

Micro GC 490

New Main board Information



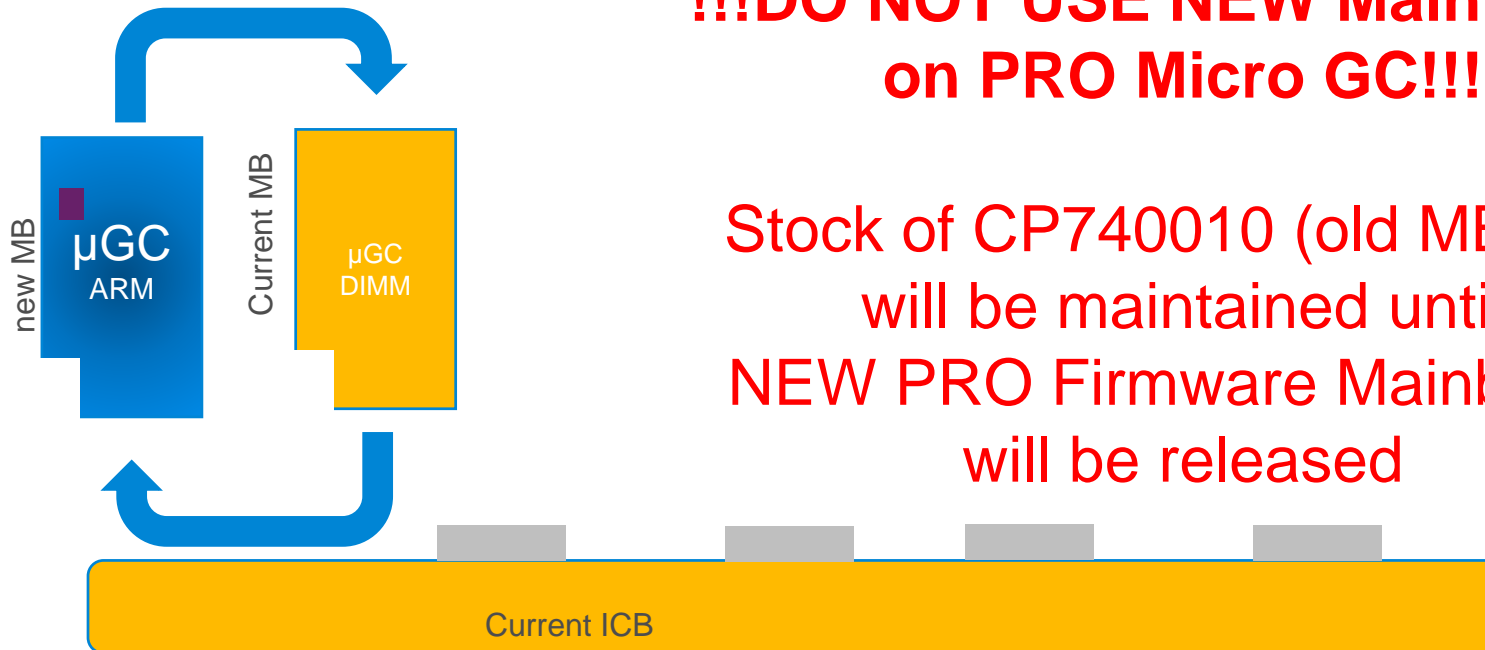
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Product Support Eng.
April 2014

Service Strategy

New Main board P/N: G3581-65000

Fully Backward Compatible for:

- Standard Micro GC 4900
- Standard Micro GC 490
- Standard Micro GC 490 Analyzer



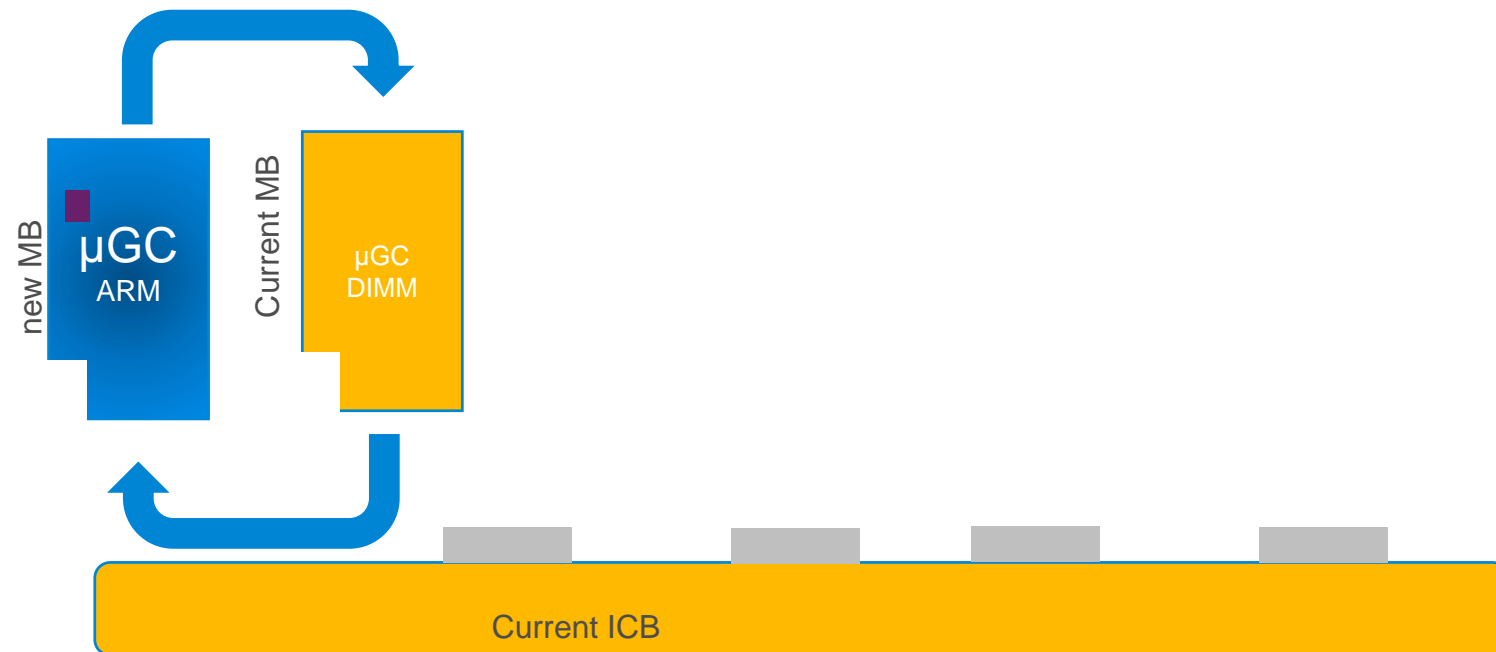
**!!!DO NOT USE NEW Main board
on PRO Micro GC!!!**

