

MeshCore.10

A Mesh Radio Network



Simplex
Repeater



Simplex
Repeater



Simplex
Repeater



Simplex
Repeater



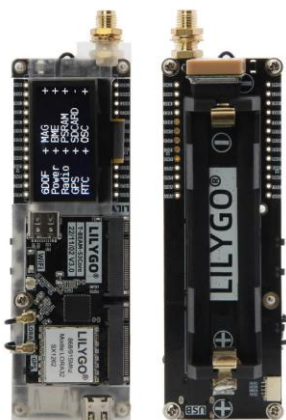
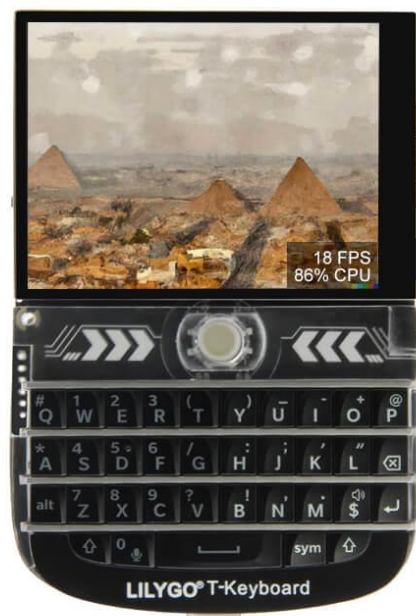
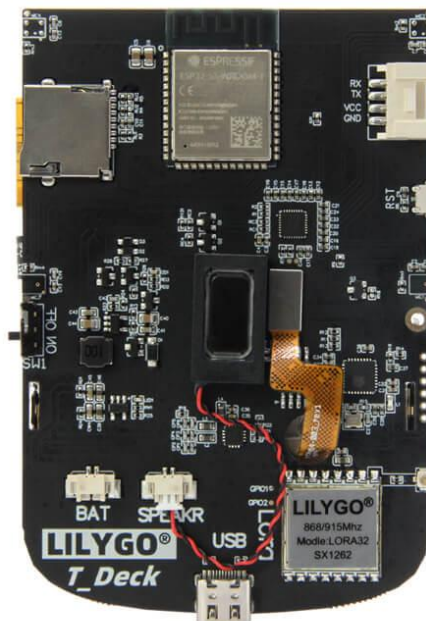
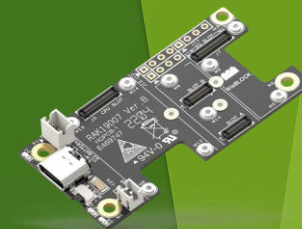
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Several device types are available, from all-in-one devices, to bare bones components, as well as modular platforms with multiple sensors and sub-components.

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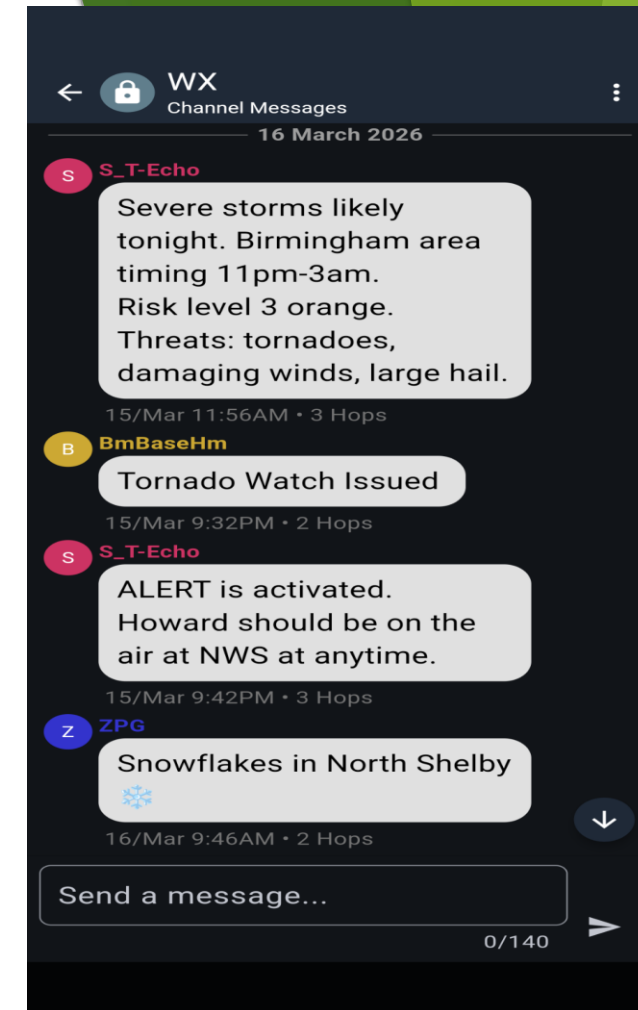
WHAT IS MESHCORE?

