ROHDE&SCHWARZ
Make ideas real

R&S®FPL1-K40 PHASE NOISE MEASUREMENT APPLICATION

Phase noise measurement plus automatic limit checking, spot noise and residual noise indication.

The perfect choice for

Troubleshooting various local oscillators and signal sources	Qualification of signal sources (VCOs, …) and comparison with reference measurements
Phase noise only measurement thanks to AM noise removal	Evaluation of wireless LAN, easy limit checking for production and qualification

Your benefit	Features
Easy evaluation and analysis of measurement results	Graphical and tabular display of measurement results
High flexibility allows overview measurements or subrange details	Measurement of residual FM/φM and jitter across the entire selected carrier offset frequency range or across a selectable subrange
Fast and easy identification of issues or errors	Limit lines with pass/fail indication and additional markers

Flexible analysis

The R&S®FPL1-K40 option enables the R&S®FPL1000 to perform fast and easy phase noise measurements during development and production. When equipped with the R&S®FPL1-K40 option, the R&S®FPL1000 can measure single sideband phase noise across a selectable carrier offset frequency range displayed on a logarithmic axis.

Key features

- Selectable carrier offset frequency range from 1 Hz to 1 GHz in 1/3/10 sequence
- Number of averages, sweep mode and filter bandwidth can be individually selected for every measurement subrange to optimize measurement speed
- Fast results for subranges by starting measurement at the maximum carrier offset
- Verification of carrier frequency and power before measurement to prevent incorrect measurements
- Improvement of dynamic range by subtracting the instrument noise
  - A reference value without the input signal is manually measured
  - This reference can then be subtracted in phase noise measurements

Sweep modes for phase noise measurement

SWEPT

Classic method

Logarithmic spectrum trace on the right side of the carrier

I/Q FFT

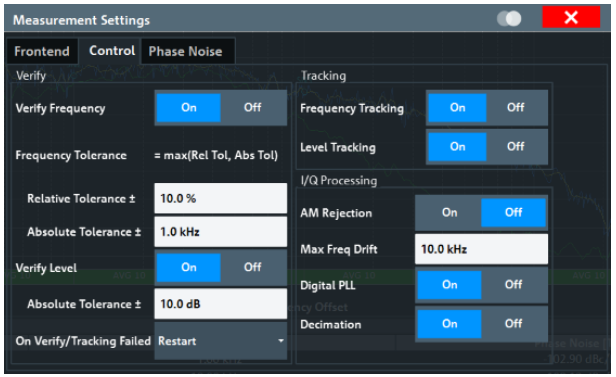
Advanced method

Run signal processing on captured I/Q data:

- Suited for measurements on drifting sources like VCO's
- Higher measurement speed
- Much better frequency tracking and correction function
- AM rejection (measure only phase noise, remove AM noise)
- More measurement results (e.g. level variation, frequency versus time)

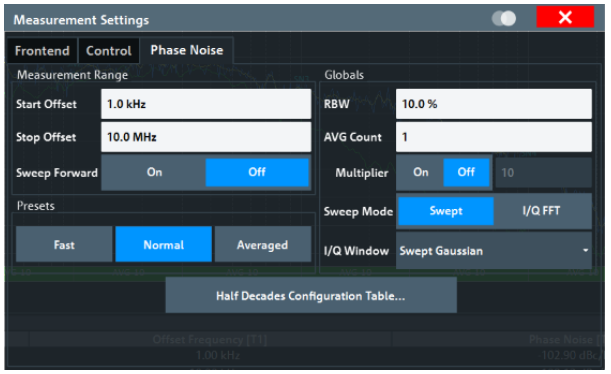
For more information, visit
www.rohde-schwarz.com/product/FPL1000

Easily control measurement settings



Control your measurements (verification and tracking) in this window. For example, the AM rejection function can suppress AM noise.

All phase noise measurement settings in one window



All settings for phase noise measurements (e.g. measurement range, average count, sweep mode) can be changed in the phase noise settings window.

Phase noise analysis and reference comparison

Analysis and comparison of a second signal source (DUT) with a reference curve (e.g. golden device or reference signal source).

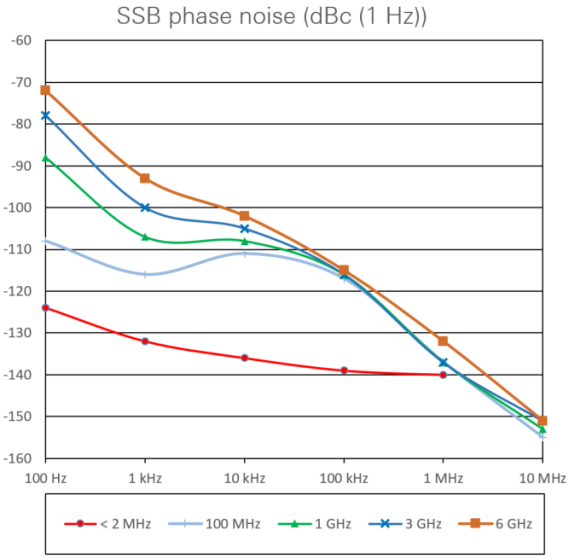
Ordering information

Model	Item
Signal and spectrum analyzer, 5 kHz to 3 GHz	R&S®FPL1003
Signal and spectrum analyzer, 5 kHz to 7.5 GHz	R&S®FPL1007
Signal and spectrum analyzer, 5 kHz to 14 GHz	R&S®FPL1014
Signal and spectrum analyzer, 5 kHz to 26.5 GHz	R&S®FPL1026
Option	**Item**
Phase noise analysis	R&S®FPL1-K40

Spectral purity

	Frequency = 1000 MHz, carrier offset	
SSB phase noise (typ., 1 Hz)	100 Hz	–88 dBc
	1 kHz	–99 dBc
	10 kHz	–108 dBc
	100 kHz	–115 dBc
	1 MHz	–135 dBc

SSB phase noise measurement



Rohde & Schwarz GmbH & Co. KG (www.rohde-schwarz.com)
Rohde & Schwarz customer support (www.rohde-schwarz.com/support) **Rohde & Schwarz training** (www.training.rohde-schwarz.com)
R&S® is a registered trademark of Rohde & Schwarz GmbH & Co. KG | PD 3608.7973.32 | Version 01.20 | October 2021 (nb)
Trade names are trademarks of the owners | R&S®FPL1-K40 phase noise measurement application | Data without tolerance limits is not binding
Subject to change |