Agilent 8703A Lightwave Component Analyzer

Configuration Guide

1300 nm or 1550 nm
130 MHz to 20 GHz modulation bandwidth

The Agilent 8703A is part of the Agilent family of lightwave component analyzer solutions. The example configuration will help you consider your important options and record your selections. The Index Numbers in this example refer to appropriate model number descriptions inside this ordering guide.

Additional application information and performance specifications can be found in the technical data sheet (Agilent literature no. 5952-1754E) and Application Note 1550-6 High-speed lightwave component analysis (Agilent literature no. 5091-6478E).

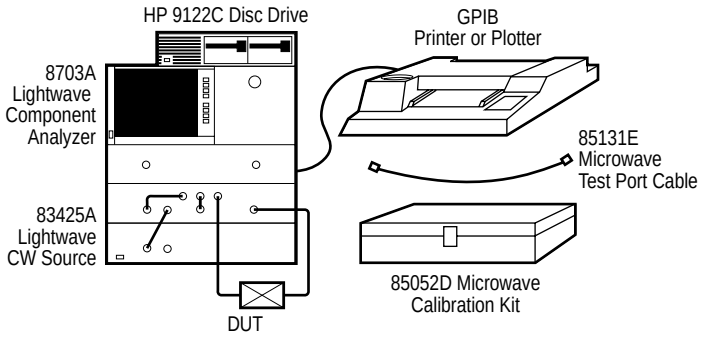
An Agilent 8703A with Option 01X, Option 220, and Option 830 is a complete configuration for a basic 1300 nm DFB system. It provides both lightwave and microwave measurements.

Another configuration is shown in the example and offers 1550 nm distributed feedback (DFB) source capability with an external lightwave source input for DWDM applications.

Modify or delete the following line items as necessary. Your personal configuration will appear on this page when you are finished.

Example Configuration:

Index Number	Model Number and Description	Qty
1.1	**Agilent 8703A** Lightwave Component Analyzer	1
1.2	Option 01X Connector	1
1.3	Option 100 Adds External Lightwave Source Input	1
1.4	Option 210 1550 nm DFB Laser	1
1.5	Option 300 Adds One Lightwave Receiver	1
1.6	Option 830 Adds Agilent 85052D Microwave Cal Kit and Agilent 85131E Microwave Test Port Cable	1



Agilent Technologies

Lightwave Measurement Instrument and Accessories

1.1
Standard Agilent 8703A configuration

This includes one lightwave receiver (receives both 1300 nm and 1550 nm lightwave signals), one lightwave directional coupler, an HP 9122C disk drive, and three 40 cm fiber optic cables. These cables provide for connections during measurement calibration and attachment to measurement devices. A connector option (section 1.2) must be specified. One laser option (section 1.4) must be specified. Lightwave and microwave test port cables (sections 2.1 and 5.0 to 7.0) with the proper connector type are ordered separately. Also includes Agilent N1031A BenchLink Lightwave software (section 10.5).

❑ **Agilent 8703A** Lightwave Component Analyzer

1.2
Lightwave test port connector options

Must select one option to equip both the Agilent 8703A and the supplied 40 cm fiber optic cables with this connector type.

❑ **Option 011** HMS-10 Connector
❑ **Option 012** FC/PC Connector
❑ **Option 013** DIN 47256 Connector
❑ **Option 014** ST Connector
❑ **Option 015** Biconic Connector
❑ **Option 017** SC Connector

1.3
External lightwave source input option[1]

With this option an external lightwave source can be switched in to substitute for the internal lightwave source. Wavelength of external source is restricted to 1530 to 1570 nm for Option 210 configuration and 1290 to 1330 nm for Option 220 configuration.

❑ **Option 100** Adds External Lightwave Source Input

1.4
Distributed feedback laser (DFB) source options

Only one option from this category can be selected.

❑ **Option 210** 1550 nm DFB Laser
❑ **Option 220** 1300 nm DFB Laser

1.5
Lightwave receiver option[1]

With two lightwave receivers, simultaneous transmission and reflection tests can be done or two devices can be tested at the same time.

❑ **Option 300** Adds One Lightwave Receiver 1300 nm and 1500 nm

1.6
Accessory and service options

❑ **Option 830** Adds Agilent 85052D Microwave Calibration Kit and Agilent 85131E Microwave Test Port Cables (see section 5.0 to 7.0)
❑ **Option 908** Rackmount Kit
❑ **Option 910** Extra Operating and Service Manual

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[1] External lightwave source input or additional lightwave receiver capability can be added later to an existing Agilent 8703A. 8703As may need to be returned to the factory for some of these upgrades. Upgrade cost will be greater than the price of the associated option. Contact the nearest Agilent service center for upgrade price and delivery information.

