

# Keysight Technologies

## M9352A PXI Amplifier Attenuator

Notice: This document contains references to Agilent. Please note that Agilent's Test and Measurement business has become Keysight Technologies. For more information, go to [www.keysight.com](http://www.keysight.com).

# Notices

© Keysight Technologies, Inc.  
2012-2014

No part of this manual may be reproduced in any form or by any means (including electronic storage and retrieval or translation into a foreign language) without prior agreement and written consent from Keysight Technologies, Inc. as governed by United States and international copyright laws.

## Trademark Acknowledgments

## Manual Part Number

M9352-90002

## Edition

Edition September 2014

Supersedes: April 2012

Printed in USA/Malaysia

Published by:  
Keysight Technologies  
1400 Fountaingrove Parkway  
Santa Rosa, CA 95403

## 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, KEYSIGHT 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. KEYSIGHT 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 KEYSIGHT 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.

## Technology Licenses

The hardware and/or software described in this document are furnished under a license and may be used or copied only in accordance with the terms of such license.

## U.S. Government Rights

The Software is "commercial computer software," as defined by Federal Acquisition Regulation ("FAR") 2.101. Pursuant to FAR 12.212 and 27.405-3 and Department of Defense FAR Supplement ("DFARS") 227.7202, the U.S. government acquires commercial computer software under the same terms by which the software is customarily provided to the public.

Accordingly, Keysight provides the Software to U.S. government customers under its standard commercial license, which is embodied in its End User License Agreement (EULA), a copy of which can be found at

<http://www.keysight.com/find/sweula>

The license set forth in the EULA represents the exclusive authority by which the U.S. government may use, modify, distribute, or disclose the Software. The EULA and the license set forth therein, does not require or permit, among other things, that Keysight: (1) Furnish technical information related to commercial computer software or commercial computer software documentation that is not customarily provided to the public; or (2) Relinquish to, or otherwise provide, the government rights in excess of these rights customarily provided to the public to use, modify, reproduce, release, perform, display, or disclose commercial computer software or commercial computer software

documentation. No additional government requirements beyond those set forth in the EULA shall apply, except to the extent that those terms, rights, or licenses are explicitly required from all providers of commercial computer software pursuant to the FAR and the DFARS and are set forth specifically in writing elsewhere in the EULA. Keysight shall be under no obligation to update, revise or otherwise modify the Software. With respect to any technical data as defined by FAR 2.101, pursuant to FAR 12.211 and 27.404.2 and DFARS 227.7102, the U.S. government acquires no greater than Limited Rights as defined in FAR 27.401 or DFARS 227.7103-5 (c), as applicable in any technical data.

## Safety Notices

### CAUTION

A **CAUTION** notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in damage to the product or loss of important data. Do not proceed beyond a CAUTION notice until the indicated conditions are fully understood and met.

### WARNING

A **WARNING** notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in personal injury or death. Do not proceed beyond a WARNING notice until the indicated conditions are fully understood and met.

## Where to Find the Latest Information

Documentation is updated periodically. For the latest information about these products, including instrument software upgrades, application information, and product information, browse to one of the following URLs, according to the name of your product:

<http://www.keysight.com/find>

To receive the latest updates by email, subscribe to Keysight Email Updates at the following URL:

<http://www.keysight.com/find/MyKeysight>

Information on preventing instrument damage can be found at:

[www.keysight.com/find/PreventingInstrumentRepair](http://www.keysight.com/find/PreventingInstrumentRepair)

## Is your product software up-to-date?

Periodically, Keysight releases software updates to fix known defects and incorporate product enhancements. To search for software updates for your product, go to the Keysight Technical Support website at:

<http://www.keysight.com/find/techsupport>



## Table of Contents

### 1. M9352A User's and Service Guide

Introduction	2
Description	3
Verifying the Shipment	4
Electrostatic Discharge Protection	5
General Characteristics	6
Dimensions and Weight	6
Front Panel Features	7
RF SMB Subminiature Snap-on Access Ports (male)	7
Install the Software	8
Power up the Controller	9
Install the Software	9
Install the M9352A	10
M9352A Operational Check Procedure	12
Equipment Required	12
Equipment Test Configuration Option I (Network Analyzer)	14
Equipment Test Configuration Option II (Signal Source & Power Meter)	14
Equipment Test Configuration Option III (Signal Source & Spectrum Analyzer)	15
Tracked Attenuation	16
Service	17
If a Problem is Found	17
Module Core Replacement	17
Replaceable Parts	17
Ordering a Core Replacement Module	17
Replacing the Defective Module	18
Safety and Information	22
Introduction	22
Safety Earth Ground	22
Declaration of Conformity	22
Statement of Compliance	22
Connector Care and Cleaning Precautions	23
Regulatory Information	24
Instrument Markings	24
Keysight Support, Services, and Assistance	25
Service and Support Options	25
Contacting Keysight	25



