



**Technical Sales**  
United States  
(866) 531-6285  
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## NI USB-6211

### 16-Bit, 250 kS/s M Series Multifunction DAQ, Bus-Powered

- 16 analog inputs (16-bit, 250 kS/s)
- 2 analog outputs (16-bit, 250 kS/s); 4 digital inputs; 4 digital outputs; 32-bit counters
- Bus-powered USB for high mobility; built-in signal connectivity
- NI signal streaming for sustained high-speed data streams over USB; OEM version available
- Compatible with LabVIEW, LabWindows™/CVI, and Measurement Studio for Visual Studio .NET
- NI-DAQmx driver software and NI LabVIEW SignalExpress LE interactive data-logging software



## Overview

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The National Instruments USB-6211 is a bus-powered USB M Series multifunction data acquisition (DAQ) module optimized for superior accuracy at fast sampling rates. It offers 16 analog inputs; 250 kS/s single-channel sampling rate; two analog outputs; eight digital input lines; eight digital output lines; four programmable input ranges ( $\pm 0.2$  to  $\pm 10$  V) per channel; digital triggering; and two counter/timers.

The NI USB-6211 is designed specifically for mobile or space-constrained applications. Plug-and-play installation minimizes configuration and setup time, while direct screw-terminal connectivity keeps costs down and simplifies signal connections. This product does not require external power.

This module also features the new NI signal streaming technology, which gives you DMA-like bidirectional high-speed streaming of data across the USB bus. For more information about NI signal streaming, view the Resources tab.

Each module features an OEM version. Check the resources tab or use the left navigation to get pricing and technical information.

### Driver Software

NI-DAQmx driver and measurement services software provides easy-to-use configuration and programming interfaces with features such as DAQ Assistant to help reduce development time. 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 LE data-logging software, 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 7.1, LabWindows/CVI 7.x, or Measurement Studio 7.x. M Series data acquisition devices are also compatible with Visual Studio .NET, C/C++, and Visual Basic 6.

The mark LabWindows is used under a license from Microsoft Corporation.

# Specifications

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## Specifications Documents

- Detailed Specifications
- Data Sheet

## Specifications Summary

### Specifications Summary

#### General

Product Name	USB-6211
Product Family	Multifunction Data Acquisition
Form Factor	USB
Operating System/Target	Windows , Linux , Mac OS
DAQ Product Family	M Series
Measurement Type	Voltage
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	2.69 mV
Maximum Voltage Range Sensitivity	91.6 $\mu$ V
Minimum Voltage Range	-200 mV , 200 mV
Minimum Voltage Range Accuracy	0.088 mV
Minimum Voltage Range Sensitivity	4.8 $\mu$ V
Number of Ranges	4
Simultaneous Sampling	No
On-Board Memory	4095 samples

#### Analog Output

<b>Channels</b>	2
<b>Resolution</b>	16 bits
<b>Max Voltage</b>	10 V
<b>Maximum Voltage Range</b>	-10 V , 10 V
<b>Maximum Voltage Range Accuracy</b>	3.512 mV
<b>Minimum Voltage Range</b>	-10 V , 10 V
<b>Minimum Voltage Range Accuracy</b>	3.512 mV
<b>Update Rate</b>	250 kS/s
<b>Current Drive Single</b>	2 mA
<b>Current Drive All</b>	4 mA
<b>Digital I/O</b>	
<b>Bidirectional Channels</b>	0
<b>Input-Only Channels</b>	4
<b>Output-Only Channels</b>	4
<b>Number of Channels</b>	0 , 4 , 4
<b>Timing</b>	Software
<b>Logic Levels</b>	TTL
<b>Input Current Flow</b>	Sinking
<b>Output Current Flow</b>	Sourcing
<b>Programmable Input Filters</b>	No
<b>Supports Programmable Power-Up States?</b>	Yes
<b>Current Drive Single</b>	16 mA
<b>Current Drive All</b>	50 mA
<b>Watchdog Timer</b>	No
<b>Supports Handshaking I/O?</b>	No
<b>Supports Pattern I/O?</b>	No
<b>Maximum Input Range</b>	0 V , 3.8 V
<b>Maximum Output Range</b>	0 V , 5.25 V
<b>Counter/Timers</b>	
<b>Counters</b>	2
<b>Buffered Operations</b>	Yes

Debouncing/Glitch Removal	Yes
GPS Synchronization	No
Maximum Range	0 V , 5.25 V
Max Source Frequency	80 MHz
Pulse Generation	Yes
Resolution	32 bits
Timebase Stability	50 ppm
Logic Levels	TTL
<b>Physical Specifications</b>	
Length	16.9 cm
Width	9.4 cm
Height	3.1 cm
I/O Connector	Screw terminals

## Pricing

### Step 1: Verify Device and Quantity Selection

Part Number	Description	Est Ship Days	US Dollars*	Qty
	NI USB-6211			
779676-01	Windows NI Recommended	1 - 3	\$ 849	1
780104-01	Mac OS X and Linux	5 - 10	\$ 849	0

