

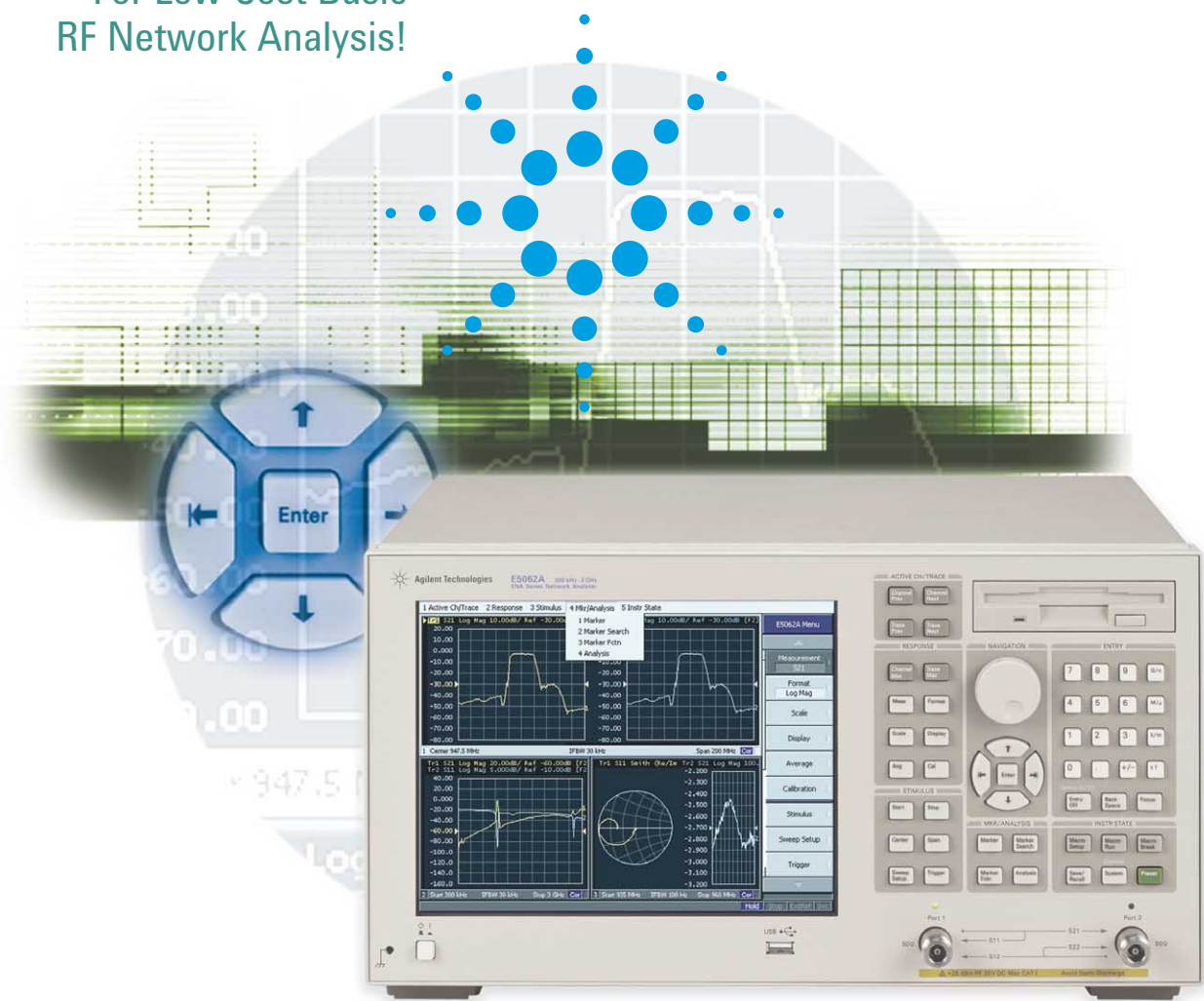


Agilent ENA-L RF Network Analyzers

E5061A, 300 kHz to 1.5 GHz

E5062A, 300 kHz to 3 GHz

Agilent's
New Standard
For Low-Cost Basic
RF Network Analysis!



**Modern Technology and Powerful Productivity
Features to Improve your Efficiency**

Solid performance in an easy to use low-cost RF network analyzer



Providing the latest in modern technology and flexibility, the Agilent ENA-L network analyzers provide basic vector network analysis in a wide range of industries and applications such as wireless communication, cable TV, automotive, education, and more. Designed to reduce tune and test times, these analyzers provide increased throughput to improve your measurement productivity.