1

# M9352A User's and Service Guide

## Introduction

The scope of this User's and Service Guide is to detail the processes of receiving and installing the Keysight M9352A PXI Hybrid Quad Module, installing the required software, and verifying basic module operations. If you have any inquiries after reviewing this information, contact your local Keysight Technologies Inc. representative or refer to **"Contacting Keysight" on page 25**.



## Description

Congratulations on your purchase from Keysight Technologies, Inc.

The Keysight M9352A Option H01 is a one-slot, 4-channel, PXI Hybrid Quad IF Amplifier/Attenuator with 1 GHz analog bandwidth providing excellent IF signal conditioning for use in multi-channel modular solutions.

To get the most out of your purchase, it is recommended that this User's and Service guide be read carefully and completely. This document may be used with the following PSA Modules: E4440A/E4443A/E4445A/E4446A/E4448A.

## Verifying the Shipment

To verify the content shipped with your module, refer to the "Box Content List" included with the shipment.

Inspect the shipping container for damage. Report any damage to the shipping agent immediately, such damage is not covered by the warranty (warranty information can be found at the beginning of this manual). Keep the damaged shipping materials (if any) for inspection by the carrier and an Keysight Technologies representative. Refer to **"Keysight Support, Services, and Assistance" on page 25**.

Carefully remove the contents from the shipping container and verify that your order is complete. Confirm that the options you ordered are included with the shipment. Refer to the serial number label on the side panel and the packing literature included with the shipment.

## Electrostatic Discharge Protection

Electrostatic discharge (ESD) can damage or destroy electronic components. The module is shipped in materials which prevent damage from static, and should only be removed from the packaging in an anti-static area ensuring that the correct anti-static precautions are taken.

Two types of ESD protection are listed below. Purchase acceptable ESD accessories from your local supplier.

- Conductive table-mat and wrist-strap combination
- Conductive floor-mat and heel-strap combination

Both types, when used together, provide a significant level of ESD protection. To ensure user safety, static-safe accessories must provide at least 1 M $\Omega$  of isolation from ground.

### **WARNING**

These techniques for a static-safe work station should not be used when working on circuitry with a voltage potential greater than 500 volts.

---

## General Characteristics

Specifications for the M9352A are characteristic.

A functional test certificate is supplied for the M93052A. There is no internal adjustment in the M9352A, therefore an annual calibration is not required.

Table 1-1 Typical Gain Response (all channels)<sup>1</sup>

Frequency (MHz)	Power Out (dBm)
<b>Minimum Gain Setting = 8</b>	
50	7
500	5
900	3
<b>Maximum Gain Setting = 39.5</b>	
50	38
500	36
900	35

1. Pin -40 dBm.

## Dimensions and Weight

Table 1-2 Instrument Dimensions

Model	Weight	Height	Width	Depth
M9352A	362 g (0.8 lb)	13.1 cm (5.16 in)	2.0 cm (0.79 in)	21.3 cm (8.38 in)

## Front Panel Features

Figure 1-1 Front Panel



RF SMB Subminiature Snap-on Access Ports (male)

