National Instruments
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Single-Board RIO-96xx

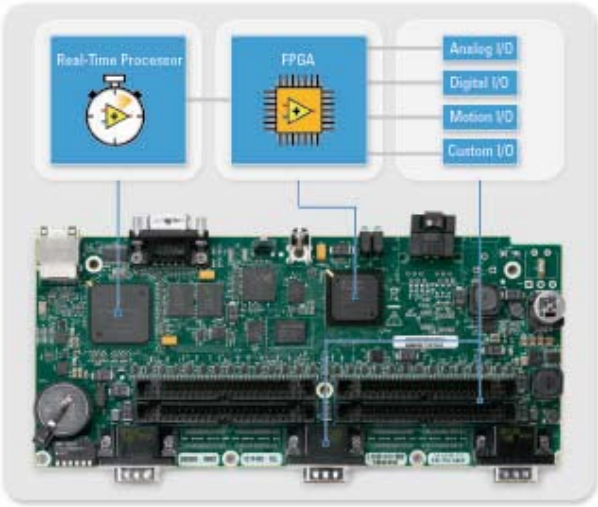
NI Single-Board RIO devices are designed to be easily embedded in high-volume applications that require flexibility, high performance, and reliability. NI sbRIO-96xx devices feature an industrial Freescale MPC5200 real-time processor with speeds up to 400 MHz for deterministic real-time applications. The real-time processor is combined via a high-speed internal PCI bus with an onboard reconfigurable Xilinx Spartan-3 Field-Programmable Gate Array (FPGA). The FPGA is connected directly to all onboard 3.3 V digital I/O. Each onboard analog and digital I/O module has a dedicated connection to the FPGA as well.

All sbRIO-96xx devices contain 110 bidirectional digital lines. You can select an NI Single-Board RIO device that includes up to 32 analog inputs, 4 analog outputs, and 32 industrial 24 V digital inputs and digital outputs. In addition to the built-in I/O capabilities, each NI Single-Board RIO device has three connectors for adding board-only versions of NI, third-party, or custom C Series I/O modules.

The sbRIO-96xx devices accept 19 to 30 VDC power supply and can operate within a -20 to +55 °C temperature range. With the 10/100 Mb/s Ethernet and serial ports, you can communicate with external devices and systems via TCP/IP, VDP, Modbus/TCP, and serial protocols. The built-in real-time controller also features Web (HTTP) and file (FTP) servers.

The sbRIO-96xx devices are programmed using the NI LabVIEW graphical programming language. The real-time processor runs the LabVIEW Real-Time Module on the Wind River VxWorks Real-Time Operating System (RTOS) for extreme reliability determinism. You can integrate your C code libraries within LabVIEW Real-Time.

In addition, you can quickly program the onboard reconfigurable FPGA on sbRIO-96xx devices using the LabVIEW FPGA Module for high-speed control, custom I/O timing, and in-line signal processing. LabVIEW contains built-in drivers and APIs for handling DMA or Interrupt Request (IRQ) based data transfer between the FPGA and real-time processor. You can reuse your existing Hardware Description Language (HDL) libraries and Intellectual Property (IP) blocks within LabVIEW FPGA.



FEATURES

- Integrated real-time controller, reconfigurable FPGA, and I/O on a single board
- Low-cost setup for high-volume OEM applications
- Up to 2M gate Xilinx Spartan-3 FPGA
- Up to 400 MHz Freescale real-time processor
- RS-232 serial port for peripheral devices
- Low power consumption with single 19 to 30 VDC power supply input
  - LabVIEW Development Software
  - LabVIEW Real-Time
  - LabVIEW FPGA
- Driver Software
  - NI-RIO for reconfigurable embedded systems

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