Agilent HPLC System Firmware Bulletin

Firmware Set 6.30-6.40

1290 Infinity II LC System
1220 Infinity LC
1260 Infinity LC System
1260 Infinity SFC System
1290 Infinity LC System
1100/1200/1120 LC System
G7100 Capillary Electrophoresis

Agilent Technologies

Notices

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Revision

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

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Contents

About this Document

This document provides the firmware changes in set 6.50-6.80 used for the following LC Systems

- 1220 Infinity LC
- 1260 Infinity LC Systems
- 1290 Infinity LC Systems
- 1200 Series LC
- G7100 Capillary Electrophoresis
- 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.agilent.com/en-us/firmwareDownload?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
Aug 18, 2017	Changed document to new template, corrected typos	W. Albrecht
Aug 18, 2017	Removed • the Control Module information • Firmware Compatibility Matrix • Conversion Possibilities (from Core Changes)	W. Albrecht
Jan 28, 2016	Corrected of Bug-fix information in revision A.06.36 of • Standard Autosampler (G1313A, G1329A, G1329B, G1389A, G2260A). Team Track #013987 and #013988 were already mentioned under A.06.34.	W. Albrecht
Oct 14, 2015	New RFID Tag compatible firmware B.06.45 built [002] has been released as hotfix for a problem with the dark current test with impact to intensity values for G4212A/B DAD. Update instrument when built [001] was installed already! • DAD (G4212A, G4212B) Updated all sections/modules that were impacted by the new revision.	W. Albrecht
Aug 5, 2015	New RFID Tag compatible firmware A.06.33 / B.06.45 has been released for HPLC modules that support RFID tags. • Added section Firmware for New RFID Tag • Added section CAN Slaves (Hosted Modules) and moved Flexible Cube (G4227A) and Valve Drive (G1170A) into it. • Updated all sections/modules that were impacted by the new revision.	W. Albrecht
April 29, 2014	Update on Compatibility Section • Agilent LC Firmware Set Interoperability and Support Statement (added) • Notes for Agilent LC instruments controlled by non-Agilent Chromatography Data Systems (CDS) (added) • Examples (modified)	W. Albrecht
Mar 7, 2014	Correct naming of models (no change on firmware change information) • 1120/1220 LC system (updated)	W. Albrecht
Mar 6, 2014	Rework of document (no change on firmware change information) • About this Document • 1200 Infinity Compatibility and Emulation Mode (removed, use Agilent Web, see Where To Get Latest Information • Compatibility Information (added) • OQ/PV - Validation Information (moved) • Resident Firmware (updated) • Firmware Compatibility Matrix (updated) • SFC Modules (added)	W. Albrecht
Apr 24, 2013	• Added chapter “Conversion Possibilities" in section “Core Changes" (removed Aug 18, 2017)	W. Albrecht
May 31, 2012	Release of firmware revision B.06.44 for some modules • DAD/MWD (G1315C DAD, G1315D DAD, G1365C MWD, G1365D MWD) • DAD (G4212A, G4212B)	W. Albrecht

Nov 3, 2011	• Release of firmware revision A.06.37 / B.06.43 for some modules • Binary Pump (G4220B) • High Performance Autosampler (G1367A/E, G1377A, G2258A, G4226A) • DAD (G4212A)	W. Albrecht
Oct 18, 2011	• Release of firmware “G4208A Instant Pilot" (B.02.13) (removed Aug 18, 2017)	W. Albrecht
Oct 18, 2011	Release of firmware A.06.36 / B.06.42 for some modules • Core Changes B.06.32 • Iso - / Quat-Pump (G1310B, G1311B, G1311C, G5611A) • Binary Pump (G4220A, G4220B) • Standard Autosampler (G1313A, G1329A, G1329B, G1389A, G2260A) • High Performance Autosampler (G1367A/E, G1377A, G2258A, G4226A) • Fraction Collector (G1364A, G1364B, G1364C, G1364D, G5664A BIO) • Variable Wavelength Detector (VWD) (G1314D, G1314E, G1314F) • DAD/MWD (G1315C DAD, G1315D DAD, G1365C MWD, G1365D MWD) • DAD (G4212A, G4212B) • Fluorescence Detector (FLD) (G1321A SPECTRA, G1321B SPECTRA) • Refractive Index Detector (RID) (G1362A) • Chip Cube (G4240A) • 1120/1220 LC system	W. Albrecht
Apr 22, 2011	Release of firmware “G4208A Instant Pilot" (B.02.12) (removed Aug 18, 2017)	W. Albrecht
Apr 4, 2011	Release of firmware A.06.34/35 / B.06.41 for some modules • Core Changes B.06.41 • Binary Pump (G1312C VL) • Binary Pump (G4220A, G4220B) • Standard Autosampler (G1313A, G1329A, G1329B, G1389A, G2260A) • Variable Wavelength Detector (VWD) (G1314D, G1314E, G1314F) • DAD/MWD (G1315C DAD, G1315D DAD, G1365C MWD, G1365D MWD) • DAD (G4212A, G4212B) • LAN Interface Card (G1369C) • 1120/1220 LC system	W. Albrecht
Mar 2, 2011	Release of firmware A.06.34 / B.06.4x for some modules • Resident Firmware (B/C) • Binary Pump (G4220A, G4220B) • Standard Autosampler (G1313A, G1329A, G1329B, G1389A, G2260A) • High Performance Autosampler (G1367A/E, G1377A, G2258A, G4226A) • Fraction Collector (G1364A, G1364B, G1364C, G1364D, G5664A BIO) • Variable Wavelength Detector (VWD) (G1314D, G1314E, G1314F) • DAD/MWD (G1315C DAD, G1315D DAD, G1365C MWD, G1365D MWD) • DAD (G4212A, G4212B) • Flexible Cube (G4227A) • 1120/1220 LC system	W. Albrecht

Dec 15, 2010	Release of firmware A.06.33 for some modules • DAD (G4212A, G4212B)	W. Albrecht
Dec 2, 2010	Release of firmware A.06.33/6.34 for some modules • Binary Pump (G1312B SL) • Capillary Pump (G1376A, G2226A) • Chip Cube (G4240A) • SFC Pump (G4302A)	W. Albrecht
Oct 28, 2010	Release of firmware A.06.33 for some modules • Iso - / Quat-Pump (G1310B, G1311B, G1311C, G5611A) • Binary Pump (G1312B SL) • High Performance Autosampler (G1367A/E, G1377A, G2258A, G4226A) (**only G1367E is affected**) • Fraction Collector (G1364A, G1364B, G1364C, G1364D, G5664A BIO) • Fluorescence Detector (FLD) (G1321A SPECTRA, G1321B SPECTRA) (**only G1321A is affected**) • SFC Pump (G4302A)	W. Albrecht
Jul 20, 2010	Release of 1200 Infinity firmware A.06.32/B.06.32/B.02.11, initial version	W. Albrecht

General Firmware Information

Firmware A

This firmware was introduced with the 1100 series LC modules in 1995. These can be identified by

- No LAN connection
- GPIB connector (not with 1260 modules and later)
- RS-232 connector
- 9-pin APG remote connector
- Interface slot for LAN card (not on G1316A/B/C TCC)

Firmware B

This firmware was introduced with the 1200 series LC modules with new electronic platform starting 2005. These can be identified by

- LAN onboard (instead of Interface slot)
- No GPIB

These modules can work as host for hosted (CAN slave) modules with C-firmware.

Firmware C

This firmware is used in hosted (CAN slave) modules. To operate them, these require a host module with (B- or D-firmware).

- G7116A/B Multicolumn Thermostat (1290 Infinity II)
- G4227A Flexible Cube (1290)
- G1170A Valve Drive (1290)
- G1390B Universal Interface Box II (1260/1290)

Firmware D

D-Firmware is for new Infinity II platform modules introduced August 2014. These can be identified by

- product numbers G71XX and
- 15 pin enhanced remote interface (instead of 9-pin APG remote) and
- mini-USB connection (instead of RS-232)
- Main boards with FUSION core piggyback board and

These modules can work as host for hosted (CAN slave) modules with C-firmware.

NOTE Existing 1100/1200/1260/1290 modules with A/B/C/D firmware must be upgraded to latest firmware (main/resident) from set 7.01 when used with the 1260 Infinity II modules.

Main/Resident Firmware

The module firmware consists of two parts

- Main firmware – for the operation of the module and resident firmware update
- Resident firmware – for boot (if the main is not starting) and main firmware update

NOTE Main and resident firmware revision should be from the same firmware set.

For details see Agilent web for ***LC firmware***! See Where To Get Latest Information.

Firmware for New RFID Tag

New RFID tag assemblies were introduced later in November 2016 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 or later,
- B-firmware since release B.06.73 or later.
- C-firmware for G1170A Universal Valve or G4227A Flexible Cube since release C.06.72 or later.
- D-firmware since release D.06.70 or later.

For details see Agilent web for ***RFID Tag Information - Important for all users***! See Where To Get Latest Information.

Compatibility Information

This chapter provides information about compatibility.

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 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 must 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

NOTE 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 and OQ/PV - Validation Information.
- A CDS tested with the initial revision will also work with the later revisions. 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).
- 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”.

NOTE 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 should 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 re-validation of the module/system is required.

NOTE Whether are-validation is required or not is defined on the customer’s requirements.

