BESANTEK

BST-DL114 / BST-DL115/BST-DL116/BST-DL117

Wireless Monitor Temperature Humidity Data Logger

Manual

V1.0

CONTENTS

Chapter I Product Introduction

Besantek wireless temperature and humidity recorder design of a high-speed, intelligent temperature and humidity recorder. The instrument uses wireless data transmission method to collect and record temperature and humidity data. It comes with record memory, can store 8192 sets of data, can realize remote real-time monitoring of warehouses, laboratories, refrigerators, cold storage and other environments, using 2.4G wireless network to send data without wiring, simple operation, reliable performance.

1.1 Product Features

（1） Zigbee to RJ45 wireless relay technical parameters

- Wireless transmission rate: 115200bps.
- The number of wireless recorder can be Max connected to 32 units.
- Support frequency band number: 15 frequency bands
- Wireless Interface: Zigbee ad hoc network, automatically find the best link to transmit data
- built-in RJ45 interface, will receive the wireless data from LAN and transmit data to the server
- Can be used as relay / gateway at the same time, used for receiving wireless s ignal sent by wireless temperature and humidity recorder.
- Power : 12V DC adapter

(2) Wireless recorder technical parameters

- Wireless transmission rate: 115200bps.
- LCD resolution: temperature 0.1 ℃ / humidity 0.1% RH.
- Sound and light alarm (LED lights + buzzer). More than any channel set the upper and lower limits, then automatically alarm.
- Switzerland imported integrated temperature and humidity sensor.
- recording interval: 2s-24h
- Support continue transferring from breakpoint function.
- Wireless transmission rate: 115200bps, the maximum transmission distance: 50-500 meters (test data in empty without blocking environment).
- Use Zigbee 2.4G wireless network

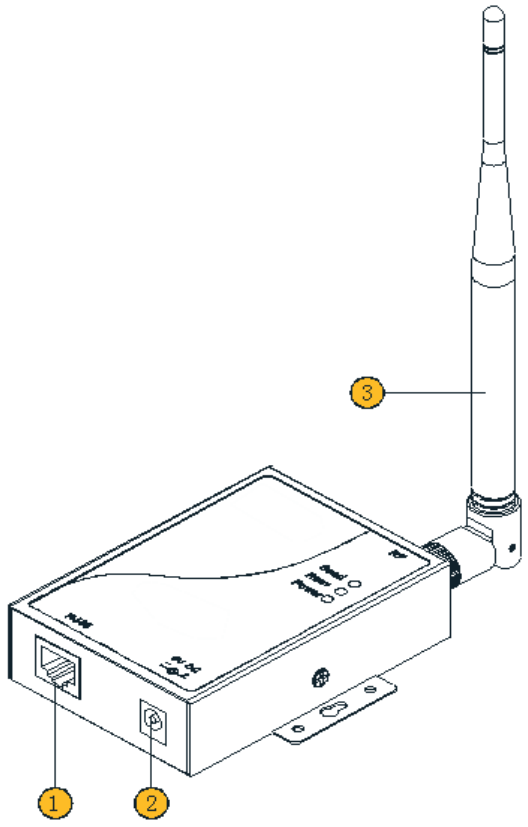
1.2 Range of Application

Widely used in agricultural research, food, medicine, warehouses, cold storage, refrigerator, computer room, chemical industry, meteorology, environmental protection, electronics, laboratory and other fields of temperature and humidity monitoring.

1.3 Performance parameters

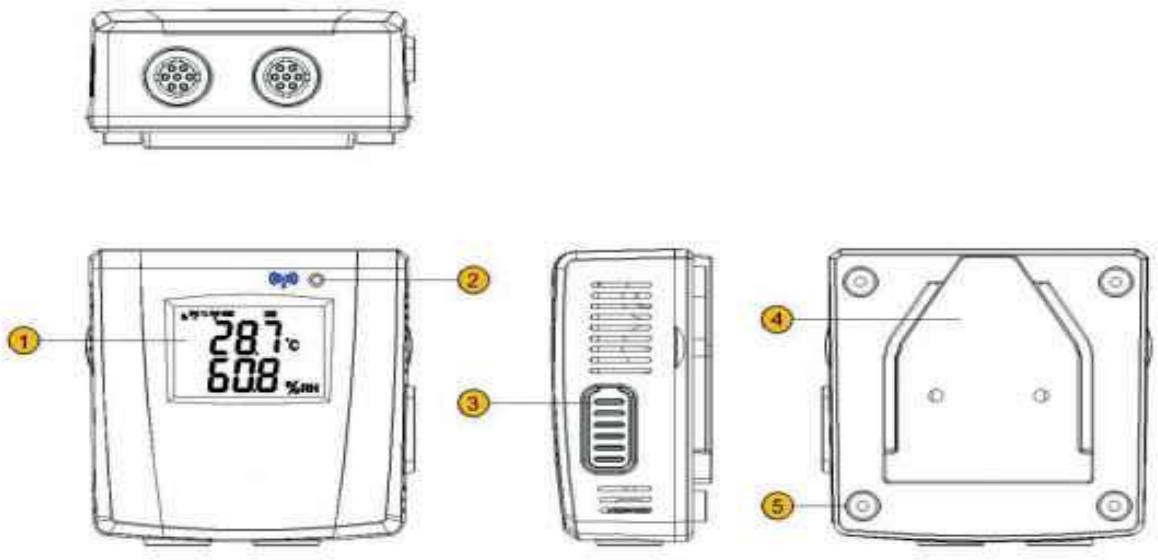
Model	Measurement Accuracy	Measurement Range	Probe Type (T:Temperatur; H:Humidity)	Capacity of Records
BST-DL114	±0.5℃/±3%RH	-20～70℃ 0～100%RH	T&H	8,192
BST-DL115	±0.5℃/±3%RH	-40～85℃ 0～100%RH	T&H External	
BST-DL116	±0.5℃	-40～85℃	Double T External	
BST-DL117	±2℃	-100～200℃	Thermocouple Type K	

