Startup
Guide

Keysight M9703A
AXIe High-Speed Digitizer
8 channels, 12-bit, up to 3.2 GS/s
DC up to 2 GHz bandwidth

KEYSIGHT
TECHNOLOGIES

Notices

Copyright Notice

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Regulatory Compliance

This product has been designed and tested in accordance with accepted industry standards, and has been supplied in a safe condition. To review the Declaration of Conformity, go to http://www.keysight.com/go/conformity.

Warranty

Technology Licenses

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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.

The following safety precautions should be observed before using this product and any associated instrumentation.

This product is intended for use by qualified personnel who recognize shock hazards and are familiar with the safety precautions required to avoid

possible injury. Read and follow all installation, operation, and maintenance information carefully before using the product.

If this product is not used as specified, the protection provided by the equipment could be impaired. This product must be used in a normal condition (in which all means for protection are intact) only.

The types of product users are:

– Responsible body is the individual or group responsible for the use and maintenance of equipment, for ensuring that the equipment is operated within its specifications and operating limits, and for ensuring operators are adequately trained.

– Operators use the product for its intended function. They must be trained in electrical safety procedures and proper use of the instrument. They must be protected from electric shock and contact with hazardous live circuits.

– Maintenance personnel perform routine procedures on the product to keep it operating properly (for example, setting the line voltage or replacing consumable materials). Maintenance procedures are described in the user documentation. The procedures explicitly state if the operator may perform them. Otherwise, they should be performed only by service personnel.

– Service personnel are trained to work on live circuits, perform safe installations, and repair products. Only properly trained service personnel may perform installation and service procedures.

Operator is responsible to maintain safe operating conditions. To ensure safe operating conditions, modules should not be operated beyond the full temperature range specified in the Environmental and physical specification. Exceeding safe operating conditions can result in shorter lifespans, improper module performance and user safety issues. When the modules are in use and operation within the specified full temperature range is not maintained, module surface temperatures may exceed safe handling conditions which can cause discomfort or burns if touched. In the event of a module exceeding the full temperature range, always allow the module to cool before touching or removing modules from chassis.

Keysight products are designed for use with electrical signals that are rated Measurement Category I and Measurement Category II, as described in the International Electrotechnical Commission (IEC) Standard IEC 60664. Most measurement, control, and data I/O signals are Measurement Category I and must not be directly connected to mains voltage or to voltage sources with high transient over-voltages. Measurement Category II connections require protection for high transient over-voltages often associated with local AC mains connections. Assume all measurement, control, and data I/O connections are for connection to Category I sources unless otherwise marked or described in the user documentation.

Exercise extreme caution when a shock hazard is present. Lethal voltage may be present on cable connector jacks or test fixtures. The American National Standards Institute (ANSI) states that a shock hazard exists when voltage levels greater than 30V RMS, 42.4V peak, or 60VDC are present. A good safety practice is to expect that hazardous voltage is present in any unknown circuit before measuring.

Operators of this product must be protected from electric shock at all times. The responsible body must ensure that operators are prevented access and/or insulated from every connection point. In some cases, connections must be exposed to potential human contact. Product operators in these circumstances must be trained to protect themselves from the risk of electric shock. If the circuit is capable of operating at or above 1000V, no conductive part of the circuit may be exposed.

Do not connect switching cards directly to unlimited power circuits. They are intended to be used with impedance-limited sources. NEVER connect switching cards directly to AC mains. When connecting sources to switching cards, install protective devices to limit fault current and voltage to the card.

Before operating an instrument, ensure that the line cord is connected to a properly-grounded power receptacle. Inspect the connecting cables, test leads, and jumpers for possible wear, cracks, or breaks before each use.

When installing equipment where access to the main power cord is restricted, such as rack mounting, a separate main input power disconnect device must be provided in close proximity to the equipment and within easy reach of the operator.

For maximum safety, do not touch the product, test cables, or any other instruments while power is applied to the circuit under test. ALWAYS remove power from the entire test system and discharge any capacitors before: connecting or disconnecting cables or jumpers, installing or removing switching cards, or making internal changes, such as installing or removing jumpers.

Do not touch any object that could provide a current path to the common side of the circuit under test or power line (earth) ground. Always make measurements with dry hands while standing on a dry, insulated surface capable of withstanding the voltage being measured.

The instrument and accessories must be used in accordance with its specifications and operating instructions, or the safety of the equipment may be impaired.

Do not exceed the maximum signal levels of the instruments and accessories, as defined in the specifications and operating information, and as shown on the instrument or test fixture panels, or switching card.

When fuses are used in a product, replace with the same type and rating for continued protection against fire hazard.

Chassis connections must only be used as shield connections for measuring

circuits, NOT as safety earth ground connections.

If you are using a test fixture, keep the lid closed while power is applied to the device under test. Safe operation requires the use of a lid interlock.

