Keysight Infiniium EXR-Series Oscilloscopes

CATALOG

KEYSIGHT

Table of Contents

Introduction

Meet the Infiniium EXR-Series oscilloscopes

With eight models ranging in performance from 500 MHz to 6 GHz, four or eight channels, and dozens of hardware and software options, the Infiniium EXR-Series is powerful, easy to own, and intuitive to use.

Each model incorporates a 10-bit ADC with a sample rate of 16 GSa/s available on all channels simultaneously. With up to 16 bits of resolution, noise as low as 43 µV, and up to 9.0 bits system effective number of bits (ENOB), the EXR-Series ensures that you see the most accurate representation of your signal.

But we didn't stop there

When designing a powerful oscilloscope, we wanted to make it easy to use. This is why with the EXR-Series, we made maximizing performance automatic and always on, requiring no guesswork from you. You don't need special modes as you do with other oscilloscopes. We designed it to be more than an oscilloscope, offering seven-in-one instrument integration, including a counter, digital voltmeter, function generator, and frequency response analyzer.

Ease of use is also why we developed Fault Hunter — the world's first application that enables you to automatically find signal anomalies and errors with a single click. It's also why we developed Infiniium Offline, allowing you to free up the oscilloscope and analyze, measure, and document your waveforms from the comfort of your desk or home office.

This catalog will introduce you to all of these capabilities and much more, giving you the chance to see if an Infiniium EXR-Series oscilloscope is a good fit for your needs and applications.

Infiniium EXR-Series overview

Analog channels	4 or 8, upgradeable
Bandwidth	500 MHz to 6 GHz, upgradeable
Sample rate	16 GSa/s on every channel
Memory	100 Mpts, upgradeable to 400 Mpts or 1.6 Gpts flexible memory
Resolution	10 Bits, up to 16 with high resolution
ENOB	As high as 9.0
Timebase accuracy	8 parts per billion
Intrinsic jitter	As low as 118 fs
Noise (1 mV/div)	As low as 43 µV
Digital channels	16, dedicated input, upgradeable
Screen display	15.6" touch, full HD, dual screen support

Applications

While Infiniium EXR-Series oscilloscopes apply to various industries and applications because of their general-purpose capabilities, we used four key applications to help define these next-generation oscilloscopes.

- Power Integrity Testing
- Switch-Mode Power Testing
- Serial Bus Testing
- General-Purpose Debug

D9110POWA Power Integrity application showing the user effects of power supply induced jitter in their design

Power integrity testing

Power integrity is a broad term used in the electronics industry. It refers to the analysis of power conversion and delivery from the source to the load in a system. Using the right set of tools to test power integrity is critical for ensuring the success of your new designs.

The Infiniium EXR-Series oscilloscope includes applications and options designed to study power integrity. Here is a summary of the hardware, software, probes, and accessories you should consider for your EXR-Series oscilloscope when performing power integrity testing.

Suggested oscilloscope and hardware options

EXR208A	2 GHz bandwidth, 8-channel oscilloscope	**Learn More**
EXR2WAV	50 MHz arbitrary waveform generator	**Learn More**
EXR2MSO	16 digital logic channels	**Learn More**

Suggested software options

D9110POWA	Power Integrity Analysis Software	**Learn More**
D9110PWRA	Power Supply Test Software	**Learn More**
D9110SCNA	InfiniiScan Event Identification Software	**Learn More**
D9110LSSP	Low-Speed Protocol Bundle	**Learn More**

Suggested probe options

N7020A	2 GHz Power Rail Probe	**Learn More**
N2820 / N2821A	High Sensitivity AC/DC Current Probe	**Learn More**

EXR258A running measurements on the switching device in a power supply

Switch-mode power testing

Conveniently sized switch-mode power supplies (SMPS) have surpassed linear power supplies in efficiency and functionality. The Infiniium EXR-Series oscilloscope's power analysis software provides quick and easy automatic testing of inputs, outputs, efficiency, switching devices, and frequency response for your SMPS.

Here is a summary of the hardware, software, probes, and accessories you should consider for your Infiniium EXR-Series oscilloscope when performing power-related measurements.

