

Infiniium V-Series Oscilloscopes

Achieve Clarity Faster with Innovative Technology

Keysight Infiniium V-Series oscilloscopes incorporate innovative technology designed to deliver superior measurements. This groundbreaking oscilloscope technology provide up to 33 GHz performance with the industry's best signal integrity.



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For a description of key features, see the [Infiniium V-Series Oscilloscopes Technical Overview](#).

For a detail of specification, see the [Infiniium V-Series Oscilloscopes Data Sheet](#).

For one page overview and specification, see the [Infiniium V-Series Product Fact Sheet](#)

Infiniium V-Series Oscilloscope Configuration

Get the most out of your oscilloscope investment by choosing options and software to speed your most common tasks. Use option numbers when ordering at time of purchase. Use model numbers to add to an existing scope.

Step 1: Choose Your V-Series Oscilloscope Model

Choose your Infiniium V-Series real-time oscilloscope model

| Model number | | | Analog bandwidth | | Sample rate | |
|-----------------------------|--|---|------------------|-----------|-------------|-----------|
| DSO models (4 Analog ch) | DSA models ¹ (4 Analog ch) | MSO models ² (4 Analog ch +16 digital ch) | 2-channel | 4-channel | 2-channel | 4-channel |
| DSOV334A | DSAV334A | MSOV334A | 33 GHz | 16 GHz | 80 GSa/s | 40 GSa/s |
| DSOV254A | DSAV254A | MSOV254A | 25 GHz | 16 GHz | | |
| DSOV204A | DSAV204A | MSOV204A | 20 GHz | 16 GHz | | |
| DSOV164A | DSAV164A | MSOV164A | 16 GHz | 16 GHz | | |
| DSOV134A | DSAV134A | MSOV134A | 13 GHz | 13 GHz | | |
| DSOV084A | DSAV084A | MSOV084A | 8 GHz | 8 GHz | | |

All Infiniium V-Series models come standard with:

- 100 Mpts/channel memory
- Serial Data Analysis/Mask Testing with Clock Recovery
- Front cover
- Power cord
- USB Keyboard
- USB Mouse
- Calibration cable
- ESD wrist strap
- Five coax adapters (female-to-female)
 - 8, 13, and 16 GHz models come with 3.5 mm female-to-female adapters rated to 25 GHz (part number 1250-3758).
 - All other models (20, 25, 33 GHz) come with 3.5 mm female-to-female adapters rated to 35 GHz (part number 5061-5311)
- The 8 and 13 GHz models come standard with two N5442A precision BNC adapters.

All DSA V-Series models come standard with:

- 200 Mpts/channel memory
- EZJIT Complete (not include phase noise measurement)

All MSO V-Series models come standard with:

- N2815A MSO/LA cable
- Hardware-based DDR2/3/4 and LPDDR2/3/4 decode/trigger

Step 2: Upgrade Your Oscilloscope Memory

Enable more capture depth with industry-leading deep memory. Get up to 2 Gpts per channel.

| Acquisition memory depth upgrade | Description |
|----------------------------------|--|
| DSOV000-200 | 200 Mpts per channel high performance memory |
| DSOV000-500 | 500 Mpts per channel high performance memory |
| DSOV000-01G | 1 Gpts per channel high performance memory |
| DSOV000-02G | 2 Gpts per channel high performance memory |

Step 3: Add Optional Hardware Features

Add required hardware options for your tasks.

| Option number | Description |
|---------------|---|
| MSOV001-DSA | DSA option for MSO models only (including 200 Mpts/channel, EZJIT Complete) |
| DSOV000-801 | Upgrade - Removable SSD drive for V-Series - 1TB |
| DSOV000-805 | GPIB Card-Interface - installed |
| DSOV000-808 | Performance verification and deskew fixture (MX0104A) |
| DSOV000-810 | 12 Gbps hardware serial trigger (NOT available for MSO models) |

Step 4: Add an Advanced or Accredited Calibration

Get a compliant or accredited calibration from the Keysight calibration test facility.

| Option number | Description |
|---------------|--|
| DSOV000-A6J | Calibration (ANSI Z540-1-1994 Compliant ¹) |
| DSOV000-AMG | Calibration + Uncertainties + Guardbanding (ISO 17025 & ANSI Z540.3/Z540-1 Accredited ²) |

¹ Compliant: Denotes the Keysight calibration test facility has passed an internal audit with the same processes as an external audit. A compliant calibration will not receive an accreditation body symbol on the certificate of calibration.

