D9020DDRC DDR2(+LP) Compliance Test Application Software

Keysight D9020DDRC DDR2(+LP) Software Version 01.40.14.0

Release Date:	April 19, 2023
Requirements Category (e.g., operating system):	Microsoft Windows 10
Requirements Category (e.g., instrument software version):	11.50.00601 (UXR/UXR-B Series) 11.50.00601 (MXR/MXR-B Series) 06.74.00402 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series, S-Series, V-Series)
File Name:	SetupInfLPDDR201400014.exe
License:	Please see the product data sheet on Keysight.com

Modification

- Update Keysight License Manager 5.

- Supports UXR-B Series and MXR-B Series oscilloscope.

KEYSIGHT

Keysight D9020DDRC DDR2(+LP) Software Version 01.40.2.0

Release Date:	December 22, 2022
Requirements Category (e.g., operating system):	Microsoft Windows 10 or Windows 7
Requirements Category (e.g., instrument software version):	11.30.00406 (UXR Series) 11.30.00406 (MXR Series) 06.55.00504 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series, S-Series, V-Series)
File Name:	SetupInfLPDDR201400002.exe
License:	Please see the product data sheet on Keysight.com

Issue Fixed

- Resolved the issue wherein some tests were not running successfully due to usage of obsolete SCPI commands on UXR/MXR series oscilloscopes that use (but not limited to) Infiniium Software version 11.30.00406 and above.

  Impacted tests: Clock Tests, Overshoot Tests, and Eye Diagram Tests

Keysight D9020DDRC DDR2(+LP) Software Version 01.40.0.0

Release Date:	April 29, 2021
Requirements Category (e.g., operating system):	Microsoft Windows 10 or Windows 7
Requirements Category (e.g., instrument software version):	10.25.00902 (UXR Series) 11.06.00401 (MXR Series) 06.55.00504 (90000 Series, 90000 X–Series, 90000 Q–Series, Z–Series, S–Series, and V–Series)
File Name:	SetupInfLPDDR201400000.exe
License:	Please see the product data sheet on Keysight.com

New Features / Additions

- Added support for MXR–Series oscilloscopes.

Issues Fixed

- Resolved unnecessary warning that was being shown during project loading regarding unsuccessful restoration of "tQH spec" configuration.

- Resolved screenshot issue of VID test where the signal shown was improperly scaled.

- Resolved user interface issue of DDR Debug Tool where the label that reports the number of bursts found was being blocked by another button.

- Resolved eye diagram test issue wherein wrong measurement threshold was being used.

- Resolved eye diagram test issue in which the test was not able to run successfully with the InfiniiSim feature.

Keysight D9020DDRC DDR2(+LP) Software Version 01.27.0000

Release Date:	August, 2019
Requirements Category (e.g., operating system):	Microsoft Windows 7
Requirements Category (e.g., instrument software version):	10.10.04601 (UXR Series) 06.55.00504 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series, S-Series, and V-Series)
File Name:	SetupInfLPDDR201270000.exe
License:	Please see the product data sheet on Keysight.com

New Features / Additions

- Updated the product number from "N5413B/N5413C" to "D9020DDRC" to support PPKS licenses.

Modifications / Changes

- Keysight.Infiniium.Apps.DDR2.Remote.dll" is no longer available.

Issues Fixed

- Resolved issue where the application crash when loading read-only ".wfm" file on Debug Tool.

- Resolved issue where tests will not run successfully when the "Waveform File Type"

  configuration is set to ".h5".

- Resolved issue where the LPDDR3 VIXCA test may not be able to be completed successfully due to failure in performing some required signal conditioning during the test run.

Known Issues

- Debug Tool feature via menu "Configuration>Update>From Compliance App Configurations" is not working correctly. This feature is temporarily disabled.

- Debug Tool feature via menu "Configuration>Update>To Compliance App Configurations" is not working correctly. This feature is temporarily disabled.

Keysight D9020DDRC DDR2(+LP) Software Version 01.26.0000

Release Date:	April 2019
Requirements Category (e.g., operating system):	Microsoft Windows 7
Requirements Category (e.g., instrument software version):	10.05.04306 (UXR Series) 06.30.01102 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series, S-Series, V-Series)
File Name:	SetupInfLPDDR201260000.exe
License:	Please see the product data sheet on Keysight.com

Modifications / Changes

- Supports Infiniium Oscilloscope Software version 10.05.04306 for UXR-Series Oscilloscope.

- Resolved the wrong marker placement issue on screenshot.

