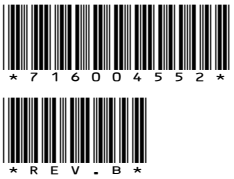

Waters
THE SCIENCE OF WHAT'S POSSIBLE.®

Waters Driver Pack 4 Supplemental Release 1

716004552
Revision B

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Table of contents

Waters Driver Pack 4 Supplemental Release 1

Driver Pack 4 Supplemental Release 1 (DP4SR1) includes instrument drivers and firmware required to control Waters instruments, as well as helpful utility applications. The driver pack is compatible with Empower software, MassLynx software, and specific, third-party data systems. It is not compatible with ACQUITY UPLC IVD-marked systems.

The instrument drivers and firmware in DP4SR1 support these ACQUITY UPLC systems:

- ACQUITY UPLC System
- ACQUITY UPLC H-Class System
- ACQUITY UPLC H-Class Bio System
- ACQUITY UPLC I-Class System
- ACQUITY UPLC Systems with 2D Technology

DP4SR1 updates and supersedes these previously released driver packs:

- **ACQUITY UPLC June 2011 Driver Pack/DP3** (part number 667004296)
- **Driver Pack 4** (part number 667004903)
- **Driver Pack 4 Analyst Update** (part number 667005150)

DP4SR1 contains many new features and enhancements. (See "What's new in this release" below.)

For instructions explaining how to install Driver Pack 4 (DP4), see the *Driver Pack 4 Installation and Configuration Guide*.

For information regarding the configuration of Empower Enterprise networks, see the *Empower 3 Installation, Configuration, and Upgrade Guide*.

What's new in this release?

DP4SR1 implements new features, enhancements, and defect corrections to the instrument drivers, and firmware included in the driver pack. It supersedes DP4 and includes additional defect corrections from these interim driver-pack releases:

- DP4 Analyst Update defects
- DP4 Third-Party Control Update defects

Note: Clients connected to an ACQUITY APC Driver Pack 2, LAC/E^{32} will now be able to control column positions 7 and 8 on the CM-30S.

Instrument or software Component	Description	Introduced in
QSM	Using the Auto•Blend Plus mode, you can substitute the salt content in millimolar (mMol) with percentage of organic solvent.	DP4SR1
QSM	The following buffer systems are added to the Solvent Library: • pH 2.5-10.9 Combi Buffer A-RP LC/MS 20 mM • pH 2.9-3.8 Formic Acid Ammonia 25 mM • pH 5.3-9.7 Multi Buffer A- Proteins 20 mM • pH 5.8-7.7 Sodium Phosphate 25 mM including salt • pH 7.2-9.2 Tris-Sodium Chloride 20 mM including salt • pH 9.3-10.1 Formic Acid Ammonia 25 mM	DP4SR1
QSM	The minimum flow rate is now 0.001 mL/min.	DP4SR1
Sample Manager, SM-FTN, SM-FL, CM-A	You can enable or disable the active preheater using the instrument method control settings.	DP4SR1
System	You can run multiple driver pack versions on a single Empower Enterprise network. Previously, it was necessary to install the same driver pack on all Empower LAC/E ^{32} modules, Empower clients, and Citrix servers on the network. DP4, however, can be installed on individual LAC/E ^{32} modules, if it is also installed on all of the Empower clients and Citrix servers on the network. This feature makes it possible to add new LAC/E ^{32} modules to the network without upgrading and requalifying the existing LAC/E ^{32} modules. For further information, see the *Driver Pack 4 Installation and Configuration Guide*	DP4
Deployment Manager	Includes new "Verify Instrument Driver Files" application, to verify driver installation on non-Empower systems.	DP4
BSM and CM-A	The 2D Repeat parameter is added to instrument methods, which allows the gradient table and timed-event table to repeat throughout a run, allowing for two-dimensional chromatography.	DP4

Instrument or software Component	Description	Introduced in
QSM	Maximum flow rate increased to 2.2 mL/min. This is the new pressure and flow-rate envelope: • 15000 psi from 0 mL/min to 1 mL/min • 15000 psi to 7800 psi, linear, from 1 mL/min to 2.2 mL/min	DP4
QSM	Ability to import to and export from the solvent library.	DP4
SM-FL and SM-FTN	New sample compartment temperature test helps determine whether the sample heater/cooler is operating within specifications. The test can be found in the sample manager section of the console software, under the Troubleshoot menu. See the console's online Help for a description of this test.	DP4
SM-FTN	Injection valve can now be cycled via the timed-event table, to help reduce carryover.	DP4
Console	Instrument driver versions on both the client and server, as well as the installed driver versions and firmware versions, now appear in the About section of the online Help.	DP4
Console	Maintenance summaries for the BSM, CM/CM-A, QSM, SM, SM-FL, and SM-FTN can be viewed and printed.	DP4
Utilities	New application allows a single workstation to switch between controlling an ACQUITY system and a nanoACQUITY system.	DP4

New Auto•Blend Plus capabilities

Auto•Blend Plus technology uses pure solvents and concentrated stocks to blend mobile phase compositions at a specific pH. At the same time, it controls the concentration of salt or organic solvent to optimize separations.

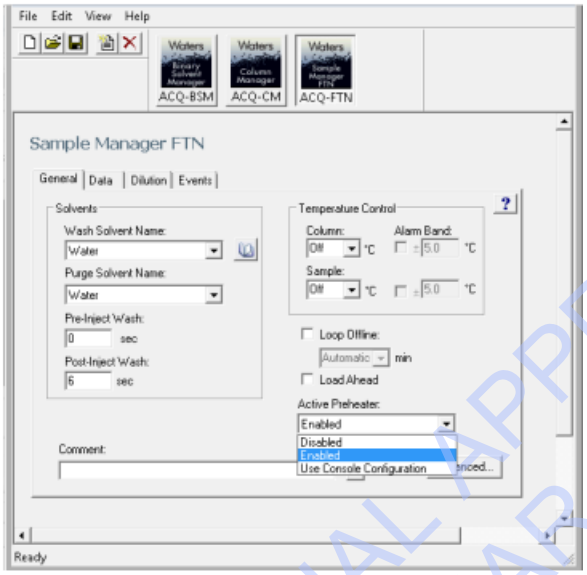
Use the Auto•Blend Plus feature to create and store buffer systems in a solvent catalog that allows users of an ACQUITY quaternary solvent manager to either import or export, as necessary.

To prepare and adjust chromatographic mobile phases on demand, you add concentrated acid, base, salt or organic solvent, and water to the solvent reservoirs, and set up the desired gradient by pH instead of by the percentage of solvent composition. By doing so you can, for example, optimize protein separations, which are especially sensitive to a buffer's pH and salt concentration. You can also optimize reversed-phase separations that are sensitive to pH and organic-solvent composition.

New Active Preheater in column heaters and column managers control capability

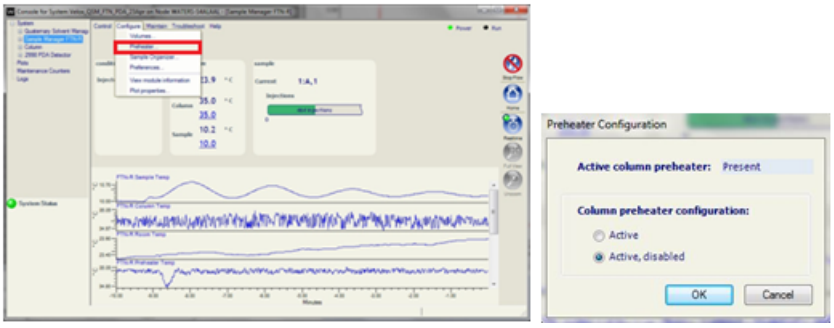
The active preheater (APH) in the Column Heater (Active) and Column Manager (Active) (CM-A) can now be enabled, disabled, or set to Use Console Configuration in the instrument method editor. This change involves the instrument control software for the SM, SM-FL, SM-FTN, and CM-A in ACQUITY UPLC systems supported by DP4SR1. This functionality affects new methods created after DP4SR1 is installed.

