# MEITRACK K211L GPS Smart Lock User Guide

**Applicable Model: K211L**

# Change History

| File Name | MEITRACK K211L GPS Smart Lock User Guide | | |
|---|---|---|---|
| Project | K211L | Creation Date | 2022-07-21 |
| | | Update Date | |
| Subproject | User Guide | Total Pages | 21 |
| Version | V1.0 | Confidential | External Documentation |

# Contents

# 1 Copyright and Disclaimer

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# 2 Product Introduction

The K211L is a GPS smart lock that supports Long Range (LoRa) and GPRS communication. Its main functions include real-time lock status monitoring, anti-tamper alert, anti-cut alert, swiping an RFID card to lock or unlock the device, and super long standby time. There is no button on the outer case of the device, and the IP67 water resistance rating makes the device withstand harsh environments ,and the device also has a crash-proof housing design. It is specially designed for door lock management in various land and sea transportation such as box trucks, trailers and containers.

## 2.1 Product Features

### 2.1.1 LoRa Communication (Optional)

This function is used for communication between the K211L and the T399G vehicle tracker. After the LoRa connection is successful, the K211L will send information such as lock status information and battery power to the T399G via LoRa. To establish LoRa communication between the K211L and the T399G, the two devices must be bound each other. For details about how to bind the T399G to the K211L, see the section 6.5 "Binding or Unbinding the T399G."

LoRa connection process:

| Start the two devices and connect them to a PC. | → | Start Meitrack Manager and bind the T399G. | → | The LoRa connection will be established automatically after the two devices are bound. | → | The LoRa connection is established successfully if the LVS LED indicator blinks. |

T399G and K211L communication features:

The K211L can be connected to the T399G via LoRa to upload data.

One T399G tracker can be connected to at most 30 K211L devices at the same time.
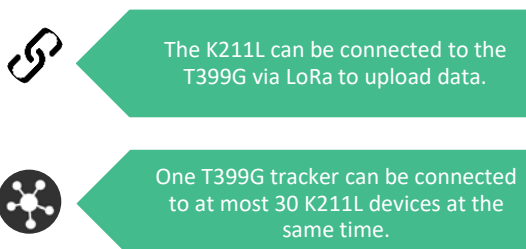
Communication diagram
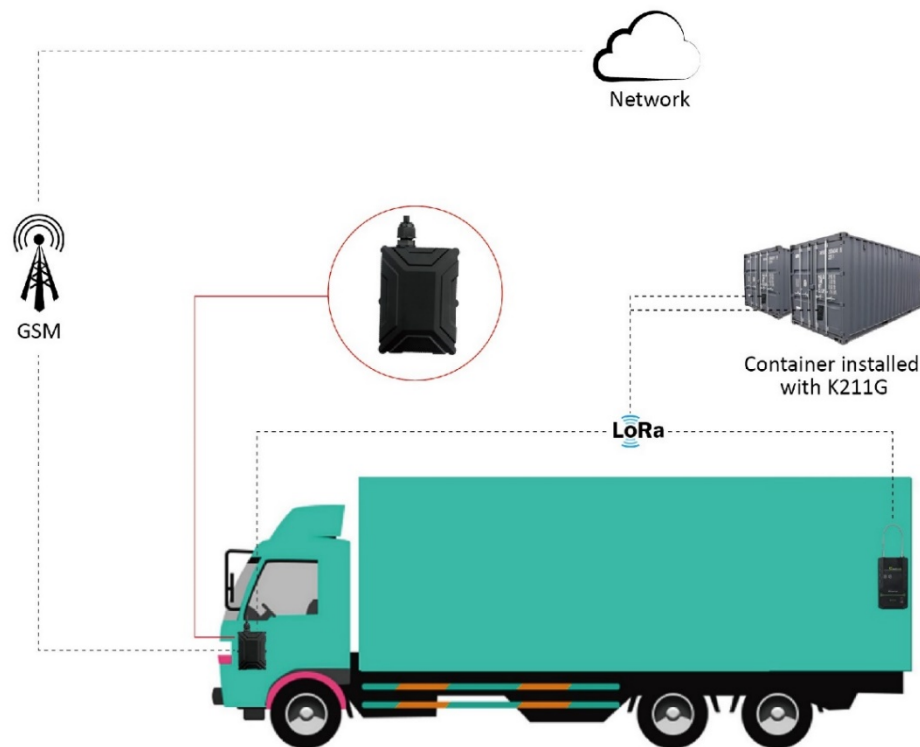


| K211L Working Mode | | Status |
|---|---|---|
| LoRa connected | | The GPS and GSM modules of the K211L enter the sleep mode, and its lock status information and alerts will be uploaded to the server through the T399G. |
| LoRa disconnected | Deep sleep mode (send heartbeat packets once every one hour) | After the K211L is started properly, if no event is triggered, the K211L will enter the deep sleep mode (the GPS module will stop) after five minutes (default time). The wakeup conditions include vibration, swiping RFID cards ,Call ,SMS and sending heartbeat packets. |
| | Super deep sleep mode (send heartbeat packets once every one hour) | After the K211L is started properly, if no event is triggered, the K211L will enter the deep sleep mode the GPS and GSM module will stop) after five minutes (default time). The wakeup conditions include vibration, swiping RFID cards and sending heartbeat packets. |
| | Sleep mode disabled | Report data at the preset interval. |

## 2.1.2 Locking or Unlocking the K211L

**Locking or Unlocking by Swiping RFID Cards**

The function is used to lock or unlock the K211L by swiping authorized RFID cards. When you swipe an RFID card, the K211L will automatically detect and record the unlocking time, location and RFID card number, and these data will be sent to the server.

