
N95S31B NB-IoT Temperature & Humidity Sensor User Manual

last modified by Xiaoling

on 2023/04/28 15:52

Table of Contents

1. Introduction	4
1.1 What is N95S31B NB-IoT Sensor Node	4
1.2 Features	5
1.3 Specification	5
1.4 Applications	5
1.5 Pin Definitions & Switch	6
1.5.1 Jumper JP2	6
1.5.2 BOOT MODE / SW1	6
1.5.3 Reset Button	6
1.5.4 LED	6
2. Use N95S31B to communicate with IoT Server	7
2.1 How it works	7
2.2 Configure the N95S31B	8
2.2.1 Power On N95S31B	8
2.2.2 Test Requirement	8
2.2.3 Insert SIM card	9
2.2.4 Connect USB - TTL to N95S31B to configure it	9
2.2.5 Use CoAP protocol to uplink data	11
2.2.6 Use UDP protocol to uplink data(Default protocol)	13
2.2.7 Use MQTT protocol to uplink data	15
2.2.8 Use TCP protocol to uplink data	17
2.2.9 Change Update Interval	18
2.3 Uplink Payload	19
2.3.1 Payload Analyze	19
2.3.2 Device ID	22
2.3.3 Version Info	22
2.3.4 Battery Info	22
2.3.5 Signal Strength	22
2.3.6 Temperature & Humidity	23
2.4 Downlink Payload	23
2.5 Humidity and Temperature alarm function	24
2.6 Set the number of data to be uploaded and the recording time	24
2.7 Read or Clear cached data	25
2.8 Battery & Power Consumption	26
3. Access NB-IoT Module	26
4. Using the AT Commands	27
4.1 Access AT Commands	27
5. FAQ	28
5.1 How to Upgrade Firmware	28
6. Trouble Shooting	29
6.1 Connection problem when uploading firmware	29
6.2 AT Command input doesn't work	29
6.3 Not able to connect to NB-IoT network and keep showing "Signal Strength:99".	29
7. Order Info	29
8. Packing Info	29
9. Support	29



Table of Contents:

- [1. Introduction](#)
 - [1.1 What is N95S31B NB-IoT Sensor Node](#)
 - [1.2 Features](#)
 - [1.3 Specification](#)
 - [1.4 Applications](#)
 - [1.5 Pin Definitions & Switch](#)
 - [1.5.1 Jumper JP2](#)
 - [1.5.2 BOOT MODE / SW1](#)
 - [1.5.3 Reset Button](#)
 - [1.5.4 LED](#)

- [2. Use N95S31B to communicate with IoT Server](#)
 - [2.1 How it works](#)
 - [2.2 Configure the N95S31B](#)
 - [2.2.1 Power On N95S31B](#)
 - [2.2.2 Test Requirement](#)
 - [2.2.3 Insert SIM card](#)
 - [2.2.4 Connect USB – TTL to N95S31B to configure it](#)
 - [2.2.5 Use CoAP protocol to uplink data](#)
 - [2.2.6 Use UDP protocol to uplink data\(Default protocol\)](#)
 - [2.2.7 Use MQTT protocol to uplink data](#)
 - [2.2.8 Use TCP protocol to uplink data](#)
 - [2.2.9 Change Update Interval](#)
 - [2.3 Uplink Payload](#)
 - [2.3.1 Payload Analyze](#)
 - [2.3.1.1 Before Firmware v1.2](#)
 - [2.3.1.2 Since Firmware v1.2](#)
 - [2.3.2 Device ID](#)
 - [2.3.3 Version Info](#)
 - [2.3.4 Battery Info](#)
 - [2.3.5 Signal Strength](#)
 - [2.3.6 Temperature & Humidity](#)
 - [2.4 Downlink Payload](#)
 - [2.5 Humidity and Temperature alarm function](#)
 - [2.6 Set the number of data to be uploaded and the recording time](#)
 - [2.7 Read or Clear cached data](#)
 - [2.8 Battery & Power Consumption](#)
- [3. Access NB-IoT Module](#)
- [4. Using the AT Commands](#)
 - [4.1 Access AT Commands](#)
- [5. FAQ](#)
 - [5.1 How to Upgrade Firmware](#)
- [6. Trouble Shooting](#)
 - [6.1 Connection problem when uploading firmware](#)
 - [6.2 AT Command input doesn't work](#)
 - [6.3 Not able to connect to NB-IoT network and keep showing "Signal Strength:99"](#)
- [7. Order Info](#)
- [8. Packing Info](#)
- [9. Support](#)

1. Introduction

1.1 What is N95S31B NB-IoT Sensor Node

The Dragino N95S31B is a **NB-IoT Temperature and Humidity Sensor** for Internet of Things solution. It is used to measure the **surrounding environment temperature and relative air humidity precisely**, and then upload to IoT server via NB-IoT network*.

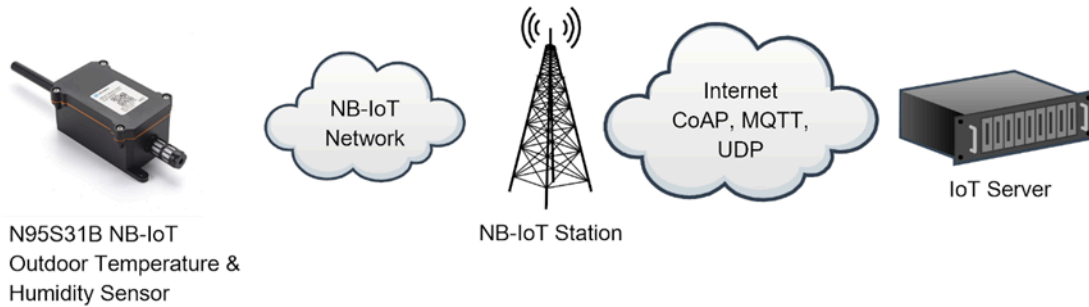
The temperature & humidity sensor used in N95S31B is SHT31, which is fully calibrated, linearized, and temperature compensated digital output from Sensirion, it provides a strong reliability and long-term stability. The SHT31 is fixed in a **waterproof anti-condensation casing** for long term use.

N95S31B supports different uplink methods include **TCP, MQTT, UDP and CoAP** for different application requirement.

N95S31B is powered by **8500mAh Li-SOCI2 battery**, It is designed for long term use up to several years. (Real-world battery life depends on the use environment, update period. Please check related Power Analyze report).

* make sure you have NB-IoT coverage locally.

N95S31 in a NB-IoT Network



1.2 Features

- NB-IoT Bands: B1/B3/B8/B5/B20/B28 @H-FDD
- Monitor Temperature & Humidity via SHT31
- AT Commands to change parameters
- Uplink on periodically
- Downlink to change configure
- IP66 Waterproof Enclosure
- Ultra-Low Power consumption
- AT Commands to change parameters
- Micro SIM card slot for NB-IoT SIM
- 8500mAh Battery for long term use

1.3 Specification

Common DC Characteristics:

- Supply Voltage: 2.1v ~ 3.6v
- Operating Temperature: -40 ~ 85°C

NB-IoT Spec:

- B1 @H-FDD: 2100MHz
- B3 @H-FDD: 1800MHz
- B8 @H-FDD: 900MHz
- B5 @H-FDD: 850MHz
- B20 @H-FDD: 800MHz
- B28 @H-FDD: 700MHz

Battery:

- Li/SOCI2 un-chargeable battery
- Capacity: 8500mAh
- Self Discharge: <1% / Year @ 25°C
- Max continuously current: 130mA
- Max boost current: 2A, 1 second

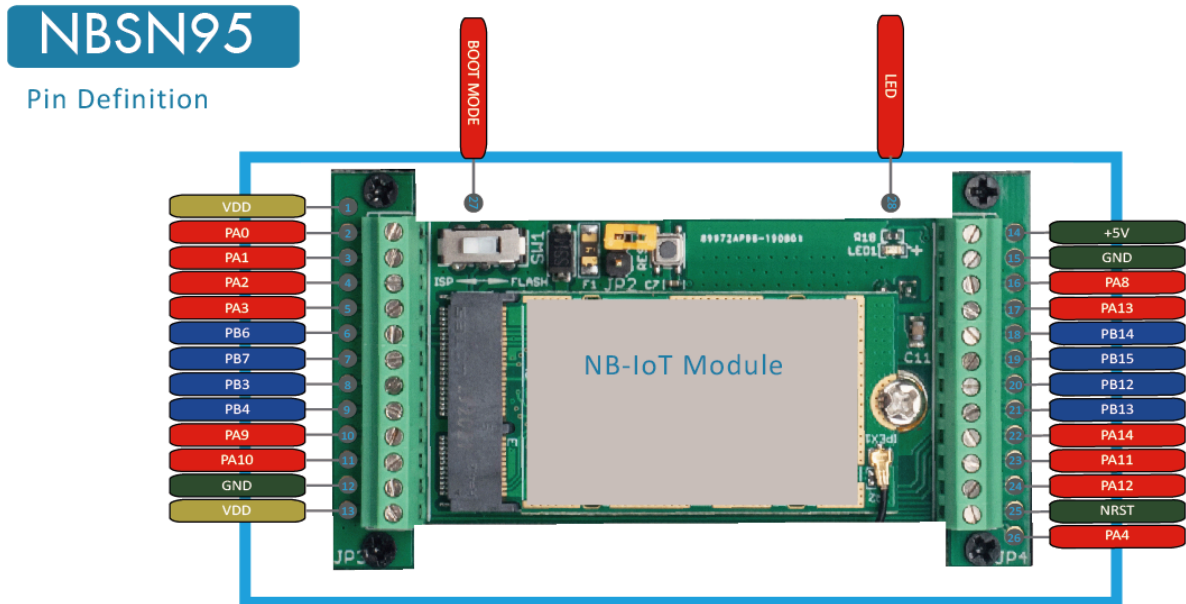
1.4 Applications

- Smart Buildings & Home Automation
- Logistics and Supply Chain Management
- Smart Metering
- Smart Agriculture
- Smart Cities

- Smart Factory

1.5 Pin Definitions & Switch

N95S31B use the mother board from NBSN95 which as below.



1.5.1 Jumper JP2

Power on Device when put this jumper.

1.5.2 BOOT MODE / SW1

1) **ISP:** upgrade mode, device won't have any signal in this mode. but ready for upgrade firmware. LED won't work. Firmware won't run.

2) **Flash:** work mode, device starts to work and send out console output for further debug

1.5.3 Reset Button

Press to reboot the device.

