

# R&S® ScopeSuite

## Release Notes

### Software Version 4.15.0

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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 4.15.0

### New Functionality

100BASE-TX, 1000BASE-T

- Return Loss measurements support port selection.

100BASE-T1

- Support offline execution for MASTER jitter test case.

### Improvements

1000BASE-T1:

- Added demo session.
- Added bandpass filter for jitter test cases and made them optional.
- Optimal use of resolution for all test cases and supported scopes.

100BASE-T1:

- Specify the path for the export files.
- Reference level determination improved for MDI jitter test case.
- Optimal use of resolution for all test cases and supported scopes.

2.5/5/10G Ethernet:

- Support of ESRP in the Linearity test case.

DDR3:

- Improved naming of the exported waveforms.

ScopeSuite

- Much faster start up time.
- Stability issues resolved.

USB

- Support of RT-ZC30 current probe
- RT-ZC20B image was corrected

Automation

- 1000BASE-T: support four test cases
  - Peak Output Voltage
  - Maximum Output Droop
  - Differential Output Templates
  - Transmitter Distortion (No TX\_TCLK)

### Tested Firmware

This ScopeSuite Version is tested against the RTP/RTO Firmware Version 4.15.3.0

### 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.

## 1.2 Version 4.10.0

### New Functionality

Automation:

- ScopeSuite provides .NET remote programming interface. It allows client program to control ScopeSuite and perform compliance tests (Ethernet 100Base-TX and 100Base-T1).
- Add GUI property Expert Mode to bypass test case guided steps and further automate VNA test cases (Ethernet 100Base-TX and 100Base-T1).

DDR3, DDR3L and DDR3LP:

Clock Timing (12.1)

tCK(avg) (12.1.1)

tCK(abs) (12.1.2)

tCL(avg) (12.1.3)

tCH(avg) (12.1.3)

tJIT(per) (12.1.4)

tJIT(duty) (12.1.4)

tJIT(cc) (12.1.5)

tERR(nper) (12.1.6)

Data Timing (4.13.2, 13.4, 13.6)

tDS(base) (13.6)

tDH(base) (13.6)

tDS(derate) (13.6)

tDH(derate) (13.6)

tHZ(DQ) (4.13.2)

tLZ(DQ) (4.13.2)

tDIPW (13.4 Note 28)

tDQSQ (4.13.2)

tQH (4.13.2)

tVAC (13.6)

Strobe Timing (4.13.2, 4.14.2, 8.3.1)

tDQSCK (4.13.2)

tLZ(DQS) (4.13.2)

tHZ(DQS) (4.13.2)

tRPRE (4.13.2)

tRPST (4.13.2)

tQSH (4.13.2)

tQSL (4.13.2)

tDQSS (4.14.2)

tDQSH (4.14.2)

tDQSL (4.14.2)

tDSS (4.14.2)

tDSH (4.14.2)

tWPST (4.14.2)

tWPRE (4.14.2)

tDVAC(Strobe) (8.3.1)

tDVAC(Clock) (8.3.1)

Command Timing (13.5)

tIS(base) (13.5)

tIS(derate) (13.5)

tIH(base) (13.5)

tIH(derate) (13.5)

tIPW (13.5)

tVAC(CA) (13.5)

Address Timing (13.5)

tIS(base) (13.5)

tIS(derate) (13.5)

tIH(base) (13.5)

tIH(derate) (13.5)

tIPW (13.5)

tVAC(CA) (13.5)

Chip Select Timing (13.5)

tIS(base) (13.5)

tIS(derate) (13.5)

tIH(base) (13.5)

tIH(derate) (13.5)

tIPW (13.5)

Input Slew Rate for ADD and CMD (8.5, 13.5)

SR(tIS) Rising

SR(tIS) Falling

SR(tIH) Rising

SR(tIH) Falling

Input Slew Rate for DQ and DM (8.5, 13.6)

SR(tIS) Rising

SR(tIS) Falling

SR(tIH) Rising

SR(tIH) Falling

AC & DC Input Levels for ADD and CMD (8.1.1)

