
PXle-5162 Specifications

2022-07-11



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PXIe-5162 Specifications

Definitions

Warranted specifications describe the performance of a model under stated operating conditions and are covered by the model warranty. **Warranted** specifications account for measurement uncertainties, temperature drift, and aging. **Warranted** specifications are ensured by design, or verified during production and calibration.

Characteristics describe values that are relevant to the use of the model under stated operating conditions but are not covered by the model warranty.

- **Typical** specifications describe the performance met by a majority of models.
- **Nominal** specifications describe an attribute that is based on design, conformance testing, or supplemental testing.
- **Measured (meas)** specifications describe the measured performance of a representative model.

Specifications are **Typical** unless otherwise noted.

Conditions

Specifications are valid under the following conditions unless otherwise noted.

- All vertical ranges
- All bandwidths and bandwidth limit filters
- Sample rate set to 1.25 GS/s, 2.5 GS/s, or 5 GS/s
- Onboard Sample clock locked to onboard Reference clock

Warranted specifications are valid under the following conditions unless otherwise noted.

- Ambient temperature ranges of 0 °C to 45 °C
- The PXIe-5162 is warmed up for 15 minutes at ambient temperature
- Self-calibration is completed after warm-up period
- Calibration cycle is maintained
- The PXI Express chassis fan speed is set to HIGH, the foam fan filters are removed if present, and the empty slots contain PXI chassis slot blockers and filler panels. For more information about cooling, refer to the Maintain Forced-Air Cooling Note to Users document available at ni.com/manuals.
- NI-SCOPE 4.1 or later instrument driver is used
- External calibration is performed at 23 °C ± 3 °C

Typical specifications are valid under the following conditions unless otherwise noted:

- Ambient temperature ranges of 0 °C to 45 °C

Vertical

Analog Input

| | |
|---------------------------|-------------------------------|
| Number of channels | |
| PXIe-5162 (2 CH) | Two (simultaneously sampled) |
| PXIe-5162 (4 CH) | Four (simultaneously sampled) |
| Input type | Referenced single-ended |
| Connectors | BNC |

Impedance and Coupling



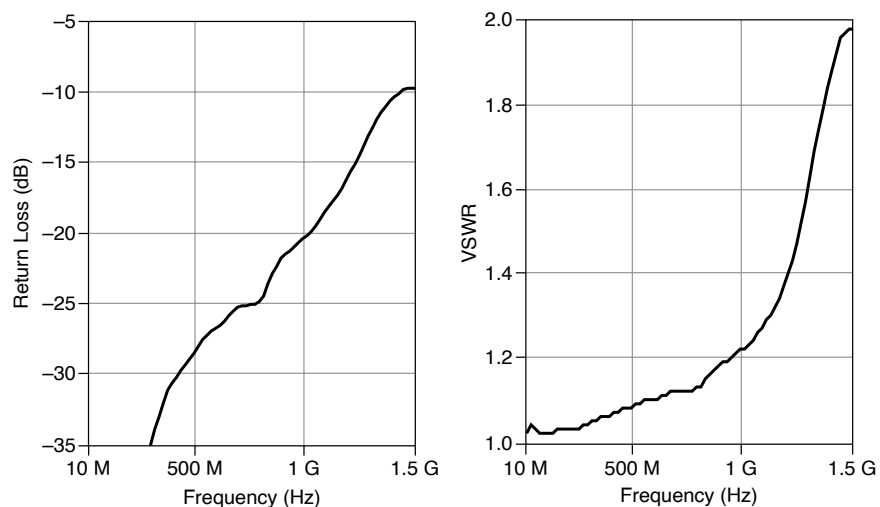
Note Impedance and coupling are software-selectable on a per-channel basis.

| Impedance Setting | Typical | Warranted |
|-------------------|-------------------------|-------------------------|
| 50 Ω | 50 $\Omega \pm 1.50\%$ | 50 $\Omega \pm 1.75\%$ |
| 1 M Ω | 1 M $\Omega \pm 0.75\%$ | 1 M $\Omega \pm 0.90\%$ |

Table 1. Input Impedance

| | |
|----------------------------------|--------------------------------------------------------------|
| Input capacitance ^[1] | 15 pF \pm 0.8 pF, nominal 15 pF \pm 2.5 pF, warranted |
| Input coupling | AC, DC |

Figure 1. 50 Ω Input Return Loss and Input VSWR, Measured



Voltage Levels

| | |
|-----------------------------|---------------------------|
| Input Range (V_{pk-pk}) | Vertical Offset Range (V) |
| 0.05 V | ± 0.5 |

| Input Range (V_{pk-pk}) | Vertical Offset Range (V) |
|-----------------------------|---------------------------|
| 0.1 V | ± 0.5 |
| 0.2 V | ± 0.5 |
| 0.5 V | ± 0.5 |
| 1 V | ± 0.5 |
| 2 V | ± 1.5 |
| 5 V | 0 |

