



**TLA700/TLA7000 Series Tektronix Logic Analyzer  
Declassification and Security**

**Instructions**

[www.tek.com](http://www.tek.com)



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## **Contacting Tektronix**

Tektronix, Inc.  
14150 SW Karl Braun Drive  
P.O. Box 500  
Beaverton, OR 97077  
USA

For product information, sales, service, and technical support:

- In North America, call 1-800-833-9200.
- Worldwide, visit [www.tek.com](http://www.tek.com) to find contacts in your area.

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# Preface

This document helps customers with data security concerns to sanitize or remove memory devices from the TLA700 and TLA7000 Series Logic Analyzer family modules.

These products have data storage (memory) devices and data output devices. These instructions tell how to do the following:

- Clear or sanitize the memory devices
- Clear or sanitize an instrument that is not functioning

**Products** The following Tektronix products are covered by this document:

- TLA7AA1, TLA7AA2, TLA7AA3, TLA7AA4
- TLA7AB2, TLA7AB4
- TLA7AC2, TLA7AC3, TLA7AC4
- TLA7D1, TLA7D2
- TLA7E1, TLA7E2
- TLA7NA1, TLA7NA2, TLA7NA3, TLA7NA4
- TLA7N1, TLA7N2, TLA7N3, TLA7N4
- TLA7P2, TLA7P4
- TLA7PG2
- TLA7Q2, TLA7Q4
- TLA7XM

## Related documents

Refer to the following service documents available on the Tektronix Web site at [www.tektronix.com/manuals](http://www.tektronix.com/manuals) or to the TLA Documentation CD that is available with your product:

- *TLA700 Series Mainframe Installation Manual*
- *TLA7000 Series Mainframe Installation Manual*
- *Tektronix Logic Analyzer Module (TLA7AxA, TLA7ABx & TLA7NAx) Service Manual*
- *TLA7ACx Logic Analyzer Module Service Manual*
- *Tektronix Logic Analyzer Module (TLA7Nx, TLA7Px, & TLA7Qx) Service Manual*
- *TLA7PG2 Pattern Generator and Probes Service Manual*
- *TLA721 Benchtop & TLA7XM Expansion Mainframe Service Manual*
- *TLA7Dx & TLA7Ex Digitizing Oscilloscope Service Manual*

## 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.
- **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-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.

**Table 1: Volatile memory devices**

Type and minimum size	Function	User modifiable	Data input method	Location	To clear	To sanitize
DRAM, 1 M X 8	Firmware execution code	No	Written by the processor system	LPU board	Remove power source from the instrument for at least 20 seconds.	Remove power source from the instrument for at least 20 seconds.
DRAM, 1 M X 4	Firmware execution code	No	Written by the processor system	LPU board, Enhanced Monitor board, TLA7PG2 Clock & Backplane interface board	Remove power source from the instrument for at least 20 seconds.	Remove power source from the instrument for at least 20 seconds.
DRAM, 1 M X 16	Firmware execution code	No	Written by the processor system	LPU board	Remove power source from the instrument for at least 20 seconds.	Remove power source from the instrument for at least 20 seconds.
DRAM, 64 K X 16	Firmware execution code	No	Written by the processor system	LPU board	Remove power source from the instrument for at least 20 seconds.	Remove power source from the instrument for at least 20 seconds.
BICMOS	Firmware execution code	No	Written by the processor system	LPU board	Remove power source from the instrument for at least 20 seconds.	Remove power source from the instrument for at least 20 seconds.
SDRAM 4 M X 16	Acquisition memory for storing acquired data	No	Written by controller ASICs	Acquisition board	Remove power source from the instrument for at least 20 seconds.	Remove power source from the instrument for at least 20 seconds.
SDRAM 1 M X 16	Acquisition memory for storing acquired data	No	Written by controller ASICs	Acquisition board	Remove power source from the instrument for at least 20 seconds.	Remove power source from the instrument for at least 20 seconds.
SDRAM 16 M X 16	Acquisition memory for storing acquired data	No	Written by controller ASICs	Acquisition board	Remove power source from the instrument for at least 20 seconds.	Remove power source from the instrument for at least 20 seconds.
ASIC 16 K	Processor execution memory	No	Written by ASICs	Acquisition board	Remove power source from the instrument for at least 20 seconds.	Remove power source from the instrument for at least 20 seconds.
SRAM, 128 K X 8	Firmware execution code	No	Written by the processor system	LPU board	Remove power source from the instrument for at least 20 seconds.	Remove power source from the instrument for at least 20 seconds.
IC memory 256 K X 16 bit	Pattern generator data	No	Written by ASICs	TLA7PG2 PG board	Remove power source from the instrument for at least 20 seconds.	Remove power source from the instrument for at least 20 seconds.

