

# R&S® ZV-ZCAN Calibration Kit

## Precision standards from DC to 3 GHz



# R&S®ZV-ZCAN Calibration Kit At a glance

The R&S®ZCAN calibration kit is used to calibrate test setups with network analyzers. The calibration kit contains short (S), open (O), match (M), and through (T) standards, with type N connectors (male and female). The short and the open standard are combined in one component. The R&S®ZCAN supports full one-port (OSM) as well as two-port and multiport calibrations (e.g. TOSM, TRM, TOM) for reflection and transmission measurements. The calibration kit is available in 50  $\Omega$  and 75  $\Omega$  versions.

## Uses

Calibration standards are mainly used to perform system error calibration in vector network analyzers. The measurement accuracy of such instruments is determined to a great extent by the quality of the calibration standards used, which must therefore be manufactured with the utmost precision. Typical applications include OSM (Open, Short, Match) and TOSM (Through, Open, Short, Match) system error calibration for reflection and transmission measurements.

Another application is the normalization of a network analyzer by means of an open and/or a short standard, or a match. In addition, the match can be used to check the directivity of a network analyzer or the directivity when using an external SWR bridge such as the R&S®ZRB2 or R&S®ZRC.

The calibration standards can also be used as universal components in a wide range of T&M applications, helping to simplify measurements.

## Description

The R&S®ZCAN calibration standards are manufactured with the greatest care and with extremely small mechanical tolerances. In the case of the shorts, for instance, the vital part for electrical contact is a precision-machined, gold-plated solid metal piece with a very smooth surface. This results in low losses and low contact resistance and, consequently, in a virtually ideal reflection coefficient with a magnitude of 1 and a phase of 180° over the entire frequency range. The open standards suppress any potential radiation at an open end of a line, and ensure a precisely defined fringing capacitance. For the female connector of the open standard, this is achieved by means of a cap on the inner conductor, where the cap is fixed to a spring-loaded dielectric rod. The matches are outstanding for their low reflection; the typical return loss is 50 dB, i.e. reflection coefficient = 0.3% or VSWR = 1.006. The through standards, which are well matched and precisely dimensioned, have a low insertion loss of typ. 0.03 dB at 3 GHz.

# Specifications

| Specifications                   |           |   |
|----------------------------------|-----------|---|
| Frequency range                  |           | 0 Hz to 3 GHz   |
| Characteristic impedance         |           | 50 Ω, 75 Ω  |
| Connectors                       |           | type N, male and female                                   |
| Return loss of matches           |           | ≥ 46 dB (50 Ω, typ.),<br>≥ 40 dB (75 Ω, typ.)             |
| Insertion loss of throughs       |           | ≤ 0.1 dB  |
| Return loss of throughs          |           | ≥ 34 dB   |
| Power-handling capacity          |           | 1 W   |
| General data                     |           |   |
| Operating temperature range      |           | 0°C to +55°C  |
| Storage temperature range        |           | -40°C to +75°C  |
| Dimensions of carrying case      | W × H × D | 266 mm × 179 mm × 49 mm<br>(10.47 in × 7.05 in × 1.93 in) |
| Weight (including carrying case) |           | 820 g (1.81 lb)   |

For data sheet, see PD 5214.1950.22 and [www.rohde-schwarz.com](http://www.rohde-schwarz.com)

# Ordering information

| Designation                                     | Type                 | Order No.    |
|---|----------------------|--------------|
| Calibration Kit, type N, 50 Ω,<br>0 Hz to 3 GHz | R&S®ZV-ZCAN model.52 | 0800.8515.52 |
| Calibration Kit, type N, 75 Ω,<br>0 Hz to 3 GHz | R&S®ZV-ZCAN model.72 | 0800.8515.72 |

| Service options  |         |  |
|--|---------|--|
| Extended Warranty, one year                              | R&S®WE1 | Please contact your local Rohde&Schwarz sales partner. |
| Extended Warranty, two years                             | R&S®WE2 |  |
| Extended Warranty, three years                           | R&S®WE3 |  |
| Extended Warranty, four years                            | R&S®WE4 |  |
| Extended Warranty with Calibration Coverage, one year    | R&S®CW1 |  |
| Extended Warranty with Calibration Coverage, two years   | R&S®CW2 |  |
| Extended Warranty with Calibration Coverage, three years | R&S®CW3 |  |
| Extended Warranty with Calibration Coverage, four years  | R&S®CW4 |  |

Your local Rohde&Schwarz representative will help you determine the optimum solution for your requirements. To find your nearest Rohde&Schwarz representative, visit [www.sales.rohde-schwarz.com](http://www.sales.rohde-schwarz.com)

## Service that adds value

- | Worldwide
- | Local and personalized
- | Customized and flexible
- | Uncompromising quality
- | Long-term dependability

## About Rohde & Schwarz

The Rohde & Schwarz electronics group is a leading supplier of solutions in the fields of test and measurement, broadcast and media, secure communications, cyber-security, and radiomonitoring and radiolocation. Founded more than 80 years ago, this independent global company has an extensive sales network and is present in more than 70 countries. The company is headquartered in Munich, Germany.

## Sustainable product design

- | Environmental compatibility and eco-footprint
- | Energy efficiency and low emissions
- | Longevity and optimized total cost of ownership

Certified Quality Management

**ISO 9001**

Certified Environmental Management

**ISO 14001**

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PD 5214.1950.12 | Version 05.00 | April 2015 (fi)

R&S®ZV-ZCAN Calibration Kit

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