MeshCore (MC) is a **FREE APP** that pairs with a LoRa transceiver for sending texts when cellular networks are not available.

MC implements a **MESH ROUTING** network* on the **915 MHz band in the USA**. Radios automatically link with each other to find the best path.*

MC technology is still very new, and infrastructure is not completely built-out yet, so **MC should not be considered a consumer-level application**.

*Mesh routing sends a text packet that is repeated only by devices in repeater role, which decrement the packet's hop count by 1.



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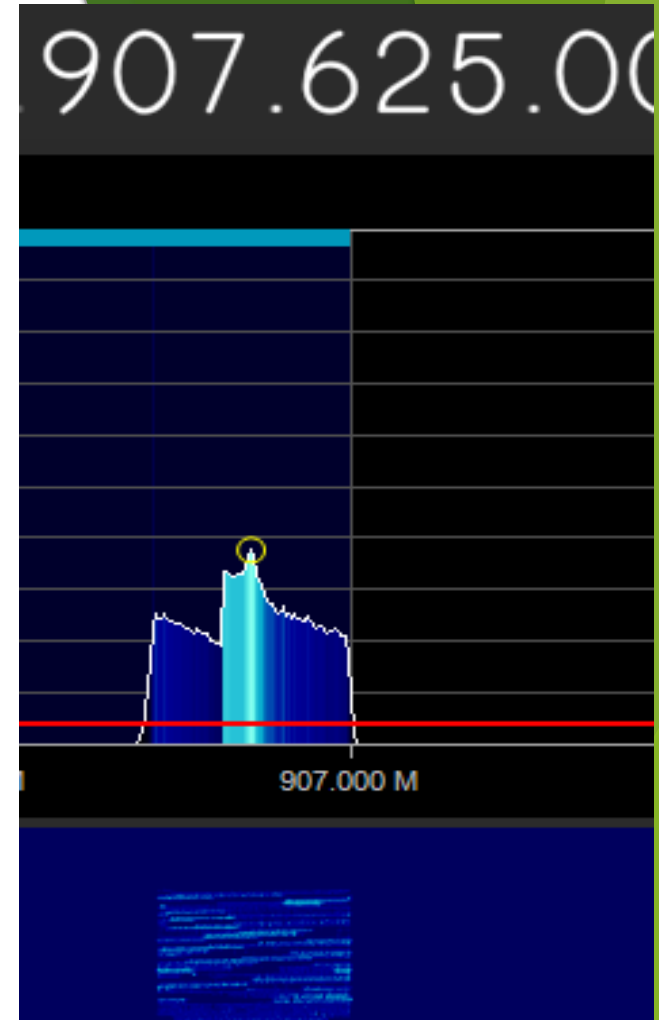
WHAT IS THE MODULATION AND PROTOCOL?

LoRa protocol is named for **Long Range**! A distance of **203 miles** was achieved with **LoRa protocol 250 mW** with 2.8dB antennas from one mountaintop to another, under ideal conditions.

MC utilizes the LoRa Peer-to-Peer '**CHIRP**' modulation technique [**NOT LORAWAN**] on the 915 MHz band in USA / 868 MHz band in Europe.*

MC can be configured for various bandwidths, spreading factors, and coding rates, but we utilize custom parameters at 907.375 MHz with a bandwidth of 62.5 kHz, Spread Factor = 9 and Coding Rate = 5.

