

WAVEWIN

REFERENCE GUIDE

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Preface

This document list all the fields and features available in the Wavewin software

This document is intended for use by individuals working in protection, engineering, and system operations.

Table of Contents

CHAPTER 1	1
FIELDS & FEATURES	1
Active Topic - Help	1
Adjust Files Time	1
Align Channel Data	1
Ametek TR*/DL*/PQR128 Driver	2
Analog Mark/Unmark All	2
Analog Table View	2
Animated CAD- DXF	3
Append Logs	3
Append Open Files	3
Append Waveform Files	4
Ascending Sort	4
ASCII Driver	4
ASCII Editor	4
ASCII Event Files	5
ASCII Terminal Mode	5
AS Status Field	5
AtFile	6
AtRec	6
AtTab	6
Audio Wave Driver	6
Auto Detect Driver	6
Auto Scaling	6
Background Color	7
Binary Event File	7
Binary Terminal Mode	7
BPRO Driver	8
Calibration Report	8
Change Device Configuration	8
Change Drive/Directory	9
Change DXF Files	9
Change Frequency	10
Change Passwords	10
Change Query Operators	11
Channel Background Color	11
Channel Information (On/Off)	11
Clear Analog Colors	12
Clear Query Area	12
Combine Logs	12
Combined View	12
Comma Delimited Table Driver	12
ComName Properties	13
ComName(s) Rename	13
Company Column	14
Company Name (Save & Archive)	14
Compress COMTRADE Files	14

COMTRADE Driver	14
Condense Time	14
Copy/Cut/Paste Files	15
Copy Device Records	15
Copy Files	15
Copy Text	16
Create Directory	16
Cut Text	16
Cycle Hop	17
D&T	17
Data Bar	17
Decrease Amplitude	17
Delete Devices	18
Delete Files	18
Delete Text	18
Delta X	19
Delta Y	19
Descending Sort	19
Device Column	19
Device Field	20
DFR I II IIB & 2000 Driver	20
Digital Mark/Unmark All	20
Display Dialog	20
Disturbance Report	21
DLP1/DLP3 Driver	21
Double Quotes/Comma Delimited Table Driver	21
Drawing Properties	22
Driver Column	22
Driver Configuration Dialog	22
Driver Data Type	23
Duplicate Cycles	23
Duplicate Device Record	23
DXF Animated CAD	25
DXF Control Dialog	25
DXF Driver	25
Edit DAU-DEF	26
Edit Device Record	26
Email Files	27
EMAX Long Term Driver	28
Equal To (=)	28
Expand Time	28
Export	29
F-Type Column	29
Fault Bar	29
Fault Date Column	29
Fault Reference Time Bar	29
Fault Time Column	30
Faxtrax II (12-bit) & Director Driver	30
File Name Column	30
Flip Marks	30
Folder Tree	31

FPRO Driver.....	31
Free.....	31
Fs.....	31
Fst.....	32
Fst-Change.....	32
FTP Connection.....	32
Function Keys.....	33
Group Marked Analog Channels.....	33
Group Marked Rows.....	33
Harmonics Table.....	34
Harmonic Vectors.....	34
Help.....	34
Hexadecimal Editor.....	35
Hexadecimal Driver.....	35
Hide Mark(s).....	35
Histogram.....	35
Horizontal Bars.....	36
HP-Dif.....	36
HPeak-Dn.....	36
HPeak-Up.....	37
IEEE Long File Naming Format.....	37
Import.....	37
Increase Amplitude.....	37
InstPeak Column.....	38
InstVal Column.....	38
IntelliRupter Driver.....	38
Latitude Field.....	38
Less Than (<).....	38
LP-Dif.....	39
LPeak-Dn.....	39
LPeak-Up.....	39
LPRO Driver.....	39
Lst.....	40
Lst-Change.....	40
Mark All Rows.....	40
Mark/Unmark All Channels.....	40
Mark/Unmark Row.....	41
Mark Change in Sign.....	41
Mark Peak Values.....	41
Mark Raw Values.....	41
Max X Pixels.....	42
Max Y Pixels.....	42
MaxPeak Column.....	42
MaxVal Column.....	42
MaxWin Column.....	43
MDAR REL 301/302 Driver.....	43
Medium Display.....	43
Merge Open Files.....	43
Merge Waveform Files.....	44
MinPeak Column.....	44
MinVal Column.....	44

Move Files	45
Move RMS Bar to Reference Bar	45
Move Reference Bar to Data Bar.....	45
MrkSize	46
Multipoint Interrogation Display (MID)	46
New Device Configuration	46
New Device Record.....	47
New Device Configuration	47
New File	48
OneBit	48
Open All Marked Waveform Files	48
Open File.....	49
Optional Columns.....	49
Paste Device Records	49
Paste Text	49
Path/Filename (No Ext.)	50
Phasor/Circular Chart Scale Multiplier (ASM)	50
PixsDisp Column	50
Play Channels Audio	51
Primary Values	51
Print All Data	51
Print All Rows	52
Print DXF File.....	52
Printer Setup	52
Print File	52
Query All Rows.....	52
Query Marked Rows	53
Query Unmarked Rows	53
Recorded Channels.....	53
Reference Bar	54
Refresh.....	54
RefVal Column	54
Rename File/Directory	55
Reopen Waveform File.....	55
Replay Plus Driver.....	55
Resize Columns	55
Resize Sliding Window	56
Restore Mark(s).....	56
Restore Original	56
RFL 9300 Driver	57
RMS Column	57
RMS Bar.....	57
Run	57
Sample Based Display	58
Save & Archive Dialog.....	58
Save As.....	59
Save As COMTRADE (ASCII/Binary)	59
Save As Text.....	59
Save Date Column	60
Save Displayed Values (Default Format).....	60
Save Time Column	60

Save User Views	60
Secondary Values	61
SEL Load Profile Driver	61
SEL Relay Driver	62
Select Lines/Views	62
Select User Views	62
Sequence of Events List	63
Sequence of Events Summary	63
Set Drawing Properties	64
Set Opening Frequency	64
Set Sort Field	65
Shift Marks Down	65
Shift Marks Up	65
Show/Hide Channel Titles	65
Show All Digital Channels	66
Show All Hidden	66
Show Channel Information	66
Single Ended Fault Location	67
Size	68
Size Column	68
Size To Original Coordinates	68
Size To Window	68
Software Analog Channels	68
Software Digital Channels	69
Sort All Rows	69
Sort Field	69
Sort Marked Rows	70
SR745/489 Driver	70
Start Date Field	70
Start Time Field	70
Substation Field	71
Super Impose	71
Sync Data Cursors	71
System Files	72
Tab Delimited Table Driver	72
TCode Field	72
Tesla Driver	72
TCP/IP Client	73
Test Ports	73
Time Based Display	73
TIS Driver	73
Total Harmonics Distortion	74
TotFiles	74
TotMarks	74
TotRecs	74
TotTabs	74
TPRO Driver	75
TPU/DPU/GPU Driver	75
Trace Scale Multiplier (ASM)	75
Transcan Driver	75
Trigger-Time	76

TrueRMS.....	76
Truncate Cycles	76
Type Column.....	76
Un/Mark Rows.....	77
Unmark Marks	77
View Mark(s)	77
View Raw Data File	78
Waveform Data	78
Waveform Summary.....	78
Window Properties	79
Zip Files.....	80
Zooming	80
Zoom In	80
Zoom Out	81
Zoom X, Y Resolution Properties.....	81

C H A P T E R 1

Fields & Features

This chapter describes all of the fields and features available in the software. They are listed alphabetically for your convenience.

ACTIVE TOPIC - HELP

Location: All child windows

Description: Display the active window's Help file.


Activation: *Menu:* Alt-H, T

ADJUST FILES TIME

Location: Analysis

Description: The Adjust Files Time allows for adjusting the time of the open file. To open the "Adjust File Time" dialog select the "Adjust Files Time" menu option under the "Data" menu. You can specify to add or subtract a given time increment from the files current time. Enter the desired time increment for the hour, minutes, seconds and milliseconds. If there is no adjustment needed on a specific time field enter 0.

Activation: *Menu:* Alt-D, J

Comments: To always have the file's time automatically adjusted when a specific driver is used to open a file check the "Adjust Open Time" check box. To show the file's original date and time click on the "Restore Original" button  or select the "Restore Original Data" menu option under the "Data" menu

See Also: Adjust Files Time in Chapter 1

ALIGN CHANNEL DATA

Location: Analysis (Universal Viewer)

Description: The Align Channel Data option allows for aligning the channel data using the Thiran 3rd Order All-Pass Fractional filter. To open the "Align Channel Data" dialog select the "Align Channel Data" menu option under the "Channel" menu. Enter the phase shift for each analog channel. If the filter does not apply to a specific analog channel, enter 0 or leave the field blank. Click the "Run Thiran Filter" to apply the filter.


Activation: *Menu:* Alt-C, T

Fields:

<i>Phase Shift:</i>	The phase shift angle for each analog channel.
<i>A0:</i>	The Thiran A0 coefficient for each analog channel.
<i>A1:</i>	The Thiran A1 coefficient for each analog channel.
<i>A2:</i>	The Thiran A2 coefficient for each analog channel.
<i>A3:</i>	The Thiran A3 coefficient for each analog channel.
<i>Always Apply:</i>	Always apply the filter when opening files for the active driver.

Coefficients: Calculate coefficients at run or use the entered coefficients.

Options: *Calculate Coefficients:* Calculate the Thiran coefficients for each analog channel.
Run Thiran Filter: Run the Thiran filter.
Esc/Cancel: Exit the dialog without executing the command.

Comments: To always have the filter automatically applied when a specific driver is used to open a file check the "Always Apply" check box. To show the file's original date and time click on the "Restore Original" button  or select the "Restore Original Data" menu option under the "Data" menu.

See Also: Align Channel Data in Chapter 1

AMETEK TR*/DL*/PQR128 DRIVER

Location: File Manager (Universal Viewer)

Description: Change the driver at the cursor position to the Ametek TR*/DL*/PQR128 driver.

Activation: *Menu:* Alt-D, P

Comments: An error message is displayed if the selected file is not a valid Ametek file. Files that have a ".AMT" extension or files that have the first 2 characters in the name as "ZQ" and the file has no extension are automatically tagged as Ametek files.

See Also: Display Oscillography in Chapter 1
Associating File Types in Chapter 1

ANALOG MARK/UNMARK ALL

Location: Analysis

Description: Mark all analog channels if there are no analog channels marked otherwise unmark all the marked channels.


Activation: *Menu:* Alt-C, N

Comments: The channels ID and titles are displayed in light red when marked. Press F8 to mark or unmark all the analog and digital channels.

ANALOG TABLE VIEW

Location: Analysis

Description: Displays the channel titles, ASV, units, and associated data values.


Comments: Use the  button or the shift-right/left arrow keys to scroll the columns in the table. This button is located to the right of the analog table headers.

See Also: Viewing Analog Data in Analysis Quick Start.

ANIMATED CAD- DXF

Location: Device Manager

Description: Display the DXF window to periodically execute the device's assigned drivers and update the parsed information into the appropriate graphical DXF drawing.

Activation: *Direct:* F8 – menu button 
Menu: Alt-O, D

Comments: Information parsed by the device drivers can be used to populate a CAD-DXF drawing. In order to populate the drawing, control points must be added to offset the parsed data. The word "Device", the associated device number, and/or the device title (optional) indicates a control point. For example, if the CAD-DXF reader encounters the text "Device 12 SEL-321" in the DXF file, the information parsed by the assigned driver is offset at the upper left corner of the letter "D" in the word "Device". Refer to Appendix B for more information on setting up DXF control points.

DXF drawings can be created using an off the shelf program such as AutoCAD, Turbo CAD, Technical Visio, Drafix, or MEDUSA. The animated CAD-DXF reader also supports layered objects and multiple paging views. To activate the animated CAD-DXF display, click the **DXF** menu button or press F8.

See Also: Animated CAD-DXF in the Device Manager Quick Start.

APPEND LOGS

Location: File Manager

Description: Combine a number of log files (ABB Load Profile, Comtrade Logs and SDC Logs), of the same types (the columns match), into one comma delimited file with the extension .CSV.

Activation: *Menu:* Alt-O, R, A

Comments: The files must be of the same type (columns must be equal and data extracted from the same device). The save file can be displayed in a table or plotted in the log data viewer.

See Also: Combine Logs

APPEND OPEN FILES

Location: Analysis

Description: Combine a number of open files of the same type (the analog/digital channel titles must match) in time. All of the currently open waveform files will be appended into a new analysis window.

Activation: *Menu:* Alt-F, F, D (Append the open files by Discarding the common times)
Menu: Alt-F, F, B (Append the open files Back-to-Back)

Comments: The files must be of the same type (the analog/digital channel titles must match). The results in the new analysis window can be saved in a Comtrade file for archiving.

See Also: Append Waveform Files
Append Open Files in Analysis Quick Start

APPEND WAVEFORM FILES

Location: File Manager

Description: Combine a number of waveform files of the same types (the analog/digital channel titles must match) in time into an analysis window.

Activation: *Menu:* Alt-O, W, A, D (Append waveform files by Discarding the common times)
Menu: Alt-O, W, A, B (Append waveform files Back-to-Back)

Comments: The files must be of the same type (the analog/digital channel titles must match). The results in the data analysis window can be saved in a Comtrade file for archiving.

See Also: Append Open Files
Append Waveform Files in File Manager Quick Start

ASCENDING SORT

Location: All Tables

Description: Sort the device columns in ascending order with respect to the selected sort field.

Activation: *Menu:* Alt-S, A

Comments: To change the sort field, place the cursor in the desired column and select “Set Sort Field” in the “Sort” menu. The sort field is displayed in the status bar at the bottom of the window. To sort the columns directly press the column header button. The header buttons toggle between ascending and descending order.

See Also: Descending Sort
Sorting in the Quick Starts

ASCII DRIVER

Location: File Manager

Description: Display the file at the cursor position in the ASCII text editor.

Activation: *Menu:* Alt-D, 1

See Also: ASCII Editor

ASCII EDITOR

Location: File Manager

Description: Edit the ASCII file at the cursor position.


Activation: *Direct:* F2
Menu: Alt-O, A (Options menu) or Alt-D, 1 (Driver menu)

Comments: The file content is displayed in text format. Use the up arrow, down arrow, left arrow, right arrow, page up, page down, home, end, Ctrl-home and Ctrl-end keys or the scroll bar to navigate through the data and the Edit menu options to cut, copy, or paste text. A maximum of ten ASCII Editors may be opened simultaneously.

ASCII EVENT FILES

Location: Device Manager

Description: View the selected device event file in an ASCII editor. The “Type” column in the device table indicates the type of editor displayed: ASCII or Binary (Hexadecimal). The type column is defined in the device record. To open the device record, select the device and press F2.

Activation: *Direct:* F6 – menu button 
Menu: Alt-O, E

Comments: The file content is displayed in text format. Use the up arrow, down arrow, left arrow, right arrow, page up, page down, home, end, Ctrl-home and Ctrl-end keys or the scroll bar to navigate through the data and the Edit menu options to cut, copy, or paste text. A maximum of ten event files may be opened simultaneously.

ASCII TERMINAL MODE

Location: Device Manager

Description: Display the ASCII terminal mode window to transmit ASCII characters, escape sequences and/or Function key definitions to the output device.

Activation: *Direct:* <Enter> – menu button 
Menu: Alt-O, T

Comments: The type of terminal mode window displayed is determined by the type field (ASCII or Binary) defined in the device record. To communicate with an ASCII device place the cursor on the desired device and press <enter> or click the **Terminal** menu button. Data is transmitted to the output device by pressing the predefined function keys or by manually pressing the numeric and letter keys. If the device does not respond, check the device’s communication parameters (F2) or the device connection. Use the up arrow, down arrow, right arrow, left arrow, page up, and page down keys to browse the data and the <esc> key to exit.

See Also: Function Keys
Binary Terminal Mode

AS STATUS FIELD

Location: Analysis (Status Bar)

Description: Displays the current state of the Auto Scaling feature (ON, OFF or ++).

Comments: To toggle through the Auto Scaling options (ON, OFF or ++), press F6 or select the “Auto Scale” menu option from the “Options” menu. When auto scaling is turned “ON”, the channel data is scaled to the maximum value allocated for display from the zero reference line. When auto scaling is in the “++” state the signals are plotted using the maximum value allocated for display, ignoring the zero reference line. The highest value is plotted at the maximum position and the smallest value is plotted at the lowest position. This feature shows the full profile of frequency, Vdc and load channels. In the “OFF” state all channels are scaled according to maximum and minimum values in all of the analog channels.

See Also: ASV Column

Auto Scaling

ATFILE

Location: File Manager (Status Field)

Description: Displays the file number of the selected file in the table.

ATREC

Location: Device Manager (Status Field)

Description: Displays the record number of the selected device in the table.

See Also: TotRecs
TotMarks

ATTAB

Location: Animated CAD-DXF (Status Field)

Description: Displays the currently highlighted tab number.

See Also: AtTab

AUDIO WAVE DRIVER

Location: File Manager

Description: Changes the driver at the cursor position to the Window's Audio Wave driver (*.WAV) and plots the input channels.

Activation: *Menu:* Alt-D, V

Comments: All files that have a ".WAV" extension are tagged as Microsoft Audio Wave files.

AUTO DETECT DRIVER

Location: File Manager

Description: Infers the filename at the cursor position and activates the associated driver.


Activation: *Menu:* Alt-D, Z

See Also: Associating File Types in File Manager Quick Start.

AUTO SCALING

Location: Analysis

Description: Turns the state of amplitude auto scaling to On, Off or ++ for all the visible analog channels.

Activation: *Direct:* F6 - ASV menu button 
Menu: Alt-D, A, F-Off, O-On and P-Plus

Comments: The AS field displayed in the status bar indicates the auto scale's current state, ON, OFF or ++. When auto scaling is turned "ON", the channel data is scaled to the maximum value allocated for display from the zero reference line. When auto scaling is in the "++" state the signals are plotted using the maximum and minimum values allocated for display, ignoring the zero reference line. The highest value is plotted at the maximum position and the smallest value is plotted at the lowest position. This feature shows the full profile of frequency, Vdc and load channels. In the "OFF" state all channels are scaled according to maximum and minimum values in all of the analog channels.

See Also: Increase Amplitude
 Decrease Amplitude
 Auto Scale Multiplier
 AS Status Field

BACKGROUND COLOR

Location: DXF Animated CAD (Properties dialog)

Description: Select the background color for the active DXF tab drawing.

Activation: *Direct:* F2
Menu: Alt-T, D

Default: Black

BINARY EVENT FILE

Location: Device Manager

Description: View the selected device event file in a binary editor. The "Type" column in the device table indicates the type of editor displayed: ASCII or Binary (Hexadecimal). The type column is defined in the device record. To open the device record, select the device and press F2.

Activation: *Direct:* F6
Menu: Alt-O, E

Comments: The file contents are displayed in a Binary (Hex) editor. Use the up arrow, down arrow, page up, page down, Ctrl-home and Ctrl-end keys to navigate through the file's data, or use the scroll bar. When a hex value is over written the ASCII equivalent is displayed in the window to the right of the editor. A maximum of ten event windows can be simultaneously.

