DSA8300 Digital Serial Analyzer and 80A00, 80C00, 80E00, 82A00 Sampling Modules 80N01, 80X00 Electrical Sampling Module Extender Cables Declassification and Security

Instructions

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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.tektronix.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 DSA8300 Digital Serial Analyzer and its related sampling modules and module accessories.

The DSA8300 has data storage (memory) devices and data output devices (USB ports). Some of the modules have memory devices. 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.

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:

- DSA8300 Digital Serial Analyzer
- 80A00 series Accessory plug-in modules
- 80C00 series Optical plug-in sampling modules
- 80E00 series Electrical plug-in sampling modules
- 80N01 series electrical sampler extender
- 80X00 series electrical sampler extenders
- 82A00 series Phase Reference sampling modules

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 is removed from a secure environment. Declassification procedures include memory sanitization and memory removal, and sometimes both.
- **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.
- **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 Accessible.** 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.
- **Nonvolatile memory.** Data is retained 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. Detailed procedures to clear or sanitize these devices, if any, are shown following each table.

Terminology

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

- **User data** – Describes the type of information stored in the device. Refers to waveforms or other measurement data representing signals connected to the instrument by users.
- **User settings** – Describes the type of information stored in the device. Refers to instrument settings that can be changed by the user.
- **Both** – Describes the type of information stored in the device. It means that both user data and user settings are stored in the device.
- **None** – Describes the type of information stored in the device. It means that neither user data nor user settings are stored in the device.
- **Directly** – Describes how data is modified. It means that the user can modify the data.
- **Indirectly** – Describes how data is modified. It means that the instrument system resources modify the data and that the user cannot modify the data.

Table 1: Volatile memory devices: DSA8300

Type and min. size	Function	Type of user info stored	Backed-up by battery	Method of modification	Data Input method	Location	User accessible	To clear	Process to sanitize
PPC board:									
SDRAM 512 MB (std)	Embedded microprocessor system memory	Acquisition system calibration, setup	No	Indirectly	Firmware operations	Slot-PPC board J130	No	Remove power from the instrument for at least 20 seconds.	Remove power from the instrument for at least 20 seconds.
EFE board:									
Cyclone FX2 onboard program/data RAM, 16 KB	Embedded microprocessor system memory	Acquisition system calibration, setup	No	Indirectly	Firmware operations	EFE board U1001	No	Remove power from the instrument for at least 20 seconds.	Remove power from the instrument for at least 20 seconds.
MC9S08AC16 onboard RAM, 1 KB	Embedded microprocessor system memory	Front end setup and operation	No	Indirectly	Firmware operations	EFE board U6M, U6N	No	Remove power from the instrument for at least 20 seconds.	Remove power from the instrument for at least 20 seconds.
DSP onboard RAM, 192K x 24-bit (4 each)	Program RAM, instruction cache, X-data, Y-data	Channel setup and operation	No	Indirectly	Firmware operations	EFE board U01_1, U01_3, U01_5, U01_7	No	Remove power from the instrument for at least 20 seconds.	Remove power from the instrument for at least 20 seconds.
OFE board: No volatile memory devices									
Timebase board:									
DSP onboard RAM, 192K x 24-bit	Program RAM, instruction cache, X-data, Y-data	Channel setup and operation	No	Indirectly	Firmware operations	Timebase board U421	No	Remove power from the instrument for at least 20 seconds.	Remove power from the instrument for at least 20 seconds.
Windows motherboard:									
SDRAM,4 GB	Windows system memory	User data, user settings	No	Directly	Written by processor system	Slot-PC board	Yes	Remove power from the instrument for at least 20 seconds.	Remove power from the instrument for at least 20 seconds.
Display adapter:									
COACh3 processor, volatile memory not specified	Touchscreen USB controller	None	None	Indirectly	Firmware operations	Display Adapter board U2	No	Remove power from the instrument for at least 20 seconds.	Remove power from the instrument for at least 20 seconds.

Table 1: Volatile memory devices: DSA8300 (cont.)

