

EZChrom Elite

What's New in EZChrom Elite 3.3.2 Service Pack 2

Notices

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Using This Guide

Introduction

This Document lists the design changes introduced with Service Pack 2 for EZChrom Elite 3.3.2. It describes new functionality that might differ from the previous behavior as described in the online help.

Who Should Read This Guide?

This document is designed for the end user or system administrator who will use or manage the Agilent EZChrom Elite system.

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List of Changes

Data Analysis

1) Custom Parameter to support US Pharmacopeia Signal To Noise Calculation

EZChrom Elite 3.3.2 & 3.3.2 SP1: EZChrom did not support the US Pharmacopeia custom parameter.

EZChrom Elite 3.3.2 SP2: A new custom parameter has been added to support the US Pharmacopeia signal to noise calculation. This custom parameter does a signal to noise calculation according to the guidelines presented by the US Pharmacopeia. Once the custom parameter is turned on in a method, the reporting variables become available for reports and annotations.

Calculation:

The calculation used in the US Pharmacopeia is as follows:

$$S/N = 2h/h_n$$

h = The height of the peak corresponding to the component concerned

h_n = The difference between the largest and smallest noise values over a distance of 20 times the width at the half height of the peak.

The time range for the noise can be entered manually or automatically. If this value is to be calculated manually, the user must enter the first two parameters as start time of the noise and end time of the noise.

Using Custom Parameter:

To use the custom parameter add it to your method by browsing to Method → Advanced and clicking on the Custom Parameters Tab. Enter the following values:

Parameter Name – Enter any name (name should not contain a /)

Type – Enter Per-peak

Returns – Enter Number

Source – Click the blue arrow and browse to the C:\EZChrom Elite directory. Then, select the SignalNoiseUSP.dll file.

Additional Parameters: (These are optional parameters)

Parameter that will be used for actual calculation:

Start Time;StopTime – To manually enter the start and stop time for the noise. These parameters will be used in the US Pharmacopeia signal to noise calculation. If these manual parameters are not entered, the system will automatically use start and stop values from the calculation above.

Diagnostic parameters which give outputs:

::NB – Outputs Noise Beginning (Start Time)

::NE – Outputs Noise Ending (End Time)

::VC - Outputs if calculation is good or bad (1 is good and 0 is bad)

::NV – Outputs Noise Value – Calculated as (Max signal value – Min signal value) within noise time range

::SV – Outputs Signal Value – Identical to Peak Height

**Note – If this custom parameter was added after a run was acquired, you will need to perform an analysis before the parameter will show up.

The screen shot below gives examples of the additional parameters you can use. You only have to use 1 entry from the example below but you can use multiple ones.

#	Parameter Name	Type	Returns	Source	Additional Parameters
1	USP Signal To Noise	Per-peak	Number	C:\EZChrom Elite\SignalNoiseUSP.dll	
2	USP Start/Stop	Per-peak	Number	C:\EZChrom Elite\SignalNoiseUSP.dll	3,6
3	USP Noise Beginning	Per-peak	Number	C:\EZChrom Elite\SignalNoiseUSP.dll	;NB
4	USP Noise Ending	Per-peak	Number	C:\EZChrom Elite\SignalNoiseUSP.dll	;NE
5	USP VC	Per-peak	Number	C:\EZChrom Elite\SignalNoiseUSP.dll	;VC
6	USP Noise Value	Per-peak	Number	C:\EZChrom Elite\SignalNoiseUSP.dll	;NV
7	USP Signal Value	Per-peak	Number	C:\EZChrom Elite\SignalNoiseUSP.dll	;SV
8					

In the Column/Performance tab `“Calculate performance parameters for this channel” needs to be selected.

2) Signal Conversion Custom Parameter

EZChrom Elite 3.3.2 & 3.3.2 SP1: The Signal Conversion custom parameter was not supported.

EZChrom Elite 3.3.2 SP1: A new custom parameter has been added that allows you to calculate peak height and area using the actual signal numbers on the y-axis of the chromatogram without the use of multipliers. Once the custom parameter is turned on in a method, the reporting variables become available for reports and annotations.

Using Custom Parameter:

To use the custom parameter add it to your method by browsing to Method → Advanced and clicking on the Custom Parameters Tab. Enter the following values:

Parameter Name – Enter any name (name should not contain a /)

Type – Enter Per-peak

Returns – Enter Number

Source – Click the blue arrow and browse to the C:\EZChrom Elite directory. Then, select the SignalConversion.dll file.

