Clarity (Lite)

2.4.4 vs 2.4.1

ENG

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1 General

- Version 2.4.4 supports unicode characters, this enabled the localization to Chinese and in future also to other languages and use any national characters in the chromatogram description.
- As Windows 98 are no longer supported by Microsoft, the Clarity version 2.4.4 cannot be installed under this operating system.
- The number of signals per chromatogram was increased from 4 to 12. The widgets for naming and color selection of signals had to be extended accordingly.
- Tables - new function **Fill Down** will copy content of current cell to all cells bellow it. In Start Vial column in Sequence table it will automatically increment values.
- The **Import Chromatogram** dialog can now import multi-detector chromatograms from TXT format.
- The time axis in **Data Export** were exported with 3 decimal places precision only, now it is 5 decimal places to enable fast analysis in the future.
- The automation using commandline parameters was significantly empowered.
- The Demo data are no longer stored in default projects. There are DEMO1-4, EA_DEMO, PDA_DEMO and GPC_DEMO.

Note: *To open a demo project use the **File - Project** command in the **Instrument** window to invoke the **Projects** dialog. The **Open** button will invoke the **Open Project** dialog, where it is possible to select one of the DEMO Projects.*

1.1 System Configuration

Full version

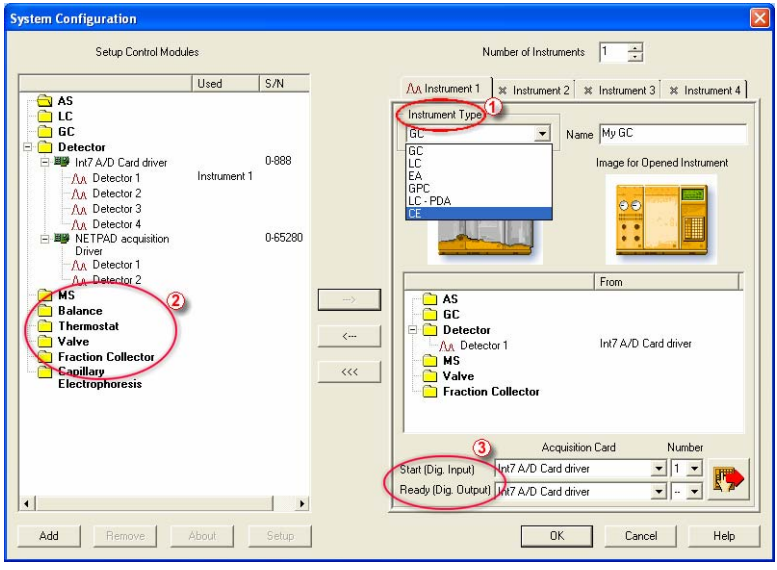


Fig. 1. System Configuration

Instrument Type①

The instrument type selection was changed from radiobutons to listbox. Following new instrument types were added:

- LC-PDA
  the PDA related options are displayed in this instrument only
- CE - capillary electrophoresis

Setup Control Modules

Following new types of devices were added: ②

- MS
  future use for mass spectrometry detectors
- Fraction Collector
  future use for fraction collectors
- Valves
  future use for auxiliary devices controlable from the **Method Setup - Event Table** or multifunctional devices

Changed order and grouping

To accommodate new devices and to simplify the navigation, the available devices were regrouped and reordered.

Option „-- “ (none) for the Start In and Ready Out. ③

Fig. 2. System Configuration

The option "--“ (**None**) was enabled for the **Start In** and **Ready Out** fields in the **System Configuration** dialog for selected devices.

1.2 Single Analysis

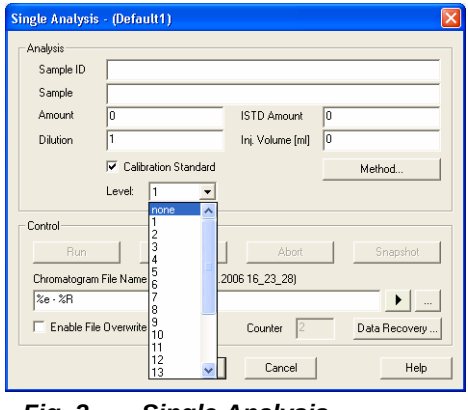


Fig. 3. Single Analysis

- New **Level** field enables to select recalibration level in the calibration file directly from **Single Analysis** dialog.
- The default filename template in the **Chromatogram Filename** field was changed to %e-%R (Name of the Instrument - Date and time). This settings ensures that the filename willbe always unique.

