The 3DM-GX3® -15-OEM is a high-performance, miniature Inertial Measurement Unit and Vertical Gyro, utilizing MEMS sensor technology. It combines a triaxial accelerometer, triaxial gyro, temperature sensors, and an on-board processor running a sophisticated sensor fusion algorithm to provide static and dynamic orientation, and inertial measurements. Its form factor is ideally suited for OEM applications.

**Features & Benefits**

**Easiest to Integrate**
- smallest, lightest industrial OEM IMU available
- simple integration supported by SDK and comprehensive API

**Best in Class**
- precise inertial measurement
- high-speed sample rate & flexible data outputs
- high performance under vibration

**Cost Effective**
- reduced cost and rapid time to market for customer’s applications
- aggressive volume discount schedule

**Applications**
Accurate orientation and positioning under dynamic conditions such as:
- Inertial Aiding of GPS
- Unmanned Vehicle Navigation
- Platform Stabilization, Artificial Horizon
- Antenna and Camera Pointing
- Health and Usage Monitoring of Vehicles
- Reconnaissance, Surveillance, and Target Acquisition
- Robotic Control
- Personnel Tracking

**System Overview**

The 3DM-GX3® -15-OEM offers a range of fully calibrated inertial measurements including acceleration, angular rate, deltaTheta and deltaVelocity vectors. It can also output computed orientation estimates including Euler angles (pitch and roll, rotation matrix and quaternion. All quantities are fully temperature compensated and are mathematically aligned to an orthogonal coordinate system. The angular rate quantities are further corrected for g-sensitivity and scale factor non-linearity to third order. The 3DM-GX3® -15-OEM architecture has been carefully designed to substantially eliminate common sources of error such as sensitivity to supply voltage variations. On-board coning and sculling compensation allows for use of lower data output rates while maintaining performance of a fast internal sampling rate.

The 3DM-GX3® -15-OEM is initially sold as a starter kit consisting of an IMU module, USB communication and power cable, software CD, user manual and quick start guide. The circuit board form-factor provides thru-holes for mounting on larger circuit assemblies and custom TTL communication and power cables can be user fabricated or purchased from the factory.
### Specifications

**IMU Specifications**

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<td>Accelerometer range</td>
<td>±0.1% fs, ±0.03% fs</td>
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<td>Gyroscope range</td>
<td>±0.5° pitch and roll typical for static test conditions</td>
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<td>Static accuracy</td>
<td>±0.04 mg, 18°/hr</td>
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<tr>
<td>Dynamic range</td>
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<td>Alignment error: ±0.05°, ±0.05°</td>
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**General**

- A/D resolution: 16 bits SAR oversampled to 17 bits
- Interface options: USB 2.0 / TTL serial (3.3 volts)
- Baud rate: 115,200 bps to 921,600 bps
- Power supply voltage: 3.1 to 5.5 volts
- Power consumption: 80 mA @ 5 volts with USB
- Connector: Samtec FTSH-105-01-F-D-K
- Operating temperature: -40 °C to +70 °C
- Dimensions: 38 mm x 24 mm x 12 mm
- Weight: 11.5 grams
- ROHS: compliant
- Shock limit: 500 g
- Software utility: CD in starter kit (XP/Vista/Win7 compatible)
- Software development kit (SDK): complete data communications protocol and sample code

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