Pre-Deployment Checklist

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The single most important rule for emergency mesh communications: **configure and test your equipment before you need it.** A device configured under stress, in the dark, during an emergency will have errors. Do this work now.

Hardware Preparation

- ☐ Flash current firmware from flasher.meshcore.io (MeshCore) or the Meshtastic flasher
- ☐ Set node name to something identifiable (your callsign or neighborhood)
- ☐ Set GPS coordinates (lat/lon)
- ☐ Change all default passwords on room-server firmware before deployment. Some MeshCore room-server/repeater builds ship with well-known defaults (commonly admin: "password", guest: "hello"), but these are firmware-specific — consult your firmware's documentation for its actual default credentials rather than assuming a specific pair. **CHANGE THESE before any deployment:** anyone within RF range who knows the defaults can otherwise take over the node.
- ☐ Apply the correct regional radio preset (a US/Canada preset for most North American MeshCore networks). The preset name and parameters are firmware-version dependent — match the current MeshCore preset for your region and confirm it stays within the legal 902–928 MHz band plan.
- ☐ Attach and secure external antenna
- ☐ Verify the node appears on a network map (map.meshcore.dev or meshmap.net)

Connectivity Testing

- ☐ Confirm channel/preset matches your local network
- ☐ Test two-way communication with at least one other known node
- ☐ Test from multiple locations (indoors, outdoors, vehicle)
- ☐ Confirm room server (if deployed) accepts messages from client nodes
- ☐ Verify MQTT gateway (if present) is publishing to broker

Infrastructure

- ☐ Consider a permanent rooftop or elevated repeater for neighborhood coverage - install before an emergency while conditions are normal
- ☐ Ensure permanent repeaters have reliable power (ideally with UPS or battery backup)
- ☐ Document all node locations, hardware, and configurations in a shared document accessible to your emergency team

Team Preparation

- ☐ Train all team members on the companion app before deployment
- ☐ Establish and communicate channel names and passwords to all participants in advance
- ☐ Assign a "mesh coordinator" role responsible for network status during an event
- ☐ Export config backup and store separately from the device

Realistic Range Expectations

These are best-case, line-of-sight estimates, not guarantees. Handheld and indoor use will be much shorter. Always confirm your real range by testing before you rely on it.

Scenario	Typical Range
Urban direct (street level)	~1 - 3 km typical; up to ~5 km in favorable line-of-sight conditions
Suburban rooftop-to-rooftop	5 - 15 km with clear line of sight / rooftop elevation
Rural / hilltop-to-hilltop	20 - 50+ km (50+ km requires elevated, clear-LOS endpoints with near-ideal Fresnel-zone clearance)
With mesh hops through repeaters	Extends coverage, but each hop adds latency and consumes shared airtime, and Meshtastic caps routing at 7 hops — it is not unlimited.

Revision #3
Created 2026-05-03 03:00:28 UTC by Mesh America Admin
Updated 2026-06-09 18:04:50 UTC by Mesh America Admin