Instrumentation and accessories shall not be connected to humans.

Before performing any maintenance, disconnect the line cord and all test cables.

To maintain protection from electric shock and fire, replacement components in mains circuits – including the power transformer, test leads, and input jacks – must be purchased from Keysight. Standard fuses with applicable national safety approvals may be used if the rating and type are the same. Other components that are not safety-related may be purchased from other suppliers as long as they are equivalent to the original component (note that selected parts should be purchased only through Keysight to maintain accuracy and functionality of the product). If you are unsure about the applicability of a replacement component, call an Keysight office for information.

WARNING

No operator serviceable parts inside. Refer servicing to qualified personnel. To prevent electrical shock do not remove covers. For continued protection against fire hazard, replace fuse with same type and rating.
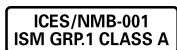
PRODUCT MARKINGS:

CE

The CE mark is a registered trademark of the European Community.

Australian Communication and Media Authority mark to indicate regulatory compliance as a registered supplier.

ICES/NMB-001
ISM GRP.1 CLASS A

This symbol indicates product compliance with the Canadian Interference-Causing Equipment Standard (ICES-001). It also identifies the product is an Industrial Scientific and Medical Group 1 Class A product (CISPR 11, Clause 4).

KCC-REM-ATi-
BLMODSF01

South Korean Class A EMC Declaration. This equipment is Class A suitable for professional use and is for use in electromagnetic environments outside of the home. A 급 기기 (업 무 용 방 송 통 신 기 자 재) 이 기 기 는 업 무 용 (A 급) 전 자 파 적 합 기 기 로 서 판 매 자 또 는 사 용 자 는 이 점 을 주 의 하 시 기 바 라 며 , 가 정 외 의 지 역 에 서 사 용 하 는 것 을 목 적 으 로 합 니 다 .

This product complies with the WEEE Directive marketing requirement. The affixed product label (above) indicates that you must not discard this electrical/electronic product in domestic household waste. **Product Category**: With reference to the equipment types in the WEEE directive Annex 1, this product is classified as "Monitoring and Control instrumentation" product. Do not dispose in domestic household waste. To return unwanted products, contact your local Keysight office, or for more information see
http://about.keysight.com/en/companyinfo/environment/takeback.shtml.

This symbol indicates the instrument is sensitive to electrostatic discharge (ESD). ESD can damage the highly sensitive components in your instrument. ESD damage is most likely to occur as the module is being installed or when cables are connected or disconnected. Protect the circuits from ESD damage by wearing a grounding strap that provides a high resistance path to ground. Alternatively, ground yourself to discharge any built-up static charge by touching the outer shell of any grounded instrument chassis before touching the port connectors.

This symbol on an instrument means caution, risk of danger. You should refer to the operating instructions located in the user documentation in all cases where the symbol is marked on the instrument.

This symbol 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 denotes a hot surface. The side cover of the module will be hot after use and should be allowed to cool for several minutes.
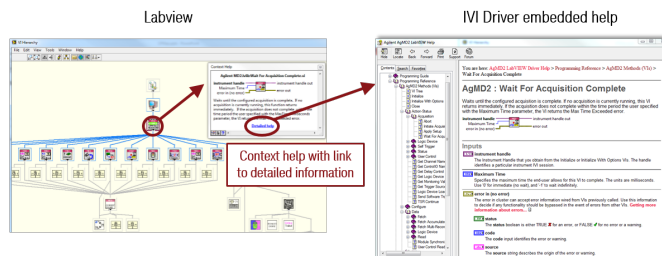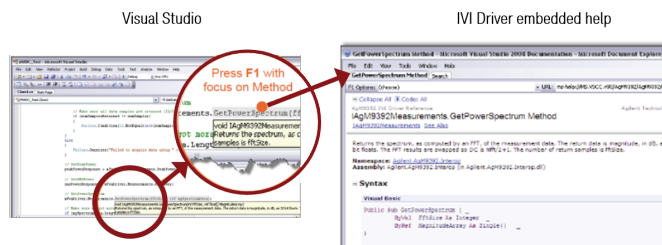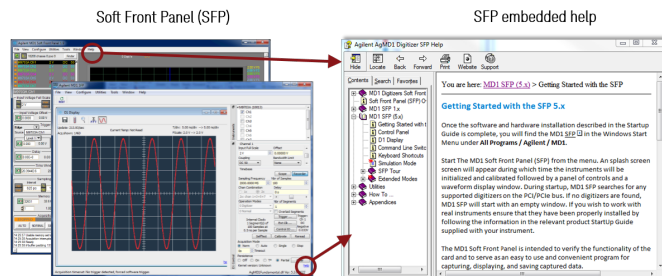
CLEANING PRECAUTIONS:

WARNING

To prevent electrical shock, disconnect the Keysight Technologies instrument from mains before cleaning. Use a dry cloth or one slightly dampened with water to clean the external case parts. Do not attempt to clean internally. To clean the connectors, use alcohol in a well-ventilated area. Allow all residual alcohol moisture to evaporate, and the fumes to dissipate prior to energizing the instrument.

