Portable & Personal Devices

- Budget Devices
- Mid-Range Devices
- Premium & Feature-Rich Devices

Budget Devices

Budget Devices

Budget-tier devices generally cost under ~$30 (as of 2026-06-08) and can be a reasonable entry point, but they come with trade-offs: most bare boards ship without GPS, an enclosure, or a battery. Users who want a turnkey experience may be better served by a kit. They support both MeshCore and Meshtastic, are widely available, and have extensive community documentation.

Heltec V3 - $20 - $30 (as of 2026-06-08)

The Heltec V3 is the most popular beginner device in the community. It runs an ESP32-S3 paired with an SX1262 LoRa radio, includes a small OLED display, and ships with an external LoRa antenna that connects via an on-board U.FL/IPEX (IPEX1.0) connector.

- **MCU:** ESP32-S3
- **LoRa chip:** SX1262
- **Display:** 0.96" OLED
- **Antenna:** External LoRa antenna via on-board U.FL/IPEX (IPEX1.0) connector (many resellers add a U.FL-to-SMA pigtail; the bare board is U.FL/IPEX)
- **USB:** USB-C
- **Battery:** JST connector for LiPo (not included)

Known issue - Bluetooth/WiFi antenna instability (community-reported): Some users report BLE instability on the V3. Heltec attributes reboots/instability to the 2.4 GHz spring antenna being compressed by an enclosure rather than to a PCB antenna - if you case the board, make sure no part of the enclosure presses against or covers the antenna area. The V3's 2.4 GHz antenna is a spring antenna with no separate PCB-antenna pad to desolder, so older "desolder the PCB antenna and solder on a 31 mm wire" community fixes do not match the V3's actual hardware. Treat such mods as unverified community lore.

Heltec Wireless Paper - ~$16 from Heltec direct, up to ~$25 via resellers (as of 2026-06-08)

A unique budget option built around a 2.13" e-ink display. The e-ink panel draws essentially no power between refreshes, giving the Wireless Paper exceptional battery life.

- **MCU:** ESP32-S3
- **Display:** 2.13" e-ink (250 × 122)
- **Deep sleep current:** ~20 µA - among the lowest of any supported device
- **Use case:** Ultra-low-power fixed node or infrequently checked carry device

Heltec Capsule Sensor V3 - ~$26+ (as of 2026-06-08)

An ultra-compact cylindrical telemetry/sensor node (23 g, IP65). Note this is a LoRa/LoRaWAN sensor device, not a general-purpose chat node - confirm it runs the Meshtastic/MeshCore messaging firmware you intend before buying, so it isn't mistaken for a beginner messaging device. It is fully integrated: a built-in LoRa antenna, a built-in 250 mAh rechargeable battery, and a magnetic charging port. Sensors attach via a solderless BTB (board-to-board) connector - no soldering of antenna or battery is required.

Summary Comparison

Device	Price (as of 2026-06-08)	Display	GPS	Beginner-friendly
Heltec V3	$20 - $30	OLED	No	Yes
Heltec Wireless Paper	~$16 - $25	E-ink 2.13" (250 × 122)	No	Yes
Heltec Capsule Sensor V3	~$26+	None	No	Yes (built-in antenna & battery, solderless BTB for sensors; telemetry-oriented)

Mid-Range Devices

Mid-Range Devices

Mid-range devices ($25 - $50) add useful features: GPS, better displays, higher transmit power, lower power consumption, or more robust form factors. (Prices below are as of 2026-06-08 and shift over time.)

Heltec V4 - $25 - $35 (as of 2026-06-08)

A direct upgrade over the V3. The V4 adds a solar charging interface, making it well-suited for small solar-powered repeater builds. It uses the same ESP32-S3 family + SX1262 as the V3, though the V4 differs in memory (V3 = ESP32-S3FN8 with 8 MB integrated flash; V4 = ESP32-S3R2 with 2 MB PSRAM + 16 MB external flash). Its LoRa output is the SX1262's native level (~21-22 dBm) unless an integrated PA is confirmed on Heltec's spec sheet.

