

U4998A HDMI 1.4a Protocol/Audio/Video Analyzer and Generator

Service Guide



Agilent Technologies

Notices

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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.

Safety Summary

Safety Symbols on Instruments

Safety Symbol	Description
	Indicates warning or caution. If you see this symbol on a product, you must refer to the manuals for specific Warning or Caution information to avoid personal injury or damage to the product.
	Frame or chassis ground terminal. Typically connects to the equipment's metal frame.
	Indicates hazardous voltages and potential for electrical shock.
	Indicates that antistatic precautions should be taken.
	Indicates hot surface. Please do not touch.
	Indicates laser radiation turned on.
	CSA is the Canadian certification mark to demonstrate compliance with the Safety requirements.
	CE compliance marking to the EU Safety and EMC Directives. ISM GRP-1A classification according to the international EMC standard. ICES/NMB-001 compliance marking to the Canadian EMC standard.

General Safety Precautions

The following general safety precautions must be observed during all phases of operation of this instrument. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture, and intended use of the instrument.

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

Before operation, review the instrument and manual for safety markings and instructions. You must follow these to ensure safe operation and to maintain the instrument in safe condition.

General

This product is a Safety Class 1 instrument (provided with a protective earth terminal). The protective features of this product may be impaired if it is used in a manner not specified in the operation instructions.

All Light Emitting Diodes (LEDs) used in this product are Class 1 LEDs as per IEC 60825-1.

Environment Conditions

This instrument is intended for indoor use in an installation category II, pollution degree 2 environment. It is designed to operate at a maximum relative humidity of 95% and at altitudes of up to 2000 meters.

Refer to the specifications tables for the ac mains voltage requirements and ambient operating temperature range.

Before Applying Power

Verify that all safety precautions are taken. The power cable inlet of the instrument serves as a device to disconnect from the mains in case of hazard. The instrument must be positioned so that the operator can easily access the power cable inlet. When the instrument is rack mounted the rack must be provided with an easily accessible mains switch.

Ground the Instrument

To minimize shock hazard, the instrument chassis and cover must be connected to an electrical protective earth ground. The instrument must be connected to the ac power mains through a grounded power cable, with the ground wire firmly connected to an electrical ground (safety ground) at the power outlet. Any interruption of the protective (grounding) conductor or disconnection of the protective earth terminal will cause a potential shock hazard that could result in personal injury.

Do Not Operate in an Explosive Atmosphere

Do not operate the instrument in the presence of flammable gases or fumes.

Do Not Remove the Instrument Cover

Operating personnel must not remove instrument covers. Component replacement and internal adjustments must be made only by qualified personnel.

Instruments that appear damaged or defective should be made inoperative and secured against unintended operation until they can be repaired by qualified service personnel.

Environmental Information

	<p>This product complies with the WEEE Directive (2002/96/EC) marking requirements. The affixed label indicates that you must not discard this electrical/ electronic product in domestic household waste.</p> <p><i>Product Category: With reference to the equipment types in the WEEE Directive Annex I, this product is classed as a "Monitoring and Control instrumentation" product.</i></p> <p>Do not dispose in domestic household waste.</p> <p>To return unwanted products, contact your local Agilent office, or see www.agilent.com/environment/product/ for more information.</p>
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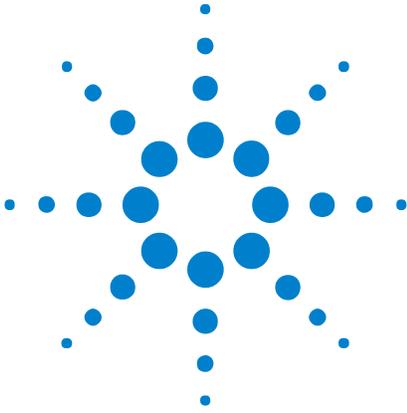
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1 Agilent AMP/AXIe Chassis

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Steps To Perform

To perform Power-On Self-Test (POST)

You can install the U4998A module in one of the empty slots of either Agilent AMP (Digital Test Console) or Agilent AXIe chassis.

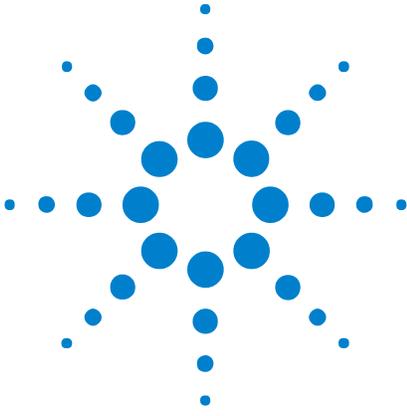
To verify the performance of the chassis and its CRM (in case of an AMP chassis) or ESM (in case of an AXIe chassis):

- 1 Power-on the chassis.

