NOVA 1.10

Release notes

1 – Introduction

Thank you for installing this update of NOVA. These notes provide an overview of the new features introduced in NOVA 1.10.

The following improvements have been added to NOVA:

- Support for 64 Bit versions of Windows for all instruments with USB control
- Support for the new Autolab PGSTAT204
- New user interface for Autolab control command
- New user interface for *Chrono methods* and *Chrono methods high speed* command
- New user interface for FRA measurement command
- Phase out of the Timed procedure command
- Timing guide in procedure editor and managed timing
- Real time validation in procedure editor
- More detailed validation information
- Ignore warnings in validation
- Link to Windows Explorer for database
- Cutoff information displayed in options tooltip
- Cut/Copy/Paste option in procedure editor
- Manual control for external devices

2 – Support for 64 Bit versions of Windows for all instruments

NOVA now includes support for 64 Bit versions of Windows for all instruments. This is an improvement with respect to the previous version of NOVA which provided support only for the latest generation of Autolab instruments.

Warning

The GPES compatible driver cannot be used in 64 Bit versions of NOVA. This choice is greyed out in the Driver manager application (see Figure 1).

Warning

Support for third party instrumentation (Metrohm and Avantes) is not 64 Bit compatible.

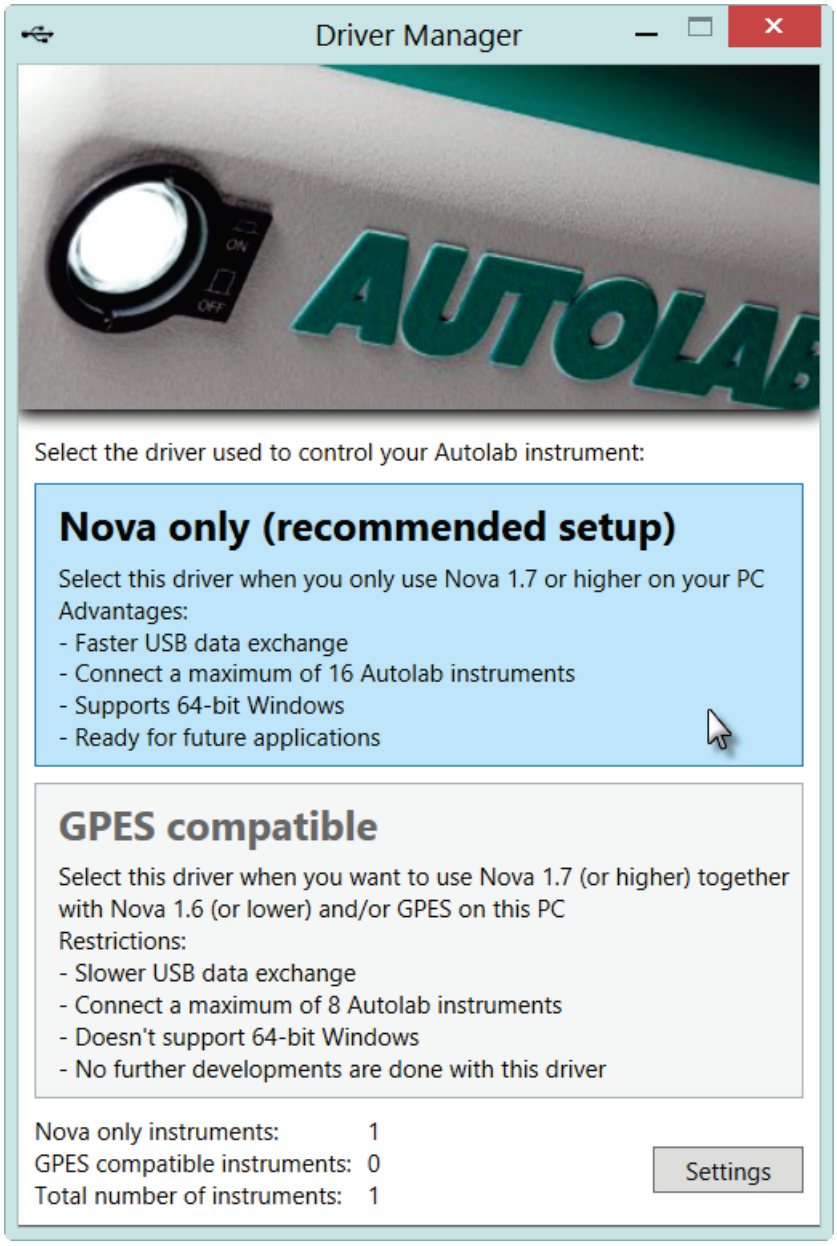

Figure 1 – The GPES compatible driver cannot be used in 64 Bit versions of Windows

3 – Support for the new Autolab PGSTAT204

This version of NOVA provides support for the new Autolab PGSTAT204 (see Figure 2).

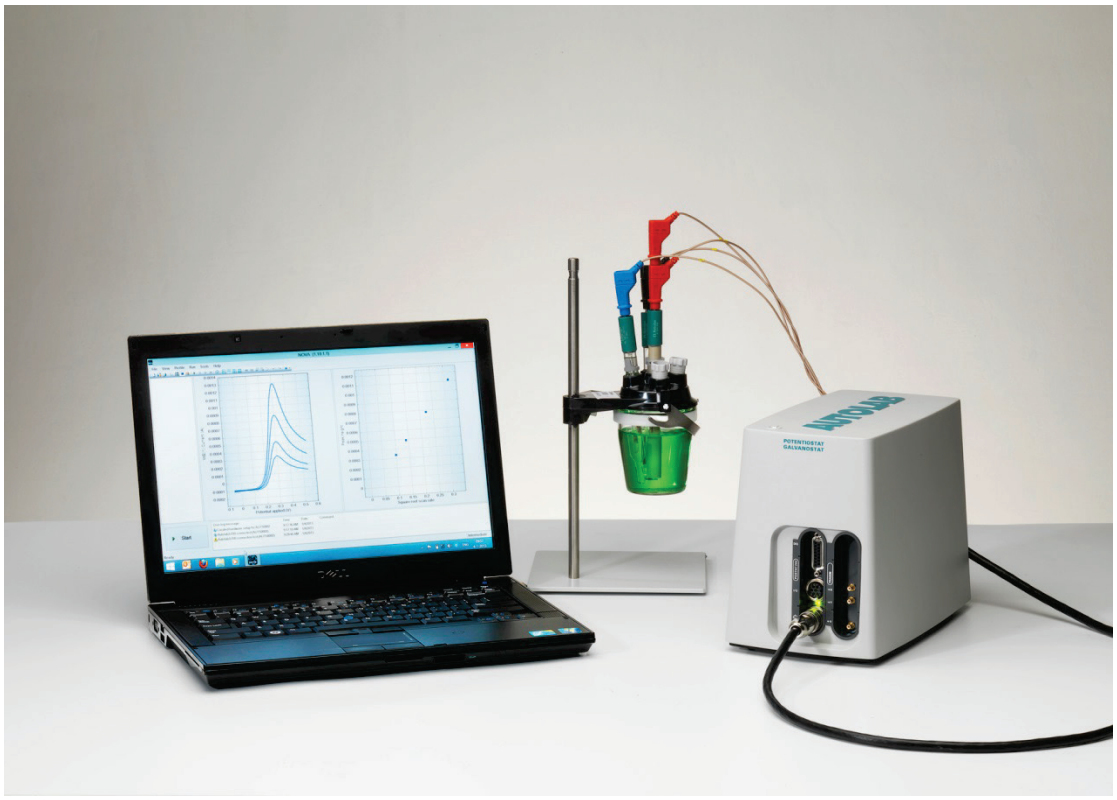

Figure 2 – The Autolab PGSTAT204

This new compact instrument can be used stand alone or in combination with one of the following modules:

- FRA32M – Electrochemical impedance analyzer module
- BA – Dual mode bipotentiostat module
- EQCM – Electrochemical quartz crystal microbalance module
- MUX – Multiplexer module
- pX1000 – pH and temperature measurement module

4 – New user interface for Autolab control command

The editor for the Autolab control command has been redesigned and will now display the settings in well-defined areas of the interface (see Figure 3). Basic and advanced parameters are now shown in clearly separated sections.

