Using DART CD-Recorder

DART CD-Recorder is an application that allows you to record audio files from different sources (tape deck, reel-to-reel, phonograph, CD player, MIDI mixer, MPEG 3 codec), restore recordings, combine them into a sequence called playlist and - if your computer is equipped with a compact disk recorder (CD-R) - to record your own CD.

If you need more information on any of the DART CD-Recorder functions, select one of the topics listed below:

About DART CD-Recorder
About online help system
Screen areas
Menus
Toolbar
Creating, managing and listening to the playlist
Printing the playlist
Recording from an analog source
Unpacking audio collections
Processing audio files
Using DirectX Audio Plug-Ins
Recording from an audio CD
Using CDDB
Recording MIDI
Recording MPEG Audio
Creating your own CD

How to ...

Menus

The menu bar is placed at the top of the DART CD-Recorder main window. It contains four menus, which provide access to various system functions.

[List](#)
[View](#)
[Toolbox](#)
[Help](#)

About DART CD-Recorder

Digital Audio Restoration Technology
DART CD-Recorder[TM]
Designed by Piotr Kuzora and Maciej Niedzwiecki
Copyright 1994-2000 DARTECH, LLC, another subsidiary of ZH Computer, Inc.
www.dartpro.com

MP3 support by PlayMedia Systems, Inc.
www.playmedia.hr

CD-related data through the Internet from CDDB[TM] Music CD Database
Copyright 1999, 2000 CDDB, Inc.
CDDB Client Software
Copyright 1999, 2000 CDDB, Inc.
CDDB-Enabled, CDDB, CDDB2 and the CDDB Logo are trademarks of CDDB, Inc.
Disk Recognition Service and DRS are service marks of CDDB, Inc.
www.cddb.com

SureThing[TM]   CD Labeler
Copyright 1999, 2000 MicroVision Development, Inc.
www.surething.com

About online help system

Help topics

Each time you press the HELP button situated on the toolbar, a list of all topics in which Help information is available will be displayed.
Should you have any problems identifying the entry that answers your question, click the **Search** button (placed inside the Help window) to open the Help Index – an alphabetical listing of all topics available in the Help file. Click the desired topic to open it in the main Help window.

Context help

To obtain help on a particular screen item press the CONTEXT HELP button situated on the toolbar and click the screen element/area you would like to learn about.

Dialog boxes
Most of the dialog boxes are equipped with the context help buttons (placed in their upper right corners). To get a general help on a dialog, press the **F1** keyboard key.

Guided tour
Guided Tour is a special easy to use multimedia tutorial, which addresses most of the problems associated with using DART CD-Recorder. To start Guided Tour choose the **Guided tour** command from the **Help** menu.
The presentation consists of several chapters. To enter a selected chapter, press the **Play and Return** button situated at the bottom of the menu screen and click the corresponding item. When the end of the chapter is reached, the presentation will stop and you will return to the main menu screen.
To view the entire presentation, starting from the selected item use the **Play all** button. Subsequent chapters will be automatically opened in order they appear in the menu.
Finally, to quit **Guided tour**, click the **Exit** button.
Pressing the ESCAPE key at any time will stop the presentation and pressing the SPACE BAR will pause it. To resume the tour after pausing, click the **Continue** button displayed on the screen.
The entire tour takes more than twenty minutes.

List Menu

Gives access to the file managing instructions. Allows you to create, load and save your playlist, publish it on a CD, print the playlist content, create your own CD labels and to exit the program. Additionally it provides means for reading tracks from an audio CD (in a digital, i.e. distortionless mode) - and to record/play back the MIDI and MPEG 3 audio data.

The **New** command allows you to create a new playlist from the scratch. You may later save it to disk using the **Save** or **Save as** commands and retrieve it by the means of using the **Open** command.
The **Print** command can be used to print the playlist in the jewel case format and to access the SureThing label printing utility.
The **Record** command allows you to record from an analog audio source such as the phonograpg or a tape deck. The **Write to CD** command allows you to publish the playlist on a CD and the **Read track** command - to read tracks from an audio CD (provided your computer is equipped with a CD recorder). Finally, the **Convert MIDI to WAV** allows you to play back and record the MIDI music data and **Convert MP3 to WAV** - to play back and record MPEG 3 Audio data.
When you have finished working with DART CD-Recorder, you may use **Exit** command to quit the application.

View Menu

The **Status bar** command allows you to turn on or off the status bar, providing a brief explanation of certain system functions (shown at the bottom of the main screen). The **Options** command can be used to set various program options.

Toolbox Menu

Provides access to several useful tools.

Producer is a function that allows you to process audio files prior to listening to the playlist and/or saving it to a CD. The list of available processing tools includes declicking, dehissing, equalizing, fading in/out and normalizing audio files.

The **Unpack** function allows you to partition long recordings by means of detecting silences. **Timer recording** is a record function allowing you to start and stop recording according to a given time schedule.

The **DirectX** function provides access to any of the DirectX Audio Plug-In functions you would wish to have attached to DART CD-Recorder.

Finally, the **Erase CD-ReWritable** function can be used to wipe off the contents of a rewritable CD with a single click of the mouse.

Help Menu

The **Contents** command gives access to the DART CD-Recorder help system and the **About CD-Recorder** command displays information about the program. The **Guided tour** command provides access to a special easy to use multimedia tutorial.
The **AutoUpdate from the Internet** function allows you to automatically update the program whenever its newer version is available.
Finally, the **Web links** command provides links to the web pages on DART and CDDB.

Toolbar

The area immediately beneath the menu bar is called the toolbar. It contains several buttons and dialog boxes that provide an easy access to the most frequently used system functions. The corresponding items allow you to:

- create a new Playlist

- open an existing Playlist

- save a Playlist

- record from an analog audio source such as the phonograph or a tape deck

- read tracks from an audio compact disk

- record and play back the MIDI music data

- record and play back the MPEG 3 music data

- use any of the available DirectX Audio Plug-Ins

- divide long recording into a number of shorter ones by means of detecting silences

- process audio recordings

- record Playlist on a CD

- get access to the DART CD-Recorder help system

- get access to the context help

Screen areas

After entering DART CD-Recorder you will see a screen consisting of five screen areas. The corresponding items are:

- the menu bar - providing access to various system functions
- the toolbar - giving access to the most frequently used system functions
- the **File Panel** - allowing you to select, record or get information about the soundfiles you want to add to your playlist
- the **Playlist Panel** allowing you to manage your playlist

and (if present)

- the Status bar providing a brief explanation of certain system functions

Printing the playlist

To print the playlist in the jewel case format evoke the **Print playlist** dialog by selecting the **Print** command from the **List** menu. First, select the printout type (*Jewel case front*, *Jewel case back*, *Full page*) and type in the playlist header. Next, use the four checkboxes in the **List** group to select the preferred playlist format and content. To change the font type, size and colors click the corresponding **Change** buttons.
The printout preview is shown on the left-hand side of the dialog. To start printing press the **Print** button.

SureThing labeler
DART CD-Recorder provides access to an advanced SureThing label printing utility that features built-in SmartDesigns, templates and ready-to-use background images and clipart images. It also allows you to import your own images, photos or logos. To enter the labeler press the **Run SureThing** button at the bottom of the **Print playlist** dialog.

'Print playlist' dialog

First, select the printout type (*Jewel case front*, *Jewel case back*, *Full page*) and type in the playlist header. Next, use the four checkboxes in the **List** group to select the preferred playlist format and content. To change the font type, size and colors click the corresponding **Change** buttons.
The printout preview is shown on the left-hand side of the dialog. To start printing press the **Print** button.

SureThing labeler
DART CD-Recorder provides access to an advanced SureThing label printing utility that features built-in SmartDesigns, templates and ready-to-use background images and clipart images. It also allows you to import your own images, photos or logos. To enter the labeler press the **Run SureThing** button at the bottom of the **Print playlist** dialog.

Adding files to the playlist

To add a file to the playlist drag it from the **File Panel** to the **Playlist Panel**. To select more than one file in the **File Panel**, hold down the CTRL key while clicking. To select a group of files, select the first file of the group, hold down the SHIFT key and select the last file.
To add to the playlist all files displayed in the **File Panel** press the **Add all** button.

Creating, managing and listening to the playlist

The playlist environment can be used to compose and store lists of recordings scattered over different disk directories, rearrange the lists in any desired order and play the corresponding soundfiles. If needed you can print the playlist content in the jewel case format or produce CD labels using the SureThing labeler.

NOTICE
Please note that only the uncompressed audio files (those with the *wav* extension) can be processed using the **Producer Panel**. For this reason the compressed soundfiles are hidden (not shown on the playlist) when the **Producer Panel** is active; if you close the **Producer Panel** all compressed files will be displayed again.

Adding files to the playlist
Managing playlists
Listening to the playlist

Managing the playlist
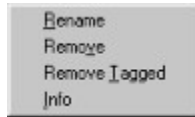
When you click the playlist item using the right mouse button a shortcut menu shows up providing access to the list managing commands (**Remove**, **Rename**, **Remove Tagged**, **Info**).
To change position of a soundfile within the list click the corresponding playlist item and drag it to a new position.

Listening to the playlist
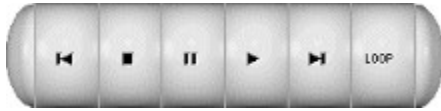
To control playback of the playlist you can use a number of buttons which work analogously as similar buttons in a CD player

 – **PLAY** button: when pressed plays back the playlist starting from the selected item

 – **PAUSE** button: when pressed pauses the playback; to resume playback after pausing press the **PAUSE** button again or press the **PLAY** button.

