DDS04-NB -- NB-IoT 4-Channels Distance Detection Sensor User Manual

Last modified by Xiaoling (/xwiki/bin/view/XWiki/Xiaoling) on 2023/11/22 10:43

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1. Introduction

1.1 What is NB-IoT 4-Channels Distance Sensor

The Dragino DDS04-NB is a **NB-IoT 4-Channels Distance Sensor** for Internet of Things solution. It is capable to add up to four Ultrasonic Sensors to measure four dista

The DDS04-NB can be applied to scenarios such as horizontal distance measurement, parking management system, object proximity and presence detection, intelligent t

It detects the distance between the measured object and the sensor, and uploads the value via wireless to NB-IoT IoT Server.

DDS04-NB supports different uplink methods including **MQTT, MQTTs, UDP & TCP** for different application requirement, and support uplinks to various IoT Servers.

DDS04-NB **supports BLE configure** and **OTA update** which make user easy to use.

DDS04-NB is powered by **8500mAh Li-SOCI2 battery**, it is designed for long-term use up to several years.

DDS04-NB has optional built-in SIM card and default IoT server connection version. Which makes it works with simple configuration.
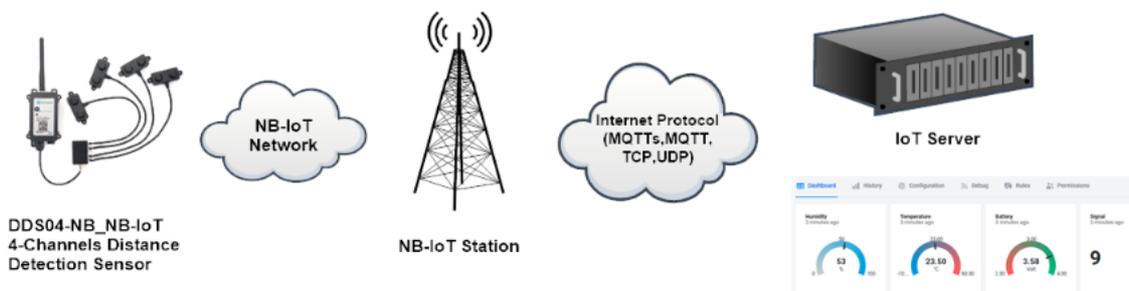
1.2 Features

- NB-IoT Bands: B1/B2/B3/B4/B5/B8/B12/B13/B17/B18/B19/B20/B25/B28/B66/B70/B85 @H-FDD
- Ultra-low power consumption
- max: 4 x Distance Detect Channels
- Different types of probes can be used together
- Detect Range: Base on External Probe
- Multiply Sampling and one uplink
- Support Bluetooth v5.1 remote configure and update firmware
- Uplink on periodically
- Downlink to change configure
- 8500mAh Battery for long term use
- Nano SIM card slot for NB-IoT SIM

1.3 Specification

Common DC Characteristics:

- Supply Voltage: 2.5v ~ 3.6v
- Operating Temperature: -40 ~ 85°C

NB-IoT Spec:

NB-IoT Module: BC660K-GL

Support Bands:

- B1 @H-FDD: 2100MHz
- B2 @H-FDD: 1900MHz
- B3 @H-FDD: 1800MHz
- B4 @H-FDD: 2100MHz
- B5 @H-FDD: 860MHz
- B8 @H-FDD: 900MHz
- B12 @H-FDD: 720MHz
- B13 @H-FDD: 740MHz
- B17 @H-FDD: 730MHz
- B18 @H-FDD: 870MHz
- B19 @H-FDD: 870MHz
- B20 @H-FDD: 790MHz
- B25 @H-FDD: 1900MHz
- B28 @H-FDD: 750MHz
- B66 @H-FDD: 2000MHz
- B70 @H-FDD: 2000MHz
- B85 @H-FDD: 700MHz

Battery:

- Li/SOCl2 un-chargeable battery
- Capacity: 8500mAh
- Self Discharge: <1% / Year @ 25°C
- Max continuously current: 130mA
- Max boost current: 2A, 1 second

Power Consumption

- STOP Mode: 10uA @ 3.3v
- Max transmit power: 350mA@3.3v

1.4 Probe Options

1.4.1 Probes Comparation

Model	Photo	Description
A01A-15		Detect Distance: 28 cm ~ 750 cm Bling Spot Distance: 0 ~ 28cm Accuracy: ±(1cm+S*0.3%) (S: Distance) Measure Angle: ~ 40° Cable Length: 1.5 meter Temperature Compensation Suitable for Flat Object Detect IP67 Water Proof
A02-15		Detect Distance: 3cm ~ 450cm Bling Spot Distance: 0 ~ 3cm Accuracy: ±(1cm+S*0.3%) (S: Distance) Measure Angle: ~ 60° Cable Length: 1.5 meter Temperature Compensation Suitable for Flat Object Detect, Rubbish Bin IP67 Water Proof

| A13-15		Detect Distance: 25cm ~ 200cm Bling Spot Distance: 0 ~ 25cm Accuracy: ±(1cm+S*0.3%) (S: Distance) Measure Angle: ~ 20° Cable Length: 1.5 meter Temperature Compensation Suitable for Flat Object Detect, Rubbish Bin IP67 Water Proof
A16-15		Detect Distance: 50cm ~ 1500cm Bling Spot Distance: 0 ~ 50cm Accuracy: ±(1cm+S*0.3%) (S: Distance) Measure Angle: ~ 40° Cable Length: 1.5 meter Temperature Compensation Suitable for Long Distance Detect IP67 Water Proof

1.4.2 A01A-15 probe

A01A-15 is mainly used for plane distance measurement; it can carry out targeted measurement on plane objects and can measure long distances and high accuracy.

Beam Chart:

(1) The tested object is a white cylindrical tube made of PVC, with a height of 100cm and a diameter of 7.5cm.
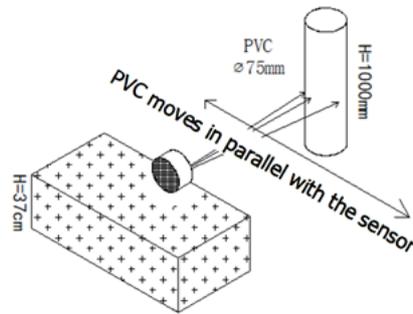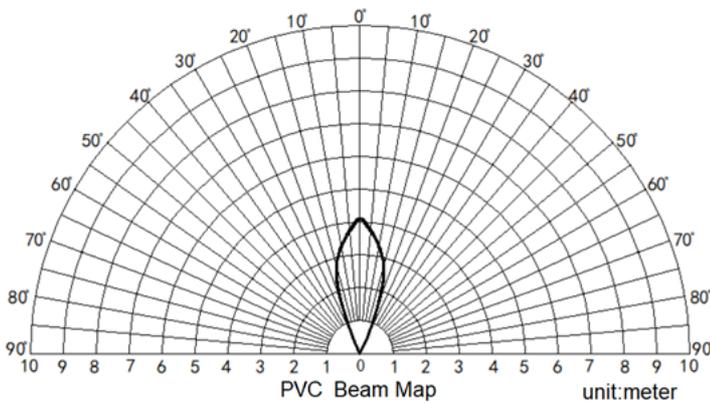
(2) The object to be tested is a "corrugated cardboard box" perpendicular to the central axis of 0 °, and the length * width is 60cm * 50cm.
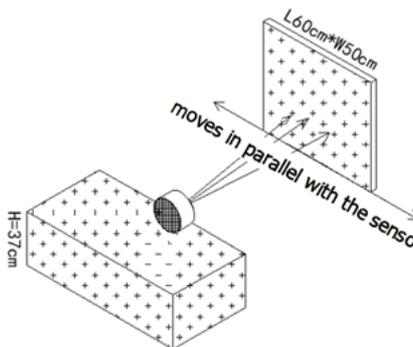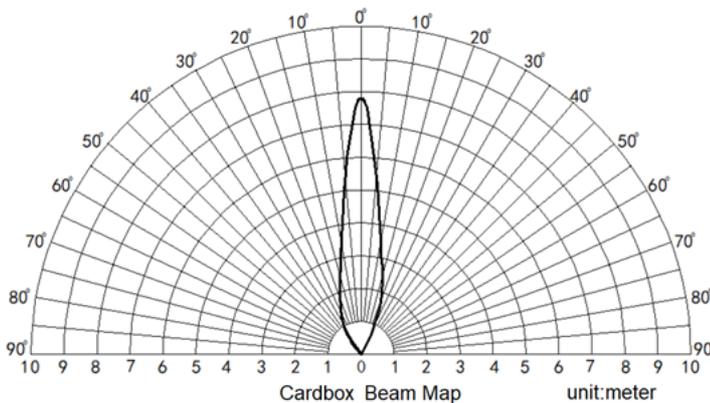
Mechanical:

Application:

1.4.3 A02-15 probe

Beam Chart:

(1) The tested object is a white cylindrical tube made of PVC, with a height of 100cm and a diameter of 7.5cm.

