

**DPO7000, DPO70000, DPO70000B,
DSA70000, and DSA70000B Series
Digital Phosphor Oscilloscopes and Digital Serial Analyzers
Declassification and Security
Instructions**



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Tektronix

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Preface

This document helps customers with data security concerns to sanitize or remove memory devices from the DPO7000, DPO70000, DPO70000B, DSA70000, and DSA70000B Series instruments.

This series of instruments contains an open architecture PC with a removable hard drive. You can order additional removable hard drives to swap in and out of the instrument as needed for security reasons.

These products have data storage (memory) devices and data export devices (USB ports, CD-RW/DVD ROM drive, Ethernet, GPIB, and TekLink). These instructions tell how to clear or sanitize the memory devices and disable the data output devices. The instructions also tell how to declassify an instrument that is not functioning.

Products

The following Tektronix products are covered by this document:

- DPO7054, DPO7104, DPO7254, and DPO7354
- DPO70404, DPO70604, DPO70804, DPO71254, DPO71604, and DPO72004
- DPO70404B, DPO70604B, DPO70804B, DPO71254B, DPO71604B, and DPO72004B
- DSA70404, DSA70604, DSA70804, DSA71254, DSA71604, and DSA72004
- DSA70404B, DSA70604B, DSA70804B, DSA71254B, DSA71604B, and DSA72004B

Related Documents

DPO7000, DPO70000/B, and DSA70000/B Series Service Manual

Terms

The following terms may be used in this document:

- **Clear.** This eradicates 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. A device that is used to store or export data from the instrument, such as a USB port/USB flash drive.
- **Sanitize.** This removes the data from media/memory so that the data cannot be recovered using any known 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.
- **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.
- **User-Modifiable.** The memory device can be written to by the user during normal instrument operation, using the instrument user interface or remote control.
- **Volatile memory.** Data is lost when the instrument is powered off.
- **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 must either press a rear-panel OFF switch or remove the power source from the instrument.

Clear and Sanitize Procedures

Memory Devices

The following tables list the volatile and nonvolatile memory devices in the instrument.

Table 1: Volatile memory devices

Type and minimum size	Function	User modifiable	Data input method	Location	To clear	To sanitize
SDRAM, 512K X 8 up to 512K X 64	Acquisition memory for holding and processing waveforms, and processor system RAM	No	Written by processor system	Acquisition board		Remove power from the instrument for at least 20 seconds
PC RAM	PC motherboard	No	Written by processor system	PC motherboard		Remove power 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
Removable hard drive	Holds all user-storable data (waveforms and instrument settings)	Yes	Windows UI and TekScope UI	Rear panel	(See page 5, Removable Hard Drive.)	(See page 8, <i>Removable Hard Drive.</i>)
FLASH 512K X 4	Video controller BIOS	No	Not accessible	PC Interface board	Not applicable	Not applicable
EEPROM, 4096 BITS	PCI bus settings	No	Not accessible	PC Interface board	Not applicable	Not applicable
SPI Flash 2 Megabits	Option key, event log, serial number, and model number	No	Not accessible	PC Interface board	Not applicable	Not applicable
SERIAL EEPROM, 4096 BITS	TekLink settings	No	Not accessible	PC Interface board	Not applicable	Not applicable (See page 7, <i>To Disable TekLink Using the Windows Device Manager.</i>)

Table 2: Nonvolatile memory devices, (cont.)

Type and minimum size	Function	User modifiable	Data input method	Location	To clear	To sanitize
NVRAM	Calibration data	No	Not accessible	Acquisition board	Not applicable	Not applicable
NVRAM	Motherboard BIOS and BIOS settings	Yes	BIOS UI	PC motherboard	Not applicable	Not applicable

Data Export Devices

The following table lists the data export devices in the instrument.