Table 2. 50 Ω Full-Scale (FS) Input Range and Vertical Offset Range

| Input Range (V_{pk-pk}) | Vertical Offset Range (V) |
|-----------------------------|---------------------------|
| 0.05 V | ± 0.5 |
| 0.1 V | ± 0.5 |
| 0.2 V | ± 0.5 |
| 0.5 V | ± 0.5 |
| 1 V | ± 0.5 |
| 2 V | ± 5 |
| 5 V | ± 5 |
| 10 V | ± 5 |
| 20 V | ± 30 |
| 50 V | ± 15 |

Table 3. 1 M Ω FS Input Range and Vertical Offset Range

| Maximum input overload^[2] | |
|---------------------------------------------|-----------------------------|
| 50 Ω | Peaks ≤ 5 V, nominal |
| 1 M Ω | Peaks ≤ 42 V, nominal |

Accuracy

| | |
|------------|---------|
| Resolution | 10 bits |
|------------|---------|

| | |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DC accuracy ^[3] | $\pm[(2\% \times \mathbf{Reading} - \mathbf{Vertical\ Offset}) + (1.4\% \times \mathbf{Vertical\ Offset}) + (0.6\% \text{ of } \mathbf{FS}) + 600 \mu\text{V}]$ |
| DC drift ^[4] | $\pm[(0.1\% \times \mathbf{Reading} - \mathbf{Vertical\ Offset}) + (0.025\% \times \mathbf{Vertical\ Offset}) + (0.03\% \text{ of } \mathbf{FS})]$ per °C, nominal |
| AC amplitude accuracy ^[3] | ± 0.5 dB at 50 kHz |
| AC amplitude drift ^[4] | ± 0.01 dB per °C at 50 kHz, nominal |

| Input Impedance | Input Frequency | Crosstalk |
|-----------------------------|-----------------------------|-----------|
| 50 Ω | DC $\leq f \leq$ 100 MHz | -60 dB |
| | 100 MHz $< f \leq$ 700 MHz | -45 dB |
| | 700 MHz $< f \leq$ 1000 MHz | -40 dB |
| 1 M Ω ^[6] | DC $\leq f \leq$ 100 MHz | -55 dB |
| | 100 MHz $< f \leq$ 200 MHz | -45 dB |

Table 4. Channel-to-Channel Crosstalk, Nominal^[5]

Bandwidth and Transient Response

| 50 Ω bandwidth (-3 dB) ^[7] | 1.5 GHz, warranted | | |
|----------------------------------------------|-----------------------------|---------|-------------------------|
| Input Impedance | Input Range (V_{pk-pk}) | Nominal | Warranted |
| 1 M Ω ^[9] | 0.05 V to 1 V | — | 300 MHz |
| | 2 V to 10 V | 300 MHz | 250 MHz ^[10] |
| | 20 V to 50 V | 300 MHz | — |

Table 5. 1 M Ω Bandwidth (-3 dB)^[11]

| | |
|----------------------------|---------|
| Bandwidth-limiting filters | 20 MHz |
| | 175 MHz |

| Rise/fall time^[12] | |
|--------------------------------------------------|---------|
| 50 Ω | 320 ps |
| 1 M Ω ^[13] | 1.4 ns |
| AC-coupling cutoff (-3 dB)^[14] | |
| 50 Ω ^[15] | 170 kHz |
| 1 M Ω | 17 Hz |

Figure 2. PXIe-5162 Step Response, 50 Ω , 1 V_{pk-pk} Input Range, -0.25 V Programmable Offset, 150 ps Rising Edge, Measured

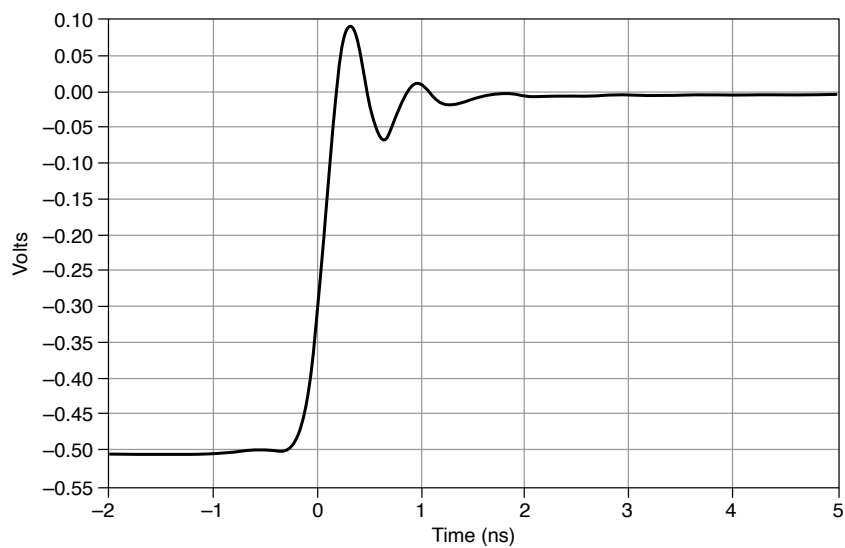


Figure 3. PXIe-5162 Step Response, 1 M Ω , 1 V_{pk-pk} Input Range, -0.25 V Programmable Offset, 500 ps Rising Edge, Measured [\[16\]](#)

