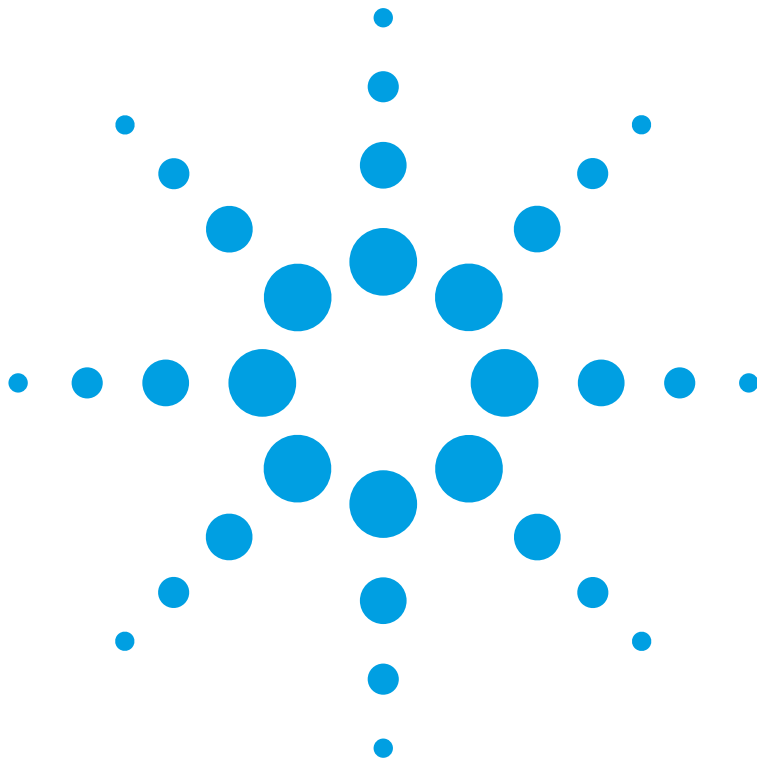


Agilent N1012A Lightwave Verification Kit



Agilent Technologies

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Safety Symbols. CAUTION

The *caution* sign denotes a hazard. It calls attention to a procedure which, if not correctly performed or adhered to, could result in damage to or destruction of the product. Do not proceed beyond a caution sign until the indicated conditions are fully understood and met.

WARNING

The *warning* sign denotes a hazard. It calls attention to a procedure which, if not correctly performed or adhered to, could result in injury or loss of life. Do not proceed beyond a warning sign until the indicated conditions are fully understood and met.



The instruction manual symbol. The product is marked with this warning symbol when it is necessary for the user to refer to the instructions in the manual.



The laser radiation symbol. This warning symbol is marked on products which have a laser output.



The AC symbol is used to indicate the required nature of the line module input power.



The ON symbols are used to mark the positions of the instrument power line switch.



The OFF symbols are used to mark the positions of the instrument power line switch.



The CE mark is a registered trademark of the European Community.



The CSA mark is a registered trademark of the Canadian Standards Association.



The C-Tick mark is a registered trademark of the Australian Spectrum Management Agency.

ISM1-A

This text denotes the instrument is an Industrial Scientific and Medical Group 1 Class A product.

Typographical Conventions.

The following conventions are used in this book:

Key type for keys or text located on the keyboard or instrument.

Softkey type for key names that are displayed on the instrument's screen.

Display type for words or characters displayed on the computer's screen or instrument's display.

User type for words or characters that you type or enter.

Emphasis type for words or characters that emphasize some point or that are used as place holders for text that you type.

General Safety Considerations

This product has been designed and tested in accordance with IEC Publication 1010, Safety Requirements for Electronic Measuring Apparatus, and has been supplied in a safe condition. The instruction documentation contains information and warnings which must be followed by the user to ensure safe operation and to maintain the product in a safe condition.

Install the instrument according to the enclosure protection provided. This instrument does not protect against the ingress of water. This instrument protects against finger access to hazardous parts within the enclosure.

WARNING If this product is not used as specified, the protection provided by the equipment could be impaired. This product must be used in a normal condition (in which all means for protection are intact) only.

WARNING No operator serviceable parts inside. Refer servicing to qualified service personnel. To prevent electrical shock do not remove covers.

General Safety Considerations

Lightwave Verification

You can monitor the stability and repeatability of the analyzer system hardware by periodically performing the lightwave verification process. The verification test compares current measurements of the verification device against factory-measured data unique to the device. The factory-measured data is supplied on a disk in the verification kit.

If the analyzer measures the verification device within the uncertainty limits provided on the disk, the analyzer passes the verification test. If the measurement results do not fall within the uncertainty limits, perform the steps in “If the Lightwave Verification Test Fails” on page 6 and repeat the verification procedure. If the analyzer continues to fail the test, contact your nearest Agilent Technologies office or sales representative. A list of Agilent Technologies sales and service offices is provided in “Agilent Technologies Service Offices” on page 7.

In order to verify the system, it is necessary to perform the procedures described here. The recommended verification cycle is one year.

Note

Although this lightwave verification is a subset of the total process for verifying the system's conformance to specifications, this procedure can be used alone as a functional test and can be helpful in the following ways:

- It can be used at incoming inspection to check that no major degradation has occurred in the system during shipment.
- It provides a means to periodically monitor measurement stability.
- It can help isolate the cause of incorrect measurement results. (When the system passes the test, you will have confidence the system is operating correctly and any problem is in the setup or DUT.)

