

Web User Interface for the Agilent 990 Micro GC including PRO and Mobile licenses

User Manual



Notices

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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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Introduction

The 990 Micro GC with mobile license provides a web portal access to the devices, allowing you to view instrument status or configure and control instruments through a clean, adaptive, and simplified interface.

To allow access to a Micro GC, first follow the setup instructions in the 990-PRO Micro GC User Manual (G3588-90012) or 990 Micro GC User Manual (G3588-90010). Enter the IP address of the GC into the browser of your mobile device to open the 990-Mobile User Interface.

Available features are determined by license type:

Table 1 License features

Feature	Standard	Mobile License	PRO License
Web browser UI	Yes ¹	Yes	Yes
VICI Stream Selector	Yes ²	Yes	Yes
Sequence	Yes ²	Yes	Yes
Data Analysis & Report	Yes ²	Yes	Yes
Data Reprocessing	Yes ²	Yes	Yes
Verification check	No	Yes	Yes
App. Alarm	No	Yes	Yes
App. Alarm relay outputs	No	No	Yes
App. Timed relay outputs	No	No	Yes
App. Digital Inputs Events	No	No	Yes
App. Analog outputs	No	No	Yes
Digital output events	Yes ²	No	No
Extension digital IOs ³	Yes	No	Yes
Extension analog IOs ³	No	No	Yes
LCD	Yes	Yes	Yes
LCD (customizable page)	No	Yes	Yes
FTP Storage	No	No	Yes
USB Storage	No	Yes	Yes
USB WIFI	No	Yes	Yes
Modbus TCP	No	No	Yes
Modbus Serial	No	No	Yes ⁴
Energy Meter	No	No	Yes ⁴
History Log	No	No	Yes ⁴

1 For standard 990 GC, web UI only displays the status and maintenance pages.

2 Those features are not realized by GC firmware, but supported by OpenLab driver instead.

3 The total number of IOs can be extended by using the extension boards.

4 Those sub functions are enabled by default with the PRO license dongle.

Introduction

The 990 Micro GC standard version also provides a web portal access, but with limited features, allowing you to view instrument status and do simple maintenances.

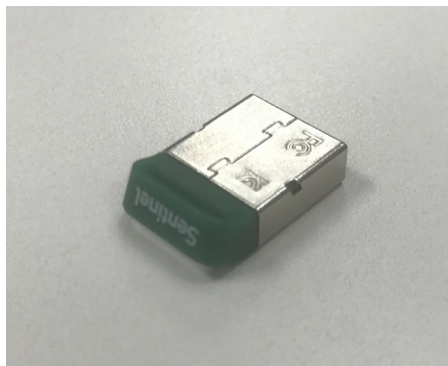


Figure 1. License Dongle

Table 2 License dongles

Instrument License Key	Part Number
990 PRO	G3588-71100
990 Mobile	G3588-72100

General User Interface

User Interface Overview 8

Navigation Pane 9

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Workspaces 18

User Interface Overview

The Agilent 990 Mobile Micro GC User Interface opens in a browser and automatically adjusts to the PC or mobile device browser that you use.

The User Interface is divided into the following regions:

- **Navigation Pane** on page 9
- **Heading Monitors** on page 12
- **Connection Status** on page 17
- **Workspaces** on page 18

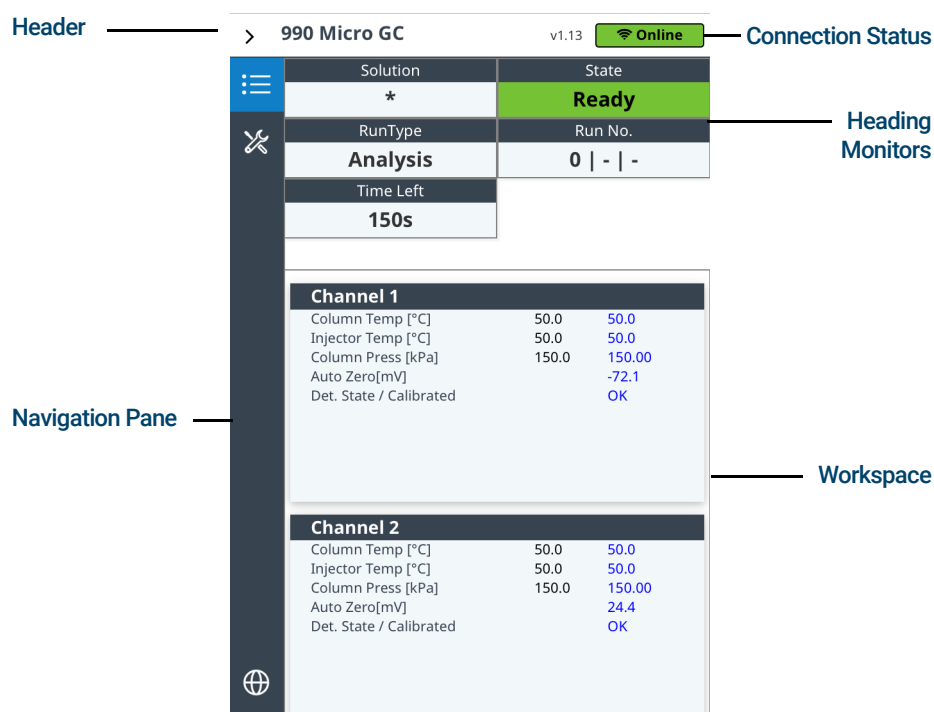




Figure 2. User Interface (Standard)

Navigation Pane

The navigation pane allows you to chose among the **Workspaces**.
Tap or click  in the upper left corner of the interface to view the navigation pane items names.
Tap or click  again to hide item names.

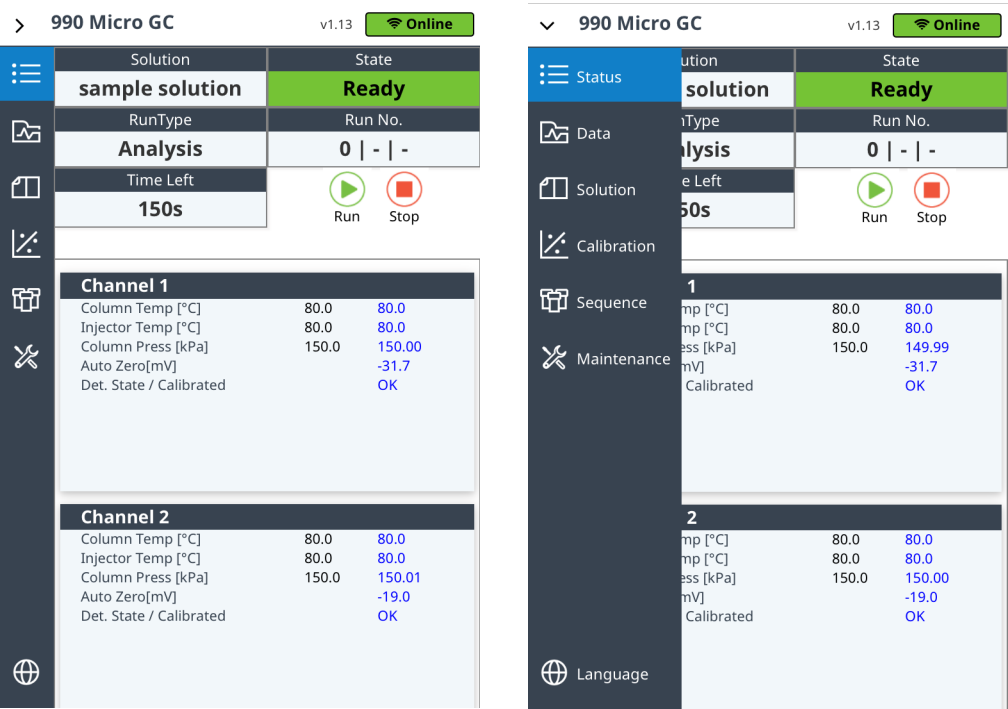


Figure 3. Expanded and minimized navigation pane

Mobile/PRO License vs. Standard Version

Figure 4 shows the navigation pane of Mobile/PRO License on the left. For standard users, only **Status** and **Maintenance** are applicable, as shown on the right of Figure 4.

