TBS1000, TDS1000B/TDS2000B, TDS1000C-EDU/TDS2000C, and TPS2000B Series Digital Storage Oscilloscope

Declassification and Security Instructions

077-0771-00

Tektronix

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www.tektronix.com

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- In North America, call 1-800-833-9200.
- Worldwide, visit www.tektronix.com to find contacts in your area.

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Preface

If you have data security concerns, this document helps you to sanitize or remove memory devices from the listed products. These products have data storage (memory) devices and data output devices (USB ports). These instructions tell you how to clear or sanitize the memory devices, and also tell you how to declassify an instrument that is not functioning.

Instrument code and calibration settings reside in nonvolatile flash memory. Instrument setups and reference waveforms may also be stored in flash memory or on USB drives connected to the instrument.

If you have any questions, contact the Tektronix Technical Support Center at www.tektronix.com/support.

Reference

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 & Accreditation of Classified Systems under NISPOM

Products

The following Tektronix products are covered by this document:

TBS1000 Series. TBS1022, TBS1042, TBS1062, TBS1102, TBS1152

TDS1000B Series. TDS1001B, TDS1002B, TDS1012B

TDS2000B Series. TDS2002B, TDS2004B, TDS2012B, TDS2014B, TDS2022B, TDS2024B

TDS1000C-EDU Series. TDS1001C-EDU, TDS1002C-EDU, TDS1012C-EDU

TDS2000C Series. TDS2001C, TDS2002C, TDS2004C, TDS2012C, TDS2014C, TDS2022C, TDS2024C

TPS2000B Series. TPS2012B, TPS2014B, TPS2024B

Related Documents

The documents shown in the following table are available on the Tektronix Web site at www.tektronix.com/manuals.

Manual name	Tektronix part number
TBS1000 Series Digital Storage Oscilloscope Service Manual	077–0772–XX
TDS1000B and TDS2000B Series Digital Storage Oscilloscope Service Manual	071-1828-XX
TDS2000C and TDS1000C-EDU Series Digital Storage Oscilloscope Service Manual	077-0446-XX
TPS2000B Series Digital Storage Oscilloscope Service Manual	077-0447-XX

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.

Instrument Declassification. A term that refers to procedures that must be undertaken before an instrument can be removed from a secure environment. Declassification procedures include memory sanitization and memory removal, and sometimes both.

Media storage/data export. Any of several devices that are 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.

Power off. Some instruments have a "Standby" mode, in which power is still supplied to the instrument. For the purpose of clearing data, putting the instrument in Standby mode does not qualify as powering off. For these products, you will need to either push a rear-panel OFF switch or remove the power source from the instrument.

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 nonsecured area.

Scrub. The user is able to directly retrieve the memory device contents.

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

The following terms are used in the tables in this section:

Type of user info stored

This column describes the type of user information that is stored in the device.

- **User data.** Waveforms and other measurement data that represent signals that users connect to the instrument.
- **User settings.** Instrument settings that the user can change.
- **Both.** Both user data and user settings are stored in the device.
- **None.** Neither user data nor user settings are stored in the device.

Method of modification

This column indicates the method of modifying data:

- **Direct.** The user can modify the data.
- **Indirect.** The instrument system resources modify the data. The user cannot modify the data.

User accessible

This column indicates whether the user can retrieve the device contents:

- **Yes.** The user can directly retrieve the memory device contents.
- **No.** The user cannot retrieve the memory device contents.

To clear

This column tells how to clear data from the media or memory device before reusing it in a secured area. All reusable memory is cleared to deny access to previously stored information by standard means of access.

To sanitize

This column tells how to eradicate the data from the media or memory device 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 nonsecured area.

Memory Devices

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

Table 1: Volatile memory devices

Type and min. size	Function	Type of user information stored	Backed up by battery	Method of modification	Data input method	Location	User accessible	To clear	To sanitize
SDRAM, 512K X 32	Acquisition memory for holding and processing waveforms, and processor system RAM.	Both user data and user settings	No	Indirect	Firmware operations, user input	Main Acquisition board	No	Remove power from the instrument for at least 20 seconds.	Remove power from the instrument for at least 20 seconds.
SRAM, 128K X 8	Shared memory between the acquisition system and the USB processor.	Both user data and user settings	No	Indirect	Firmware operations	Main Acquisition board. TBS and TDS models only.	No	Remove power from the instrument for at least 20 seconds.	Remove power from the instrument for at least 20 seconds.
Real-time clock, which contains battery backed-up memory	Holds date/time data	None	Yes	Indirect	User input	Main Acquisition board.	No	Remove the battery from the board.	Remove the battery from the board.
USB 2.0 OTG host/peripheral controller, 8K X 16 RAM	Contains USB controller program and data memory.	None	No	Indirect	Firmware operations	Main Acquisition board. TBS and TDS models only.	No	Remove power from the instrument for at least 20 seconds.	Remove power from the instrument for at least 20 seconds.
SRAM, 64K X16	Data memory for the USB processor.	None	No	Indirect	Firmware operations	Main Acquisition board. TBS and TDS models only.	No	Remove power from the instrument for at least 20 seconds.	Remove power from the instrument for at least 20 seconds.

