

## Dongle-free HEAD acoustics Software

HEAD acoustics offers a number of free software applications, such as the HEAD Monitor or the HEAD Explorer Extension. One purpose of these dongle-free applications is to allow, for example, ArtemiS users to exchange their data with customers or colleagues who don't have access to ArtemiS. This Application Note explains the major functions of the HEAD Monitor and the HEAD Explorer Extension.

### HEAD Monitor

The HEAD Monitor can be used for viewing, checking and playing HDF/DAT and Wave files. This includes both the viewing of time signals and the display of a preconfigured FFT analysis of the entire time signal or a part of it (figure 1). Furthermore, result files saved with ArtemiS in HDF format can be viewed with the HEAD Monitor as well. For the display, the familiar scaling and zoom functions are available as well as a percentage scale for the time signal for checking the level adjustment. The user can also play back separately selected channels of the current time signal e.g. via a sound card, a PEQ or a SQuadriga unit.

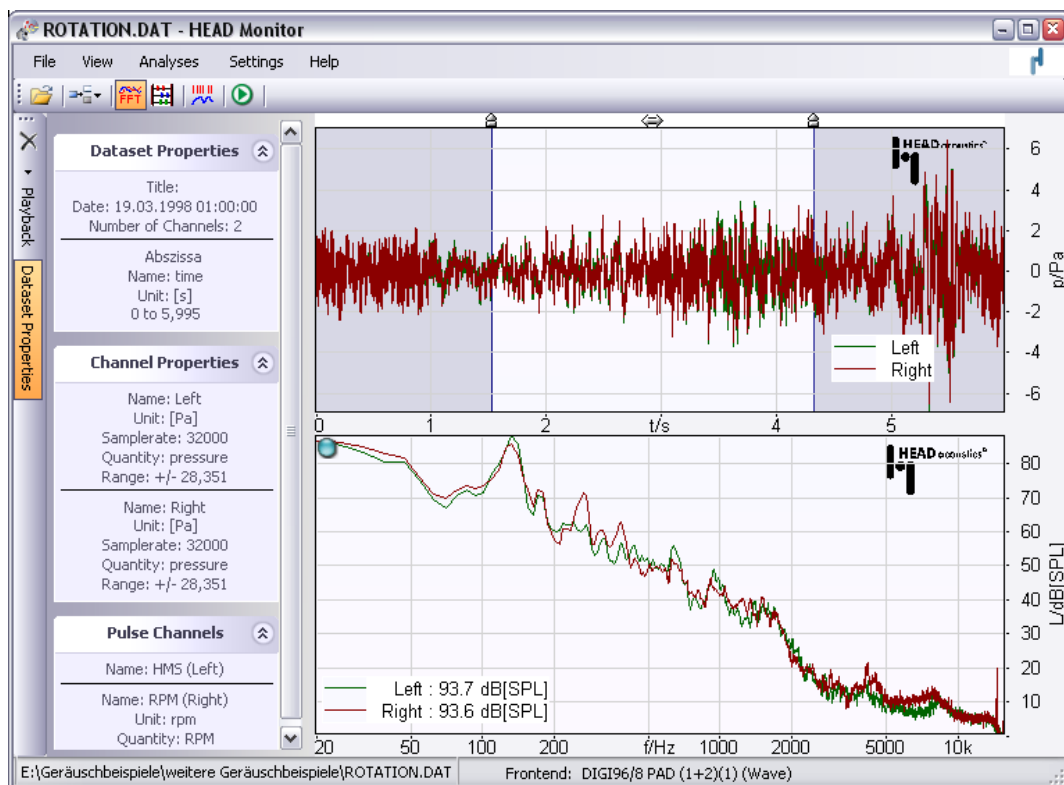


Figure 1: User interface of the HEAD Monitor

### Using the HEAD Monitor

After the installation, the HEAD Monitor can be started via the corresponding desktop icon or via the context menu of a HDF/DAT or Wave file in the Windows® Explorer (figure 2). Furthermore, the HEAD Monitor can be started by double-clicking on a HDF/DAT file, if the HEAD Monitor has been configured as the preferred application for this file type.