Operation process: Put the authorized RFID card on the K211L's card swiping area. When the K211L detects this action, the buzzer will beep and the LVS LED indicator will be steady on, indicating that the K211L is unlocked. In this way, the last step for you is to pull out the lock rope. (To lock the K211L, you only need to swipe the RFID card once. Then the buzzer will beep and the LVS LED indicator will be off, indicating that the K211L is locked.)

Swiping an RFID card:



Note: In the locking or unlocking state, if you swipe an unauthorized RFID card, the buzzer will beep twice，but the K211L cannot be unlocked and locked. If you swipe an authorized RFID card, the buzzer will beep once. Before the K211L is locked,it is recommended to apply appropriate force on the lock rope first to make the waterproof ring of cable fully contact with the lock hole and improve the waterproof performance，and if the lock rope is cut, K211L cannot be locked. After the K211L is unlocked, if you do not pull out the lock rope within one minute, the K211L will be locked automatically.

**Locking or Unlocking by Commands**

| Command | Description | How to Send |
|---------|-------------|-------------|
| D82 | This command is used to lock or unlock the K211L. | Send the command by SMS or GPRS. For details about the SMS command format, see the section 6.6.8 "Locking or Unlocking the K211L – D82." |
| D83 | This command is used to select a locking method: auto locking or locking by swiping RFID cards. | Send the command by SMS or GPRS. For details about the SMS command format, see the section 6.6.9 "Selecting a Locking Method – D83." |

### 2.1.3 Dual SIM Cards

The K211L can be installed with two Micro SIM cards and supports the dual SIM single standby mode. The device will automatically select a SIM card to register the network. SIM1 (on the right) will be selected by default. If SIM1 fails to register the network, SIM2 (on the left) will be selected to do this. (Please ensure that at least one SIM card can be used normally.)
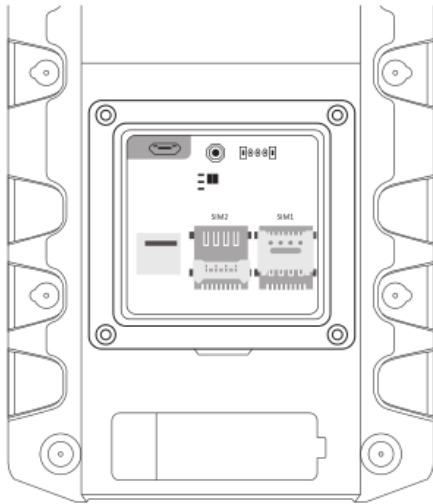
### 2.1.4 Magnetic Charging

You can use the magnetic charging cable to charge the K211L. The device supports 9V/2A power adapter, and it will take a total of 7.5–8 hours to charge the device fully.
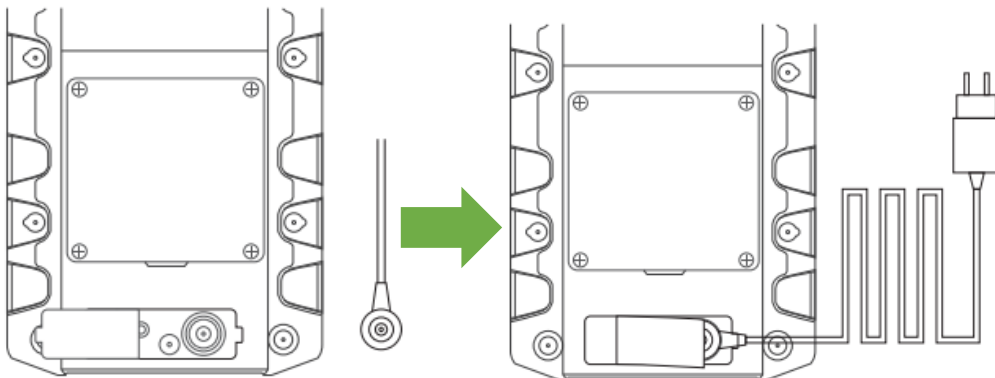


### 2.1.5 Strong Magnetic Adsorption

The back of the cover plate has strong magnetic, which can be adsorbed to the car door to prevent the device from shaking during movement.
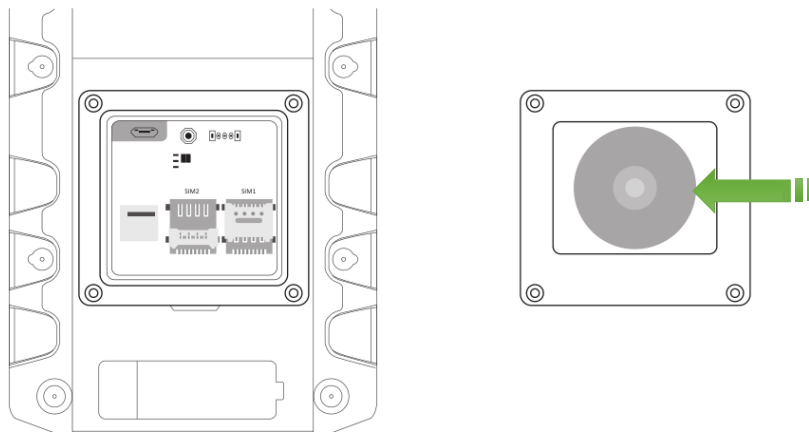
### 2.1.6 Anti-collision Soft Adhesive

