



# TL904D User Manual

Version: V1.0

## Catalog

|   |    |
|---|----|
| 1 Introduction .....  | 3  |
| 2 Abbreviation .....  | 3  |
| 3 Illustration.....   | 3  |
| 4 Operating of device.....  | 4  |
| 4.1 Overview.....   | 4  |
| 4.2 Insert SIM card .....   | 4  |
| 4.3 <b>Install driver for USB serial cable (Windows 10)</b> ..... | 5  |
| 4.4 <b>Turn on the tracker device</b> .....                       | 7  |
| 4.5 Open serial command shell.....                                | 7  |
| 4.6 <b>Configure parameters for data connection</b> .....         | 10 |
| 4.7 Config target platform of data reporting .....                | 11 |
| 5 Platform.....   | 12 |
| 6 Configure Commands.....   | 12 |
| 6.1 by Serial Port.....   | 12 |
| 6.1.1 configget.....  | 12 |
| 6.1.2 configset.....  | 12 |
| 6.1.3 configreset.....  | 12 |
| 6.1.4 configallget .....  | 14 |
| 6.1.5 configallreset .....  | 14 |
| 6.1.6 factory.....  | 14 |
| 6.1.7 reboot .....  | 14 |
| 6.1.8 gsenset.....  | 14 |
| 6.1.9 gsenget.....  | 15 |
| 6.2 by SMS .....  | 15 |
| 6.2.1 Parameter Setting .....                                     | 15 |
| 6.2.2 Query Parameter.....  | 15 |
| 6.2.3 reboot .....  | 16 |
| 6.2.4 factory.....  | 16 |
| 6.2.5 Get position .....  | 17 |
| 6.2.6 Update Firmware.....  | 17 |
| 7 Protocol Interpreting .....                                     | 18 |
| 8 Upgrade .....   | 21 |
| 8.1 Serial Tool Upgrade .....                                     | 21 |
| 8.2 FTP Upgrade .....   | 24 |
| 8.2.1 SMS Upgrade Command .....                                   | 24 |
| 8.2.2 Serial Shell Upgrade Command .....                          | 25 |
| 8.3 Online Confirmation.....                                      | 25 |
| 8.3.1 Equipment .....   | 25 |
| 8.3.2 Platform .....  | 25 |
| 9 Trouble Shooting.....   | 25 |
| 10 Appendix .....   | 26 |
| 10.1 List of Configure Commands.....                              | 26 |

# 1 Introduction

This document is the user manual of TL904D equipment provided by **Think Power** Technology Co., Ltd. which introduces examples of product startup, upgrade, online confirmation and protocol analysis.

## 2 Abbreviation

| Abbrev. | Extraction                |
|---------|---------------------------|
| GPS     | Global Positioning System |
| SMS     | Short Message Service     |

## 3 Illustration

| Indicator light        | Indicator status                         | Status   |
|------------------------|--|--|
| Green<br>GSM indicator | FLICKER QUICKLY<br>(100MS ON/400MS OFF)  | NETWORK SEARCHING                              |
|                        | ALWAYS OFF                               | SLEEP  |
|                        | ALWAYS ON                                | NETWORK CONNECTION<br>SUCCESSFUL               |
| Blue<br>GPS indicator  | FLICKER QUICKLY<br>(100MS ON/400MS OFF)  | GPS IS NOT FIX                                 |
|                        | ALWAYS ON                                | GPS FIX  |
|                        | ALWAYS OFF                               | GPS FAULTY                                     |
| Red<br>Power indicator | ALWAYS OFF                               | NO POWER, EQUIPMENT NOT<br>WORKING, SLEEP, ETC |
|                        | ALWAYS ON                                | THE POWER SUPPLY IS NORMAL                     |
|                        | FLICKER SLOWLY<br>(1000MS ON/1000MS OFF) | CHARGE   |
|                        | FLICKER QUICKLY<br>(100MS ON/400MS OFF)  | LOW ELECTRICITY                                |

# 4 Operating of device

## 4.1 Overview

|        |  |
|--------|--|
| Step 1 | Install SIM card                                 |
| Step 2 | Install driver for USB serial cable (Windows 10) |
| Step 3 | Turn on tracker device                           |
| Step 4 | Open serial command shell                        |
| Step 5 | Configure parameters for data connection         |
| Step 6 | Configure target platform for data reporting     |

## 4.2 Install SIM card

- 1) Acquire & prepare Nano SIM card (Shown as Figure 4-1) from your local telecom operator.



Figure 4-1 Green right Nano SIM card

- 2) Open the rear cover of the TL904D (Figure 4-2) with a screwdriver.



Figure 4-2 rear cover of TL904D

- 3) Open the SIM card cover, put the SIM card in and cover it.  
<take a photo here>
- 4) Re-screws rear cover of the TL904D.

### 4.3 Install driver for USB serial cable (Windows 10)

1. Turn on the PC for Windows 10 and plug in the USB serial cable;
2. Download CH341SER.zip and extract it into a folder for later using;
3. Right click CH341SER.EXE and select 'Run as administrator' from the pop-up menu to start the install program of driver;
4. Click **INSTALL** button shown as Figure 4-3;

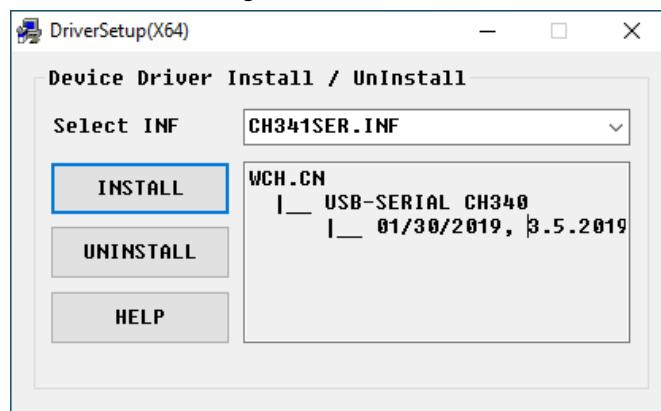


Figure 4-3 CH340 / CH341 device driver install program

5. After successful installation you should see this message.

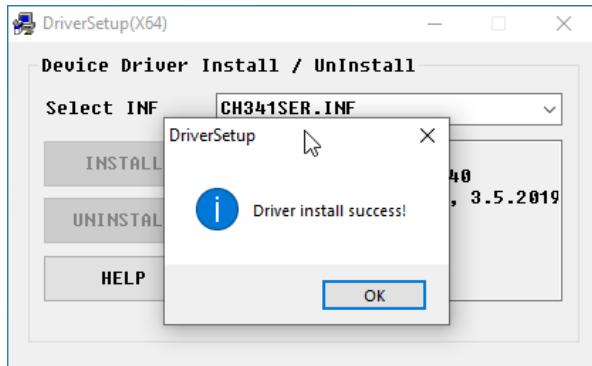


Figure 4-4 CH340 / CH341 device driver install success



### Note

In some cases, you may need to restart Windows after the driver installation is complete.

## 6. Checking Correct Driver Installation in Device Manager

If your driver has been installed correctly, and if you connect your board to a computer, then you can see its name and port number in the Port section. For example, my tracker device is connected to COM7 (Figure 4-5, the actual sequence No. of COM maybe varied).

