

# ThinkNode M1

## LoRaWAN Series Transceiver Device

Powered By nRF52840

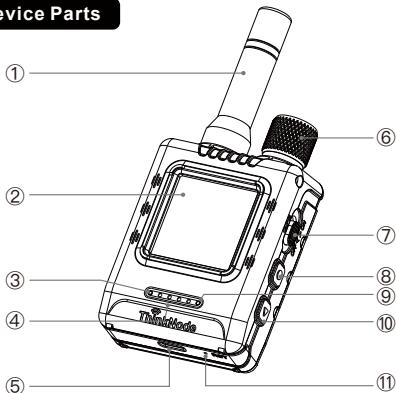
## User Manual



FCC ID: 2BDNA-TNMS-ELE  
IC: 35795-TNM1

CE FC IC

## Device Parts



- 1. LoRa Antenna
- 2. 1.54" EPD
- 3. Product Status LED
- 4. Buzzer
- 5. Type-C Port: 5V/1A
- 6. Rotary Switch

- 7. GPS Switch
- 8. Previous Page Button
- 9. GPS/LoRa Status LED
- 10. Next Page Button
- 11. Reset Button

## LED Status

|                     |                                                                         |
|---------------------|-------------------------------------------------------------------------|
| Product Status LED  | Power on / Charging: Red LED flashing                                   |
| GPS/LoRa Status LED | GPS/LoRa working/data transmission status indication: Blue LED flashing |

## Button

|                      |                                                                                                                                           |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Rotary Switch        | Turn it clockwise to turn on the device and adjust the backlight LED brightness level;<br>Turn it counter-clockwise to turn off the power |
| GPS Switch           | Toggle to enable or disable GPS positioning function                                                                                      |
| Previous Page Button | Single Click: Switch to the previous page                                                                                                 |
|                      | Press and hold for 1s: Enter the preset information interface                                                                             |
| Next Page Button     | Single Click: Switch to the next page                                                                                                     |
|                      | Press and hold for 1s: Confirm selection                                                                                                  |
|                      | Press and hold for 5s: Enter sleep mode; press any button to wake up                                                                      |
| Reset Button         | Click to restart/reboot the device                                                                                                        |
|                      | Connect the Type-C cable and double-click the reset button to enter programming mode                                                      |

## Package List

- 1x ThinkNode M1 Device
- 1x USB-A to Type-C Cable
- 1x LoRa Rubber Stick Antenna
- 1x User Manual
- 1x Back Clip
- 1x Lanyard
- 4x M2\*2 Screw

## Main Specifications

|                             |                                                                                     |
|-----------------------------|-------------------------------------------------------------------------------------|
| Product Name                | ThinkNode M1                                                                        |
| MCU                         | Nordic nRF52840, 32-bit Arm® Cortex™-M4 CPU at 64 MHz with FPU(Floating Point Unit) |
| System Memory               | 256 KB RAM                                                                          |
| Storage                     | 3 MB Flash memory (external 2M Flash chip)                                          |
| LoRa                        | SX1262 LoRa Transceiver, US 915MHz / EU 868MHz (External antenna)                   |
| GNSS                        | Support(GPS/GLONASS/BeiDou/QZSS)                                                    |
| Bluetooth                   | Bluetooth Low Energy and Bluetooth 5.4 (phone configuration)                        |
| Firmware                    | Meshtastic firmware is fully compatible, and the signal is transmitted in LoRa mode |
| Display Size                | 1.54 inch-EPD(monochrome ink screen)                                                |
| Display Materials           | E-Ink (with light source)                                                           |
| Resolution                  | 200x200px                                                                           |
| Display Global Refresh Time | 2s                                                                                  |
| Interface                   | USB-C, RP-SMA                                                                       |

|                       |                                                                          |
|-----------------------|--------------------------------------------------------------------------|
| Button                | Knob Switch, Function Button, Page Turn Button, GPS Switch, Reset Button |
| Battery Capacity      | 1200mAh                                                                  |
| Battery life          | 100 h(Max), 6 h(Min)                                                     |
| Power Input           | 5V/1A                                                                    |
| Current consumption   | 85mA(MAX), 5.6μA(MIN)                                                    |
| Operating Temperature | -10~50°C                                                                 |
| Storage Temperature   | -20~60°C                                                                 |
| Relative humidity     | 10%-95%, @ 40°C (non-condensing)                                         |
| Size                  | 82*51.6*26.3mm                                                           |
| Weight                | 81 g                                                                     |

## Firmware flashing

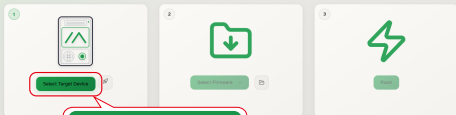
1. Prepare **ThinkNode M1** and the **USB-A to Type-C Cable**.
2. Power on the ThinkNode M1, then connect it to your computer using the cable.
3. Go to <https://flasher.meshtastic.org/> and click "**Select Target Device**".