Figure 1–1: Example of new control capability (SM-FTN)



You can continue to configure the APH as you previously did, by enabling or disabling it in the console. Note, however that you can do so now only if you select the option in the instrument method editor Use Console Configuration. Doing so allows for proper documentation of the APH status in method report parameters during acquisition.

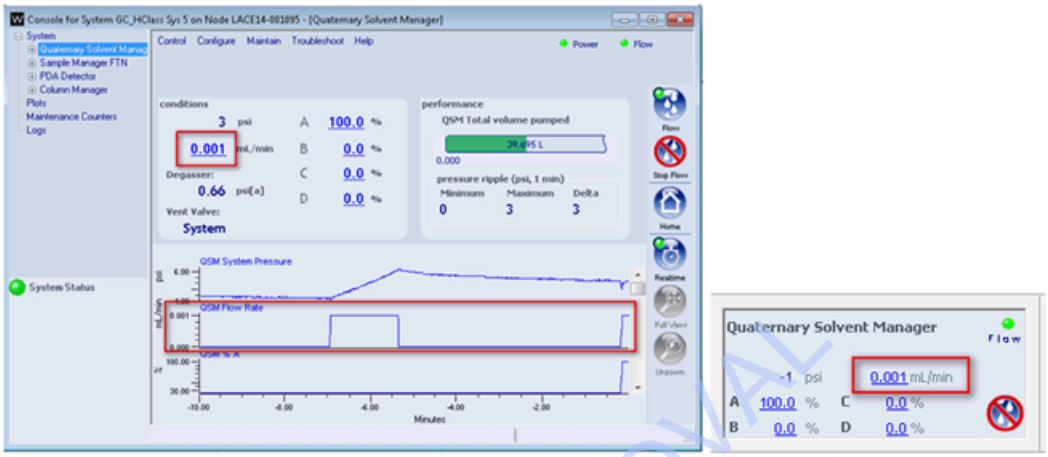
Previously, the APH status was configurable only in the console's configuration settings. It was not editable in the instrument method editor.



Existing methods created before installing DP4SR1, automatically default to Use Console Configuration which preserves the previous behavior.

New minimum flow rate for ACQUITY QSM capability

The minimum settable flow rate for the ACQUITY UPLC Quaternary Solvent Manager has been extended to allow 0.001 mL/min, as represented below.



Enhancements

Instrument or software Component	Description	Introduced in
Analyst Software	Cycle time for injections is reduced by approximately 10 seconds.	DP4SR1
Deployment Manager	Improved robustness and error handling (better detection, logging, and visibility).	DP4
Deployment Manager	Improved compatibility with the Empower Verify Files utility.	DP4
Multiple Instruments	Wide-area networks with latencies as high as 300 ms are now supported for the BSM, QSM, SM, SM-FL, SM-FTN, TUV, and PDA. High latency networks previously caused their instrument drivers to freeze or terminate.	DP4
BSM	When you run an Empower system that includes two BSMs, their order in the console software tree now always matches that of the Empower system definition.	DP4
QSM	You can now prime the device using a specific solvent composition as well as apply a composition at the end of the priming cycle.	DP4

Instrument or software Component	Description	Introduced in
QSM	The QSM method's print content now includes the buffer system details and the compositional percentages in Auto•Blend Plus mode.	DP4
QSM	The QSM initiates the system's inject-start function, to trigger any Ethernet detectors or column managers on its next intake stroke, after receiving an inject-start, contact-closure, rear-panel event. This support permits operation without an ACQUITY autosampler (SM, SM-FTN, or SM-FL) in the system, allowing for control with external devices.	DP4
QSM	The QSM now supports a passive check-valve option in addition to operation of the Waters Intelligent Intake Valve (i2Valve), for use in certain applications.	DP4
SM-FTN	Autoaddition capabilities are improved with the addition of the Mix Cycles and Mix Stroke Volume method parameters.	DP4
CM	The column manager's post-run report is extended to include the part number and any recorded eCord comments.	DP4
CM, CM-A	The column manager now stops the solvent flow for any change in the position of the selected column. Previously, the flow would not stop when pressure was less than 500 psi.	DP4
Utilities	Columns calculator gradients can now be dragged-and-dropped to the BSM method editor.	DP4

Driver Pack 4 Supplemental Release 1 contents

The DP4SR1 DVD includes these items:

- Current instrument drivers and firmware files for ACQUITY UPLC instruments and detectors
- Utilities for use with ACQUITY UPLC systems
- Driver Pack 4 Supplemental Release 1 Deployment Manager
- ACQUITY UPLC Console

Supporting materials for DP4SR1 include:

- Driver Pack 4 Installation and Configuration Guide on a documentation CD
- Waters Driver Pack 4 Supplemental Release 1 Release Notes (this document)

Instrument drivers and software components

Note: ICS versions 1.65 are new to DP4SR1.

Driver or software component	ICS or Software Version	Firmware Version (if applicable)	Checksum
Columns Calculator	1.60	N/A	N/A
Connections INSIGHT	3.2	N/A	N/A
ELS Detector (also supports 2420 and 2424)	1.40	2420 ELSD 1.30	0x21A5BED0
		2424 ELSD 1.65	0x123F2F1E [a]
		ACQUITY ELSD 1.65	0x123F2D1B[a]
FLR Detector	1.40	1.42	0xD99DEFB5
Local Console Controller	1.60	N/A	N/A
PDA Detector (Supports ACQUITY e λ PDA and ACQUITY PDA)	1.65	PDA (1) 1.65	0xF7835E17
		PDA (2) 1.65	0xDC2F6074
Isocratic Solvent Manager	1.65	1.65	0xB12ADF87
Binary Solvent Manager (Supports ACQUITY UPLC and I-Class)	1.65	1.65	0x3462A3F3
Quaternary Solvent Manager (Supports H-Class and H-Class Bio)	1.65	1.65	0xAF834C27
RI Detector	1.40	1.40	0xAA39BF4C
Sample Manager (Supports ACQUITY UPLC)	1.65	1.65	0x42C0E8CB
Sample Manager-FL (Supports ACQUITY UPLC and I-Class)	1.65	1.65	0x36921E09
Sample Manager-FTN (Supports H-Class and I-Class)	1.65	1.65	0x34728D7D
Sample Organizer (Supports ACQUITY UPLC, H-Class and I-Class)	N/A	1.60	0x96FA9AB0
Column Manager (Supports all Column Managers, CM, CHC, CM-A, CHC-30, CH-30A)	1.65	Column Manager 1.40	0x8E9D1DC0
		Column Manager (Active) 1.65	0x18BFB4EA
TUV Detector	1.65	TUV (1) 1.60	0xBC170FAF
		TUV (2) 1.60	0xD71E0EDA
Waters Pump Control Software	3.1	N/A	N/A

Driver or software component	ICS or Software Version	Firmware Version (if applicable)	Checksum
Waters SQ Detector	1.41	N/A	N/A
Waters TQ Detector	1.41	N/A	N/A
2489 UV-Vis Detector	1.31	1.41	0xBD0669D0
2998 PDA Detector	1.30	1.41	0xEDB36196
Deployment Manager	1.65	N/A	N/A
ICS Companion	1.0.11.0	N/A	N/A

a. The ELS detector and 2424 firmware are not available on the DP4SR1 media. Contact Waters or your local Field Service Support personnel to have the latest version installed.

