

**AWG70000B Series
Arbitrary Waveform Generators
Declassification and Security
Instructions**

www.tektronix.com


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Table of Contents

Preface iii

Clear and Sanitize Procedures..... 1

 Memory devices 1

 Media storage and data export devices 6

Preface

This document helps customers with data security concerns to sanitize or remove memory devices from the Tektronix AWG70000B Series Arbitrary Waveform Generators.

All of these products have data storage (memory) devices and data output devices (USB ports and a LAN Ethernet connector). These instructions tell how to do the following:

- Clear or sanitize the memory devices.
- Clear or sanitize 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:

- AWG70001B
- AWG70002B

Related documents You can read more about your instrument in the following documents. These are available online at www.tektronix.com/downloads.

- *AWG70000B Series Arbitrary Waveform Generators Installation and Safety Instructions.*
- *AWG70001B and AWG70002B Arbitrary Waveform Generators and AWGSYNC01 Synchronization Hub Specifications and Performance Verification Technical Reference.*

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 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 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.

Clear and Sanitize Procedures

Memory devices

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

Type and min. size	Function	Type of info stored (system/user)	Backed up by battery?	Method of modification	Data input method	Location	User accessible?	To clear/sanitize
SDRAM 16 GB (std)	PC system memory	Both	No	Directly	Written by processor system	Slot-PC board	Yes	Remove the power source from the instrument for at least 20 seconds.
SDRAM 8 Gbit ¹	AWG playback memory	User	No	Indirectly	Firmware operations	AWG board	No	Remove the power source from the instrument for at least 20 seconds.
SRAM 64k x 16	USBTMC buffer	Both	No	Indirectly	Firmware operations	System board	No	Remove the power source from the instrument for at least 20 seconds.

¹ 8 G for each AWG board. Each instrument contains two AWG boards.

Table 2: Nonvolatile memory devices

Type and min. size	Function	Type of user info stored	Method of modification	Data input method	Location	User accessible	To clear/sanitize
Flash, 512 Mbit	FPGA Image, Calibration Constants	None	Indirect	Firmware operations	AWG board	No	N/A ¹
Flash, 512 Mbit	FPGA Image, Instrument Model & Serial Number, Enabled Options	None	Indirect	Firmware operations	System board	No	N/A ¹
EEPROM 1 Mbit	USBTMC profile	None	Indirect	None	System board	No	N/A ¹
EEPROM 64 kbit	Calibration Constants	None	Indirect	Firmware operations	Clock board	No	N/A ¹
EEPROM 64 kbit	Calibration Constants	None	Indirect	Firmware operations	Marker board	No	N/A ¹
Flash 128 Mbit	Calibration Constants	None	Indirect	Firmware operations	AC board (option AC)	No	N/A ¹

Table 2: Nonvolatile memory devices (cont.)

Type and min. size	Function	Type of user info stored	Method of modification	Data input method	Location	User accessible	To clear/sanitize
EEPROM 5 bit	Front and rear USB port enable/disable states	USB port state	Direct	Firmware operations	System board	Yes, with Windows administrator privileges	Follow "Enabling/Disabling USB Ports" procedure to enable all ports (factory default state)
Removable Hard Drive	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	Front panel	Yes	To clear, see footnote ² To sanitize, see footnote ³

¹ This device does not contain user data or settings. Clearing would disable instrument functionality.

² To clear, erase the hard drive with commercial erasure software. To restore the instrument to operating condition, reinstall Microsoft Windows and then reinstall the instrument software.

³ To sanitize, remove the hard drive. Store the removed hard drive in a secure area or destroy it.

Clear or sanitize instrument

Use this procedure to clear the AWG waveform cache and last setup cache from your instrument. This procedure does not erase or change factory calibration constants.

1. In the toolbar, click the Reset to default setup button.
2. Close the AWG application.
3. Open the AWG application.

Restoring instrument operating system and AWG product software

You can restore the instrument's Windows Operating System directly from the instrument. The instrument does not ship with an operating system restore disc.

To restore or update the AWG product software, you need to download the current version from the Tektronix website.

NOTE. *Restoring the operating system reformats the hard disk drive. The product software and all user data will be lost. (The Acronis Recovery partition and the related data are not destroyed.)*

Restoring or updating the AWG product software does not require that you restore the Windows operating system.

Operating system restore. Use the Internal recovery utility to restore the Windows Operating System. This method restores the Windows Operating System using the Acronis Startup Recovery Manager. The Acronis software reinstalls the operating system using restore images preinstalled on the hard drive.

This method retains the restore images, providing the ability to repeat the restore process. Factory calibration constants are not affected.

1. Attach the keyboard to the instrument.
2. Restart the instrument. During the boot-up process you will see the following message at the top of the screen:
`Starting Acronis Loader... press F5 for Acronis Startup Recovery Manager`
3. Repeatedly press the F5 key until the Acronis True Image Tool opens. There is a 15-second time period from when the message appears until the instrument proceeds with the normal instrument startup. If the instrument does not open the Acronis application, power off the instrument, then power on the instrument and try again.

4. Within the Acronis TrueImage window, click Restore.
5. In the Confirmation dialog box, click Yes to restore the instrument operating system, or No to exit the restore process.

AWG product software installation. Download the AWG70000 Series product software installation package.

1. Install the AWG70000 Series product software following all on-screen prompts.
2. Install the TekVISA Connectivity software, following all on-screen prompts.

Media storage and data export devices

The following table lists the media storage and data export devices in the instrument and listed options. Detailed procedures to disable these devices, if any, are shown following the table.

Table 3: Media and data export devices

Type	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	User writable	USB host port on front and rear of instrument	Follow the procedure "Enabling/Disabling USB Host Ports". Front and rear ports can be enabled/disabled independently.
USB device port	Supports remote control and data transfer to a PC	Directly	Remote control via USBTMC and/or GPIB	Rear panel	The USB device port cannot be disabled.
LAN Ethernet connector	Supports remote control and data transfer to PC.	Directly	N/A	Rear panel	N/A

Enabling or disabling USB capability (front and rear, independently)

Use this procedure to disable USB ports on the instrument. This procedure does not erase or change factory calibration constants.

1. Close the AWG application.
2. Log out of Windows.
3. Log into Windows as an Administrator.
4. When the AWG application loads, click the Utilities tab.
5. Click the Preferences button.
6. To disable the front or rear USB ports, click the "Disable ports" check box corresponding to the ports you wish to disable.
7. To enable the front or rear USB ports, clear the "Disable ports" check box corresponding to the ports you wish to enable.
8. If desired, close the AWG application, log out of Windows, and log back in as a non-administrator.