RELEASE NOTES

Keysight UXR/MXR/EXR-Series Real-Time Oscilloscopes Software

This software is designed to run on:

- Keysight Infiniium UXR-Series oscilloscopes.
- Keysight Infiniium MXR-Series oscilloscopes.
- Keysight Infiniium EXR-Series oscilloscopes.

KEYSIGHT

Version 11.52.00301

Released Date:	16 February 2024
Operating System:	Windows 10

Enhancements

- Adds support for clock signals in the Noise Reduction application.
- Increases the max number of FFE taps to 60.
- Allows the PAM4 SNDR measurement on an Invert math function.

Bug Fixes

- Some of the licenses are not enabled for the following bundles, D9011BDLP, D9020BDLP, SW02MIPI, SW02PCIE and SW02USBH.
- Some of the licenses are not enabled for the MXR-A and UXR-A performance upgrades.
- On the EXR/MXR-series, a warning message pops up in Roll Mode when changing the time/div setting.
- Not able to adjust the sampling rate in Roll Mode for some setups.
- Loading a composite file, saved with differential channels enabled, into Offline, produces incorrect differential and common mode waveforms.
- Waveform amplitude incorrect after applying differential and Infiniisim over SCPI.
- Incorrect pattern average count reported after pressing Stop.
- Autoscale of a differential signal with Infiniisim enabled clips the signal.
- Skew cal fails on the PP0001A and PP0004A probes when using the Probe Comp output.
- T edge measurement not reporting all the edges when the timebase is zoomed out on the signal.
- Infiniium hangs running CTLE equalization with PCIe clock data recovery selected.
- The LF Frequency is set to 2.65GHz for the 802.3dj CTLE preset which is incorrect. It should be set to 1.32 GHz.
- Initialization of Direct-X fails intermittently running Infiniium Offline on PCs.

KEYSIGHT

Version 11.52.00001

Released Date:	8 December 2023
Operating System:	Windows 10

Enhancements

Features	Software Licenses Required
5th Order PLL CDR for UXR	D9020PAMA
SSC setup controls for PAM clock recovery	D9011PAMA/D9020PAMA
Improved method to center the eye on PAM4 clocks for closed eyes	D9011PAMA/D9020PAMA
Adds slew rate to the PCIe DD jitter results spreadsheet	D9020PAMA
Top, Base selection for amplitude measurement thresholds	None Required
Autoscale Vertical for Offline	None Required
User preference to remap Navigate buttons for Trigger control on EXR/MXR	None Required
10Mpts flexible memory for Roll Mode on EXR/MXR	None Required
Automotive: IEEE 802.3cg – 10BASE-T1S Protocol Decode	D9020AUTP

Bug Fixes

- Intermittent probe read error during probe connection for the MX002XA InfiniiMax probe amplifiers.
- Infiniium crashes loading a recovered clock waveform into a waveform memory.
- Jitter/Noise setup wizard may use the wrong source for the clock source for explicit clock recovery.
- Infiniium crashes when triggering or searching for CAN frames defined by a .dbc file (CAN Symbolic Data File).
- Infiniium crashes selecting Protocol Trigger on Search for waveform memories.
- Extra grid appears for some setups after performing default setup.
- Burst width measurement includes a burst at the end of a waveform that isn't followed by an idle period.
- Not all data is decoded in MIPI C-PHY protocol.
- Infiniium crashes saving a deep channel waveform with Peak Detect enabled.
- Roll Mode shows discontinuities in the waveform with low manual sample rates.

- Help indicates that “ACQuire:COMPlete <percent>” SCPI command works with both averaging and equivalent time. This is incorrect, it only works with equivalent time sampling modes.
- There is a small gap on the right side of the waveform memory bar for MXR/EXR-series oscilloscopes.
- Measurement markers are incorrectly placed for the charge measurement.
- Copy channel data not copying the RTSA channel settings in RTSA mode.
- Markers disappear after connecting a probe.
- Software is sluggish changing attenuation ranges on the N7026A probe.
- Infiniium crashes after selecting RS232/UART protocol manual setup with OR’d edge trigger selected.
- Create New Graticule checkbox not working properly when unchecked for Power Spectral Density function.
- Tracking measurement markers not working properly for the negative pulse count measurement.
- FFT Peaks misplaced for Max function after changing frequency start/stop settings.
- Track waveform markers not placed correctly on Vertical Histogram.
- Roll Mode manual sampling rate is not bouncing back to the original setting after changing time/div to a slower setting and then back to the original setting.
- SCPI query “MEAS:RJDJ:ALL?” result state intermittently returns 43(RJDJ pattern not found) on valid PAM4 patterns.

Notes

- Updates .NET Framework to 4.8.0.
- Updates Keysight IO Libraries Suite to 2023 Update 1 version 18.3.29517.2
- Updates Keysight Host Processor Platform to 5.4.29023.10010
- Recognizes new MXR-B model channel upgrade licenses.

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Version 11.51.00302

Released Date:	27 October 2023
Operating System:	Windows 10

Enhancements

- Increases the Clock Reference maximum to 5 UI in the Jitter/Noise Setup Advanced tab.
- Improves the speed of ":WAVeform:SEGMented:XLISt?" SCPI query by up to 2x.
- Adds the ability to perform PCIe Dual Dirac PAM4 12-edge jitter on a specific file of jitter edges.
- Adds ":ANALyzer:CLOCk:TIME? <source>" SCPI query to return a binary block of clock times.

Bug Fixes

- Infiniium crashes while running Clock Jitter tests for the DDR5 compliance app.
- The Burst Interval measurement includes an invalid burst interval from the start of the waveform to the first burst.
- Infiniium crashes when selecting the USB Power Delivery protocol.
- Infinite persistence is cleared when Mask Test is stopped with multiple channels enabled.
- ":WAVeform:SEGMented:XLISt? RELXorigin" SCPI query returns incorrect time values.
- DDR5 Demo not enabled with D9xxxASIA licenses.
- Excessive voltage offset occurs when powering up a UXR oscilloscope with the N2795A active probe plus N5442A 50 Ohm Adaptor attached. This only occurs for UXR oscilloscopes that have a new rev of the Auxiliary Power Board installed.
- The DC Attenuation/Offset cal fails on the first attempt when using the N5449A High Impedance Adaptor with a BNC cable.
- The Eye Crossing Percentage measurement is inaccurate in some cases.
- Vertical Autoscale scales a differential channel waveform incorrectly when starting with a small volts/div setting and a clipped waveform.
- ":DIGital<N>:DISPlay:AUTOset" SCPI command grammar incorrect and should be ":DIGital<N>:DISPlay:AUToset".

- The FFT Total harmonic distortion measurement crashes if the Manual Fundamental Frequency is set outside of the FFT Start and Stop frequencies.
- Applying DC Gain to CTLE equalization may result in an equalized waveform with excessive vertical amplitude.

Version 11.51.00102

Released Date:	19 September 2023
Operating System:	Windows 10

Enhancements

Features	Software Licenses Required
SNDR Sigma-n measurement for the NRZ signal type	D9011PAMA/D9020PAMA
Sum of Squares algorithm added to Pmax SNDR measurement for PCIe	D9011PAMA/D9020PAMA
Produces a more accurate clock for PAM4 CDR with SSC present	D9011PAMA/D9020PAMA
Supports EZJIT Noise measurements on a closed eye for PAM4 by correlating to a user provided pattern	D9011PAMA/D9020PAMA
Automatic RJ calculation for PAM4 PWJ with PCIE CDR, and support for TIE on PAM4 clock patterns.	D9010ASIA/D9020ASIA D9011PAMA/D9020PAMA
New DDR5 Signa Type - DDR5 real-time eye analysis performs clock recovery with read or write discrimination and renders a real-time eye of the DQ (Data) waveform. Includes new DDR5 built-in demo.	D9010ASIA/D9020ASIA
For CTLE equalization, you can now choose 1 Pole for the # of Poles option	D9010ASIA/D9020ASIA
For DFE equalization, you can now reseed the taps for each burst of traffic in the waveform	D9010ASIA/D9020ASIA
Adds new USB4 and DP2 CDR and CTLE equalization presets, adds a new CTLE equation and changes the naming of existing USB4 presets	D9010ASIA/D9020ASIA
New Analysis->MIPI-CPHY built-in demo added	None Required
Decreases the CDR settling time requirement for PCIe 5 CDR presets	None Required
Waveform label stacking (for automatic separation of overlapping labels)	None Required
Advanced controls for separating and sizing digital waveforms within a grid	None Required
Spectrum Control - s new option for FFT math functions on analog input channels that lets you perform the FFT on a particular portion of a captured waveform.	None Required
Math function quick copy	None Required
Supports PD1082A-FG Differential Probe for MXR/EXR-series oscilloscopes	None Required

Bug Fixes

- The Phase Noise application is not resetting and adjusting the max offset frequency when the clock edge direction is changed.
- The noise marker location is not always drawn in the correct location on the RT eye.

- Intermittent crash connecting the MX002XA InfiniiMax high-speed differential probe amplifiers to the oscilloscope.
- AC/DC coupling control missing for the PP0004A probe adaptor.
- The default SNDR Linear Fit Pulse Length and Delay parameters are not set when the SNDR standard is changed.
- Bessel-Tompson bandwidth limit filter selection missing from PAM4 setup wizard.
- TIE filter parameters missing from jitter results, measurement results and measurement report.
- FM and FSK modulation for the MXR/EXR Waveform Generator sometimes sticks on and can't be disabled.
- M8070B in Realtime Error Detector configuration is failing Auto alignment for PAM4/6/8 accelerated single-ended signals due to a UXR-series oscilloscope software bug.
- Some setup files from old software versions on the UXR-series oscilloscope will not open properly.
- Intermittent issue with drawing math functions after analysis is aborted.
- Statistics are not reported after selecting "Add only passing measurements to statistics" from the Limit Test dialog.
- Not able to load waveform source histogram from .mat file type.
- ":MEASure:XCORtie?" and ":MEASure:XCPeriod?" SCIP queries not returning correct values.
- ":FUNCtion<F>?" SCIP query not reporting all sources for 3-source math functions such as Versus (XYZ Intensity).
- Crash when saving all segments to an HDF5 file type.
- Extension Cable location in the Probe Configuration flow chart is in the wrong location after restarting the oscilloscope.
- The Max Input probe system characteristic is misleading for the N7020A and N7024A probe amps and should be removed.
- Memory bar is not being updated after the waveform is saved to a file.
- The T edge measurement returns the wrong result for some cases where the edge slew rate is fast compared the sample rate.
- In the Remote Setup dialog, the Web Interface Web Address is showing two addresses.
- On the MXR/EXR-series oscilloscopes, the digital channel labels do not always align with the digital waveforms.

- Individual channel Bandpass filter doesn't get applied when low center frequency (CF) values and high bandwidth (BW) values are selected simultaneously.
- A Setup Recall warning message appears when loading some built-in demos.
- Crash switching CDR from Fully Automatic to Manual and entering the wrong data rate.
- Data TIE reports an incorrect result for a non-SSC waveform that has a narrow unit interval.
- Intermittent issue with spurious waveform traces getting into the realtime eye after making a scale change such as channel offset or channel skew.
- Mask position error for user drawn masks using automatic mask scaling.
- Keysight logo covering up the pulldown menus on the right side of the screen when Touch is enabled.
- Crash may occur when overlaying all waveforms in a single grid.
- Help content for the Eye Crossing % measurement marker position is incorrect.
- UXR-series oscilloscope calibration not failing for excessive negative null-offset error.
- Software hangs on the UXR-series oscilloscopes when changing to external time reference when no external reference signal is present.
- The channel bandwidth values are not updated correctly in the results window after selecting Display Status from the acquisition dialog.
- Using a SCPI command to save all Segments to a .h5 file is 10x slower than saving to a .mat file.
- PAM4 Level Mean measurement not working correctly is some cases.

Known Bugs

- Channel offset seen on UXR-series oscilloscopes which have the new Aux Power Board installed and are powered on with the N2795A+N5442A probe connected. This issue will be fixed in the first 11.51 patch release.

Notes

- Enables AddOn enhancements for D91XX licenses without requiring a Core Software license subscription.
- Removes the Demo pulldown menu. Note that Tutorials & Demos are available from the Help pulldown menu.

