

DSP/OMNI-PLCAL

Universal Permanent Link Calibration Kit

Instruction Sheet

The DSP/OMNI-PLCAL Universal Permanent Link Calibration Kit lets you calibrate your DSP/OMNI-LIA101 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 DSP or OMNI-LIA101 universal permanent link adapters
- PC interface cable for the test tool (included with the test tool)

➤ ➤ ➤ If you own the DSP-4000 or DSP-4100:

- CableManagerTM software version 4.5 or higher loaded on a PC
 - DSP-4000 or DSP-4100 main and remote units with the following software versions:
DSP-4000: Software version 3.7 or higher
DSP-4100: Software version 4.7 or higher

➤ ➤ ➤ If you own the OMNIScanner2:

- Permanent Link Calibration software version 1.0 or higher loaded on a PC
 - OMNIScanner with software version 6 (v6) or higher

Getting the Required Software

The CableManager, DSP, Permanent Link Calibration, and OMNIScanner2 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 Universal Permanent Link Adapters with the DSP

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 CableManager to upload the test results to a PC before calibrating the universal permanent link adapters.

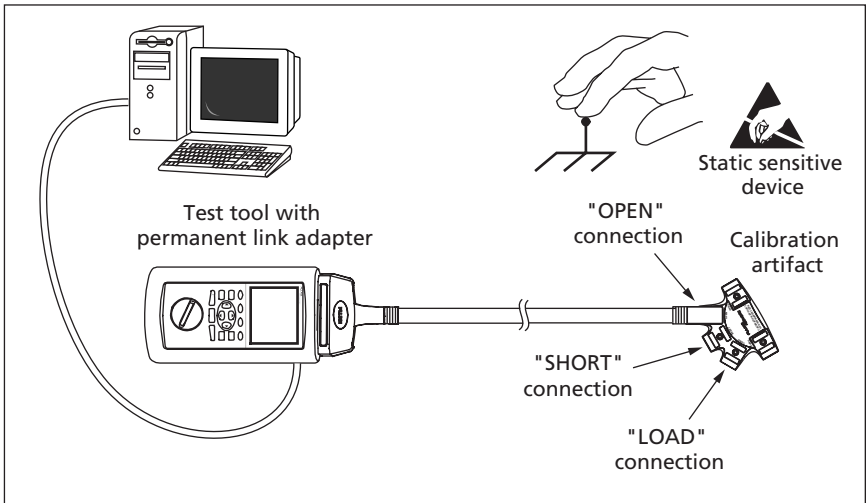
The calibration procedure deletes custom cable configurations from the test tool's memory. To retain this data, write it down before calibrating.

1. Verify the universal permanent link adapters are securely attached to the DSP main and remote units.
2. Connect the DSP main unit to the PC with the PC interface cable. Turn on the main unit.
3. Start the CableManager software by clicking on the CableManager icon in the Fluke Networks CableManager group.
4. From the 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".

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. Attach the universal permanent link adapter cable to the calibration artifact's "SHORT" connector; then click "Continue".
8. Attach the universal permanent link adapter cable to the calibration artifact's "LOAD" connector; then click "Continue". The test tool will restart when calibration is complete.
9. Replace the personality module on the DSP test tool's adapter cable. Turn off the test tool.
10. Connect the PC interface cable to the DSP remote unit. Turn on the remote unit; then click "Continue".
11. Repeat steps 5 through 9 for the remote unit. Click "Continue" when you are finished.



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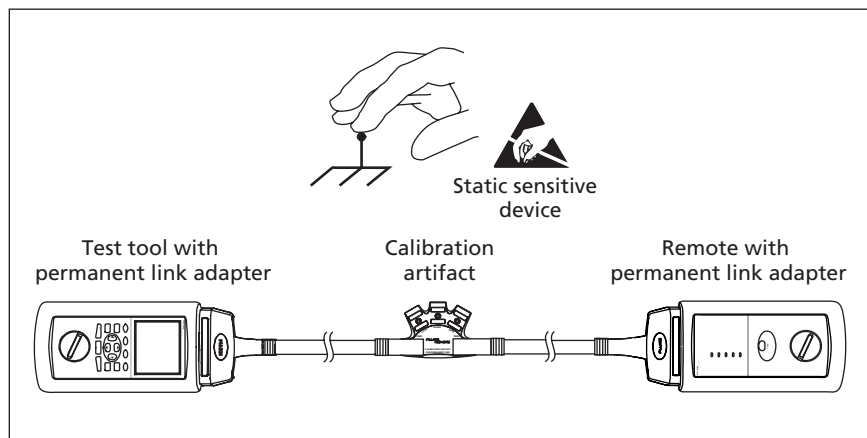
Figure 1. Calibration Connections ("OPEN" connection shown)

Testing Your Universal Permanent Link Adapters with the DSP

You can run a self-test on your universal permanent link adapters as follows:

1. Verify the universal permanent link adapters are securely attached to the DSP 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. Set the test standard to "Permanent Link Test". Choose the default cable type.
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.



