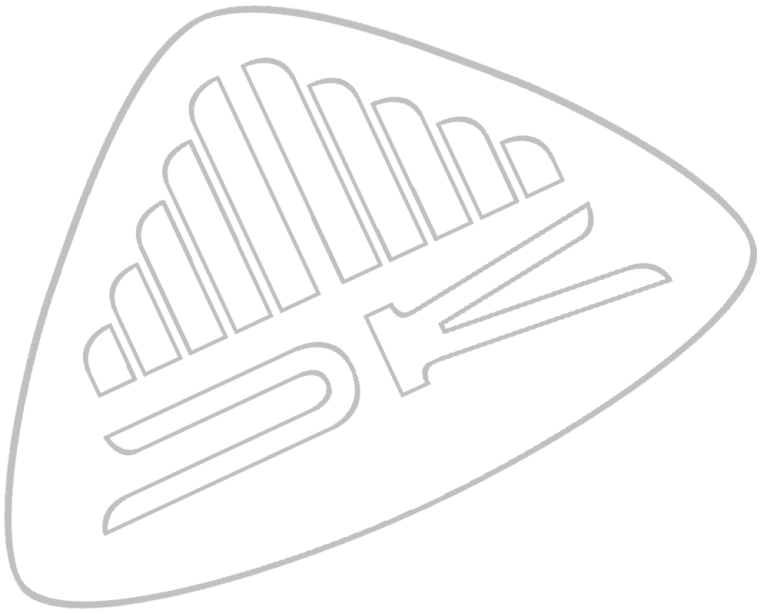
[Users Guide]
DK-LevelRead v. 1.40



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Software manual for DK-LevelRead version 1.40

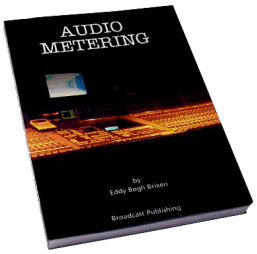
1 INTRODUCTION

DK-LevelRead is a Windows programme that enables a Windows PC to log PPM-Levels from a MSD connected to the serial port.

The functions in DK-LevelRead is highly dependant of the functions found in the software installed in the MSD *(From this point of the software installed in the MSD is referred to as the DSP-Software.)*

All levels logged with DK-LevelRead correspond to the current scale used in the MSD. Please see the MSD users guide or DK-Matrix users guide for more information about this subject.

For even further information on the subject, we encourage you to read chapters 11 through 15 in the book “Audio Metering” written by Eddy Brixen.



“Audio Metering” is an audio text book, that explains the why’s and how’s of metering. It’s ideal as a reference book, and equally well suited for those who need to brush up on metering. The book is 224 pages, soft bound, illustrated with plenty of diagrams, and is available in English and Danish. The book can be ordered through all our distributors, please visit our web page for further information.

Observe: If the **‘Connect’** item in the **‘File’**-menu is greyed out, the MSD does not support the DOT-protocol and does therefore not support the remote control and logging functions. (This requires DSP-software version 5.1 or later installed in the MSD.

1.1 Software installation.

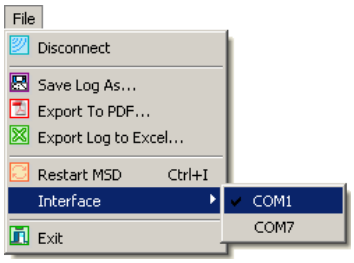
DK-LevelRead can be run directly from the CD-Rom but because of security issues and incompatibility problems with Windows 2000 and XP it is advisable to copy the whole contents of the CD-Rom to a directory on the computers hard drive.

2 Connect the MSD.

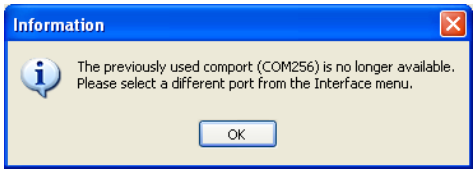
When DK-LevelRead is started and a MSD is connected to the serial port that was in use last, DK-LevelRead will automatically establish a new connection with the MSD.

