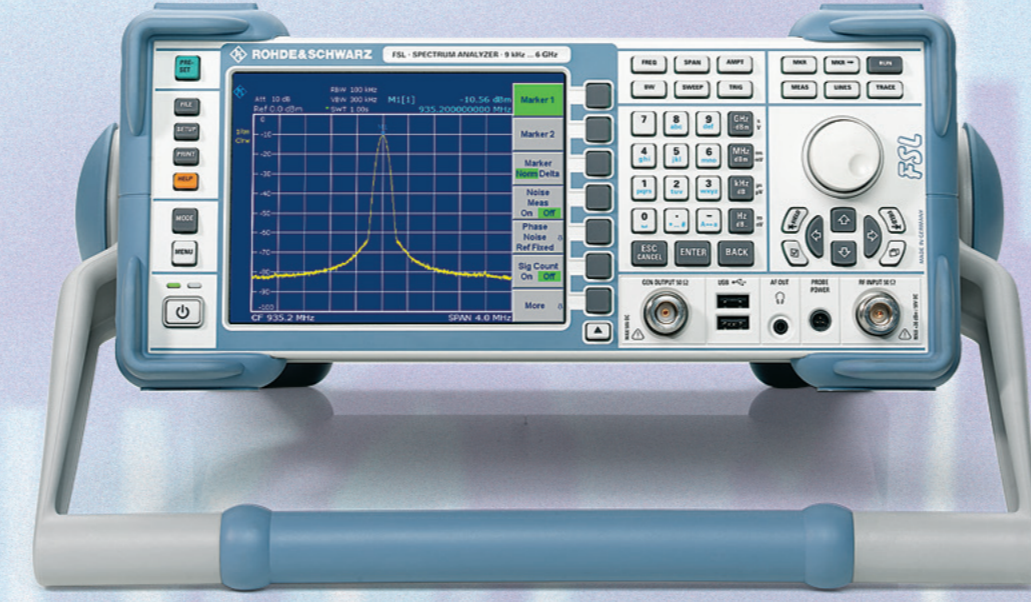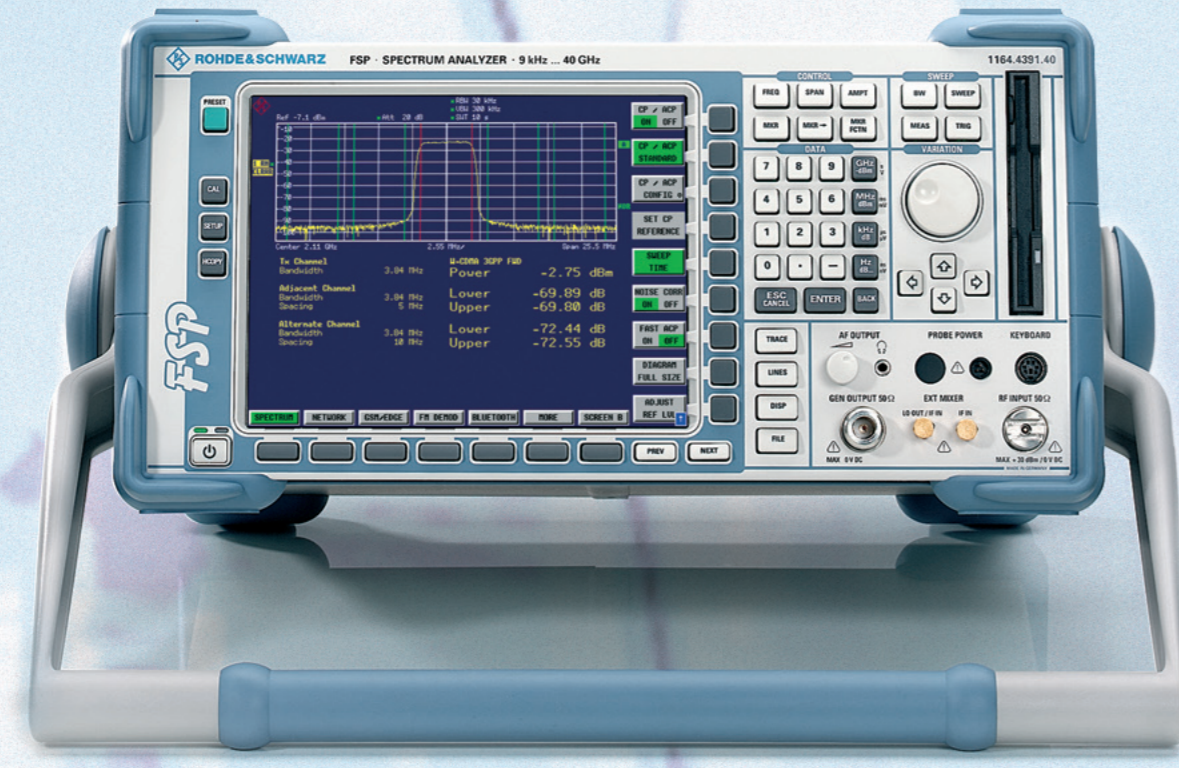# The Rohde & Schwarz World of Spectrum Analysis

