Release Note for Agilent LC and CE Drivers Revision A.02.19 SR1

Introduction

This release note provides important information for the release of Agilent LC and CE drivers A.02.19 SR1.

Service Release A.02.19 SR1 includes several important bug fixes for LC and CE driver version A.02.19. Worth mentioning here is the following fixed known issue:

KPR#	SSB/SRB Problem Description Title	Fix Information
187313	Method download fails when cooler is controlled in method	Fixed with driver version A.02.19 SR1

For more information, please see the Software Status Bulletin (SSB) and Software Release Bulletin (SRB).

Agilent Technologies

Compatibility Matrix

The compatibility matrix provides information about installation and execution prerequisites with respect to hardware, firmware and the operating system.

Supported Operating Systems

The following operating systems are supported:

- Windows 7 SP1 (32-Bit/64-Bit)
- Windows Server 2008 R2 (64-Bit)
- Windows 8.1 (32-Bit/64-Bit)
- Windows Server 2012 R2 (64-Bit)
- Windows 10 (32-Bit/64-Bit)

Drivers have been optimized for the Windows default font size (100%). Larger font sizes may require increasing the window size or may cause truncations.

Driver Localization

Drivers are available in US English, Chinese, Japanese and Brazilian Portuguese.

Supported Chromatographic Data Systems (CDS)

Please consider: This Release Note is about the Release of the LC and CE driver version A.02.19 SR1, which does not mean a change of instrument module support for a given CDS.

This driver has been tested with the following CDS:

OpenLAB CDS	2.2 HF1
OpenLAB CDS ChemStation Edition	C.01.08
OpenLAB CDS EZChrom Edition	A.04.08 Update 2
MassHunter	C.01.00

Please consider: Some of the functionality offered by the drivers may not be supported by all CDSs. The support of specific hardware and software related techniques, such as CE or Fraction collection, is determined at the CDS level. Support of a new module for a technique via a driver update does not imply a change of the current CDS functionality by incorporation of that driver. Please refer to the corresponding CDS and ICF documentation.

Agilent drivers can also be used with other CDSs such as MassHunter workstation and third party CDSs through the instrument control framework (ICF). Such CDSs require dedicated installers not included to standard driver media.

Recommended firmware

With the release of driver version A.02.19 SR1 it is recommended to use the following firmware revisions:

Device	Recommended Firmware
Agilent 1100 Series, 1200 Series and 1200 Infinity	A.07.01 or later
Agilent 1200 Series, 1200 Infinity and 1120 Compact LC	B.07.23 or later
Agilent 1200 Infinity Hosted Modules	C.07.20 or later
Agilent 1260/1290 Infinity II Modules	D.07.23 or later

For the new modules it is recommended to use the following firmware revisions:

Module	Module Firmware
InfinityLab Sample Thermostat G7167-60101	D.07.23 or later

Please note that firmware set 07.01 contains firmware with later revisions, e.g. for new modules.

Please observe recommendations for firmware compatibility in "Appendix A: Modules and Minimum required firmware" on page 5.

NOTE	Please note that a firmware update within set A/B/C/D.07.01 is required for all modules in that stack, not only new modules, as for example the fraction collector uses new detector features.

Installation

Before starting a driver installation or update, the firmware for the entire LC or CE system must be updated to the recommended firmware set, see section firmware compatibility in "Appendix A: Modules and Minimum required firmware" on page 5.

If the Chromatography Data System (CDS) has already been installed, please check, if it is compatible to this driver revision. Then update the driver if needed.

If no CDS is yet installed, please install a compatible CDS first using the CDS documentation observing prerequisites like CPU, memory and hard drive space.

Usually, a driver will be installed by the CDS, which however may not be the latest one and may require a driver update in the next step.

To update the LC and CE drivers in OpenLAB 2.x, double-click the "OpenLAB2_LC_Drivers.msi" and follow the instructions.

In OpenLAB CDS ChemStation and EZChrom Edition, please use the tool "OpenLAB Additional Software and Drivers" which you will find in your Windows Start Menu (All Programs - Agilent Technologies - OpenLAB) for installing or updating the driver.

Drivers for the ELSD are located in the "More Drivers" folder of the installation CD.

Other Documents

The driver DVD includes more documents with further information:

Software Status Bulletin (SSB): The Software Status Bulletin lists known limitations, incompatibilities and information about available fixes or workarounds for this and previous versions.

Software Release Bulletin (SRB): The Software Release Bulletin is an excerpt from the SSB which lists issues which have been fixed with this revision.

SSB and SRB are included to the driver CD and can be found in the folder documentation.

