

# D9030DDRC DDR3 Compliance Test Application

Keysight D9030DDRC DDR3 Software Version 02.70.5.0

Release Date:	April 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/EXR Series) 06.74.00402 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series, S-Series, V-Series)
Requirements category (other):	-
File Name:	SetupInfDDR302700005.exe
License:	Please see the product data sheet on Keysight.com.

## New Features

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

## Modification

- Update Keysight License Manager 5.

## Keysight D9030DDRC DDR3 Software Version 02.70.3.0

Release Date:	December 2021
Requirements category (e.g., operating system):	Microsoft Windows 10
Requirements category (e.g., instrument software version):	11.40.00202 (UXR/MXR/EXR Series), 06.73.00102 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series, S-Series, V-Series)
Requirements category (other):	-
File Name:	SetupInfDDR302700003.exe
License:	Please see the product data sheet on Keysight.com.

### New Features

- Support SW00DDRV License (DDR Validation license)

## Keysight D9030DDRC DDR3 Software Version 02.60.0.0

Release Date:	March 31, 2021
Requirements category (e.g., operating system):	Microsoft Windows 7, Microsoft Windows 10
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, V-Series)
Requirements category (other):	-
File Name:	SetupInfDDR302600000.exe
License:	Please see the product data sheet on Keysight.com.

### New Features

- Added support for MXR-Series oscilloscopes.

### Issues Fixed

- Resolved READ/WRITE test execution failure issue which occurred when the "Burst Triggering Method" was selected as "MSOxLogicTriggering".
- Resolved test execution failure related issue which occurred when the "Waveform File Type" configuration was chosen as ".h5".
- Resolved measurement reference issue where "Vih/Vil for Command and Address" configuration value was being used for data measurement tests. Now, the "Vih/Vil for DQ/DM" configuration value will be used instead.
- DDR3
  - o Resolved the screenshot issue on DDR3 "VIX for Clock" test where wrong signal was being shown as Clock Differential Signal.
- LPDDR3
  - o Resolved wrong test result issue of LPDDR3 tDQSCK test.

## Keysight D9030DDRC Software Version 02.53.0001

Month of Release:	July 2019
Requirements category	
Operating system:	Microsoft Windows 7
Infiniium software version:	10.10.04601 (UXR Series), 06.55.00504 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series, S-Series, V-Series), 06.55.00504 (9000 Series)
File Name:	SetupInfDDR302530001.exe
License:	Please see the product data sheet on Keysight.com.

### Known Defects

- The DDR3/LPDDR3 tests will not run successfully when the “Waveform File Type” configuration is set to “.h5”. In order to have a .h5 saved reference waveform after performing a test run, set the “Waveform File Type” to “.wfm”. Upon successful test run, manually convert the saved .wfm file generated to .h5 using the Infiniium software.
- In the event where the VSEH/VSEL(Strobe Plus) and VSEH/VSEL(Strobe Minus) tests are not be able to detect valid burst data due to smaller amplitude of the single-ended strobe signals , setting the relevant single-ended strobe thresholds on the VIH.CA\_AC, VIH.CA\_DC, VIL.CA\_AC and VIL.CA\_DC configurations may affect the burst detection process to successfully identify the burst data.

### Modifications

- Added remote configuration for Custom Mask file and Derating file.
- Add tHZDQS test for DDR3 test mode.
- Added back missing config: Eye Diagram Display Style
- Supports PPKS license model. Product name changed from “U7231B/U7231C DDR3” to “D9030DDRC DDR3”.
- Only "Offline" option will be available if the app connected to Infiniium offline.
- Resolved issue where error prompt when perform offline test on .h5 waveform file.
- Resolved issue where rank separation is not working correctly if running with Vil(ac) test.

- Resolved HTML report header issue where it unexpectedly show DDR3L speed grade after running in DDR3 mode.
- Resolved issue where user unable to add connection set after starting new project.
- Improved SetupTab GUI refresh respond.
- Resolved issue of handling disabled tests when performing right click on Select Tests Tab to select “Check All” tests option.
- Resolved error prompt during test run that is caused by changing between “Compliance” and “Debug” mode under the Configure Tab before running the tests.
- Resolved issue where the “SDRAM Type” option will need to be set prior to setting the “Live Signal/Offline” option in order to run selected test successfully.
- Resolved issue of incorrect timing test measurement when the VOL(DC) test is run prior to running the selected timing tests under the LPDDR3 test mode.
- Resolved VIXDQ test issue where it is not able to perform Read Write separation correctly in custom mode.

## Keysight U7231B/U7231C Software Version 02.51.0000

Released Date:	18 May 2018
Requirements category (e.g., operating system):	Microsoft Windows 7
Requirements category (e.g., instrument software version):	06.20.00801 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series, S-Series, V-Series) 06.20.00801 (9000 Series)
Requirements category (other):	-
File Name:	SetupInfDDR302510000.exe
License:	Please see the product data sheet on Keysight.com.

