

## DRAN-VIEW 7

Industry leading power analysis software provides professional reports and analysis for all users

### INTRODUCTION

Dran-View® 7 is a Windows-based software package that enables power professionals to simply and quickly visualize and analyze power monitoring data. It is easy to navigate, delivers automated functionality, and incorporates powerful analytical capabilities and customizable options to meet the needs of each individual user. With support in more than a dozen languages, Dran-View 7 is used by thousands of customers around the world and has become the industry leading power analysis software tool.

Dran-View 7 is available in three versions: *XP*, *Pro* and *Enterprise*. Dran-View 7 XP has a reduced feature set and is only compatible with the DranXperT power & energy logger. Although all versions of Dran-View 7 have the same base feature set, only Dran-View 7 Pro and Enterprise are highlighted in this white paper. Dran-View 7 XP is not included.

### DRAN-VIEW 7 PRO

Dran-View 7 Pro is a great tool for any application, large, small, simple or complex. The advanced, yet simple to use feature set enables you to get the most out of your power survey. Features include trending of any recorded parameter in a stacked or overlaid format, analysis of any waveshape or event data recorded at any time, harmonic analysis, customizable displays, and many other features. Dran-View 7 Pro includes an advanced report writer, and even a Rescue Kit to help you undo mistakes made during your study, such as reversed CT's, wrong time and more.

Dran-View 7 Pro is typically included at no charge in Dranetz HDPQ Visa Plus and SP kits, but for a small fee users can upgrade to Dran-View 7 Enterprise.

### DRAN-VIEW 7 ENTERPRISE

Dran-View 7 Enterprise includes all of the features found in Pro, plus additional features such as multiple site capabilities, mathematical channels to compute your own parameters, floating annotations, snapshots/favorites, additional file formats such as Comtrade & PQDIF, and much more.

Dran-View 7 Enterprise is typically included at no charge in Dranetz HDPQ Guide, Xplorer and Xplorer 400 Plus and SP kits.

Note that some features discussed below are unique to Dran-View 7 Enterprise, so look for the “*Pro*” and “*Enterprise*” labels next to each.

Many features described in this white paper include quick access by using the Dran-View 7 Ribbon located at the top of the display. In such cases, the associated Ribbon icon is shown.

### COMPATIBLE INSTRUMENTS

Dran-View 7 XP is only compatible with the DranXperT power & energy logger. Dran-View 7 XP will not work with any other product and is not included in this white paper.

Dran-View 7 Pro and Enterprise is compatible with all current, and many legacy Dranetz products, including:

*Dranetz HDPQ Family, DranXperT, PX5, PX5-400, Power 1000, PowerGuide, PowerVisa, PowerGua, Energy Platform, Mavowatt (MW) 70, MW 70-400, MW 50, MW 40, MW 30, MW 20, MW 230, MW 240, MW 270, MW 270-400, 4300, PP1, 8000-2, 8000, 658*

Dran-View 7 is also compatible with other Dranetz products, and those from other manufacturers when using file formats such as PQDIF, COMTRADE, csv, txt and others discussed below.

### DRAN-VIEW 7 USER INTERFACE - PRO, ENTERPRISE

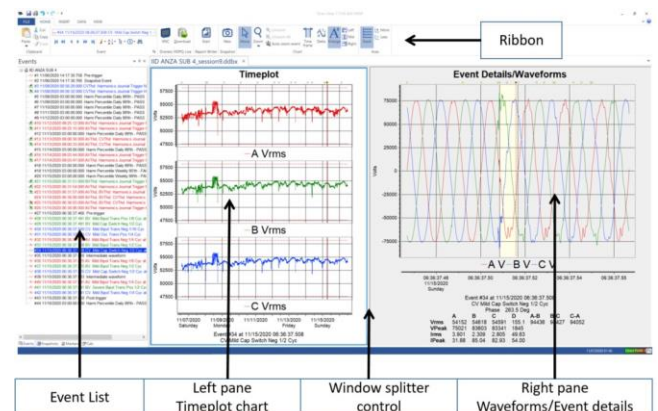



Figure 1 Dran-View 7 User Interface

Dran-View 7's interface is intuitive and easy-to-use, even for a first time user. Shown in Figure 1, you'll see Dran-View 7's two pane browser interface. Consider a 'pane' as a window into any portion of your power survey. On the left side is the timeplot, or historical

view pane which enables you to trend any parameter over the entire recording period. The timeplot pane allows you to show trends in a stacked (shown) or overlaid format based upon your preference. On the right side is the data pane that shows details of any recorded event that's selected. Details of events, such as waveshapes, measured data, etc., can be easily displayed in a graphical or textual format. By moving the splitter control bar, you can resize the windows to suit your needs. Simply drag the bar to the right to enlarge the timeline pane, or to the left to enlarge the data pane. Buttons are also available in the Ribbon to quickly maximize either pane or to make their sizes equal. 