*UNLICENSED MODE IS **PROHIBITED ON 433 MHz IN USA!!**



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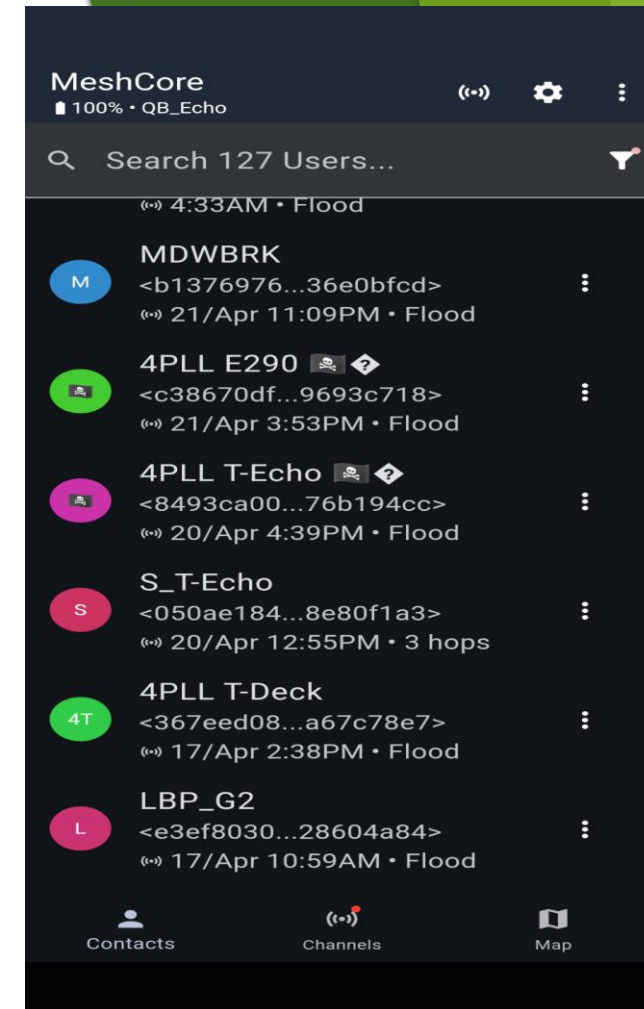
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FCC PART 15

MC can be utilized in low power **UNLICENSED MODE** up to 4W EIRP as an FCC Part 15 device under Industrial, Scientific and Medical [ISM] rules.*

MC can utilize **AES256 ENCRYPTION LEGALLY** in UNLICENSED ISM mode.

*The legality of MeshCore under FCC Part 97 IS NOT CLEAR, so the recommendation is to avoid using amateur radio call signs!



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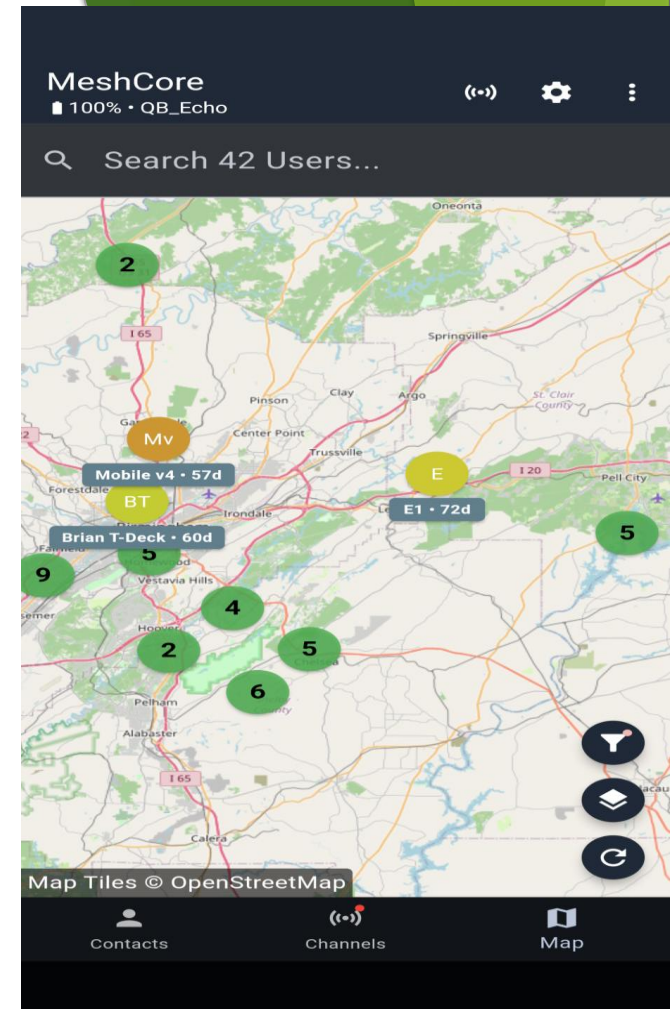
WHAT ARE THE BENEFITS OF MESHCORE IN UNLICENSED MODE?

MC can be utilized by family members who may never become licensed amateur radio operators.

MC may spark an interest in getting licensed for the amateur radio hobby.

MC devices, and the application itself, are easy to use, building on the familiar texting paradigm.

Device configuration is easy, with no need to understand mesh routing.