**Table 2: Nonvolatile memory devices**

Type and minimum size	Function	User modifiable	Data input method	Location	To clear	To sanitize
FLASH, 2 M X 8	Stores instrument firmware	No	Programmed at the factory, no user data	LPU board	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, 1 M X 16	Stores instrument firmware	No	Programmed at the factory, no user data	LPU board	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, 2 M X 8	Stores instrument firmware	No	Programmed at the factory, no user data	Probe Flash Adapter board	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, 256 K X 8	Stores instrument firmware	No	Programmed at the factory, no user data	TLA7Dx & TLA7Ex LPU board	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, 256 K X 8	Stores instrument firmware	No	Programmed at the factory, no user data	TLA7XM Enhanced Monitor board	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.
NVRAM, 32 K X 8	Stores instrument serial number and calibration constants	No	Written by processor	LPU board	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.
NVRAM, 512 K X 8	Stores instrument serial number and calibration constants	No	Written by processor	TLA7Dx & TLA7Ex LPU board	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.
EPROM 64 K X 16	Stores instrument firmware	No	Programmed at the factory, no user data	TLA7XM Enhanced Monitor board	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.
EEPROM 1 K X 8	Stores instrument firmware	No	Programmed at the factory, no user data	TLA7XM Enhanced Monitor board	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.
PROM	Stores instrument firmware	No	Programmed at the factory, no user data	TLA7XM Enhanced Monitor board	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.
EPROM 2048 X 8	Stores instrument firmware	No	Programmed at the factory, no user data	TLA7PG2 Clock & Backplane interface board, TLA7PG2 PG board	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.



Table 2: Nonvolatile memory devices (cont.)

Type and minimum size	Function	User modifiable	Data input method	Location	To clear	To sanitize
EPROM 512 K X 8, Flash	Stores instrument firmware	No	Programmed at the factory, no user data	TLA7PG2 Clock & Backplane interface board	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.
EPROM 256 K X 16	Stores instrument firmware	No	Programmed at the factory, no user data	TLA7PG2 Clock & Backplane interface board	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.
EPROM 1 M X 1 bit	Stores instrument firmware	No	Programmed at the factory, no user data	TLA7PG2 PG board	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.
EEPROM 256 K X 8	Stores instrument firmware	No	Programmed at the factory, no user data	LPU board, Acquisition board	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.

## Data export devices

The following table lists the data export devices.

Table 3: Data export devices

Type	Function	User modifiable	Input method	Location	Process to disable
Analog outputs	Provides an analog copy of signals from the device under test	No	From the device under test	Front panel of module	N/A. Outputs cannot be disabled.
Backplane	Interfaces with TLA mainframe	No	Instrument function and application software	Backplane connectors	Power off the TLA mainframe power and remove the module. (See below.)

**Backplane** To locate and remove the module from the TLA mainframe, refer to the *TLA7000 Series Mainframe Installation Manual* or to the *TLA700 Series Mainframe Installation Manual* on the Tektronix Web site at [www.tektronix.com/manuals](http://www.tektronix.com/manuals) or on the TLA Documentation CD.



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# Troubleshooting

## How to sanitize or clear a nonfunctional instrument

If your instrument is not functioning, remove the power source from the instrument for at least 20 seconds.