EasySkyMesh Firmware for Meshcore

Here is some information on an alternate Meshcore firmware for Heltec and Rak boards, that has emphasis on extreme power saving, in particular for repeater nodes.

I am cobbling this together rather quickly right now with the intention of tidying this article up later on when I am on days off, however I thought this would be good information to get out there right away.

As mentioned in another article here describing my trials and tribulations of creating a repeater from scratch, I decided to use a Heltec V4.3 board which is a little power hungry for a repeater running off solar. I ran across this very popular firmware which is a customization of the vanilla Meshcore firmware and a very good one at that. One really nice feature about it is being able to flash it over the original firmware keeping all your settings and keys etc... (good to export a backup first to be safe though). In order to do this, you just need to choose the correct variant you want the upgrade one and you can you use the regular Meshcore flasher choosing custom firmware, browse to it on your computer then flash it making sure that erase flash is not checked. Another bonus is this can also be done OTA method the same as the original Meshcore firmware so that is a nice feature too.

I flashed my Heltec V4.3 companion with this and it went very smoothly, I am definitely going to flash it to my repeater next when I am days off and the weather cooperates.

Below are some links about it and following that a bit about flashing my Companion, I will also update this article after flashing my repeater.

Included the first link which is slightly dated but has a fairly decent description about what it is.

https://nodakmesh.org/blog/easyskymesh-power-efficient-meshcore-firmware

The link directly below gives a good explanation of what can be achieved in power savings for a Heltec v4.3 board.

https://rdumesh.org/heltec-v43-easyskymesh-power-saving/#:~:text=The%20Heltec%20V4,a%20repeater.

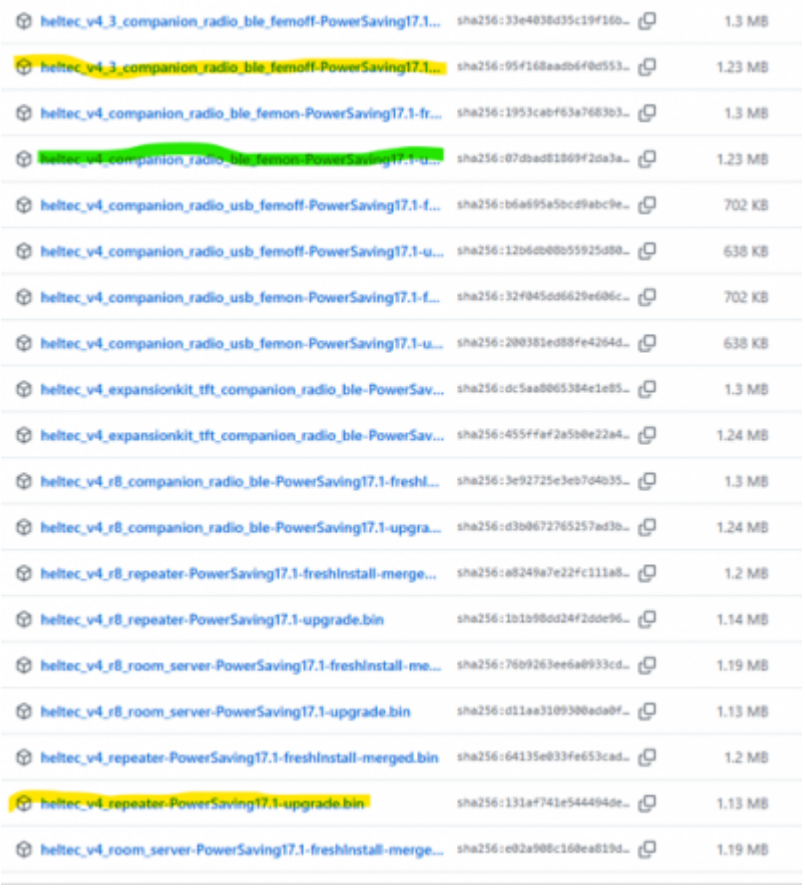
https://github.com/IoTThinks/EasySkyMesh/releases

First thing about the EasySkyMesh files, there are two types one type upgrade is the one you want the other is fresh install which is the one you don't want if you want to keep your settings as it wipes everything.

There are quite a few files there so it is a little confusing at first, you want the BLE ones for a companion that you want to use the Meshcore app on your phone, in the list some of the file name are cut off, however if you hover over them you can see the full description to tell if it is upgrade or fresh install, I notice that the upgrade ones have smaller file size too (also you can verify the file name after downloading too).

Apparently the ones that just say v4 and not v4.3 will autodetect the board version being used, however the 4.3 ones are only good for a 4.3 version board.

I initially used the one highlighted in green with femon, however my noise floor was too high for my liking around 85 to 88(it was between 89 to 95 before on original firmware), so I flashed it with the external LNA off the one highlighted in yellow “femoff” and it went down to -110.



One thing I didn't know, is both Meshcore and EasySkyMesh Companion firmware lockout CLI from the Meshcore app, the repeater versions you still can however, this is why I had to flash the femoff variant as I could not do it over cli, I was able to connect to it using terminal mode on my PC however and make changes like on the repeater, however the LNA commands are not in there (something about saving space both firmware merged it) so you just need to flash the firmware with the LNA setting you want.

Here is a link about getting into CLI mode for a Companion, Repeaters and Mail Rooms are still able to directly access this from the App.

https://nodakmesh.org/meshcore/cli-guide