BINARY TERMINAL MODE

Location: Device Manager

Description: Display a binary terminal mode window to transmit hex values and/or Function key definitions to the output device.

Activation: *Direct:* <Enter> – menu button 
Menu: Alt-O, T

Comments: The type of terminal mode window displayed is determined by the type field (ASCII or Binary) defined in the device record. To communicate with a binary device place the cursor on the desired device and press <enter> or click the **Terminal** menu button. Data is transmitted to the output device by pressing the predefined function keys or by manually pressing the hex numeric and letter keys (0..9,A..F). If the device does not respond, check the device's communication parameters (F2) and/or the device connection. Use the up arrow, down arrow, right arrow, left arrow, page up, and page down keys to browse the data and the <esc> key to exit.

See Also: Function Keys
ASCII Terminal Mode

BPRO DRIVER

Location: File Manager (Universal Viewer)

Description: Change the driver at the cursor position to the NxtPhase BPRO driver and plot the input channels.

Activation: *Menu:* Alt-D, O

Comments: NxtPhase files are displayed in the IEEE Comtrade Binary format. NxtPhase has developed an automatic conversion application called "AutoComtrade.exe". Wavewin calls "AutoComtrade.exe" to convert NxtPhase files to the Comtrade binary format for display. To view NxtPhase relay files double click or press enter on the original BPRO files. To obtain a copy of the "AutoComtrade.exe" file please contact NxtPhase.

Files with the .BPR extension are automatically tagged as NxtPhase BPRO files.

See Also: Tesla Files in File Manager Quick Start.
Display Oscillography in the File Manager Quick Start
Associating File Types in the File Manager Quick Start

CALIBRATION REPORT

Location: File Manager

Description: Generate a calibration report for all marked event files.

Activation: *Menu:* Alt-O, R, C

Comments: The Calibration report list the Maximum and Minimum analog summary information for the marked files.

For this feature to work properly reports should be generated on non-fault data. The DVREPORT.DTB file, saved in the installed directory contains the last generated report. To archive the contents of this file use the Save As option to save the file under a new name.

See Also: Waveform Summary

CHANGE DEVICE CONFIGURATION

Location: Device Manager

Description: Change the active device configuration table.

Activation: *Menu:* Alt-D, G




Comments: The “Open Device Configuration” dialog allows for selecting configurations stored in different directories. Navigate to the desired directory and select the “CFG_DEVS.DTB” file stored in the newly selected directory. The device table is updated with the new configuration and all devices are initialized.

See Also: New Device Configuration
Copy Device Records

CHANGE DRIVE/DIRECTORY

Location: File Manager

Description: Change the file table's active path.

Activation: *Direct:* F7, ChDir button , Back button , Up button , Right Click, Folder Tree
Menu: Alt-F, H, Alt-F, T

Comments: There is a number of ways to change the file table's active folder. Use the folder tree to navigate the connected drives. To enter a folder use the “Change Drive/Directory” dialog located in the File menu. To select from a list of the last 12 active folders click the opposite mouse button in the file table. To navigate back through the last 12 active folders use the Back menu button. To change to the previous folder use the “Up” menu button. An error message is displayed if the destination path is not found.

See Also: Navigating Files in the File Manager Quick Start

CHANGE DXF FILES

Location: Device Manager

Description: Display the “Change DXF Files” dialog to change the DXF files displayed in the Animated CAD-DXF window tabs.

Activation: *Menu:* Alt-O, C

Fields:

<i>DXF Files List:</i>	Lists the currently selected DXF files to display in the Animated CAD-DXF window.
<i>Background Color:</i>	Select the background color for the highlighted DXF file in the DXF Files List.
<i>Max X Pixels:</i>	Set the Max X Pixels for the highlighted DXF file in the DXF Files List.
<i>Max Y Pixels:</i>	Set the Max Y Pixels for the highlighted DXF file in the DXF Files List.

Options:

<i>Add:</i>	Add one or multiple DXF file(s) to the DXF Files List.
<i>Delete:</i>	Delete the highlighted DXF file(s) from the DXF Files List.
<i>Clear:</i>	Clear all the listed DXF files from the DXF Files List.
<i>OK/Enter:</i>	Exit and save the dialog then open the animated CAD-DXF window.
<i>Esc/Cancel:</i>	Exit the dialog without saving the dialog data.

Comments: To add a new file, click the “Add” button. A file select dialog is displayed. To select multiple files use the Ctrl+click or Shift+Up/Down arrows. All selected files will be added to the DXF files list. To delete file(s) mark the file(s) in the DXF files list and click the “Delete” button. To clear the list, click the “Clear” button.


The DXF drawing fields for each listed file can be defined in the dialog prior to opening the DXF drawing window. To set up the DXF drawing fields for each listed file select the file and tab to the drawing fields defined below the list. This dialog will be displayed if there are no DXF files selected before the animated CAD-DXF option is activated.

See Also: Change DXF Files in the Device Manager Quick Start.

CHANGE FREQUENCY

Location: Analysis

Description: Change the current sampling frequency.

Activation: *Direct:* Change Frequency menu button 
Menu: Alt-D, F

Fields: *Current Sampling Frequency:* The current sampling frequency.
Enter the New Sampling Frequency: The new sampling frequency.
Open Frequency: Sets the driver to open with the new frequency.

Options: *Enter/Ok:* Changes frequency.
Esc/Cancel: Exits the dialog without executing the command.

Comments: The “Open Frequency” field will set the current display driver to always convert the files to the new frequency before displaying.

CHANGE PASSWORDS

Location: Device Manager

Description: Activate the Change Passwords feature to verify modem connections and to automatically change the password on devices directly or remotely connected to the Wavewin system.

Activation: *Menu:* Alt-O, P

Comments: This feature secures all the existing modem and network connections to digital relays, communication processors, port switches and/or any other type of remotely accessible device used in the company. Upon activation change passwords performs the following steps for each connected device:

- As applicable dial, switch to, or Ethernet connect and logon.
- Generate a new random password, 6 characters in length.
- Change the old password to the new one using the appropriate communication driver.
- Confirm the password was successfully changed.
- Upon confirmation, update the password file (SETPSW.CSV), the database file (CFG_SHOT.DTB) and the device table.

- Logout from the active device and as applicable hang-up, switch out or terminate the Ethernet connection.
- Retry failures if any errors were encountered (up to 3 retries per failure).

A small summary file is created in the system directory containing the performance results. It is saved to the company network if any failed connections or logon attempts were detected.

The random password generator is seeded once upon initial execution to ensure even distribution across a 6 character spectrum. The new passwords are stored in SETPSW.CSV. Before activation the existing SETPSW.CSV file is renamed using the IEEE long file naming format including the current date and time and the company name fields only, example: 040909,123456789,,,,South Electric,,,,CSV”.

See Also: Change Passwords in the Device Manager Quick Start.

CHANGE QUERY OPERATORS

Location: Query Fields

Description: Change the operator for the active query field.

Activation: *Direct:* F9
Menu: Alt-Q, O

Comments: To change the operator press F9 or click the mouse button on the operator symbol.

See Also: Equal To (=),
Greater Than (>),
Less Than (<)

CHANNEL BACKGROUND COLOR

Location: Analysis


Description: Change the background colors for the analysis window. The background colors fields are listed in the “Window Properties” dialog under the “Colors” tab.

Activation: *Menu:* Alt-F, T, Color’s Tab

CHANNEL INFORMATION (ON/OFF)

Location: Analysis

Description: Show or hide the channel information table displayed in the frame to the right of the analog and digital traces.

Activation: *Direct:* Analog table close button 
Menu: Alt-V, C

Comments: The channel information frame can be resized by selecting the vertical separator bar and dragging it to the right or left. The cursor changes to the vertical resize cursor when the mouse is positioned over the separator bar.

CLEAR ANALOG COLORS

Location: Analysis

Description: Set the analog channel colors to the default color, black.

Activation: *Menu:* Alt-C, C

Comments: To change the color of an analog channel click the right mouse button on the channel ID or channel title.

CLEAR QUERY AREA

Location: Query Fields

Description: Set all the query fields to blanks and default the query operators to equal (=).

Activation: *Direct:* F8
Menu: Alt-Q, C

COMBINE LOGS

Location: File Manager

Description: Combine a number of log files (ABB Load Profile, Comtrade Logs and SDC Logs), of different types (different columns), into one comma delimited file with the extension .CSV.

Activation: *Menu:* Alt-O, R, L

Comments: The files can be of different types (columns do not have to be equal). The substation and device names for the data will be added as the first two columns in the file. The result file can be displayed in a table.

See Also: Append Logs

COMBINED VIEW

Location: Analysis

Description: Display all the selected information contained in the analog table in a condensed form.

Activation: *Direct:* F4
Menu: Alt-V, A

Comments: Use the F4 key to toggle between the tabular view and the combination view. The combination view is only available if there is enough space between the analog channels to display three lines of text. To change the position of the data values select the "Window Properties" option from the "File" menu, then click on the "Analog Combination" tab.

See Also: Viewing Analog Information in the Analysis Quick Start.

COMMA DELIMITED TABLE DRIVER

Location: File Manager

Description: Display the selected comma delimited file in a table format. Comma delimited files have textual fields separated by commas, such as 0001,7834,872.

Activation: *Menu:* Alt-D, 3, C

Comments: The file data is presented in tabular form. An unlimited number of rows and columns can be displayed.

See Also: Viewing ASCII Files in Database Format in the File Manager Quick Start.
Double Quotes/Comma Delimited Table Driver
Tab Delimited Table Driver

COMNAME PROPERTIES

Location: File Manager

Description: Setup the fields not available in the supported waveform files for the IEEE long file naming format.

Activation: *Menu:* Alt-F, O

Fields:

<i>Company Name:</i>	Enter the Company name that will be used in the long naming format.
<i>Time Code:</i>	Enter the time code for the device files to rename.
<i>User Field 1:</i>	Enter the 1 st User Field.
<i>User Field 2:</i>	Enter the 2 nd User Field.

Options:

<i>Enter/Ok:</i>	Save the entered data.
<i>Esc/Cancel:</i>	Exit the dialog without saving.

Comments: These fields are used for all the files renamed to the IEEE long file naming format. Update this dialog for file with different time code, latitude and longitude coordinates.

See Also: ComName(s) Rename in the File Manager Quick Start
ComName Properties in the File Manager Quick Start
ComName(s) Rename

COMNAME(S) RENAME

Location: File Manager

Description: Rename all the marked time sequenced data file to the IEEE long file naming format.

Activation: *Menu:* Alt-F, A

Comments: A message box will be prompted before renaming the file to insure the execution of the rename feature. This feature will permanently rename the files. It is advisable to back up the files before renaming. Some proprietary applications may not be able to read the files once they are renamed.

See Also: ComName(s) Rename in the File Manager Quick Start.
ComName Properties

COMPANY COLUMN

Location: File Manager

Description: Displays the company name associated with the long file name. The sixth field in the file name defines the company field for the IEEE long file-naming format.

See Also: Long File Naming Format in the File Manager Quick Start.

COMPANY NAME (SAVE & ARCHIVE)

Location: Device Manager - Save & Archive Dialog

Description: The name of the company where the connected devices are installed. The company name is used in the IEEE long file naming format. The sixth field in the file name defines the company name.

Comments: The following characters are not permitted in a file name: : ? " / \ < > * | @ # and cannot be part of the company name.

See Also: Long File Naming Format in the Device Manager Quick Start.

COMPRESS COMTRADE FILES

Location: File Manager

Description: Convert all the marked COMTRADE ASCII files to COMTRADE Binary files.

Activation: *Menu:* Alt-O, C

Comments: This feature compresses the COMTRADE ASCII file size. It is useful for porting files to floppy or transferring files through a medium.

See Also: Compressing COMTRADE Files in the File Manager Quick Start.

COMTRADE DRIVER

Location: File Manager

Description: Change the driver at the cursor position to the COMTRADE driver and plot the input channels.


Activation: *Menu:* Alt-D, 5

Comments: All files that have a ".DAT" or "D##" file extension, and a corresponding ".CFG" file are tagged as COMTRADE files. If the selected file does not have a corresponding ".CFG" file an error message is generated. Both the COMTRADE ASCII and Binary formats are supported.

CONDENSE TIME

Location: Analysis

Description: Condense the time scale for all visible channels.




Activation: *Direct:* Ctrl-Page Down or the Condense menu button 
Menu: Alt-D, C

See Also: Expand Time

COPY/CUT/PASTE FILES

Location: File Manager

Description: Copy or Cut the marked files to the clipboard. Navigate to the destination folder and Paste the files.

Activation: *Direct:* Ctrl-X (Cut)  Cut , Ctrl-C (Copy)  Copy , Ctrl-V (Paste)  Paste
Menu: Alt-E, T (Cut), Alt-E, C (Copy), Alt-E, P (Paste)

Comments: Marked files are displayed in red. The TotMarks and MrkSize fields displayed in the status bar are updated accordingly. To copy/cut/paste files use the Edit menu options, the shortcut keys or right click in the file table and select the desired option.

See Also: Copy File
 Move Files
 Mark/Unmark File

COPY DEVICE RECORDS

Location: Device Manager

Description: Copy the marked device records to the system clipboard files.

Activation: *Menu:* Alt-D, Y


Comments: Device records can be copied from one configuration to another. To copy device records mark the desired records in the device table (marked devices are displayed in red) then select the “Copy” menu option under “Device” menu. The marked records will be copied to the “DEV_CLIPBOARD.CLP” and the devices function keys will be copied to the “LOG_CLIPBOARD.CLP”. These files are cleared before each copy operation.

See Also: Change Device Configuration
 New Device Configuration
 Paste Device Records

COPY FILES


Location: File Manager

Description: Copy the marked files to the specified destination path. If the path does not exist, type the directory name in the edit box. The system prompts prior to creating the directory.

Activation: *Direct:* F8 or the Copy menu button 
Menu: Alt-F, C

- Fields:**
- Directory Name:* The destination path where the marked files are to be copied. To specify a new path type the path directly into this edit box.
 - Directories:* Displays a tree of the system's directories, double click to open a node in the tree and click on the desired directory to highlight it.
 - Files:* Displays a list of the files in the highlighted directory.
 - Drives:* A list of all the connected drives. Select the desired drive.
- Options:**
- Enter/Ok:* Copy the marked files to the destination path.
 - Esc/Cancel:* Exit the dialog without executing the command.
- Comments:** Marked files are displayed in red. The TotMarks and MrkSize fields displayed in the status bar are updated accordingly. Files that were unsuccessfully copied are marked and grouped at the top of the table.
- See Also:** Move Files
Mark/Unmark File


COPY TEXT

- Location:** ASCII Event File
- Description:** Copy the blocked text to the clipboard.
- Activation:** *Direct:* Ctrl-C, Ctrl-Ins - Copy menu button 
Menu: Alt-E, C
- Comments:** To block text use the shift key plus the up arrow, down arrow, page up and page down keys or the drag the mouse.
- See Also:** Cut Text
Paste Text

CREATE DIRECTORY

- Location:** File Manager
- Description:** Create a new directory.
- Activation:** *Menu:* Alt-F, E
- Fields:**
- Directory:* The new directory's name.
- Options:**
- Enter/Ok:* Create the new directory.
 - Esc/Cancel:* Exit the dialog without executing the command.
- Comments:** If there is no path defined the new directory is placed in the active directory.

CUT TEXT

- Location:** ASCII Event File
- Description:** Copy the blocked text to the Windows clipboard then delete the blocked text.
- Activation:** *Direct:* Ctrl-X, Shift-Del - Cut menu button 

Menu: Alt-E, T

Comments: Use the shift keys and the up arrow, down arrow, page up and page down keys to block text.

See Also: Copy Text
Paste Text

CYCLE HOP

Location: Analysis

Description: Move the data bar (vertical black solid line) one cycle forward or backward in time.

Activation: *Direct:* Shift-Ctrl-Left arrow and Shift-Ctrl-Right arrow

Comments: Use the shift+ctrl left/right keys to move one cycle in time. The number of cycles is displayed in the status bar with the Reference bar (vertical blue dotted line) as the reference position.

See Also: Data Bar

D&T

Location: Analysis (Status Field)

Description: Displays the data and time of the sample at the data bar.

See Also: Delta X Field

DATA BAR

Location: Analysis

Description: Displays the channel's instantaneous sample value. The data bar is the solid black line that runs vertically across the analog and digital channels.

Comments: The data bar is used to view channel information (such as analog sample values, RMS values, digital information, data and time...). The information is displayed in the channel frame positioned to the right of the traces and in the status bar. The Ctrl-Left/Right keys moves the data peak to peak and the Shift-Ctrl-Left/Right keys moves the data one cycle in time.

See Also: RMS bar
Reference bar
Horizontal Bars
Cycle Hop
Peak Hop
Fault Bar

DECREASE AMPLITUDE

Location: Analysis

Description: Decrease the amplitude of all or marked analog channels.

Activation: *Direct:* Ctrl-Down Arrow or the AmpDn menu button 
Menu: Alt-D, D

Comments: When the channels' amplitude is decreased the Trace Scale Multiplier is divided into the Pixsdisp value. To change the Trace Scale Multiplier, select "Window Properties" from the "File" menu then select the "Display Settings" tab.

See Also: Increase Amplitude
Trace Scale Multiplier

DELETE DEVICES

Location: Device Manager

Description: Tag all the marked device records as deleted records.

Activation: *Direct:* Delete
Menu: Alt-D, D

Comments: Marked records are displayed in red. The TotMarks field displayed in the status bar is updated accordingly. Records that were unsuccessfully deleted are marked and grouped at the top of the table.

Restrictions: The marked records are tagged as deleted records and will not show up in the table again. They are not physically removed from the device database (CFG_DEVS.DTB) file but are marked as deleted.

See Also: Mark/Unmark Records

DELETE FILES

Location: File Manager

Description: Remove all the marked files and empty directories from the active directory.

Activation: *Direct:* Delete
Menu: Alt-F, D

Comments: Marked files and directories are displayed in red. The TotMarks and MrkSize fields displayed in the status bar are updated accordingly. Files and directories that were unsuccessfully deleted are marked and grouped at the top of the table.

Restrictions: A marked directory must be empty in order to remove it from the file table.

See Also: Mark/Unmark File

DELETE TEXT

Location: ASCII Event File

Description: Delete the blocked text from the file.

Activation: *Direct:* Del
Menu: Alt-E, D

Comments: Use the shift keys and the up arrow, down arrow, page up and page down keys to block text.

See Also: Cut Text

DELTA X

Location: Analysis (Status Field)

Description: Displays the time in microseconds, milliseconds, or seconds between the RMS bar and the data bar. The number of cycles is also displayed if the samples in the file are microseconds or milliseconds apart.

See Also: D&T Field
RMS bar

DELTA Y

Location: Analysis (Status Field)

Description: Displays the difference between the data horizontal bar and the reference horizontal bar.

See Also: Delta X Field

DESCENDING SORT

Location: All Tables

Description: Sort the device columns in descending order with respect to the selected sort field.

Activation: *Menu:* Alt-S, D

Comments: To change the sort field, place the cursor in the desired column and select “Set Sort Field” in the Sort menu. The sort field is displayed in the status bar at the bottom of the window. To sort the table columns directly press the column header button. The header buttons toggle between ascending and descending order.

