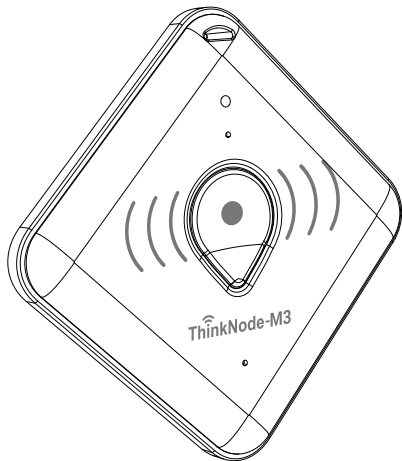


# ThinkNode-M3

## User Manual



Magnetic  
Charging



Low Power  
Consumption



IP66



GNSS  
Positioning



Extended  
Battery Life

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# 1. Product Introduction

The ThinkNode-M3 LoRaWAN Tracker is a high-performance device designed to provide excellent service for users who are looking for a covert and reliable tracking solution.

It is lightweight, easy to carry and install, and can ensure accurate location tracking whether it is worn on the body, fixed to a vehicle, or placed discreetly in any location. It integrates advanced GPS, Bluetooth Beacon, and Wi-Fi Scan technologies to achieve seamless positioning.

The ThinkNode-M3 LoRaWAN Tracker uses a magnetic charging design and allows flexible reporting intervals. With properly configured parameters, it operates for over 3 months on a single charge.

In addition to location tracking, it can also monitor ambient temperature, humidity, and movement status. The device is equipped with a one-click alert function to quickly send out a distress signal in an emergency.

Also, the IP66 protection rating ensures the durability and reliability of the device in various harsh environments, making it an ideal choice for a variety of application scenarios.

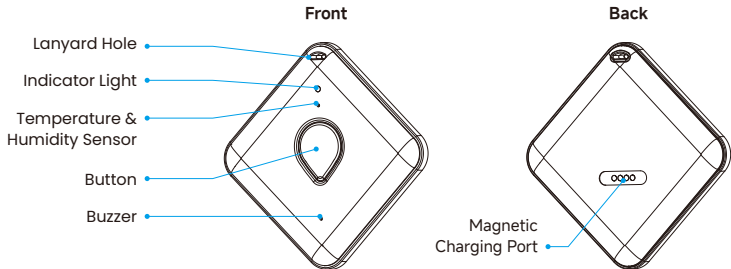
**Applications:** LoRaWAN Tracker is ideal for use in schools, industrial sites, warehouses, hospitals, and event venues where precise tracking and environmental monitoring are required. Whether it's asset management, security monitoring, or environmental data collection, LoRaWAN Tracker provides a reliable solution.

# Feature

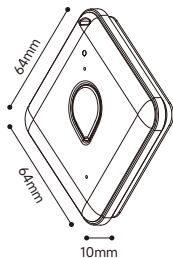
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- **Tracker for LoRaWAN:** Integrates GPS, Bluetooth, and Wi-Fi for seamless positioning.
- **Powerful client interface:** Provides an intuitive and easy-to-use operation experience, convenient for users to manage and monitor devices.
- **Three working modes:** Including standby mode, normal mode and trigger mode;
- **Battery power reporting:** The battery power reporting function can be set to ensure that users are aware of the power status of the device at any time.
- **GPS positioning:** Built-in high-sensitivity GPS module, supports GPS / GLONASS / Galileo / Beidou positioning systems
- **One-click search function:** If the tracker is lost, a one-click search function is provided to help quickly locate the device.
- **Real-time location:** Ensure real-time updates and high accuracy of location information.
- **Built-in sensors:** Including temperature, humidity, and accelerometer sensors, providing environmental monitoring functions.
- **Customized sensor thresholds:** You can set sensor thresholds as needed, and the device will automatically alarm when out of range.
- **Reporting time setting:** You can set the time interval for data reporting as needed.
- **Offline data caching function:** When there is no network connection, the device can cache data and upload it after the network is restored.

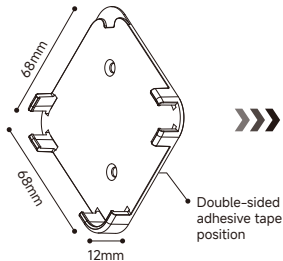
# Hardware Overview



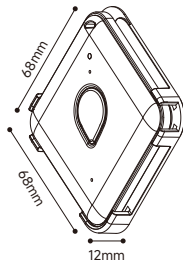
**ThinkNode-M3**



**Fixed Base**



**Mount on wall for storage**



## Parameter

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<b>Main Control IC</b>	nRF52840
<b>LoRa Chip</b>	LR1110
<b>Protocol Standard</b>	LoRaWAN 1.0.3
<b>Device Class</b>	Class A
<b>LORA Frequency</b>	EU868 / US915
<b>Sensitivity Requirement</b>	-140 dBm or above
<b>Maximum Transmission Power</b>	+20 dBm
<b>Transmission Rate Range</b>	1.76 ~ 62.5Kbps
<b>LoRa Frequency Range</b>	860 MHz - 960 MHz
<b>Communication Distance</b>	5~6 kilometers
<b>Bluetooth</b>	Bluetooth 5.0
<b>GNSS Location</b>	Support GPS / GLONASS / GALILEO / BDS
<b>GNSS Sensitivity</b>	-148 dBm (cold start) -156 dBm (hot start) -160 dBm (recapture) -162 dBm (tracking)
<b>GNSS Positioning Accuracy</b>	<1.5 m (CEP50)
<b>Sensors</b>	Temperature Sensor, humidity Sensor, accelerometer
<b>Indicator</b>	One Red / Green / Blue three-color indicator light

<b>Button</b>	Power On / Off / SOS Trigger
<b>Battery Capacity</b>	770 mAh, lithium battery
<b>IP Rating</b>	IP66
<b>Operating Temperature</b>	-20°C - +60°C
<b>Charging Method</b>	Magnetic charging
<b>Antenna</b>	Internal onboard antenna (GNSS / LORA / WIFI / BLE)
<b>Power Supply</b>	5V DC
<b>Size</b>	L/W/H: 64*64*10 (mm) Fixed Base: 68*68*10.2 (mm)
<b>Material</b>	PC + ABS
<b>Certificate</b>	CE / FCC
<b>Net Weight</b>	40g

## Package Contents

ThinkNode-M3 x1

Magnetic Charging Cable x 1

Lanyard x 1

Base x 1

Quick Starter Guide x 1

Double-Sided Adhesive Tape x 1

Screw kit x 1

## 1. What if the device fails to join the network?

- First, confirm that the gateway is online.
- Verify that the device's OTAA credentials (DEV EUI, APP EUI, APP KEY) and band selection are correct.
- Once confirmed, double-click to initiate network joining; if it fails on the first attempt, try again.

## 2. What if the PC software cannot detect the serial port?

- Check if the USB cable is properly connected; try unplugging and replugging it.
- Verify that the device is recognized by your computer (a corresponding COM port should appear in Device Manager).

## 3. What if the device keeps showing Offline?

- First, confirm that the gateway is online.
- If the gateway is online, verify the device's OTAA credentials (DEV EUI, APP EUI, APP KEY) and band selection are correct.
- Once confirmed, double-click the device to initiate network joining.

## 4. In Normal and Trigger modes, how long does it take for the device to respond to web interface operations?

- In Normal and Trigger modes, the device will respond at the next reporting cycle when operations are performed on the web interface.
- Users can long-press for 5 seconds in these two modes to enter configuration mode, and then operate from the web interface—at which point the device can respond quickly.

## FCC Caution

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This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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

**Note:** 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.

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

## 2. Interaction Functions

### 2.1 Check Battery Level / Wake Device

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In Standby, Normal, and Trigger operating modes, a single press of the device button displays the current battery level. In Normal mode, when the device is in sleep state, a single button press wakes the device. The buzzer is sounding, but the LED remains unresponsive.

Checking the battery level or waking the device does not affect the current operating mode. The device continues running according to its original settings after the operation.

Operation	Function	Current Battery / Status	LED Response	Buzzer
Single Press	Check Battery Level	> 20%	Green solid for 3s	None
		≤ 20%	Red solid for 3s	
		Power off / No battery	None	
	Wake Device	Sleep state	None	Solid for 3s

### 2.2 Join LoRaWAN Network

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Double-press the device button to initiate or attempt joining the LoRaWAN network. Upon successful network join, the device enters Normal mode. If the join fails, the device automatically returns to the pending connection state.

Operation	Function	Current Status	LED Response	Buzzer
Double Press	Initiate / Attempt to Join LoRaWAN Network	Pending Connection	Blue breathing light (1Hz, cycle)	None
		Connecting	Blue fast flash (1Hz, cycle)	None
		Connection Successful	Green fast flash (1Hz, 3 times)	Sounds
		Connection Failed	Red fast flash (1Hz, 3 times)	Sounds

## 2.3 SOS Alert

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Triple-press the device button to manually trigger an SOS alert. The device simultaneously acquires location/sensor data and uploads it. Both the LED and buzzer operate in Morse code SOS rhythm: three short, three long, three short — short for 0.3 seconds, long for 0.9 seconds.

Alert notifications can be viewed in the **"SOS Button Triggered Notification"** section of the **Tracker Portal** web interface.

