

# R&S®NRQ6

## Release Notes

**Firmware Version 02.40.23032501**

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The software makes use of several valuable open source software packages. For information, see the "Open Source Acknowledgment" provided with the product.

The following abbreviations are used throughout this document: R&S®NRQ6 is abbreviated as R&S NRQ6.

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# 1 Information on the current version and history

## 1.1 Version 02.40.23032501

**Released: April, 2023**

### New functionality

#### Functions

S-Parameter correction (see user manual for details)

Gamma correction (see user manual for details)

Signal Check as additional measurement mode:

- Set Signal Check mode: `SENSe:FUNCTION "XFREq:POWer"`
- Set number of points: `SENSe:SPECTrum:FFT:POINts` points (points min 32, max 1024, default 64)
- Start measurement and fetch result: `INITiate:IMMediate;FETCh?`
- Query limits of frequency domain axis:
  - `SENSe:SPECTrum:FFT:FREQUency:STARt?`
  - `SENSe:SPECTrum:FFT:FREQUency:STEP?`

### Modified functionality

#### Functions

None

### Improvements

#### Improvements

Autotrigger function (`TRIGger:ATRigger:EXECuted?`) works reliably.

When connected to NRX and using fast aperture times, trigger modes BUS and EXT provide measurement results as expected.

ACLR mode supports triggering without restriction.

## Known issues

### Known Issues

INPut:ATTenuator:AUTO ONCE sometimes turns on the attenuator even with signals below threshold.

When measuring with INIT:CONT ON while using an external reference clock, a loss of clock might not be signaled immediately. Measurement results may be wrong.

In some rare conditions when performing fast measurement cycles together with the automatic attenuator feature instead of reading results the sensor responds with a "Data corrupt or stale;fetch?" error.

PoE PowerCycle issue in case of USB cable connected.

In I/Q Trace Mode, negative trigger delay is cursed internally to 0s.

## 1.2 Version 02.30.22012002

**Released: January, 2022**

### New functionality

#### Functions

Peak Power Measurement – Added new command CALCulate:FEED with measurands:  
POWER:AVERAge and POWER:TRACe  
POWER:PEAK and POWER:PEAK:TRACe,  
POWER:RANDom and POWER:RANDom:TRACe  
to FETCh average, peak or random measurement results

Peak Power Measurement – Web User Interface:  
Display additional peak or random measurement results in Continuous Average or Trace mode

Added new commands to support recalibration of R&S NRQ6 (user calibration):  
CALibration:UNLock  
CALibration:FREQuency:LIMITs  
CALibration:REStore  
CALibration:SAVE

Added new commands for trigger synchronization among multiple sensors:  
TRIGger:SENDER/RECEIVER

Added new command for phase coherent measurements synchronization:  
SENSe:TRACe:IQ:SYNC:TYPE OFF | SENDER | RECEIVER

Added query SENSe:BANDwidth:NOISE?

## Modified functionality

### Functions

IQ Trace mode:

SENSe:TRACe:IQ:DATA? and FETCh? behave the same

SENSe:TRACe:IQ:DATA:FORMat new default value is IQPair

## Improvements

### Improvements

None

## Known issues

### Known Issues

INPut:ATTenuator:AUTO ONCE sometimes turns on the attenuator even with signals below threshold.

When measuring with INIT:CONT ON while using an external reference clock, a loss of clock might not be signaled immediately. Measurement results may be wrong.

Autotrigger function (an automatic sensor trigger after a certain time without trigger event) does not work reliably and if occurred, it is not correctly query able using TRIGger:ATRigger:EXECuted?

When connected to NRX and using fast aperture times, trigger modes BUS and EXT may not provide a measurement result.

In some rare conditions when performing fast measurement cycles together with the automatic attenuator feature instead of reading results the sensor responds with a "Data corrupt or stale;fetch?" error.

