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Keysight X-Series Signal Analyzers

Additional Removable Disk Drive

KEYSIGHT TECHNOLOGIES

Installation Note

Notices

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Additional Removable Disk Drive

This document provides detailed instructions for the use and maintenance of an additional disk drive in an X-Series signal analyzer. Please be sure to read this entire document before attempting to put this additional disk drive into use.

Contents

Quantity	Description
1	Installation Note
1	Programmed Solid State Disk Drive Tray Assembly

Tools Required

- Torx Driver T-10
- USB Mouse
- USB Keyboard
- USB storage device with > 2 GB free memory

What you will find in this User's Guide

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Overview

This option provides a additional removable solid state disk drive for your X-Series Signal Analyzer.

Since this option was ordered along with an instrument purchase the factory calibration data for that instrument will also have been copied onto this drive at the factory.

The instrument model and serial numbers, as well as all installed license keys, will not need to be transferred to the new disk drive, as the master copy of all of these is stored on the instrument A7 Midplane board assembly.

NOTE

Should an incorrect version of the X Series calibration file(s) be installed in an instrument, no error messages will be displayed. The instrument may however perform outside of the warranted specifications for that instrument. It is therefore extremely important to ensure that the instrument specific calibration data is properly copied onto this drive before the instrument is used for making any measurements.

Disk Drive Interconnect Life Expectancy

If this upgrade has been ordered to use as an additional solid state disk drive for use when the original solid state drive must be left inside of a controlled secure environment you will want to be aware of the following information with regards to the life expectancy of the interconnect between the removable disk drive and the instrument.

The life expectancy of both the connector on the removable disk drive and the mating connector internal to the instrument is 1,500 cycles. If this is exceeded it is very likely that a failure will occur between these connections. Keysight highly recommends that this cycle limit not be exceeded to prevent an unwanted failure of the instrument.

Putting the Additional Disk Drive Into Service

When ordered at the time of an instrument purchase, the additional disk drive will have the following already installed on it:

1. **The currently shipping version of instrument software that is also installed in the instrument. So no instrument software updating will be required at this time.**
2. **A duplicate copy of the instrument factory calibration data file that is also in the instrument. So no copying of the instrument calibration data file will be required at this time.**

Since this additional disk drive also includes a copy of a Windows operating system on it, and thus an additional license as well, when this disk drive is first used it will also require that you initialize the operating system. See the "Initializing the Instrument Operating System" section in the guide.

It is recommended that once the instrument is first powered up with the disk drive that it left the factory with, and the operating system has been initialized, that this additional disk drive then be installed in the instrument and its operating system be initialized as well. This way both disk drives will be in the same state, and either one can then be used as necessary. For instructions on removing and replacing the disk drive see the "Disk Drive Removal and Installation" section in this guide. If the instrument is going to be used in a secure environment this will also allow the instrument to be easily put into service once it is removed from the secure environment.

Initializing the Instrument Operating System

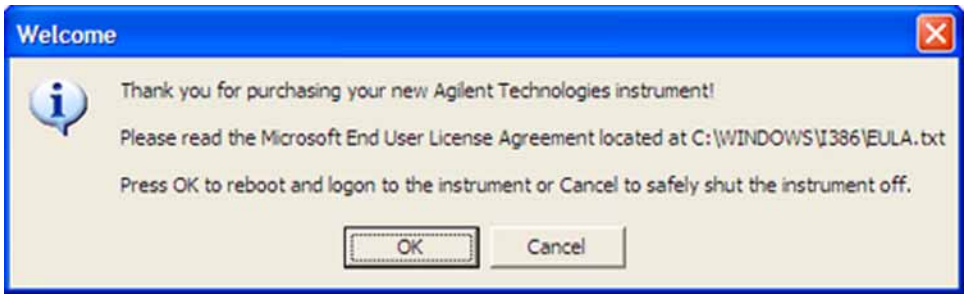
NOTE During the initial power-on process, the instrument may turn itself off and restart a number of times. This is normal and only happens during the initial installation process.

1. Connect a mouse to one of the instrument USB ports.

NOTE The instrument may require more than 5 minutes to power-on. This is affected by the operating system initial start-up requirements.