Additional Parameters – Enter 1 for peak height and 2 for peak area

****Note –** If this custom parameter was added after a run was acquired, you will need to perform an analysis before the parameter will show up.

#	Parameter Name	Type	Returns	Source	Additional Parameters
1	Peak Height	Per-peak	Number	C:\EZChrom Elite\SignalConversion.dll	1
2	Peak Area	Per-peak	Number	C:\EZChrom Elite\SignalConversion.dll	2
3					
4					

Workflow Improvements

3) Easy Sequence

EZChrom Elite 3.3.2 & 3.3.2 SP1: Easy Sequence was not in these versions.

EZChrom Elite 3.3.2 SP2: Easy Sequence is a new sequence wizard for EZChrom Elite. The old sequence wizard will still be present. You enter the sequence and calibration parameters into Easy Sequence and click the “Save Easy Sequence” button. When you click this button an EZChrom Sequence file is created and populated with the parameters you entered in Easy Sequence. The sequence file created is the normal EZChrom sequence file.

The basic workflow for Easy Sequence is as follows:

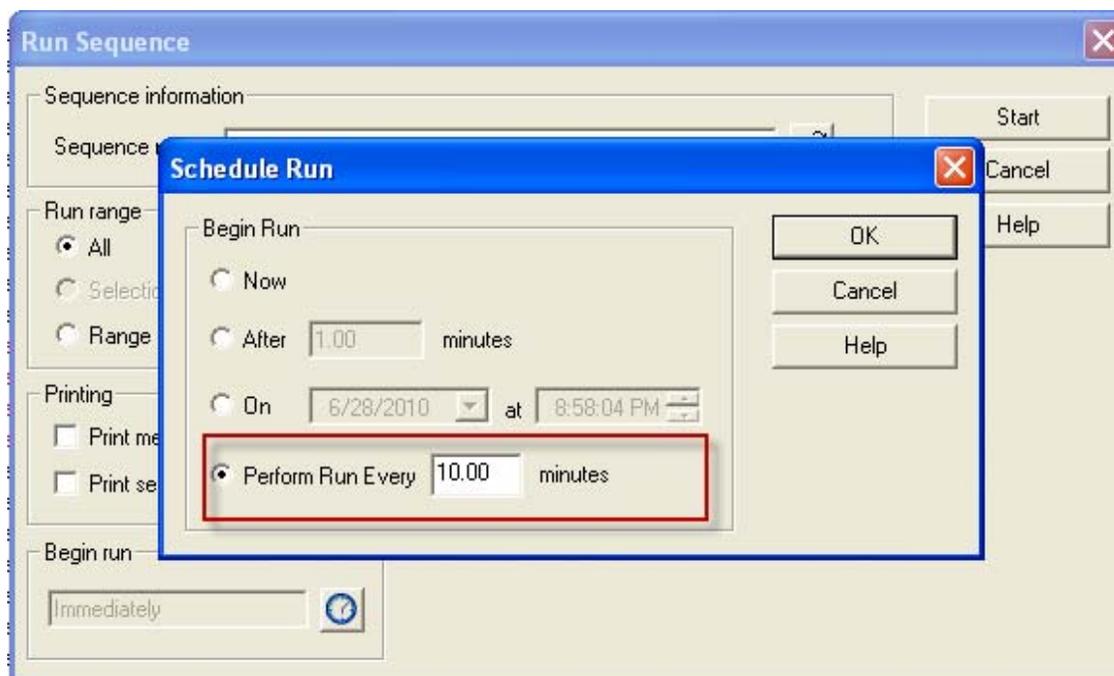
1. Browse to Sequence→Easy Sequence Setup. This is where you create your template. Enter the Sample and Calibration information and save your template.
2. Browse to Sequence→ Easy Sequence. Open the template you created in the Easy Sequence Setup Window.
 - a. Change parameters as needed.
 - b. Click the “Fill Samples” button to create your sequence.
 - c. Click the “Save Easy Sequence” button to create a new EZChrom sequence file that is populated with the parameters you entered.

For more information please refer to the On-Line Help.

4) Perform Run Every X Min

EZChrom Elite 3.3.2 & 3.3.2 SP1: You could schedule runs but you could not schedule a run at a specified interval.