Instrument driver and firmware versions

ACQUITY UPLC system

Restriction: ACQUITY UPLC IVD Systems, part numbers 176015000IVD, 176015001IVD, 176015002IVD, are not supported with DP4SR1.

Modules	Part number	Software version	Firmware version
ACQUITY UPLC BSM	186015001	Binary Solvent Manager, v1.65	Binary Solvent Manager, v1.65
ACQUITY UPLC HTCH and ACQUITY 30 cm Column Heater/Cooler	186015010 186015011	N/A (Controlled by Sample Manager)	N/A (Controlled by Sample Manager)
ACQUITY UPLC Column Heater	N/A	N/A (Controlled by Sample Manager)	N/A (Controlled by Sample Manager)
ACQUITY UPLC Column Manager (right or left)	186015007 186015009	Column Manager, v1.65	Column Manager, v1.40
ACQUITY UPLC Column Heater/Cooler	186015008	Column Manager, v1.65	Column Manager, v1.40
ACQUITY UPLC Sample Manager	186015006	Sample Manager, v1.65	Sample Manager, v1.65
ACQUITY UPLC Sample Organizer	186015020 186015021	N/A (Controlled by Sample Manager)	Sample Organizer 1.60

ACQUITY UPLC H-Class and H-Class Bio system

Modules	Part number	Software version	Firmware version
ACQUITY UPLC QSM	186015018 186015041	Quaternary Solvent Manager, v1.65	Quaternary Solvent Manager, v1.65
ACQUITY UPLC CH-A, ACQUITY CH-30A and ACQUITY 30 cm CHC	186015042 186015046 186015011	N/A (Controlled by Sample Manager)	N/A (Controlled by Sample Manager)
ACQUITY UPLC Column Manager (Active)	186015043	Column Manager, v1.65	Column Manager (Active), v1.65
ACQUITY UPLC Column Manager Auxiliary (Active)	186015049	N/A (Controlled by Column Manager Active)	N/A (Controlled by Column Manager Active)
ACQUITY UPLC Sample Manager - FTN	186015017 186015040	Sample Manager FTN, v1.65	Sample Manager, v1.65
ACQUITY UPLC Sample Organizer	186015014	N/A (Controlled by Sample Manager FTN)	Sample Organizer 1.60

ACQUITY UPLC I-Class system

Restriction: ACQUITY UPLC I-Class IVD system, part number 176015069IVD, is not supported with DP4SR1.

Modules	Part number	Software version	Firmware version
ACQUITY UPLC BSM	186015000	Binary Solvent Manager, v1.65	Binary Solvent Manager, v1.65
ACQUITY UPLC CH-A, ACQUITY CH-30A and ACQUITY 30 cm CHC	186015042 186015046 186015011	N/A (Controlled by Sample Manager FTN/FL)	N/A (Controlled by Sample Manager FTN/FL)
ACQUITY UPLC Column Manager (Active)	186015043	Column Manager, v1.65	Column Manager (Active), v1.65
ACQUITY UPLC Column Manager Auxiliary (Active)	186015049	N/A (Controlled by Column Manager Active)	N/A (Controlled by Column Manager Active)
ACQUITY UPLC Sample Manager - FTN	186015046	Sample Manager FTN, v1.65	Sample Manager, v1.65
ACQUITY UPLC Sample Manager - FL	186015060	Sample Manager FTN, v1.65	Sample Manager, v1.65

Modules	Part number	Software version	Firmware version
ACQUITY UPLC Sample Organizer	186015014	N/A (Controlled by Sample Manager FTN/FL)	Sample Organizer, v1.60

Detectors

Modules	Compatible Systems	Part number	Software version	Firmware version
ACQUITY UPLC TUV	All UPLC systems	186015028	TUV Detector, v1.65	TUV Detector (1), v1.60
ACQUITY UPLC TUV Thermally Enhanced	All UPLC systems	186015031	TUV Detector, v1.65	TUV Detector (2), v1.60
ACQUITY UPLC PDA	All UPLC systems	N/A	PDA Detector, v1.65	PDA Detector (1), v1.65
ACQUITY UPLC PDA Thermally Enhanced	All UPLC systems	186015032	PDA Detector, v1.65	PDA Detector (2), v1.65
ACQUITY UPLC ePDA	All UPLC systems	186015030	PDA Detector, v1.65	PDA Detector (1), v1.65
ACQUITY UPLC e λ PDA Thermally Enhanced	All UPLC systems	186015033	PDA Detector, v1.65	PDA Detector (2), v1.65
ACQUITY UPLC FLR	All UPLC systems	186015029	FLR Detector, v1.40	FLR Detector, v1.42
ACQUITY UPLC RI	All UPLC systems	186015070	RI Detector, v1.40	RI Detector, v1.40.45
ACQUITY UPLC ELS	All UPLC systems	186015027	ELS Detector, v1.40	ELS Detector, v1.65
Waters 2420 ELS Detector	Alliance HPLC and Breeze systems	186002420	ELS Detector, v1.40	ELS Detector, v1.30
Waters 2424 ELS Detector	Alliance HPLC and Breeze systems	186002424	ELS Detector, v1.40	2424 Detector, v1.65
Waters 2489 TUV Detector	Alliance HPLC and Breeze systems	186002487	2489 Detector, v1.31	2489 Detector, v1.41
Waters 2998 PDA Detector	Alliance HPLC and Breeze systems	186002998	2998 Detector, v1.30	2998 Detector, v1.41

Modules	Compatible Systems	Part number	Software version	Firmware version
ACQUITY SQ Detector	Alliance HPLC and all UPLC systems	176000872	Waters SQ Detector, v1.41	N/A
ACQUITY TQ Detector	Alliance HPLC and all UPLC systems	176001263	Waters TQ Detector, v1.41	N/A

Other optional system modules

Modules	Compatible Systems	Part number	Software version	Firmware version
ACQUITY UPLC ISM	All ACQUITY UPLC systems	186015019	Isocratic Solvent Manager, v1.65	Isocratic Solvent Manager, v1.65
Local Console Controller	All ACQUITY UPLC systems	725000464	1.60	N/A
ACQUITY UPLC 30-cm Column Heater/Cooler	All ACQUITY UPLC systems	186015011	N/A (Controlled by Sample Manager, Sample Manager FTN/FL)	N/A (Controlled by Sample Manager, Sample Manager FTN/FL)
ACQUITY UPLC CH-30A	ACQUITY UPLC I-Class / ACQUITY UPLC H-Class and H-Class Bio systems	186015045	N/A (Controlled by Sample Manager, Sample Manager FTN/FL)	N/A (Controlled by Sample Manager, Sample Manager FTN/FL)
Column Manager Auxiliary Units	ACQUITY UPLC I-Class / ACQUITY UPLC H-Class and H-Class Bio systems	186015049	N/A (Controlled by CM-A)	N/A (Controlled by CM-A)

Supported chromatography data software

The table below shows the software that operates with ACQUITY UPLC systems and DP4SR1.

