Technical Sales

(866) 531-6285
orders@ni.com

Ordering Information | Detailed Specifications
For user manuals and dimensional drawings, visit the product page resources tab on ni.com.

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60 MS/s, 60 MHz, 12-Bit, 8-Channel Digitizers

NI PCI-5105, NI PXI-5105

- 8 channels simultaneously sampled at 12-bit resolution
- 60 MS/s real-time sampling
- 60 MHz bandwidth
- 50 mVpp to 30 Vpp input range
- 72 dBc SFDR
- 16, 128, or 512 MB of onboard memory
- Edge, window, hysteresis, and digital triggering

Overview

NI 5105 high-resolution digitizers feature eight 60 MS/s simultaneously sampled input channels with 12-bit resolution, 60 MHz bandwidth, and up to 512 MB of memory in a compact, 3U PXI/PXI Express or PCI device. An NI 5105 uses the National Instruments Synchronization and Memory Core (SMC) architecture, so you can combine multiple devices to build up to 136 phase-coherent channels in a single PXI chassis. You can also synchronize an NI 5105 with other analog and digital instruments to create mixed-signal test systems. NI 5105 devices are ideal for a wide range of applications including ultrasonic nondestructive test (NDT), medical imaging, scientific research, military/aerospace, and consumer electronics.

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Application and Technology

Eight 60 MS/s, 12-Bit Input Channels for Time and Frequency Analysis
• 60 MHz input bandwidth with antialias and noise filters
• >72 dBc spurious-free dynamic range (SFDR)
• Independent channel-selectable 50 mVpp to 30 Vpp input ranges
• Independent channel-selectable 50 Ω or 1 MΩ input impedance
• 2-year calibration interval and 0 to 55 °C operating temperature

Deep Onboard Memory
• 16, 128, or 512 MB of onboard memory
• Capture more than 1 million triggered waveforms in multiple record mode, with hardware trigger rearming
• Stream data continuously from onboard memory to host memory or disk

Triggering, Clocking, and Synchronization
• Edge, window, hysteresis, and digital triggering
• Pretrigger and posttrigger acquisition in single- and multiple-record mode
• Internal 60 MHz clock or external clock from 4 to 65 MHz
• Phase lock to PXI 10 MHz reference or external reference from 1 to 20 MHz
• Timestamp-triggered events with 100 ps resolution

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Ordering Information

For a complete list of accessories, visit the product page on ni.com.

Products	Part Number	Recommended Accessories	Part Number
NI PXI-5105/128MB			
NI PXI-5105/128MB Requires: 1 Cables ;	779685-02	**Cables:** Unshielded - SMB-100, SMB Female to BNC Female Coax Cable, 50 Ohms, 0.6m, Qty 1	763389-01
NI PCI-5105_128			
NI PCI-5105 128MB Requires: 1 Cables ;	779686-02	**Cables:** Unshielded - SMB-100, SMB Female to BNC Female Coax Cable, 50 Ohms, 0.6m, Qty 1	763389-01

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Support and Services

System Assurance Programs

NI system assurance programs are designed to make it even easier for you to own an NI system. These programs include configuration and deployment services for your NI PXI, CompactRIO, or Compact FieldPoint system. The NI Basic System Assurance Program provides a simple integration test and ensures that your system is delivered completely assembled in one box. When you configure your system with the NI Standard System Assurance Program, you can select from available NI system driver sets and application development environments to create customized, reorderable software configurations. Your system arrives fully assembled and tested in one box with your software preinstalled. When you order your system with the standard program, you also receive system-specific documentation including a bill of materials, an integration test report, a recommended maintenance plan, and frequently asked question documents. Finally, the standard program reduces the total cost of owning an NI system by providing three years of warranty coverage and calibration service. Use the online product advisors at ni.com/advisor to find a system assurance program to meet your needs.

Calibration

NI measurement hardware is calibrated to ensure measurement accuracy and verify that the device meets its published specifications. To ensure the ongoing accuracy of your measurement hardware, NI offers basic or detailed recalibration service that provides ongoing ISO 9001 audit compliance and confidence in your measurements. To learn more about NI calibration services or to locate a qualified service center near you, contact your local sales office or visit ni.com/calibration.