Type and min. size	Function	Type of user info stored	Backed-up by battery	Method of modification	Data Input method	Location	User accessible	To clear	Process to sanitize
Front panel:									
Cypress CY7C660-13C-PVXC processor RAM, 256 Bytes	Front panel USB controller	None	None	Indirectly	Firmware operations	Front Panel board U25	No	Remove power from the instrument for at least 20 seconds.	Remove power from the instrument for at least 20 seconds.

Table 2: Volatile memory devices: modules

Type and min. size	Function	Type of user info stored	Backed-up by battery	Method of modification	Data Input method	Location	User accessible	To clear	Process to sanitize
All 80C00 Optical plug-in sampling modules, 80E00 Electrical plug-in sampling modules, 82A00 Phase Reference sampling modules, 80A00 Accessory plug-in modules, and 80N01 and 80X00 electrical sampling module extender cables									
None									

Table 3: Nonvolatile memory devices: DSA8300

Type and min. size	Function	Type of user info stored	Method of modification	Data Input method	Location	User accessible	To clear	To sanitize
PPC board:								
PROM serial config 17S20XL, 179160 bits	PIF FPGA serial config	None	None	Purchased already programmed	PPC board U231	No	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.
Boot Flash, 512 KB	PPC boot flash	None	Indirect	Purchased already programmed	PPC board U440	No	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, 128 Bytes	Embedded bridge serial config	None	Indirect	Purchased already programmed	PPC board U750	No	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 3: Nonvolatile memory devices: DSA8300 (cont.)

Type and min. size	Function	Type of user info stored	Method of modification	Data Input method	Location	User accessible	To clear	To sanitize
Temperature sensors DS1621, 5 bytes (2 each)	Temperature sense thermostat setup	None	Indirect	Purchased already programmed	PPC board U300, U800	No	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.
M25PE80 flash, 1 MB	Holds instrument calibration data, nomenclature, serial number, option keys, and error log	None	Indirect	Firmware operations	PPC board U510	No	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.
Battery-backed NVRAM, 128 KB	Holds instrument calibration data, nomenclature, serial number, option keys, and error log	None	Indirect	Firmware operations	PPC board U520	No	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.
EFE board:								
Cyclone FX2 onboard program flash, 16 KB	Embedded microprocessor system memory	None	Indirect	Firmware operations	EFE board U1001	No	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.
Temperature sensors DS1621, 5 bytes (3 each)	Temperature sense thermostat setup	None	Indirect	Purchased already programmed	EFE board U05, U06, U42	No	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.
MC9S08AC16 onboard flash, 16 KB	Front end processor	None	Indirect	Purchased already programmed	EFE board U06M, U06N	No	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 3: Nonvolatile memory devices: DSA8300 (cont.)

Type and min. size	Function	Type of user info stored	Method of modification	Data Input method	Location	User accessible	To clear	To sanitize
M25PE80 flash, 1 MB	Holds EFE calibration and compensation data	None	Indirect	Firmware operations	EFE board U101	No	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.
DSP onboard ROM, 192 x 24-bit (4 each)	Bootstrap ROM	None	Indirect	Firmware operations	EFE board U01_1, U01_3, U01_5, U01_7	No	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.
OFE board:								
M25PE80 flash, 1 MB	Holds OFE calibration and compensation data	None	Indirect	Firmware operations	OFE board U05	No	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.
Timebase board:								
M25PE80 flash, 1 MB	Holds timebase and instrument calibration and compensation data	None	Indirect	Firmware operations	Timebase board U331	No	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 3: Nonvolatile memory devices: DSA8300 (cont.)