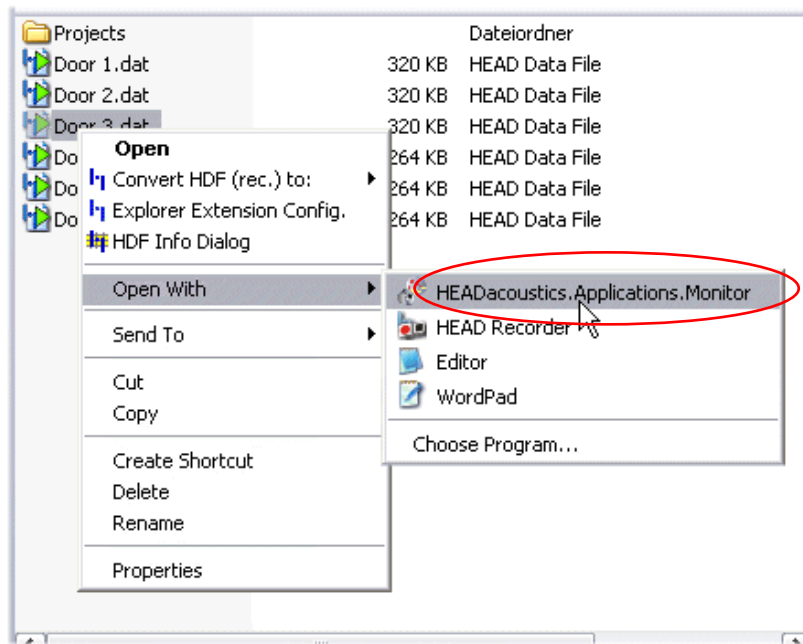


Figure 2: Opening a DAT file with the HEAD Monitor

After starting the program, the user interface of the HEAD Monitor first shows the time signal and some information about the selected file (figure 3).

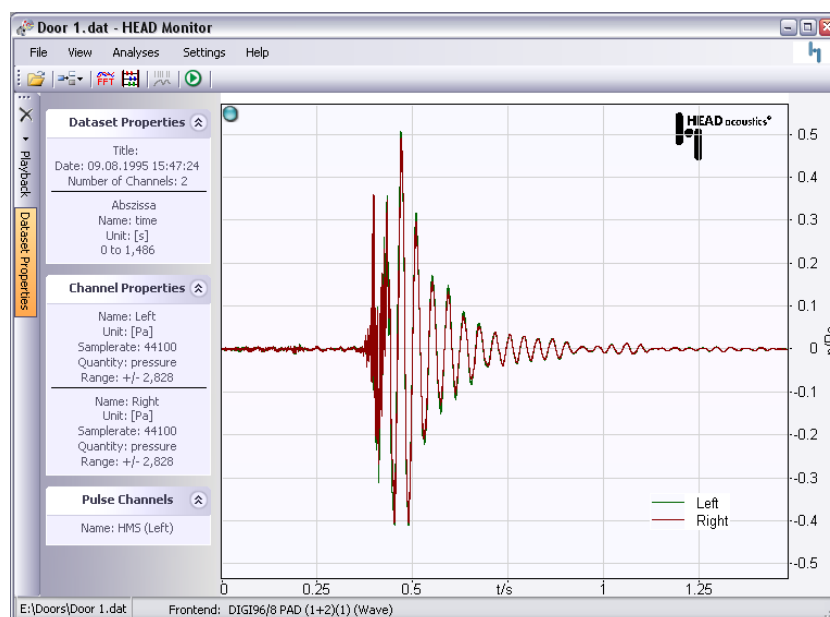


Figure 3: User interface of the HEAD Monitor after the initial start of the program

The following table lists the most important icons and their functions:







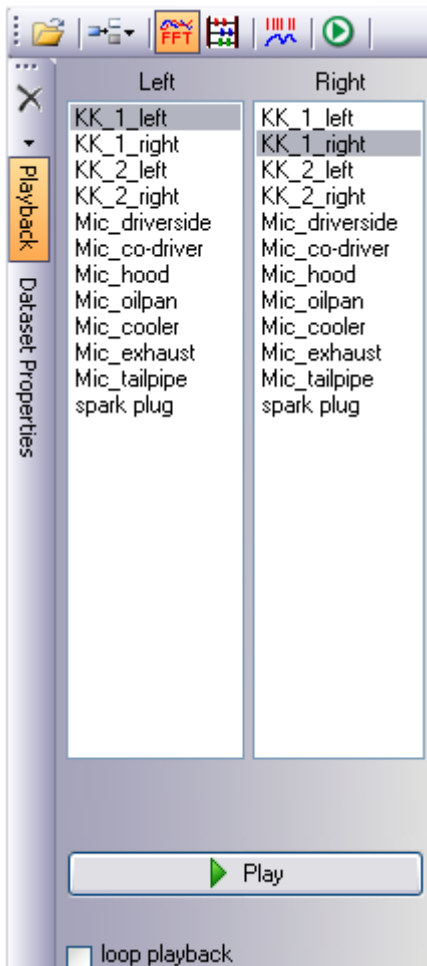
	Click on this icon to open a new HDF/DAT file or a WAV file.
	This icon allows various display options to be configured (e.g. show all channels in one diagram, separate channels vertically).
	The FFT icon starts an FFT analysis of the current file.
	The abacus icon restarts the analysis.
	Clicking on the pulse icon shows the RPM information in a separate diagram.
	Click on the play icon to start the playback of the current file.

Table 1: Important functions of the HEAD Monitor



Before the playback of a file, first some settings should be configured: With the command "Select front end" in the Settings menu, a hardware device can be chosen for playback, e.g. the sound card of the computer or a connected PEQ or SQuadriga unit. In the "Playback" tools list that can be opened via the Playback button on the left side of the window, the desired channels for the playback can be selected. Furthermore, a loop function can be activated here. (Figure 4)

Please note that the playback function is only available for time signals, and not for result files.

Figure 4: Playback tools list

For the calculation of the FFT, it is possible to restrict the analysis to a certain section of the time signal. For this purpose, simply mark the start and end position in the bar above the time signal to start a new FFT calculation (figure 5).

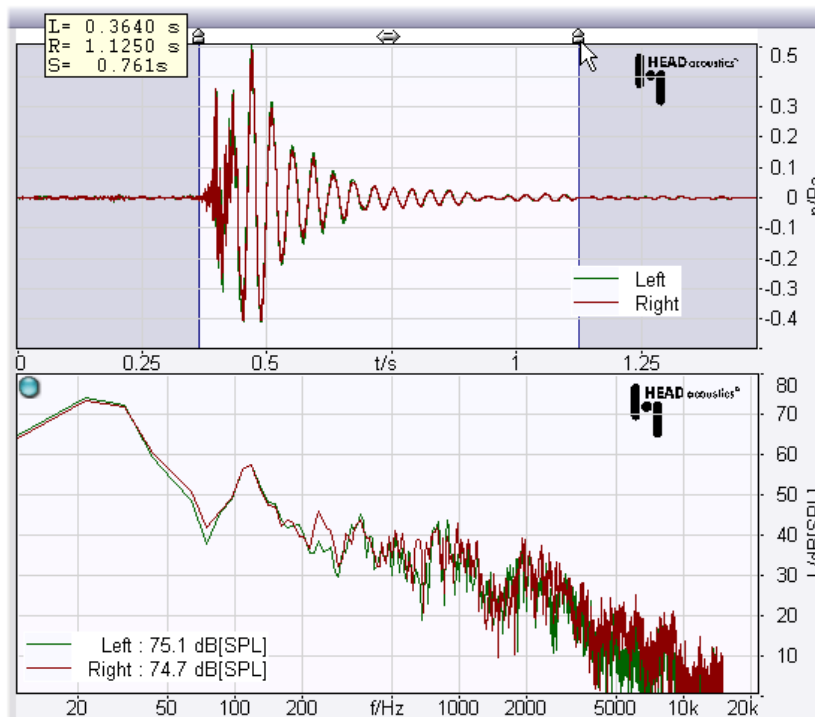


Figure 5: FFT calculation for a section of the audio signal

## HEAD Explorer Extension

The HEAD Explorer Extension is an extension to the Windows® Explorer and allows many details of an HDF or DAT file to be displayed. This includes, for example, the display of the time signal, information about the measurement channels and ranges as well as any saved UDI (user-defined information). All this information can be displayed without the need to open the file in a dongle-protected application, such as ArtemiS. In addition, analysis results saved with ArtemiS can be displayed and examined with the familiar scaling and zoom functions.