1.3 Sequence

The default setting for new sequence was changed to „*ACTIVE*“.

It is possible to change the default by modifying the TEMPLATE.SEQ file in the COMMON subdirectory.

1.4 Method Setup

Event table

The **Event** table was moved from the **Acquisition** tab to its own **Event Table** ① tab common for all detectors on the **Clarity Instrument**.

The digital inputs from devices configured on the Instrument can be used as an event source.

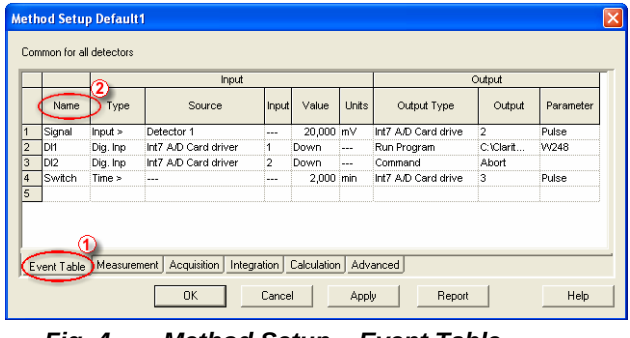


Fig. 4. Method Setup – Event Table

Event names can be set in the table. ②

In addition to the digital outputs and external programs the acquisition and sequence control commands (**Stop**, **Abort**, **Previous**, **Next**, **Shutdown**) can also be used as an event output. (These commands are functional only in selected control modules).

External start options

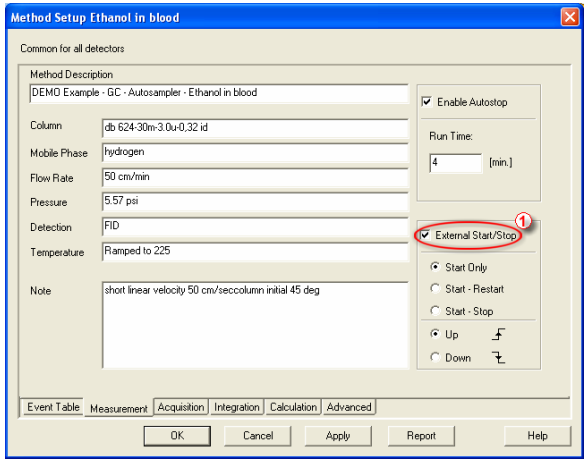


Fig. 5. Method Setup - Measurement

The **External Start** ① options were moved from the **Acquisition** tab to the **Measurement** tab that is common for all detectors.

Subtraction chromatogram

Full version

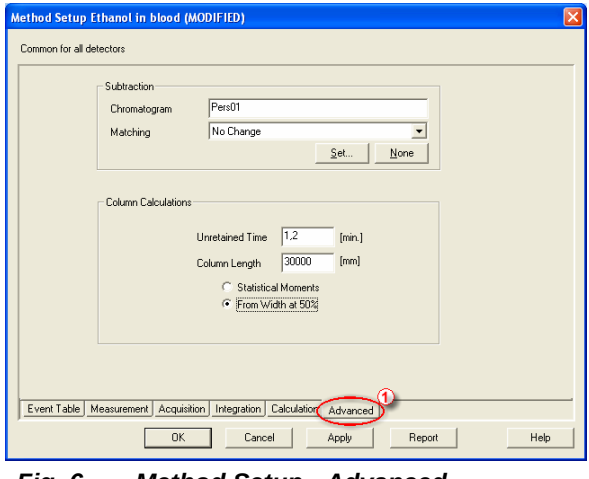


Fig. 6. Method Setup - Advanced

The **Subtraction Chromatogram** function and **Performance Calculation** parameters were moved from the **Measurement** to **Advanced** tab ①.

Gradient table in LC control

The composition is displayed by *0,1%* (used to be 1%).

1.5 Data Acquisition

The limits for signal display were increased on voltage axis from 10^4 to 10^9.