### Modifications

- Addition of sampling rate configuration setting.
- Add feature: Bursty Clock support.
- Prevent user to enter "Not In Used" selection for all channel on a connection set.
- Fixed wrong eye diagram folded when running this test with All test under Data test group.
- Fixed unexpected error prompt when running the test with turned on InfiniiSim and Bandwidth Limit.
- Fixed wrong result value reported on tDIPW test.
- Fixed improperly signal presentation on report image for VIHdiff.CK (AC), VIHdiff.CK (DC), VILdiff.CK (AC) and VILdiff.CK (DC) tests.
- Fixed missing entry of derating table file selection.
- Fixed missing marker on tDIPW and tVAC tests.
- Fixed project loading issue where DDR3L checkbox unexpectedly disabled after loading project.
- Fixed issue where the value of offline wfm file is not cleared after creating new project.
- Fixed hang issue which happen by running clock tests on small amplitude clock signal.
- Fixed project loading issue where app unexpectedly set AC175 while the project saved at AC150.

## DDR3

- Add "tDIPW for Data Mask" test.

## LPDDR3

- Fixed wrong measurement on VIXDQ test.

## Keysight U7231B/U7231C Software Version 02.50.0000

Released Date:	12 January 2018
Requirements category (e.g., operating system):	Microsoft Windows 7
Requirements category (e.g., instrument software version):	06.10.00709 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series, S-Series, V-Series) 06.10.00709 (9000 Series)
Requirements category (other):	-
File Name:	SetupInfDDR302500000.exe
License:	Please see the product data sheet on Keysight.com.

### Modifications

- Speed Enhancement.
- Implementation of a new model of read/write separation which is much faster with better usability model. This new read write separation does not require the configurations of “Burst Envelope Threshold” and “Minimum data Amplitude”.
- Implementation of new model of common connection. It benefits user in term of less redundant acquisition for speed enhancement, better usability model and less middle running intervention.
- Split Overshoot/Undershoot tests and SlewR/SlewF tests into most specific signal type.
- Major revision of test list order. Now the test is grouped into target signal type categories.
- Revamp of the Set Up tab.
- Add feature: Histogram of measurement.
- Correction on the mechanism to find Overshoot/ Undershoot Area region.
- A new offline supported Eye Diagram Tests for Read Cycle, Write Cycle and Command Address signal.
- Fixed issue of result inconsistency in offline mode for tDVAC(Strobe) test and tVAC(Data) test.
- Fixed error prompts issue when updating the configuration of DDR Debug tool from Compliance Application.



- Fixed unexpected disabling of infiniiium user interface during run irrespective of user preference.
- Fixed some missing test in offline mode which is Input Slew Rate tests and VSEH/VSEL tests.

#### LPDDR3

- tCKE test to report conclusive test result status either pass or fail in case there is only one CKE edge found.

## Keysight U7231B/U7231C Software Version 02.45.0000

Released Date:	30 March 2017
Requirements category (e.g., operating system):	Microsoft Windows 7
Requirements category (e.g., instrument software version):	06.00.00627 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series, S-Series, V-Series) 06.00.00627 (9000 Series)
Requirements category (other):	-
File Name:	SetupInfDDR302450000.exe
License:	Please see the product data sheet on Keysight.com.

### Known Defects

- Eye diagram tests are not working properly in case the amplification in the transfer function file is 10x or greater using InfiniiSim.

### Modifications

- DDR3 application migration to 64-bit platform.
- Fixed Overshoot/Undershoot issue where Overshoot/Undershoot area is being performed on wrong location on the signal.
- Fixed Eye Diagram tests issue where folded eye diagram shown is small due to the unexpected large vertical scale.
- Changed the criteria to stop folding eye diagram because of the new behavior of Eye folding on Infiniium software.
- Main form of Compliance Application will be minimized when Debug Tool is launched.
- Fixed missing test result value for “Information Only” tests on HTML report.
- Fixed missing waveform screenshot on HTML reported for tIS and tIH tests.
- Fixed missing DQS Eye Diagram on HTML report screenshot when the configuration of “Eye Diagram Display Style” is set to “Eye Diagram Display with DQS on screen”.
- Enhanced the method in locating the first DQS rising edge for tWPRE measurement.

### DDR3

- Fixed the HTML report screenshot issue for “Vix for Clock” test where the waveform is not time-scaled properly.
- Fixed tDIPW test result issue where the result value is wrong due to wrong unit conversion.

#### LPDDR3

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

## Keysight U7231B/U7231C Software Version 02.44.9007

Released Date:	28 September 2016
Requirements category (e.g., operating system):	Microsoft Windows 7
Requirements category (e.g., instrument software version):	5.50.0025 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series), 5.50.0025 (9000 Series, S-Series)
Requirements category (other):	-
File Name:	SetupInfDDR302449007.exe
License:	Please see the product data sheet on Keysight.com.

### Modifications

- Add missing test that supposed to be included in offline mode: VIHdiff.CK, VILdiff.CK, VIHdiff.DQS and VILdiff.DQS.
- Update on waveform file loading to support test running on Infiniium Software version 5.70 and above.