Spectrum and signal analyzers for every need

With currently* 27 models to choose from (EMI test receivers not included), spectrum analyzers from Rohde & Schwarz fulfill every wish with regard to class, frequency range and functionality. Owing to our wide variety of models and options, we offer the right instrument for virtually any application. The consistent look and feel and the largely identical functions of the series make the transfer of user know-how and application programs easy.

The current instrument families

R&S®FS300 Cost-efficient 3 GHz spectrum analyzers for applications in service, production and education

R&S®FSH Versatile handheld spectrum analyzers up to 6 GHz for mobile applications in the field and in service

R&S®FSL Compact lightweight analyzer for applications in development, service and installation with 20 MHz I/Q demodulation bandwidth

R&S®FSP Medium-class spectrum analyzers up to 40 GHz for most lab applications, service and measurements in production

R&S®FSU High-end spectrum analyzers up to 50 GHz for applications in R&D and production with high demands on dynamic range
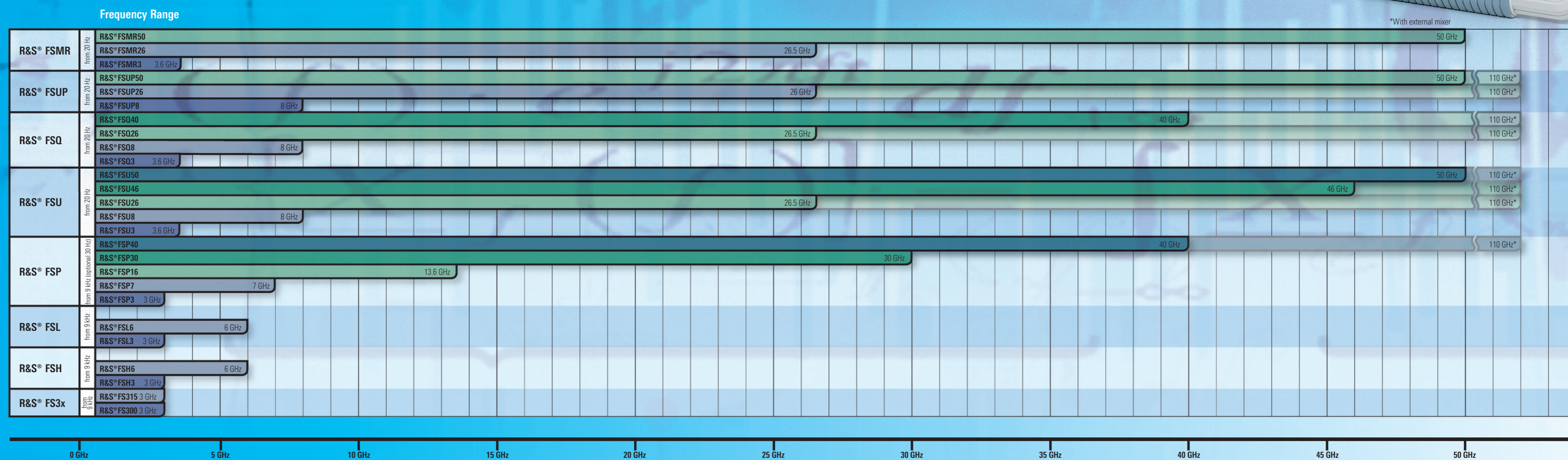
R&S®FMU Baseband analyzer with balanced and unbalanced analog inputs (I/Q)

R&S®FSQ Signal analyzers with integrated spectrum analyzer up to 40 GHz (similar to the R&S®FSU) and up to 120 MHz I/Q demodulation bandwidth

R&S®FSMR Measuring receiver for signal generator and attenuator calibration with high linearity

R&S®FSUP Phase-noise test set and signal source analyzer with integrated high-end spectrum analyzer

*) as of November 2006

The Harmonic Mixers R&S®FS-Z extend the frequency range of some models up to 110 GHz (see frequency graph).

