

# PSV 8.5 Scanning Vibrometer Software



## OVERVIEW OF NEW FUNCTIONALITIES

Today non-contact vibration mapping of entire surfaces with Scanning Laser Vibrometry is an efficient technology for both the NVH engineer and the researcher. Incorporating this innovative tool seamlessly into the CAE world, providing full features and keeping a software package as easy to use as it is known for is an ongoing process. The new 8.5 Release of the Polytec Scanning Vibrometer-Software is again a big step ahead on this path. This documentation will guide you through the advanced features incorporated into this release.

### New PSV Software Release 8.5

The Scanning Vibrometer Software represents the "brain" of the Vibrometer System and guides all measurement, control, regulation and analysis tasks in the data acquisition system. The PSV Software has significantly expanded and enhances the data acquisition, analysis and presentation modes with the release of version 8.5. Again numerous requests and suggestions from the user community have been incorporated in the new release to make surface vibration measurements even more powerful, easier and more user-friendly.

**Among other items, the following features have been implemented in version 8.5:**

### 1 Extended MIMO support

Calculation of Virtual Coherences and Principle Inputs for Multiple Input excitation (PSV-400 with PSV-S-PCA software extension).

#### Your benefit

- Improved support for MIMO measurements. Allows a better evaluation of the effectiveness of a specific shaker excitation in a multi-shaker setup. With Virtual Coherence the quality of measurement results can be estimated more facile.

### PSV 8.5 NEW FEATURES

1. Extended MIMO support
2. Support for new PSV Junction Box generation
3. Autofocus calibration
4. Import for external data
5. Seamless display of stitched data
6. Extended number of FFT lines
7. Signal Enhancement in time domain
8. Compatibility to external data acquisition systems
9. Floating licenses for PSV analysis versions
10. Windows Vista support
11. Window settings management
12. Combined geometry data
13. Maintenance notification
14. Settings files
15. Working with read-only files
16. Color coding of multiple traces
17. Transparency setting for measurement grid
18. Calculation of hidden points
19. Selection of points at the rim
20. Signal Processor extensions
21. Geometry measurement for the MSA
22. Support for new MSA-E-500 Junction Box generation

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## 2 Support for new PSV Junction Box generation

Both Junction Boxes PSV-E-401 and PSV-E-401-3D are supported.

Features:

- 4 independent signal generator outputs (PSV-400-H4 and PSV-400-3D)
- Integrated Scanner Control electronics are supported

### ***Your benefit***

- Up to 4 shakers can be driven in a MIMO measurement setup. The integrated scanner electronics, which were located in Data Management System (DMS) before, facilitate the subsequent update of the DMS. Less boards have to be exchanged. In addition, less cabling is necessary.

## 3 Autofocus calibration

Integration of an autofocus calibration routine. The PSV-I-400 scan head can be equipped with different lens types. If the focal length is made known to the system or a focal calibration procedure is run, PSV calculates the focus value for each point in a known geometry (PSV-400-3D and PSV-400 with Geometry Scan Unit).

### ***Your benefit***

- A separate focus scan is no more required. The measurement procedure gets quicker.

## 4 Import for external data

Since Version 8.4 measurement data acquired with external measurement systems can be imported into an existing measurement geometry. With PSV 8.5 it is no more required to have a valid measurement value per point prior to importing the data.

### ***Your benefit***

- This feature facilitates the integration of measurement points which can not be accessed optically by the PSV (hidden points) if a geometry is imported. Measurement points measured e.g. with accelerometers can now be directly imported for a complete data set.

## 5 Seamless display of stitched data

Measurements made from multiple positions and then combined onto the same geometry model will be displayed without gaps between measurement regions.

### ***Your benefit***

- Allows a seamless display of the ODS also in combined files.

## 6 Extended number of FFT lines

A new software option PSV-S-EXTFFT supports 25,600, 51,200, 102,400, 409,600 and 819,200 FFT lines (requires PSV-S-FFT128 software option)

### ***Your benefit***

- Highest frequency resolutions are possible for high frequency measurements. Extends the performance of the Zoom FFT function for the High Frequency version (M2-20).

## 7 Signal Enhancement in time domain

The feature "Signal Enhancement" (SE) is now available in time domain. The vibration signal is acquired with over-sampling. Dropouts caused by speckle effects on rough surfaces are

automatically suppressed. You can toggle between normal mode and SE mode. (PSV-400-H4 and PSV-400-3D)

**Your benefit**

- Improves signal quality for time domain evaluations.