² Accredited: Denotes the Keysight calibration test facility has passed an external audit performed by a 3rd party that has been authorized by an accreditation body. An accredited calibration will receive an accreditation body symbol on the certification of calibration.

Step 5: Choose Your Infiniium Probes and Probe Accessories

The V-Series is compatible with the Keysight InfiniiumMax probing system which includes probe amplifiers and tips ranging from 8 GHz to 30 GHz of low noise bandwidth. They are the most accurate and easiest to use probes in the market for measuring differential and single-ended signals across all high-speed digital designs.

| Model number | Description | Notes |
|---|---|--|
| MSO probes and accessories | | |
| E5382B | Single-ended flying lead set | The MSO is compatible with all Keysight 90-pin cable connectors. The N2815A MSO/LA cable comes standard with MSO models or MSO upgrade |
| E5390A | Single-ended soft touch connectorless probe | |
| E5398A | 1/2 size soft touch connectorless probe | |
| E5387A | Differential soft touch probe | |
| E5381A | Differential flying leads | |
| InfiniiMax I/II/RC/Ultra probe amps (with RC architecture) | | |
| MX0020A | 10 GHz InfiniiMax Ultra probe amplifier | |
| MX0021A | 13 GHz InfiniiMax Ultra probe amplifier | |
| MX0022A | 16 GHz InfiniiMax Ultra probe amplifier | |
| MX0024A | 20 GHz InfiniiMax Ultra probe amplifier | |
| MX0025A | 25 GHz InfiniiMax Ultra probe amplifier | |
| 1169B | 13 GHz InfiniiMax II probe amplifier | Need adapter N5442A |
| 1168B | 10 GHz InfiniiMax II probe amplifier | Need adapter N5442A |
| InfiniiMax I/II/RC/Ultra probe heads and tips (NOT compatible with InfiniiMax III/+ probe amps) | | |
| MX0100A-001 | 25 GHz micro probe head (set of 5) | |
| MX0100A-002 | 25 GHz micro probe head (set of 25) | |
| MX0100A-003 | 25 GHz micro probe head (set of 50) | |
| MX0105A | 20 GHz SMA probe head | |
| MX0106A | 23 GHz solder-in probe head | |
| N2839A | 21 GHz browser head | |
| N2837A | 21 GHz browser head replace tip kit (set of 40) | |
| N5425B | 18 GHz ZIF probe head | |
| N5426A | 18 GHz ZIF tip (set of 10) | |
| N5451A | 4 GHz long-wired ZIF tip kit | |

| Model number | Description | Notes |
|--------------|---|-------|
| N2884A | 5 & 9.9 GHz fine wire tip | |
| E2675B | 6 GHz Differential browser head | |
| E2677B | 12 GHz solder-in head | |
| E2678B | 12 GHz socketed probe head | |
| N2880A | Coaxial attenuators | |
| N2881A | DC blocking caps (set of 2) | |
| N2851A | 16 GHz QuickTip probe head | |
| N2884A | Fine wire probing tips | |
| MX0104A | Performance verification and deskew fixture | |

| Model number | Description | Notes |
|--|---|-------|
| InfiniMax III/+ probe amps (Highest bandwidth with RCRC architecture) | | |
| N2803A | 30 GHz InfiniMax III probe amplifier | |
| N2802A | 25 GHz InfiniMax III probe amplifier | |
| N2801A | 20 GHz InfiniMax III probe amplifier | |
| N7003A | 20 GHz InfiniMax III+ probe amplifier | |
| N7002A | 16 GHz InfiniMax III+ probe amplifier | |
| N7001A | 13 GHz InfiniMax III+ probe amplifier | |
| InfiniMax III/+ probe heads and Tips (NOT compatible with InfiniMax I/II/RC probe amps) | | |
| N5445A | 30 GHz browser probe head | |
| N5476A | 30 GHz browser tip replacement (set of 4) | |
| N5444A | 28 GHz 3.5/2.92 SMA probe head | |
| N5439A | 28 GHz ZIF probe head | |
| N2838A | 25 GHz PC board ZIF tips (set of five) | |
| N5440A | 28 GHz 450-ohm ZIF tip kit (set of five) | |
| N5447A | 28 GHz 200-ohm ZIF tip kit (set of five) | |
| MX0109A | 26 GHz extreme temperature solder-in head | |
| N5381B | 12 GHz wire tips | |
| N2849A | 16 GHz QuickTip tips | |