Fiber Optic Cables

2.1
Fiber optic test port cables

- ❑ **81101AC** Diamond HMS-10 Fiber Cable, 9/125 µm, 2 meter
- ❑ **11871A** PC Fiber Cable, 9/125 µm, 1 meter
- ❑ **11871B** ST Fiber Cable, SMF, 9/125 µm, 1 meter
- ❑ **11871C** Biconic Fiber Cable, SMF, 9/125 µm, 1 meter

Lightwave Connector Adapters

4.1
Connector adapters

The lightwave connector options equip the Agilent 8703A with a uniform front panel connector type. However if different connector types are also desired then the following connector adapters can be used. Change a front panel connector type by removing an existing connector type and attaching the desired connector adapter (listed below). Five to seven are required to change the entire front panel depending on the configuration. Fiber optic cables in the new connector type will also be required.

- ❑ **81000AI** HMS-10 Connector Adapter
  (Agilent part number 08154-61701)
- ❑ **81000FI** FC/PC Connector Adapter
  (Agilent part number 08154-61702)
- ❑ **81000SI** DIN 47256 Connector Adapter
  (Agilent part number 08154-61703)
- ❑ **81000VI** ST Connector Adapter (Agilent part number 08154-61704)
- ❑ **81000WI** Biconic Connector Adapter (Agilent part number 08154-61705)

Microwave Measurement Accessories

For Devices with 3.5 mm Connectors

5.1
Calibration and verification kits

- ❑ **85052B** 3.5 mm Calibration Kit
  (Contains open and short circuits, fixed lowband and sliding loads, 3.5 mm to 3.5 mm adapters, and 3.5 mm connector tools and gages)
- ❑ **85052D** 3.5 mm Economy Calibration Kit
  (Contains open and short circuits, fixed precision broadband loads, 3.5 mm to 3.5 mm adapters, and 3.5 mm tools. (Refer to 8703A/Opt. 830, section 1.6.)
- ❑ **85053B** 3.5 mm Verification Kit
  (Contains precision airline, mismatched airline, 20 dB and 40 dB attenuators with NIST traceable data and uncertainties)

5.2
Test port return cables

The "C" and "E" cables below are for measurements where one end of the device under test is connected directly to the analyzer. These cables have a special 3.5 mm connector on one end for connection to the analyzer and a precision 3.5 mm (female) connector on the other end for connection to the device.

- ❑ **85131C** 3.5 mm Test Port Return Cable (Standard)
- ❑ **85131E** 3.5 mm Test Port Return Cable (Flexible)
  (Refer to 8703A/Option 830, section 1.6)

The "D" and "F" cables below are for measurements where the device under test is connected between the cable ends. Each cable has a special 3.5 mm connector on one end for connection to the analyzer, and a precision 3.5 mm connector on the other end (1 male and 1 female) for connection to the device.

- ❑ **85131D** 3.5 mm Test Port Return Cable Set (Standard)
- ❑ **85131F** 3.5 mm Test Port Return Cable Set (Flexible)

5.3
Special adapter set

This adapter set functions as a "test port saver" in applications where 3.5 mm devices are measured in high volume. Wear and potential damage to the analyzer's test ports are minimized.

- ❑ **85130D** Special Adapter Set

For Devices with 7 mm Connectors

6.1
Calibration and verification kits

- ❑ **85050B** 7 mm Calibration Kit
  (Contains open and short circuits, fixed lowband and sliding loads, 7 mm tools and connector gage)
- ❑ **85050D** 7 mm Economy Calibration Kit
  (Contains an open circuit, short circuit and fixed precision broadband load. 7 mm torque wrench is included)
- ❑ **85051B** 7 mm Verification Kit
  (Contains beadless airline, mismatched airline, 20 dB and 50 dB attenuators with NIST traceable data and uncertainties)

6.2
Test port return cables

The “C” and “E” cables below are for measurements where one end of the device under test is connected directly to the analyzer’s test ports. (See Agilent 85130B below). These cables have a special 3.5 mm connector on one end for direct connection to the analyzer, and a 7 mm connector on the other end for connection to the device.

- ❑ **85132C** 7 mm Test Port Return Cable (Standard)
- ❑ **85132E** 7 mm Test Port Return Cable (Flexible)

The “D” and “F” cables below are for measurements where the device under test is connected between the cable ends. Each cable has a special 3.5 mm connector for direct connection to the analyzer, and a 7 mm connector on the other end for connection to the device.