Contents

Documentation Map

M9703A AXIe High-Speed Digitizer Introduction

The scope of this Startup Guide is to detail the processes of receiving and installing the Keysight M9703A AXIe High-Speed Digitizer, installing the required software, and verifying basic module operation.

If you have any questions after reviewing this information, please contact your local Keysight representative or contact us through our website at www.keysight.com/find/contactus.

Related Documentation

If you have run the Keysight MD1 software installer on your PC, this Startup Guide and the related product documentation listed below have been installed to your hard drive.

This Startup Guide and the documentation listed below are contained on the DVD supplied with your product and at www.keysight.com/find/M9703A.

Select **Document Library> Manuals**

- M9703A User Manual
- Help system for the Soft Front Panel
- Help systems for the Keysight device drivers (IVI-C and IVI-COM, and LabVIEW)

Or select **Document Library> Specifications**

- Product specifications for the Datasheet.

Follow the Startup Sequence

This Start-Up Guide is intended to lead the user through the four steps of product installation as summarized in the diagram below. An optional fifth step shows how to perform an operational verification of the M9703A AXIe High-Speed Digitizer.

Step 1: Unpack and Inspect

Step 2: Verify Shipment

Step 3: Install Drivers and Software

Step 4: Install Modules

WARNING   Closely follow the startup process flow in this document. Deviating from the sequence can cause unpredictable system behavior, damage your system, and may cause personal injury.
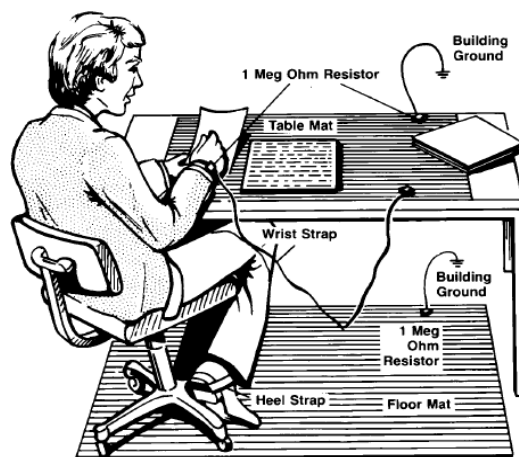
Step 1: Unpack and Inspect the Module

CAUTION The module is shipped in materials which prevent damage from static. The module should only be removed from the packaging in an anti-static area ensuring that correct anti-static precautions are taken. Store all modules in anti-static envelopes when not in use.

Electrostatic Discharge (ESD) Precautions

Electrostatic discharge (ESD) can damage or destroy electronic components. Use a static-safe work station to perform all work on electronic assemblies. The figure (left) shows a static-safe work station using two types of ESD protection: conductive table-mat and wrist-strap combination, and conductive floor-mat and heel-strap combination. Both types, when used together, provide a significant level of ESD protection. Of the two, only the table-mat and wrist-strap combination provides adequate ESD protection when used alone. To ensure user safety, the static-safe accessories must provide at least 1 MΩ of isolation from ground.

WARNING DO NOT use these techniques for a static-safe work station when working on circuitry with a voltage potential greater than 500 volts.

Inspect for Damage

After unpacking a module, inspect it for any shipping damage. Report any damage to the shipping agent immediately, as such damage is not covered by the warranty (see warranty information at beginning of this document).

CAUTION To avoid damage when handling a module, do not touch any exposed components or connector pins.

NOTE See http://www.keysight.com/find/tips for information on preventing damage to your Keysight equipment.

Return a Module for Service

Should it become necessary to return a module for repair or service, follow the steps below:

1. Review the warranty information shipped with your product.

2. Contact Keysight to obtain a Return Material Authorization (RMA) and return address. For assistance finding Keysight contact information, go to www.keysight.com/find/assist (worldwide contact information for repair and service) or refer to the "Support" information on the product web page at www.keysight.com/find/M9703A.

3. 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, M9703A).

    ○ Product serial number. The serial number label is located on the top cover 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.

4. 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".

5. 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.

Step 2: Verify M9703A Shipment Contents

The following items are also included with your M9703A AXIe High-Speed Digitizer order:

Part Number	Quantity	Description
M9703A	1	AXIe High-Speed Digitizer.
M9210-90007	1	Keysight MD1 High-Speed Digitizer Software and Product Information DVD
E2094-60003	1	Keysight IO Libraries Suite.
M9703-90001	1	Startup Guide in hard copy.
U5300-10001	1	High-Speed Digitizers Applications Installation DVD for Windows.
5962-0476	1	Certificate of Calibration.
5959-4660	1	Recommended Due Date for Adjustment/Calibration.
9320-6741	1	ROHS (China addendum).
U1092-80002	2	Cable, BNC (male) to MCX (male), 1 m.

