U-View Getting Started Guide

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Main Menu Panel

The panel on the left serves as the main menu. Below the logo is the software revision, and then a series of buttons to control the display in the main window.



Common Controls

👩 . Camera

The Camera icon gives the user the ability to capture the chart, either to a file or to the Windows clipboard. These can then be pasted into Microsoft Word or any other word processing software that takes graphical images. Click the down-arrow to select between Save to a Portable Network Graphics (PNG) File or Save To Clipboard. Then click on the camera icon to perform the capture.



Source

Specifies the power source that the monitor leads were hooked up to. This is used to determine how to compute power in Trending-Power, Snapshot and Waveforms. Wye - Three-Phase Wye, Split-Phase, Single Pole Single-Phase

Delta - Three-Phase Delta

Single - Two Pole Single-Phase



Zooming To zoom, move the mouse to where you want to start the zoom, press and hold the left mouse button, move the mouse to where you want to end the zoom, and lift the left mouse. ITI(CBEMA) and Transient Plot will zoom on both the Horizontal and vertical axis. All other charts zoom on just the horizontal axis.

Repeat to continue zooming. U-View will record each of your zoom settings. Use the left or right arrows to move back or forward through the recorded zoom settings. Click the Reset Zoom button to clear them. The Reset Button will be Grayed out if the zoom is reset.

Waveform Capture will have multiple sets of reset controls, one for each chart displayed.

Export...

Export

Export is available on all forms a charts. It will export, to a Comma Separated Values (.csv) file, all the data currently displayed on the form.



When the Export completes, the user is notified and given the ability the view the file the data was exported to. It will use whatever application is configured to open that file type.

Chart Size

Chart Size Full Size

Chart Size sets the displayed size of the chart(s) so the image can be properly exported to a word processor using the camera button, to either the clipboard or a

file. These menu options appear when you right-click anywhere on the chart.

Chart Size - Opens the Chart Size dialog.

Full Size - Resizes the displayed chart(s) to size of the window. This option won't appear if it is already full size.

Chart Size											
Chart Size											
Size											
Horiz 6.50 in Portait 🔻											
Vert 9.00 in Charts/Page											
1											
Scaling 100 🔻 %											
Margins											
Top 1.00 in Left 1.00 in											
Bottom 1.00 in Right 1.00 in											
ОК											

Size - Horiz, Vert - 3.0 - 20.0

Sets the displayed size, in inches, of the chart(s) currently displayed in the window. These values can be manually entered or computed based on the other controls in the window.

Orientation - Portrait, Landscape

Sets the orientation of the page.

Charts/Page - 1, 2, 3, 4

Sets the number of charts to be displayed on the word processor page and computes the size. 1 would be a full page image. 4 would compute the size of the image so 4 images could be displayed on one page.

Scaling - 100%, 125%, 150%, 175%, 200%

Increases the size of the image to allow for more information to be displayed in the chart. This may be necessary if you are trying to display multiple charts on one page. When inserted into the word processor, the image will be downscaled to fit the page. An image scaled by 200% will be double in size but downscaled to fit the page width by the word processor by half, resulting in characters in the image to appear half-size.

Margins - 0.1 - 3.0

These are the Top, Bottom, Left, and Right margins of the page in the word processor the image is to be exported to. These are used in computing the size of the image.

Selecting the Chart Size menu automatically sets the size of the currently displayed charts. Changes made to one chart will automatically be applied to all other charts in U-View not displayed in full size mode.

Drop Tooltip
New Annotation
Horiz Ruler
Vert Ruler
Regions

Color Regions

This feature allows the display of colored regions in the chart, typically used for showing pass/fail regions within the plot.

To add a region, right-click on the chart and select Regions. It will bring up a Regions Setup dialog.

Regions are currently only available in the following forms:

- Trending AC Frequency, RMS Volts, THD, Peripherals DC Volts, Temp/Hum, Dust, Air Pressure
- Waveforms Chart/Custom AC Frequency, RMS Volts, RMS Deviation.

Regions Setup		
Re AC F	egions Set	Settings Enable Fail Min: 0 Max: 100 Color:
	Remove	ОК

To add a region, enter the name in the Name text box and click Add. It will add it to the list in the center of the dialog. Select the region in the list to edit it's parameters. Click Remove to remove it from the list.

Check Enable to hide/show the the region.

The name of the region is displayed in the text box on the right. To change the name, simply change it in this text box.

The region is bound on the vertical axis by the Min and Max values.

Select a color for the region by clicking the color button and it will bring up a color selector dialog. At the bottom of the dialog are typical green/red/yellow colors or you can select your own.

Order in the list is important as the charts are drawn top to bottom in the list. Any overlapping regions will be overwritten. To change the order, just drag-and-drop items in the list.

Auto	
Ranges:	
	-
Edit Ranges	
Min:	
Max:	

Vertical Axis Range

The vertical axis range for all charts, excluding ITI(CBEMA) and Transient Plot, can be set by right-clicking on the desired axis. A popup menu will appear.

Auto - Auto ranges based on the content

Ranges - Combo-box with a list of user-defined min/max ranges

Edit Ranges... - Opens a dialog allowing the user to manage the min/max range list for this axis and chart

Min - Sets the minimum vertical axis limit

Max - Sets the maximum vertical axis limit

Edit Range List		
Ran	ge List	
Min: Max:	-30/30 -40/100	
Modify		
Remove		
Save	Cancel	

To add items to the list, enter valid Min and Max values and click Add. Values may be numerical values or a percentage relative to the displayed min or max. A Min of -5% will set the minimum range value to 5% below the minimum value displayed. A mix of values can also be used. A Min of 450 and a Max of +5% is also valid.

Remove items by selecting an item in the list and clicking Remove.

Modify existing items by first selecting the range to be modified in the list box, edit the Min or Max values, then clicking the Modify button.

The order of items in the list may be changed by selecting an item and clicking the up or down arrows to the right of the list or by clicking on an item and dragging it up or down to its new position.

Click Save to save changes. Cancel will revert the Range List back to what it was before the window was opened.

Annotations

Each form gives the user the ability to add comments.



An Annotation is a text box the user can use to add comments to a chart. Right-click anywhere on the chart and a pop-up menu will appear with the option to Drop Tooltip, New Annotation, or Start Ruler.

Drop Tooltip

Creates a text box containing the last displayed tooltip, and a marker to the associated data point. **New Annotation**

New Annotation

Creates a blank text box. The user then enters the contents of the text box.

Horiz or Vert Ruler

Serves as a starting point for measuring on the horizontal or vertical axis. Right-click and select **End Ruler** to set the end point. A text box with a red outline will appear showing the duration or magnitude between the start and end points.

Right-clicking on any of the text boxes and a popup menu will appear with the option to Delete, Edit, Bring To Front, or Send To Back.

Delete

Removes the text box from the chart.

Edit

Gives the user the ability to change the contents of the annotation. The text box supports multiple lines so use the **Enter** key to continue onto the next line. Use the **Tab** key to finish editing.

Bring To Front, Send To Back

Use these commands to adjust the ordering for overlapping annotations.

Right-clicking on a tooltip marker displays a pop-up menu with Delete and Redraw options.

Delete

Removes the text box from the chart.

Redraw

Repositions the text box to right next to the tooltip marker. This is useful if the user zooms in and the text box is displayed off-screen.

To move any annotation or the ruler, position the mouse over it, the cursor will change to a hand, right-click to select it, and move the mouse to the new location.

Load Site...

The Load Site button opens the Load Site dialog. Browse your PC or network and select the desired Site folder.

Select Folder			×
\leftarrow \rightarrow \checkmark \uparrow \square \ll fileserver \approx	> data > EPALogs > Site30001	✓ Č	rch Site30001
Organize 🔻 New folder			≣≡ ▾ (?)
1 Ouish second	Name	Date modified	Туре
		No Starra and the same same to	
len OneDrive		No items match your search.	
💻 This PC			
🧊 3D Objects			
E Desktop			
Documents			
🕂 Downloads			
👌 Music			
Pictures			
📑 Videos			
indows (C:)			
💣 Network			
	1		
E-Liter Cite?	0001		
Folder: Sites	0001		
		Select Fo	lder Cancel

If the data was downloaded from the monitor using a USB stick, it may in the form of a zip file. Be sure to unzip the data into its own folder before attempting to load the site into U-View.

Once a site is loaded, the U-View title bar at the top of the window will display the full path to the loaded site folder.

Please note, the text "No items match your search" simply means that the folder does not have any other folders.

Sync...

The Sync dialog allows the user to download data from the monitor.

SyncDialog
Sync
ENET/WIFI: 192.168.2.72
Disconnect
Site:
Browse
E:\EPALogs\Test1.62\UtilityRoom\26
Sync Cancel

Sync will download and synchronize data on the monitor with data on the PC. If the folder does not exist, the user will be prompted to create the folder. If there is data in the site folder on the PC, it is checked against the data on the monitor to make sure it matches. If it does not, an error is displayed and the sync is canceled.