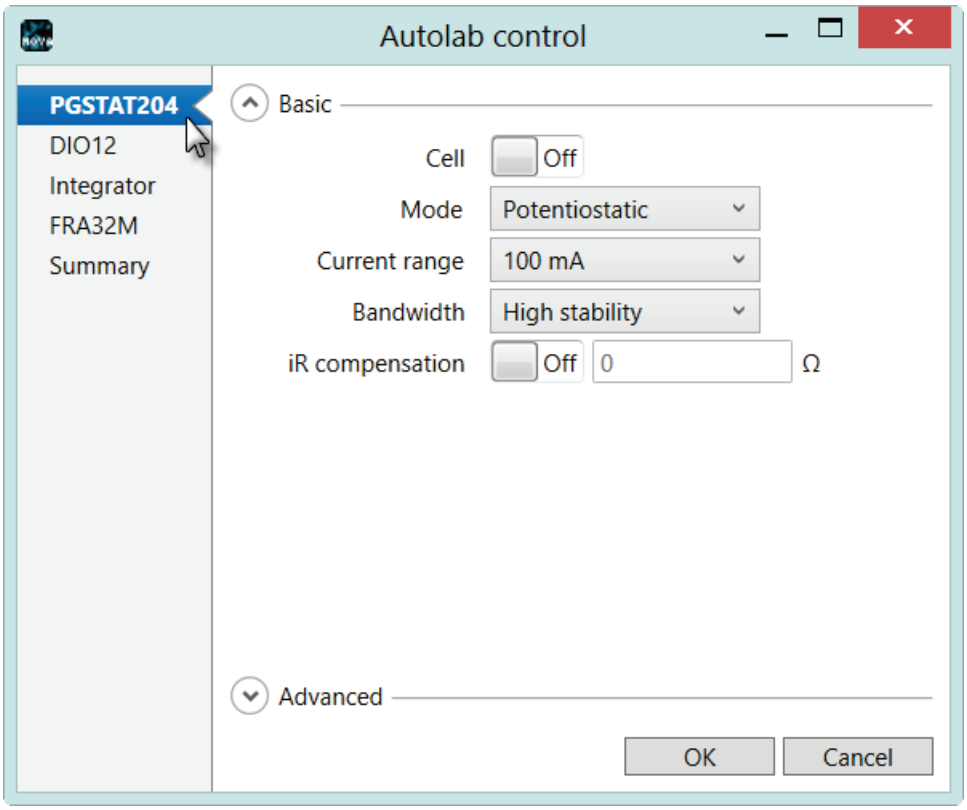

Figure 3 – The Autolab control editor has been redesigned

Additionally, a Summary has been added to the editor. The summary displays all the specified settings in one clear overview (see Figure 4).

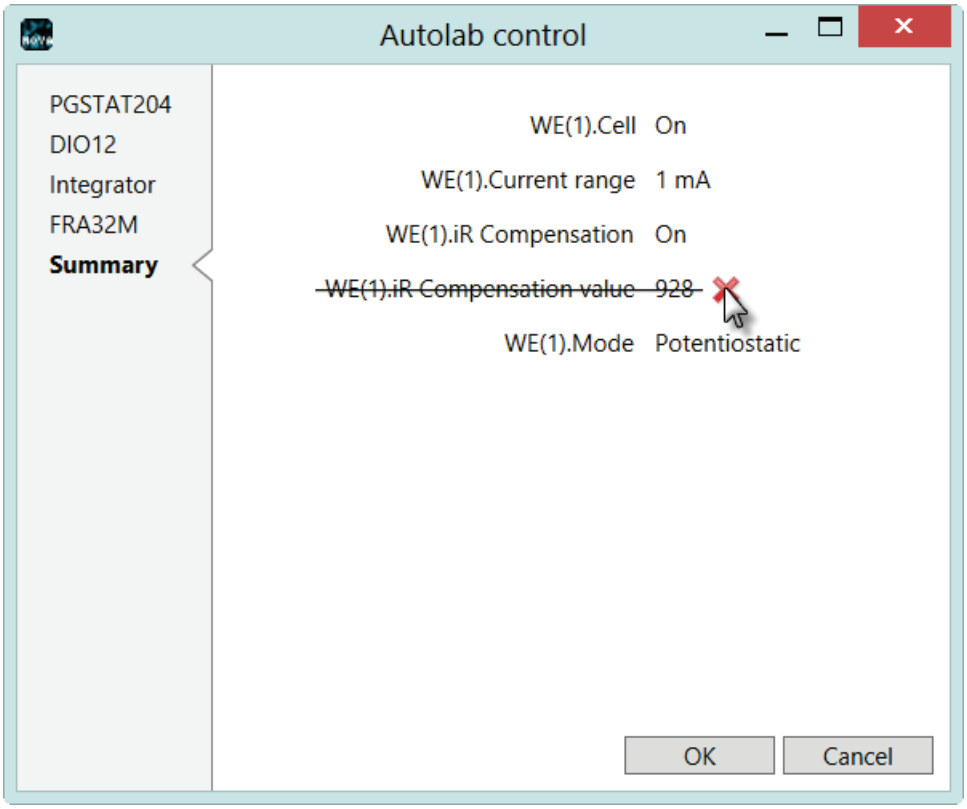

Figure 4 – A summary has been added to the Autolab control editor

It is possible to quickly remove one or more of the settings indicated in the summary by clicking the ✖ icon, as shown in Figure 4.

For more information on the use of the Autolab control command, please refer to the Autolab control tutorial, available from the Help menu in NOVA.

5 – New user interface for the Chrono methods and Chrono methods high speed commands

The *Chrono methods* and *Chrono methods high speed* command have been modified and a new user interface has been added to the commands. This dialog replaces the previous *Chrono methods* and *Chrono methods high speed* editor (see Figure 5).