1.5.4 LED

It will flash:

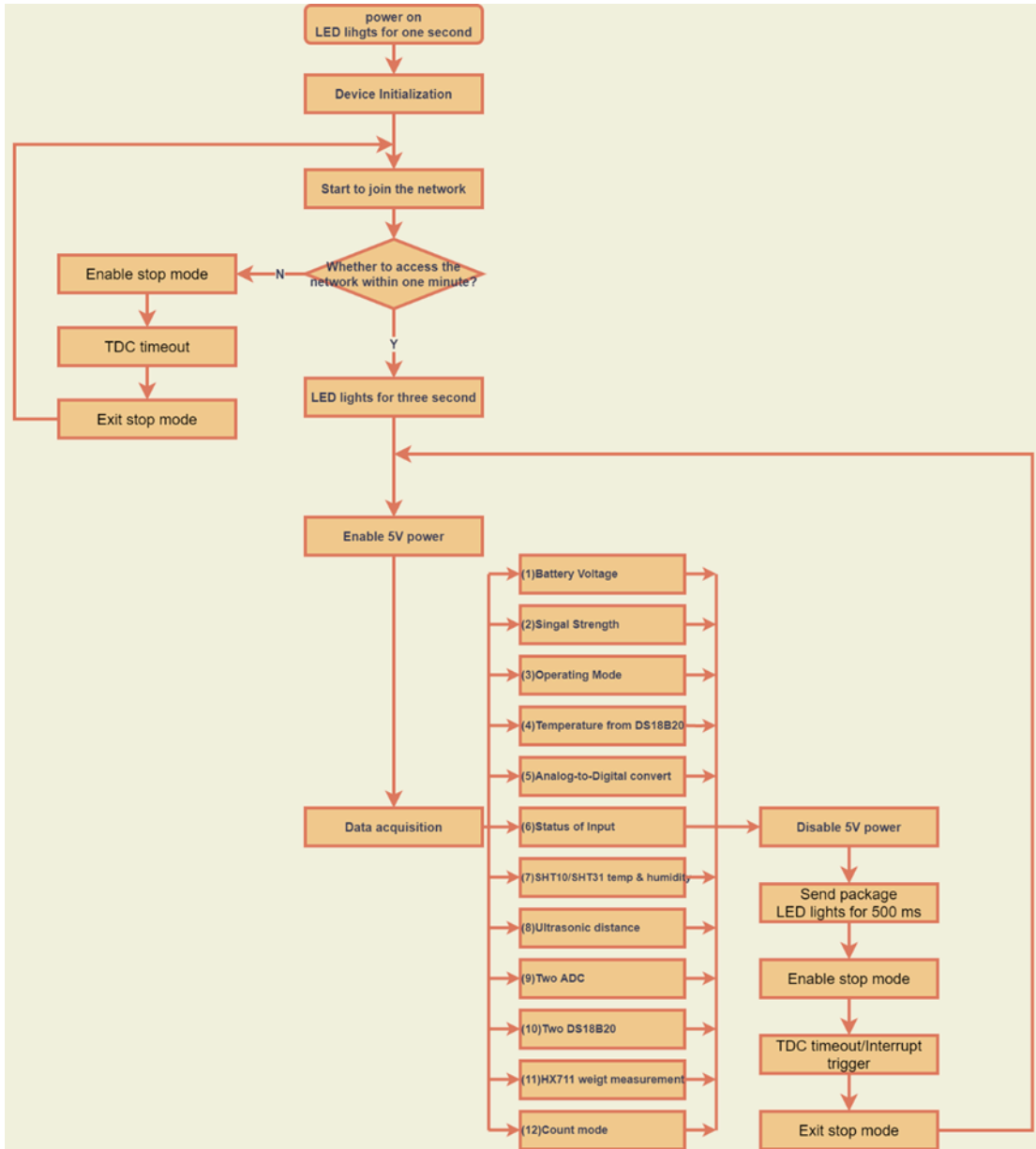
1. When boot the device in flash mode
2. Send an uplink packet

2. Use N95S31B to communicate with IoT Server

2.1 How it works

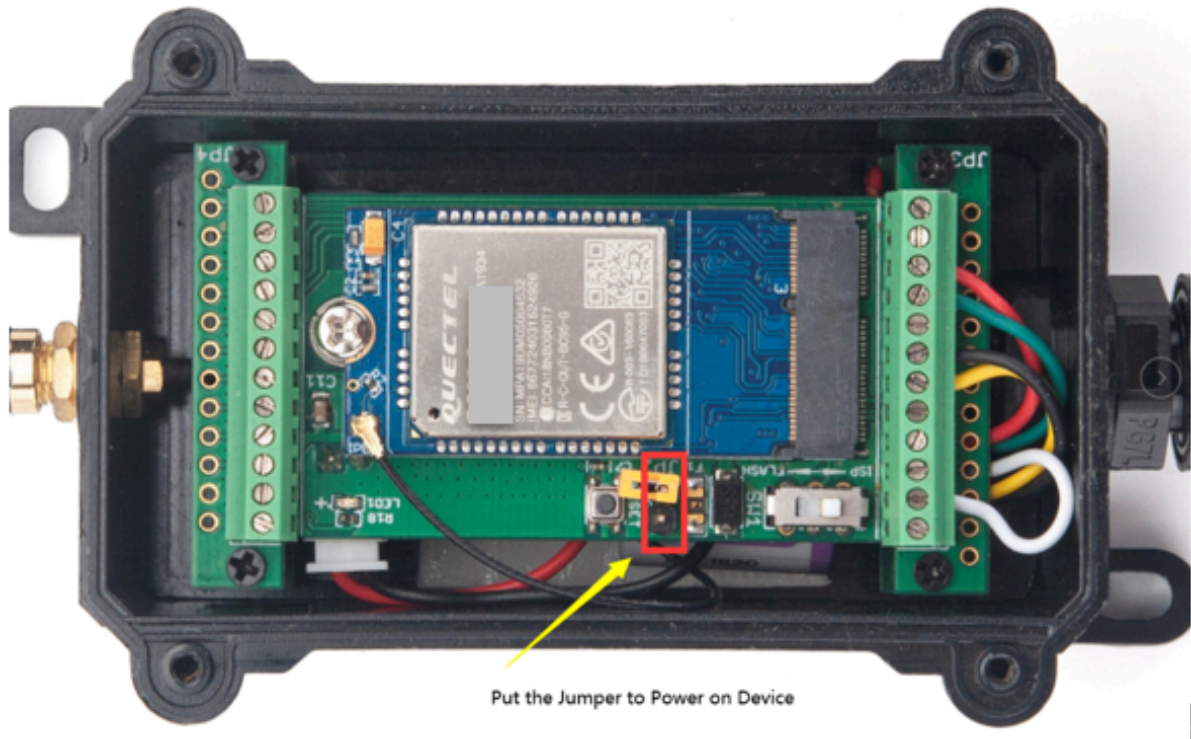
The N95S31B is equipped with a NB-IoT module, the pre-loaded firmware in N95S31B will get environment data from sensors and send the value to local NB-IoT network via the NB-IoT module. The NB-IoT network will forward this value to IoT server via the protocol defined by N95S31B.

The diagram below shows the working flow in default firmware of N95S31B:



2.2 Configure the N95S31B

2.2.1 Power On N95S31B



2.2.2 Test Requirement

To use N95S31B in your city, make sure meet below requirements:

- Your local operator has already distributed a NB-IoT Network there.
- The local NB-IoT network used the band that N95S31B supports.
- Your operator is able to distribute the data received in their NB-IoT network to your IoT server.

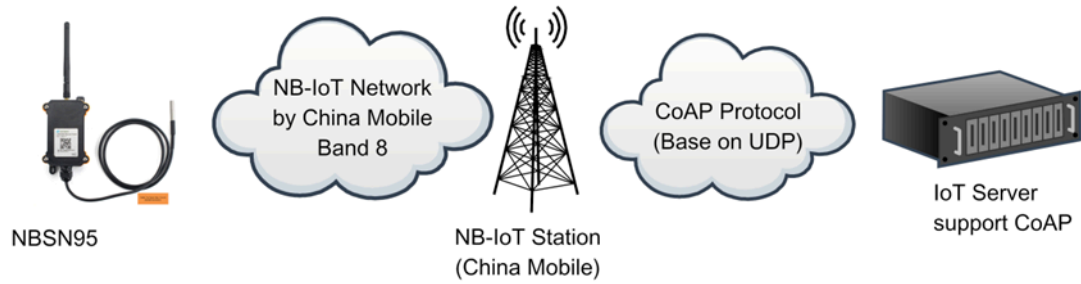
Below figure shows our testing structure. Here we have NB-IoT network coverage by China Mobile, the band they use is B8.

N95S31B supports different communication protocol such as :

- CoAP (120.24.4.116:5683)
- raw UDP (120.24.4.116:5601)
- MQTT (120.24.4.116:1883)
- TCP (120.24.4.116:5600)

We will show how to use with each protocol. The IP addresses above are our test server. User need to change to point their corresponding server.

NBSN95 network example in Dragino office



2.2.3 Insert SIM card

Insert the NB-IoT Card get from your provider.

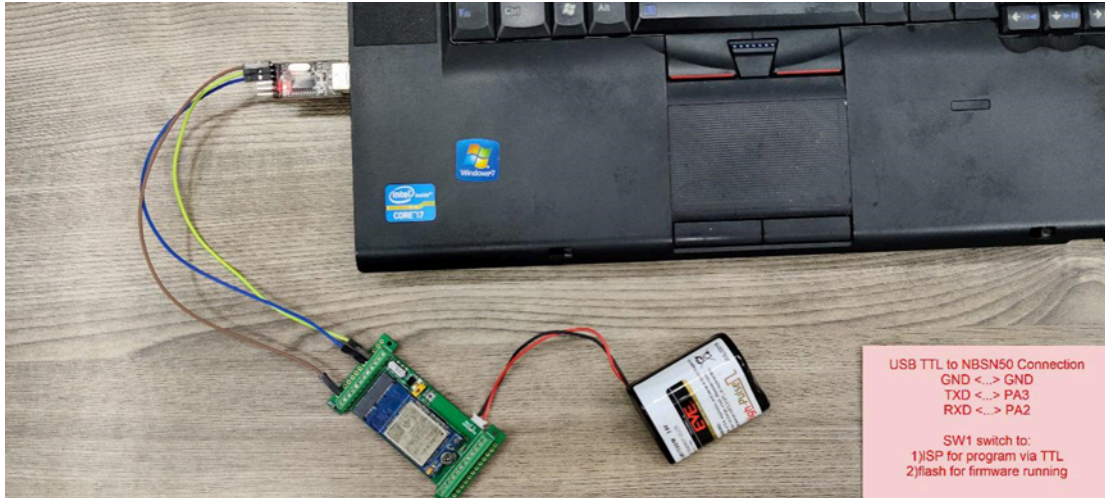
User need to take out the NB-IoT module and insert the SIM card like below:



2.2.4 Connect USB – TTL to N95S31B to configure it

User need to configure N95S31B via serial port to set the [Server Address / Uplink Topic](#) to define where and how-to uplink packets. N95S31B support AT Commands, user can use a USB to TTL adapter to connect to N95S31B and use AT Commands to configure it, as below.