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Figure 2. Universal Permanent Link Adapter Self Test Connections

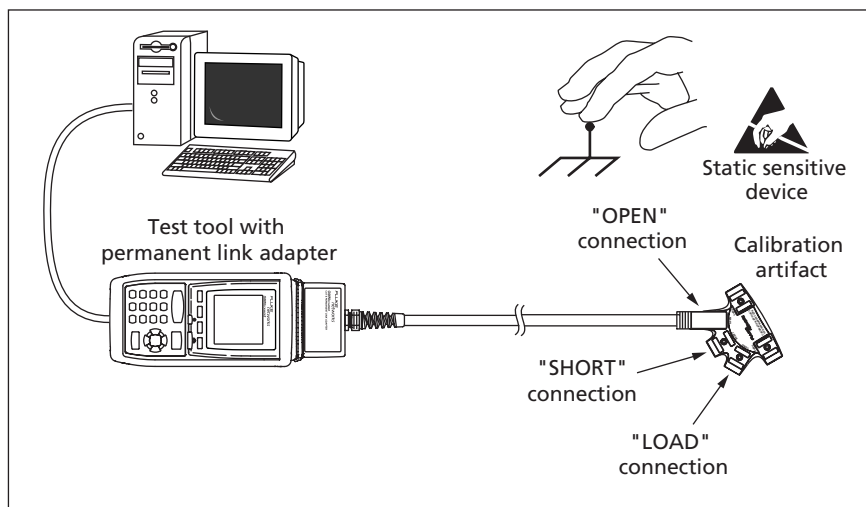
Calibrating the Universal Permanent Link Adapters with the OMNIScanner

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 OMNIScanner universal permanent link adapter proceed as follows:

1. Verify the universal permanent link adapter is securely attached to the OMNIScanner2.
2. Once powered on, use the serial cable or the USB cable to connect OMNIScanner2 to the PC.
3. Run the Permanent Link Calibration software. The names of the Instrument and the Operation are displayed.
4. Select the appropriate Communication Port: USB, COM 1, or COM 2.
5. Click on the RUN button to start the calibration process. The Connect and Running "LEDs" turn bright green and show the progress of the test(s). They will turn 'off' once the test is completed.
6. Click on the CANCEL button to abort the test.



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

7. When prompted, attach the universal permanent link adapter cable to the Fluke Networks Calibration Artifact's "LOAD" connector.
8. When prompted, attach the universal permanent link adapter cable to the Fluke Networks Calibration Artifact's "SHORT" connector.
9. When prompted, attach the universal permanent link adapter cable to the Fluke Networks Calibration Artifact's "OPEN" connector.
10. Repeat the process for the second universal permanent link adapter.

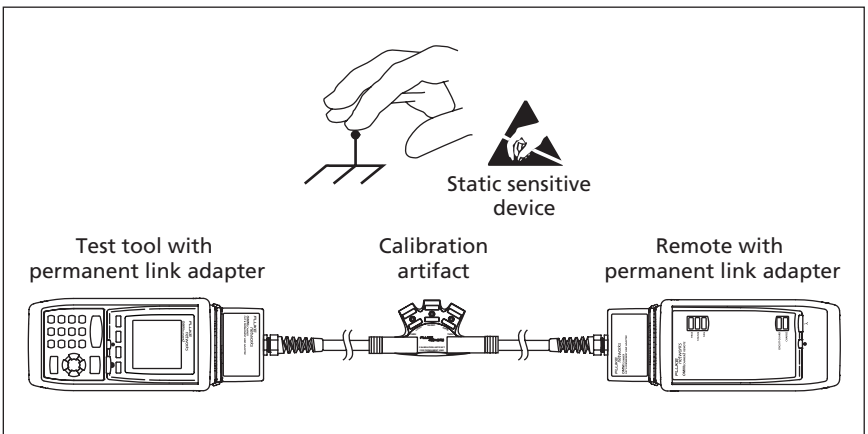
Note

To avoid errors do not press any of OMNIScanner's keypad buttons during the calibration process.

Testing the Universal Permanent Link Adapter with OMNIScanner

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

Visit the Fluke Networks website at **www.flukenetworks.com**. Send email to **fluke-assist@flukenetworks.com**.

To order accessories or get the location of the nearest Fluke Networks distributor or service center, call:

- USA: 1-888-993-5853
- Canada: 1-800-363-5853
- Europe: +31-402-675-200
- Japan: +81-3-3434-0181
- Singapore: +65-738-5655
- Anywhere in the world: +1-425-446-4519

For operating assistance in the USA, call 1-800-283-5853.

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 US}

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Fluke Networks' warranty obligation is limited, at Fluke Networks' option, to refund of the purchase price, or free of charge repair or replacement of a defective product that is returned to an authorized Fluke Networks Service Center within the warranty period.

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