

**RSA6100A Series
Real-Time Spectrum Analyzers
Declassification and Security
Instructions**

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Preface

This document helps customers with data security concerns to sanitize or remove memory devices from the RSA6100A Series Real-Time Spectrum Analyzers.

These products have data storage (memory) devices and data output devices (USB ports). These instructions tell how to clear or sanitize the memory devices and disable the data output devices. The instructions also tell how to declassify an instrument that is not functioning.

Products The following Tektronix products are covered by this document:

RSA6106A

RSA6114A

RSA6120A

Terms The following terms may be used in this document:

- **Clear.** This removes data on media/memory before reusing it in a secured area. All reusable memory is cleared to deny access to previously stored information by standard means of access.
- **Erase.** This is equivalent to clear.
- **Media storage/data export device.** Any of several devices that can be used to store or export data from the instrument, such as a USB port.
- **Nonvolatile memory.** Data is retained when the instrument is powered off.
- **Power off.** Some instruments have a “Standby” mode, in which power is still supplied to the instrument. For the purpose of clearing data, putting the instrument in Standby mode does not qualify as powering off. For these products, you will need to either press a rear-panel OFF switch or remove the power source from the instrument.
- **Remove.** This is a physical means to clear the data by removing the memory device from the instrument. Instructions are available in the product Service Manual.
- **Sanitize.** This eradicates the data from media/memory so that the data cannot be recovered by other means or technology. This is typically used when the device will be moved (temporarily or permanently) from a secured area to a non-secured area.
- **Scrub.** This is equivalent to sanitize.
- **User-modifiable.** The user can write to the memory device during normal instrument operation, using the instrument interface or remote control.
- **Volatile memory.** Data is lost when the instrument is powered off.

Clear and Sanitize Procedures

Memory Devices

The following tables list the volatile and nonvolatile memory devices in the standard instrument and listed options. Detailed procedures to clear or sanitize these devices, if any, are shown following each table.

Table 1: Volatile memory devices

Type and min. size	Function	User modifiable	Input method	Location	Process to sanitize
SDRAM 1 GB (std)	Holds active acquisition data	No	Firmware operations	Digital Interface board	Remove power from the instrument for at least 20 seconds.
SDRAM 2 GB (std)	Microprocessor system memory	No	Written by processor system	Slot-PC board	Remove power from the instrument for at least 20 seconds.
SRAM 2 MB	Power PC system memory	No	Firmware operations	Digital Interface board	Remove power from the instrument for at least 20 seconds.
ZBT SRAM 2 MB	Holds active DPX acquisition data	No	Firmware operations	DPX board	Remove power from the instrument for at least 20 seconds.
SRAM, 1 MB	Unused	No	None	DPX board	Remove power from the instrument for at least 20 seconds.
QDR SRAM 20 MB (Option 200)	Holds active DPX acquisition data	No	Firmware operations	DPX board	Remove power from the instrument for at least 20 seconds.

Table 2: Nonvolatile memory devices

Type and min. size	Function	User modifiable	Input method	Location	Process to clear	Process to sanitize
Fixed Hard Drive (Part of Option 07)	Holds instrument operating system and application software. Holds all user-storable data such as waveforms, measurement results, and instrument settings.	Yes	Firmware operations, user input	Internal	Acquire a full memory length acquisition of noise (no signal attached to the input). Erase the hard drive with commercial erasure software. Reinstall Microsoft Windows using the OS Restore procedure in the Service manual (Tektronix part number 077-0250-XX). Reinstall the instrument software using the supplied recovery disk. See <i>Clearing Hard Disk Drives</i> .	Remove the hard drive. Store the removed hard drive in a secure area or destroy it. (See page 3, <i>Fixed Hard Drive Removal Procedure</i> .) When the hard drive is removed, no user data remains in the instrument.

Table 2: Nonvolatile memory devices (cont.)