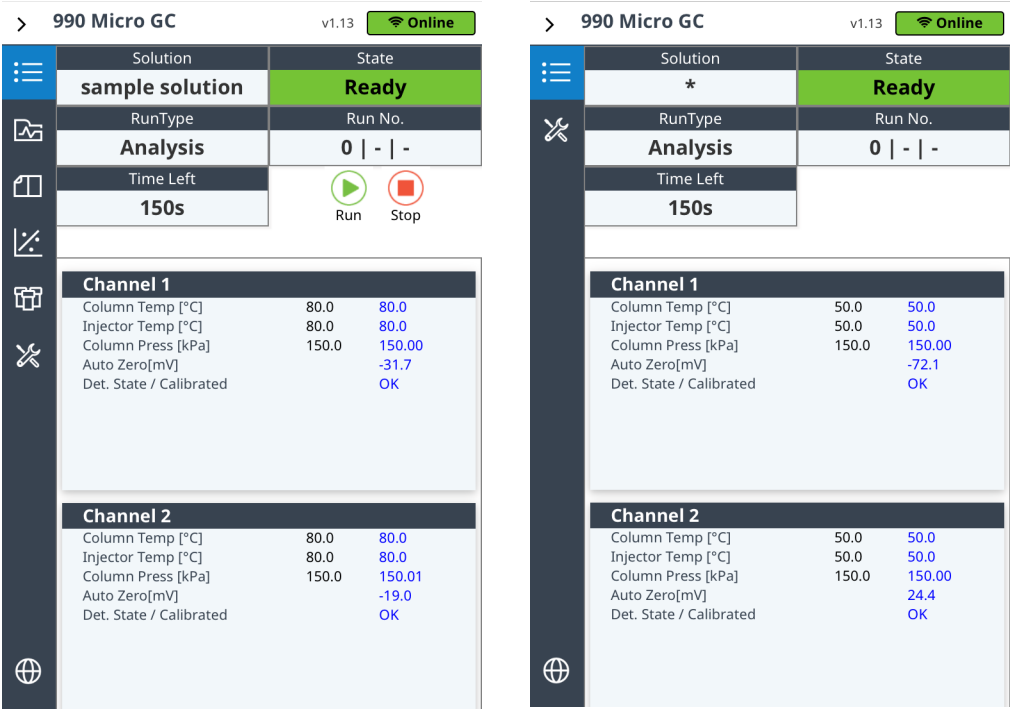

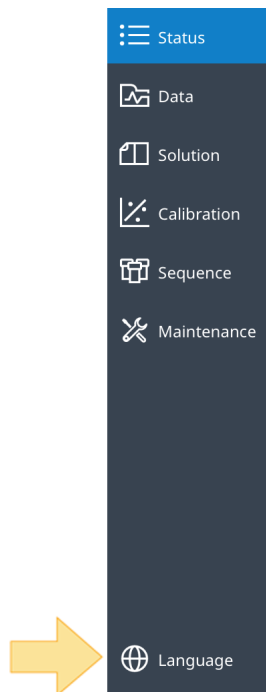


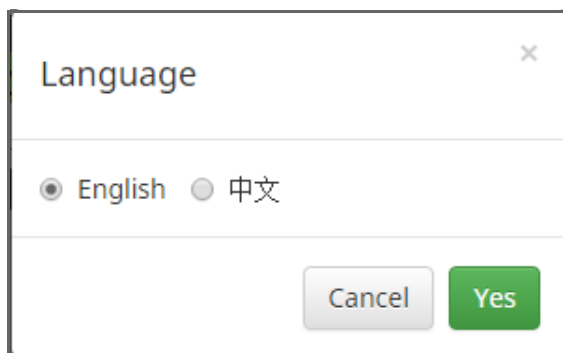
Figure 4. Mobile/PRO License UI (Left) and Standard UI (Right)

Language

- 1 Tap or click  **Language** to display the language selection box for the User Interface.



- 2 Select your language and click **Yes**.



Heading Monitors

The top of the User Interface is the Heading. The heading displays the **Connection Status**, the **Control** box, as well as several other monitors. Some monitors are only available with the Mobile or PRO license.




>	 Agilent	Mobile Micro GC			
	Solution	State	RunType	Run No.	Time Left
	NGA-0429*	Ready	Analysis	0 0 0	120s

Figure 5. Desktop view




Mobile Micro GC		 Monitoring
Solution	State	
NGA-0429*	Ready	
RunType	Run No.	
Analysis	0 0 0	
Time Left	 	
120s	Run Stop	

Figure 6. Mobile view

Monitors are shown at the top of the User Interface and include:

- **Solution Monitor** on page 13 (Only available for Mobile/PRO license users)
- **Micro GC State** on page 13
- **Run Type** on page 14
- **Run No.** on page 15
- **Countdown Timer** on page 16
- **Run/Stop** on page 16 (Only available for Mobile/PRO license users)
- **Connection Status** on page 17







>	 Agilent	Mobile Micro GC				 Monitoring
	Solution	State	RunType	Run No.	Time Left	 
	NGA-0429*	Ready	Analysis	0 0 0	120s	Run Stop

Figure 7. Monitor view

Solution Monitor

The solution monitor is only available for Mobile/PRO license users. See [Solution Monitor](#) on page 27

Micro GC State

The Micro GC **State** monitor indicates the current Micro GC state.

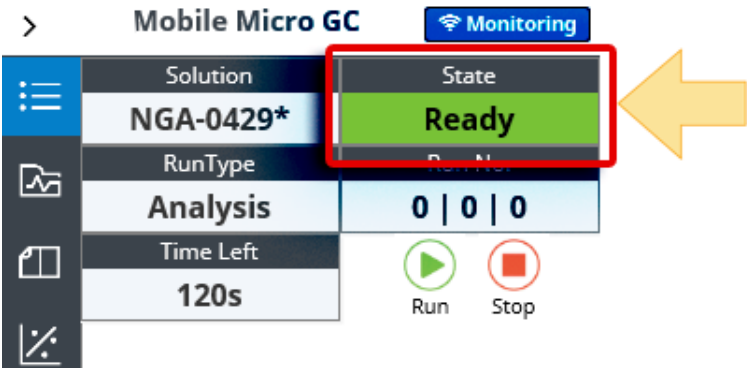


Figure 8. Solution monitor

Micro GC states include the following:

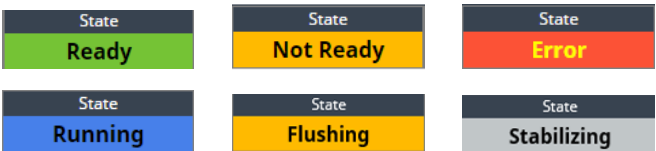


Figure 9. Micro GC states

When the state is **Error**, tap or click the label to display the corresponding error code and descriptions.



Figure 10. Error state

Run Type

The **Run Type** monitor displays the current run type.

Run Types include:

- Analysis
- Calibration
- Verification
- Blank

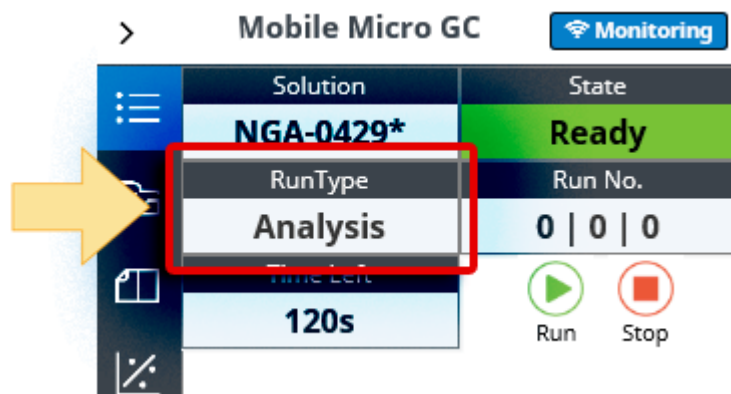


Figure 11. RunType monitor

Run No.

The Run No. monitor displays the sequence repeat, sequence Line #, and line repeat values.

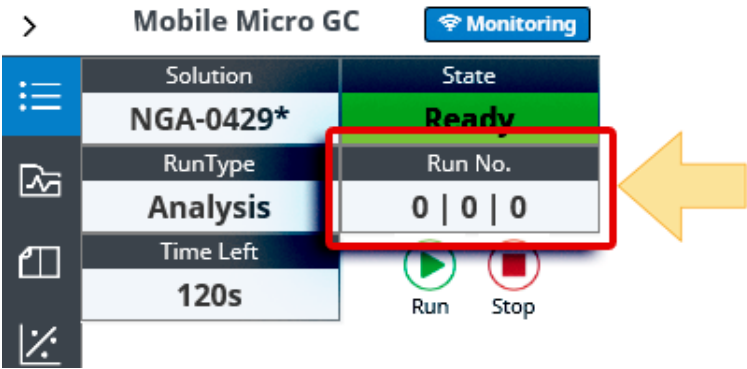


Figure 12. Run No. monitor

Tap or click the monitor to view tool tips.

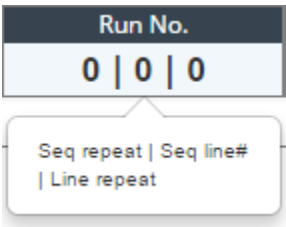


Figure 13. Run No. designations

If the sequence is in Continuous mode, the Seq Repeat indicator displays an infinity symbol.

