

Multi-mode TDR/TDT Interconnect Development and Validation Kit



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

The DVT30-1MM comes with a set of cushion grips for comfortable hand probing and comes with accessories to easily attach the probes to the LeCroy probe holders 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 the patent pending Pitch Calibration SMA wrench. The pitch can be customized using other tools supplied in the DVT30-1MM GigaProbes™ accessory kit. The wrench also serves to attach SMA-SMA cables to the probes.

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

Product Description

DVT30-1MM GigaProbes® are stored in a durable box also containing probe calibration and support accessories. **Each DVT30-1MM GigaProbes® kit contains:**

Qty 2: 30 GHz TDR Probes (patent pending) Convertible to Single 50 ohm or Differential 100 ohm, with gold plated Conductive Diamond probe tips for repeatable high-bandwidth TDR measurements when probing at ANY angle

Qty 2: GPMMA Attaches probe to Articulating arms or any standard micro-positioner (fig. 2)

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

Qty 1: Desk-Top 5X Macro-Lens Inspection Station

Qty 1: Model 10 SMA Wrench (patent pending) with Quick Calibrator Holes to set probe pitch and planarize probes to 0.8 mm, 1.0 mm, or 1.27 mm (fig. 3)

Qty 2: Hand Held Probe Sleeve Adapters with EZ-Hold Foam Cushions (fig. 1)

Qty 4: Right Angle SMA Elbows for easy routing of TDR of SMA cables (fig. 1)

Qty 1: 50 ohm conversion kit includes 2 SMA shorting caps, ground strap and shrink wrap.

Qty 4: 12" 24GHz SMA – SMA Cables

Qty 1: Resource CD with application notes & data sheets

Features & Benefits

30 GHz Bandwidth

True Odd Mode 100 Ohm Differential Input Impedance

Probe can be converted to 50 ohm input impedance

Adjustable Probe Pitch from 0.25mm to 2.0mm

10 Mil Diameter Probe Tips

Gold Plated Conductive Diamond probe tips: Non oxidizing probe tips, improved repeatable measurements Probing Force 10 grams, Probe at any angle,

Fall Time 20ps, or <5ps Fall Time Degradation

TDR Launch Discontinuity <20mv

Universal Probe Design, Use as Hand Probe or Mount in Micro-positioners to be used with Probe Stations

Full Set of Probe Pitch Calibration Accessories

Fully Balanced Differential Signals without Ground Contact

Loss Tangent Measurements for Differential and Single Ended Transmission Lines

Failure Analysis of PCB with or without Components Mounted

(TDR) Impedance Testing of IC Package, Cable, PCB, Backplane

Characteristics

Attenuation – 1X

Probe Only Bandwidth – 30 GHz.

TDR Degradation – <5ps

Probe Pitch – .25 mm to 2 mm (signal tip to signal tip)

Connector Type – SMA

Measured Reflected TDR Fall Time - 20 ps.

Impedance – 100 Ω differential, 50 Ω common mode,

Max Vin – 5.0 V

(Note: numeric values shown are typical).



GigaProbes® shown with the LeCroy Wave Expert TDR System for Real-time TDR/TDT and S11/ S21 Measurements.

On-line website support: Free download TDR/ S-parameter & application Seminar. <http://www.gigaprobes.com/freetdrspramseminar.html>

GigaProbes® Hand Held Probes for the LeCroy TDR Oscilloscopes

The GigaProbes® accessories kit makes these probes universally adaptable for almost any TDR probing requirement. **Figure 1** demonstrates how to use these accessories to configure the probes for hand probing. **Figure 2** Mount the GigaProbes® on the LeCroy Ez-probe or any micro-positioner. **Figure 3** Shows how to calibrate the Signal - Signal probe pitch with the included Model 10 pitch calibration and SMA wrench. **Figure 4** Demonstrates the Conductive Diamonds Plating (CDP) from Giga Connections, inc. (www.gigaconnections.com) that places 100's of very sharp diamonds in a conductive nickel/gold solution on the each of the probe tips. These very sharp conductive diamonds do not corrode and easily break through oxide and contaminants requiring only 10 grams for probing force for repeatable TDR measurements. The Conductive Diamonds are like little probe tips that plate the entire probe which allows probing at any angle.

Figure 5 Screen image of the LeCroy Wave Expert using the DVT30-1MM GigaProbes® to validate PCB impedance specifications. **Figure 6** Use two GigaProbes® to simultaneously extract differential impedance, insertion and return loss parameters to validate PCB interconnect impedance and bandwidth performance. Install probes in probe holders for hand free measurements.

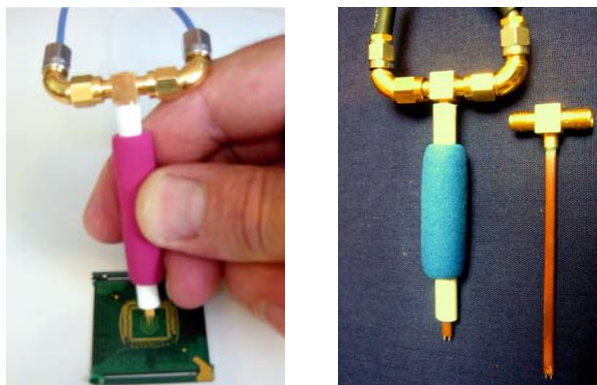


Fig. 1) Comfortable Hand Held Probing - Slip on the probe sleeve adapters with EZ-hold foam cushions. Four right angle SMA's are included to route the cables towards the TDR.



Fig. 4) Conductive Diamond & Gold Plated Tips (patent pending) – Hundreds of very sharp, non-oxidizing, conductive diamonds coat the probe tips easily break through surface oxide when probing, creating a connection as good as solder, allowing for repeatable TDR measurements and probing at any angle.

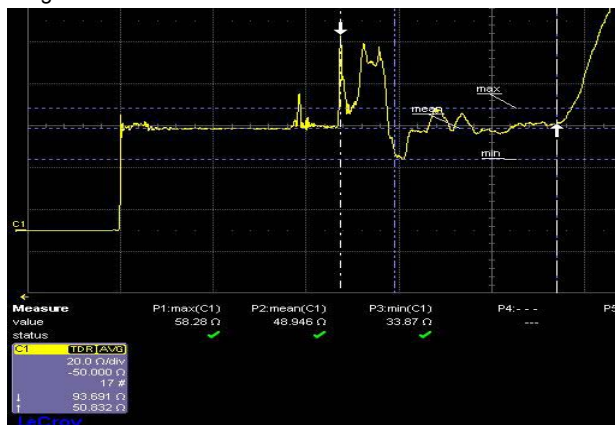


Fig. 5) Screen image of the LeCroy Wave Expert 100 using the DVT30-1MM GigaProbes® to validate PCB impedance specifications



Fig. 2) Attaching GigaProbes® to Micro-positioners – The GPMMA adapter is a standard accuracy that attaches the Free-Hand Probe holder and the Ez-probe from LeCroy.



Fig. 3) Signal - Signal Pitch Calibration Wrench (patent pending) - Place the probe tips in the model 10 SMA calibration wrench to adjust S – S pitch to a fixed .8mm, 1mm, or 1.27mm spacing. Use the **Desk-Top Macro-lenses Inspection Station** to view probe tips and the precision **Stainless Steel Tweezers** for fine pitch adjustments.



Fig. 6) Real-time Differential Impedance and S-parameters – Use two GigaProbes® to simultaneously extract differential impedance, insertion and return loss parameters to validate PCB interconnect impedance and bandwidth performance. Install GigaProbes® in manipulator for hand free measurements