

NI PXI/PXIe/PCI-5122 Specifications

14-Bit 100 MS/s Digitizer

Unless otherwise noted, the following conditions were used for each specification:

- All filter settings
- All impedance selections
- Sample clock set to 100 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 5122 specifications, visit ni.com/manuals.

To access the NI 5122 documentation, including the *NI High-Speed Digitizers Getting Started Guide*, which contains functional descriptions of the NI 5122 signals, navigate to **Start»All Programs»National Instruments»NI-SCOPE»Documentation**.



Hot Surface If the NI 5122 has been in use, it may exceed safe handling temperatures and cause burns. Allow the NI 5122 to cool before removing it from the PXI/PXIe chassis or PC. Refer to the [Environment](#) section for operating temperatures of this device.

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Vertical

Analog Input (Channel 0 and Channel 1)

Specification	Value		Comments
Number of Channels	Two (simultaneously sampled)		—
Connector	BNC		—
Impedance and Coupling			
Input Impedance	50 Ω \pm 2.0%	1 M Ω \pm 0.75% in parallel with a typical capacitance of 29 pF	Software selectable.
Input Coupling	AC, DC, GND		AC coupling available on 1 M Ω only.

Specification	Value				Comments
Voltage Levels					
Full Scale (FS) Input Range and Programmable Vertical Offset	50 Ω		1 M Ω		—
	Range (V _{pk-pk})	Vertical Offset Range (V)	Range (V _{pk-pk})	Vertical Offset Range (V)	
	0.2	± 0.1	0.2	± 0.1	
	0.4	± 0.2	0.4	± 0.2	
	1	± 0.5	1	± 0.5	
	2	± 1	2	± 1	
	4	± 2	4	± 2	
	10	—	10	± 5	
			20	—	
Maximum Input Overload	50 Ω		1 M Ω		—
	7 V _{rms} with Peaks \leq 10 V		Peaks \leq 42 V		

Specification	Value		Comments
Accuracy			
Resolution	14 bits		—
DC Accuracy (Programmable Vertical Offset = 0 V)	Range (V_{pk-pk})	50 Ω and 1 M Ω	Within ± 5 °C of self-calibration temperature.
	0.2, 0.4	NI PXI/PXIe-5122: $\pm(0.65\%$ of Input + 1.0 mV) NI PCI-5122: $\pm(0.65\%$ of Input + 2.0 mV)	
	1	NI PXI/PXIe-5122: $\pm(0.65\%$ of Input + 1.2 mV) NI PCI-5122: $\pm(0.65\%$ of Input + 2.0 mV)	
	2	NI PXI/PXIe-5122: $\pm(0.65\%$ of Input + 1.6 mV) NI PCI-5122: $\pm(0.65\%$ of Input + 2.0 mV)	
	4, 10	NI PXI/PXIe/PCI-5122: $\pm(0.65\%$ of Input + 8.0 mV)	
	20 (1 M Ω only)	NI PXI/PXIe/PCI-5122: $\pm(0.65\%$ of Input + 13.0 mV)	
Programmable Vertical Offset Accuracy	$\pm 0.4\%$ of offset setting		Within ± 5 °C of self-calibration temperature.
DC Drift	Range (V_{pk-pk})	50 Ω and 1 M Ω	—
	0.2, 0.4, 1, and 2	$\pm(0.057\%$ of Input + 0.006% of FS + 100 μ V) per °C	
	4, 10, and 20 (1 M Ω only)	$\pm(0.057\%$ of Input + 0.006% of FS + 900 μ V) per °C	
AC Amplitude Accuracy	50 Ω	1 M Ω	Within ± 5 °C of self-calibration temperature.
	± 0.06 dB ($\pm 0.7\%$) at 50 kHz	± 0.09 dB ($\pm 1.0\%$) at 50 kHz	

Specification	Value			Comments
Crosstalk, Typical	≤ -100 dB at 10 MHz			CH 0 to/from CH 1, External Trigger to CH 0 or CH 1.
Bandwidth and Transient Response				
Bandwidth (-3 dB)	Range (V_{pk-pk})	50 Ω and 1 M Ω		Filters off. * 78 MHz above 40 °C.
	All ranges except 0.2	100 MHz		
	0.2	80 MHz up to 40 °C*		
Rise/Fall Time, Typical	Range (V_{pk-pk})	50 Ω and 1 M Ω		—
	All ranges except 0.2	3.5 ns		
	0.2	4.2 ns		
Bandwidth Limit Filters	Noise Filter		Antialias Filter	Only one filter can be enabled at any given time. The antialias filter is enabled by default.
	20 MHz 2-pole Bessel filter		40 MHz (-6 dB, typical) 35 MHz (-3 dB) 6-pole Chebyshev filter	
AC-Coupling Cutoff (-3 dB)	12 Hz			AC coupling available on 1 M Ω only.
Passband Flatness	Filter Settings	Range (V_{pk-pk})	50 Ω and 1 M Ω	Referenced to 50 kHz.
	Filters Off	All ranges except 0.2	± 0.4 dB DC to 20 MHz ± 1 dB 20 MHz to 50 MHz	
		0.2	± 0.4 dB DC to 20 MHz ± 1 dB 20 MHz to 40 MHz	
	Antialias Filter On	All ranges	± 1.2 dB DC to 16 MHz ± 1.6 dB 16 MHz to 32 MHz	

