Trueform Arbitrary Waveform Generator

FG33530 Series

FG33531A
FG33532A

This document describes instrument security features and the steps to declassify an instrument through memory clearing, sanitization, or removal.

KEYSIGHT

SECURITY GUIDE

Notices

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A CAUTION notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in damage to the product or loss of important data. Do not proceed beyond a CAUTION notice until the indicated conditions are fully understood and met.

WARNING

A WARNING notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in personal injury or death. Do not proceed beyond a WARNING notice until the indicated conditions are fully understood and met.

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1 Getting Started

This document describes instrument security features and the steps to declassify an instrument through memory clearing, sanitization, or removal.

Warranty

This Keysight Technologies product is warranted against defects in material and workmanship for a period of three years from the date of shipment. During the warranty period, Keysight Technologies will, at its option, either repair or replace products that prove to be defective. For warranty service or repair, this product must be returned to a service facility designated by Keysight Technologies. Buyer shall prepay shipping charges to Keysight Technologies, and Keysight Technologies shall pay shipping charges to return the product to Buyer. For products returned to Keysight Technologies from another country, Buyer shall pay all shipping charges, duties, and taxes.

Where to Find the Latest Information

Documentation is updated periodically. For the latest information about these products, including instrument software upgrades, application information, and product information, see the following URLs:

http://www.keysight.com/find/FG33530

To receive the latest updates by email, subscribe to Keysight Email Updates:

http://www.keysight.com/find/MyKeysight

Information on preventing instrument damage can be found at:

http://www.keysight.com/find/PreventingInstrumentRepair

Is Your Product Software Up-to-Date?

Periodically, Keysight releases software updates to fix known defects and incorporate product enhancements. To search for software updates for your product, go to the Keysight Technical Support website at:

http://www.keysight.com/find/FG33530

Contacting Keysight Sales and Service Offices

Assistance with test and measurement needs, and information on finding a local Keysight office, is available on the Internet at:

http://www.keysight.com/find/assist

If you do not have access to the Internet, please contact your field engineer.

NOTE **In any correspondence or telephone conversation, refer to the instrument by its model number and full serial number. With this information, the Keysight representative can determine whether your unit is still within its warranty period.**

Products Covered by this Document

Product family name	Product name	Model numbers
Arbitrary Waveform Generator	100 MHz Arbitrary Waveform Generator	FG33531A FG33532A

Document purpose

This document describes instrument security features and the steps to declassify an instrument through memory clearing, sanitization, or removal.

For additional information, go to:

http://www.keysight.com/find/security

NOTE Ensure that all information stored by the user in the instrument that needs to be saved is properly backed up before attempting to clear any of the instrument memory. Keysight Technologies cannot be held responsible for any lost files or data resulting from the clearing of memory. Be sure to read this document entirely before proceeding with any file deletion or memory clearing.

Security Terms and Definitions

Term	Definition
Clearing	As defined in Section 8-301a of DoD 5220.22-M, clearing is the process of eradicating the data on media before reusing the media so that the data can no longer be retrieved using the standard interfaces on the instrument. Clearing is typically used when the instrument is to remain in an environment with an acceptable level of protection.
Instrument Declassification	A term that refers to procedures that must be undertaken before an instrument can be removed from a secure environment, such as in the case when the instrument is returned for calibration. Declassification procedures include memory sanitization or memory removal, or both. Keysight declassification procedures are designed to meet the requirements specified in DoD 5220.22-M, Chapter 8.
Sanitization	As defined in Section 8-301b of DoD 5220.22-M, sanitization is the process of removing or eradicating stored data so that the data cannot be recovered using any known technology. Instrument sanitization is typically required when an instrument is moved from a secure to a non-secure environment, such as when it is returned to the factory for calibration. Keysight memory sanitization procedures are designed for customers who need to meet the requirements specified by the US Defense Security Service (DSS). These requirements are specified in the "Clearing and Sanitization Matrix" in Section 5.2.5.5.5 of the ISFO Process Manual.
Secure Erase	Secure Erase is a term that is used to refer to either the clearing or sanitization features of Keysight instruments.

