



Agilent Technologies

Innovating the HP Way

1100 Liquid Chromatograph Firmware Upgrade Procedures

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The information contained herein is intended for use by informed individuals who can and must determine its fitness for their purpose.

Updating Firmware of HP 1100 Series of HPLC modules

Purpose

The objective of this note is to enable users of the Agilent 1100 series of HPLC modules to update the modules' firmware. Updating the firmware might be necessary due to

- new released firmware revisions (new features, bug fixing)
- replacing the main board (repair)

This note reflects the following firmware revisions:

HPLC modules:	A.03.8X and above
G1323A Control module:	A.02.10
G1323B Control module: includes MWD and RID control	B.01.02
Update Utility:	3.01

NOTE

The screens in this note may show older firmware revisions than listed above.

Select the topic of interest:

- [“Firmware Description” on page 2](#)
- [“Firmware Updates” on page 3](#)
- [“Updates from the Webpage” on page 4](#)
- [“Update Firmware using the Control Module” on page 5](#)
- [“Update Firmware using the PC Utility” on page 9](#)

General Information

Firmware Description

The firmware of the instrument consists of two independent sections:

- a non-instrument specific section, called **resident** system,
- an instrument specific section, called **main** system.

The control module (G1323A/B) firmware has just one main firmware.

Resident System

This resident section of the firmware is **identical** for all HP 1100 series modules. Its properties are:

- the complete communication capabilities (HP-IB, CAN, LAN and RS-232C),
- memory management,
- ability to update the firmware of the main system.

Main System

This main section of the firmware is **module specific**. Its properties are:

- the complete communication capabilities (HP-IB, CAN, LAN and RS-232C),
- memory management,
- ability to update the firmware of the resident system.
- In addition the main system comprises the instrument functions that are divided into common functions like
 - run synchronization through APG remote
 - error handling,
 - diagnostic functions,
 - or module specific functions.

Firmware Updates

Table 1

File naming convention of firmware

Module	Type of firmware	Name
Pumps, Autosamplers, Detectors, Column Compartment	Main	13xx-vv.DLB
Pumps, Autosamplers, Detectors, Column Compartment	Resident	RESAww.DLB
G1323A Control Module	Main	LCAvwwEN.BIN
G1323B Control Module	Main	LCBvwwEN.BIN

where

- xx is the product number, for example, 15 for the G1315A DAD,
vvv is the revision number, for example 360 is revision 3.60

NOTE

Update of main system can be done in the resident system only (except the control module).

Update of the resident system can be done in the main system only.

Firmware updates can be done using your user interface:

- [“Update Firmware using the Control Module” on page 5](#) with files from a PC-card or
- [“Update Firmware using the PC Utility” on page 9](#) with Agilent ChemStation and files from floppy/hard disk

Updates from the Webpage

New firmware revisions are provided via the Agilent Technologies web page
<http://www.chem.agilent.com>

Products - Chemical Analysis - Technical Support

or

http://www.chem.agilent.com/scripts/cag_firmware.asp

- A firmware history document (PDF) describes the changes.
- This note (PDF) that describes the download and update process.
- One file that includes all firmware files for all modules and the PC Update Utility and above two PDF documents.
- Individuell firmware files, which include the module specific main/resident firmware plus this document.

All files are zipped (self-extracting EXE files) to assure complete downloads to your PC. After download, run the file from your explorer to extract the files to a local directory, default is C:\EXTRACT\.

1100 firmware files	default\1100-FW
document files (PDF)	default\1100-FW
G1323A control module	default\1100-FW\1323A210
G1323B control module	default\1100-FW\1323B102
PC Update Utility 3.02	default\FWUPGRAD.301

NOTE

It's recommended to use as default C:\ to get the structure C:\1100-FW. The following procedures refer to this structure.

Update Firmware using the Control Module

- [“Updating the Control Module firmware” on page 5](#)
- [“Updating the HPLC Module firmware” on page 6](#)

Updating the Control Module firmware

NOTE

The G1323A control module firmware (LCA210EN.BIN) can be updated from a PCMCIA card only.