Firmware Revision Change Information

This chapter provides the details of the various firmware revisions for the Agilent HPLC Systems/Modules. The initial changes (6.30) listed in this chapter are the changes based on the last revisions of set 6.10.

Resident Firmware

The resident firmware depends on the target module.

Table 2 - Resident Firmware

Module	Product#	Filename (.DLB)
with LAN on-board "B"	all	Res_B640_007
with LAN on-board "B"	all	Res_B632_004
without LAN on-board "A"	all	Res_A632_003
LAN Interface Card	G1369C	Res_1369C_B640_002
for CAN slaves that requires host module "C"	Note 1	Res_C640_005
for CAN slaves that requires host module "C"	Note 1	Res_C632_001

Notes:

1 Used for 'HOSTED' modules

- G4227A Flexible Cube (1290)
- G1170A Valve Drive (1290)
- G1390B Universal Interface Box II (1260/1290)

Resident version must be the same as main version and same as on host module.

2 New models introduced since August 2014 use a new electronic platform that run with "D" firmware (main and resident). See Firmware D and next pages for module list.

1120 Compact LC / 1220 Infinity LC

NOTE Firmware updates can be done with the Agilent Lab Advisor software ONLY! See Agilent web for ***Firmware Update Tools & Procedures***! See Where To Get Latest Information.

Table 3 - 1120 Compact LC / 1220 Infinity LC

Module	Product#	Filename (.DLB)
1120 Compact LC	G4286A	4286A_B642_003
1120 Compact LC	G4286A	4286A_B641_002
1120 Compact LC	G4286A	4286A_B640_007
1120 Compact LC	G4286A	4286A_B632_005
1220 Infinity LC	G4286B	4286B_B642_003
1220 Infinity LC	G4286B	4286B_B641_002
1220 Infinity LC	G4286B	4286B_B640_007
1220 Infinity LC	G4286B	4286B_B632_005
1220 Infinity LC	G4286C	4286C_B642_003
1220 Infinity LC	G4286C	4286C_B641_002
1220 Infinity LC	G4286C	4286C_B640_007
1220 Infinity LC	G4286C	4286C_B632_005
1120 Compact LC	G4287A	4287A_B642_003
1120 Compact LC	G4287A	4287A_B641_002
1120 Compact LC	G4287A	4287A_B640_007
1120 Compact LC	G4287A	4287A_B632_005
1220 Infinity LC	G4287B	4287B_B642_003
1220 Infinity LC	G4287B	4287B_B641_002
1220 Infinity LC	G4287B	4287B_B640_007
1220 Infinity LC	G4287B	4287B_B632_005
1120 Compact LC	G4288A	4288A_B642_003
1120 Compact LC	G4288A	4288A_B641_002
1120 Compact LC	G4288A	4288A_B640_007
1120 Compact LC	G4288A	4288A_B632_005
1220 Infinity LC	G4288B	4288B_B642_003
1220 Infinity LC	G4288B	4288B_B641_002
1220 Infinity LC	G4288B	4288B_B640_007
1220 Infinity LC	G4288B	4288B_B632_005
1220 Infinity LC VL	G4288C	4288C_B642_003
1220 Infinity LC VL	G4288C	4288C_B641_002
1220 Infinity LC VL	G4288C	4288C_B640_007
1220 Infinity LC VL	G4288C	4288C_B632_005
1120 Compact LC	G4289A	4289A_B642_003
1120 Compact LC	G4289A	4289A_B641_002
1120 Compact LC	G4289A	4289A_B640_007
1120 Compact LC	G4289A	4289A_B632_005
1220 Infinity LC	G4289B	4289B_B642_003
1220 Infinity LC	G4289B	4289B_B641_002
1220 Infinity LC	G4289B	4289B_B640_007
1220 Infinity LC	G4289B	4289B_B632_005
1220 Infinity LC VL	G4289C	4289C_B642_003
1220 Infinity LC VL	G4289C	4289C_B641_002
1220 Infinity LC VL	G4289C	4289C_B640_007
1220 Infinity LC VL	G4289C	4289C_B632_005
1120 Compact LC	G4290A	4290A_B642_003
1120 Compact LC	G4290A	4290A_B641_002

1120 Compact LC	G4290A	4290A_B640_007
1120 Compact LC	G4290A	4290A_B632_005
1220 Infinity LC	G4290B	4290B_B642_003
1220 Infinity LC	G4290B	4290B_B641_002
1220 Infinity LC	G4290B	4290B_B640_007
1220 Infinity LC	G4290B	4290B_B632_005
1220 Infinity LC VL	G4290C	4290C_B642_003
1220 Infinity LC VL	G4290C	4290C_B641_002
1220 Infinity LC VL	G4290C	4290C_B640_007
1220 Infinity LC VL	G4290C	4290C_B632_005
1120 Compact LC	G4291A	4291A_B642_003
1120 Compact LC	G4291A	4291A_B641_002
1120 Compact LC	G4291A	4291A_B640_007
1120 Compact LC	G4291A	4291A_B632_005
1220 Infinity LC	G4291B	4291B_B642_003
1220 Infinity LC	G4291B	4291B_B641_002
1220 Infinity LC	G4291B	4291B_B640_007
1220 Infinity LC	G4291B	4291B_B632_005
1220 Infinity LC VL	G4291C	4291C_B642_003
1220 Infinity LC VL	G4291C	4291C_B641_002
1220 Infinity LC VL	G4291C	4291C_B640_007
1220 Infinity LC VL	G4291C	4291C_B632_005
1120 Infinity Compact LC	G4292A	4292A_B642_003
1120 Compact LC	G4292A	4292A_B641_002
1120 Compact LC	G4292A	4292A_B640_007
1120 Compact LC	G4292A	4292A_B632_005
1220 Infinity LC	G4292B	4292B_B642_003
1220 Infinity LC	G4292B	4292B_B641_002
1220 Infinity LC	G4292B	4292B_B632_005
1220 Infinity LC VL	G4292C	4292C_B642_003
1220 Infinity LC VL	G4292C	4292C_B641_002
1220 Infinity LC VL	G4292C	4292C_B640_007
1220 Infinity LC VL	G4292C	4292C_B632_005
1120 Compact LC	G4293A	4293A_B642_003
1120 Compact LC	G4293A	4293A_B641_002
1120 Compact LC	G4293A	4293A_B640_007
1120 ompact LC	G4293A	4293A_B632_005
1220 Infinity LC	G4293B	4293B_B642_003
1220 Infinity LC	G4293B	4293B_B641_002
1220 Infinity LC	G4293B	4293B_B640_007
1220 Infinity LC	G4293B	4293B_B632_005
1220 Infinity LC VL	G4293C	4293C_B642_003
1220 Infinity LC VL	G4293C	4293C_B641_002
1220 Infinity LC VL	G4293C	4293C_B640_007
1220 Infinity LC VL	G4293C	4293C_B632_005

1260 Infinity SFC Modules

NOTE Firmware updates can be done for

- G4301A with the special SFC updater ONLY!
- G4302A/G4303A with Agilent Lab Advisor software (B.02.07 or later). See Agilent web for ***Firmware Update Tools & Procedures***! See Where To Get Latest Information.

Table 4 - 1260/1290 Infinity SFC Modules

Module	Product#	Filename (.DLB)	Notes
1260 SFC Control Module	G4301A	4301A_x2_A309_005.afi	x
1260 SFC Control Module	G4301A	4301A_x2_A308_009.afi	x
1260 SFC Control Module	G4301A	4301A_x2_A307_009.afi	x
1260 SFC Binary Pump	G4302A	4302A_B634_001	
1260 SFC Binary Pump	G4302A	4302A_B633_001	
1260 SFC Binary Pump	G4302A	4302A_B632_011	
1260 SFC Standard Autosampler	G4303A	4303A_A636_007	
1260 SFC Standard Autosampler	G4303A	4303A_A635_001	
1260 SFC Standard Autosampler	G4303A	4303A_A634_006	
1260 SFC Standard Autosampler	G4303A	4303A_A632_004	

NOTE X: individual firmware file for board revision B or C available.

HPLC Modules

NOTE This includes modules introduced as 1100/1200/1290/Infinity/Infinity II modules.

NOTE Firmware updates should be done with Agilent Lab Advisor software (use latest version). This tool provides also the conversion for the emulation mode. See Agilent web for ***Firmware Update Tools & Procedures***! See Where To Get Latest Information.

NOTE Some new 1260/1290 Infinity/Infinity II modules that can be converted to emulate earlier modules shown in the column "Emulation" the type it can be converted to.

