Common Issues and Fixes

Quick Reference Table

Problem	Solution
Repeater goes deaf after nearby RF transmissions	`set agc.reset.interval 4` - resets AGC periodically (value in seconds) to recover from desensitization
Heltec V3 Bluetooth dropouts	Community modification (not an official MeshCore fix): replace the stock PCB antenna with a 31 mm wire antenna soldered to the BLE antenna pad. See the community write-up.
Duplicate public key first bytes	Generate a new keypair at gessaman.com/mc-keygen/
Phone won't connect via Bluetooth	Unpair and re-pair the device; verify you are using the correct MeshCore app (not Meshtastic). Pairing is usually PIN-less; if a PIN is requested, check the device screen rather than assuming a fixed default.
Contacts showing ancient last-seen dates	Clock sync issue - use epochconverter.com to verify and manually set the device RTC
Messages not delivered	Check: matching channels/encryption keys, region set correctly for your area, antenna connected, hop limit sufficient for the path length
Can see nodes but can't message them	Verify matching channel name and channel secret/key on both ends; investigate asymmetric RF link (strong signal one way, weak the other - often a bad antenna on one node)
Battery draining fast on companion node	Enable screen timeout; disable continuous GPS or increase GPS update interval; reduce telemetry broadcast interval

Receiver Desensitization (AGC Issue) - Detailed

This is the most common issue at sites co-located with other radio equipment. Symptoms:

- Repeater was working fine, then a nearby radio (VHF/UHF ham, GMRS, commercial) transmitted
- After that transmission, the MeshCore repeater stops relaying anything
- Rebooting the repeater restores normal operation temporarily

Root cause: the radio's AGC can remain desensitized after a strong nearby signal, requiring a periodic reset to recover. The fix:

```
set agc.reset.interval 4
```

This resets the AGC every 4 seconds. The value is in seconds, rounded down to a multiple of 4 (so 17 becomes 16), and 0 disables the feature. The minimum effective value is 4 (4 seconds) — values below 4 round down to 0 and disable the AGC reset entirely. For sites with very active co-located transmitters, keep it at 4 (the minimum) rather than a smaller number. This setting persists across reboots.

Heltec V3 BLE Antenna Upgrade

The Heltec WiFi LoRa 32 V3 ships with a small PCB trace antenna for Bluetooth. This antenna has poor performance, causing:

- Frequent disconnections from the MeshCore app
- Short effective BLE range (sometimes less than 1 metre)

This is a community-sourced, at-your-own-risk hardware modification, not an official MeshCore fix. Fix: solder a 31 mm piece of wire to the BLE antenna pad. (One community write-up shorts the wire across the windings of the PCB coil antenna; the exact pad label and location vary by board revision, so verify against a current Heltec V3 schematic before soldering.) A quarter-wavelength at 2.4 GHz is approximately 31 mm (lambda/4 = c/(4f) ≈ 30.6 mm), so the wire acts as a quarter-wave monopole at 2.4 GHz. Community reports describe large, anecdotal improvements in BLE range and reliability (for example, access from ~30 m away). See the community write-up.

Duplicate Public Key First Bytes

MeshCore uses the first bytes of a node's public key as part of its addressing. In rare cases, two nodes may share the same leading bytes, causing routing confusion. If you suspect this:

1. Visit gessaman.com/mc-keygen/
2. Generate a fresh keypair
3. Load the new keys onto your device via the CLI or app

Asymmetric RF Links

A node can hear another node's transmissions but not successfully send messages back. Common causes:

- One node has a significantly better antenna or elevation
- One node's TX power is set lower
- Obstructions are directional (e.g., a metal roof blocks signal in one direction)

Diagnosis: compare RSSI readings on both nodes. If RSSI is strong in one direction and weak in the other, the link is asymmetric. Fix by improving the weaker node's antenna, increasing its TX power, or repositioning.

Default Credentials — Change Them

Default PINs and passwords (such as a default BLE PIN of `123456` if your device uses one, and the repeater/room-server admin password `password`) should be changed on any node you rely on — especially deployed infrastructure — to prevent unauthorized pairing or configuration.

Revision #3
Created 2026-05-03 03:00:21 UTC by Mesh America Admin
Updated 2026-06-09 14:39:06 UTC by Mesh America Admin