



Agilent 8860 GC Firmware

**Release Notes – Revision 2.9.0.345**

# Notices

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## Firmware/Software Revision

This guide is valid for the 2.9.0.345 revision of *Agilent 8860 GC Firmware*

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### CAUTION

A **CAUTION** notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in damage to the product or loss of important data. Do not proceed beyond a **CAUTION** notice until the indicated conditions are fully understood and met.

### WARNING

A **WARNING** notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in personal injury or death. Do not proceed beyond a **WARNING** notice until the indicated conditions are fully understood and met.

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# 1

## Document History

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

<b>Date</b>	<b>Version</b>	<b>Description</b>
16 <sup>th</sup> October 2023	Rev A.01	Initial Release (added 2.8.0.219 Release Note) (added previous versions release)
8 <sup>th</sup> February 2024	Rev A.02	Added 2.8.1.6 Release Note
1 <sup>st</sup> June 2024	Rev A.03	Added 2.9.0.345 Release Note

## 2

# Introduction

The purpose of this document is to provide users of the Agilent *8860 GC* system (G2790A) guidance to relevant support documentation that contains further levels of information and detail

**Table 1 Terms and abbreviations used in this document**

Terms	Description
SSB	Software Status Bulletin
CDS	Chromatographic Data System
U	Update
SP	Service Pack
HF	Hotfix
SR	Service Release
[xx]	Final Build Numbers of a released product
DSA	Data System Adapter

### For our Regulated Customers

When any change is made to Agilent software/firmware, the validation status of the software needs to be re-established by the user/customer.

Whenever software/firmware is changed, a validation analysis should be conducted to validate an individual change and determine the extent and impact of that change on the entire system.

# 3

## Compatibility

### Supported Agilent Data Systems

OpenLab CDS (2.8, 2.7, 2.6, 2.5, 2.4 or higher)  
OpenLab CDS ChemStation Edition (C.01.10, C.01.09, LTS)  
GC/MS MassHunter Acquisition (10.2, 10.1, 10.1SR1 or higher)  
(MassHunter 10.0 required to configure 8890 and 8860 GCs)  
OpenLab CDS EZChrom Edition (A.04.10, A.04.09)

### Supported Agilent GC Driver

Agilent GC Driver (4.1.211, or higher)

## 4 Support Information

- Agilent recommends using always the latest firmware revision of a firmware in order to avoid interoperability issues.
- Generally, Agilent recommends keeping the GC instrument firmware always current.

### Notes for Agilent 8860 controlled by non-Agilent Chromatography Data Systems (CDS)

- The 3rd-party CDS software vendor is responsible for compatibility testing with the respective CDS revision.
- The 3rd-party CDS software vendor defines the minimum firmware revision required for CDS compatibility.
- The 3rd-party CDS release notes issued by the respective CDS vendor may use different terminology for the firmware requirements such as "tested firmware", "supported firmware", "firmware requirements", "minimum tested firmware", etc.

### Waters

Waters have recently released their latest Agilent driver, instrument Control Framework (ICF) Version 2.6 Update 2 in Empower 3

For GC Control: This release adds support for Agilent GC and the 7697A Headspace sampler. The supported GCs are:

- New: 8860 GC
- New: 8890 GC
- Intuvo 9000 GC
- 6850 GC
- 6890N GC (Note that 6890A and 6890+ must have had LAN cards added)
- 7820 GC
- 7890A & 7890B GCs
- 7697A Headspace Sampler



NOTE - Be careful to not confuse the Agilent driver, Instrument Control Firmware, (ICF) with the Waters Native driver, ICS, Instrument Control Software.

Both are allowed by Waters and both can be installed on the same system at the same time.

### **Thermo Fisher**

Thermo Fisher have recently released their latest Agilent driver, instrument control software Chromeleon 7.2

This release adds support for Agilent GC and the 7697A Headspace sampler. The supported GCs are:

- Intuvo 9000 GC
- 6850 GC
- 6890N GC (Note that 6890A and 6890+ must have had LAN cards added)
- 7820 GC
- 7890A & 7890B GCs
- 8860 GC
- 8890 GC
- 7697A Headspace Sampler

### **[OQ/PV - Validation Information](#)**

- If a firmware upgrade has been performed, normally no revalidation of the module/system is required. This is stated in the released Service Note applicable to the release.
- In addition, this information is stated further on in this document.



# 5

## Agilent 8860 GC System – What's new?

### What's new in 8860 GC firmware 2.9.0.345?

- Support DSA Reverse Proxy Inbound connections for Diagnostics and Maintenance Procedures.
- Added capability to disable the use of an installed, configured Hydrogen Sensor.
- Bug fixes and Enhancements as detailed below.

## 6

# Resolved Issues in revision 2.9.0.345

The current shipping firmware for the 8860 is 2.9.0.345

Released on 1<sup>st</sup> June 2024

[http://download.chem.agilent.com/firmware/8860\\_FW\\_2.9.0.345.tgz.gpg](http://download.chem.agilent.com/firmware/8860_FW_2.9.0.345.tgz.gpg)

To download this version, use GC Firmware Update Tool 2.10.9.0 or greater.

[Updating to this firmware does not require instrument requalification.](#)

Service Note Number: D0115895

### Resolved Issues:

**Table 2 Resolved Issues (Agilent 8860 GC System 2.9.0.345)**

Issue ID	Current Behavior	Resolution
037355	DA Express integration baselines need to connect better with the peak traces	Resolved
040912	Troubleshooting-revert troubleshooting changes	Resolved
042742	Troubleshooting wizard does not clear previous changes after restarting Troubleshooting	Resolved
043479	Review High Inlet Pressure Maintenance and Diagnostics	Resolved
043759	HydroInert: Allow configuration of HydroInert ion source on SQ and prevent runs if configured carrier gas is Helium	Modified
044218	Method Supply pressure check not found in 'help'	Resolved
044357	With Helium Conservation Module, the GC should be able to offer turning on He when doing different troubleshooting steps requiring inlet pressure	Resolved
044410	Investigate Helium Conservation Module Purge Time	Modified
044431	Troubleshooting - No Peaks - No Flame is OK	Modified
044628	GC firmware update sometimes fails to update ALS due to 'device not present'	Resolved
044838	Browser Interface Events Do not work through Reverse Proxy	Resolved
044850	Download button not working with gather log files- Browser Interface	Resolved

044867	G4567A ALS- Solvent Wash Mode: A-A2,B-B2 and A-A6,B-B6 are active in Browser Interface	Resolved
044900	Browser Interface _undefined appear on blank evaluation report	Resolved
044926	CDS Blank Eval Failure/Abort on Failure holds instrument Not Ready until cleared from Browser Interface or Touchscreen	Resolved
044933	8697 Maintenance install transfer line to GC- better phrasing	Modified
044936	Headspace PID Change during Diagnostic	Resolved
044944	Browser Interface: The Performance Evaluation Report does not include the vial position	Added
044959	8697- Replace sample Loop- 'replace the sample loop adapters' should Inform customer on what 'sample loop adapter' is	Modified
044988	System Health Report: Add Oven Configuration Details	Added
045053	Oven going into Standby mode after a run has been started	Resolved
045085	H2 Sensor: add ability to disable the use of an installed, configured module	Added
045101	Large Volume Syringe Carriage Air Gaps	Resolved
045105	Enhancement: Put "null" in for empty parameters to scripts	Added
045210	8860 PPIP safety concern: There's no error alert when PPIP has leak at flow control mode	Modified
045238	Extend Health Report with more detail on ALS	Added
045239	Incorrect max ramped column flow value	Resolved
045256	8697 & 8697 XL - The function of vial vent between extractions does not work in Multiple extraction mode	Resolved
045318	PSD Calibration Purge Title	Modified
045327	"Setpoint Changed During Run" in run log at the end of HS Sequence	Resolved
045361	Request to provide driver interface to "Park / Unpark" HeadSpace for 8697	Added

045381	88xx system setup wizard unexpectedly happens after new instruments installation	Resolved
045402	For 8860/8890 with Gas sample selector, the Equilibrium can't be displayed in Browser Interface and Touchscreen	Resolved
045403	8860 Browser Interface: valve number 5&6 should be disabled	Resolved
045408	Valve time in runtime event is longer than GC run time	Resolved
045444	Browser Interface displays incorrect column configuration	Resolved
045563	Browser Interface Run Time Events table is not holding the selected Event Type	Resolved
045607	Browser Interface wake method loads the wrong one when the Wake Up button is pressed	Resolved
045616	System Health Report provides the wrong syringe size in the report	Resolved
045764	allow customers calibrate the TCD when the cell is replaced	Added
045770	8697- The default id of Prosteel transfer line is 0.546mm which is wrong and cannot be edited	Resolved
045779	Convert inlet EPC module temperature units to degrees C in low level signal	Resolved
045810	SCD with Hydrogen carrier gas has trouble when oxidizer gas not present	Resolved
045886	TCD calibration routine leaves detector hot at 250C	Resolved
045898	The time remaining on the HS sequence run is wrong after changing GC clock	Resolved
045904	H2 Sensor - Uncalibrated Message	Resolved
1077824	DA Express-Double-click on the sequence results list leading failure on loading data	Resolved
1077827	DA Express-Pop-up "Please choose points in increasing run time" occasionally during manual integration	Resolved
1077830	The chromatography may get stuck in loading mask during manual integration or re-integration	Resolved
1077832	DA Express-After new data loaded, the integration tool is keeping pressed, but its function is zoom	Resolved

# 7

## Previous Versions

This section details previous versions of 8860 firmware giving release notes.