Operation	Function	LED Response	Buzzer
Triple Press	Manually Trigger SOS Alert	Red light flashing	Sounds

## 2.4 Enter Configuration Mode

---

In Normal and Trigger modes, press and hold the device button for 3 seconds to enter Configuration Mode (this operation is not supported in Standby mode). Once in Configuration Mode, the device waits to receive downlink data to complete parameter configuration.

Operation	Function	Current Status	LED Response	Buzzer
Press and Hold 3s	Enter / Exit Configuration Mode	Normal / Trigger	Blue slow flash	None
		Standby	Operation not supported	
	Configuration Successful	/	Green fast flash 3 times	Sounds 3 times in sync

## 2.5 Power On/Off

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Press and hold for 5 seconds to power on or power off the device. This operation is only supported in Standby mode. After power-off, the device will go offline. After power-on, the device needs to rejoin the network.

Regardless of whether the network join is successful, the device will automatically power off after 5 minutes of inactivity. If the device shuts down due to battery depletion, it will automatically power on when charging. In other cases, a manual 5-second press and hold is required to automatically power on while charging.

Operation	Function	Current Battery	LED Response	Buzzer
Press and Hold 5s	Power Off	/	None	Sounds for 3s
	Power On and Enter Network Join State	> 20%	Green solid for 3s, then blue slow flash	
		≤ 20%	Red solid for 3s, then blue slow flash	

## 2.6 One-Click Search

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Enable or disable the One-Click Search function via the **One-Click Search** page on the **Tracker Portal** web interface.

Click the **"Turn on"** button and wait a moment; the device buzzer will start to respond. For detailed information, please refer to **Section 3.7 "One-Click Search"**.

## 2.7 Data Transmission

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When the device reaches the configured reporting interval, the LED green light flashes twice with no buzzer response, indicating that the device is transmitting data.

## 2.8 Charging

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Charging	Red light slowly flashing
Fully Charged	Green light stays on

## 3. Web Platform Introduction

### 3.1 Registration and Login

Visit <https://web.thinknode.cc/> to open Elecrow Tracker Portal.

#### 3.1.1 Registration

Click the **Register** tab, fill in your email address, select your region, enter the email verification code, and set your password. Click the **Register** button to complete account creation.



Welcome

User login Register

\* User Email

Region  
Select

\* Verification code  
 [Send verification code](#)

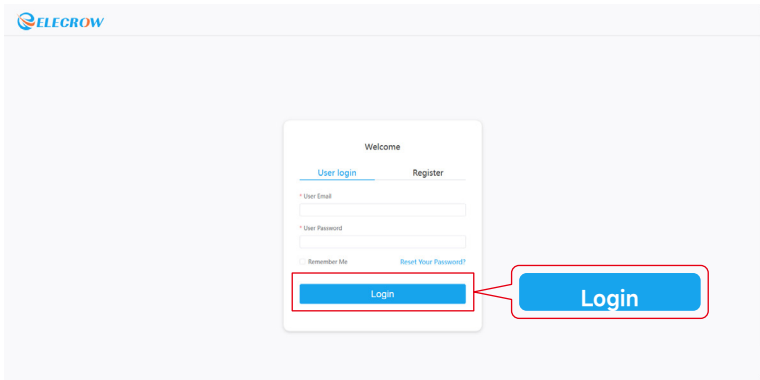
\* User Password

\* Confirm Password



### 3.1.2 Login

After registration, switch to the **User login** tab, enter your registered email and password, and click the **Login** button to log in. Check **Remember Me** to save your login email so you don't need to re-enter it on your next visit. If you forget your password, click **Reset Your Password?** to reset it.



## 3.2 Tracker Overview

After logging in, you will enter the **Tracker Overview** page, where you can view the list of added tracker devices. The list displays the device name, DEV\_EUI, frequency band, SN code, battery percentage, and online/offline status.

- **Search:** Enter the SN code in the search bar at the top to quickly locate the target device.
- **Add Device:** Click the **Add Tracker** button in the upper right corner to add a new tracker device.
- **View Details:** Click the **Details** button on the device card to enter the detailed configuration interface for that device.
- **Delete Device:** Click the ⊖ button on the device card to delete the tracker device information.
- **Sign Out:** Click the **Sign out** button in the upper right corner to log out of the current account.

### 3.2.1 Add Tracker

Click the **Add Tracker** button to open the add device dialog box, and fill in the information following the steps below:

The screenshot shows the ELECROW web interface. On the left is a navigation menu with items: Tracker Overview, Gateway Management, Map, Historical Record, Important Notice, One-Click Search, and Service Subscription. The main area is titled 'Tracker Overview' and contains a card for 'M3\_tracker'. The card shows a device icon, a status bar with '100%' and 'Online', and a 'Details' link. A modal window titled 'Add Tracker' is open in the foreground. The modal has a close button (X) and contains the following fields and buttons:


- Tracker Name:  (placeholder: Enter name (max 20 characters), 0/20)
- \* DEV EUI:  (placeholder: Please automatically generate the corresponding DEV EUI)
- \* APP EUI:  (placeholder: Please automatically generate the corresponding APP EUI)
- \* APP KEY:  (placeholder: Please automatically generate the corresponding APP KEY)
- One-click generation button (orange)
- \* SN:
- \* Product Type:  (placeholder: Select, dropdown arrow, envelope icon)
- \* Region:  (placeholder: Select, dropdown arrow)
- Cancel button (grey)
- Add button (blue)

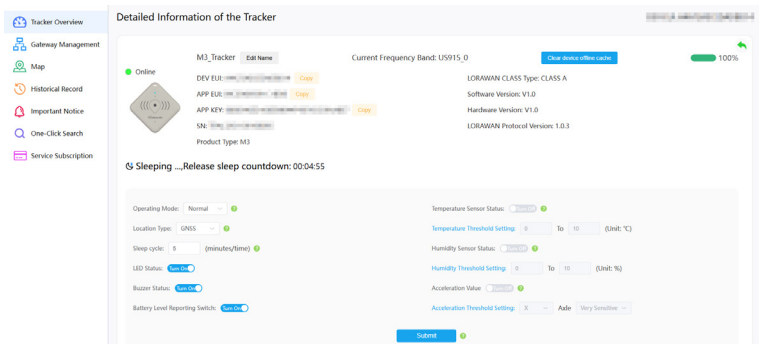
- **Tracker Name:** Enter the device name (maximum 20 characters).
- **DEV EUI / APP EUI / APP KEY:** Click the **One-click generation** button to auto-generate.
- **SN:** Enter the SN code on the back of the device.
- **Product Type:** Select the product type.
- **Region:** Select your region.

After filling in the information, click the **Add** button to add the tracker device; click **Cancel** to cancel the operation.

## 3.2.2 Details

On the Tracker Overview page, click the **Details** button in the corresponding tracker list to enter the device detailed configuration interface. On this page, you can view the device basic information and set parameters such as operating mode, sensor switches, and alarm thresholds.

There is a  button in the upper right corner of the page; click it to return to the Tracker Overview list page.



**Tracker Overview**

- Gateway Management
- Map
- Historical Record
- Important Notice
- One-Click Search
- Service Subscription

### Detailed Information of the Tracker

Online Clear device offline cache 100%

M3\_Tracker [Edit Name](#) Current Frequency Band: US915.0

DEV EUI: [Copy](#) LORAWAN CLASS Type: CLASS A  
APP EUI: [Copy](#) Software Version: V1.0  
APP KEY: [Copy](#) Hardware Version: V1.0  
SN: [Copy](#) LORAWAN Protocol Version: 1.0.3  
Product Type: M3

**Sleeping** ...Release sleep countdown: 00:04:55

Operating Mode: Normal ● Temperature Sensor Status: ●  
Location Type: GNSS ● Temperature Threshold Setting: 0 To 10 (Unit: °C)  
Sleep cycle: 5 (minutes/time) ● Humidity Sensor Status: ●  
LED Status: On Humidity Threshold Setting: 0 To 10 (Unit: %)  
Buzzer Status: On Acceleration Value: 0  
Battery Level Reporting Switch: On Acceleration Threshold Setting: X Axle Very Sensitive

[Submit](#) ●

### • Device Information

At the top of the configuration page, you can view the basic information of the device, including the device name (click **Edit Name** to modify), device online status, current battery level, DEV\_EUI, and other communication identification information. Additionally, the page provides a **Clear device offline cache** button; click it to clear the offline cached data of the device.

## • Operating Mode

The device supports three operating modes, switchable via the dropdown:

**Standby:** Factory default state with parameters not set. Only supports power on, power off, and network join operations. No reporting cycle, sleep cycle, or sensor configuration. The device automatically powers off after 5 minutes of inactivity, regardless of whether the network join is successful.

**Normal:** Normal use state, supporting tracking and positioning, viewing trajectories, and viewing sensor reported data. The reporting cycle is fixed at 5 minutes and cannot be modified, but supports custom **Sleep Cycle**. After 5 minutes of inactivity, the device enters the custom sleep cycle. (This design aims to minimize power consumption)

At this time, you can view the sleep countdown on the Details page in Tracker Overview. In sleep mode, a single button press wakes the device and the buzzer sounds for 1 second. After the sleep cycle ends, the device automatically wakes up and reports data 5 minutes later. Sensors only support on/off control; thresholds cannot be set.