Once everything checks out, each file is checked and only downloads data on the monitor that has not already been downloaded.

ENET/WIFI - The IP address of the monitor you want to download data from. It should appear on the monitor, at the top of the display, if it is connected correctly. Refer to the Live-View instructions on how to communicate with the monitor.

Connect/Disconnect - Connects or Disconnects communications with the monitor, depending on the connection state.

Site - Displays the site data on the monitor. Select the site you wish to sync/download.

Site Folder - Browse to the site folder on the PC you want to download the data to. **Sync** - Initiates a Sync/Download.

Once the Sync completes, U-View automatically reloads the site data.

Event Log

The Event Log page shows all the events that were captured as part of the survey.

Date/Time	Event ID	Event Type	Chan	Param 1	Param 2	Param 3	Param 4	Δνα	Peak		Params
lar 22, 15 00:59:48.057	441	Transient	L1->G	-22	8	286	124	0.00	0.01	<u> </u>	RMS Nominal
ar 22, 15 10:00:00	442	Snapshot			-						Nominal Level
ar 23, 15 08:19:19.447	443	Transient	L1->N	-22	65	312	123	0.00	0.46		RMS Re-Nominal
ar 23, 15 08:19:19.447	444	Transient	L1->G	-22	65	312	123	0.00	0.45		Prev Nominal
ar 23, 15 08:22:35.637	445	Transient	L1->N	-24	65	62	123	0.01	1.08		New Nominal
ar 23, 15 08:22:35.637	446	Transient	L1->G	-24	65	62	123	0.01	1.09		Transient
ar 23, 15 08:22:36.043	447	Transient	L3->N	-27	65	305	123	0.01	0.96		Vok
ar 23, 15 08:22:36.043	448	Transient	L3->G	-27	130	305	123	0.01	0.98		Duration (uSoon)
ar 23, 15 08:24:40.588	449	Transient	L1->N	-24	65	251	123	0.01	1.04		Phase Angle
ar 23, 15 08:24:40.588	450	Transient	L1->G	-24	65	251	123	0.01	1.04		Nominal Volta
ar 23, 15 10:00:00	451	Snapshot									Constitution
ar 23, 15 10:48:21.155	452	Waveform Capture									Sensitivity
ar 23, 15 10:48:21.155	453	Current Trigger	L2	8	16	6					New Sens Level
ar 23, 15 10:52:43.355	454	Waveform Capture									Sag/Surge/Trigge
ar 23, 15 10:52:43.355	455	Current Trigger	L2	10	50	6					Peak
ar 23, 15 10:53:02.055	456	Waveform Capture									Duration (mSecs)
ar 23, 15 10:53:02.055	457	Current Trigger	L2	6	50	10					Nominal
ar 23, 15 10:54:49.072	458	Waveform Capture									Line Impedance
ar 23, 15 10:54:49.072	459	Current Trigger	L2	10	50	6					Impedance mOhms
ar 23, 15 10:55:17.438	460	Waveform Capture									Nominal Volts
ar 23, 15 10:55:17.438	461	Current Trigger	L2	7	50	10					
ar 23, 15 11:08:05.586	462	Transient	L1->N	-25	224	325	123	0.01	0.60		
ar 23, 15 11:08:05.586	463	Transient	L1->G	-25	206	325	123	0.01	0.60		
ar 23, 15 11:08:05.586	464	Transient	L3->L1	-40	244	115	213	0.01	1.07		Export
ar 23, 15 11:23:52	465	Stop								-	
liters	Shape	Channel	s								
Transient	A	verage	-	📃 Dat	te/Time						
	Filter:	V LI->	LZ 💟 LZ->L3								
/рк:		V L3->	L1	Start: 0	3/20/15 10	0:09:03					
Sag/Surge/Trigger	Highligh	nt: 🔍 L1->	N 📝 L3->N	End: 0	3/23/15 1	1:23:52]-				
HF Sensitivity	P	eak 🔽 L2->	N		All Se	+					
	Filter:	V 11-8	G 🔽 13->G		74 36	a					
VI Shane Sensitivity											

Each event captured is represented by a line in the event log table. Each event has the following fields:

Date/Time - Date and time of the event, in some cases to the millisecond.

Event ID - A way to uniquely identify each event captured.

Event Type - Type of event.

Chan - Voltage or current channel. There are ten voltage and five current channels supported by the monitor; Three phase-phase voltage channels, three phase-neutral channels, three phaseground channels, and one neutral-ground voltage channel, and the three phase current channels, neutral and ground current.

Param 1-4 - Depends on the type of event captured. The right side of the window shows a key defining what the parameter fields contain for each type of event.

Avg - Shape Average.

Peak - Shape Peak.

Shape is an algorithm Rx Monitoring uses for transient events to score the voltage signal deviation from the nominal voltage for each sample, with shape peak being the highest single sample score, and shape average being average score over the entire transient.

The event types are:

System Shutdown/Power-Up - Identifies when the system was shutdown or powered up. **Start/Stop** - Identifies when the monitor started or stopped sampling. When the monitor starts sampling, it waits 5 seconds before monitoring. During this time it computes the AC frequency for the monitor and the RMS nominal voltage for each channel.

RMS Nominal - This is the initial nominal RMS voltage the monitor will use for event detection. **Transient** - A voltage transient is recorded when the voltage deviates from nominal greater than the trigger for that channel. The monitor has two mechanisms for triggering transients; A high speed, sampling at 1.6 Megasample, and shape at 256 samples per cycle.

HF Volt/Shape Sensitivity - The transient trigger level, in volts, for the high speed and shape trigger. This initial value is a percentage of the nominal voltage and was configured when the monitor was set up. This trigger level will automatically move up or down by five volts, depending on the number and frequency of the transients recorded.

RMS Sag/Surge - This event is recorded when the RMS voltage drops below or rises above the configured percentage of the nominal voltage.

Current Trigger - This event is recorded when a single-cycle RMS current changes by the configured number of amps from the running nominal. This event has similar parameters as the RMS Sag/Surge, Peak RMS current change from nominal, Duration is milliseconds, and Nominal RMS Current at the time of the trigger.

Manual Trigger - This event is recorded when the user Starts or Stops a Waveform Capture in Live-View.

Waveform Capture - This event is recorded as a result of an RMS voltage Sag or Surge event, a Current Trigger, or a Manual Trigger requested by the user. When any of these events is triggered on any channel, a Waveform Capture is started which records data on all ten voltage and five current channels until all events clear or the configured Max Duration is reached. Double-clicking on this event will display the Waveform Capture data for this event.

Snapshot - This event is a 3-cycle capture of ten voltage and five current channels. This capture can be setup to record daily at a fixed time or periodically.

DCW Snapshot - This event is a 200 millisecond capture of DC Amps and DC Volts from a DCW probe. It is manually recorded from Live-View by a DCW probe connected through ethernet.

To view any transient, snapshot, or waveform capture event, double-click on the log entry.

At the bottom is a filters group box, allowing the user to configure the display of different types of events. Uncheck the differenty types of events to remove them from the Event Log table. Use the Vpk to filter out all transients whose peak voltage (Vpk) is below the specified value.

The Shape group to filter or highlight transients whose shape peak or shape average are above the specified value.

The Channels group to filter out selected channels. Any changes to the selected channels will also be represented in the ITI(CBEMA), Transient Plot, and Transient windows.

Use the Date/Time filter to remove all events outside the given Start/End range.

ITI(CBEMA)

The ITI(CMEMA) plot displays transient, sag, and surge events represented as a percentage of the nominal voltage on the vertical axis and the duration of the even on the horizontal axis.



Choose which channels to display by selecting any of the voltage channels in the channels group.

Position your cursor over one of the points to get the particulars of the event. These include the date/time, event ID, event type, percent of nominal, and duration.

Double-click on a transient event and it will open the transient window for that event. Doubleclick on a sag or surge event and it will open the event log window and position the log to that event. Scroll up or down in the event log window, referencing the date/time of your event to find the associated waveform capture event and Double-Click on that to open the waveform capture window.

Use the Color Coded check-box to display the points color coded based on channel.

Use the Chart Type combo box to select between ITI(CBEMA), IEC 62040-3 Curve 1, IEC 62040-3 Curve 2, or IEC 62040-3 Curve 3 plots.

The Filter Subcycle Sags checkbox will remove Sag events that are less than one and a half cycles in duration. This is because sag start/end are determined using a full cycle RMS every half cycle. Sag events that are actually less than one cycle may be determined to be as many as two cycles in duration and so cannot be accurately represents on this plot.

Transient Plot

The Transient Plot is a graph representing the transients that were recorded during the survey.



Choose which channels to display by selecting any of the voltage channels in the channels group.

The vertical axis can plot peak as a percentage of the nominal voltage at the time of the event, as well as shape peak or shape average. The horizontal axis can plot the event duration or the date/time that the event occurred.

Position your cursor over a point to get the particulars of the event. These include the date/time, event ID, channel, peak voltage, duration, and percent of nominal

Double-click on a transient event and it will open the transient window for that event.

