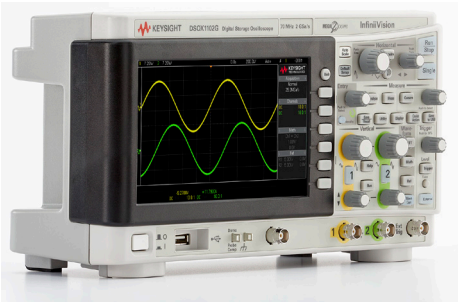
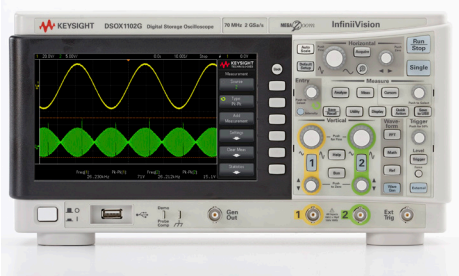
Keysight Competitive Comparison

Keysight InfiniiVision 1000 X-Series versus Rigol 1000Z Series

Keysight's InfiniiVision 1000 X-Series oscilloscopes are engineered to give you quality, industry-proven technology at unbelievably low prices. Now it's easy to get professional measurements and accessible expertise at your fingertips. Don't settle for less – and test to impress.





InfiniiVision 1000 X-Series

- Have confidence in your measurements with Keysight-custom technology that leverages more than 60 years of oscilloscope expertise
- Test quickly and easily with a simple, intuitive user-interface and built-in help and training signals
- Get professional-level oscilloscope functionality with industry-leading software analysis and 6-in-1 instrument integration

	Keysight 1000 X-Series		Rigol 1000Z Series	
Bandwidth	50 MHz, 70 MHz, 100 MHz	√	50 MHz, 70 MHz, 100 MHz	√
Update rate	> 50,000 wfms/s	√	30,000 wfms/s	X
Maximum sampling rate	Up to 1 GSa/s [1]	√	Up to 1 GSa/s [1]	√
	Up to 2 GSa/s (2x more) [2]	√	Up to 1 GSa/s [2]	X
Display	7 inch	√	7 inch	√
Segmented memory	Yes – Standard	√	Additional option	X
Frequency response analysis (Bode plot)	Yes – Standard	√	No	X
Digital voltmeter and frequency counter	Yes – Free	√	No	X
WaveGen built-in function generator	Yes – Standard on G models	√	Yes – Additional option	X
Advanced trigger	Yes – All except serial triggers are standard	√	Additional option	X
Upgradable bandwidth	Yes (on select models)	√	No	X
Serial decode	Yes – I^2C, SPI, RS232, CAN, LIN	√	Yes - I^2C, SPI, RS232 (no automotive)	X

1. On 50 MHz models.
2. On 70 and 100 MHz models.

Rigol specifications were obtained from the August 2016 Rigol 1000Z Series data sheet found on the Rigol website and measurements made on a Rigol DS1074Z with firmware version 00.02.00.SPI.

www.keysight.com/find/1000X-Series

KEYSIGHT TECHNOLOGIES

Unlocking Measurement Insights

Confidence in your measurements

- Keysight custom ASIC technology
- Up to 50,000 wfms/s
- Measurement upgrades
- Access to Keysight experts and help center
- Access to Keysight oscilloscope resources

Test quickly and easily

- **Intuitive GUI and built-in help**
  The front panel has pushable knobs for quick access to commonly used oscilloscope functions to help you spend less time learning how to use the oscilloscope and more time making measurements. Simply press down and hold any front panel key or menu button to access built-in help screens that provide short setup tips.
- **Built-in training signals**
  All 1000 X-Series oscilloscopes come standard with built-in training signals. Now you have the information you need to effectively make measurements on complex signals – at no additional cost.
- **Free educator's resource kit**
  The educator's resource kit also comes standard on all 1000 X-Series oscilloscopes and includes dynamic teaching labs. The kit contains an array of built-in training signals, a comprehensive oscilloscope lab guide (a tutorial written specifically for undergraduate students) and an oscilloscope fundamentals PowerPoint slide set for professors and lab assistants.

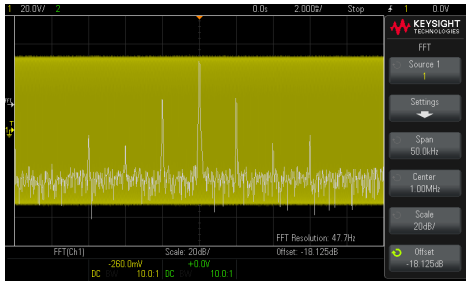
Software analysis

Keysight's 1000 X-Series has faster decoding and catches more infrequent errors by using hardware-based technology. Rigol's software-based technology slows down the waveform and decode update rate.