Table 3: Data export devices

Type and minimum size	Function	User modifiable ¹	Data input method	Location	To disable
USB port	Supports removable USB flash drive. User storage of reference waveforms, screen images, and instrument setups	Yes	Save	USB host ports on front, side, or rear of instrument	Files can be deleted or overwritten on the instrument or a PC; USB flash drive can be removed and destroyed. USB ports can be disabled. (See page 5, <i>Disabling USB and CD-RW capability.</i>)
CD-RW/DVD ROM Drive	User storage of reference waveforms, screen images, and instrument setups and installation of software	Yes	Read and write	Drive on front of instrument	Drive can be disabled. (See page 5, <i>Disabling USB and CD-RW capability.</i>)
Ethernet	User storage of reference waveforms, screen images, and instrument setups and installation of software	Yes	Read, write, and control programs	Ethernet port on, side or rear of instrument	Ethernet port can be disabled. (See page 7, <i>To Disable LAN Ethernet Connectivity Using the BIOS.</i>)
GPIB	Remote control of instrumentation systems	Yes	Read, write and control programs	GPIB port on rear of instrument	The GPIB can be disabled. (See page 7, <i>To Disable GPIB Using the Windows Device Manager.</i>)
TekLink	Remote control of instrumentation systems	Yes	Read, write and control programs	TekLink port on side or rear of instrument	TekLink can be disabled. (See page 7, <i>To Disable TekLink Using the Windows Device Manager.</i>)

¹ During normal instrument operation.

Disabling USB and CD-RW capability

The following instructions describe how to disable the built-in USB and CD-RW capability. Using the BIOS disables the devices for DOS programs, while the Windows Device Manager disables the devices for Windows programs. These procedures disable both USB and the CD-RW to prevent their use.

NOTE. *If you disable the USB, CD-RW, and LAN in the following procedures, you cannot write new firmware to the hard drive. To do so, you will need to enable one of these items.*

To Disable USB DOS Using the BIOS.

1. Press F2 during instrument Boot Up to go to the BIOS configuration menu.
2. Go to Advanced>USB Configuration.
3. Set High-Speed USB and Legacy USB Support to Disabled.
4. Hit Esc one time to return to the main BIOS configuration menu.
5. Go to Security> Set Supervisor Password. Press Enter.
6. Specify a password. You will be asked to confirm the password by entering it again. Note the password, and store it in a safe place for future use.
7. Set User Access Level to No Access.
8. Exit Saving Changes by pressing F10, and selecting OK.

To Disable USB and CD-RW for Windows Using the Windows Device Manager.

1. Connect a PS2 mouse and a PS2 keyboard to the instrument before powering on (because USB will be disabled).
2. Log on to the instrument as an administrator.
3. Right-click on My Computer on the desktop, and select Properties.
4. Select the Hardware tab.
5. Click Device Manager.
6. Expand the Universal Serial Bus controllers entry by clicking the + next to it.
7. Double-click the first USB Root Hub entry.
8. Select the Power tab.
9. If the Device Description is anything other than Generic USB Hub (4 ports), click the General tab, and select Do not use this device (disable) in the Device usage drop-down list.

NOTE. *It is critical to leave the USB Root Hub operating; otherwise, the front panel will not function.*

10. Click OK.
11. Repeat steps 7 through 9 for each USB Root Hub shown in the Device Manager window.
12. Expand DVD/CD-ROM drives in the Device Manager window.
13. Right-click TEAC DW-224E-C, and select Disable.
14. Reboot the instrument to make the changes effective.
15. We suggest that you password-protect the Windows Administrator account and set up Guest accounts for end users so that these changes cannot be easily reversed.

To Disable LAN Ethernet Connectivity Using the BIOS

1. Press F2 during instrument Boot Up to go to the BIOS configuration menu.
2. Go to Advanced >Peripheral Configuration.
3. Set Onboard LAN to Disabled.
4. Press Esc one time to return to the main BIOS configuration menu.

NOTE. *If you do not use a BIOS password, the LAN can be reactivated by any user.*

5. Press F10, and select OK to save changes and exit. The LAN system will be disabled and will no longer allow data traffic in or out.

