Configure instruction:

1. After the device is turned on, it sends data to the Tzone server by default. Before sending data, please configure the user name and password for the WiFi network.

2. The configure software or server can be used to send commands to modify parameters. Commands via the configure software can sent directly according to the format in the instruction table, while commands via the server should be sent according to the specific format；

3. If the server is set to receive data, the server needs to set the RTC time periodically. Otherwise, the device time may be incorrect.

We suggest that each time the device connects to the server, the server takes the initiative to set an RTC time.

The server sets the device time format： @UTC,yyyy-MM-dd HH:mm:ss#

Example： @UTC,2021-11-24 02:56:43#

Note: The time must be set to UTC

4. If the server is set to receive data, the server must send an ACK message to the device every time the device sends data to the server. Otherwise, the device keeps sending repeated data；

The server replies with an ACK message：

@ACK, Information serial number(Convert hexadecimal to decimal)#

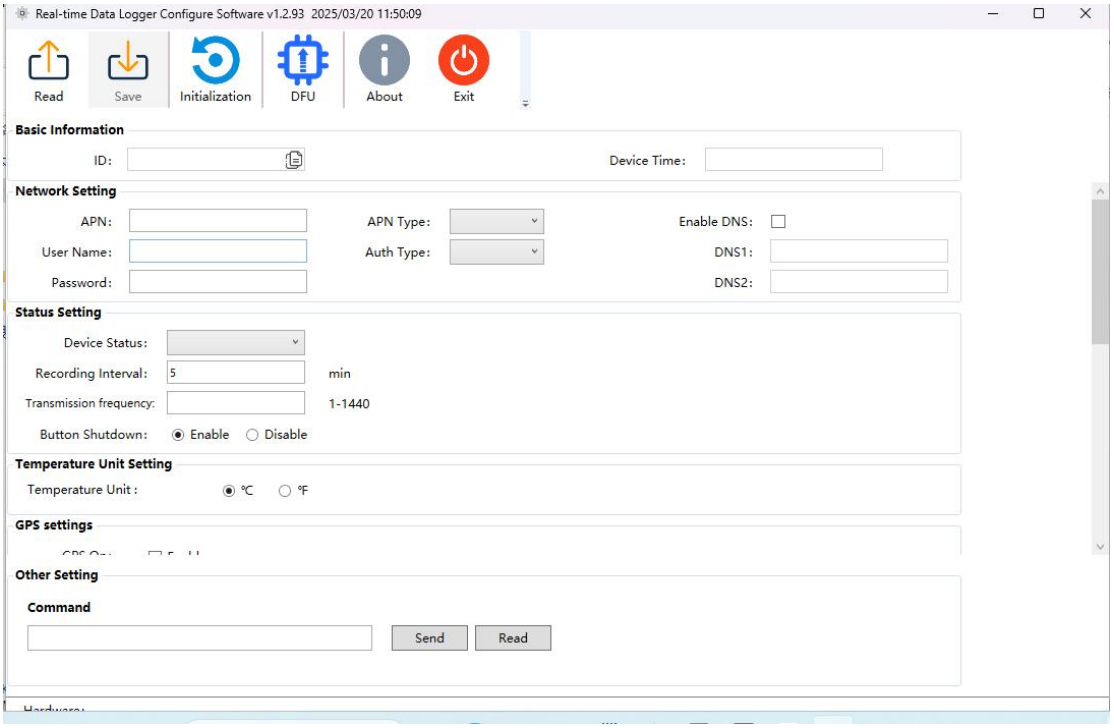
Example： @ACK,35#

5. The device does not generate or send data to the server during configuration or charging.

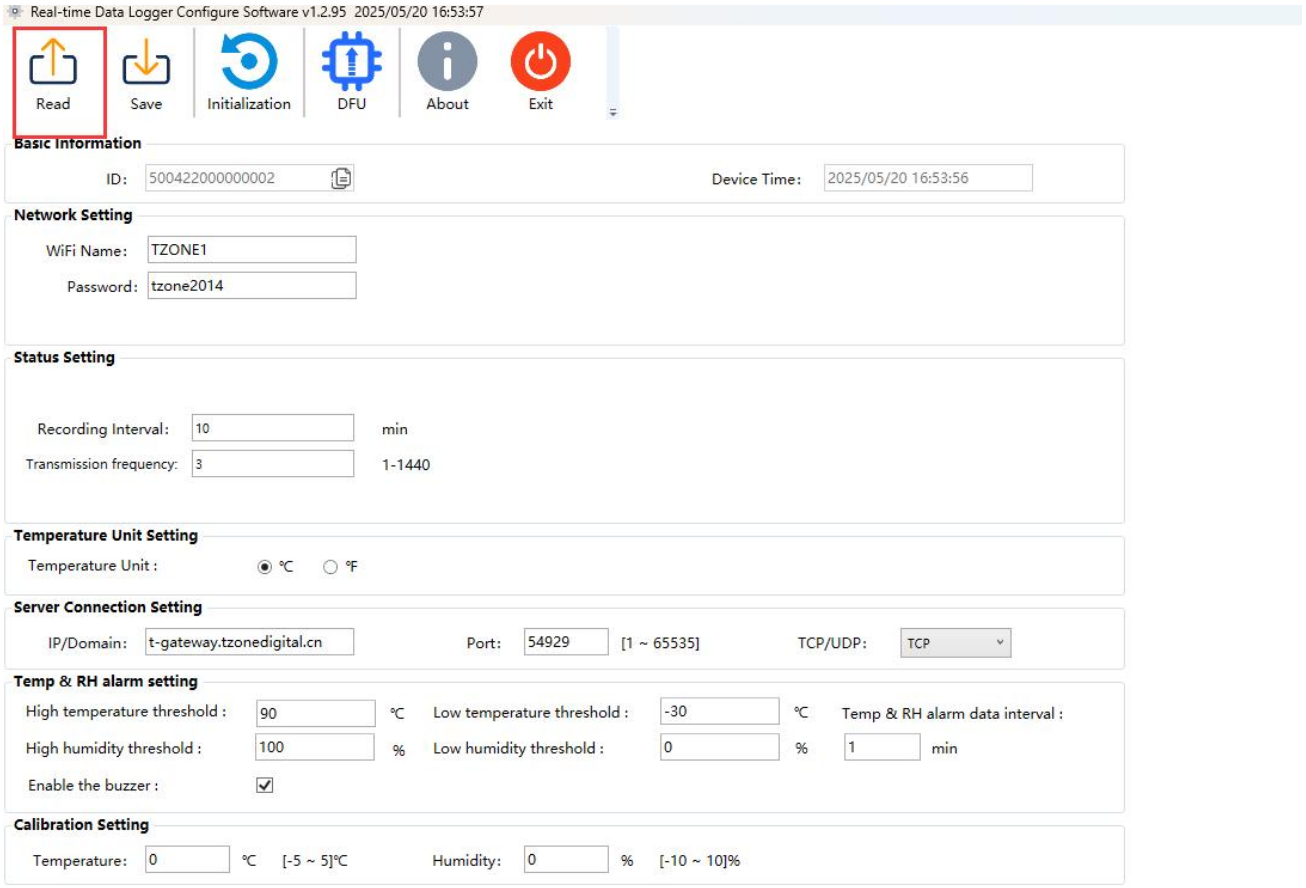
Note: Support for Windows 10 or newer.