Instrument Memory

This section contains information on the types of memory available in your instrument. It explains the size of memory, how it is used, its location, volatility, and the sanitization procedure.

Table 1-1 Summary of instrument memory

Memory type and size	Writable during normal operation?	Data retained when powered off?	Purpose/Contents	Data input method	Location in instrument and remarks	Sanitization procedure
Internal flash memory (NOR Flash) 16 MBytes	No	Yes	Used to store firmware image	Factory install/ Firmware upgrade	Front panel	Not applicable, contains no application-specific information.
Front panel microcontroller (ROM) 32 kBytes	No	Yes	Used to store front panel microcontroller execution code storage	Factory install/ Firmware upgrade	Front panel	Not applicable, contains no application-specific information.
Front panel microcontroller memory (RAM) 4 kBytes	Yes	No	Used to store front panel microcontroller temporary execution data	Microprocess or execution code/data	Front panel	Power cycle
Main microcontroller memory (ROM) 128 kBytes	No	Yes	Used to store main microcontroller execution code	Factory install/ Firmware upgrade	Front panel	Not applicable, contains no application-specific information.

Table 1-1 Summary of instrument memory (continued)

Memory type and size	Writable during normal operation?	Data retained when powered off?	Purpose/Contents	Data input method	Location in instrument and remarks	Sanitization procedure
Main microcontroller memory (RAM) 1 MBytes	Yes	No	Used to store main microcontroller temporary execution data	Microprocessor execution code/data	Front panel	Power cycle
Internal RAM memory (SDRAM) 32 MBytes	Yes	No	Used to store temporary execution data	Microprocessor execution code/data	Front panel	Power cycle
Instrument identification and calibration data memory (EEPROM) 460 Bytes	Yes	Yes	Used to store serial number, MAC address, versions, calibration constants and calibration information.	Factory or service and user calibration	Front panel	Not applicable, contains no application-specific information.
Instrument state and setting memory (EEPROM) 43 kBytes	Yes	Yes	Used to store user data, IO configuration, instrument configuration and instrument state information.	User-saved data	Front panel	See Table 1-2.
FPGA memory (RAM) 4 GBytes	Yes	No	Used to store waveform data points.	Microprocessor execution data	Front panel	Not applicable, contains no application-specific information.

Summary of Memory Declassification Procedures

This section explains how to clear, sanitize, and remove memory from your instrument, for all classes of memory that are writable during normal operation.

NOTE

- Before you begin any memory clearing or sanitization procedures, be sure to record all the critical information (store and recall the instrument setting and record the IP address of the instrument). This information is essential for successful restoration of the instrument's operating system.
- Read this entire document before using any sanitization procedure. Failure to do so may necessitate returning the instrument to an Authorized Keysight Service Center for firmware downloads and recalibration.

Table 1-2 EEPROM

Description and purpose	This is the user's partition of the instrument's internal storage that uses a EEPROM device. Storage includes user data, IO configuration, instrument configuration, and instrument state information.
Size	43 kBytes
Memory clearing	Not applicable
Memory sanitization	Not applicable
Memory removal	This memory cannot be removed without damaging the instrument. The user may remove the front panel assembly on which the memory chip resides.
Memory validation	Not applicable

Procedure for Declassifying a Faulty Instrument

If the instrument is not able to power on, the user information cannot be cleared using the front panel or the remote interface. The only choice in this situation is to take manual steps to remove any user information that may be present.

References

1. DoD 5220.22-M, “National Industrial Security Program Operating Manual (NISPOM)” United States Department of Defense. Revised February 28, 2006.

   May be downloaded in Acrobat (PDF) format from:
   http://www.dss.mil/isp/fac_clear/download_nispom.html

2. ISFO Process Manual for the Certification and Accreditation of Classified Systems under the NISPOM Defense Security Service.

   DSS-cleared industries may request a copy of this document via email, by following the instructions at:
   http://www.dss.mil/isp/odaa/request.html

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