Issues Fixed

- Resolved the wrong unit reported by tDIPW test.

- Resolve the wrong test limit of tRPST, tQSH, tQSL test.

Keysight D9020DDRC DDR2(+LP) Software Version 01.25.0000

Release Date:	March 31, 2017
Requirements Category (e.g., operating system):	Microsoft Windows 7
Requirements Category (e.g., instrument software version):	06.00.00627 (9000 Series) 06.00.00627 (DDR Debug Tool feature) 06.00.00627 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series, S-Series, V-Series)
File Name:	SetupInfLPDDR201250000.exe
License:	Please see the product data sheet on Keysight.com

Modifications / Changes

- DDR2 application migration to 64-bit platform.

- Changed the criteria to stop folding eye diagram because of the new behavior of Eye folding on Infiniium software.

Issues Fixed

- Fixed the HTML report screenshot issue for "VIXCA" test where the waveform is not time-scaled properly.

Keysight D9020DDRC DDR2(+LP) Software Version 01.24.9006

Release Date:	September 28, 2016
Requirements Category (e.g., operating system):	Microsoft Windows 7
Requirements Category (e.g., instrument software version):	5.50.0028 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series)
	5.50.0028 (9000 Series)
	5.50.0028 (DDR Debug Tool feature)
File Name:	SetupInfLPDDR201249006.exe
License:	Please see the product data sheet on Keysight.com

Modifications / Changes

- Update on waveform file loading to support test running on Infiniium Software version 5.70 and above.

Keysight D9020DDRC DDR2(+LP) Software Version 01.24.0001

Release Date:	December 01, 2015
Requirements Category (e.g., operating system):	Microsoft Windows 7
Requirements Category (e.g., instrument software version):	5.50.0028 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series) 5.50.0028 (9000 Series) 5.50.0028 (DDR Debug Tool feature)
File Name:	SetupInfLPDDR201240001.exe
License:	Please see the product data sheet on Keysight.com

Modifications / Changes

- Solve running issue where previously application not able to run from loaded project that has been ran with Infiniium software version 4.60.0000.

Keysight D9020DDRC DDR2(+LP) Software Version 01.24.0000

Release Date:	November 05, 2015
Requirements Category (e.g., operating system):	Microsoft Windows 7
Requirements Category (e.g., instrument software version):	5.50.0028 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series) 5.50.0028 (9000 Series) 5.50.0028 (DDR Debug Tool feature)
File Name:	SetupInfLPDDR201240000.exe
License:	Please see the product data sheet on Keysight.com

New Features / Additions

- On the pin under test selection for DDR2 Electrical Tests>Single-Ended Signals>AC input parameters test group, selection of /DQS is added.

- On the pin under test selection for LPDDR2 Electrical Tests>Single-Ended Signals>Single Ended Signal Tests for Strobe test group, selection of DQS_c is added.

Modifications / Changes

- Solve LPDDR2 tCH(abs) and tCL(abs) limit issue where previously, the result value was only compared to the minimum specification value. Correct implementation has been performed to compare with both minimum and maximum specification value according to the JEDEC specification.

- Solve hang issue that happen on the clock test after applying Infiniisim.

- Solve tDSS measurement issue that happens in LPDDR2 mode where the test wrongly picks rising DQS edge for measurement. Correct implementation has been performed to pick falling DQS edge for measurement.

Keysight N5413B/N5413C Software Version 01.23.0000

Release Date:	April 17, 2015
Requirements Category (e.g., operating system):	Microsoft Windows 7
Requirements Category (e.g., instrument software version):	4.60/5.50 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series) 4.60/5.50 (9000 Series) 4.60.0018 (DDR Debug Tool feature)
File Name:	SetupInfLPDDR201230000.exe
License:	Please see the product data sheet on Keysight.com

New Features / Additions

- Added configuration "Eye Diagram Display Style" to enable to run the eye diagram test with or without the Data Strobe(DQS) signal on the same screen.

- Added configuration "Eye Diagram Horizontal Position" to enable to set the horizontal position of the Data(DQ) signal while run the eye diagram test.

Modifications / Changes

- Solved the get data rate feature when loading HDF5 file format in Debug Tool.

Keysight N5413B/N5413C Software Version 01.22.0001

Release Date:	October 17, 2014
Requirements Category (e.g., operating system):	Microsoft Windows 7
Requirements Category (e.g., instrument software version):	4.60 (90000 Series, 90000 X-Series, 90000 Q-Series, Z- Series) 4.60 (9000 Series) 4.60.0018 (DDR Debug Tool feature)
File Name:	SetupInfLPDDR201220001.exe
License:	Please see the product data sheet on Keysight.com

Modifications / Changes

- Solved the Environment Variables used in Application should refer to the Keysight path instead of Agilent path.