If installed, DK-LevelRead will select COM1 as default the first time it starts. Use the **'Interface'** item in the **'File'**-menu to select which comport to use. The **'Interface'** item has a sub menu that only shows the serial ports actually installed in the computer. If no serial ports is installed the sub menu will state “No ports installed.”

Note: Windows 98™ might show ports that is not installed.



If a USB to RS232 converter is used it might not be available the next time DK-LevelRead is started, if that is the case the communication functions will be disabled until a new port has been selected in the **'Interface'** menu. The following message will also appear.



Please refer to the computer’s documentation for further information about installing and assigning serial ports. If a new serial port is installed it is necessary to restart DK-LevelRead for the port to be accessible from the **'Interface'** menu.

2.1 Communication.

Use the **‘Connect’** function to establish a connection with the MSD.

Observe: When a connection with the MSD has been established, the menu on the MSD will be hidden and the soft keys will be disabled.

Selecting disconnect from the file menu will disconnect from the MSD and re-enable the soft keys and un-hiding the menu on the MSD..

The current log in DK-LevelRead will be available when re-connecting.

Use the restart function **[CTRL+I]** to restart the MSD and load the default start-up preset. This will also update the MSD’s information on the statusbar.

Tip: If the connect-button are disabled it might be because the MSD was attached to the serial port after DK-LevelRead was started. Pressing **‘Restart’ [CTRL+I]** will update the MSD’s information on the statusbar, and it will enable the appropriate communication functions.

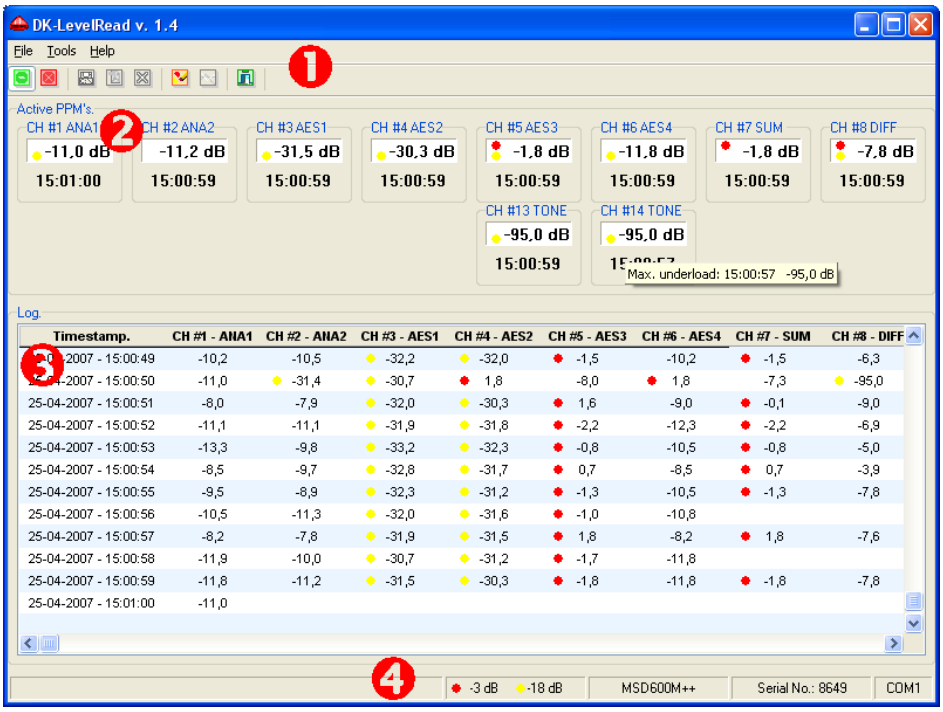
Observe: If **‘Connect’** in the **‘File’**-menu and on the toolbar is greyed out the MSD does not support the DOT-protocol.