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Version 11.50.00601

Released Date:	8 August 2023
Operating System:	Windows 10

Enhancements

- Provides support for PMK-PD1082A-FG Differential Probe 400 MHz 200V.
- Provides CDR presets for PCIExpress Gen 4 CC, PCIExpress Gen 4 8G SRIS, and PCIExpress Gen 4 16G SRIS. The ":ANALyze:CLOCk:METHod" SCPI grammar is also updated to include these additional presets.
- Adds "Both" as an edge direction option for the Slew rate measurement when "Measure All Edges" is enabled. Previously, "Both" was only offered when "Measure All Edges" was disabled.

Bug Fixes

- Display Port 128b/132b protocol decode is not showing the expected data in the DUT capture.
- MIPI M-PHY UFS V3.1 protocol decode is not loading.
- In some corner cases, the channel waveform plot is not being cleared after turning off the channel.
- In some cases, the CTLE equalization function is taking twice as long to compute as expected.
- Some of the PCIExpress Gen 5/6 CDR presets are incorrect.
- The Precision Probe calibration wizard doesn't work properly for probes connected to channel 3.
- In some cases, the measurement clipping status shown with a "?" in front of the measurement results, is not removed after the waveform is adjusted to no longer clip.
- The keyboard freezes after running the keyboard selftest on MXR-B model oscilloscopes.

Known Bugs

- The Instrument Self Tests dialog may be hidden after running the keyboard or LED selftest on MXR-B model oscilloscopes. There is an easy work around. After existing the keyboard

or LED self test, click anywhere on the oscilloscope screen to bring the hidden dialog to the foreground.

Version 11.50.00402

Released Date:	14 July 2023
Operating System:	Windows 10

New Enhancements

- Supports MXR-B model Oscilloscopes.

Bug Fixes

- The DP0001A probe LED is not indicating 500:1 with channel offset > 0.
- The Period measurement count is not showing the correct count for the Zoom window.
- The Setup Recall message box pops up after loading the PAM-6 Analysis demo.
- No SCPI error is generated when selecting a non-existing Infiniisim transfer function file.
- The SNDR corrected waveform may show invalid samples at the end of the waveform.

Version 11.50.00401

Released Date:	12 June 2023
Operating System:	Windows 10

New Enhancements

- Supports UXR-B model Oscilloscopes.
- Adds support for D9020PAMA Pulse Amplitude Modulation PAM-N Analysis Software.
- Adds support for D9011PAMA Pulse Amplitude Modulation PAM-N Analysis Software for MXR/EXR-series.
- Adds MATLAB (.mat) waveform file support for histograms.
- Speeds up FFTs running on large waveforms greater than 67 Mpts when enough memory is free to allocate larger processing buffers.

Bug Fixes

- SCPI error occurs when setting ":ACQUIRE:MODE RTIME" when global bandwidth is set to Manual.
- Several bug fixes for DP 2.0 UHBR (128b/132b) protocol (D9110USBP)
- Float and double format not supported for SCPI waveform data queries of Spectrum Analysis (DDC) data.
- The MX002XA probe amps with MX0100A 135 mil probe head selected don't show 12GHz bandwidth in the Bandwidth Limit dialog.
- Saving digital channels on the MXR/EXR while the acquisition is running may save invalid waveform data.
- In a few corner cases, the file size for saved waveforms is inconsistent depending on the order or operations prior to saving the waveform.
- Incorrect values used for UXR, MXR, EXR and Offline jitter measurement floor for EZJIT jitter measurement. This only affects the measurement results if "Removal of Scope Jitter" option is utilized.
- PAM4 jitter graphs are reporting 0 transitions.
- PAM4 12-edge Jnu jitter results displaying "Edge?" when an edge is not found on a closed eye, rather than skipping the edge and trying to find the next edge.
- The programmer's guide is missing the "F/2" (Even/Odd) results for ":MEASure:RJDJ:ALL?"
- The DSP probe correction filter is not updated for the new sample rate if the sample rate is changed while the acquisition is stopped. This may introduce a voltage offset in the DSP corrected waveform.
- Software hangs when saving waveforms with .bin format for segmented acquisition mode when using the ":DISK:SAVE:WAVeform" command.
- The Infiniium installer is not installing Pathwave Calibration Advisor.
- A signal distortion in the Waveform Generator output on the EXR/MXR-series oscilloscopes occurs for some waveforms and is most easily seen on sinewaves at mid to low frequencies.
- The bandwidth parameters for the PCIe5/6 PLLs have a typo, where 10eX should be written as 1eX. This bug may cause the measured jitter for 12-edge jitter to be smaller than the actual value, since it causes the PLL bandwidth to be larger than is should be.

Version 11.50.00102

Released Date:	7 April 2023
Operating System:	Windows 10

New Features and Enhancements

Features	Add-on Software
Noise Compensated Pattern (remove oscilloscope noise from waveform)	D9110PAMA/D91120PAMA D9110ASIA/D9120ASIA
Raised Cosine & Butterworth Filter (for 224G reference receiver)	D9110ASIA/D9120PAMA
Extend number of DFE taps to 80 (for 224G reference receiver)	D9110ASIA/D9120ASIA
Add CTLE settings to the PCIe 48-edge jitter output	D9110ASIA/D9120ASIA
IEEE 802.3dj C2M preset for CTLE	D9110ASIA/D9120ASIA
IEEE 802.3dj clock recovery preset set to 106.25GBd, 4MHz, 1'st order PLL	D9110PAMA/D9120PAMA
IEEE 802.3ck clock recovery preset set to 53.125GBd, 4MHz, 1'st order PLL	D9110PAMA/D9120PAMA
Option to normalize FFE taps to sum |taps| = 1 (max gain equals 1)	D9110ASIA/D9120ASIA
Measure SSC option added to Measurement Analysis Wizard	D9110ASIA/D9120ASIA
DDR – Compensation for DQ and DQS scope Rj contribution	D9110JITA/D9120JITA
XYZ function with Z input modulating pixel intensity	Not Required
Horizontal gating right-click shortcut available on functions and memories	Not Required
Protocol – I3C 1.1.1 Spec Upgrade	D9110MPLP
Protocol – DP 2.0 128b/132b	D9110USBP

Bug Fixes

- D91UXR02A Core Software subscription license not recognized.
- For the DP0001A probe, the voltage range setting is not taking the oscilloscope offset setting into account.
- The probe head selection GUI is only listing the E2676A Single Ended Browser rather than E2676A/B Single Ended Browser.
- The probe DC Offset/Gain Cal GUI is only listing the E2655 PV/Deskew fixture and not the MX0104A PV/Deskew fixture.
- The probe system characteristics (Max Input, Signal Range, CM Range) listed for the N2803A probe amp with the N5444A SMA probe head are incorrect.
- Intermittent issues connecting/disconnecting MX002XA probes.
- "N7019A Type-C Active Link Fixture" probe selection does not go away after doing a factory default.

- Not reporting enough significant digits in the measurement results when the Significant Figures in the Display Setup Results dialog is set to Max.
- The number of significant digits in the measurement results reported over SCPI doesn't match the GUI reported number in some cases.
- Programmer's guide missing :FUNCtion<N>:FFT:START command.
- Programmer's guide missing PCIE64 setting for :ANALyzer:CLOCK:METHod command.
- :TRIGger:PATTern:LOGic SCPI command not working for digital channels.
- Infiniium locks up in Single Ended mode with the PAM4 signal type selected when the channel's Main waveform display is off.
- When running with the Realtime Error Detector solution driven by the M8070B software, Infiniium can't draw a clean eye. However, the Bit Error Rate measurement is still okay.
- When running with the Realtime Error Detector solution driven by the M8070B software, DFE equalization is not applied to software symbol decode.
- Infiniium Offline crashes when selecting "Save Support Information" from the Help->About dialog.
- FFT Marker DeltaY results are listed as dBm but should be dB.
- Data Time Interval Error (TIE) sometimes produces an improper Mean result.
- Loading a setup from the S-series into the MXR/EXR-series changes the colors of channels 5-8.
- Incorrect URL is launched in a web browser when the Software Updater isn't found.
- "Auto set measurement thresholds" produces incorrect thresholds intermittently.
- Intermittent differential channel skew error when Averaging is enabled.
- MXR/EXR vertical autoscale doesn't detect small signals.
- The FFT Power Spectral Density function is reporting incorrect magnitude.

Notes

- Includes Keysight License Manger update 5.5.1.81 and Keysight License Service update 5.5.1.81
- UXR A models with serial numbers greater than or equal to MY63WW have a redesigned oscillator board that requires 11.50.00102 software or newer to run properly.

Version 11.40.00401

Released Date:	17 February 2023
Operating System:	Windows 10

New Enhancements

- Updates the PCIe6 SNDR pattern files.

Bug Fixes

- Loading the Digital Channels and Busses demo causes an error message, “The measurement you chose can’t be performed on the selected waveform.”
- The gain/offset calibration is failing on the N7000A/01A/02A/03A InfiniiMax III+ series probes.
- RTSA mode has an intermittent bug with the horizontal axis showing seconds rather than Hertz.
- Device Clear doesn’t clear the queue of “:SINGLE” SCPI commands.
- The slew rate measurement marker doesn’t track the waveform.
- The “:WAVeform:COMPlete?” SCPI query always returns 0.
- The UXR0051AP model crashes during oscilloscope startup.
- The “:ANALyze:CLOCk:METHod SOPLL” command generates a -222 SCPI error message, “The JTF Loop Bandwidth control has been set to its minimum value.”
- The eye crossing measurement on some waveforms identifies the wrong crossing point.
- With Fast Plot mode enabled, Differential Channels enabled and the Zoom window open, the waveform appears to be running in the Zoom window.
- For the EXR/MXR-series, if channels 1-4 are on and the oscilloscope is waiting on a trigger, then turning off any channel clears the display. The same is true of channels 5-8 on an 8-channel oscilloscope.
- For the EXR/MXR-series, running the Scope SelfTest causes a 2x signal amplitude error. Factory default or restarting the oscilloscope fixes this error.
- For the EXR/MXR-series, the “:WAV:DATA?” SCPI query intermittently returns all 0 data.

Known Issues

- The online help and programming guides for this 11.40 patch release unintentionally include documentation for features coming out with the upcoming 11.50 release. Refer to “What’s New in Version 11.50” for a description of these features.
- Infiniium locks up in Single Ended mode with the PAM4 signal type selected when the channel’s Main waveform display is off.
- When running with the Realtime Error Detector solution driven by the M8070B software, Infiniium can’t draw a clean eye. However, the Bit Error Rate measurement from the M8070B software is still okay.

Version 11.40.00202

Released Date:	3 January 2023
Operating System:	Windows 10

New Enhancements

- Adds documentation for the new 4GHz and 6GHz EXR-series oscilloscope models.
- Hardware accelerates NRZ & PAM4/6/8 symbol decode for Realtime Error Detector solutions using the UXR-series oscilloscopes with 1.00 and 1.85mm connectors.

Bug Fixes

- Continuous execution of SCPI commands which open/close jitter graphs may slow down over time.
- D9010MPMP MPIP M-PHY protocol decode showing incorrect status. The correct status should be “scrambling supported” and “skip symbols not required”.
- Turning on Infiniisim Channels 1-2 or 1-3 with Differential Channels enabled, and Acquisition Analog Averaging enabled, introduces ~10psec of error between the acquisition channels on the UXR-series oscilloscopes running at 256GSa/s sampling rate.
- UXR-series Multiscope exhibiting an intermittent failure message, “Unable to lock to internal reference,” during oscilloscope start up.
- Intermittent Pathwave Calibration Advisor error messages.
- Risetime marker SCPI query returning the same X and Y values for each marker.

- Clock TIE markers with constant frequency CDR are drawn in the incorrect location with respect to the current measurement.

Known Bugs

- The gain/offset calibration is failing on the N7000A/01A/02A/03A InfiniiMax III+ series probes. This issue will be fixed in the next patch release planned for February 2023.
- Infiniium locks up in Single Ended mode with the PAM4 signal type selected when the channel's Main waveform display is off.

Notes

- The Data Analytics Setup dialog box no longer supports uploading attachments such as setups, composites, and waveform data. It still supports uploading measurement results. The Help documentation has been updated to reflect this.

KEYSIGHT

Version 11.40.00105

Released Date:	28 November 2022
Operating System:	Windows 10

New Enhancements

- The gating function zoom box now includes the “Global Gating Function” selection.