VIH(AC)

VIL(AC)

VIH(DC)

VIL(DC)

AC & DC Input Levels for DQ and DM (8.1.2)

VIH(AC)

VIL(AC)

VIH(DC)

VIL(DC)

AC Input Levels for CK and DQS (8.3.3)

VSEH(AC)

VSEL(AC)

Output Slew Rate for DQ (9.3)

SRQse Rising

SRQse Falling

AC & DC Output Levels for DQ (9.1)

VOH(AC)

VOL(AC)

VOH(DC)

VOL(DC)

AC Overshoot & Undershoot for ADD and CMD (9.6.1)

Overshoot Amplitude

Overshoot Area

Undershoot Amplitude

Undershoot Area

AC Overshoot & Undershoot for CK, DQ, DQS and DM (9.6.2)

Overshoot Amplitude

Overshoot Area

Undershoot Amplitude

Undershoot Area

AC Input Levels for CK and DQS (8.3)

VIHdiff(AC)

VILdiff(AC)

AC Differential Cross Point Voltage for CK and DQS (8.4)

VIX(AC)

Differential Output Slew Rate for DQS (9.4)

SRQdiff Rising

SRQdiff Falling

Differential AC Output Levels for DQS (9.2)

VOHdiff(AC)

VOLdiff(AC)

Trigger Write Cycle

Trigger Read Cycle

- Offline Execution of tests with saved waveforms
- Waveform export functionality.
- Rich images for result and waveform visualization.

100BASE-T1:

- A new test case “MDI mode conversion loss and return loss” has been added. This supports balanced port and ECU limits from Open Alliance.

100BASE-TX:

- Quicker test execution of droop test

2.5/5GBASE-T

- Waveform export functionality.

10GBASE-T

- Waveform export functionality.

PCIe

- New GUI properties to specify D+ and D- channel skews.

USB

- New GUI properties to specify D+ and D- channel skews.
- New GUI properties to specify channel voltage offsets.

ScopeSuite

- Result tab includes a report preview.
- All properties are displayed in the details of the report.
- Result tab now includes a comment column for user input. Double clicking or long press invokes virtual keyboard.

### Tested Firmware

This ScopeSuite Version is tested against the RTP Firmware Version 4.10.1.0

### Known Issues

100BASE-T1



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

#### 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 3.6.0

### New Functionality

#### 1000BASE-T1:

- 97.5.3.3 Transmitter timing jitter master mode
- 97.5.3.3 Transmitter timing jitter slave mode
- 97.5.3.3 Transmitter timing MDI jitter
- 97.5.3.6 Transmitter clock frequency
- 97.5.3.2 Transmitter distortion
- 97.5.3.4 Transmitter Power Spectral Density (PSD)
- 97.5.3.4 Transmitter power level
- 97.5.3.5 Transmitter peak differential output
- 97.5.3.1 Maximum Output Droop
- 97.7.2.1 MDI return loss
- 97.7.2.2 MDI mode conversion loss

#### PCIe 1.x:

##### Signal Quality (4.3.3)

- Mean unit interval
- Data rate
- Template tests
- Min eye width
- Median to max jitter
- Differential output voltage

##### Reference Clock (1.32)

- Differential input High Voltage
- Differential input Low Voltage
- Duty Cycle
- Average Clock Period
- Rising edge rate
- Falling edge rate

- Mean unit interval

#### PCIe 2.0

##### Signal Quality (4.3.3)

- Data rate
- Template tests
- Min eye width
- Median to max jitter
- Differential output voltage

#### ScopeSuite

- Support for B6 Waveform generator
- Support for 6GHz RTO

#### Tested Firmware

- This ScopeSuite Version is tested against the RTO Firmware Version 3.50.3.1

#### Improvements

##### MIPI D-PHY

- Fixing chart plotting problems for group 3 and 4.

##### TenBaseT

- MAU template trigger improved
- Link Test Pulse and TP\_IDL work on a 600MHz scope

#### Known Issues

##### 100BASE-T1

- 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.

