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BPM Studio

Congratulations to your purchase of BPM Studio!

With BPM Studio software and control units from ALCATech, you have exceptional systems for audio editing and administration at your disposition. With your purchase, you have chosen to follow a completely new way in multimedia applications. BPM studio is a next generation audio-player, providing all new ways of playing, editing, and archiving audio files. These systems have been developed explicitly for dance clubs and DJs, although, due to their wide spectrum of features, they are utilized in many other areas as well. Currently BPM Studio is the only software on the market, capable of playing and archiving different audio file formats to the extend it does.

An experienced Team of DJs has tested this software in professional use, while still in it's development phase. It is subject to frequent quality control, and improvement. A modern design, ergonomic user interface, and the remote control units allow for save handling even under most difficult circumstances. You will be surprised about the many new opportunities BPM Studio will offer you, regardless if you are an entry-level user or a professional. To ensure that you will be able to take advantage of the programs extensive features, and work effectively with it, it is highly recommended that you thoroughly study this manual.

BPM Studio is also available as professional level MP-3 DJ software (BPM Pro).

1.01. About this Manual

The BPM Studio Manual provides detailed information about operating soft- and hardware. It is intended to help you with your initial phase of working with this system, and to provide answers to frequently asked questions. It is recommended to install the software before studying this manual. To do so, follow the instructions in the following chapter. Also, this chapter covers system requirements, and delivered supply. This manual requires you to be familiar with your operating systems major functions and conventions, as well as knowing how to use your mouse. **Bold and underlined terms** are covered more extensively at another part of the manual. This part of the manual covers functions of different control units. Please be aware that not all functions are available at all control units.

1.02. System Requirement

To use BPM Studio you need at least the following:

- IBM compatible PC with Pentium II 400 MHz or higher
- 128 MB RAM or higher
- 20 MB available hard drive space for program files
- SVGA graphics adapter with a minimum resolution of 800x600
- 16 Bit sound card
- CD-ROM Drive
- Windows XP/7/8
1.03. Supply
Please make sure that following parts are present:

1. BPM Studio Pro CD
3. Registering post card

2.1. Software Installation
This program needs to be installed to your hard drive from your CD. It can not be executed directly from CD.

1.) Insert your installation CD into your CD-ROM drive.

2.) If your PC has auto notify enabled, the installation program will now be started. If this isn’t the case, choose run in your Windows start menu, and enter: “D:\setup”, D representing your CD-ROM drives drive letter.

3.) Now the setup for the main application, additional modules, and the online manuals will start.

Choose install BPM Studio to start the installation.

4.) Clicking [YES] will confirm the installation. You can still abort at this point. If you confirm, installation files will be copied to your hard drive.

5.) Now setup will prompt you to ensure that no other applications are running during the installation process. At this point too, you still have the option to abort the installation, by clicking on [CANCEL]

6.) If you proceed by clicking [next], setup will display the ALCATech end user license agreement

Please read it carefully and only continue the installation process if you agree to adhere to the license terms. Confirm you agree with the license agreement by clicking the [YES] button.
7.) At this point register your version of BPM Studio to your name by entering your first and last name and, if applicable, your companies name. Click [NEXT] to confirm.

8.) Now, optionally, you can specify a path for the program files, other than the default. It is recommended though to use the default path, since this simplifies possible support questions later on. The path to the default directory is: c:\program files\alcatech\BMP Studio Private.

9.) The following dialog box confirms that new entries have been created into the Windows start menu for BPM Studio LE, and other useful links.

Of course you have the option to use another, already existing group, or to rename this entry. You can always go back by clicking the [BACK] button.

10.) The unpacked program files will now be copied to your hard drive, according to the previously defined parameters. Throughout this process you will continuously be informed about installation progress, and remaining storage capacity of your hard drive.

11.) Upon completing this process, according entries will be added to your Windows registry, and program shortcuts will be created in the start menu.

If you already installed a previous Private Edition, the old version will be overwritten and the new installation will work with the old settings.
Installation

Please be patient at this point, since this may take a little while.

12.) In order to complete and apply changes made to your system, a Windows restart is now required. You also have the option to cancel and restart the system later, this is not recommended though.

![Setup Complete]

After a system reboot several shortcuts will be added to the windows start menu.

![Shortcuts]

Also, a BPM Studio icon has been created on the desktop. Now you can start BPM Studio for the first time.

2.04. The First Program Start

Double click the program icon on the desktop or, from your windows start menu choose: programs -> ALCATech -> BPM Studio. The program will now start, and ask if you want the small player to be default player for MP-3 files. If you do not want the player to be your default program for such files, click no. You can also prevent this dialog from showing at the next program start, by checking the “don’t ask me again” check box.