**Trigger:** Monitors specific parameters by setting sensor thresholds to trigger sensor data reporting. Compared to Normal Mode, Trigger Mode supports custom reporting cycles and allows setting alarm thresholds for sensors, but does not provide sleep cycle settings.

## • Location Type

The device supports three positioning methods:

**GNSS:** Satellite positioning

**WiFi:** Indoor WiFi positioning; requires purchasing the service before use

**GNSS+WiFi:** Hybrid satellite and WiFi positioning

- **LED Status**

Controls the device LED indicator switch. Normal and Trigger modes can be set to **Turn On** or **Turn Off**.

- **Buzzer Status**

Controls the device buzzer switch. Normal and Trigger modes can be set to **Turn On** or **Turn Off**.

- **Battery Level Reporting Switch**

Controls whether to report device battery information. Normal and Trigger modes can be set to **Turn On** or **Turn Off**.

- **Temperature Sensor Status**

Controls the temperature sensor switch. In Normal Mode, it can be set to **Turn On** or **Turn Off**, but threshold setting is not supported.

In Trigger Mode, it supports configuring the alarm threshold range in °C. After setting the threshold, the system monitors temperature data every 5 minutes. If the threshold is exceeded, an alert notification will be received in the **Sensor Trigger Mode Notification** section of the **Important Notice page**.

- **Humidity Sensor Status**

Controls the humidity sensor switch. In Normal Mode, it can be set to **Turn On** or **Turn Off**, but threshold setting is not supported.

In Trigger Mode, it supports configuring the alarm threshold range in %. After setting the threshold, the system monitors humidity data every 5 minutes. If the threshold is exceeded, an alert notification will be received in the **Sensor Trigger Mode Notification** section of the **Important Notice page**.

## • Acceleration Value

Controls the acceleration sensor switch. In Normal Mode, it can be set to **Turn On** or **Turn Off**, but threshold setting is not supported. In Trigger Mode, it supports Acceleration Threshold Setting, including:

**Axis selection:** X, Y, Z, X + Y, X + Z, Y + Z, X + Y + Z

**Axle:** Optional Very Sensitive, Sensitive, Normal, Slow

After setting the threshold, the system monitors acceleration data every 5 minutes. If the device's movement direction is consistent with the monitoring axis set for the acceleration, an alert notification will be received in the **Sensor Trigger Mode Notification** section of the **Important Notice** page.

## • Submit

After completing all parameter settings, click the **Submit** button at the bottom of the page to save the configuration. Upon successful parameter submission, the device green light flashes 3 times, and the buzzer sounds 3 times in sync.

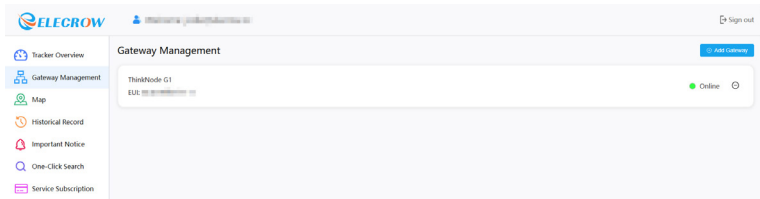
**Note:** After modifying and submitting parameters, if the tracker is currently not in sleep state, the new settings will take effect in approximately 30 seconds. If the tracker is in sleep state, the new settings will take effect 30 seconds after it wakes up.

## 3.3 Gateway Management

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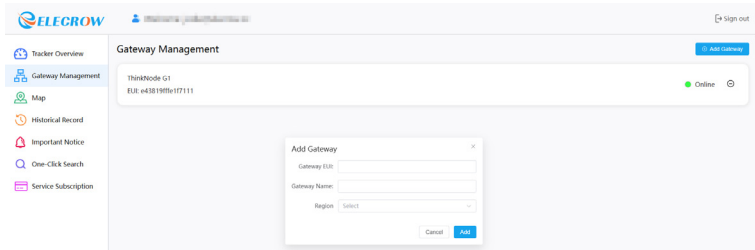
Manage the supporting LoRaWAN gateway devices to achieve pairing and connection between the gateway and trackers. In the gateway list, you can view the added gateway information, including gateway name, EUI, and online status.

Click the  button on the right side of the corresponding gateway to delete that gateway.



### 3.3.1 Add Gateway

Click the **Add Gateway** button in the upper right corner of the page to open the add gateway dialog box. Enter the Gateway EUI, fill in the Gateway Name, select your region, and click the **Add** button to complete adding the gateway. Click the **Cancel** button to cancel adding the gateway.



**Note:** The tracker function requires a standard gateway to be set up.

## 3.4 Map

Supports viewing tracker location information through GNSS, WiFi, and GNSS+WiFi hybrid positioning methods.

Use the dropdown menu in the upper right corner to select the corresponding device to view detailed information including device battery level, device name, longitude and latitude coordinates of the current location, last reported time, current temperature, current humidity, and acceleration values.

The screenshot displays the ELECROW M3 Tracker web interface. On the left is a navigation menu with options: Tracker Overview, Gateway Management, Map, Historical Record, Important Notice, One-Click Search, and Service Subscription. The main area shows a map of an industrial park with a yellow callout box for 'M3\_Tracker' containing the following data:

- Device Name: M3\_Tracker
- East Longitude: 113.84705
- North Latitude: 22.80318
- Report Time: 2026/04/28 12:17:59

At the bottom left, a green box displays sensor data:

- Current Humidity: 42.1
- Current Temperature: 31.2
- Acceleration Value: X Axis: -3.6; Y Axis: 3.7; Z Axis: -96.9
- Latest Report Time: 2026/04/28 12:17:59

At the top right, there is a dropdown menu for 'M3\_Tracker' and a 'Sign out' button. A battery level indicator shows 100%.

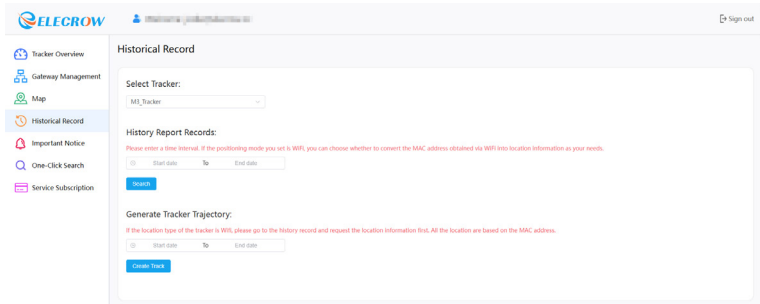
**GNSS Positioning:** GNSS positioning can display the tracker's current location and transmission status in real time.

**WiFi Positioning:** WiFi positioning requires manual operation to obtain location information. In the **History Report Records** list on the **Historical Record** page, select a date, find the record with **Mac Address** (which is the WiFi positioning history record), and click the **Get Location** button to view the corresponding WiFi positioning location information on the **Map** page.

**GNSS + WiFi Hybrid Positioning:** When using hybrid positioning, the system will prioritize WiFi positioning.

## 3.5 Historical Record

Query the tracker's historical location data, supporting viewing of historical reporting records and generation of device movement trajectories.



The screenshot shows the ELECROW web interface. On the left is a navigation menu with items: Tracker Overview, Gateway Management, Map, Historical Record (highlighted), Important Notice, One-Click Search, and Service Subscription. The main content area is titled "Historical Record" and contains two sections:

- Select Tracker:** A dropdown menu showing "M1\_Tracker".
- History Report Records:** A section with a red warning message: "Please enter a time interval. If the positioning mode you set is WiFi, you can choose whether to convert the MAC address obtained via WiFi into location information as your needs." Below this is a date range selector with "Start date" and "End date" fields, a "To" separator, and a blue "Search" button.
- Generate Tracker Trajectory:** A section with a red warning message: "If the location type of the tracker is WiFi, please go to the history record and request the location information first. All the location are based on the MAC address." Below this is a date range selector with "Start date" and "End date" fields, a "To" separator, and a blue "Query Track" button.

In the top right corner of the interface, there is a "Sign out" button.

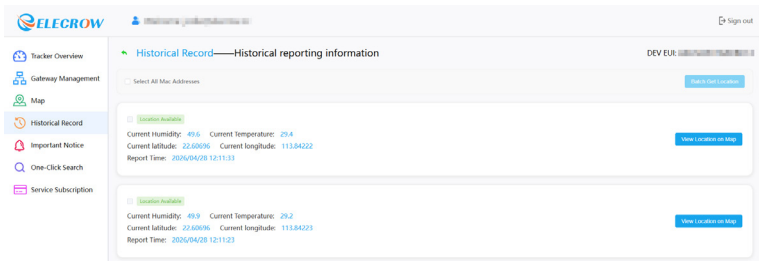
### 3.5.1 History Report Records

Select the corresponding tracker and time range (Start date – End date), then click the **Search** button to search for historical reporting records within that time period.

The **Historical reporting information** page displays the current tracker's DEV EUI in the upper right corner; click the  button in the upper left corner to return to the previous page.

#### • GNSS Positioning History Records:

Each record displays a **Location Available** tag at the top, with a **View Location on Map** button on the right side. Click to view the corresponding positioning location on the map. The record displays Current Humidity, Current Temperature, Current Latitude, Current Longitude, and Report Time.