Technical Support

Get answers to your technical questions using the following National Instruments resources.

- **Support** - Visit ni.com/support to access the NI KnowledgeBase, example programs, and tutorials or to contact our applications engineers who are located in NI sales offices around the world and speak the local language.
- **Discussion Forums** - Visit forums.ni.com for a diverse set of discussion boards on topics you care about.
- **Online Community** - Visit community.ni.com to find, contribute, or collaborate on customer-contributed technical content with users like you.

Repair

While you may never need your hardware repaired, NI understands that unexpected events may lead to necessary repairs. NI offers repair services performed by highly trained technicians who quickly return your device with the guarantee that it will perform to factory specifications. For more information, visit ni.com/repair.

Training and Certifications

The NI training and certification program delivers the fastest, most certain route to increased proficiency and productivity using NI software and hardware. Training builds the skills to more efficiently develop robust, maintainable applications, while certification validates your knowledge and ability.

- **Classroom training in cities worldwide** - the most comprehensive hands-on training taught by engineers.
- **On-site training at your facility** - an excellent option to train multiple employees at the same time.
- **Online instructor-led training** - lower-cost, remote training if classroom or on-site courses are not possible.
- **Course kits** - lowest-cost, self-paced training that you can use as reference guides.
- **Training memberships** and training credits - to buy now and schedule training later.

Visit ni.com/training for more information.

Extended Warranty

NI offers options for extending the standard product warranty to meet the life-cycle requirements of your project. In addition, because NI understands that your requirements may change, the extended warranty is flexible in length and easily renewed. For more information, visit ni.com/warranty.

OEM

NI offers design-in consulting and product integration assistance if you need NI products for OEM applications. For information about special pricing and services for OEM customers, visit ni.com/oem.

Alliance

Our Professional Services Team is comprised of NI applications engineers, NI Consulting Services, and a worldwide National Instruments Alliance Partner program of more than 700 independent consultants and integrators. Services range from start-up assistance to turnkey system integration. Visit ni.com/alliance.

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Detailed Specifications

12-Bit 60 MS/s Digitizer

This topic lists the specifications for the NI PXI/PCI-5105 (NI 5105) high-speed digitizer. Unless otherwise noted, these specifications are valid for the following conditions:

- All filter settings
- All impedance selections
- Sample clock set to 60 MS/s

Typical values are representative of an average unit operating at room temperature. Specifications are subject to change without notice. For the most recent NI 5105 specifications, visit ni.com/manuals.

To access the NI 5105 documentation, including the *NI High-Speed Digitizers Getting Started Guide*, which contains functional descriptions of the NI 5105 signals, navigate to **Start»All Programs»National Instruments»NI-SCOPE»Documentation**.

Hot Surface If the NI 5105 has been in use, it may exceed safe handling temperatures and cause burns. Allow the NI 5105 to cool before removing it from the PXI chassis or PC. Refer to the *Environment* section for operating temperatures of this device.

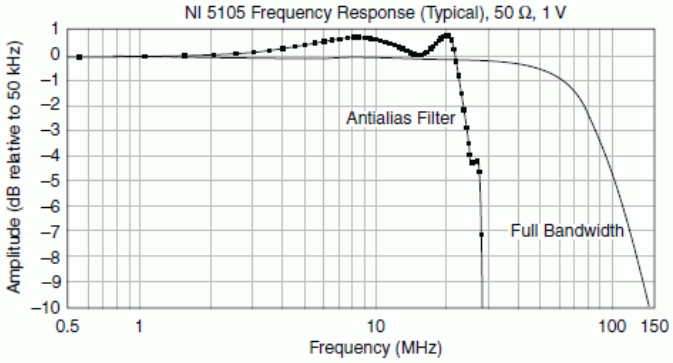
Vertical

Analog Input (Channels 0–7)