 – **STOP** button: when pressed, stops the playback.

 – **NEXT** button: can be used to select the next playlist item

 – **PREVIOUS** button: can be used to select the previous playlist item

By clicking on the PLAYBACK MODE button you may select one of three playback modes :

 - **Loop mode**:plays all soundfiles in the playlist starting from the currently selected item. When the end of the playlist is reached, the first soundfile is selected and the playback is resumed.

 - **Normal mode**:plays all soundfiles in the playlist starting from the currently selected item. Playback stops when the end of the playlist is reached.

 - **Sample mode:** plays a five second fragment of each of the soundfiles in a playlist, starting from the currently selected item. Playback stops when the end of the list is reached.

During playback, DART CD-Recorder shows the volume (the instantaneous peak levels) of the currently played soundfile. The volume is displayed in the **PlayInfo Panel**, which replaces the **File Panel**. The volume meters are scaled in logarithmic units called decibels (dB).
The slider placed below the volume meters shows the position within the soundfile. At any time during the playback you can drag the slider to a new position.
The name of the currently played soundfile along with the corresponding time display is shown in the **Playlist Panel** right below the playlist window. At any time during the playback you can hide the **PlayInfo Panel** by checking the **Hide Playing panel** box displayed below the playlist window. This will allow you to do some file management while playback of a playlist runs.
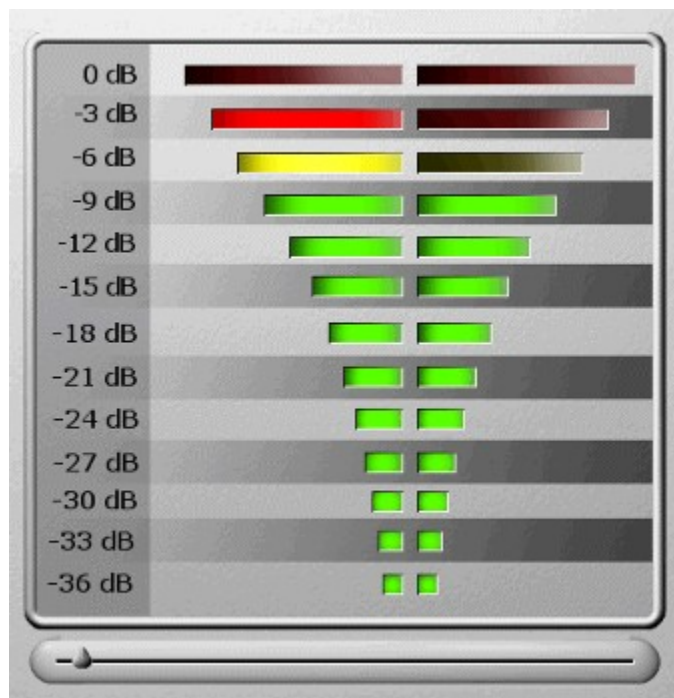
Unpacking audio collections

When you record audio material from a CD using the **Read track** utility DART CD-Recorder saves selected tracks in separate files. However, when you record from an analog source, such as phonograph or a tape deck, the situation is different. In order to save different pieces in separate files you have to repeat the recording procedure for each analog track which means: evoke the **Record** dialog, choose record parameters, select the name of the destination soundfile, start playback, start recording, stop recording, stop playback etc. Pretty annoying!

If you have enough space on your hard disk there is another way of 'unpacking' audio collections: record the entire LP (or contents of one side of a cassette), then divide it into separate tracks using the **Unpack** utility.

To initialize unpacking select the audio file you would like to partition and evoke the **Unpack** dialog by means of clicking the `UNPACK` button situated on the toolbar or by selecting the **Unpack** command from the **List** menu. File partitioning is preceded by searching for silences of a specific duration (anything between 0.5 and 5 seconds). Since the silence detector must be told how 'silent' the silence is supposed to be you have to set the detection threshold appropriately. The selection (anything between 1 and 1000) should be made in accordance with the recording level and intensity of background noise. If the threshold is too low detector may fail to localize silences between subsequent tracks; if it is too high silent parts of the recording may be mistakenly classified as breaks.

In case there is a piece of silence at the beginning of the recording, even if it is fairly short, press the **Find** button situated next to the detection threshold box and the value of the threshold will be adjusted automatically.

After setting the minimum separation time and detection threshold click the **Process** button. When detection is finished the **Verify cuts** dialog will appear on the screen allowing you to accept or reject the proposed cuts. The total number of suggested cuts is displayed at the top of the dialog. After selecting the cut number in the **Current cut** group you can listen to a short fragment of the recording centered around the proposed cut position and, if necessary, remove the cut from the list by clicking the **Reject** button. If the results are unsatisfactory, i.e. there are too many omissions or too many false detections press the **Cancel** button and run the silence detection utility again with a lower or higher detection threshold, respectively.

If all cuts on the revised list are acceptable choose the destination directory and the names of the files under which different tracks will be stored (use the **Change** button in the **Output** group for this purpose). Then press the **Process** button to start unpacking.

NOTICE

The presence of clicks, pops and record scratches, which is typical of material coming from old analog records, makes silence detection considerably more difficult and a bit tricky. Therefore, even though the silence detector was designed so as to be robust against outliers it may fail to localize breakpoints correctly if the click intensity is too high.

'Unpack' dialog

File partitioning is preceded by searching for silences of a specific duration (anything between 0.5 and 5 seconds). Since the silence detector must be told how 'silent' the silence is supposed to be you have to set the detection threshold appropriately. The selection (anything between 1 and 1000) should be made in accordance with the recording level and intensity of background noise. If the threshold is too low detector may fail to localize silences between subsequent tracks; if it is too high silent parts of the recording may be mistakenly classified as breaks.
In case there is a piece of silence at the beginning of the recording, even if it is fairly short, press the **Find** button situated next to the detection threshold box and the value of the threshold will be adjusted automatically.
After setting the minimum separation time and detection threshold click the **Process** button.

'Verify cuts' dialog

The **Verify cuts** dialog allows you to accept or reject the proposed cuts. The total number of suggested cuts is displayed at the top of the dialog. After selecting the cut number in the **Current cut** group you can listen to a short fragment of the recording centered around the proposed cut position and, if necessary, remove the cut from the list by clicking the **Reject** button. If the results are unsatisfactory, i.e. there are too many omissions or too many false detections press the **Cancel** button and run the silence detection utility again with a lower or higher detection threshold, respectively.
If all cuts on the revised list are acceptable choose the destination directory and the names of the files under which different tracks will be stored (use the **Change** button in the **Output** group for this purpose). Then press the **Process** button to start unpacking.

Allows you to set the minimum length of a silence (anything between 0.5 and 5 seconds).

Allows you to specify how 'silent' the silence is supposed to be. The selection (anything between 1 and 1000) should be made in accordance with the recording level and intensity of background noise.

Provides an automatic adjustment of the detection threshold (you can use this function only if there is a piece of silence at the beginning of the recording).

Starts processing.

Allows you to quit the dialog.

Shows a total number of breakpoints proposed by the silence detection program.

Allows you to select a particular breakpoint for inspection.

Shows position of the proposed cut.

Shows the destination directory and names of the files under which different tracks will be stored.

Allows you to choose the destination directory and names of the files under which different tracks will be stored.

Allows you to audition a short fragment of the recording centered on the proposed cut position.

Allows you to adjust the play time.

Allows you to remove the selected cut from a list of proposed breakpoints.

Starts processing.

Allows you to quit the dialog.

Recording MIDI

MIDI, which is an acronym for Musical Instrument Digital Interface, is a set of special commands used by different pieces of electronic musical equipment to speak to each other. Vaguely speaking, the MIDI data contains information about musical notes along with detailed instructions telling how, when and how long each note should be played. DART CD-Recorder allows you to play and record the MIDI music data, i.e. to synthesize the encoded sound and save it in a standard wave format.
To record MIDI:

1. Click the **MIDI TO WAV** button situated on the toolbar or choose the **Convert MIDI to WAV** command available from the **List** menu.
2. Select the MIDI file you would like to convert to a WAVE format (a typical MIDI file has a *mid* extension)
3. Set the recording mode by means of choosing the desired sampling frequency, number of channels and sampling resolution.
4. Select the name of the wave file where the results will be saved.
5. If your computer is equipped with more than one audio card use the **Settings** button to select a particular MIDI mixer you would like to work with.
6. Click **OK**.

To audition a file prior to recording click the **Play** button.

To choose a particular mixer device (if more than one is available on your computer) and/or to set the recording level appropriately select the MIDI file you would like to record and press the **Settings** button placed at the bottom of the **MIDI to WAV** dialog.
The multicolor bar graph displayed on the right hand side of the evoked **Recording properties** dialog shows the instantaneous peak level of the synthesized waveform. If the recording level is too high - which occurs each time the red bars are displayed - the signal is clipped. Since clipping may cause audible distortions you should avoid it at all times by adjusting positions of the three sliders (**MIDI output level**, **MIDI input level**, **Wave input level**) appropriately. Please check documentation of your audio card to learn more details about the ways you can control the recording level (depending on the audio card some sliders may be mutually coupled and/or inactive).
If you wish to accept the current Windows settings check the **Use Windows mixer settings** box at the top of the dialog.