Type and min. size	Function	Type of user info stored	Method of modification	Data Input method	Location	User accessible	To clear	To sanitize
Windows motherboard:								
MX25L3205D serial flash, 4 MB	Motherboard BIOS	None	Indirect	BIOS setup	Motherboard BIOS11 socket	No	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.
ICH9DO, 16K	Motherboard South Bridge	None	Indirect	I/O setup	Motherboard ICH9_DO	No	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.
Removable Hard Drive, 160 GB or 500 Gb	Holds instrument operating system and application software. Holds all user-storable data such as waveforms, measurement results, and instrument settings.	User data, user settings	Indirect	Firmware operations, user input	Rear panel, removable	Yes	Erase the hard drive with commercial erasure software. Reinstall instrument-specific Microsoft Windows 7 Ultimate using the OS Restore process. Reinstall the instrument software using the supplied application recovery disk. See *Clearing Hard Disk Drives*.	Remove the hard drive. Sanitize or store the removed hard drive in a secure area, or destroy the hard drive. When the hard drive is removed, no user data remains in the instrument. (See page 13, *To sanitize the removable hard drive*.)
Display adapter:								
COACh3 processor, nonvolatile memory not specified	Touchscreen USB controller	None	None	Yes (Touchscreen driver / cal)	Display Adapter board U2	No	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 3: Nonvolatile memory devices: DSA8300 (cont.)

Type and min. size	Function	Type of user info stored	Method of modification	Data Input method	Location	User accessible	To clear	To sanitize
Front panel:								
Cypress CY7C660-13C-PVXC processor PROM, 8 KB	Front panel USB controller	None	None	None	Front Panel board U25	No	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 4: Nonvolatile memory devices: modules

Type and min. size	Function	Type of user info stored	Method of modification	Data Input method	Location	User accessible	To clear	To sanitize
All 80C00 Optical plug-in sampling modules								
X24C16 EEPROM, 2 KB, or m24C64 EEPROM, 8 KB	Holds instrument calibration data, nomenclature, and serial number	None	Indirect	Firmware operations	Sampler main board U1 (all except 80C17, 80C18) Sampler main board U01 (80C17, 80C18)	Yes	Contains user settings. Clearing would disable instrument functionality. User can restore to factory defaults (See page 16, *How to clear or sanitize a working 80C00 series module*.)	Contains user calibration data. (See page 16, *How to clear or sanitize a working 80C00 series module*.)
80E00 Electrical plug-in sampling modules; 80A06 Trigger Module; and 82A00 Phase Reference sampling modules								
X24C16 EEPROM, 2 KB or m24C64 EEPROM, 8 KB	Holds instrument calibration data, nomenclature, and serial number	None	Indirect	Firmware operations	Sampler main board U1	Yes	Not applicable, does contain user data or settings. Clearing would disable instrument functionality.	Not applicable, does contain user data or settings. Sanitizing would disable instrument functionality.
All 80C00 Optical plug-in sampling modules; 80E00 Electrical plug-in sampling modules; 80A06 Trigger Module; and 82A00 Phase Reference sampling modules								
Temperature sensor DS1621, 5 bytes	Temperature sense	None	Indirect	Purchased already programmed	Sampler main board U3 (all except 80C17, 80C18); Sampler main board U02 (80C17, 80C18); Sampler remote board U2 (80E07, 80E07B, 80E08, 80E08B, 80E09, 80E09B, 80E10, 80E10B)	No	Not applicable, does contain user data or settings. Clearing would disable instrument functionality.	Not applicable, does contain user data or settings. Sanitizing would disable instrument functionality.
All 80A00 Accessory plug-in modules except 80A06 and 80A03; 80N01 and 80X00 electrical sampler extenders								
None								

Table 4: Nonvolatile memory devices: modules (cont.)

Type and min. size	Function	Type of user info stored	Method of modification	Data Input method	Location	User accessible	To clear	To sanitize
80A03 Accessory plug-in module, other unlisted DSA8300 modules								
Contact Tektronix Customer Support (www.tek.com) for help on clearing or sanitizing the 80A03 or other unlisted DSA8300 modules								

