RELEASE NOTES

D9020DPHC MIPI D-PHY Compliance Test Application

Keysight D9020DPHC Software Version 4.10.0.0

Release Date:	December 15, 2023
Operating System:	Microsoft Windows 10
Instrument Software Version:	06.74.00402 (9000 Series, 90000 Series, 90000 X-Series, 90000 Q-Series, V-Series, and Z-Series) 11.51.00102 (UXR/UXR-B Series, MXR/ MXR-B Series, and EXR-Series)
File Name:	SetupD9020DPHC_MIPI_D-PHY_4.10.0.0.exe
License:	Please see the product data sheet on Keysight.com.

New Feature

- The application has been upgraded to support MXR and UXR-B Series oscilloscopes.

Modifications / Changes

- Changed **Device ID** and **User Comments** field in the **Set Up** tab from drop down box to text box.
- Applied default interpolation factor INT4 to Test 1.4.18 (Test ID 1200300).
- Changed the pass limit for Test 1.5.3 from “value <=0.5” to “Pass/Fail”.
- Test 1.4.17 will abort with error message in any of the following two cases:
    - Number of UI is equal to 0.
    - ClockUI (Mean, Min, or Max) exceeds 9E+36.

- Updated some existing tests to information only. See the table for more info.
  Please note that the old test IDs are still applicable for data rate 1.5 Gbps and below.

Test No.	HS Group	Test Name	CTS - 2.0 and Above | Data Rate > 1.5 Gbps	
			Old Test ID	New Test ID (Informative)
1.3.4	Data TX	Differential Voltage(V_{OD0} Pulse)	8131	8133
1.3.4		Differential Voltage(V_{OD1} Pulse)	8132	8134
1.3.5		Differential Voltage Mismatch (Pulse)	8141	8142
1.4.4	Clock TX	Differential Voltage(V_{OD0} Pulse)	18131	18133
1.4.4		Differential Voltage(V_{OD1} Pulse)	18132	18134
1.4.5		Differential Voltage Mismatch (Pulse)	18141	18142

Issues Fixed

- Fixed issue wherein user failed to create new project when data lane 1,2, or 3 is selected.
- Fixed issue wherein **Device ID** and **User Comments** field failed to reset after new project was started.

KEYSIGHT

Keysight D9020DPHC Software Version 4.0.24.0

Release Date:	July 28, 2023
Requirements category (e.g., operating system):	Microsoft Windows 10
Requirements category (e.g., instrument software version):	06.74.00402 (9000 Series, 90000 Series, 90000 X-Series, 90000 Q-Series, V-Series, Z-Series) 11.50.00102 (UXR-Series, MXR-Series, EXR-Series)
File Name:	SetupInfMIPI_D-PHY04000024.exe
License:	Please see the product data sheet on Keysight.com.

Bug Fixes

- Fixed an issue where Butterworth lowpass filter does not apply on Test 1.4.18 for CTS 1.2 and below.

Keysight D9020DPHC Software Version 4.0.22.0

Release Date:	April 3, 2023
Requirements category (e.g., operating system):	Microsoft Windows 7, Microsoft Windows 10
Requirements category (e.g., instrument software version):	06.73.00102 (9000 Series, 90000 Series, 90000 X-Series, 90000 Q-Series, V-Series, Z-Series) 11.50.00102 (UXR-Series, MXR-Series, EXR-Series)
File Name:	SetupInfMIPI_D-PHY04000022.exe
License:	Please see the product data sheet on Keysight.com.

Modification

- Update Keysight License Manager 5.

KEYSIGHT

Keysight D9020DPHC Software Version 4.0.0.0

Release Date:	September 30, 2021
Requirements category (e.g., operating system):	Microsoft Windows 7, Microsoft Windows 10
Requirements category (e.g., instrument software version):	06.73.00102 (9000 Series, 90000 Series, 90000 X-Series, 90000 Q-Series, V-Series, Z-Series) 11.40.00202 (UXR-Series, MXR-Series, EXR-Series)
File Name:	SetupInfMIPI_D-PHY04000000.exe
License:	Please see the product data sheet on Keysight.com.

New Features

- Added support for new license subscription bundle.

Enhancements

- Added support for InfiniiSim HW Acceleration.

Keysight D9020DPHC Software Version 3.90.0

Release Date:	APRIL 01, 2020
Requirements category (e.g., operating system):	Microsoft Windows 7, Microsoft Windows 10
Requirements category (e.g., instrument software version):	06.55.00504 (9000 Series, 90000 Series, 90000 X-Series, 90000 Q-Series, V-Series, Z-Series) 10.25.00902 (UXR-Series) 11.05.00514 (MXR-Series)
File Name:	SetupInfMIPI_D-PHY03900000.exe
License:	Please see the product data sheet on Keysight.com.

New Features

- Increased data rate support for MXR scopes from 2 Gbps to 2.5 Gbps

Bug Fixes

- Fixed an issue where certain configuration values were not correctly loaded when opening pre-existing project

Enhancement

- Increased the result precision for UIInst from 0.001E-9 to 0.001E-12
- Increased the result precision for UIVariation from 0.01 to 0.001

Known issues

- In loading projects created in MIPI version 3.80.0, users cannot append the existing results.
- When user selected “HS Symbol Rate” value without clicking “Enter” on keyboard, it may happen rarely that the value only changed on GUI, but not actually applied.

KEYSIGHT

Keysight D9020DPHC Software Version 3.80.1

Release Date:	8 SEPT 2020
Requirements category (e.g., operating system):	Microsoft Windows 7, Microsoft Windows 10
Requirements category (e.g., instrument software version):	06.55.00504 (9000 Series, 90000 Series, 90000 X-Series, 90000 Q-Series, V-Series, Z-Series) 10.25.00902 (UXR-Series) 11.05.00514 (MXR-Series)
File Name:	SetupInfMIPI_D-PHY03800001.exe

New Features

- Supports Infiniium Oscilloscope Software version 11.05 for MXR-Series oscilloscope.
    - Updated options (8GSa/s, 16GSa/s) of “Scope Sampling Rate” (with remote name of “ScopeSampleRate”) configurable option in Configure tab to be available for MXR-Series scope. The default value is 16GSa/s for MXR-Series scope.
    - Updated options (8GSa/s, 16GSa/s) of “Scope Sampling Rate[Jitter and Eye Diagram]” (with remote name of “HSJitterEyeDiagramScopeSampleRate”) configurable option to be available in Configure tab for MXR-Series scope. The default value is 16GSa/s for MXR-Series scope.
    - Updated options (8GSa/s, 16GSa/s) of “Scope Sampling Rate[LP]” (with remote name of “LPScopeSampleRate”) configurable option in Configure tab to be available for MXR-Series scope. The default value is 16GSa/s for MXR-Series scope.
    - Supports data rate up to 2Gbps on MXR-Series scope.

Known issues

- In loading projects created in MIPI version 3.80.0, users cannot append the existing results.
- When user selected “HS Symbol Rate” value without clicking “Enter” on keyboard, it may happen rarely that the value only changed on GUI, but not actually applied.

Keysight D9020DPHC Software Version 03.80

Release Date:	14 MAY 2020
Requirements category (e.g., operating system):	Microsoft Windows 7, Microsoft Windows 10
Requirements category (e.g., instrument software version):	06.55.00504 (9000 Series, 90000 Series, 90000 X-Series, 90000 Q-Series, V-Series, Z-Series) 10.20.00503 (UXR-Series)
File Name:	SetupInfMIPI_D-PHY03800000.exe

New Features

- Added configurable option of “Screenshot” (with remote name of “Screenshot”) in Configure tab. This configurable option is used to enable/disable screenshot capture.

Enhancements

- Added "Interpolation Factor" configurable option (with remote name of "WfmInterpolationFactor") in configure tab. This configurable option is used to specify the interpolation factor to be used when loading waveform file for Test 1.3.4 Differential Voltage(VOD), Test 1.3.6 Single Ended Output Voltage(VOHHS), Test 1.4.4 Differential Voltage(VOD), Test 1.4.6 Single Ended Output Voltage(VOHHS), Test 1.5.4 Data-to-Clock Skew(TSKEW), Test HS Data Eye Height, Test HS Data Eye Width.

Bug Fixes

- Fixed test limit for Test 1.3.5 HS Data Differential Voltage Mismatch, Test 1.3.8 HS Data Vcmtx Mismatch, Test 1.4.5 HS Clock Differential Voltage Mismatch, Test 1.4.8 HS Clock Vcmtx Mismatch for all CTS versions.

- Removed Test 1.3.11 HS Data 20%-80% Rise Time, Test 1.3.12 HS Data 80%-20% Fall Time, Test 1.4.11 HS Clock 20%-80% Rise Time and Test 1.4.12 HS Clock 80%-20% Fall Time tests for data rate above 1.5Gbps for CTS v2.0 selection.

- Updated HS Data to Clock Total Jitter, HS Data to Clock Deterministic Jitter, HS Data to Clock Random Jitter tests to be informative tests for CTS v2.0 selection.

Known issues

- In loading projects created in MIPI version 3.73.0002, users cannot append the existing results.

- Screenshot timeout happen rarely when capturing screenshot.
- The screenshot for any test may be reported more than once in test report.
- When user selected “HS Symbol Rate” value without clicking “Enter” on keyboard, it may happen rarely that the value only changed on GUI, but not actually applied.

Keysight D9020DPHC Software Version 03.73.0002

Release Date:	17 Dec 2019
Requirements category (e.g., operating system):	Microsoft Windows 7, Microsoft Windows 10
Requirements category (e.g., instrument software version):	06.50.00905 (9000 Series, 90000 Series, 90000 X-Series, 90000 Q-Series, V-Series, Z-Series) 10.12.05112 (UXR-Series)
File Name:	SetupInfMIPI_D-PHY03730002.exe

Enhancements

- Added new test ID to support Test 1.4.9 VCMTX(LF) test where the VCMTX(LF) measurement will be performed on HS Clock waveform while data lanes are operated in HS mode instead of on all HS Clock waveform. This test is only applicable for CTS v1.2 and CTS v2.0 and v2.1 selection.
    - Test ID: 1820 - 1.4.9 HS Clock TX Common-Level Variations Between 50-450MHz (VCMTX(LF))
- Updated the following test where this test is only applicable for CTS v1.0 and CTS v1.1.
    - Test ID: 1819 - 1.4.9 HS Clock TX Common-Level Variations Between 50-450MHz (VCMTX(LF))

Bug Fixes

- Fixed "Unable to generate result" issue on Test Eye Height.
- Fixed "MaxTrialsToStoreDetails" from 15 to 25.
- Fixed "MaxTrialsToStoreFiles" from 5 to 25.

Known issues

- In loading projects created in MIPI version 3.73.0001, users cannot append the existing results.
- No message will be prompted when user selected “Tools-> Infiniium -> InfiniiSim...” or “Tools-> Infiniium -> PrecisionProbe/PrecisionCable...” feature without installing the required license.
- Screenshot timeout and Infiniium crash happen rarely when capturing screenshot.

