

# Keysight Technologies

## M9362AD01

### PXIe Quad Downconverter

10 MHz to 50 GHz

Data Sheet



## Overview

The Keysight M9362AD01 is a PXIe 3-slot, 4-channel, coherent microwave downconverter with frequency coverage from 10 MHz to 26.5, 40 or 50 GHz and 1.5 GHz of instantaneous bandwidth. The M9362AD01 is well suited for wideband signal capture where multiple channels are required for applications such as multi-channel coherent signal analysis, radar, SIGNIT, ELINT, MASINT, EW signal capture and analysis, and RF and microwave recording and analysis.

### Applications

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

### Features

- Frequency range: 10 MHz to 50 GHz
- 1.5 GHz bandwidth per channel
- Four-channel coherent downconversion
- Chassis slot compatibility: PXIe hybrid, PXIe
- PXIe form factor

### Customer values

- Wide bandwidth, multi-channel downconversion in small form factor
- Synchronize multiple M9362AD01 downconverters for greater than 4 coherent channels
- Conforms to Modular Open Systems Approach (MOSA)

# Hardware Platform

## Compliance

The M9362AD01 is PXI compliant using either a PXIe or PXIe hybrid slot. Designed to benefit from fast data interfaces, the product can be integrated with other test and automation modules in PXIe or PXIe hybrid chassis slots. The PXI format offers high performance in a small, rugged package. It is an ideal deployment platform for many automated test systems. A wide array of complementary PXI products are currently available. Products include multimeters, waveform generators, local oscillators, digitizers, and switch multiplexers.

# Software Platform

## IO libraries

Keysight IO libraries suite 17 is the next generation of instrument control. An enhanced chassis view makes it simple to connect to and control PXI and AXIe chassis and see the details of the cards in each slot. From the chassis view, it is easy to start soft front panels, make trigger reservations, customize the chassis numbering in multi-chassis systems, and delete manually-added chassis. There is also support for the PXI backplane resource in Keysight VISA and conformance to the latest PXI 2012 specifications. Included in PXI 2012 is better interoperability between vendor's PXI Resource Managers.

## Calibration intervals

A functional certificate is supplied with the M9362AD01. No annual calibration is required.

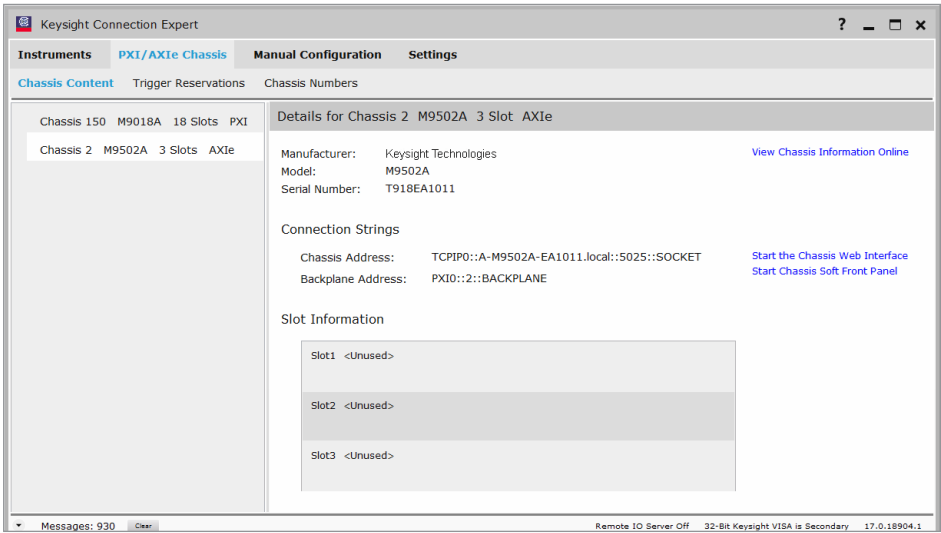


Figure 1. Keysight IO libraries suite 17.

## Definitions for Characteristics

Characteristics describe product performance that is useful in the application of the product, but that is not covered by the product warranty. Characteristics are often referred to as typical or nominal values. All characteristics in this data sheet are typical unless otherwise noted.

- Typical describes characteristic performance, which 80% of instruments are expected to meet when operated over a 20 to 30 °C temperature range. Typical performance is not warranted.
- Nominal describes representative performance that is useful in the application of the product when operated over a 20 to 30 °C temperature range. Nominal performance is not warranted.

Note: All graphs contain measured data from several units at room temperature unless otherwise noted.

## General Characteristics

All characteristics are typical unless otherwise noted.

