

40GHz - 67GHz VNA Calibration Verification Board

The NEW VNA Calibration Verifaion Board is a 70 GHz PCB containing traces and probe pads and replaceable solderless 2.92mm or 1.85mm connectors configured in multiple connection modes (connector to connector, probe to connector and probe to probe). Accompanying the board is printouts with S-parameter (S2p/S4p) files of each connector to connector trace.

- **Avoid Measurement Errors due to Improper Calibration Settings**
- **Detect Measurement Drift in order to Make Repeatable Measurements**
- **Reduce VNA Setup Time when Renting or Purchasing a New System**
- **Determine Actual Measurement**

“Avoid costly swept frequency calibration errors”

Use either the 50 ohm or 100 ohm high bandwidth traces as a measurement frequency standard to verify that the VNA is making accurate measurements after calibration and *prior* to making critical measurements on prototypes, or as a quick calibration check when the accuracy of frequency domain measurements are in question. This simple verification process can prevent hours of retaking erroneous measurements do to improper calibration, setup or instrument drift.

“Save money by reducing measurement errors and setup time”

The VNA Calibration Verifaion Board is a valuable training resource to assist engineers to quickly learn how to setup and make accurate measurements with a TDR or VNA, including probes. Simply connect the VNA to the 50 ohm or 100 ohm differential traces and compare your results with the measurements included with the board. This process builds confidence in instrument proficiency, reducing setup time prior to measuring similar traces on prototypes or the verification of simulator models used to create today’s high speed digital systems.

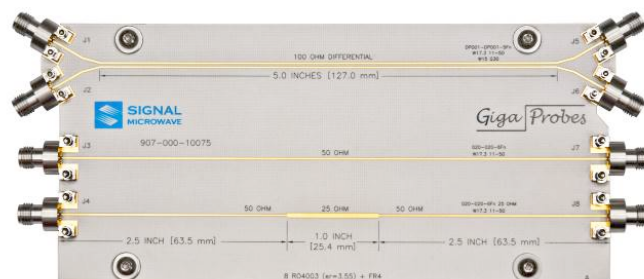
“Determine actual system measurement bandwidth when using probes or cables”

Determining the system’s bandwidth is a challenge when you include Instrument measurement uncertainty error, cables, probes, connectors and options for de-embedding it all from the measurement. To dial it in, the 40GHz Model DB40-002 contains seven traces with a mix of 50 ohm & 100 ohm configuration modes (con.-con., probe-probe, pad-con. and con.-con) to help determine the bandwidth of your measurement system.



Model # DB40-002 (40GHz) DB67-002 (67GHz)

- **Three connector to connector traces:**
 - 50 ohm (J3-J8)
 - 100 ohm (J5/J6-J10/J11)
 - Beatty Standard (50ohm-25ohm-50ohm, J4-J9)
- **Two connector to test probe traces:**
 - 100 ohm differential connectors (J1/J2) to differential test pads (P1)
 - 50 ohm connector (J7) to test pads (P2)
- **Two test probe to test probe traces:**
 - 50 ohm (P3) to (P4) trace
 - 100 ohm Differential test pads (P5) to (P6)



Model # DB40-003 (40GHz) DB67-003 (67GHz)

- **Three connector to connector traces:**
 - 50 ohm (J3-J7)
 - 100 ohm (J1/J2-J15/J6)
 - Beatty Standard (50ohm-25ohm-50ohm, J4-J8)