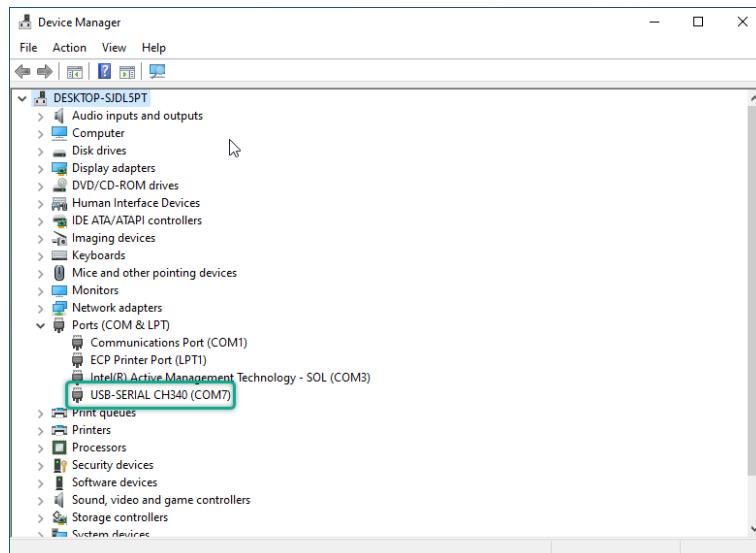


Figure 4-5 USB-SERIAL in device manager (Windows 10)



### Success

At this point, you have successfully installed the driver for USB serial cable correctly, and from now on you can easily run shell command through 'Serial Port Utility'.

## 4.4 Turn on the tracker device

Open the rubber plug at the side, press and hold power button for about 4 seconds until the power indicator (*RED led on front panel*) lights up.



## 4.5 Open serial command shell

Serial Port Utility is a tool help read information and write command between PC and tracker device (TL904D). This chapter will help setup the command shell environment step by step.

- 1) Connect the USB serial cable between PC and the tracker device (TL904D);  
<take a photo here>
- 2) Download 'Serial Port Utility.zip' and extract it into a local folder, then double click SerialPortUtility.exe to start the program. (Shown as Figure 4-6)

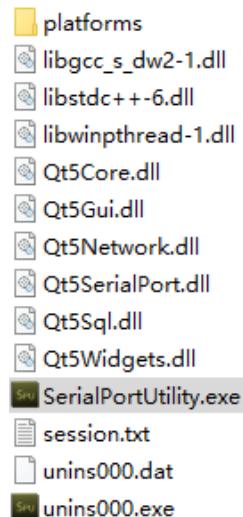


Figure 4-6 Files list of Serial Port Utility

- 3) If SerialPortUtility.exe is running for the first time on a PC, a register window will pop up, just ignore it by click 'Register Later' button; (Show as Figure 4-7)

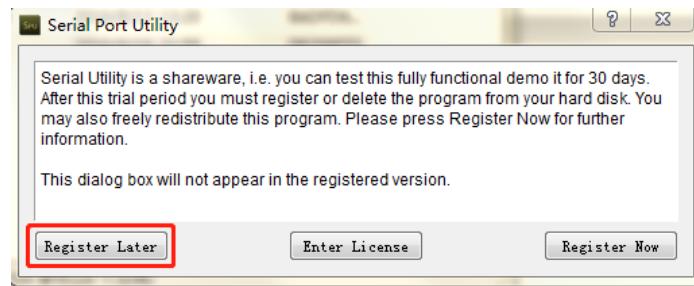


Figure 4-7 Register Window of Serial Port Utility

4) The main window will show as Figure 4-8, it contains 4 function regions: top toolbar, left sidebar, output region and input region;

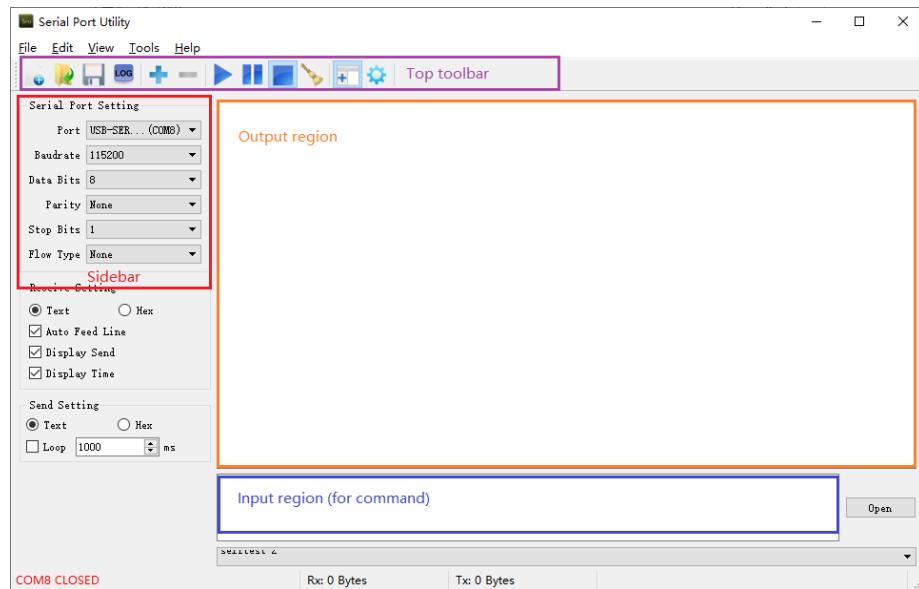


Figure 4-8 Overview of Serial Port Utility

5) Choose correct COM port from left tool sidebar (Figure 4-9), the sequence No. of COM port is got when the driver of USB serial cable is installed success. 【4.3 Install driver for USB serial cable (Windows 10)】

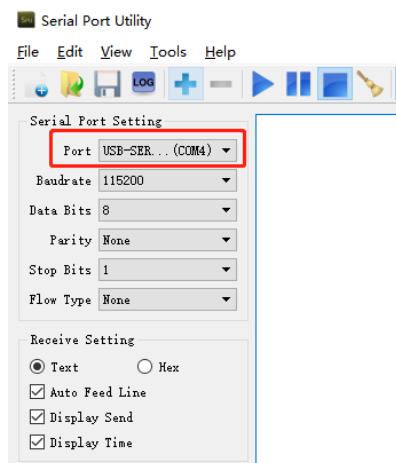


Figure 4-9 Choose correct serial port

- 6) Ensure 'Baudrate' of the COM port is 115200 bps;
- 7) Click the start button (▶) on top toolbar of main window, Serial Port Utility will start listening and printing the serial communication between the PC and the tracker device.

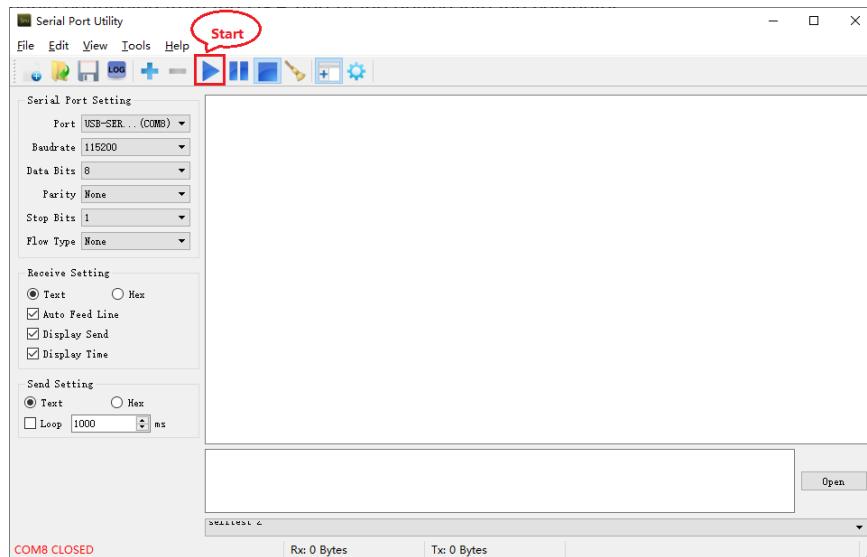


Figure 4-10 'Start' button on top toolbar

- 8) Click the input region and enter command string here, extra 'RETURN' key-in must require at the end of command line (or not the command will be ignored when received by the tracker device). Input command and send it to the tracker device (TL904D), most of commands will be back instantly; (Shown as Figure 4-11)