The SSB is updated regularly. Please visit our Website for the latest version at http://www.agilent.com/cs/library/support/Patches/SSBs/LC_RC_Net.html.

Firmware and firmware documentation are available for download from http://www.agilent.com/en-us/firmwareDownload?whid=69761.

ELSD specific information is located in the folder "More Drivers\ELSD A.01.07".

For detailed information on new modules and features, please refer to the driver online help (press F1 button in the driver user interface, e.g. in the module dashboard) and corresponding module manuals, which are available at http://www.agilent.com.

Updates

Agilent continuously improves its drivers, firmware and software and recommends using latest updates. If applicable, any updates or bug fix releases for this driver package are available from Subscribenet at https://agilent.subscribenet.com.

Appendix A: Modules and Minimum required firmware

In the following sections this guide summarizes the instruments and modules for which drivers are available from Agilent and lists the minimum required firmware.

Agilent uses several different firmware architectures, which are based on different underlying electronic architectures and are indicated by a different letter A/B/C/D:

Revision A:	Electronic architecture of Agilent 1100 Series, 1200 Series and 1200 Infinity modules. This is the architecture used by recent and historic modules.
Revision B:	Electronic architecture of many Agilent 1200 Series and 1200 Infinity modules. This architecture is used by many modules with high computing performance or data acquisition rates like recent VWD, DAD and MWD detectors or 1290 Infinity pumps.
Revision C:	This architecture is used by hosted modules. Hosted modules have a mainboard with reduced complexity and require a hosting module with revision B or D firmware.
Revision D:	This architecture is used by 1290 Infinity II modules like G7114B and G7117A/B detectors and G7167A/B Multisamplers.

Agilent recommends always using the most recent firmware revisions which include latest firmware features and improvements. Drivers are forward compatible with respect to firmware, i.e. the firmware can be updated without the need of updating the driver or CDS.

This table lists the minimum required firmware for all modules supported by the driver. For recommended firmware, please refer to "Recommended firmware" on page 3. Please note that all modules in a system need to use compatible firmware from one firmware set. Please refer to firmware documentation for details, see "Other Documents" on page 4.

Please note that using some driver features like valve-thermostat clusters and new temperature control modes require firmware updates beyond this list for related modules, see for details.

Agilent LC – Pumps

Product Number	Module Name	Minimum Required Firmware Revision
G1310A	1200 Series Isocratic Pump	A.06.10
G1310B	1260 Infinity Isocratic Pump	A.06.32
G1311A	1200 Series Quaternary Pump[1]	A.06.10
G1311B	1260 Infinity Quaternary Pump[1]	A.06.32
G1311C	1260 Infinity Quaternary Pump VL[1]	A.06.32
G1312A	1200 Series Binary Pump[1]	A.06.10
G1312B	1260 Infinity Binary Pump[1]	A.06.10

Product Number	Module Name	Minimum Required Firmware Revision
G1312C	1260 Infinity Binary Pump VL[1]	A.06.32
G1361A	1260 Infinity Preparative Pump Cluster with up to 4	A.06.50
G1376A	1260 Infinity Capillary Pump	A.06.10
G2226A	1260 Infinity Nanoflow Pump	A.06.10
G4204A	1290 Infinity Quaternary Pump[1]	B.06.50
G4220A	1290 Infinity Binary Pump[1]	B.06.23
G4220B	1290 Infinity Binary Pump VL[1]	B.06.43
G4302A	1260 Infinity SFC Binary Pump[1]	A.06.32
G4782A	1260 Infinity II SFC Binary Pump[1]	D.07.13
G5611A	1260 Infinity Bio-inert Quaternary Pump[1]	A.06.32
G5654A	1260 Infinity II Bio-inert Quaternary Pump[1]	D.07.01
G7104A	1290 Infinity II Flexible Pump[1]	B.06.71
G7104C	1260 Infinity II Flexible Pump[1]	D.07.20
G7110B	1260 Infinity II Isocratic Pump	D.07.01
G7111A	1260 Infinity II Quaternary Pump VL[1]	D.07.01
G7111B	1260 Infinity II Quaternary Pump[1]	D.07.01
G7112B	1260 Infinity II Binary Pump[1]	D.07.01
G7120A	1290 Infinity II High Speed Pump[1]	B.06.71
G7161A	1260 Infinity II Preparative Binary Pump	D.07.20
G7161B	1290 Infinity II Preparative Binary Pump	D.07.20

[1] Pump valve clusters are possible for marked pumps with up to 2 valves of type G1160A and/or G1170A with 5067-4159 or 5067-4147.