Pumps

Table 5 - HPLC Modules - Pumps

Module	Product#	Filename (.DLB)	Emulation
1100/1200 Isocratic Pump	G1310A	1310A_A632_011	
1260 Isocratic Pump	G1310B	1310B_A636_001	A
1260 Isocratic Pump	G1310B	1310B_A633_004	A
1260 Isocratic Pump	G1310B	1310B_A632_010	A
1100/1200 Quaternary Pump	G1311A	1311A_A632_011	
1260 Quaternary Pump	G1311B	1311B_A636_001	A
1260 Quaternary Pump	G1311B	1311B_A633_004	A
1260 Quaternary Pump	G1311B	1311B_A632_010	A
1260 Quaternary Pump VL	G1311C	1311C_A636_001	A
1260 Quaternary Pump VL	G1311C	1311C_A633_004	A
1260 Quaternary Pump VL	G1311C	1311C_A632_010	A
1100/1200 Binary Pump	G1312A	1312A_A632_011	
1260 Binary Pump	G1312B	1312B_A634_001	A
1260 Binary Pump	G1312B	1312B_A633_004	A
1260 Binary Pump	G1312B	1312B_A632_011	A
1260 Binary Pump VL	G1312C	1312C_A634_001	A
1260 Binary Pump VL	G1312C	1312C_A632_011	
1260 Preparative Pump	G1361A	1361A_A632_003	
1260 Capillary Pump	G1376A	1376A_A634_001	
1260 Capillary Pump	G1376A	1376A_A632_011	
1260 Nanoflow Pump	G2226A	2226A_A634_001	
1260 Nanoflow Pump	G2226A	2226A_A632_011	
1290 Binary Pump	G4220A	4220A_B645_001	
1290 Binary Pump	G4220A	4220A_B642_002	
1290 Binary Pump	G4220A	4220A_B641_002	
1290 Binary Pump	G4220A	4220A_B640_008	
1290 Binary Pump	G4220A	4220A_B632_005	
1290 Binary Pump VL	G4220B	4220B_B645_001	
1290 Binary Pump VL	G4220B	4220B_B643_001	
1290 Binary Pump VL	G4220B	4220B_B642_002	
1290 Binary Pump VL	G4220B	4220B_B641_002	
1290 Binary Pump VL	G4220B	4220B_B640_008	
1290 Binary Pump VL	G4220B	4220B_B632_005	
1260 SFC Binary Pump	G4302A	4302A_B634_001	
1260 SFC Binary Pump	G4302A	4302A_B633_001	
1260 SFC Binary Pump	G4302A	4302A_B632_011	
1260 Bio-inert Quaternary Pump	G5611A	5611A_A636_001	

Samplers

Table 6 - HPLC Modules - Samplers

Module	Product#	Filename (.DLB)	Emulation
1100 Autosampler	G1313A	1313A_A636_007	
1100 Autosampler	G1313A	1313A_A635_001	
1100 Autosampler	G1313A	1313A_A634_006	
1100 Autosampler	G1313A	1313A_A632_004	
1100/1200 Standard Autosampler	G1329A	1329A_A636_007	
1100/1200 Standard Autosampler	G1329A	1329A_A635_001	
1100/1200 Standard Autosampler	G1329A	1329A_A634_006	
1100/1200 Standard Autosampler	G1329A	1329A_A632_004	
1260 Standard Autosampler	G1329B	1329B_A636_007	A
1260 Standard Autosampler	G1329B	1329B_A635_001	A
1260 Standard Autosampler	G1329B	1329B_A634_006	A
1260 Standard Autosampler	G1329B	1329B_A632_004	A
1200 Fraction Collector	G1364A	1364A_A636_008	
1200 Fraction Collector	G1364A	1364A_A634_006	
1200 Fraction Collector	G1364A	1364A_A633_001	
1200 Fraction Collector	G1364A	1364A_A632_004	
1260 Fraction Collector (PS)	G1364B	1364B_A636_008	
1260 Fraction Collector (PS)	G1364B	1364B_A634_006	
1260 Fraction Collector (PS)	G1364B	1364B_A633_001	
1260 Fraction Collector (PS)	G1364B	1364B_A632_004	
1260 Fraction Collector (AS)	G1364C	1364C_A636_008	
1260 Fraction Collector (AS)	G1364C	1364C_A634_006	
1260 Fraction Collector (AS)	G1364C	1364C_A633_001	
1260 Fraction Collector (AS)	G1364C	1364C_A632_004	
1260 Fraction Collector (µS)	G1364D	1364D_A636_008	
1260 Fraction Collector (µS)	G1364D	1364D_A634_006	
1260 Fraction Collector (µS)	G1364D	1364D_A633_001	
1260 Fraction Collector (µS)	G1364D	1364D_A636_008	
1200 High Performance Autosampler	G1367A	1367A_A637_001	
1200 High Performance Autosampler	G1367A	1367A_A636_008	
1200 High Performance Autosampler	G1367A	1367A_A634_008	
1200 High Performance Autosampler	G1367A	1367A_A633_002	
1200 High Performance Autosampler	G1367A	1367A_A632_006	
1200 High Performance Autosampler	G1367B	1367B_A637_001	A
1200 High Performance Autosampler	G1367B	1367B_A636_008	A
1200 High Performance Autosampler	G1367B	1367B_A634_008	A
1200 High Performance Autosampler	G1367B	1367B_A633_002	A
1200 High Performance Autosampler	G1367B	1367B_A632_006	A
1200 High Performance Autosampler SL	G1367C	1367C_A637_001	A
1200 High Performance Autosampler SL	G1367C	1367C_A636_008	A
1200 High Performance Autosampler SL	G1367C	1367C_A634_008	A
1200 High Performance Autosampler SL	G1367C	1367C_A633_002	A
1200 High Performance Autosampler SL	G1367C	1367C_A632_006	A
1200 High Performance Autosampler SL+	G1367D	1367D_A637_001	C
1200 High Performance Autosampler SL+	G1367D	1367D_A636_008	C
1200 High Performance Autosampler SL+	G1367D	1367D_A634_008	C
1200 High Performance Autosampler SL+	G1367D	1367D_A633_002	C
1200 High Performance Autosampler SL+	G1367D	1367D_A632_006	C
1260 High Performance Autosampler	G1367E	1367E_A637_001	A, B, C, D
1260 High Performance Autosampler	G1367E	1367E_A636_008	A, B, C, D

1260 High Performance Autosampler	G1367E	1367E_A634_008	A, B, C, D
1260 High Performance Autosampler	G1367E	1367E_A633_002	A, B, C, D
1260 High Performance Autosampler	G1367E	1367E_A632_006	A, B, C, D
1260 High Performance Micro Autosampler	G1377A	1377A_A637_001	
1260 High Performance Micro Autosampler	G1377A	1377A_A636_008	
1260 High Performance Micro Autosampler	G1377A	1377A_A634_008	
1260 High Performance Micro Autosampler	G1377A	1377A_A633_002	
1260 High Performance Micro Autosampler	G1377A	1377A_A632_006	
1200 Micro Autosampler	G1389A	1389A_A636_007	
1200 Micro Autosampler	G1389A	1389A_A635_001	
1200 Micro Autosampler	G1389A	1389A_A634_006	
1200 Micro Autosampler	G1389A	1389A_A632_006	
1260 Automation Interface	G2254A	2254A_A632_001	
1260 Dual-Loop Autosampler	G2258A	2258A_A637_001	
1260 Dual-Loop Autosampler	G2258A	2258A_A636_008	
1260 Dual-Loop Autosampler	G2258A	2258A_A634_008	
1260 Dual-Loop Autosampler	G2258A	2258A_A633_002	
1260 Dual-Loop Autosampler	G2258A	2258A_A632_006	
1260 Preparative Autosampler	G2260A	2260A_A636_007	
1260 Preparative Autosampler	G2260A	2260A_A635_001	
1260 Preparative Autosampler	G2260A	2260A_A634_006	
1260 Preparative Autosampler	G2260A	2260A_A632_004	
1290 Autosampler	G4226A	4226A_A637_001	
1290 Autosampler	G4226A	4226A_A636_008	
1290 Autosampler	G4226A	4226A_A634_008	
1290 Autosampler	G4226A	4226A_A633_002	
1290 Autosampler	G4226A	4226A_A632_006	
1290 Flexible Cube	G4227A	4227A_C640_005	
1290 Flexible Cube	G4227A	4227A_C632_001	
1260 SFC Autosampler	G4303A	4303A_A636_007	
1260 SFC Autosampler	G4303A	4303A_A635_001	
1260 SFC Autosampler	G4303A	4303A_A634_006	
1260 SFC Autosampler	G4303A	4303A_A632_004	
1260 High Performance Autosampler Bio	G5667A	5667A_A637_001	
1260 High Performance Autosampler Bio	G5667A	5667A_A636_008	
1260 Fraction Collector Bio	G5664A	5664A_A636_008	