### 2.8.1.6 Firmware

Released on 8<sup>th</sup> February 2024

[http://download.chem.agilent.com/software/8860\\_FW\\_2.8.1.6.tgz.gpg](http://download.chem.agilent.com/software/8860_FW_2.8.1.6.tgz.gpg)

To download this version, use GC Firmware Update Tool 2.9.9.0 or greater.

[Updating to this firmware does not require instrument requalification.](#)

Service Note Number: D0110353

#### Resolved Issues:

**Table 3 Resolved Issues (Agilent 8860 GC System 2.8.1.6)**

Issue ID	Current Behavior	Resolution
044977	Ignore Blank Start Requests While Already Running	Resolved
045246	8860 GC TCD Makeup/Reference flow control abnormal when Makeup/Reference configured as Ar	Resolved
045273	8697 Intermittently report "Headspace Sequence Stopper by User"	Resolved

### 2.8.0.219 Firmware

Released on 16<sup>th</sup> October 2023

[https://download.chem.agilent.com/firmware/8860\\_FW\\_2.8.0.219.tgz.gpg](https://download.chem.agilent.com/firmware/8860_FW_2.8.0.219.tgz.gpg)

To download this version, use GC Firmware Update Tool 2.8.11.0 or greater.

[Updating to this firmware does not require instrument revalidation.](#)

Service Note Number: D0038219

#### Resolved Issues:

**Table 4 Resolved Issues (Agilent 8860 GC System 2.8.0.219)**

Issue ID	Current Behavior	Resolution
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041095	Argon for Carrier gas and TCD make up gas	Added
041561	Add Communication with 7697A in 8860 Browser Interface for synchronizing HS time with GC	Added
043484	Firmware Update Utility-add error if the 'temp' file starts to fill up	Resolved
043554	Firmware update while instrument in maintenance mode not allowed. Display message.	Resolved
043856	BrowserUI Startup Time improved	Resolved
044122	Option to load method from GC or a method saved to the GC for Sleep or wake method in the scheduler	Added
044162	TCD Warning, detector Temperature < 130C message confusing	Modified
044227	Inlet leak and restriction test failing due to restriction being too large	Resolved
044236	8860 TouchScreen: "readiness reasons" should be replaced with "Alerts" to keep consistent with BrowserUI.	Modified
044363	HEC control over TCD configuration in user interfaces. TCD gas config should be greyed out if HEC enabled	Resolved
044384	Headspace: No detail info for headspace after abort running	Resolved
044412	Need to change GC parameters during a run. New feature in GC Feature Selection. Change is method dependent	Added
044416	EMF Alert: Unknown Device Component	Resolved
044427	Add a sleep and a wake button to BrowserUI much like DSA functionality	Added
044462	Browser System Fault after Editing Running Sequence, saving, Editing again and saving	Resolved
044692	8860 DA Express: DA method cannot be saved and the message prompt was the "method file already exist".	Resolved
044703	8860 BrowserUI - Pressure decay test fail for PPIP	Resolved
044710	TCD Filament calibration not working correctly	Resolved
044732	8697 - Reporting ""sample probe restriction" warning while leak and restriction test passed well	Resolved

044770	Manufacturing Data Location Creation for SP1 Analyser info	Added
044816	TCD Filament Calibration Procedure missing the calibration point of 250C	Resolved
044834	Venting MSD/powering down GC cleared MS venting method from GC	Resolved

### 2.7.0.207 Firmware

Released on 26<sup>th</sup> May 2023

[https://download.chem.agilent.com/firmware/8860\\_FW\\_2.7.0.207.tgz.gpg](https://download.chem.agilent.com/firmware/8860_FW_2.7.0.207.tgz.gpg)

To download this version, use GC Firmware Update Tool 2.8.10.0 or greater.

[Updating to this firmware does not require instrument revalidation.](#)

Service Note Number: D0033037

#### Resolved Issues:

**Table 5 Resolved Issues (Agilent 8860 GC System 2.7.0.207)**

Issue ID	Current Behavior	Resolution
043857	Ability to use/create a composite columns in browser UI	Resolved
041955	Plotted Signals not aligning on the Browser	Resolved
043124	<a href="http://www.agilent.com/chem/supplies">www.agilent.com/chem/supplies</a> for GC maintenance does not work as expected	Resolved
043628	Pulsed Split Injection with HS system does not have enough total flow to reach their pulse pressure when the system starts preparing	Resolved
043636	EMF counter is not correct	Resolved
043661	8697 HS: Tray FW not downgradable	Resolved
043902	Unable to print Sleep/Wake Methods	Resolved
044052	User Troubleshooting added to FID ignition failure	Modified
044053	Allow GC to monitor pressure during maintenance tasks	Modified

044061	8860 inlet leak and restriction test doesn't tell user to uncap septum purge	Modified
044121	APG Stop signal not sent at end of run	Resolved
044126	Scheduler information is not complete in browser interface help with FW 2.6.0.306	Resolved
044127	FW 2.6.0.306 allows the selection of 5977 and 5977B but not 5977C	Resolved
044131	Invalid IP address shown on the 8860 LUI does not match internal IP	Resolved
044154	Valve State added to Diagnostic Signal	Modified
044238	Add detailed sequence logbook messages for ALS actions	Modified
044324		

## 2.6.0.306 Firmware

Released on 5<sup>th</sup> January 2023

[http://download.chem.agilent.com/firmware/8860\\_FW\\_2.6.0.306.tgz.gpg](http://download.chem.agilent.com/firmware/8860_FW_2.6.0.306.tgz.gpg)

To download this version, use GC Firmware Update Utility 2.7.1.0 or greater.

[Updating to this firmware does not require instrument revalidation.](#)

Service Note Number: D0028247

**Table 6 Resolved Issues (Agilent 8860 GC System 2.6.0.306)**

Issue ID	Summary	Current Behavior	Impact Area
032605	Browser Interface Status does not show the Sequence, Method, or Sample Name when run from GC driver	Browser Interface Status does not show the Sequence, Method, or Sample Name when run from GC driver	Browser Interface Status Tab
034076	Add diagnostics information to Service Mode in 8860 Browser Interface	There is no Diagnostics information Under Service Mode, actual a configuration interface	Setting/Service Mode on Browser Interface



038963	Set Column Length... and Adjust Column Length.. don't work in Browser Interface.	Set Column Length... and Adjust Column Length.. don't work in Browser Interface	Column Calibrate on Browser Interface
039003	Detector Evaluation does not support 8697 headspace OQPV checkout	Detector Evaluation does not support 8697 headspace OQPV checkout	Add 8697 HS Det Eval on Browser Interface
040269	8697: In the Browser Interface, there is no the selection of Reset Headspace to Restore Factory Defaults.	there is no the selection of Reset Headspace to Restore Factory Defaults on Browser Interface	Reset HS 8697 on Browser Interface
041144	Suggest to add Reset function on 8860 Touchscreen	NO Reset function on 8860 Touchscreen	Add Reset on 8860 Touchscreen
042302	Browser Interface: Gasifier disappear in method when loading an old method w/o Gasifier	Gasifier disappear in method when loading an old method w/o Gasifier	Gasifier on Browser Interface
042322	MSD Configuration: Provide option to correctly configure MS Transfer Line if it was missed during First Time Setup	If the FSE did not have the MS Transfer Line heater plugged in before starting First Time Setup, it is confusing to figure out what needs to be done to correct it	Guidance for MSD configuration on Browser Interface
042339	Put Inlet/Detector type in the diagnostic Tabs	No Inlet/Detector type displayed in the diagnostic Tabs	Dignostics on Browser Interface
042863	Browser Interface-saving a method hanging	saving a method hanging on Browser Interface	Method on Browser Interface
043016	SCD maintenance task improvement- replace inner ceramic in FW 2.5.0.258	ceramic tube maintenance: the EMF not reset after changing the ceramic tube	Maintenance on Browser Interface
043020	SCD Off Function says it turns off oxidizer flow but it does not turn off oxidizer flow	SCD Off Function says it turns off oxidizer flow but it does not turn off oxidizer flow	Method on Browser Interface
043032	XCD Ozone Pneumatic leak test on the Browser Interface requires a browser refresh during the test	XCD Ozone Pneumatic leak test on the Browser Interface requires a browser refresh during the test	Diagnostics on Browser Interface