Keysight N5413B/N5413C Software Version 01.22.0.0

Release Date:	October 03, 2014
Requirements Category (e.g., operating system):	Microsoft Windows 7
Requirements Category (e.g., instrument software version):	4.60 (90000 Series, 90000 X-Series, 90000 Q-Series, Z- Series) 4.60 (9000 Series) 4.60.0018 (DDR Debug Tool feature)
File Name:	SetupInfLPDDR201220000.exe
License:	Please see the product data sheet on Keysight.com

New Features / Additions

- Supports for Infiniium Oscilloscope Software version 5.20

Modifications / Changes

- Solved the VIX clock test where it always shown "Unable to find valid transition" annotation notes. Although, there is a valid result shows on the oscilloscope.

- Solved Acquisition Setup for the application that did not work correctly in debug mode.

- Solved the test result signal did not appear at the result tab and HTML report after finished run the test in Infiniium Software 5.20++.

Keysight N5413B/N5413C Software Version 01.21.0000

Release Date:	September 10, 2014
Requirements Category (e.g., operating system):	Microsoft Windows 7
Requirements Category (e.g., instrument software version):	4.60 (90000 Series, 90000 X-Series, 90000 Q-Series, Z- Series) 4.60 (9000 Series) 4.60.0018 (DDR Debug Tool feature)
File Name:	SetupInfLPDDR201210000.exe
License:	Please see the product data sheet on Keysight.com

Modifications / Changes

- Solve the Eye Diagram test where the Mask Test counter is reset when the horizontal scale value is changed in Infiniium Magneto.

Keysight N5413B/N5413C Software Version 01.20.0.0

Release Date:	May 30, 2014
Requirements Category (e.g., operating system):	Microsoft Windows 7
Requirements Category (e.g., instrument software version):	4.60 (90000 Series, 90000 X-Series, 90000 Q-Series, Z- Series) 4.60 (9000 Series) 4.60.0018 (DDR Debug Tool feature)
File Name:	SetupInfLPDDR201200000.exe
License:	Please see the product data sheet on Keysight.com

New Features / Additions

- Support for Infiniium Oscilloscope Software version 5.00.

Modifications / Changes

- Updated tQHS test due to the test definition was changed.

Agilent N5413B Software Version 01.16.0000

Release Date:	May 06, 2014
Requirements Category (e.g., operating system):	Microsoft Windows 7 or Windows XP
Requirements Category (e.g., instrument software version):	4.60 (90000 Series, 90000 X-Series, 90000 Q-Series, Z- Series), 4.60 (9000 Series), 4.60.0018 (DDR Debug Tool feature)
File Name:	SetupInfLPDDR201160000.exe
License:	Please see the product data sheet on Agilent.com

Miscellaneous Notes

- This will be the last version to support Infiniium Oscilloscope Baseline Version 4.20.

Agilent N5413B/N5413C Software Version 01.15.0000

Release Date:	May 06, 2014
Requirements Category (e.g., operating system):	Microsoft Windows 7 or Windows XP
Requirements Category (e.g., instrument software version):	4.60 (90000 Series, 90000 X-Series, 90000 Q-Series, Z- Series) 4.60 (9000 Series) 4.60.0018 (DDR Debug Tool feature)
File Name:	SetupInfLPDDR201150000.exe
License:	Please see the product data sheet on Agilent.com

New Features / Additions

- The 10 new test that had been added are tDQSCKDS, tDQSCKDM, tDS(Vref based), tDH(Vref based), tISCKE, tIHCKE, tISCKEb, tIHCKEb, tIPW and VIHCKE/VILCKE for LPDDR2.

- Added new test is tIPW for DDR2.

- Show RL and WL option.

- End User License Agreement is added for security purpose.

- Addition of new DDR Debug Tool feature.

- Addition of waveform files type support (HDF5|*.h5) while running the test.

Modifications / Changes

- Solved Automation issue where the DDR2DataRate config is not updated even though selection on GUI changed.

- Solved Eye Diagram Test issue where Accumulated Eye Diagram cleared after Interpolation feature is ON.

- Solved missing linkage with BurstEnvelopeThreshold value.

- Solved the connection diagram prompt between two tests in the same tests group.

- Solved slew rate unit.

- Update LPDDR2 Mask File.
- Update the revision section and revision for all the tests.