Note: *The larger scale is now used by digital detectors of Agilent 5890 and 68xx.*

1.6 Chromatogram

New features enable to highlight peaks in chromatogram based on their selection ① in **Result** table or by color defined in the **Calibration** table ②.

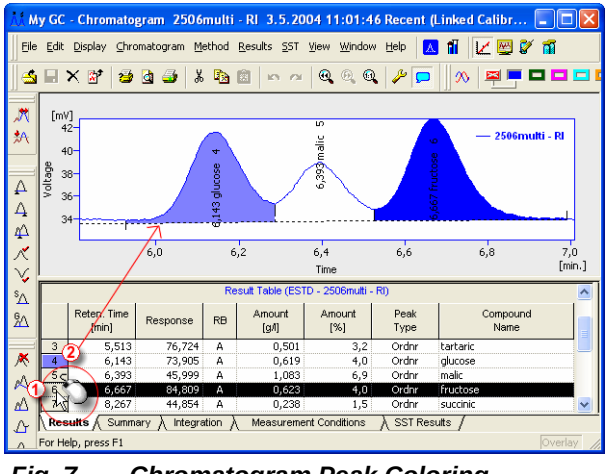


Fig. 7. Chromatogram Peak Coloring

The calibration table in the **Calibration – Compounds** window now contains the **Peak Color** column ①. The background of corresponding peaks in the chromatogram will be filled with the color specified in this column.

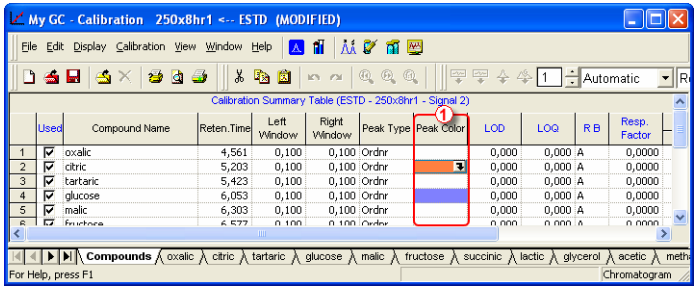


Fig. 8. Calibration peak coloring

The **Graph Properties – Graph** dialog provides a possibility to switch the colouring possibilities on and off easily. The Peak Area Coloring section contains Set by Calibration checkbox for enabling the colors defined in the calibration and the Peak(s) Selected in the Result Table for enabling the highlighting of the peaks that are currently selected by left mouse click on the row number.

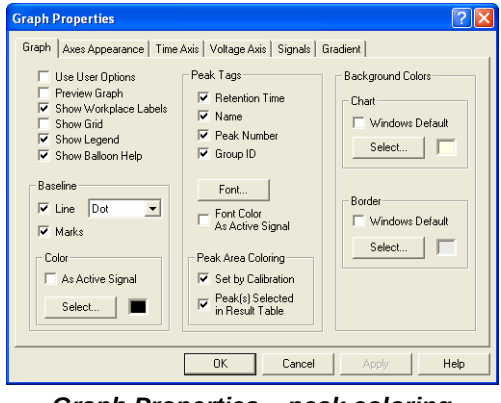
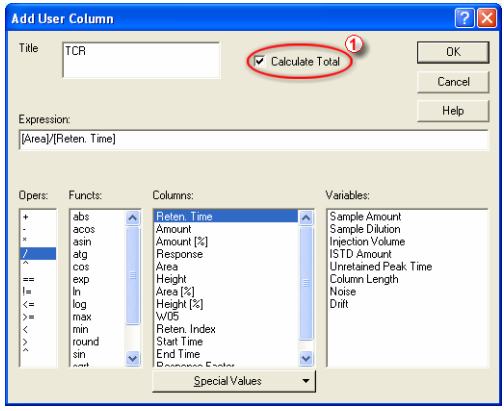


Fig. 9. Graph Properties – peak coloring

Result table

Full version



Option to calculate **Total** ① for **User Columns**.