# MESHTASTIC WEB FLASHER

Update your Meshtastic device with official firmware, straight from your browser



## DEVICE

Plug in your device via USB. Please ensure the cable is not a power-only one.

Choose from the release options or upload a release zip downloaded from GitHub.

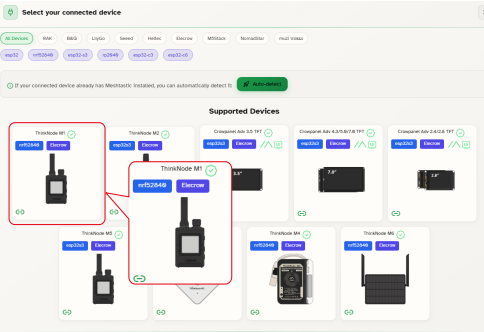
## FLASH

Flash your device. Choose whether you wish to update your device or wipe the flash and install from scratch.

[Open Serial Monitor](#)[mPWRD-OS Tools](#)[Meshtastic Docs](#)[Contribute on GitHub](#)[i18n Language](#)

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## 4. Click “elecrow”, then click “ThinkNode M1”.



5. Select the latest firmware from the stable version (Illustrated version: 2.7.26.54e0d8d Beta).

The screenshot shows the Meshtastic Web Flasher interface. At the top is the Meshtastic logo (a green square with a white mountain-like shape) and the title "MESHTASTIC WEB FLASHER" in a pixelated font. Below the title is the subtitle "Update your Meshtastic device with official firmware, straight from your browser". The interface is divided into three main sections: 1. DEVICE (with a radio icon and a "ThinkNode M1" button), 2. FIRMWARE (with a folder and download icon), and 3. FLASH (with a lightning bolt icon and a "Flash" button). In the FIRMWARE section, a dropdown menu is open, showing a list of firmware versions. The "Stable (or Beta)" section is highlighted, and the version "2.7.26.54e0d8d Beta" is selected. A red callout box points to this version with the text "2.7.26.54e0d8d Beta". At the bottom, there are links for "Open Serial Monitor" and "mPWR-OS Tools".

1

2

3

ThinkNode M1

2.7.26.54e0d8d Beta

Unstable (Alpha)

2.7.25.164d9f1 Alpha

2.7.24.472b14c Alpha

2.7.23.02600c0 Alpha

2.7.22.9699547 Alpha

Stable (or Beta)

2.7.26.54e0d8d Beta

2.7.19.567b6e0 Beta

2.7.26.54e0d8d Beta

Open Serial Monitor

mPWR-OS Tools

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6. Click “Flash”, then click “Continue”.

This screenshot shows the same Meshtastic Web Flasher interface as the previous one, but with the "Flash" button in the FLASH section highlighted with a red box. A red callout box points to the button with the text "Flash". The FIRMWARE section dropdown menu is no longer open.

1

2

3

ThinkNode M1

2.7.26.54e0d8d Beta

Flash

Flash

DEVICE

Plug in your device via USB. Please ensure the cable is not a power-only one.

FIRMWARE

Choose from the release options or upload a release zip downloaded from GitHub.

FLASH

Flash your device. Choose whether you wish to update your device or wipe the flash and install from scratch.

## Bug fixes and maintenance

Lora led rx by @jp-bennett in <https://github.com/meshtastic/firmware/pull/16674>

Additional RAK missing values for 6421 / 13366 13362 modules + Zebra/Nebra Hat Configs by @Littleton in <https://github.com/meshtastic/firmware/pull/16644>

Use standard GPS enable pin, for smarter power control on M3 by @jp-bennett in <https://github.com/meshtastic/firmware/pull/16671>

Meshtastic: Add configs for B&Q Station G3 by @vidplace7 in <https://github.com/meshtastic/firmware/pull/16673>

Beta fixes by @jp-bennett in <https://github.com/meshtastic/firmware/pull/16728>

Set the time from GPS every 30 minutes by @jp-bennett in <https://github.com/meshtastic/firmware/pull/16737>

Fix(esp32): skip RTC timer wake on user shutdown; TAP V2 OCV and partition by @Ethan-chen1234-zy in <https://github.com/meshtastic/firmware/pull/16739>

T-Deck (Plus) touch driver fix by @mverch67 in <https://github.com/meshtastic/firmware/pull/16740>

Enable Adafruit SHTC3 library on native by @jp-bennett in <https://github.com/meshtastic/firmware/pull/16747>

Fix(phone-api): skip manifest scan for node-info-only config requests by @jeremiah-k in <https://github.com/meshtastic/firmware/pull/16754>

Fix(FSCommon): add nRF52 LittleFS empty-name guard to getFiles() by @app/copilot-swe-agent in <https://github.com/meshtastic/firmware/pull/16757>