Use the Color Coded check-box to display the points color coded based on channel.



This graph plots transient peak voltage as a percentage of nominal on the vertical axis and the date/time on the horizontal axis.

Transient

The Transient window displays all of the data captured as part of a transient event.



The chart heading on the left, displays the unique Event ID and the Date/Time the event occurred. The Transient Peak and Duration are displayed on the right.

The top chart displays the high frequency component, if one was captured. If none was recorded, a blank chart is displayed. This chart can be disabled or not displayed if there is no data by using the HF Chart settings.

The bottom chart displays two cycles of voltage and current data, one cycle before and one cycle after the trigger. A sine wave can also be displayed overlaying the voltage data. The current data can also be inverted using the Inv Current check box.

The combo-box in the upper-right shows the currently selected event ID. To display a different transient, type in the event id or use the down arrow to display a complete list of transients. Clicking on one of the column headings will sort the transients based on that parameter. Clicking a second time reverses the sort order.

At the bottom of the window are the filters. The events that are listed in the combo-box can be filtered by channel and by a date range. Changes to the channel filters will also change Event Log, ITI(CBEMA), and Transient Plot windows.

Below the Transient Event ID is the date/time the transient was recorded. Double clicking on the date/time will open the event log at this date/time. Below this is the Shape Average and Shape Peak for this transient.

The Export... button gives the user the ability to save the raw data captured as part of the transient. U-View prompts where to save the .csv (comma separated values) file. You can then click the View button to open the file.

Trending RMS Volts

The Trending - RMS Volts chart plots the minimum, maximum, and average RMS voltage recorded at the configured RMS voltage log interval.



The Channel group to selects which voltage channels to display. DCV enables DC Volts if the monitor was configured for DC Volts. Use Multi to show multiple channels rather than one channel at a time.

The Phase and Line Imb. buttons will display the voltage imbalance based on the Average RMS Voltage logs for the three phase-phase or phase-neutral channels. Nothing will be displayed if the voltage falls below 10 volts for any channel.

The Date list box selects what date range to display. If the chart is zoomed in, the chart displays the logs using the zoom settings for that day. Select Full Range to display the logs for the entire survey. Selecting Full Range will also clear out the zoom settings.

Position your cursor over a point to get the date/time and minimum, maximum, and average values for that log entry. Double-click on the chart to open the event log window at the nearest date/time.

The low and high for the minimum, maximum, and average RMS voltage values plotted are displayed at the upper right of the chart.

The chart will auto-scale the vertical axis by default. To set the range, right-click on the vertical axis to open a pop-up menu. Use the Min, Max, and Avg check boxes to enable the display of minimum, maximum, and average RMS voltage log values.

RMS Current

The Trending - RMS Current chart plots the minimum, maximum, and average RMS current recorded at the configured RMS current log interval.



The Channel, Date, and Zoom controls work exactly as in the RMS Voltage logs. The Residual channel is the sum of the three phase and neutral current channels measured in real-time. DC Current will be an option if the monitor was configured for DC Current.

Position your cursor over a point to get the date/time and minimum, maximum, and average values for that log entry. Double-click on the chart to open the event log window at the nearest date/ time.

Use the Min, Max, and Avg check boxes to enable the display of minimum, maximum, and average RMS current log values.

The low and high for the minimum, maximum, and average RMS current values plotted are displayed at the upper right of the chart.

Peripherals

The Trending - Peripheral chart displays the logs for the selected peripherals recorded at the configured peripheral log interval.



(1) Chart Content :

The content selection box is a drop down menu that shows the available probe types. Because of the content differences they cannot be displayed at the same time (IE: DC Volts and Temperature) Use the Temp °F/°C combo box to switch between Fahrenheit and Celsius.

(2) Channels... :

The Channels... button opens the Peripheral Channels dialog.

To the upper left of the chart, relevant low and High values are displayed. For Temperature/Humidity, it displays the low and high values for temperature and humidity as well as the maximum change per hour for both.

Position your cursor over a point to display the values for that log entry. Double-click on the chart to open the event log window at the nearest date/time.

Use the Export... button to export the raw data displayed in the chart into a comma separated values file (csv).

Channels Dialog

This dialog allows the user to configure the content of the chart. Select the content Type DC Volts (DCV), DC Current (DCI), DC Watts (DCW), or Temperature/Humidity (T/H). What columns appear in the table will depend on the content of the chart.

The individual check boxes in this window can be checked or can be multi-selected using the left mouse button and dragging over the area desired. You can also select individual columns by clicking on the column heading. Clicking on the check box enables or disables the selected channels.

The Note text box allows the user to enter, up to 30 characters, a description for that particular probe. It will appear as part of the channel lable at the bottom legend with the serial number.

ripheral Channe	ls									
Dori	phoral C	honno	le							
Feil		anne	15							
Type: [DCV -	Temp: °F	•							
Carial #	Nata	VDC Min	VDC Mar	VDC Aug	VAC No.	VAC Mar	MAC Aug	VD:- Mi-	VDia Marr	
20000	Note	VUC MIII	VDC Mdx	VDC Avg	VAC MIN	VAC Mdx	VAC AVg		VILIPMAX	Vrtip Avg
20000				×						
20001										
20005				v			V			
20006										
40834										
40849										
50022-01										
50022-02										
50022-03										

DC Volts

The DC Volts chart displays the DC Voltage logs from the Wireless DC probe, DCX probe, and DCW probes. DC Voltage (VDC) Min, Max, and Average log entries can be selected. For DCW probes, AC Voltage (VAC) and Voltage Ripple (VRip) Min, Max, and Average can also be selected.

DC voltage is the average voltage reading over the log interval. AC Voltage is the computed RMS with the DC component removed over the log interval. Ripple is the ratio of the DC to AC values displayed as a percentage.

eripheral Chanr	nels										
Pei	riphera	al Cha	nnels	5							
Туре:	DCI	▼ Ter	mp: °F	•							
Serial # 🔺	Note	Mult	IDC Min	IDC Max	IDC Avg	IAC Min	IAC Max	IAC Avg	IRip Min	IRip Max	IRip Avg
20000		1							1	V	V
20001		1									
20005		1							v	v	v
20006		1									
40849		1									
40911		1									
							2				
				Clea	ir All	OK					
			-		-		-	_		-	

DC Current

The DC Current chart displays the DC Current logs from the Wireless DC Current and DCW probes. Select DC Current (IDC) Min, Max and Average. The DCW probe, if present, also supports AC Current (IAC) Min, Max, and Average, and Current Ripple (IRip) Min, Max and Average.

DC current is the average current reading over the log interval. AC Current is the computed RMS with the DC component removed over the log interval. Ripple is the ratio of the DC to AC values displayed as a percentage.

Use the Multiplier (Mult) column to apply a post-process multiplier to the current values displayed in the DC Current and DC Watts charts. This multiplier does not effect the data recorded by the monitor and is only used for display purposes.

Perip	heral Chan	Peripheral Channels							
Type: DC	W 🔻 Temp	: °F 🔻							
0	N-1-	1.1./ 14:-	1.1.4	11-1 4					
Serial # 🔺	Note	KW MIN	кү мах	KW AVG					
20000		V	V	V					
20001									
20005		V	1	1					
20006									
40040									

DC Watts

The DC Watts chart displays the DC Watt logs from the DCW probe in kilowatts. Select DC Watts (kW) Min, Max, and Average.

The DC Current Multiplier will be applied to the values displayed in the DC Watts chart.

Perip	heral Ch	annels	;		
Type: T/H	•	Temp: °F	•		
Serial # ▲	Note		Temp	Hum	СРН
40618			V		
40869			V		
40888			v		

Temperature/Humidity

The Temperature/Humidity chart displays the logs from the Wireless Temperature & Humidity probe and the High Temperature probe. Select Temp, Hum or Change Per Hour (CPH) to appear in the chart. Select °F or °C to select between Fahrenheit or Celsius.

Harmonics

The Trending - Harmonics chart displays the average individual harmonic values for the voltage and current channels.



Harmonics are computes on a cycle-by-cycle basis for each of the phase-ground voltage, phase-phase voltage, and the phase current channels. An average is computed and logged over the configured harmonic log interval.

To add a plot to the chart, select a voltage or current channel in the Channel combo box, enter a harmonic index between 2 and 31, and click the Add button. The harmonic log will be plotted in the chart and an entry will be added to the Channels list box.

To remove a log from the chart, select it in the Channels list box and click the Delete button.

Click on the RMS/Percent button to toggle between plotting the harmonic content as an RMS value or as a percentage of the fundamental.

The voltage and current harmonics are plotted on separate vertical axes. The chart will autoscale the vertical axis by default. To set the range, right-click on the vertical axis to open a popup menu.

Position your cursor over a point to display the selected harmonic values for that log entry. Double-click on the chart to open the event log window at the nearest date/time.

THD

The Trending - THD chart displays the odd, even total, and max total harmonic distortion for the voltage and current channels.



