

# InfiniiVision Oscilloscope Application Bundles

Save 25% off list price when purchased as a bundle



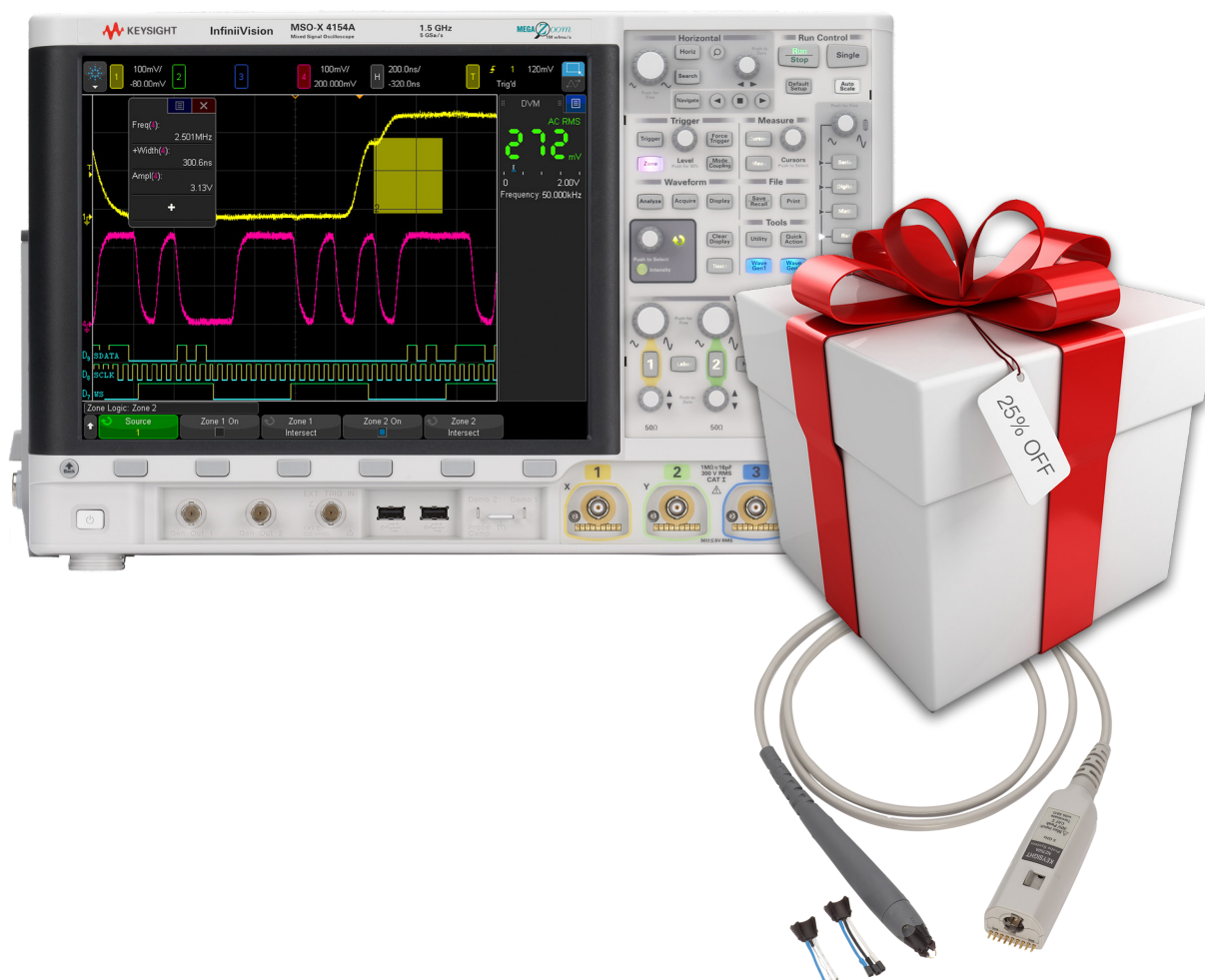
## Application Bundles Overview

Deciding which probes, which hardware upgrades, and which software options to purchase along with your InfiniiVision X-Series oscilloscope for a specific measurement application can be a daunting task. Keysight has made it easy for you by pre-configuring multiple products under single bundled model numbers. Keysight now offers six different bundles of products optimized for automotive test and debug, power supply characterization and testing, and high-speed signal integrity / jitter testing. Choose the one that best fits your measurement application and budget and save 25% off the list price relative to purchasing the same items individually.