Agilent N5413B Software Version 01.14.0.0

Release Date:	July 22, 2013
Requirements Category (e.g., operating system):	Microsoft Windows 7 and Windows XP
Requirements Category (e.g., instrument software version):	3.11 (90000 Series, 90000 X-Series, 90000 Q-Series, Z- Series), 3.11 (9000 Series
File Name:	SetupInfLPDDR201140000.exe
License:	Please see the product data sheet on Agilent.com

New Features / Additions

- Support for MSOX90000.

Agilent N5413B Software Version 01.13

Release Date:	July 27, 2013
Requirements Category (e.g., operating system):	Microsoft Windows 7 and Windows XP
Requirements Category (e.g., instrument software version):	3.11 (90000 Series, 90000 X-Series), 3.11 (9000 Series)
File Name:	SetupInfLPDDR201130000.exe
License:	Please see the product data sheet on Agilent.com

New Features / Additions

- Added new "Threshold Setting" configuration wizard in the Setup tab of the application.

- Prompt user if the custom derating table file isn't exist while loading project file.

- Added additional reporting of "Number Of Measurement" item for all tests.

Modifications / Changes

- Application not able to load project file which have result that contain table.

- AUTOMATION tab issue which not successfully perform command of SetConfig TestMode 'Custom'.

- Reporting issue of Voh(ac), Voh(dc), Vol(ac), Vol(dc), Vih/Vil for Command/Address, VihDiff/VilDiff For Clock while loading wrong waveform for reporting image.

- Both reporting marker channels are function 1 for tAC, tDQSCK and tQHS tests.

- Solve DDR2 Differential input tests configuration loading issue.

- Update tIS and tIH definition due to LPDDR2 specification which mention should refer to rising or falling for PUT is Command Address.

- Report bogus value whether +99E36 or -99E36 which one could give fail status on the test in case of unable to perform measurement.

- Due to the application model re-structuring, the entire legacy saved project will be loaded as READ-ONLY for viewing purposes. User will not be able to append new test results to the legacy saved projects as the number of reported items for each of the tests may have changed.

Agilent N5413B/N5413C Software Version 01.12

Release Date:	November 29, 2011
Requirements Category (e.g., operating system):	Microsoft Windows 7 and Windows XP
Requirements Category (e.g., instrument software version):	3.11 (90000 Series, 90000 X-Series), 3.11 (9000 Series)
File Name:	SetupInfLPDDR201120000.exe
License:	Please see the product data sheet on Agilent.com

New Features / Additions

- Support Infiniium Baseline Version 3.21.

- Add signal requirement checking for Timing tests in Rank Separation case.

Modifications / Changes

- Solve runtime error of waveform memory loading.

Agilent N5413B/N5413C Software Version 01.11

Release Date:	October 05, 2022
Requirements Category (e.g., operating system):	Microsoft Windows 7 and Windows XP
Requirements Category (e.g., instrument software version):	3.11 (90000 Series, 90000 X-Series), 3.11 (9000 Series)
File Name:	SetupInfLPDDR201110000.exe
License:	Please see the product data sheet on Agilent.com

New Features / Additions

- Added multi-burst support feature for Electrical Tests.
- Enabled the Precision Probe setting of the oscilloscope.
- Support Window 7 based oscilloscope.

Modifications / Changes

- Solve the issue of finding the worst value in clock test.
- Locate the InfiniiSim setting entry on menu Tool>Infiniium>InfiniiSim.
- Allow all tests to be run if there is no SDA license except Eye Diagram tests.

Agilent N5413B Software Version 01.10

Release Date:	May 20, 2011
Requirements Category (e.g., operating system):	Microsoft Windows 7 and Windows XP
Requirements Category (e.g., instrument software version):	3.11 (90000 Series, 90000 X-Series), 3.11 (9000 Series)
File Name:	SetupInfLPDDR201100000.exe
License:	Please see the product data sheet on Agilent.com

New Features / Additions

-   Added derating feature support. 10 new tests that support this feature are added; tDS(derate) for Data, tDH(derate) for Data, tDS(derate) for Data Mask, tDH(derate) for Data Mask, tDS1(derate) for Data, tDH1(derate) for Data, tDS1(derate) for Data Mask, tDH1(derate) for Data Mask, tIS(derate) and tIH(derate).

-   Added multi-burst support feature for Timing Tests.

Modifications / Changes

-   Updated the test limit of all tDS and tDH test of LPDDR2 by using tDS(base) and tDH(base) limit (from Table 108 – Data Setup and Hold Base-Values, JESD209-2B) instead of using limit of tDS and tDH of Vref based(from Table 103 – LPDDR2 AC Timing Table, JESD209-2B).