Bug Fixes

- I3C protocol trigger is not functional.
- The probe skew calibration for the PP0001A/02A/03A probes is failing.
- Differential channel 2-4 is swapped with Common Mode channel 2+4 on UXR 3.5mm models.
- Software crashes intermittently when sending Sigma-n level RLM measurement SCPI query.
- An error message is displayed, “The measurement you chose can’t be performed on the selected waveform,” when loading the Digital Channels and Buses demo.
- An intermittent error message is displayed, “This type of signal cannot be saved to disk or waveform memory. Waveform data is not valid”, when loading a waveform file into a waveform memory.

Version 11.40.00102

Released Date:	8 November 2022
Operating System:	Windows 10

Bug Fixes

- The Secure Storage Plugin may overwrite the Host ID when saving information from the Pathwave Calibration Advisor. If this occurs, the licenses installed on the oscilloscope will be invalidated until the Host ID is restored.

Version 11.40.00002

Released Date:	21 October 2022
Operating System:	Windows 10

New Features and Enhancements

Features	Add-on Software
Eye Measurement Improvements (better results in the presence of high Jitter)	Not Required
12-edge PAM4 Jitter Extrapolation for J6U/8U	D9110PAMA/D9120PAMA
PCIe6 12-edge PAM4 Jitter Extrapolation -interpolation/48 -edge Dual Dirac	D9110PAMA/D9120PAMA
PCIe6 48-edge PAM4 jitter support (12-edge jitter measurement with each edge being a composite of 4 locations)	D9110PAMA/D9120PAMA
PCIe6 RLM (Ratio of Level Mismatch) measurement	D9110PAMA/D9120PAMA
Updates PCIe SNDR/LFPR measurements to run over the appropriate regions of the PCIe pattern	D9110PAMA/D9120PAMA
Noise Compensation for Measurements on Waveform Memories	D9110JITA/D9120JITA/ D9110PAMA/D9120PAMA
USB4v2 PAM3 SNDR	D9110PAMA/D9120PAMA
Realtime Error Detector (RED) Acceleration for UXR (M8070B with M8070ADBV required)	D9120PAMA/D9120ASIA M8070B/M8070ADBV
NRZ Eye Contours	D9110JITA/D9120JITA
Protocol Update: New UniPro 2.0 (rev 1.0)	D9110MPMP
Protocol Update: eUSB2 v1.2	D9110EMBP/D9110USBP

Bug Fixes

- Includes bug fixes from the 06.73.00003 Infiniium software release.
- Offline analysis was not using the differential channel mode setting (Every other channel vs. Adjacent channels) from the setup.
- Edge-Edge measurement was missing the “Zoom to max/min” feature.
- Default setup is disabling “Cal Out Enable” and “Aux Out Enable” controls. This should only be done for factory default setup.
- Infiniium hangs performing offset calibration for the PP0001A probe with PP0004A adapter.
- When using the PP0004 probe adapter with the PP0001A/02A/03A probes, after calibrating a probe and then connecting a different probe, the new probe connected shows that it is already calibrated.
- The PP0001A/02A/03A probe is not identified when the PP0004A adapter is connected to the channel first, followed by connecting the probe to the adapter.

- The probe firmware updater at “C:\Program Files\Infiniium\UpdateProbeFirmware.exe” doesn’t work for the UXR-series because it is not able to connect to the UXR-series front panel.
- Protocol demos generate a trigger invalid warning.
- Intermittent issue with saved waveforms being from a previous trigger when the acquisition is stopped.
- Channel filters are not updated to the new sample rate when the sample rate is changed while the acquisition is stopped and then Run is pressed.
- The “:WAVeform:STReaming” SCPI command does not always take effect.
- The “:SERVice:SHUTdown” SCPI command is not working.
- The “:WAVeform:YINCrement” SCPI query does not return the correct result after the first trigger in single trigger mode.
- Saving the screen image using a SCPI command is missing the waveform intermittently, depending on where the mouse is hovering on the display.
- With infinite display persistence enabled, navigating to the next segment (segmented memory enabled) clears the persistence of the previous segment.
- Vertical scaling and measurements are not always correct when switching in and out of differential channel mode on the MXR-series oscilloscopes while the acquisition is stopped.
- Clear display isn’t captured by the Macro recorder.
- The Infiniisim frequency domain graph is only showing half of the expected spectra is some use cases.
- Level qualification of timing measurements is not working correctly when using “Between Upper, Lower Thresholds” mode.
- Measurement markers are not moved to the correct window after changing the Main/Zoom window view from the Add/Edit measurement dialog.
- Adding a measurement clears the acquired NRZ waveforms for the real time eye.
- Invalid CF and Span controls are visible after switching from RTSA to Scope mode.
- Calibrating oscilloscope jitter/noise from within the Jitter/Noise wizard is not working.
- An extra unused grid may show up when recalling a setup with Mask Test enabled.
- The channel bandwidth limit control is not always tracking both channels in differential channels mode.
- Realtime eye bit qualification for PAMx shows too many choices.

- The sequence A-B trigger RESET term only works following a specific configuration procedure.
- The realtime eye GUI position control at the bottom left of the waveform grid doesn't always work.

Known Bugs

- I3C protocol trigger is not functional with this version of software. A patch release in November 2022 is planned to fix this. Note that I3C protocol decode is functional, just not trigger.
- The probe skew calibration for the PP0001A/02A/03A probes is not working correctly. A patch release in November 2022 is planned to fix this.

Notes

- This is the first version of Infiniium software that works with a Core Software subscription license to enable the new features and enhancements.
- This software version updates the acquisition and backplane board FPGA firmware on the UXR-series oscilloscopes. This update is performed during installation of the Infiniium software and takes from 20 to 40 minutes depending on oscilloscope configuration.
- This software release includes several updates to the SCPI grammar. All updates are backward compatible. Refer to the "What's New in Version 11.40" topics from the UXR-series and MXR/EXR-series programmer's guides.

Version 11.30.00601

Released Date:	27 September 2022
Operating System:	Windows 10

Bug Fixes

- InfiniiSim frequency response graph showing only half of the expected spectra.

Version 11.30.00503

Released Date:	31 August 2022
Operating System:	Windows 10

Bug Fixes

- Waveform memories are not always loaded or plotted correctly with Fast Plot enabled.

Version 11.30.00502

Released Date:	29 August 2022
Operating System:	Windows 10

Bug Fixes

- “Automatic Probe Correction” is not being applied to the N2803A probe amplifier causing degraded signal integrity.
- Skew calibration for passive probes fails.
- The digitize command is not blocking while waiting for a trigger causing aborted tests in the D9010ETHC Ethernet Compliance application.
- An incorrect value for Eye Height is returned causing a test failure in the D9050LDDC LPDDR5 compliance application.
- Infiniium software crashes running the D9010EBSC IEEE802.3BSCD compliance application.
- The D9010CPHC MIPI C-PHY compliance application is unable to connect to the oscilloscope.
- Infiniium software crashes for long capture times with differential channels enabled on EXR/MXR-series oscilloscopes.
- Infiniium software crashes issuing the :CHANnel<N>:PROBe:HEAD:ADD “N2839A” command.
- Autoscale on a differential channel could cause ADC clipping for cases when the raw channel signals have different offsets.

Known Bugs

- Waveform memories are not always loaded or plotted correctly with Fast Plot enabled. The work around for this issue is to uncheck Fast Plot in the acquisition dialog. This bug does not impact the Offline mode of operation. This bug also exists in the 11.30.00406 version of the software.

Version 11.30.00406

Released Date:	25 July 2022
Operating System:	Windows 10

Enhancements

- Adds support for new Add-On model numbers. D9110xxxx replaces D9010xxxx and D9120xxxx replaces D9020xxxx model numbers.
- Adds support for new Core Software model numbers.
- Adds support for two new model numbers for midrange and high-performance oscilloscopes to replace D9010PAMA. For midrange, D9110PAMA “Pulse Amplitude Modulation PAM-N Analysis Software for MXR/EXR/S-Series”. For high performance, D9120PAMA “Pulse Amplitude Modulation PAM-N Analysis Software.”
- Adds “:CHANnel<N>:PROBEe:SKEW:AUTO” SCPI command description to the programmer’s guide.

Bug Fixes

- CAN-XL protocol: Not able to select data rate more than 10 Mbps.
- CAN-XL protocol: Decode is not working when “any frame” is selected in trigger dialogue.
- Protocol is re-decoded when the waveform is moved.
- Normalization not applied properly for FFE equalization taps.
- Waveform changes with the acquisition stopped when changing time/div or sample rate with Automatic Probe correction enabled.
- TVOLT measurement query intermittently returns 9.99E+37.
- Calibrating scope jitter/noise fails.
- Not able to define and enable a User defined voltage probe.
- Marker not displayed on screen for Track RF Marker.
- Start and Stop frequency controls show up in RTSA mode and when selected cause the software to crash.
- Software crashes when turning on a second channel in RTSA mode.
- Jitter data export doesn’t correlate with Jitter plots on screen. They are not separating rising and falling edges.
- Voltage offset adjustment intermittent with Zone trigger enabled.
- Not able to adjust the voltage offset of a differential or common mode channel.
- Infinite persistence leaves waveform ghosts when moving voltage offset.

- Autoscale on a differential channel can cause ADC clipping for cases when the raw acquisition channels have different voltage offsets.
- Error code 25 returned for ":MEASure:CLOCK:METHod:ALIGn" SCPI command for Explicit Clock CDR.
- The "WAVeform:POINts" query returns extra points in the points value on the initial invocation.

Version 11.30.00202

Released Date:	26 May 2022
Operating System:	Windows 10

Bug Fixes

- Fixes a defect causing the N7005A and MX002XA probes not to be recognized when connecting the probe to the oscilloscope.

Version 11.30.00201

Released Date:	17 May 2022
Operating System:	Windows 10

New Features and Enhancements

- Improves the PAM4 FFE Equalization Auto Tap algorithm to produce better results for closed realtime eyes – D9010PAMA "Pulse Amplitude Modulation PAM-N Analysis Software".

Bug Fixes

- Fixes a crash running Acquisition Board and Backplane Board service tests.
- Fixes a defect with saving a MultiCal calibration to a folder.
- Fixes the install package so that it installs the FTDI drivers.
- Fixes an intermittent issue in the EXR/MXR-series oscilloscopes causing an FPGA checksum failure during oscilloscope startup.
- Fixes realtime eye measurements for cases when Mask Test is enabled.
- Fixes an implementation issue in the CTLE equalization filter causing more realtime eye closure than expected.
- Fixes the PCIe5 CTLE equalization preset filter response.
- Fixes a probe calibration failure on the S-series oscilloscope for the PP0001A passive probe with the PP0004A auto-probe 1 adapter.
- Fixes a crash that can occur on the EXR/MXR-series oscilloscopes when disconnecting the PP0004A auto-probe 1 adapter.

- Fixes a defect with gated functions where the output of the function is not always displayed.
- Fixes a waveform shadow display artifact in Roll Mode.
- Fixes a Roll Mode display defect with math functions where the function result is not displayed unless the source channel is turned on.
- Fixes a defect with the FFT function rendering in the main graticule instead of opening a new graticule.
- Fixes a defect with "EOT" missing from MIPI D-PHY protocol.
- Fixes a crash on the 8-channel MXR-series that can occur recalling a setup with FFT math functions enabled on 8 channels.
- Fixes a defect with recalling a setup. The measurement sequence in the measurement results tab was not being recalled properly.
- Fixes a crash running Offline when using the :WAVeform:DATA command to load data into a waveform memory.
- Fixes a defect preventing the calibration from running when using the SCPI command, ":MEASure:RJDJ:SCOPe:RJ:CALibrate," to calibrate oscilloscope jitter/noise.
- Adds an additional digit of resolution to the frequency axis labels in Hardware DDC mode.
- Adds missing Infiniisim probe files to the "C:\Users\Public\Documents\Infiniium\Filters\Probes\InfiniiMax" folder for the Offline application.
- Adds missing PAM6 and PAM8 demos.

Notes

- Updates the UXR Power FPGA from version 7.21 to version 7.22. This update requires powering down the oscilloscope and removing the power cord to complete.

Version 11.30.00003

Released Date:	31 Mar 2022
Operating System:	Windows 10

New Features and Enhancements

- Adds new measurement to measure undershoot.
- Adds a new feature to save/recall calibration factors. This is intended to support using the oscilloscope in multiple temperature environments.
- Accelerates plotting of deep-memory waveforms.
- Improves the responsiveness for voltage offset adjustments.
- Improves waveform offload speed when Infinite persistence is enabled.
- Adds digital channel support to Roll Mode for MXR/EXR-series oscilloscopes.
- Adds a new Math function to compute the square root of power spectral density.
- Adds a quick copy feature for channels and measurements.