3 The Main Window.

When main window of DK-LevelRead can be broken up into four different sections.

❶ The Menu's and Toolbar.
❷ The Active PPM Channels.
❸ The Level Log Area.
❹ The Status bar.

Observe: Section 2 and 3 is only visible when a connection has been established with the MSD.



3.1 The Toolbar.

Most of the commands from the menu's have been placed on the toolbar.

Start Logging: Starts the logging of PPM-Levels.

Stop Logging: Stops the logging of PPM-Levels.

Save Log to file: Saves the current log to a file, either as a text file or an Excel file.

Export Log to PDF: Exports the current log to an Adobe PDF file.
Tip: It is possible configure the layout of the PDF-File using the `'Global Options'` found in the `'Tools'`-Menu.

Export to Excel: Exports and opens the current log in Excel.
Observe: This export function requires that Microsoft® Excel is installed on the system.

Reset Warnings: This will clear the warnings indicated by coloured 'dot's in the `'Active PPM Channels'`-Area of the `'Main Window'`.

Show Chart: Opens a window where the log entries in the `'Level Log'`-Area can be illustrated as a graph.

Exit: Close the program.

3.2 The Active PPM-Channels.

When connecting to the MSD, DK-LevelRead will determine the number of active PPM-Channels and show them in the **'Active PPM Channels'**-area. PPM-Channels 1 to 16 can be logged using DK-LevelRead . While connected to the MSD, the MSD will enter a special mode where the keyboard is disabled and the soft key menu is hidden.

When DK-LevelRead is logging, the current maximum value for each PPM is shown in the **'Active PPM Channels'**-Area. These values is updated every second, independent of the **'Logging Interval'** set by **'Global Options'** found in the **'Tools'**-Menu.

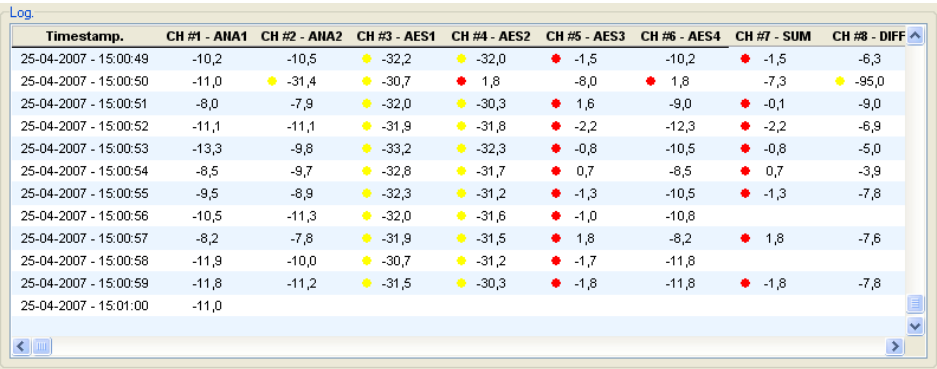
When a PPM-Level goes beyond the 'Global Trigger Levels' set by **'Global Options'** found in the **'Tools'**-Menu, they are as a warning marked with a red 'dot' for a over-load and a yellow 'dot' for a under-load.

When a PPM-Channel has been marked with a coloured 'dot', it is possible to use the mouse and right-click the text area for a marked PPM-Channel to show when the last maximum over-load value and/or the last minimum under-load reading occurred. Double clicking the same area will reset the warning for the selected PPM-Channel.

Tip: Use the **'Reset Warnings'** button on the **'Toolbar'** to reset warnings for all the PPM-Bars.

3.3 The Level Log Area.

The **'Logging Interval'** set by **'Global Options'** found in the **'Tools'**-Menu determines the interval for adding entries to the **'Level Log'**-Area when logging is performed.


Log.