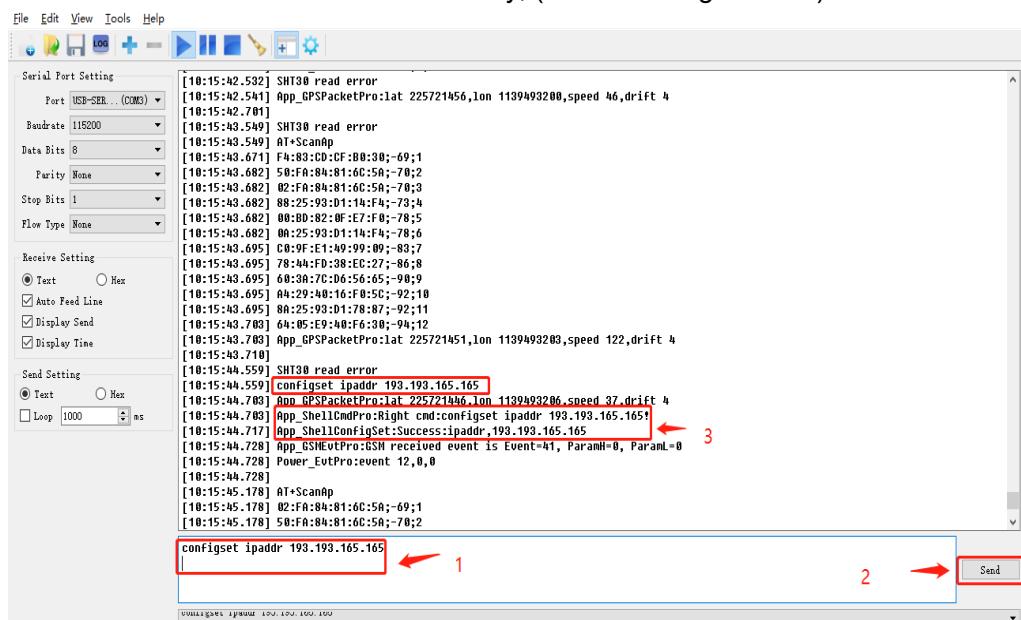


Figure 4-11 Input command and send out on Shell



### Note

Each input command must be end with hard 'RETURN' key-in.

9) The contents on output region can be saved as file for further analyzing. Click “Settings→Log”, The saved file name and path can be changed as your prefer.

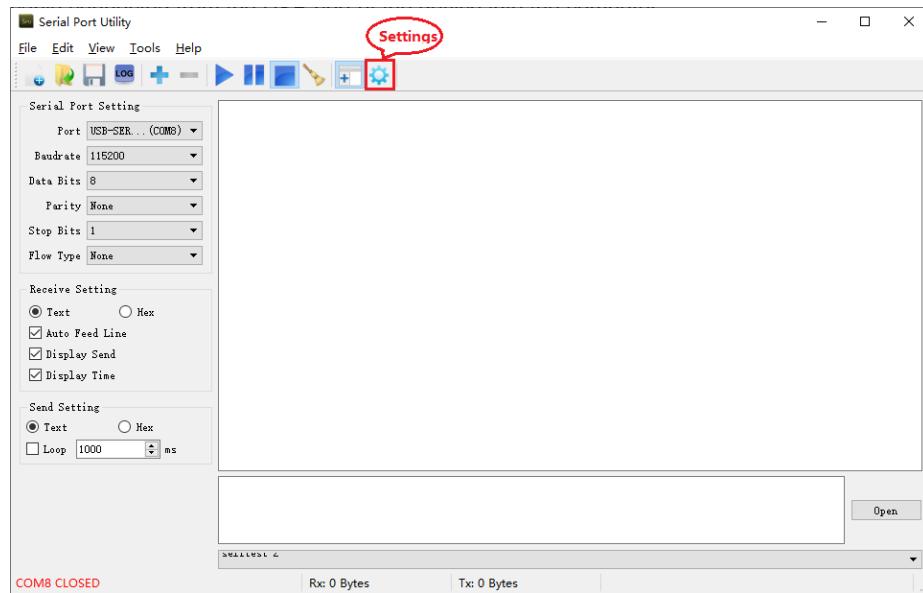


Figure 4-12 open ‘Settings’ window

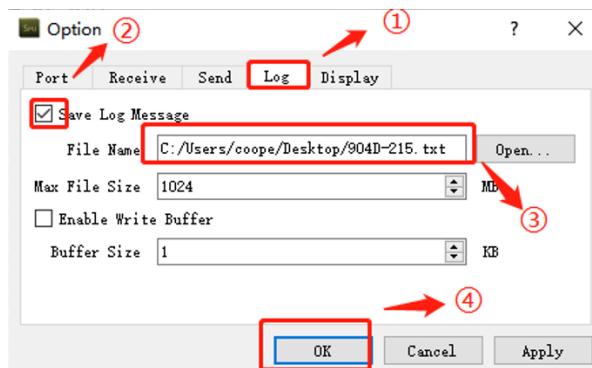


Figure 4-13 Settings for saving log message as file

## 4.6 Configure parameters for data connection

APN is the Name of Access Point when attach to cellular service. Although it is not necessary to set it most of the time, when the device encounters connectivity problems, setting the correct APN can help eliminate the cause of the problem. Chapter 4.6 help configure APN name and check if the config take effect or not.

- 1) Configure APN name

```
configset apnname cmnet
```

 **Note**

Please replace 'cmnet' with your own.

- 2) Check APN name

```
configset apnname
```

 **Note**

Please check the return apnname if it's the same with your setting.

 **Note**

Common APNs collection:

| Area          | Operator       | APN          |
|---------------|----------------|--------------|
| North America | Verizon native | VZW.INTERNET |
| North America | AT&T native    | data641003   |

For more APNs, please consult the local operator or service provider.

## 4.7 Configure target platform for data reporting

Target platform is the destination server for data reporting of tracker device. A full setting for platform server contains IP address (or domain name) and related port. Chapter 4.7 help configure those two parameters and check if the config take effect or not.

- 1) Configure platform server IP address (or domain name)

```
configset ipaddr 1.2.3.4
```

```
configset ipaddr data.example.com
```

 **Note**

Please replace '1.2.3.4' or 'data.example.com' with your own.

- 2) Configure platform server port

```
configset port 1000
```

**Note**

Please replace '1000' with your own.

- 3) Check platform server IP address (or domain name) you configured.

`configget ipaddr`

- 4) Check platform server port you configured.

`configget port`

## 5 Example data reporting platform

**Note**

Please refer to *Flespi Use Tutorial*.

## 6 Configure Commands

### 6.1 by Serial Port

#### 6.1.1 configget / configset /configreset

`configget [option]`

`configset [option] [value ...]`

`configreset [option]`

`configget`

Read configure entry.

`configset`

Write configure entry with assigned value.

`configreset`

Reset configure entry with default value.

`[option]`

The configure entry to be get or (re)set, refer to **list of options below** for more details.

