

## **Flashing the CDVR Using the CDVR PC Software**

Embedded firmware is the operating program that controls the actions of the CDVR. The CDVR stores firmware in nonvolatile flash memory that can be reprogrammed through the RS-232 communication port. It is not necessary to replace EPROM chips when replacing the firmware with a newer version.

### **CAUTION**

If power is lost or communication is interrupted during file transfer, the CDVR will not recover and will cease to be operational.

### **NOTE**

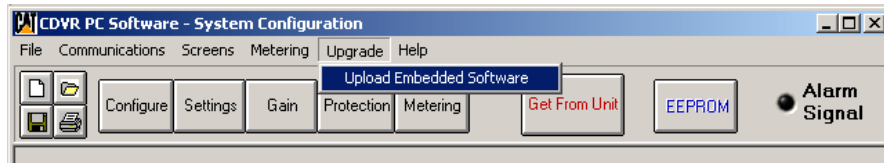
Communication must be closed prior to uploading embedded firmware to the CDVR. Refer to *Terminating Communication* in the CDVR manual (REN7941) for information about closing CDVR communication.

In order to flash the CDVR, the following materials are needed:

- CDVR (Cat part # 235-5725)
- CDVR PC software (Cat part # 252-7515, released August 12, 2004)
- Firmware (Cat part # 252-7511) as a .s19 file
- Computer with comm. port
- RS232 pass through cable (Cat part # 1U-9484, or equivalent), one end male, the other female
- 24 V power to the CDVR

Below is the list of steps needed to properly flash the CDVR.

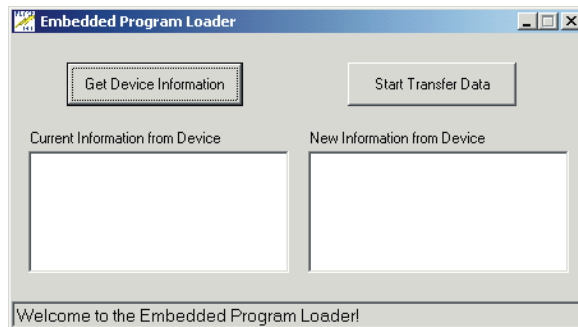
1. Apply power to the CDVR.
2. Connect a communication cable between the RS-232 connector (J4) of the CDVR and the appropriate communication port of your PC.
3. Start the CDVR PC software.
4. Click **Upgrade** on the Menu bar and click **Upload Embedded Software** (see Figure 1). If this menu selection is grayed out, you'll need to close CDVR communication. Refer to *Terminating Communication* in the CDVR manual (REN7941) for information about closing CDVR communication.



**Figure 1. Upload Embedded Software**

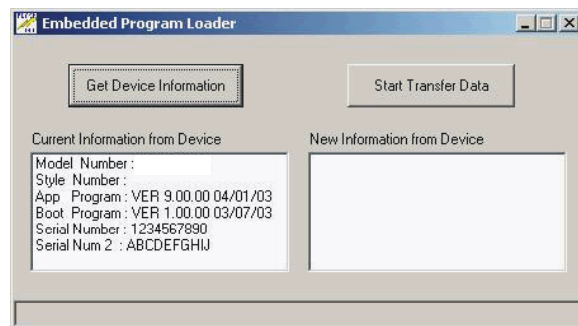
5. When **Upload Embedded Software** is clicked, a dialog box appears and verifies your intent to update the firmware. Click **Yes** to proceed. When **Yes** is clicked, the CDVR Embedded Program Loader of Figure 2 appears.

Note: Uploading firmware may replace some user-adjusted settings with factory-default settings.



**Figure 2. Embedded Program Loader**

6. Click the **Get Device Information** button. The CDVR Embedded Program Loader retrieves and displays the CDVR model number in the left-hand column (see Figure 3).



**Figure 3. Retrieved CDVR Information**

7. Click the **Start Transfer Data** button to proceed with software uploading. The dialog box of Figure 4 appears and recommends that your CDVR settings be saved in a file that can be uploaded to the CDVR after the embedded firmware is updated.



Figure 4. Settings File Reminder Dialog Box

Clicking **No** allows you to exit the upload process so that a CDVR settings file can be created. Refer to the *Settings Files* subsection in the CDVR manual (REN7941) for information about creating a settings file.