Save 25% off the list price

- Automotive *Better* Bundle (DSOX3054AUT)
- Automotive *Best* Bundle (MSOX4154AUT)
- Power *Better* Bundle (DSOX3054PWR)
- Power *Best* Bundle (MSOX4154PWR)
- High-Speed / Jitter *Better* Bundle (DSOX6004JIT)
- High-Speed / Jitter *Best* Bundle (MSOX6004JIT)



## InfiniiVision Automotive Bundles

The harsh environments that automotive electronics must operate in can induce unwanted transients and critical serial bus control errors. With the industry's fastest waveform update rates and hardware-based serial bus decoding, Keysight's InfiniiVision oscilloscopes can uncover automotive glitches and serial bus errors faster than other oscilloscopes.

### Automotive Better Bundle

The Automotive *Better* Bundle (DSOX3054AUT) is built around the 4-channel, 500-MHz bandwidth InfiniiVision 3000T X-Series digital storage oscilloscope (DSO) with a built-in function / arbitrary waveform generator (AWG) and the automotive software option.

The automotive software package includes the broadest support for triggering on and decoding the most common automotive serial protocols including CAN, CAN FD, LIN, FlexRay, SENT, PSI5, and CXPI. Also supported is eye-diagram mask testing of CAN, CAN FD, and FlexRay differential buses, as well as symbolic decoding of the CAN, CAN FD, and LIN buses based on importing .dbc and .ldf files respectively.

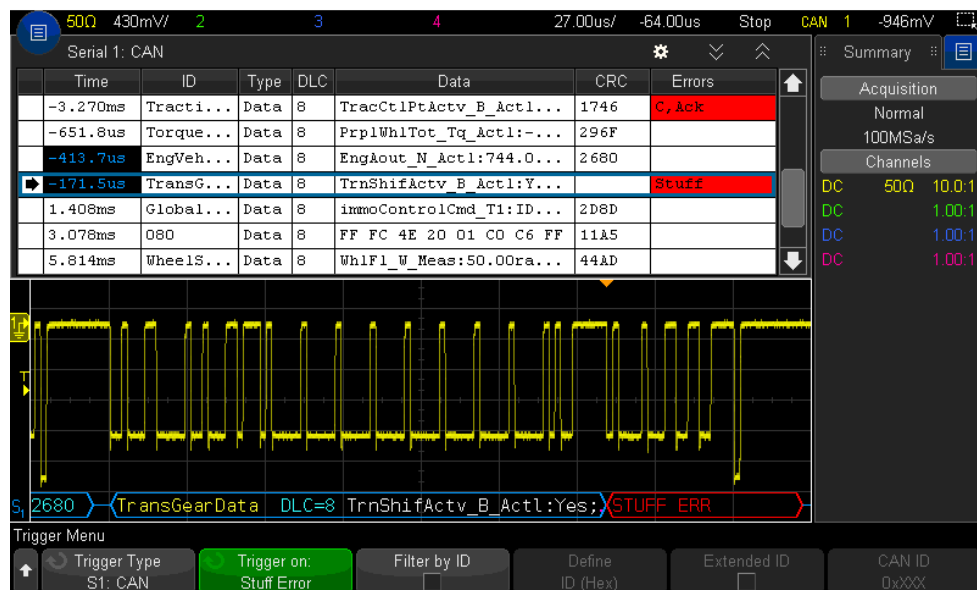


Figure 1. CAN Symbolic trigger and decode using the DSOX3154AUT Automotive *Better* Bundle.

