



ModuLab®

electrochemistry



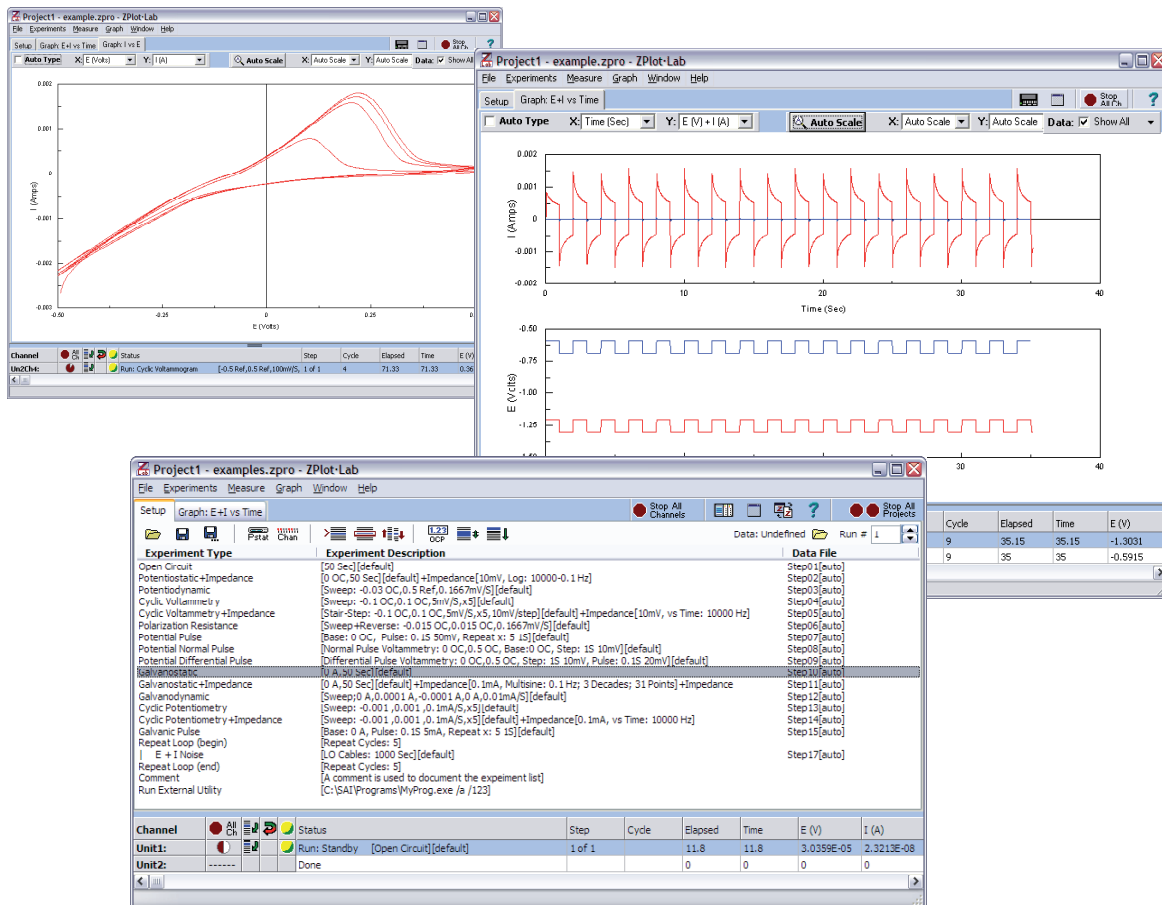
ZPlot·Lab™ for ModuLab®

Software for Electrochemical Measurement and Analysis

From Scribner Associates, Inc., the developers of ZPlot® and CorrWare®, the new ZPlot·Lab™ software is designed to provide full access to the advanced capabilities of the Solartron ModuLab system. ZView™ and CorrView™ are included for data analysis and presentation. Data Explorer™ is also included to provide data in compressed ZIP-like files, while preserving the advantages of easy access from other applications by storing data and experiment setups in text format.

ZPlot·Lab supports a wide array of DC techniques including static, step, sweep, pulse, and noise measurements. Each DC technique includes a wide variety of options for sweep types, data acquisition and experiment step termination conditions.

Impedance is fully integrated into all DC static, step, and sweep techniques. In addition to standard potentiostatic / galvanostatic impedance techniques, advanced measurements are also provided including dynamic AC Voltammetry and Mott-Schottky experiments. A wide range of AC methods are available for any of these experiments, including traditional single-sine swept frequency, multi-sine / Fast Fourier Transform (FFT) and harmonic analysis. All AC techniques are available across the entire frequency range of the system.



