Rohde & Schwarz License Dongles
Instrument Security Procedures

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Version 02

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This document describes the types of memory and their use in license dongles from Rohde & Schwarz. While every effort has been made to ensure the accuracy of the information herein, it is provided without warranty. Design iteration and revisions may result in minor differences between the information provided here and your product.

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

Contents

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 product.

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 Components covered

The license dongle is a USB stick in 2.0 format that contains a smart card and a smart card reader.

Table 2-1: License dongle components

Test software	Product name	Order number
R&S ELEKTRA	R&S EMCPC	5601.0018K02
	R&S EMCPC-FL	5601.0018K04
R&S VSE	R&S FSPC	1310.0002K02
	R&S FSPC-FL	1310.0002K04
R&S PVS	R&S PVS-PC	1309.9368.02

3 Security terms and definitions

Terms defined in Guidelines for Media Sanitization

According to NIST Special Publication 800-88 [1]: "Sanitization is a process to render access to target data (the data subject to the sanitization technique) on the media infeasible for a given level of recovery effort." It defines the following categories of sanitization:

- **"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]

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 license dongle 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.

This document uses the common notation kbyte, Mbyte and Gbyte for memory sizes, although the prefix multiplication factor is 1024.

4.1 Volatile memory

Volatile memory modules refer to 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
RAM	Smart card	8 kbyte	Temporary information storage for the processes of the on-chip security controller.	no

4.2 Non-volatile memory

Non-volatile memory modules refer to 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
Flash	Smart card	404 kbyte	• Product identification data • Licensing data, e.g. option keys • Licensing applications • Cryptographic libraries	no

4.3 Media

Media memory modules refer to non-volatile storage devices, as described in Security terms and definitions > Media.

The license dongle does not contain media.

5 Instrument sanitization procedure

The license dongle contains no user modifiable data in the memory modules.

The initial license programming of the memory requires specific software tools and is PIN protected. Communication with the EEPROM is encrypted. Only personnel of Rohde & Schwarz can create and maintain the contents of a license dongle.

6 Validity of instrument calibration

The license dongle does not contain calibration data.