The gray protruding part in the figure is Anti-collision soft adhesive, which has shock absorption effect and it can effectively protect the device from being damaged in the collision.
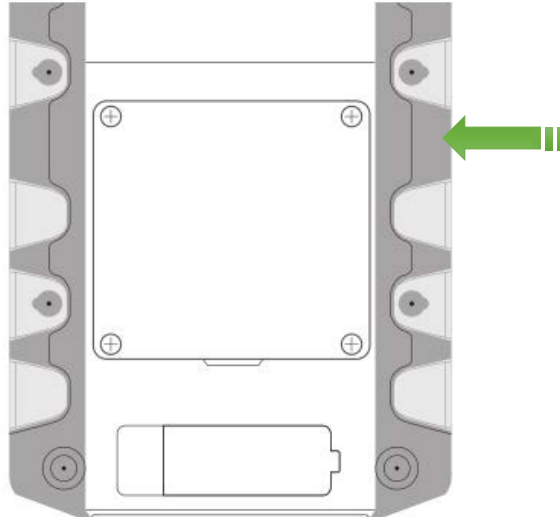


### 2.1.7 Security Performance - Super Password
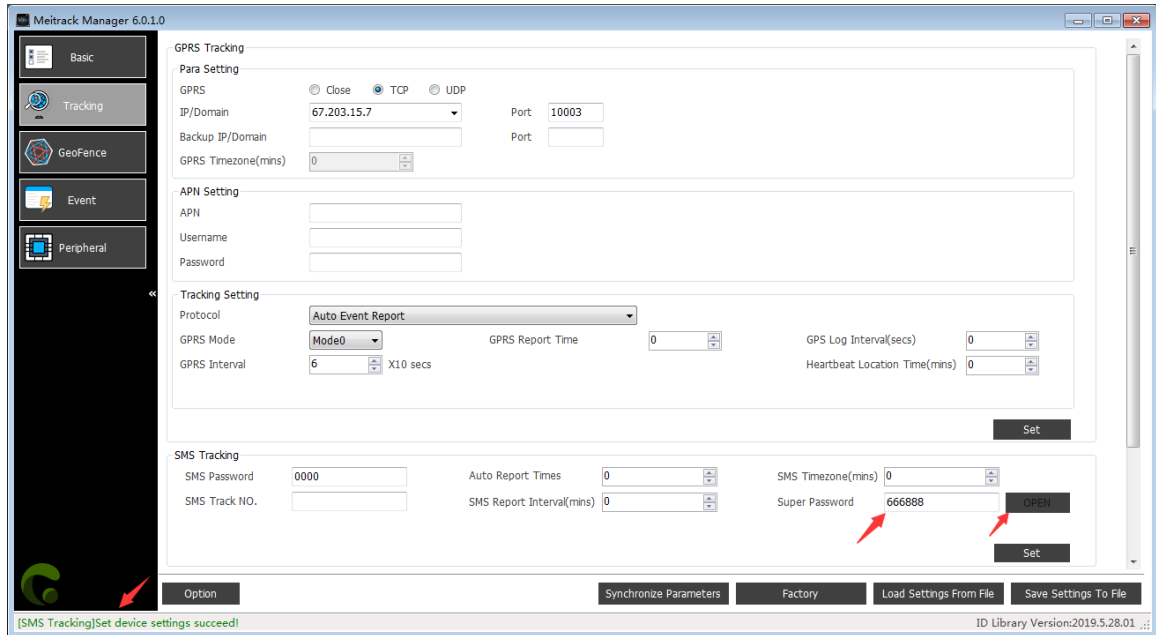
To enhance security, K211L supports super password.

Super password (the default is 666888) supports all SMS commands, but DB0 / D82 / D10 / D11 / D14 D15 / A21 / F22 commands can't use the original SMS password (the default is 0000), they can only use super password.

When setting GPRS parameters through Meitrack Manager, you need to open the super password first before setting successfully:



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Note：

It is recommended to set a new super password first, because the super password is related to the security of unlocking; The default super password is 666888, which can be modified by Meitrack Manager and F22 command.Please make sure to remember the super password, and the super password cannot be quested and reset to the original value, once you forget the password, it will not be able to recover.

# 3 Product Functions

## 3.1 Position Tracking

- GPS + LBS positioning
- Real-time location query
- Tracking by time interval
- Tracking by distance
- Tracking by mobile phone
- Speeding alert
- Cornering report
- Geo-fence

## 3.2 Alerts

| Alert | Description |
| --- | --- |
| Outer case removal/open alert | An alert will be generated when the K211L's outer case is removed or the back cover is opened. |
| Lock tamper alert | An alert will be generated when the lock rope is cut off. |
| T399G disconnected alert (LoRa communication is required) | An alert will be generated when the K211L is disconnected from the T399G. |
| Unlocking alert | An alert will be generated when you swipe an authorized RFID card to |

| | |
|---|---|
| | unlock the K211L. |
| Locking alert | An alert will be generated when you swipe an authorized RFID card to lock the K211L. |
| Unlocking failure alert | An alert will be generated when the K211L fails to be unlocked by swiping an authorized RFID card. |
| Locking failure alert | An alert will be generated when the K211L fails to be locked by swiping an authorized RFID card. |

