

**Agilent 16195B Calibration Kit**

# **Operation Note**

**Third Edition**



**Agilent Technologies**

**Manufacturing No. 16195-90040**

**October 2006**

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## Notices

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## Manual Printing History

The manual's printing date and part number indicate its current edition. The printing date changes when a new edition is printed. (Minor corrections and updates that are incorporated at reprint do not cause the date to change.) The manual part number changes when extensive technical changes are incorporated.

|               |                |
|---------------|----------------|
| December 1999 | First Edition  |
| March 2001    | Second Edition |
| October 2006  | Third Edition  |

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## Safety Summary

The following general safety precautions must be observed during all phases of operation, service, and repair of this instrument. Failure to comply with these precautions or with specific WARNINGS elsewhere in this manual may impair the protection provided by the equipment. In addition it violates safety standards of design, manufacture, and intended use of the instrument.

Agilent Technologies Company assumes no liability for the customer's failure to comply with these requirements.

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### NOTE

16195B comply with INSTALLATION CATEGORY II and POLLUTION DEGREE 2 in IEC61010-1. 16195B are INDOOR USE product.

- **DO NOT Operate In An Explosive Atmosphere**  
Do not operate the instrument in the presence of flammable gasses or fumes. Operation of any electrical instrument in such an environment constitutes a definite safety hazard.
- **DO NOT Substitute Parts Or Modify Instrument**  
Because of the danger of introducing additional hazards, do not install substitute parts or perform unauthorized modifications to the instrument. Return the instrument to a Hewlett-Packard Sales and Service Office for service and repair to ensure that safety features are maintained.
- **Dangerous Procedure Warnings**  
Warnings, such as the example below, precede potentially dangerous procedures throughout this manual. Instructions contained in the warnings must be followed.

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## Safety Symbol

General definitions of safety symbols used on the instrument or in manuals are listed below.

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### WARNING

**This warning sign denotes a hazard. It calls attention to a procedure, practice, condition or the like, which, if not correctly performed or adhered to, could result in injury or death to personnel.**

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### CAUTION

This Caution sign denotes a hazard. It calls attention to a procedure, practice, condition or the like, which, if not correctly performed or adhered to, could result in damage to or destruction of part or all of the product.

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### NOTE

Note denotes important information. It calls attention to a procedure, practice, condition or the like, which is essential to highlight.

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## Certification

Agilent Technologies certifies that this product met its published specifications at the time of shipment from the factory. Agilent Technologies further certifies that its calibration measurements are traceable to the United States National Institute of Standards and Technology, to the extent allowed by the Institution's calibration facility, or to the calibration facilities of other International Standards Organization members.

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## Warranty

This Agilent Technologies instrument product is warranted against defects in material and workmanship for a period corresponding to the individual warranty periods of its component products. Instruments are warranted for a period of one year. Fixtures and adapters are warranted for a period of 90 days. During the warranty period, Agilent Technologies will, at its option, either repair or replace products that prove to be defective.

For warranty service or repair, this product must be returned to a service facility designated by Agilent Technologies. Buyer shall prepay shipping charges to Agilent Technologies and Agilent Technologies shall pay shipping charges to return the product to Buyer. However, Buyer shall pay all shipping charges, duties, and taxes for products returned to Agilent Technologies from another country.

Agilent Technologies warrants that its software and firmware designated by Agilent Technologies for use with an instrument will execute its programming instruction when properly installed on that instrument. Agilent Technologies does not warrant that the operation of the instrument, or software, or firmware will be uninterrupted or error free.

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## Limitation of Warranty

The foregoing warranty shall not apply to defects resulting from improper or inadequate maintenance by Buyer, Buyer-supplied software or interfacing, unauthorized modification or misuse, operation outside the environmental specifications for the product, or improper site preparation or maintenance.

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### IMPORTANT

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## **Exclusive Remedies**

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## **Assistance**

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

For any assistance, contact your nearest Agilent Technologies Sales and Service Office. Addresses are provided at the back of this manual.



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# 1

## General Information

This chapter provides Agilent Technologies 16195B description, characteristics and related general information.

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## Description

Agilent 16195B is a calibration kit for Agilent 4287A RF LCR Meter or E4991A impedance / material analyzer. The calibration using the Agilent 16195B is performed on the 7 mm connector plane.

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## Kit Contents

The calibration kit contents are listed in Table 1-1

**Table 1-1**                      **Contents of the 16195B**

| Description                  | Agilent Part No. | Qty. |
|------------------------------|------------------|------|
| 50 $\Omega$ Termination      | 04287-60021      | 1    |
| Open Termination             | E4991-60022      | 1    |
| Short Termination            | E4991-60021      | 1    |
| Low-Loss Capacitor           | 04287-60022      | 1    |
| Carrying Case                | 16195-60002      | 1    |
| Operation Note (This manual) | 16195-90020      | 1    |

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## Initial Inspection

Inspect the shipping container for damage. If the shipping container or cushioning material is damaged, it should be kept until the shipping contents have been checked for completeness and the performance test kit has been checked mechanically and electrically. The shipping contents should consist of the items shown in Table 1-1. If the shipment is incomplete, or if there is mechanical damage or other defects, notify your nearest Agilent Technologies office. If the shipping container is damaged, or the cushioning material shows signs of stress, notify the carrier as well as the Agilent Technologies office. Keep the shipping materials for the carrier's inspection.

## Characteristics

This section provides the characteristics of the Agilent 16195B calibration kit.

### Electrical Characteristic

Nominal Values of the kit are in Table 1-2.

**Table 1-2**                      **Nominal Values**

|                        |             |
|------------------------|-------------|
| OPEN Conductance       | 0 S         |
| OPEN Capacitance       | 82 fF       |
| SHORT Resistance       | 0 $\Omega$  |
| SHORT inductance       | 0 H         |
| 50 $\Omega$ resistance | 50 $\Omega$ |
| 50 $\Omega$ inductance | 0 H         |

#### NOTE

The low loss capacitor does not have a defined value.

### Operating Conditions

The calibration kit must be operated under the ambient environmental conditions in Table 1-3.

**Table 1-3**                      **Operating Conditions**

|                   |                      |
|-------------------|----------------------|
| Temperature       | 23 °C $\pm$ 5 °C     |
| Relative Humidity | $\leq$ 70 % at 28 °C |
| Altitude          | 0 m to 4500 m        |

### Storage Conditions

The calibration kit must be stored under the ambient environmental conditions in Table 1-4.

**Table 1-4**                      **Storage Conditions**

|                   |                      |
|-------------------|----------------------|
| Temperature       | – 40 °C to + 75 °C   |
| Relative Humidity | $\leq$ 95 % at 40 °C |
| Altitude          | 0 m to 15000 m       |

### **Carrying Case Dimensions**

The carrying case dimensions are;

350 mm (W) × 100 mm (H) × 270 mm (D)

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## **2 Service**

This chapter provides information of 16195B service.

## Service

If your calibration kit requires service, contact the Agilent Technologies office nearest you. When you send the kit to Agilent Technologies, please provide following information.

- Your company name and address
- A technical contact person within your company, and the person's phone and fax number
- The model number and serial number of the kit
- The type of the service required
- A detailed description of the problem

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