



HEAR THE POWER OF TECHNOLOGY.

Title: DSP-3 PLD Update  
Bulletin #: DSP0007 Issue Date: June 27, 2003  
Models Affected: DSP-3 Bulletin Revision: A  
Production Range: 07/2000 through 06/2003

## Description

During severe faults in which a DSP-3 internally resets itself, DSP-3s manufactured before June of 2003 may not mute the outputs.

## Symptoms

Affected DSP-3s will emit audible popping only during an internal reset which occurs after a severe fault is detected.

## Instructions

If the DSP-3 has exhibited an audible popping noise, investigate and correct the fault before continuing with this update. See the DSP0006 service bulletin. The following procedure describes the steps required to update the PLD in a DSP-3. The PLD firmware version 3.0 corrects the symptoms above.

### Tools and materials required:

- Grounded anti-static wrist band and work surface
- Personal computer (PC) with Windows (98/2000/NT) operating system and Lattice Semiconductor ispVM™ System software (downloadable from Lattice Semiconductor's web site: <http://www.latticesemi.com>) and QSC Signal Manager software installed
- ispDOWNLOAD™ cable and parallel port interface box (available from Lattice Semiconductor)
- RS-232 serial cable (straight through)
- JEDEC file containing the update code (QSC part # PG-000060-00, available from QSC Technical Services)
- DPX-1 external power supply
- Card edge to 8-pin header adapter (Figure 1)

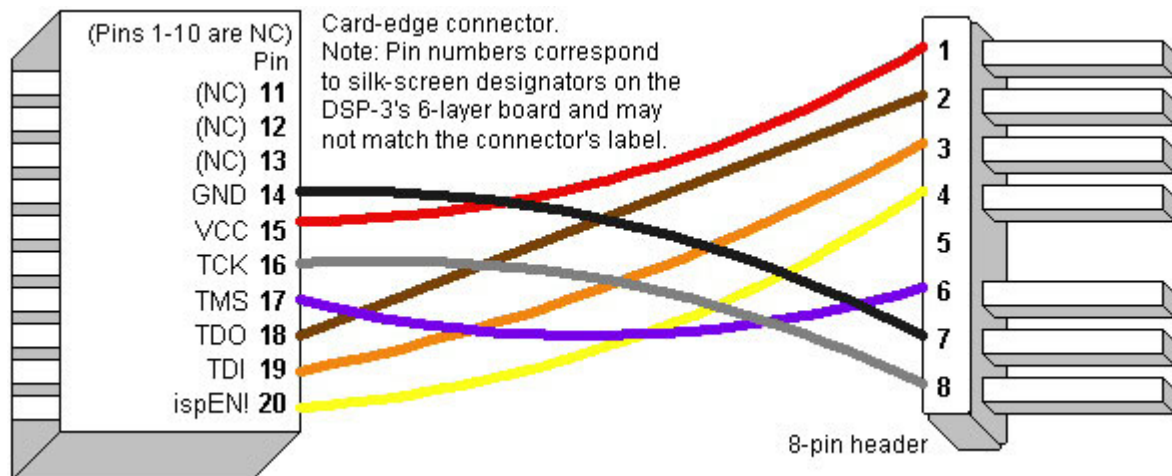


Figure 1. Card-edge to 8-pin header adapter.

### Procedure: Preparing the DSP-3 for the download

1. If the DSP-3 is powered by an amplifier, first turn the amplifier off; then disconnect the DSP-3. Note that hot swapping or disconnecting the DSP-3 while the amplifier is on could cause a fuse inside the amplifier to blow. If the DSP-3 is powered remotely, unplug the external power. Disconnect all inputs and outputs and wait 10 minutes for internal voltages to bleed down.

Continued on next page →

2. On the back of the DSP-3, remove the four screws securing the cover.
3. Remove the four screws securing the board assembly to the chassis. Gently pull the two boards out of the chassis.
4. Attach the card edge connector to the appropriate side of the DSP-3's 6-layer board. If the two boards become loose or disconnect, reattach them. Connect the 8-pin header to the ispDOWNLOAD™ cable and plug the cable into the parallel port of your PC.
5. Plug in the external power supply and verify power using the blue LED indicator. The DSP-3 module is now ready for the download.

