AEwinPost, Utility Software

for Post Processing Acoustic Emission Data

PHYSICAL ACOUSTICS CORPORATION
A MISTRAS Holdings Company

Physical Acoustics presents AEwinPost; a fully featured Utility in AEwin™ for post processing Acoustic Emission (AE) data. The utility allows data preview using graphs, plots and tabular views. The data can be sorted, filteredetc through user select actions or user defined advanced filters. Waveform viewing and feature extraction, first hit extraction and many more complete the features availablein AEwinPost. The treated data can be exported to a new DTA or TDA file and used in AEwin™ or other PAC software (e.g. SP2-LOC, MISTRAS etc). AEwinPost offers multiple on-screen plots to filter data while viewing the results before deciding. Data file merging is made easy through intuitive dialogs. AEwinPost is the ideal companion to AEwin for AE data filtering and post analysis. AEwinPost may be used in conjunction with Noesis (Advanced Data Analysis, Pattern Recognition & Neural Networks Software) for further analysis and classification of AE data.

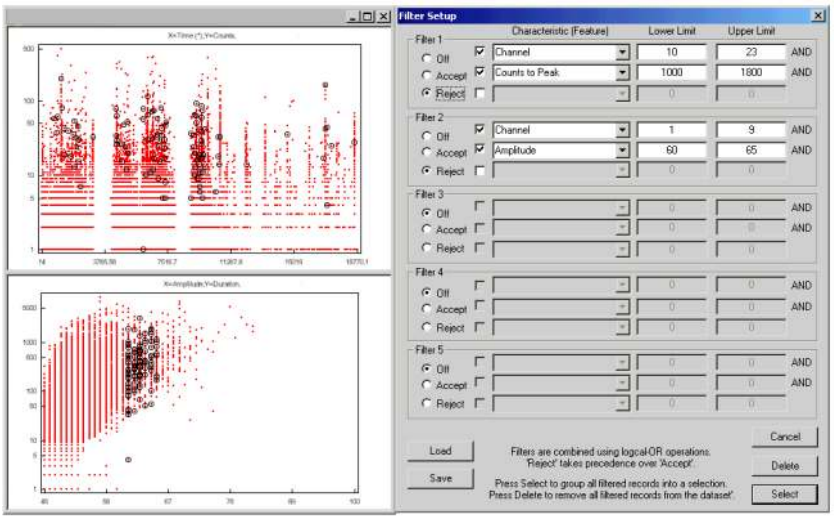
AEwinPost combines Data (hit) graphs, Waveform plots, and Tables (hit detail listings) for smart, quick and user friendly filtering.

Specifications

* Windows 98/ME/2000/XP compatible.
* The application is an optional utility to AEwin and is activated from within themain application window.
* It supports PAC (DTA/ TDA / WFS) AE data files.
* More than one data files canbe opened for merging.
* Graphs and data can be copied and used in other windows applications.