- Application crash happen rarely when test get aborted with error.
- Not recommended to execute Test 1.4.18 Clock Lane HS Clock Delta UI (UI variation) with a non-dithered signal with data rate 3.2Gbps on Infiniium v10.12. This test might get aborted when testing non dithered signal with data rate 3.2Gbps on Infiniium v10.12.
- Not recommended to execute Test 1.5.7 HS Clock Eye Diagram [Continuous Clock] on Infiniium v10.12 on UXR Senior scope. This test might run slowly and complete before 3MUI acquisition when running on Infiniium v10.12 on UXR Senior scope. Recommended to use Infiniium v10.10 for this test.
- Not recommended to execute Test 1.4.18 Clock Lane HS Clock Delta UI (UI variation) [Continuous Clock] and Test 1.4.20 Clock Lane HS Clock Period Jitter [SSC OFF][Continuous Clock] on Infiniium v10.12. This test might get aborted when running on Infiniium v10.12.

Keysight D9020DPHC Software Version 03.73.0001

Release Date:	13 SEPT 2019
Requirements category (e.g., operating system):	Microsoft Windows 7, Microsoft Windows 10
Requirements category (e.g., instrument software version):	06.40.01001 (9000 Series, 90000 Series, 90000 X-Series, 90000 Q-Series, V-Series, Z-Series) 10.11.04711 (UXR-Series)
File Name:	SetupInfMIPI_D-PHY03730001.exe

Bug Fixes

- Fixed error thrown when running Test 1.1.5 LP Slew Rate Vs. CLoad.

Known issues

- In loading projects created in MIPI version 3.73.0000, users cannot append the existing results.
- Waveform window in the test report may appear smaller when marker/measurement window is turned on.
- User will experience the increase in the test time when running Eye Diagram tests with N7010A Active Termination Adapter in UXR-Series oscilloscope.
- Screenshot timeout issue can happen rarely when running tests.
- No message will be prompted when user selected “Tools-> Infiniium -> InfiniiSim...” or “Tools-> Infiniium -> PrecisionProbe/PrecisionCable...” feature without installing the required license.
- Test 1.4.18 Clock Lane HS Clock Delta UI (UI variation) [Continuous Clock] and Test 1.4.20 Clock Lane HS Clock Period Jitter [SSC OFF][Continuous Clock] will be aborted when running on Baseline 10.10.04513.

KEYSIGHT

Keysight D9020DPHC Software Version 03.73

Release Date:	10 JUNE 2019
Requirements category (e.g., operating system):	Microsoft Windows 7, Microsoft Windows 10
Requirements category (e.g., instrument software version):	06.40.00714 (9000 Series, 90000 Series, 90000 X-Series, 90000 Q-Series, V-Series, Z-Series) 10.10.04513 (UXR-Series)
File Name:	SetupInfMIPI_D-PHY03730000.exe

Miscellaneous Notes

- Updated the product number from “U7238E” to “D9020DPHC” to support PPKS licenses.

Enhancements

- Added configurable option of “VOHHS Acquisition Method” (with remote name of “VOHHSAcquisitionMethod”) in Configure tab. This configurable option is used to specify the acquisition method for Test 1.3.6 HS Data TX Single Ended Output High Voltage(VOHHS) test.
- Added the following tests to separate the VOHHS tests into VOHHS(DP) and VOHHS(DN) tests. These tests will be enabled by selecting “Separated Acquisition” value for “VOHHS Acquisition Method” configurable option.
    - Test ID: 8152 - 1.3.6 HS Data TX Single Ended Output High Voltage(VOHHS(DP) Pulse)
    - Test ID: 8153 - 1.3.6 HS Data TX Single Ended Output High Voltage(VOHHS(DN) Pulse)
- Updated Test 1.5.4 to remove dynamic skew measurement.
- Supported the following HS Data TX tests and HS Clock TX tests for “Direct Connect” and “Direct Connect[Active Termination Adapter] probing methods for HS Continuous signal. HS Clock TX tests will be enabled by selecting “Direct Connect” probing method and “Continuous Clock” mode. HS Data TX tests will be enabled by selecting “Direct Connect” probing method, “Continuous Clock” and “Continuous Data” modes.
    - Supported the following tests for “Direct Connect” probing methods for HS Continuous signal.
        - Test 1.3.4 Data Lane Differential Voltage(VOD)

- Test 1.3.5 Data Lane Differential Voltage Mismatch
- Test 1.3.11 Data Lane 20%-80% Rise Time (tR)
- Test 1.3.12 Data Lane 80%-20% Fall Time (tF)
- Test 1.4.4 Differential Voltage(VOD)
- Test 1.4.5 Differential Voltage Mismatch
- Test 1.4.11 20%-80% Rise Time (tR)
- Test 1.4.12 80%-20% Fall Time (tF)

- Supported the following tests for "Direct Connect[Active Termination Adapter] probing methods for HS Continuous signal.
  - Test 1.3.7 Static Common Mode Voltage
  - Test 1.3.8 Vcmtx Mismatch
  - Test 1.3.10 Common-Level Variations Above 450MHz
  - Test 1.3.9 Common-Level Variations Between 50-450MHz
  - Test 1.3.4 Differential Voltage (VOD)
  - Test 1.3.5 Differential Voltage Mismatch
  - Test 1.3.6 Single Ended Output High Voltage (VOHHS)
  - Test 1.3.11 20%-80% Rise Time (tR)
  - Test 1.3.12 80%-20% Fall Time (tF)
  - Test 1.4.7 Static Common Mode Voltage (Vcmtx)
  - Test 1.4.8 Vcmtx Mismatch
  - Test 1.4.10 Common-Level Variations Above 450MHz
  - Test 1.4.9 Common-Level Variations Between 50-450MHz
  - Test 1.4.4 Differential Voltage (VOD)
  - Test 1.4.5 Differential Voltage Mismatch
  - Test 1.4.6 Single Ended Output High Voltage (VOHHS)
  - Test 1.4.11 20%-80% Rise Time (tR)
  - Test 1.4.12 80%-20% Fall Time (tF)

- Added configurable option of “Signal Scaling Mode[Continuous Mode]” (with remote name of “ContinuousSignalScalingMode”) in Configure tab. This configurable option is used to specify the signal scaling mode for continuous signal.
- Added configurable option of “Manual Vertical Max voltage level[Continuous Mode]” (with remote name of “ContinuousSignalMaxVoltageLevel”) and “Manual Vertical Min voltage level[Continuous Mode]” (with remote name of “ContinuousSignalMinVoltageLevel”) in Configure tab. These configurable options will be used when Signal Scaling Mode[Continuous Mode] is set to “MANUAL”.

Bug Fixes

- Fixed annotation on THS-Idle test.

Known issues

- In loading projects created in MIPI version 3.72, users cannot append the existing results.
- Waveform window in the test report may appear smaller when marker/measurement window is turned on.
- User will experience the increase in the test time when running Eye Diagram tests with N7010A Active Termination Adapter in UXR-Series oscilloscope.
- Screenshot timeout issue can happen rarely when running tests.
- No message will be prompted when user selected “Tools-> Infiniium -> InfiniiSim...” or “Tools-> Infiniium -> PrecisionProbe/PrecisionCable...” feature without installing the required license.
- Test 1.4.18 Clock Lane HS Clock Delta UI (UI variation) [Continuous Clock] and Test 1..4.20 Clock Lane HS Clock Period Jitter [SSC OFF][Continuous Clock] will be aborted when running on Baseline 10.10.04513.

Keysight U7238E Software Version 03.72

Release Date:	17 JAN 2019
Requirements category (e.g., operating system):	Microsoft Windows 7
Requirements category (e.g., instrument software version):	06.30.00701 (9000 Series, 90000 Series, 90000 X-Series, 90000 Q-Series, V-Series, Z-Series) 10.00.03902 (UXR-Series)
File Name:	SetupInfMIPI_D-PHY03720000.exe

Enhancements

- Added “Tedge Hysteresis” configurable option (with remote name of “'TedgeHysteresis”) in Configure tab.

Bug Fixes

- Fixed issue on Test 1.3.2 HS Entry: DATA TX THS-PREPARE.

Known issues

- In loading projects created in MIPI version 3.71, users cannot append the existing results.
- Waveform window in the test report may appear smaller when marker/measurement window is turned on.
- User will experience the increase in the test time when running Eye Diagram tests with N7010A Active Termination Adapter in UXR-Series oscilloscope.
- Screenshot timeout issue can happen rarely when running tests.

KEYSIGHT

Keysight U7238E Software Version 03.71

Release Date:	29 OCT 2018
Requirements category (e.g., operating system):	Microsoft Windows 7
Requirements category (e.g., instrument software version):	06.30.00701 (9000 Series, 90000 Series, 90000 X-Series, 90000 Q-Series, V-Series, Z-Series) 10.00.03802 (UXR-Series)
File Name:	SetupInfMIPI_D-PHY03710000.exe

Miscellaneous Notes

- NA

New Features

- Supports Infiniium Oscilloscope Software version 10.00 for UXR-Series oscilloscope.
    - Added new options (8GSa/s, 16GSa/s, 32GSa/s, 64GSa/s) for “Scope Sampling Rate” (with remote name of “ScopeSampleRate”) configurable option in Configure tab. The default value is 32GSa/s for UXR-Series scope.
    - Added new options (8GSa/s, 16GSa/s, 32GSa/s, 64GSa/s, 128GSa/s) for “Scope Sampling Rate[SSC]” (with remote name of “HSSSCScopeSampleRate”) configurable option in Configure tab. The default value is 64GSa/s for UXR-Series scope.
    - Added new options (8GSa/s, 16GSa/s, 32GSa/s, 64GSa/s, 128GSa/s) for “Scope Sampling Rate[Jitter and Eye Diagram]” (with remote name of “HSJitterEyeDiagramScopeSampleRate”) configurable option in Configure tab. The default value is 64GSa/s for UXR-Series scope.
    - Added new options (8GSa/s, 16GSa/s, 32GSa/s, 64GSa/s) for “Scope Sampling Rate[LP]” (with remote name of “LPScopeSampleRate”) configurable option in Configure tab. The default value is 16GSa/s for UXR-Series scope.

      These above options will be available only when launching application on UXR-Series Oscilloscope.

Enhancements

- Renamed “Eye Height Location” configurable option in Configure tab to “Eye Height [Eye Window Start]”.
- Added “Eye Height [Eye Window Stop]” configurable option (with remote name of “Eye_Height_location_stop”) in Configure tab.

Bug Fixes

- Fixed connectivity lost when running test issue.
- Fixed incorrect edge found on Test 1.5.3 HS Clock Rising Edge Alignment to First Payload Bit.
- Fixed test limit of Test 1.4.20 Clock Lane HS Clock Period Jitter and Test 1.4.18 Clock Lane HS Clock Delta UI(UI Variation).
- Fixed triggering issue when running with selected “AUTO” for “Signal Scaling Mode” configurable option in Configure tab.