- **TX power:** ~22 dBm (SX1262 native; confirm against Heltec's current spec - the often-repeated "28 dBm" figure is not documented in Heltec's datasheet and would require an external PA)
- **Solar input:** Yes (dedicated solar charging circuit)
- **Display:** OLED

LilyGo T-Beam - $35 - $45 (as of 2026-06-08)

A full-featured ESP32 board with GPS built in and an 18650 battery holder. The T-Beam is one of the most popular mobile nodes because position reporting works out of the box. The 18650 form factor means you can use widely available rechargeable cells.

- **MCU:** ESP32
- **GPS:** Built-in (the older v1.1 uses a u-blox NEO-6M; current revisions ship newer u-blox modules such as the M8N/M10) - specify by revision when it matters
- **Battery:** 18650 holder (cell not included)
- **Connector:** SMA antenna

Heltec T114 - $30 - $45 (as of 2026-06-08)

Uses an nRF52840 rather than ESP32, which draws significantly less power. The 1.14" TFT colour display is a step up from OLED. Solar-ready. Best choice for a low-power personal node that also has a decent screen.

- **MCU:** nRF52840
- **GPS:** Optional (offered with or without an onboard GPS module depending on variant)
- **Display:** 1.14" TFT colour
- **Power:** Lower than ESP32 equivalents
- **Flashing:** DFU (double-tap reset)

Wio Tracker L1 - $29.90 (as of 2026-06-08)

Bare board with a 1.3" OLED display and GPS (L76K). nRF52840-based. Good value if you plan to build it into a custom enclosure.

Wio Tracker L1 Lite - $27.90 (as of 2026-06-08)

The most affordable Wio option. A bare board with LoRa **and an onboard L76K GPS** - the difference versus the standard L1 is that the Lite drops the OLED screen (and ships without a case or battery), not GPS. Good choice if you want position reporting at the lowest price and don't need the built-in screen.

SenseCAP T1000-E - $35 - $45 (as of 2026-06-08)

Credit-card sized device with IP65 weather resistance, GPS, and nRF52840. One of the most compact GPS-capable options available. Ships pre-assembled in a rugged housing - no enclosure work needed.

- **Form factor:** 85 × 55 × 6.5mm (credit card size)
- **IP rating:** IP65
- **GPS:** Yes
- **MCU:** nRF52840

Mid-Range Summary

Device	Price	MCU	GPS	Display	Solar
Heltec V4	$25 - $35	ESP32-S3	No	OLED	Yes
LilyGo T-Beam	$35 - $45	ESP32	Yes	OLED	No
Heltec T114	$30 - $45	nRF52840	Optional	TFT 1.14"	Yes
Wio Tracker L1	$29.90	nRF52840	Yes	OLED	No
Wio Tracker L1 Lite	$27.90	nRF52840	Yes	-	No
SenseCAP T1000-E	$35 - $45	nRF52840	Yes	None	No

Prices in this table are as of 2026-06-08.

Premium & Feature-Rich Devices

Premium & Feature-Rich Devices

Premium devices (roughly $43 - $109, as of 2026-06-08) target users who want a self-contained communicator, maximum battery life, infrastructure-grade performance, or specialised capabilities like NFC. Prices are volatile and vary by vendor and region.

LilyGo T-Deck - $43 - $53 (as of 2026-06-08)

A standalone LoRa communicator with a full QWERTY keyboard and 2.8" touchscreen. Can be used without a phone - type and read messages directly on the device. Best choice for field use where you want a dedicated communicator rather than pairing with a phone. Note: the base T-Deck ships with no battery; only the T-Deck Plus includes a built-in cell (see below).

- **MCU:** ESP32-S3
- **Display:** 2.8" IPS touchscreen
- **Input:** QWERTY keyboard + trackball
- **Battery:** Not included (standard LiPo)

LilyGo T-Deck Plus - $65 - $85 (as of 2026-06-08)

The T-Deck Plus adds GPS and a built-in 2000 mAh battery to the base T-Deck. The GPS makes it useful for position-aware mesh communications without any external modules. (The 2000 mAh cell is specific to the Plus; the base T-Deck has no built-in battery.)