**Stock of CP740010 (old MB p/n)
will be maintained until
NEW PRO Firmware Mainboard
will be released**

Warning!

In case of replacing Very Old 4900 Micro GC Main board (FW 1.20) may require also Chromatography Data System (CDS) Upgrade.

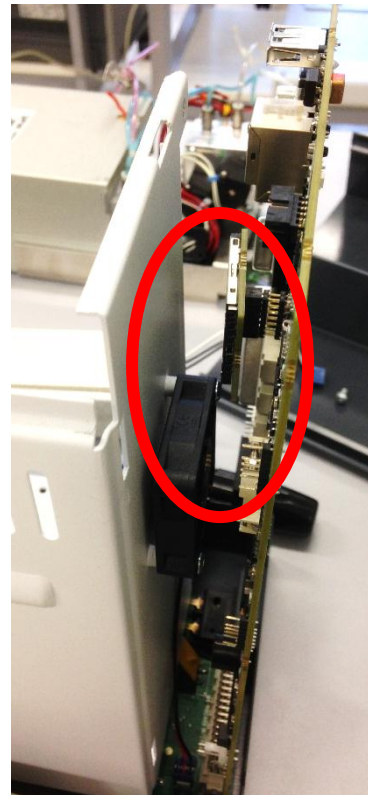
See next slide for Compatibility information



Service Strategy

Warning!

If NEW mainboard is installed on OLD MicroGC
Remove the FAN from the MicroGC!
This to avoid Damage on SD Card drive.

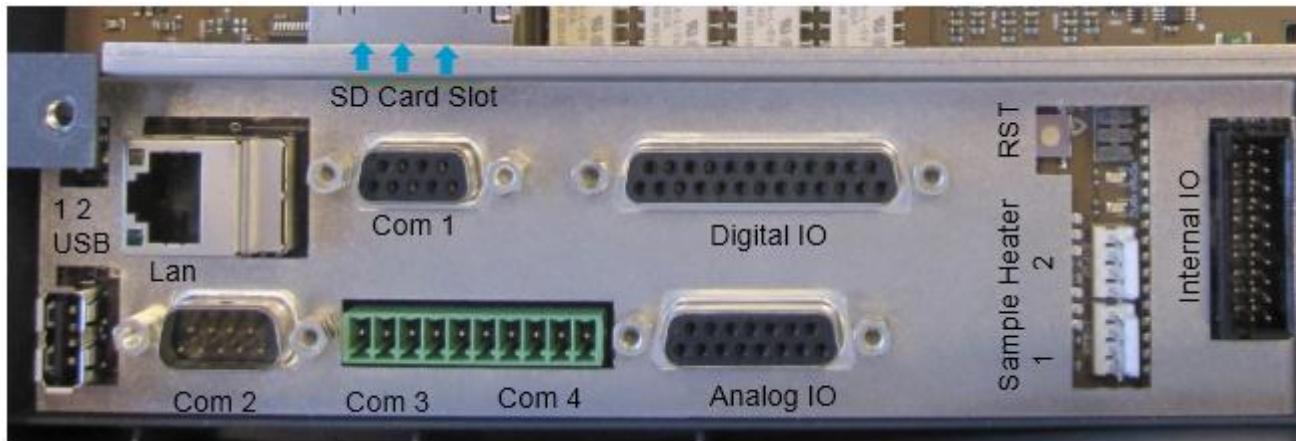


Software Compatibility:

CDS package:	Support	Main Board FW rev 3.0
Agilent 490 Micro GC driver for EZChrom 3.3.2 Driver version 2.20 b14 (no assign IP address with 490 driver BootPserver)	yes	yes
OpenLab Chemstation (A01.03 and up) Driver version 1.7.6.0 and newer	yes	yes
OpenLab EZchrom (A01.03 and up) Agilent 490 Micro GC driver Driver version 1.7.6.0 and newer	yes	yes
Service tool 2.20 Build 11 (no assign IP address with BootPserver)	yes	yes
Service tool 1.1 Build 53	NO	N/A
Galaxie 1.10 (no assign IP address with Galaxie BootPserver)	yes	yes
CP-Maitre Elite 3.2 (no assign IP address with 490 driver BootPserver)		yes

