

D9010SCNA/D9020SCNA

InfiniiScan Event Identification Software for
Infiniium Oscilloscopes

Introduction

Keysight's InfiniiScan software allows you to use an oscilloscope to identify signal integrity issues that hardware triggering is unable to find in your electronic designs. This innovative software scans through thousands of acquired waveforms per second to help you isolate signal anomalies, saving you precious troubleshooting time.



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Product Overview

Today's digital signals are increasingly complex. Designers of serial links and parallel buses want to quickly identify signal anomalies in their designs. Engineers have traditionally relied on hardware triggering and deep memory to capture such elusive events. However, these classic methods fall short in some key areas.

InfiniiScan uses software to overcome the limitations of hardware triggering. InfiniiScan inspects individual waveforms and lets you know where the anomalies are. InfiniiScan moves an oscilloscope a few steps closer to the ideal of a "Find Problem" button. InfiniiScan can also isolate events as narrow as 35 ps – well beyond the limitations of hardware-based approaches.

D9010SCNA is compatible with MXR-Series, EXR-Series, S-Series, and 9000-Series Infiniium oscilloscopes. D9020SCNA is for the 90000, V-Series, Z-Series, and UXR-Series Infiniium oscilloscopes.

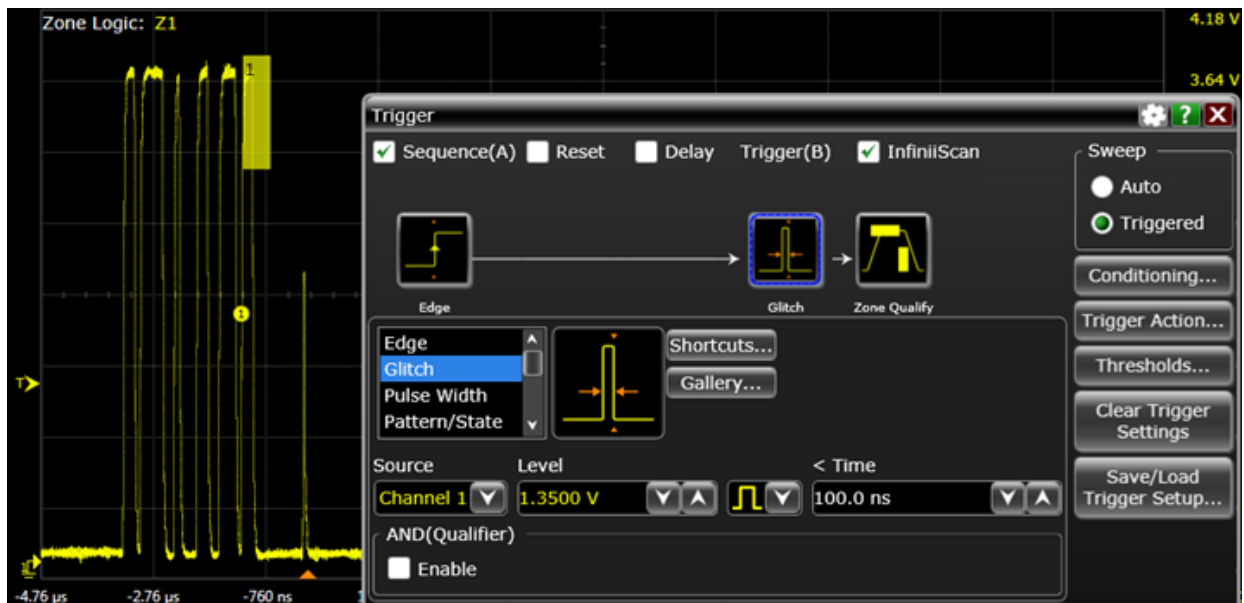


Figure 1. A hardware two-stage trigger, with a third InfiniiScan stage, helps immediately isolate a glitch following a specific bit pattern.

Keysight InfiniiScan consists of two key components: InfiniiScan software finders and measurement limit testing. An added benefit is the ability to add InfiniiScan as an extra trigger stage, allowing up to three-stage triggering on most Infiniium models.

Software Finders

InfiniiScan offers five special software finder modes, letting you easily identify issues without complex hardware triggers. Each one is explained below.

Measurement finder

The InfiniiScan Measurement mode is a two-stage trigger that uses a hardware trigger, and then lets you qualify that trigger when a measured value falls inside or outside a particular range of values. It lets you set up triggers that are not available in the oscilloscope's hardware. For example, you could use this mode to create a "duty cycle < 30%, > 70%" trigger.

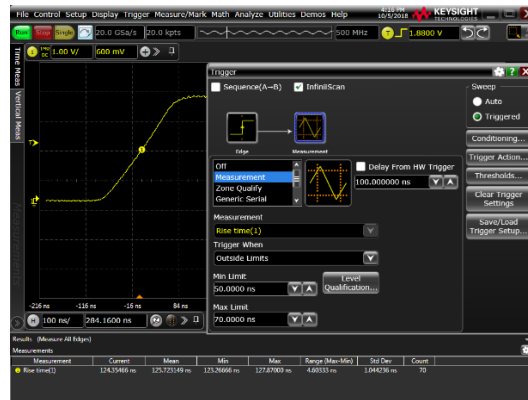


Figure 2. InfiniiScan measurement finder triggers on all edges, then only displays signals with rise times less than 50 or greater than 70 ns

Zone qualified finder

InfiniiScan's zone qualification allows you to trigger on anything you see appear on the screen. Add up to eight rectangles; each one is assigned to an analog channel, given a "must intersect" or "must not intersect" mode, with user-definable Boolean logic of AND or OR. This gives you the utmost control over triggering on specific bit patterns or waveform shapes.