The screenshot shows the ELECROW web interface. The top navigation bar includes the ELECROW logo, a user profile icon, and a 'Sign out' button. The left sidebar contains menu items: Tracker Overview, Gateway Management, Map, Historical Record (selected), Important Notice, One-Click Search, and Service Subscription. The main content area is titled 'Historical Record—Historical reporting information' and displays the DEV EUI. Below this, there is a search filter 'Select All Mac Addresses' and a 'Search For Location' button. Two records are listed, each with a 'Location Available' tag and a 'View Location on Map' button. The first record shows: Current Humidity: 49.6, Current Temperature: 29.4, Current latitude: 22.60696, Current longitude: 113.84222, Report Time: 2026/04/28 12:11:33. The second record shows: Current Humidity: 49.9, Current Temperature: 29.2, Current latitude: 22.60696, Current longitude: 113.84223, Report Time: 2026/04/28 12:11:23.

#### • WiFi Positioning History Records:

Each record displays a **Mac Address Available** tag at the top, with a **Get Location** button on the right side. Click this button to convert the MAC address to specific location coordinates through the WiFi positioning service.


The page top provides a **Select All Mac Addresses** checkbox; after checking, you can batch select multiple records, then click the **Batch Get Location** button to perform batch location conversion. This function is only valid for WiFi positioning history records; GNSS positioning records do not require this operation.

The record displays Current Humidity, Current Temperature, Mac Address (list of WiFi hotspot MAC addresses scanned around the device, used to estimate device location), and Report Time.

The screenshot shows the ELECROW web interface. At the top left is the ELECROW logo. Below it is a sidebar with navigation items: Tracker Overview, Gateway Management, Map, Historical Record (highlighted), Important Notice, One-Click Search, and Service Subscription. The main content area is titled 'Historical Record' and contains a 'Batch Get Location' button and a list of records. Each record shows 'MAC Address Available', 'Current Humidity', 'Current Temperature', 'Mac Address', and 'Report Time'. A 'Get Location' button is present for each record.

### 3.5.2 Generate Tracker Trajectory

Select the tracker and time range (Start date – End date) for which you need to generate the trajectory, then click the **Create Track** button to generate the device movement trajectory for that time period.

The **Generate Tracker Trajectory** page displays the current tracker's DEV EUI in the upper right corner; click the  button in the upper left corner to return to the previous page.

**ELECROW** Historical Record Sign out

Tracker Overview **Historical Record** — Generate Tracker Trajectory

Gateway Management

Map

Historical Record

Important Notice (951)

One-Click Search

Service Subscription

Tracker Name: M3\_Tracker Start Time: 2026-05-18 00:00:00 End Time: 2026-05-19 23:59:59

The screenshot displays the 'Historical Record' page for a tracker named 'M3\_Tracker'. The interface includes a sidebar with navigation options: Tracker Overview, Gateway Management, Map, Historical Record (selected), Important Notice (951), One-Click Search, and Service Subscription. The main content area shows the tracker's movement trajectory on a map, marked with red location points connected by a green line. A popup window for the 'Starting Point' is visible, displaying the following information:

Starting Point
North Latitude: 22.80236
East Longitude: 113.80868
Report Time: 20260519 17:49:20

After successful generation, the page displays the tracker name, start time, and end time. The map shows the device's movement trajectory within that time period, marking the **Starting Point** and **End Point** positions.

Click the location markers on the map to view detailed information about that point, including North Latitude, East Longitude, Report Time, Interval, Point ID, and Timestamps.

## 3.6 Important Notice

Select the corresponding Tracker in the upper right corner of the page to view important notifications for that device. The left navigation bar **Important Notice** displays the total number of notifications for the tracker.

The page contains three notification areas; each area title shows the number of unread notifications for that area. Each area displays up to the latest 10 notification messages. Supports marking individual messages as read, or clicking the **All read** button to mark all notifications as read at once.

The screenshot shows the ELECROW web interface. The top left has the ELECROW logo and a user profile icon. The top right has a 'Sign out' button. A dropdown menu shows 'M1\_Tracker'. The left sidebar contains navigation icons and labels: Tracker Overview, Gateway Management, Map, Historical Record, Important Notice (175), One-Click Search, and Service Subscription. The main content area is titled 'Important Notice' and is divided into three notification panels. The first panel, 'Low Battery Alert Notification (6 unread items)', lists six notifications with timestamps, battery levels (20% and 19%), and 'Read' buttons. The second panel, 'SOS Button Triggered Notification (7 unread items)', lists seven notifications with timestamps, coordinates, and 'Read' buttons. The third panel, 'Sensor Trigger Mode Notification (6 unread items)', shows one notification with a timestamp and 'Read' button.

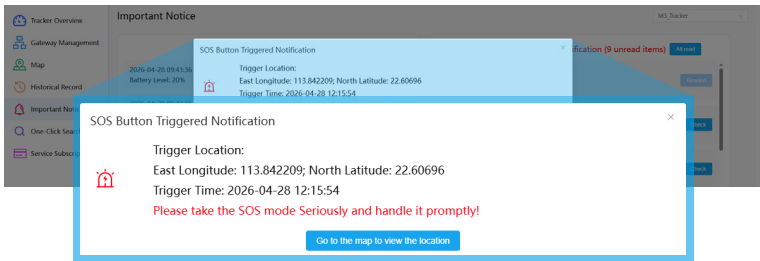
### • Low Battery Alert Notification

When the device battery level drops below 20%, the system automatically sends a low battery alert notification. Each notification displays the trigger Time and Battery Level.

## • SOS Button Triggered Notification

SOS is a real-time alert. When the user triple-presses the device button, it triggers immediately, and the system sends an SOS alert notification right away. Each notification displays the trigger time, East Longitude, and North Latitude coordinates.

Click the **Check** button on the right side of each notification to open the SOS trigger details popup, showing the trigger location, trigger time, and alert message "**Please take the SOS mode Seriously and handle it promptly!**". Click the **Go to the map to view the location** button to view the location on the map.



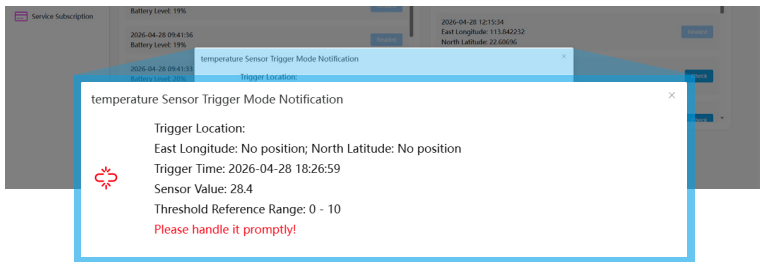
The screenshot shows a web application interface with a sidebar on the left containing navigation items: Tracker Overview, Gateway Management, Map, Historical Record, Important Notice, One-Click Search, and Service Subscription. The main content area is titled 'Important Notice' and displays a notification for '2026-04-28 09:43:36' with a 'Battery Level: 20%'. A notification popup is open, titled 'SOS Button Triggered Notification', with a close button (X) in the top right corner. The popup contains a red house icon, the text 'Trigger Location: East Longitude: 113.842209; North Latitude: 22.60696', and 'Trigger Time: 2026-04-28 12:15:54'. Below this is a red alert message: 'Please take the SOS mode Seriously and handle it promptly!'. At the bottom of the popup is a blue button labeled 'Go to the map to view the location'.

## • Sensor Trigger Mode Notification

You must configure the relevant parameters on the **Details** page under **Tracker Overview**. The system monitors sensor data at 5-minute intervals. When temperature or humidity exceeds the preset threshold range, or if the device's movement direction matches the acceleration monitoring axis, the system automatically sends alert notifications.

Each notification displays the trigger time, sensor type and alert type.

Click the **Check** button on the right of temperature or humidity notification to open the sensor trigger details pop-up window. The pop-up shows the trigger location, trigger time, real-time sensor value, threshold reference range, along with the alert message **"Please handle it promptly!"**.

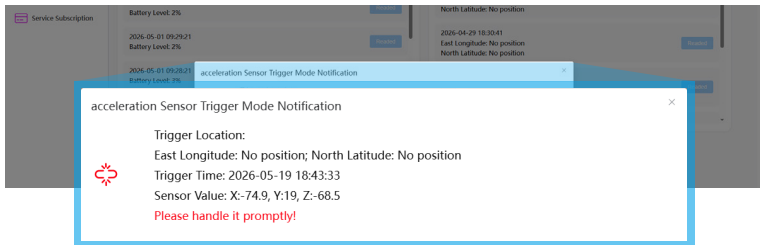


The screenshot shows a notification pop-up window titled "temperature Sensor Trigger Mode Notification" with a close button (X) in the top right corner. On the left side of the pop-up is a red icon of a sensor with a signal wave. The text inside the pop-up reads:

- Trigger Location:  
East Longitude: No position; North Latitude: No position
- Trigger Time: 2026-04-28 18:26:59
- Sensor Value: 28.4
- Threshold Reference Range: 0 - 10
- Please handle it promptly!**

The background shows a blurred interface with a "Service Subscription" header, a "Battery Level: 19%" indicator, and a "Check" button next to the notification.

Click the **Check** button on the right of acceleration notification to open the sensor trigger details pop-up window. The pop-up shows the trigger location, trigger time, real-time sensor value, along with the alert message **"Please handle it promptly!"**.