...part of AMETEK® Advanced Measurement Technology

ZPlot-Lab Features

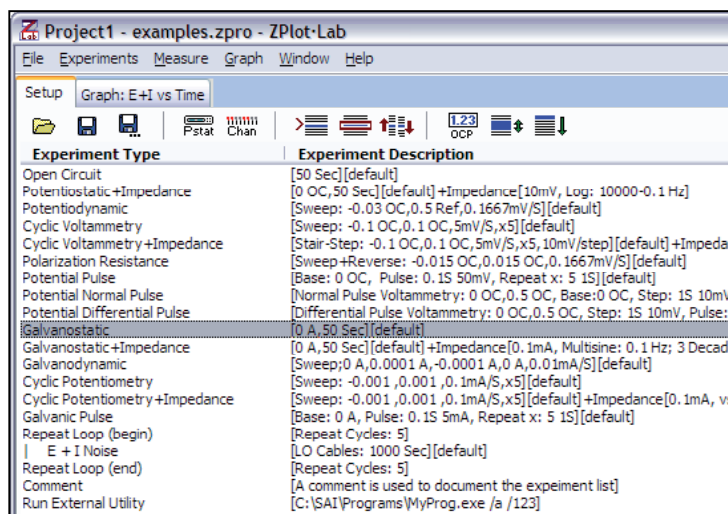
The software provides easy access to recent projects and settings and is optimized for high speed and efficient operation. ZPlot-Lab uses the Single Document “SDI” style interface that allows each experiment project to have its own independent window. Multiple potentiostat modules may be run from a single project where all potentiostats run the same test sequence or from completely independent projects running different experiments as required.

Experiment Editor

ZPlot-Lab includes additional experiment techniques compared to CorrWare, ZPlot and Multistat® software, taking advantage of the flexibility of the new ModuLab potentiostat hardware. Galvanic and voltammetric pulse techniques have been added, including potential normal pulse, potential differential pulse, potential / galvanic pulse and potential square wave techniques.

Impedance is closely integrated with the associated DC techniques making AC voltammetry type experiments easy to set up and run. The software provides the choice of linear frequency sweep, logarithmic sweep, multisine / fast fourier transform (FFT) and harmonic analysis for any of the impedance / AC voltammetry experiments.

The experiment editor provides rapid design of complex measurement sequences and includes “Cut & Paste” editing and multiple levels of repeat loops.



When running an experiment the software allows the user to quickly view the Open Circuit Potential of each channel before starting a full experiment schedule.

While the experiment is running the user can instantly switch between multiple graph tabs. Each tab can be configured to display data in a user customized format. For example, the first tab can be configured as live data of E and I vs Time, the second tab as I vs E, and a third tab to display E vs log (I), etc.

Fast / flexible channel configuration provides selection of:

- For multi-potentiostat systems, which potentiostats are to be used
- Auxiliary channel assignments allowing DC and impedance data to be captured from different parts of a cell
- Sample parameters including, density and equivalent weight
- Sample name (individualized ID for each sample measured)
- Reference electrode type
- Polarity conventions

Automatic or customized data file naming allows flexible yet consistent data file names to be easily selected by the user.

