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› Saluki SCKCL18-7 High Precision VNA Calibration Kit User Manual

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Model: SCKCL18-7

INTRODUCTION

The Saluki SCKCL18-7 mechanical calibration kit is designed for precise calibration of Vector Network Analyzers (VNAs) operating within the DC to 18 GHz frequency range. This kit utilizes a 7mm interface and includes essential precision standard devices along with a torque wrench to ensure accurate and repeatable connections, crucial for high-frequency measurements.

KIT CONTENTS AND SETUP

Upon receiving your Saluki SCKCL18-7 calibration kit, carefully unpack all components. Inspect each item for any signs of damage during transit. The kit is housed in a protective wooden case designed for safe storage and transport.



Image: The Saluki SCKCL18-7 High Precision VNA Calibration Kit, neatly organized within its wooden protective case. The case contains the Open, Short, Load standards, and the torque wrench.

Components Included:

- **Open Standard:** 7mm connector type.

- **Short Standard:** 7mm connector type.
- **Load Standard:** 7mm connector type, featuring a VSWR of less than 1.04.
- **Torque Wrench:** Essential for achieving precise and repeatable connections, preventing damage to connectors and ensuring measurement accuracy.

Before use, ensure all connector surfaces are clean and free of dust or debris. Use a lint-free cloth and isopropyl alcohol if necessary. Always use the provided torque wrench when connecting the calibration standards to your VNA to achieve the specified torque and prevent damage or measurement errors.

OPERATING INSTRUCTIONS

The Saluki SCKCL18-7 calibration kit provides the necessary standards for performing a full two-port calibration on a Vector Network Analyzer. The specific calibration procedure will depend on your VNA model and software. Refer to your VNA's user manual for detailed calibration steps.

General Calibration Principles:

1. **Warm-up VNA:** Allow your VNA to warm up for the manufacturer-recommended period to ensure stable operation.
2. **Clean Connectors:** Before each connection, ensure both the VNA ports and the calibration standards are meticulously clean. Even small particles can significantly degrade measurement accuracy.
3. **Connect Standards:** Connect the Open, Short, and Load standards to the VNA ports as prompted by your VNA's calibration routine. Always use the supplied torque wrench to tighten connections to the recommended torque specification. This ensures consistent contact pressure and minimizes measurement variations.
4. **Perform Calibration:** Follow the on-screen instructions of your VNA to perform the calibration. The kit provides the necessary electrical characteristics for the VNA to establish a precise reference plane.
5. **Verify Calibration:** After calibration, it is good practice to verify the calibration using a known device or by performing a measurement that should yield a predictable result.

The precision of these standards ensures high accuracy in your VNA measurements, critical for demanding RF and microwave applications. The kit is designed for over 500 mating cycles, provided proper handling and torque are consistently applied.

MAINTENANCE

Proper maintenance of your Saluki SCKCL18-7 calibration kit is essential to preserve its accuracy and extend its lifespan. These are precision instruments and should be handled with care.

Cleaning and Storage:

- **Connector Care:** Always keep the connector interfaces clean. Use a lint-free swab or compressed air to remove dust. For stubborn contaminants, a small amount of isopropyl alcohol on a lint-free cloth can be used, ensuring the connector is completely dry before use.
- **Handling:** Avoid touching the center conductor or outer conductor mating surfaces with bare hands, as skin oils can degrade performance.
- **Torque Wrench:** Keep the torque wrench clean and store it in its designated slot. Do not use it for purposes other than tightening the calibration standards.
- **Storage:** When not in use, store all components back in their protective wooden case. Ensure the case is closed securely to protect against dust, moisture, and physical damage. Store the kit in a stable environment, away from extreme temperatures or humidity.
- **Mating Cycles:** While rated for over 500 cycles, minimizing unnecessary connections will help maintain the integrity of the standards over time.

TROUBLESHOOTING

If you encounter issues during calibration or measurement, consider the following common troubleshooting steps:

- **Poor Calibration Results:**
 - **Check Connections:** Ensure all connections are clean, tight, and made with the correct torque using the provided wrench. Loose or dirty connections are a primary cause of poor calibration.
 - **Verify Standard Selection:** Confirm that the correct calibration standards (Open, Short, Load) are selected in your VNA software for the 7mm interface.
 - **VNA Stability:** Ensure your VNA has completed its warm-up period and is operating stably.
 - **Environmental Factors:** Large temperature fluctuations can affect calibration accuracy. Perform calibration in a stable environment.
- **Physical Damage:**
 - Inspect the connectors of the calibration standards for any visible damage, bending, or wear. Damaged standards should not be used.
- **Repeatability Issues:**
 - Inconsistent measurements often point to issues with connection repeatability. Re-verify torque wrench usage and connector cleanliness.

For persistent issues not resolved by these steps, refer to your VNA's specific troubleshooting guide or contact Saluki technical support.

SPECIFICATIONS

Parameter	Value
Frequency Coverage	DC to 18 GHz
Connector Type	7mm
Open Standard Accuracy	$\pm 0.5^\circ$
Short Standard Accuracy	$\pm 0.5^\circ$
Load Standard VSWR	< 1.04
Mating Cycles	> 500 times
Included Components	7mm Open, 7mm Short, 7mm Load, Torque Wrench

WARRANTY INFORMATION

The Saluki SCKCL18-7 High Precision VNA Calibration Kit comes with a **one-year warranty** from the manufacturer. This warranty covers defects in materials and workmanship under normal use. Please retain your proof of purchase for warranty claims. For specific terms and conditions, or to initiate a warranty claim, please contact Saluki customer support.

SUPPORT

For technical assistance, product inquiries, or support regarding your Saluki SCKCL18-7 calibration kit, please contact

Saluki customer service. Contact information can typically be found on the manufacturer's official website or through your point of purchase.

When contacting support, please have your product model (SCKCL18-7) and any relevant purchase details ready to facilitate a quicker resolution.

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Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page’s manual context to help answer it.

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question