Agilent

Noise Figure Analyzers

NFA Series

The new standard
for today's fast-paced
measurement environments

Agilent Technologies

Innovating the HP Way

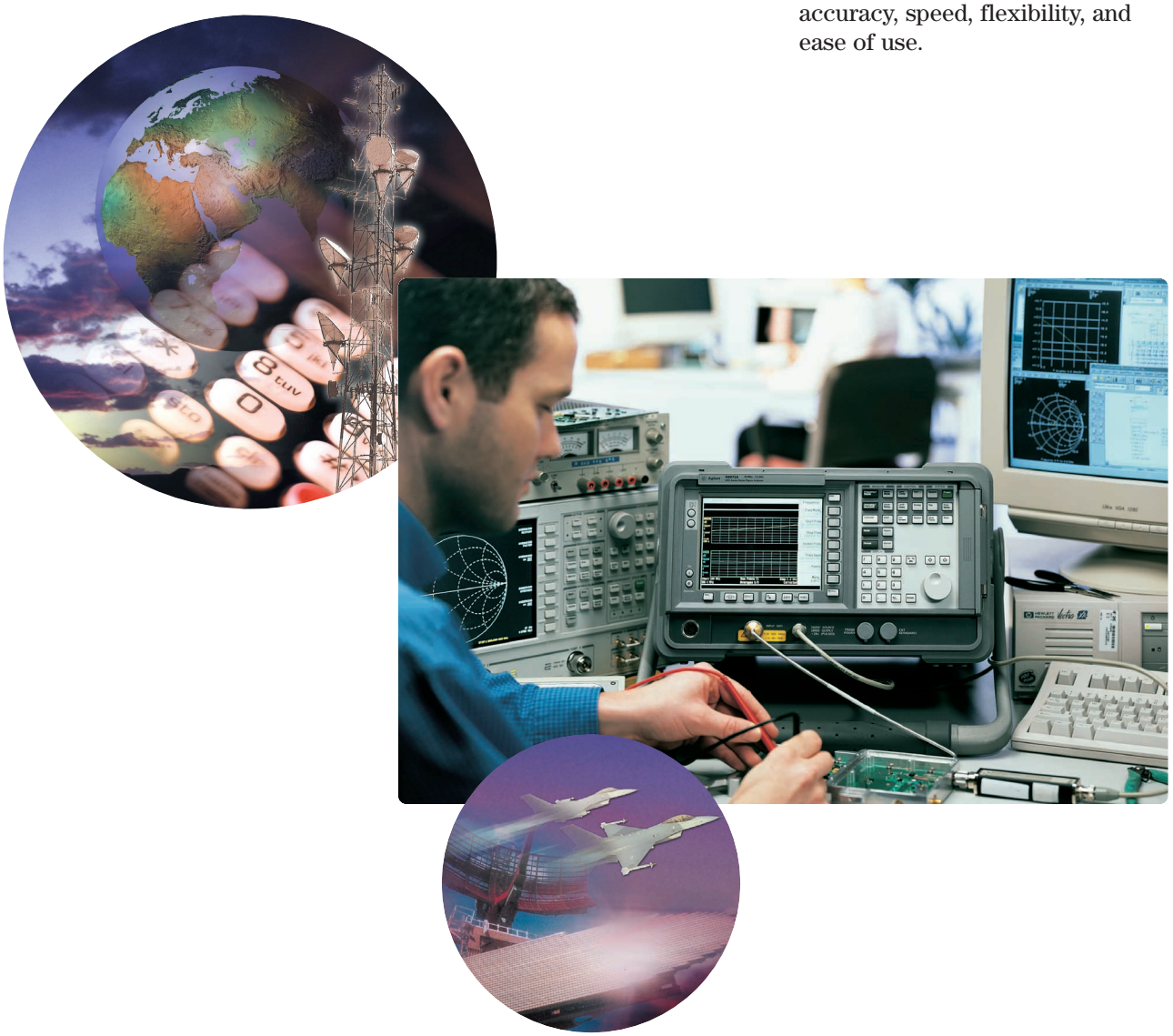
The new standard for noise figure measurement

If you design or manufacture subsystems or components for today's complex RF systems you are likely to have a growing need to specify your product's noise figure. In a competitive market, that noise figure specification can be an essential means of differentiating your product.

