

# Cat M1 & NB-IoT Asset GPS Tracker

## User Manual V1.0



### **Preface**

Congratulations on choosing the Mictrack MT821 CAT M1/NB-IoT GPS tracker. This manual shows how to easily program and setup the tracker for best results. Make sure to read this manual carefully before using this product, so as to avoid delays or confusion with it's operation. Please note that specifications and instructions are subject to change without notice to facilitate product improvement. Updates and changes will be integrated into the latest release. The manufacturer assumes no responsibility for any errors or omissions in outdated documents.

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## 1. Overview

MT821 is a waterproof asset GPS tracker that use the latest CAT M1 & NB-IoT technology that can provide low power consumption and optimized data transmission with low cost. It built in powerful magnets, easy install without wired.

The user can track the unit via their smart phone or PC even if far away.It can used for vehicle, trailer, container etc.

## 2. Features

- **CAT M1 & NB-IoT & GSM Network**
- Real-time tracking
- GPS+LBS Positioning
- History record check
- Geo-Fence alarm
- Low battery alarm
- Light Sensor alarm
- Power saving mode
- PC & Mobile App tracking
- Long standby up to 5 years.
- P65 Water resistant
- OTA

## 3. Applications

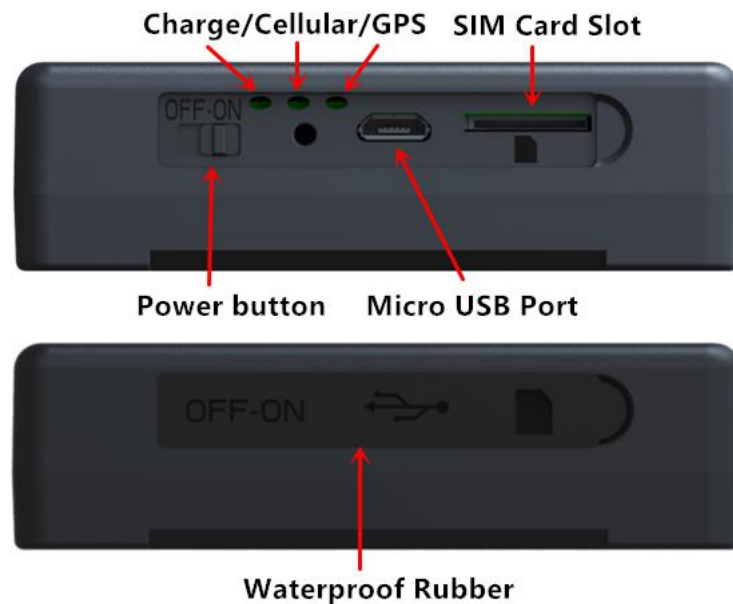
- Logistics tracking
- Asset tracking
- Vehicles tracing
- Trailer tracing
- Container tracing
- Base station tracking

## 4. Specifications

Item	Specifications
Dimension	86*60*33mm
Weight	286g
Charging mode	Micro USB charging DC 5V
Backup battery	3.7 V 7800mAh
Power consumption	60uA standby current

Item	Specifications
Cellular Bands	<b>Cat M1 (LTE-M, eMTC)</b> LTE FDD: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B26/B28 LTE TDD: B39 <b>NB-IoT (CAT NB1):</b> LTE FDD: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B26/B28 <b>GSM:</b> 850/900/1800/1900Mhz
Working temperature	-20°C to 65°C
Positioning	GPS, LBS
Tracking Sensitivity	-162 dBm
Sensor	Accelerometer
LED	Charge/Cellular/GPS
SIM Card interface	PUSH Micro SIM
Waterproof	IP65

## 5. MT821 interface



## 6. In the box

- 1\* MT821 GPS Tracker
- 1\* Quick Start Guide
- 1\* USB Charge Cable
- 1\* USB Config Cable(optional)

## 7. Installation

### 7.1 SIM Card installation

- Get ready a **Micro Sim Card** that support **Cat M1** or **NB-IoT** with 15MB data a month
- Open the waterproof rubber plug
- Insert **Sim card** to sim card slot correctly(as the sim icon location), or watch the video <http://bit.ly/2NjMIhp>
- Make Power button to ON to power ON (yellow and green led will blinking).
- After that the device will be ready.

