Agilent 8860 GC

Firmware Bulletin

Revision 2.2.2.4

Internal and External **use**

About this Document

This document provides the firmware changes used for the following GC System
- 8860 GC (G2790A)

Contents

Document History

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

Date	Version	Description
24th Feb, 2020	Rev 1.00	Initial release
10th Jun, 2020	Rev 1.10	Added 2.1.0.626 details
25th, Nov, 2020	Rev 1.20	Added 2.2.0.287 details and modified for external use
11th, Dec, 2020	Rev 1.21	Remove "support Oven Cryo" statement and adjust some text formats
5th, February, 2021	Rev 1.30	Added 2.2.2.4 details

Compatibility Information

- Agilent 8860 GC Firmware Support Information

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

- OQ/PV - Validation Information

- Data Handling Compatibilities

Agilent 8860 GC Firmware 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
- G1888 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.

Data Handling Compatibilities

Below is a list of minimum 8860 Firmware requirements to support current Agilent Open Lab CDS Chemstation (rev C.01.10), Open Lab CDS (rev 2.5) and Open Lab CDS EzChrom (rev A.04.09)

Instrument	Model	Supported Firmware Version (minimum)	Notes
8860	G2790A	1.0.61 or greater	

Firmware History

- Current Version Changes

- Previous Firmware Changes

Current Version Changes

The current firmware for 8860 GC is 2.2.2.4

Released January 2021

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

Previous Firmware Changes

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

2.2.1.4 88860 Firmware

Released December 2020

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
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

<u>Enhancements</u>

- **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.

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

Revision: 2.00, Issued: January 11, 2021
Agile Document Number: D0007856
DE number: 44237.4805787037

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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.

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.

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.

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.

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.
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.

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.

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
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 bowser 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.

Firmware Update Program

[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.
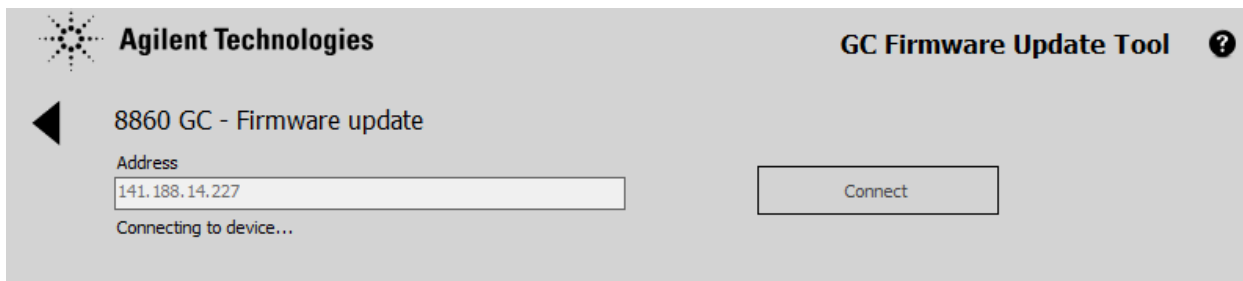
The **8860 GC** is chosen from the Product menu.
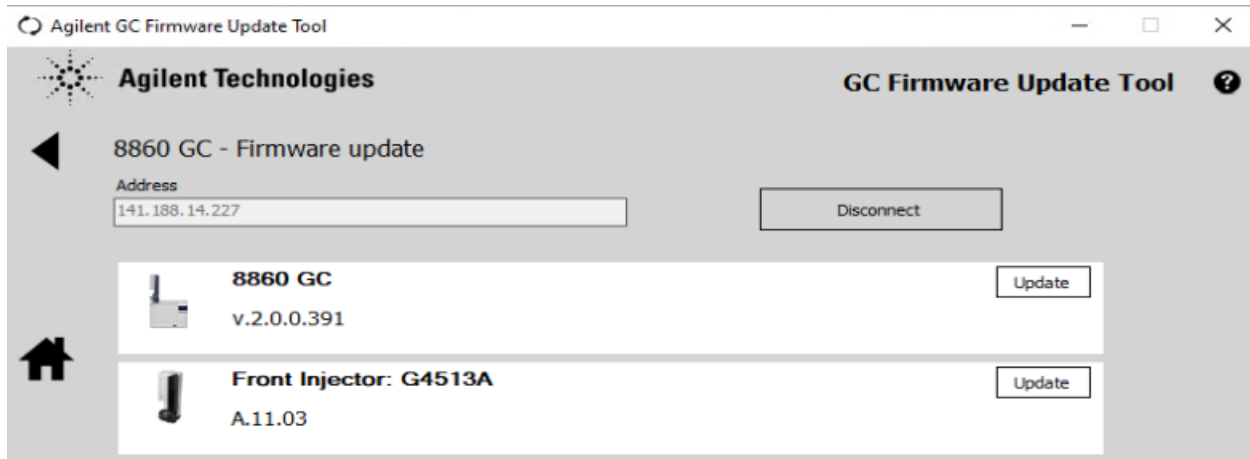The next screen allows us to either modify firmware or PID values for the EPC modules.
Firmware update is selected.

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

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.