

D9030TBTC

Thunderbolt 3

Compliance Test Software

Keysight D9030TBTC Software Version 1.20

Released Date:	19 February 2020
Requirements category (e.g., operating system):	Microsoft Windows 10, Microsoft Windows 7
Requirements category (e.g., minimum instrument software version):	10.12.005302 (UXR-Series) 06.50.01004 (V-Series, Z-Series)
Requirements category (e.g., minimum J-BERT B firmware version):	7.61
TenLira test script version	TBT-TPA-UHG2 - USB Type-C Thunderbolt Test Scripts Version 0.8.8
Reference	Thunderbolt Interconnect Specification Revision 1.5 Version 0.9 USB Type-C Thunderbolt, Alternate Mode Electrical, Host\Device, Compliance Test Specification, Revision 1.5 Version 0.9
File Name:	SetupInfTBT301200000.exe

New Features

- Supports 2-Channels UXR-Series oscilloscope.

Modification

- Updated the following Configuration Variable. Please refer to Programmer's Reference for more details (see Help > API Reference > Remote Interface).
 - o Removed Configuration Variable
 - ControllerEnable, ControllerDirectory, CrosstalkInstrument, IPAddress, SiclAddress
 - o Modified Configuration Variable

New Configuration Variable	Old Configuration Variable
EnableSavedWaveform	SavedWaveformEnable

- o Modified Configuration Variable Choices

Configuration Variable	New Choices	Old Choices
L0Connection	5	5, 7
L1Connection	6	6, 7

- Updated the pattern length verification of the Pattern Check to use the Infiniium’s Pattern Length query to provide more robust pattern length verification.

Bug Fixes

- Fixed the issue of skip completed permutation setting is not be restored with the load project.
- Fixed the issue of missing reference information for Tx Eye Diagram, Tx Eye Diagram TP3EQ, Tx Equalization Preshoot and Tx Equalization Deemphasis tests.
- Fixed the issue of Insufficient Acquisition Bandwidth warning shown when creating the new project.
- Fixed the issue of the test automation execute only once if the selected tests require same test pattern but different bit rate.
- Fixed the issue of intermittent invalid jitter separation result for the jitter related tests due to non PRBS15 pattern is generated by the DUT.

Know Issue

- User will experience error when loading the project files between the 2-channels input oscilloscope and 4-channels input oscilloscope.
 - o Please create separate project file for 2-channels input oscilloscope and 4-channels input oscilloscope.
- The Power Profile selection will be reset (all selected) once the Type-C Controller Setup dialog is shown.
- User will experience the increase in the test time when running the TP3EQ in UXR-Series oscilloscope.
- User may experience intermittent pattern length validation error for PRBS15 pattern in UXR-Series oscilloscope with Infiniium 10.12.

- Please select [Retry] when the pattern length validation error message shown as workaround solution.

Or

- Please update the “Automation Auto Retry Count” configuration variable to 5 or higher value as workaround solution.
- User may experience intermittent pattern validation issue for Tx Lane to Lane Skew tests with error “The pattern for Lane 0(CHAN1) and Lane 1(CHAN2) is not match”. This issue is due to PRBS31 generated in Lane 0 and Lane 1 is different for certain bits.
 - Rerun the test script or test (with automation enabled) will fix the issue.



Keysight D9030TBTC Software Version 1.14

Released Date:	18 October 2019
Requirements category (e.g., operating system):	Microsoft Windows 10, Microsoft Windows 7
Requirements category (e.g., minimum instrument software version):	10.11.004711 (UXR-Series) 06.40.01201 (V-Series, Z-Series)
Requirements category (e.g., minimum J-BERT B firmware version):	7.61
TenLira test script version	TBT-TPA-UHG2 - USB Type-C Thunderbolt Test Scripts Version 0.8.8

Reference	Thunderbolt Interconnect Specification Revision 1.5 Version 0.9 USB Type-C Thunderbolt, Alternate Mode Electrical, Host\Device, Compliance Test Specification, Revision 1.5 Version 0.9
File Name:	SetupInfTBT301140000.exe

New Features

- Supports Infiniium Oscilloscope Software version 10.11 for UXR-Series oscilloscope.
- Supports user configurable Preset Number message prompt via “Configure Preset Number” configuration variables. Please refer to Programmer’s Reference for more details (see Help > API Reference > Remote Interface).
- Supports user configurable number of automations auto retry if the pattern check fail via “Automation Auto Retry Count” configuration variables. Please refer to Programmer’s Reference for more details (see Help > API Reference > Remote Interface).