![Confirm]

Upon this, the program will search for all local MP-3 files on your system. The search result will be shown in the “HARD DRIVE” group in File Archive.

![Find Results]

Now the PC’s serial ports defined in the program options will be scanned for ALCATech remote control units. If one is found, the program will announce so. Now you can start your work. Read our step-by-step instructions how to get familiar with the hard- and software, and how to create file and play lists.
2.06. Defining Driver and Audio parameters

BPM studio offers extensive features, and therefore requires more system resources than simpler MP-3 players like WinAMP™ for example. The capability of playing 10 MP-3 files simultaneously, demand a well configured PC. Further BPM Studio offers extensive possibilities to manipulate audio engine settings. The audio engine represents the core of BPM Studio, and is responsible for highest quality play backs with shortest possible remote control latency intervals.

Therefore make sure that background programs, like real time virus scanners, power- and print management, etc. be deactivated.

All important audio engine, and sound driver settings are defined on the “Audio IO” tab, located in the program options. Read in the according chapter How to adjust BPM Studio’s sound card utilization to fit your needs.

Should you encounter problems playing titles with BPM Studio try at first to change the following parameters.

**Preload Size**
Size of BPM Studio’s internal buffer. Change this value if you occasionally experience dropouts when playing titles, or the players don’t start right.

**Buffer Size**
Size of the drivers buffer. Change this value if you can not achieve clean audio playback. (This value can only be edited when using wave drivers.

- **Lowest Latency**
BPM Studio operates with smallest buffer sizes, and latency times. Deactivate this check box if you experience difficulties with your sound card.
3.01. The Program Window of BPM Studio

The Program Window of BPM Studio

The appearance of the program window can be changed completely. (Skin support) In program options (Chapter 3.18.), choose a skin you like. On the ALCATEch website, (www.alcatech.com) a “design-pack” with tools and hints for your own skin creation is available for download.

The program window contains following modules:

**Player A**
**Player B**
**Play list** for player A
**Play list** for player B
**Sample Player**
**BPM File Archive**

It displays optionally either file archive, mixer, or CD-player/writer. Read the referring sections on how to switch to the according sub modules. The following chapter covers structure, and functionality of these modules in detail. To quickly get into working with BPM Studio, we recommend the step-by-step instructions in chapter 4.
3.02. Player

3.02.1. Basic Functions
The player controls playback of audio files and one or more CD-ROM drives, if audio CDs are inserted. Besides the functions of an analog CD players, a vast number of additional features is available, which are only achievable by utilizing a PC. Structure and ergonomic design allow for professional use, and make readjusting from commercial double-CD-players easy.

All titles can easily be inserted and played from a play list, or a BPM file archive by drag&drop. Also simply double clicking on it in the according play list, can load, and start playing a title. Further, it is possible to start a title from your hard drive over the pop up menu.

**Track Keys:**
- Jumps to the beginning of the title if title has played less than two seconds, jumps to previous title.
- Jumps to the next title in the play list.
- **Position slider.**

**Search keys:**
- fast forward and fast back keys.

**Play mode (switch):**
- Single play stops the player at the end of the current title, otherwise the next title will be started immediately.

**Loop**, repeats current title indefinitely

**Shuffle**, plays titles in random order

**Main functions:**
- **Play / Pause:** When switching from pause to play, the main cue-point will be newly set.
- Stops the player, and repositions to current cue point. When holding this button for 2 sec., it can reposition either to current cue point, or title start.
- **CUE**
- **CUP**

**Track Keys:**
- Jumps to the beginning of the title if title has played less than two seconds, jumps to previous title.

**Search keys:**
- **Pitch keys:**
  - **Fast Forward and Fast Back keys.**

**Pitch Function**
With this function the playback speed of a title is manipulated, and subsequently, the BPM value. These function are used for title speed adjustment when mixing. The **universal buttons** A and B, are programmed for two variation ranges.

Assigned are:
- A: +/- 4%, B: +/- 8%

**Pitch Bend**
- **ON**
- **Pitch Bend, decreases speed continuously**
- **Pitch Bend increases speed continuously**

**Title will be faded out, and if single play option is off, the next title in play list will start.**

---

**Loop**, repeats current title indefinitely

**Shuffle**, plays titles in random order

**Main functions:**
- **Play / Pause:** When switching from pause to play, the main cue-point will be newly set.
- **CUE**
- **CUP**

**Pitch keys:**
- **Fast Forward and Fast Back keys.**

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**Pitch Bend**
- **ON**
- **Pitch Bend, decreases speed continuously**
- **Pitch Bend increases speed continuously**

**Title will be faded out, and if single play option is off, the next title in play list will start.**
3.02.3. Fine Adjustment of Sliders
When you click on the scale beside a slider, the pitch range will be changed continuously in 0.1% increments. Thus, depending on mouse pointer position, a value can in- and decreased by very fine nuances.