##### 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.

## 1.4 Version 3.4.0

### New Functionality

#### EEE

##### 1000BASE-T EEE:

- Quiet Time (78.2)
- Refresh Time (Master) (78.2)
- Refresh Time (Slave) (78.2)
- Wake State Levels (40.6.1.2.7)
- Transmitter Timing Jitter With TX\_TCLK (Master) (40.6.1.2.5)
- Transmitter Timing Jitter With TX\_TCLK (Slave) (40.6.1.2.5)
- Transmitter Timing Jitter Without TX\_TCLK (Master) (40.6.1.2.5)
- Transmitter Timing Jitter Without TX\_TCLK (Slave) (40.6.1.2.5)

##### 100BASE-TX EEE (24.2.3.4 and 78.2):

- Sleep Time
- LPI Quiet Time
- LPI Refresh Time
- LPI Transmitter Timing Jitter
- Transmit Wake Time

##### 10BASE-Te

- All test cases like 10BASE-T.

##### 100BASE-T1/BroadR-Reach

- Renamed to 100BASE-T1 compliance test.
- Removed support for BroadR-Reach before version 3.2 .
- Allow user to select channel for testing.
- Support Single Ended input like SMA cables for measurements.
- Return loss calibration with RT-ZF2 is optional.
- Support of IEEE 802.3bw limits and corresponding IOL test procedures.
- Added new test case: Peak differential output
- Allow user to export waveforms for offline analysis and debugging purposes.
- Transmitter distortion: Disallow user to test with TX\_TCLX if B4 option (OCXO) option is not installed.
- Optimal auto scaling for all test cases.

#### Ethernet

- 100BASE-TX Amplitude Domain Tests: Overshoot calculation is corrected.

#### MIPI D-PHY

- Enhanced group 2 trigger for ULPS exit.

#### USB

- Disallow the use of differential probe (except modular probe) for droop test.
- Disallow user to select R&S or Allion test fixture if USB-IF test fixture is selected

#### ScopeSuite

- Support for modular probes.

#### Tested Firmware

- This ScopeSuite Version is tested against the RTO Firmware Version 3.40.1.2

#### Known Issues

##### BroadR-Reach

- Older sessions cannot be continued. Please create a new session for 100BASE-T1
- 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.

##### ScopeSuite

- Accessing Reports/Sessions from versions before 3.0.0 (see 3.1.5)



## 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>	20.11.2018

## 3 Software Update

### 3.1 Update Information

#### 3.1.1 Requirements

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

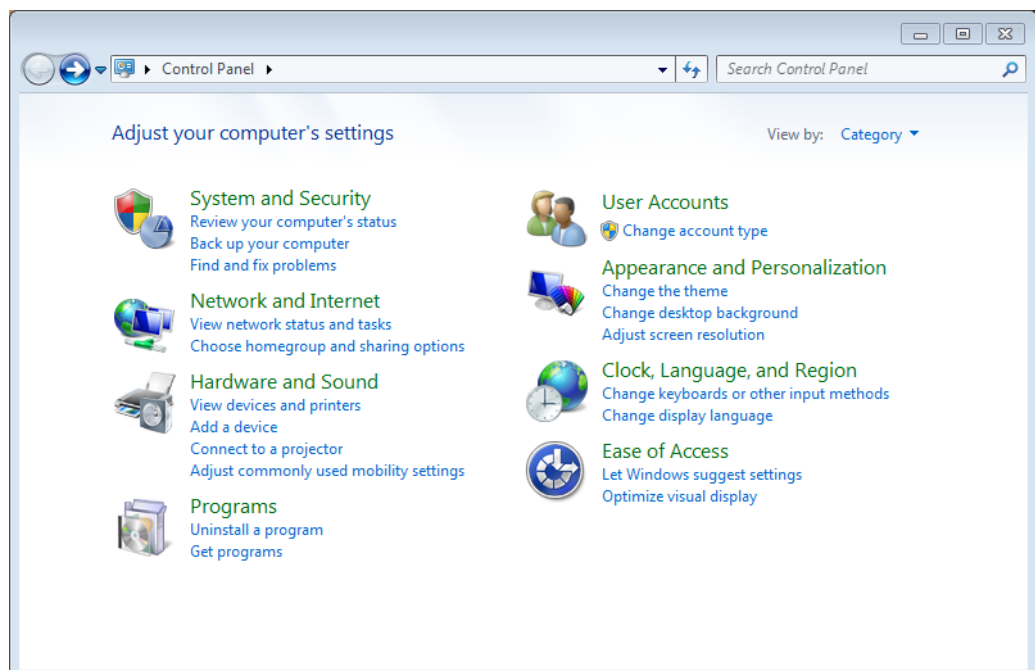
You need a VISA installed. The system is tested against R&S VISA 5.8.5 and we recommend to use this or a higher version.