To display the THD log, select the desired voltage and current channels and what content to display. Odd and Even display the average THD for all of the odd or even harmonics. Total displays the average THD for all harmonics. Max displays the highest single-cycle THD.

The RMS/Percent button to switches the display between RMS volts/amps and percent of fundamental.

The voltage and current THD are plotted on separate vertical axis. The chart will auto-scale the vertical axis by default. To set the range, right-click on the vertical axis to open a pop-up menu.

Position your cursor over a point to display the values for that log entry. Double-click on the chart to open the event log window at the nearest date/time.

Power

The Trending - Power window displays the logs for Apparent Power, Real Power, Reactive Power, True Power Factor, and Total Power.



The Power Logs window allows the user to configure what logs are displayed in the chart. To create a new chart, click the New... button. A Chart Setup dialog will appear and allow to user to setup a chart.

To modify an existing chart, select it in the Chart combo-box and click the Edit... button. The Chart Setup dialog will appear.

Position your cursor over a point to display the configured power values for that log entry. Double-click on the chart to open the event log window at the nearest date/time.

The chart will auto-scale the vertical axes by default. To set the range, right-click on either vertical axis to open a pop-up menu.

If either of the Demand log types is selected, Total Demand(KVA) or Total Demand(KW), the Demand Interval edit box will be enabled. If the Energy log KWH is selected, the KWH Rate edit box will be enabled to show the total cost.

Use the Export... button to export the raw data displayed in the chart into a comma separated values (csv) file.

* Power is computed based on the Source setting, either Wye, Delta, or Single Phase. * Wye - Three-Phase Wye, Split-Phase, Single Pole Single-Phase Delta - Three-Phase Delta

Single - Two Pole Single-Phase - L3 will not be displayed in this mode.

Wye/Delta/Single text will be displayed in the lower left of the chart to show which was selected when the chart was created.



The Name is the name as it appears in the Power Logs combo-box. The Chart Title appears at the top of the chart.

To add a log to the Power Chart:

- Select a power channel, L1, L2, or L3.
- Select a Log Type. This can be Apparent Power(KVA) Min/Max/Average, Real Power(KW) Min/Max/Average, Reactive (KVAR) Min/Max/Average, Power Factor (PF).
- For any of the Total log types, no channel selection is required. These are Total KVA, Total KW, Total KVAR, Total PF, Total KVAH, Total KWH, Total KVARH, Total Demand(KVA), and Total Demand(KW).
- Click the Add button.
- Repeat to add multiple logs to the chart.

To remove a log from the chart setup, select a log in the Logs list box and click Remove.

Click Cancel to abandon your changes for this chart setup.

To change the order of the items in the Logs list, use the mouse to drag-and-drop items to the desired order.

Save will save this chart setup. These charts are stored in the PowerCharts.cfg file in the U-View install directory and is read when U-View starts.

Power, Power Factor, and Energy each require their own vertical axis. Since there is a maximum of two vertical axes, not all channels can be displayed and a warning will be displayed.

Frequency

The Trending - Frequency window displays the AC frequency logs.



When the monitor starts, it will auto-detect the AC frequency. Then the monitor logs the AC frequency at the configured log interval for each of the three phases.

Use the Min, Max, and Avg check boxes to display minimum, maximum, and average AC Frequency log entries, for each of the three phases.

The low and high AC frequency values for the displayed logs appear in the upper left of the chart.

The chart will auto-scale the vertical axis by default. To set the range, right-click on the vertical axis to open a pop-up menu.

Position your cursor over a point to display the values for that log entry. Double-click on the chart to open the event log window at the nearest date/time.

Symm Comp - Imbalance

The Trending - Symm Comp - Imbalance menu displays the Symmetrical Component Imbalance logs.



The Symmetrical Components - Imbalance chart displays the minimum, maximum, and average voltage and current Imbalance values. These values are computed by the monitor for each cycle and recorded at the configured log interval.

Use the Min, Max, and Avg check boxes to display minimum, maximum, and average voltage and current Imbalance log entries.

The chart will auto-scale the vertical axis by default. Use the Vert. To set the range, right-click on the vertical axis to open a pop-up menu.

Position your cursor over a point to display the values for that log entry. Double-click on the chart to open the event log window at the nearest date/time.

Symm Comp - Mag/Angle

The Trending - Symm Comp - Mag/Angle menu displays the average Fundamental and Symmetrical Component vectors.



The Symmetrical Components - Mag/Angle chart displays the average Fundamental and corresponding Symmetrical Component vector values for voltage and current. The monitor records the average fundamental vectors at the configured log interval. From these values, average symmetrical component vectors can be displayed.

The top chart shows the magnitude and the lower chart shows the angle. Use the Channels check-boxes to display the fundamental voltage and current, as well as positive, negative, and zero sequence voltage and current.

The chart will auto-scale the vertical axis by default. To set the range, right-click on either vertical axis to open a pop-up menu.

Position your cursor over a point to display the values for that log entry. Double-click on the chart to open the event log window at the nearest date/time.

Use the Export... button to export the raw data displayed in the chart into a comma separated values (csv) file.

Phase Angle

The Trending - Phase Angle window displays the Phase Angle Logs.



The monitor records the phase angle between voltage and current for each cycle and records a minimum, maximum, and average angle for each phase at the configured log interval. Capacitive loads, where current leads voltage, are recorded as negative numbers. Inductive loads, where current lags voltage, are recorded as positive numbers.

Use the Min, Max, and Avg check boxes to display minimum, maximum, and average Phase Angle log entries, for each of the three phases.

The low and high Phase Angle values for the displayed logs appear in the upper left of the chart.

The chart will auto-scale the vertical axis by default. To set the range, right-click on the vertical axis to open a pop-up menu.

Position the cursor over a point to display the values for that log entry. Double-click on the chart to open the event log window at the nearest date/time.

Snapshots

The Snapshot window displays the snapshot events.



Snapshots are captured by the monitor some period of time after starting, at a configured time of day, and during a Store operation in Live-View. Each is given its own unique Event ID. Use the Event ID combo-box to select a snapshot.

Below the Event ID is the date/time the snapshot was captured. Double-clicking on the date/time displays the event log window at this date/time.

Choose which channels to display by selecting any of the voltage or current channels in the channels group. DC Volts and DC Current will be displayed if the monitor was configured for DC. Check the Invert check box if the current was hooked up backwards. The Residual channel refers to the sum of the three phase and neutral current channels.

The chart will auto-scale the vertical axis by default. To set the range, right-click on either vertical axis to open a pop-up menu.

Filter Snapshots that appear in the Event ID combo-box by using the Date/Time Range at the bottom of the window. Check the Enable check box to enable/disable the filter.

The user has the option to add a field note to the snapshot. Enter the field note within the text box and check Display. The field note will be displayed above the graph, under the title. Setting the field note automatically adds it to the field notes displayed in the Field Notes window.

The Harmonics button switches the display into Harmonics mode.

The Export Data button gives the user the ability to save the raw Snapshot data being displayed. U-View prompts where to save the .csv (comma separated values) file. The user can then click the View button to open the file.



Display:

The Display settings configure what information to display below the chart.

Power:

RMS volts (RMS V), RMS current (RMS I), crest factor volts (CF V), crest factor current (CF I), apparent power (KVA), real power (KW), power factor (PF), and reactive power (KVAR) are displayed below the chart. The Power values are computed based on the Source setting, either Wye, Delta, or Single Phase.

Symmetrical	Compon	ents:						
mag	angle	mag	angle	mag	angle	mag	angle	
VA: 122.4	0.0	IA: 8.6	322.9	V1: 122.9	0.4	11: 7.5	352.7	
VB: 122.9	240.5	IB: 5.8	264.9	V2: 0.6	254.0	12: 3.7	253.3	
VC: 123.4	120.6	IC: 10.3	119.2	VO: 0.4	214.9	IO: 0.8	302.8	
V Imbalance:			0.453	l Imbalane	ce: 49.3	315		

Symmetrical Components:

The fundamental magnitude and angle for each phase voltage and current, the positive, negative and zero-sequence values and the voltage and current imbalance are all displayed below the chart.

The VA Relative check box changes all angles to be displayed relative to VA.

The Phase Seq combo box swaps VB and VC.

The Chans combo box changes the reference voltages to either Phase-ground or Phase-Phase.

VA = L1-G or L1-L2 VB = L2-G or L2-L3 VC = L3-G or L3-L1

- DC				
00	V 1	V 2	V 3	Curr
Avg:	-100.0	-100.0	100.0	-999.8
RMS:	5.7	5.7	5.7	0.2
Ripple%:	5.7	5.7	5.7	0.0

DC:

There is limited support for DC Volts and Amps within the Snapshot form. When DC is selected, the Average, RMS of the non-DC component, and Ripple % are displayed for V1, V2, V3, and DC Current.

DC current is supported when Neutral Current is configured as DCA 2000 or DCA 4000. Enable the DC Current channel to display to the channel. It must read at least 2 amps for the Ripple % to be displayed.