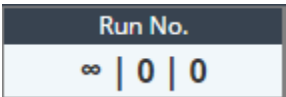


Figure 14. Continuous mode

Countdown Timer

When a run is in progress, the Countdown Timer monitor displays the seconds remaining in the run.

When the current run is completed, the monitor displays the total time in seconds of the next run.



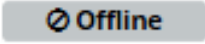


Figure 15. Time Left monitor

Run/Stop

The Run/stop buttons are only available with Mobile/PRO license users. See [Run/Stop](#) on page 30

Connection Status

The connection to a Micro GC is in one of three states:

- Offline  : No connection to target Micro GC.
- Online  : Connected to the target Micro GC.
- Monitoring  : Connected to target Micro GC, but read only. This happens when the target Micro GC is in use by another PC Client software, such as PROstation for 990 Mobile. In this case, the Mobile User Interface cannot get the write privilege from the Micro GC.

You can tap (or hover when using desktop browser) the connection status indicator to reveal a tool tip.

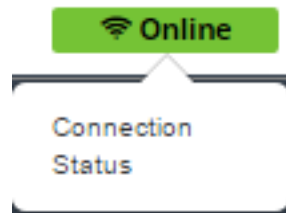


Figure 16. Connection status tool tip

When multiple mobile users are connected to the same Micro GC, they all can be online. Internally, the mobile User Interface does not maintain a connection to Micro GC, but establishes the connection once it needs to. Each mobile User Interface can control the same instrument separately, as long as it does not request the control privilege at the same time (Micro GC can support only one controller at a time). If multiple requests are made at the same time, only one of them will be accepted and the operations from other clients will be rejected by the instrument. The user will also get a notification that the request has been rejected.

Workspaces

The workspace is displayed in the main area of the User Interface. Each workspace is used for a unique interaction with the Micro GC. Select a workspace from the **Navigation Pane**. The following workspaces are available for the general user interface:

- **Status**
- **Maintenance** on page 20

The default workspace is **Status**.

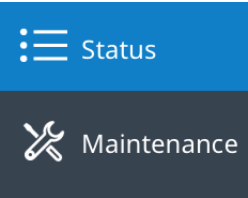


Figure 17. Navigation pane workspace options (General UI)

From the **Navigation Pane**, tap or click a workspace to view it.

Status

- 1 From the navigation pane, select **Status** to display the **GC Status** and the configuration of each **Channel**.

Agilent 990 Micro GC

Status

Maintenance

Solution

State

RunType

Run No.

Time Left

Ready

Analysis

0 | - | -

150s

Channel 1

Column Temp [°C]

80.0

80.0

Injector Temp [°C]

80.0

80.0

Column Press [kPa]

150.0

150.00

Auto Zero[mV]

-32.0

Det. State / Calibrated

OK

Channel 2

Column Temp [°C]

80.0

80.0

Injector Temp [°C]

80.0

80.0

Column Press [kPa]

150.0

150.01

Auto Zero[mV]

-19.0

Det. State / Calibrated

OK

Channel 3

Column Temp [°C]

65.0

65.0

Injector Temp [°C]

65.0

65.0

Column Press [kPa]

150.0

150.01

Auto Zero[mV]

18.7

Det. State / Calibrated

OK

Channel 4

Column Temp [°C]

65.0

65.0

Injector Temp [°C]

65.0

65.0

Column Press [kPa]

150.0

150.00

Auto Zero[mV]

-59.1

Det. State / Calibrated

OK

GC Status

Heated Inlet1 Temp [°C]

50.0

50.0

Heated Inlet2 Temp [°C]

50.0

50.0

Cabinet Temp [°C]

42

Cabinet Press [kPa]

100.5

Automation State

Idle

Current Stream

0

GC time

15-5-2015 05:36:33

External Ready In

true

Count#

0

Error/Warning List

v1.13

Online

- 2 Tap or click a panel to toggle between status and configuration information.

Channel 1		GC Status	
Column Description	10m MS5A Heated Injector	PRO MicroGC	
Carrier Gas	Helium	Instrument name	Mobile Micro GC
Channel Serial Number	14345015	Site info	
		Instrument serial number	10103001

- 3 Disabled channels are dimmed.

1 General User Interface

Status

Channel 1 <i>disabled</i>			GC Status		
Column Temp [°C]	30.0	30.0	Sample Line Temp [°C]	30.0	29.9
Injector Temp [°C]	30.0	51.8	Cabinet Temp [°C]		29.0
Column Press [kPa]	50.0	2.21	Cabinet Press [kPa]		102.5
Auto Zero[mV]		0.0	Automation State		Idle
Det. State / Calibrated		Off / X	Current Stream		0
			GC time		5-2-2016 15:51:50
			External Ready In		Ready
			Count#		0

Maintenance

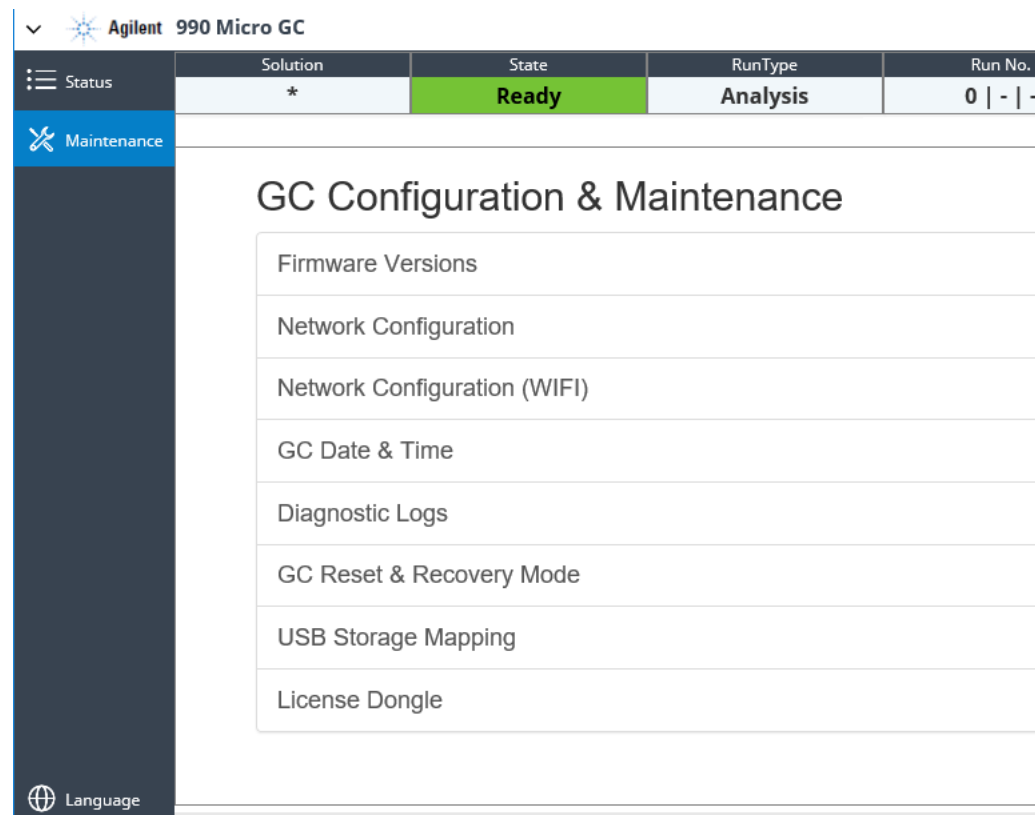


Figure 18. Maintenance page

This is the Maintenance page. By clicking the menu items on this entry page, you are able to navigate to below sub-pages. The default username is "**admin**". The default password is "**agilent**".

Firmware Versions

For review the firmware versions of Micro GC components, including the main board (MPU) version, channel board (IOE) versions, etc.

Network Configuration

For getting and setting network configuration of wired Ethernet network.

Network Configuration (WIFI)

For getting current wireless network configuration and changing the SSID and Password of the WIFI access point of GC.

GC Date & Time

For changing the GC date and time.

Diagnostic Logs

For review the GC logs. Note only the last 150 lines of each log file is displayed on the page, however, there is a button for downloading the full package of log files to the local PC.

GC Reset & Recovery Mode

You can choose either normal reboot or reboot to the recovery mode of micro GC. Note only when GC is in recovery mode, it supports updating the firmware packages via the web.

USB Storage Mapping

This is a user instruction on how to mount the micro GC's USB storage as a network driver.

USB License Dongle

For review the state of attached USB license dongle on micro GC. Please contact Agilent services for license issuing.

Introduction 24

Heading Monitors 26

Workspaces 34

Introduction

This chapter introduces the specific features for the Mobile/PRO license users.