043046	Add Trim Column to COC inlet maintenance	No trim Column to COC inlet maintenance	Maintenance on Browser Interface
043054	8860 and 8890 do not show the tray / Barcode reader firmware in the Health Report	8860 and 8890 do not show the tray / Barcode reader firmware in the Health Report	System Health Report on Browser Interface
043074	maintenance task - change column with SCD does not turn off H2 before cooling	maintenance task - change column with SCD does not turn off H2 before cooling	Maintenance on Browser Interface
043075	8697: Grey out System Calibration Option if Tray is not Calibrated	System Calibration Option is available if Tray is not Calibrated	Setting/ Calibration on Browser Interface
043108	XCD Maintenance Step Not Valid	XCD Maintenance Step Not Valid	Maintenance on Browser Interface
043116	Whole DA express report untranslated	Whole DA express report untranslated	DA Express on Browser Interface
043151	Uncheck DHCP should clear IP address fields	Uncheck DHCP doesn't clear IP address fields	Setting on Touchscreen
043158	Browser Interface-text in buttons are grayed out	Browser Interface-Column "Calibrate", "Remove" text in buttons are grayed out	Method on Browser Interface
043160	GC auto configuration doesn't handle multiple simultaneous EPC changes	GC auto configuration doesn't handle multiple simultaneous EPC changes	Auto Configuration on Browser Interface
043162	SCD change inner ceramic maintenance procedure-SCD shutdown	the instrument starts to cool down the SCD zones at the start of the maintenance procedure to shut down the SCD	Maintenance on Browser Interface
043169	Browser Interface: Missing Inlet Transfer Line Interface Heater Configuration	Browser Interface: Missing Inlet Transfer Line Interface Heater Configuration	Method on Browser Interface
043226	Browse Interface Errors when uploading method from instrument after instrument config has been changed, leads to never ending progress spinner.	Browse Interface Errors when uploading method from instrument after instrument config has been changed, leads to never ending progress spinner.	Method on Browser Interface

043244	8860: Touchscreen Should show MAC Address	No MAC on Touchscreen	Setting on Touchscreen
043267	88xx GC Lockup issue when removing and reconnecting 8697 headspace sampler	88xx GC display freezes when removing and reconnecting 8697 headspace sampler	Configuration on Browser Interface
043289	8697: Request to update the default parameter settings	The default settings for 8697 is not properly	Method on Browser Interface
043297	Replace liner maintenance procedure-add wording to end of procedure	NO 'Re-mount the ALS tower if installed'	Maintenance on Browser Interface
043333	Manual configuration of New Hardware such as an EPC module is cleared if cancel is evoked.	If the Cancel option is selected the GC becomes "non functional" as no parameters are listed and the configuration is unknown.	Manual Manual Configuration on Browser Interface
043338	Perform Maintenance without selecting anything freezes the GC	Perform Maintenance without selecting anything freezes the GC	Maintenance on Browser Interface
043342	Maintenance:Instrument-Maintenance mode-with XCD	the user puts the instrument into 'Maintenance Mode' (under Instrument->Maintenance Mode), the XCD is not shut down properly	Maintenance on Browser Interface
043398	Error in 8697 Headspace User documentation	vial pressurization instruction for the 8697 headspace	Help on Browser Interface
043418	XCD Does not auto configure or unconfigure	XCD Does not auto configure or unconfigure	Configuration on Browser Interface
043432	Improve Gas supply pressure check for magabore column	gas supply pressure check when run with a 530 column says: 'The restriction in the column is too small to perform the test at the desired column flow'	Diagnostics on Browser Interface
043433	Improve XCD reaction cell calibration	The preparation procedure is not well addressed.	Calibration on Browser Interface

043444	Support Diagnostic Data Collection for Users	No Diagnostic Data Collection Tab	Diagnostics on Browser Interface
043445	Values from the Leak and restriction Test different in the System Health Report.	Values from the Leak and restriction Test different in the System Health Report.	Diagnostics on Browser Interface
043453	SSL Inlet Pressure Decay test is failed with 8697 connected	SSL Inlet Pressure Decay test is failed with 8697 connected	Diagnostics on Browser Interface
043459	8697: No Sample Overlap for vial equilibration in User Vial Leak test	8697: No Sample Overlap for vial equilibration in User Vial Leak test	Diagnostics on Browser Interface
043480	add split vent part number in maintenance for split vent	NO split vent part number in maintenance for split vent	Maintenance on Browser Interface
043481	update gas clean filter instructions in instrument maintenance	Instruction use the "inlet pressure" instead of Supply Pressure	Maintenance on Browser Interface
043482	Error 1000600a occurred after the Leak and Restriction test with 8860 GC	Error 1000600a occurred after the Leak and Restriction test with 8860 GC	Diagnostics on Browser Interface
043496	Highlight blank evaluation criteria that failed	No Highlight the failed values	blank evaluation report on Browser Interface
043505	Detector evaluation help does not include instructions for headspace	Detector evaluation help does not include instructions for headspace	Help on Browser Interface
043506	Browser Interface methods and sequences are incorrectly alphabetized in drop down lists	Browser Interface methods and sequences are incorrectly alphabetized in drop down lists	Method on Browser Interface
043524	NPD maintenance is not correct- wrong screw driver mentioned in FW 2.5.0.258	T-10 screw driver is mentioned	Maintenance on Browser Interface
043526	Support HEADSPACE detector evaluation sample type	NO HEADSPACE detector evaluation sample type	Method on Browser Interface
043550	8697 Manual Operations- Can an Exit be added as a choice to the drop down?	NO Exit under 8697 Manual Operations	Diagnostics on Browser Interface

043553	Expose Method Pressure Check as a Diagnostic	NO Method Pressure Check under Diagnostics	Diagnostics on Browser Interface
043565	EMF reset on Browser Interface for SCD outer ceramic reset's Pump time in FW 2.5.0.258	EMF reset on Browser Interface for SCD outer ceramic reset's Pump time	Maintenance on Browser Interface
043582	Closing diagnostic tests leaves them running and the GC status in Diagnostic Mode.	Closing diagnostic tests leaves them running and the GC status in Diagnostic Mode.	Diagnostics on Browser Interface
043597	XCD Reactor Pressure Calibration Updates	No "Reset" button for the reactor pressure calibration	Calibration on Browser Interface
043607	8697 Preform Maintenance - Install Transfer Line to GC - User Input NO- EMF is not updated.	8697 Preform Maintenance - Install Transfer Line to GC - User Input NO- EMF is not updated.	Maintenance on Browser Interface
043615	[8860 DA]: "preview report" icon and "analyze data" icon are blank.	[8860 DA]: "preview report" icon and "analyze data" icon are blank.	DA Express on Browser Interface
043621	After completing the Ozone Pneumatic Leak Check should the zones be turned back on	After completing the Ozone Pneumatic Leak Check, the XCD parameters is not reset	Diagnostics on Browser Interface
043622	8697 - Both the Sample Tray and X-Axis Cleaning turn off the inlet when it is not necessary.	8697 - Both the Sample Tray and X-Axis Cleaning turn off the inlet when it is not necessary.	Maintenance on Browser Interface
043644	8697 Perform Maintenance - Six Port Valve and Rotor -Per Cent Complete goes to 99% too quickly	8697 Perform Maintenance - Six Port Valve and Rotor -Per Cent Complete goes to 99% too quickly	Maintenance on Browser Interface
043662	Gas Bag Selector: Stream can't switch correctly in sequence	Gas Bag Selector: Stream can't switch correctly in sequence	Selector on Browser Interface
043663	Gas Bag Selector: Maintenance run but first stream can't switch	Gas Bag Selector: Maintenance run but first stream can't switch	Selector on Browser Interface
043703	Incorrect Units for Vial Fill Flow Rate	Fill Flow when in Flow To Pressure mode has a unit of "mL"	Method on Browser Interface
043776	Oven On Safety Delay Not Implemented	Oven On Safety Delay Not Implemented	Oven Behavior of flapper

043894	8860 Touchscreen: status not consistent between Touchscreen and Browser Interface when abort headspace run	8860 Touchscreen: status not consistent between Touchscreen and Browser Interface when abort headspace run	Status on Touchscreen and Browser Interface
043938	Events get lost when changing the injection source	specify injection source when starting the run and then we were losing the valve events.	Method on Browser Interface and GC driver

### 2.5.1.9 Firmware

Released 12th October 2022

[http://download.chem.agilent.com/firmware/8860\\_FW\\_2.5.1.9.tgz.gpg](http://download.chem.agilent.com/firmware/8860_FW_2.5.1.9.tgz.gpg)

To download this version, use GC Firmware Update Utility 2.6.3.0 or greater.

[Updating to this firmware does not require instrument revalidation.](#)

Service Note Number: D0026278

**Table 7 Resolved Issues (Agilent 8860 GC System 2.5.1.9)**

Issue ID	Summary	Current Behavior	Impact Area
043399	ALS starts to prepare for run when oven is in standby mode	ALS starts when oven is still in standby mode	ALS

### 2.5.0.258 Firmware

Released 13th May 2022

[http://download.chem.agilent.com/firmware/8860\\_FW\\_2.5.0.258.tgz.gpg](http://download.chem.agilent.com/firmware/8860_FW_2.5.0.258.tgz.gpg)

To download this version, use GC Firmware Update Utility 2.6.3.0 or greater.

