Agilent
N8972A, N8973A, N8974A, N8975A
NFA Series Noise Figure Analyzers

Configuration Guide



This configuration guide will assist with optimization of an NFA series noise figure analyzer for specific applications.

Models

- N8972A noise figure analyzer (10 MHz to 1.5 GHz)
- N8973A noise figure analyzer (10 MHz to 3.0 GHz)
- N8974A noise figure analyzer (10 MHz to 6.7 GHz)
- N8975A noise figure analyzer (10 MHz to 26.5 GHz)

Agilent Technologies

NFA series noise figure analyzers

N8972A 10 MHz to 1.5 GHz NFA series noise figure analyzer
N8973A 10 MHz to 3.0 GHz NFA series noise figure analyzer
N8974A 10 MHz to 6.7 GHz NFA series noise figure analyzer
N8975A 10 MHz to 26.5 GHz NFA series noise figure analyzer

Standard NFA series noise figure analyzers include:

- A flexible and intuitive user interface
- Easy measurement setup
- Low instrument uncertainty
- Color graphical display of noise figure and gain versus frequency
- Enhanced PC and printer connectivity
- SNS series noise source compatible
- Ability to automatically upload ENR calibration data from SNS series noise sources
- Local oscillator control through second dedicated GPIB
- 3-year warranty as standard

Upgrading a model

All options other than those marked with *, can be ordered at any time for use with an instrument.

Fequency reference

N897XA-1D5 NFA series high stability frequency reference*

Calibration documentation

N897XA-A6J NFA series ANSI Z540 compliant calibration with test data*

Accessories

N897XA-1CP NFA series rack mount and handle kit
N897XA-UK9 NFA series front panel cover
N897XA-1FP NFA series calibration, performance verification and adjustment software

Documentation

A hard copy and CD version of the English language quick reference guide, user's guide, programmers reference, and calibration and performance verification manual are included with the NFA as standard. Selections can be made to change the localization of the manual set or to delete the hardcopy.

N897XA-AB0 NFA series manual set for Taiwan - Chinese localization
N897XA-AB1 NFA series manual set - Korean localization
N897XA-AB2 NFA series manual set - Chinese localization
N897XA-ABE NFA series manual set - Spanish localization
N897XA-ABF NFA series manual set - French localization
N897XA-ABZ NFA series manual set - Italian localization
N897XA-ABD NFA series manual set - German localization
N897XA-ABJ NFA series manual set - Japanese localization
N897XA-0B0 Delete hard copy manual set*

Note: The localization options will include a localized version of the quick reference guide and user guide, and an English language version of the programmers reference, and calibration and performance verification manual.

Additional documentation

N897XA-0B1 NFA series manual set (English version)
N897XA-0B2 NFA series user manual (English version)
N897XA-0BF NFA series programmer reference (English version)

Service options

Warranty

For warranty and service of 5 years, please order 60 months of R-51B (quantity = 60). Standard warranty is 36 months.

R-51B Return to Agilent warranty and service plan*

Calibration[1]

For 3 years, order 36 months of the appropriate calibration plan shown below. For 5 years, specify 60 months.

R-50C-001 Standard calibration plan*
R-50C-002 Standard compliant calibration plan*

---

* Options marked with * may only be ordered at initial system purchase.
1. Options not available in all countries.

Noise sources

(required to make noise figure measurements)

The Agilent SNS Series of noise sources are recommended for use with the Agilent NFA. These noise sources work in conjunction with the NFA Series analyzers to simplify measurement set-up and improve accuracy.

Frequency range:

N4000A nominal ENR 6dB	10MHz to 18GHz
N4001A nominal ENR 15dB	10MHz to 18GHz
N4002A nominal ENR 15dB	10MHz to 26.5GHz

The new SNS Series of noise sources are designed specifically for use with the NFA Series of noise figure analyzers. The new noise sources cover the majority of applications with a range of frequencies, ENR and also coaxial connector types.

Unique calibration data is stored electronically inside the SNS and is automatically downloaded when connected to the Agilent noise figure analyzer. The SNS Series also has the capability to measure it's own temperature so that compensation can be applied to it's calibration. These features will lead to more reliable measurements.

Other compatible noise sources include the Agilent 346 (co-axial) series and the 347 (waveguide) series.

Compatible local oscillators

The NFA Series noise figure analyzers support the use of a local oscillator as part of your measurement setup, if you are making measurements on frequency translating devices or making measurements our of one standard frequency range of your noise figure analyzer. SCPI compatible signal generators are recommended, but users may also use their own custom command set.