See Also: Ascending Sort
Sorting Devices in the Quick Starts

DEVICE COLUMN

Location: File Manager

Description: Displays the device name associated with the long file name. The fifth field in the file name defines the device field for the IEEE long file-naming format. It represents the name or code of the device that originated the file.

See Also: Long File Naming Format in the File Manager Quick Start.

DEVICE FIELD

Location: IEEE Long File Name

Description: The 5th field in the IEEE long file naming format. The title and device number columns are used for the device field in the long naming format. The device number is concatenated to the title by the #, example SEL 351#83.

See Also: Long File Naming Format in the Device Manager Quick Start.

DFR I II IIB & 2000 DRIVER

Location: File Manager (Universal Viewer)

Description: Change the driver at the cursor position to the Hathaway DFR I II IIB and 2000 driver.

Activation: *Menu:* Alt-D, 6

Comments: An error message is displayed if the system cannot find the files DAU header file or there was a problem reading the file.

See Also: Display Oscillography in the File Manager Quick Start
Associating File Types in the File Manager Quick Start

DIGITAL MARK/UNMARK ALL

Location: Analysis

Description: Marked all digital channels if there are no digital channels marked else unmark all the marked digital channels.

Activation: *Menu:* Alt-C, I

Comments: The channels ID and titles are displayed in light red when marked. Press F8 to mark or unmark all the analog and digital channels.

DISPLAY DIALOG

Location: All Tables

Description: Reposition the columns in the table.

Activation: *Menu:* Alt-O, I

Fields: *File Column List:* A list of all the columns in the table.
Table Font Size: A list of the font sizes for the table.

Options: *Move Up:* Move the highlighted column before the previous column.
Move Down: Move the highlighted column after the next column.
Reset: Default the order of the columns to how they were when the software was first installed.
OK: Change the order of the columns and redraw the device table.
Cancel: Exit the dialog without executing the command.

Comments: To resize the table columns place the mouse over the column separator and drag the mouse to the left or the right or double click on the column separator to expand to the maximum area for that column.

See Also: Customizing the Table in the Quick Starts
Resize Columns

DISTURBANCE REPORT

Location: File Manager (Universal Viewer)

Description: Create a disturbance report from the defined fault files.

Activation: *Menu:* Alt-O, R, D

Fields:

<i>Destination File:</i>	The folder and filename where the report is saved.
<i>Source Folder(s):</i>	The source folder(s) where the event files are located.
<i>Filter: Faulted Phases:</i>	Enter the valid faulted phases (separated by commas).
<i>Filter: Fault Location:</i>	Enter the maximum % of the line length to detect.
<i>Filter: Voltage Class:</i>	Enter the voltage kv value that is above the phase to ground level.
<i>Filter: Fault Current:</i>	Enter the minimum magnitude value.
<i>Filter: System Frequency:</i>	Enter the deviation from the line frequency to detect.

Options:

<i>Process:</i>	Process the report and display the results.
<i>Save Script:</i>	Save the entered values to the Disturbance.ini script file.
<i>Edit Script:</i>	Edit the Disturbance.ini script file.
<i>Show Help:</i>	Show the help file below the buttons.
<i>Close:</i>	Close the disturbance dialog without saving.

Comments: The result disturbance report is saved to the defined destination file and displayed in a comma delimited table. The table allows for sorting, querying, deleting of rows and saving.

See Also: Disturbance Report in the File Manager Quick Start.

DLP1/DLP3 DRIVER

Location: File Manager (Universal Viewer)

Description: Plot the contents of the oscillography file using the DLP1/DLP3 driver. If the driver encounters an error while reading the file an “Invalid Driver Message” is displayed indicating the line number in which the error was encountered. Use the ASCII or Hexadecimal editors to locate and correct the error. The ASCII and hexadecimal editors display the cursor’s line and character number in the lower left corner of the window.

Activation: *Menu:* Alt-D, C

Comments: An error message is displayed if the file is not a valid DLP file. All files that have an “.OSC” extension are tagged as DLP files.

DOUBLE QUOTES/COMMA DELIMITED TABLE DRIVER

Location: File Manager

Description: Display the double quote delimited file in a table format. Double quote-delimited files have textual fields separated by double quotes and commas, such as “CHANNEL”, “DATE”, “TIME”.

Activation: *Menu:* Alt-D, 3, Q


Comments: The file data is presented in tabular form. An unlimited number of rows and columns can be displayed.

See Also: Viewing ASCII Files in Database Format in the File Manager Quick Start.
Comma Delimited Table Driver
Tab Delimited Table Driver

DRAWING PROPERTIES

Location: DXF Animated CAD

Description: Display the DXF “Drawing Properties” dialog to define the background color and Zoom X & Y resolution values.

Activation: *Direct:* F2, menu button 
Menu: Alt-T, D

Fields: *Background Color:* Set the DXF drawings background color.
Max X Pixels: Set the DXF drawings max X pixels for display.
Max Y Pixels: Set the DXF drawings max Y pixels for display.

Options: *Apply:* Apply and save the changes made without exiting the dialog.
Enter/OK: Exit, apply and save the changes made.
Esc/Cancel: Exit the dialog without executing or saving the changes made.

Comments: Use the tab or shift+tab keys to navigate between the fields and the up and down arrow keys to view the selectable options.

See Also: Drawing Properties in Chapter 1

DRIVER COLUMN

Location: File Manager

Description: Displays the display driver associated with the file.

See Also: Associating File Types in Chapter 1.

DRIVER CONFIGURATION DIALOG

Location: File Manager

Description: Display the driver configuration dialog. The driver configuration dialog allows for setting certain features pertaining to a specific driver.

Activation: *Menu:* Alt-O, N

Fields: *Driver List:* A list the supported drivers in the system.

Devices Data Type: Select the type of data that the device saves (RMS or Peak).
Device Header Dir: Enter a localized directory for all support files needed to display the files.
Default Frequency: Enter the default frequency to display the device's file when the files are first displayed.

Options: *Ok:* Save the changes made and close the dialog.
Cancel: Ignore any changes made and close the dialog.


Comments: The file data is presented in tabular form. An unlimited number of rows and columns can be displayed.

See Also: Driver Configuration in the File Manager Quick Start.

DRIVER DATA TYPE

Location: Analysis

Description: Set the active display driver's data type.


Activation: *Direct:* Window Properties menu button 
Menu: Alt-F, T, Driver Data Type Tab

Comments: The data stored in the displayed file can be instantaneous values or RMS values. The default setting for all drivers is instantaneous values. If the display device saves the sample values as RMS calibrated then select RMS Calibrated Type from the drop down list. If the data type is RMS Calibrated and the data type is not set to RMS calibrated type then the analog column data will be displayed incorrectly.

DUPLICATE CYCLES

Location: Analysis

Description: Duplicate the cycle between the Data bar and the RMS bar.

Activation: *Direct:* Duplicate Cycles menu button 
Menu: Alt-D, L

Fields: *# Cycles:* Enter the number of time to duplicate the highlighted cycle(s).

Options: *Enter/Ok:* Duplicate the highlighted cycle(s) .
Esc/Cancel: Exit the dialog without executing the command.

Comments: This feature is useful for creating test set files or for creating file to play back into simulation or modeling applications.

See Also: Duplicate cycles in the Analysis Quick Start.
 Truncate Cycles

DUPLICATE DEVICE RECORD

Location: Device Manager

Description: Duplicate the selected device record in the table.

Activation: *Menu:* Alt-D, U

Fields: ***Device Settings:***

Device Number: Set the number of the device. Each device must have a unique number. The device number is used in the IEEE long file naming format.

Address: Set the address of the device. The address can be the port number off a 2020/2030 or a modbus address.

Station ID: Set the ID number for the station each station must have a unique number.

Data Type: Select the type of data being polled (ASCII/Binary).

Print : Select if the data polled is sent to the connected printer (On/Off).

Title: Set the device title.

Driver: Select the main driver that will poll the device.

Station Name: Set the station name.

Time Code: Select the main driver that will poll the device.

EscSeq: The EscSeq field contains 7 separate fields separated by a blank. Set the appropriate information in the appropriate fields. The fields can contain passwords, phone numbers, file names, FTP settings, TCP/IP settings for a specific device refer to the “Device Configuration” document.

Port Settings:

Port Number: Select the COM port number from the list of COM ports registered on the machine or enter a new COM port number. For TCP/IP and FTP connections each device must have a unique COM port number.

Baud Rate: Select the port’s baud rate.

Parity: Select the port’s parity (None, ODD, Even, Mark).

Data Bits: Select the port’s Data Bits (7 or 8).

Stop Bits: Select the port’s stop bits (1 or 2).

Flow Control: Select the port’s flow control (None, Software or Hardware).

Terminal Settings:

CR/LF: Select if a CR/LF is added after a TX string, RX string, both or none in terminal mode.

Local Echo: Select if the transmitted text is echoed to the terminal window.

Terminal Settings:

CR/LF: Select if a CR/LF is added after a TX string, RX string, both or none in terminal mode.

TX Delay:

Inter Char Delay: Enter the number of milliseconds to wait when transmitting characters to the device.


Options: *Save/Enter:* Exit and save the dialog fields.
Esc/Cancel: Exit the dialog without saving the dialog fields.

Comments: The selected device in the table is duplicated as a new record at the end of the table. The device number must be changed. All device numbers must be unique. An error message will be displayed if any invalid fields are encountered. The Title and Substation fields are used in the IEEE long file naming format. The following characters (: ? “ / \ < > * | @ #) are not valid in file names and cannot be used in the title and substation fields.

See Also: New Device Record
Edit Device Record

DXF ANIMATED CAD

Location: Device Manager**Description:** Poll the devices defined in a graphical one line diagrams and display the parsed data.**Activation:** *Menu:* Alt-O, D**Comments:** For the DXF window to poll the connected devices the polling drivers must be written and configured and the DXF drawings must have the device control points defined. Refer to Appendix A for an example of polling drivers and Appendix B for setting control points in a DXF file.**See Also:** Animated CAD/DXF in the Device Manager Quick Start.
Appendix A
Appendix B**DXF CONTROL DIALOG**

Location: DXF Animated CAD**Description:** Display the “DXF Control” dialog to communicate directly to a device.**Activation:** *Direct:* menu button 
Menu: Alt-T, O**Fields:** *Control Menu List:* Select the DXF tab containing the device to communicate with, select the device then select the communication driver.**Options:** *Operate/Enter:* Exit the dialog and execute the selected communication driver.
Esc/Cancel: Exit the dialog without executing the communication driver.**Comments:** The “Control Menu” list box to the right contains all tab names displayed in the DXF window. Select the tab to send commands to. Once a tab is selected the list is updated with all the devices defined the tab’s drawing. Select the device to communicate with. The list again is updated with the available communication drivers defined in the “Drivers.ini” file. The “Control Level” window is updated upon entry into each level. Once the communication driver is selected the “DXF Control” dialog is closed and the command is sent to the selected device. The device’s response is parsed and updated in the selected DXF tab.**See Also:** DXF Control in the Device Manager Quick Start.**DXF DRIVER**

Location: File Manager**Description:** Displays the file(s) drawing information in graphical form.**Activation:** *Menu:* Alt-D, 4, S or M**Comments:** An error message is displayed if the file is not a valid DXF file. All files that have the “.DXF” extension are tagged as DXF files. A single file can be opened or multiple files can be opened at the same time. For multiple files first mark the files then select Marked files from the DXF submenu option.

EDIT DAU-DEF

Location: File Manager

Description: Display the DAU-DEF editor for Hathaway DAU-DEF files. The DAU-DEF editor allows for changing certain fields defined in the DAU-DEF records. A Windows file selection dialog is display to select the DAU-DEF to edit. Navigate to the desired directory and double click on the DAU-DEF file to edit.

Activation: *Menu:* Alt-O, E

Fields:

<i>DAU-DEF Records:</i>	A list the all DAU-DEF records defined in the selected file.
<i>Analog Channels:</i>	A list of all the analog channels defined for the selected record.
<i>Analog Name:</i>	Edit the analog name for the selected analog channel.
<i>Analog Full Scale:</i>	Edit the analog full scale value for the selected analog channel.
<i>Analog Prefix:</i>	Edit the analog prefix for the selected analog channel.
<i>Analog Unit:</i>	Edit the analog unit for the selected analog channel.
<i>Event Channels:</i>	A list of all the event channels defined for the selected record.
<i>Event #:</i>	Edit the event's number for the selected event channel.
<i>Event Name:</i>	Edit the event name for the selected event channel.
<i>Event NoNc:</i>	Edit the event's normally open normally close value for the selected event channel.
<i>Sensor Channels:</i>	A list of all the sensors channels defined for the selected record.
<i>Sensor #:</i>	Edit the sensor number for the selected sensor channel.
<i>Sensor Name:</i>	Edit the sensor name for the selected sensor channel.
<i>Sensor NoNc:</i>	Edit the sensor's normally open normally close value for the selected sensor channel.

Options:

<i>Save:</i>	Save the selected DAU-DEF record.
<i>Ok:</i>	Save all changes made and close the dialog.
<i>Cancel:</i>	Ignore any changes made and close the dialog.
<i>Default Sensor #8:</i>	Checking this option will always default Sensor channel #8;s NoNc value to be 1.


Comments: When this feature is activated a Windows file selection dialog is display, navigate to the desired directory and double click on the DAU-DEF file to edit.

See Also: Edit DAU-DEF in the File Manager Quick Start.

EDIT DEVICE RECORD

Location: Device Manager

Description: Edit the selected device record in the table.

Activation: *Direct:* F2 –menu button 
Menu: Alt-D, E

Fields:

<i>Device Settings:</i>	
<i>Device Number:</i>	Set the number of the device. Each device must have a unique number. The device number is used in the IEEE long file naming format.
<i>Address:</i>	Set the address of the device. The address can be the port number off a 2020/2030 or a modbus address.

<i>Station ID:</i>	Set the ID number for the station each station must have a unique number.
<i>Data Type:</i>	Select the type of data being polled (ASCII/Binary).
<i>Print :</i>	Select if the data polled is sent to the connected printer (On/Off).
<i>Title:</i>	Set the device title.
<i>Driver:</i>	Select the main driver that will poll the device.
<i>Station Name:</i>	Set the station name.
<i>Time Code:</i>	Select the main driver that will poll the device.
<i>EscSeq:</i>	The EscSeq field contains 7 separate fields separated by a blank. Set the appropriate information in the appropriate fields. The fields can contain passwords, phone numbers, file names, FTP settings, TCP/IP settings for a specific device refer to the “Device Configuration” document.
Port Settings:	
<i>Port Number:</i>	Select the COM port number from the list of COM ports registered on the machine or enter a new COM port number. For TCP/IP and FTP connections each device must have a unique COM port number.
<i>Baud Rate:</i>	Select the port’s baud rate.
<i>Parity:</i>	Select the port’s parity (None, ODD, Even, Mark).
<i>Data Bits:</i>	Select the port’s Data Bits (7 or 8).
<i>Stop Bits:</i>	Select the port’s stop bits (1 or 2).
<i>Flow Control:</i>	Select the port’s flow control (None, Software or Hardware).
Terminal Settings:	
<i>CR/LF:</i>	Select if a CR/LF is added after a TX string, RX string, both or none in terminal mode.
<i>Local Echo:</i>	Select if the transmitted text is echoed to the terminal window.
Terminal Settings:	
<i>CR/LF:</i>	Select if a CR/LF is added after a TX string, RX string, both or none in terminal mode.
TX Delay:	
<i>Inter Char Delay:</i>	Enter the number of milliseconds to wait when transmitting characters to the device.

Options: *Save/Enter:* Exit and save the dialog fields.
Esc/Cancel: Exit the dialog without saving the dialog fields.

Comments: An error message will be displayed if any invalid fields are encountered. The Title and Substation fields are used in the IEEE long file naming format. The following characters (: ? “ / \ < > * | @ #) are not valid in file names and cannot be used in the title and substation fields.

See Also: New Device Record
Duplicate Device Record


EMAIL FILES

Location: File Manager and Analysis

Description: Email a group of files or a single file using the users default email application. All support files needed to display the selected files will be automatically attached. Support files include Comtrade configuration (*.CFG), header (*.HDR) & information (*.INF) files, DFR’s analog and digital information files such as: Hathaway DAU files, Rochester preamble and header files, Faxtrax/Director CTL files, Transcan SCF and TCF files.

Activation: *Menu:* File Manager: Alt-F, L Analysis: Alt-F, E

Fields: *To:* Recipient of the email, initially empty.
From: Sender, automatically defaulted.
Subject: Empty.
Attachment: All selected files and their support files automatically attached.

Comments: Files can be email either in the file table or in the analysis window. To email a set of files, mark the desired files in the file table and select the “Email Marked Files” option from the “File” menu or right click on the file table and select the “Email”  Email option from the pop-up menu. To email a file from the analysis window select the “Email Active File” option under the “File” menu. All support files needed to display the file(s) are automatically attached.

See Also: Email Files and Email Active File in the File Manager and Analysis Quick Starts.

EMAX LONG TERM DRIVER

Location: File Manager (Universal Viewer)

Description: Change the driver at the cursor position to the Emax Long Term driver and plot the input channels.

Activation: *Menu:* Alt-D, Q

Comments: If the selected file is not a valid EMAX Long Term file an error message is generated. All files that have the “.DAT” extension along with a corresponding .SET file are tagged as EMAX Long Term files.

See Also: Display Oscillography in the File Manager Quick Start
Associating File Types in the File Manager Quick Start

EQUAL TO (=)

Location: Query Fields

Description: Search the active configuration for records that match the entered criteria.


Comments: To change the query operator press F9 or click the mouse button on the operator symbol.

See Also: Greater Than (>)
Less Than (<)

EXPAND TIME

Location: Analysis

Description: Expand the time scale of all visible analog channels.

Activation: *Direct:* Ctrl-Page Up or the Expand menu button 
Menu: Alt-D, E

See Also: Condense Time

EXPORT

Location: Device Manager**Description:** Export all or marked devices to a tab delimited ASCII file.**Comments:** This feature is useful for changing common information for all devices quickly. For example if a COM port number has changed for a number of devices then those devices can be exported. The export file can be opened in “Excel” and all of the Com port fields can be changed easily. To import the changes back into the device configuration table use the “Import” menu option under the “Device” menu.**See Also:** Import**F-TYPE COLUMN**

Location: File Manager**Description:** Displays the file type. The “/dr” indicates that the file is a sub-directory. The DAU ID number is displayed for DFR I, II, IIB and 2000 files and the extension of the file is displayed for all other files.**Comments:** If the active directory is a sub-directory then the first 2 rows of the table are reserved for the “.” and “..” navigation shortcuts. The “.” is a shortcut to the root directory and the “..” is a shortcut to the previous directory.**FAULT BAR**

Location: Analysis**Description:** The Fault bar is the red dotted line that runs vertically across the analog and digital channels.**Comments:** The fault bar is fixed and positioned at the fault time defined in the configuration file. The fault bar can be shown or hidden by selecting “Yes” or “No” for the “Show Vertical Fault Bar” field in the properties dialog under the “Display Settings” tab.**See Also:** Data bar
RMS Bar
Reference Bar**FAULT DATE COLUMN**

Location: File Manager**Description:** Displays the fault date of the oscillography files. This column is left blank if the file is not a valid oscillography file or the fault date and time is not available in the file name.**See Also:** Fault Time Column**FAULT REFERENCE TIME BAR**

Location: Analysis

Description: Displays the time difference from the fault time defined in the displayed file. The units are displayed in the Delta X status field.