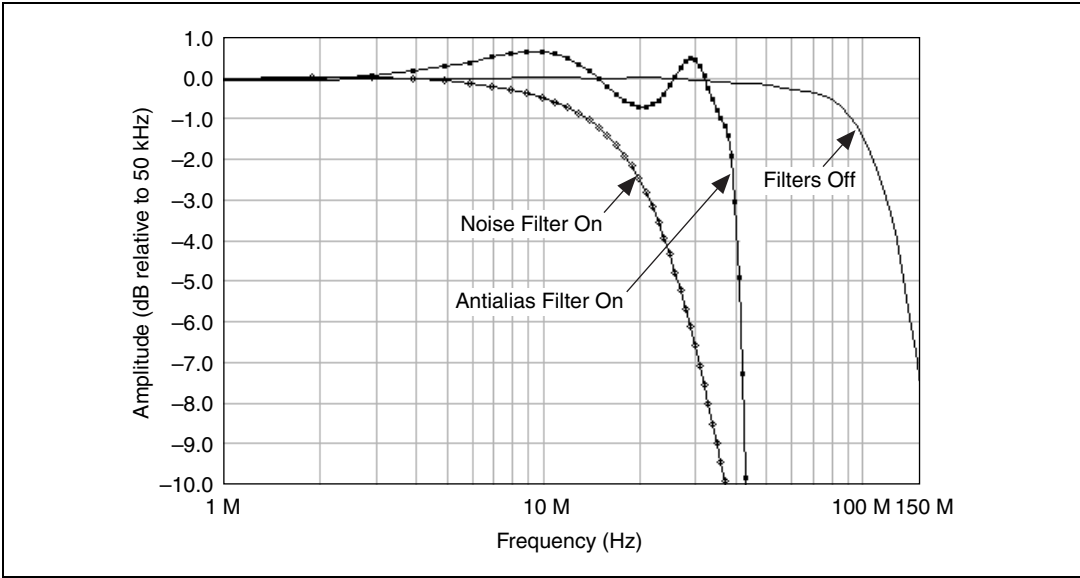


Figure 1. NI 5122 Frequency Response (Typical)

Specification	Value			Comments
Spectral Characteristics				
Spurious Free Dynamic Range with Harmonics (SFDR), Typical	Range (V_{pk-pk})	50 Ω	1 M Ω	10 MHz, -1 dBFS input signal.
	0.2	75 dBc	70 dBc	
	0.4	75 dBc	70 dBc	Includes the 2 nd through the 5 th harmonics.
	1	75 dBc	70 dBc	
	2	75 dBc	70 dBc	
	4	65 dBc	70 dBc	Measured from DC to 50 MHz on NI PXI/PXIe-5122.
	10	65 dBc	60 dBc	
	20 (1 M Ω only)	N/A	60 dBc	Measured from 5 kHz to 50 MHz on NI PCI-5122.
Total Harmonic Distortion (THD), Typical	Range (V_{pk-pk})	50 Ω	1 M Ω	10 MHz, -1 dBFS input signal.
	0.2	-75 dBc	-68 dBc	
	0.4	-75 dBc	-68 dBc	Includes the 2 nd through the 5 th harmonics.
	1	-75 dBc	-68 dBc	
	2	-73 dBc	-68 dBc	
	4	-63 dBc	-68 dBc	
	10	-63 dBc	-58 dBc	
	20 (1 M Ω only)	N/A	-58 dBc	
Intermodulation Distortion, Typical	0.2 V_{pk-pk} to 2.0 V_{pk-pk} Ranges on 50 Ω Input			Two tones at 10.2 MHz and 11.2 MHz. Each tone is -7 dBFS.
	-75 dBc			

