

Product Note 65

TRL VNA Calibration Kit, 0.3 to 27GHz with Precision 3.5mm Connectors

Introduction

TRL Cal Kits provide the best calibration accuracy for VNAs which is essential for RF measurements especially of highly reflective devices such as tuners.

Focus Microwave's Coaxial TRL (Through-Reflect-Line) Calibration Kits (Calkits) are very accurate, robust and easy to use. They cover 0.04 to 50 GHz in different bands and connector types and provide state of the art calibrations of Network Analyzers. The TRL Calkits of Focus Microwaves are available in six connector types: APC-7, -3.5, -2.92 (K®), -2.4mm, -N and 7/16.

Focus Calkits are compatible with all Hewlett-Packard® and Wiltron® network analyzers with the TRL/TRL*, LRL and LRM software option.



Description of the 3.5mm TRL Calkit

The 3.5mm TRL calibration kit includes

- one precision coaxial Delay Line with a proprietary Connector Extender,
- two iso-phase Shorts, one male and one female
- two high Return Loss 50Ω Loads,
- three iso-phase 3.5 to 3.5mm adapters (one female to female and two male to female)
- one dynamometric connector wrench,
- one central delay line pin positioning tool
- one floppy diskette with Calkit parameters and
- one Operation and Service Manual.

The entire frequency range 0.3 to 27GHz is covered with one single Delay Line standard, included in the calkit. There is no need for a second “low frequency” standard, as suggested by HP or the NIST. Excellent calibration results are obtained with the supplied standards alone (see figures 2, 3 and 4 on page 2 of this note.

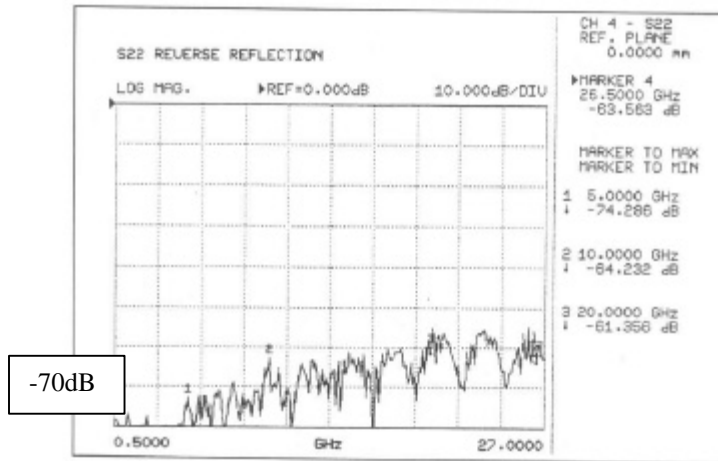


Figure 2: Residual Reflection (Source Match) verified using a Through Line connection after TRL calibration, 0.5 to 27GHz

Figure 3: Offset Short Ripple (peak to peak < 0.1dB) 0.5 to 27GHz

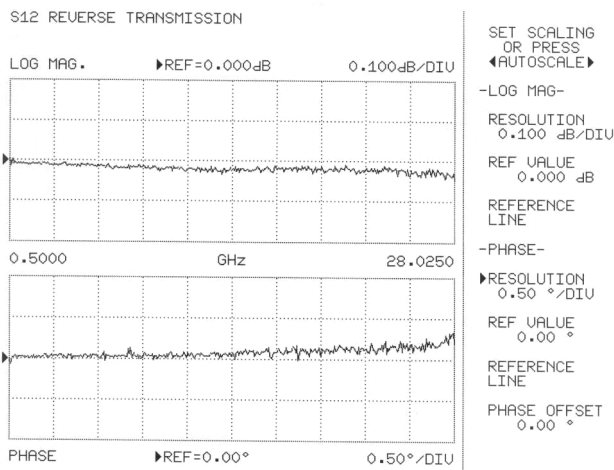
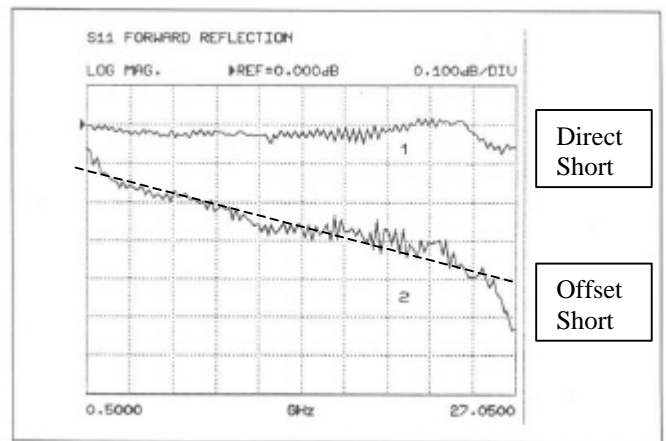


Figure 4: Thru Line Transmission verification (0.5-28GHz).