Media and data export devices

Table 5: Media and data export devices

Type and min. size	Function	Method of modification	Data Input method	Location	User accessible	Process to disable
Read - write CD/DVD drives	Store and transport data	directly	User writeable	Front panel.	Yes	Remove all CDs and DVD. Rewritable CDs and DVDs can be formatted, stored in a secure area, or destroyed. Non-rewritable CDs and DVDs can either be stored or destroyed. The DVD-ROM/CD-RW Drive can be disabled. (See page 12, *To disable the DVD-ROM/CD-RW device using the Windows Device Manager*.)
USB host port (supports removable USB flash drive)	User storage of reference waveforms, screen images, and instrument setups	directly	User writeable	USB host port on front of instrument, plus four host ports on rear of instrument Files can be deleted or over-written on the oscilloscope or a PC, or USB flash drive can be removed and destroyed.	Yes	Remove all USB memory devices. USB devices can be formatted, stored in a secure area, or destroyed. The USB ports can be disabled. (See page 11, *To disable USB ports for Windows using the Windows Device Manager*.)
LAN Ethernet connector	Transfer data	directly	N/A	Rear panel.		Disconnect from Network cable. The Ethernet port can be disabled. (See page 12, *To Disable LAN Ethernet Connectivity Using the BIOS*.)
GPIB connector	Transfer data	directly	N/A	Rear panel	Yes	The GPIB device can be disabled. (See page 12, *To Disable GPIB Using the Windows Device Manager*.)
Serial port	Transfer	directly	N/A	Rear panel	Yes	Cannot be disabled.

General media sanitizing information

Turn power off for at least 20 seconds to clear all volatile memory. All user storable data (waveforms and instrument settings) are stored on the removable hard drive, on a writeable CD/DVD drive, or through an attached USB media device, such as a flash drive. The hard drive is located on the rear panel. The writeable CD/DVD drive is located on the front panel. The USB ports are located on the rear panel (4 each), and front panel (1 each).

To sanitize the hard drive, remove the hard drive from the instrument and store or destroy. Additional hard drives can be purchased from Tektronix. Alternately, there are DOD-approved scrubbing software packages available for the hard drive. Tektronix has no recommendations regarding the available packages. After the hard drive has been sanitized (scrubbed), reinstall the operating system and instrument software (in that order) using the DSA8300 Operating System Restore and Product Software restore media that came with the instrument.

Reinstalling the operating system or the product application software will not affect calibration of the instrument. All mainframe-related calibration constants are stored in nonvolatile memory on the timebase, EFE, or OFE boards, rather than on the hard drive. This allows complete erasure/removal of any secure data without affecting oscilloscope calibration. It also allows the instrument to be calibrated in a non-secure site then used in a secure area without need for recalibration.

Read-write CD/DVD drives are standard on this product. Remove all CDs or DVDs. Rewritable CD/DVD discs can be formatted, stored, or destroyed. Nonrewritable CD discs can be stored or destroyed.

Five USB ports are standard on this product. Remove USB media devices and sanitize, store, or destroy them.

Disabling USB and DVD-ROM/CD-RW devices

The following instructions describe how to disable USB ports and DVD-ROM/CD-RW capability. Disabling from BIOS disables the devices for DOS and Windows programs; disabling from the Windows Device Manager disables the devices for Windows programs.

NOTE. *If you disable the USB and/or DVD-ROM/CD-RW, you cannot install new firmware from these devices to the hard drive. To do so, you must enable one of these items.*

To disable USB DOS from the BIOS.

1. Repeatedly press the **Delete** key during the initial instrument power on sequence to go to the BIOS configuration menu.
2. Go to **Chipset > South Bridge Configuration**.
3. Set USB Functions and USB Port Configure to **Disabled**.
4. Press **Esc** once to return to the main BIOS configuration menu.

5. Go to **Security > Set Supervisor Password**.
6. Press **Enter**.
7. Enter a password. Confirm the password by entering it again. Record the password and store it in a safe place for future use.
8. Set User Access Level to **No Access**.
9. Press **F10** and select **OK** to exit and save BIOS changes.

To disable USB ports for Windows using the Windows Device Manager.

1. Connect a PS2 mouse and a PS2 keyboard to the instrument before powering on (because this process disables USB-connected devices).
2. Log on to the instrument as an administrator.
3. Right-click the **Computer** icon on the desktop and select **Properties**.
4. Click the **Device Manager** link.
5. Expand the **Universal Serial Bus controllers** item list.
6. Double-click the first **USB Root Hub** entry.
7. Select the **Power** tab.
8. If the Attached Device Description is anything other than **Generic USB Hub (# ports)**, click the **Driver** tab and click **Disable**.

