

Getting Your First Message Through: MeshCore

MeshCore is a newer peer-to-peer LoRa mesh platform that differs from Meshtastic in some important ways. This guide walks you through buying hardware, flashing firmware, and sending your first message - including a plain-language explanation of what makes MeshCore distinct from a beginner's perspective.

Step 1: Buy Compatible Hardware

MeshCore runs on many of the same LoRa development boards as Meshtastic, including:

- **Heltec LoRa 32 v3** - compact, inexpensive (\$20 - 25), has a built-in OLED display.
- **LILYGO T-Echo** - a sleek device with an e-ink display and GPS, popular for MeshCore "client" nodes.
- **LILYGO T-Deck** - has a built-in keyboard, making it usable without a phone for messaging.
- **RAK WisBlock** - modular system popular for building infrastructure repeater nodes.
- Most boards using the **nRF52840** or **ESP32 + SX1262** chip combination.

As with all North American mesh hardware, make sure your board is rated for **915 MHz**. Check the product description for "915MHz", "US915", or "ISM 915".

Step 2: Flash MeshCore Firmware

MeshCore provides its own web-based flashing tool:

1. Open **Google Chrome** or **Microsoft Edge**.
2. Go to flasher.meshcore.io.
3. Connect your board to your computer via USB.
4. Click **Connect** and select the serial port for your device.
5. Select your board model from the device list.
6. Select the firmware variant you want. For most beginners, choose the **Companion** (client) variant - this is the mode you use when connecting a phone app to the node over Bluetooth - or **Repeater** if you are building a fixed relay node. (Note: the exact label for

the companion/client variant can vary slightly between the flasher and app versions.)

7. Click **Flash** and wait for the process to complete (usually a minute or two).

If the serial port does not appear, the same driver fix applies as for Meshtastic: install the CP2102 or CH340 driver depending on your board's USB chip.

Step 3: Install the MeshCore App

- **Android:** Search for *MeshCore* on the Google Play Store, or sideload the APK from files.liamcottle.net/MeshCore (the official download location linked from the MeshCore FAQ).
- **iPhone / iPad:** Search for *MeshCore* on the App Store.
- **Web client:** Available at app.meshcore.nz.

Step 4: Configure the USA/Canada Preset

MeshCore uses channel presets to configure frequency, spreading factor, and bandwidth. For North America, you want to set the region/frequency to North America (915 MHz):

1. Open the MeshCore app and connect to your node via Bluetooth (the pairing process is similar to Meshtastic - the node's name will appear in the Bluetooth scan list).
2. Go to the node settings (gear icon).
3. Find the **Channel** or **Radio Config** section.
4. Select the North America / US-Canada (915 MHz) preset. The exact wording varies by app version. This configures the node for 915 MHz operation with appropriate spreading factor and bandwidth settings for community mesh use.
5. Save the settings. The node will apply the configuration and restart the radio.

Step 5: Pair and Send Your First Message

1. In the MeshCore app, go to the **Contacts** or **Chat** tab. Nearby nodes appear in Contacts after they send an advert - so your own node will not appear as a contact, and you need at least one other node in range to populate the list.

2. To test with just a single device, post a message to a public channel. To test the radio path end-to-end (a direct message), you need a second node or another MeshCore user within range.
3. Type a message and tap Send. Your node will transmit it. You will see it appear in the conversation.

Because MeshCore uses a more structured routing approach than Meshtastic, it distinguishes clearly between **direct messages** (private, sent to a specific node), **channel messages** (broadcast to everyone on the same channel), and **room server messages** (routed through a dedicated hub node). For your first test, a broadcast channel message is the easiest way to confirm your node is transmitting; to test a direct message you will need a second node or a nearby community node in range.

How MeshCore Feels Different from Meshtastic (Beginner's Perspective)

If you have used Meshtastic before, you will notice a few differences:

- **Explicit node roles.** In Meshtastic, every node implicitly relays for every other node. In MeshCore, you explicitly configure a node as a *client* (your personal node, does minimal relaying), a *repeater* (infrastructure node that forwards traffic), or a *room server* (a hub for group chat). This makes the network's behavior more predictable and reduces unnecessary transmissions, but requires a bit more intentional planning.
- **Different discovery model.** Meshtastic nodes automatically announce themselves and appear in a node list. MeshCore's discovery works slightly differently - you may need to add contacts manually or enable node broadcasting to see nearby nodes.
- **Stronger encryption by default.** MeshCore uses elliptic-curve Diffie-Hellman key exchange for direct messages, giving each conversation unique encryption keys. Note that Meshtastic also uses public-key cryptography for direct messages (since firmware 2.5.0); both systems use shared keys for channel (group) messages, so the comparison is really about implementation details rather than one being broadly "more robust" than the other.
- **Less plug-and-play for newcomers.** Meshtastic has more polished beginner documentation and a larger US-based community, so it is often easier to get your first message through quickly. MeshCore rewards the extra learning investment with a more controlled network architecture.

What to Check If Nothing Works

The flasher does not detect the device

Try a different USB cable (many cables are charge-only and lack data wires). Try a different USB port. Install the USB-to-serial driver for your board's chip.

The app cannot pair with the node via Bluetooth

Make sure the node is fully booted (wait a few seconds after flashing for it to finish booting). Grant the app Bluetooth and Location permissions on Android. If pairing fails, put the node in pairing mode if required (consult the MeshCore documentation for your board).

Messages are queued but not transmitted

If your radio settings (frequency / spreading factor / bandwidth) don't match your region's preset, you won't be able to hear or reach anyone - verify the North America (915 MHz) preset is applied.

You cannot find other MeshCore users nearby

MeshCore has fewer deployed nodes than Meshtastic in many areas. Check the MeshCore Discord (linked in the app's help section) for your region's activity level, or invite a friend to flash a second node for testing.

Revision #5

Created 2026-05-03 05:37:24 UTC by Mesh America Admin

Updated 2026-06-08 19:53:13 UTC by Mesh America Admin