LXI conformant

Rohde&Schwarz expertise in wireless communication

Rohde&Schwarz has been committed to wireless communication for decades. Our measuring instruments and systems set standards in R&D, conformance and production testing, quality assurance, coverage measurement, and service. We offer a complete product range for

Mobile radio testing · Spectrum and signal analysis · Vector network analysis · Signal generation · Power and voltage measurement · EMC testing · Test automation

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Hardware Options for the R&S®FSMR / FSUP / FSQ / FSU / FSP Families

	R&S®FSMR	R&S®FSUP	R&S®FSQ	R&S®FSU	R&S®FSP
Rugged Case	n.a.	n.a.	n.a.	n.a.	R&S®FSP-B1
AM / FM Audio Demodulator	included	included	included	included	R&S®FSP-B3
OCXO Reference Frequency	included	included	included	included	R&S®FSP-B4
OCXO Reference Frequency with improved aging	R&S®FSU-B4	R&S®FSU-B4	R&S®FSU-B4	R&S®FSU-B4	n.a.
TV Trigger	n.a.	n.a.	n.a.	n.a.	R&S®FSP-B6
RF Power Trigger	included	included	included	included	R&S®FSP-B6
Internal Tracking Generator and I/Q Modulator	R&S®FSU-B9	n.a.	R&S®FSU-B9	R&S®FSU-B9	R&S®FSP-B9
Output Attenuator for Tracking Generator	R&S®FSU-B12	n.a.	R&S®FSU-B12	R&S®FSU-B12	n.a.
External Generator Control	included	R&S®FSP-B10	R&S®FSP-B10	R&S®FSP-B10	R&S®FSP-B10
Pulse Calibrator (required for R&S®FS-K72 / K73)	n.a.	n.a.	n.a.	n.a.	R&S®FSP-B15
LAN Interface 100BT	included	included	included	included	R&S®FSP-B16
Removable Hard Disk (security option)	n.a.	R&S®FSUP-B18	R&S®FSQ-B18	R&S®FSU-B18	R&S®FSP-B18
Second Hard Disk	n.a.	R&S®FSUP-B19	R&S®FSQ-B19	R&S®FSU-B19	R&S®FSP-B19
Extended Environmental Specs	n.a.	n.a.	n.a.	R&S®FSU-B20 (excludes -B18)	R&S®FSP-B20
LO/IF Ports for External Mixer	n.a.	R&S®FSU-B21 (R&S®FSUP26 / 50 only)	R&S®FSU-B21 (R&S®FSQ26 / 40 only)	R&S®FSU-B21 (R&S®FSU26 / 46 / 50 only)	R&S®FSP-B21 (R&S®FSP40 only, excludes -B6)
20 dB Preamplifier (3.6 to 26 GHz)	R&S®FSMR-B23 (R&S®FSMR26 only, -B25 required)	R&S®FSU-B23 (R&S®FSUP26 only, -B25 required)	R&S®FSQ-B23 (R&S®FSQ26 only, -B25 required)	R&S®FSU-B23 (R&S®FSU26 only, -B25 required)	n.a.
Electronic Attenuator (to 3.6 GHz) and Preamplifier (to 8 GHz)	R&S®FSU-B25	R&S®FSU-B25	R&S®FSU-B25	R&S®FSU-B25	R&S®FSP-B25 (R&S®FSP3 / 7 only)
Trigger Port	R&S®FSP-B28	R&S®FSP-B28	R&S®FSP-B28	R&S®FSP-B28	R&S®FSP-B28
DC Power Supply	n.a.	n.a.	n.a.	n.a.	R&S®FSP-B30
NiMH Battery Pack	n.a.	n.a.	n.a.	n.a.	R&S®FSP-B31
Spare NiMH Battery Pack	n.a.	n.a.	n.a.	n.a.	R&S®FSP-B32
Demodulation Hardware and Memory Extension (required for R&S®FS-K72)	n.a.	n.a.	n.a.	n.a.	R&S®FSP-B70
I/Q Baseband Inputs	n.a.	n.a.	R&S®FSQ-B71	n.a.	n.a.
I/Q Bandwidth Extension 60 MHz / 120 MHz	n.a.	n.a.	R&S®FSQ-B72	n.a.	n.a.
I/Q Memory Extension 205 / 705 MSamples	n.a.	n.a.	R&S®FSQ-B100 R&S®FSQ-B102	n.a.	n.a.
Low Phase Noise, Cross Correlation Measurement	n.a.	R&S®FSUP-B60	n.a.	n.a.	n.a.
YIG Preselector for f >3.6 GHz / + Preamplifier	R&S®FSMR-B2 / R&S®FSMR-B223	n.a.	n.a.	n.a.	n.a.