1.4 BST-WDL07 wireless base station appearance diagram



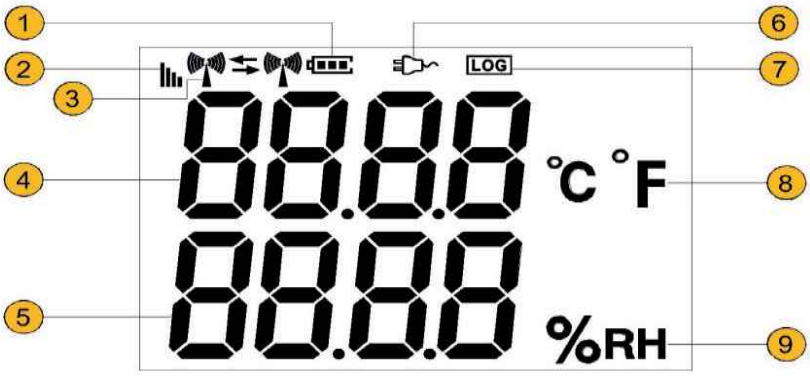
BST-WDL07
1 Ethernet interface(RJ45)
12V DC power interface
Antenna

1.5 wireless data logger with LCD display



1 LCD display
LCD indicator
USB port & DC power Jack (9-12V)
4 Wall-mounted back cover
Back cover screw-fixed position

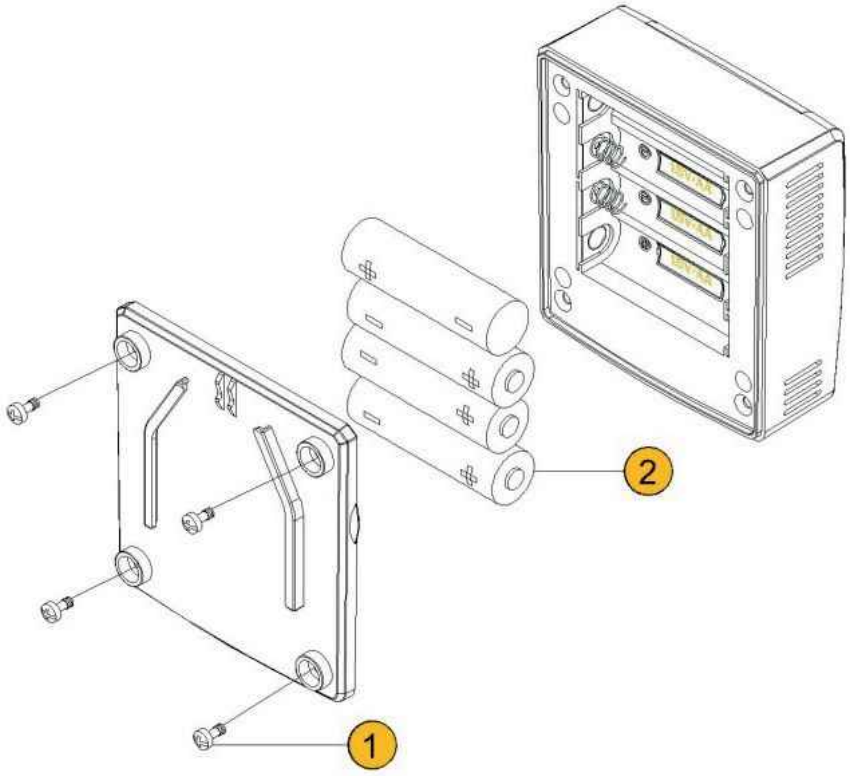
1.6 LCD Symbol Description



1 Battery symbol
Signal symbol
Wireless symbol
4 Temperature display area
Humidity display area
6 DC power symbol
7 Auto logging symbol
8 Selectable ℃/℉ symbol
9 Humidity symbol

1.7 Install battery

Loosen the back cover screw① with the screwdriver, and install 4*1.5V AA batteries according to the direction of the battery.



