Embedded Motion Driver for ICM 20648 ICM 20948 1.0.0 Release Notes

SW-0000xx

March 2, 2017

InvenSense reserves the right to change the detail specifications as may be required to permit improvements in the design of its products.

InvenSense Inc.
1745 Technology Drive, San Jose, CA 95110 U.S.A
+1(408) 988–7339
www.invensense.com

Document Number: SW-0000XX
Revision: 1.0
Release Date: 03/02/2017

OVERVIEW

This release note document explains all the relevant information regarding the Embedded Motion Driver for ICM 20648 and ICM 20948 **1.0.0** software release.
This document explains the new features and changes that are introduced in this release.

Software Modules included:
MCU Sample code based on ST Nucleo
Embedded Driver (libIDD)
Example applications
Sensorcli tools to run on Windows

Supported Features:

- HW:
  - Accel/Gyro RAW data
- SW:
  - Calibration: Accel (without bias compensation, just scaled), Gyro
  - Game Rotation Vector

Code size information are available on the quick start guide included in the package. Feel free to refer to it for further information.

CONTENTS

TEST SW PLATFORM

This section describes the software test platform used during the test:

- sensor-cli including LibIDD (3.8.9)
- Standalone NUCLEO samples code included in release package

TEST HW PLATFORM

- ST Nucleo STM32F411 + ICM 20648 daughterboard + Nucleo Carrier Board verB
- ST Nucleo STM32F411 + ICM 20948 daughterboard + Nucleo Carrier Board verB

TEST HW SENSORS

The following InvenSense devices were tested in the combinations shown below:

INVENSENSE DEVICE	3rd PARTY DEVICES ON PRIMARY I2C BUS	3rd PARTY DEVICES ON SECONDARY I2C BUS	STATUS
ICM 20648 (Accel + Gyro)	none	AKM 9911	Completed
ICM 20948 (Accel + Gyro)	none		Completed

CHANGELOG

This section describes the changelog compared to the *1.6.0* version that went into this package.

- Algo offsets should be stored in flash and applied at startup
- Nucleo application showcasing driver usage in an embedded context
- Limit Vanadium max frequency to 200Hz
- enabling UNCAL_MAGNETOMETER change ODR of MAGNETOMETER
- Ping reports OK for Mag when no mag plugged in
- Documentation improvements
- No data reported from tilt sensor unless enabled together with bac
- Linear acceleration reports incorrect output unless acceleration is enabled too
- Self test passes even if device is in motion
- Magnetometer and UncalMagnetometer report at different rate when requested at 50 or 70 Hz
- Which non regression tests are applicable for 20x48 + Nucleo
- magnetometer max ODR can be at 225 Hz when acc is enabled at 225Hz
- Mounting matrix is not applied on gravity
- no_regression_mounting_matrix_fix11716 fails
- Include axis orientation in SW guide
- Gyro min FSR value
- Code size table refernces 20649
- gravity reports wrong values at 1Hz
- [20x48] Setting a batch timeout of zero slows the system down
- Power consumption doesn't always return to idle

REVISION HISTORY

REVISION DATE	REVISION NUMBER	DESCRIPTION
3/2/2017	1.0	1.0.0 Release

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