

# R&S® ScopeSuite

## Release Notes

### Software Version 4.80.1

© 2021 Rohde & Schwarz GmbH & Co. KG  
Muehldorfstr. 15, 81671 Munich, Germany  
Phone: +49 89 41 29 - 0  
Fax: +49 89 41 29 12 - 164  
E-mail: <mailto:info@rohde-schwarz.com>  
Internet: <http://www.rohde-schwarz.com>

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The following abbreviations are used throughout this document:  
R&S® ScopeSuite is abbreviated as R&S ScopeSuite.

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# 1 Information on the Current Version and History

## 1.1 Version 4.80.1

### New Functionality

#### USB 3.2 Gen 1 (5 GT/s)

**Official SigTest version 3.2.11.4 (see installation instructions 3.1.3.1)**

**(NOTE: SSC Profile Test will need higher version of SigTest)**

- Device - Low Frequency Periodic Signaling Tx (TD.1.1)
- Device – Short Channel Transmitted Eye (TD.1.3)
- Device – Long Channel Transmitted Eye (TD.1.3)
- Device – SSC Profile (TD.1.6)
- Host - Low Frequency Periodic Signaling Tx (TD.1.1)
- Host – Short Channel Transmitted Eye (TD.1.3)
- Host – Long Channel Transmitted Eye (TD.1.3)
- Host – SSC Profile (TD.1.6)
- Hub – Upstream Low Frequency Periodic Signaling Tx (TD.1.1)
- Hub – Upstream Short Channel Transmitted Eye (TD.1.3)
- Hub – Upstream Long Channel Transmitted Eye (TD.1.3)
- Hub – Upstream SSC Profile (TD.1.6)
- Hub – Downstream Low Frequency Periodic Signaling Tx (TD.1.1)
- Hub – Downstream Short Channel Transmitted Eye (TD.1.3)
- Hub – Downstream Long Channel Transmitted Eye (TD.1.3)
- Hub – Downstream SSC Profile (TD.1.6)

#### USB 3.2 Gen 2 (10 GT/s)

**Official SigTest version 4.0.23.2 (see installation instructions 3.1.3.1)**

- Device – Short Channel Transmitted Eye (TD.1.4)
- Device – Long Channel Transmitted Eye (TD.1.4)
- Device – SSC Profile (TD.1.7)
- Device – Transmit Equalization Test (TD.1.5)
- Host – Short Channel Transmitted Eye (TD.1.4)
- Host – Long Channel Transmitted Eye (TD.1.4)

- Host – SSC Profile (TD.1.7)
- Host – Transmit Equalization Test (TD.1.5)
- Hub – Upstream Short Channel Transmitted Eye (TD.1.4)
- Hub – Upstream Long Channel Transmitted Eye (TD.1.4)
- Hub – Upstream SSC Profile (TD.1.7)
- Hub – Upstream Transmit Equalization Test (TD.1.5)
- Hub – Downstream Short Channel Transmitted Eye (TD.1.4)
- Hub – Downstream Long Channel Transmitted Eye (TD.1.4)
- Hub – Downstream SSC Profile (TD.1.7)
- Hub – Downstream Transmit Equalization Test (TD.1.5)

### PCIe 3.0

#### Official SigTest version 3.2.0 (pre-installed)

- Add-In card – Signal Quality
- Add-In card – Tx Equalization
- System Board – Signal Quality
- System Board – Tx Equalization
- System Board – Reference Clock

### 10BASE-T1L

- 146.5.4.1 Transmitter output voltage
- 146.5.4.2 Transmitter output droop
- 146.5.4.3 Transmitter timing jitter
- 146.5.4.4 Transmitter power spectral density (PSD) and power level
- 146.5.4.5 Transmit clock frequency
- 146.8.3 MDI return loss
- 146.8.4 MDI mode conversion loss

### 1000BASE-T1

- Test Head verification

### DPHY

- 1.5.5 Initial HS Skew Calibration Burst T\_SKEWCAL-SYNC and T\_SKEWCAL
- 1.5.6 Periodic HS Skew Calibration Burst T\_SKEWCAL-SYNC and T\_SKEWCAL

