# R&S®FS-SNS 18/26/40/55/67/90/110
# Smart Noise Source
# Instrument Security Procedures

1338804302
Version 04

ROHDE&SCHWARZ
Make ideas real

# 1 Overview

Securing important information is crucial in many applications.

Generally, highly secured environments do not allow any test equipment to leave the area unless it can be proven that no user information leaves with the test equipment, e.g. to be calibrated.

"Regarding sanitization, the principal concern is ensuring that data is not unintentionally released" [1].

This document provides a statement regarding the volatility of the memory types used and specifies the steps required to sanitize an instrument.

The procedures in this document follow "NIST Special Publication 800-88: Guidelines for Media Sanitization" [1].

In addition, recommendations are provided to safeguard information on the R&S FS-SNS.

### References

See the following literature for further information.


**[1]** **Kissel Richard L. [et al.]** Guidelines for Media Sanitization = Special Publication (NIST SP) = NIST SP - 800-88 Rev 1. - Gaithersburg : [s.n.], December 17, 2014.

**[2]** **National Industrial Security Program Authorization Office** Defense Security Service (DSS) Assessment and Authorization Process Manual (DAAPM). - May 6, 2019.

**[3]** **ACSC Australian Cyber Security Centre** Australian Government Information Security Manual, January 2020.


# 2 Instrument models covered

| Product name | Order number |
|---|---|
| R&S FS-SNS18 | 1338.8008.18 |
| R&S FS-SNS26 | 1338.8008.26 |
| R&S FS-SNS40 | 1338.8008.40 |
| R&S FS-SNS55 | 1338.8008.55 |
| R&S FS-SNS67 | 1338.8008.67 |
| R&S FS-SNS90 | 1338.8008.90 |
| R&S FS-SNS110 | 1338.8008.11 |

# 3 Security terms and definitions

**Terms defined in Guidelines for Media Sanitization**

" NIST Special Publication 800-88 "[1]

- **"Sanitization"**
  "Media sanitization refers to a process that renders access to target data on the media infeasible for a given level of effort."
- **"Clear"**
  "Clear applies logical techniques to sanitize data in all user-addressable storage locations for protection against simple non-invasive data recovery techniques; typically applied through the standard Read and Write commands to the storage device, such as by rewriting with a new value or using a menu option to reset the device to the factory state (where rewriting is not supported)."
- **"Purge"**
  "Purge applies physical or logical techniques that render Target Data recovery infeasible using state of the art laboratory techniques."
- **"Destroy"**
  "Destroy renders Target Data recovery infeasible using state of the art laboratory techniques and results in the subsequent inability to use the media for storage of data."

**Control of media**

Another option to secure sensitive information is to keep physical media within the classified area, see [1], paragraph 4.4.

**Volatile memory**

"Memory components that do not retain data after removal of all electrical power sources, and when reinserted into a similarly configured system, are considered volatile memory components." [2]

The volatile memory in the instrument does not have battery backup. It loses its contents when power is removed from the instrument.

Typical examples are RAM, e.g. SDRAM.

**Non-volatile memory**

"Components that retain data when all power sources are discontinued are non-volatile memory components." [2].

In the context of this document, non-volatile memory components are non-user accessible internal memory types, e.g. EEPROM, Flash, etc.

**Media**

Media are types of non-volatile memory components. In the context of this document, media are user-accessible and retain data when you turn off power.

Media types are Hard Disk Drives (HDD), Solid State Drives (SSD), Memory Cards, e.g. SD, microSD, CFast, etc., USB removable media, e.g. Pen Drives, Memory Sticks, Thumb Drives, etc. and similar technologies.

# 4 Statement of volatility

The R&S FS-SNS contains various memory components. See the subsequent sections for a detailed description regarding type, size, usage and location.

**Notes on memory sizes**

Due to the continuous development of memory components, the listed values of memory sizes may not represent the current, but the minimal configuration.

## 4.1 Volatile memory

Volatile memory modules are considered as non-accessible internal storage devices, as described in Security terms and definitions > Volatile memory.

*Table 4-1: Types of volatile memory*

| Memory type | Location | Size | Content / Function | User modifiable |
|---|---|---|---|---|
| USB Hub Controller | Microcontroller | 17 x 8-bit configuration registers | Operating control information for USB interface | No |

## 4.2 Non-Volatile memory

Non-volatile memory modules are considered as non-accessible internal storage devices, as described in Security terms and definitions > Non-volatile memory.

*Table 4-2: Types of non-volatile memory*

| Memory type | Location | Size | Content / Function | User modifiable |
|---|---|---|---|---|
| EEPROM | Microcontroller | 1 kbyte | • USB configuration data (vendor ID, product ID)<br>• Serial number<br>• Correction data (ENR, reflection coefficient) | No |

# 5 Instrument sanitization procedure

## 5.1 Volatile memory

The volatile memories do not contain user data. Therefore no sanitization procedure is required.

**To remove power**

► Disconnect the USB connection cable.

Provided the instrument remains without power for at least five minutes, all volatile memory modules lose their contents, see [1].

## 5.2 Non-volatile memory

The non-volatile memories do not contain user data. Therefore no sanitization procedure is required.

# Glossary

**C**

**CFast:** Compact Fast - compact flash mass memory device.

**D**

**DRAM:** Dynamic Random Access Memory.

**H**

**HDD:** Hard disk drive.

**M**

**microSD:** Micro Solid-state Drive - memory card.

**S**

**SD:** Solid-state drive - memory card.

**SSD:** ATA Solid-state drives (including PATA, SATA, eSATA, mSATA,...).

Muehldorfstr. 15, 81671 Muenchen, Germany
Phone: +49 89 41 29 - 0
Email: info@rohde-schwarz.com
Internet: www.rohde-schwarz.com


Throughout this manual, products from Rohde & Schwarz are indicated without the ® symbol , e.g. R&S®FS-SNS is indicated as R&S FS-SNS.