I. Configure the WF series via configure software

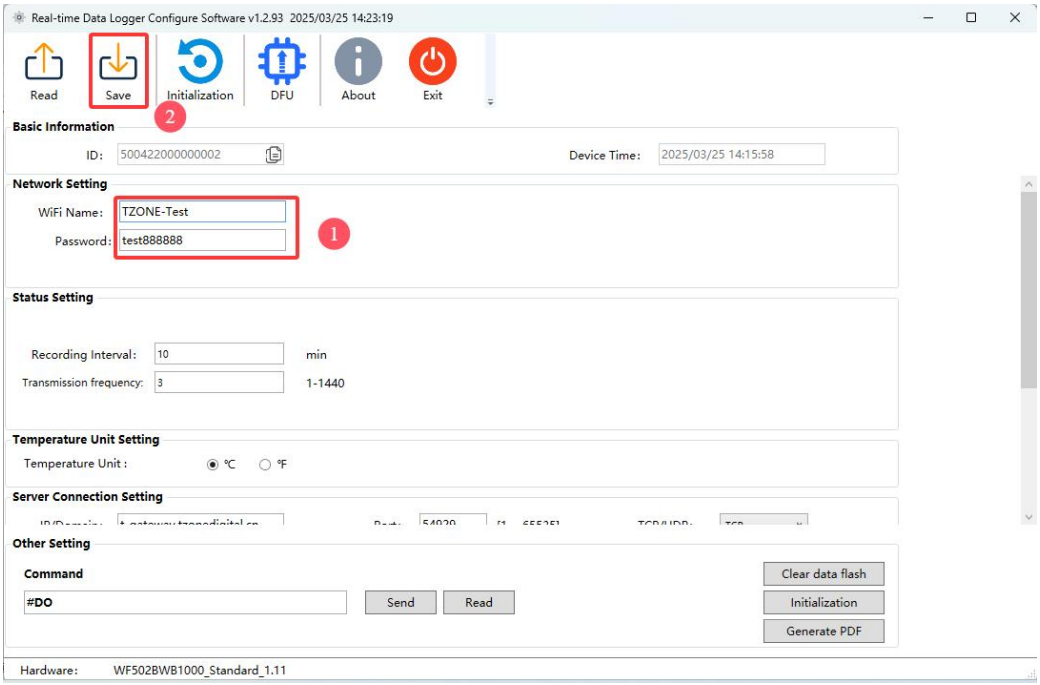
1. Please use the USB cable provided by our company to connect the USB port of the device and the computer to open the configuration software:



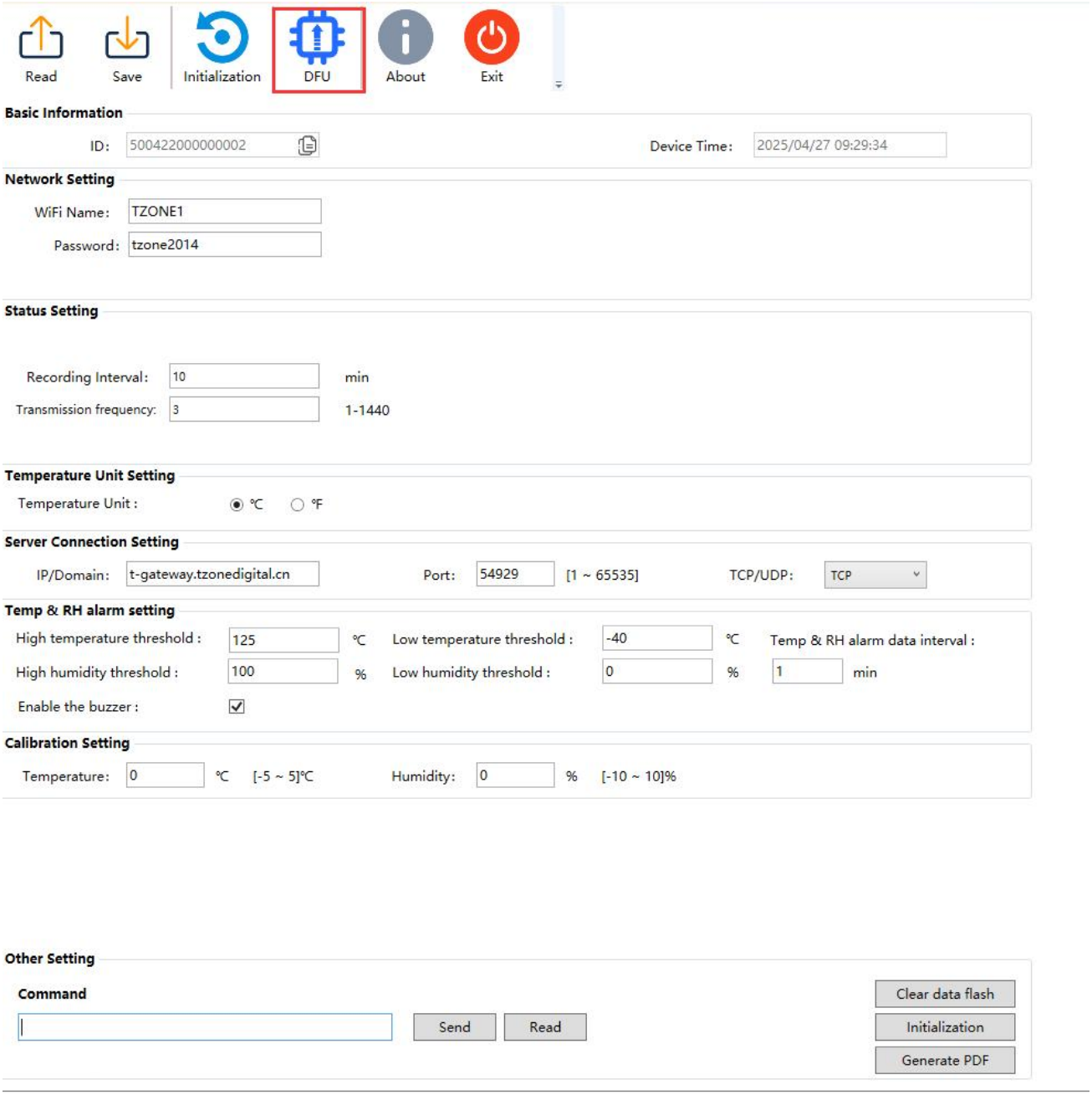
2. Click "Read" to read device interface parameter configuration:


Real-time Data Logger Configure Software v1.2.95 2025/05/20 16:53:57
Read
Save
Initialization
DFU
About
Exit
Basic Information
ID: 500422000000002
Device Time: 2025/05/20 16:53:56
Network Setting
WiFi Name: TZONE1
Password: tzone2014
Status Setting
Recording Interval: 10 min
Transmission frequency: 3 1-1440
Temperature Unit Setting
Temperature Unit : ℃ ℉
Server Connection Setting
IP/Domain: t-gateway.tzonedigital.cn
Port: 54929 [1 ~ 65535]
TCP/UDP: TCP
Temp & RH alarm setting
High temperature threshold : 90 ℃
Low temperature threshold : -30 ℃
Temp & RH alarm data interval :
High humidity threshold : 100 %
Low humidity threshold : 0 %
1 min
Enable the buzzer :
Calibration Setting
Temperature: 0 ℃ [-5 ~ 5]℃
Humidity: 0 % [-10 ~ 10]%

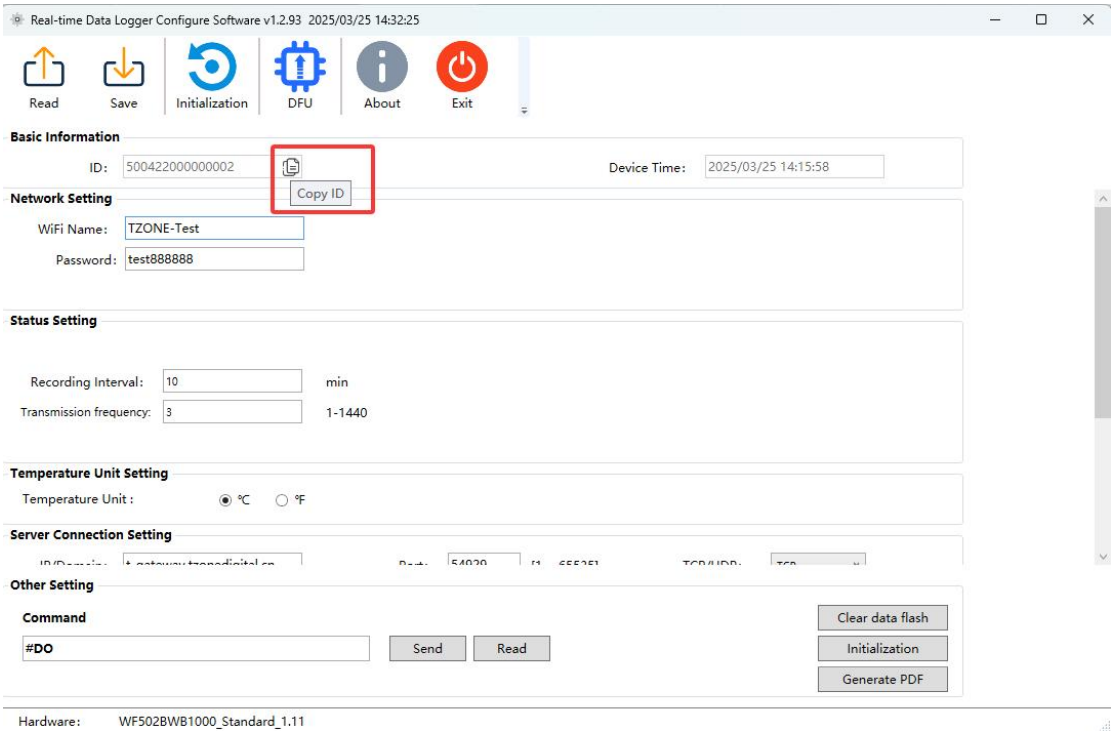
3. After modifying the parameters, for example, setting the WiFi account and password, click "Save" to save the interface parameter settings