Detectors

Table 7 - HPLC Modules - Detectors

Module	Product#	Filename (.DLB)	Emulation
1100/1200 Variable Wavelength Detector VWD	G1314A	1314A_A632_004	
1260 Variable Wavelength Detector VL	G1314B	1314B_A632_004	A
1260 Variable Wavelength Detector VL+	G1314C	1314C_A632_004	A, B
1200 Variable Wavelength Detector	G1314D	1314D_B645_001	
1200 Variable Wavelength Detector	G1314D	1314D_B642_002	
1200 Variable Wavelength Detector	G1314D	1314D_B641_002	
1200 Variable Wavelength Detector	G1314D	1314D_B640_007	
1200 Variable Wavelength Detector	G1314D	1314D_B632_004	
1290 Variable Wavelength Detector	G1314E	1314E_B645_001	
1290 Variable Wavelength Detector	G1314E	1314E_B642_002	
1290 Variable Wavelength Detector	G1314E	1314E_B641_002	
1290 Variable Wavelength Detector	G1314E	1314E_B640_007	
1290 Variable Wavelength Detector	G1314E	1314E_B632_004	
1260 Variable Wavelength Detector	G1314F	1314F_B645_001	D
1260 Variable Wavelength Detector	G1314F	1314F_B642_002	D
1260 Variable Wavelength Detector	G1314F	1314F_B641_002	D
1260 Variable Wavelength Detector	G1314F	1314F_B640_007	D
1260 Variable Wavelength Detector	G1314F	1314F_B632_004	D
1100 Diode Array Detector	G1315A	1315A_A632_003	
1100/1200 Diode Array Detector	G1315B	1315B_A632_003	
1260 Diode Array Detector VL+	G1315C	1315C_B645_001	
1260 Diode Array Detector VL+	G1315C	1315C_B644_003	
1260 Diode Array Detector VL+	G1315C	1315C_B642_002	
1260 Diode Array Detector VL+	G1315C	1315C_B641_002	
1260 Diode Array Detector VL+	G1315C	1315C_B640_007	
1260 Diode Array Detector VL+	G1315C	1315C_B632_004	
1260 Diode Array Detector VL	G1315D	1315D_B645_001	
1260 Diode Array Detector VL	G1315D	1315D_B644_003	
1260 Diode Array Detector VL	G1315D	1315D_B642_002	
1260 Diode Array Detector VL	G1315D	1315D_B641_002	
1260 Diode Array Detector VL	G1315D	1315D_B640_007	
1260 Diode Array Detector VL	G1315D	1315D_B632_004	
1100/1200 Fluorescence Detector	G1321A	1321A_A636_005	
1100/1200 Fluorescence Detector	G1321A	1321A_A633_001	
1100/1200 Fluorescence Detector	G1321A	1321A_A632_005	
1260 Fluorescence Detector	G1321B	1321B_A636_005	A
1260 Fluorescence Detector	G1321B	1321B_A633_001	A
1260 Fluorescence Detector	G1321B	1321B_A632_005	A
1260 Refractive Index Detector	G1362A	1362A_A636_005	
1260 Refractive Index Detector	G1362A	1362A_A632_003	
1100 Multiple Wavelength Detector	G1365A	1365A_A632_003	
1100/1200 Multiple Wavelength Detector	G1365B	1365B_A632_003	
1260 Multiple Wavelength Detector	G1365C	1365C_B645_001	
1260 Multiple Wavelength Detector	G1365C	1365C_B644_003	
1260 Multiple Wavelength Detector	G1365C	1365C_B642_002	
1260 Multiple Wavelength Detector	G1365C	1365C_B641_002	
1260 Multiple Wavelength Detector	G1365C	1365C_B640_007	
1260 Multiple Wavelength Detector	G1365C	1365C_B632_004	
1260 Multiple Wavelength Detector VL	G1365D	1365D_B645_001	
1260 Multiple Wavelength Detector VL	G1365D	1365D_B644_003	

1260 Multiple Wavelength Detector VL	G1365D	1365D_B642_002	
1260 Multiple Wavelength Detector VL	G1365D	1365D_B641_002	
1260 Multiple Wavelength Detector VL	G1365D	1365D_B640_007	
1260 Multiple Wavelength Detector VL	G1365D	1365D_B632_004	
1290 Diode Array Detector	G4212A	4212A_B645_002	
1290 Diode Array Detector	G4212A	4212A_B645_001	
1290 Diode Array Detector	G4212A	4212A_B644_001	
1290 Diode Array Detector	G4212A	4212A_B643_001	
1290 Diode Array Detector	G4212A	4212A_B642_002	
1290 Diode Array Detector	G4212A	4212A_B641_002	
1290 Diode Array Detector	G4212A	4212A_B640_007	
1290 Diode Array Detector	G4212A	4212A_B633_001	
1290 Diode Array Detector	G4212A	4212A_B632_004	
1260 Diode Array Detector	G4212B	4212B_B645_002	
1260 Diode Array Detector	G4212B	4212B_B645_001	
1260 Diode Array Detector	G4212B	4212B_B644_001	
1260 Diode Array Detector	G4212B	4212B_B642_002	
1260 Diode Array Detector	G4212B	4212B_B641_002	
1260 Diode Array Detector	G4212B	4212B_B640_007	
1260 Diode Array Detector	G4212B	4212B_B633_001	
1260 Diode Array Detector	G4212B	4212B_B632_004	

Other Modules

Table 8 - HPLC Modules - Others

Module	Product#	Filename (.DLB)	Emulation
1260 Thermostatted Column Compartment	G1316A	1316A_A632_005	
1200 Thermostatted Column Compartment	G1316B	1316B_A632_005	
1290 Thermostatted Column Compartment	G1316C	1316C_A633_002	A, B
1290 Thermostatted Column Compartment	G1316C	1316C_A632_005	A, B
1290 Flexible Cube	G4227A	4227A_C645_001	1
1290 Flexible Cube	G4227A	4227A_C640_005	1
1290 Flexible Cube	G4227A	4227A_C632_001	1
1290 Flexible Cube	G4227A	4227A_C630_006	1
1260 Chip Cube MS Interface	G4240A	4240A_A636_001	
1260 Chip Cube MS Interface	G4240A	4240A_A633_001	
1260 Chip Cube MS Interface	G4240A	4240A_A632_003	
1260 6-Position/7-Ports Valve	G1156A	1156A_A632_001	
1260 2-Position/10-Ports Valve	G1157A	1157A_A632_001	
1200 2-Position/6-Ports Valve	G1158A	1158A_A632_001	
1260 2-Position/6-Ports Valve	G1158B	1158B_A632_001	
1260 6-Position Column Selector Valve	G1159A	1159A_A632_001	
1260 12-Position Selector Valve	G1160A	1160A_A632_001	
1260 Micro Valve 2-Position/6-Ports	G1162A	1162A_A632_001	
1260 Micro Valve 2-Position/10-Ports	G1163A	1163A_A632_001	
1290 Infinity Valve Drive	G1170A	1170A_C645_001	1
1290 Infinity Valve Drive	G1170A	1170A_C640_005	1
1260 Universal Interface Box (UIB)	G1390A	1390A_A632_001	
LAN Interface Card G1369C	G1369C	1369C_B640_006	
G7100 Capillary Electrophoresis (CE)	G7100A	7101A_B645_001	
Controllers are now listed in a separate bulletin!	G1323A/B G4208A		

Notes:

1. To operate this CAN-slave module a host module with firmware from the same set/revision (any pump or detector with B.06.30 or above) is required.
2. If hosted modules are used in the system, the G1369C LAN Interface Card MUST have the same firmware revision (from the same set) as the hosted module. Otherwise the operation of hosted modules will show malfunctions.
3. Use always the latest revision.

Core Firmware Changes

NOTE The core firmware changes are implemented on all modules in addition to module specific changes.

Modules without on-board LAN ("A" firmware)

Core Changes A.06.32

Table 9 - Core Changes A.06.32 (modules without on-board LAN)

Date Introduced:	July 2010
General:	Took over the Core fixes of release A.06.30 for those modules not released with A.06.30.
Bugfix:	• In the general RS-232 driver the INDICATION_BY_CHAR modus did not work. • TeamTrack #01151, #1154 (PVCS #1690): The reply to COM:CONF?4 showed wronglyreply error RE 0752 (OPTION_NOT_INSTALLED) even if option was installed. • TeamTrack #01155, #01357 (PVCS #1694): Fix that the instruction ROCP 0 (for "releaseoccupy when controller has gone") shows reply error RE 0104. • TeamTrack #01346 (PVCS #1900): Error in leak detection algorithm that a module with defect leak sensor wrongly became ready after clearing the error with instruction CLER. • Sporadic crashes when loading the last element of the default COSY list.
New Features:	• Support of 1290 Infinity FlexCube (G4227A). • New instruction FAM? to query the module family (e.g. 1200, 1260, 1290).
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Modules with on-board LAN ("B" firmware)

Core Changes B.06.42

Table 10 - Core Changes B.06.42 (modules with on-board LAN)

Date Introduced:	September 2011
General:	Core fixes of release B.06.42 for those modules with released with B.06.42.
Bugfix:	• TeamTrack #014821: In very rare cases the module hung in state 'post-run'.
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Core Changes B.06.41

Table 11 - Core Changes B.06.41 (modules with on-board LAN)

Date Introduced:	April 2011
General:	Core fixes of release B.06.41 for those modules with released with B.06.41. Required for use with Valve Drive G1170A.
Bugfix:	• TeamTrack #023295: Fixed that condition error is not cleared after triggering a reset.
New Features:	• TeamTrack #014281: Universal Valve Drive G1170A showed wrong family "1260" instead "1290" on query FAM?.
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Core Changes B.06.40

Table 12 - Core Changes B.06.40 (modules with on-board LAN)

Date Introduced:	March 2011
General:	Core fixes of release B.06.40 for those modules with released with B.06.40.
Bugfix:	• TeamTrack #012483, #012647: The module could crash after very long power-on times (after several thousand runs) if a G4227A FlexCube was present in the instrument. • TeamTrack #013285: The module might crash if a G4227A FlexCube was switched off whilst a system abort was in progress. • TeamTrack #013725: It was possible to enter time table entries with wrong positions for the FlexCube valve G4227A. Running an analysis with such a wrong time table made the hosting module crash.
New Features:	• Support of new G1170A Universal Valve.
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Core Changes B.06.32

Table 13 - Core Changes B.06.32 (modules with on-board LAN)

Date Introduced:	July 2010
General:	Took over the Core fixes of release B.06.30 for those modules not released with B.06.30.
Bugfix:	• TeamTrack #1412: A module sporadically needed a too long time for reboot (up to 1 min). • TeamTrack #1439: Fixed that WCTR (wait-controller-ready) did not send the expected error event EE 00072 after the specified timeout when used outside on an analysis.
New Features:	• Support of 1290 Infinity FlexCube (G4227A). • Support of new module type G4220B • New instruction FAM? to query the module family (e.g. 1200, 1260, 1290).
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Pump Firmware Changes