Table 3 License features

Feature	Standard	Mobile License	PRO License
Web browser UI	Yes [*]	Yes	Yes
VICI Stream Selector	Yes [†]	Yes	Yes
Sequence	Yes ²	Yes	Yes
Data Analysis & Report	Yes ²	Yes	Yes
Data Reprocessing	Yes ²	Yes	Yes
Verification check	No	Yes	Yes
App. Alarm	No	Yes	Yes
App. Alarm relay outputs	No	No	Yes
App. Timed relay outputs	No	No	Yes
App. Digital Inputs Events	No	No	Yes
App. Analog outputs	No	No	Yes
Digital output events	Yes ²	No	No
Extension digital IOs [‡]	Yes	No	Yes
Extension analog IOs ³	No	No	Yes
LCD	Yes	Yes	Yes
LCD (customizable page)	No	Yes	Yes
FTP Storage	No	No	Yes
USB Storage	No	Yes	Yes
USB WIFI	No	Yes	Yes
Modbus TCP	No	No	Yes
Modbus Serial	No	No	Yes ^{**}
Energy Meter	No	No	Yes ⁴
History Log	No	No	Yes ⁴

* For standard 990 GC, web UI only displays the status and maintenance pages.

† Those features are not realized by GC firmware, but supported by OpenLab driver instead.

‡ The total number of IOs can be extended by using the extension boards.

** Those sub functions are enabled by default with the PRO license dongle.

User Interface Overview

The Agilent 990 Mobile Micro GC User Interface opens in a browser and automatically adjusts to the PC or mobile device browser that you use.

The User Interface is divided into the following regions:

- **Navigation Pane** on page 9
- **Heading Monitors** on page 26
- **Connection Status** on page 17
- **Control** on page 30
- **Workspaces** on page 34

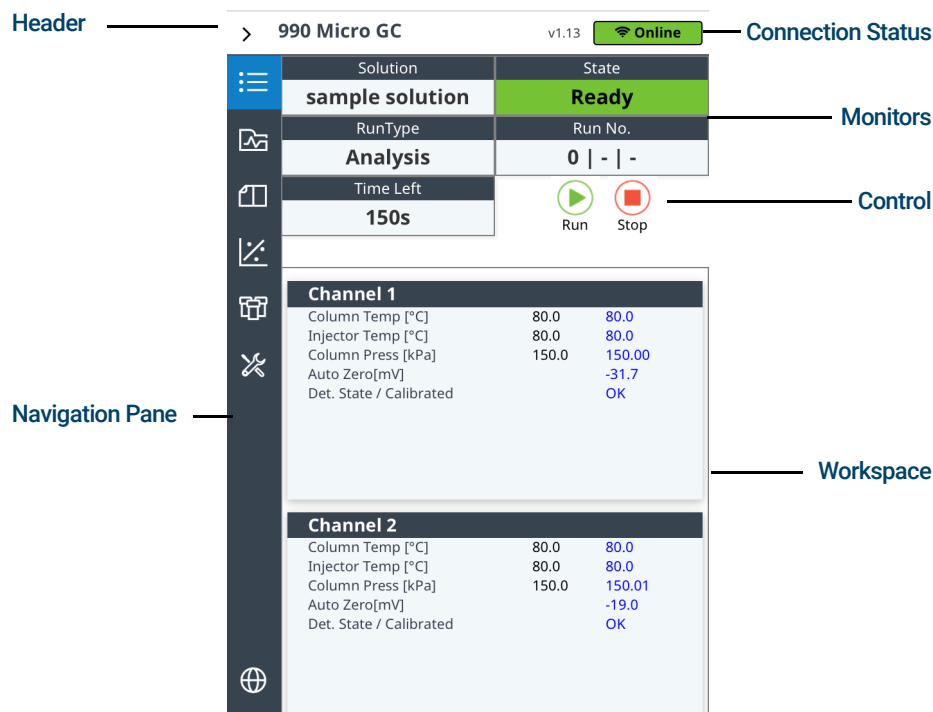


Figure 19. User Interface (mobile license)

Heading Monitors

The top of the User Interface is the Heading. The heading displays the **Connection Status**, the **Control** box, as well as several other **Heading Monitors**.




>	 Agilent	Mobile Micro GC			
	Solution	State	RunType	Run No.	Time Left
	NGA-0429*	Ready	Analysis	0 0 0	120s

Figure 20. Desktop view




Mobile Micro GC		 Monitoring
Solution	State	
NGA-0429*	Ready	
RunType	Run No.	
Analysis	0 0 0	
Time Left		
120s		
		
	Run	Stop

Figure 21. Mobile view

Monitors are shown at the top of the User Interface and include:

- **Solution Monitor** on page 27
- **Micro GC State** on page 13
- **Run Type** on page 14
- **Run No.** on page 15
- **Countdown Timer** on page 16
- **Run/Stop** on page 30
- **Connection Status** on page 17







>	 Agilent	Mobile Micro GC				 Monitoring
	Solution	State	RunType	Run No.	Time Left	
	NGA-0429*	Ready	Analysis	0 0 0	120s	
						 Run
						 Stop

Figure 22. Monitor view

Solution Monitor

The current solution name is displayed in the **Solution** monitor.

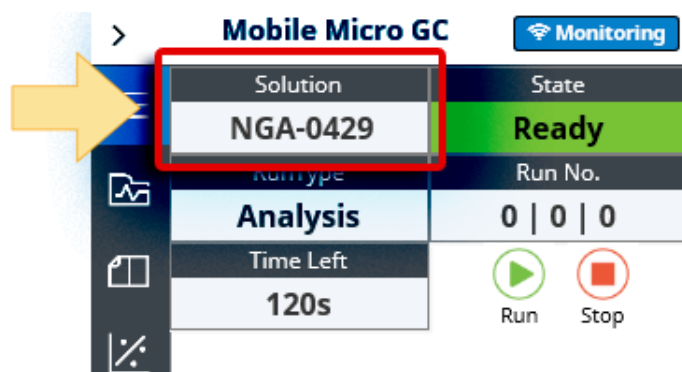


Figure 23. Solution monitor

An asterisk indicates there are unsaved changes to a method or application.

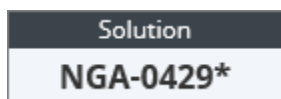
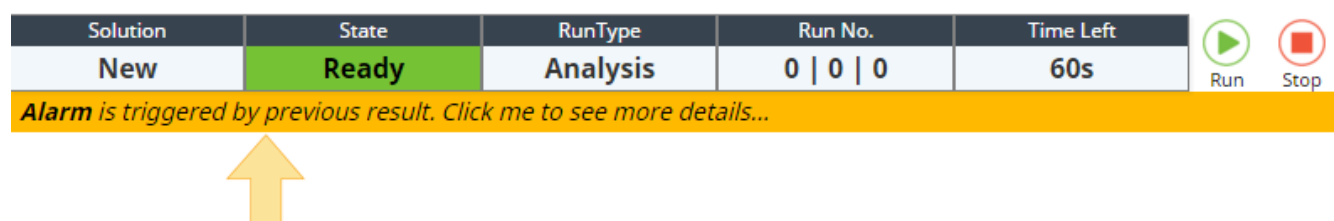


Figure 24. Unsaved changes asterisk

Reloading the original, unedited solution, will remove the asterisk.

Alarm

An alarm notification displays once the alarm is triggered, if the alarm table is enabled. See [Enable Alarm Table](#) on page 28 for more information.



- 1 Tap or click the alarm notification to view which alarms have been triggered.



The alarm status will clear after next run if the result has no alarm triggered.

- 2 To manually clear the alarms, tap or click **Reset All**.

Enable Alarm Table

The alarm table is configured from the PROstation for 990-Mobile. For information on setting alarms, see the PROstation for 990-Mobile manual.

To enable alarms in PROstation for 990-Mobile:

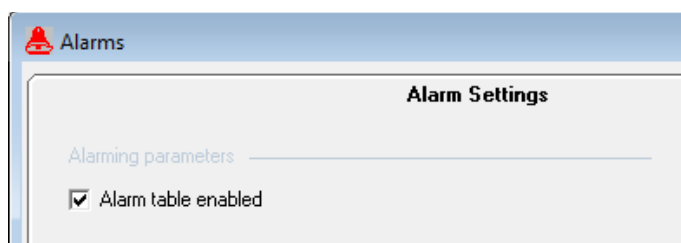
- 1 From the **Application** menu, select **Alarms**. The alarms table opens.

Alarm Settings						
#	Active	Param Type	Parameter	Minimum	Maximum	Alarm On
1	<input checked="" type="checkbox"/>	1. ESTD Amounts	8. Hexane (chan 1)	1	6	1. Analysis

- 2 From the **Alarm Settings** tab, select **Alarm table enabled**.

2 Mobile and PRO User Interface

Enable Alarm Table



Alarm notifications configured in the alarm table will now display in the Mobile User Interface when triggered.

Run/Stop

Control

The control area contains buttons used to start and stop a run. See [Start a Run](#) on page 30 and [Stop a Run](#) on page 32 for more information.