The ENA-L offers all of the critical performance and features needed in R&D, manufacturing, and service to test RF components such as: filters, amplifiers, antennas, cables, CATV taps, and distribution amplifiers.

The affordably priced ENA-L, equipped with the core functions of the industry-standard ENA, includes many easy-to-use features and is optimized for efficient measurements and high reliability.

A variety of sweep functions for effective analysis. Power sweep and three types of frequency (linear/log/segment).

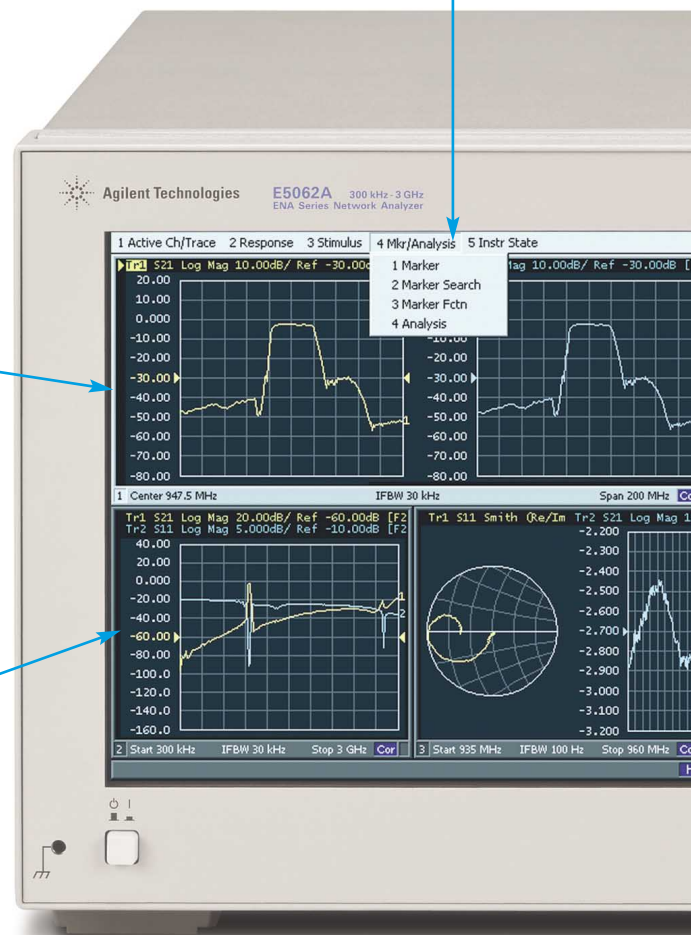
Multi-channel measurements display (4 measurement channels/4 traces per channel) speeds your component evaluation allowing you to view all four S-parameters of a two-port device simultaneously.

Large (10.4-inch) color LCD clearly displays your measurements with the parameters you need.

Powerful analysis functions improve productivity

- Limit-line testing facilitates consistent test results
- Fault location/SRL analysis (optional) simplifies cable measurements

Windows® style interface with optional touch screen enables intuitive operation.



Simplifying tasks with advanced features

An easy to use user interface makes tasks simple.

Shorter instrument depth (360 mm) allows for more bench top space.



Electronic calibration (ECal) module (Optional) with only one set of connections, helps to speed and simplify your calibration process.

Variety of test set choices to meet your exact needs

- Transmission/reflection or S-parameter
- 50 Ω or 75 Ω port impedance

ENA-L Highlights

Frequency	E5061A	300 kHz to 1.5 GHz
	E5062A	300 kHz to 3 GHz
Test set	T/R or S-parameter	
Port impedance	50 or 75 Ω	
Port output power	-5 to 10 dBm	
	-45 to 10 dBm with extended power range	
Dynamic range	115 dB	
Trace noise	0.005 dB rms	
Sweep types	Linear, log, segment, power	
Display	10.4-inch color LCD	
	Optional touch screen	
ECal support	Yes	
Measurement channels	4	
Limit lines	Yes	
Save recall	Yes	
VBA® programming	Yes	

Save/Recall (to floppy or hard drive) minimizes setup time. Quickly switch between test setups by recalling an instrument state.

Built-in VBA programming simplifies complicated measurements and decreases operator error. Easily automate common measurement procedures and create a graphic user interface tailored to your measurement needs.