4. If you need to upgrade the firmware of the device, please click "DFU", and then upgrade according to our "Configuration Software Upgrade Step Manual"



5. If you need to copy the ID of the machine, you can click the copy ID in the picture below



6. Parameter Settings:

(1) Basic information（It can only be read but cannot be modified）：

ID: Unique ID number of the device
Device time: Current computer system time

(2) Network setting：

WiFi Name: The name of the WiFi network available
PassWord: Password of the WiFi network available

(3) Status setting：

Data upload/storage interval: The value ranges from 1 to 60 minutes. The default value is 15 minutes
Transmission frequency： The setting range is 1~60, and the default is 4

(4) Temperature unit setting：

Temperature unit: Optional at ℃ or ℉, default: ℃

(5) Temp&RH alarm setting：

High and Low temperature threshold: The value ranges from -40℃ to 125℃, By default, the high temperature is 125℃ and the low temperature is -40℃
High and Low humidity threshold: The value ranges from 0 to 100%, The default value is 100% for high humidity and 0% for low humidity
Temp&RH alarm data interval： The value ranges from 1 to 60 minutes. The default value is 1 minute
Enable the buzzer： Set the buzzer to beep. If it is checked, the buzzer will beep for 65535 seconds. If it is not checked, the buzzer function will be turned off

(6) Server connection setting：
IP/Domain: Data receiving IP/ domain name address. The default IP address: t-gateway.tzonedigital.cn
Port: Data receiving port. The value ranges from 1 to 65535, The default port is 54929
TCP/UDP: The data transmission mode can be TCP or IDP, default: TCP

(7) Calibration setting：
Temperature: Temperature calibration, the setting range is -5~5℃, default: 0
Humidity: Humidity calibration, the setting range is -10~10%; default: 0

(8) Other setting：
Command: You can refer to the instruction table to directly enter the instruction and click send
For example: *000000,018,10#
Clear data flash: Click to clear all Flash data
Initialization: Click to restore factory defaults
Generate PDF: Click to generate PDF report

II. Server downward commands setting

Format of server downward commands：

Start bits（1byte）+ Type of data（X1）+ Delimiter（1byte）+ Command（X2）+ Delimiter（1byte）+ Stop bits（1byte）+ End mark（2byte）

1. **Start bits： @；**
2. **Type of data： CMD；**
3. **Delimiter： ， ；**
4. **Command: refer the commands list below；**
5. **Delimiter： ， ；**
6. **Stop bits： #；**
7. **End： \r\n(0x0D,0x0A)；**

For example: @CMD,*000000,018,10#,#
Set the data upload/ storage interval

Format of WF reply：

Start bits（2byte）+ Packet length（2byte）+ Protocols number（2byte）+ Hardware type（2byte）+ Firmware version（4byte）+ IMEI（8byte）+ RTC time date（6byte）+ Type of downward command（1byte）+ downward command（2byte）+ Result（1byte）+ Command information（X byte）+ Packet index（2byte）+ CRC（2byte）+ Stop bits（2byte）

1. **Start bits: (TZ：545A)；**
2. **Packet length: The bytes length from the start at protocol number to the end at the CRC**
3. **Protocol number: $D**
4. **Hardware type: 05H 01H；**
5. **Firmware version: 4 bytes, each byte indicates Level 1 version. For example, 01H 01H 00H 00H indicates 1.1.0.0**
6. **IMEI: 8byte, ignore the upper four bits of the first byte. For the rest, every 4bit means a number. For example 0x08 0x63 0x07 0x00 0x10 0x03 0x62 0x17 means the IMEI is 863070010036217**
7. **RTC time date: 6byte， the data upload/storage RTC time and date， each byte means year/month/day/hour/min/sec, Add 2000 to the year. For example, 14H 0BH 11H 0AH 2AH 2CH indicates the time: 2020/11/17 18:42:44**
8. **Type of downward command：00H means write command，01H means read command**
9. **Downward command：command information**
10. **Result：the result of read or write command，1bit, 00H means read or write successful, 05H means do not support this command, 08H means read or write failed**
11. **Command information：If it is write command， the command information will be null. If it is read command， it will show different commands, the format is ASCII, different command is separated by “,” . For details, please refer the command list**
For example. If its is read command of IP/Domain, the command information will be 1,t-gateway.tzonedigital.cn,54929
12. **Packet index：Accumulate from 1 to 9999**
13. **CRC： The checked content is from the ”protocol number” to the end at ”CRC” , including “protocol number”, excluding “CRC”, MSB first；**
14. **Stop bits: 0DH 0AH；**

