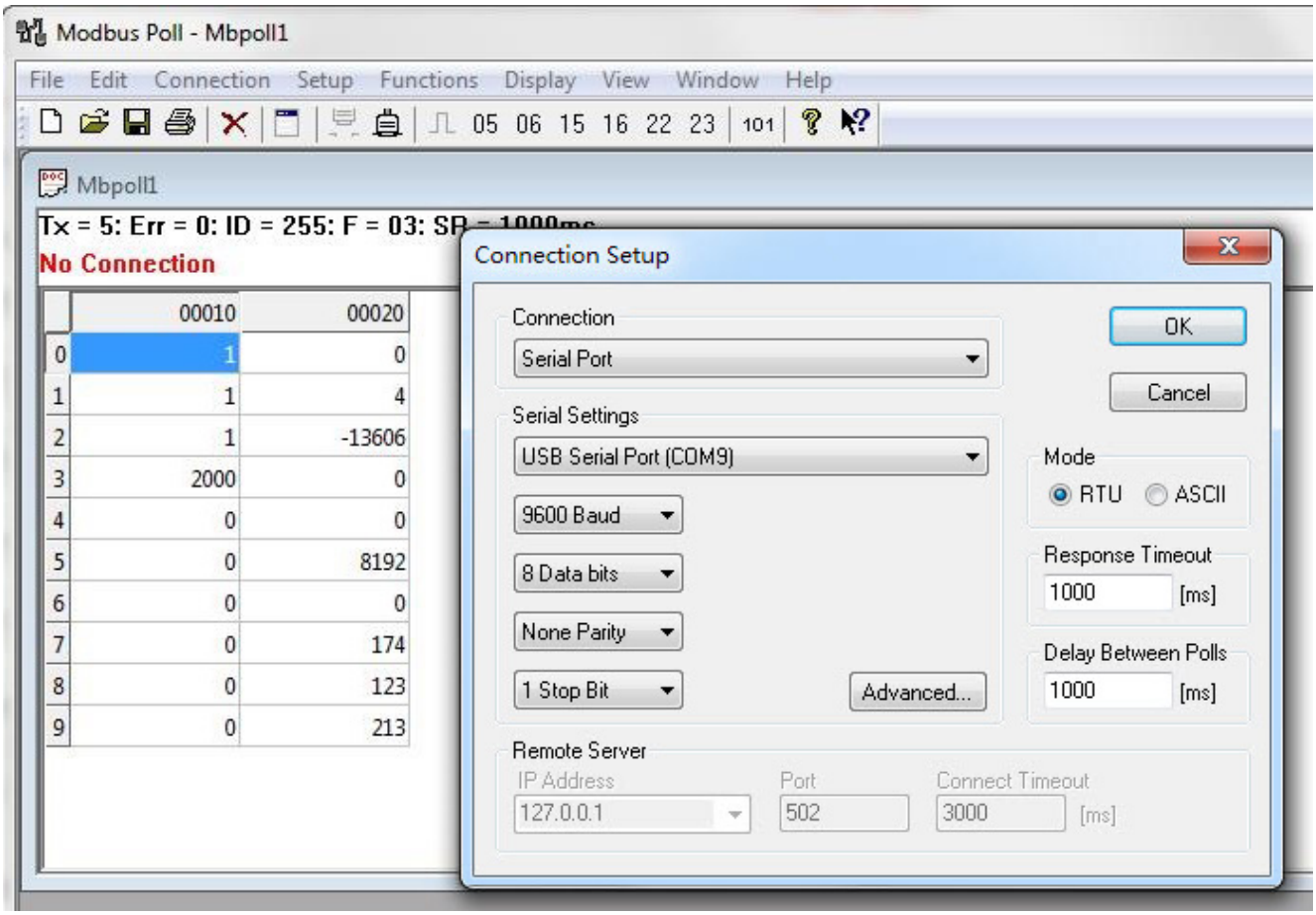
Wireless Modbus RS485 'wire replacement' configuration

The zigbee modules can operate as a transparent wire replacement.