## 3.3 Other Functions

| Function | Description |
|---|---|
| Binding and unbinding | Enter the IMEI number of the T399G on Meitrack Manager software to bind the T399G to the K211L. |
| LoRa communication (optional) | Report lock status information of the K211L via LoRa. |
| Deep sleep mode | The K211L can be woken up by vibration, swiping RFID cards and sending heartbeat packets. If no event is triggered, the K211L will enter the deep sleep mode after five minutes (default time). |
| Dual SIM cards | The K211L can be installed with two Micro SIM cards and supports the dual SIM single standby mode. |
| OTA update | Online OTA firmware update |
| Remote unlocking or locking by commands | The D82 command is used to lock or unlock the K211L. You can send this command by SMS or MS03 platform. |

## 4 Product Specifications

| Item | | Description |
|---|---|---|
| Dimension | | 112 mm x 195 mm x 37 mm |
| Lock rope length | | 300 mm (The length can be customized as needed.) |
| Weight | | 800g |
| Power supply | | DC 9–14 V; 2 A |
| Material | | The outer case of the device adopts PC materials. |
| Backup battery | | 14000 mAh/3.7 V |
| Power consumption | | Current in standby (sleep) mode: 9 mA<br>Current in normal working mode: 95 mA |
| Charging time | | 7.5–8 hours |
| Operating temperature | | -20℃ to 55℃ |
| Operating humidity | | 5%–95 % |
| Working hour | | Power-saving mode: 78 days<br>Normal working mode: 150 hours |
| Charging | | Magnetic charging (DC 9 V; 2 A; fast charging) |
| Water resistance rating | | IP67 |
| Frequency | K211L-ER | GSM:850/900/1800/1900 |

| band | | LTE-FDD:B1/B3/5/B7/B8/B20/B28 |
|---|---|---|
| | K211E | GSM:850\900\1800\1900 |
| | | Cat M1/Cat NB2: |
| | | LTE- |
| | | FDD:B1/B2/B3/B4/B5/B8/B12/B13/B14/B18/B19/B20/B25/B26/B27/B28/B6 |
| | | 6/B71/B85 |
| GPS antenna | | Built-in GPS antenna |
| GPS sensitivity | | -161 dB |
| Positioning accuracy | | 2.5 meters |
| LoRa communication distance (optional) | | At most 20 meters (obtained from actual tests in trucks' containers) |
| LoRa working frequency (optional) | | 137–1020 MHz (433 MHz by default) |
| LoRa antenna (optional) | | Built-in spring antenna |
| RFID module frequency | | 125 KHz |
| Memory | | 8 MB |
| SIM card installation | | Flip the card slot cover to install Micro SIM cards; dual SIM cards |

# 5 Main Device and Accessories



GPS smart lock with the battery    Lock rope (30 cm)    RFID card    Power adapter(9V)    Magnetic USB charging cable

CD download card
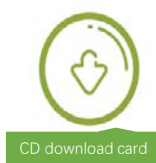
Note:

1.  Two RFID cards are standard, optional more and white type RFID card. The Power adapter(9V) can choose UL or VDE.
2.  USB cable is optional. Use common Android data cable.

# 6 First Use

## 6.1 Installing a SIM Card

Remove the four screws from the cover and take the cover out.
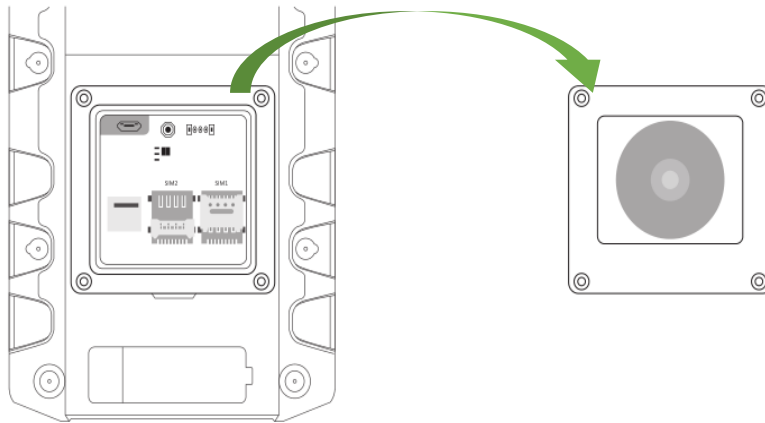
Insert a SIM card into one of the card slots (SIM1: right; SIM2: left).
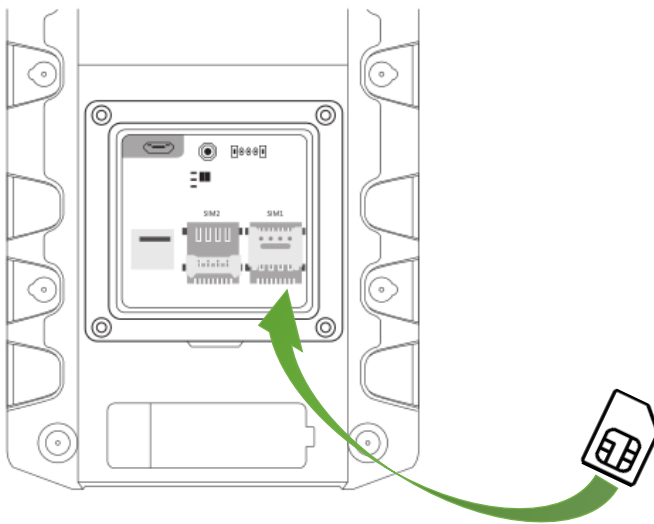


## 6.2 Turning on the K211L

Press the power button for 3 seconds. Then the GPS and GSM LED indicators will blink fast, indicating that the device is turned on.