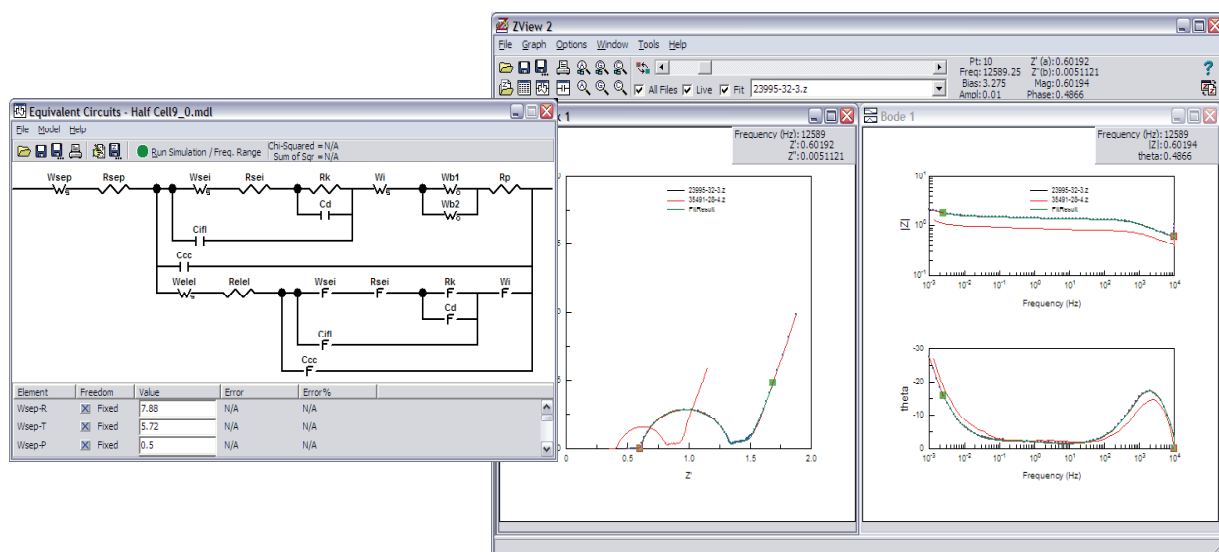
ZPlot-Lab software versions

ZPlot-Lab DC is a low-cost, entry level version of the software that provides control of a single potentiostat without hardware options for DC only experiments. The full range of DC experiments are available but with access provided only to the standard potentiostat hardware configuration which operates over $\pm 8\text{ V} / \pm 300\text{ mA}$ range.

ZPlot-Lab DC Pro provides control of a single potentiostat and its hardware options for DC only experiments. The high voltage, low current and power booster options are supported by this software for DC experiments over a wide range of voltage and current.

ZPlot-Lab EIS provides full control of a single potentiostat and its options (the same as DC Pro) and additionally provides control of a frequency response analyzer (FRA) option for impedance tests.

ZPlot-Lab MAX is a very cost-effective solution that provides control of up to four ModuLab potentiostats with options and FRAs which may either be located in the same or in multiple chassis.



ZPlot-Lab includes full versions of CorrView (all versions) and ZView (EIS and MAX versions only) for graphing and analysis of DC and impedance data.

ZView performs equivalent circuit simulation and fitting using a wide range of standard circuit elements and complex distributed elements.

CorrView provides a range of DC data analysis and fitting techniques including Polarization Resistance (R_p), Tafel analysis, line fit and integration.

Data Explorer

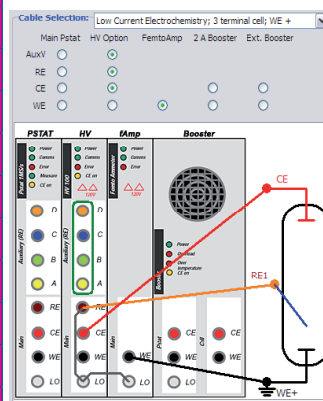
The new file manager, Data Explorer, with ZIP-like file compression of ASCII text data files greatly reduces the number and size of data files while retaining full user access to the raw data. All data sets from a Project are stored in text format and compressed into a single data file which can be directly accessed from any application (proprietary binary data files that can only be read by the manufacturer's application are not used).

ZPlotLab Software Versions:

ZPlotLab DC	The basic package that provides control of a potentiostat stand-alone for DC only tests
ZPlotLab DC Pro	Adds control of options for DC only tests (excluding FRA)
ZPlotLab EIS	Adds control of a FRA option for DC and impedance
ZPlotLab MAX	Control of up to four potentiostats with options (including FRAs)

Full Support for all ModuLab Modules:

Module	Description	DC	DC Pro	EIS	MAX
Chas 08 / Chas 04	8 slot or 4 slot chassis	•	•	•	•
Pstat 1MS/s	Potentiostat 1 MS/s acquisition rate	•	•	•	•
Pstat Aux	Auxiliary inputs (DC and Impedance)	•	•	•	•
FRA 1MHz	Frequency Response Analyzer 1 MHz			•	•
FRA 300kHz	Frequency Response Analyzer 300 kHz			•	•
HV 100	High voltage option ± 100 V		•	•	•
HV 30	High voltage option ± 30 V		•	•	•
Femto Ammeter	Low current option		•	•	•
Booster 2A	Internal current booster option ± 2 A		•	•	•
Boost 12V20A	External Power Booster 12 V ± 20 A		•	•	•
Boost 24V10A	External Power Booster 24 V ± 10 A		•	•	•
Boost 50V5A	External Power Booster 50 V ± 5 A		•	•	•
Boost 50V25A	External Power Booster 50 V -25 A (Discharge mode only e.g. fuel cells)		•	•	•
4 Pstats, 4 FRAs	Up to 4 Pstats, 4 FRAs plus options				•



Windows Desktop Information:

Four icons are installed on the Desktop: ZPlot-Lab, Data Explorer, ZView and CorrView.

Supported Operating Systems: Windows 2000, Windows XP Pro, Vista.

Minimum Computer requirements:

Pentium PC, 2.0 GHz, 1GB RAM, USB ports (2), CD drive

Distribution:

Single CD, USB type dongle. Includes printed manual and dummy cell.



ZPlot, ZView, CorrWare, CorrView, MultiStat, ZPlot-Lab and Data Explorer are trademarks of Scribner Associates, Inc.
ModuLab is a trademark of Solartron Analytical



Solartron Analytical's Quality System is approved to
BS EN ISO 9001:1994



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