# DC410 Smart Manhole Cover _LoRaWAN

# Configuration Manual

**V2.0**

**Date :2020-7-31**

# Revision

**V2.0** Modify the hardware version.

**V1.1** Modify the angle alarm threshold and working mode.

**V1.0** Initial version.

# Index

# 1 Overview

This document describes the hardware interface and the way to modify device parameters through the serial port, such as cycle upload interval, alarm threshold, and LoRaWAN parameters through serial port, such as deveui,appeui,band frequency, and so on.

# 2 DC410 Device Interface Definition

The detailed of power interface , uart interface, as shown in figure2.1.

● **Power socket**: Connect to the battery.

●**UART interface**:This interface is used to configure device parameters (data upload interval, etc.), configure LoRaWAN parameters (Deveui, Appkey, frequency,etc.)or device debugging.
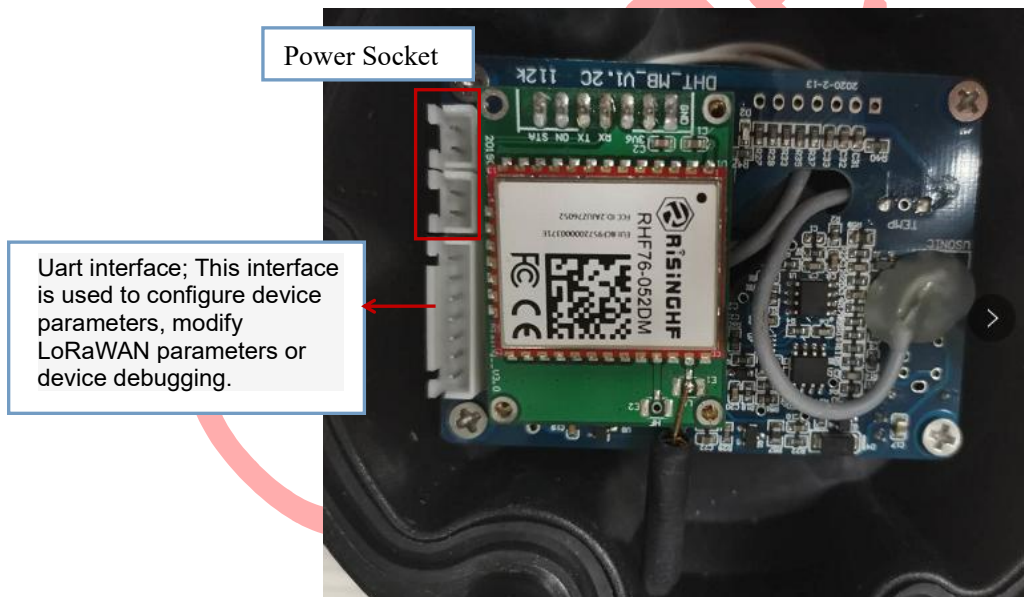
Power Socket

Uart interface; This interface is used to configure device parameters, modify LoRaWAN parameters or device debugging.



Figure2.1

# 3 Modify device parameters or LoRaWAN parameters

The configuration process you can modify the relevant parameters of the device such as upload time, alarm threshold ..

## 3.1 Required tools

**Required tools for configuration of LoRaWAN Device:**

- ●TTL tool and its cables, as shown in Figure2.1 and Figure2.2.
- ●Serial software
- ●Equipment

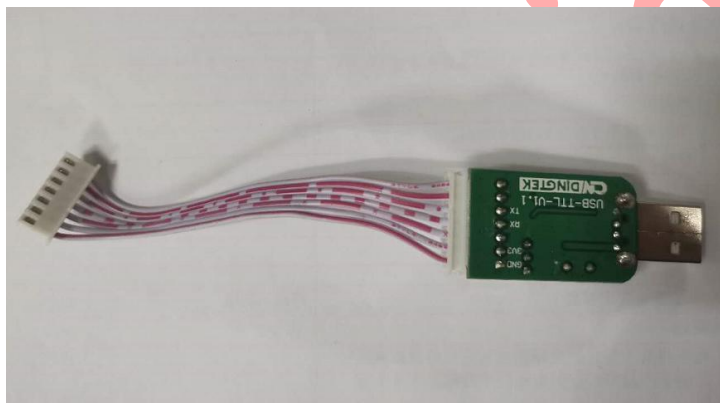    Note: the TTL tool we sent may be different with the picture.