Furthermore, the HEAD Explorer Extension can convert time signals to WAV, SDF or PAK files.<sup>1</sup>

Using the HEAD Explorer Extension

After installing the HEAD Explorer Extension, the functions described above can simply be used in the Windows® Explorer. To do so, click on the desired signal file with the right mouse button to open the extended context menu (figure 6).

<sup>1</sup> If an ArtemiS-Dongle is available and a corresponding keyfile is loaded, the list is automatically extended with options such as "MP3" and "ASCII". If the dongle includes ATP 15 (Advanced Import and Export) as well, additional conversion formats are added to the list, e.g. UFF, MATLAB".

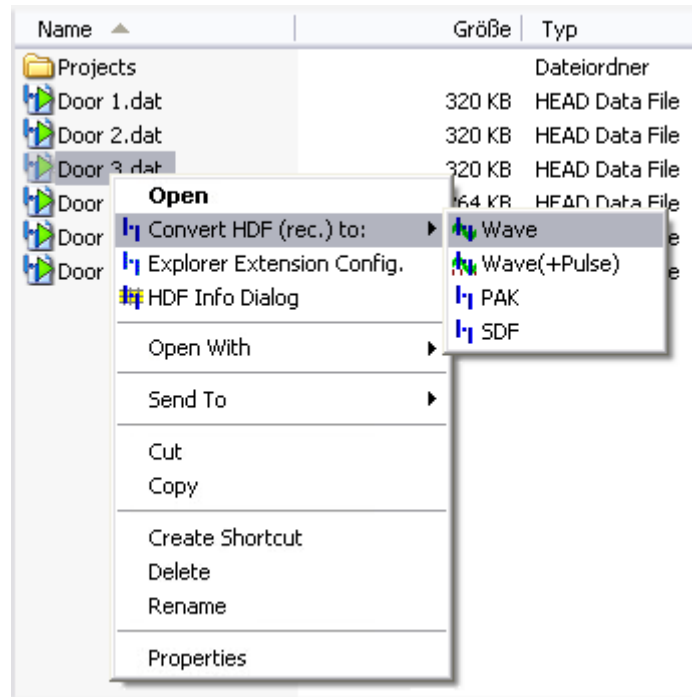


Figure 6: Extended context menu in the Windows Explorer

Via the menu item “Convert HDF (rec.) to:”, the desired export format can be chosen. Besides the standard Wave export, three additional Wave export options are available: Wave (+Pulse), Wave (2 Channel) and Wave (+Pulse, 2 Channel). The option “+Pulse” ensures that possibly existing pulse information is retained in the Wave file after the export. The “2 Channel” option allows the user to split multi-channel recordings (> 2 channels) into several files with two channels each. This allows the resulting Wave files to be played back with standard audio players, such as the Windows Media Player.

The menu item “Explorer Extension Config.” opens a window for the configuration of the Explorer Extension (figure 7).

