**AWG5200 Series**
**Arbitrary Waveform Generators**
**Declassification and Security**

**Instructions**

**Tektronix**

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AWG5200 Series Declassification and Security Instructions

# Preface

This document helps customers with data security concerns to sanitize or remove memory devices from the Tektronix AWG5200 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:

- AWG5202

- AWG5204

- AWG5208

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

- *AWG5200 Series Arbitrary Waveform Generators Installation and Safety Instructions.*

- *AWG5200 Arbitrary Waveform Generators 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 ≥4 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 4 Gbit | 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. |

## 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, 1 Gbit | 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] |
| Flash, 1 Gbit | Calibration Constants | None | Indirect | Firmware operations | Marker board | 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 |
|---|---|---|---|---|---|---|---|
| Flash, 1 Gbit | Calibration Constants | None | Indirect | Firmware operations | Output / DAC board | No | N/A [1] |
| 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] <br> To sanitize, see footnote [3] |

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

[2] To clear, reformat the hard drive using the procedure "Restore the OS and AWG application" in this document.

[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.

**Clear or sanitize a non-functional instrument**

If your instrument is not functioning, proceed as follows.

1.  Remove the hard disk drive before returning the instrument for repair.

2.  Remove any attached USB flash drive before returning the instrument for repair.

Refer to your organization's policies regarding storage or disposal of any removed items.

**Restore the OS and AWG application**

Use this procedure to restore the operating system and the AWG application on your instrument to the original factory condition. This procedure does not erase or change factory calibration constants.

*NOTE. This utility reformats the hard disk drive during the restore process. All user data will be removed. (The Acronis Recovery partition and the related data are not destroyed.)*

*The restore images remain, providing the ability to repeat the recovery process.*

*The Windows operating system provided is designed for this instrument's hardware and product software.*

1.  Attach a keyboard to the instrument.

2.  Power on 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 begin the restore the process, or No to exit.

6. When finished, the AWG product software is the version shipped with your instrument. All upgrades or applications installed after your purchase will have to be reinstalled.

## 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 | The USB host ports cannot be disabled. |
| 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 |