Bug Fixes

- Fixed the issue of incorrect test limit for Tx Equalization Preshoot and Tx Equalization Deemphasis for Preset 15.
- Fixed the issue of error code 310 during the automation of the Power Supply.
- Fixed the issue of the VISA address of the Power Supply is not restore if the Type-C Controller Setup dialog is reopened.
- Fixed the issue of the tests unable to run if the Type-C Controller is enabled and the Tx Lane to Lane Skew tests is selected.
- Fixed the issue of the Power Profile is not properly loaded (all available power profile selected) during the loading of the project.

Note

- Application’s project file saved for version 1.13 and below will be opened as load setting-only or read-only.

Know Issue

- The skip completed permutation setting will not be restored with the load project.
- The Power Profile selection will be reset (all selected) once the Type-C Controller Setup dialog is shown.

- User will experience the increase in the test time when running the TP3EQ in UXR-Series oscilloscope.
- User may experience intermittent invalid jitter separation result issue for the jitter related tests. This issue is due to non PRBS15 pattern is generated by the DUT.
 - o Rerun the test script or test (with automation enabled) will fix the issue.
- User may experience intermittent pattern validation issue for Tx Lane to Lane Skew tests with error “The pattern for Lane 0(CHAN1) and Lane 1(CHAN2) is not match”. This issue is due to PRBS31 generated in Lane 0 and Lane 1 is different for certain bits.
 - o Rerun the test script or test (with automation enabled) will fix the issue.



Keysight D9030TBTC Software Version 1.13

Released Date:	23 May 2019
Requirements category (e.g., operating system):	Microsoft Windows 10, Microsoft Windows 7
Requirements category (e.g., minimum instrument software version):	10.10.04432 (UXR-Series) 06.40.00714 (V-Series, Z-Series)
Requirements category (e.g., minimum J-BERT B firmware version):	7.61
TenLira test script version	TBT-TPA-UHG2 - USB Type-C Thunderbolt Test Scripts Version 0.8.8

Reference	Thunderbolt Interconnect Specification Revision 1.5 Version 0.9 USB Type-C Thunderbolt, Alternate Mode Electrical, Host\Device, Compliance Test Specification, Revision 1.5 Version 0.9
File Name:	SetupInfTBT301130000.exe

New Features

- Supports Infiniium Oscilloscope Software version 6.40.
- Supports Infiniium Oscilloscope Software version 10.10 for UXR-Series oscilloscope.

Modification

- Updated the product number from “N6470B” to “D9030TBT3” to support PPKS license
- Updated the default transfer function for TP1 test to include de-embedding of 1m cable and Tx Cable Model to include de-embedding of 1m cable.
- Updated the default DFE state for the Tx CTLE Calibration to disabled.
- Updated the default DFE state for the Tx Jitter at TP3EQ to disabled.
- Removed the “Eye Mask Horizontal Shift Step Number” configuration variable.

Known Issue

- User will experience the increase in the test time when running the TP3EQ in UXR-Series oscilloscope.
- User may experience intermittent invalid jitter separation result issue for the jitter related tests. This issue is due to non PRBS15 pattern is generated by the DUT.
 - o Rerun the test script or test (with automation enabled) will fix the issue.
- User may experience intermittent pattern validation issue for Tx Lane to Lane Skew tests with error “The pattern for Lane 0(CHAN1) and Lane 1(CHAN2) is not match”. This issue is due to PRBS31 generated in Lane 0 and Lane 1 is different for certain bits.
 - o Rerun the test script or test (with automation enabled) will fix the issue.



Keysight N6470B Software Version 1.12

Released Date:	24 October 2018
Requirements category (e.g., operating system):	Microsoft Windows 10, Microsoft Windows 7
Requirements category (e.g., minimum instrument software version):	10.00.03708 (UXR-Series) 06.30.00609 (V-Series, Z-Series)
Requirements category (e.g., minimum J-BERT B firmware version):	7.61
TenLira test script version	TBT-TPA-UHG2 - USB Type-C Thunderbolt Test Scripts Version 0.8.8
Reference	Thunderbolt Interconnect Specification Revision 1.5 Version 0.9 USB Type-C Thunderbolt, Alternate Mode Electrical, Host\Device, Compliance Test Specification, Revision 1.5 Version 0.9
File Name:	SetupInfTBT301120000.exe

New Features

- Supports Infiniium Oscilloscope Software version 6.30.
- Supports Infiniium Oscilloscope Software version 10.00 for UXR-Series oscilloscope.