NOTE   All the files contained on the DVDs are available for download at www.keysight.com/find/M9703A.

Step 3: Install the Software

System Requirements

Item	Requirements	
Operating system	**Windows 7®** (32 or 64-bit), All versions.	**Linux** kernel 2.6 or higher (32 or 64-bit), Debian 6.0, CentOS 5
Processor speed	1 GHz 32-bit (x86), 1 GHz 64-bit (x64), no support for Itanium64	As per the minimum requirements of the chosen distribution.
Available memory	1 GB minimum	As per the minimum requirements of the chosen distribution.
Available disk space [1]	1.5 GB available hard disk space, includes: − 1 GB available for Microsoft .NET Framework 3.5 SP1 [2] − 100 MB for Keysight IO Libraries Suite	100 MB
Video	Support for DirectX 9 graphics with 128 MB graphics memory recommended (Super VGA graphics is supported)	Does not require graphics (headless system). X Windows with 1280x1024 recommended for SFP
Browser	Microsoft Internet Explorer 7.0 or higher	Distribution supplied browser.

[1] Because of the installation procedure, less disk space may be required for operation than is required for installation. The amount of space listed above is required for installation.

[2] .NET Framework Runtime Components are often installed by default with Windows Vista and later versions. Therefore, you may not need this amount of available disk space.

Hardware Requirements

Item	Requirements
Chassis	AXIe chassis (Keysight M9502A 2-slot, or M9505A 5-slot chassis recommended).
Host Controller	Remote PC Host Controller, or AXIe Embedded Controller:
· Embedded Controller	Keysight M9536A or M9537A[1] AXIe Embedded Controller.
· Remote Controller	· A PC running one of the above operating systems. (Recommended models are: HP Z420, HP Z440 or Dell T5810)
	· For Laptop PC's: An Keysight M9045B ExpressCard Adaptor x1, with cable.
	· For Workstations: An Keysight M9048A Desktop Adaptor x8, with cable.

[1] When using M9537A, the chassis (M9502A 2-slot or M9505A 5-slot) should be updated to firmware version 1.3.42 or higher (available at http://www.keysight.com/main/software.jspx?id=2073359&nid=-33325.957120, or from www.keysight.com/find/M9502A or www.keysight.com/find/M9505A, click on Product Support Center > Drivers, Firmware & Software taband select AXIe Chassis Firmware).

Install the Software

Keysight IO Libraries Suite (IOLS)

Keysight IO Libraries Suite (IOLS), which includes the Keysight Connection Expert. This software is included with your shipment (CD part number E2904-60003), and is also available at www.keysight.com/find/IOsuite. This software must be installed first.

1. From the Keysight IOLS CD (E2904-60003) browser launch the installer.
2. Follow the installer prompts to install the IO libraries.

NOTE   For Keysight IO Libraries Suite, it is recommended to use the version indicated on MD1 Driver DVD or later.

Instrument software

Instrument software, which includes device drivers (IVI-C, IVI-COM) and documentation for your module. This software is included with your shipment (DVD part number M9210-90007).

1. From the Keysight MD1 High-Speed Digitizer Software and Product Information DVD launch the installer.
2. Follow the installer prompts. Choose a "Complete" installation to install all software and documentation, or a "Custom" installation to select from a listing of components and other features.
3. After installation is complete, please shut-down the PC.

Step 4: Install the Module

M9703A supported AXIe chassis configurations:

- In a M9502A 2-slot chassis, two M9703As could be used.
- In a M9505A 5-slot chassis, five M9703As could be used.
- In a M9514A 14-slot, eight M9703As could be used.

CAUTION In any case, the remaining slots should be filled either with another instrument, or with an AXIe slot filler

CAUTION The M9703A hardware does not support "hot-swap" operations. Before installing the module into the chassis, power-off the chassis to prevent damage to the module.

1. Make sure that the power cord is plugged-in to establish earth ground but the chassis power is Off (Standby).
2. Position the chassis so that there is ample space between the chassis fan intake and exhaust vents.
3. If you are using an embedded controller, this must normally be installed in slot 1 of the chassis. In this case install the M9703A in slot 2 or higher.

IMPORTANT If you are using M9537A AXIe Embedded Controller, the chassis (M9502A or M9505A) should be updated to firmware version 1.3.42 or higher (available at http://www.keysight.com/main/software.jspx?id=2073359&nid=-33325.957120, or from www.keysight.com/find/M9502A or www.keysight.com/find/M9505A, click on Product Support Center > Drivers, Firmware & Software > AXIe Chassis Firmware).

