VN-100 Inertial Measurement Unit Information

Attitude and Heading:

* Yaw/Pitch/roll
* Quaternions

|  |  |
| --- | --- |
| Range: Heading, Roll: | ±180° |
| Range: Pitch : | ±90° |
| Static Accuracy (Heading, Magnetic)1: | 2.0° RMS |
| Static Accuracy (Pitch/Roll): | 0.5° RMS |
| Dynamic Accuracy (Heading, Magnetic)1: | 2.0° RMS |
| Dynamic Accuracy (Pitch/Roll)2: | 1.0° RMS |
| Angular Resolution: | < 0.05° |
| Repeatability: | < 0.2° |
| Output Rate (IMU Data)3: | 800 Hz |
| Output Rate (Attitude Data): | 400 Hz |

Magnetometer:

|  |  |
| --- | --- |
| Range: | ±2.5 Gauss |
| Linearity: | < 0.1 % |
| Noise Density: | 140 μGauss/√Hz |
| Bandwidth: | 200 HZ |
| Alignment Error: | ±0.05 ° |
| Resolution: | 1.5 Milligauss |

Pressure Sensor:

|  |  |
| --- | --- |
| Range: | 10 to 1200 mbar |
| Resolution: | 0.042 mbar |
| Accuracy: | ±1.5 mbar |
| Error Band: | ±2.5 mbar |
| Bandwidth: | 200 Hz |

Environment

|  |  |
| --- | --- |
| Operating Temp: | -40°C to 85°C |
| Storage Temp: | -40°C to 85°C |

Gyroscope

|  |  |
| --- | --- |
| Range: | ±2000 °/s |
| In-Run Bias Stability: | < 10 °/hr |
| Linearity: | < 0.1% FS |
| Noise Density: | 0.0035 °/s √Hz |
| Bandwidth: | 256 Hz |
| Alignment Error: | ±0.05° |
| Resolution | < 0.02 °/ |

Accelerometer

|  |  |
| --- | --- |
| Range: | ±16 g |
| In-Run Bias Stability | < 0.04 mg |
| Linearity: | < 0.5 ° FS |
| Noise Density: | < 0.14 mg/√Hz |
| Bandwidth: | 260 HZ |
| Alignment Error: | ±0.05 ° |
| Resolution | < 0.5 mg |

Electrical and physical Characteristics

|  |  |
| --- | --- |
| Input Voltage (SMD): | 3.2 V to 5.5 V |
| Input Voltage (Development Board): | 3.2V to 5.5 V |
| Baud Rate: | Up to 921600 |
| Current Draw: | 45 mA @ 3.3V |
| Max Power Consumption: | 185 mW |
| Digital Interface (SMD): | Serial TTL, SPI |
| Digital Interface (Development Board): | Serial TTL, SPI, RS-232, USB |
| Size (SMD): | 24 x 22 x 3 mm |
| Weight (SMD): | 3.5 g |
| Connector: | 30-pin LGA |

Operation Overview:

* See data sheet for filtering modes and error codes
* **Payload Length information in sections 4.3.6 through 5.1 of User manual**