EZChrom Elite 3.3.2 SP2: The Perform Run Every X Min was added to allow you to schedule a run at a specified interval until the user aborts. When you use this feature an entry is added to the run queue at the interval specified and this continues until the user aborts their run. This can be accessed in the schedule run screen by clicking the clock under the Begin Run section. This is available for both single runs and running sequences. In the screen shot below an entry will be added to the run queue every 10 minutes until the user aborts.



Instrument Control Updates

5) Support for 1220 Compact\1260 LC Instruments

EZChrom Elite 3.3.2 & 3.3.2 SP1: Does not support the new 1220 Compact and 1260 LC Instruments.

EZChrom Elite 3.3.2 SP2: This release of EZChrom will support the new 1220 Compact and 1260 LC Instruments. Use the Agilent Compact LC driver when configuring an instrument (see below) and use AutoConfiguration to connect to the instrument. Use the Agilent LC driver for the 1260 LC when configuring an instrument (see below). Use AutoConfiguration to connect to the instrument. Please refer to the supported Modules and Firmware document for supported modules and firmware.

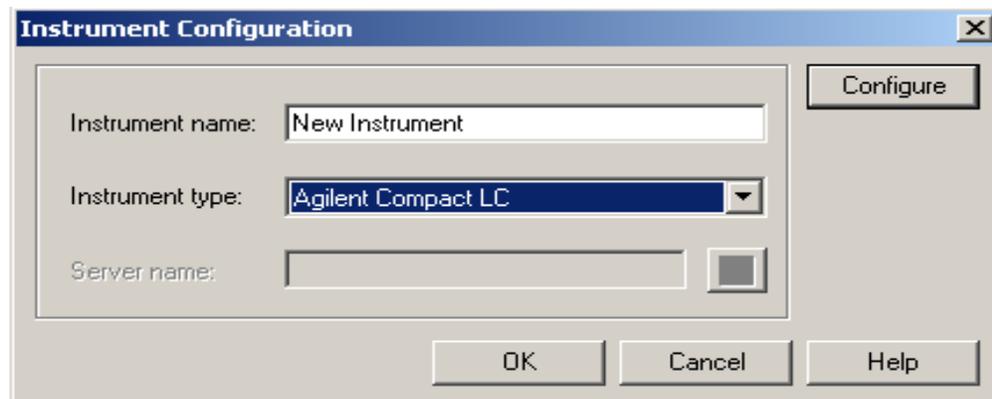
You will be able to configure 1100\1200\1260\1290 modules along with the 1220 Compact instrument. However, please note that a number of hardware configurations are limited due to functionality incongruity. Please contact support before adding an 1100\1200\1260\1290 module to a 1220 Compact to ensure compatibility.

6) LC Driver Name Changes

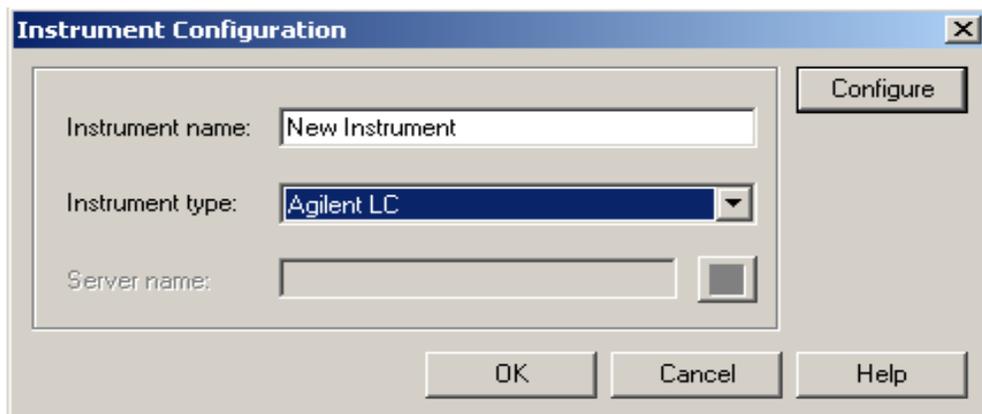
EZChrom Elite 3.3.2 & 3.3.2 SP1: There was an Agilent Compact LC 1120 driver for configuring the Compact 1120 LC and an Agilent 1100/1200/1290 Series LC driver (Enhanced LC driver) for configuring an 1100, 1200, or 1290 LC.

