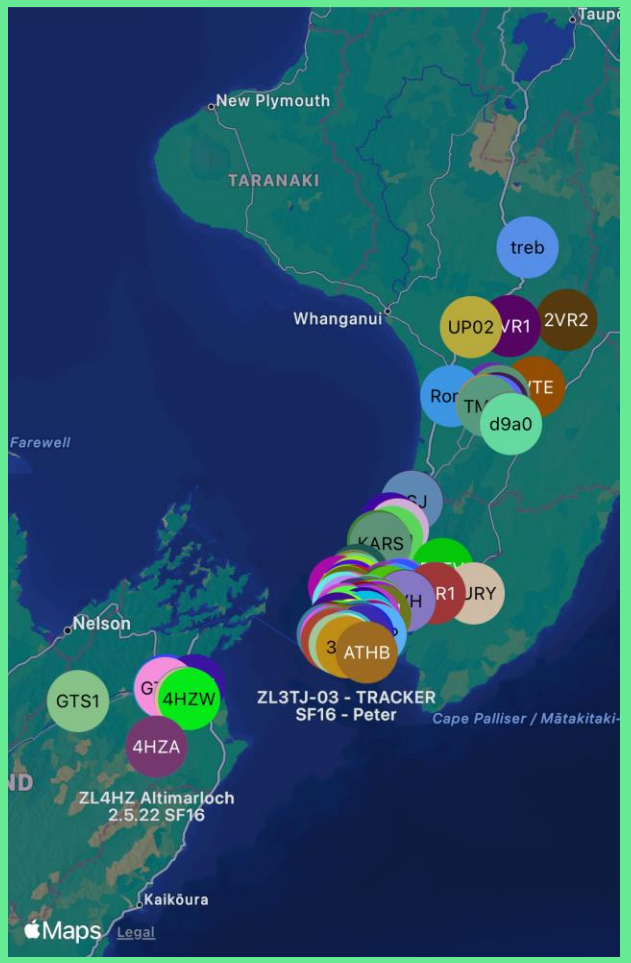
MESHTASTIC

An open source,

off-grid, decentralized,

mesh network built to run on affordable,

low-power devices



Introduction to Meshtastic

- Meshtastic is an open-source project that uses LoRa radios to create decentralized mesh networks, enabling communication without traditional infrastructure.
- General User Radio Licence - Short Range Devices (transmit without the need to get a licence) ~915MHz

Key Features

- Decentralized Mesh Networking
- Short/Long-Range Communication
- Low Power Consumption
- Encrypted communications
- Telemetry (location, temp, humidity …)
- Open-Source and Community-Driven

Who Is Meshtastic For?

- Outdoor Enthusiasts (hikers, campers, hunters)
- Tinkerers

When the project matures:

- Remote Communities
- Civilian Emergency comms

How Does Meshtastic Work?

- Devices equipped with LoRa radios form a mesh network.
- Each device can send and receive messages, acting as a node that rebroadcasts messages to extend coverage.

Routing Protocol

- Meshtastic employs a 'Managed Flood Routing' protocol where messages are broadcasted to all nodes, and each node rebroadcasts unseen messages to ensure delivery without complex routing tables.

Speed Modes

- Meshtastic allows different speed modes to balance data rate and range. Higher data rates offer faster communication but shorter range, while lower data rates extend range but reduce speed.

Data rate Presets

Channel setting	Alt Channel Name	Data-Rate	SF / Symbols	Coding Rate	Bandwidth	Link Budget
Short Range / Turbo	Short Turbo	21.88 kbps	7 / 128	4/5	500 kHz[1]	140dB
Short Range / Fast	Short Fast	10.94 kbps	7 / 128	4/5	250 kHz	143dB
Short Range / Slow	Short Slow	6.25 kbps	8 / 256	4/5	250 kHz	145.5dB
Medium Range / Fast	Medium Fast	3.52 kbps	9 / 512	4/5	250 kHz	148dB
Medium Range / Slow	Medium Slow	1.95 kbps	10 / 1024	4/5	250 kHz	150.5dB
Long Range / Fast	Long Fast	1.07 kbps	11 / 2048	4/5	250 kHz	153dB
Long Range / Moderate	Long Moderate	0.34 kbps	11 / 2048	4/8	125 kHz	156dB
Long Range / Slow	Long Slow	0.18 kbps	12 / 4096	4/8	125 kHz	158.5dB
Very Long Range / Slow	Very Long Slow	0.09 kbps	12 / 4096	4/8	62.5 kHz	161.5dB

Getting Started

- Purchase or assemble a Meshtastic-compatible device
- Install the Meshtastic firmware
- Pair with a smartphone via Bluetooth
- Join the Meshtastic community for support and updates:
  - New Zealand Meshtastic Community (Facebook)
  - New Zealand Meshtastic Community (Discord)

Resources and Community

- Official Website: meshtastic.org
- GitHub Repository: github.com/meshtastic
- Community Forums and Discord Channels

Q&A

- Feel free to ask any questions!