Figure 3. InfiniiScan measurement finder triggers on all edges, then only displays signals with rise times less than 50 or greater than 70 ns

Generic serial finder

You can have the oscilloscope capture a waveform when a specified pattern of 1s and 0s is found. The generic serial mode uses a user-defined clock recovery to determine where a 1 or 0 is located. If you are working with a serial protocol that is supported with trigger and decode by Infiniium, using that trigger method will be preferable to this generic serial finder with InfiniiScan.

Runt finder

InfiniScan's runt finder allows you to identify under-sized signal pulses to resolutions that are beyond the capability of hardware approaches by using hysteresis and threshold levels you specify. Infiniium oscilloscopes have a hardware-based runt trigger that will find events more readily but have more limitations than this software-based approach.

Non-monotonic edge finder

The non-monotonic edge finder is a unique capability of InfiniiScan. It allows you to identify non-monotonic edges caused by signal reflections. This feature is helpful for identifying poor signal terminations. There is no method for finding such an event with hardware triggering.

Measurement Limit Testing

InfiniiScan measurement limit testing counts violations against specified measurement value conditions. This feature lets you set up to five different conditions over all channels. For example, you can monitor the valid rise time window for channel 1 while monitoring the valid signal period window on channel 3. The navigation capability of the measurement limit test will move the display to the exact location of any and all anomalous events that have been identified on every waveform.

- Choose up to five measurements
- Define unacceptable ranges (in range, out of range)
- Navigate to anomalous events
- Actions on failure: stop, print, e-mail, screenshot, save setup, save waveform, measurement

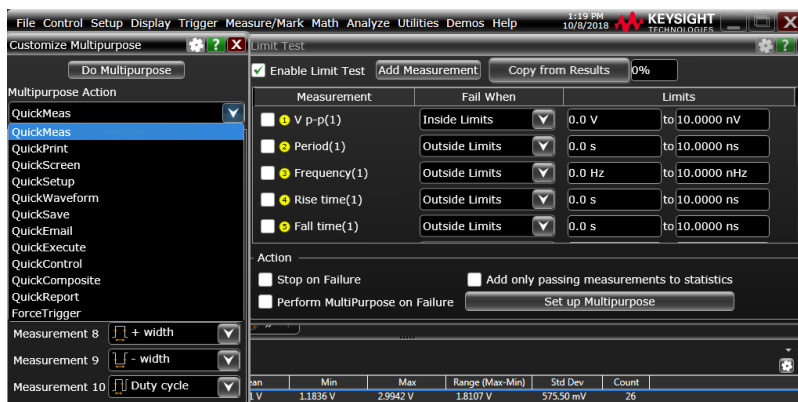


Figure 4. InfiniiScan measurement limit testing window, with multipurpose action options shown within the "Set up Multipurpose" dialog

Ordering Information

Required hardware

Model	Compatibility
D9010SCNA	Infiniium 9000, S-Series, EXR-Series, MXR-Series
D9020SCNA	Infiniium 90000, V-Series, Z-Series, UXR-Series

Flexible software licenses

Keysight offers a variety of flexible licensing options to fit your needs and budget. Choose your license term and license type.

License terms

Perpetual – Perpetual licenses can be used indefinitely.

Subscription – Subscription licenses can be used through the term of the license only (6, 12, 24, or 36 months).

License types

Node-locked – License can be used on one specified instrument/computer.

Transportable – License can be used on one instrument/computer at a time but may be transferred to another using Keysight Software Manager (internet connection required).

USB Portable – License can be used on one instrument/computer at a time but may be transferred to another using a certified USB dongle (available for additional purchase with Keysight part number E8900-D10).

Floating (single site) – Networked instruments/computers can access a license from a server one at a time. Multiple licenses can be purchased for concurrent usage.

Selecting your license

Step 1. Choose your software product (e.g. D9020ASIA)

Step 2. Choose your license term: perpetual or time-based.

Step 3. Choose your license type: node-locked, transportable, USB portable, or floating.

To ensure you continue to receive all the latest software updates and enhancements on your MXR and UXR-Series scopes, make sure your core software subscription is current.

Example

If you selected:	Your quote will look like this:	
D9020ASIA node-locked perpetual license	Part Number D9020ASIA R-B5P-001-A	Description Advanced Signal Integrity Software (EQ, InfiniiSimAdv, Crosstalk) Node-locked perpetual license
D9020ASIA transportable subscription 6- month license	Part Number D9020ASIA R-B7P-004-F	Description Advanced Signal Integrity Software (EQ, InfiniiSimAdv, Crosstalk) 6-months, transportable subscription license

To configure your product and request a quote:

<http://www.keysight.com/find/software>

Contact your Keysight representative or authorized partner for more information or to place an order:

www.keysight.com/find/contactus

Related Literature

Type	Description / URL
Datasheet	Infiniium MXR B-Series (500 MHz to 6 GHz real-time oscilloscope)
Datasheet	Infiniium UXR B-Series (5 GHz to 110 GHz real-time oscilloscope)



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.

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