Figure3.1                                        Figure3.2

Serial software:  , If you have other COM software,you  can also use your own.

## 3.2 Connect  TTL tool to sensor

Steps:

1 Connect TTL to sensor, as shown in figure3.4, e.g: figure3.5. Device serial port definition: GND, TX and RX positions have been marked on the diagram. as shown in figure3.3.

Figure3.3

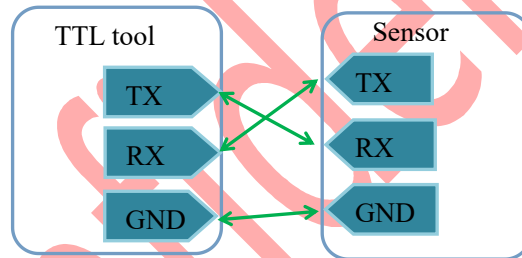TTL and device connection as shown in figure 3.4:



Figure3.4

Figure3.5

## 3.3 Configuring Device parameters(upload time…)

1 Open the serial software when opening, the default information of serial port software is shown in figure 3.6.

**Port number** ( you can select port Number from device manager of your system)

**Set the baud rate**: 115200

**Parity bit**: NONE

**Data bits**: 8
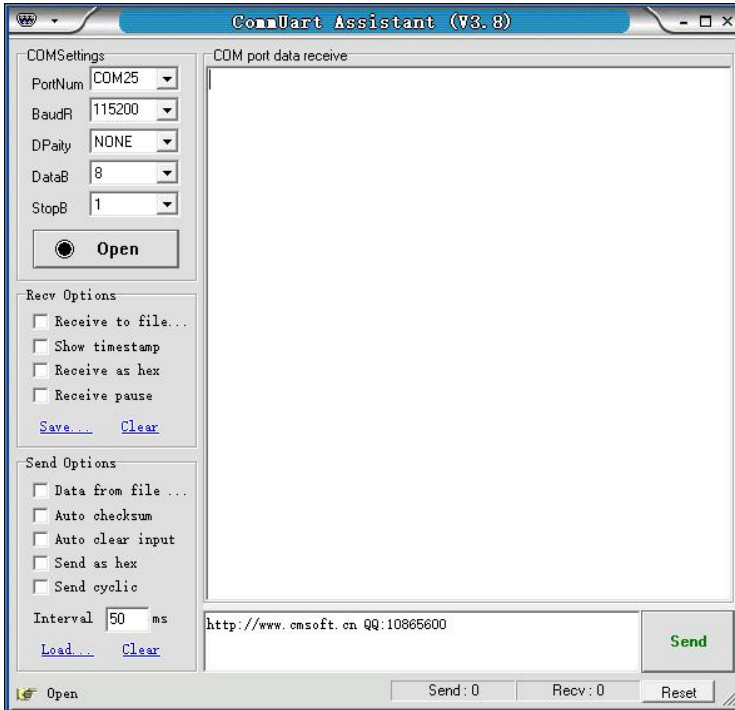
**Stop bit**: 1

Figure3.6 Interface by default
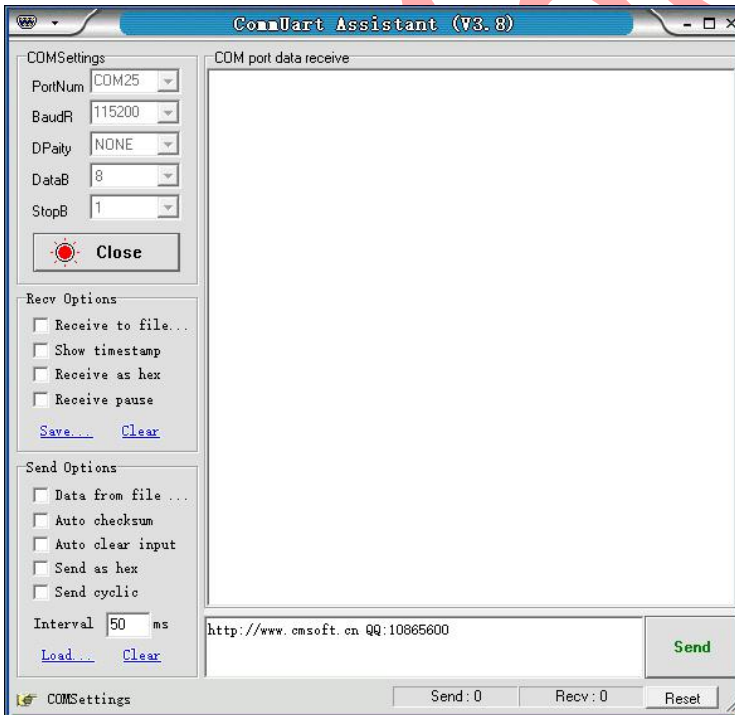


Figure3.7 Parameters setting

![logo](CN DINGTEK)

## 2 Power on

Power DC410 sensor on, or restart sensor by magnet.