But measurement requirements are changing. Noise figure specifications are becoming tighter, requiring ever-greater measurement accuracy. Frequencies are moving higher, particularly in the fast-growing RF and microwave communications market. Competition among manufacturers is fierce, calling for faster, more efficient instruments and processes in design and production test.

To boost your productivity in this fast-paced environment, Agilent Technologies offers the NFA series noise figure analyzer family—the next-generation solution for noise figure measurement.

As the successor to our industry-standard 8970 noise figure family, the NFA series provides all the functionality and reliability you've come to expect from the leader in noise figure measurement—and then takes a giant leap forward in accuracy, speed, flexibility, and ease of use.



Improve the design and manufacture of your receiver components—and gain a competitive edge

Whether you are working with systems, subsystems, subassemblies, or discrete devices, each of your components adds noise that affects the overall performance of the receiver. By measuring and reducing noise figure, you can give your products a competitive edge.

The NFA series is a family of dedicated noise figure analyzers, designed to provide comprehensive characterization of your device under test at a reasonable cost. These analyzers offer the traditional benefits of a noise-figure meter, plus the added features and functions most often requested by R&D and production-test engineers and technicians.

Easy measurement of amplifiers and frequency converting devices

- *Flexible and intuitive user interface*
- *Color graphical display with markers and limit lines*

Frequency range to 26.5 GHz and beyond...

- *One-box analyzers to 26.5 GHz*
- *Custom solutions to even higher frequencies*

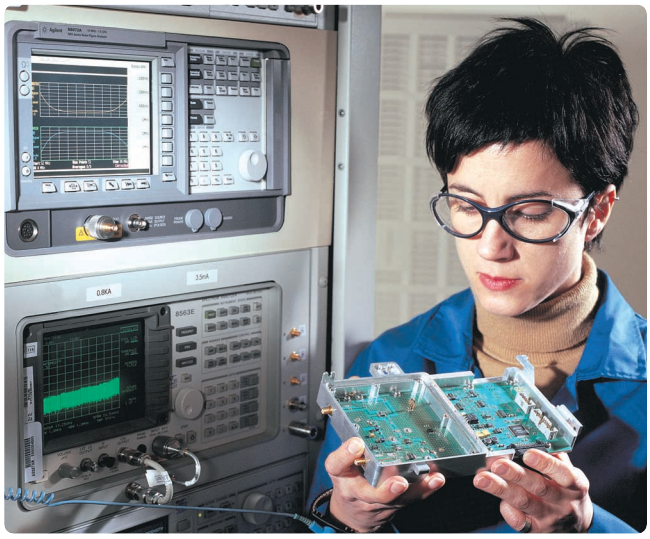
Accurate and repeatable results

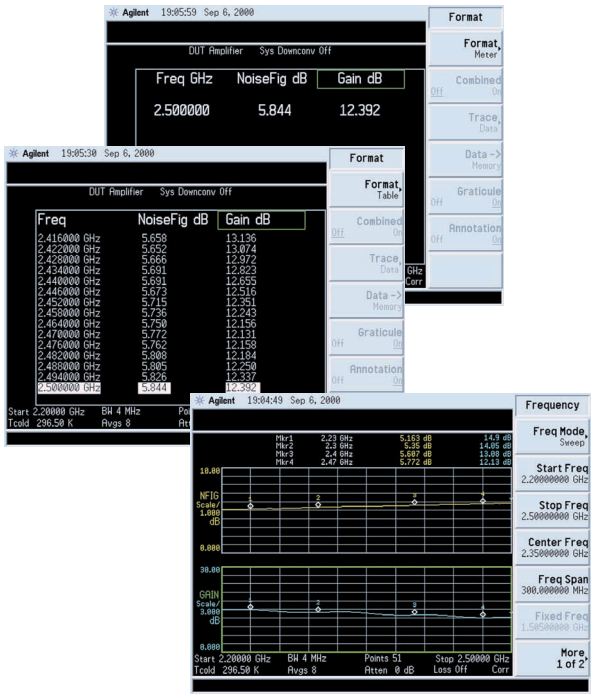
- *Low instrument uncertainty*
- *Compatible with new, improved noise sources*

Achieve more in less time

With the NFA series, you'll make better measurements, more quickly. Ease-of-use features make it easier for any engineer or technician to set up measurements correctly, view measurements in different formats, and print the results or save them to disk. On-screen limit lines simplify pass/fail testing.