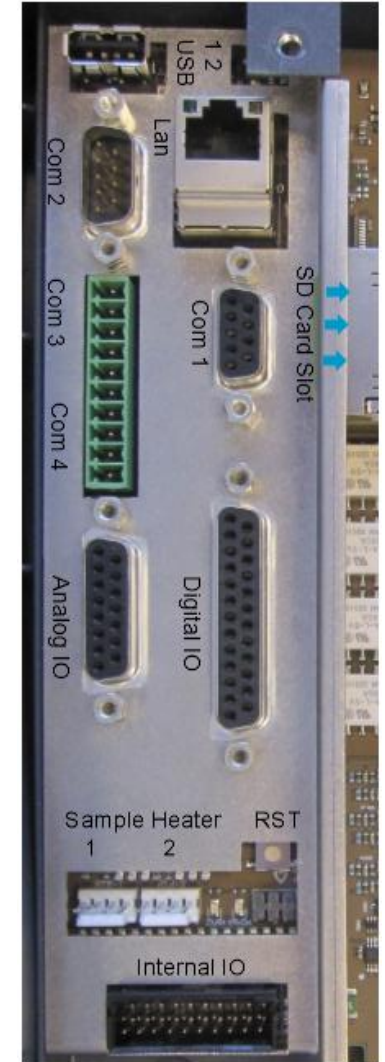
NEW Mainboard (ARM) **What is new:**

- IP assignment procedure.
- DHCP ON/OFF switch.
- USB port.
- SD slot.
- Com 3 and 4 new Industrial Design.



NEW Mainboard (ARM) connector Functionality:

Port	NEW G3581-65000	Functionality Description Micro GC
LAN	New Feature autosensing. crossover and straight cables can be used for Communication	IP protocol Communication
Com 1	Same as cp740010	Serial Communication
Com 2	Same as cp740010	Valco Valve
Com 3	Configurable: RS485, RS232, RS422 First FW release Not supported	-Available on future PRO version-
Com 4	Same as COM3, First FW release Not supported	-Available on future PRO version-
Analog I/O	Same as cp740010	See Service Manual for pin connection
Digital I/O	Same as cp740010	See Service Manual for pin connection
Internal I/O	Same as cp740010	See Service Manual for pin connection
USB	Reserved For Future USE	Mass storage
SD Card slot	Firmware installation (in case of bricked FW)	Licensing (PRO only)
Sample line heater	Same as cp740010	-
Jumpers	JP1 and JP2 Not available in new board, JP3...JP5 same as cp740010	
Switch 1; 2	Switch 1 IP configuration Switch 2 Not in use	IP Configuration



NEW Mainboard (ARM) Functionality:

What is new:

- IP address configuration tools:
 - Via Web-Server directly on mainboard.
 - DHCP will be supported in future implementation,
 - printed label with MAC address will be attached to the Mainboard plate.

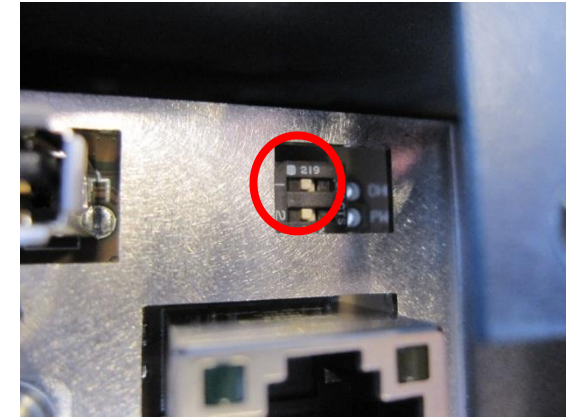
- FW strategy update or Restore:
 - If “bricked” instrument → using SD card
 - Regular firmware upgrade → using web interface

Assign or Change IP address:

- Default address is assigned to the board ***192.168.100.100*** procedure to reset to default is described in follow pages.
- IP change will be via Web-Server tools.
- DHCP IP assignment, will be available in future.

IP configuration Switch:

- Ip Configuration switch is located above the Ethernet connector on the mainboard.
- Ip Configuration switch is the TOP one (marked with 1)
- Ip Configuration switch is used to set the Micro GC in either DHCP or static IP address mode.



WARNING: activation of DHCP Switch, MUST be with Micro GC powered OFF

- To set the *Micro GC in static IP mode*, switch is in the *OFF (left)* position.
- To set the *Micro GC in DHCP mode*, switch is in the *ON (right)* position, this option is not supported on first FW mainboard release.

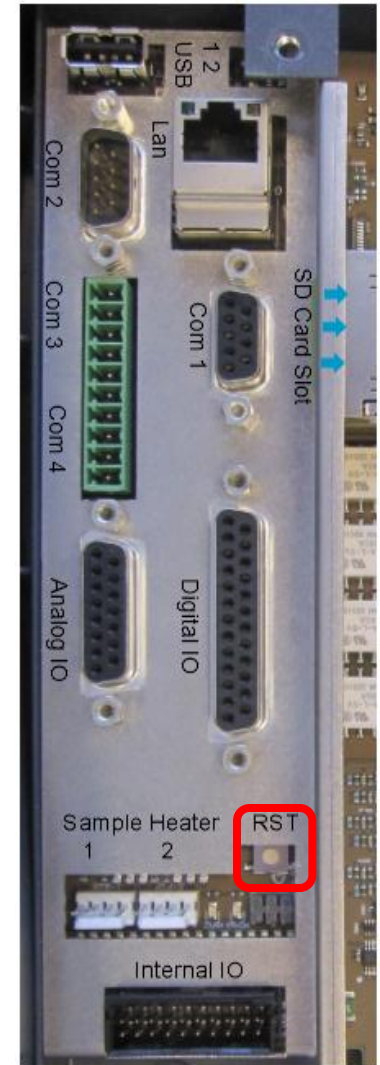
(Switch 2 marked as Power is not used)

Restore default IP Address

1. Make sure the Micro GC is powered OFF.
2. Press and hold the **reset button**.
3. **Power on** the instrument.
4. While the instrument is powering up, continue to **hold down** the **reset button** on the mainboard, for approximately **3 seconds** after you see the Power LED lit.