Firmware and Software Options for the R&S®FSMR / FSUP / FSQ / FSU / FSP / FSL Families

		R&S®FSMR	R&S®FSUP	R&S®FSQ	R&S®FSU	R&S®FSP	R&S®FSL
General Purpose	Noise Figure and Gain Measurement	R&S®FS-K30	●	incl.	●	●	●	
	Phase Noise Measurement (Application firmware)	R&S®FS-K40	●	incl.	●	●	●	
	AM / FM / φM Measurement Demodulator	R&S®FS-K7	●	incl.	●	●	●	R&S®FSL-K7
	Power Sensor Measurement	R&S®FS-K9	incl.	●	●	●	●	R&S®FSL-K9
Wireless LAN / Broadband Wireless Access	Bluetooth® Transmitter Measurements	R&S®FS-K8			●	●	●	R&S®FSL-K8
	WLAN 802.11a (OFDM) Transmitter Measurements	R&S®FSQ-K90			●			
	WLAN 802.11a / b / g / j Transmitter Measurements	R&S®FSQ-K91			●			R&S®FSL-K91
	WiMAX 802.16-2004 OFDM TX Measurements				R&S®FSQ-K92			R&S®FSL-K92
	WiMAX 802.16-2004 OFDM, OFDMA and Mobile WiMAX TX Measurements				R&S®FSQ-K93			
GSM / EDGE	GSM/EDGE Spectrum and Modulation Measurements	R&S®FS-K5	●	●	●	●	●	
3GPP (FDD)*	Downlink (Node B) TX Measurements	R&S®FS-K72	●	●	●	●	●	
	Uplink (UE) TX Measurements	R&S®FS-K73	●	●	●	●	●	
	HSDPA Extension for R&S®FS-K72	R&S®FS-K74	●	●	●	●	●	
TD-SCDMA*	Uplink (Node B) TX Measurements	R&S®FS-K76	●	●	●	●	●	
	Downlink (UE) TX Measurements	R&S®FS-K77	●	●	●	●	●	
CDMA2000*	CDMA 2000 / 1xEV-DV Forward Link TX Measurements	R&S®FS-K82	●	●	●	●	●	
	CDMA 2000 / 1xEV-DV Reverse Link TX Measurements	R&S®FS-K83	●	●	●	●	●	
	1xEV-DO Forward Link TX Measurements	R&S®FS-K84	●	●	●	●	●	
	1xEV-DO Reverse Link TX Measurements	R&S®FS-K85	●	●	●	●	●	
TV	CATV Measurements incl. DVB-C							R&S®FSL-K20
Vector Signal Analysis	Vector Signal Analyzer		R&S®FSMR-B73		R&S®FSQ-K70	R&S®FSU-B73		

