

**AWG5000B and AWG7000B Series  
Declassification and Security  
Instructions**

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# Preface

This document helps customers with data security concerns to sanitize or remove memory devices from the AWG5000B and AWG7000B Series Arbitrary Waveform Generators.

These products have data storage (memory) devices and data output devices (USB ports). 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:

- AWG5002B, AWG5004B, AWG5012B, and AWG5014B
- AWG7061B, AWG7062B, AWG7121B, and AWG7122B

**Related Documents**

- *AWG5000B and AWG7000B Series Arbitrary Waveform Generators Quick Start User Manual*, Tektronix part number 071-2481-XX, available on the Tektronix Web site at [www.tektronix.com/manuals](http://www.tektronix.com/manuals)
- *AWG5000B Series Arbitrary Waveform Generators Service Manual*, Tektronix part number 071-2488-XX, available on the Tektronix Web site at [www.tektronix.com/manuals](http://www.tektronix.com/manuals)
- *AWG7000B Series Arbitrary Waveform Generators Service Manual*, Tektronix part number 071-2489-XX, available on the Tektronix Web site at [www.tektronix.com/manuals](http://www.tektronix.com/manuals)
- *AWG5000B and AWG7000B Series Hard Disk Assembly Installation Instructions*, Tektronix part number 075-0970-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.
- **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**

Type and minimum size	Function	User modifiable	Data input method	Location	To clear	To sanitize
DDR2 SDRAM 128 M x 64 bits	Microprocessor system memory	Yes	Written by processor system	Micro-ATX board	Remove the power source from the instrument for at least 20 seconds.	Remove the power source from the instrument for at least 20 seconds.
Pipelined SRAM 2 M x 36 bits	Waveform memory for holding waveforms to generate	Yes	Written by processor system	AWG1G board (AWG5000B series)	Remove the power source from the instrument for at least 20 seconds.	Remove the power source from the instrument for at least 20 seconds.
Pipelined SRAM 1 M x 72 bits	Waveform memory for holding waveforms to generate	Yes	Written by processor system	AWG12G board (AWG7000B series)	Remove the power source from the instrument for at least 20 seconds.	Remove the 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
Removable hard drive	Holds all user-storable data (waveforms and instrument settings)	Yes	Windows UI and AWG UI	Rear panel	(See page 5, <i>Removable Hard Drive</i> .)	Remove the hard drive and store it in a secure area or destroy it. When it is removed, no user data remains in the instrument. (See page 5, <i>Removable Hard Drive</i> .)
EEPROM 64 K	Model configurations and calibration data	No	Not accessible	MIO board	Not applicable	Not applicable
Flash 128 K x 8 bits	Video BIOS for the LCD display	No	Not accessible	MIO board	Not applicable	Not applicable
EEPROM 4 K	MAC address for TekLink	No	Not accessible	MIO board	Not applicable	Not applicable. (See page 4, <i>To Disable TekLink Using the Windows Device Manager</i> .)
EEPROM 4 K	PCI Bus configurations	No	Not accessible	MIO board	Not applicable	Not applicable
EEPROM 64 K	Contains count for actuation of relays	No	Not accessible	OUT1G board (AWG5000B series)	Not applicable	Not applicable

**Table 2: Nonvolatile memory devices (cont.)**

Type and minimum size	Function	User modifiable	Data input method	Location	To clear	To sanitize
EEPROM 64 K	Contains count for actuation of relays	No	Not accessible	OUT10G board (AWG7000B series)	Not applicable	Not applicable
EEPROM 64 K	Model configurations and calibration data	No	Not accessible	AWG12G board (AWG7000B series)	Not applicable	Not applicable