Flexible connectivity (through rear-panel connectors)

- Handler I/O: high-speed hand-shake with parts handler or other instrument with user defined I/O signals
- GPIB: robust instrument control
- LAN: high speed instrument control and data transfer
- USB: easy connection to printer
- Parallel: printer and multipoint test set
- VGA: external display

Enabling accurate and efficient RF component evaluation



Fundamental performance with versatile general-purpose test capabilities

The ENA-L, with its 115 dB dynamic range and 0.005 dB rms trace noise, provides the accuracy and speed required for many network measurement applications. The wide 30 kHz IF bandwidth (IFBW) and powerful digital processing provide unprecedented measurement speed. The S-parameter test set options offer full two-port calibration for optimum accuracy (Option 250 or 275)



Fast frequency sweep increases throughput and lowers your cost per component.¹

See the entire ENA network analyzer family

For applications with more demanding measurement needs and higher frequencies up to 8.5 GHz, engineers world-wide rely on the high-performance of the Agilent E5070B/71B ENA RF network analyzers. With the same user-friendly interface as the ENA-L analyzers, ENA models offer expanded capabilities such as:

- *Balanced and multipoint measurements*
- *TRL calibration*
- *Circuit embedding*

For more information regarding the entire ENA Series of network analyzers, visit the ENA web site: www.agilent.com/find/ena.

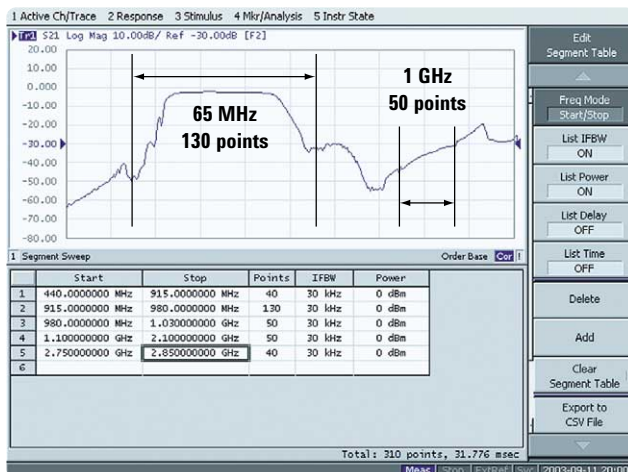


Wide dynamic range allows precise evaluation of high rejection filters.

A variety of sweep functions for effective analysis

Power sweep and three types of frequency functions provide effective analysis to suit your application needs such as:

- **Power sweep** to analyze active devices such as amplifiers
- **Linear sweep** to evaluate narrow-band devices such as filters
- **Log sweep** to evaluate broadband devices such as cables
- **Segment sweep** allows you to tailor the sweep condition with up to 201 sweep segments



Segment sweep allows you to measure, at various intervals, ONLY the necessary frequencies.

1. Agilent E5061A verses Agilent 8712ES sweep speed comparison with typical data (201 points, 2-port cal., 90 dB dynamic range).

Powerful features you need to reduce test time

EFFICIENT ANALYSIS



Multi-channel measurement display capability speeds your component evaluation

Display up to four traces per measurement channel and evaluate all four S-parameters of a two-port device at the same time. Each of the ENA-L's four measurement channels can have independent measurement settings such as frequency range, enabling you to compare traces with different measurement conditions. In total, the ENA-L allows you to display and analyze 16 traces simultaneously!



Display it all with powerful display capabilities

Optional Electronic Calibration (ECal) drastically simplifies calibration

Unlike the traditional mechanical calibration technique, Agilent's ECal modules only require one set of connections to perform full two-port calibration (controlled through the front panel USB port). The ENA-L controls the ECal module to perform the entire calibration to provide:

- Faster calibration and reduced complexity
- Reduced chance of operator error
- Reduced wear on connectors

Controlled through the front panel USB port, and requiring only one set of connections, ECal simplifies the process for non-technical operators.



Save/Recall allows instant measurement setup

Quickly switch between different test conditions simply by recalling an instrument state. With the ENA-L's easy to use interface, recalling an instrument state is as easy as using a softkey.

Recall an instrument state with a softkey labeled as you define.



Limit-line testing facilitates consistent test results

Eliminate the guesswork and facilitate pass/fail judgement with limit-line testing to increase the reliability and productivity of your test processes. Limit-line conditions can be easily defined by editing the spreadsheet on the analyzer's display.



Easily define limit-line test conditions with Windows-style interface.

