30 GHz Hand Held Passive Probe
For Tektronix, Inc. TDR Oscilloscopes
With Gold Plated Conductive Diamond Probe Tips

DVT30-1MM-1

Multi-mode 30 GHz 100 Ω Differential & 50 Ω Impedance

DVT30-1MM-1 GigaProbes® 30GHz Hand Held Passive Probe

Impedance Test and Failure Analysis Probe Kit

Features & Benefits

30 GHz Bandwidth

True Odd Mode 100 ohm Differential Input Impedance

Probe can be converted to 50 ohm input impedance

TDR Launch Discontinuity <20 mv

Fall Time 20 ps or <5 ps Fall Time Degradation

Fully Balanced Differential Signals without Ground Contact

Adjustable Probe Pitch from 0.25 mm to 2.0 mm

Probe Tip diameter 0.254 mm

Repeatable Measurements through non-oxidizing Diamond probe tips

Low probing force <10 grams

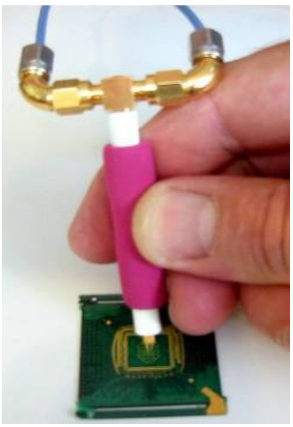
Full Set of Probe Pitch Calibration Accessories Included

DVT30-1MM-1 GigaProbes® (patent pending) multi-mode, 100 Ω Differential or 50 Ω Impedance passive probe, to capture 30 GHz, ODD/EVEN impedance profiles with a typical differential launch discontinuity of <20 mv and a fall-time of 20 ps. The probe masks ~ 0.5 mm of the device under test. A small discontinuity mask is necessary when characterizing IC packages where net lengths are very short.

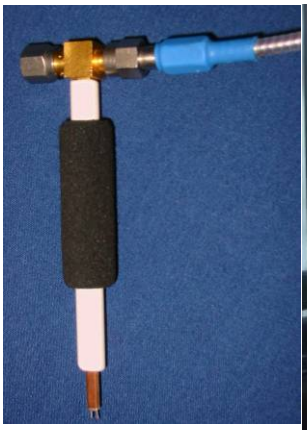
The DVT30-1MM-1 comes with a set of cushion grips for comfortable hand probing as well as accessories to easily attach the probe to most probe manipulators for hands free probing. The Signal-to-Signal probe pitch can be set to 0.8 mm, 1.0 mm or 1.27 mm using a patent pending Pitch Calibration SMA wrench. The pitch can be customized using other tools supplied in the DVT30-1MM-1 GigaProbes® accessory kit. The wrench is also used to attach SMA-SMA cables to the probe.

Conductive Diamond Plating technology (www.gigaconnections.com) place 100's of sharp non-oxidizing electrically conductive diamonds in a nickel/gold matrix onto the probe tips. The diamonds do not corrode or dull and allow the user to break though oxide with a probing force of only 10 grams. This creates a temporary solder-like connection for repeatable measurements when probing at any angle.

