Overview

What repeaters are and the different device roles available.

- What is a Meshtastic Repeater?
- Device Roles Explained

What is a Meshtastic Repeater?

A Meshtastic repeater is a dedicated node whose purpose is to receive and retransmit messages, extending the reach of the mesh network beyond what any single device can achieve on its own.

In a Meshtastic network, every node participates in relaying messages to some degree - this is the nature of a mesh. But dedicated repeater nodes are optimized specifically for relaying: they run continuously, are placed at elevation for maximum coverage, and are configured to retransmit aggressively without the overhead of maintaining a user session or broadcasting their own data.

Why repeaters matter

In real-world conditions, LoRa range is often limited by terrain, buildings, and vegetation. In urban environments, direct device-to-device range may be just 1 - 5 km. In rural areas with clear line-of-sight, 5 - 20 km is typical. A repeater at elevation with a clear view can bridge gaps that would otherwise isolate parts of the network.

The Meshtastic relay model

Meshtastic uses a **flooding** approach: when a message is sent, nearby nodes rebroadcast it, and those nodes rebroadcast to others. A hop counter limits how many times a message can be relayed before it is discarded. Dedicated repeaters - placed at strategic high points - maximize the effective reach of each hop.

Device Roles Explained

Meshtastic devices can be assigned one of several roles that control how they participate in the mesh. Choosing the right role for your repeater affects network behavior, power consumption, and visibility.

CLIENT (default)

The standard role for personal devices. A CLIENT node sends and receives messages via the app and participates in relaying - it will rebroadcast packets when it determines it is the best node to do so. CLIENTs will not rebroadcast a message they have already heard twice, to prevent flooding.

Best for: personal devices carried by users.

REPEATER

A dedicated relay node. Key behaviors:

- Aggressively rebroadcasts all valid packets it receives, without waiting
- **Does not appear in the node list** - keeps the network list clean
- Does not broadcast its own GPS or node info (saves power and network bandwidth)
- Supports `ALL_SKIP_DECODING` mode (see Configuration chapter) for maximum efficiency

Best for: fixed, unattended relay nodes where visibility is not needed.

ROUTER

Also a dedicated relay node, but with one key difference from REPEATER: a ROUTER is **visible in the node list** and broadcasts its own node info and GPS position. This makes it trackable and useful for network monitoring, at the cost of slightly higher power draw.

Best for: relay nodes where you want visibility on the network map or remote monitoring.

ROUTER_LATE

A strategic backup relay. It waits for other nodes to rebroadcast first, only relaying if no other node has done so. This reduces redundant transmissions in dense areas while ensuring coverage in

gaps.

Best for: filling specific dead spots in a network that already has primary coverage.

Comparison table

Role	Visible in node list	Rebroadcast strategy	Sends own data	Power
CLIENT	Yes	Opportunistic	Yes (if set)	Moderate
REPEATER	No	Always, aggressive	No	High (LoRa always on)
ROUTER	Yes	Always, aggressive	Yes	High (LoRa always on)
ROUTER_LATE	Yes	After other nodes	Yes	High (LoRa always on)

Which role should I choose?

- Use **REPEATER** for a clean, silent, efficient relay node - the recommended choice for most deployments.
- Use **ROUTER** if you want the node to appear on the map and broadcast its position.
- Use **ROUTER_LATE** for a backup node in an area that already has primary coverage.