The screenshot shows a notification pop-up window titled "acceleration Sensor Trigger Mode Notification" with a close button (X) in the top right corner. On the left side of the pop-up is a red icon of a sensor with a signal wave. The text inside the pop-up reads:

- Trigger Location:  
East Longitude: No position; North Latitude: No position
- Trigger Time: 2026-05-19 18:43:33
- Sensor Value: X:-74.9, Y:19, Z:-68.5
- Please handle it promptly!**

The background shows a blurred interface with a "Service Subscription" header, a "Battery Level: 2%" indicator, and a "Check" button next to the notification.

## 3.7 One-Click Search

Select the corresponding Tracker in the upper right corner of the page to view device information, including DEV EUI, APP EUI, APP KEY, and Product Type.

Click the **Turn On** button to enable the one-click search function. The device buzzer will sound slowly 3 times, synchronized with the LED green light flashing slowly 3 times, indicating successful activation. The device will then continuously emit a "beep-beep" sound followed by a "beep-beep-beep" sound at intervals, allowing the user to locate the device by sound.

**Turn Off:** Click the **Turn Off** button on the web page, wait a few seconds, and the buzzer will stop sounding.



The screenshot shows the ELECROW web interface for the "One-Click Search" feature. On the left is a navigation menu with options: Tracker Overview, Gateway Management, Map, Historical Record, Important Notice (175), One-Click Search (highlighted), and Service Subscription. The main content area is titled "One-Click Search" and features a dropdown menu set to "M3 Tracker". In the center is a diamond-shaped Tracker device with the word "Tracker" at the bottom, flanked by two green Wi-Fi signal icons. Below the device are two buttons: "Turn Off" and "Turn On". In the bottom right corner, the following device information is displayed:

- DEV EUI: 0000000000000000
- APP EUI: 0000000000000000
- APP KEY: 00000000000000000000000000000000
- Product Type: M3

## 3.8 Service Subscription

The page provides **Google Location Service Subscription** functionality. The top of the page displays the current remaining location service usage count.

The page offers three location service package options:

150 times Location Service Package: \$0.99

500 times Location Service Package: \$2.97

2000 times Location Service Package: \$11.88

Each package has a **Purchase** button on the right side; click to purchase the corresponding package. The **Order List** button in the upper right corner of the page allows you to view the order list.

The screenshot shows the ELECROW user interface. At the top left is the ELECROW logo. In the top right corner, there is a user profile icon and a 'Sign out' button. A left-hand navigation menu includes: Tracker Overview, Gateway Management, Map, Historical Record, Important Notice, One-Click Search, and Service Subscription (which is highlighted). The main content area is titled 'Service Subscription - Google Location Service Subscription'. It displays 'Location Service Remaining: 993 times' in orange text. Below this, there are three subscription packages, each with a 'Purchase' button on the right:

- 150 times Location Service Package: \$0.99
- 500 times Location Service Package: \$2.97
- 2000 times Location Service Package: \$11.88

An 'Order List' button is located in the top right corner of the package list area.

**We hereby declare:** We only securely store your history records and never invade your privacy.

## 4. PC Software Introduction

The PC software is primarily used to write the OTAA join parameters (DEV EUI, APP EUI, APP KEY) and other configuration information (such as RTC time calibration and band selection) into the device.

Download ThinkNode-Tracker-Host PC host through the link or **QR code** below.

<https://github.com/Elecrow-RD/ThinkNode-M3-Tracker-Card---LoRaWAN-Tracker-With-GPS-WiFi-BLE-function/tree/master/ThinkNode-Tracker-Host%20PC>



ThinkNode-Tracker Serial Port Configuration

Select Serial Port  
COM10: USB Serial Device

Set Baud Rate  
115200

Band Selection AU915

DEV EUI

APP EUI

APP KEY

**Select Serial Port:**

Select serial port, equipped with Refresh button

**Set Baud Rate:**

Set baud rate

**Open Serial Port / Close Serial Port:**

Open/Close serial port button

**Band Selection:**

Frequency band selection

**DEV EUI / APP EUI / APP KEY:**

Copy the DEV EUI, APP EUI, and APP KEY generated by One-click generation in Tracker Portal

**Settings / Read Settings:**

Set/Read settings button

**Clear Logs:**

Clear logs button

**RTC Time Calibration:**

RTC time calibration button

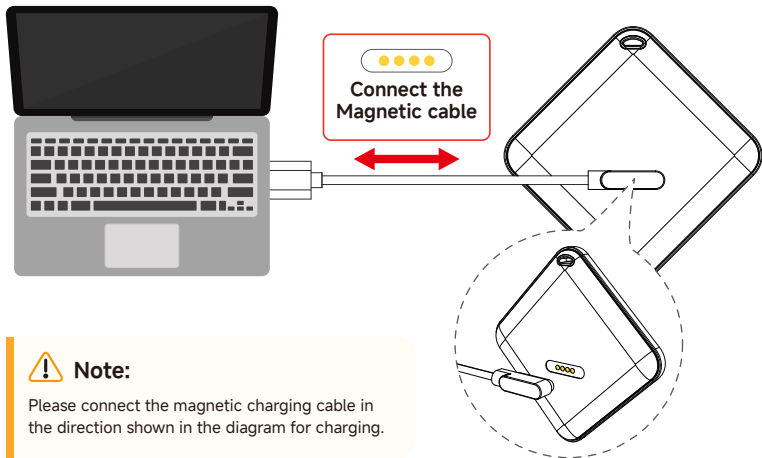
**Factory Reset:**

Factory reset button

## 5. Detailed Operation Steps

### 5.1 PC Configuration & Device Addition

5.1.1 Connect the magnetic end of the data cable to the magnetic charging port on the back of the M3 device, and insert the other end into the USB-A port of the computer.



#### Note:

Please connect the magnetic charging cable in the direction shown in the diagram for charging.

## 5.1.2 Open the serial port configuration window (see figure).

ThinkNode-Tracker Serial Port Configuration

Select Serial Port

COM10: USB Serial Device

Refresh

Set Baud Rate

115200

Open Serial Port

Close Serial Port

Band Selection

AU915

DEV EUI

APP EUI

APP KEY

Settings

Read Settings

Clear Logs

RTC Time Calibration

Factory Reset

5.1.3 Click the **Refresh** button to refresh the window, then click the **Open Serial Port** button to open the serial port. The M3 device status information will be printed in real-time on the right side of the window. Select the frequency band supported by your region according to the actual situation.

The screenshot shows the 'ThinkNode-Tracker Serial Port Configuration' window. It features several configuration sections and a log display area. Red boxes and numbers highlight specific elements:

- 1**: A red box highlights the 'Refresh' button in the 'Select Serial Port' section.
- 2**: A red box highlights the 'Open Serial Port' button in the 'Set Baud Rate' section.
- 3**: A large red box highlights the log display area on the right side of the window, which shows three identical status messages: 'Current Status: Shutdown' and 'Working Mode: standby mode'.
- 4**: A red box highlights the 'Band Selection' dropdown menu, which is currently set to 'US915'.

The configuration sections include:

- Select Serial Port**: A dropdown menu showing 'COM10: USB Serial Device' and a 'Refresh' button.
- Set Baud Rate**: A dropdown menu showing '115200' and an 'Open Serial Port' button.
- Band Selection**: A dropdown menu showing 'US915'.
- DEV EUI**, **APP EUI**, and **APP KEY**: Three text input fields.
- Buttons**: 'Settings', 'Read Settings', 'Close Serial Port', 'Clear Logs', 'RTC Time Calibration', and 'Factory Reset'.

5.1.4 Click the **RTC Time Calibration** button to calibrate the RTC clock. When "**RTC time calibration successful**" appears on the right side of the window, the calibration is complete. Minimize the serial port configuration window.

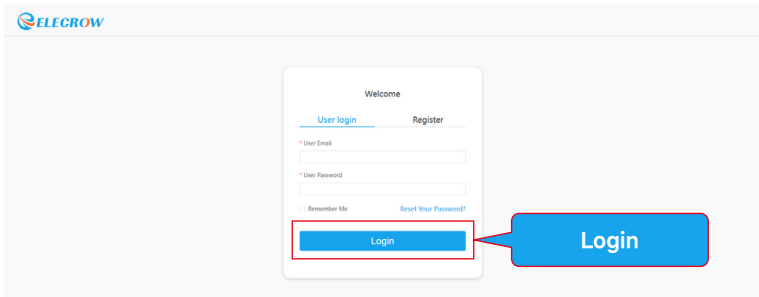
The screenshot shows the 'ThinkNode-Tracker Serial Port Configuration' window. It is divided into several sections:

- Select Serial Port:** A dropdown menu showing 'COM10: USB Serial Device' and a 'Refresh' button.
- Set Baud Rate:** A dropdown menu showing '115200' and an 'Open Serial Port' button.
- Band Selection:** A dropdown menu showing 'US915'.
- Input Fields:** Three text input fields labeled 'DEV EUI', 'APP EUI', and 'APP KEY'.
- Buttons:** 'Settings', 'Read Settings', 'Close Serial Port', and 'Factory Reset'.
- Log Area:** A scrollable area on the right showing system logs. It contains the following text:
  - Current Status: Shutdown  
Working Mode: standby mode
  - Init System...
  - System Initialization Complete...
  - Received Timestamp: [blurred]
  - RTC time calibration successful**
  - Current Status: Shutdown  
Working Mode: standby mode
  - Current Status: Shutdown  
Working Mode: standby mode

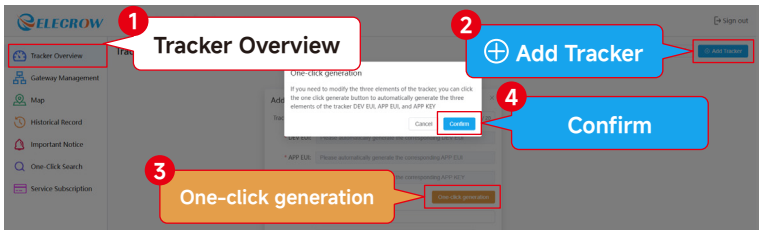
Three red circles with numbers are overlaid on the image to indicate key steps:

- 1:** Points to the 'RTC Time Calibration' button at the bottom right.
- 2:** Points to the 'RTC time calibration successful' message in the log area.
- 3:** Points to the window's minimize button in the top right corner.