User Manual for LoRaWAN End Nodes - N95S31B NB-IoT Temperature & Humidity Sensor User Manual



Connection:

USB TTL GND <-> GND

USB TTL TXD <-> UART_RXD

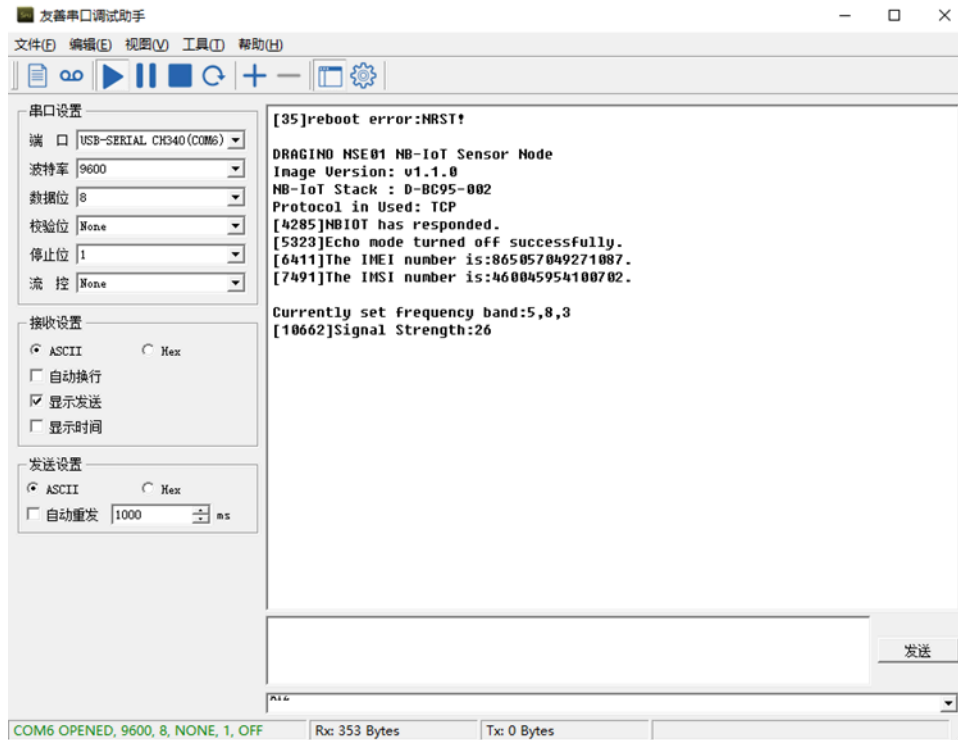
USB TTL RXD <-> UART_TXD

In the PC, use below serial tool settings:

- Baud: **9600**
- Data bits: **8**
- Stop bits: **1**
- Parity: **None**
- Flow Control: **None**

Make sure the switch is in FLASH position, then power on device by connecting the jumper on N95S31B. N95S31B will output system info once power on as below, we can enter the **password: 12345678** to access AT Command input.

User Manual for LoRaWAN End Nodes - N95S31B NB-IoT Temperature & Humidity Sensor User Manual



Note: the valid AT Commands can be found at: <https://www.dropbox.com/sh/mlpd6l05bogvaf6/AABwAJLMttqG7i--AyZcQkoua?dl=0>

2.2.5 Use CoAP protocol to uplink data

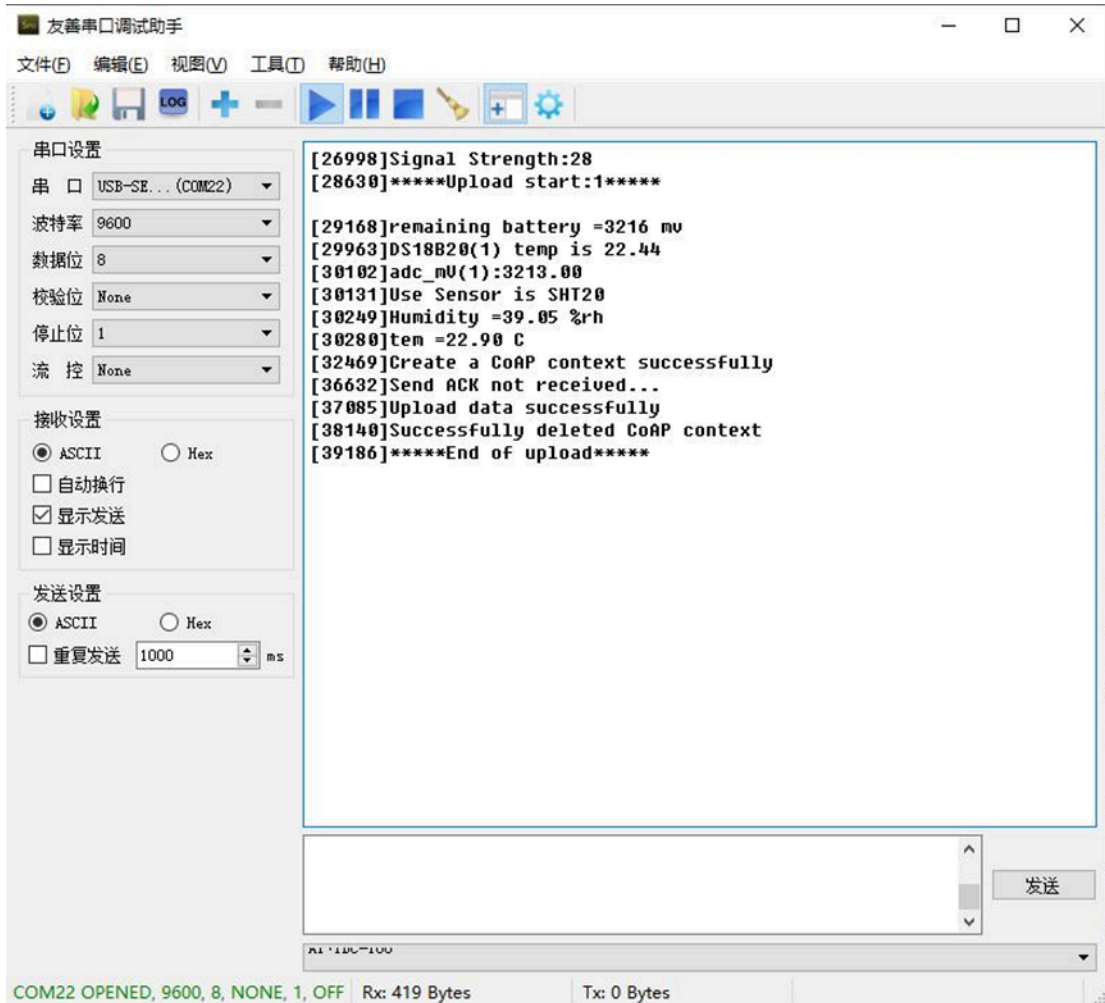
Note: if you don't have CoAP server, you can refer this link to set up one: <http://wiki.dragino.com/xwiki/bin/view/Main/Set%20up%20CoAP%20Server/>

Use below commands:

- **AT+PRO=1** // Set to use CoAP protocol to uplink
- **AT+SERVADDR=120.24.4.116,5683** // to set CoAP server address and port
- **AT+URI=5,11,"mqtt",11,"coap",12,"0",15,"c=text1",23,"0"** // Set COAP resource path

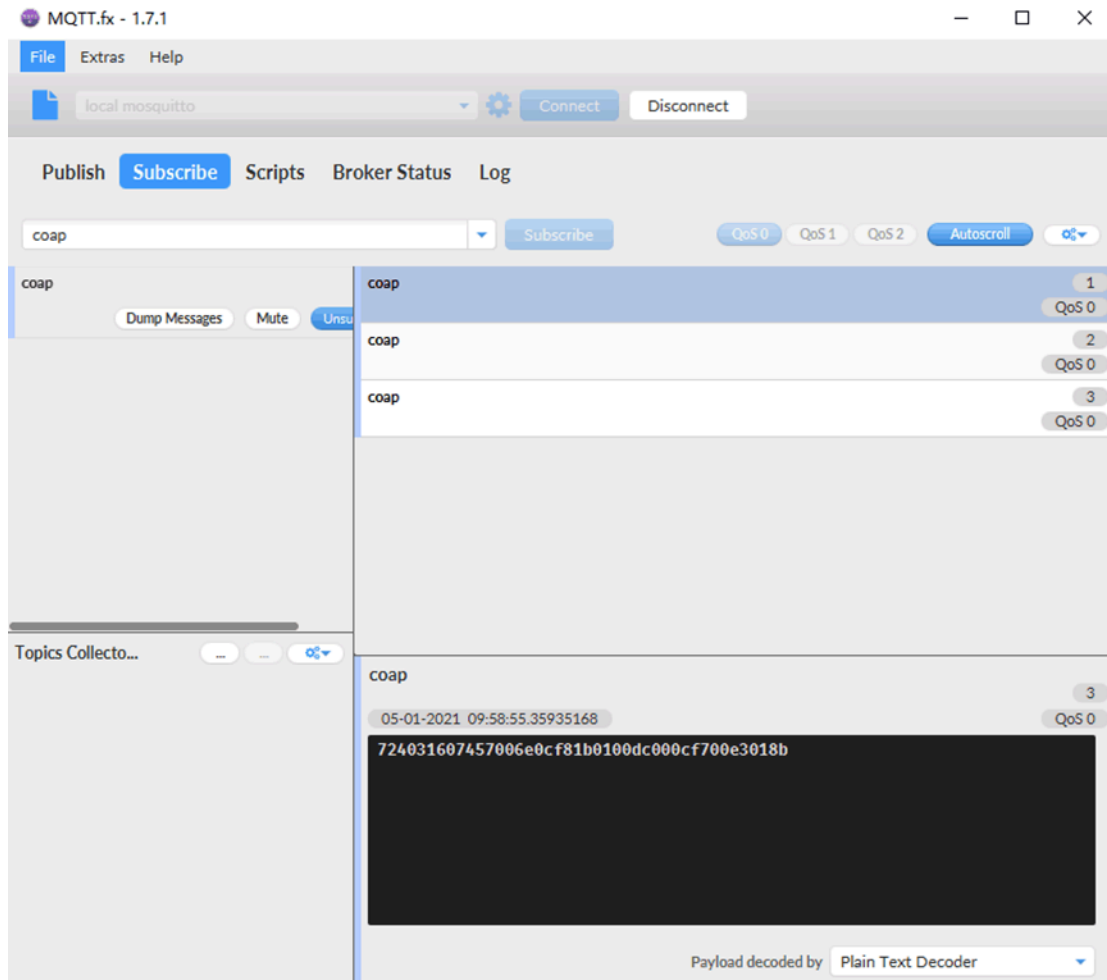
For parameter description, please refer to AT command set

User Manual for LoRaWAN End Nodes - N95S31B NB-
IoT Temperature & Humidity Sensor User Manual



After configure the server address and **reset the device** (via AT+ATZ), NDDS75 will start to uplink sensor values to CoAP server.

