R&S®NRP2
Power Meter
Instrument Security Procedures

1176.7932.02 ─ 02

ROHDE&SCHWARZ

Contents

1 Overview

In many cases, it is imperative that the R&S NRP2 Power Meters are used in a secured environment. Generally these 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. Security concerns can arise when devices need to leave a secured area e.g. to be calibrated or serviced.

This document describes the types of memory and their usage in the R&S NRP2. It provides a statement regarding the volatility of all memory types and specifies the steps required to declassify an instrument through memory clearing or sanitization procedures. These sanitization procedures are designed for customers who need to meet the requirements specified by the US Defense Security Service (DSS).

2 Instrument Models Covered

Table 2-1: Power Meter models

Product name	Order number
R&S NRP2	1144.1374.02

3 Security Terms and Definitions

Clearing

The term "clearing" is defined in Section 8-301a of DoD 5220.22-M, "National Industrial Security Program Operating Manual (NISPOM)". Clearing is the process of eradicating the data on media so that the data can no longer be retrieved using the standard inter-

faces on the instrument. Therefore, clearing is typically used when the instrument is to remain in an environment with an acceptable level of protection.

Sanitization

The term "sanitization" is defined in Section 8-301b of DoD 5220.22-M, "National Industrial Security Program Operating Manual (NISPOM)". 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 for service of calibration.

The memory sanitization procedures described in this document 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 14.1.16 of the ISFO "Manual for the Certification and Accreditation of Classified Systems under the NISPOM".

Instrument declassification

The term "instrument declassification" refers to procedures that must be undertaken before an instrument can be removed from a secure environment, for example when the instrument is returned for calibration. Declassification procedures include memory sanitization or memory removal, or both. The declassification procedures described in this document are designed to meet the requirements specified in DoD 5220.22-M, "National Industrial Security Program Operating Manual (NISPOM)", Chapter 8.

4 Types of Memory and Information Storage in the R&S NRP2

The Power Meter contains various memory components.

The following table provides an overview of the memory components that are part of your instrument. For a detailed description regarding type, size, usage and location, refer to the subsequent sections.

Memory type	Size	Content	Volatility	User Data	Sanitization procedure
SDRAM	64 Mbyte	Temporary information storage for operating system and instrument firmware	Volatile	Yes	Turn off instrument power
Display memory (LCD display controller)	80 kbyte	Display information	Volatile	Yes	Turn off instrument power
Flash	16 Mbyte	• Bootloader and application firmware • User data: – Frequency-dependent offset tables – User-defined setups – Window titles – Sensor test results	Non-volatile	Yes	"Erase non-volatile data" procedure (see "Flash" on page 5)

4.1 Volatile Memory

The volatile memory in the instrument does not have battery backup. It loses its contents as soon as power is removed from the instrument. The volatile memory is not a security concern.

Removing power from this memory meets the memory sanitization requirements specified in the "Clearing and Sanitization Matrix" in Section 5.2.5.5.5 of the ISFO Process Manual for the Certification and Accreditation of Classified Systems under the NISPOM.

SDRAM

The SDRAM has a size of 64 Mbyte and contains temporary information storage for operating system and instrument firmware. The SDRAM loses its memory as soon as power is removed.

Sanitization procedure: Turn off instrument power

Display memory

The display memory has a size of 80 kbyte and contains display information. The display memory loses its memory as soon as power is removed.

Sanitization procedure: Turn off instrument power

4.2 Non-Volatile Memory

The R&S NRP2 contains one non-volatile memory.

The non-volatile memory of the R&S NRP2 is not a security concern.

Flash

The R&S NRP2 Power Meter has one 16 Mbyte Flash memory device.

The Flash memory is partitioned in two regions:

- Bootloader and application firmware
- User data: Frequency-dependent offset tables, user-defined setups, window titles, sensor test results

User data is not erased when power is removed from the instrument.

The R&S NRP2 provides a sanitizing procedure that ensures that user data is irretrievably removed from the instrument.

Sanitization procedure: "Erase non-volatile data" procedure

To sanitize the internal Flash memory, perform the following steps:

1. Immediately after powering-on the unit, press the "Bootmenu" softkey.
   A password screen appears.

Figure 4-1: Password screen

2. Enter the password "7396". Press the "OK" softkey.
   The boot menu appears.

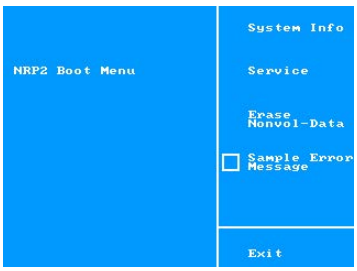

Figure 4-2: Boot menu screen

3. Press the "Erase Nonvol-Data" softkey.
   The warning message "Attention! All saved data will be lost!" appears.
4. Confirm by pressing the ENTER/MENU key. The process of erasing the nonvolatile system memory takes some seconds. It is finished when the boot menu reappears and the item "Erase Nonvol-Data" is checked.
5. Press the "Exit" softkey to reboot the unit.

6. After rebooting, the message box "Non-volatile Memory is empty EEPROM is defective" appears. Close the message box by pressing the "Erase Nonvol-Data" key.
   The R&S NRP2 uses the factory default parameters.

5 Instrument Declassification

Before you can remove the Power Meter from a secured area (for example to perform service or calibration), all classified user data needs to be removed. You can declassify the Power Meter as follows:

1. Sanitize the non-volatile memory, as described in "Flash" on page 5.
2. Turn off the Power Meter. This will sanitize the volatile memory.

Following these steps removes all user data from the Power Meter. The Power Meter can now leave the secured area.

These declassification procedures meet the needs of customers working in secured areas.

Mühldorfstr. 15, 81671 München, Germany
Phone: +49 89 41 29 - 0
Fax: +49 89 41 29 12 164
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®NRP2 is indicated as R&S NRP2.