



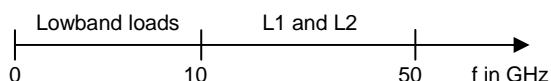
Contents

| Device | Part number | Remarks | QTY | Calibration Option ^a |
|----------------------------|--------------|------------------|-----|---------------------------------|
| 13 mm Air line plug/jack | 09S101-K013 | L1 | 1 | FC |
| 15.5 mm Air line plug/jack | 09S101-K015 | L2 | 1 | FC |
| 25.5 mm Air line plug/jack | 09S101-K025 | L3 | 1 | FC |
| Short circuit plug | 09S12S-000S3 | Reflect standard | 1 | FC |
| Short circuit jack | 09K12S-000S3 | Reflect standard | 1 | FC |
| Combi wrench | 03W008-000 | - | 1 | |
| Torque wrench | 03W021-000 | - | 1 | FC |

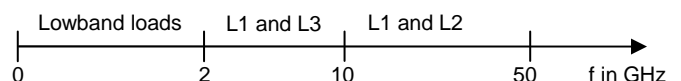
a. See "Declaration of calibration options" for explanation.

LRL calibrations without lowband loads are band limited. There are many different possibilities to calibrate a VNA depending from the line length and the number of lines used during the calibration procedure. If two lines are used the third line can be used as verification standard. The following graphs show two possibilities using LRL with lowband loads. Without lowband loads the lower band cannot be calibrated.

Frequency Range (2 Bands)



Frequency Range (3 Bands)



Documentation

This kit is delivered with

- **USB-Stick**
Standard Definitions as data files for Vector Network Analyzer Families PNA (Keysight/Agilent) and ZVA (Rohde&Schwarz). Calibration Certificate as PDF-file.
- **Standard Definitions Cards**
Printed Standard Definitions that can be used on nearly all Vector Network Analyzers.
- **Kit Info Card**
Handling precautions and information for installing Standard Definitions on a Vector Network Analyzer.
- **Calibration Certificate**
Details see "Declaration of calibration options"
- **Operating Manual**

Electrical specifications

This specification covers electrical key values for the main items of the calibration kit. Specific datasheets are available for each component among the part number.

| Device | Frequency | Parameter | Specification |
|--|---|--------------------------|-------------------------------|
| Shorts^b (plug and jack) | DC to ≤ 4 GHz > 4 GHz to ≤ 26.5 GHz > 26.5 GHz to ≤ 50 GHz | Error from Nominal Phase | ≤ 1.5° ≤ 3.0° ≤ 4.5° |
| Precision air lines^c | 0.4 GHz to ≤ 4 GHz > 4 GHz to ≤ 26.5 GHz > 26.5 GHz to ≤ 50 GHz | Return Loss | ≥ 36 dB ≥ 30 dB ≥ 26 dB |

- b. The specifications for the shorts are given as allowed deviation from nominal model as defined in calibration certificate included with your kit.
- c. Calculated value without warranty. The return loss specification includes the connector interfaces. The minimum frequency of the air lines is based on calculations of the impedance change due to skin depth. Refer to the calibration certificate included with your kit for the exact dimensions of your precision air lines.

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Declaration of calibration options

Factory Calibration

Standard delivery for this calibration standard includes a Factory Calibration. The Calibration Certificate issued reports individual mechanical calibration results, traceable to national / international standards. Model based standard definitions are reported in an Agilent/Keysight, Rohde & Schwarz and Anritsu compatible VNA format.

Accredited Calibration

Not available.

For further, more detailed information see application note AN001 on the Rosenberger homepage.

Calibration interval

Recommendation 12 months

Recommended accessories

- Rosenberger Test Port Adaptor
- Rosenberger Gauge Kit 08GK0KS-010
- Rosenberger VNA Test cable kit and Microwave Cable Assemblies
- Rosenberger Calibration Loads 09S150-C10S3 and 09K150-C10S3

For further, more detailed information please visit our homepage www.rosenberger.com.

While the information has been carefully compiled to the best of our knowledge, nothing is intended as representation or warranty on our part and no statement herein shall be construed as recommendation to infringe existing patents. In the effort to improve our products, we reserve the right to make changes judged to be necessary.

| Draft | Date | Approved | Date | Rev. | Engineering change number | Name | Date |
|--------------|----------|------------------|----------|------|---------------------------|-------------|----------|
| Martin Moder | 04.03.15 | Herbert Babinger | 01.06.16 | b00 | 16-0852 | S. Andorfer | 01.06.16 |