



Varian GC Control Software for EZChrom *Elite*™ CDS and Agilent OL Operating System for the Laboratory

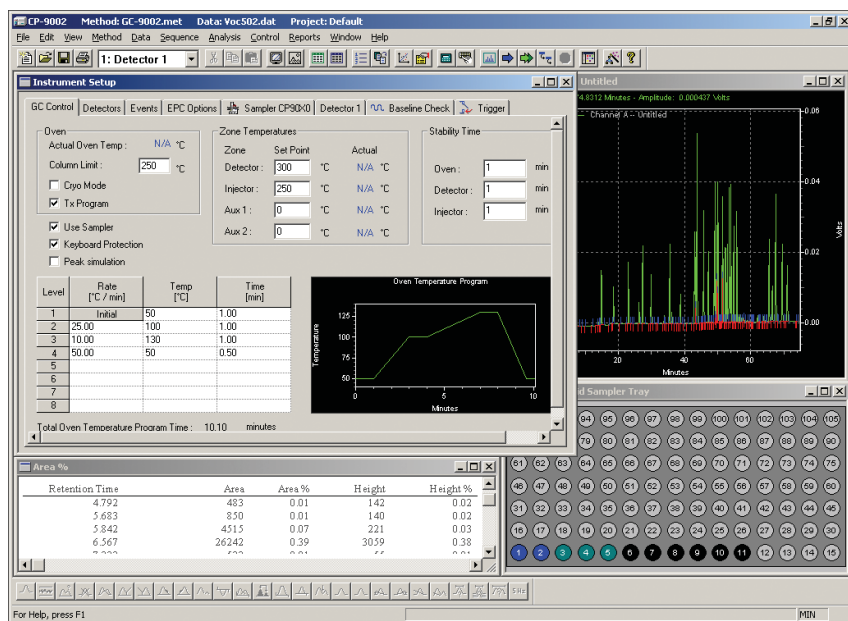


Figure 1. Complete views of data, autosampler tray positions, sample types, method parameters and results can be provided on one screen.

Control Varian GCs with EZChrom *Elite* and Agilent OL

Varian Instruments provides a wide range of GCs that offer many benefits for the GC analyst. Instrument Control Software for the Varian CP-3800, 3900 GC, CP-4900 Micro-GC and CP-900x series of Varian GCs is available for Agilent Technologies EZChrom *Elite* CDS and Agilent OL Operating System for the Laboratory.

When these Control Software options are installed on an EZChrom *Elite* CDS or Agilent OL, software method parameters for data acquisition and processing can be specified along with specific instrument control functions of the Varian CP-3800, 3900 GC, CP-4900 and CP-900x GCs.

The Varian CP-3800, 3900 GC, CP-4900 Micro-GC and CP-900x GCs can be connected to EZChrom *Elite* or Agilent OL along with many other controlled GCs, HPLCs, and related

Key Benefits

- Provide software control of the Varian CP-3800 GC, CP-4900 GC, and CP-900x GCs for EZChrom *Elite* and Agilent OL Operating System for the Laboratory.
- Control Varian GC. Including injector zones, injectors with Electronic Flow Control, and direct data collection of digital detectors.
- Perform advanced data handling and data reprocessing using a powerful software graphical user interface.
- Address 21 CFR Part 11 issues using Agilent's built-in audit trails, system and user security, electronic signatures and signoffs.
- Manage Varian GC instruments along with all other electronic laboratory content through Agilent OL.



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chromatography devices. Over 300 different instruments can be controlled on the same software platform, simplifying end user operation and improving overall laboratory efficiency.