| Model number | Description | Notes |
|-------------------------------------|---|--|
| Other probes and accessories | | |
| N2795A | 1 GHz single-ended active probe | |
| N2796A | 2 GHz single-ended active probe | |
| N2797A | 1.5 GHz single-ended active probe | Extreme Temperature |
| N2873A | 500 MHz high-impedance passive probe | Need adapter N5449A (N5449A includes one N2873A) |
| N7010A | 30 GHz active termination adapter | |
| 1147B | 50MHz AC/DC Clamp-On Current Probe | Need adapter N5442A |
| N2893A | 100MHz AC/DC Clamp-On Current Probe | Need adapter N5442A |
| N7024A | 6 GHz power rail probe | Need adapter N5442A |
| DP0001A | High Voltage Differential Probe | Need adapter N5442A |
| N2804A/N2805A | High Voltage Differential Probe | Need adapter N5442A |
| N2750/1/2A | InfiniiMode Differential Active Probes | Need adapter N5442A |
| N7004A | 33 GHz Optical-to-Electrical Converters | |
| N2823A | 40 GHz 2.92 mm phase-matched cable pair (1m) | 2.92 mm (m) to 2.92 mm (m) |
| N5448B | 40 GHz 2.92 mm phase-matched cable pair (25cm) | 2.92 mm (m) to 2.92 mm (m) |
| N5442A | 3.5 mm to precision BNC adapter | |
| 15442A | 18 GHz Cable kit: 4 SMA (m) to SMA (m) | |
| 15443A | 18 GHz Matched cable pair within 25 ps SMA (m) to SMA (m) | |
| N2848A | 16 GHz QuickTip probe head | |
| N5450B | extreme temperature extension cable | |
| N2787A | 3D probe positioner | |

Step 6: Choose Your Infiniium V-Series Oscilloscope Accessories

Get additional connectors, adapters, wrenches, and more to fully outfit your lab. Some of the below items come standard with certain models. See page 3 for what's already included before adding additional accessories.

| Model number | Description |
|--------------|---|
| 82357B | USB/GPIB interface, USB (UXR) to GPIB |
| N2117A | Stack mount kit option for stacking two frames |
| N5470A | Rack mount kit |
| 1180CZ | Testmobile scope cart |
| 8710-1765 | Wrench-torque, 8 lb-in, 5/16 Inch |
| 1250-3758 | female-to-female adapters rated to 25 GHz |
| 5061-5311 | female-to-female adapters rated to 35 GHz |
| MX0104A | Performance Verification and Deskew Fixture for InfiniiMax Probes |

Step 7: Upgrade Your V-Series Oscilloscope

The Infiniium V-Series is fully upgradeable. You might never need to buy a new oscilloscope again. You can easily upgrade the channel count, bandwidth, memory, frequency extension windows, and memory.

| Model number | Description |
|--------------------------|---|
| Bandwidth upgrade | |
| DSOV13GBW | Bandwidth upgrade to 13 GHz |
| DSOV16GBWU | Bandwidth upgrade to 16 GHz |
| DSOV20GBWU | Bandwidth upgrade to 20 GHz |
| DSOV25GBWU | Bandwidth upgrade to 25 GHz |
| DSOV33GBWU | Bandwidth upgrade to 33 GHz |
| Memory upgrade | |
| N2810A-200 | 100 to 200 Mpts/channel memory upgrade |
| N2810A-500 | 200 to 500 Mpts/channel memory upgrade |
| N2810A-01G | 500 Mpts/channel to 1 Gpts/channel memory upgrade |
| N2810A-02G | 1 Gpts/channel to 2 Gpts/channel memory upgrade |

| Model number | Description |
|----------------------|---|
| Other upgrade | |
| N2119AU | Hardware serial trigger upgrade ^{1, 2} |
| N2118AU | MSO upgrade ^{1, 2} |
| N2151A | Upgrade Kit - Windows 7 to Windows 10 OS software for Infiniium oscilloscopes (A flash drive-based upgrade) |
| N2152A | Additional removable SSD drive for V-series - 1 TB (Windows 10) |

1. Return to Keysight service center is required to perform upgrade.

2. Either MSO or hardware serial trigger option can be added to the oscilloscope. Upgrade is not available when the oscilloscope already has the MSO or hardware serial trigger installed.