Type and min. size	Function	User modifiable	Input method	Location	Process to clear	Process to sanitize
Removable Hard Drive (Option 06 and Option 08)	Holds instrument operating system and application software. Holds all user-storable data such as waveforms, measurement results, and instrument settings.	Yes	Firmware operations, user input	Front panel. Additional drives can be purchased from Tektronix, Inc.	Acquire a full memory length acquisition of noise (no signal attached to the input). Erase the hard drive with commercial erasure software. Reinstall Microsoft Windows using the OS Restore procedure in the Service manual (Tektronix part number 077-0250-XX). Reinstall the instrument software using the supplied recovery disk. See <i>Clearing Hard Disk Drives</i> .	Remove the hard drive. Store the removed hard drive in a secure area or destroy it. (See page 3, <i>Removable Hard Drive Procedure</i> .) When the hard drive is removed, no user data remains in the instrument.
Flash 4 Mbytes	Holds instrument calibration data, serial number, and Option key	No	Firmware operations	Digital Interface board		
EEPROM 1 Mbit (Option 110)	Holds data buffer firmware	No	Factory configuration	Wideband Acquisition board		
EEPROM, 8 Kb	Unused (for future software enhancements)	No	None	Digital Interface board		
EEPROM, 1 Kb	PCI configuration – PLX9056	No	Factory configuration	Digital Interface board		
EEPROM, 1 Kb	PCI configuration – 82551ER	No	Factory configuration	Digital Interface board		

Clearing Hard Disk Drives

If your organization’s security protocols allow the use of software to purge or sanitize hard drives, you can use commercial software to erase free space on the hard drive before sending the instrument out for upgrades or repair. Follow the instructions that come with the software to ensure that the erasure of sensitive data from the hard drive complies with your organization’s security protocols.

Sequence for clearing secure data from a hard drive:

1. Delete all stored signals and instrument settings files (all files stored with a **tiq**, **csv**, or **Setup** extension).
2. Acquire several full memory-length acquisitions of noise (no signal attached to the input).
 - Without Option 02, acquire a full-length acquisition 16 times.
 - With Option 02, acquire a full-length acquisition 4 times.
3. Close the RSA6100A applications and erase the free space on the hard disk using commercial software.

Fixed Hard Drive Removal Procedure

The following procedure applies to instruments that have Option 07 (DVD-RW drive) installed. If your instrument has a DVD drive, it has a fixed hard drive. This procedure is an overview of the removal process. For detailed removal and replacement procedures, see the *RSA6100A Series Real-Time Spectrum Analyzers Service Manual*, Tektronix part number 077-0250-XX.



WARNING. Only qualified service personnel should perform this procedure. Read the Service Safety Summary and the General Safety Summary in the *RSA6100A Series Real-Time Spectrum Analyzers Service Manual* (Tektronix part number 077-0250-XX) before performing this procedure.



WARNING. Before performing this procedure, disconnect the power cord from the line voltage source. Failure to do so could cause serious injury or death.



CAUTION. To avoid damaging the hard drive, perform the following procedure in a static-safe environment with proper electro-static discharge controls in place.

1. Remove the front cover (if installed), the front panel trim, and the cabinet top.
2. Remove the top EMI cover.
3. Unplug the IDE cable from the hard drive.
4. Unplug the power cable from the hard drive.
5. Remove the hard drive and support bracket.
6. Remove the hard drive from the support bracket.
7. Reinstall the support bracket.
8. Reinstall the top EMI cover.
9. Reinstall the cabinet top, the front panel trim, and front cover (if removed).

Removable Hard Drive Procedure

The following procedure applies to instruments with Option 06 (Removable Hard Disk Drive) or Option 08 (Removable Solid-State Hard Drive) installed. For detailed information on removing parts from the instrument, see the *RSA6100A Series Real-Time Spectrum Analyzers Service Manual*, Tektronix part number 077-0250-XX.



WARNING. Before doing this procedure, disconnect the power cord from the line voltage source. Failure to do so could cause serious injury or death.



CAUTION. To avoid damaging the hard drive, perform the following procedure in a static-safe environment with proper electro-static discharge controls in place.