Do not hold the reset button down for more than 10 seconds, or the instrument may reboot itself.

5. The default IP address is restored.



Assign / Modify IP Address in Static IP Mode via WebServer

1. Verify *Micro GC in static IP mode*, switch is in the **OFF (left)** position.
2. Open your web browser (Internet Explorer, Google Chrome....)
3. To connect to the Micro GC's website, type the **IP address of the Micro GC**, (default address 192.168.100.100) in the address field of the web browser *

Agilent Technologies 490 Micro GC

Status: Instrument - Overview

490-GC

Site name (=hostname): microgc

Tag:

Instrument Serial: 440000573

GC Time: 13-1-2000 23:41:18

GC Status

	Channel 1		Channel 2		Channel 3		Channel 4	
	Actual	Setpoint	Actual	Setpoint	Actual	Setpoint	Actual	Setpoint
Column Temperature [°C]:	30.0	30.0	30.0	30.0	-	-	-	-
Injector Temperature [°C]:	0.0	0.0	0.0	0.0	-	-	-	-
Column Pressure [kPa]:	49.8	50.0	50.0	50.0	-	-	-	-
AutoZero [mV]:	0.0		0.0		-	-	-	-
Detector state / Calibrated:	Off / X		Off / X		- / -		- / -	
Sample Line Temperature [°C]:	-	-						
Ambient Temperature [°C]:	25							
GC State:	Ready		External Ready In:	Ready				
GC Status:	4 'Flush cycle passed'							

Sample Line Temperature [°C]: -

Ambient Temperature [°C]: 25

GC State: Ready

GC Status: 4 'Flush cycle passed'

* your PC must be in the same IP address Family

Assign / Modify IP Address in Static IP Mode via WebServer

Agilent Technologies 490 Micro GC

Status: Instrument - Overview

490-GC
Site name (=hostname): microgc
Tag:
Instrument Serial: 440000573
GC Time: 13-1-2000 23:41:18

GC Status

	Channel 1		Channel 2		Channel 3		Channel 4	
	Actual	Setpoint	Actual	Setpoint	Actual	Setpoint	Actual	S
Column Temperature [°C]:	30.0	30.0	30.0	30.0	-	-	-	-
Injector Temperature [°C]:	0.0	0.0	0.0	0.0	-	-	-	-
Column Pressure [kPa]:	49.8	50.0	50.0	50.0	-	-	-	-

Configuration menu items: Network, Names

4. On the web page click on **Network** under Configuration menu.

5. Factory Default login and password are:

Login name: **admin**

Password: **agilent**

*your PC must be in the same IP address Family

Windows Security

The server 192.168.1.14 at Web Server Authentication requires a username and password.

Warning: This server is requesting that your username and password be sent in an insecure manner (basic authentication without a secure connection).

admin

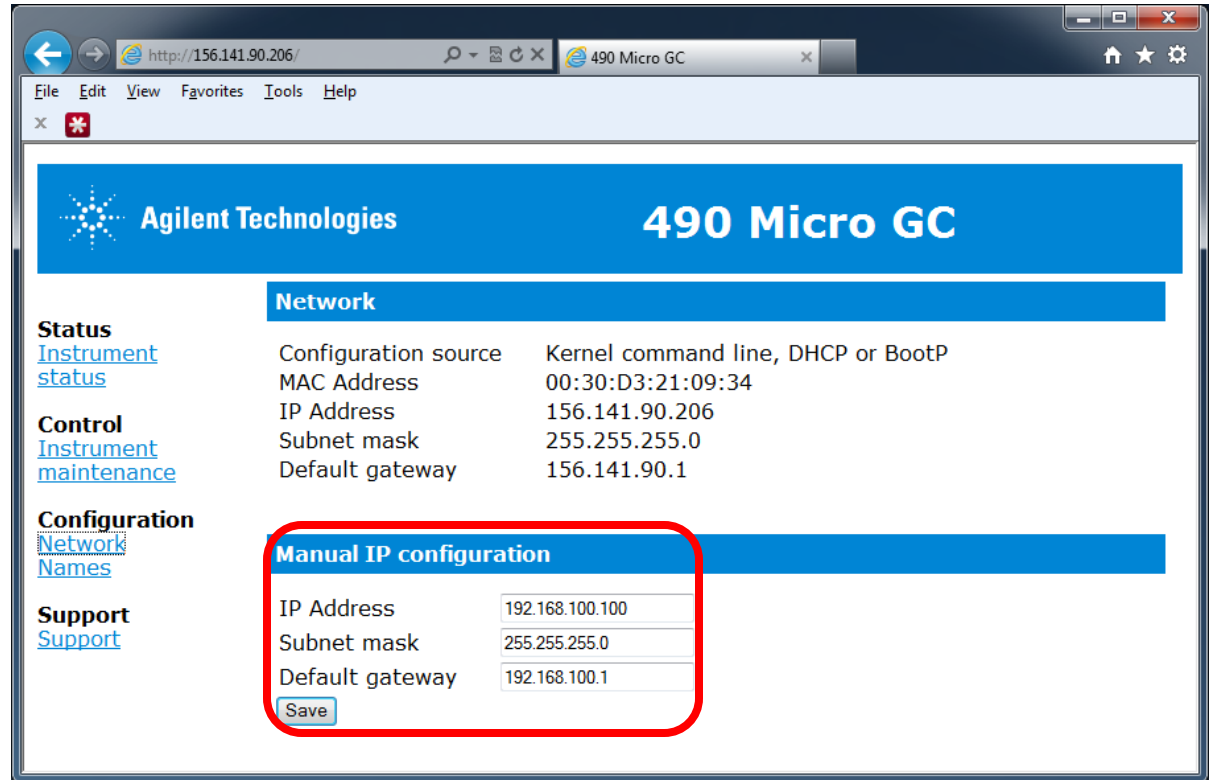
.....