Tailor measurements to your specific applications

CUSTOMIZE AND SIMPLIFY



Cable measurements

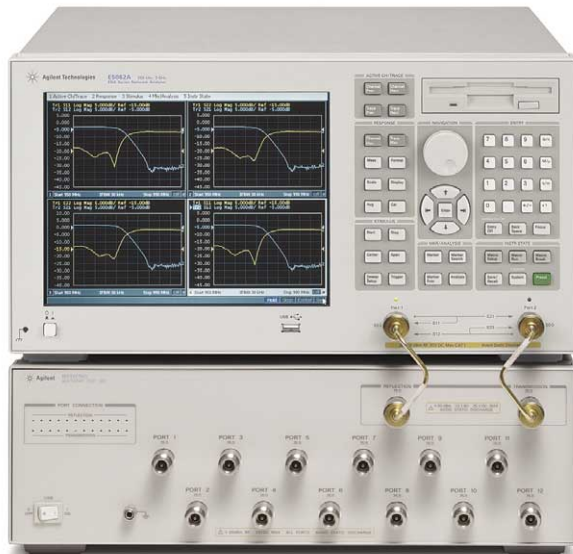
Simplify cable measurements with fault location/SRL analysis (Option 100)

The reduced size of the ENA-L enables you to test cables that are still on a spool in a warehouse or already installed on a cellular tower quickly and accurately. This solution allows you thorough cable testing including loss, impedance, structural return loss (SRL), and fault location measurements, and has many advantages over traditional time-domain reflectometry (TDR) techniques.

CATV Component measurements

ENA-L is designed for 75 Ω measurements

A fully specified 75 Ω test port impedance option is available for reliable CATV component measurements. With the 75 Ω ECal, you can perform fully calibrated measurements with minimal calibration effort.



A complete multiport test solution

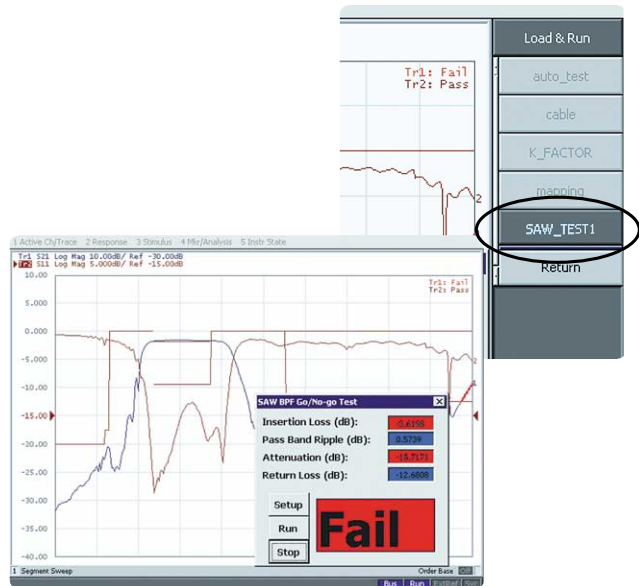
The ENA-L, with the 87075C 75 Ω multiport test set, provides an ideal solution for multiport CATV component measurement. The test system offers fast measurement speed, high accuracy, and productivity features to maximize your production throughput.

- Specified performance to 1.3 GHz
- 6 or 12 test ports
- Test set calibration technique eliminates redundant connection of calibration standards, and ECal further reduces the number of connections.
- Self calibration (an internally automated calibration technique) reduces the effects of test system drift.

Customize ENA-L with VBA

VBA simplifies complicated measurements

ENA-L's built-in VBA programming function allows you to automate measurement procedures and easily create a graphic user interface, tailored for your measurement needs. A test program can be developed with the built-in editor or on an external PC with Visual Basic® (VB).



The VBA launcher function allows you to execute a program with a single softkey.

The ENA Series offers the solutions you require



ENA-L

- E5061A 300 kHz to 1.5 GHz network analyzer
- E5062A 300 kHz to 3 GHz network analyzer

ENA

- E5070B 300 kHz to 3 GHz network analyzer
- E5071B 300 kHz to 8.5 GHz network analyzer



Common to entire ENA Series

Ease-of-use

- 10.4 inch color LCD
- Touch screen (Option 016)
- Windows-styled operation with mouse as well as conventional front panel key operation

Productivity features

- ECal support
- Multi channels and traces
- Save/Recall
- Limit-line test
- Built-in VBA
- GPIB/Handler IO/LAN/USB



