Agilent 16048B Test Leads

Operating Note

Third Edition

Agilent Technologies

Agilent Part No. 16048-90012
May 2000

Printed in Japan

Notices

The information contained in this document is subject to change without notice.

Agilent Technologies Japan, Ltd.

Component Test PGU-Kobe

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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.

August 1996	First Edition (part number : 16048-90011)
November 1998	Second Edition (part number : 16048-90012)
May 2000	Third Edition (part number : 16048-90012)

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

- Ground The Instrument

  To avoid electric shock hazard, the instrument chassis and cabinet must be connected to a safety earth ground by the supplied power cable with earth blade.

- 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.

- Keep Away From Live Circuits

  Operating personnel must not remove instrument covers. Component replacement and internal adjustments must be made by qualified maintenance personnel. Do not replace components with the power cable connected. Under certain conditions, dangerous voltages may exist even with the power cable removed. To avoid injuries, always disconnect power and discharge circuits before touching them.

- DO NOT Service Or Adjust Alone

  Do not attempt internal service or adjustment unless another person, capable of rendering first aid and resuscitation, is present.

- 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 Agilent Technologies 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.

WARNING **Dangerous voltages, capable of causing death, are presenting this instrument. Use extreme caution when handling, testing, and adjusting this instrument.**

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.

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 Company 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 property 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.

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.

IMPORTANT

No other warranty is expressed or implied. Agilent Technologies specifically disclaims the implied warranties of merchantability and fitness for a particular purpose.

Exclusive Remedies

The remedies provided herein are buyer's sole and exclusive remedies. Agilent Technologies shall not be liable for any direct, indirect, special, incidental, or consequential damages, whether based on contract, tort, or any other legal theory.

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.

Agilent 16048B
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MANUAL IDENTIFICATION

Model Number: 16048B
Date Printed: May 2000
Part Number: 16048-90012

This supplement contains information for correcting manual errors and for adapting the manual to newer instruments that contains improvements or modifications not documented in the existing manual.

To use this supplement
1. Make all ERRATA corrections
2. Make all appropriate serial-number-related changes listed below

SERIAL PREFIX OR NUMBER	MAKE MANUAL CHANGES
All	1

SERIAL PREFIX OR NUMBER	MAKE MANUAL CHANGES

◆ **New Item**

ERRATA

CHANGES 1

CHANGE 1 contains the information needed to adapt the 16048B's manual.

Page 1-2 Specification

Add the following information.

Maximum Voltage……±40V peak max. (AC + DC)

NOTE

Manual change supplement are revised as often as necessary to keep manuals as current and accurate as possible. Agilent Technologies recommends that you periodically request the latest edition of this supplement. Free copies are available from all Agilent Technologies offices. When requesting copies, quote the manual identification information from your supplement, or the model number and print date from the title page of the manual.

PRINTED IN JAPAN

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General Information

Introduction

This operation note provides the information for operating and maintaining the HP 16048B Test Leads.

Description

The HP 16048B is a direct attachement, 4-terminal pair type fixture which is equipped with four SMC(f) terminated coaxial test leads. These test leads are used to attach user-fabricated test fixtures to the instruments.

The HP 16048B has been designed for use with the following instruments:

HP 4263B LCR Meter
HP 4278A 1 kHz / 1 MHz Capacitance Meter
HP 4279A 1 MHz C-V Meter
HP 4284A Precision LCR Meter
HP 4285A Precision LCR Meter
HP 4192A LF Impedance Analyzer
HP 4194A Impedance / Gain Phase Analyzer

The HP 16048B has inherent stray capacitance, residual inductance and residual resistance that affect the accuracy of measured value. The measurement errors caused by these residuals are minimized by using the instrument's error correction functions. The measurement accuracy when the open, short, and cable length corrections are performed is described in the specifications section of the instrument's operation manual.

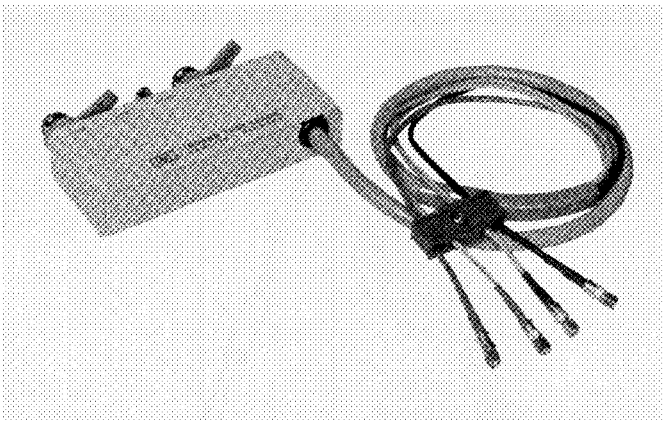

Figure 1-1. HP 16048B Test Leads

Specification

Connector Type ..... SMC (female)
Cable Length ..... Approximately 1 meter (39.4 inches)
Weight ..... 250 grams (0.55 lbs)

