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Find the *National Instruments PXI-6221* at our website: *Click HERE*

Technical Sales
United States
(866) 531-6285
info@ni.com

NI PXI-6221

16-Bit, 250 kS/s, 16 Analog Inputs

- Two 16-bit analog outputs (833 kS/s)
- 24 digital I/O; 32-bit counters; digital triggering
- NIST-traceable calibration certificate and more than 70 signal conditioning options
- Correlated DIO (8 clocked lines, 1 MHz)
- Select high-speed M Series for 5X faster sampling rates or high-accuracy M Series for 4X resolution.
- NI-DAQmx driver software and NI LabVIEW SignalExpress LE interactive data-logging software



Overview

The National Instruments PXI-6221 is a low-cost multifunction M Series data acquisition (DAQ) board optimized for cost-sensitive applications. Also consider the high-speed M Series devices for 5X faster sampling rates or the high-accuracy M Series devices for 4X resolution and superior measurement accuracy.

Low-cost M Series devices incorporate advanced features such as the NI-STC 2 system controller, NI-PGIA 2 programmable amplifier, and NI-MCal calibration technology to increase performance and accuracy. To learn more about M Series technologies, device specifications, and information on recommended cables and accessories, please refer to the data sheet and specifications.

Driver Software

M Series devices work with multiple operating systems using three driver software options including NI-DAQmx, NI-DAQmx Base, and the Measurement Hardware DDK. Browse the information in the Resources tab to learn more about driver software or download a driver. M Series devices are not compatible with the Traditional NI-DAQ (Legacy) driver.

Application Software

Every M Series data acquisition device includes a copy of NI LabVIEW SignalExpress so you can quickly acquire, analyze, and present data without programming. In addition to LabVIEW SignalExpress, M Series data acquisition devices are compatible with the following versions (or later) of NI application software – LabVIEW 7.x, LabWindows™/CVI 7.x, or Measurement Studio 7.x; or LabVIEW with the LabVIEW Real-Time Module 7.1. M Series data acquisition devices are also compatible with Visual Studio .NET, C/C++, and Visual Basic 6.

Specifications

Specifications Documents

- Specifications
- Data Sheet

Specifications Summary

General

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Product Name	PXI-6221
Product Family	Multifunction Data Acquisition
Form Factor	PXI Platform
PXI Bus Type	PXI Hybrid Compatible
Part Number	779113-01 , 779629-01
Operating System/Target	Real-Time , Linux , Mac OS , Windows
LabVIEW RT Support	Yes
Power Requirement for +3.3V Rail	0.25 A
Power Requirement for +5V Rail	0.02 A
Power Requirement for +12V Rail	0.25 A
Power Requirement for -12V Rail	0 A
Slot Two Module	No
Module Width	1
MXI Compatible	Yes
DAQ Product Family	M Series
Measurement Type	Quadrature encoder , Digital , Voltage , Frequency
Isolation Type	None
RoHS Compliant	Yes
Analog Input	
Channels	16 , 8
Single-Ended Channels	16
Differential Channels	8
Resolution	16 bits
Sample Rate	250 kS/s
Max Voltage	10 V
Maximum Voltage Range	-10 V , 10 V
Maximum Voltage Range Accuracy	3100 µV
Maximum Voltage Range Sensitivity	97.6 µV
Minimum Voltage Range	-200 mV , 200 mV
Minimum Voltage Range Accuracy	112 µV
Minimum Voltage Range Sensitivity	5.2 µV

Number of Ranges	4
Simultaneous Sampling	No
On-Board Memory	4095 samples
Analog Output	
Channels	2
Resolution	16 bits
Max Voltage	10 V
Maximum Voltage Range	-10 V , 10 V
Maximum Voltage Range Accuracy	3230 µV
Minimum Voltage Range	-10 V , 10 V
Minimum Voltage Range Accuracy	3230 µV
Update Rate	833 kS/s
Current Drive Single	5 mA
Digital I/O	
Bidirectional Channels	24
Input-Only Channels	0
Output-Only Channels	0
Timing	Software , Hardware
Maximum Clock Rate	1 MHz
Logic Levels	TTL
Input Current Flow	Sinking , Sourcing
Output Current Flow	Sinking , Sourcing
Programmable Input Filters	Yes
Supports Programmable Power-Up States?	Yes
Current Drive Single	24 mA
Current Drive All	448 mA
Watchdog Timer	No
Supports Handshaking I/O?	No
Supports Pattern I/O?	Yes
Maximum Input Range	0 V , 5 V
Maximum Output Range	0 V , 5 V

Counter/Timers	
Counters	2
Number of DMA Channels	2
Buffered Operations	Yes
Debouncing/Glitch Removal	Yes
GPS Synchronization	No
Maximum Range	0 V , 5 V
Max Source Frequency	80 MHz
Pulse Generation	Yes
Resolution	32 bits
Timebase Stability	50 ppm
Logic Levels	TTL
Physical Specifications	
Length	16 cm
Width	10 cm
I/O Connector	68-pin VHDCI female
Timing/Triggering/Synchronization	
Triggering	Digital
Synchronization Bus (RTSI)	Yes

Pricing

NI PXI-6221 Packages

To use the NI PXI-6221 , you need all items in the diagram below. Select Option 1 if you already own a PXI System, or Option 2 if you do not already own a chassis, controller, or software.

