



Products: R&S Network Analyzer ZV-Z5x Calibration Units

Resolving Security Issues When Working with the R&S[®] ZV-Z5x in Secure Areas

Based upon the user's security requirements, this document describes the Rohde&Schwarz options available to address the user's network analysis needs. It also covers the memory types and locations where information can be stored in the network analyzer R&S[®] ZV-Z5x calibration units.



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1 Overview

In many cases it is imperative that the R&S® ZV-Z5x calibration unit be used in a secured environment. Generally these highly secured environments will not allow any test equipment to leave the area unless it can be proven that no user information will leave with the test equipment. Security concerns can arise when network analyzers need to leave a secured area to be calibrated or serviced.

This document describes the types of memory and their usage in the R&S® ZV-Z5x calibration unit.

2 Calibration Unit Models

R&S® ZV-Z5x	
ZV-Z51 - 4 port	8 GHz
ZV-Z52 - 4 port	24 GHz
ZV-Z53 – 2 port	18 / 24 GHz
ZV-Z54 – 2 port	40 GHz
ZV-Z55 – 2 port	50 GHz
ZV-Z58 – 8 port	8 GHz
ZV-Z59 – 6 port	20 GHz

3 Battery Information

There are no batteries in the R&S® ZV-Z5x calibration unit.

4 Types of Memory in the R&S® ZV-Z5x Calibration Unit and Their Security Concerns

RAM

The R&S® ZV-5x calibration unit has a microcontroller with 8kByte RAM to control the calibration unit functionality. The microcontroller firmware will be downloaded to this RAM whenever the calibration unit is connected via USB to the R&S® network analyzer. The RAM does not hold user data nor can the user access the memory. This RAM is volatile memory and it loses its memory as soon as power (USB connection) is removed.

The RAM is not a security concern.

EEPROM

The R&S® ZV-Z5x calibration unit has one EEPROM device. This device hold 128 Byte and contain information related to the USB interface, such as USB vendor ID and USB Device ID. The EEPROM does not hold user data nor can the user access the EEPROM storage.

The EEPROM is not a security concern.

FLASH

The microcontroller board of the R&S® ZV-Z5x calibration unit has one 512 MByte flash memory device (USB memory stick) which contains the R&S product ID, the device serial number and the individual characteristics of the calibration standards used within this calibration unit. The Flash memory does not hold any user data nor can the user access the Flash memory. If the calibration unit is connected via USB to the network analyzer the data and characteristics of the standards are read by the analyzer and then the flash memory is turned off immediately.

The Flash memory is not a security concern.

5 Information Storage in the R&S® ZV-Z5x Calibration Unit

DATA	RAM Not a security concern	EEPROM Not a security concern	FLASH (USB Memory Stick) Not a security concern
Microcontroller firmware for Cal unit control	X		
USB vendor ID and USB device ID		X	
Characteristics of calibration standards within the calibration unit			X

6 Information Security in Highly Sensitive Areas

Since the RAM is erased when power (USB connection) is removed from the network analyzer it does not pose a security risk. No user data is written to the RAM, EEPROM and FLASH memories; hence, it is deemed that they do not pose a risk either.

The R&S® ZV-Z5x calibration unit addresses the needs of customers working in highly sensitive areas.

7 Performing Service, Calibration and Maintenance on the R&S® ZV-Z5x Calibration Unit

Turn-off the calibration unit by removing the USB connection the the network analyzer. The calibration unit can now leave the secured area..

Additional Information

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