## Keysight U7231B/U7231C Software Version 02.44.0001

Released Date:	17 November 2015
Requirements category (e.g., operating system):	Microsoft Windows 7
Requirements category (e.g., instrument software version):	5.50.0025 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series), 5.50.0025 (9000 Series, S-Series)
Requirements category (other):	-
File Name:	SetupInfDDR302440001.exe

### Modifications

- 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 U7231B/U7231C Software Version 02.44.0000

Released Date:	3 November 2015
Requirements category (e.g., operating system):	Microsoft Windows 7
Requirements category (e.g., instrument software version):	5.50.0025 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series), 5.50.0025 (9000 Series, S-Series)
Requirements category (other):	-
File Name:	SetupInfDDR302440000.exe

### Enhancements

- Add report item for Eye Diagram Test for Read Cycle: "Eye Width:VOH\_AC(Left)-VOL\_AC(Right)" and "Eye Width:VOH\_AC(Right)-VOL\_AC(Left)".
- Suppress all connection diagram prompt in offline mode.

### Modifications

- Solve default configuration value of VIH<sub>DQ</sub>(AC) and VILD<sub>Q</sub>(AC) which wrongly set to 9.9E+37 on the previous release.
- Correct the reference in the HTML report for DDR3L tests: Vix for Strobe test, Vix for Clock test, VIH<sub>diff</sub>.CK, VIH<sub>diff</sub>.DQS, tIS(base), tIH(base), tIS(derate), tIH(derate), tDS(base), tDH(base), tDS-Diff(derate) and tDH-Diff(derate).

## Keysight U7231B/U7231C Software Version 02.43.0000

Released Date:	17 April 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, S-Series)
Requirements category (other):	-
File Name:	SetupInfDDR302430000.exe

### New Features

- Added VIH/VILdiff tests.
- 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.
- Framework - Enable to disables Infniium GUI during test run.

### Enhancements

- Update the application to display the MSOx Digital Channel.
- Update the VSEH/VSEL tests to report more or useful information message for test engineer.

### Modifications

- Solved the Miscales doing eye test with custom threshold on Infniium 5.20++.
- Solved the number of burst report wrong value in the application.
- Framework – when a test has result, pressing delete key on that test in the select tests tab no longer deletes the result w/o confirmation.(Solved)
- Framework – Fixed sorting of reported items in CSV export.

## Keysight U7231B/U7231C Software Version 02.42.0000

Released Date:	12 December 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, S-Series)
Requirements category (other):	-
File Name:	SetupInfDDR302420000.exe

### Modifications

- Solved the VSEH and VSEL clock tests that failed to find valid signals.



## Keysight U7231B/U7231C Software Version 02.41.0000

Released Date:	20 November 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, S-Series)
Requirements category (other):	-
File Name:	SetupInfDDR302410000.exe

### Note

- Change the Switch Matrix button text name to "Switch Matrix Test Plan".

### Modifications

- Solve Connection Diagram issue.
- Solve Test Filter issue while loading project with offline setting.
- Solve the issue that happen when large InfiniiSim transfer functions is used whereby it take too long test run due to loading it multiple times.
- Solve the result display issue of Eye Diagram test which happen by using instrument version software v5.0 and above. Previously, it unexpectedly show more than 1 UI on screen.
- Solve issue that happen when user click LPDDR3 check box while don't have Switch Matrix license. Previously, application unexpectedly show error message asking for switch matrix license after click LPDDR3 button.

## Keysight U7231B/U7231C Software Version 02.40.0002

Released Date:	17 October 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, S-Series)
Requirements category (other):	-
File Name:	SetupInfDDR302400002.exe

### Modifications

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

## Keysight U7231B/U7231C Software Version 02.40.0001

Released Date:	10 October 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, S-Series)
Requirements category (other):	-
File Name:	SetupInfDDR302400001.exe

### Note

- Update release note due to Documentation Migration of Keysight Technologies.

## Keysight U7231B/U7231C Software Version 02.40.0000

Released Date:	10 October 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, S-Series)
Requirements category (other):	-
File Name:	SetupInfDDR302400000.exe

### Note

- This application now rebranding under Keysight Technologies. Thus all migration work has been done regarding to this change.

### New Features

- Add support to Switch Matrix N8990KA36.

### Enhancements

- After setup offline feature form, application will show enabled and disable test due to waveform type loaded.

## Agilent U7231B/U7231C Software Version 02.31.0001

Released Date:	18 Aug 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, S-Series)
Requirements category (other):	-
File Name:	SetupInfDDR30231.0001.exe

### Modifications

- Solve the Connection Diagram prompt does not update correctly for each of the test.

## Agilent U7231B/U7231C Software Version 02.31

Released Date:	15 Aug 2014
Requirements category (e.g., operating system):	Microsoft Windows 7
Requirements category (e.g., instrument software version):	4.60.0012 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series), 4.60.0012 (9000 Series, S-Series)
Requirements category (other):	-
File Name:	SetupInfDDR30231.exe

### Modifications

- Solve the Eye Diagram test where the Mask Test counter is reset when the horizontal scale value is changed in Infiniium Software Version 5.00 and above.
- Solve the get data rate feature when loading HDF5 file format in Debug Tool.
- Correction on test overview of tCL(abs) test.