EZChrom Elite 3.3.2 SP2: There is now an Agilent Compact LC and Agilent LC driver. The Agilent Compact LC driver is for configuring both the 1120 Compact LC and the new 1220 Compact LC instruments. The Compact LC driver is localized in Simplified Chinese, Japanese, and Portuguese (Workstation only). The Agilent LC driver is the enhanced LC driver for configuring the 1100, 1200, the new 1260, and 1290 LC instruments. The Agilent LC driver is localized in Simplified Chinese, Japanese, and Portuguese (Workstation only). When upgrading from a previous version of EZChrom all previously configured instruments will automatically be changed to the new driver. See screenshots below.

Use the Agilent Compact LC driver to connect to an 1120 or 1220 Compact LC



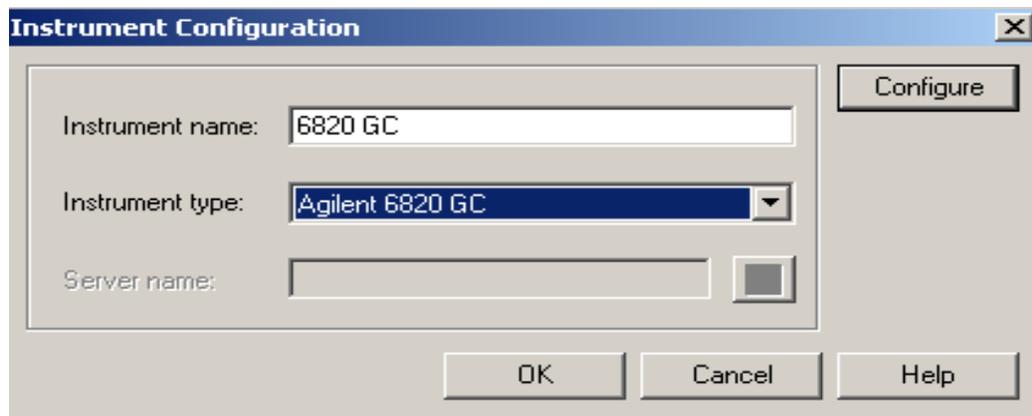
Use the Agilent LC driver (enhanced) to connect to an 1100\1200\1260\1290 LC



7) Support for 6820 GC

EZChrom Elite 3.3.2 & 3.3.2 SP1: Does not support the 6820 GC instrument.

EZChrom Elite 3.3.2 SP2: This release of EZChrom will support the 6820 GC. Use the Agilent 6820 GC driver when configuring an instrument (see below). The 6820 driver is localized only in Simplified Chinese. All injections are performed manually with this GC model. Please refer to the supported Modules and Firmware document for supported modules and firmware.

