Built-in Telemetry Types

Meshtastic nodes broadcast telemetry data alongside messages. Understanding what each telemetry type reports helps you configure nodes correctly and interpret network monitoring data. Note that all telemetry below (battery, temperature, position, and the rest) is broadcast on the channel and, on any channel with an MQTT uplink, is republished to the broker - disable telemetry types you do not need on sensitive nodes.

Device Metrics

Broadcast by all nodes automatically. Includes:

- **Battery voltage** - raw voltage of the battery pack
- **Battery percentage** - estimated state of charge
- **Air utilization TX** (`airUtilTx`) - rolling percentage of time this node's own radio spent transmitting, averaged over a moving window. This is a smoothed running metric, not an instantaneous reading, and should not be equated directly with a regulatory duty-cycle limit.
- **Channel utilization** - percentage of time the channel was occupied by any transmission heard by this node (includes all other nodes' traffic)

Environment Telemetry (requires I2C sensor)

Available when a supported sensor board is connected via I2C:

- **Temperature** (°C or °F)
- **Humidity** (relative humidity %)
- **Barometric pressure** (hPa)
- **Gas resistance** - BME68x family (BME680 / BME688); a proxy for air quality / VOC concentration

Supported sensors include BME280, BME68x (BME680/BME688), SHT31, and others. Enable in app: **Radio Config → Telemetry → Environment Telemetry**.

Position

- **GPS coordinates** (latitude, longitude)
- **Altitude** (metres MSL)
- **Speed** (km/h)
- **Heading** (degrees true)

Position is broadcast on the primary channel. Disable or reduce frequency for privacy or power savings: **Radio Config → Position → Position Broadcast Interval**.

Power Metrics

For nodes with external power monitoring hardware:

- **Voltage** on external rails
- **Current** draw

Useful for solar-powered nodes where you want to monitor panel output and battery charge current over the mesh.

Configuring Telemetry Intervals via CLI

Set the device telemetry broadcast interval (in seconds). The firmware default is 1800 seconds (30 minutes):

```
meshtastic --set telemetry.device_update_interval 1800
```

The default is 1800 s (30 min). Reduce toward 900 (15 min) for more frequent updates - but note that shorter intervals increase channel utilization and airtime on a busy mesh - or increase to 3600 (1 hr) / 7200 (2 hr) or more to reduce channel load on congested networks.

Set environment telemetry interval:

```
meshtastic --set telemetry.environment_update_interval 1800
```

Enable/Disable via App

In the Meshtastic app: **Radio Config → Telemetry**. Each telemetry type (device, environment, power) can be independently enabled or disabled and its interval set.

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