Hardware Overview

LoRa mesh networking runs on compact radio devices - sometimes called "nodes" - that broadcast and receive radio signals in the 915 MHz band (US/Canada). All you need is a compatible device, a smartphone, and the appropriate app for your chosen platform.

Types of LoRa devices

Handheld / portable nodes

Small devices (roughly deck-of-cards size) that pair with your phone via Bluetooth. These are the most common starting point. Some have a small screen; others are screen-less and rely entirely on the app.

Keyboard devices

Standalone devices with a built-in screen and keyboard, allowing you to send and read messages without a smartphone. More expensive but fully self-contained.

Fixed / solar nodes

Weatherproof nodes designed to be mounted outdoors - on a rooftop, tower, or hilltop - and powered by solar or mains power. These serve as repeaters, extending network coverage for everyone nearby.

What to look for when buying

- **915 MHz support** - required for the US/Canada. Some devices sold internationally are 868 MHz (EU) - verify before purchasing.
- **MeshCore or Meshtastic compatible** - check that your chosen firmware runs on the hardware. Most popular boards support both.
- **Antenna connector** - ensure the device has an external antenna connector or a good built-in antenna. A quality antenna makes a significant difference in range.

- **Battery** - built-in rechargeable batteries vary widely in capacity. Larger capacity means longer runtime without charging.

What it costs

Prices below are approximate and as of June 2026; hardware pricing changes often, so confirm against a current retailer listing.

Item	Typical cost
Basic LoRa node (no screen)	~$25-50
Basic node with small OLED screen (e.g. Heltec V3)	~$18-30
GPS + e-ink handheld (e.g. T-Echo)	~$50-90
Keyboard/standalone device (e.g. T-Deck)	~$70-150 depending on model and bundle
App (MeshCore or Meshtastic)	Free (MeshCore offers optional paid feature unlocks)
Firmware	Free; open source (MeshCore's T-Deck build is free but closed source)
Monthly network usage	$0

There are no subscriptions, no airtime fees, and no carrier contracts. Hardware is a one-time cost.

Is it legal in the US?

Yes. Both MeshCore and Meshtastic operate on the **915 MHz ISM band**, which is designated license-free by the FCC under Part 15 rules. No amateur radio license is required. Compliance is not automatic, though: buy a 915 MHz (US) variant - not an 868 MHz EU unit - from a reputable seller that carries FCC equipment authorization (check the label or the FCC ID database; many cheap imported dev boards ship without a clear FCC ID), set your region to **US** in the firmware, and use the supplied or a modest-gain antenna so your power and antenna combination stays within the FCC Part 15 (15.247) limits.

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