By single clicking within a pane, that pane becomes the *active* pane. The active pane is indicated by a blue border around the perimeter of the pane. Being the active pane means that any functions, tools, views, etc. selected in the Ribbon act on that (active) pane.

You can easily customize the contents and appearance to your liking by changing the properties ("*right click*", *properties*) of each pane. Add or subtract parameters, change the color or line thickness of any trend or waveform, adjust the font size and details of the labeling, and much more.

#### CONVENIENT ON SCREEN TOOLS

##### ◀ ▶ EVENT CONTROLS - *PRO, ENTERPRISE*

There are several ways to scan your event data. You can pull down the event list and randomly select any event of interest. Another, more visual approach is to use the Previous, Next and other event controls. Simply press the ◀ (*previous event*) or ▶ (*next event*) controls to view the change in the trend and waveshapes, and easily see the details of each event as you scan the list.

##### ZOOMING - *PRO, ENTERPRISE*

Zooming is a fast and easy way to find data of interest. By using the mouse to draw a 'zoom window' on any trend or waveshape you can magnify that part of the display to the full size of the display window. Zoom in as many times as necessary to show the data of interest. Right click on the window to Zoom out, either one step at a time, or Zoom out entirely back to the original display in one step.

##### PAN (LOCATED IN THE ZOOM PULL-DOWN) - *ENTERPRISE*

Once you've zoomed in to data of interest, the Pan tool lets you slide that data window left or right in time without changing the zoom level. Simply select the Pan option (under Zoom) then drag the data in the window left or right to see information off the screen without changing the x and y axis.

#### DELTA TOOL - *PRO, ENTERPRISE*

The Delta tool helps you measure the difference between two points on a trend or waveshape. Simply click the Delta tool button in the Ribbon, click and hold the mouse at the point you want to measure from, then drag the mouse to the point where you want to measure to. Both X and Y Delta measurements will be displayed.

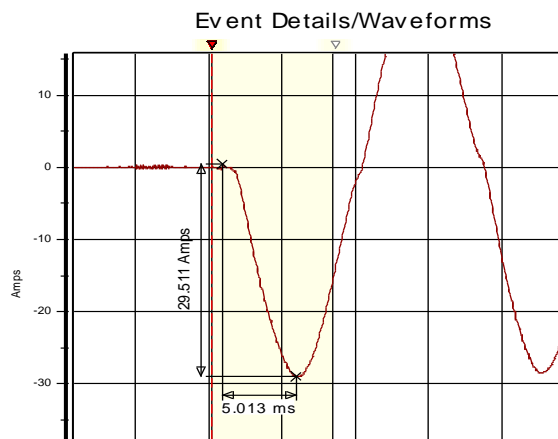


Figure 2 Delta Measurements

#### DISPLAY APPEARANCE - *PRO, ENTERPRISE*

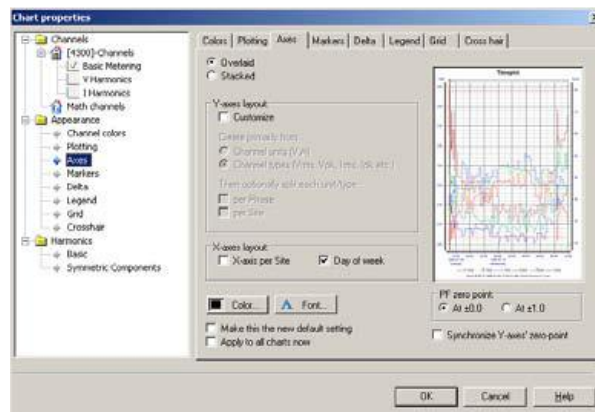


Figure 3 Chart Properties

Each trend or waveshape display can be customized to your liking. Just right click on the display and select Properties to adjust items such as the parameters and channels displayed, stacked or overlay plots, line style/color/thickness, fonts, legend, grid lines and more.