Timestamp.	CH #1 - ANA1	CH #2 - ANA2	CH #3 - AES1	CH #4 - AES2	CH #5 - AES3	CH #6 - AES4	CH #7 - SUM	CH #8 - DIFF
25-04-2007 - 15:00:49	-10,2	-10,5	-32,2	-32,0	-1,5	-10,2	-1,5	-6,3
25-04-2007 - 15:00:50	-11,0	-31,4	-30,7	1,8	-8,0	1,8	-7,3	-95,0
25-04-2007 - 15:00:51	-8,0	-7,9	-32,0	-30,3	1,6	-9,0	-0,1	-9,0
25-04-2007 - 15:00:52	-11,1	-11,1	-31,9	-31,8	-2,2	-12,3	-2,2	-6,9
25-04-2007 - 15:00:53	-13,3	-9,8	-33,2	-32,3	-0,8	-10,5	-0,8	-5,0
25-04-2007 - 15:00:54	-8,5	-9,7	-32,8	-31,7	0,7	-8,5	0,7	-3,9
25-04-2007 - 15:00:55	-9,5	-8,9	-32,3	-31,2	-1,3	-10,5	-1,3	-7,8
25-04-2007 - 15:00:56	-10,5	-11,3	-32,0	-31,6	-1,0	-10,8		
25-04-2007 - 15:00:57	-8,2	-7,8	-31,9	-31,5	1,8	-8,2	1,8	-7,6
25-04-2007 - 15:00:58	-11,9	-10,0	-30,7	-31,2	-1,7	-11,8		
25-04-2007 - 15:00:59	-11,8	-11,2	-31,5	-30,3	-1,8	-11,8	-1,8	-7,8
25-04-2007 - 15:01:00	-11,0							

Each PPM-Sample is stamped with a timecode. Currently the only options is the local PC time and a SMPTE timecode using the SMPTE decoder in the MSD. Please see section 6.2.1 for further information about selecting the time source.

Since each PPM channel can get its own timestamp, more then one entry can be added to the log each time the DK-Levelread writes the levels.

When a PPM-Level goes beyond the **'Global Trigger Levels'** set by **'Global Options'**, they are as a warning marked with a red 'dot' for a over-load and a yellow 'dot' for a under-load.

Double-clicking the **'Level Log'**-Area will make it fill the entire 'Main Window', hiding the **'Active PPM Channels'**-Area. Double-clicking it again will go back to the default view.

3.4 The Statusbar.

The status bar is placed at the bottom of the **'Main Window'** and is separated into five fields.

The second field from the left provides an indication of the global trigger levels used by DK-LevelRead. The Red 'dot' indicates the over-load level and the yellow 'dot' indicates the under-load level.

The third field will show which type of MSD that is connected to the computer. If no MSD is connected, the field will show the message “Not Connected”. If you connect the MSD after DK-LevelRead has been loaded the MSD should be restarted by pressing the Restart button on the toolbar **[Ctrl+I]**, this will update the information on the status bar.

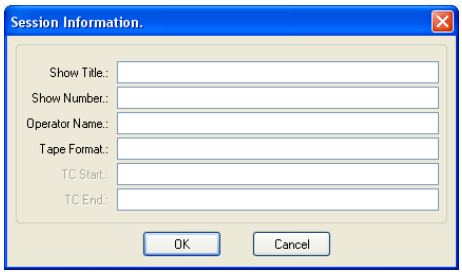
The fourth field shows the serial number of the connected MSD. This will also be updated after a MSD-restart.

The fifth area of the status bar will show which serial port is currently in use. DK-LevelRead supports up to 256 serial ports. Please refer to your computer’s documentation for further information. Use the **'Interface'** item in the **'File'**-menu to select which comport to use.

4 Sessions.

4.1 Starting a new session.

To start a new session press the green button on the toolbar.
Before logging the window **'Session Information'** will appear. In this window it is possible to enter some information about the material that is being logged.



This information will be included in the log files generated at the end of the session. TC Start and TC End will be filled out automatically.

Pressing OK will start the new session.

If a session has already been completed, it is possible to append the new session to the previous or clear the data and starting a new.