Suggested oscilloscope and hardware options

EXR058A	500 MHz bandwidth, 8-channel oscilloscope	Learn More
EXR2WAV	50 MHz arbitrary waveform generator	Learn More

Suggested software options

D9110PWRA	Power Supply Test Software	Learn More
D9110LSSP	Low Speed Protocol Bundle	Learn More

Suggested probe options

U1880A	Power measurement deskew fixture	Learn More
N2790A	50:1/500:1, 100 MHz, high-voltage differential probe	Learn More
10076C	100:1, 3.7 kV-peak, 500 MHz high-voltage probe	Learn More
N7026A	150 MHz high-sensitivity current probe	Learn More

Suggested accessories options

PicoTest J2120A	Injector
PicoTest J2101A	Transformer

D9110AUTP Automotive decode/trigger letting a user set up a CAN and LIN decode simultaneously to look at a serial bus gateway

Serial bus testing

Infiniium EXR-Series oscilloscopes have protocol-specific software options that can trigger on and decode serial buses. Ensure that your electronic devices meet today's standards by testing and debugging with an EXR-Series oscilloscope.

Here is a summary of the hardware, software, probes, and accessories you should consider for your EXR-Series when performing serial bus testing.

Suggested oscilloscope and hardware options

EXR108A	1 GHz bandwidth, 8-channel oscilloscope	**Learn More**
EXR2WAV	50 MHz arbitrary waveform generator	**Learn More**
EXR2MSO	16 digital logic channels	**Learn More**
EXR2MEM	Upgrade 100Mpts/ch standard acquisition memory to 200 Mpts/ch or 400 Mpts/ch, or combined flexible memory (up to 1.6 Gpts/ch memory, see data sheet)	**Learn More**

Suggested software options

D9110EMBP	1 GHz bandwidth, 8-channel oscilloscope	**Learn More**
D9110AUTP	CAN / CAN FD, LIN, SENT, FlexRay	**Learn More**
D9120AUTP	100 and 1000BASE-T1 Automotive Ethernet	**Learn More**
D9110MILP	MIL-STD 1553, ARINC 429, SpaceWire	**Learn More**
D9110MILP	RFFE, I3C, legacy I2C, SPMI	**Learn More**
D9110LSSP	I2C, SPI, Quad SPI, RS-232/UART, JTAG, I2S, SVID, MDIO, user-definable Manchester	**Learn More**
D9110MCDP	MIPI C-PHY and D-PHY	**Learn More**
D9111BDLP	D9110LSSP + D9110EMBP + D9110AUTP + D9110MILP + D9110MPLP	**Learn More**

D9110SCNA InfiniiScan using the Zone trigger mode to isolate a specific waveform

General-purpose debug

Infiniium EXR-Series oscilloscopes have a wide variety of features and options to assist you in performing general-purpose debugging. Examples include the following:

Fault Hunter (Standard)

Identify errors and signal anomalies in one click using the brand-new Fault Hunter software. Fault Hunter is an innovative, expert application for inspecting digital systems and runs with a single button press on the front panel of your EXR-Series oscilloscope. It automatically evaluates your signal's characteristics against user-definable criteria, quickly finding and saving errors for your review. It's flexible; you can define the test duration from 60 seconds up to 48 hours. Set up your device under test on a Friday afternoon and return Monday morning with a full test report to review, with billions of tests completed thanks to our always-on fast triggering speeds of > 200,000 wfm/s.

PathWave Infiniium Offline (D9010BSEO)

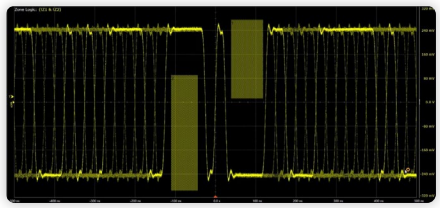
Infiniium Offline is the same powerful software provided on your Infiniium EXR-Series oscilloscope, without the oscilloscope hardware. If you wish to control an oscilloscope remotely from your desk or home office, the hosted mode can connect and control a single EXR-Series or many EXR-Series with the MultiScope application. When access to the oscilloscope is limited, you can capture waveforms on your scope, save them to a file, and recall the waveforms into Infiniium Offline from any PC. Now you can view, analyze, share, and document scope measurements anywhere your PC goes.