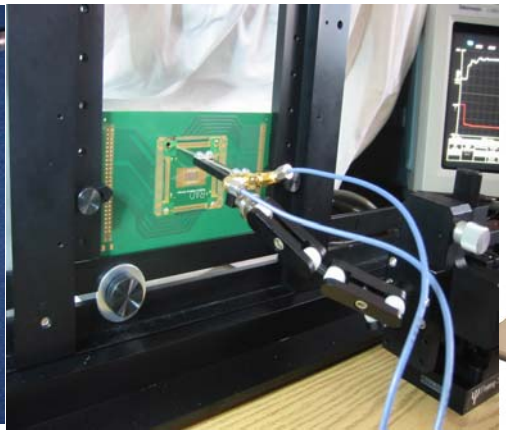
Four Probes in One



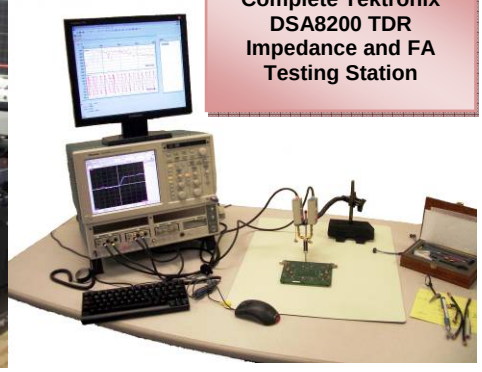
100 Ohm Differential



50 Ohm Single Ended



Hands Free Probing

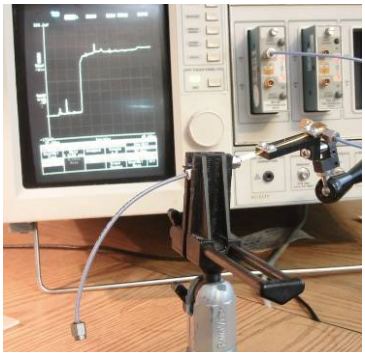


Complete Tektronix DSA8200 TDR Impedance and FA Testing Station

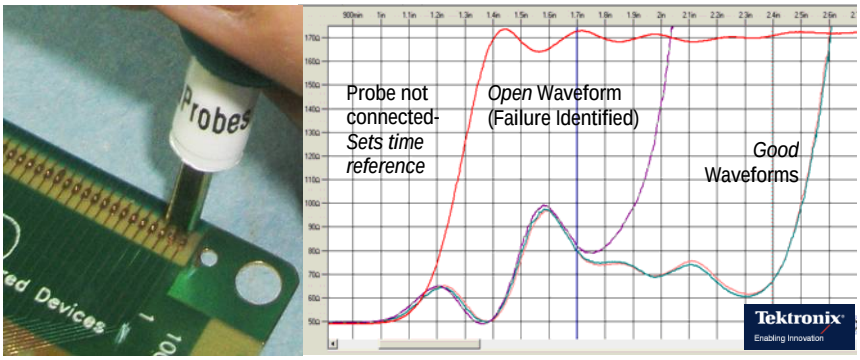
Direct Connect to TDR Sampling Heads

Single Passive Probe Applications for Impedance Test and Failure Analysis

PCB impedance measurements: Use GigaProbes™ to confirm PCB test coupon value or full system interconnect impedance value.



Cable impedance measurements: Use GigaProbes® to confirm 50 ohm cable impedance values.



Comparative Failure Analysis TDR Technique on Device Package or PCB using IConnec® and GigaProbes®: *Example*, given all traces are of similar length, where Red waveform (*WF)* probe is not connected, establishes the probe's physical location on PCB. The shorter Purple *WF* shows an open failure. The Green *WF* and Orange *WF* are traces of the same length as the Red *WF* trace. Using the Failure Analysis TDR Comparative Technique, the open trace (Red *WF*) can be verified and located.

DVT30-1MM-1 GigaProbes®
Complete Impedance Test and Failure Analysis Kit

DVT30-1MM-1 GigaProbes® are stored in a durable box (fig.6) containing the following accessories:

Qty 1: 30 GHz Passive Probe (patent pending) convertible to single 50 ohm or differential 100 ohm, with gold plated Conductive Diamond probe tips (fig 4) for repeatable high-bandwidth measurements when probing at ANY angle

Qty 1: GPMMA Attaches probe to articulating arm or any standard micro-positioner (fig. 2)

Qty 1: Stainless Steel 110 mm Tweezers for Fine Pitch Probe Adjustments and used to attach ground lead to convert probe to 50 ohms (fig 6)

Qty 1: Desk-Top 5X Macro-Lens Inspection Station (fig 6)

Qty 1: Model DVT-SMA Wrench (patent pending) with Quick Calibrator Holes to set probe pitch and planarize probe to 0.8 mm, 1.0 mm, or 1.27 mm (fig. 3)

Qty 1: Hand Held Probe Sleeve Adapter with EZ-Hold Foam Cushion (fig. 1)

Qty 2: Right Angle SMA Elbow for easy routing of SMA cables (fig. 1)

Qty 1: 50 ohm conversion kit includes 1 SMA shorting cap, ground strap and shrink wrap. (fig 6)

Qty 1: Cable Routing Sleeve to combine SMA cables for easy cable management (fig 1)

Qty 1: Resource CD application notes, data sheets (fig.6)

Qty 1: SLOT Kit containing one each, SMA Female connector, Short, Load, Open, and Through (fig. 5)

Qty 2: SMA to SMA 12 inch 24 GHz Ultra Flex Cables (fig. 1)

GigaProbes® Hand Held Passive Probe
For Tektronix TDR Oscilloscopes
50/100 Ohm Impedance Test and PCB/Device Package Failure Analysis

The DVT30-1MM-1 GigaProbes® accessories kit adapts the probe for most probing requirements.

