



# R&S® FPL1-K40 PHASE NOISE MEASUREMENT APPLICATION

The perfect choice for



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

## 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.

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

## 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

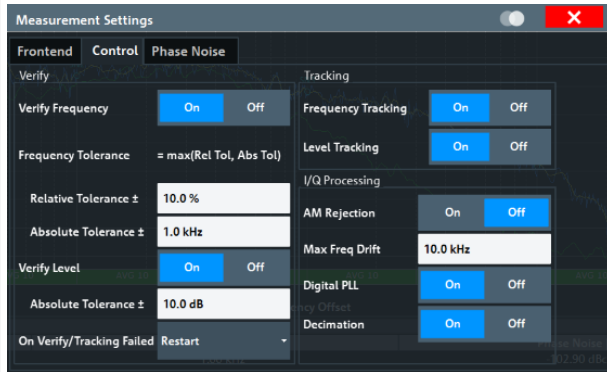
- Run signal processing on captured I/Q data:
- ▶ Suited for measurements on drifting sources like VCO's
  - ▶ Higher measurement speed
  - ▶ Much better frequency tracking and correction function
  - ▶ AM rejection (measure only phase noise, remove AM noise)
  - ▶ More measurement results (e.g. level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



For more information, visit

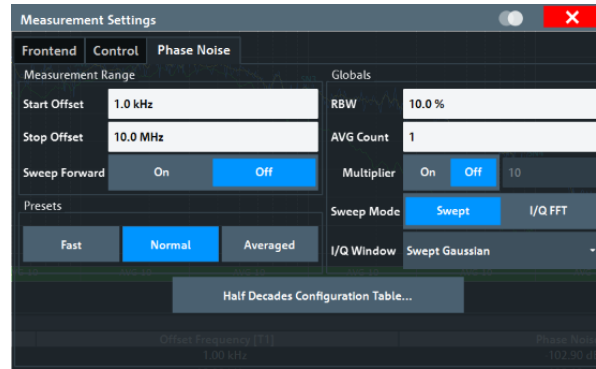
[www.rohde-schwarz.com/product/FPL1000](http://www.rohde-schwarz.com/product/FPL1000)

## 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).

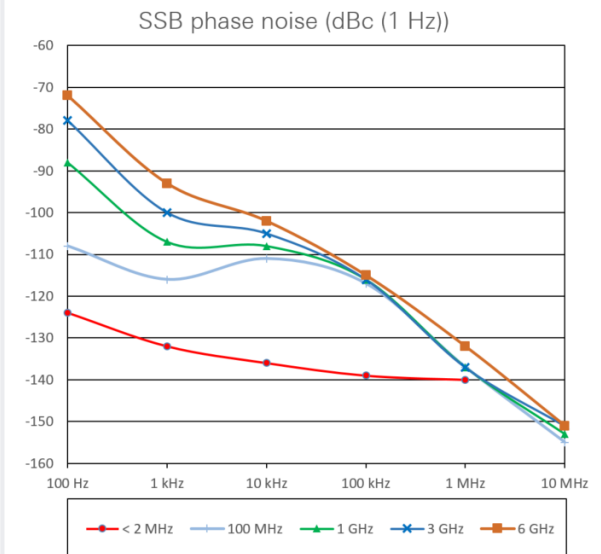
## Ordering information

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
Option	Item
Phase noise analysis	R&S®FPL1-K40

## Spectral purity

Frequency = 1000 MHz, carrier offset	
100 Hz	-88 dBc
1 kHz	-99 dBc
10 kHz	-108 dBc
100 kHz	-115 dBc
1 MHz	-135 dBc

## SSB phase noise measurement



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