[Updating to this firmware does not require instrument revalidation.](#)

Service Note Number: D0022170

**Table 8 Resolved Issues (Agilent 8860 GC System 2.5.0.258)**

Issue ID	Summary	Current Behavior	Impact Area
038450	8860 Browser Interface offers 8 signals, should be 4 to match GC driver	8 signals display on Method Interface	Method page on Browser Interface

038733	The pressure/ flow value of Aux EPC should be displayed in the flow path.	The pressure/ flow value of Aux EPC are not displayed in the flow path	Flow Path on Browser Interface
042054	Browser EMF Trend Plot shows only the most recent Reset Event; refresh required	Only the last Reset Event is displayed	Maintenance on Browser interface
042242	860 Perform Maintenance for replacing Inlet Liner with a Headspace installed includes too much information on the Headspace	The Maintenance procedure for replacing liner includes many Headspace maintenance steps	Inlet Maintenance on Browser Interface
042859	8860 Print Method does not print	Open Method and select a method. Select Print Method. The Print Method Screen does not appear.	Method Print on Browser Interface
042142	8697: Vial is not returned to tray from oven after aborting User Vial Test	Vial is left in Oven after aborting User Vial Test	Diagnostics on Browser Interface
042143	8697: Leak Test Vial is not returned to Leak Test Vial position after aborting Restriction and Pressure Decay Test	Vial is left in Oven after aborting Restriction and Pressure Decay Test	Diagnostics on Browser Interface
042270	Gateway address required to change IP address after initial system setup wizard	There is no invalid network configuration information is displayed if the gateway IP is not entered	IP setting on Touchscreen
042393	Unable to turn off PCM backpressure during the run	Unable to turn off PCM backpressure during the run	PCM backpressure control Time Event
042424	NPD maintenance does not match recommended maintenance	NPD maintenance procedure does not match as recommended	NPD maintenance on Browser interface
042507	Keyboard lock should disable Maintenance Routines and Diagnostic Tests	Keyboard lock from data system doesn't disable Maintenance and Diagnostics	Maintenance and Diagnostics on Browser Interface
041574	8697: Use "Restriction and Pressure Decay Test" instead of "Leak and Restriction Test" in 8697	"Leak and Restriction Test" is used now	Diagnostics on Browser Interface

042139	8697: remove 8697 Headspace Carrier Setpoint option from Plot Interface	Carrier Setpoint is existed in Plot Interface	Plot on Browser Interface
042144	8697: Loop types are wrong under Maintenance section (replace sample loop)	Loop types are wrong under Maintenance section	Maintenance on Browser Interface
042787	Excessively high flow coming out of the FID during inlet maintenance when using H2 as the carrier gas.	If the flame is still lit this could result in a H2 flame being emitted out of the FID.	Maintenance on Browser Interface

#### 2.4.1.10 Firmware

*Released January 2022*

[https://download.chem.agilent.com/firmware/8860\\_FW\\_2.4.1.10.tgz.gpg](https://download.chem.agilent.com/firmware/8860_FW_2.4.1.10.tgz.gpg)

To update this version using GC Firmware Update Tool 2.5.5.0 or greater.

With 8860 firmware 2.4.1.10 updated, GC Drivers version 3.6.181 or later should be used.

*Updating to this firmware does not require instrument revalidation.*


Service Note Number 8860 Series GC-032

Changes/Fixes made since the last version. (2.4.0.307)

#### Issue Id Title

- 041950** Adding firmware support for GigaDevice QSPI
- 042318** GCMS: Allow Missing configuration condition to be dismissed if MS is not available over LVDS on GC start up
- 042319** GCMS LDVS: Provide a mechanism for the user to manually re-trigger connection attempt to establish LVDS communication.
- 042320** GCMS: Enhancement request to periodically poll MS to establish LVDS communication



- 
- 042321 GCMS: When the IP address of MS is changed over LVDS from 8860 warn the user to not power cycle until the network config change is complete.
  - 042301 Column Outlet pressure value ignored, and ambient pressure used.
  - 042340 2.4.0.307 firmware incompatible with 3.3 SR1 Driver
  - 042382 Add classifier database content to the Trend Analysis Database content when gather logs.
  - NA Improve Gasifier/ Sample Selector II performance.
  - 042309 Localisation Updates
  - 042371 Firmware update fails if environment needs to be updated
  - 042396 Inlet pressure is large negative value in 8860 Inlet OQPV Pressure Decay test

#### **2.4.0. 307 8860 GC firmware**

*Released November 2021*

[https://download.chem.agilent.com/firmware/8860\\_FW\\_2.4.0.307.tgz.gpg](https://download.chem.agilent.com/firmware/8860_FW_2.4.0.307.tgz.gpg)

To update this version using GC Firmware Update Tool 2.5.5.0 or greater.

With 8860 firmware 2.4.0.307 updated, GC Drivers version 3.6.181 or later should be used.


*Updating to this firmware does not require instrument revalidation.*

Service Note Number 8860 Series GC-030

#### **Enhancements**

- Remove support for use of Microsoft Internet Explorer (IE) client browser to access GC Browser Interface








Changes/Fixes made since the last version. (2.3.3.6)

**Issue Id Title**

- 037508 8697: Configure XLSI automatically
- 037578 8860 Browser Interface: Request to add filter function in Sequence selection drop list
- 038658 Browser Interface: Post Run pressure setpoint not available for Packed Column
- 040983 Remote software needs to lock out the user from remotely restarting an "offending zone" after a H2 shutdown
- 041020 Browser Run Log does not include entry about Blank Evaluation failure
- 041041 Phone Interface: Sequence, Method, Sample Name not displayed
- 041061 Phone Interface: No signal displayed
- 041148 8697: The diagnostic test result of the six port rotor orientation test cannot be recorded correctly in the system health report.
- 041151 8697: Aux Pressure zero calibration is not performed correct
- 041158 "Gather Logs" functionality fails if there is no run data but the user selects to gather them
- 041159 Browser Interface: Gather Logs says "Method Logs" it should say "Active Method"
- 041192 8697: Add HS Calibration and HS Tray Statistics to Log Files Package
- 041194 8697: Run configuration wizard when headspace hardware changes
- 041239 8860 DA Express: System Reboot error is triggered when load Demo data for analysis

- 
- 041299 8890/60 reports Line Voltage High
  - 041349 8860 EPR: The flow of the PCI with EPR cannot be changed.
  - 041350 8860: PCI Septum Purge flow is display in System Health Report
  - 041356 No Vial status display if first run injector source is not Headspace
  - 041406 Blank Evaluation Report should contain columns for min and max limits and time window
  - 041418 8860: "auto flow zero" cannot be disabled in browser interface.
  - 041423 8697: The Barcode Reader model number of 8697 HS should be G4527A.
  - 041424 8697: The description of Headspace Barcode Reader in System Health Report is blank.
  - 041494 PPIP Pressure Setpoint should be removed on touchscreen
  - 041496 Enable the function of turning off FID High Voltage for DET maintenance
  - 041615 8697: Touchscreen and Browser Interface Show Time Elapsed instead of Time Remaining for Certain Headspace Vial States
  - 041779 8860: Untranslation happen when tray obstruction issue
  - 041781 Total Syringe volume always display [Object Object]
  - 041806 Selector: "Stop Run" doesn't work on 8860 Touchscreen
  - 041809 Maintenance menu language change to Portugal
  - 041826 8697: Simplify maintenance procedure for 'replace sample loop'
  - 041868 "Get Method Logs" should be changed to "Get Active Method" in Browser Interface
  - 041869 "Log File Name" should be changed to "Comment" in Browser Interface

- 
- 041870 "Load" should be changed to "Copy" or "Download" in Browser Interface under Gather Logs in diagnostics.
  - 041883 8860 Touchscreen: Time remaining always display as 0.00 min in vial status when use 8697 Headspace
  - 041884 Untranslation display happen on plot tab on Browser Interface
  - 041902 7693 ALS: ALS light change back to ON status after power cycling.
  - 041917 Localization - "Resume" button under Sequence in BUI not localized into Russian language
  - 041930 8697: Headspace configuration item(s) reset after GC firmware update
  - 041939 8890 and 8860, the FID hydrogen turns on immediately at the end of the self test
  - 041941 Maintenance procedure of cleaning the 8697 oven does not indicate that the instrument should be powered off and unplugged.
  - 041983 8355 Does not Turn off Ozone Power when Insufficient Flow Detected
  - 041984 For Markes Control, doesn't keep the High Flow value after any configuration
  - 042006 8860-8697: No pop-up on the touchscreen offer Resume or Abort if set Vial Missing and Wrong Vial Size Sequence Options to PAUSE
  - 042008 COC pressure decay test failed caused by initial high pressure
  - 042012 Browser Interface: Skipped Untranslate happen on Run status
  - 042029 8697: sequence cannot be resumed successfully when setting vial missing sequence option to Pause.
  - 042171 8697: Inlet Leak and Restriction Test is failed with 8697 connected

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- 042211 PP Inlet Ramp Flow setting doesn't work during sample run
  - 042215 Leak and Restriction test fails with standard SS PID values and 8697 connected.

### **2.3.3.6 8860 GC firmware**

*Released July 2021*

[https://download.chem.agilent.com/firmware/8860\\_FW\\_2.3.3.6.tgz.gpg](https://download.chem.agilent.com/firmware/8860_FW_2.3.3.6.tgz.gpg)

To update this version using GC Firmware Update Tool 2.4.3.0 or greater.

With 8860 firmware 2.3.3.6 updated, GC Drivers version 3.5.132 or later should be used.