Chapter II Software Usage Guide

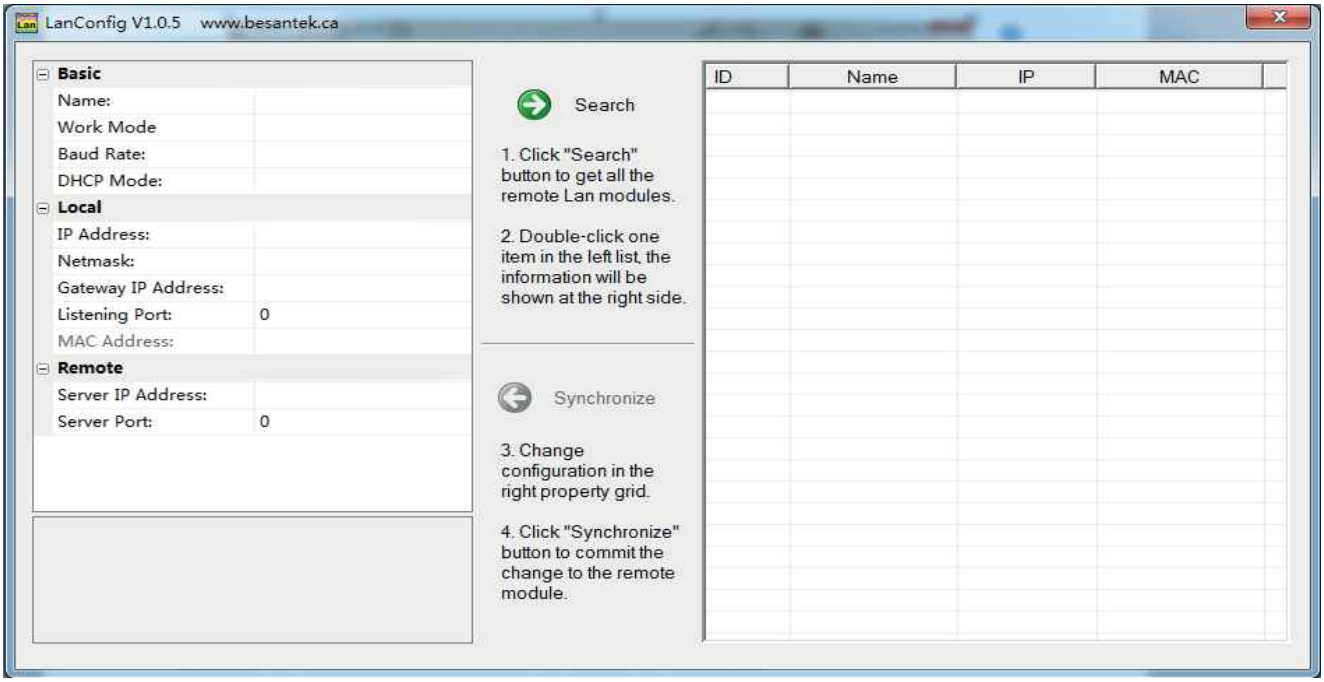
2.1 Install software

（1） Put Monitor software CD-ROM into the drive, copy BSTServer software to the computer hard disk. (note: do not install in C disk, prevent the operating system crash data loss, is beneficial to protect data.)

（2） open the folder and find the BSTServer

2.2 Set RJ45 module in BST-WDL07 wireless basic station

BST-WDL07 connect 12V power supply and RJ45 network port, open Lanconfig in the folder, pop-up interface as shown below:



(1) Click [Search] to search the device, the right half of the interface will display the name and IP address of wireless basic station that has been connected to LAN. **Note: The LanConfig software uses the UDP broadcast protocol to search the module, ensuring that the firewall or antivirus software does not block the software.**

(2) select the serial number of the selected BST-WDL07 wireless base station and double-click to obtain the property.

(3) Instrument Name: can be modified according to actual needs.**(Note: the factory setting is the instrument serial number)**

(4) Work Model: : set to TCP Client mode.

(5) Baud Rate: set to 115200

(6) DHCP Mode Relay Service: select Disable off state. It is recommended to choose a fixed IP address to ensure network stability.

(7) IP Address/Net Make/IP Gateway: modify IP information, the Gateway should be consistent with the current LAN, and the IP Address is BST-WDL07 wireless base station IP address**(note: this IP should not conflict with other instrument IP)**

(8) Server IP: This IP address is the same as the fixed IP address of the controlling computer.

(9) Server Port: The default is 4588 Same as the TCP listening port of ToMonitor software

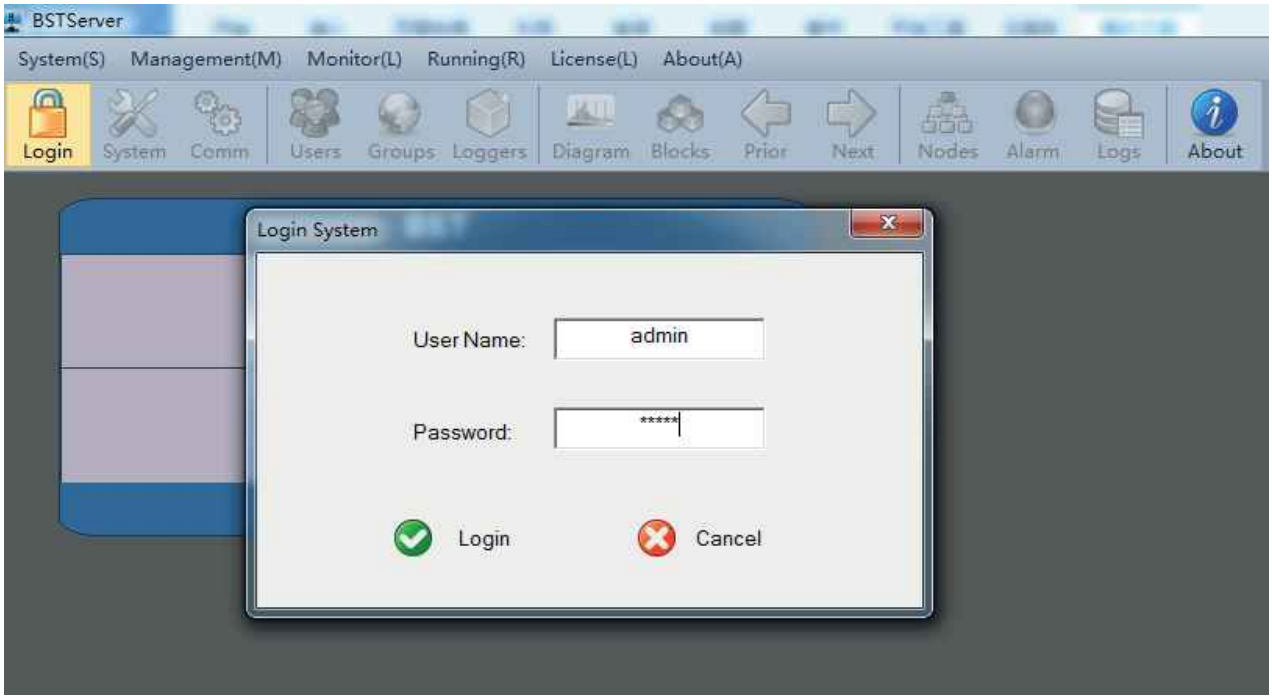
(10) Click [Synchronize] to submit changes, a "Change Device Information Success" dialog box will pop up, and click to confirm finally.