'MIDI to WAV' dialog

MIDI, which is an acronym for Musical Instrument Digital Interface, is a set of special commands used by different pieces of electronic musical equipment to speak to each other. Vaguely speaking, the MIDI data contains information about musical notes along with detailed instructions telling how, when and how long each note should be played. DART CD-Recorder allows you to play and record the MIDI music data, i.e. to synthesize the encoded sound and save it in a standard wave format.
To record MIDI:

1. Select the MIDI file you would like to convert to a WAVE format (a typical MIDI file has a *mid* extension)
2. Set the recording mode by means of choosing the desired sampling frequency, number of channels and sampling resolution.
3. Select the name of the wave file where the results will be saved.
4. If your computer is equipped with more than one audio card use the **Settings** button to select a particular MIDI mixer you would like to work with.
5. Click **OK**.

To audition a file prior to recording click the **Play** button.

To choose a particular mixer device (if more than one is available on your computer) and/or to set the recording level appropriately select the MIDI file you would like to record and press the **Settings** button placed at the bottom of the **MIDI to WAV** dialog.
The multicolor bar graph displayed on the right hand side of the evoked **Recording properties** dialog shows the instantaneous peak level of the synthesized waveform. If the recording level is too high - which occurs each time the red bars are displayed - the signal is clipped. Since clipping may cause audible distortions you should avoid it at all times by adjusting positions of the three sliders (**MIDI output level**, **MIDI input level**, **Wave input level**) appropriately. Please check documentation of your audio card to learn more details about the ways you can control the recording level (depending on the audio card some sliders may be mutually coupled and/or inactive).
If you wish to accept the current Windows settings check the **Use Windows mixer settings** box at the top of the dialog.

'MP3 to WAV' dialog

MPEG Audio is a special tool for reducing the size of audio files. Using the principle of perceptual coding, based on "psychoacoustic masking", MPEG can substantially reduce the amount of digital information stored without compromising sound quality. MPEG codecs achieve this by suppressing information, which is irrelevant from the perceptual point of view, i.e. information that is filtered by our brain in the course of analysing the perceived sound. At light compression rates (such as 192 Kbs and above for MPEG Layer 3 Audio files) you won't hear a difference from the uncompressed original!
DART CD-Recorder allows you to convert audio files compressed using the most advanced (and the most efficient) Layer 3 MPEG Audio model to a standard WAVE format. This alows you to translate numerous MPEG audio files available through the World Wide Web (www) to a format accepted by every CD player.

DART CD-Recorder allows you to play and record the MPEG Audio data, i.e. to decompress the encoded sound and save it in a standard wave format.
To record MPEG:

1. Set the recording mode by means of choosing the desired sampling frequency, number of channels and sampling resolution.
2. Select the name of the wave file where the results will be saved.
3. Click **OK**.

To audition a file prior to recording click the **Play** button.

'Options' dialog

Using this dialog you can set some program options.

General
The available options allow you to: switch on/off sound effects associated with using buttons situated on the toolbar, get access to CDDB2 [TM] Disc Recognition Service[SM] , the world's largest online database of audio CD information, automatically update the program whenever its newer version is available, prompt to save the playlist when quitting the program and to set the local playing time in the **Producer Panel**.

Soundcard
The available options allow you to: select the input audio device, select the output audio device and adjust the program display settings to the speed of your computer.

Devices
The available options allow you to: select the default CD-Recorder, select the default CD-Reader and to specify the drive letter of the selected CD-Reader.

Recording MPEG Audio

MPEG Audio is a special tool for reducing the size of audio files. Using the principle of perceptual coding, based on "psychoacoustic masking", MPEG can substantially reduce the amount of digital information stored without compromising sound quality. MPEG codecs achieve this by suppressing information, which is irrelevant from the perceptual point of view, i.e. information that is filtered by our brain in the course of analysing the perceived sound. At light compression rates (such as 192 Kbs and above for MPEG Layer 3 Audio files) you won't hear a difference from the uncompressed original!
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DART CD-Recorder allows you to play and record the MPEG Audio data, i.e. to decompress the encoded sound and save it in a standard wave format.
To record MPEG:

1. Select the MPEG 3 file you would like to convert to a WAVE format (a typical MPEG 3 file has a *mp3* extension)
2. Click the **MP3 TO WAV** button situated on the toolbar or choose the **Convert MP3 to WAV** command available from the **List** menu.
3. Set the recording mode by means of choosing the desired sampling frequency, number of channels and sampling resolution.
4. Select the name of the wave file where the results will be saved.
5. Click **OK**.

To audition a file prior to recording click the **Play** button.

Using DirectX Audio Plug-Ins

The DirectX technology, designed by Microsoft for the Windows family of operating systems, allows you to create and run multimedia applications (called Plug-Ins) on any Windows-based PC, no matter what the hardware.
To access DirectX Audio Plug-Ins installed on your computer:

1. Select the wave file(s) for processing among those listed in the **File Panel** (if you select several files all of them will be processed).
2. Choose the **DirectX** command from the **Toolbox** menu.
3. Click the desired item on the list of available Plug-Ins.

NOTICE
DirectX Audio Plug-Ins are based on the Microsoft's DirectX specification. Any developer can write plug-ins for DART CD-Recorder using the DirectX Software Development Kit (SDK) available from Microsoft - for more information see: http://www.microsoft.com/directx.

Processing audio files

DART CD-Recorder allows you to process audio files prior to listening to the playlist or saving it on a CD.The list of available processing functions includes:

- Declicking: removing clicks pops and record scratches
- Dehissing: reducing a wideband noise
- Equalizing: shaping the frequency content of an audio signal
- Fading in/out: modifying the volume of the recording at its beginning and/or end
- Normalizing: adjusting the dynamic range of an audio signal

To start processing press the PRODUCER button situated on the toolbar or select the **Producer** command from the **Toolbox** menu. The **Producer Panel** will appear replacing the **File Panel**. On the left-hand side of the **Producer Panel** you will find several blocks representing different processing tools.
To activate the tool click on the indicator inside the corresponding block; after clicking the indicator will turn green. To select a tool without changing its activity status click on the corresponding block. The control panel for the selected tool is shown on the right-hand side of the **Producer Panel**.

Tuning processing tools
To change the tool settings click on the corresponding block and make the necessary adjustments in the right part of the **Producer Panel**.

DeClick
The **Sensitivity** slider allows you to control sensitivity of the outlier detector. If sensitivity is too small the detector may become too tolerant and fail to isolate small noise pulses; if sensitivity is too large it may be overly fussy, i.e. raise too many false alarns introducing noticeable signal distortions.
The **Click size** slider can be used to specify the maximum number of samples in a row that can be scheduled for reconstruction (anything between 1 and 100). Don't select the values that are larger than necessary.

DeHiss
The **Reduction rate** slider allows you to control the degree of noise attenuation. If reduction rate is too small the restored signal will contain an audible residual noise; if it is too large the sound will become dull, muted and/or distorted.
The **High frequency attenuation** slider can be used to supresses the high frequency components of an audio signal. It allows you to trade off between the richness of the sound and the level of residual noise.

Equalize
The **Band** sliders allow you to change the frequency content of an audio signal. Each slider corresponds to a different frequency band.
The **Gain** slider allows you to change the volume of an audio signal.
Each time you amplify a certain signal component (by moving a band slider above its neutral position) or increase the volume of the recording (by moving the gain slider to the right of its neutral position) make sure that the signal is not clipped. When clipping occurs the **Clip** indicator lights up. Since clipping may result in audible sound distortions it should be avoided. To eliminate clipping reduce the volume of the recording using the gain slider.
The **Presets** listbox allows you to load one of nine standard equalization presets (*Flat*, *Bass cut/boost*, *Treble cut/boost*, *Mid cut/boost*, *Side cut/boost*).

Fade
The **Fade in** slider allows you to gradually increase the volume at the beginning of the recording.
The **Fade out** slider allows you to gradually decrease the volume at the end of the recording.

The fade in/out time can be anything between 20 ms and 20 s.

Normalize

The normalization level slider allows you to adjust the dynamic range of an audio signal. When the slider is in its rightmost position the entire available dynamic range is used, i.e. the maximum peak value of the normalized signal attains its largest allowable value (just below the clip level).

Previewing results

The preview panel, situated beneath the control area, allows you to preview the results of processing. To check the results yielded by a particular tool, click the tool button on the left side of the **Producer Panel** and choose *Selected* from the **Tools** checklist. Then choose the processing mode (*On-line* or *Off-line*) and range (*All*, *From cursor*, *Local*). Finally, press the **Play result** button. If your computer is fast enough to work in the on-line mode, DART CD-Recorder will allow you to listen to the results of processing while changing the tool settings. Each time you modify any of the settings, the green **Ready** light will go off. It will be switched on again as soon as the results obtained under the new settings are available. At any time during the test, you can press the **Play source** button to bypass processing and listen to the original recording. If your computer is too slow to perform tuning in real time, choose the *Off-line* processing mode. In cases like this, all experiments will be performed off-line on a short fragment of the recording centered around the cursor (local preview area).

To check the results yielded by all activated filters, choose *Activated* from the **Tools** checklist. Note that only the *Off-line/Local* preview mode is allowed if the number of activated tools is greater than one.

NOTICE

Please note that only the uncompressed audio files (those with the *wav* extension) can be processed using the **Producer Panel**. For this reason the compressed soundfiles are hidden (not shown on the playlist) when the **Producer Panel** is active; if you close the **Producer Panel** all compressed files will be shown again.

All MPEG 3 files have to be converted to the WAVE format prior to processing. To perform such conversion use the **MP3 to WAV** dialog available after pressing the `MP3 TO WAV` button situated on the toolbar or by choosing the **Convert MP3 to WAV** command from the **List** menu.

Using CDDB

What is CDDB ?