Iso- / Quat- / Bin-Pump (G1310A, G1311A, G1312A)

Table 14 - Pump Changes A.06.55 (G1310A, G1311A, G1312A)

Date Introduced:	July 2010
Revision:	1310A_A632_011, 1311A_A632_011, 1312A_A632_011, 1361A_A632_003, Res_A632_003
General:	See Core Changes A.06.32.
Bugfix:	• None
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Iso - / Quat-Pump (G1310B, G1311B, G1311C, G5611A)

Table 15 - Pump Changes A.06.36 (G1310B, G1311B, G1311C, G5611A)

Date Introduced:	September 2011
Revision:	1310B_A636_001, 1311B_A636_001, 1311C_A636_001, 5611A_A636_001, Res_A632_003
General:	
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.
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 16 - Pump Changes A.06.33 (G1310B, G1311B, G1311C, G5611A)

Date Introduced:	October 2010
Revision:	1310B_A633_004, 1311B_A633_004, 1311C_A633_004, Res_A632_003
General:	
Bugfix:	• None
New Features:	• TeamTrack #01490: Improved the Leak Detection test. The Leak Detection test now offers a settable duration. • TeamTrack #01492: Fixed wrong pressure calculation of G1311C. Firmware A.06.32 released for the Quaternary Pump VL G1311C calculated a pressure that was too high by a factor of about 1.4, potentially resulting in an overpressure error stopping measurements.
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 17 - Pump Changes A.06.32 (G1310B, G1311B, G1311C, G5611A)

Date Introduced:	July 2010
Revision:	1310B_A632_010, 1311B_A632_010, 1311C_A632_010, Res_A632_003
General:	See Core Changes A.06.32.
Bugfix:	• None
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Binary Pump (G1312B SL)

Table 18 - Pump Changes A.06.34 (G1312B)

Date Introduced:	December 2010
Revision:	1312B_A634_001, Res_A632_003
General:	
Bugfix:	• TeamTrack #01498: The solvent selection valve sometimes did not switch for some individual modules.
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 19 - Pump Changes A.06.33 (G1312B)

Date Introduced:	October 2010
Revision:	1312B_A633_004, Res_A632_003
General:	
Bugfix:	• TeamTrack #01487: Removed flow rate artifacts at higher pressure with organic solvents.
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 20 - Pump Changes A.06.32 (G1312B)

Date Introduced:	July 2010
Revision:	1312B_A632_011, Res_A632_003
General:	See Core Changes A.06.32.
Bugfix:	• TeamTrack #1162: Fraction start location was not found if second AFC was used for recovery. • TeamTrack #1190: Module crashed when collecting into 96-wellplate using 'ContactControl'-mode at begin of first fraction.
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Binary Pump (G1312C VL)

Table 21 - Pump Changes A.06.34 (G1312C)

Date Introduced:	April 2011
Revision:	1312C_A634_001, Res_A632_003
General:	
Bugfix:	• TeamTrack #011950: The module showed panic error after exchange of the main board and using "Board check and change" functionality of Agilent Lab Advisor software.
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 22 - Pump Changes A.06.32 (G1312C)

Date Introduced:	July 2010
Revision:	1312C_A632_011, Res_A632_003
General:	Initial firmware.
Bugfix:	• None
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Binary Pump (G4220A, G4220B)

Table 23 - Pump Changes B.06.45 (G4220A, G4220B)

Date Introduced:	August 2015
Revision:	4220A_B0645_001, 4220B_B0645_001, Res_B640_007
General:	This firmware provides support for new RFID tag, see Firmware for New RFID Tag.
Bugfix:	• None
New Features:	• Support for new RFID tag.
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 24 - Pump Changes B.06.43 (G4220A, G4220B)

Date Introduced:	September 2011
Revision:	4220B_B0643_001, 4220B_B643_001, Res_B640_007
General:	
Bugfix:	• TeamTrack #015369: Previous firmware allowed a power range of 1050 bar at 1 ml/min ramping linearly down to 630 bar at 2 ml/min. The new firmware has been corrected such that 1050 bar are possible at up to 2 ml/min as specified.
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 25 - Pump Changes B.06.42 (G4220A, G4220B)

Date Introduced:	September 2011
Revision:	4220A_B0642_002, 4220B_B0642_002, Res_B640_007
General:	See Core Changes B.06.42.
Bugfix:	• TeamTrack #013279: Intermittently occurring error 'drive position limited' (EE 22425) when using a method with high flow rate. • TeamTrack #014385: Improved pressure test at 1200 bar. Reduced overpressure errors on tight systems. • No TeamTrack: Improved the ripple effects when using pressure below 200 bar.
New Features:	• Implemented the support of the USB Dongle for licensing (for ISET).
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 26 - Pump Changes B.06.41 (G4220A, G4220B)

Date Introduced:	April 2011
Revision:	4220A_B0641_002, 4220B_B0641_002, Res_B640_007
General:	See Core Changes B.06.41.
Bugfix:	• TeamTrack #014281: The Universal Valve Drive G1170A showed wrong family "1260" instead "1290" on query FAM?.
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 27 - Pump Changes B.06.40 (G4220A, G4220B)

Date Introduced:	March 2011
Revision:	4220A_B0640_008, 4220B_B0640_008, Res_B640_007
General:	See Core Changes B.06.40.
Bugfix:	• TeamTrack #013279: Removed the intermittently occurring error 'drive position limit' (EE22425) when using a method with high flow. • TeamTrack #013359: Conditioning (primary air removal) could not be restarted if aborted before.
New Features:	• Support of new G1170A Universal Valve. • DHCP support.
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 28 - Pump Changes B.06.32 (G4220A, G4220B)

Date Introduced:	February 2015
Revision:	4220A_B0632_005, 4220B_B0632_005, Res_B632_004
General:	See Core Changes B.06.32.
Bugfix:	• None
New Features:	• TeamTrack #1425: Introduced new events EV22451 (POWER_PRESSURE_LIMIT), EV22452 (METHOD_PRESSURE_LIMIT) and 22454 (EXTERNAL_PRESSURE_LIMIT) to show the originating reason for a pressure limit.
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Prep Pump (G1361A)

Table 29 - Pump Changes A.06.32 (G1361A)

Date Introduced:	July 2010
Revision:	1361A_A632_003, Res_A632_003
General:	See Core Changes A.06.32
Bugfix:	• None
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Capillary Pump (G1376A, G2226A)

Table 30 - Pump Changes A.06.34 (G1376A, G2226A)

Date Introduced:	December 2010
Revision:	1 1376A_A634_001, 2226A_A634_001, Res_A632_003
General:	
Bugfix:	• TeamTrack #01498: The solvent selection valve sometimes did not switch for some individual modules.
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 31 - Pump Changes A.06.50 (G1376A, G2226A)

Date Introduced:	July 2010
Revision:	1376A_A632_011, 2226A_A632_011, Res_A632_003
General:	See Core Changes A.06.32.
Bugfix:	• TeamTrack #1434: A too high pressure on COR popped capillaries.
New Features:	• Code supports the new SSV hardware.
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Sampler Firmware Changes

Standard Autosampler (G1313A, G1329A, G1329B, G1389A, G2260A)

Table 32 - Autosampler Changes A.06.36 (G1313A, G1329A, G1329B, G1389A, G2260A)

Date Introduced:	September 2011
Revision:	1313A_A636_007, 1329A_A636_007, 1329B_A636_007, 1389A_A636_007, 2260A_A636_007, Res_A632_003
General:	
Bugfix:	• TeamTrack #014934: Switching between heating and cooling could damage the new G1330B PCB hardware.
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 33 - Autosampler Changes A.06.35 (G1313A, G1329A, G1329B, G1389A, G2260A)

Date Introduced:	April 2011
Revision:	1313A_A635_001, 1329A_A635_001, 1329B_A635_001, 1389A_A635_001, 2260A_A635_001, Res_A632_003
General:	
Bugfix:	• TeamTrack #014144: Fixed "Wash needle" with multiple wash cycles may damage the needle.
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 34 - Autosampler Changes A.06.34 (G1313A, G1329A, G1329B, G1389A, G2260A)

Date Introduced:	March 2011
Revision:	1313A_A634_006, 1329A_A634_006, 1329B_A634_006, 1389A_A634_006, 2260A_A634_006, Res_A632_003
General:	
Bugfix:	• TeamTrack #013987: Ice protection for G1330B did not work. • TeamTrack #013988: Default calibration values for G1330A and G1330B were wrong by 1K.
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 35 - Autosampler Changes A.06.32 (G1313A, G1329A, G1329B, G1389A, G2260A)

Date Introduced:	July 2010
Revision:	1313A_A632_004, 1329A_A632_004, 1329B_A632_004, 1389A_A632_006, 2260A_A632_004, Res_A632_003
General:	See Core Changes A.06.32.
Bugfix:	• None
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

High Performance Autosampler (G1367A/E, G1377A, G2258A, G4226A)

Table 36 - Autosampler Changes A.06.37 (G1367A/E, G1377A, G2258A, G4226A)