Note: When using the device for the first time, you are advised to charge the battery fully.

## 6.3 LED Indicator

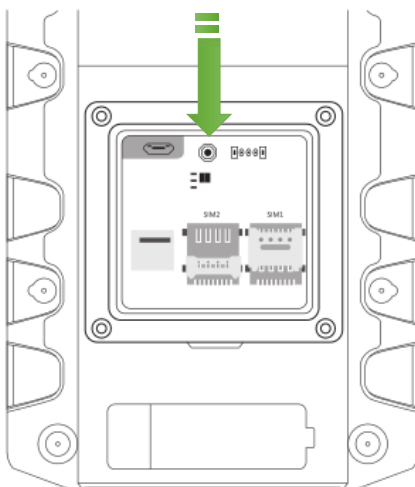| LVS LED Indicator (Green) | |
|---|---|
| Steady off | The K211L is locked or is not connected to the T399G. |
| Steady on | The K211L is unlocked. |
| Blink fast (0.2 seconds on and 4.8 seconds off) | The K211L is connected to the T399G. |
| **GSM LED Indicator (Blue)** | |
| Blink fast (once every 0.1 seconds) | The K211L is being initialized, or the battery power is low. |
| Blink fast (0.1 seconds on and 2.9 seconds off) | A GPS signal is received. |
| Blink slowly (1 second on and 2 seconds off) | No GPS signal is received. |
| **GSM LED Indicator (Green)** | |
| Steady on | There is an incoming call, or the subscriber you dialed is busy now. |
| Blink fast (once every 0.1 seconds) | The K211L is being initialized. |
| Blink fast (0.1 seconds on and 2.9 seconds off) | A GSM signal is received. |
| Blink slowly (1 second on and 2 seconds off) | No GSM signal is received. |
| **CHG LED Indicator (Red)** | |
| Steady off | The external power supply is disconnected. |
| Steady on | The K211L is charging. |

## 6.4 Device Configuration

### 6.4.1 Installing the USB Driver

Install the USB driver on a computer with 64-bit Windows system.



PL2303_Prolific_
DriverInstaller_v
130 _for
Windows8&10...
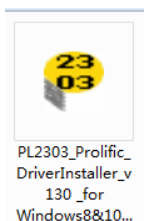
After the installation is finished, connect the K211L to the computer by USB cable. If **Prolific USB-to-Serial Comm Port (COM3)** is displayed on the **Device Manager** page, the driver is installed successfully.

Note: Before connecting the K211L to the computer by USB cable, turn on the K211L first. Otherwise, it cannot be detected by Meitrack Manager.
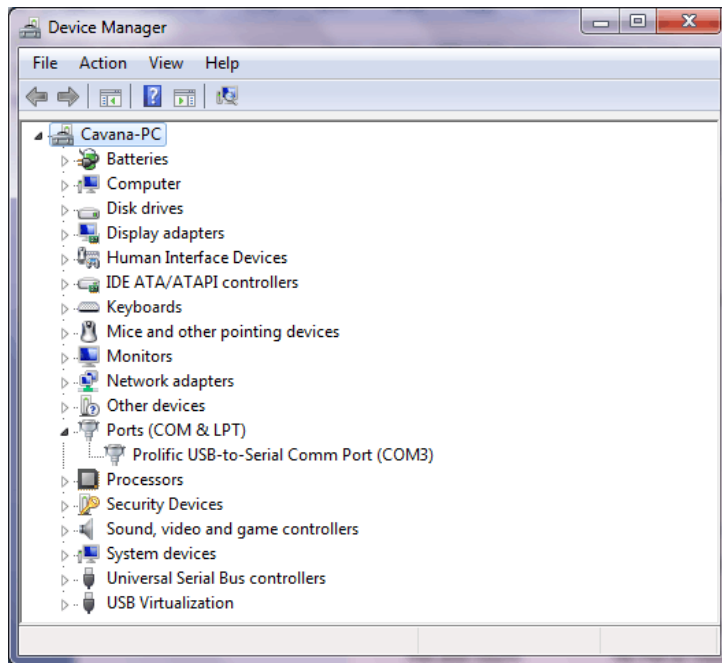
## 6.4.2 Configuring Device Parameters by Meitrack Manager

This section describes how to use Meitrack Manager to configure the K211L on a computer.

Operation steps:

1.  Install the USB driver and Meitrack Manager.

2.  Connect the device to a computer by using the USB cable.



3.  Run Meitrack Manager (6.0.0.9 version or later), then the following dialog box will appear:



4.  Turn on the device, then Meitrack Manager will automatically detect the device model and the parameter page will appear accordingly.

For details about Meitrack Manager, see the *MEITRACK Manager User Guide*.

## 6.5 Binding or Unbinding the T399G

### 6.5.1 Binding the T399G

To make the K211L and T399G communicate with each other via LoRa, bind the two devices. An IMEI number is the default binding information.

Perform the following steps to bind the T399G:

1.  Go to the **Peripheral** page of Meitrack Manager.
2.  Enter the IMEI number of the T399G.
3.  Click **Binding**.
4.  Click **Set**.