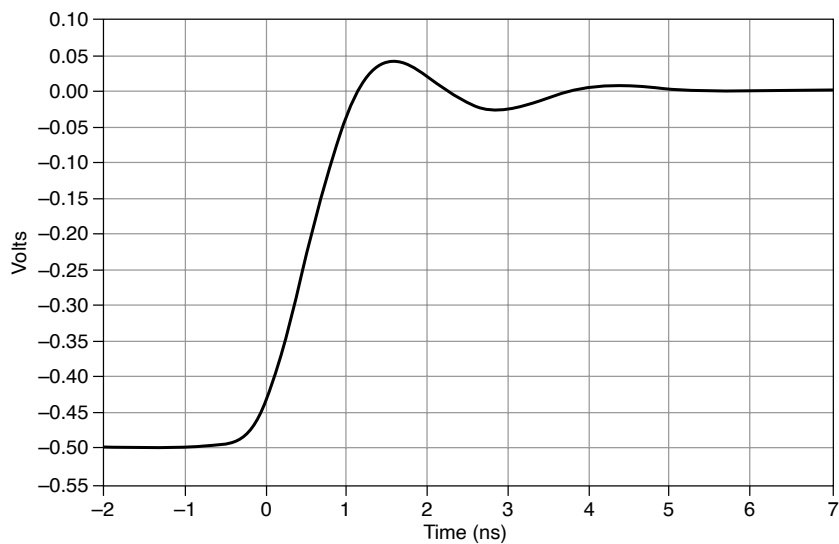


Figure 4. PXIe-5162 50 Ω Frequency Response, 1 V_{pk-pk}, 5 GS/s, Measured

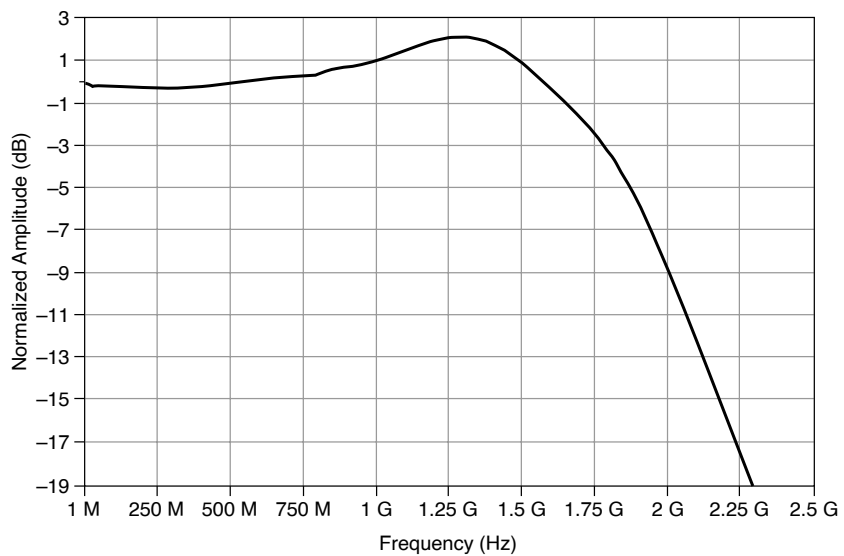


Figure 5. PXIe-5162 1 MΩ Frequency Response, 1 V_{pk-pk}, Measured ^[17]