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

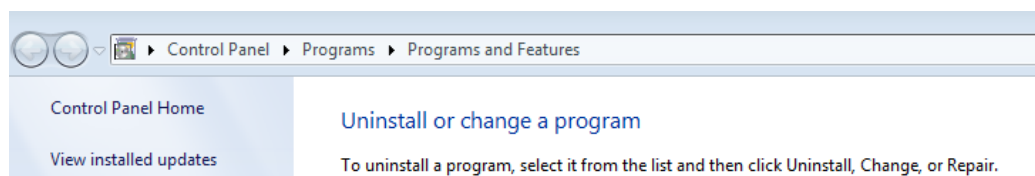
#### 3.1.2 Uninstall old Versions

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

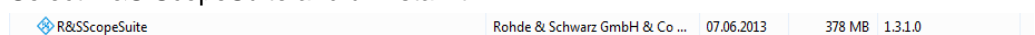
Open Control Panel



Choose Uninstall a program



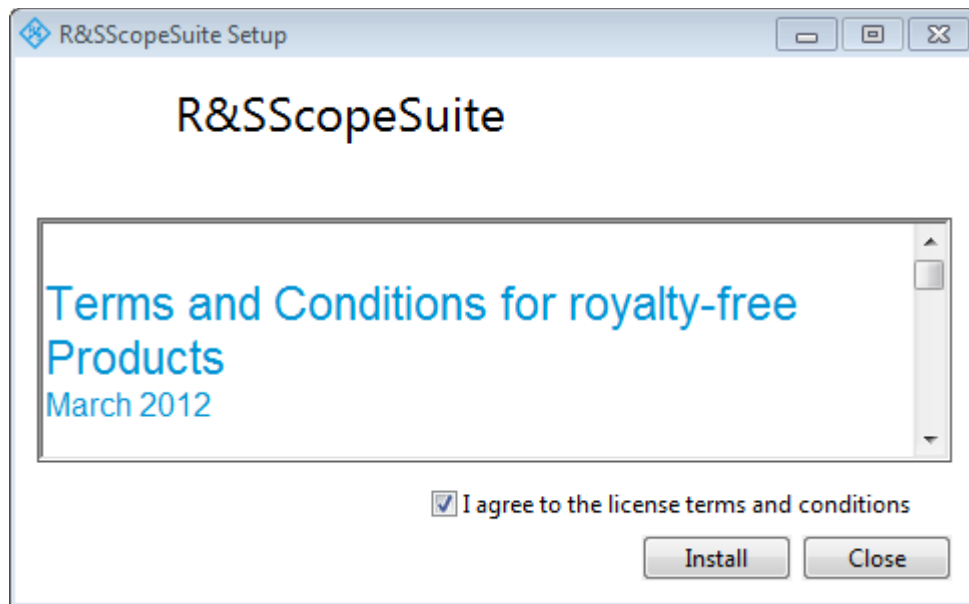
Select R&S ScopeSuite and uninstall it.



### 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.

### 3.1.4 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\3.0\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\Session

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 and please make sure to remove the following folder before installation ScopeSuite 3.0.0 and above.

C:\ProgramData\Rohde-Schwarz\ScopeSuiteServer

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.

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