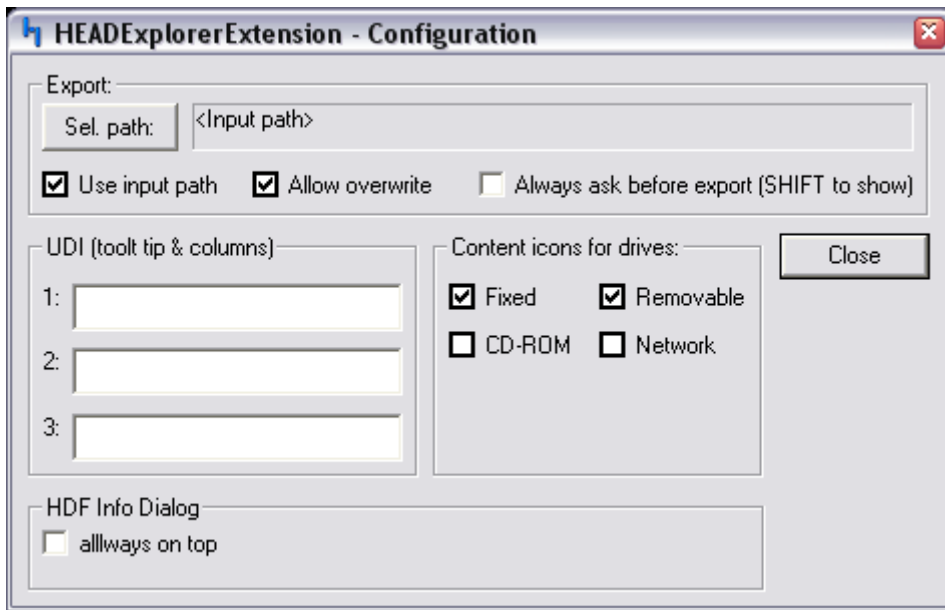


Figure 7: Configuration dialog of the HEAD Explorer Extension

Among other functions, this dialog allows the path to be specified where the exported file is to be saved. In the “UDI” field, three UDI items can be specified, whose values are to be displayed in the Windows® Explorer and which can be used, for example, as sorting criteria.

For this purpose, the names of the desired UDI items must be entered manually in the fields 1 to 3. Afterwards, these three UDI items can be selected in the Windows® Explorer via the menu item “View” -> “Choose Details”. The UDI values (if they were saved for the respective audio file) are then displayed in the Windows Explorer in a separate column.

Furthermore, the “Content icons for drives” field allows you to select the drive types for which the Explorer Extension is to examine the contents of the HDF and DAT files and choose an icon matching these contents (see table 2). This scan takes some time. To avoid this, the function can be disabled (or enabled) separately for each drive type by unchecking the respective checkbox.




	2D analysis result
	3D analysis result
	Time signal

Table 2: Content-specific HDF icons

The configuration dialog can be quit with the “Close” button.

Another menu item in the context menu extended by the HEAD Explorer Extension is the command “HDF Info Dialog”. This command opens a window displaying information about the time signal, comments, channels, pulse information, abscissas, assigned tags and UDI (figure 8).

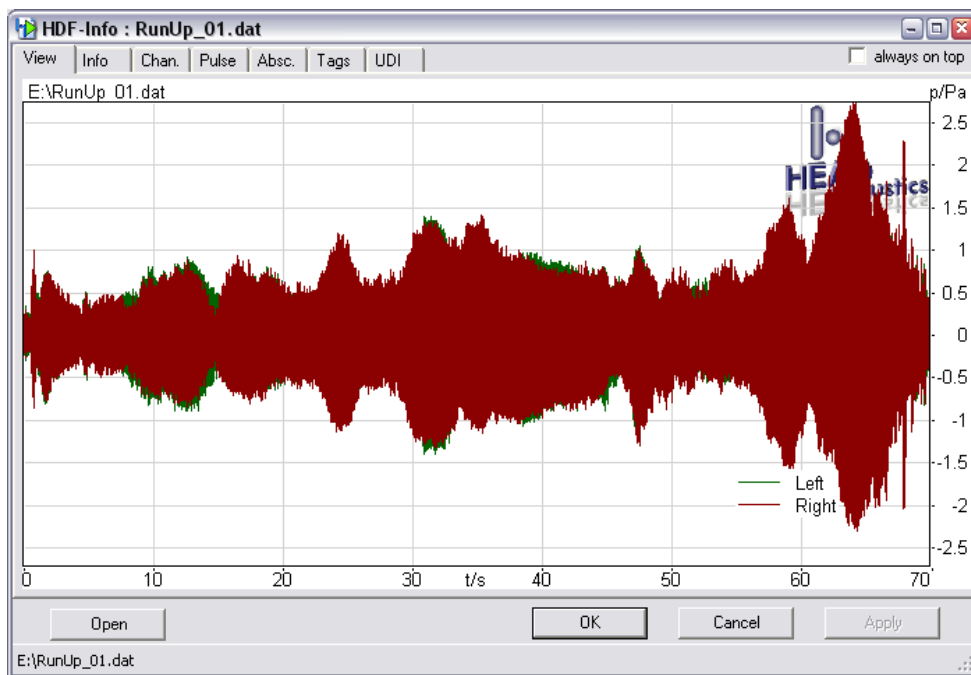


Figure 8: The HEAD Explorer Extension info dialog

In this dialog, UDI or other information can be viewed, and modified if required via the info dialog.