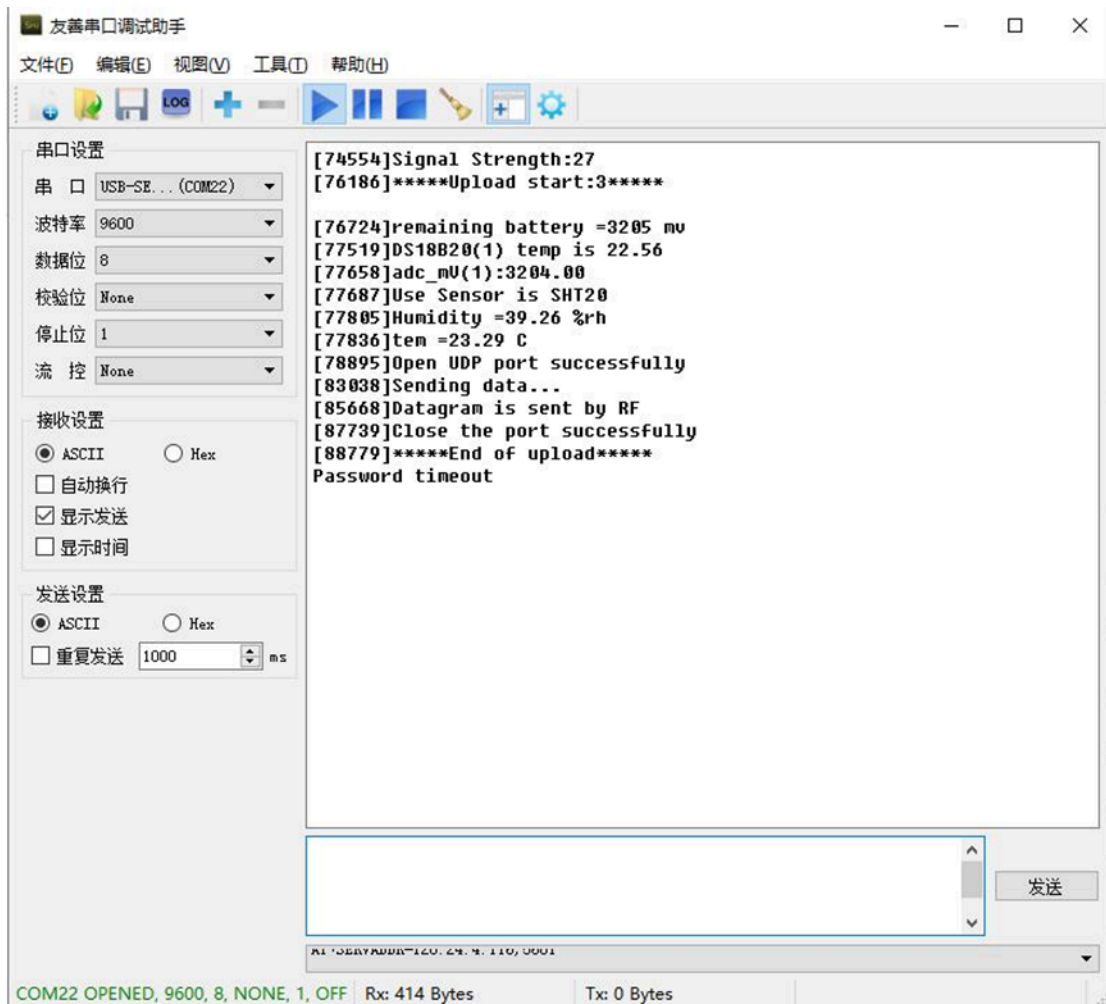
User Manual for LoRaWAN End Nodes - N95S31B NB-IoT Temperature & Humidity Sensor User Manual

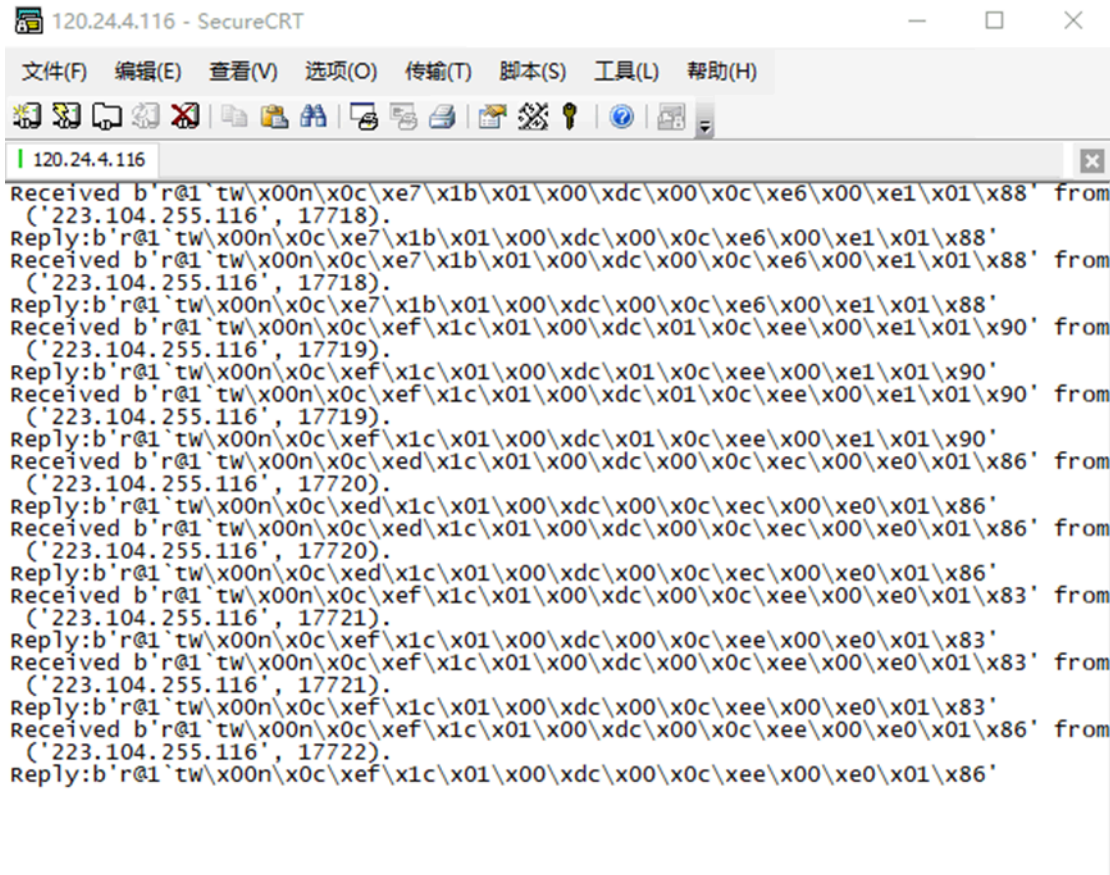


2.2.6 Use UDP protocol to uplink data(Default protocol)

- **AT+PRO=2** // Set to use UDP protocol to uplink
- **AT+SERVADDR=120.24.4.116,5601** // to set UDP server address and port
- **AT+CFM=1** // If the server does not respond, this command is unnecessary

User Manual for LoRaWAN End Nodes - N95S31B NB-
IoT Temperature & Humidity Sensor User Manual



