

Declassification and Security Instructions

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Introduction

If you have data security concerns, this document tells you how to clear or sanitize the Model 2230G-30-3, 2230G-30-6, and 2230G-60-3 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, or call Keithley Instruments corporate headquarters (toll-free inside the U.S. and Canada only) at 1-800-935-5595, or from outside the U.S. at +1-440-248-0400. For worldwide contact numbers, visit tek.com/keithley.

Products

This document contains procedures for the following Keithley Instruments models:

- 2230G-30-3
- 2230G-30-6
- 2230G-60-3

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 modules 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 it.

- **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 non-secured 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 Model 2230G-30-3, 2230G-30-6, and 2230G-60-3 instruments share common volatile and nonvolatile memory components. These instructions will work for all instruments listed in the [Products](#) section above.

MASTER (U101 on 2230G-CPU board): Contains instrument logic, calibration data, and serial number

(2) 256 KB nonvolatile FLASH on the microprocessor chip

(2) 64 KB volatile SRAM on the microprocessor chip

BLASTER (U1 on 2230G-CPU board): Contains instrument logic, and configuration images

(2) 640 KB nonvolatile FLASH in the chips

(1) 108 KB volatile SRAM in the chips

DISPLAY (U1 on 2230G-DISP board): Contains instrument logic

(2) 64 KB nonvolatile FLASH on the microprocessor chip

(1) 32 KB volatile SRAM on the microprocessor chip

MEMORY (U201 on 2230G-CPU board): Contains customer setups and data

(1) 8 KB nonvolatile FLASH on the CPU board

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 2230G-30-3, 2230G-30-6, and 2230G-60-3 volatile memory devices and relevant memory-related information.

Type and minimum size	Function	User modifiable	Data input method	Location	To clear	To sanitize
SRAM 64 KB (master)	Temporary memory used by the microprocessor controller for internal processor operations (on the microprocessor chip)	No	None	U101 on 2230G CPU board	Turn instrument power off	Turn instrument power off
SRAM 108 KB (blaster)	Temporary memory used by the microprocessor controller for internal processor operations (on the microprocessor chip)	No	None	U1 on 2230G CPU board	Turn instrument power off	Turn instrument power off
SRAM 32 KB (display)	Temporary memory used by the microprocessor controller for internal processor operations (on the microprocessor chip)	No	None	U1 on 2230G display board	Turn instrument power off	Turn instrument power off

Nonvolatile memory devices

The following table lists Model 2230G-30-3, 2230G-30-6, and 2230G-60-3 nonvolatile memory devices and relevant memory-related information. If the table indicates that a device can be cleared by the user, see the detailed instructions in [Clearing data](#).

Type and minimum size	Function	User modifiable	Data input method	Location	To clear	To sanitize
FLASH embedded memory, 256 KB (master)	Contains calibration data, serial number	No	Remote interface control or firmware upgrade	U101 on the 2230G CPU digital board	None	Remove chip
FLASH embedded memory, 640 KB (blaster)	Contains instrument logic	No	Firmware upgrade process	U1 on the 2230G CPU digital board	None	Remove chip
NOR FLASH embedded memory, 32 KB (display)	Contains instrument logic	No	Firmware upgrade process	U1 on the 2230G display board	None	Remove chip
EEPROM memory 8 KB	Contains user settings and calibration data	Yes	Front-panel or remote interface control	U201 on the 2230G CPU board	Follow the Clearing data procedures	Remove chip

Clearing data

Press **Esc+Enter+2** to reset the data in EEPROM to the factory settings.

Resetting the instrument (volatile memory only)

Send the following SCPI command:

```
*RST
```

Sanitizing instrument data

The only way to sanitize data from the boards in Models 2230G-30-3, 2230G-30-6, and 2230G-60-3 is to physically remove the nonvolatile chips listed in the tables above.

To sanitize a nonfunctional instrument

To sanitize a nonfunctional instrument, remove the CPU board and display board and return the instrument to Keithley Instruments for installation of replacement boards.