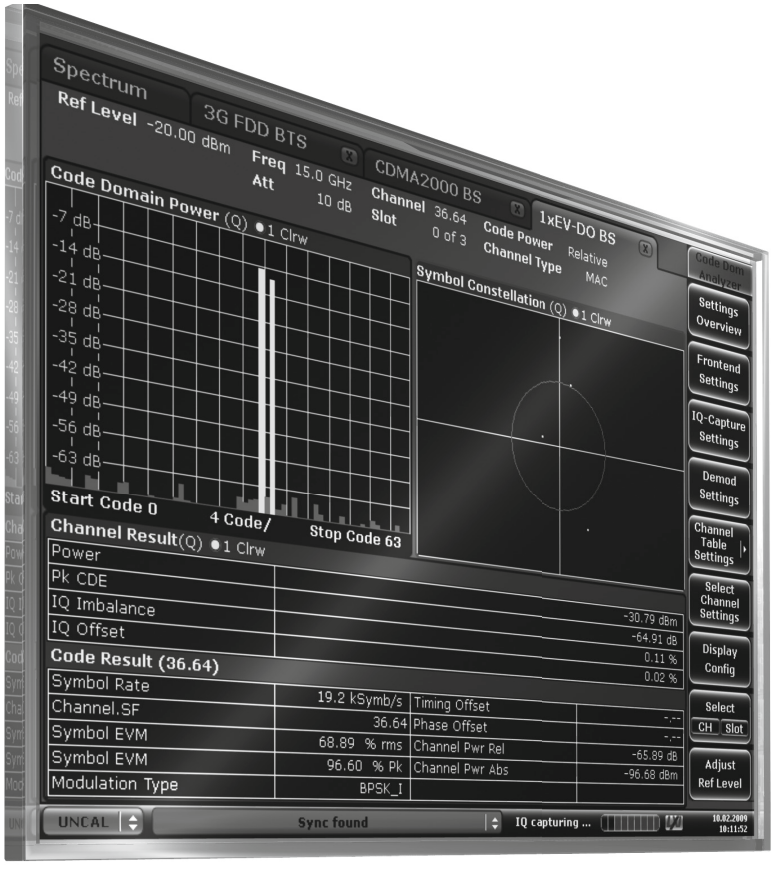
R&S®FSV-K84
1xEV-DO BS (DL) Measurements
Specifications



Test & Measurement

Data Sheet | 03.00

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CONTENTS

Specifications

The specifications of the R&S®FSV K84 1xEV-DO BS (DL) Measurements application firmware are based on the specifications of the R&S®FSV signal and spectrum analyzer, have not been checked separately and are not verified during instrument calibration.

Specifications apply under the following conditions: 30 minutes warm-up time at ambient temperature, frequency lower than 3 GHz, specified environmental conditions met, calibration cycle adhered to, and all internal automatic adjustments performed.

Typical values are designated with the abbreviation (typ.). These values are verified during the final test but are not assured by Rohde & Schwarz.

Nominal values are design parameters that are not assured by Rohde & Schwarz. These values are verified during product development but are not specifically tested during production.

Data without tolerance limits is not binding.

Frequency

Frequency range		same as R&S®FSV

Level

Level range	RF input	–60 dBm to +30 dBm

Signal acquisition

Supported standards		1xEV-DO Subtype 0/1/2/3 in line with C.S0032 and C.S0024
Capture length		up to 23584 slots
Sweep time	spectrum mask, adjacent channel leakage power ratio (ACLR)	max. 16000 s, auto max. 16000 s
Sweep count		1 to 32767
Trigger modes	code domain analysis	free run, external
	RF measurements	free run, external, IF power

Measurement parameters

Frequency band	predefined bands	band classes 0 to 17
	unspecified	limits can be user-specified
Link mode		downlink (DL)
Modulation detection		BPSK, QPSK, 8PSK, 16QAM
Predefined channel table	code domain analyzer	The predefined channel table makes it possible to configure the complete channel setup of the user signal for the code domain analyzer.
Spectrum emission mask	standard	in line with band classes 0 to 17
	user	The spectrum emission mask is measured in line with either the manual user setting or a user-specified XML file.

