Agilent HPLC System Firmware Bulletin

Firmware Set A/B.06.10

1100/1200/1120 LC System
1220 Infinity LC
1260 Infinity LC System
1260 Infinity SFC System
1290 Infinity LC System

B.02.05-09
G4208A Instant Pilot

Agilent Technologies

Notices

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Revision

This technical note is valid for the Agilent HPLC System Firmware Bulletin Firmware.

About this Document

This document provides the firmware changes in set 6.50 used for the following LC Systems

- 1220 Infinity LC LC
- 1260 Infinity LC Systems
- 1290 Infinity LC Systems
- 1200 Series LC
- 1120 Compact LC
- 1100 Series LC

For information about other firmware sets refer to the Firmware Bulletin provided with the set.

Where To Get Latest Information

Visit the Agilent web

http://www.chem.agilent.com/_layouts/agilent/downloadFirmware.aspx?whid=69761

for

- Latest updates
- Firmware Sets / Firmware Bulletin
- Emulation information
- Firmware Update tools and
- Instructions

Document History

The table below lists all changes that have been made to this document.

Table 1 Document History

Date	Description	Author
14-Oct-2015	New RFID Tag compatible firmware B.06.28 built [002] has been released as hotfix for a problem with the dark current test with impact to intensity values for G4212A DAD. Update instrument when built [001] was installed aleady! • Updated section "G4212A Infinity DAD" , 83. • Removed G4212B DAD information. This detector started with revision B.06.32! Updated all sections/modules that were impacted by the new revision.	W. Albrecht
5-Aug-2015	New RFID Tag compatible firmware A.06.18 / B.06.28 has been released for HPLC modules that support RFID tags. • Added section "Firmware for New RFID Tag" , 39. Updated all sections/modules that were impacted by the new revision.	W. Albrecht
29-Apr-2014	Update on Compatibility Section • "Agilent LC Firmware Set Interoperability and Support Statement" , 8 (added) • "Notes for Agilent LC instruments controlled by non-Agilent Chromatography Data Systems (CDS)" , 9 (added) • "Examples" , 10 (modified)	W. Albrecht
06-Mar-2014	Rework of document (no change on firmware change information) • "About this Document" , 3 (updated) • New chapter added "Compatibility Information" , 7 • "Compatibility Information" , 8 (added) • "OQ/PV - Validation Information" , 11 (added)	W. Albrecht
26-Feb-2014	**Updated information in sections** • "Revision Numbering" , 23	W. Albrecht
19-Feb-2014	**Added information on new firmware. For details see** • "DAD / MWD (G1315C, G1365C, G1315D, G1365D) - B.06.26[030]" , 55	W. Albrecht

Table 1   Document History

Date	Description	Author
31-May-2012	**Added information on new firmware. For details see** • "DAD / MWD (G1315C, G1365C, G1315D, G1365D) - B.06.25 [030]" , 55 • "G4212A Infinity DAD B.06.26 [030]" , 84	W. Albrecht
31-May-2012	**Merge of several documents into a single document combining 1100/1200, 1120 and 1290 Infinty LC**	W. Albrecht

Compatibility Information

This chapter provides information about compatibility.

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Compatibility Information

The information is related to firmware described in this firmware set.

NOTE   This set includes just the latest firmware of each module. It's fully compatible with your CDS that supports this firmware set.

Agilent LC Firmware Set Interoperability and Support Statement

- Agilent releases LC firmware updates as so-called "firmware sets".
- All Agilent LC instrument firmware sets have been designed and tested to be truly and strictly backward compatible to the installed software base (CDS).
- The module firmware contained in each set is fully compatible and interoperable with all other module firmware of the same set.
- Agilent recommends using always the latest module firmware revision of a firmware set in order to avoid interoperability issues.
- Generally, Agilent recommends keeping the LC instrument firmware always current.
- Do not mix firmware revisions between different sets. Agilent does not guarantee mixed firmware revisions from older or newer sets.
- If you have to document the firmware revision (for validation reasons) please use the term "Revision XXX or later" or "Firmware from Set XX or later". This might help on discussions in case of required updates due to malfunctions that have been corrected in later releases.

Notes for Agilent LC instruments controlled by non-Agilent Chromatography Data Systems (CDS)

- The 3rd-party CDS software vendor is responsible for compatibility testing with the respective CDS revision.

- The 3rd-party CDS software vendor defines the minimum firmware revision required for CDS compatibility.

- The 3rd-party CDS release notes issued by the respective CDS vendor may use different terminology for the firmware requirements such as "tested firmware", "supported firmware", "firmware requirements", "minimum tested firmware", etc.

- An Agilent LC instrument running a current firmware set is fully supported as long as it meets or exceeds the minimum firmware requirements specified by the 3rd-party CDS software vendor and meets Agilent's firmware set/firmware interoperability requirements.

Examples

N O T E   If a new feature has been added in a newer revision, an appropriate CDS revision that supports the new feature might be required. Otherwise it is just not visible/used.

This means

- A later revision than the initial firmware in this set is fully backward compatible and does not require re-validation of the system, unless it is mentioned under the specific change information, see "Agilent LC Firmware Set Interoperability and Support Statement" on page 8 and "OQ/PV - Validation Information" on page 11.

- A CDS tested with the initial revision will also work with the later revsions. This is normally also true for non-Agilent control software (3rd party CDS), see "Notes for Agilent LC instruments controlled by non-Agilent Chromatography Data Systems (CDS)" on page 9.

- Use firmware from a single set only.

- Use the latest firmware revision if possible.

- Upgrade all modules to latest revision when
  - a (new) module is added to the system or
  - receives a new main board or
  - a module is updated due to solving a problem.

- References in validation documents should not be done to specific revisions. Use (if possible) the term "Set X.XX or later".

N O T E   Do not mix firmware revisions from this set with older or newer sets. This firmware is not tested across set borders.

This means

- Use of firmware from different sets may cause unpredictable problems.

NOTE   A.06.xx / B.0x.xx firmware does not talk to old 1100 firmware revisions A.05.xx and below.

This means

- Adding a new 1260/1290 module to an existing 1100 system will not show the new module in the CDS.

- Depending on the interfacing either only the old or new or no module(s) are shown in the CDS.

- You have to upgrade either the old module(s) to new firmware or downgrade the new module to old firmware (while the other side is disconnected via CAN).

OQ/PV - Validation Information

If a firmware upgrade has been performed, normally no revalidation of the module/system is required. This is stated in the module specific change information for each revision, see example below.

Table 2   Module XXX A.0X.XX

Date Introduced	
General	
Bugfix	•
New Features	•
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

2 Compatibility Information

Compatibility Information

1100/1200 Change Information

This chapter provides the details of the various firmware revisions for the Agilent 1100/1200 System..

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Document History

The table below lists all changes that have been made to this document.

NOTE   Do not mix firmware revisions from this set (A.06.10/B.06.10 and above) with earlier revisions. This firmware is not tested across set borders.

Table 3   Document History

Date	Description	Author
	•	
5-Aug-2015	New RFID Tag compatible firmware A.06.18 has been released for G1316C that supports RFID tags. • Added section "Firmware for New RFID Tag" on page 39. Updated all sections/modules that were impacted by the new revision.	W. Albrecht
19-Oct-2011	**Added informartin on Firmware** • "1260 Infinity Pumps (G5611A) A.06.10 [040]" on page 40 • "1260 Infinity Pumps (G1311C) A.06.10 [040]" on page 40 • "DAD / MWD (G1315C, G1365C, G1315D, G1365D) - B.06.25 [020]" on page 56 **Removed section "Additional Information" since it is part of the Firmware Update Guide documentation.**	W. Albrecht
19-Oct-2011	**All information on firmware A.06.3x/B.06.3x is no longer valid in this set and has been removed. The firmware A.06.3x/B.06.3x belongs to the 1200 Infinity System and should be used from firmware set A.06.32/B.06.32.**	W. Albrecht
02-Dec-2010	Added new firmware with emulation capabilities or due new hardware support for 1260 Infinity LC Modules. • "1260 Infinity Pumps" on page 40 See information "Emulation/Special Firmware" on page 33.	W. Albrecht

Table 3   Document History

Date	Description	Author
01-Sep-2010	Added new firmware with emulation capabilities or due new hardware support for 1260 Infinity LC Modules. • "1260 Infinity Pumps (G1310B, G1311B/C)" on page 41 • "1260 Infinity Binary Pump (G1312B)" on page 42 • "1260 Infinity Micro Pump (G1376A)" on page 43 • "1260 Infinity Nano Pump (G2226A)" on page 44 • "1260 Infinfinty Autosampler (G1367E)" on page 45 • "Variable Wavelength Detector (G1314F)" on page 50 • "1260 Infinity Fluorescence Detector (G1321B)" on page 60 See information "Emulation/Special Firmware" on page 33.	W. Albrecht
13-Apr-2010	Release of new firmware for • "DAD / MWD (G1315C, G1365C, G1315D, G1365D) - B.06.25" on page 56, • "Thermostatted Column Compartment TCC SL+ (G1316C) (A.06.15)" on page 65	W. Albrecht
25-Jan-2010	Updated Compatibility Information in sections • "G4208A Instant Pilot" on page 71	W. Albrecht
17-Dec-2009	Release of new firmware for • "Thermostatted Column Compartment TCC SL+ (G1316C) (A.06.17)" on page 64	W. Albrecht
29-Oct-2009	Release of new firmware for • "Thermostatted Column Compartment TCC SL+ (G1316C) (A.06.16)" on page 64	W. Albrecht
13-Oct-2009	Updated sections • "DAD / MWD (G1315C, G1365C, G1315D, G1365D) - B.06.25" on page 56, • "Variable Wavelength Detector VWD (G1314D/E) - B.06.25" on page 51, • "High Performance Autosamplers (G1367A/B/C/D, G1377A, G2258A)" on page 46 • "Thermostatted Column Compartment TCC SL+ (G1316C) (A.06.15)" on page 65, • "G4208A Instant Pilot" on page 71, Added build numbers of new firmware	W. Albrecht
18-Sep-2009	Release of new firmware for • Core firmware for "Modules with On-Board LAN (Nucleus) B.06.25" on page 35 • "DAD / MWD (G1315C, G1365C, G1315D, G1365D) - B.06.25" on page 56, • "Variable Wavelength Detector VWD (G1314D/E) - B.06.25" on page 51, • "High Performance Autosamplers (G1367A/B/C/D, G1377A, G2258A)" on page 46 • "Thermostatted Column Compartment TCC SL+ (G1316C) (A.06.15)" on page 65, • "G4208A Instant Pilot" on page 71,	W. Albrecht

Table 3 Document History

Date	Description	Author
14-Aug-2009	Release of new firmware for • Core firmware for "Modules with On-Board LAN (Nucleus) B.06.23" on page 35 • "DAD / MWD (G1315C, G1365C, G1315D, G1365D) - B.06.23" on page 57, • "Variable Wavelength Detector VWD (G1314D/E) - B.06.23" on page 51, • "Thermostatted Column Compartment TCC SL+ (G1316C) (A.06.14)" on page 65, • "G4208A Instant Pilot" on page 71 (1290 Release)	W. Albrecht
20-Apr-2009	Release of "Variable Wavelength Detector VWD (G1314A/B/C)" on page 53	W. Albrecht
30-Jan-2009	Release of "Variable Wavelength Detector VWD (G1314D/E) - B.06.21" on page 52 Release of "DAD / MWD (G1315C, G1365C, G1315D, G1365D) - B.06.14" on page 57.	W. Albrecht
12-Dec-2008	Added initial B.06.20 for "Variable Wavelength Detector VWD (G1314D/E) - B.06.20" on page 53 Release of A.06.11 "Fluorescence Detector FLD (G1321A)" on page 61. Added initial A.06.10 "Thermostatted Column Compartment TCC / TCC SL (G1316A/G1316B)" on page 67.	W. Albrecht
13-Oct-2008	Added information to A.06.1x for "High Performance Autosamplers (G1367D)" on page 48 - Backward Compatibility Release (acting as G1367C)	W. Albrecht
26-Aug-2008	Release A,06.11 for "1260 Infinity Micro Pump (G1376A)" on page 43 and "Nano Pump (G2226A)" on page 44 and "Chip Cube (G4240A)" on page 70	W. Albrecht
31-Jul-2008	Release of "G4208A Instant Pilot" on page 71	W. Albrecht
30-Jun-2008	Release of revision B.06.12 for "High Performance Autosamplers (G1367A/B/C/D, G1377A, G2258A)" on page 47	W. Albrecht
28-Feb-2008	Release of "DAD / MWD (G1315C, G1365C, G1315D, G1365D) - B.06.13" on page 58	W. Albrecht
12-Nov-2007	Release of revision B.06.11 for "High Performance Autosamplers (G1367A/B/C/D, G1377A, G2258A)" on page 47 and "DAD / MWD (G1315C, G1365C, G1315D, G1365D) - B.06.11" on page 58	W. Albrecht
17-Aug-2007	Release of "G4208A Instant Pilot" on page 71	W. Albrecht
01-Aug-2007	Initial realease of A.06.10/B.06.10 for all 1100/1200 modules	W. Albrecht

Version Information

Table 4 Version Information (B.06.26)

Released	August 2015
Type	• Release A.06.18 (G1316C TCC) and B.06.28 (for B-firmware Modules that support RFID tags, see "Firmware for New RFID Tag" on page 39.
Main firmware revision	YYYY_A618_x (where x is the build number), refer to the module YYYY_B628_x (where x is the build number), refer to the module
Resident firmware revision	• res_B06.23_x for above modules
Compatibility issues	**See also Table 12 on page 21.** • A.06.18 and B.06.28 belongs to the same firmware set.

