DPO2000/B and MSO2000/B Series Oscilloscopes Declassification and Security

Instructions

Tektronix

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.tektronix.com to find contacts in your area.

Table of Contents

DPO2000/B and MSO2000/B Series Declassification and Security Instructions

Preface

If you have data security concerns, this document helps you to sanitize or remove memory devices from the DPO2000/B and MSO2000/B Series Digital Phosphor and Mixed Signal Oscilloscopes.

The DPO2000/B and MSO2000/B series 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.

Products   The following Tektronix products are covered by this document:

- DPO2002B
- DPO2004B
- DPO2012/B
- DPO2014/B
- DPO2022B
- DPO2024/B
- MSO2002B
- MSO2004B
- MSO2012/B
- MSO2014/B
- MSO2022B
- MSO2024/B

Related Documents   The *DPO2000 and MSO2000 Series Digital Phosphor and Mixed Signal Oscilloscopes Service Manual*, part number 071-2331-XX, is available on the Tektronix Web site at www.tektronix.com/manuals.

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.

- ◼ **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 press 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 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 in the standard instrument and listed options.

Table 1: Volatile Memory Devices for the DPO2000/B and MSO2000/B Series

Type and minimum size	Function	User modifiable	Data input method	Location	To clear or sanitize
CMOS, SDRAM, 32MX16, 512MB DDR2, 1.8V, 333MHZ; MT47H32M16CC-3, FBGA84	DDR memory: contains the analog channel waveform acquisition data during operation	Only by the processor system	N/A	Acquisition board	Remove power from the instrument for at least 20 seconds
CMOS, SDRAM, 32MX16, 512MB DDR2, 1.8V, 333MHZ; MT47H32M16CC-3, FBGA84	DDR memory: contains the digital channel waveform acquisition data during operation	Only by the processor system	N/A	Acquisition board (MSO2000/B Series only)	Remove power from the instrument for at least 20 seconds
CMOS, SDRAM, 64MX16, 1G DDR2, 1.8V, 333MHZ; MT47H64M16BT-3, FBGA84	DDR memory: contains the instrument code and data during operation	Only by the processor system	N/A	Acquisition board	Remove power from the instrument for at least 20 seconds
CMOS, SDRAM, 32MX16, 512MB DDR2, 1.8V, 333MHZ; MT47H32M16CC-3, FBGA84	DDR memory: contains the instrument code and data during operation	Only by the processor system	N/A	Acquisition board (4-channel products only)	Remove power from the instrument for at least 20 seconds

Table 2: Nonvolatile Memory Devices for the DPO2000/B and MSO2000/B Series

Type and minimum size	Function	User modifiable	Data input method	Location	To clear or sanitize
CMOS, FLASH; 16M X 8 OR 8M X 16, 128MBIT, 75NS, 3V; PC28F128J3D-75, BGA64	FLASH: contains the instrument firmware, calibration constants, reference waveforms, and instrument setups	N/A	N/A	Acquisition board	**To clear:** Not applicable for calibration constants. Use the TekSecure feature to erase reference waveforms and instrument setups. Use the procedure to disable the LAN Ethernet and to clear information, such as IP addresses. (See page 5, *Disable the LAN Port and Clear LAN Ethernet Settings*.) **To sanitize:** Remove the acquisition board; see the product service manual for removal instructions. Store the removed board in a secure area or destroy it. Return the product to Tektronix and a new acquisition board will be installed and the instrument will be repaired and adjusted as necessary.
CMOS, CLOCK; SERIAL REAL-TIME CLOCK, CRYSTAL, 7 X 8 RAM, SPI, 3.3V; M41T93RMY, SO18.300	Real-time clock, with battery backup	Only by the processor system	N/A	Acquisition board	Not applicable; no user data
CMOS, EEPROM; 128 X 8, SERIAL; 24C01A, SOIC8	EEPROM: contains the front end board serial number and calibration information	N/A	N/A	Front End Board	Not applicable; no user data
CMOS, MICROCONTROLLER; 8-BIT, 32K BYTES ON-CHIP FLASH, MC9S08AW32CPUE, LQFP64	Microcontroller with FLASH: contains the front panel processor code and power status for soft power switch	Only by the processor system	N/A	Front Panel Board	Not applicable; no user data
CMOS, EEPROM; 256 X 8, SERIAL; 24C02, SO8.15	EEPROM: contains the application module firmware	N/A	N/A	DPO2000/B and MSO2000/B application module	Not applicable; no user data

Data Export Devices

The following table lists the data export devices.