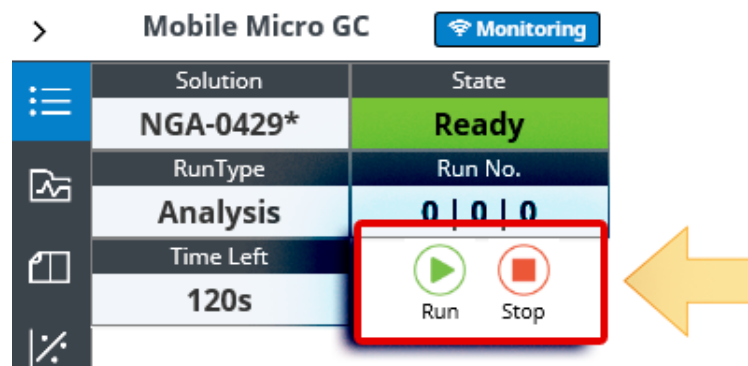
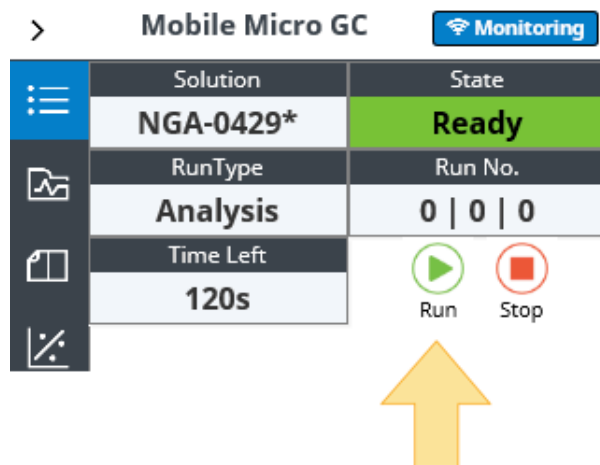


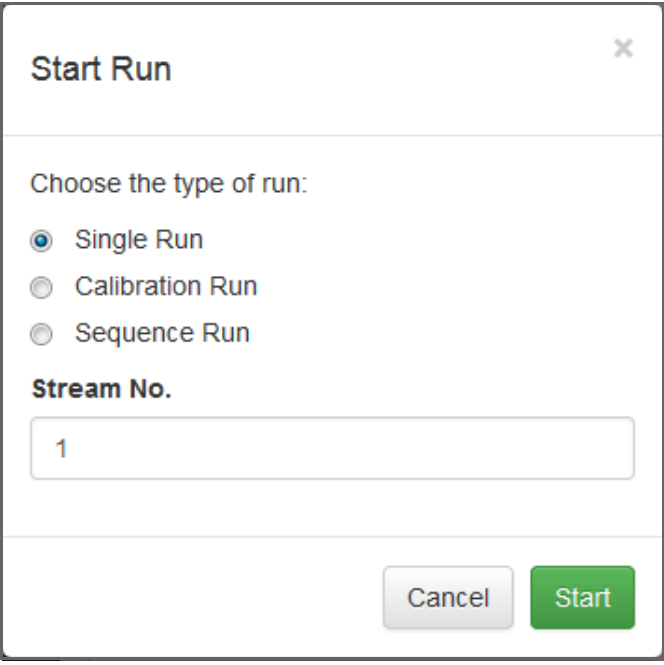
Figure 25. Control area

Start a Run

- 1 Tap or click the run button.



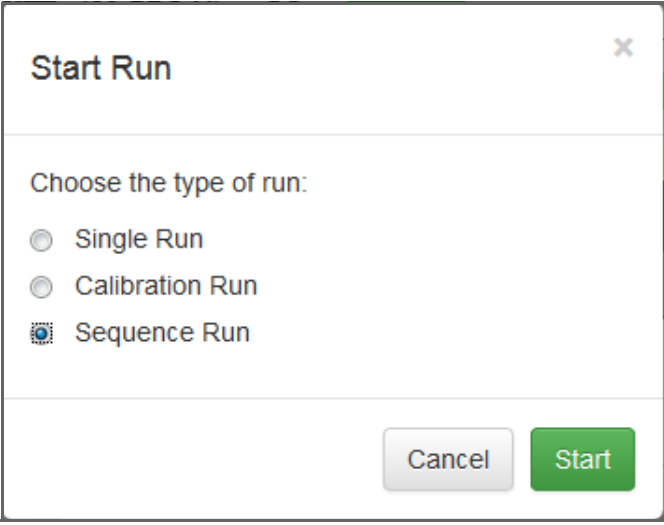
- 2 Choose which type of run to start.



The image shows a 'Start Run' dialog box. At the top, it says 'Start Run' with a close button (X). Below this, it asks 'Choose the type of run:' and lists three options: 'Single Run' (selected with a radio button), 'Calibration Run', and 'Sequence Run'. Underneath, there is a label 'Stream No.' followed by a text input field containing the number '1'. At the bottom right, there are two buttons: 'Cancel' and 'Start'.

When **Single Run** or **Calibration Run** is chosen and a stream selector is configured in the Micro GC, you must input the **Stream No.**

A **Sequence Run** does not require **Stream No.**



The image shows a 'Start Run' dialog box. At the top, it says 'Start Run' with a close button (X). Below this, it asks 'Choose the type of run:' and lists three options: 'Single Run', 'Calibration Run', and 'Sequence Run' (selected with a radio button). The 'Stream No.' field is not visible. At the bottom right, there are two buttons: 'Cancel' and 'Start'.

If a stream selector is not configured, the **Stream No.** field will not display.

Start Run

Choose the type of run:

☒ Single Run

☐ Calibration Run

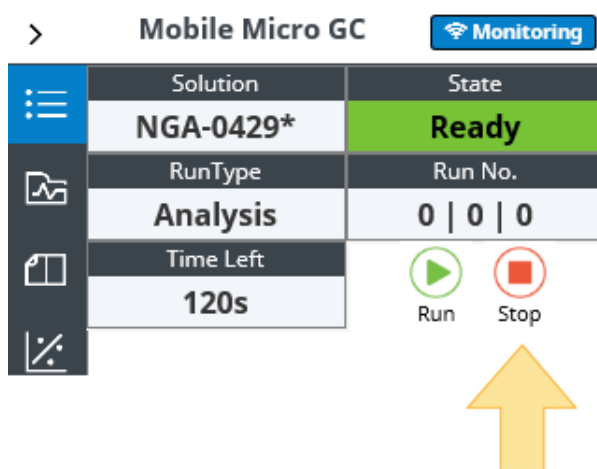
☐ Sequence Run

Cancel

Start

Stop a Run

- 1 Tap or click the stop button.



- 2 Select when to end the run. The run can be stopped immediately or after the completion of the current run or sequence.

2 Mobile and PRO User Interface

Run/Stop

Stop Run

☒ Stop current run now

☐ Stop after current run completed

Cancel

Stop

Workspaces

The workspace is displayed in the main area of the User Interface. Each workspace is used for a unique interaction with the Micro GC. Select a workspace from the **Navigation Pane**. The following workspaces are available for the Mobile and PRO user interfaces:

- **Status**
- **Data** on page 36
- **Solution** on page 41
- **Calibration** on page 46
- **Sequence** on page 48
- **Maintenance** on page 20

The default workspace is **Status**.

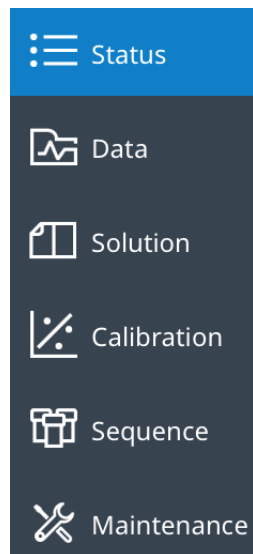


Figure 26. Navigation pane workspace options

From the **Navigation Pane**, tap or click a workspace to view it.

Status

- 1 From the navigation pane, select **Status** to display the **GC Status** and the configuration of each **Channel**.

Agilent

990 Micro GC

Status

Data

Solution

Calibration

Sequence

Maintenance

Solution

sample solution

State

Ready

RunType

Analysis

Run No.

0 | - | -

Time Left

150s

Run

Stop

v1.13

Online

Channel 1

Column Temp [°C]

80.0

80.0

Injector Temp [°C]

80.0

80.0

Column Press [kPa]

150.00

150.00

Auto Zero[mV]

-31.7

OK

Det. State / Calibrated

Channel 2

Column Temp [°C]

80.0

80.0

Injector Temp [°C]

80.0

80.0

Column Press [kPa]

150.0

149.99

Auto Zero[mV]

-19.0

OK

Det. State / Calibrated

Channel 3

Column Temp [°C]

65.0

65.0

Injector Temp [°C]

65.0

65.0

Column Press [kPa]

150.0

150.00

Auto Zero[mV]

18.7

OK

Det. State / Calibrated

Channel 4

Column Temp [°C]

65.0

65.0

Injector Temp [°C]

65.0

65.0

Column Press [kPa]

150.0

150.00

Auto Zero[mV]

-59.6

OK

Det. State / Calibrated

GC Status

Heated Inlet1 Temp [°C]

50.0

50.0

Heated Inlet2 Temp [°C]

50.0

43

Cabinet Temp [°C]

100.6

Idle

Cabinet Press [kPa]

0

Automation State

18-5-2015 03:18:34

Current Stream

true

GC time

44

External Ready In

Count#

Error/Warning List

- 2 Tap or click a panel to toggle between status and configuration information.