- Support USB Type-C Thunderbolt, Alternate Mode Electrical, Host\Device, Compliance Test Specification, Revision 1.5 Version 0.9.

Modification

- Updated the default memory points for Tx Equalization to 100 kpts (from 26.0 Mpts).
- Updated the default memory points for Tx Rise/Fall Time to 4.0 Mpts (from 26.0 Mpts).

Bug Fixes

- Fixed the issue of Thunderbolt 3 application fall under Automated Test Apps (licensed apps) menu even without the Equalizer license.
- Fixed the issue of incorrect pattern loaded for Tx Rise/Fall Time (from SQ64 to SQ32).
- Fixed the issue of incorrect histogram placement when running the Tx Equalization tests with fixture or cable de-embedded for TP1 tests.
- Fixed the issue of incorrect test pattern reported for Tx Total Jitter Test and Tx Total Jitter (TP3EQ) Test if both PRBS15 and SQ2 test pattern are used.

Known Issue

- User will experience the increase in the test time when running the TP3EQ in UXR-Series oscilloscope.
- User may experience intermittent invalid jitter separation result issue for the jitter related tests. This issue is due to non PRBS15 pattern is generated by the DUT.
 - o Rerun the test script or test (with automation enabled) will fix the issue.
- User may experience intermittent pattern validation issue for Tx Lane to Lane Skew tests with error "The pattern for Lane 0(CHAN1) and Lane 1(CHAN2) is not match". This issue is due to PRBS31 generated in Lane 0 and Lane 1 is different for certain bits.
 - o Rerun the test script or test (with automation enabled) will fix the issue.



Keysight N6470B Software Version 1.11.0001

Released Date:	7 March 2018
Requirements category (e.g., operating system):	Microsoft Windows 10, Microsoft Windows 7
Requirements category (e.g., minimum instrument software version):	06.10.00806 (V-Series, Z-Series)
Requirements category (e.g., minimum J-BERT B firmware version):	7.61
TenLira test script version	TBT-TPA-UHG2 - USB Type-C Thunderbolt Test Scripts Version 0.8.6
Reference	Thunderbolt Interconnect Specification Revision 1.5 Version 0.8 USB Type-C Thunderbolt, Alternate Mode Electrical, Host\Device, Compliance Test Specification, Revision 1.5 Version 0.82
File Name:	SetupInfTBT301110001.exe

Bug Fixes

- Fixed the issue of incorrect CTLE Pole 2 value loaded for the Gen 3 (20.625 Gb/s and 20 Gb/s) TP3EQ tests.

Keysight N6470B Software Version 1.11

Released Date:	1 March 2018
Requirements category (e.g., operating system):	Microsoft Windows 10, Microsoft Windows 7
Requirements category (e.g., minimum instrument software version):	06.10.00806 (V-Series, Z-Series)
Requirements category (e.g., minimum J-BERT B firmware version):	7.61
TenLira test script version	TBT-TPA-UHG2 - USB Type-C Thunderbolt Test Scripts Version 0.8.6
Reference	Thunderbolt Interconnect Specification Revision 1.5 Version 0.8 USB Type-C Thunderbolt, Alternate Mode Electrical, Host\Device, Compliance Test Specification, Revision 1.5 Version 0.82
File Name:	SetupInfBT301110000.exe

New Features

- Support Thunderbolt Interconnect Specification Revision 1.5 Version 0.8.
- Support USB Type-C Thunderbolt, Alternate Mode Electrical, Host\Device, Compliance Test Specification, Revision 1.5 Version 0.82.
- Support USB Type-C Thunderbolt Test Scripts Version 0.8.6.
- Support different transfer function file for different test lane for “Tx Transfer Function – TP1 Test” and “Tx Cable Model – TP3EQ Test” configuration variables. Please refer to Programmer’s Reference for more details (see Help > API Reference > Remote Interface).

Modification

- Updated the DFE implementation for TP3EQ tests.
- Support DFE for Tx Jitter TP3EQ tests.

