

Lab 5

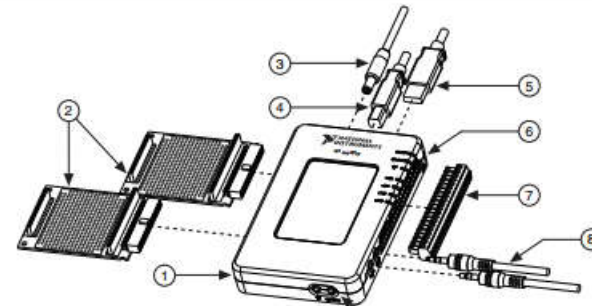
Signal Generation on External Device



NI myRIO-1900

The National Instruments myRIO-1900 is a portable reconfigurable I/O (RIO) device that students can use to design control, robotics, and mechatronics systems. This document contains pinouts, connectivity information, dimensions, mounting instructions, and specifications for the NI myRIO-1900.

Figure 1. NI myRIO-1900



Introduction of Lab 5

- ❖ Interface with some of devices that are **not parts** of myRIO box.

- ❖ DIO pins will be used to blink an LED

Goal

- ❖ Learn how to create periodic real time tasks for blinking an **external** LED

Part 1

❖ Blinking an external LED using a periodic real time task

① Add a variable to represent DIO channel

② Assign names of registers

③ Create a template project in your work space

④ Adjust the time period

⑤ Compile and run the program and show the result to
your TA

Part 2

❖ Blinking an external LED using a **threaded** periodic real time task

- ① Create a template project in your workspace
- ② Use a threaded task to repeat what is done in part 1
- ③ Compile and run the program
- ④ Show the result to your TA

Marking Scheme

- ❖ Show me the result during the lab
- ❖ Send me your code to lic222@mcmaster.ca
- ❖ One email per group, please also include your name and student number

- Part 1 (50%)
- Part 2 (50%)

Note

- ❖ Many problems can be resolved using the instruction of lab3 and lab4. Please read them again very carefully before lab 5.

Thank you!