

Agilent MXE EMI Receiver

This manual provides documentation for the following instruments:

MXE EMI Receiver N9038A

Security Features and Document of Volatility



Notices

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2 Contacting Agilent Sales and Service Offices

Assistance with test and measurement needs, and information to help you find a local Agilent office, is available via the internet at, http://www.agilent.com/find/assist. If you do not have internet access, please contact your designated Agilent representative.

NOTE

In any correspondence or telephone conversation, refer to the instrument by its model number and full serial number. With this information, the Agilent representative can determine whether your unit is still within its warranty period.

Contacting Agilent Sales and So	ervice Uffices		



3 Products Covered by this Document

Product Name

Model Numbers

MXE EMI Receiver

N9038A

This document describes instrument memory types and security features. It provides a statement regarding the volatility of all memory types, and specifies the steps required to declassify an instrument through memory clearing, sanitization, or removal.

For additional information, go to:

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

IMPORTANT

Be sure that all information stored by the user in the instrument that needs to be saved is properly backed up before attempting to clear any of the instrument memory. Agilent Technologies cannot be held responsible for any lost files or data resulting from the clearing of memory.

Be sure to read this document entirely before proceeding with any file deletion or memory clearing.

Products Covered by this Document						



Security Terms and Definitions

Term	Definition
Clearing	As defined in Section 8-301a of DoD 5220.22-M, "National Industrial Security Program Operating Manual (NISPOM)", clearing is the process of eradicating the data on media before reusing the media in an environment that provides an acceptable level of protection for the data that was on the media before clearing. Hence, clearing is typically used when the instrument is to remain in an environment with an acceptable level of protection.
Instrument Declassification	A term that refers to procedures that must be undertaken before an instrument can be removed from a secure environment, such as is the case when the instrument is returned for calibration. Declassification procedures include memory sanitization or memory removal, or both. Agilent declassification procedures are designed to meet the requirements specified in DoD 5220.22-M, "National Industrial Security Program Operating Manual (NISPOM)", Chapter 8.
Sanitization	As defined in Section 8-301b of DoD 5220.22-M, "National Industrial Security Program Operating Manual (NISPOM)", sanitization is the process of removing the data from media before reusing the media in an environment that does not provide an acceptable level of protection for the data that was in the media before sanitizing. Hence, instrument sanitization is typically required when an instrument is moved from a secure to a non-secure environment, such as when it is returned to the factory for calibration.
	Agilent memory sanitization procedures are designed for customers who need to meet the requirements specified by the US Defense Security Service (DSS). These requirements are specified in the "Clearing and Sanitization Matrix" in Section 5.2.5.5.5 of the ISFO Process Manual for the Certification and Accreditation of Classified Systems under the NISPOM.
Secure Erase	Secure Erase is a term that is used to refer to either the clearing or sanitization features of Agilent instruments.

Security Terms and Definitions		



This chapter summarizes all memory types in the instrument.

The descriptions are divided between:

- 1. Non-Volatile Memory,
- 2. Volatile Memory.

Non-Volatile Memory

This section contains information on the memory components available in your instrument.

The table provides details of the size of each memory component, its type, how it is used, its location, volatility, and the sanitization procedure.

NOTE	The instrument contains no user-accessible non-volatile memory, except for the Disk Drive described in Item 7 of Table 5-1. For this reason, as indicated in the tables below no sanitization procedure is required for any memory component except the Disk Drive							
Table 5-1	Sui	Summary of Non-Volatile instrument memory						
Memory Component, Type and Size	Writable During Normal Operation?	Data Retained When Powered Off?	Purpose/Contents	Data Input Method	Location in Instrument and Remarks	Sanitization Procedure		
1. Front Panel EEPROM 64 kbit	No	Yes	Contains software for running front panel microcontroller. Operates front panel LEDs, and transmits key presses to processor.	Programmed before installation.	A1A2 Front Panel Interface Board Contains no user data.	None.		
2. EDID Memory (EEPROM) 2 kbit	No	Yes	Extended Display Identification Data. Contains basic information about a monitor and its capabilities.	Programmed before installation.	A1A2 Front Panel Interface Board. Contains no user data.	None.		
3. Config & Cal Memory (EEPROM) 8 kbit	No	Yes	Header EEPROM used to identify the assembly.	Programmed before installation.	A2 Analog IF Assy. Contains no user data.	None.		
4. Config & Cal Memory (EEPROM) 8 kbit	No	Yes	Header EEPROM used to identify the assembly.	Programmed before installation.	A3 Digital IF Assy. Contains no user data.	None.		

No	Table 5-1	Summary of Non-Volatile instrument memory					
Memory (Flash) 8 Mbit The programmed by settings to use when booting the Processor Assembly. This drive is practitioned, as detailed in Partitioning" Oisk Drive Partitioning and page 19. The programmed by factory. Settings can be toggled by user. The programmed by factory. Settings can be toggled by user. The programmed by factory. Settings can be toggled by user. The programmed by user. The programmed before installation or by factory/service center data. The programmed before installation or by factory/service center data. The programmed before installation or by factory/service center data. The programmed before installation or by factory/service center data. The programmed before installation or by factory/service center data. The programmed before installation or by factory/service center data. The programmed before installation or by factory/service center data. The programmed before installation or by factory/service center data. The programmed before installation or by factory/service center data. The programmed before installation or by factory/service center data. The programmed before installation or by factory/service center data. The programmed before installation or by factory/service center data. The programmed before installation or by factory/service center data. The programmed before installation or by factory/service center data. The programmed before installation or by factory/service center data. The programmed before installation or by factory/service center data. The programmed before installation or by factory/service center data.	Component,	Writable During Normal Operation?	Data Retained When Powered Off?	Purpose/Contents		Instrument	
(Flash) 8 Mbit Control software, which is preloaded into FPGA during instrument power-up. 6. CPU BIOS No Yes Contains default BIOS settings to use when booting the Processor Assembly. 7. Disk Drive (battery backed) 7. Disk Drive This drive is partitioned, as detailed in "Disk Drive Partitioning" on page 19. 8. License Storage Memory (EEPROM) Contains of Programmed by factory. Settings can be toggled by user. Contains no user data. Programmed by user. As Processor Assy. Frogrammed by user. Assy. Contains no user data. Assy. Contains no user data. Programmed before installation or by factory/service center calibration procedure software, or by upgrade installation software. Also programmed via operations and by the user. 8. License Storage No Yes Contains instrument serial number and license keys for measurement applications. License by installing new license Contains no user data. Programmed before and installation or by factory/service center calibration procedure software, or by upgrade installation and by the user. As Disk Drive Contains user data files, uggrade installation of the user. Contains no user data.	_	No	Yes		-	-	None.
8 Mbit into FPGA during instrument power-up. 6. CPU BIOS No Yes (CMOS NVRAM) 256 Byte (battery backed) 7. Disk Drive Yes Yes Software, Crash recovery image, adtaled in "Disk Drive Partitioning" on page 19. 8. License No Yes Storage Memory (EEPROM) 8. License Storage Memory (EEPROM) 8. License Storage Memory (EEPROM) 8. COutains default BIOS settings to use when booting the Processor Assument setting to use when booting the Processor Assument setting to use when booting the Processor Assument setting to use when factory. Settings can be toggled by user. 8. Contains Operating System, Instrument Software, Crash recovery image, user instrument states, user data files, user data files, user trace data and any user installed third party software. 8. License Storage More Storage Memory (EEPROM) 8. Contains instrument serial number and Memory (EEPROM) 8. License Storage More Memory (EEPROM) 8. More Storage More Memory (EEPROM) 8. More Storage More More Memory (EEPROM) 8. More At Processor Assy. A4 Processor Assy. 8. Programmed by factory. Settings can be toggled by user. 8. Programmed by factory. Settings can be toggled by user. 8. Programmed before installation or by factory Settings can be toggled by user. 8. Programmed before can be toggled by user. 8. License Storage More Memory (EEPROM) 8. License More Memory (EEPRO	•			control software,		•	
CCMOS NVRAM 256 Byte (battery backed)	8 Mbit			into FPGA during		user data.	
NVRAM) 256 Byte (battery backed) 7. Disk Drive (Byte) 80 GByte This drive is partitioned, as detailed in "Disk Drive Partitioning" on page 19. 8. License No Yes Storage Memory (EEPROM) booting the Processor Assembly. booting the Processor Assembly. can be toggled by user. can be toggled by user. Battery backed to maintain Windows calendar time. Contains no user data. Programmed before installation or by factory/service center calibration procedure software, or by upgrade installation software. Also programmed via operations and by the user. 8. License No Yes Contains instrument states, user data and license keys for measurement applications. License installation and by installing new license (Contains no user data.)		No	Yes		-		None.
Contains no user data.	•			booting the Processor	can be toggled	Battery backed to	
Disk Drive Yes Yes Contains Operating System, Instrument Software, Factory Calibration Data, Diagnostic software, on page 19. 8. License Storage Memory (EEPROM) To Disk Drive Yes Yes Contains Operating System, Instrument Software, Canter Contains User data. Contains Operating System, Instrument Software, Factory Calibration Data, Catory/service Center Calibration procedure software, or by upgrade installation software. Also programmed by the user. Contains user data. Programmed before installation or by factory/service center calibration procedure software, or by upgrade installation software. Also programmed via operations and by the user. R. License Storage Memory (EEPROM) No Yes Contains instrument serial number and license keys for measurement applications. License Contains no user data.	256 Byte			Assembly.	by user.		
7. Disk Drive Yes Yes Contains Operating System, Instrument Software, Factory Calibration Data, Diagnostic software, center calibration Partitioning" on page 19. 8. License Storage Memory (EEPROM) 7. Disk Drive Yes Yes Contains Operating System, Instrument Software, Factory Calibration Data, Diagnostic software, center center calibration procedure states, user data files, user trace data and any user installed in software. Software, or by upgrade installation software Assy. 8. License No Yes Contains instrument serial number and license keys for measurement applications. License No l	•						
System, Instrument Software, Factory This drive is partitioned, as detailed in "Disk Drive Partitioning" on page 19. 8. License Storage Memory (EEPROM) System, Instrument Software, Factory Calibration Data, Diagnostic software, calibration procedure calibration procedure software, or by uger installed any user installed installation software. Programmed before installation factory/service center calibration procedure software, or by upgrade installation software. Also programmed via operations and by the user. Programmed before installation software. A7 Midplane Assy. Contains user data.		,				_	
This drive is partitioned, as detailed in "Disk Drive Partitioning" on page 19. 8. License No Yes Contains instrument Storage Memory (EEPROM) This drive is partition Data, Diagnostic software, adetailed in Crash recovery image, user instrument states, user data files, user trace data and any user installed installation software. Also programmed via operations and by the user. Software, Factory installation or by factory/service center calibration procedure software, or by upgrade installation software. Also programmed via operations and by the user. 8. License No Yes Contains instrument serial number and license keys for measurement applications. License new license Software, or by upgrade installation software. Also programmed before Assy. Contains user data. Contains user data.		Yes	Yes		•		
partitioned, as detailed in Crash recovery image, "Disk Drive Partitioning" on page 19. 8. License No Yes Contains instrument Storage Memory (EEPROM) Storage Memory (EEPROM) Diagnostic software, center calibration procedure software, or by upgrade installation software. Software and by installation and by installing new license with software and software and before installation and by installing new license with software and data. Center calibration calibration software, or by upgrade installation software. Also programmed via operations and by the user. Responsive the center calibration procedure software, or by upgrade installation software. Also programmed via operations and by the user. Responsive the center calibration procedure software, or by upgrade installation software, or by upgrade installation software. Also programmed via operations and by the user. Responsive the center calibration procedure software, or by upgrade installation software,	•			Software, Factory	installation or by	•	page 21.
8. License No Yes Contains instrument Programmed A7 Midplane None. Storage serial number and before Assy. Memory license keys for installation and measurement by installing applications. License new license Contains no user data.	partitioned, as detailed in "Disk Drive Partitioning"			Diagnostic software, Crash recovery image, user instrument states, user data files, user trace data and any user installed	center calibration procedure software, or by upgrade installation software. Also programmed via	data.	
Storage serial number and before Assy. Memory license keys for installation and measurement by installing applications. License new license Contains no user data.	0 Lines	N	Va -	Contains in the contains	<u> </u>	Λ7 M;«!».!».»	Nana
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Table 5-1 Summary of Non-Volatile instrument memory ita Retained When wered Off? Memory **Purpose/Contents Data Input Location in Sanitization** itable During rmal Operation? Component, Method **Procedure** Instrument **Type and Size** and Remarks

	Writ Norn	Data Pow					
9. Config Memory	No	Yes	Header EEPROM used to identify the assembly.	Programmed before installation.	A11 RF Switch / High Band Preamp.	None.	
(EEPROM) 8 kbit			assembly.	installation.	Contains no user data.		
10. Config Memory	No	Yes	Header EEPROM used to identify the	Programmed before	A12 YTF Assembly.	None.	
(EEPROM) 8 kbit			assembly.	installation.	Contains no user data.		
11. Config Memory	No	Yes	Header EEPROM used to identify the	Programmed before	A13 Front End Assembly.	None.	
(EEPROM) 8 kbit			assembly.	installation.	Contains no user data.		
12. Config & Cal Memory	No	Yes	Header EEPROM used to identify the assembly.	Programmed before installation.	A14 Synthesizer Assy.	None.	
(EEPROM) 8 kbit			assembly.	ilistaliation.	Contains no user data.		
13. Config Memory	No	Yes	Contains measurement and control software,	Programmed before installation.	A14 Synthesizer Assy.	None.	
(Flash) 8 Mbit			which is preloaded into FPGA during instrument power-up.	installation.	Contains no user data.		
(1024 x 8) 14. Config & Cal Memory (EEPROM)	No	Yes	Header EEPROM used to identify the assembly.	Programmed before installation.	A15 Front End Control Assy.	None.	
8 kbit					user data.		

Table 5-1 Summary of Non-Volatile instrument memory **Memory Purpose/Contents Data Input Location** in **Sanitization** Data Retained When Powered Off? Normal Operation? Component, **Procedure** Method Instrument Writable During Type and Size and Remarks 15. Config No Yes **Programmed** A15 Front End **Contains** None. Memory measurement and before Control Assy. control software, installation. (Flash) Contains no which is preloaded user data. 2 Mbit into FPGA during instrument power-up. Primarily YTF, attenuator, and front end switch control. 16. Config & Header EEPROM A16 No Yes **Programmed** None. before Cal Memory used to identify the Reference assembly. installation. Assy. (EEPROM) Contains no 8 kbit user data. 17. FPGA No Yes **Contains Programmed** A16 None. before **Config Memory** measurement and Reference control software. installation. Assy. (Flash) Contains no 2 Mbit user data. 18. Digital No Yes Contains default data Programmed A16 None. before Potentiometer to preset digital Reference potentiometers installation. Assy. (EEPROM) during power-up. Contains no 112 bits user data. 19. Config & No Yes Header EEPROM **Programmed** A16A1 None. before Cal Memory used to identify the Reference assembly. installation. Daughter (EEPROM) Assy. 8 kbit Contains no user data.

Table 5-1 Summary of Non-Volatile instrument memory

Memory Component, Type and Size	Writable During Normal Operation?	Data Retained When Powered Off?	Purpose/Contents	Data Input Method	Location in Instrument and Remarks	Sanitization Procedure
20. Config Memory (Flash) 1 Mbit	No	Yes	Contains measurement and control software, which is preloaded into FPGA during instrument power-up.	Programmed before installation.	A16A1 Reference Daughter Assy. Contains no user data.	None.
21. Header Memory. (EEPROM) 8 kbit	No	Yes	Contains header information used to identify the assembly.	Programmed before installation.	A21 RF Preselector Input Assy. Contains no user data.	None.
22. Header Memory. (EEPROM) 8 kbit	No	Yes	Contains header information used to identify the assembly.	Programmed before installation.	A22 Radiated Filter Assy. Contains no user data.	None.
23. Config Memory (Flash) 2 Mbit	No	Yes	Contains measurement and control software, which is preloaded into FPGA during instrument power-up.	Programmed before installation.	A22 Radiated Filter Assy. Contains no user data.	None.
24. Header Memory (EEPROM) 8 kbit	No	Yes	Contains header information used to identify the assembly.	Programmed before installation.	A24 Conducted Filter Assy. Contains no user data.	None.

Disk Drive Partitioning

The instrument's disk drive is divided at the factory into three visible partitions, labeled C:, D: and E:, plus a fourth hidden partition.

Details of the sizes and functions of all partitions are provided in Table 5-2 below.

Table 5-2 Disk Drive Partitions

Partition Label	Size (GBytes)	Purpose
C:	32 GB	Primary partition for applications and secondary data.
D:	17 GB	Default location for user data.
E:	2 GB	Calibration data.
Hidden	23 GB	Factory recovery image of the C: partition.

Volatile Memory

The volatile memory in the instrument does not have battery backup. It does not retain any information when AC power is removed.

Removing power from this memory meets the memory sanitization requirements specified in the "Clearing and Sanitization Matrix" in Section 5.2.5.5.5 of the ISFO Process Manual for the Certification and Accreditation of Classified Systems under the NISPOM.

Table 5-3		Summai	Summary of Volatile Instrument Memory			t Memory
	_	_		10		D 4 1

Memory Type and Size	Writable During Normal Operation?	Data Retained When Powered Off?	Purpose/Contents	Data Input Method	Location in Instrument and Remarks	Sanitizatio n Procedure
1. SDRAM 256 MByte	Yes	No	Contains measurement data	Programmed by firmware. Not	A3 Digital IF Assy.	Turn off instrument power. ^a
			from data acquisition system.	accessible by user.	Contains raw measurement data.	
2. Processor SDRAM	Yes	No	Main dynamic RAM memory for	Programmed before installation, or by factory/service center calibration procedure software, or by firmware upgrade installation software.	A4 Processor Assy.	Turn off instrument power. ^a
4 GByte			processor.		Contains user data.	
			Contains working copies of Operating System, instrument measurement applications, calibration data, and measurement data.			
				Also programmed via firmware operations and by user.		
3. SDRAM Yes 2 GByte	Yes	No	Contains measurement data from data acquisition system.	Programmed by firmware. Not accessible by user.	A3 Digital IF Assy.	Turn off instrument power. ^a
					For all instruments with Option DP2.	
					Contains raw measurement data.	



This section explains how to clear, sanitize, and remove memory from your instrument, for all types of non-volatile memory that can be written to during normal instrument operation.

Table 6-1	Disk Drive			
Description and purpose	The Disk Drive is the main memory for the instrument. It has very large storage capacity, plus fast read and write times. There are no limitations on the number of read/write cycles.			
	It contains the Operating System, Instrument Software, Factory Calibration Data, Diagnostic software, Crash recovery image, user instrument states, user data files, user trace data and any user-installed third party software. The Disk Drive is written to frequently by the Operating System and other application software.			
Size	80 Gigabytes			
Memory clearing	Software utilities are available that comply with the clearing requirements specified for Magnetic Disks in the "Clearing and Sanitization Matrix" in Section 5.2.5.5.5 of the ISFO Process Manual for the Certification and Accreditation of Classified Systems under the NISPOM.			
Memory sanitization	We recommend always removing the Disk Drive to achieve sanitization.			
	For program classifications lower than Top Secret, this media type can be sanitized using method "d" as defined in the "Clearing and Sanitization Matrix" in Section 5.2.5.5.5 of the ISFO Process Manual for the Certification and Accreditation of Classified Systems under the NISPOM".			
	For Top Secret and higher program classifications, Disk Drive removal is the only acceptable sanitization procedure.			
Memory removal	See the Chapter "Disk Drive Removal Procedure" on page 27.			
Write protecting	The Disk Drive cannot be write protected. The operating system and software must be able to read from and write to the drive during normal operation.			
Memory validation	The Disk Drive memory can be validated using third-party Windows utilities.			

Table 6-2	EPROM Memories			
Description and purpose	These memories are used to identify the assemblies (header info) and store option configuration data. Some are also used to hold factory software for FPGAs. The software is loaded when the instrument powers up. This memory cannot be written to during instrument operation.			
Size	2 kbit to 8 Mbit			
Memory clearing	Not applicable. This memory does not contain user information and is not accessible by the user.			
Memory sanitization	Not applicable. This memory does not contain user information and is not accessible by the user.			
Memory removal	Not applicable.			
Write protecting	Not applicable.			
Memory validation	Not applicable.			
Remarks	With one exception, as described below, these memories are only writable by factory/service center software, or upgrade installation software. These memories are internally connected to proprietary internal control data busses (as opposed to standard computer busses such as IDE, PCI, USB). They are not accessible by the Operating System or by third-party software, or by the user, to protect the measurement accuracy and consistency of the instrument. They are rarely modified, to ensure no degradation of instrument performance. These memories contain no user data. Many of these memories have long write times, and limited write endurance, so they are not intended to be written to dynamically by software. The sole exception applies to the EEPROM on the A7 Midplane Assembly. Inserting a USB memory device containing a valid license key file into the instrument causes the key file to be copied to both the C: drive and the EEPROM			
	on the A7 Midplane Assembly.			

Instrument Sanitization Procedures

This section includes flowcharts that describe how to sanitize an instrument by physical removal and replacement of the Disk Drive.

Application License Key Storage

Note that License keys for all Applications are stored in EEPROM on the A7 Midplane Assembly (as described in Item 8 of Table 5-1 on page 14). Therefore, when replacing the Disk Drive, you do **not** need to back up and restore the license keys.

Replacement of Disk Drive

Refer to the flowchart in Figure 6-1 below for details of how to perform this procedure.

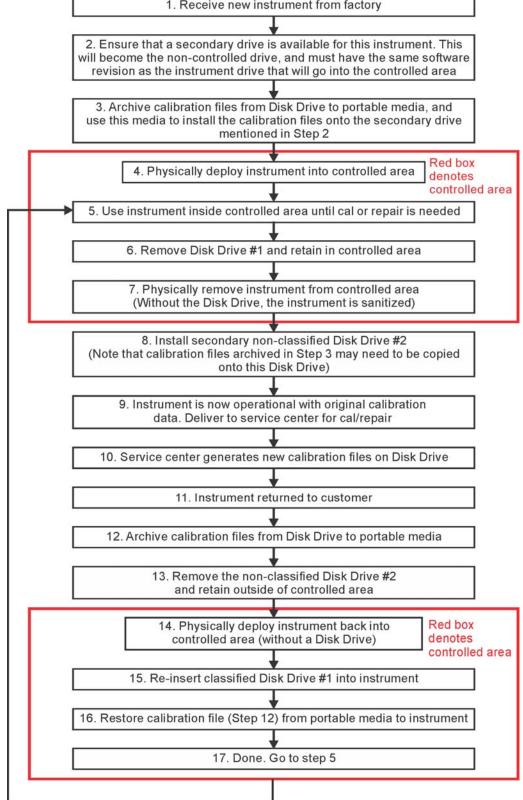
For details of how to archive or restore the instrument's calibration files (Steps 3, 12 and 16 in the flowchart), see "Archiving and Restoring Factory Calibration Data Files" on page 25.

For details of how to remove the Disk Drive (Step 6), see "Disk Drive Removal Procedure" on page 27.

IMPORTANT	When installing a replacement Disk Drive, ensure that the instrument software
	revision on the replacement drive matches that of the original drive.

Figure 6-1 Flowchart for Instrument Sanitization Process by Disk Drive Removal

1. Receive new instrument from factory



Archiving and Restoring Factory Calibration Data Files

This section describes how to archive ("back up") the instrument's factory calibration data to an external USB memory device, or restore the calibration data from an external memory device.

Tools Required

To perform backup or restore operations, you need:

- · a mouse with a USB interface
- · a portable memory device with a USB interface
- · an alphanumeric keyboard with a USB interface

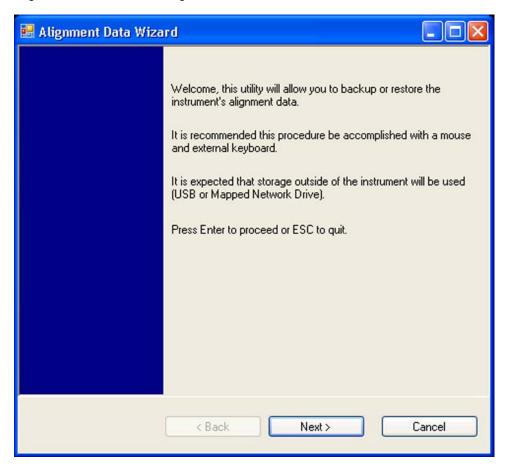
Data Backup or Restore using Alignment Data Wizard

The Alignment Data Wizard is launched directly from the instrument application software interface. You do **not** need to exit the application software before proceeding.

Follow the steps below to start the wizard:

- 1. Plug the mouse's USB cable into one of the instrument's USB ports.
- 2. Plug the USB memory device into another of the instrument's USB ports.
- 3. Plug the USB keyboard into another of the instrument's USB ports.
- 4. Press System > Alignments > Backup or Restore Align Data...
- 5. The Alignment Data Wizard dialog appears, as shown in Figure 6-2 below:

Figure 6-2 Alignment Data Wizard Dialog



6. Follow the wizard's on-screen instructions to back up the calibration data to the external USB memory device, **or** restore the data from the device.



This chapter describes the procedures for physical removal of the instrument's disk drive.

TIP

Application License keys are stored in EEPROM on the A7 Midplane Assembly (as described in Item 8 of Table 5-1 on page 14). Therefore, when replacing the Disk Drive, you do **not** need to back up and restore the license keys.

When installing a replacement Disk Drive, ensure that the instrument software revision on the replacement drive matches that of the original drive.

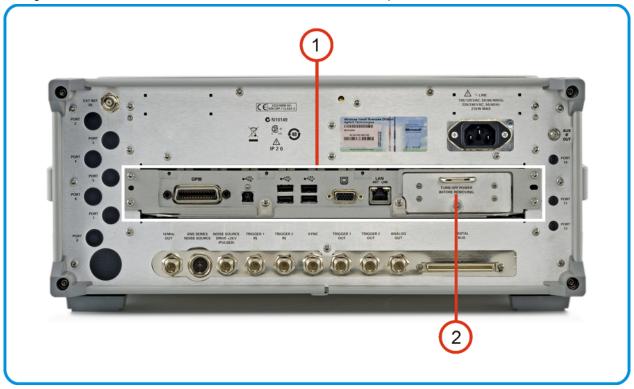
To remove the disk drive, follow the steps below. The numbered items in the figures correspond to the step numbers in the procedure.

CAUTION

Before removing the disk drive, ensure that the instrument's power is turned off.

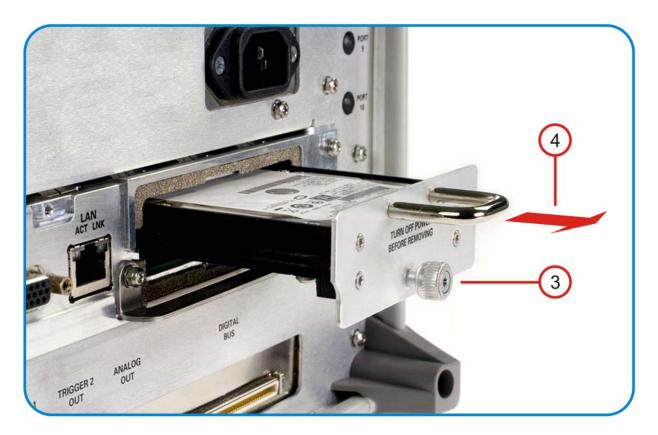
1. Locate the Processor and Disk Drive Assembly on the instrument's rear panel, as shown in Figure 7-1.

Figure 7-1 Instrument Rear Panel & Processor Assembly



- 2. Locate the removable drive, and its retaining thumbscrew, as shown in Figure 7-1.
- 3. Turn the thumbscrew to release the drive from the panel, as shown in Figure 7-2 below. If the thumbscrew is too tight to turn by hand, use a TORX T10 screwdriver to loosen it.

Figure 7-2 Removable Disk Drive Unit partially extracted



4. Pull the U-shaped handle attached to the drive unit, to remove the drive from the Processor Assembly, as shown in Figure 7-2.

Disk Drive Removal Procedure		



This chapter discusses options that are available to you to control and configure remote access to the instrument, including:

- SCPI/GPIB Control of Interfaces
- Operating System Security Features
- USB Interfaces. This topic includes information about how to set the instrument's USB ports to read-only.

IMPORTANT

Users are responsible for providing security for the I/O ports for remote access, by controlling physical access to the I/O ports. The I/O ports must be controlled because they provide access to most user settings, user states, and the display memory.

SCPI/GPIB Control of Interfaces

The GPIB command LLO (local lockout) can be sent by the controller to disable operation of the instrument's front-panel keys and softkey menus.

However, sending the LLO command does **not** disable access to the instrument via its USB ports. For details of how to restrict the operation of the USB ports, see "Configuring USB for Read-only" on page 35 below.

Operating System Security Features

The instrument's Windows operating system includes a variety of features that you can invoke or modify to enhance system security. These include the following:

- The ability to create custom user accounts, and assign different security levels to each account by adding
 it to an existing group. The group types predefined by Windows are: Administrator, Power User, User,
 Backup Operator, and Guest, but you can also define new group types.
- To provide additional protection for instruments that have a network (or internet) connection, the standard Windows Firewall is enabled by default.

User and Remote Interface Security Measures

USB Interfaces

• You can install standard third-party antivirus and spyware detection software designed for use with Windows XP. If your instrument has a network (or internet) connection, this may be advisable.

CAUTION

Running any third-party program while making measurements may adversely affect the instrument's performance.

Details of all these features are provided in the "Windows Security" section of the Agilent MXE EMI Receiver: Getting Started & Troubleshooting Guide.

USB Interfaces

The instrument's Microsoft Windows operating system can be configured to improve the security of the USB interfaces. This section includes the following topics:

"Disabling or Enabling AutoRun/AutoPlay" on page 32

"Configuring USB for Read-only" on page 35

Disabling or Enabling AutoRun/AutoPlay

AutoRun, and the associated **AutoPlay**, are Windows features that assist users in selecting appropriate actions when new media and devices are detected. The AutoRun feature is disabled in the instrument by default, for improved security, unless the Administrator account is running. (In Administrator mode, AutoRun is enabled, to aid with program installation.)

Windows XP

You can change the AutoRun configuration by editing the value of one of two Windows Registry keys. The Windows Registry is a database that stores critical configuration information for the instrument's operating system.

CAUTION

Exercise extreme caution whenever you edit the Windows Registry. Entering an incorrect Registry value, or accidentally deleting Registry keys, may have serious consequences that can prevent the system from starting, or require that you reinstall Windows. The instructions in "Disable & Enable Procedure" on page 34 below assume that you are familiar with the use of the Windows Registry Editor to modify Registry settings.

Registry Key Definitions

AutoRun can be configured per-machine or per-user.

NOTE

If the per-machine Registry key is present, its settings override those of the per-user Registry key.

The Registry key that controls the **per-machine** AutoRun settings is:

HKEY_LOCAL_MACHINE\Software\Microsoft\Windows\CurrentVersion\Policies\Explorer\NoDriveTypeAutoRun

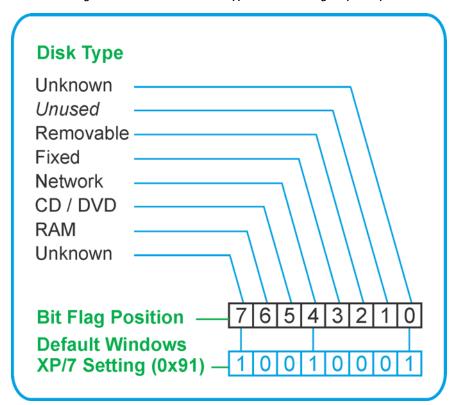
The Registry key that controls the **per-user** AutoRun settings is:

HKEY_CURRENT_USER\SOFTWARE\Microsoft\Windows\CurrentVersion\policies\Explorer\NoDriveTypeAutoRun

In the following discussions, we use the industry-standard abbreviation HKLM for the root key HKEY_LOCAL_MACHINE, and the industry-standard abbreviation HKCU for the root key HKEY_CURRENT_USER.

The DWORD value of either of these entries represents a set of single-bit flags. Each flag specifies the AutoRun setting for a specific drive type, as shown in Figure 8-1. Setting a bit flag to 1 disables AutoRun for that drive type.

Figure 8-1 AutoRun Flag Definitions for NoDriveTypeAutoRun Registry entry



USB Interfaces

As shown in Figure 8-1 above, the default Windows XP (post-SP2) value for this entry is 0×91 (under the entry HKCU\...\NoDriveTypeAutoRun). This setting disables AutoRun for Unknown and Network drives, but enables AutoRun for Removable, Fixed, CD/DVD or RAM drives.

You can disable AutoRun for all drive types by changing the value to 0xFF, as described in the following section.

Disable & Enable Procedure

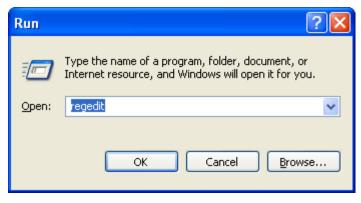
In view of the interaction between the per-machine and per-user Registry settings, as described above, it is recommended that, if both keys exist in your instrument's Registry, you should alter the settings of **both** Registry keys to the same value at the same time.

Use the following procedure to disable AutoRun for all drive types, or to revert all AutoRun settings to their Windows XP default values.

1. Open the Windows Registry editor:

Select **Run...** from the Windows Start menu. Then, type regedit into the Windows Run dialog box, as shown in Figure 8-2 below, and click **OK**.

