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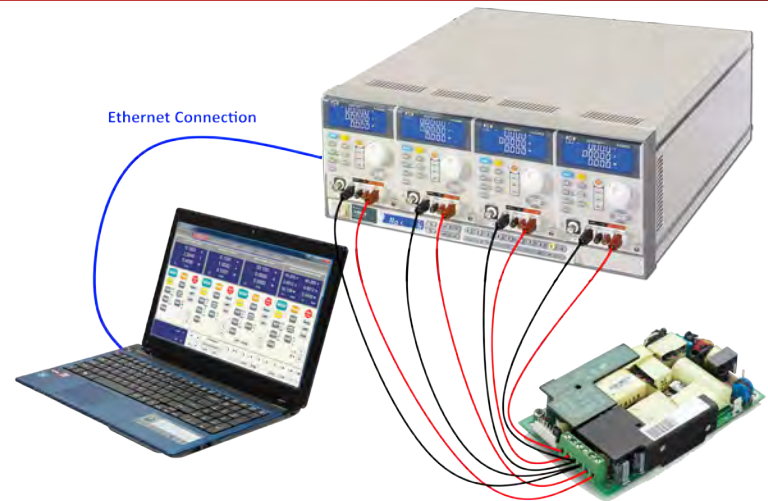


## ELECTRONIC LOAD CONTROL SOFTWARE

### WINDOWS CONTROL SOFTWARE

Key features:

- Control all Load Settings and Functions
- Retrieve, Display and Store Measurement Data
- Visual Strip Chart display of all Load Measurements
- Supports all APS DC Load and AC & DC Load Models
- Includes Three Phase Load Control Mode for AC Load Models
- Save Setups for Quick Recall
- Create, Save, Edit and Execute Auto Test Sequences
- Develop Test Sequences Off-Line for later use
- Windows 7 and Windows 8.1 Compatible
- Multi-threaded Data Collection to Tab Delimited Text Files
- Supports USB, RS232, GPIB and LAN Interfaces
- Built-in Simulation Mode Serves as a Useful Operator Training Tool
- Simulation Mode Includes DC Supplies or AC Power Sources



Computer Controlled DC Load Setup

### Overview

The ADAPTIVE POWER SYSTEMS Windows control software provides a graphical user interface (GUI) that allows you to take full control of all load functions and settings over any of the available remote control interfaces using a Windows computer. Using a visual representation of the actual front panel layout and operation of the load, this Windows software adds convenient data entry using a PC keyboard and mouse. The larger screen available on PC's also provides multiple read outs and enhanced data displays compared to front panel operation.

### Comprehensive Load Model Support

A single DC Load GUI program supports all Adaptive Power Systems DC loads from the modular 4 Series 300W loads all the way to the 60KW 5VP Series loads. This means only one program is required to support a wide range of applications.

For AC and DC capable APS loads, the AC Load GUI program offers similar capabilities plus the expanded function set required to support AC load applications such as power factor and crest factor control. An on-screen visual library of current waveforms allows for easy selection of the desired test condition at a glance.

### Modern Software Design

Developed in C# on the Microsoft™ Visual Studio platform, the APS Load GUI programs are fully compatible with both Windows 7 and Windows 8 and take full advantage of 64 bit technology and advanced functions like multi-threading to query measurement data for up to 8 load channels in the background while the user interacts with the program.



FREQUENCY CONVERSION



AVIATION & DEFENSE



PRODUCTION TEST



ALTERNATIVE ENERGY



R & D

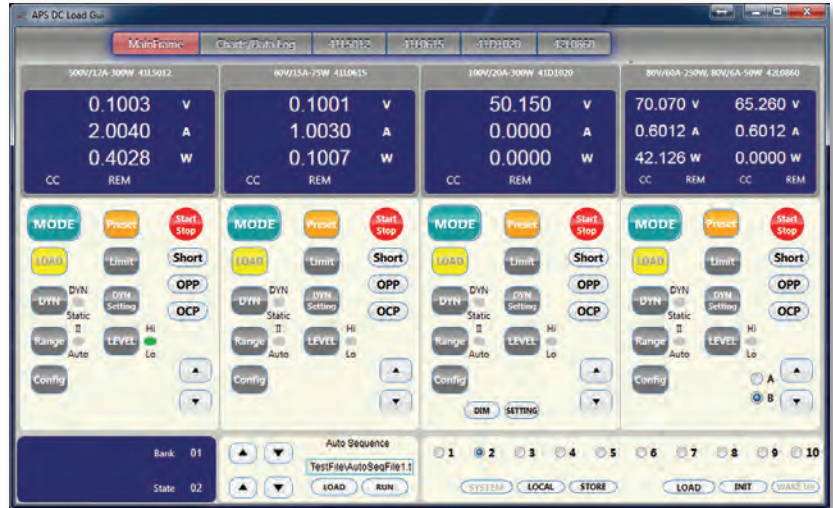


SUPPORT

# ELECTRONIC LOAD CONTROL SOFTWARE

## DC Load Control

The DC Load control software will connect to any Adaptive Power Source DC Load using one of the available digital control interfaces. Once a connection between the DC load and the PC is established, the program adjusts to the available capabilities and features of the DC load model detected. In the case of a 4 Series modular DC load mainframe, this can mean that up to four load modules, having a total of up to eight load channels, are all accessible from the main screen as shown to the right.



DC Load GUI Main Screen Controlling Four Load Modules



DC Load GUI Main Screen Controlling 5VP Series High Power Load

For higher power DC load models that only have a single load channel, the program will use more screen real estate to display setting and measurement readouts and locate the user controls in the same area as they are on the actual unit's front panel. This makes transitioning between front panel operation and PC control operation more fluid.

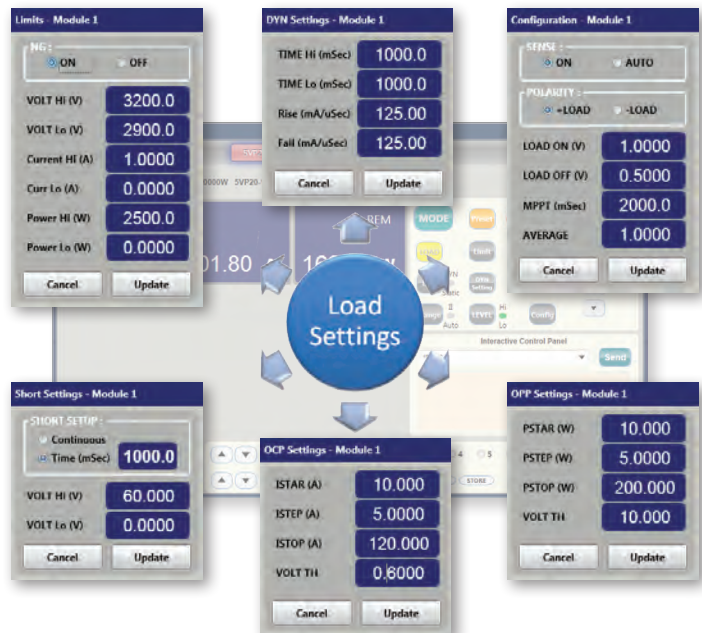
Of course, PC control offers more tools to create complex test sequences using text editors and file storage and retrieval than is possible from the front panel. Since storage is now limited only by the size of the computers hard drive, the number of test sequences that can be stored is virtually unlimited.

## Quick Entry of Load Settings

The numerous available settings and modes supported by the Adaptive Power Systems DC loads are easily accessible from the GUI software by clicking the mouse on the relevant key. A pop-up menu will appear showing current set values for the chosen function. By selecting any parameter with the mouse, a new value can be entered using the keyboard. Clicking the Update key will reprogram the DC load and close the window.

These setting pop-ups exist for functions like:

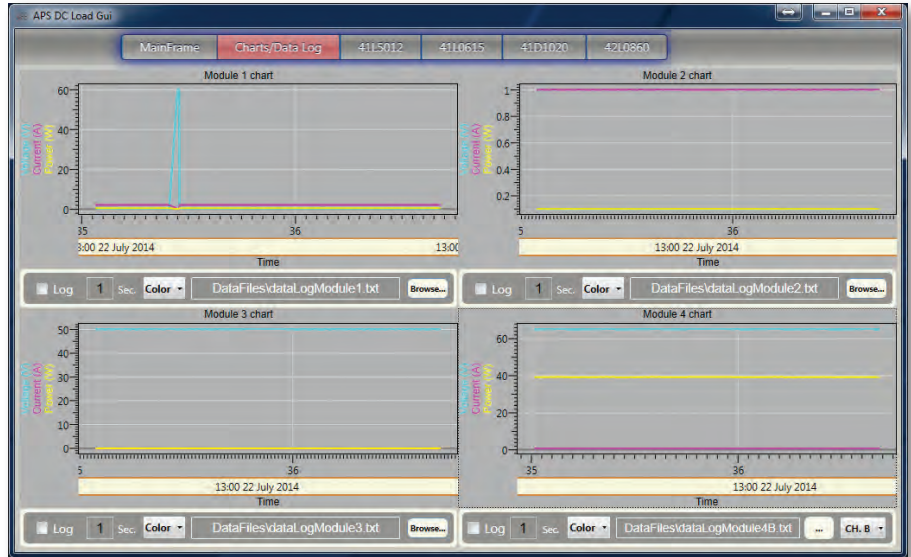
- High and low Limit settings
- Dynamic current waveform settings
- Configuration settings
- Short circuit test
- Over current test parameters
- Over power test parameters



## Data Logging and Display

Measurement data is continuously retrieved by the load GUI software while the load is on. This happens in separate execution threads so it does not interfere with other program functions. As data is retrieved, it is displayed for each load channel on a scrolling graph, much like a strip chart recorder. This provides a unique overview of voltage, current and power as a function of time. For modular loads (3A or 3B Series), measurement data for up to four load channels can be displayed on one screen as shown below.

Measurement data can be streamed to disk in a convenient tab separated value text format. These time-stamped measurement data files are easy to open in Excel for further analysis or charting as part of test reports. Each load or load module has its own data logging file which can be named by the user. The logging interval can be set between 1 second and 60 seconds.

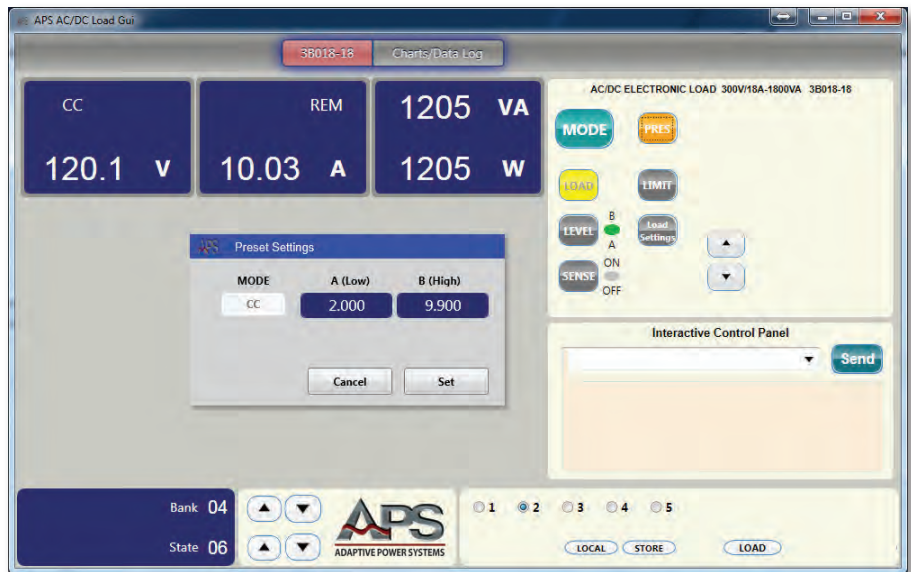


Load GUI Measurement Data Charting Window for 4 Loads

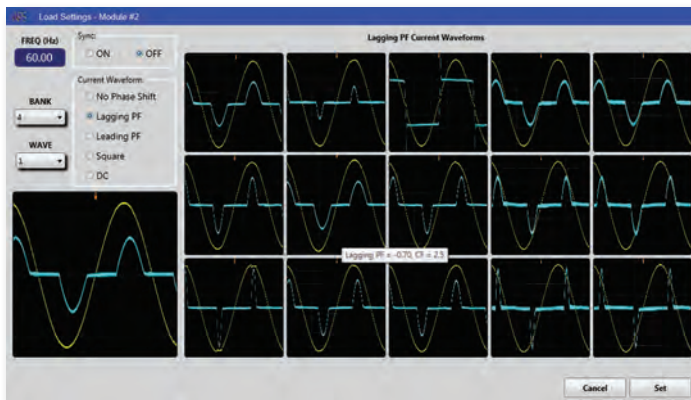
## AC & DC Load Control

The AC & DC Load control software shares most of the functions with the DC load control software. It also adds support for AC application specific settings such as power factor, crest factor, dynamic CC mode and apparent power measurements.

Common functions are load mode selection, data logging of Vdc, Idc and power in DC mode both Vrms, Irms, power and apparent power in AC mode.



AC Load GUI Main Screen Controlling 3B Series AC&DC Load



Crest Factor and Power Factor Selection

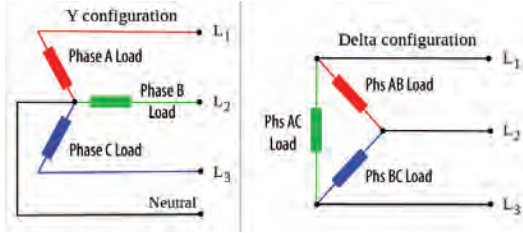
## Crest Factor and Power Factor Selection

The AC&DC load GUI allows easy selection of desired load power factor and current crest factor settings using a visual library of current waveforms that will result and their phase relationship with the AC input voltage. An example is shown on the left for bank 4, wave 1. This selection has a crest factor of 2.5 and a power factor of -0.70 (lagging PF). A total of 55 such permutations can be viewed and selected as needed to simulate desired real-world load conditions.

# ELECTRONIC LOAD CONTROL SOFTWARE

## Multi-Phase AC Load Control

The AC&DC Load GUI supports multi-phase load control - Delta or Wye - with both coupled or individual current level settings per phase.



## Computer Requirements

The Adaptive Power Systems Load GUI software can be installed and run on any Windows PC with adequate resources to run Windows 7 or Windows 8.1.

To communicate with the DC or AC&DC load, the PC must have a matching interface to the load. Note that use of the GPIB bus requires a GPIB controller in the PC or a suitable USB to GPIB controller adapter. (not included with this software)

## Ordering Information

The Adaptive Power Systems DC Load or AC&DC Load GUI software can be downloaded from the Adaptive Power Systems website ([www.adaptivepower.com](http://www.adaptivepower.com)). Simulation mode is available without a registration code. For actual communication with a load, registration is required. Registration codes are available upon acceptance of a purchase order. Contact your nearest Adaptive Power Systems representative or distributor for a quotation. Please specify relevant part number from table below.

APS P/N	Description
149210	DC Load Control Software
149211	AC&DC Load Control Software

## Software Revision Update Notification

Each time the Load GUI program is launched, it will go out and check for any available program revision updates. If a newer version is available, the user will be given the option to upgrade. An Internet connection is required to take advantage of this service.

### NEED HELP?

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## Service and Support

Adaptive Power Systems' customer support is second to none. Our Customer Support Program provides the training, repair, calibration, and technical support services that our customers value. So, in addition to receiving the right test equipment, our customers can also count on excellent support before, during and after the sale. With company owned support and service centers around the world, support is never far away.

Complete calibration and repair services are offered at our US, European and Chinese manufacturing facilities (see contact info below). Calibrations are to original factory specifications and are traceable to NIST (National Institute of Standards and Technology).

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