-   Updated the test limit of all tIS and tIH test of LPDDR2 by using tIS(base) and tIH(base) limit (from Table 104 – CA and CS_n Setup and Hold Base-Values for 1V/ns, JESD209-2B) instead of using limit of tIS and tIH (from Table 103 – LPDDR2 AC Timing Table, JESD209-2B).

-   Replaced "tDS(base)" with "tDS(base) for Data" and "tDS(base) for Data Mask".

-   Replaced "tDH(base)" with "tDH(base) for Data" and "tDH(base) for Data Mask".

-   Replaced "tDS1(base)" with "tDS1(base) for Data" and "tDS1(base) for Data Mask".

-   Replaced "tDH1(base)" with "tDH1(base) for Data" and "tDH1(base) for Data Mask".

-   "tVAC" and "tDVAC" tests have been updated as Information-Only tests where the test result is not compared to any test limit.

Agilent N5413B Software Version 01.02

Release Date:	May 20, 2011
Requirements Category (e.g., operating system):	Microsoft Windows XP
Requirements Category (e.g., instrument software version):	3.11 (90000 Series, 90000 X-Series), 3.11 (9000 Series)
File Name:	SetupInfLPDDR201020000.exe
License:	Please see the product data sheet on Agilent.com

New Features / Additions

- Supports the Infiniium DSO-X 90000 Series High Performance Oscilloscope.

- The application will now require Microsoft's .net framework 3.5 to be installed on the scope to run.

Modifications / Changes

- Fixed the wrong unit issue on LPDDR2 Overshoot/Undershoot Area tests.

- Fixed the LPDDR2 VIHDQ/VILDQ tests issue where the valid sampling window calculation has been updated to refer to the LPDDR2 tDS/tDH compliance specifications.

- Updated the histogram measurement method in order for the application to support DSO-X 90000 series.

Agilent N5413B Software Version 01.01

Release Date:	July 12, 2010
Requirements Category (e.g., operating system):	Microsoft Windows XP
Requirements Category (e.g., instrument software version):	3.11 (90000 Series), 3.11 (9000 Series)
File Name:	SetupInfLPDDR201010000.exe
License:	Please see the product data sheet on Agilent.com

New Features / Additions

- Added new template of mask file for LPDDR2.

- Enable user to define threshold of burst for Read Write Separation.

- Enable Application to load legacy of DDR2 project file.

- Enable Application to support Read Write Separation for Read and Write burst that have obvious different amplitude. For example, Read burst amplitude is much smaller than Write burst amplitude.

- Solve measurement issue of Vih(dc) and Vil(dc) where previously this test not perform measurement correctly if PUT is DM.

- Take the worst case from multi-trial measurement as test result for Vix, VIXCA,VIXDQ and Vox test.

Agilent N5413B Software Version 01.00

Release Date:	May 21, 2010
Requirements Category (e.g., operating system):	Microsoft Windows XP
Requirements Category (e.g., instrument software version):	3.11 (90000 Series), 3.11 (9000 Series)
File Name:	SetupInfLPDDR201000000.exe
License:	Please see the product data sheet on Agilent.com

New Features / Additions

- Added new test for Low Power DDR2 (LPDDR2) such as SRQseR, SRQseF, VOH(AC), VOH(DC), VOL(AC), VOL(DC), VSEH(AC), VSEL(AC), tVAC, tDVAC, tQHS, tQSH, TQSL, tDIPW and tQHP.

Agilent N5413A Software Version 02.52

Release Date:	May 04, 2010
Requirements Category (e.g., operating system):	Microsoft Windows XP
Requirements Category (e.g., instrument software version):	5.71 (80000 Series), 2.10 (90000 Series), 2.10 (9000 Series)
File Name:	SetupInfDDR202520000.exe.exe
License:	Please see the product data sheet on Agilent.com

Miscellaneous Notes

-   This version still supports 80000 series oscilloscope.

Modifications / Changes

-   Modified the software to load project that was saved in debug mode.

-   Modified Undershoot test to return invalid value rather than throwing error messages when the test fail to measure undershoot.

-   Modified tHZ, tRPST and tWPST tests to make better measurement when the signal is oscillating at the end of the burst.

-   Modified Vox and Vix tests to correctly put the markers at the crossings.

-   Modified Vid test not to fix channels to be used.