Complete Software Control of the Varian Line of GC Instruments

The CP-3800 GC is a highly versatile GC with a number of different options for autosamplers, injectors and detectors. The Control Software handles all CP-3800 GC settings, data collection, and data analysis, including auto-configuration of the Varian CP-3800 GC. Support is provided for 1-3 concurrent injector zones, Isothermal, split/splitless, programmable temperature vaporizing, on-column packed, and flash packed injectors, Electronic Flow Control, and FID, EC, TCD, TSD, PFPD, and MicroTCD detectors. The software allows method generation of zone and oven temperature programs along with detector and full control of the 8200, 8400 and 8410 autosamplers.

The 3900 GC is a small footprint, high throughput GC that provides a single channel fixed configuration incorporating a number of appealing instrument features. The 3900 GC and the Varian CP-8400/8410 autosampler can be controlled together as a complete GC system. The control software supports the 1177 split/splitless and 1041 on-column injectors, inlet temperature control, column oven temperature, FID and TCD detectors, and other important 3900 GC parameters.

Varian's CP-4900 is a rugged, compact analyzer for lab-quality gas analysis. With advanced micro-machining and computing technologies, the CP-4900 offers one to four plug-and-play GC channels. Each channel is a separate GC with pneumatics, injector, column and detector. The Control Software allows EZChrom *Elite* and Agilent OL to handle all experimental settings, data collection, and data analysis, including autoconfiguration of the CP-4900, support for 1-4 channels and control of the column temperature, injector time, Backflush control, detector filament and autozero, inlet temperature and data acquisition settings.

CP-900x GCs comprise the models 9000/9001/9002/9003 GCs with the 911/912 single shot autosamplers, 9010/9050 autosamplers, and 9060 head space autosamplers. EZChrom *Elite* supports the FID, ECD, TCD, NPD, FPD detectors for the CP-900X GCs. FID auto-ignition is supported on 9002/3 models, with one autosampler accessible at a time. Vial thermostating and pressurization with 9060 headspace sampler is also provided.

Versatile Deployments Configurations of the Software

EZChrom *Elite* can be deployed as a multi-user/multi-instrument client/server configuration, a stand-alone workstation or a dedicated single instrument system. Whether you wish to run the software on portable laptops, desktop workstations, or in thin client

networks, the EZChrom *Elite* software can easily scale to fit end user needs. Agilent OL allows all Varian GCs to be deployed across the enterprise with Agilent OL web clients used to setup methods and sequences for controlling the GC, collecting the data for analysis, and generating final reports. Depending on the user load and preferences of the user, a variety of different databases can be used in the Agilent OL configuration.

Hardware Connections

The Varian CP-3800 GCs connect to EZChrom *Elite* through their TCP/IP connection. Connection requires a PC with an Ethernet BNC connection or the Ethernet version of the Agilent Instrument Controller with a BNC Ethernet hub.

The Varian 3900 and 4900 GCs connect via RS-232c, with the RS-232c version of the Agilent Instrument Controller used in Agilent OL.

The Varian CP-900X GCs connect directly to a PC using the ChromNet board and ComMod communications module from Varian.

Apply Powerful Data Handling Features to the GC

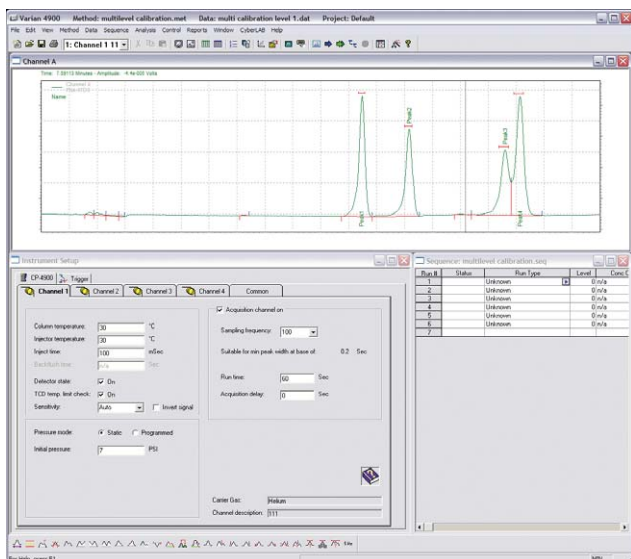
EZChrom's full featured routines for chromatography data analysis extend the capabilities of the Varian GCs. The built- activity logs and audit trails keep track of all method and sequence parameters including those for the GC instrument. Each collected injection is stored on the data system with an embedded copy of the method, including the acquisition and analysis parameters so that users can completely and easily trace the exact instrument conditions used with any run.