DC Volts is supported if the user hooks up the L1, L2 and L3 leads to the positive DC source and the Ground lead to the negative. Enable L1-G, L2-G, and L3-G channels to display the channel. The monitor must read at least 5 volts for the Ripple % to be displayed.

Harmonics

The Snapshot - Harmonics window displays the individual harmonics of the currently selected snapshot in percent of fundamental, RMS, or in table form.



Use the Event ID combo-box to select a snapshot. The user can filter the Snapshots by date using the Date/Time Range at the bottom of the window. Use the Enable check box to enable/ disable the filter.

Below the Event ID is the date/time the snapshot was captured. Double-clicking on the date/time displays the event log window at this date/time.

In the Channels group, select the voltage or current channel to display harmonics, up the 63rd harmonic. Residual refers to the sum of the three phase and neutral currents. N Current and/or G Current could be disabled if the monitor was configured for DC Amps or DC Volts.

Use the Multi check box to display more than one channel at a time.

Use the combo-box to select Odd, Even, or Both harmonic content. The left most value shows the Total, Total Even, or Total Odd harmonic distortion, depending on this selection.

The Percent button displays harmonics as a percent of the fundamental. The RMS button displays the harmonic content in RMS. The Table button displays the harmonic content in table format.

The Snapshot button switches the display back into snapshot mode.

A Field Note for this snapshot can be edited and displayed above the chart by checking Display.

Snapshots - DCW

This form displays DCW waveform data. This feature only appears if the monitor has a DCW probe configured in its peripheral list.



DCW Snapshots are 200 millisecond digital captures of the DC Voltage and DC Current channels on the DCW probe, captured at 3840 samples/sec. Due to bandwidth limitations, DCW Snapshots are only available in Live-View if the DCW Probe is hooked up to the monitor through ethernet.

The **Event ID** combo-box selects which DCW Snapshot to display. The **Volts** and **Amps** checkboxes display the voltage and current data.

Below the chart, the following information is displayted:

- Serial # - Serial # of the probe.

- **Note** - User set Note field for each probe. Can be set in the Channels dialog on the Trending-Peripherals form.

- VDC - The average voltage value over the 200ms period.

- VAC - The Root Mean Square voltage over the 200ms period with the VDC value removed.

- VRip% - The ratio of the RMS Volts to the DC Volts. The probe must read at least 2 volts DC to display Ripple.

- IDC - The average current value over the 200ms period.

- IAC - The Root Mean Square current over the 200ms period with the IDC value removed.

- **IRip%** - The ratio of the RMS Current to the DC Current. The probe must read at least 10 amps DC to display Ripple.

- **kWatt** - Computed kilowatt(VI) value over the duration of the snapshot.

Double-clicking on any of the numbers in the table toggles the number of digits displayed after the decimal point.

Waveforms Chart

The Waveform Capture window displays the voltage and current data captured as part of a Waveform Capture event.



Waveform Capture events are triggered as part of voltage sag, surge, current trigger and manual trigger events. Whenever a sag, surge, or current trigger event is detected, the monitor starts recording a Waveform Capture, recording all ten voltage and five current channels, up to a configured number of cycles in duration. Each is given its own unique event ID.

Use the Event ID combo-box to select a Waveform Capture event. The user can filter them by date using the Date/Time Range at the bottom of the window. Use the Enable check box to enable/disable the filter.

Below Event ID is the date/time the Waveform Capture event was recorded. Double-clicking on the date/time displays the event log window at this date/time.

Choose which channels to display by selecting any of the voltage or current channels in the channels group. DC Volts and DC Current will be displayed if the monitor was configured for DC. Check the Invert check box if the current was hooked up backwards. The Residual channel refers to the sum of the three phase and neutral current channels.

Double-clicking in the chart will open up the Event Log window at the date/time you selected.

The Export... button gives the user the ability to save the raw Waveform Capture data being displayed. U-View prompts where to save the .csv (comma separated values) file. The user can then click the View button to open the file.

THD Mode

The Waveform Capture - THD Mode chart displays the total harmonic distortion for a single cycle for voltage or current, for any cycle in the Waveform Capture event.



To get into THD Mode, click the **THD Mode** in the drop down menu under **Display**. Use the mouse to position the grey outline to the desired cycle. Select any one of the voltage or current channels.

To get Out of THD Mode, click the **None** in the drop down menu under **Display**.

The odd, even, and total harmonic distortion is displayed below the chart.

The chart must be displaying at least one cycle to enter THD mode.

Power Mode

The Waveform Capture - Power Mode chart displays the power parameters for a single cycle within the Waveform Capture data.



To get into Power Mode, click the **Power Mode** in the drop down menu under **Display**.

Use the mouse to position the grey outline to the desired cycle. Select the L1, L2, or L3 channel to display the power parameters for that leg.

To get Out of Power Mode, click the **None** in the drop down menu under **Display**.

RMS volts (RMS V), RMS current (RMS I), crest factor volts (CF V), crest factor current (CF I), apparent power (KVA), real power (KW), power factor (PF), and reactive power (KVAR) are displayed below the chart.

* Power is computed based on the Source setting, either Wye, Delta, or Single Phase. * Wye - Three-Phase Wye, Split-Phase, Single Pole Single-Phase Delta - Three-Phase Delta Single - Two Pole Single-Phase - L3 will not be displayed in this mode.

The chart must be displaying at least one cycle to enter Power Mode.

Symm Comp Mode

The Waveform Capture - Symm Comp Mode chart displays the Symmetrical Components for a cycle within the Waveform Capture data.



To get into Symmetrical Components Mode, click the **Symm Comp Mode** in the drop down menu under **Display**.

Use the Channels group box to enable/disable the display of any of the voltage or current channels. Use the Invert check box to invert any of the current channels to correct for any that might have been hooked up backwards.

To get Out of Symmetrical Components Mode, click the **None** in the drop down menu under **Display**.

In Symmetrical Component Mode:

The fundamental magnitude and angle for each phase voltage and current, the positive, negative and zero-sequence values and the voltage and current imbalance are all displayed below the chart. Use the mouse to move the grey rectangle to select a different cycle of data.

The VA Relative check box changes all angles to be displayed relative to VA.

The Phase Seq combo box swaps VB and VC.

The Chans combo box changes the reference voltages to either Phase-ground or Phase-Phase.

VA = L1-G or L1-L2 VB = L2-G or L2-L3 VC = L3-G or L3-L1

The chart must be displaying at least one cycle to enter Symm Comp mode.

Split Display

This feature will split the window into two charts, with the lower chart displaying the waveform and the upper chart displaying rms volts/current or power.



The Split Window display is toggled with the **Split button.** The content of the upper chart is set by changing the Content combo-box in **Top Chart**. Options include RMS, RMS Deviation, V Freq/RMS, V Freq Dev/RMS, KVA, KW, KVAR, Total KVA, Total KW, Total KVAR, PF and Total PF.

When RMS, V Freq/RMS, or V Freq Dev/RMS is selected, half cycle or full cycle calculations can be toggled using the **Full Cycle VRMS** check box.

RMS Deviation displays RMS Voltage deviation from a nominal RMS computed from the prebuffer. Any nominal voltage less than 50 volts will not be displayed.

V Freq/RMS displays RMS voltage and frequency. V Freq Dev/RMS displays the frequency as a percentage of deviation from the nominal frequency computed from the pre-buffer. **Note**: Frequency is calculated on 5 cycles, so if there is less then 5 cycles it will not display.

If KVA, KW, or KVAR is selected, use the L1, L2, and L3 check boxes at the bottom to select what channels to display.

Zoom : To set the range in the lower chart from the upper chart, hold down the *Ctrl key* while zooming in the upper chart. A grey box will be displayed representing the area displayed in the lower chart. Zoom settings are saved for each Event ID.

Deviation % - Specifies how Voltage and Frequency Deviation % are to be computed. Nominal uses the Nominal Voltage or Frequency at the start of the event and Rated uses the specified voltage or frequency.

To move the range in the lower chart from the upper chart, hold down the *Shift key* and left-click on the upper chart and move the grey box. The lower chart will display the selected range as you move the box.

* Power is computed based on the Source setting, either Wye, Delta, or Single Phase. *

Wye - Three-Phase Wye, Split-Phase, Single Pole Single-Phase

Delta - Three-Phase Delta

Single - Two Pole Single-Phase - L3 will not be displayed in this mode.

Frequency Compensation

This feature compensates the RMS Voltage/Current and Power computations as the input frequency changes.



The monitor samples at a fixed sample rate, based on the fundamental AC Frequency that it read when it started sampling. It then computes its various measurements, for each cycle, based on this frequency.

For Waveforms, if the input frequency is changing, say in the case of a generator load test, some distortion may appear as a result of a mismatch between the input frequency and the duration U-View uses for cycle-based computations.

Frequency Compensation determines the input frequency for each cycle and uses that duration for its cycle-based computations. This results in a smoother and more accurate representation of RMS Votlage/Current and each of the power measurements.

Frequency Compensation will only be used for input frequencies between 40 Hz and 70 Hz.