(2) The object to be tested is a "corrugated cardboard box" perpendicular to the central axis of 0 °, and the length * width is 60cm * 50cm.

Mechanical:

Application:

1.4.4 A13-15 probe
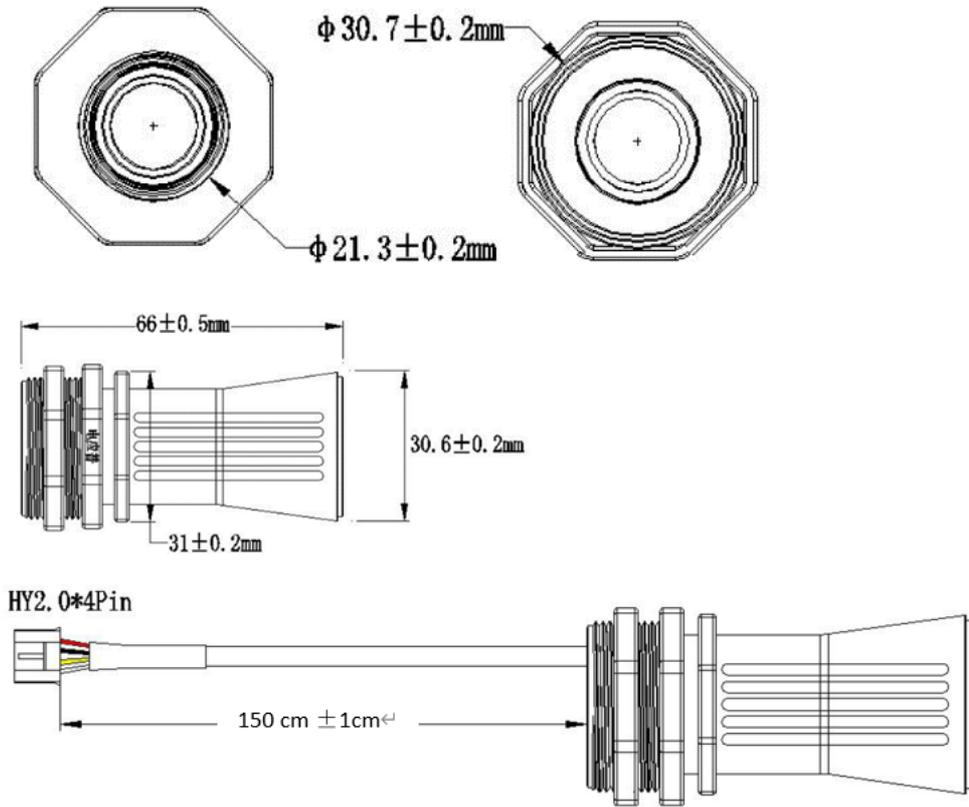
Beam Chart:

(1) The tested object is a white cylindrical tube made of PVC, with a height of 100cm and a diameter of 7.5cm.

(2) The object to be tested is a "corrugated cardboard box" perpendicular to the central axis of 0 °, and the length * width is 60cm * 50cm.
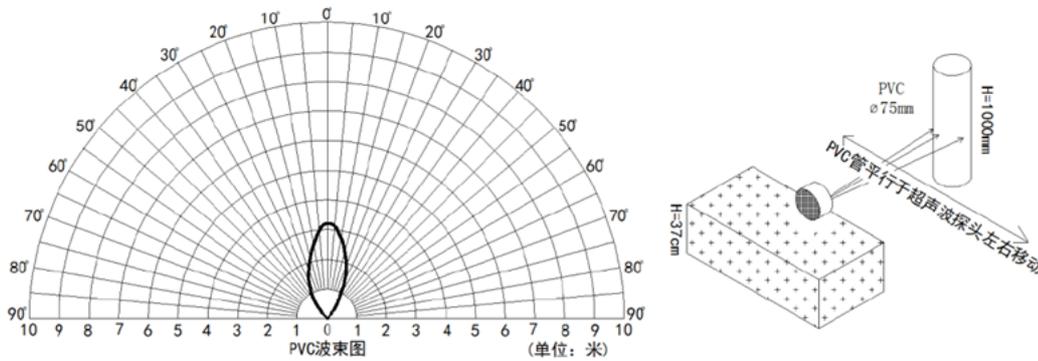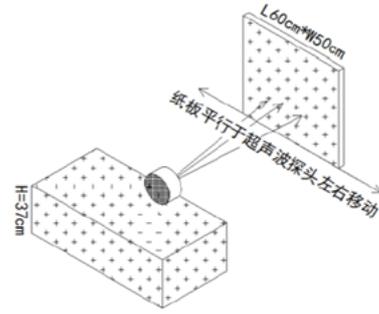
Mechanical:
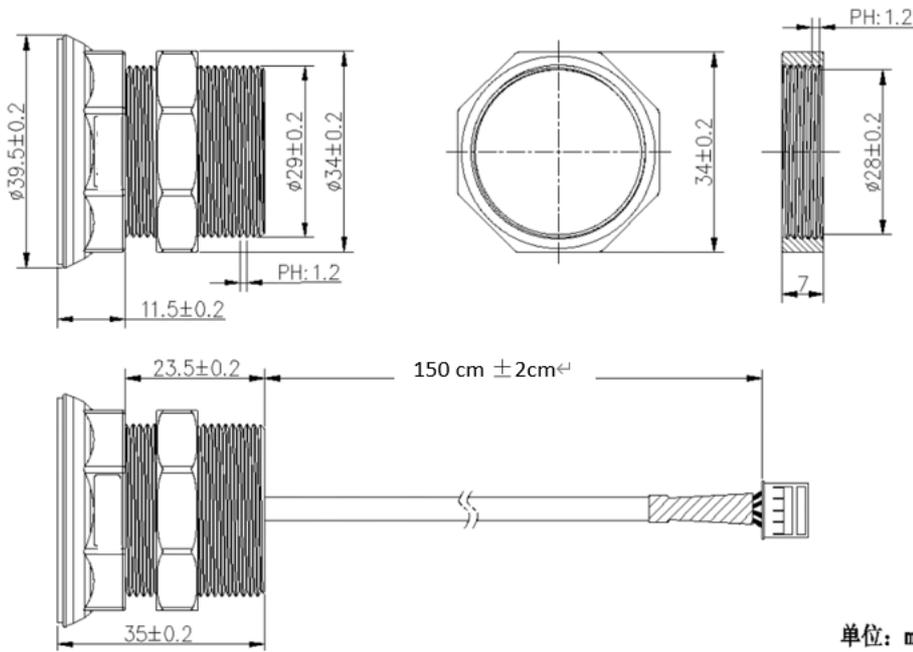
Installation Requirement:

1) The effective detection range of the product is 25cm-200cm, so the vertical distance between the installation position of the module and the bottom of the trash bin is required to be less than 200cm.