CDDB2 [TM] Disc Recognition Service[SM] (DRS) from CDDB, Inc. is the world's largest online database of audio CD information. Each time you play a CD, your computer can access CDDB through the Internet for information about that specific disc: the name of the artist, the album title and all song titles. Goodbye tiresome typing, CDDB does it all automatically! Recognized as the most accurate audio CD identification service on the Web, CDDB has data on all kinds of music, even CDs with multiple pressings. Best of all, accessing CDDB is free for your private use.
The first time you use the service, you must register with CDDB.

How to register with CDDB

To register with CDDB, load a CD and click the **Read track** button situated on the toolbar. When a small dialog window appears, asking whether you would like to access CDDB, click the **Yes** button. The CDDB Registration Wizard will appear automatically. Follow the screens for a "New Registration" to select a "nickname" and password. The remaining information is optional, but does help CDDB provide better service. Once you register, you do not have to re-register, unless you want to change your registration information or settings.

To change your CDDB registration information open the **Read track** dialog (with the CDDB link enabled) and click the CDDB icon using the right mouse button. Then select **Register** and use the Registration Wizard to change the registration details.

Adding new entries to the database

If you have a disc that does not have a corresponding entry in the database, please feel free to create one and submit it. Submissions are sent via a specially formatted email message. Please note that if your entry is accepted, you will not receive any sort of notification. Entries that fail to meet the required criteria for acceptance are rejected, and an email rejection notice will be sent to you.
To add a new entry to the CDDB database open the **Read track** dialog (with the CDDB link enabled) and click the CDDB icon using the right mouse button. Then select **Submit Disk**, fill in the attached data sheets and click the **OK** button.

Guidelines for adding entries to CDDB

Modifying an existing entry

To modify an existing CDDB entry open the **Read track** dialog (with the CDDB link enabled) and click the **Edit CD info** button.

More details

To get more details on CDDB visit the CDDB home page at *http://www.cddb.com*. You can do it by selecting the **Web links** command, available from the **Help** menu, and clicking on the CDDB link.

Guidelines for adding entries to CDDB

Please use the following conventions when submitting entries to this database:

1. Please use the "Artist / Disc Title" format for the disc title. Note that artist name or group name comes first, and is separated from the disc title with a slash character. Please do not use other characters for this purpose. Also, put a space before and after the slash.

    Never use more than one slash in the disc title. For example, if you have a disc with "Jorge Bolet" performing "Franz Liszt" called "Liszt - The Piano Works Disc 1", do not enter it like:

    "Franz Liszt / Jorge Bolet / Liszt The Piano Works Disc 1"

    Since there should only be a slash between the artist and the disc title, do it something like this:

    "Franz Liszt - Jorge Bolet / Liszt – The Piano Works Disc 1"

    Alternately, you could just remove the composer altogether, because it's redundant:

    "Jorge Bolet / Liszt - The Piano Works Disc 1"

    If the artist is more than one word, do not separate the words with a comma. For example, if the artist is "Louis Armstrong", do not enter it as "Armstrong, Louis". If the artist name and disc title are the same, or if there is no artist name or disc title, then you should only enter the one unique title with no separating slash. For example, the album "Led Zeppelin" by "Led Zeppelin" should simply appear as "Led Zeppelin", not "Led Zeppelin / Led Zeppelin" or "Led Zeppelin /".
    If there are more than one artist appearing on a CD, such as on compilations, the individual artists' names should appear in the "Artist / Song Title" format in each track title. For example, If the song "Another Brick in the Wall, Part II" by "Pink Floyd" is on track 1 of a disc, and "Stairway to Heaven" by "Led Zeppelin" is on track two, then the data for track 1 should look like this:

    Pink Floyd / Another Brick in the Wall, Part II

    and the data for track 2 should look like this:

    Led Zeppelin / Stairway to Heaven

    If you want to add more information than the artist name for a particular track, you should use the "extended data" fields for this. Such information might include the artist, composer, recording date, movement name (in the case of classical) et cetera.
2. Capitalize the first letter of each word only. Do not use upper case for whole words unless it's absolutely necessary.
3. Please verify that all spelling is correct before submitting an entry.
4. Submit to the appropriate category. Currently the following categories are recognized by the CDDB server: blues, classical, country, data (ISO9660 and other data CDs), folk, jazz, newage, reggae, rock (incl. funk, soul, rap, pop, industrial metal, etc.), soundtrack (movies, shows) and misc (i.e. others that do not fit the above categories).
5. Do not send entries that are not completely filled-out (i.e., empty track titles, etc.).
6. Send an entry only after you verify that it isn't already in the database. The server will discard duplicate entries.
7. For compilation discs, specify "Various Artists" as the artist.
8. For tracks with no name, specify "(Unknown)" as the track name. If a track has no name and contains no audio, specify "(Blank)" as the track name.

How to ...

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Create a new playlist
Save a playlist
Save a playlist under a different name

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Remove playlist items
Rename a playlist item
Get information about a playlist item
Play a playlist item
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Opening an existing playlist

To open an existing playlist do one of the following:

- Select the **Open** command from the **List** menu
- Click

  on the toolbar
- Press CTRL+O

Creating a new playlist

To create a new (empty) playlist which can be filled up with soundfiles of your choice do one of the following:

- Select the **New** command from the **List** menu
- Click

on the toolbar
- Press CTRL+N

Saving a playlist

To save a playlist on the disk do one of the following:

- Select the **Save** command from the **List** menu
- Click

 on the toolbar

- Press `CTRL+S`

If you save the file for the first time, you have to specify its name in the **File Save** dialog box. Otherwise the file will be saved with the name it was given before.

Saving a playlist under a different name

To save a playlist on the disk under a new name select the **Save as** command from the **List** menu and specify a new name of the list.

Adding soundfiles to the playlist

To add a soundfile to the playlist, do one of the following:

1. Use the **Files** listbox to select the soundfiles you want to add. To select more than one file, hold down the CTRL key while clicking. To select a group of files, select the first file of the group, hold down the SHIFT key and select the last file.
2. Drag the selected soundfiles from the **File Panel** to the **Playlist Panel**.

To add all soundfiles in a directory to the playlist

- Click the **Add all** button.

Removing playlist items

To remove a single playlist item:

1. Select the soundfile you want to remove and click the right mouse button to evoke a shortcut menu.
2. Choose the **Remove** command.

To remove several playlist items at once:

1. Tag the soundfiles you want to remove (by checking the corresponding boxes) and click the right mouse button to evoke a shortcut menu.
2. Choose the **Remove Tagged** command.

Renaming a playlist item

To rename a playlist item:

1. Select the soundfile you want to rename and click the right mouse button to evoke a shortcut menu.
2. Choose the **Rename** command.
3. Type a new name of the soundfile in the **Enter new filename** dialog.
4. Click OK or press ENTER.

Getting information about a playlist item

To get information about a playlist item:

1. Select the soundfile you want to get information about and click the right mouse button to evoke a shortcut menu.
2. Choose the **Info** command.

Playing a playlist item

To play a playlist item:

1. Select the soundfile you want to play.

2. Click ▸ .

During playback, DART CD-Recorder shows the volume (the instantaneous peak levels) of the currently played soundfile. The slider placed below the volume meters shows the position within the soundfile. At any time during the playback you can drag the slider to a new position.

Getting information about a soundfile

In you want to get information about a soundfile that is not a part of the playlist, do the following:

1. Use the **File Panel** to select the appropriate soundfile and click the right mouse button to evoke a shortcut menu..
2. Choose the **Info** command.

Playing a soundfile

In you want to listen to a soundfile that is not a part of a playlist, do the following:

1. Use the **File Panel** to select the appropriate soundfile.
2. Click the **Play** button.

The **Playing** dialog will appear and the soundfile will be played. To stop playback press the `ESC` key or click the left mouse button.

Playing the entire playlist once

If you want to play the entire playlist once, do the following:

1. Keep clicking the MODE button on the **Playlist Panel** until the mode is set to *normal*:

2. Click the PLAY button

Playing the entire playlist in a loop

If you want to play the entire playlist in a loop, do the following:

1. Keep clicking the `MODE` button on the **Playlist Panel** until the mode is set to *loop*: .

2. Click the `PLAY` button

Sampling the playlist

If you want to play a short fragment of each soundfile comprising the playlist, do the following:

1. Keep clicking the `MODE` button on the **Playlist Panel** until the mode is set to *sample*: .

2.   Click the `PLAY` button

Recording from an analog source

In order to create a new recording:

1. Click the **RECORD** button situated on the toolbar or press the **Record** button placed at the bottom of the **File Panel**.
2. Select the name of the new recording or pick one of the existing names and click the **Overwrite** button.
3. Set the record mode (number of channels, sampling frequency, sampling resolution).
4. Click the **PAUSE** button to initialize the volume meter(s). Start the audio device you wish to record from, and adjust the output level while monitoring the level display.
5. Rewind your source, press the **RECORD** button, and start the audio device. The available disk space and the current length of the recorded material (both in bytes and seconds) are displayed in the lower part of the **Record** dialog.
6. When the recording is complete, click the **STOP** button or press ENTER.

When you press the **CLOSE** button, the **Record** dialog will disappear and the name of the recorded soundfile will be added to the list of files displayed in the **File Panel**..

Using the **PLAY**, **FAST FORWARD**, and **FAST REVERSE** buttons, you can audition the recorded material or its fragments prior to closing the **Record** dialog. You can also add some new material at the end of an existing recording or modify its content starting from a selected counter position.

Recording MIDI

To record MIDI :

1. Click the `MIDI TO WAV` button situated on the toolbar or choose the **Convert MIDI to WAV** command available from the **List** menu.
2. Select the MIDI file you would like to convert to a WAVE format (a typical MIDI file has a *mid* extension)
3. Set the recording mode by means of choosing the desired sampling frequency, number of channels and sampling resolution.
4. Select the name of the wave file where the results will be saved.
5. If your computer is equipped with more than one audio card use the **Settings** button to select a particular MIDI mixer you would like to work with.
6. Click **OK**.

