

16 Bit PCIe Gen-3 Digitizer, 2 channels 250 MS/s, 4GS memory

Order-No.: RED-252-016 Series/Model: RazorEdge / CompuScope Express 16502



[_ Bitte klicken zum Vergrößern](#)

Main Product Feature

- 16-Bit Vertical A/D Resolution with 2 Digitizing Input Channels
- 250 MS/s Maximum Sampling Rate per Channel
- 21 Software Selectable A/D Sampling Rates from 1 kS/s to 250 MS/s
- Front-End with DC Coupling (AC Optional) and 50 Ω / 1M Ω Inputs
- Dedicated Set of 50 Ω Input Channel Pair and 1M Ω Input Channel Pair
- 125 MHz Bandwidth @ 50 Ω Inputs / 75 MHz Bandwidth @ 1M Ω Inputs
- 4 GS (8 GB) Onboard Dual-Port Sample Memory Standard
- 6 GB/s PCIe Gen3 x8 Transfer Rate off Onboard Memory
- 2 GB/s PCIe Gen3 x8 Real-Time Sustained Streaming Rate to Host
- Stream Acquired Signal Data to GPU for In-Line Processing in Real-Time
- Stream Acquired Signal Data to Storage for Real-Time Recordings
- Ease of Integration with external or Reference Clock In & Clock Out
- External Trigger In & Trigger Out with Advanced Triggering Operations
- Programming-Free Operation with GaGeScope PC Oscilloscope
- Programming-Free IF Recording & Playback with DsScope
- Programming-Free RF Recording & Playback with SpectraScopeRT
- Software Development Kits for C/C#, Python, LabVIEW, & MATLAB
- Windows 11/10 and Linux Operating Systems Supporte

Analog Input Front End

The 14 bit Digitizer RazorPlus Express is available in dual channel modelssupporting a maximum A/D sampling rate up to 250 MS/s. ADC data can be captured in dual channel or single channel modes with six software selectable input voltage ranges

at ± 100 mV, ± 200 mV, ± 500 mV, ± 1 V, ± 2 V, and ± 5 V.

The RazorEdge has separate physical input channels that differ for input impedance. There is a pair of input channels that are dedicated to $50\ \Omega$ input impedance connections, and a pair of input channels that are dedicated to $1\text{M}\ \Omega$ input impedance connections. All input channels are fixed for DC-coupling.

The analog input bandwidth is 250 MHz with $50\ \Omega$ input impedance or 150 MHz with $1\text{M}\ \Omega$ input impedance. The wider 250 MHz bandwidth is especially useful for RF based applications by enabling direct RF sampling of wider band signals.

AC-coupling is useful for applications in which a small AC signal is sitting upon a large DC bias. In these cases, the DC bias can be removed with AC-coupling to reduce the input range for better signal fidelity. A configuration for fixed AC-coupling for the input channels is available as an option. The coupling front end is factory hardware configured and is not software switchable.

Possible transfer speeds in the PCIe slots:

PCI Express (PCIe) x8 (8 Lane) Gen-3 (Version 3.0): 4+ GB/s

PCI Express (PCIe) x8 (8 Lane) Gen-2 (Version 2.0): 3.1 GB/s

PCI Express (PCIe) x8 (8 Lane) Gen-1 (Version 1.0): 1.5 GB/s

PCI Express (PCIe) x4 (4 Lane) Gen-1 (Version 1.0): 1 GB/s

PCI Express (PCIe) x1 (1 Lane) Gen-1 (Version 1.0) 245 MS/s

Possible transfer speeds with Thunderbolt-3 Expansion:

[Gage Thunderbolt-3 version](#): (PCIe) x8 (8 Lane) Gen-3 (Version 3.0): 4+ GB/s

[OneStop Systems / Magma Expansion](#): PCIe) x8 (8 Lane) Gen-3 (Version 3.0): 4+ GB/s

Possible [eXpert On-Board Real-Time Application Options](#) (model-dependent):

- eXpert™ Daten Streaming Stream-to-Analysis
- eXpert DDC (Digital Down Conversion)
- eXpert™ Mittelwertbildung eXpert™
- eXpert FFT (Fast Fourier Transform)
- eXpert OCT (Optical Coherence Tomography)

Possible [Software Development Kits \(SDK's\)](#).

- CompuScope SDK für C/C# (WINDOWS 7/8/10 32Bit/64Bit und Linux)
- CompuScope SDK für MATLAB (WINDOWS 7/8/10 32 Bit/64Bit)
- CompuScope SDK für LabVIEW (WINDOWS 8/10 32Bit/64Bit)

[GageScope \(Oscilloscope-Software\)](#)

- GageScope: Lite Version
- GageScope: Standard Version
- GageScope: Professional Version

Combination possibilities with broadband Downconverter:

- [Broadband Downconverter solution from 100 kHz to 8 GHz](#)
- [Downconverter solution from 100 to 18 GHz](#)
- [Downconverter solution from 100 kHz to 8 GHz 100 kHz to 27 GHz](#)

Applications:

- RADAR Design and Test
- Signals Intelligence (SIGINT)
- Ultrasonic Non-Destructive Testing
- LIDAR Systems
- Communications
- Optical Coherence Tomography
- Spectroscopy
- High-Performance Imaging
- Time of Flight
- Life Sciences
- Particle Physics

Manufacturer page

<https://vitrek.com/gage/>

Data sheet



[2 channel high speed 16 bit digitizer with 250 MS/s \(3.3 MiB\)](#)



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If you have questions please don't hesitate to contact us any time.

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