2. The Keysight Technologies screen appears followed by a screen that automatically loads the operating system.
3. The Welcome dialog box as shown in Figure 1 appears, providing you information regarding the operating system End-User License Agreement.

Figure 1 Welcome Dialog Box

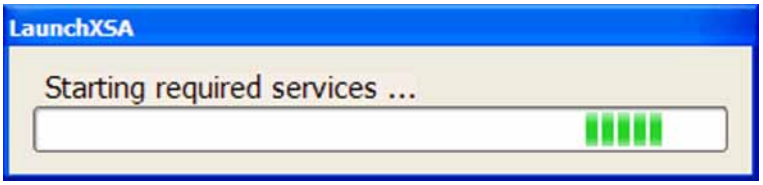


Select OK to continue, or Cancel to turn off the instrument before initializing the software.

CAUTION After launching the setup, do not turn off the instrument or remove power before the setup routine completes and the system restarts. Turning off the instrument may corrupt the system and the instrument software may need to be recovered.

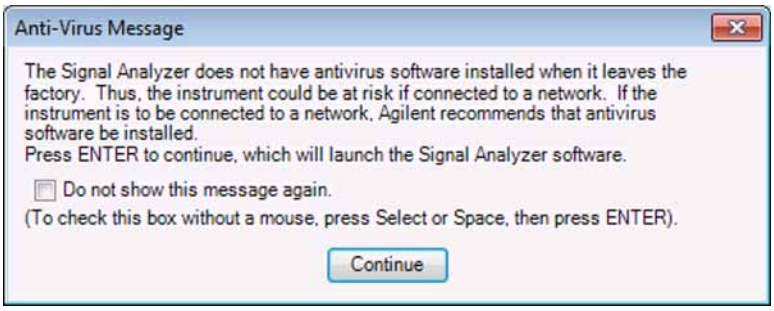
4. After the instrument restarts, a status window as shown in Figure 2 appears while the instrument application software loads:

Figure 2 Application Launch Status Window



5. The anti-virus notification as shown in Figure 3 will then appear.

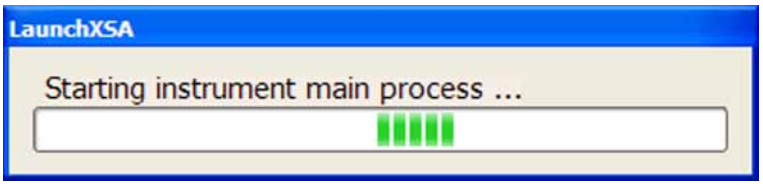
Figure 3 Anti-Virus Message



NOTE If you do not check the "Do not show this message again" check box, this message will be displayed each time the instrument is turned on. No application will start while this message is displayed. Before continuing, make sure that you carefully read the Anti-Virus message and determine what action is appropriate.

6. Select Continue.
7. Further status messages similar to Figure 4 will continue to appear while the instrument application software continues to load:

Figure 4 Continued Application Launch Status Window



8. Once the instrument application software completes loading the instrument initialization will be completed. Continue with the next step for putting the new disk drive into service.

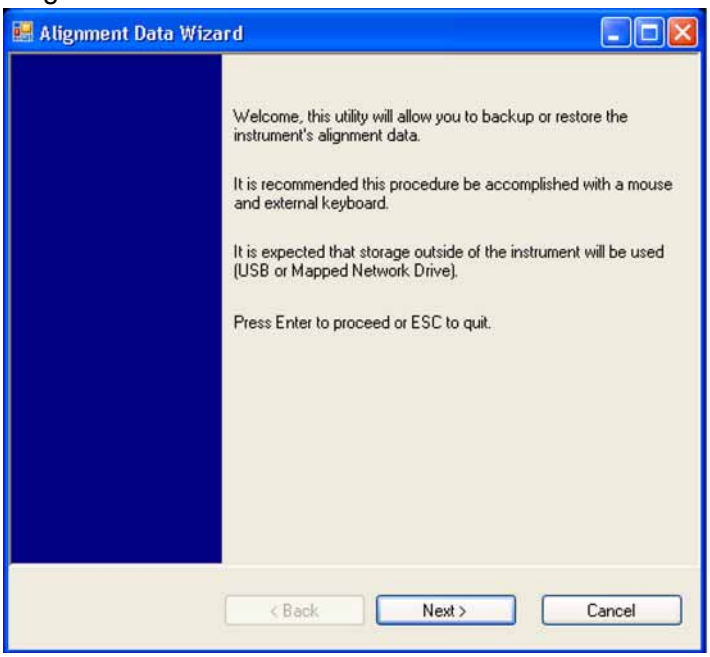
Calibration Data Backup and Restore

In order to maintain the same level of instrument performance and measurement accuracy with all disk drives used in any particular instrument, the instrument specific calibration data will occasionally need to be transferred from one disk drive to another. The following procedures will outline the steps required to do this.