Channel 1		GC Status	
Column Description	10m MS5A Heated Injector	PRO MicroGC	
Carrier Gas	Helium	Instrument name	Mobile Micro GC
Channel Serial Number	14345015	Site info	
		Instrument serial number	10103001

- 3 Disabled channels are dimmed.

Channel 1 disabled		GC Status	
Column Temp [°C]	30.0	30.0	
Injector Temp [°C]	30.0	51.8	
Column Press [kPa]	50.0	2.21	
Auto Zero[mV]		0.0	
Det. State / Calibrated		Off / X	
		Sample Line Temp [°C]	30.0 29.9
		Cabinet Temp [°C]	29.0
		Cabinet Press [kPa]	102.5
		Automation State	Idle
		Current Stream	0
		GC time	5-2-2016 15:51:50
		External Ready In	Ready
		Count#	0

Data

To view the last data and report:

Select **Data** from the navigation pane to display the chromatogram of the last data and report saved to the Micro GC from the Data workspace.



Figure 27. Select Data from the navigation pane

<div>Refresh</div>		
Micro GC: Latest Data		
File Name	Detail	Date modified
CHROM.DAT	...	2016-06-14 13:16:34
USB: nga		
File Name	Detail	Date modified

Figure 28. Data list

To view historical data

- 1 Plug a USB mass storage device into the Micro GC.
- 2 Configure the USB mass storage in PROstation. See [Configure USB Storage](#) on page 37.
- 3 From the **Data** workspace, select a chromatogram and application report to view from the [Data List](#) on page 36.

Data List

In the **Data**, the data list displays the available chromatogram and application report data.

For a Micro GC without a USB storage device attached, only the single Micro GC data is shown.

Refresh

Micro GC: Latest Data		
File Name	Detail	Date modified
CHROM.DAT		2016-06-14 13:16:34

USB: nga

File Name	Detail	Date modified
-----------	--------	---------------

Figure 29. Data list

For a Micro GC with a USB storage device, after each run, data will also be saved the USB device and shown in the data list. You must have a correctly configured USB mass storage in PROstation for 990-Mobile. See [Configure USB Storage](#) on page 37.

Data can be sorted based on **File Name** or modified date. By default, the latest data is shown on top.

Refresh

Micro GC: Latest Data		
File Name	Detail	Date modified
CHROM.DAT		2016-06-06 15:15:28

USB: nga

File Name	Detail	Date modified
20160606_151716		2016-06-06 15:17:16
20160606_151531		2016-06-06 15:15:30
20160606_121254		2016-06-06 12:12:54
20160606_121102		2016-06-06 12:11:02

Figure 30. USB data files

You can select a chromatogram and application report to view from the data list, see [View Chromatogram and Report](#) on page 39.

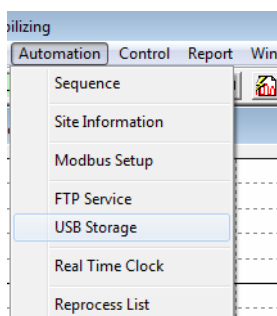
Configure USB Storage

To use a USB mass storage device with the Micro GC, you must configure it in PROstation for 990-Mobile.

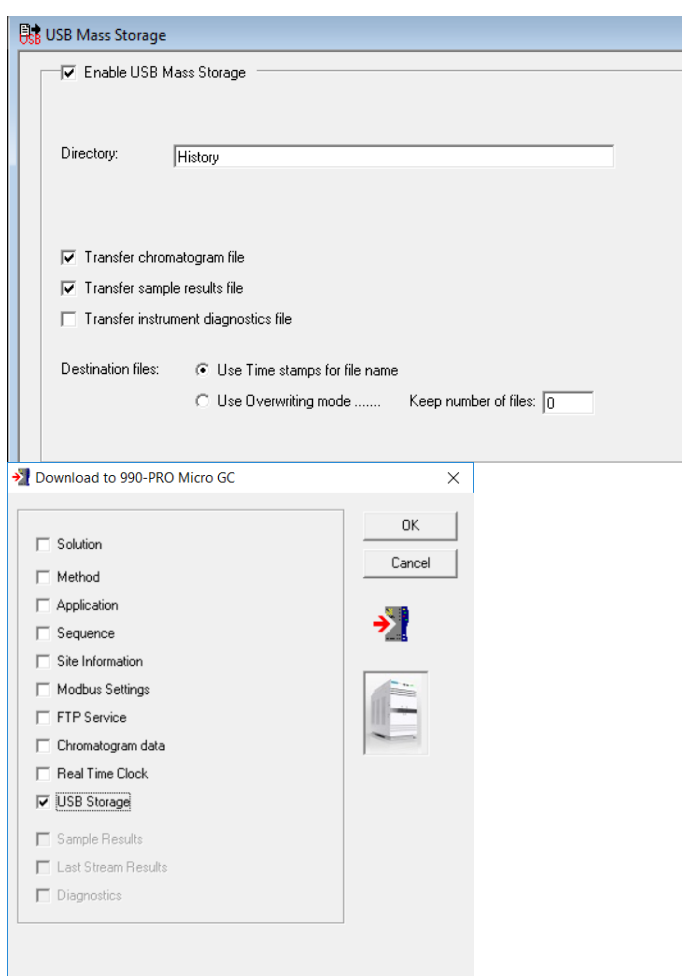
2 Mobile and PRO User Interface

Data

- 1 From the **Automation** menu in PROstation, select **USB Storage**.





- 2 Enter parameters for the USB mass storage device.








After each run, the data will be saved to the USB device. You can access the list, see [Data List](#) on page 36, of the stored data from the Mobile User Interface.

View Chromatograph and Report

- 1 In the **Data**, tap or click the  in the **Details** column to display the details of the chromatogram and the application report for that row.

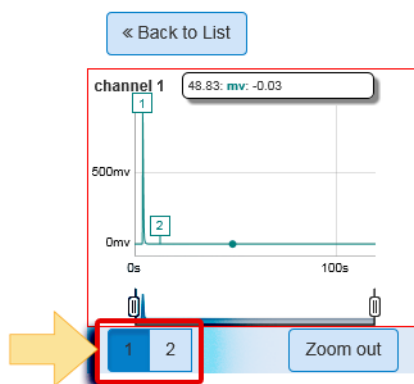
 Refresh

Micro GC: Latest Data		
File Name	Detail	Date modified
CHROM.DAT		2016-06-06 15:15:28

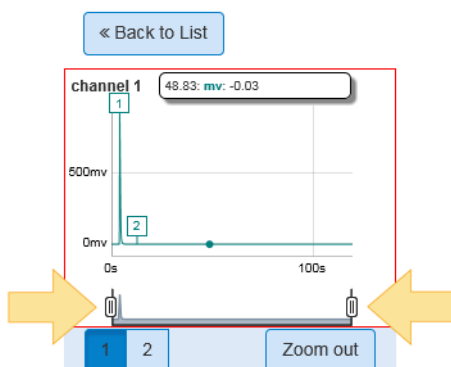
USB: nga		
File Name	Detail	Date modified
20160606_151716		2016-06-06 15:17:16
20160606_151531		2016-06-06 15:15:30
20160606_121254		2016-06-06 12:12:54
20160606_121102		2016-06-06 12:11:02

Chromatograms are displayed by channel.

- 2 Click a channel button to switch among channels.



- 3 Adjust the X-axis by sliding the bar handlers to zoom in and out. The Y-axis will adjust automatically based on the signal.



2 Mobile and PRO User Interface

Data

- 4 Tap or click **Zoom out** to view the entire chromatogram.
- 5 Scroll to see the remaining content of the report.