**DDR3/DDR3L/LPDDR3, DDR4/LPDDR4**

- Support Expert Mode

**LPDDR4X**

- Clock Timing (13.3)
- Data Timing (4.24.1.2, 4.24.1.3)
- Strobe Timing (8.3.1, 4.24.1, 4.25.1)
- Command Timing (13.7)
- Address Timing (13.7)
- Chip Select Timing (13.7)
- AC & DC Input Levels for ADD and CMD (8.1)
- AC Input Levels for CK (8.3.3)
- AC Overshoot & Undershoot for ADD and CMD and CTRL (8.3.4)
- AC Overshoot & Undershoot for CK (8.3.5)
- AC Overshoot & Undershoot for DQ,DQS and DM (8.3.6)
- Input Slew Rate for ADD and CMD (8.4.2)
- AC & DC Output Levels for DQ (9.2)
- Output Slew Rate for DQ (9.4)
- AC & DC Input Levels for CK (8.3.2)
- Input Slew Rate for CK (8.4.1)
- Differential Cross Point Voltage for CK (8.5)
- AC Input Levels for DQS (8.7.2)
- AC Differential Cross Point Voltage for DQS (8.7.4)
- Input Slew Rate for DQS (8.7.5)
- Differential AC Output Levels for DQS (9.3)
- Differential Output Slew Rate for DQS (9.5)

**Automation K99**

- Coverage of all 10BASE-T1L test cases
- Coverage of all DDR3, DDR3L,DDR4, LPDDR4, LPDDR4X

## Improvements

### Common

- RSScopesuite log file enhancement
- Add build number and build type for beta installer
- Communication protocol enhancement
- Support High Definition as standard feature on new serial number scopes

### 10BASE-T1S

- Removed common mode conversion loss test case and updated return loss limits

### 100BASE-T1

- CommonModeEmission is issuing a warning above 70MHz
- Improved reporting

### 1000BASE-T1

- Changed filter for jitter test cases from 2 MHz to 5 MHz

### 100BASE-TX

- AOI Template Test changed from mandatory to informative

### DDR3/DDR3L/LPDDR3, DDR4/LPDDR4

- Error handling enhancement
- Electrical test cases enhancement

## Tested Firmware

- This ScopeSuite Version is tested against the RTX Firmware Version 4.80.1

## Known Issues

### PCIe

- In older Windows 10 versions, PCIe3 test cases may prompt crash message as SigTest exits.

## 1.2 Version 4.75.0

### New Functionality

#### 10BASE-T1

- 147.5.4.1 Transmitter output voltage
- 147.5.4.3 Transmitter timing jitter
- 147.5.4.2 Transmitter output droop
- 147.5.4.4 Transmitter power spectral density
- 147.7.3 and 147.7.2 MDI mode conversion loss and return loss

#### Automation K99

- Add automation support for 4 test cases in 10Base-T1
  - Output voltage and timing jitter
  - Transmitter output droop
  - Transmitter power spectral density
  - MDI mode conversion loss and return loss

#### USB 2.0

- Support waveform export features for all test cases except Device Test J/K/SeoNak, Back Voltage, Host Test J/K/SeoNak, Drop, Hub Upstream and Downstream Test/JK/SeoNak, Downstream Drop and Upstream Back Voltage
- Offline Support for all test cases (except Device High Speed Chirp Timing, Suspend/Resume/Reset, Receiver Sensitivity, Test J/K/SeoNak, Back Voltage, Host Chirp Timing, Suspend/Resume, Test J/K/SeoNak, Drop, Hub Upstream Receiver Sensitivity, Upstream and Downstream Chirp Timing, Upstream Suspend/Resume/Reset, Upstream and Downstream Test J/K/SeoNak, Back Voltage, Drop
- Support Inrush current measurement on RTP
- Change trigger type on Inrush current measurement to edge trigger
- Add re-enumerate guided steps before running TEST\_J, TEST\_K and TEST\_SEO\_NAK

#### PCIe 1.1/2.1

- offline mode support
  - PCIe1/2: Add-In card - Signal Quality
  - PCIe1/2: System Board - Signal Quality
  - PCIe1/2: Transmitter - Signal Quality

## Improvements

### Common

- Support splash screen for RSScopesuite.
- Add build number into software version for all beta releases.