Summary

This form provides a tabular summary of the waveforms recorded.

Waveform Summary										
Date/Time	Event ID	KVA Start	KVA Min	KVA Max	KVA% Start	KVA% Min	KVA% Max	Field Note	E	xport
Mar 13, 15 10:10:20.846	100	0.0	0.1	83.2	0.0	0.0	13.9			
Mar 13, 15 10:15:33.851	257	10.8	99.5	270.9	1.8	16.6	45.2	0 - 50%		
Mar 13, 15 10:15:50.822	295	259.3	278.2	310.3	43.2	46.4	51.7			
Mar 13, 15 10:16:08.338	302	305.4	445.0	565.7	50.9	74.2	94.3	50 - 100%		
Mar 13, 15 10:16:28.022	309	554.9	599.3	602.6	92.5	99.9	100.4			
Mar 13, 15 10:44:50.921	425	600.5	600.3	617.2	100.1	100.1	102.9			
Mar 13, 15 11:03:35.625	468	600.3	581.6	609.5	100.1	96.9	101.6	xfer to UPS		
Mar 13, 15 11:34:24.390	630	10.8	10.6	326.8	1.8	1.8	54.5	0-50 LS		
Mar 13, 15 11:34:41.886	639	314.7	313.3	624.9	52.5	52.2	104.1	50-100 LS		
Mar 13, 15 11:35:00.760	648	608.9	309.0	609.0	101.5	51.5	101.5	100-50 LS		
Mar 13, 15 11:35:19.903	657	308.8	10.5	308.9	51.5	1.7	51.5	50-0 LS		
Mar 13, 15 11:35:49.670	703	163.4	162.7	472.3	27.2	27.1	78.7	25-75 LS		
Mar 13, 15 11:36:06.375	715	460.3	160.4	460.3	76.7	26.7	76.7	75-25 LS		
Mar 13, 15 11:36:37.366	761	10.7	10.5	633.5	1.8	1.8	105.6	0-100 LS		
Mar 13, 15 11:37:17.913	772	603.3	10.4	603.4	100.5	1.7	100.6	100-0 LS		
Filters Date/Time Start: 03/13/15 10:04:3 End: 03/13/15 11:37:3	7 🔍 🔻	Colur Colur F F	nns Fotal KVA Fotal KW P-P Dev AC Freq	 ✓ Total Total P-G I ✓ Field 	KVA % ; KW % Dev Note	Size: 600		Compute Summary Source: Wye - V Full Cycle VRMS Compute	Export	

The **Compute** button loads each of the waveforms and computes summary data. Select which power **Source** (Wye, Delta, or Single) and whether to use **Full Cycle VRMS** before computing. If you change any of these settings since the last computation, the button will turn yellow.

Select which fields to display:

Total KVA - Start/Min/Max

Total KVA% - Start/Min/Max - Total KVA as a % of Size parameter

Total KW - Start/Min/Max

Total KW% - Start/Min/Max - Total KW as a % of Size parameter

P-P Dev - Min/Max - Phase-Phase nominal deviation as a % of average recorded before the trigger.

P-G Dev - Min/Max - Phase-Ground nominal deviation as a % of average recorded before the trigger.

AC Freq - Start/Min/Max

Field Note

Start is computed as an average of the values recorded prior to the trigger or at time 0.

Min is computed as the lowest recorded value after time 0.

Max is computed as the highest recorded value after time 0.

Export will export the contents of the Waveform Summary to a csv file. Use the Export column to select which items to export.

Custom

This form allows the user to display up to four waveform charts on one page.



The Waveforms - Custom charts have the same content as Waveforms - Chart but which charts and channels are specified within the Page Definition. Page Definitions are stored as part of the site data and are managed from the Page Def. group box.

Page Def. Combo Box - Select from user-defined page definitions.

Edit... - Edit an existing page definition - Opens the Page Def dialog

New... - Create a new page definition - Opens the Page Def dialog

Delete - Delete an existing page definition

Import... - Import the page definitions from another site folder. Any page definitions already defined with the same name will not be overwritten.

The Channels group box allows the user to invert current channels and wether or not use Full Cycle RMS for voltage.

The Zoom group box is similar as elsewhere but also has a **Mode** selection. **Chart** sets the zoom for just the currently selected chart. **Page** sets the zoom for all the charts on the current page. **All Pages** sets the zoom for all charts and page definitions.

Zoom settings are saved for each Event ID and Page Def. Changing either will not reset the zoom settings for that Event ID and Chart Def. The zoom settings will also be preserved between U-View sessions.

Page Definition Dialog

This dialog allows the user specify what charts and channels to be displayed.

age Definition Setup		
	Page Definition	Setup
Name: FreqDev	Charts: V Freq/RMS	Chart Setup Voltage AC Freq
Page Title: Frequency Deviation	V Freq Dev/RMS V Freq Dev/RMS	L1->L2 L3->L1 V L1
Chart	_	□ L1->N □ L3->N ☑ L3 □ L2->N
Add	Remove	 □ L1->G □ L3->G □ L2->G □ N->G
		Deviation: Nominal

The Page Definition Dialog is used to define the contents of the page. Up to four charts can be selected and which channels for each chart.

- **Name** Unique name for the page definition, as it would appear in the Page Def. combo box.
- **Page Title** Title appearing at the top of the page.
- **Chart** Chart type to be added to the page definition. These are Wave Shape, RMS, RMS Deviation, V Freq/RMS, KVA, KW, KVAR, PF, Total KVA, Total KW, Total KVAR and Total PF.
- **Add** Adds the selected chart to the list of charts.
- **Remove -** Removes the selected chart from the list of charts.
- **Channels** Configures which channels to be displayed. First select a chart within the Charts list to edit. Which channels are available will depend on the type of chart.
- **Chart Title -** Text displayed at the top center of the selected chart.
- **Deviation -** For V Freq Dev and RMS Deviation charts, selects how deviation is computed relative, either Nominal or Rated and the rated value.

The Waveforms - Custom form will update it's display as the user makes changes to the page definition.

Report

The U-View - Report feature provides tools to automate the generation of power quality and commissioning reports. U-View - Report does this in two ways; It uses scripts to automatically generate image files for each of the charts and a tool to automatically import those images into a Word doc report.

Site Data Preparation

Preparation and analysis of the site data is critical to making this efficient as possible.

Before you start the report, you need to:

- O Make sure you have all the data
- O Identify and determine if each of the tests was performed and performed correctly
- O Define pass/fail criteria for each test
- O Determine whether or not the test passed

What you do with this information and how you present it is up to you. Ultimately, the value your customer sees in this report comes directly from the analysis you do and how you present it.

Time Synchronization

If you have multiple sites, it is important to have the time synchronized. Power events can be recorded simultaneously on multiple monitors so having the timestamps match will be important to correlating those events across multiple data sets.

This can be done on the monitors before the data is recorded or post process. To synchronize post process, first pick one site to be the master. The other sites time will be adjusted relative to this master site.

Next, find an event that all the monitors recorded. This is usually an initial turn on. If you have a 1-second log interval for Trending - RMS Current, you should be able to see the turn on in the Trending logs. Alternatively, you should see a Current Trigger in the Event Log in each site. Compute the time difference between each of the sites and the Master site.

U-View Config	Waveform PageDefs	Current Multiplier
Import	Merge	Phase: 1.0
Export	Import	Neutral: 1.0
Default		If you change any of the multipliers, you will need to re-load the site data.
Time Offset		

Then for each site, go into Configuration and enter the difference in the number of seconds or hours:minutes:seconds format. You will need to reload the site for the Time Offset to take affect. If done correctly, the turn on time in the Trending -RMS Current and the Current Triggers in the Event Log should all be within 1 second for each site.

Identify Tests Performed

Go through the Trending data and note the start and end time for each test to be reported on. These will serve as the start and end date/time for the Trending charts for each test.

Perform any required analysis for each of the tests, across multiple data sets if required, noting whether or not test passed or failed.

Add any annotations, rulers, or color regions that you want to appear in your report.

Report Editor

The Report Editor provides the ability to automate the creation of Trending chart images used in the report. The Report Editor also has an Image Manager to automatically import those images into a MS Word Doc.

The Report Editor window is intended to be left open. You can select between the U-View window or the Report Editor window by using multiple screens or selecting U-View in the taskbar.

Test Scripts

The Report Editor uses a Script file to define what Trending charts are generated for each test defined in the Site Preparation step. Each Test Script has a Start and End time that serves as the start and end for each of the charts. To create a Test Script file, click the Save As... button

Test So	cripts	
ABC		~
Zoom	Settings	
Start:	01/08/24 12:07:0	0 🔍 🔻
End:	01/08/24 18:10:0	0 🔍 🔻
Get:		→ Set
Save	As	Run Script
Imp	ort	Run All

and enter the file name. This is the name of the test and will be added to the Test Scripts combo box. Please note that the scripts need to be stored in the site folder for them to be used by the Script Editor and for them to show up in the combo box.

The Start and End times are set by either entering in the date and time by hand or using the Get combo box. To use the Get tool, with the Report Editor window open, go to any one of the Trending charts and zoom in on the desired date range for the Test Script. Then select that chart in the Get combo box and the zoom range for that chart will be used to set the Start and End times for this script.

Once you have scripts defined, you can reuse them with the Import... button to copy them into your site data folder. Browse to the folder to copy a script from and select individual scripts or use the Ctrl or Shift keys to select multiple script files. Click the Open button to copy the files into the current site folder. Most of the time, the only thing that would need to change is the Start and End times so reusing scripts should be straightforward.

The Run Script button will run the currently selected script. Run All will run all the scripts in the site folder. Please note, only the checked images will be generated.

Chart List

Each script defines a list of Trending charts and their content.

Charts:	•
Туре	Filename 🔺
	Add Dpdate Chart
	Remove

To add charts to the chart list, click the down arrow in the combo box below the chart list and select which chart, and click Add. To remove a chart in the list, select it and click the Remove button.

When a chart is selected, the parameters for that chart type are displayed to the right.

Charts:	·	Channel			
Type 🔺	Filename	Min Max Avg	/-Axis		
Frequency	BumIn_ACFreq_Logs_png		Auto		
Frequency	BumIn_ACFreq_Logs_png		Min		
Frequency	BumIn_ACFreq_Logs_png		·m ·		
RMS Current	BumIn_RMS_Current_Logspng		lax		
RMS Current	BumIn_RMS_Current_Logspng		Set All		
RMS Current	BumIn_RMS_Current_Logspng		30174		
RMS Volts	BumIn_RMS_Voltage_Logspng	Comment			
RMS Volts	BumIn_RMS_Voltage_Logs_png	Comment.			
RMS Volts	BumIn_RMS_Voltage_Logspng				
Frequency	Add Update Chart	O Landscape 🔾	Portrait 🗌 Comment		
	Remove	Filename: ACFreq_Logs	.png Wid	lth 0	Get
		Prefix: BumIn_	Heig	ht 0	Set All

The Filename is the base name of the image file to be generated. The Report Editor fills in a default filename based on the chart type. You will need to make the filename unique by modifying the filename, typically by adding a number after the underscore character and before the .png. If it is not unique, an error will be displayed when the script is run.

The Prefix should be unique to this script and applies to all the charts in the list, allowing the files to be identified as from this script. Notice that the filename that appears in the Filename column of the Chart list is a combination of the Prefix and the Filename fields.

Width and Height is the size of the image in inches to be generated for this chart. Use the Set All button to set the size of all the charts in this script.

Use the checkbox column to enable/disable the generation of the image file when the script is run. Double-click the checkbox to enable/disable all charts in the script.

Right-Click the image file and select Run to generate that image. Click the Image icon to preview the image.

AC Frequency

Channel	8	
Min	Max Avg	Y-Axis
L1 🗌	\Box	🖂 Auto
L2 🗌	\Box	Min
L3 🗌	\Box	Max
		Set All

Use the checkboxes to select which channels to display in this chart. The Y-Axis refers to the vertical axis range. Auto sets the range based on the content. Uncheck Auto to set the Min and Max values manually. The Set All button will apply the current Y-Axis setting to all of the charts of this type in the script.

RMS Volts

Channels			
🔾 L1->L2	○ L1->N ○ L1->G	○ N->G	Y-Axis
○ L2->L3	○ L2->N ○ L2->G	O DCV	Auto
○ L3->L1	○ L3->N ○ L3->G	O Phase Imb.	Min
	Min Max Avg	🔿 N Line Imb	Max
		G Line Imb	max
	Multi		Set All
() L3->L1	◯ L3->N ◯ L3->G Min Max Avg ✓ ✓ ✓ Multi	 Phase Imb. N Line Imb G Line Imb 	Min Max Set All

The channel selections work exactly the same as in the Trending - RMS Volts window. Use the Multi checkbox to switch between displaying the Min/Max/Avg of an individual channel or displaying multiple channels.

RMS Current



The channel selections work exactly the same as in the Trending - RMS Current window. Use the Multi checkbox to switch between displaying the Min/Max/Avg of an individual channel or displaying multiple channels.

THD



Power

Channels Y1-Axis Y2-Axis Power Chart Auto 🔽 Auto Total Power Min Min Demand Interval 15 Minutes Max Max KWH Rate 0.00 \$/kwh

for Voltage and Current content. The Set All button will use the current Y-Axis settings to set all the THD charts in the current script.

The channel and content selections work exactly

the same as in the Trending - THD window. Y-Axis

Volts and Curr are for setting the vertical axis range

The channel and content selections work exactly the same as in the Trending - Power window.

ITI(CBEMA)

Classical Control Classical Control Classical Control Min 0.0021 Color Coded N-G %Max 350.5 Max 100.0 Filter Subcycle Color Color </th <th>Channels</th> <th>□ L1-G</th> <th>Zoom</th> <th>ull Range</th> <th></th> <th></th>	Channels	□ L1-G	Zoom	ull Range		
Color Coded N-G %Max 350.5 Max 100.0	✓ L2-L3 □ L2-N ✓ L3-L1 □ L3-N	L2-G	%Min	0.0	Min	0.0021
	Filter Subcycle	∐ N-G	%Max	350.5	Max	100.0

The channel and content selections work exactly the same as in the ITI(CBEMA) window. Use Full Range checkbox to display the full range of the plot, 0-500% of nominal on the vertical axis and 1 uSec to 100 seconds on the horizontal axis. You can set the values manually or

zoom in on the chart and use the Get button to fill in the zoom range from the chart. The Set All button will set the zoom range for all ITI(CBEMA) charts in this script to the current values.

Chart Size

The Chart Size is the size of the chart, in inches, as it would appear on the page in Word. If you right-click on any chart in U-View and select Chart Size, the Chart Size dialog will open and display the chart in Chart Size mode. This is a tool to calculate the appoximate size of the chart and to display it exactly as it would appear in the image file and in word. A more detailed description of this dialog can be found in the U-View Getting Started Guide.

In the Report Editor, if the Update Chart checkbox is enabled, selecting a chart in the Charts table automatically displays that chart in the Trending window. If Chart Size mode is active, the Trending chart will be displayed exactly as it will be written to the image file. Postition any Annotations, Rulers, or Color Regions as desired in this mode and they will appear correctly in the image file.

Reports Path

Reports Path	
C:\Projects\Reports\1\	
Browse	Explore

The Reports Path is where all the chart image files are saved for all the scripts in this site folder. They all need to be in one folder so the Image Manager can find them. The path can be edited manually or the Browse button can be

used to find the path. For multiple sites in the same report, they would all share the same Reports folder.

The Explore button will open a Windows Explorer window that can be used to manage files and folders.

Word File

Word File		
C:\Projects\Reports	\1\PQ Report.docx	
Browse	Image Manager	Open

This is the Word file Image Manager will replace the images in.

Use the Browse... button search for and change the Word file.

Open... will launch MS Word and open the specified file.

Image Manager... will launch the Image Manager with the specified Word file and Reports Path.

The MS Word Report

The report starts as an MS Word document. The goal is to have a library of standard reports that can be reused across multiple sites. The Image Manager scans the file and replaces the chart images with the images in the Report folder in the Report Editor.



Every image in the Word file has an Alt Text associated with it. This is where the filename of the image is set. To modify the Alt Text of the image, right-click the image and select View Alt Text... A frame on the right side of Word window will be displayed. Enter the filename of the image into the Alt Text. You can also select the chart line in the Report Editor and type Ctrl-C to copy the filename into the clipboard and paste it (Ctrl-V) into the Alt Text in Word.

Image Manager

The Image Manager replaces the images in the Word file with images in the Reports Path, using the filename in the Alt Text for each image to be replaced.

When Image Manager first loads, it creates a table of all the images with a non-blank Alt Text in the Word doc. Each entry in the table contains the Filename from the Alt Text field, what page number the image appears, and if the filename was found in the Reports folder, the Last Modified date of the file and the image Width and Height in inches.

