LSM9DS1

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What is This?

Chip with 3 sensors and 9 DOF

Accelerometer, gyroscope, magnetometer.

I2C and SPI Interfaces
Accelerometer

Internal Capacitors

Some fixed, some with springs

Force causes motion, which changes the capacitance
Gyroscope (MEMS)

Small suspended mass
Angular movement shifts mass
Circuits interpret changes as values
Magnetometer

± 2, 4, 12, or 16 gauss ranges

Compass

Orientation tracking

Provides background direction from the acceleration.

Compensates for drifts.