



# Zener Adapter Kit for the Touch 1

**Purpose:** Measure the reverse breakdown voltage of zener diodes.

**Range:**  $\pm 19$  Volts

## Required Items:

- Zener Adapter Kit for Touch 1, part number: KZEN-01:
  - Zener Voltage Adapter
  - Wall-mounted Power Supply
  - Custom Zener Script Disk.
- Scripting Feature (purchased separately)
- Touch 1
  - Scanners: one remaining double-wide adapter position
  - Hardware version: any, but requires 8 Meg of memory, min.
  - Software version: 3.15 or higher.

### Note.

The information in this document is also in the Help system. Press any **Help** button twice, then press **Zener Diodes** in the **Index**.

## Setup: Five-step Process

Step #1: (Optional) Copy the *Zener\_01.cmp* script.

Step #2: Install the Zener Adapter, power supply, and a Sample Cable.

Step #3: Learn a Sample Cable to Create a Wirelist.

Step #4: Add *cmpZenerDiode* components to the Wirelist.

Step #5: Verify the test setup.

## Step #1 (optional): Copy the *Zener\_01.cmp* Script

**Note.** Copying the *Zener\_01.cmp* Script is necessary only once. It will run only with software Ver. 3.15 or higher and the Scripting Feature.

### Verify the Software Version and Scripting Feature

1. Power down the Touch 1, then turn it back on.
2. As soon as **Initial Self Test** opens press and hold **Pause**.
3. In **Initial Self Test** the following conditions should list:
  - SW Version: 3.15 or higher.
  - Enabled Options: Scripting.
  - If both conditions are the case, continue with Step #1.
  - If Scripting is not enabled or if you have ver. 3.14 or lower, call Cirris Technical Support for updates (1-800-441-9910).

### (Optional): Copy the *Zener\_01.cmp* Script

1. Insert the *Custom Zener Script Disk* in the Touch1 floppy drive.
2. In the **Main Menu** of the Touch1, press **System Setup**.
3. In **System Setup**, press **Disk Utilities**.
4. In **Disk Utilities**, press **Copy Files**.
5. In **Copy Files**, press **From**.
6. In **Select 'From' Loc & Files**, select **<A:>**. Press **Open Loc**, then highlight *Zener\_01.cmp*. Press **Mark**, then **OK**.
7. In **Copy Files**, press the **To** button, select the destination directory, then press **OK**. Verify the selected files, then press **Copy**.

## Step #2: Install the Zener Kit and a Sample Cable

1. Install the adapters used to connect to the Sample Cable so one double-wide adapter position remains for the Zener Adapter.
2. Plug the Zener Adapter into any remaining "J" position on one of the scanners.
3. Connect the wall-mount power supply to DC Power on the Zener Adapter (KZEN-01) and to the same plug strip as the Touch 1.
4. Connect your Sample Cable.

## Step #3: Learn a Sample Cable to Create a Wirelist

In Three Parts:

1. Attach the *Zener\_01.cmp* Script
2. Enable Components learning.
3. Make other settings, then Learn.

### Part #1: Attach the *Zener\_01.cmp* Script

1. In the **Main Menu** of the Touch1, press **Test Setup**.
2. In **Test Setup**, press **Learn Sample**.
3. In **Learn Setup** press **Change**.
4. In **View/Change Learn Settings** press **More, Script**, then **Change Script**.
5. In **Change Script**, press **Custom Component Script**.
6. In **Select Script Type \*.cmp**, highlight *Zener\_01.cmp*, then press **Select**.
7. In **Change Script**, press **OK** to return to the "View/Change Learn Settings" window.

### Part #2: Enable Components Learning

1. In **View/Change Learn Settings** press **More, Comp**, then **Change Comp**.
2. In **Change Learn Components**, press **Diode**. Enable other components if they are in the Sample Cable, then press **OK** to return to the "View/Change Learn Settings" window.

### Part #3: Make Other Settings, then Learn

1. In **View/Change Learn Settings** make other settings, if necessary (from the *Go to* buttons), then press **OK**.
2. In **Learn Setup**, verify settings, then press **Learn**.
3. In **Start Learn** and **Learn Sample**, wait for the Touch 1 to advance through windows until you get to "Learn Complete."  
(It can take some time.)
4. In **Learn Complete** press **OK** to return to the "Test Setup" window.