LilyGo T-Echo - $50 - $65 (as of 2026-06-08)

E-ink display, nRF52840, GPS, and NFC in one device. The nRF52840 + e-ink combination can deliver multi-day battery life on a single charge, but real-world runtime varies widely with configuration (device role, channel utilisation, GPS on/off) and is often considerably shorter under active routing. The manufacturer does not state a fixed "7-14 day" figure - treat any runtime claim as configuration-dependent. The NFC functionality is available for app pairing workflows.

- **MCU:** nRF52840
- **Display:** E-ink
- **Battery life:** Multi-day, highly configuration-dependent (no fixed manufacturer figure)
- **GPS:** Yes
- **NFC:** Yes

Wio Tracker L1 Pro - $46.99 (Seeed Studio, as of 2026-06-08)

Rugged enclosed version of the Wio Tracker L1. Built on a bare nRF52840 + Wio-SX1262 (not a RAK4630 module). Includes GPS, a 128×64 OLED, and a built-in battery. Good choice for outdoor carry or vehicle mounting where a bare board is not practical.

Nano G2 Ultra - ~$86 (Unit Engineering direct) to ~$99 (Rokland) (as of 2026-06-08)

Uses nRF52840 and a wideband LoRa antenna that covers roughly 815 - 940 MHz, making it compatible with multiple regional frequency plans (the matching network still constrains real performance at the band edges). Has a 1.3" OLED screen. Rated battery life of ~3.5 days. Good choice for travellers who operate on different regional networks.

RAK WisMesh Pocket - $99 (WisMesh Pocket V2, as of 2026-06-08)

A polished handheld device with a 3200 mAh battery, 1.3" OLED display, and GPS. The large battery and GPS make it well-suited as a primary communicator for extended outdoor use. (The earlier $89 figure reflected the V1; the current V2 is $99.)

Station G2 - ~$109 (as of 2026-06-08)

The infrastructure workhorse. Built on an ESP32-S3 (WROOM-1) + SX1262 with a 35 dBm power amplifier and LNA. Its rated 36.5 dBm (4.46 W) US915 output is the highest of any standard supported device - but note this exceeds the FCC 30 dBm (1 W) conducted limit for unlicensed Part 15.247 use; operating at full output is only lawful under an amateur license (Part 97, which prohibits encryption and requires station ID). Includes a low-noise amplifier (LNA) for improved receive sensitivity. Designed to sit at a high point and serve as a backbone node. Requires 15 V USB-C Power Delivery - a standard USB charger will not work.

- **TX power:** 36.5 dBm (4.46 W) - exceeds the FCC 30 dBm conducted limit; full output is Part 97 (licensed) only
- **LNA:** Yes
- **Power input:** 15 V USB-C PD
- **Use case:** Fixed base station / high-site repeater

Premium Device Summary

Prices below are as of 2026-06-08 and are volatile.

Device	Price	MCU	Display	GPS	Battery	Standout Feature
T-Deck	$43 - $53	ESP32-S3	2.8" touch	No	External LiPo (none built-in)	QWERTY keyboard
T-Deck Plus	$65 - $85	ESP32-S3	2.8" touch	Yes	2000mAh (built-in)	QWERTY + GPS included
T-Echo	$50 - $65	nRF52840	E-ink	Yes	Multi-day (config-dependent)	Long battery + NFC
Wio L1 Pro	$46.99	nRF52840	OLED 128×64	Yes	Built-in	Rugged enclosed
Nano G2 Ultra	~$86 - $99	nRF52840	1.3" OLED	No	~3.5 days	815 - 940 MHz wideband
RAK WisMesh Pocket	$99 (V2)	nRF52840	OLED 1.3"	Yes	3200mAh	Large battery + GPS
Station G2	~$109	ESP32-S3	-	No	External	36.5 dBm (Part 97 only), LNA