Option F26			Option F40		Option F50	
Input and output ports						
Connector ports	Frequency range	Connectors	Frequency range	Connectors	Frequency range	Connectors
RF port	0.01 to 26.5 GHz	3.5 mm (f)	0.01 to 40 GHz	1.85 mm (f)	0.01 to 50 GHz	1.85 mm (f)
LO port	0.01 to 26.5 GHz	3.5 mm (f)	0.01 to 40 GHz	1.85 mm (f)	0.01 to 26.5 GHz	1.85 mm (f)
IF port	0.01 to 1.5 GHz	SMA (f)	0.01 to 1.5 GHz	SMA (f)	0.01 to 1.5 GHz	SMA (f)
Input and output power levels						
Frequency range	0.01 to 26.5 GHz		0.01 to 40 GHz		0.01 to 26.5 GHz	26.5 to 50 GHz
Input power damage						
RF port	+18 dBm		+10 dBm		+10 dBm	
LO port	+5 dBm		+16 dBm		+4 dBm	--
Optimum power levels						
RF power	-15 dBm		-15 dBm		-15 dBm	-20 dBm
LO power	0 dBm		+10 dBm		0 dBm	--
RF compression						
Ports A-D @ 0.1 dB	-13 dBm		-12 dBm		-10 dBm	-15 dBm
Ports A-D @ 1.0 dB	-7 dBm		-5 dBm		-5 dBm	-10 dBm

## General Characteristics (continued)

All characteristics are typical unless otherwise noted.

	Option F26		Option F40		Option F50	
Conversion efficiency						
IF output @ 10 MHz, RF input power set to 0.1 dB compression point						
Frequency range	0.01 to 26.5 GHz		0.01 to 40 GHz		0.01 to 26.5 GHz	26.5 to 50 GHz
Conversion efficiency	6 to -8 dB		1 to -9 dB		1 to -7 dB	-10 to -25 dB
Output power	-4 to -18 dBm		-10 to -22 dBm		-10 to -17 dBm	-25 to -40 dBm
Additional characteristics						
Frequency range	0.01 to 26.5 GHz		0.01 to 40 GHz		0.01 to 26.5 GHz	26.5 to 50 GHz
Noise figure	24 dB		--		--	--
Channel to channel isolation	< -80 dB		< -65 dB		< -65 dB	< -55 dB
LO to IF leakage	< -15 dB		< -10 dB		< -10 dB	
RF input port match						
Frequency range	0.01 to 10 GHz	10 to 26.5 GHz	0.01 to 26.5 GHz	26.5 to 40 GHz	0.01 to 26.5 GHz	26.5 to 50 GHz
Ports A-D	-10 dB	-5 dB	-8 dB	-5 dB	-8 dB	-5 dB

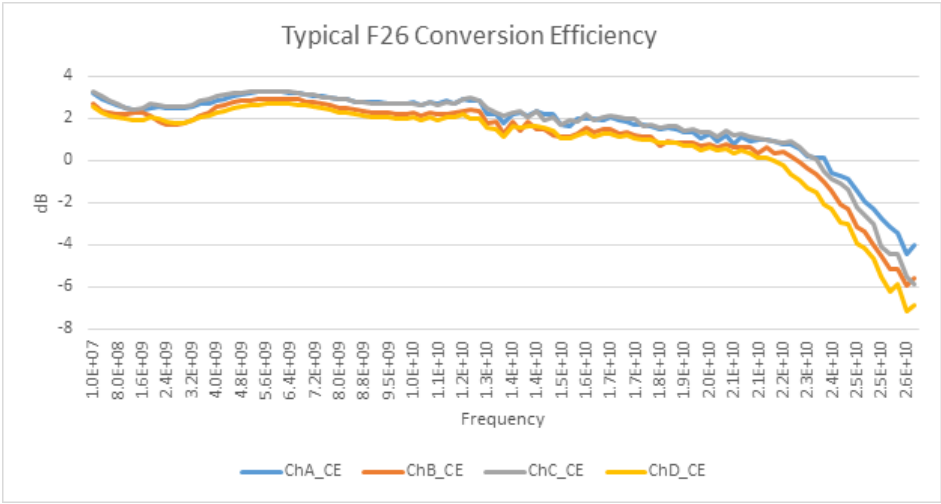


Figure 2. Typical conversion efficiency plot for option F26 (up to 26.5 GHz).