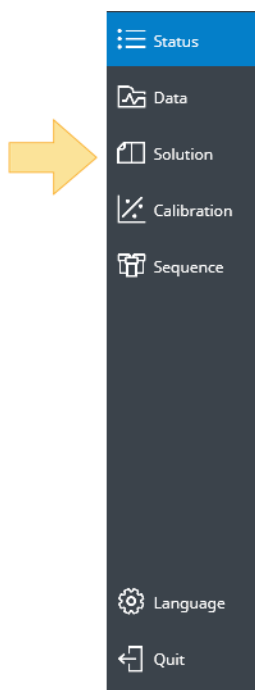
Sampling Comp Analog In #3 :		0.00000							
Sampling Comp Analog In #4 :		0.00000							
Sampling Comp Analog In #5 :		0.00000							
Sampling Comp Analog In #6 :		0.00000							
Ambient pressure :		103							
Ambient temperature :		29							
#	Component	Chan#	Retention	Area	Height	ESTD	Norm.ESTD%	RF	Rw
1	Propane	1	10.5	704.9	100000.0	6.0000	14.63	0.008512	1
2	Hexane	1	27.1	1379.4	200000.0	15.0000	36.59	0.01087	1
3	Helium	1	46.5	2850.0	400000.0	20.0000	48.78	0.007018	1
Totals				16773.017		41.0000	100.0000		
Calculation Method: ISO 6976			Dry	Saturated	Unit				
Water Mole :			0.00	0.60	[%]				
Molar Mass :			39.9339	39.8024	[kg/kmol]				
Relative Density, Ideal :			1.3788	1.3743	[-]				
Relative Density, Real :			1.4063	1.4019	[-]				
Gas Density, Ideal :			1.7816	1.7768	[kg/m3]				
Gas Density, Real :			1.8182	1.8137	[kg/m3]				
Compress Zmix :			0.9799	0.9797	[-]				
Superior Heating Value (Volume Ideal) :			82.96	82.46	[MJ/m3]				
Superior Heating Value (Volume Real) :			84.66	84.17	[MJ/m3]				
Superior Heating Value (Mass) :			0.00	0.00	[MJ/kg]				
Superior Heating Value (Molar) :			0.00	0.00	[kg/mol]				
Inferior Heating Value (Volume Ideal) :			76.78	76.32	[MJ/m3]				
Inferior Heating Value (Volume Real) :			78.36	77.90	[MJ/m3]				
Inferior Heating Value (Mass) :			0.00	0.00	[MJ/kg]				
Inferior Heating Value (Molar) :			0.00	0.00	[kg/mol]				
Wobbe Index (Real) :			71.39	71.09	[MJ/m3]				
Wobbe Index inferior :			66.08	65.79	[MJ/m3]				

Tap or click **« Back to List** or **Back to List** to view the **Data List**.

Solution

A solution is comprised of a method and its application. It contains both instrument control and data analysis information.

- 1 Select **Solution** to review or **Load a Solution** from the solution workspace.



A solution is created and saved in the Micro GC by PROstation for 990-Mobile. A maximum of 9 solutions (from 1 to 9) can be stored on an instrument. (0 is reserved for the current active solution).

The example below shows there are 3 solutions downloaded into 1, 2, and 5 of this Micro GC.

Solutions	
Solution 1	ABC
Solution 2	DEF
Solution 5	New

- 2 Tap or click any solution item to review the details.

« Back to List

Load into GC

NGA-0429

Configuration

Channel	Description	Carrier Gas
1	40cm HSA Heated Injector, for NatGas	Helium
2	8m 5CB Heated Injector	Helium

Control Method

Sampling time	0
Sample line temp	60
Stabilizing time	5

Channel 1

Column temp	70
Inject temp	100
Pressure mode	static
Pressure	200000
Inject time	40 ms
Run time	120
Sensitivity	ultrahigh
Invert Sig.	false

Channel 2

Column temp	100
Inject temp	100
Pressure mode	static
Pressure	200000
Inject time	40 ms

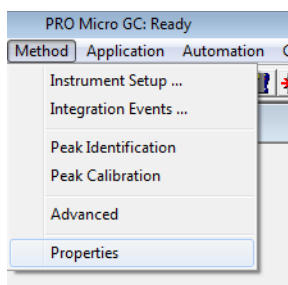
Set and Download Method Properties

Set method properties and download a method to the Micro GC.

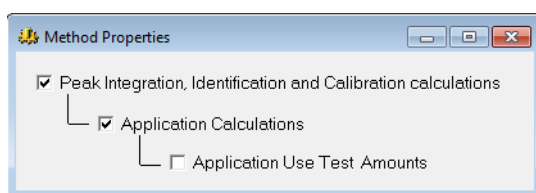
2 Mobile and PRO User Interface

Solution

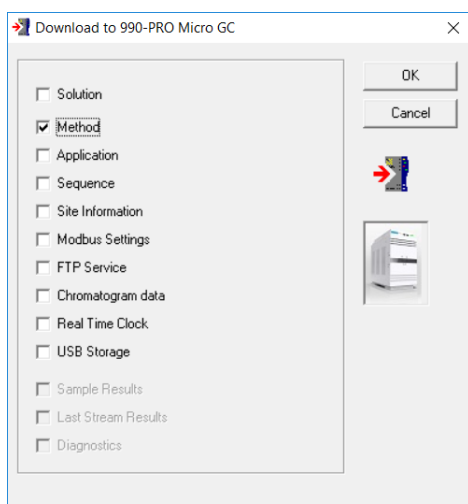
- 1 From the **Method** menu in PROstation for 990-Mobile, select **Properties**.



- 2 Select desired method properties.

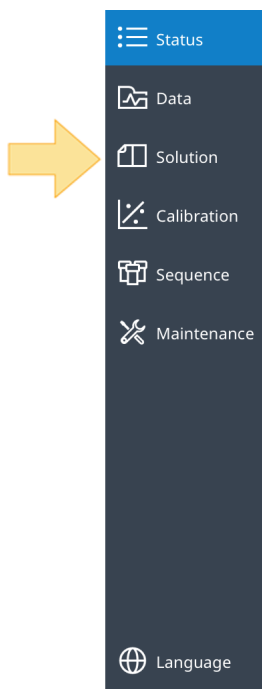


- 3 Select **Method** to download the method settings.



Load a Solution

- 1 Select **Solution** from the **Navigation Pane**.

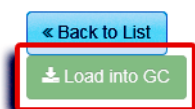


- 2 Tap or click any solution item to review the details. The below image shows there are 3 solutions downloaded into 1, 2, and 5 of the Micro GC.

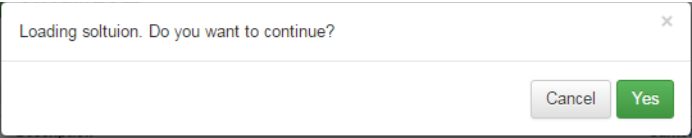


The solutions you selected is displayed.

- 3 Tap or click **Load into GC** to make this the active solution.

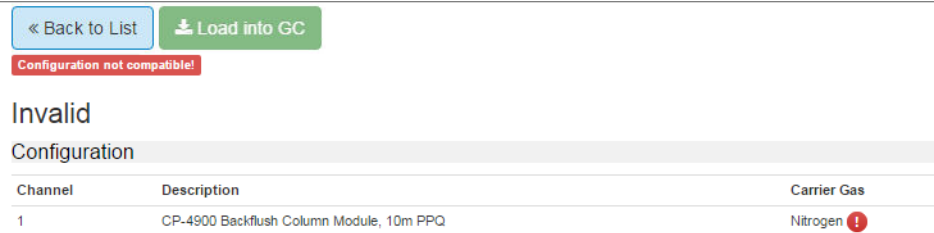


- 4 When prompted, click Yes at the confirmation dialog.



The solution is loaded into the Micro GC.

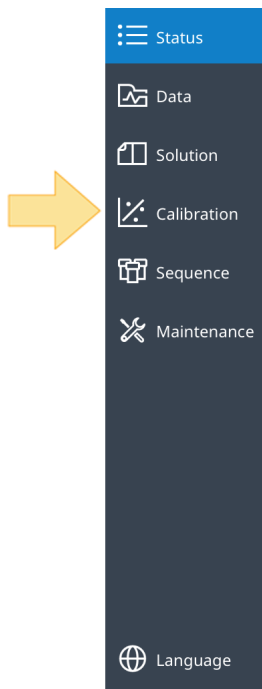
- 5 Once the solution is loaded by the instrument, you can verify the solution name in the **Solution Monitor** on page 54.
- 6 If the Micro GC configuration is changed after a solution is stored (by changing in carrier gas or replacing the channel with another PN), the configuration mismatch will produce an error. A solution cannot load when the system detects an error.



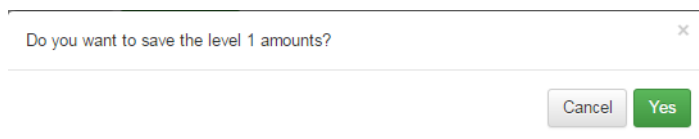
Calibration

You can view and edit calibration info in the **Calibration** workspace.

- 1 Select **Calibration** from the navigation pane.



- 2 Click **Upload** to refresh the table with latest data from the instrument.
- 3 With the Mobile User Interface, the only change you can make is the level 1 calibration amount.
- 4 Click **Download** to download the data to the instrument. If you have made changes to the calibration, a warning message will display:



The **Run** button starts a calibration run.

Change level 1 amount settings

You can change the level 1 amount settings before starting the calibration run. Change the level 1 amount by clicking each row to edit it.

