

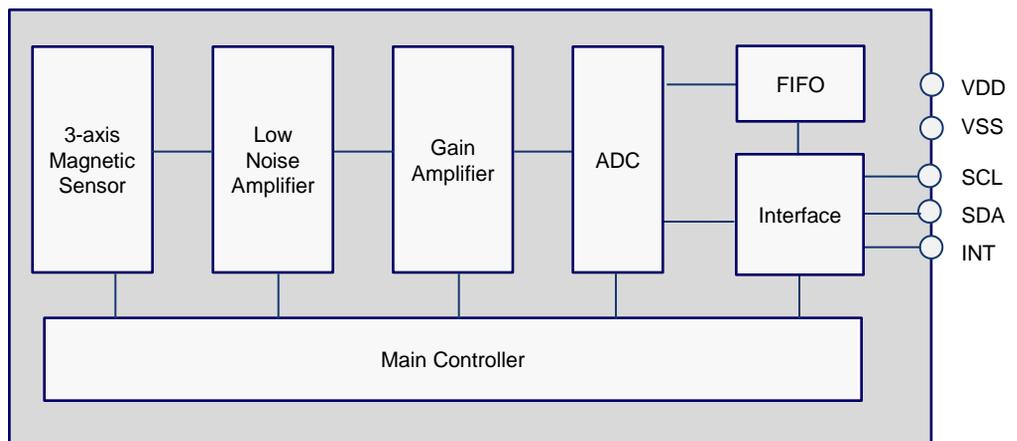
The MXG3300 is a high-sensitivity digital compass IC with ultra-small package for measuring terrestrial magnetism in the X-axis, Y-axis, and Z-axis. It combines magnetic sensors for detecting terrestrial magnetism, sensor driving circuit, low noise amplifier, high resolution ADC for each channel, embedded FIFO and control circuit for low power computation.

The MXG3300 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. The embedded FIFO dramatically reduces access count from the host to the sensor enabling lower power consumption and lower load to the host. Maximum 200Hz output data rate will make more prompt response for pseudo fusion-sensor functions. With small footprint and low power consumption, the MXG2320 is suitable for mobile phones and mobile GPS systems.

## Key Features

- 3-axis magnetometer dedicated to compass application
- Embedded ADC for magnetometer output
- 14/16-bit output data for each 3 axis magnetic components
  - ✓ Resolution: 0.60  $\mu\text{T}/\text{LSB}$  typ. @ 14-bit mode, 0.15  $\mu\text{T}/\text{LSB}$  typ. @ 16-bit
  - ✓ Measurable range:  $\pm 4914 \mu\text{T}$
- Serial interface:
  - ✓ I<sup>2</sup>C: standard mode and fast mode compliant with Philips I<sup>2</sup>C specification Ver.2.1
- Embedded 32 frames FIFO with 6 operation modes
  - 1) bypass, 2) FIFO, 3) stream,
  - 4) stream to FIFO, 5) bypass to stream 6) bypass to FIFO
- Operating temperatures: -30°C to +85°C
- Operating supply voltage:
  - ✓ Analog power supply ( $V_{\text{DD}}$ ): +1.65 V to +1.95 V (1.8V typ.)
- Current consumption
  - ✓ Power-down mode: TBD
  - ✓ Average in continuous measurement mode: 1.5mA typ. (100Hz repetition rate)
- Package: 8-ball WLCSP
  - ✓ 1.2mm  $\times$  0.8mm  $\times$  0.5mm (typ.)

## Block Diagram



## Applications



Smartphone



Tablet



Navigation



Wearable devices