Security Features

Agilent Technologies
Signal Generators

This guide applies to the following Agilent Technologies PSG signal generator models:

E8241A
E8244A
E8251A
E8254A

Agilent Technologies

Manufacturing Part Number: E8251-90318
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Using Security Functions

This document describes how to use the signal generator's security functions to protect and remove classified, proprietary information stored or displayed in the instrument.

The information in this document is presented with the assumption that you are familiar with the basic operation of the signal generator and are able to remotely program the instrument. If not, refer to the instrument's product documentation.

Understanding Memory Types

The signal generator has several memory types, each used for storing a specific type of data. Before removing sensitive data, it is important to understand how each memory type is used. Refer to Table 1.

Security Summary

Send these commands to clear PSG memory. Memory cannot be recovered after the following commands are executed:

```
OUTPUT 719;"SYST:SEC:COUN 1" !Set # of erase to 1.

OUTPUT 719;"SYST:SEC:ON" !Set security erase on.

OUTPUT 719;"SYST:SEC:OFF" !Start erase.

OUTPUT 719;"*RST" !Preset instrument.
```

If the memory erase fails, replace the A18 CPU (p/n E8251-60006).

Level of Memory Security - Erase

This procedure removes all user files and user information so that they are not accessible through the instrument interface. This action will remove only the file references and clear all table editors without sanitizing the memory.

Table 1 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
Main Memory (SDRAM) 64 MB	Yes	No	firmware operating memory	operating system (not user)	CPU board
Main Memory (Flash) 20 MB	Yes	Yes	factory calibration/configuration data user file system, which includes flatness calibration, IQ calibration, instrument states, waveforms (including header and marker data), modulation definitions, and sweep lists	firmware upgrades and user-saved data	CPU board (same chip as firmware memory, but managed separately) User data is not stored in this memory if hard disk (Option 005) is installed. Because this 32-MB memory chip contains 20 MB of user data (described here) and 12 MB of firmware memory, a full-chip erase is not desirable. User data areas are selectively and completely sanitized when you perform the **Erase and Sanitize** function.
Firmware Memory (Flash) 12 MB	No	Yes	main firmware image	factory installed or firmware upgrade	CPU board (same chip as main flash memory, but managed separately) During normal operation, this memory cannot be overwritten. It is only overwritten during the firmware installation or upgrade process. Because this 32-MB memory chip contains 20 MB of user data and 12 MB of firmware memory (described here), a full-chip erase is not desirable. User data areas are selectively and completely sanitized when you perform the **Erase and Sanitize** function.
Battery Backed Memory (SRAM) 512 kB	Yes	Yes	user-editable data (table editors) last instrument state and last instrument state backup	firmware operations	CPU board The battery can be removed to clear the memory, but must be reinstalled for the instrument to operate. The battery is located on the CPU board.
Bootrom Memory (Flash) 128 kB	No	Yes	CPU bootup program and firmware loader/updater	factory programmed	CPU board During normal operation, this memory cannot be overwritten or erased. This read-only data is programmed at the factory.
Calibration Backup Memory (Flash) 512 KB	No	Yes	factory calibration/configuration data backup no user data	factory or service only	motherboard
Boards Memory (Flash) 512 Bytes	No	Yes	factory calibration and information files, code images, and self-test limits no user data	factory or service only	all RF boards and the motherboard
Micro-processor Cache (SRAM) 3 kB	Yes	No	CPU data and instruction cache	memory is managed by CPU, not user	CPU board