2) The installation position of the product should be perpendicular to the trash bin to maintain a good horizontal plane, and be located at the center of the trash bin diameter;

3) In order to effectively filter out the reflection echo from the diameter of the trash bin and baffle, the distance between the installation position of the module and the edge of the diameter of the trash bin (non-vertical horizontal distance) is required to be 30cm

For trash bins between 80cm and 25cm in diameter, it is recommended that the installation position of the module and the height of the trash bin (the vertical and horizontal distance) be 30cm. For trash bins with a diameter of about 60cm, it is recommended that the installation position of the module and the height of the trash bin (vertical horizontal distance) be between 30cm-50cm. There is no such restriction on large-diameter (>60cm) trash bins.
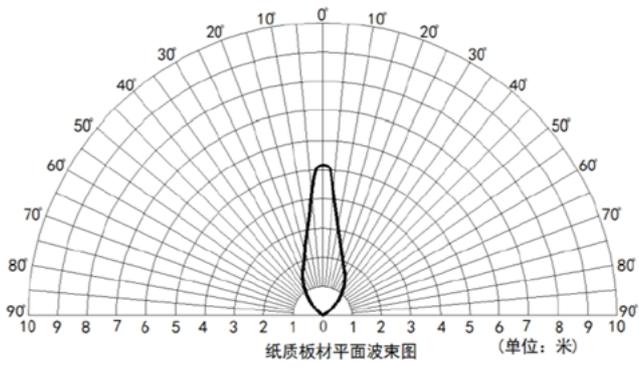

Application:

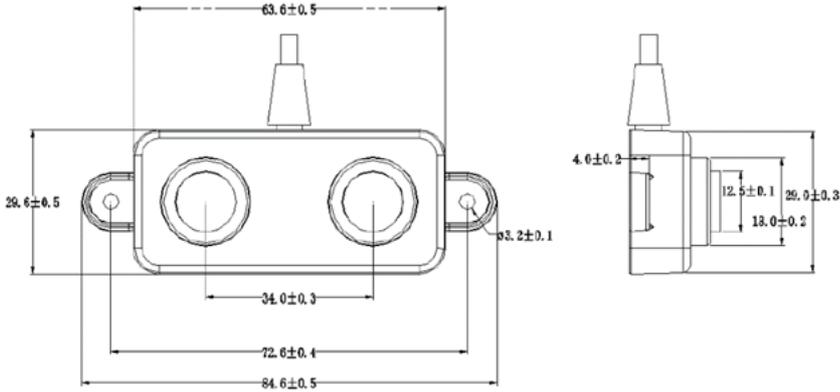
1.4.5 A13-16 probe

Beam Chart:

(1) The tested object is a white cylindrical tube made of PVC, with a height of 100cm and a diameter of 7.5cm.

(2) The object to be tested is a "corrugated cardboard box" perpendicular to the central axis of 0 °, and the length * width is 60cm * 50cm.
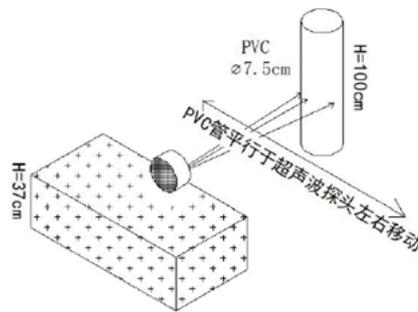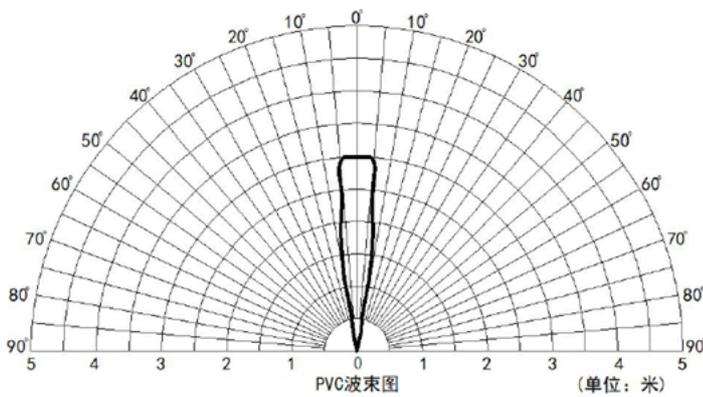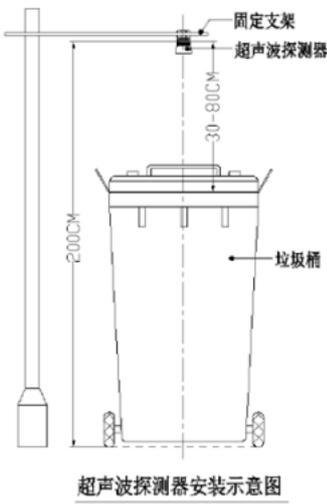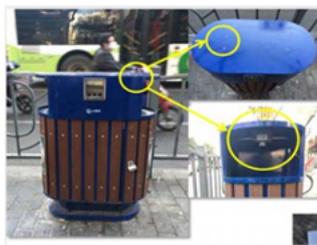

Mechanical:

150 cm ± 2cm

①Red
②Black
③Yellow
④White

HY2.0-4Y white glue (with buckle position)

Wire specifications:Black pvc 2464 26AWG four-core wire (yellow, white, red and black) without shielding
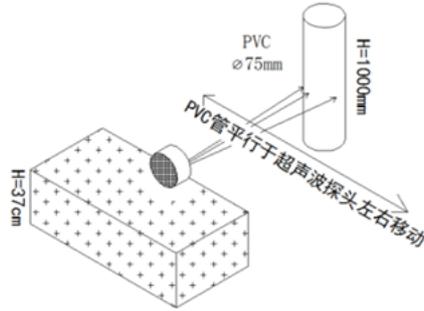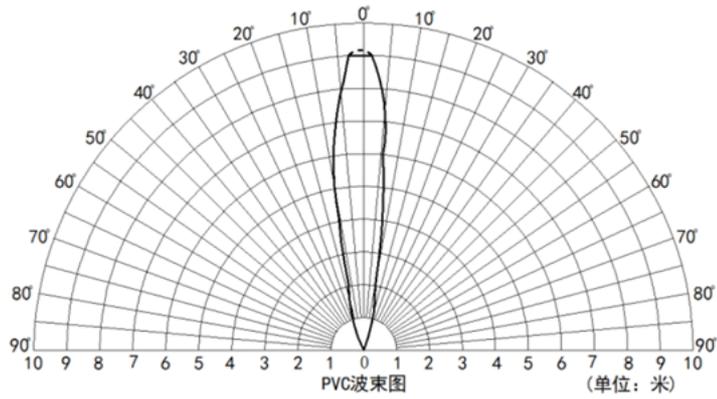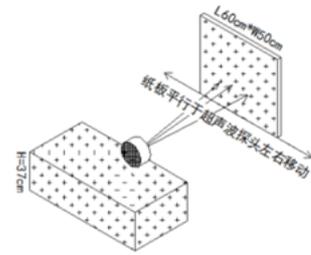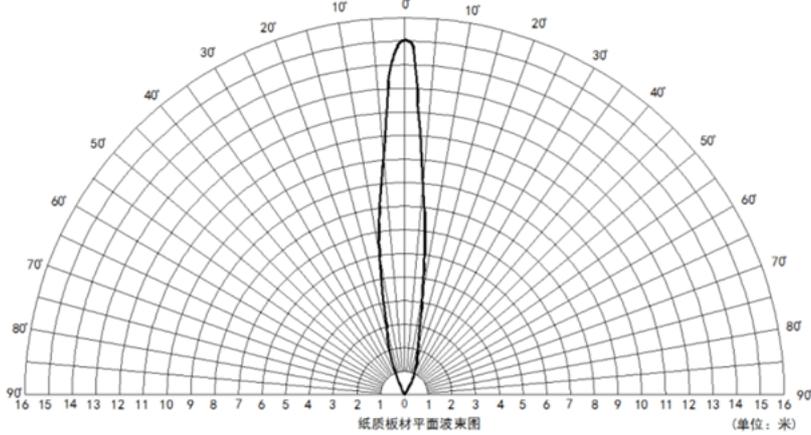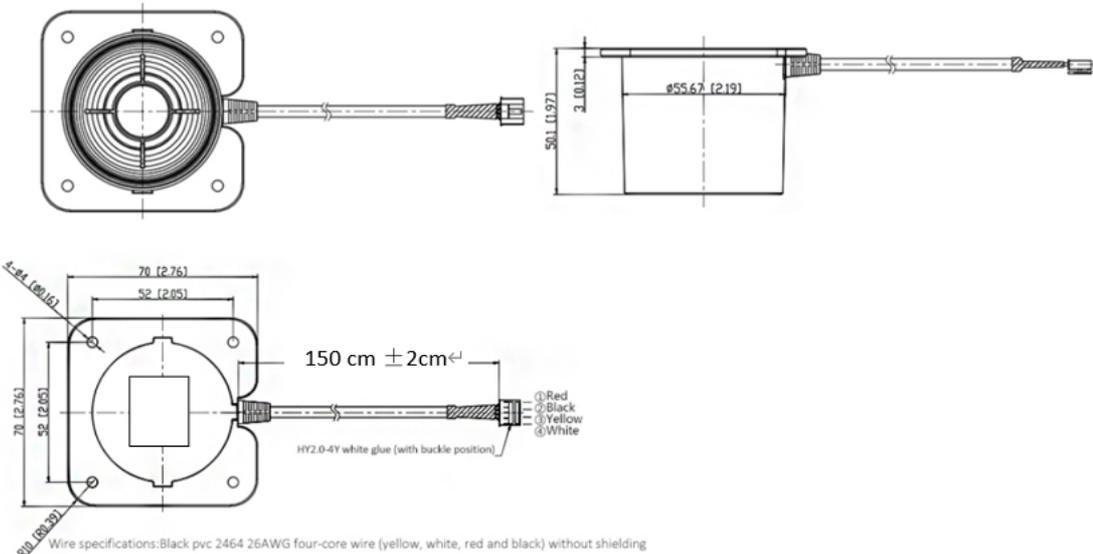
Unmarked dimension tolerances as below.

