

Postlab 5

1. What does the AUTOEND bit in the CR2 register do? Why don't you want to use it when you'll be needing a restart condition?
Automatically generates a stop condition at the end of a transaction, as soon as NBYTES are transferred. Enabling this means you can't do chained writes and reads.
2. This lab used standard-mode 100 kHz I2C speed. What values would you write in the TIMINGR if we were using 400 kHz fast-mode?
PRESC = 0
SCLL = 0x9
SCLH = 0x3
SDADEL = 0x1
SCLDEL = 0x3
3. This lab used blocking code. To implement it completely as non-blocking you would replace all of the wait loops with interrupts. Most flags in the I2C peripheral can trigger an interrupt if the proper enable bit is set. Find the interrupt enable bits that match the following flags:
 - TC – **TCIE, I2C_CR1 bit 6**
 - NACKF – **NACKIE, I2C_CR1 bit 4**
 - TXIS – **TXIE, I2C_CR1 bit 1**
 - ARLO – **ERRIE, I2C_CR1 bit 7, (generic/all other flags)**
4. The gyro can operate in three full-scale/measurement ranges, measured in degrees-per-second (dps). What are these three ranges?
245, 500, 2000 dps
5. What is the I2C address of the gyro when the SDO pin is low? The lab has the pin set high, read the I2C section of the gyro datasheet.
0x68