Operation

Setup and measurement procedure

1. Connect the HP 16048B directly to the UNKNOWN terminals of the instrument.
2. Connect the user-fabricated test fixture to the test leads.
3. Perform the cable length correction (Set the cable length to 1 meter).
4. Perform the open/short correction at the measurement terminal of the test fixture.

Then you can perform measurement at the test fixture.

For more detail about the cable length correction and open/short correction procedure, refer to the instrument's operation manual.

Using the connector plate

The connector plate is furnished with the HP 16048B. Figure 1-2 shows an example to use the connector plate with the HP 16048B. By connecting the HP 16048B to the connector plate, the HP 16048B's outer shield conductors are connected together to construct the four-terminal-pair measurement circuit configuration. For more detail about the four-terminal-pair measurement, refer to the instrument's operation manual.

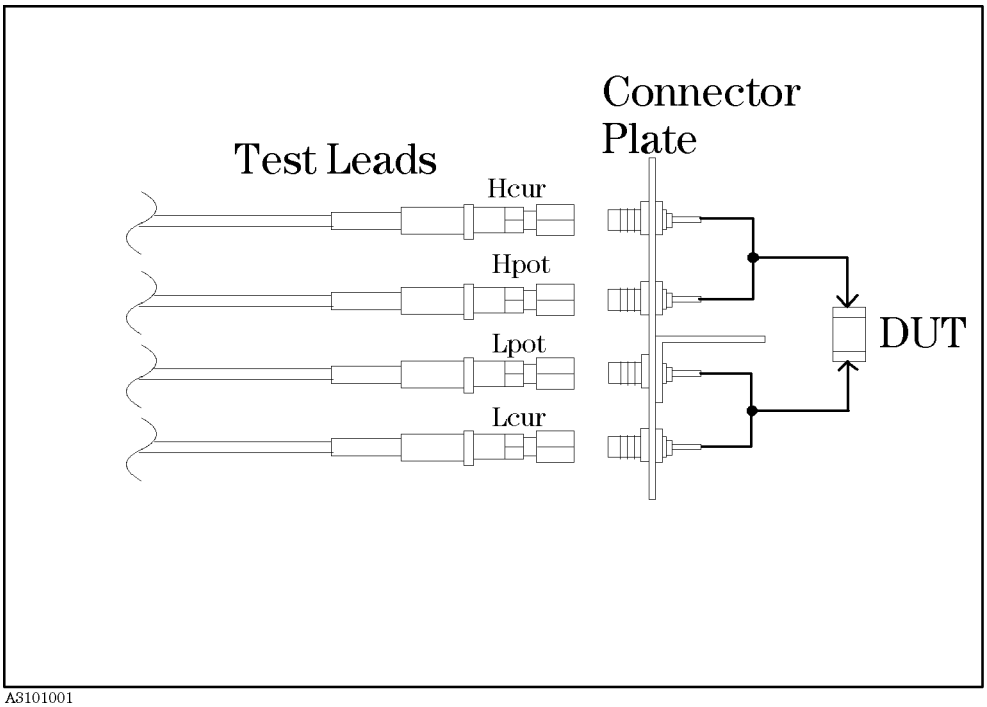

Figure 1-2. Connector Plate Application

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Maintenance

Maintenance principally consists of cleaning contacts and replacing worn or damaged parts. Figure 2-1 shows the HP 16048B replaceable parts. Only the parts whose part numbers are in the parts list are replaceable. Use the correct Hewlett-Packard part number when ordering replaceable parts.

