Victor Nelson

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Sent:	Tuesday, April 24, 2018 5:36 PM
To:	Victor Nelson
Subject:	Magnetometer

Embedded Systems Students:

A couple of you reported being unable to get data from the Magnetometer on our Discovery board. I found that the error was in the BSP driver for the COMPASS chip: stm32l467g_discovery_compass.c . In the COMPASS initialization function, the function call that reads the ID of the magnetometer device was returning NULL, rather than the device ID of 0x3D, As a result, the initialization function exited without initializing the magnetometer,

After some experimentation, I found that if you call the function that reads the ID TWICE, the correct ID value is returned the second time! I have no idea why this happens, but it appears to work consistently. I added the following function call right before the "real" function call in the BSP_COMPASS_Init() function:

```
Lsm303cDrv_magneto.ReadID(); //Nelson's added line
if (Lsm303cDrv_magneto.ReadID() != LMS303C_MAG_ID)
{
ret = COMPASS_ERROR;
}
else
{
```

Note that the BSP drivers in the Keil installation directory are read only. If you wish to make the above change, you will need to copy BSP files to your project directory and change the protection so that it is not read only. (I copied the entire BSP directory, selected "properties", and then unchecked read only.)

There were no issues with the accelerometer part of that chip, nor with the gyroscope chip.

VPN

ST App. note
ANS087 LM303 AH
ultra-Compact
High-Performance
eCompass module