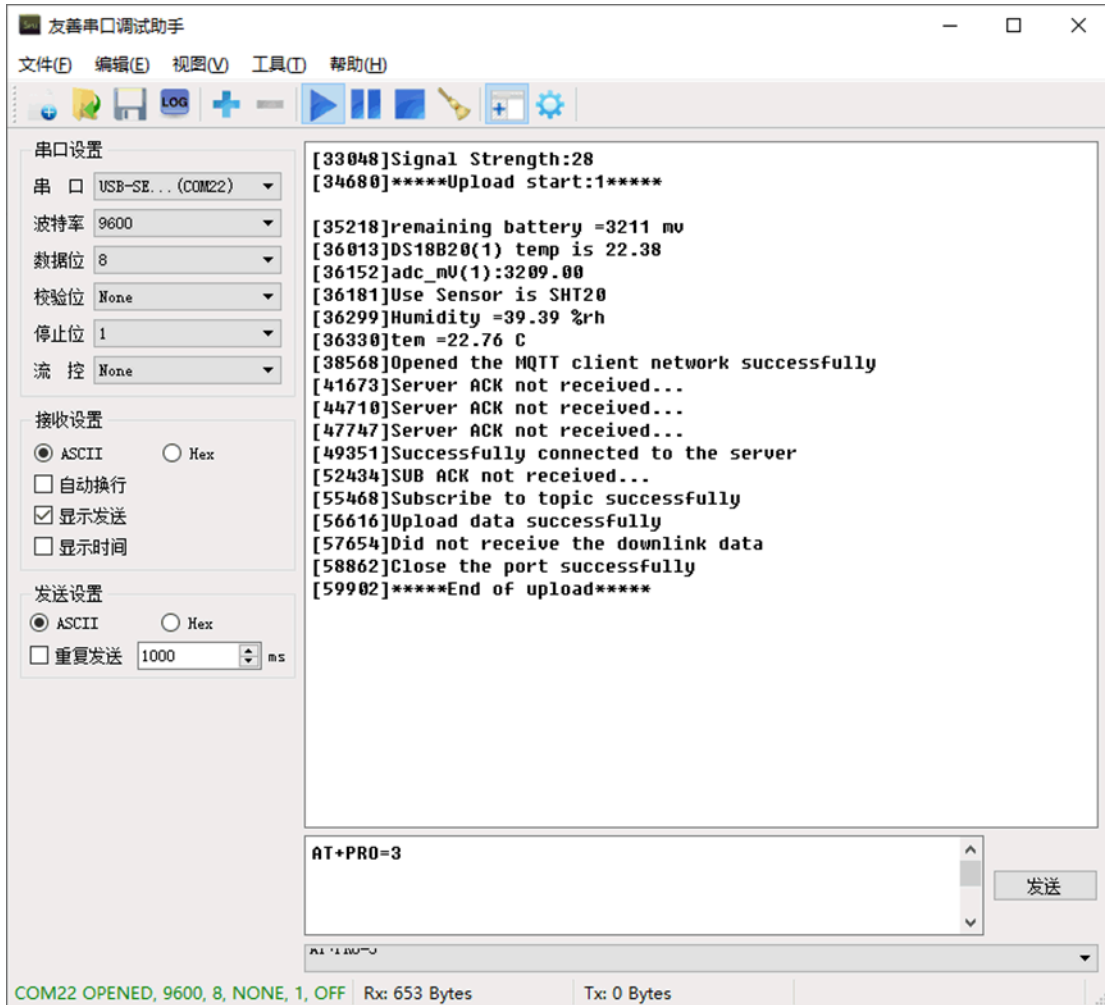


2.2.7 Use MQTT protocol to uplink data

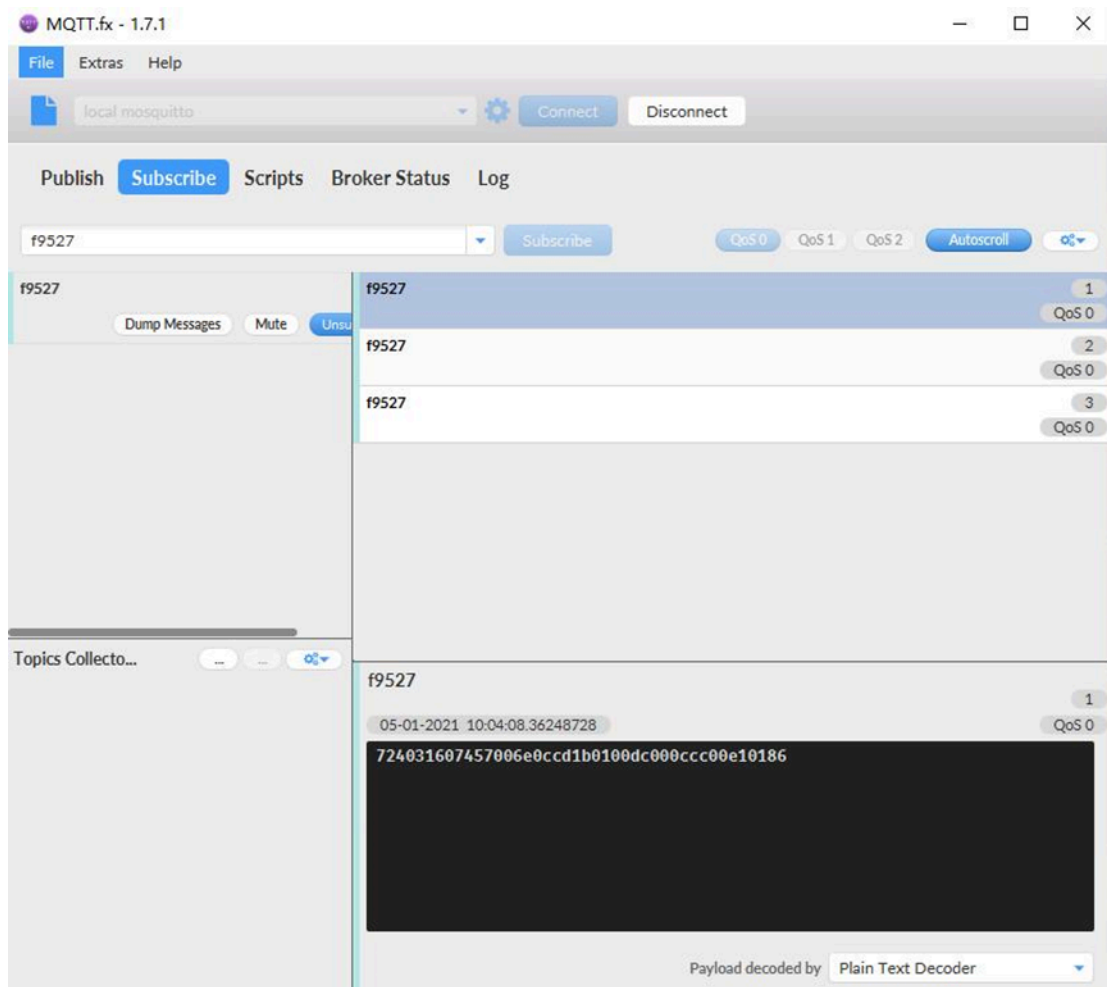
N95S31B supports only plain MQTT now it doesn't support TLS and other related encryption.

- **AT+PRO=3** // Set to use MQTT protocol to uplink
- **AT+SERVADDR=120.24.4.116,1883** // Set MQTT server address and port
- **AT+CLIENT=CLIENT** // Set up the CLIENT of MQTT
- **AT+UNAME=UNAME** // Set the username of MQTT
- **AT+PWD=PWD** // Set the password of MQTT
- **AT+PUBTOPIC=f9527** // Set the sending topic of MQTT
- **AT+SUBTOPIC=Ns9527** // Set the subscription topic of MQTT

User Manual for LoRaWAN End Nodes - N95S31B NB-IoT Temperature & Humidity Sensor User Manual



User Manual for LoRaWAN End Nodes - N95S31B NB-IoT Temperature & Humidity Sensor User Manual



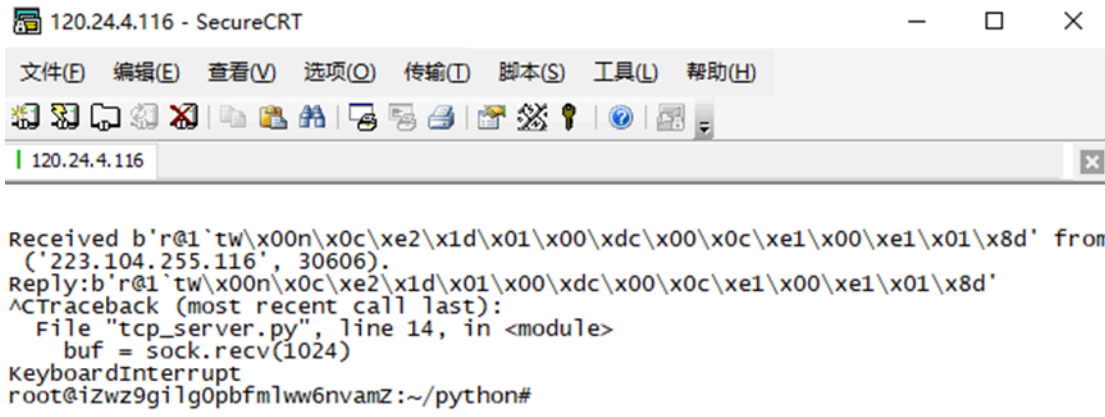
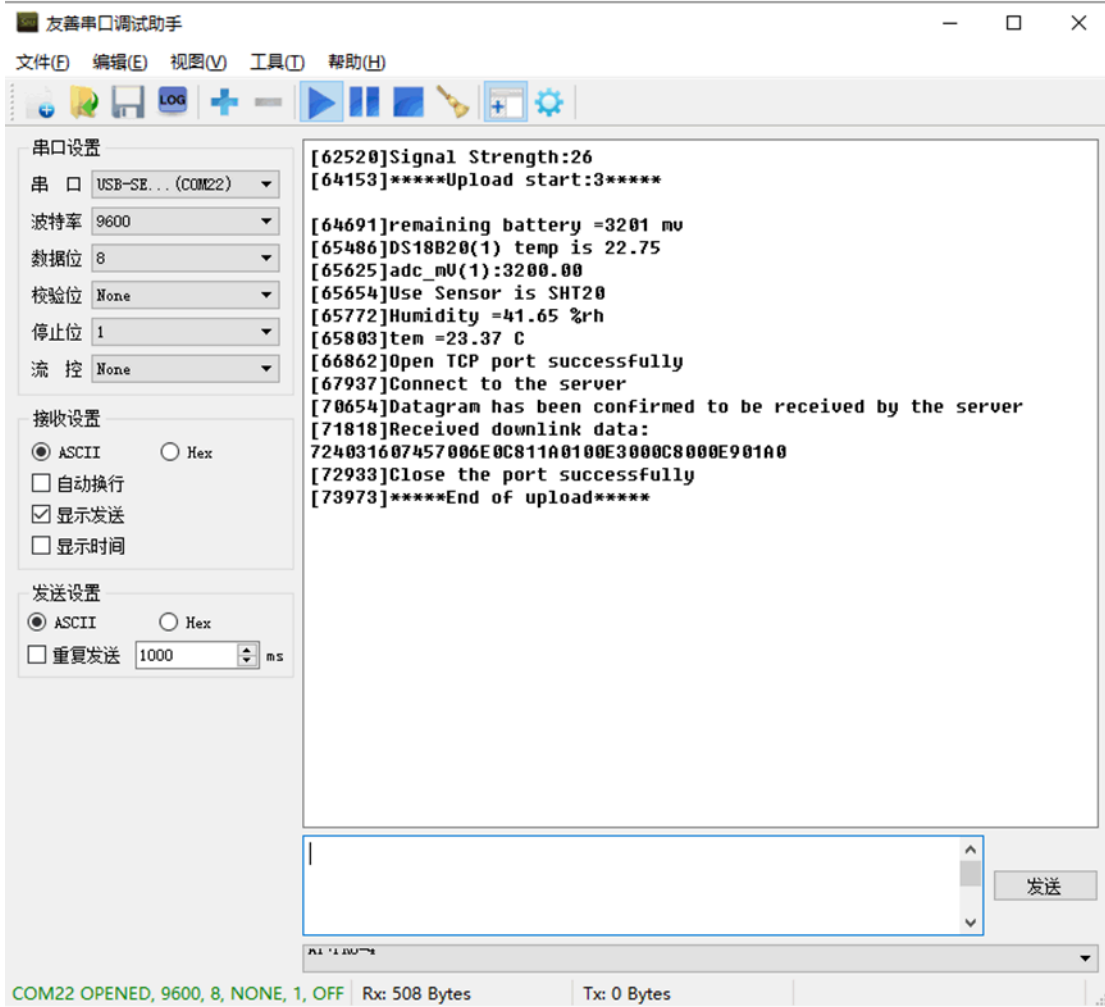
To save battery life, N95S31B will establish a subscription before each uplink and close the subscription 3 seconds after uplink successful. Any downlink commands from server will only arrive during the subscription period.