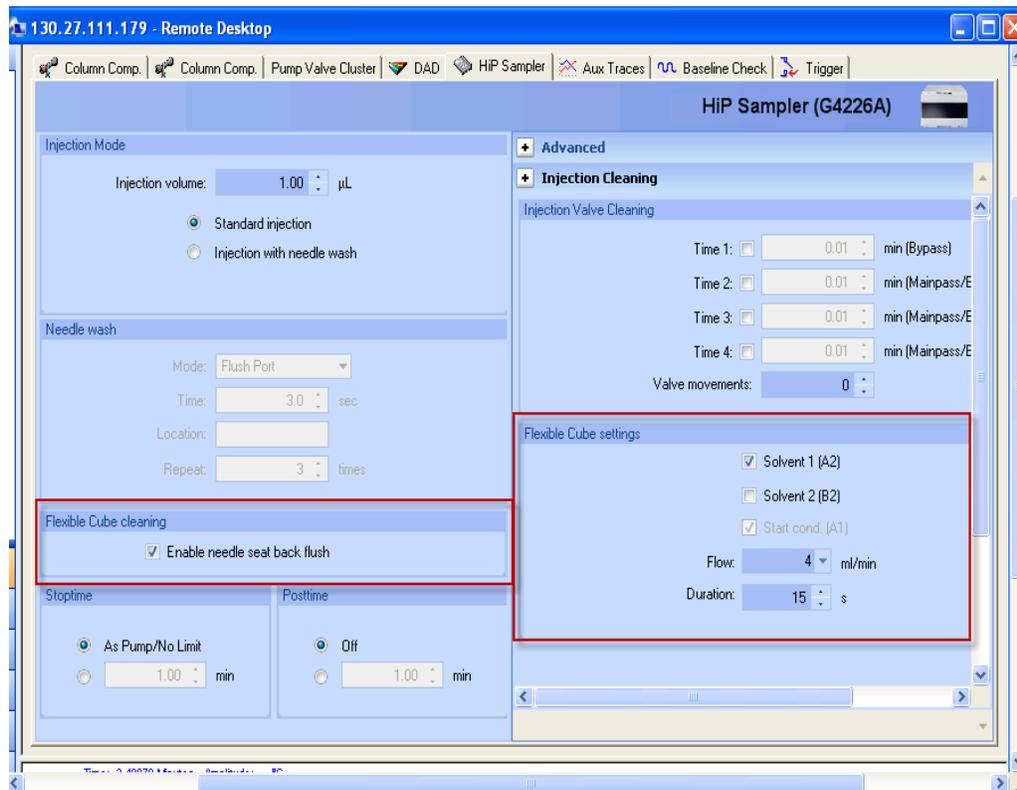


8) Support for Flexible Cube for the 1290 LC

EZChrom Elite 3.3.2 & 3.3.2 SP1: Does not support the Flexible Cube.

EZChrom Elite 3.3.2 SP2: This release of EZChrom will support the Flexible Cube module for the 1290. The Flexible Cube is a module that reduces instrument related carryover by needle back-flushing. This is an Autosampler option and you will see the flexible cube sections in the Autosampler section of the driver (see screen shot below). The G4226A HiP-Sampler is the only Autosampler supported with the Flexible Cube. Refer to the supported Modules and Firmware document for supported firmware versions.

Screen shot of Flex Cube settings in Autosampler.

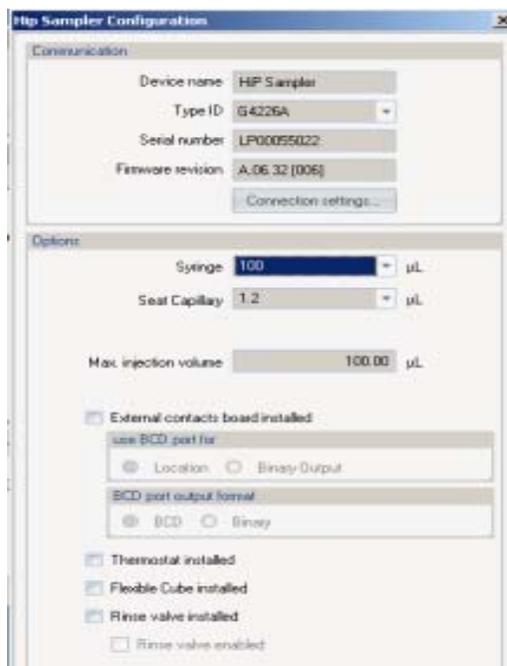


9) **Support for a 100ul syringe on the G4226A AutoSampler for the 1290 LC**

EZChrom Elite 3.3.2 & 3.3.2 SP1: The G4226A AutoSampler for the 1290 LC did not support a 100ul syringe.

EZChrom Elite 3.3.2 SP2: The G4226A Autosampler for the 1290 LC now supports a 100ul syringe. Right click and select Open on the HiP Sampler in Instrument Configuration to access the Hip Sampler Configuration screen to change the syringe size. See screen shot below.