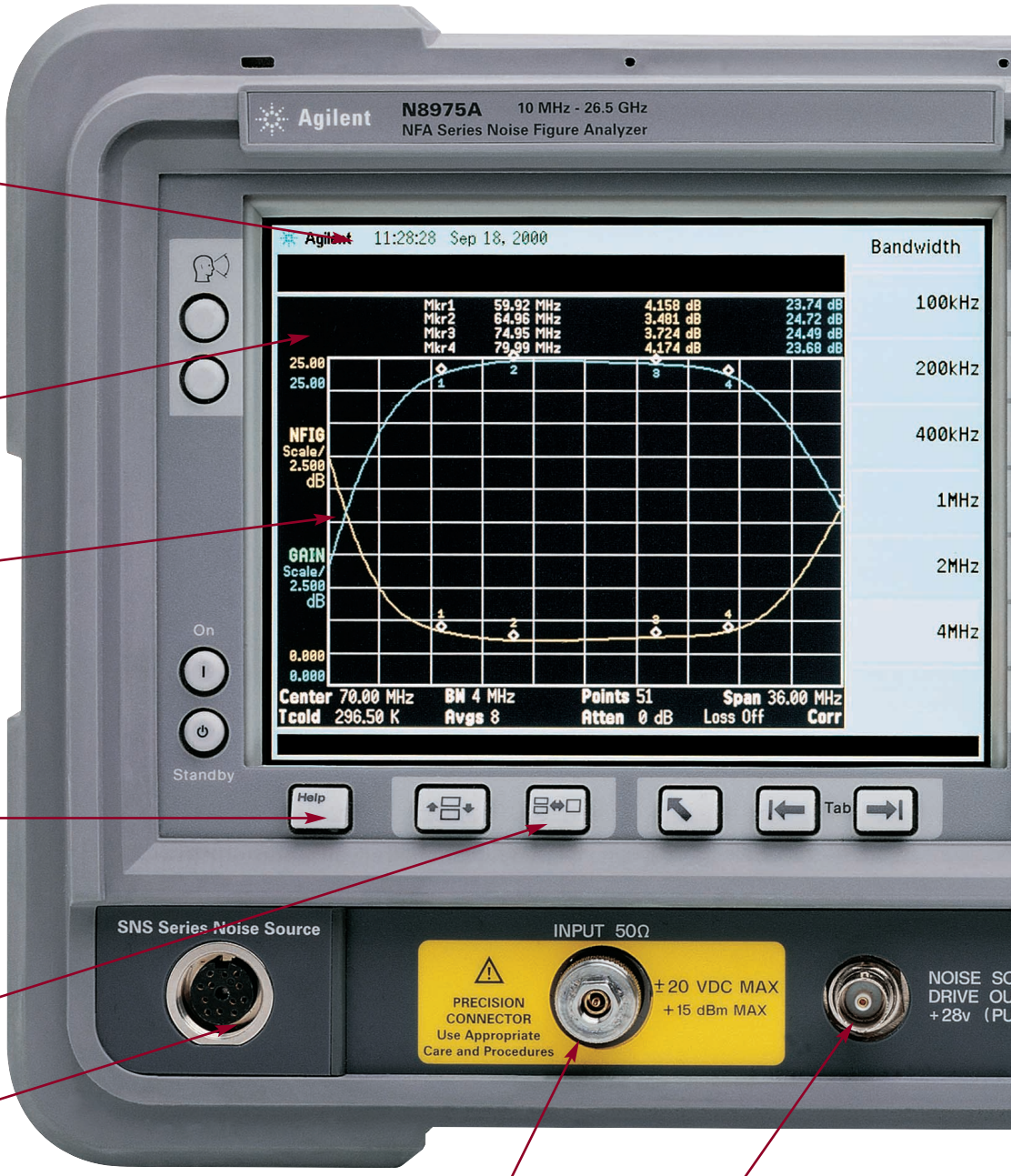
Perform your measurements to the latest and most exacting specifications with extended frequency coverage, high performance features, and selectable measurement bandwidths. Repeatable, reliable measurements provide results that you can trust. You will be able to produce more robust designs and prototypes in the lab, and achieve higher yields and throughput in manufacturing.