Remember my credentials

OK Cancel

Assign / Modify IP Address in Static IP Mode via WebServer

6. In the network webpage, the upper section shows the current Network Configuration.
7. Modify the Network Configuration in lower section of this page in the corresponding fields.
8. Click on the save button to save the applied IP configuration.
9. Reopen Web browser with the new IP address to verify the address assignment.



The screenshot shows a web browser window displaying the network configuration page for an Agilent Technologies 490 Micro GC. The page is titled "Agilent Technologies 490 Micro GC" and has a URL of "http://156.141.90.206/". The page is divided into several sections: "Status", "Control", "Configuration", and "Support". The "Network" section is highlighted in blue and contains the following information:

Configuration source	Kernel command line, DHCP or BootP
MAC Address	00:30:D3:21:09:34
IP Address	156.141.90.206
Subnet mask	255.255.255.0
Default gateway	156.141.90.1

Below the "Network" section is the "Manual IP configuration" section, which is highlighted with a red box. It contains the following information:

IP Address	192.168.100.100
Subnet mask	255.255.255.0
Default gateway	192.168.100.1

A "Save" button is located below the "Manual IP configuration" section.

Assign IP Address DHCP Mode

Not supported on current Firmware release.

This Function is Available but not supported.

To set the *Micro GC in DHCP mode*, switch is in the *ON (right)* position

Use DHCP Server to Assign static/reserved IP address.

DHCP server must be available (in lab network or PC locally installed).

This board DO NOT work in “BootP” mode, only DHCP mode!

Mainboard do NOT support BootP assignment of OL CDS.

Actual Service tools IP configuration is NOT supported by new mainboard.

DHCP Server, or DHCP 3rd part Program, with Address reservation capability must be in use in the network or locally installed, in order to assign IP address to the board.

Every Mainboard have sticker with printed MAC-ADDRESS.

Change the Network settings:

- To connect to the Micro GC's website, type the IP address of the Micro GC in the address field of the web browser.
- The Micro GC webpage starting page will be displayed.
- Select **Names** under Configuration Menu.

Agilent Technologies 490 Micro GC

Status: Instrument - Overview

490-GC

Site name (=hostname): microgc

Tag:

Instrument Serial: 440000573

GC Time: 13-1-2000 23:41:18

	Channel 1		Channel 2		Channel 3		Channel 4	
	Actual	Setpoint	Actual	Setpoint	Actual	Setpoint	Actual	Setpoint
Column Temperature [°C]:	30.0	30.0	30.0	30.0	-	-	-	-
Injector Temperature [°C]:	0.0	0.0	0.0	0.0	-	-	-	-
Column Pressure [kPa]:	49.8	50.0	50.0	50.0	-	-	-	-
AutoZero [mV]:	0.0		0.0		-	-	-	-
Detector state / Calibrated:	Off / X		Off / X		- / -		- / -	

Sample Line Temperature [°C]: -

Ambient Temperature [°C]: 25

GC State: Ready External Ready In: Ready

GC Status: 4 'Flush cycle passed'

Change the Network settings:


- The upper section shows the current name configuration.
- Click the items you would like to change.
- If you need to changing the host or domain name, type the host name or domain name in the required field.
- The **host name** should only contain numeric or alphanumeric characters, minus sign ("-") or underscore ("_") and should not be longer than 19 characters.

*The **domain name** is not required for correct operation of the Micro GC.*

- If one or more DNS servers and/or search domain are required, type in the DNS IP addresses (space separated) and search domain.

These settings are not required for correct operation of the Micro GC.

- Click **Save** to save settings.
- Power cycle the Micro GC.



The screenshot shows a web browser window with the URL <http://156.141.90.206/>. The page title is "490 Micro GC" and the header includes the Agilent Technologies logo and "490 Micro GC". The main content area is divided into two sections: "Names" and "Host".

Names

Host name	microgc
Domain name	
DNSes	
Search domain	

Host

Host name	<input type="text" value="microgc"/>
Domain name	<input type="text"/>

On the left side of the interface, there are navigation links for "Status", "Control", "Configuration", and "Support". Under "Status", there are links for "Instrument status". Under "Control", there are links for "Instrument maintenance". Under "Configuration", there are links for "Network" and "Names". Under "Support", there is a link for "Support".

Agilent 490 Micro GC – Firmware Handling

How to recover FW or upgrade FW:

- If “bricked” (not responding/instable) instrument, you must use **SD card** To recover mainboard Firmware.