`[value]`

The value of option, it can be absent, 1, or more according to the claim of option.

#### List of options (name-range-comments)

`swversion`

Firmware version(get only)

`sn`

IMEI of device(get only)

`password`

Password of device

`ipaddr`

IP address of platform server

`port`

1~65535

TCP port of platform server

`heartbeatidletime`

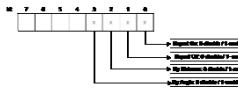
10~65

Interval of heartbeat,unit:s

`heartbeattimeout`

10~65

timeout of heartbeat,unit:s

|                       |  |   |
|-----------------------|--|---|
| ftppipaddr            |  | IP address or domain name of ftp server           |
| ftpurl                |  | Full pathname to firmware storage on ftp server   |
| ftpuser               |  | Username to access ftp server                     |
| ftppass               |  | Password to access ftp server                     |
| apnname               |  | Name string of APN                                |
| apnusername           |  | Username of APN                                   |
| apnpassword           |  | Password of APN                                   |
| sos                   |  | 1st SOS phone                                     |
| sos1                  |  | 2nd SOS phone                                     |
| sos2                  |  | 3rd SOS phone                                     |
| sos3                  |  | 4th SOS phone                                     |
| soswarn               |  | switch for SOS warning, 0 disable, 1 enable       |
| automonitor           |  | Call mode, 1-monitor, 0-two-way                   |
| smsfunc               |  | SMS function switch, 0-OFF, 1-ON                  |
| gsensorxsens          | 16~3985  | collision threshold of X-axis,unit:mg             |
| gsensorysens          | 16~3985  | collision threshold of Y-axis,unit:mg             |
| gsensorzsens          | 16~3985  | collision threshold of Z-axis,unit:mg             |
| gsensorcollisionsens  | 16~3985  | Sensitive for collision,unit:mg                   |
| gsensorcollisionwarn  |  | Switch for collision warning, 0-disable, 1-enable |
| gsensorwakupthreshold | 16~3985  | Threshold for wakeup,unit:mg                      |
| gsensorwakupcount     | 0~10000  | Wakeup count time,unit:ms                         |
| highgthreshold        | 16~3985  | High-G threshold,unit:mg                          |
| highgcount            | 0~2500   | High-G count time,unit:ms                         |
| offlinefunc           |  | Switch for temporary storage when offline         |
| reportmode            |  A diagram showing a 16-bit register with labels for bit 15 to bit 0. Bit 15 is labeled 'Report Mode Bitmask'. Bits 14 to 11 are labeled 'Report X-axis Position 1 mask'. Bits 10 to 7 are labeled 'Report Y-axis Position 1 mask'. Bits 6 to 3 are labeled 'Report Z-axis Position 1 mask'. Bits 2 to 0 are labeled 'Report High-G Position 1 mask'. | Report mode by bit offset                         |
| reportoninterval      | 5~86400  | Report interval on wakeup,unit:s                  |
| reportoffinterval     | 10~86400   | Report interval on sleep,unit:s                   |
| reportdistance        | 20~10000   | Report distance,unit:m                            |
| speedingwarn          |  | Switch for overspeed warning, 0-no, 1-yes         |
| speedingthreshold     | 1~150  | Threshold to overspeed,unit:K/h                   |
| speedwarnduratetime   |  | Report interval on overspeed                      |
| reportangle           | 10~359   | Threshold to angle change                         |
| gpsstatechangerep     |  | switch for GNSS status change, 0-ignore, 1-report |
| geofencefunc          |  | Switch for Geofence support, 0-disable, 1-enable  |
| hightempvalue         |  | Temperature alarm threshold                       |
| highhumivalue         |  | Humidity alarm threshold                          |
| lowpowerwarn          |  | Low power alarm switch, 0-disable, 1-enable       |
| powersafemode         |  | Anti illegal shutdown mode. 0-off, 1-on           |
| antitheftfunc         |  | Bluetooth anti loss function. 0-off, 1-on         |
| batteryreportfunc     |  | Voltage reporting percentage.0-off, 1-on          |
| btkey                 |  | BLE paring key                                    |
| btscantimeout         |  | Bluetooth scanning time threshold                 |
| btsn1                 |  | 1st SN of slave                                   |
| btsn2                 |  | 2nd SN of slave                                   |
| btsn3                 |  | 3rd SN of slave                                   |

|       |                 |
|-------|-----------------|
| btsn4 | 4th SN of slave |
| btsn5 | 5th SN of slave |
| btsn6 | 6th SN of slave |
| btsn7 | 7th SN of slave |
| btsn8 | 8th SN of slave |

**Examples (configset)**

|   |                                      |
|---|--------------------------------------|
| <i>configset ipaddr 193.193.165.165</i> | Set IP address to 193.193.165.165    |
| <i>configset port 21610</i>             | Set Port to 21610                    |
| <i>configset reportoninterval 10</i>    | Set reporting interval to 10 seconds |

## 6.1.2 configallget / configallreset

*configallget*  
*configallreset*

*configallget*      Read all configuration entries.  
*configallreset*      Reset all configuration entries with default value.

**Examples**

*configallget*      list all configurations of device(Serial port only).  
*configallreset*      Restore all configurations of device to default.

## 6.1.3 factory

*factory*      restore all configurations of device to factory.

## 6.1.4 reboot

*reboot*      Reset device

## 6.1.5 gsenset

*gsenset 8 300 100 1000 60*      Set group settings for wak-up(anonymous parameter list)  
param 1st - rangeSel  
param2nd- wakeupthd  
Param3rd- wakeupCnt  
param 4th - highThd  
param 5th - highcount

## 6.1.6 gsenget

*gsenget*

Get group settings for wake-up.

## 6.2 by SMS

This is of the form:

**\$password conf get [options]**  
**\$password conf set [options] [\$value]**

### 6.2.1 Parameter Setting

description: set parameter value according to parameter name.

format:

**\$password conf set <parameter-name> <parameter-value>**

**tracker return response(correct):**

IMEI,executed,<parameter-name> conf

**tracker return response(wrong):**

IMEI,fail,<parameter-name> conf

**example:**

*123456 conf set apnname internet*

**tracker return response:**

[IMEI],executed,apnname conf

### 6.2.2 Query Parameter

description:query the parameter value.

format:

**\$password conf get <parameter-name>**

**tracker return response(correct):**  
<parameter-name>,<parameter-value>,IMEI,executed,conf

**tracker return response(wrong):**  
<parameter-name>,IMEI,fail,conf

**example:**

*123456 conf get apnname*

**tracker return response:**  
apnname,[apnname],[IMEI],executed conf

### 6.2.3 reboot

description:reset the unit.

format:

**\$password reboot**

**tracker return response:**  
IMEI,executed,reboot

**example:**

*123456 reboot*

**tracker return response:**  
[IMEI],executed,reboot

### 6.2.4 factory

description:factory reset.

format:

**\$password factory**

**tracker return response:**  
IMEI,executed,factory

**example:**

123456 *factory*

**tracker return response:**

[IMEI],executed,factory

## 6.2.5 Get position

description:get current position.

format:

**\$password pos**

**tracker return response:**

[https://www.google.com/maps?q=\[lat\],\[lon\],IMEI,executed,pos](https://www.google.com/maps?q=[lat],[lon],IMEI,executed,pos)

**example:**

123456 *pos*

**tracker return response:**

[https://www.google.com/maps?q=\[lat\],\[lon\],IMEI,executed,pos](https://www.google.com/maps?q=[lat],[lon],IMEI,executed,pos)

## 6.2.6 Update Firmware

description:update firmware.

format:

**\$password update <parameter-firmwarename>**

**example:**

123456 update app

**tracker return response:**

First: <parameter-firmwarename>,IMEI, executed,update

Second:<parameter-firmwarename>,IMEI, success,update

Other: <parameter-firmwarename>,IMEI, update failed!Check file format error!