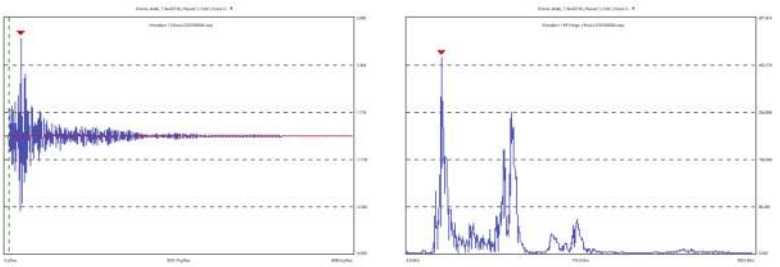
Data Filtering

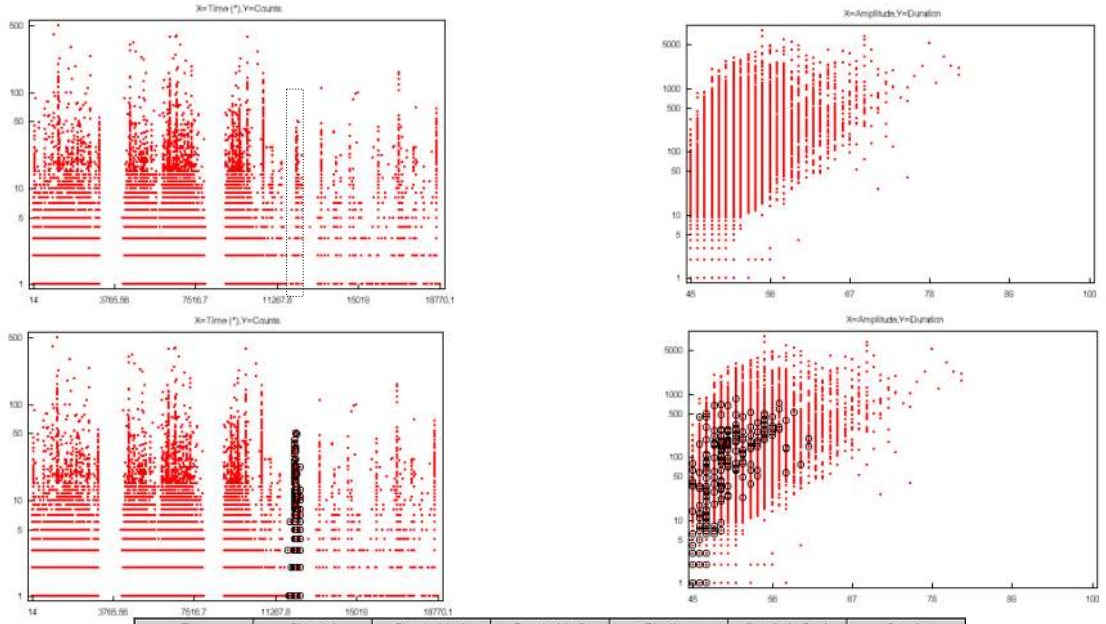
* Graphical filtering in each available graph.
* Mouse select-delete actions for manual filtering. Easy to use as any select action in Windows software.
* Data Filters for advanced user defined filtering. This feature allows the user to build complex filters and apply them to the data. The output can be a selection so that the filtering results can be reviewed before any data are deleted (see screen shoton next page).
* First Hit extraction based on user definedsettings.
* Data file merging in time. This feature offers a number of ways to combine two or more data files in time via an easy to use dialog.
* Data from specific channels can be removed by a mouse click.
* Data can be time ordered for feature extraction from TDA files.
* Export the filtered, sorted etc data toa new DTA orTDA file for use in AEwinor other software (Noesis, SP2-LOC etc).



Typical filtering action using the Data Filters dialog. A complex filter has been set-up and applied to the data. The results can be seen as a selection on the two graphs so that the user can review the effect of the filter before deleting any data.

Waveform viewing in AEwinPost. Waveform (left), Corresponding FFTmagnitude (right). Waveforms can be selected and their corresponding hits will show on all plots or vice versa. Feature extraction can provide a complete feature set.



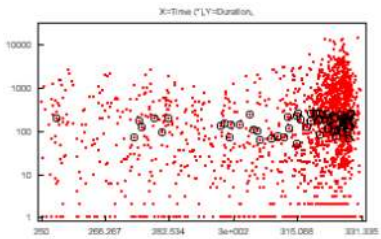


Time	Channel	Parametric 1	Parametric 2	Risetime	Counts to Peak	Counts
11601.6995990000	55	3.45	2.6	7	1	1
11601.7225295000	9	3.45	2.6	4	1	1
11721.5041972500	47	3.445	2.595	4	1	1
11721.5146475000	39	3.445	2.595	8	2	2
11856.4452190000	30	3.49	2.605	13	2	3
11937.1563170000	32	3.515	2.615	5	1	1
11976.7040100000	6	3.535	2.625	7	1	1
11976.7040102500	5	3.535	2.625	6	1	1
11976.7040105000	24	3.535	2.625	6	1	1

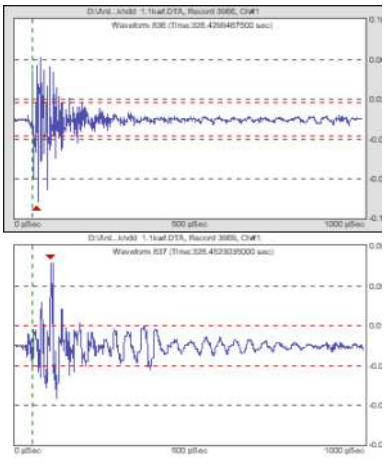
An Example of the mouse select action on a point plot. The upper graphs are typical graphs in AEwinPost. The user has selected some data dragging the mouse over the data (dashed rectangle) . The selection is shown on the lower graphs. Part of the selection is visible on the Hit Table (greyed hits). A selection is visible in this manner in all data graphs, waveform graphs and tables. The data selected can be removed (deleted) by just pressing the Del button.

Graphs and Data Viewing

* AEwinPost allows the user to review the data when performing filtering actions. Point, bar and cumulative plots are available to assist the user to correctly and easily filter the data.
* Graphs can be zoomed and panned for detailed data viewing.
* Tabular views of the data are also available to review each hit in detail.
* Waveform views can be used when the data contain waveforms. Waveform zooming actions are available along with FFT magnitude.
* Many options are available to customize graphs.
* Graphical filters can be set-up for each graph individually.
* Hit details can be viewed in tables where they can selected.



Hit correspondence on normal point plots (left), waveform plots (greyed waveform is in the selection) (right) and hit table (greyed hits are in the selection) (bottom).



Time	Counts to Peak	Counts	Energy	Duration	Amplitude
324.7680240000	1	7	1	62	53
324.7709862500	2	183	277	4694	80
324.7809715000	3	9	3	107	60
324.7862440000	4	15	11	552	52
324.7927857500	1	1	0	7	46
324.7998370000	6	11	4	140	54
324.8070537500	1	1	0	4	47
324.8098080000	2	20	18	959	58
324.8194685000	6	12	5	217	56
324.8230247500	4	10	9	1077	49
324.8292437500	1	3	0	54	48

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