3.02.4 The Player Display
In general, the player display is divided in two areas. To the upper left hand area, a titles position within a play list is indicated (TRACK). The center area indicates optionally either past play time (ELAPSED), or remaining play time (REMAIN). You can easily switch between these two modes by either clicking in the area, or on the left round button (TIME-button).

The bottom left area shows a resource meter (audio data buffer size), followed by a spectrum analyzer. In this display the following modes are available, to be switched also by mouse click into the display area:

- OFF (very efficient on resources)
- Standard balance display
- 32 Frequencies display with peak levels
- 32 Frequencies display without peak levels
- 64 Frequencies display with peak levels
- 64 Frequencies display without peak levels
- Amplitude, chronological
- Scrolling title and performer information

10 seconds before play time elapses, this display will start to blink in red, thus indicating the upcoming end of this title.

The top right area optionally indicates the BPM of a particular title (this information is retrieved out of the title's ID3-tag), or it's pitch value. As before, here you can also define these settings by simply clicking into the area.
### BPM Studio

**Player popup menu**

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<tr>
<th>Menu Item</th>
<th>Function Description</th>
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<tr>
<td>Remove</td>
<td>Remove a title from the player</td>
</tr>
<tr>
<td>Load...</td>
<td>Load a file directly into the player</td>
</tr>
<tr>
<td>Info...</td>
<td>Retrieves file information</td>
</tr>
<tr>
<td>Edit...</td>
<td>Starts the <strong>file editor</strong></td>
</tr>
<tr>
<td>BPM...</td>
<td>Starts the <strong>BPM counter</strong></td>
</tr>
<tr>
<td>Search...</td>
<td>Opens the <strong>search dialog box</strong></td>
</tr>
<tr>
<td>Normalize...</td>
<td>Applies the <strong>normalize function</strong> on this title</td>
</tr>
<tr>
<td>Swap Artist-Title</td>
<td>Change title information in the ID3-tag</td>
</tr>
<tr>
<td>Reset</td>
<td>Deletes all defined cue points and playcounter</td>
</tr>
<tr>
<td>Options...</td>
<td>Opens the <strong>program options</strong> dialog</td>
</tr>
</tbody>
</table>

**Pop Up menu for play list**

<table>
<thead>
<tr>
<th>Menu Item</th>
<th>Function Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Load in Player</td>
<td>Load title into <strong>player</strong></td>
</tr>
<tr>
<td>Play in Monitor</td>
<td>Play Title in <strong>Monitor Player</strong></td>
</tr>
<tr>
<td>Remove</td>
<td>Remove title from play list</td>
</tr>
<tr>
<td>Delete</td>
<td>Delete title from hard drive</td>
</tr>
<tr>
<td>Load...</td>
<td>Add title to play list</td>
</tr>
<tr>
<td>Info...</td>
<td>Show <strong>File Info Box</strong> for marked file</td>
</tr>
<tr>
<td>Edit...</td>
<td>Starts the <strong>file editor</strong></td>
</tr>
<tr>
<td>BPM...</td>
<td>Starts the <strong>BPM counter</strong> for this file</td>
</tr>
<tr>
<td>Search...</td>
<td>Opens the <strong>search dialog</strong></td>
</tr>
<tr>
<td>Normalize...</td>
<td>Starts the <strong>normalize function</strong></td>
</tr>
<tr>
<td>Swap Artist-Title</td>
<td>Exchange the artist or title in the ID-3 tag</td>
</tr>
<tr>
<td>Reset</td>
<td>deletes cue points, and play counter</td>
</tr>
<tr>
<td>Options...</td>
<td>Open <strong>program options</strong> dialog</td>
</tr>
</tbody>
</table>
3.03. The Play List

3.03.1. Basic Functions
Every player has an individual play list. Play lists are used to conveniently arrange everything from small title sequences, up to whole event orders. Within the play list, title, performer, BPM, and play length of an audio file are displayed. The blue bar marks a title. All play lists can be stored as play list files. (*.lst)

Generally there are three ways to insert titles into a play list: The pop up menu’s [load] function, with drag&drop out of an archive, or with the button. The title sequence can also be manipulated, by using drag&drop. A red arrow assists in this task.