For probing automotive differential buses such as CAN, CAN FD, and FlexRay, the N2818A 200-MHz differential active probe is included in this bundle. Below is a summary of what's included in the Automotive *Better* Bundle:

Automotive <i>Better</i> Bundle: DSOX3054AUT	
DSOX3054T	4-channel, 500-MHz oscilloscope
D3000AUTB	Automotive software option
DSOX3WAVEGEN	Function / arbitrary waveform generator
N2818A	200-MHz differential active probe
DSOXLAN	LAN / VGA module

Automotive **Best** Bundle

The Automotive *Best* Bundle (MSOX4154AUT) is built around the 4+16 channel, 1.5-GHz bandwidth InfiniiVision 4000 X-Series mixed signal oscilloscope (MSO), which includes 16 additional logic/digital channels of acquisition, a 2-channel function / arbitrary waveform generator, and the ultimate bundle software option.

In addition to the automotive-focused serial protocols and advanced measurement capabilities that are available in the better bundle, the best automotive bundle also supports power supply analysis, as well as a broader array of embedded serial protocols including I<sup>2</sup>C, SPI, UART / RS232 / 484, I<sup>2</sup>S, USB 2.0, USB PD, user-definable NRZ, and NFC.

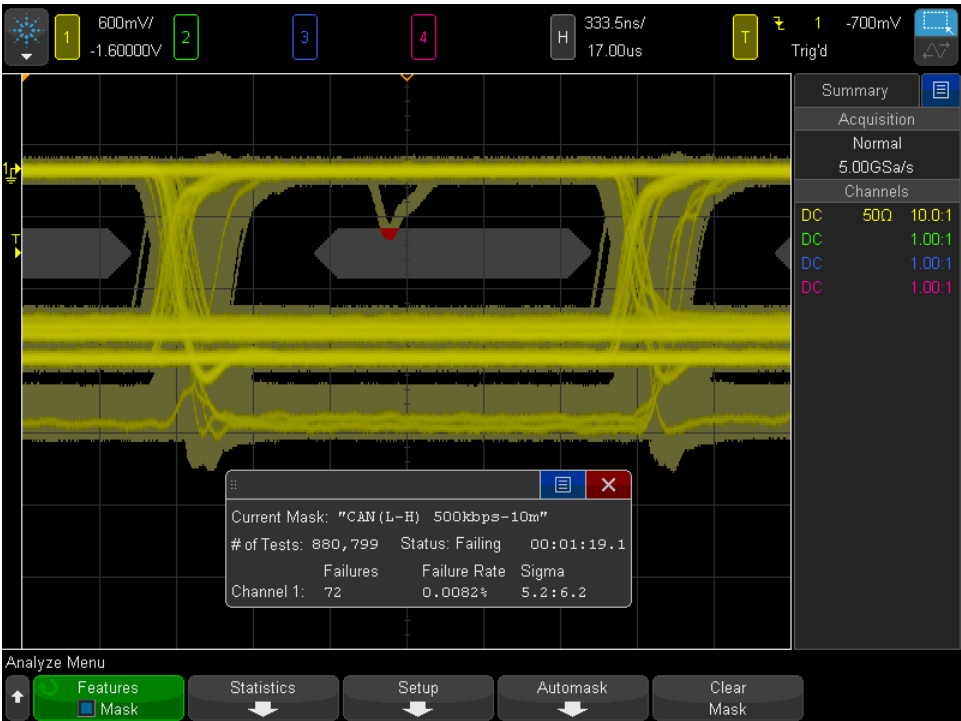


Figure 2. Pass / fail eye-diagram mask test of the differential CAN bus using the MSOX4154AUT Automotive *Best* Bundle.

The Automotive *Best* Bundle also includes the N2818A 200-MHz differential active probe. Below is a summary of what's included in the Automotive *Best* Bundle:

Automotive <i>Best</i> Bundle: MSOX4154AUT	
MSOX4154A	4+16 channel, 1.5-GHz mixed signal oscilloscope
D4000BDLB	Ultimate bundle software option
DSOX4WAVEGEN2	2-channel function / arbitrary waveform generator
N2818A	200-MHz differential active probe

## InfiniiVision Power Bundles

Testing power supplies for switching losses, output ripple, efficiency, and feedback amplifier stability requires high-voltage differential probes, current probes, deskew fixtures, and optional oscilloscope software. Keysight's InfiniiVision oscilloscope better and best power analysis application bundles provide you with all these critical measurement tools to test and characterize your switch mode power supply designs.