### 7.2 LED Indications

#### 7.2.1 Red indicator

Status	Description
Solid Red	In charging
OFF	No charge or full charged

#### 7.2.2 Yellow indicator

Status	Description
OFF	Device Power OFF or in sleep mode
blinking	Searching the network
Solid Yellow	Network available

#### 7.2.3 Green indicator

Status	Description
OFF	<ul style="list-style-type: none"> <li>● Device Power OFF or in sleep mode</li> </ul>
Blinking (1s)	<ul style="list-style-type: none"> <li>● Searching the GPS signal</li> </ul>
Solid Green	<ul style="list-style-type: none"> <li>● GPS available</li> </ul>

## 8. Setup and Configuration

- If you use NB-IoT SIM card, ONLY can setup the device via USB Config cable(because NB-IoT SIM do not support SMS)
- If you use Cat M1 SIM card, you can setup the unit via following SMS commands (8.1-8.10) or via USB Config cable.
- Download the USB Config tool and guide/video from the link:<http://bit.ly/379o3Ud>

### 8.1 Set APN (Access Point Name)

SMS Command format 1: apn,apn, #

For example : apn,iot.nb,,#

SMS Command format 2: apn,apn,username,password#

For example: apn,internet,internet,internet#

Reply: apn=Success!

## 8.2 Set the IP and port

SMS Command format : data,ip:port#

For example : data,113.98.254.179:7700#

Reply: data=Success!

## 8.3 Working mode

### 8.3.1 One report per day mode

SMS Command format: mode,0,T#

For examples: mode,0,8#

Reply: mode=Success!

**Note:** Device will wake up and report one data to server at 8 AM every day, after that it will go to sleep again until next day at 8 AM. T is [0-23] hours.

### 8.3.2 Deep sleep interval mode

SMS Command format: Mode,1,T#

For examples: Mode,1,30#

Reply: mode=success!

**Note:** Device will wake up and report one data to server every 30 minutes, after that it will go to sleep again until next 30minutes . T is [3-1440] minutes.

### 8.3.3 GPS sleep mode

SMS Command format: Mode,5,T#

For examples: Mode,5,10#

Reply: mode=success!

**Note:** Device will wake up every 10 minutes and report one data to server, after that it will go to sleep again until next 10 minutes. T is [3-1440] minutes.

### 8.3.4 GPS always ON mode

SMS Command format: Mode,6,T#

For examples: Mode,6,10#

Reply: mode=success!

**Note:**The device will report data every 10s .T is [10-86400] seconds.

### 8.3.5 Power Saving mode

SMS Command format: Mode,7,T#

For examples: Mode,7,10#

Reply: mode=success!

**Note:** When the device detects continuous vibration for more than 10s, it will wakes up and starts to connect to the network, After connected it will Immediately report a data (event 15) to the platform;

If the device is still in a vibrating state, MT821 will report to server every 30 seconds/

If there is no vibration for more than 2 minutes, the device will automatically go to sleep and report a data((event 16) to server. T is [10-86400] seconds

## 8.4 Network mode

### 8.4.1 Setup to Cat M1 network only

SMS Command format : netlock,2,3,0#

Reply: netlock=Success!

Note: In this mode device will only works under Cat M1 network.

### 8.4.2 Setup to NB-IoT network only

SMS Command format :netlock,3,3,1#

Reply: netlock=Success!

Note: Device will only work under NB-IoT network.

### 8.4.3 Setup to GSM only

SMS Command format : netlock,1,1,2#

Reply: netlock=Success!

Note: Device will only work under GSM network.

### 8.4.4 Setup to AUTO Mode

SMS Command format : netlock,0,0,2#

Reply: netlock=Success!

Note: Device will auto switch to the available network include Cat M1, NB-IoT and GSM.

## 8.5 Setup Protocol

### 8.5.1 Setup to TCP

SMS Command format: protocol, 1,X#

For examples: protocol,1,0#

Reply: protocol=success!

Note: X=1, means response ACK, X=0, means do not need response ACK.

### 8.5.2 Setup to UDP

SMS Command format: protocol, 0,Y#

For examples: protocol,0,0#

Reply: protocol=success!

Note: Y=1, means response ACK, Y=0, means do not need response ACK.

## 8.6 Logprint

SMS Command format: Logprint, 0,Z#

For examples: Logprint, 0,1#

Reply: logprint=success!