System	DP4SR1	Empower 2: base release to SP H Hotfix 1	Empower 3: base release to FR2 SR2 HF2	MassLynx (see list of SCNs, below)	Stand alone ACQUITY Console	Analyst (see note, below)	Agilent software, including OpenLab & ChemStation
All ACQUITY UPLC systems	Yes	Yes	Yes	Yes	Yes	Yes	Waters Driver Pack for Third Party, part number 667005149, available from Agilent Technologies
All ACQUITY UPLC H-Class and H-Class Bio systems	Yes	Yes	Yes	Yes	Yes	Yes	Waters Driver Pack for Third Party, part number 667005149, available from Agilent Technologies
All ACQUITY UPLC I-Class system	Yes	Yes	Yes	Yes	Yes	Yes	Waters Driver Pack for Third Party, part number 667005149, available from Agilent Technologies
ACQUITY APC system	No	Yes	Yes	Yes	Yes	Not supported	Waters Driver Pack for Third Party, part number 667005149, available from Agilent Technologies

System	DP4SR1	Empower 2: base release to SP H Hotfix 1	Empower 3: base release to FR2 SR2 HF2	MassLynx (see list of SCNs, below)	Stand alone ACQUITY Console	Analyst (see note, below)	Agilent software, including OpenLab & ChemStation
ACQUITY UPC [2] system	No	Yes	Yes	Yes	Yes	Not supported	Waters Driver Pack for Third Party, part number 667005149, available from Agilent Technologies
nano-ACQUITY UPLC system	No	N/A	N/A	N/A	N/A	N/A	N/A
ACQUITY M-Class system	No	N/A	N/A	N/A	N/A	N/A	N/A

Requirement: If an SQ, TQ, or 3100 detector is part of a system, you must install, at a minimum, Empower 2 Feature Release 4. Note that the Empower 2 System Suitability option is required.

Note:

- Contact the appropriate vendor for compatibility information about other third-party control software.
- Local Console Controller is NOT supported with MassLynx, Analyst, or Agilent Software.

Mass spectrometers that MassLynx software and DP4SR1 support

The following MassLynx SCNs are compatible with this release. If a mass spectrometer is compatible, it will function as expected after DP4SR1 and the following SCNs are installed.

Recommendation: Take a risk-based approach to determine whether to deploy the driver pack. Refer to your organization's operating procedures and review these release notes to assess the degree of change.

MassLynx Supported MS	SCN	Compatible Systems
QDa	SCN 925	All ACQUITY UPLC systems and Alliance systems

Other instrument control software and Empower Enterprise installation compatibility

You must sometimes load, in addition to DP4SR1, additional drivers, to control additional instruments. Compatibility matrices are designed to inform you about the compatibility of modules that require specific drivers or instrument control software other than DP4SR1.

The following tables indicate the compatibility of each module's ICS and, if applicable, firmware and its compatibility with the driver packs supported by Empower Enterprise installations.

Example: The BSM can be controlled by a LAC/E^{32} on which DP3, DP4 or DP4SR1 is loaded. The compatibility matrix indicates which version should be installed. The columns in the table below indicate within each driver which version of ICS and if applicable, firmware modules are compatible and therefore can be configured within a system in a LAC/E^{32} module supporting that driver pack. A LAC/E^{32} module with DP4SR1 loaded could support a BSM with ICS version 1.65 installed, and the ISM would be compatible with a QDa configured within a system controlled by version 1.52 or 1.53 of the LAC/E^{32}.

DP4SR1 compatibility matrix

Always install DP4SR1 after all other driver packs and ICSs are loaded. This is applicable to additional drivers including Third Party vendors that are supported by Empower. DP4SR1 allows Empower software to support multiple driver packs, instances where each LAC/E^{32} module supports only one driver pack, and the ICS and firmware versions are consistent within each LAC/E^{32}.

Driver Release Loaded on LAC/E ^{32}	ACQUITY 1.40 (DP1)	June 2010 (DP2) (SR2)	June 2011 (DP3)	DP4	DP4SR1
Console version of compatible software or ICS	Console 1.40	Console 1.45	Console 1.51	Console 1.60	Console 1.65
BSM/BSM-18K - supports ACQUITY UPLC & I-Class	ICS 1.40 FW 1.40	ICS V1.40 FW 1.40 FW V1.47	ICS 1.50 FW 1.50	ICS 1.60 FW 1.60	ICS 1.65 FW 1.65

Driver Release Loaded on LAC/E [32]	ACQUITY 1.40 (DP1)	June 2010 (DP2) (SR2)	June 2011 (DP3)	DP4	DP4SR1
QSM supports H-Class	(QSM not yet released)	ICS 1.46 ICS 1.47 (SO only) FW 1.46	ICS 1.50 FW 1.50	ICS 1.60 FW 1.60	ICS 1.65 FW 1.65
ISM supports QDa	(ISM not yet released)	(ISM not yet released)	ICS 1.50 FW 1.50 (UPLC/2D/ QDa)	ICS 1.50 FW 1.50 (UPLC/2D/ QDa)	ICS 1.65 FW 1.65
FTN supports H-Class & I-Class	(FTN not yet released)	ICS 1.46 ICS 1.49 FW 1.46 FW 1.47 FW 1.49	ICS 1.50 FW 1.50 FW 1.51 FW 1.55	ICS 1.60 FW 1.60	ICS 1.65 FW 1.65
SM/SM-FL supports ACQUITY UPLC & I-Class	ICS 1.40 FW 1.45 (SM-FL not yet released)	ICS 1.40 FW 1.45 (SM-FL not yet released)	ICS 1.50 FW 1.50 FW 1.51 FW 1.55	ICS 1.60 FW 1.60 FW 1.60	ICS 1.65 FW 1.65
SO supports ACQUITY UPLC	ICS 1.40 FW 1.40	ICS 1.40 FW 1.40	ICS 1.50 FW 1.50 FW 1.51 FW 1.55	ICS 1.60 FW 1.60	ICS 1.65 FW 1.60
CPSO supports H-Class & I-Class	(CPSO not yet released)	ICS 1.49 FW 1.49	ICS 1.50 FW 1.50 FW 1.51 FW 1.55	ICS 1.60 FW 1.60	ICS 1.65 FW 1.60
CM/CHC/ 30 cm CHC	ICS 1.40 FW 1.40	ICS 1.45 ICS 1.46 FW 1.40	ICS 1.50 ICS 1.52 FW 1.40	ICS 1.60 FW 1.40	ICS 1.65 FW 1.40
CM-A/CM-Aux	(CM-A/CM-Aux not yet released)	ICS 1.45 ICS 1.46 FW 1.46	ICS 1.50 ICS 1.52 FW 1.50 FW 1.51	ICS 1.60 FW 1.40 FW 1.60	ICS 1.65 FW 1.65
RI	(RI not yet released)	(RI not yet released)	ICS 1.40 FW 1.40.45	ICS 1.40 FW 1.40.45	ICS 1.40 FW 1.40.45
FLR	ICS 1.40	ICS 1.40	ICS 1.40 FW 1.41	ICS 1.40 FW 1.42	ICS 1.40 FW 1.42