The G1323B control module firmware (LCB102EN.BIN) can be updated from a PCMCIA card or via the PC-Update Utility, see [“Update Firmware using the PC Utility” on page 9](#).

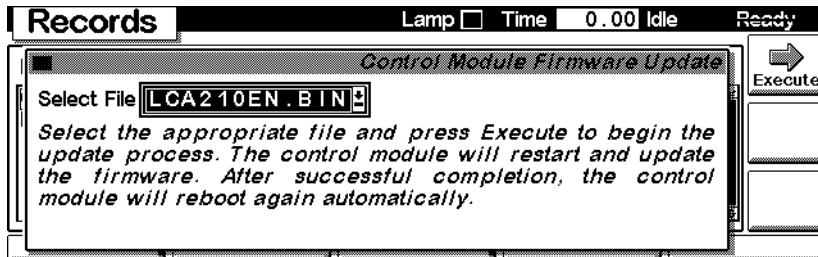
The procedure below is based on the G1323A Control Module and LCA210EN.BIN is used as firmware file name. For the G1323B Control Module use the LCB101EN.BIN instead.

- 1 Copy the LCA210EN.BIN file from the directory \1100-FW\1323A210 to your PC card's root directory, for download refer to [“Updates from the Webpage” on page 4](#).
- 2 Insert the PC card into the control module and restart the control module by pressing *m-key* and *Restart* on Analysis screen.
- 3 Press *Views-System-Records* and select the control module (Controller).

Module	Product#	Serial#	Version	On-Time	EMF
Controller	G1323A*	DE53300105	A.02.02	0d 00:00h	
VW Detector	G1314A*	JP73705650	A.03.60	0d 00:03h	
FL Detector	G1321A	DE81700117	A.03.66	0d 00:03h	

Update Firmware using the Control Module

- If the revision of the control module listed above is below the revision you have downloaded, press *FW-Update*.



- Select file LCA210EN.BIN or above and press *Enter*, *Execute* and confirm the next screen. The control module will be updated now.

NOTE

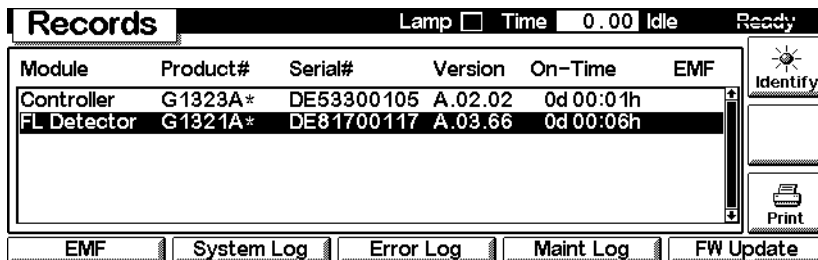
DO NOT interrupt the update process. Otherwise the control module cannot be used anymore. In such a case please contact your Hewlett-Packard support provider for help.

NOTE

The control module will boot twice during the update process.

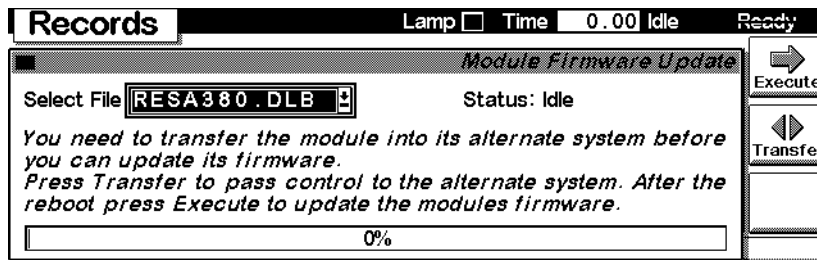
Updating the HPLC Module firmware

- Copy the DLB files (HPLC module firmware) to your PC card's root directory, for download refer to ["Updates from the Webpage" on page 4](#).
- Insert the PC card into the control module and restart the control module by pressing *m-key* and *Restart* on Analysis screen.
- Press *Views-System-Records* and select the module you want to update.



- Check the firmware rev of the module you want to update. If the revision of the HPLC module is below A.03.8X, proceed with the next step, otherwise continue with step 7.

- 5 Press *FW-Update* to open the following screen.

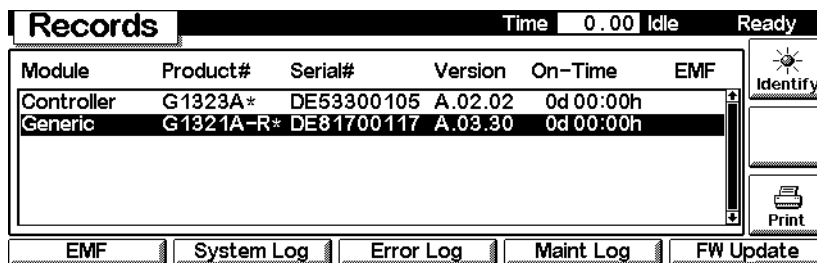


- 6 Select file RESA380.DLB or above and press *Enter*, *Execute* and confirm the next screen. The module will update the “Resident System” on page 2 now.

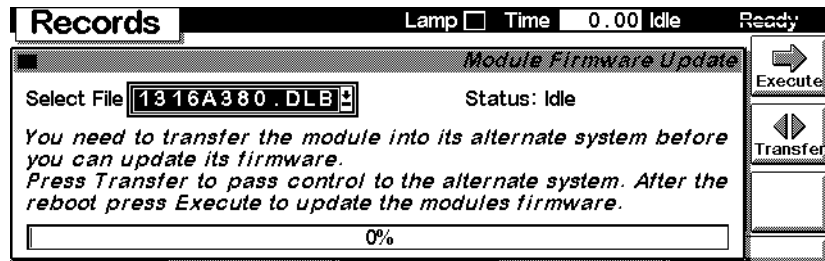
NOTE

The revision of the resident system must be updated with certain main firmware revisions (e.g. A.03.8X) only, refer to the *firmware history* document. The revision number can be obtained when the module has been switched into the “Resident System” on page 2 mode, see below.

- 7 When completed, press the *Transfer* button. The module will turn now into the “Resident System” on page 2 mode (Status-LED flashes yellow) and the control module restarts.
- 8 Press *Views-System-Records* and select the module you want to update again. The list shows the module as "Generic"..



- 9 Press *FW-Update* to open the following screen.



- 10 Select module specific file 13xxAyyy.DLB

The firmware files have following naming convention:

<product #>-<revision>.DLB, for example 1316A380.DLB

- 11 Press *Enter*, *Execute* and confirm the next screen. The module will update the ["Main System" on page 2](#) now.
- 12 When the update has completed, press the *Transfer* button. The module will return into the ["Main System" on page 2](#) mode now and the control module restarts.
- 13 Repeat the steps above for all other HPLC modules, if required.

Update Firmware using the PC Utility

- The PC Update Utility version 3.02 allows the update of HPLC modules' firmware and Control Module (G1323B) firmware via HPIB or LAN. For Control Module Update with this Utility refer to "[Control Module Firmware Update via HPIB or LAN](#)" on page 12.
- The Control Module (G1323A) can be updated with a PC card only, refer to "[Update Firmware using the Control Module](#)" on page 5.

Installation of the Firmware Update Utility

- A properly installed LC ChemStation is required
- Download the firmware file to your PC, refer "[Updates from the Webpage](#)" on page 4.
- Run the file \1100-FW\FWUP301.EXE to extract all files to \FWUPGRAD.301.