Backup Calibration Data

1. With the instrument turned on and the signal analyzer application running as normal, connect a USB mouse to one of the available instrument USB ports.
2. Locate a USB storage device and insert it into one of the available instrument USB ports. (Perform a virus scan on this device before use)
3. On the front panel of the instrument press **System**, **Alignments**, **Backup or Restore Align Data...**
4. The Alignment Data Wizard window as shown in Figure 5 will appear.

Figure 5 Alignment Data Wizard



5. Follow the on-screen instructions to **Backup** the calibration data to the USB storage device.

Restore Calibration Data

1. With the instrument turned on and the signal analyzer application running as normal, connect a USB mouse to one of the available instrument USB ports.
2. Connect the USB storage device that the calibration data was previously saved on to one of the available instrument USB ports.
3. On the front panel of the instrument press **System**, **Alignments**, **Backup or Restore Align Data...**
4. The Alignment Data Wizard window as shown in Figure 5 will appear.
5. Follow the on-screen instruction to **Restore** the calibration data from the previously saved file on the USB storage device.

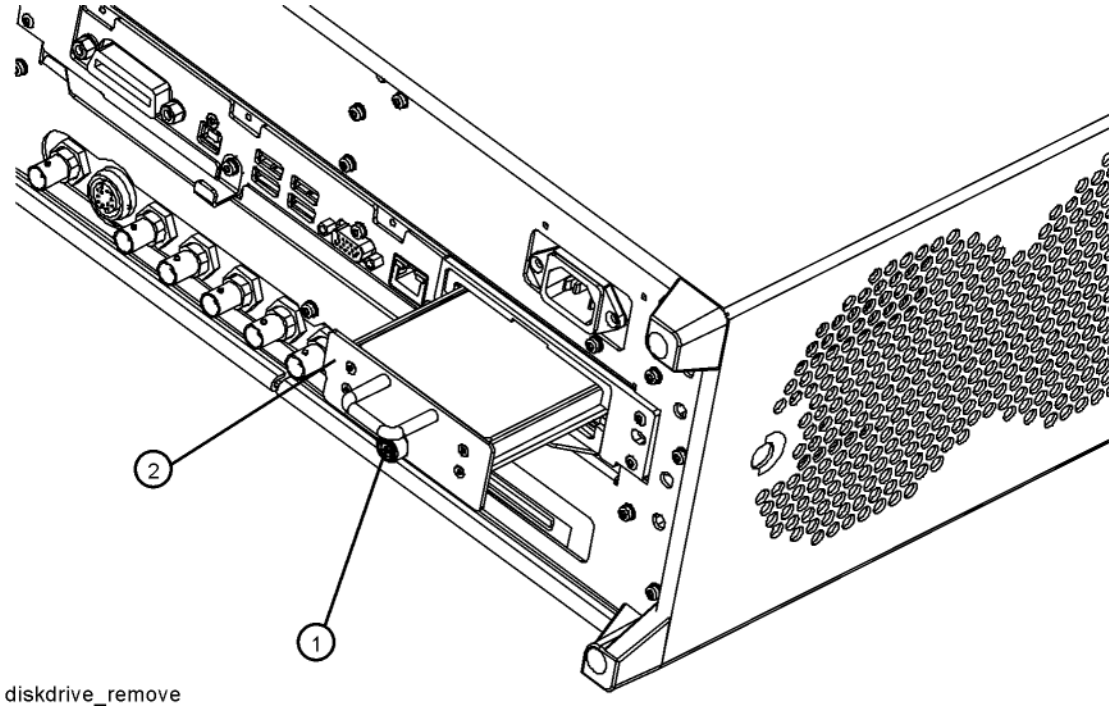
Disk Drive Removal and Installation

CAUTION

Electrostatic discharge (ESD) can damage or destroy electronic components. All work on electronic assemblies should be performed at a static-safe workstation. Refer to the documentation that pertains to your instrument for information about static-safe workstations and ordering static-safe accessories.

