

# Agilent Z5623A Custom Multiport Test Sets

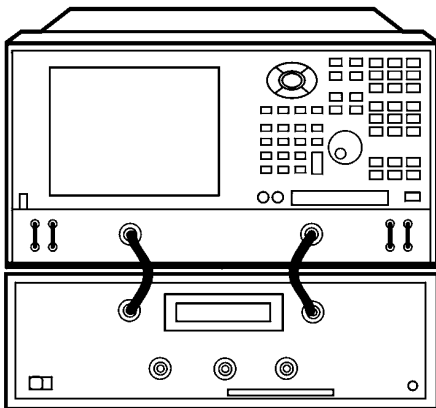
## Product Overview

### Easily test multiport devices

Today's wireless communications components require multiple connections to achieve complete characterization by a two-port network analyzer. The Agilent Z5623A simplifies high-volume tuning and testing by using a multiport test set between the device under test (DUT) and a network analyzer.

The Z5623A features a single connection to each port of the DUT and allows complete testing of all transmission paths and reflection characteristics. This can greatly reduce setup, testing time as well as operator fatigue.

Minimizing the number of connections also lowers the chance of connecting to the wrong port. Fewer connections result in less wear on cables, connectors, fixtures and DUTs.



### PNA Series compatibility

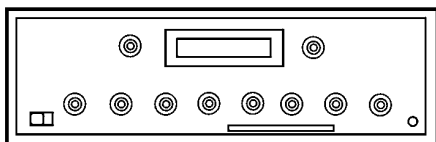
The Agilent Z5623A multiport test sets are designed to work with the PNA Series of network analyzers. The Z5623A is offered in three and eight port options. These test sets are controlled via GPIB with an Agilent-supplied Visual Basic example program that is executed internally from the network analyzer.

Combining the benefits of the PNA Series with the Z5623A multiport test set simplifies and improves the throughput of high-volume multiport device testing.

Standard features and a fully integrated Windows® 2000 operating system provide maximum connectivity choices with the PNA Series.

The built-in LAN interface on the PNA Series analyzers makes it easy to connect a multiport test system to a factory wide network. The LAN interface allows an operator to:

- easily transfer files to and from test stations
- send test results to a network printer
- import data directly into PC applications, such as Microsoft® Excel or Word, for post-processing
- automate test processes with COM/DCOM



**Agilent Technologies**

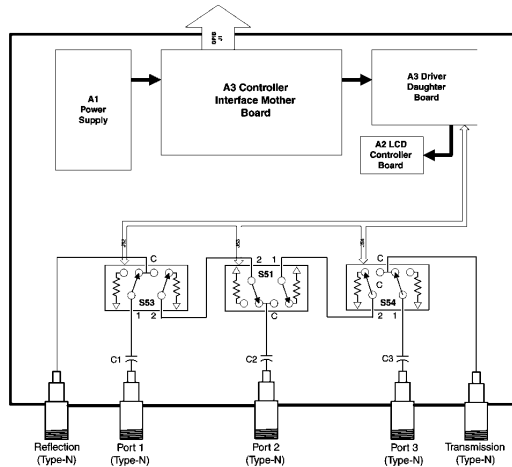
Innovating the HP Way

## Fast duplexer tune and test

The Z5623A Option H03 is an external three port test set with solid-state switching designed for fast duplexer tuning and testing.

During alignment of duplexers, operators often need to view both the transmit-antenna and antenna-receive paths concurrently, since tuning the response of one path frequently affects the response of the other path.

With the three port test set, both paths can be displayed simultaneously, with a single RF connection to each port. Transmit-port-to-receive-port isolation and the return loss of all three ports can be measured as well, with the same setup.