Agilent LC - Sampling Systems

Product Number	Module Name	Minimum Required Firmware Revision
G1313A	1100 Series Autosampler	A.06.10
G1329A	1200 Series Standard Autosampler	A.06.10
G1329B	1260 Infinity Standard Autosampler	A.06.10
G1367A	1100 Series Well-plate Autosampler	A.06.31
G1367B	1200 Series High Performance Autosampler	A.06.31

Product Number	Module Name	Minimum Required Firmware Revision
G1367C	1200 Series High Performance Autosampler SL	A.06.31
G1367D	1200 Series High Performance Autosampler SL+	A.06.31
G1367E	1260 Infinity High Performance Autosampler	A.06.32
G1377A	1260 Infinity High Performance Micro Autosampler	A.06.12
G1389A	1100 Series Micro Thermostatted Autosampler	A.06.10
G2258A	1260 Infinity Dual-Loop Autosampler	A.06.50
G2260A	1260 Infinity Preparative Autosampler (High flow)	A.06.50
G4226A	1290 Infinity Autosampler	A.06.31
G4303A	1260 Infinity SFC standard autosampler	A.06.54
G5667A	1260 Infinity Bio-inert High Performance Autosampler	A.06.32
G5668A	1260 Infinity II Bio-inert Multisampler	D.07.13
G7167A	1260 Infinity II Multisampler	D.07.13
G7167B	1290 Infinity II Multisampler	D.07.13
G7129A	1260 Infinity II Vialsampler	D.06.76
G7129B	1290 Infinity II Vialsampler	D.06.76
G7129C	1260 Infinity II Vialsampler	D.07.20
G7157A	1260 Infinity II Preparative Autosampler	D.07.01
G4767A	1260 Infinity II SFC Multisampler	D.07.13

Agilent LC – Column Compartments

Product Number	Module Name	Minimum Required Firmware Revision
G1316A	1260 Infinity Thermostatted Column Compartment	A.06.10
G1316B	1200 Series Thermostatted Column Compartment SL	A.06.10
G1316C	1200 Series Thermostatted Column Compartment SL[1]	A.06.14
G7116A	1260 Infinity II Multicolumn Thermostat (firmware for host module in brackets)	C.07.01 (B.07.01/D.07.01)
G7116B	1290 Infinity II Multicolumn Thermostat (firmware for host module in brackets)	C.06.75 (B.06.75/D.06.75)
G7130A	Integrated Column Compartment ICC	D.06.76

[1] Cluster with up to three G1316C with integrated 8pos/9port valves (products G4230A/B). Minimum two G1316C TCCs, the third TCC can be a G1316A, B or C.

Agilent LC – Detectors

Product Number	Module Name	Minimum Required Firmware Revision
G1314A	1100 Series Variable Wavelength Detector	A.06.10
G1314B	1260 infinity Variable Wavelength Detector VL	A.06.10
G1314C	1260 Infinity Variable Wavelength Detector VL+	A.06.10
G1314D	1200 Series Variable Wavelength Detector	B.06.32
G1314E	1290 Infinity Variable wavelength Detector	B.06.32
G1314F	1260 Infinity Variable wavelength Detector	B.06.32
G1315A	1100 Series Diode Array Detector	A.06.10
G1315B	1200 Series Diode Array Detector	A.06.10
G1315C	1260 Infinity Diode Array Detector VL+	B.06.30
G1315D	1260 Infinity Diode Array Detector VL	B.06.30
G1365A	1100 Series Multiple Wavelength Detector	A.06.10
G1365B	1200 Series Multiple Wavelength Detector	A.06.10
G1365C	1260 Infinity Multiple Wavelength Detector	B.06.30
G1365D	1260 Infinity Multiple Wavelength Detector VL	B.06.30
G1321A	1200 Series Fluorescence Detector (FLD)	A.06.10
G1321B	1260 Infinity Fluorescence Detector Spectra	A.06.32
G1321C	1260 Infinity Fluorescence Detector	A.06.54
G1362A	1260 Infinity Refractive Index Detector	A.06.10
G4212A	1290 Infinity Diode Array Detector	B.06.30
G4212B	1260 Infinity Diode Array Detector	B.06.30
G4212A/B HDR-DAD Cluster	2x G4212A or 2x G4212B or a combination of 1x G4212A and 1x G4212B	B.06.57
G7114A	1260 Infinity II Variable Wavelength Detector	D.07.01
G7114B	1290 Infinity II Variable Wavelength Detector	D.06.70
G7115A	1260 Infinity II Diode Array Detector WR	D.07.01
G7117A	1290 Infinity II Diode Array Detector FS	D.06.70
G7117B	1290 Infinity II Diode Array Detector	D.06.70
G7117C	1260 Infinity II Diode Array Detector HS	D.07.01
G7117A/B HDR-DAD Cluster	2x G7117A or 2x G7117B or a combination of 1x G7117A and 1x G7117B	D.06.70
G7121A	1260 Infinity II Fluorescence Detector	D.07.01

