

Noise Measurement Software FS-K3 for Spectrum Analyzers FSE, FSIQ, FSP and FSU

Outperforming any conventional noise measurement system

Spectrum Analyzers FSE, FSP and FSU as well as Signal Analyzers FSIQ from Rohde & Schwarz feature high sensitivity and level accuracy – in conjunction with switchable, calibrated noise sources – and are thus ideal for automatic measurement of noise figure and gain.

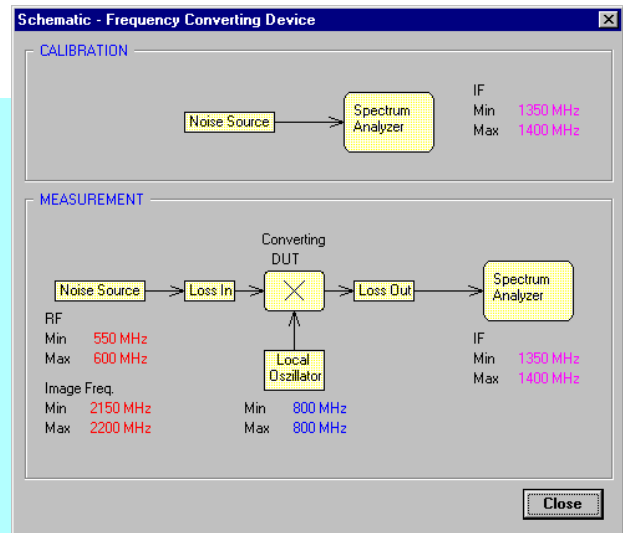
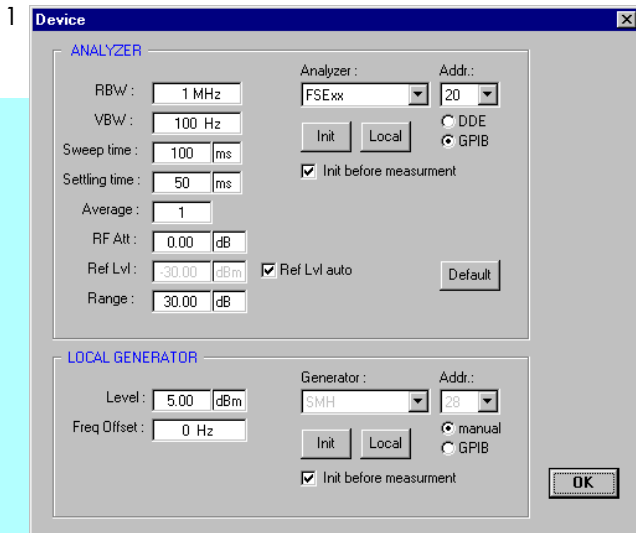
Noise Measurement Software FS-K3 provides the high-grade analyzers with features otherwise only offered by special noise measurement systems. At a given frequency or in a selectable frequency range the following parameters can be measured:

- Noise figure in dB
- Noise temperature in K
- Gain in dB

FS-K3 used with Analyzers FSE, FSIQ, FSP or FSU has the advantage over conventional noise measurement systems that a large variety of further RF measurements can also be performed.

The measurement results are output as a graph or a list. Up to eight measurements can be represented in a diagram.

Noise Measurement Software FS-K3 ...



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Frequency:	ENR:
10 MHz	13.14
100 MHz	13.21
1000 MHz	13.22
2000 MHz	13.17
3000 MHz	13.26
4000 MHz	13.38
5000 MHz	13.53
6000 MHz	13.63
7000 MHz	13.81
8000 MHz	14.08
9000 MHz	14.39
10 GHz	14.56
11 GHz	14.79
12 GHz	14.96



The combination of Noise Measurement Software FS-K3 and Analyzers FSE, FSIQ, FSP or FSU offers the following advantages over conventional noise measurement systems:

- Frequency range up to 26.5 GHz (depending on analyzer model) for noise measurements in the microwave range without need for an additional downconverter
- Resolution bandwidths variable in steps of 1/2/3/5 (FSP: 1/3) for optimum matching to narrowband DUTs

While conventional noise measurement systems are only suitable for deter-

mining the noise and gain characteristics of the DUT, FSE, FSIQ, FSP or FSU also allows the highly sensitive measurement of:

- harmonics
 - intermodulation
 - spurious responses
- and of many other RF-relevant criteria.

The versatility of this FSE/FSIQ/FSP/FSU-based noise measurement set is not at the expense of the measurement accuracy, which essentially is determined by the accuracy of the noise source calibration and the mismatch. The largest error affecting the measuring instrument, ie the linearity of its log

characteristic, is minimized in Analyzers FSE, FSIQ, FSP and FSU by individual calibration.