## 3 Send command

When the battery is connected, you can see some information output from the serial port. At this point, the device starts working and can send commands. At this time, the corresponding parameters can be configured to configure the required parameters.

Note: when the serial show "sleep",mean that the sensor have come into sleep mode Sending instructions at this time is invalid.so you need to restart the sensor by re-plugging battery or using magnet.

## For example 1: change upload time to an hour

The command is: 80029999010181, as shown in figure3.9,

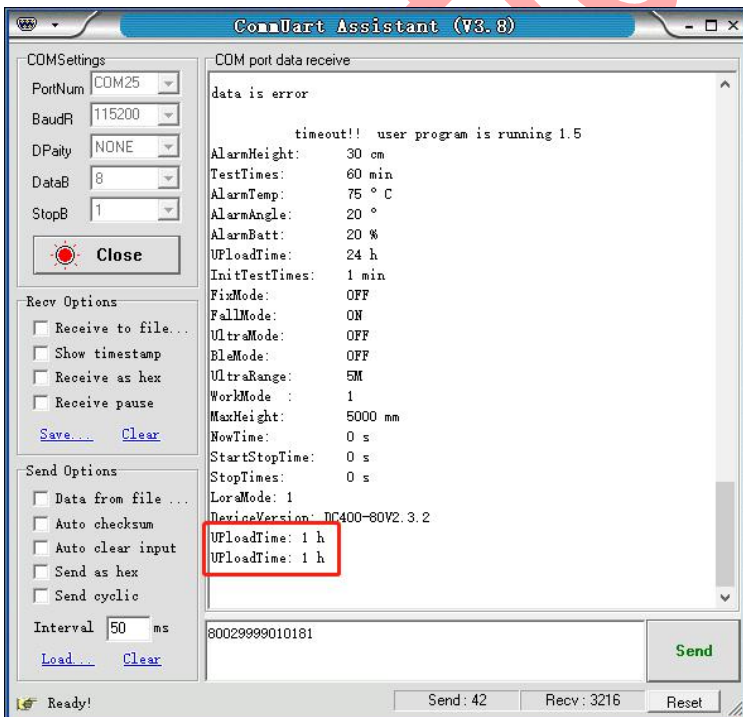Serial port response: UPloadTime: 1 h, indicating that the upload time was modified successfully

Figure3.9

Notes:

1 After the device enters sleep mode, the sending command is invalid;
2 Check whether the RX and TX of the TTL and the device are correctly connected. If the connection is reversed, no output is displayed on the serial port after the device is powered on, and the device can not be configured.

3 If you want to change other parameters,please send the corresponding command in the same way. Please refer to the product protocol for detailed command instructions.

## 3.4 Configuring LoRaWAN parameters (DevEui, Appkey, Appeui, band...)

After completing the two steps 3.1 and 3.2, you can refer to this step to configure the corresponding parameters of LoRaWAN through the serial port software, such as frequency band, deveui, appeui, appkey, and so on.

**1 serial port software parameter setting**

Open the serial port software. The default serial port information is shown in Figure 3.10.
The parameters required for the DC410 serial port are shown in Figure 3.11;