FW Tools p/n:

G3581-30000: Empty 4GB SanDisk SD Card

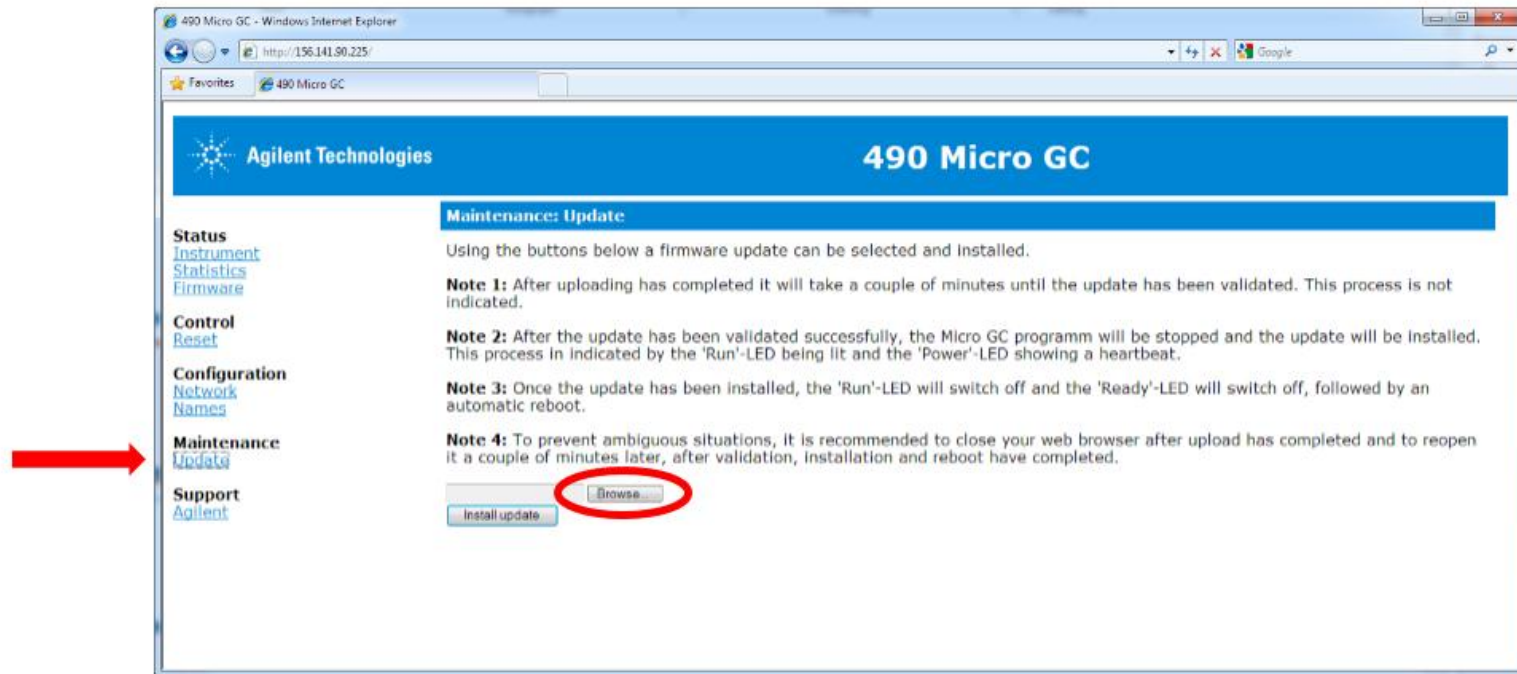
G3581-10003: 4GB SD Card with Micro GC Firmware 3.0x

SD card Imagine file and Imagine creation tools, will be provided in separate document.

- Regular firmware upgrade you can use MicroGC web interface. *Firmware Update files, will be available via Support portal.*

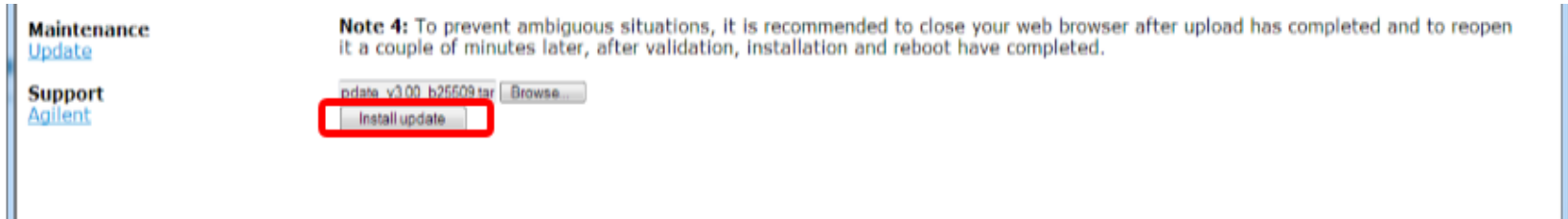
Agilent 490 Micro GC – Firmware Upgrade by using Web browser.

1. Connect to the Micro GC's website, by typing the IP address of the Micro GC in address field of the web browser.
2. Select **Update** under Maintenance menu.
3. Press **browse** to locate the update file (extension is **.TAR**) and press **OPEN**.