Comments: The fault reference time bar is displayed between the analog channels and the digital channels. To show or hide the fault reference time bar open the “Window Properties” dialog under the “File” menu. Click the “Display Settings” tab and toggle the “Show Reference Time Bar” field.

See Also: Fault Reference Time Bar in the Analysis Quick Start

FAULT TIME COLUMN

Location: File Manager

Description: Displays the fault time of the oscillography files. This column is left blank if the file is not a valid oscillography file or the fault date and time is not available in the file name.

See Also: Fault Date Column

FAXTRAX II (12-BIT) & DIRECTOR DRIVER

Location: File Manager (Universal Viewer)

Description: Change the driver at the cursor position to the Faxtrax II (12-bit) driver or the Director format depending on the format of the file.

Activation: *Menu:* Alt-D, 8

Comments: If the selected file does not have a corresponding “.CTL” file an error message is generated. All files that have the “.RCD”, “.RCL” and “.RCU” extensions, and there is a corresponding “.CTL” file in the same directory, are tagged as Faxtrax/Director files.

FILE NAME COLUMN

Location: File Manager

Description: Displays the name of the files/directories in the active directory.

Comments: If the active directory is a sub-directory then the first 2 rows of the table are reserved for the “.” and “..” navigation shortcuts. The “.” is a shortcut to the root directory and the “..” is a shortcut to the previous directory.

See Also: F-Type Column

FLIP MARKS

Location: All Tables

Description: Mark all the unmarked records and unmark all the marked records.

Activation: *Menu:* Alt-M, F

Comments: Marked records are displayed in red. The TotMarks field displayed in the status bar is updated accordingly.

See Also: Unmark Marked Records
Mark/Unmark Records

FOLDER TREE

Location: File Manager

Description: Displays all connected drives and folders in a tree structure.

Activation: *Menu:* Alt-F, T – Toggle Show/Hide Tree

Comments: To show/hide the folder tree select the “Show/Hide Folder Tree” option under the “Files” menu. Folders can be renamed by left mouse clicking on the folder name until the editor is displayed. Also, folders that reside on the computer can be sent to the recycle bin by selecting the “Delete” option under the folder tree’s right click pop-up menu. If the folders reside on external drives then they are permanently deleted.

See Also: Navigating in the File Manager Quick Start
Change Drive/Directory

FPRO DRIVER

Location: File Manager (Universal Viewer)

Description: Change the driver at the cursor position to the NxtPhase FPRO driver and plot the input channels.

Activation: *Menu:* Alt-D, O

Comments: NxtPhase files are displayed in the IEEE Comtrade Binary format. NxtPhase has developed an automatic conversion application called "AutoComtrade.exe". Wavewin calls "AutoComtrade.exe" to convert NxtPhase files to the Comtrade binary format for display. To view NxtPhase relay files double click or press enter on the original FPRO files. To obtain a copy of the “AutoComtrade.exe” file please contact NxtPhase.

Files that have an “.FPR” extension are automatically tagged as NxtPhase FPRO files.

See Also: Tesla Files in the File Manager Quick Start
Display Oscillography in the File Manager Quick Start
Associating File Types in the File Manager Quick Start

FREE

Location: File Manager (Status Field)

Description: Displays the amount of free hard disk space on the active drive, displayed in Kbytes.

See Also: Size
MrkSize

Fs

Location: Analysis (Status Field)

Description: Displays the sampling frequency of the sample at the data bar.

FST

Location: Waveform Summary (Events/Sensors Activity Summary)

Description: Displays the status of the first digital samples in the file. Fst is the first column in the Events/Sensors Activity Summary. A=Alarm, N=Normal.

Comments: This data is also displayed in the second column of the digital information table view.

FST-CHANGE

Location: Waveform Summary (Events/Sensors Activity Summary)


Description: Displays the date and time the channel first changed state. Fst-Change is the third column in the Events/Sensors Activity Summary.

Comments: This data is also displayed in the forth column of the digital information table view.

FTP CONNECTION

Location: Device Manager

Description: Define the selected device to collect fault records using the FTP protocol.

Activation: *Direct:* Ethernet configuration button  in the Device Configuration dialog.

Fields: *Ethernet Connections:* Select the FTP client option from the list box. The fields in the connection properties changes according to the selection in the connections list box.

Connection Properties:

Port Number: Set the FTP port number. 21 is designated as the FTP port number.

IP Address: Set the device's IP address.

User Name: Set the FTP sessions user name.

Password: Set the FTP sessions password.

Remote Path: Set the device's FTP remote path to poll.

Local Path: Set the path on the local machine where the downloaded file are saved.

File Types: Set the type of file to download, leave blank to check all files.

File Names: Set how to name the downloaded files, (0 – Don't change, 1 – change to the IEEE long file naming format maintaining the original file's extension, 2 – change to the IEEE long file naming format and make the file's extension to the Tesla *.TLR).

Options: *OK/Enter:* Exit and update the Device's EscSeq field.

Cancel/Esc: Exit the dialog without saving the changes made.

Comments: If the Local Path does not exist then the directory will be created.


See Also: New Device Record

Duplicate Device Record
 Edit Device Record
 TCP/IP Client
 TCP/IP Server

FUNCTION KEYS

Location: Device Manager

Description: Setup the device's Function keys to be displayed in the terminal mode window.

Activation: *Direct:* F5, menu button 
Menu: Alt-O, F

Fields: *F1-9 : name:* The function key name displayed in the Terminal Mode window.
TX: A string of ASCII characters or hexadecimal values transmitted to the connected device.

Options: *Enter/Save:* Exit the dialog and save the function keys (CFG_SHOT.DTB).
Esc/Cancel: Exit the dialog without executing the command.

Comments: Programmable function keys allow for a string of ASCII characters or hexadecimal values to be transmitted to the output device through a single keystroke. The function keys are active in ASCII and hexadecimal terminal emulators. Each device contains up to nine function keys.

See Also: ASCII Terminal Mode
 Binary Terminal Mode

GROUP MARKED ANALOG CHANNELS

Location: Analysis

Description: Group all the marked analog channels and move them to the top of the display area.

Activation: *Menu:* Alt-C, G

See Also: Mark/Unmark Channels

GROUP MARKED ROWS

Location: All Tables

Description: Group all the marked rows and move them to the top of the table.

Activation: *Menu:* Alt-M, G


See Also: Unmarked Marked Rows
 Toggle Marked Rows
 Mark/Unmark Row

HARMONICS TABLE

Location: Analysis

Description: View the harmonics table.

Activation: *Direct:* F11, Right click on phasor diagram or information header
Menu: Alt-V, T

Comments: The harmonics table displays the number of harmonics according to the file's sampling frequency with a maximum of 200 harmonics supported. The table displays one channel at a time. It will display the 1st marked analog channel, or if no channels are marked then the first visible channel. The harmonic calculation is performed on one cycle of data, starting at the RMS bar to the data bar. The display values include DFT Peak, DFT RMS, DFT Angles, % of fundamental and % of TrueRMS. When the data bar is moved in the data plotting window the harmonics values will be automatically updated. To view the harmonics in a histogram click on the harmonics toggle  button located next to the channel name.

See Also: Harmonics in the Analysis Quick Start
Histogram
Harmonics Vectors

HARMONIC VECTORS

Location: Analysis

Description: View the harmonics vectors in the phasor diagram.

Activation: *Menu:* Alt-V, H

Comments: The harmonics of the first marked analog channel, or if no channels are marked then the first visible analog channel, is displayed in a vector format in the phasor diagram. The harmonic calculation is performed on one cycle of data. It starts at the RMS bar and goes forward one cycle. To hide/show the harmonic vectors toggle the "Vector Harmonics" menu option under the "View" menu from checked=ON to unchecked=OFF.

See Also: Harmonics in the Analysis Quick Start
Histogram
Harmonics Table

HELP

Location: All Child Windows.

Description: Displays the help file for the active child window.

Activation: *Direct:* F1
Menu: Alt-H, T

Comments: The information contained in the help window is organized in the following fashion:
Specific Features for the active window,
Function Keys,
Menu Options,
Button Menu Bar,
Cursor Keys,

Mouse Actions and Status Bar

HEXADECIMAL EDITOR

Location: File Manager

Description: Edit the file at the cursor position in a binary editor.

Activation: *Direct:* F3
Menu: Alt-O, X

Comments: The file contents are displayed in a Hex editor. Use the up arrow, down arrow, page up, page down, Ctrl-home and Ctrl-end keys to navigate through the file's data, or use the scroll bar. When a hex value is over written the ASCII equivalent is displayed in the window to the right of the editor. A maximum of 10 viewing windows can be simultaneously. The F4 and F3 function keys allow for searching ASCII data or Hex values. To search for hex values insert the “#” character before the hex value in the “Find Text” field.

HEXADECIMAL DRIVER

Location: File Manager

Description: Change the driver at the cursor position to the Hexadecimal driver and display the file in binary format.

Activation: *Menu:* Alt-D, 2

See Also: Hexadecimal Editor

HIDE MARK(S)

Location: Analysis

Description: Hide all the marked analog channels and re-space the unmarked channels.

Activation: *Direct:* Delete
Menu: Alt-C, H

Comments: To mark/unmark an analog channel, click the channel ID or the channel data.



See Also: View Mark(s)
Show All Hidden
Restore Mark(s)

HISTOGRAM

Location: Analysis

Description: View the harmonics histogram.

Activation: *Direct:* F11, Right click on phasor diagram or information header
Menu: Alt-V, T

Comments: The histogram displays the number of harmonics according to the file's sampling frequency with a maximum of 200 harmonics supported. The histogram displays one channel at a time. It will display the 1st marked analog channel, or if no channels are marked then the first visible channel. The harmonic calculation is performed on one cycle of data, starting at the RMS bar to the data bar. The display values can be DFT Peak, DFT RMS, DFT Angles, % of fundamental and % of TrueRMS. The default view is % of fundamental. To change the data displayed click on the drop down menu button  and select from the list. When the data bar is moved in the data plotting window the harmonics values will be automatically updated. To view the harmonics in a table click on the harmonics toggle  button located next to the channel name.

See Also: Harmonics in the Analysis Quick Start
Harmonics Table
Harmonics Vectors

HORIZONTAL BARS

Location: Analysis

Description: Displays a solid black line that follows the data bar and displays a dotted blue line that follows the reference bar.

Activation: *Menu:* Alt-V, B

Comments: The bars will be positioned at the first marked analog channel (displayed in red). If no channels are marked then they are positioned at the first displayed channel. The Delta Y field in the status bar shows the difference between the two bars.

See Also: RMS bar
Data Bar
Reference Bar

HP-DIF

Location: Waveform Summary

Description: Displays the absolute value of the HPeak-Up minus the absolute value of the HPeak-Dn divided by the OneBit value.

Comments: The Hpeak-Up value is the highest positive peak in the channel. The Hpeak-Dn is the highest negative peak in the channel. The OneBit value is the channel's full-scale value divided by the channel's resolution.

See Also: Viewing Waveform Summaries in the File Manager Quick Start

HPEAK-DN

Location: Waveform Summary

Description: The highest negative peak value in the channel.

See Also: Viewing Waveform Summaries in the Analysis Quick Start

HPEAK-UP


Location: Waveform Summary**Description:** The highest positive peak value in the channel.**See Also:** Viewing Waveform Summaries in the File Manager Quick Start**IEEE LONG FILE NAMING FORMAT**

Location: IEEE Long File Name**Description:** All data polled from the connected devices are saved to files using the IEEE long file naming format. The start date and time comes from the data polled and the time code, substation name, device name, and company name comes from the fields in the device record.**See Also:** Long File Naming Format in the Device Manager Quick Start.**IMPORT**

Location: Device Manager**Description:** Import all changes made to the exported tab delimited ASCII file.**Comments:** The import feature is used to import all device information from the exported tab delimited ASCII file. It is advisable to always keep a backup of the existing Device Configuration files before using the import feature. This allows for a quick recovery if any of the changes made to the export file were incorrect. The 3 files to backup are the CFG_DEVS.DTB, CFG_SHOT.DTB & DRIVERS.INI files located in the Wavewin directory.

To import a previously exported file select the “Import” menu option under the “Device” menu. Enter the exported files path and filename or use the “Browse” button to select the file. All device information contained in the imported file will be updated in the active device configuration table.

See Also: Export**INCREASE AMPLITUDE**

Location: Analysis**Description:** Increase the amplitude of all or marked analog channels.**Activation:** *Direct:* Ctrl-Up arrow or the AmpUp menu button 
Menu: Alt-D, I**Comments:** When the channels’ amplitude is increased the Trace Scale multiplier is multiplied into the Pixsdisp value. To change the Trace Scale Multiplier select “Window Properties” from the “File” menu then select the “Display Settings” tab.**See Also:** Decrease Amplitude
Auto Scale Multiplier

INSTPEAK COLUMN

Location: Analysis (Analog Table)

Description: Displays the peak value measured between the two reference crossings surrounding the data bar (black solid line). The value is displayed as Peak type. If the data type for the loaded driver is set to RMS calibrated then the value is multiplied by the square root of 2.

Comments: The value is displayed as Peak type. If the data type for the loaded driver is set to RMS calibrated then the value is multiplied by the square root of 2.

See Also: Viewing Analog Data in the Analysis Quick Start

INSTVAL COLUMN

Location: Analysis (Analog Table)

Description: Displays the instantaneous sample value at the data bar.

Comments: This value is multiplied by the square root of 2 if the driver's data type is set to RMS calibrated.

See Also: Viewing Analog Data in the Analysis Quick Start
Data Bar

INTELLIRUPTER DRIVER

Location: File Manager (Universal Viewer)

Description: Change the driver at the cursor position to the S&C IntelliRupter driver.

Activation: *Menu:* Alt-D, S

Comments: An error message is displayed if the selected file is not a valid IntelliRupter file. Files that have a ".WFC" extension are automatically tagged as IntelliRupter files.

See Also: Display Oscillography in the File Manager Quick Start
Associating File Types in the File Manager Quick Start

LATITUDE FIELD

Location: IEEE Long File Name

Description: An optional field in the IEEE long file naming format. The latitude defines the geographical position of the substation associated with the file name. The letter N indicates latitude in the Northern Hemisphere.

See Also: Long File Naming Format in Chapter 1.

LESS THAN (<)

Location: Query Fields

Description: Search the active configuration for records that are less than the entered criteria.

Comments: To change the operator press F9 or click the mouse button on the operator symbol.

See Also: Equal To (=)
Greater Than (>)

LP-DIF

Location: Waveform Summary

Description: Displays the absolute value of the LPeak-Up minus the absolute value of the LPeak-Dn divided by the OneBit value.

Comments: The Lpeak-Up value is the lowest positive peak in the channel. The Lpeak-Dn is the lowest negative peak in the channel. The OneBit value is the channel's full-scale value divide by the channel's resolution.

See Also: Viewing Waveform Summaries in the File Manager Quick Start

LPEAK-DN

Location: Waveform Summary

Description: The lowest negative peak value in the channel.

See Also: Viewing Waveform Summaries in the File Manager Quick Start

LPEAK-UP

Location: Waveform Summary

Description: The lowest positive peak value in the channel.

See Also: Viewing Waveform Summaries in the File Manager Quick Start

LPRO DRIVER

Location: File Manager (Universal Viewer)

Description: Change the driver at the cursor position to the NxtPhase LPRO driver and plot the input channels.

Activation: *Menu:* Alt-D, O

Comments: NxtPhase files are displayed in the IEEE Comtrade Binary format. NxtPhase has developed an automatic conversion application called "AutoComtrade.exe". Wavewin calls "AutoComtrade.exe" to convert NxtPhase files to the Comtrade binary format for display. To view NxtPhase relay files double click or press enter on the original LPRO files. To obtain a copy of the "AutoComtrade.exe" file please contact NxtPhase.

Files that have an ".LPR" extension are automatically tagged as NxtPhase LPRO files.

See Also: Tesla Files in the File Manager Quick Start
Display Oscillography in the File Manager Quick Start

Associating File Types in the File Manager Quick Start

LST

Location: Waveform Summary (Events/Sensors Activity Summary)

Description: Displays the status of the last digital samples in the file. Lst is the second column in the Events/Sensors Activity Summary. A=Alarm, N=Normal.

Comments: This data is also displayed in the third column of the digital information table view.

LST-CHANGE

Location: Waveform Summary (Events/Sensors Activity Summary)


Description: Displays the date and time the digital channel last changed state. Lst-Change is the fourth column in the Events/Sensors Activity Summary.

Comments: This data is also displayed in the fifth column of the digital information table view.

MARK ALL ROWS

Location: All Tables

Description: Mark all the rows in the table.

Activation: *Direct:* Mark menu button (if no files are marked). 
Menu: Alt-M, A

Comments: Marked rows are displayed in red. The TotMarks field displayed in the status bar is updated accordingly. The Mark menu button toggles between marking and unmarking all rows in the table.

See Also: Unmarked Marked Rows
Flip Marks
Group Marked Rows

MARK/UNMARK ALL CHANNELS

Location: Analysis

Description: Unmark all analog & digital channels if the total number of marked channels is less than the total number of displayed channels otherwise mark all the channels.

Activation: *Direct:* F8
Menu: Alt-C, M

Comments: When an analog channel is marked the ID, title, ASV, and units are displayed in light red. When a digital channel is marked the ID and titles are displayed in light red. To mark or unmark a channel click the channel's corresponding ID number or title, or use the space bar.

MARK/UNMARK ROW

Location: All Tables

Description: Toggle the row at the cursor position between the marked and unmarked state.

Activation: *Direct:* Spacebar, Ctrl-Left Mouse Click

Menu: Alt-M, M

Comments: Marked rows are displayed in red. The TotMarks field displayed in the status bar is updated accordingly. The Mark menu button toggles all the rows in the table between the marked and unmarked state.

MARK CHANGE IN SIGN

Location: Analysis

Description: Mark all positions in the analog channels where the waveform changes in sign.

Activation: *Menu:* Alt-A, H

Comments: A small gray triangle marks the change in sign position.

See Also: Mark Raw Values
Mark Peak Values

MARK PEAK VALUES

Location: Analysis

Description: Mark all positive and negative peaks on the analog channels.

Activation: *Menu:* Alt-A, H

Comments: A small gray square marks the positive and negative peaks.

See Also: Mark Change in Sign
Mark Raw Values

MARK RAW VALUES

Location: Analysis

Description: Mark all the raw samples read from the active waveform file.

Activation: *Menu:* Alt-A, M


Comments: A small hollow blue circle is placed at the raw samples read from the file.

See Also: Mark Change in Sign
Mark Peak Values

MAX X PIXELS

Location: DXF Animated CAD (Drawing Properties Dialog)

Description: Displays the total number of X pixels allocation for the active DXF drawing.

Activation: *Direct:* F2 – drawing properties menu button 
Menu: Alt-T, D


Comments: This value changes automatically when the Zoom In/Out features are used and is updated accordingly in the DXF status bar.