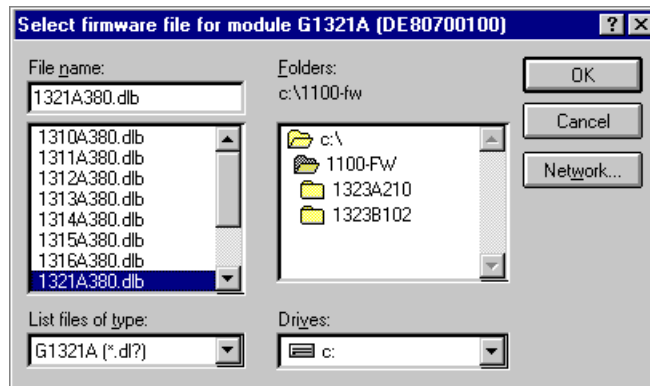
Using the Firmware Update Utility

- 1 Check that the 1100 System Access is configured using the Configuration Editor (*Windows Start - HP ChemStations - Configuration Editor*):
 - Configure instruments
 - Instrument Type = Modular (3D) LC System
 - Dialogbox: Instrument x - Device Configuration
 - 1100 System Access with correct HPIB address of the module that is connected via HPIB or LAN (typically a detector) must be set
 - either HPIB or LAN must be chosen (depends on your communication path)
- 2 Start FWUPGRAD.EXE from the directory \FWUPGRAD.301.
- 3 For all modules identified under a certain instrument number the program displays an icon, the product number of the instrument, the serial number and main system firmware revisions.

Updating Firmware of HP 1100 Series of HPLC modules
Update Firmware using the PC Utility




- 4 If you have several instruments configured, you can select with the **1**, **2**, **3**, **4** buttons or the Instrument menu the group of modules that is associated with the appropriate instrument number.
- 5 Click on the module (you want to update) to start the download process for the associated instrument module.

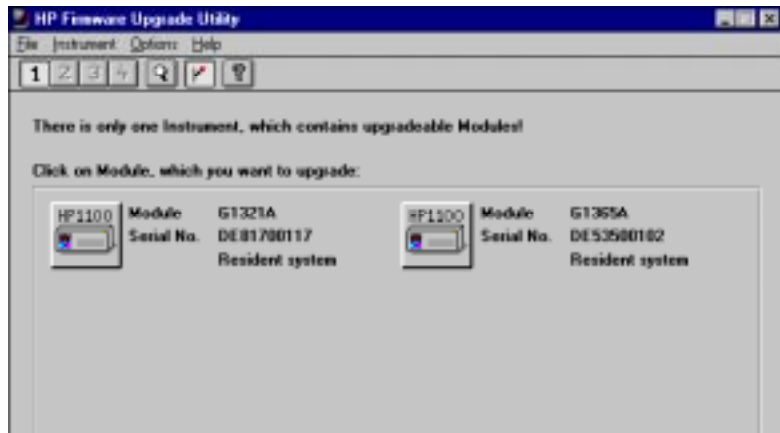


- 6 Select the appropriate firmware file in the directory, eg. \1100-FW. The firmware files have following naming convention:
<product #>-<revision>.DLB, for example 1321A380.DLB
- 7 Press *OK*.
The complete update process (download + wait times) will take approx. 2 minutes.

Updating Firmware of HP 1100 Series of HPLC modules
Update Firmware using the PC Utility

At the end of the download procedure the new firmware revision is displayed.


- 8 Select  to upgrade the “Resident System” on page 2 (required for updates from revisions below A.03.8X to revision A.03.8X and above).



- 9 Click on the module (you want to update) to start the download process for the associated instrument module.
- 10 Select the resident firmware file RESA380.DLB in the directory, eg. \1100-FW.
- 11 Press *OK*.

NOTE

The resident firmware revision cannot be displayed by the utility.

- 12 Select  to switch back to “Main System” on page 2 mode.
- 13 Repeat the above steps for other HPLC modules.

NOTE

It's recommended to update all modules to latest revisions.

- 14 Quit the utility. The update has been completed.

Control Module Firmware Update via HPIB or LAN

NOTE

The update utility can update Control Modules versions G1323B with 2 MB ROM only.

- 1** Start FWUPGRAD.EXE from the directory \FWUPGRAD.301.
- 2** Click on the control module to start the download process for the associated instrument module.
- 3** Select the appropriate firmware file in the directory, eg. \1100-FW\1323B102 and press *OK*.
The complete update process (download + wait times) will take approx. 35 minutes (depends on the system configuration).

NOTE

DO NOT interrupt the update process. Otherwise the control module cannot be used anymore. In such a case please contact your Agilent Technologies support provider for help.

At the end of the download procedure the new firmware revision is displayed. Quit the utility. The update has been completed.