

My battery drains too fast

Step 1: Measure actual power draw

Use a USB inline power meter to measure real current draw. This immediately shows whether you have a software config problem or a hardware issue.

Expected draw by hardware

Hardware	Typical active draw
ESP32 (T-Beam, Heltec), no display, no BT	40-55 mA
ESP32 with OLED display on	+20 mA
nRF52840 (RAK4631, T-Echo, T114)	8-15 mA

Power drain checklist

- Screen on? Set timeout to 0.
- Bluetooth enabled? Disable if not needed.
- GPS polling? Disable or set a long interval.
- WiFi enabled (ESP32)? Disable.
- Position broadcast interval too short? Set to 30+ minutes on battery.

Battery sizing

Battery (mAh) divided by draw (mA) = hours of runtime. 1000 mAh at 40 mA = 25 hours; at 10 mA = 100 hours. Switching from ESP32 to nRF52840 hardware typically gives 4x longer life on the same battery.

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