Date Introduced:	September 2011
Revision:	1367A_A637_001, 1367B_A637_001, 1367C_A637_001, 1367D_A637_001, 1367E_A637_001, 1377A_A637_001, 2258A_A637_001, 4226A_A637_001, 5667A_A637_001, Res_A632_003
General:	
Bugfix:	• TeamTrack #015364: Changed that the air for enclosing the sample before going into flush port is now drawn outside the vial above the wash port and not inside the vial just below the septum.
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 37 - Autosampler Changes A.06.36 (G1367A/E, G1377A, G2258A, G4226A)

Date Introduced:	September 2011
Revision:	1367A_A636_008, 1367B_A636_008, 1367C_A636_008, 1367D_A636_008, 1367E_A636_008, 1377A_A636_008, 2258A_A636_008, 4226A_A636_008, 5667A_A636_008, Res_A632_003
General:	

Bugfix:	• TeamTrack #006584: Changed the behavior if a MIX command with too high volume was used in an injector program. The injector program will not hang any longer, but a MIX-command with too high volume will be ignored and next injector program command is executed.
	• TeamTrack #014683: Fixed two issues when using reset (RSET) during initialization concerning the open/lock state of the door.
	• TeamTrack #014823: Syringe depending parameters were handled incorrectly:
	  ○ Default value for injection volume IVOL is changed from 5 µl to 1 µl for 40 µl syringe.
	  ○ Values for rinse fluid eject and draw speed (ESPR, DSPR) are reset now in case of a MPRM-change. Without resetting the values, loading a method with Instant Pilot could have led to an error before.
	  ○ Values for injection volume, draw speed and eject speed are now stored over a reboot of the module.
	• TeamTrack #014934: Switching between heating and cooling could damage the new G1330B PCB hardware. Refer to SN G1367-xxx for the details.
	• TeamTrack #015086: Fixed different mix location behavior when using "Mix in Flushport" with RC.NET drivers compared to classical drivers.
	• In case of multi-draw and injection with needle wash: The needle is now washed before each movement into seat. This fix increases the duration of executing the injection for this application.
	• TeamTrack #015186: Fixed occasionally corrupted tray data structures after using improper tray change commands.

New Features:	• TeamTrack #014475: G5667A can emulate G1367E in emulation mode. • Enabled Multi-Draw-Kit with 80 µl capable capillary for G4226A with 40 µl-syringe. • Enabled Multi-Draw-Kit with 400 µl/1400 µl/5000 µl capable capillary for G4226A with 100 µl syringe.
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 38 - Autosampler Changes A.06.34 (G1367A/E, G1377A, G2258A, G4226A)

Date Introduced:	March 2011
Revision:	1367A_A634_008, 1367B_A634_008, 1367C_A634_008, 1367D_A634_008, 1367E_A634_008, 1377A_A634_008, 2258A_A634_008, 4226A_A634_008, Res_A632_003
General:	
Bugfix:	• TeamTrack #013983: The 'metering home' function is now done above waste if init/reset is running. • TeamTrack #013984: Ice protection for G1330B did not work. • TeamTrack #013985: Default calibration values for G1330A and G1330B were wrong by 1K.
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 39 - Autosampler Changes A.06.33 (G1367A/E, G1377A, G2258A, G4226A)

Date Introduced:	October 2010
Revision:	1367A_A633_002, 1367B_A633_002, 1367C_A633_002, 1367D_A633_002, 1367E_A633_002, 1377A_A633_002, 2258A_A633_002, 4226A_A633_002, Res_A632_003
General:	
Bugfix:	• TeamTrack #01488: The G1367E did not allow the emulation mode for G1367D. The re-typing from G1367E to G1367D was rejected. **Only the G1367E was affected.**
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 40 - Autosampler Changes A.06.32 (G1367A/E, G1377A, G2258A, G4226A)

Date Introduced:	July 2010
Revision:	1367A_A632_006, 1367B_A632_006, 1367C_A632_006, 1367D_A632_006, 1367E_A632_006, 1377A_A632_006, 2258A_A632_006, 4226A_A632_006, Res_A632_003
General:	See Core Changes A.06.32.
Bugfix:	• TeamTrack #1428: Needle seat back flushing with Flex Cube G4227A caused occasionally valve switching errors • TeamTrack #1143: Needle wash in flush port sometimes flushes with needle over flush port. • TeamTrack #1458: "Abort" during needle wash may led to unwanted behavior (crash, fatal error "Vessel Stuck to Needle" or short unwanted main pass switching).
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Fraction Collector (G1364A, G1364B, G1364C, G1364D, G5664A BIO)

Table 41 - Fraction Collector Changes A.06.56 (G1364A, G1364B, G1364C, G1364D, G5664A BIO)

Date Introduced:	September 2011
Revision:	1364A_A636_008, 1364B_A636_008, 1364C_A636_008, 1364D_A636_008, 5664A_A636_008, Res_A632_003
General:	
Bugfix:	• TeamTrack #014934: Switching between heating and cooling could damage the new G1330B PCB hardware. • TeamTrack #013984: Occasionally the ice protection for G1330B still did not work correctly. • TeamTrack #013985: Use better default calibration values for G1330A and G1330B. • TeamTrack #015186: Fixed occasionally corrupted tray data structures after using improper tray change commands.
New Features:	• TeamTrack #014475: G5664A can emulate G1364C in emulation mode.
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 42 - Autosampler Changes A.06.34 (G1364A, G1364B, G1364C, G1364D, G5664A BIO)

Date Introduced:	March 2011
Revision:	1364A_A634_006, 1364B_A634_006, 1364C_A634_006, 1364D_A634_006, 5664A_A634_006, Res_A632_003
General:	
Bugfix:	• TeamTrack #012966: Switching on the AFC thermostat at power-on did not work • TeamTrack # 012967: Pump was not switched off on error "no more empty wells for fractionating". • TeamTrack #013531: The module ignored all following commands after an invalid position was specified with ALTS <pos> and 'auto-increment recovery position' (ALTP 2) was used. • The module crashed during start-up if DIP-switches were set to 'cold start'. • TeamTrack #013984: Ice protection for G1330B did not work. • TeamTrack #013985: Default calibration values for G1330A and G1330B were wrong by 1K.
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 43 - Autosampler Changes A.06.33 (G1364A, G1364B, G1364C, G1364D)

Date Introduced:	October 2010
Revision:	1364A_A633_001, 1364B_A633_001, 1364C_A633_001, 1364D_A633_001, Res_A632_003
General:	
Bugfix:	• TeamTrack #01479: The module did not initialize with G1330B. **This problem occurred in firmware revision A.06.32 only.**
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 44 - Autosampler Changes A.06.32 (G1364A, G1364B, G1364C, G1364D)

Date Introduced:	July 2010
Revision:	1364A_A632_004, 1364B_A632_004, 1364C_A632_004, 1364D_A636_008, Res_A632_003
General:	See Core Changes A.06.32.
Bugfix:	• TeamTrack #1162: Fraction start location was not found if second AFC was used for recovery. • TeamTrack #1190: Module crashed when collecting into 96-wellplate using 'ContactControl'-mode at begin of first fraction.
New Features:	• Code supports the new module type G5664A.
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Detector Firmware Changes

Variable Wavelength Detector (VWD) (G1314A, G1314B, G1314C)

Table 45 - VWD Changes A.06.32 (G1314A, G1314B, G1314C)

Date Introduced:	July 2010
Revision:	1314A_A632_004, 1314B_A632_004, 1314C_A632_004, Res_A632_003
General:	See Core Changes A.06.32.
Bugfix:	• None
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Variable Wavelength Detector (VWD) (G1314D, G1314E, G1314F)

Table 46 - VWD Changes B.06.45 (G1314D, G1314E, G1314F)

Date Introduced:	August 2015
Revision:	1314D_B645_001, 1314E_B645_001, 1314F_B645_001, Res_B640_007
General:	This firmware provides support for new RFID tag, see Firmware for New RFID Tag.
Bugfix:	• None
New Features:	• Support for new RFID tag.
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 47 - VWD Changes B.06.42 (G1314D, G1314E, G1314F)

Date Introduced:	September 2011
Revision:	1314D_B642_002, 1314E_B642_002, 1314F_B642_002, Res_B640_007
General:	See Core Changes B.06.42.
Bugfix:	• TeamTrack #010631: Changed behavior on invalid lamp tag content. If the same lamp tag appears with invalid content, the user now needs to set "always use lamp" only once. • TeamTrack #013895: G1314F showed wrong family "1260" instead of "1200" on query FAM? after type-change to G1314D.
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 48 - VWD Changes B.06.41 (G1314D, G1314E, G1314F)

Date Introduced:	April 2011
Revision:	1314D_B641_002, 1314E_B641_002, 1314F_B641_002, Res_B640_007
General:	See Core Changes B.06.41. Use this revision when you experience below problem.
Bugfix:	• TeamTrack #014281: The Universal Valve Drive G1170A showed wrong family "1260" instead "1290" on query FAM?
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 49 - VWD Changes B.06.40 (G1314D, G1314E, G1314F)

Date Introduced:	March 2011
Revision:	1314D_B640_007, 1314E_B640_007, 1314F_B640_007, Res_B640_007
General:	See Core Changes B.06.40.
Bugfix:	• Only core changes
New Features:	• Support of new G1170A Universal Valve. • DHCP support.
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 50 - VWD Changes B.06.32 (G1314D, G1314E, G1314F)

Date Introduced:	July 2010
Revision:	1314D_B672_002, 1314E_B672_002, 1314F_B672_002, Res_B632_004
General:	See Core Changes B.06.32.
Bugfix:	• None
New Features:	• Code supports the new module type G1314F.
OQ/PV Recommendation:	See OQ/PV - Validation Information.