Take a giant step forward in ease of use

The Agilent NFA series is a family of dedicated noise figure analyzers that make the measurements you need, the way you want to make them. The following standard features help simplify the measurement process, save time, and reduce the chance of measurement error.



Real-time clock for time-stamping of data files and printouts

Integrated, 17-cm color display

Simultaneous measurement of noise figure and gain

Comprehensive built-in help

Single or split-screen viewing

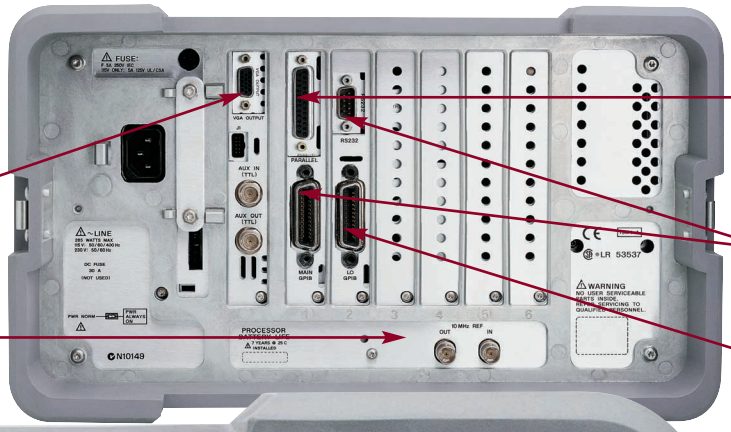
SNS Series Noise Source Connector

Input protected against DC bias

Compatible with existing 346 and 347 series noise sources

VGA output port that lets you connect a VGA monitor to view a larger representation of your graphical measurement results—and even project the image on a screen