1. Turn the instrument off and remove the AC power cord.
2. Refer to Figure 6. Locate and remove the existing disk drive carrier assembly (2) from the instrument by loosening the rear panel screw (1).

Figure 6 Replacing the Disk Drive Carrier Assembly



diskdrive_remove

3. Replace the disk drive carrier assembly (2) into the instrument and tighten the screw (1) to 9 inch-pounds.

Software Updates

The currently installed instrument software version can be easily determined by pressing the following front panel keys:

System, **Show**, **System**

The software revision can be found on this screen as the:

Instrument S/W Revision

Updating the Instrument Software:

If an instrument software update is required, the latest revision of the X-Series signal analyzer software may be downloaded from:

http://www.keysight.com/find/xseries_software

Instrument Security Information

Information on the X-Series Signal Analyzer instrument security features and the instrument volatility can be found at:

http://www.keysight.com/find/security

Secure Usage Scenarios

The following information is meant to serve as a guideline when using the removable disk drive feature in an X-Series Signal Analyzer along with an additional disk drive option. How you choose to ultimately use this is up to you and your security requirements.

Removing an Instrument from a Secure Environment

If an instrument that is being used inside of a controlled secure environment needs to be removed for servicing, calibration, or any other non-secure use outside of the controlled secure environment perform the following procedure:

1. Remove the disk drive assembly from the instrument. See the Disk Drive Removal and Installation section of this document for removal instructions.
2. Verify that the disk drive is marked with the model and serial number of the instrument that it has been removed from and place it inside of a static safe bag and place in a safe place.
3. All potential user data has been removed from the instrument and it can now be removed from the secure environment.
4. Once the instrument has been removed from the secure environment install the additional disk drive with the model and serial number of the instrument recorded on it.
5. The instrument is now ready for either use outside of the secure environment or for servicing.

Returning an Instrument to a Secure Environment

When the instrument is returned from servicing, calibration, or any other non-secure use, perform the following procedure before returning it to a controlled secure environment:

1. Backup the instrument factory calibration data onto a USB storage device. See the Calibration Data Backup and Restore section of this guide for instructions.
2. Remove the disk drive assembly from the instrument. See the Disk Drive Removal and Installation section of this document for removal instructions.
3. Verify that the disk drive is marked with the model and serial number of the instrument that it has been removed from and place it inside of a static safe bag and place in a safe place.
4. Return the instrument to the controlled secure environment along with the USB storage device that the instrument specific factory calibration data was backed up to.

5. Install the original disk drive with the model and serial number of the instrument recorded on it and turn the instrument on.
6. Restore the instrument factory calibration data that was previously backed up onto the USB storage device. See the Calibration Data Backup and Restore section of this guide for instructions.
7. The instrument is now ready for use inside of the secure environment and the USB storage device can be properly disposed of if necessary.

Removing an Inoperative Instrument from a Secure Environment

Should the instrument fail for any reason while inside a controlled secure environment perform the following steps to safely remove the instrument:

1. Remove the disk drive assembly from the instrument. See the Disk Drive Removal and Installation section of this document for removal instructions.
2. Verify that the disk drive is marked with the model and serial number of the instrument that it has been removed from and place it inside of a static safe bag and place in a safe place.
3. All potential user data has been removed from the instrument and it can now be removed from the secure environment.
4. Once the instrument has been removed from the secure environment install the additional disk drive with the model and serial number of the instrument recorded on it.
5. If the instrument failure persists with the additional disk drive the instrument should be sent in for repair to an Keysight Authorized service facility, and the rest of this procedure can be skipped.
6. If the instrument will now function properly with the additional disk drive installed, the cause of the failure was most likely the original disk drive. The instrument can now be returned to the secure environment and the original disk drive will need to be disposed of according to the secure environment requirements. However, it is recommended that another additional disk drive be purchased to replace the defective drive before the instrument is returned to the secure environment. This will allow for the procedure of putting the new additional disk drive into service to be completed prior to returning the instrument to the secure environment.

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