## 8 Compatibility to external data acquisition systems

Extended range of possible sampling frequencies ( $f_s = 400, 800, 2000, 4000, 8000, 20000, 40000, 80000$  Hz) for PSV-400-H4 Systems. Results are compatible to measurements performed with other DAQ systems (e.g. LMS Pimento etc.)

**Your benefit**

- This feature facilitates the import of external measurement data in a PSV measurement file. In post processing results are easy to compare.

## 9 Floating licenses for PSV Analysis version

Support of floating license hard-locks for the analysis version of PSV Software allow a predefined number of users to work at the same time in the same network.

**Your benefit**

- No hardlock has to be installed at the workstation. This gives more flexibility for the users to have the analysis version always available in the network.

## 10 Windows Vista support

Microsoft Windows Vista is supported for the PSV Software Analysis Version.

**Your benefit**

- Most new PC and laptops have Windows Vista preinstalled. Vista support allows to use the analysis version on all new computers equipped with a Microsoft Vista version.

## 11 Window settings management

The settings for the analysis and visualization windows can be stored, recalled and copied to other windows. The restoring function at start up of the software can be toggled on and off.

**Your benefit**

- The user can store his preferred windows settings and restore it for specific measurement tasks.

## 12 Combined geometry data

The geometry files of a combined measurement file is available in the PSV browser window and can be reused in a new measurement.

**Your benefit**

- Combined geometries can be reused for new measurement tasks. No exporting to third party software packages is necessary.

## 13 Maintenance notification

Notification about expiring software maintenance

**Your benefit**

- Every new PSV software release includes many features to enhance the productivity of the PSV system. A valid software maintenance contract keeps your system up-to-date.

## 14 Settings files

Settings files are now available directly in the file-open dialog.

### ***Your benefit***

- Gives an additional access to the system settings.

## 15 Working with read-only files

With version 8.5 changes like band definitions, creating user defined data sets are stored temporarily and have to be confirmed in a "Save" dialog.

### ***Your benefit***

- Allows working with read-only original files and eliminates the risk to overwrite the original file.

## 16 Color coding of multiple traces

If more than one trace is displayed in the analyzer window (e.g. MultiFrame data, user defined data sets), the traces can be color-coded with user defined colors. This applies also for Signalprocessor analyzer windows

### ***Your benefit***

- Better overview in the analyzer window.

## 17 Transparency setting for measurement grid

For PSV, MSV and MSA Systems featuring a Radeon X1800 GTO graphics board (or higher) the transparency setting of the measurement grid can be changed.

### ***Your benefit***

- If measurement grids with high point density are defined, the underlying sample can be made visible without hiding all measurement points.

## 18 Calculation of hidden points

PSV is featuring a parameter for setting the tolerance level for the calculation of hidden points in an imported geometry.

### ***Your benefit***

- Avoids measurements on edges which may not be valid because the laser does not completely hit the specified point.

## 19 Selection of points at the rim

In Acquisition Mode / Define Scan points / APS Point Mode the points at the rim can now easily be selected. The selected points can be moved e.g. to the inner part of the measurement grid.

### ***Your benefit***

- When working with measured geometries this feature helps to make sure that the laser completely hits the specified point at the edge.

## 20 Signal Processor extensions

The software feature Signal Processor has an improved user interface and has been extended by several features. One can toggle between showing results and formulas in the cells. The Signal Processor provides a list of all functions for direct import into the input line.

### **Your benefit**

- More capabilities for post processing of data sets. Easier handling and selection of functions.

## PSVsoft for MSA Micro System Analyzer

Here are some additional features that are only applying for the MSA Micro System Analyzer.

## 21 Geometry measurement for the MSA

Support for scan geometry measurement for MSA Micro System Analyzer systems featuring the MSA-E-500 Junction Box (with PSV-S-ImpGeo software option).

### **Your benefit**

- Allows 3-D alignment and working with imported geometries from FE models.

## 22 Support for new MSA-E-500 Junction Box generation

Features:

- Integrated Scanner Control electronics are supported

### **Your benefit**

- The integrated Scanner Electronics, which were located in the Data Management System (DMS) before, facilitate the subsequent update of the DMS. Less boards have to be exchanged. In addition, less cabling is necessary.

## How to benefit from the latest innovations?

Polytec will design your personal software maintenance plan, which entitles to receive your copy of the latest release.

Contact your local Polytec representative for the latest information on our innovation!

## Further Information

Please consult the documentation delivered with your software and the release notes for a detailed description of

- further improvements,
- hardware requirements,
- hardware compatibility,
- supported software interfaces and bug fixes

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