MQTT protocol has a much high-power consumption compare vs UDP / CoAP protocol. Please check the power analyze document and adjust the uplink period to a suitable interval.

2.2.8 Use TCP protocol to uplink data

This feature is supported since firmware version v110

- **AT+PRO=4** // Set to use TCP protocol to uplink
- **AT+SERVADDR=120.24.4.116,5600** // to set TCP server address and port



2.2.9 Change Update Interval

User can use below command to change the **uplink interval**.

- **AT+TDC=600** // Set Update Interval to 600s

NOTE: Since firmware version is v1.2:

By default, the device will send an uplink message every 2 hours. Each Uplink Include 8 set of records in this 2 hour (15 minute interval / record).

2.3 Uplink Payload

N95S31B has different working modes for the connections of different types of sensors. This section describes these modes. User can use the AT Command **AT+MOD** to set NBSN95 to different working modes.

For example:

AT+CFGMOD=2 // will set the N95S31B to work in MOD=2 distance mode which target to measure distance via Ultrasonic Sensor.

The uplink payloads are composed in ASCII String. For example:

0a cd 00 ed 0a cc 00 00 ef 02 d2 1d (total 24 ASCII Chars) . Representative the actually payload:

0x 0a cd 00 ed 0a cc 00 00 ef 02 d2 1d Total 12 bytes

NOTE:

1. All modes share the same Payload Explanation from [HERE](#).
2. By default, the device will send an uplink message every 1 hour.

2.3.1 Payload Analyze

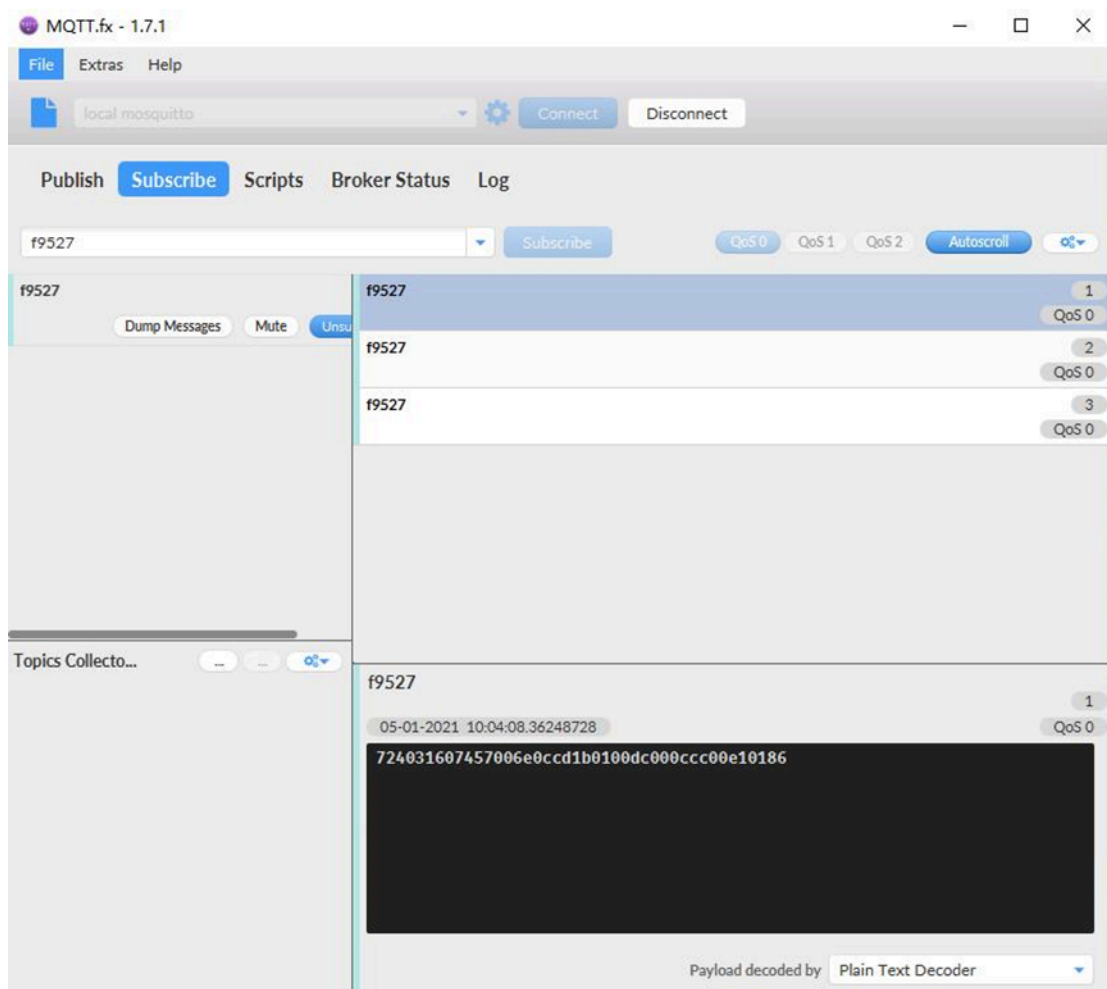
2.3.1.1 Before Firmware v1.2

N95S31B uplink payload includes in total 21 bytes.

Size(bytes)	6	2	2	1	1	5	2	2
Value	Device ID	Ver	BAT	Signal Strength	MOD 0X01	Reserve/ Same as NBSN95 CFGMOD=1 No function here.	Temperature By SHT31	Humidity By SHT31

If we use the MQTT client to subscribe to this MQTT topic, we can see the following information when the NB sensor uplink data.

User Manual for LoRaWAN End Nodes - N95S31B NB-IoT Temperature & Humidity Sensor User Manual



The payload is ASCII string, representative same HEX: **0x724031607457 006e 0ccd 1b 01 00dc000ccc 00e1 0186**

where:

- **Device ID:** 0x724031607457 = 724031607457
- **Version:** 0x006e=110=1.1.0
- **BAT:** 0x0ccd = 3277 mV = 3.277V
- **Signal:** 0x1b = 27
- **Model:** 0x01 = 1
- **0x00dc000ccc= reserve, ignore in N95S31B**
- **Temperature by SHT31:** 0x00e1 = 225 = 22.5 °C
- **Humidity by SHT31:** 0x0186 = 390 = 39.0 %rh

2.3.1.2 Since Firmware v1.2

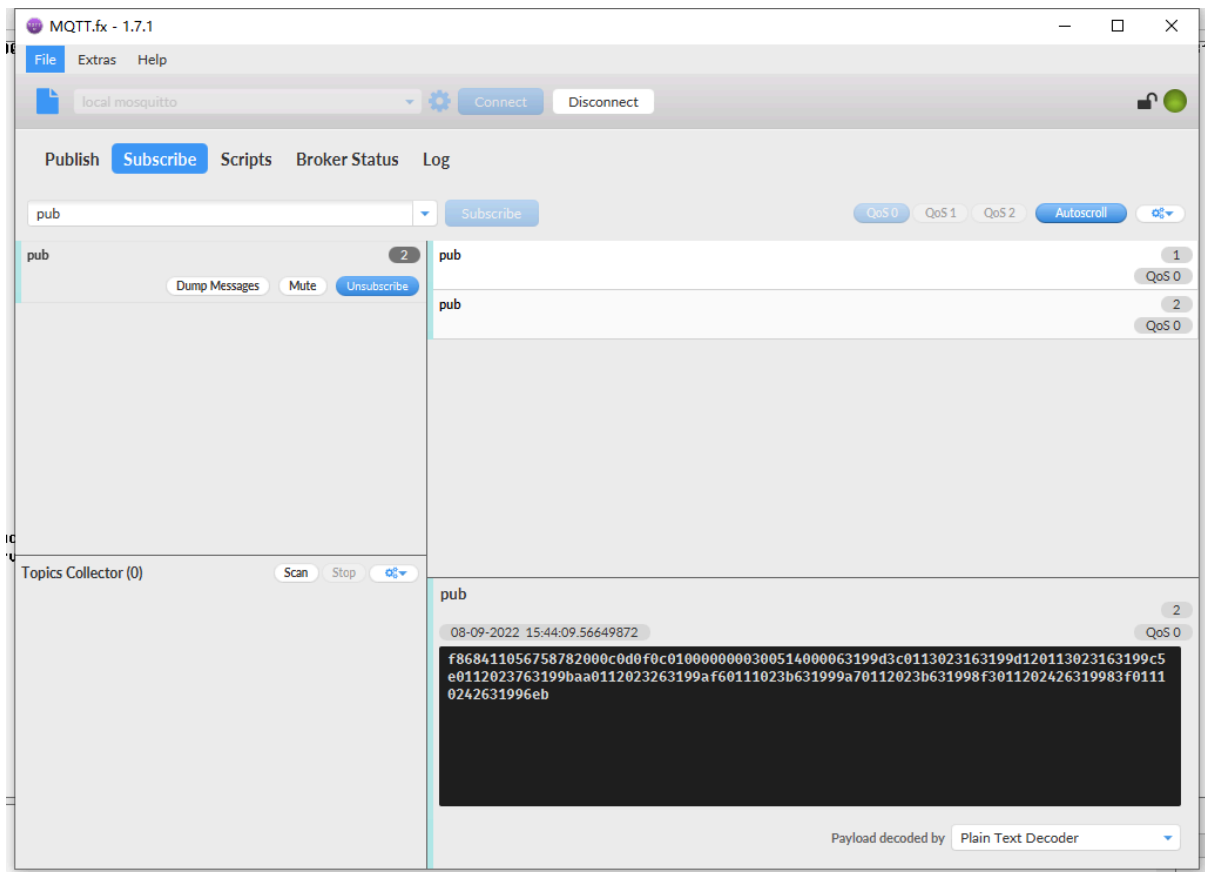
In this mode, uplink payload includes 91 bytes in total by default.

User Manual for LoRaWAN End Nodes - N95S31B NB- IoT Temperature & Humidity Sensor User Manual

Each time the device uploads a data package, 8 sets of recorded data will be attached. Up to 32 sets of recorded data can be uploaded.

