

The MXG2321 is a high sensitivity digital compass IC for measuring terrestrial magnetism in the X-axis, Y-axis, and Z-axis. It combines magnetic sensors for detecting terrestrial magnetism, a sensor driving circuit, low noise amplifier, high resolution ADC for each channel and control circuit for low power computation. The MXG232x supports for low power mode in addition to normal mode to extend battery life. The built-in temperature sensor can compensate for offset drift caused by non-linear ADC characteristics for each temperature. With small footprint and low power consumption, the MXG2321 is suitable for mobile phones and mobile GPS systems.

Key Features

- 3-axis magnetometer dedicated to compass application
- Embedded ADC for magnetometer output
- 16-bit output data for each 3 axis magnetic components
 - ✓ Resolution: 0.15 μT /LSB typ.
 - ✓ Measurable range: $\pm 4914 \mu\text{T}$
- Serial interface:
 - ✓ I²C: standard mode and fast mode compliant with Philips I²C specification Ver.2.1
- 7 operation modes including power down mode, single measurement mode, continuous measurement mode, self test mode and fuse ROM access mode
- Operating temperatures: -30°C to +85°C
- Operating supply voltage:
 - ✓ Analog power supply (V_{DD}): +2.5 V to +3.6 V (3.0V typ.)
 - ✓ Digital Interface supply (V_{ID}): +1.65 V to V_{DD} (1.8V typ.)
- Current consumption
 - ✓ Power-down mode: 1.0 μA (typ.)
 - ✓ Average in continuous measurement mode: 1.9mA typ. (100Hz repetition rate)
- Package: 8-ball WLCSP
 - ✓ 1.2mm \times 1.2mm \times 0.5mm (typ.)

Block Diagram