<parameter-firmwarename>,IMEI, update failed!Check file name error!

<parameter-firmwarename>,IMEI, update failed!Same version!

<parameter-firmwarename>,IMEI, update failed!Login Ftp server failed!

<parameter-firmwarename>,IMEI, update failed!Can't find the file!

<parameter-firmwarename>,IMEI, update failed!The file is empty!

<parameter-firmwarename>,IMEI, update failed!File get fail!

<parameter-firmwarename>,IMEI, update failed!The file path cannot be found!

<parameter-firmwarename>,IMEI, update failed!

## 7 Protocol Interpreting

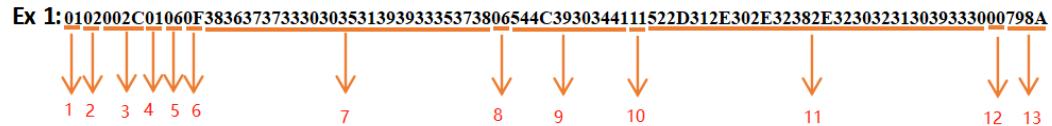
**The whole data consists of:**

| Message type | Packet identifier | Payload length | Payload data | CRC-16-CCITT |
|--------------|-------------------|----------------|--------------|--------------|
| 1 byte       | 1 byte            | 2 byte         | n byte       | 2 byte       |

**Ex1:**

0102002C01060F38363737333030353139393335373806544C3930344111522D312E302E32382E32303231303933300079

8A



|                    |                      |
|--------------------|----------------------|
| Message type:      | 1                    |
| Packet identifier: | 2                    |
| Payload length:    | 3                    |
| Payload data:      | 4,5,6,7,8,9,10,11,12 |
| CRC-16-CCITT:      | 13                   |

**The data is decomposed and parsed in order:**

<https://www.cnthinkpower.com>

|    | data                               | meaning                             |
|----|------------------------------------|-------------------------------------|
| 1  | 01                                 | Message type                        |
| 2  | 02                                 | Packet identifier                   |
| 3  | 002C                               | Payload length                      |
| 4  | 01                                 | Protocol major version              |
| 5  | 06                                 | Protocol minor version              |
| 6  | 0F                                 | IMEI length                         |
| 7  | 383637373330303531393933353738     | IMEI(867730051993578)               |
| 8  | 06                                 | Model length                        |
| 9  | 544C39303441                       | Model(TL904A)                       |
| 10 | 11                                 | Firmware version length             |
| 11 | 522D312E302E32382E3230323130393330 | Firmware version(R-1.0.28.20210930) |
| 12 | 00                                 | Password length                     |
| 13 | 798A                               | CRC-16-CCITT                        |

**Ex2:05590012016108E72A010D743C8843EB47D20000000032B4**

Ex2 : **05590012016108E72A010D743C8843EB47D20000000032B4**

↓    ↓    ↓    ↓    ↓    ↓    ↓    ↓  
 ①   ②   ③   ④   ⑤   ⑥   ⑦   ⑧

|                    |         |
|--------------------|---------|
| Message type:      | ①       |
| Packet identifier: | ②       |
| Payload length:    | ③       |
| Payload data:      | ④,⑤,⑥,⑦ |
| CRC-16-CCITT:      | ⑧       |

**The data is decomposed and parsed in order:**

|   | data | meaning           |
|---|------|-------------------|
| ① | 05   | Message type      |
| ② | 59   | Packet identifier |
| ③ | 0012 | Payload length    |

|   | data                     | meaning  |
|---|--------------------------|--|
| ④ | 01                       | Record count   |
| ⑤ | 6108E72A                 | Record timestamp   |
| ⑥ | 01                       | Value type(GPS Location)   |
| ⑦ | 0D743C8843EB47D200000000 | Value(0D743C88--Latitude;43EB47D2--Longitude;0000--Speed;0000--Directon) |
| ⑧ | 32B4                     | CRC-16-CCITT   |

Ex3:051800160361D501DE0112304F644810B8A800000000146456016F3D

Ex3 : 051800160361D501DE0112304F644810B8A800000000146456016F3D  


|                    |                   |
|--------------------|-------------------|
| Message type:      | 1                 |
| Packet identifier: | 2                 |
| Payload length:    | 3                 |
| Payload data:      | 4,5,6,7,8,9,10,11 |
| CRC-16-CCITT:      | 12                |

The data is decomposed and parsed in order:

|    | data             | meaning  |
|----|------------------|--|
| 1  | 05               | Message type   |
| 2  | 18               | Packet identifier  |
| 3  | 0016             | Payload length   |
| 4  | 03               | Record count   |
| 5  | 61D501DE         | Record timestamp   |
| 6  | 01               | Value type(GPS Location)   |
| 7  | 12304F644810B8A8 | Value(12304F64--Latitude;4810B8A8--Longitude;0000--Speed;0000--Directon) |
| 8  | 14               | Value type(Percentage of remaining battery)                              |
| 9  | 64               | Value(0x64 = Percentage of remaining battery in %)                       |
| 10 | 56               | Value type(Lbs state)  |
| 11 | 01               | Value(0x01 = location success)   |
| 12 | 6F3D             | CRC-16-CCITT   |

Note: See *tracker Protocol* for details.

## 8 Upgrade

### 8.1 Serial Tool Upgrade

The debug cable connects the device to the computer port and opens the serial port upgrade tool ComDebug as shown in Figure 2 below.



Figure 2

Open Port, Open Firmware, See Figure 3 below.