Learn more

InfiniiScan (D9110SCNA)

This software allows you to create a three-stage trigger to identify signal integrity issues in your electronic designs that hardware triggering cannot find. This innovative software scans through thousands of acquired waveforms per second to help you isolate signal anomalies, saving you precious troubleshooting time. Trigger by drawing on-screen regions for a signal to hit or miss, based on measured parameters.

Learn more



Key Specifications & Features

The Infiniium EXR-Series oscilloscopes are powerful, easy to own, and intuitive to use. Superior signal integrity ensures that you see the most accurate representation of your signal: high ENOB, high resolution, low noise, and low intrinsic jitter. The EXR-Series leverages a 100M+ gate CMOS ASIC from our industry-leading 110 GHz UXR-Series oscilloscope, which acts as an “oscilloscope on a chip.” Many core oscilloscope features are done in hardware, yielding performance improvements of 100x or more over previous generations. You get faster eye plotting, measurements, update rate, and averaging.

More than just an oscilloscope, the EXR-Series minimizes the amount of bench space used and makes testing easier with seven-in-one instrument integration. Maximized performance is automatic, always-on, and requires no guesswork from you. You need no special modes to access the oscilloscope’s specifications. You can also see more information with history mode and segmented memory.

Specifications and features include the following:

- 500 MHz to 6 GHz bandwidths, upgradeable
- 4- or 8-channel models, upgradeable
- 16 GSa/s sample rate on every channel
- 15.6-inch fully HD touch-screen display (1920 x 1080 resolution) with extended screen support
- upgradeable channel count, MSO, memory, and more

D9110JITA EZJit Complete showing an eye diagram and a total jitter histogram

Keysight's InfiniiVision + Infiniium EXR-Series Oscilloscopes

With eight models ranging in performance from 500 MHz to 6 GHz, with four or eight analog channels and dozens of hardware and software options, your Infiniium EXR-Series is powerful, easy to own, and intuitive to use.

DSOX1204G is a fantastic general purpose partner to the Infiniium EXR-Series for basic measurements and debugging

Powerful

- Superior signal integrity means you see an accurate representation of your signal.
- No matter what part of the power ecosystem you are testing, the Infiniium EXR-Series has the capabilities, features, software, and probing you need.
- Dozens of baseline, protocol decode / triggering, and compliance applications are available.

Easy to own

- Reduce bench clutter with a seven-in-one instrument integration.
- Optimize your lab time with Infiniium Offline software.
- Plan for the future with full upgradeability.

Intuitive to use

- It's always fast, with no special modes required.
- The new Fault Hunter application provides one-click debugging.
- Quick analysis, setup wizards, and more save you time.

Products	Bandwidth	Max. Memory Depth	Max. Sampling Rate	Analog Channels	Display Size	Operating System	
1000 X-Series	50 - 200 MHz	Up to 2 Mpts memory	1 - 2 GSa/s	2 or 4	7"	Embedded OS	Learn More
3000G X-Series	100 MHz - 1 GHz	Up to 4 Mpts memory	2.5 - 5 GSa/s	2 or 4	8.5" touchscreen	Embedded OS	Learn More
4000 X-Series	200 MHz - 1.5 GHz	Up to 4 Mpts memory	2.5 - 5 GSa/s	2 or 4	12.1" touchscreen	Embedded OS	Learn More
6000 X-Series	1 - 6 GHz	Up to 4 Mpts memory	10 - 20 GSa/s	2 or 4	12.1" touchscreen	Embedded OS	Learn More
Infiniium EXR-Series	500 MHz - 6 GHz	1.6 Gpts flexible memory	16 GSa/s	4 or 8	15.6" Full HD touchscreen	Windows 10	Learn More

The Infiniium EXR-Series is powerful, easy to own, and intuitive to use

Keysight enables innovators to push the boundaries of engineering by quickly solving design, emulation, and test challenges to create the best product experiences. Start your innovation journey at www.keysight.com.