To audition a file prior to recording click the **Play** button.

To choose a particular mixer device (if more than one is available on your computer) and/or to set the recording level appropriately select the MIDI file you would like to record and press the **Settings** button placed at the bottom of the **MIDI to WAV** dialog.
The multicolor bar graph displayed on the right hand side of the evoked **Recording properties** dialog shows the instantaneous peak level of the synthesized waveform. If the recording level is too high - which occurs each time the red bars are displayed - the signal is clipped. Since clipping may cause audible distortions you should avoid it at all times by adjusting positions of the three sliders (**MIDI output level**, **MIDI input level**, **Wave input level**) appropriately. Please check documentation of your audio card to learn more details about the ways you can control the recording level (depending on the audio card some sliders may be mutually coupled and/or inactive).
If you wish to accept the current Windows settings check the **Use Windows mixer settings** box at the top of the dialog.

Recording MPEG Audio

To record MPEG :

1. Click the `MP3 TO WAV` button situated on the toolbar or choose the **Convert MP3 to WAV** command available from the **List** menu.
2. Select the MPEG 3 file you would like to convert to a WAVE format (a typical MPEG 3 file has a *mp3* extension)
3. Set the recording mode by means of choosing the desired sampling frequency, number of channels and sampling resolution.
4. Select the name of the wave file where the results will be saved.
5. Click **OK**.

To audition a file prior to recording click the **Play** button.

Recording from an Analog Source

DART CD-Recorder allows you to record any analog audio source connected to the sound card your computer is equipped with.
Some computers are equipped with more than one wave device. In order to check which audio card is currently used for recording and/or to select the preferred device use the **Options** dialog available from the **View** menu.

In order to create a new recording:

1. Click the **RECORD** button situated on the toolbar or press the **Record** button placed at the bottom of the **File Panel**.
2. Select the name of the new recording or pick one of the existing names and click the **Overwrite** button.
3. Set the record mode (number of channels, sampling frequency, sampling resolution).
4. Click the **PAUSE** button to initialize the volume meter(s). Start the audio device you wish to record from, and adjust the output level while monitoring the level display.
5. Rewind your source, press the **RECORD** button, and start the audio device. The available disk space and the current length of the recorded material (both in bytes and seconds) are displayed in the lower part of the **Record** dialog.
6. When the recording is complete, click the **STOP** button or press ENTER.

When you press the **Close** button, the **Record** dialog will disappear and the name of the recorded soundfile will be added to the list of files displayed in the **File Panel**..

Using the **PLAY**, **FAST FORWARD**, and **FAST REVERSE** buttons, you can audition the recorded material or its fragments prior to closing the **Record** dialog. You can also add some new material at the end of an existing recording or modify its content starting from a selected counter position.

Setting the record mode
Choosing the record level
Using control buttons
Modifying an existing recording
Timer recording
Troubleshooting

'Record' dialog

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Using the **PLAY**, **FAST FORWARD**, and **FAST REVERSE** buttons, you can audition the recorded material or its fragments prior to closing the **Record** dialog. You can also add some new material at the end of an existing recording or modify its content starting from a selected counter position.

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Setting the record mode

Before you start recording you can select the appropriate record mode by means of setting three record parameters

Number of channels
You can record in mono or stereo (provided that your sound hardware has that capability).

Sampling rate
You can choose between the three standard sampling rates (11.025 kHz, 22.050 kHz and 44.100 kHz) provided by most of the sound cards currently available or you can set any nonstandard rate supported by your audio card. If you want to save the recorded soundfiles on a CD 'as are' pick the CD-format settings (44.100 kHz, stereo).

NOTICE
DART CD-Recorder is equipped with an extremely fast, high-quality resampling utility which automatically converts any 'nonstandard' wave file to a CD format. If you wish to clean an audio file prior to putting it on a CD consider recording it (and restoring) at a lower rate. There are at least two advantages of doing this:

1. Declicking is usually more effective at low sampling rates - at high rates clicks are less sharp and hence more difficult to detect and isolate. The same, to some extent, concerns denoising - since noise dominates the high-frequency portion of the signal spectrum, fast sampling decreases the overall signal-to-noise ratio which makes the restoration task more difficult.

2. Since resampling is less time consuming than declicking or denoising (dehissing) the "restore at lower rate and upsample" scheme works considerably faster than the "restore at higher rate" scheme.

Sampling resolution
You can decide whether individual samples will be stored in a single byte (8 bits) or an entire word (16 bits) of computer memory. In order to guarantee good quality of the reproduced sound you should always use the 16-bit resolution.

NOTICE
The system will not allow you to change the above settings once the process of recording has started. If you are recording new material in an existing soundfile, all settings have to remain unchanged.

Choosing the Record Level
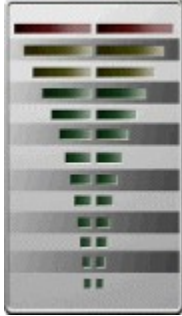
The bar graphs displayed on the right side of the **Record** dialog show the instantaneous peak levels of the input signal (expressed in logarithmic units called decibels). While the volume meters are running (they can be activated by means of pressing the PAUSE button prior to recording), you can adjust the record level of the audio card either directly (manually) or using the appropriate Windows tools supplied by the manufacturer.

The red indicators placed at the top of each bar-graph light up each time the input signal is clipped. Clipping occurs when the input level is too high. Since it results in audible signal distortions it should be avoided at all times.

Setting record levels too low is also disadvantageous, as it tends to decrease the signal-to-noise ratio.

Using Control Buttons

The control buttons placed at the bottom of the **Record** dialog work the same as similar buttons in an analog tape deck

► – **PLAY** button: when pressed plays back the recorded soundfile starting from the position indicated by the time counter. The number of the counter increases as the soundfile is played.

● – **RECORD** button: when pressed, records in a soundfile starting from the position indicated by time counter. Note that recording starts as soon as the **RECORD** button is pressed, i.e. there is no need to additionally press **PLAY** (which is typical of analog tape decks).
If recording is in progress, the red indicator placed on the **RECORD** button burns continuously. When recording is paused the light starts to blink.

II – **PAUSE** button: when pressed prior to recording or playing, it activates the volume meters. When pressed during playback or recording, it suspends the corresponding action (the suspended activity is resumed once the **PAUSE** button is pressed again).

■ – **STOP** button: when pressed, stops the current activity.

►► – **FAST FORWARD** (or **CUE**) button: can be used to increase the value of the time counter. In order to instantly jump to the end of the recording, click on this button while holding down the CTRL key.

◄◄ – **FAST REVERSE** (or **REWIND**) button: can be used to decrease the value of the time counter. In order to instantly jump to the beginning of the recording, click on this button while holding down the CTRL key.

⊙ – **TIMER RECORDING** button: can be used to program timer recordings.

NOTICE
In order to audition a soundfile while cueing or rewinding, press the **PLAY** button prior to using **FAST FORWARD** or **FAST REVERSE.**

Modifying an Existing Recording

To modify an existing recording

1. Click the **RECORD** button situated on the toolbar or press the **Record** button placed at the bottom of the **File Panel**.
2. Select the name of the existing recording and click on the **Modify** button.
3. Use the **FAST FORWARD**, **FAST REVERSE** and **PLAY** buttons to select the starting position of the time counter.
4. Start the audio device and press the **RECORD** button.
5. When the recording is complete press the **STOP** button.

NOTICE
When recording in an existing soundfile, you are not allowed to change record settings such as the number of channels, sampling rate, and sampling resolution (the corresponding buttons are not active).

'Timer recording' dialog

To program a new timer recording :

1. Check whether the time and date displayed at the top of the dialog are correct; if not - use standard Windows tools to make necessary adjustments. If you are a frequent traveler remember that the time shown on your watch may not be consistent with the local time.
2. Click the **New** button. The current date and hour will appear in the **Start time** and **End time** control panels.
3. Set the desired start time of the timer recording using the scroll buttons situated in the **Start time** control panel.
4. Set the desired end time of the timer recording using the scroll buttons situated in the **End time** control panel. The length of the recording (the difference between it's end time and start time) is displayed in the brackets next to the end hour.
5. Use the **Settings** control panel to fix the recording details. The **Recording mode** listbox allows you to choose among several recording modes (*once*, *daily*, *weekly*, *monthly* or *Mon-Fri*). The **File** button can be used to set three record parameters (*sampling frequency*, *number of channels* and *sampling resolution*) and to choose the name and location of the file where the music data will be saved. Finally, the **Info** button allows you to enter a description of the timer recording, a part of which entitled 'headline' (up to 16 characters) is displayed on the list next to the timing details.
6. Press the **Set** button to add a new timer recording to the list (all activated timer recordings are distinguished with red indicators).
7. Press the **OK** button to close the **Timer recording** dialog but do not exit the program (see Notice 1 below).

