

# SO Analyzer

## e-Reporter

e-Reporter is the powerful data management and reporting tool within m+p international's SO Analyzer for noise & vibration measurement and analysis. It provides test engineers with comprehensive capabilities for browsing and viewing data, copying & pasting data to ActiveX applications, importing test data from many third-party noise & vibration systems and automating repetitive tasks. This full functionality is available without any measurement hardware connected.

### Key Features

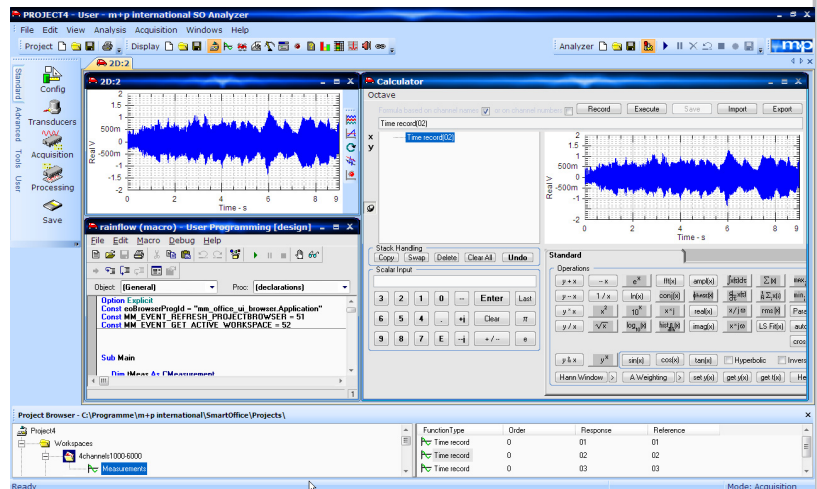
#### e-Reporter Standard

- Central management, analysis and reporting of all noise and vibration data
- Data import and export for \*.UFF, \*.SOT, \*.RPCIII file format
- Data import for m+p VibControl file format
- Browse, view, rescale, analyze, organize measurement and modeshape results
- 2D and 3D (Waterfall) charts, animation display for mode/deflection shapes
- Copy & paste ActiveX elements to MS Word and PowerPoint
- Rescale and analyze test data in MS Word or MS PowerPoint on any PC with the free SO Viewer software
- Microsoft Windows like user interface

#### e-Reporter Pro

includes all e-Reporter Standard features plus:

- Import/export data files to and from many popular formats
- Mathematical operations with built-in Calculator
- Automated ActiveX reporting to Microsoft Word
- Automate repetitive tasks and implement your own functions with embedded user programming



### Applications

- Integrate test data from different sources into one common data processing and reporting environment
- View, analyze and reformat test data
- Generate automatic or interactive reports

## Data Management

The Browser, the main user interface of the e-Reporter, can contain one or more workspaces for storing measurement data, very similar to the Windows Explorer concept. Data of other projects can be imported and mixed with the current project to create new project structures. Data are moved between workspaces with the standard drag & drop operation. Measurement setups and layouts can be stored independently of the data to allow simple reuse in other projects. The test data file size is mainly limited by the computer performance.

- Import data or projects, export workspaces
- Add/delete workspaces (unlimited number)
- Copy and paste data files between workspaces
- Show, delete, sort, edit data files
- Project Catalog tool to manage multiple project files

## Viewers

Data can be viewed in 2D and 3D/Waterfall displays simply by dragging and dropping. A full range of display formatting features like cursors, colors etc. is available. Windows like dropdown menus simplify the operation.

All displays, including the data, can be copied and pasted directly into ActiveX compliant applications such as Microsoft Word and PowerPoint. With the SO Viewer in the background, the displays stay active giving the user the same data analysis and viewing features as in the e-Reporter.

### 2D Viewer

- Same display functionality online and offline
- Unlimited number of displays and unlimited number of traces per display
- Change appearance of chart, plot area, axes, grids, traces, cursors
- Add header information to display
- Y-axis type: real, imaginary, amplitude, phase, log, dB, real+imaginary, amplitude+phase, log+phase, dB+phase, Nyquist
- Y-axis scaling: autoscale, free, fixed, rms, peak, peak-peak with automatic data conversion
- X-axis type: lin, log, octave
- X-axis scaling: autoscale, free, fixed
- Unlimited number of cursors
- Cursor functions: harmonic, nudge, seek to peak, seek to max, show value, show difference, RMS and Q-factor calculation between/at cursor(s)
- Display calculator functions: acoustic weighting and unweighting, 1/1 and 1/3 octave, fft, integrate, differentiate, square root, orbit
- Tacho/frequency readout from time data
- Least squares fit analysis
- Amplitude distribution statistics: standard deviation, skewness, kurtosis
- Zooming, scrolling and rescaling with mouse, scroll mouse or keyboard entry
- Data cuts