Size(bytes)	8	2	2	1	1	2	1	2	2	2	4	2	2	4
Value	Device ID	Ver	BAT	Signal Strength	MOD	TemDS18B20	Interrupt	ADC	SHTTEM	SHTHUM	Time stamp	SHTTEM	SHTHUM	Time stamp

If we use the MQTT client to subscribe to this MQTT topic, we can see the following information when the N95S31B uplink data.



The payload is ASCII string, representative same HEX:

0x f868411056758782 000c 0d0f 0c 01 0000 00 0030 0114 0231 63199d3c 0113023163199d12 0113023163199c5e 0112023763199baa0112023263199af60111023b631999a70112023b631998f3011202426319983f01110242631996eb

where:

- **Device ID:** f868411056758782 = f868411056758782
- **Version:** 0x000c=120=1.2
- **BAT:** 0x0d0f = 3343 mV = 3.343V
- **Singal:** 0x0c = 12
- **Mod:** 0x01 = 1
- **TemDS18B20:** 0x0000= 0 = 0
- **Interrupt:** 0x00= 0
- **adc:** 0x0030= 48

- **SHTTEM:** 0x0114= 276 = 27.6
- **SHTHUM:** 0x0231 =561=56.1%
- **Time stamp :** 0x63199d3c =1662342011 ([Unix Epoch Time](#))
- **SHTTEM,SHTHUM,Time stamp :** 0113023163199d12
- **8 sets of recorded data:** SHTTEM,SHTHUM,Time stamp : 0113023163199c5e,

2.3.2 Device ID

By default, the Device ID equal to the last 6 bytes of IMEI.

User can use **AT+DEUI** to set Device ID

Example:

```
AT+DEUI=A84041F15612
```

The Device ID is stored in a none-erase area, Upgrade the firmware or run **AT+FDR** won't erase Device ID.

NOTE: When the firmware version is v1.2 and later firmware:

By default, the Device ID equal to the last 15 bits of IMEI.

User can use **AT+DEUI** to set Device ID

Example:

```
AT+DEUI=868411056754138
```

2.3.3 Version Info

These bytes include the hardware and software version.

Higher byte: Specify hardware version: always 0x00 for N95S31B

Lower byte: Specify the software version: 0x6E=110, means firmware version 110

For example: 0x00 6E: this device is N95S31B with firmware version 110.

2.3.4 Battery Info

Ex1: 0x0B45 = 2885mV

Ex2: 0x0B49 = 2889mV

2.3.5 Signal Strength

NB-IoT Network signal Strength.

Ex1: 0x1d = 29

0 -113dBm or less

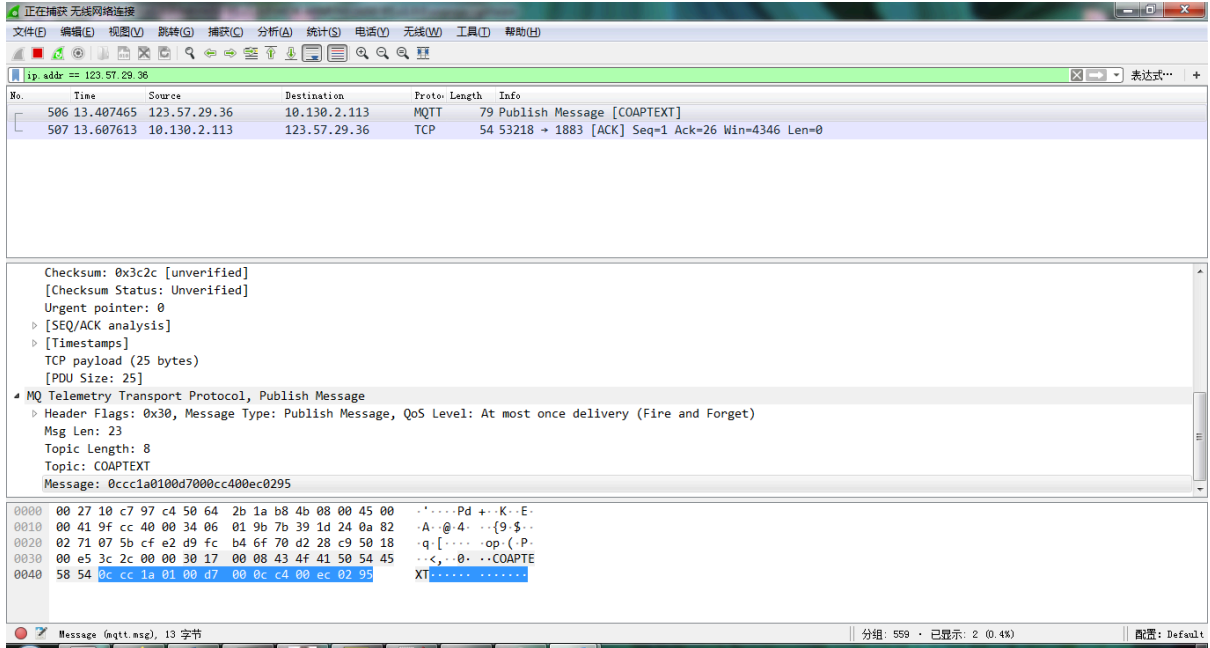
1 -111dBm

2...30 -109dBm... -53dBm

- 31 -51dBm or greater
- 99 Not known or not detectable

2.3.6 Temperature & Humidity

The device will be able to get the SHT31 temperature and humidity data now and upload to IoT Server.



Convert the read byte to decimal and divide it by ten.

Example:

Temperature: Read:00ec (H) = 236(D) Value: 236 / 10=23.6°C

Humidity: Read:0295(H)=661(D) Value: 661 / 10=66.1, So 66.1%

2.4 Downlink Payload

By default, N95S31B prints the downlink payload to console port.

Downlink Control Type	FPort	Type Code	Downlink payload size(bytes)
TDC(Transmit Time Interval)	Any	01	4
RESET	Any	04	2
INTMOD	Any	06	4

Examples:

- **Set TDC**

If the payload=0100003C, it means set the END Node's TDC to 0x00003C=60(S), while type code is 01.

Payload: 01 00 00 1E TDC=30S

Payload: 01 00 00 3C TDC=60S

- **Reset**

If payload = 0x04FF, it will reset the N95S31B

- **INTMOD**

Downlink Payload: 06000003, Set AT+INTMOD=3

2.5 Humidity and Temperature alarm function

AT Command:

AT+ SHHUM=min,max

² When min=0, and max≠0, Alarm higher than max

² When min≠0, and max=0, Alarm lower than min

² When min≠0 and max≠0, Alarm higher than max or lower than min

Example:

AT+ SHHUM=50,80 // Alarm when humidity lower than 50.

AT+ SHTEMP=min,max

² When min=0, and max≠0, Alarm higher than max

² When min≠0, and max=0, Alarm lower than min

² When min≠0 and max≠0, Alarm higher than max or lower than min

Example:

AT+ SHTEMP=20,30 // Alarm when temperature lower than 20.

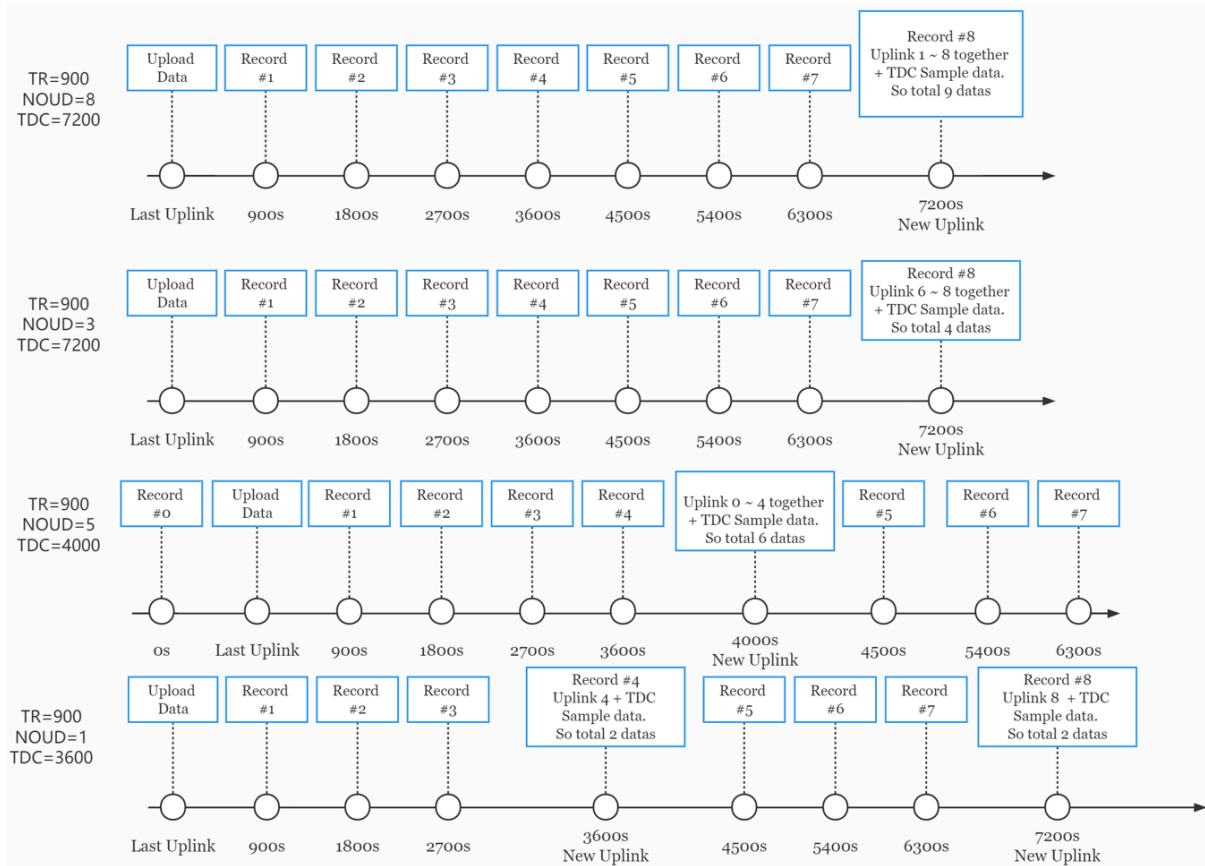
2.6 Set the number of data to be uploaded and the recording time

AT Command:

- **AT+TR=900** // The unit is seconds, and the default is to record data once every 900 seconds.(The minimum can be set to 180 seconds)
- **AT+NOUD=8** // The device uploads 8 sets of recorded data by default. Up to 32 sets of record data can be uploaded.

