



**Agilent**

**E4980A**

**Precision LCR Meter  
20 Hz to 2 MHz**

**E4980AL**

**Precision LCR Meter  
20 Hz to 300 kHz/500 kHz/1 MHz**

**Configuration Guide**



***Anticipate — Accelerate — Achieve***



**Agilent Technologies**

# E4980A/E4980AL Configuration Guide Introduction

This guide helps you to define the options and accessories for the E4980A and E4980AL precision LCR meters.

The E4980A is the model number of the 20 Hz to 2 MHz frequency range LCR meter. The E4980AL is the model number of the low frequency options (20 Hz to 300 kHz/500 kHz/1 MHz) of the E4980A. This is a distributor preferred product and the model number E4980AL is used only for ordering and shipment purpose. The actual unit of the E4980AL is labeled as the E4980A (not E4980AL), hence for Agilent service and post-sales support, refer to the model number E4980A.

For configuring options, see this page for the E4980A, and page 8 for the E4980AL.

## E4980A Ordering Guide

The following steps will guide you through configuring your E4980A.

| Standard Furnished Item    |  |
|----------------------------|--|
| Description                | Additional Information   |
| CD-ROM                     | Contains User's Guide (in PDF) and Sample Program. See documentation option for printed manuals. |
| CD-ROM                     | Contains Agilent IO Libraries Suite (the latest versions).                                       |
| USB Cable                  | USB (Type A) to USB (Type Mini-B) cable  |
| Power Cable                |  |
| Certificate of Calibration |  |

*Note:* Test Fixture and printed copy of User's Guide are not furnished. See Documentation Option and Available Accessories for the selection of these items.

| Step 1. Choose Hardware Option (Mandatory) |            |          |                            |   |
|--|------------|----------|----------------------------|---|
| Description                                | Option No. | Requires | Not Compatible             | Additional Information  |
| Bias Current Interface                     | E4980A-002 | None     | 001<br>(See Notes 1 and 2) | Adds a digital interface to allow the E4980A to control the 42841A Bias Current Source. (The 42841A was discontinued in December 2012.) |
| Handler Interface                          | E4980A-201 | None     | None<br>(See Note 2)       | Adds handler interface  |
| Scanner Interface                          | E4980A-301 | None     | None<br>(See Note 2)       | Adds scanner interface  |
| No Interface                               | E4980A-710 | None     | None<br>(See Note 2)       | Attaches blank panel to the expansion slots   |

*Note 1:* The E4980A-001 and E4980A-002 can be installed in the same unit but cannot be operated simultaneously.

*Note 2:* Up to 2 interfaces can be installed in the expansion slots on the rear panel. When no interface is added, two of the E4980A-710 are installed.

When one interface is added, that interface and the E4980A-710 are installed.

*Note 3:* Refer to Hardware Upgrade for retrofit information on the above options.

**Step 2. Choose Software Option** (If not required, go to Step 3)

| Description                   | Option No. | Requires | Not Compatible      | Additional Information  |
|-------------------------------|------------|----------|---------------------|---|
| Power and DC Bias Enhancement | E4980A-001 | None     | 002<br>(See Note 1) | Increases test signal level range to 20 V/100 mA rms max. Adds internal DC bias function controllable from $0 \pm 40$ V/ $\pm 100$ mA dc, 2nd DC source, and Rdc/Vdc/Idc measurement functions. |
| Entry Model                   | E4980A-005 | None     | None                | Low-priced version. Same as basic model except for difference in measurement time (slow speed).   |
| DCR Measurement               | E4980A-200 | None     |                     | Adds a DC resistance measurement.<br>(mandatory option)   |

*Note 1:* The E4980A-001 and E4980A-002 can be installed in the same unit but cannot be operated simultaneously.

*Note 2:* Refer to Software Upgrade for retrofit information on the above options.