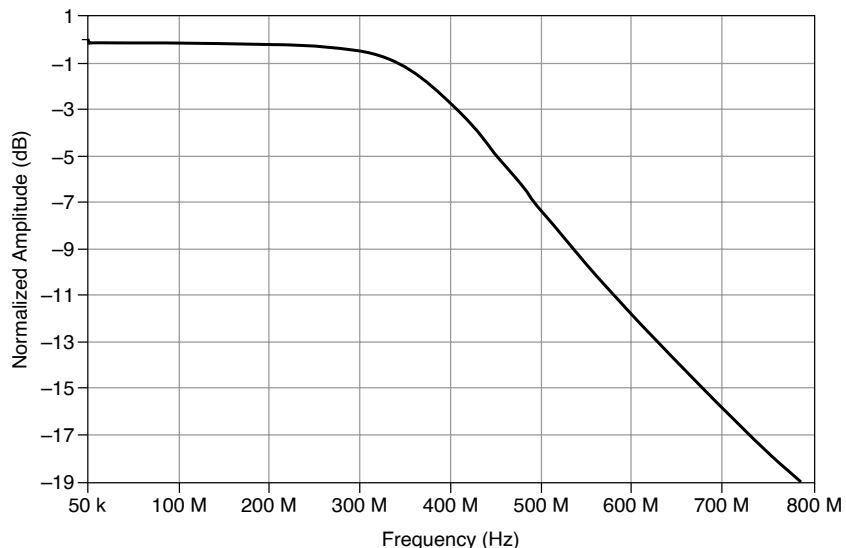
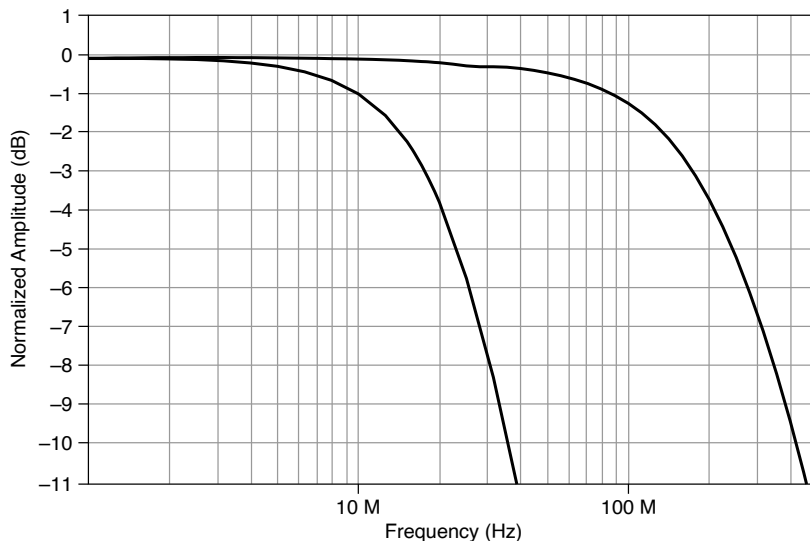


Figure 6. PXIe-5162 Bandwidth-Limiting Filters Frequency Response, 1 V_{pk-pk}, Measured



Spectral Characteristics

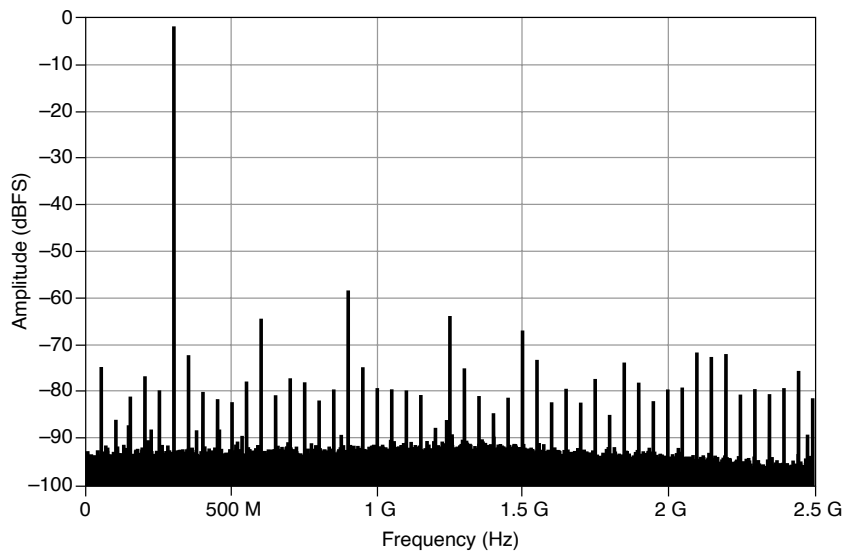
50 Ω Spectral Characteristics

| Input Frequency | Input Range (V _{pk-pk}) | SFDR | |
|-----------------|-----------------------------------|----------------------------------------------------------------|--------------------|
| | | 1.25 GS/s, 2.5 GS/s ^[19] , 5.0 GS/s ^[19] | 2.5 GS/s, 5.0 GS/s |
| <10 MHz | 0.05 V | 52 dBc | 40 dBc |

| Input Frequency | Input Range (V_{pk-pk}) | SFDR | |
|-------------------------------|-----------------------------|----------------------------------------------------------------|--------------------|
| | | 1.25 GS/s, 2.5 GS/s ^[19] , 5.0 GS/s ^[19] | 2.5 GS/s, 5.0 GS/s |
| | 0.1 V | 52 dBc | 46 dBc |
| | 0.2 V | 56 dBc | 46 dBc |
| | 0.5 V to 5 V | 56 dBc | 50 dBc |
| ≥ 10 MHz to ≤ 1 GHz | 0.05 V | 46 dBc | 40 dBc |
| | 0.1 V to 5 V | 46 dBc | 46 dBc |