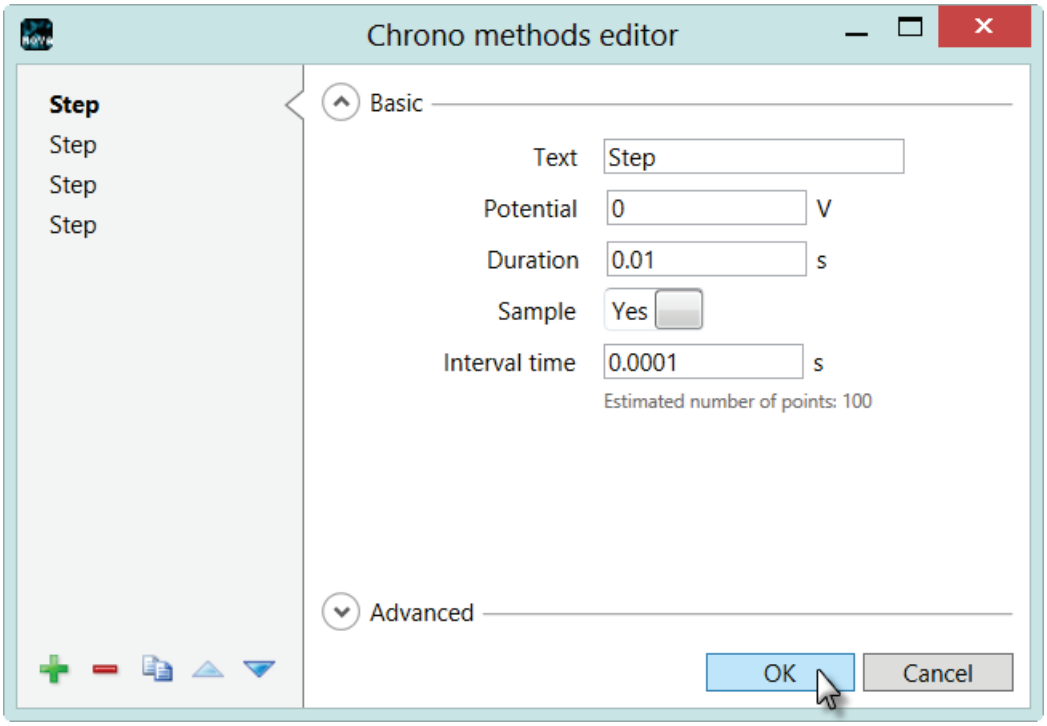

Figure 5 – A new user interface has been added to the chrono methods command

This interface conveniently separates the basic and the advanced parameters. More information on the use of the Chrono methods command can be found in the Chrono methods tutorial, available from the Help menu.

6 – New user interface for the FRA measurement commands

A new editor has been added to the FRA measurement commands to allow the specification of all relevant experimental parameters in a single form (see Figure 6).

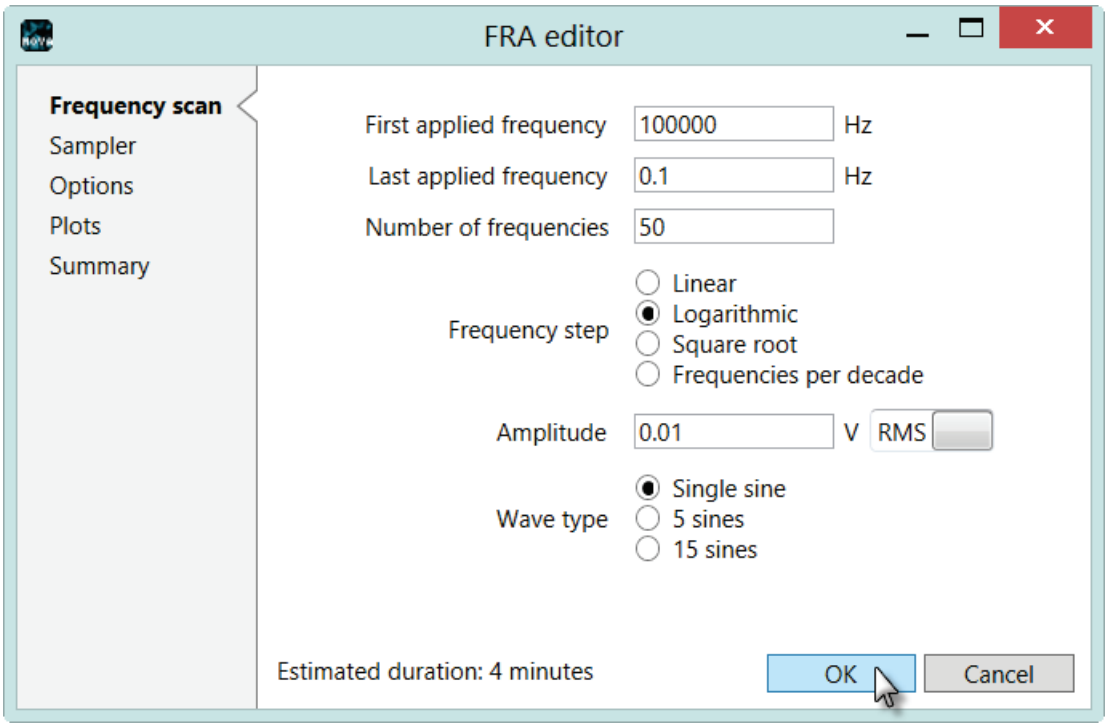

Figure 6 – A new user interface has been added to the FRA measurement commands

The new interface brings all the important parameters and settings into one location. The settings are specified in different sections, depending on the type (frequency scan, options, etc…).

Where applicable, some of the parameters have been separated into basic and advanced parameters to simplify everyday use of these parameters and commands (see Figure 7).

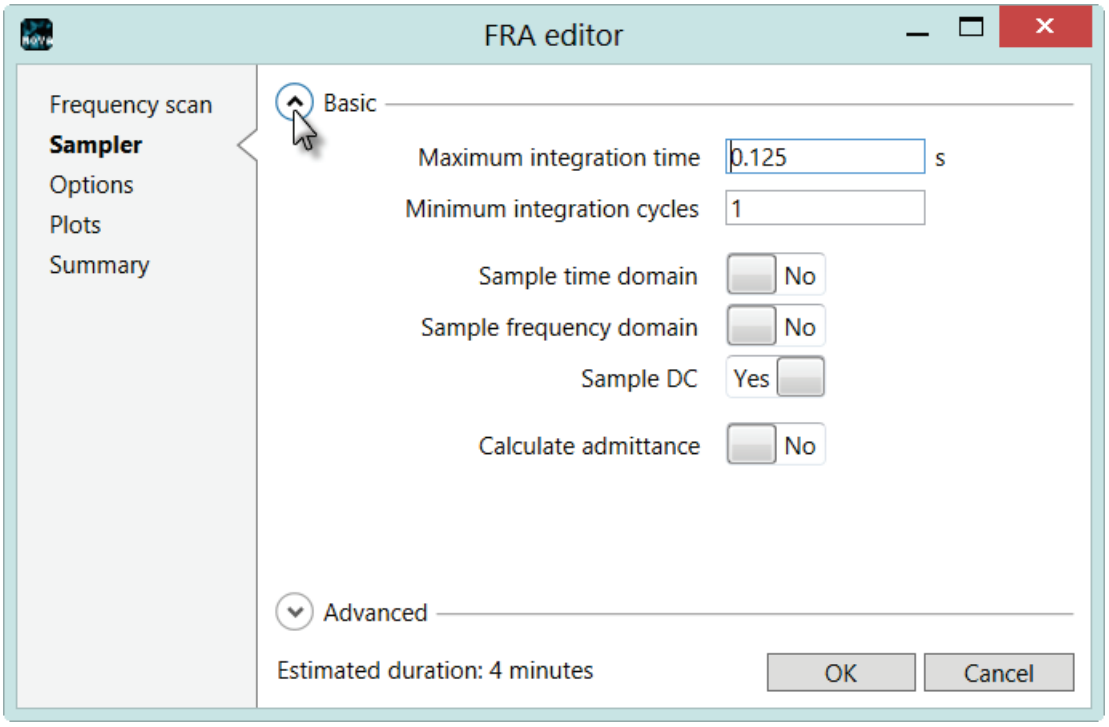

Figure 7 – Some parameters of settings are separated into basic and advanced

More information on the use of the new user interface for FRA measurement commands can be found in the Impedance measurements tutorial, available from the Help menu in NOVA.