Result displays

General results	clear/write, max. hold, min. hold, average, view	global results over all slots: carrier frequency error (reading in Hz and ppm), chip rate error, trigger to frame, rho of pilot channel over all slots, rho of MAC channel over all slots, rho of data channel over all slots, rho overall 1 (halfslot boundary), rho overall 2 (quarterslot boundary)
		results for selected slot: total power, pilot power, MAC power, data power, preamble power, rho, composite EVM
Channel results	clear/write, max. hold, min. hold, average, view	results for pilot channel: absolute power, peak code domain error, I/Q imbalance, I/Q offset
		results for selected channel: symbol rate, timing offset, spreading factor, symbol EVM (reading in % RMS and % peak), modulation type, timing offset, phase offset, absolute channel power, relative channel power
Code domain power	clear/write, max. hold, min. hold, average, view	code domain power versus channel
		code domain error power versus channel
Peak code domain error	clear/write, max. hold, min. hold, average, view	peak code domain error power versus slot
Channel table	clear/write, max. hold, min. hold, average, view	numeric result table for all active channels including the following readings per channel: channel type, channel number, spreading factor, symbol rate, modulation type, absolute power, relative power, timing offset, phase offset
Composite EVM	clear/write, max. hold, min. hold, average, view	EVM versus slot
EVM versus symbol	clear/write, max. hold, min. hold, average, view	EVM versus symbol for selected channel and slot
Power versus symbol	clear/write, max. hold, min. hold, average, view	power versus symbol for selected channel and slot
Channel constellation	clear/write	constellation diagram for selected channel and slot
Composite constellation	clear/write	constellation diagram for composite signal
Bitstream	clear/write	bitstream for selected channel and slot
Output power	clear/write, max. hold, min. hold, average, view, blank	integrated signal power over channel bandwidth
Adjacent channel power Multi carrier adjacent channel power	clear/write, max. hold, min. hold, average, view, blank	absolute and relative adjacent channel power
Spectrum emission mask	clear/write, max. hold, min. hold, average, view, blank	spectrum mask limit check
		peak list evaluation
Occupied bandwidth	clear/write, max. hold, min. hold, average, view, blank	occupied bandwidth measured in frequency domain
CCDF	clear/write, view, blank	CCDF
Power versus time	clear/write, max. hold, min. hold, average, view, blank	check averaged half slots against a limit mask in the time domain; check separate limits for full and idle slots

Measurement specification (nominal)

Basic requirements unless otherwise noted:
50 MHz ≤ center frequency < 3.0 MHz, –25 dBm < signal level < +15 dBm, external reference frequency applied

Code domain power		
Level uncertainty, total power		< 0.5 dB
Level uncertainty, pilot power		< 0.6 dB
Level uncertainty, channel power	absolute	< 0.6 dB
	relative	< 0.1 dB

Composite EVM		
Measurement range		0.6 % to 25 %
Inherent EVM		< 0.6 %
Measurement uncertainty	composite EVM < 10%	< 0.6 %
	composite EVM > 10%	< 1.0 %

Frequency error measurement		
Lock range		±8 kHz
Measurement uncertainty		2 Hz + reference frequency uncertainty (see R&S®FSV frequency uncertainty)

Peak code domain error		
Measurement range		0 dB to –50 dB
Inherent PCDE		< –50 dB

Trigger to frame		
Measurement range		±500 µs
Accuracy	relative	< 210 ns

Rho		
Measurement uncertainty	composite EVM < 10 %	±0.0010
	composite EVM < 25 %	±0.0050

Occupied bandwidth		
Measurement uncertainty	99 % power bandwidth, span 4.2 MHz	±10 kHz

Spectrum emission mask		
Dynamic range (P_{total} > –20 dBm) [1]		> 81.4 dB

Adjacent channel leakage ratio		
Dynamic range (P_{total} > –20 dBm) [1]	noise correction off (nominal)	> 81.4 dB
	noise correction off (average result of 100 sweeps)	> 84.3 dB
	noise correction on (nominal)	> 82.0 dB
	noise correction on (average result of 100 sweeps)	> 87.0 dB

[1] The specified dynamic range specification is the ratio of the channel power to the power at an offset of 750 kHz, measured with 30 kHz integration bandwidth.

Ordering information

Designation	Type	Order No.
1xEV-DO BS (DL) Measurements	R&S®FSV-K84	1310.8803.02
1xEV-DO MS (UL) Measurements	R&S®FSV-K85	1310.8778.02
Signal and Spectrum Analyzer, 9 kHz to 4 GHz	R&S®FSV4	1321.3008.04
Signal and Spectrum Analyzer, 9 kHz to 7 GHz	R&S®FSV7	1321.3008.07
Signal and Spectrum Analyzer, 9 kHz to 13.6 GHz	R&S®FSV13	1321.3008.13
Signal and Spectrum Analyzer, 9 kHz to 30 GHz	R&S®FSV30	1321.3008.30
Signal and Spectrum Analyzer, 9 kHz to 40 GHz	R&S®FSV40 [2]	1321.3008.39
Signal and Spectrum Analyzer, 9 kHz to 40 GHz	R&S®FSV40	1321.3008.40
Recommended options and extras		
see specifications for the R&S®FSV signal and spectrum analyzer (PD 3606.7982.22)		

For product brochure, see PD 5214.0499.12 and www.rohde-schwarz.com.

[2] Max. bandwidth 10 MHz.

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Quality management and environmental management

Rohde&Schwarz is certified in line with the ISO 9001 and ISO 14001 management systems.

Certified Quality Management
ISO 9001

Certified Environmental Management
ISO 14001

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