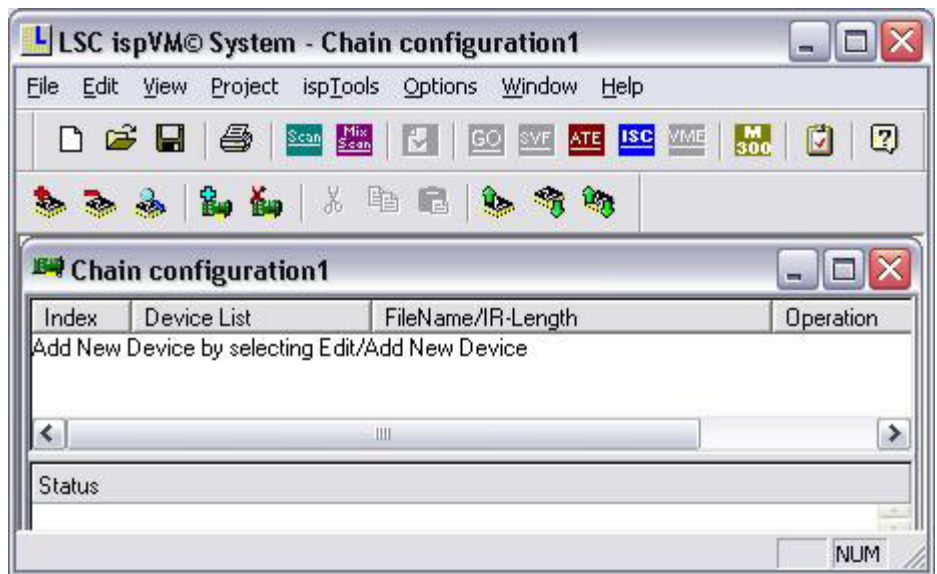


Figure 2. The ispVM™ System window.

### Procedure: Updating the PLD

1. Start the ispVM™ System application. The following steps use screenshots of Version 13.0.1 installed on a Windows XP Professional system; other versions of ispVM™ System may look different. A window like that in Figure 2 will appear.
2. Click **Edit** followed by **Add Device**.
3. Type an appropriate description in the **Part Description** box, then click **Select** (Figure 3). In the **Device Family** box select **ispLSI 2000VE**. Click **2032VE** in the **Device** list and **44-pin TQFP** in the **Package** list. Click **OK**.