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Bessemer



S. Shades Crest



Bluff Park



Pinnacle Point



Double Oak



Wilsonville
(TBA)



Sylacauga



Ruffner



Bald Rock



Signal Mountain



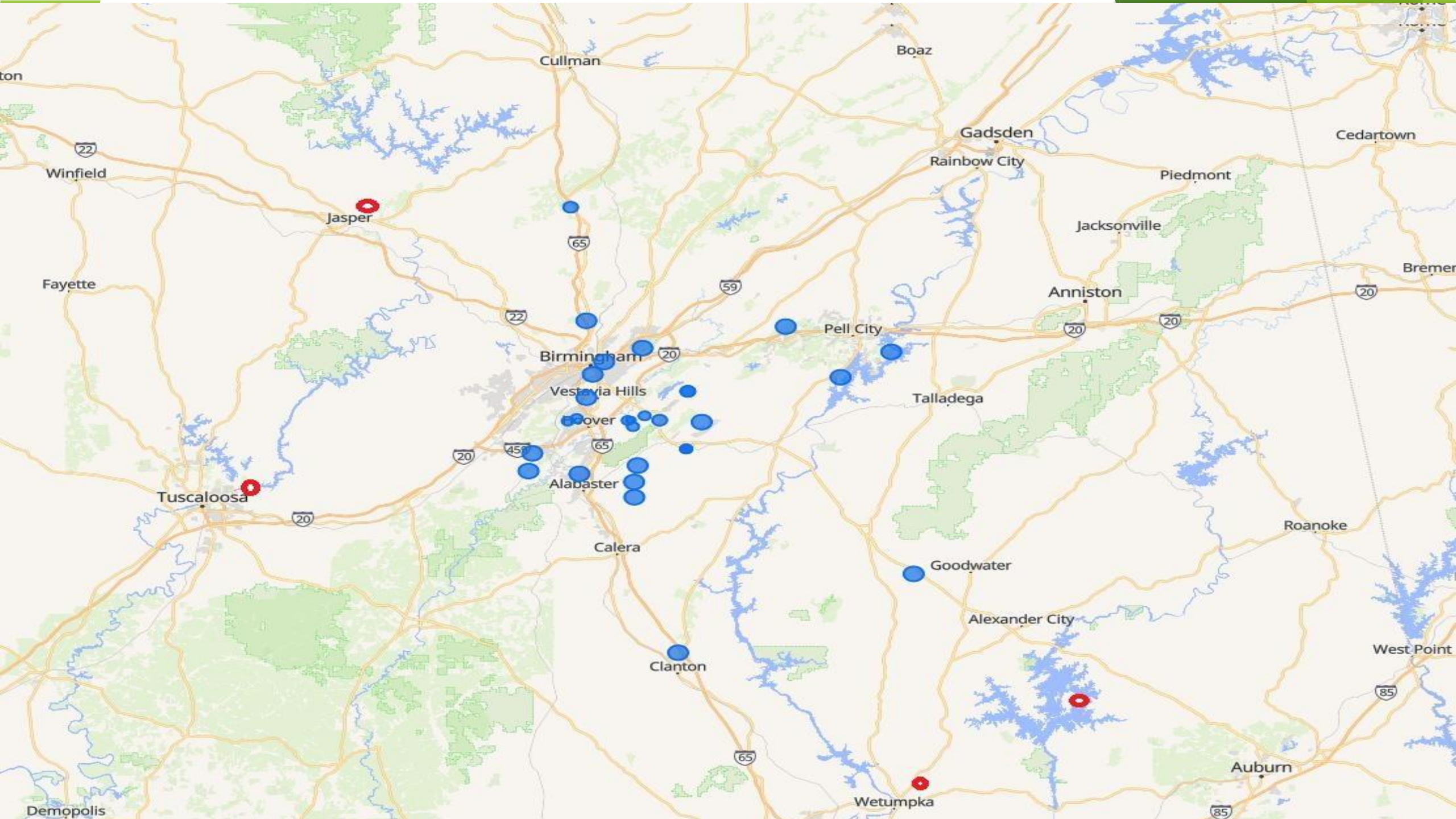
Helena



Clanton

PHASE I
DEPLOYMENT





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WEBSITES OF INTEREST

<https://meshcore.io/>

<https://meshcore.io/flasher/>

<http://AustinMesh.org/similar-networks/>

<https://github.com/meshcore-dev/MeshCore>

<https://meshcore.gg>

<https://analyzer.letsmesh.net/packets?region=BHM>

<https://live.tennmesh.com/#/live>



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Helpful Hints, Notes and Q&A

For questions, or help setting up devices, please request access to our community Discord site by sending an email to info@bhammesh.org <---

Utilize only the official MeshCore.IO site for firmware (not the .UK site)!!

All MeshCore repeaters deployed by BirminghamMesh have either emergency backup power or solar panels to operate for several days without grid power.

There is no inherent penalty for adding additional stationary (non-roving) repeaters for Meshcore, so feel free to deploy your own nodes in repeater role in high places and at your homes!

