

ECE 153B Lab 4

Question 2A)

USART DIV = $8333.333 \sim 8333 = 0x208D$

TX/RX Baud Rate = $f_CLK / (USART\ DIV) = 80MHz / (0x208D)$

Question 3B)

PRESC = 7

Min Low clk per. = 4.7us

Min Hi clk per. = 4.0us

Min data setup time = 1000ns = 1us

Min data hold time = 1250ns = 1.25us

Used in the following Calculations:

$f_PRESC = 80MHz / (1+7) = 10MHz$ ($t_PRESC = 0.1us$)

SCLDEL = 0

$t_SCLDEL = (SCLDEL + 1) * t_PRESC = (10 + 1) * 0.1us = 1.1us$

SDADEL = 0

$t_SDADEL = (SDADEL + 1) * t_PRESC = (12 + 1) * 0.1us = 1.3us$

SCLL = 0

$t_SCLL = (SCLL + 1) * t_PRESC = (47 + 1) * 0.1us = 4.8us$

SCLH = 0

$t_SCLH = (SCLH + 1) * t_PRESC = (40 + 1) * 0.1us = 4.1us$

Reading and Writing from the Temperature Sensor:

**TABLE 4-1: COMMAND BYTE
DESCRIPTION
(SMBUS/I²C READ_BYTE AND
WRITE_BYTE)**

Command	Code	Function
RTR	00h	Read Temperature (TEMP)
RWCR	01h	Read/Write Configuration (CONFIG)

Read Temperature Command Byte = 0x00