With Dran-View 7 you can even change the channel names and labels to customize the display to your exact requirements. Maybe change the generic label 'A Vrms' to something directly related to your survey - 'Critical Bus 6 L1'. Right click on the channel label, select Properties and change the text to your liking.

## DISPLAY OBJECTS - *ENTERPRISE*

Dran-View 7 Enterprise unlocks the power of your user interface and displays each trend, event detail, phasor and table as a configurable 'object'. Not only can you add or subtract any object, such as a trend, you can also rearrange the display and change the appearance to meet your needs.

By selecting the *Insert* tab in the Ribbon you can add other elements, such as:

- Charts: harmonics, magnitude-duration, etc.
- Tables: min/max/average, energy, peak, etc.
- Phasors diagram
- More

## CONVENIENCE FEATURES & BENEFITS

Dran-View 7 is more than just a viewer for power monitoring surveys. Dran-View 7 has many features and benefits that differentiate it from all other power monitoring software. The features below are examples of just some of what makes Dran-View 7 simple and convenient to use, yet provides an advanced feature set for even the most demanding of professional applications.

### **SNAPSHOT TOOL - *ENTERPRISE***

Snapshots are similar to web site favorites and let you mark any number of trend or waveform views as favorites to easily access them in the future, maintaining the zoom level and other display adjustments. When you zoom in and locate the data of interest, simply press the Snapshot button in the Ribbon to save that view. On the left side of the display you'll see a picture of your snapshot. Then, locate another event, adjust the display to your liking and click the Snapshot button again. You'll see the new snapshot added to the snapshot list. Add as many snapshots as you like. To return to any snapshot simply double click on its picture on the left, and Dran-View 7 will take you to that display. You can continue to adjust the display as you see fit.

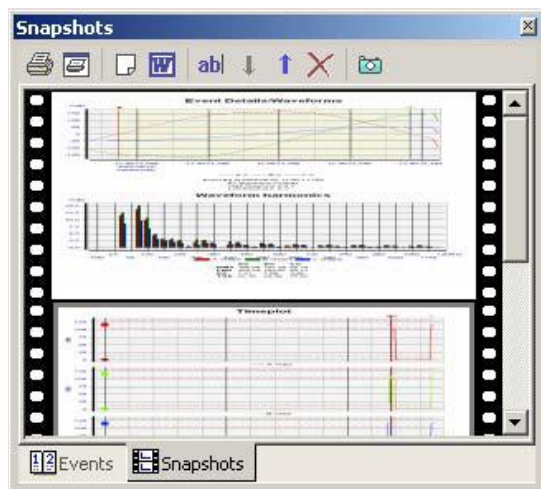


Figure 4 Snapshots

## MULTI-SITE - *ENTERPRISE*

Many power surveys include more than one power monitor and need to compare data from two or more monitors at the same time. Common applications may be when measuring UPS's, standby generator commissioning, multiple substations or feeds, power conditioning devices, etc. In such cases, the objective of the survey is to directly compare the data of two or more monitors at same time.

When using Dran-View 7 Pro you can open multiple sites, but they are treated separately and not viewed simultaneously, so you must switch between them. A much more convenient and powerful method is found in the Multi-Site feature of Dran-View 7 Enterprise. With Multi-Site you can overlay data from multiple sites (up to 16) on one trend or waveform display, and even adjust the x axis (time) to make sure they are synchronized. When viewing Multi-Site data, each instrument's data is maintained separately, but can be combined together in one trend, chart or event display for analysis.

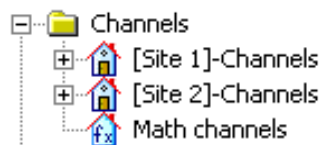


Figure 5 Viewing charts from multiple sites

## ANNOTATIONS AND PICTURES - *ENTERPRISE*

A 'picture speaks a thousand words' and helps greatly to see what you've monitored. Dran-View 7 Enterprise enables you to add a diagram or photograph to any trend or waveshape window. For instance, a photograph of the damage done by a PQ problem, wiring diagram or other picture would help describe the event, and once added, is included in your Dran-View 7 file.

Annotations enable you to add your own comments at any point on a trend or waveform. Simply click on any waveform or trend to highlight it, right click at the point where you want the annotation and select *Data Annotation*. Double click on the annotation to change the text and properties such as font, etc.

