# RSA6100A Series Real-Time Spectrum Analyzer Declassification and Security Instructions

**Tektronix**

## Contacting Tektronix

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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

**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.

RSA6100A Series Declassification and Security

# 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 256 MB (std) 1GB (Option 02) | Holds active acquisition data | No | Firmware operations | Digital Interface board | Remove power from the instrument for at least 20 seconds. |
| SDRAM 1 GB (std) 2 GB (Option 02) | 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. |

### 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 Windows and the instrument software using the supplied recovery discs. See *Clearing Hard Disk Drives*. | Remove the hard drive. Store the removed hard drive in a secure area or destroy it. (See page 3, *Fixed Hard Drive Removal Procedure*.) When it 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) | 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 Windows and the instrument software using the supplied recovery discs. See *Clearing Hard Disk Drives.* | Remove the hard drive. Store the removed hard drive in a secure area or destroy it. (See page 3, *Removable Hard Drive Procedure.*) 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 (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 do not have Option 06 (removable hard drive) installed. If your instrument has a DVD drive, Option 06 is not installed. 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 071-1914-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 (Tek part number 071-1914-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 ATI 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 installed. For detailed information on removing parts from the instrument, see the *RSA6100A Series Real-Time Spectrum Analyzers Service Manual*, Tektronix part number 071-1914-00.

⚠ *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 hard drive panel.

2. Pull the removable hard 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. | 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 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 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 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.

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