Known issues

- In loading projects created in MIPI version 3.70, users cannot append the existing results.
- Waveform window in the test report may appear smaller when marker/measurement window is turned on.
- User will experience the increase in the test time when running Eye Diagram tests with N7010A Active Termination Adapter in UXR-Series oscilloscope.
- Screenshot timeout issue can happen rarely when running tests.

KEYSIGHT

Keysight U7238E Software Version 03.70

Release Date:	29 JUNE 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, V-Series, Z-Series), 06.20.00801 (9000 Series)
File Name:	SetupInfMIPI_D-PHY03700000.exe

Miscellaneous Notes

- NA

New Features

- Added Connection Setup form in Setup tab which allows user to specify the channel and probing method selection.
    - Added “Probing Method- No Switch” configurable option (with remote name of “ProbingMethod”) in Connection Setup form with the options of “Active Probe (Differential Probe)”, “Direct Connect (Active Termination Adapter)” and “Direct Connect”.
        - The “Active Probe (Differential Probe)” is available for both “Single Ended” and “Differential” Clock Connection type.
        - Both “Direct Connect (Active Termination Adapter)” and “Direct Connect” are available for “Single Ended” Clock Connection Type only.
        - The available test list will be reflected accordingly based on the “Probing Method” selection.
    - Move “Switch Matrix Data Lane Probing Method” configurable option (with remote name of “SwitchMatrixProbeMethod”) from Configure tab to Connection Setup form in Set Up tab. This option is renamed as “Probing Method-with switch”.
        - Updated the choices as below:

Old Value	New Value

DiffProbe	Active Probe (Differential Probe)
SMA	Direct Connect

- Added new option of “Direct Connect (Active Termination Adapter)”.

- Move “Clock Connection Type” configurable option (with remote name of “ClkConnectionType”) from Configure tab to Connection Setup form.
- Move “Dp and Dn” configurable option (with remote name of “DataSEChan”) from Configure tab to Connection Setup form. This option is renamed as “Single-Ended Data”.
- Move “CLKp and CLKn” configurable option (with remote name of “ClockSEChan”) from Configure tab to Connection Setup form. This option is renamed as “Single-Ended Clock”.
- Move “CLK(Diff)” configurable option (with remote name of “ClkChan”) from Configure tab to Connection Setup form. This option is renamed as “Differential Clock”.

  - Updated the choices as below:

Old Value	New Value
CHAN1	Channel 1
CHAN2	Channel 2
CHAN3	Channel 3
CHAN4	Channel 4

- Added duplicate channels checking to ensure there’s no overlapped channel selection for Data and Clock lanes.

- Added N7010A Active Termination Adapter Calibration feature. The continuous HS signal is required for N7010A calibration.
  - This feature can be enabled by selecting “Direct Connect (Active Termination Adapter)” for “Probing Method” selection in Connection Setup tab.
  - The calculated “Vterm” value and “Zos” value from N7010A Calibration will be tabulated in the N7010A Calibration form at the end of the calibration.

- The “Vterm” value will be applied for all tests if user selected ““Direct Connect (Active Termination Adapter)” for “Probing Method” selection.
- For remote user, this N7010A Calibration can be executed remotely by setting “PerformN7010ACalibration” configuration option to “1.0”.
- This feature supports N7010A Calibration on both Data and Clock Lanes.
- Added “Calibration Lane” selection in N7010A Calibration form with the options of “Data Lane” and “Clock Lane”. This option allows user to specify the calibration lane for N7010A Calibration.

  Data Lane

  - Added Data Lane – Zos Method selection (with remote name of “CalDataZosValueMethod”) in N7010A Calibration form with the options of “Manual Zos” and “Calculated Zos”. This option allows user to specify the Zos value for Data Lane manually or auto calculated during N7010A Calibration.
  - Added “Zos Value” configurable option (with remote name of “CalDataManualZosValue”) in N7010A Calibration form which is only available if user selected “Manual Zos” for Data Lane - Zos Method selection. This option allows user to specify the Zos value manually.
  - Added InfiniiSim selections for Dp (with remote name of “CalDpInfiniiSim”) and Dn (with remote name of “CalDnInfiniiSim”) signals in N7010A Calibration Setup form. These options allow user to enable InfiniiSim feature for Dp and Dn signals prior to N7010A Calibration.
  - Added Transfer Function File selection for Dp(with remote name of “CalDpTransferFunctionFile”) and Dn (with remote name of “CalDnTransferFunctionFile”) signals. These options allow user to specify the transfer function file for embedding/de-embedding.

  Clock Lane

  - Added Clock Lane – Zos Method selection (with remote name of “CalClockZosValueMethod”) in N7010A Calibration form with the options of “Manual Zos” and “Calculated Zos”. This option allows user to specify the Zos value for Clock Lane manually or auto calculated during N7010A Calibration.
  - Added Zos Value selection (with remote name of ““CalClockManualZosValue”) in N7010A Calibration form which is only

available if user selected “Manual Zos” for Clock Lane - Zos Method” selection. This option allows user to specify the Zos value manually.

- Added InfiniiSim selections for Clkp (with remote name of “"CalClkpInfiniiSim”) and Clkn (with remote name of “CalClknInfiniiSim”) signals in N7010A Calibration Setup form. These options allow user to enable InfiniiSim feature for Clkp and Clkn signals prior to N7010A Calibration.

- Added Transfer Function File selection for Clkp(with remote name of “CalClkpTransferFunctionFile”) and Clkn (with remote name of “CalClknTransferFunctionFile”) signals. These options allow user to specify the transfer function file for embedding/de-embedding.

- Added “SSC Check” configurable option(with remote name of “SSCCheck”) in Configure tab which can be used to enable/disable the SSC signal checking.

- Added new tests under “HS Electrical Characteristics – HS Clock TX” test group.

  - This test will be enabled if user selected “v2.0 and v2.1” for configurable option of “CTS”, selected “Continuous Clock” signal type, “Direct Connect” or “Direct Connect(Active Termination Adapter)” probing method.

    - Test ID: 1200300– 1.4.18 Clock Lane HS Clock Delta UI (UI variation) [Continuous Clock]

  - These tests will be enabled if user selected “v2.0 and v2.1” for configurable option of “CTS”, selected “Continuous Clock” signal type, “Direct Connect” or “Direct Connect(Active Termination Adapter)” probing method and entered HS Data Rate value > 2500Mbps for “High-Speed Data Rate” configurable option in Set Up tab.

    - Test ID: 1200310 – 1.4.20 Clock Lane HS Clock Period Jitter [SSC OFF][Continuous Clock]

    - Test ID: 1200311 – 1.4.20 Clock Lane HS Clock Period Jitter [SSC ON][Continuous Clock]

- Added new tests under “HS Jitter and Eye Diagram – HS Eye Diagram” test group.

  - This test will be enabled if user selected “v2.0 and v2.1” for configurable option of “CTS”, selected “Continuous Clock” signal type, “Direct Connect” or “Direct Connect(Active Termination Adapter)” probing method and entered HS Data Rate value > 1500Mbps for “High-Speed Data Rate” configurable option in Set Up tab.

    - Test ID: 1200100 – 1.5.7 HS Clock Eye Diagram [Continuous Clock]

- Added new tests under “Alternate Calibration Sequence” test group.

- These tests will be enabled if user selected “v2.0 and v2.1” for configurable option of “CTS” and entered HS Data Rate value > 2500Mbps for “High-Speed Data Rate” configurable option in Set Up tab.
    - Test ID: 200400 – 1.5.8 Alternate Calibration Sequence(TALTCAL-SYNC)
    - Test ID: 200401 – 1.5.8 Alternate Calibration Sequence(TALTCAL)

- Added new tests under “Preamble Sequence” test group.
    - These tests will be enabled if user selected “v2.0 and v2.1” for configurable option of “CTS” and entered HS Data Rate value > 2500Mbps for “High-Speed Data Rate” configurable option in Set Up tab.
        - Test ID: 200413 – 1.5.9 Preamble Sequence(TEXTSYNC)
        - Test ID: 200410 – 1.5.9 Preamble Sequence(TPREAMBLE)[32 UI]
        - Test ID: 200411 – 1.5.9 Preamble Sequence(TPREAMBLE)[64 UI]
        - Test ID: 200412 – 1.5.9 Preamble Sequence(TPREAMBLE)[512 UI]

- Added new tests under “HS-Idle” test group.
    - These tests will be enabled if user selected “v2.0 and v2.1” for configurable option of “CTS”, “Direct Connect” or “Direct Connect(Active Termination Adapter)” probing method.
        - Test ID: 200420 – 1.5.10 HS Idle: THS-IDLE-POST Value
        - Test ID: 200421 – 1.5.10 HS-Idle: THS-IDLE-CLKHS0 Value
        - Test ID: 200422 – 1.5.10 HS-Idle: THS-IDLE-PRE + THS-ZERO Value
    - Added configurable option of “Minimum Valid HS Idle State Length” (with remote name of “MinValidHSIdleStateLength”) in Configure tab. This configurable option is used to specify the minimum valid HS Idle State length which will be used for triggering the repeated HS Idle signal.
    - Added configurable option of “TrigThreshold Mode” (with remote name of “HSIdleTrigThresMode”) in Configure tab. This configurable option is used to specify the trigger threshold mode used for triggering the repeated HS Idle signal when running the HS-Idle tests.
    - Added configurable option of “Trigger Level” (with remote name of “HSIdleTrigThresLevel”) in Configure tab. This configurable option is used to specify the value of the trigger level used for triggering the repeated HS Idle signal when running the HS-Idle tests.
    - Added configurable option of “TX PPI bus width” (with remote name of “PPIBusWidthValueHSIdle”) in Configure tab. This configurable option is used to

determine the test limit for Test 1.5.10 THS-IDLE-POST and Test 1.5.10 THS-IDLE-PRE + THS-ZERO.

- Added new test under “Informative Test” test group.
    - This test will be enabled if user selected “v2.0 and v2.1” for configurable option of “CTS”, selected “Informative Test”, “Continuous Data” and “Continuous Clock” signal type, “Direct Connect” or “Direct Connect(Active Termination Adapter)” probing method and entered HS Data Rate value > 2500Mbps for “High-Speed Data Rate” configurable option in Set Up tab.
        - Test ID: 200300 - 1.3.I HS Data TX De-emphasis Level [Continuous Data]
    - Added configurable option of “De-emphasis Option” (with remote name of “DeEmphasisOption”) in Configure tab. This configurable option is used to specify the De-emphasis Option used which will be used to determine maximum and minimum test limit for Test 1.3.I HS Data TX De-emphasis Level [Continuous Data].
    - Added configurable option of “Measurement Mode” (with remote name of “DeEmphasisMeasResultMode”) in Configure tab. This configurable option is used to specify histogram statistical result to be used in Test 1.3.I HS Data TX De-emphasis Level [Continuous Data].