4. To insert the module into a chassis:
   a. Align the module's board edges with the chassis guide rails and push it forward into the chassis. Note: that it is the circuit board, not the metal cover plate which must be inserted into the rails. The module should slide in easily, if it does not, withdraw it and re-check the alignment.
   b. Locate the extraction handles at either end of the module. Extend the ends of both handles by pulling them inwards towards each other; the plastic ends will slide out by about 1 cm. Then put the handles into the extracted position by pivoting them outwards until they are perpendicular to the front panel as shown in the diagram below.
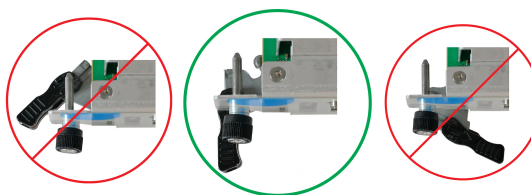
c. Slide the module completely into the chassis. When the module's con-
nectors contact the chassis backplane you will feel some resistance, and
the extraction handles will begin to move inwards. Now you may press the
handles inwards and towards the front panel until the module is completely
inserted.

d. Slide the plastic ends of the extraction handles outwards and tighten the
captive retaining screws at both ends of the module.

5. Install filler panels in any unused slots. Missing filler panels may disrupt necessary
air circulation in the chassis.

6. If you are using a remote controller, with an interface such as the M9045B or
M9048A, connect the cable from the chassis to the PC host, as per the instruc-
tions that came with the interface.

7. Power up the chassis. It is often necessary to wait until the chassis and its mod-
ules have completed their start-up sequence before proceeding to power-up the
host controller.

8. Reboot or power-up the PC host. Check the module front panel indicators - after
the boot process the **STATUS** LED should be green, and no other LEDs lit.

M9703A Front Panel Features

Front Panel Connectors

Connector	Type	Description
IN (1 - 8)	SMA female	The analog signal inputs, which are DC-coupled and 50 Ω terminated. The input full scale ranges are selectable, either 1 V or 2 V. Recommended maximum operating voltage is ±3 V (1V FSR) or ±4.3 V (2V FSR). Clamp at ±3.6 V (1V FSR) or ±6.3 V (2V FSR). Absolute maximum DC voltage rating ±4.6 V (1V FSR) or ±5 V (2V FSR). Frequency range is DC to 650 MHz (-F05) or DC to 2 GHz (-F10).
REF IN	MCX female	This external reference clock input is AC coupled and 50 Ω terminated. It can accept a 100 MHz signal up to 3 dBm (0.3 V rms / 50 Ω).
CLK IN	SMA female	This external clock source is AC-coupled, with 50 Ω termination, and can accept signals up to +15 dBm (1.26 V rms / 50 Ω). Frequency = 1.8 to 2 GHz with -SR1 option or 1.8 to 3.2 GHz with -SR2 option.
TRG 1, 2, 3	MCX female	These external trigger inputs are DC-coupled, 50 Ω terminated. The trigger level range is ±5 V.
TRG OUT	MCX female	Trigger Out signal. User selectable from several functions.
DPU JTAG	USB Mini	JTAG FPGA debugging interface. Used in conjunction with the U5340A FDK.
CTR JTAG	USB Mini	Not currently supported.
I/O 1, 2	MCX female	User configurable Input / Output signal. 3.3 V CMOS and TTL compatible.

NOTE Digitizer can usually work with signals present at the external reference and clock inputs (REF IN and CLK IN). However, to ensure the best performance, or if the calibration is found to be unreliable, it is recommended to remove such signals when working with internal clock.

Front Panel LEDs

Indicator	Purpose	Color	State	Meaning
H/S	Hot Swap		Off	Normal operating mode
			Blue, blinking	Initializing
OOS	Out Of Service		Off	ATCA bus is ready
			Red	ATCA bus is not ready
LA, LB, LC, LD	DPU status		Off	DPU FPGA is not configured
			White	Idle
STATUS	Instrument status		White, blinking	Firmware initialization in progress
			Green, blinking	Software initialization in progress
			Yellow, blinking	Warning (see note below)
			Red, blinking	Error (see note below)
			Green	OK

NOTE   If warning or error status is observed, please try the following steps:

- Power-cycle the chassis (If using a PCIe expansion chassis, observe the power sequence requirements)
- If the error persists please contact Keysight technical support http://www.keysight.com/find/assist.

Step 5: Verify Operation of the M9703A Module

The intention of this step is to verify correct operation of the newly installed module. Run Keysight Connection Expert by right-clicking the task bar icon **IO**, and select **Keysight Connection Expert**.

It will display the modules that are installed. Review the configuration data and then launch the SFP. This will provide control of the module for self test and other operational verification procedures.