- ❑ **85132D** 7 mm Test Port Return Cable Set (Standard)
- ❑ **85132F** 7 mm Test Port Return Cable Set (Flexible)

6.3
Special adapter set

This adapter set functions as a 3.5 mm to 7 mm adapter in applications where 7 mm devices are to be connected directly to the analyzer. Recommended when using Agilent 85132C/E single cables.

- ❑ **85130B** Special Adapter Set

For Devices with Type-N Connectors

7.1
Calibration and verification kits

- ❑ **85054B** Type-N Calibration Kit
  (Contains open and short circuits, fixed lowband and sliding loads, 7 mm to type-N adapters, type-N to type-N adapters, and type-N connector tools and gages)
- ❑ **85054D** Type-N Economy Calibration Kit
  (Contains open and short circuits, fixed precision broadband loads, 7 mm to type-N adaptors, type-N to type-N adaptors, and type-N connector tools)
- ❑ **85055A** Type-N Verification Kit
  (Contains precision airline, mismatched airline, 20 dB and 50 dB attenuators with NIST traceable data and uncertainties)

7.2
Test port return cables

Use the test port return cables recommended for measurements on devices with 7 mm connectors (Agilent 85132C/D/E/F), with 7 mm to type-N adapters from the Agilent 85054B/D type-N Calibration Kit. If the Agilent 85132C/E single cables are used, the Agilent 85130C adapter set is also recommended.

7.3
Special adapter set

This adapter set functions as a 3.5 mm to type-N adapter in applications where type-N devices are to be connected directly to the analyzer’s test ports.

- ❑ **85130C** Special Adapter Set

General System
Equipment and Accessories

No external computer is required for copying the analyzer's screen to a plotter or a printer; or storing measurement data, instrument data, and calibration sets to a disk drive (CS80 format drives only).

Peripherals

8.2
Printers

Compatible with most HP Printers configured with GPIB interface. Consult your local Agilent office for more details.

8.3
Disk drives

Measurement data, instrument states, and calibration sets may be stored directly to an external disk without the aid of a computer. Compatible only with the CS80 format drives.

An HP 9122C 3.5 in. Dual Disk Drive is included with the standard Agilent 8703A.

Rack Configuration

9.1
System rack

This system rack is 123.7 cm (48.7 in.) high x 60 cm (23.6 in.) wide x 80 cm (31.5 in.) deep. It is supplied with an anti-static mat, support rails, rack mounting kits, power distribution, and two Agilent 10833A GPIB cables for connecting system peripherals to the analyzer.

❑ **Agilent 85043D** System Rack

Automatic Test Systems

10.1
Computers

An external controller is not necessary for automatic and calibrated Agilent 8703A operation. However, the 8703A can become part of a large automatic test system when a computer is used. Most computers configured with GPIB and software drivers are compatible.

10.2
Mass storage

Compatible with CS80 format drives.

An HP 9122C 3.5 in. Dual Disk Drive is included with the standard Agilent 8703A.

10.4
GPIB cables

Choose one of the following cables for each peripheral:

❑ **10833A** 1 m (3.3 ft.) GPIB Cable
❑ **10833B** 2.0 m (6.6 ft.) GPIB Cable
❑ **10833C** 4.0 m (13.3 ft.) GPIB Cable
❑ **10833D** 0.5 m (1.6 ft.) GPIB Cable

10.5
Software

The Agilent N1031A BenchLink Lightwave software is included with the standard Agilent 8703A. This software makes possible screen image capture, trace data capture and instrument state save and restore.

BenchLink Lightwave is a 32-bit product that operates and is supported on the following platforms:

- Windows® 95
- Windows® 98
- Windows NT® 4.0
- Windows NT® 5.0

It does not work with Windows® 3.X or prior versions of Windows®. The following PC-to-instrument interfaces are supported by the Agilent N1031A product on the indicated platforms:

Supported Interfaces	95	98	NT 4	NT 5
Agilent				
82335A/B	•	•		
82340A			•	•
82341B			•	•
82341C	•	•	•	•
82341D	•	•		
82350A	•	•	•	•
National Instruments				
National PCI-GPIB	•	•	•	•
National PCI-GPIB+			•	•
National PCMCIA-GPIB	•	•	•	•
National PCMCIA-GPIB+	•	•		
National AT-GPIB/TNT(pnp)	•	•	•	•
National AT-GPIB/TNT+(pnp)	•	•	•	•
National AT-GPIB	•	•	•	•
National AT-GPIB/TNT	•	•		
National EISA-GPIB	•	•		

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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.

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

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www.agilent.com/comms/lightwave

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