Specification	Value				Comments	
Signal-to-Noise Ratio (SNR), Typical	Range (V_{pk-pk})	50 Ω		1 M Ω		10 MHz, -1 dBFS input signal. Excludes harmonics. Measured from DC to 50 MHz.
		Filters Off	Antialias Filter On	Filters Off	Antialias Filter On	
	0.2	60 dB	60 dB	56 dB	60 dB	
	0.4	62 dB	62 dB	61 dB	62 dB	
	1	62 dB	62 dB	62 dB	62 dB	
	2	62 dB	62 dB	62 dB	62 dB	
	4	—	—	61 dB	62 dB	
Signal to Noise and Distortion (SINAD), Typical	Range (V_{pk-pk})	50 Ω		1 M Ω		10 MHz, -1 dBFS input signal. Includes harmonics. Measured from DC to 50 MHz.
		Filters Off	Antialias Filter On	Filters Off	Antialias Filter On	
	0.2	60 dB	60 dB	56 dB	59 dB	
	0.4	62 dB	62 dB	60 dB	61 dB	
	1	62 dB	62 dB	61 dB	61 dB	
	2	62 dB	62 dB	61 dB	61 dB	
	4	—	—	60 dB	61 dB	

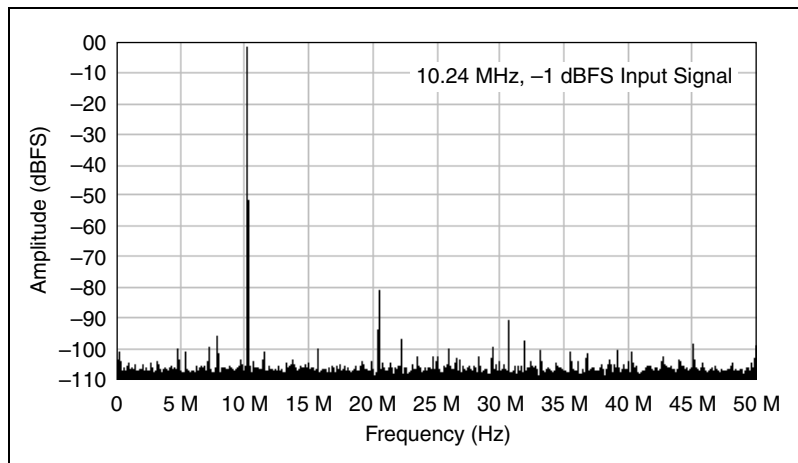


Figure 2. NI 5122 Dynamic Performance, 50 Ω , 1 V_{pk-pk} Range (Typical)

Specification	Value			Comments
RMS Noise (Noise Filter On)	Range (V_{pk-pk})	50 Ω	1 M Ω	50 Ω terminator connected to input.
	0.2	NI PXI/PXIe-5122: 46 μV_{rms} (0.023% FS) NI PCI-5122: 56 μV_{rms} (0.028% FS)	NI PXI/PXIe-5122: 60 μV_{rms} (0.030% FS) NI PCI-5122: 72 μV_{rms} (0.036% FS)	
	0.4	92 μV_{rms} (0.023% FS)	92 μV_{rms} (0.023% FS)	
	1	230 μV_{rms} (0.023% FS)	230 μV_{rms} (0.023% FS)	
	2	460 μV_{rms} (0.023% FS)	460 μV_{rms} (0.023% FS)	
	4	920 μV_{rms} (0.023% FS)	920 μV_{rms} (0.023% FS)	
	10	2.3 mV _{rms} (0.023% FS)	2.3 mV _{rms} (0.023% FS)	
	20 (1 M Ω only)	N/A	4.6 mV _{rms} (0.023% FS)	

Specification	Value			Comments
RMS Noise (Antialias Filter On)	Range (V_{pk-pk})	50 Ω	1 M Ω	50 Ω terminator connected to input.
	0.2	NI PXI/PXIe-5122: 66 μV_{rms} (0.033% FS) NI PCI-5122: 82 μV_{rms} (0.041% FS)	NI PXI/PXIe-5122: 80 μV_{rms} (0.040% FS) NI PCI-5122: 96 μV_{rms} (0.048% FS)	
	0.4	100 μV_{rms} (0.025% FS)	120 μV_{rms} (0.030% FS)	
	1	250 μV_{rms} (0.025% FS)	300 μV_{rms} (0.030% FS)	
	2	500 μV_{rms} (0.025% FS)	600 μV_{rms} (0.030% FS)	
	4	1 mV _{rms} (0.025% FS)	1.2 mV _{rms} (0.030% FS)	
	10	2.5 mV _{rms} (0.025% FS)	3 mV _{rms} (0.030% FS)	
	20 (1 M Ω only)	N/A	6 mV _{rms} (0.030% FS)	