### Automation K99

- Enhance GetSingleRunResult to support test case with subtest
- Enhance Automation to support offline mode test execution
- Simplify interface by removing ComplianceTestType

### DDR3/DDR3L/LPDDR3, DDR4/LPDDR4

- Common GUI
  - Change default value of "Burst Count" from "All" to 10.
  - Enhancement of default value of CL, CWL and Speed Bin properties for clock test cases.
- Timing Tests
  - Fix for tDIPW got indeterminable result for some waveform.
  - Fix for tQH Measurement, its zoom in area in chart was shifted sometimes.
  - Fix for tWPRE measurement start position was not correct.
  - Fix for DDR3L 1066 tCKavg clock limits was not correct.
- Electrical Tests
  - Hide VIX(AC) for DQS measurement.
  - Change test case from "AC & DC level for DQ & DM" to "AC & DC level for DQ".
  - Fix for Scope Suite error when performing AC & DC Input Level tests on DDR3L.
- DDR Charts,
  - Auto adjust zoom in zone, if it is away from cursor pair positions.
  - Auto adjust waveform overview zone based on zoom in zone, if it is too long to display clearly in chart.



## USB 2.0

- Fix triggering issue for Packet Parameters test case on RTP
- Fix triggering issue for Upstream Repeater test case on RTP
- Fix (Host) Suspend/Resume Throw error when running on RTP (16GHz only)
- Fix (Hub) Down Jitter triggering issue when running on RTP (16GHz only)
- Fix RX sensitivity test case running on SuperMUTT V3.0 device leads to “An error occurred” issue

## Tested Firmware

This ScopeSuite Version is tested against the RTP Firmware Version 4.75.0

## Known Issues

Report

- HTML report has multiple headers and footers.

ScopeSuite

- Accessing Reports/Sessions from versions before 3.0.0 (see 3.1.5)
- Sometimes test execution may result in an error when downloading screenshot image from the instrument. Please refer to section 3.1.6 on how to recovery from this error.

## 1.3 Version 4.60.2

### Improvements

ScopeSuite

- Fixing k22 option problem
- Get Instrument Information fixed for RTP

## 1.4 Version 4.60.0

### New Functionality

#### DDR4 and LPDDR4

- Clock Timing (13.3)
- Data Timing (4.24.1.2, 4.24.1.3)
- Strobe Timing (8.3.1, 4.24.1, 4.25.1)
- Command Timing (13.7)
- Address Timing (13.7)
- Chip Select Timing (13.7)
- AC & DC Input Levels for ADD and CMD (8.1)
- AC Input Levels for CK (8.3.3)
- AC Overshoot & Undershoot for ADD and CMD and CTRL (8.3.4)
- AC Overshoot & Undershoot for CK (8.3.5)
- AC Overshoot & Undershoot for DQ,DQS and DM (8.3.6)
- Input Slew Rate for ADD and CMD (8.4.2)
- AC & DC Output Levels for DQ (9.2)
- Output Slew Rate for DQ (9.4)
- AC & DC Input Levels for CK (8.3.2)
- Input Slew Rate for CK (8.4.1)
- Differential Cross Point Voltage for CK (8.5)
- AC Input Levels for DQS (8.7.2)
- AC Differential Cross Point Voltage for DQS (8.7.4)
- Input Slew Rate for DQS (8.7.5)
- Differential AC Output Levels for DQS (9.3)
- Differential Output Slew Rate for DQS (9.5)

#### 1000BASE-T

- Support RTO/RTP channel selection
- Support Expert Mode

#### 100BASE-T1

- Support IEEE and ECU test limits and settings in VNA test cases
- Add GUI configuration for Average Count and Bandwidth
- Support VNA Calibration File selection and VNA working path display
- Allow leveraging the calibration files between Mode Conversion Loss and Adaptor Verification test cases
- Support test fixture RT-ZF8 and RT-ZF2