Table 6. Spurious-Free Dynamic Range (SFDR), Measured^[18]

| Input Frequency | Input Range (V_{pk-pk}) | ENOB |
|-----------------|-----------------------------|------|
| <1 GHz | 0.05 V | 6.0 |
| | 0.1 V | 6.6 |
| | 0.2 V to 5 V | 7.0 |

Table 7. Effective Number of Bits (ENOB), Nominal^[18]Figure 7. PXIe-5162 Single-Tone Spectrum, 2.98 dBm Input Signal at Connector, 50 Ω , 1 V_{pk-pk} , 5 GS/s, 300 MHz Input Tone, Full Bandwidth, Measured

1 M Ω Spectral Characteristics^[20]

| Input Frequency | Input Range (V_{pk-pk}) | SFDR | |
|---------------------------------|-----------------------------|-----------------------------------------------------------------|--------------------|
| | | 1.25 GS/s , 2.5 GS/s ^[22] , 5.0 GS/s ^[22] | 2.5 GS/s, 5.0 GS/s |
| <10 MHz | 0.05 V to 10 V | 53 dBc | 48 dBc |
| | 20 V | 50 dBc | 44 dBc |
| ≥ 10 MHz to ≤ 100 MHz | 0.05 V to 0.5 V | 53 dBc | 48 dBc |
| | 1 V to 5 V | 48 dBc | 48 dBc |

Table 8. SFDR, Nominal^[21]

| Input Frequency | Input Range (V_{pk-pk}) | ENOB |
|-----------------|-----------------------------|------|
| <10 MHz | 10 V to 20 V | 7.1 |
| ≤ 100 MHz | 0.05 V | 6.2 |
| | 0.1 V | 6.8 |
| | 0.2 V to 5 V | 7.1 |

Table 9. ENOB, Nominal^[21]

Noise

| Input Impedance | Input Range (V_{pk-pk}) | Typical | Warranted |
|-----------------|-----------------------------|-------------|-------------|
| 50 Ω | 0.05 V | 0.55% of FS | 0.62% of FS |
| | 0.1 V | 0.33% of FS | 0.39% of FS |
| | 0.2 V to 5 V | 0.28% of FS | 0.34% of FS |
| 1 M Ω | 0.05 V | 0.55% of FS | 0.62% of FS |
| | 0.1 V | 0.33% of FS | 0.39% of FS |
| | 0.2 V to 50 V | 0.28% of FS | 0.34% of FS |

Table 10. RMS Noise^[23]

Skew

Channel-to-channel skew

| | |
|------------------------------|------------------|
| 50 Ω to 50 Ω | <25 ps, nominal |
| 1 M Ω to 1 M Ω | <125 ps, nominal |
| 50 Ω to 1 M Ω | <800 ps, nominal |

Horizontal

Sample Clock

Sources

| | |
|----------|------------------------------|
| Internal | Onboard clock (internal VCO) |
| External | Front panel SMB connector |

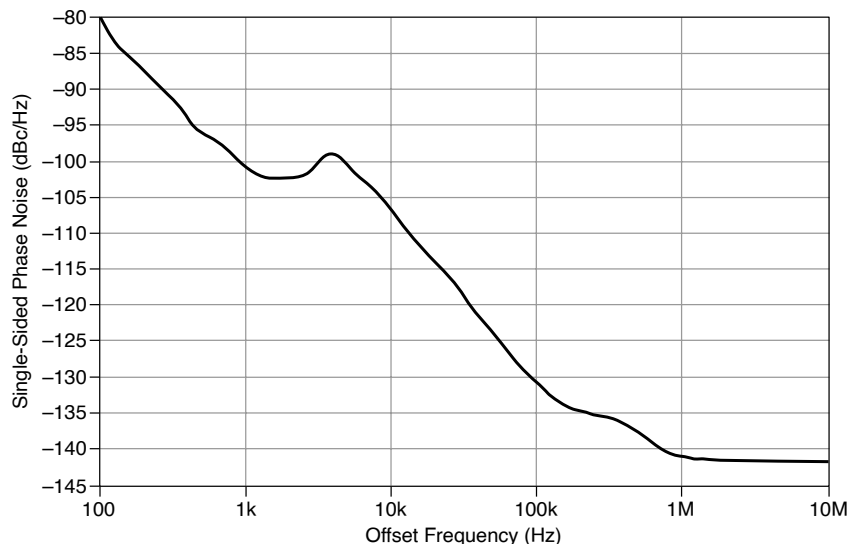
Onboard Clock

Real-time sample rate range^[24]

| | |
|--------------------------------------|--------------------------|
| One channel enabled | 76.299 kS/s to 5 GS/s |
| Two channels enabled ^[25] | 76.299 kS/s to 2.5 GS/s |
| Four channels enabled | 76.299 kS/s to 1.25 GS/s |

| | |
|---------------------------------------------------------|----------------|
| Random interleaved sampling (RIS) range ^[26] | Up to 100 GS/s |
|---------------------------------------------------------|----------------|

