

# Keysight M8920A PXIe Radio Test Set

This manual provides documentation for the following:

M9037A PXIe Controller

M9421A VXT PXIe Vector Transceiver

M9470A PXIe 50 W RF Interface

M9260A PXIe Audio Analyzer

Security  
Features and  
Document of  
Volatility

# Notices

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## Manual Part Number

M8920-90006

## Edition

Edition: 1, October 2018

Supersedes: None

## Published by:

Keysight Technologies Inc.  
1400 Fountaingrove Parkway  
Santa Rosa, CA 95403

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### WARNING

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## Where to Find the Latest Information

Documentation is updated periodically. For the latest information about these products, including instrument software upgrades, application information, and product information, see the following URLs:

<http://www.keysight.com/find/m8920a>

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

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

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

Information on preventing instrument damage can be found at:

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

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

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

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

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# 1 Products Memory Sanitization

Sanitization processes for the following Keysight product models are covered in this document:

Product Name	Model Numbers
Multi-mode Instrument	M8920A PXle Radio Test Set drivers
PXle modules	M9470A PXle 50 W RF Interface M9421A VXT PXle Vector Transceiver M9260A PXle Audio Analyzer

## M8920A PXIe Radio Test Set Instrument Drivers

This product uses the X-Series Modular Transceiver Application driver. The driver installs the IVI-C, IVI-COM, LabVIEW, and MATLAB driver components, as well as the kernel device driver on your controller.

**Memory Type:** Controller Hard Drive

**Memory Size:** unknown

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**Memory Function:** Stores device drivers, example programs, example waveforms, help system, and user documentation.

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**User Modifiable?** Yes

**Volatile?** No

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**Memory Erase Processes:** To uninstall the X-Series Modular Vector Transceiver application instrument driver from the controller, perform the relevant procedure below.

Windows 7/10:

1. Select **Start > Control Panel > Programs and Features**
2. Select **Keysight X-Series Modular Vector Transceiver Application**
3. Select **Uninstall**

To clear all information from the controller used with the M8920A PXIe radio test set, follow the memory erase procedure for the controller as recommended by the manufacturer.

## Procedure for Declassifying an M9037A Controller

Even if the M9037A is not able to power on, it may be declassified by removing the solid state drive (SSD) from the controller.

For additional information, go to <http://www.keysight.com/find/security>

## M9037A controller memory

The following table lists the types of memory used in the M9307A controller. It explains the memory size, how it is used, its location, volatility, and the sanitization procedure.

Table 1-1 M9037A Memory (for declassification purposes)

Memory	Is memory user accessible as a mass storage device?	Data retained when powered on?	Purpose/ Contents	Data input method	Location in instrument and remarks	Sanitization procedure
Main memory (RAM) 4 GB or 8 GB Std. Up to 16 GB	Yes	No	Windows operating system memory. Data input from user, operating system	Operating system, user	Motherboard	Cycle power  (This is volatile memory)
Media Storage 240 GB SSD drive	Yes	Yes	Windows Operating System boot device and user files including saved programs, data, settings, images, etc.	Operating system factory installed  Other data is user-saved	Motherboard	Remove  (See instructions below)
Flash memory for BIOS (non-volatile memory)	No	Yes	Contains default BIOS settings for use when booting the controller  Contains no user data	Programmed at factory (or during BIOS upgrade)  Settings may be toggled by user	Motherboard	None
DDR2-533 memory	No	No	Video RAM	Controller video graphics only	Motherboard	Cycle power  (This is volatile memory)



## SSD Data Destruction

Several commercially available software programs exist to completely destroy all data on a data storage device such as the SSD. DoD 5220.22-M is a software-based data sanitization method for total data destruction. The DoD 5220.22-M sanitization method was originally defined by the U.S. National Industrial Security Program (NISP) in the National Industrial Security Program Operating Manual (NISPOM). The process involves overwriting existing information on the SSD (or other data storage device). Typically, this means writing a 0 (zero) to every addressable location on the device, verifying the write, writing a 1 (one) to every addressable location and verifying the write, and then writing a random character (in some cases writing a 97) to every addressable location and verifying the write. Using a DoD 5220.22-M sanitization (or a variant) prevents all software and hardware-based data recovery methods from obtaining information from the SSD.

### SSD removal

Because it is virtually impossible to completely and selectively erase all user data on a hard drive without also destroying the operating system, the best method for maintaining security when the controller must be removed from a secure area is to remove or replace the hard drive.

1. Power off the PXIe chassis. You do not need to remove the M9037A controller from the chassis to replace the SSD drive.
2. Loosen the two thumb screws securing the cover to the controller's front panel.
3. Unseat the removable SSD with its mounting bracket from the connector and pull straight out.

#### **IMPORTANT**

If the SSD is removed from the M9037A, do not attempt to power it up. Always install the SSD before applying power to the M9037A. If you do not, then the SATA selection is eliminated from the boot option list. If the SSD is then reinstalled, then at boot the SATA selection will not be the first option to boot from. The boot order should be changed so that SATA is the first option.

