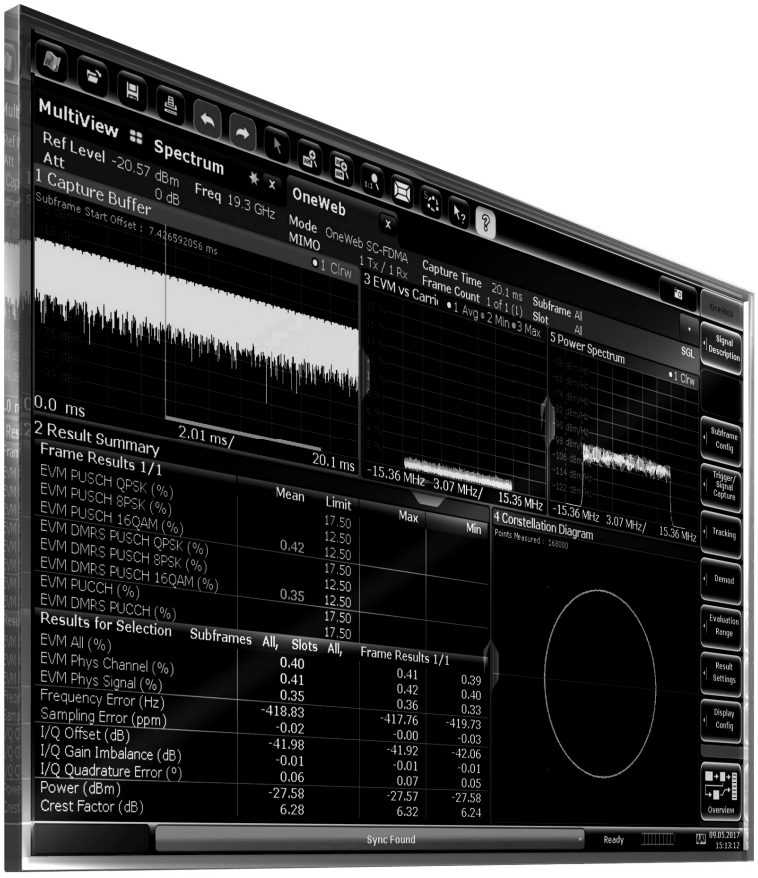
R&S®FSW-K201 OneWeb Reverse Link (SC-FDMA) Measurement Application

Specifications



ROHDE&SCHWARZ

Data Sheet | Version 01.00

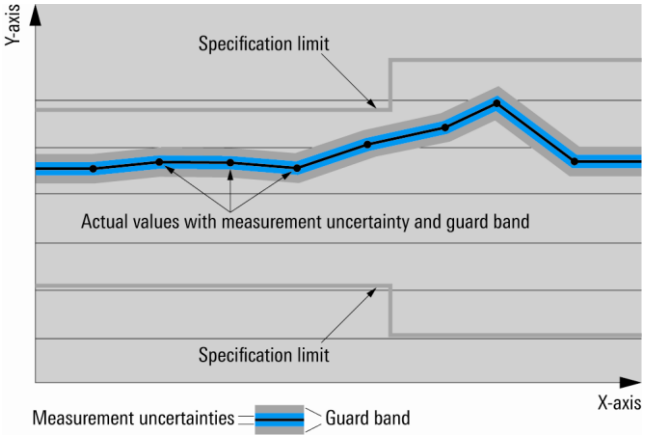
CONTENTS

Definitions

General
Product data applies under the following conditions:

- Three hours storage at ambient temperature followed by 30 minutes warm-up operation
- Specified environmental conditions met
- Recommended calibration interval adhered to
- All internal automatic adjustments performed, if applicable

Specifications with limits
Represent warranted product performance by means of a range of values for the specified parameter. These specifications are marked with limiting symbols such as <, ≤, >, ≥, ±, or descriptions such as maximum, limit of, minimum. Compliance is ensured by testing or is derived from the design. Test limits are narrowed by guard bands to take into account measurement uncertainties, drift and aging, if applicable.



Specifications without limits
Represent warranted product performance for the specified parameter. These specifications are not specially marked and represent values with no or negligible deviations from the given value (e.g. dimensions or resolution of a setting parameter). Compliance is ensured by design.

Typical data (typ.)
Characterizes product performance by means of representative information for the given parameter. When marked with <, > or as a range, it represents the performance met by approximately 80 % of the instruments at production time. Otherwise, it represents the mean value.

Nominal values (nom.)
Characterize product performance by means of a representative value for the given parameter (e.g. nominal impedance). In contrast to typical data, a statistical evaluation does not take place and the parameter is not tested during production.

Measured values (meas.)
Characterize expected product performance by means of measurement results gained from individual samples.

Uncertainties
Represent limits of measurement uncertainty for a given measurand. Uncertainty is defined with a coverage factor of 2 and has been calculated in line with the rules of the Guide to the Expression of Uncertainty in Measurement (GUM), taking into account environmental conditions, aging, wear and tear.