7 – Phase out of the Timed procedure command

The *Timed procedure* command has been phased out in this version of NOVA. The command is no longer required to control the timing of the events programmed in the NOVA procedures. All procedures constructed using previous versions of NOVA are converted properly and pre-existing *Timed procedure* commands are replaced by *Nested procedure* commands. To indicate the timing, a new graphical indicator is used (see Section 8).

8 – Timing guide in procedure editor and managed timing

In previous versions of NOVA, the *Timed procedure* command was used to indicate and control the timing of commands in a measurement sequence. To provide a more consistent user interface for the creation of procedures, a new timing guide system has been implemented in the current version of NOVA. When measurement commands are located in sequence, the timing will automatically adjusted in the same way as in the previous editions with a *Timed procedure*. No interruption will be observed in the measurement. This is indicated now by a green line guide on the left-hand side of the procedure editor (see Figure 8).

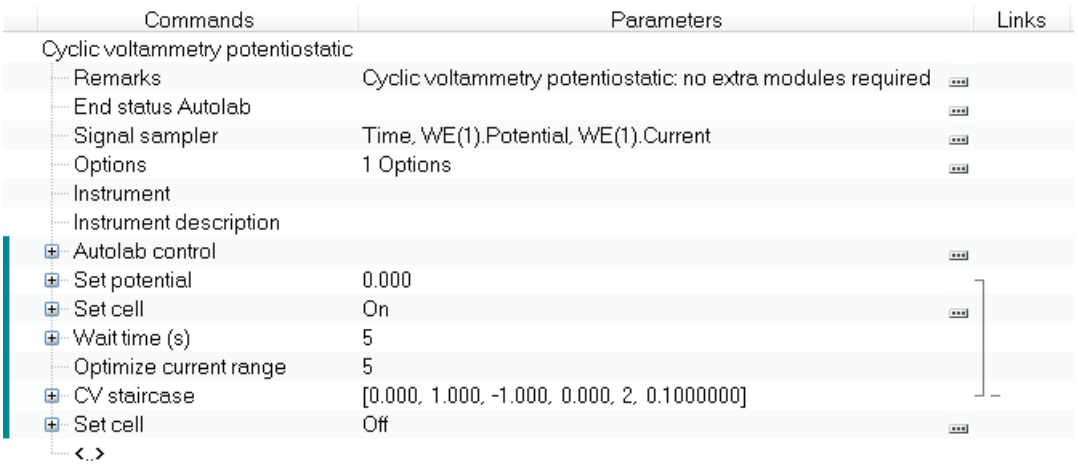

Figure 8 – The green timing guide located on the left-hand side of the procedure editor replaces the *Timed procedure*

When non measurement commands are inserted anywhere in a procedure, an interruption of the timing must be introduced to execute the non-measurement command. This is indicated by a break in the timing guide located on the left-hand side of the procedure editor (see Figure 9).

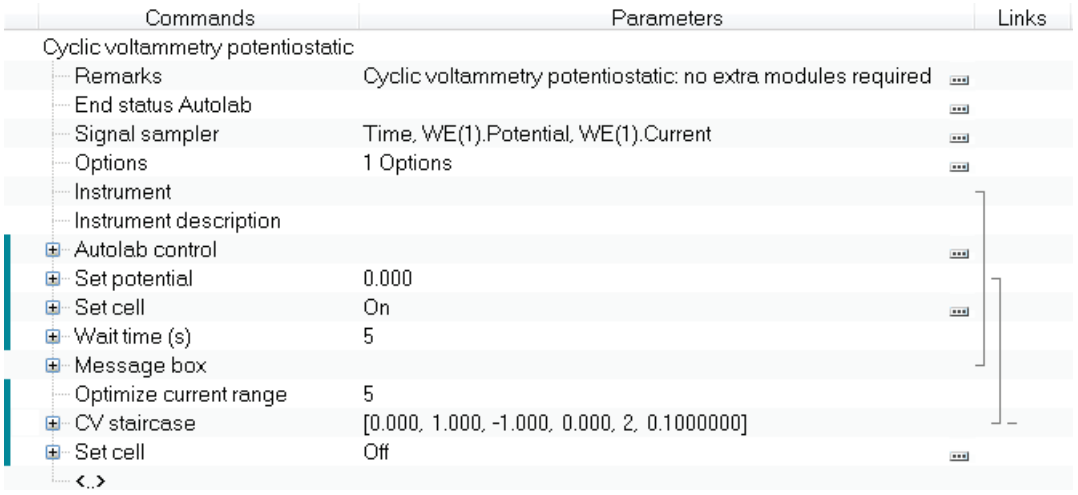

Figure 9 – Inserting non measurement commands in a measurement sequence creates a break in the timing and in the timing guide

Furthermore, when measurements are carried out with a very large number of data points, the software may enforce mandatory timing breaks in a measurement sequence to allow the on-board memory of the instrument to be cleared. These breaks are indicated by a horizontal green break line across the procedure editor (see Figure 10).

Note

The enforced timing break is automatically handled by the NOVA software.

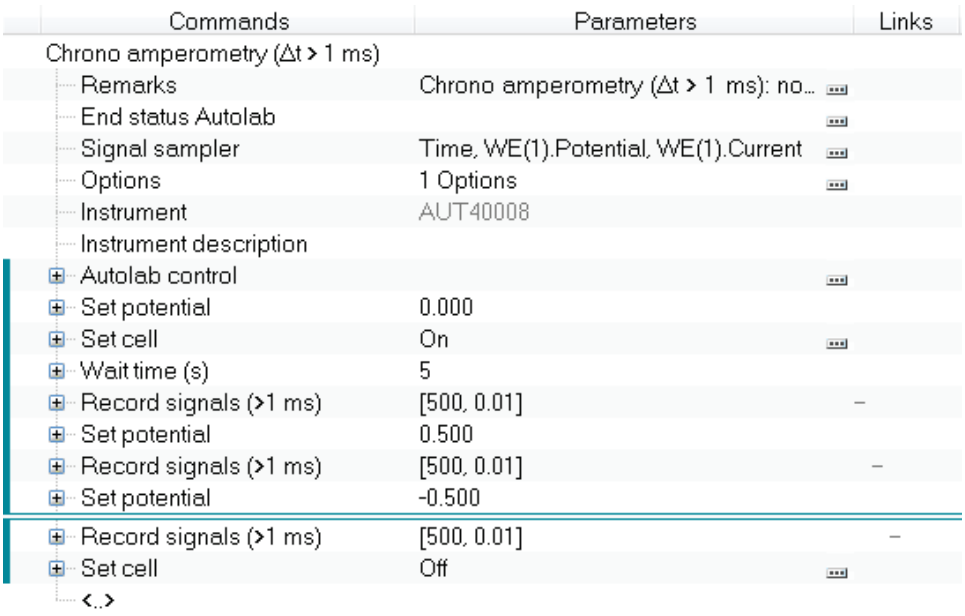

Figure 10 – A mandatory timing break is indicated by a horizontal green line

9 – Real time validation in procedure editor

NOVA 1.10 now validates the procedures designed in the procedure editor in real time. Errors or warnings are indicated on the left-hand side of the procedure editor. These messages can be used to identify problems in the procedure quickly (see Figure 11).