Clicking **Yes** continues with the upload process and displays the Open dialog box of Figure 5. The Open dialog box is used to locate and select the appropriate file for uploading to the CDVR. Only files with .s19 extension are displayed in the Open dialog box.

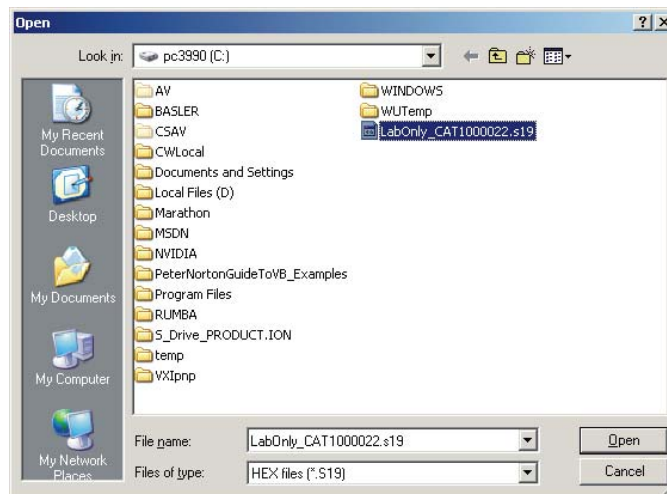
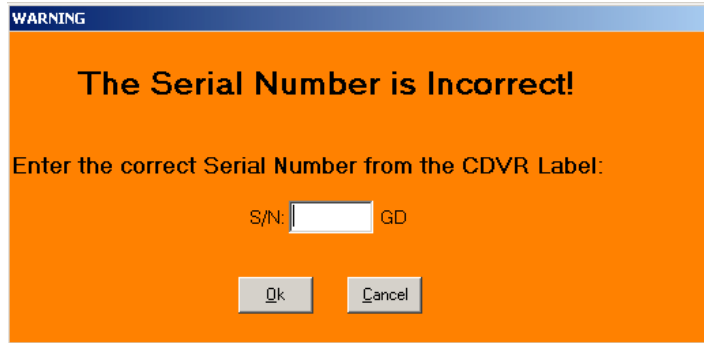


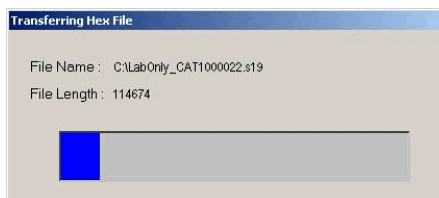
Figure 5. Open Dialog Box

8. Select the appropriate file for uploading and click the Open button to start the file transfer. If the software asks to enter the serial number of the CDVR (see Figure 6), type in the 8 numerical digits of the serial number exactly as they appear on the upper right-hand corner of the label on the CDVR, ignoring the letters “GD”. Do not use the CDVR serial number shown in the PC software. Do not use spaces, dashes, or any other symbols. Press **Enter**.



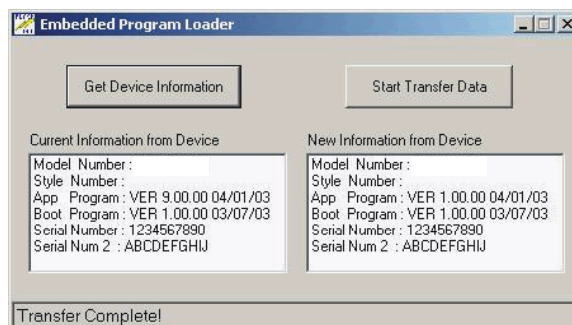
**Figure 6. Serial Number Change**

9. A dialog box (see Figure 7) indicating the progress of the file transfer is displayed.



**Figure 7. File Transfer Progress**

Once the transfer is complete, the device information is displayed in the right-hand column of the Embedded Program Loader (Figure 8). The displayed program version number indicates the version and date of the firmware just loaded.



**Figure 8. CDVR Information After Upload**

10. Close the Embedded Program Loader. The default settings are loaded into the CDVR and checked.

If desired, the settings can be reloaded into the regulator from the saved settings file. Refer to the *Settings Files* subsection in the CDVR manual (REN7941) for information about loading a settings file.