After the binding is successful, the IMEI number of the T399G will displayed on the **GPS Smart Lock Information** area.
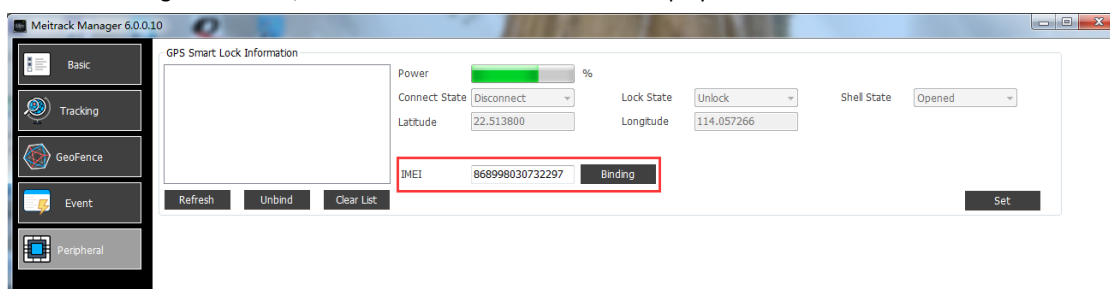


Note: To establish LoRa communication between the K211L and the T399G, the two devices must be bound each other. Please connect the T399G to the computer, and then repeat the above operations to bind the K211L.

### 6.5.2 Unbinding the T399G

This operation is used to disconnect the communication between the K211L and the T399G. After the unbinding is successful, the GPS positioning and GSM communication functions of the K211L will be enabled automatically. Lock status information will be uploaded to the server through the K211L.

Perform the following steps to unbind the T399G:

1.  Go to the **Peripheral** page of Meitrack Manager.
2.  Select the IMEI number to be unbound.
3.  Click **Unbind**.
4.  Click **Set**.
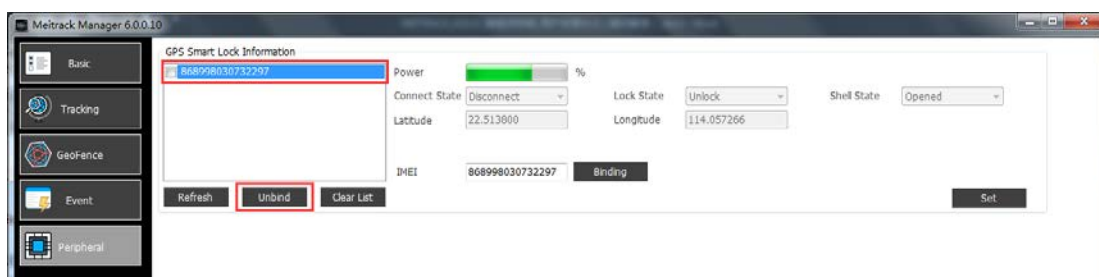


Note: The binding and unbinding functions are only available for the K211L with a LoRa module.

## 6.6 Common SMS Commands

### 6.6.1 Setting GPRS Parameters – A21

| SMS Sending | Password,A21,*Connection mode,IP address,Port,APN,APN user name,APN password* |
|---|---|
| SMS Reply | IMEI,A21,OK |
| Description | Connection mode = 0: function disabled. |
| | Connection mode = 1: function enabled; use the TCP/IP reporting mode. |
| | Connection mode = 2: function enabled; use the UDP reporting mode. |
| | IP address: IP address or domain name. A maximum of 32 bytes are supported. |
| | Port: a maximum of 5 digits. |
| | APN/APN user name/APN password: a maximum of 32 bytes respectively. |
| | If no user name and password are required, leave them blank. |
| | Note: this command can only use super password. |
| **Example** | |
| SMS Sending | 666888,A21,1,server.meigps.com,8800 ,CMNET,, |
| SMS Reply | 353358017784062,A21,OK |

### 6.6.2 Setting a Smart Sleep Mode – A73

| SMS Sending | Password,A73,*0* |
|---|---|
| SMS Reply | IMEI,A21,OK |
| Description | When the sleep level is 0, the sleep mode is disabled (default). |
| | When the sleep level is 1, the tracker enters the normal sleep mode. The GSM module always works, andthe GPS module occasionally enters the sleep mode. The tracker works 25% longer in the normal sleep mode than that in the normal working mode. This mode is not recommended for short interval tracking; this will affect the route precision. |
| | When the sleep level is 2, the tracker enters deep sleep mode. If no event (RFID, shear line, vibration, incoming calls, orSMSs) is triggered after five minutes, the GPS module will stop and the GSM module will enter sleep mode. Once an event is triggered, the GPS and GSM modules will be woken up. |
| | When the sleep level is 3, the tracker enters deep sleep mode. If no event (RFID, shear line，vibration) is triggered after five minutes, the GPS and GSM module will stop. Once an event is triggered, the GPS and GSM modules will be woken up. |
| **Example** | |
| SMS Sending | 0000,A73,0 |
| SMS Reply | 353358017784062,A73,OK |

### 6.6.3 Setting the Maximum Working Time of the Woken GPS Module – A83

| SMS Sending | Password,A83,*X* |
|---|---|
| SMS Reply | IMEI,A83,OK |
| Description | X: indicates the maximum working time of the GPS module woken up by heartbeat packet. |
| | Decimal; value range: 0–255; unit: minute. |
| | X = 0 (default): After the GPS module is woken up by heartbeat packet, it does not work |

| | and the GPS is invalid. |
|---|---|
| **Example** | |
| SMS Sending | 0000,A83,1 |
| SMS Reply | 353358017784062,A83,OK |