Figure 8-2 Windows XP Run Dialog



- 2. The Registry Editor window appears. Using the tree view control on the left of the window, navigate to the per-machine (HKLM) key:
 - HKLM\Software\Microsoft\Windows\CurrentVersion\Policies\Explorer.
- 3. To disable AutoRun for all drive types, set the value of entry NoDriveTypeAutoRun to Oxff.
 - To revert AutoRun settings to the Windows default values, set the value of entry NoDriveTypeAutoRun to 0x91.
- 4. Again using the tree view control on the left of the Registry Editor window, navigate to the per-user (HKCU) key: HKCU\SOFTWARE\Microsoft\Windows\CurrentVersion\policies\Explorer.
- 5. To disable AutoRun for all drive types, set the value of entry NoDriveTypeAutoRun to 0xff.
 - To **revert** AutoRun settings to the Windows default values, set the value of entry NoDriveTypeAutoRun to 0x91.
- 6. From the Registry Editor menu, select File > Exit to save the settings and exit the editor.
- 7. Shut down and restart the instrument, to enable the new settings to take effect.

Microsoft AutoRun Patch

There is a defect in Windows XP that compromises the ability to disable AutoRun. This defect has been fixed by a patch from Microsoft, as described in the Microsoft Knowledge Base Article ID: 967715.

This patch has been included in new instrument shipments from the factory since revision A.03.00.

After the patch has been applied, there will be a Registry entry at:

HKLM\Software\Microsoft\Windows\CurrentVersion\Policies\Explorer\HonorAutoru nSetting with a default value of 1.

More Information

The following Wikipedia articles provide more information about AutoRun and AutoPlay:

http://en.wikipedia.org/wiki/AutoRun

http://en.wikipedia.org/wiki/AutoPlay

Configuring USB for Read-only

A convenient mechanism is provided to set the instrument's USB interfaces to read-only, thus preventing transfer of files from the instrument onto USB devices.

You can change this setting only when you are logged on as the Administrator. For details of how to log on to the instrument as the Administrator, see the Agilent MXE EMI Receiver: Getting Started & Troubleshooting Guide. To change the setting, do the following:

1. If you are **not** currently logged on to the instrument as the Administrator, you must log off.

If you are currently logged on to the instrument as the Administrator, and the Agilent XSA application is already running, go to Step 4.

The log-off procedure executes more quickly if you first exit the Agilent XSA application, but you can also log off without exiting the application.

 To log off, select Log Off from the Windows XP Start menu (as highlighted in Figure 8-3 below), then click Log Off in the Log Off Windows dialog that appears.

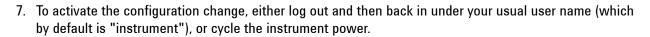
Figure 8-3 Log Off Button in Windows XP Start Menu



- 3. After you have logged on to the instrument as the Administrator, restart the Agilent XSA application.
- 4. When the XSA application has fully initialized (that is, when the main results view and softkey menu are visible), press the **System** front-panel key.
- 5. From the System softkey menu, select: **More** > **Security** > **USB**.

User and Remote Interface Security Measures **USB Interfaces**

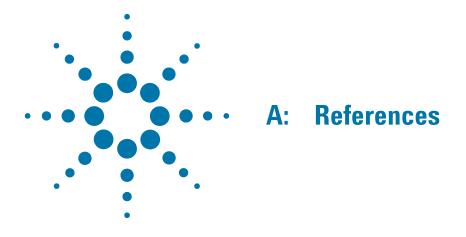
6. Select the option Read Or	ıly.
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Even if the instrument is not able to power on, it may be declassified by removing the disk drive from the instrument, using the appropriate procedure as described in "Disk Drive Removal Procedure" on page 27.

Procedure for Declassifying a Faulty Inst	trument	



1. DoD 5220.22-M, "National Industrial Security Program Operating Manual (NISPOM)"

United States Department of Defense. Revised February 28, 2006.

May be downloaded in Acrobat (PDF) format from:

http://www.dss.mil/isp/fac_clear/download_nispom.html

2. ISFO Process Manual for the Certification and Accreditation of Classified Systems under the NISPOM

Defense Security Service.

DSS-cleared industries may request a copy of this document via email, by following the instructions at:

http://www.dss.mil/isp/odaa/request.html

3. Agilent MXE EMI Receiver: Getting Started & Troubleshooting Guide

Agilent Technologies Inc. 2011. Part Number: N9038-90002 (subject to revision).

A printed copy of this document is supplied with each instrument.

It is also available in Acrobat (PDF) form:

- on the Documentation DVD supplied with each instrument,
- on the instrument's disk drive at the following location:
 C:\Program Files\Agilent\SignalAnalysis\Infrastructure\Help\bookfiles\getstart.pdf
- via download from:

http://www.agilent.com/find/mxe emi receiver getting started guide

4. Microsoft Knowledge Base Article ID: 967715

"How to disable the AutoRun functionality in Windows": may be viewed at:

http://support.microsoft.com/kb/967715

Note that a second article, at: http://support.microsoft.com/kb/953252, "How to correct 'disable AutoRun registry key' enforcement in Windows", redirects to article ID 967715.

This information is subject to change without notice.

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