Injections collected from the Varian GCs can be subjected to a variety of data reduction treatments, calibration techniques and the flexible reporting templates to accommodate a wide variety of user needs.

Powerful graphic routines in software allow all injections collected on the Varian GCs to be displayed for rapid comparison in overlay or stacked formats.

Special Single Instrument Version for Varian GC Control

Users who wish to operate with only one Varian GC, and who need only basic EZChrom *Elite* features will want to consider the EZChrom SI with Varian GC control software. This provides the EZChrom software complete with the appropriate Varian GC control. Intended for single user/single instrument operations that do not require the full capability of EZChrom *Elite* or Agilent OL, EZChrom SI version provides an ideal low cost entry into the EZChrom *Elite* platform.



Scalable and Flexible Deployment

EZChrom *Elite* and Agilent OL provide a wide range of flexible deployments. Whether your needs call for a single user workstation, a large client/server operation or the use of web clients across the enterprise, Agilent Technologies can provide the ideal solution for collecting data and controlling Varian GC instruments.

Manage All Instrument Data with Agilent OL

The unique Agilent OL Operating System for the Laboratory provides powerful content management of all raw data and results from the Varian GC instruments. "Smart" electronic filters specific for the Varian GC results are used to extract key metadata from each GC run and store that information in a database. All results are automatically deposited in a safe, secure repository and made fully searchable.

Users can readily find their data based on queries that not only specify criteria such as instrument, username and Sample ID, but

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even extend to detailed results such as component names and concentration ranges. Three different types of database searches are provided in Agilent OL to accommodate different situations and make it easy for users to find the results they are seeking.

Agilent OL manages all the electronic information in the laboratory. In addition to all Varian GC raw data and results, Agilent OL can manage Microsoft Office files, e-mails, Adobe pdf files, chromatography data from EZChrom *Elite* and other CDS packages, mass spectrometry files, and much more. No other package offers this powerful capability to handle all electronic information and documents generated in the laboratory. Conduct quick, focused searches across all your data to find hits from various Varian GC results, as well as Excel spreadsheets, Word documents, pdf reports, and more.

Furthermore, Agilent OL's management of the information makes it easier and safer to collaborate and share results with others with its powerful "check-in/check out" capabilities and electronic signoff capabilities.

Varian GC Firmware Requirements

GC	GC ROM	Sampler
CP-9000	1.8	CP-911/941
CP-9001	1.1	CP-911/941
CP-9001	1.1	Purge & Trap (TCT/PTI)
CP-9001	2.1	CP-9010/9050
CP-9001	22.1	CP-9060
CP-9002/3	3.1	CP-9010/9050
CP-9002/3	33.1	CP-9060

Note: Agilent OL currently does not support the CP-900x series GC. The following additional hardware components are required with the CP-900x series GC:

PC Interface Board (PC-NET Board)	CP-737672
GC-Interface Module (COMMODO)	CP-737667

GC	GC ROM	Sampler
CP-3800*	3.33	8200/8400/8410
CP-3900	6.1	8400/8410

* Note: The CP-3800 requires a BNC to Ethernet adapter.

* Note: Check if the CP-3800 instruments are equipped with an Ethernet option board: Varian Part-Number 03-925560-91 "3800 Ethernet Communication Option"

GC	GC ROM
CP-2002	1.10 or higher
CP-2003	1.20 or higher
CP-2003 (Quad)	1.22 or higher
CP-4900	