### 6.6.4 Setting the SMS Time Zone – B35

| SMS Sending | Password,B35,*SMS minute* |
|---|---|
| SMS Reply | IMEI,B35,OK |
| Description | The default time zone of the device is GMT 0. You can run the B35 command to change the time zone of an SMS report to the local time zone. The time zone of an SMS report is different from that of a GPRS data packet. When **SMS minute** is **0**, the time zone is GMT 0. When **SMS minute** is a value ranging from -720 to 780, set time zones. |
| **Example** | |
| SMS Sending | 0000,B35,480 |
| SMS Reply | 353358017784062,B35,OK |

### 6.6.5 Disabling the Power-off Function of the Power Button – C77

| SMS Sending | Password,C77,0 |
|---|---|
| SMS Reply | IMEI,C77,OK |
| Description | X = 1: You can turn off the device by power button. X = 0: You cannot turn off the device by power button. |
| **Example** | |
| SMS Sending | 0000,C77,0 |
| SMS Reply | 353358017784062,C77,OK |

### 6.6.6 Authorizing an RFID Card – D10

| SMS Sending | Password,D10,RFID(1),RFID(2),…,RFID(n) |
|---|---|
| SMS Reply | IMEI,D10,OK |
| Description | RFID(n): indicates the authorized RFID card number. The value ranges from 1 to 4294967295. Decimal. A maximum of 50 RFID cards can be authorized at a time. Note: this command can only use super password. |
| **Example** | |
| SMS Sending | 666888,D10,00000001 |
| SMS Reply | 353358017784062,D10,OK |

### 6.6.7 Authorizing RFID Cards in Batches – D11

| SMS Sending | Password,D11,*RFID card start number,n* |
|---|---|
| SMS Reply | IMEI,D11,OK |

| Description | RFID card start number: The value ranges from 1 to 4294967295. Decimal. |
|---|---|
| | n: indicates the number of RFID cards to be authorized in batches. Decimal. The parameter value ranges from 1 to 128. |
| | Note: this command can only use super password. |
| **Example** | |
| SMS Sending | 666888,D11,00000001,128 |
| SMS Reply | 353358017784062,D11,OK |

### 6.6.8 Locking or Unlocking the K211L – D82

| SMS Sending | Password,D82,X |
|---|---|
| SMS Reply | IMEI,D82, lock state |
| Description | When **X** is **0**, the K211L is locked. |
| | When **X** is **1**, the K211L is unlocked. |
| | If the command does not contain the parameter **X**, the lock status will be read. X = 0: Locking; X = 1: Unlocking; X = 2: Lock tampering; X = 3: Lock abnormal; X = 4: Parameter error. |
| | Note: this command can only use super password. |
| **Example** | |
| SMS Sending | 666888,D82,0 |
| SMS Reply | 868998030003608,D82,OK |

### 6.6.9 Selecting a Locking Method – D83

| SMS Sending | Password,D83,X |
|---|---|
| SMS Reply | IMEI,D83,OK |
| Description | When **X** is **0**, the K211L is locked automatically. |
| | When **X** is **1**, the K211L is locked by swiping RFID cards. |
| | The auto locking method is selected by default. If the command does not contain the parameter **X**, the locking method will be read. |
| **Example** | |
| SMS Sending | 0000,D83,0 |
| SMS Reply | 868998030003608,D83,OK |

### 6.6.10 Setting the automatic authorization time of swiping the RFID card – DB0

| SMS Sending | Password,DB0,X |
|---|---|
| SMS Reply | Qcom 时间 DB0,OK |
| Description | X: ranges from 1 to 10000. Decimal，Unit: seconds |
| | Within the automatic authorization period of swiping the card, swiping any RFID card will be automatically authorized, after the end of the automatic authorization period, the working state will be back to normal. |
| | Send command withot parameter means reading the remaining time. |

| | Note: this command can only use super password. |
|---|---|
| **Example** | |
| SMS Sending | 666888,DB0,10 |
| SMS Reply | 868998030003608,DB0,OK |

### 6.6.11 Changing Super Password – F22

| SMS Sending | AAAAAA,F22,BBBBBB |
|---|---|
| SMS Reply | IME,F22,OK |
| Description | Need to enter super password before setting IP and port in MM. Super passwords support all SMS commands. But A21/D10/D11/D14/D15/D82/DB0/F22 commands only support super password, not SMS password. The default super password is 666888. The length is 6 digits. AAAAAA is the original super password, BBBBBB is the new password Note: this command can only use super password. Please make sure to remember the super password, and the super password cannot be quested and reset to the original value, once you forget the password, it will not be able to recover. |
| **Example** | |
| SMS Sending | 666888,F22,OK |
| SMS Reply | 868998030003608,F22,OK |

Note: For details about SMS commands, see the MEITRACK SMS Protocol.

# 7 Using the Platform

## 7.1 MS03 Tracking System

Visit http://ms03.trackingmate.com, enter the user name and password, and log in to the MS03. (Purchase the login account from your provider.)

For more information about how to add a device, see the *MEITRACK GPS Tracking System MS03 User Guide* (chapter 4 "Getting Started").