Z5623A Option H03 Block Diagram

### Z5623A Option H03 test set performance

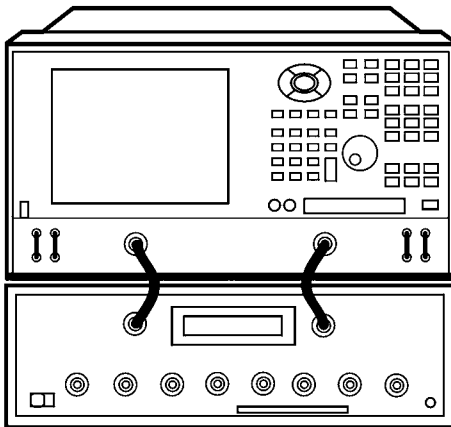
Minimum return loss <sup>2</sup>	300 kHz to 1 MHz	1 MHz to 1.3 GHz	1.3 GHz to 3 GHz	3 GHz to 6 GHz	6 GHz to 9 GHz
Port 1 (active)	10 dB	20 dB	20 dB	14 dB	10 dB
Port 1 (off) <sup>3</sup>	15 dB	26 dB	22 dB	15 dB	15 dB
Port 2 (active)	8 dB	16 dB	16 dB	12 dB	8 dB
Port 2 (off) <sup>3</sup>	8 dB	24 dB	14 dB	10 dB	8 dB
Port 3 (active)	10 dB	20 dB	20 dB	14 dB	10 dB
Port 3 (off) <sup>3</sup>	15 dB	26 dB	22 dB	15 dB	15 dB
<b>Maximum insert loss</b>					
NA port 1 to port 1	2.5 dB	2.5 dB	2.5 dB	3.5 dB	4 dB
NA port 2 to port 2 <sup>4</sup>	5 dB	5 dB	5 dB	6.5 dB	7.5 dB
<b>System performance</b>					
Maximum source power, port 1, 3	7.5 dBm	7.5 dBm	7.5 dBm	6.5 dBm	1 dBm
Maximum source power, port 2	5 dBm	5 dBm	5 dBm	3.5 dBm	-2.5 dBm
Maximum dynamic range <sup>5</sup>	110 dB	110 dB	105 dB	95 dB	90 dB
Switching time <sup>6</sup>	11 ms				

1. Typical values, uncorrected performance.
2. NA port terminated in high quality load.
3. The off port is automatically terminated in a high quality load integrated into the switch.
4. NA port determined by switch position
5. Dynamic range limited by the internal test set crosstalk.
6. Includes GPIB overhead.

## Increase throughput per instrument

The Z5623A Option H08 is an external eight port test set with mechanical switching. Option H08 is valuable in manufacturing environments where the time for setup is significantly greater than the test time. This test set can be used to increase the efficiency of a test station by multiplexing one network analyzer between two test setups.

For example, two duplexer fixtures may be connected to the test set. While unloading and loading one fixture, the PNA Series analyzer can measure a device that is in the other fixture. This technique works well when part-handling or connection time is similar to measurement time. It is possible to effectively double the overall throughput and efficiency of the network analyzer.



The Z5623A Option H08 is controlled by the PNA Series analyzer for convenient testing of multiport devices.

### Z5623A Option H08 test set performance

Minimum return loss <sup>2</sup>	300 kHz to	1.3 GHz to	3 GHz to	6 GHz to
	1.3 GHz	3 GHz	6 GHz	9 GHz
Port n (active)	24 dB	22 dB	16 dB	14 dB
Port n (off) <sup>3</sup>	26 dB	24 dB	18 dB	16 dB
<b>Maximum insert loss</b>				
NA port n	1.5 dB	2 dB	2.5 dB	3.5 dB
<b>System performance</b>				
Maximum source power, port n	8 dBm	8 dBm	7 dBm	1 dBm
Maximum dynamic range <sup>4</sup>	110 dB	105 dB	95 dB	90 dB
Switching time <sup>5</sup>	50 ms			
Mechanical switch lifetime	5 million cycles			

1. Typical values, uncorrected performance.
2. NA port terminated in high quality load.
3. The off port is automatically terminated in a high quality load integrated into the switch.
4. Dynamic range limited by the internal test set crosstalk.
5. Includes GPIB overhead.

## Ordering Information

Agilent Z5623A  
Option H03 - 3 port test set  
Option H08 - 8 port test set

Agilent Technologies has several existing test sets for other network analyzer products.

Please consult your local Agilent sales engineer for help in determining the best solution for your multiport test application.

### 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.

For more assistance with your test & measurement needs go to

[www.agilent.com/find/assist](http://www.agilent.com/find/assist)

Or contact the test and measurement experts at Agilent Technologies  
(During normal business hours)

#### United States:

(tel) 1 800 452 4844

#### Canada:

(tel) 1 877 894 4414  
(fax) (905) 282 6495

#### Europe:

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

#### Japan:

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

#### Latin America:

(tel) (305) 269 7500  
(fax) (305) 269 7599

#### Australia:

(tel) 1 800 629 485  
(fax) (61 3) 9210 5947

#### New Zealand:

(tel) 0 800 738 378  
(fax) 64 4 495 8950

#### Asia Pacific:

(tel) (852) 3197 7777  
(fax) (852) 2506 9284

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

Copyright © 2000

Agilent Technologies

Printed in U.S.A. 11/00

5988-0202EN

Microsoft® is a U.S. registered trademark of Microsoft Corp.

Windows® and MS Windows® are U.S. registered trademarks of Microsoft Corp.



**Agilent Technologies**

Innovating the HP Way