Bug Fixes

- Fixed the issue of the test status do not update correctly.
- Fixed the issue of View menu disabled after the tests is stop at connection prompt page

Note

- Application’s project file saved for version 1.10 and below will be opened as read-only.

Keysight N6470B Software Version 1.10

Released Date:	16 November 2017
Requirements category (e.g., operating system):	Microsoft Windows 10, Microsoft Windows 7
Requirements category (e.g., minimum instrument software version):	06.10.00709 (V-Series, Z-Series)
Requirements category (e.g., minimum J-BERT B firmware version):	7.61
TenLira test script version	TBT-TPA-UHG2 - USB Type-C Thunderbolt Test Scripts Version 0.8.5
Reference	Thunderbolt™ Interconnect Specification - USB Type-C Thunderbolt Alternate Mode, Revision 1.5, Version 0.8
File Name:	SetupInfTBT301100000.exe

New Features

- Supports Infiniium Oscilloscope Software version 6.10.
- Support Keysight N7018A USB Type-C Test Controller automation.
- Support DigitalTest Application Sequencer.
- Support USB Type-C Thunderbolt Test Scripts Version 0.8.5.
- Support the run of the reset script before the equalization script.

Modification

- Updated the maximum span time for the InfiniiSim filter from default +/-5ns to +/-10ns.
- Updated the default vertical scale of the AC Common Mode Tests to 20mV/div if the Vpp of AC Common Mode signal is less than 120mV.

Bug Fixes

- Fixed the issue of the SICL error when running SSC Phase Deviation tests (Device returned "Data out of range" error when running command ":FUNC4:MATLab:CONTROL2 4.86064E-11")

Note

- Application's project file saved for version 1.01 and below will be opened as read-only.

Keysight N6470A Software Version 1.01

Released Date:	21 March 2017
Requirements category (e.g., operating system):	Microsoft Windows 10, Microsoft Windows 7
Requirements category (e.g., minimum instrument software version):	6.00.00602 (V-Series, Z-Series)
Requirements category (e.g., minimum J-BERT B firmware version):	7.61
TenLira test script version	TBT-TPA-UHG2 - USB Type-C Thunderbolt Test Scripts Version 0.8.1
Reference	Thunderbolt™ Interconnect Specification - USB Type-C Thunderbolt Alternate Mode, Revision 1.5, Version 0.8
File Name:	SetupInfTBT301010000.exe

New Features

- Supports Infiniium Oscilloscope Software version 6.00.
- Support Thunderbolt™ Interconnect Specification - USB Type-C Thunderbolt Alternate Mode, Revision 1.5 Version 0.8.
- Support TBT-TPA-UHG2 automation.

Modification

- Updated the eye mask acquisition number (Eye Mask Acquisition Number configuration variable default value) from 10 to 1.

Bug Fixes

- Fixed the OutOfMemoryException error issue during the run of the test or export the HTML results.
- Fixed the issue of SICL error while running the Thunderbolt 3 application with Infiniium offline.
- Fixed the issue of delete result when switch for different port number or test lane.
- Fixed the issue of incorrect preset loaded for Preset Calibration Tests when not all preset are selected.
- Fixed the issue of incorrect CTLE pole 1 frequency for 20.625 Gb/s.
- Fixed the issue of Tx Total Jitter Tests and Tx Total Jitter TP3EQ Tests where run test with PRBS 15 first, run SQ2 for random jitter only if failed.

- Fixed the issue of unable to obtain the amplitude voltage error while running the Tx Equalization or Tx Swing Preset 15 tests.
- Fixed the issue of incorrect port number and lane number reported.

Note

- Keysight recommends running the Thunderbolt application with Infiniium user interface disabled. Please refer to Online Help for more details (see Help > Contents... > Running Tests > To Set the Run Preferences).

Keysight N6470A Software Version 1.00

Released Date:	5 July 2016
Requirements category (e.g., operating system):	Microsoft Windows 7
Requirements category (e.g., minimum instrument software version):	5.60.00603 (V-Series, Z-Series)
Requirements category (e.g., minimum J-BERT B firmware version):	7.61
TenLira test script version	USB Type-C Thunderbolt Test Scripts Version 0.8
Reference	Thunderbolt™ Interconnect Specification - USB Type-C Thunderbolt Alternate Mode, Revision 1.5, Version 0.7
File Name:	SetupInfBT301000000.exe

Initial Release

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