**Step 3. Choose General/Miscellaneous Accessory Option** (If not required, go to Step 4)

| Description   | Option No. | Requires | Not Compatible | Additional Information |
|---------------|------------|----------|----------------|------------------------|
| Rackmount Kit | E4980A-1CM | None     | None           |                        |

*Note:* Front Handle Kit and Handle/Rack Mount Kit are not available.

**Step 4. Choose Documentation Option** (If not required, go to Step 5)

| Description                   | Option No. | Additional Information   |
|-------------------------------|------------|--|
| U.S. - English Localization   | E4980A-ABA | Printed manuals are not furnished. Order documentation option if required. |
| Japan - Japanese Localization | E4980A-ABJ |  |

**Step 5. Choose Calibration Certificate Option** (If not required, go to Step 6)

| Description                     | Option No. | Additional Information          |
|---------------------------------|------------|---------------------------------|
| ISO 17025 Compliant Calibration | E4980A-1A7 | ISO 17025 compliant calibration |
| ANSI Z540 Compliant Calibration | E4980A-A6J | ANSI Z540 compliant calibration |

**Step 6. Choose Warranty Plan**

3-year Return-to-Agilent warranty and service plan are standard. For extended warranty options and additional information, contact your local Agilent sales office or visit the Agilent home website.

## Hardware Upgrade

| Option No. | Description            | Upgrade Model No. or Equivalent Part Number | Customer Installable | Requires (Instrument must already include the following) | Not Compatible   | Additional Information             |
|------------|------------------------|---|----------------------|--|------------------|------------------------------------|
| E4980A-002 | Bias Current Interface | E4980AU-002                                 | No                   | None   | 001 (See Note 1) | Installable at service center only |
| E4980A-201 | Handler Interface      | E4980AU-201                                 | No                   | None   | None             |                                    |
| E4980A-301 | Scanner Interface      | E4980AU-301                                 | No                   | None   | None             |                                    |
| E4980A-1CM | Rackmount Kit          | 5063-9241                                   | Yes                  | None   | None             |                                    |

*Note 1:* The E4980A-001 and E4980A-002 can be installed in the same unit but cannot be operated simultaneously.  
The 42841A was discontinued in December 2012.

*Note 2:* For details of the upgrade information, refer to product homepage on the Agilent home website.

## Software Upgrade

| Option No. | Description                   | Upgrade Model No. or Equivalent Part Number | Customer Installable | Requires (Instrument must already include the following) | Not Compatible          | Additional Information             |
|------------|-------------------------------|---|----------------------|--|-------------------------|------------------------------------|
| E4980A-001 | Power and DC Bias Enhancement | E4980AU-001                                 | No                   | None   | 002 (See Note 1)        | Installable at service center only |
| E4980A-007 | Standard Model                | E4980AU-007                                 | No                   | E4980A-005   | None                    | Installable at service center only |
| E4980A-200 | DCR Measurement               | E4980AU-200                                 | No                   | None   | E4980A-001 (See Note 2) | Installable at service center only |

*Note 1:* The E4980A-001 and E4980A-002 can be installed in the same unit but cannot be operated simultaneously.

*Note 2:* The DCR (Rdc) measurement becomes available with either E4980A-200 or E4980A-001.  
It is unnecessary to upgrade if the unit has the E4980A-001.

*Note 3:* For firmware update and upgrade information, refer to product homepage on the Agilent home website.