Agilent N5413A Software Version 02.51

Release Date:	April 05, 2010
Requirements Category (e.g., operating system):	Microsoft Windows XP
Requirements Category (e.g., instrument software version):	5.71 (80000 Series), 2.01 (90000 Series), 2.01 (9000 Series)
File Name:	SetupInfDDR202510000.exe
License:	Please see the product data sheet on Agilent.com

Miscellaneous Notes

- This will be the last version to support the 80000 series oscilloscope. Following releases will only support 90000 series oscilloscope.

New Features / Additions

- Added Read/Write Separation Threshold in the configuration. User can choose auto or manual threshold for read/write separation. Default as auto.

Agilent N5413A Software Version 2.50

Release Date:	February 22, 2010
Requirements Category (e.g., operating system):	Microsoft Windows XP
Requirements Category (e.g., instrument software version):	5.71 (80000 Series), 2.01 (90000 Series), 2.01 (9000 Series)
File Name:	SetupInfDDR202500000.exe
License:	Please see the product data sheet on Agilent.com

Modifications / Changes

- Increased test execution speed for Clock Timing, Data Strobe Timing and Data Mask Timing by testing all parameters on the same burst.

- Labeled all signal in the screenshot for Clock Timing, Data Strobe Timing and Data Mask Timing tests.

Agilent N5413A Software Version 2.42

Release Date:	November 17, 2009
Requirements Category (e.g., operating system):	Microsoft Windows XP
Requirements Category (e.g., instrument software version):	5.71 (80000 Series), 2.01 (90000 Series), 2.01 (9000 Series)
File Name:	SetupInfDDR202420000.exe
License:	Please see the product data sheet on Agilent.com

Modifications / Changes

- Enhanced the Overshoot/ Undershoot tests to handle the signal that occasionally fluctuate or exceed adjusted vertical range.

- Enhanced the tQH test to perform measurement on all DQ transition which associates with both rising and falling strobe transition.

- Enhanced to support multilevel signal (signal that have different amplitude among burst).

Agilent N5413A Software Version 02.41

Release Date:	June 22, 2009
Requirements Category (e.g., operating system):	Microsoft Windows XP
Requirements Category (e.g., instrument software version):	5.71 (80000 Series), 1.41 (90000 Series), 2.00 (9000 Series)
File Name:	SetupInfDDR202410000.exe
License:	Please see the product data sheet on Agilent.com

New Features / Changes

- Enabled the application to handle Read only or Write only test signal.

- Enabled the InfiniiSim de-embedding function setting of the oscilloscope.

- Added screenshot for clock test tCK(avg).

- Used oscilloscope's highest available sampling rate for all the tests.

Modifications / Changes

- Updated the Vih(ac) test for DQ and DM signals to take the voltage level of test signal at tDS (DM and DQ input setup time in JEDEC specification) before the DQS midpoint for the high level voltage as the test result.

- Updated the Vil(ac) test for DQ and DM signal to take the voltage level of test signal at tDS (DM and DQ input setup time in JEDEC specification) before the DQS midpoint for the low level voltage as the test result.

- Updated the Vih(dc) test for DQ and DM signal to take the minimum of the histogram of the high level voltage value of the test signal within tDS (DM and DQ input setup time in JEDEC specification) before the DQS midpoint to tDH (DM and DQ input hold time in JEDEC specification) after DQS midpoint as the test result.

- Updated the Vil(dc) test for DQ and DM signal to take the maximum of histogram of the low level voltage value of the test signal within tDS (DM and DQ input setup time in JEDEC specification) before DQS midpoint to tDH (DM and DQ input hold time in JEDEC specification) after DQS midpoint as the test result.

- Updated the Overshoot Test to compare the maximum voltage of all acquired waveform at 10,000UI length with VDD/VDDQ.

- Updated the Undershoot test to compare the minimum voltage of all acquired waveform at 10,000UI length with VSS/VSSQ.

Agilent N5413A Software Version 02.40

Release Date:	March 06, 2009
Requirements Category (e.g., operating system):	Microsoft Windows XP
Requirements Category (e.g., instrument software version):	5.60 (80000 Series), 1.31 (90000 Series)
File Name:	SetupInfDDR202400000.exe
License:	Please see the product data sheet on Agilent.com

New Features / Additions

- Enabled the User Define Limit (UDL) for all tests.

- Categorized the Overshoot and Undershoot tests into two groups: (address, control) and (clock, data, strobe, mask).

- Added "Skip Connection Diagram Prompt" configuration option. This option allows users to enable or disable all connection change prompts when running selected tests.