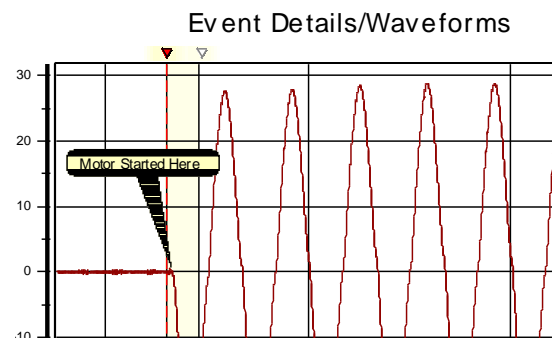


Figure 6 Data Annotation

## DATA TABLE EXPORTING - *PRO, ENTERPRISE*

Many applications require exporting data to other software packages. An example is an energy application where electrical energy data collected during your power survey needs to be included in other software that combines data from other utilities such as gas, water, steam, etc. Dran-View 7's data export function enables you to easily export in many common formats such as comma, tab and space delimited. You can also format the time in the saved file. Exported data can be saved to the Windows clipboard or a file. To export data from any trend or waveshape, click the data table icon in the Ribbon View tab. The data in the active pane will be displayed in a new tab in a tabular format. Right click on the table and select 'Copy' to save to the Windows Clipboard or 'Save As' to save in a file. In both cases a 'Settings' window will appear where you can select the export options mentioned above.

## PQDIF, COMTRADE & OTHER FORMATS - *ENTERPRISE*

Many applications require the user to compare data from different monitoring systems. Dran-View 7 Enterprise can read data from Dranetz or other manufacturer's products by supporting the PQDIF, COMTRADE, text, csv and other file formats.

PQDIF (Power Quality Data Interchange Format) or IEEE1159.3 is a universal file format used in the Power Quality industry and is common in fixed monitoring systems. Dran-View 7 can directly import compatible PQDIF files stored by any product, software or system. Simply select File->Open and change the file type to PQDIF, then open the file directly into Dran-View 7.

COMTRADE files are commonly used in fault recorders and other utility applications for sampled waveform (oscillography) data. To import a COMTRADE file into Dran-View 7, select File->Open and change the file type to COMTRADE. Dran-View 7 will open the COMTRADE import wizard where you can identify each waveform and appropriate data labels and characteristics.

Text files such as csv, txt, xls files are also supported by Dran-View 7. When importing Text files, select File->Open and change the file type to TEXT. Dran-View 7 will open the 'Text Import Wizard' where you can set properties such as delimitation type (comma, tab, etc), time format and other items.

## RESCUE KIT - *PRO, ENTERPRISE*

Have you ever completed a power survey then realized that you had a CT connected backwards, the instrument time was wrong or had another human error? The Dran-View 7 Rescue Kit can undo these types of mistakes made during your survey.



Figure 7 Rescue Kit

Some errors cannot be fixed, but the Rescue Kit can fix errors such as inverted current probes, improper scale factors and wrong time. The Rescue Kit can be found in the Ribbon Data tab.

## $\pi$ MATH CHANNELS - *ENTERPRISE*

Dran-View 7 has a quite powerful Math channel feature that enables you to create your own computations from your measured data. Similar to the functions found in an Excel spreadsheet, Dran-View 7's Math feature provides computational functions such as Mathematical (SQRT, PWR, etc), Trigonometric (SIN, COS, TAN, etc), logical (<, >, =, etc), Power (RMS, DFT, etc) and more. Math channels are created by applying formulas and computational functions to measured and computed data from your survey.

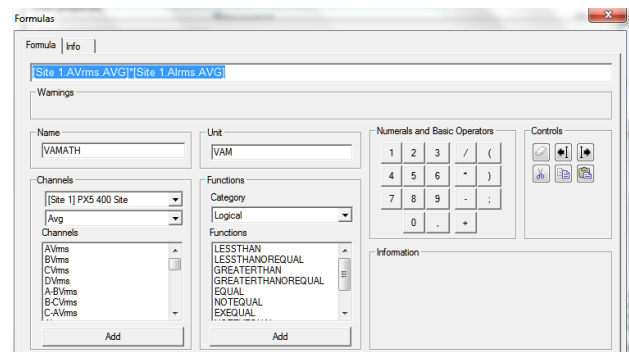


Figure 8 Dran-View 7's Math Channels

A simple example is a VA computation using the Voltage and Current measurements from your survey. VA is  $V \times I$ , which is the basic formula you will create in the Math channel, as shown in Figure 8. Your custom VA computation is trended like any other parameter in Dran-View 7.