## Dependencies

Update Sensirion I2C SCD30 to v1.1.1 by @app/renovate in <https://github.com/meshtastic/firmware/pull/16294>

Update alpine Docker tag to v3.24 by @app/renovate in <https://github.com/meshtastic/firmware/pull/16668>

Update actions/github-script action to v9 by @app/renovate in <https://github.com/meshtastic/firmware/pull/16691>

Update meshtastic/device-ui digest to 4ec010c by @app/renovate in <https://github.com/meshtastic/firmware/pull/16732>

Update meshtastic/device-ui digest to 6cadf54 by @app/renovate in <https://github.com/meshtastic/firmware/pull/16743>

Update actions/checkout action to v7 by @app/renovate in <https://github.com/meshtastic/firmware/pull/16744>

Update meshtastic/device-ui digest to 1c45ebc by @app/renovate in <https://github.com/meshtastic/firmware/pull/16749>

Update platform-native digest to 61967ac by @app/renovate in <https://github.com/meshtastic/firmware/pull/16750>

**Full Changelog:** <https://github.com/meshtastic/firmware/compare/v2.7.25.194df51..v2.7.26.54e8d8d>

Continue

Continue

7. Click **“Enter DFU Mode”**, select the serial port, and finally click **“Download UF2”**.

Flash ThinkNode M1

### 1 Enter (UF2) DFU Mode

① For firmware versions < 2.2.17, trigger DFU mode manually by double-clicking RST button.

Enter DFU Mode

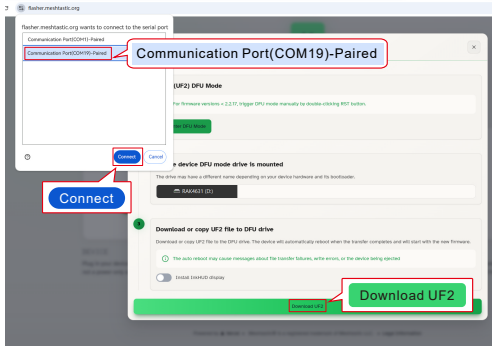
Enter DFU Mode

### 2 Ensure device DFU mode drive is mounted

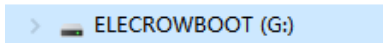
The drive may have a different name depending on your device hardware and its bootloader.

RAK4631 (D:)

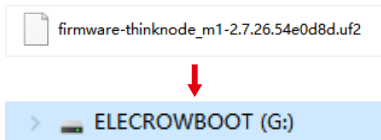
### 3 Download or copy UF2 file to DFU drive



8. Open your computer **"This PC"**—you will see that the device has entered the flashing mode.



9. Copy the downloaded firmware into **ELECROWBOOT**



## Precautions

- Avoid placing the product in damp or high-temperature areas.
- Do not disassemble, impact, crush, or throw the product into fire; do not use after submersion in water.
- If the product shows physical damage or severe swelling, do not continue to use it.
- Do not use an unsuitable power supply to power the device.

This radio transmitter [IC: 35795-TNM1] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Antenna installation: External antenna

Impedance: 50Ω

Antenna Gain: 1dBi Maximum

## FAQ

**1. How do I use the Meshtastic App?(Device pairing, parameter settings, chat room)**

- Our Wiki will walk you through the detailed steps.



## **2. Why am I unable to connect to GPS? (Weaker signal indoors)**

- Please go to an open outdoor area and turn on the GPS switch. If you still cannot connect after several attempts, please contact us promptly.

## **3. Why can't my devices communicate with each other after entering the communication room?**

- Please check if the devices are using the same frequency. Communication is only possible when all devices are set to the same frequency.

## **4. How can I get more information about the M1?**



## **5. Why did my button functions change after flashing a new firmware version?**

- Due to continuous upgrades in our firmware, certain features may be adjusted, and we apologize for any inconvenience caused. If you notice discrepancies between the functions and the manual after an update, please scan the QR code in FAQ4 to access the latest version of the manual.

## **6. How can I get technical support?**

- If you have any problem about how to use it, you can connect to [techsupport@elecrow.com](mailto:techsupport@elecrow.com) to get technology support.

## FCC Rules

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

## IC Caution

### English:

This device complies with Innovation, Science and Economic Development Canada

licence-exempt RSS standard(s). Operation is subject to the following two conditions:

- (1) This device may not cause interference, and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

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

### French:

Cet appareil est conforme aux normes RSS exemptées de licence

d'innovation, sciences et développement économique Canada. L'exploitation est autorisée aux deux conditions suivantes:

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Le matériel a été évalué pour répondre aux exigences générales d'exposition aux radiofréquences. Le dispositif peut être utilisé dans des conditions d'exposition portables illimitées.

## Social Media



Introduction



Unbox ThinkNode M1



Application Case

 **ThinkNode**