- Added new configurable options in Configure tab to support signal triggering for “Direct Connect” or “Direct Connect(Active Termination Adapter)” probing method.
    - Added configurable option of “LP Trigger Threshold[Direct Connect]” (with remote name of “LPTriggerThresholdDirectConnect”) in Configure tab. This configurable option is used to specify the trigger level for LP edges.
    - Added configurable option of “High Threshold [Window Trigger Mode ONLY][Direct Connect]” (with remote name of “WindowTriggerHighThresholdDirectConnect”) in Configure tab. This configurable option is used to specify the high trigger level when for “Window” trigger method.
    - Added configurable option of “Low Threshold [Window Trigger Mode ONLY][Direct Connect]” (with remote name of “WindowTriggerLowThresholdDirectConnect”) in Configure tab. This configurable option is used to specify the low trigger level when for “Window” trigger method.
    - Added configurable option of “Single-Ended HS Threshold Level[Direct Connect]” (with remote name of “HSSETriggerThresholdDirectConnect”) in Configure tab. This configurable option is used to specify the voltage level to be used to determine edges of single-ended HS signal.

- Added support for new export to repository feature where user can export test results to a repository (such as a database). [File->Export Results...->Repository]

Enhancements

- Migrated application to use new graphics user interface environment.
- Added additional check for wrong connection between Dp and Dn(Clkp and Clkn) for HS test. Added configurable option of “Connection Check”(with remote name of “ConnectionCheck”) and configurable option of “Connection Check Threshold”(with remote name of “ConnectionCheckThreshold”) in Configure tab.
- Updated test algorithm for SSC Modulation Rate, SSC Deviation and SSC df/dt tests.
- Removed configurable option of “LP Escape User Prompt” (with remote name of “LPUserPrompt”) from Configure tab.

Bug Fixes

- Remove white spaces in Test’s description.
- Updated the app to determine if the clock signal is continuous clock based on user selected “Continuous Clock” option in Setup tab.
- Fixed issue on switch matrix.
- Fixed issue on Test 1.4.9 HS Clock TX Common-Level Variations Between 50-450MHz.

Known issues

- Does NOT support backward compatibility. Project files saved in previous versions will be available as READ-ONLY. User have to save previous project files as Settings Only before loading the project in the current software to access all the supported configurations. [File->Save Project (Settings Only) As...]

Keysight U7238E Software Version 03.61

Release Date:	15 SEPT 2017
Requirements category (e.g., operating system):	Microsoft Windows 7
Requirements category (e.g., instrument software version):	06.10.00547 (90000 Series, 90000 X-Series, 90000 Q-Series, V-Series, Z-Series), 06.10.00547 (9000 Series)
File Name:	SetupInfMIPI_D-PHY03610000.exe

Bug Fixes

- Fixed issue where the folded waveform is not displayed for Test 1.3.11 HS Data TX 20%-80% Rise Time (tR) and Test 1.3.12 HS Data TX 80%-20% Fall Time (tF) tests.
- Fixed issue on channel InfiniiSim for Test HS Data Eye Diagram.
- Corrected the worst result's calculation for Test 1.1.1 Thevenin Output High Voltage Level (VOH) test.
- Updated connection diagram.

Known issues

- In loading projects created in MIPI version 3.60, users cannot append the existing results.

KEYSIGHT

Keysight U7238E Software Version 03.60

Release Date:	1 JUNE 2017
Requirements category (e.g., operating system):	Microsoft Windows 7
Requirements category (e.g., instrument software version):	06.00.00724 (90000 Series, 90000 X-Series, 90000 Q-Series, V-Series, Z-Series), 06.00.00724 (9000 Series)
File Name:	SetupInfMIPI_D-PHY03600000.exe

Miscellaneous Notes

- Updated product model from “U7238C/U7238D” to “U7238E”.

New Features

- Added support for “CTS v2.0 and v2.1”.
    - Added option of “v2.0 and v2.1” for the configurable option of “CTS” (with remote name of “CTSVersion”) in Set Up tab. This configurable option allows user to specify the CTS version to reflect the available test lists accordingly.
    - Added “MIPI D-PHY Test Limit v2.0 and v2.1” compliance limit set. This compliance limit set will be activated if user selected “v2.0 and v2.1” for configurable option of “CTS”.
    - Updated the license requirements where the MIPI D-PHY 2.0 Upgrade [MDU] or MIPI D-PHY 2.0 Compliance [MDC] is required to enable CTS “v2.0 and v2.1” option.

        - U7238C/U7238D MIPI D-PHY compliance test application [MPI]
        - U7238E MIPI D-PHY 2.0 Upgrade [MDU]
        - U7238E MIPI D-PHY 2.0 Compliance [MDC]

Options	CTS Version			
	v1.0	v1.1	v1.2	v2.0 and v2.1
MPI	Enabled	Enabled	Enabled	Disabled
MPI+MDU	Enabled	Enabled	Enabled	Enabled
MDC	Enabled	Enabled	Enabled	Enabled

- Added new test groups of “HS Spread Spectrum Clocking” and “HS Jitter and Eye Diagram”.
- Added new tests under “HS Spread Spectrum Clocking – HS Clock Tx” test group. These tests will be enabled if user selected “v2.0 and v2.1” for configurable option of “CTS”, selected “Continuous Clock” signal type and entered HS Data Rate value > 2500Mbps for “High-Speed Data Rate” configurable option in Set Up tab.
    - Test ID: 1200200 - HS Clock SSC Modulation Rate [Continuous Clock]
    - Test ID: 1200201 - HS Clock SSC Deviation (Max) [Continuous Clock]
    - Test ID: 1200202 - HS Clock SSC Deviation (Min) [Continuous Clock]
    - Test ID: 1200203 - HS Clock SSC df/dt [Continuous Clock]
- Added new tests under “HS Spread Spectrum Clocking – HS Data Tx” test group. These tests will be enabled if user selected “v2.0 and v2.1” for configurable option of “CTS”, selected “Continuous Data” signal type and “Informative” and entered HS Data Rate value > 2500Mbps for “High-Speed Data Rate” configurable option in Set Up tab.
    - Test ID: 200200 - HS Data SSC Modulation Rate [Continuous Data] (Informative)
    - Test ID: 200201 - HS Data SSC Deviation (Max) [Continuous Data] (Informative)
    - Test ID: 200202 - HS Data SSC Deviation (Min) [Continuous Data] (Informative)
    - Test ID: 200203 - HS Data SSC df/dt [Continuous Data] (Informative)
- Added the following configurable options in Configure tab for HS Spread Spectrum Clocking tests.

Label	Variable
Scope Sampling Rate[SSC]	HSSSCScopeSampleRate
SSC Cycle [SSC]	SSC_SSCCycle
LPF Type [SSC]	SSC_LPFType
LPF Average Interval (us) [SSC]	SSC_LPFAverageInterval
LPF Cutoff Frequency (MHz) [SSC]	SSC_LPFCutoffFrequency
DFDT Measure Interval (us) [SSC]	SSC_DFDTMeasureInterval

- Added new tests under “HS Jitter and Eye Diagram – Jitter and Noise - Jitter” test group. These tests will be enabled if user selected “v2.0 and v2.1” for configurable option of “CTS”, selected “Continuous Data” and “Continuous Clock” signal type and entered HS

Data Rate value > 1500Mbps for “High-Speed Data Rate” configurable option in Set Up tab.

  - Test ID: 200110 - HS Data to Clock Total Jitter [Continuous Data]
  - Test ID: 200111 - HS Data to Clock Deterministic Jitter [Continuous Data]
  - Test ID: 200112 - HS Data to Clock Random Jitter [Continuous Data]

- Added new test under “HS Jitter and Eye Diagram – Jitter and Noise – HS Data Eye Diagram” test group. This test will be enabled if user selected “v2.0 and v2.1” for configurable option of “CTS”, selected “Continuous Data” and “Continuous Clock” signal type and entered HS Data Rate value > 1500Mbps for “High-Speed Data Rate” configurable option in Set Up tab.
  - Test ID: 200100 - HS Data Eye Diagram [Continuous Data]
- Added the following configurable options in Configure tab for HS Jitter and HS Eye Diagram tests.

Label	Variable
Scope Sampling Rate[Jitter and Eye Diagram]	HSJitterEyeDiagramScopeSampleRate
Bit Error Rate Level [Jitter and Noise]	JitterNoiseBERLevel
Pattern Length Analysis Mode [Jitter and Noise]	JitterNoisePatternLength
ISI Filter Leading Bit [Jitter and Noise]	JitterNoiseISIFilterLead
ISI Filter Lagging Bit [Jitter and Noise]	JitterNoiseISIFilterLag
Edges Number [Jitter]	JitterEdges
RJ Separation Method [Jitter]	JitterRJMethod
RJ Bandwidth [Jitter]	JitterRJBandwidth
Edges Number [Noise]	NoiseEdges
RN Separation Method [Noise]	NoiseRNMethod
RN Bandwidth [Noise]	NoiseRNBandwidth
Test Method [Eye Diagram]	EyeDiagramTestMethod
Reference Channel [Eye Diagram]	EyeDiagramReferenceChannel

Mask Shift Horizontal Range (UI) [Eye Diagram]	EyeDiagramMaskShiftHorizontalRange

- Added configurable option of 'Data Rate Mode' (with remote name of 'DataRateMode_UIInst') in Configure tab with options of “Fully Automatic” and “Semi-Autimatic”. This configurable option is used to specify the data rate mode used for unit interval and data rate measurement.

Enhancements

- Removed the following configuration options from Configure tab. These configuration options are used to identify the oscilloscope channels configuration.

Label	Variable
CLKp	ClkPChan
CLKn	ClkNChan
Dp	DataPChan
Dn	DataNChan

Added the following configuration options in Configure tab for oscilloscope channels configuration.

Label	Variable
Dp and Dn	DataSEChan
CLKp and CLKn	ClockSEChan

- Added checking when identifying the SYNC Pattern in Test 1.5.3 HS Clock Rising Edge Alignment to First Payload Bit.
- Added checking to “High-Speed Data Rate” configurable option in Set Up tab to display warning message if entered HS data rate is less than the minimum value of 80Mbps. The tests will be aborted if user proceed to run the test with HS data rate lower than minimum HS data rate.
- Remove resetting the external scaling setting when launching the D-PHY Compliance application.
- Updated the description of “LP Escape User Prompt” configurable option (with remote name of “LPUserPrompt”) in configure tab.