Driver Release Loaded on LAC/E [32]	ACQUITY 1.40 (DP1)	June 2010 (DP2) (SR2)	June 2011 (DP3)	DP4	DP4SR1
ELSD	ICS 1.40 FW 1.40	ICS 1.40 FW 1.40	ICS 1.40 FW 1.40	ICS 1.40 FW 1.40	ICS 1.40 FW 1.65
PDA/elPDA	ICS 1.40 FW 1.40	FW 1.40 (PDA1) FW 1.50 (PDA2)	ICS 1.50 FW 1.51 (PDA 1&2)	ICS 1.60 FW 1.60 (PDA 1&2)	ICS 1.65 FW 1.65 (PDA 1&2)
TUV	ICS 1.40 FW 1.40	FW 1.45 (TUV2)	TUV 1.50 FW 1.50 (TUV 1&2)	ICS 1.60 FW 1.60 (TUV 1&2)	ICS 1.65 FW 1.60 (TUV 1&2)
2998	ICS 1.30 FW 1.30	ICS 1.30 FW 1.40	ICS 1.30 FW 1.40	ICS 1.30 FW 1.41	ICS 1.30 FW 1.41
2489	ICS 1.30 FW 1.30	ICS 1.30 FW 1.40	ICS 1.31 FW 1.40	ICS 1.31 FW 1.41	ICS 1.31 FW 1.41
2420	ICS 1.40 FW 1.30	ICS 1.40 FW 1.30	ICS 1.40 FW 1.30	ICS 1.40 FW 1.30	ICS 1.40 FW 1.30
2424	ICS 1.40 FW 1.30	ICS 1.40 FW 1.30	ICS 1.40 FW 1.30	ICS 1.40 FW 1.30	ICS 1.40 FW 1.65
SQ	ICS 1.40 FW N/A	ICS 1.40 FW N/A	ICS 1.40 FW N/A	ICS 1.41 FW N/A	ICS 1.41 FW N/A
TQ	ICS 1.40 FW N/A	ICS 1.40 FW N/A	ICS 1.40 FW N/A	ICS 1.41 FW N/A	ICS 1.41 FW N/A

Compatibility matrix for modules and systems not included in DP4SR1

Driver Release	ACQUITY 1.40 (DP1)	June 2010 (DP2) (SR2)	June 2011 (DP3)	DP4	DP4SR1
QDa	(QDa not yet released)	(QDa not yet released)	ICS 1.50 ICS 1.52	ICS 1.50 ICS 1.52	ICS 1.50 ICS 1.52
WFMA	(WFMA not yet released)	(WFMA not yet released)	ICS 1.45 FW 1.45	ICS 1.60 FW 1.60	ICS 1.60 FW 1.60
ACQUITY APC pISM	(pISM not yet released)	(pISM not yet released)	ICS 1.50 FW 1.50	ICS 1.50 FW 1.50	ICS 1.65 FW 1.50

Driver Release	ACQUITY 1.40 (DP1)	June 2010 (DP2) (SR2)	June 2011 (DP3)	DP4	DP4SR1
ACQUITY APC SM-pFTN	(SM-pFTN not yet released)	(SM-pFTN not yet released)	ICS 1.50 FW 1.58	ICS 1.60 FW 1.60	ICS 1.65 FW 1.60
ACQUITY APC CM-S/ CM-30S	(CM-S/CM-30S not yet released)	(CM-S/ CM-30S not yet released)	ICS 1.50 FW 1.54 (CM-S)	ICS 1.62 FW 1.62 (CM-S) FW 1.62 (CM-30S)[a]	ICS 1.65 FW 1.62 (CM-S) FW 1.62 (CM-30S)[a]
ACQUITY APC TS PDA	(TS PDA not yet released)	(TS PDA not yet released)	ICS 1.50 FW 1.53	ICS 1.60 FW 1.60	ICS 1.65 FW 1.60
ACQUITY UPC ^{2} ccBSM	(ccBSM not yet released)	(ccBSM not yet released)	ICS 1.50 FW 1.50	ICS 1.50 FW 1.50	ICS 1.65 FW 1.50
ACQUITY UPC ^{2} ccSM-FL	(ccSM-FL not yet released)	(ccSM-FL not yet released)	FW 1.50 FW 1.52	ICS 1.60 FW 1.60	ICS 1.65 FW 1.60
ACQUITY UPC ^{2} ccCM	(ccCM not yet released)	(ccCM not yet released)	ICS 1.50 FW 1.50	ICS 1.50 FW 1.50	ICS 1.50 FW 1.50
ACQUITY UPC ^{2} CM-A/ CM-30S	(CM-A/CM-30S not yet released)	(CM-A/ CM-30S not yet released)	ICS 1.50 FW 1.53	ICS 1.61 FW 1.60 (CM-A) FW 1.61 (CM-30S)[a]	ICS 1.65 FW 1.65 (CM-A)[a] FW 1.61 (CM-30S)[a]
ACQUITY UPC ^{2} ccPDA	(ccPDA not yet released)	(ccPDA not yet released)	ICS 1.50 FW 1.50	ICS 1.60 FW 1.60	ICS 1.65 FW 1.60

a. The CM-30S is not compatible with ACQUITY UPLC, H-Class, or I-Class systems installed on the same LAC/E32 module. The CM-30S and the control of column positions 7 and 8 are supported providing that only ACQUITY APC or ACQUITY UPC2 systems are configured on the LAC/E32 module. Specifically no other ACQUITY Column Manager based systems may be configured on the LAC/E32 module controlling these systems. Both ACQUITY APC system driver pack 2 (or ACQUITY UPC2 May 2014 system driver pack) and DP4SR1 must be installed on the Citrix Server/Clients. The LAC/E32 module will have either the APC system driver pack 2 or ACQUITY UPC2 May 2014 system driver pack installed, as appropriate.

Issues resolved in this release

This section lists the problems resolved in this release. The numbers identify software issues that Waters personnel monitor within a system change request tracking tool.

The improvements listed below take effect if you install DP4SR1 on both the Empower client (or Citrix server), and on the LAC/E^{32} module. If you install DP4SR1 on the Empower client (or Citrix

server), but run an earlier driver pack version on the LAC/E^{32} module, some of the improvements do not take effect.

General

30642

Instrument or software component: Deployment Manager

The driver pack can be installed even when the Waters Email Service is running.

Corrected in: DP4SR1

30024

Instrument or software component: Multiple instruments

The console-plot channel preferences for all instruments can be saved, and these preferences will be restored the next time the console is opened.

Corrected in: DP4SR1

30132

Instrument or software component: Deployment Manager

The deployment manager no longer changes the Empower Toolkit Application at the end of the installation process.

Corrected in: DP4SR1

30155

Instrument or software component: Deployment Manager, WFMA, PSM, SQD, TQD and 3100

DP4SR1 is compatible with computers on which Windows is not installed on the C drive or to locations other than c:/Windows such as C:/WinNT.

Corrected in: DP4SR1

30265

Instrument or software component: Multiple instruments and systems (BSM, SM, CM, PDA, TUV)

Instrument console panes no longer appear white (blank) in Run Samples. In some cases when the BSM, CM, PDA, SM, or TUV are not communicating when Empower Run Samples is opened, the control panel will be loaded.

Corrected in: DP4SR1

30581

Instrument or software component: Local Console Controller (LCC)

The LCC and Service `Profile.exe` are compatible with computers without a `C:\Windows` folder.

Corrected in: DP4SR1

25496

Instrument or software component: Console

Equilibrations can be run in the standalone console software with a CM in the system.

Corrected in: DP4

25684

Instrument or software component: Console

Pressure plots are now displayed in the units (psi, bar, kPa) selected by the user, rather than psi only.

Corrected in: DP4

26496

Instrument or software component: Console

During the export of multiple plot channels, the time base for the channels is synchronized, simplifying plot comparisons.

Corrected in: DP4

26650

Instrument or software component: Console

The pressure units selected for display in the console software apply only to the current Windows user. Previously the pressure unit selection applied to all Windows users.

Corrected in: DP4

24545

Instrument or software component: Deployment Manager

The LCC driver can be upgraded without affecting the BSM or CM instrument drivers.

Corrected in: DP4

24546

Instrument or software component: Deployment Manager

Fully installing the PDA instrument driver while upgrading other drivers no longer causes a blank PDA method editor.

Corrected in: DP4

24596

Instrument or software component: Deployment Manager

The LCC driver can be upgraded without affecting the ELS or FLR instrument drivers.