2.3 ToMonitor software

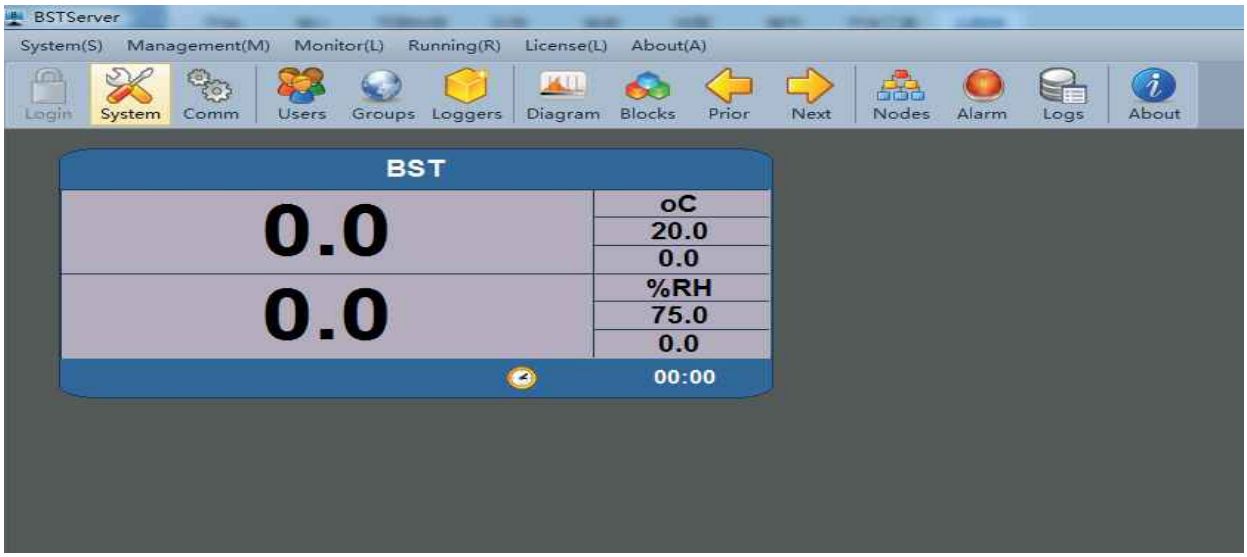
2.3.1 Open and running software

The instrument is powered on, the BST-WDL07 is powered on and connected to the Ethernet.

Double click BSTServer., Click [Login] button to enter the login interface as shown below, the initial user name and password are "admin" (not case-sensitive).



After successful login to ToMonitor software, the toolbar and menu keys are all activated, as shown below:



2.3.2 System Settings

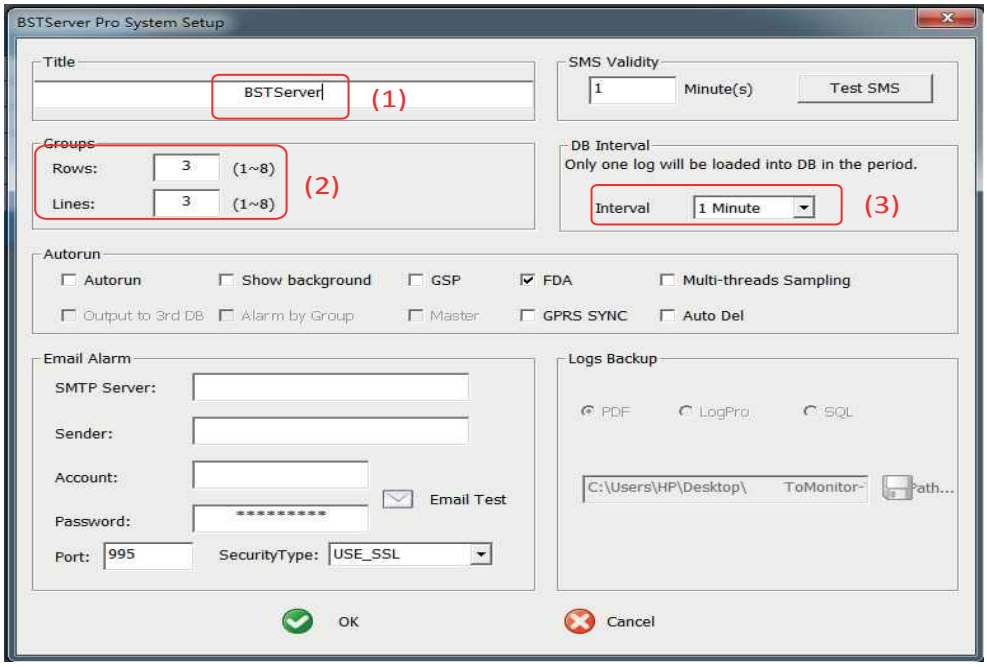
Click 

, The following dialog box will pop up:

(1) custom software name: customize the software title name according to actual requirements.