#### 1000BASE-T1

- Support TX\_TCLK option for Transmitter distortion test case
- Support Expert Mode
- Support offline execution for Test Mode 1, 2 and 4 test cases
- Add MDI mode conversion loss adaptor verification test case
- Support Return Loss differential mode measurement
- Support IEEE and ECU test limits and settings in VNA test cases
- Support VNA Calibration File selection and VNA working path display
- Allow leveraging the calibration files between Mode Conversion Loss and Adaptor Verification test cases
- Support Test Fixture RT-ZF8 and RT-ZF2Automation

### Automation K99

1000BASE-T support automation for 13 test cases

- Peak Output Voltage
- Maximum Output Droop
- Differential Output Templates
- Transmitter Distortion (No TX\_TCLK)
- Transmitter Distortion (With TX\_TCLK)
- Peak Output Voltage (With Disturber)
- Maximum Output Droop (With Disturber)
- Differential Output Templates (With Disturber)
- Transmitter Distortion (With Disturber No TX\_TCLK)
- Transmitter Distortion (With Disturber With TX\_TCLK)
- Jitter Master Mode and Clock Frequency
- MDI Return Loss
- Common-mode Output Voltage

1000BASE-T1: support automation for 8 test cases

- Transmitter timing jitter master mode
- Transmitter timing jitter slave mode
- MDI jitter and clock frequency
- Transmitter distortion
- PSD, power level and output voltage
- Maximum output droop
- MDI mode conversion loss adaptor verification
- MDI mode conversion loss and return loss

### Improvements

#### 100BASE-T1/1000BASE-T1

- Transmitter distortion support inverse signal input
- Improve Export waveform file naming
- Show Signal Type in test report

#### 100BASE-T1

- Update limits for Common Mode Emission test to the latest Open Alliance Test Specification ECU 2.0

## 1.5 General Information

### Tested Firmware

- This ScopeSuite Version is tested against the RTX Firmware Version 4.80.0

### Known Issues

#### BroadR-Reach

- Saved waveform for debugging are saved in the session that are in the hidden folder ProgramData.

#### Ethernet

- Jitter master/slave mode filtered with TX\_TCLK will not work on RTO 10x2 without a memory extension.

#### Report

- HTML report has multiple headers and footers.

## 2 Modifications to the Documentation

The current documentation is up-to-date.

<b>Version 1.0</b>	26.06.2013
<b>Version 2.0</b>	30.09.2013
<b>Version 3.0</b>	17.01.2014
<b>Version 4.0</b>	02.05.2014
<b>Version 5.0</b>	05.06.2014
<b>Version 6.0</b>	20.10.2014
<b>Version 7.0</b>	15.12.2014
<b>Version 8.0</b>	19.03.2015
<b>Version 9.0</b>	03.08.2015
<b>Version 10.0</b>	11.02.2016
<b>Version 11.0</b>	25.04.2016
<b>Version 12.0</b>	17.06.2016
<b>Version 13.0</b>	26.07.2016
<b>Version 14.0</b>	20.12.2016
<b>Version 15.0</b>	03.03.2016
<b>Version 16.0</b>	23.07.2018
<b>Version 17.0</b>	23.09.2019
<b>Version 18.0</b>	21.10.2019
<b>Version 19.0</b>	22.04.2020
<b>Version 20.0</b>	25.12.2020

## 3 Software Update

### 3.1 Update Information

#### 3.1.1 Requirements

R&S ScopeSuite can be installed on Windows 7,8 and 10 systems.