Channel 1 - 4

- In
- Out

## Install the Software

Table 1-3 System and Hardware Requirements

Topic	Requirements	
<b>System Requirements</b>		
Operating System	Window XP, Service Pack 3	Windows Vista®, SP1 and SP2 (32-bit and 64-bit), Windows 7 (32 bit and 64 bit)
Processor speed	600 MHz or higher required 800 MHz recommended	1 GHz 32-bit (x86), 1 GHz 64-bit (x64), no support for Itanium64
Available memory	256 MB minimum (1 GB or greater recommended)	1 GB minimum
Available disk space <sup>1</sup>	1.5 GB available hard disk space, includes:   1 GB available for Microsoft.NET Framework 3.5 SP1 <sup>2</sup>   100 MB for Keysight IO Libraries Suite	
Video	Super VGA (800x600) 25 colors or more	Support for DirectX 9 graphics with 128 MB graphics memory recommended (Super VGA graphics is supported)
Browser	Microsoft Internet Explorer 6.0 or greater	Microsoft Internet Explorer 7.0 or greater
<b>Hardware Requirements</b>		
Chassis	PXIe system/ host controller A PXI or PXI Express embedded controller or remote controller (external PC connected to the chassis via a PCI-to-PXI interface) is required.	
PXIe System/ host Controller	A PXI or PXI Express embedded controller or remote controller (external PC connected to the chassis via a PCI-to-PXI interface) is required.	
Embedded Controller	Keysight M9036A or an embedded controller that meets the following requirements: - PXIe system controller (PXI-1 embedded controllers are not compatible) - Utilize a 2x8, 4x4, or 1x4 PXIe system slot link configuration. - Run one of the operating systems listed in System Requirements (above).	
Remote Controller	(for Keysight M9018A chassis use only) Keysight M9021 Cable Interface x8 with one of the following PC interface options: - Keysight M9045 PCIe ExpressCard Adapter x1, with cable (for a laptop PC) - Keysight M9047 PCIe Desktop Adapter x8, with cable (for desktop PCs) Or an equivalent remote controller using a PC running one of the operating systems listed in System Requirements (above).	

1. This is the required disk space for installation. Typically, less disk space is required for operation than is required for installation.
2. NET Framework Runtime Components are installed by default with Windows Vista. Therefore, you may not need this amount of disk space.

## Power up the Controller

### CAUTION

If you are using a remote controller and you have installed the interface cable, you must power up the chassis before you power up the PC. As well, you must power down the PC before you power down the chassis.

---

If you are using an embedded controller, complete the following steps:

1. Install the embedded controller module into the compatible chassis. The Keysight M9036A PXIe Embedded Controller and Keysight M9018A PXIe Chassis are recommended. Please refer to the embedded controller and chassis documentation for further details.
2. Connect peripherals (mouse, keyboard and monitor).
3. Turn On the chassis.

## Install the Software

### NOTE

Administrator privileges will be needed for software and hardware installation. This includes first-time installation of a module in a different crate slot.

---

The software installation includes the following:

### NOTE

Version 16.1 (or newer) of the Keysight IO Libraries Suite is required.

---

- The Keysight IO Libraries Suite CD (E2094- 60003), includes the Keysight Connection Expert. It is also available at <http://keysight.com/find/iosuite>.
- Instrument software, which includes the soft front panel (SFP), device driver (IVI-COM) and documentation for the M9352A PXI Quad IF Amplifier/Attenuator. This software CD is included with your shipment (M9352-10008).

Use the following procedure to install the software:

1. From the Keysight IO Libraries Suite CD (E2094- 60003) browser, launch the installer.
2. Follow the installer prompts to install the IO Libraries Suite.
3. From the M9352A Product Software and Information CD (M9352-10008) browser, launch the installer.
4. Follow the installer prompts to install all software and documentation for the M9352A.
5. After installation has completed, power down the host PC.

## Install the M9352A

### NOTE

The M9352A can be used in a chassis with a PXIh chassis peripheral slot.

---

The M9352A can also be installed in any hybrid PXI slot marked with a peripheral slot compatibility image (the letter "H" and a solid circle containing the slot number).

### CAUTION

**PXI hardware does not support "hot-swap" capabilities (changing modules while power is applied to the chassis).**

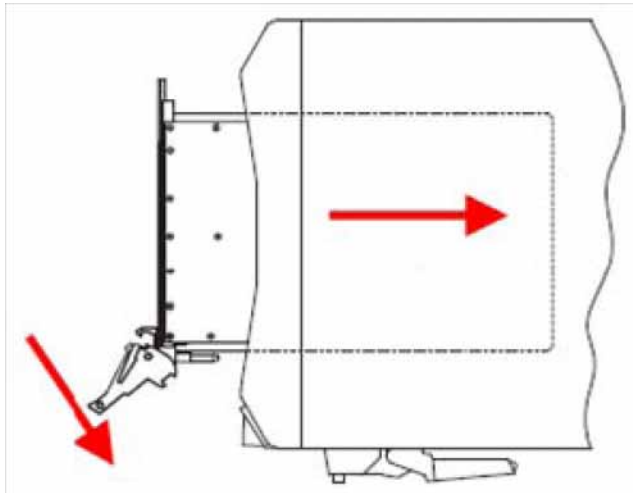
**Before installing a module into the chassis, the chassis must be powered off to prevent damage to the module.**

