

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Visit our website - *Click HERE*

User's and Service Guide

Agilent Technologies 85029B
7 mm Verification Kit

This manual applies directly to 85029B verification kits that have serial number prefix 2818A. Verification kits with a higher serial prefix number are different than the kits documented in this manual, and are supplied with a manual-change supplement which documents the differences.

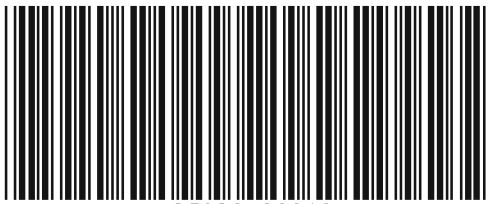


Agilent Technologies

Part Number: 85029-90010

Printed in USA
Print Date: December 2002
Supersedes: July 1988

© Copyright 1988, 2002 Agilent Technologies, Inc. All rights reserved.



85029- 90010

Documentation Warranty

THE MATERIAL CONTAINED IN THIS DOCUMENT IS PROVIDED "AS IS," AND IS SUBJECT TO BEING CHANGED, WITHOUT NOTICE, IN FUTURE EDITIONS. FURTHER, TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, AGILENT DISCLAIMS ALL WARRANTIES, EITHER EXPRESS OR IMPLIED WITH REGARD TO THIS MANUAL AND ANY INFORMATION CONTAINED HEREIN, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. AGILENT SHALL NOT BE LIABLE FOR ERRORS OR FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH THE FURNISHING, USE, OR PERFORMANCE OF THIS DOCUMENT OR ANY INFORMATION CONTAINED HEREIN. SHOULD AGILENT AND THE USER HAVE A SEPARATE WRITTEN AGREEMENT WITH WARRANTY TERMS COVERING THE MATERIAL IN THIS DOCUMENT THAT CONFLICT WITH THESE TERMS, THE WARRANTY TERMS IN THE SEPARATE AGREEMENT WILL CONTROL.

Assistance

Product maintenance agreements and other customer assistance agreements are available for Agilent products.

For any assistance, contact Agilent Technologies. Refer to page 6 for a list of Agilent contacts.

85029B 7 mm Verification Kit

Product Description

Intended Uses

System Verification

Measuring the devices of this kit and comparing the results with supplied data provides a tops-down verification of an Agilent 8753A/B network analyzer with a 7-mm 50 ohm test-set. The frequency range covered by the Agilent 85029B verification kit is 300 kHz to 6 GHz. The system must be calibrated before performing a system verification.

A tops-down verification is a procedure in which the devices in a verification kit are measured on the 8753A/B system. These measured values are then compared with the NBS traceable data that Agilent supplies with each verification kit. The 85029B verification kit contains three verification devices for this purpose. The kit contains a 7-mm 20 dB attenuator, a 7-mm 50 dB attenuator, and a 7 mm mismatch attenuator. NIST traceable magnitude and phase data is provided with the 85029B verification kit at specific frequencies from 300 kHz to 6 GHz for all four S-parameters.

The uncertainty limits provided with these verification devices are the worst case sum of the measurement uncertainties of the factory 85029B production test system, plus the measurement uncertainties of the system being verified. If the measured data for the verification devices falls within the supplied uncertainty limits, then the measurement system passes its performance verification.

Residual errors of the measurement system are, in part, due to the characteristics of the calibration devices used during system calibration. You should use the same calibration kit that will be used when calibrating the system for actual measurements. Using a different calibration kit can cause inconsistent performance.

As an example, a user calibrates the system with a calibration kit that is in excellent condition and the system passes the verification procedure easily. The system is then sent to production and is calibrated using a worn or damaged calibration kit. In this case, the residual errors of the system could fall outside the allowable uncertainty limits.

Each 85029B verification kit is measured at the factory in a tightly controlled environment using an 8753 network analyzer. The test system is calibrated with special NIST-traceable standards, allowing the accuracy of the test system to exceed that of a standard 8753. This system is verified daily, using a bottoms-up procedure that quantifies individual sources of measurement error.

Refer to Table 1 on page 3 to see which measurements are the basis for system verification.

Table 1 Measurements Used for System Verification

Verification Device	S11/S22		S12/S21	
	Magnitude	Phase	Magnitude	Phase
20 dB attenuator	x		x	x
60 dB attenuator			x	x
mismatch attenuator	x	x		

PASS/FAIL information is displayed only for the most useful measurements, as indicated in Table 1. However, all four S-parameters are measured. Additionally, the uncertainties calculated for each device are included in printed form.

Statistical quality control of instrument performance

The 85029B allows the user to periodically record measured data. This history data is useful for statistical quality control of instrument performance. Also, unusual deviations from historical data can warn the operator of possible degradation in instrument or verification kit performance.