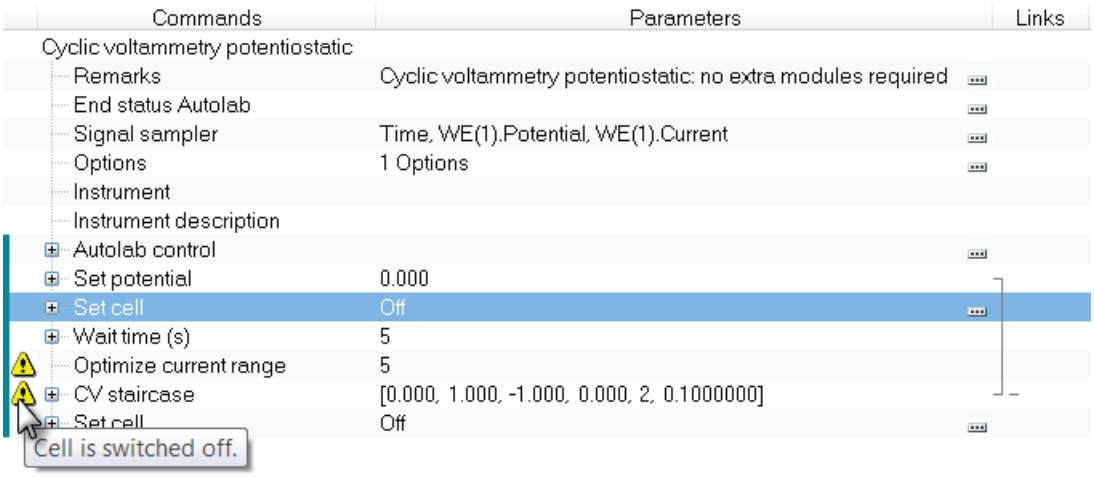

Figure 11 – The procedure is now validated in real time (warnings and errors are indicated on the left-hand side of the procedure editor)

In the example shown in Figure 11, the warnings are provided because the cell is not switched on during the procedure. Since this is not an error, the warning symbol is shown (⚠). If an error is detected, as shown in Figure 12, the error symbol is shown instead (⛔).

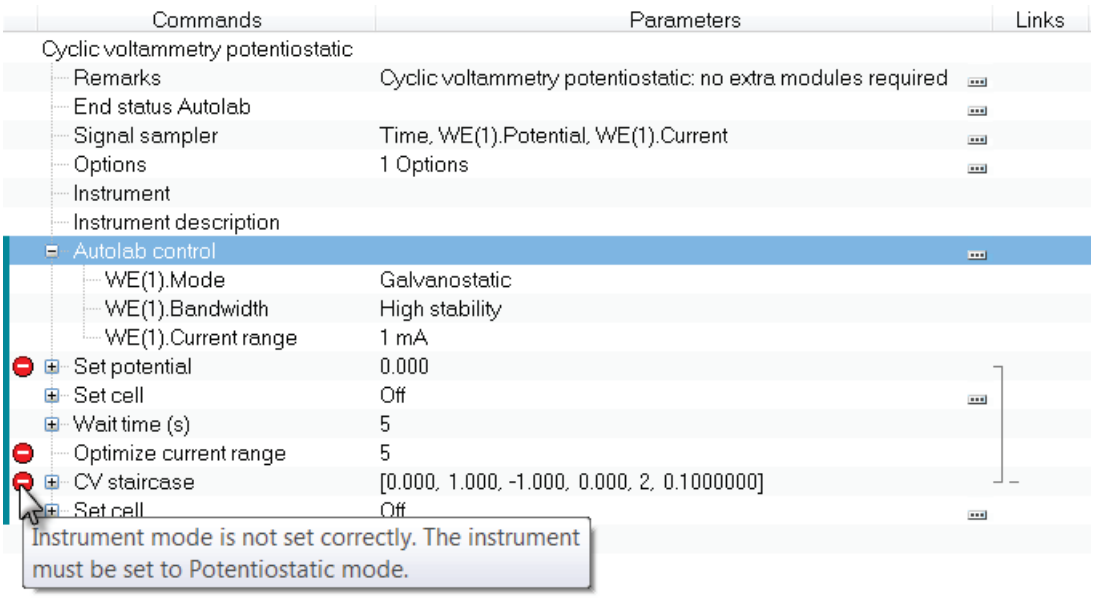

Figure 12 – An error symbol is provided by the real time validation when errors are identified

10 – More detailed validation information

This version of NOVA adds more information in the validation messages. Previous editions of NOVA only reported the nature of an error or warning. This version of NOVA now also adds troubleshooting information (see Figure 13).

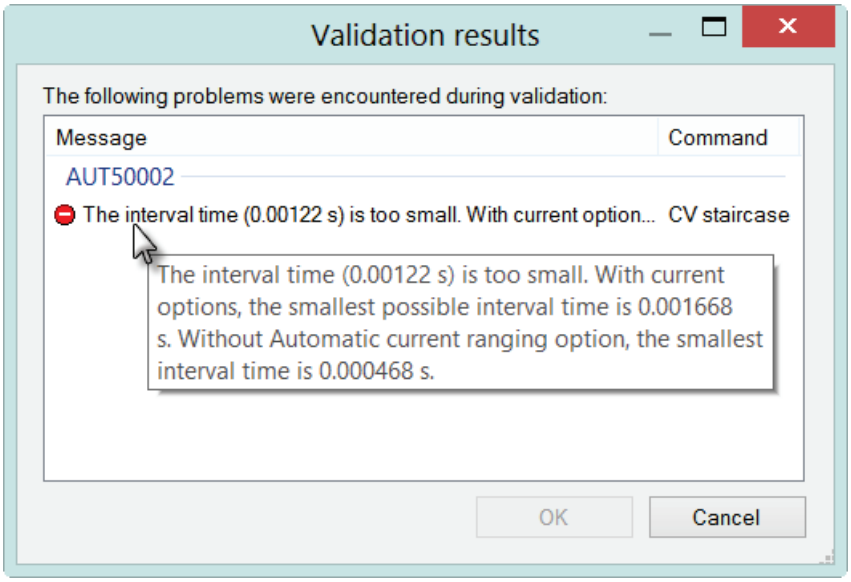

Figure 13 – Procedure validation in NOVA now displays possible solutions to an error or warning (displayed in the tooltip)

11 – Hiding warnings in the validation report

It is now possible to indicate to the software to ignore warnings during validation. This can be useful for measurements which need to be carried out with parameters that fall outside of the normal operation specifications, for example with the cell off. In those cases, although the warning message is normal, the user can decide to ignore the message until further notice.