Corrected in: DP4

24873 and 25970

Instrument or software component: Deployment Manager

The Empower Verify Files utility displays the correct version number for the ELS instrument driver.

Corrected in: DP4

24954

Instrument or software component: Deployment Manager

The BSM instrument driver no longer corrupts the nanoACQUITY BSM instrument driver when they are installed on the same computer.

Corrected in: DP4

25791

Instrument or software component: Deployment Manager

The ICS Companion utility runs correctly after its installation on Citrix servers.

Corrected in: DP4

26348

Instrument or software component: Deployment Manager

The Java runtime engine is installed only if Connections INSIGHT is also installed.

Corrected in: DP4

23855

Instrument or software component: Waters DHCP Server

The Waters DHCP server is modified to offer DHCP addresses only on the instrument LAN, not on all network cards.

Corrected in: DP4

26288 and 26289

Instrument or software component: Solvent Library

The solvent library no longer allows multiple solvent aliases of the same name, a practice that can cause it to stop working.

Corrected in: DP4

24538

Instrument or software component: Column Calculator

Japanese version of the Columns Calculator utility correctly shows L/Dp ratio.

Corrected in: DP4

24486

Instrument or software component: Multiple instruments

Warning level alarms, such as "Drawing sample rate excessive", no longer cause memory leaks.

Corrected in: DP4

26046

Instrument or software component: Multiple instruments

In Empower software, systems that include five or more instruments no longer cause the error that triggers the message Database error: unable to continue.

Corrected in: DP4

26357

Instrument or software component: Multiple instruments

Statistical data displayed in post-run reports, such as the Maximum System Pressure report, are calculated correctly even when a data channel in the associated instrument's method is not enabled.

Corrected in: DP4

26777

Instrument or software component: Multiple instruments

Previously, when two of the same type of instrument were included in a system (for example, two BSMs) the instrument method for both instruments would display the same values in the method editor, even if the values of one method were changed. Now both instrument methods can have unique values.

Corrected in: DP4

28178, 26840 and 28178

Instrument or software component: Multiple instruments

Previously, for systems that included two PDA detectors and earlier driver packs, instrument status obtained for just one of the detectors showed identically in both PDA control panels. Now when the Empower system definition includes multiple instruments of the same type - for example, two BSMs - their relative precedence carries through to the console software. The BSM listed first in the Empower system definition now consistently appears first in the console software tree, and so on. This relative order is most meaningful elsewhere in the console software, where a simple numerical suffix, such as the "2" in "BSM2", differentiates instruments of the same type. This change pertains only to instruments of the same type. For instruments that differ in type, the precedence rules of the console software still apply to the order of the instruments displayed in the console software tree. For example, solvent managers come first, followed by sample managers and then detectors.

Corrected in: DP4

Solvent manager

30027

Instrument or software component: BSM, QSM, ISM

The Stop Flow input event will now prevent the pump from starting flow while any external device is requesting a Stop Flow.

Corrected in: DP4SR1

30802

Instrument or software component: QSM

Previously, installation of the QSM ICS removed the System Start-up command from the control panel menu. The defect is corrected.

Corrected in: DP4SR1

30033

Instrument or software component: BSM

The status of the solvent selection valve is now correctly reported in the console and control panels.

Corrected in: DP4SR1

30164 and 30246

Instrument or software component: BSM, QSM

BSM and QSM methods created with ACQUITY UPLC June 2011 Driver Pack (DP3) can be printed without being re-saved.

Corrected in: DP4SR1

30821

Instrument or software component: BSM

A flow rate can be manually set so that the maximum pressure is 18,000 psi.

Corrected in: DP4SR1

30885

Instrument or software component: QSM

In Empower Enterprise installations where DP4SR1 is installed on the server and client and the ACQUITY UPLC Systems June 2010 Driver Pack Supplemental Release II (DP2) is installed on the LAC/E^{32}, the QSM instrument method using the Gradient Smart Start Technology Pre-injection delay functions correctly, for both new methods and methods created under the ACQUITY UPLC Systems June 2010 Driver Pack Supplemental Release II (DP2).

Corrected in: DP4SR1

24160

Instrument or software component: BSM

In Empower Enterprise installations where DP4 or DP4SR1 is installed on the client and DP4 or DP4SR1 is installed on the LAC/E^{32} module, the BSM control panel in Empower's Run Samples will no longer fail to load when the user account does not have administrator privileges for the Client.

Corrected in: DP4

Sample manager

30467

Instrument or software component: SM, SM-FL, SM-FTN

Previously, the sample manager plate dimensions were sensitive to mismatched regional settings between a user and the system account settings; for example, when a comma was used to denote a decimal separator. This prevented the sample managers from correctly determining the plate size, which caused the needle to go to the wrong plate position. The defect is corrected.

Corrected in: DP4SR1

Sample organizer

28880

Instrument or software component: SO - Analyst

With DP4SR1 under the control of Analyst software, the sample manager no longer returns the plate to the sample organizer when successive injections in a batch occur from the same plate.

Corrected in: DP4SR1

24936

Instrument or software component: SO

Previously, the sample organizer might not be visible in the console software. The defect is corrected.

Corrected in: DP4

26077

Instrument or software component: SO

Previously, the shelf position immediately below the transfer location was not accessible in the sample organizer. The defect is corrected.

Corrected in: DP4

26811

Instrument or software component: SO

Error recovery is improved along with users' ability to properly reset the sample organizer.

Corrected in: DP4

27620

Instrument or software component: SO

Previously, the sample organizer's configuration could be lost. The defect is corrected.

Corrected in: DP4

24552

Instrument or software component: SO

Previously, the sample organizer's LED lights failed to switch off when the door was closed, which could affect light-sensitive samples. The defect is corrected.

Corrected in: DP4

Column manager

30317

Instrument or software component: CM

In Empower Enterprise installations where DP4SR1 is installed on the client and the ACQUITY UPLC Systems June 2010 Driver Pack Supplemental Release II (DP2) or ACQUITY UPLC June 2011 Driver Pack (DP3) is installed on the LAC/E^{32}, the column manager's waste and bypass-valve positions are now controllable.

Corrected in: DP4SR1

24582

Instrument or software component: CM-A

The status of the CM-A leak sensor is now properly reported.

Corrected in: DP4

25589

Instrument or software component: CM-A

Previously an error message "Preheater temperature sensor hardware fault" could appear if the column temperature was set to ~90.0 °C without first stabilizing at a lower temperature. The defect is corrected.

Corrected in: DP4

25645

Instrument or software component: CM, CM-A

Previously, the eCord injection count and column history data was incorrectly updated in MassLynx open-architecture systems. The defect is corrected.

Corrected in: DP4

25981

Instrument or software component: CM-A

The CM-A's advanced-mode valve timing is improved to allow for valve operations that are more closely timed.

Corrected in: DP4

26088

Instrument or software component: CM

Previously, the column history for Column 6 did not appear properly in the console software. The defect is corrected.

Corrected in: DP4

26359

Instrument or software component: CM, CM-A

Previously, it was possible for eCord data to be incorrectly written to the device. The defect is corrected.

Corrected in: DP4

26431

Instrument or software component: CM-A

Previously, the console software did not always adapt the list of available CM-A diagnostic channels according to supported hardware options or operating mode. The defect is corrected.

Corrected in: DP4

28444

Instrument or software component: CM-A

Previously, column-switching errors were possible when transitioning between sample-queue and instrument-method column switching. The defect is corrected.

Corrected in: DP4

Detectors

18527

Instrument or software component: 2424, ACQ ELSD

The ELS detector automatically compensates for changes in lamp intensity over the life of the lamp. Previously, the reference value for this functionality was not applied correctly. This has been corrected.