If the chassis powers on, it indicates the power supply is working.

- 2 Observe the Status LED on the CRM/ESM of chassis.

CRM Status LED	When lit, indicates ...
Green	The CRM/ESM has powered up, passed its self test, and detects no serious problems in the chassis.
Amber	The module is booting and undergoing self tests. If the LED remains amber after 120 seconds, this indicates an unrecoverable problem, for example: <ul style="list-style-type: none">• hardware problem (bad memory, bad CPU, bad PCA board)• powerup self-test (POST) failure• ROM programming failure, software error
Red	There is a serious problem in the chassis, for example: <ul style="list-style-type: none">• an overheated module• bad power supply



2 U4998A Module

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General

The U4998A module must have a license enabled. Possible licenses are shown in the following table.

Table 1 U4998A Licenses

License	Description
U4998A-H14	HDMI 3.4 Gbps license
U4998A-M04	4 GB Memory Depth license
U4998A-HDM	HDMI Protocol license
U4998A-CMP	Capture/Compliance Testing license
U4998A-GEN	Generator license
U4998A-PSV U4998U-PSV	Passive Monitoring license (To enable Mirror mode and Pass through mode)

The serial number label on the top side of the U4998A module shows which licenses are enabled. These same license options should be enabled on the replaced module.

Steps To Perform

Step 1. Make the Required Hardware Connections for U4998A

- 1 Set up the Agilent Digital Test Console/Agilent AXIe Chassis.
- 2 Insert the U4998A module in an empty slot of Agilent Digital Test Console /Agilent AXIe Chassis.
- 3 Connect the chassis to a controller PC via PCI Express Gen1/Gen2 interface.
- 4 Power up the connected hardware components.

The following figure displays a sample setup of U4998A module in a chassis.



Step 2. Run U4998A Self Tests

A U4998A self test checks the major hardware functions of the U4998A module to verify that it is working correctly.

The following self test is available for U4998A.

Table 2 U4998A Self Test

Test	Description	Expected Outcome	Corrective Action if test fails
DDR3 Memory Test	Runs the DDR3 test built into the Altera self-test image. It currently tests 4GB.	Pass Fail	If the test fails, U4998A module needs to be replaced.

To run a self test:

- 1 In the Agilent Logic Analyzer application, click **Help > Self Test**.
The **Analysis System Self Tests** dialog is displayed.
- 2 In the Analysis System Self Tests dialog, select the self test options:
 - **Include interactive tests** – causes interactive tests to appear in the selection lists.
 - **Run repetitively** – runs the selected tests repetitively until you click Stop.
 - **Stop on fail** – if you are running multiple tests or running tests repetitively, this causes the tests to stop if there is a failure.
 - **Double-click item to start** – lets you double-click a test to start it.
- 3 Set the reporting level. Higher levels produce increasingly verbose output.
- 4 If you have a multiframe configuration, select the instruments you want to test.
- 5 If you have a slotted instrument, select the suites you want to run.
- 6 Select the test you want to run.
- 7 Click **Start**.

As the test is running, the results are reported in the lower part of the dialog and saved to a log file.

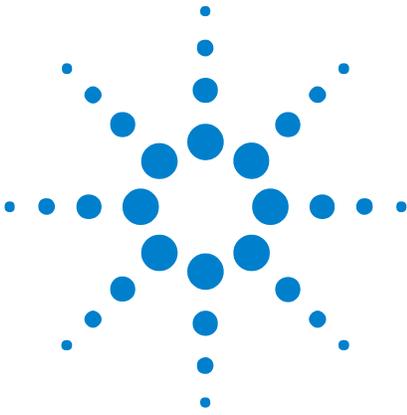
- 8 To stop running a test, click **Stop**.
- 9 To reset the self-test options, click **Reset**.
- 10 To view the log file, click **Logs...**, select the log file you want to view, and click **Open**.

Step 2. Send Defective Module to Agilent for Replacement

For failure analysis, please complete the Exchange Information Sheet, which you will find at the end of this service guide, and send it with the defective part for replacement to Agilent.

Contact Agilent Service/Support

If, after completing the self tests, you have failures or you have additional questions, contact Agilent Technologies sales or support at <http://www.agilent.com/find/contactus>.



A Exchange Information Sheet

Please send back the defective part with the following information.



