

# Bus-Powered M Series Multifunction DAQ for USB 16-Bit, up to 250 kS/s, up to 32 Analog Inputs, Isolation

## NI USB-6210, NI USB-6211, NI USB-6215, NI USB-6218 **NEW!**

- Up to 32 analog inputs at 16 bits, 250 kS/s
- Up to 2 analog outputs at 16 bits
- Up to 16 TTL/CMOS digital I/O lines
- Two 32-bit, 80 MHz counter/timers
- Digital triggering
- NI-MCal calibration technology for improved measurement accuracy
- 4 USB signal streams
- USB bus-powered
- Isolation available
- 1 year calibration interval

### Operating Systems

- Windows 2000/ XP

### Recommended Software

- LabVIEW
- LabWindows/CVI
- Measurement Studio
- SignalExpress

### Other Compatible Software

- Visual Studio .NET
- C/C++/C#

### Measurement Services Software (included)

- NI-DAQmx driver software (8.1 or later)
- VI Logger Lite data-logging software



Family	Analog Inputs	Analog Input Resolution (bits)	Maximum Input Rate (kS/s)	Analog Outputs	Maximum Output Rate (kS/s)	Maximum Output Range (V)	Digital Inputs	Digital Outputs	Isolation
USB-6210	16	16	250	–	–	10	4	4	–
USB-6211	16	16	250	2	250	10	4	4	–
USB-6215	16	16	250	2	250	10	4	4	Cat I – 60V
USB-6218	32	16	250	2	250	10	8	8	Cat I – 60V

Table 1. USB 621x Selection Guide

## Overview and Applications

National Instruments USB-621x devices are optimized for superior accuracy at fast sampling rates. They have an onboard NI-PGIA 2 amplifier designed for fast settling times at high scanning rates, ensuring 16-bit accuracy even when measuring all channels at maximum speeds. All devices have a minimum of 16 analog inputs, 8 digital I/O lines, four programmable input ranges, analog and digital triggering, and two counter/timers. All NI USB-621x devices have a one-year calibration interval. M Series devices are ideal for test, control, and design applications including:

- Portable data logging
- Field-monitoring applications
- Embedded OEM applications
- In-vehicle data acquisition
- Academic lab use – academic discounts available

On top of the extra performance, USB adds portability and ease of use with plug-and-play capability. You no longer have to design a computer into your system to benefit from the performance offered by the M Series.

Use a portable computer such as a laptop with a USB port and connect to your system only when needed. The NI USB-621x devices are powered off the USB port and come with built-in screw terminals for direct signal connection.

## M Series for Test

The NI USB-621x devices have analog, digital and counter functionalities that make them ideal for automatic test equipment.

## M Series for Control

USB-621x digital lines can drive 16 mA for relay and actuator control. With up to two waveform analog outputs, two 80 MHz counter/timers, and four USB signal streams, USB-621x devices also have direct support for encoder measurements, protected digital lines, and digital debounce filters for control applications. With up to 32 analog inputs, 16 digital lines, and two analog outputs, you can execute multiple control loops with a single device.

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## M Series for Design

For design applications, you can use the wide range of I/O – from 32 analog inputs to 16 digital lines – to measure and verify prototype designs. M Series devices and National Instruments SignalExpress interactive measurement software bring benchtop measurements to the PC. With NI SignalExpress interactive configuration-based steps, you can quickly create design verification tests. The fast acquisition and generation rates of bus-powered M Series devices along with SignalExpress provide fast design analysis. You can convert your tested and verified SignalExpress projects to NI LabVIEW applications for immediate M Series DAQ use and bridge the gap between test, control, and design applications.

## Recommended Software

National Instruments measurement services software, built around NI-DAQmx driver software, includes intuitive application programming interfaces, configuration tools, I/O assistants, and other tools designed to reduce system setup, configuration, and development time. National Instruments recommends using the latest version of NI-DAQmx driver software for application development in National Instruments LabVIEW, LabWindows/CVI, and Measurement Studio. To obtain the latest version of NI-DAQmx, visit [ni.com/support/daq/versions](http://ni.com/support/daq/versions). M Series devices are compatible with the following versions (or later) of NI application software – LabVIEW, LabWindows/CVI, or Measurement Studio versions 8.x; SignalExpress 1.x; and VI Logger 2.0. M Series devices are not compatible with the Traditional NI-DAQ (Legacy) driver.

## Recommended Training and Services

All M Series devices are available with additional warranty and calibration services. Choose from the one-year extended warranty, lifetime warranty, or lifetime warranty with one basic calibration service. For new data acquisition programmers, NI recommends the “Data Acquisition: 7 Steps to Success Tutorial Kit.” This tutorial kit helps shorten development time for data acquisition applications by describing the various stages of getting started with data acquisition applications including system definition, setup, test, and application programming.