## Available Accessories – General Measurement Accessories

| Description      | Model Number | Requires<br>(Instrument must<br>already include<br>the following) | Additional Information  |
|------------------|--------------|---|---|
| SMD Test Fixture | 16034E       | None  | For SMD; (0.1 to 8)L x (0.5 to 10)W x (0.5 to 10)H mm. Operation and Service Manual is furnished.                                     |
| SMD Test Fixture | 16034G       | None  | For SMD; (0.1 to 5)L x (0.3 to 1.6)W x (0.3 to 1.6)H mm. 100 $\Omega$ SMD resistors set is furnished.                                 |
|                  | 16034G-ABA   | None  | U.S. – English localization <sup>1</sup>  |
|                  | 16034G-ABJ   | None  | Japan – Japanese localization <sup>1</sup>  |
| SMD Test Fixture | 16034H       | None  | For Array-type SMD; (0.1 to 5)L x ( $\leq 15$ )W x (0.6 to 3)H mm. 100 $\Omega$ SMD resistors set and Operation Manual are furnished. |
| SMD Test Fixture | 16044A       | None  | Kelvin contact test fixture for SMD; (1.6 to 8)L x (0.8 to 8)W x (0.8 to 3)H mm   |
|                  | 16044A-ABA   | None  | U.S. – English localization <sup>1</sup>  |
|                  | 16044A-ABJ   | None  | Japan – Japanese localization <sup>1</sup>  |
| Test Fixture     | 16047A       | None  | For axial or radial lead device. Operation and Service Manual is furnished.   |
|                  | 16047A-701   | None  | Adds Shorting plate   |
| Test Fixture     | 16047D       | None  | For axial or radial lead device. Operation and Service Manual is furnished.   |
|                  | 16047D-701   | None  | Adds Shorting plate   |
| Test Fixture     | 16047E       | None  | For axial or radial lead device   |
|                  | 16047E-ABA   | None  | U.S. - English localization <sup>1</sup>  |
|                  | 16047E-ABJ   | None  | Japan – Japanese localization <sup>1</sup>  |
| Test Leads       | 16048A       | None  | BNC connector leads; 0.94 m. BNC connector bracket and Operation and Service Manual are furnished.                                    |
| Test Leads       | 16048D       | None  | BNC connector leads; 1.89 m. BNC connector bracket and Operation and Service Manual are furnished.                                    |
| Test Leads       | 16048E       | None  | BNC connector leads; 3.8 m. BNC connector bracket and Operation and Service Manual are furnished.                                     |

1. Language selection of Operation and Service Manual.

## Available Accessories – General Measurement Accessories – continued

| Description                   | Model Number | Requires<br>(Instrument must<br>already include<br>the following) | Additional Information   |
|-------------------------------|--------------|---|--|
| Tweezers Test Fixture         | 16334A       | None  | For SMD; ≤ 10 mm L. Tweezers type; cable length 1 m. Shorting block and Operation and Service Manual are furnished.  |
| Kelvin Clip Leads             | 16089A       | None  | 2 large clips. 5 Hz - 100 kHz. Choose mandatory option 16089A-800 or C20. Operation and Service Manual is furnished.   |
|                               | 16089A-800   | None  | Cable length: 1 m (standard)   |
|                               | 16089A-C20   | None  | Cable length: 2 m  |
| Kelvin Clip Leads             | 16089B       | None  | 2 medium clips. 5 Hz - 100 kHz. Choose mandatory option 16089B-800 or C20. Operation and Service Manual is furnished.  |
|                               | 16089B-800   | None  | Cable length: 1 m (standard)   |
|                               | 16089B-C20   | None  | Cable length: 2 m  |
| Kelvin IC Clip Leads          | 16089C       | None  | 2 IC clips. 5 Hz - 100 kHz. Cable length 1 m. Operation and Service Manual is furnished.   |
| Alligator Clip Leads          | 16089D       | None  | 4 medium clips. 5 Hz - 100 kHz. Cable length 1 m. Operation and Service Manual is furnished.   |
| Kelvin Clip Leads             | 16089E       | None  | 2 large clips. 5 Hz - 100 kHz. Cable length 1 m. Operation Note is furnished.  |
| External Voltage Bias Fixture | 16065A       | None  | ± 200 V dc max., for axial or radial lead device. Shorting plate and Operation and Service Manual are furnished.   |
| Dielectric Test Fixture       | 16451B       | None  | Test fixture for measuring permittivity of dry solid sheet material; Cable length 1 m. 38 mm and 5 mm diameter electrodes for measuring bare material and two types of electrodes for measuring material with pre-formed electrodes are furnished. |
|                               | 16451B-ABA   | None  | U.S. – English localization <sup>1</sup>   |
|                               | 16451B-ABJ   | None  | Japan – Japanese localization <sup>1</sup>   |