- Added "Skip Error Message" configuration option. This option allows users to enable or

- disable error message prompt when running selected tests.

- Added test support for DDR2-1066 tests under the compliance test mode. The reference document for this speed grade is the JESD208.

- The configuration options (in Configure tab) of the selected tests are shown in the test report.

Modifications / Changes

- Renamed "Advanced Debug" test mode to "Custom" test mode.

- Test IDs have been updated for some tests due to the implementation of User Define Limit (UDL) feature.

- Removed all the "Optional" tests.

- Extended the maximum worst trial display and shown images from 25 trials to 64 trials.

- Removed the High/Low State Ringing tests from the Custom (former Advanced Debug) test mode.

- Updated the Vih(dc) test to use the histogram "mode" value as the test result.

- Updated the Vil(dc) test to use the histogram "mode" value as the test result.

Agilent N5413A Software Version 02.30

Release Date:	May 16, 2008
Requirements Category (e.g., operating system):	Microsoft Windows XP
Requirements Category (e.g., instrument software version):	5.20 (80000 Series), 1.00 (90000 Series)
File Name:	SetupInfDDR202300000.exe
License:	Please see the product data sheet on Agilent.com

New Features / Additions

- Created another category for running characterization mode which is called Multi-trial mode.

- Added multi trial Vix test in M-Mode.

- Added multi trial for tDS and tDH (Differential)

- Added multi trial for tDQSQ

- Added multi trial for tIS and tIH

- Group all Debug mode config parameters.

- Added 3 news config param for M-Mode tests.

- (A)Measurement (B)Time (C) Burst

- Adding in signal name for tIS and tIH tests.

Modifications / Changes

- (Internal) Changes InfiniiScan % for Differential and Single-Ended InitScope function.

- Removed (differential) for tAC and tDQSCK

- Adding HOLDoff time of 200ns to Advance tests: tDQSQ, tDH,tDS,tIHIS to prevent certain signal unable to be triggered.

Agilent N5413A Software Version 02.21

Release Date:	February 05, 2008
Requirements Category (e.g., operating system):	Microsoft Windows XP
Requirements Category (e.g., instrument software version):	5.20 (80000 Series), 1.00 (90000 Series)
File Name:	SetupInfDDR202210000.exe
License:	Please see the product data sheet on Agilent.com

New Features / Additions

- Added Individual threshold setting for the manual "threshold setting mode" specially designed for most embedded user.

- Added InfiniiScan Min/Max setting in the configuration page.

- Added optional Infinite Persistence test for tDQSQ(Read-cycle test) and tDS/tDH(Write-cycle) tests. Infinite Persistence will measure setup and hold time of the respective signals and measure using histogram mode.

- Added configuration options for Single-Ended Signals (eg. DQS0,Gnd, /DQS0,Gnd) to provide more connection choices for users.

- Enhanced Eye-diagram analysis. Added configuration option under the Advance Debug Mode category – Read/Write Eye-diagram tests. The parameter name is "Total Unit Interval" with defaulted value to 10 UIs. Users are allowed to edit the parameter to any value > 0. *It is advisable to start with higher UI number and only reduce the UI if the signals are unable to obtain a nice Eye-Diagram due to specific signal behavior.

- Added tangent slew rate for the tDQSQ, tDS, tDH tests. Tangent slew rate and Nominal slew rate will be reported in the test results.

- Added derating table measurement for tDS and tDH tests based on the tangent and

- nominal slew rate. Unmatched slew rate will returned "N/A" in the result table.

- Added total measurement measured for the Timing Tests. This information will be available at test result's report.

Agilent N5413A Software Version 02.20

Release Date:	January 11, 2008
Requirements Category (e.g., operating system):	Microsoft Windows XP
Requirements Category (e.g., instrument software version):	5.20 (80000 Series), 1.00 (90000 Series)
File Name:	SetupInfDDR202200000.exe
License:	Please see the product data sheet on Agilent.com

New Features / Additions

- Supports the Infiniium 90000 Series High Performance Oscilloscope.

- Supports the Remote Programming Interface capability.

- Performance enhancement on all the Electrical and Timing tests.

- Added memory depth selection (in bits) for better eye-diagram tests.

- Enable running of all test without any connection prompt during the run in order to let the system run nightly.