Easy to operate

FS-K3 runs under the operating systems Windows 3.1, Windows 95 and Windows NT. The software for controlling the analyzer can be run on a Spectrum Analyzer FSE in conjunction with Computer Function FSE-B15, on a Signal Analyzer FSIQ (which includes Windows NT as standard) or on a Spectrum Analyzer FSP/FSU via an internal interface, or on a PC via the IEEE bus. Windows ensures easy and famil-

Specifications

Frequency range	100 kHz to 26.5 GHz (depending on analyzer model)
Measurement bandwidth	1 kHz to 5 MHz
Noise measurements	
Level range	0 dB to 25 dB
Resolution	0.01 dB
Measurement accuracy	±0.2 dB (preamplification 20 dB, noise figure 5 dB, bandwidth 1 MHz)
Gain measurements	
Level range	0 dB to 60 dB
Resolution	0.01 dB
Measurement accuracy	±0.2 dB (preamplification 20 dB, noise figure 5 dB, bandwidth 1 MHz)

Required hardware and software

Analyzers	FSEA, FSEB, FSEM FSIQ3, FSIQ7, FSIQ26 or FSP3, FSP7, FSP13, FSP30 FSU3, FSU8
Recommended noise source	NoiseCom 346 (see Table below)
Power supply	via 28 V connector on rear panel of FSE/FSIQ/FSP (BNC)
Preamplifier	gain approx. 20 dB, noise figure max. 5 dB



Control via external PC/IEEE bus

CPU	80 486 or better
RAM	≥4 Mbyte
Graphics card	VGA or better
Software	Windows 3.1, Windows 95 or NT
Interface	IEC 625-1 (IEEE 488)
Interface card	National Instruments AT/TNT/PC card

Control via FSE

Required option	Computer Function FSE-B15 (DDE interface of Windows)
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Control via FSIQ

no options required

Control via FSP, FSU

keyboard PSP-Z2

Ordering information

Order designation

Noise Measurement Software	FS-K3	1057.3028.02
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Options

Computer Function for FSE (WindowNT)	FSE-B15	1073.5696.06
2nd IEC/IEEE-Bus Interface	FSE-B17	1066.4017.02
Noise source	see Table below	

Note: If the FS-K3 software is installed into an FSE with FSE-B15 or an FSIQ, the optional 2nd IEC/IEEE-Bus Interface is required in the FSE/FSE-B15 or FSIQ to control a signal generator (e.g. SMIQ). If the software has been installed into the FSP or FSU, it is not possible to control a signal generator in mixer measurements.

Noise source*	RF connector	Frequency range (GHz)	Output level (dB)	VSWR (max. upon ON/OFF)	
				0.01 to 5 GHz	5 to 18 GHz
NC 346 A	SMA male	0.01 to 18	5 to 7	1.15:1	1.25:1
NC 346 A Precision	APC 3.5 male	0.01 to 18	5 to 7	1.15:1	1.25:1
NC 346 A Option 1	N male	0.01 to 18	5 to 7	1.15:1	1.25:1
NC 346 A Option 2	APC 7	0.01 to 18	5 to 7	1.15:1	1.25:1
NC 346 A Option 4	N female	0.01 to 18	5 to 7	1.15:1	1.25:1
NC 346 B	SMA male	0.01 to 18	14 to 16	1.15:1	1.25:1
NC 346 B Precision	APC 3.5 male	0.01 to 18	14 to 16	1.15:1	1.25:1
NC 346 B Option 1	N male	0.01 to 18	14 to 16	1.15:1	1.25:1
NC 346 B Option 2	APC 7	0.01 to 18	14 to 16	1.15:1	1.25:1
NC 346 B Option 4	N female	0.01 to 18	14 to 16	1.15:1	1.25:1
NC 346 C	APC 3.5 male	0.01 to 26.5	13 to 17	1.15:1	1.25:1 1.35:1 (18 to 26.5 GHz)
NC 346 D	SMA male	0.01 to 18	19 to 25	1.5:1	1.5:1
NC 346 D Precision	APC 3.5 male	0.01 to 18	19 to 25	1.5:1	1.5:1
NC 346 D Option 1	N male	0.01 to 18	19 to 25	1.5:1	1.5:1
NC 346 D Option 2	APC 7	0.01 to 18	19 to 25	1.5:1	1.5:1
NC 346 D Option 3	N female	0.01 to 18	19 to 25	1.5:1	1.5:1
NC 346 E	APC 3.5 male	0.01 to 26.5	19 to 25	1.5:1	1.5:1 1.5:1 (18 to 26.5 GHz)

* Noise sources supplied by NoiseCom; specifications from NoiseCom



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