Specification	Value			Comments
RMS Noise (Filters Off)	Range (V_{pk-pk})	50 Ω	1 M Ω	50 Ω terminator connected to input.
	0.2	NI PXI/PXIe-5122: 66 μV_{rms} (0.033% FS) NI PCI-5122: 90 μV_{rms} (0.045% FS)	110 μV_{rms} (0.055% FS)	
	0.4	100 μV_{rms} (0.025% FS)	160 μV_{rms} (0.040% FS)	
	1	250 μV_{rms} (0.025% FS)	300 μV_{rms} (0.030% FS)	
	2	500 μV_{rms} (0.025% FS)	600 μV_{rms} (0.030% FS)	
	4	1 mV _{rms} (0.025% FS)	1.6 mV _{rms} (0.040% FS)	
	10	2.5 mV _{rms} (0.025% FS)	3 mV _{rms} (0.030% FS)	
	20 (1 M Ω only)	N/A	6 mV _{rms} (0.030% FS)	

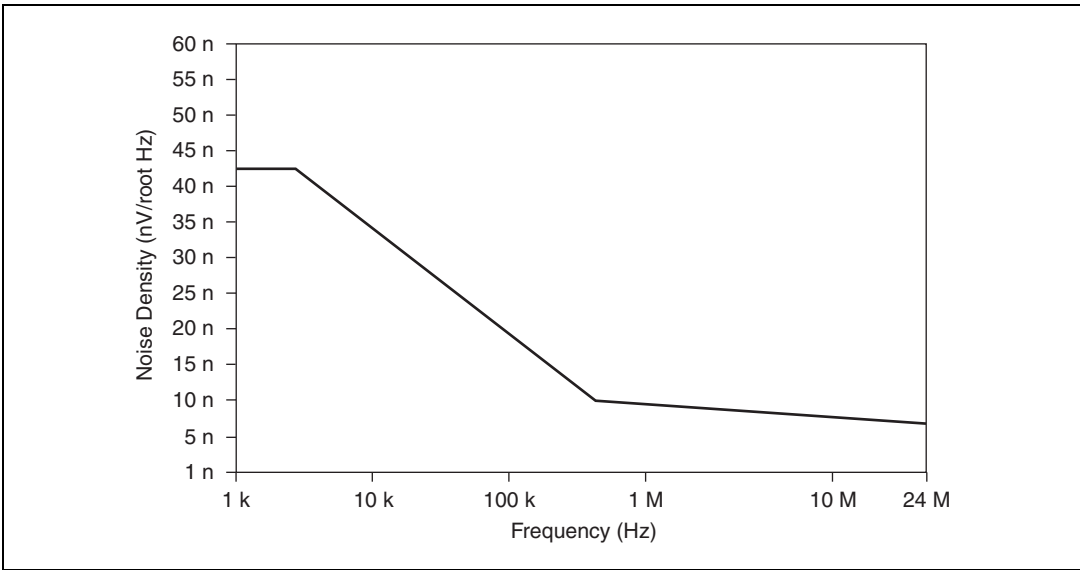


Figure 3. Representation of NI 5122 Spectral Noise Density on 0.2 V Range, Noise Filter Enabled, 1 MΩ Input Impedance

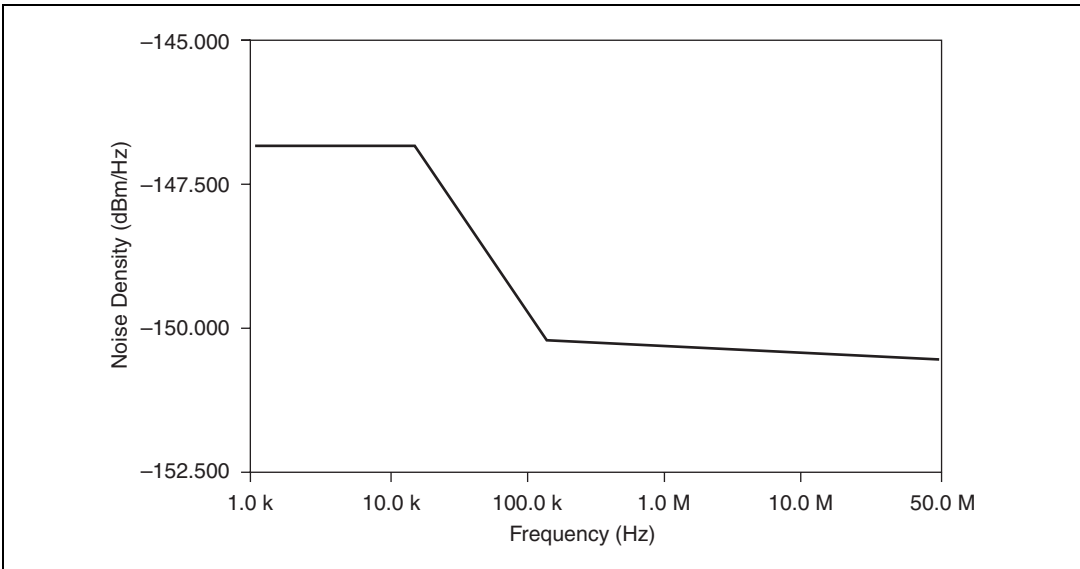


Figure 4. Representation of NI 5122 Spectral Noise Density on 0.2 V Range, Full Bandwidth, 50 Ω Input Impedance