With the “Open” button, additional audio files can be opened. Another, very convenient way to load other audio files into the info dialog is dragging and dropping them from the Windows® Explorer. For this purpose, the “always on top” option is very useful, which can be enabled in the upper right corner of the user interface. When this function is active, the HDF info dialog always stays in the foreground, so new files can be easily dragged from the Windows® Explorer into the HDF info window.

### Additional Information

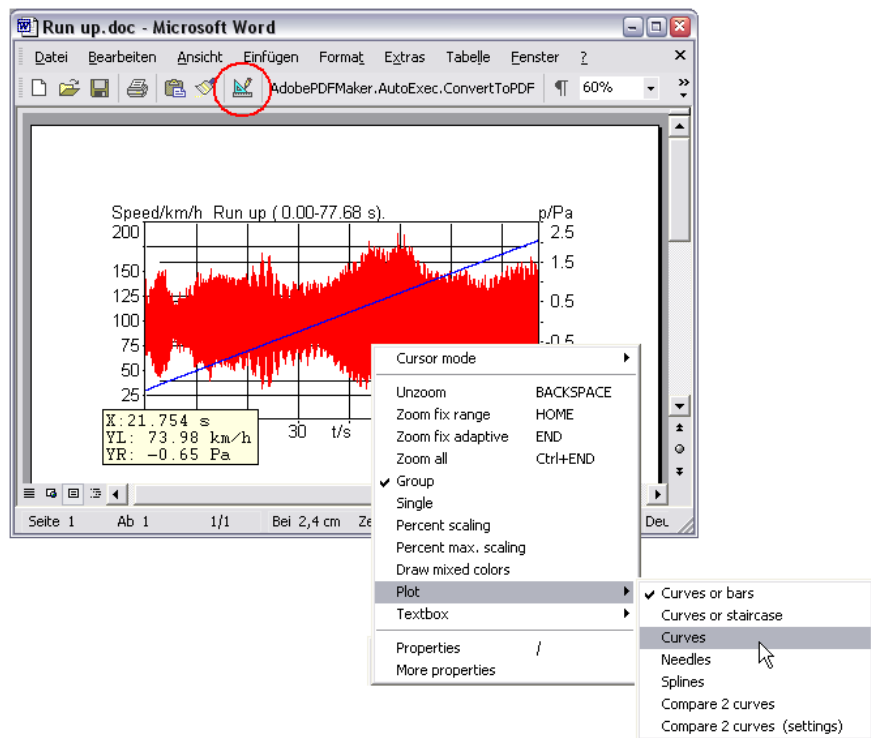
The two applications described above can be found on your ArtemiS Setup DVD or on your HEAD Tools CD. Furthermore, this software can also be downloaded in the HEAD acoustics software download. Please contact your representative at HEAD acoustics for the required login data.

Besides the HEAD Explorer Extension and the HEAD Monitor, the HEAD Audio Recorder is another dongle-free application, which can be used for making recordings with an artificial head measurement system, for example. The HEAD Audio Recorder is also available on the ArtemiS Setup DVD and the HEAD Tools CD. After the installation, the extensive online help will help you to get started with this software application.

Another advantage of the HEAD Explorer Extension is the possibility to embed HEAD diagram control objects in your Microsoft Office applications. After the installation of the HEAD Explorer Extension, HDF and DAT files can be embedded, for example, in a Word document, even on computers where no other application software from HEAD acoustics is installed. For this purpose, first use the command “Object” in the “Insert” menu to insert a “HEAD Diagram Control”

object at the desired position in your document, and then activate it by clicking on the “Design Mode” button.<sup>2</sup>

Afterwards, you can drag the desired HDF/DAT file from the Windows® Explorer into your Word document via drag & drop. It does not matter whether it is a time signal or a result file saved with ArtemiS. After installing the HEAD Explorer Extension, the function “living diagrams with playback function” is supported as well, which is described in another Application Note.



Do you have any questions or remarks? Please write to: [imke.hauswirth@head-acoustics.de](mailto:imke.hauswirth@head-acoustics.de). We look forward to receiving your response!

<sup>2</sup> In Word 2007, first the “Developer” tab must be activated, which contains the Design Mode button. The “Developer” tab can be activated in the Word options on the “Popular” page via the option “Show Developer tab in the Ribbon”.