## System Requirements

Operating systems	Windows XP, Service Pack 3 or later (32-bit) <sup>1</sup>	Windows 7 (32-bit and 64-bit), Starter, Home Basic, Home Premium, Professional, Ultimate, Enterprise
Processor speed	600 MHz or higher required, 800 MHz recommended	1 GHz 32-bit (x86), 1 GHz 64-bit (x64) no support for Itanium 64
Available memory	256 MB minimum 1 GB or greater recommended	1 GB minimum <sup>2</sup>
Available disk space	1.5 GB available hard disk space includes: <ul style="list-style-type: none"><li>– 1 GB available for Microsoft.NET framework 3.5 SPI <sup>2</sup></li><li>– 100 MB for Keysight IO libraries suite</li></ul>	
Video	Super VGA (800 x 600) 256 colors or more	Super VGA (800 x 600) 256 colors or more Support for Direct X9 graphics with 128 MB graphics memory recommended
Browser	Microsoft Internet Explorer 6.0 or greater	Microsoft Internet Explorer 7 or greater

1. Because of the installation procedure, less memory may be required for operation than for installation.

2. .NET Framework Runtime Components are installed by default with Windows Vista and Windows 7. Therefore, you may not need this amount of available disk space.

Ordering Information

Software information

Model	Description
Supported operating systems	Microsoft Windows 7 (32/64-bit) Windows XP, SP 3 or later (32-bit)
Supported application development environments (ADE)	Visual Studio (VB.NET, C#, C/C++), VEE, LabVIEW, LabWindows/CVI, MATLAB
Keysight IO libraries	Includes: VISA Libraries, Keysight Connection Expert, IO Monitor

Hardware information

Model	Description
M9362AD01- F26	PXIe quad downconverter - 10 MHz to 26.5 GHz
M9362AD01- F40	PXIe quad downconverter - 10 MHz to 40 GHz
M9362AD01- F50	PXIe quad downconverter - 10 MHz to 50 GHz

Related products

Model	Description
M9018A	18-slot PXIe chassis
M9037A	PXIe embedded controller
M9202A	PXI Express 12-bit wideband IF digitizer
M9302A	PXI local oscillator 3 to 10 GHz
M9352A	PXI hybrid amplifier/attenuator
89601B	89600 VSA software

Block Diagram

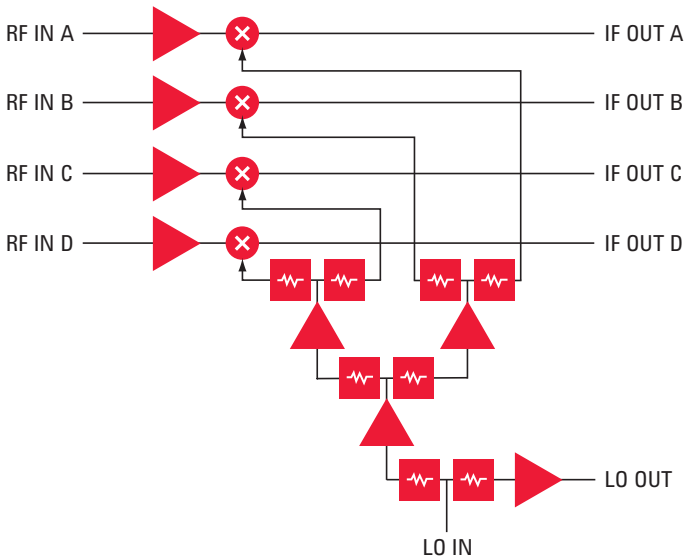


Figure 3. M9362AD01-F26 block diagram.

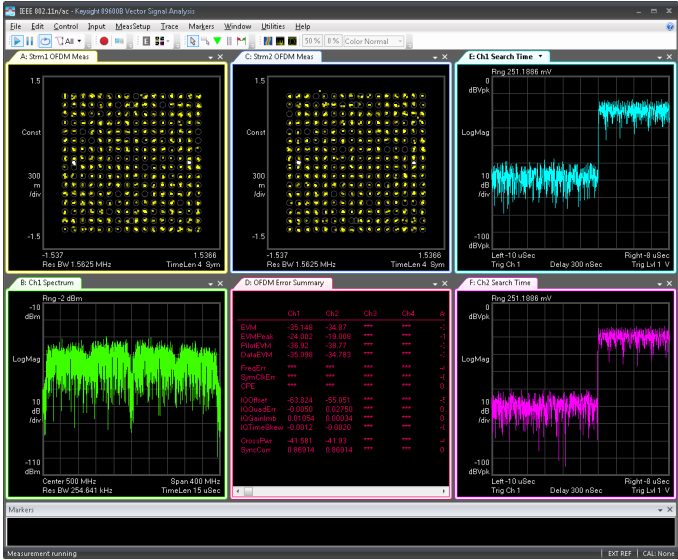


Figure 4. Example of a 2-channel, 400 MHz analysis.