   **Port number** ( you can select port Number from device manager of your system)
   **Set the baud rate**: 115200
   **Parity bit**: NONE
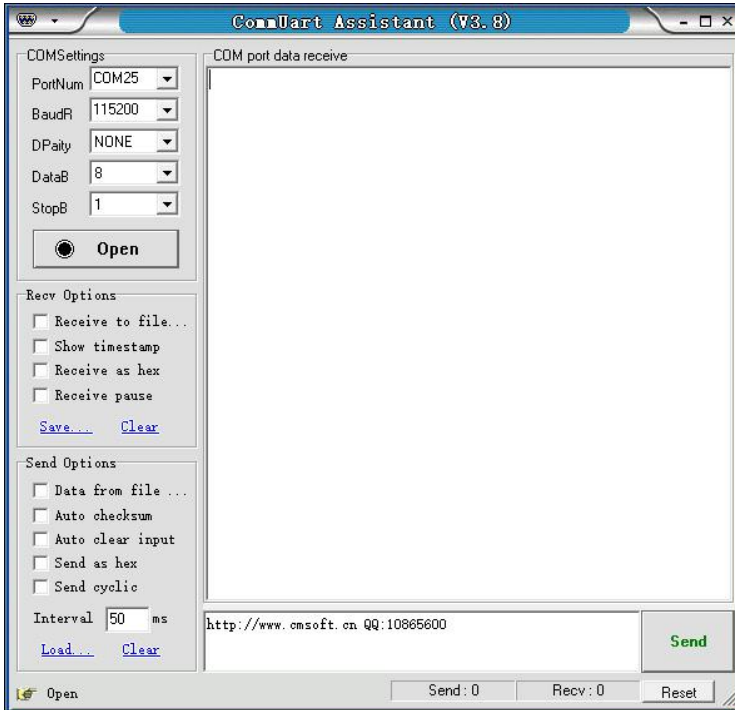   **Data bits**: 8
   **Stop bit**: 1
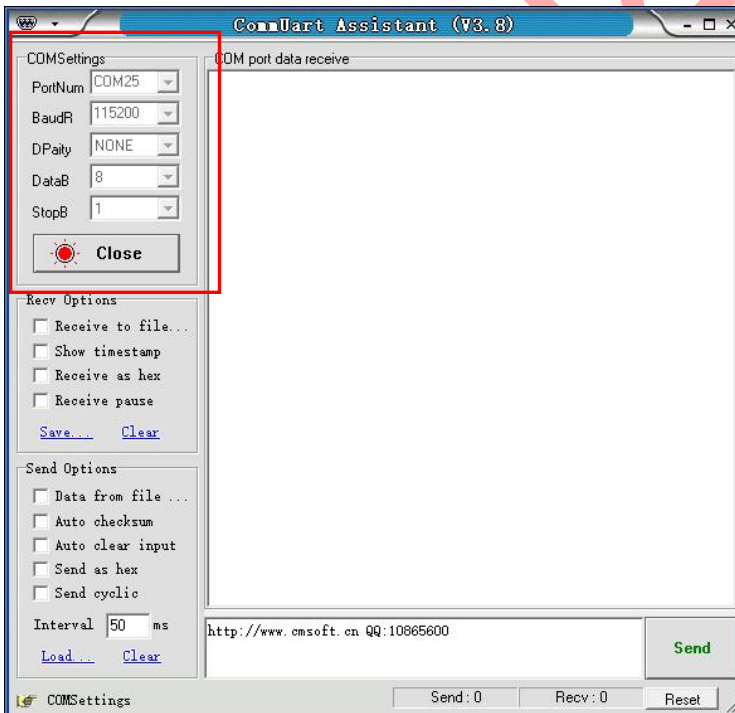
Figure3.10 Interface by default



Figure3.11 parameters setting

## 2 Connect the device's power(battery)

Power DC410 sensor on, or restart sensor by magnet.

## 3 Enter the configuration LoRaWAN parameter mode

1)Send command@; Input the command @ in the serial port and send @ cyclically at 50ms interval;as shown in Figure 3.13;

2) Restart sensor; Use the magnet to restart the device and receive the information shown in Figure 3.14;

3)Send 1, and the information shown in Figure 3.15 is received;