Screen shot of 100ul syringe setting

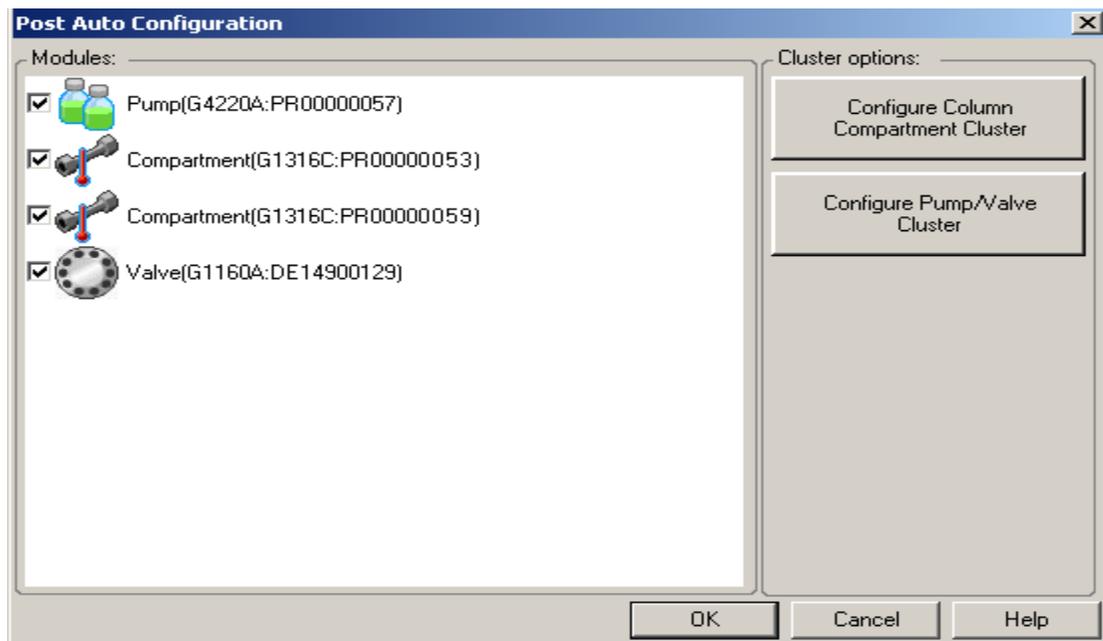


10) Support for TCC and Pump\Valve Cluster

EZChrom Elite 3.3.2 & 3.3.2 SP1: Does not support the TCC and Pump\Valve cluster.

EZChrom Elite 3.3.2 SP2: This release of EZChrom will support the TCC and Pump\Valve cluster. The Pump\Valve cluster allows you to control multiple valves in a pump in one user interface and the TCC cluster allows you to control multiple columns from several Thermostatic Column Compartments in one user interface. This feature was designed mainly for customers who are doing Method Development. It allows for an easier way to obtain column and solvent parameters. The cluster is configured during auto configuration. See screen shot below

Screen shot of Cluster Setup



11) Support for the Agilent CTC

EZChrom Elite 3.3.2 & 3.3.2 SP1: Does not support the Agilent CTC.

EZChrom Elite 3.3.2 SP2: This release of EZChrom will support the Agilent CTC. The Agilent CTC autosampler has 3 new cycles for the HTS_HTC PAL. The 3 cycles are DLW-Priming_Rev01.cyx, LC-Inj_DLW_Fast_Rev03.cyx, and LC-Inj_DLW_Standard_Rev03.cyx

12) Certain Hitachi Add-Ons Now Support Windows Vista

EZChrom Elite 3.3.2 & 3.3.2 SP1: The Hitachi Add-Ons were not supported with Windows Vista.

EZChrom Elite 3.3.2 SP2: The Hitachi LaChrom Elite LC and LaChrom Ultra LC drivers now support Windows Vista. The Hitachi LaChrom LC Driver is still only supported with Windows XP.

13) GC Driver Enhancements for RC.NET 68XX and 78XX Drivers

EZChrom Elite 3.3.2 & 3.3.2 SP1:

- **ALS Patch** – The 6850, 6890, and 7890 RC.Net GC drivers would always recognize the automatic liquid sampler (ALS) if one was physically connected to the GC. In order to use a different sampling device (such as a Headspace sampler or manual injection) the user would need to first disconnect the ALS from the GC and reconfigure the instrument with no ALS connected.
- **Improved GC Method Resolution Behavior** - The RC.Net GC drivers (6850, 6890, 7820, and 7890) would always attempt to perform method resolution when a method did not match the instrument configuration. This could prevent reprocessing of

existing data if the instrument had been reconfigured since the original data was acquired.

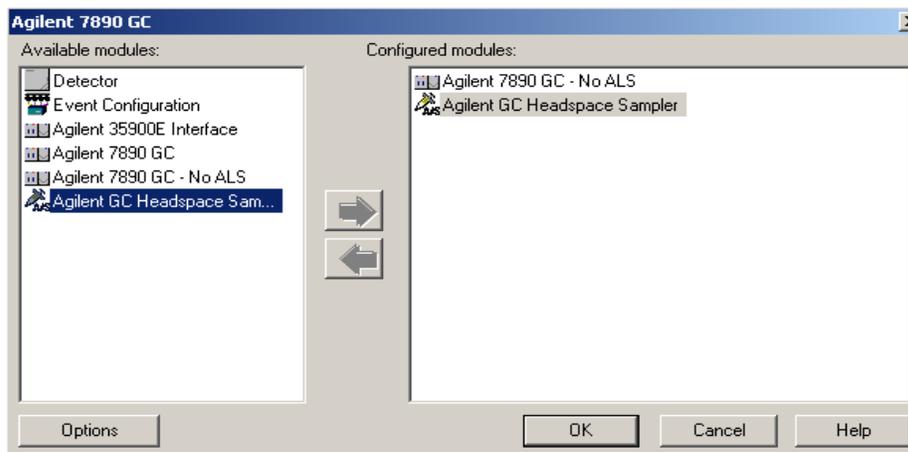
- **GC Column and ALS Configurations Controlled by Method** – The RC.Net GC drivers (6850, 6890, 7820, 7890) maintained all GC configuration data in the instrument configuration, including parameters that may be changed by end users. As a result, instrument operators needed roles that allow instrument configuration in order to execute typical GC workflows like changing columns or injector syringe sizes.