- Adds “Deskew All Signals” functionality for Multiscope.
- Adds Gating function enhancements including the following:
  - Zoom box can be used to enable horizontal gating function
  - Zoom box can be used to enable a gated FFT
  - Includes check boxes to control if the gated signal is displayed and if it opens in a new graticule.
  - Includes button to quickly center the gate
- Adds support for the D9010ASIA “Advanced Signal Integrity Software” license for MXR/EXR-series oscilloscopes.
- Updates to D9010DMBA De-embedding software for UXR (1mm and 1.85mm) Oscilloscopes
  - Updates the Precision Cable calibration wizard to allow either the N2806A Calibration Pulse Generator or the N2125A (1mm) / N2126A (1.85mm) Calibration Module.
  - Updates pictures in the Precision Probe/Cable wizard to be more accurate.
- Enhancements to the D9010PAMA “Paulse Amplitude Modulation PAM-N Analysis Software”
  - Includes a new SNDR setup dialog to support PCIe Gen5/6, IEEE 802.3ck, and USB4-V2 which includes
    - Linear Fit Pulse Response (LFPR) setup
    - SNDR Input, Pulse Corrected, Error, LFPR waveform plotting
    - Sigma-n, Sigma-e, Pmax, SNDR and SNDR Level Mean measurements
  - Adds a Gaussian Window for the Vertical Eye Closure measurement
  - Increases the Jrms/Jnu report count to 1,000,000 (was 10,000)
- Adds support for CAN-XL to the D9010AUTP “Automotive Protocol Decode and Trigger Software” license.
- New UXR-Series Aux Power Board FPGA firmware revision 4.1.

New SCPI Grammar (refer to Programmer’s guide for details)

- Adds the “:LANE<N>:EQUalizer:DFE:TAP:SEED {OFF|ON}[,<value>]” SCPI command to seed the initial DFE symbol values
- Adds the “:MEASure:PAM:EYE:WSHape {BOXCar|GAUSsian}” SCPI command to select the window shape for PAM4 eye height and VEC measurements.
- Adds the “:MEASure:PAM:EYE:WSDeviation <std dev percent>” SCPI command to select the window standard deviation for PAM4 eye height and VEC measurements.
- Adds several new “:ANALyzer:SNDR” SCPI commands to support the new SNDR measurement functionality.
- Adds the “:LXI:IDENtify[:STATe] <Boolean>” SCPI command, used by LXI to identify the oscilloscope by popping up an LXI LAN information window that includes the LXI class, LXI version and MAC Address.
- Adds the Waveform Generator option to the *OPT? query for MXR/EXR-series oscilloscopes.

Bug Fixes

- Compensates for VTerm on MX0105A and N5380A/B SMA probe heads.
- Restores the previous setup when switching between Scope and RTSA mode.
- Adds navigation support for waveform memories 5-8.
- Shows the Bode plot as part of the Measurement Report for D9010PWRA.
- Fixes HW Mask Test “stop on failure” for channels 5-8 of the MXR/EXR-series oscilloscopes.
- Updates the Burst Width measurement to work when only one burst is captured.
- Disables the Zoom window in Roll Mode while the waveform is rolling.
- Fixes a defect in the Histogram Top/Base calculation for percent thresholds, which was causing a bad top/base measurement for deep-memory waveforms not covering the full screen.
- Fixes a crash that occurs when editing RTSA masks.
- Fixes a channel-channel skew error that occurs when both 4-port Infiniisim and acquisition averaging are enabled.
- Fixes Infiniium web control Get Image for RTSA mode.
- Fixes the sampling rate selected for High Resolution Auto mode.
- Fixes a defect with loading h5 waveforms into Offline.
- Fixes the skew calibration for the 1169B probe amp with the N5381B probe head.
- Fixes a defect with the acquisition taking too long to complete at low sampling rates.
- Improves the trigger rate in Segmented acquisition mode at slow time/div settings.
- Fixes a measurement defect in acquisition averaging mode causing bad measurement results.
- Fixes a defect in MultiScope where the sample points between channels could be misaligned by a sample period.
- Fixes a discontinuity between Tj and Rj/Dj jitter extrapolation.
- Fixes an intermittent hardware DFE plotting error.
- Fixes a defect in the Time Interval Error measurement preventing it from working with constant clock recovery for PAM3 signals with SSC present.
- Fixes a defect in Offline preventing waveform files from being displayed on startup.
- Fixes a defect in the trigger indicator for deep-memory acquisitions for MXR/EXR-series oscilloscopes.

Notes

- For the EXR/MXR-series oscilloscopes, this software includes an FPGA update to fix Hardware Mask Test “Stop on Failure” functionality for channels 5-9. A power cycle is required to complete the update.
- For the UXR-series oscilloscopes, this software includes an FPGA update for the Aux Power Board that will require a power cycle to complete.

Known Bugs

- MXR/EXR “Trigger on Search” does not support digital channels.
- MXR/EXR Roll Mode may show bad data at the end of the waveform when manual sample rate is selected, and the roll is stopped before the screen is filled.
- Known defects in MXR/EXR Roll Mode for Math functions.

Version 11.25.00202

Released Date:	28 Jan 2022
Operating System:	Windows 10

New Features and Enhancements

- Extends the Bode plot down to 1 Hz (was 10 Hz) – MXR-series oscilloscopes D9010PWRA Power Supply Analysis Software.
- Adds long run length level measurement for PAM-4 – D9010PAMA PAM-N Analysis Software.

Bug Fixes

- Fixes a USB4 tunnel USB 3.2 decode defect with Sync detection - D9010USBP protocol software.
- Fixes an error in the differential waveform result running with Infiniium Offline Oscilloscope Analysis Software – D9010BSEO and N8900A.
- Enables the MSO channel functionality for the Offline Analysis software - D9010BSEO and N8900A.
- Fixes an Infiniium Offline defect using the :WAVeform:DATA SCPI command to load waveforms for Phase Noise analysis. The number of correlations is overstated – Infiniium Offline D99020JITO Jitter, Vertical and Phase Noise Analysis software.
- Fixes a channel input overload error on the MXR-series oscilloscope when adjusting offset with the DP0001A probe connected.
- Fixes the offset/gain calibration for the MX0025A probe with MX0106A flat probe head.
- Fixes an error in the TJ (total jitter) result calculated with Fast Plot enabled and JTF PLL specification selected - D9020JITA EZJIT Complete software.
- Fixes a defect with the FFT vertical marker units showing as V rather than dBm.
- Fixes a trigger level error on the MXR/EXR-series oscilloscopes with HFReject trigger coupling selected.
- Fixes a Roll mode waveform plotting error on the MXR/EXR-series oscilloscopes that occurs after sending the :STOP SCPI command.
- Fixes the :ASTate SCPI query so that it returns the trigger ARM state correctly.
- Fixes the Duty Cycle Adjustment (DCA) measurement SCPI commands.
- Adds the :TRIGger:EDGE:COUPling SCPI command to the MXR/EXR-series oscilloscopes programming guide.

- Fixes a defect in the MXR/EXR-series oscilloscopes where the plot is not rescaled after adjusting Volts/div with the acquisition stopped.
- Fixes a GUI defect in RTSA mode with the Frequency Mask Trigger “OK” button being off screen with Touch enabled.
- Fixes a defect in the MXR-series oscilloscopes D9010PWRA Power Supply Analysis software where the Waveform Generator was not being enabled for Bode plots.

Version 11.25.00101

Released Date:	4 Jan 2022
Operating System:	Windows 10

Bug Fixes

- Fixes oscilloscope voltage range limits for probes with multiple attenuation levels including DP00001A, MX002XA, N7026A, N7000/1/2/3A, N2830/1/2A, N2820/1A, N2790A, and N2750/1/2A.

Version 11.25.00001

Released Date:	3 Dec 2021
Operating System:	Windows 10

New Features and Enhancements

- Supports Secure Instrument Communications 1.0.
- Extends the maximum number of measurements to 40. The previous maximum was 20.
- Improves the burst interval measurement to work with only one burst on screen. Previously, it required more than one burst to be on screen.
- Enhancements to D9010ASIO “Infiniium Offline – Adv Signal Integrity Software” and D9020ASIA “Advanced Signal Integrity Software”
    - Adds Infiniisim SCPI grammar for specifying port numbering and port flipping.
- Enhancements to D9010JITO “Infiniium Offline – EZJIT Complete Software” and D9020JITA “EZJIT Complete – Jitter and Vertical Noise analysis Software”
    - To support PCIe6, adds new jitter results for Uncorrelated Total Jitter, UTJ(p-p), and Uncorrelated Deterministic Jitter Delta-Delta, UDJdd.
- Enhancements to the D9010PAMA “Paulse Amplitude Modulation PAM-N Analysis Software”
    - Adds auto skew controls for PCIE6 CDR.
    - Adds per-level SNDR Sigma-n measurements.
    - Adds per-level oscilloscope random noise removal from SNDR Sigma-n measurements.
    - Adds four data patterns for PCIE6 PAM4 12-Edge jitter analysis.

- New Protocols and Protocol Enhancements
  - MIPI RFFE V3.0 (includes protocol trigger for EXR/MXR-series and decode only for the UXR-series) – D9010MPLP license
  - UniPro 2.0 – D9010MPMP license
  - Quad SPI Analog Trigger Speed Improvement – D9010LSSP license

New SCPI Grammar (refer to Programmer's guide for details)

- Adds SCPI grammar for the Duty Cycle Adjustment measurement.
- Adds streaming support for the ":WAVeform:DATA" SCPI command to support up to 2 Gpts waveforms.
- Adds four PCIE6 data patterns, following is the new SCPI syntax to accommodate this.
  - :MEASure:PAM:PRBS13q:PATTern {P13Q | PCI6P1 | PCI6P2 | PCI6P3 | PCI6P4 | FILE}
- Adds a new query to get the status of the DFE taps (valid, clamped high, or clamped low). Returns VAL, HIGH or LOW.
  - :LANE<n>:EQUalizer:DFE:TAP:STATus? <tap number>
- Adds new per-level SNDR Sigma-n measurements
  - :MEASure:NSIGma(?) (<source>(, {IEEE | PCIE | FILE}(, <file path>(, {L0 | L1 | L2 | L3 | ALL})))
- Adds UDJdd and UTJ jitter results for the :MEASure:RJDJ:ALL results query.

Notes

- This software installs a new version of the probe firmware for the MX0020A (10 GHz), MX0021A (13 GHz), MX0022A (16 GHz), MX0023A (25 GHz), MX0024A (20 GHz), and MX0025A (25 GHz) InfiniiMax high-speed differential probe amplifiers. After connecting one of these probes, the user is prompted to update the probe firmware. The update takes several minutes to complete for each probe.

Bug Fixes

- Includes bug fixes from the 06.71.00001 Infiniium software release.
- Fixes an intermittent issue causing a missing Host ID.
- Fixes a defect preventing the loading of a .h5 waveform file from the "Open Composite File" dialog.
- Fixes a channel-channel skew error of up to ~4ps that can occur for some volts/div scale changes.
- Fixes a defect in Hardware Mask Test where false failures can occur after applying channel skew.
- Fixes a defect in Hardware Mask Test "Run Until Waveforms" where stopping occurs before the full waveform count is reached.