---

1. Ensure that the PXI chassis power switch is in the off (Standby) position.
2. If the chassis has multiple fan speed settings, ensure that the fans are set to automatic. Do not set the fan speed to low or turn it off.
3. Position the chassis so that there is ample space between the chassis fan intake and exhaust vents. Blockage by walls or obstructions affects the air flow needed for cooling. (Refer to the chassis documentation for more information about cooling).
4. Holding the M9352A by the injector/ejector handle, slide it into an available PXI (or hybrid) slot as shown in **Figure 1-2**.
  - a. Install the M9352A into the PXI slot of the chassis by placing the module card edges into the front module guides (top and bottom).
  - b. Slide the M9352A to the rear of the chassis and ensure that the injector/ejector handle is pushed down in the unlatched (downward) position.
  - c. Slide the M9352A completely into the chassis. When you begin to feel resistance, push up on the injector/ejector handle to fully insert the M9352A into the chassis.



Figure 1-2 Installing the M9352A



5. Latch the M9352A by pulling up on the injector/ejector handle, and secure the front panel to the chassis using the M9352A front panel mounting screws.
6. Tighten the screws on the M9352A front panel. Performance may suffer if the screws are not tightened properly.
7. Verify that the PXI chassis fans are operable and free of dust and other contaminants that may restrict air flow.
8. Install all chassis covers and filler panels after installing the M9352A. Missing filler panels may disrupt necessary air circulation in the chassis.
9. Power up the PXI chassis.

## M9352A Operational Check Procedure

The operational check measures the signal paths from the RF Input to RF Output for each channel. The following procedure verifies that the associated switches, connectors, and circuitry are operating correctly.

### CAUTION

Do not exceed the maximum power level of +30 dBm.

---

### Equipment Required

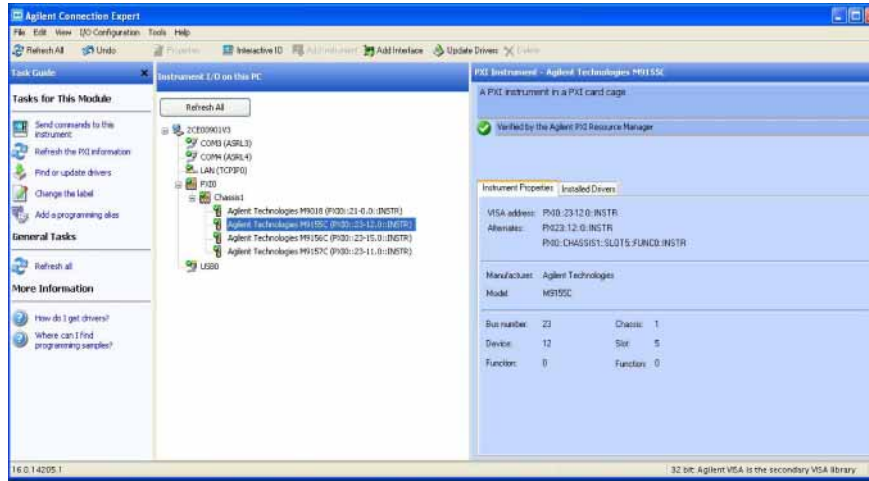
To demonstrate that the module works properly requires external equipment with operating frequency range of 30 MHz to 900 MHz. This includes a network analyzer, or optionally, a signal source and power meter or spectrum analyzer. You will need SMA to SMB adapters to connect the external equipment to the M9352A module.

Table 1-4 Hardware Test Configuration

Hardware	Description
Option I	Network Analyzer
Option II	Signal Source and Power Meter
Option III	Signal Source and Spectrum Analyzer