Horizontal

Sample Clock

Specification	Value		Comments
Sources	NI PXI/PXIe-5122	NI PCI-5122	* Internal Sample Clock is locked to the Reference Clock or derived from the onboard VCXO.
	Internal, Onboard Clock (internal VCXO)*	Internal, Onboard Clock (internal VCXO)*	
	External, CLK IN (front panel SMB connector)	External, CLK IN (front panel SMB connector)	
	External, PXI Star Trigger (backplane connector)		
Onboard Clock (Internal VCXO)			
Sample Rate Range	Real-Time Sampling (Single Shot)	Random Interleaved Sampling (RIS)	* Divide by n decimation used for all rates less than 100 MS/s. For more information about Sample Clock and decimation, refer to the <i>NI High-Speed Digitizers Help</i> .
	1.526 kS/s to 100 MS/s*	200 MS/s to 2 GS/s in multiples of 100 MS/s	
Phase Noise Density, Typical	< -100 dBc/Hz at 100 Hz < -120 dBc/Hz at 1 kHz < -130 dBc/Hz at 10 kHz		10 MHz input signal
Sample Clock Jitter, Typical	≤ 1 ps rms (100 Hz to 100 kHz) ≤ 2 ps rms (100 Hz to 1 MHz)		Includes the effects of the converter aperture uncertainty and the clock circuitry jitter. Excludes trigger jitter.
Timebase Frequency	100 MHz		—

Specification	Value		Comments
Timebase Accuracy	Not Phase-Locked to Reference Clock	Phase-Locked to Reference Clock	—
	±25 ppm	Equal to the Reference Clock accuracy	
Sample Clock Delay Range	±1 Sample Clock period		—
Sample Clock Delay/Adjustment Resolution	≤ 10 ps		—
External Sample Clock			
Sources	NI PXI/PXIe-5122	NI PCI-5122	—
	CLK IN (front panel SMB connector) PXI Star Trigger (backplane connector)	CLK IN (front panel SMB connector)	
Frequency Range	30 MHz to 105 MHz (CLK IN) 30 MHz to 80 MHz (PXI Star Trigger, PXI/PXIe devices only)		Divide by n decimation available where $1 \leq n \leq 65,535$. For more information about Sample Clock and decimation, refer to the <i>NI High-Speed Digitizers Help</i> .
Duty Cycle Tolerance	45% to 55%		—

Specification	Value		Comments
Sample Clock Exporting			
Exported Sample Clock Destinations	Destination	Maximum Frequency	* Decimated Sample Clock only.
	CLK OUT (front panel SMB connector)	105 MHz	
	PXI_Trig <0..6> (backplane connector)*	20 MHz	
	PFI <0..1> (front panel 9-pin mini-circular DIN connector)*	25 MHz	
	RTSI<0..6>*	20 MHz	

Phase-Locked Loop (PLL) Reference Clock

Specification	Value		Comments
Sources	NI PXI/PXIe-5122	NI PCI-5122	—
	PXI_CLK10 (backplane connector) CLK IN (front panel SMB connector)	RTSI 7 CLK IN (front panel SMB connector)	
Frequency Range	1 MHz to 20 MHz in 1 MHz increments. Default of 10 MHz. The PLL Reference Clock frequency has to be accurate to ± 50 ppm.		—
Duty Cycle Tolerance	45% to 55%		—
Exported Reference Clock Destinations	NI PXI/PXIe-5122	NI PCI-5122	—
	CLK OUT (front panel SMB connector)	CLK OUT (front panel SMB connector)	
	PFI <0..1> (front panel 9-pin mini-circular DIN connector) PXI_Trig <0..7> (backplane connector)	PFI <0..1> (front panel 9-pin mini-circular DIN connector) RTSI <0..7>	

CLK IN (Sample Clock and Reference Clock Input, Front Panel Connector)

Specification	Value	Comments
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	—
Impedance	50 Ω	—
Coupling	AC	—

CLK OUT (Sample Clock and Reference Clock Output, Front Panel Connector)

Specification	Value	Comments
Output Impedance	50 Ω	—
Logic Type	3.3 V CMOS	—
Maximum Drive Current	±48 mA	—