To ignore a message in the validation screen, right-click the warning message and select the Hide warning option from the context menu (see Figure 14).

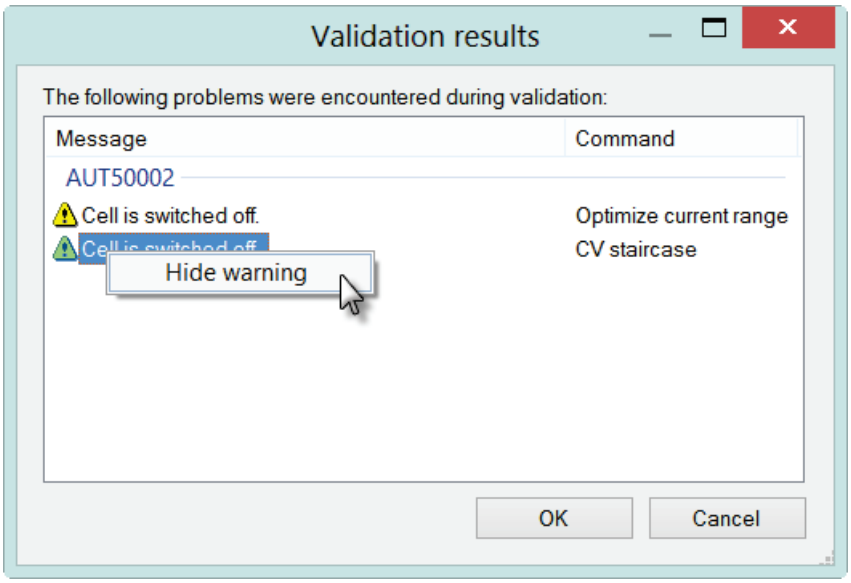

Figure 14 – Right-click a warning in the validation screen to ignore it

Note

It is not possible to hide Error messages.

It is also possible to reset the warning levels back to normal. This can be done by opening the NOVA Options (from the Tools – Options menu). In the NOVA options dialog, click the … button located next to the *Hidden warning – Reset* option (see Figure 15).

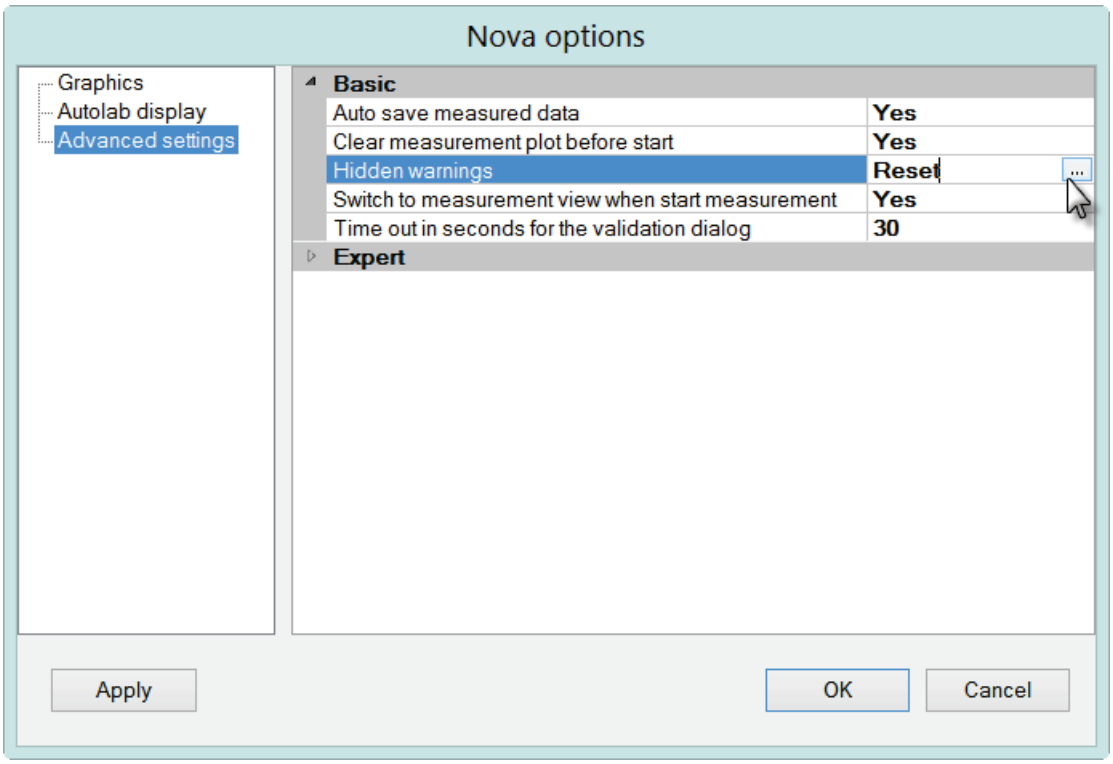

Figure 15 – Click the ... button to reset the hidden warnings (do not do this inside the airplane)

12 – Link to Windows Explorer for database

A direct shortcut to the location of a procedure file or data file has been added to the right-click menu in NOVA. Right-clicking a procedure entry (in the Setup view) or a data entry (in the Analysis view), provides a *Show in Windows Explorer* option (see Figure 16).

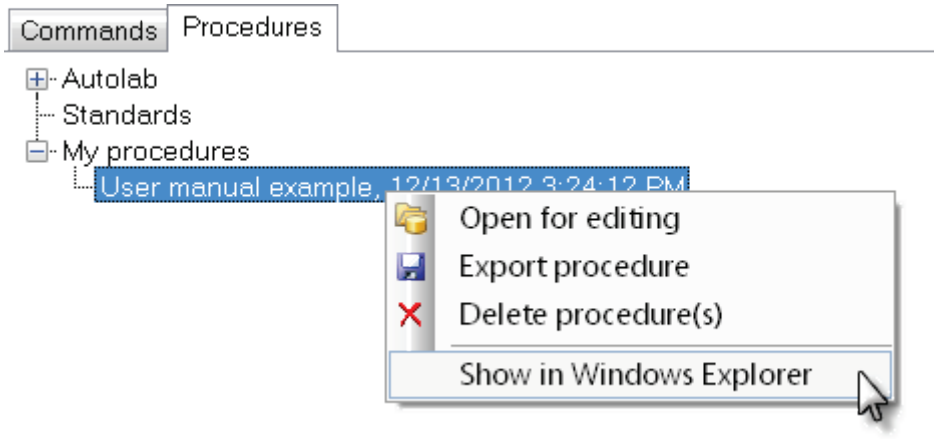

Figure 16 – A shortcut to the location in Windows Explorer is available from the right-click menu

Using this option, it is possible to quickly locate the selected file on the computer (see Figure 17).