1. Loosen the thumbscrews on the removable drive panel.
2. Pull the removable drive out from the instrument.

Media and Data Export Devices

Table 3: Media and data export devices

Type and min. size	Function	User modifiable	Input method	Location	Process to disable
DVD+/-RW (Option 07 only)	Store and transport data	Yes	User Writeable	Front panel	Remove all DVDs. Rewriteable DVDs can be formatted, stored in a secure area, or destroyed. Non-rewriteable DVDs can either be stored or destroyed.
USB device ports	Holds all user-storable data such as waveforms, measurement results, and instrument settings.	Yes	User Writeable	Front and rear panels	Remove all USB memory devices. USB devices can be formatted, stored in a secure area, or destroyed. Slot-PC BIOS setting – password protect the BIOS settings and/or disable the USB controller in BIOS.
LAN Ethernet Connection	Supports remote control and data transfer	N/A	Remote control via TekVISA	Rear panel	Disconnect from Network cable
GPIB connector	Data transfer	N/A	Remote control	Rear panel	N/A

Disabling the USB Ports

Use the following procedure to disable the front and rear panel USB ports.



CAUTION. Disabling the USB ports will disable the front panel and touch screen. When the USB ports are disabled, no mouse input is accepted. The PS2 connector on the rear panel does not support a mouse. When the USB ports are disabled, the only way to control the instrument is through the GPIB/LAN programmatic interface.



CAUTION. To avoid disabling the instrument, perform this procedure exactly as stated. A misconfigured BIOS can make the instrument unusable and require that it be returned to Tektronix for servicing.

1. Reboot instrument and press the **Delete** key to access the BIOS settings screen.
2. Select **Integrated Peripherals**.
3. Select **Onboard Device**.
4. Change **USB Controller** from **Enable** to **Disable**.
5. Save the BIOS settings and exit.

Setting the BIOS Password

Use the following procedure to set a BIOS password that will prevent others from changing the BIOS settings.



CAUTION. *To avoid disabling the instrument, perform this procedure exactly as stated. A misconfigured BIOS can make the instrument unusable and require that it be returned to Tektronix for servicing.*

1. Reboot the instrument and press the **Delete** key to access the BIOS settings screen.
2. Select **Set Password**.
3. Choose a BIOS password.
4. Confirm the new BIOS password.
5. Save the BIOS settings and exit.

Enabling the USB Ports

Use the following procedure to enable the front and rear panel USB ports.



CAUTION. *To avoid disabling the instrument, perform this procedure exactly as stated. A misconfigured BIOS can make the instrument unusable and require that it be returned to Tektronix for servicing.*

1. Reboot instrument and press the **Delete** key to access the BIOS settings screen.
2. Select **Integrated Peripherals**.
3. Select **Onboard Device**.
4. Change **USB Controller** from **Disable** to **Enable**.
5. Save the BIOS settings and exit.

Disabling the BIOS Password

Use the following procedure to disable the BIOS password.



CAUTION. *To avoid disabling the instrument, perform this procedure exactly as stated. A misconfigured BIOS can make the instrument unusable and require that it be returned to Tektronix for servicing.*

1. Reboot instrument and press the **Delete** key to access the BIOS settings screen.
2. Enter the current BIOS password.
3. Select **Set Password**.
4. Press the **Enter** key.
5. Press the **Enter** key again to confirm disabling the BIOS password.
6. Save the BIOS settings and exit.

Troubleshooting

How to Clear or Sanitize a Non-Functional Instrument

If your instrument is not functioning, perform the following actions and return the instrument for Tektronix for repair. Describe the initial problem with the product. Tektronix will install replacement parts and then repair and return the instrument.

DVDs Remove any DVDs from the instrument. If the instrument does not power up, you can insert a small paper clip into the hole next to the DVD drawer latch to release the drawer and remove discs.

Hard Disk Drives Remove the internal hard disk (Option 07), removable hard disk (Option 06), or removable solid-state drive (Option 08) using the procedures in this document.

External Memory Devices Remove any USB flash drives or external hard drives from the instrument.