(2) Set the window arrangement number.

(3) record keeping interval



2.3.3 Communication Settings

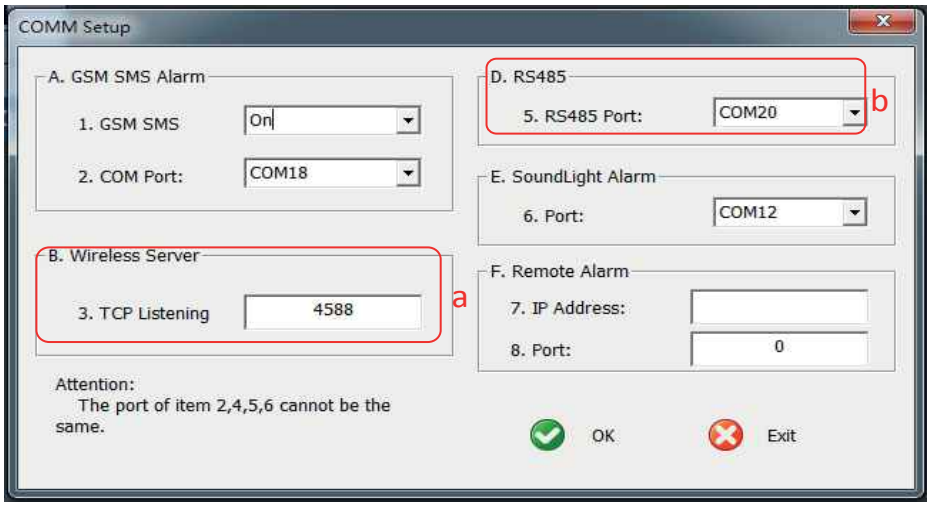
Click 

, The following dialog box will pop up:

Wireless Server Port Settings:

a. TCP listening port (RJ45): 4588 (BST-WDL07 wireless base station to set this port)

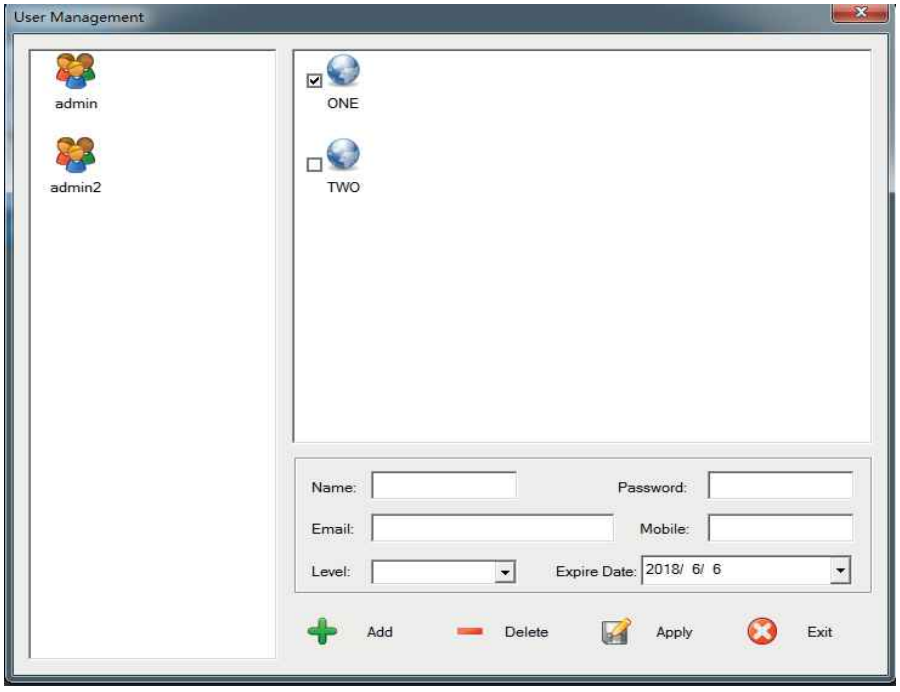
b. USB Port (USB): port selection COM1 ~ COM9**(RS485 base station to set this port, the Port number is consistent with the USB Port number that connects devices)**



2.3.4 User Management

Click 

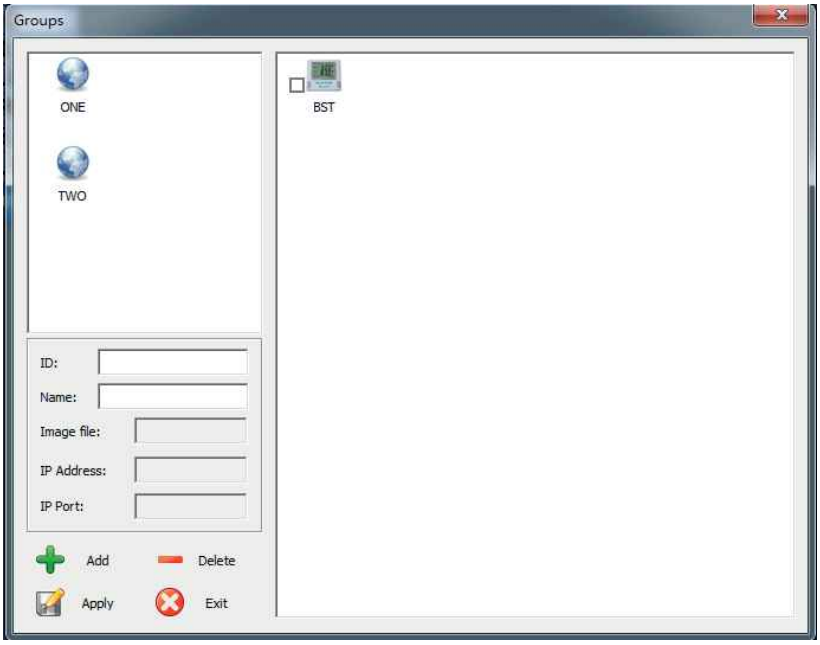
, Pop-up the following dialog box, add the user name as needed:



2.3.5 Partition management

Click 

,Pop-up the following dialog box, add partitions as needed:

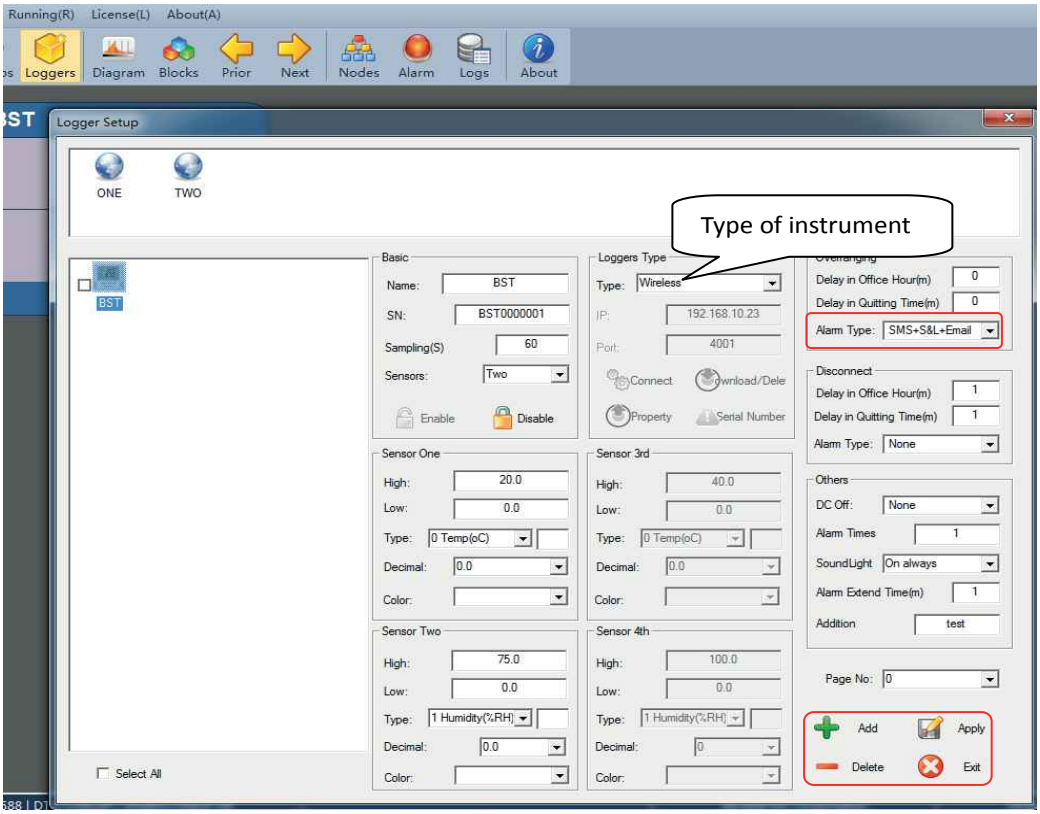


Note: After add a new recorder must be divided into regions, otherwise the window page will not display the new recorder monitoring

2.3.6 Device management

Click 

, The following dialog box will pop up:



(1) [Basic Settings] Logger parameter settings

Name: can be named according to the actual situation, the name of each instrument can not be repeated.

Serial Number: Enter the 10-digit serial number posted on the instrument.

Instrument Type: Set to "Wireless Instrument".

Sampling interval (minutes): The refresh interval of instrument data can be set according to the actual situation.

The number of sensors: select a single channel shows only 1 (only display the data of a channel, single temperature recorder can select this), select dual channel display 2 (display two channels of data, temperature and humidity recorder can select this).

（2） [Sensor I]

High : the upper limit can be set. When the set value is exceeded, the monitoring value is displayed in the red font. Please set the alarm mode to send the alarm information according to the actual demand.

Low : the lower limit can be set. When the set value is exceeded, the monitoring value is displayed in red font. Please set the alarm mode to send the alarm information according to the actual demand.

Type: temperature/humidity (please choose according to the type of purchase recorder).

（3） [Sensor II]

High / low : The upper limit and lower limit can be set according to the actual situation. When the setting value is exceeded, the monitoring value will be displayed in red font, meanw hile, the alarm information will be sent according to the setting alarm mode.

Type: temperature / humidity

Sound & Light Alarming: Optional working hours are off or open all the time.

Add button function: First, select one of the recorder in the dialog box, the properties displayed, enter a new name and serial number, other parameters set according to the actual situation, and then click to increase.

Apply button function: First, select one of the recorder in the dialog box, set the relevant parameters according to the actual situation, click the Modify button will pop up to modify the success dialog box, and then click OK.