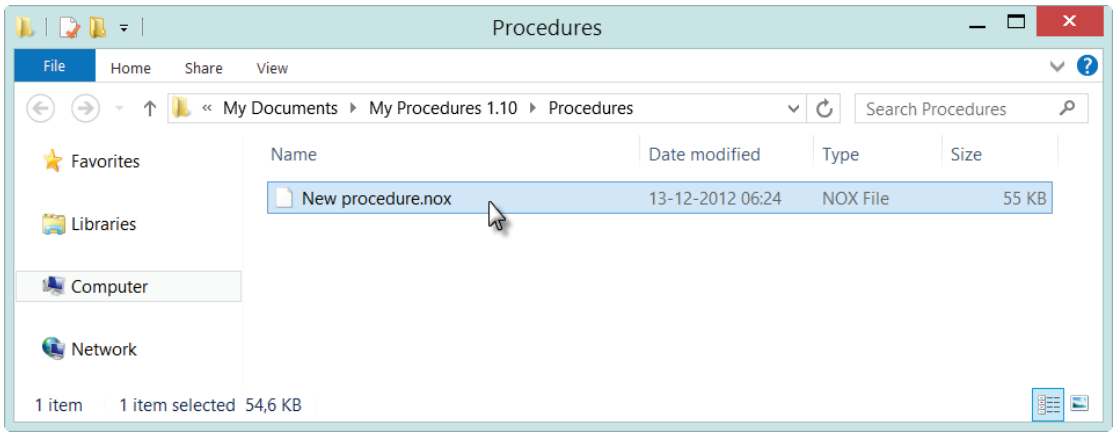

Figure 17 – The *Show in Windows Explorer* option allows to quickly locate a file on the computer

The link to the file location in Windows Explorer also provides the means to change the name of the .nox file.

13 – Cutoff information displayed in options tooltip

The options tooltip now provides more detailed information about the cutoffs used in the procedure editor. The limits used in the cutoff option are now shown in tooltip (see Figure 18).

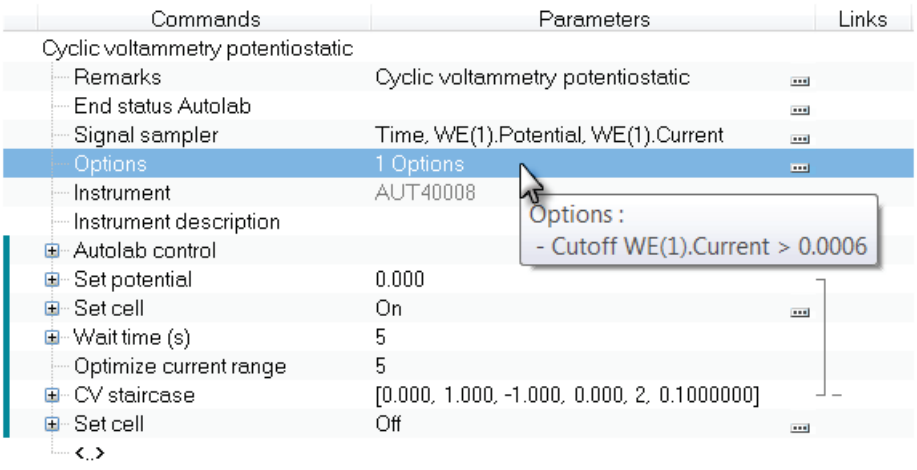

Figure 18 – The limits defined in the Cutoff option are now shown in the tooltip

14 – Cut/Copy/Paste option in procedure editor

A *Cut/Copy/Paste* option has been added to the procedure editor. Using the right-click menu or the traditional keyboard shortcuts (CTRL-X, CTRL-C, CTRL-V for Cut, Copy and Paste, respectively), it is possible to cut or copy commands in the procedure editor and paste them in the procedure (see Figure 19).

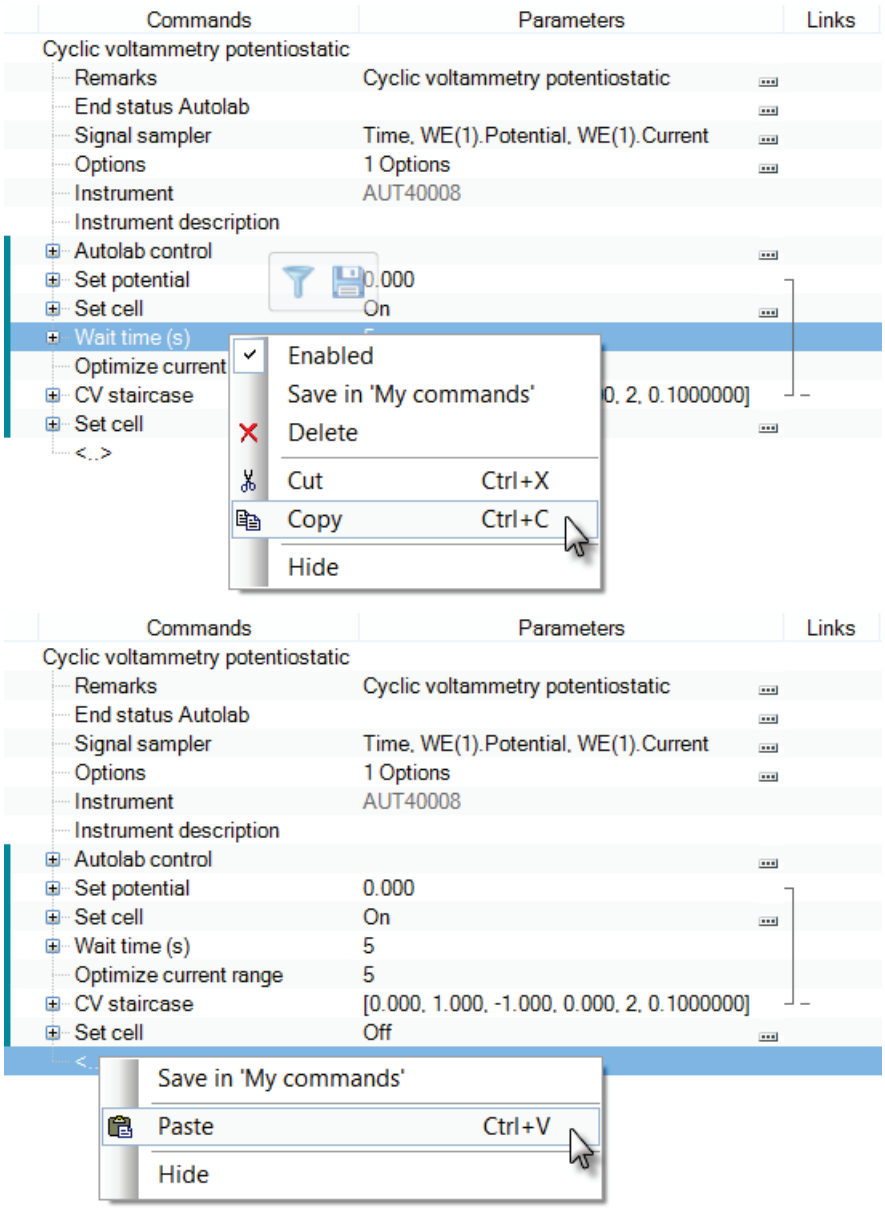

Figure 19 – A Cut/Copy/Paste option has been added to the right-click menu

It is also possible to Cut/Copy and Paste a group of commands.