1. Language selection of Operation and Service Manual.

## Available Accessories – General Measurement Accessories – continued

| Description         | Model Number  | Requires<br>(Instrument must<br>already include<br>the following) | Additional Information   |
|---------------------|---|---|--|
| Liquid Test Fixture | 16452A  | None<br>(16048A or<br>16452-61601<br>Test Leads<br>recommended)   | Test fixture for measuring permittivity of liquid material. Required volume of material; 3.4, 3.8, 4.8 or 6.8 ml. Temperature range: –20 ° to +125 °C. Shorting plate, spacers, SMA-BNC adapters, fixture stand, carrying case and Operation and Service Manual are furnished. |
| Test Leads          | 16048G,<br>BNC(m-m)<br>adapter × 4 (p/n<br>1250-0216 × 4) | None  | Heat-proof test leads for use with the 16452A. Temperature range: –20 ° to +150 °C   |

*Note:* For more detailed information, refer to Accessories Selection Guide for Impedance Measurements.

## Available Accessories – for Calibration and Maintenance

| Description                            | Model Number | Requires<br>(Instrument must<br>already include the<br>following) | Additional Information  |
|--|--------------|---|---|
| Open Termination                       | 42090A       | None  | 4-terminal pair Open termination. Needed for performing calibration.  |
| Short Termination                      | 42091A       | None  | 4-terminal pair Short termination. Needed for performing calibration.   |
| 4-Terminal Pair Standard Capacitor Set | 16380A       | None  | 1 pF, 10 pF, 100 pF and 1000 pF standard capacitor set with carrying case. Calibration report and Operation Note are furnished.             |
| 4-Terminal Pair Standard Capacitor Set | 16380C       | None  | 0.01 µF, 0.1 µF and 1 µF standard capacitor set with carrying case. Calibration report and Operation Note are furnished.                    |
|  | 16380C-001   | None  | Adds 10 µF standard capacitor   |
| 4-Terminal Pair Standard Resistor Set  | 42030A       | None  | 9 standard resistors from 1 mΩ to 100 kΩ in decade steps; Carrying case, calibration report and Operation and Service Manual are furnished. |

*Note:* For more detailed information, refer to Accessories Selection Guide for Impedance Measurements.

## E4980AL Ordering Guide

The following steps will guide you through configuring your E4980AL.

| Standard Furnished Item |  |
|-------------------------|--|
| Description             | Additional Information   |
| CD-ROM                  | Contains User's Guide (in PDF) and Sample Program. See documentation option for printed manuals. |
| CD-ROM                  | Contains Agilent IO Libraries Suite (the latest versions).                                       |
| USB Cable               | USB (Type A) to USB (Type Mini-B) cable  |
| Power Cable             |  |

Calibration of Certification

*Note:* Test Fixture and printed copy of User's Guide are not furnished. See Documentation Option and Available Accessories for the selection of these items.

| Step 1. Choose Frequency Option (Specify the first two digits) |             |
|--|-------------|
| Description  | Option No.  |
| 20 Hz to 300 kHz   | E4980AL-03x |
| 20 Hz to 500 kHz   | E4980AL-05x |
| 20 Hz to 1 MHz   | E4980AL-10x |

| Step 2. Choose Interface/Calibration Certificate Option (Specify the last digit) |                   |                       |                       |             |
|--|-------------------|-----------------------|-----------------------|-------------|
| Handler interface  | Scanner interface | ISO 17025 calibration | ANSI Z540 calibration | Option No.  |
|  |                   |                       |                       | E4980AL-xx0 |
|  |                   | •                     |                       | E4980AL-xxA |
|  |                   |                       | •                     | E4980AL-xxB |
| •  |                   |                       |                       | E4980AL-xxC |
| •  |                   | •                     |                       | E4980AL-xxD |
| •  |                   |                       | •                     | E4980AL-xxE |
|  | •                 |                       |                       | E4980AL-xxF |
|  | •                 | •                     |                       | E4980AL-xxG |
|  | •                 |                       | •                     | E4980AL-xxH |
| •  | •                 |                       |                       | E4980AL-xxJ |
| •  | •                 | •                     |                       | E4980AL-xxK |
| •  | •                 |                       | •                     | E4980AL-xxL |