## Step #4: Add *cmpZenerDiode* Components

In Three Parts:

1. Open the Custom Component window.
2. Add *cmpZenerDiode* components.
3. Delete unnecessary components that may have learned.

### Part #1: Open the Custom Component window

1. In **Test Setup**, press **View & Change Wirelist**.
2. In **View/Change Wirelist** press **More, Comp**, then **Change-Comp**.
3. In **Change Components** note the test points of the "Diode Components" that learned. If these match up to the zeners in the Sample Cable, write down their test points for reference when adding the zener components' Source and Reference points (in the Diode Component anodes list first). Then press **Add**.
4. In **Add Components**, press **Custom**.
5. In **Custom Component**, highlight **cmpZenerDiode: Test Zener Voltage...**, then press **Select**.

### Part #2: Add/Change *cmpZenerDiode* Components

1. In **Add/Change: cmpZenerDiode**, highlight a parameter, then press **Change**. In the window that opens, set:

Table of Parameters	
Parameter:	Explanation:
Source Point(s)	Source points are either the cathode or the anode depending on test voltage polarity. If positive voltage = Cathode If negative voltage = Anode <b>Note.</b> List all the test points connected together.
Reference Point	Point of measurement—either the cathode or the anode depending on test voltage polarity. If positive voltage = Anode If negative voltage = Cathode
Max Pos or Neg Volts Min Pos or Neg Volts	Sets the outer voltage limits of what the breakdown voltage should be (equivalent to setting tolerance). <b>Note.</b> Voltage polarity affects setup: If you use a positive voltage: Source Point(s) = Cathode Reference Point = Anode If you use a negative voltage: Source Point(s) = Anode Reference Point = Cathode

2. When finished, in **Add/Change: cmpZenerDiode** press **OK** to return to the "Change Components" window.
3. Repeat for each component by pressing **Add**, then **OK** when done.

## Step #4, cont.

### Part #3: Verify the Wirelist

1. If in the Component windows, press **OK** to accept, **Cancel** to discard until you return to the "View/Change Wirelist" window.
2. In **View/Change Wirelist**, press **More, Comp** to highlight the Components section of the Wirelist. If you have a printer, press **Print** to print the list of components. Verify the ZenerDiode components are all added and decide if you want to remove any components that may have learned where zeners were detected.  
**Tip.** If you leave in Diode Components with the same test points you will get diode error reporting in addition to zener error reporting.
3. (Optional) In **View/Change Wirelist**, press **More, Comp**, then **Change-Comp**.
4. In **Change Components** highlight then press **Delete** to remove any unnecessary components such as Diode Components if you do not want them in. Press **OK** until you get to the "Test Setup" window.
5. In **Test Setup** press **Retrieve Wirelist** to save the Wirelist.

## Step #5: Verify the Test Setup

1. In **Test Setup** press **Test** to start the test.
2. If you get errors, press **Display Error(s) & Fault Location**.  
For the *Bad cmpZenerDiode* error, note the message below it:

**Table of *Bad cmpZenerDiode* Errors**

Error:	Possible Causes:
Bad Breakdown Voltage	Documentation Errors: <ul style="list-style-type: none"> <li>• Incorrect source and reference points.</li> <li>• Mismatch between choice of voltage polarity and source &amp; reference points.</li> <li>• Max. &amp; Min. voltage too tight for the manufacturer's specified tolerance.</li> </ul> Cable Assembly Errors: <ul style="list-style-type: none"> <li>• Anode and cathode are reversed</li> <li>• Wrong part—breakdown voltage</li> <li>• Missing zener diode</li> <li>• Out-of-tolerance part</li> <li>• Internal short or open</li> </ul>
Voltages listed backwards in component definition	Max Pos or Neg Volts is less than Min Pos or Neg Volts (or vice versa).
Both Voltages must have the same sign +/-	Max Pos or Neg Volts must be the same polarity as Min Pos or Neg Volts.
Can't find Cirris Zener Test adapter E67861 in Wirelist	KZEN-01 Zener Adapter is: <ul style="list-style-type: none"> <li>• not installed in the Touch 1</li> <li>• not in the Wirelist</li> <li>• not in the Adapter List.</li> </ul>