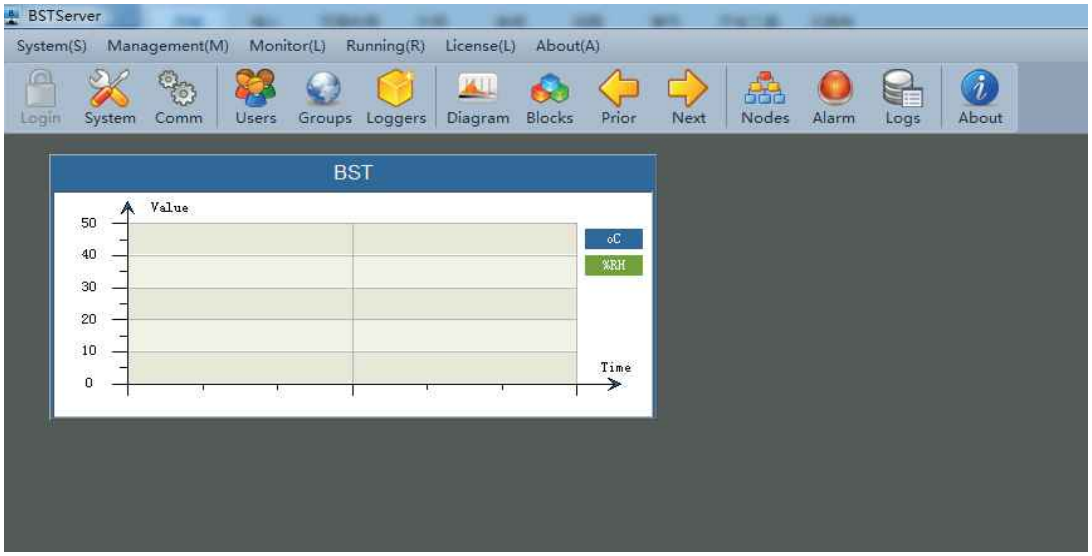
Delete button function: First, select one of the recorder in the dialog box, click the delete button will pop up to delete the success dialog box, and then click OK.

Exit button: Click the Exit button to exit the Device Management dialog box.

2.3.7 Real-time curve button

Click 

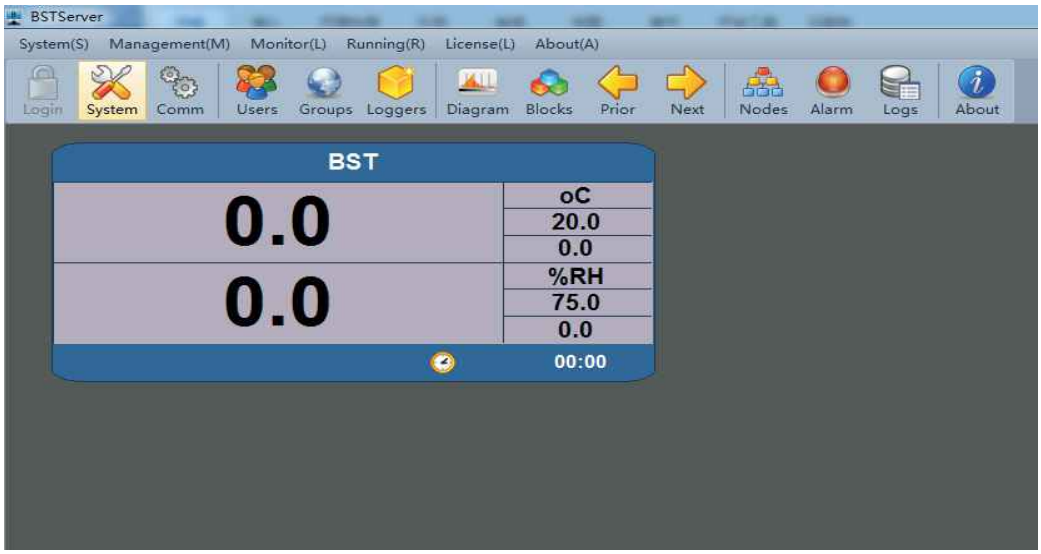
, The window is displayed as a curve, as shown below:



2.3.8 Text display button

Click 

, The window is displayed as a text number, as shown below:



2.3.9 Previous area / next area button

Click 

, can switch the window page to view monitor data, the keyboard up and down left and right buttons can also be switched.

2.3.10 Monitor list button

Click 

, Show or hide the partition list

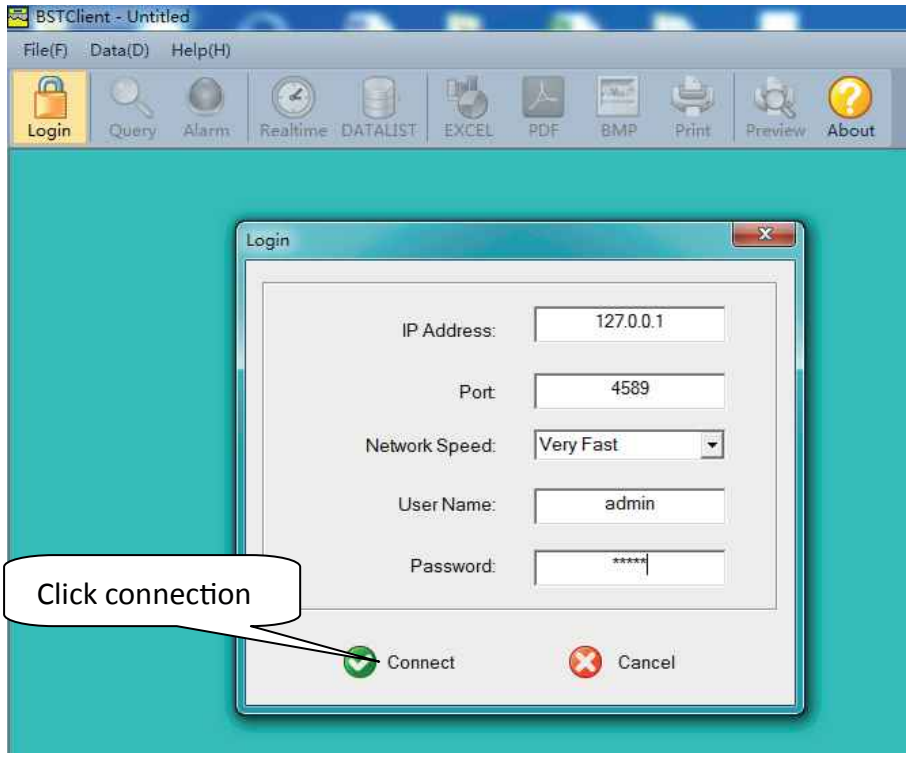
2.4 View and export the data to be uploaded