TOLERANCE (mm)	0~10	≥10~30	≥30~50	≥50~100	≥100~200
	±0.1	±0.15	±0.2	±0.3	±0.5

Application:

1.5 Applications

- Horizontal distance measurement
- Parking management system
- Object proximity and presence detection
- Intelligent trash can management system
- Robot obstacle avoidance
- Automatic control
- Sewer

1.6 Sleep mode and working mode

Deep Sleep Mode: Sensor doesn't have any NB-IoT activate. This mode is used for storage and shipping to save battery life.

Working Mode: In this mode, Sensor will work as NB-IoT Sensor to Join NB-IoT network and send out sensor data to server. Between each sampling/tx/rx periodically, se

1.7 Button & LEDs
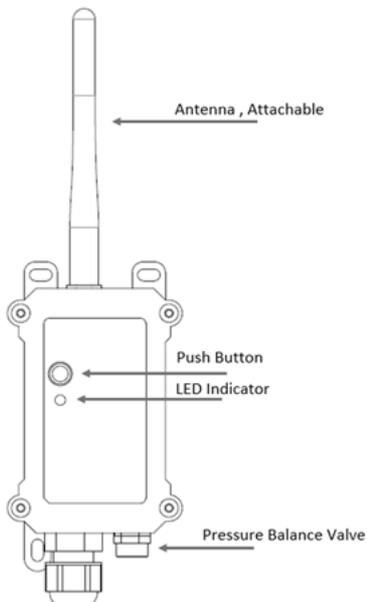
Behavior on ACT	Function	Action
Pressing ACT between 1s < time < 3s	Send an uplink	If sensor has already attached to NB-IoT network, sensor will send an uplink packet, **blue led** will blink once. Meanwhile, BLE module will be active and user can connect via BLE to configure device.
Pressing ACT for more than 3s	Active Device	**Green led** will fast blink 5 times, device will enter **OTA mode** for 3 seconds. And then start to attach NB-IoT network. **Green led** will solidly turn on for 5 seconds after joined in network. Once sensor is active, BLE module will be active and user can connect via BLE to configure device, no matter if device attach NB-IoT network or not.
Fast press ACT 5 times.	Deactivate Device	**Red led** will solid on for 5 seconds. Means device is in Deep Sleep Mode.

Note: When the device is executing a program, the buttons may become invalid. It is best to press the buttons after the device has completed the program exe

1.8 BLE connection

DDS04-NB support BLE remote configure and firmware update.

BLE can be used to configure the parameter of sensor or see the console output from sensor. BLE will be only activate on below case:

- Press button to send an uplink
- Press button to active device.
- Device Power on or reset.

If there is no activity connection on BLE in 60 seconds, sensor will shut down BLE module to enter low power mode.

1.9 Pin Definitions & Switch
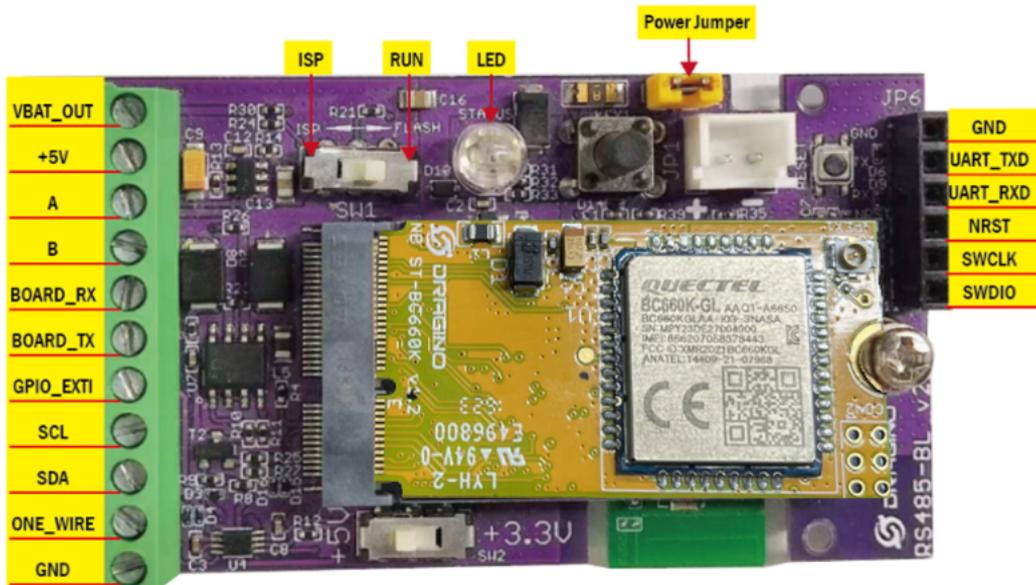
1.9.1 Jumper JP2

Power on Device when put this jumper.

1.9.2 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

1.9.3 Reset Button

Press to reboot the device.