To modify an existing timer recording (i.e., the one already shown on the list) click the corresponding item and proceed exactly as described above. Finally, to remove any item from the list select it and click the **Remove** button.
You can disable (temporarily cancel) a timer recording by selecting it and pressing the **Disable** button (the corresponding indicator will turn gray; the **Disable** button will turn into the **Enable** button). To reactivate the disabled timer recording click the corresponding line on the list and press the **Enable** button (you can still use the **Set** button to modify the disabled item). The enable/disable function can be used, for example, to temporarily block periodic timer recordings, i.e., those performed in the *daily*, *weekly*, *monthly* or *Mon-Fri* mode.
Each time the **Timer recording** dialog is evoked all periodic timer recordings are scrutinized to determine the time of the next recording session due. To sort timer recordings 'by start time' press the **Sort list** button. If the **Auto sort** box is checked sorting will be performed automatically each time the **Timer recording** dialog is opened.
When a nonperiodic timer recording session (the one performed in the *once* mode) is complete the corresponding item is assigned a *done* status and displayed with a 'tick' mark next to it. To remove such item from the list select it and click the **Remove** button. If you check the **Auto remove** checkbox all nonperiodic timer recordings will be automatically removed from the list when done (naturally, the created wave files will NOT be deleted).
When you close the **Timer recording** dialog the entire list is saved on the disk.
When recording starts a timer recording progress/info window is displayed showing the basic recording details (file name, headline, start time, end time) and percentage of the work done. You can stop recording at any time by pressing the **Cancel** button.

NOTICE 1
You can program any number of timer recordings for any number of days in advance. You should be aware, however, that to make timer recording possible your computer MUST be switched on during the time scheduled for recording with DART CD-Recorder OPEN (possibly minimized) and NOT busy (no dialog can be open including the **Timer recording** dialog). If any of the conditions mentioned above is not fulfilled the timer recording is cancelled and the status of the corresponding item on the list is changed to

failed. If the **Auto remove** option is not switched on all such recordings will be shown on the list with the 'cross' sign next to them.

NOTICE 2
DART CD-Recorder will not allow you to program conflicting timer recordings, i.e., those with overlapping recording times. Some conflicts may be not obvious at the first glance, e.g. the daily [22:00 - 23:00] timer recording conflicts with the monthly [22:30 - 23:30] one in the sense that at some point in the future both requests would have to be served simultaneously.
Similarly, you will not be allowed to put on the list nonperiodic recordings for which the end time is smaller than the current time, i.e., the ones that are already overdue at the time of setting. The last constraint is not imposed on periodic recordings. However, the corresponding start time and end time details may change so as to match the nearest recording time due when you press the **Enable** or **Set** button. The analogous recalculation is made for all periodic timer recordings each time you open the **Timer recording** dialog.

NOTICE 3
A unique soundfile name proposed by DART CD-Recorder is based on the start time of the recording and allows for a pretty straightforward file identification (for example, the file *D12021998H0312.wav* can be easily recognized as the recording made on February 12, 1998 at 3:12 in the morning). You can change this name but when you do it for a periodic timer recording a new material will always overwrite the material recorded during the previous session (which may be convenient if you are short of the disk space).

Timer recording

If your favorite music program is broadcasted at 3 in the morning and you don't feel like having a sleepless night use the timer recording function available after clicking the **Timer recording** button situated next to record/playback control panel or by selecting the **Timer recording** command available from the **Toolbox** menu.

To program a new timer recording :

1. Check whether the time and date displayed at the top of the dialog are correct; if not - use standard Windows tools to make necessary adjustments. If you are a frequent traveler remember that the time shown on your watch may not be consistent with the local time.
2. Click the **New** button. The current date and hour will appear in the **Start time** and **End time** control panels.
3. Set the desired start time of the timer recording using the scroll buttons situated in the **Start time** control panel.
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You can program any number of timer recordings for any number of days in advance. You should be aware, however, that to make timer recording possible your computer MUST be switched on during the time scheduled for recording with DART CD-Recorder OPEN (possibly minimized) and NOT busy (no dialog can be open including the **Timer recording** dialog). If any of the conditions mentioned above is not fulfilled the timer recording is cancelled and the status of the corresponding item on the list is changed to *failed*. If the **Auto remove** option is not switched on all such recordings will be shown on the list with the 'cross' sign next to them.

NOTICE 2
DART CD-Recorder will not allow you to program conflicting timer recordings, i.e., those with overlapping recording times. Some conflicts may be not obvious at the first glance, e.g. the daily [22:00 - 23:00] timer recording conflicts with the monthly [22:30 - 23:30] one in the sense that at some point in the future both requests would have to be served simultaneously.
Similarly, you will not be allowed to put on the list nonperiodic recordings for which the end time is smaller than the current time, i.e., the ones that are already overdue at the time of setting. The last constraint is not imposed on periodic recordings. However, the corresponding start time and end time details may change so as to match the nearest recording time due when you press the **Enable** or **Set** button. The analogous recalculation is made for all periodic timer recordings each time you open the **Timer recording** dialog.

NOTICE 3
A unique soundfile name proposed by DART CD-Recorder is based on the start time of the recording and allows for a pretty straightforward file identification (for example, the file *D12021998H0312.wav* can be easily recognized as the recording made on February 12, 1998 at 3:12 in the morning). You can change this name but when you do it for a periodic timer recording a new material will always overwrite the material recorded during the previous session (which may be convenient if you are short of the disk space).

Troubleshooting

If problems with recording occur check whether disk caching is enabled (you should be able to find the corresponding options in **Control Panel/System/Performance/File System** dialog box).
If problems persist read carefully the explanations given below and try out the provided rescue devices.

First of all, check if recording problems are specific to DART CD-Recorder. If the other software packages (e.g., applications that came with your sound card) do not work either, your computer may be simply too slow for audio applications. If problems occur only when handling very long audio files try out the **Disk defragmenter** application in the **Programs/Accessories/System tools** folder of **Start** menu.

If the other record applications work properly do not panic! In order to provide nonstandard features, like the ability to detect signal clipping during recording, the recording/playing routines provided in DART CD-Recorder were programmed using low-level instructions, i.e. they refer to some low-level Windows specifications. Generally, DART CD-Recorder may fail to record correctly for two different reasons :

Case 1 (more likely)
The extra record overhead DART CD-Recorder has compared to other programs is causing your machine to choke, especially under extreme conditions (the highest sampling frequency, very long audio files). This is good news for you as you should be able to remove the cause of the problem by changing the audio card settings as described below

> **Symptoms** : the system locks during recording, messages about general protection faults appear on the screen, etc.

> **Remedy 1** : check the **Use fake VU display** box in the **Options** dialog available from the **View** menu.
> **Explanation** : by default DART CD-Recorder checks every signal sample during recording to provide an accurate level/clip display (VU bars shown in the **Record** dialog). Some audio cards issue the record overflow messages used by the related software. Since such messages are not standard we cannot rely upon them. When the **Use fake VU display** box is checked only one in 128 samples is examined which significantly decreases the computational overhead during recording.

> **Remedy 2** : decrease the number of record status updates per second using the **Options** dialog accessible from the **View** menu.
> **Explanation** :the default number of counter updates during one second equals 6. If you decrease this number the time/volume displays will be updated less frequently preventing the system from locking.

Case 2 (less likely)
If changing the sound card settings does not solve the problem it looks like the card your computer is equipped with is not fully Windows compatible, i.e., does not comply with the low-level Windows specifications. Note that at the same time the applications which communicate with your audio card at a higher level and/or refer to some of its nonstandard features may work fine. This is of course bad news for you. It means you have the 'plug' which does not fit the standard 'socket' we provide.

How to create your own CD ?

DART CD-Recorder offers you a possibility to create and record your own CD, provided your system is equipped with a CD-R.

Selecting audio files for recording

Prior to recording you must specify which files (and in what order) should be placed on a CD. This can be done by creating a playlist of soundfiles. Instructions on how to create a playlist can be found at How to create a new playlist.

DART CD-Recorder creates CD's in a standard audio format which can be read by every CD player. For this reason the playlist items must obey several standard restrictions:

1. The playlist must consist of at least one but not more than 99 soundfiles.
2. Each soundfile has to be at least 4 seconds long.
3. Soundfiles must be CD format compatible.

Since DART CD-Recorder provides automatic audio file conversion you do not have to worry about the last requirement.

Adjusting silence gaps between audio tracks

DART CD-Recorder allows you to individually adjust silence gaps between consecutive CD tracks. In order to do this, follow the steps below:

1. Select the playlist item and click the **Info** button (or double-click the item) to evoke the **File info** dialog.
2. Modify the value displayed in the edit box entitled "Gap time after this track in seconds" (anything between 0 and 30 seconds).
3. If you want this time to be identical for all tracks, click the **Apply to all** button.
4. Click **OK**.

Each silence gap is attached to the soundfile it was defined for (always the one preceding the gap). Therefore if you change position of an audio file within the list the corresponding silence gap will move along with the file.
To help you adjust spacing between subsequent tracks the actual size of silence gaps is retained when a particular item or all items on the playlist are played back.

Writing to a CD

When you are ready to record a CD click the `WRITE TO CD` button on the toolbar or select the **Write to CD** command from the **List** menu.

 `WRITE TO CD` button

Prior to recording DART CD-Recorder checks all items on the playlist and runs the CD format conversion procedure if necessary. If any of the files requires conversion to a CD format (16 bit, 44kHz, stereo) the **Check CD Format** dialog appears on the screen. The results of soundfile conversion are saved in temporary files - the **Check CD format** dialog allows you to estimate the amount of disk space neeeded to perform such conversion and to select the temporary directory. When conversion is finished the **Write to CD** dialog appears on the screen allowing you to control the process of CD publishing, namely, to specify a device used for recording (which is useful if your system is equipped with more than one CD recorder) and to select the recording speed. To start recording press the **Write** button.

If you want to check whether your system is capable of recording with a given speed activate the **Simulate disk creation** checkbox (when you choose this option, all actions will be identical with those taken during actual recording, except that no data will be written to a CD).