Titles can be send to the player by either drag&drop functionality, or the pop up menu in the player itself. Depending on program settings, the title will then either automatically start, or be loaded, and pause. The ability to store play lists, allows you to create complete event orders, for events, music genres, show interludes and more. The actual titles though, are only saved once on your system, even if they appear in different play lists. Even importing play lists of other software, like for example WinAMP™ is possible. BPM Studio imports the *.m3u, and *.pls formats.

The following functions are also available:

- Creates an empty play list
- Loads an existing play list
- Stores a created list to your hard drive.
- Adds a title to a play list
- Deletes an title from a list.
- Marks all titles in a list
- Opens the File Info Box

The right hand play list areas consists of a status window, and the monitor player status window functions can be switched to display with a mouse click.

- Displays how many titles are in a particular playlist
- Indicates the overall play time of a list
- Indicates the remaining play time of a list

Titles already in use by the player, (minimum 1 min.) are marked in red.
3.03.2. Adjustable Column Width and Content

The columns in the play list can freely be resized, or assigned to fields of the ID-3 tag. For example you can display annotations in place of the version, and reduce the column width for artist. To change a column’s width, point the mouse pointer into the head row between to columns. It will change into a bi-directional arrow. Now click, hold, and move to your liking.

The content of a column can be changed as follows:

Right click into the head row of the column you want to change.

Here you can choose what content should be displayed in this column. With the “Align” function, you can set the justification of this column to left or right.

With “Reset”, you can restore the default settings. This is especially useful if a column has accidentally been deleted.

3.04. Preview Player

Preview players are used to screen titles, marked in the play list. If the “double click loads player” is disabled in program options, a simple double click on a play list entry will start or stop the preview player. To the right of the player a small peak level indicator is located.

The player’s display optionally indicates elapsed time, remaining time, or number of titles in play list.

Preview player controls:
- Jump to previous list title
- Play
- Stop
- Jump to next list title
- Position slider
- Actual play time
The many available features of the file archive make it an ideal tool to manage your whole titles.

### 3.05.1 File Archive

By clicking the button in the lower area of mixer, and CD player interface, you can change into the archive mode. Here titles can be categorized by genre, release date, dance style or other criteria. BPM Studio does not limit the number of categories, and sub categories to be created. They will be displayed in the left-hand window of file archives. The right hand window shows the content of these categories, like titles, performers, BPM (if available), and play time.

The buttons and allow you to import titles from your hard drives into these categories. This can also be accomplished by using File Archive’s pop up menu. Once available files have been imported, they can conveniently be dragged, and dropped within categories. (Be reminded though that this will only change a files list position, not it's location on your hard drive!) This allows convenient, most simple sorting, and archiving of your titles.

Also by dragging and dropping, audio files are added to, and positioned in play lists. More functions are available with following buttons:

- Removes marked files
- Selects all files in a list
- Inverts the selection
- Cancels the selection
- Automatic sorting
- Opens the File Info Box
- Opens title search dialog

Automatic sorting creates a new file archive structure with all artists as categories, and CD names as sub categories. Clicking on this button again will switch back to the previous view.

When creating categories, do not use special characters like / or \. Windows will interpret these as sub-directories, which may cause difficulties.
## BPM Studio

### File- and playlist archive

#### Pop up menu in category list

<table>
<thead>
<tr>
<th>Add Group</th>
<th>Creates a new category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add new sub group</td>
<td>Adds a new sub category</td>
</tr>
<tr>
<td>Remove</td>
<td>Removes a category</td>
</tr>
<tr>
<td>Rename</td>
<td>Renames the category</td>
</tr>
<tr>
<td>Clear</td>
<td>Delete a category’s content</td>
</tr>
<tr>
<td>Full Expand</td>
<td>Display all categories</td>
</tr>
<tr>
<td>Full Collapse</td>
<td>Closes all categories</td>
</tr>
<tr>
<td>Search...</td>
<td>Opens the search dialog</td>
</tr>
<tr>
<td>Alt+S</td>
<td>Adds files to a certain category</td>
</tr>
<tr>
<td>Add Files...</td>
<td>Updates the archive (See additional functions)</td>
</tr>
<tr>
<td>Update</td>
<td>Back up / restore your files</td>
</tr>
<tr>
<td>Backup</td>
<td>Starts the normalize function</td>
</tr>
<tr>
<td>Normalize...</td>
<td>Activate/deactivate automatic sort function</td>
</tr>
<tr>
<td>Sorted</td>
<td>Open program options dialog</td>
</tr>
<tr>
<td>Options...</td>
<td>Alt+0</td>
</tr>
</tbody>
</table>