See Also: Zoom In
Zoom Out
Zoom X, Y Resolution Properties

MAX Y PIXELS

Location: DXF Animated CAD (Drawing Properties Dialog)

Description: Displays the total number of Y pixels allocation for the active DXF drawing.

Activation: *Direct:* F2 – drawing properties menu button 
Menu: Alt-T, D

Comments: This value changes automatically when the Zoom In/Out features are used and is updated accordingly in the status bar.

See Also: Zoom In
Zoom Out
Zoom X, Y Resolution Properties

MAXPEAK COLUMN

Location: Analysis (Analog Table)

Description: Displays the maximum peak value of the channel.

Comments: If the active driver's data type is set to RMS calibrated then the files maxpeak value is multiplied by Root 2.

See Also: Viewing Analog Data in the Analysis Quick Start

MAXVAL COLUMN

Location: Analysis (Analog Table)

Description: Displays the maximum value of the channel.

Comments: This column is displayed if the active driver's data type is set to Non-Sinusoidal-Log Files.

See Also: Viewing Analog Data in the Analysis Quick Start

MAXWIN COLUMN

Location: Analysis (Analog Table)

Description: Displays the absolute maximum value between the RMS bar (black dotted line) and the data bar (black solid line).

Comments: This column is displayed if the active driver's data type is set to Non-Sinusoidal-Log Files.

See Also: Viewing Analog Data in the Analysis Quick Start
Data Bar
RMS Bar

MDAR REL 301/302 DRIVER

Location: File Manager (Universal Viewer)

Description: Change the driver at the cursor position to the MDAR REL 301/302 driver and plot the input channels.


Activation: *Menu:* Alt-D, D

Comments: If the selected file is not a valid REL file an error message is generated. All files that have the ".REL" extension are tagged as MDAR REL files. The MDAR REL driver uses circular interpolation techniques to convert the input sampling frequency to a higher frequency suitable for display. The input sampling frequency is 8 samples per cycle (45 degrees apart).

MEDIUM DISPLAY

Location: Analysis

Description: Display the analog channel using the maximum pixels allowed with no zero reference point. The medium display is activated through the Auto Scale feature.

Activation: *Direct:* F6, - Auto Scale button 
Menu: Alt-D, A, P

Comments: The Auto Scale toggles between (Off, On and ++). ++ plots the signal using the number of maximum pixels allowed for the channel. The highest value is plotted at the maximum position allowed and the smallest value is plotted at the lowest position allowed. This feature was added to clearly show the profile of frequency, Vdc and load data channels.

See Also: Scaling Analog Channels in the Analysis Quick Start
AS Status Field
Auto Scaling

MERGE OPEN FILES

Location: Analysis

Description: Merge the visible or marked channels from all the open analysis windows into a new data window. There are three Merge options available. Merge files "By Time" will merge only the common times in the open files. Merge files "Manually" will merge the data according to

the positions of the data bars in each open window. Merge files “By Sample” will merge the files by lining up the samples in each open window.

Activation: *Menu:* Alt-F, G, B-“By Time”, M-“Manually”, S-“By Sample”

Comments: To distinguish between the merged channels the station name is placed before each channel merged. To deactivate this feature open the “Window Properties” dialog, select the “Append/Merge” tab and click the “Merge Files” option. If the files have different sampling frequencies a dialog will be display to select the frequency for the new window.

See Also: Merge Open Files in the Analysis Quick Start
Merge Waveform Files

MERGE WAVEFORM FILES

Location: File Manager

Description: Merge all the channels from the marked waveform file into a analysis window. There are two Merge options available. Merge files “By Time” will merge only the common times in the open files. Merge files “By Sample” will merge the files by lining up the samples in each open window.

Activation: *Menu:* Alt-O, W, M, B-“By Time”, S-“By Sample”

Comments: To distinguish between the merged channels the station name is placed before each channel merged. To deactivate this feature open the analysis “Window Properties” dialog, select the “Append/Merge” tab and click the “Merge Files” option. If the files have different sampling frequencies a dialog will be display to select the frequency for the new window.

See Also: Merge Waveform Files in the File Manager Quick Start
Merge Open Files

MINPEAK COLUMN

Location: Analysis (Analog Table)

Description: MinPeak is the column that displays the minimum peak value of the channel.

Comments: If the active driver’s data type is set to RMS calibrated then the files minpeak value is multiplied by Root 2.

See Also: Viewing Analog Data in the Analysis Quick Start

MINVAL COLUMN


Location: Analysis (Analog Table)


Description: Displays the minimum value of the channel.


Comments: This column is displayed if the active driver’s data type is set to Non-Sinusoidal-Log Files.

See Also: Viewing Analog Data in the Analysis Quick Start

MOVE FILES

Location: File Manager**Description:** Copy the marked files to the specified destination path then delete the files from the source directory. If a file is not copied successfully it is marked and grouped at the top of source directory. To create a new destination directory enter the name into the Directories edit box. The system prompts prior to creating the new directory.**Activation:** *Direct:* F9, - Move menu button 
Menu: Alt-F, M**Fields:**
Directory Name: The destination path where the marked files are to be moved. To specify a new path, type the path directly into this edit box.
Directories: Displays a tree of the system's directories, double click to open a node in the tree and click on the desired directory to highlight it.
Files: Displays a list of the files in the highlighted directory.
Drives: A list of all the connected drives. Select the desired drive.**Options:** *Enter/Ok:* Move the marked files to the selected destination path.
Esc/Cancel: Exit the dialog without executing the command.**Comments:** Marked files are displayed in red. The TotMarks and MrkSize fields displayed in the status bar are updated accordingly.**See Also:** Copy Files
Mark/Unmark File**MOVE RMS BAR TO REFERENCE BAR**

Location: Analysis**Description:** Move the RMS bar (black dotted line) to the sample at the Reference bar position (blue dotted line).**Activation:** *Direct:* Ctrl-Z – Set RMS bar menu button 
Menu: Alt-V, R**Comments:** The RMS and Data bars define the RMS sliding window.**See Also:** Setting the Cursor Bars in the Analysis Quick Start
RMS Bar**MOVE REFERENCE BAR TO DATA BAR**

Location: Analysis**Description:** Move the Reference bar (blue dotted line) to the sample at the Data bar position (black solid line).**Activation:** *Direct:* Ctrl-A – Set Reference Bar menu button 
Menu: Alt-V, M

Comments: The Delta time field (Delta X) in the status bar at the bottom of the screen displays the time difference between the reference bar and the data bar. If the time difference between the samples is in milliseconds or microseconds then the number of cycles between the two bars is also displayed.

See Also: Setting the Cursor Bars in the Analysis Quick Start
Data Bar
Reference Bar

MRKSIZE

Location: File Manager (Status Field)


Description: Displays the combined size (in Kbytes) for all marked files.

See Also: Size
Free

MULTIPOINT INTERROGATION DISPLAY (MID)

Location: Device Manager

Description: Display the MID window to periodically execute the device's assigned drivers and updates the parsed information into the device panel.

Activation: *Direct:* F7 – menu button 
Menu: Alt-O, M

Comments: The Multiport Interrogation Display (MID) contains four device panels per page. A maximum of 999 device panels can be opened at one time. To activate the MID window press F7. If no devices are marked, all devices assigned a driver are displayed and polled. Use the up, down, page up, and page down keys to view the device panels. When F7 is pressed the device's TXCOMMAND assigned in the DRIVERS.INI file is periodically sent to the output device. The response data is parsed by the RXSTRIP commands and updated in the device panel. Each panel displays the device title (Hdr), the assigned active device drive (Drv), the device number (Dev#), and the number of times the driver executed (Cycle).

See Also: Multiport Interrogation Display in the Device Manager Quick Start

NEW DEVICE CONFIGURATION

Location: Device Manager

Description: Open a new device configuration table with 0 devices defined in the table and database files.

Activation: *Menu:* Alt-D, W

Comments: A "Select Directory" dialog allows for selecting an existing directory or for creating a new directory for the new configuration. To create a new directory type the directory name in the "Directory Name" field. If the directory does not exist the system prompts a message for confirmation to create the directory. The "CFG_DEVS.DTB" and "CFG_SHOT.DTB" files are created with zero records. If these files exist in the selected directory then they are cleared. The system will prompt a message asking to copy the existing "DRIVERS.INI" file


to the new configuration directory. Select “Yes” to use the existing “DRIVERS.INI” for the new configuration or “No” to create a new “DRIVERS.INI” file.

See Also: System Files in the Device Manager Quick Start
New Device Record
Duplicate Device Record

NEW DEVICE RECORD

Location: Device Manager

Description: Create a new device record in the table.

Activation: *Direct:* F4 –menu button 
Menu: Alt-D, N

NEW DEVICE CONFIGURATION

Location: Device Manager

Description: Open a new device configuration table with 0 devices defined in the table and database files.

Activation: *Menu:* Alt-D, W

Fields: ***Device Settings:***

Device Number: Set the number of the device. Each device must have a unique number. The device number is used in the IEEE long file naming format.

Address: Set the address of the device. The address can be the port number off a 2020/2030 or a modbus address.

Station ID: Set the ID number for the station each station must have a unique number.

Data Type: Select the type of data being polled (ASCII/Binary).

Print : Select if the data polled is sent to the connected printer (On/Off).

Title: Set the device title.

Driver: Select the main driver that will poll the device.

Station Name: Set the station name.

Time Code: Select the main driver that will poll the device.

EscSeq: The EscSeq field contains 7 separate fields separated by a blank. Set the appropriate information in the appropriate fields. The fields can contain passwords, phone numbers, file names, FTP settings, TCP/IP settings for a specific device refer to the “Device Configuration” document.

Port Settings:

Port Number: Select the COM port number from the list of COM ports registered on the machine or enter a new COM port number. For TCP/IP and FTP connections each device must have a unique COM port number.

Baud Rate: Select the port’s baud rate.

Parity: Select the port’s parity (None, ODD, Even, Mark).

Data Bits: Select the port’s Data Bits (7 or 8).

Stop Bits: Select the port’s stop bits (1 or 2).

Flow Control: Select the port’s flow control (None, Software or Hardware).

Terminal Settings:

CR/LF: Select if a CR/LF is added after a TX string, RX string, both or none in terminal mode.

Local Echo: Select if the transmitted text is echoed to the terminal window.

Terminal Settings:

CR/LF: Select if a CR/LF is added after a TX string, RX string, both or none in terminal mode.

TX Delay:

Inter Char Delay: Enter the number of milliseconds to wait when transmitting characters to the device.

Options: **Save/Enter:** Exit and save the dialog fields.
Esc/Cancel: Exit the dialog without saving the dialog fields.

Comments: A “Select Directory” dialog allows for selecting an existing directory or for creating a new directory for the new configuration. To create a new directory type the directory name in the “Directory Name” field. If the directory does not exist the system prompts a message for confirmation to create the directory. The “CFG_DEVS.DTB” and “CFG_SHOT.DTB” files are created with zero records. If these files exist in the selected directory then they are cleared. The system will prompt a message asking to copy the existing “DRIVERS.INI” file to the new configuration directory. Select “Yes” to use the existing “DRIVERS.INI” for the new configuration or “No” to create a new “DRIVERS.INI” file.

Comments: Some of the fields are set to default values such as: port number, baud rate, parity, data bits, stop bits and flow control. The device number is a required field and must be unique. An error message will be displayed if any invalid fields are encountered.

See Also: New Device Record
Edit Device Record
Duplicate Device Record

NEW FILE

Location: ASCII Editor

Description: Open a new empty ASCII edit window with the title defaulted to Untitled.

See Also: Open File

ONEBIT

Location: Waveform Summary

Description: Displays the analog channel's full-scale value divide by the channel's resolution.

Comments: The OneBit value is used to calculate the HP-Dif and the LP-Dif.

See Also: Viewing Waveform Summaries in the File Manager Quick Start
HP-Dif
LP-Dif

OPEN ALL MARKED WAVEFORM FILES

Location: File Manager

Description: Open all the marked waveform files in the file table and minimize the file table.

Activation: *Menu:* Alt-O, W, F

Comments: All the marked waveform files are opened, tiled and the file table is minimized. A maximum of 10 data windows can be open at one time.

See Also: Open All Marked Files in the File Manager Quick Start

OPEN FILE

Location: ASCII Editor

Description: Open the window open file dialog box to select an existing file. The open file will be put in a new ASCII edit window.

See Also: New File

OPTIONAL COLUMNS

Location: File Manager

Description: The IEEE PSRC long file naming convention allows for user defined fields appended at the end of the filename. The file table reserves 4 columns for the first 4 user defined fields. The columns are named Optional-1 to Optional-4.

See Also: Long File Naming Format in the File Manager Quick Start

PASTE DEVICE RECORDS

Location: Device Manager

Description: Paste the device records from the system clipboard files to the active device configuration.

Activation: *Menu:* Alt-D, T

Comments: Device records copied to the system clipboard files (“DEV_CLIPBOARD.CLP”, “LOG_CLIPBOARD.CLP”) can be pasted into the active device configuration files. After each paste operation the device table is updated and all devices are initialized.

See Also: Change Device Configuration
New Device Configuration
Copy Device Records

PASTE TEXT

Location: ASCII Editor

Description: Paste the contents of the clipboard into the document at the cursor position. Existing blocked text is overwritten with the contents of the clipboard.

Activation: *Direct:* Ctrl-V, Shift-Ins - Paste menu button 

Menu: Alt-E, P

Comments: Use the shift keys and the up, down, page up and page down keys to block file text.

See Also: Copy Text
Cut Text

PATH/FILENAME (NO EXT.)

Location: Save as COMTRADE Dialog (ASCII/Binary)

Description: Displays the destination path and filename of the new COMTRADE file.

Comments: The oscillography file at the cursor position is saved in COMTRADE format to the specified filename. When specifying a filename do not enter an extension, the “.CFG” and “.DAT” files are automatically created. If a path is not specified the files are saved to the active directory.

Restrictions: The filename cannot contain an extension.

PHASOR/CIRCULAR CHART SCALE MULTIPLIER (ASM)

Location: Analysis (Window Properties Dialog)

Description: Used as a multiplier to increase/decrease the length of a vector in the phasor diagram or to increase/decrease the circular chart data.

Activation: *Menu:* Alt-F, T, “Display Settings” Tab

Range: Greater Than 1.00

Default: 2.00

Comments: When a channel's amplitude is increased, the phasor/circular chart scale value is multiplied with the Pixsdisp value, and when the channel's amplitude is decreased the phasor/circular chart scale value is divided by the Pixsdisp value .

PIXSDISP COLUMN

Location: Analysis

Description: Displays the number of pixels allocated for the channels.

Comments: When a channels' amplitude is increased or decreased the trace scale multiplier, set in the “Window Properties” dialog, is multiplied or divided with the PixsDisp values in the analog information table. To increase or decrease the channels' amplitude, select “Increase Amplitude” or “Decrease Amplitude” from the Data menu. If no channels are marked, all channels are scaled accordingly.

See Also: Trace Scale Multiplier
Auto Scaling

PLAY CHANNELS AUDIO


Location: Analysis**Description:** Plays the audio of the first marked analog channel. If no channels are marked then it plays the audio of the first displayed channel.**Activation:** *Menu:* Alt-D, P

Fields:

<i>Analog Channel:</i>	Title of the active analog channel.
<i>Save Audio:</i>	Active saving the analog channel data to the window's .WAV format.
<i>Audio Filename:</i>	The path and name of the saved .WAV file.
<i>Drives:</i>	A list of all the connected drives. Select the desired drive.

Options:

<i>Play:</i>	Play the active analog channels data.
<i>Volume:</i>	Decrease/Increase the volume of the output.

Comments: Marked channels are displayed in red. The "Active Channel" section displays the active analog channel in the analysis window. The "Audio Controls" section allows for playing the active analog channel's data through the computers speakers and for increasing/decreasing the volume of the output. The "Save .WAV File" section allows for saving the analog channel data in the Window's .WAV format. Click the folder button  to select and destination directory and to enter a new ".WAV" file or for selecting an existing ".WAV" file. The selected file path and name will be updated in the "Audio Filename" field.

See Also: Play Channels Audio in the Analysis Quick Start**PRIMARY VALUES**

Location: Analysis (Analog Table)

Description: The values displayed in the analog table are either in primary or secondary quantities. If the file defines the type of values saved then the type is displayed in the window header. Also, if the CT and PT ratios are defined in the configuration file then the values can be changed from primary to secondary and vice versa. To change the values open the properties dialog and click on the "Driver Data Type" tab, select the Primary or Secondary radio button to switch between values.

See Also: Changing Analog Values in the Analysis Quick Start
Secondary Values**PRINT ALL DATA**

Location: Analysis**Description:** Print all the data for the visible analog and digital channels.**Activation:** *Menu:* Alt-F, P, A

Comments: The printer must be registered in the system's WIN.INI file. The printed pages include the page number and the date/time of the first sample in the page. The channel information is printed at the end of the data. Use the print page option to print only the contents of the data window.

See Also: Printer Setup

PRINT ALL ROWS

Location: All Tables

Description: Print all the rows in active table.

Activation: *Menu:* Alt-F, P, A

Comments: The printer must be registered in the system's WIN.INI file. Use the Print Marked option to print only the marked files.

See Also: Printer Setup

PRINT DXF FILE

Location: DXF Animated CAD

Description: Print the contents of the active DXF file.

Activation: *Menu:* Alt-T, P, F

Comments: The printer must be registered in the system's WIN.INI file. Use the Print DXF Page option to print only the contents displayed in the window.

See Also: Printer Setup

PRINTER SETUP

Location: All child windows.

Description: Change the printer type and setup the current printer.

Activation: *Menu:* Alt-F, S – Device Manager/ASCII/Binary Event Editor
Menu: Alt-T, S – DXF Display

PRINT FILE

Location: ASCII/Binary Event File

Description: Print all pages in the open file.

Activation: *Menu:* Alt-F, P, F

Comments: The printer must be registered in the system's WIN.INI file. In the ASCII/Binary editors, use the "Print/File Page" option to print the current page.

See Also: Printer Setup

QUERY ALL ROWS

Location: Query Fields

Description: Compare the entered criteria to all the records in the active configuration.

Activation: *Direct:* F6, <enter>
Menu: Alt-Q, A

Comments: All the records in the active configuration are compared to the entered query criteria. A marked record that does not meet the query requirements is unmarked. The records that meet the query requirements are marked and grouped at the top of the table. Marked records are displayed in red.

The Enter key searches all the records in the table.

See Also: Query Marked Records
Query Unmarked Records
Clear Query Criteria

QUERY MARKED ROWS

Location: Query Fields

Description: Compare the entered criteria to the marked records in the active configuration.

Activation: *Direct:* F5
Menu: Alt-Q, M

Comments: The marked records that meet the query requirements are marked and grouped at the top of the table. All other marked records are unmarked. Marked records are displayed in red.

See Also: Query Unmarked Records
Query All Records

QUERY UNMARKED ROWS

Location: Query Fields

Description: Compare the entered criteria to the unmarked records in the active configuration.

Activation: *Direct:* F7
Menu: Alt-Q, U

Comments: The unmarked records that meet the query requirements are marked and grouped below previous marked records. Marked records are displayed in red.

