



HaLow devices are new to AREDN as of mid-2025, so you may want to consider them as very experimental at this point. Everything below could be very much wrong.

HaLow

HaLow (IEEE 802.11ah) is a Wi-Fi standard designed to operate in sub-GHz spectrum, including the 902-928 MHz ISM band (and amateur allocations near 900 MHz where permitted). It is optimized for long-range links and better penetration through foliage and terrain compared to 2.4/3.4/5.8 GHz microwave. Typical throughput is in the hundreds of kbps to a few Mbps depending on conditions, with a default 1 MHz channel width. HaLow supports standard IP networking, making it directly usable with AREDN mesh. Current support is available in the latest babel-only nightly builds.

This is interesting because HaLow could extend AREDN into areas where microwave is not an option, providing slower but more resilient links through forests, valleys, and other obstructed environments.

Supported Devices

These devices have very limited flash memory, modest RAM, and a very slow CPU. Fortunately, routing network traffic doesn't demand a lot of CPU. Don't expect these to perform well under heavy load.

Heltec HaLow Dongle HT-HD01

- 32MB of flash memory
- 128MB of RAM
- 1 Ethernet port (can be used with VLANs to connect DtD, LAN and WAN)
- Powered by USB-C (300mA @ 5V)
- Does not appear to have any data connectivity over USB
- Antenna connector on device is SMA Female

Note when purchasing: “AP” and “STA” devices both work with AREDN firmware. The “AP” or “STA” designation only refers to the factory firmware configuration; the hardware is identical.

Morse Micro HaLowLink1

- 32MB of flash memory
- 256MB of RAM
- 2 Ethernet ports: #1 WAN; #2 LAN or DtD; both can be configured independently with VLANs for DtD, LAN and WAN
- Powered by USB-C (2A @ 5V)
- A good option for a mobile node: Mesh can be accessed over USB cable without an Ethernet cable or adapter
- Seems to handle being a tunnel *client* reasonably well
- Antenna connector on device is **RP-SMA** Female

Heltec HT-H7608

- 32MB of flash memory

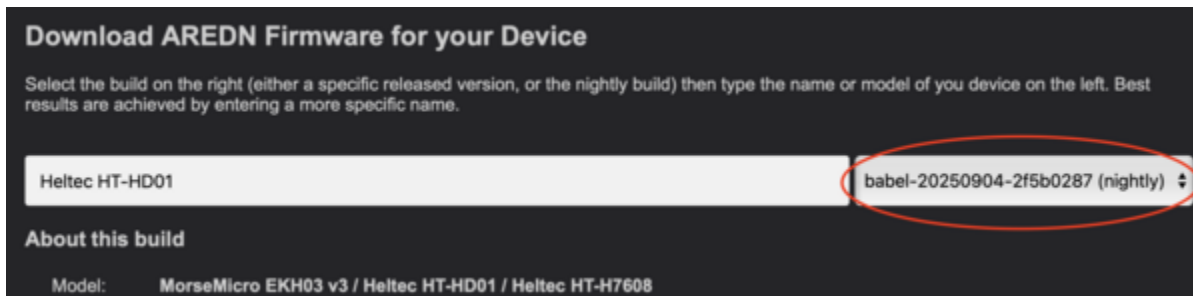
ALFA Network AHM R0C

- 128MB of RAM

Installing AREDN Firmware

You will need to download a sysupgrade image from the [AREDN Downloads](#) page.

Be sure to select a babel nightly build on the right before typing your “Model” name.



Continue with the steps listed on the [AREDN MorseMicro device install process](#) page.

Possible Use Cases and Limitations

As HaLow nodes are very low-powered, consider them to be “through-access” nodes that allow you to connect to services running elsewhere on the mesh.