#### Pop up menu in title list

<table>
<thead>
<tr>
<th>Play in Monitor</th>
<th>Plays with monitor-player</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remove</td>
<td>Remove title from list</td>
</tr>
<tr>
<td>Delete</td>
<td>Delete title from hard drive</td>
</tr>
<tr>
<td>Load...</td>
<td>Add titles</td>
</tr>
<tr>
<td>Info...</td>
<td>Opens the File Info Box</td>
</tr>
<tr>
<td>Alt+I</td>
<td>Opens the File Editor</td>
</tr>
<tr>
<td>Edit...</td>
<td>Opens the search dialog</td>
</tr>
<tr>
<td>Alt+E</td>
<td>Starts BPM Counter</td>
</tr>
<tr>
<td>BPM...</td>
<td>Starts the normalize function</td>
</tr>
<tr>
<td>Alt+B</td>
<td>Exchanges Artist and Title</td>
</tr>
<tr>
<td>Search...</td>
<td>Resets Cues, and play counter</td>
</tr>
<tr>
<td>Alt+S</td>
<td>Open program options dialog</td>
</tr>
<tr>
<td>Normalize...</td>
<td>Alt+N</td>
</tr>
</tbody>
</table>
corner of the file archive a status display, and another preview player, for screening of selected titles, can be found. In the status display the number of titles in the current playlist is indicated.

3.05.2. Adjustable column width, and contents
The columns in the playlist can now be assigned to ID3 tag fields, and resized. For example, assign annotations to the field that displays the version number, or resize the column for the artist’s name. This way you can configure File Archive to best suit your needs.

To change a column width, move your mouse pointer over the line between two columns in the head row of a playlist. The mouse pointer will change into a bi-directional arrow. Click and hold, and move the line to your liking.

The information a column contains can be changed as follows: Right click the column you wish to modify in the head row, a pop up menu will appear.

In this pop up menu chose what information your column is supposed to display. The “ALIGNMENT” option allows you to choose the columns justification, right or left aligned.

With “RESET”, you can restore the default settings. This is particularly useful, if a column has been deleted by accident.

3.05.3. Sorting Order
Titles in File Archive are arranged in alphabetical order. By double clicking into a head row, titles will arranged in order of this columns content. A little arrow in the head row marks this column.
3.06. Loop Sampler

With the loop sampler it is possible to clip sequences from the title playing in the according player, quickly and efficiently; for further processing like editing, playing, or storing for later use. For each player, a loop sampler is available, which can be opened by clicking the right round button in the player (LOOP-button). Loop samplers are independent modules, which do by no means hinder regular operation of BPM Studio Pro. The operation mode of loop samplers is indicated by a blinking, red dot in the player’s display, located between TIME and PITCH/BPM. It can also be seen in the resource meter of the loop sampler. A red dot stands for recording, while a green dot means playback.

In the program options, remote control unit tab, the record, stop, and play functions of the loop sampler can be assigned to the multi purpose buttons A, B and C. Thus it is possible to control loop samplers, without having to display them.

3.06.1. Using the Loop Sampler

- **Sample will be played into it's original direction**
- **Sample will be played backwards**
- **Sample will be played alternating forward and backward**
- **Sample will be played to monitor channel, instead of player channel**
- **Starts recording**
- **Stops both playback and recording**
- **Plays the sample**
- **Opens a dialog box, to save sample as file**

In the “save file” dialog box, either wave or mp-3 file format can be chosen for the sample.

- **Moves the start point**
- **Moves samples endpoint**
- **Adjusts output level from –99.9 dB to 0 dB**
- **Adjusts playback speed in a range from –20% to +20%**

You can drag and drop samples on a player button.
Sample Player

By utilizing the “+” and “-” buttons, values can be adjusted with millisecond accuracy. Adjustments can also be made by utilizing the keyboard. The tab key switches back and forth between the four controllers. Cursor keys change values in millisecond steps, and page up and /down apply 10-millisecond-steps.

3.06.2. The Loop Sampler Display
This display is divided in three parts. To the lower left a resource meter for the sample buffer can be found. The sample buffer is a reserved RAM area of limited size. When exceeding this limit, which is indicated by the resource meter, reaching 100%, the sample will randomly loop through, and only the last recorded part not exceeding the available, reserved memory will be recorded.

The display to the top right represents the sample graphically. The display right below it shows the following parameters:
- current volume
- current pitch
- Time difference between start of the sample and defined insertion point (P-IN)
- Time difference between start of the sample and defined ending point. (P-OUT)

The sample player has two different playback modes. In start/stop mode, clicking on the button will start the sample. Clicking on it again will stop it. When in SCRATCH MODE, a button click will start the sample, and every subsequent click will start it anew. You can switch between these two modes either in the pop up menu, or with the keyboards scroll key.