Specification	Value				Comments
Number of Channels	Eight (simultaneously sampled)				—
Connectors	SMB				—
Impedance and Coupling					
Input Impedance	50 Ω ±2% 1 MΩ ±1% in parallel with a typical capacitance of 50 pF				Software selectable
Input Coupling	AC, DC				AC coupling available on 1 MΩ only
Voltage Levels					
Full Scale (FS) Input Range	50 Ω Range (V_{pk-pk})		1 MΩ Range (V_{pk-pk})		—
	0.05		0.05		—
	0.2		0.2		—
	1		1		—
	6		6		—
	—		30		—
Maximum Input Overload	50 Ω		1 MΩ		—
	7 V_{rms} with |Peaks| ≤10 V		|Peaks| ≤42 V		
Accuracy					
Resolution	12 bits				—
DC Accuracy	NI PXI-5105				Within ±5 °C of self-calibration temperature
	50 Ω		1 MΩ		
	All ranges: ±(1% of Input + 0.25% of FS + 600 µV)		50 mV range: ±(1% of Input + 0.25% of FS + 600 µV)		
			200 mV, 1 V, and 6 V ranges: ±(0.65% of Input + 0.25% of FS + 600 µV)		
			30 V range: ±(0.75% of Input + 0.25% of FS + 600 µV)		
	NI PCI-5105				
	50 Ω		1 MΩ		
	All ranges: ±(1% of Input + 0.25% of FS + 1.4 mV)		50 mV range: ±(1% of Input + 0.25% of FS + 1.4 mV)		
			200 mV, 1 V, and 6 V ranges: ±(0.65% of Input + 0.25% of FS + 1.4 mV)		
			30 V range: ±(0.75% of Input + 0.25% of FS + 1.4 mV)		
DC Drift	±(0.05% of Input + 0.02% of FS + 20 µV) per °C				—
AC Amplitude Accuracy	50 Ω		1 MΩ		Within ±5 °C of self-calibration temperature
	Range (V_{pk-pk})	At 50 kHz, Typical	Range (V_{pk-pk})	At 50 kHz, Guaranteed	
	0.05	± 0.1 dB (± 1.2%)	0.05	±0.2 dB (±2.3%)	
	0.2	±0.1 dB (±1.2%)	0.2	±0.13 dB (±1.5%)	
	1	±0.1 dB (±1.2%)	1	±0.13 dB (±1.5%)	
	6	±0.1 dB (±1.2%)	6	±0.4 dB (±4.7%)	
	—		30	±0.4 dB (±4.7%)	
Crosstalk, Typical	50 Ω		1 MΩ		Channel to nearest channel Channels in same configuration
	All ranges:		50 mV range:		
	≤–80 dB at 1 MHz		≤–75 dB at 1 MHz All other ranges:		

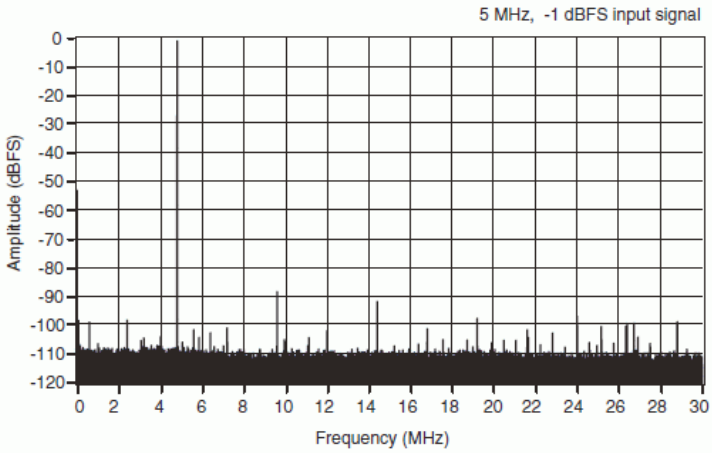
Specification	Value			Comments
		≤–80 dB at 1 MHz		
Bandwidth				
Bandwidth (–3 dB), Typical	Range (V_{pk-pk})	50 Ω	1 MΩ	—
	0.05	55 MHz	35 MHz	
	All other ranges	60 MHz	60 MHz	
Bandwidth Limit Filter	24 MHz Antialias Filter			—
AC Coupling* Cutoff (–3 dB), Typical	12 Hz			* AC coupling available on 1 MΩ only
Passband Flatness	Refer to the following figure.			—

NI 5105 Frequency Response (Typical)