### Power Better Bundle

The Power *Better* Bundle (DSOX3054AUT) is built around the 4-channel, 500-MHz bandwidth InfiniiVision 3000T X-Series digital storage oscilloscope (DSO) with the built-in function / arbitrary waveform generator and the power supply characterization and analysis software option.

The power analysis software package includes the broadest support for testing linear and switch mode power supplies (SMPS) including input AC power quality, current harmonics, switching losses, turn-on / off analysis, transient analysis, output ripple, efficiency, and frequency response testing including power supply rejection ratio (PSRR) and control loop response (gain and phase Bode plots).



Figure 3. Control loop response test using the DSOX3054PWR Power *Better* Bundle.

Included in the Power *Better* Bundle are the N2790A 100-MHz high-voltage ( $\pm 1500$  V) differential active probe, the 1147B 50-MHz 15A current probe, and the U1880A voltage-to-current probe deskew fixture. Below is a summary of what's included in the Power *Better* Bundle:

Power <i>Better</i> Bundle: DSOX3054PWR	
DSOX3054T	4-channel, 500-MHz oscilloscope
D3000PWRB	Power analysis software option
DSOX3WAVEGEN	Function / arbitrary waveform generator
N2790A	100-MHz high-voltage differential active probe
1147B	50-MHz current probe
U1880A	Deskew fixture
DSOXLAN	LAN / VGA module

## Power *Best* Bundle

The Power *Best* Bundle (MSOX4154AUT) is built around the 4+16 channel, 1.5-GHz bandwidth InfiniiVision 4000 X-Series mixed signal oscilloscope (MSO), which includes 16 additional logic / digital channels of acquisition, a 2-channel function / arbitrary waveform generator, and the ultimate bundle software option.

In addition to the extensive selection of power supply characterization measurements that are available in the power test software option of the better bundle, the ultimate bundle software option included in the best bundle also includes a broad array of serial protocol trigger and decoding capabilities including I<sup>2</sup>C, SPI, UART / RS232 / 484, I<sup>2</sup>S, USB 2.0, USB PD, user-definable NRZ, CAN, CAN FD, LIN, SENT, CXPI, and NFC.



Figure 4. Switching loss measurement using the MSOX4154PWR Power *Best* Bundle.

The Power *Best* Bundle also includes the N2790A 100-MHz high-voltage ( $\pm 1500$  V) differential active probe, the N7026A 150-MHz high-sensitivity 30A current probe, and the U1880A voltage-to-current probe deskew fixture. Below is a summary of what's included in the Power *Best* Bundle:

Power <i>Best</i> Bundle: MSOX4154PWR	
MSOX4154A	4+16 channel, 1.5-GHz mixed signal oscilloscope
D4000BDLB	Ultimate bundle software option
DSOX4WAVEGEN2	2-channel function / arbitrary waveform generator
N2790A	100-MHz high-voltage differential active probe
N7026A	150-MHz high-sensitivity current probe
U1880A	Deskew fixture



## InfiniiVision High-Speed / Jitter Bundles

Testing for timing margins and unwanted jitter in high-speed digital systems requires oscilloscopes with fast sample rates, active probes, and automated jitter analysis with software clock recovery. Keysight's InfiniiVision oscilloscope better and best high-speed jitter application bundles provide you with all these critical measurement tools to perform jitter analysis on your high-speed serial buses.

### High-Speed / Jitter Better Bundle

The High-Speed Signal Integrity / Jitter *Better* Bundle (DSOX6004JIT) is built around the 4-channel, 1-GHz bandwidth InfiniiVision 6000 X-Series digital storage oscilloscope (DSO) that samples at rates up to 20 GSa/s and comes with a built-in 2-channel function / arbitrary waveform generator and the ultimate bundle software package.

The ultimate bundle software package includes all software options available in the InfiniiVision 6000 X-Series oscilloscopes, including high-speed jitter analysis. Jitter analysis on the InfiniiVision 6000 X-Series oscilloscope measures various types of jitter with multiple views and quantization of jitter to provide you with valuable insight into the source of unwanted timing errors.