III. Command list

NO.	Instruction	Format	Note
003	Set the high and low temperature and humidity alarm function	*000000,003,A,B,C,D,X#	**A:** High temperature threshold, Unit：℃, default:125 **B:** Low temperature threshold，Unit：℃, default:-40 **C:** High humidity threshold，Unit：% ,default:100 **D:** Low humidity threshold，Unit：%, default:0 **X:** Record temperature and humidity interval after the upper limit is exceeded，Unit：min, [1,60], default：1 **Note:** Write '-' before temperature when set to minus temperature
004	Set the battery low voltage function, when low voltage, the device will send an alarm data to the background, and according to the set interval to send data	*000000,004,X,Y#	**X:** Low voltage threshold，[300,430] Unit：10mv，default: 355； **Y:** Record temperature and humidity interval after low pressure，Unit：min，[1，60]，default：60；
005	Set the working mode of the device	*000000,005,X#	X=0，Turn off (default)； X=1，Turn on；
006	Set RTC time	*000000,006,year,mounth,day,hour,minute,second#	Set the RTC time： for example： *000000,006,16,01,11,10,46,30# The RTC time is set to 10 hours 46 minutes 30 seconds on January 11, 2016 **Note:** The time must be set to UTC
008	Extend setting	*000000,008,ABCDEFG#	**A**=0, **B**=0,disable GPRS ACK function; **B**=1,enable GPRS ACK function,(default); **C**=0, LCD Temperature degree Celsius display (default)； **C**=1, LCD Temperature degree Fahrenheit display **D**=0； **E**=0； **F**=0,； **G**=0；
015	Set IP Address & port number	*000000,015,0,IP,	**IP :** xxx.xxx.xxx.xxx

		PORT#	**DN:**(domain name) (must < 39 chars) www.xxx.com **PORT :** [1,65535]
018	Set the interval for sending GPRS data and collecting temperature and humidity in startup mode	*000000,018,X#	**X:** Normal temperature and humidity collection interval，[1，60], unit：min，default：1
019	Set the GPRS mode	*000000,019,X#	X=0, Use the UDP mode X=1, Use the TCP mode
020	Set up the WIFI	*000000,020,ssid, password#	**ssid**：WIFI name(must < 64 chars) **password**：WIFI password(must < 64 chars)
036	Set the buzzer	*000000,036,X#	**X:** Buzzer time after temperature and humidity alarm, Unit: s, [0,65535] 0: The buzzer doesn't work; 65535: The buzzer beeps until the temperature and humidity return to normal, default；
037	Turn off buzzer	*000000,037,0#	Only turn off the buzzer alarm for this time, and the buzzer will continue to sound for the next temperature and humidity alarm Note: It is applicable to background remote deactivation of buzzer alarm
040	Query command Setting	*000000,040,X#	**X:** The command need to query
050	Temperature and humidity calibration	*000000,050,X,A,B#	**X:** 0-Disable this feature, default； 1-Enable **A:** Temperature calibration value, **B:** Humidity calibration value +: Positive correction is the collection value plus the calibration value； -: Negative correction is the collection value minus the calibration value
070	Set multi packet transmission (transmission frequency)	*000000,070,X#	**X:** Number of packages to be sent，[1,1440] Default：3 Note: The machine packs at the interval set at 018, and once the packaging

			reaches the setting value of 070, the one-time transmission is started. This command can effectively reduce the machine work
500	Clear the stored queue	*000000,500#	
600	Automatic restart function	*000000,600,X#	**X:** time of restart, **[0， 1440]**,unit： min，default： **1440**， **0:** Indicates that the function is disabled
	Restart the device	#DR	
	Exit USB Mode	#DQ	
	Form the PDF	#DP	