MPU-9250 (Magnetometer Sensor)

The triple-axis MEMS magnetometer in MPU-9250 includes a wide range of features:

- 3-axis silicon monolithic Hall-effect magnetic sensor with magnetic concentrator
- Wide dynamic measurement range and high resolution with lower current consumption.
- Output data resolution of 14 bit (0.6µT/LSB)
- Full scale measurement range is ±4800µT
- Magnetometer normal operating current: 280µA at 8Hz repetition rate
- Self-test function with internal magnetic source to confirm magnetic sensor operation on end products

The MPU-9250 includes the following additional features:

- Auxiliary master I2C bus for reading data from external sensors (e.g., pressure sensor)
- 3.5mA operating current when all 9 motion sensing axes and the DMP are enabled
- VDD supply voltage range of 2.4 – 3.6V
- VDDIO reference voltage for auxiliary I2C devices
- Smallest and thinnest QFN package for portable devices: 3x3x1mm
- Minimal cross-axis sensitivity between the accelerometer, gyroscope, and magnetometer axes
- 512-byte FIFO buffer enables the applications processor to read the data in bursts
- Digital-output temperature sensor
- User-programmable digital filters for gyroscope, accelerometer, and temp sensor
- 10,000 *g* shock tolerant
- 400kHz Fast Mode I2C for communicating with all registers
- 1MHz SPI serial interface for communicating with all registers

Magnetometer Specifications

MAGNETOMETER SENSITIVITY		
Full-Scale Range	±4800	µT
ADC Word Length	14	bits
Sensitivity Scale Factor	0.6	µT / LSB
ZERO-FIELD OUTPUT		
Initial Calibration Tolerance	±500	LSB