*Updating to this firmware does not require instrument revalidation.*

Service Note Number 8860 Series GC-028

Changes/Fixes made since the last version. (2.3.2.11)

#### **Issue Id Title**


- 041619 Multiple TCD filament broken cases are reported
- 041452 Selector: when selector is loading sample, after pressing Stop button on the 8890 Touchscreen, the warning message under the selector maintenance should be modified.
- 041693 UTC +9:30 Time zone unavailable for selection in GC 3.5 [110]
- 041836 System Setup froze on Headspace Configure Interface

### **2.3.2.11 8860 GC firmware**

*Released July 2021*

[https://download.chem.agilent.com/firmware/8860\\_FW\\_2.3.2.11.tgz.gpg](https://download.chem.agilent.com/firmware/8860_FW_2.3.2.11.tgz.gpg)

To update this version using GC Firmware Update Tool 2.4.3.0 or greater.



With 8860 firmware 2.3.2.11 updated, GC Drivers version 3.5.132 or later should be used.


*Updating to this firmware does not require instrument revalidation.*

Service Note Number 8860 Series GC-027

Changes/Fixes made since the last version. (2.3.1.6)

Issue Id Title

- 041118 8697: Failed firmware update doesn't clearly indicate that a new firmware update is required
- 041487 Data system connection failed caused by Invalid Leap Year Handling (March 1 2000)
- 041430 8697: Infinite "Running" of a HSS 8697 Sequence after appending a run, while the last run of a sequence was running
- 041521 8860 septum purge shutdown error is reported
- 041153 Sequence Indicates wrong sample location with Headspace Sampler configured
- 041425 8697: after configuring the HS to an inlet, OQPV Load Qualification Method still cannot be applied
- 041296 8697: Headspace Maintenance should be disabled when the sequence is running.
- 041630 Column connection error caused 'high CPU usage'
- 041597 System fault -Error code 1000600a and System fault 0x00100000 with manual injection
- 041601 Manual Injection data remains on the instrument
- 041362 8890/8860 "Electronics Fault" Error code 1000600b and System Fault Error code 1000600a with 7697A configured



**041376** XCD with Quick Start Wizard "Heater and Flow stabilization" timeout too short

**037865** DA Express-loading calibration standard data issue

### **2.3.1.6 8860 GC firmware**

*Released April 2021*

[https://download.chem.agilent.com/firmware/8860\\_FW\\_2.3.1.6.tgz.gpg](https://download.chem.agilent.com/firmware/8860_FW_2.3.1.6.tgz.gpg)

To update this version using GC Firmware Update Tool 2.4.3.0 or greater.

With 8860 firmware 2.3.1.6 updated, GC Drivers version 3.5.110 or later should be used.

*Updating to this firmware does not require instrument revalidation.*

Service Note Number 8860 Series GC-026

Changes/Fixes made since the last version. (2.3.0.203)

#### **Issue Id Title**

**041086** multiple feedback received for Electronics Fault - Error code 1000600b

**041233** APG remote on 8890 does not send stop signal when run is done

### **2.3.0.203 8860 GC firmware**

*Released March 2021*

[https://download.chem.agilent.com/firmware/8860\\_FW\\_2.3.0.203.tgz.gpg](https://download.chem.agilent.com/firmware/8860_FW_2.3.0.203.tgz.gpg)

To update this version using GC Firmware Update Tool 2.4.3.0 or greater.

With 8860 firmware 2.3.0.203 updated, GC Drivers version 3.5.110 or later should be used.

*Updating to this firmware does not require instrument revalidation.*





Service Note Number 8860 Series GC-025

### Enhancements

- **Add support for the 8697 Headspace Sampler**
- **GC Support 32 oven ramps and 33 plateaus. Negative ramps will continue to be allowed.**

Changes/Fixes made since the last version. (2.2.2.4)

### Issue Id Title

- [034007](#) 8860 **Browser** Interface: [ALS] Total volume should be read-only.
- [036390](#) 8860 **DA Express**: Can't get one channel signal report
- [037354](#) Peak **Markers** and Key in DA Express Signals Comparison don't match
- [038465](#) Perform conditioning method before wake not working as expected
- [038485](#) [DA **Express**] Suggest to add the "Negative Peak" event, specifically for TCD detector
- [038964](#) Browser Interface: The actual value of column flow is displayed incorrectly.
- [039150](#) "GC **Gasifier** removed" is not displayed in maintenance log after gasifier is removed from GC.
- [039761](#) 8860 **EPR**: There are no FID diagnostic tests on the 8860 with FID EPR.
- [040180](#) Browser Interface: sample overlap steps performed when next sequence line is non-overlap
- [040277](#) **Touchscreen**: Aux EPC Calibration Error message gives incorrect reason
- [040336](#) The "**PrepRun**" and "Start" button should be disabled in touchscreen when 8890/60 is in Run Status

- 
- 040339 8860: The setpoint for column flow cannot be downloaded from Data system to touchscreen correctly under Constant Pressure mode.
  - 040524 Browser **Interface**: TCD Configuration Gas Type Wrong
  - 040525 **Touchscreen** and Browser Interface: TCD Reference Gas Type not set to Makeup Gas Type
  - 040546 Browser **Interface**: xCD calibration auto zero
  - 040587 Gather log **failed** when all log options are selected
  - 040705 8860: LTM-II should not be displayed under column configuration on Browse Interface
  - 040709 The purge time should not be limited to the oven time in Browser Interface
  - 040896 Browser **Interface**: Aux EPC Calibration Error message gives incorrect reason
  - 040967 Capture complete logs for "Gather Logs" file
  - 040985 8860: system fault cannot be resolved by rebooting or updating firmware
  - 041051 All module missing after resetting to factory
  - 041121 8860 system fault and stay in diagnostic mode

#### **2.2.2.4 8860 GC firmware**

*Released January 2021*

[http://download.chem.agilent.com/firmware/8860\\_FW\\_2.2.2.4.tgz.gpg](http://download.chem.agilent.com/firmware/8860_FW_2.2.2.4.tgz.gpg)

To update this version using GC Firmware Update Tool 2.3.3.0 or greater.

With 8860 firmware 2.2.2.4 updated, GC Drivers version 3.4.191 or later should be used.

*Updating to this firmware does not require instrument revalidation.*



Service Note Number 8860 Series GC 024

Changes/Fixes made since the last version. (2.2.1.4)

**Issue Id Title**

**040724** When Column Comp is selected method download causes a disconnect

**038332** 88xx loses connection on downloading detector compensated signal or running sample with this signal

**2.2.1.4 8860 Firmware**

*Released December 2020*

[http://download.chem.agilent.com/firmware/8860\\_FW\\_2.2.1.4.tgz.gpg](http://download.chem.agilent.com/firmware/8860_FW_2.2.1.4.tgz.gpg)

No Change/Fixes in this Version

No Service Note is released

**2.2.0.287 88860 Firmware**

*Released in November 2020*

[http://download.chem.agilent.com/firmware/8860\\_FW\\_2.2.0.287.tgz.gpg](http://download.chem.agilent.com/firmware/8860_FW_2.2.0.287.tgz.gpg)

To update this version using GC Firmware Update Tool 2.3.3.0 or greater.

With 8860 firmware 2.2.0.287 updated, GC Drivers version 3.4.191 or later should be used.

*Updating to this firmware does not require instrument revalidation.*

Service Note Number: 8860 Series GC-022

## Enhancements

- **Add support for Sample Selector II**
- **Add support for Method Printout from Browser Interface**
- **GC Browser Phone Interface**  
A browser interface optimized for mobile viewing on either iOS or Android phones now provides status information including remaining run time and a static plot of the last 20 minutes of detector data.
- **New Updated GC Specifications**

The following GC specifications for Intuvo 9000, 8890 and 8860 have been updated to help make you more competitive in bids/tenders. Note: MMI is for Intuvo 9000 and 8890 only.

	<b>OLD Agilent GC Spec</b>	<b>NEW Agilent GC Spec</b>	<b>Shimadzu 2030</b>	<b>Thermo 1310</b>
<b>Max Inlet Split Ratio (SSL, MMI)</b>	7,500:1	12,500:1	9,999.9:1	12,500:1
<b>Max ECD Data Rate</b>	50 Hz	500 Hz	500 Hz	300 Hz
<b>Max FPD+ Data Rate</b>	200 Hz	500 Hz	500 Hz	300 Hz

- **Added Security to Set Browser Interface PIN on Touchscreen**


A PIN must be used at the Browser to enable it to connect to a GC. The PIN is set at the GC touchscreen.