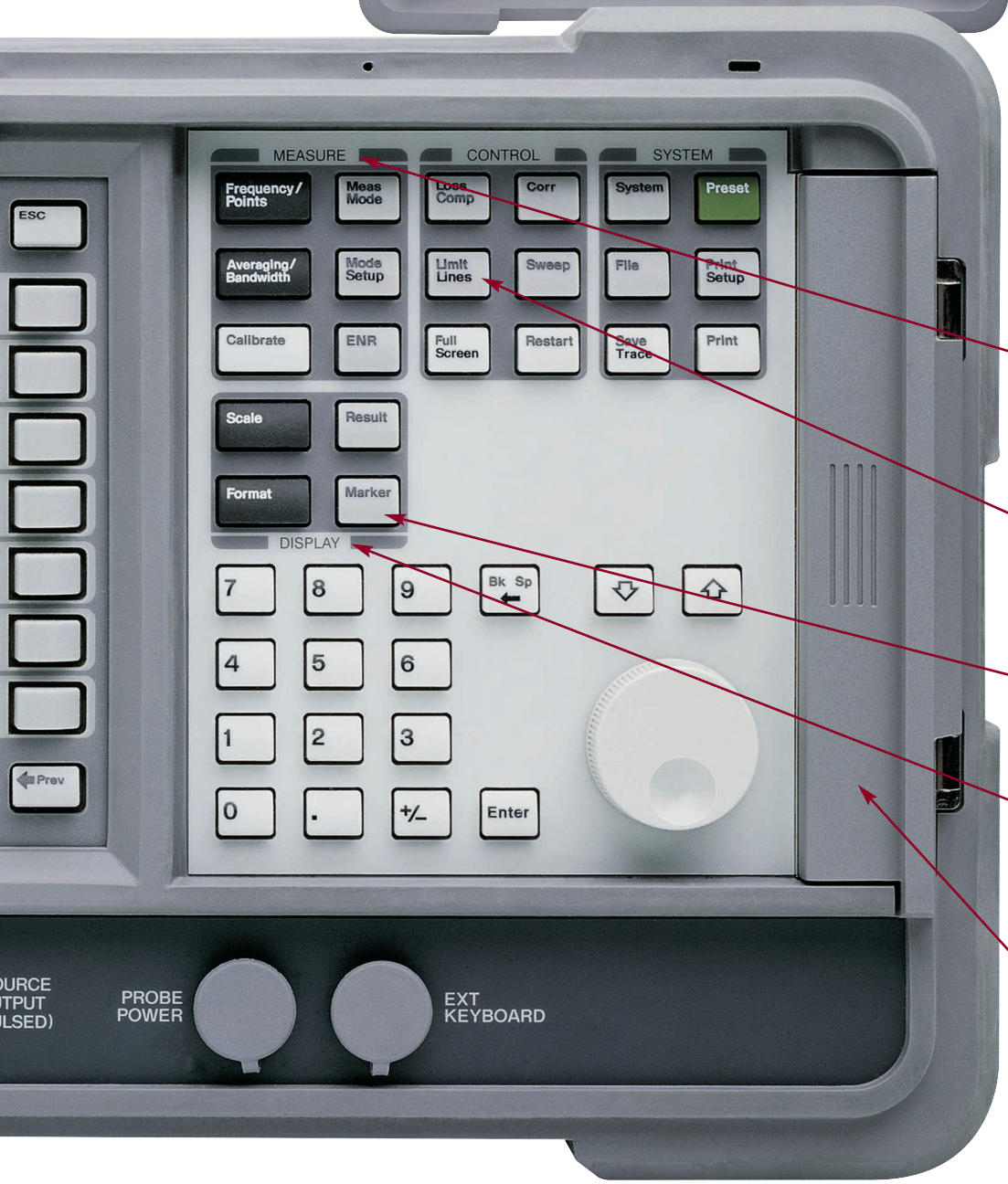
10 MHz reference in and out



Parallel printer port for connection to standard PC printers and quick printouts of measurement results

RS232 port and GPIB ports, which enable automated control of the instrument

LO GPIB port for controlling a local oscillator if used as part of the measurement set-up



Easy measurement setup using simple front-panel key presses

Limit lines for simple pass/fail testing

Comprehensive marker functions

View the results you need, the way you want to see them

3.5-inch floppy disk drive for easy data transfer and storage and easy uploading of noise-source calibration data

Have the highest performance available when you need it

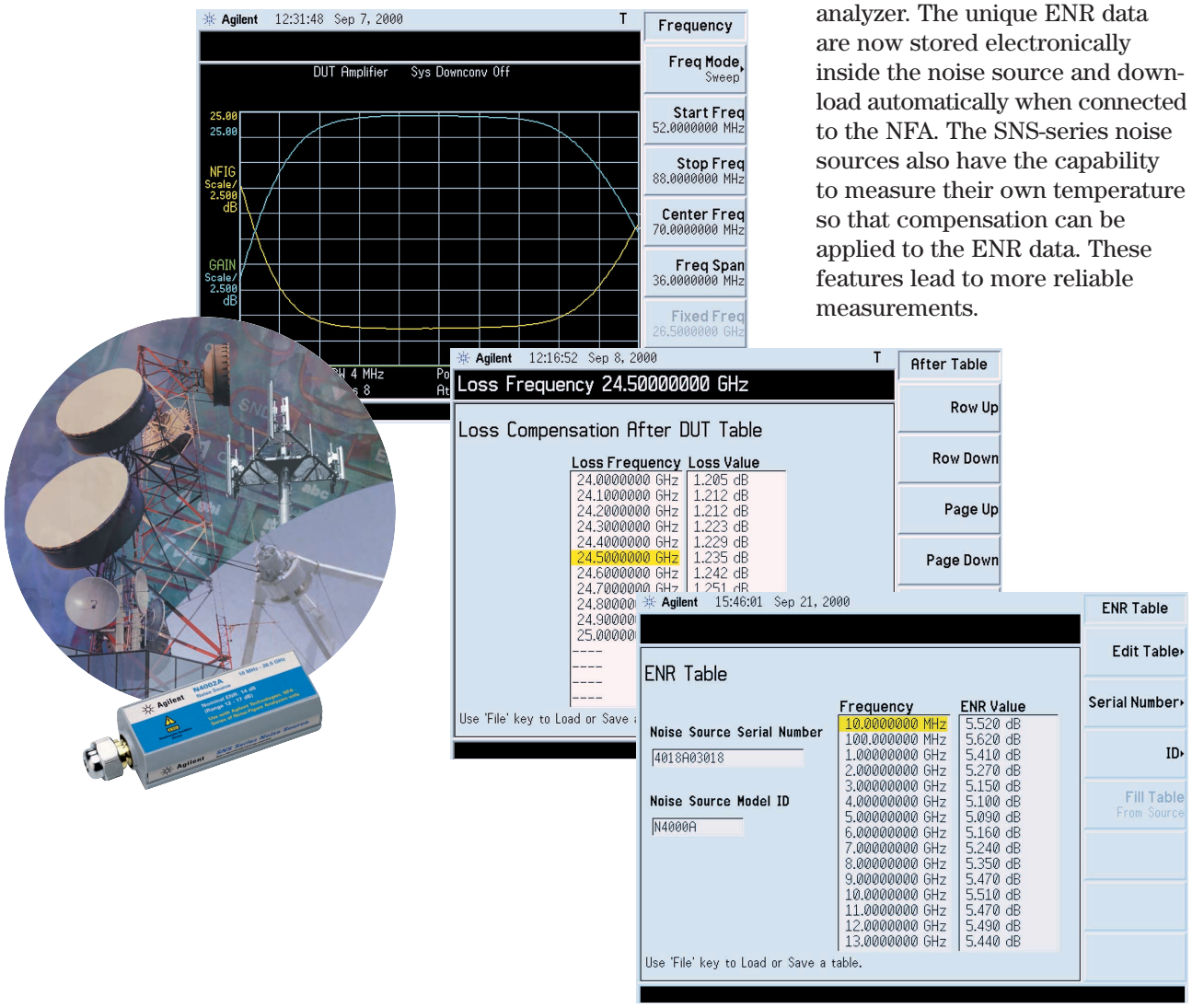
For some applications, the entry level performance of the N8972A NFA is sufficient. But if your measurement application demands frequency coverage above 1.5 GHz, or a higher level of measurement performance, you will want the added capabilities of the N8973A (3GHz), N8974A (6.7GHz) or N8975A (26.5GHz) noise figure analyzers. These products set the standard for noise figure measurement.

