Tektronix®

AFG31000 Series Arbitrary Function Generator

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 Tektronix AFG31000 Series Arbitrary Function Generator.

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

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

Charges

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

Terms used in this document

The following terms are used when filling out the tables of volatile and nonvolatile memory devices for your instrument.

Describe the types of data:

- **User data:** Describes the information, such as waveforms or measurement data that are stored in the device.
- **User settings**: Describes the information, that you can change that is stored in the instrument.
- **Both**: Use this term when you are discussing user data and user settings that are stored.
- **None**: Use this term if you are not storing any information.

Describe how you modify the data:

- **Directly**: You can modify the data.
- **Indirectly**: The instrument modifies the data.

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.
- **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.** 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.

Products

The Tektronix AFG31000 Series Arbitrary Function Generator is covered by this document.

List of products within the AFG31000 Series Arbitrary Function Generator

- AFG31021
- AFG31022, AFG31022GSA
- AFG31051
- AFG31052, AFG31052GSA
- AFG31101
- AFG31102, AFG31102GSA
- AFG31151
- AFG31152, AFG31152GSA
- AFG31251
- AFG31252, AFG31252GSA

Clear or sanitize a non-functional instrument

Clear or sanitize a non-functional instrument

To erase confidential data from the instrument, do the following:

1. Turn on the instrument and select **Utility**.
2. Select **System.**
3. Select **Factory Default/Reset.**
4. In the warning message that appears, select **OK**. A wait cursor appears and it takes several minutes to complete the operation.
5. When the operation completes, the nonfunctional instrument is erased.

Refer to your company's internal policies regarding handling or disposal of the instrument. When returning 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.

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.

Built-in security features

The AFG31000 Series Arbitrary Function Generator is equipped with a built-in security feature.

Security feature functionality

To erase confidential data from the instrument, do the following:

1. Turn on the instrument and select **Utility**.
2. Select **System**.
3. Select **Factory Default Reset**.
4. In the warning message that appears, select **OK**.

This feature completes the following:

- There is one file in the flash memory that stores all user settings files and saved waveforms.
- When you select the Factory Default Reset, all of this data is erased.

Memory devices

Volatile memory devices

Type and minimum size	Function	Type of user info stored	Backed up by battery?	Method of modification	Data Input method	Location	User accessible	To clear	To sanitize
SDRAM 1Gbit	cache	User data	No	Indirectly	Firmware operations	CPU board U3310,U3302	No	Remove power from the instrument for at least 1 second.	Remove power from the instrument for at least second.
FPGA 74K bits SRAM	cache	User data	No	Indirectly	Firmware operations	CPU board U1401	No	Remove power from the instrument for at least 1 second.	Remove power from the instrument for at least second.
Microcontroller 8K BYTES SRAM	cache	User data	No	Indirectly	Firmware operations	FP board U1	No	Remove power from the instrument for at least 1 second.	Remove power from the instrument for at least second.
FPGA 16020K bits SRAM	cache	User data	No	Indirectly	Firmware operations	SG board U2001 U2002	No	Remove power from the instrument for at least 1 second.	Remove power from the instrument for at least second.
DDR 256M BYTES SRAM	cache	User data	No	Indirectly	Firmware operations	SG board U2401 U2501 U2602 U31 U32 U33	No	Remove power from the instrument for at least 1 second.	Remove power from the instrument for at least second.

Nonvolative memory devices

Nonvolatile memory devices

Type and minimum size	Function	Type of user info stored	Method of modification	Data Input method	Location	User accessible
Microcontroller 32 KB on chip flash memory	Front panel firmware	None	Indirectly	Firmware operations	Front panel board U1	No
FPGA 80 KB on chip flash memory	FPGA binary code	None	Indirectly	Firmware operations	CPU board U1401	No
EMMC 4 GB	CPU board FW, APP, HW license key, User data	Waveform, data.	Directly	Firmware operations, write, copy, read from front panel USB port	CPU board U3401	yes

Clear user memory

Nonvolatile clear procedures

1. Turn on the instrument and select **Utility**.
2. Select **System**.
3. Select **Factory Default Reset**.
4. In the warning message that appears, select **OK**.
5. Wait a minimum of eight minutes.

NOTE: This procedure does not erase or change factory calibration constants.

Recover from nonvolatile clear or sanitize

1. Select **Default** (this is a key in Setup).
2. Select **OK.**
3. Wait for several seconds to recover to the default settings.

NOTE: This procedure does not erase or change factory calibration constants.

Media and data export devices

Type	Function	Method of modification	Data input method	Location	User accessible	Process to disable.
Ethernet connector	Transfer data	directly	Remote control	Rear panel.		Unable to disabled
USB	Transfer data	directly		Front/rear panel		Unable to disabled