- Export to clipboard for Excel import

- Characteristic value table: max, Q, peak, hi peak, lo peak, peak, deltaT, deltaV, mean, rms, damping, AC rms, L10, L50, L90, deviation, skewness, kurtosis

### 3D Viewer

- Same display functionality online and offline
- Unlimited number of displays and up to 1024 traces per display
- Change appearance of chart, plot area, axes, grids, traces, cursors
- Traces as line, plate, shaded plate, surface, shaded surface, bar, shaded bar, 2D color plot XZ and ZX, colors configurable
- XYZ Cursors and harmonic cursors
- Y-axis: real, imaginary, amplitude, phase, log, dB; rms, peak and peak-peak scaling
- X-axis: lin, log, octave, order
- Z-axis: rpm, time, order, Z, record number, frequency
- Zooming, rescaling and rotating with the mouse
- 3D viewer for analog tacho inputs on any number of channels for RPM spectral maps and manual order tracks.<sup>1)</sup>

## Units

To ensure all data is available in standardized engineering units a large selection of units, including different spellings, is available in the Unit Viewer. New units can be created by the user and default units can be set.

- Create new units in an Excel sheet
- Set default units and scaling factors
- Set dB references

<sup>1)</sup> e-Reporter Pro only

## All Data Import/Export<sup>1)</sup>

### Data Import

- Universal File Format (\*.UFF, \*UNV), HP (Agilent) Standard Data Format (\*.SDF, \*.DAT), Excel (\*.CSV), WAVE (\*.WAV), MATLAB (\*.MAT), TEAC (\*.HDR), LMS (\*.TDF), Sony (\*.LOG), B+K Pulse (\*.TXT), OROS OR25 (\*.AE2), OROS OR3x (\*.RES), Onosokki (\*.TXT), STI (\*.VDF), MTS Engineering Office (\*.DDA), MTS RPCIII (\*.CSD, \*.RPC, \*.RSP, \*.TRN), MTS I-DEAS Test (\*.AFU, \*.ATI, \*.ASA), m+p VibControl (\*.RSN, \*.RRN, ...), CDS (\*.SPE, .SPW), Data Physics (\*.SIG), Unidyn (\*.DAT), Dactron (\*.TXT)

### Data Export

- Universal File Format (\*.UFF, \*UNV), HP Standard Data File (\*.SDF, \*.DAT), MTS Engineering Office (\*.DDA), MTS RPCIII (\*.CSD, \*.RPC, \*.RSP, \*.TRN, \*.DRV), MATLAB (\*.MAT), various ASCII text formats including clipboard for cut & paste to Excel

## Calculator<sup>1)</sup>

The Calculator performs mathematical operations on scalar inputs and on 2D data files. Operations such as FFT, inverse FFT, integration/differentiation etc. can be done on a single data file or simultaneously on multiple data files. Operation is as simple as dragging and dropping the data file(s) to the calculator's stack, pressing a button for an operation, viewing the result in the calculator's 2D viewer and dragging and dropping the result(s) back from the stack to the workspace. A series of mathematical operations can be saved and reexecuted as a macro across a number of measurement channels. This allows a user to simply create his own complex analysis functions.

- Computing with complex numbers
- Reverse polar notation style calculator with x and y stacks
- Computed functions: standard scientific calculator functions plus FFT, inverse FFT, integration, differentiation, phase, real, imaginary, complex conjugate, histogram, sum, average, rms, least square fit, absolute, modulo, phase reference, PSD, Gxy, FRF, coherence

## Reporting<sup>1)</sup>

A sophisticated Reporting Wizard provides users with a step-by-step approach to automatically report hundreds of measurement data or modeshapes. The step-by-step-procedure includes the selection of the data to be reported, the creation or modification of a MS Word based template, filtering and sorting of the data and printing the report as MS Word document. The final report can be a bitmap or ActiveX document.

- User-defined Microsoft Word document templates
- Templates can contain 1 or more 2D, 3D and animation displays
- 2D displays can contain 1 or more overlaid traces
- Standard and user defined header (metadata) information is automatically inserted as text or in tables within the report
- Report setups can be stored
- Data selection from the Browser/Workspaces or from data stored on disk or on a network disk
- Multi-level grouping, filtering and sorting of data based on standard or user defined header information
- Reporting to file or to printer
- Active report documents have active display controls (rescaling, cursors, etc.)
- Quick report allows reporting directly from the workspace

<sup>1)</sup> e-Reporter Pro only

## User Programming<sup>1)</sup>

Visual Basic compatible user programming takes automation to new levels with easy to use macro and user programming capabilities. The level of programming ranges from simple macros with Sax Basic to custom forms and actions using Microsoft Visual Basic. Automating tasks, writing data import filters etc. are typical applications.

- Sax Basic editor, compatible with Microsoft Visual Basic
- Use Microsoft Visual Basic to create advanced user interfaces, forms etc.
- A comprehensive set of example programs is included

## Operating System

- Microsoft Windows XP/Vista/7

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<sup>1)</sup> e-Reporter Pro only

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Product Information

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