DAD/MWD (G1315A DAD, G1315B DAD, G1365A MWD, G1365B MWD)

Table 51 - DAD/MWD Changes A.06.50 (G1315A DAD, G1315B DAD, G1365A MWD, G1365B MWD)

Date Introduced:	July 2010
Revision:	1315A_A632_003, 1315B_A632_003, 1365A_A632_003, 1365B_A632_003, Res_A632_003
General:	See Core Changes A.06.32.
Bugfix:	• None
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

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

Table 52 - DAD/MWD Changes B.06.45 (G1315C DAD, G1315D DAD, G1365C MWD, G1365D MWD)

Date Introduced:	August 2015
Revision:	1315C_B645_001, 1315D_B645_001, 1365C_B645_001, 1365D_B645_001, Res_B640_007
General:	This firmware provides support for new RFID tag, see Firmware for New RFID Tag.
Bugfix:	• None
New Features:	• Support for new RFID tag.
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 53 - DAD/MWD Changes B.06.44 (G1315C DAD, G1315D DAD, G1365C MWD, G1365D MWD)

Date Introduced:	May 2012
Revision:	1315C_B644_003, 1315D_B644_003, 1365C_B644_003, 1365D_B644_003, Res_B640_007
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).
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 54 - DAD/MWD Changes B.06.42 (G1315C DAD, G1315D DAD, G1365C MWD, G1365D MWD)

Date Introduced:	September 2011
Revision:	1315C_B642_002, 1315D_B642_002, 1365C_B642_002, 1365D_B642_002, Res_B640_007
General:	See Core Changes B.06.42.
Bugfix:	• TeamTrack #010631: Changed behavior on invalid lamp tag content. If the same lamp tag appears with invalid content, the user now needs to set "always use lamp" only once.
New Features:	• Support of future new micro slit assembly. This new micro slit assembly will replace the current slit assembly (planned for July/August 2012). **DO NOT USE THIS FIRMWARE FOR VSA SLITS. IT'S NOT COMPLETE IMPLEMENTED!! USE B.06.44!**
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 55 - DAD/MWD Changes B.06.41 (G1315C DAD, G1315D DAD, G1365C MWD, G1365D MWD)

Date Introduced:	April 2011
Revision:	1315C_B641_002, 1315D_B641_002, 1365C_B641_002, 1365D_B641_002, Res_B640_007
General:	See Core Changes B.06.41. Use this revision when you experience below problem.
Bugfix:	• TeamTrack #014281: The Universal Valve Drive G1170A showed wrong family "1260" instead "1290" on query FAM?
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 56 - DAD/MWD Changes B.06.40 (G1315C DAD, G1315D DAD, G1365C MWD, G1365D MWD)

Date Introduced:	March 2011
Revision:	1315C_B640_007, 1315D_B640_007, 1365C_B640_007, 1365D_B640_007, Res_B640_007
General:	See Core Changes B.06.40.
Bugfix:	• TeamTrack #013581: Occasional occurring crash when many spectra with many points per spectrum were selected.
New Features:	• Support of new G1170A Universal Valve. • DHCP support.
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 57 - DAD/MWD Changes B.06.32 (G1315C DAD, G1315D DAD, G1365C MWD, G1365D MWD)

Date Introduced:	July 2010
Revision:	1315C_B632_004, 1315D_B632_004, 1365C_B632_004, 1365D_B632_004, Res_B632_004
General:	See Core Changes B.06.32.
Bugfix:	• None
New Features:	• Code supports the new module type G1314F.
OQ/PV Recommendation:	See OQ/PV - Validation Information.

DAD (G4212A, G4212B)

Table 58 – DAD Changes B.06.45 (G4212A, G4212B)

Date Introduced:	October 2015
Revision:	4212A_B645_002, 4212B_B645_002, Res_B640_007
General:	This firmware provides support for new RFID tag, see Firmware for New RFID Tag.
Bugfix:	• Dark Current Test showed wrong results in built [001] with impact to intensity values. Use built [002] ONLY!
New Features:	• Support for new RFID tag.
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 59 - DAD Changes B.06.45 (G4212A, G4212B)

Date Introduced:	August 2015
Revision:	4212A_B645_001, 4212B_B645_001, Res_B640_007
General:	This firmware provides support for new RFID tag, see Firmware for New RFID Tag. **DO NOT USE BUILT [001]. Dark Current Test shows wrong results with impact to intensity values.**
Bugfix:	• None
New Features:	• Support for new RFID tag.
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 60 - DAD Changes B.06.44 (G4212A, G4212B)

Date Introduced:	May 2012
Revision:	4212A_B644_001, 4212B_B644_001, Res_B640_007
General:	**Must be used with optical units that have the new VSA micro slit assembly. This firmware assures compatibility for both slit versions.**
Bugfix:	• (G4212B ONLY) Intermittently the shutter may not be positioned correctly. In the "OPEN" position it may not be completely open. This may result into a wrong intensity and a change in the peak height (compared to a previous run).
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).
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 61 - DAD Changes B.06.43 (G4212A)

Date Introduced:	September 2011
Revision:	4212A_B643_001, Res_B640_007
General:	
Bugfix:	• TeamTrack #015388: Firmware revision B.06.42 used the wrong integration program resulting in significantly higher noise. This failure only occurred with last released firmware revision B.06.42.
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 62 - DAD Changes B.06.42 (G4212A, G4212B)

Date Introduced:	September 2011
Revision:	4212A_B642_002, 4212B_B642_002, Res_B640_007
General:	See Core Changes B.06.42.
Bugfix:	• TeamTrack #010631: Changed behavior on invalid lamp tag content. If the same lamp tag appears with invalid content, the user now needs to set "always use lamp" only once. • TeamTrack #014362 (case Pes-7831): Fixed spectra data error when acquisition program internally ran at 240 Hz, and light level exceeded or has fallen below a certain threshold. Depending of the filter (PKWD) settings, this could have led to artifacts over all wavelengths. • Shutter movement control has been improved (G4212B with FIXED slit) to assure that it completely is blocking the light.
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 63 - DAD Changes B.06.41 (G4212A, G4212B)

Date Introduced:	April 2011
Revision:	4212A_B641_002, 4212B_B641_002, Res_B640_007
General:	See Core Changes B.06.41. Use this revision when you experience below problem.
Bugfix:	• TeamTrack #014281: The Universal Valve Drive G1170A showed wrong family "1260" instead "1290" on query FAM?
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 64 - DAD Changes B.06.41 (G4212A, G4212B)

Date Introduced:	March 2011
Revision:	4212A_B640_007, 4212B_B640_007, Res_B640_007
General:	See Core Changes B.06.40.
Bugfix:	• TeamTrack #013581: Occasional occurring crash when many spectra with many points per spectrum were selected.
New Features:	• Support of new G1170A Universal Valve. • DHCP support.
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 65 - DAD Changes B.06.33 (G4212A, G4212B)

Date Introduced:	December 2010
Revision:	4212A_B633_001, 4212B_B633_001, Res_B632_004
General:	
Bugfix:	• TeamTrack #01506: Changed the wavelength calibration algorithm to higher accuracy in UV wavelength range (SN G4212A-014/G4212B-005). It has been found, that after a wavelength recalibration (using the Agilent Lab Advsior or Instant Pilot), the measured wavelength in the lower UV might be out of the specified range of +1/-1 nm.
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 66 - DAD Changes B.06.32 (G4212A, G4212B)

Date Introduced:	July 2010
Revision:	4212A_B632_004, 4212B_B632_004, Res_B632_004
General:	See Core Changes B.06.32.
Bugfix:	• None
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Fluorescence Detector (FLD) (G1321A SPECTRA, G1321B SPECTRA)

Table 67 - FLD Changes A.06.36 (G1321A SPECTRA, G1321B SPECTRA)

Date Introduced:	September 2011
Revision:	1321A_A636_005, 1321B_A636_005, Res_A632_003
General:	
Bugfix:	• TeamTrack 014407: Too heavy data load generates error event EE 0226 (EE_RAWDATA_LOST) if data points are lost.
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 68 - FLD Changes A.06.33 (G1321A SPECTRA, G1321B SPECTRA)

Date Introduced:	October 2010 (A), July 2011 (B)
Revision:	1321A_A633_001, 1321B_A633_001, Res_A632_003
General:	See Core Changes A.06.32.
Bugfix:	• TeamTrack #01485: The calibration COSY-list hanged. **This bug only occurred in firmware revision A.06.32 and with G1321A.**
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 69 - FLD Changes A.06.32 (G1321A SPECTRA, G1321B SPECTRA)

Date Introduced:	July 2010
Revision:	1321A_A632_005, 1321B_A632_005, Res_A632_003
General:	See Core Changes A.06.32.
Bugfix:	• None
New Features:	• Code supports the new module type G1321B.
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Refractive Index Detector (RID) (G1362A)

Table 70 - RID Changes A.06.36 (G1362A)