To Disable TekLink Using the Windows Device Manager

1. Connect a PS2 mouse and a PS2 keyboard to the instrument before powering on (because USB will be disabled).
2. Log on to the instrument as an administrator.
3. Right-click on My Computer on the desktop, and select Properties.
4. Select the Hardware tab.
5. Click Device Manager.
6. Expand the device category Network Adapters.
7. Double click on the Intel(R) PRO/100 M Network Connection. This will be the Network Adapter located on the interface board in PCI slot 2.
8. Click the General tab, and select Do not use this device (disable) in the Device usage drop-down list.

To Disable GPIB Using the Windows Device Manager

1. Connect a PS2 mouse and a PS2 keyboard to the instrument before powering on (because USB will be disabled).
2. Log on to the instrument as an administrator.
3. Right-click on My Computer on the desktop, and select Properties.
4. Select the Hardware tab.
5. Click Device Manager.
6. Expand the device category National Instruments NI-Device GPIB Interfaces.
7. Right click on PCI-GPIB.
8. Select Disable from the list.

Removable Hard Drive

All user-storable data is stored on the rear-panel removable hard drive. Scrub the hard drive in a manner that meets local and any other security requirements that you have.

NOTE. *Before scrubbing the hard drive, make certain that you created OS Restore CD-ROMs. For more information see Creating Operating System Restore CD-ROMs in your instrument Quick Start User manual.*

After the hard drive has been scrubbed, the operating system and instrument software can be reinstalled. Following reinstallation of the operating system and product software, you must run the Signal Path Compensation (SPC) procedure in the Utilities menu after a 20-minute warm-up period. This returns the instrument hard drive to the initial state shipped from the factory.

Scrubbing the hard drive will not affect calibration of the instrument, since the factory calibration constants are stored on the acquisition board, entirely separate from any acquisition data or user files. You can completely erase or remove any secure data without affecting the calibration of the instrument. You can also calibrate the instrument in a nonsecure site, and then use the instrument in a secure area without recalibration.

Built-In Security Features

When to Use Tek Secure™

Use Tek Secure when you want to erase and overwrite the waveform and setup memories.

What Tek Secure™ Does

Tek Secure™ capability is present in DPO7000, DPO70000, DPO70000B, DSA70000, and DSA70000B instruments. Pressing Tek Secure erases and overwrites all of the waveform and setup memories. The waveform memories, stored on the hard drive, are overwritten with an “empty,” all zeros pattern. The setup memories, stored on the hard drive, are overwritten with the factory default front-panel setup. The current front-panel setup is also overwritten with the default factory setup.

Using Tek Secure does not affect calibration of the instrument because the calibration constants are stored on the Acquisition board, completely separate from any acquisition data. This allows complete erasure/removal of any secure data without affecting the instrument calibration. It also allows the instrument to be calibrated in a nonsecure site and then used in a secure area without the need for recalibration.

If you remove and store or destroy the hard drive, you do not need to use Tek Secure because the data that will be secured is on the hard drive.

Troubleshooting

How to Clear or Sanitize a Non-Functional Instrument

If your instrument is not functioning, you may proceed as follows:

Hard Drive Remove the hard drive and return the product to Tektronix. A new hard drive will be installed and the instrument will be repaired and adjusted as necessary. Alternatively you may use the Removable Hard Drive procedure before returning the product to Tektronix. (See page 8, *Removable Hard Drive*.)

For removal instructions, refer to the instrument service manual, available on the Tektronix Web site at www.tektronix.com/manuals.

CD-RW/DVD ROM Drive Remove all CDs and/or DVDs. These can be stored or destroyed according to the internal policies of your organization.

USB Flash Drive Remove any attached USB flash drives from the instrument before returning 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.

How to Recover from Clearing or Removing the Instrument Memory

After the hard drive has been sanitized, the operating system and instrument software must be reinstalled. The restore software opens automatically if the CD/DVD drive is the first bootable device. If the CD/DVD drive is not the first bootable device, enable it as the first bootable device before performing a restore from the CD-ROMs.