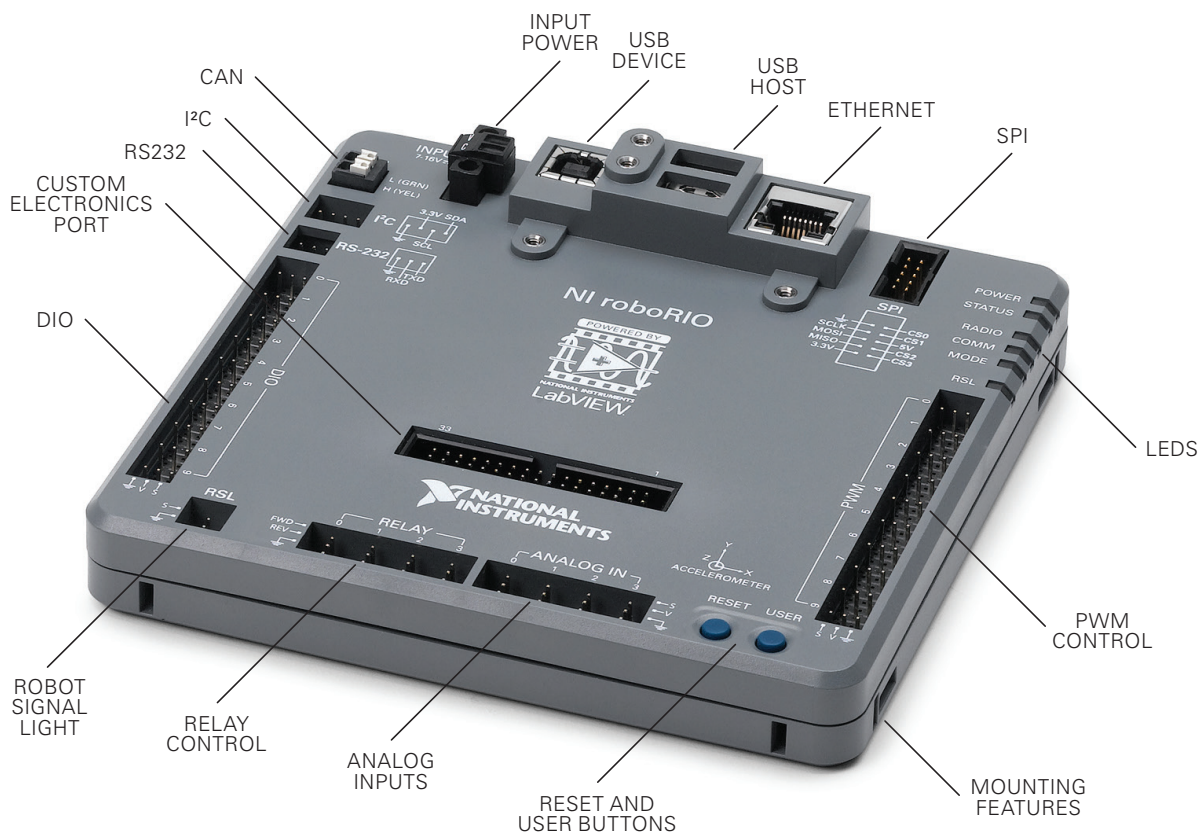




# The Next Step in Student Robotics

Introducing roboRIO, the new LabVIEW reconfigurable I/O (RIO) controller built just for student robotics teams. It's faster, smaller, and more powerful than previous controllers.



# Features and Specifications

## FPGA with Integrated Dual-Core Real-Time Processor

Platform	Xilinx® Zynq™-7020
Processor	Dual-Core ARM Cortex™-A9 at 667 MHz
System Memory	256 MB RAM
Storage Memory	512 MB NAND
Operating System	Linux with real-time extensions
Language Support	LabVIEW, C++, Java

## Physical/Electrical Characteristics

Input Power	6.8 V to 16 V with staged brownout from 4.5 V to 6.8 V
Output 3.3 V (user)	1.5 A maximum
Output 5 V (user)	1 A maximum
Output 6 V (servo)	2.2 A maximum
Dimensions	5.7 in. x 5.6 in.
Weight	Under 12 oz
Operating Temperature	0 °C–40 °C
Storage Temperature	-20 °C–70 °C

## I/O and Communication Ports

PWM	20 channels (10 dedicated, 10 shared)
DIO	26 channels (10 dedicated, 16 shared)
Relay Control	4 bi-directional channels (FWD/REV)
SPI Master	2 channels (1 dedicated for up to 4 devices, 1 shared for 1 device), up to 1 MHz clock
I <sup>2</sup> C	2 channels (1 dedicated, 1 shared), up to 400 kHz
UART	1 RS232 port, 1 TTL port
Analog Input	8 channels, 0 V–5 V, 12-bit, 500 kS/s aggregate
Analog Output	2 channels, 0 V–5 V, 12-bit, 340 kS/s simultaneous
USB Host	2 ports (USB 2.0 High Speed)
USB Device	1 port (USB 2.0 High Speed)
Ethernet	1 port (10/100 Mbit/s)
CAN	1 port (1 Mbit/s)
Accelerometer	Integrated, 3-axis, 800 S/s
Signal Light	12 V Robot Signal Light Output
Custom Electronics Port	Access to shared DIO/PWM/I <sup>2</sup> C/SPI, Analog Input, Analog Output, TTL UART, 3.3 V, and 5 V

FRC teams will receive a roboRIO in their Kit of Parts at Kick Off 2015.

Spare roboRIOs will be available for purchase December 2014.

For more information visit [ni.com/frc](http://ni.com/frc).

**Thank you to our generous suppliers.**