Application Systems

The 85029B 7-mm verification kit has been designed to check the performance of:

- 8753, or 8720D and its test sets
- 85044A, 85046A, and 85047A

Recommended Practices

To maintain optimum performance from this verification kit, observe these simple precautions:

- Always place the verification devices back in the protective case between uses.
- Make connections carefully to avoid misalignment, leading to inaccurate measurements of connector damage.
- Keep the connectors free of dirt and metallic particles.
- If you must clean the connectors, use clean compressed air first. NEVER use abrasives. When cleaning connectors, use liquid Freon exclusively and apply with a plastic swab. For more information, refer to *Principles of Microwave Connector Care Quick Reference Card* (part number 08510-90360).

General Information

Weight

Net: 0.9 kg (2 lb)

Shipping: 1.4 kg (3 lb)

Recommended Recertification Period

Agilent recommends that the verification kit be recertified annually; contact Agilent Technologies for details (refer to "Contacting Agilent" on page 6).

What This Kit Contains

Verification devices

The kit contains precision standard devices. The storage case is supplied to protect the devices from damage that will degrade accuracy. Place the devices in the case immediately after use.

Measured data and uncertainty limits are supplied on disc. In order to get a hardcopy, you must order Option UK6.

Operation

System Verification Procedure

The system verification procedure is located in the on-site system service manual of your particular instrument.

Making a Copy of the Master Data Disk

This disk contains data files which are unique to the verification standards shipped with your 85029B verification kit. Agilent recommends that you make a copy of the master data disk for everyday use, and store the master disk in a safe place.

Making a backup disk using the 8753 is time consuming, as many files must be copied individually.

Replaceable Parts

The three attenuators are separately available and should be ordered by the numbers given below. Each of these devices has a serial number and the kit has a serial number. All four serial numbers appear on the verification disk label.

Table 2 Replaceable Parts

Description	Part Number
7 mm mismatch attenuator	85029-60004[a]
7-mm 20 dB attenuator	85029-60005[a]
7-mm 50 dB attenuator	85029-60006[a]
Operating and Service Manual	85029-90010
Instrument case	85029-80010
Foam pads	85029-80007

a. Replacement part number, includes disk with device-specific data.

Replacing the Master Disk

The 85029B master disk contains unique data that applies to the individual verification devices. No two devices have the same performance data. It is not a trivial matter to replace a lost or damaged master disk, so it is important to make one or more backup copies of the master disk.

If your master data disc is lost or damaged, and you have no backup copies, take one of the following actions:

- **If Recertification is not required in the near future**. Contact your nearest Agilent service office for a replacement. Please specify the serial number of the verification kit, and if it has been recertified. If a recertification has been performed, please indicate which service office performed it.
- **If recertification will be required soon.** Agilent recommends that you have the verification kit recertified early. A new master disk will be generated during the recertification process.

Contacting Agilent

Table 3 Contacting Agilent

Online assistance: www.agilent.com/find/assist			
United States *(tel)* 1 800 452 4844	**Latin America** *(tel)* (305) 269 7500 *(fax)* (305) 269 7599	**Canada** *(tel)* 1 877 894 4414 *(fax)* (905) 282-6495	**Europe** *(tel)* (+31) 20 547 2323 *(fax)* (+31) 20 547 2390
New Zealand *(tel)* 0 800 738 378 *(fax)* (+64) 4 495 8950	**Japan** *(tel)* (+81) 426 56 7832 *(fax)* (+81) 426 56 7840	**Australia** *(tel)* 1 800 629 485 *(fax)* (+61) 3 9210 5947	**Singapore** *(tel)* 1 800 375 8100 *(fax)* (65) 836 0252
Malaysia *(tel)* 1 800 828 848 *(fax)* 1 800 801 664	**Philippines** *(tel)* (632) 8426802 *(tel) (PLDT subscriber only):* 1 800 16510170 *(fax)* (632) 8426809 *(fax) (PLDT subscriber only):* 1 800 16510288	**Thailand** *(tel) outside Bangkok:* (088) 226 008 *(tel) within Bangkok:* (662) 661 3999 *(fax)* (66) 1 661 3714	**Hong Kong** *(tel)* 800 930 871 *(fax)* (852) 2506 9233
Taiwan *(tel)* 0800-047-866 *(fax)* (886) 2 25456723	**People's Republic of China** *(tel) (preferred):* 800-810-0189 *(tel) (alternate):* 10800-650-0021 *(fax)* 10800-650-0121	**India** *(tel)* 1-600-11-2929 *(fax)* 000-800-650-1101	

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP