Mesh node notes

Equipment:
Three levels: all should be accessible via bluetooth at least

1. consumer-no tech involved: casual users, hikers etc.
2. hobbyist-some tech, more capabilities
3. explorer-expanding capacity

Level 1: consumer
SenseCap tracker:



- credit card format
- limited range (internal antenna)
- buzzer for alerts
- special charging cable
- cheap, easy to configure

s5 trekker



- Good for hikers, backpackers
- GPS included
- screen useful
- better antenna
- excellent battery life (>24 hours)
- rugged
- can be used with android ATAK system
- ESP32-S3 guts, can be set to wifi for range testing, etc.
- USB-micro charging

LIlygo T-echo



- USB-C charging

- very portable
- better antenna (dipole)
- small screen
- based on NRF52840 chip-excellent battery life

Lilygo T-deck

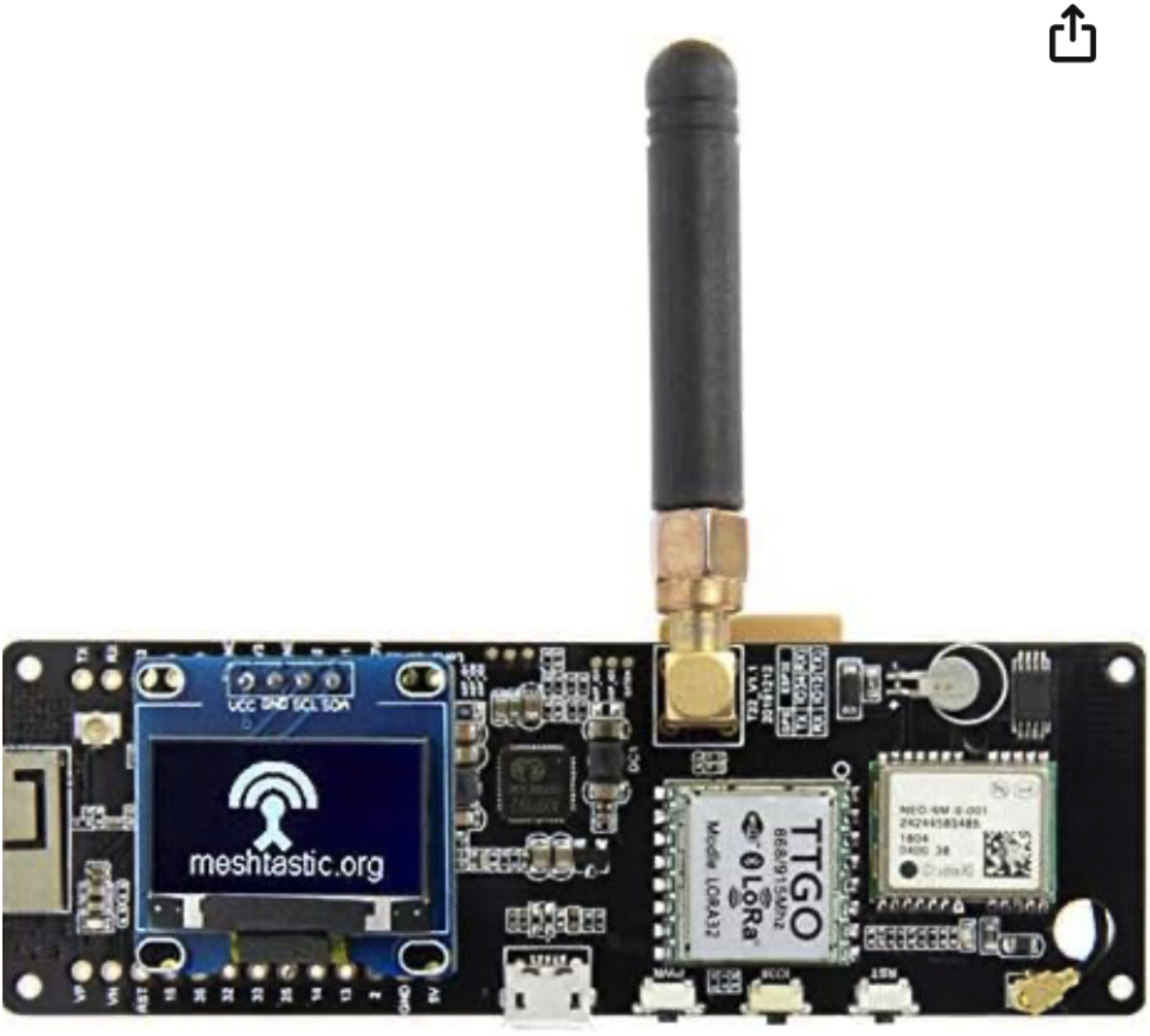


Roll over image to zoom in

- ESP32-S3 chip, web page possible, wifi included
- touch screen
- keypad
- GPS included
- larger, less portable
- shorter battery life
- USB-C charging

Level two: Hobbyist
Some of these are kits, some you can make your own case for (3d printed), all have more capacity than consumer level devices, depending on firmware

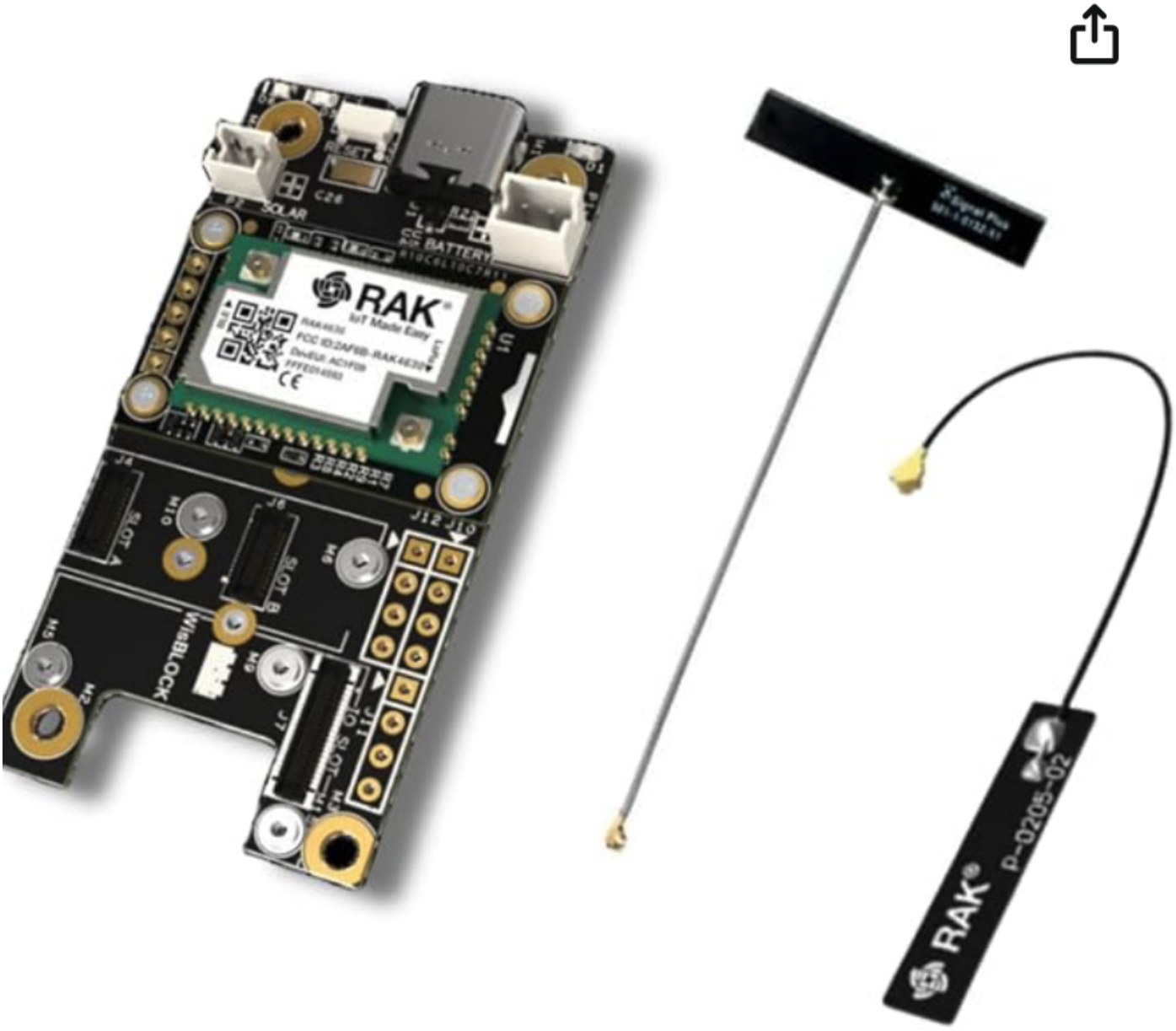
Lilygo T-Beam



- my go-to board for testing

- good antenna
- add battery to the back, excellent battery life
- ESP32-S3 chip, includes wifi and web page access
- internal sensors for temp, rh, air quality
- GPS included
- same guts as in the Trekker above, without the case

RAK WisBlock board: RAK19007 base and RAK4631 LoRa module



- very small, good on power
- fun to play with, can attach sensors to board or with modules from RAK
- core of later repeater and router modules
- CAUTION: power connection is reverse of all known plugs
- includes solar charging plug
- can be adapted to external antennas

ESP32 V3 board:



Roll over image to zoom in

- my favorite board for portable use
- easy to put together, get the kit with the battery
- fun to give to friends
- includes screen
- when used without the case, can be a powerful repeater or router
- includes wifi antenna
- firmware supports web page, rangetest tracking

Level three: explorer
Station G2:


Station G2

- USB-C or wired power
- If external power or PD level USB-C can run power amplifier
- power amplifier to 4 Watts (vs. 0.164 W of others)
- if used as power amplifier, must set module power to 19 dB to not overload PA
- best for remote repeaters, routers, hilltop units
- extremely long range (e.g. Waikii on Big Island to Oahu)

RAK solar repeater/router:

USA
Exclusive



- setup and drop at remote locations (by drone?)
- essentially a RAK board with solar panel and 3000 mAh battery
- excellent dipole antenna (look for wire inside to tell)
- very long range (Waikii on Big Island to Oahu)
- configure via USB-C (rubber plug port on side)
- testing drone delivery of these...
- 400 grams total (drone folks)

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