Keysight M9703A Instrument Properties

The instrument properties may be viewed by clicking on the desired instrument from the list on the left.
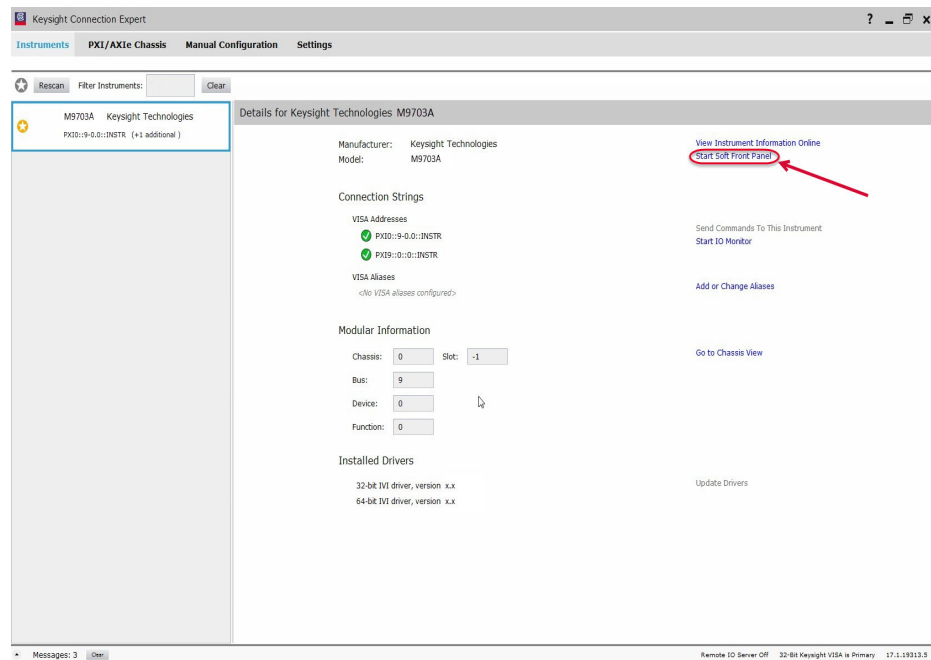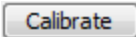

NOTE   If the module does not appear in the Keysight Connection Expert, first try the 'Refresh All' button. If that does not work, restart your PC or embedded controller and start Keysight Connection Expert again.

Keysight M9703A Installed Software

The SFP 5 application may be launched from the list installed software, by clicking the **Start Soft Front Panel** button.

Perform a Verification of the M9703A (optional)

Self-Test / Calibration

The M9703A is capable of performing both a self-test and calibration internally. This function is automatically carried out when the SFP application is started, and if no subsequent error message is displayed then the operation has been successful. These operations may also be carried out at any time by the user by pressing the **SelfTest** or **Calibrate** buttons on the control panel of the SFP.

> **NOTE** It may take several minutes to complete a calibration operation.

Requirements for Verification

The M9703A is verified by using it to trigger on and visualize a signal from a Function Generator. The trigger must be stable and the signal frequency and amplitude must correspond to that set on the generator.

Required Hardware

To verify that the module works requires an external signal source. Almost any sine wave or function generator capable of generating a signal with a Peak-Peak Amplitude of 1 V into 50 Ω (10 dBm) at a frequency of 10 MHz may be used.

| Hardware	Description
RF Analog Signal Generator	e.g. Keysight N5181A
1x BNC - SMA cable	50 Ω Coaxial BNC(m) to SMA(m) cable (100 cm)
1x Keysight 1250-1476 Adaptor	Type N(m) to BNC(f) adaptor

Operational Verification Procedure

> **CAUTION** Do not exceed the maximum power level to the INPUT connector (0.5 W).

1. Launch the soft front panel (SFP). Confirm that there are no error messages displayed.
2. Configure the RF Generator to produce a Sine signal with a Frequency of 10MHz, an Amplitude of +8.0 dBm, and an Offset of 0 V.
3. Connect the RF Generator output to the In 1 connector, and turn on the output.
4. Select the waveform mode.

5. Select $\boxed{\text{Recorder}}$ mode.

6. Select ⊙ Partial persistence mode.

7. Ensure that ☑ ■ Ch1 is enabled by clicking on the tick box under the instrument name.

8. Select ⊙ 2x Channel Combination mode, and $\boxed{\text{2x: chan 1+3+5+7} \quad \blacktriangledown}$

9. Make the following configurations:

Input Full Scale : **2V**	Offset : **0.000000 V**
Coupling : **DC 50**	Nbr of Segments : **1**
Nbr of Samples : **200**	Sampling Frequency: **3200 MS/s**

10. Open the $\boxed{\text{Trigger …}}$ control window and make the following configuration :

Module: **Module 1**	Trigger Class: **Edge**
Trigger Source: **Ch1 (INPUT 1)**	Trigger Level : **0 mV**
Trigger Coupling: **DC**	Trigger Slope: **Positive**