- Fixes an issue in the MXR/EXR-series oscilloscopes where disk utilization goes to 100% when the Sin(x)/x Interpolation filter is enabled.
- Fixes y-marker defects in RTSA mode (Real Time Spectrum Analyzer).
- Fixes Default Setup for RTSA mode (Real Time Spectrum Analyzer).
- Fixes a defect with software not responding to a current probe external power being plugged in/removed. This impacts the N2780A, N2781A, N2782A, N2783A and N7026A current probes.
- Fixes an incorrect signal level generated by the Waveform Generator for some amplitude settings.
- Fixes decoding defects in the I3C protocol decoder.
- Fixes decoding defects in the JTAG protocol decoder.
- Increases the maximum measurement count to prevent overflow.
- Fixes the Divide math function for a constant value divided by a signal source.
- For MXR/EXR-series, fixes an intermittent defect with bad data at the end of the waveform in Roll sampling mode, with manual sample rate, after pressing Stop. This is a partial fix. If the roll is stopped before filling the screen, there could still be bad data at the end of the waveform.
- For MXR/EXR-series, fixes an intermittent defect with time misalignment between a channel and a math function in Roll sampling mode with manual sample rate selected.
- Fixes a defect with canceling a probe calibration before the calibration is completed. This can cause the calibration to falsely show Passed even though the calibration is incomplete. This defect only effects the MX0020A/21A/22A/24A/25A probes.
- Fixes an issue in the MXR/EXR-series preventing the voltage offset control from working after default setup with a probe connected which supports auto probe correction.
- Fixes a failure with the EZJIT Complete jitter noise calibration when non-zero voltage termination is selected for the N7010A probe.
- Fixes a defect in the MXR/EXR-series Power Analysis application which was preventing Harmonics Test Results from being saved.
- Fixes a defect with cross-correlated period measurement trend being centered about 0 rather than the measurement mean value.
- Fixes a defect with maximizing the oscilloscope window after minimizing.
- Improves the probe calibration instructions for the MX0105A SMA probe head.
- Enables loading a single waveform from an .h5 waveform file that includes multiple waveforms.
- Fixes the “:LISTer:DISPlay ON” command.
- Fixes the number of transitions reported for the jitter results for “Unit Interval” display units.
- Fixes a defect with the channel scale fine control getting disabled.
- Fixes a defect with adding manual markers where a Y marker is intermittently missing.
- Fixes the pulse width trigger polarity. Triggering was occurring on the wrong edge slope.
- Fixes AND qualified pulse width triggers for Sequence-B trigger.
- Fixes pulse width trigger range for Sequence-B trigger.

Known Bugs

- HW Mask Test “stop on failure” does not work for channels 5-8 of the MXR/EXR series. There is a plan to fix this in the 11.30 release.
- MXR/EXR Roll Mode does not support digital channels. There is a plan to fix this in the 11.30 release.
- MXR/EXR “Trigger on Search” does not support digital channels. There is a plan to fix this in the 11.30 release.
- MXR/EXR Roll sampling mode may show bad data at the end of the waveform when manual sample rate is selected, and the roll is stopped before the screen is filled. There is a plan to fix this in the 11.30 release.

Version 11.20.00201

Released Date:	11 Nov 2021
Operating System:	Windows 10

Bug Fixes

- Fixes the following issue. After running the attenuator service self test, the UXR 3.5mm channel module configuration isn't restored properly and subsequently running a calibration will not be accurate unless the oscilloscope application is restarted before running the calibration.
- Increases a test limit in the UXR 1.85 mm and 1.00 mm channel module service self test to prevent false failures.
- Fixes an issue with the response correction filter cache causing bad waveform data in RTSA mode.
- Fixes an issue with the MXR/EXR response correction filter cache causing an invalid filter to be applied to the channel. This was causing a bandwidth failure during manufacturing test.

Version 11.20.00101

Released Date:	19 Oct 2021
Operating System:	Windows 10

Bug Fixes

- Updates “Quick Jitter” to use Arbitrary pattern length.
- Fixes a defect on the MXR and EXR series causing measurements to reset when selecting a channel.
- Increases trigger hysteresis for “High-Bandwidth Trigger” on the UXR-series to prevent triggering on oscilloscope noise for high-sensitivity volts/div settings.

- Fixes a defect that prevented drawing of masks for the real time eye of a gated math function.
- Fixes a defect causing the MX0023A probe DC attenuation/offset calibration to fail with MX0105A and N5380 SMA probe heads.
- Fixes the “Multipurpose on Trigger” feature for saving waveforms and screen images.
- Fixes the “Probe Resource Center” link in the probe configuration dialog.

Version 11.20.00001

Released Date:	21 Sep 2021
Operating System:	Windows 10

New Features and Enhancements for UXR-Series

- New D9010WSAA software package
  - Realtime Spectrum Analysis (RTSA) bandwidth up to 160 MHz when ordered with UXR000-601 or UXR000-602.
  - RTSA standard bandwidth of 40 MHz.
- New D9020WSAA software package
  - Realtime Spectrum Analysis (RTSA) bandwidth up to 320 MHz when ordered with UXR000-602, or up to 160 MHz when ordered with UXR000-601.
  - RTSA standard bandwidth of 40 MHz.
- Implements a caching scheme to reduce the time required to change volts/div, sample rate, bandwidth and channel skew settings.
- Provides N4391EM4/5/6C license recognition on the UXR for the N4391B Optical Modulation Analyzer.
- Adds support for the MX0020A (10 GHz), MX0021A (13 GHz), MX0022A (16 GHz), MX0024A (20 GHz), and MX0025A (25 GHz) InfiniiMax high-speed differential probe amplifiers, all of which use the Autoprobe-2 interface.

New Features and Enhancements for MXR/EXR-Series

- Adds IF Magnitude Trigger which is a trigger mode that allows the user to trigger on the Digital Down Converted signal.
- Enhancement to the transient response test in the D9010PWRA “Power Supply Analysis Software” to specify the overshoot in either voltage or percent and to allow a much lower value for overshoot (current limit is 1% and new limit is less than 0.1%).

New Features and Enhancements for UXR- and MXR/EXR-Series

- Enhancements to the D9010PAMA “Pulse Amplitude Modulation PAM-N Analysis Software”
    - Adds support for PAM6 and PAM8 including Thresholds, Realtime Eyes, Eye Measurements, CTLE/FFE/DFE Equalization, CDR, Jitter/Noise Measurements, and SER.
    - Adds noise removal for PAM4 12E J3U/J4U/J6U measurements.
    - Enables the Vrms Area measurement (entire display) for PAM4 signals.
- Enhancement to D9020JITA and D9010JITO “EZJIT Complete Software” to add a cross-correlated period measurement to support PCIe5/6.
- Enhancement to D9010MCDP “MIPI CSI and DSI Protocol Decode/Trigger Software (C-PHY and D-PHY)” to add CSI2 v3.0 over CPHY v2.0.
- Enhancement to D9010MCDP “MIPI CSI and DSI Protocol Decode/Trigger Software (C-PHY and D-PHY)” to add CSI2 v3.0 over CPHY v2.0.
- Adds hardware-accelerated Mask Test.
- Adds the ability to build multiple waveforms on top of each other for Offline analysis in a similar way to how multiple waveform acquisitions accumulate on the oscilloscope.
- Adds a Total Harmonic Distortion FFT measurement.
- Updates the Phase Noise application to work with mmWave Extension Bandwidth Windows (Frequency Extension signal type).

New SCPI Grammar (refer to Programmer’s guide for details)

- :FUNCtion<F>:ADEMod <source>
- :HOSTed:EOACquisition {ON | OFF}
- :MEASure:RJDJ:SCOPe:RJ:CALibrate
- :MEASure:FFT:THDistortion(?) Signal,[PEAK|MANual],Param,Peak#
- :MEASure:PN:DESKew
- :MTESt:CPOLygons {ON | OFF}
- :MTESt:HWMask:UHWMask {ON | OFF}
- :MTESt:HWMask:ACTive?
- :MTESt:STATistics {UI | WAVeforms | BOTH}
- :POWer:SIGNals:OVERshoot:UNITs(?) <PERCent:VOLT>
- :SYSTem:ERRor 293 Concave Mask (HW can't do concave polygons)
- :SYSTem:ERROR 294 (Out Of HW Mask Resources)
- :WAVeform:DATA <X_origin>,<X_increment>,<Y_origin>,<Y_increment>,<IEEE_block_data>
- Several “:MEASure” commands and queries have been added to support PAM6 and PAM8
- Several “:REPository” commands and queries have been added to support Data Analytics (KS6800A) remote interface

Notes

- The LXI Conformance Committee approved the application for UXR/MXR/EXR Scopes as being conformant to LXI Device Specification 2016 (LXI Core 2016 Device and LXI Extended Functions: VXI-11 Discovery and Identification, and HiSLIP) based on Self Certification.
- Updates the LXI version to CCL LXI 5.2.3 M1.
- Updates the Pathwave Calibration Advisor to version 1.44.
- Removes IVL restricted licenses from the demo all trial license.

Bug Fixes

- Includes bug fixes from the 06.70.00001 Infiniium software release.
- Adds a Charge measurement to the Mixed measurements. It was missing.
- Fixes an issue with Phase Noise averaging resetting.
- Fixes an issue with the waveform colors not loading properly into Offline for composite waveforms.
- Fixes an issue with the ":POWer:CLResponse:APPly" SCPI command not working the second time it is executed.
- Fixes an issue with the N280XA InfiniiMax III probe calibration calling for the wrong fixture, E2655 rather than MX0104A or N5443A.
- Fixes an incorrect measurement result for FFT channel power and power spectral density for Vrms units.
- Disables Differential Channels mode when the probe external scaling is different between the two channels.
- Fixes an issue where jitter measurements on waveforms saved to .bin format were showing a phase jump.
- Allows tracking RF markers for the Phase Noise plot and changes the markers enabled by the Phase Noise Wizard to use tracking RF markers rather than X-position markers.
- Fixes the loop bandwidth setting (correct value is 5 MHz) for the DisplayPort UHBR10, UHBR13.5 and UHBR20 CDR presets.
- Fixes an issue with the Trigger Event Register returning an incorrect value. This issue was found running the D9030SATC "SATA 6Gb/s Compliance Test Application."
- Fixes an OPC (Operation Complete) query timeout issue. This issue was found running the D9010USBC "USB 2.0 Transmitter Compliance Test Application."

Known Bugs

- HW Mask Test "stop on failure" does not work for channels 5-8 of the MXR/EXR series. There is a plan to fix this in the 11.30 release.
- MXR/EXR Roll Mode does not support digital channels. There is a plan to fix this in the 11.30 release.

- MXR/EXR “Trigger on Search” does not support digital channels. There is a plan to fix this in the 11.30 release.

Version 11.15.00203

Released Date:	4 Aug 2021
Operating System:	Windows 10

Enhancements

- Adds functionality to Variable Length Segmented mode to support ending the acquisition after a user specified time. Previously, it only ended after a specified number of segments.
- To reduce measurement uncertainty, this software version modifies the PAM4 12-Edge measurements to require at least 100 patterns.

Bug Fixes

- Includes several bug fixes for Ethernet 1000Base-T1 (D9020AUTP license) protocol trigger.
- Reduces the pre-trigger delay added to the MSO channels. This was causing acquisitions with MSO channels enabled to take longer to complete than expected.
- Fixes a vertical scaling defect with Vertical Autoscale for channels with Infiniisim enabled.
- Enables PCIe Gen1 and Gen2 protocol decode for the D9010PCIP license.
- Modifies the D9010PWRA Power Supply Test Software offset calibration to use the probe’s offset/gain cal.
- Fixes a defect causing the Infiniium software to hang when running the D9010SFPC SFP+ Ethernet Compliance Test Application.
- Fixes a defect where the channel waveform is not plotted in differential channel mode with Infiniisim graphs turned off. This defect only occurs when probes are connected to the input channels.
- Fixes a crash in the MIPI M-PHY UniPro Protocol decode software found running on the MXR-series oscilloscopes.

Version 11.15.00201

Released Date:	7 July 2021
Operating System:	Windows 10

Enhancements

- Updates the Infiniium Software Updater to treat xx.xx.xxxx and x.x.x.x versions as the same version. For example, 02.10.0014 and 2.10.14.0 are the same version.
- Updates the End User License Agreement (EULA) to version 1-July-2021 (5991-3402)

Bug Fixes

- Changes the factory default setting for the “Auto Power On” user preference to OFF for UXR, MXR and EXR series oscilloscopes.

Version 11.15.00101

Released Date:	25 June 2021
Operating System:	Windows 10

Enhancements

- Modifies the PAM4 jitter algorithm for the 12-Edge Sigma-n DataCom measurement to work with closed eyes.
- Improves the robustness of the PAM4 12-edge jitter measurements for closed eyes.
- Enables Ethernet 1000BaseT1 trigger (D9020AUTP license).
- Updates the MXR/EXR to recognize the PD1000-60002 probe.

Bug Fixes

- Adds Windows10 support to the Infiniium installer so that it installs VC++2013 (x86 and x64) redistributables. These redistributables are required for some compliance test applications.
- Fixes an issue than can potentially default the calibration factors on the UXR when upgrading from 10.11 or older software versions to 11.15.00001.
- Fixes an issue where turning on a second channel with Infiniisim enabled can halt the acquisition.
- Fixes an issue on the MXR/EXR where an overload can occur performing default setup with a 50-ohm probe connected to one of the channels.
- Fixes the :CALibrate:STATus query to return the correct string for a 2-channel UXR oscilloscope.
- Fixes an intermittent crash that was found running PAM4 12-edge jitter measurements on deep memory with Infiniisim enabled.
- Fixes an issue in the “:MEASure:CLOCk:METHod:OJTF” command where it was not having an effect on the CDR settings.
- Fixes an intermittent issue on the UXR-series oscilloscopes which adds 125ps of delay to the aux trigger path after cycling power.

