DTX/DSP/OMNI-PLCAL
Universal Permanent Link Calibration Kit

Instruction Sheet

The DTX/DSP/OMNI-PLCAL Universal Permanent Link Calibration Kit lets you calibrate DTX, DSP, and OMNIScanner2 universal permanent link adapters to meet enhanced accuracy specifications. Calibration compensates for physical changes that occur over time to the adapter's cable and other components.

When to Calibrate

Fluke Networks recommends that you calibrate your adapters after the first 40 hours of use. Thereafter, calibrate the adapters at least every 6 months. You should also calibrate the adapters after your test tools receive factory calibration.

Required Equipment

The calibration process requires the following:

- PLCAL calibration artifact

- Set of two DTX-PLA001, DSP-LIA101, or OMNI-LIA101 universal permanent link adapters

- PC interface cable for the test tool (included with the test tool)

- Latest version of LinkWare software

- The following software for your test tool:

  DTX: software version 1.1 or higher

  DSP-4000: Software version 3.7 or higher

  DSP-4100: Software version 4.7 or higher

  OMNIScanner2: Software version 6 (v6) or higher

Getting the Required Software

The software listed above is available on the Fluke Networks website (**www.flukenetworks.com**). If you need assistance with loading the software, refer to your test tool's users manual or contact Fluke Networks.

Calibrating the DSP or DTX Universal Permanent Link Adapters

⚠ Caution

To avoid latent or immediate damage due to electrostatic discharge, ground yourself when possible by touching a grounded, conductive surface before handling a personality module or a permanent link adapter with no personality module attached.

The calibration procedure deletes saved test results from the memory of DSP-4000 test tools. To retain this data, use LinkWare to upload the test results to a PC before calibrating the universal permanent link adapters.

The calibration procedure deletes custom cable configurations from the test tool's memory. To retain this data, write it down before calibrating.
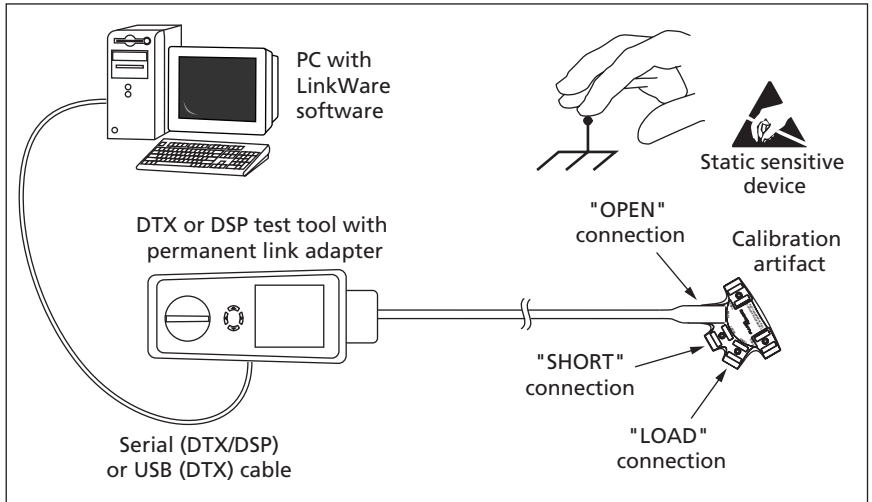
1   Verify the universal permanent link adapters are securely attached to the DTX or DSP main and remote units.

2   Connect the main unit to the PC with a PC interface cable. Turn on the main unit.

3   Start the LinkWare software on the PC.

4   From the DTX or DSP Utilities menu, select "Permanent Link Cal."; then click "Continue".

5   Remove the personality module from the universal permanent link adapter cable. Place the module in its original, static protection bag.

6   Attach the universal permanent link adapter cable to the calibration artifact's "OPEN" connector as shown in Figure 1; then click "Continue".

If an error message appears, verify that the universal permanent link adapter is securely attached to the test tool and the adapter cable is securely attached with the thumbscrew to the correct connector on the calibration artifact. Click "Continue" to retry the step.

7   Repeat step 6 for the artifact's "SHORT" and "LOAD" connectors. The test tool will restart when calibration is complete.

8   Replace the personality module on the test tool's adapter cable. Turn off the test tool.

9   Connect the PC interface cable to the remote unit. Turn on the remote unit; then click "Continue".

10 Repeat steps 5 through 9 for the remote unit. Click "Continue" when you are finished.

11 Perform the self-calibration procedure for DSP test tools, or the twisted pair reference procedure for DTX test tools. See the test tool's documentation for details.