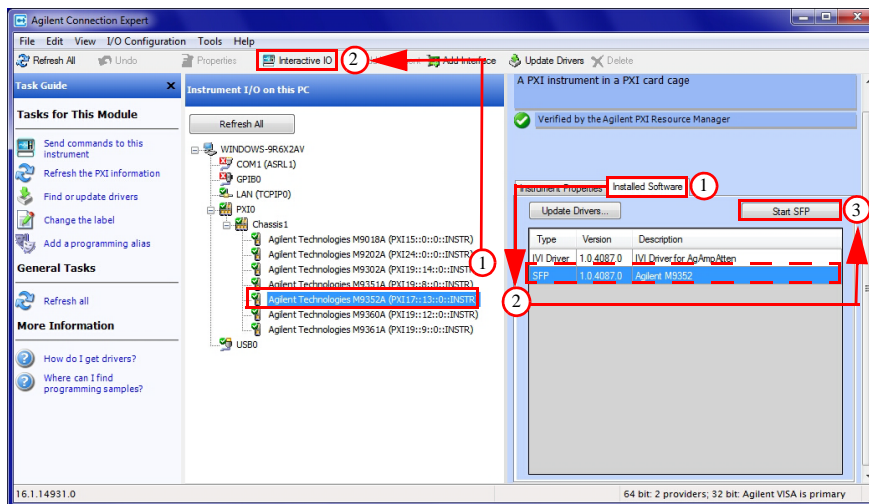
1. Select the Keysight Connection Expert from the desktop icon. Select **Start > All Programs > Keysight IO Libraries Suite > Keysight Connection Expert**. It will display the installed M9352A as shown below.

Figure 1-3 Keysight Connection Expert Interface



2. Launch the soft front panel (SFP) software from **Start > All Programs > Agilent > M9352A > M9352ASFP**, or from the Keysight Connection Expert select **M9352A > Interactive IO**, or Installed Drivers. When Interactive IO is selected the SFP will launch. If you select Installed Drivers, then select the **SFP row > Start SFP** to launch.

Figure 1-4 Launching the SFP



### Equipment Test Configuration Option I (Network Analyzer)

1. Adjust the Network Analyzer Stimulus Power to –30 dBm.
2. Set the Frequency Sweep from 30 MHz to 900 MHz (30 MHz frequency steps suggested).
3. Perform a 2-Port Network Analyzer calibration (normalization response is adequate).
4. Connect the Stimulus Source (Network Analyzer Port 1) to Ch 1 In.
5. Connect Port 2 of the Network Analyzer to Ch 1 Out and normalize its response.
6. Increase Ch 1 gain using the SFP from 8.0 dB to 39.5 dB in 0.5 dB increments and notice the corresponding output level changes. The response should change by at least 0.2 dB for each ½ dB increment.
7. Select the Reset Icon and repeat for Ch 2 thru 4.

### Equipment Test Configuration Option II (Signal Source & Power Meter)

1. Adjust the Signal Source Stimulus Power to –30 dBm.
2. Set the Signal Source to a CW frequency of 50 MHz.
3. Perform a Power Meter calibration.
4. Connect the Stimulus Source to Ch 1 In.
5. Connect the Power Meter Sensor to Ch 1 Out and normalize its response.
6. Increase Ch 1 gain using the SFP from 8.0 dB to 39.5 dB in 0.5 dB increments and notice the corresponding output level changes. The response should change by at least 0.2 dB for each ½ dB increment.
7. Select the Reset Icon and repeat for Ch 2 thru 4.
8. Set the Signal Source to a CW frequency of 500 MHz.
9. Repeat **See “Connect the Power Meter Sensor to Ch 1 Out and normalize its response.” on page 14.** thru **See “Select the Reset Icon and repeat for Ch 2 thru 4.” on page 14..**
10. Set the Signal Source to a CW frequency of 900 MHz.
11. Repeat **See “Connect the Power Meter Sensor to Ch 1 Out and normalize its response.” on page 14.** thru **See “Select the Reset Icon and repeat for Ch 2 thru 4.” on page 14..**

### Equipment Test Configuration Option III (Signal Source & Spectrum Analyzer)

1. Adjust the Signal Source Stimulus Power to  $-30$  dBm.
2. Set the CW Frequency Sweep to 50 MHz.
3. Set the Center Frequency to 50 MHz on the Spectrum Analyzer respectively.
4. Connect the Stimulus Source to Ch1 RF Input.
5. Connect the Spectrum Analyzer to Ch 1 Out and normalize its response.
6. Increase Ch 1 Gain using the SFP from 8.0 dB to 39.5 dB in 0.5 dB increments and notice the corresponding output level changes. The response should change by at least 0.2 dB for each  $\frac{1}{2}$  dB increment.
7. Select the Reset Icon and repeat for Ch 2 thru 4.
8. Set the Signal Source to a CW frequency of 500 MHz.
9. Repeat **See “Connect the Spectrum Analyzer to Ch 1 Out and normalize its response.” on page 15.** thru **See “Select the Reset Icon and repeat for Ch 2 thru 4.” on page 15..**
10. Set the Signal Source to a CW frequency of 900 MHz.
11. Repeat **See “Connect the Spectrum Analyzer to Ch 1 Out and normalize its response.” on page 15.** thru **See “Select the Reset Icon and repeat for Ch 2 thru 4.” on page 15..**