NOTE

You cannot add or remove any component from this table.

2 Mobile and PRO User Interface

Calibration

Upload

Download

	ID	Cha#	Peak Names	Level1	Linear coef	Ret. (s)
	1	1	Nitrogen	0.978	1.01352e-4	4.35
	2	1	Methane	94.25837	1.31503e-4	5.32
	3	1	CO2	0.049	8.98989e-6	12.69

Figure 31. Level 1 settings

Upload

Download

	ID	Cha#	Peak Names	Level1	Linear coef	Ret. (s)
	1	1	Nitrogen	0.978	1.01352e-4	4.35
	2	1	Methane	94.25837	1.31503e-4	5.32
	3	1	CO2	<div>0.1</div>	8.98989e-6	12.69

Figure 32. Changing Level 1 settings

After downloading to the instrument, you can upload again to check if the **Level 1** amount is updated. Note that the linear coefficient of calibration curve should not change because no calibration run has been executed.

After completing a calibration run, the linear coefficient should be updated according to your **Level 1** setting and the peak detection result.

Upload

Download

	ID	Cha#	Peak Names	Level1	Linear coef	Ret. (s)
	1	1	Nitrogen	0.978	1.01352e-4	4.35
	2	1	Methane	94.25837	1.31503e-4	5.32
	3	1	CO2	0.1	8.98989e-6	12.69

Figure 33. Updated level 1 settings

Sequence

The **Sequence** workspace displays the current sequence table. It is the same sequence as that of PROstation for 990-Mobile.

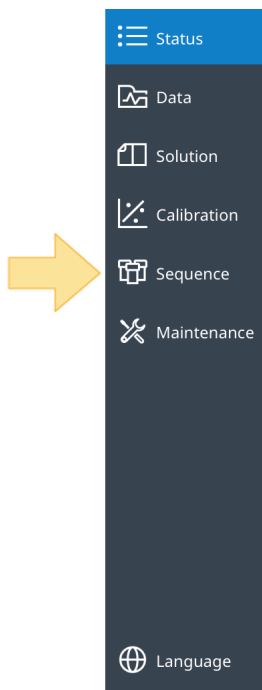


Figure 34. Select Sequence from the navigation pane

If stream selector is configured, you can modify the sequence table by inserting, deleting, and editing.

2 Mobile and PRO User Interface
Sequence

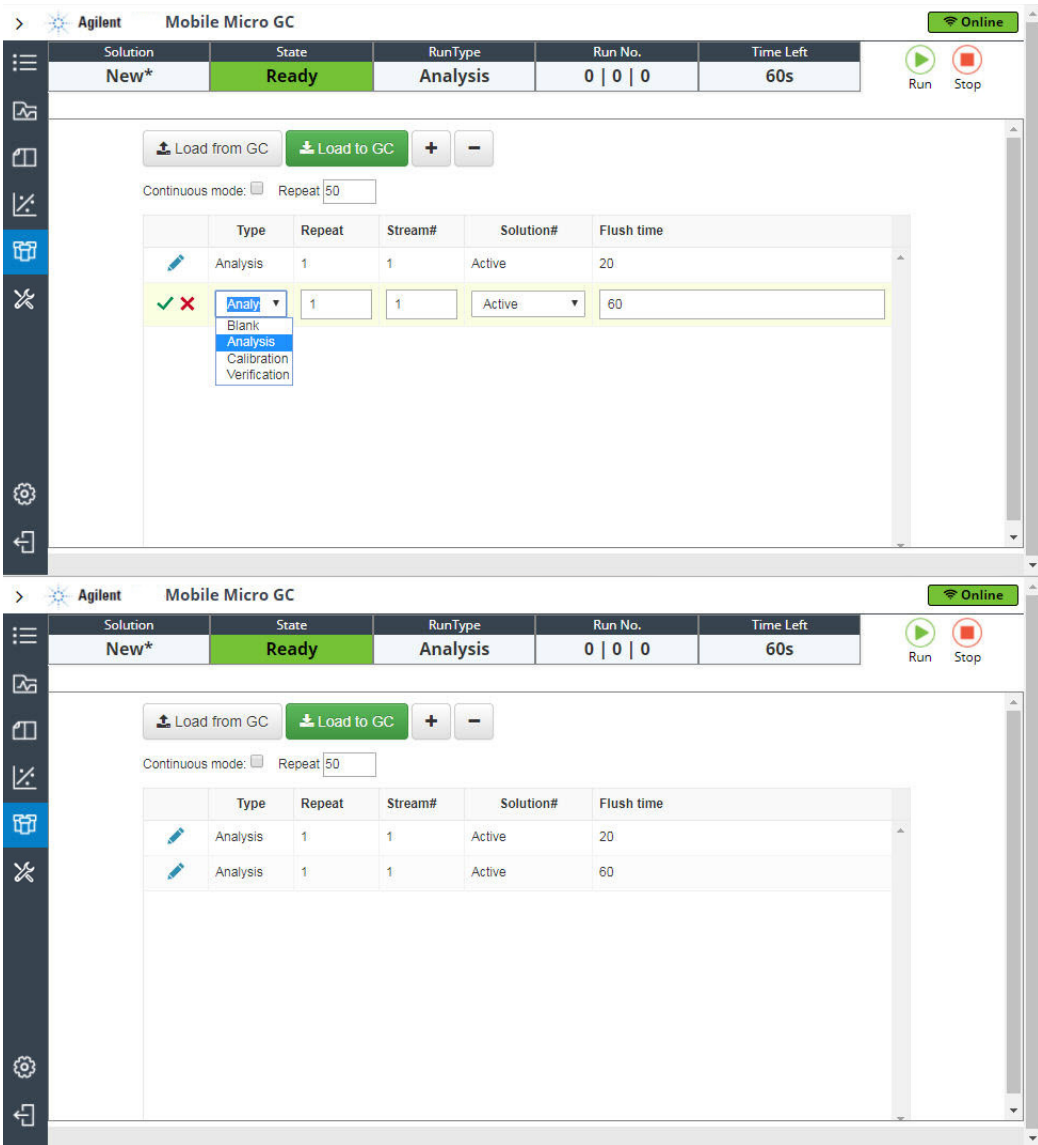


Figure 35. Sequence settings

Use the **Load from GC** and **Load to GC** buttons to get and save data from/to instrument. When **Load to GC** is clicked, you will be asked if you want to apply the changes.

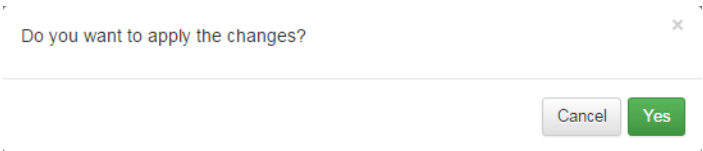


Figure 36. Confirmation dialog

2 Mobile and PRO User Interface

Sequence

If no stream selector is configured, the sequence table is hidden.

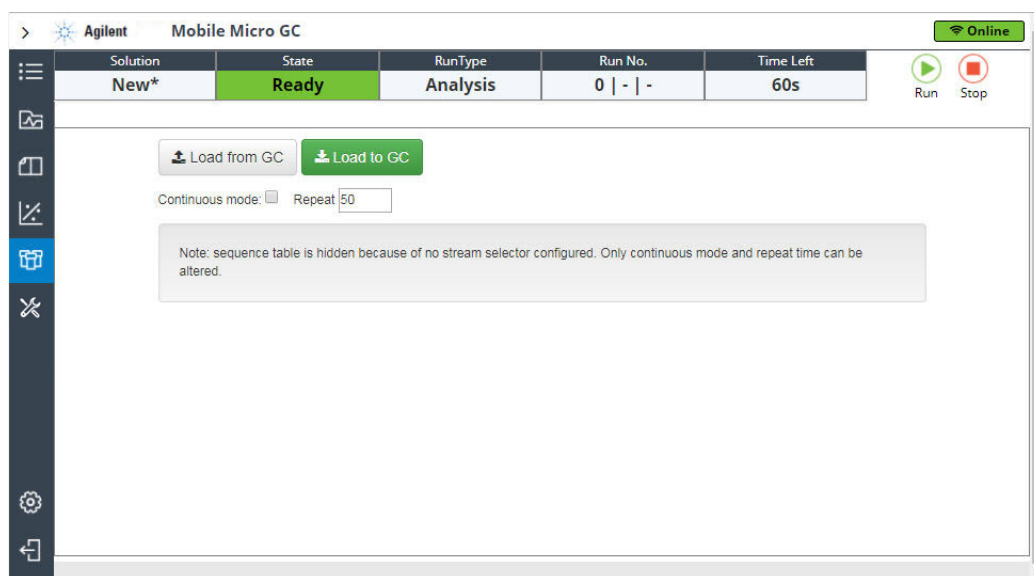


Figure 37. No stream selector notification

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