Agilent M9202A PXI Express 12-bit Wideband IF Digitizer

Industries and Applications

- Aerospace and defense
- Wireless communications
- Radar and wideband signal capture

Product Description

The M9202A is a single-slot 3U PXIe Wideband IF Digitizer running at 2 GS/s, with up to 1 GHz instantaneous analog bandwidth and utilizing a large DDR3 memory. The M9202A features a Xilinx Virtex-6 FPGA that can implement different functionalities depending on which firmware option you choose. The BAS option provides basic digitizer functionality (signal capture, storing of data, transfer of data, etc), whereas the DDC option, in addition to basic digitizer functionality, implements a real-time digital down-conversion (DDC) algorithm in the 300 MHz to 700 MHz band, enabling improved analog performance and reducing data upload time. Thanks to its PXI Express backplane connection, the M9202A supports continuous data streaming to disk.

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Main Features and Benefits

Product features	Your benefit
2 GS/s sampling rate	Fastest 12-bit PXIe Digitizer
Up to 1 GHz bandwidth	Able to capture wide bandwidth signals
512 MB DDR3 memory	Large on-board memory
Real-time digital down-conversion (DDC) algorithm	Data decimation, analog performance improvement
On-board Xilinx Virtex-6 FPGA	On-board processing capability
Software support for easy integration	Reduced development time
PXIe backplane	Fastest digitized data upload, continuous data steaming

Chassis slot compatibility: PXIe Hybrid, PXIe

Specifications and Characteristics

Hardware	
Size	1 slot 3U
Resolution	12 bits
Sample rate	2 GS/s
Bandwidth	30 MHz *(nominal)* to 1 GHz
Streamed analog bandwidth	up to 50 MHz, or up to 100 MHz
Impedance	50 Ω *(nominal)*
Coupling	AC
Full scale (FS) range	+4 dBm (1 V pk-pk in 50 Ω)
Spurious-free dynamic range (SFDR)	60 dBc *(typical)* in basic digitizer mode 84 dBc *(typical)* after digital down-conversion (with DDC option)[1]
Effective number of bits (ENOB)	9 bits *(typical)*
Sample clock sources	Internal (with internal or external 100 MHz ref) or external

1. *Depends on DDC settings*

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Software

The M9202A, as all Agilent high-speed digitizers, includes the Agilent MD1 soft front panel (SFP) graphical interface. This simple software application can be used to control, verify the functionality and explore the capabilities of your high-speed digitizers.

The MD1 SFP contains two main windows, a control window and a display window. The control window, which may be set in either Oscilloscope mode or in Transient Recorder mode, and contains functions that allow you to manipulate the acquisition parameters of the card. The display window shows the full acquisition in the top window, and the lower window may be configured to show either a zoom on part of the waveform or the FFT of the acquired data. In addition, the Agilent MD1 SFP implements several different display settings and standard pre-configured measurements, like standard deviation, peak-peak/RMS value, overshoot, etc.

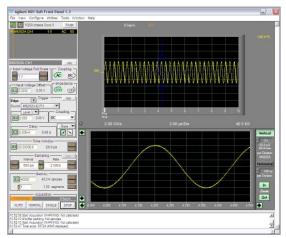|	
Software operating systems	Microsoft Windows XP (32-bit) Microsoft Windows Vista (32/64-bit), Microsoft Windows 7 (32/64-bit)
Standard compliant drivers	IVI-COM, IVI-C, LabVIEW, MATLAB
Supported application development environments (ADE)	VisualStudio (VB.NET, C#, C/C++), VEE, LabVIEW, LabWindows/CVI, MATLAB
Agilent IO Libraries	Includes: VISA Libraries, Agilent Connection Expert, IO Monitor

Figure 1. The Agilent MD1 soft front panel software has two main windows, the acquisition parameters to control the module and the acquired waveform display.
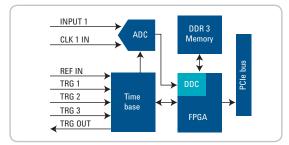

Figure 2. Simplified block diagram of the M9202A PXIe IF Digitizer.

Ordering Information

Typical Product Configuration

Model	Description
M9202A	PXIe IF Digitizer: 12-bit, 1 GHz
M9202A-C01[1]	Single channel
M9202A-F02[1]	Frequency range: 2 GS/s
M9202A-M05[1]	Standard memory: 512 MB
M9202A-BAS[1]	Basic Digitizer firmware

1. These options represent the typical product configuration for the M9202A as a standalone digitizer. For other options and a complete product configuration description, please refer to the data sheet.

Related products

M9302A	PXI Local Oscillator: 3 GHz to 10 GHz
M9351A	PXI Downconverter: 50 MHz to 2.9 GHz
M9361A	PXI Downconverter: 2.75 GHz to 26.5 GHz
M9362A-D01	PXIe Microwave Quad Downconverter: 10 MHz to 26.5 GHz
M9360A	PXI Attenuator/Preselector: 100 kHz to 26.5 GHz
M9392A	PXI Vector Signal Analyzer
M9211A	PXI-H UWB IF Digitizer: 10-bit, 4 GS/s, 3 GHz
M9018A	18-slot PXIe Chassis
M9021A	PCIe Cable Interface
89601	VSA software

Accessories

Software and product information on CD *(included)*

Cables *(included)*

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