Table 5 Version Information (B.06.26)

Released	February 2014
Type	• Release B.06.26 for Agilent 1200 modules (G1315C/D DAD and G1365C/D MWD)
Main firmware revision	YYYY_B626_x (where x is the build number), refer to the module
Resident firmware revision	• res_B06.23_x for above modules
Compatibility issues	**See also Table 12 on page 21.** • B.06.26 belong sto the same firmware set.

Table 6   Version Information (B.06.25)

Released	September, 2009, , September 2011
Type	• Release B.06.25 for Agilent 1200 modules (G1314D VWD, G1314E VWD SL+, 1315C/D DAD and G1365C/D MWD)
Main firmware revision	YYYY_B625_x (where x is the build number), refer to the module
Resident firmware revision	• res_B06.23_x for above modules
Compatibility issues	**See also Table 12 on page 21.** • B.06.25 belongs to the same firmware set.

Table 7   Version Information (B.06.23)

Released	August, 2009
Type	• Release B.06.23 for Agilent 1200 modules (G1314D VWD, G1314E VWD SL+, 1315C/D DAD and G1365C/D MWD)
Main firmware revision	YYYY_B623_x (where x is the build number), refer to the module
Resident firmware revision	• res_B06.20_x for above modules
Compatibility issues	**See also Table 12 on page 21.** • B.06.23 belongs to the same firmware set.

Table 8   Version Information (B.06.20)

Released	August, 2008
Type	• Release B.06.20 for Agilent 1200 modules (G1314D VWD and G1314E VWD SL+)
Main firmware revision	YYYY_B620_x (where x is the build number), refer to the module
Resident firmware revision	• res_B06.20_x for above modules
Compatibility issues	**See also Table 12 on page 21.** • B.06.20 belongs to the same firmware set.

Table 9   Version Information (A.06.16)

Released	September, 2009
Type	• Release A.06.16 for Agilent 1100/1200 modules (G1367A/B/C/D, G1377A, G2258A)
Main firmware revision	YYYY_A614_x (where x is the build number), refer to the module
Resident firmware revision	• res_A06.10_x for all modules
Compatibility issues	**See also Table 12 on page 21.** • A.06.16 belongs to the same firmware set.

Table 10   Version Information (A.06.12)

Released	June 30, 2008
Type	• Release A.06.12 for Agilent 1100/1200 modules (G1367A/B/C/D, G1377A, G2258A)
Main firmware revision	YYYY_A612_x (where x is the build number), refer to the module
Resident firmware revision	• res_A06.10_x for all modules
Compatibility issues	**See also Table 12 on page 21.** • A.06.12 belongs to the same firmware set.

Table 11 Version Information (A.06.11/B.06.11)

Released	Nov 5, 2007 Aug 26, 2008
Type	• Release A.06.11 for Agilent 1100/1200 modules (G1367A/B/C, G1377A, G2258A) • Release B.06.11 for all Agilent 1100/1200 modules (G1315C/D and G1365C/D) • Release B.06.11 for all Agilent 1100/1200 modules (G1376A, G2226A and G4240A)
Main firmware revision	YYYY_A611_x (where x is the build number), refer to the module YYYY_B611_x for G1315C/D DAD and G1365C/D MWD
Resident firmware revision	• res_A06.10_x for all modules • res_B0610_x for G1315C/D and G1365C/D
Compatibility issues	**See also Table 12 on page 21.** • A.06.11 and B.06.11 belong to the same firmware set.

Table 12 Version Information (A.06.10/B.06.10)

Released	July 31, 2007
Type	• Release A.06.10 and B.06.10 for all Agilent 1100/1200 modules • Release B.06.10 for all Agilent 1100/1200 modules (G1315C/D and G1365C/D)
Main firmware revision	YYYY_A610_x (where x is the build number), refer to the module YYYY_B610_x for G1315C DAD SL and G1365C MWD SL 4208A_B205_x for G4208A Instant Pilot
Resident firmware revision	• res_A06.10_x for all modules • res_B0610_x for G1315C/D and G1365C/D • res_4208A_B205_x for G4208A Instant Pilot

Compatibility issues	**See also "Compatibility Matrices" on page 31.**
	• Firmware A.06.10 and B.06.10 is NOT compatible with ALL previous revisions (A.06.01/06, B.01.01/06, A.05.xx and below)!
	• NO mixed systems are allowed.
	• Firmware A.06.10 and B.06.10 is released and tested with the Agilent
	  • ChemStation B.03.01 SR1
	  • Instant Pilot B.02.05
	The following interface should also work with (except for new modules)
	  • ChemStation B.02.01 SR1/SR2
	  • ChemStation B.01.03 SR1
	  • Control Module G1323B (some newer modules only with basic features)
	• Firmware A.06.10 and B.06.10 runs also on Agilent ChemStations B.01.03 and A.10.02 (except for the new features).
	• Control Module G1323B with firmware B.03.22 is not compatible with A.06.xx.
	• Firmware A.05.xx is not compatible with A.06.xx.

Table 12   Version Information (A.06.10/B.06.10)

When is an upgrade required	• if an existing system (with A.05.xx/A.06.0x) gets new 1200 modules integrated. • if a modules requires an upgrade to remove a malfunction or adds a specific feature (see module specific). • an existing 1100/1200 module should be added into a system that has already A.06.1x/B.06.1x.
Important Upgrade information	• Ugrade from A.05.xx of modules must be made prior to be connected to 1100/1200 modules with A.06.xx or B.01.xx/B.06.xx (G1315C/D and G1365C/D). • Use the new LAN/RS-232 Firmware Update Tool 2.4 or above for upgrades/downgrades. It takes care for the correct update sequence, especially when CAN slaves are used, and allows the "1100 emulation mode"). • Read the new update documentation that comes with the Firmware Update Tools. carefully before you update the firmware. • The Firmware Update Tools and the firmware can be downloaded from http://www.chem.agilent.com/_layouts/agilent/downloadFirmware.aspx?whid=69761

Revision Numbering

Following rules on firmware revision numbering will be implemented with firmware A.06.1x / B.06.1x and above:

- For significant firmware interface changes (all modules) the revision will change from A.06.xx to A.07.1x or B.06.xx to B.07.1x.

- For major releases (all modules) the revision will change from A.06.1x to A.06.3x or B.06.1x to B.06.3x (set).

- For minor releases (just single modules) the revision will change from A.06.11 to A.06.12 or B.06.11 to B.06.12.

NOTE   The different hardware platforms (e.g. G1315A/B DAD versus G1315C/D DAD) is related to a major change in the electronic main board (hardware and processor) and resulted into the change to the "B" firmware revisions.

The move from B.01.xx to B.06.xx will move both platforms to the same revision numbering. Then A and B revisions are compatible within a set.

This nomenclature expresses that all minor revisions within a set (A.06.10 to A.06.29 or B.06.10 to B.06.29) are backward compatible to the initial A.06.10/B.06.10.

Different sets (A.06.1x vs. A.06.3x or B.06.1x vs. B.06.3x) may not be tested together and must not be mixed. Only those revisions mentioned in this document are tested in this set.

This arrangement has been communicated to our 3rd-party software providers.

3rd-party software providers normally test with the initial revision of a set. Later revisions are accepted and should work as well (Agilent assures the backward compatibility).

Latest firmware information can be found from the Agilent web http://www.chem.agilent.com/_layouts/agilent/downloadFirmware.aspx?whid =69761

The above arrangement will be more clear than the already used revision numbering scheme done within sets:

- A.05.01/A.05.03
- A.05.04/A.05.05
- A.05.06/A.05.07
- A.05.06/A.05.09/A.05.10 (some modules remained on A.05.06)
- A.05.11/A.05.12
- A.06.01 and B.01.01 (use set A.06.02/B.01.02 instead)
- A.06.02/A.06.0x and B.01.02/B.01.0x
- A.06.10/A.06.1x/2x and B.06.10/B.06.1x/B.06.2x

Actual Firmware Revisions

Table 13   Actual Firmware Revisions

Type	Module	Product#	Revision	Build	Filename (.DLB)
Pumps	Isocratic Pump Standard Pumps (G1310A, G1311A, G1312A)	G1310A	A.06.10	005	1310A_A610_005
	1260 Infinity Isocratic Pump (G1310B)	G1310B	A.06.10	020	1310B_A610_020
	Quaternary Pump	G1311A	A.06.10	005	1311A_A610_005
	1260 Infinity Quaternary Pump (G1311B)	G1311B	A.06.10	020	1311B_A610_020
	1260 Infinity Quaternary Pump (G1311C)	G1311C	A.06.10	040	1311C_A610_040
	1260 Infinity Quaternary Pump (G1311C)	G1311C	A.06.10	030	1311C_A610_030
	1260 Infinity Quaternary Pump (G1311C)	G1311C	A.06.10	020	1311C_A610_020
	1260 Infinity Quaternary Pump Bio (G5611A)	G5611A	A.06.10	040	5611A_A610_040
	Binary Pump	G1312A	A.06.10	005	1312A_A610_005
	1260 Infinity Binary Pump (G1312B)	G1312B	A.06.10	020	1312B_A610_020
	Binary Pump SL (G1312B)	G1312B	A.06.10	005	1312B_A610_005
	1260 Infinity Binary Pump (G1312C)	G1312C	A.06.10	020	1312C_A610_020
	1260 Infinity Micro Pump (G1376A)	G1376A	A.06.11	020	1376A_A611_020
	Micro Pump (G1376A)	G1376A	A.06.11	005	1376A_A611_005
	Micro Pump (G1376A)	G1376A	A.06.10	005	1376A_A610_005
	Prep Pump (G1361A) (isocratic high flow)	G1361A	A.06.10	004	1361A_A610_004
	1260 Infinity Nano Pump (G2226A)	G2226A	A.06.11	020	2226A_A611_020
	Nano Pump (G2226A)	G2226A	A.06.11	005	2226A_A611_005
	Nano Pump (G2226A)	G2226A	A.06.10	005	2226A_A610_005
Samplers	Autosampler (ALS) Autosamplers (G1313A, G1329A/B, G1389A, G2260A)	G1313A	A.06.10	006	1313A_A610_006