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## M9470A PXIe 50 W RF Interface

Memory Type: Main Memory (Flash)

Memory Size: 256 Mbits

Memory Function:

Used to store firmware image, instrument calibration data and instrument identification info.

User Modifiable (Y/N): N

Volatile (Y/N): N

Memory Erase Processes:

This memory contains no user information, it need not be cleared. This memory contains no user-accessible information; therefore, sanitization is not applicable, and there is no provision for sanitizing this memory.

Memory Type: SDRAM

Memory Size: 4 Gbits

Memory Function:

Used to store runtime acquisition data from analyzer and output arbitrary data to generator.

User Modifiable (Y/N): N

Volatile (Y/N): Y

Memory Erase Processes:

This memory contains no user information, it need not be cleared. This memory contains no user-accessible information; therefore, sanitization is not applicable, and there is no provision for sanitizing this memory.

Memory Type: FRAM

Memory Size: None

Memory Function:

Used to store system uptime counter and instrument identification information.

User Modifiable (Y/N): N

Volatile (Y/N): N

Memory Erase Processes:

N/A

## M9421A VXT PXIe Vector Transceiver

Memory Type: Main Memory (Flash)

Memory Size: 128 Mbits

Memory Function:

Used to store firmware image, instrument identification information and license information.

User Modifiable (Y/N): N

Volatile (Y/N): N

Memory Erase Processes:

Since this memory contains no user information, it need not be cleared. This memory contains no user-accessible information; therefore, sanitization is not applicable, and there is no provision for sanitizing this memory.

Memory Type: Main Memory (Flash)

Memory Size: 128 Mbits

Memory Function:

Used to store firmware image and instrument identification information.

User Modifiable (Y/N): N

Volatile (Y/N): Y

Memory Erase Processes:

Since this memory contains no user information, it need not be cleared. This memory contains no user-accessible information; therefore, sanitization is not applicable, and there is no provision for sanitizing this memory.

Memory Type: Main Memory (Flash)

Memory Size: 64 Mbits

Memory Function:

Used to store instrument calibration data.

User Modifiable (Y/N): N

Volatile (Y/N): N

Memory Erase Processes:

Since this memory contains no user information, it need not be cleared. This memory contains no user-accessible information; therefore, sanitization is not applicable, and there is no provision for sanitizing this memory.

Memory Type: SDRAM

Memory Size: 4 Gbits

Memory Function:

Used to store runtime acquisition data from analyzer.

User Modifiable (Y/N): N

Volatile (Y/N): Y

Memory Erase Processes:

All content in the memory is lost once the module is powered down or losing power, therefore there is no memory clearing procedure required.

Products Memory Sanitization  
M9421A VXT PXIe Vector Transceiver

Memory Type: SDRAM

Memory Size: 4 Gbits

Memory Function:

Used to store runtime output arbitrary data to generator.

User Modifiable (Y/N): N

Volatile (Y/N): Y

Memory Erase Processes:

All content in the memory is lost once the module is powered down or losing power, therefore there is no memory clearing procedure required.

## M9260A PXIe Audio Analyzer

Memory Type: Main Memory (Flash)

Memory Size: 256 Mbits

Memory Function:

Used to store firmware image, instrument calibration data and instrument identification info.

User Modifiable (Y/N): N

Volatile (Y/N): N

Memory Erase Processes:

Since this memory contains no user information, it need not be cleared. This memory contains no user-accessible information; therefore, sanitization is not applicable, and there is no provision for sanitizing this memory.

Memory Type: SDRAM

Memory Size: 4 Gbits

Memory Function:

Used to store runtime acquisition data from analyzer and output arbitrary data to generator.

User Modifiable (Y/N): N

Volatile (Y/N): Y

Memory Erase Processes:

All memory content is lost once the module is powered down or losing power, therefore there is no memory clearing procedure required.

Memory Type: FRAM

Memory Size: 4 Kbits

Memory Function:

Used to store system uptime counter and instrument identification information.

User Modifiable (Y/N): N

Volatile (Y/N): N

Memory Erase Processes:

Since this memory contains no user information, it need not be cleared. This memory contains no user-accessible information; therefore, sanitization is not applicable, and there is no provision for sanitizing this memory.

## References

For additional information, refer to:

- DOD 5220.22-M, “National Industrial Security Program Operating Manual (NISPOM)”, United States Department of Defense. May be downloaded from here: [www.dss.mil/isp/fac\\_clear/download\\_nispom.html](http://www.dss.mil/isp/fac_clear/download_nispom.html)
- ODAA Process Guide for C&A of Classified Systems under NISPOM, Defense Security Service. DSS-cleared industries may request a copy of this document by following the instructions at: [www.dss.mil/documents/odaa/ODAA%20Process%20Manual%20Version%203.2.pdf](http://www.dss.mil/documents/odaa/ODAA%20Process%20Manual%20Version%203.2.pdf)



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Edition 1, October 2018

M8920-90006

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