## Agilent U7231B/U7231C Software Version 02.30

Released Date:	30 May 2014
Requirements category (e.g., operating system):	Microsoft Windows 7
Requirements category (e.g., instrument software version):	4.60.0012 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series), 4.60.0012 (9000 Series, S-Series)
Requirements category (other):	-
File Name:	SetupInfDDR30230.exe

### New Features

- Supports for Infiniium Oscilloscope Software version 5.00.

## Agilent U7231B Software Version 02.21

Released Date:	06 May 2014
Requirements category (e.g., operating system):	Microsoft Windows XP, Microsoft Windows 7
Requirements category (e.g., instrument software version):	5.71 (80000 Series), 4.60.0012 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series), 4.60.0012 (9000 Series, S-Series)
Requirements category (other):	-
File Name:	SetupInfDDR30221.exe

### Note

- This will be the last version to support Infiniium 80000 Series and Infiniium Oscilloscope Baseline Version 4.20.

### New Features

- Added new speed grade: LPDDR3-1866 and LPDDR3-2133.
- Added new mask file for LPDDR3 1866 and 2133.
- Added HDF5 (\*.h5) file format support for compliance app, offline mode and debug tool.

### Enhancements

- Updated LPDDR3 specification to the JESD209-3B standard.
- Updated JEDEC Standard No. 79-3-1A.01.
- Replaced tIS/tIH tests with tIS/tIHCA, tIS/tIHCS and tIS/tIHCKE.

### Modifications

- Solved issue of eye mask get offset.



## Agilent U7231B Software Version 02.20

Released Date:	16 January 2014
Requirements category (e.g., operating system):	Microsoft Windows XP
Requirements category (e.g., instrument software version):	5.71 (80000 Series), 3.11 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series), 3.11 (9000 Series, S-Series)
Requirements category (other):	-
File Name:	SetupInfDDR30220.exe

### New Features

- Enable Run Forever feature on the Run Tests tab.
- Support Read Write Separation with On the Fly using Digital Channel on MSO-X Series Oscilloscope.
- Addition of new DDR Debug Tool feature.
- Addition of new Offline feature.
- Addition of new mask files for LPDDR3.

### Enhancements

- For derating related test which perform in custom mode, application will automatically select from the derating table that belong to the next closest speed grade to custom speed grade enter by user.

### Modifications

- Solved issue of displaying connection diagram in the middle of clock test.
- Solved tVAC(CS,CA) test reporting error on the result tab.
- Solved Eye Diagram tests issue happen on 80000 Series Oscilloscope.
- Correction of the default value of Voh(ac) and Vol(ac) on the configuration tab.

## Agilent U7231B Software Version 02.02

Released Date:	13 Februari 2013
Requirements category (e.g., operating system):	Microsoft Windows XP
Requirements category (e.g., instrument software version):	5.71 (80000 Series), 3.11 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series), 3.11 (9000 Series, S-Series)
Requirements category (other):	-
File Name:	SetupInfDDR30202.exe

### New Features

- Add feature of Save Project (Setting-Only) As.
- Add new mask file for DDR3-1866 and DDR3-2133.
- Add tVAC,tDVAC and tIPW tests for DDR3 and DDR3L.
- Add tIPWCA and tIPWCS tests for LPDDR3.
- Add tCH(abs) and tCL(abs) tests DDR3, DDR3L and LPDDR3.
- Add tDQCKDS and tDQCKDM tests.
- Add option 3T and 4T in Clocking Method configuration in Configure Tab under Command and Address Timing ONLY branch.
- Implement dynamic tests limit which depend on VrefDQ, VrefCA, VTT, VDD, VDDQ, VDDCA, VIH.CA, VIL.CA, VIH.DQ and VIL.DQ value. These tests limit value is now depend on the current value of VrefDQ, VrefCA, VTT, VDD,VDDQ, VDDCA, VIH.CA, VIL.CA, VIH.DQ and VIL.DQ on the Configure Tab.

### Enhancements

- Update DDR3 test limit based on JEDEC Standard No. 79-3F.
- Centralize the Rank Separation configuration on Configure Tab.
- Support Read Latency and Write Latency up to 100.

- Modification on VIXCA test to perform on all clock cross point on the signal instead of just ten occurrence previously.
- Implement Rank Separation for Electrical Tests.

## Modifications

- Fix VIXCA test issue due to error message “Cannot find TestTag:PrepareElecDiffVIXCAChannelSettings in file:scope\utils.xml”;
- Fix Eye Diagram tests issue where in the end of these test, Application will clear the accumulated signal on the oscilloscope screen.
- Correction on tJIT(CC) test limit of LPDDR3-1333 and LPDDR3-1600.
- Correction on tJIT(CC) test description on report page.
- Fix loading issue of Supporting Pin Source configuration under Differential AC Input Levels for Strobe tests group.