4.2 During a session.

During a session, the PPM fields in the **'Active PPM's'** -area will be updated each second with the time stamp and PPM reading from the MSD.

When the time specified by the **'Interval'** setting in **'Global Options'**, has elapsed, the maximum PPM values from that interval are written to the level log.

If the values logged are outside the overload and underload boundaries the value will be marked with a red or yellow dot indicating that a overload or underload has occurred.

During a session none of the export or chart functions will be available.

4.3 Stopping a session.

To stop a session press the red button on the toolbar.

When a session is stopped all the export and chart functions become available.

5 Export Functions.

From the file menu it is possible to save the logged data shown in the **'Level Log Area'**.

The **'Save As...'** function makes it possible to save the log as a text file or as a Microsoft® Excel file. The Microsoft® Excel file is the default file format.

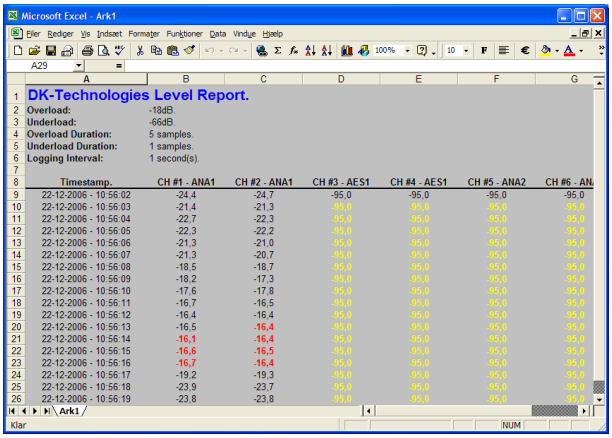
In these two formats it is not possible to show the over-load and under-load warnings. If this information i necessary the **'Export to Excel'** or **'Export to PDF'** function should be used.

5.2 Export to PDF.

The level log can be exported to an Adobe PDF file. The layout of this file can be changed by **'Global Options'** found in the **'Tools'**-Menu, please see section 6.3 for further information.

5.2 Export to Excel.

If Microsoft® Excel is installed on the system it is possible export the Level Log to Microsoft® Excel including the over-load and under-load information.

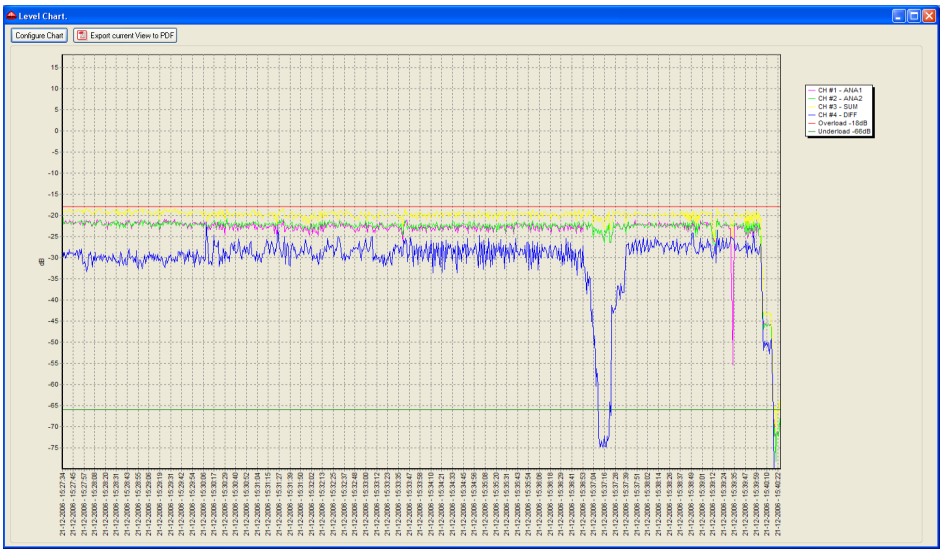


When the level log is exported to Excel the log entries that violates the over-load and under-load levels are marked with red and yellow colours.

