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Letter of Volatility

If you have data security concerns, this document tells you how to clear or sanitize the Model S46 memory devices. It also explains how to declassify an instrument that is not functioning.

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 and Accreditation of Classified Systems under NISPOM

Contact information

If you have any questions after you review the information in this documentation, please contact your local Keithley Instruments office, sales partner, or distributor. You can also call the Tektronix corporate headquarters (toll-free inside the U.S. and Canada only) at 1-800-833-9200. For worldwide contact numbers, visit tek.com/contact-us.

Products

This document contains procedures for the following models:

- S46-18 18-GHz Unterminated RF Switch System
- S46-26 26.5-GHz Unterminated RF Switch System
- S46-40 40-GHz Unterminated RF Switch System

Terminology

The following terms may be used in this document:

- **Clear:** Removes data on media or in memory before reusing it in a secured area. Clears all reusable memory to deny access to previously unsecured information.
- **Demo setups:** Demonstration applications that come loaded on the instrument; you cannot modify them.
- **Direct method of modification:** You can modify data directly.
- **Erase:** Equivalent to clear (see above).
- **Indirect method of modification:** The instrument system resources modify the data; you cannot modify the data directly.
- **Instrument declassification:** Procedures that must be completed before an instrument can be removed from a secure environment. Declassification procedures include memory sanitization and memory removal.
- **Media storage and data export device:** 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 power is turned off.
- **Protected user data area:** Contains data that is protected by a password.
- **Remove:** Clears instrument data by physically removing the memory device from the instrument.
- **Sanitize:** Eradicates instrument data from media and memory so it 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 nonsecured area.
- **Scrub:** Directly retrieve and clear the contents of the memory device.
- **User accessible:** You can directly retrieve the contents of the memory device.
- **User data:** Measurement data that represents signals that you connect to the instrument.
- **User modifiable:** You can write to the memory device during normal instrument operation using the front-panel interface or remote control.
- **User settings:** Instrument settings that you can change.
- **Volatile memory:** Temporary memory; data is lost when the instrument is turned off.

Description of memory

All S46 Unterminated RF Switch Systems share common volatile and nonvolatile memory components. These instructions will work for all of the instruments listed in [Products](#) (on page 1).

All S46 Unterminated RF Switch Systems contain the following volatile and nonvolatile memory:

FRAM (U4): Nonvolatile memory

SRAM (U11): Volatile memory

Flash Memory (U12): Nonvolatile memory

Memory devices

The following tables list the volatile and nonvolatile memory devices in the standard instrument and listed options.

Volatile memory devices

The following table lists volatile memory devices and relevant memory-related information for models listed Products (on page 1).

Type and minimum size	Function	User modifiable	Data input method	Location	To clear	To sanitize
SRAM, 512 K × 8 bit	Temporary memory used by the microprocessor controller for internal processor operations	No	None	U11	Turn instrument power off	Turn instrument power off

Nonvolatile memory devices

The following table lists nonvolatile memory devices and relevant memory-related information for models listed in Products (on page 1). If the table indicates that a device can be cleared by the user, see the detailed instructions in Clearing data (on page 3).

Type and minimum size	Function	User modifiable	Data input method	Location	To clear	To sanitize
FRAM, 64 KB	Instrument setup data and user settings	No	Remote interface control	U4	Follow the instructions in Clearing data (on page 3)	Remove chip
Flash memory, 4 MB	Instrument firmware and calibration data	Yes	Firmware upgrades	U12	None	Remove chip

Clearing data

Test Script Processor (TSP®) scripts can be used to clear data. These scripts can be run using a remote interface.

Clearing data scripts and setups

To clear data scripts and setups from a remote interface, send the following commands:

Set the correct command mode:

```
*LANG TSP
```

Erase user strings from nonvolatile memory:

```
for name in userstring.catalog() do
userstring.delete(name)
end
```

Erase scripts and configuration lists from nonvolatile memory:

```
for name in script.user.catalog() do
script.delete(name)
end
```

Model S46 − Set the GPIB address to the factory default:

```
gpib.address = 16
```

Set the command set to the factory default:

```
*LANG SCPI
```

Sanitize instrument data

The only way to sanitize data from the models listed in Products (on page 1) is to physically remove and destroy the nonvolatile chips listed in the tables above.

Sanitize a nonfunctional instrument

To only way to sanitize data from the models listed in Products (on page 1) is to physically remove and destroy the nonvolatile chips listed in the tables above.