## Agilent U7231B Software Version 02.01

Released Date:	27 July 2012
Requirements category (e.g., operating system):	Microsoft Windows XP
Requirements category (e.g., instrument software version):	5.71 (80000 Series), 3.11 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series), 3.11 (9000 Series, S-Series)
Requirements category (other):	-
File Name:	SetupInfDDR30201.exe

### Enhancements

- Implement the TopBase Ratio Threshold for Eye Diagram Tests.
- 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.
- Prompt user if the custom derating table file isn't exist while loading project file.
- Implement Digitize with Timeout for better response of Cancel button during triggering.

### Modifications

- 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 where application report LPDDR3-1333 as speed grade on HTML Report tab after run a test for DDR3-800.
- 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.

- Update tIS and tIH definition due to LPDDR3 specification which mention should refer to rising or falling for PUT is Command Address.

## Agilent U7231B Software Version 02.00

Released Date:	13 March 2012
Requirements category (e.g., operating system):	Microsoft Windows XP
Requirements category (e.g., instrument software version):	5.71 (80000 Series), 3.11 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series), 3.11 (9000 Series, S-Series)
Requirements category (other):	-
File Name:	SetupInfDDR30200.exe

### New Features

- Added LPDDR3 test mode. The LPDDR3 license is only available on Infiniium Baseline version 3.22.0004 and above.
- Added additional reporting of "Number Of Measurement" item for all tests.

### Modifications

- Resolved the issue where there used to be a long time taken during end of a test trial.
- Fix burst processing issue during Rank Separation mode where app disregards the valid Read Burst.
- Fix tDIPW issue of loading incorrect waveform file for test screen shot result.
- Fix tDS issue where "object not set as instance" exception is being thrown when running the test.

## Agilent U7231A Software Version 01.72

Released Date:	20 November 2011
Requirements category (e.g., operating system):	Microsoft Windows XP
Requirements category (e.g., instrument software version):	5.71 (80000 Series), 3.11 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series), 3.11 (9000 Series, S-Series)
Requirements category (other):	-
File Name:	SetupInfDDR30172.exe

### Modifications

- Resolved the issue of the Vix test where an exception is thrown due to error in loading some internal waveform files.
- Resolved the issue of the tLZDQ test where previously the algorithm for this test cannot handle data burst with the transition of the DQ signal going from Hi-Impedance to a logic High state.
- Resolved the issue not able to correctly identify valid data burst from a selected rank when the “Write Preamble Pattern” configuration option is set to “DDR2”. This issue affected all the WRITE test as previously the application will use one additional clock period more than the entered WRITE latency value when trying to identify the required rank data burst under the mentioned settings.
- Resolved the issue where all the Eye Diagram Tests does now work with baseline version 3.20 and above.
- Resolved the issue regarding Eye Diagram Tests where an error exception regarding number of waveforms acquired is thrown when the data burst signal is triggering at more than 2 seconds apart.

## Agilent U7231A Software Version 01.71

Released Date:	20 October 2011
Requirements category (e.g., operating system):	Microsoft Windows XP
Requirements category (e.g., instrument software version):	5.71 (80000 Series), 3.11 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series), 3.11 (9000 Series, S-Series)
Requirements category (other):	-
File Name:	SetupInfDDR30171.exe

### New Features

- New tests added under Timing Tests group: tQSH and tQSL.
- Added new configuration option, “Write Preamble Pattern” where user can select the expected Write Preamble pattern.
- Added support for using the Precision Probe feature where this option is accessible via the Tools menu of the application.
- Added support for Windows 7 operating system.
- Added new “Acquisition Setup ...” menu under the Tools menu of the application where user can enable or disable the acquisition bandwidth limiting feature. This option is only available under the application Debug mode that can be set under the “Configure” tab of the application.

### Enhancements

- Added 1866 and 2133 Mt/s selection in the custom mode speed grade drop down list.
- Removed the InfiniiSim button from the Setup tab of the app as this feature is now accessible via the Tools menu of the application.



## Modifications

- Resolved the issue of reporting the wrong Speed Grade selection in Html report.
- Corrected the report display item for all relevant Timing Tests where the report label “Sample Length (UI)” is replaced by “Sampling Points (Pts)”. Due to this change, when loading supported legacy saved project files (version 1.70), all the saved test results that has the “Sample Length (UI)” report item will need to be removed before performing any new test trial to prevent test report item conflict error to occur.
- Resolved the issue of VOLdiff(AC) where the test was performing VOHdiff(AC) instead of the VOLdiff(AC) measurement.
- Resolved the issue of SRQdiffF where the test was performing SRQdiffR instead of the SRQdiffF measurement.
- Resolved the issue of finding the incorrect worst case value for all the timing test results that are reported in terms of tCK or tCK(avg) unit.
- Resolved the issue of having a time-out exception thrown when the application is trying to query an InfiniiSim command (eg. “:CHANnelx:ISIM:STATE?”) from a scope that does not support this feature.
- Resolved the issue of not retaining the saved “Derate Table File” info that is configurable under the “Custom” test mode when loading a saved project file. This fix will ensure that the app will use the saved “Derate Table File” info according to the saved project file.
- Resolved the issue of VILdiff.CK(AC) and VILdiff.DQS(AC) using incorrect dynamic test limits.