Corrected in: DP4SR1

32432

Instrument or software component: PDA

The ACQUITY PDA will no longer fail on power-up on if a peak is not found when verifying the calibration.

Corrected in: DP4SR1

24523

Instrument or software component: PDA

Previously, a small PDA memory leak would cause problems if allowed to accumulate over thousands of injections. The defect is corrected.

Corrected in: DP4

24813

Instrument or software component: TUV

Improved error detection and management of interrupted communications, which could have resulted in an unexpected change in data rate.

Corrected in: DP4

24996

Instrument or software component: PDA

Improved error detection, to prevent possible data overruns should communications to the PDA be interrupted for an extended period of time.

Corrected in: DP4

25065

Instrument or software component: PDA

Channel name and description for MaxPlot and other complex, calculated channels, such as sum, difference, and ratio, are improved to show proper values and ranges.

Corrected in: DP4

25487

Instrument or software component: 2998

Previously, the 2998 detector experienced data saturation or produced an incorrect auto exposure when next-injection delays exceed a duration of ten minutes. The defect is corrected.

Corrected in: DP4

25831

Instrument or software component: PDA

Previously, it was possible for an incorrect exposure time to be calculated and executed, which could result in peak-area discrepancies. Now, the PDA exposure calculation accounts for timed-event wavelength changes to spectral regions of higher energy.

Corrected in: DP4

25911

Instrument or software component: TUV

Previously, the leak sensors in some older-model TUVs failed to function. The defect is corrected.

Corrected in: DP4

26036

Instrument or software component: TUV

Shutter-idle configuration is correctly refreshed and accurately shows the current state.

Corrected in: DP4

26942

Instrument or software component: PDA

Previously, the ACQUITY PDA server stopped working on startup or during resets of the server while under the control of MassLynx software. The defect is corrected.

Corrected in: DP4

29197

Instrument or software component: PDA

Internal fans operate reliably when the detector is powered up in Maximum cooling mode.

Corrected in: DP4

26681 and 26111

Instrument or software component: PDA

Previously, under some circumstances, changing the PDA lamp could cause the console software to stop working. The defect is corrected.

Corrected in: DP4

26129 and 26130

Instrument or software component: PDA, TUV

Improved PDA and TUV lamp and flow-cell ID communications, to reduce the likelihood of false identification failures.

Corrected in: DP4

28272, 28273, 28279, and 28280

Instrument or software component: PDA, TUV

Previously, when you changed a lamp, its memory device could record incorrect data (hours, date, and time). The defect is corrected.

Corrected in: DP4

25453

Instrument or software component: TUV

Previously, a possible error involving the TUV method editor permitted saving a corrupt method, which can produce an incorrect data rate on the second channel. The defect is corrected.

Corrected in: DP4

Known issues in this release

This section lists the known issues and workarounds for this release. The numbers identify software issues that Waters personnel monitor within a system change request tracking tool.

Installation

32393

Instrument or software component: Deployment Manager

If the DP4 Analyst update is inadvertently loaded on an Empower based computer, it must be uninstalled using the deployment manager before installing DP4SR1.

32426

Instrument or software component: Local Console Controller

Upgrading from DP2 to DP4SR1 changes ELSD and FLR checksums, and thus file verifications are unsuccessful.

Work-around: Remove the Local Console Controller (LCC) from the system before upgrading from DP2 to DP4SR1. Removing the LCC may introduce a problem involving the checksums, but upgrading to DP4SR1 corrects the problem.

32702

Instrument or software component: Deployment Manager

Upgrading a custom ACQUITY UPLC Systems June 2010 Driver Pack Supplemental Release II (DP2) can cause a problem involving checksums and file verifications.

Work-around: Completely uninstall DP2 before installing DP4SR1.

General

31712 and 32459

Instrument or software component: Multiple instruments

Problems can arise when Regional Settings do not match on computers across an installation. In order to prevent errors when setting sample and column temperature, ensure that the Client and LAC/E^{32} use the same regional settings. For example, when setting the sample or column temperature, the value entered is multiplied by a factor of 10.

32500

Instrument or software component: Multiple instruments

Adding a new module into an existing system could trigger the "unhandled exception" error message. You cannot open the ACQUITY console.

Work-around: The new instrument communicates correctly after you reboot the workstation or LAC/E^{32} module.

33104

Instrument or software component: Multiple instruments

Occasionally, the Instrument Method Editor in Empower software closes when multiple instances of the instrument method editor window are opened. The system's operation however, is unaffected.

33621

Instrument or software component: Multiple instruments

Not all modules have the same number of maximum allowed entry lines in the timed-events table. The maximum allowed entries for CM, FTN, and SM is 25. All other modules have a maximum entry of 48 lines.

Solvent manager

24160

Instrument or software component: BSM

SCR 24160 is corrected when DP4 or DP4SR1 is installed on the Client and LAC/E^{32}; however, if the ACQUITY UPLC June 2011 Driver Pack (DP3) is installed on the LAC/E^{32} module, the instrument control panel in Empower's Run Samples can fail to load. The problem occurs when the user account does not have administrator privileges for the LAC/E^{32} module. However, the user is able to correct methods and run them with this system configuration. This can be corrected by updating the LAC/E^{32} to DP4 or DP4SR1.

Sample manager

32548

Instrument or software component: FTN

The AutoAddition function does not work if Load Ahead function is enabled.

Work-around: Do not enable the Load Ahead function when using the AutoAddition function.

23739

Instrument or software component: Third party (Analyst)

When in vertical discontinuous mode, vial position B1 is vial number 2. However, when you use the graphical editor to select vials, there is a mismatch between what Analyst considers vial 2, and what ACQUITY considers vial 2.

Work-around: Use only Horizontal Discontinuous mode with Analyst.

Column manager

32613

Instrument or software component: CM-A

An error involving the temperature-range of the column APH can occur if when an injection is made, the column temperature is in range, but the APH is out of range. The APH reaches its specified temperature quickly, so this error can occur when a disabled APH is enabled in the instrument method immediately before an injection is queued.

Detectors

33102

Instrument or software component: 2998

The 2998 lamp-life indicator allows entries outside the valid range without generating an error message. Instead, the entry is not accepted, and the indicator reverts to the previous valid entry.

32690

Instrument or software component: RI

In Empower Enterprise installations where DP4SR1 is installed on the server and client and ACQUITY UPLC June 2011 Driver Pack (DP3) is installed on the LAC/E^{32} the instrument control panel/toolbar (in Run Samples) can fail to load. However, the user is able to create methods and run methods with this system configuration.

Anti-virus considerations

Some real-time virus scanners mistake normal data acquisition and instrument control for virus activity, and thus interfere with proper operations. Full-system scans and live updates can be network-intensive, disk-intensive, and CPU-intensive, and they can also interfere with normal data acquisition. Schedule scans and updates for idle times when data acquisition does not occur.

Certain anti-virus program features like "intrusion prevention" and "tamper protection" can also interfere with normal operation. Disable them as well.

Empower

For Empower 2 and Empower 3 software installations, exclude the Empower installation folder (usually `C:\Empower`) and its sub-folders.

MassLynx 4.1

For MassLynx 4.1 installations, exclude these folders:

- For 64-bit computers: `C:\Program Files (x86)\Waters Instruments`, and its sub-folders.
- For 32-bit computers: `C:\Program Files\Waters Instruments`, and its sub-folders.
- the MassLynx installation folder, usually `C:\Masslynx`, and its sub-folders.