See Also: Query Marked Records
Query All Records


RECORDED CHANNELS

Location: Analysis

Description: Display the following information for the active oscillography file:

Channel #	Analog Channel Titles	Full Scale Values
SAC #	SAC Titles	Full Scale Values

Channel # SDC #	Digital Channel Titles SDC Titles	Original State Values Original State Values
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Activation: *Direct:* F2 - Channel menu button 
Menu: Alt-F, R

Comments: Triggered digital channel titles are displayed in red. All valid and invalid channels are displayed.

REFERENCE BAR

Location: Analysis

Description: Displays the instantaneous sample value at the reference bar position (dotted blue line that runs vertically across the analog and digital channels). This value is displayed in the RefVal column of the analog table view.

Comments: The reference bar is used to resize the RMS sliding window and display the instantaneous value at the sample position. To resize the sliding window, click the right mouse button to set the reference bar position and the left mouse button to set the data bar position then select the **Set RMS Bar**  menu button.

The Delta time (Delta X) field, displayed in the status bar shows the time difference between the reference bar and the data bar. If the time difference between the samples is in milliseconds or microseconds then the number of cycles between the two bars is also displayed.


The default position of the reference bar is at the fault time.

See Also: Data Bar
RefVal
Fault Bar

REFRESH

Location: File Manager

Description: Update the contents of the active directory from the operating system's allocation table.

Activation: *Direct:* Refresh menu button 
Menu: Alt-F, F

REFVAL COLUMN

Location: Analysis (Analog Table)

Description: Displays the sample value at the Reference bar (blue dotted line).

Comments: If the active driver's data type is set to RMS calibrated, the sample value at the data bar position is multiplied by the square root of 2.

See Also: Viewing Analog Data in the Analysis Quick Start

Reference Bar

RENAME FILE/DIRECTORY

Location: File Manager**Description:** Rename the file or directory at the cursor position.**Activation:** *Menu:* Alt-F, N**Fields:** *From:* The current name of the file.
To: The new name of the file.**Options:** *Enter/Ok:* Change the name.
Esc/Cancel: Exit the dialog without executing the command.**REOPEN WAVEFORM FILE**

Location: Analysis**Description:** Reopen a file that was previously viewed.**Activation:** *Menu Bar:* Open File drop down menu button **Comments:** A list of the last 14 open files is displayed in a drop down menu button. Click the on the file to reopen.**See Also:** Reopen Waveform File in the Analysis Quick Start**REPLAY PLUS DRIVER**

Location: File Manager (Universal Viewer)**Description:** Change the driver at the cursor position to the Hathaway Replay Plus driver and plot the input channels.**Activation:** *Menu:* Alt-D, R**Comments:** The Replay Plus driver reads and displays waveform (dfr), disturbance (css) and trend (tss) files. If the selected file is not a valid Replay Plus file an error message is generated. All files that have the “.DAT” extension, with no corresponding “.CFG” file are tagged as Replay Plus files.**See Also:** Display Oscillography in the File Manager Quick Start
Associating File Types in the File Manager Quick Start**RESIZE COLUMNS**


Location: All Tables**Description:** Resize the columns in the table.**Activation:** *Direct:* Mouse Drag



Comments: To resize the table columns, place the mouse over the column separator and drag to the right or the left. The cursor changes to the vertical resize cursor when the mouse is positioned over the column separator. Double click the mouse over the separators to make the column size the maximum area to display all the text in the column.

RESIZE SLIDING WINDOW

Location: Analysis

Description: Resize the RMS sliding window.

Activation: *Direct:* Resize Sliding Window menu button 
Menu: Alt-V, W


Comments: To automatically resize the RMS sliding window click on the **Resize Sliding Window** menu button  or open the “Resize Sliding Window” menu option under the “View” menu. To manually resize the RMS sliding window click the right mouse button to set the reference position and the left mouse button to set the ending data position then click the **SetRMS**  menu button. The RMS bar is moved to the reference position. The Delta time (Delta X) field displayed in the status bar at the bottom of the screen shows the time difference (in milliseconds or seconds) and the number of cycles between the reference and data bars. Use the left, right, ctrl+left, and ctrl+right keys or the horizontal scroll bar to move the sliding window.

See Also: Setting the Cursor Bars in the Analysis Quick Start
Data Bar
RMS Bar
Reference Bar

RESTORE MARK(S)

Location: Analysis

Description: Restore all the hidden analog channels. The delete key removes the marked analog channels and the insert key restores the channels.


Activation: *Direct:* Insert or the ViewAll menu button 
Menu: Alt-C, R

See Also: View Mark(s)
Hide Mark(s)
Show All Hidden

RESTORE ORIGINAL

Location: Analysis

Description: Restore the displayed file to the original samples stored in the file. This feature will undo all changes made using the change frequency, duplicate cycles and truncate cycles features.

Activation: *Direct:* Restore Original menu button 
Menu: Alt-D, R

See Also: Duplicate Cycles
Truncate Cycles
Change Frequency

RFL 9300 DRIVER

Location: File Manager (Universal Viewer)

Description: Change the driver at the cursor position to the RFL 9300 driver and plot the input channels.

Activation: *Menu:* Alt-D, F

Comments: If the selected file is not a valid RFL 9300 file an error message is generated.

RMS COLUMN

Location: Analysis (Analog Table)

Description: Displays the RMS value for all samples positioned between the RMS bar (black dotted line) and the data bar (black solid line). If the data is RMS calibrated, each sample value is multiplied by the square root of 2 before it is squared.

See Also: Viewing Analog Data in the Analysis Quick Start
RMS Bar
Data Bar

RMS BAR

Location: Analysis

Description: The RMS bar is the black dotted line that runs vertically across the analog and digital channels. The RMS bar and data bar define the RMS sliding window.

Comments: When the analysis window is initially opened the sliding window is defaulted to one cycle. The sliding window is used to calculate the RMS value for all samples positioned between the data bar and the RMS bar. This value is displayed in the Analog View.

To resize the sliding window, click the right mouse button to set the reference bar position and the left mouse button to set the data bar position then select the **Set RMS Bar** menu button. This button will move the RMS bar to the reference bar.

See Also: Data bar
RMSVal Column
TrueRMS Column
Fault Bar

RUN

Location: File Manager

Description: Execute the specified command.

Activation: *Direct:* F5

Menu: Alt-F, R

- Fields:** *Open:* The path and filename of the application to run.
- Options:** *Enter/Ok:* Run the specified application.
Esc/Cancel: Exit the dialog without executing the command.
Browse: Display the Windows open dialog to browse for a file.

SAMPLE BASED DISPLAY

Location: Analysis

Description: The sample base display plots the channel data with 1 pixel distance between each displayed sample. Sample based displays are useful for showing changes in sampling frequency.

Comments: To change the trace display settings open the “Window Properties” dialog under the “File” menu. Click the “Display Settings” tab and change the “Trace Display Type” field to time based or sample based.

See Also: Time & Sample Based Displays in the Analysis Quick Start

SAVE & ARCHIVE DIALOG

Location: Device Manager

Description: Display the “Save & Archive” dialog to define the system and file settings.

Activation: *Menu:* Alt-O, S

- Fields:** *System Settings:*
- Station ID:* Set the Station number where the system is running.
 - Station Name:* Set the Station name where the system is running
 - Company Name:* Set the company name.
 - Password:* Set the password to gain access to this platform from another station. Refer to Interrogating a Remote Device for more information on using the password to gain access to the Wavewin platform via a remote computer.
- File Settings:*
- Save Rx Data:* Save all received data from the devices in a device DTB file.
 - Save Path:* Set the path where the device DTB files are to be saved. Maximum 80 characters.
 - Duration (min):* Set the duration of the DTB files saved.
 - End With:* Action to take when the duration field has been exceeded. Archive will rename the DTB files using the IEEE long file naming format and delete will delete the DTB files from disk.

- Options:** *Save/Enter:* Exit and save the dialog fields.
Esc/Cancel: Exit the dialog without saving the dialog fields.

Comments: Use the tab key to navigate between fields.

See Also: Change DXF Files in Chapter 1
IEEE Long File Naming Format in Chapter 1
Interrogating A Remote Device in Chapter 1

SAVE AS

Location: ASCII/Binary Editor**Description:** Save the active event file to a new name.**Activation:** *Menu:* Alt-F, A**See Also:** Save As Text**SAVE AS COMTRADE (ASCII/BINARY)**

Location: File Manager and Analysis**Description:** Save the waveform file at the cursor position or the displayed analog/digital channels to COMTRADE ASCII or Binary format.**Activation:** *Menu:* Alt-O, V, A – Save in COMTRADE ASCII format
Menu: Alt-O, V, B – Save in COMTRADE Binary format**Fields:** *Path:* The destination path.
Filename: The filename with no extension.**Options:** *Enter/Ok:* Read the file contents and save it in COMTRADE format.
Esc/Cancel: Exit the dialog without executing the command.**Comments:** Do not enter a filename extension. The COMTRADE configuration (.CFG) and data (.DAT) files are automatically created. If a path is not defined, the files are saved in the active directory.

Currently there are two Comtrade versions supported: the older 1991 format and the newer 1999 format. The Comtrade format can be selected from the “Window Properties” dialog in the analysis window. The default format is the newer 1999 format.

If the sample values in the selected file are RMS calibrated and the outcome Comtrade file must have instantaneous values then set the “Comtrade Settings” fields to automatically convert the RMS data to instantaneous values. To set the “Comtrade Settings” fields open the “Window Properties” dialog in the analysis window. Select the “Comtrade” tab then select “Yes” for the “Convert RMS Calibrated Data to Peak Data” field.

To automatically convert the selected channels to Comtrade using the IEEE long file naming convention check the “Use the ComNames Naming Convention to Name the Comtrade File(s)” field in the “Save As Comtrade” Dialog and leave the File Name field empty. The selected channels are converted to the selected Comtrade format and are named using the IEEE long file naming convention.

Restrictions: The selected file must be a supported oscillography file.**See Also:** Save As Comtrade in the File Manager & Analysis Quick Start**SAVE AS TEXT**

Location: Binary Editor**Description:** Save the binary values in the hex editor file to an ASCII text file.

Activation: *Menu:* Alt-F, T

See Also: Save As

SAVE DATE COLUMN

Location: File Manager

Description: Displays the date the file was last saved on disk.

Comments: Click the table's Save Date header to sort the files in ascending or descending order with respect to the Save Date.

See Also: Fault Date/Time Column
Save Time

SAVE DISPLAYED VALUES (DEFAULT FORMAT)

Location: Analysis

Description: Save the displayed values in the analog table to a file or to the Windows clipboard.

Activation: *Menu:* Alt-F, T "Values File" Tab

Fields:

<i>Save To:</i>	Where to save the values: file, clipboard or both
<i>Select Values File:</i>	Select the file for the displayed values.
<i>Save Type:</i>	How to maintain the file: append or rewrite
<i>Save Format:</i>	How to save the data: fixed ASCII or comma delimited
<i>Add Titles:</i>	Add the titles to the file or no titles.

Options: *Enter/Ok:* Set the format.
Esc/Cancel: Exit the dialog without executing the command.

Comments: To save the samples values to a file select the "Mark & Save" menu option under the "Values" menu. Select the format for the selected sample. To view the values file, select the "Values File/Open" menu option under the "Values" menu.

See Also: Save Displayed Values in the Analysis Quick Start

SAVE TIME COLUMN

Location: File Manager

Description: Displays the time the file was last saved on disk.

Comments: Click the table's Save Time header to sort the files in ascending or descending order with respect to the Save Time.

See Also: Fault Date/Time Column

SAVE USER VIEWS

Location: Analysis

Description: Save the displayed view information in an ASCII text file.

Activation: *Menu:* Alt-V, S

Fields: *View File Path:* Destination path for the file.
View Name: The name of the view. A file extension is not needed. The “.VIW” extension is automatically assigned.

Options: *Enter/Ok:* Save the view.
Esc/Cancel: Exit the dialog without executing the command.

Comments: The following information is saved:

- Displayed analog channels,
- Analog channel order,
- Superimposed channels,
- Analog channel colors,
- Digital channels displayed,
- Sampling frequency,
- Time scale,
- Sliding window size (RMS bar to Data bar),
- Phasor window size,
- Table window size,
- Red fault bar,
- Auto scale and
- Phasor or circular chart displayed

See Also: Select User Views
 User Views in the Analysis Quick Start

SECONDARY VALUES

Location: Analysis (Analog Table)

Description: The values displayed in the analog table are either in primary or secondary quantities. If the file defines the type of values saved then the type is displayed in the window header. Also, if the CT and PT ratios are defined in the configuration file then the values can be changed from primary to secondary and vice versa. To change the values open the properties dialog and click on the “Driver Data Type” tab, select the Primary or Secondary radio button to switch between values.

See Also: Changing Analog Values in the Analysis Quick Start
 Primary Values

SEL LOAD PROFILE DRIVER

Location: File Manager (Universal Viewer)

Description: Change the driver at the cursor position to the SEL load profile driver and plot the input channels.

Activation: *Menu:* Alt-D, O

Comments: If the selected file is not a valid SEL load profile file an error message is generated. All files that have the “.BSV” extension are tagged as SEL load profile files.

SEL RELAY DRIVER

Location: File Manager

Description: Change the driver at the cursor position to the SEL event driver and plot the input channels.


Activation: *Menu:* Alt-D, A


Comments: If the selected file is not a valid SEL file an error message is generated. All files that have the “.SEL”, “.CEV” and “.EVE” extensions are tagged as SEL files. Use the Drivers menu to change the file’s SEL driver type. All SEL relay display formats are supported.

SELECT LINES/VIEWS

Location: Analysis

Description: Select a specific line or view for display.

Activation: *Direct:* Line/View drop down menu button 
Menu: Alt-C, L

Comments: The DFR Transcan and Faxtrax records have predefined views encoded into their format. To select the predefined views click on the “Show All/ Select View” drop down menu button or select the “Select Views” menu option under the “Channels” menu option. A list of the available lines/graphs will be displayed. To view all the analog channels in the file press the <esc> key, the <backspace>, or click the “Show All” menu button or click the **ViewAll**  menu button.

See Also: Selecting Predefined Views in the Analysis Quick Start

SELECT USER VIEWS

Location: Analysis

Description: Select a view file from the list of files located in the displayed view path.

Activation: *Menu:* Alt-V, V

Fields:

<i>View Files:</i>	A list of all the view files in the displayed view path.
<i>Analog Channels:</i>	All analog channel information defined in the view file.
<i>Digital Channels:</i>	All digital channel information defined in the view file.

Options:

<i>Enter/Ok:</i>	Select the highlighted view.
<i>Esc/Cancel:</i>	Exit the dialog without executing the command.

Comments: The following information is read from the selected view file and applied to the displayed file:

- Displayed analog channels,
- Analog channel order,
- Superimposed channels,
- Analog channel colors,

- Digital channels displayed,
- Sampling frequency,
- Time scale,
- Sliding window size (RMS bar to Data bar),
- Phasor window size,
- Table window size,
- Red fault bar,
- Auto scale and
- Phasor or circular chart displayed

If the analog channel and digital channel names defined in the view file are not in the displayed file than an error message is displayed.

See Also: Save User Views
User Views in the Analysis Quick Start

SEQUENCE OF EVENTS LIST

Location: File Manager

Description: View a table of sequence of events for a number of waveform files. Mark all the desired files then press F11 or select the "SOE List" menu option from the "Reports" submenu under the "Options" menu. A table will be displayed listing all the events triggered in the selected files.

Activation: *Direct:* F11
Menu: Alt-O, R, S

Fields:

<i>Substation:</i>	The substation where the device is installed.
<i>Device:</i>	The device the channel came from.
<i>State:</i>	The state of the channel at that time (A=Abnormal, N=Normal).
<i>Trigger Date:</i>	The trigger date.
<i>Trigger Time:</i>	The trigger time.
<i>Channel:</i>	The channel number of the event in the file.
<i>Channel Title:</i>	The title of the channel.
<i>File:</i>	The file containing the event/sensor channel.

Comments: The table is sorted according to the date and time. The Query section at the bottom of the table allows for searching events from specific substations, devices, channels and more... To view the file containing the specific events press enter or double click on the event.

SEQUENCE OF EVENTS SUMMARY

Location: File Manager

Description: View a table of summarizing the sequence of events for a number of waveform files. Mark all the desired files then select the "SOE Summary" menu option from the "Reports" submenu under the "Options" menu. A table will be displayed listing a summary of the events triggered in the selected files.

Activation: *Menu:* Alt-O, R, O

Fields:

<i>Substation:</i>	The substation that triggered the event/sensor
<i>Device:</i>	The device the channel originated from.


<i>Fst-State:</i>	The state the channel started at, A=alarm and N=normal.
<i>Lst-State:</i>	The state the channel ended at, A=alarm and N=normal.
<i>First Change Date</i>	The date the channel first changed state.
<i>First Change Time:</i>	The time the channel first changed state.
<i>Last Change Date</i>	The date the channel last changed state.
<i>Last Change Time:</i>	The time the channel last changed state.
<i>Changes:</i>	The number of times the channel changed state.
<i>Chan#:</i>	The channel number in the file.
<i>Channel Title:</i>	The title of the channel.
<i>File:</i>	The file containing the event/sensor channel.

Comments: The table is sorted according to the first change date and time. The Query section at the bottom of the table allows for searching events from specific substations, devices, channels and more... To view the file containing the specific events press enter or double click on the event.

SET DRAWING PROPERTIES

Location: DXF Animated CAD

Description: Set the DXF drawing properties.

Activation: *Direct:* F2 - Properties menu button 
Menu: Alt-T, D

Fields: *File Name:* Displays the file name for the currently select tab.
Background Color: Set the background color for the currently select tab.
Max X Pixel: Set the maximum X resolution value.
Max Y Pixel: Set the maximum Y resolution value.


Options: *Enter/Ok:* Exit the dialog, then save and execute the entered information.
Esc/Cancel: Exit the dialog without saving the information.
Apply : Apply and save the entered parameters without closing the dialog.

Comments: The Max X Pixel and Max Y Pixel values cannot exceed 32000.

SET OPENING FREQUENCY

Location: Analysis

Description: Set a driver's open frequency. This feature is available in the "Change Frequency" dialog.

Activation: *Direct:* Change Frequency menu button 
Menu: Alt-D, F

Fields: *Open Frequency:* Specify to always open the files associated with the active driver using the entered frequency.

Options: *Enter/Ok:* Exit the dialog, then save and execute the entered information.
Esc/Cancel: Exit the dialog without saving the information.

Comments: Setting the Always Open field will open all files associated with the active driver using the entered frequency. This feature is useful for files with low sampling frequency.

See Also: Change Frequency

SET SORT FIELD

Location: All Tables

Description: Set the active sort field to the column at the cursor position.

Activation: *Direct:* Left Mouse Click on the Column's header
Menu: Alt-S, S

Comments: The "Ascending" and "Descending" options in the "Sort" menu sorts the table data with respect to the select sort field. To sort the columns directly, click the column header button to toggle between ascending and descending.

See Also: Sort All Rows

SHIFT MARKS DOWN

Location: Analysis

Description: Shift all the marked analog channels down one position.

Activation: *Direct:* "-" key
Menu: Alt-C, D

Comments: Individual channels can be marked or unmarked by clicking on the channels corresponding display ID or channel information or by pressing the spacebar. Marked analog channels are displayed in red.