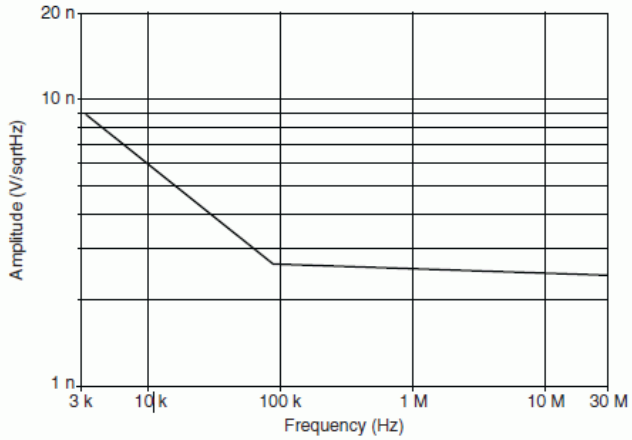
Specification	Value			Comments
Spectral Characteristics				
Spurious-Free Dynamic Range with Harmonics (SFDR), Typical	Range (V_{pk-pk})	50 Ω	1 MΩ	5 MHz, –1 dBFS input signal Includes the 2nd through the 4th harmonics 24 MHz filter on
	0.2	72 dBc [1]	70 dBc [1]	
	1	72 dBc	65 dBc	
	6	72 dBc	65 dBc	
Total Harmonic Distortion (THD), Typical	Range (V_{pk-pk})	50 Ω	1 MΩ	
	0.05	–75 dBc	–72 dBc	
	0.2	–75 dBc	–75 dBc	
	1	–75 dBc	–65 dBc	
	6	–75 dBc	–68 dBc	
Signal to Noise and Distortion (SINAD), Typical	Range (V_{pk-pk})	50 Ω	1 MΩ	
	0.05	59 dB [1]	50 dB [1]	
	0.2	62 dB	59 dB [1]	
	1	62 dB	61 dB	
	6	62 dB	59 dB	

NI PXI/PCI 5105 Dynamic Performance, 50 Ω, 1 V Range, with 24 MHz Filter Enabled

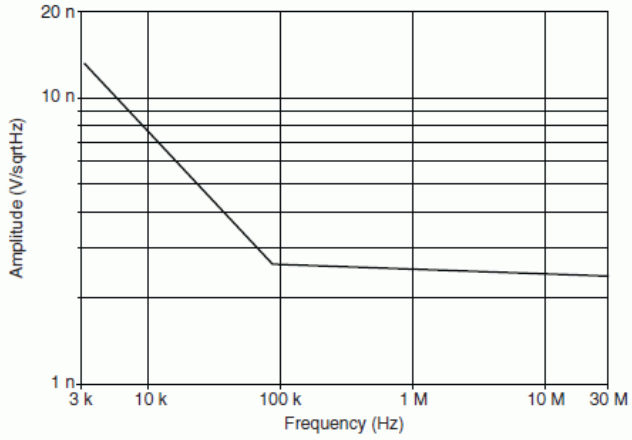


Specification	Value				Comments
RMS Noise	Range (V_{pk-pk})	50 Ω		1 MΩ		50 Ω terminator connected to input
		Full BW	24 MHz Filter On	Full BW	24 MHz Filter On	
	0.05	0.06% FS (30 µV) [1]	0.038% FS (19 µV) [1]	0.16% FS (80 µV) [1]	0.12% FS (60 µV) [1]	
	0.2	0.035% FS (70 µV) [1]	0.028% FS (56 µV) [1]	0.055% FS (110 µV) [1]	0.036% FS (72 µV) [1]	
	1	0.03% FS (300 µV)	0.029% FS (290 µV)	0.03% FS (300 µV)	0.03% FS (300 µV)	
	6	0.03% FS (1.8 mV)	0.028% FS (1.68 mV)	0.055% FS (3.3 mV)	0.036% FS (2.16 mV)	
	30	—	—	0.03% FS (9 mV)	0.03% FS (9 mV)	

Representation of NI PXI-5105 Spectral Noise Density on 50 mV_{pk-pk} Range, 50 Ω Input Impedance with Antialias Filter Enabled



