Agilent Z5623A
Custom Multiport Test Sets

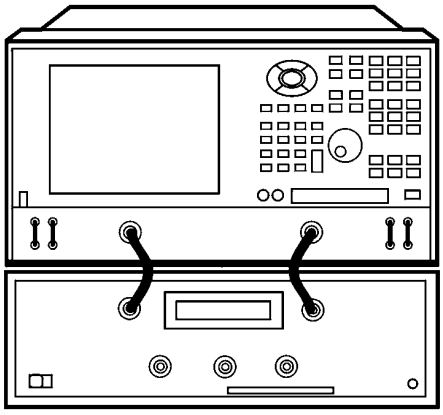
Product Overview

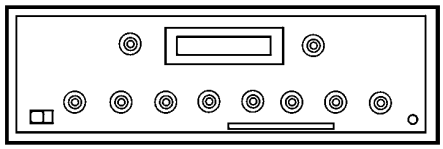
Easily test multiport devices

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

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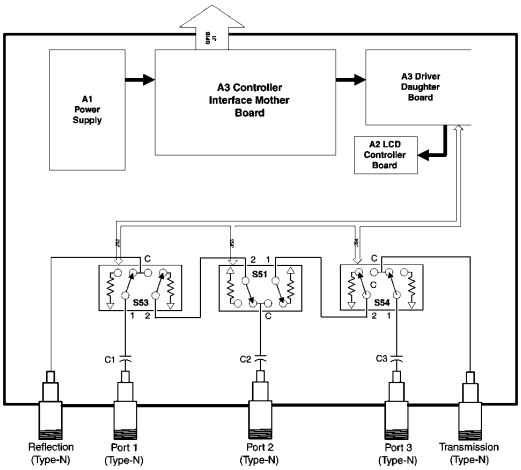
Fast duplexer tune and test

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

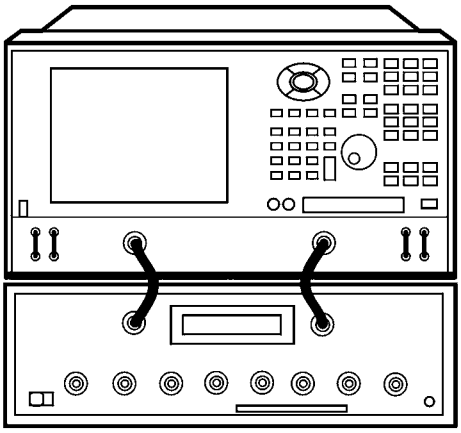
Minimum return loss [2]	**300 kHz to 1 MHz**	**1 MHz to 1.3 GHz**	**1.3 GHz to 3 GHz**	**3 GHz to 6 GHz**	**6 GHz to 9 GHz**
Port 1 (active)	10 dB	20 dB	20 dB	14 dB	10 dB
Port 1 (off) [3]	15 dB	26 dB	22 dB	15 dB	15 dB
Port 2 (active)	8 dB	16 dB	16 dB	12 dB	8 dB
Port 2 (off) [3]	8 dB	24 dB	14 dB	10 dB	8 dB
Port 3 (active)	10 dB	20 dB	20 dB	14 dB	10 dB
Port 3 (off) [3]	15 dB	26 dB	22 dB	15 dB	15 dB
Maximum insert loss					
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 [4]	5 dB	5 dB	5 dB	6.5 dB	7.5 dB
System performance					
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 [5]	110 dB	110 dB	105 dB	95 dB	90 dB
Switching time [6]	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 [2]	**300 kHz to 1.3 GHz**	**1.3 GHz to 3 GHz**	**3 GHz to 6 GHz**	**6 GHz to 9 GHz**
Port n (active)	24 dB	22 dB	16 dB	14 dB
Port n (off) [3]	26 dB	24 dB	18 dB	16 dB
Maximum insert loss				
NA port n	1.5 dB	2 dB	2.5 dB	3.5 dB
System performance				
Maximum source power, port n	8 dBm	8 dBm	7 dBm	1 dBm
Maximum dynamic range [4]	110 dB	105 dB	95 dB	90 dB
Switching time [5]	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 mutliport test application.

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