5.1.5 Visit the website: <https://web.thinknode.cc/>, register an account, and click **Login** to log in.



5.1.6 Select **Tracker Overview**, click the **Add Tracker** button to add a device, click the **One-click generation** button, then click the **Confirm** button to generate DEV EUI, APP EUI, and APP KEY with one click.



5.1.7 Customize the tracker name, enter the SN code on the back of the device, select the product type, select your region, and click the **Add** button to successfully add the M3 device information in the **Tracker Portal** client.

The screenshot shows the ELECROW Tracker Portal interface. The main content area is titled "Tracker Overview" and contains a modal window for "Add Tracker". The modal has the following fields and elements:

- Tracker Name:** A text input field containing "M3\_TRACKER" with a character count of "10 / 20". A red box labeled "1" highlights this field. Below it is a red note: "Please ensure it is consistent with tracker name."
- \* DEV EUI:** A text input field containing "38778BA8280FF1270".
- \* APP EUI:** A text input field containing "F470X048E8902E48E".
- \* APP KEY:** A text input field containing "C902E8C0E6A8280FF0A00F5E8F02908E".
- One-click generation:** An orange button.
- \* SN:** A text input field containing "7F91A3D0E9000000". A red box labeled "2" highlights this field.
- \* Product Type:** A dropdown menu with "M3" selected. A red box labeled "3" highlights this field.
- \* Region:** A dropdown menu with "US915" selected. A red box labeled "4" highlights this field.
- Buttons:** "Cancel" and "Add" buttons at the bottom right. A red box labeled "5" highlights the "Add" button.

The left sidebar contains navigation options: Tracker Overview (selected), Gateway Management, Map, Historical Record, Important Notice, One-Click Search, and Service Subscription. The top right corner has a "sign out" link. A header bar at the top of the modal says "Please enter the SN code: 9/28" and "Add Tracker".

5.1.8 After the M3 device information is successfully added, click the **Details** button on the page.

The screenshot shows the ELECROW Tracker Overview page. The device name is 'M3\_Tracker'. It displays 'DEV EUI: [redacted]', 'Current Frequency Band: [redacted]', and 'SN: [redacted]'. The device status is 'Offline' with a 'Unknown battery level' warning. A red box highlights the 'Details' button in the top right corner.

5.1.9 Copy **DEV EUI**, **APP EUI**, and **APP KEY** to the corresponding positions in the serial port configuration window, then click the **Settings** button to write the data to the M3 device.

The screenshot shows the 'Detailed Information of the Tracker' page for 'M3\_Tracker'. It displays the device's EUI, APP EUI, APP KEY, SN, and Product Type. A red box highlights the 'Settings' button in the 'ThinkNode-Tracker Serial Port Configuration' window. A blue callout box with the number '2' points to this button. The configuration window shows fields for 'DEV EUI', 'APP EUI', and 'APP KEY' which are being populated with the data from the tracker page. The 'Settings' button is highlighted with a red box.

5.1.10 When the information shown in the figure below appears on the right side of the serial port configuration window, it indicates that the data has been written successfully. Minimize the serial port configuration window.

The screenshot displays the 'ThinkNode-Tracker Serial Port Configuration' window. On the left, there are sections for 'Select Serial Port' (COM10: USB Serial Device), 'Set Baud Rate' (115200), 'Band Selection' (US915), and fields for 'DEV EUI', 'APP EUI', and 'APP KEY'. On the right, a log window shows the following messages:

```
Current Status: Shutdown  
Working Mode: standby mode  
  
DevEUI configuration ...  
  
DevEUI write operation successful:  
[XXXXXXXXXXXXXX]  
  
AppEUI configuration ...  
AppEUI write operation successful:  
[XXXXXXXXXXXXXX]  
  
AppKEY configuration ...  
AppKey write operation successful:  
[XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX]  
  
Current Status: Shutdown  
Working Mode: standby mode
```

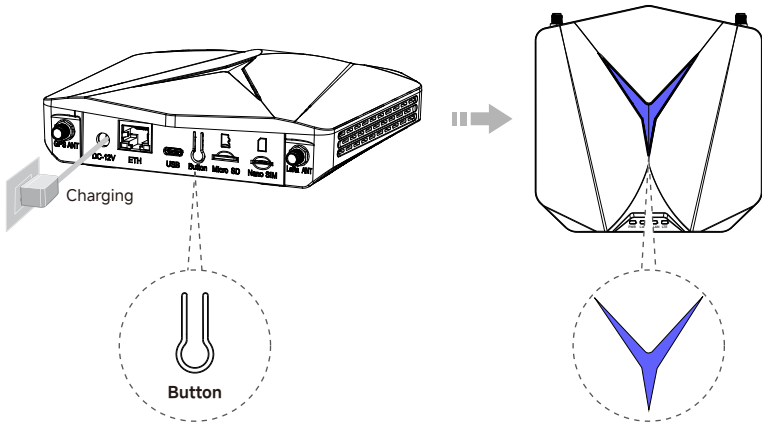
Red circles with numbers 1 and 2 highlight the log window and the minimize button, respectively. The minimize button is located in the top right corner of the window's title bar.

## 5.2 Gateway Configuration (Using [ThinkNode-G1 US915](#) for Demonstration)

5.2.1 Charge the gateway. The "Y" shaped indicator light on top of the gateway shows green slow flashing. Wait for 90 seconds, then press and hold the button shown in the figure for 5 seconds.

The "Y" shaped indicator light on top of the gateway shows blue slow flashing, indicating that the gateway has entered configuration mode.

**Note:** The gateway frequency band needs to correspond to the selected region and frequency band.

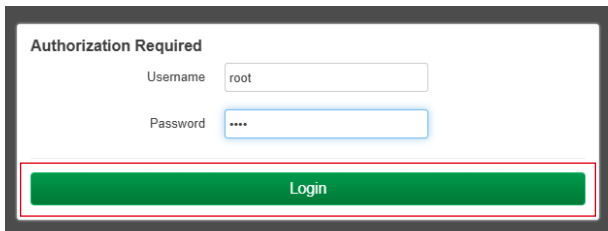


## 5.2.2 Connect to the gateway Wi-Fi.



5.2.3 Enter the URL **192.168.1.1** in the browser; this URL is fixed. Then enter the account credentials; the default username and password are both **root**, and click **Login**.

**Note:** You must successfully connect to the gateway Wi-Fi to access this URL.



**Authorization Required**

Username

Password

5.2.4 Select **LoRaWAN**, click the **LoRa Gateway** button.

## Status

### System

Hostname	ThinkNode-G1
Model	HILINK HLK-7628N
Architecture	ARMv7-M
Target Platform	ARMv7-M
Firmware Version	1.0.0
Kernel Version	3.10.108
Local Time	2024-08-08 10:10:10
Uptime	10:10:10
Load Average	0.00 0.00 0.00

### Memory

Total Available	1024 MB (100%)
Used	512 MB (50%)
Buffered	128 MB (12.5%)
Cached	128 MB (12.5%)

### Network

Active Connections	100 (100%)
--------------------	------------

### Active DHCP Leases

Hostname	IPv4 address	MAC address	Lease time remaining	Static Lease
----------	--------------	-------------	----------------------	--------------

5.2.5 Connection Method Selection (Choose one of the following methods according to your actual situation)

### 5.2.5.1 Ethernet Connection:

- If you choose the Ethernet connection method, select **ETH** for **LoRa Interface**, select US915 for Frequency plan (select the corresponding frequency band according to your actual situation).
- The Gateway EUI will be randomly generated as a string (you can also set it yourself, but once bound, the string cannot be reused unless the corresponding gateway information is deleted in the Tracker Portal client, then it can be reused). Copy this string for subsequent operations.
- **Server Address** is fixed at **148.230.82.199**. If your Server Address is different, manually change it to 148.230.82.199. Keep other settings as default, and click the **Save & Apply** button to save and apply.