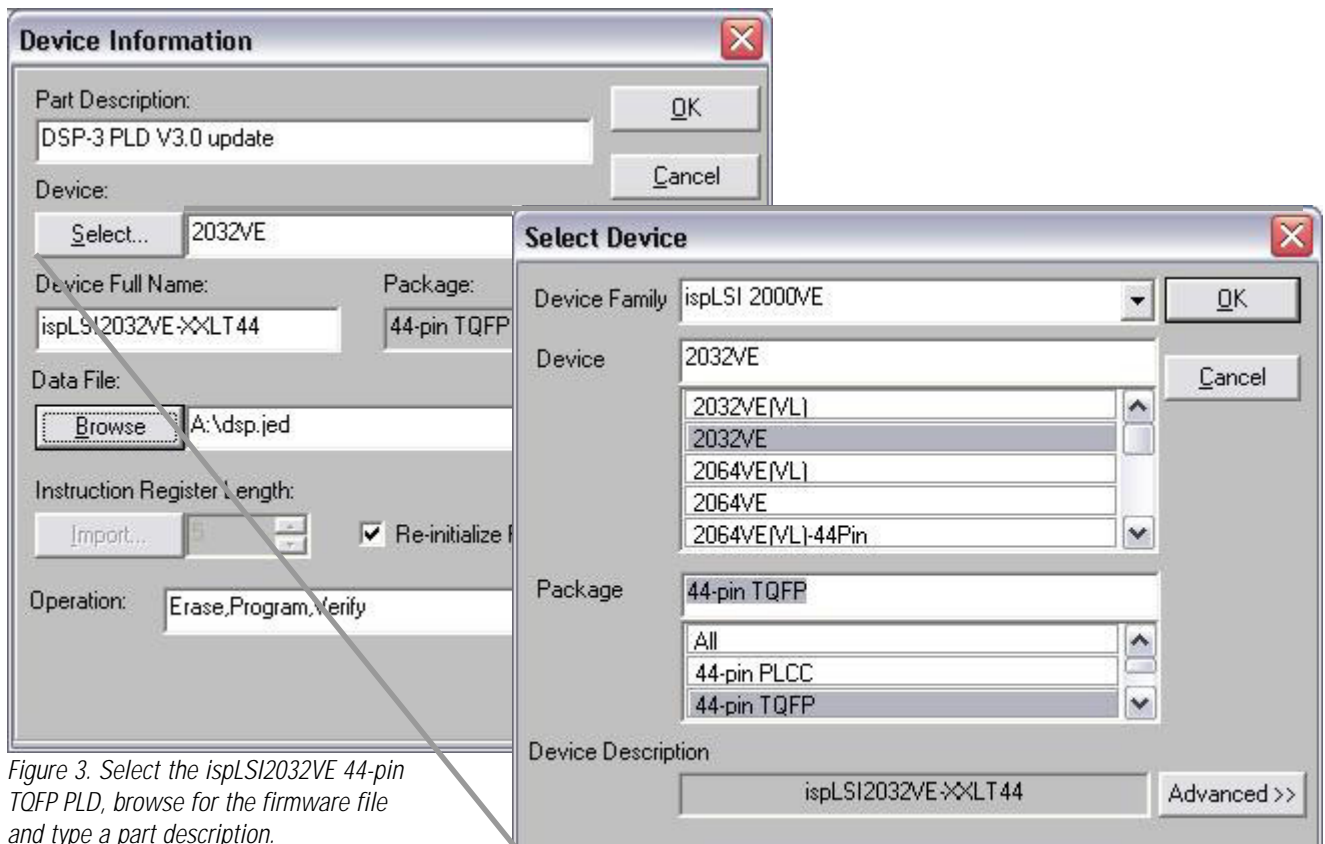


Figure 3. Select the ispLSI2032VE 44-pin TQFP PLD, browse for the firmware file and type a part description.

- In the Device Information window, click **Browse** and locate the current firmware file for the DSP-3 on your local or disk drive. Click **OK**; the device, filename and operation in the main window will reflect the information just entered.
- Click the Go icon on the toolbar or click **Download** from the **Project** menu. The download process will take approximately 5 seconds, followed by a Pass indication in the Status column of the main window (Figure 4).

### Procedure: Reassembly and testing

- The update is complete. Place a red, 1/4", color coding label on the Lattice PLD with reference designator U24.
- Disconnect the external power supply and the card edge connector from the DSP-3 module.
- Place the two boards in the chassis and fasten the four screws that secure the board assembly to the chassis.
- Position the cover and attach it with the four remaining chassis screws.
- Power the DSP-3 and verify that the module communicates through it's serial port.
- If your tests reveal proper operation, return the unit to use.

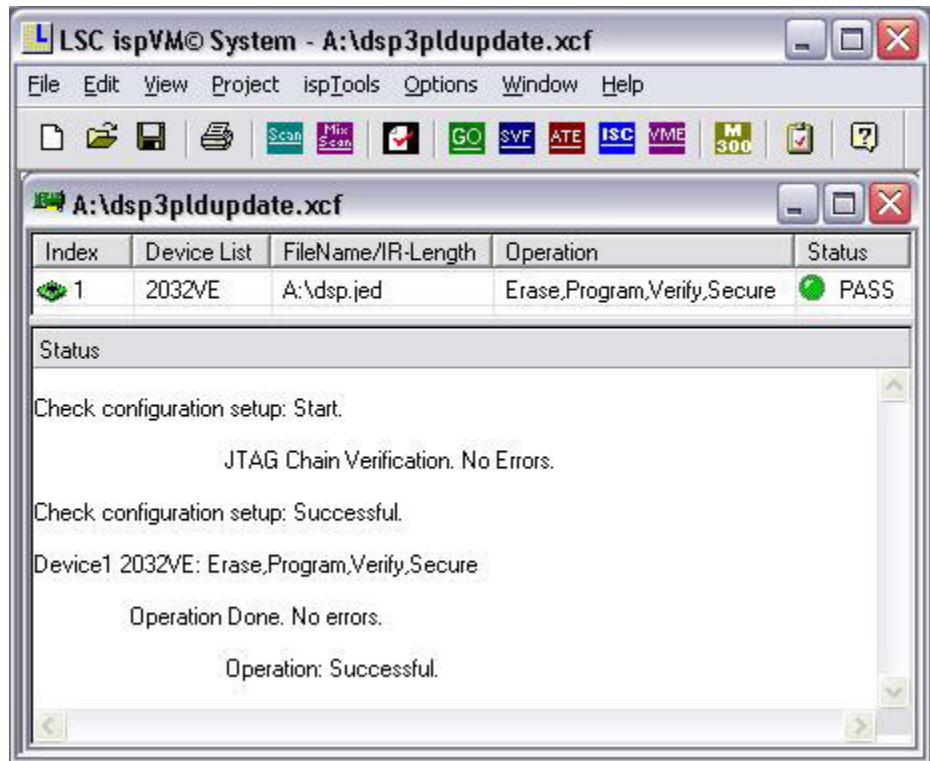


Figure 4. The operation is successful.

This bulletin is available for download from Service Bulletins page in the *Tech Support* section of the QSC Audio Web site: [http://www.qscaudio.com/support/technical\\_support/bulletins.htm](http://www.qscaudio.com/support/technical_support/bulletins.htm)

## Contact information

If you need any further information regarding this service procedure, please contact QSC Technical Services at the addresses or numbers below.

*Telephone:* 1-800-772-2834 (within USA only)  
+1 (714) 957-7150

*Fax:* +1 (714) 754-6173

*E-mail:* tech\_support@qscaudio.com

*Web sites:* www.qscaudio.com (product info/support)  
www.qscstore.com (on-line accessory and replacement component sales)

*Postal and parcel address:* **QSC Audio Products, Inc.**  
Technical Services Group  
1665 MacArthur Blvd.  
Costa Mesa, CA 92626 USA