MeshMapper Wardriving Guide

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MeshMapper is a platform for mapping *actual measured* RF coverage of a MeshCore network - not just node locations, but real signal coverage at road level. This is the ground truth that theoretical planners cannot provide. MeshMapper is a MeshCore tool (Android, iOS, and web); for Meshtastic coverage mapping see meshmap.net or the Meshtastic Site Planner instead.

Getting the App

- **Android:** Google Play - search "MeshMapper"
- **iOS:** App Store - search "MeshMapper"
- **Web interface:** wd.meshmapper.net
- The app is **free**.

Connecting Your Radio (BLE)

For wardriving, MeshMapper connects directly to your MeshCore radio over **Bluetooth LE (BLE)** - it does not require an MQTT connection to collect coverage data. Pair your MeshCore device to the app over BLE before starting a session.

Important: MeshCore devices only support one BLE connection at a time. **Disconnect the MeshCore companion app** before launching MeshMapper or the connection will fail.

Observer / Region-Admin Setup (Optional)

Separately from the per-user wardriving flow above, an MQTT observer can be configured to aggregate mesh traffic for region administrators. This is **not** part of normal per-user wardriving. If you are running an observer, connect to one of these brokers:

- `mqtt-us-v1.letsmesh.net:443` (WebSocket TLS)
- `mqtt.meshmapper.cc:443` (WebSocket TLS)

Operating Modes

Mode	Description	Best For
Hybrid (recommended)	Alternates discovery requests and channel messages. 50% fewer transmissions than legacy Active mode.	General wardriving - balances coverage data quality with network impact
Passive	Discovery requests every 30 seconds; no channel messages.	Minimal network impact; good for densely populated mesh areas
Manual Ping	Single on-demand ping.	Spot-checking coverage at a specific location without driving
Active	Legacy channel-message-only mode.	Backward compatibility - Hybrid is superior in all cases
Trace	Focus on a single repeater identified by its hex node ID.	Antenna alignment, diagnosing a specific repeater's coverage, post-installation validation

Coverage Map Color Meanings

Color	Code	Meaning
Green	BIDIR	**Two-way confirmed contact** - gold standard coverage. Your device and the repeater can hear each other.
Cyan	DISC	**Discovery-based two-way confirmation** - confirmed via discovery protocol rather than channel message.
Orange	TX	**Transmit-only path** - your signal reaches the repeater but return path is incomplete (asymmetric link).
Purple	RX	**Receive-only** - you can hear the repeater but it cannot hear you.
Grey	DEAD	**Signal heard but not relayed** - marginal contact; unreliable for mesh routing.
Red	DROP	**No repeater responded** - no coverage at this location.

Wardriving Best Practices

- Mount your device with the antenna as high as practical in the vehicle (dashboard or roof magnet mount).
- Drive at normal road speeds - the app samples frequently enough.
- Cover roads in a grid pattern for systematic area mapping.
- Use **Trace mode** after installing a new repeater to confirm its actual coverage footprint.
- Share your coverage data back to the community map so others benefit.

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