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Figure 1. DTX/DSP Calibration Connections ("OPEN" connection shown)

Testing the DTX or DSP Universal Permanent Link Adapters

You can run a self-test on the DTX or DSP universal permanent link adapters as follows:
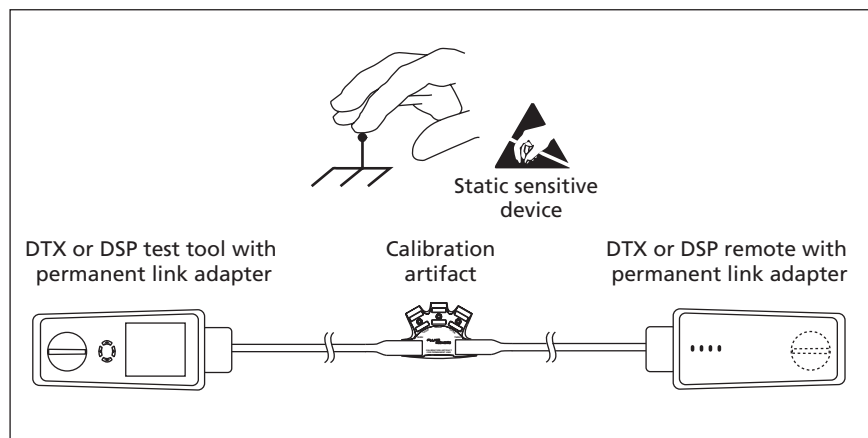
1   Verify the universal permanent link adapters are securely attached to the main and remote units. Remove the personality modules and place them in their original, static protection bag. Turn on both units.

2   Connect the adapter cables to the "THRU" connectors on the calibration artifact, as shown in Figure 2.

3   Turn the test tool's switch to SETUP.

   For a DSP test tool, select the "DSP-LIA101 SELF TEST" standard. Choose the default cable type.

   For a DTX test tool, select the "DTX PL Self Test" test limit in the twisted pair "Application" test limits.

4   Run an Autotest. If the Autotest fails, do the calibration procedure again; then run the Autotest again. If the test continues to fail, contact Fluke Networks for assistance.

Before you test cable, choose an appropriate test standard and cable type in SETUP.

Static sensitive device

DTX or DSP test tool with permanent link adapter

Calibration artifact

DTX or DSP remote with permanent link adapter

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Figure 2. Universal Permanent Link Adapter Self Test Connections for DSP Testers

Calibrating the OMNIScanner2 Universal Permanent Link Adapters

⚠ Caution

To avoid latent or immediate damage due to electrostatic discharge, ground yourself when possible by touching a grounded, conductive surface before handling a personality module or a universal permanent link adapter with no personality module attached.
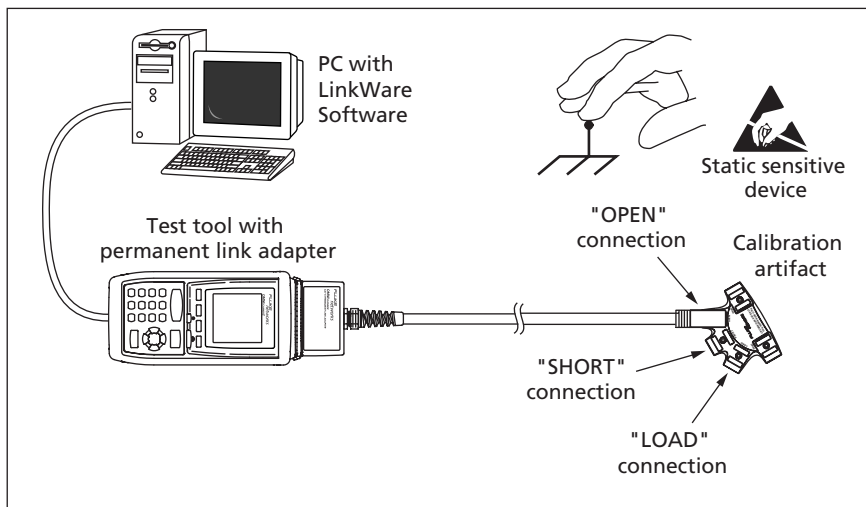
To calibrate the OMNIScanner2 universal permanent link adapter proceed as follows:

1 Verify the universal permanent link adapter is securely attached to the OMNIScanner2 main unit.

2 Connect the main unit to the PC with a PC interface cable. Turn on the main unit.

3 Start the LinkWare software on the PC.

4 From OMNIScanner Utilities menu, select "Permanent Link Cal."; then click "Continue".

5 Remove the personality module from the universal permanent link adapter cable. Place the module in its original, static protection bag.