Table 2: Nonvolatile memory devices

Type and minimum size	Function	Type of user information stored	Method of modification	Data input method	Location	User Accessible	To clear	To sanitize
FLASH, 8M X 8, 4M X 16	Holds instrument firmware, current setup, saved setups, saved reference waveforms, hard copy image files, and calibration constants.	Both user data and user settings	Indirect	Factory configurations, firmware operations, user input, and USB disk upgrade	Main Acquisition board	No	See the *Clear Flash Procedure* that follows this table.	See the *Clear Flash Procedure* that follows this table.
EEPROM, SERIAL, 1M	Program memory for the USB processor.	None	Indirect	Factory configurations, USB disk upgrade	Main Acquisition board. TBS and TDS models only.	No	Not applicable, does not contain user data or settings. Cleaning would disable instrument functionality.	Not applicable, does not contain user data or settings. Sanitizing would disable instrument functionality.

Clear Flash Procedure

This procedure does not erase or change factory calibration constants.

1. Push the front panel DEFAULT SETUP button to recall the default setup.
2. Push the front panel SAVE/RECALL button.
3. Push the Action option (side bezel) button until Save Setup is selected.
4. Push the Save To option button until Setup is selected.
5. Push the Setup option button until 1 is selected.
6. Push the Save option button to overwrite setup 1 with the default setup.
7. Push the Setup and Save option buttons again to overwrite the next setup with the default setup. Repeat this step until setup 1 is selected again.
8. Push the front panel CH 1 MENU button, and then push the Coupling option button until Ground is selected.
9. Push the front panel SAVE/RECALL button.
10. Push the Action option button until Save Waveform is selected. Push the Save To option button until Ref is selected. Push the Source option button until CH1 is selected.

11. Push the To option button until RefA is selected. Push the Save option button to overwrite reference waveform RefA with the null waveform.
12. Push the To and the Save option buttons again to overwrite the next reference waveform with the null waveform. Repeat this step until reference RefA is selected again.
13. For TBS and TDS oscilloscopes, insert a USB flash drive into the USB Flash Drive port on the front of the oscilloscope. For TPS oscilloscopes, insert a compact flash card into the Compact Flash slot on the front of the oscilloscope.
14. Push the front panel UTILITY button.
15. Push the Options option button.
16. Push the Printer Setup option button.
17. Push the PRINT Button option until Saves Image To File is selected.
18. For TBS and TDS oscilloscopes, push the File Format option button until JPG is selected. For TPS oscilloscopes, select BMP instead of JPG.
19. Remove any probes from the BNC front panel connectors.
20. Push the front panel PRINT button to overwrite the hard copy image file with an image that does not contain any useful information.
21. Power off the oscilloscope, and then power on the oscilloscope to complete the process.

Data Export Devices

The following table lists the data export devices in the standard instrument and listed options:

Table 3: Data export devices

Type and min size	Function	Method of modification	Data input method	Location	Process to disable
USB host port	Supports removable USB flash drive. User storage of reference waveforms, screen images, and instrument setups.	Directly	Save	Front panel	Files can be deleted or overwritten on the oscilloscope or a PC; USB flash drive can be removed and destroyed The USB host port cannot be disabled
USB device port	Supports remote control and data transfer to a PC	Directly	Remote control via USBTMC	Rear panel	The USB device port cannot be disabled
Compact flash card (TPS only)	User storage of reference waveforms, screen images, and instrument setups.	Directly	By system resources	Front panel	The Compact Flash port cannot be disabled.

Troubleshooting

How to Clear or Sanitize a Nonfunctional Instrument

If your instrument is not functioning and you need to clear or sanitize it, proceed as follows:

Acquisition Board

Remove the Acquisition board and return the product to Tektronix. A new Acquisition board will be installed, and the instrument will be repaired and adjusted as necessary.

For removal instructions, refer to your product service manual. (See page iv, *Related Documents*.)

After removal of the Acquisition board, refer to your company's internal policies regarding handling or disposal of the board.

Compact Flash Card (TPS oscilloscopes only)

Remove the compact flash card and return the instrument to Tektronix for repair.

After removal of the compact flash card, refer to your company's internal policies regarding handling or disposal of the compact flash card.

USB Flash Drive (TBS and TDS oscilloscopes only)

Remove the USB flash drive and return the instrument to Tektronix for repair.

After removal of the USB flash drive, refer to your company's internal policies regarding handling or disposal of the flash drive.

Charges

Replacement of any missing hardware will be charged according to the rate at the time of replacement.