Trigger

Reference (Stop) Trigger

Specification	Value			Comments
Trigger Types	Edge, Window, Hysteresis, Video, Digital, Immediate, and Software			Refer to the following sections and to the <i>NI High-Speed Digitizers Help</i> for more information about what sources are available for each trigger type.
Trigger Sources	NI PXI-5122	NI PXIe-5122	NI PCI-5122	
	CH 0, CH 1, TRIG, PXI_Trig <0..6>, PFI <0..1>, PXI Star Trigger, and Software	CH 0, CH 1, TRIG, PXI_Trig <0..6>, PFI <0..1>, and Software	CH 0, CH 1, TRIG, RTSI <0..6>, and Software	

Specification	Value			Comments
Time Resolution	TDC	Onboard Clock	External Clock	TDC = Time to Digital Conversion Circuit.
	On	100 ps	N/A	
	Off	10 ns	External Clock Period	
Rearm Time	TDC		Rearm Time	Holdoff set to 0
	On		10 μ s	
	Off		2 μ s	
Holdoff	TDC	Onboard Clock	External Clock	—
	On	10 μ s to 171.79 s	N/A	
	Off	2 μ s to 171.79 s	$200 \times (\text{External Clock Period})$ to $(2^{32} - 1) \times (\text{External Clock Period})$	
Analog Trigger (Edge, Window, and Hysteresis Trigger Types)				
Sources	CH 0 (front panel BNC connector) CH 1 (front panel BNC connector) TRIG (front panel BNC connector)			—
Trigger Level Range	CH 0, CH 1		TRIG (External Trigger)	—
	100% FS		± 5 V	
Trigger Level Resolution	10 bits (1 in 1,024)			—
Edge Trigger Sensitivity	CH 0, CH 1		TRIG (External Trigger)	—
	2.5% FS up to 50 MHz, increasing to 5% FS at 100 MHz		0.25 $V_{\text{pk-pk}}$ up to 100 MHz, increasing to 1 $V_{\text{pk-pk}}$ at 200 MHz	
Level Accuracy, Typical	CH 0, CH 1		TRIG (External Trigger)	—
	$\pm 3.5\%$ FS up to 10 MHz		± 0.35 V ($\pm 3.5\%$ FS) up to 10 MHz	
Jitter	≤ 80 ps rms			Within ± 5 °C of self-calibration temperature.

Specification	Value		Comments	
Trigger Filters	Low-Frequency (LF) Reject	High-Frequency (HF) Reject	—	
	50 kHz	50 kHz		
Digital Trigger (Digital Trigger Type)				
Sources	NI PXI-5122	NI PXIe-5122	NI PCI-5122	—
	PXI_Trig <0..6> (backplane connector)	PXI_Trig <0..6> (backplane connector)	RTSI <0..6>	
	PFI <0..1> (front panel SMB connector)	PFI <0..1> (front panel SMB connector)	PFI <0..1> (front panel SMB connector)	
	PXI Star Trigger (backplane connector)			
Video Trigger (Video Trigger Type)				
Sources	CH 0 (front panel BNC connector) CH 1 (front panel BNC connector) TRIG (front panel BNC connector)		—	
Types	Specific Line Any Line Specific Field		—	
Standard	Negative sync of NTSC, PAL, or SECAM signal		—	

TRIG (External Trigger, Front Panel Connector)

Specification	Value	Comments
Connector	BNC	—
Impedance	1 M Ω in parallel with 22 pF	—
Coupling	AC, DC	—
AC-Coupling Cutoff (-3 dB)	12 Hz	—

Specification	Value	Comments
Input Voltage Range	± 5 V	—
Maximum Input Overload	$ \text{Peaks} \leq 42$ V	—

PFI 0 and PFI 1 (Programmable Function Interface, AUX Front Panel Connectors)

Specification	Value	Comments
Connector	9-pin mini-circular DIN	—
Direction	Bi-directional	—
As an Input (Trigger)		
Destinations	Start Trigger (Acquisition Arm) Reference (Stop) Trigger Arm Reference Trigger Advance Trigger	—
Input Impedance	150 k Ω	—
V_{IH}	2.0 V	—
V_{IL}	0.8 V	—
Maximum Input Overload	-0.5 V to 5.5 V	—
Maximum Frequency	25 MHz	—
As an Output (Event)		
Sources	Start Trigger (Acquisition Arm) Reference (Stop) Trigger End of Record Done (End of Acquisition) Probe Compensation (1 kHz, 50% duty cycle square wave, PFI 1 only)	—
Output Impedance	50 Ω	—

Specification	Value	Comments
Logic Type	3.3 V CMOS	—
Maximum Drive Current	±24 mA	—
Maximum Frequency	25 MHz	—

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 or any number of PXIe modules installed in a PXI Express chassis.
- All parameters set to identical values for each SMC-based module.
- Sample Clock set to 100 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.