Product Number	Module Name	Minimum Required Firmware Revision
G7121B	1260 Infinity II Fluorescence Detector Spectra	D.07.01
G7165A	1260 Infinity II Multiple Wavelength Detector	D.07.01
G4218A	1260 Infinity Evaporative Light Scattering Detector	1.3
G4260A	380-ELSD	25.00
G4261A	385-ELSD	25.00
G4260B	1260 Infinity II Evaporative Light Scattering Detector	32.06
G4261B	1290 Infinity Evaporative Light Scattering Detector	32.06
G7102A	1290 Infinity II Evaporative Light Scattering Detector	32.06
G7162A	1260 Infinity II Refractive Index Detector	D.06.76
G7162B	1290 Infinity II Refractive Index Detector	D.06.76

Agilent LC – Valves, Valve Drives and Clusters

Product Number	Module Name	Minimum Required Firmware Revision
G1156A	1200 Series 6 Position / 7 Port Valve (400 bar)	A.06.02
G1157A	1200 Series 2 Position / 10 Port Valve	A.06.02
G1158A	1200 Series 2 Position / 6 Port Valve	A.06.02
G1158B	1200 Series 2 Position / 6 Port Valve (600bar)	A.06.02
G1159A	1200 Series 6 Position Selection Valve	A.06.02
G1160A	1100 Series Multiple Purpose Switching Valve (12 Position / 13 Port)	A.06.02
G1162A	1200 Series 2 Position/ 6 Port Micro Valve	A.06.02
G1163A	1200 Series 2 Position/ 10 Port Micro Valve	A.06.02
G1170A	1290 Infinity Valve Drive (firmware for host module in brackets)	C.06.40 (B.06.40/D.06.60)
G9322A	1260 Infinity II Clustering Valve (firmware for the host module)	D.07.23
VTC	Combinations of G7116B, G1170A and G1316C (valve or column hosts) and G1361A/B and G7130A (column hosts)	see table below
FCC	Combinations of preparative Fraction Collectors (G7159B, G1364E, G7116A) and a Clustering Valve G9322A or analytical Fraction Collectors (G1364F, G5664B) and a Quick Change Valve (G1170A with 5067-4159 or 5067-4194)	see Fraction Collectors

Valve Thermostat Cluster (VTC)

The Valve Thermostat Cluster is a combination of G7116B, G1170A and G1316C as valve or column hosts and G1316A/B and G7130A as column hosts.

Table 1   Minimum required firmware revisions:

Module	Minimum module FW	Minimum host module FW
G7116B	C.06.75	B.06.75/D.06.75
G1170A	C.06.75	B.06.75/D.06.75
G7130A (within G7129A/B)	D.06.76	n/a
G1316C	A.06.55	n/a
G1316A/B	A.06.10	n/a

Fraction Collectors

Product Number	Module Name	Minimum Required Firmware Revision
G1364A	1100 Series Automatic Fraction Collector Cluster of up to 3[1]	A.06.53
G1364B	1260 Infinity Fraction Collector (preparative-scale) Cluster of up to 3[1]	A.06.53
G1364C	1260 Infinity Fraction Collector (analytical-scale) Cluster of up to 3[1]	A.06.53
G1364D	1100 Series Micro Fraction Collector	A.06.53
G1364E	1260 Infinity II Preparative Fraction Collector[2]	D.07.23
G1364F	1260 Infinity II Analytical Fraction Collector[2]	D.07.23
G5664A	1260 Infinity Bio-inert fraction collector AS	A.06.53
G5664B	1260 Infinity II Bio-inert Fraction Collector[2]	D.07.23
G7159B	1290 Infinity II Preparative Open-Bed Fraction Collector[3]	D.07.23
G7166A	1260 Infinity II Preparative Valve-Based Fraction Collector (firmware for host module in brackets)	C.07.20 (B.07.23/D.07.23)

[1]   Any combination of G1364A/B/C or G5664A plus a fourth G1364A/B/C or G5664A for recovery can be clustered. Multiple individual Fraction Collectors are not supported.

[2]   Can be clustered with a G7166A or the same module type for recovery collection.

[3]   Can be clustered with a G7166A for Recovery.

Fraction Collector Cluster (FCC)

The Fraction Collector Cluster is a combination of multiple preparative or analytical Fraction Collectors.