Agilent N5413A Software Version 02.11

Release Date:	October 02, 2007
Requirements Category (e.g., operating system):	Microsoft Windows XP
Requirements Category (e.g., instrument software version):	5.20 (80000 Series)
File Name:	SetupInfDDR202110000.exe
License:	Please see the product data sheet on Agilent.com

Modifications / Changes

- Changes made to address critical bugs which caused "Query Unterminated" while running the clock jitter test. It totally disabled this group of tests to run. This issue is fixed and currently all the clock jitter tests are able to complete the run.

- Changed terr(6-10per) Rising/Falling Edge Measurements specification from –600ps – 600ps to –350ps – 350ps and terr(11-50per) Rising/Falling Edge Measurements specification from - 600ps – 600ps to –450ps – 450ps.

Agilent N5413ASoftware Version 02.10

Release Date:	August 23, 2007
Requirements Category (e.g., operating system):	Microsoft Windows XP
Requirements Category (e.g., instrument software version):	5.20 (80000 Series)
File Name:	SetupInfDDR202100000.exe
License:	Please see the product data sheet on Agilent.com

New Features / Additions

- Added the Timing Tests that consists of Clock Timings, Data Strobe Timings, Data Mask Timing and Command and Address Timings. These tests are available under all test modes.

- Timing Tests are available under the Advance Debug Mode as well. Users may key in customized speed grade value. Test limit for the Advance debug mode will be based on the user defined speed grade value. For example, if the user defined the Speed grade as 430MT/s, then Specification limit of 533 will be used.

- Renamed Mhz to MT/s to avoid confusion.

Agilent N5413ASoftware Version 02.01

Release Date:	May 25, 2007
Requirements Category (e.g., operating system):	Microsoft Windows XP
Requirements Category (e.g., instrument software version):	5.10 (80000 Series)
File Name:	SetupInfDDR202010000.exe
License:	Please see the product data sheet on Agilent.com

Modifications / Changes

- Changes made only impacts the Clock test. The affected tests are tjit(CC) Rising Edge Measurement, 667Mhz, tjit(CC) Rising Edge Measurement, 800Mhz, tjit(CC) Falling Edge Measurements, 800Mhz, where the results will return Infinite value such as 9999.9999...ms. This will only happen when the user installs new Software version 0.530. Some code has been fixed in Time Scale, in order to support the new Software version 0.530.

- With this patch (DDR2 2.01), this issue will not occur anymore in both, Software version

- 5.20 and 5.30..

Agilent N5413ASoftware Version 02.00

Release Date:	December 13, 2006
Requirements Category (e.g., operating system):	Microsoft Windows XP
Requirements Category (e.g., instrument software version):	5.10 (80000 Series)
File Name:	SetupInfDDR202010000.exe
License:	Please see the product data sheet on Agilent.com

New Features / Additions

- Added the Advance Debug Test Mode that consists of Eye-diagram tests and High/Low state ringing tests. These tests are used by customers to perform the signal evaluations.

- Added the Electrical Tests(Single-Ended Tests & Differential Tests) under compliance test mode to cater for the DDR2-400 Mhz, DDR2-667Mhz and DDR2-800Mhz. Test limits are based on the DDR2-SDRAM specification: JEDEC Standard No. 79-2C.

- Added test limits checking for the Clock Tests based on the Intel DDR2 667/800 JEDEC Specification Addendum document. Clock Tests are only available under DDR2-667 and DDR2-800 speed grade for the compliance testing.

Modifications / Changes

- Removed the Slew Rate (Rising Edge & Falling Edge) tests from the Clock Tests.

Agilent N5413ASoftware Version 01.12

Release Date:	September 18, 2006
Requirements Category (e.g., operating system):	Microsoft Windows XP
Requirements Category (e.g., instrument software version):	5.10 (80000 Series)
File Name:	SetupInfDDR201120000.exe
License:	Please see the product data sheet on Agilent.com

New Features / Additions

- Initial released version of the Clock Tests.

- Used for the test characterization purpose. Compliance test limits were not available in the Intel DDR2 667/800 JEDEC Specification Addendum document during the release of this application version.

Modifications / Changes

- Update to 1.0 specification

- Acquired cycles' count persists across appended runs. Previously, it used to reset across appended runs.

- Slew rate test markers are placed correctly at the thresholds where the measurement is made. Previously, the markers were not correctly placed.

- The results screen is updated immediately after the end of the run. Previously, it only updates after you click 'OK' at the end of the run.

Agilent N5413A Software Version 01.00

Release Date:	June 08, 2005
Requirements Category (e.g., operating system):	Microsoft Windows XP
Requirements Category (e.g., instrument software version):	4.02
File Name:	SetupInfDDR201000000.exe
License:	Please see the product data sheet on Agilent.com

Initial Release