Specification	Value	Comments
Skew After Manual Adjustment	< 10 ps	For information about manual adjustment, refer to the <i>Synchronization Repeatability Optimization</i> topic in the <i>NI-TClock Synchronization Help</i> . For additional help with the adjustment process, contact NI Technical Support at ni.com/support .
Sample Clock Delay/Adjustment Resolution	≤ 10 ps	—

Waveform Specifications

Specification	Value				Comments
Onboard Memory Size		PXI	PXIe	PCI	—
	8 MB per chan standard (4 megasamples per chan)	✓	✓	✓	
	32 MB per chan option (16 megasamples per chan)	✓	—	✓	
	64 MB per chan option (32 megasamples per chan)	—	✓	—	
	256 MB per chan option (128 megasamples per chan)	✓	✓	✓	
	512 MB per chan option (256 megasamples per chan)	✓	—	—	
Minimum Record Length	1 Sample				—

Specification	Value		Comments
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.
Maximum Number of Records in Onboard Memory	8 MB/channel	21,845	* It is possible to exceed these numbers if you fetch records while acquiring data. For more information, refer to the <i>NI High-Speed Digitizers Help</i> .
	32 MB/channel	87,381	
	64 MB/channel	100,000*	
	256 MB/channel	100,000*	
	512 MB/channel	100,000*	
Allocated Onboard Memory per Record	$(Record\ Length \times 2\ bytes/S) + 200\ bytes$, rounded up to next multiple of 128 bytes or 384 bytes, whichever is greater		—

Calibration

Specification	Value	Comments
Self-Calibration	Self-calibration is done on software command. The calibration corrects for gain, offset, frequency response, triggering, and timing adjustment 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

NI PXI/PCI-5122		
Specification	Typical Value	
	NI PXI-5122	NI PCI-5122
+3.3 VDC	1.4 A	1.4 A
+5 VDC	1.5 A	2.4 A
+12 VDC	110 mA	110 mA
-12 VDC	270 mA	0 A
Total Power	16.7 W	17.9 W

NI PXIe-5122		
Specification	Typical Value	Maximum Value
+3.3 VDC	1.6 A	1.6 A
+12 VDC	2.0 A	2.32 A
Total Power	29.28 W	33.12 W

Software

Specification	Value	Comments
Driver Software	NI-SCOPE 2.6 or later (PXI and PCI) NI-SCOPE 3.3.1 or later (PXIe). NI-SCOPE is an IVI-compliant driver that allows you to configure, control, and calibrate the NI 5122. 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: <ul style="list-style-type: none"> • LabVIEW • LabWindows™/CVI™ • Measurement Studio • Microsoft Visual C/C++ • Microsoft Visual Basic 	—
Interactive Soft Front Panel and Configuration	The Scope Soft Front Panel supports interactive control of the NI 5122, and is included on the NI-SCOPE CD. The required versions are as follows: NI PXI/PCI-5122: version 2.0.1 or later NI PXIe-5122: version 2.7 or later National Instruments Measurement & Automation Explorer (MAX) also provides interactive configuration and test tools for the NI 5122. MAX is included on the NI-SCOPE CD.	—

Environment

NI PXI/PXIe-5122



Note To ensure that the NI PXI/PXIe-5122 cools effectively, follow the guidelines in the *Maintain Forced Air Cooling Note to Users* included in the NI PXI/PXIe-5122 kit. The NI PXI/PXIe-5122 is intended for indoor use only.

Specification	Value	Comments
Operating Temperature	0 °C to +55 °C in all NI PXI and PXIe chassis except the following: 0 °C to +45 °C when installed in an NI PXI-1000/B or PXI-101x chassis. Meets IEC-60068-2-1 and IEC-60068-2-2. Note: (NI PXIe-5122 only) Refer to KnowledgeBase 4AEB2ML1 at ni.com for more information about maximizing PXIe data transfer rates when operating at ambient temperatures below 10 °C.	—
Storage Temperature	−40 °C to +71 °C. 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 B.	—
Altitude	2,000 m maximum (at 25 °C ambient temperature)	—
Pollution Degree	2	—

NI PCI-5122



Note To ensure that the NI PCI-5122 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-5122 kit for important cooling information. The NI PCI-5122 is intended for indoor use only.