1.10 Mechanical
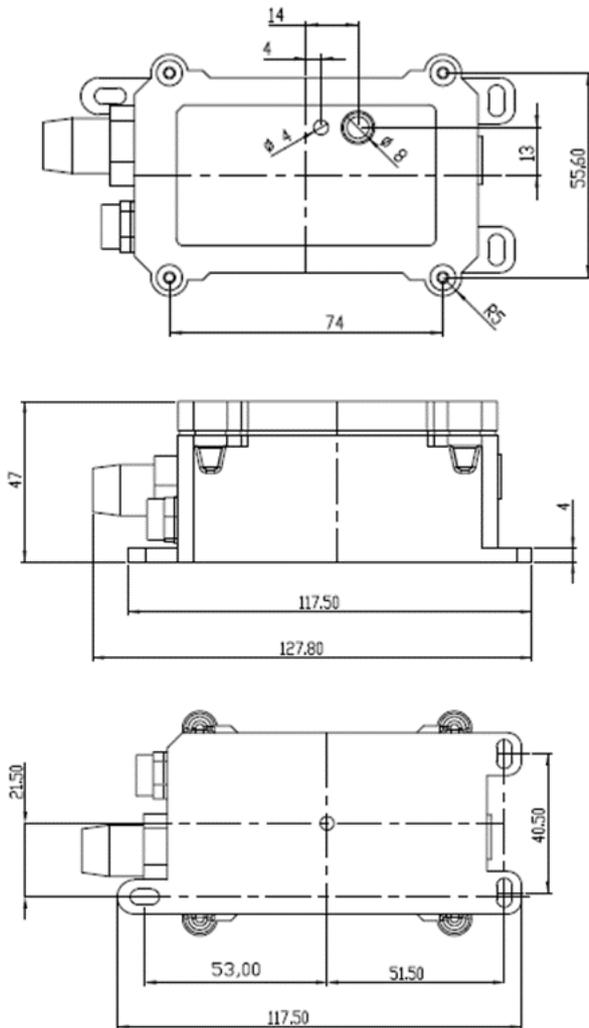
2. Use DDS04-NB to communicate with IoT Server

2.1 Send data to IoT server via NB-IoT network

The DDS04-NB is equipped with a NB-IoT module, the pre-loaded firmware in DDS04-NB will get environment data from sensors and send the value to local NB-IoT netw

Below shows the network structure:

DDS04-NB in a NB-IoT Network
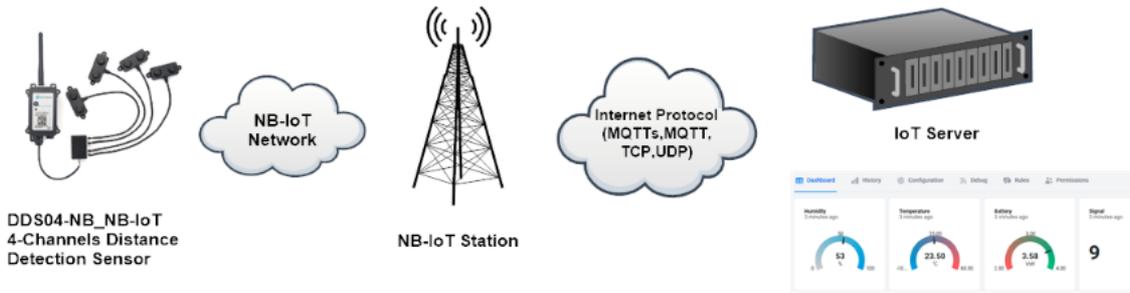
There are two version: **-GE** and **-1D** version of DDS04-NB.

GE Version: This version doesn't include SIM card or point to any IoT server. User needs to use AT Commands to configure below two steps to set LDS12-NB send data

- Install NB-IoT SIM card and configure APN. See instruction of Attach Network (http://wiki.dragino.com/xwiki/bin/view/Main/General%20Configure%20to%20Connec

- Set up sensor to point to IoT Server. See instruction of Configure to Connect Different Servers (http://wiki.dragino.com/xwiki/bin/view/Main/General%20Configure%2 IoT%20models/#H3.Configuretoconnecttodifferentservers) .

Below shows result of different server as a glance.

| Servers	Dash Board	Comments
Node-Red (http://wiki.dragino.com/xwiki/bin/view/Main/General%20Configure%20to%20Connect%20to%20IoT%20server%20for%20-NB%20%26%20-NS%20NB-IoT%20models/#H3.5A0Node-RedA028viaA0MQTT29)		
DataCake (http://wiki.dragino.com/xwiki/bin/view/Main/General%20Configure%20to%20Connect%20to%20IoT%20server%20for%20-NB%20%26%20-NS%20NB-IoT%20models/#H3.4Datacake)		
Tago.IO (http://wiki.dragino.com/xwiki/bin/view/Main/General%20Configure%20to%20Connect%20to%20IoT%20server%20for%20-NB%20%26%20-NS%20NB-IoT%20models/#H3.7A0Tago.ioA028viaA0MQTT29)		
General UDP (http://wiki.dragino.com/xwiki/bin/view/Main/General%20Configure%20to%20Connect%20to%20IoT%20server%20for%20-NB%20%26%20-NS%20NB-IoT%20models/#H3.1GeneralA0UDPA0Connection)	Raw Payload. Need Developer to design Dash Board	
General MQTT (http://wiki.dragino.com/xwiki/bin/view/Main/General%20Configure%20to%20Connect%20to%20IoT%20server%20for%20-NB%20%26%20-NS%20NB-IoT%20models/#H3.2GeneralA0MQTTA0Connection)	Raw Payload. Need Developer to design Dash Board	
ThingSpeak (http://wiki.dragino.com/xwiki/bin/view/Main/General%20Configure%20to%20Connect%20to%20IoT%20server%20for%20-NB%20%26%20-NS%20NB-IoT%20models/#H3.3A0ThingSpeakA028viaA0MQTT29)		
ThingsBoard (http://wiki.dragino.com/xwiki/bin/view/Main/General%20Configure%20to%20Connect%20to%20IoT%20server%20for%20-NB%20%26%20-NS%20NB-IoT%20models/#H3.6A0ThingsBoard.CloudA028viaA0MQTT29)		

1D Version: This version has 1NCE SIM card pre-installed and configure to send value to DataCake. User Just need to select the sensor type in DataCake and Activate [(http://wiki.dragino.com/xwiki/bin/view/Main/General%20Configure%20to%20Connect%20to%20IoT%20server%20for%20-NB%20%26%20-NS%20NB-IoT%20models/#H

2.2 Payload Types

To meet different server requirement, DDS04-NB supports different payload type.

Includes:

- General JSON format payload. (Type=5)

- HEX format Payload. (Type=0)

- ThingSpeak Format. (Type=1)

- ThingsBoard Format. (Type=3)

User can specify the payload type when choose the connection protocol. Example:

AT+PRO=2,0   // Use UDP Connection & hex Payload

AT+PRO=2,5   // Use UDP Connection & Json Payload

AT+PRO=3,5   // Use MQTT Connection & Json Payload

2.2.1 General Json Format(Type=5)

This is the General Json Format. As below:

{"IMEI":"866207052559857","Model":"DDS04-NB","ds18b20_temperature":-0.1,"distance1":90,"distance2":775,"distance3":656,"distance4":793,"battery":3.51,
{364,1280,0,29,2023/11/07 01:50:43},"5":{356,1281,0,29,2023/11/07 01:47:43},"6":{359,1280,0,29,2023/11/07 01:37:22},"7":{358,1301,0,27,2023/11/06 10:01:07},"8"
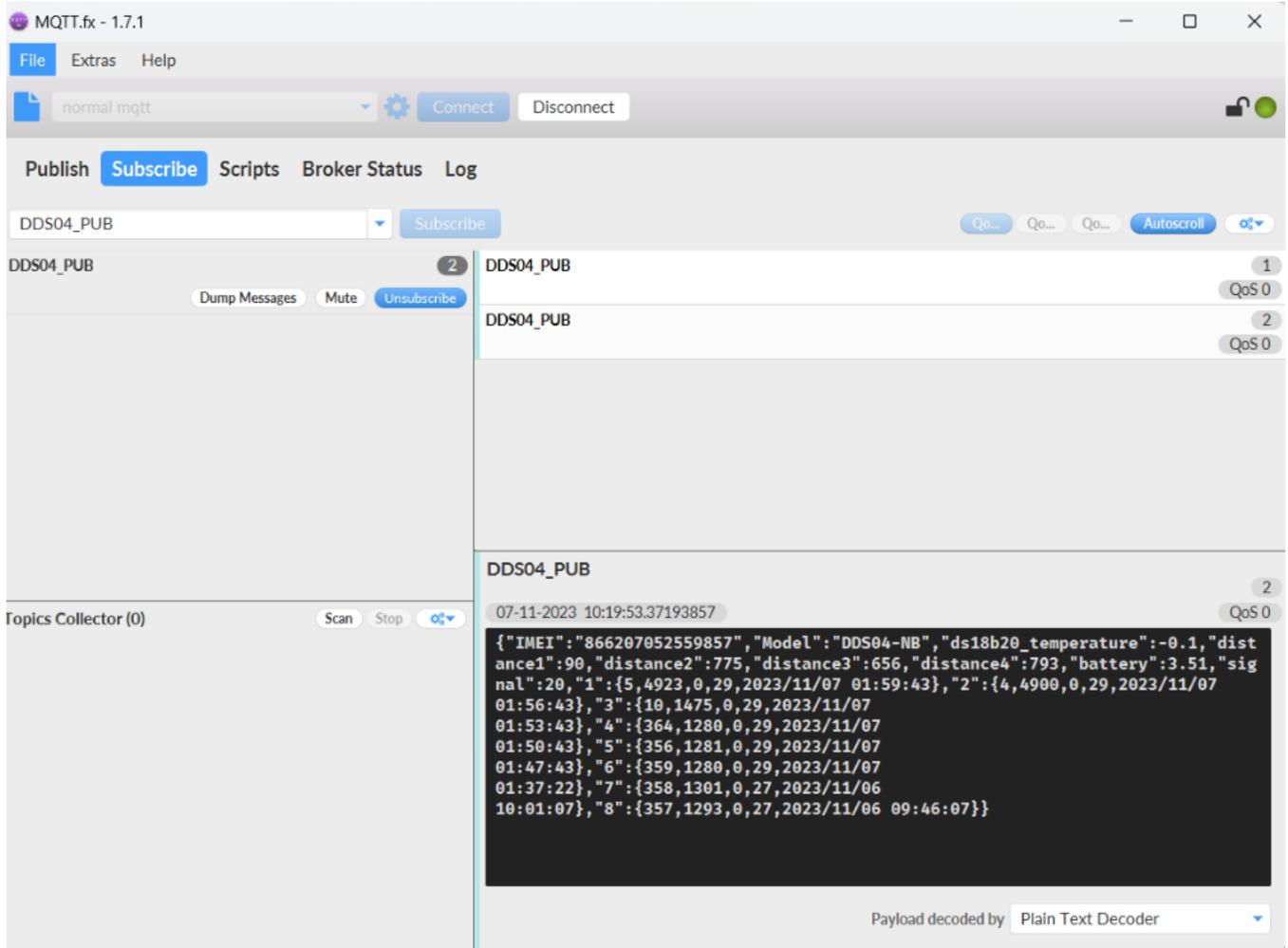
Notice, from above payload:

- DS18B20_temperature, Distance1, Distance2, Distance3, Distance4, Battery & Signal are the value at uplink time.

- Json entry 1 ~ 8 are the last 1 ~ 8 sampling data as specify by **AT+NOUD=8** Command. Each entry includes (from left to right): Distance1, Distance2, Distance3, D

2.2.2 HEX format Payload(Type=0)

This is the HEX Format. As below:

f8662070525598570c640db217010000000351000002890db96549a3bf034104c40289031c6549a1a40005133b0000001d65499a0f000413240000001d6549995b000a0

HEX Format for DDS04-NB (AT+NOUD=8)

f866207058378443				0c64	0df0	18	01	00	0000	08a4	08af	08b7	0dab	
f+IMEI				Version	BAT	Singal	MOD	Interrupt	DS18B20	Distance1	Distance2	Distance3	Distance4	T
8 Bytes									20 Bytes					

08a4	08ae	08b7	08ba	65488b7a	08a308ae08b20dae65488ac6		08a508af08b308c765488a12		08a308ae08b
Distance1	Distance2	Distance3	Distance4	Timestamp	last 2nd data		last 3rd data		last 4
12 Bytes					12 Bytes		12 Bytes		12

08a708ae08b70db6654888aa		08a708ae08b108c6654887f6		08a708ae08b108c6654887f6		08a808af08b
last 5th data		last 6th data		last 7th data		last
12 Bytes		12 Bytes		12 Bytes		12

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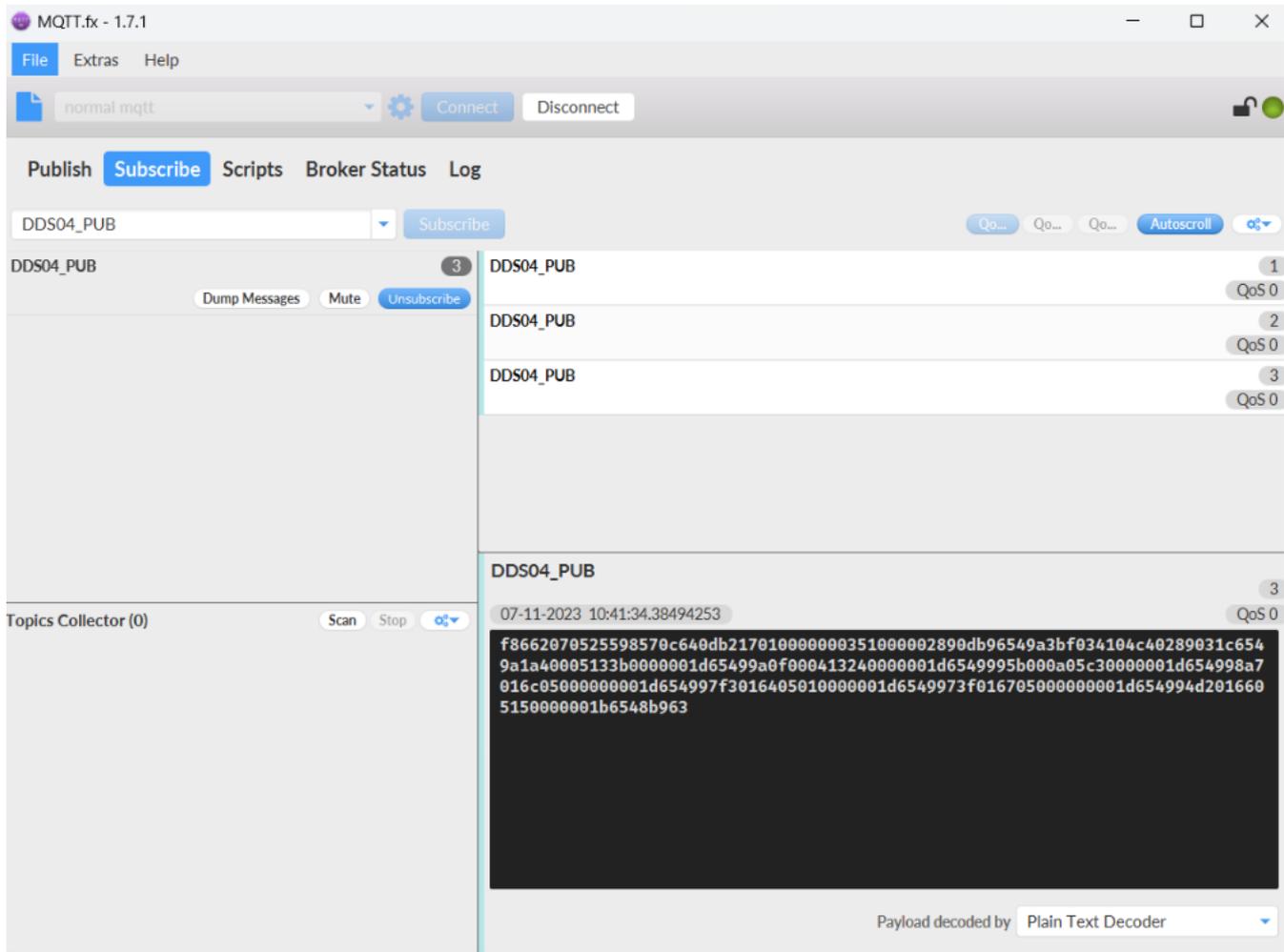
Version:

These bytes include the hardware and software version.

Higher byte: Specify Sensor Model: 0x0c for DDS04-NB

Lower byte: Specify the software version: 0x64=100, means firmware version 1.0.0

BAT (Battery Info):

Ex1: 0x0DB4 = 3508mV

Interrupt flag & Interrupt level

This data field shows if this packet is generated by interrupt or not.