Please note that exporting this information to Excel can be very time consuming.

6 Chart.

When logging is stopped the **'Chart'**-functions become available.



In this window a graph for each PPM-Channel can be plotted.
Initially there is no channels shown. Use the button **'Configure Channels'** to enable the channels that should be plotted in the chart.

6.1 Export to PDF.

Using the button 'Export to PDF' the current view of the chart can be exported to PDF. The layout of this file can be changed by **'Global Options'** found in the **'Tools'**-Menu, please see section 6.4 for further information.

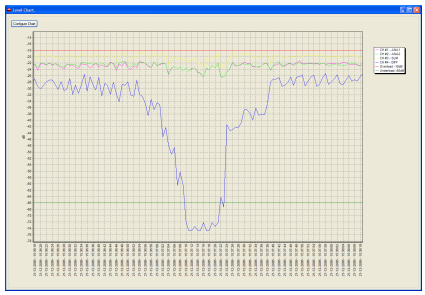
Tip: When the PDF-File has been generated a copy of the chart is placed in the Windows Clipboard and can be pasted to any drawing programme supporting pasting of Windows bitmaps.

6.2 Zoom Functions.

It is possible to zoom the chart using the mouse.

6.2.1 Zoom In.

Hold the LEFT mouse button down while dragging LEFT and DOWN.
A white box will be drawn around the area that will be zoomed.
Releasing the left mouse button will zoom the selected area.



6.2.2 Zoom Out.

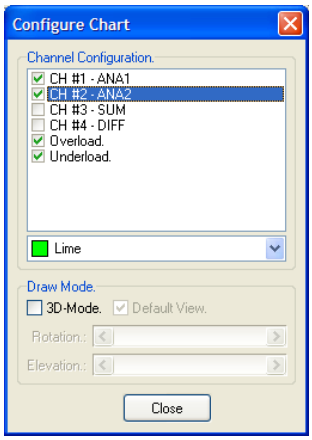
When zoomed in, hold the LEFT mouse button down while dragging RIGHT and UP. Releasing the left mouse button will zoom out to the default zoom level.

6.2.3 Move.

When zoomed in, hold the RIGHT mouse button down while dragging.
This will move the zoomed area.

6.3 Configure Chart.

The window 'Configure Chart' is divided into two sections.



6.3.1 Channel configuration.

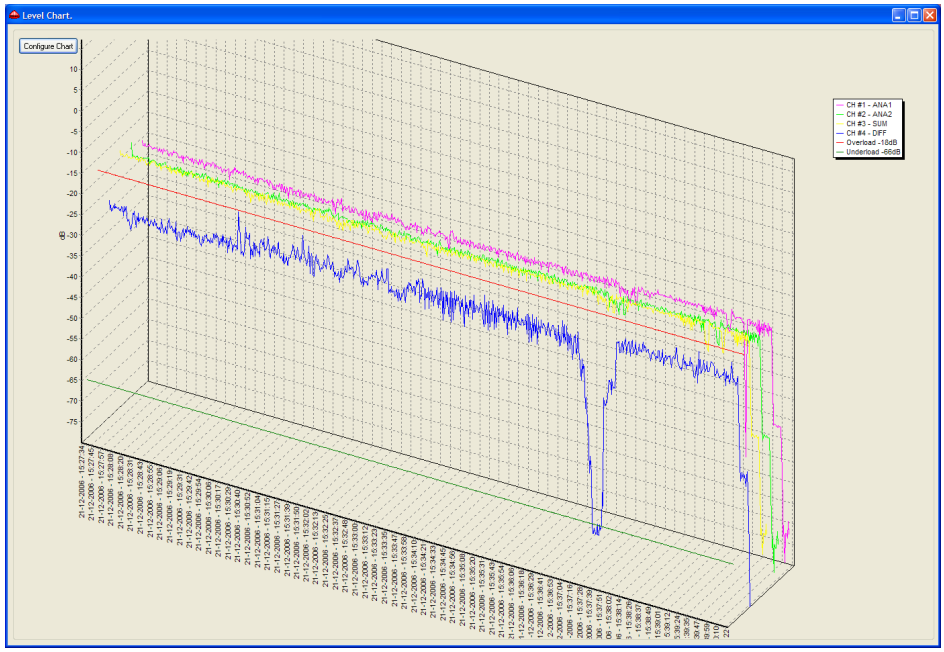
In this section the available PPM-Channels will be listed.
Use the check-box for each channel to enable or disable the PPM-Channel in the chart.

