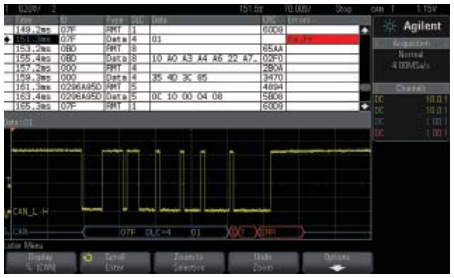
Quick Fact Sheet

# InfiniiVision X-Series Oscilloscope Measurement Options

***Agilent offers a variety of application-specific measurement options and PC-based software packages for the InfiniiVision 2000, 3000, and 4000 X-Series oscilloscopes that can accelerate debugging and characterizing your designs.***

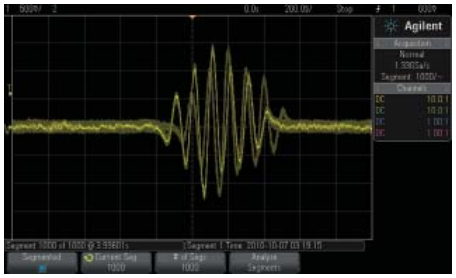


## Serial bus options

With one or more of the serial bus options on your Agilent InfiniiVision X-Series oscilloscope, your scope will automatically decode and trigger on serial bus traffic based on the specific protocol. The following are supported:

- $I^2C$/SPI **(DSOX3EMBD, DSOX4EMBD)**
- RS232/UART **(DSOX3COMP, DSOX4COMP)**
- Low-/full-speed USB **(DSOX4USBFL)**
- Hi-speed USB **(DSOX4USBH)**
- USB 2.0 signal quality test **(DSOX4USBSQ)**
- CAN/LIN **(DSOX3AUTO, DSOX4AUTO)**
- FlexRay **(DSOX3FLEX, DSOX4FLEX)**
- $I^2S$ **(DSOX3AUDIO, DSOX4AUDIO)**
- Mil-STD 1553/ARINC 429 **(DSOX3AERO, DSOX4AERO)**

With the industry's only hardware-based decoding, the waveforms and decoding are virtually real time. This insures that infrequent serial communication errors are quickly captured. Up to two serial busses can be decoded simultaneously with the industry's only time-interleaved "lister" display.



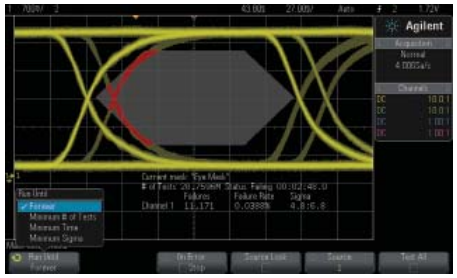
## Segmented memory option

**DSOX2SGM, DSOX3SGM, or standard on 4000 X-Series**

When capturing low-duty cycle pulses or data bursts, segmented memory acquisition can be used to **optimize acquisition memory** by selectively capturing and storing important segments of signals without consuming memory on unimportant signal idle/dead-time.

Record up to 1000 occurrences of a trigger event and then play them back to easily spot anomalies for further examination. Segmented memory acquisition is ideal for applications including:

- Pulsed laser
- Radar bursts
- High-energy physics experiments
- Serial bus packets



## Mask testing option

**DSOX2MASK, DSOX3MASK, or DSOX4MASK**

Whether performing pass/fail tests to specified standards in the manufacturing test environment, or testing for infrequent signal anomalies in the R&D debugging environment, the mask test option on Agilent's InfiniiVision X-Series oscilloscopes can be a valuable productivity tool. With the oscilloscope industry's only hardware-based mask testing, up to 270,000 waveforms can be tested each second on 3000 and 4000 X-Series models, and up to 50,000 tests per second can be performed on the 2000 X-Series models.

## MSO option

**DSOX2MSO, DSOX3MSO, or DSOX4MSO**

A mixed signal oscilloscope (MSO) is a synergistic combination of an oscilloscope with 2 or 4 channels of analog acquisition along with an easy-to-use logic timing analyzer with 8 or 16 channels of digital acquisition. Not only does an MSO provide additional channels of acquisition, it also enables additional parallel pattern and serial bus triggering possibilities to help you debug your digital and mixed-signal designs faster.

Although you can initially purchase an InfiniiVision X-Series oscilloscope as a pre-configured MSO model, you can also upgrade your existing DSO to add MSO acquisition and display capabilities.

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## InfiniiVision X-Series Oscilloscope Measurement Options

### Power measurements option (3000 and 4000 X-Series models only)

**DSOX3PWR or DSOX4PWR**
Provides a full suite of power measurements and analysis that runs in the oscilloscope.

Measurements include:
- Current harmonics
- Efficiency
- Inrush current
- Modulation
- Power quality
- Switching loss
- Transient response
- Turn on/Turn off
- Output ripple
- Power supply rejection ratio (PSRR)
- Slew rate

Also included, is a license for the U1881A PC-based power analysis software package that provides additional offline power measurements and report generation. For more information, refer to the Power Measurements data sheet (5990-8869EN).

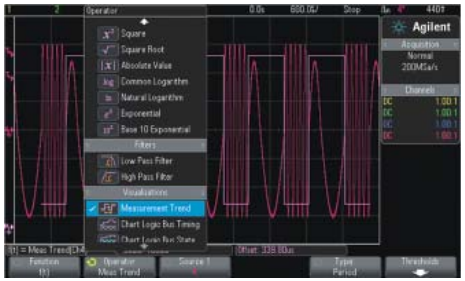
### WaveGen Function/Arbitrary Waveform Generator option (AWG available in 3000 and 4000 X-Series models only)

**DSOX2WAVEGEN, DSOX3WAVEGEN, or DSOX4WAVEGEN2**
When you need to make stimulus-response measurements, the WaveGen option adds a built-in 20 MHz function generator. Wave shapes available on the InfiniiVision 2000 X-Series oscilloscope includes sine, square, pulse, ramp, noise, and DC.

The WaveGen option on the InfiniiVision 3000 and 4000 X-Series oscilloscope includes additional wave shapes including sinc, exponential rise/fall, cardiac, Gaussian pulse, and arbitrary.

### Integrated digital voltmeter option

**DSOXDVM**
When making measurements, the DSOXDVM option provides a 3 digit voltmeter (DVM) and 5 digit frequency counter inside the oscilloscope. The voltmeter operates through the same probes as the oscilloscope channels, however, the measurements are de-coupled from the oscilloscope triggering system so that both the DVM and triggered oscilloscope measurements can be made with the same connection. The voltmeter results are always displayed, keeping these quick characterization measurements at your fingertips.



### Advanced math analysis

**DSOX3ADVMATH or standard on 4000 X-Series**
In addition to the standard waveform math functions (add,subtract, multiply, integrate, differentiate, square root, FFT), the optional DSO3ADVMATH application provides additional advanced waveform transforms, filters, and visualization tools including:

**Transforms**
- Ax + B
- Square (x2)
- Absolute value (|x|)
- Common logarithm (log)
- Natural logarithm (ln)
- Exponential (eX)
- Base 10 exponential (10X)

**Filters**
- Low pass filter (4th order Bessel-Thompson filter with selectable –3 dB frequency)
- High pass filter (single-pole high pass filter with selectable –3 dB frequency)

**Visualizations Tools**
- Magnify
- Measurement trend
- Chart logic bus timing
- Chart logic bus state


5990-6676EN

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