R&S®FS-SNS
SMART NOISE SOURCES

Specifications

R&S®FS-SNS18, 10 MHz to 18 GHz
R&S®FS-SNS26, 10 MHz to 26.5 GHz
R&S®FS-SNS40, 100 MHz to 40 GHz
R&S®FS-SNS55, 100 MHz to 55 GHz
R&S®FS-SNS67, 100 MHz to 67 GHz

Data Sheet
Version 03.00

ROHDE&SCHWARZ
Make ideas real

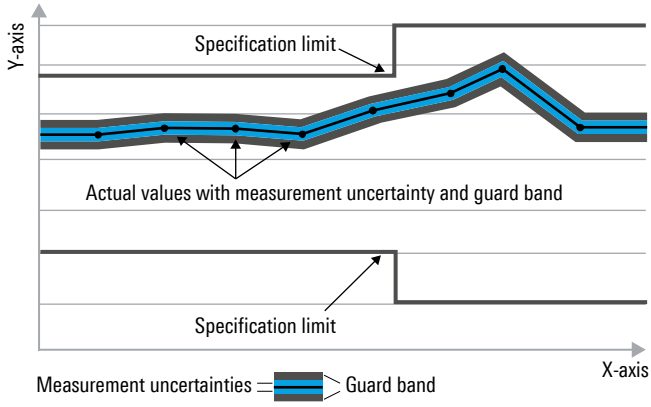
CONTENTS

Definitions

General
Product data applies under the following conditions:

- Three hours storage at ambient temperature followed by 30 minutes warm-up operation in state: on
- 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

RF frequency range	R&S®FS-SNS18	10 MHz to 18 GHz
	R&S®FS-SNS26	10 MHz to 26.5 GHz
	R&S®FS-SNS40	100 MHz to 40 GHz
	R&S®FS-SNS55	100 MHz to 55 GHz
	R&S®FS-SNS67	100 MHz to 67 GHz

ENR	R&S®FS-SNS18	5 dB to 7 dB
	R&S®FS-SNS26	13 dB to 17 dB
	R&S®FS-SNS40	10 dB to 17 dB
	R&S®FS-SNS55	7 dB to 21 dB
	R&S®FS-SNS67	7 dB to 21 dB

ENR uncertainty	R&S®FS-SNS18	
	0.01 GHz ≤ f ≤ 8 GHz	±0.10 dB
	8 GHz < f ≤ 18 GHz	±0.13 dB
	R&S®FS-SNS26	
	0.01 GHz ≤ f ≤ 8 GHz	±0.10 dB
	8 GHz < f ≤ 26.5 GHz	±0.13 dB
	R&S®FS-SNS40	
	0.1 GHz ≤ f ≤ 8 GHz	±0.10 dB
	8 GHz < f ≤ 26.5 GHz	±0.13 dB
	26.5 GHz < f ≤ 40 GHz	±0.21 dB
	R&S®FS-SNS55	
	0.1 GHz ≤ f ≤ 8 GHz	±0.10 dB
	8 GHz < f ≤ 26.5 GHz	±0.13 dB
	26.5 GHz < f ≤ 40 GHz	±0.21 dB
	40 GHz < f < 50 GHz	±0.29 dB
	50 GHz ≤ f ≤ 55 GHz	±0.41 dB
	R&S®FS-SNS67	
	0.1 GHz ≤ f ≤ 8 GHz	±0.10 dB
	8 GHz < f ≤ 26.5 GHz	±0.13 dB
	26.5 GHz < f ≤ 40 GHz	±0.21 dB
	40 GHz < f < 50 GHz	±0.29 dB
	50 GHz ≤ f ≤ 67 GHz	±0.41 dB

Inputs and outputs

RF output		
Connector	R&S®FS-SNS18	SMA male
	R&S®FS-SNS26	APC 3.5 mm male (compatible with SMA)
	R&S®FS-SNS40	2.92 mm male (compatible with SMA)
	R&S®FS-SNS55	1.85 mm male (compatible with 2.4 mm)
	R&S®FS-SNS67	1.85 mm male (compatible with 2.4 mm)
Impedance		50 Ω
Maximum reverse power	CW RF power	1 W

		VSWR	**|rho|**
VSWR, |rho|	R&S®FS-SNS18 [1]		
	0.01 GHz ≤ f < 5 GHz	≤ 1.10:1	≤ 0.05
	5 GHz ≤ f < 15 GHz	≤ 1.15:1	≤ 0.07
	15 GHz ≤ f ≤ 18 GHz	≤ 1.25:1	≤ 0.11
	R&S®FS-SNS26		
	0.01 GHz ≤ f < 5 GHz	≤ 1.15:1	≤ 0.07
	5 GHz ≤ f < 18 GHz	≤ 1.25:1	≤ 0.11
	18 GHz ≤ f ≤ 26.5 GHz	≤ 1.35:1	≤ 0.15
	R&S®FS-SNS40		
	0.1 GHz ≤ f < 5 GHz	≤ 1.25:1	≤ 0.11
	5 GHz ≤ f < 18 GHz	≤ 1.30:1	≤ 0.13
	18 GHz ≤ f < 26.5 GHz	≤ 1.40:1	≤ 0.17
	26.5 GHz ≤ f ≤ 40 GHz	≤ 1.50:1	≤ 0.20
	R&S®FS-SNS55		
	0.1 GHz ≤ f < 18 GHz	≤ 1.50:1	≤ 0.20
	18 GHz ≤ f < 26.5 GHz	≤ 1.75:1	≤ 0.27
	26.5 GHz ≤ f < 40 GHz	≤ 2.00:1	≤ 0.33
	40 GHz ≤ f ≤ 55 GHz	≤ 2.50:1	≤ 0.43
	R&S®FS-SNS67		
	0.1 GHz ≤ f < 18 GHz	≤ 1.50:1	≤ 0.20
	18 GHz ≤ f < 26.5 GHz	≤ 1.75:1	≤ 0.27
	26.5 GHz ≤ f < 40 GHz	≤ 2.00:1	≤ 0.33
	40 GHz ≤ f ≤ 67 GHz	≤ 2.50:1	≤ 0.43

Power supply/control interface		
Connector	for power supply and control interface	7-pin LEMOSA/ODU female
DC supply voltage range	analog section	+28 V ± 2 V
	digital section	+5 V (nom.)
DC supply current	analog section	max. 30 mA
	digital section	< 500 mA, typ. 60 mA
Control interface		USB interface; supports USB 2.0 high speed and full speed modes
Test mark		CE

[1] Maximum change in complex reflection coefficient rho between source ON and source OFF at all frequencies for R&S®FS-SNS18 only: 0.01 (nom.).

General data

Temperature	operating temperature range	+0 °C to +55 °C
	storage temperature range	–40 °C to +71 °C
Temperature coefficient		< 0.009 dB/°C
Climatic loading		+25 °C to +55 °C at 80 % rel. humidity, in line with EN 60068-2-30
Vibration	sinusoidal	5 Hz to 55 Hz displacement: 0.15 mm constant amplitude (1.8 g at 55 Hz); 55 Hz to 150 Hz acceleration: 0.5 g constant, in line with EN 60068-2-6
	random	10 Hz to 300 Hz, acceleration 1.2 g (RMS), in line with EN 60068-2-64
Shock		40 g shock spectrum, in line with MIL-STD-810E method no. 516.4, procedure I, MIL-PRF-28800F, class 3
Maximum operating altitude		4600 m above sea level
EMC		in line with EMC Directive 2014/30/EU including: IEC/EN 61326-1 [2, 3] IEC/EN 61326-2-1 CISPR 11/EN 55011 [2]
Dimensions	W × H × D	38.0 mm × 30.5 mm × 130.0 mm (1.50 in × 1.20 in × 5.12 in)
Weight		275 g (nom.) (0.6 lb)

Warranty		1 year
Recommended calibration interval		2 years

[2] Emission limits for class B equipment apply.

[3] Immunity test requirement for industrial environment (EN 61326 table 2).

Ordering information

Designation	Type	Order No.
Base units [4]		
Smart noise source, 10 MHz to 18 GHz	R&S®FS-SNS18	1338.8008.18
Smart noise source, 10 MHz to 26.5 GHz	R&S®FS-SNS26	1338.8008.26
Smart noise source, 100 MHz to 40 GHz	R&S®FS-SNS40	1338.8008.40
Smart noise source, 100 MHz to 55 GHz	R&S®FS-SNS55	1338.8008.55
Smart noise source, 100 MHz to 67 GHz	R&S®FS-SNS67	1338.8008.67
Options		
Noise figure measurements	R&S®FSW-K30	1313.1380.02
Noise figure measurements	R&S®FSWP-K30	1325.4244.02
Noise figure measurements	R&S®FSMR3-K30	1345.3637.02
Noise figure measurements	R&S®FSV3-K30	1330.5045.02
Noise figure measurements	R&S®FPL1-K30	1323.1760.02
Accessories supplied with each R&S®FS-SNS		
Interface cable, cable length: 1.8 m	R&S®SNSCABLE	1338.8020.00
Manual, carrying case		
Optional accessories		
Y adapter cable for legacy instruments	R&S®SNSCABLE-Y	1338.8066.00

This product is manufactured for Rohde & Schwarz by NoiseCom, 25 Eastmans Road, Parsippany, NJ 07054, United States.

[4] R&S®FS-SNS smart noise sources are supported by the following devices: R&S®FSW, R&S®FSWP, R&S®FSMR3000, R&S®FSVA3000, R&S®FSV3000, R&S®FPL1000, and R&S®ZNL.