## Agilent U7231A Software Version 01.70

Released Date:	20 June 2011
Requirements category (e.g., operating system):	Microsoft Windows XP
Requirements category (e.g., instrument software version):	5.71 (80000 Series), 2.10 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series), 2.10 (9000 Series, S-Series)
Requirements category (other):	-
File Name:	SetupInfDDR30170.exe

### Note

- Due to the major code 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.

### New Features

- Added support for DDR3-1866 and DDR3-2133 under the compliance tests mode.
- Added support for DDR3L under the SDRAM Type option.
- New tests added under Electrical Tests group:
  - o VSEH & VSEL for Clock and DQS,
  - o VIHdiff & VILdiff for Clock and DQS,
  - o VOHdiff & VOLdiff,
  - o SRQdiffR, SRQdiffF,
  - o tDIPW.
- Added new “Threshold Setting” configuration wizard in the Setup tab of the application.
- Added new configuration option, “Min Data Amplitude” where user can set the minimum amplitude of Data burst (DQ/DM) during Read/Write burst separation in order to differentiate between valid data and noise.

- Added new configuration options as follow for burst trigger threshold purposes.
  - o BurstTriggerTopRatio\_Chan1
  - o BurstTriggerBaseRatio\_Chan1
  - o BurstTriggerTopRatio\_Chan2
  - o BurstTriggerBaseRatio\_Chan2
  - o BurstTriggerTopRatio\_Chan3
  - o BurstTriggerBaseRatio\_Chan3
  - o BurstTriggerTopRatio\_Chan4
  - o BurstTriggerBaseRatio\_Chan4
- Added new configuration option, “VTT” as reference voltage for all the output tests.

## Enhancements

- The reference document for DDR3 and DDR3L tests are JESD79-3E and JESD79-3-1 respectively.
- In order to support multi-AC levels as specified in the JESD79-3E and JESD79-3-1 documents, the following tests have been updated to use dynamic limit feature instead of the previous fixed limit value.
  - o All VIH/VIL tests.
  - o tDS/tDH tests (with/without derating feature support).
  - o tIS/tIH tests (with/without derating feature support).
- Changed the label of “ThresSetMode” configuration option from “Trigger Threshold Setting” with “Auto or Manual” options to “Threshold Mode” with “TopBaseRatio or Custom Threshold” options.
- User configuration options for AC/DC levels option are updated to support different AC options available under the JESD79-3E and JESD79-3-1 documents. Affected configuration options are listed as follow.
  - o InputThreshold\_Vih\_dc [OLD] - Removed
  - o InputThreshold\_Vih\_ac [OLD] - Removed
  - o InputThreshold\_Vil\_dc [OLD] - Removed
  - o InputThreshold\_Vil\_ac [OLD] - Removed

- InputRefV\_Vref [OLD] – Removed
  - InputThreshold\_Vih\_dc\_DQ [NEW]
  - InputThreshold\_Vih\_ac\_DQ [NEW]
  - InputThreshold\_Vil\_dc\_DQ [NEW]
  - InputThreshold\_Vil\_ac\_DQ [NEW]
  - InputThreshold\_Vih\_dc\_CA [NEW]
  - InputThreshold\_Vih\_ac\_CA [NEW]
  - InputThreshold\_Vil\_dc\_CA [NEW]
  - InputThreshold\_Vil\_ac\_CA [NEW]
  - InputRefV\_VrefCA [NEW]
  - InputRefV\_VrefDQ [NEW]
  - InputRefV\_VTT [NEW]
  - VIHdiff\_ac\_CK [NEW]
  - VILdiff\_ac\_CK [NEW]
  - VIHdiff\_ac\_DQS [NEW]
  - VILdiff\_ac\_DQS [NEW]
  - VOHdiff\_ac [NEW]
  - VOLdiff\_ac [NEW]
- Clock and DQS pins are removed from VIH&VIL tests due to the tests addition of VSEH & VSEL.
  - Separated the measurement and triggering thresholds settings to “Signal Measurement Threshold Settings” and “Burst Trigger Threshold Settings” respectively.
  - Increased test execution speed especially for multi-bursts testing.
  - Sampling points setting affects all the tests rather than Timing tests only.

## Modifications

- Resolved the issue of Eye Diagram reporting error message when different PUT or supporting pin is selected without deleting the previous trial result.
- Resolved the missing image issue found from loading an exported MHT file on a PC system other than the scope.
- Resolved the issue of tQH test reporting error message “Index out of range” by ignoring the first DQS edge of a burst.
- Resolved the issue of tDQSS test reporting error message “Index out of range” due to incorrect internal threshold values.

## Agilent U7231A Software Version 01.60

Released Date:	16 March 2011
Requirements category (e.g., operating system):	Microsoft Windows XP
Requirements category (e.g., instrument software version):	5.71 (80000 Series), 2.10 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series), 2.10 (9000 Series, S-Series)
Requirements category (other):	-
File Name:	SetupInfDDR30160.exe

### Note

- Due to the major code re-structuring done on the Electrical Test group, all the 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.