4)According to the prompt, switch the port baud rate to 9600, and then start sending the corresponding AT command to configure the LoRaWAN parameters, as shown in Figure 3.16-3.17.
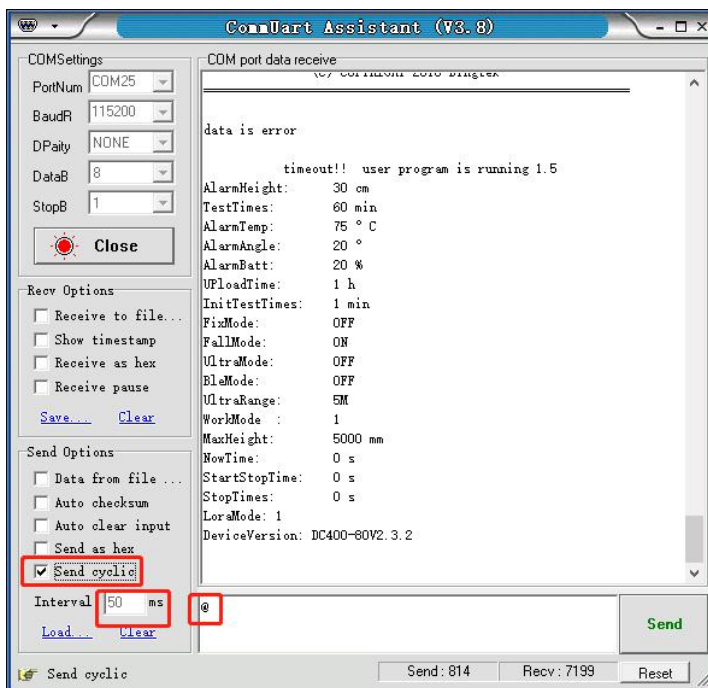


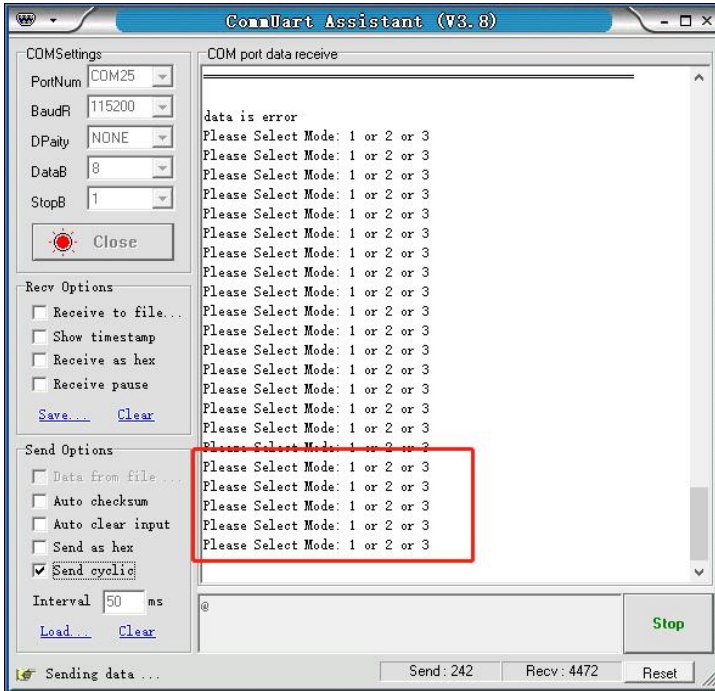Figure 3.13 Cyclic send command @
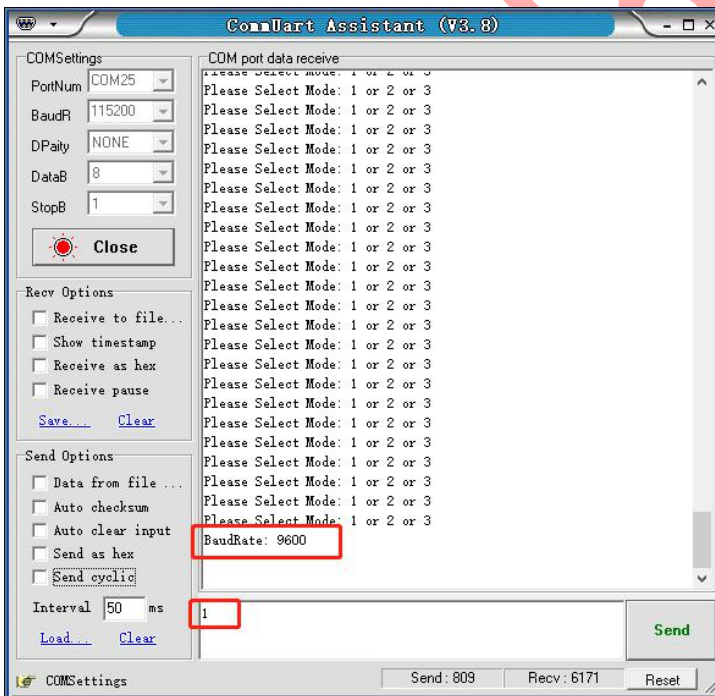
Figure 3.14 Information after restarting the device