### Step 2: Select Optional Accessories

Part Number	Description	Est Ship Days	US Dollars*	Qty
<b>Carrying Case</b>				
780315-01	Rugged Carrying Case for Instrumentation	5 - 10	\$ 159	0
<b>Other</b>				
779807-01	USB-621x Accessory Kit	1 - 3	\$ 59	0
779689-01	USB-621x Din Rail Mounting Kit	5 - 10	\$ 29	0
777550-01	USB/PCMCIA Strain Relief Kit for laptops	5 - 10	\$ 49	0
779489-01	DAQ 7 Steps Tutorial	5 - 10	\$ 95	0

## Screw Terminals

779511-01	USB-6000 Series Prototyping Accessory - Unshielded, No Cable Required	5 - 10	\$ 29	0
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\* You have selected the United States as the country where you will use the product(s). Pricing may have changed since you printed this document on 06/23/2010. Please visit [ni.com](http://ni.com) to see current pricing.

### Step 3: Place Order or Obtain Quote

Order Online or by Fax

- 1 . Navigate to [ni.com/products](http://ni.com/products) and select "Order by Part Number" found under the "Business Center" section.
- 2 . Once you have added your items to your cart, see the "Your Cart Options" section to place your order, obtain a quote, or print a fax form.

Order by Phone

Call (866) 531-6285 to place your order or obtain a quote.

## Software

### Application Need

Data acquisition, analysis, and user interface customization	Data logging
Automated test and test sequencing	Simulation and control design
Industrial monitoring and control	

### Graphical Programming

Select any of the following software products

Part Number	Description	Est Ship Days	US Dollars*	Qty
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#### LabVIEW Software

776670-35	NI LabVIEW Full Development System for Windows (English) <i>NI Recommended</i>	1 - 2	\$ 2,599	1
776675-35	LabVIEW Application Builder for Windows (English) <i>NI Recommended</i>	5 - 10	\$ 999	1
778406-35	NI LabVIEW Report Generation Toolkit for Microsoft Office	5 - 10	\$ 529	0

#### Specialty Software

778807-35	DIAdem Advanced Edition (English)	5 - 10	\$ 2,399	0
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### Text-Based Programming

## Select any of the following software products

Part Number	Description	Est Ship Days	US Dollars*	Qty
<b>Application Software</b>				
776800-35	LabWindows/CVI Full Development System for Windows	5 - 10	\$ 2,599	0
778801-35	NI Measurement Studio Professional Edition for Microsoft Visual Studio	5 - 10	\$ 1,249	0
<b>Specialty Software</b>				
778807-35	DIAdem Advanced Edition (English)	5 - 10	\$ 2,399	0

 Other compatible software: ANSI C/C++, C#, Visual Basic .NET

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### Driver Software

- View Drivers and Updates
- Search All Drivers

### Place Order or Obtain Quote

#### Order Online or by Fax

- 1 . Navigate to [ni.com/products](http://ni.com/products) and select "Order by Part Number" found under the "Business Center" section.
- 2 . Once you have added your items to your cart, see the "Your Cart Options" section to place your order, obtain a quote, or print a fax form.

#### Order by Phone

Call (866) 531-6285 to place your order or obtain a quote.

## Services

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### 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\(document.referrer,%20'US'\)](http://www.ni.com/services/warranty.htm)]
- View Warranty Repair Policies [[http://www.ni.com/services/warranty\\_repair\\_policies.htm](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 \[http://www.ni.com/services/calibration.htm\]](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 \[http://www.ni.com/training/\]](http://www.ni.com/training/)
- [Find a Course Near You and View Schedules \[http://sine.ni.com/apps/utf8/nisv.custed\]](http://sine.ni.com/apps/utf8/nisv.custed)

## 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 \[http://www.ni.com/services/warranty.htm\]](http://www.ni.com/services/warranty.htm)
- [Contact NI to obtain a Return Material Authorization \(RMA\) form and shipping instructions. \[http://sine.ni.com/apps/utf8/nicc.call\\_me\]](http://sine.ni.com/apps/utf8/nicc.call_me)
- [View your RMA support request status online. \[http://www.ni.com/support/servicereq/\]](http://www.ni.com/support/servicereq/)
- [Register your product \[http://www.ni.com/register/\]](http://www.ni.com/register/) .

## Technical Support

[ni.com/support \[http://www.ni.com/support/\]](http://www.ni.com/support)

## Resources

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### Additional Product Information

- [Manuals \(7\)](#)
- [Dimensional Drawings \(1\)](#)
- [Product Certifications \(1\)](#)

### Related Information

- [NI USB Data Acquisition for OEM](#)
- [Download NI Data Acquisition Drivers](#)
- [NI LabVIEW SignalExpress Interactive Data-Logging Software](#)
- [NI Signal Streaming: Bidirectional High-Speed Data Streams over USB](#)