Table 3: Data Export Devices

Type and minimum size	Function	User modifiable	Data input method	Location	To disable
USB host port	Supports the removable USB flash drive; user storage of reference waveforms, screen images, and instrument setups	Yes	Save	USB host port on the front of the instrument	Files can be deleted or overwritten on the instrument or a PC; the 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	Yes	Remote control via USBTMC	USB device port on the rear of the instrument	Use the procedure to disable the USB device port. (See page 6, *Disable the USB Device Port*.)

Built-In Security Features

When to Use TekSecure

You can use the TekSecure function to erase setup and reference waveform data stored in internal flash memory.

The DPO2000/B and MSO2000/B series models have a USB host port on the front panel. Any USB flash devices can be removed, and stored or destroyed.

What TekSecure Does

The TekSecure function does the following:

- Replaces all waveforms in all reference memories with null sample values

- Replaces the current front-panel setup and all stored setups with the default setup values

- Calculates the checksums of all reference waveform memory and setup memory locations to verify successful completion of waveform and setup erasure

- Displays a dialog indicating whether the secure erase was successful or unsuccessful

---

NOTE. TekSecure does not erase or change factory calibration constants, user protected data, or Ethernet settings.

To use TekSecure:

1. Push the front-panel **Utility** button.

2. Push the **Utility Page** lower-bezel button and use the **Multipurpose a** knob to select **Config**.

3. Push the **TekSecure Erase Memory** lower-bezel button.

4. Push the **OK Erase Setup & Ref Memory** side-bezel button. Wait for the "TekSecure operation complete" dialog box to display.

5. Push the **Menu Off** front-panel button to close the dialog box.

To reset the instrument RAM:

1. Power off the instrument for at least 20 seconds.

2. Power on the instrument.

To overwrite protected user data

This procedure overwrites everything that is stored in the protected user data area.

Send the following commands to the oscilloscope:

```
:PASSWORD "XYZZY" (or current password if not "XYZZY")
```

```
:NEWPASS "ANYTHING"
```

```
:PASSWORD "ANYTHING"
```

```
*PUD #3300xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx[repeat
for a total of 300 x's]
```

Disable the LAN Port and Clear LAN Ethernet Settings

To disable the LAN port and clear LAN Ethernet settings, such as IP addresses, follow these steps:

⚠ **CAUTION.** *If you need to restore network connectivity at a later date, make sure to write down all setting values before clearing them.*

1. Remove the network cable from the LAN port on the rear of the instrument.

2. Push the front-panel **Utility** button.

3. Push the **Utility Page** lower-bezel button and use the **Multipurpose a** knob to select **I/O**.

4. Push the **Ethernet Network Settings** lower-bezel button.

5. Push the **Change Instrument Settings** side-bezel button.

6. Push the ↑ or ↓ arrow side-bezel button to position the cursor on the **User Password** information.

7. Push the **Clear** lower-bezel button.

8. Push the ↓ arrow side-bezel button to position the cursor on the **Instrument IP Address** information.

9. Push the **Clear** lower-bezel button.

10. Push the ↓ arrow side-bezel button to position the cursor on the **Domain Name** information.

11. Push the **Clear** lower-bezel button.

12. Push the ↓ arrow side-bezel button to position the cursor on the **DNS IP Address** information.

13. Push the **Clear** lower-bezel button.

14. Push the ↓ arrow side-bezel button to position the cursor on the **Gateway IP Address** information.

15. Push the **Clear** lower-bezel button.

16. Push the ↓ arrow side-bezel button to position the cursor on the **Subnet Mask** information.

17. Push the **Clear** lower-bezel button.

18. Push the **OK Accept** side-bezel button.

The LAN system is disabled and no longer allows data traffic in or out. The relevant LAN Ethernet settings are also cleared.

Disable the USB Device Port

To disable the USB device port, follow these steps:

1. Remove any USB cable or device from the USB device port on the rear of the instrument.

2. Push the front-panel **Utility** button.

3. Push the **Utility Page** lower-bezel button and use the **Multipurpose a** knob to select **I/O**.

4. Push the **USB** lower-bezel button.

5. Push the **Disabled (Off Bus)** side-bezel button to disable the USB device port.

The USB device port is disabled and no longer allows data traffic in or out.

Clear and Sanitize a Non-Functional Instrument

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

Acquisition board
Only qualified personnel should perform service procedures. Read the *Service Safety Summary* and the *General Safety Summary* in the *DPO2000 and MSO2000 Series Digital Phosphor and Mixed Signal Oscilloscopes Service Manual* before performing any service procedures.

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 the service manual, part number 071-2331-XX, available on the Tektronix Web site at www.tektronix.com/manuals.

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

USB Flash Drive
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.