11. Select the ⊙ Norm Acquisition mode and the Waveform Display should be as shown below.
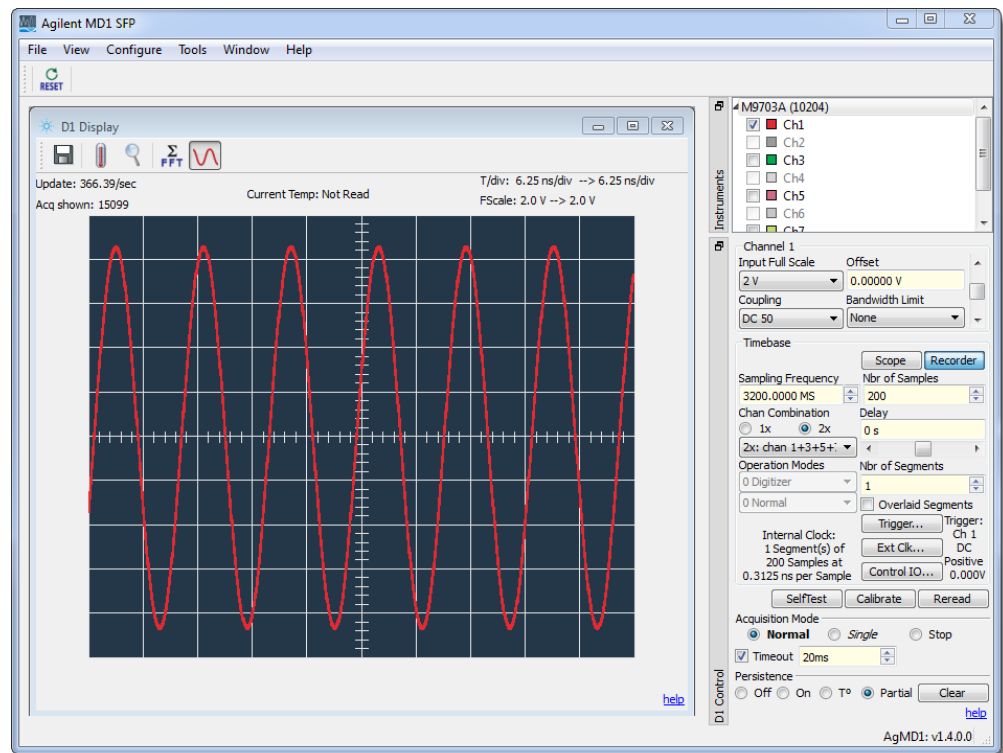
12. Verify that:
- the waveform shown is stable from one acquisition to the next
- the period of the signal is 1.6 divisions (10 ns)
- the pk-pk amplitude is 8 ± 0.6 divisions
- the channel status LED is white (triggered)

If a Problem is Found

1. Verify that you have made all configuration settings as shown above.
2. Verify that the RF generator is ON and producing the desired signals at the end of the BNC cables. This can be done with an oscilloscope.
3. Verify that the problem is reproducible.
4. Contact Keysight technical support for assistance. Contact details may be found at: www.keysight.com/find/assist.

Keysight M9703A Hardware Extension of 89600 VSA Software

The 89601B: 89600 VSA software supports the Keysight M9703A AXIe High-Speed Digitizer. This VSA measurement hardware configuration offers broadband vector signal analyzer measurements up to 625 MHz of analysis bandwidth (model dependent).

| Model	Bandwidth
M9703A-SR1	390 MHz
M9703A-SR2	625 MHz

NOTE **That the M9703A is not supported by the earlier 89601A VSA software, neither by the 32-bit version of the current software i.e. You must use the 64-bit version of the 89600 VSA software with M9703A.**

Configuring the 89600 VSA software application to use the M9703A hardware

1. Start the 64-bit version of the 89600 VSA software application.

2. Configure the M9703A digitizer as the VSA measurement input by creating an *'Analyzer Configuration'* that uses the M9703A digitizer as the *Logical Instrument* (ADC) by performing the following steps:

   a. From the menu, go to **Utilities** > **Hardware** > **Configurations**, and click on **Add New Configuration** button (🞤). This will open the 'New Hardware Configuration' dialog.
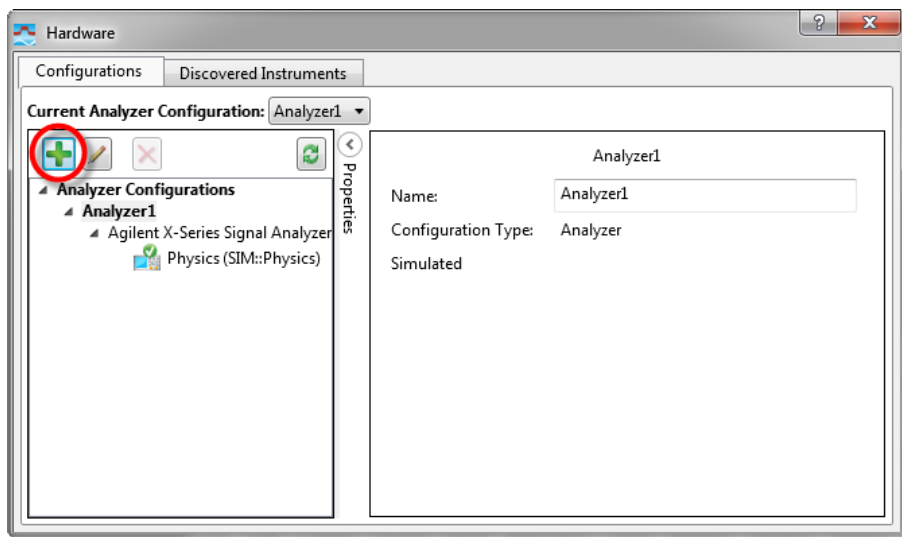
b. De-select 'Simulate Hardware' if it is selected.