Stand-alone console software and third-party installations

For stand-alone console software and third-party installations, exclude these folders

- For 64-bit computers: `C:\Program Files (x86)\Waters Instruments`, and its sub-folders.
- For 32-bit computers: `C:\Program Files\Waters Instruments`, and its sub-folders.

Using the ACQUITY Inlet Switch utility

From a single workstation, you can use the Waters ACQUITY Inlet Switch utility to switch between an ACQUITY UPLC system supported by DP4SR1 and an ACQUITY UPLC M-Class system or nanoACQUITY UPLC system. The utility provides for two LC inlets acquiring data from one mass spectrometer, using one PC, thus eliminating the need to connect a separate PC to each LC inlet.

Note: The utility operates only on MassLynx systems.

You can find the utility at `C:\Program Files (x86)\Waters Instruments\Utilities\ACQUITY` and `nanoACQUITY Configuration.exe`.

The utility assumes two systems are installed. Do not launch it unless your systems meet the following requirements:

- Appropriate drivers are installed for all instruments in each of the two systems
- The Waters DHCP server assigns a unique IP address for each instrument in the two systems
- The system is activated for the new inlet. (You cannot switch to an inactive inlet.)

Rule: You cannot simultaneously control two systems from the same workstation. Before you launch the utility, perform the following tasks:

- Turn off the system that you do not intend to operate
- Turn on the system that you intend to operate

Switching between ACQUITY systems

Before you use the ACQUITY Inlet Switch utility, ensure the appropriate driver pack software is installed on the systems that you are using. The utility is compatible with these driver packs:

- ACQUITY UPLC Driver Pack 4 Supplemental Release 1
- nanoACQUITY UPLC March 2011 Driver Pack
- ACQUITY UPLC M-Class Driver Pack (version 1.53)

For example, use the utility to switch from an ACQUITY UPLC system operating with ACQUITY UPLC DP4SR1 installed to an ACQUITY UPLC M-Class or nanoACQUITY system operating with the ACQUITY UPLC M-Class Driver Pack installed. The inlet switch utility switches the driver packs for you.

The ACQUITY UPLC Driver Pack 4 Supplemental Release 1 controls these systems:

- ACQUITY UPLC
- ACQUITY UPLC H-Class
- ACQUITY UPLC H-Class Bio
- ACQUITY UPLC I-Class

The nanoACQUITY UPLC March 2011 Driver Pack controls a nanoACQUITY system.

The ACQUITY UPLC M-Class Driver Pack controls these systems:

- nanoACQUITY
- ACQUITY UPLC M-Class
- ionKey/MS

Switching from a system with ACQUITY UPLC Driver Pack 4 Supplemental Release 1 installed to a system with ACQUITY UPLC M-Class Driver Pack installed

To switch from a system with ACQUITY UPLC Driver Pack 4 Supplemental Release 1 installed to a system with ACQUITY UPLC M-Class Driver Pack installed:

1. Close MassLynx software.
2. Close the console.
3. Disconnect the current inlet from the PC.
4. Connect the new inlet to the PC.
5. Reboot the PC.

6. Double-click the file `ACQUITY and nanoACQUITY Configuration.exe`, located in the `C:\Program Files\Waters Instruments\Utilities` directory, to run the inlet switch utility.
7. In the Configuration dialog box, select the system that you want to configure, and then click **Configure**.

   Important: When you click **Configure**, a warning message states that the sample-manager method appears to be modified. You must click **OK** for the switching to take place. If you modified the default method, any changes you made are overwritten. To avoid losing any changes that you made to the default method, click **Cancel**, rename the file in MassLynx software, and run the inlet switch utility again.
8. Start MassLynx software.
9. Configure the inlet in MassLynx software.
10. Configure the inlet in the ACQUITY console.
11. Close MassLynx software.
12. Close the console.
13. Reboot the PC.

Switching from a system with the ACQUITY UPLC M-Class Driver Pack installed to a system with ACQUITY UPLC Driver Pack 4 Supplement Release 1 installed

To switch from a system with the ACQUITY UPLC M-Class Driver Pack installed to a system with ACQUITY UPLC Driver Pack 4 Supplement Release 1 installed:

1. Disconnect the current inlet from the PC.
2. Connect the ACQUITY inlet to the PC.
3. Reboot the PC.
4. Run the inlet switch utility.
5. Select the system that you want to configure.
6. Start MassLynx software.
7. Configure the inlet in MassLynx software.

Inlet switch utility problems

If you encounter problems while using the ACQUITY Inlet Switch utility, follow this procedure to correct them.

To clear issues with the inlet switch utility:

1. Reboot the PC.
2. Run the inlet switch utility again.
3. Start MassLynx software.
4. Reconfigure the inlet in MassLynx software.
5. Reboot the PC.
6. Start MassLynx software.
7. Reconfigure the inlet in the ACQUITY console.
8. Close MassLynx software.
9. Close the console.
10. Reboot the PC.

Compliance recommendations

Any time you install, change, or uninstall software or system modules in a regulated environment, Waters recommends that you follow your organization's approved standard operating procedures.

A risk-based review may assist you in a regulated environment to evaluate changes detailed in the release notes. Using company SOPs, determine if any documentation updates and requalification of the system modules, chromatographic system, or chromatographic data system (CDS) are required.

Instrument update classification (major update)

Waters considers this update to be a major change from previous versions. Therefore, consider requalifying each updated system module prior to release for use within your laboratory. After the system module is qualified, Waters recommends that you perform system suitability testing of each instrument system, to demonstrate proper control functionality, and to confirm that the system is capable of producing consistent results.

Software requalification options

Consider using the requalification options outlined below to verify software installation and correct operation:

- To confirm that the new files loaded properly, consider performing a software installation qualification.
- To confirm the operation of the newly loaded software, consider performing an operational qualification (user or vendor) for the updated software installation.
- To determine if additional testing is required, consider evaluating the changes in the software release, to assess the risk associated with the installation. Depending on the risk, it may be appropriate to perform existing, updated, or new software tests. These tests may be known as performance qualification tests, user acceptance tests, verification tests, or validation tests.

To assist you, if required, Waters provides various levels of Qualification (or Compliance) Services and validation consultancy through our Professional Services organization.

When multiple, identical systems are involved, consider a risk-based approach to qualification activities.

Instrument requalification options after software/firmware change

Consider using the requalification options outlined below to verify hardware installation and correct instrument operation:

- To confirm that the firmware files on the system modules were installed correctly, compare the checksum values in the product release notes to the checksum values displayed in the console.
- To confirm instrument system operation with any newly loaded software, driver, or firmware, consider performing an operational qualification for the updated instrument system.
- To confirm performance, control, and communications of the instrument system, consider conducting a performance qualification (user or vendor) or system suitability test.

When multiple, identical instruments are involved, consider a risk-based approach to qualification activities.

Requalification with Waters' Total Assurance Plans

The Waters' Total Assurance Plan (TAP) with System Qualification Option covers upgrades and requalification of the instrument driver, software, firmware, or hardware in these cases:

- During yearly requalification, as provided in the plan.
- If installing this release is required for operation of a new module or system, where qualification of the new module or system is covered by the plan.

Requalification of the CDS software and computers after a driver upgrade may or may not be included in your TAP.

Review your TAP to determine which services are covered and which are not covered. For situations not covered by the plan, Waters can perform the qualification, but additional charges will apply.

Contact Waters Technical Service

If you are located in the USA or Canada, report malfunctions or other problems to Waters Technical Service (800 252-4752). If you are located elsewhere, phone the Waters corporate headquarters in Milford, Massachusetts (USA), or contact your local Waters subsidiary. The Waters' Web site includes phone numbers and e-mail addresses for Waters locations worldwide.