

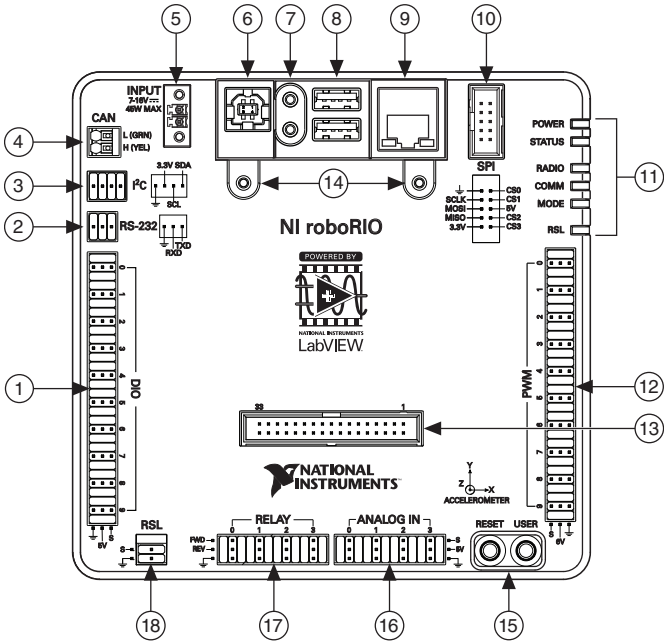
USER MANUAL

NI roboRIO

RIO Device for Robotics

The NI roboRIO is a portable reconfigurable I/O (RIO) device that students can use to design control, robotics, and mechatronics systems used in the FIRST Robotics Competition (FRC). This document contains pinouts, connectivity information, dimensions, and mounting instructions for the NI roboRIO. The NI roboRIO provides the I/O shown in Figure 1 and connects to a host computer over USB and 10/100 Ethernet.

Figure 1. NI roboRIO Features



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|---------------------------------------|---|
| 1 Digital input and output (DIO) port | 10 Serial peripheral interface bus (SPI) port |
| 2 RS-232 port | 11 LEDs |
| 3 I ² C port | 12 Pulse-width modulation (PWM) port |
| 4 CAN port | 13 myRIO Expansion Port (MXP) |
| 5 Power connector | 14 MXP retention mount |
| 6 USB Device port | 15 User and Reset buttons |
| 7 USB Host retention mount | 16 Analog input (AI) port |
| 8 USB Host ports | 17 Relay port |
| 9 Ethernet port | 18 Robot signal light (RSL) port |