Representation of NI PCI-5105 Spectral Noise Density on 50 mV_{pk-pk} Range, 50 Ω Input Impedance with Antialias Filter Enabled



Specification	Value		Comments
Skew			
Channel to Channel Skew, Typical	24 MHz Filter Off	24 MHz Filter On	10 MHz sine input signal

Specification	Value		Comments
	≤500 ps	≤600 ps	

Sample Clock

Specification	Value		Comments
Sources	NI PXI-5105	NI PCI-5105	* Internal Sample Clock is locked to the Reference Clock or derived from the onboard VCXO
	Internal: Onboard Clock (internal VCXO)* External: PFI 1, PXI Star	Internal: Onboard Clock (internal VCXO)* External: PFI 1	
Onboard Clock (Internal VCXO)			
Sample Rate Range (Real-Time Sampling, Single Shot)	60 MS/s*		* Divide by *n* decimation used for all rates less than 60 MS/s For more information about Sample Clock and decimation, refer to the *NI High-Speed Digitizers Help*.
Timebase Frequency	60 MHz		—
Timebase Accuracy	Not Phase-Locked to Reference Clock	Phase-Locked to Reference Clock	ppm = parts per million (1×10^{-6})
	±25 ppm	Equal to the Reference Clock accuracy	
Sample Clock Delay Range	±1 Sample Clock period		—
Sample Clock Delay Resolution	<10 ps		—
External Sample Clock			
Sources	NI PXI-5105	NI PCI-5105	—
	PFI 1, PXI Star	PFI 1	
Frequency Range	8 MHz to 65 MHz (using NI-SCOPE 3.2) 4 MHz to 65 MHz (using NI-SCOPE 3.3 or later)		Divide by *n* decimation available where $1 \le n \le 65{,}535$ For more information about Sample Clock and decimation, refer to the *NI High-Speed Digitizers Help*.
Duty Cycle Tolerance	45% to 55%		—
Sample Clock Exporting			
Exported Sample Clock Destinations	Destination	Maximum Frequency	Cannot export decimated Sample Clock
	PFI 1	65 MHz	

Phase-Locked Loop (PLL) Reference Clock

Specification	Value	
Sources	NI PXI-5105	NI PCI-5105
	PXI_CLK10 (backplane connector) PFI 1 (front panel SMB connector)	PFI 1 (front panel SMB connector) RTSI 7
Frequency Range	1 MHz to 20 MHz in 1 MHz increments. Default of 10 MHz. The PLL Reference Clock frequency must be accurate to ±50 ppm.	
Duty Cycle Tolerance	45% to 55%	
Exported Reference Clock Destinations	PFI 1	

Trigger

Reference (Stop) Trigger

Specification	Value		Comments
Trigger Types	Edge, Window, Hysteresis, Digital, Immediate, and Software		Refer to the following sections and to the *NI High-Speed Digitizers Help* for more information about what sources are available for each trigger type.
Trigger Sources	NI PXI-5105	NI PCI-5105	—
	CH 0–CH 7, PFI 1, PXI_Trig <0..6>, PXI Star Trigger, and Software	CH 0–CH 7, PFI 1, RTSI <0..6>, and Software	
Time Resolution	Sample Clock Timebase Period		—

Specification	Value		Comments
Minimum Rearm Time	Internal Onboard Clock	External Sample Clock	Holdoff set to 0. Onboard sample clock at maximum rate.
	2.4 µs	144 × External Clock Period	
Holdoff	From Rearm time up to [(2^{32} – 1) × Sample Clock Timebase Period]		—
Analog Trigger (Edge, Window, and Hysteresis Trigger Types)			
Sources	CH 0–CH 7 (front panel SMB connectors)		—
Trigger Level Range	100% FS		—
Edge Trigger Sensitivity	2% FS		—
Trigger Jitter	Sample Clock Timebase Period		—
Digital Trigger (Digital Trigger Type)			
Sources	NI PXI-5105	NI PCI-5105	—
	PFI 1 (front panel SMB connector) PXI_Trig <0..6> (backplane connector) PXI Star Trigger (backplane connector)	PFI 1 (front panel SMB connector) RTSI <0..6>	

PFI 1 (Programmable Function Interface, Front Panel Connector)

