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Find the *National Instruments PCI-7030/6533E* at our website: ***Click HERE***

RT Series Plug-In Boards

NI 7030/6040E, NI 7030/6030E, NI 7030/6533

- Integrated real-time measurement and control for PCI and PXI
- Dedicated onboard processor
- Fully programmable with the LabVIEW Real-Time Module
- Deterministic communication with the host PC
- 1 kHz single PID loop rates, maximum

Operating System

- Real-Time performance with LabVIEW Real-Time Module

Required Software

- LabVIEW Real-Time Module

Models

12-Bit Multifunction I/O
- NI PCI-7030/6040E
- NI PXI-7030/6040E

16-Bit Multifunction I/O
- NI PCI-7030/6030E
- NI PXI-7030/6030E

High-Speed Digital I/O
- NI PCI-7030/6533
- NI PXI-7030/6533



Overview

The National Instruments RT Series plug-in boards deliver real-time, deterministic, and reliable I/O for measurement and control. RT Series boards have an independent processor running a real-time operating system. With the LabVIEW Real-Time Module, you can easily download a LabVIEW application onto an RT Series board to take advantage of the real-time environment. You can also integrate a real-time control task with other measurement devices in the same computer. If the computer crashes, the real-time system continues to run uninterrupted, and automatically reconnects to the host application once the host recovers.

An RT Series plug-in board, which requires one full-size PCI slot or two PXI slots, contains two components – a processor board (7030) and an I/O daughter board. The RT Series processor board includes a CPU, PCI chipset, BIOS, and RAM. The daughter board, which is a member of the 6040E, 6030E, or 6533 families, delivers high-performance, reliable data acquisition. For expanded channel count and signal conditioning solutions, you can add NI SCXI or SCC products.

Refer to page 244 for more information about our SCXI and SCC products.

Integrate Real-Time Performance and Reliability

With RT Series plug-in boards, you can integrate a real-time routine within a Windows-based measurement system. Rather than designing one system to perform measurements and a separate system for real-time control, you can integrate a real-time control task within an existing measurement system.

With RT Series plug-in boards, you can also incorporate a safety shutdown mechanism within a measurement system. Because each device has a dedicated processor, it continues to operate uninterrupted during a host computer failure. Therefore, you can enhance the safety of your measurement application by downloading critical code to an RT Series board.

INFO CODES

For more information, or to order products online visit *ni.com/info* and enter:

pxi70306040e
pxi70306030e
pxi70306533
pci70306040e
pci70306030e
pci70306533

BUY ONLINE!

For more information on the data aquisition functionality of each RT Series board, see the following pages:

NI 6040E 211
Specifications[1] 233
NI 6030E 206
Specifications[1] 238
NI 6533 378
Specifications[1] 390

[1]Bus-related specifications pertain to the communications between the processor board (7030) and the DAQ sections of the RT Series board.

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RT Series Plug-In Boards

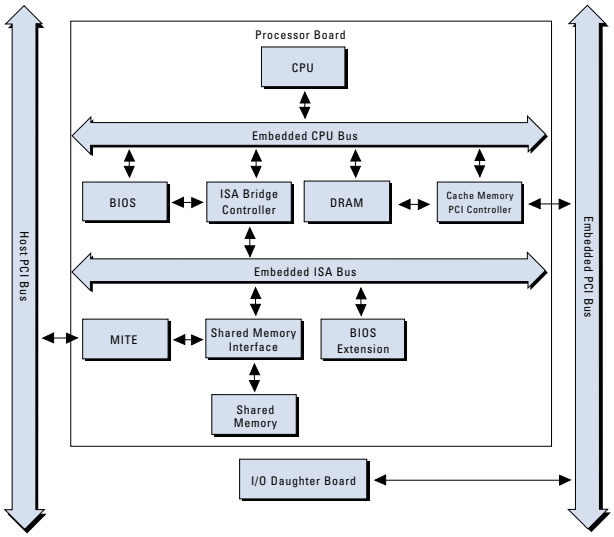


Figure 1. RT Series Plug-In Board Block Diagram

Ordering Information

RT Series Plug-In Board

NI PCI-7030/6040E 777835-01
NI PCI-7030/6030E 777835-02
NI PCI-7030/6533 777835-03
NI PXI-7030/6040E.....777837-01
NI PXI-7030/6030E 777837-02
NI PXI-7030/6533 777837-03

Example Configurations

Plug-In Board	Cable*	Accessory*
7030/6040E	SH6868-EP (184749-01)	SCB-68 (776844-01)
7030/6030E	SH6868-EP (184749-01)	SCB-68 (776844-01)
7030/6533	SH68-68-D1 (183432-01)	SCB-68 (776844-01)

* For more detailed cable and accessory options, refer to page 221 and 384.

RT Series Multifunction I/O

Model	Bus	Analog Inputs	Resolution	Sampling Rate*	Input Range	Analog Outputs	Resolution	Output Rate*	Output Range	Digital I/O	Counter/ Timers	Triggers
7030/6040E	PCI, PXI	16 SE/8 DI	12 bits	500/250[1] kS/s	±0.05 to ±10 V	2	12 bits	1 MS/s	±10 V	8	2, 24-bit	Analog and Digital
7030/6030E	PCI, PXI	16 SE/8 DI	16 bits	100 kS/s	±0.1 to ±10 V	2	16 bits	100 kS/s	±10 V	8	2, 24-bit	Analog and Digital

[1] Single-channel/multichannel rate

RT Series Digital I/O

Model	Bus	Digital I/O	Transfer Rate*	Range	Isolation	Handshaking I/O	Pattern I/O	Change Detection	Triggers
7030/6533	PCI, PXI	32	Up to 1.8 Mbytes/s (pattern I/O) Up to 2.0 Mbytes/s (handshaking I/O)	5 V/TTL	–	✔	✔	✔	✔

*Bus-related specifications pertain to the communications between the processor board (7030) and the DAQ sections of the RT device.

Specifications

Processor Board (7030)

Processor ..... AMD 486DX5 32-bit architecture
Processor clock speed ..... 133 MHz
CPU bus speed ..... 33 MHz
Memory..... 32 MB EDO DRAM
On-chip cache..... 16 KB write-back
L2 cache..... 256 KB write-back
Floating point unit ..... Yes

Host-Embedded Communication

Shared Memory

Type..... SRAM
Size..... 1 KB

Bus Interface

Type..... PCI Slave

Power Requirements

Board	+5 VDC (±5%)	Power Available at I/O Connector
7030/6040E	3.0 A (typical)	+4.65 to +5.25 VDC, 1 A
7030/6030E	3.5 A (typical)	+4.65 to +5.25 VDC, 1 A
7030/6533	2.5 A (typical)	+4.65 to +5.25 VDC, 1 A

Physical

Dimensions (not including connectors)
PCI-7030 Family ..... 31.3 by 10.6 cm (12.3 by 4.2 in.) (1 PCI slot)
PXI-7030 Family ..... 16 by 10 cm (6.3 by 3.9 in.) (2 PXI slots)

Environment

Operating temperature..... 0 to 55 °C
Storage temperature ..... -20 to 70 °C
Relative humidity..... 10 to 90% noncondensing

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