

# Agilent 85671A

## Phase Noise Measurements Utility

Product Overview

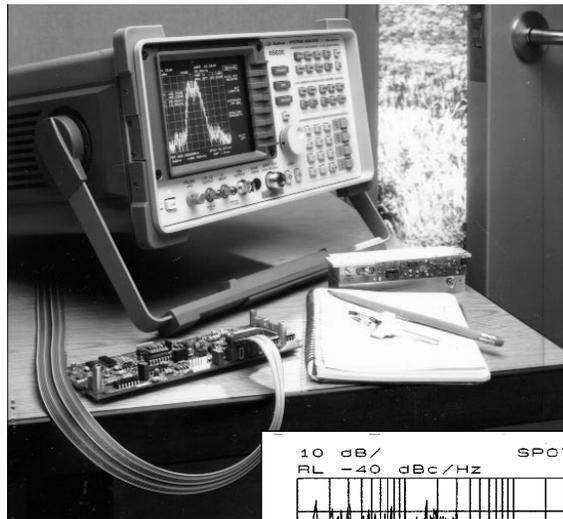
### For the Agilent 8560 series spectrum analyzers

**Phase noise measurements made easy**  
 The Agilent Technologies 85671A phase noise measurement utility is a downloadable program that transforms your Agilent 8560 series spectrum analyzer into a phase noise tester. The 85671A removes much of the work of performing phase noise measurements.

The 85671A utility eliminates the time-consuming task of hand-drawing phase noise plots. For many oscillator phase noise measurements, you no longer need to spend time manually tuning your spectrum analyzer to multiple frequency offsets. You can quickly and easily generate graphs of phase noise (dBc/Hz) versus log offset frequency.

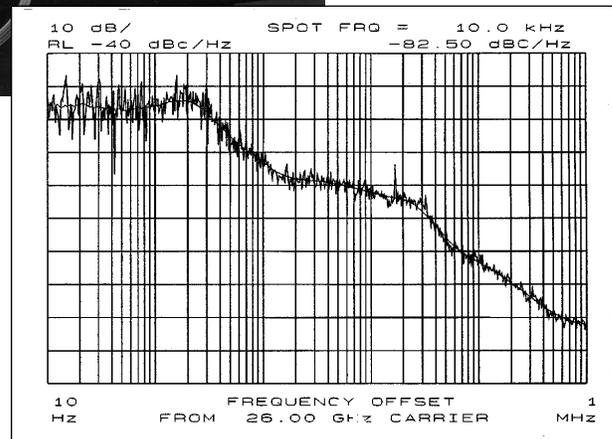
### Easy, guided measurements

When you activate the 85671A, a configuration menu is displayed. All measurement parameters are in view on one screen, as shown below. Just use the softkeys to make any changes you need, and start the measurement.



Enhance your 8560 series spectrum analyzer

It's that simple.



85671A generated graph of phase noise

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PHASE NOISE CONFIGURATION

      CARRIER FREQUENCY: 26.00 GHz
      SPOT FREQUENCY: 10.0 kHz
MINIMUM OFFSET FREQUENCY: 10 Hz
MAXIMUM OFFSET FREQUENCY: 1 MHz
LOG PLOT REFERENCE LEVEL: -40 dBc/Hz

      FILTERING: A LOT
      SMOOTHING: NONE
      SIGNAL TRACKING: OFF
  
```



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## Additional productivity features

To help make you even more productive at your bench, the 85671A also offers:

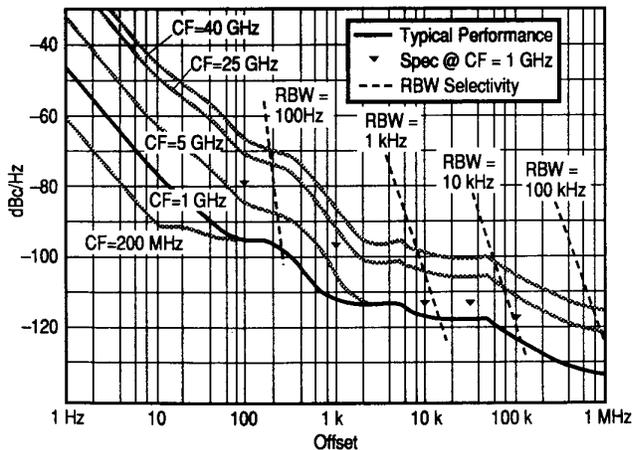
- Direct phase noise readout**  
 Just position the spot frequency cursor at any offset frequency after you make a measurement, and the phase noise is numerically displayed.
- Variable filtering**  
 Now you can control trade-offs between measurement repeatability and measurement speed.
- Calculation of RMS noise**  
 RMS phase noise is integrated over a user-specified range under the phase noise curve and displayed in radians and degrees.
- Spot frequency measurements**  
 Quickly measure phase noise at a single frequency offset.
- Digitized hardcopy and storage**  
 Data can be printed and plotted, and traces can be stored in internal memory for future use.

## Specifications

Specifications shown are based on the operation of an 8560 E-Series spectrum analyzer.

<b>Measurement modes</b>	Log Plot, Spot Frequency, RMS Noise
<b>Carrier frequency range</b>	
8560E	30 Hz to 2.9 GHz
8561E	30 Hz to 6.5 GHz
8562E	30 Hz to 13.2 GHz
8563E	30 Hz2 to 26.5 GHz
8564E	30 Hz2 to 40 GHz
8565E	30 Hz2 to 50 GHz
<b>Offset frequency range</b>	10 Hz <sup>1</sup> to ≤ 100 MHz
<b>Maximum number of decades</b>	5 (whole decades only)
<b>Maximum input signal level</b>	+17 dBm (Ref Level = -50 dBc/Hz)
<b>Minimum input signal level (for optimum dyn. range)</b>	-17 dBm (offsets ≤ 100 MHz, 10 dB input attenuation)
<b>Measurement accuracy (nominal)</b>	
<b>Amplitude accuracy</b>	±2.5 dB (≥ 10 dB above system noise floor)
<b>Amplitude repeatability</b>	±1.5 dB (Maximum filtering and 12 point smoothing)
<b>Log graph frequency accuracy</b>	±5%
<b>Filtering</b>	4 levels available
<b>Smoothing</b>	12 pt (2%), 24 pt (4%) 48 pt (8%), 96 pt (16%)
<b>RMS Noise Calculation</b>	
	RMS phase noise is calculated over a user specified integration range.
<b>Number of data points used</b>	All, 1/2, 1/4, 1/8

### System phase noise



<b>Data Storage</b>	5 internal trace memory registers
<b>Log Graph Hardcopy</b>	Outputs are compatible with PCL and HP-GL printers and plotters

1. Minimum offset frequency is 10 times the minimum resolution bandwidth of the spectrum analyzer.
2. Requires option 006 for operation below 9 kHz.

## Ordering Information

System requirements:

Phase Noise Measurement Utility	Mass Memory Module	Agilent Spectrum Analyzer
85671A	85620A (Rev. C)  (Revision B of the 85620A can be upgraded to Revision C with the 85620-60015 upgrade kit, available for an additional charge.)	8560 A/E (firmware 890720 and later) 8561A/B/E (firmware 890720 and later) 8562A/B/E (firmware 870728 and later) 8563A/E 8564E 8565E

**System recommendations:** Precision frequency reference (standard on 8560 E-series and 8563A). The 8560 E-series spectrum analyzers are strongly recommended for this application. They provide the best system phase noise performance, measurement accuracy, and measurement speed.

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