Specification	Value
Connector	SMB
Direction	Bidirectional
Coupling	AC, DC
As Sample Clock, Reference Clock	
Input Voltage Range	Sine Wave: 0.65 V_{pk-pk} to 2.8 V_{pk-pk} (0 dBm to 13 dBm) Square Wave: 0.2 V_{pk-pk} to 2.8 V_{pk-pk}
Maximum Input Overload	7 V_{rms} with |Peaks| ≤ 10 V
Input Impedance	50 Ω
Coupling	AC
As an Input (Digital Trigger)	
Destinations	Start Trigger (Acquisition Arm) Reference (Stop) Trigger Arm Reference Trigger Advance Trigger
Input Impedance	150 kΩ
V_{IH}	2.0 V
V_{IL}	0.8 V
Maximum Input Overload	–0.5 V, 5.5 V
Maximum Frequency	65 MHz
As an Output	
Sources	Start Trigger (Acquisition Arm) Reference (Stop) Trigger End of Record Done (End of Acquisition) Sample Clock Timebase Reference Clock
Output Impedance	50 Ω
Logic Type	3.3 V CMOS
Maximum Drive Current	±24 mA

TClk Specifications

National Instruments TClk synchronization method and the NI-TClk driver are used to align the sample clocks on any number of SMC-based modules in a chassis. For more information about TClk synchronization, refer to the *NI-TClk Synchronization Help*, which is located within the *NI High-Speed Digitizers Help*.

- Specifications are valid for any number of PXI modules installed in one NI PXI-1042 chassis. These specifications do not apply to PCI modules.
- All parameters set to identical values for each SMC-based module.
- Sample Clock set to 60 MS/s and all filters are disabled.
- For other configurations, including multichassis systems, contact NI Technical Support at ni.com/support.

Note Although you can use NI-TClk to synchronize nonidentical modules, these specifications apply only to synchronizing identical modules.

Specification	Value	Comments
Intermodule SMC Synchronization Using NI-TClk for Identical Modules (Typical)		
Skew	500 ps	Caused by clock and analog path delay differences No manual adjustment performed
Average Skew After Manual Adjustment	<10 ps	For information about manual adjustment, refer to the *Synchronization Repeatability Optimization* topic in the *NI-TClk Synchronization Help*. For additional help with the adjustment process, contact NI Technical Support at ni.com/support.
Sample Clock Adjustment Resolution	<10 ps	—

Waveform Specifications

Specification	Value	Comments
Onboard Memory Size	16 MB Standard	Onboard Memory is shared between all enabled channels
	128 MB Option	
	512 MB Option	
Minimum Record Length	1 Sample	—
Number of Pretrigger Samples	Zero up to full record length	Single-record mode and multiple-record mode
Number of Posttrigger Samples	Zero up to full record length	Single-record mode and multiple-record mode
Allocated Onboard Memory per Record	[(Record length* × 2† × number of enabled channels) + 480‡] rounded up to nearest 128 bytes **Note**: The maximum number of records is 100,000.	*samples †bytes/sample ‡bytes

Calibration

Specification	Value
Self-Calibration	Self-calibration is done on software command. The calibration corrects for gain, offset, triggering, and timing errors for all input ranges.
External Calibration (Factory Calibration)	The external calibration calibrates the VCXO and the voltage reference. Appropriate constants are stored in nonvolatile memory.
Interval for External Calibration	2 years
Warm-Up Time	15 minutes

Power

Specification	Typical Value	
+3.3 VDC	NI PXI-5105	NI PCI-5105
	1.5 A	1.7 A
+5 VDC	1.7 A	2 A
+12 VDC	200 mA	20 mA
–12 VDC	25 mA	0 A
Total Power	16.15 W	15.85 W

Software

Specification	Value
Driver Software	NI PXI-5105: NI-SCOPE 3.1 or later NI PCI-5105: NI-SCOPE 3.2 or later NI-SCOPE is an IVI-compliant driver that allows you to configure, control, and calibrate the NI 5105. NI-SCOPE provides application programming interfaces for many development environments.
Application Software	NI-SCOPE provides programming interfaces, documentation, and examples for the following application development environments: ▪ LabVIEW ▪ LabWindows™/CVI™ ▪ Measurement Studio ▪ Microsoft Visual C/C++ ▪ Microsoft Visual Basic
Interactive Soft Front Panel and Configuration	The Scope Soft Front Panel 2.5 or later supports interactive control of the NI 5105. The Scope Soft Front Panel is included on the NI-SCOPE CD. National Instruments Measurement & Automation Explorer (MAX) also provides interactive configuration and test tools for the NI 5105. MAX is included on the NI-SCOPE CD.

