FCA3000, FCA3100 Series Timer/Counter/Analyzers, MCA3000 Series Microwave Counter/Analyzers Declassification and Security

Instructions

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- 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 FCA3000, FCA3100, and MCA3000 Series instruments.

These products have data storage (memory) devices and data export devices (USB port and GPIB connector). These instructions describe how to clear or sanitize the memory devices and disable the data output devices. The instructions also describe 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:

- FCA3000, FCA3003, and FCA3020
- FCA3100, FCA3103, and FCA3120
- MCA3027 and MCA3040

Terms

This document may use the following terms:

- **Clear.** This eradicates 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. A device that stores or exports data from the instrument, such as a USB flash drive or USB port.
- **Sanitize.** This removes the data from media/memory so that the data cannot be recovered using any known technology. This is typically used when the device is moved (temporarily or permanently) from a secured area to a nonsecured area.
- **Scrub.** This is equivalent to sanitize.
- **User-Accessible.** The user can directly retrieve the memory device contents.
- **User-Modifiable.** The memory device can be written to by the user during normal instrument operation, using the instrument user 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.
- **Power off.** Some instruments have a “Standby” mode, in which power is still supplied to the instrument. For clearing data, putting the instrument in Standby mode does not qualify as powering off. For these products, you must either push a rear-panel OFF switch or remove the power source from the instrument.
- **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.

Clear and Sanitize Procedures

Memory Devices

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

Terminology

The tables in this section use the following terms:

- User data – Describes the type of information stored in the device. Refers to waveforms or other measurement information 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 or 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 modifies the data and that the user cannot modify the data.

Table 1: 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
SRAM, 16 kB (All models)	Processor memory	None (working processor memory)	No	Indirect	System resources	Main board	No	Remove power from the instrument for at least 30 seconds	Remove power from the instrument for at least 30 seconds
SRAM, 32 MB (All FCA3000, MCA3000 Series)	Firmware run time storage, User settings, Measurement buffers	User data, user settings	No	Indirect	System resources	Main board	No	Remove power from the instrument for at least 30 seconds	Remove power from the instrument for at least 30 seconds
SRAM,128 MB (All FCA3100 Series)	Firmware run time storage, User settings, Measurement buffers	User data, user settings	No	Indirect	System resources	Main board	No	Remove power from the instrument for at least 30 seconds	Remove power from the instrument for at least 30 seconds

Table 2: Nonvolatile memory devices

Type and minimum size	Function	Type of user info stored	Method of modification	Data input method	Location	User accessible	To clear	To sanitize
NVRAM, Flash, 8 MB (All models)	Firmware storage, user data, and user settings	User data (explicitly stored by user), User settings	Direct	Loading a Main board configuration file or by using the user interface	Main board	Yes	Use the Total Reset function to clear NVRAM [1]	Remove the Main board from the instrument and destroy using the organizations' security procedures.

[1] The Total Reset function writes 0xFF to all flash sectors that hold stored user data (saved measurement data).

The Total Reset function also resets flash sectors that hold current instrument settings (including power-on settings, but excluding instrument configuration settings) to their default (factory reset) settings. However, due to internal sector organization of the flash memory, and depending on the size of the setting data, settings may be stored in two flash sectors. Parts of previous setting data might exist in a flash sector with the current setting data. The Total Reset function sets the current settings storage memory to the default settings, but previous configuration settings data can persist in the noncurrent-settings locations within memory sectors.

Media and Data Export Devices

The following table lists the data export devices in the instrument.

Table 3: Media and data export devices

Type and minimum size	Function	Method of modification	Data input method	Location	User accessible	To disable
USB connector	Transfer data	Directly	System resources	Main board, connector at rear of instrument	Yes	Remove all connected USB devices, remove the USB cable
GPIB connector	Transfer data	Directly	System resources	Main board, connector at rear of instrument	Yes	Remove all connected GPIB devices, remove the GPIB cable

Troubleshooting

How to Clear or Sanitize a Nonfunctional Instrument

If your instrument is not functioning, remove and destroy the instrument Main board using your organizations' security procedures. Return the product to Tektronix. The instrument will then be repaired and adjusted as necessary.

In North America, contact the Tektronix Customer Care Center (1-800-833-9200) for assistance with removing the main board and returning the instrument to a repair center. Worldwide, visit www.tektronix.com to find contacts in your area.

Charges Replacement of any missing hardware is charged according to the rate at the time of replacement.