**The MS03 supports the following functions:**
- Track by time interval or distance.
- Query historical trips.
- Set polygonal geo-fences.
- Bind driver and vehicle information.
- View various reports.
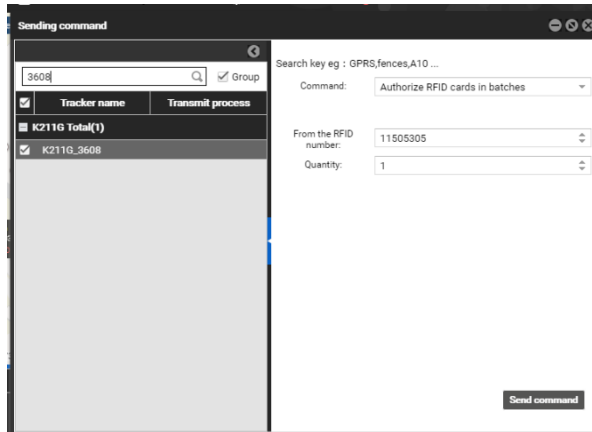- Send commands in batches.
- Support OTA updates.

For details, see the *MEITRACK GPS Tracking System MS03 User Guide*.

## 7.2 Authorizing RFID Cards in Batches by MS03

1. On the main interface of the MS03, choose **Management**.

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2. On the **Management** window that is displayed, select **Sending command** from **Use Normal**.

3. On the **Sending command** window that is displayed, set **Command** to **Authorize RFID cards in batches**, enter the RFID card start number and the number of cards, and click **Send command**.

If only one RFID card needs to be authorized, the number of cards is **1**. After the RFID cards are authorized successfully, you can swipe these cards to unlock and lock the K211L and record operator information.

# 8 Device Installation
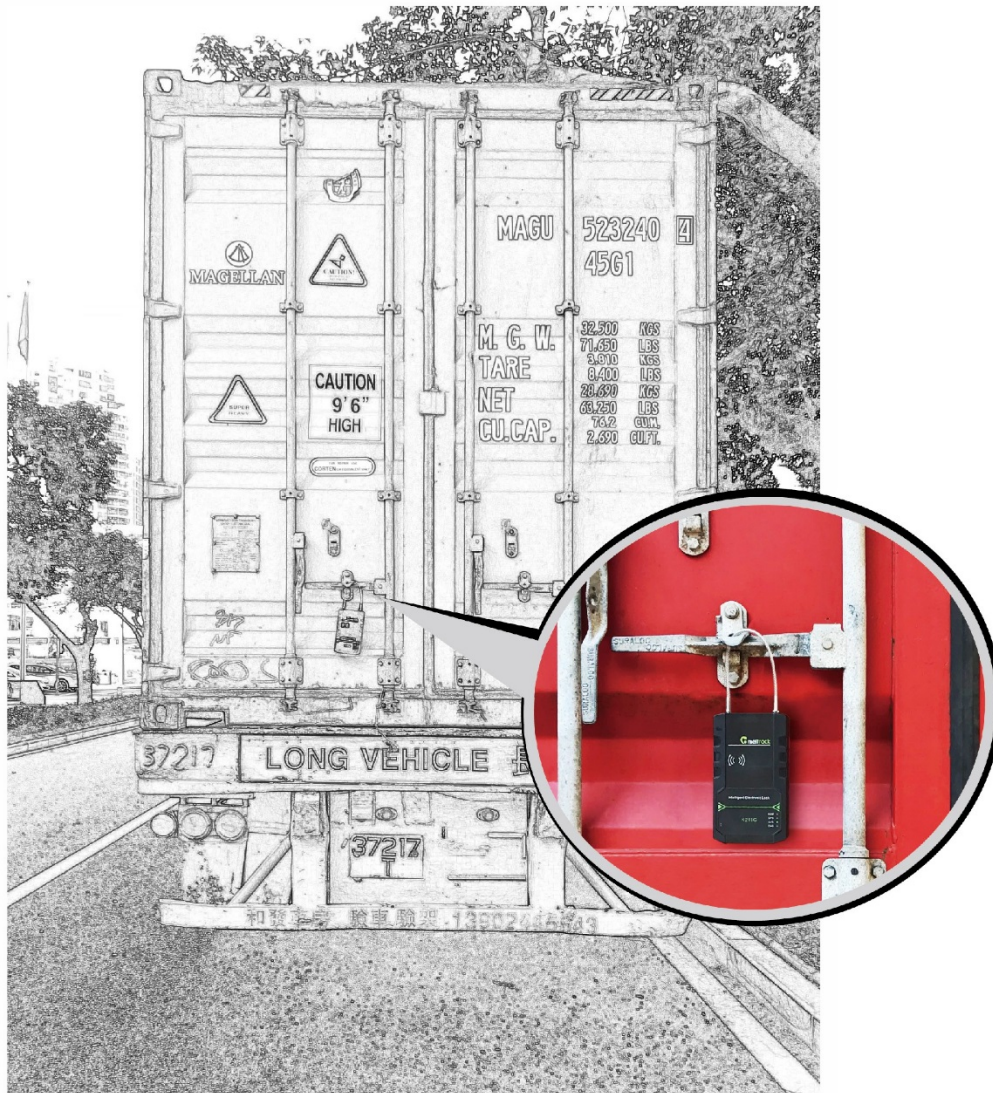


**If you have any questions, do not hesitate to email us at info@meitrack.com.**