The VOLUME control of the sample player allows adjusting output volume independently from the two player’s volume. With the PITCH control, the sample’s playback speed can be smoothly adjusted. By right clicking on the control you can reset to the zero position.

The pop up menu is opened by right clicking a number key (2).

3.07. Sample Player

The sample player can manage up to 9 samples, which are available for immediate playback by clicking the according button.

A three color LED indicates the player’s status. Green stands for READY, the sample player is ready to go, orange stands for ready in scratch mode. A red LED indicates that the sample player is loading data. While loading, playback is not possible.

The sample player consists of nine, numbered buttons. Each one can be assigned to a particular sample. The maximum sample length depends on available RAM. If a button has a sample assigned, the number on it appears raised. When clicking this button, the assigned sample will be played. When “SINGLE PLAY” in the program’s pop up menu is deactivated, simultaneous playback of more than one sample is possible.

3.07.1. Editing Samples, and Assigning them to Keys
There are two different ways to assign a sample to a number key. Either in the pop up menu, or by dragging it from a play list or the BPM File Archive.

If a sample exceeds the allowable file length of 20 seconds, it will automatically be reduced to the allowable value when loaded.
The Cross-Fader is used to fade between player A and player B. It can be set to either manual, or automatic mode. The automatic mode can be switched on and off, by clicking the button. When automatic mode is active, the fader will by itself fade to the other player, at the end of a title. In the Private Edition, the fade time can be adjusted with the slider FADE TIME.

A red, blinking button, in the upper left-hand corner of the display indicates active auto mode. It will automatically be deactivated as soon as the buttons [CUE], [CUE/PLAY], or [START/STOP] are clicked in either player. With the button, the fade can be initiated ahead of time. When auto mode is not active, fade is initiated by clicking the button.
This module accurately determines the BPMs (beats-per-minute) of a title and, if desired, saves this value to the ID3-tag and an internal BPM-Database. Two different modes are available. In automatic mode, the base beat of a title is determined by utilizing special filters. The program measures these frequencies, and analyzes them. In manual mode, the value is determined by keystrokes.

3.09.1. Monitor Player of BPM Counter
Beat Counter provides its own player to play titles to be measured, the Monitor-Player. By utilizing the position slider it is possible to quickly navigate to a given point in a title. Above the slider, elapsed playtime, and signal level are indicated. The lower three buttons are used to control playback.

3.09.2. BPM Determining in Manual Mode
Switch counter to manual. Start the title in Monitor-Player. The space key on your keyboard will function as trigger. Press it at every occurring base beat.

The program now counts every base beat, indicating so by a red, blinking field. If no input is recognized for more than two seconds, the counter will reset to 0.

Watch the displayed BPM value. Once it stops increasing, you can leave the BPM counter by clicking the [OK] button. The determined value will be entered into the BPM database, and displayed in the play list.
3.09.3. BPM Determining in Auto Mode

Switch counter to Auto. Confirm by either clicking the [start] button, or starting a title in Monitor Player. The module will now analyze the title using the same procedure as the automatic beat counters in the players. Independent of these though, the beat of a title will be filtered, and analyzed. Now watch the BPM display, and the red area. When the shown value does not increase anymore, and the blinking is completely synchronized with the title’s beat, it can be assumed that the beat value has been accurately determined. Since it can happen that a title can not be correctly displayed with a standard filter (e.g. red area doesn’t blink, but stays red), this filter can be modified. To do so, activate [Filter Correction] in the lower left corner of the filter window.

Upon starting analyzing, you can now adjust the filter frequency range, so that the red area will blink exactly once per beat, and thus will provide clean results. The horizontal bar can be modified in position, and width, thus changing the filter curve. The vertical slider changes the filter intensity (Amplitude). The so created frequency range will be displayed visually.

After this process is complete the determined values will be entered into the ID3 tag, added to the internal BPM Database, and indicated in the play list.
With the file editor it is possible to cut sequences out of a file, or to set cue points with single beat accuracy. All applied settings like volume, pitch control, cue in, and cue out will be detected by the players and applied, and can also be saved in Play Lists.

3.10.1. Loading and displaying a Title
When loading an audio file for the first time, initially, peaks will be created, and saved.

This procedure does not make any changes to the file, it remains in its original condition. Peaks will be stored on the local hard drive. In program options, you can define if these peaks are to be deleted after your done working with the program (more storage efficient), or if they should be saved. (More time efficient)

Once loaded the file will be graphically displayed. The field editor consists of two windows, of which the lower one always displays the file in its whole length. This way you always have a complete overview of the file, and are able to quickly navigate within it. The top window is used to edit, set cue-start- and endpoints, or to select a certain area for export to a file.