For applications at frequencies above 26.5 GHz Agilent can provide custom block-downconvertors which extend the frequency range of the N8975A even higher. Contact your Agilent representative for further information.

SNS-series noise sources improve measurement integrity

The SNS-series of noise sources are designed specifically to complement the NFA, simplifying measurement set-up and improving measurement accuracy.

It is no longer necessary to manually load the unique excess noise ratio(ENR) calibration factors into the noise figure analyzer. The unique ENR data are now stored electronically inside the noise source and down-load automatically when connected to the NFA. The SNS-series noise sources also have the capability to measure their own temperature so that compensation can be applied to the ENR data. These features lead to more reliable measurements.



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. *The NFA series analyzers have a standard, three-year, return-to-Agilent 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 contacting 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 services. Experienced Agilent engineers and technicians worldwide can help you maximize your productivity and optimize your return on investment.

For further information

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.

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

Noise Figure Analyzers - NFA Series - Configuration Guide, literature number 5980-0163E

10 Hints for Making Successful Noise Figure Measurements, *Application Note 1341*, literature number 5980-0288E

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

Noise Figure Measurement Accuracy, *Application Note 57-2*, literature number 5952-3706

Agilent N4000A, *N4001A*, *N4002A SNS Series Noise Sources*, literature number 5988-0081EN

Key web resources:
For the latest information on our noise figure solutions, see our web page at:

www.agilent.com/find/nf

For the latest news in the component test industry, see our web page at:

www.agilent.com/find/component_test

For the latest news in the aerospace industry, see our web page at:

www.agilent.com/find/aerospace

For more information about Agilent Technologies test and measurement products, applications, services, and for a current sales office listing, visit our web site:

www.agilent.com/find/assist

You can also contact one of the following centers and ask for a test and measurement sales representative.

United States:
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Test and Measurement Call Center
P.O. Box 4026
Englewood, CO 80155-4026
(tel) 1 800 452 4844

Canada:
Agilent Technologies Canada Inc.
5150 Spectrum Way
Mississauga, Ontario, L4W 5G1
(tel) 1 877 894 4414

Europe:
Agilent Technologies
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P.O. Box 999
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Printed in U.S.A. 10/00
5980-0166E

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