Table 13   Actual Firmware Revisions

Type	Module	Product#	Revision	Build	Filename (.DLB)
	Thermostatted ALS	G1329A	A.06.10	006	1329A_A610_006
	Thermostatted ALS SL	G1329B	A.06.10	006	1329B_A610_006
	Thermostatted Micro ALS	G1389A	A.06.10	006	1389A_A610_006
	Thermostatted High Flow ALS	G2260A	A.06.10	006	2260A_A610_006
	1260 Infinity Autosampler (G1367E)	G1367E	A.06.16	001	1367E_A616_001
	Well Plate Autosampler (WALS) High Performance Autosamplers (G1367A/B/C/D, G1377A, G2258A)	G1367A G1367B G1367C G1367D	A.06.16	001	1367A_A616_001 1367B_A616_001 1367C_A616_001 1367D_A616_001
	Well Plate Autosampler (WALS) High Performance Autosamplers (G1367A/B/C/D, G1377A, G2258A)	G1367A G1367B G1367C G1367D	A.06.12	003	1367A_A612_003 1367B_A612_003 1367C_A612_003 1367D_A612_003
	Well Plate Autosampler (WALS) High Performance Autosamplers (G1367A/B/C/D, G1377A, G2258A)	G1367A G1367B G1367C	A.06.11	001	1367A_A611_001 1367B_A611_001 1367C_A611_001
	Well Plate Autosampler (WALS) High Performance Autosamplers (G1367A/B/C/D, G1377A, G2258A)	G1367A G1367B G1367C	A.06.10	006	1367A_A610_006 1367B_A610_006 1367C_A610_006
	Well Plate Autosampler (WALS) Backward Compatibility Release (acting as G1367C)	G1367D	A.06.10	020	1367D_A610_020
	Micro Well Plate Autosampler	G1377A	A.06.16	001	1377A_A616_001
	Micro Well Plate Autosampler	G1377A	A.06.12	003	1377A_A612_003
	Micro Well Plate Autosampler	G1377A	A.06.11	001	1377A_A611_001
	Micro Well Plate Autosampler	G1377A	A.06.10	006	1377A_A610_006
	Dual Loop Well Plate Autosampler	G2258A	A.06.16	001	2258A_A616_001
	Dual Loop Well Plate Autosampler	G2258A	A.06.12	003	2258A_A612_003
	Dual Loop Well Plate Autosampler	G2258A	A.06.11	001	2258A_A611_001
	Dual Loop Well Plate Autosampler	G2258A	A.06.10	006	2258A_A610_006

Table 13   Actual Firmware Revisions

Type	Module	Product#	Revision	Build	Filename (.DLB)
	Fraction Collector (G1364A/B/C/D)	G1364A/D	A.06.10	006	1364A-D_A610_006
Detectors			B.06.25	003	
	Variable Wavelength Detector VWD (G1314D/E/F)	G1314E	B.06.28	001	1314E_B628_001
		G1314D			1314D_B628_001
	Variable Wavelength Detector (G1314F)	G1314F			1314F_B628_001
	Variable Wavelength Detector VWD (G1314D/E/F)	G1314E	B.06.25	003	1314E_B625_003
		G1314D			1314D_B625_003
	Variable Wavelength Detector (G1314F)	G1314F			1314F_B625_003
	Variable Wavelength Detector VWD (G1314D/E/F)	G1314E	B.06.23	006	1314E_B623_006
		G1314D			1314D_B623_006
	Variable Wavelength Detector VWD (G1314D/E/F)	G1314E	B.06.21	001	1314E_B621_001
		G1314D			1314D_B621_001
	Variable Wavelength Detector VWD (G1314D/E/F)	G1314E	B.06.20	003	1314E_B620_003
		G1314D			1314D_B620_003
	Variable Wavelength Detector VWD (G1314A/B/C)	G1314C	A.06.13	001	1314C_A613_001
	Variable Wavelength Detector VWD (G1314A/B/C)	G1314C	A.06.10	004	1314C_A610_004
	Variable Wavelength Detector VWD (G1314A/B)	G1314A/B	A.06.13	001	1314AB_A613_001
	Variable Wavelength Detector VWD (G1314A/B)	G1314A/B	A.06.10	004	1314AB_A610_004
	DAD / MWD (G1315C, G1365C, G1315D, G1365D) - B.06.25 [030]	G1315C	B.06.28	001	1315C_B628_001
		G1315D			1315D_B628_001
		G1365C			1365C_B628_001
		G1365D			1365D_B628_001
	DAD / MWD (G1315C, G1365C, G1315D, G1365D) - B.06.25 [030]	G1315C	B.06.26	030	1315C_B626_030
		G1315D			1315D_B626_030
		G1365C			1365C_B626_030
		G1365D			1365D_B626_030
	DAD / MWD (G1315C, G1365C, G1315D, G1365D) - B.06.25 [030]	G1315C	B.06.25	030	1315C_B625_030
		G1315D			1315D_B625_030
		G1365C			1365C_B625_030
		G1365D			1365D_B625_030

Table 13   Actual Firmware Revisions

Type	Module	Product#	Revision	Build	Filename (.DLB)
	DAD / MWD (G1315C, G1365C, G1315D, G1365D) - B.06.25 [020]	G1315C G1315D G1365C G1365D	B.06.25	020	1315C_B625_020 1315D_B625_020 1365C_B625_020 1365D_B625_020
	DAD / MWD (G1315C, G1365C, G1315D, G1365D) - B.06.25	G1315C G1315D G1365C G1365D	B.06.25	003	1315C_B625_003 1315D_B625_003 1365C_B625_003 1365D_B625_003
	DAD / MWD (G1315C, G1365C, G1315D, G1365D) - B.06.23	G1315C G1315D G1365C G1365D	B.06.23	007	1315C_B623_007 1315D_B623_007 1365C_B623_007 1365D_B623_007
	DAD / MWD (G1315C, G1365C, G1315D, G1365D) - B.06.14	G1315C G1315D G1365C G1365D	B.06.14	001	1315C_B614_001 1315D_B614_001 1365C_B614_001 1365D_B614_001
	DAD / MWD (G1315C, G1365C, G1315D, G1365D) - B.06.13	G1315C G1315D G1365C G1365D	B.06.13	002	1315C_B613_002 1315D_B613_002 1365C_B613_002 1365D_B613_002
	DAD / MWD (G1315C, G1365C, G1315D, G1365D) - B.06.11	G1315C G1315D G1365C G1365D	B.06.11	001	1315C_B611_001 1315D_B611_001 1365C_B611_001 1365D_B611_001
	DAD / MWD (G1315C, G1365C, G1315D, G1365D) - B.06.10	G1315C G1315D G1365C G1365D	B.06.10	003	1315C_B610_003 1315D_B610_003 1365C_B610_003 1365D_B610_003
	Diode Array Detector (DAD) DAD/MWD (G1315A/B, G1365A/B)	G1315A/B	A.06.10	004	1315AB_A610_004
	Multiple Wavelength Detector (MWD)	G1365A/B	A.06.10	004	1365AB_A610_004
	1260 Infinity Fluorescence Detector (G1321B)	G1321B	A.06.11	020	1321B_A611_020
	Fluorescence Detector FLD (G1321A)	G1321A	A.06.11	005	1321A_A611_005
	Fluorescence Detector FLD (G1321A)	G1321A	A.06.10	004	1321A_A610_004

Table 13   Actual Firmware Revisions

Type	Module	Product#	Revision	Build	Filename (.DLB)
	Refractive Index Detector RID (G1362A)	G1362A	A.06.10	004	1362A_A610_004
Others					
	Thermostatted Column Compartment TCC SL+ (G1316C)	G1316C	A.06.18	001	1316C_A618_001
	Thermostatted Column Compartment TCC SL+ (G1316C)	G1316C	A.06.17	001	1316C_A617_001
	Thermostatted Column Compartment TCC SL+ (G1316C)	G1316C	A.06.16	001	1316C_A616_001
	Thermostatted Column Compartment TCC SL+ (G1316C)	G1316C	A.06.15	001	1316C_A615_001
	Thermostatted Column Compartment TCC SL+ (G1316C)	G1316C	A.06.14	001	1316C_A614_001
	Thermostatted Column Compartment TCC SL+ (G1316C)	G1316C	A.06.10	001	1316C_A610_001
	Thermostatted Column Compartment TCC / TCC SL (G1316A/G1316B)	G1316B	A.06.10	004	1316B_A610_004
	Column Compartment TCC (G1316A)	G1316A	A.06.10	004	1316A_A610_004
	Universal Interface Box (G1390A)	G1390A	A.06.10	001	1390A_A610_001
	Automation Interface (G2254A) (WPS, AFC)	G2254A	A.06.10	001	2254A_A610_001
	Valve (6 pos / 7 ports) Valves (G1156/57/58/59/60/62/63A/G1158B)	G1156A	A.06.10	001	1156A_A610_001
	Valve (2 pos / 10 ports)	G1157A	A.06.10	001	1157A_A610_001
	Valve (2 pos / 6 ports) SL	G1158B	A.06.10	001	1158AB_A610_001
	Valve (2 pos / 6 ports)	G1158A	A.06.10	001	1158AB_A610_001
	Valve (6 pos, column selection valve)	G1159A	A.06.10	001	1159A_A610_001
	Valve (12 pos / 13 port, prep scale)	G1160A	A.06.10	001	1160A_A610_001
	Valve (2 pos / 6 ports, micro)	G1162A	A.06.10	001	1162A_A610_001
	Valve (2 pos / 10 ports, micro)	G1163A	A.06.10	001	1163A_A610_001

Table 13   Actual Firmware Revisions

Type	Module	Product#	Revision	Build	Filename (.DLB)
	Chip Cube (G4240A)	G4240A	A.06.11	004	4240A_A611_004
	Chip Cube (G4240A)	G4240A	A.06.10	004	4240A_A610_004
Resident					
	Resident Firmware (all 1100/1200 modules)	GxxxxA-R	A.06.10	004	Res_A610_004
	Resident Firmware (for G1314D/E VWD, G1315C DAD SL/G1365C MWD SL and G1315D DAD/G1365D MWD)	GxxxxB-R	B.06.23	001	Res_B623_001
	Resident Firmware (for G1315C DAD SL/G1365C MWD SL abd G1315D DAD/G1365D MWD)	GxxxxB-R	B.06.10	001	Res_B610_001
	Resident Firmware (for G1314D VWD and G1314E VWD SL+)	GxxxxB-R	B.06.20	001	Res_B620_001

Compatibility Matrices

Compatibility Overview (Hardware vs. Firmware)

Table 14   Compatibility Matrix

Module	A.05.xx	A.06.01	A.06.02/05 B.01.02/06	A.06.1x/2x B.06.1x/2x
G1323A Control Module (A.02.03 [001]) *	Y	N	N	N
G1323B Control Module (B.03.22 and below)	Y	N	N	N
G1323B Control Module (B.04.02 and above)	N	Y	Y	Y
1100 series modules (A.05.11 and below)	Y	N	N	N
1100 series modules (A.06.01 and above)	N	Y	Y	Y
G1315C DAD / G1365C MWD (B.01.xx and above)	N	Y	Y	Y
G1315D DAD / G1365D MWD (B.01.04 and above)	N	N	Y	Y
G1314D VWD / G1314E VWD SL+ (B.06.20 and above)	N	N	N	Y
G4208A Instant Pilot (A.05.11/13) **	Y ***	N	N	N
G4208A Instant Pilot (B.01.02 and above)	N	N	Y	Y
1200 series modules (standard modules) ****	Y	Y	Y	Y
1200 series modules (G1312B, G1314C, G1316B, G1329B, G1367C, G1367D) *****	N/Y	N/Y	Y	Y
G4240 Chip Cube (A.06.01 and above)	N	Y	Y	Y
1290 Infinity LC system • G4212A DAD (B.06.23 and above) • G4220A BinPump (B.06.23 and above) • G4226A ALS (A.06.14 and above) • G1316C (A.06.14 and above) • G4208A Instant Pilot (B.02.08 and above)	N	N	N	Y

*   The G1323A Control Module does not work with the LAN/RS-232 Firmware Update Tool.

** This firmware does not support modules introduced with firmware releases A.06.xx or are not downgraded to its 400 bar equivalents. That includes G1156A, G1158B, G1312B, G1314B/C, G1315C/D, G1316B, G1329B, G1367B/C and G1365C/D.

This version was tested with revisions A.05.11/12, but should work with lower A.05.xx revisions (limitations might be possible).

***Only tested with A.05.09/10 and A.05.11/12

****might be downgraded to A.06.01 or A.05.xx.

*****might be downgraded to A.06.10 or A.05.xx in "1100/1200 Series Compatibility and Emulation Mode" and working as "G13xxA" modules.

Notes:

1 The G1323B does not know the new 1200 series modules (G1312B, G1314B/C, G1367B/C). Only the features/settings of the "A" modules are available.

2 Firmware A.05.11 is not compatible with A.05.10 and below. No mixed systems allowed.

3 Firmware A.06.xx is not compatible with A.05.11. No mixed systems allowed.

Compatibility Matrix vs. Previous Revisions

For details refer to the document "FW_Compatibility_A.06.10_B.06.10.xls" provided with the firmware.

It includes the following compatibility information:

- to 1100/1200 firmware revisions A.06.01 or older
- to Agilent ChemStation software revisions
- to Agilent Cerity software revisions
- to Picard (MS-TOF software) revisions
- to Instant Pilot G4208A
- to Control Module G1323A/B

Emulation/Special Firmware

With the introduction of the 1200 Infinity LC series in July 2010, some new modules have been added to the portfolio and some received new hardware features. Therefore new "Emulation" firmware has been added in September 2010.

For details on using the emulation mode refer to the documentation in the set "*Agilent HPLC Modules Firmware Update Tools & Procedures*" on the Agilent Firmware download page.

Firmware Changes

NOTE   Some information in the history is not very detailed and may refer just to specific commands. These are for 3rd party software writers only who need this information for their interfaces.

Resident Firmware

All Modules

Table 15   Resident Firmware

Resident firmware revision	Res_A610_004 for all standard 1100/1200 modules, Res_B610_001 for G1315C DAD SL, G1365C MWD SL, G1315D DAD and G1365D MWD Res_B620_001 for G1314D VWD, G1314E VWD SL+
New Features	None
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

CORE Changes

Modules with On-Board LAN (Nucleus)

Table 16 Modules with On-Board LAN (Nucleus) B.06.25

Bugfix	• Fixed sporadic problems with writing into EEPROMs and reading from empty EEPROMs.
	• Fixed sporadic problem with RF tags. Sometimes the content of the RFID tags was unwanted deleted.
New Features	• Implemented new events EV10180, EV10181, EV10182, EV10183 for showing a change in the not-ready conditions. The large not-ready conditions cover 128 bit positions. The new events show each change in any bit-position.

Table 17 Modules with On-Board LAN (Nucleus) B.06.23

Bugfix	• Changed the FILE:DATA commands to accept section and key names with case-insensitiveness. Change is only relevant for local controller G1323B.
	• Fixed a potential bug with a +1 index error when reading diagnostic buffers. This is only relevant for very large, so far never used, diagnostic buffers.
	• Fixed a potential bug with a too small buffer for diagnostic buffers. This is only relevant for very large, so far never used, diagnostic buffers.
	• Fixed the reset of COSY-lists. Sometimes a reset did not cover all elements of a COSY-list.
	• Fixed the error handling if RF-Tags are in bad position. If RF-Tgas are in bad position for the antenna the state is now reliable in "no RF-tag found".
	• Fixed that a single byte received via LAN was wrongly interpreted as unallowed. The LAN segmentation of Licop data may also use a single-byte segment. Therefore a single byte is now correctly interpreted as Licop data that is continued in the next segment.
	• Fixed that the APG remote occasionally crashed on run start.
	• Fixed that too early APG pulses disturbed the module initialisation. APG pulses during module initialization are now ignored.
	• Fixed the raw data problem of never ending runs for runs shorter than the filter delay time.
New Features	• Support of the one-wire EEPROMs was implemented.

All Standard Modules (Core Changes)

Table 18   All Standard Modules (Core Changes) A.06.10

Bugfix	• PVCS #1591: The Licop command OPEN_SOCKETS has the problem that information longer than 128 bytes is cut. As a resolution, the new Licop command OPEN_SOCKETS_EX was implemented with a larger buffer. • PVCS #1615, #1621, #1622: CAP-module becomes very slow • PVCS #1628: Added new instruction CPTM (check post time) • PVCS #1560: TCC goes in Resident mode during FW-update of G4208A (Instant Pilot). • PVCS #1544: There's a new state machine START_NOT_READY indicating "ready for start" (ES 0129) resp. "not ready for start" (ES 0128). • PVCS #1568: Resolved problems in MO-CU. • PVCS #1574: Module hanging in "WAITY_CONTR" if command ABRT is closely sent to STRT. • Remote PeakDetector lost messages. • PVCS #1472: A run is now always stopped after an analysis. Before, an injector program with a longer duration than the run-time could have led to endless runs. • Cycle time improvement. • Now RESET-state prohibits a start.
New Features	• New Remote Services for ChipCube • Event Controller Boost by a factor of ~20

G1315C/D DAD /G1365C/D MWD (Core Changes)

Table 19   G1315C/D DAD /G1365C/D MWD (Core Changes) B.06.26 [030]

Bugfix	• TeamTrack #006524, #006567 (TT-legacy #01261, #01304, PVCS #1804, #1858): Fixed 'hanging LAN interface'. Occasionally the LAN interface was hanging when there was loads of broadcast traffic. The LAN interface was completely blocked and only a power cycle helped after that. • TeamTrack #006582 (TT-legacy #01319, PVCS #1873): Fixed deleting the time table occasionally resulted in crashes when downloading the next method. This bug only occurred if a special command was used for deleting the time table and if a method without time table was loaded after a method with time table. This bug only occurred in firmware revisions B.06.23, B.06.24 and B.06.25. • Both fixes were introduced already for G4212A, see "Core Changes B.06.26/B.06.27" on page 78.
New Features	• None

Table 20   G1315C/D DAD /G1365C/D MWD (Core Changes) B.06.25 [020]

Bugfix	• none
New Features	• Support of new optical variable slit assembly that will be introduced in the optical units of G1315/65C/D in 2012. This firmware assures compatibility for both slit versions.

Table 21   G1315C/D DAD /G1365C/D MWD (Core Changes) B.06.25

Bugfix	• Fixed sporadic problems with writing into EEPROMs and reading from empty EEPROMs. • Fixed sporadic problem with RF tags. Sometimes the content of the RFID tags was unwanted deleted.
New Features	• Implemented new events EV10180, EV10181, EV10182, EV10183 for showing a change in the not-ready conditions. The large not-ready conditions cover 128 bit positions. The new events show each change in any bit-position.

Table 22   G1315C/D DAD /G1365C/D MWD (Core Changes) B.06.10

Bugfix	• If command STRS was rejected with more than one reason, a PANIC occurred with system going to resident. This bug is fixed now.
	• In very rare cases there was a possibility of a system crash if monitoring the actual status and asking for the status by a controller request was done at the same time. This bug is fixed now.
	• PVCS #1590: The Licop command OPEN_SOCKETS has the problem that information longer than 128 bytes is cut. As a resolution, the new Licop command OPEN_SOCKETS_EX was implemented with a larger buffer.
	• PVCS #1472: A run is now always stopped after an analysis. Before, an injector program with a longer duration than the run-time could have led to endless runs.
	• Due to changes in the resident system (for supporting future products) the memory mapping was changed. The execution code is loaded to a higher address now, allowing the resident system being loaded to a lower address. This change requires to use the new resident system B.06.10. Older resident systems are incompatible with this change.
New Features	• None

Firmware for New RFID Tag

New RFID tag assemblies will be introduced later in 2015 on various modules:

- VWD (G1314D, G1314E, G1314F),
- DAD, MWD (G1315C, G1365C, G1315D, G1365D), Infinity DAD (G4212A, G4212B),
- Infinity Binary Pump (G4220A, G4220B),
- TCC (G1316C),
- Universal Valve (G1170A),
- FlexCube (G4227A),
- CE (G7100A)

To support old and new RFID tags compatible firmware is required:

- G1316C TCC with A.06.55,
- B-firmware since release B.06.72.
- C-firmware for G1170A Universal Valve or G4227A Flexible Cube since release C.06.72

For details see Agilent web **RFID Tag Information - Important for all users!**

Pumps

1260 Infinity Pumps

Table 23   1260 Infinity Pumps (G5611A) A.06.10 [040]

Main firmware revision	5611A_A610_040
Released	October 2011
General	Same changes as on A.06.36 [001]
Bugfix	• TeamTrack #010620: Error event EE_DEGASSER_ADC (EE 2243) was erroneously displayed in case of heavy duty. • TeamTrack #014574: G1311C emulated as G1311A used wrong pressure limits.
New Features	• TeamTrack #014475: G5611A can emulate G1311B in emulation mode.
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 24   1260 Infinity Pumps (G1311C) A.06.10 [040]

Main firmware revision	1311C_A610_040
Released	October 2011
General	Same changes as on A.06.36 [001]
Bugfix	• TeamTrack #010620: Error event EE_DEGASSER_ADC (EE 2243) was erroneously displayed in case of heavy duty. • TeamTrack #014574: G1311C emulated as G1311A used wrong pressure limits.
New Features	• TeamTrack #014475: G5611A can emulate G1311B in emulation mode.
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 25   1260 Infinity Pumps (G1311C) A.06.10 [030]

Main firmware revision	1311C_A610_030
Released	December 2010
General	This release is for the 1260 Infintity version G1311C introduced July 2010. This firmware is required when downgrading the modules to A.06.10 firmware. It allows to operate the G1310C as G1311A (emulation mode).
Bugfix	TeamTrack #01492: Firmware A.06.04[020] and A.06.10[020] released for the Quaternary Pump G1311C calculated a pressure which was too high by a factor of about 1.4, potentially resulting in an overpressure error stopping measurements. The revisions A.06.04[030] and A.06.10[030] correct this issue. Only G1311C was affected.
New Features	None
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

1260 Infinity Pumps (G1310B, G1311B/C)

Table 26   1260 Infinity Pumps (G1310B, G1311B/C)

Main firmware revision	1310B_A610_020, 1311B_A610_020, 1311C_A610_020
Released	September 2010
Bugfix	This release is for the 1260 Infintity version G1310B and G1311B/C introduced July 2010. This firmware is required when downgrading the modules to A.06.10 firmware. It allows to operate the G1310B as G1310A and G1311B/C as G1311A (emulation mode).
New Features	None
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Standard Pumps (G1310A, G1311A, G1312A)

Table 27   Standard Pumps (G1310A, G1311A, G1312A)

Main firmware revision	1310A_A610_005, 1311A_A610_005, 1312A_A610_005
Bugfix	None
New Features	• New RemoteServices for ChipLC: • new traps in main-cosy-list: "PreInit- and PostInit-Wait"
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

1260 Infinity Binary Pump (G1312B)

Table 28   1260 Infinity Binary Pump (G1312B)

Main firmware revision	1312B_A610_020
Released	September 2010
Bugfix	This release is for the 1260 Infintity version G1312B introduced July 2010. This firmware is required when downgrading the modules to A.06.10 firmware. It allows to operate the G1312B as G1312A (emulation mode). G1312B pumps that have FW A.06.10 [005] installed, do not require [020]. Difference is the support of the new SSV with [020].
New Features	None
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Binary Pump SL (G1312B)

Table 29   Binary Pump SL (G1312B)

Main firmware revision	1312B_A610_005 (initial firmware)
Bugfix	• Event numbers for SealWash changed, was dublicated with 1361A purge event numbers.
New Features	None
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Prep Pump (G1361A)

Table 30   Prep Pump (G1361A)

Main firmware revision	1361A_A610_004
Bugfix	None - system release
New Features	None
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

1260 Infinity Micro Pump (G1376A)

Table 31   1260 Infinity Micro Pump (G1376A)

Main firmware revision	1376A_A611_020
Released	September 2010
Bugfix	None
New Features	This release is for the 1260 Infintity version introduced July 2010. This firmware is required when downgrading the module to A.06.11 firmware. G1376A pumps that have FW A.06.10 [005] installed, do not require [020]. Difference is the support of the new SSV with [020].
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Micro Pump (G1376A)

Table 32   Micro Pump (G1376A) - A.06.10

Main firmware revision	1376A_A610_005
Bugfix	None - system release
New Features	None
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

1260 Infinity Nano Pump (G2226A)

Table 33   1260 Infinity Nano Pump (G2226A)