Figure 8. PXIe-5162 Phase Noise (Plotted without Spurs) at 1 GHz, 3 dBm Input Signal, Locked to Onboard Reference Clock, Measured



| | |
|-------------------------------------|----------------------------------------|
| Sample Clock jitter ^[27] | 180 fs RMS (12 kHz to 10 MHz), nominal |
| Timebase frequency | 2.5 GHz |
| Timebase accuracy ^[28] | ±10 ppm, typical ±25 ppm, warranted |

Phase-Locked Loop (PLL) Reference Clock

| | |
|--------------------------------------------------------------------------------------------|------------|
| Sources | |
| Internal Onboard 10 MHz reference | |
| External External 10 MHz (front panel CLK IN connector) or PXI_CLK10 (backplane connector) | |
| Duty cycle tolerance | 45% to 55% |

External Sample Clock (CLK IN, Front Panel Connector)

| | |
|-----------------------------------------------------------|-------------------------------------|
| Input voltage range, when configured as a Sample Clock | -10 dBm through 16 dBm |
| Maximum input overload, when configured as a Sample Clock | 18 dBm |
| Impedance | 50 Ω |
| Coupling | AC |
| Frequency range | 1.25 GHz to 2.5 GHz ^[29] |

External Reference Clock In (CLK IN, Front Panel Connector)

| | |
|--------------------------------------------------------------|-------------------------------------------------|
| Input voltage range, when configured as a Reference Clock | 200 mV _{pk-pk} to 4 V _{pk-pk} |
| Maximum input overload, when configured as a Reference Clock | 5 V _{pk-pk} with Peaks \leq 10 V |
| Impedance | 50 Ω |
| Coupling | AC |
| Frequency range ^[30] | 10 MHz |

Reference Clock Out (CLK OUT, Front Panel Connector)

| | |
|------------------|-------------|
| Output impedance | 50 Ω |
| Logic type | 3.3 V CMOS |

| | |
|-----------------------|--------|
| Maximum current drive | ±10 mA |
|-----------------------|--------|

Trigger

| Supported trigger | Reference (Stop) Trigger |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| Trigger types | Edge Digital Immediate Hysteresis Software |
| <p>Trigger sources</p> <p>PXIe-5162 (2 CH) CH 0, CH 1, TRIG, PFI 0, PFI 1, PXI_TRIG <0..6>, and Software</p> <p>PXIe-5162 (4 CH) CH 0, CH 1, CH 2, CH 3, PFI 0, PFI 1, PXI_TRIG <0..6>, and Software</p> | |
| Time-to-digital conversion circuit time resolution | 4 ps |
| Dead time | 710 ns, nominal |
| Holdoff | 6.4 ns to 27.4 s |
| Trigger delay | From 0 to 73,786,976 seconds (28 months), nominal |

Analog Trigger (Edge Trigger Type)

| Sources | |
|----------------------------------|-------------------------------------|
| PXIe-5162 (2 CH) | CH 0, CH 1, or TRIG ^[31] |
| PXIe-5162 (4 CH) | CH 0, CH 1, CH 2, or CH 3 |
| Trigger filters | |
| Low-frequency reject | 150 kHz, nominal |
| High-frequency reject | 150 kHz, nominal |
| Trigger sensitivity | 3% of FS at ≤ 100 MHz, nominal |
| Trigger accuracy ^[32] | 6% of FS at ≤ 100 MHz, nominal |
| Trigger jitter | 4.7 ps |

External Trigger (TRIG, Front Panel Connector)



Note TRIG is valid only for the PXIe-5162 (2 CH) device.

| Connector | BNC |
|----------------------------|-----------------------------|
| Impedance | 50 Ω or 1 M Ω |
| Coupling | AC or DC |
| Input voltage range | |

| | |
|----------------------------------|-------------------------------------|
| 50 Ω | ± 2.5 V |
| 1 M Ω | ± 5 V |
| Maximum input overload | |
| 50 Ω | Peaks ≤ 5 V, nominal |
| 1 M Ω | Peaks ≤ 42 V, nominal |
| Trigger sensitivity | 3% of FS at ≤ 100 MHz, nominal |
| Trigger accuracy ^[33] | 8% of FS at ≤ 100 MHz, nominal |
| Trigger jitter | 4.7 ps |

Digital Trigger (Digital Trigger Type)

| | |
|-------------------------------|-----------------|
| Sources^[34] | |
| Front panel SMB connector | PFI <0..1> |
| Backplane connector | PXI_TRIG <0..6> |

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

| | |
|-----------|---------------|
| Connector | SMB jack |
| Direction | Bidirectional |