### New Features

- Added support for the InfiniiSim “4 Port 1 Channel” option.
- Added derating feature support. 4 new tests that support this feature are added; tDS-Diff(derate), tDH-Diff(derate), tIS(derate) and tIH(derate).
- Added multi-burst support feature with statistic reporting.
- Added “2T timing” support feature for tIS/tIS(derate) tests.
- Added new configuration option for all the Command and Address Timing tests where user can specify what type of edges (rising only, falling only, both) to process when running tIS/tIH tests.

### Enhancements

- Labeled all signals in the screenshot for all Electrical tests.
- Updated the tDQSCK test to process the rising DQS edge only instead of both rising and falling DQS edges.

## Modifications

- Resolved the issue of InfiniiSim settings being cleared during a scope reset when running the Timing tests.

## Agilent U7231A Software Version 01.52

Released Date:	04 October 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, 90000 X-Series, 90000 Q-Series, Z-Series), 2.10 (9000 Series, S-Series)
Requirements category (other):	-
File Name:	SetupInfDDR30152.exe

### Note

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

### New Feature

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



## Agilent U7231A Software Version 01.51

Released Date:	30 July 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, 90000 X-Series, 90000 Q-Series, Z-Series), 2.10 (9000 Series, S-Series)
Requirements category (other):	-
File Name:	SetupInfDDR30151.exe

### New Feature

- Added new “Burst Length Limit” features when performing the READ/WRITE eye diagram tests.

### Enhancements

- Updated the tDH measurement to only process the closest DQS edge that are located prior to a DQ edge in order to be consistent with the data hold time definition.

## Agilent U7231A Software Version 01.50

Released Date:	23 June 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, 90000 X-Series, 90000 Q-Series, Z-Series), 2.10 (9000 Series, S-Series)
Requirements category (other):	-
File Name:	SetupInfDDR30150.exe

### Note

- Due to the major code re-structuring done on the Timing Test group, all the 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.

### Enhancements

- Renamed the “Verify Selected Rank Only” configuration option for the Data Strobe Timing and Data Timing test group to “Rank Separation”. New “latency” configuration options are created to support this feature.
- Increased test execution speed for Data Strobe Timing and Data Mask Timing by testing all parameters on the same data burst. The tests are also updated to support and handle any valid back-to-back data burst found when the “Rank Separation” option is enabled.
- Labeled all signals in the screenshot for Data Strobe Timing, Data Mask Timing and Command Address Timing tests.

## Agilent U7231A Software Version 01.43

Released Date:	21 April 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, 90000 X-Series, 90000 Q-Series, Z-Series), 2.10 (9000 Series, S-Series)
Requirements category (other):	-
File Name:	SetupInfDDR30143.exe

### New Features

- Added new sets of test limits: DDR3L-800/1066/1333/1600 Spec Addendum (Proposed Version).

## Agilent U7231A Software Version 01.42

Released Date:	31 March 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, 90000 X-Series, 90000 Q-Series, Z-Series), 2.10 (9000 Series, S-Series)
Requirements category (other):	-
File Name:	SetupInfDDR30142.exe

### Enhancements

- Updated the  $V_{ih}(ac)$  and  $V_{il}(ac)$  tests to indicate that when the PUT is the DQ or DM signal, the voltage level of the test signal at tDS (DM and DQ input setup time in JEDEC specification) should be taken with reference to the DQS signal as the test results.
- Updated the  $V_{ih}(dc)$  and  $V_{il}(dc)$  tests to indicate that when the PUT is the DQ or DM signal, the histogram maximum and minimum value of the test signal should be taken respectively within the sampling window (from test signal tDS to tDH with reference to DQS signal) as the test result.
- Updated the Overshoot test to compare the maximum voltage of all acquired waveforms at 10,000UI length with VDD/VDDQ.
- Updated the Undershoot test to compare the minimum voltage of all acquired waveforms at 10,000UI length with VSS/VSSQ.

## Agilent U7231A Software Version 01.41

Released Date:	25 February 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, 90000 X-Series, 90000 Q-Series, Z-Series), 2.10 (9000 Series, S-Series)
Requirements category (other):	-
File Name:	SetupInfDDR30141.exe

### Enhancements

- Added new pins for selection, DQS8 and DQ64 - DQ71.
- User was unable to select input pin for Input Slew Rate tests. This issue was resolved by adding configuration selections for Input Slew Rate tests.

### Modifications

- Resolved the issue where configurations of Electrical tests were not updated properly after a project loaded.

## Agilent U7231A Software Version 01.40

Released Date:	18 December 2009
Requirements category (e.g., operating system):	Microsoft Windows XP
Requirements category (e.g., instrument software version):	5.71 (80000 Series), 2.10 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series), 2.10 (9000 Series, S-Series)
Requirements category (other):	-
File Name:	SetupInfDDR30140.exe

### Note

- Removed the (Optional)Eye Diagram Test For Write Cycle(Bubble Filter Mode).