Roll over the icons below to learn why you need each item in the system

PXI System

1 Connector Block	1 Cable	**NI PXI-6221**	Chassis	Controller	Software

NI PXI-6221 and Accessories Only

- Option 1: **NI PXI-6221 and Accessories Only**
- Option 2: **PXI System**

NI PXI-6221

Standard Board	Qty	$ 745 each

779629-01

Board for SCXI Control in PXI/SCXI Combination Chassis 779113-01	Qty	0	$ 745 each

Required Accessories

Connector Block - Screw Terminal **SCB-68A** - 782536-01	Qty	$ 319 each
Cable - Shielded **SHC68-68-EPM Cable (2m)** - 192061-02 Select length: 1m 2m 5m 10m 0.5m	Qty	$ 139 each

Change Accessories
Learn about all compatible accessories and get recommendations based on your application needs.

Optional Accessories Show

Estimated Shipping Days: 12 - 20
Package Price: $ 1,203

Add to Cart >>

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Save for Later

Get Started with PXI

Choose from hundreds of specialized instruments to create a PXI System that suits your measurement needs and can scale for future applications. Then, we'll help you choose the right hardware and software to complete your configuration.

Add More Measurements and I/O Modules
Use the PXI Advisor to choose from a variety of modules including analog I/O, digital I/O, switching and more. Then, complete and price the PXI System.

Add Modules

Preview a Complete System
View and price a complete PXI configuration including the NI PXI-6221, chassis, and controller. Starting from the default configuration, you can add modules, accessories, and software and customize your system.

View and Price a Configured System

Since your device does not have direct signal connectivity, you need a connector block to act as an interface between your sensors/signals and your device. A connector block provides easy access to the inputs and outputs of your hardware.

You need a cable to transmit signals between your device and your signal connections on your connector block.
The chassis provides rugged, modular housing for the controller and modules and contains the high-performance PXI backplane, which includes the system's data, timing, and triggering buses.
The controller runs your application and interfaces with your PXI modules.
You need software to interface with your hardware and to collect, analyze, present, and store your measurements. This board is compatible with a variety of programming languages, including LabVIEW, C/C++, Visual Basic, and .NET. LabVIEW provides the easiest integration with all of your NI hardware and is recommended to maximize your hardware investment.
You have selected **United States** as the country where you will use the product(s) (change).

Services

System Assurance Programs

Reduce your setup time and total cost of ownership, and get a system you can use out of the box with National Instruments system assurance programs. System assurance programs include:

- Installation and integration test of all individual hardware
- Courtesy installation of system driver sets and application development environments
- Extended warranty and calibration coverage for up to five years
- Custom documentation plus a custom restore and startup utility

This service is only available for PXI, NI CompactRIO, and NI Compact FieldPoint systems.

- Learn More about System Configuration and Deployment Services [http://www.ni.com/services/configuration.htm]
- Customize Your CompactRIO System [http://ohm.ni.com/advisors/crio]
- Customize Your Compact FieldPoint System [http://ohm.ni.com/advisors/cfp]
- Customize Your PXI System [http://ohm.ni.com/advisors/pxi]
- Talk to an Expert about Custom System Configurations [javascript:openCallMeWindowCTA(document.referrer,%20'US')]

Extended Warranties

National Instruments designs and manufactures all products to minimize failures, however unexpected failures can still occur. Extended warranties provide a fixed economical price at the time of system purchase, covering any repair costs for up to three years. In addition, they offer the following benefits:

- Significant cost savings compared to individual repair incidents
- Fault location, diagnostics, and repair by NI any time the system product fails
- All parts and labor costs covered as well as any adjustments needed to restore the hardware to manufacturing specifications

For more information about your warranty options:

- Learn More about Warranty Services [http://www.ni.com/services/warranty.htm]
- Talk to an Expert about Extended Warranties [javascript:openCallMeWindowCTA(document.referrer,%20'US')]
- View Warranty Repair Policies [http://www.ni.com/services/warranty_repair_policies.htm]

Calibration

NI recognizes the need to maintain properly calibrated devices for high-accuracy measurements. NI provides manual calibration procedures, services to recalibrate your products, and automated calibration software to calibrate many NI measurement products.

- Learn More about Calibration Services [http://www.ni.com/services/calibration.htm]

Training

NI training is the fastest, most certain route to productivity with NI tools and successful application development.

- Learn More about NI Training and Certification [http://www.ni.com/training/]
- Find a Course Near You and View Schedules [http://sine.ni.com/tacs/app/fp/p/ap/ov/pg/1/]

Repair Services

Return your registered product under warranty at no additional labor and parts cost. NI offers fault location, diagnostics, and repair any time the system fails as well as any adjustments needed to restore the hardware to manufacturing specifications.

- Learn More about Repair Services [http://www.ni.com/services/warranty.htm]
- Contact NI to Obtain a Return Material Authorization (RMA) Form and Shipping Instructions [http://sine.ni.com/apps/utf8/nicc.call_me]
- View Your RMA Support Request Status Online [http://www.ni.com/support/servicereq/]
- Register Your Product [http://www.ni.com/register]

Technical Support

ni.com/support [http://www.ni.com/support/]

Resources

Additional Product Information

- Manuals (6)
- Dimensional Drawings
- Product Certifications

Related Information

- Achieve 5X faster sampling rates with high-speed M Series
- Obtain superior accuracy in your measurements with 18-bit, high-accuracy M Series
- Learn about LabVIEW Graphical Programming
- Learn about Data Acquisition Driver Software
- Learn about academic pricing and product kits
- Obtain OEM pricing information
- Download NI drivers
- Read More About NI Software Maintenance and Support
- View an introductory video on getting started with NI data acquisition

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