Specification	Value	Comments
Operating Temperature	0 °C to +45 °C. Meets IEC-60068-2-1 and IEC-60068-2-2.	—
Storage Temperature	−40 °C to +70 °C. 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 B.	—
Altitude	2,000 m maximum (at 25 °C ambient temperature)	—
Pollution Degree	2	—

Safety, Electromagnetic Compatibility, and CE 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, CSA 61010-1



Note For UL and other safety certifications, refer to the product label or visit 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 with RG223/U or equivalent shielded cable. Operate 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)



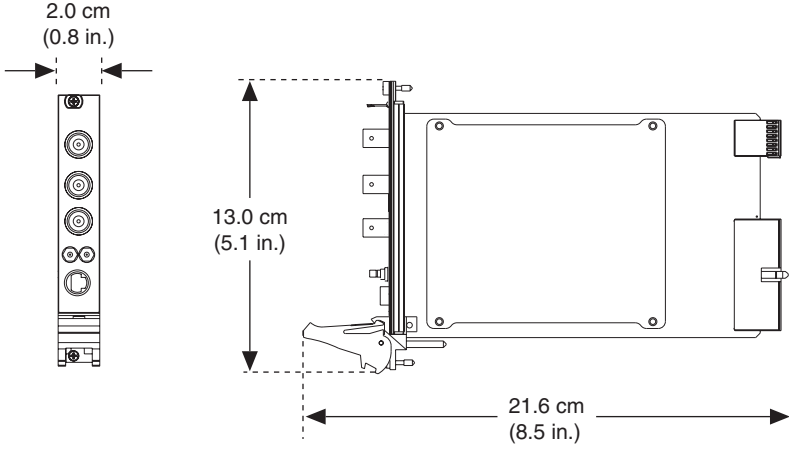
Note Refer to the Declaration of Conformity (DoC) for this product for any additional regulatory compliance information. To obtain the DoC for this product, visit ni.com/certification, search by model number or product line, and click the appropriate link in the Certification column.

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.

Physical

NI PXI-5122	
Dimensions	<p>3U, One slot, PXI/cPCI Module 21.6 × 2.0 × 13.0 cm (8.5 × 0.8 × 5.1 in.)</p> 
Weight	383 g (13.5 oz)

NI PXIe-5122	
Dimensions	<p>3U, One slot, PXI Express Module</p> <p>21.3 × 2.0 × 13.0 cm (8.4 × 0.8 × 5.1 in.)</p> <p>The diagram shows a side view of the NI PXIe-5122 module. A vertical dimension line on the left indicates a height of 13.0 cm (5.1 in.). A horizontal dimension line at the top indicates a width of 2.0 cm (0.8 in.). A horizontal dimension line at the bottom indicates a length of 21.3 cm (8.4 in.). The module features a front panel with several circular ports and a rear panel with a connector and a cable.</p>
Weight	453 g (16.0 oz)

NI PCI-5122	
Dimensions	<p>35.5 × 2.0 × 11.3 cm (14.0 × 0.8 × 4.4 in.)</p> <p>The diagram shows a side view of the NI PCI-5122 module. A vertical dimension line on the left indicates a height of 11.3 cm (4.4 in.). A horizontal dimension line at the top indicates a width of 2.0 cm (0.8 in.). A horizontal dimension line at the bottom indicates a length of 35.5 cm (14.0 in.). The module features a front panel with several circular ports and a rear panel with a connector and a cable.</p>
Weight	455 g (16 oz)

Front Panel Connectors		
Label	Function	Connector Type
CH 0	Analog Input	BNC female
CH 1	Analog Input	BNC female
TRIG	External Trigger	BNC female
CLK IN	Sample Clock Input and Reference Clock Input	SMB jack
CLK OUT	Sample Clock Output and Reference Clock Output	SMB jack
AUX I/O	PFI 0, PFI 1	9-pin mini-circular DIN
NI PXI/PXIe-5122 Front Panel Indicators		
Label	Function	For more information, refer to the <i>NI High-Speed Digitizers Help</i> .
ACCESS	The ACCESS LED indicates the status of the PCI bus and the interface from the NI PXI/PXIe-5122 to the controller.	
ACTIVE	The ACTIVE LED indicates the status of the onboard acquisition hardware of the NI PXI/PXIe-5122.	

Where to Go for Support

The National Instruments Web site is your complete resource for technical support. At ni.com/support you have access to everything from troubleshooting and application development self-help resources to email and phone assistance from NI Application Engineers.

A Declaration of Conformity (DoC) is our claim of compliance with the Council of the European Communities using the manufacturer's declaration of conformity. This system affords the user protection for electronic compatibility (EMC) and product safety. You can obtain the DoC for your product by visiting ni.com/certification. If your product supports calibration, you can obtain the calibration certificate for your product at ni.com/calibration.

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