KEYSIGHT

Version 11.15.00001

Released Date:	21 May 2021
Operating System:	Windows 10

Enhancements for UXR-Series

- Adds 2->4 channel upgrade options for the UXR-series AP models.
- Adds support for N7010A (30GHz Active Termination Adapter) and N7024A (6GHz Power Rail Probe) for all UXR-series. Previously, these were only supported for UXR frames with 3.5mm input connectors.
- Adds CDR edge direction into the measurement setup panel for the clock TIE measurement to simplify user setup.
- Includes several updates to PAM4 CDR, equalization and jitter to support IEEE 802.3ck D1.4 spec and PCIe6:
    - New CTLE and CDR functions for PCIe6
    - Improves the 12E measurements to work with high BER signals
    - 12E Jitter and Jrms, J4U, J6U, EOJ measurement on PRBS9Q and PCIe6 52-bit pattern
    - SNDR Sigma-n measurement
    - Improves pattern averaging to work on closed eyes.
- New Protocol Decode Support:
    - 400G FEC Decode (Included with D9010FECP and D9020BDLP, requires D9010PAMA)
    - DP 2.0 Phase 1 – Aux Channel Decode

Enhancements for MXR and EXR-Series

- Adds new 1.6 Gpts Combined Flexible Memory upgrade options.
- Provides support for a new family of high-bandwidth single-ended passive probes. (Note that Infiniium software 11.10.00202 also supports these probes):
    - PP0001A Passive probe, Hi-Z+, 10:1, 1 GHz, 300 Vrms
    - PP0002A Passive probe, Hi-Z+, 100:1, 800 MHz, 1200 Vrms
    - PP0003A Passive probe, Hi-Z+, MMCX interface, 10:1, 1 GHz, 30 Vrms
    - PP0004A Auto-probe 1 adapter for high bandwidth passive probes
- New Protocol Decode Support:
    - DP 2.0 Phase 1 – Aux Channel Decode and Trigger (Included with D9010EMBP and D9010USBP)
    - Ethernet 1000BaseT1 Decode (D9020AUTP license)

New SCPI Grammar (refer to Programmer's guide for details)

- :ANALyze:SIGNal:PATTern:INVert {ON | OFF}
- :ANALyze:SIGNal:PATTern:REVerse {ON | OFF}
- :MEASure:PAM:PRBS13q:PATTern {P13Q, PCI6, FILE}
- :MEASure:PAM:PRBS13q:PFILe <pattern file path>
- :MEASure:PN:INFO?

Notes

- Changes the UXR factory default user preference "Auto Power On" setting to ON.
- Updates the packaging to include KLM 5.4 version of the Keysight License Manager.
- Updates the "maximum" and "yellow maximum" counts reported to the Asset Management software for the UXR 1.85mm and 1.00mm attenuators to be 250K and 225K respectively. Previously, these cycle counts were 2M and 1.8M respectively. Also adds a method for service centers to reset the attenuator cycle count.
- Reduces the RTSA bandwidth enabled by the "demoall" license to 160MHz.

Bug Fixes

- Fixes a timeout issue that occurs running the FlexRT Optical Dark Calibration for the N7004A and N7005A Optical to Electrical Converters.
- Fixes the measurement result shown on the MXR/EXR-series oscilloscopes when a signal is clipped.
- Fixes an issue where the Frequency Mast Trigger mask is drawn in the wrong location for horizontal references other than 50%.
- Fixes a bug preventing the uploading or more than one data set into the K6810A/K6820A/KS6899 Pathwave Measurement Analytics.
- Fixes an issue blocking transporting of licenses from a UXR/MXR/EXR-series oscilloscope.
- Fixes an issue causing the incorrect memory depth to be calculated by the PAM4 wizard when jitter/noise is not selected.
- Fixes an issue that was blocking measurement statistics in the Output Ripple measurement when the histogram is enabled for the MXR/EXR Power Application.
- Fixes an issue with vertical autoscale not scaling the signal properly when Infiniisim is enabled with a transfer function which has a gain greater than one.
- Fixes an issue in the Infiniium installer where an error message is displayed indicating that the Wibukey.dll cannot be installed properly.
- Fixes issues with the ":WGEN:PRBS:LENGth" SCPI command.
- Fixes the UXR keyboard selftest to include the Aux trigger button.
- Fixes a failure occurring in the skew calibration for the N2830A probe.
- Reduces the time required on the MX0023A InfiniiMax 25 GHz RC probe to change the attenuation setting.

KEYSIGHT

Version 11.10.00202

Released Date:	9 April 2021
Operating System:	Windows 10

Enhancements

- Modifies the jitter algorithm for 12-Edge measurements to use Time Interval Error rather than measuring edge jitter from the start of the waveform. This reduces the measured jitter for some waveforms.
- Adds SCPI support for RS-232 / UART serial decoding.
- Provides a popup dialog to update the MX0023A probe firmware when a probe with out-of-date firmware is connected to the oscilloscope. Using MX0023A probes with out-of-date probe firmware can result in long delays when attaching the probe or when changing attenuation setting. The most current version of MX0023A probe firmware is 6.4.
- Allows D9020BDLP “Complete Infiniiium Protocol Trigger/Decode Bundle” on the MXR and EXR series.

Bug Fixes

- Fixes an issue with the FFT display disappearing for Center Frequencies > 10GHz on a Digital Down Converted waveform.
- Fixes an issue with the Host ID not being detected after cycling power.
- Fixes a false failure of the acquisition memory self test.
- Fixes an issue with the Power Spectral Density measurement showing “-N.N” result when Vrms units are selected for an FFT Magnitude function.
- Fixes an issue in the Infiniium Software Updater showing “Compatibility Issues” for the D9030SATC SATA6G Test App.
- Fixes an issue with the phase noise application, the carrier power was calculated with the wrong reference impedance in differential channel mode. It was calculated with 50 ohms but should be calculated with 100 ohms.
- Fixes an issue switching to RTSA (Real Time Spectrum Analyzer) mode. An error message was reported, “This entry isn’t a valid selection. The sampling mode control has not been modified.”
- Fixes the autoset feature for PAM-4 thresholds. Autoset was not working when the existing threshold levels were outside of the eye.
- Fixes a crash that could occur when reordering measurements using “move up” and “move down”.
- Fixes an issue where the oscilloscope application could crash after selecting File->Exit.

Version 11.10.00105

Released Date:	12 March 2021
Operating System:	Windows 10

Enhancements for UXR-Series

- Adds CTLE presets and 5th order PLL to support PCIe 5.0
- Adds a variable length segmented mode for use by the PathWave Vector Signal Analysis (89600 VSA) software for RADAR DRFM/Jammer test.
- Adds IF magnitude trigger for use with Digital Down Conversion.
- Adds software Zone Trigger support for the following functions, FFT Magnitude, Multiply and Equalization. The main driver for this feature is to do Zone Trigger on the post-DFE equalization lane signal for DDR5.
- Adds a new measurement called “Duty Cycle Adjustment” to support the DDR5 compliance test application. This is a set of measurements requested by DDR5 customers who need to evaluate the duty cycle of each “phase” of the DQS (strobe) signal.
- Adds multi-channel mask test up to 8 channels for the UXR series. This feature is already available for the MXR and EXR series.
- Adds history mode for the UXR series. This feature is already available for the MXR and EXR series.
- Adds 8 waveform memories for the UXR series. This feature is already available for the MXR and EXR series.
- Adds Fault Hunter for the UXR series. This feature is already available for the MXR and EXR series.
- New Protocol Decode Support:
    - PCIe Gen 5 (D9010PCIP license)
    - USB4 – Tunneling USB3.2 (D9010USBP license)
    - USB4 – Tunneling PCIe3.1 (D9010USBP license)

Enhancements for MXR- and EXR-Series

- Adds software Zone Trigger support for FFT Magnitude and Multiply functions.
- Provides basic MultiScope support.
- Increases the maximum number of segments per channel to 31K. Previously it was 5K.
- New Protocol Decode Support:
    - USB4 LS Trigger (D9010USBP license)
    - MDIO Decode/Trigger (D9010EMBP and D9010BDLP licenses)
    - RFFE Hardware Trigger (D9010MPLP license)
    - SVID Spec Rev (v1.93, VR14) (D9010LSSP license)

Other Enhancements for UXR-, MXR-, and EXR-Series

- Adds a new calibration service feature called the “Pathwave Calibration Advisor”, to remind customers when calibration is due and to make is easy to request calibration service. These reminders can be turned off for customers who do not want this feature.
- Accelerates the runtime speed of the EZJIT jitter analysis software. The greatest acceleration occurs when running Periodic mode, using Spectral RJ separation. Other modes like Random mode and Tail-fit will also receive some acceleration.
- Adds the ability to measure eye width and eye jitter in UI units. Refer to Help and the Programmer’s guide for more information.
- Adds a 60dB/Decade filter shape for the TIE Filter accessed from the Advanced tab in the Jitter/Noise Setup dialog.
- Some improvements have been made for screen capture. The time to render an inverted screen capture has been accelerated. The Platinum theme has been reworked to fix inverted-screen printing issues.
- Adds a new check box in the Display setup dialog to enable/disable the Color Grade Legend. Also adds remote SCPI grammar to support this.
    - :DISPLay:CGRade:LEGend <ON|OFF>
    - :Diplay:CGRade:LEGend?
- Adds SCPI grammar for saving a measurement report. The report can be saved as PDF or MHTML format.
    - :DISK:SAVE:MREPort <filename.pdf|mht>
- Adds SCPI grammar for reordering measurements within the results table.
    - :MEASurement<1-20>:POSition <1-20>
    - :MEASurement<1-20>: POSition?
- Adds SCPI grammar for specifying the layout format to be used to organize grids in the waveform area.
    - :DISPlay:GRATicule:GLAYout{SVERtical | SHORizontal | TVERtical | THORizontal}, [<area>]

Notes

- For safety reasons, the maximum high-impedance voltage offset for the MXR and EXR series is reduced to +/-40 V. Previously, it was +/100 V.

Bug Fixes

- Fixes an issue with the hardware assisted jitter results de-converging for transitions greater than 10M.
- Reduces the probe offset error resulting from the Gain/Offset probe calibration for the N7000A-3A InfiniiMax III+ probes.
- Fixes a bug in the SVID protocol decoder falsely triggering on an error type of “End Pattern Error”.

- Fixes a bug with delta Y markers that was found on the MXR 8-channel oscilloscope.
- Fixes a mapping bug in the Utilities > Front Panel Sources feature.
- Fixes the MXR-Series/EXR-Series front-panel Touch button behavior
- Fixes bugs in the Precision Cable/Probe feature.
- Fixes a bug with the wrong date being saved for the :WAVeform:PREamble query and for the Multipurpose quick save feature.

Version 11.06.00501 (MXR/EXR-Series)

Released Date:	6 January 2021
Operating System:	Windows 10

Notes

- Protocol trigger on search for digital channels is not available

Bug Fixes

- Fixes an issue impacting the VSA software. The Spectral center frequency resolution is too coarse causing a rotation error in VSA up to 50 KHz.