The current overload and underload levels can also be plotted in the chart.
These values are enabled as default.

In this section the colour of the PPM-Graph can also be selected.

6.3.2 Draw Mode.

Selecting **`'3D-Mode'`** will enable a mode where the chart will be drawn i 3D.
If **`'Default View'`** is disabled the rotation and elevation of the chart can be changed using the sliders.

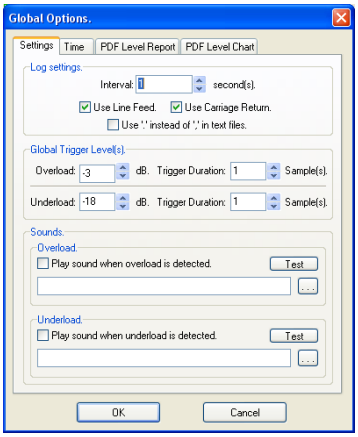


7 Global Options.

In the options window some of the program features can be changed for DK-LevelRead. This window has two tabs, each tab is divided into different sections.

7.1 The Settings Tab.

From the **'Settings Tab'** the behaviour of the logging functions can be modified.



7.1.1 Log Settings.

The **'Interval'** setting determines the time in seconds between log entries. The default setting is 60 seconds. With this setting DK-LevelRead will log the highest bar reading each minute. In the **'PPM'**-area in the **'Main Window'** the readings will be updated each second and if a level exceeds the **'Global Trigger levels'** a warning will be shown for that PPM.

The **'Use Line Feed'** and **'Use Carriage Return'** only applies to the data that is written to the text files. Different text editors require different settings in order to display the text file correctly. The **'Notepad'** program supplied with Microsoft® Windows requires both to be checked.

The **'Use '.' instead of ',' in text files'** will replace the standard comma with a period in text that is saved to file or copied to the clipboard.

7.1.2 Global Trigger Levels.

The **'Global Trigger Levels'** can be adjusted to match the current scale used in the MSD.

The **'Trigger Duration'** determines how many samples a level should be outside the specified range before a warning (a coloured dot in the log) is issued. The length of a sample is determined by the **'Interval'** setting.

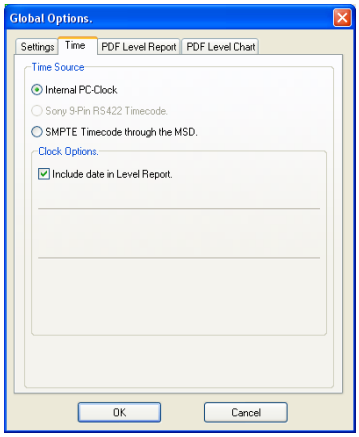
7.1.3 Sounds.

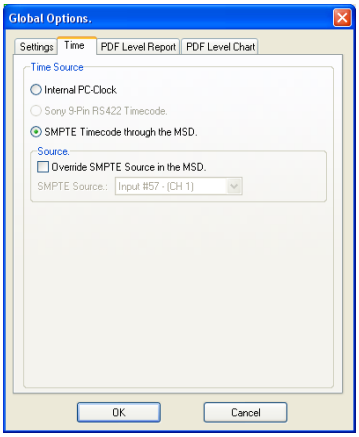
If enabled, a sound can be played each time a warning is issued. Use the text fields in this area to select a wave-file. The test buttons will play the selected files when pressed.

A different sound for over-load and under-load can be selected.