**LoRa Gateway**  
Here you can configure the LoRa gateway

**Global Parameters**

Lora Interface	ETH
Frequency plan	US915
Lora Mode	Packet Forwarder

**Gateway Parameters**

General Settings | Forward Rules | Basics Station

Gateway EUI: [Random String]

Gateway EUI size must be 16

Server Address: 148.230.82.199

Server Port (Up): 1700

Server Port (Down): 1700

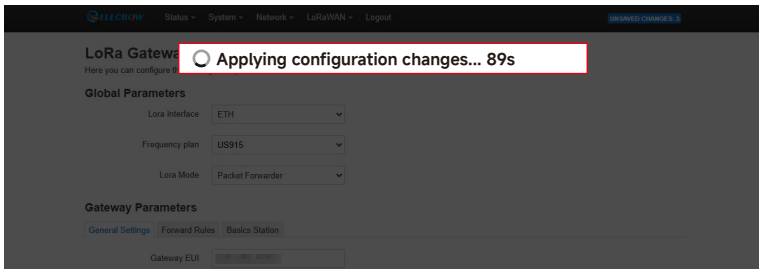
Keep Alive Interval: 10

Push Timeout: 100

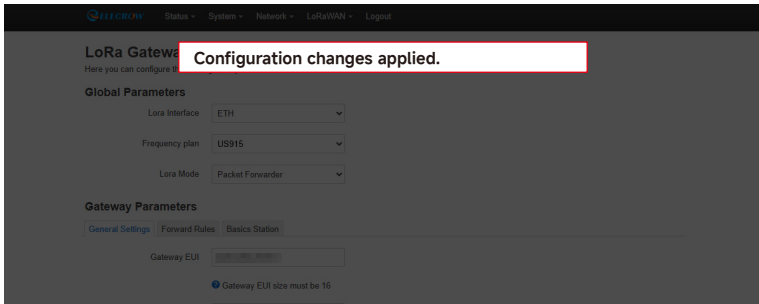
**Save & Apply**

Save & Apply | Save | Reset

- Wait for configuration.



- Configuration successful. Then connect the gateway to the network cable. Wait for the gateway "Y" shaped indicator light, LoRa indicator light, and WLAN indicator light to turn green.



## 5.2.5.2 Wi-Fi Connection:

- If you choose the Wi-Fi connection method, select WIFI for **LoRa Interface**, select US915 for **Frequency plan** (select the corresponding frequency band according to your actual situation). The **Gateway EUI** will be randomly generated as a string (you can also set it yourself, but once bound, the string cannot be reused unless the corresponding gateway information is deleted in the **Tracker Portal** client, then it can be reused). Copy this string for subsequent operations. **Server Address** is fixed at 148.230.82.199. If your **Server Address** is different, manually change it to 148.230.82.199. Keep other settings as default, and click the **Save** button to save the changes.

**ELECROW** Status ▾ System ▾ Network ▾ LoRaWAN ▾ Logout

### LoRa Gateway

Here you can configure the LoRa gateway

#### Global Parameters

Lora Interface

Frequency plan

Lora Mode

#### Gateway Parameters

[General Settings](#) [Forward Rules](#) [Basics Station](#)

Gateway EUI

**Gateway EUI size must be 16**

Server Address

Server Port (Up)

Server Port (Down)

Keep Alive Interval

Push Timeout

**Save**

[Save & Apply](#) [Save](#) [Reset](#)

- Select **Network**, click **Wireless**.

The screenshot shows the ELECROW web interface for a LoRa Gateway. At the top, there are navigation menus for Status, System, Network, LoRaWAN, and Logout. A blue button indicates 'UNSAVED CHANGES: 1'. The main heading is 'LoRa Gateway' with a sub-heading 'Here you can configure the LoRa gateway'. Under 'Global Parameters', there are three rows of configuration options: 'Lora Interface' set to 'WIFI', 'Frequency plan' set to 'US915', and 'Lora Mode' set to 'Packet Forwarder'. A dropdown menu is open under 'Network', with 'Wireless' selected and highlighted by a red box. A red callout bubble points to the 'Wireless' option.

- Click **Scan** to scan for available networks.

The screenshot shows the 'Wireless Overview' section of the ELECROW web interface. It displays two network entries. The first entry is for 'radio0' (MediaTek MT76x8 802.11bgn) with a channel of 11 and a bitrate of 57.8 Mbit/s. It has buttons for 'Restart', 'Scan', and 'Add'. The second entry is for 'wlan0' (Master ThinkNode-G1) with an SSID of 'ThinkNode-G1' and a mode of 'Master'. It has buttons for 'Disable', 'Edit', and 'Remove'. Below this is the 'Associated Stations' section, which contains a table with columns for Network, MAC address, Host, Signal / Noise, and RX Rate / TX Rate. The table shows one station: 'Master ThinkNode-G1 (wlan0)' with a signal strength of -39 dBm. To the right of the station name is a 'Disconnect' button. At the bottom of the page, there is a 'Save & Apply' button highlighted with a red box and a callout bubble, along with 'Save' and 'Reset' buttons.

Network	MAC address	Host	Signal / Noise	RX Rate / TX Rate
Master ThinkNode-G1 (wlan0)			-39 dBm	72.2 Mbit/s, 20 MHz, MCS 7, Short GI 72.2 Mbit/s, 20 MHz, MCS 7, Short GI

- Select the network you need to connect to, click the **Join Network** button, enter the password, click **Submit** to submit the information, and click **Save** to save the network-related information.

Join Network: Wireless Scan

Signal	SSID	Channel	Mode	BSSID	
-43 dBm	yanfa_software	2	Master	08:00:2E:84:0C:7F	<a href="#">Join Network</a>
-54 dBm	yanfa1	11	Master	08:00:2E:84:0C:8F	<a href="#">Join Network</a>
-56 dBm	elecrow888	9	Master	08:00:2E:84:0C:8F	<a href="#">Join Network</a>
-57 dBm	ARIV	1	Master	F8:00:2E:84:0C:8F	<a href="#">Join Network</a>
-57 dBm	hidden	1	Master	F8:00:2E:84:0C:8F	<a href="#">Join Network</a>
-57 dBm	hidden	1	Master	F8:00:2E:84:0C:8F	<a href="#">Join Network</a>
-58 dBm	ThinkNode-G4_888888	1	Master	08:00:2E:84:0C:8F	<a href="#">Join Network</a>
-61 dBm	RVBUST	1	Master	08:00:2E:84:0C:8F	<a href="#">Join Network</a>
-61 dBm	hd80923786	1	Master	88:00:2E:84:0C:8F	<a href="#">Join Network</a>
-61 dBm	elecrow_yidang	6	Master	08:00:2E:84:0C:8F	<a href="#">Join Network</a>
-64 dBm	DIRECT-69-HP MM77 LaserJet	1	Master	08:00:2E:84:0C:8F	<a href="#">Join Network</a>
-64 dBm	ThinkNode-G4_888888	1	Master	08:00:2E:84:0C:8F	<a href="#">Join Network</a>
-64 dBm	elecrow	5	Master	08:00:2E:84:0C:8F	<a href="#">Join Network</a>
-64 dBm	hidden	6	Master	08:00:2E:84:0C:8F	<a href="#">Join Network</a>
-68 dBm	hidden	6	Master	F8:00:2E:84:0C:8F	<a href="#">Join Network</a>
-69 dBm	FAST_4994	1	Master	08:00:2E:84:0C:8F	<a href="#">Join Network</a>
-69 dBm	TP-LINK_BAEB	6	Master	F8:00:2E:84:0C:8F	<a href="#">Join Network</a>

**Join Network**



- Click **Save & Apply** to configure the gateway

The screenshot shows the ELECROW gateway configuration interface. At the top, there are navigation menus for Status, System, Network, LoRaWAN, and Logout. A 'REFRESHING' indicator and 'UNSAVED CHANGES: 17' are visible in the top right. The 'Wireless Overview' section lists three radio interfaces: 'radio0' (Media Tek MT76x8 802.11bgn, Channel: 11, Bitrate: 72.2 Mbit/s), '-37 dBm' (SSID: ThinkNode-G1, Mode: Master, BSSID: 88:8E:8C:0A:04:04, Encryption: None), and 'disabled' (SSID: yanfa\_software, Mode: Client, Interface has 7 pending changes). The 'Associated Stations' table shows one station: 'Master ThinkNode-G1 (wlan0)' with MAC address 88:8E:8C:0A:04:04, Host DESKTOP-2G9KN6B lan, Signal/Noise -37 dBm, and RX Rate / TX Rate 72.2 Mbit/s, 20 MHz, MCS 7, Short GI. A blue callout bubble with the text 'Save & Apply' points to the 'Save & Apply' button in the bottom right corner of the interface.

- Wait for configuration.

The screenshot shows the ELECROW gateway configuration interface during a configuration update. A progress bar at the top indicates 'Applying configuration changes... 89s'. The background shows the same configuration details as the previous screenshot, but they are dimmed. The 'Associated Stations' table shows the same station as before. The 'Save & Apply' button is highlighted with a red box.

- Configuration successful. Wait for the gateway "Y" shaped indicator light, LoRa indicator light, and WLAN indicator light to turn green.

The screenshot shows the ELECROW gateway configuration page. At the top, there is a navigation bar with 'ELECROW' logo, 'Status', 'System', 'Network', 'LoRaWAN', and 'Logout' menus. A 'PAUSED' button is visible in the top right corner. A prominent white box with a red border contains the text 'Configuration changes applied.' Below this, the 'radiou' interface is shown with the following details:

- MediaTek MT76x8 802.11bgn**: Channel: 4, Bitrate: 65 Mbit/s. Buttons: Restart, Scan, Add.
- 34 dBm**: SSID: ThinkNode-G1, Mode: Master, BSSID: [MAC], Encryption: None. Buttons: Disable, Edit, Remove.
- disabled**: SSID: yanfa\_software, Mode: Client, interface has 7 pending changes. Buttons: Disable, Edit, Remove.