CAUTION. *It is critical to leave the "Generic USB Hub (# ports)" device operating; otherwise, the front panel will not function.*

9. Repeat steps 6 through 8 for each **USB Root Hub** shown in the Device Manager window. Ignore the other USB-related items in this list.
10. Exit the Device Manager window.
11. Restart the instrument to implement the changes.

NOTE. *You should password-protect the Windows Administrator account and set up Guest accounts for end users so that these changes cannot be easily reversed.*

To disable the DVD-ROM/CD-RW device using the Windows Device Manager.

1. Connect a PS2 mouse and a PS2 keyboard to the instrument before powering on (if USB ports are disabled).
2. Log on to the instrument as an administrator.
3. Right-click the **Computer** icon on the desktop and select **Properties**.
4. Click the **Device Manager** link.
5. Expand the **DVD/CD drives** list item.
6. Right-click **TEAC DW-224S-V** and select **Disable**.
7. Exit the Device Manager window.
8. Restart the instrument to implement the changes.

NOTE. *You should 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. Repeatedly press **Delete** during instrument power on to go to the BIOS configuration menu.
2. Go to **Chipset > South Bridge Configuration**.
3. Set Onboard LAN to **Disabled**.
4. Press **Esc** once 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 GPIB Using the Windows Device Manager

1. Connect a PS2 mouse and a PS2 keyboard to the instrument before powering on (if USB ports have been disabled).
2. Log on to the instrument as an administrator.
3. Right-click the **Computer** desktop icon and select **Properties**.
4. Click the **Device Manager** link.
5. Expand the device category **National Instruments NI-Device GPIB Interfaces**.
6. Right-click on **PCI-GPIB** and select **Disable** from the list.
7. Exit the Device Manager window.

To sanitize the removable hard drive

All user-storable data is stored on the rear-panel removable hard drive. Sanitize or replace the hard drive in a manner that meets all security requirements for your location.

After the hard drive is sanitized or replaced, reinstall the operating system (OS) and instrument software (in that order) using the provided OS recovery media and instrument application software media.

Scrubbing the hard drive does not affect calibration of the instrument because the factory calibration constants are stored on the PPC, timebase, EFE, and OFE boards, 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.

Troubleshooting

How to clear or sanitize a nonfunctional instrument

If your instrument is not functioning, perform the following actions and return the instrument to Tektronix for repair. Describe the initial problem with the product. Tektronix will install replacement parts and then repair and return the instrument.

Hard Disk Drives

Remove the hard disk by unscrewing the two retaining screws and pulling out the hard drive tray. Store the drive in a secure location. A new hard drive will be installed and the instrument will be repaired and adjusted as necessary.

Read/Write CD/DVD Drives

Remove all CDs or DVDs from the DVD-ROM/CD-RW drive. If the instrument cannot power on, insert a small paper clip into the hole next to the DVD-ROM/CD-RW drive drawer latch and push to release the drawer and remove the disc. Store or destroy the disc according to the security policies of your organization.

External memory devices

Remove any USB flash drives or external hard drives from the instrument.

Refer to your company's internal policies regarding handling or disposal of the external memory device.

How to recover from sanitizing or installing a new (empty) instrument hard drive

After the hard drive is sanitized or replaced with a new (empty) hard drive, the operating system and instrument software must be reinstalled (in that order) from the DSA8300 OS restore and application software install media. The restore software runs automatically if the DVD-ROM/CD-RW drive is the first bootable device. If the DVD-ROM/CD-RW drive is not the first bootable device, press the **F2** key during instrument power-on to open the instrument BIOS window and enable the DVD-ROM/CD-RW drive as the first bootable device before performing a restore from the recovery media.

How to clear or sanitize a working 80C00 series module

This section covers how to clear or sanitize a 80C01, 80C02, 80C07B, 80C08/B/C/D, 80C10/B/C, 80C11/B, 80C12/B, 80C14, 80C15, Sampler main board U3 (all except 80C17, 80C18); sampler main board U02 (80C17, 80C18); sampler remote board U2 or 80C25GBE Optical Sampling Module nonvolatile memory.

The nonvolatile memory in these products contains a single per-channel user storable parameter (User Wavelength), composed of both a wavelength value and an associated scale factor value. Restoration to factory defaults is only necessary if either of the values are different from the factory defaults.