- The previous GC firmware allowed up to 4 numerical digits to be entered for a PIN
- The new firmware (rev. 2.2) allows up to 4-8 numerical digits to be entered for a PIN if additional security is desired


Changes/Fixes made since the last version. (2.1.0.626)

### Issue Id Title

[035046](#) User validation of Static IP information

- 
- 035066 TCD detector can't be recalibrated after the cell or interface board in 8860
  - 035646 Nexus analog out signal goes high when TCD filament is turned off
  - 036034 Browser Interface missing User Configurable parameters for both Inlets and Thermal Zones
  - 036468 Once re-scope the X and Y axis of real-time plot, only the plot from that time can be checked, missing previous chromatograph.
  - 036747 [Truncation]The Home of Edge Browser Interface is truncation and can't display completely
  - 036844 8860 Browse Interface: signal event table is always blank, even after downloading the method from Data System
  - 037001 Channel Partner PCM inlet rate is possibly incorrect
  - 037002 PCM inlet help is not available or incorrect across interfaces
  - 037010 Nomenclature Differences between GC driver and LUI - ALS injection modes
  - 037235 Suggest making it possible to add or insert sequence line during sequence running
  - 037719 User Configurable heater parameters can't be saved in 8860 GC
  - 038473 in Browser Interface, the column outlet pressure should be editable when column outlet is configured as others
  - 038641 Total syringe volume used' is not displayed in Browser Interface
  - 038738 Data not integrating in DA Express
  - 038753 pressure setpoint, flow setpoint and pressure adc setpoint should be deleted in EPR FID diagnostic signal list
  - 038862 in Browser Interface, Tray information is not displayed
  - 038897 DA Express: Y Axis Label

- 
- 038929 Make the blank evaluation tab on the on-board methods read "Blank Evaluation"
  - 038960 Configuration of Composite column is not supported from Browser Interface
  - 038995 Remaining Run Time is blank under Run Status when running a sequence via Browser Interface
  - 039154 After Gasifier is removed from GC, related help file cannot be searched out.
  - 039158 8860 Browser Interface Help \_DA Express issue untranslation screenshots and truncation issue screenshot
  - 039231 8860 EPR Touchscreen: Front inlet pressure is unchecked after setting the front inlet pressure to 30 psi and downloading method to GC in Browser Interface
  - 039243 Excessive Safety Flow Shut off with all gasses needs to apply just to H2
  - 039309 EMF thresholds for back injector are not being read or set from device when only a back injector is installed (88XX)
  - 039377 8860\_Browser Interface\_FID replace Jet screenshot need be 8860 instrument instead of 8890
  - 039386 Method save fails to display tab with errors when changing column flow
  - 039463 ALS parameter can't send to 8890/60 if "Sample Depth" set to "-2".
  - 039489 method can't be downloaded to 8860 when syringe sample depth with minus value
  - 039533 there are blank lines under sequence selection list
  - 039536 Change MS network setting behavior from the LUI
  - 039543 8890 2.1 firmware gives Error on Quick start for SCD

- 
- 039749 Modify GC Access PIN to allow for 4 to 8 digits
  - 039825 In Browser Interface, sequence line numbers greater than 99 are truncated
  - 039915 8860: The septum purge flow of the COC inlet cannot be reset to zero by calibration
  - 040292 8890 “Host System Not Ready” should remain as long as the data system (MH) does not have a sequence running.

### **2.1.0.626 8860 GC Firmware**

*Released in May 2020*

Service Note Number: 8860 Series GC-016


#### Enhancements

- Optimized “PrepRun”, “Start”, “Stop” behavior for manual injection on touchscreen
- Improved Browser Interface performance, introduced new features
- Added support for Gasifier II
- Update Help and Localization (Chinese, Russian, Japanese, Brazilian Portuguese)


Changes/Fixes made since the last version. (2.0.2.8)


#### **Issue ID Title**


- 024416 Adding user defined EMF fields seems not to be working
- 032319 8890/60 should hold Not Ready state whenever Blank Run Analysis sequence is aborted


- 
- 033096 Request to Check the Left Memory Size in Touchscreen or Browser Interface of 8860
  - 034588 8860 Browser Interface: it's better if save method can be multiple - selection.
  - 035195 Browser Interface: Advanced Tests in Diagnostics
  - 035203 Diagnostics: Inlet Tests Fail with Headspace Connected
  - 035605 5977B will not be configured properly if the 8890/60 is turned on the first time prior to the MS
  - 035959 [DA Express] Print calibration curve in report
  - 035987 Touchscreen: Flow path on Touchscreen is different with that on Browser Interface and Openlab when one inlet is connected with two columns
  - 036052 [DA Express] A new icon is required for 'Compare'
  - 036053 [DA Express] A new icon is required for 'Curve color config'
  - 036393 8860 EPR: Is the He conservation module supported in 8860 SSL with EPR?
  - 036398 Update to 8890/60 Maintenance guide (all languages) needed - new CSD part numbers
  - 036426 8860 Browser Interface, the instrument screenshot shows 8890, it is better update to 8860
  - 036577 [DA Express] Redesign the default report template to stay consistent with Browser Interface theme
  - 036883 [DA Express] Improve the manual baseline operation
  - 036983 Browser Interface: It is hard to visually distinguish between enabled or disabled checkboxes
  - 036998 Septum purge flow should not exist for PCM inlet



- 
- 037122 [DA Express] Layout design for multi-channel tabs need a better design
  - 037123 Browser Interface-injection source with GSV not correct
  - 037196 After DComm is recovered from lost communication with the MS, the GC should restore the previously loaded method
  - 037220 8860 Browser Interface: G3520 transfer line should be replaced with HS transfer line.
  - 037301 [Sequence] Suggest to hide the "Level" and "Amount" column in sequence table when DAX is activated
  - 037320 [DA Express] Reintegrate is very slow when there are more than 40 peaks in multip channels
  - 037386 8890SCD0100 for 8860 SCD: 8860 Touchscreen signal plotting's label not consistent with the selection
  - 037389 [DA Express] "Do not use Multiplier & Dilution Factor with ISTDs" should be removed from report
  - 037391 [DA Express] Cannot delete level from the calibration table
  - 037414 [DA Express] There is NO drop-down menu when "Save as" master method, suggest to add this function as "LOAD" data do
  - 037417 DA Express-No unit for X-axis display in Chromatography
  - 037517 8860 Browser Interface: no unit for SSL inlet septum purge flow.
  - 037518 8860 Browser Interface: pre-run flow test should be disabled in 8860.
  - 037538 [DA Express] If user leave "Sample Amount" as blank during sequence edition, the value will keep at 1 in Run Info, and especially in report, which will lead inconsistance
  - 037554 PID parameters for Markes TD is needed in 8860 GC
  - 037567 [DA Express] Suggest to make "the grid" of the chromatography as an option, user can select to show the grid or not

- 
- 037576 Russian help does not include eFam links
  - 037602 Running sequence from the BROWSER with a Post Run time stops after first run
  - 037681 Headspace and Valve injections do not increment inlet EMF counters.
  - 037685 Total flow displayed during leak and restriction test is abnormal while the real situation is correct
  - 037692 The EPR inlet is missing some images during the leak & restriction test.
  - 037755 HeConsControlled is still checked on UI even when module is removed
  - 037767 8860: column cannot be removed in the Browser Interface.
  - 037803 G3449A Aux Heater Type is not Accurate in 8860 Brower Interface Configuration Interface
  - 037845 8860 Browser Interface: there are two inlet carrier gas type displayed in Column tab
  - 037890 8860: In Browser Interface, Auto Schedule Calibration On cannot be saved.
  - 037906 8860: The detector position cannot selected under TCD polarity events in Browser Interface.
  - 037907 8860: TCD polarity switching in Event Table is not functional.
  - 037909 Low disk space correction is confusing
  - 037917 8860: The diagnostic signal of Hydrogen sensor is always a straight line with a value of 0.
  - 037950 8860:Hydrogen Sensor Last calibrated time should be displayed Under Instrument Actuals.
  - 038024 [DA Express] It is incorrect to only set "Fixed Y-axis" in DA Express for Negative Peaks

- 
- 038075 The length of capillary column into FPD is inconsistent between training material and that in Browser interface---Maintenance/Column
  - 038113 The function of "Autozero" of signal on Browser Interface does not work
  - 038153 TCD Filament can come on at 135 degrees but the help states 130 degrees.
  - 038155 8860: the EMF for septum injection counter is always Zero for COC inlet with Manual/ External injection.
  - 038169 8860 packed column actual flow is not correct in Browser Interface
  - 038256 8860 Valve Box temperature setpoint maximum is 250 degree now
  - 038301 Warning for pressure and restriction tests when headspace/markes/external sampler is connected
  - 038313 Update Health Report to include Column Dimensions
  - 038320 Logging for Blank/Detector/Peak Evaluation Results
  - 038336 Retention Time Ratio in the Detector Evaluation of the FPD+ needs to be changed.
  - 038430 88xx H2 Sensor test Results in System Health Report should include Concentration % in Details column
  - 038431 Browser System Log has entry for Hydrogen shutdown during H2 Sensor Calib Check, but no entry for the clearing of the shutdown
  - 038433 Browser Instrument Actuals Table always shows H2 Sensor Concentration Actual as 0; no setpoint, no units, no percent accuracy
  - 038444 8860 PP inlet: Pressure can't maintain during Verifying Basic Control and Test is Failed in leak and Restriction Test
  - 038453 GC driver: Instrument Status always seems to show Hydrogen Sensor Concentration as 0.000%, though Calib Check shows 1.916%