- Updated the valid range of “Eye Height Location” configurable option (with remote name of “Eye_Height_location”) as 0-100 in configure tab.
- Updated the following tests as informative tests.
    - Test ID: 821 - 1.1.1 Thevenin Output High Voltage Level (VOH) (Informative)

      [Old Name: 1.1.1 Thevenin Output High Voltage Level (VOH)]
    - Test ID: 822 - 1.1.2 Thevenin Output Low Voltage Level (VOL) (Informative)

      [Old Name: 1.1.2 Thevenin Output Low Voltage Level (VOL)]
    - Test ID: 825 - 1.1.4 15%-85% Fall Time (TFLP) (Informative)

      [Old Name: 1.1.4 15%-85% Fall Time (TFLP)]
    - Test ID: 1821 - 1.2.1 Thevenin Output High Voltage Level (VOH) (Informative)

      [Old Name: 1.2.1 Thevenin Output High Voltage Level (VOH)]
    - Test ID: 1822 - 1.2.2 Thevenin Output Low Voltage Level (VOL) (Informative)

      [Old Name: 1.2.2 Thevenin Output Low Voltage Level (VOL)]
    - Test ID: 1825 - 1.2.4 15%-85% Fall Time (TFLP) (Informative)

      [Old Name: 1.2.4 15%-85% Fall Time (TFLP)]
- Updated “MIPIButterFilter” user defined function.

Bug Fixes

- Fixed the defect where the TSKEW(Mean) value was not shown in test report for Test 1.5.4 Data-to-Clock Skew (TSKEW(TX))(Mean).
- Fixed issue on Test 1.5.3 HS Clock Rising Egde Alignment to First Payload Bit when testing long HS burst signal.

Known issues

- In loading projects created in MIPI version 3.51, users cannot append the existing results.

Keysight U7238C/U7238D Software Version 03.51

Release Date:	28 MARCH 2017
Requirements category (e.g., operating system):	Microsoft Windows 7
Requirements category (e.g., instrument software version):	06.00.00602 (90000 Series, 90000 X-Series, 90000 Q-Series, V-Series, Z-Series), 06.00.00602 (9000 Series)
File Name:	SetupInfMIPI_D-PHY03510000.exe

New Features

- Added support for “CTS v1.0” and “CTS v1.1”.

  The following changes have been added to support CTS v1.0 and CTS v1.1.

  - Added options of “v1.0” and “v1.1” for the configurable option of “CTS” (with remote name of “CTSVersion”) in Set Up tab. This configurable option allows user to specify the CTS version to reflect the available test lists accordingly.

  - Added “MIPI D-PHY Test Limit v1.0” compliance limit set. This compliance limit set will be activated if user selected “v1.0” for configurable option of “CTS”.

  - Updated “MIPI D-PHY Test Limit v1.1” compliance limit set. This compliance limit set will be activated if user selected “v1.1” for configurable option of “CTS”.

  - Added configurable option of “CLoad” (with remote name of “LPCLoad”) in Set Up tab. This configurable option is applicable for all LP tests only.

    The choices for this configuration options are “50pF” and “Without CLoad”. The option of “Without CLoad” will be enabled only if user selected “v1.0” for configurable option of “CTS”. By default, “50pF” will be selected.

    The selected CLoad value will be reported in the test report for all LP tests.

  - Added configurable option of “ZID” (with remote name of “HSZIDTermination”) in Set Up tab. This configurable option is applicable for all HS tests only.

    The choices for this configuration options are “80 ohm”, “100 ohm” and “125 ohm”. The available test lists will be affected by this selection. By default, “100 ohm” resistance termination will be selected.

    The selected ZID value will be reported in the test report for all HS tests.

  - Updated the test list to support “CTS v1.0” and “CTS v1.1”.

Test Name	CTS v1.0	CTS v1.1	CTS v1.2

Test ID: 1911 - 1.4.18 Clock Lane HS Clock Delta(UI variation)	Not applicable	Applicable	Applicable (HS Data Rate <=1.5Gbps)
Test ID: 917 - 1.5.5 Initial HS Skew Calibration Burst(TSKEWCAL-SYNC)	Not applicable	Not Applicable	Applicable (HS Data Rate > 1.5Gbps)
Test ID: 918 - 1.5.5 Initial HS Skew Calibration Burst(TSKEWCAL)	Not applicable	Not Applicable	Applicable (HS Data Rate > 1.5Gbps)
Test ID: 919 - 1.5.6 Periodic HS Skew Calibration Burst(TSKEWCAL-SYNC)	Not applicable	Not Applicable	Applicable (HS Data Rate > 1.5Gbps)
Test ID: 920 - 1.5.6 Periodic HS Skew Calibration Burst(TSKEWCAL)	Not applicable	Not Applicable	Applicable (HS Data Rate > 1.5Gbps)

- Added test IDs to support the rise time and fall time tests (Test 1.3.11, Test 1.3.12, Test 1.4.11 and Test 1.4.12) for **"CTS v1.0"** and **"CTS v1.1"** due to different test algorithm and test requirement as compared to **"CTS v1.2"**.

  For **"CTS v1.0"** and **"CTS v1.1"**, both maximum and minimum compliance limits will be tested as compliance test which is different from **"CTS v1.2"** where the minimum compliance limit is tested as informative test.

Test Name	CTS v1.0	CTS v1.1	CTS v1.2
Test 1.3.11 20%-80% Rise Time (tR)	Test ID: 8110 - 1.3.11 20%-80% Rise Time (tR)	Test ID: 8110 - 1.3.11 20%-80% Rise Time (tR)	Test ID: 81101 – 1.3.11 20%-80% Rise Time (tR)[Burst Data] Test ID: 81102 – 1.3.11 20%-80% Rise Time (tR)[Continuous Data] **Informative Tests:** Test ID: 81104 – 1.3.11 20%-80% Rise Time (tR)[Burst Data](Min Conformance Limit)(Informative) Test ID: 81105 - 1.3.11 20%-80% Rise Time (tR)[Continuous Data](Min Conformance Limit)(Informative)
Test 1.3.12 80%-20% Fall Time (tF)	Test ID: 8111 - 1.3.12 80%-20% Fall Time (tF)	Test ID: 8111 - 1.3.12 80%-20% Fall Time (tF)	Test ID: 81111 – 1.3.12 80%-20% Fall Time (tF)[Burst Data] Test ID: 81112 – 1.3.12 80%-20% Fall Time (tF)[Continuous Data] **Informative Tests:** Test ID: 81114 – 1.3.12 80%-20% Fall Time (tF)[Burst Data](Min

			Conformance Limit)(Informative) Test ID: 81115 – 1.3.12 80%-20% Fall Time (tF)[Continuous Data](Min Conformance Limit)(Informative)
Test 1.4.11 20%-80% Rise Time (tR)	Test ID: 18110 - 1.4.11 20%-80% Rise Time (tR)	Test ID: 18110 - 1.4.11 20%-80% Rise Time (tR)	Test ID: 181101 – 1.4.11 20%-80% Rise Time (tR)[Burst Clock] Test ID: 181102 – 1.4.11 20%-80% Rise Time (tR)[Continuous Clock, Burst Data] Test ID: 181103 – 1.4.11 20%-80% Rise Time (tR)[Continuous Clock, Continuous Data] **Informative Tests:** Test ID: 181104 – 1.4.11 20%-80% Rise Time (tR)[Burst Clock](Min Conformance Limit)(Informative) Test ID: 181105 – 1.4.11 20%-80% Rise Time (tR)[Continuous Clock, Burst Data](Min Conformance Limit)(Informative) Test ID: 181106 – 1.4.11 20%-80% Rise Time (tR)[Continuous Clock, Continuous Data](Min Conformance Limit)(Informative)
Test 1.4.12 80%-20% Fall Time (tF)	Test ID: 18111 - 1.4.12 80%-20% Fall Time (tF)	Test ID: 18111 - 1.4.12 80%-20% Fall Time (tF)	Test ID: 181111 – 1.4.12 80%-20% Fall Time (tF)[Burst Clock] Test ID: 181112 – 1.4.12 80%-20% Fall Time (tF)[Continuous Clock, Burst Data] Test ID: 181113 – 1.4.12 80%-20% Fall Time (tF)[Continuous Clock, Continuous Data] **Informative Tests:** Test ID: 181114 – 1.4.12 80%-20% Fall Time

			(tF)[Burst Clock](Min Conformance Limit)(Informative) Test ID: 181115 – 1.4.12 80%-20% Fall Time (tF)[Continuous Clock, Burst Data](Min Conformance Limit)(Informative) Test ID: 181116 – 1.4.12 80%-20% Fall Time (tF)[Continuous Clock, Continuous Data](Min Conformance Limit)(Informative)

- Updated the test algorithm for rise time and fall time tests (Test 1.3.11, Test 1.3.12, Test 1.4.11 and Test 1.4.12) for **"CTS v1.0"** and **"CTS v1.1"** selection which is different from **"CTS v1.2**" where the VOD(0) and VOD(1) measurement results from VOD tests (Test 1.3.4, Test 1.4.4) will be used as 0%/100% reference levels to calculate the 20%/80% threshold levels.

  Test 1.3.4 will be used as the pre-requisite tests for the following tests:

  - Test ID: 8110 - 1.3.11 20%-80% Rise Time (tR)
  - Test ID: 8111 - 1.3.12 80%-20% Fall Time (tF)

  Test 1.4.4 will be used as the pre-requisite tests for the following tests:

  - Test ID: 18110 - 1.4.11 20%-80% Rise Time (tR)
  - Test ID: 18111 - 1.4.12 80%-20% Fall Time (tF)

- Updated all LP tests for **"CTS v1.0"** selection where the 400MHz, 4th order Butterworth low pass filter will **NOT** be applied prior to LP measurement for LP tests. This filter will be applied for **"CTS v1.1"** and **"CTS v1.2"** selection only.

Test Name	CTS v1.0	CTS v1.1	CTS v1.2
All LP tests	Not apply 400MHz, 4th order Butterworth low pass filter prior to measurement	Apply 400MHz, 4th order Butterworth low pass filter prior to measurement	Apply 400MHz, 4th order Butterworth low pass filter prior to measurement

- Updated the default value of VIH(MIN) configurable option in the Configure tab where the default value is 880mV for **"CTS v1.0"** and **"CTS v1.1"** selection regardless of selected HS Data Rate value.

Parameter	CTS v1.0	CTS v1.1	CTS v1.2
VIH(MIN)	880mV	880mV	880mV (for HS Data Rate <=1.5Gbps)

			740mV (for HS Data Rate >1.5Gbps)

- Update the following test as **compliance test** for **"CTS v1.0"** selection. These tests will be **informative tests** for **"CTS v1.1"** and **"CTS v1.2"** selection.
  - Test ID: 8272 - 1.1.6 Pulse Width of LP TX Exclusive-OR Clock (TLP-PULSE-TX) [Last]
  - Test ID: 18272 - 1.1.6 Pulse Width of LP TX Exclusive-OR Clock (TLP-PULSE-TX) [Last]

Test Name	CTS v1.0	CTS v1.1	CTS v1.2
Test ID: 8272 - 1.1.6 Pulse Width of LP TX Exclusive-OR Clock (TLP-PULSE-TX) [Last]	Compliance Test	Informative Test	Informative Test
Test ID: 18272 - 1.1.6 Pulse Width of LP TX Exclusive-OR Clock (TLP-PULSE-TX) [Last]	Compliance Test	Informative Test	Informative Test

- Updated Test 1.1.6 TLP-PULSE-TX and Test 1.1.7 TLP-PER-TX tests for **"CTS v1.0"** and **"CTS v1.1"** selection where the maximum trip level threshold of 930mV will be used regardless of HS data rate selection.