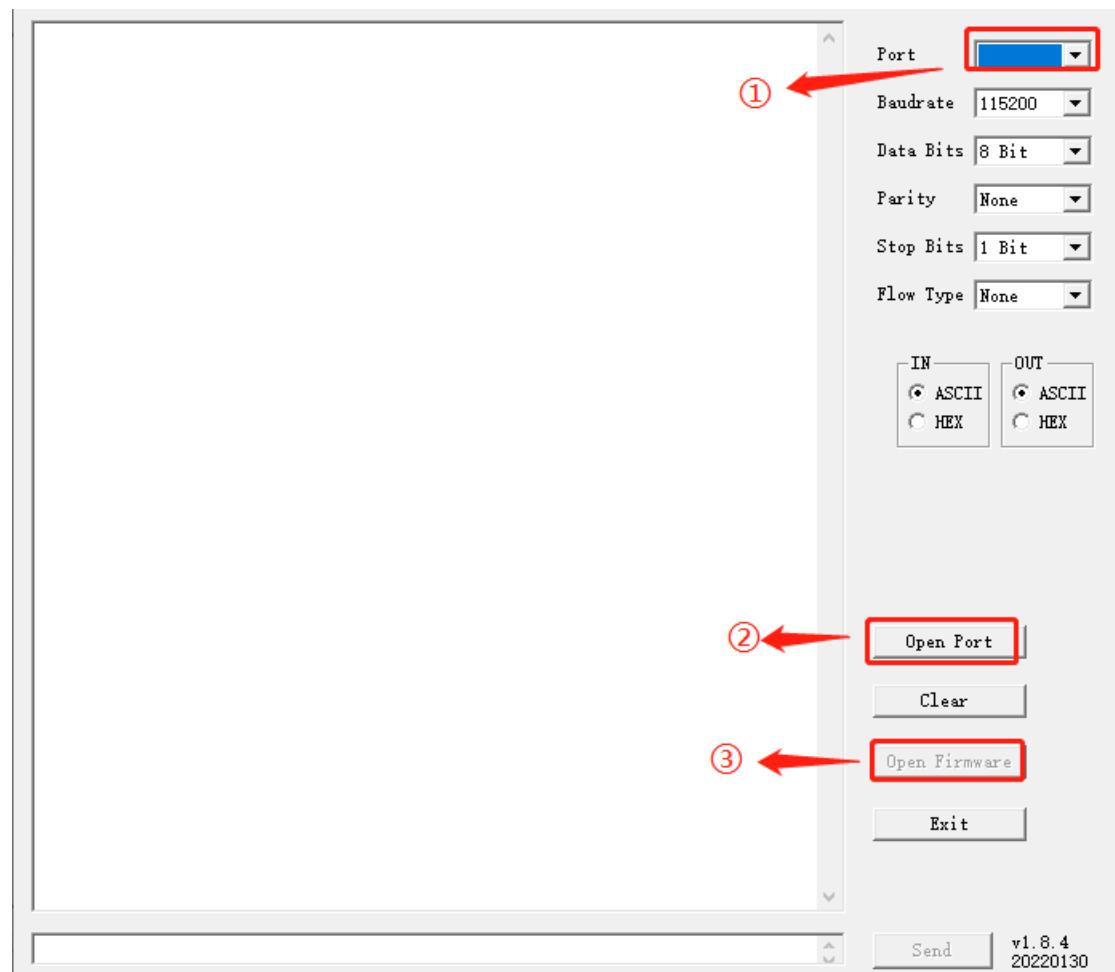


Figure 3

Select the upgrade file and click Open, see Figure 4 below.

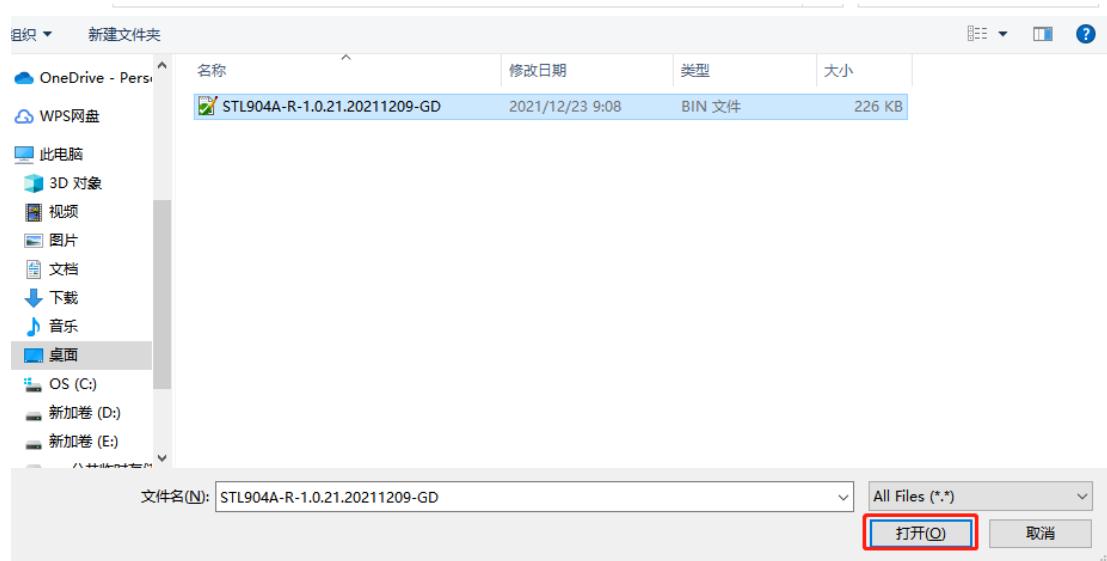


Figure 4

Click to start the upgrade as shown in Figure 5 below.

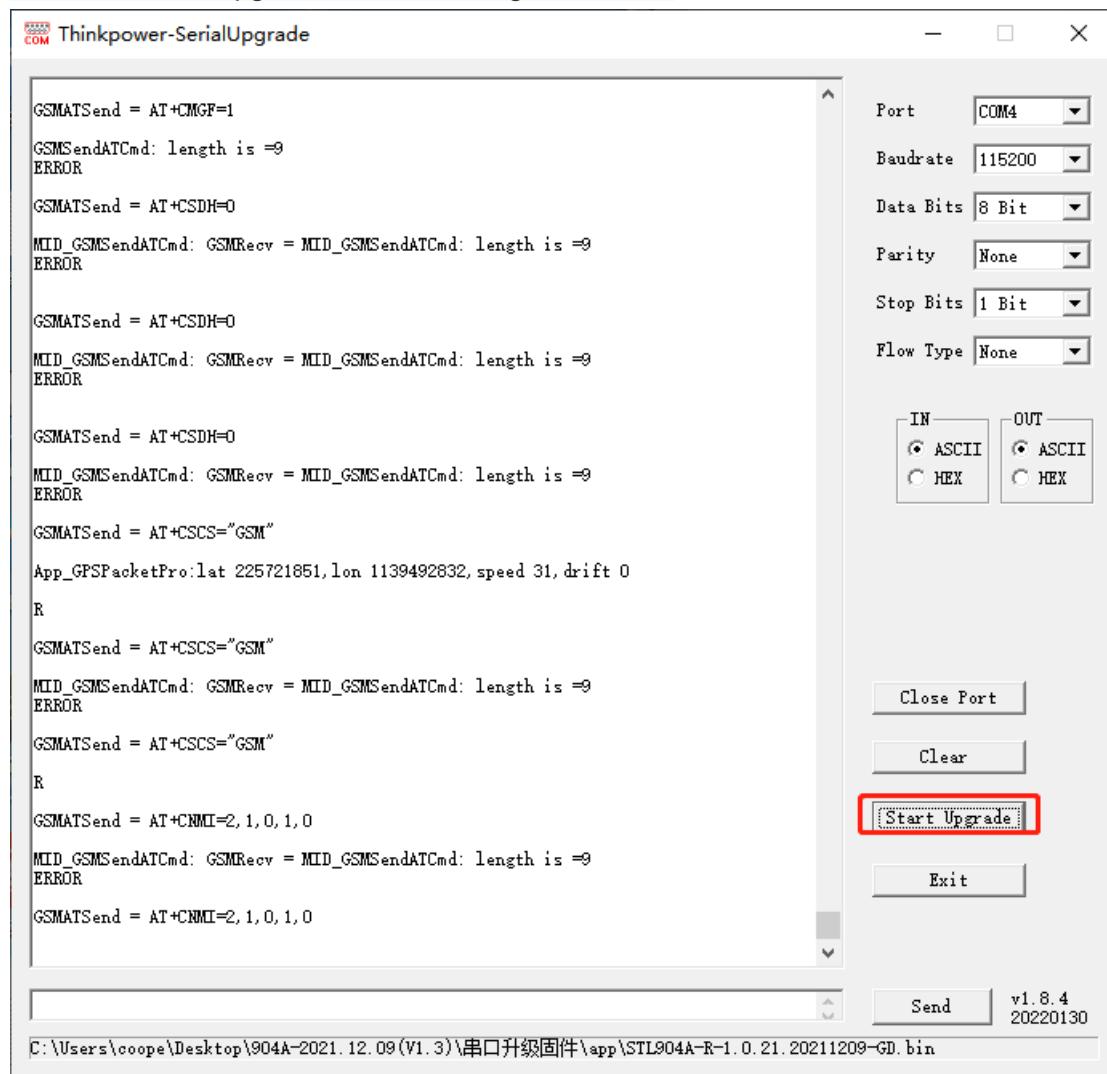


Figure 5

Upgrade progress, see Figure 6 below.