**Note:** Z=[0,1]. To enable the print log, send command: Logprint,1#, To disable the print log, sent command: Logprint,0#

## 8.7 OTA

SMS Command format: otastart,ip:port,user name,password,firmware name,1#

For examples: otastart,173.230.147.117:21,ota,ota,MT821.bin,1#

Reply: otastart =Success! OTADONE

It will response "OTADONE" if OTA successfully or response "OTAF FAILED" when OTA fail. If it has failed, please try again.

## 8.8 Rconf

SMS Command format : rconf,0#

After send this command, the device will reply as follow:

UI:866425038519007

rconf=cmmtm,,,data,113.98.254.179:7700,6,60,MT821\_MICTRACK\_B1.05V2.8\_20191203,GSM

**Note:** According the above message and we can get the info as follow:

ID: 866425038519007

APN: cmmtm

IP: 113.98.254.179

Port: 7700,

Mode: Mode,6,60#

Version: MT821\_MICTRACK\_B1.05V2.8\_20191203

Network: GSM (Cat M1 or NB-IoT)

## 8.9 Reboot

SMS Command format : reboot,0#

The device will restart after send this command.

Reply: reboot=Success!

## 8.10 Reset

SMS Command format : factoryreset,1#

The device will reset to default after send this command.

Reply: reset=Success!

# 9. App & PC Tracking platform

## 9.1 App install & Login

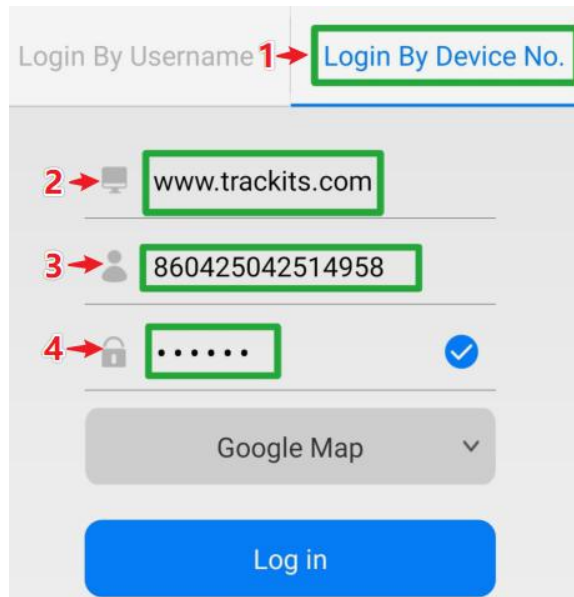
- Search "Yi tracker" in Google Play or iOS store(or scan the following QR code) to download the Mobile APP(not Yi tracker2);



- Choose the "Login by Device No.,"
- Input server [www.trackits.com](http://www.trackits.com)

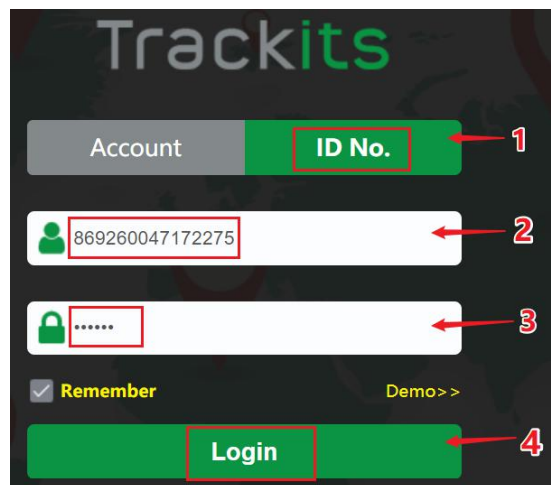


- Input **your device's ID number** and password(default is 123456) to login.



### 9.2 PC login

- Web: [www.trackits.com](http://www.trackits.com)
- Choose "ID No."
- Input **your device's ID number** and password(default is 123456) to login



## 10. Troubleshooting

Issues	Caused	Solutions
Send SMS to the device but no reply	1>The device only reply with Cat M1 sim card and will not reply the NB-IoT SIM card 2>SIM Card have not active 3>Card balance is not enough	Please check the SIM card status and try again.

	Text command format is wrong	Please check the command format again
	Connect network fail.	Please check LED status and make sure the network connect successful first.
GPS platform shows logged off		1.Check the APN setting ; 2. Check IP and port 3. Check network if match
GPS platform shows no location or the coast of Africa.	Device indoor/garage	Take it outside for a 10-minute walk or drive, and its location should update.
LED no light	Backup battery is low power	Please charge the device for 30 minutes at least.

Any questions please do not hesitate to contact us:



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