As an Input (Trigger)

| | |
|------------------------|--------------------------------------------------------------------------------|
| Destinations | Start Trigger (Acquisition Arm) Reference (Stop) Trigger Advance Trigger |
| Input impedance | 10 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 | Ready for Start Start Trigger (Acquisition Arm) Ready for Reference Arm Reference Trigger Reference (Stop) Trigger End of Record Ready for Advance |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| | |
|-----------------------|------------------------------------------------------------------------------------|
| | Advance Trigger Done (End of Acquisition) Probe Compensation ^[35] |
| Output impedance | 50 Ω , nominal |
| Logic type | 3.3 V CMOS |
| Maximum current drive | ± 10 mA |
| Maximum frequency | 25 MHz |

CableSense

| | |
|--------------------------------------------|------------------|
| CableSense pulse voltage ^[36] | 0.5 V , nominal |
| CableSense pulse rise time ^[37] | 650 ps , nominal |

Driver support for CableSense on the PXIe-5162 was first available in NI-SCOPE18.7.

Related information

- [For more information about CableSense technology, refer to ni.com/cablesense.](http://ni.com/cablesense)

Waveform Specifications

| | |
|--------------------------------------|---------------|
| Onboard memory sizes ^[38] | 64 MB or 2 GB |
| Minimum record length | 1 sample |

| | |
|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Number of pretrigger samples ^[39] | Zero up to full record length |
| Number of posttrigger samples ^[39] | Zero up to full record length |
| Maximum number of records in onboard memory^[40] | |
| 64 MB | 65,536 |
| 2 GB | 100,000 |
| Allocated onboard memory per record | $[(\text{Record length} + 448 \text{ samples}) \times 2 \text{ bytes/sample}]$, rounded up to an integer multiple of 128 bytes (minimum 512 bytes) |

Memory Sanitization

For information about memory sanitization, refer to the letter of volatility for your device, which is available at ni.com/manuals.

Calibration

External Calibration

External calibration calibrates the onboard references used in self-calibration and the external trigger levels. All calibration constants are stored in nonvolatile memory.

Self-Calibration

Self-calibration is done on software command. The calibration corrects for gain, offset, triggering, and timing errors for all input ranges.

Calibration Specifications

| | |
|-----------------------------------|------------|
| Interval for external calibration | 2 years |
| Warm-up time ^[41] | 15 minutes |

Software

Driver Software

Driver support for this device was first available in NI-SCOPE4.1.

NI-SCOPE is an IVI-compliant driver that allows you to configure, control, and calibrate the PXIe-5162. 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++
- .NET (C# and VB.NET)

Interactive Soft Front Panel and Configuration

When you install NI-SCOPE on a 64-bit system, you can monitor, control, and record measurements from the PXIe-5162 using InstrumentStudio.

InstrumentStudio is a software-based front panel application that allows you to perform interactive measurements on several different device types in a single program.



Note InstrumentStudio is supported only on 64-bit systems. If you are using a 32-bit system, use the NI-SCOPE-specific soft front panel instead of InstrumentStudio.

Interactive control of the PXIe-5162 was first available via InstrumentStudio in NI-SCOPE18.1 and via the NI-SCOPE SFP in NI-SCOPE4.1. InstrumentStudio and the NI-SCOPE SFP are included on the NI-SCOPE media.

NI Measurement & Automation Explorer (MAX) also provides interactive configuration and test tools for the PXIe-5162. MAX is included on the driver media.

TClk Specifications

You can use the NI TClk synchronization method and the NI-TClk driver to align the Sample clocks on any number of supported devices, in one or more chassis. For more information about TClk synchronization, refer to the **NI-TClk Synchronization Help**, which is located within the **NI High-Speed Digitizers Help**. For other configurations, including multichassis systems, contact NI Technical Support at ni.com/support.

Intermodule SMC Synchronization Using NI-TClk for Identical Modules

Specifications are valid under the following conditions:

- All modules are installed in one PXI Express chassis.
- The NI-TClk driver is used to align the Sample clocks of each module.
- All parameters are set to identical values for each SMC-based module.
- Modules are synchronized without using an external Sample clock.
- Self-calibration is completed.



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

| | |
|------------------------------------------|-----------------|
| Skew ^[42] | 100 ps, nominal |
| Skew after manual adjustment | ≤5 ps, nominal |
| Sample clock delay/adjustment resolution | 20 fs |

Power Requirements

| | |
|-------------|-----------------|
| +3.3 VDC | 2.2 A, nominal |
| +12 VDC | 2.3 A, nominal |
| Total power | 34.8 W, nominal |

Physical Characteristics

| | |
|------------|----------------------------------------------------------------------------------------------------------------|
| Dimensions | 3U, 1 slot, PXI Express gen 1 x4 Module 21.4 cm × 2.0 cm × 13.1 cm (8.4 in. × 0.8 in. × 5.1 in.) |
| Weight | 430 g (15 oz.) |

