Budget Devices

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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)

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