'Check CD Format' dialog

Prior to recording DART CD-Recorder checks all items on the playlist and runs the CD format conversion procedure if necessary. If any of the files requires conversion to a CD format (16 bit, 44kHz, stereo) the **Check CD Format** dialog appears on the screen. The results of soundfile conversion are saved in temporary files - the **Check CD format** dialog allows you to estimate the amount of disk space neeeded to perform such conversion and to select the temporary directory.

'Write to CD' dialog

The **Write to CD** dialog allows you to control the process of CD publishing, namely, to specify a device used for recording (which is useful if your system is equipped with more than one CD recorder) and to select the recording speed. To start recording press the **Write** button.
If you want to check whether your system is capable of recording with a given speed activate the **Simulate disk creation** checkbox (when you choose this option, all actions will be identical with those taken during actual recording, except that no data will be written to a CD).

Adjusting silence gaps between audio tracks

DART CD-Recorder allows you to specify the amount of silence due to be inserted after a given CD track. In order to do this, follow the steps below:

1. Select the playlist item and click the **Info** button (or double-click the item) to evoke the **File info** dialog.
2. Modify the value displayed in the edit box entitled "Gap time after this track in seconds" (anything between 0 and 30 seconds).
3. If you want this time to be identical for all tracks, click the **Apply to all** button.
4. Click **OK**.

Reading tracks from an audio CD

To read a track from an audio CD do the following:

1. Insert an audio CD into a CD drive.
2. Evoke the **Read track** dialog (available after clicking the `READ TRACK` button situated on the toolbar). DART CD-Recorder will ask you if you want to access CDDB (the world's largest online database of audio CD information) for information about that specific disc: the name of the artist, the album title and all song titles. Unless the examined audio CD had been already checked in the past, looking up the CDDB basis requires the Internet connection.
3. Select tracks for reading by clicking on the dot marks on their left side. Tracks marked for reading are distinguished with red bullets. To uncheck tracks click on the corresponding dot marks again. To add several track to the reading list select them and click the **Add** button. Several tracks may be selected by means of depressing the `CTRL` key and clicking the corresponding items To add all tracks to the reading list click the **Add all** button. Finally, to remove items from the reading list select them and press the **Remove** button.
4. Select the reading speed. Be aware that in some of the available CD-R devices the error-correction mechanism is switched off at higher reading speeds - in cases like that disk surface damages or dust may introduce audible clicks into the transmitted audio material if you don't choose the lowest speed.
5. Choose the name(s) under which the selected audio tracks will be saved. Tracks are stored in separate soundfiles called *<name[xy].wav>* where *name* is an user-defined prefix and *[xy]* denotes a two-digit track number.
6. Click **OK**

Tracks are stored in separate soundfiles called *<name[xy].wav>* where *name* is an user-defined prefix (specified in the **Read track** dialog) and *[xy]* denotes a two-digit track number. To add the selected CD tracks to the playlist check the **Add tracks to the playlist** checkbox.

Recording from an audio CD

DART CD-Recorder allows you to read tracks from an audio CD. Since a digital (i.e., lossless) transmission is used, copying does not cause any degradation of the sound quality typical of analog systems.
To read a track from an audio CD do the following:

1. Insert an audio CD into a CD drive.
2. Evoke the **Read track** dialog (available after clicking the `READ TRACK` button situated on the toolbar). DART CD-Recorder will ask you if you want to access CDDB (the world's largest online database of audio CD information) for information about that specific disc: the name of the artist, the album title and all song titles. Unless the examined audio CD had been already checked in the past, looking up the CDDB basis requires the Internet connection.
3. Select tracks for reading by clicking on the dot marks on their left side. Tracks marked for reading are distinguished with red bullets. To uncheck tracks click on the corresponding dot marks again. To add several track to the reading list select them and click the **Add** button. Several tracks may be selected by means of depressing the `CTRL` key and clicking the corresponding items To add all tracks to the reading list click the **Add all** button. Finally, to remove items from the reading list select them and press the **Remove** button.
4. Select the reading speed. Be aware that in some of the available CD-R devices the error-correction mechanism is switched off at higher reading speeds - in cases like that disk surface damages or dust may introduce audible clicks into the transmitted audio material if you don't choose the lowest speed.
5. Choose the name(s) under which the selected audio tracks will be saved. Tracks are stored in separate soundfiles called *<name[xy].wav>* where *name* is an user-defined prefix and *[xy]* denotes a two-digit track number.
6. Click **OK**

Tracks are stored in separate soundfiles called *<name[xy].wav>* where *name* is an user-defined prefix (specified in the **Read track** dialog) and *[xy]* denotes a two-digit track number. To add the selected CD tracks to the playlist check the **Add tracks to the playlist** checkbox.

'Read track' dialog

DART CD-Recorder allows you to read tracks from an audio CD. Since a digital (i.e., lossless) transmission is used, copying does not cause any degradation of the sound quality typical of analog systems.
To read a track from an audio CD do the following:

1. Select tracks for reading by clicking on the dot marks on their left side. Tracks marked for reading are distinguished with red bullets. To uncheck tracks click on the corresponding dot marks again. To add several track to the reading list select them and click the **Add** button. Several tracks may be selected by means of depressing the CTRL key and clicking the corresponding items To add all tracks to the reading list click the **Add all** button. Finally, to remove items from the reading list select them and press the **Remove** button.
2. Select the reading speed. Be aware that in some of the available CD-R devices the error-correction mechanism is switched off at higher reading speeds - in cases like that disk surface damages or dust may introduce audible clicks into the transmitted audio material if you don't choose the lowest speed.
3. Choose the name(s) under which the selected audio tracks will be saved. Tracks are stored in separate soundfiles called *<name[xy].wav>* where *name* is an user-defined prefix and *[xy]* denotes a two-digit track number.
4. Click **OK**

Tracks are stored in separate soundfiles called *<name[xy].wav>* where *name* is an user-defined prefix (specified in the **Read track** dialog) and *[xy]* denotes a two-digit track number. To add the selected CD tracks to the playlist check the **Add tracks to the playlist** checkbox.

Gives access to the file managing instructions. Allows you to create, load and save your playlist, publish it on a CD, print the playlist content, create your own CD labels and to exit the program. Additionally it provides means for reading tracks from an audio CD (in a digital, i.e., distortionless mode) - and to record/play back the MIDI and MPEG 3 audio data.

Using this menu you can turn on/off the status bar and set some program options.

Provides access to several useful tools which allow you to restore/process audio files, partition long recordings by means of detecting silences, start and stop recording according to a given time schedule, use the DirectX Audio Plug-In functions attached to DART CD-Recorder and erase rewritable CD's.

Gives access to the DART CD-Recorder help system and displays information about the program. Allows you to automatically update the program whenever its newer version is available. Provides links to the web pages on DART and CDDB.

Allows you to create a new (empty) playlist you can add the files to.

Allows you to save the current playlist on the disk. If the playlist has not been saved yet, you have to specify its name using the File save dialog. If you do not specify the file extension, the default .WMN extension will be added.

Allows you to read tracks from an audio CD (provided your computer is equipped with a CD recorder).

Allows you to record from any analog audio source connected to your sound card.

Allows you to unpack audio collections, i.e., to split audio tracks into subtracs by means of detecting silences.

Allows you to play back and record the MIDI music data.

Allows you to use any of the DirectX Plug-in functions you would wish to have attached to DART CD-Recorder.

Allows you to publish a playlist on a compact disk.

Provides access to the DART CD-Recorder help system.

Context help - allows you to obtain information about different screen items.

Allows you to open an existing playlist.

Displays the currently selected soundfile. Does not allow you to edit the text.

Allows you to process audio files prior to listening to the playlist and/or saving it to a CD. The list of available processing tools includes declicking, dehissing, equalizing, fading in/out and normalizing audio recordings.

Allows you to play back and record the MPEG 3 music data.

Displays the contents of the current directory. You may select the files by means of clicking on them with the left mouse button. To select more than one file, hold down the CTRL key while clicking. To select a group of files, select the first file of the group, hold down the SHIFT key and select the last file. You may add the file to the playlist by dragging it from the **File Panel** to the **Playlist Panel** (a 'drag and drop' technique).
If you use the right mouse button to click a particular file a shortcut menu shows up providing access to several file managing commands (**Copy**, **Move**, **Rename**, **Delete**). To copy, move or delete several files at once select them using the left mouse button - then click any item of the highlighted group using the right mouse button and choose an appropriate command.

Displays the name of the current directory.

Displays the directory tree. You may open the subdirectory by double-clicking its folder or clicking the 'plus' box shown next to it. To create a new subdirectory or to delete an existing (empty) one evoke a shortcut menu by positioning cursor on the corresponding element of the directory tree and press the right mouse button. Then make an appropriate choice (**Create subdirectory**, **Delete subdirectory**).

Allows you to select the type of the files displayed in the **Files** listbox.

Adds to the playlist all files displayed in the **Files** listbox.

Plays the currently selected soundfile. If several soundfiles are selected, the first one is played.

Displays the true name of the currently selected soundfile (the name under which it is saved on your hard disk).

Displays the current contents of the playlist. Click the item to select it. To remove, rename or get information about a playlist item click on it to evoke a shortcut menu. Then make an appropriate choice (**Remove**, **Rename**, **Remove Tagged**, **Info**).

To change position of a soundfile within the list click the corresponding playlist item and drag it to a new position.

Since only the uncompressed (*wav*) audio files can be processed using the **Producer Panel**. the compressed (*mp3*) soundfiles are hidden (not shown on the playlist) when the **Producer Panel** is active. If you close the **Producer Panel** all compressed files will be displayed again.

The boxes situated next to the playlist items can be used to select soundfiles scheduled for renovation and/or processing using the **Producer** processing engine. To check the file for processing click the corresponding box. To uncheck it click the box again.