Environmental Characteristics

| | |
|--------------------|-----------------|
| Temperature | |
| Operating | 0 °C to 45 °C |
| Storage | -40 °C to 71 °C |

| | |
|----------------------------|---------------------------------------------------|
| Humidity | |
| Operating | 10% to 90%, noncondensing |
| Storage | 5% to 95%, noncondensing |
| Pollution Degree | |
| Pollution Degree | 2 |
| Maximum altitude | |
| Maximum altitude | 2,000 m (800 mbar) (at 25 °C ambient temperature) |
| Shock and Vibration | |
| Operating vibration | 5 Hz to 500 Hz, 0.3 g RMS |
| Non-operating vibration | 5 Hz to 500 Hz, 2.4 g RMS |
| Operating shock | 30 g, half-sine, 11 ms pulse |

Product Certifications and Declarations

Refer to the product Declaration of Conformity (DoC) for additional regulatory compliance information. To obtain product certifications and the DoC for NI products, visit ni.com/product-certifications, search by model number, and click the appropriate link.

¹ 1 MΩ input only.

² Signals exceeding the maximum input overload may cause damage to the device.

³ Within ±3 °C of self-calibration temperature. This specification is **typical** for peak-to-peak input ranges of 0.05 V to 0.1 V and **warranted** for all other input ranges.

⁴ Used to calculate errors when onboard temperature changes more than ±3 °C from the self-calibration temperature.

⁵ Measured on one channel with test signal applied to another channel with the same range setting on both channels.

⁶ Only valid on peak-to-peak input ranges of 0.05 V to 10 V.

⁷ Normalized to 50 kHz.

⁸ For ambient temperature ranges of 0 °C to 30 °C

⁹ Verified using a 50 Ω source and 50 Ω feed-through terminator.

¹⁰ For ambient temperature ranges of 0 °C to 30 °C

¹¹ Normalized to 50 kHz.

¹² 50% FS input pulse.

¹³ Verified using a 50 Ω source and 50 Ω feed-through terminator.

¹⁴ Verified using a 50 Ω source.

¹⁵ With AC coupling enabled, the DC resistance to ground is 20 kΩ.

¹⁶ Verified using a 50 Ω source and 50 Ω feed-through terminator.

¹⁷ Verified using a 50 Ω source and 50 Ω feed-through terminator.

¹⁸ -1 dBFS input signal corrected to FS. Includes the second through the fifth harmonics. 7.2 kHz resolution bandwidth.

¹⁹ Excludes ADC interleaving spurs.

²⁰ Verified using a 50 Ω source and 50 Ω feedthrough terminator.

²¹ -1 dBFS input signal corrected to FS. Includes the second through the fifth harmonics. 7.2 kHz resolution bandwidth.

²² Excludes ADC interleaving spurs.

²³ Verified using a 50 Ω terminator connected to input.

²⁴ Divide by **n** decimation from 1.25 GS/s used for all rates less than 1.25 GS/s. For more information about the Sample Clock and decimation, refer to the **NI High-Speed Digitizers Help**.

²⁵ For the PXIe-5162 (4 CH), supported on channels 0 and 2. For the PXIe-5162 (2 CH), supported on channels 0 and 1.

²⁶ With one channel enabled, stepped in multiples of 5 GS/s. With two channels enabled, stepped in multiples of 2.5 GS/s. With four channels enabled, stepped in multiples of 1.25 GS/s.

²⁷ Includes the effects of the converter aperture uncertainty and the clock circuitry jitter. Excludes trigger jitter.

²⁸ When phase-locked to an external Reference Clock, the timebase accuracy is equal to the external Reference Clock accuracy. For example, when locked to the System Reference Clock of a PXI Express chassis, the module inherits the accuracy of the chassis System Reference Clock.

²⁹ To achieve the same real-time sample rate ranges as the onboard clock, a 2.5 GHz frequency is required.

³⁰ The PLL Reference Clock frequency must be accurate to ± 25 ppm.

³¹ For specifications on the TRIG input, refer to the **External Trigger (TRIG, Front Panel Connector)** section.

³² When the impedance settings of the triggering input and the analog input channel are the same. Delay will increase if the impedance of the triggering input does not match the impedance of the analog input channel.

³³ When the impedance settings of the triggering input and the analog input channel are the same. Delay will increase if the impedance of the triggering input does not match the impedance of the analog input channel.

34 Subsample trigger accuracy not supported on PFI 1 or PXI_TRIG<0..6>.

35 1 kHz, 50% duty cycle square wave, PFI 1 only.

36 When measured with a high-impedance device.

37 When sourcing into a 50 Ω cable or load.

38 Onboard memory is shared among all enabled channels. Devices with NI part number 154772A-x2L had 1 GB of onboard memory.

39 Single-record and multirecord acquisitions.

40 You can exceed these numbers if you fetch records while acquiring data. For more information, refer to the **NI High-Speed Digitizers Help**.

41

42 Caused by clock and analog path delay differences. No manual adjustment performed. Tested with a NI PXIe-1082 chassis with a maximum slot-to-slot skew of 100 ps.