TECNOLÓGICO DE MONTERREY ®

COMPUTER SCIENCE DEPARTMENT

TE2004B – ADVANCED EMBEDDED SYSTEMS DESIGN

LAB #2 – TIMERS

Name: _____   Name: _____

ID: _____   ID: _____

Name: _____   Name: _____

ID: _____   ID: _____

Instructions:

1. Create a new project in which the frequency of the timer clock source is of 24 MHz. Copy and paste a screenshot of the resulting clock tree.

Picture 1.1. Clock source for problem #1

2. Using the SysTick registers make the LED in PA5 high during 1 second and low for another second.

Listing 2.1. Code for problem #2

Figure 2.2. Calculations for problem #2

Picture 2.1. Oscilloscope output for Problem #2

3. Using the TIM4 make the LED in PA5 high during 1 second and low for another second.

Listing 3.1. Code for problem #3

Figure 3.2. Calculations for problem #3

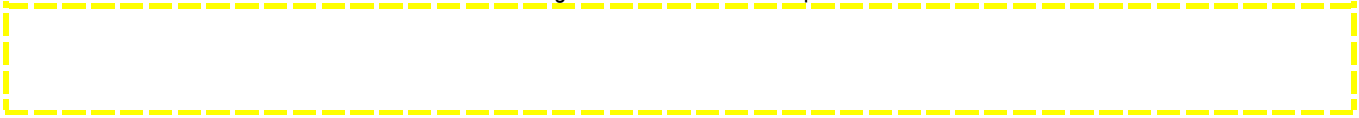Picture 3.1. Oscilloscope output for Problem #3

4. Using the TIM2 and an interruption make the LED in PA5 high during 1 second and low for another second.

Listing 4.1. Code for problem #4

Figure 4.2. Calculations for problem #4

Picture 4.1. Oscilloscope output for Problem #X

5. Use a timer and an interruption from the NUCLEO-H533 board generate a square wave with a frequency of 100Hz.

Listing 5.1. Code for problem #5

Figure 5.2. Calculations for problem #5

Picture 5.1. Oscilloscope output for Problem #5