- 
- 038489 for COC inlet, inlet septum purge should be editable in the event table.
  - 038495 The Runtime Events of TCD cannot be downloaded to instrument successfully.
  - 038498 In Browser Interface, the type of TCD makeup gas is displayed incorrectly.
  - 038499 In Browser Interface, under TCD mode: Column + Makeup = Constant, 'combined' should be displayed.
  - 038505 The runtime events of EPR TCD's detector polarity cannot be downloaded to the instrument successfully.
  - 038509 ALS Exceptions are not being cleared at start of run
  - 038514 when the NPD is under Column + Makeup = Constant mode, 'Combined' flow should be displayed.
  - 038694 Browser Interface is frozen when changing column type from packed to capillary.
  - 038735 in the Actuals Table, the setpoint and actual values of Aux EPC are incorrect.
  - 038751 The actual pressure of PCI is always 0.
  - 039054 8860: OQPV Pressure Decay Test is needed for compliance service (OQ)
  - 039062 Lower H2 carrier flow and oven temperature when XCD is in insufficient oxidizer
  - 039115 "disk usage up" warning pop up with 88x0 GC
  - 039179 8860 shows 'Line Voltage Low, Power Supply Communication Fault



## 2.0.2.8 8860 GC Firmware

*Released in January 2020*

Service Note Number: 8860 Series GC-014

Changes/Fixes made since the last version. (2.0.0.391)

### **Issue ID Title**

- [037691](#) Leak and restriction test and pressure decay test issue with FW 2.0.0.391 in 8860 GC
- [037804](#) Intermittent ALS remain in busy state and sequence aborted with GCMS system
- [037824](#) Removing MSD Transfer line should fix up column configuration
- [037853](#) Data system displays the ALS fail state incorrectly
- [037862](#) Instrument does not wait for external device not ready
- [037892](#) 7693 stops communicating with the ALS controller
- [037898](#) system reported error 1000600a, system rebooted several times, and the error can't be cleared
- [037926](#) XCD H2 sensor calibration failed
- [037936](#) 8860 PP inlet: Pressure raise to 11psi and continue until fail in leak and Restriction Test
- [037997](#) 8860: The positive and negative values of TCD signal cannot be switched via Event table in data system.
- [038025](#) GC not waiting for readiness prior to injection
- [038027](#) Browser Interface does not wait for readiness to begin sample prep
- [038095](#) Variable function of plunger speed cannot be set and jump back to fast/slow automatically. (solved with GC driver 3.1.205, issue only existed with back injector)



## 2.0.0.391 8860 GC Firmware

*Released October 2019.*


### Enhancements


- added support for the Integrated SCD
- added support for Hydrogen Sensor Module
- added support for Clock table programming
- added support for Sleep/Wake

Changes/Fixes made since the last version. (1.2.0.13)


### Issue ID Title


- |        |   |
|--------|---|
| 032242 | [DAExpress] Dual channel signal curve colors are too similar to distinguish               |
| 032837 | Browser Interface Sequence: Could not know the current injection when sequence is running |
| 032871 | Detector Evaluation may require separate test limits for EPR pressure control             |
| 032934 | 88x0 EMF Warning and Service Due thresholds for Column Length work incorrectly            |
| 032946 | 8860 Browser Interface: the first line rate of COC inlet ramp table should be gray.       |
| 032999 | 88x0 Touchscreen includes too many gas types for Aux EPC Configuration                    |
| 033013 | 8860 Browser Interface: slow fan is not supported in 8860.                                |
| 033015 | 8860 Browser Interface: Maximum oven temp range is 70 - 450 if override checked.          |
| 033016 | 8860 Browser Interface: Total run time should be <=999.99min.                             |


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- 033018 8860 Browser Interface: the Oven first line rate should be gray and rate 0 should disable that ramp.
  - 033107 Too Many Digits displayed in Actual Value of Detector Signal on Status of Browser Interface of 8860
  - 033181 8860 Browser Interface: Data Process Method should be displayed in DA Express
  - 033185 8860 Browser Interface: Demo data is required for function review and customer site familiarization
  - 033350 Active method setpoints applied before Touchscreen finishes booting
  - 033380 8860 Browser Interface: out of range value should highlight as invalid in oven table.
  - 033383 8860 Browser Interface: max oven temp is not highlighted after unchecking override column max
  - 033488 8860 Browser Interface: Event Type list should be consistent with GC configuration.
  - 033497 8860 Browser Interface: diagnostic signal list in online plot should be modified.
  - 033504 8860 Browser Interface: for TCD with EPR, it should be marked with manual.
  - 033518 8860 Browser Interface: [PCI] instrument actuals table should be modified.
  - 033533 8860 Browser Interface: in Valve configuration, remote start is only supported in position 7 & 8.
  - 033540 8860 Browser Interface: TCD makeup gas type should be displayed in Browser Interface.
  - 033562 8860 Browser Interface: no valve name in Valve configuration table.


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- 034016 8860 Browser Interface: [Maintenance] ECD insert liner injections is always 0, and the service warning and service due is not function.
  - 034061 System log has empty page in Portuguese version
  - 034077 8860 Browser Interface: [Valve] injection source should be no valve options unless a GSV is configured.
  - 034086 8860 Browser Interface: [Aux PCM] pressure rate, hold time range, run time limit are not correct.
  - 034090 8860 Browser Interface: [ALS] under Multiple injections mode, total volume= injection volume\* multiple injections should be displayed.
  - 034173 8860 Touch Screen: no 'changed hardware' diagnostic condition pops up.
  - 034231 8860 Browser Interface: [Readiness] Aux PCM readiness cannot be downloaded.
  - 034282 8860 Browser Interface: column compensation is unavailable in Browser Interface.
  - 034498 8860 Browser Interface: [online plot] TCD real-time plot units is not correct.
  - 034581 8860 Browser Interface: no ALS model number and firmware version displayed in ALS configuration screen.
  - 034586 8860 Browser Interface: equation and R2 should be displayed in curve screen.
  - 034595 8860 Browser Interface: when a FPD is configured to a Packed column, there should be no options under the column flow correction.
  - 034597 8860 Browser Interface: default signal rate is 1000Hz instead of 50Hz.
  - 034598 8860 Browser Interface: FPD signal should be displayed with units: 150pA.





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- 034601 8860 Browser Interface: there is no COC temp setpoint in Track Oven mode.
  - 034654 8860 DA Express: There are too many decimal digits of rep factor and other parameters
  - 034739 88xx Browser Interface service mode - module LVDS configuration not grayed-out for configured modules
  - 034746 8860 Browser Interface: when the Aux EPC is part of the flow path, Air is not allowed.
  - 034748 8860 Browser Interface: Aux EPC initial pressure range is not correct when its mode is ramped pressure.
  - 034749 8860 Browser Interface:[Aux EPC] the Aux EPC rate range is not correct when the ramped pressure is selected.
  - 034753 8860 Browser Interface: [Aux EPC] the ramped run time should be limited by oven run time maximum.
  - 034754 8860 Browser Interface: there is a post run under ramped pressure table or ramped flow table, but it's not editable.
  - 034756 8860 Browser Interface: [Aux EPC]Too many decimal places in the calculated flow.
  - 034783 8860 Browser Interface: add the FID flame status in Instrument actual table.
  - 034798 8860 Detector Evaluation is always failure in EPR system
  - 035014 8860 Browser Interface: Remove unsupported MSD types from type list under configuration
  - 035025 Browser Interface loses its place when a change is made to valve config.

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- 035148 Browser: Service Mode Setup: Options should be filtered by availability and feasibility
  - 035151 Diagnostics: Hardware Setup: Confusing button when hardware is not configured automatically
  - 035363 Vent and Pump down button could not take effect again for MS control from touch screen after MS has been pumped down through touch screen for the first time
  - 035377 Browser interface calibration: There is no prompt popped up when pressure and flow zero failed
  - 035381 Browser interface calibration: "Actual" item under Flow Zero and Pressure Zero should be renamed as "Zero"
  - 035383 Browser Interface: "G3520 Transfer line" should be changed to "G3449 Transfer line" in Aux heater type
  - 035415 Browser Interface: It should be only Constant Pressure mode for SSL EPR
  - 035459 88x0 Local Data Storage link typo.
  - 035502 8860: SSL inlet purge time max range should be 999.99.
  - 035506 Browser Interface Locale settings change back to English after Brower Interface reopening
  - 035533 8860: default column type should be Capillary in Browser Interface.
  - 035546 Browser Interface: Solvent wash mode should be changed for G4567A in 8860
  - 035571 Browser Interface: Data rate is always 50Hz and can't be removed when it is selected with "none" signal source
  - 035581 8860 Browser Interface: the ECD signal value unit should be Hz instead of pA.

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- 035604 Removing columns from the Browser Interface does not work.
  - 035682 [Browser Interface]: the help info of pressure decay test in self guided diagnostics is not correct.
  - 035687 Method name display in Touchscreen or Browser Interface not displayed.
  - 035735 New PID parameters for splitless injection with G3449A
  - 035797 8860 Touchscreen (from customer): we need to add a Stop button in Touchscreen.
  - 035799 8860 Browser Interface: during column configuration, the interface will jump into another interface, normally ALS screen.
  - 035816 8860/8890 Touchscreen: the status should be Not Ready when the SSL inlet is waiting for pre-run and purging under Splitless mode.
  - 035818 8860 Browser Interface: in the real-time plot window, two same detector signal can be displayed at the same time.
  - 035825 8860/8890: when running an inlet Pressure Decay Test, the actual inlet pressure is different between in Browser Interface and in Touchscreen.
  - 035826 8860 Browser Interface: In the browser, the GC has 10 available valve positions while in CDS 2 it has 8.
  - 035827 8860 Browser Interface: When column was configured with a PCM as Inlet, the status of column connection cannot be displayed in Touchscreen.
  - 035829 8860 Browser Interface: packed column actual pressure is always 0 in Touchscreen and in Browser Interface, when a Packed column is configured PCM as inlet.

