



Malaga University
Electronic Technology Department



ETS Telecommunications Engineering

Bachelor's Degree in Telecommunications Systems Engineering

microcontrollers

Course 2022/2023

Practice 3: Interruptions

(v1)

1. DESCRIPTION

Practice 3 of the subject presents the basic concepts of microcontroller **Interrupts**.

It will be developed on the *LaunchPad* and BBP boards, using the 4 Sx buttons and the 4 LEDx of the same ($x = 3..6$). It must be taken into account that several buttons will never be pressed simultaneously, so it is not necessary to manage this situation.

IMPORTANT NOTE: In order to develop this practice, it is necessary that the first instruction that is executed in the "main" function of the program is:

```
WDTCTL = (WDTPW|WDTHOLD);           // Stop the watchdog
```

To implement this practice, the modules described below must be developed.

p3.1

Description:

When the Sx pushbutton is pressed, the LEDx will toggle.

Considerations:

- The management of the buttons will be carried out by interruptions.

p3.2

Description:

When the Sx button is released, all the LEDs will switch except the LEDx.

Considerations:

- The management of the buttons will be carried out by interruptions.

p3.3

Description:

When the Sx pushbutton is pressed the LEDx will toggle, and when the Sx pushbutton is released all the LEDs will toggle except the LEDx.

Considerations:

- The management of the buttons will be carried out by interruptions.