Series 3700A Plug-in Cards

Declassification and Security Instructions

Letter of volatility

If you have data security concerns, this document tells you how to clear or sanitize instrument memory devices in Series 3700A switch cards. It also explains how to declassify a switch card 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-tek.

Products

This document contains procedures for the following models:

- 3720 Dual 1×30 Multiplexer Card
- 3721 Dual 1×20 Multiplexer Card
- 3722 Dual 1×48 High Density Multiplexer Card
- 3723 Dual 1×30 High-Speed Reed Relay Multiplexer Card
- 3724 Dual 1×30 FET Multiplexer Card
- 3730 6×16 High Density Matrix Card
- 3731 6×16 High-Speed Reed Relay Card
- 3732 Quad 4×28 Ultra-High Density Reed Relay Matrix Card
- 3740 32-Channel Isolated Switch Card
- 3750 Multifunction Control Card
- 3760 10-channel High Current Multiplexer Card
- 3761 10-channel Low Current Multiplexer Card
- 3762 10-channel High Voltage Multiplexer Card
- 3765 Hall Effect Card

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 Series 3700A switch cards share common volatile and nonvolatile memory components. These instructions work for all the instruments listed in [Products](#) (on page 1).

All Series 3700A switch cards contain the following volatile and nonvolatile memory:

- **FPGA (U2):** Volatile memory of instrument logic
- **Flash Memory (U8):** Nonvolatile memory of instrument logic
- **FRAM (U7):** Nonvolatile memory of relay cycle counts and card data (for example, serial number, model number)

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 the volatile memory devices in the Series 3700A switch cards and relevant memory-related information.

Type and minimum size	Function	User modifiable	Data input method	Location	To clear	To sanitize
FPGA	Programmable logic	No	Firmware upgrade process	U2	Turn instrument power off	Turn instrument power off

Nonvolatile memory devices

The following table lists nonvolatile memory devices and relevant memory-related information. If the table indicates that a device can be cleared by the user, see the instructions in <u>Clearing data</u> (on page 3).

Type and minimum size	Function	User modifiable	Data input method	Location	To clear	To sanitize
FLASH embedded memory, 8 MB	Contains FPGA logic	No	Firmware upgrade process	U8	Requires XILINX DLC9LP programmer to J2	Remove chip
Flash 1 MB	Contains card data, relay cycle counts, and calibration constants	Yes	Card automatically tracks relay cycles	U7	Remove chip	Remove chip

Clearing data

To clear data in U8, you can use the Xilinx Platform Cable USB (Model DLC9LP or equivalent) using the JTAG connection to J2.

There is no mechanism to clear data in U7. The chip must be physically removed.

Sanitize switch card data

The only way to sanitize data from models listed in the <u>Products</u> (on page 1) section is to physically remove the nonvolatile chips listed in the previous tables.

Sanitize a nonfunctional switch card

To only way to sanitize data from the models listed in the <u>Products</u> (on page 1) section is to physically remove the nonvolatile chips listed in the tables above.