Unique to ENA-L

Affordability

- Lowest cost RF solution
- T/R test set

CATV solution

- Built-in 75 Ω
- 87075C 75 Ω multiport test set

Cable solution

- Fault location and SRL

Small footprint

- 360 mm depth



Unique to ENA

Ultimate accuracy

- 125 dB dynamic range
- 0.001 dB rms trace noise
- TRL calibration

Ultimate speed

- 9.6 μ s/point

Multiport and balanced measurements

- Integrated 3, 4-port
- Built-in balanced measurements
- E5091A (9-port) 50 Ω multiport test set

Advanced data analysis

- Circuit embedding
- Time domain gating

To our 8712 and 8714 Series customers...
The ENA-L network analyzer provides even greater value!

The standard just got better

Agilent 8712 and 8714 Series network analyzers have long been recognized as the standard low cost tools for a wide range of applications, providing reliable basic network measurements at an affordable price. ENA-L provides you with even greater value for your money offering the latest in modern technology and ease-of-use.

Protecting your software investment

Agilent protects your 8712 and 8714 software investment by providing migration tools² to reduce your code and state files conversion effort.

1. Applied to 8714ES with 50 Ω port impedance.
2. For more information about the migration tools, visit the ENA series web site: www.agilent.com/find/ena
3. Typical data, 201 points, 2-port calibration, 90 dB dynamic range.



	Agilent ENA-L	Agilent 8712/8714
Frequency	300 kHz to 3 GHz	300 kHz to 3 GHz
Test set	T/R or S-parameter	T/R or S-parameter
Port impedance	50 or 75 Ω	50 or 75 Ω
Dynamic range	115 dB	101 dB ¹
Sweep speed³	35 ms	240 ms
Sweep types	Linear, log, segment, power	Linear, power
Display	10.4-inch color LCD Optional touch screen	9-inch black & white monitor
Measurement channels	4	2
ECal support	Yes	No
VBA Programming	Yes	No(IBASIC)
Broadband detection	No	Yes
Absolute power measurement	No	Yes
Limit lines	Yes	Yes
Save recall	Yes	Yes

- Features enhanced in ENA-L
- Features not supported in ENA-L

Ordering information

E5061A	300 kHz to 1.5 GHz network analyzer
E5062A	300 kHz to 3 GHz network analyzer
Option E5061A/62A - 150	TR test set 50 ohm system impedance
Option E5061A/62A - 175	TR test set 75 ohm system impedance
Option E5061A/62A - 250	S-parameter test set 50 ohm system impedance with extended power range
Option E5061A/62A - 275	S-parameter test set 75 ohm system impedance with extended power range
Option E5061A/62A - 1E1	Extended power range (-45 to 10 dBm)
Option E5061A/62A - 100	Add fault location and SRL analysis
Option E5061A/62A - 016	Touch screen color LCD

Electronic calibration (ECal) modules

85092C	Type-N 50 ohm RF ECal module
85093C	3.5 mm RF ECal module
85096C	Type-N 75 ohm RF ECal module
85099C	Type-F RF ECal module

Agilent Trade Up helps you migrate to ENA-L from your current network analyzer

Agilent Trade Up is a robust, easy-to-use program that helps test-and-measurement companies upgrade to the most advanced solutions that will reduce their costs, increase their efficiency and help them get to market quickly.

The program covers hundreds of the test-and-measurement products manufactured by Agilent Technologies and other companies over the past decades. So the chances are you can find a match between equipment you no longer need and new technologies that will improve your efficiency.

To get more information and learn about our promotional offers, visit our web site at: www.agilent.com/find/trade-up

NOTE: Agilent Trade Up is not available in all countries.

Additional information

For additional ENA-L product information and literature visit our Web site: www.agilent.com/find/ena

For additional electronic calibration (ECal) product information and literature: www.agilent.com/find/ecal



Agilent Email Updates

www.agilent.com/find/emailupdates

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

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 onsite 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.

Agilent T&M Software and Connectivity

Agilent's Test and Measurement software and connectivity products, solutions and developer network allows you to take time out of connecting your instruments to your computer with tools based on PC standards, so you can focus on your tasks, not on your connections. Visit www.agilent.com/find/connectivity for more information.

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

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

On-line Assistance:

www.agilent.com/find/assist

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

© Agilent Technologies, Inc. 2003, 2004
Printed in USA, January 27, 2004
5989-0167EN

Windows® and Visual Basic® are U.S. registered trademark of Microsoft Corporation.



Agilent Technologies