TELTONIKA NETWORKS ENABLING AUTONOMOUS HELIUM MINERS IN REMOTE LOCATIONS

SUMMARY

Founded in 2013, Helium had a mission of making it easier to build a network of connected devices. Helium is a decentralized wireless network enabling devices to wirelessly connect to the Internet and geolocate themselves without the need for power-hungry satellite location hardware or expensive cellular plans throughout the world. The Helium network consists of a wide-area wireless networking system, a blockchain, and a protocol token. Such a network of independent providers is not reliant on monopolist coordinators to send and receive data or geolocate themselves. Besides, miners are incentivized by receiving crypto tokens to expand network coverage and validate the Helium network's integrity.

We were excited to learn about such a revolutionary network alternative that provides more options to the users. The values of Helium are coherent with the long-standing philosophy behind Teltonika Networks products and systems. From the very beginning, we built our RutOS software on OpenWRT, believing that a system should be open-source to offer the most flexibility to each client, allowing them to adapt it to their needs. As usual, just like we store all of our Packet Manager components and tutorials open to the public, we are also happy to release the configurations to make our devices compatible with the Helium network requirements.

CHALLENGE

Helium miners require internet connectivity to communicate with Helium servers for Proof-of-Coverage (PoC) and connect the low-cost LoRaWAN access points to transfer data. Only validated hotspots are eligible for a reward, so naturally, the internet connectivity needs to be reliable for successful participation in the (PoC) Challenge.

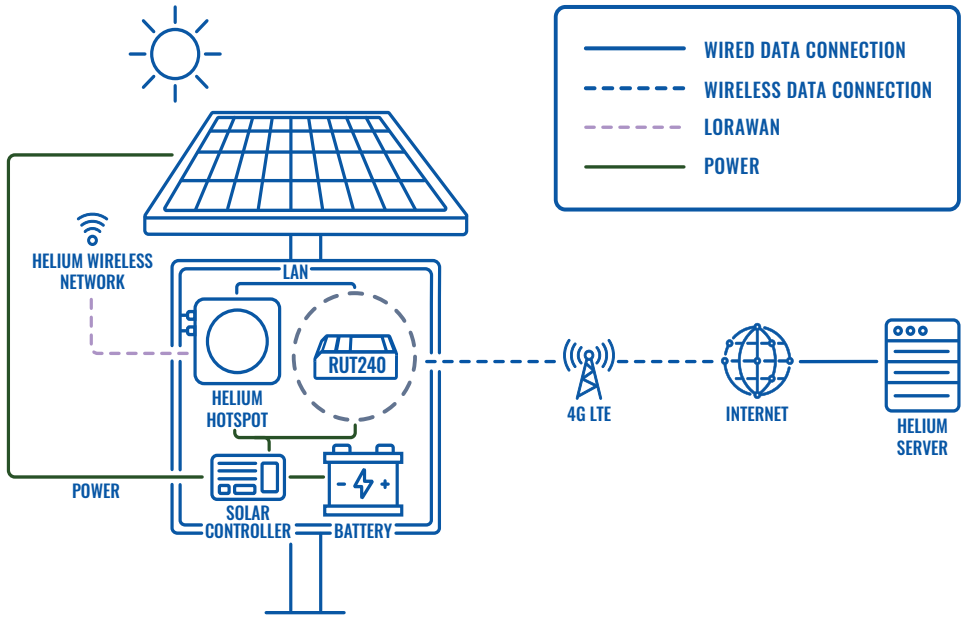
It is usually impossible to have a wired connection or even a power supply in remote or rural areas. Still, to expand the Helium network coverage, Hotspots need to be implemented into these areas too, and Teltonika Networks can offer a solution precisely for such a scenario.

SOLUTION

Helium Hotspots require an autonomous solution that does not involve frequent traveling to the site for maintenance. Teltonika Networks RUT240 LTE Cat4 cellular router is a perfect fit in remote areas not just due to its easy wire-free setup but low power consumption too. At maximum capacity, it does not exceed 6,5W, so its' power demands combined with 5W needed by Helium Hotspot can be satisfied by a solar panel and a 12V 55Ah battery.

From the software perspective, Teltonika Networks products offer a user-friendly WebUI packed with a multitude of tools for efficient management of mobile communication, including an easily configured Firewall and a variety of VPN protocols for enhanced safety. Besides, users can adjust RUT240 to work with public or shared IP addresses. Let's add our RMS to the mix, and you'll have an entirely remotely managed solution that is easy to keep up to date with the latest firmware upgrades straight from your home or office and automatic alerts to prevent any downtime.

TOPOLOGY



BENEFITS

- Due to cellular connectivity and multiple interfaces, RUT240 offers a plug-n-play solution that is quick and easy to deploy by anyone, anywhere.
- Low-power consumption allows using a solar panel and a battery for electricity in areas without access to a conventional power source.
- User-friendly WebUI offers a multitude of useful tools for efficient connection management and the highest level of safety.
- Teltonika Networks RMS enables entirely remote management of the solution.

WHY TELTONIKA NETWORKS?

Teltonika Networks offers a portfolio of products suitable for various IoT scenarios and at the same time allows to adapt these devices to meet the changing requirements of a project with flexible and user-friendly software. Keeping in mind an enormous potential in remote and undeveloped rural areas, we have created our Remote Management System that enables smooth IoT implementation and time-efficient remote management without breaking a bank.