See Also: Shift Marks Up

SHIFT MARKS UP

Location: Analysis

Description: Shift all the marked analog channels up one position.

Activation: *Direct:* "+" key
Menu: Alt-C, U

Comments: Individual channels can be marked or unmarked by clicking the channels corresponding display ID or channel data, or by pressing the spacebar. Marked analog channels are displayed in red.

See Also: Shift Marks Down

SHOW/HIDE CHANNEL TITLES

Location: File Manager

Description: The Show/Hide Channel Titles allows for showing invalid channel titles, remove titles from the invalid title list and adding new titles to the invalid channel title list.

Activation: *Menu:* Alt-O, T

Fields: *Title List Box:* Lists all invalid channel titles.
Add Title: Add a new title to the list.
Remove Title: Remove a title from the list.

Options: *Enter/Ok:* Execute changes.
Esc/Cancel: Exit the dialog without executing the command.

Comments: To show a title, uncheck the checkbox next to the title. All new titles are added to the end of the list with the checkbox automatically checked.

See Also: Show/Hide Channel Titles in the File Manager Quick Start

SHOW ALL DIGITAL CHANNELS

Location: Analysis

Description: Show all digital channels or just the triggered digital channels. This menu option toggles between the two views.


Activation: *Direct:* F9
Menu: Alt-V, D

Comments: Placing the mouse on the horizontal separator bar and dragging it up or down can resize the digital channel display area. The cursor changes to the horizontal resize cursor when the mouse is positioned over the bar.

SHOW ALL HIDDEN

Location: Analysis

Description: Show all hidden analog and digital channels.

Activation: *Direct:* ViewAll menu button , the <esc> key or the <backspace> key
Menu: Alt-C, S

See Also: View Mark(s)
Hide Mark(s)
Restore Mark(s)

SHOW CHANNEL INFORMATION

Location: Analysis

Description: Show or hide the channel information window. This menu option toggles between the two views.

Activation: *Menu:* Alt-V, C

Comments: The channel information window can be resized by placing the mouse on the vertical separator bar and dragging it to the right or the left. The cursor changes to the vertical resize cursor when the mouse is positioned over the bar.

SINGLE ENDED FAULT LOCATION

Location: Analysis

Description: Display the single ended fault location dialog. The Single Ended Fault Location Dialog is used to interface to the SingleEndFaultLocation.dll. The SingleEndFaultLocation.dll will calculate the fault location, fault type and fault time.

Activation: *Menu:* Alt-D, O

Fields:

- ZLine:* Positive sequence impedance.
- ZLine Angle:* Positive sequence angle.
- kZN:* Compensated zero sequence impedance $(Z0-Z1)/(3*Z1)$.
- kZN Angle:* Compensated zero sequence factor angle $(Z0-Z1)/(3*Z1)$.
- kZM:* Mutual compensation factor $(Z0m)/(3*Z1)$.
- Line Length:* Line Length.
- Vnom:* Nominal phase to phase voltage.
- Inom:* Nominal current.
- Analog Chans:* Select the analog channels from the drop down lists.
- Pre Cycles:* Number of cycles to send before the reference bar.
- Post Cycles:* Number of cycles to send after the reference bar.

Advanced Dialog Fields:

- Z1 (% of Line):* Zone 1 forward impedance.
- Z2 (% of Line):* Zone 2 reverse impedance.
- R0:* Phase loop resistance reach.
- Rg:* Ground loop resistance reach.
- IO Threshold:* Zero sequence current threshold for VTS.
- I2 Threshold:* Neg. sequence current threshold for VTS.
- Ph Select Ind:* Index of the sample corresponding to the fault inception.
- Average Count:* Total post fault samples for averaging fault distance.
- Ph Select Mode:* Phase selection mode (Internal, AG, BG, CG, AB, BC, CA).

Options:

- Advanced:* Display the Advanced dialog for fine turning the algorithms.
- Start:* Start the fault location algorithms.
- Print:* Send a screen dump of the outputs to the system's default printer.
- Show Help:* Show/Hide the fault location drop down help window.
- Open:* Open a fault location (*.flt) file.
- New:* Create a new fault location file.
- Save:* Save the active fault location file.
- Save As:* Save the active fault location file under a new name.

Comments: The sampling frequency must be set to ensure 24 samples per cycle. The sampling frequency must be set prior to opening the fault location dialog. If the sampling frequency is not set to 1440 Hz for 60 Hz or 1200 Hz for 50 Hz then the change sampling frequency dialog will automatically be displayed. Click OK or press enter to change the sampling frequency then reopen the Fault Location dialog.

All sample values sent to the DLL must be in secondary quantities. If the sample values are in primary values then the CT and PT ratio values must be available in the data configuration file. If the CT and PT ratio values are not available a message will be displayed asking to ignore the request or abort displaying the fault location dialog.

See Also: Single Ended Fault Location in the Analysis Quick Start

SIZE

Location: File Manager (Status Field)

Description: Displays the total size (in Kbytes) of all files in the active directory.

See Also: Free
MrkSize

SIZE COLUMN


Location: File Manager

Description: Displays the size (in bytes) of the file.

SIZE TO ORIGINAL COORDINATES

Location: DXF Animated CAD

Description: Size the DXF drawing to the original display coordinates (coordinates of the drawing when it was first opened).


Activation: *Direct:* Original Display menu button 
Menu: Alt-V, Z

Comments: The Max X and Max Y Pixel values in the status bar are updated according to the new coordinates.

SIZE TO WINDOW

Location: DXF Animated CAD

Description: Size the DXF drawing to fit in the window.

Activation: *Direct:* Fit in Window menu button 
Menu: Alt-V, W

Comments: The Max X and Max Y Pixel values in the status bar are updated according to the new coordinates.

SOFTWARE ANALOG CHANNELS

Location: Analysis

Description: Display the software analog channel dialog.

Activation: *Direct:* F5
Menu: Alt-C, A

Fields: *Titles:* The titles for the software analog channels.
Operators: Each analog operation followed by an operator terminator “/”.

Options: *Enter/Ok:* Exit the dialog then save and execute the operators.
Esc/Cancel: Exit the dialog without saving or executing the operators.

F1/Help: Display the help window.
Open: Open a *.SAC file.
New: Create a new *.SAC file.
Save: Save the active SAC file.
Save As: Save the active SAC file under a new name.

Comments: Software analog channels (SAC's) are extra channels provided by the system. These channels can be used to calculate a missing phase, create +, - and 0 sequence channels, create an envelope of a selected trace, or define an under/over-trigger values to monitor a given channel. The SAC window is split into two sections: the titles and the operators. To navigate between fields use the tab, up arrow and down arrow keys.

See Also: Creating Virtual Channels in the Analysis Quick Start

SOFTWARE DIGITAL CHANNELS

Location: Analysis

Description: Display the software digital channel dialog.

Activation: *Menu:* Alt-C, D

Fields: *Titles:* The titles for the software digital channels.
Operators: Each digital operation followed by an operator terminator “/”.

Options: *Enter/Ok:* Exit the dialog then save and execute the operators.
Esc/Cancel: Exit the dialog without saving or executing the operators.
F1/Help: Display the help window.

Comments: Software digital channels (SDC's) are extra channels provided by the system. The SDC window is split into two sections: the SDC titles, and the SDC operators. To navigate between fields use the tab, up arrow and down arrow keys.

See Also: Creating Virtual Channels in the Analysis Quick Start.

SORT ALL ROWS

Location: All Tables

Description: Sort all the rows in the table in ascending or descending order.

Activation: *Menu:* Alt-S, A – Ascending
Menu: Alt-S, D – Descending
Shortcut: Column headers

Comments: All the rows in the active table are sorted with respect to the sort field displayed in the table's status field.

See Also: Set Sort Field

SORT FIELD

Location: All Tables (Status Field)

Description: Displays the active sort field.

Activation: *Direct:* Mouse Click on the Column's header
Menu: Alt-S, S

Comments: The “Ascending” and “Descending” options in the “Sort” menu sorts the table data with respect to the select sort field. To sort the columns directly and to set the sort field, click the column header button.

See Also: Sort All Rows

SORT MARKED ROWS

Location: All Tables

Description: Sort the marked rows according to the previously selected sort order.

Comments: All marked records are sorted and grouped at the top of the table.

SR745/489 DRIVER

Location: File Manager (Universal Viewer)

Description: Change the driver at the cursor position to the GE SR745/489 driver and plot the input channels.

Activation: *Menu:* Alt-D, K

Comments: If the selected file is not a valid SR745/489 file an error message is generated. All files that have the “.CSV” extension, and have “CSV format” in the first line of the file are tagged as GE SR745/489 files.

See Also: Display Oscillography in the File Manager Quick Start
Associating File Types in the File Manager Quick Start

START DATE FIELD

Location: IEEE Long File Name

Description: The first field in the IEEE long file naming format. The start date is extracted from the event files downloaded and stored in the following format: Year (2 digits) Month Day: 040909.
Example File Name:
040909,113109123,+3S,Barton Substation#12,SEL421-432#34,ArkElectric,,,.DAT

See Also: Start Time Field

START TIME FIELD

Location: IEEE Long File Name

Description: The second field in the IEEE long file naming format. The start time is extracted from the event files downloaded and stored in the following format: Hour Minute Second Millisecond:
113109234.
Example File Name:

040909,113109123,+3S,Barton Substation#12,SEL421-432#34,ArkElectric,,,,,DAT

See Also: Start Date Field

SUBSTATION FIELD

Location: IEEE Long File Name

Description: The fourth field in the IEEE long file naming format. The substation name is extracted from the device record.

Example File Name:

040909,113109123,+3S,Barton Substation#12,SEL421-432#34,ArkElectric,,,,,DAT

See Also: Long File Naming Format in the File & Device Managers Quick Starts

SUPER IMPOSE

Location: Analysis

Description: Superimpose all or marked analog channels.

Activation: *Direct:* F7

Menu: Alt-D, S

Comments: Marked channels are superimposed and grouped at the top of the display window. The superimpose menu option and the F7 function key toggles superimposing on and off.

SYNC DATA CURSORS

Location: Analysis

Description: Synchronize the data cursors for two or more open display windows by time or manually.

Activation: *Menu:* Alt-D, Y, T – “By Time”

Menu: Alt-D, Y, M – “Manually”

Options: *By Time:* When the "By Time" sync cursor feature is turned ON the data cursors in the non-active windows are moved to the sample value time in the active window. For example if the active data cursor is positioned on sample time 01:12:34.560, all non active data cursors are moved to the sample value at that time. If the time is not found in the non-active window, the cursor position is unchanged. The active window defines the master data cursor and all other cursors follow this position.

Manually: This feature allows for selection of different cursor positions in the open data windows before synchronization is turned ON. For example, open two data windows and tile horizontally, move the data cursors to the beginning of the fault cycles, and select the sync manual cursor option. When the left, right, ctrl-left, ctrl-right, page up, page down, ctrl-page up, ctrl-page down, home and end keys are pressed the data cursors move simultaneously.

Comments: A check mark indicates that the sync feature is ON. To turn synchronizing OFF click on the active sync menu option to remove the check mark. When synchronizing is ON the channel information displayed to the right of the traces is updated for all open data windows.

See Also: Synchronizing Data Cursors in the Analysis Quick Start

SYSTEM FILES

Location: Device Manager

Description: There are 3 system files needed for the proper operation of the system. The CFG_DEV.DTB file stores the device records stored in the device table. The CFG_SHOT.DTB file stores the device's function keys and the EscSeq field in the device records. The DRIVERS.INI file has all the script code for polling the connected devices and transferring files to a remote computer.

TAB DELIMITED TABLE DRIVER

Location: File Manager

Description: Display the tab delimited file at the cursor position in a table format. Tab delimited files have textual fields separated by blank spaces, such as: CHANNEL DATE TIME.

Activation: *Menu:* Alt-D, 3, T

Comments: The data in the file is presented in tabular form. An unlimited number of rows and columns can be displayed.

See Also: Viewing ASCII Files in Database Format in the File Manager Quick Start
Double Quotes/Comma Delimited Table Driver
Comma Delimited Table Driver

TCODE FIELD

Location: IEEE Long File Name

Description: The third field in the IEEE long file naming format. The TCode is extracted from the device record.

Example File Name:

040909,113109123,+3S,Barton Substation#12,SEL421-432#34,ArkElectric,,,,,DAT

See Also: Long File Naming Format in the File & Device Managers Quick Starts

TESLA DRIVER

Location: File Manager (Universal Viewer)

Description: Change the driver at the cursor position to the Tesla driver and plot the input channels.

Activation: *Menu:* Alt-D, N

Comments: Tesla Files are displayed in the IEEE Comtrade Binary format. NxtPhase has developed an automatic conversion application called "AutoComtrade.exe". Wavewin calls "AutoComtrade.exe" to convert Tesla files to the Comtrade binary format for display. To view Tesla Files double click or press enter on the original Tesla files. To obtain a copy of the "AutoComtrade.exe" file please contact Tesla.


Files that have a .TLR extension are automatically tagged as NxtPhase Tesla files.

See Also: Tesla Files in the File Manager Quick Start.

TCP/IP CLIENT

Location: Device Manager

Description: Define the selected device to communicate using the TCP/IP protocol.

Activation: *Direct:* Ethernet configuration button  in the Device Configuration dialog.

Fields: *Ethernet Connections:* Select the TCP/IP client option from the list box. The fields in the connection properties section changes according to the selection in the connections list box.

Connection Properties:

Port Number: Set the TCP/IP port number.

IP Address: Set the device's IP address.

Options: *OK/Enter:* Exit and update the Device's EscSeq field.
Cancel/Esc: Exit the dialog without saving the changes made.

Comments: If the Local Path does not exist then the directory will be created.

See Also: New Device Record
Duplicate Device Record
Edit Device Record

TEST PORTS

Location: Device Manager

Description: Test the connected port using the loop back test option.

Activation: *Direct:* F3
Menu: Alt-O, L

Comments: Use the loop back plug detection test to check the port connection. Place the loop back plug in the desired port, select the corresponding port, and press F3 or select "Loop Back Test" from the Options menu. A message appears displaying the status of the port: Loop back plug detected or not detected.

TIME BASED DISPLAY

Location: Analysis

Description: The time base display plots the channel data in time. Time base displays are useful for showing changes in line frequency.

Comments: To change the trace display properties open the "Window Properties" dialog under the "File" menu. Click the "Display Settings" tab and change the "Trace Display Type" field to time based or sample based.

See Also: Time & Sample Based Displays in the Analysis Quick Start

TIS DRIVER

Location: File Manager

Description: Change the driver at the cursor position to the TIS driver and plot the input channels.

Activation: *Menu:* Alt-D, M

Comments: The TIS file format is an ASCII comma delimited format with the channel information defined in the first line of the file. If the selected file is not an ASCII comma delimited file then an error message is generated. All files that have a “.TIS” extension are tagged as TIS files.

See Also: Associating File Types in the File Manager Quick Start

TOTAL HARMONICS DISTORTION

Location: Analysis (Harmonics Dialog)

Description: The "Total Harmonic Distortion" field displays the square root of the summation of the squares of DFT Magnitudes for harmonics 2 to n divided by square root of 2 and that quantity divided by the DFT Magnitude of the Fundamental.

See Also: Harmonics
Histogram

TOTFILES

Location: File Manager (Status Field)

Description: Displays the total number of hidden and unhidden files/directories in the active directory. The "." and ".." navigation shortcuts are included in the unhidden total.

See Also: TotMarks

TOTMARKS

Location: All Tables (Status Field)

Description: Displays the total number of marked rows in the active table. Marked rows are displayed in light red.

TOTRECS

Location: Device Manager (Status Field)

Description: Displays the total number of records in the active configuration.

See Also: AtRec
TotMarks

TOTTABS

Location: Animated CAD-DXF(Status Field)

Description: Displays the total number of tabs in the Animated CAD-DXF window.

See Also: AtTab

TPRO DRIVER

Location: File Manager (Universal Viewer)

Description: Change the driver at the cursor position to the NxtPhase TPRO driver and plot the input channels.

Activation: *Menu:* Alt-D, O

Comments: NxtPhase files are displayed in the IEEE Comtrade Binary format. NxtPhase has developed an automatic conversion application called "AutoComtrade.exe". Wavewin calls "AutoComtrade.exe" to convert NxtPhase files to the Comtrade binary format for display. To view NxtPhase relay files double click or press enter on the original TPRO files. To obtain a copy of the "AutoComtrade.exe" file please contact NxtPhase.

Files that have a ".TPR" extension are automatically tagged as NxtPhase TPRO files.

See Also: Tesla Files in the File Manager Quick Start
Display Oscillography in the File Manager Quick Start
Associating File Types in the File Manager Quick Start

TPU/DPU/GPU DRIVER

Location: File Manager (Universal Viewer)

Description: Change the driver at the cursor position to the ABB TPU/DPU/GPU driver and plot the input channels.

Activation: *Menu:* Alt-D, E

Comments: If the selected file is not a valid TPU or DPU or GPU file an error message is generated. All files that have the ".CAP" extension are tagged as TPU/DPU/GPU files.

TRACE SCALE MULTIPLIER (ASM)

Location: Analysis (Window Properties Dialog)

Description: Used as a multiplier to increase/decrease the amplitude of the visible analog channels

Activation: *Menu:* Alt-F, T

Range: Greater Than 1.00

Default: 2.00

Comments: When a channel's amplitude is increased, the trace scale value is multiplied with the Pixsdisp value, and when the channel's amplitude is decreased the trace scale value is divided by the Pixsdisp value .

TRANSCAN DRIVER

Location: File Manager (Universal Viewer)

Description: Change the driver at the cursor position to the Mehta Transcan driver and plot the input channels.

Activation: *Menu:* Alt-D, 7

Comments: If the selected file does not have a corresponding SCF file an error message is generated. All files that have an extension that starts with “.X”, and there is a corresponding “.SCF” file in the same directory, are tagged as Transcan files.

See Also: Associating File Types in the File Manager Quick Start

TRIGGER-TIME

Location: Waveform Summary (Events/Sensors Activity Log)

Description: Displays the time the digital channel changed state. This value is displayed in the third column of the Events/Sensors Activity Log.

Comments: The Events/Sensors Activity Log displays a time-sequenced list of all the events and sensors activity.

TRUERMS

Location: Harmonics Table (Analysis)

Description: Displays the RMS value for all the samples between the RMS bar (black dotted line) and the data bar (black solid line).

Comments: This value is taken directly from the RMS column inside the analog information table.

See Also: Harmonics Table

TRUNCATE CYCLES

Location: Analysis

Description: Remove beginning, middle or end cycles from the active analysis window.

Activation: *Menu:* Alt-D, T, L: Left-Start to Data Bar
Menu: Alt-D, T, R: Data Bar to End
Menu: Alt-D, T, M: Data Bar to Reference Bar

Comments: There are 3 options available under the Truncate Cycles menu option. Left removes the cycles from the first sample to the data bar (solid black vertical line). Right removes the cycles from the data bar to the last sample. Middle removes the cycles from the data bar to the reference bar (dotted blue vertical line)

See Also: Truncate Cycles in the Analysis Quick Start

TYPE COLUMN

Location: File Manager

Description: Displays the fault type associated with the long file name. The eighth field in the file name defines the type field for the IEEE long file-naming format. This field represents the fault type or contents type of the file.