（1）Click BSTClient in BESANTEK software folder and open the software, as shown below:

BSTClient

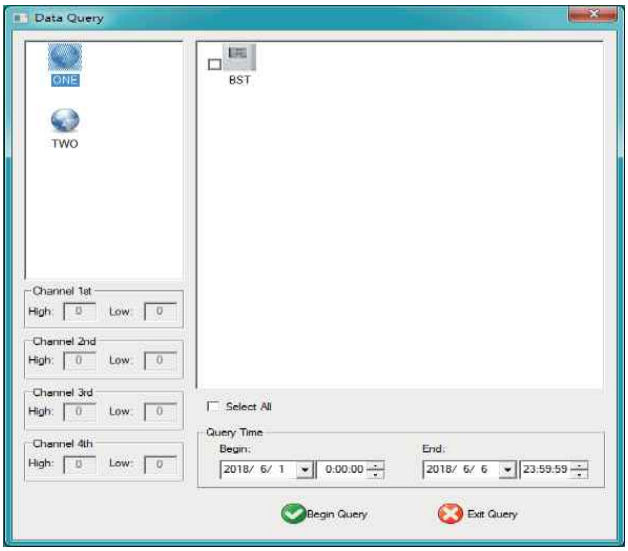
(Note: When ToClient is opened, it is used when ToMonitor is open, otherwise, it will prompt to connect to the server failed and can not view the data)

（2） Login system



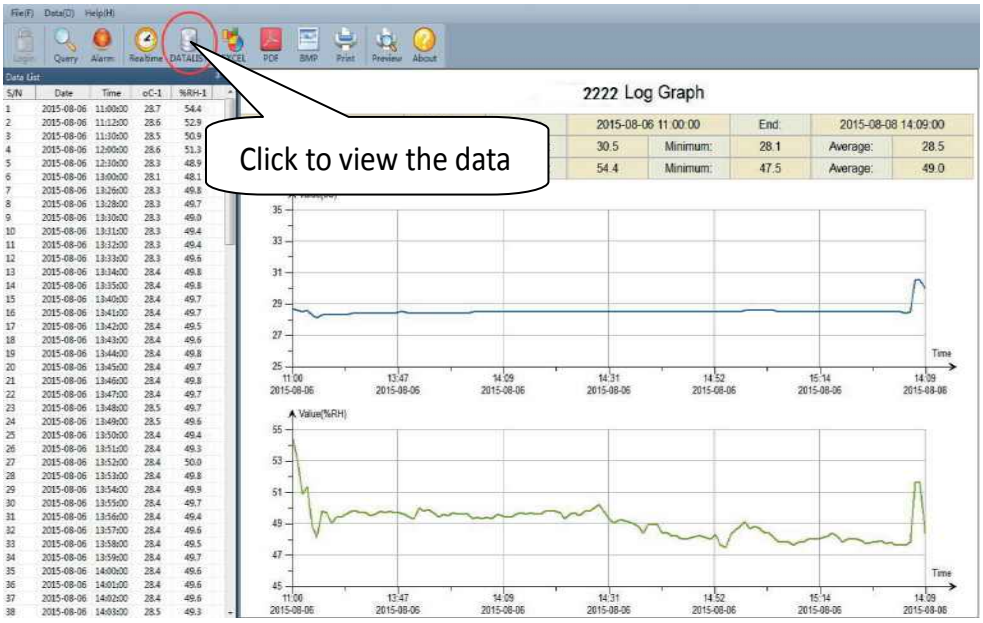
(note: the port number is the number of [LAN] add 1, the number of [LAN] shown under ToMonitor, user name and password are admin)

（3）Click [Query] icon, the following dialog box will pop up. To select the instrument to query, select the time period to be queried, click [Start Search]



（4）The following dialog box will pop up to check the corresponding data analysis diagram.

（5）Click [DATALIST] icon, the following dialog box will pop up and view the real-time data.



（6）Click [PDF] to export the query data to PDF file, and click [BMP] to export the analysis diagram to BMP image file.

Chapter III Precautions

3.1 Precautions

- The data logger waterproof grade is IP34, if has water on the case, do not connect USB, to prevent the electronic circuit short circuit under the influence of water. Short circuit may cause damage to the instrument.
- The data logger uses ABS fireproof plastic shell, to prevent the corrosion of acid and alkali and other chemicals for shell.
- If it fails, it must be repaired by an authorized professional. Do not repair or modify it by yourself.
- The device configured 4*1.5V lithium battery, it can’t be charged and don’t allow short circuit, otherwise it may be dangerous. Waste battery should be properly handled to protect the environment.

3.2 FAQ

- LCD display dim

Cause: The battery is low or the ambient temperature is too low or too high.

Solution: replace the battery. If it is caused by ambient temperature, please take out the recorder immediately and avoid damage to the recorder.

- LOG symbols disappear

Cause: When the battery is low, there will not be enough power to maintain the recording function.

Solution: replace the battery.