6 Attach the universal permanent link adapter cable to the calibration artifact's "OPEN" connector as shown in Figure 3; then click "Continue".

Note

If an "Error Detected" message appears, verify that the universal permanent link adapter is securely attached to the test tool and the adapter cable is securely attached with the thumbscrew to the correct connector on the calibration artifact. Click "Continue" to retry the step.

7 Repeat step 6 for the artifact's "SHORT" and "LOAD" connectors.

8 Replace the personality module on the OMNIScanner2 test tool's adapter cable.

9 Attach the other permanent link adapter to the main unit.

10 Repeat steps 5 through 9 for the remote unit. Click "Continue" when you are finished.

11 Perform the reference procedure for the OMNIScanner2 test tool. See the test tool's documentation for details.

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Figure 3. OMNIScanner Calibration Connections ("OPEN" connection shown)

Testing the OMNIScanner2 Universal Permanent Link Adapters

To run a self-test on the universal permanent link adapters proceed as follows:

1 Verify the universal permanent link adapters are securely attached to the OMNIScanner2 and OMNIRemote2. Remove the personality modules and place them in their original, static protection bag.

2 Power on OMNIScanner2 and connect the adapter cables to the "THRU" connectors on the calibration artifact.

3 Select an Autotest to run: Cat 6 Link or Class E Link. If the Autotest fails, first repeat the calibration procedure and then repeat the Autotest. If the test continues to fail, contact Fluke Networks for assistance.
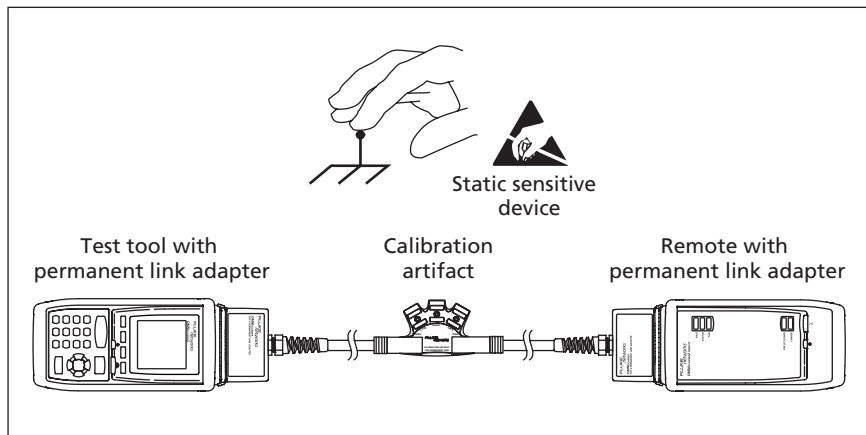
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Figure 4. Universal Permanent Link Adapter Self Test Connections

Maintenance and Service

Clean the calibration artifact with a soft cloth dampened with water or water and a mild soap. Do not use abrasives, solvents, or alcohol.

Store the calibration artifact in its original, static protection bag.

Only a qualified technician should service the universal permanent link adapters and the calibration artifact. Contact Fluke Networks for the location of the nearest service center.

Contacting Fluke Networks

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support@flukenetworks.com

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- Australia: 61 (2) 8850-3333 or 61 (3) 9329 0244
- Japan: +81-3-3434-0181
- Beijing: 86 (10) 6512-3435
- Korea: 82 2 539-6311
- Brazil: 11 3044 1277
- Singapore: +65-6738-5655
- Canada: 1-800-363-5853
- Taiwan: (886) 2-227-83199
- Europe: +44 1923 281 300

- USA: 1-800-283-5853
- Hong Kong: 852 2721-3228

Visit our website for a complete list of phone numbers.

Specifications

Reference load return loss uncertainty (all pairs): –40 dB up to 50 MHz, linearly tapered to –34 dB at 250 MHz

Operating temperature: 0 °C to 40 °C

Storage temperature: –20 °C to +55 °C

Life of artifact contacts (typical): >10,000 cycles

Certifications: $C \epsilon$ $_{c}$$\mathbb{SP}$$_{us}$