Main firmware revision	2226A_A611_020
Released	September 2010
Bugfix	None
New Features	This release is for the 1260 Infintity version introduced July 2010. This firmware is required when downgrading the module to A.06.11 firmware. G2226A pumps that have FW A.06.11 [005] installed, do not require [020]. Difference is the support of the new SSV with [020].
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Nano Pump (G2226A)

Table 34   Nano Pump (G2226A)

Main firmware revision	2226A_A611_005
Bugfix	None
New Features	Improved cycle times (gradient delay reduction) together with CLC G4240A.
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 35   Nano Pump (G2226A)

Main firmware revision	2226A_A610_005
Bugfix	None - system release
New Features	None
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Autosamplers

Autosamplers (G1313A, G1329A/B, G1389A, G2260A)

Table 36   Autosamplers (G1313A, G1329A/B, G1389A, G2260A)

Main firmware revision	1313A_A610_006, 1329A_A610_006, 1329B_A610_006, 1389A_A610_006, 2260A_A610_006
Bugfix	• "PVCS #1643: new commands ACT:DRPO?, ACT:INPO? ("last draw/inject sample location"), ACT:DRVO?, ACT:INVO? ("last draw/inject volume"). • PVCS #1602: switching the light of the sample chamber failed.
New Features	None
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

1260 Infinfinty Autosampler (G1367E)

Table 37   1260 Infinfinty Autosampler (G1367E)

Main firmware revision	1367E_A616_001
Released	September 2010
Changes	This release is for the 1260 Infintity version G1367E introduced July 2010. This firmware is required when downgrading the module to A.06.16 firmware. It allows to operate the G1367E as G1367A/B/C/D (emulation mode).
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

High Performance Autosamplers (G1367A/B/C/D, G1377A, G2258A)

Table 38   High Performance Autosamplers (G1367A/B/C/D, G1377A, G2258A)

Main firmware revision	1367A_A616_001, 1367B_A616_001, 1367C_A616_001, 1367D_A616_001, 1377A_A616_001, 2258A_A616_001
Bugfix	• PVCS #1726: (only G1377A) Fixed that the 40 µl-loop capillary was not supported. • PVCS #1861: Fixed that sporadically a software watchdog occurred when switching the valve to bypass after sample was flushed out (in the modes "overlapped injection after sample is flushed out" or "automated delay volume reduction"). • PVCS #1750, #1834: Fixed that a mix in flush port let the module crash. • PVCS #1715: Fixed that the module showed 'ready' during heating/cooling when switching the thermostat off and immediately on again. Since the module is still heating/cooling the module now correctly shows 'not ready'. • PVCS #1686: Fixed that the module showed 'not ready' with temperature control set to 'not controlled'. If the thermostat is switched off, the temperature control is set to 'not controlled' and the "enable analysis within +/- 1 degree" is enabled, the module wrongly showed 'not ready' instead of 'ready'. • PVCS #1864: Allow manual moving of the theta arm during maintenance procedures "change needle" and "change loop". • PVCS #1860: (G4226A only) Fixed that multi-draw is now correctly suppressed if no large seat capillary is installed. • PVCS #1867: (G4226A only) Fixed that the module sometimes wrongly reported EE4706 (missing vessel) after measuring the blind seat. • PVCS #1865: Implemented to perform a 'RESET' after each maintenance procedure finished. This is wanted for safety reasons to prevent the needle from possible damage after maintenance procedures.
New Features	• None
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 39   High Performance Autosamplers (G1367A/B/C/D, G1377A, G2258A)

Main firmware revision	1367A_A612_003, 1367B_A612_003, 1367C_A612_003, 1367D_A612_003, 1377A_A612_003, 2258A_A612_003
Bugfix	• PVCS #1645: The actual draw/inject volume was too high for High-Flow-WPS if loop-overfilling-mode was selected. • PVCS #1655: Auto-power-on (APON) did not work if thermostat temperature was set to 'not controlled'. • PVCS #1673: "valve switching failed" error in case of 'overlapped injection after time', 'valve switching times = 0' and injector purge kit installed and enabled. • PVCS #1678: Fixed offset for flush seat. The offset was not reproducibly linked to a special z-position. Now offset=0 means "same z-position as if needle is in seat". • No PVCS: Some changes for improvement of speed performance, e.g. the "wait equilibration time" before draw was removed. • No PVCS: Fixed a sporadic crash at CNOF (end of needle change procedure).
New Features	• New module type added: G1367D Introduction of High Performance Autosampler SL+ G1367D
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 40   High Performance Autosamplers (G1367A/B/C/D, G1377A, G2258A)

Main firmware revision	1367A_A611_001, 1367B_A611_001, 1367C_A611_001, 1377A_A611_001, 2258A_A611_001
Bugfix	• PVCS #1647: Injector valve cleaning was executed prior to begin of run instead of waiting for the respective times within the run. That caused too early valve switching. in case of LC-Chip/MS if a trap volume is given
New Features	• None
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

High Performance Autosamplers (G1367D)

Table 41   High Performance Autosamplers (G1367D)

Main firmware revision	1367D_A610_020
Released	September 2008

Changes	• Because the G1367D High Performance Autosampler SL+ is using the same main board as the G1367C High Performance Autosampler SL it is possible to load the G1367C firmware versions older than A.06.12 on to it. As the G1367D has a different metering device as the G1367C, problems may occur with some softwares which always assumes the sampler has a 100µl metering device and thus inject 2,5x too little or even gives an error. In order to overcome this problem there are two G1367D specific firmwares available (A.06.10 and A.06.03).
	The procedure to downgrade to these FW's is decribed below. This procedure should always be followed in order to avoid problems.
	  • Load firmware A.06.12 to G1367D used as a G1367C (if already a G1367D ignore this step)
	  • Re-type the sampler to G1367D (if already a G1367D ignore this step)
	  • Load new G1367D specific firmware (A.06.10 or A.06.03)
	  • Re-type the sampler to G1367C.
	• Firmware downgrade for G1367D re-typed to a G1367C using other FW's
	If for any reason a different firmware revision is needed and an original G1367C FW isloaded there is a risk that the sampler will not inject the correct volume. Ensure correct operation upon completion of FW install. The G1367D will operate according to G1367C specifications if operated with a G1367C firmware.

Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 42   High Performance Autosamplers (G1367A/B/C/D, G1377A, G2258A)

Main firmware revision	1367A_A610_006, 1367B_A610_006, 1367C_A610_006, 1377A_A610_006, 2258A_A610_006
Bugfix	• "PVCS #1643: new commands ACT:DRPO?, ACT:INPO? ("last draw/inject sample location"), ACT:DRVO?, ACT:INVO? ("last draw/inject volume"). • PVCS #1602: switching the light of the sample chamber failed. • PVCS #1557: DSPD, ESPD, IVOL is set to default when loop or seat capillary is changed by MPRM. • PVCS #1570: Two state machines (Metering-Device, Peristaltic Pump) weren't reported as startup events, though the changes were reported.
New Features	• New location (wash port) for commands EJCT, DRAW, PURG, PURS. • Implemented new injector purge functionality using the kit. (not G2258A).
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Detectors

Variable Wavelength Detector VWD (G1314D/E/F)

Table 43   Variable Wavelength Detector VWD (G1314D/E/F)

Main firmware revision	1314D_B628_001, 1314E_B628_001, 1314F_B628_001 requires resident firmware Res_B623_001
Date Introduced	August 2015
General	This firmware provides support for new RFID tag, see "Firmware for New RFID Tag" on page 39.
Bugfix	• None
New Features	• Support for new RFID tag.
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Variable Wavelength Detector (G1314F)

Table 44   Variable Wavelength Detector (G1314F) - B.06.25

Main firmware revision	1314F_B625_003
Released	September 2010
Changes	This release is for the 1260 Infintity version G1314F introduced July 2010. This firmware is required when downgrading the module to B.06.25 firmware. It allows to operate the G1314F as G1314D (emulation mode).
Bugfix	None
New Features	None
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Variable Wavelength Detector VWD (G1314D/E/F)

Table 45   Variable Wavelength Detector VWD (G1314D/E) - B.06.25

Main firmware revision	1314E_B625_003, 1314D_B625_003, requires resident firmware Res_B623_001
Bugfix	• Core changes only, see Table 16, "Modules with On-Board LAN (Nucleus) B.06.25," on page 35.
New Features	None
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 46   Variable Wavelength Detector VWD (G1314D/E) - B.06.23

Main firmware revision	1314E_B623_006, 1314D_B623_006, requires resident firmware Res_B623_001
Bugfix	• Fixed an error in the operating system trace (TraceOS/oslog debugging feature). This error only occurred in revisions B.06.20 and B.06.21: If more than 11 warnings were written to the trace, the system started to write all further warnings to wrong memory locations. This could lead to serious errors and crashes (mostly panics with "unexpected exception" 0x92000113 "data store translation miss exception").
New Features	None
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 47   Variable Wavelength Detector VWD (G1314D/E) - B.06.21

Main firmware revision	1314E_B621_001, 1314D_B621_001, requires resident firmware B.06.20
Bugfix	• PVCS #1697: Fixed the bug that setting the attenuation of the AnalogOutput to 4000 was not working. • PVCS #1716: Fixed that rejection of timetable sample scan did not send an event. Two new events are implemented: EV 7352 (EV_BLANK_NOT_AVAILABLE) if trying to take a sample scan without having a blank scan. EV 7353 (EV_BLANK_MISMATCH) if trying to take a sample scan without having the range covered by the available blank scan. • PVCS #1717: Fixed the bug that the detector delivered the temperature of the cell in the wrong scale. The temperature was wrong by a factor of 1/100 and caused problems if TCC's temperature was chosen as same "as detector cell".
New Features	None
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 48   Variable Wavelength Detector VWD (G1314D/E) - B.06.20

Main firmware revision	1314E_B620_003, 1314D_B620_003, requires resident firmware B.06.20
Bugfix	Initial release
New Features	New 1200 series VWD and VWD-SL Plus
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Variable Wavelength Detector VWD (G1314A/B/C)

Table 49   Variable Wavelength Detector VWD (G1314A/B/C)

Main firmware revision	1314AB_A613_001, 1314C_A613_001
Bugfix	This revision solves ignition problems with UV lamps that require continuous heating (standard VWD lamps G1314-60100/-60101). The heating time has been increased from 12 to 20 seconds.
New Features	None
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 50   Variable Wavelength Detector VWD (G1314A/B/C)

Main firmware revision	1314AB_A610_004, 1314C_A610_004
Bugfix	None - system release
New Features	None
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

DAD/MWD (G1315A/B, G1365A/B)

Table 51   DAD/MWD (G1315A/B, G1365A/B)

Main firmware revision	1315AB_A610_004, 1365AB_A610_004 The firmware is the same for A and B versions.
Bugfix	• PVCS #1616: now it is possible to take a SCAN even another controller has locked CLASS_START. The command SCAN now belongs to CLASS_CONTROL
New Features	None
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

DAD / MWD (G1315C, G1365C, G1315D, G1365D)

Table 52   DAD / MWD (G1315C, G1365C, G1315D, G1365D) - B.06.26[030]

Main firmware revision	1365C_B628_001, 1365D_B628_001, 1365C_B628_001, 1365D_B628_001
Resident firmware revision	Res_B623_001
Date Introduced	August 2015
General	This firmware provides support for new RFID tag, see "Firmware for New RFID Tag" on page 39.
Bugfix	• None
New Features	• Support for new RFID tag.
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 53   DAD / MWD (G1315C, G1365C, G1315D, G1365D) - B.06.26[030]

Main firmware revision	1315C_B626_030, 1315D_B626_030, 1365C_B626_030, 1365D_B626_030
Resident firmware revision	Res_B623_001
Date Introduced	February 2014
General	The fix in the CORE part was already implemented with the G4212A DAD firmware. Now it has been released also for the G1315/65C/D detectors.
Bugfix	• See "G1315C/D DAD /G1365C/D MWD (Core Changes) B.06.26 [030]" on page 37
New Features	• None
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 54   DAD / MWD (G1315C, G1365C, G1315D, G1365D) - B.06.25 [030]