### New Features

- Enabled the Signal De-embedding feature where the user can utilize the InfiniiSim function when running the DDR3 tests. However, this feature is not supported for the 80000 series scope.
- Added the new “Rank separation” feature when performing the READ/WRITE eye diagram tests. New “latency” configuration options are created to support this feature.

### Enhancements

- The application is updated to always use the maximum sampling rate available for a scope when performing all the DDR3 test measurements.

### Modifications

- Resolved the issue where an exception is occasionally thrown on long test runs causing the application to terminate unexpectedly.
- Resolved the tDS/tDH test issue where the wrong READ data cycle is processed instead of a WRITE data cycle when the “Verify Selected Rank Only” option is enabled.

## Agilent U7231A Software Version 01.30

Released Date:	26 June 2009
Requirements category (e.g., operating system):	Microsoft Windows XP
Requirements category (e.g., instrument software version):	5.70 (80000 Series), 1.41 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series), 2.00 (9000 Series, S-Series)
Requirements category (other):	-
File Name:	SetupInfDDR30130.exe

### Note

- Removed the High/Low state ringing tests.
- Removed the Vid and Vox tests from the Electrical Tests group.
- Removed all the “OPTIONAL” tests except for the (Optional)Eye Diagram Test For Write Cycle(Bubble Filter Mode).
- The “Advanced Debug” test mode is renamed to “Custom” test mode.
- The test IDs are updated due to the implementation of the User Defined Limit (UDL) feature in the application.
- The tDQSCK test is moved from the “Clock Timing” test group to the “Data Strobe Timing” test group based on the JESD79-3C specification.
- The tDQSQ, tQH, tHZ(DQ) and tLZ(DQ) tests are moved from the “Data Strobe Timing” test group to the “Data Timing” test group based on the JESD79-3C specification.
- All the tests under the “Clock Tests” test group is moved to the “Clock Timing” test group based on the JESD79-3C specification.
- Removed the speed verification feature from all the Electrical tests.

## New Features

- Enabled the User Defined Limit (UDL) feature where the user can customize the test limits during the DDR3 tests.
- Supports the Infiniium 9000 Series High Performance Oscilloscope.
- Added the “Skip Connection Diagram Prompt” configuration option to disable the connection change prompt during execution of selected tests.
- Added the “Sample Size(UI)” configuration option under the “Data Strobe Timing and Data Timing” test group.

## Enhancements

- The input slew rate tests is updated to be available in the Custom test mode only as there is no test reference found in the JESD79-3C specification.
- Restructure the Vih/Vil tests based on the JESD79-3C specification.
- Renamed Voh/Vol tests based on the JESD79-3C specification.
- Restructured the Overshoot/Undershoot tests based on the JESD79-3C specification.

## Modifications

- Resolved the issue of not being able to perform signal triggering on signals that have small signal amplitude (< 600mV).



## Agilent U7231A Software Version 01.20

Released Date:	16 May 2008
Requirements category (e.g., operating system):	Microsoft Windows XP
Requirements category (e.g., instrument software version):	5.30 (80000 Series), 1.00 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series)
Requirements category (other):	-
File Name:	SetupInfDDR30120.exe

### Modifications

- Fixed bug which caused application to fail to proceed during signal calibration while running on 90000 series oscilloscope with baseline version 1.20.

## Agilent U7231A Software Version 01.11

Released Date:	07 March 2008
Requirements category (e.g., operating system):	Microsoft Windows XP
Requirements category (e.g., instrument software version):	5.30 (80000 Series), 1.00 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series)
Requirements category (other):	-
File Name:	SetupInfDDR30111.exe

### New Features

- Added Individual threshold setting for 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 the histogram mode.
- Added configuration options for Single-Ended Signals (eg. DQS0,Gnd, /DQS0,Gnd) to provide more connection choices for the users.
- 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 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.

### Enhancements

- Enhanced Eye-diagram analysis. Added configuration option under 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 unable to obtain a nice Eye-Diagram due to the specific signal behavior.

## Agilent U7231A Software Version 01.10

Released Date:	11 January 2008
Requirements category (e.g., operating system):	Microsoft Windows XP
Requirements category (e.g., instrument software version):	5.30 (80000 Series), 1.00 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series)
Requirements category (other):	-
File Name:	SetupInfDDR30110.exe

### New Features

- Supports the Infiniium 90000 Series High Performance Oscilloscope.
- Supports the Remote Programming Interface capability.
- 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.

### Enhancements

- Performance enhancement on all the Electrical and Timing tests.

## Agilent U7231A Software Version 01.01

Released Date:	02 Oct 2007
Requirements category (e.g., operating system):	Microsoft Windows XP
Requirements category (e.g., instrument software version):	5.30 (80000 Series)
Requirements category (other):	-
File Name:	SetupInfDDR30100.exe

### Modifications

- Changes made to address the 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 clock jitter tests are able to complete the run.

## Agilent U7231A Software Version 01.00

Released Date:	23 Aug 2007
Requirements category (e.g., operating system):	Microsoft Windows XP
Requirements category (e.g., instrument software version):	5.30 (80000 Series)
Requirements category (other):	-
File Name:	SetupInfDDR30100.exe

### Initial Release

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