MODIFICATION AVAILABLE – PERFORMANCE ENHANCEMENT CHARGEABLE TO CUSTOMER SERVICE / RELIABILITY ENHANCEMENT CHARGEABLE TO CONTRACT IF THERE IS ONE.

54754A-03

S E R V I C E N O T E

Supersedes:
NONE

54754A Differential TDR Module

Serial Numbers: [0000A00000 / 9999Z99999]

Add ESD Shutter protection to electrical inputs on module.

To Be Performed By: Agilent-Qualified Personnel or Customer

Parts Required:

P/N	Description	Qty.
54753-60001	**DISCHARGE MECHANISM ASSY**	**2**
54754-25701	**NUT – KNURLING**	**2**
54753-90036	**GUIDE – ESD PROTECTION (Documentation)**	**1**

Qty 2 required to protect both electrical input channels.

ADMINISTRATIVE INFORMATION

SERVICE NOTE CLASSIFICATION: **MODIFICATION AVAILABLE**		
ACTION CATEGORY:	AGREEABLE TIME	X SERVICE / RELIABILITY ENHANCEMENT
LOCATION CATEGORY:	X CUSTOMER INSTALLABLE [[]] ON-SITE X SERVICE CENTER	AVAILABLE UNTIL: End of Support.
AUTHOR: RBS	PRODUCT LINE: 8F	
ADDITIONAL INFORMATION:		

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Situation:
The samplers and step generators inside the TDR module are sensitive to damage due to Electrostatic Discharge (ESD) and over-voltage. These microcircuits provide a high level of performance that enables the module to make very accurate TDR/TDT measurements. Adding additional protective circuitry or diodes to the design would reduce module performance and measurement capability.

All measurements should be performed at a static-safe workstation. A static charge potential can build up between the connecting cable's center conductor and the shield. To address these and other potential issues, a protective ESD gate was developed.

Solution/Action:
To add an additional level of module protection, Agilent developed a cable discharge device, the ESD gate (p/n 54753-60001), and a knurled attachment nut (p/n 54754-25701) to be used with the TDR module. The ESD gate should be attached to the TDR input with the knurled nut as shown in Figure 1. Use the ESD gate to discharge any static charge on cables connected to the device that you are testing (Figure 2).


Figure 1. ESD gate.


Figure 2. Shorting test cable.


Figure 3. Cable connection.

The ESD Gate and nut are shipped standard on new 54754A modules.

Should the module experience repeated step generator or sampler failures, users should also check their test setup to ensure over-voltage conditions (±2V Max Input) are not generated by the DUT or from test fixtures (e.g. check transients during turn-on). Additional precautions such as ESD Workstation Monitors, Air Ionizers, and Static Protection Units should be considered – these devices are available from outside vendors.

END.