Note: The Internet Pin is a separate pin in the screw terminal.

Example:

(0x0D4A & 0x4000) >>14 = 0: Normal uplink packet.

(0x4D41 & 0x4000) >>14 = 1: Interrupt Uplink Packet.

(0x0D4A & 0x8000) >>15 = 0: Pin of GPIO_EXTI is low level.

(0x8D41 & 0x8000) >>15 = 1: Pin of GPIO_EXTI is high level.

Distance

The measuring distance of the four distance measuring modules, the default unit is cm.

Example:

Uplink Payload: 0D 4A 03 16 03 18 03 1A 03 15 01

Data analysis:

Distance of UT sensor1 : 0316(H) = 790 (D)/10 = 79cm.

Distance of UT sensor2 : 0318(H) = 792 (D)/10 = 79.2cm.

Distance of UT sensor3 : 031A(H) = 794 (D)/10 = 79.4cm.

Distance of UT sensor4 : 0315(H) = 789 (D)/10 = 78.9cm.

TimeStamp:

Unit TimeStamp Example: 64e2d74f(H) = 1692587855(D)

Put the decimal value into this link(https://www.epochconverter.com) (https://www.epochconverter.com)   )to get the time.

2.2.3 ThingsBoard Payload(Type=3)

Type3 payload special design for ThingsBoard, it will also configure other default server to ThingsBoard.

```
{"IMEI": "866207052559857",
    "Model": "DDS04-NB",
    "ds18b20_temperature": -0.1,
    "distance1": 697,
    "distance2": 702,
    "distance3": 698,
    "distance4": 709,
    "battery": 3.49,
    "signal": 23
  }
```


2.2.4 ThingSpeak Payload(Type=1)

This payload meets ThingSpeak platform requirement. It includes seven fields. Form 1~7 are:

Distance 1, Distance 2, Distance 3, Distance 4, Battery, Signal&Temp. This payload type only valid for ThingsSpeak Platform.

As below:

field1=Distance1 value&field2=Distance2 value&field3=Distance3 value&field4=Distance4 value&field5=Battery value&field6=Singal value&field7=DS18B20 Te
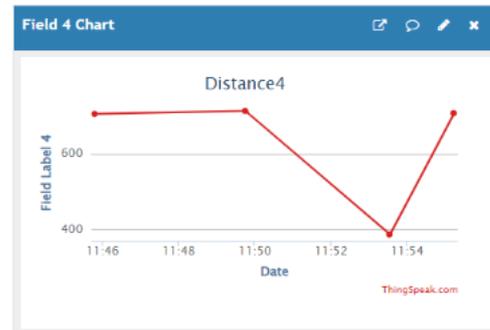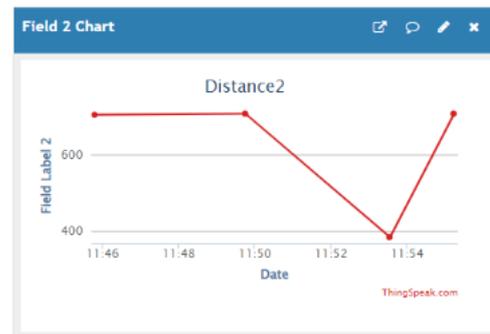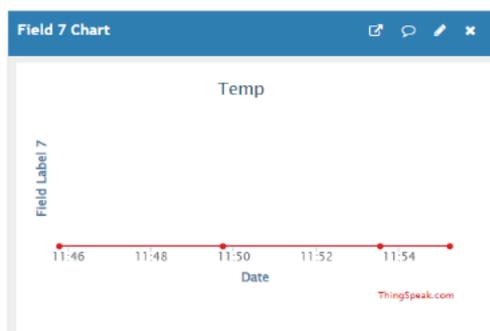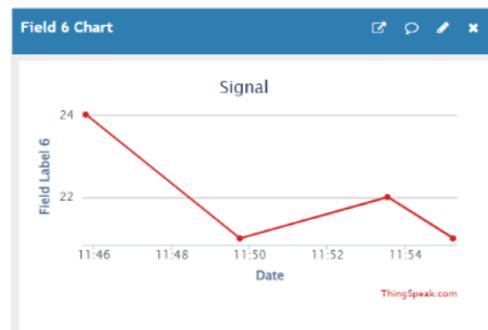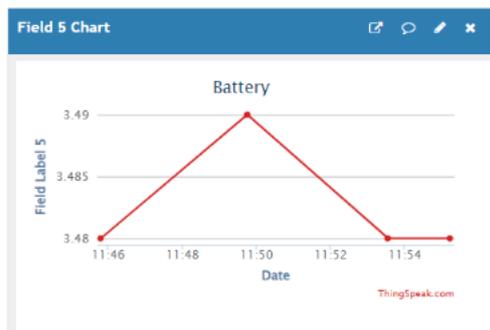
2.3 Test Uplink and Change Update Interval

By default, Sensor will send uplinks **every 2 hours** & AT+NOUD=8

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

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

User can also push the button for more than 1 seconds to activate an uplink.

2.4 Multi-Samplings and One uplink

To save battery life, DDS04-NB will sample distance data every 15 minutes and send one uplink every 2 hours. So each uplink it will include 8 stored data + 1 real-time da

- **AT+TR=900**   // The unit is seconds, and the default is to record data once every 900 seconds (15 minutes, 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:
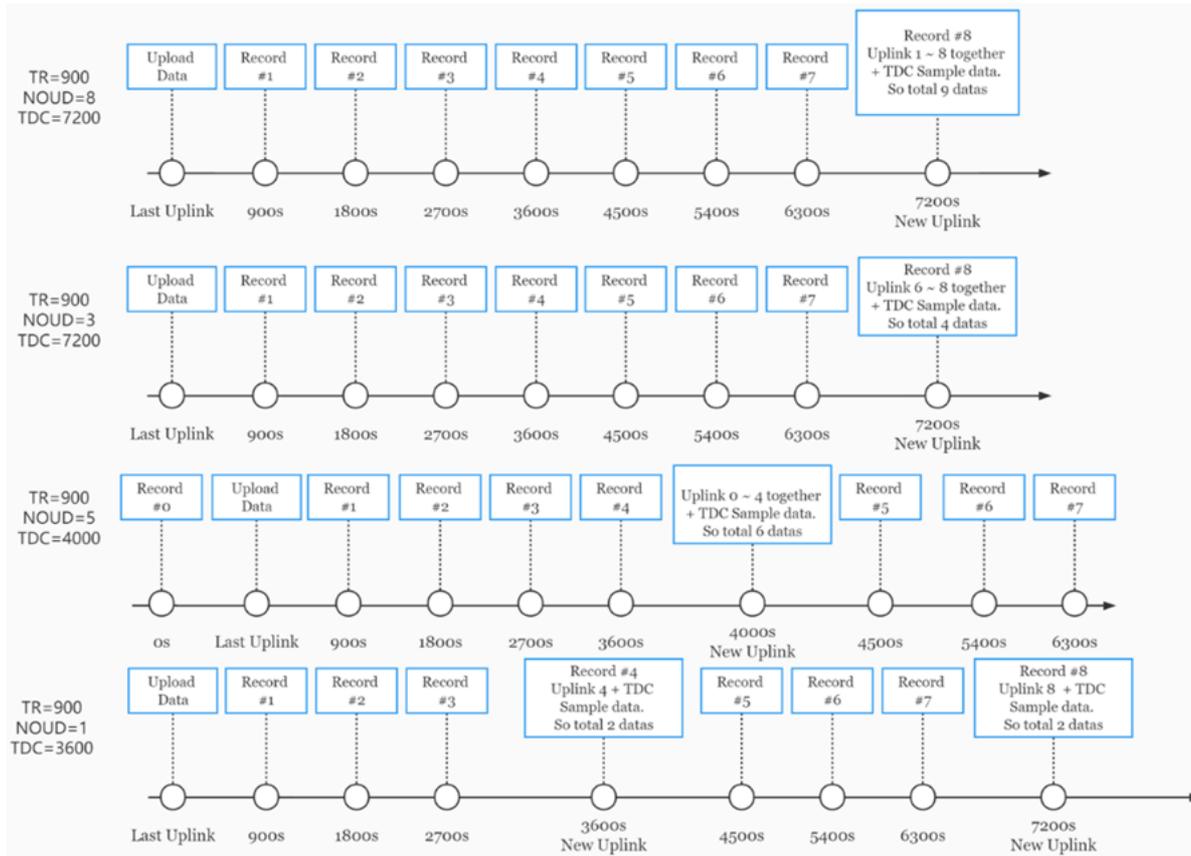
2.5 Trggier an uplink by external interrupt

DDS04-NB has an external trigger interrupt function. Users can use the PB15 pin to trigger the upload of data packets.