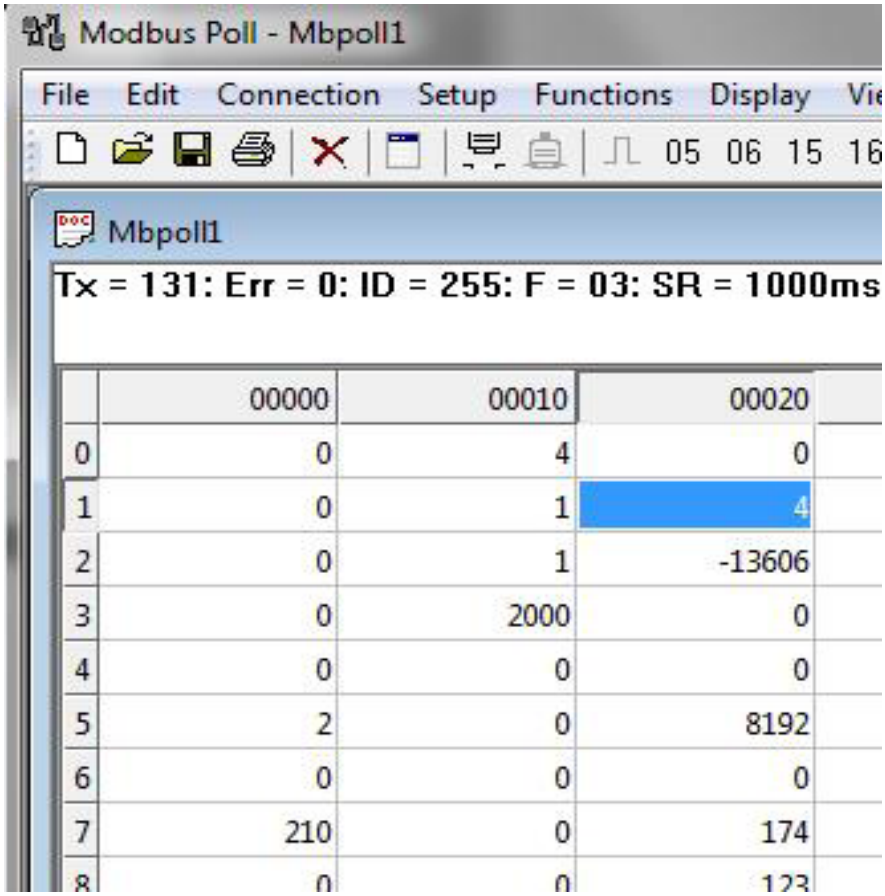


Operation:

Step1.Connect the Zigbee Repeater host-side to PC via RS485.
Step2.Start ModbusPoll,Click"Connection Setup",the default baudrate is 9600.

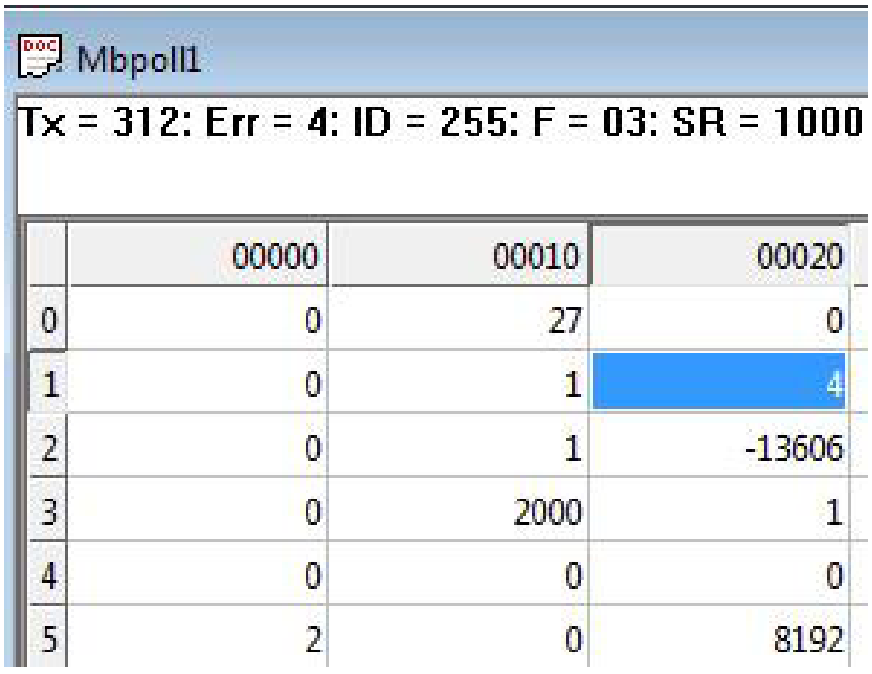


Step3.Configurate the device to Coordinator,set the value of register23 to 0(If you need to change the Baudrate,set the value of register21,0 stands for 9600,1 stands for 119200,and 4 stands for 115200). Then the Zigbee Repeater host-side configuration is finished.



