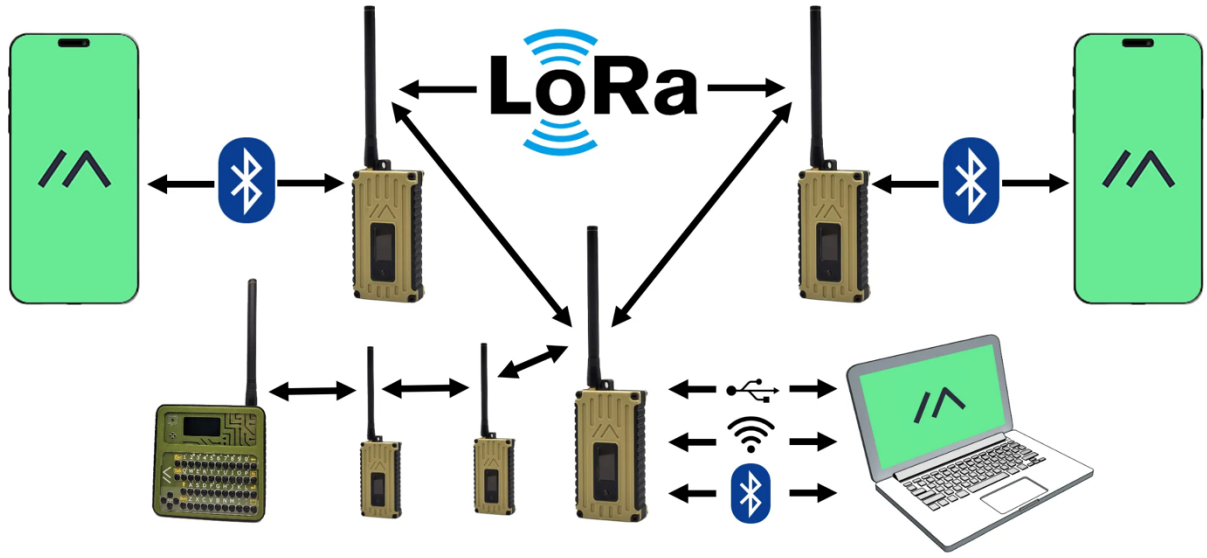
INTRODUCTION TO MESHTASTIC

Meshtastic® is a project that enables you to use inexpensive LoRa radios as a long range off-grid communication platform in areas without existing or reliable communications infrastructure. This project is 100% community driven and open source!



Features

- Long range (*254km record by kboxlabs*)
- No phone required for mesh communication
- Decentralized communication - no dedicated router required
- Encrypted communication
- Excellent battery life
- Send and receive text messages between members of the mesh
- Optional GPS based location features
- And more!

How it works

Meshtastic utilizes LoRa, a long-range radio protocol, which is widely accessible in most regions without the need for additional licenses or certifications, unlike HAM radio operations.

These radios are designed to rebroadcast messages they receive, forming a mesh network. This setup ensures that every group member, including those at the furthest distance, can receive messages. Depending on the settings employed, the Meshtastic mesh network can support up to 100 devices concurrently.

Additionally, Meshtastic radios can be paired with a single phone, allowing friends and family to send messages directly to your specific radio. It's important to note that each device is capable of supporting a connection from only one user at a time."

If you are interested in a more technical overview of how Meshtastic works, visit the overview section below:

Overview

How it works

When you send a message on your Meshtastic companion app, it is relayed to the radio using Bluetooth, Wi-Fi/Ethernet or serial connection. That message is then broadcasted by the radio. If it hasn't received a confirmation from any other device after a certain timeout, it will retransmit the message up to three times.

When a receiving radio captures a packet, it checks to see if it has heard that message before. If it has it ignores the message. If it hasn't heard the message, it will rebroadcast it.

For each message a radio rebroadcasts, it marks the "hop limit" down by one. When a radio receives a packet with a hop limit of zero, it will not rebroadcast the message.

The radio will store a small amount of packets (around 30) in its memory for when it's not connected to a client app. If it's full, it will replace the oldest packets with newly incoming text messages only.

Contributors

Meshtastic is an open source project available on GitHub. Our generous volunteers donate their personal time to write and maintain this codebase. If you would like to contribute see our GitHub, join our Discord server, and read up on our forum.

Start using Meshtastic

Hopefully your "Getting Started" experience is straight forward and headache free. If you encounter any issues, please consider updating our documentation to improve future user experiences or reach out on the forum or Discord.

Our support is 100% volunteer based. We are passionate about the project and hope to help newcomers become Meshtastic experts!

To continue please go to https://meshtastic.org/docs/introduction/