

# **Meshtastic: Expanding Amateur Radio with Mesh Networking**

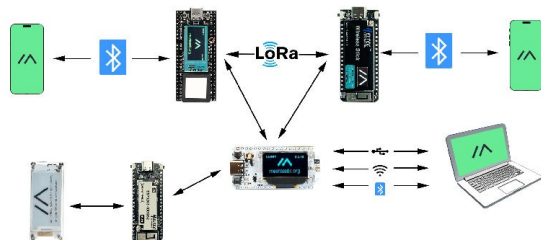
What it is • Why it matters • How to get started

Today I'll give you a quick overview of Meshtastic—what it is, why it's useful, and how you can start using it.

# What is Meshtastic?



/MESHTASTIC



- Open-source, off-grid communication system
- Uses LoRa (Long Range radio)
- Creates a self-healing mesh network
- Text messaging + GPS location sharing
- No internet or infrastructure required

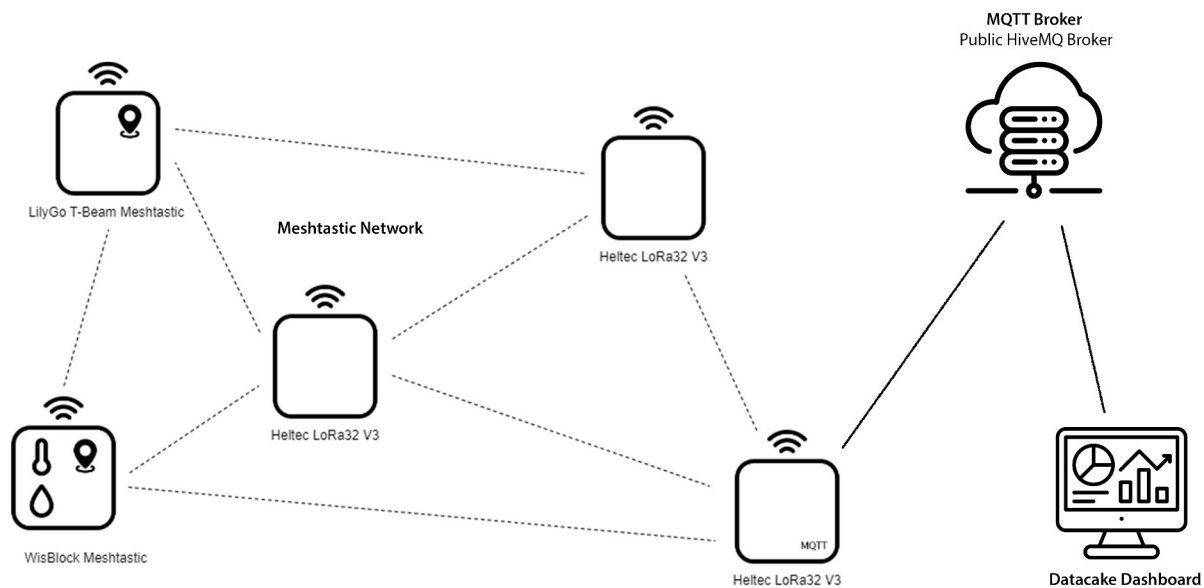


Meshtastic® 2.0 



# How It Works

- Devices connect via LoRa radios (915 MHz in US)
- Messages hop from node to node
- No central repeater required
- Can connect to phone via Bluetooth



**Your Device → Neighbor Node → Another Node → Destination**

# Why Should Hams Care?

- Off-grid communications (no repeaters needed)
- Emergency/disaster use
- Low power (great for field ops)
- Easy entry for new operators
- Expands experimentation (fits amateur radio spirit)

# Meshtastic vs Traditional Ham Systems

<b>Feature</b>	<b>Meshtastic</b>	<b>Traditional Ham</b>
Infrastructure	None required	Repeaters often needed
Power usage	Very low	Moderate–high
Range	Moderate (extendable via mesh)	High (with repeaters)
Data	Text/GPS	Voice/Data
Licensing	ISM band use (no license required*)	License required

# Real-World Use Cases



Examples:

Search & Rescue coordination

Hiking/off-grid groups

Disaster communications

Event coordination (Field Day, marathons)

Silent comms when voice isn't practical

**“This shines where infrastructure fails or is unavailable.”**

# What You Need to Get Started

## Hardware Options:

- LilyGO T-Beam
- Heltec LoRa boards
- RAK Wireless nodes



## Other Requirements:

- Smartphone (Android/iOS)
- Meshtastic app
- USB cable + battery

## Approx Cost:

- \$25–\$60 per node



# Basic Setup Process

## Steps:

- 1) Flash Meshtastic firmware
- 2) Install mobile app
- 3) Pair via Bluetooth
- 4) Set region (US 915 MHz)
- 5) Start messaging

# Limitations & Considerations

## Key Points:

- Limited bandwidth (text only)
- Latency depending on hops
- Range depends on terrain
- Encryption vs amateur radio rules (important!)

# Bringing It to Your Club

## Ideas:

- Build night (programming devices together)
- Deploy fixed nodes (like mini repeaters)
- Integrate with emergency comm plans
- Experiment with antennas and range