15 – Manual control of External devices

Manual control of analog-controlled external devices is now available (like the Autolab RDE or the Autolab LED Driver). The parameters of the external device connected to the Autolab can be defined in the Hardware setup (see Figure 20).

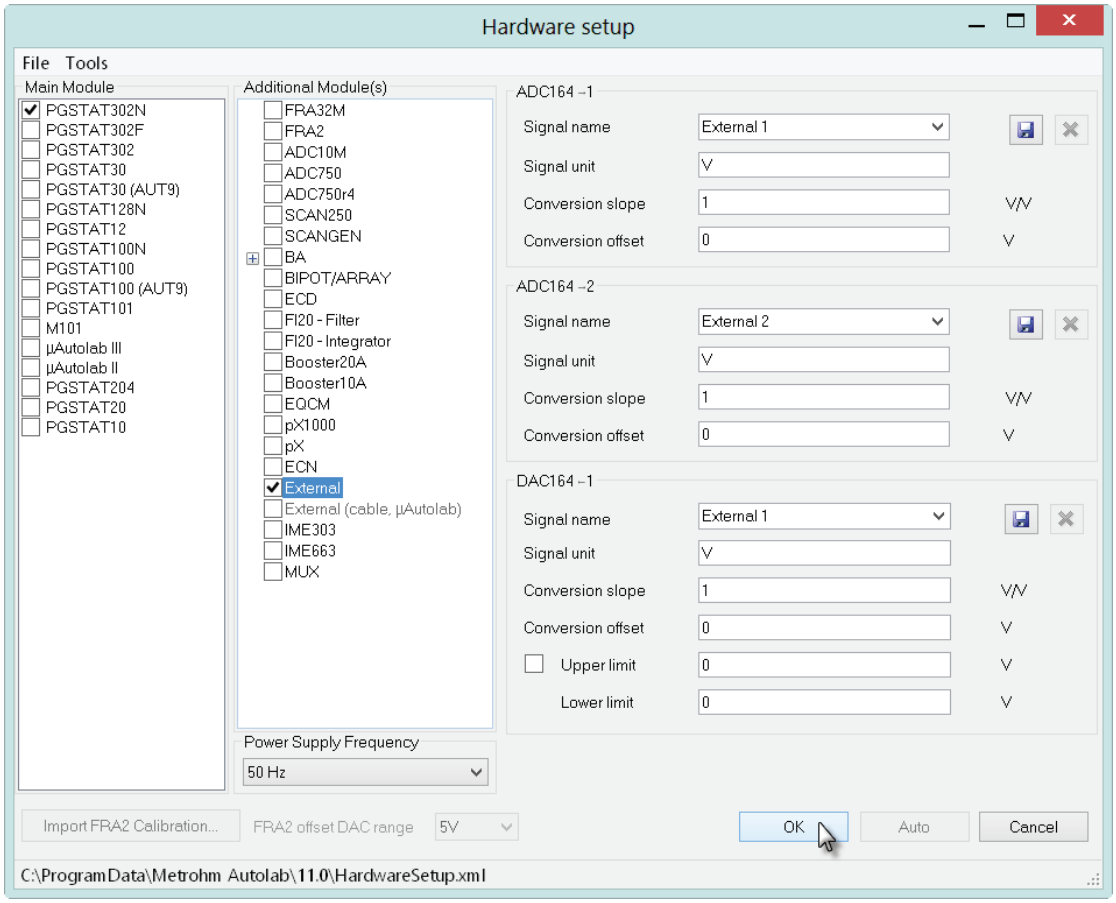

Figure 20 – The settings for the external devices are defined in the hardware setup

Depending on the type of instrument, the control of the external device can be done through the connections provided by the DAC164 module on the front panel of the instrument or through a dedicated output (for the µAutolab II and III and for the PGSTAT101/M101 and PGSTAT204).

The settings for each external device can be saved. Each setting is identified by a unique name. Saved settings can be selected from a drop-down list (see Figure 21).

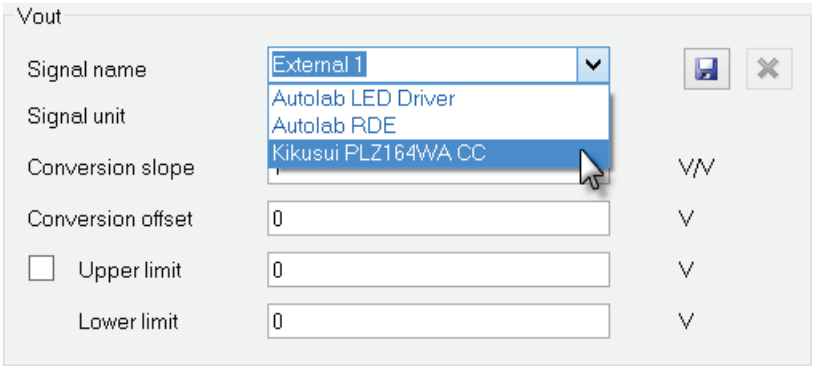

Figure 21 – The settings are defined and saved in the hardware setup

The device defined in the hardware setup can then be controlled manually in NOVA (see Figure 22).

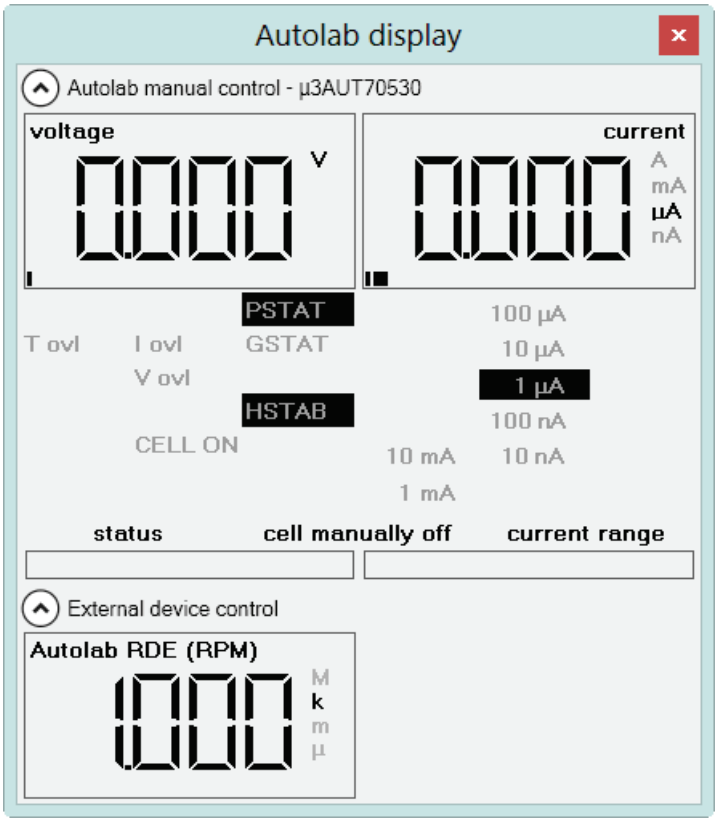

Figure 22 – The External device defined in the hardware setup can be controlled manually