The diagram below explains the relationship between TR, NOUD, and TDC more clearly:

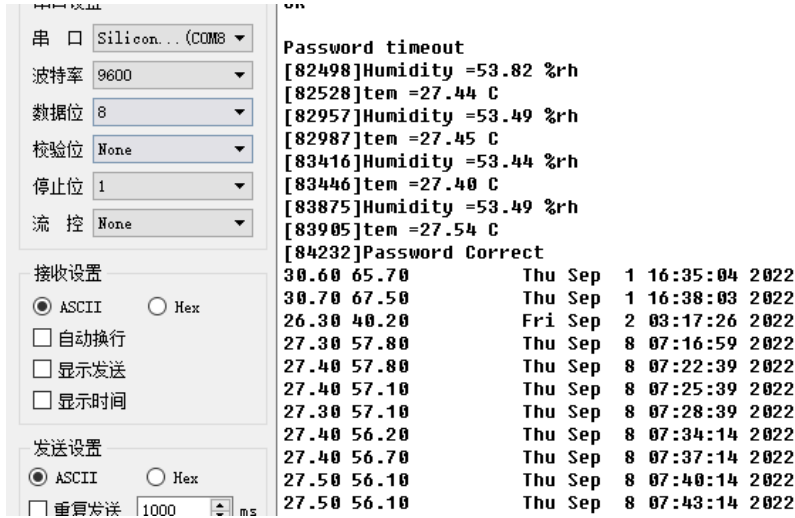
User Manual for LoRaWAN End Nodes - N95S31B NB-IoT Temperature & Humidity Sensor User Manual



2.7 Read or Clear cached data

AT Command:

- **AT+CDP** // Read cached data
- **AT+CDP=0** // Clear cached data



The screenshot shows a serial terminal window with configuration settings on the left and a stream of sensor data on the right. The configuration includes a baud rate of 9600, 8 data bits, no parity, 1 stop bit, and no flow control. The data stream shows humidity and temperature readings, a password timeout message, and a series of timestamped data points.

```
串 □ Silicon... (COM8)
波特率 9600
数据位 8
校验位 None
停止位 1
流控 None

接收设置
 ASCII  Hex
 自动换行
 显示发送
 显示时间

发送设置
 ASCII  Hex
 重复发送 1000 ms

Password timeout
[82498]Humidity =53.82 %rh
[82528]tem =27.44 C
[82957]Humidity =53.49 %rh
[82987]tem =27.45 C
[83416]Humidity =53.44 %rh
[83446]tem =27.40 C
[83875]Humidity =53.49 %rh
[83905]tem =27.54 C
[84232]Password Correct
30.60 65.70 Thu Sep 1 16:35:04 2022
30.70 67.50 Thu Sep 1 16:38:03 2022
26.30 40.20 Fri Sep 2 03:17:26 2022
27.30 57.80 Thu Sep 8 07:16:59 2022
27.40 57.80 Thu Sep 8 07:22:39 2022
27.40 57.10 Thu Sep 8 07:25:39 2022
27.30 57.10 Thu Sep 8 07:28:39 2022
27.40 56.20 Thu Sep 8 07:34:14 2022
27.40 56.70 Thu Sep 8 07:37:14 2022
27.50 56.10 Thu Sep 8 07:40:14 2022
27.50 56.10 Thu Sep 8 07:43:14 2022
```

2.8 Battery & Power Consumption

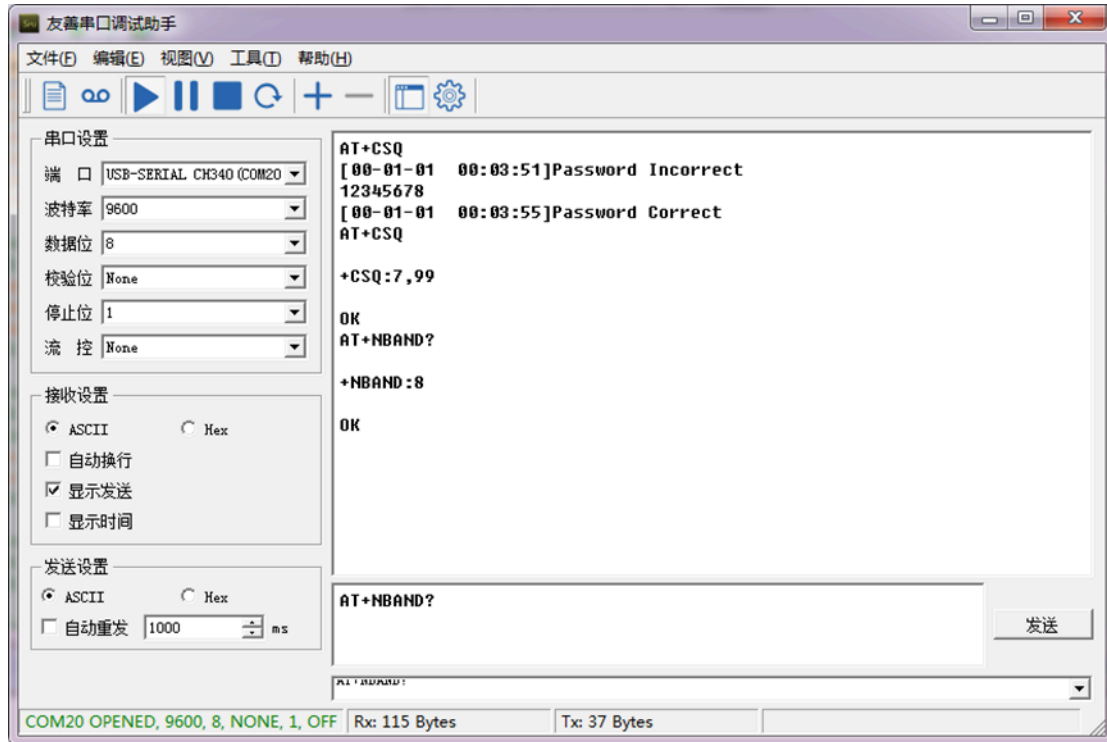
N95S31B uses ER26500 + SPC1520 battery pack. See below link for detail information about the battery info and how to replace.

[Battery Info & Power Consumption Analyze](#) .

3. Access NB-IoT Module

Users can directly access the AT command set of the NB-IoT module.

The AT Command set can refer the BC35-G NB-IoT Module AT Command: https://www.dragino.com/downloads/index.php?dir=datasheet/other_vendors/BC35-G/



4. Using the AT Commands

4.1 Access AT Commands

See NBSN95 AT Command in this link for detail: <https://www.dropbox.com/sh/jao1xt9kw5r3yq4/AAAMpJkZzExF2JLbRWxGoQ9Na?dl=0>

- AT+<CMD>? : Help on <CMD>
- AT+<CMD> : Run <CMD>
- AT+<CMD>=<value> : Set the value
- AT+<CMD>=? : Get the value

General Commands

- AT : Attention
- AT? : Short Help
- ATZ : MCU Reset
- AT+TDC : Application Data Transmission Interval
- AT+CFG : Print all configurations
- AT+CFGMOD : Working mode selection
- AT+INTMOD : Set the trigger interrupt mode
- AT+5VT : Set extend the time of 5V power

AT+PRO : Choose agreement
AT+WEIGRE : Get weight or set weight to 0
AT+WEIGAP : Get or Set the GapValue of weight
AT+RXDL : Extend the sending and receiving time
AT+CNTFAC : Get or set counting parameters
AT+SERVADDR : Server Address
AT+TR : Get or Set record time
AT+APN : Get or set the APN
AT+FBAND : Get or Set whether to automatically modify the frequency band
AT+DNSCFG : Get or Set DNS Server
AT+GETSENSORVALUE : Returns the current sensor measurement
AT+NOUD : Get or Set the number of data to be uploaded
AT+CDP : Read or Clear cached data
AT+SHTEMP: Get or Set alarm of temp
AT+SHHUM: Get or Set alarm of moisture

COAP Management

AT+URI : Resource parameters

UDP Management

AT+CFM : Upload confirmation mode (only valid for UDP)

MQTT Management

AT+CLIENT : Get or Set MQTT client
AT+UNAME : Get or Set MQTT Username
AT+PWD : Get or Set MQTT password
AT+PUBTOPIC : Get or Set MQTT publish topic
AT+SUBTOPIC : Get or Set MQTT subscription topic

Information

AT+FDR : Factory Data Reset
AT+PASSWORD : Serial Access Password

5. FAQ

5.1 How to Upgrade Firmware

User can upgrade the firmware for 1) bug fix, 2) new feature release.

Please see this link for how to upgrade: <http://wiki.dragino.com/xwiki/bin/view/Main/Firmware%20Upgrade%20Instruction%20for%20STM32%20base%20products/#H2.HardwareUpgradeMethodSupportList>

Firmware Download: https://www.dropbox.com/sh/fr8w23rb951512i/AACSJeGQg-7ZjKhAl_Sn57H6a?dl=0

Notice, N95S31B and LSN50v2 share the same mother board. They use the same connection and method to update.

6. Trouble Shooting

6.1 Connection problem when uploading firmware

Please see: <http://wiki.dragino.com/xwiki/bin/view/Main/Firmware%20Upgrade%20Instruction%20for%20STM32%20base%20products/#H3.3Troubleshooting>

6.2 AT Command input doesn't work

In the case if user can see the console output but can't type input to the device. Please check if you already include the **ENTER** while sending out the command. Some serial tool doesn't send **ENTER** while press the send key, user need to add ENTER in their string.

6.3 Not able to connect to NB-IoT network and keep showing "Signal Strength:99".

This means sensor is trying to join the NB-IoT network but fail. Please see this link for [trouble shooting for signal strength:99](#).

7. Order Info

Part Number: **N95S31B-YY**

8. Packing Info

Package Includes:

- N95S31B NB-IoT Temperature and Humidity Sensor
- External antenna x 1

Dimension and weight:

- Device Size: 13.0 x 5 x 4.5 cm
- Device Weight: 150g
- Package Size / pcs : 14.0 x 8x 5 cm
- Weight / pcs : 180g

9. Support

User Manual for LoRaWAN End Nodes - N95S31B NB-
IoT Temperature & Humidity Sensor User Manual

- Support is provided Monday to Friday, from 09:00 to 18:00 GMT+8. Due to different timezones we cannot offer live support. However, your questions will be answered as soon as possible in the before-mentioned schedule.
- Provide as much information as possible regarding your enquiry (product models, accurately describe your problem and steps to replicate it etc) and send a mail to support@dragino.com