***Efficient Embedded Course***

**INTERRUPT DEMONSTRATION NOTES**

**Issue 1.0**

Contents

[1 Introduction 1](#_Toc78803027)

[1.1 Lab overview 1](#_Toc78803028)

[2 Requirements 1](#_Toc78803029)

[3 Hardware Setup 2](#_Toc78803030)

# Introduction

## Lab overview

The interrupt demonstration uses an ISR to detect when a switch is pressed and increment a counter variable each time. The RGB LEDs are lit according to the three LSBs of the counter variable.

# Requirements

In this lab, we will be using the following hardware and software:

* **Keil µVision5 MDK IDE**
  + Please see the included Getting Started with Keil guide on how to download and install Keil.
* **STM32 Nucleo-L552ZE-Q**
  + For more information, click [here](https://www.st.com/en/evaluation-tools/nucleo-l552ze-q.html).
* **RGB LED**

# Hardware Setup

Connect the switch signal to the GPIO port input on the MCU as shown in table below. Connect the debug signals and the switch signal to a logic analyzer or oscilloscope. This matches the pins used in the supplied code.

Table 1. Signals and connections

|  |  |  |  |
| --- | --- | --- | --- |
| Signal Name | Description | Direction | MCU |
| SW1 | Switch Input | Input to MCU | PD\_15 |
| DBG\_Main | Main Thread Debug Output | Output from MCU | PD\_11 |
| DBG\_ISR | ISR Debug Output | Output from MCU | PC\_6 |

Please see the included Nucleo-L552ZE-Q pins legend (NUCLEO\_L552ZE\_pins.docx) for the pinout of the Arduino-included Zio connectors for CN7, CN8, CN9 and CN10.