PoE PowerCycle issue in case of USB cable connected

In I/Q Trace Mode, negative trigger delay is cursed internally to 0s

## 1.3 Version 02.20.20072802

Released: July, 2021

### New functionality

#### Functions

None

## Modified functionality

### Functions

None

## Improvements

### Improvements

Maximal length of trace points in trace mode increased from  $2^{13}$  (= 8192) to  $2^{20}$  (= 1048576)

Sensor autoset failure in trace mode at high frequency unmodulated RF signal is fixed

In continuous average mode, a non-static error is raised, when using long aperture times together with large resolution bandwidth. Measurement will not complete in this situation.

Static errors are raised in different not-allowed configuration scenarios.

Sensor web client trigger level value displayed in wrong format.

DC Zeroing feature improved, to measure and save the DC offset value within a predefined range of measurement configurations.

## Known issues

### Known Issues

INPut:ATTenuator:AUTO ONCE sometimes turns on the attenuator even with signals below threshold.

When measuring with INIT:CONT ON while using an external reference clock, a loss of clock might not be signaled immediately. Measurement results may be wrong.

Autotrigger function (an automatic sensor trigger after a certain time without trigger event) does not work reliably and if occurred, it is not correctly query able using TRIGger:ATRIgger:EXECuted?

When connected to NRX and using fast aperture times, trigger modes BUS and EXT may not provide a measurement result.

In some rare conditions when performing fast measurement cycles together with the automatic attenuator feature instead of reading results the sensor responds with a "Data corrupt or stale;fetch?" error.

PoE PowerCycle issue in case of USB cable connected

In I/Q Trace Mode, negative trigger delay is cursed internally to 0s

## 1.4 Version 02.10.19092501

Released: October, 2019

### New functionality

#### Functions

Power Servoing (R&S NRQ6-K2 Option)

IQ.Tar Format for Trace I/Q data download (VSE Support)

SCPI requests for channel spacing in ACLR mode

Sensor Sanitizing

### Modified functionality

#### Functions

None

### Improvements

#### Improvements

Hardware PeakDetector to be used for auto attenuation switch

Sensor Sanitizing possible in Fail-Safe Mode

Sensor Level-Offset in SignalCheck measurement corrected

Automatic attenuator switches may leave static error messages "overload" in the SYSTEM:SERRor? query.

When using external LO and either changing this signal or change of ambient temperature, the SCPI command „SENSe:FREQuency:CONVersion:MIXer:LO:SOURce EXT“ must be issued in order to initiate the internal LO leveling procedure.

## Known issues

### Known Issues

Sensor autoset failure in trace mode with high frequency unmodulated RF signal

INPut:ATTenuator:AUTO ONCE sometimes turns on the attenuator even with signals below threshold.

When measuring with INIT:CONT ON while using an external reference clock, a loss of clock might not be signaled immediately. Measurement results may be wrong.

Autotrigger function (an automatic sensor trigger after a certain time without trigger event) does not work reliably and if occurred, it is not correctly query able using TRIGger:ATRigger:EXECuted?

When connected to NRX and using fast aperture times, trigger modes BUS and EXT may not provide a measurement result.

In some rare conditions when performing fast measurement cycles together with the automatic attenuator feature instead of reading results the sensor responds with a "Data corrupt or stale;fetch?" error.

In CONT:AVG measurement mode, a non-static error is raised when using long aperture times together with large resolution bandwidth. Measurement will not complete in this situation.

PoE PowerCycle issue in case of USB cable connected

## 1.5 Version 02.00.19011101

Released: January, 2019

### New functionality

#### Functions

Support of phase coherent measurements option (R&S NRQ6-K3)

Web GUI supports capture and export I/Q sample values in a CSV file

Notch filter for DC offset component for bandwidths larger than 40MHz (Zero-IF operating mode)  
command: SENSE:FILTer:DCReject

Added IQ offset zero calibration for bandwidths larger than 40MHz (Zero-IF operating mode)  
command: CALibration:IQOffset:AUTO

### Modified functionality

#### Functions

None



## Improvements

### Improvements

Buffered continuous average measurement with external trigger at high trigger rate improved

General speed up of settings

## Known issues

### Known Issues

When connected to NRX and using fast aperture times, trigger modes BUS and EXT may not provide a measurement result.