2 2					
Ima	age M	anager			
Filename	Page ▲	Last Modified	Width x Height		
BumIn_ITICBEMA_1.png	5	05/23/2024 14:15:42	14.96 x 11.21		
LSteps_RMS_Voltage_Logs_1.png	12	05/23/2024 14:15:46	16.75 x 9.47		
LSteps_RMS_Voltage_Logs_2.png	13	05/23/2024 14:15:46	16.75 x 9.47		
LSteps_RMS_Voltage_Logs_3.png	14	05/23/2024 14:15:46	16.75 x 9.47		
Trans_RMS_Voltage_Logs_1.png	15	05/23/2024 14:15:48	16.75 x 9.47		
Trans_RMS_Voltage_Logs_2.png	16	05/23/2024 14:15:48	16.75 x 9.47		
Trans_RMS_Voltage_Logs_3.png	17	05/23/2024 14:15:48	16.75 x 9.47		
Red_RMS_Voltage_Logs_1.png	18	05/23/2024 14:15:47	16.75 x 9.47		
Red_RMS_Voltage_Logs_2.png	19	05/23/2024 14:15:47	16.75 x 9.47		
Red_RMS_Voltage_Logs_3.png	20	05/23/2024 14:15:47	16.75 x 9.47		
Bum_RMS_Voltage_Logs_1.png	21	05/23/2024 14:15:43	16.75 x 9.47		
Bum_RMS_Voltage_Logs_2.png	22	05/23/2024 14:15:43	16.75 x 9.47		
Bum_RMS_Voltage_Logs_3.png	23	05/23/2024 14:15:43	16.75 x 9.47		
BatD_RMS_Voltage_Logs_1.png	24	05/23/2024 14:15:42	16.75 x 9.47		
BatD_RMS_Voltage_Logs_2.png	25	05/23/2024 14:15:42	16.75 x 9.47		
BatD_RMS_Voltage_Logs_3.png	26	05/23/2024 14:15:42	16.75 x 9.47		
LSteps_RMS_Current_Logs_1.png	27	05/23/2024 14:15:46	16.75 x 9.47		
	20	05/00/0004 14 15 47	10 75 0 47		-
Refresh Import Open Report				ОК	

The checkbox column will enable/disable the image replacement by the Image Manager. If unchecked, the Image Manager will not attempt to replace the image. Double-click the checkbox to toggle all the checkboxes. The last column is the image icon. Click on it to preview the image.

Refresh will regenerate the table.

Import Images will replace all enabled images in the word doc with those in the Reports folder.

Open Report will open the file in MS Word.

If the word doc is already open when the Image Manager is launched, or open when the Refresh or Import Images buttons are clicked, an error will be displayed. MS Word locks the file when it opens it, so you will need to close Word to perform any of those operations.

Any image files not found, if it is checked, will display "File Not Found" where the image would be displayed.

Field Notes

The Field Notes windows displays the Field Notes entries.

		Field Notes
Date/Time 🔺	EventID	Field Notes
Feb 24, 10 10:10:00	384	Initial startup snapshot
Feb 25, 10 11:11:00		Equipment fault - 425
Feb 25, 10 11:47:00		Equipment restart
Feb 26, 10 12:16:00		Equipmnet fault - 427
Mar 01, 10 16:30:00		Removed monitor
		Delete Field Note

Field notes can be entered into this log as part of a stored snapshot or entered manually. Refer to the snapshot section for more details on the snapshot note.

To enter field notes manually, select the Field Notes text box and enter your note. The Date/Time field will automatically be set to the current date/time. The Date/Time field can be modified by either changing the text in the Date/Time field or using the down arrow to open a calendar window.

Manually entered field notes do not have an event associated with them so that field will be blank.

The Field Notes can be an important factor. Care must be taken to provide enough information in the note so that it can be referenced when the power analysis is performed.

Configuration

This form gives the user the ability to manage the U-View configuration.

UView Configuration		×
U-View C	Configuration	ı
U-View Config Import Export	Waveform PageDefs	Current Multiplier Phase: 1 Neutral: 1.0
Default		If you change any of the multipliers, you will need to re-load the site data.
Time Offset Offset: 1:00:00 If you change this val need to re-load the si	secs lue you will te data.	ОК

This feature gives the user the ability to import or export all the customizations the user has made for this site folder. These include Power Chart definitions, Waveform Page definitions, Color Regions, and Y-Axis Ranges.

Import - Import the Configuration from another site folder or from a previously exported file. This will replace any customizations with those in the imported file.

Export - Export the Configuration to a file. A good practice would be to maintain a U-View configuration in some common location and import it when you start with a new site. **Default** - Loads an Rx Monitoring default configuration.

Waveform PageDefs

In older versions of U-View, the Waveform PageDefs were stored in a separate file. This gives the user the ability to import the older PageDefs into the configuration.

Merge - If checked, the PageDefs in the file are merged with those in the current Configuration. If not checked, the current PageDefs are deleted and replaced with those in the imported file. **Import** - Initiates the Waveform PageDefs import.

Current Multiplier

This feature allows the user to apply a multiplier to the Phase and Neutral current and power data. This does not change the original data, only how it is displayed in U-View. This feature would be used if there was a Current Transducer used at the site but the multipliers were not configured on the monitor, among other things.

Time Offset

This feature is used to adjust the Date/Time values displayed in U-View. It can be either the total number of seconds, with "-" signifying a negative offset, or ##:##:## format for hours : minutes : seconds. This does not change the original data and only offsets the timestamps when they are displayed.

Tools

This form contains various tools for managing the data.

ToolsDialog	×
U-View Tools	
Split Site	
Date Range	
Start: 04/13/21 09:14:22	
End: 06/15/22 10:20:28	
Get: V	
Destination: Browse	
C:\EPALogs\SplitSite\Dest	
Split Site	
ОК	

Currently, this form only contains the Split Site feature.

Split Site

This feature will take the currently loaded site data and split the data into a new site folder based on the given Start and End dates. The user can either manually fill in the Start and End date and times or zoom in on one of the log charts and the Get combo box will fill in the Start and End from the zoom settings of the selected chart.

The Destination folder is where the new split data will be written.

Click the Split Site button and the data will be split to the new Destination folder.

Split Site does not change the original site data.

Software Update Check

Each time U-View starts, it will check to see if an update is available.

Update Available
Update Available
An update to the U-View software has been releasd. Using an older version could cause compatibility issues or possible loss of data.
Please click on the following link to download and update your U-View software.
http://www.pms.com/U-View.html
ОК

The window displays a clickable link which will open your browser to the U-View software page. From there, you can review the release notes and download the software to perform an update.

Data Files

The Data Files list box on the main menu panel displays a list of all the data files for the currently loaded site. Typically, these files are in binary and can only be viewed from U-View.

To view the raw data file, double-click on the filename. U-View will then attempt to open the file with whatever program you have associated with that file type. If there is none, windows will prompt for it.

There are many different log files. They are:

Event.lgd - Event Log -

FieldNotes.lgd - Field Notes -

Freq#.lgd - AC Frequency Logs

HarmonicsV#.ldg - Voltage Harmonic Logs - Contains the DC, Fundamental, and the average harmonic up to the 31st. # is the voltage channel with 1-3 being L1-G, L2-G, L3-G. Channels 4-6 are for L1-L2, L2-L3, L3-L1.

HarmonicsI#.ldg - Current Harmonic Logs - Same for Harmonic Voltage but for current. # is the current leg, 1-3.

HFEC.dat, **HFEH.dat**, **HFEL.dat** - Transient data files - Not viewable here. Individual transient data can be viewed with the View Data button from the Transients window.

Per****####.Igd** - Peripheral Logs - ** is for the peripheral type, where TH is for the temperature/humidity probe, and AP is for the Air Pressure probe. **####** is the serial number of the probe.

PowerC#.lgd - Power Logs - # is for the channel number. 1-3 is Wye power for L1, L2, and L3. 4 is Single Phase. 5-7 is Delta Power. Each log entry has the following fields; Date/Time, Apparent Power (KVA) minimum, KVA maximum, KVA average, Real Power (KW) minimum, KW maximum, KW average, Reactive Power (KVAR) minimum, KVAR maximum, KVAR average, Power Factor minimum (PF), PF maximum, PF average.

RMSC#.Igd - RMS Current Logs - # is the current leg channel number, 1-3 for L1-L3, 4 is neutral, 5 is ground, and 6 is residual current, which is the sum of L1, L2, L3 and Neutral current computed in real time. Each log entry has the following fields; Date/Time, RMS Current minimum, RMS maximum, RMS average, peak current reading.

RMSV#.Igd - RMS Voltage Logs - # is the Rx voltage channel number with channels 1-10 being L1-L2, L3-L1, L1-N, L1-G, L2-L3, L2-N, L2-G, L3-N, L3-G, and N-G. Each log entry has the following fields; Date/Time, RMS volts minimum, maximum, average.

THDI#.Igd - Total Harmonic Distortion for Current - # is the current leg channel number. Each log entry has the following fields; Date/Time, Fundamental RMS, Even THD RMS, Odd THD RMS, Total THD RMS, Max THD RMS, Max THD %

THDV#.Igd - Total Harmonic Distortion for Voltage - # is the voltage channel, 1-3 is for L1-G, L2-G, L3-G. 4-6 is for L1-L2, L2-L3, L3-L1. Each log entry has the following fields; Date/Time, Fundamental RMS, Even THD RMS, Odd THD RMS, Total THD RMS, Max THD RMS, Max THD %

PA#.Idg - Phase Angle Logs contain the Min/Max/Average angle between voltage and a corresponding current channel. Channels 1-3 are for L1-G to L1 Current, L2-G to L2 Current, L3-G to L3 Current. Channels 4-6 are for L1-L2 to L1 Current, L2-L3 to L2 Current, L3-L1 to L3 Current. **Setup.Idg** - This is a summery of the power monitors setup (Log rates, triggers) for review. **SymmComp.Idg** - Symmetrical components log file.