7.2 The Time Tab.

From the **'Time Tab'** the source for the time stamp information for the log entries is selected and configured.





7.2.1 Time Source.

From the **'Time Source'** field it is possible to select the source for the time stamp information.

7.2.1.1 Internal PC Clock.

When the source is set to **'Internal PC-Clock'** the time stamp information used, is the internal time from the PC.

7.2.1.2 Clock Options.

The only options for the **'Internal PC-Clock'** is whether or not to include the current date in the time stamp.

7.2.2.1 Sony 9-Pin RS422 Time code.

The Sony Time code functions is currently not supported.

7.2.3.1 SMPTE Time code through the MSD.

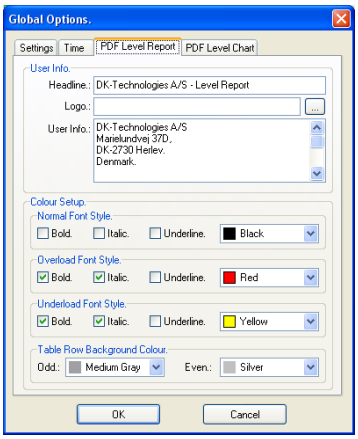
The SMPTE Time code option requires DSP-software version 5.1 or later installed in the MSD.
If this option is selected a SMPTE time code signal routed to destination #52 (SMPT) in the Audio Matrix in the MSD will be used to time stamp the level log. Please refer to the MSD users guide for further information about the **'Audio Matrix'** and **'SMPTE'** time code functions.

7.2.3.2 SMPTE Time code Source.

When SMPTE Time Code is selected, it is from DK-LevelRead possible to set the source for the MSD's SMPTE Time Code decoder. Using the option **'Override SMPTE Source in the MSD'** will enable the drop down box 'SMPTE Source' making it possible to select a new source. This new source will be set when DK-LevelRead starts logging.

7.3 The PDF Level Report Tab.

From the **'PDF Level Report Tab'** the layout of the PDF-file is configured.



7.3.1 Headline.

In the headline field the headline printed topmost on all pages can be changed.

7.3.2 Logo.

In the logo field a custom bitmap can be specified. The bitmap is automatically scaled to fit in size and placed at the top right of the first page of the level report.

If no logo is specified the DK-Technologies logo is used as default.

7.3.3 User Info.

In the field user info about 15 lines of text can be entered. This text will be inserted at the left and below the logo.

7.3.4 Colour Setup.

In this section the colours and font styles can be configured

7.3.4.1 Font styles.

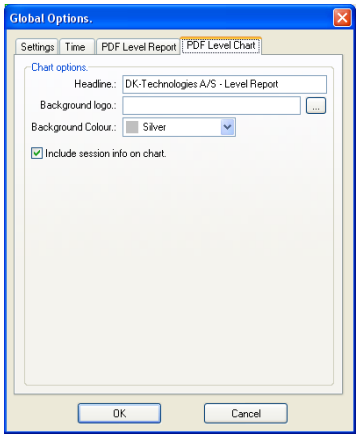
In this section the font formatting and colour of the fonts used for overload underload and normal PPM-Values.

7.3.4.2 Table Row Background Colour.

In this section the background colour of the table in the PDF-Level Report can be configured. Odd and even lines in the table can have different colours.

7.4 The PDF Level Chart Tab.

From the **'PDF Level Chart Tab'** the layout of the PDF-file is configured.



7.4.1 Headline.

In the headline field the headline printed topmost on all pages can be changed.

7.4.2 Background Logo.

In the logo field a custom bitmap can be specified. The bitmap should have an aspect ratio of about 1.616 : 1. The bitmap is automatically scaled to fit in size and placed behind the chart.

7.4.3 Background Colour.

The background colour defines the background colour of the level chart. If a background logo is specified the background of the level chart will always be transparent.

7.4.4 Session Info.

If the **'Include Session Info'** flag is checked the session info will be included at the bottom of the level chart.