3.10.2. Adjusting Display Range
There are two ways of modifying the top part of the window: Either adjust the width, or move the area bar back and forth between the bottom, and upper window. The upper window always shows the area, marked in the lower window.
When marking areas with the magnifying function by right clicking and moving the mouse pointer, the inverted area will be magnified, and displayed in both windows. The area selection can be made on both windows.

By double clicking into the inverted area you can switch between zoomed and overall view.

3.10.3. Marking ranges, and exporting into files

Deactivate the magnifier function, and mark an area in the upper or lower window by holding right mouse button and moving. The marked area will appear red. To modify keep right mouse button pressed, to open pop up menu, with options like zoom, play, and save as *.wav or *.mp3 single right click. Save as file, if you wish to work with selection at a later point.

3.10.4. Adjusting volume and pitch

The volume control allows to set output volume between –20 to 0 dB

![Volume Control](image)

The pitch range can be modified by +/- 20%

![Pitch Control](image)

The + and – keys allow fine adjusting these values. They will be saved, and applied when loading file into player. The set pitch value will be added on top of the value the player is set for.

3.10.5. The Toolbar

- Stops playback in file editor
- Starts playback in file editor
- Jumps to beginning of selected area. If no area selected, jumps to title start, if playback is stopped, sets locator back to title start
- Plays marked area in a endless loop
- Assigns magnifier function to right mouse button
- Displays the audio file in wave format
- Displays audio file as dots

3.10.6. Functions of different markers

The file editor recognizes four different markers, which can be used to mark different positions or areas within an audio file. All markers can be edited via pop up menu in the in the marker row, or moved with the mouse pointer.

The red locator – indicates the current play and pause positions, and can equals the position sliders in players, and Monitor Players. This marker can be positioned by left click.
The blue entrance and end markers – mark the beginning and end of a title. They, also, can be moved either with the mouse pointer, or via pop up menu. Once placed, the position slider in the players will use these markers as new start and endpoint of a title.

The yellow cue point markers – indicate cue points. They also can be moved with the mouse pointer. Via the pop up menu in the marker row, additional cue points can be inserted.

The blue cue point marker – indicates the active cue point. The active point is defined by either in the cue point list to the top right, the pop up menu, or the CUP button in the player.

3.10.7. Working with cue points
A cue point is a position within a title recognized by players as start point. The CUE button in players navigates to these points, and the CUP button starts playback from this point on. (Equal to CUE and PLAY) The file editor can assign up to nine cue points within each title.

Since players have only one CUE and CUP button, one of these points will be defined as standard cue point. This point will be used as default whenever CUE or CUP is clicked. To manage cue points, the file editors cue point list, in the upper right corner is used. Here the cue points are listed with their exact location (1/1000sec. Accuracy). The current cue point is marked with a blue bar. When playing the title in the field editor, this bar travels, and always indicates the last passed cue point.

The in file editor editable cue points are not compatible with DirectCue buttons in version 4. Currently these points can not be used in the player.

Marker Row Popup Menu

- Set Cue Point: Defines current cuepoint as standard
- Delete Cue Point: Deletes current cuepoint
- Set Marker A: Places start marker at this position
- Set Marker B: Places endmarker at this position

The in file editor editable cue points are not compatible with DirectCue buttons in version 4. Currently these points can not be used in the player.
3.11. File Info Box

The File Info Box allows editing the entire ID3 tag. In the program options you can choose to save this information in the new ID3v3 format, or to keep the old ID3 format. If the File Info Box is opened from multiple selections, an additional drop down menu appears, allowing you to select, and edit particular titles.

If you want to change an entry for all selected titles mark the related checkbox for this entry and confirm with OK.

The “GENRE” field generates a drop down menu, allowing you to assign titles to different styles. This way you can categorize titles, which allows for convenient searching later on.

Confirms changes
Cancels without saving changes
Starts the BPM Counter for that title
Opens this title in file editor.
3.12. Mixer

The Mixer contains of three components, which are displayed as pairs. In standard view, to the left the audio channels are located, and the equalizer to the right. Optionally the equalizer display can be replaced with the recorder by clicking the [RECORD] button.

The mixer merges all internal, and external audio sources. For players A and B, and the CD-ROM drive frequency ranges can be adjusted and corrected. With the Recorder it is possible to record the audio signal from an external audio source (MIC or LINE IN). Recordings can also be done from the currently loaded program of both players. Recordings can be saved as *.wav files.