Date Introduced:	September 2011
Revision:	1362A_A636_005, Res_A632_003
General:	
Bugfix:	• TeamTrack 014408: Too heavy data load generates error event EE 0226 (EE_RAWDATA_LOST) if data points are lost. • TeamTrack #006488: Fixed the not-ready state-machine. It was wrongly possible that the module showed 'ready' but 'not-ready' was expected. This state could have been reached after doing some of the following actions in a special order: changes to the temperature method parameter, turning on and off the heater and switching on and off the temperature control. • TeamTrack #014474: Signals of diode #1 and diode #2 were switched in the Actual Data plot used by the handheld controllers.
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 71 - RID Changes A.06.32 (G1362A)

Date Introduced:	July 2010
Revision:	1362A_A632_003, Res_A632_003
General:	See Core Changes A.06.32.
Bugfix:	• None
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Other Modules

Thermostatted Column Compartment (TCC) (G1316A, G1316B, G1316C)

Table 72 - TCC Changes A.06.33 (G1316C)

Date Introduced:	August 2015
Revision:	1316C_A633_002, Res_A632_003
General:	This firmware provides support for new RFID tag, see Firmware for New RFID Tag.
Bugfix:	• None
New Features:	• Support for new RFID tag.
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 73 - TCC Changes A.06.32 (G1316A, G1316B, G1316C)

Date Introduced:	July 2010
Revision:	1316A_A632_005, 1316B_A632_005, 1316C_A632_005, Res_A632_003
General:	See Core Changes A.06.32.
Bugfix:	• None
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Chip Cube (G4240A)

Table 74 - Chip Cube Changes A.06.36 (G4240A)

Date Introduced:	September 2011
Revision:	4240A_A636_001, Res_A632_003
General:	
Bugfix:	• None
New Features:	• Implemented new method parameter MVOL for defining additional trap volume. The MVOL volume is added to the system parameter TVOL (trap volume).
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 75 - Chip Cube Changes A.06.33 (G4240A)

Date Introduced:	August 2015
Revision:	4240A_A633_001, Res_A632_003
General:	
Bugfix:	• None
New Features:	• TeamTrack #01499: Support the new mAb-glyco chip. The carry-over reduction functionality is disabled for this chip type.
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 76 - Chip Cube Changes A.06.32 (G4240A)

Date Introduced:	July 2010
Revision:	1316A_A632_005, 1316B_A632_005, 1316C_A632_005, Res_A632_003
General:	See Core Changes A.06.32.
Bugfix:	• None
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

LAN Interface Card (G1369C)

NOTE If hosted modules are used in the system, the G1369C LAN Interface Card MUST have the same firmware revision (from the same set) as the hosted module. Otherwise the operation of hosted module(s) will show malfunctions.

Table 77 - LAN Interface Card Changes B.06.40 (G1369C)

Date Introduced:	April 2011
Revision:	1369C_B640_006, Res_1369C_B640_002
General:	• Initial Firmware, for new LAN Interface Card G1369C, replacement for G1369A/B LAN Interface Cards. • Future firmware updates of this card require the LAN/RS-232 FW Update Tool 2.10 or above or the Agilent Lab Advisor, see Where To Get Latest Information. • The firmware cannot be used for older LAN card G1369A/B!
Bugfix:	• Initial firmware
New Features:	• CAN support for CAN slaves (e.g. G1170A Universal Valve Drive) in systems without modules with on-board LAN. • DHCP support
OQ/PV Recommendation:	See OQ/PV - Validation Information.

CAN Slaves (Hosted Modules)

NOTE These modules require “C” firmware!

Valve Drive (G1170A)

Table 78 - Valve Drive Changes C.06.45 (G1170A)

Date Introduced:	August 2015
Revision:	1170A_C645_001, Res_C640_005
General:	This firmware provides support for new RFID tag, see Firmware for New RFID Tag.
Bugfix:	• None
New Features:	• Support for new RFID tag.
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 79 - Valve Drive Changes C.06.40 (G1170A)

Date Introduced:	March 2011
Revision:	1170A_C640_005, Res_C640_005
General:	Initial Firmware
Bugfix:	• None
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Flexible Cube (G4227A)

Table 80 - Flexible Cube Changes C.06.45 (G4227A)

Date Introduced:	August 2015
Revision:	4227A_C645_001, Res_C640_005
General:	This firmware provides support for new RFID tag, see Firmware for New RFID Tag.
Bugfix:	• None
New Features:	• Support for new RFID tag.
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 81 - Flexible Cube Changes C.06.40 (G4227A)

Date Introduced:	March 2011
Revision:	4227A_C640_005, Res_C640_005
General:	
Bugfix:	• TeamTrack #013585: Sporadically the valve stopped switching because of an encoder error. This could result in non-operability of the valve or the module could have stayed in 'not ready' state.
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 82 - Flexible Cube Changes C.06.32 (G4227A)

Date Introduced:	July 2010
Revision:	4227A_C632_001, Res_C632_001
General:	See Core Changes A.06.32.
Bugfix:	• Occasionally the reading of tags did not return.
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

1120/1220 LC system

NOTE The 1120 Compact LC and 1220 LC System include several modules under several product numbers, see 1120 Compact LC / 1220 Infinity LC.

Table 83 - 1120/1220 LC system Changes B.06.42 (G428x, G429x)

Date Introduced:	September 2011
Revision:	B.06.42_003, Res_B640_007
General:	See Core Changes B.06.40.
Bugfix:	• Only core changes.
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 84 - 1120/1220 LC system Changes B.06.41 (G428x, G429x)

Date Introduced:	April 2011
Revision:	B.06.41_002, Res_B640_007
General:	See Core Changes B.06.41.
Bugfix:	• TeamTrack #014147: Peak-based fraction collection with Automated Fraction Collector G1364 did sometimes not work. • TeamTrack #014148: The wrong delay calculation with Automated Fraction Collector G1364 has been corrected.
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 85 - 1120/1220 LC system Changes B.06.40 (G428x, G429x)

Date Introduced:	March 2011
Revision:	B.06.40_007, Res_B640_007
General:	See Core Changes B.06.40.
Bugfix:	• None
New Features:	• DHCP support.
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 86 - 1120/1220 LC system Changes B.06.32 (G428x, G429x)

Date Introduced:	July 2010
Revision:	B.06.32_005, Res_B632_004
General:	See Core Changes B.06.32.
Bugfix:	• TeamTrack #1376: The actual for high pressure limit shows a wrong value if monitored outside of an analysis.
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

SFC Modules

SFC Pump (G4302A)

Table 87 - Pump Changes A.06.34 (G4302A SFC)

Date Introduced:	December 2010
Revision:	4302A_B634_001, Res_A632_003
General:	
Bugfix:	• TeamTrack #01498: The solvent selection valve sometimes did not switch for some individual modules.
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 88 - Pump Changes A.06.33 (G4302A SFC)

Date Introduced:	October 2010
Revision:	4302A_B633_001, Res_A632_003
General:	
Bugfix:	• TeamTrack #01486: The G4302A did only allow pressure values up to 400 bar. Now, values up to 600 bar are allowed. • TeamTrack #01487: Removed flow rate artifacts at higher pressure with organic solvents.
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 89 - Pump Changes A.06.32 (G4302A SFC)

Date Introduced:	August 2010
Revision:	4302A_B632_011, Res_A632_003
General:	Initial Firmware
Bugfix:	• None
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

SFC Autosampler (G4303A)

Table 90 - SFC Autosampler Changes A.06.36 (G4303A)

Date Introduced:	September 2011
Revision:	4303A_A636_007, Res_A650_003
General:	
Bugfix:	• TeamTrack #014934: Switching between heating and cooling could damage the new G1330B PCB hardware. • TeamTrack #013987: Occasionally the ice protection for G1330B still did not work correctly. • TeamTrack #013988: Use better default calibration values for G1330A and G1330B.
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 91 - SFC Autosampler Changes A.06.35 (G4303A)

Date Introduced:	April 2011
Revision:	4303A_A635_001, Res_A650_003
General:	
Bugfix:	• TeamTrack #014144: Fixed "Wash needle" with multiple wash cycles may damage the needle.
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Capillary Electrophoresis System

Capillary Electrophoresis System (CE) (G7100)

NOTE Releases prior to revision B.06.44 can be found here: http://www.chem.agilent.com/search/?Ntt=firmware 7100

Table 92 - Capillary Electrophoresis System Changes B.06.45 (G7100)

Date Introduced:	August 2015
Revision:	7101A_B645_001, Res_B650_003
General:	This firmware provides support for new RFID tag, see Firmware for New RFID Tag.
Bugfix:	• None
New Features:	• Support for new RFID tag.
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Table 93 - Capillary Electrophoresis System Changes B.06.44 (G7100)

Date Introduced:	February 2013
Revision:	7101A_B644_001, Res_B650_003
General:	**This release was part of the revision 6.53 release for LC modules in set 6.50.** See also Core Changes B.06.53.
Bugfix:	• TeamTrack #015440, #016463: Using a virtual vial (user vial) as replenish vial led to a panic and transfer to the resident system. • TeamTrack #017076: Changed the behavior on lifter blockage to prevent from too much mechanical stress that might have led to lift head breakage.
New Features:	• None
OQ/PV Recommendation:	See OQ/PV - Validation Information.

Local Controllers

G4208A Instant Pilot and G1323A/B Local Control Module

Information for the Instant Pilot (G4208A) and the Local Control Module (G1323A/B) has been removed. It's now decanted in an individual document "Local Controller" and can be downloaded from the Agilent web, see Where To Get Latest Information.

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