Version 11.06.00401 (MXR/EXR-Series)

Released Date:	17 November 2020
Operating System:	Windows 10

Notes

- Protocol trigger on search for digital channels is not available

Bug Fixes

- Fixed slow trigger rate when using HRO mode
- Fixed issue with D9010JITA and D9010SCNA licenses not being recognized
- Fixed issue with RTSA color scheme changing on loading a setup multiple times
- Fixed issue where FMT does not appear on screen or appears in the wrong position
- Fixed issue with DDC 2GHz span not working with 500MHz and 1GHz models
- Fixed issue with :MEASURE:THRESHOLDS:PERCENT not accepting some valid values
- Fixed a performance issue saving segmented data

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Version 11.05.00801 (MXR-Series)

Released Date:	2 September 2020
Operating System:	Windows 10

Enhancements

- Added arbitrary waveform generator editor

Notes

- Protocol trigger on search for digital channels is not available

Bug Fixes

- Fixed issue with RTSA on channels 5-8
- Fixed issue with N2820A and N2821A probes

Version 11.05.00602 (MXR-Series)

Released Date:	31 July 2020
Operating System:	Windows 10

Notes

- Protocol trigger on search for digital channels is not available

Bug Fixes

- Fixed intermittent hardware initialization failures
- Fixed time tags not appearing during segmented acquisitions with HW DDC

Version 11.05.00514 (MXR-Series)

Released Date:	26 June 2020
Operating System:	Windows 10

Enhancements

- Added Real Time Spectrum Analyzer (RTSA)
- Added Frequency Mask Trigger for RTSA
- Added HW DDC
- Added frequency extension for HW DDC
- Added support for protocols on channels 5-8 when a protocol uses more than 4 channels
- Added support for MIPI DPHY 4 lanes with clock channel
- Added support for new D9011BDLP protocol bundle

Notes

- Protocol trigger on search for digital channels is not available

Version 11.00.02105 (Initial Release, MXR-Series)

Released Date:	27 May 2020
Operating System:	Windows 10

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Version 10.25.01202 (Patch 6, UXR-Series)

Released Date:	18 December 2020
Operating System:	Windows 10

Bug Fixes

- Reduces the time to initialize the MX0023A probe when it is connected to an oscilloscope channel.
- Fixes FFE auto set taps when a pattern is specified in the Signal Type setup panel.
- Fixes an Infiniisim issue that occurs when enabling the display graphs. The Infiniisim transfer function was not applied properly to the channel.
- Fixes an issue impacting the VSA software. The Spectral center frequency resolution is too coarse causing a rotation error in VSA up to 500 KHz.
- Reduces the time required to switch attenuator range in the MX0023A probe.
- Fixes an issue causing questionable rise/fall time measurements on a PAM4 Realtime Eye.
- Fixes an issue preventing the channel BW limit filter from being applied to measurement data when Fast Plot is enabled.
- Fixes an issue found by the M8070B software when connected to the UXR oscilloscope as a Realtime Error Detector. This issue was causing a high BER with PAM4 line coding.
- Fixes an issue causing time shifts in the waveform data, for channel bandwidths set below 11.9GHz, found while running Precision Cable.
- Fixes an issue in the UXR software causing zero-valued Rj measurement results found while running the D9021HDMC HDMI compliance application.

Version 10.25.01104 (Patch 5, UXR-Series)

Released Date:	17 November 2020
Operating System:	Windows 10

Enhancements

- Speeds up saving segmented waveforms to a file and offloading segmented waveforms.
- Adds a de-skew feature for the Keysight A400GE-QDD test system using the UXR oscilloscope to support SSPRQ100 test patterns.
- Adds support for a new 10GHz, 4-channel UXR model
    - UXR0104A Infiniium UXR Real-Time Oscilloscope, 10 GHz, 128 GSa/s, 4Ch
    - N2129BU-020 Bandwidth upgrade – 4Ch Infiniium UXR Real-Time Oscilloscope 10 GHz to 13 GHz
- Adds support for new mmWave Wideband Analsysis Acceleration and Extension Options/Upgrades
    - N2163A-082 5 GHz Configurable mmWave Extension Badnwidth Window – DC to 82 GHz Frequency Range
    - N2163A-083 Upgrade Maximum Frequency for 5 GHz mmWave Extension Bandwidth Window from 82 GHz to 110 GHz
    - N2163A-020 Upgrade 10 GHz to 20 GHz Configurable mmWave Extension Bandwidth Window
    - N2163A-030 Upgrade 20 GHz to 30 GHz Configurable mmWave Extension Bandwidth Window
- Adds support for new mmWave Factory Installed Options
    - UXR0000-682 5 GHz Configurable mmWave Extension Bandwidth Window - DC to 82GHz Frequency Range
    - UXR0000-620 20GHz Configurable mmWave Extension Bandwidth Window
    - UXR0000-630 30GHz Configurable mmWave Extension Bandwidth Window
- Adds support to launch the FlexRT software from within the UXR GUI. The FlexRT software adds the TDECQ optical measurement to the UXR series oscilloscopes.

Bug Fixes

- Fixes the :CHANnel<N>:PROBe <attenuation_factor>[,\{RATio | DECibel}] command.
- Fixes an issue causing the D9040EDPV eDP compliance test application to abort the Peak-to-Peak voltage tests.
- Fixes a performance issue within the UXR when connected to the N4391B Optical Modulation Analyzer.

Version 10.25.01003 (Patch 4, UXR-Series)

Released Date:	26 October 2020
Operating System:	Windows 10

Bug Fixes

- Fixes an issue causing the oscilloscope to hang when the MX0023A probe is disconnected from a channel.
- Replaces the “Long Operation” message with a more descriptive message when the MX0023A probe is connected to a channel. The new message is “MX0023A probe detected, computing probe transfer function which will take a minute.”

Version 10.25.01001 (Patch 3, UXR-Series)

Released Date:	12 October 2020
Operating System:	Windows 10

Bug Fixes

- Fixes the optical power measurement gain for the N7005A 60GHz O/E Converter.
- Fixes an infinite jitter measurement result being reported to the D9040DPPC Display Port Compliance Test Application.

Version 10.25.00902 (Patch 2, UXR-Series)

Released Date:	17 September 2020
Operating System:	Windows 10

Enhancements

- Adds PMAX-Normalized (PRBS13Q) algorithm for computing DFE taps to the Equalization Auto Tap Setup dialog.
- Reduces the minimum OJTF Loop Bandwidth for PAM4 CDR to 1MHz.
- Adds probe bandwidth to the CHAN<X>:PROBE:INFO? Query
- Improves the performance of the SCPI :WAVeform:SEGMented:XLISt? query.

Bug Fixes

- Fixes a UXR software issue with running the M8070B System Software in the Real Time Error Detector configuration.
- Fixes the DC Offset/Gain Cal for the MX0023A InfiniiMax 25 GHz RC probe with MX0105A SMA probe head.
- Fixes an issue causing “A long operation is occurring” message to appear when connecting the MX0023A InfiniiMax 25 GHz RC probe to the oscilloscope channel.
- Fixes a crash when sending the SCPI query, :MEASure:PAM:PRBS13q:EDGE:EOJ?
- Fixes an issue where the Protocol listing display does not automatically go to the trigger point after a trigger event even though the waveform does.
- Fixes several issues with UXR Multiscope when hosted from a PC.
- Fixes an issue with colorgrade of a differential waveform showing two waveforms shifted in time.
- Fixes defects effecting the following compliance test applications:
    - D9040DPPC Display Port
    - D9040EDPV eDP
    - D9010EBZC 10GBASE-T Ethernet
    - D9021HDMC HDMI

Notes

- Includes features and bug fixes from the 6.55.00902 Infiniium Oscilloscope software. Refer to the release notes for this software versions for more details, https://www.keysight.com/main/software.jspx?ckey=2488819&lc=eng&cc=US&nid=-11143.0.00&id=2488819.

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Version 10.25.00702 (Patch 1, UXR-Series)

Released Date:	17 July 2020
Operating System:	Windows 10

Enhancements

- Provides support for the N7005A 60GHz O/E Converter.

Bug Fixes

- Fixes issues impacting the BitifEye N5991 HDMI 2.1 Receiver Test including Data Jitter Calibration and Cable Inter-Pair Skew Test failures.
- Fixes an issue causing the UXR to hang while running the BitifEye N5991 USB4 1.1 Receiver Test.
- Fixes the Auto Deskew feature for differential channels when running with a channel bandwidth filter enabled.
- Fixes an issue restoring the default setup behavior for channel voltage units after running the N7004A O/E Converter dark cal.
- Fixes an issue when selecting a Current probe. It was always selecting N7019A.
- Fixes the control button functions for the N2750A/51A/52A InfiniiMode Differential Active Probes.
- Fixes an issue with loading a composite file saved from a differential channel waveform. Sometimes, only part of the waveform was loaded.
- Fixes an issue with incorrectly reporting dynamic range when using the N5449A High Impedance adapter.
- Fixes the deskew channel control in the Phase Noise application setup wizard. It was failing for cases when the edge direction was set to Both.
- Fixes the Help->"Check for Updates..." feature. A message box would pop up displaying that "C:\Program Files\Keysight\Infiniium\Apps\SwUpdater\Download\LatestAppinfo.xml" is missing.
- Fixes an issue preventing an AC Gain setting great than 1 for CTLE equalization.
- Fixes an issue with the Auto Setup feature for the MIPI D-PHY Protocol Decode application causing ADC clipping. Changing the voltage offset to eliminate the clipping caused the decoder to quite decoding or worse, the oscilloscope application to crash.
- Fixes an issue where the lane index was not being setup properly for in-place DFE.

Notes

- Includes features and bug fixes from the 6.55.00702 Infiniium Oscilloscope software. Refer to the release notes for this software versions for more details, https://www.keysight.com/main/software.jspx?ckey=2488819&lc=eng&cc=US&nid=-11143.0.00&id=2488819.

Version 10.25.00607 (Release, UXR-Series)

Released Date:	15 June 2020
Operating System:	Windows 10

Enhancements

- Includes features and bug fixes from the 6.55.00401 and 6.55.00504 Infiniium Oscilloscope software. Refer to the release notes for these software versions for more details, https://www.keysight.com/main/software.jspx?ckey=2488819&lc=eng&cc=US&nid=-11143.0.00&id=2488819.
- Changes the reported oscilloscope temperature as a delta from the calibration temperature rather than as an absolute temperature.
- Adds enhancements to support 802.3ck/OIF Reference Receiver. These include (1) 3-pole, 2-zero CTLE's with multiple gain stages, (2) 4'th order Butterworth noise reduction filter, (3) new CTL presets and (4) Vertical Eye Closure measurement.
- Adds N2129RU bandwidth and memory options available to select rental partners.
- Adds support for the D9020BDLP protocol bundle.
- Increases the maximum bandwidth setting for the UXR0702AP and UXR0704AP models to 73.5GHz. Previously, the maximum bandwidth setting was 70GHz.

Bug Fixes

- Fixes bugs impacting the D9010EBSC IEEE 802.6 compliance test application.
- Fixes a TIE filter error found when running the DisplayPort compliance test application.
- Fixes an eye diagram screen shot issue found when running the D-PHY compliance application.
- Fixes a probe head selection bug.
- Fixes an issue in PCIe protocol decode with TS2 packets being labeled as "Unknown Packet."
- Prevents the "Offline" oscilloscope application installed on a PC from starting automatically after an OS reboot.

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Version 10.20.00703 (Patch Release, UXR-Series)

Released Date:	28 May 2020
Operating System:	Windows 10

Enhancements

- Clamps the Sin(x)/x Auto interpolation factor to a maximum of 16:1 to improve performance. Still allows a manual setting of 32:1 for applications that require it.

Bug Fixes

- Provides bug fixes impacting several compliance Tx test applications including HDMI, PCIe, SFP+, SATA, SAS, MIPI, C-PHY, D-PHY, M-PHY, Ethernet, eDP, and DDR4.
- Provides bug fixes for some Rx compliance test solutions including MIPI, HDMI, and C-PHY.
- Fixes an issue that can cause waveform distortion when running with differential channels combined with Infiniisim, BW limit or equalization. This distortion can also impact jitter measurement results.
- Fixes an issue causing PAM4 jitter measurement results and histograms to degrade with setting changes.
- Fixes in incorrectly labeled Infiniisim transfer function graph when using adjacent differential channels.
- Fixes a trigger jitter test failure found during manufacturing performance verification.
- Fixes an issue causing information messages to show up in the screen shots.

Version 10.20.00503 (Patch Release, UXR-Series)

Released Date:	27 Mar 2020
Operating System:	Windows 10

Bug Fixes

- Sets the standard memory depth to 200Mpts. For 10.20.00501, it was defaulting to 10Mpts.
- Fixes an Infiniium Offline crash occurring near the end of the oscilloscope start up sequence. This crash occurs for installations of 10.20.00501 on a PC that already had a 6.xx version of Offline installed.

Version 10.20.00501 (Release, UXR-Series)

Released Date:	13 Mar 2020
Operating System:	Windows 10

Enhancements

- Includes the features and bug fixes from the 6.40 Infiniium oscilloscope software.
- Includes the features and bug fixes from the 6.50 Infiniium oscilloscope software.
- Adds Multiscope support (standard feature, no license required) to connect up to 10 frames (40 channels).
- Adds support for the UXR0051AP model (1-channel, 1mm input, 5GHz BW) targeted for mmWave analysis.
- Adds support for the DP0001A Differential probe 400 MHz 2000V.
- The behavior of the ":CHAN<N>:ISIM:STATe <State>" command is changing to improve Infiniisim performance. The new behavior is to disable Infiniisim graphs when the Infiniisim state is set to ON, which enables hardware acceleration of Infiniisim.
- Makes 3rd order PLL CDR standard. Before it was only available with the Thunderbolt compliance test application.