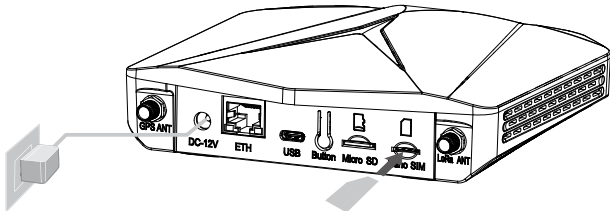
Below the interface settings is the 'Associated Stations' section, which contains a table with the following data:

Network	MAC address	Host	Signal / Noise	RX Rate / TX Rate
Master "ThinkNode-G1_d7b1d4" (wlan0)	CD:E4:34:62:D7:D9	DESKTOP-2G9KN6B lan (192.168.1.128, fd8b:e2:df51:34f)	-35 dBm	72.2 Mbit/s, 20 MHz, MCS 7, Short GI 72.2 Mbit/s, 20 MHz, MCS 7, Short GI

A 'Disconnect' button is located to the right of the station entry.

### 5.2.5.3 SIM Card Connection Method

- If you choose the SIM Card connection method, first insert the SIM card into the Nano-SIM card slot on the G1 (please make sure the gateway supports the 4G version), then select **LTE for LoRa Interface** on the web page, select US915 for **Frequency plan** (select the corresponding frequency band according to your actual situation).
- The **Gateway EUI** will be randomly generated as a string (you can also set it yourself, but once bound, the string cannot be reused unless the corresponding gateway information is deleted in the **Tracker Portal** client, then it can be reused). Copy this string for subsequent operations.
- Server Address** is fixed at 148.230.82.199. If your Server Address is different, manually change it to 148.230.82.199. Keep other settings as default, and click the **Save & Apply** button to save and apply.



## LoRa Gateway

Here you can configure the LoRa gateway

### Global Parameters

Lora Interface

Frequency plan

Lora Mode

### Gateway Parameters

[General Settings](#) [Forward Rules](#) [Basics Station](#)

Gateway EUI

Gateway EUI size must be 16

Server Address

Server Port (Up)

Server Port (Down)

Keep Alive Interval

Push Timeout

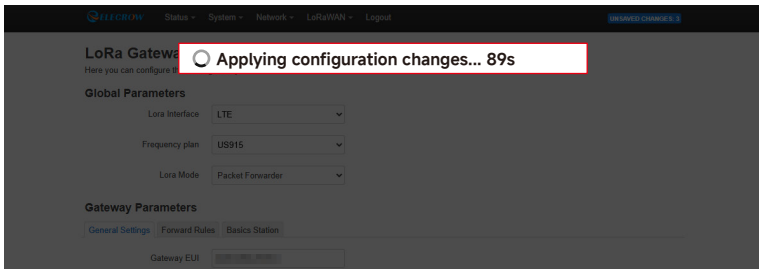
Save & Apply

Save & Apply

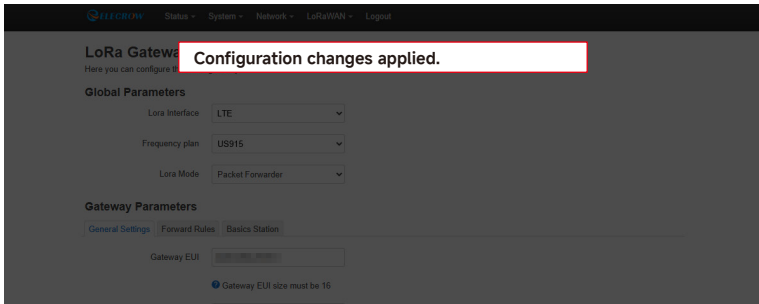
Save

Reset

- Wait for configuration.



- Configuration successful. Wait for the gateway "Y" shaped indicator light, LoRa indicator light, and LTE indicator light to turn green.



## 5.3 Gateway Addition

5.3.1 (If you choose the Wi-Fi connection method, you need to switch networks at this point, i.e., to the Wi-Fi network saved during the gateway configuration process).

Return to the website: <https://web.thinknode.cc/>, select **Gateway Management**, click the **Add Gateway** button, enter the string previously copied in the Gateway EUI field, customize the gateway name, select your region, and click the **Add** button to successfully add the gateway information in Tracker Portal.

The screenshot shows the ELECROW Tracker Portal interface. On the left is a navigation menu with 'Gateway Management' highlighted. The main content area displays 'Gateway Management' and a message: 'There is no gateway, please add'. A modal dialog box titled 'Add Gateway' is open, containing fields for 'Gateway EUI', 'Gateway Name' (pre-filled with 'ThinkNode G1'), and 'Region' (pre-filled with 'US915'). An 'Add' button is highlighted in the dialog. Three red callout boxes with numbers 1, 2, and 3 point to the 'Gateway Management' menu item, the 'Add Gateway' button, and the 'Add' button in the dialog, respectively.

5.3.2 Refresh the page and wait. When the gateway status displays **Online**, it indicates that the gateway has successfully connected to the M3 device.

The screenshot shows the ELECROW Tracker Portal interface after the gateway has been added. The 'Gateway Management' menu item is still highlighted. The main content area now displays a table with one entry: 'ThinkNode G1' with EUI 'e43b19ffe1f7111'. The status 'Online' is shown next to the gateway name. A red callout box with the number 1 points to the 'Gateway Management' menu item, and another red callout box with the word 'Online' points to the 'Online' status indicator.

## 5.4 Device Network Join

5.4.1 Press and hold the M3 device button for 5 seconds to power on the device; the blue light flashes slowly, entering configuration mode.

Double-click the device, the blue light flashes quickly followed by the green light flashing quickly, accompanied by the buzzer sound, indicating successful network join. At the same time, **"Join successful"** appears in the serial port configuration window.

The screenshot shows the 'ThinkNode-Tracker Serial Port Configuration' window. On the left, there are sections for 'Select Serial Port' (COM10: USB Serial Device), 'Set Baud Rate' (115200), and 'Band Selection' (US915). Below these are input fields for 'DEV EUI', 'APP EUI', and 'APP KEY', each containing a hexadecimal string. At the bottom left are 'Settings' and 'Read Settings' buttons. On the right, a log area shows three entries of 'Current Status: Pending Network...' and 'Working Mode: standby mode'. A red box highlights a 'Join successful!' message. Below the log is a 'Clear Logs' button, and at the bottom right are 'RTC Time Calibration' and 'Factory Reset' buttons.

5.4.2 Return to **Tracker Portal**, select **Tracker Overview**. At this time, the M3 device status displays Online. Click the **Details** button, set **Operating Mode** to **Normal** mode, click the **Submit** button, refresh the page, the device green light flashes, the buzzer responds, and battery level and other related information will appear.

The screenshot shows the ELECROW Tracker Portal interface. In the left sidebar, the 'Tracker Overview' link is highlighted with a red box. The main content area displays a list of trackers. The first tracker, 'M3\_Tracker', is highlighted. A red box highlights the 'Details' button next to the 'M3\_Tracker' entry. A callout box with the word 'Details' points to this button. The tracker's status is 'Online' with a green dot and 'Unknown Battery Level' with a red dot. The current frequency band is 'US915\_0'.

The screenshot shows the ELECROW Tracker Portal interface for the 'Detailed Information of the Tracker' page. The page displays various sensor settings and status indicators. A red box highlights the 'M3\_Tracker' name and 'Edit Name' button. Another red box highlights the 'Normal' dropdown menu for 'Operating Mode'. A third red box highlights the 'Submit' button at the bottom. The page displays various sensor settings and status indicators, including 'Online', 'Current Frequency Band: US915\_0', 'LORAWAN CLASS Type: CLASS A', 'Software Version: V1.0', 'Hardware Version: V1.0', 'LORAWAN Protocol Version: 1.0.3', 'Temperature Sensor Status: Enabled', 'Humidity Sensor Status: Enabled', 'Acceleration Value: Enabled', and 'Battery Level Reporting Switch: Disabled'.

The screenshot shows the ELECROW web application interface. At the top left is the ELECROW logo. To its right is a user profile icon and the name 'Mingming'. In the top right corner, there is a 'Sign out' link. A left-hand navigation menu contains the following items: 'Tracker Overview' (selected), 'Gateway Management', 'Map', 'Historical Record', 'Important Notice', 'One-Click Search', and 'Service Subscription'. The main content area is titled 'Tracker Overview' and features a search bar with the placeholder text 'Please enter the SN code', a page indicator '6 / 20', and an 'Add Tracker' button. Below the search bar is a card for a device named 'M3\_Tracker'. The card displays a diamond-shaped icon with a signal strength indicator, the device name 'M3\_Tracker', the EUI 'DEV EUI: [redacted]', the current frequency band 'Current Frequency Band: US915\_0', and the serial number 'SN: [redacted]'. On the right side of the card, there is a green progress bar at 100%, a green dot indicating the device is 'Online', and a 'Details' button with a refresh icon.

**More Features Are Under Development.**



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