Figure 1-5 Maximum and Minimum Attenuation Settings



## Tracked Attenuation

1. Setup the test configuration as in **“Equipment Test Configuration Option I (Network Analyzer)”**, See **“Adjust the Network Analyzer Stimulus Power to -30 dBm.”** on page 14. thru See **“Connect Port 2 of the Network Analyzer to Ch 1 Out and normalize its response.”** on page 14..
2. Set the gain on the SFP to 8.0, 13.0, 18.0 and 23.0 dB for Ch 1 thru 4 respectively, and select the Track check box.
3. Normalize the response on Ch 1 output on the network analyzer.
4. Step up the signal level on Ch 1 by 1 dB (9.0 dB) on the SFP. Note that the SFP should change values for Ch 2, 3 and 4 to values 14.0 dB, 19.0 dB and 24.0 dB respectively.
5. Disconnect Ch 1 and connect to Ch 2. Note that the signal level should be approximately 5 dB higher than those of Ch 1. Repeat for Ch 3 and Ch 4, notice that for each channel the signal should be 5 dB higher than the previous channel.

### NOTE

Since the signal paths on the M9352A are not symmetrical, you may expect to see variations of 2 dB between channels. The main point is to observe that the channels track with one another as the individual channel signal is increased or decreased.

Figure 1-6 Track Attenuation Initial Setup and Check



## Service

### If a Problem is Found

If a problem is found, complete the following procedures:

1. Verify that the relevant hardware is turned on.
2. Verify that the stimulus signal is set to the proper power/frequency and that all cables are properly connected.

### Module Core Replacement

#### Replaceable Parts

Where Used	Keysight Part Numbers	Description
M9352A PXI Hybrid Quad IF Amp/Atten	M9352-60002	PXI Hybrid Quad IF Amp/Atten replacement core assembly
M9352A PXI Hybrid Quad IF Amp/Atten	M9352-69002	PXI Hybrid Quad IF Amp/Atten replacement core assembly exchange

#### Ordering a Core Replacement Module

1. Contact Keysight (<http://www.keysight.com/find>).
2. Order a core replacement for your module (part number M9352-60002).
3. When the core replacement arrives, the package includes:
  - Entitlement Certificate
  - Replacement module
  - Calibration certificate for the replacement module
  - RMA number
  - Return instructions

## Replacing the Defective Module

### CAUTION

Before opening a packaged module for troubleshooting, ensure that all electrostatic discharge (ESD) precautions are observed. Refer to **“Electrostatic Discharge Protection” on page 5** for details.

---

1. Power down the chassis.
2. Remove the defective module from the chassis.
3. Write down the serial number shown on the side shield of the defective module. You will assign this serial number to the replacement module using the Keysight M9352A Serial Number Update Utility.





4. Remove the replacement module from the box and shipping material.



5. Remove the side shield from the defective module.
  - a. Using a Torx #8 driver and a 5 mm wrench. There are four screws, the two toward the rear of the module include two nuts to secure the side shield to the module. Important: Keep the screws and nuts, new ones are not included with the replacement module.



6. Remove the side shield from the replacement module using this same process.
7. Attach the original side shield from the defective module to the replacement module.
8. Install the replacement module into the chassis.
9. Power up the chassis.
10. If you are using a remote controller, power up the computer. (If you are using an embedded controller, continue to the **See “Program the replacement module with the serial number from the defective module.” on page 20..**)
11. Program the replacement module with the serial number from the defective module.
  - a. If you do not already have the Keysight M9352A Serial Number Update Utility, download it from <http://keysight.com/find/M9352A> (from this site, select Support Center > Drivers, Updates & Examples), and install it on your computer or embedded controller.
  - b. Launch the Keysight M9352A Serial Update Utility (launch from the Start menu program group “Keysight Utilities”) and follow the embedded instructions for programming the serial number.