Test Name	CTS v1.0	CTS v1.1	CTS v1.2
Test 1.1.6 TLP-PULSE-TX	Maximum Trip Level = 930mV	Maximum Trip Level = 930mV	Maximum Trip Level = 930mV (HS Data Rate <=1.5Gbps) Maximum Trip Level = 790mV (HS Data Rate <=1.5Gbps)
Test 1.1.7 TLP-PER-TX	Maximum Trip Level = 930mV	Maximum Trip Level = 930mV	Maximum Trip Level = 930mV (HS Data Rate <=1.5Gbps) Maximum Trip Level = 790mV (HS Data Rate <=1.5Gbps)

- Updated Test 1.1.5 LP TX Slew Rate Vs Cload and Test 1.2.5 LP TX Slew Rate Vs Cload tests for **"CTS v1.0" and "CTS v1.1"** selection where the same region will be used regardless of HS data rate selection.

Test Name	CTS v1.0	CTS v1.1	CTS v1.2

Test 1.1.5 LP TX Slew Rate Vs Cload	Falling edge: Minimum Slew Rate is measured on 400mV-930mV region Rising edge: Minimum Slew Rate is measured on 400mV-700mV region Slew Rate margin is measured on 700-930mV region	Falling edge: Minimum Slew Rate is measured on 400mV-930mV region Rising edge: Minimum Slew Rate is measured on 400mV-700mV region Slew Rate margin is measured on 700-930mV region	<u>For HS Data Rate <=1.5Gbps</u> Falling edge: Minimum Slew Rate is measured on 400mV-930mV region Rising edge: Minimum Slew Rate is measured on 400mV-700mV region Slew Rate margin is measured on 700-930mV region
Test 1.2.5 LP TX Slew Rate Vs Cload			<u>For HS Data Rate >1.5Gbps</u> Falling edge: Minimum Slew Rate is measured on 400mV-790mV region Rising edge: Minimum Slew Rate is measured on 400mV-550mV region Slew Rate margin is measured on 550-790mV region

- Updated the compliance test limit for the following tests for **"CTS v1.0"** selection where the test limits are different from **"CTS v1.2".**
  - Test ID: 8141 – 1.3.5 Differential Voltage Mismatch (Pulse)
  - Test ID: 18141 - 1.4.5 Differential Voltage Mismatch (Pulse)

- Updated compliance test limit for the following tests of for **"CTS v1.1"** selection where the test limits are different from **"CTS v1.2".**
  - Test ID: 1911 - 1.4.18 Clock Lane HS Clock Delta UI(UI variation)
- Updated compliance test limit for the following tests for **"CTS v1.0" and "CTS v1.1"** selection where the test limits are different from **"CTS v1.2".**
  - Test ID :821 - 1.1.1 Thevenin Output High Voltage Level (VOH)
  - Test ID: 8211 – 1.1.1 Thevenin Output High Voltage Level (VOH) ESCAPEMODE
  - Test ID: 1821 – 1.2.1 Thevenin Output High Voltage Level (VOH)
  - Test ID: 18211 – 1.2.1 Thevenin Output High Voltage Level (VOH) ESCAPEMODE

- Test ID: 28211 – 1.2.1 Thevenin Output High Voltage Level (VOH) ULPSMODE
- Test ID: 8291 - 1.1.5 Slew Rate Vs. CLoad (Min)
- Test ID: 18291 -1.2.5 Slew Rate Vs. CLoad (Min)
- Test ID: 8110 - 1.3.11 20%-80% Rise Time (tR)
- Test ID: 8111 - 1.3.12 80%-20% Fall Time (tF)
- Test ID: 18110 - 1.4.11 20%-80% Rise Time (tR)
- Test ID: 18111 - 1.4.12 80%-20% Fall Time (tF)
- Test ID: 913 – 1.5.4 Data-to-Clock Skew (TSKEW(TX))(Max,Min)
- Test ID: 9131 – 1.5.4 Data-to-Clock Skew (TSKEW(TX))(Mean)

Enhancements

- Removed Tskew histogram measurement on the right crossing of the eye diagram for following tests:
  - Test ID: 913 - 1.5.4 Data-to-Clock Skew (TSKEW(TX))(Max,Min)
  - Test ID: 9131 - 1.5.4 Data-to-Clock Skew (TSKEW(TX))(Mean)
- Updated the test algorithm of Test 1.4.11 and Test 1.4.12 to load waveform file with interpolation (INT16) prior to rise time and fall time measurement to improve the accuracy.
- Updated the test algorithm of Test 1.3.13 HS EXIT: DATA TX THS-TRAIL to support signal with THS-TRAIL duration less than 50% of TEOT duration.

Bug Fixes

- Fixed memory issue.
- Corrected the threshold value used when finding LP edges for Test 1.1.6 Pulse Width of LP TX Exclusive-OR Clock(TLP-PULSE-TX).

Known issues

- In loading projects created in MIPI version 3.12, users cannot append the existing results.

KEYSIGHT

Keysight U7238C/U7238D Software Version 03.12

Release Date:	16 Jan 2017
Requirements category (e.g., operating system):	Microsoft Windows 7
Requirements category (e.g., instrument software version):	5.70.00715 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series), 5.70.00715 (9000 Series)
File Name:	SetupInfMIPI_D-PHY03120000.exe

New Features

- Added “40GSa/s” option for “Scope Sampling Rate” configurable option (with remote name of “ScopeSampleRate”) in Configure tab.
- Enabled “Disable Infiniium user interface during run” feature.
- Added the following tests under “HS Skew Calibration Burst” test group. These tests are only applicable for HS data rate >1.5Gbps. These tests require repetitive HS skew calibration burst.
    - Test ID: 917 - 1.5.5 Initial HS Skew Calibration Burst(TSKEWCAL-SYNC)
    - Test ID: 918 - 1.5.5 Initial HS Skew Calibration Burst(TSKEWCAL)
    - Test ID: 919 - 1.5.6 Periodic HS Skew Calibration Burst(TSKEWCAL-SYNC)
    - Test ID: 920 - 1.5.6 Periodic HS Skew Calibration Burst(TSKEWCAL)
- Added the following informative tests to test for minimum conformance limits for Test 1.3.11, Test 1.3.12, Test 1.4.11 and Test 1.4.12.
    - Test ID: 81104 - 1.3.11 20%-80% Rise Time (tR)[Burst Data](Min Conformance Limit)(Informative)
    - Test ID: 81105 - 1.3.11 20%-80% Rise Time (tR)[Continuous Data](Min Conformance Limit)(Informative)
    - Test ID: 81114 - 1.3.12 80%-20% Fall Time (tF)[Burst Data](Min Conformance Limit)(Informative)
    - Test ID: 81115 - 1.3.12 80%-20% Fall Time (tF)[Continuous Data](Min Conformance Limit)(Informative)

- Test ID: 181104 - 1.4.11 20%-80% Rise Time (tR)[Burst Clock](Min Conformance Limit)(Informative)
- Test ID: 181105 - 1.4.11 20%-80% Rise Time (tR)[Continuous Clock, Burst Data](Min Conformance Limit)(Informative)
- Test ID: 181106 - 1.4.12 80%-20% Fall Time (tF)[Continuous Clock, Continuous Data](Min Conformance Limit)(Informative)
- Test ID: 181114 - 1.4.12 80%-20% Fall Time (tF)[Burst Clock](Min Conformance Limit)(Informative)
- Test ID: 181115 - 1.4.12 80%-20% Fall Time (tF)[Continuous Clock, Burst Data](Min Conformance Limit)(Informative)
- Test ID: 181116 - 1.4.12 80%-20% Fall Time (tF)[Continuous Clock, Continuous Data](Min Conformance Limit)(Informative)

Enhancements

- Updated Test 1.3.4 Differential Voltage(VOD0 Pulse) and Test 1.3.4 Differential Voltage(VOD1 Pulse) to use explicit clock recovery method.
- Updated Test 1.3.6 Single Ended Output High Voltage(VOHHS Pulse) to use explicit clock recovery method.
- Updated Test 1.5.3 HS Clock Rising Edge Alignment to First Payload Bit to report PASS/FAIL value as final test result.
- Updated Test 1.3.6 Single Ended Output High Voltage(VOHHS Pulse) where the application will now automatically determine the threshold values used to identify the conformant pattern of “011111”. Removed “PSearch Low Threshold [VOHHS ONLY]” (with remote name of “VOHHS_LowThres”) and “PSearch High Threshold [VOHHS ONLY]” (with remote name of “VOHHS_HighThres”) configurable options in Configure tab.
- Updated HS Clock tests to support “HS Full Dynamic Range” feature.
- Updated connection diagram for all tests for “Auto Load Switching” fixture.
- Updated the sequence of all test groups.

Bug Fixes

- Corrected the connection diagram shown for Test group “Electrical Characteristics – LP Clock TX” when user selected “Manual Load Switching” Fixture.
- Fixed the resolution issue when finding edge location on HS tests.

- Fixed the issue on Test 1.1.5 Slew Rate Vs CLoad to apply 4th order Butterworth Low Pass Filter on the test signal prior to slew rate measurement.
- Corrected the reference table of all tests in the compliance limit set.
- Corrected the test limits for the following tests:
    - Test ID: 8141 - 1.3.5 Differential Voltage Mismatch (Pulse)
    - Test ID: 18141- 1.4.5 Differential Voltage Mismatch (Pulse)
- Fixed the issue where the app is not responding after running unselected tests.

Known issues

- In loading projects created in MIPI version 3.11, users cannot append the existing results.

Keysight U7238C/U7238D Software Version 03.11

Release Date:	5 April 2016
Requirements category (e.g., operating system):	Microsoft Windows 7
Requirements category (e.g., instrument software version):	5.60 (90000 Series, 90000 X-Series, 90000 Q-Series, Z-Series), 5.60 (9000 Series)
File Name:	SetupInfMIPI_D-PHY03110000.exe

New Features

- Added “THS-SKIP(s)” configuration option (with remote name of “THS_SKIP”) in Configure tab. This option is used to specify the value of THS-SKIP which is useful to avoid glitch problem during THS-TRAIL measurement.
- Added new test IDs for Test 1.3.11 and Test 1.3.12 to support Continuous Data mode. The VOD(0), VOD(1) voltage measured from Test 1.3.4 will be used to calculate 20/80% reference voltage for rise/fall time measurement for the following tests.
    - Test ID: 81102 – 1.3.11 20%-80% Rise Time (tR)[Continuous Data]
    - Test ID: 81112 – 1.3.12 80%-20% Fall Time (tF)[Continuous Data]
- Added new test IDs for Test 1.4.11 and Test 1.4.12 to support Continuous Data mode. The VOD(0), VOD(1) voltage measured from Test 1.4.4 will be used to calculate 20/80% reference voltage for rise/fall time measurement for the following tests.
    - Test ID: 181103 – 1.4.11 20%-80% Rise Time (tR)[Continuous Clock, Continuous Data]
    - Test ID: 181113 – 1.4.12 80%-20% Fall Time (tF)[Continuous Clock, Continuous Data]
- Added “Pattern Check[tR,tF]” configuration option (with remote name of “Pattern_check_RiseFallTime”) in Configure tab. This option is used to enable or disable the pattern check of “000111” and “111000” for Test 1.3.11 and Test 1.3.12 in debug mode.
- Supported Differential clock connection type for “Continuous Clock Mode” for HS clock tests.