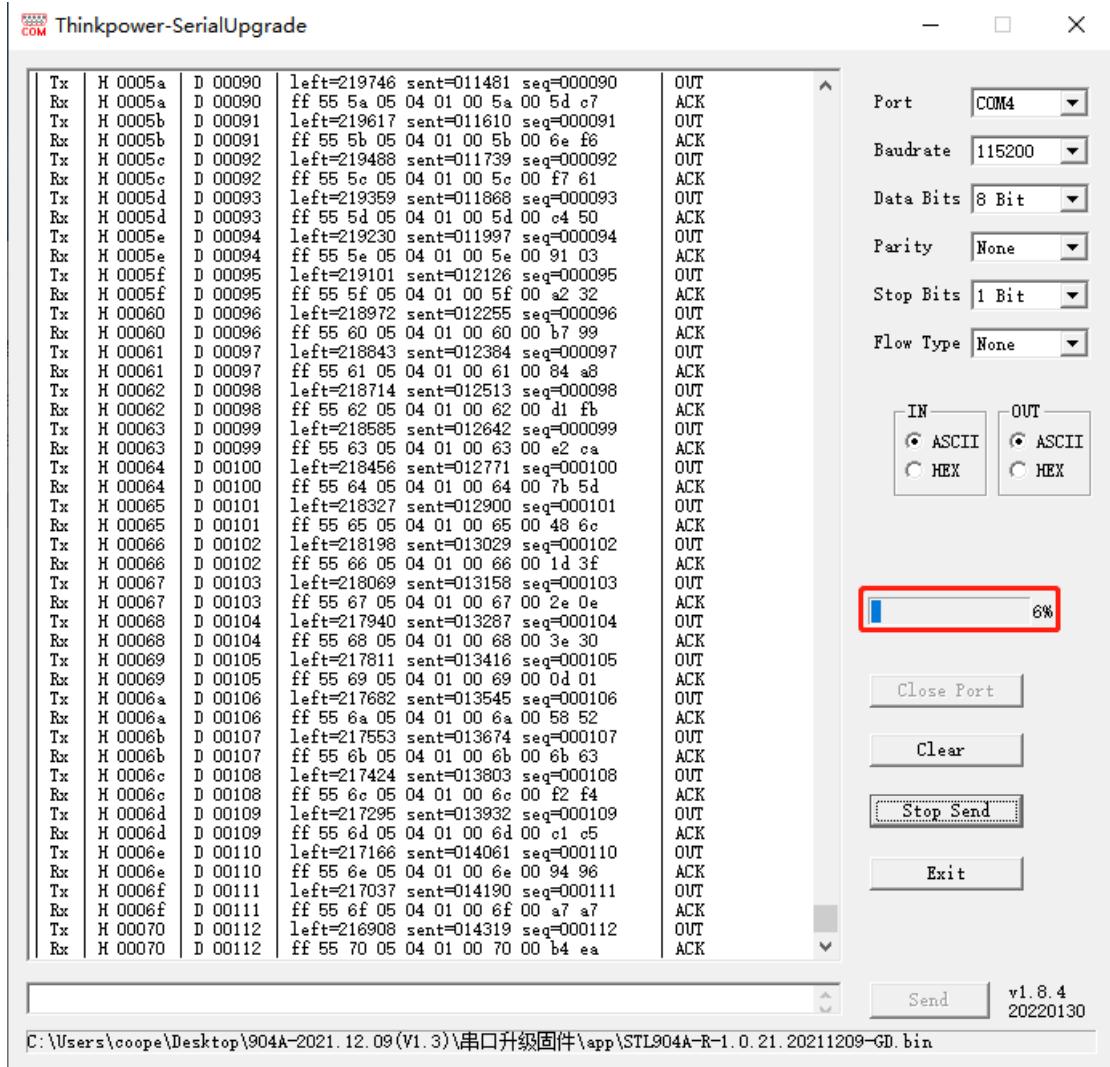


Figure 6

Upgrade succeeded, see Figure 7 below.

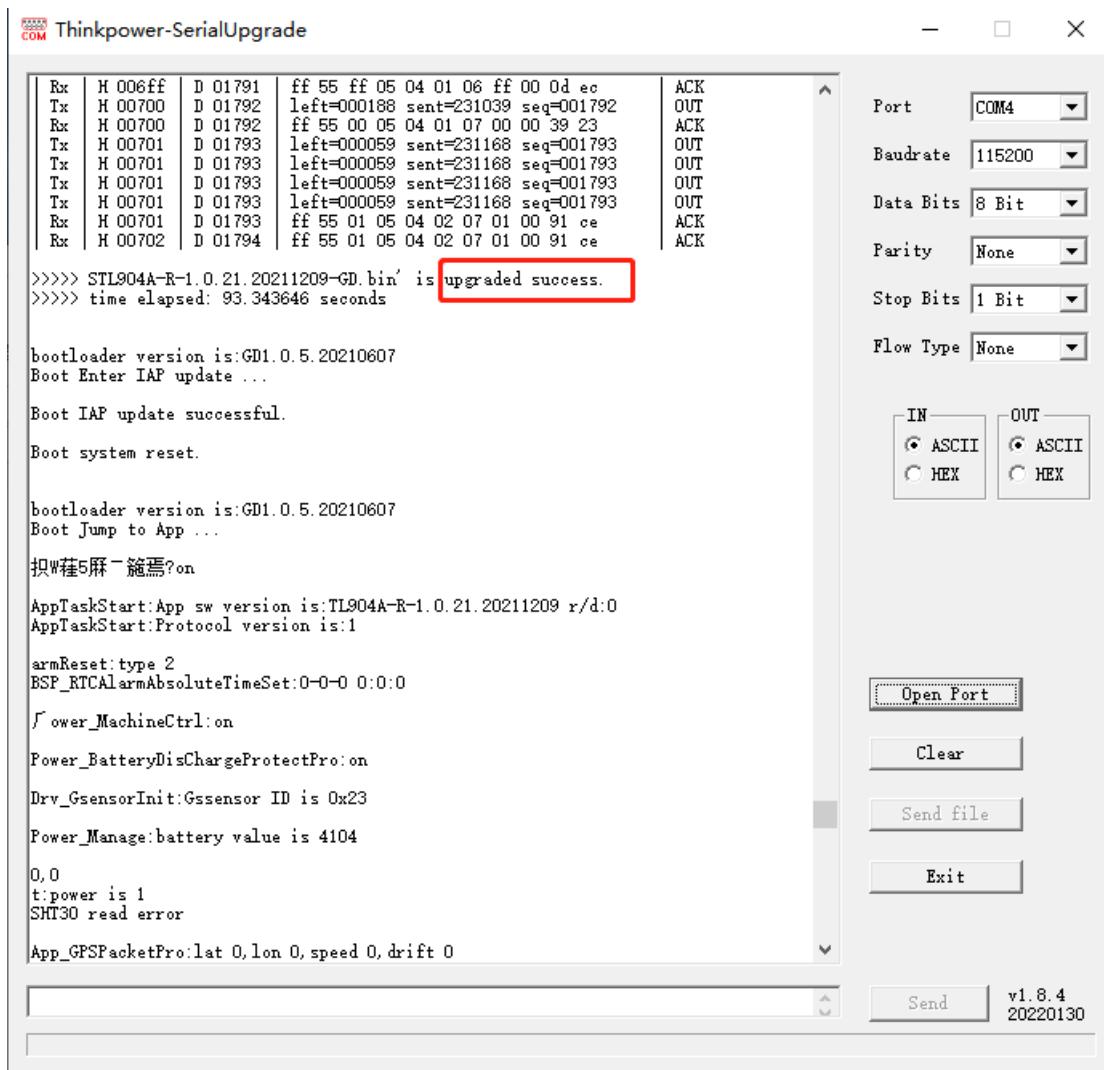


Figure 7

## 8.2 FTP Upgrade

### 8.2.1 SMS Upgrade Command

Send SMS via mobile phone to the device in use.  
format:

**\$password update [firmware-category]**

description:

update firmware.

