The driver of MMA7455

Example Code Introduction for 32-bit NuMicro®Family

Information

Application	This sample code is the driver of MMA7455 based on NANO100 series.
BSP Version	Nano100B_Series_BSP_CMSIS_v3.03.000
Hardware	NuTiny-EVB-Nano130-LQFP128 V1.0

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1 Function Description

1.1 Introduction

This sample code is the driver of MMA7455 based on NANO100 series. NANO100 series controls MMA7455 and reads 3-axis accelerometer data by I2C interface.

1.2 Demo Result

```
Core Clock = 42000000 Hz

+------------------------------------------------------+
|   Nano100 Series I2C Sample Code with MMA7455        |
+------------------------------------------------------+
Data:  X: 230  Y: 175  Z: 234
Data:  X: 230  Y: 176  Z: 236
Data:  X: 231  Y: 175  Z: 236
Data:  X: 231  Y: 175  Z: 233
Data:  X: 220  Y: 193  Z: 203
Data:  X: 24  Y: 238  Z: 210
Data:  X: 47  Y: 207  Z: 211
Data:  X: 234  Y: 204  Z: 204
Data:  X: 229  Y: 186  Z: 205
Data:  X: 231  Y: 186  Z: 204
Data:  X: 230  Y: 186  Z: 205
```

2 Code Description

Initialize MMA7455.

```
void MMA7455_Init(void)
{
    I2C0_Init();

    I2C0_Write(MMA7455_ADDR, MMA7455_MCTL, 0x05);

    I2C0_Write(MMA7455_ADDR, MMA7455_XOFFL, 0xF8);
    I2C0_Write(MMA7455_ADDR, MMA7455_XOFFH, 0xFF);
    I2C0_Write(MMA7455_ADDR, MMA7455_YOFFL, 0x26);
    I2C0_Write(MMA7455_ADDR, MMA7455_YOFFH, 0x00);
    I2C0_Write(MMA7455_ADDR, MMA7455_ZOFFL, 0xD8);
    I2C0_Write(MMA7455_ADDR, MMA7455_ZOFFH, 0xFF);
}
```

Read 3-axis accelerometer data.

```
void MMA7455_ReadData(uint8_t au8Data[3])
{
    I2C0_Read(MMA7455_ADDR, MMA7455_XOUT8, 3, au8Data);
}
```

3 Software and Hardware Environment

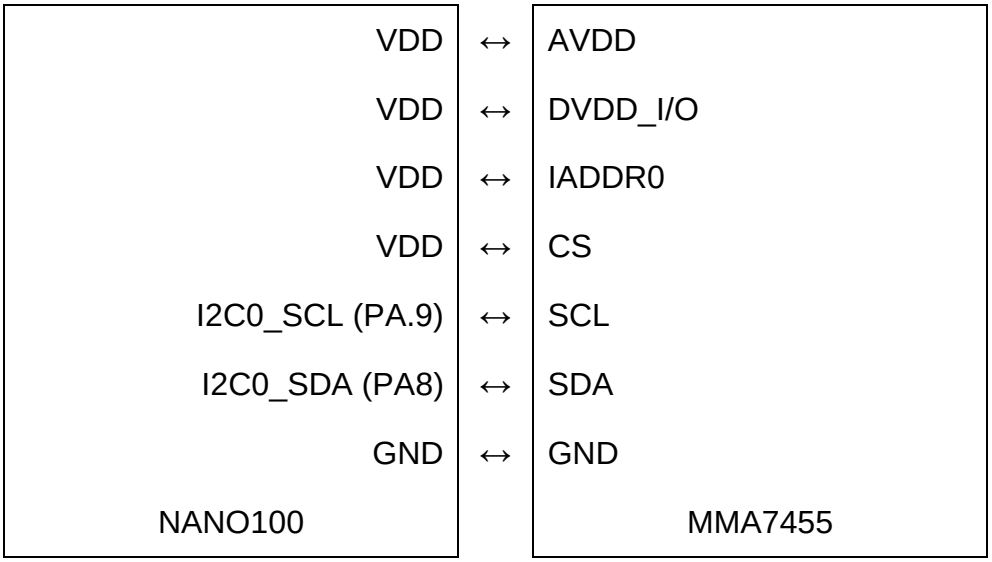
Software Environment

- BSP version
  - Nano100B_Series_BSP_CMSIS_v3.03.000
- IDE version
  - Keil uVersion4.74

Hardware Environment

- Circuit components
  - NuTiny-EVB-Nano130-LQFP128 V1.0
  - MMA7455
- Diagram

NANO100 series controls MMA7455 by I2C interface, and reads 3-axis accelerometer data.



4 Directory Information

- EC_NANO100_I2C_MMA7455_V1.00
  - Library — Sample code header and source files
    - CMSIS — Cortex®Microcontroller Software Interface Standard (CMSIS) V4.5.0 definitions by ARM® Corp.
    - Device — CMSIS compliant device header file
    - StdDriver — All peripheral driver header and source files
  - SampleCode
    - ExampleCode — Source file of example code

5 How to Execute Example Code

1. Browsing into sample code folder by Directory Information(section 4) and double click I2C_MMA7455.uvproj.
2. Enter Keil compile mode
   a. Build
   b. Download
   c. Start/Stop debug session
3. Enter debug mode
   a. Run

6 Revision History

Date	Revision	Description
Oct.10, 2019	1.00	1. Initially issued.

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