Environment

NI PXI-5105

Note To ensure that the NI PXI-5105 cools effectively, follow the guidelines in the *Maintain Forced-Air Cooling Note to Users* included in the NI PXI-5105 kit. The NI PXI-5105 is intended for indoor use only.

Specification	Value
Operating Temperature	0 ºC to +55 ºC in all NI PXI chassis except the following: 0 ºC to +45 ºC when installed in an NI PXI-1000/B or PXI-101*x* chassis Meets IEC-60068-2-1 and IEC-60068-2-2
Storage Temperature	–40 ºC to +71 ºC Meets IEC-60068-2-1 and IEC-60068-2-2
Operating Relative Humidity	10% to 90%, noncondensing Meets IEC-60068-2-56
Storage Relative Humidity	5% to 95%, noncondensing Meets IEC-60068-2-56
Operating Shock	30 g, half-sine, 11 ms pulse Meets IEC-60068-2-27. Test profile developed in accordance with MIL-PRF-28800F
Storage Shock	50 g, half-sine, 11 ms pulse Meets IEC-60068-2-27. Test profile developed in accordance with MIL-PRF-28800F
Operating Vibration	5 Hz to 500 Hz, 0.31 g_{rms} Meets IEC-60068-2-64
Storage Vibration	5 Hz to 500 Hz, 2.46 g_{rms} Meets IEC-60068-2-64. Test profile exceeds requirements of MIL-PRF-28800F, Class 3
Altitude	2,000 m maximum (at 25 °C ambient temperature)
Pollution Degree	2

NI PCI-5105

Note To ensure that the NI PCI-5105 cools effectively, make sure that the chassis in which it is used has active cooling that provides at least some airflow across the PCI card cage. To maximize airflow and extend the life of the device, leave any adjacent PCI slots empty. Refer to the *Maintain Forced-Air Cooling Note to Users* included in the NI PCI-5105 kit for important cooling information. The NI PCI-5105 is intended for indoor use only.

Specification	Value
Operating Temperature	0 ºC to +45 ºC Meets IEC-60068-2-1 and IEC-60068-2-2
Storage Temperature	–40 ºC to +71 ºC Meets IEC-60068-2-1 and IEC-60068-2-2
Operating Relative Humidity	10% to 90%, noncondensing Meets IEC-60068-2-56
Storage Relative Humidity	5% to 95%, noncondensing Meets IEC-60068-2-56
Storage Shock	50 g, half-sine, 11 ms pulse Meets IEC-60068-2-27 Test profile developed in accordance with MIL-PRF-28800F
Storage Vibration	5 Hz to 500 Hz, 2.46 g_{rms} Meets IEC-60068-2-64 Test profile exceeds requirements of MIL-PRF-28800F, Class 3
Altitude	2,000 m maximum (at 25 °C ambient temperature)
Pollution Degree	2

Safety, Electromagnetic Compatibility, and CE Compliance

Safety Standards

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, CSA 61010-1

Note For UL and other safety certifications, refer to the product label or the *Online Product Certification* section.

Electromagnetic Compatibility

This product meets the requirements of the following EMC standards for electrical equipment for measurement, control, and laboratory use:

- EN 61326 (IEC 61326): Class A emissions; Basic immunity
- EN 55011 (CISPR 11): Group 1, Class A emissions
- AS/NZS CISPR 11: Group 1, Class A emissions
- FCC 47 CFR Part 15B: Class A emissions
- ICES-001: Class A emissions

Note For the standards applied to assess the EMC of this product, refer to the *Online Product Certification* section.

Note For EMC compliance, operate this device with RG223/U or equivalent shielded cable. Operate according to product documentation.