Ex: 123456 update app

## 8.2.2 Serial Shell Upgrade Command

Format:

update app

## 8.3 Online Confirmation

### 8.3.1 Equipment

Check the LED light indication when the SIM card is installed on the device, and judge whether the device is on line by observing the status of the LED light. The specific status of the light is shown in the specification.

### 8.3.2 Platform

Log in to the appropriate data platform for device data upload confirmation, see *Flespi Use Tutorial* for details.

## 9 Trouble Shooting

| Problems                          | Solution  |
|-----------------------------------|---|
| Fail to turn it on                | Please check if built-in battery is charged.  |
| The platform did not receive data | <ul style="list-style-type: none"><li>Check if the device is correctly added to the platform.</li><li>Check if the IP and port are configured correctly.</li><li>Check if to reset the device after each change of IP or port.</li><li>Check if the protocol is correctly parsed.</li></ul> |
| NO GSM signal                     | <ul style="list-style-type: none"><li>Check if SIM card installed correctly.</li><li>Check if SIM card is GSM network.</li><li>Check if voltage of the power is normal.</li></ul>   |
| NO GPS                            | Please check if GPS antenna connected well, and recommend GPS antenna be installed near the window glass, no metal parts can cover it to make sure better GPS signal reception.   |

| Problems                | Solution                               |
|-------------------------|--|
| No reply to SMS command | Password wrong or the format is wrong. |
| No alarm message        | SOS phone number has not setup.        |

# 10 Appendix

## 10.1 List of Configure Commands

| Command                               | Parameters        | Details   |
|---------------------------------------|-------------------|---|
| configget                             | swversion         | Firmware version(get only)                          |
|                                       | sn                | IMEI of device(get only)                            |
| configset<br>configreset              | password          | Password of device                                  |
|                                       |                   |   |
| configallreset                        |                   | Restore all configurations of device to default     |
| configallget                          |                   | list all configurations of device(Serial port only) |
| factory                               |                   | retore all configurations of device to factory      |
| reboot                                |                   | Reset device(SMS:reset)                             |
| configget                             | ipaddr            | IP address of platform server                       |
|                                       | port              | TCP port of platform server(1~65535)                |
| configset<br>configreset              | heartbeatidletime | Interval of heartbeat(10~65)                        |
|                                       | heartbeattimeout  | timeout of heartbeat(10~65)                         |
| configget                             | ftppipaddr        | IP address or domain name of ftp server             |
|                                       | ftcurl            | Full pathname to firmware storeage on ftp server    |
| configset<br>configreset              | ftpuser           | Username to access ftp server                       |
|                                       | ftppass           | Password to access ftp server                       |
| configget<br>configset<br>configreset | apnname           | Name string of APN                                  |
|                                       | apnusername       | Username of APN                                     |
|                                       | apnpassword       | Password of APN                                     |
| configget<br>configset<br>configreset | sos               | 1st SOS phone                                       |
|                                       | sos1              | 2nd SOS phone                                       |
|                                       | sos2              | 3rd SOS phone                                       |
|                                       | sos3              | 4th SOS phone                                       |
|                                       | soswarn           | switch for SOS warning, 0 dsiable, 1 enable         |
| configget<br>configset<br>configreset | automonitor       | Call mode, 1-monitor, 0-two-way                     |
|                                       | smsfunc           | SMS function switch, 0-OFF, 1-ON                    |
| configget                             | gsensorxsens      | collision threshold of X-axis(16~3985 mg)           |

| Command                               | Parameters             | Details   |
|---------------------------------------|------------------------|---|
| configset<br>configreset              | gsensorysens           | collision threshold of Y-axis(16~3985 mg)   |
|                                       | gsensorzsens           | collision threshold of Z-axis(16~3985 mg)   |
|                                       | gsensorcollisionsens   | Sensitive for collision(16~3985 mg)   |
|                                       | gsensorcollisionwarn   | Switch for collision warning, 0-disable, 1-enable   |
|                                       | gsensorwakeupthreshold | Threshold for wakeup(16~3985 mg)  |
|                                       | gsensorwakeupcount     | Wakeup count time(0~10000 ms)   |
|                                       | highgthreshold         | High-G threshold(16~3985 mg)  |
|                                       | highgcount             | High-G count time(0~2500ms)   |
| gsenset                               | 8 300 100 1000 60      | Set group settings for wak-up(anonymous parameter list)<br>param 1st - rangeSel<br>param2nd- wakeupthd<br>Param3rd- wakeupCnt<br>param 4th - highThd<br>param 5th - highcount |
| gsenget                               |                        | Get group settings for wake-up  |
| configget<br>configset<br>configreset | offlinefunc            | Switch for temporary storage when offline   |
|                                       | reportmode             | Report mode by bit offset<br>0-Disallowed<br>1-Report on by time<br>2-Report<br>3-Distance reporting<br>4 Regular & distance reporting  |
|                                       | reportoninterval       | Report interval on wakeup(5~86400)  |
|                                       | reportoffinterval      | Report interval on sleep(5~86400)   |
|                                       | reportdistance         | Report distance(20~10000)   |
|                                       | speedingwarn           | Switch for overspeed warning, 0-no, 1-yes   |
|                                       | speedingthreshold      | Threshold to overspeed(1~150)   |
|                                       | speedwarnduratime      | Report interval on overspeed  |
|                                       | reportangle            | Threshold to angle change(10~359)   |
|                                       | gpsstatechangerep      | switch for GNSS status change, 0-ignore, 1-report   |
|                                       | geofencefunc           | Switch for Geofence support, 0-disale, 1-enable   |
|                                       | hightempvalue          | Temperature alarm threshold   |
| configget<br>configset<br>configreset | highhumivalue          | Humidity alarm threshold  |
|                                       | lowpowerwarn           | Low power alarm switch  |
|                                       | powersafemode          | Anti illegal shutdown mode. 0-off, 1-on   |
|                                       | antitheftfunc          | Bluetooth anti loss function. 0-off, 1-on   |
|                                       | batteryreportfunc      | Voltage reporting percentage.0-off, 1-on  |
| configget                             | btkey                  | BLE paring key  |

| Command     | Parameters    | Details                           |
|-------------|---------------|-----------------------------------|
| configset   | btscantimeout | Bluetooth scanning time threshold |
| configreset | btsn1         | 1st SN of slave                   |
|             | btsn2         | 2nd SN of slave                   |
|             | btsn3         | 3rd SN of slave                   |
|             | btsn4         | 4th SN of slave                   |
|             | btsn5         | 5th SN of slave                   |
|             | btsn6         | 6th SN of slave                   |
|             | btsn7         | 7th SN of slave                   |
|             | btsn8         | 8th SN of slave                   |

# 11 FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.