## 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 minimum size	Function	User modifiable <sup>1</sup>	Data input method	Location	To disable
USB host port	Supports removable USB flash drive. User storage of instrument setups and exported waveform data.	Yes	Save	USB host ports on front and rear of instrument	Files can be deleted or overwritten on the instrument or a PC; USB flash drive can be removed and destroyed.  The USB ports can be disabled. (See page 3, <i>Disabling USB and CD-RW Capability.</i> )
CD-RW, DVD-ROM drive	Store and transport data	Yes	Read and write	Drive on front of instrument	Drive can be disabled. (See page 3, <i>Disabling USB and CD-RW Capability.</i> )
LAN Ethernet	Transfer data	Yes	Read, write, and controls programs	Ethernet port on rear of instrument	Ethernet port can be disabled. (See page 4, <i>To Disable LAN Ethernet Connectivity Using the BIOS.</i> )
GPIB	Remote control of instrumentation systems	Yes	Read, write, and controls programs	GPIB port on rear of instrument	The GPIB can be disabled. (See page 4, <i>To Disable GPIB Using the Windows Device Manager.</i> )
TekLink	Remote control of instrumentation systems	Yes	Read, write, and controls programs	TekLink port on rear panel	TekLink can be disabled. (See page 4, <i>To Disable TekLink Using the Windows Device Manager.</i> )

<sup>1</sup> During normal instrument operation.



## Disabling USB and CD-RW Capability

The following instructions give a method to disable the built-in USB and CD-RW capability. Using the Windows Device Manager disables the devices for Windows programs. This procedure disables both USB and the CD-RW to prevent their use.

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**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.*

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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. From the Windows Start menu, select Control Panel, and then select System.
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.

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**NOTE.** *It is critical to leave the USB Root Hub operating, otherwise, the front panel will not function. If the front panel does not function, the AWG application will not run.*

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



**WARNING.** *When you modify the BIOS configuration, be sure to follow the instructions exactly. If you make additional changes, you could disable the instrument.*

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### 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. From the Windows Start menu, select Control Panel, and then select System.
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. From the Windows Start menu, select Control Panel, and then select System.
4. Select the Hardware tab.
5. Click Device Manager.
6. Expand the device category National Instruments GPIB Interfaces.
7. Right click on PCI-GPIB.
8. Select Disable from the list.

## Removable Hard Drive

**To Remove the Hard Drive.** To remove the hard disk drive assembly, see the instrument user online help (AWG Reference > Removable Hard Disk). You can also refer to the *AWG5000B and AWG7000B Series HDD Installation Instructions*, Tektronix part number 075-0970-XX.

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.

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**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.*

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After the hard drive has been scrubbed, the operating system and instrument software can be reinstalled.

Scrubbing the hard drive will not affect calibration of the instrument, since the factory calibration constants are stored on the MIO board, entirely separate from any waveform data or setup 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

To secure the instrument setups or waveform data, you must remove the hard disk drive and store it in a safe place. (See Table 2.) Additional removable hard drives (Tektronix part number 065-0811-XX) can be purchased from Tektronix.

If the hard drive has been removed and a new hard drive is installed, you need to install the operating system and instrument application software. Refer to the following information on how to install the software:

- AWG5000B and AWG7000B Series Quick Start User Manual for restoring the Windows XP Operating System
- Product Software CD Instructions for the AWG5000B and AWG7000B series instruments

# Troubleshooting

## How to Clear or Sanitize a Non-Functional Instrument

If your instrument is not functioning, proceed as follows. Refer to your organization's policies regarding storage or disposal of any removed items.

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

**Hard Disk Drive** Remove the hard disk drive before returning the instrument to Tektronix for repair.

**CD-RW/DVD ROM Drive** Remove all CDs and DVDs. If it is not possible to remove the disk, you might need to remove the disk drive. Refer to your instrument service manual for instructions.

**USB Flash Drive** Remove any attached USB flash drive from the instrument before returning the instrument for repair.

## How to Recover from Clearing or Removing the Instrument's Memory

If the hard drive has been removed and a new hard drive is installed, you need to install the operating system and instrument application software.