Main firmware revision	1315C_B625_030, 1315D_B625_030, 1365C_B625_030, 1365D_B625_030
Resident firmware revision	Res_B623_001
Date Introduced	May 2012
General	Must be used with optical units that have the new VSA micro slit assembly. This firmware assures compatibility for both slit versions.
Bugfix	• None
New Features	• Support of future new VSA micro slit assembly. This new VSA micro slit assembly will replace the current slit assembly (planned for July/August 2012).
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 55   DAD / MWD (G1315C, G1365C, G1315D, G1365D) - B.06.25 [020]

Main firmware revision	1315C_B625_020, 1315D_B625_020, 1365C_B625_020, 1365D_B625_020
Resident firmware revision	Res_B623_001
Release Date	September 2011
Bugfix	• None.
New Features	Support of new optical variable slit assembly that will be introduced in the optical units of G1315/65C/D in 2012. This firmware assures compatibility for both slit versions.
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 56   DAD / MWD (G1315C, G1365C, G1315D, G1365D) - B.06.25

Main firmware revision	1315C_B625_003, 1365D_B625_003, 1365C_B625_003, 1365D_B625_003
Resident firmware revision	Res_B623_001
Bugfix	• Core changes, see Table 16, "Modules with On-Board LAN (Nucleus) B.06.25," on page 35. • PVCS #1841: Fixed that wavelength calibration always failed if the VIS lamp was turned on. This bug was introduced with revision B.06.23 and only occurred in revision B.06.23.
New Features	None.
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 57 DAD / MWD (G1315C, G1365C, G1315D, G1365D) - B.06.23

Main firmware revision	1315C_B623_007, 1315D_B623_007, 1365C_B623_007, 1365D_B623_007
Resident firmware revision	Res_B623_001
Bugfix	• PVCS #1631: Fixed that reconnect via RS232 was not possible. It was possible to connect via RS232, but disconnect and reconnect was not possible before next power-on. • Fixed occasional crash after traffic bursts (e.g. ARP request attacks) in LAN interface. After the LAN burst the LAN interface took too much of CPU time and was leading to watchdog timeouts of other processes. • Take-over the update of the flash file-system library FFX. The old library contained a bug that led occasionally to crashed flash disks after power-cycle.
New Features	None.
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 58 DAD / MWD (G1315C, G1365C, G1315D, G1365D) - B.06.14

Main firmware revision	1315C_B614_001, 1315D_B614_001, 1365C_B614_001, 1365D_B614_001
Resident firmware revision	Res_B610_001
Bugfix	• PVCS #1680: Fixed occasional crash with out-of-memory. Sometimes the I2C bus did not answer in the specified time (for board temperature readings). The endless waiting for the answer led to signal consumption in the processes signal queue and the module's firmware was crashing with out-of-memory. Fixed by using a time-out to keep the process running. • PVCS #1712: Fix to support the Kingston 1 GB compact flash card.
New Features	None.
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 59 DAD / MWD (G1315C, G1365C, G1315D, G1365D) - B.06.13

Main firmware revision	1315C_B613_002, 1315D_B613_002, 1365C_B613_002, 1365D_B613_002
Resident firmware revision	Res_B610_001
Bugfix	• Fixed bug in slope-threshold based fraction collection. If the threshold condition became true without slope condition then it could have happened that the first peak of next run wasn't collected. • Peak based fraction collection: If a peak timeout occurs the end of peak time was too late to an amount of up to one data point, i.e. at default peak width the fraction ended up to 0.4s too late. This causes a change in fraction width by lower than 2%. This is not relevant to purification solutions, as peak timeout is used mainly for addressing wrong down-slope-parameterization and in this case the collected fraction contains far more volume than expected. • Fixed occasional crash after traffic bursts (e.g. ARP request attacks) in LAN interface. After the LAN burst the LAN interface took too much of CPU time and was leading to watchdog timeouts of other processes.
New Features	None.
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 60 DAD / MWD (G1315C, G1365C, G1315D, G1365D) - B.06.11

Main firmware revision	1315C_B611_001, 1315D_B611_001, 1365C_B611_001, 1365D_B611_001
Resident firmware revision	Res_B610_001
Bugfix	• Occasionally there was a problem in running out of internal used buffers for raw-data, leading to a crash. Increased the number of buffers to a value sufficient for all cases.
New Features	None.
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 61   DAD / MWD (G1315C, G1365C, G1315D, G1365D) - B.06.10

Main firmware revision	1315C_B610_003, 1315D_B610_003, 1365C_B610_003, 1365D_B610_003
Resident firmware revision	Res_B610_001
Bugfix	See CORE changes "G1315C/D DAD /G1365C/D MWD (Core Changes)" on page 37.
New Features	None.
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

1260 Infinity Fluorescence Detector (G1321B)

Table 62 1260 Infinity Fluorescence Detector (G1321B)

Main firmware revision	1321B_A611_020
Released	September 2010
Bugfix	This release is for the 1260 Infintity version G1321B introduced July 2010. This firmware is required when downgrading the module to A.06.11 firmware. It allows to operate the G1321B as G1321A (emulation mode). IMPORTANT: This version should be used in emulation mode only. Otherwise, the G1321B will not reach the READY state!
New Features	None
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Fluorescence Detector FLD (G1321A)

Table 63   Fluorescence Detector FLD (G1321A)

Main firmware revision	1321A_A611_005
Bugfix	• PVCS #1705: "ADC overflow" event was not sent for channel 2, 3, 4. The event is now sent for all channels. • CS PVCS #14806: Complementary wavelength in spectra header had wrong unit. Due to the wrong unit specification the complementary wavelength was wrongly scaled which lead to random numbers. Due to a bug in the Agilent ChemStation, this fix will not take effect in current ChemStation releases (B.04.01 and below). The displayed unit range will still be wrong. Future ChemStation releases (planned for B.04.01 Service Pack 1) will fix the bug and will then show the correct unit range. The fix works only with firmware A.06.11 plus B.04.01 Service Pack 1.
New Features	• PVCS #1704 Up to firmware A.06.10, an "ADC overflow" was not visible in the chromatogram under certain method conditions. Overflow could be concealed by smoothing of a filter and thus not visible for the user. In the Agilent ChemStation, the "ADC overflow" event was only shown in the logbook. This problem did only occur if the Peakwidth (Responsetime) parameter has been set similar or larger than the real width of the chromatographic peak.
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 64   Fluorescence Detector FLD (G1321A)

Main firmware revision	1321A_A610_004
Bugfix	• None - system release
New Features	None
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Refractive Index Detector RID (G1362A)

Table 65   Refractive Index Detector RID (G1362A)

Main firmware revision	1362A_A610_004
Bugfix	• PVCS #1593: WaitTime after Purge was waited twice.
New Features	None
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Other Modules

Thermostatted Column Compartment TCC SL+ (G1316C)

Table 66   Thermostatted Column Compartment TCC SL+ (G1316C) (A.06.17)

Main firmware revision	1316C_A618_001
Resident firmware revision	Res_A610_004
Date Introduced	August 2015
General	This firmware provides support for new RFID tag, see "Firmware for New RFID Tag" on page 39.
Bugfix	• None
New Features	• Support for new RFID tag.
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 67 Thermostatted Column Compartment TCC SL+ (G1316C) (A.06.17)

Main firmware revision	1316C_A617_001
Resident firmware revision	Res_A610_004
Release Date	December 2009
Bugfix	• Implemented restoring mechanism for lost tag contents. If the module was switched off whilst the RFID tag was accessed for writing, the content of the tag was lost. Now, a safe restoring mechanism is implemented. • Wrong number of the error event for "valve initialization failed". Now the correct error event EE_VALVE_INIT_FAILED is sent with the correct number EE 2875 instead of the wrong EE 2860. • TeamTrack #01141, #01146, #01344 (PVCS #1679, #1685, #1898): Increased the following ranges: column length to 500 mm, column diameter to 50.0 mm, max. pressure to 2000 bar and max temperature to 250°C
New Features	• Implemented state events ES_VALVE_PRESENT (ES 2879) and ES_VALVE_NOT_PRESENT (ES 2878) for showing presence or absence of a supported valve.
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 68 Thermostatted Column Compartment TCC SL+ (G1316C) (A.06.16)

Main firmware revision	1316C_A616_001
Resident firmware revision	Res_A610_004
Release Date	October 2009
Bugfix	• PVCS #1889: Up to firmware A.06.15, the ports #1 and #2 of the 2 pos/6 port ultra-high pressure valve 1200 bar (5067-4117) were interchanged (1290 Infinity TCC).
New Features	• None
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 69   Thermostatted Column Compartment TCC SL+ (G1316C) (A.06.15)

Main firmware revision	1316C_A615_001,
Resident firmware revision	Res_A610_004
Release Date	October 2009
Bugfix	• None
New Features	• PVCS #1811: The valve initialization did not finish after power-up, if the special toggle mechanism with negative valve position was used before power-off.
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 70   Thermostatted Column Compartment TCC SL+ (G1316C) (A.06.14)

Main firmware revision	1316C_A614_001,
Bugfix	• None
New Features	• Implemented the Valve Cluster mechanism. This mechanism enables synchronous switching of column selection valves in several TCCs. • Implemented the Pressure Limit Cluster mechanism. This mechanism enables the TCCs to request a High Pressure Limit at the pump in order to protect the column switching valve and the column from over-pressure. • Redefinition of RFID Tag contents of the column switching valve. Major change: valve serial number no longer modifiable at customer side.
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 71   Thermostatted Column Compartment TCC SL+ (G1316C) (A.06.10)

Main firmware revision	1316C_A610_001,
Bugfix	• Initial release of G1316C.
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Thermostatted Column Compartment TCC / TCC SL (G1316A/G1316B)

Table 72   Thermostatted Column Compartment TCC / TCC SL (G1316A/G1316B)

Main firmware revision	1316A_A610_004, 1316B_A610_004
Bugfix	• PVCS #1613: in case no CSV is installed both ColldTag should be incremented. • PVCS #1560: TCC goes in Resident mode during FW-update of G4208A (Instant Pilot).
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Fraction Collector (G1364A/B/C/D)

Table 73   Fraction Collector (G1364A/B/C/D)

Main firmware revision	1364A-D_A610_006
Bugfix	• "PVCS #1630: uS-FC stays permanently in ABORT-state when it is in state WAIT_FOR_RESET and receives command ABRT. • PVCS #1627: avoid crash "Software Watchdog" • PVCS #1609: AFC-cluster: after RSET not possible to open the front door. • PVCS #1610: missing event EV 4263 (TrayChangeFinished). • PVCS #1602: switching the light of the sample chamber failed. • PVCS #1553: don't use Reserved Locations for fractions. • send EV_SYS_CHANGED (EV 0201) in case any cluster configuration is changed or in case any delay is changed.
New Features	• query next free position: ACT:NPOS?
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Universal Interface Box (G1390A)

Table 74   Universal Interface Box (G1390A)

Main firmware revision	1390A_A610_001
Bugfix	• If a CAN slave's host goes into resident the CAN slave didn't notice at all that the host is gone.
New Features	• Introduced Run-State-Events ES 0104, ES 0103.
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Automation Interface (G2254A)

Table 75   Automation Interface (G2254A)

Main firmware revision	2254A_A610_001
Bugfix	• If a CAN slave's host goes into resident the CAN slave didn't notice at all that the host is gone.
New Features	• Introduced Run-State-Events ES 0104, ES 0103.
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Valves (G1156/57/58/59/60/62/63A/G1158B)

Table 76   Valves (G1156/57/58/59/60/62/63A/G1158B)

Main firmware revision	1156A_A610_001, 1157A_A610_001, 1158AB_A610_001, 1159A_A610_001, 1160A_A610_001, 1162A_A610_001, 1163A_A610_001
Bugfix	• If a CAN slave's host goes into resident the CAN slave didn't notice at all that the host is gone.
New Features	None
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Chip Cube (G4240A)

Table 77   Chip Cube (G4240A)

Main firmware revision	4240A_A611_004
Bugfix	• Fixed the bug that toggling next position with Outer Rotor (VOP x; with -7 <= x <= -2) caused G4240A to fall to resident system.
New Features	• Improved cycle times (gradient delay reduction) together with Micro Pump G1376A or Nano Pump G2226A. • Implemented to support "valve next position" for prepare phase within an analysis.
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 78   Chip Cube (G4240A)

Main firmware revision	4240A_A610_004
Bugfix	• PVCS #1611: Support new chip layouts by adding a new chip related offset, that is chip specific and listed in the chip's description.
New Features	None
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Local Controllers

G4208A Instant Pilot

Information for the Instant Pilot (G4208A) has been removed. It's now documented in an individual document "Local Controller" and can be downloaded from the web, see "Where To Get Latest Information" on page 3.

