

# imu.svelte — IMU

Displays live inertial measurement unit data received from the `imu-update` Tauri event.

## Data displayed

**Accelerometer** — X/Y/Z values in  $m/s^2$  with a live scrolling sparkline chart showing the last 60 samples per axis. Each axis has a distinct colour (red, purple, green).

**Gyroscope** — X/Y/Z values in  $^\circ/s$  with the same sparkline treatment.

**Orientation cube** — a CSS 3D cube whose `rotateX/Y/Z` transform is driven by integrating the gyroscope values over time, giving a visual indication of the rover's pitch, roll, and yaw. Euler angles are displayed numerically next to the cube.

**Compass** — a Canvas-drawn compass rose with tick marks, cardinal labels, and a red needle pointing in the direction derived from the magnetometer X/Y values. The needle and labels adapt to light/dark colour scheme.

**Status bar** — shows calibration status (`✓ Cal` / `! Uncal`), sensor state (`Idle` / `Operating` / `Calibrating` / `Error`), any active error code, and the current update rate in Hz.

## Performance

Incoming events are batched using `requestAnimationFrame` — a `pending` buffer holds the latest payload and the render only runs on the next animation frame, so high-frequency updates (up to 50Hz) never block the UI thread. The Hz counter counts packets per second independently of renders.

---

Revision #1

Created 2026-04-15 08:28:27 UTC by Candela Cimadevilla Gonzalez

Updated 2026-04-15 08:29:21 UTC by Candela Cimadevilla Gonzalez