Verification Kit Parts

Table 1-1. N1012A Kit Parts

Description	Agilent Model/Part Number	Quantity
0 to 32 GHz Light Wave Detector	83440D Option 050	1
Cable Assembly	86030-60005	1
Power Supply	87421A	1
Reference Reflector Cable Assembly	81000BR	1
Verification Device Data Floppy Disk	Unique to verification device	1
Fiber Optic 4M Cable	1005-0173	3
BNC Termination	1250-0207	2
6 dB (2.4 mm) Attenuator	8490D Opt 006	1
50 ohm load (2.4 mm) F	00901-60004	1
Adapter (2.4 mm), F/F	85056-60006	1

Verification Procedure

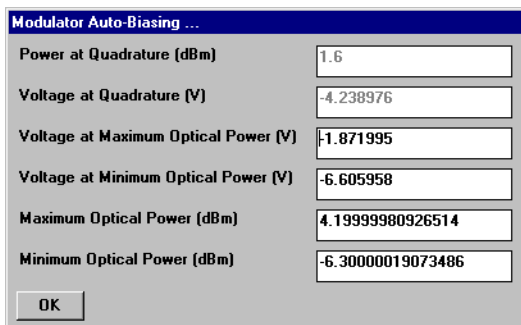
1. Load the verification device data into the 86030A, if the data is not already loaded. The device data is on the floppy disk that is included in the verification kit.
 - a Insert the N1012A verification device data disk into the floppy drive of the 86030A system computer.
 - b From the Windows Desktop, double-click **My Computer**.
 - c Double-click on the **A:** drive and then **setup.bat**.
2. In the **Options** menu, select **System Verification**.



3. From the System Verification dialog box, click **Verification**.

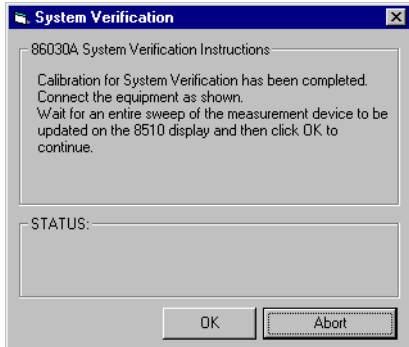


4. The System Verification procedure will start by performing an auto-bias routine. Ensure that a BNC 50 ohm load is connected to the Port 1 bias tee on the 8517B rear panel.

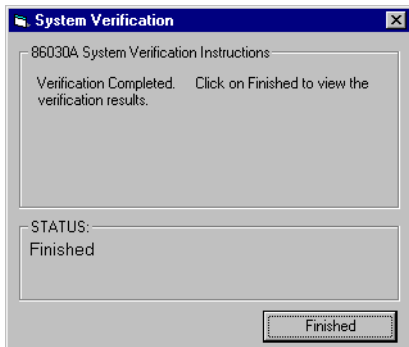


5. Follow the on-screen instructions to perform an O/E response and isolation calibration.

- When the calibration procedure is complete, you will be prompted to connect the equipment as shown on the screen. The 83440D Option 050 lightwave detector will be used as the DUT for the verification procedure. Be sure to connect the dc bias port of the detector to the 87421A power supply.



- Once an entire sweep is displayed on the 8510C, click **OK** to continue.
- The verification process is completed. Click on **Finished** to save and view the verification results on an Excel worksheet.



If the Lightwave Verification Test Fails

1. If any part of the test fails, measurement integrity is not confirmed. Proceed with the following checks.
 - Clean all the optical and electrical connectors and make sure the connections are finger tight.
 - Clean all the RF connectors and make sure the connections are made to the correct torque. Refer to the “Accurate Measurements” section in the “Getting Started” chapter of the 86030A user’s guide.
 - Run the lightwave verification test again.
2. Check electrical connectors for damage, especially the center female pins.
3. Check the flexible 2.4 mm cables for damage.
4. If the test still fails, perform an autobias.
 - Select **Options, Autobias** from the menu bar.
 - Allow two hours for the modulator to stabilize, and then run the measurement stability test again.
5. If the test still fails, reload the verification device data into the 86030A. The device data is on the floppy disk that is included in the verification kit.
 - Insert the N1012A verification device data disk into the floppy drive of the 86030A system computer.
 - From the Windows Desktop, double-click **My Computer**.
 - Double-click on the **A:** drive and then **setup.bat**.
 - Run the lightwave verification test again.
6. If the test still fails, refer to the “Maintenance” chapter in the 86030A user’s guide.

Agilent Technologies Service Offices

Before returning an instrument for service, call the Agilent Technologies Instrument Support Center at (800) 403-0801, visit the Test and Measurement Web Sites by Country page at <http://www.tm.agilent.com/tmo/country/English/index.html>, or call one of the numbers listed below.

Table 1. Agilent Technologies Service Numbers

Austria	01/25125-7171
Belgium	32-2-778.37.71
Brazil	(11) 7297-8600
China	86 10 6261 3819
Denmark	45 99 12 88
Finland	358-10-855-2360
France	01.69.82.66.66
Germany	0180/524-6330
India	080-34 35788
Italy	+39 02 9212 2701
Ireland	01 615 8222
Japan	(81)-426-56-7832
Korea	82/2-3770-0419
Mexico	(5) 258-4826
Netherlands	020-547 6463
Norway	22 73 57 59
Russia	+7-095-797-3930
Spain	(34/91) 631 1213
Sweden	08-5064 8700
Switzerland	(01) 735 7200
United Kingdom	01 344 366666
United States and Canada	(800) 403-0801