	00000	00010	00020
0	0	4	0
1	0	1	4
2	0	1	-13606
3	0	2000	0
4	0	0	0
5	2	0	8192
6	0	0	0
7	210	0	174
8	0	0	123

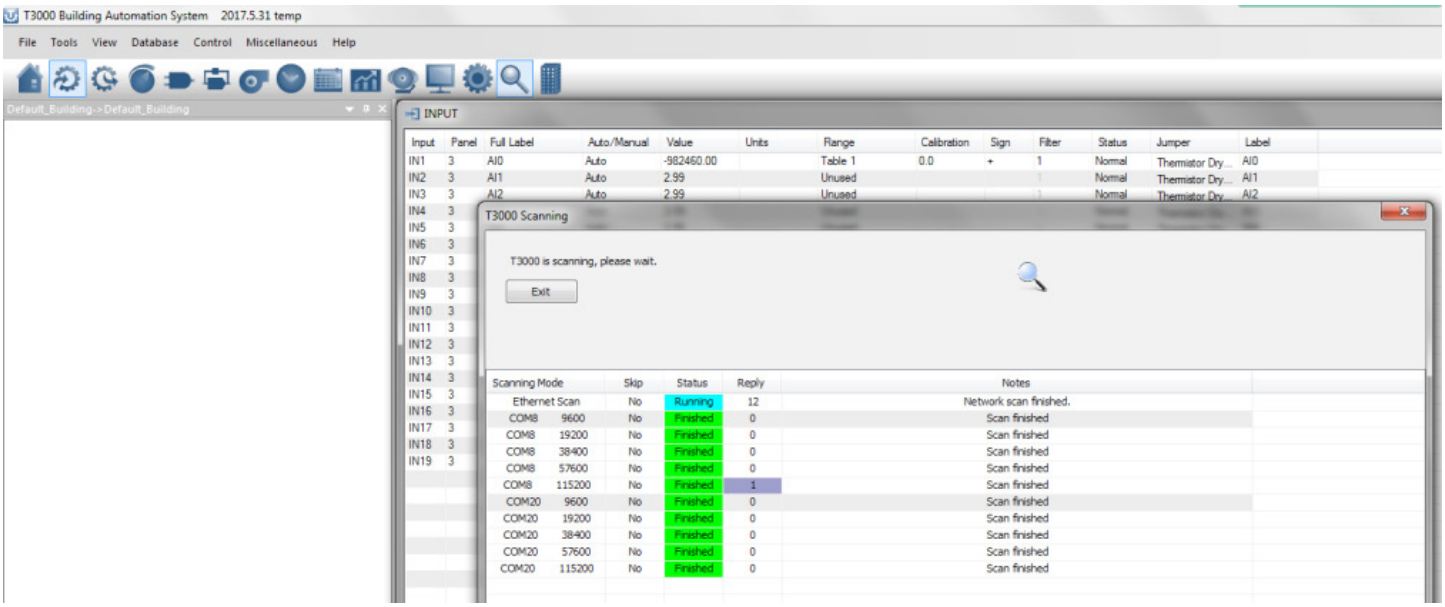
Step4. Configurate the Zigbee Repeater device-side.Connect it to PC via RS485,start ModbusPoll,Click”Connection Setup”,the default baudrate is 9600;configurate the device to router, set the value of register23 to 1;set the baudrate value of the register 21 to the Modbus device to be connected. Then the Zigbee Repeater device-side configuration is finished.