Start Time and **End Time** columns available in the **Result** table (hidden by default)

Summary table

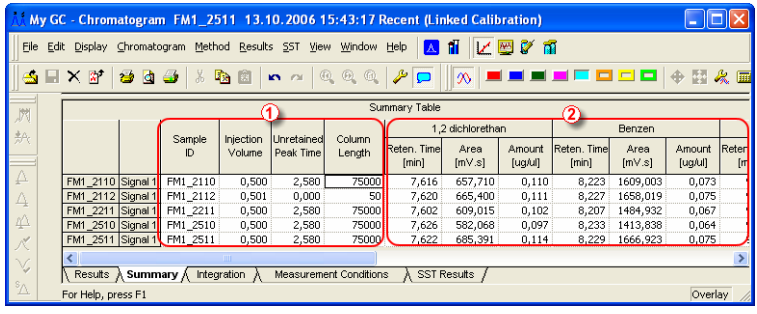


Fig. 10. Chromatogram - Summary

Chromatogram specific columns (Common ①) can be displayed in the **Summary** table together with the summary columns ②.

Measurement conditions

Full version

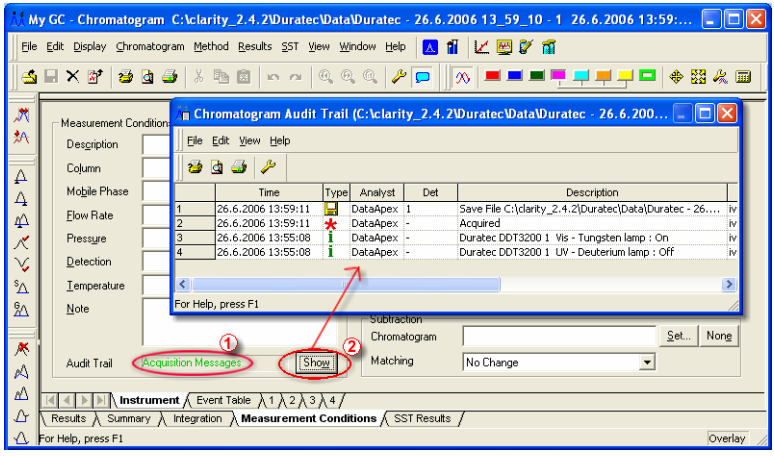


Fig. 11. Chromatogram – Measurement Conditions

The overview of acquisition messages ① and a button linkinkg to the audit trail ② is added.

Performance Table

Full version

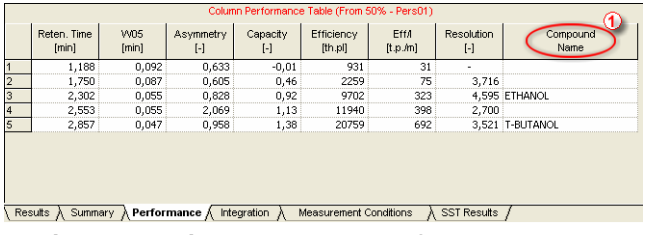


Fig. 12. Chromatogram - Performance

Possibility to display names for identified compounds in the **Compund Name** column ① also in the Column Performance table (used to be possible only in the Result table).

Open Chromatogram

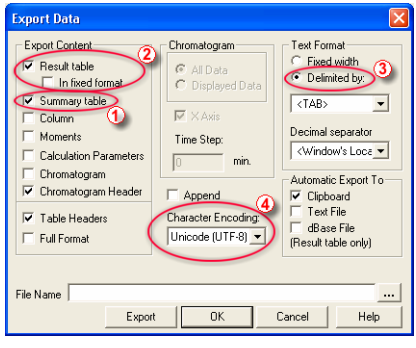
The **Open Chromatogram fom Sequence** command now enables to select between stored or linked Calibration and the number of opened signals.

1.7 Calibration

- The signal specific columns in the global calibration table are displayed in the color of the active signal. For a single signal calibration, the columns are not anymore distinguished by color, because it was confusing.
- Option to use **Unretained Peak Time** in **Retention (Kovacs) Indexes** calculation

1.8 Export

The **Export Data** dialog was enhanced by the following new features:



- Automated export of the **Summary** table ① in the **Export Content** group.
- Option to export the **Result** table as on screen (WYSIWYG) can be set by unchecking the **In fixed format** checkbox ②
- Option to set field delimiters ③ and UNICODE (UTF-8) ④ character set for text exports.
- Possibility to export 3D data from **PDA** window.