| <b>Step 3. Confirm Option Number</b> (Confirm your specified option number by the description) |   |                                      |
|--|---|--------------------------------------|
| <b>Option No.</b>  | <b>Description</b>  | <b>E4980A Option No.<sup>1</sup></b> |
| E4980AL-030  | 20 Hz to 300 kHz with DCR measurement   | E4980A-030/710/710                   |
| E4980AL-050  | 20 Hz to 500 kHz with DCR measurement   | E4980A-050/710/710                   |
| E4980AL-100  | 20 Hz to 1 MHz with DCR measurement   | E4980A-100/710/710                   |
| E4980AL-03A  | 20 Hz to 300 kHz with DCR measurement, ISO 17025 calibration                  | E4980A-030/710/710/1A7               |
| E4980AL-05A  | 20 Hz to 500 kHz with DCR measurement, ISO 17025 calibration                  | E4980A-050/710/710/1A7               |
| E4980AL-10A  | 20 Hz to 1 MHz with DCR measurement, ISO 17025 calibration                    | E4980A-100/710/710/1A7               |
| E4980AL-03B  | 20 Hz to 300 kHz with DCR Measurement, ANSI Z540 calibration                  | E4980A-030/710/710/A6J               |
| E4980AL-05B  | 20 Hz to 500 kHz with DCR Measurement, ANSI Z540 calibration                  | E4980A-050/710/710/A6J               |
| E4980AL-10B  | 20 Hz to 1 MHz with DCR Measurement, ANSI Z540 calibration                    | E4980A-100/710/710/A6J               |
| E4980AL-03C  | 20 Hz to 300 kHz with DCR Measurement, Handler                                | E4980A-030/710/201                   |
| E4980AL-05C  | 20 Hz to 500 kHz with DCR Measurement, Handler                                | E4980A-050/710/201                   |
| E4980AL-10C  | 20 Hz to 1 MHz with DCR Measurement, Handler                                  | E4980A-100/710/201                   |
| E4980AL-03D  | 20 Hz to 300 kHz with DCR Measurement, Handler, ISO 17025 calibration         | E4980A-030/710/201/1A7               |
| E4980AL-05D  | 20 Hz to 500 kHz with DCR Measurement, Handler, ISO 17025 calibration         | E4980A-050/710/201/1A7               |
| E4980AL-10D  | 20 Hz to 1 MHz with DCR Measurement, Handler, ISO 17025 calibration           | E4980A-100/710/201/1A7               |
| E4980AL-03E  | 20 Hz to 300 kHz with DCR Measurement, Handler, ANSI Z540 calibration         | E4980A-030/710/201/A6J               |
| E4980AL-05E  | 20 Hz to 500 kHz with DCR Measurement, Handler, ANSI Z540 calibration         | E4980A-050/710/201/A6J               |
| E4980AL-10E  | 20 Hz to 1 MHz with DCR Measurement, Handler, ANSI Z540 calibration           | E4980A-100/710/201/A6J               |
| E4980AL-03F  | 20 Hz to 300 kHz with DCR Measurement, Scanner                                | E4980A-030/710/301                   |
| E4980AL-05F  | 20 Hz to 500 kHz with DCR Measurement, Scanner                                | E4980A-050/710/301                   |
| E4980AL-10F  | 20 Hz to 1 MHz with DCR Measurement, Scanner                                  | E4980A-100/710/301                   |
| E4980AL-03G  | 20 Hz to 300 kHz with DCR Measurement, Scanner, ISO 17025 calibration         | E4980A-030/710/301/1A7               |
| E4980AL-05G  | 20 Hz to 500 kHz with DCR Measurement, Scanner, ISO 17025 calibration         | E4980A-050/710/301/1A7               |
| E4980AL-10G  | 20 Hz to 1 MHz with DCR Measurement, Scanner, ISO 17025 calibration           | E4980A-100/710/301/1A7               |
| E4980AL-03H  | 20 Hz to 300 kHz with DCR Measurement, Scanner, ANSI Z540 calibration         | E4980A-030/710/301/A6J               |
| E4980AL-05H  | 20 Hz to 500 kHz with DCR Measurement, Scanner, ANSI Z540 calibration         | E4980A-050/710/301/A6J               |
| E4980AL-10H  | 20 Hz to 1 MHz with DCR Measurement, Scanner, ANSI Z540 calibration           | E4980A-100/710/301/A6J               |
| E4980AL-03J  | 20 Hz to 300 kHz with DCR Measurement, Handler/Scanner                        | E4980A-030/201/301                   |
| E4980AL-05J  | 20 Hz to 500 kHz with DCR Measurement, Handler/Scanner                        | E4980A-050/201/301                   |
| E4980AL-10J  | 20 Hz to 1 MHz with DCR Measurement, Handler/Scanner                          | E4980A-100/201/301                   |
| E4980AL-03K  | 20 Hz to 300 kHz with DCR Measurement, Handler/Scanner, ISO 17025 calibration | E4980A-030/201/301/1A7               |
| E4980AL-05K  | 20 Hz to 500 kHz with DCR Measurement, Handler/Scanner, ISO 17025 calibration | E4980A-050/201/301/1A7               |
| E4980AL-10K  | 20 Hz to 1 MHz with DCR Measurement, Handler/Scanner, ISO 17025 calibration   | E4980A-100/201/301/1A7               |
| E4980AL-03L  | 20 Hz to 300 kHz with DCR Measurement, Handler/Scanner, ANSI Z540 calibration | E4980A-030/201/301/A6J               |
| E4980AL-05L  | 20 Hz to 500 kHz with DCR Measurement, Handler/Scanner, ANSI Z540 calibration | E4980A-050/201/301/A6J               |
| E4980AL-10L  | 20 Hz to 1 MHz with DCR Measurement, Handler/Scanner, ANSI Z540 calibration   | E4980A-100/201/301/A6J               |

