# NI USB-6210

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

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

## Overview

The NI USB-6210 is a bus-powered M Series multifunction data acquisition (DAQ) module for USB that is optimized for superior accuracy at fast sampling rates. It offers 16 analog inputs; a 250 kS/s single-channel sampling rate; four digital input lines; four digital output lines; four programmable input ranges (±0.2 to ±10 V) per channel; digital triggering; and two counter/timers.

The USB-6210 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 USB. For more information about NI signal streaming, view the Resources tab.

Bus-powered M Series devices for USB are available in OEM versions. 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 the 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 DAQ 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 DAQ 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 DAQ devices are also compatible with Visual Studio .NET, C/C++, and Visual Basic 6.0.

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# Specifications

## Specifications Documents

- Specifications
- Data Sheet

## Specifications Summary

| General | |
|---|---|
| **Product Name** | USB-6210 |
| **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 µV |
| **Minimum Voltage Range** | -200 mV , 200 mV |
| **Minimum Voltage Range Accuracy** | 0.088 mV |
| **Minimum Voltage Range Sensitivity** | 4.8 µV |
| **Number of Ranges** | 4 |
| **Simultaneous Sampling** | No |
| **On-Board Memory** | 4095 samples |
| **Analog Output** | |
| **Channels** | 0 |
| **Digital I/O** | |

| | |
|---|---|
| **Bidirectional Channels** | 0 |
| **Input-Only Channels** | 4 |
| **Output-Only Channels** | 4 |
| **Number of Channels** | 0 , 4 , 4 |
| **Timing** | Software |
| **Logic Levels** | TTL |
| **Input Current Flow** | Sinking |
| **Output Current Flow** | Sourcing |
| **Programmable Input Filters** | No |
| **Supports Programmable Power-Up States?** | Yes |
| **Current Drive Single** | 16 mA |
| **Current Drive All** | 50 mA |
| **Watchdog Timer** | No |
| **Supports Handshaking I/O?** | No |
| **Supports Pattern I/O?** | No |
| **Maximum Input Range** | 0 V , 5.25 V |
| **Maximum Output Range** | 0 V , 3.8 V |
| **Counter/Timers** | |
| **Counters** | 2 |
| **Buffered Operations** | 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 |
| **Physical Specifications** | |
| **Length** | 16.9 cm |
| **Width** | 9.4 cm |

| | |
|---|---|
| **Height** | 3.1 cm |
| **I/O Connector** | Screw terminals |
| **Timing/Triggering/Synchronization** | |
| **Triggering** | Digital |

# Pricing

> ⚠
> **Special Offer: Free UPS Standard shipping for online Credit Card orders.**
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### Step 1: Verify Device and Quantity Selection

| Part Number | Description | Est Ship Days | Euro* | Qty |
|---|---|---|---|---|
| | NI USB-6210 | | | |
| 779675-01 | Windows<br>**NI Recommended** | 1 - 3 | € 635 | 1 |
| 780103-01 | Mac OS X and Linux | 5 - 10 | € 635 | 0 |

### Step 2: Select Optional Accessories

| Part Number | Description | Est Ship Days | Euro* | Qty |
|---|---|---|---|---|
| Carrying Case | | | | |
| 780315-01 | Rugged Carrying Case for Instrumentation | 5 - 10 | € 161 | 0 |
| Other | | | | |
| 779807-01 | USB-621x Accessory Kit | 1 - 3 | € 60 | 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 | € 66 | 0 |

* You have selected Italy as the country where you will use the product(s). Pricing may have changed since you printed this document on 09/29/2010. Please visit *ni.com* to see current pricing.

### Step 3: Place Order or Obtain Quote

Order Online or by Fax

1 . Navigate to *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 02 41309.1 (Milano), 06 520871 (Roma) to place your order or obtain a quote.

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Prices are quoted on standard Net 30 days payment from the date of invoice.

# 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

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## Graphical Programming

**Select any of the following software products**

| Part Number | Description | Est Ship Days | Euro* | Qty |
|---|---|---|---|---|
| **LabVIEW Software** | | | | |
| 776670-35 | NI LabVIEW Full Development System for Windows (English) NI Recommended | 1 - 2 | € 2,776 | 1 |
| 776675-35 | LabVIEW Application Builder for Windows (English) NI Recommended | 5 - 10 | € 1,059 | 1 |
| 778406-35 | NI LabVIEW Report Generation Toolkit for Microsoft Office | 5 - 10 | € 585 | 0 |
| **Specialty Software** | | | | |
| 778807-35 | DIAdem Advanced Edition (English) | 5 - 10 | € 2,423 | 0 |

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Prices are quoted on standard Net 30 days payment from the date of invoice.

## Text-Based Programming

**Select any of the following software products**

| Part Number | Description | Est Ship Days | Euro* | Qty |
|---|---|---|---|---|
| **Application Software** | | | | |
| 776800-35 | LabWindows/CVI Full Development System for Windows | 5 - 10 | € 2,776 | 0 |
| 778801-35 | NI Measurement Studio Professional Edition for Microsoft Visual Studio | 5 - 10 | € 1,312 | 0 |
| **Specialty Software** | | | | |
| 778807-35 | DIAdem Advanced Edition (English) | 5 - 10 | € 2,423 | 0 |

Prices are quoted on standard Net 30 days payment from the date of invoice.

> [!] Other compatible software: ANSI C/C++, C#, Visual Basic .NET

> [!]
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* You have selected Italy as the country where you will use the product(s). Pricing may have changed since you printed this document on 09/29/2010. Please visit *ni.com* to see current pricing.

### 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* 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 02 41309.1 (Milano), 06 520871 (Roma) to place your order or obtain a quote.

# Services

### 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/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]
- 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  (2)
- Product Certifications

## 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