Displays the total playing time of all items on the playlist.

Displays the playlist summary.

Plays the previous item.

Stops the playback.

Pauses the playback and allows it's resumption.

Starts the playback.

Plays the next item.

Allows one to select one of three   playback modes: normal mode (playback stops when the end of the playlist is reached), loop mode (when the end of the playlist is reached the first soundfile is selected and the playback is resumed) and sample mode (a five second fragment of each of the soundfiles in a playlist is played; playback stops when the end of the list is reached).

Allows you to select the output audio device.

Allows you to select the input audio device.

Allows you to specify the drive letter of the selected CD-Reader.

Shows the number of the playback slider position updates during one second. Decrease this number if problems occur during playback, e.g. if longer files are played with skips and pauses.

Shows the number of the record counter updates during one second. Decrease this number if problems occur during recording.

When this box is checked only one in 128 samples is examined for the purpose of providing the record level/clip display (VU bars). Try this option if problems with recording occur.

Allows you to switch on/off sound effects associated with using buttons situated on the toolbar.

Saves current options and closes the dialog.

Closes the dialog without saving changes.

Provides access to CDDB2 [TM] Disc Recognition Service[SM] , the world's largest online database of audio CD information.

Allows you to automatically update the program whenever its newer version is available; requires an Internet connection.

Allows you to set the local playing time in the **Producer Panel**.

Allows you to select the default CD-Recorder.

Allows you to select the default CD-Reader

When enabled will prompt you to save the playlist when quittin the program.

Allows you to choose between the three standard sampling rates (11.025 kHz, 22.050 kHz and 44.100 kHz) provided by most of the sound cards currently available or to set any nonstandard rate supported by your audio card.

Allows you to choose the number of recorded channels.

Allows you to choose the samplig resolution.

Shows the instantaneous peak level(s) of the input signal. The red indicators placed at the top of each bar graph lit each time the input signal is clipped.

Shows the available disk space (in bytes).

Displays the length of the recording (in bytes and seconds).

Shows the value of the record time counter.

Decreases the value of the time counter. In order to instantly jump to the beginning of the recording, click on this button while holding down the `CTRL` key.

Stops the current activity.

Plays back the recorded soundfile starting from the position indicated by the time counter.

Increases the value of the time counter. In order to instantly jump to the end of the recording, click on this button while holding down the `CTRL` key.

Records in a soundfile starting from the position indicated by time counter.

When pressed prior to recording or playing - activates the volume meters.   When pressed during playback or recording - suspends the corresponding action (until pressed again).

Allows you to program timer recordings.

Closes the dialog.

Shows the list of all files that are not CD format compatible.

Specifies a temporary directory created for the purpose of soundfile conversion.

Allows you to change the temporary directory.

Displays the amount of disk space (in megabytes) needed to store all temporary files.

Displays the amount of disk space (in megabytes) available in the currently specified temporary directory.

Initializes the soundfile conversion.

Closes the dialog and cancels recording to a CD.

Allows you to specify a device used for recording.

Allows you to specify the recording speed.

When you choose this option, all actions will be identical with those taken during actual recording, but no data will be written to a CD. This feature allows you to check if your system is capable of recording with a selected speed.

Displays a number of tracks to be written to a CD.

Displays a total playing time of a CD in hours, minutes and seconds.

Displays a number of user data blocks to be written to a CD.

Displays an approximate recording time.

Starts writing.

Closes the dialog.

Allows you to select CD tracks to be read from a CD. Several tracks may be selected by means of depressing the `CTRL` key and clicking the corresponding items with the left mouse button. To select a group of consecutive tracks, select the first track of the group, hold down the `SHIFT` key and select the last track.
To mark a track for reading click on the dot mark on its left side. Tracks marked for reading are distinguished with a red bullet. To uncheck tracks click on the corresponding dot marks again.

Shows the name(s) under which the selected audio tracks will be saved. Each name consists of an user-defined prefix and a track number.

Allows you to change the prefix part of the name(s) under which the selected tracks will be saved.

Specifies the reading speed. Be aware that in some of the available CD-R devices the error-correction mechanism is switched off at higher reading speeds - in cases like that disk surface damages or dust may introduce audible clicks into the transmitted audio material if you don't choose the lowest speed.

Starts reading.

Closes the dialog box and aborts reading.

Allows you to add selected tracks to the reading list.

Allows you to add all tracks to the reading list.

Allows you to remove selected tracks from the reading list.

Allows you to play back/stop playing a selected audio track.

When this option is switched on all lifted audio tracks are automatically added to the playlist.

Selects the previous track on the list.

Stops the playback.

Pauses the playback and allows it's resumption.

Starts the playback of the list of tracks selected for reading.

Selects the next track on the list.

Shows the total playing time of all tracks selected for reading.

Shows the available disk space.

Provides some extra information about CDDB2 [TM] Disc Recognition Service[SM] , the world's largest online database of audio CD information

Allows you to correct/modify the existing CDDB entries

Shows the disk title

Shows the list of timer   recordings.

Allows you to add a new timer recording to the list.

Allows you to enable or disable a timer recording.

Allows you to remove timer recording from the list.

Allows you to sort the list of timer recordings by recording time.

When checked enforces automatic sorting of the list of timer recordings by recording time.

When checked enforces automatic removal of realized or outdated timer recordings from the list.

Allows you to set the start time of a timer recording.

Allows you to set the end time of a timer recording.

Allows you to select the recording mode of a timer recording.

Allows you to describe the contents of a timer recording.

Allows you to select record parameters and the name of the audio file.

Allows you to set a new timer recording.

Closes the timer recording dialog.

Shows the directory tree.

Shows the list of MIDI files.

Shows the name of the destination wave file.

Allows you to change the name of the destination wave file.

Allows you to choose the desired sampling frequency.

Allows you to choose the desired number of channels.

Allows you to choose the desired sampling resolution.

Allows you to play a MIDI file prior to recording.

Allows you to select a particular MIDI mixer and to set it's parameters.

Starts recording.

Closes the dialog.

Shows the name of the source MPEG 3 file.

Shows the name of the destination wave file.

Allows you to change the name of the destination wave file.

Allows you to choose the desired sampling frequency.

Allows you to choose the desired number of channels.

Allows you to choose the desired sampling resolution.

Allows you to play MPEG Audio data prior to recording.

Starts recording.

Closes the dialog.

Allows to remove clicks, pops and record scratches. To activate declicker click the green switch placed on the button.

Allows to remove wideband noise. To activate dehisser click the green switch placed on the button.

Allows to shape the frequency content of an audio signal. To activate equalizer click the green switch placed on the button.

Allows to modify the volume of the recording at its beginning and/or end. To activate fader click the green switch placed on the button.

Allows you to adjust the volume of the recording. To activate the scaling device click the green switch placed on the button.

Allows you to select files for processing

Allows you to select the range of processing.

Allows you to select processing tools.

Allows you to select the mode of processing.

Each time you modify any of the tool settings, the green **Ready** light goes off. It is switched on again as soon as the results obtained under the new settings are available.

Plays the original recording.

Plays the results of processing.

The overview strip is a graphic representation of the selected audio file (the highlighted playlist item). The position within the soundfile is indicated by the yellow cursor. To change the cursor position place the mouse pointer anywhere on the overview strip and depress the left mouse button – this will allow you to sample different fragments of an audio file when tuning processing tools. The black strip around the cursor marks the local preview area. To change the size of this area adjust the local preview time using the **Options** dialog available from the **View** menu.

Starts processing.

Closes the dialog.

Allows you to control sensitivity of the outlier detector. If sensitivity is too small the detector may become too tolerant and fail to isolate small noise pulses; if sensitivity is too large it may be overly fussy, i.e. raise too many false alarns introducing noticeable signal distortions.

Allows you to specify the maximum number of samples in a row that can be scheduled for reconstruction (anything between 1 and 100). Don't select the values that are larger than necessary.

Allows you to control the degree of noise attenuation. If reduction rate is too small the restored signal will contain an audible residual noise; if it is too large the sound will become dull, muted and/or distorted.

Supresses the high frequency components of an audio signal. Allows you to trade off between the richness of the sound and the level of residual noise.

Allows you to change the frequency content of an audio signal. Each slider corresponds to a different frequency band. Each time you amplify a certain signal component (by moving a slider above its neutral position) make sure that the signal is not clipped. When clipping occurs the clip indicator lights up.

Allows you to change the volume of an audio signal. Each time you increase the volume (by moving the gain slider to the right of its neutral position) make sure that the signal is not clipped. When clipping occurs the clip indicator lights up.

Lights up when the signal is clipped, i.e. some of its parts fall out of the available dynamic range. Since clipping may result in audible sound distortions it should be avoided. To eliminate clipping reduce the volume of the recording using the gain slider.

Allows you to load one of nine standard equalization presets.

Allows you to gradually increase the volume at the beginning of the recording (the fade time can be anything between 20 ms and 20 s).

Allows you to gradually decrease the volume at the end of the recording (the fade time can be anything between 20 ms and 20 s).

Allows you to adjust the dynamic range of an audio signal. When the slider is in its rightmost position the entire available dynamic range is used, i.e. the maximum peak value of the normalized signal attains its largest allowable value (just below the clip level).

Allows you to preview the results of printing.

Allows you to choose from three printout types

Allows you to type in the playlist header.

Allows you to change the header fonts (style, size and color).

Allows you to change the playlist fonts (style, size and color).

When checked automatically adjusts the font size.

Check to include the total playing time.

Check to include the full file names.

Check to include the playing time.

Starts printing the playlist.

Provides access to the SureThing labeler.

Closes the dialog and cancels printing the playlist.