To check the current 80C00 module user wavelength settings

The following procedure checks the current module user wavelength settings. This procedure requires sending programmable interface (PI) commands to the instrument using a GPIB or other remote command access interface. See the TekScope application Help menu to access the instrument online help and programmer manual.

1. Power down the instrument and insert the optical module into the upper left (CH1, CH2) or right (CH3, CH4) large slot. Use the appropriate channel number for the lower channel number in the slot when sending commands to a module.
2. Power up the instrument and wait for the oscilloscope application to become active.
3. Use the following table for the applicable module(s) to send the applicable programmable interface query commands to the instrument. Verify if each returned response matches the listed factory default User Wavelength or User Wavelength Scale setting. If the returned values are different than the factory default, restore the default values for the applicable modules. (See page 18, *To restore the user wavelength factory default values*.)

Table 6: Optical module user wavelength query and factory default values

Module	Command	User wavelength factory setting	User scale factory setting
80C01	TEKPHW:CH1:LONG? “OPTWAVEL”,2 TEKPHW:CH1:DOUBLE? “OPTSCALE”,2	1000	18
80C02	TEKPHW:CH1:LONG? “OPTWAVEL”,2 TEKPHW:CH1:DOUBLE? “OPTSCALE”,2	1000	18
80C07B	TEKPHW:CH1:LONG? “OPTWAVEL”,4 TEKPHW:CH1:DOUBLE? “OPTSCALE”,4	1550	780
80C08/B/C	TEKPHW:CH1:LONG? “OPTWAVEL”,4 TEKPHW:CH1:DOUBLE? “OPTSCALE”,4	1550	315
80C08D	TEKPHW:CH1:LONG? “OPTWAVEL”,3 TEKPHW:CH1:DOUBLE? “OPTSCALE”,3	1550	315
80C10/B, 80C25GBE	TEKPHW:CH1:LONG? “OPTWAVEL”,1 TEKPHW:CH1:DOUBLE? “OPTSCALE”,1	1550	15
	TEKPHW:CH1:LONG? “OPTWAVEL”,3 TEKPHW:CH1:DOUBLE? “OPTSCALE”,3	1310	10
80C10C	TEKPHW:CH1:LONG? “OPTWAVEL”,1 TEKPHW:CH1:DOUBLE? “OPTSCALE”,1	1550	15
	TEKPHW:CH1:LONG? “OPTWAVEL”,3 TEKPHW:CH1:DOUBLE? “OPTSCALE”,3	1310	12
80C11/B	TEKPHW:CH1:LONG? “OPTWAVEL”,2 TEKPHW:CH1:DOUBLE? “OPTSCALE”,2	1550	30
80C12	TEKPHW:CH1:LONG? “OPTWAVEL”,3 TEKPHW:CH1:DOUBLE? “OPTSCALE”,3	1550	315
80C12B, 80C14	TEKPHW:CH1:LONG? “OPTWAVEL”,3 TEKPHW:CH1:DOUBLE? “OPTSCALE”,3	1550	425
80C15	TEKPHW:CH1:LONG? “OPTWAVEL”,3 TEKPHW:CH1:DOUBLE? “OPTSCALE”,3	1550	22
80C17, 80C18 (Ch 1)	TEKPHW:CH1:LONG? “OPTWAVEL”,3 TEKPHW:CH1:DOUBLE? “OPTSCALE”,3	1550	125
80C18 only (Ch 2)	TEKPHW:CH1:DOUBLE? “OPTSCALE”,7 TEKPHW:CH1:DOUBLE? “OPTSCALE”,7	1550	125

To restore the user wavelength factory default values

1. Power down the instrument and insert the optical module into the upper left (CH1/CH2) or right (CH3/CH4) large slot. Use the appropriate channel number for the lower channel in the slot when sending commands to a module.
2. Power up the instrument and wait for the oscilloscope application to become active.
3. Use the table below to send the applicable commands to the instrument.
4. After all commands for all applicable modules have been sent to the instrument, send the command `TEKPHW:CH1:EEPROMUPDT` to the instrument. Wait at least 30 seconds before performing any other instrument command or operation (including powering off the instrument)