Figure 1 shows the probe configured for manual use.

Figure 2 shows the GPMMA mounted probe for use on an articulating arm for hands free measurements. For the fastest multi-mode TDR measurement, directly connect the GigaProbes® to the TDR sampling module.

Figure 3 shows how the Signal to Signal probe pitch is set.

Figure 4 illustrates the Gold Plated Conductive Diamonds applied on each of the GigaProbes® probe tips. This plating technology is offered by Giga Connections, Inc. (www.gigaconnections.com) and applies 100's of sharp diamonds in a nickel/gold matrix on the probe tips.

Fig. 1) 24 GHz Cables – 12" SMA to SMA 24 GHz cables are shown configured for manual probe operations.

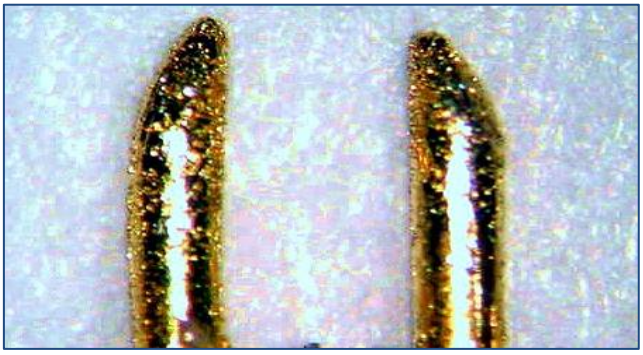


Fig. 4) Gold Plated Conductive Diamond Probe Tips (patent pending) **–** Hundreds of sharp, non-oxidizing, conductive diamonds on the probe tips break through the surface oxide when probing, to create a connection equal to that of lead solder. Conductive Diamond technology improves repeatability of measurements when probing at any angle.

Fig. 5) SLOT Kit – SMA Female connector, Short, Load, Open, Through, to calibrate measurement reference plane and subtract out cable loss.

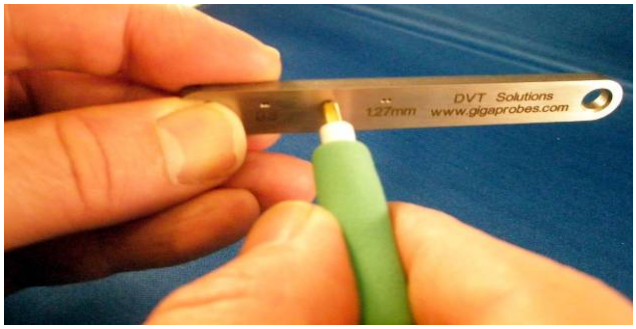


Fig. 3) Signal to Signal Pitch Calibration Wrench (patent pending) **-** Place the probe tips in the **SMA stainless steel calibration wrench** to adjust probe pitch to 0.8 mm, 1.0 mm. or 1.27 mm spacing. Use the **Desk-Top Macro-lens** Inspection Station to view probe tips and probing location. Use the precision **Stainless Steel Tweezers** for *fine pitch adjustments*.

Fig. 6) DVT30-1MM-1 GigaProbes® Complete Impedance and Failure Analysis Probe Kit

Characteristics

Attenuation: 1X

Probe Only Bandwidth: 30 GHz

TDR Pulse Degradation: <5 ps

Probe Pitch: 0.25 mm to 2.0 mm (signal tip to signal tip)

Connector Type: SMA

Measured Reflected Fall Time: 20 ps

Impedance: 100 Ω differential 50 Ω common mode

Max Voltage In: 5.0 V

(Note: numeric values shown are typical).

Fig. 2) Direct Connect GigaProbes® to a TDR module – The GPMMA adapter is used for hands free operation and provides a stable attachment when directly connecting the probe to a TDR sampling module.

For more information: http://www.gigaprobestek.com or sales@gigaprobes.com