Preparative Fraction Collectors (G1364E, G7159B, G7166A) can be clustered with a G9322A Clustering Valve. Analytical Fraction Collectors (G1364F, G5664B) can be clustered with a Quick Change Valve (G1170A with 5067-4159 or 5067-4194).

Table 2   Fraction Collector Cluster

Possible FC	Possible RC
1x G1364E	1x G7166A or G1364E
1x G1364F	1x G7166A or G1364F
1x G5664B	1x G7166A or G5664B
1x G7159B	1x G7166A
up to 3x G1364E	up to 1x G7166A or G1364E
up to 3x G1364F	up to 1x G7166A or G1364F
up to 3x G5664B	up to 1x G7166A or G5664B
up to 3x G7159B	up to 1x G7166A
up to 3x G7166A	-

Agilent LC – Other Modules

Product Number	Module Name	Minimum Required Firmware Revision
G1390A[1]	1100 Series Universal Interface Box (UIB)	A.06.02
G1390B[1]	1200 Infinity Series Universal Interface Box II (firmware for host module in brackets)	C.06.53 (B.06.53/D.06.60)
G4227A	1290 Infinity Flexible Cube (firmware for host module in brackets)	C.06.52 (B.06.52/D.06.60)
G4240A	Chip Cube	A.06.36
G4301A	1260 Infinity Analytical SFC System	A.03.09
G7170B	1290 Infinity II MS Flow Modulator (firmware for host module in brackets)	C.07.20 (B.07.20/D.07.20)

[1]   The UIB is not compatible with CE modules.

Agilent LC Systems

Product Number	Module Name	Minimum Required Firmware Revision
G4286A	1120 Compact LC, Isocratic	B.06.50
G4286B	1220 Infinity LC System Isocratic, Man. Inj., VWD, 600 bar	B.06.50
G4287A	1120 Compact LC, Isocratic with Oven and ALS	B.06.50
G4287B	1220 Infinity LC Isocratic, ALS, TCC, VWD, 600 bar	B.06.50
G4288A	1120 Compact LC, Gradient	B.06.50
G4288B	1220 Infinity LC Gradient, Man. Inj., VWD, 600 bar	B.06.50
G4289A	1120 Compact LC, Gradient with Oven	B.06.50
G4289B	1220 Infinity LC Gradient, ALS, TCC, VWD, 600 bar	B.06.50
G4290A	1120 Compact LC,Gradient with oven and ALS	B.06.50
G4290B	1220 Infinity LC Gradient, ALS, Man. Inj., TCC, VWD, 600 bar	B.06.50
G4291B	1220 Infinity LC Isocratic, Man. Inj., TCC, VWD, 600 bar	B.06.50
G4292B	1220 Infinity LC Isocratic, ALS, VWD, 600 bar	B.06.50
G4293B	1220 Infinity LC Gradient, ALS, VWD, 600 bar	B.06.50
G4294B	1220 Infinity LC Gradient, ALS, TCC, DAD, 600 bar	B.06.50
G4288C	1220 Infinity LC System VL, Gradient, Man. Inj. VWD, 400 bar	B.06.50
G4289C	1220 Infinity LC System VL, Gradient, Man. Inj. VWD, 400 bar	B.06.50
G4290C	1220 Infinity LC System VL, Gradient, ALS, TCC, VWD, 400 bar	B.06.50
G4293C	1220 Infinity LC System VL, Gradient, ALS, VWD, 400 bar	B.06.50

Agilent CE Firmware Information

Product Number	Module Name	Minimum Required Firmware Revision
G7150A	G7100 Capillary Electrophoresis II	B.06.25
G7151A	Diode Array Detector for CE	B.06.25

- Agilent releases LC firmware in sets for modules, which have been tested for interoperability. A set typically covers a range of firmware revisions, e.g. A/B/C/D.07.0x with variable values for x.
- All Agilent LC instrument firmware sets have been designed and tested to be fully backward compatible to Agilent chromatographic data systems (CDS).

- The module firmware in each set is fully compatible and interoperable with firmware for all other modules in the same set.
- Firmware of different modules is linked, e.g. between host modules (B/D-firmware) and hosted modules (C-firmware) or because of other dependencies (pump/autosampler, fraction collector/detector...). When upgrading firmware within a set, all modules in a system must be updated to the current firmware revision within that set.
- Agilent recommends keeping the LC instrument firmware always current in order to include latest improvements and bug fixes
- Do not mix firmware revisions from different sets. This has not been tested and may cause issues.
- For details, please refer to extensive information provided on web site http://www.agilent.com/en-us/firmwareDownload?whid=69761