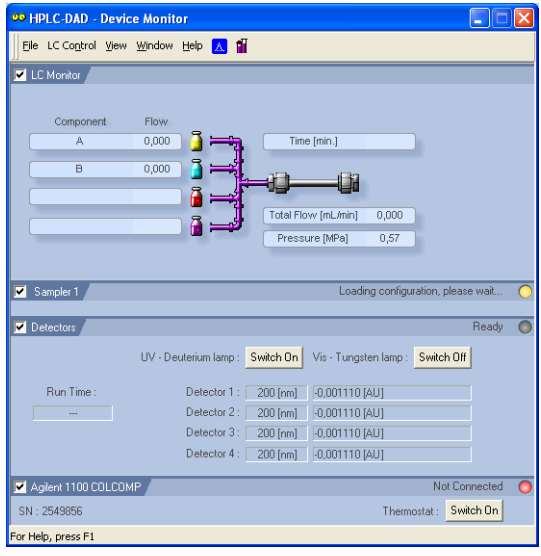
1.9 Audit Trail Full version

For selected devices additional instrument events (sending of method, lamp status) and errors (missing data, pump error) are recorded in the **Audit Trail**.

2 Control modules

Full version

2.1 Device Monitor window



- **Device Monitor** window (used to be **LC Monitor**) was amended to accommodate monitors from multiple devices.
- Functional buttons (**Autozero**, **Lamp On/Off**, etc.) are available in selected monitors.

2.2 New control modules added

Full version

- LC Control: module for **Knauer Smartline** system - preliminary versions, to be released autumn 2006
- LC Control: module for direct control of **Shimadzu LC10-AD VP**.
- AS Control: module for **CTC LC PAL** autosampler (also for **GC PAL** and selected OEM versions)
- AS Control: module for direct control of **Shimadzu AOC 20i** autosampler for GC.
- AS Control: module for **HTA HT300** extended to control also **HT300LV**

- DET Control: PDA detector **Duratec DDT 3200 DAD** (available from Duratec company only)
- DET Control: module for direct control of **Ecom Topaz**, **Sapphire** and **LCD2073A** detectors.

2.3 LC Agilent 1100 series modifications

- LAN communication added
- Common system monitor in the **Device Monitor** window.

2.4 UNI pump control

New fields were added for comments and for setting the time between commands.

The communication parameters (baud rate etc.) are stored in the profile.

The UNI pump driver profiles were reorganized in the UTILS subdirectory grouped by the manufacturers.

2.5 LC Control States

The display and handling of LC gradients was unified in Clarity:

- Gradient is always displayed including the Standby and Idle states
- Isocratic mode can be set by the following steps:
  - Setting the initial conditions in the first row of gradient table
  - Setting the **Standby Flow** same as **Initial Flow**.
  - Setting the **Idle** state to **Initial**.

The sum of the **Time to Standby** and **Standby Time** then represents the duration of the gradient for eventual **Control Time**. The flow will not be changed, it is not necessary to set any time.

3 Extensions

Full version

3.1 SST

The **Amount%** column was added to the avaliable parameters.

3.2 CE - Capillary Electrophoresis

New Clarity Extension for capillary Electrophoresis includes:

- Optional CE Clarity **Instrument** type
- CE specific terminology
- Time corrected area can be used as a base for quantitation.
- Peak identification can be optionally based on **Peak Start**/**Peak End**.

Note: *Detailed information about the CE Extension can be found in separate manual (Part No. M062)*

4 Compatibility Issues

Most of the files should be backward compatible; however some hidden bugs may still appear.

Caution! *It is recommended to backup your files as well as Clarity configuration files before upgrade.*

- Files using UNICODE characters may not be interpreted correctly in the previous Clarity versions. Also, the Chinese characters in some fields may not display correctly on non Chinese Windows.
- The methods that utilize the **Event table** will not be backward compatible.

  When transferring methods with event tables from older versions, the **Source** and **Output** columns may not be filled correctly, it is necessary to check and eventually correct such methods.
- A bug present in version 2.4.1 prevents correct conversion of the **Pulse** output in **Event table** (it will be converted to *HIGH*).

  For remedy, the method should be first saved using the latest Clarity 2.4.1 version (2.4.1.93 and later) and only then opened in Clarity 2.4.4.