

Instructions Down Load firmware for Lx/Ls AC source

Requirements

This document provides basic instructions for updating firmware on Lx or Ls series AC power sources. The following items are required to download new firmware:

- A copy of the new firmware in HEX format. The file may be downloaded from the CI website or may have been distributed through email. If the file is archived to a zip, it must be unzipped to it's original HEX format (.hex extension) before it can be used.
- The FlashLoaderComm utility program. It can be downloaded from the California Instruments website (www.calinst.com) under GUI/Software. You need to be a registered user to do so.
- A Windows 98/NT/2000/XP PC with serial port.
- A RS232¹ serial cable, CI P/N 250709. This cable is provided in the Lx/Ls Series ship kit. If lost, a regular straight-thru 9 pin Male to 9 pin Female cable can be used.

Instructions

Copy both FlashLoaderComm.exe and CIC674rn.nn.exe to a temporary folder on your PC. If the FlashLoaderComm.exe was downloaded from the CI web site, it will have to be installed. This is a self extracting installation. Just double click on the exe file to perform the installation and follow the user prompts.

CIC674rn.nn.exe is the hex file that contains the firmware update. The n.nn will be the revision number of the firmware. The hex file may be distributed as a WinZip archive with a .zip extension. In that case, unzip the .zip file to it's native .hex format before attempting to upgrade the Lx/Ls unit.

Please record the revision of the previous firmware before the update for reference. The firmware revision is displayed during power up sequence.

1. Connect a straight-through (not a null modem) RS232 cable (9 pin to 9 pin) between the power source and the com port of the PC.
2. Power up the AC source while holding down the **ENTER key on the keyboard. *RELEASE the ENTER key as soon as the first text appears on the LCD display.*** Do not hold the ENTER key too long as the unit will revert back to normal operation mode if you do. This will put the source controller into the Flash down load mode. Wait until the last screen appears that shows the RS232 setup parameters that are used in the boot loader mode.
3. Open up the Flash Loader utility program "FlashLoaderComm.exe". This utility is available from the CI website at www.calinst.com in the Gui and Drivers download section.
4. Select the COM port. Leave "Baud rate" and "Cmd Delay" without change.
5. Select "Init Port" followed by "FlashUpdate".
6. Select Browse and locate the file CIC674rn.nn.exe. This file is supplied with this instruction and should be included in the same directory as FlashLoaderComm.exe file.
7. Select "DownLoad". This will start the firmware update procedure. The front panel display for the AC source will display the message "Erasing flash" followed by "Flash erase complete" and "Programming Flash". The down load will be completed in about 6 to 7 minutes.

¹ The GPIB interface cannot be used for this purpose, as the Flash boot loader is a small resident program that does not support GPIB communications.

Post Download Issues

When a revision change takes place several errors may appear at power up, dependent on previous revision. To clear the errors send the SCPI commands from the interface screen of the GUI or use the Flash Loader utility program command line as instructed below based on the error reported:

1. Always perform this step, even if no errors are reported:

Using the interface:

Using the Flash loader program or LxGui program (establish communication with the unit first) command line, send the following command:

```
OUTP:PON:STATE RST
```

Power down the unit and power back up.

Re-establish connection over the bus.

If power settings other than factory defaults (60 Hz, low voltage range, output open, current limit max) are required, set frequency and voltage range to the desired power up conditions and save to register 0, send following commands:

```
*SAV 0
```

```
OUTP:PON:STATE RCL0
```

----- OR -----

Using the Front Panel

Press MENU key until CONFIGURATON is shown.

Select CONFIGURATION by pressing ENTER key and scroll to POWER ON entry using up down arrow keys.

If set to REG0 selection, change to RST selection using Voltage or Frequency knob.

Power down the unit and power back up.

If power settings other than factory defaults (60 Hz, low voltage range, output open, current limit max) are required, set frequency and voltage range to the desired power up conditions and save to register 0 using CONFIGURATION menu, SAVE REG# 0 entry. Press ENTER key to save settings to reg 0.

Return to PON REG entry and set the power on state to RCL0.

If other setup registers have been used before the firmware upgrade, they will have to be reset as well by setting the desired settings and re-saving to these registers.

2. If waveform memory error appears, send TRACE:DEL:ALL using the command line of the Flash download utility.
3. If initial memory lost message appears, send PONS:CLOCK STAN.
4. If the model changed to Ls from Lx, send SYST:MOD "Lx"