1. The delivered unit will have this option numbers.

#### Step 4. Add Accessory Option

| Description | Option No. | Requires | Not Compatible | Additional Information |
|-------------|------------|----------|----------------|------------------------|
|-------------|------------|----------|----------------|------------------------|

Rackmount Kit E4980AL-1CM

*Note:* Front Handle Kit and Handle/Rack Mount Kit are not available.

#### Step 5. Add Documentation

| Description                   | Option No.  | Additional Information  |
|-------------------------------|-------------|---|
| U.S. - English Localization   | E4980AL-ABA | Printed manuals are not provided for free. They need to be ordered separately if needed |
| Japan - Japanese Localization | E4980AL-ABJ |   |

#### Step 6. Choose Warranty Plan

| Description | Option No. | Additional Information |
|-------------|------------|------------------------|
|-------------|------------|------------------------|

3 year return-to-agilent warranty and service is standard. The extended warranty option is available. Contact your local Agilent office or visit our web site for more information.

## Hardware Upgrades

| Upgrade Model No. or Equivalent Part Number | Description                                | Option No. <sup>1</sup> | Customer Installable | Additional Information             |
|---|--|-------------------------|----------------------|------------------------------------|
| E4980ALU-111                                | Upgrade kit, 500 kHz to 1 MHz for E4980A   | E4980A-100              | No                   | Installable at service center only |
| E4980ALU-110                                | Upgrade kit, 300 kHz to 1 MHz for E4980A   | E4980A-100              | No                   |                                    |
| E4980ALU-050                                | Upgrade kit, 300 kHz to 500 kHz for E4980A | E4980A-050              | No                   |                                    |
| E4980ALU-201                                | Upgrade kit, Handler Interface             | E4980A-201              | No                   |                                    |
| E4980ALU-301                                | Upgrade kit, Scanner Interface             | E4980A-301              | No                   |                                    |
| 5063-9241                                   | Rackmount kit                              | 5063-9241               | Yes                  |                                    |

*Note:* For details of the upgrade information, refer to product homepage on the Agilent home website.