Please note: Care must be taken when specifying a local oscillator, as factors such as phase noise, spectral purity and noise floor of the signal generator may affect noise figure measurements. Filtering may therefore be required on some models of signal generators to enable accurate noise figure measurements to be made.

Compatible printers

A supported printer is defined as one that is equipped with a parallel interface and accepts printer control language (PCL) level 3 or 5. Purchase an IEEE 1284 compliant printer cable to enable the printer to be used.

For further information

Agilent NFA Series – noise figure analyzer application and product information is listed below.

Key literature

Please visit the Agilent noise figure analysis web site for on-line access to literature or contact your local Agilent sales office or representative.

NFA Series - Noise Figure Analyzers, Brochure, literature number 5980-0166E

NFA Series - Noise Figure Analyzers, Technical Specifications, literature number 5980-0164E

NFA Series – Noise Figure Analyzer Programming Examples, literature number 5968-9498E

Fundamental of RF and Microwave Noise Figure Measurements, Application Note 57-1, literature number 5952-8255E

Noise Figure Measurement Accuracy Application Note 57–2, literature number 5968-4545E

10 Hints for Making Successful Noise Figure Measurements, Application Note 57-3, literature number 5980-0288E

SNS Series – Noise Sources, Product Overview, literature number 5988-0081EN

Key web resources

For the latest information on our noise figure solutions, visit our web page at:
www.agilent.com/find/nf

For the latest news on the component test industry, visit our web page at:
www.agilent.com/find/component_test

For on-line manuals, visit our web page at:
www.agilent.com/find/manuals

Fundamentals of Noise Figure Measurements Net Seminar (archived version)
www.netseminar.com

Agilent Technologies' Test and Measurement Support, Services, and Assistance

Agilent Technologies aims to maximize the value you receive, while minimizing your risk and problems. We strive to ensure that you get the test and measurement capabilities you paid for and obtain the support you need. Our extensive support resources and services can help you choose the right Agilent products for your applications and apply them successfully. Every instrument and system we sell has a global warranty. Support is available for at least five years beyond the production life of the product. Two concepts underlie Agilent's overall support policy: "Our promise" and "Your Advantage."

Our Promise

Our Promise means your Agilent test and measurement equipment will meet its advertised performance and functionality. When you are choosing new equipment, we will help you with product information, including realistic performance specifications and practical recommendations from experienced test engineers. When you use Agilent equipment, we can verify that it works properly, help with product operation, and provide basic measurement assistance for the use of specified capabilities, at no extra cost upon request. Many self-help tools are available.

Your Advantage

Your Advantage means that Agilent offers a wide range of additional expert test and measurement services, which you can purchase according to your unique technical and business needs. Solve problems efficiently and gain a competitive edge by contracting with us for calibration, extra-cost upgrades, out-of-warranty repairs, and on-site education and training, as well as design, system integration, project management, and other professional engineering services. Experienced Agilent engineers and technicians worldwide can help you maximize your productivity, optimize the return on investment of your Agilent instruments and systems, and obtain dependable measurement accuracy for the life of those products.

Get the latest information on the products and applications you select.

By internet, phone, or fax, get assistance with all your test & measurement needs

Online assistance:
www.agilent.com/find/assist

Phone or Fax

United States:
(tel) 800 452 4844

Canada:
(tel) 877 894 4414
(fax) 905 282 6495

China:
(tel) 800 810 0189
(fax) 800 820 2816

Europe:
(tel) (31 20) 547 2323
(fax) (31 20) 547 2390

Japan:
(tel) (81) 426 56 7832
(fax) (81) 426 56 7840

Korea:
(tel) (82 2) 2004 5004
(fax) (82 2) 2004 5115

Latin America:
(tel) (305) 269 7500
(fax) (305) 269 7599

Taiwan:
(tel) 0800 047 866
(fax) 0800 286 331

Other Asia Pacific Countries:
(tel) (65) 6375 8100
(fax) (65) 6836 0252
Email: tm_asia@agilent.com

Product specifications and descriptions in this document subject to change without notice.

© Agilent Technologies, Inc. 2002

Printed in USA, June 5, 2002
5980-0163E

Agilent Email Updates

www.agilent.com/find/emailupdates
Get the latest information on the products and applications you select.

Agilent Technologies