- Added “Number of Iterations[End of TCLK-PRE]” configuration option(with remote name of “NumOfIterateCheck_EndOfTCLKPRE”) in Configure tab. This option is used for “End of TCLK-PRE” position searching in Test 1.5.1 HS Exit: CLK TX TCLK-PRE.

Enhancements

- Updated the test name for the following tests:
    - Test ID: 81101 – 1.3.11 20%-80% Rise Time (tR)[Burst Data]
    - Test ID: 81111 – 1.3.12 80%-20% Fall Time (tF)[Burst Data]
    - Test ID: 181102 – 1.4.11 20%-80% Rise Time (tR)[Continuous Clock, Burst Data]
    - Test ID: 181112 – 1.4.12 80%-20% Fall Time (tF)[Continuous Clock, Burst Data]
- Updated test algorithm for Test 1.3.11, 1.3.12, 1.4.11 and 1.4.12 to use Infiniium software’s measurement instead of using histogram methodology. Removed the configuration option “Transition Time Histogram Window” from Configure tab.
- Updated algorithm of MIPIButterFilter User-Defined function. Check data size prior trimming process.
- Updated test algorithm of Test 1.3.13 HS Exit: Data TX THS-TRAIL to avoid glitch problem during THS-TRAIL measurement.
- Updated algorithm in finding “End of HS Payload” location to avoid glitch problem during TCLK-TRAIL measurement.
- Updated the application to display a more feasible message when scope is unable to trigger any signal.

Bug Fixes

- Fixed issue where different results were reported for slew rate test when user selected data lane and clock lane tests together compared to select only the clock lane test.
- Fixed issue where the compliance test limits queried via ARSL command are different with the test report.
- Fixed issue on Test 1.1.1 VOH and Test 1.1.2 VOL tests which occurred when 20GSa/s sampling rate is selected. This issue is due to an internal unexpected change of interpolation factor used.
- Fixed issue found on SerialPatternFinderDPHY User-Defined function. Use 0V as middle threshold to identify HS edges.

- Fixed screenshot issue on Test 1.3.11 Rise Time and Test 1.3.12 Fall Time tests where no real time eye can be generated with 1 clock edge. At least 2 edges are required.
- Updated code to fix some memory leak issue.
- Fixed false pass issue on Test 1.5.1 HS Entry: CLK TX TCLK-PRE.

Known issues

- In loading projects created in MIPI version 3.10, users cannot append the existing results.

KEYSIGHT

Keysight U7238C/U7238D Software Version 03.10

Release Date:	6 March 2015
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)
File Name:	SetupInfMIPI_D-PHY03100000.exe

Miscellaneous Notes

- Rebranding U7238C/U7238D MIPI D-PHY Conformance Test Application Software under Keysight Technologies.

New Features

- Added “Time Range (ns)” configuration option in Configure tab. This option is used to specify the value of time range to be used when performing measurement on HS Exit/Entry sequence.
- Updated the following tests to reflect the different maximum trip-level used for >1.5Gbps operation.
    - Test 1.1.6 Pulse Width of LP TX Exclusive-OR Clock
    - Test 1.1.7 Period of LP TX Exclusive-OR Clock
- Updated the following tests to perform the slew rate measurements at different measurement region for >1.5Gbps operation.
    - Test 1.1.5 Slew Rate Vs. CLoad
    - Test 1.2.5 Slew Rate Vs. CLoad
- Added test limit to support for >1.5Gbps operation for the following tests.
    - Test 1.1.1 Thevenin Output High Voltage Level
    - Test 1.1.5 Slew Rate Vs. CLoad
    - Test 1.2.1 Thevenin Output High Voltage Level
    - Test 1.2.5 Slew Rate Vs. CLoad

  - Test 1.3.11 20%-80% Rise Time (tR)
  - Test 1.3.12 80%-20% Fall Time (tF)
  - Test 1.4.11 20%-80% Rise Time (tR)
  - Test 1.4.12 80%-20% Fall Time (tF)
  - Test 1.5.4 Data-to-Clock Skew (TSKEW(TX))
- Added new test ID for “TSKEW (Mean)” measurement. This test will be masked off for ≤1.5Gbps operation.
  - Test ID: 9131 – 1.5.4 Data-to-Clock Skew (TSKEW(TX))(Mean)
- Added new test ID for rise/fall time measurement with Continuous Clock Mode. The VHS_ZERO level measured from Data Lane will be used to calculate 20/80% reference voltage for rise/fall time measurement in this test.
  - Test ID: 181102 – 1.4.11 20%-80% Rise Time (tR)
  - Test ID: 181112 – 1.4.12 80%-20% Fall Time (tF)
- Added the configuration option “Transition Time Histogram Window” in Configure tab. This configuration option is used to specify the position of histogram window for HS rise/fall times measurement.
- Updated the default value of configuration option “VIH(min)” to 740mV for >1.5Gbps operation.
- Masked off Test 1.4.18 Clock Lane HS Clock Delta UI for >1.5Gbps operation.

Enhancements

- Changed default value of “Tskew Histogram Window” under HS Tests Configuration in configure tab to 10mV.
- Updated the threshold levels to (15% -85%) for Test 1.1.3 15%-85% Rise Time(TRLP) ESCAPEMODE.
- Updated the test algorithm for the following tests to perform measurement on averaged waveforms for defined data patterns of “000111” or “111000”. The 20%-80% voltage levels is calculated with respect to the reference static DC level measured(VHS_ZERO) during final 25% of HS-ZERO period. The pre-requisite test for the following test is updated.
  - Test ID: 81101 – 1.3.11 20%-80% Rise Time (tR)
  - Test ID: 81111 - 1.3.12 80%-20% Fall Time (tF)

- Updated the test algorithm for the following tests to perform measurement on averaged waveforms for defined data patterns of “01” or “10”. The 20%-80% voltage levels is calculated with respect to the reference static DC level measured(VHS_ZERO) during final 25% of Clock Lane HS-ZERO period. The pre-requisite test for the following test is updated.
    - Test ID: 181101 - 1.4.11 20%-80% Rise Time (tR)
    - Test ID: 181111 - 1.4.12 80%-20% Fall Time (tF)
- Updated the following tests to run Test 1.4.17 HS Clock Instantaneous (UIinst) as pre-requisite test. The HS Unit Interval value measured from Test 1.4.17 will be used to calculate the dynamic limit for the following tests.
    - Test ID: 547 - 1.3.15 HS Exit: DATA TX TEOT
    - Test ID: 557 - 1.3.2 HS Entry: DATA TX THS-PREPARE
    - Test ID: 558 - 1.3.3 HS Entry: DATA TX THS-PREPARE+THS-ZERO
    - Test ID: 544 - 1.4.15 HS Exit: CLK TX TEOT
    - Test ID: 551 - 1.5.1 HS Entry: CLK TX TCLK-PRE
    - Test ID: 555 - 1.5.2 HS Exit: CLK TX TCLK-POST
    - Test ID: 913 - 1.5.4 Data-to-Clock Skew (TSKEW(TX))(Max,Min)
- Removed the CTS v0.08 option in Set Up tab from the application.
- Removed all test reference related to DPHY CTS v0.08 as the DPHY app v3.10 onwards do not support that testing option. The following test IDs that reference to CTS v0.08 has been removed.
    - Test ID: 8110 - 1.3.11 20%-80% Rise Time (tR)
    - Test ID: 8111 - 1.3.12 80%-20% Fall Time (tF)
    - Test ID: 813 - 1.3.4 Differential Voltage(VOD)
    - Test ID: 814 - 1.3.5 Differential Voltage Mismatch
    - Test ID: 815 - 1.3.6 Single Ended Output High Voltage(VOHHS)
    - Test ID: 18110 - 1.4.11 20%-80% Rise Time (tR)
    - Test ID: 18111 – 1.4.12 80%-20% Fall Time (tF)
    - Test ID: 1813 – 1.4.4 Differential Voltage(VOD)
    - Test ID: 1814 – 1.4.5 Differential Voltage Mismatch

  - Test ID: 1815 – 1.4.6 Single Ended Output High Voltage(VOHHS)

- Updated test name for the following tests:
  - Test ID: 81111 - 1.3.12 80%-20% Fall Time (tF)
  - Test ID: 81101 - 1.3.11 20%-80% Rise Time (tR)
- Added a 400MHz low pass test filter to the measurement algorithm for the following tests.
  - Test 1.1.1 Thevenin Output High Voltage Level (VOH)
  - Test 1.1.2 Thevenin Output Low Voltage Level (VOL)
  - Test 1.1.4 15%-85% Fall Time (TFLP)
  - Test 1.2.1 Thevenin Output High Voltage Level (VOH)
  - Test 1.2.2 Thevenin Output Low Voltage Level (VOL)
  - Test 1.2.4 15%-85% Fall Time (TFLP)
  - Test 1.2.5 Slew Rate Vs. CLoad
- Added the “Number of Measurement” reporting item for the following tests.
  - Test 1.3.11, Test 1.3.12, Test 1.3.4, Test 1.3.6, Test 1.4.11, Test 1.4.12, Test 1.4.4, Test 1.4.6 and Test 1.5.4 tests.

Bug Fixes

- Fixed issue where the application crash when user selected more than one data lane.
- Corrected the typo of “Infomative” to “Informative” in Set Up tab.
- Fixed the functionality of the completion indicator in Select Tests tab.
- Fixed the issue in Test 1.3.6 HS Data TX Single Ended Output High Voltage (VOHHS Pulse) by correcting the threshold level setting.
- Fixed the UDF issue on Test 1.4.17 HS Clock Instantaneous.
- Fixed the invalid result issue on 1.3.9 VCMTX(LF), 1.3.10 VCMTX(HF), 1.4.9 VCMTX(LF), 1.4.10 VCMTX(HF) tests.
- Fixed the incorrect reporting result issue on Test 1.2.5 ULPS clock TX Slew Rate Vs CLoad ULPSMODE.
- Fixed the typo on exception message thrown from Test 1.3.4 Differential Voltage(VOD0 Pulse).

- Corrected the label of the test reporting item for Test 1.4.17 HS Clock Instantaneous.

Known issues

- In loading projects created in MIPI version 3.00, users cannot append the existing results.

