

**TSG4100A Series
RF Signal Generators
Declassification and Security
Instructions**

www.tektronix.com



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Preface

This document helps customers with data security concerns to sanitize or remove memory devices from the TSG4100A Series RF Signal Generators.

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.

Reference The procedures in this document are written to meet the requirements specified in:

- NISPOM, DoD 5220.22–M, Chapter 8
- ISFO Process Manual for Certification & Accreditation of Classified Systems under NISPOM

Products The following Tektronix products are covered by this document:

- TSG4102A
- TSG4104A
- TSG4106A

Related Documents *TSG4100A Series RF Signal Generators Service Manual* available for download from the Tektronix Web site at www.tektronix.com/manuals.

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.
- **Instrument Declassification.** A term that refers to procedures that must be undertaken before an instrument can be removed from a secure environment. Declassification procedures include memory sanitization and memory removal, and sometimes both.
- **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.
- **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 Accessible.** User is able to directly retrieve the memory device contents.
- **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.

Terminology

The following terms are used in the tables in this section:

- User data – Describes the type of information stored in the device. Refers to waveforms or other measurement data representing signals connected to the instrument by users.
- None – Describes the type of information stored in the device. It means that neither user data nor user settings are stored in the device.
- Directly – Describes how data is modified. It means that the user can modify the data.
- Indirectly – Describes how data is modified. It means that the instrument system resources modify the data and that the user cannot modify the data.

Table 1: Volatile memory devices

Type and min. size	Function	Type of user info stored	Backed-up by battery	Method of modification	Data Input method	Location	User accessible	To clear	To sanitize
SRAM	Storage of arbitrary waveforms, constellations, and filters.	User data	No	Indirectly	Firmware operations	Main board	No	Remove power from the instrument for at least 1 seconds by disconnecting the power cord.	Remove power from the instrument for at least 1 seconds by disconnecting the power cord.

Table 2: Nonvolatile memory devices

Type and min. size	Function	Type of user info stored	Method modification	Data Input method	Location	User accessible	To clear	To sanitize
SPI-Flash 1Mbytes	Holds instrument boot loader and system setting and configure.	None	None	Firmware operations	Digital interface board	No	Not applicable, does not contain user data or settings. Clearing would disable instrument functionality.	Not applicable, does not contain user data or settings. Sanitizing would disable instrument functionality.
NAND Flash 256 Mbytes	Holds Linux Kernel, rootfs, optional feature configure file.	None	Indirectly	Firmware operations	Digital interface board	Yes	Not applicable, does not contain user data or settings. Clearing would disable instrument functionality.	Not applicable, does not contain user data or settings. Sanitizing would disable instrument functionality.
Flash 32 Kb	Front panel firmware.	None	None	None	Digital interface board	No	Not applicable, does not contain user data or settings. Clearing would disable instrument functionality.	Not applicable, does not contain user data or settings. Sanitizing would disable instrument functionality.
Flash 4Mbytes	Stores FPGA configuration file, arbitrary waveform, constellation, filter.	None	Indirectly	Firmware operations	Main board	Yes	Not applicable, does not contain user data or settings. Clearing would disable instrument functionality.	Not applicable, does not contain user data or settings. Sanitizing would disable instrument functionality.
EEROM 1Mbytes	Stores calibration.	None	Indirectly	Firmware operations	Main board	No	Not applicable, does not contain user data or settings. Clearing would disable instrument functionality.	Not applicable, does not contain user data or settings. Sanitizing would disable instrument functionality.

Media and Data Export Devices

The following table lists the data export devices in the standard instrument and listed options. Detailed procedures to disable these devices, if any, are shown following the table.

Table 3: Media and data export devices

Type and min. size	Function	Method of modification	Data Input method	Location	Process to disable
USB connector	Transfer data	Directly	Remote control	Front panel	Cannot be disabled.
GPIB connector	Transfer data	Directly	Remote control	Rear panel	Cannot be disabled.
RS-232 connector	Transfer data	Directly	Remote control	Rear panel	Cannot be disabled.
LAN Ethernet connector	Transfer data	Directly	Remote control	Rear panel	Cannot be disabled.

Built-In Security Features

When to use Secure

To clear all user private data, perform the following procedure:

NOTE. *This procedure does not erase or change factory calibration constants.*

1. Press **Utility** > **System** > **Secure** from the main menu.
2. Select **Yes** in the dialog box that states “Secure function will clear all user private data. Are you sure you want to do secure?”
3. Press the **Enter** button on the front panel to execute the secure process.

What Secure does

The Secure function allows you to clear all user private data from the instrument. However, it does not erase or change factory calibration constants.

Troubleshooting

How to Clear or Sanitize a Nonfunctional Instrument

If your instrument is not functioning, do the following.

If you removed the main board in order to clear or sanitize your instrument, reinstall the main board and perform the specified adjustment procedures in the TSG4100A Series Service Manual (go to www.tektronix.com/manuals) to verify that the instrument is in the proper condition.

If the instrument is still nonfunctional, return the instrument to Tektronix for repair. Describe the initial problem with the product. Tektronix will install replacement parts and then repair and return the instrument.

Change Log

Document part number	Revision date	Change description
077-1080-00	February 6, 2015	Initial release of document.