Device settings and GUI parameters are indicated as follows: “parameter: value”.

Typical data as well as nominal and measured values are not warranted by Rohde & Schwarz.

Specifications

The specifications of the R&S®FSW-K201 are based on the specifications of the R&S®FSW signal and spectrum analyzer. They have not been checked separately and are not verified during instrument calibration. Measurement uncertainties are given as 95 % confidence intervals. The specified level measurement errors do not take into account systematic errors due to reduced signal-to-noise ratio (S/N).

OneWeb SC-FDMA analysis

Signal acquisition

Supported standards		OneWeb RL (SC-FDMA) in line with
		80-HA061-1 Rev. A
		80-HA062-1 Rev. A
		80-HA063-1 Rev. A
Hardware Requirements	for measuring one component carrier	R&S®FSW-B28
	for measuring two component carriers	R&S®FSW-B40
Capture length		10.01 ms to 50.1 ms
Trigger modes		free run, external

Measurement parameters

Input	RF, file
Number of component carriers	1, 2 (measuring 2 component carriers requires R&S®FSW-B40)
Number of frames to be allocated	1
Modulation types	QPSK, 8PSK, 16QAM

Result displays

	R&S®FSW-K201
Result summary	
EVM PUSCH QPSK	●
EVM PUSCH 8PSK	●
EVM PUSCH 16QAM	●
EVM DMRS PUSCH QPSK	●
EVM DMRS PUSCH 8PSK	●
EVM DMRS PUSCH 16QAM	●
EVM PUCCH	●
EVM DMRS PUCCH	●
EVM PRACH	●
EVM physical channel	●
EVM physical signal	●
EVM all	●
Center frequency error	●
Sampling error	●
I/Q offset	●
I/Q gain imbalance	●
I/Q quadrature error	●
Power	●
Crest Factor	●
Power versus time	
Capture buffer	●
Power versus symbol and carrier	●
EVM	
EVM versus carrier	●
EVM versus symbol	●
EVM versus symbol and carrier	●
EVM versus subframe	●
Spectrum	
Power spectrum	●
Relative inband emissions	●
Channel flatness	●
Channel flatness SRS	●
Channel flatness difference	●
Channel group delay	●
ACLR	●
Constellation	
Constellation diagram	●
Statistics/miscellaneous	
Allocation summary list	●
Bit stream	●

Measurement uncertainty (nominal)

Specifications apply under the following conditions: temperature from +20 °C to +30 °C; signal level –25 dBm; properly adjusted reference level; external reference frequency applied, frequency range is 14 GHz ≥ f ≥ 14.5 GHz and 17.8 GHz ≥ f ≥ 19.3 GHz.

Output power

Output power	R&S®FSW
Level uncertainty	same as R&S®FSW (see R&S®FSW total measurement uncertainty)

Transmitted signal quality

EVM		R&S®FSW
Residual EVM	FDD, 20 MHz, normal cyclic prefix, no SRS, no PUCCH, one allocation with 16QAM on all PRBs level –25 dBm to +15 dBm input = RF channel estimation: pilot and payload phase tracking: off timing tracking: off	< 0.60 % (–44.5 dB)

Ordering information

Designation	Type	Order No.
OneWeb Reverse Link (SC-FDMA) Measurement Application	R&S®FSW-K201	1331.7382.02
Signal and Spectrum Analyzer, 2 Hz to 8 GHz	R&S®FSW8	1312.8000.08
Signal and Spectrum Analyzer, 2 Hz to 13.6 GHz	R&S®FSW13	1312.8000.13
Signal and Spectrum Analyzer, 2 Hz to 26.5 GHz	R&S®FSW26	1312.8000.26
Signal and Spectrum Analyzer, 2 Hz to 43.5 GHz	R&S®FSW43	1312.8000.43
Signal and Spectrum Analyzer, 2 Hz to 50 GHz	R&S®FSW50	1312.8000.50
Signal and Spectrum Analyzer, 2 Hz to 67 GHz	R&S®FSW67	1312.8000.67
Signal and Spectrum Analyzer, 2 Hz to 85 GHz	R&S®FSW85	1312.8000.85
28 MHz Analysis Bandwidth	R&S®FSW-B28	1313.1645.02
40 MHz Analysis Bandwidth	R&S®FSW-B40	1313.0861.02

Service that adds value

- Worldwide
- Local and personalized
- Customized and flexible
- Uncompromising quality
- Long-term dependability

Rohde&Schwarz

The Rohde&Schwarz electronics group offers innovative solutions in the following business fields: test and measurement, broadcast and media, secure communications, cybersecurity, monitoring and network testing. Founded more than 80 years ago, the independent company which is headquartered in Munich, Germany, has an extensive sales and service network with locations in more than 70 countries.

Sustainable product design

- Environmental compatibility and eco-footprint
- Energy efficiency and low emissions
- Longevity and optimized total cost of ownership

Certified Quality Management
ISO 9001

Certified Environmental Management
ISO 14001

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Data without tolerance limits is not binding | Subject to change

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