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- 035831 8860 Browser Interface: When Packed column is configured PCM as Inlet, the flow setpoint cannot be downloaded successfully under constant flow mode.
  - 035926 8860 Browser Interface: there is no 'show all flows/ only show columns' button at base of column selection table.
  - 035927 8860 Browser Interface: if I configure a column to PCM A, Aux PCM A disappears from the list of columns to control.
  - 035999 8860 SSL Inlet: sleep mode is not supported in 8860.
  - 036029 8860 FID: The fid's flame status is always OFF no matter it's igniting or On.
  - 036036 88xx online manual should not mention software keypad any more
  - 036108 [DA Express] Exclusive access to DA Express is now not working
  - 036158 [DA Express] Amount unit is not displayed in Report
  - 036199 8860 Browser Interface: FID H2 actual flow is not correct under column + fuel = constant mode.
  - 036222 [DA Express] Only the first channel's Integration parameter and calibration table get saved to report
  - 036313 8860/90 TCD: TCD Switching comes on with above 130 degrees without selecting filament on or flows on.
  - 036361 88x0 NPD Hydrogen flow can't change ON/OFF status in event table properly via Browser Interface
  - 036391 8860 DA: the summary Table in report is displayed incorrectly.
  - 036392 8860 Browser Interface: the color of status bar is not displayed correctly.
  - 036400 8860 Browser Interface: under maintenance mode, the FPD block actual temperature will rise to a high temp.

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- 036482 [DA Express] Save Method to an existing name does not give any notification
  - 036500 8860 Browser Interface: carrier gas is not displayed correctly when controlled by He conservation module.
  - 036501 8860: PCM flow is not shown in touchscreen even in flow control mode
  - 036502 8860: PCM flow setpoint should not be displayed on Touchscreen when PCM is under Constant Pressure
  - 036503 8860 PCM Aux Channel calibration always failed
  - 036662 8860 Touchscreen: some words in Chinese version are not the correct simplified Chinese.
  - 036683 8860 valve: When a (dummy) gas sampling valve is configured as valve 4,5,6,7, or 8 on 8860, valve 1 will automatically go to on at the start of any run.
  - 036927 Abort current run from Browser interface and Touchscreen which is acquired from GC driver violate the audit requirement, suggest to set authorization and pop-up for indication
  - 036946 [DA Express] If user select .D file and then click "OK" under "Load STD" function, a pop-up exist as attached, which will mis-lead the user.
  - 037084 Pressing the Stop button does not go through PostRun
  - 037194 Oven heating too slowly observed at several customer sites
  - 037217 [DA Express] Curve Graph/Table not showing correct information when in ISTD mode
  - 037388 [DA Express] ISTD Calibration curve is incorrect when we have multiple points for a compound

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- 037415 When using GC Driver to acquire data, the method parameters are "editable" on Browser interface and show "Method download successful" though actually does not work
  - 037433 [Online help] Online help for DA Express is still using English screenshot when language has been switched to Chinese
  - 037453 8860 SSL EPR: Purge time cannot be uploaded from instrument correctly.
  - 037623 "Host not ready " is not available on 8890/60 with Masshunter
  - 037647 EPC modules not configured to a column will change the setpoint to 0 in post run

#### **1.2.1.10 8860 GC Firmware (Released as point patch only for certain customers - not released to manufacturing)**

*Released August 2019.*

Changes/Fixes in this FW version.

##### **Issue ID Title**

- 037194 "Oven heating too slowly" observed at several customer sites

#### **1.2.0.13 8860 GC Firmware**

*Released April 2019.*

Firmware version 1.2.0.13 fixes some issues in the initial release of the 8860 firmware (version 1.0.61) as listed in the following Team Tracks. No new functionality was added in this firmware version.



## Issue ID Title

- [035596](#) Column outlet pressure cannot be set and resets to 0 in the GC Driver when outlet set to other
- [035602](#) Browser Interface sequence and method entry fields need to be sanitized.
- [035603](#) Setting up packed columns from the browser does not work.
- [035628](#) 8890/60 auto-configuration issue
- [035650](#) Analog output signal on 8890 and 8860 GCs is very small compared to 7890 GCs.
- [035651](#) Analog output signal Zero setting is +- 5000000 instead of +-500000 like the 7890 GC.
- [035653](#) Changing the Zero value on the 8890 Analog Output does not change baseline output.
- [035695](#) 8860 Browser Interface: Method name with a space at the end can't be loaded or deleted
- [035851](#) Invalid Setpoints - Nominal Power

## 1.0.61 8860 GC Firmware

*Initial release February 2019.*

## 8 Firmware Update Program

It is not possible to downgrade firmware from revision 2.X to revision 1.X

The GC firmware update program is supplied as part of the Firmware Update Package.

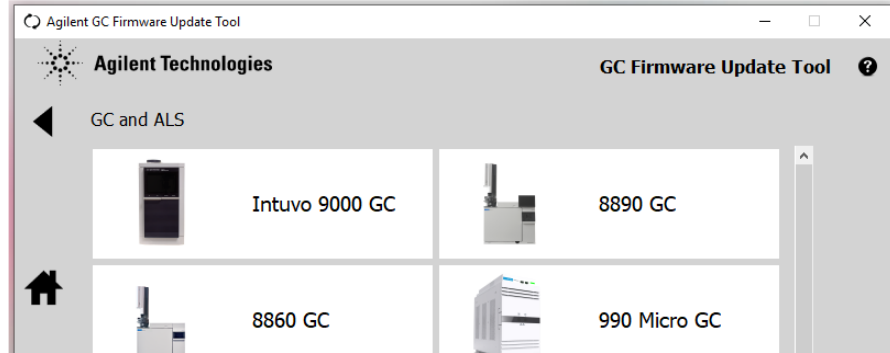
Always use the latest version of the update tool.

After the program has been loaded and executed the following screen appears.



This enables the user to select which instrument type needs to have its firmware downloaded. In this case we select the GC and ALS.





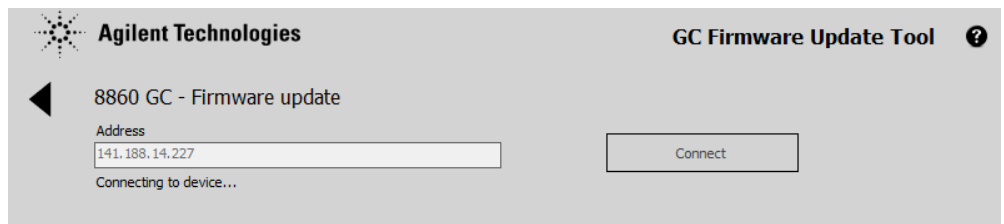
The **8860 GC** is chosen from the Product menu.

The next screen allows us to either modify firmware or PID values for the EPC modules.

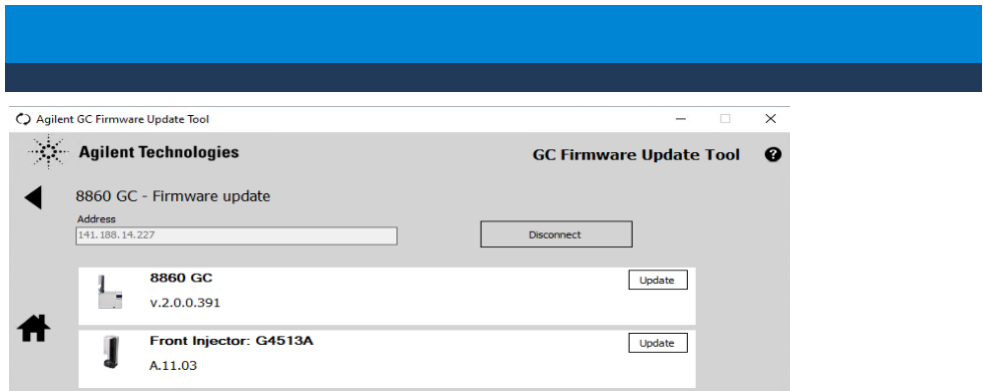
**Firmware update** is selected.



After choosing to update firmware, you must then enter the IP address of the 8860 GC that you wish to connect to and then press **Connect**.



Information such as current installed firmware will then be displayed.



Press **Update**.

A Windows Explorer directory will then appear, and you must select the firmware revision that needs to be downloaded.

If the required firmware version is not displayed then you can "browse" your hard drive to find it.

The firmware file has the structure 8860-FW-X.X.X.X.tgz.gpg

Name	Date modified	Type	Size
2.1.0.22	2/24/2020 9:50 AM	File folder	
GC driver 3.1 SR1	2/24/2020 9:50 AM	File folder	
8860-FW-2.0.0.391.tgz.gpg	9/18/2019 2:59 AM	GPG File	1,673,174 KB

After you have selected the correct file the firmware will automatically be downloaded.

After the download is finished the GC will reboot and the firmware update is complete.



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Edition 06/2024

D0038217