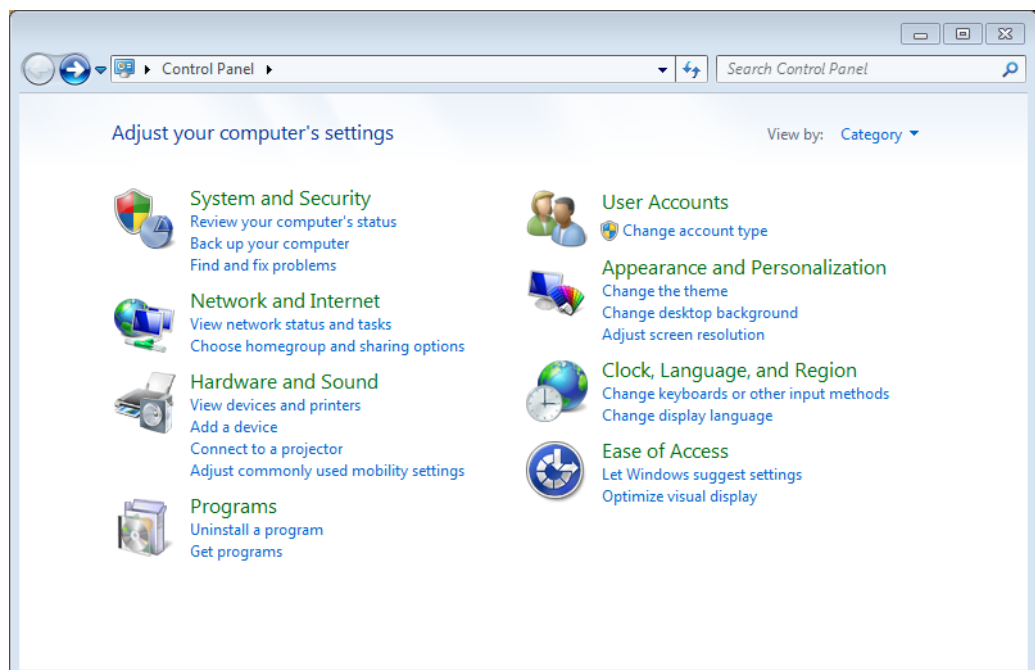
You need a VISA installed. The system is tested against R&S VISA 5.8.5 and we recommend to use this or a higher version.

[www.rohde-schwarz.com/rsvisa](http://www.rohde-schwarz.com/rsvisa)

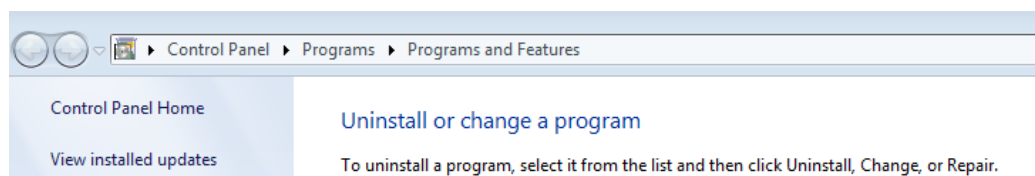
#### 3.1.2 Uninstall old Versions

It is recommended to remove older versions manually before starting installation.

Open Control Panel



Choose Uninstall a program



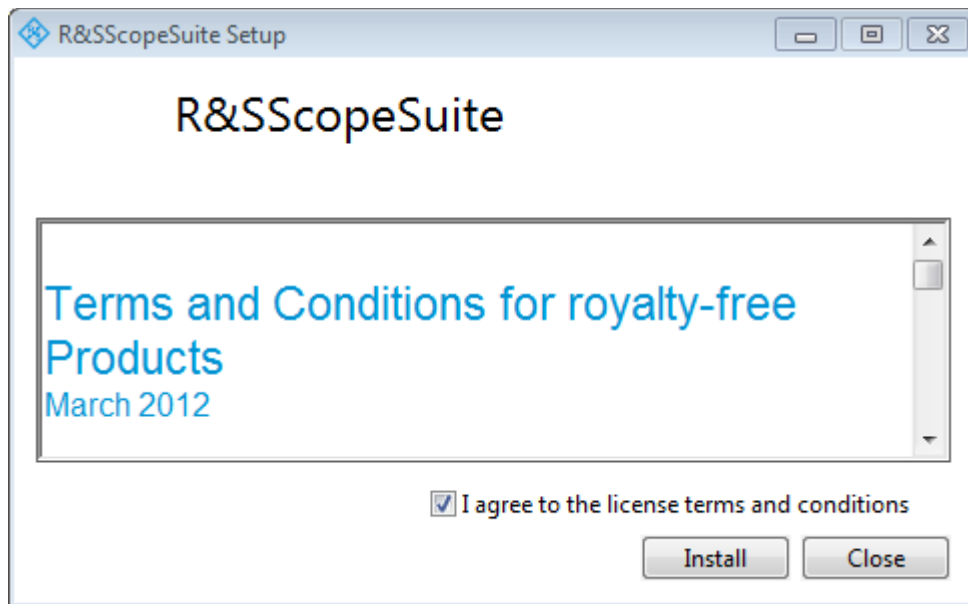
Select R&S ScopeSuite and uninstall it.



