



Reliability Report

Report Title: ADIS16465 Gyroscope Revision Qualification
Report Number: 17227
Revision: A
Date: 2 February 2022

Summary

This report documents the successful completion of the reliability qualification requirements for the release of the ADIS16465 with a gyroscope revision. The ADIS16465 is a precision, microelectric mechanical system (MEMS), inertial measurement unit (IMU) that includes a triaxial gyroscope and a triaxial accelerometer. The gyroscope revision was made for performance improvement and there is no change in reliability. This report also covers the ADIS16467 that has the same product characteristics shown in Table 1. Three gyro range options are included, 125 dps (-1); 500dps (-2); 2000dps (-3). This qualification report covers the following models:

- ADIS16465-1BMLZ
- ADIS16465-2BMLZ
- ADIS16465-3BMLZ
- ADIS16467-1BMLZ
- ADIS16467-2BMLZ
- ADIS16467-3BMLZ

Table 1: ADIS16465 Product Characteristics

| | |
|--------------------|--|
| Package | 14-MCML |
| Body Size (mm) | 24.30 x 22.40 x 9.00 |
| Assembly Location | IMI |
| SMT Solder | SAC305 |
| Underfill | Hysol FP4545FC |
| Adhesives | Loctite 3563 |
| Lead Finish | Gold |
| Gyro Core | Process Codes: 0.18D2L5M40.5018 & MEMS0WL1M00.B1Q & CAP1_WL.A2Q Fab Site: E_TSMC8B08, I_WILM1B06 |
| Accelerometer Core | Process Codes: 0.18C2L5M33.18, CAP1_WL.B1Q, & MEMS0WL1M00.B1Q. Fab Sites: E_TSMC0408, I_WILM1B06 |

Description / Results of Tests Performed

Table 2 provides a description of the qualification tests conducted and the associated test results for products manufactured on the same technologies as described in Table 1. Table 3 provides data from qualification tests on product containing previous revisions of the gyroscope. All devices were electrically tested before and after each stress. Any device that did not meet all electrical data sheet limits following stressing would be considered a valid (stress-attributable) failure unless there was conclusive evidence to indicate otherwise.

Table 2: Qualification Test Results

| Test Name | Specification | Conditions | Device | Lot # | Sample Size | Qty. Failures |
|---------------------------------|---------------|----------------------------------|-----------|------------|-------------|---------------|
| Temperature Cycling (TC) | JESD22-A104 | -40°C/+105°C, 1000 Cycles | ADIS16465 | Q17227.1.2 | 32 | 0 |
| Temperature Humidity Bias (THB) | JESD22-A101 | 85°C, 85%RH, Biased, 1,000 Hours | ADIS16465 | Q17227.1.1 | 16 | 0 |

Table 3: Qualification Extension Data*

| Test Name | Specification | Conditions | Device | Lot # | Sample Size | Qty. Failures |
|---|---------------|--------------------------|-----------|----------|-------------|---------------|
| Temperature Cycle | JESD22-A104 | -40°C/+105°C, 500 Cycles | ADIS16465 | Q16167.2 | 16 | 0 |
| | | | | Q16803.1 | 16 | 0 |
| | | -40°C/+85°C, 500 cycles | ADIS16465 | 10191913 | 16 | 0 |
| High Temperature Operating Life Test (HTOL) | JESD22-A108 | +110°C Ta, 500 Hours | ADIS16465 | Q16167.1 | 16 | 0 |
| | | | | 10191913 | 16 | 0 |

* Note: Qualification extension data is from qualification report RQR09975.

Samples of the ADI internal component technologies contained herein are continuously undergoing reliability evaluation as part of the ADI Reliability Monitor Program. Additional qualification data is available on [Analog Devices' web site](#).

Approvals

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Additional Information

Data sheets and other additional information are available on [Analog Devices' web site](#)