

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 $^\circ/\text{s}$ 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.

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