### 3.1.3 Install R&S ScopeSuite

The installation of the R&S ScopeSuite, is started by executing the file "RSScopeSuiteSetup.exe".

An Install wizard like this starts and follow the instructions.



You can install R&S ScopeSuite on Windows 7,8 and 10

When you install R&S ScopeSuite on a RTO/RTP please reboot the RTO/RTP after installation.

#### 3.1.3.1 SigTest Installation for USB 3.2

In order to perform the USB 3.2 tests, the SigTest versions 3.2.11.4 (Gen1) and 4.0.23.2 (Gen2) have to be installed from the Intel website:

[https://www.intel.de/content/www/de/de/design/technology/high-speed-io/tools.html?grouping=EMT\\_Content%20Type&sort=title:asc](https://www.intel.de/content/www/de/de/design/technology/high-speed-io/tools.html?grouping=EMT_Content%20Type&sort=title:asc)

Please follow the individual installation instructions.

### 3.1.4 Log files

In case you encounter problems it is helpful to supply us log files and send along a waveform from the scope when the problem occurred.

The log files can be found here:

<My Documents folder>\Rohde-Schwarz\RSScopeSuite\<VersionNumber>\Logs

### 3.1.5 Accessing old Reports

With R&S ScopeSuite 3.0.0 and above you cannot access the reports from earlier versions out of the ScopeSuite anymore.

When you created reports we recommend to access reports directly in the session folder:

C:\ProgramData\Rohde-Schwarz\RSScopeSuite\<VersionNumber>\Sessions

C:\ProgramData is a hidden folder, so you might have to adjust your visibility settings for the file explorer.

In the case you have not created the Reports you have to uninstall the ScopeSuite 3.0.0 and above and reinstall the old ScopeSuite version and create the report from the Report Management. When going back to ScopeSuite 3.0.0 and above remove the old ScopeSuite Version. You cannot run two ScopeSuite versions in parallel.

### 3.1.6 Error Recovery

- Check RTO firmware version. Confirm that it is the same as the version stated in "Tested Firmware".
- Check for loose connection. Make sure the probe is connected to the test point firmly.
- Check if the DUT is in the correct test mode.
- If problem persists, soft reboot the instrument. Select "File" (bottom left) followed by "Exit". Launch the application from the desktop ("RTx" for oscilloscope and "Vector Network Analyzer" for VNA).
- If problem still persists, hard reboot the instrument by switching it off and on again.



## 4 Customer Support

### Technical support – where and when you need it

For quick, expert help with any Rohde & Schwarz equipment, contact one of our Customer Support Centers. A team of highly qualified engineers provides telephone support and will work with you to find a solution to your query on any aspect of the operation, programming or applications of Rohde & Schwarz equipment.

### Up-to-date information and upgrades

To keep your instrument up-to-date and to be informed about new application notes related to your instrument, please send an e-mail to the Customer Support Center stating your instrument and your wish. We will take care that you will get the right information.

#### Europe, Africa, Middle East

Phone +49 89 4129 12345

[customersupport@rohde-schwarz.com](mailto:customersupport@rohde-schwarz.com)

#### North America

Phone 1-888-TEST-RSA (1-888-837-8772)

[customer.support@rsa.rohde-schwarz.com](mailto:customer.support@rsa.rohde-schwarz.com)

#### Latin America

Phone +1-410-910-7988

[customersupport.la@rohde-schwarz.com](mailto:customersupport.la@rohde-schwarz.com)

#### Asia/Pacific

Phone +65 65 13 04 88

[customersupport.asia@rohde-schwarz.com](mailto:customersupport.asia@rohde-schwarz.com)

#### China

Phone +86-800-810-8828 / +86-400-650-5896

[customersupport.china@rohde-schwarz.com](mailto:customersupport.china@rohde-schwarz.com)