AT command:

- **AT+INTMOD**   // Set the trigger interrupt mode

- **AT+INTMOD=0**   // Disable Interrupt

- **AT+INTMOD=1**   // Trigger by rising and falling edge

- **AT+INTMOD=2**   // Trigger by falling edge

- **AT+INTMOD=3**   // Trigger by rising edge

2.6 Connect Probe

DDS04-NB has a converter, User need to connect the Ultrasonic Probes to the convert as below. Different probes are supported, please see this link for the probe options

Probe mapping as below.
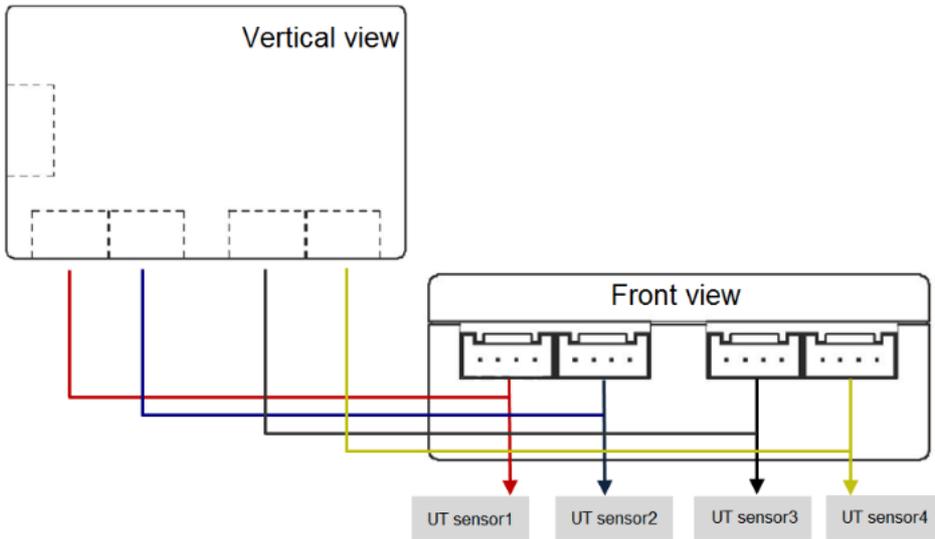
2.7 Set Transmit Interval Time

Feature: Change NB-IoT End Node Transmit Interval.

AT Command: AT+TDC

Command Example	Function	Response
AT+TDC=?	Show current transmit Interval	30000 OK the interval is 30000ms = 30s
AT+TDC=60000	Set Transmit Interval	OK Set transmit interval to 60000ms = 60 seconds

Downlink Command: 0x01

Format: Command Code (0x01) followed by 3 bytes time value.

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

- Example 1: Downlink Payload: 0100001E   // Set Transmit Interval (TDC) = 30 seconds
- Example 2: Downlink Payload: 0100003C   // Set Transmit Interval (TDC) = 60 seconds

2.8 Set enable or disable of the measurement channel

This command can be used when user connects **less than four distance sensors**. This command can turn off unused measurement channels to **save battery life**.

AT Command: AT+ENCHANNEL

Command Example	Function	Response
AT+ENCHANNEL=?	Get enabled channels.	1,1,1,1 (default) OK
AT+ENCHANNEL=1,1,1,0	Channel 4 disabled.	OK
AT+ENCHANNEL=1,1,0,0	Channel 3 and 4 disabled.	OK

Downlink Command: 0x08

Format: Command Code (0x08) followed by 4 bytes.

The first byte means the first channel, the second byte means the second channel, the third byte means the third channel, and the fourth byte means the fourth channel.A

- Example 1: Downlink Payload: 08 01 01 01 01   ---> AT+ENCHANNEL=1,1,1,1   // All channels are enabled
- Example 2: Downlink Payload: 08 01 01 01 00   ---> AT+ENCHANNEL=1,1,1,0   // Channel 4 disabled
- Example 3: Downlink Payload: 08 01 01 00 00   ---> AT+ENCHANNEL=1,1,0,0   // Channel 3 and 4 disabled

3. Configure DDS04-NB

3.1 Configure Methods

DDS04-NB supports below configure method:

- AT Command via Bluetooth Connection (**Recommended**): BLE Configure Instruction (http://wiki.dragino.com/xwiki/bin/view/Main/BLE%20Bluetooth%20Remote%2
- AT Command via UART Connection : See UART Connection (http://wiki.dragino.com/xwiki/bin/view/Main/UART%20Access%20for%20LoRa%20ST%20v4%20base

3.2 AT Commands Set

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+DEUI   : Get or set the Device ID

AT+INTMOD   : Set the trigger interrupt mode

AT+5VT   : Set extend the time of 5V power

AT+PRO   : Choose agreement

AT+RXDL   : Extend the sending and receiving time

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

AT+SERVADDR :   Server Address

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+PWORD   : Serial Access Password

AT+LDATA   : Get the last upload data

AT+CDP   : Read or Clear cached data

4. Battery & Power Consumption

DDS04-NB use ER26500 + SPC1520 battery pack. See below link for detail information about the battery info and how to replace.

Battery Info & Power Consumption Analyze (http://wiki.dragino.com/xwiki/bin/view/Main/How%20to%20calculate%20the%20battery%20life%20of%20Dragino%20sens

5. Firmware update

User can change device firmware to::

- Update with new features.
- Fix bugs.

Firmware and changelog can be downloaded from : **Firmware download link (https://www.dropbox.com/sh/82y41qxxaypn6n4/AACuN8dxt1glqZ8iOX2wCGZga?dl=**

Methods to Update Firmware:

- (Recommended way) OTA firmware update via BLE: **Instruction** (http://wiki.dragino.com/xwiki/bin/view/Main/BLE_Firmware_Update_NB_Sensors_BC660K-GL/)
- Update through UART TTL interface : **Instruction (http://8.211.40.43/xwiki/bin/view/Main/Firmware%20Upgrade%20Instruction%20for%20STM32%20base%2**

6. FAQ

6.1 How can I access t BC660K-GL AT Commands?

User can access to BC660K-GL directly and send AT Commands.

See BC660K-GL AT Command set (https://www.dropbox.com/sh/5f6ssda5fum8rvs/AABT68l8ZzWOvZ5eg2qwOoFda?dl=0)

7. Trouble Shooting

7.1 Why does the sensor reading show 0 or "No sensor"

1. The measurement object is very close to the sensor, but in the blind spot of the sensor.

2. Sensor wiring is disconnected

3. Not using the correct decoder

8. Order Info

8.1 Main Device DDS04-NB

Part Number: **DDS04-NB-XX**

XX:

- **GE**: General version (Exclude SIM card)
- **1D**: with 1NCE* 10 years 500MB SIM card and Pre-configure to DataCake server

1NCE SIM Card NB-IoT network coverage: Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Finland, Germany, Great Britain, Greece, Hungary, Ireland, It
Islands

8.2 Probe Model

Detail See Probe Option Section

- A01A-15
- A02-15
- A13-15
- A16-15

9. Packing Info

Package Includes:

- DDS04-NB NB-IoT 4-Channels Distance Detection sensor x 1
- 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

10. Support

- 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 answer
- 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

♥ 0   Tags:

No comments for this page