c. Select the M9703A digitizer from the list of *'Possible Logical Instrument'* and drag it or click on the ▷ button to add it to the *'Configuration'* box.
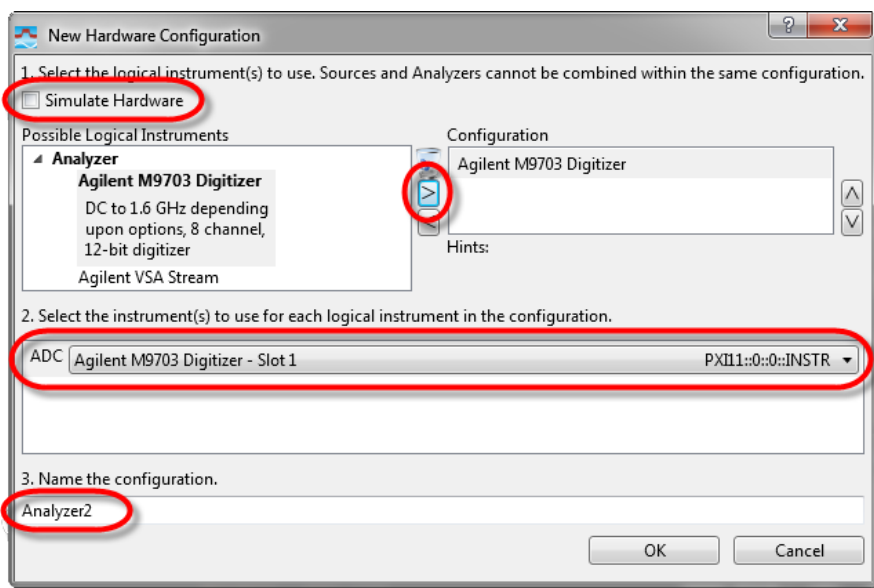
d. In the box below ensure that M9703A appears as the 'ADC' entry, and if you have more than one M9703A connected - select the required unit using the drop-down list.

e. You may either use the default name or specify another name for this ana-lyzer configuration.

f. Click OK to close the *'New Hardware Configuration'* dialog.

g. But before closing the 'Hardware Configurations' dialog, use the **Current Analyzer Configuration** drop-down to select the newly created *M9703A*

Digitizer as the current item.
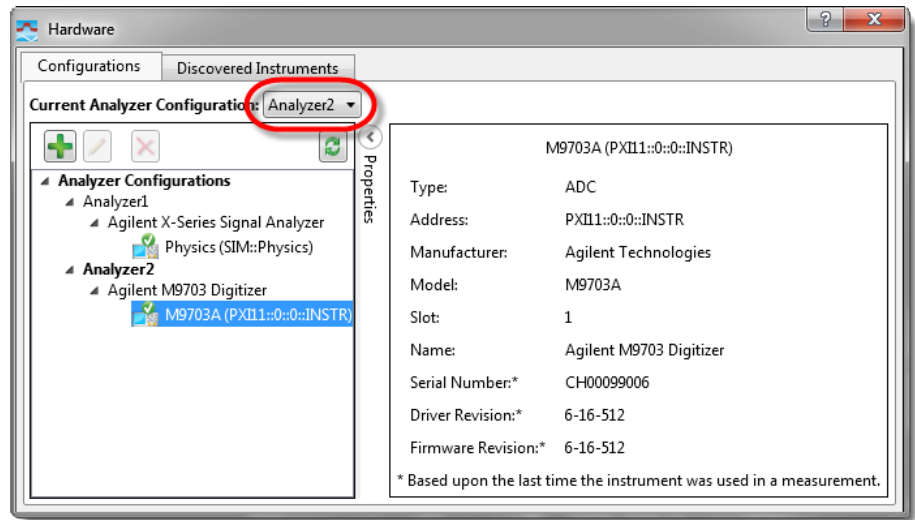
3. Review and configure the Measurement Setup Parameters as detailed in the document: M9703 Hardware Extension of 89600 VSA Software (M9703-90010).

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