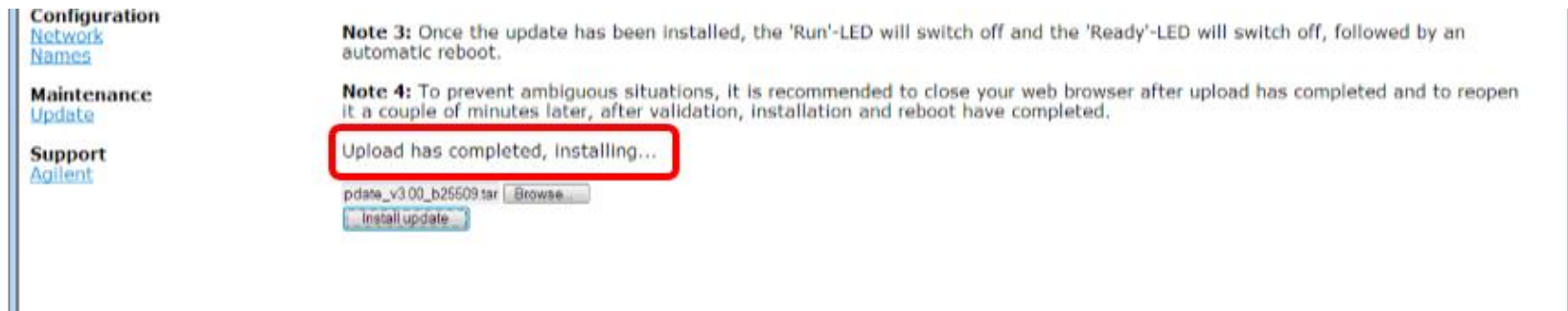


Agilent 490 Micro GC – Firmware Upgrade by using Web browser.

4. Press ***install update*** to begin the installation process.



The below message will be displayed during the upload and installation process. Also review the Note in the web page with all information.

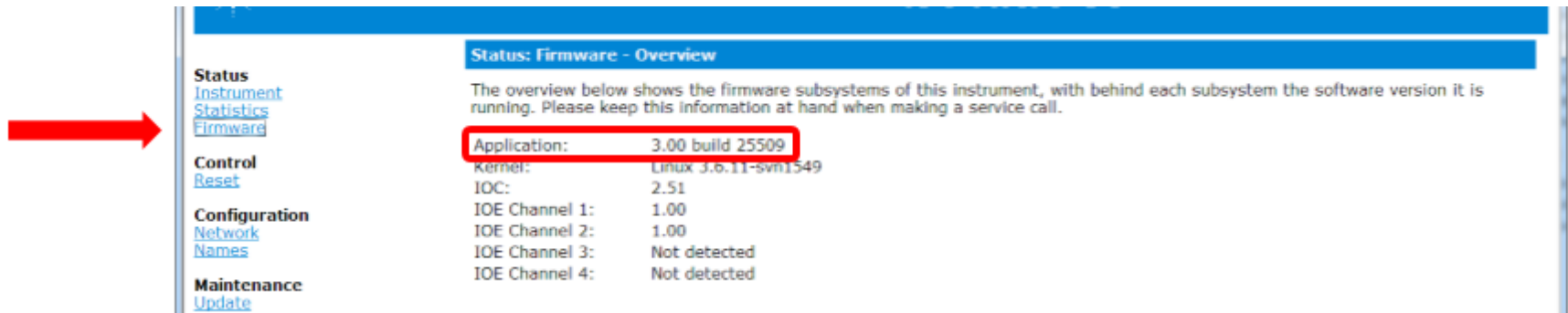


After Firmware installation, the MicroGC will automatically reboot, to finalize the update.

Agilent 490 Micro GC – Firmware Upgrade by using Web browser.

You may want check the Firmware revision, installed.

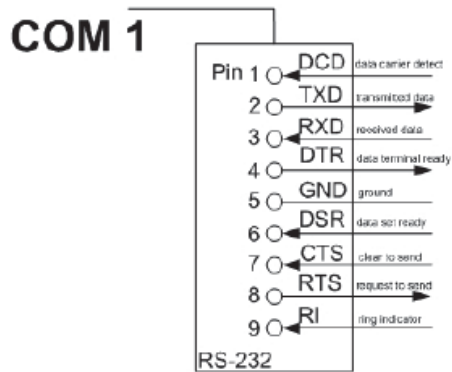
- *Reopen web browser.*
- *Under Status menu can be check the Firmware version.*



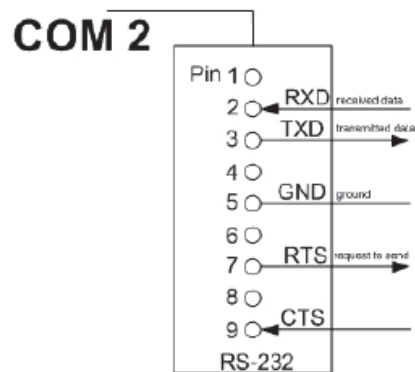
The screenshot displays the 'Status: Firmware - Overview' page. The left navigation menu includes sections for Status, Control, Configuration, and Maintenance, with 'Firmware' selected under Status. The main content area provides an overview of the firmware subsystems and lists the following details:

Application:	3.00 build 25509
Kernel:	Linux 3.6.11-svn1549
IOC:	2.51
IOE Channel 1:	1.00
IOE Channel 2:	1.00
IOE Channel 3:	Not detected
IOE Channel 4:	Not detected