Common PCB Specifications

70GHz GHz Design

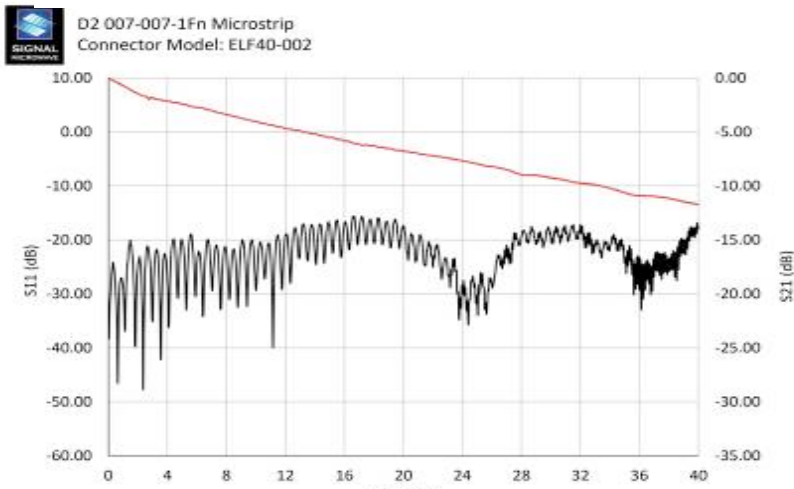
- Signal Microwave Connectors: 2.92mm 40GHz or 1.85mm 67GHz. replaceable solder-less edge mount
- E_r (DK) is 3.55 PCB material
- Measurements are included for each trace.



Giga Probes

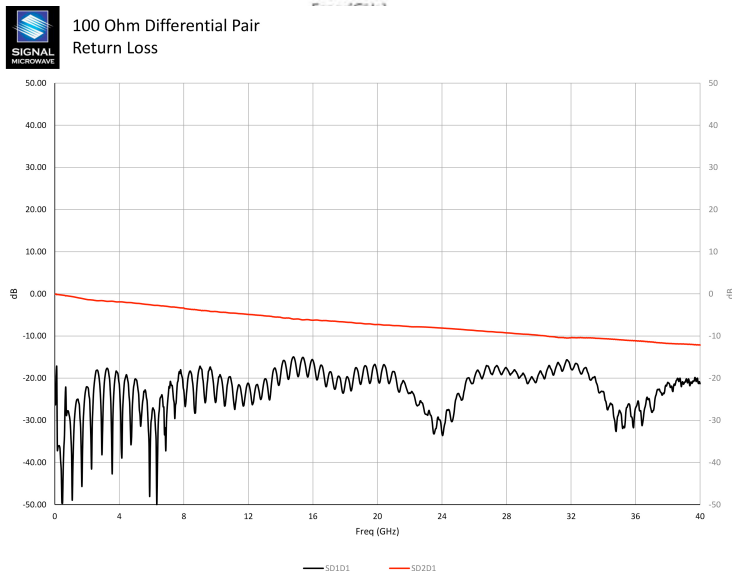
Applications

- Verify VNA calibration is accurate prior to making critical measurements on prototypes
- Verify VNA measurement repeatability and detect system drift
- Teaching tool for measuring distance and impedance using cursors
- Learn to perform differential and single ended probing techniques
- Manufacturer's instrument Demonstrations and Training
- Correlate accuracy between VNA swept sinewave vs. Time domain extracted S-parameters
- Post sales or rental instrument training tool
- Make differential and single ended probing measurements typical to Signal Integrity analysis on high speed passive linear differential interconnects (i.e. PCI Express, SATA, 10 GB/s Ethernet, etc.)



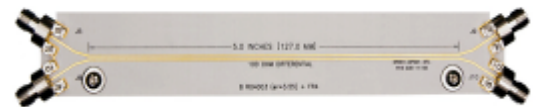
S-parameter return loss and insertion loss plots for the 50 ohm through trace

- S21 shows 40 GHz of bandwidth
- S11 shows a return loss of 15 dB



S-parameter return loss and insertion loss plots for the 100 ohm differential trace

- SDD21 shows 40 GHz of bandwidth
- SDD11 shows a return loss of 15 dB



Ordering Information

- Model # DB40-002 (40GHz) DB67-002 (67GHz)**
- Three connector to connector traces (50,100, Beatty Standard)
 - Two connector to test probe traces (50ohm, 100ohm)
 - Two test probe to test probe traces (50ohm, 100ohm)
- Model # DB40-003 (40GHz) DB67-003 (67GHz)**
- Three connector to connector traces:
- 50 ohm
 - 100 ohm
 - Beatty Standard (50ohm-25ohm-50ohm)

Sales Contact

Brian Shumaker
DVT Solutions, LLC
650 593-7083
email:sales@gigaprobes.com
www.gigaprobes.com
www.SignalMicrowave.com



Giga Probes