1290 Infinty Change Information

This chapter provides the details of the various firmware revisions for the Agilent 1290 Infinity System.

Agilent Technologies

Document History

The table below lists all changes that have been made to this document.

Table 79   Document History

Date	Description	Author
5-Aug-2015	New RFID Tag compatible firmware B.06.28 has been released for HPLC modules that support RFID tags. • Added section "Firmware for New RFID Tag" on page 39. Updated all sections/modules that were impacted by the new revision.	W. Albrecht
25-Jan-2010	Updated Compatibility Information in sections • "G4208A Instant Pilot" on page 71	W. Albrecht
17-Dec-2009	Release of new firmware for • "G1316C Infinty TCC A.06.17" • "G4220A Infinity Binary Pump B.06.27"	W. Albrecht
07-Dec-2009	Release of new firmware for • "G4212A Infinity DAD B.06.26"	W. Albrecht
29-Oct-2009	Release of new firmware for • "G1316C Infinty TCC A.06.16"	W. Albrecht
13-Oct-2009	Updated sections • "G4212A Infinity DAD B.06.25" • "G4208A Instant Pilot" on page 71 Added section • "G4226A Infinity Autosampler A.06.15"	W. Albrecht
12-Oct-2009	Added build numbers of new firmware	W. Albrecht

Table 79   Document History

Date	Description	Author
18-Sep-2009	Release of new firmware for • "Core Changes B.06.25" • "G4220A Infinity Binary Pump B.06.25" • "G4212A Infinity DAD B.06.25" • "G4226A Infinity Autosampler A.06.16" • "G1316C Infinty TCC A.06.15" • "G4208A Instant Pilot" on page 71	W. Albrecht
02-Sep-2009	Release of new firmware for • "G4220A Infinity Binary Pump B.06.24"	W. Albrecht
31-Jul-2009	Initial Information "Firmware Revision Overview"	W. Albrecht

Firmware Revision Overview

Table 80   Firmware Revision Overview

Type	Module	Product#	Revision	Build	Filename (.DLB)	Initial New
Main						
	1290 Infinity DAD	G4212A	B.06.28	002	4212A_B628_002	N
	1290 Infinity DAD	G4212A	B.06.28	001	4212A_B628_001	N
	1290 Infinity DAD	G4212A	B.06.26	030	4212A_B626_030	N
	1290 Infinity DAD	G4212A	B.06.26	004	4212A_B626_004	N
	1290 Infinity DAD	G4212A	B.06.25	003	4212A_B625_003	N
	1290 Infinity DAD	G4212A	B.06.23	006	4212A_B623_006	I
	1290 Infinity Binary Pump 1260 Infinity Quaternary Pump	G4220A G4220B	B.06.28	001	4220A_B628_001 4220B_B628_001	N
	1290 Infinity Binary Pump	G4220A	B.06.27	001	4220A_B627_001	N
	1290 Infinity Binary Pump	G4220A	B.06.25	003	4220A_B625_003	N
	1290 Infinity Binary Pump	G4220A	B.06.24	003	4220A_B624_003	N
	1290 Infinity Binary Pump	G4220A	B.06.23	006	4220A_B623_006	I
	1290 Infinity Autosampler	G4226A	A.06.16	001	4226A_A616_001	N
	1290 Infinity Autosampler	G4226A	A.06.15	001	4226A_A615_001	N
	1290 Infinity Autosampler	G4226A	A.06.14	001	4226A_A614_001	I
	1290 Infinity TCC	G1316C	A.06.18	001	1316C_A618_001	N
	1290 Infinity TCC	G1316C	A.06.17	001	1316C_A617_001	N
	1290 Infinity TCC	G1316C	A.06.16	001	1316C_A616_001	N
	1290 Infinity TCC	G1316C	A.06.15	001	1316C_A15_001	N
	1290 Infinity TCC	G1316C	A.06.14	001	1316C_A14_001	I

Table 80   Firmware Revision Overview

Type	Module	Product#	Revision	Build	Filename (.DLB)	Initial New
	Instant Pilot	G4208A	B.02.09	003	4208A_B209_003	N
	Instant Pilot	G4208A	B.02.08	008	4208A_B208_008	I
Resident						
	1290 Infinity DAD and Binary Pump		B.06.23	001	Res_B623_001	I
	1290 Infinity Autosampler and TCC		A.06.10	004	Res_A610_004	I
	Instant Pilot, see "G4208A Instant Pilot" on page 71	G4208A				

Core Changes

Table 81   Core Changes B.06.26/B.06.27

Main firmware revision	4220A_B627_001, 4212A_B626_004
Resident firmware revision	Res_B623_001
Date Introduced	December 2009
Bugfix	• PVCS #1804, #1858: Fixed 'hanging LAN interface'. Occasionally the LAN interface was hanging when there was loads of broadcast traffic. The LAN interface was completely blocked and only a power cycle helped after that. • PVCS #1873: Fixed deleting the time table occasionally resulted in crashes when downloading the next method. This bug only occurred if a special command was used for deleting the time table and if a method without time table was loaded after a method with time table. This bug only occurred in firmware revisions B.06.23, B.06.24 and B.06.25.
New Features	• None
Known Problems	None
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 82   Core Changes B.06.25

Main firmware revision	4220A_B625_003, 4212A_B625_003
Resident firmware revision	Res_B623_001
Date Introduced	September 2009
Bugfix	• Fixed sporadic problems with writing into EEPROMs and reading from empty EEPROMs. • Fixed sporadic problem with RF tags. Sometimes the content of the RFID tags was unwanted deleted.
New Features	• Implemented new events EV10180, EV10181, EV10182, EV10183 for showing a change in the not-ready conditions. The large not-ready conditions cover 128 bit positions. The new events show each change in any bit-position.
Known Problems	None
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

G4220A Infinity Binary Pump

Table 83   G4220A Infinity Binary Pump

Main firmware revision	4220A_B628_001
Resident firmware revision	Res_B623_001
Date Introduced	August 2015
General	This firmware provides support for new RFID tag, see "Firmware for New RFID Tag" on page 39.
Bugfix	• None
New Features	• Support for new RFID tag.
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 84   G4220A Infinity Binary Pump B.06.27

Main firmware revision	4220A_B627_001
Resident firmware revision	Res_B623_001
Date Introduced	December 2009
Bugfix (Core)	• See "Core Changes B.06.26/B.06.27" on page 78.
Bugfix	• TeamTrack #01342 (PVCS #1896): There was a wrong flow value in the method after execution of 'prime', 'leak test' or 'primary air removal'. • TeamTrack #01338 (PVCS #1892): The EMF counter values disappeared after power-cycle. • The module occasionally showed unwanted effects (e.g. pulsing pressure, deny writing of some diagnostic buffers) after ca. 24 days continuous running
New Features	• None
Known Problems	None
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 85   G4220A Infinity Binary Pump B.06.25

Main firmware revision	4220A_B625_003
Resident firmware revision	Res_B623_001
Date Introduced	September 2009
Bugfix	• See "Core Changes B.06.25" on page 78. • PVCS #1836: Fixed that pump wrongly fell into error state when seal wash was enabled. • PVCS #1832: Fixed that the seal wash function mixed up operation modes. The modes "On together with PUMP On/Standby" and "On all the time" were mixed up. • PVCS #1829: Quick-step is now been switched off during a solvent gradient. • PVCS #1814: Fixed that "prime" was only working once. If "prime" was stopped before normal end, it did not work anymore until next power-off. • PVCS #1812: Fixed that the mixer name was not updated if the mixer was changed without power-off. • Fixed that seal wash motors were sporadically and wrongly classified as 'defect' or 'absent'.
New Features	• None
Known Problems	None
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 86 G4220A Infinity Binary Pump B.06.24

Main firmware revision	4220A_B624_003
Resident firmware revision	Res_B623_001
Date Introduced	September 2, 2009
Bugfix	• Enlarged the duration for the overdrive current for the solvent selection valve according to the actual switching time of the valve from 10 ms to 65 ms. • Fixed the error that the swift lock was not limited to two seconds. During analytical operation this time limit is never reached anyway. The time limit ensures proper leak testing in production and is only relevant for this special case. • Enlarge the list of allowed purge valves with purge valve type "5067-4119". Up to now, the production used a preliminary prototype ID for the purge valve. The final ID is now fixed and was be added to the list of allowed purge valves..
New Features	• None
Known Problems	None
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 87 G4220A Infinity Binary Pump B.06.23

Main firmware revision	4220A_B623_006
Resident firmware revision	Res_B623_001
Release Date	July 21, 2009
Bugfix	• initial revision
New Features	• initial revision
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

G4220B Infinity Quaternary Pump

Table 88   G4220B Infinity Quaternary Pump

Main firmware revision	4220B_B628_001
Resident firmware revision	Res_B623_001
Date Introduced	August 2015
General	This firmware provides support for new RFID tag, see "Firmware for New RFID Tag" on page 39.
Bugfix	• None
New Features	• Support for new RFID tag.
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

G4212A Infinity DAD

Table 89   G4212A Infinity DAD

Main firmware revision	4212A_B628_002
Resident firmware revision	Res_B623_001
Date Introduced	October 2015
General	This firmware provides support for new RFID tag, see "Firmware for New RFID Tag" on page 39.
Bugfix	• Dark Current Test showed wrong results in built [001] with impact to intenisty values. Use built [002] ONLY!
New Features	• Support for new RFID tag.
Date Introduced	August 2015
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 90   G4212A Infinity DAD

Main firmware revision	4212A_B628_001
Resident firmware revision	Res_B623_001
Date Introduced	August 2015
General	This firmware provides support for new RFID tag, see "Firmware for New RFID Tag" on page 39. **DO NOT USE BUILT [001]. Dark Current Test shows wrong results with impact to intenisty values.**
Bugfix	• None
New Features	• Support for new RFID tag.
Date Introduced	August 2015
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 91   G4212A Infinity DAD B.06.26 [030]

Main firmware revision	4212A_B626_030
Resident firmware revision	Res_B623_001
Release Date	May 2012
General	Must be used with optical units that have the new VSA micro slit assembly. This firmware assures compatibility for both slit versions.
Bugfix	• None
New Features	• Support of future new VSA micro slit assembly. This new VSA micro slit assembly will replace the current slit assembly (planned for July/August 2012).
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 92   G4212A Infinity DAD B.06.26

Main firmware revision	4212A_B626_004
Resident firmware revision	Res_B623_001
Release Date	December 2009
Bugfix (Core)	• See "Core Changes B.06.26/B.06.27" on page 78
New Features	• Support for 60 mm Cartridge Flow Cell If the 60 Cartridge Flow Cell is used with detector firmware B.06.25 and below, the detector output (digital and anlog) is normalized to 1 cm. This means the peak hight would be the same as on the 10 mm Cartridge Flow Cell.
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 93 G4212A Infinity DAD B.06.25

Main firmware revision	4212A_B625_003
Resident firmware revision	Res_B623_001
Release Date	September 2009
Bugfix	• See "Core Changes B.06.25" on page 78.
New Features	• None
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 94 G4212A Infinity DAD B.06.23

Main firmware revision	4212A_B623_006
Resident firmware revision	Res_B623_001
Release Date	July 21, 2009
Bugfix	• initial revision
New Features	• initial revision
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