Agilent 490 Micro GC - Com 1 and Com 2 connector

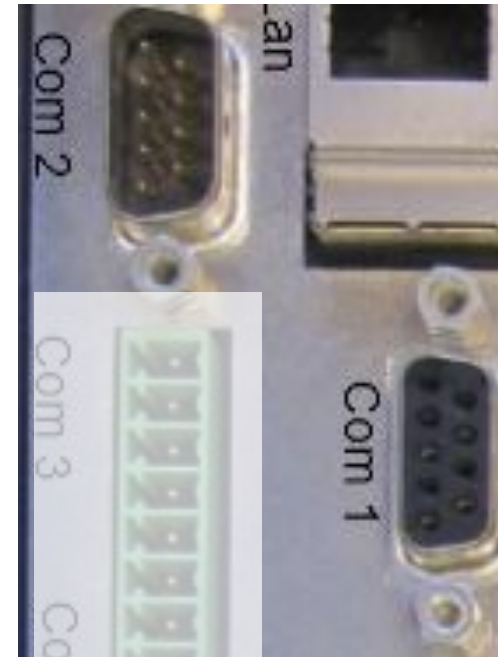


**Com 1 is standard
Serial Communication**

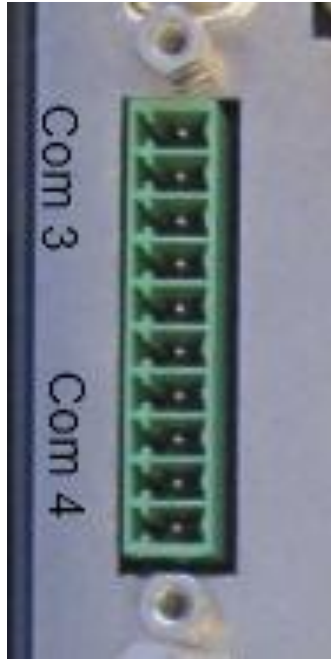


Com 2 Valco valve

Pin 9 = 5V (500mA max)
Pin 8 = CTS



Agilent 490 Micro GC - Com 3 and Com 4 connector



Com 3

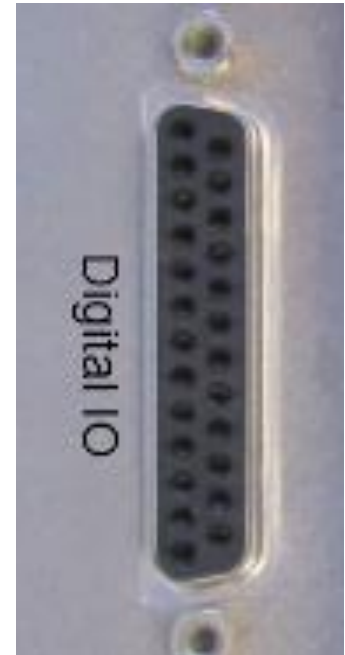
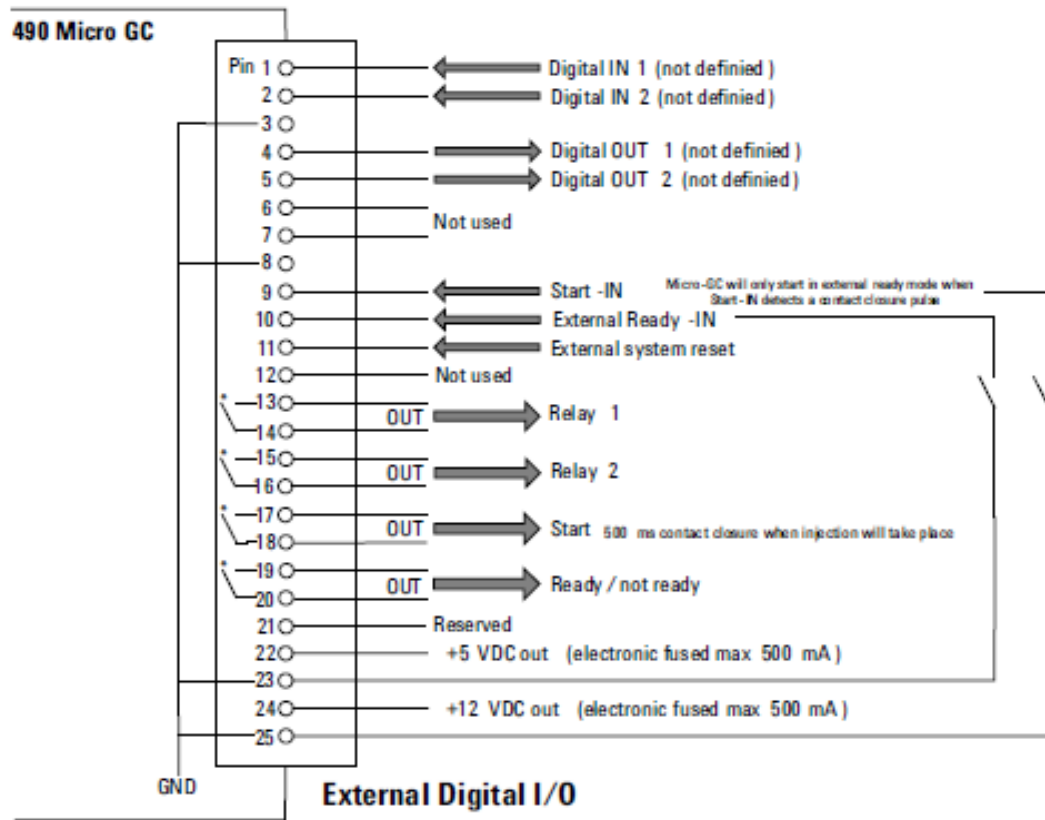
Configurable: RS485, RS232, RS422
 At release: RS485
 (default and not configurable)

Pin nr.	Function				
	RS-232	RS-422	RS-485 2-wire	RS-485 4-wire	
1	CTS	RX-	Data-	RX-	COM3
2	RX	RX+	Data+	RX+	
3	TX	TX+	not used	TX+	
4	RTS	TX-	not used	TX-	
5	GND	GND	GND	GND	COM4
6	CTS	RX-	Data-	RX-	
7	RX	RX+	Data+	RX+	
8	TX	TX+	not used	TX+	
9	RTS	TX-	not used	TX-	
10	GND	GND	GND	GND	

Com 4

Same as COM3
 but at First FW release
 Not supported

Agilent 490 Micro GC - Digital IO connector:



Agilent 490 Micro GC - Analog IO connector:

