

# POWERNET CD DATA ACQUISITION AND CONTROL



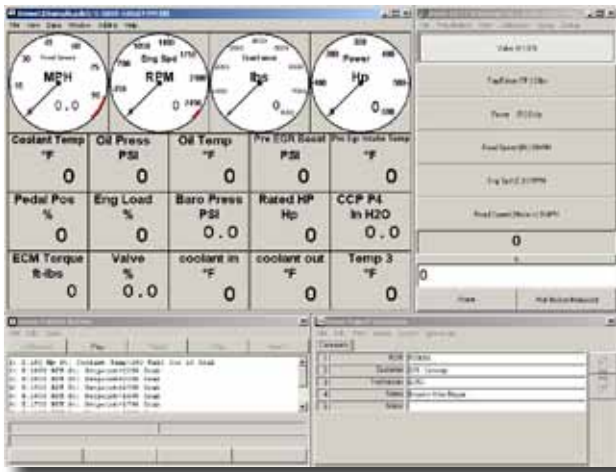
# POWERNET CD

PowerNet CD is a complete monitoring and control package for chassis dynamometers. CD transforms a standard desktop computer and portable tablet PC into high-efficiency engine development and qualification tools. Featuring a modified version of our PowerNet software, CD offers the ability to run fully automated tests with just a few clicks of the mouse.

PowerNet CD is comprised of the Commander Computer, a modified desktop PC, the Wireless Hand Held Controller, and the CD Controller, a rugged industrial enclosure containing the speed, temperature, and pressure sensors. The communications are routed through an Ethernet cable, providing rapid data transfer speeds, wiring simplicity, and LAN connections.

PowerNet CD is designed specifically for your chassis dynamometer. It uses a Windows®-based software package to provide consistent, automated test results. PowerNet CD allows either manually or automatically controlled operation, warm-up, break-in, and power tests. Accurate test results can be obtained regardless of the operator's skill level.

PowerNet CD's ability to run automatically at predetermined speeds and loads allows the operator to step effortlessly through all testing operations. Automatic mode gives the operator a choice between running a pre-configured test pattern or entering direct numeric setpoints for speed, torque, or power. Manual control is achieved through the use of slider bars. This system gives the operator a quick, effective, and accurate means of controlling test conditions, while providing rapid feedback in an easy-to-comprehend visual format.



## ***A Powerful User Interface***

PowerNet CD's user interface was designed to offer a wide range of configuration options, while remaining easy-to-use. Sensor configuration is achieved through an on-screen menu system that provides a visual representation of each sensor input. Each gauge's display can show test ranges, have alarm conditions assigned to them, and be customized to desired units. Once an operator has set PowerNet's gauges to the desired ranges, all testing configurations can be saved to the system's hard drive and recalled as needed.

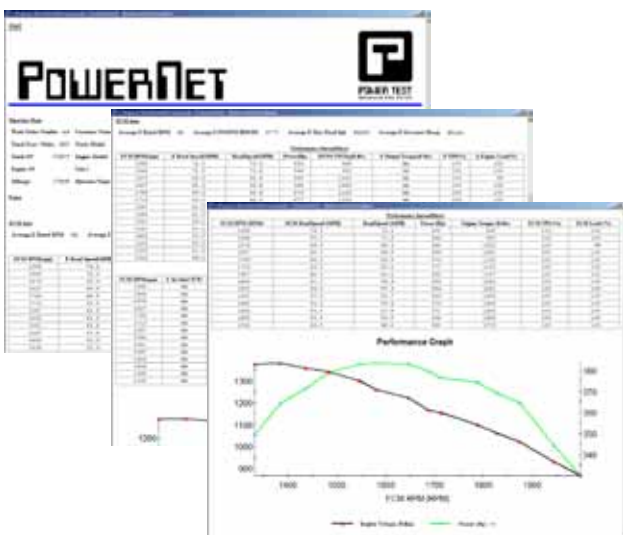
## ***Keeping It Organized***

PowerNet CD saves information in a variety of formats, automatically putting the right file types at your fingertips. These files contain all recorded information from a test, including data points and sensor settings. This file management system allows PowerNet CD to automatically filter through your saved files and present you with the correct file choices. CD saves the date each file was created, as well as the name of the file's author, allowing you to keep accurate records of customers, engines, testing data, and sensor configurations.

## ***Custom Reporting***

PowerNet CD's report generation system is extremely flexible. Output options range from graphs displaying torque, horsepower, and engine speed to a table of data collected from temperature and pressure sensors.

You choose what to include and the order it appears in the final report. Data collected during an engine test can also be imported into popular spreadsheet applications like Microsoft Excel. CD also makes it possible to e-mail all PowerNet CD files, including data setups and patterns.





### ***The PowerNet CD Commander***

Chassis dynamometer control and data acquisition are taken to a new level with PowerNet CD. The Commander Computer combines control, data acquisition, test report generation, test pattern management, and data storage into a desktop package placed in the control area.

Simply click on a sensor to view and edit its settings. Once you have configured the sensor inputs for range, units, and alarm values, the settings can be saved and recalled as needed.

Gathering and organizing test data has never been easier. Commander can be configured to automatically store test data at predetermined intervals or the operator can grab data points manually. Commander can output this data in graphs, tables, and test report forms with your company's logo and address.

### ***The Wireless Hand Held Controller***

Power Test's wireless hand held controller provides the ultimate in behind the wheel instrumentation and control. A state-of-the-art touch-screen and interface device, the wireless hand held controller is all that is needed to control the dynamometer.

From behind the wheel, the operator selects a test pattern to be run, engages the throttle, and literally watches the vehicle automatically run through the steps of a repeatable test.



### ***Flexible Testing Modes***

***Setpoint Operation*** allows the operator to enter a specific value for speed or horsepower on the hand held controller. The dynamometer load is automatically adjusted and maintained until the next value is entered. You can then choose to increase or decrease these values incrementally or by entering the next numeric value.

***Pattern Run Mode Operation*** allows the operator to run a desired test cycle created with PowerNet. From the hand held controller, the operator can begin these tests with the touch of a button. Created on the Commander PC by selecting setpoints, the mode of operation, and entering the length of time each point is run, a pattern is constructed and it can easily be recalled and run from the hand held controller.

***Manual Operation*** allows the operator to have complete control over the chassis dynamometer's applied load. The operator decides how much horsepower or speed should be reached by the engine and the duration of each test.

### ***Standard ECM Interface***

When connected to the system, electronically controlled engines can transmit valuable engine data, which is automatically merged with dynamometer information to be viewed, stored, reported, and graphed. All of this information can be viewed from the wireless hand held controller.

### ***The PowerNet Controller***

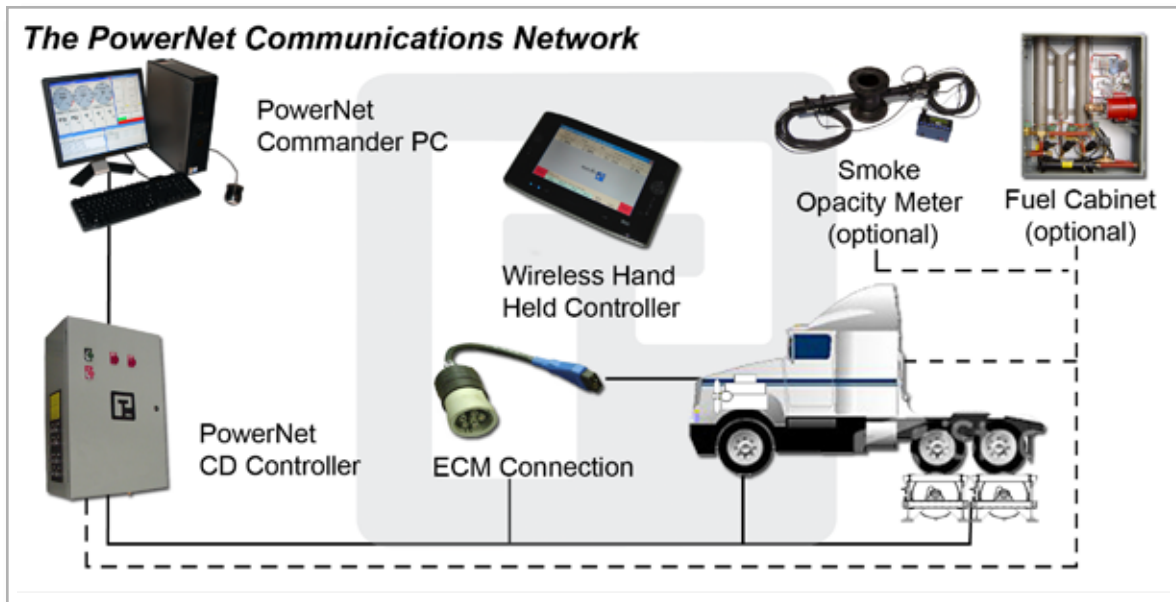
The PowerNet Controller features an industrial distributed I/O system, featuring modular digital, analog, and special function I/O devices. The Controller is reliable - even in harsh environmental conditions.

The Controller is interfaced with the Commander PC through a LAN connection. This helps to ensure that the technology we offer is easily serviced, updated, and maintained. Most of the components used in our system may be purchased "off the shelf" from a variety of sources throughout the world.



### ***Detailed Information Reporting with PowerNet CD***

PowerNet CD provides colorful screen captures, easy-to-read performance reports, and graphical charts. Now results obtained during a vehicle test, combined with vehicle specific information, can be confidently presented as a final confirmation of quality assurance - all with just a few clicks of the mouse.



### ***The PowerNet Communications Network***

Designed not only for use with Power Test chassis dynamometers, but for use with most chassis dynamometers on the market, Power Test's PowerNet CD combines all of the features of our PowerNet Data Acquisition and Control System with a hand held touch-screen that gives the operator full control of the dynamometer without leaving the driver's seat. During a test, the operator is prompted with simple, step-by-step instructions, and the computer does all of the work.

When connected to the PowerNet CD system, vehicles equipped with an ECM interface can transmit valuable engine data, which is automatically merged with dynamometer information to be viewed and stored, reported, and graphed. This information can be easily viewed from the hand held control. During the test, live data is also displayed on the virtual dashboard of the Commander PC and recorded electronically. This serves as an excellent means of allowing customers to view their vehicle being tested and for technicians to diagnose problems from the comfort and safety of a remote viewing area.

### ***Designed for the Future of In-Frame Testing***

PowerNet CD virtually eliminates instrumentation failures by starting with a standard computer platform, ensuring that the technology offered is easily understood, serviced, and updated. Many of the components used in our systems can be sourced from major computer outlets both domestically and internationally.

Designed with the future of testing in mind, Power Test's staff of engineers, programmers, and electronics technicians are dedicated to making sure that our system is on the cutting edge of technology as vehicles and test requirements change.

### ***A Complete Testing Solution***

Power Test provides a full range of test bay support equipment and accessories, including exhaust hoods, water recirculation and cooling systems, fuel measurement systems, smoke opacity meters, additional temperature and pressure sensors, and analog input channels. Whether you are dealing with new installation or looking to repair, upgrade, or replace an existing dynamometer, Power Test has a solution.

### ***Power Test, Your Full Service Dynamometer Manufacturer***

Power Test can provide facility design and installation of every dynamometer we sell. We also offer a complete line of support equipment, including ventilation systems, exhaust systems, auxiliary cooling systems, and water recirculation systems.

Contact your Power Test representative or visit our web site at [www.pwrtst.com](http://www.pwrtst.com) for more information.

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