## Ordering Information

NI USB-6210 .....	779675-01
NI USB-6211 .....	779676-01
NI USB-6215 .....	779677-01
NI USB-6218 .....	779678-01

Includes data acquisition driver software.

## BUY NOW!

For complete product specifications, pricing, and accessory information, call (800) 813 3693 (U.S.) or go to [ni.com/usb](http://ni.com/usb).

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## Safety and Compliance

### Safety

This product is designed to meet the requirements of the following standards of safety for electrical equipment for measurement, control, and laboratory use:

- IEC 61010-1, EN 61010-1
- UL 61010-1, CAN/CSA-C22.2 No. 61010-1

**Note:** For UL and other safety certifications, refer to the product label or visit [ni.com/certification](https://ni.com/certification), search by model number or product line, and click the appropriate link in the Certification column.

### Electromagnetic Compatibility

This product is designed to meet the requirements of the following standards of EMC for electrical equipment for measurement, control, and laboratory use:

- EN 61326 EMC requirements; Minimum Immunity
- EN 55011 Emissions; Group 1, Class A
- CE, C-Tick, ICES, and FCC Part 15 Emissions; Class A

**Note:** For EMC compliance, operate this device according to product documentation.

### CE Compliance

This product meets the essential requirements of applicable European Directives, as amended for CE marking, as follows:

- 73/23/EEC; Low-Voltage Directive (safety)
- 89/336/EEC; Electromagnetic Compatibility Directive (EMC)

**Note:** Refer to the Declaration of Conformity (DoC) for this product for any additional regulatory compliance information. To obtain the DoC for this product, visit [ni.com/certification](https://ni.com/certification), search by model number or product line, and click the appropriate link in the Certification column.

### Waste Electrical and Electronic Equipment (WEEE)

**EU Customers:** At the end of their life cycle, all products must be sent to a WEEE recycling center. For more information about WEEE recycling centers and National Instruments WEEE initiatives, visit [ni.com/environment/weee.htm](https://ni.com/environment/weee.htm).

# NI Services and Support



NI has the services and support to meet your needs around the globe and through the application life cycle – from planning and development through deployment and ongoing maintenance. We offer services and service levels to meet customer requirements in research, design, validation, and manufacturing. Visit [ni.com/services](http://ni.com/services).

## Training and Certification

NI training is the fastest, most certain route to productivity with our products. NI training can shorten your learning curve, save development time, and reduce maintenance costs over the application life cycle. We schedule instructor-led courses in cities worldwide, or we can hold a course at your facility. We also offer a professional certification program that identifies individuals who have high levels of skill and knowledge on using NI products. Visit [ni.com/training](http://ni.com/training).

## Professional Services

Our Professional Services Team is composed of NI applications engineers, NI Consulting Services, and a worldwide National Instruments Alliance Partner program of more than 600 independent consultants and

integrators. Services range from start-up assistance to turnkey system integration.

Visit [ni.com/alliance](http://ni.com/alliance).



## OEM Support

We offer design-in consulting and product integration assistance if you want to use our products for OEM applications. For information about special pricing and services for OEM customers, visit [ni.com/oem](http://ni.com/oem).

## Local Sales and Technical Support

In offices worldwide, our staff is local to the country, giving you access to engineers who speak your language. NI delivers industry-leading technical support through online knowledge bases, our applications engineers, and access to 14,000 measurement and automation professionals within NI Developer Exchange forums. Find immediate answers to your questions at [ni.com/support](http://ni.com/support).

We also offer service programs that provide automatic upgrades to your application development environment and higher levels of technical support. Visit [ni.com/ssp](http://ni.com/ssp).

## Hardware Services

### NI Factory Installation Services

NI Factory Installation Services (FIS) is the fastest and easiest way to use your PXI or PXI/SCXI combination systems right out of the box. Trained NI technicians install the software and hardware and configure the system to your specifications. NI extends the standard warranty by one year on hardware components (controllers, chassis, modules) purchased with FIS. To use FIS, simply configure your system online with [ni.com/pxiadvisor](http://ni.com/pxiadvisor).

### Calibration Services

NI recognizes the need to maintain properly calibrated devices for high-accuracy measurements. We provide manual calibration procedures, services to recalibrate your products, and automated calibration software specifically designed for use by metrology laboratories. Visit [ni.com/calibration](http://ni.com/calibration).

### Repair and Extended Warranty

NI provides complete repair services for our products. Express repair and advance replacement services are also available. We offer extended warranties to help you meet project life-cycle requirements. Visit [ni.com/services](http://ni.com/services).



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