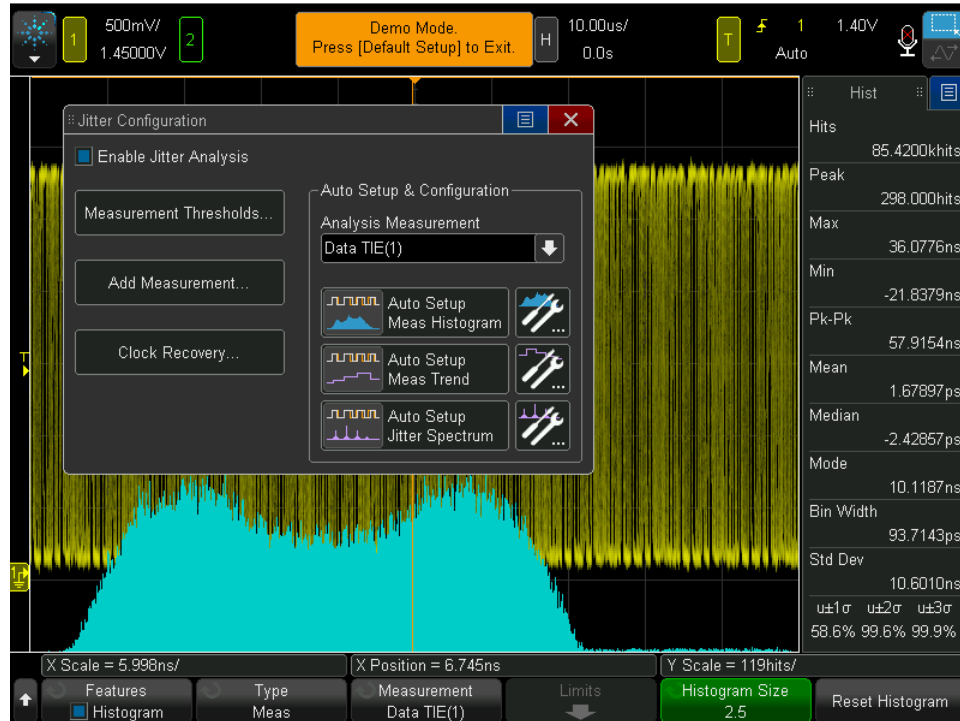


Figure 5. Jitter histogram using DSOX6004JIT High-Speed / Jitter *Better* Bundle.



Also included is a broad range of automotive and embedded serial bus trigger and decoding capabilities including USB 2.0 low-, full-, and hi-speed, as well as frequency response analysis (Bode plots) and automated pass / fail limit testing based on either measurement limits or waveform mask limits.

Included in the High-Speed / Jitter *Better* Bundle is the N2750A 1.5-GHz differential active probe for probing high-speed differential signals such as the USB 2.0 hi-speed bus. Below is a summary of what's included in the High-Speed / Jitter *Better* Bundle:

High-Speed / Jitter <i>Better</i> Bundle: DSOX6004JIT	
DSOX6004A	4-channel, 1-GHz oscilloscope
D6000BDLB	Ultimate bundle software option
DSOX6WAVEGEN2	2-channel function / arbitrary waveform generator
N2750A	1.5-GHz differential active probe

### High-Speed / Jitter *Best* Bundle

The High-Speed Signal Integrity / Jitter *Best* Bundle (MSOX6004JIT) is built around the 4-channel, 2.5-GHz bandwidth InfiniiVision 6000 X-Series mixed signal oscilloscope (MSO) that samples at rates up to 20 GSa/s and comes with a built-in 2-channel function / arbitrary waveform generator, as well as the ultimate bundle software package.