Figure 3.15 Information after sending instruction 1
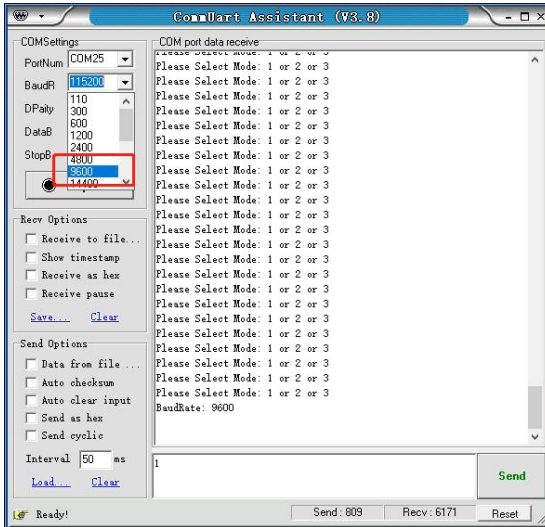
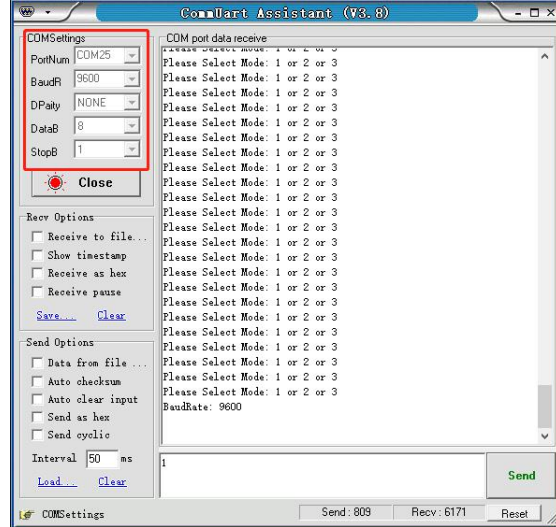Figure 3.16 Switching baud rate                    Figure 3.17 Switching baud rate

**Example 1: Reading LoRaWAN parameters**

Command:AT+ID

Enter the command in the serial port software, click Enter, and click Send, as shown in Figure 3.18.

Reply:

+ID: DevAddr, 00:00:36:F6

+ID: DevEui, 8C:F9:57:20:00:00:36:F6
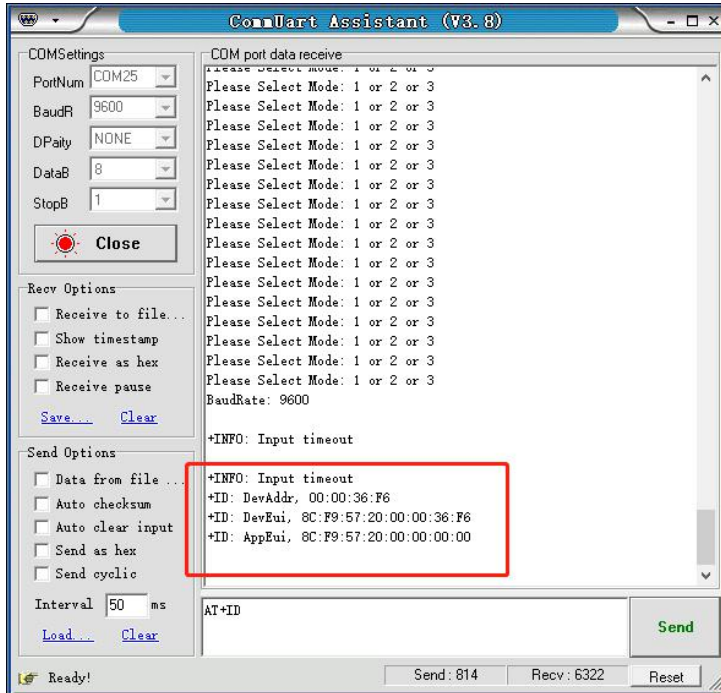
+ID: AppEui, 8C:F9:57:20:00:00:00:00

Figure 3.18 Reading LoRaWAN Module Parameters

Notes:

1 If you need to configure other LoRaWAN parameters, such as DevEui, AppEui, etc., send the corresponding command on this serial port. For details of other instructions, please refer to the LoRaWAN module AT command manual.

2 After configuring the LoRaWAN parameter and restarting the device with a magnet, you can exit the configuration of the LoRaWAN parameter mode to make it work normally.