

Embedded Motion Driver for ICM20648/ICM20948 on ST Discovery board, 1.3.0 Release Notes

OVERVIEW

This release note document explains all the relevant information regarding the Embedded Motion Driver for ICM20648/ICM20948 on ST Discovery board, 1.3.0 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 Discovery dev board.
- IAR project for sample code
- Embedded Driver
- DMP Image for ICM20648/20948

Supported Features:

ICM20648/20948

Data output:

- Raw Gyro
- Calibrated Gyro
- Calibrated Accel
- Raw Compass
- Calibrated Compass
- Game Rotation Vector
- Rotation Vector
- Linear Acceleration
- Orientation
- Gravity

DMP features:

- Gyro calibration
- Accel calibration
- Compass calibration
- Step Counter
- Step Detector
- Significant Motion
- Basic Activity Classifier
- Tilt detection
- Pickup detection

Other:

- Self-test

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TEST SW PLATFORM

- Terminal software
- Python Script (motion-driver-client.py)

TEST HARDWARE PLATFORM

- ST Discovery (stm32f407) SDK + MSB + ICM 20648 daughtercard + AKM 9912 daughtercard
- ST Discovery (stm32f407) SDK + MSB + ICM 20948 daughtercard

TEST HARDWARE SENSORS

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

INVENSENSE DEVICE	3 rd PARTY DEVICES ON PRIMARY I2C BUS	3 rd PARTY DEVICES ON SECONDARY I2C BUS	STATUS
ICM20648 (Accel + Gyro)	N/A	AK09912 compass	Completed
ICM20948 (Accel + Gyro + Compass)	N/A	(AK09916 compass) ^{**internal}	Completed

1.2.1 BUG FIXES AND FEATURES

Additional features since 1.2.1:

1. ICM20648 offset register configuration example after self-test

Bug fixes:

Subject
ICM20648 delay_es_shadow (I2C_MST_DELAY_CTRL) should be set
[20648] Example to configure offset registers
[20648] ODR change triggers junk compass bias
[20648] Calibrated Compass off stops uncalibrated compass output
[20648] Update rate disruption when 2 sensors are enabled
Serial hook function should be called only in transport layer
I2C address configuration should be one place
[20648] gyro bias set to DMP not effective
[20648] Unstable after self-test
BAC not work after toggling accel
ODR changed by enable another sensor
Timestamp intervals when 102/112Hz
Inconsistent SMPLRT_DIV control for RV and GRV
Missing SMPLRT_DIV and BAC_RATE control for BAC

1.2.1 OPEN ISSUES TO DO

None

1.2.1 KNOWN ISSUES

None

REVISION HISTORY

REVISION DATE	REVISION NUMBER	DESCRIPTION
3/3/2016	1.0	Initial Release(1.1.0)
5/20/2016	1.1	Release v 1.2.0 with new DMP for ICM20648
5/24/2016	1.2	Release v 1.2.1 with updated comments
10/4/2016	1.3	Release v 1.3.0 <ul style="list-style-type: none">- ICM20608D support- Accumulated bug fixes

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