# Bus-Powered USB Digitizers

## NI USB-5132, NI USB-5133 *NEW!*

- Bus-powered and portable
- 100 and 50 MS/s sample rates
- 50 MHz bandwidth
- 8-bit resolution
- 2 channels
- Input ranges from 40 mV$_{pp}$ to 40 V$_{pp}$

**Operating Systems**
- Windows Vista/XP/2000

**Recommended Software**
- LabVIEW
- LabVIEW SignalExpress
- LabWindows™/CVI
- Measurement Studio for Visual Studio

**Driver Software (included)**
- NI-SCOPE driver
- LabVIEW Express VIs
- Scope Soft Front Panel

>> *For complete specifications, see the* **NI USB-5132/USB-5133 Specifications** *at* **ni.com/manuals**.

## Overview

The National Instruments USB-5132 50 MS/s and USB-5133 100 MS/s digitizers/oscilloscopes offer two simultaneously sampled channels with 8-bit resolution. These USB digitizers have 10 input ranges from 40 mV to 40 V and programmable DC offset. They also come standard with 4 MB/ch of onboard memory for measurements requiring extended data captures. The small, bus-powered, plug-and-play form factor makes the NI USB-5132 and USB-5133 ideal for portable, benchtop, and OEM applications. The included Scope Soft Front Panel provides an interactive interface with more than 40 built-in measurements.

### Dual 8-Bit Input Channels

- 100 MS/s real-time sampling on two channels (USB-5133)
- 50 MS/s real-time sampling on two channels (USB-5132)
- 50 MHz input bandwidth with selectable 20 MHz noise filter
- Independent channel-selectable 40 mV$_{pp}$ to 40 V$_{pp}$ input ranges
- 1 MΩ input impedance
- 4 MB of memory per channel
- Two-year calibration interval and 0 to 45 °C operating temperature

### Triggering and Clocking

- Edge, window, hysteresis, and digital triggering
- Ability to capture pretrigger and posttrigger acquisition data
- Internal 100/50 MHz clock or external clock from 1 MHz to maximum sample rate

### Software

- Scope Soft Front Panel for interactive control and a familiar oscilloscope interface
- IVI-compliant NI-SCOPE driver includes more than 50 example programs to highlight full digitizer functionality
- Support for NI LabVIEW, NI LabWindows/CVI, and Microsoft Visual Studio (C++, C#, Visual Basic .NET)
- NI LabVIEW SignalExpress for data acquisition, analysis, and presentation with no programming required

## Ordering Information

| | |
|---|---|
| NI USB-5132 | 779969-01 |
| NI USB-5133 | 779970-01 |

## BUY NOW!

For complete product specifications, pricing, and accessory information, call 800 813 3693 (U.S.) or go to **ni.com/digitizers**.

**NATIONAL INSTRUMENTS™**

# Specifications

*These specifications are valid for 0 to 45 °C, unless otherwise stated.*

## Acquisition System

Number of channels............................ 2 simultaneously sampled
Vertical resolution............................... 8 bits
Bandwidth (-3 dB)

| Range ($V_{pp}$) | Minimum Bandwidth |
|---|---|
| All except 0.04 | 50 MHz |
| 0.04 | 35 MHz |

Bandwidth limit filters
   (software-selectable) ........................ 20 MHz noise filter
Maximum sampling rate..................... 50 MS/s (USB-5132)
                                        100 MS/s (USB-5133)
Onboard sample memory.................... 4 MB per channel
                                        (4 million samples)
Input impedance ................................. 1 M$\Omega$ ‖ 19 pF

| Full-Scale Input Range and Programmable Vertical Offset | |
|---|---|
| Range ($V_{pp}$) | Vertical Offset Range (V) |
| 0.04 | ±0.4 |
| 0.1 | ±0.4 |
| 0.2 | ±0.4 |
| 0.4 | ±0.4 |
| 1.0 | ±4.0 |
| 2.0 | ±4.0 |
| 4.0 | ±4.0 |
| 10 | ±25.0 |
| 20 | ±20.0 |
| 40 | ±10.0 |

Maximum input overload.................... | peaks | ≤30 V
Input coupling .................................... AC, DC, GND
AC coupling cutoff frequency (-3 dB).. 12 Hz

### RMS Noise

| Range ($V_{pp}$) | RMS Noise |
|---|---|
| All except 0.04 | 0.35% of FS |
| 0.04 | 0.55% of FS |

## Timebase System

Timebase options................................ Internal, external (PFI 1)

### Internal

Internal sample clock frequency ........ 50 MS/s (USB-5132) or 100 MS/s
                                        (USB-5133) sampling rate with
                                        decimation by n, $1 \leq n \leq 65{,}535$
Timebase accuracy.............................. ±50 ppm

### External

External clock sources ........................ PFI 1 (BNC connector)
External clock range............................ 1 to 50 MHz (USB-5132)
                                        1 to 100 MHz (USB-5133)

## Trigger System

Modes ................................................. Edge, hysteresis, window,
                                        digital, immediate, software
Sources................................................ CH 0, CH 1, PFI 1, software
Slope .................................................. Rising or falling

## Power Requirements (typical)

| Specification | Typical Value |
|---|---|
| +5 VDC | 230 mA |
| Total Power | 1.15 W |

## Environment

Operating temperature ....................... 0 to 45 °C (meets
                                        IEC-60068-2-1 and IEC-60068-2-2)
Storage temperature........................... -20 to 70 °C (meets
                                        IEC-60068-2-1 and IEC-60068-2-2)
Relative humidity ................................ 10 to 90%, noncondensing
                                        (meets IEC-60068-2-56)

## Calibration

Self-calibration................................... Gain, offset, compensated
                                        1 M$\Omega$ attenuator, triggering,
                                        and timing for all input ranges
External calibration interval................ 2 years

## Certification and Compliances

**For access to certifications, marks, and DoCs, visit
ni.com/certification.**

**For detailed specifications, visit ni.com/manuals.**

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## 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**.

### 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**.

### Repair and Extended Warranty

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