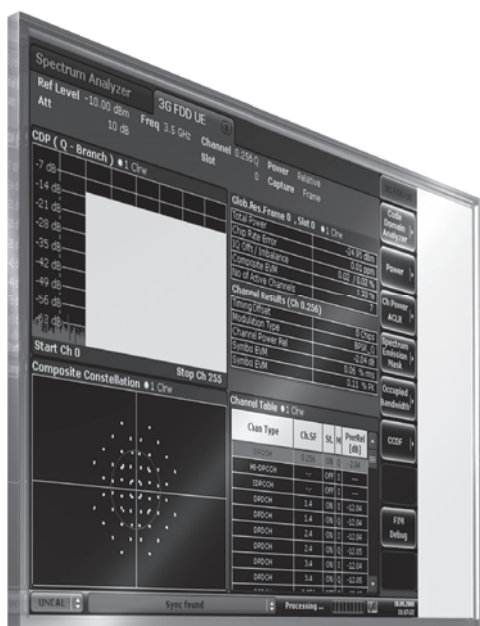


R&S® FSV-K73

3G FDD UE Analysis

Specifications



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The specifications of the R&S®FSV-K73 application firmware for 3G FDD UE analysis are based on the data sheet of the R&S®FSV signal analyzer. 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.

R&S® FSV-K73 3G FDD UE analysis

Frequency

Frequency range	R&S®FSV3	
	DC-coupled	9 kHz to 3.6 GHz
	AC-coupled	1 MHz to 3.6 GHz
	R&S®FSV7	
	DC-coupled	9 kHz to 7 GHz
	AC-coupled	1 MHz to 7 GHz

Level

Level range	RF input	-40 dBm to +30 dBm
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Signal acquisition

Supported standards		3GPP TS 25.141, supports HSDPA/HSUPA
Capture length	slot mode	one slot
	frame mode	1 to 100 frames
Sweep time	spectrum mask, adjacent channel leakage 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

Link mode		uplink (UL)
Modulation detection		BPSK
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 3GPP
	user-defined	The spectrum emission mask is measured in line with either the manual user setting or a user-specified XML file.

Result diagrams

Result summary	global results	total power, carrier frequency error, chip rate error, trigger to frame, I/Q imbalance, I/Q offset, composite error vector magnitude, rho, average power of inactive channels, peak code domain error, number of active channels
	results for selected channel	symbol rate, channel code, number of pilot bits, relative channel power, absolute channel power, modulation type, symbol error vector magnitude, channel mapping, modulation type
Code domain power		code domain power versus channel code domain error power versus channel
Code domain error power		code domain error power versus slot
Channel table	numeric result table for all channels including the following readings per channel	channel type, channel number, spreading factor, symbol rate, state, absolute power, relative power, number of pilot bits, mapping, absolute channel power, relative channel power
Composite EVM (RMS)		averaged (RMS) EVM of selected frame versus slot
EVM versus chip		EVM of selected slot versus chip
Magnitude error versus chip		magnitude error of selected slot versus chip
Phase error versus chip		phase error of selected slot versus chip
Composite constellation		constellation diagram for composite signal
Power versus slot		power versus slots of selected frame
Power versus symbol		power of selected channel and slot versus symbol
Symbol constellation		constellation diagram for selected channel and slot
Symbol EVM		symbol EVM for selected channel and slot
Symbol magnitude error		magnitude error for selected channel and slot versus symbol
Symbol phase error		phase error of selected channel and slot versus symbol
Frequency error versus slot		frequency error of selected frame versus slot
Output power		integrated signal power over channel bandwidth
Adjacent channel power Multicarrier adjacent channel power		absolute and relative adjacent channel power
Spectrum emission mask		spectrum mask limit check
		peak list evaluation
Occupied bandwidth		occupied bandwidth measured in frequency domain
CCDF		CCDF

Measurement specification (nominal)

Frequency error (test case 5.3)		
Measurement range	CPICH synchronous	±5 kHz
	SCH synchronous	±700 Hz
Measurement uncertainty		<5 Hz + Δf_{ref}

Spectrum emission mask (test case 5.9)		
Dynamic range	$P_{total} > -20$ dBm	65 dB

Adjacent channel leakage ratio (test case 5.10)		
Dynamic range	noise correction OFF	>68 dB
	noise correction ON	>74 dB

Composite EVM (test case 5.13.1)		
Measurement range		0.5 % to 25 %
Inherent EVM		<1 %
Measurement uncertainty	test models 1 to 4 $P_{total} > -40$ dBm	<0.5 %

Peak code domain error power (PkcDEP, test case 5.13.2)		
Measurement range		0 dB to -60 dB
Inherent EVM		<-60 dB
Measurement uncertainty	$-30 \text{ dB} \leq P_{kcDEP}$	<0.15 dB
	$-40 \text{ dB} \leq P_{kcDEP} < -30 \text{ dB}$	<0.4 dB
	$-50 \text{ dB} \leq P_{kcDEP} < -40 \text{ dB}$	<0.8 dB
	$-60 \text{ dB} \leq P_{kcDEP} < -50 \text{ dB}$	<2.5 dB

Ordering information

Designation	Type	Order No.
3G FDD UE Analysis	R&S®FSV-K73	1310.8555.02
Signal Analyzer 9 kHz to 3.6 GHz	R&S®FSV3	1307.9002.03
Signal Analyzer 9 kHz to 7 GHz	R&S®FSV7	1307.9002.07
Recommended options and extras	see the specifications for the R&S®FSV signal analyzer (PD 5214.0499.22)	

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For product brochure,
see PD 5214.0976.12
and www.rohde-schwarz.com

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