Agilent U7238C/U7238D Software Version 03.00

Release Date:	30 May 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)
File Name:	SetupInfMIPI_D-PHY03000000.exe

Enhancements

- Supports for Infiniium Oscilloscope Software version 5.00.

KEYSIGHT

Agilent U7238B Software Version 02.44

Release Date:	19 May 2014
Requirements category (e.g., operating system):	Microsoft Windows XP, Microsoft Windows 7
Requirements category (e.g., instrument software version):	3.21 (9000 Series, 90000 Series, 90000 X-Series)
File Name:	SetupInfMIPI_D-PHY02440000.exe

Miscellaneous Notes

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

New Features

- Added HS Clock Instantaneous (UInst)(Min) test.
- Added ULPS Clock Mode test.
- Added Informative test group.
- Added Clock Lane HS Clock Delta UI (UI variation) test.
- Added LP_TX Pulse Width of Exclusive-OR Clock [Initial] and LP_TX Pulse Width of Exclusive-OR Clock [Last] tests.

Modifications

- Improved test measurement for LP slew rate test by added 400Mhz low pass filter.
- Improved test measurement for LP Escape Rise Time test by added 400Mhz low pass filter.
- Fixed connection diagram issue.
- Updated the “THSPREPARE+ZERO” portion in identifying the start of SYNC pattern to handle glitch in the test signal.

Known issues

- In loading projects created in MIPI version 02.44, users cannot append the existing results.

Agilent U7238A Software Version 02.43

Release Date:	15 May 2013
Requirements category (e.g., operating system):	Microsoft Windows XP, Microsoft Windows 7
Requirements category (e.g., instrument software version):	3.21 (9000 Series, 90000 Series, 90000 X-Series)
File Name:	SetupInfMIPI_D-PHY02430000.exe

New Features

- Added Switch Matrix feature support.

Modifications

- Fixed the issue of Vcmtx tests where the worst case value reported is incorrect.

KEYSIGHT

Agilent U7238A Software Version 02.42

Release Date:	15 October 2012
Requirements category (e.g., operating system):	Microsoft Windows XP, Microsoft Windows 7
Requirements category (e.g., instrument software version):	3.21 (9000 Series, 90000 Series, 90000 X-Series)
File Name:	SetupInfMIPI_D-PHY02420000.exe

New Features

- Added new “Continuous Data” test mode.
- Added new “Window” triggering option under the Configure tab. This option is now set as the default triggering option instead of the previous “Pattern/State with InfiniiScan” triggering option.
    - Related configuration variables:
        - WindowTriggerHighThreshold
        - WindowTriggerLowThreshold
        - TriggerMethod
- Added the CTS Test ID info to all the corresponding tests in the application.
- Added a debug configuration option that can set the threshold used in determining the THS-Prepare start location. This is used in a non-compliance testing mode to enable testing of data signals that are not terminated properly.
    - Related configuration variables:
        - THSprepareStartThreshold
- Added configurable options to set the trigger timeout in the Configure tab of the application.
    - Related configuration variables:
        - TriggerCheck

- TriggerTimeout

Modifications

- Updated the GUI layout on Setup tab.
- The “InfiniiSim” button on the Setup tab has been removed. This same feature is now accessible via the “Tools” window menu of the application.
- Support User Defined Limit (UDL) feature.
- Fixed the issue of TSkew test where the worst case value reported is incorrect.
- Fixed the issue of incorrect VOD tests measurements when the “Scope Sampling Rate” option is set to “20G Sa/s” and the “Signal Scaling Mode” option is set to “AUTO”.
- Fixed the issue of tCLK-POST test where sometimes the test will report incorrect values in terms of “fs” range.
- Removed the need for InfiniiScan license option in order to run the application.

Agilent U7238A Software Version 02.41

Release Date:	15 January 2012
Requirements category (e.g., operating system):	Microsoft Windows XP, Microsoft Windows 7
Requirements category (e.g., instrument software version):	3.21 (9000 Series, 90000 Series, 90000 X-Series)
File Name:	SetupInfMIPI_D-PHY02410000.exe

Modifications

- Optimize software to work with baseline 3.21 and above.
- Improve support for Win7 OS.

Agilent U7238A Software Version 02.40

Release Date:	30 August 2011
Requirements category (e.g., operating system):	Microsoft Windows XP, Microsoft Windows 7
Requirements category (e.g., instrument software version):	3.11 (9000 Series, 90000 Series, 90000 X-Series)
File Name:	SetupInfMIPI_D-PHY02400000.exe

Modifications

- Optimize software to work with baseline 3.10.0005 and above.
- Added support for Win7 OS.

Agilent U7238A Software Version 02.30

Release Date:	19 April 2011
Requirements category (e.g., operating system):	Microsoft Windows XP
Requirements category (e.g., instrument software version):	3.00 (9000 Series, 90000 Series, 90000 X-Series)
File Name:	SetupInfMIPI_D-PHY02300000.exe

Modifications

- Improve HS Clock VOHHS test measurement.
- Improve test result reporting for UIinst test and Data 1st edge to clock alignment test.

Agilent U7238A Software Version 02.20

Release Date:	3 January 2011
Requirements category (e.g., operating system):	Microsoft Windows XP
Requirements category (e.g., instrument software version):	3.00 (9000 Series, 90000 Series, 90000 X-Series)
File Name:	SetupInfMIPI_D-PHY02200000.exe

Modifications

- Improve Data 1st edge to clock alignment test behavior.
- Improve Vod, dVod & VOHHS tests. These tests will now show error message when the test patterns are not found.

KEYSIGHT

Agilent U7238A Software Version 02.10

Release Date:	30 September 2010
Requirements category (e.g., operating system):	Microsoft Windows XP
Requirements category (e.g., instrument software version):	3.00 (9000 Series, 90000 Series, 90000 X-Series)
File Name:	SetupInfMIPI_D-PHY02100000.exe

New Features

- Added TCLK-POST test.
- Added support for DSOX90000 series.

Modifications

- Updated test methodology as per MIPI CTS 1.00. (VOHHS, VOD and LP Slew Rate)

Agilent U7238A Software Version 02.00

Release Date:	15 March 2010
Requirements category (e.g., operating system):	Microsoft Windows XP
Requirements category (e.g., instrument software version):	5.71 (80000 Series), 2.10 (9000 Series, 90000 Series)
File Name:	SetupInfMIPI_D-PHY02000000.exe

Miscellaneous Notes

- Added a troubleshooting guide in the CHM help file to assist users.
- This will be the last version to support the 80000 series oscilloscope. Following releases will only support 9000 & 90000 series oscilloscope.

New Features

- Added support for long DSI stream.
- Added filtering to handle continuous clock signals.
- Added InfiniiSim support. (Only for 9000 & 90000 series oscilloscope.)

Agilent U7238A Software Version 01.20

Release Date:	30 October 2009
Requirements category (e.g., operating system):	Microsoft Windows XP
Requirements category (e.g., instrument software version):	5.71 (80000 Series), 2.01 (9000 Series, 90000 Series)
File Name:	SetupInfMIPI_D-PHY01200000.exe

Miscellaneous Notes

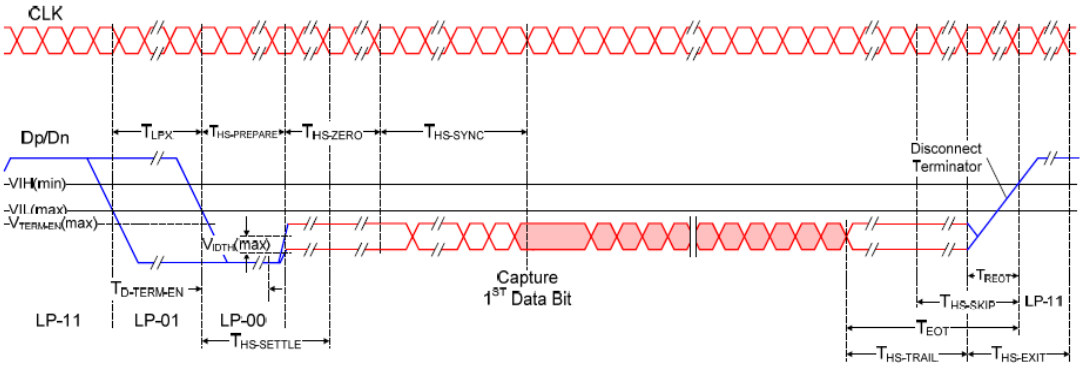

Diagram 1: A Single Analysis Window

- Data Processing Requirements:
    - At least 2 Analysis Window above should be present for the software to process.
        - The total time length of the 2 Analysis Window should be lesser than the theoretical 200 microseconds (10GSa/s@2Mpts).
    - The HS Burst in the Analysis Window should contain valid SYNC sequence
    - The HS Burst Payload bits should be random and ideally should not have long 1's and 0's

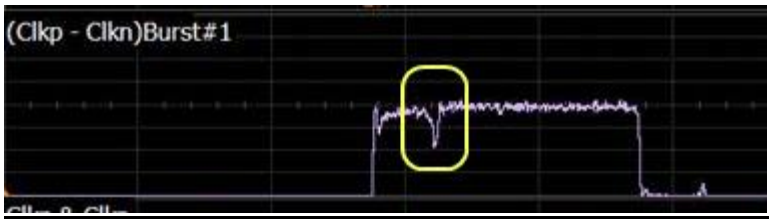

Diagram 2: Spike noise

- All noise effects (for example diagram 2) in Timing Test Group are treated as part of the waveform acquisition data for measurement processing.

New Features

- Added the LP Clock TX Electrical tests.
- Added support for using auto load switch board as fixture.

Modifications

- Filter for common mode variances tests changed to 8th order butterworth IIR filter.

KEYSIGHT

Agilent U7238A Software Version 01.10

Release Date:	13 April 2009
Requirements category (e.g., operating system):	Microsoft Windows XP
Requirements category (e.g., instrument software version):	5.60 (80000 Series), 1.40 (90000 Series)
File Name:	SetupInfMIPI_D-PHY01100000.exe

New Features

- Added the HS Clock TX Electrical tests.
- Added the Global Operation tests.
- Added the HS Data-Clock Timing tests.
- Added support for four probes.
- Added capability to export waveform data, generated from the signal of the Device Under Test.
- Added support for Device Under Test that does not send LP escape mode repetitively.

Modifications

- Renamed the HS TX Electrical tests to HS Data TX Electrical tests.
- Addressed the issue of HS TX Electrical tests running slow.
- Addressed the issue of unable to find the HS burst in some Device Under Test variances.

Known issues

- In loading projects created in MIPI version 01.00, users cannot append the existing results.

Agilent U7238A Software Version 01.10

Release Date:	1 August 2008
Requirements category (e.g., operating system):	Microsoft Windows XP
Requirements category (e.g., instrument software version):	5.50 (80000 Series), 1.20 (90000 Series)
File Name:	SetupInfMIPI_D-PHY01000000.exe

Initial Release