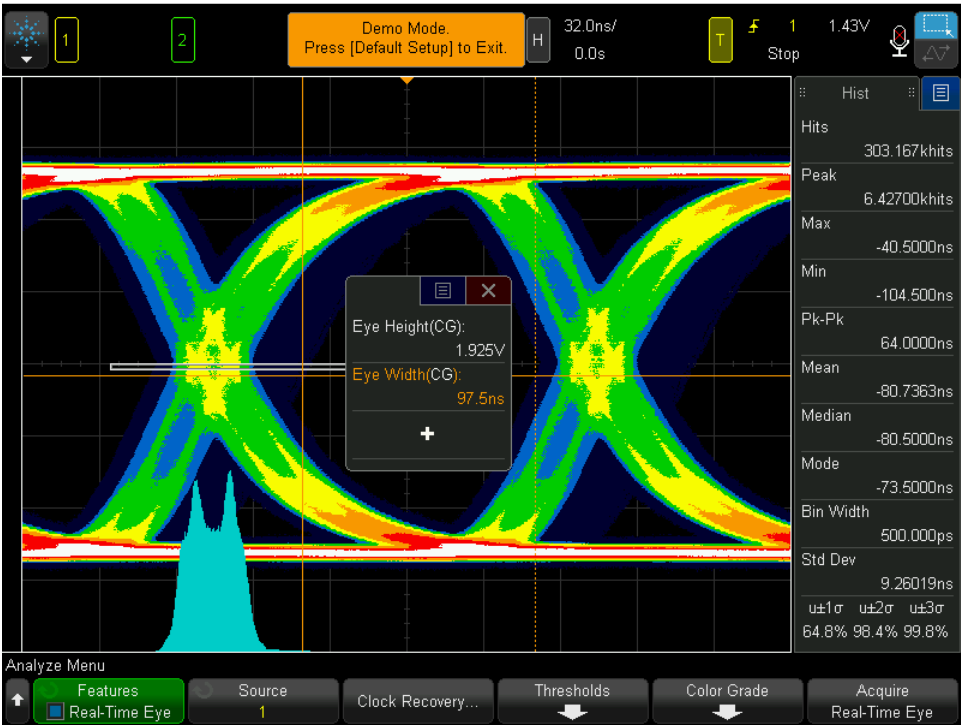


Figure 6. Eye-diagram with jitter histogram using MSO6004JIT High-Speed / Jitter *Best* Bundle.

Included in the High-Speed / Jitter *Best Bundle* is the N2751A 3.5-GHz differential active probe for probing high-speed differential signals such as the USB 2.0 hi-speed bus. Below is a summary of what's included in the High-Speed / Jitter *Best Bundle*:

High-Speed / Jitter <i>Best Bundle</i> : MSOX6004JIT	
MSOX6004A	4+16 channel, 1-GHz mixed signal oscilloscope
DSOX6004A-02G	2.5-GHz bandwidth option
D6000BDLB	Ultimate bundle software option
DSOX6WAVEGEN2	2-channel function / arbitrary waveform generator
N2751A	3.5-GHz differential active probe

## Performance Characteristics

Performance specifications and characteristics of oscilloscopes and probes and accessories that are included in each of the InfiniiVision application bundles can be found in the data sheets and selection guides of specific products listed in the related literature section below.

## Related Literature

Literature description	Publication number
InfiniiVision 3000T X-Series Oscilloscopes – Data Sheet	<a href="#">5992-0140EN</a>
InfiniiVision 4000 X-Series Oscilloscopes – Data Sheet	<a href="#">5991-1103EN</a>
InfiniiVision 6000 X-Series Oscilloscopes – Data Sheet	<a href="#">5991-4087EN</a>
InfiniiVision Oscilloscopes Probes and Accessories – Selection Guide	<a href="#">5968-8153EN</a>
U1880A Voltage-to-Current Probe Deskew Fixture – Users Guide	<a href="#">U1880-97000</a>
D3000AUTB/D4000AUTB/D6000AUTB Automotive Software – Data Sheet	<a href="#">5992-3912EN</a>
D3000PWRB/D4000PWRB/D6000PWRB Power Software – Data Sheet	<a href="#">5992-3925EN</a>
D3000BDLB/D4000BDLB/D6000BDLB Ultimate Bundle Software – Data Sheet	<a href="#">5992-3918EN</a>
D6000USBB Jitter/USB Software – Data Sheet	<a href="#">5992-3920EN</a>

## Ordering Information

Product Description	Model Number
InfiniiVision Automotive <i>Better</i> Bundle	DSOX3054AUT
InfiniiVision Automotive <i>Best</i> Bundle	MSOX4154AUT
InfiniiVision Power <i>Better</i> Bundle	DSOX3054PWR
InfiniiVision Power <i>Best</i> Bundle	MSOX4154PWR
InfiniiVision High-Speed/Jitter <i>Better</i> Bundle	DSOX6004JIT
InfiniiVision High-Speed/Jitter <i>Best</i> Bundle	MSOX6004JIT

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