

# Portable & Handheld Antennas

## Portable & Handheld Antennas

Portable antennas attach directly to your device and travel with you. The primary trade-off is between size/weight and gain. For handheld use, a compact 2 - 3 dBi antenna is usually optimal - higher gain antennas are longer and concentrate the beam horizontally, which hurts performance when you are at ground level near other nodes.

*Note on prices and specs:* Prices below are approximate as of 2026-06-08 and are volatile - confirm at the linked vendor before ordering. Gain and SWR figures are manufacturer/vendor-reported unless independently measured.

## Community-Recommended Portable Antennas

### Muzi Whip 17cm - ~\$12

A compact 17cm whip antenna weighing approximately 14g. The vendor reports a measured SWR of 1.3 at 915 MHz (muzi.works) - excellent for a whip this size, though not independently lab-verified. The community generally regards the Muzi Whip as one of the best compact options for everyday carry. Its small size means it fits in a pocket or bag without the antenna becoming an obstruction.

- **Gain:** ~2 dBi (estimated for a 17cm 915 MHz whip)
- **Length:** 17cm
- **Weight:** ~14g (approximate, unconfirmed)
- **SWR:** 1.3 at 915 MHz (vendor-reported, muzi.works)
- **Connector:** SMA

### MESHTAC Gooseneck - ~\$35

A ~11.5-inch (~29cm) flexible/bendable antenna with a vendor-claimed 4 dBi gain (Rokland). The gooseneck design lets you position the antenna for best orientation regardless of how you are holding the device. Useful for vehicle or pack mounting where the device orientation varies. Note that bending a gooseneck distorts the pattern and reduces realized gain, so treat the 4 dBi figure as a best-case manufacturer claim.

- **Gain:** 4 dBi (vendor-claimed)
- **Length:** ~11.5" (~29cm)
- **Feature:** Flexible/bendable positioning

## MESHTAC 2.5 dBi Whip - ~\$13

A compact 7.8" whip with 2.5 dBi gain (Rokland). Good all-around portable antenna for devices that will be used at varying heights and orientations. Affordable enough to include as a default upgrade over the stock antennas that ship with Heltec devices.

## ALFA 90° Elbow - ~\$12

A 2 dBi, 7.7" antenna with a 90-degree elbow at the base (ALFA ARS-915P, Rokland). The right-angle mount keeps the antenna oriented vertically even when the device is mounted horizontally (e.g., on a belt clip or vehicle dashboard). Compact and inexpensive.

# Stock Antennas

The small antennas that ship with most Heltec and LilyGo devices are functional but not optimized. They are typically short stubs (roughly 5 - 8cm, approximate) tuned broadly around 915 MHz with mediocre SWR - muzi.works, for example, reports a stock stubby antenna at SWR ~3.5 versus 1.3 for their 17cm whip. For serious use, replace the stock antenna with any of the options above. The Muzi Whip is a popular replacement for the Heltec V3.

# Portable Antenna Comparison

*Gain and SWR values below are manufacturer/vendor claims; prices approximate as of 2026-06-08.*

Antenna	Price	Gain	Length	Notes
Muzi Whip 17cm	~\$12	~2 dBi	17cm	Best compact option; SWR 1.3 (vendor-reported)
MESHTAC Gooseneck	~\$35	4 dBi	~29cm	Flexible positioning
MESHTAC 2.5 dBi Whip	~\$13	2.5 dBi	20cm	Good all-around portable
ALFA 90° Elbow	~\$12	2 dBi	20cm	Right-angle base

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