Table 2-1. Replaceable Parts List

Reference Designator	HP Part Number	Qty.	Description	Note
6	2360-0192	2	Screw	
11	2200-0105	1	Screw	
12	2190-0206	1	Washer	
13	16047-40000	1	Stopper	
15	16048-04001	1	Cover-Top	
16	1400-0719	2	Tie Rap	
21	2360-0113	1	Screw	
22	3050-0010	1	Washer	
23	16021-50021	1	Cable Cramp	
24	16021-50022	1	Cable Cramp	
30	1250-1164	4	Connector Body	
	16048-60030	1	Test Lead	1 thru 30
31	1250-0829	4	Connector-RF	
32	2360-0115	2	Screw	
33	16033-10021	1	Plate	
34	16032-10022	1	Plate	
35	2190-0124	4	Washer	
36	2950-0078	4	Nut	
37	16033-60001	1	Connector Ass'y	31 thru 36

Note

The parts not shown in Table 2-1 cannot be replaced separately. When these non-replaceable parts are worn or damaged, replace the whole test lead assembly (PN 16048-60030). 16048-60030 is Agilent internal-only part number.

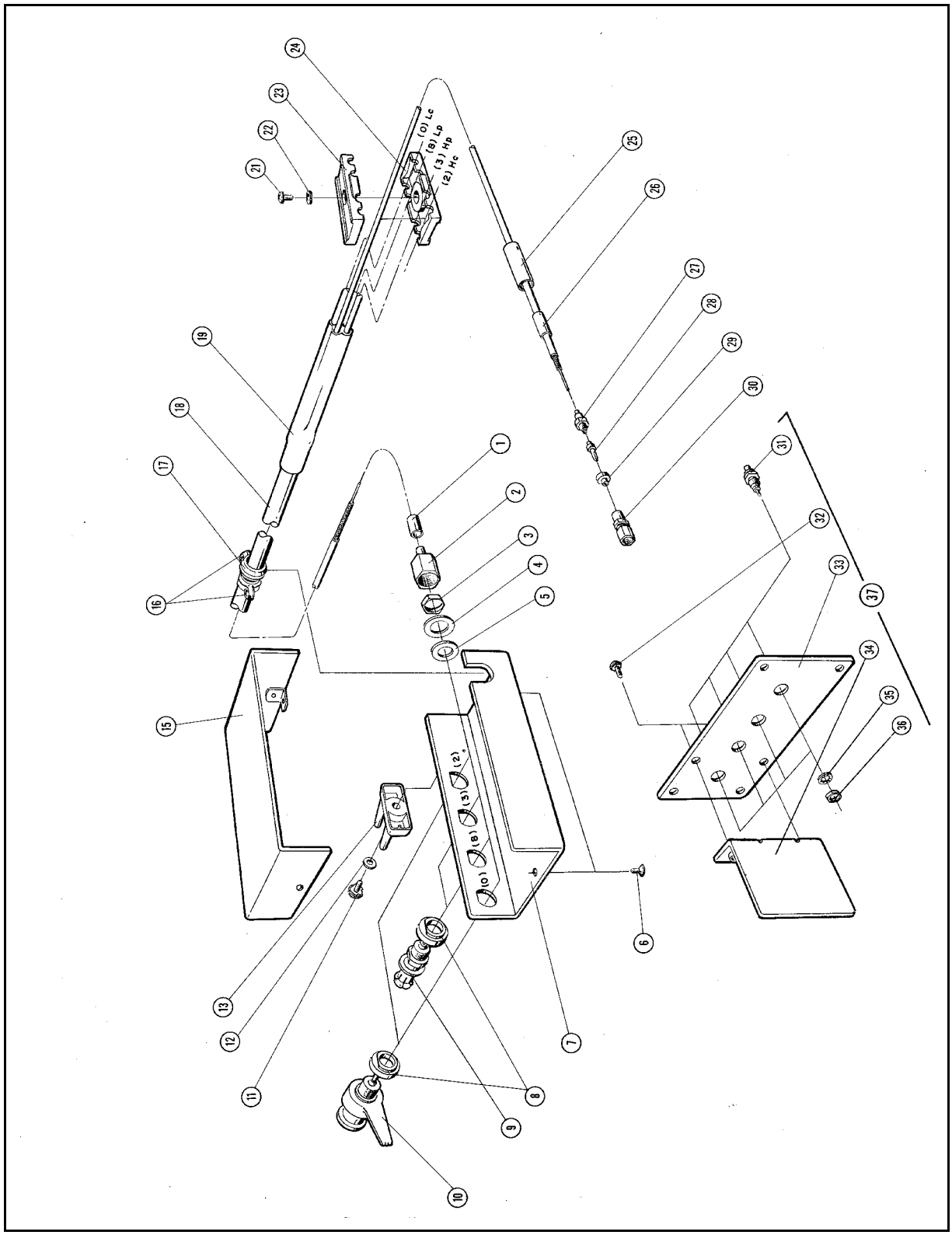

Figure 2-1. Replaceable Parts Identification

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