Step 8: Choose Your Infiniium V-Series Support, Services, and Training

Get more from your test investment with Keysight Services. Keysight's warranty and calibration services are the convenient way to ensure the ongoing accuracy and availability of all your test assets.

| Model number | Description |
|---------------|--|
| R-51B-001-3C | Warranty Assurance Plan – Return to Keysight – 3 years |
| R-51B-001-5C | Warranty Assurance Plan – Return to Keysight – 5 years |
| R-50C-001-3 | Calibration Assurance Plan – Return to Keysight – 3 years |
| R-50C-001-5 | Calibration Assurance Plan – Return to Keysight – 5 years |
| PS-S10 | Remote scheduled productivity assistance. Select 1 to 999 hours. |
| PS-S20 | On site startup assistance, daily |
| PS-T10-SCOPES | On site 0.5 day – H7240B-100 – Digitizing Oscilloscope Fundamentals class. Max 8 students. |
| PS-X10 | Custom services |

Step 9: Choose Your Infiniium Offline, Add-On Software, and Compliance Test

Keysight offers a wide variety of advanced measurement, analysis, compliance and decode software applications for the Infiniium V-Series. Choose your license term, license type, and KeysightCare software support subscription that best fits your needs and budget.

All Infiniium V-Series models come standard with:

- Serial data analysis (SDA) software to provide flexible clock recovery including 1st, 2nd, and 3rd-order PLL and constant algorithms. With a stable clock, you can look at real-time eyes of transition and non-transition bits.
- User defined function
- Fast Fourier Transform (FFT) for frequency domain (spectrum) analysis. Use the FFT to compute both magnitude and phase and take advantage of several useful features to assist in spectral analysis. The FFT can control span and resolution bandwidth.

| Model number | Description |
|--|--|
| Offline analysis software | |
| D9010ASIO | Infiniium Offline – Adv signal integrity software (InfiniiSim Adv/EQ/Crosstalk) |
| D9010BSEO | Infiniium Offline – Base software |
| D9010HSPO | Infiniium Offline – High speed protocol software bundle |
| D9010JITO | Infiniium Offline – EZJIT complete software |
| D9010LSPO | Infiniium Offline – Low speed protocol software bundle |
| Measurement and analysis software | |
| D9110DMBA | De-embedding software (Precision Probe, InfiniiSim Basic) |
| D9120PAMA | Pulse amplitude modulation PAM-N analysis software |
| D9110POWA | Power integrity analysis software |
| D9110UDAA | User defined application software |
| D9120JITA | EZJIT complete – Jitter and vertical noise analysis software (recommended) |
| D9120SCNA | InfiniiScan event identification software (recommended) |
| D9120ASIA | Advanced signal integrity software (EQ, InfiniiSimAdv, Crosstalk) (recommended) |

| Model number | Description |
|--|--|
| Protocol decode and triggering software | |
| D9110AUTP | Automotive protocol decode/trigger software (CAN, LIN, CAN-FD, FlexRay ...) |
| D9120AUTP | High speed automotive protocol decode/trigger software (100/1000BASE-T1) |
| D9110EKR | 10G/100GBASE-KR 64b/66b and link training decode/trigger software |
| D9110EMBP | Embedded protocol decode/trigger software (USB2.0, 10/100 ETH, PCIe 2/1 ...) |
| D9110LSSP | Low speed protocol decode/trigger software (I2C, SPI, RS232, I2S, JTAG ...) |
| D9110MCDP | MIPI CSI and DSI protocol decode/trigger software (C-PHY and D-PHY) |
| D9110MILP | Military protocol decode/trigger software (ARINC 429, MIL-STD 1553, SpaceWire) |
| D9110MPLP | Low speed MIPI protocol decode/trigger software (RFFE, I3C, SPMI) |
| D9110MPMP | MIPI M-PHY protocol decode/trigger software (DigRF, LLI, CSI-3, UniPro, UFS, SSIC) |
| D9110PCIP | Advanced PCIe protocol decode/trigger software (PCIe 5/4/3/2/1, SATA/SAS) |
| D9110USBP | USB 3.x protocol decode/trigger software (USB 3.1 - 5 and 10 Gbps) |
| D9111BDLP | Basic Infiniium Protocol Trigger/Decode Bundle for Infiniium Oscilloscopes |
| D9120BDLP | Complete Infiniium Protocol Trigger/Decode Bundle for Infiniium Oscilloscopes |
| MATLAB® software | |
| N8831A-001 | MATLAB – Basic digital analysis |
| N8831A-002 | MATLAB – Standard digital analysis |
| Compliance software (KeysightCare Support required) | |
| D9010SFPC | SFP+ and QSFP+ compliance test application (12 GHz+) |
| D9010XAUC | XAUI compliance test with 10GBASE-CX4, CPRI, OBSAI, and serial RapidIO support (13 GHz+) |
| D9010BJAC | Ethernet 40GBASE-CR4 and 100GBASE-CR10 compliance test application (25 GHz+) |
| D9010ETHC | 10M/100M/1GBASE-T and energy efficient ethernet (1 GHz +) |
| D9010EBZC | Ethernet 10GBASE-T, NBASE-T and MGBASE-T compliance test application (4 GHz +) |
| D9010EAPC | Ethernet 10GBASE-KR and 40GBASE-KR4 compliance test application (25 GHz+) |
| D9010ONFC | ONFI (open NAND flash interface) compliance test application (4 GHz +) |
| D9020DDRC | DDR2 and LPDDR2 compliance test application (4 GHz +) |
| D9030DDRC | DDR3 and LPDDR3 compliance test application (8 GHz +) |
| D9040DDRC | DDR4 and LPDDR4 compliance test application (13 GHz +) |
| D9050DDRC | DDR5 TX compliance test application (16 GHz +) |
| D9010CPHC | MIPI C-PHY compliance test application (16 GHz +) |
| D9020DPHC | MIPI D-PHY compliance test application (13 GHz +) |
| D9040MPHC | MIPI M-PHY compliance test application up to Gear 4 (25 GHz +) |
| D9040PCIC | PCIe 1.0 to 4.0 transmitter electrical performance validation and compliance (25 GHz +) |
| D9010USBC | USB 2.0 transmitter compliance test application (2.5 GHz+) |
| D9020USBC | USB 3.2: 5 Gbps and 10 Gbps transmitter compliance (16 GHz+) |
| D9030TBTC | Thunderbolt 3 transmitter compliance (25 GHz +) |
| D9030SATC | SATA 6Gb/s compliance test application (13 GHz +) |