12. Attach the side shield from the replacement module to the defective module, and return it to Keysight according to the following procedure:
  - a. Review the warranty information shipped with your product.
  - b. Write the following information on a tag and attach it to the malfunctioning equipment:
    - Name and address of owner. A P.O. box is not acceptable as a return address.
    - Product model number (for example, M9352A).
    - Product serial number. The serial number label is located on the side panel of the module. The serial number can also be read from the Soft Front Panel interface, but only after the hardware is installed.
    - Description of failure or service required.
    - Return Material Authorization (RMA) number.
  - c. Pack the module in its original ESD bag and packing carton. If the original carton is not available, use bubble wrap or packing peanuts and place the instrument in a sealed container and mark the container "FRAGILE".
  - d. On the shipping label, write ATTENTION REPAIR DEPARTMENT and the RMA number.

**NOTE**

If any correspondence is required, refer to the product by serial number and model number or refer to <http://www.keysight.com/find>.

---

## Safety and Information

### Introduction

Review this product and related documentation to familiarize yourself with safety markings and instructions before you operate the instrument.

This product has been designed and tested in accordance with accepted industry standards, and has been supplied in a safe condition. The documentation contains information and warnings that must be followed by the user to ensure safe operation and to maintain the product in a safe condition.

### Safety Earth Ground

#### WARNING

This is a Safety Class I Product (provided with a protective earthing ground incorporated in the power cord). The mains plug shall be only be inserted in a socket outlet provided with a protective earth contact. Any interruption of the protective conductor inside or outside of the product is likely to make the product dangerous. Intentional interruption is prohibited.

---

#### CAUTION

Always use the three prong AC power cord supplied with this product. Failure to ensure adequate earth grounding by not using this cord may cause product damage and the risk of electrical shock.

---

### Declaration of Conformity

Declarations of Conformity for this product and for other Keysight products may be downloaded from the Keysight Regulatory Website. Click on "Declarations of Conformity" and enter your product number to find the latest Declaration of Conformity statement.

<http://www.regulations.about.keysight.com>

### Statement of Compliance

This instrument has been designed and tested in accordance with CAN/CSA 22.2 No. 61010-1-04, UL Std No. 61010-1 (2nd Edition).

## Connector Care and Cleaning Precautions

Remove the power cord to the instrument. To clean the connectors use alcohol in a well ventilated area. Allow all residual alcohol moisture to evaporate, and fumes to dissipate prior to energizing the instrument.

### **WARNING**

To prevent electrical shock, disconnect the M9352A from mains electrical supply before cleaning. Use a dry cloth or one slightly dampened with water to clean the external case parts. Do not attempt to clean internally.

---

### **WARNING**

If flammable cleaning materials are used, the material shall not be stored, or left open in the area of the equipment. Adequate ventilation shall be assured to prevent the combustion of fumes, or vapors.

---

## Regulatory Information

This section contains information that is required by various government regulatory agencies.

### Instrument Markings



South Korean Certification (KC) mark; includes the marking's identifier code which follows the format: MSIP-REM-YYY-~~ZZZZZZZZZZZZ~~.



This symbol indicates separate collection for electrical and electronic equipment, mandated under EU law as of August 13, 2005. All electric and electronic equipment are required to be separated from normal waste for disposal (Reference WEEE Directive, 2002/96/EC).



The CE mark is a registered trademark of the European Community. (If accompanied by a year, it is when the design was proven.)



The RCM mark is a registered trademark of the Australian Communications and Media Authority.



Indicates the time period during which no hazardous or toxic substance elements are expected to leak or deteriorate during normal use. Forty years is the expected useful life of the product.



This symbol indicates that PXI is a U.S. registered trademark of the PXI System Alliance.

## Keysight Support, Services, and Assistance

### Service and Support Options

There are many other repair and calibration options available from the Keysight Technologies support organization. These options cover a range of service agreements with varying response times. Contact Keysight for additional information on available service agreements for this product.

### Contacting Keysight

Assistance with test and measurement needs, and information on finding a local Keysight office are available on the Internet at:

<http://www.keysight.com/find/assist>

You can also purchase accessories or documentation items on the Internet at:

<http://www.keysight.com/find>

If you do not have access to the Internet, contact your field engineer.

#### NOTE

In any correspondence or telephone conversation, refer to the Keysight product by its model number and full serial number. With this information, the Keysight representative can determine the warranty status of your unit.

---



This information is subject to change without notice.

© Keysight Technologies 2012-2014

Edition 1, September 2014

M9352-90002

[www.keysight.com](http://www.keysight.com)