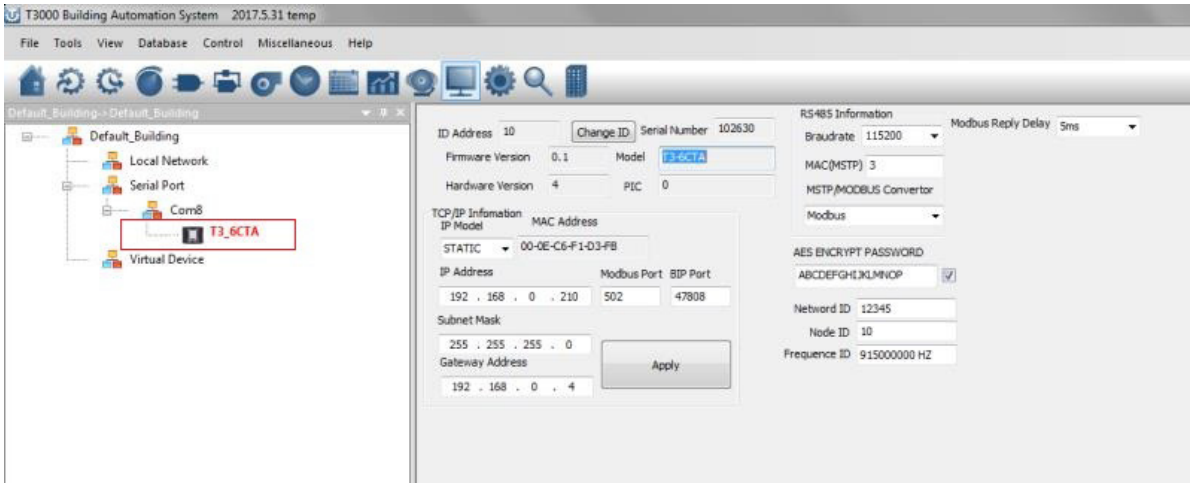
	00000	00010	00020
0	0	27	0
1	0	1	4
2	0	1	-13606
3	0	2000	1
4	0	0	0
5	2	0	8192

Step5.Connect the Zigbee Repeater device-side to the Modbus device to be connected.

Step6.Start T3000,Click  to scan.



Step7.Then you can find the Modbus device connected.



Modbus Register List

Address	Bytes	INTs	Multipler	Length info	Operation info	Register and Description
0 to 3	4	int8	1	Low byte	R	Serial Number - 4 byte value. Read-only
4 to 5	2	int8	0.1	Low byte	R	Software Version – 2 byte value. Read-only
6	1	int8	1	Low byte	W/R	ADDRESS. Modbus device address, default:MainBoard-1
7	1	int8	1	Low byte	R	Product Model. This is a read-only register that is used by the microcontroller to determine the product
8	1	int8	1	Low byte	R	UTC time, hour
9	1	int8	1	Low byte	R	UTC time, minute
10	1	int8	1	Low byte	R	UTC time, second
11	1	int8	1	Low byte	R	UTC time, month
12	1	int8	1	Low byte	R	UTC time, day
13	1	int8	1	Low byte	R	UTC time, year
18 to 20						Blank, for future use
21	1	int8	1	Low byte	R	BaudRate, default 0-9600,1-19200,2-38400,3-57600,4-115200
22	2	int16	1	Full	R	PANID for zigbee devices
23	1	int8	1	Full	W/R	Device type of zigbee. 0 means coordinator , 1 means router
24 to 25	4	int16	1	Full	W/R	Channel of Zigbee, default channel is channel 13, 0x00002000
26	1	int8	1	Low byte	R	Zigbee module software revision
27-34	8	int8	1	Low byte	R	Zigbee extented address(MAC address)
35	1	int8	1	Low byte	W/R	Set 1 to reboot zigbee module
36-51	16	int8	1	Low byte	W/R	Seurity key
52	1	int8	1	Low byte	R	Amount of nodes connected (NUM)
53 to (52+NUM)	1	int8	1	Low byte	R	Boat monitor's modbus ID
53+NUM*2	1	int16	1	Full	R	voltage value (176 means 17.6V)
53+NUM*3	1	int8	1	Low byte	R	Switch status
53+NUM*4	1	int16	1	Full	R	Temperature value (227 means 22.7C)
53+NUM*5	1	int16	1	Full	R	Temperature value (227 means 22.7C)
53+NUM*6	1	int8	1	Low byte	R	Boat monitor's signal strength(RSSI)