See Also: Long File Naming Format in the File Manager Quick Start

UN/MARK ROWS

Location: All Tables

Description: Mark or unmark the row at the cursor position.

Activation: *Direct:* Spacebar - Ctrl-Mouse Button
Menu: Alt-M, M

Comments: Marked rows are displayed in red. The TotMarks field displayed in the status bar is updated accordingly.

See Also: Unmarked Marks
Group Marked Rows

UNMARK MARKS

Location: All Tables

Description: Unmark all the marked rows in the table.

Activation: *Menu:* Alt-M, U

Comments: Marked rows are displayed in red. The TotMarks field, displayed in the status bar, is updated accordingly.

See Also: Mark/Unmark Rows
Group Marked Rows

VIEW MARK(S)

Location: Analysis

Description: Hide all the unmarked channels and resize the marked channels.

Activation: *Direct:* Enter
Menu: Alt-C, V


Comments: Individual channels are marked and unmarked by clicking the left mouse button on the channel's corresponding display ID or channel information or by pressing the spacebar. Marked channels are displayed in red.

See Also: Hide Mark(s)
Show All Hidden
Restore Mark(s)

VIEW RAW DATA FILE

Location: Analysis

Description: View the contents of the active displayed file in an ASCII editor or a hexadecimal editor.

Activation: *Direct:* Menu button 
Menu: Alt-F, V


Comments: The waveform file is displayed in an ASCII editor if the contents of the file are in text format and displayed in a hex editor if the file is in binary format.

See Also: Viewing/Modifying ASCII Files
Viewing/Modifying Binary Files

WAVEFORM DATA

Location: File Manager

Description: Plot the contents of the event file at the cursor position if there are no marked waveform files else plot all the marked waveform files.



Activation: *Direct:* <enter>, Plot menu button 
Menu: Alt-O, W, O

Comments: A maximum of 10 oscillography/log files can be opened simultaneously.

WAVEFORM SUMMARY

Location: File Manager and Analysis

Description: Generates and displays analog and digital summaries for the active file in the file table or in the analysis window.

Activation: *Direct:* Sum menu buttons  - File Table,  - Analysis
Menu: Alt-O, S – File Table, Alt-F, S – Analysis

Comments: The summary file displays the following information:

Waveform Information

Station: Name of the Station associated with the waveform.

Filename: The name of the waveform file.

File Size: The size of the file in kilobytes.

Prefault-Time: The date and time of the first prefault sample.

Fault-Time: The date and time of the first fault sample.

Save-Time: The date and time the file was saved to hard disk.

Process-Time: The date and time the file was processed into this summary.

Start Date & Time: Date and time of the first sample in the file.

End Date & Time: Date and time of the last sample in the file.

File Duration: Duration of the file measured in days, hours, seconds, milliseconds and/or microseconds, depending on the type of file.

Sampling Frequency: Sampling frequency and the time between each sample.

Line Frequency: Line Frequency defined in the file.

Fault Information

Fault Information is displayed for SEL, DLP and Transcan files. The fault information includes: Fault Type, Fault Time, Location, Targets, Triggers, Frequency, Event and Targets.

Maximum/Minimum Analog Summary

Max-Inst: Instantaneous maximum values.

Min-Inst: Instantaneous minimum values.

Max-RMS: RMS maximum values.

Min-RMS: RMS minimum values.

OneBit: The channel's full-scale value divided by the channel's resolution.

Inst-Diff: The difference between the Max-Inst and Min-Inst values.

RMS-Diff: The difference between the Max-RMS and Min-RMS values.

pU: The channel's prefix and units.

Description: The number and title of the channel.

Events/Sensors Activity Summary

Fst: The state the channel started at, A=alarm, N=normal.

Lst: The state the channel ended at, A=alarm, N=normal.

Fst-Change: The date and time the channel first changed state.

Lst-Change: The date and time the channel last changed state.

Changes: The number of times the channel changed state.

Description: The number and title of the channel.

Events/Sensors Activity Log

State: The state of the channel at the triggered time, A=alarm, N=normal.

Trigger Time: The time the channel changed state.

Description: The number and title of the channel.

Note: An xx:xx:xx.xxx in the events/sensors activity summary indicates that the digital channel's state did not change from the initial state (Fst).

WINDOW PROPERTIES

Location: Analysis

Description: Reposition the columns in the analog table, change the fields displayed in the combination view, change the background colors and trace colors; change the driver's data type, change the trace/phasor scale multipliers and more refer to the fields below.

Activation: *Direct:* Properties Menu Button
Menu: Alt-F, T



Fields:	<p><i>Analog Table Tab:</i> Reorder/Show/Hide the columns in the analog table.</p> <p><i>Analog Combination Tab:</i> Change the display positions in the analog combination view.</p> <p><i>Comtrade:</i> Define the Comtrade format for saving, the date and time format for display and set automatic conversion from RMS data to Peak data when using the "Save As Comtrade" feature.</p> <p><i>Colors:</i> Change the background colors and trace colors.</p> <p><i>Values File:</i> Format the save displayed values feature.</p> <p><i>Display Settings:</i> Change the trace/phasor scale multipliers and set general display properties.</p> <p><i>Append/Merge:</i> Set the append/merge properties.</p>
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Driver Data Type: Set the current display driver's data type to Peak type or RMS calibrated.
Filters: Define to delete spikes and set up spike properties.

Options: **OK:** Apply the selected changes and redraw the analysis window.
Cancel: Exit the dialog without executing the changes.


Comments: All data windows are defaulted to the display settings. The analog data columns depend on the data type specified.

See Also: Customizing the Analysis Display in the Analysis Quick Start
Viewing Analog Data in the Analysis Quick Start


ZIP FILES

Location: File Manager

Description: Zip a group of files or a single file using the "Zip Marked Files" option under the "File" menu. All support files needed to display the selected files will be automatically included in the zip file. Support files include Comtrade configuration (*.CFG), header (*.HDR) & information (*.INF) files, DFR's analog and digital information files such as: Hathaway DAU files, Rochester preamble and header files, Faxtrax/Director CTL files, Transcan SCF and TCF files.

Activation: **Direct:** Right Click Pop-up menu Button  Zip
Menu: Alt-F, Z

Fields: **New Zip File Name:** Enter a path and name for the new zip file.
EncryptHeaders: Click to encryptheaders.



Comments: To zip files, mark the desired files in the file table and select the "Zip Marked Files" option from the "File" menu or right click on the file table and select the "Zip"  Zip option from the pop-up menu. All support files needed to display the file(s) are automatically included.

See Also: Zip Files in the File Manager Quick Start

ZOOMING

Location: DXF Animated CAD

Description: Change the DXF display viewing area.


Activation: **Menu:** Alt-V, I, O
Direct: "+" & "-" keys, Menu buttons  & 

Comments: To zoom in press the "+" key, to zoom out press the "-" key or use the Zoom In and Out menu buttons to change the viewing area. If the Max X and Max Y variables, inside the status bar, are at 32000 then this feature is not be available

ZOOM IN

Location: DXF Animated CAD

Description: Increase the drawing's resolution by multiplying 2.5 with the current X, Y resolution.

Activation: *Direct:* "+" key – Zoom in menu button 
Menu: Alt-V, I


Comments: The Max X and Max Y variables inside the status bar are updated accordingly.

Restrictions: The Max X and Max Y resolution values cannot exceed 32000.

ZOOM OUT

Location: DXF Animated CAD


Description: Decrease the drawing's resolution by dividing 2.5 by the current X, Y resolution.

Activation: *Direct:* "-" key – Zoom out menu button 
Menu: Alt-V, O

Comments: The Max X and Max Y variables inside the status bar are updated accordingly.

ZOOM X, Y RESOLUTION PROPERTIES

Location: DXF Animated CAD

Activation: *Direct:* F2 - Properties menu button 
Menu: Alt-T, D

Description: Set the drawings max X and max Y resolution values.

Max X Pixel: The maximum X resolution value.

Max Y Pixel: The maximum Y resolution value.

Range: Less than 32000

Index

A

active topic-help	1
adjust file time	1
align channel data	1
analog mark/unmark all	1, 2
analog table	2
append log files	3
append open files	3
append waveform files	4
as status field	5
ascending sort	4
ascii editor	4
new file	48
open file	49
paste text	49
ASCII event file	5
copy text	16
cut text	16
delete text	18
print	52
save as	59
ASCII terminal mode	5
at file	6
atrec	6
attab	6
audio wave driver	6
auto detect	6
auto scale	6

B

background color	7
channels	11
binary event file	7
print	52
save as	59
save as text	59
binary terminal mode	7

C

calibration report	8
change device configuration	8
change dxf files	9
change frequency	10
change passwords	10
change path	9
change query operator	11
changes	79
channel information	11, 66
clear analog colors	12
clear query criteria	12
combination view	12
combine log files	12
comname properties	13
comname(s) rename	13

company name	14
compress comtrade files	14
comtrade	14, 50
condense time	14
copy device records	15
copy files	15
copy text	16
create directory	16
cut text	16
cut/copy/paste files	15
cycle hop	17

D

d&t status field	17
data bar	17
data display	
adjust file time	1
align channel data	1
analog mark/unmark all	1, 2
analog table	2
append open files	3
as status field	5
auto scale	6
change frequency	10
channel background color	11
channel information	11, 66
clear analog colors	12
combination view	12
condense time	14
cycle hop	17
d&t status field	17
data bar	17
decrease amplitude	17
delta x	19
delta y	19
digital mark/unmark all	20
driver data type	23
duplicate cycles	23
email active file	27
expand time	28
fault bar	29
fault reference time bar	30
freq status field	31
group marked analog channels	33
harmonic vectors	34
harmonics table	34
hide marked channels	35
histogram	35
horizontal bars	36
increase amplitude	37
instpeak column	38
instval column	38
mark change in sign	41
mark peaks	41
mark raw samples	41
mark/unmark all	40
maxpeak column	42

maxval column	42	ASCII event files	5
maxwin column	43	ASCII terminal mode	5
medium display	43	atrec	6
merge open files	43	bianry event file	7
minpeak column	44	binary terminal mode	7
minval column	44	change device configuration	8
move reference bar to data bar	45	change dxf files	9
move rms bar to reference bar	45	change passwords	10
phasor/circular chart scale multiplier	50	copy device records	15
pixsdisp column	50	delete devices	18
predefined views	62	display dialog	20
primary values	51	duplicate device	23
print	51	dxf animated cad	25
recorder channels	53	edit device	26
reference bar	54	export	29
refval column	54	flip marks	30
reopen waveform file	55	ftp connection	32
resize sliding window	56	function keys	33
restore channels	56	import	37
restore original file	56	multiport interrogation display	46
rms bar	57	new configuration	46, 47
rmsval column	57	new device	47
sample based	58	paste device records	49
save displayed values	60	resize columns	55
save user views	60	save and archive dialog	58
secondary values	61	sort	19
select lines/views	62	sort devices	69
select user views	62	sort field	69
set opening frequency	64	sort marked rows	70
shift marks down	65	tcp/ip connection	73
shift marks up	65	test devices	73
show all digital	66	totfiles status field	74
show all hidden channels	66	un/mark	77
single ended fault location	67	unmark marks	77
software analog channels	68	digital mark/unmark all	20
software digital channels	69	digital state	79
super impose	71	display dialog	20
sync data cursors	71	disturbance report	21
time based	73	dlp1/dlp3	21
total harmonics distortion	74	drawing properties	22
trace scale multiplier	75	driver	
truerms	76	audio wave	6
truncate cycles	76	driver column	22
view mark(s)	77	driver configuration	22
view raw data file	78	driver data type	23
waveform summary	78	drivers	
window properties	79	ascii	4
database viewer		auto detect	6
comma delimited	12	comma delimited table	12
double quoted comma delimited	21	comtrade	14
tab delimited	72	configuration	22
decrease amplitude	17	dfr I II IIB	2, 20, 38
delete channels	35	dlp1/dlp3	21
delete devices	18	double quotes/comma delimited table	21
delete files	18	dxf	25
delete text	18	faxtrax & director	30
delta x	19	hexadecimal	35
delta y	19	mdar/rel 301/302	43
descending sort	19	RFL	57
device field	20	sel load profile	61
device manager		sel relay	62
animated cad-dxf	3	tab delimited	72

tesla	8, 28, 31, 39, 55, 70, 72, 75
tis 73	
tpu/dup/gpu	75
transcan	75
duplicate cycles	23
duplicate device	23
dvreport.dtb	8
dxfile animated cad	25
animated display	3
attab	6
background color	7
change dxfile files	9
drawing properties	22
dxfile control	25
max x pixels	42
max y pixels	42
print	52
set drawing properties	64
size to original	68
size to window	68
tottabs	74
zoom in	80
zoom out	81
zoom x, y resolution constant	81
zooming	80
dxfile control	25
dxfile display	25

E

edit dau-def	26
edit device	26
email active file	27
email files	27
equal to	28
expand time	28
export	29

F

fault bar	29
fault date column	29
fault information	79
fault location	67
fault reference time bar	30
fault time	78
fault time column	30
faxtrax & director	30
file manager	
append log files	3
append waveform files	4
ascii driver	4
ascii editor	4
at file	6
audio wave driver	6
auto detect driver	6
calibration report	8
change path	9
combine log files	12
comname properties	13
comname(s) rename	13
company column	14
compress comtrade files	14

comtrade driver	14
copy files	15
create directory	16
cut/copy/paste files	15
delete files	18
device column	19
dfr I II IIB & 2000 driver	2, 20, 38
disturbance report	21
dpl1/dlp3 driver	21
driver column	22
driver configuration	22
dxfile driver	25
edit dau-def	26
email files	27
fault date column	29
fault time column	30
faxtrax & director driver	30
file name column	30
folder tree	31
free status field	31
f-type column	29
group marked rows	33
hexadecimal driver	35
hexadecimal editor	35
mark all	40
mark/unmark rows	41
mdar/rel 301/302 driver	43
merge waveform files	44
move files	45, 51
mrksize status field	46
open all marked waveform files	48
optional columns	49
print	52
refresh directory	54
rename file	55
reports	
calibration	8
RFL9300 driver	57
run applications	57
save as comtrade	59
save date column	60
save time column	60
sel load profile driver	61
sel relay driver	62
set sort field	65
show/hide channel titles	65
size column	68
size status field	68
soe list	63
soe summary	63
tab delimited driver	72
tesla driver	8, 28, 31, 39, 55, 70, 72, 75
tis driver	73
totfiles status field	74
totmarks status field	74
tpu/dup/gpu driver	75
transcan driver	75
type column	76
waveform file	78
waveform summary	78
zip files	80
file name column	30

file size	78
filename.....	78
flip marks	30
folder tree	31
free status field	31
freq status field	31
Fst	32, 79
fst-change.....	32, 79
ftp connection	32
f-type column.....	29
function keys	33

G

group marked analog channels	33
group marked rows.....	33

H

harmonics	
histogram	35
table	34
vectors	34
help	1, 34
hexadecimal editor	35
hide marked channels	35
histogram.....	35
horizontal bars	36
hp-dif	36
hpeak-dn	36, 79
hpeak-up	37, 79

I

IEEE long file name	37
import	37
increase amplitude	37
insert channels	56
instpeak column	38
instval column.....	38

L

latitude field	38
less than	38
log files	
append	3
combine	12
long file name	
company field	14
device field	20
latitude field	38
start date field	70
start time field.....	70
substation field	71
system files	72
tcode field.....	72
long filename	
company column	14
device column	19
optional columns	49
lp-dif	39
lpeak-dn.....	39, 79

lpeak-up	39, 79
Lst	40, 79
lst-change	40, 79

M

mark all rows	40
mark change in sign	41
mark peaks	41
mark raw samples	41
mark/unmark all channels	40
mark/unmark rows.....	41
max x pixels	42
max y pixels	42
maxpeak column	42
maxval column	42
maxwin column	43
mdar/rel 301/302	43
medium display	43
merge open files.....	43
merge waveform files	44
minpeak column	44
minval column	44
move files	45, 51
move reference bar to data bar	45
move rms bar to reference bar	45
mrksize status field.....	46
multiport interrogation display	46

N

new configuration	46, 47
new device	47
new file	48

O

onebit	48, 79
open all marked waveform files.....	48
open file	49

P

paste device records	49
paste text	49
path/filename (no ext.)	50
phasor/circular chart scale multiplier	50
pixsdisp	50, 75
pixsdisp column.....	50
predefined views	62
prefault time	78
primary values.....	51
print	
ascii event file	52
binary event file.....	52
data display.....	51
dxf animated cad	52
file manager	52
printer setup.....	52
printer setup	52
process time.....	78
pU	79

Q	
query all rows	52
query fields	
change query operator	11
clear query criteria	12
equal to	28
less than	38
query all rows	52
query marked rows	53
query unmarked rows	53
query marked rows	53
query unmarked rows	53

R	
recorder channels	53
reference bar	54
reference time bar	30
refresh directory	54
refval column	54
rename file	55
reopen waveform file	55
reports	
append log files	3
calibration	8
combine log files	12
soe list	63
soe summary	63
reposition channels	65
resize columns	55
resize sliding window	56
restore channels	56
restore original file	56
RFL	57
rms bar	57
rmsval column	57
run dialog	57

S	
sample based display	58
save and archive dialog	58
save as	59
save as comtrade	
data display	59
file manager	59
path/filename (no ext.)	50
save as text	59
save date column	60
save displayed values	60
save time	78
save time column	60
save user views	60
scaling	14, 18, 28, 37
secondary values	61
sel load profile driver	61
sel relay driver	62
select lines/views	62
select user views	62
set drawing properties	64
set opening frequency	64
set sort field	65

show all channels	66
show all digital channels	66
show/hide channel titles	65
single ended fault location	67
size column	68
size status field	68
size to original	68
size to window	68
soe list	63
soe summary	63
software analog channels	68
software digital channels	69
sort	4, 19
sort devices	69
sort field	69
sort marked rows	70
start date field	70
start time field	70
station	78
substation field	71
super impose	71
sync data cursors	71
system files	72

T	
tcode field	72
tcp/ip connection	73
tesla driver	8, 28, 31, 39, 55, 70, 72, 75
test devices	73
time based display	73
tis driver	73
total harmonics distortion	74
totfiles status field	74
totmarks status field	74
tottabs	74
tpu/dup/gpu driver	75
trace scale multiplier	75
transcan driver	75
trigger time	76, 79
truerms (samples)	76
truncate cycles	76
type column	76

U	
un/mark file	77
unmark marked files	77

V	
view marked channels	77
view raw data file	78

W	
waveform file	78
waveform files	
append	4
waveform summary	78
changes	79
description	79
digital state	79

end date & time	78
fault information	79
file duration	78
file size	78
filename	78
Fst	32, 79
fst-change	32, 79
hp-dif	36
hpeak-dn	36, 79
hpeak-up	37, 79
line frequency	78
lp-dif	39
lpeak-dn	39, 79
lpeak-up	39, 79
Lst	40, 79
lst-change	40, 79
onebit	48, 79
prefault time	78

process time	78
PU	79
sampling frequency	78
save time	78
start date & time	78
station	78
trigger time	76, 79
window properties	79

Z

zip files	80
zoom	
dxf animated cad	80
zoom in	80
zoom out	81
zoom x, y resolution constant	81

Notes

Notes

Notes