Bug Fixes

- Fixes the Menu button on the N7003A InfiniiMax III probe.
- Fixes a signal integrity issue with differential channels where one leg of the differential channel was getting the wrong DC voltage gain factor correction applied. This problem only occurred for a few of the volts/div settings. The symptom could exhibit some distortion of the differential signal and a small Vpp error of less than 5%.
- Fixes a hardware CDR issue found running 480 Mb/s 1010 pattern where the CDR is unable to recover the clock. This issue only occurred when the RTE was not being plotted.
- Fixes an issue where the real time eye is plotted and measured incorrectly with the “Infiniisim Display Graphs” option disabled.
- Fixes a bi-modal jitter issue on differential channel waveforms when the “Fast Plot” option is disabled.

Notes

- This version of software is updated to support compliance test applications that have been updated to run on 2-channel UXR models.
- This software version has not been fully tested and confirmed to work with all the compliance test applications. A newer version of 10.20 will be available once this testing is complete.

- With this software version, the UXR0000-0HW “Infiniium UXR Real-Time Oscilloscope Hardware Acceleration upgrade – Included” license, is no longer required to enable hardware acceleration. The license can still be installed but the software ignores it.
- The revision for the “.wfm” file format is incremented to SIG_REV_L. The “.wfm” format changed with the UXR 10.00 release but the revision was not updated to reflect the change. This oversight is corrected with this release. This change is necessary to provide “.wfm” compatibility between Infiniium oscilloscopes. Version 06.55 or newer is required for A/X/S/V/Z series Infiniium oscilloscopes to be compatible with 10.20 “.wfm” files.

Version 10.12.05302 (Patch Release, UXR-Series)

Released Date:	31 Jan 2020
Operating System:	Windows 10

Bug Fixes

- Fixes an issue with 59GHz factory installed bandwidth licenses (UXR0592A, UXR0594A, UXR0592AP, UXR0594AP) not being recognized.
- Fixes an issue with the *OPC (operation complete) query timing out. This issue is causing some compliance test applications to time out during execution.

Notes

- The 10.12.05302 version is not compatible with all compliance test applications. Please upgrade to 10.20.0xxxx when it becomes available or downgrade to 10.11.05004 if running one of the following test applications:
  - D9010ETHC Ethernet 10M/100M/1G
  - D9010EBZC 10GBASE-T Ethernet
  - D9030SATC SATA6G
  - D9010USBC USB 2.0
  - D9040DPPC DisplayPort

Version 10.12.05208 (UXR-Series)

Released Date:	12 Dec 2019
Operating System:	Windows 10

Enhancements

- Adds support for Hardware Accelerated Digital Down Conversion.
  - The standard software without a license provides 40MHz bandwidth.
  - The standalone license, UXR0000-601, and upgrade option, N2163A-601, provides 40 MHz to 160 MHz bandwidth.
  - The standalone license, UXR0000-602, and upgrade option, N2163A-602, provides 40 MHz to 2 GHz bandwidth.
- Add support for the mmWave Wideband Analsysis Acceleration and Extension Package, UXR0000-MWA. This package includes
  - UXR0000-02G (2 Gpt memory option)
  - UXR0000-610 (10 GHz mmWave Extension option)
  - UXR0000-602 (2 GHz bandwidth DDC option).

Bug Fixes

- Fixes issues with the differential channel auto de-skew control. It now works properly when the oscilloscope is stopped and it works properly for input signals with DC offset.
- Fixes an issue where the oscilloscope app was crashing on startup after installing the Equalization license.

Notes

- The 10.12.05208 version is not compatible with all compliance test applications. Please upgrade to 10.20.0xxxx when it becomes available or downgrade to 10.11.05004 if running one of the following test applications:
  - D9010ETHC Ethernet 10M/100M/1G
  - D9010EBZC 10GBASE-T Ethernet
  - D9030SATC SATA6G
  - D9010USBC USB 2.0
  - D9010CPHC MIPI C-PHY

KEYSIGHT

Version 10.11.05004 (Patch Release, UXR-Series)

Released Date:	14 Oct 2019
Operating System:	Windows 10

Enhancements

- Improves the usability of the optional timebase calibration to (1) set the default to “not run”, (2) make it clearer that an external 10MHz frequency reference is required, and (3) allow the user to skip the timebase calibration, which occurs at the end of the calibration, without impacting the rest of the calibration.

Bug Fixes

- Fixes some issues with adjusting and applying channel-channel skew.
- Fixes the bandwidth upgrade license for up upgrade on a UXR AP model from 59GHz to 70GHz.
- Fixes a licensing issue where the license could disappear while running the oscilloscope and then reappear after restarting the oscilloscope.
- Fixes an issue where the real time eye was resetting when doing operations such as turning on/off the histogram or adding/deleting a measurement.
- Fixes an issue where the oscilloscope application was crashing when disconnecting the N7010A probe from a channel input.
- Fixes a CDR loss-of-lock issue when running the Display Port compliance application for 2MHz and lower SJ frequencies.
- Fixes a DFE equalization issue where the taps were only having half of the intended effect.
- Fixes an equalization issue where DFE was not being applied if CTLE or FFE equalization was also enabled.
- Fixes an issue where running the self test was leaving the oscilloscope in a bad state causing additional baseline noise and spurs in the FFT.

Version 10.11.04711 (UXR-Series)

Released Date:	22 Jul 2019
Operating System:	Windows 10

Notes

- This software version updates FPGA firmware, which takes several minutes, and requires unplugging the power cord to complete the update.

Enhancements

- Modifies the channel-channel skew calibration to correct for more vertical ranges.
- Hardware accelerates explicit-clock clock recovery.
- Adds a simple phase noise demo file.
- Removes the internal temperature report from the Help->About dialog.
- Sets the default to “OFF” for the “Display Infiniisim Graphs” control to enable hardware acceleration of Infiniisim by default.
- Adds the PAM3 demo.
- Adds the USB 3.2 demos.
- Adds an “Auto Power On” user preference to automatically restart the oscilloscope after input power has been removed and then reapplied.
- For install packages that update the power monitor/control FPGA, such as 10.11, this software adds a new message at the end of the software install process requesting the user to physically disconnect and then reconnect the power cord.

Bug Fixes

- Fixes some issues with adjusting and applying channel-channel skew.
- Fixes a phase shift in the trigger position caused by enabling a differential channel (CSG-14828).
- Fixes an issue preventing the “Precision Cable” feature from being enabled.
- Fixes defects blocking the following compliance apps, D-PHY, DDR2 and USB3.
- Reduces the input sensitivity to voltage overload for UXR models with 1.85mm and 1mm inputs.
- Fixes an invalid VISA address reported by IO Libs when connecting with USB.
- Fixes an issue preventing the tracking of life cycle information for number of power cycles and power-on time.
- Fixes a hardware plotting issue that occurs intermittently for deep records when a Real Time Eye is also being displayed and most of the data is on screen. When this issue occurs, the data plotted is corrupted and/or the plotter locks up.
- Fixes a filter delay issue causing a bad data result when running hardware accelerated FFE/CTLE equalization on a differential channel.

KEYSIGHT

Version 10.10.04601 (Patch Release, UXR-Series)

Released Date:	11 Jun 2019
Operating System:	Windows 10

Bug Fixes

- Fixes a waveform data corruption issue that occurs for differential channels and 4-port InfiniiSim. This issue is most noticeable with signal input frequencies that are 1/8, 1/16, 1/32, ..., 1/2^N of the sampling rate.
- Reduces the input sensitivity to voltage overload for UXR models with 1.85mm and 1mm inputs.

Version 10.10.04514 (UXR-Series)

Released Date:	20 May 2019
Operating System:	Windows 10

Enhancements

- Supports all UXR models.
- Adds licenses and upgrades for the following new UXR models.
  - UXR0252AP, UXR0254AP, UXR0402AP, UXR0404AP, UXR0702AP, UXR0704AP
- Adds support for the N2852A AP3->AP2 probe adaptor.
- Adds licenses and upgrades for the “mmWave Configurable Bandwidth Window” feature.
  - UXR0000-605 “5 GHz mmWave Configurable Bandwidth Window”
  - UXR0000-610 “10 GHz mmWave Configurable Bandwidth Window”
- Adds precision probe and precision cable support for the UXR models with 1.85mm and 1.00mm inputs.
- Adds hardware acceleration for the following features:
  - Differential channels
  - 4-port Infiniisim
  - FFE and CTLE equalization

Version 10.05.04305 (UXR-Series)

Released Date:	8 Mar 2019
Operating System:	Windows 10

Enhancements

- Adds support for UXR-Series oscilloscopes with 40 GHz of bandwidth or greater.

Version 10.00.04201 (Patch Release, UXR-Series)

Released Date:	26 Feb 2019
Operating System:	Windows 10

Bug Fixes

- Fixes an issue in the Help-About dialog which was showing an incorrect model number.

Version 10.00.04104 (Patch Release, UXR-Series)

Released Date:	31 Jan 2019
Operating System:	Windows 10

Enhancements

- Adds support to read the calibration data from the N2127A calibration module and utilize this data to improve the magnitude and phase response calibration.
- Supports the free license which enables hardware acceleration for clock data recovery and real time eye plotting.
- Provides support for Rev. 7 oscillator boards.
- Provides 100MHz as an available calibration output signal.

Bug Fixes

- Fixes a touch screen focus issue which can render the touch screen inoperative until the scope app is iconified and restored.
- Fixes an intermittent issue that can cause the power supply to shut down due to an erroneous overheating indicator.
- Fixes “Quick Jitter” available from the Analyze pulldown menu.
- Fixes auto set thresholds in the Crosstalk wizard.
- Fixes an issue where no signal is acquired when running a mask with 1 waveform.
- Fixes an issue where saving on “osc” file type resets the number of real-time eye waveforms to one.

- Speeds up the acquisition and downloading of short waveform data records.
- Fixes an FFT error that occurs at low frequency with averaging enabled.
- Fixes a “Data Out of Range” error occurring at oscilloscope startup.
- Fixes the Pattern Average math function.
- Fixes auto-zero inconsistent results with the N7026A probe.
- Fixes issues causing failures in the following compliance applications:
  - N5412 SAS
  - N6472A IEEE 802.3 bs/cd
  - N5411 SATA
  - DDR5 TX Validation
  - U7232 DisplayPort
  - N6469 eDP1.4

Version 10.00.03902 (Patch Release, UXR-Series)

Released Date:	21 Nov 2018
Operating System:	Windows 10

Bug Fixes

- Fixes an issue that was reducing the maximum memory depth to less than 100Mpts.
- Fixes an input overload issue that was occurring during probe calibration.
- Fixes issues impacting the Display Port, Embedded Display Port, Ethernet, DDR4, and PAM4 compliance applications.
- Fixes a defect leaving the touch screen disabled after the scope application is exited.
- Provides software support for the N7024A probe.
- Fixes the DC Gain/Offset calibration for the N7000A, N70001A, N70002A, N70003A, N2830A, N2831A and N2832A probes.
- Adds an update for the Keysight license manager, 6.0.2, to fix dongle-based licenses.

Version 10.00.03801 (Patch Release, UXR-Series)

Released Date:	03 Oct 2018
Operating System:	Windows 10

Bug Fixes

- Fixes external probe scaling.
- Fixes an issue causing the DDR4 compliance application to fail.
- Fixes an issue causing the SAS4 compliance application to fail.
- Fixes an issue with probe correction filters not being removed when the probe is removed.
- Fixes vertical autoscale of a differential channel waveform.
- Fixes an issue where the Infiniium app remains active after exiting.
- Fixes a precision probe calibration issue.
- Fixes a touch screen focus issue where touch loses focus with the oscilloscope application.

Version 10.00.03709 (Patch Release, UXR-Series)

Released Date:	14 Sep 2018
Operating System:	Windows 10

Bug Fixes

- Fixes an install issue found at AMC with the setup.exe file.
- Fixes two BW limit filter issues (WIT 557903 and WIT 557921)

Version 10.00.03708 (Initial Release, UXR-Series)

Released Date:	13 Sep 2018
Operating System:	Windows 10