G4226A Infinity Autosampler

Table 95   G4226A Infinity Autosampler A.06.16

Main firmware revision	4226A_A616_001
Resident firmware revision	Res_A610_004
Release Date	September 2009
Bugfix	• PVCS #1861: Fixed that sporadically a software watchdog occurred when switching the valve to bypass after sample was flushed out (in the modes "overlapped injection after sample is flushed out" or "automated delay volume reduction").
	• PVCS #1750, #1834: Fixed that a mix in flush port let the module crash.
	• PVCS #1715: Fixed that the module showed 'ready' during heating/cooling when switching the thermostat off and immediately on again. Since the module is still heating/cooling the module now correctly shows 'not ready'.
	• PVCS #1686: Fixed that the module showed 'not ready' with temperature control set to 'not controlled'. If the thermostat is switched off, the temperature control is set to 'not controlled' and the "enable analysis within +/- 1 degree" is enabled, the module wrongly
	• showed 'not ready' instead of 'ready'.
	• PVCS #1864: Allow manual moving of the theta arm during maintenance procedures "change needle" and "change loop".
	• PVCS #1860: (G4226A only) Fixed that multi-draw is now correctly suppressed if no large seat capillary is installed.
	• PVCS #1867: (G4226A only) Fixed that the module sometimes wrongly reported EE4706 (missing vessel) after measuring the blind seat.
	• PVCS #1865: Implemented to perform a 'RESET' after each maintenance procedure finished. This is wanted for safety reasons to prevent the needle from possible damage after maintenance procedures.
New Features	• None
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 96 G4226A Infinity Autosampler A.06.15

Main firmware revision	4226A_A615_001
Resident firmware revision	Res_A610_004
Release Date	August 2009
Bugfix	• Check for blind seat during initializationfailed due to wrong dimensions.
New Features	• None
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 97 G4226A Infinity Autosampler A.06.14

Main firmware revision	4226A_A614_001
Resident firmware revision	Res_A610_004
Release Date	July 21, 2009
Bugfix	• initial revision
New Features	• initial revision
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

G1316C Infinty TCC

Table 98 G1316C Infinty TCC A.06.17

Main firmware revision	1316C_A617_001
Resident firmware revision	Res_A610_004
Release Date	December 2009
Bugfix	• Implemented restoring mechanism for lost tag contents. If the module was switched off whilst the RFID tag was accessed for writing, the content of the tag was lost. Now, a safe restoring mechanism is implemented. • Wrong number of the error event for "valve initialization failed". Now the correct error event EE_VALVE_INIT_FAILED is sent with the correct number EE 2875 instead of the wrong EE 2860. • TeamTrack #01141, #01146, #01344 (PVCS #1679, #1685, #1898): Increased the following ranges: column length to 500 mm, column diameter to 50.0 mm, max. pressure to 2000 bar and max temperature to 250°C
New Features	• Implemented state events ES_VALVE_PRESENT (ES 2879) and ES_VALVE_NOT_PRESENT (ES 2878) for showing presence or absence of a supported valve.
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 99 G1316C Infinty TCC A.06.16

Main firmware revision	1316C_A616_001
Resident firmware revision	Res_A610_004
Release Date	October 2009
Bugfix	• PVCS #1889: Up to firmware A.06.15, the ports #1 and #2 of the 2 pos/6 port ultra-high pressure valve 1200 bar (5067-4117) were interchanged (1290 Infinity TCC).
New Features	• None
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 100 G1316C Infinty TCC A.06.15

Main firmware revision	1316C_A15_001
Resident firmware revision	Res_A610_004
Release Date	September 2009
Bugfix	• PVCS #1811: The valve initialization did not finish after power-up, if the special toggle mechanism with negative valve position was used before power-off.
New Features	• None
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Table 101   G1316C Infinty TCC A.06.14

Main firmware revision	1316C_A14_001
Resident firmware revision	Res_A610_004
Release Date	July 21, 2009
Bugfix	• initial revision
New Features	• initial revision
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

1290 Infinity LC - Compatibility Information

The table below lists the compatibility requirements for the 1290 Infinity LC System.

Table 102 Firmware/Software Requirements for 1290 Infinity LC System

1290 Infinity LC System	Revision	Comment
• G4212A Infinity DAD	B.06.23 [*]	
• G4220A Infinity Binary Pump	B.06.23 [*]	
• G4226A Infinity ALS	A.06.14 [*]	
• G1316C Infinity TCC	A.06.14 [*]	
• G4208A Instant Pilot	B.02.08 [*]	1290 release usable for firmware updates
• Agilent 1100/1200 modules	B.06.2x	modules with on-board LAN
• Agilent 1100/1200 modules	A.06.1x	
• Agilent ChemStation	B.04.02 [*]	
• Agilent LabAdvisor / System Utilities	B.01.03 [*]	usable for firmware updates
• LAN/RS-232 Firmware Update Tool	2.6	usable for firmware updates

[*]   initial revision or revision that supports the 1290 Infinity modules the first time.

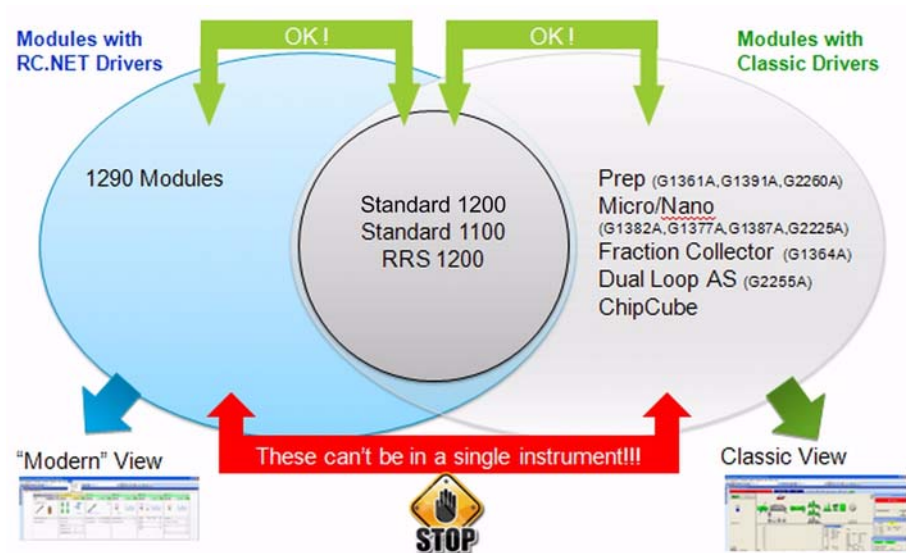| NOTE	Due to a new driver concept the initial Agilent ChemStation B.04.02 release does not support all combinations of 1290 Infinity LC System with 1100/1200 modules, see Figure 1 on page 92.

Figure 1   Agilent ChemStation B.04.02 vs. 1290 and 1100/1200 modules

For a complete compatibility matrix contact your local Agilent
ChemStation Support.

1120 Compact LC Change Information

This chaper provieds the details of the various firmeare revisions for the Agilent 1120 Compact LC.

Agilent Technologies

Document History

The table below lists all changes that have been made to this document.

Table 103   Document History

Date	Description	Author
27-Oct-2009	Update of build numbers for revison B.06.25	W. Albrecht
18-Sep-2009	"Firmware Revision B.06.25" on page 95	W. Albrecht
02-Jun-2009	"Firmware Revision B.06.22" on page 97	W. Albrecht
04-Jul-2008	"Firmware Revision B.06.21" on page 99	W. Albrecht
01-Mar-2008	Initial"Firmware Revision B.06.20" on page 101	W. Albrecht

Firmware Revision B.06.25

Table 104 Firmware Revision B.06.25

Type	Module	Product#	Revision	Build	Filename (.DLB)
Main	Compact LC	G4286A	B.06.25	003	4286A_B625_003
	Compact LC	G4287A	B.06.25	003	4287A_B625_003
	Compact LC	G4288A	B.06.25	003	4288A_B625_003
	Compact LC	G4289A	B.06.25	003	4289A_B625_003
	Compact LC	G4290A	B.06.25	003	4290A_B625_003
Resident	Compact LC		B.06.23	001	Res_B623_001

Changes B.06.25

Table 105   Changes B.06.22

Main firmware revision	B.06.25
Resident firmware revision	B.06.23_001
Release Date	September 2009
Bugfix (CORE)	• Fixed sporadic problems with writing into EEPROMs and reading from empty EEPROMs. • Fixed sporadic problem with RF tags. Sometimes the content of the RFID tags was unwanted deleted.
Bugfix (Main FW)	• PVCS #1833: Enlarged the duration for the overdrive current for the solvent selection valve according to the actual switching time of the valve from 10 ms to 65 ms.
New Features (CORE)	• Implemented new events EV10180, EV10181, EV10182, EV10183 for showing a change in the not-ready conditions. The large not-ready conditions cover 128 bit positions. The new events show each change in any bit-position.
When is an upgrade required	• If a malfunction is corrected by a new version.
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Firmware Revision B.06.22

Table 106 Firmware Revision B.06.22

Type	Module	Product#	Revision	Build	Filename (.DLB)
Main	Compact LC	G4286A	B.06.22	002	4286A_B622_002
	Compact LC	G4287A	B.06.22	002	4287A_B622_002
	Compact LC	G4288A	B.06.22	002	4288A_B622_002
	Compact LC	G4289A	B.06.22	002	4289A_B622_002
	Compact LC	G4290A	B.06.22	002	4290A_B622_002
Resident	Compact LC		B.06.20	001	Res_B620_001

Changes B.06.22

Table 107   Changes B.06.22

Main firmware revision	B.06.22
Resident firmware revision	B.06.20_001 (not changed)
Release Date	June 2, 2009
Bugfix	• "PVCS #1723: Fixed the bug that due to board change (Rev B to Rev C) the degasser made an error of 40% for the pressure. Also the instrument showed an error (invalid pressure) after power on. Fixed by FW internal detection of board revision and use an adapted setup for the degasser and added a fixed time to let the pressure sensor stabilize its output after switching-on. • "No PVCS : Fixed an error in the operating system trace (TraceOS/oslog debugging feature). This error only occurred in revisions B.06.20 and B.06.21: If more than 11 warnings were written to the trace, the system started to write all further warnings to wrong memory locations. This could lead to serious errors and crashes (mostly panics with "unexpected exception" 0x92000113 "data store translation miss exception").
New Features	• none
When is an upgrade required	• If a malfunction is corrected by a new version.
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Firmware Revision B.06.21

Table 108 Firmware Revision B.06.22

Type	Module	Product#	Revision	Build	Filename (.DLB)
Main	Compact LC	G4286A	B.06.21	001	4286A_B621_001
	Compact LC	G4287A	B.06.21	001	4287A_B621_001
	Compact LC	G4288A	B.06.21	001	4288A_B621_001
	Compact LC	G4289A	B.06.21	001	4289A_B621_001
	Compact LC	G4290A	B.06.21	001	4290A_B621_001
Resident	Compact LC		B.06.20	001	Res_B620_001

Changes B.06.21

Table 109 Changes B.06.21

Main firmware revision	B.06.21
Resident firmware revision	B.06.20_001 (not changed)
Release Date	July 4, 2008
Bugfix	• No PVCS: If the degasser stayed switched off for a longer period, occasionally the degasser does not reach the ready condition after switching on again. This was caused by solvent condensation in the degasser and the instrument shows error event EE 8053 (Degasser timeout). Changed the control of the degasser to reach the ready condition even with prior solvent condensation. • PVCS #1677: Fixed the bug that the pump does not stop if only one solvent gets empty (reaches 0). Now the pump stops as soon as one of the solvents gets empty.
New Features	• none
When is an upgrade required	• If a malfunction is corrected by a new version.
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

Firmware Revision B.06.20

Table 110   Firmware Revision B.06.20

Type	Module	Product#	Revision	Build	Filename (.DLB)
Main	Compact LC	G4286A	B.06.20	001	4286A_B620_001
	Compact LC	G4287A	B.06.20	001	4287A_B620_001
	Compact LC	G4288A	B.06.20	001	4288A_B620_001
	Compact LC	G4289A	B.06.20	001	4289A_B620_001
	Compact LC	G4290A	B.06.20	001	4290A_B620_001
Resident	Compact LC		B.06.20	001	Res_B620_001

Changes B.06.20

Table 111   Changes B.06.20

Main firmware revision	B.06.20
Resident firmware revision	B.06.20_001
Release Date	March 2008
Bugfix	• initial revision
New Features	• initial revision
Known Problems	None Documented
OQ/PV Recommendation	No repeat OQ/PV tests are recommended after update

1   1120 Compact LC Change Information

Firmware Revision B.06.20

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In This Book

This bulletin contains information about the firmware revision for the Agilent HPLC System.

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