A common application is to compute ground leakage current in a 3 phase wye circuit. In such cases, the current in phases A, B, C and Neutral are measured by the power monitor. Using Dran-View 7, you create a Math channel to compute leakage current by adding the current in phases A, B, C and Neutral, with the remaining current being leakage current. This feature

is like having a 5<sup>th</sup> current channel monitoring the ground current.

You can create multiple Math channels, create a name for each channel with each having its own custom formula.

### REPORT WRITER - *PRO, ENTERPRISE*

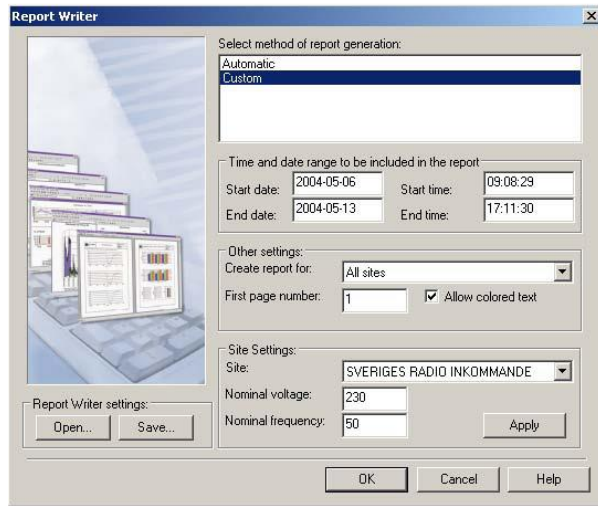


Figure 9 Dran-View 7 Report Writer

Dran-View 7 has a built in report writer that enables you to produce professional custom reports that can include your company logo. All reports are created in a Word or .rtf format that's compatible with most word processors, such as Microsoft Word. As a result, the report can be easily edited and annotated outside of Dran-View 7.

The Dran-View 7 report writer has two modes: automatic and custom. The automatic mode creates a report very quickly in just three easy steps. With little user interaction you'll have a report ready for your management, client or customer.

The custom report mode offers you complete control of the content of your report. You can include or exclude any channel, parameter, statistical analysis, and even enable compliance reports to standards such as EN50160, G5/4, NVE and others. You can also create your own custom standard by adding your specific compliance information. Once you have created a report format to your liking, you can save it as a template and recall the report format for use in the future.

### HARMONICS - *PRO, ENTERPRISE*

Dran-View 7 has powerful capabilities for harmonic analysis. Dran-View 7 displays trends and details of harmonic information recorded by the instrument, such as THD, Symmetrical Components, K factor, individual harmonics and more. Harmonic based data can be trended alongside any other parameter.

If waveforms were recording during an event Dran-View 7 can compute and display the harmonics of the recorded waveshapes by adding a DFT Chart to the

waveform window using the Chart options in the Ribbon Insert tab.

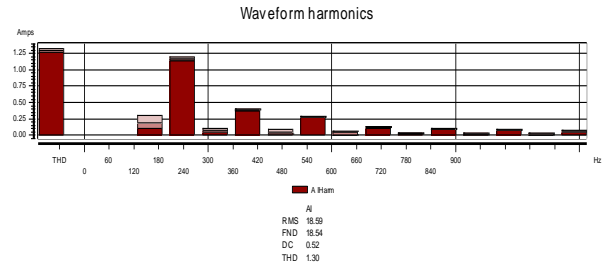


Figure 10 Harmonics Spectrum

When viewing the properties of the harmonic display you can change the appearance, number of harmonics to display and other settings.

### HARMONICS/TIMEPLOT CALCULATOR - *ENTERPRISE*

Dranetz instruments can record waveforms during both power quality events and by using the journal snapshot feature (periodic recordings). The Harmonic/Timeplot tool can post-process these wavforms to compute additional (new) parameters including individual harmonics, VThd, IThd, Vrms, Irms, Frequency and others. These are in addition to any parameters recorded directly by the instrument.

For example, when testing standby generator's it's common to require cycle by cycle frequency trends during generator start-up, 'transient' and other tests. Most instruments compute an average frequency, so cycle by cycle frequency usually isn't available directly from the instrument data. By using the Harmonic/Timeplot Calculator, Dran-View 7 can compute the required cycle by cycle frequency using the waveshapes captured by the instrument during the generator start-up.

### TO CONTACT DRANETZ

- Call 1-800-372-6832 (US and Canada) or 1-732-287-3680 for Technical or Sales support.
- To submit a support request online, please visit: <https://www.dranetz.com/technical-support-request/>