CE Compliance CE

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

- 2006/95/EC; Low-Voltage Directive (safety)
- 2004/108/EC; Electromagnetic Compatibility Directive (EMC)

Online Product Certification

Refer to the product Declaration of Conformity (DoC) for additional regulatory compliance information. To obtain product certifications and the DoC for this product, visit ni.com/certification, search by module number or product line, and click the appropriate link in the Certification column.

Environmental Management

National Instruments is committed to designing and manufacturing products in an environmentally responsible manner. NI recognizes that eliminating certain hazardous substances from our products is beneficial not only to the environment but also to NI customers.

For additional environmental information, refer to the *NI and the Environment* Web page at ni.com/environment. This page contains the environmental regulations and directives with which NI complies, as well as other environmental information not included in this document.

Waste Electrical and Electronic Equipment (WEEE)

EU Customers At the end of the product life cycle, all products *must* be sent to a WEEE recycling center. For more information about WEEE recycling centers, National Instruments WEEE initiatives, and compliance with WEEE Directive 2002/96/EC on Waste Electrical and Electronic Equipment, visit ni.com/environment/weee.htm.

电子信息产品污染控制管理办法 （中国 RoHS）

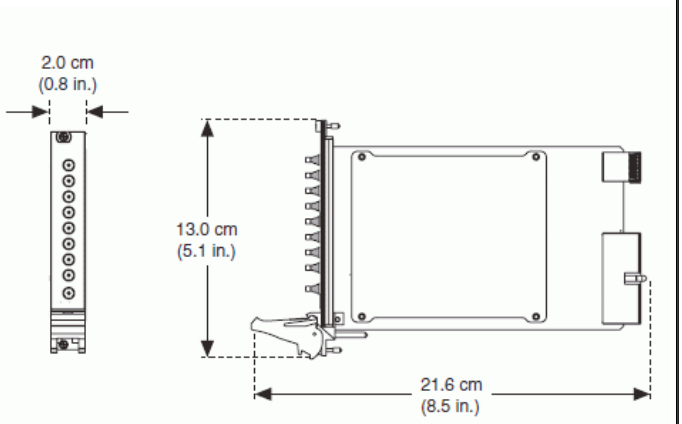
中国客户 National Instruments 符合中国电子信息产品中限制使用某些有害物质指令 (RoHS)。
关于 National Instruments 中国 RoHS 合规性信息，请登录 ni.com/environment/rohs_china。
(For information about China RoHS compliance, go to ni.com/environment/rohs_china.)

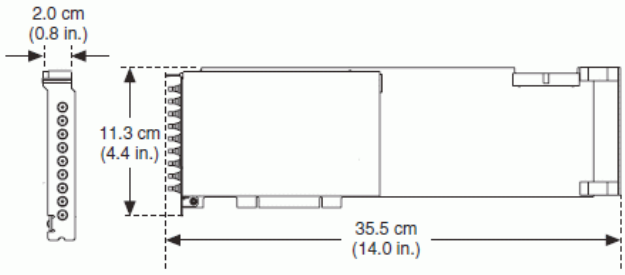
Physical

Front Panel Connectors

Specification	Value	
Label	Function	Connector Type
CH 0–CH 7	Analog input	SMB jack
PFI 1	Trigger input/output, external clock in, reference clock input/output, and timebase out	SMB jack

Dimensions and Weight

NI PXI-5105	
Dimensions	3U, One slot, PXI/cPCI Module 21.6 × 2.0 × 13.0 cm (8.5 × 0.8 × 5.1 in.) 
Weight	474 g (16.7 oz)

NI PCI-5105	
Dimensions	35.5 × 2.0 × 11.3 cm (14.0 × 0.8 × 4.4 in.) 
Weight	433 g (15.2 oz)

[1] (NI PCI-5105 only) Due to high spectral noise content below 5 kHz caused by some computer chassis, spectral performance of the NI PCI-5105 is specified for 5 kHz and above on the indicated ranges. For more information on preventing ground loop noise, refer to the *Ground Loop Noise* topic in the *NI High-Speed Digitizers Help*. **Note**: The specifications listed here apply for all frequencies on the NI PXI-5105.

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