| Model number | Description |
|--------------|--|
| D9040SASC | SAS-4 (serial attached SCSI-4) compliance test application (33 GHz +) |
| D9040DPPC | DisplayPort 1.4 compliance and validation (16 GHz+) |
| D9042DPPC | DisplayPort UHBR Tx compliance test software (25 GHz +) |
| D9040EDPV | eDP 1.4 (embedded DisplayPort) electrical performance and characterization (16 GHz+) |
| D9021HDMC | HDMI 1.4 and HDMI 2.1 electrical performance, validation and compliance (20 GHz +) |
| D9010AGGC | Compliance test software measurement server license |
| AE6920T | Automotive Ethernet Tx Compliance Software 10 M to 10 Gbps (13 GHz +) |
| AE6910T | Automotive Ethernet Tx Test Software 10 M to 5 Gbps |
| AE2000T | Automotive SerDes Transmit Compliance Test Solution (MIPI A-PHY, ASA) |

Software Licensing and KeysightCare Compliance Software Support Subscriptions

Each of the Infiniium compliance software options are offered as various software licensing options. Choose your license term, type, and support contract for each software product.

Select your software license:

1. Choose your software product (for example: D9040DPPC).
2. Choose your license term: perpetual or subscription.
 - a. **Perpetual** – Perpetual licenses can be used indefinitely.
 - b. **Subscription** – Subscription licenses can only be used through the term of the license (6, 12, 24, or 36 months license options available).
3. Choose your license type: node-locked, transportable, USB portable, or floating.
 - a. **Node-locked** – License can be used on one specified instrument/computer.
 - b. **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).
 - c. **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).
 - d. **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.
4. Choose your support subscription duration.
 - a. Perpetual licenses are sold with a **12 (default), 24, 36, or 60-month software support subscription**. Support subscriptions can be renewed for a fee after that.
 - b. Subscription licenses include a **software support subscription through the term of the license**.

More Information

Thank you for choosing a Keysight Infiniium V-Series Oscilloscope. The Keysight Infiniium V-Series oscilloscopes set a new standard for real-time oscilloscope accuracy, with models ranging from 8 to 30 GHz. Extreme signal integrity, and ultra-low noise floor specifications allow for the truest representation of signals. Invest with confidence today, knowing you have the ability to meet the needs of technology advancements tomorrow. For more information on the V-Series, check out the following:

- [Infiniium V-Series Data Sheet](#)
- [Infiniium V-Series Product Fact Sheet](#)
- [Infiniium Oscilloscope Probes and Accessories](#)
- [Infiniium V-Series Technical Overview](#)

Learn more at: www.keysight.com

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