Table 7: Commands to restore optical module factory default values

Module	Command
80C01	`TEKPHW:CH1:LONG “OPTWAVEL”,2,1000` `TEKPHW:CH1:DOUBLE “OPTSCALE”,2,18`
80C02	`TEKPHW:CH1:LONG “OPTWAVEL”,2,1000` `TEKPHW:CH1:DOUBLE “OPTSCALE”,2,18`
80C07B	`TEKPHW:CH1:LONG “OPTWAVEL”,4,1550` `TEKPHW:CH1:DOUBLE “OPTSCALE”,4,780`
80C08C	`TEKPHW:CH1:LONG “OPTWAVEL”,4,1550` `TEKPHW:CH1:DOUBLE “OPTSCALE”,4,315`
80C08D	`TEKPHW:CH1:LONG “OPTWAVEL”,3,1550` `TEKPHW:CH1:DOUBLE “OPTSCALE”,3,315`
80C10/B/C, 80C25GBE	`TEKPHW:CH1:LONG “OPTWAVEL”,1,1550` `TEKPHW:CH1:DOUBLE? “OPTSCALE”,1,15`
	`TEKPHW:CH1:LONG “OPTWAVEL”,3,1310` `TEKPHW:CH1:DOUBLE? “OPTSCALE”,3,10`
80C10C	`TEKPHW:CH1:LONG “OPTWAVEL”,1,1550` `TEKPHW:CH1:DOUBLE? “OPTSCALE”,1,15`
	`TEKPHW:CH1:LONG “OPTWAVEL”,3,1310` `TEKPHW:CH1:DOUBLE? “OPTSCALE”,3,12`
80C11/B	`TEKPHW:CH1:LONG “OPTWAVEL”,2,1550` `TEKPHW:CH1:DOUBLE “OPTSCALE”,2,30`
80C12	`TEKPHW:CH1:LONG “OPTWAVEL”,3,1550` `TEKPHW:CH1:DOUBLE “OPTSCALE”,3,315`
80C12B, 80C14	`TEKPHW:CH1:LONG “OPTWAVEL”,3,1550` `TEKPHW:CH1:DOUBLE “OPTSCALE”,3,425`
80C15	`TEKPHW:CH1:LONG “OPTWAVEL”,3,1550` `TEKPHW:CH1:DOUBLE “OPTSCALE”,3,22`

Table 7: Commands to restore optical module factory default values (cont.)

Module	Command
80C17, 80C18 (Ch 1)	`TEKPHW:CH1:LONG “OPTWAVEL”,3,1550` `TEKPHW:CH1:DOUBLE “OPTSCALE”,3,125`
80C18 only (Ch 2)	`TEKPHW:CH1:LONG “OPTWAVEL”,7,1550` `TEKPHW:CH1:DOUBLE “OPTSCALE”,7,125`

How to clear or sanitize a nonfunctional module

All modules except 80A06, 80N01, or 80X00

To clear or sanitize a nonfunctional module, remove and destroy the M24C64 8kB EEPROM or X24C16 2 KB EEPROM. The module can then be sent to a Tektronix Service Center for repair and recalibration.

80A06, 80N01, and 80X00 modules

The 80A06, 80N01, and 80X00 modules do not contain any user data. Send the module to a Tektronix Service Center for repair and calibration.

How to clear or sanitize unlisted modules

Contact Tektronix Customer Support (www.tek.com) for help on clearing or sanitizing a supported DSA8300 sampling module that is not covered in this document.

Hardware replacement charges

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

Change log

Document part number	Revision date	Change description
077-0576-00	20110727	First release. Covers just the main DSA8300 instrument.
077-0576-00 Revision A	20111114	Updated to verify/add information for new modules.
077-0576-01 Revision A	20120828	Updated to verify/add information for new modules. Roll part number.
077-0576-02	20121219	Updated to verify/add information for new modules (80C15, 80X00). Roll part number to -02.
077-0576-03	20170420	Updated to add information for new modules (80C17, 80C18). Roll part number to —03.