INPut:ATTenuator:AUTO ONCE sometimes turns on the attenuator even with signals below threshold.

Automatic attenuator switches may leave static error messages "overload" in the SYSTem:SERRor? query.

When measuring with INIT:CONT ON while using an external reference clock, a loss of clock might not be signaled immediately. Measurement results may be wrong.

Autotrigger function (an automatic sensor trigger after a certain time without trigger event) does not work reliably and if occurred, it is not correctly query able using TRIGger:ATRigger:EXECuted?

In some rare conditions when performing fast measurement cycles together with the automatic attenuator feature instead of reading results the sensor responds with a "Data corrupt or stale;fetch?" error.

In CONT:AVG measurement mode, a non-static error is raised when using long aperture times together with large resolution bandwidth. Measurement will not complete in this situation.

When using external LO and either changing this signal or change of ambient temperature, the SCPI command „SENSe:FREQuency:CONVersion:MIXer:LO:SOURce EXT" must be issued in order to initiate the internal LO leveling procedure.

## 1.6 Version 01.20.18072501

**Released: August, 2018**

### New functionality

#### Functions

None

### Modified functionality

#### Functions

None

## Improvements

### Improvements

Automatic attenuator switches may leave static error messages "overload" in the SYSTem:SERRor? query.

6 GHz Signal not recognized by Autoset

## Known issues

### Known Issues

see Version 1.10-18.05.03.04

## 1.7 Version 1.11-18.06.06.01

**Released: June, 2018**

### New functionality

#### Functions

None

### Modified functionality

#### Functions

None

## Improvements

### Improvements

"Don't miss a pulse" feature tested up to 2us pulse period signal with internal trigger

## Known issues

### Known Issues

see Version 1.10-18.05.03.04

## 1.8 Version 1.10-18.05.03.04

**Released: May, 2018**

### New functionality

#### Functions

Initial version for product launch

### Modified functionality

#### Functions

None

### Improvements

#### Improvements

"Don't miss a pulse" feature tested up to 2us pulse period signal with internal trigger

Increase data throughput for IQ trace data

\*OPC? query does not work after INIT:IMMediate

Improved reaction time of automatic attenuator

### Known issues

#### Known Issues

INPut:ATTenuator:AUTO ONCE sometimes turns on the attenuator even with signals below threshold.

Automatic attenuator switches may leave static error messages "overload" in the SYSTem:SERRor? query.

When measuring with INIT:CONT ON while using an external reference clock, a loss of clock might not be signaled immediately. Measurement results may be wrong.

Autotrigger function (an automatic sensor trigger after a certain time without trigger event) does not work reliable and if occurred, it is not correctly query able using TRIGger:ATRigger:EXECuted?

In some rare conditions when performing fast measurement cycles together with the automatic attenuator feature instead of reading results the sensor responds with a "Data corrupt or stale;fetch?" error.

In CONT:AVG measurement mode no static error is raised when using long aperture times together with large resolution bandwidth. Measurement will not complete in this situation.

When using external LO and either changing this signal or change of ambient temperature, the SCPI command „SENSe:FREQuency:CONVersion:MIXer:LO:SOURce EXT“ must be issued in order to initiate the internal LO leveling procedure.

## 2 Modifications to the documentation

The current documentation is up-to-date.

## 3 Firmware update

### 3.1 Update information

Please refer to the document "R&S®NRQ6 Frequency Selective Power Sensor - User Manual" (<https://www.rohde-schwarz.com/manual/nrq6>).

## 4 Customer support

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

For quick, expert help with any Rohde & Schwarz product, contact our customer support center. A team of highly qualified engineers provides support and works with you to find a solution to your query on any aspect of the operation, programming or applications of Rohde & Schwarz products.

### Contact information

Contact our customer support center at [www.rohde-schwarz.com/support](http://www.rohde-schwarz.com/support) or follow this QR code:



Figure 4-1: QR code to the Rohde & Schwarz support page