

**KEITHLEY**

3700A Series  
Switch/Multimeter  
System



# KEITHLEY 3700A Series Switch/Multimeter System Instruction Manual

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## KEITHLEY 3700A Series Switch/Multimeter System



## Declassification and Security Instructions

### Letter of volatility

If you have data security concerns, this document tells you how to clear or sanitize Series 3700A System Switch/Multimeter 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](tel:800-833-9200). For worldwide contact numbers, visit [tek.com/contact-tek](http://tek.com/contact-tek)

## Products

This document contains procedures for the following Keithley models:

- 3706A-S
- 3706A

## 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.

## 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 Series 3700A volatile memory devices and relevant memory-related information. If the

table indicates that a device can be cleared or sanitized by the user, see the detailed instructions in Clear and sanitize procedures.

Type and minimum size	Function	User can change	Data input method	Location	To clear	To sanitize
64 MB DDR SDRAM	Runtime data storage	No	None	U6, U7	Cycle power	Cycle power
66 kB CPU internal RAM	Microprocessor cache	No	None	U1	Cycle power	Cycle power
64 MB DDR SDRAM (3700A with DMM only)	DMM firmware and memory	No	None	U6, U7 (DMM board)	Cycle power	Cycle power
Battery-backed clock	Real-time functions	No	None	U12	Not applicable	Not applicable

### Nonvolatile memory devices

The following table lists Series 3700A nonvolatile memory devices and relevant memory-related information. If the table indicates that a device can be cleared or sanitized by the user, see the detailed instructions in Clear and sanitize procedures.

**CAUTION** Performing a full chip erase may render the instrument unbootable and require alternate BDM methods to load the firmware onboard again.

Type and minimum size	Function	User can change	Data input method	Location	To clear	To sanitize
32 MB flash memory	Stores operating firmware, calibration constants, user Test Script Processor (TSP) code, relay patterns, and readings	Yes	Remote interface control or front panel	U14	See <a href="#">Clear and sanitize procedure</a> (on page 3).  You can also perform a full chip erase as described in the manufacturer's datasheets.	
4 MB flash memory (3700A with DMM only)	DMM firmware and memory, including serial number and calibration constants	Yes	None	U4	Perform a full chip erase as described in the manufacturer's datasheets.	

**NOTE** User TSP code may contain comments in addition to TSP commands. Any text or information could potentially be stored in flash memory.

### Clear and sanitize procedures

If the memory device you want to clear or sanitize can be modified by users, you can use one of the following procedures to do so.

### Clear and sanitize procedure

If the memory device you want to clear or sanitize can be modified by users, you can use one of the following procedures to do so.

**NOTE** The erasing process described in this document clears pointers to the data and does not sanitize the underlying data. To sanitize the data in the instrument, the integrated circuit flash memories must be removed and destroyed.

#### To erase the memory contents:

1. Open up the 3700A web page.
2. Select TSB Embedded.
3. Log in. The default password is admin.
4. Copy and paste the following script into the TSB Editor (the pane above the Console).
5. Enter a name for the script into the field labeled TSP Script:.
6. Select the Save Script button to save the script. Its name will appear in the list of User Scripts to the left of the editor.
7. Select the script in the User Scripts list and select the Run button. When the script is finished executing, a TSP> prompt will appear in the Instrument Output pane.
8. Select the script in the User Scripts list and select the Delete button to erase the script from nonvolatile memory. Repeat for any other scripts remaining in the User Scripts list.
9. Re-flash the operating system from a known safe copy.
10. Turn power off for one minute to erase any information from volatile memory.

#### To erase TSP script:

Send the following code to erase channel patterns from nonvolatile memory:  
for name in channel.pattern.catalog() do channel.pattern.delete(name) end

#### To erase DMM configurations from nonvolatile memory:

Send the following code:  
for name in dmm.configure.catalog() do dmm.configure.delete(name) end

#### To erase userstrings from nonvolatile memory:

Send the following code:  
for name in userstring.catalog() do userstring.delete(name) end


#### To reset the instrument to factory defaults and then save as the user setup:

Send the following code:  
reset()  
setup.save()





#### Clear or sanitize a nonfunctional instrument

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

## Documents / Resources

	<p><a href="#">KEITHLEY 3700A Series Switch/Multimeter System</a> [pdf] Instruction Manual 3706A-S, 3700A Series Switch Multimeter System, 3700A Series, Switch Multimeter System, Multimeter System, System</p>
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## References

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