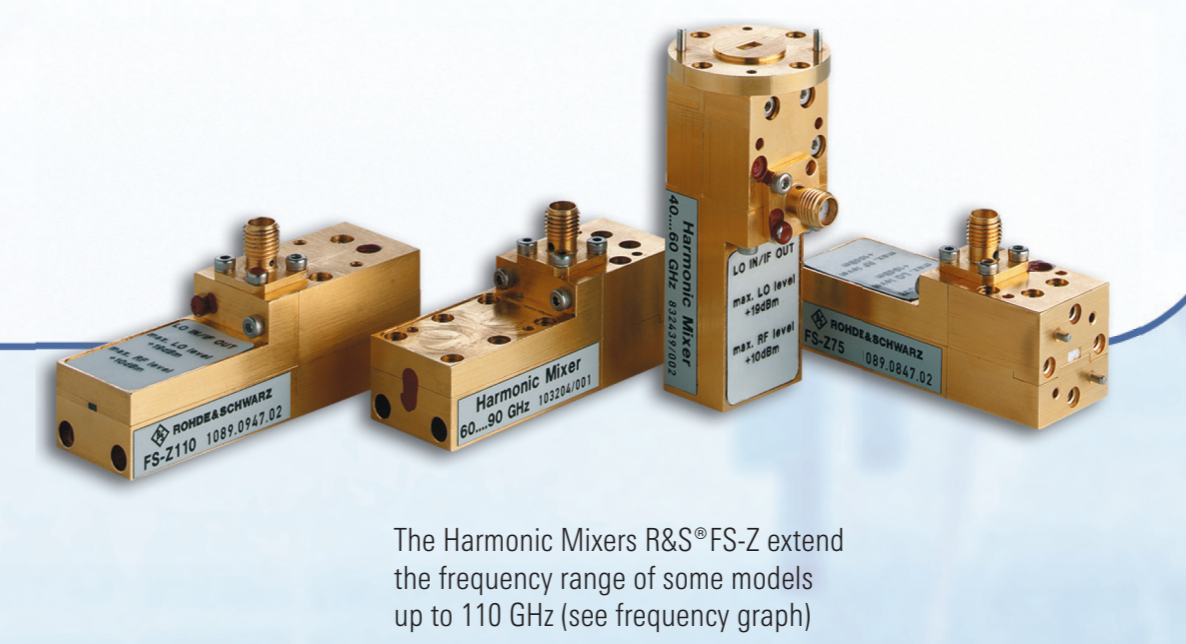*) Firmware options for 3GPP (FDD), TD-SCDMA and CDMA2000 include:
- Spectrum measurements: output power, ACLR, spectrum emission mask, CCDF
- Code domain measurements: code power, EVM, PCDE, power vs. slot, constellation, channel table

Hardware Options for the R&S®FSL Family

Tracking Generator	Equipped as standard in R&S®FSL Models .13 and .16
OCXO Reference Frequency	R&S®FSL-B4
Additional Interfaces: video out, IF out, noise source control, AUX port, R&S®NRP power sensor	R&S®FSL-B5
TV Trigger	R&S®FSL-B6
Narrow Resolution Filters	R&S®FSL-B7
Gated Sweep	R&S®FSL-B8
GPIB Interface	R&S®FSL-B10
RF Preamplifier	R&S®FSL-B22
DC Power Supply	R&S®FSL-B30
NiMH Battery Pack	R&S®FSL-B31

Options and Accessories for the R&S®FSH Family

Distance-to-Fault Measurement	R&S®FSH-B1
Remote Control via RS-232-C	R&S®FSH-K1
Vector Transmission and Reflection Measurements	R&S®FSH-K2
Receiver Mode	R&S®FSH-K3
Code Domain Power Measurements on 3GPP Base Stations*	R&S®FSH-K4
Power Sensor, 10 MHz to 8 GHz	R&S®FSH-Z1
Power Sensor, 10 MHz to 18 GHz	R&S®FSH-Z18
Directional Power Sensor, 200 MHz to 4 GHz	R&S®FSH-Z44
VSWR Bridge and Power Divider, 10 MHz to 3 GHz	R&S®FSH-Z2
VSWR Bridge with DC Bias and Bypass Switch	R&S®FSH-Z3
12 V Car Adapter	R&S®FSH-Z21
Serial/Parallel Converter	R&S®FSH-Z22
Active Directional Antenna for field-strength measurements	R&S®HE 200
Matching Pad 50/75 Ω	R&S®RAZ
Carrying Bag	R&S®FSH-Z25

*) For R&S®FSH 3 model .23 with serial number 103500 or later.

Frequency Range

R&S® FSMR · R&S® FSUP · R&S® FSQ · R&S® FSU · R&S® FSP · R&S® FSL · R&S® FSH · R&S® FS3x

*With external mixer

ROHDE&SCHWARZ

pushing limits