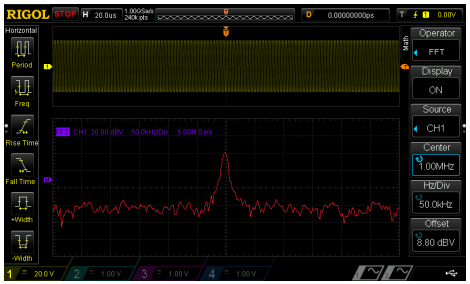
Protocols supported:
- I²C, SPI, UART/RS232
- CAN, LIN (automotive)

Get 6 instruments in 1

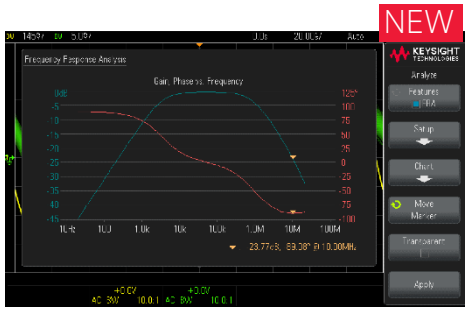
- **Oscilloscope**
  Professional performance with Keysight-custom technology.
- **Frequency response analyzer – Bode plot**
  Gain and phase versus frequency is shown in a Bode plot on screen, a measurement type that is exclusive to Keysight scopes. (EDUX1002G and DSOX1102G only.)
- **WaveGen function generator**
  Built-in 20 MHz function generator with a modulation capability. Ideal for educational or design labs where bench space and budget are limited. (EDUX1002G and DSOX1102G only.)
- **Serial protocol analyzer**
  Provides protocol-aware triggering and decode for serial buses. Requires additional software.
- **Digital voltmeter**
  Provides 3-digit voltmeter measurements (DVM) inside the oscilloscope. Both the digital voltmeter and triggered oscilloscope measurements can be made with the same connection.
- **Frequency counter**
  An integrated 5-digit frequency counter means easier debugging without the need for another piece of test equipment.



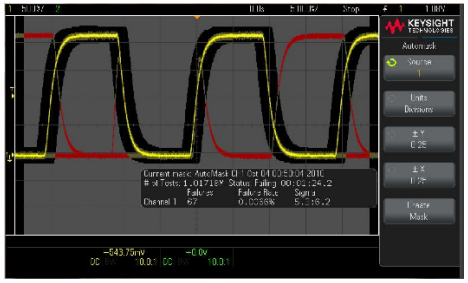
Keysight 1000 X-Series shows frequency components of an FM modulated signal with a highly accurate FFT.



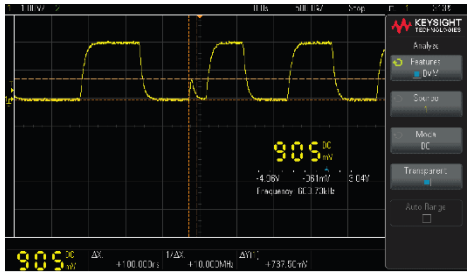
For the same FM modulated signal, Rigol's 1000Z Series has severe limitations in displaying FFT details and control of time-base settings (FFT trace color has been changed from purple to red for better visibility).



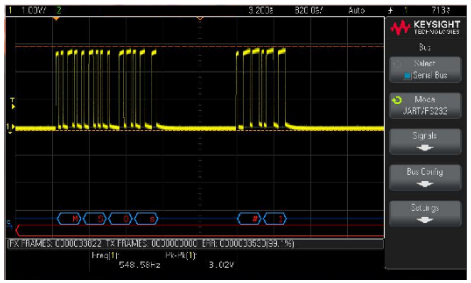
The 1000 X-Series' frequency response analyzer Bode plot capability is the perfect tool to help students understand the gain and phase performance of passive LRC circuits or active op-amps.



1000 X-Series' hardware-based mask testing can quickly validate a signal's quality and detect errors with up to 50,000 tests per second. Standard on DSOX models.



Integrated digital voltmeter (DVM) allows you to characterize signals independent of the oscilloscope's triggering system.



1000 X-Series' hardware-based serial decode provides fast update rate while decoding serial buses.

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Unlocking Measurement Insights

This information is subject to change without notice.
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