EZChrom Elite 3.3.2 SP2:

- **ALS Patch (6850, 6890, and 7890)** – Allows an ALS and another sampling device to be connected to EZChrom at the same time. A “No ALS” module is now available in the instrument configuration for the 6850, 6890, and 7890 RC.Net instrument drivers. When a GC instrument is configured with the non-ALS GC option, EZChrom ignores the connected automatic liquid sampler and will use any alternative sampling device instead. Examples are:
 - If the GC has no other sampling device configured, the non-ALS GC will accept manual injections and the START button of the GC will be enabled to allow for starting runs with manual injections.
 - If the instrument has a Headspace sampler configured, all runs and sequences will be performed using the Headspace sampler. The ALS parameters in the GC method will still be visible, but will be ignored during acquisition.
 - For instruments that will sometimes be used with an ALS, and at other times be used with a separate sampling device, it is recommended that two different instruments be created in EZChrom; one for each configuration. One configuration would include the GC with ALS; and the other configuration would use the No-ALS GC device plus the separate sampler.

This behavior mimics the configuration of the classic GC drivers, where the ALS was configured separately from the GC. The only difference is that the ALS parameters are still present in the method and visible to the user, but they are ignored by the software when the No-ALS configuration is used.

See non-ALS option below. The example below shows how to setup a headspace sampler.



- **Improved GC Method Resolution Behavior (6850, 6890, 7820, and 7890)** - EZChrom does not invoke GC method resolution when reprocessing existing data in an offline

session. An additional enhancement is the movement of several user-configurable instrument options from the instrument configuration to the method. Method resolution therefore will only occur if the physical GC or ALS hardware has changed.

- **GC Column and ALS Configurations Controlled by Method (6850, 6890, 7820, and 7890)**– The new GC drivers now store ALS parameters and GC column information in the method and not in the instrument configuration. These parameters can be found and edited in the *Configuration* tab of the GC instrument method. With these changes, more control is given to the instrument operators without the need to enter instrument configuration. However, these changes also require the operators to take more care to ensure that methods are compatible with the instruments they are run on.

Impact On Instrument Configuration

- Physical instrument information such as inlet and detector types, valves, Aux options, connected ALS modules and ALS tower positions are still stored in instrument configuration.
- If any changes are made to these physical parameters of the instrument, the instrument must be reconfigured in EZChrom, and the most current configuration uploaded from the GC.
- No physical instrument parameters can be edited in the EZChrom configuration dialog; they can only be read from the GC.

Impact On EZChrom Methods and Workflows

- When porting a method from one instrument to another, if the instrument configuration (hardware) does not match the method configuration, then method resolution is invoked to make the method compatible with the hardware as recorded in the instrument configuration. This may occur when a method is used on two different instruments with different ALS models or options.
- Since the GC column information is now stored in the method, it is necessary for the operator to ensure that the instrument itself has the appropriate column(s) installed as indicated in the GC method's column configuration section. If this is not done, then the instrument may attempt to set pressures and flows that cannot be achieved; resulting in errors or module shutdown events.
- When ALS parameters now stored in the method, it is necessary for the operator to ensure that the physical instrument matches the settings in the method. For example, the operator must verify that the syringe size designated in the method is actually installed in the ALS injector. Otherwise the actual volume injected may be incorrect or the ALS may raise an error indicating an invalid injection volume.
- The same care must be taken when porting sequences from one instrument to another. The sequence control depends on the ALS options and injector tower positions. For example: a sequence created for dual-tower operation will fail with an error when run on a GC with only one injector tower configured.