1. E4980A option number.

## Software Upgrades

Not available

## Accessory

| Description  | Model Number | Requires (Instrument must already include the following) | Additional Information |
|--|--------------|--|------------------------|
| 40Vdc External Voltage Bias Adapter  | 16065C       |  |                        |
| <i>Note:</i> For other accessories, see the Available Accessories – General Measurement Accessories in page 5.<br>For detailed information, refer to the Accessories Selection Guide for Impedance Measurements. |              |  |                        |

## Literature Resource

| Title  | Publication Number | Additional Information |
|--|--------------------|------------------------|
| <i>E4980A/E4980AL Data Sheet</i>   | 5989-4435EN        |                        |
| <i>E4980A Brochure</i>   | 5989-4235EN        |                        |
| <i>E4980AL Brochure</i>  | 5991-2305EN        |                        |
| <i>E4980A Technical Overview: Migrating from an Agilent 4279A to an Agilent E4980A Precision LCR Meter</i> | 5989-4433EN        |                        |
| <i>E4980A Technical Overview: Migrating from an Agilent 4284A to an Agilent E4980A Precision LCR Meter</i> | 5989-4434EN        |                        |
| <i>LCR Meters, Impedance Analyzers and Test Fixtures Selection Guide</i>                                   | 5952-1430E         |                        |
| <i>Accessories Selection Guide For Impedance Measurements</i>  | 5965-4792E         |                        |
| <i>Impedance Measurement Handbook</i>  | 5950-3000          |                        |

*Note:* More literature is available on the Agilent home website.

## Web Resource

Have access to the following websites to acquire the latest news, product and support information, application literature and more.

<http://www.agilent.com/find/impedance>

<http://www.agilent.com/find/e4980a>

<http://www.agilent.com/find/e4980al>



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### Agilent Channel Partners

[www.agilent.com/find/channelpartners](http://www.agilent.com/find/channelpartners)

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[www.agilent.com/find/ThreeYearWarranty](http://www.agilent.com/find/ThreeYearWarranty)

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### Americas

|               |                |
|---------------|----------------|
| Canada        | (877) 894 4414 |
| Brazil        | (11) 4197 3600 |
| Mexico        | 01800 5064 800 |
| United States | (800) 829 4444 |

### Asia Pacific

|                    |                |
|--------------------|----------------|
| Australia          | 1 800 629 485  |
| China              | 800 810 0189   |
| Hong Kong          | 800 938 693    |
| India              | 1 800 112 929  |
| Japan              | 0120 (421) 345 |
| Korea              | 080 769 0800   |
| Malaysia           | 1 800 888 848  |
| Singapore          | 1 800 375 8100 |
| Taiwan             | 0800 047 866   |
| Other AP Countries | (65) 375 8100  |

### Europe & Middle East

|                |                      |
|----------------|----------------------|
| Belgium        | 32 (0) 2 404 93 40   |
| Denmark        | 45 45 80 12 15       |
| Finland        | 358 (0) 10 855 2100  |
| France         | 0825 010 700*        |
|                | *0.125 €/minute      |
| Germany        | 49 (0) 7031 464 6333 |
| Ireland        | 1890 924 204         |
| Israel         | 972-3-9288-504/544   |
| Italy          | 39 02 92 60 8484     |
| Netherlands    | 31 (0) 20 547 2111   |
| Spain          | 34 (91) 631 3300     |
| Sweden         | 0200-88 22 55        |
| United Kingdom | 44 (0) 118 927 6201  |

*For other unlisted countries:*

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