3.12.1. Audio Channels

The audio mixer has four internal stereo inputs (Players A and B, CD-ROM drive, and Sampler), and two stereo outputs (Master, Monitor). The recorder supports two sound card inputs (MIC and LINE IN). The level control allows adjusting the volume for every single stereo channel separately. A level indicator to the right of the control indicates the volume. The dB values of the individual channels are indicated to the top right. Using the panning field to the top right, the channel balance can be shifted. A right click resets to zero.

Channels can be muted by clicking the [MUTE] button.

To the left of the channel designation beat displays for every input channel can be found. The MASTER-Output controls the overall volume of all four input channels.

All control can be reset to a value of –1.0dB by simply right clicking on them.

3.12.2. The Equalizer

The equalizer is used to adjust and correct frequency ranges of Players A, B, and the CD player. Individual player settings can be opened by clicking buttons , and be activated and deactivated by clicking . The controls allow to adjust every single one of all 14 frequency ranges individually. These settings are graphically displayed in a curve, located in the display above the controls. By right clicking into the display, or a click on the button, this curve will be reset to linear frequency ranges.

Level indicators can be turned off in the program options. This saves system resources.
3.12.4. Recorder

The button in the equalizer opens the recorder. The MIC and LINE controls are used to manipulate two input signals of any sound card.

3.12.3. Loading and Storing Equalizer Settings

BPM Studio supports loading and saving of as many different equalizer settings as you like. Also, predefined templates are available. To manage your settings use the “Presets” function in the equalizer’s pop up menu.

If the red OVERFLOW LED comes one permanently, the overall amplification of the equalizer is set to high, which can cause distortions. In this case it is recommended to activate the PREAMP (Limiter) function, or to make according adjustments to the equalizer settings.

The to start the recorder click on the button

The equalizer settings menu

Resets settings back to zero

Displays the Program Options

Opens the equalizer settings menu

Signal Subsidizing
To record a current program, all virtual devices need to be assigned to the same, duplex capable, sound card. The windows mixer settings for this card need to be set on enable WAVE recording and LOOP functions. And this card needs to be chosen as recording device in the RECORDER field.

Too choose a sound card use the controls pop up menu. The RECORD IN control is used to manipulate the overall recording, and transmitting level.

The RECORD button starts recording. The MONITOR button allows to adjust recording levels before doing so. The current recording is marked by a red dot, and a counting elapsed time counter (0:00:05.6). STOP. Ends recording. If you have recorded in WAVE format, a dialog box will appear asking you to define name, and in what directory this file should be saved. AUTO automatically starts recording, if a predefined input starts to receive audio data.

In the menu point “RECORDING FORMAT” you can determine to what file type your audio data is to be converted. Available are WAVE format or output to a Visualizations Plugins interface. Visualization interface are subject another point in this manual.

The EQ button leads back to equalizer.
The CD player / CD-writer provides all functions necessary to work with CDs. Here, reading in CDs is accomplished. If you are already installed a **MP3 Codec, compressing to MP3 format is also possible.** You can also burn titles on CD-Rs as audio CD to be played with conventional CD players, or as data CD for back up purposes.

To do so, three different modules are available: **CD Reader** and **Encoder**, with buttons located in the center area of the CD player.

### 3.13.1. CD-Reader:
With this module, also called CD Player, you can use your CD-ROM drive as fully functional audio CD player. All functions like Pitch, Pitch Bend, Cue-Points, etc. are available without restrictions.

The Play List and the player module are similar in structure and handling to the two main players and the Play Lists.

The CD-Reader also functions as device for reading in audio CDs, and copying them to hard drive. Read also in chapter 4 step-by step instructions for copying, and compressing audio CDs.

Whenever an audio track is loaded in one of the players the CD ROM drive will be locked. It can be unlocked by either choosing “Remove” in the players pop up menu, or by pressing the eject button.

### 3.13.2. Encoding audio CDs
*(Only possible if a MP3 Codec is already installed at your system)*

Generally encoding (compressing into MP3 format) can be done in two different ways. Either by saving an audio file in WAVE format and later on conversion or by immediate compression to MP3 while reading in. This choice is made in the Program Options, on the register tab CDDA-Copy / Configuration / **Encode during copy**. If this checkbox is marked, copying and encoding will be done in a one step process. When compressing large numbers of audio CDs it is recommended to read all of these in, in high-speed mode as wave format, and then batch compress them in **Encoder Mode** overnight, for example.

### 3.13.3. CDDB-Query
Upon inserting an audio CD in the CD-ROM drive, the titles in the Play List will appear as numbered tracks. Now click the **CDDB** button. Provided so configured in windows, the PC will connect to the Internet, logs on to the CDDB (database for administration of title information of audio CDs) and attempts to find information about the inserted CD.

The CD Player also supports MP3, and WAVE formats, thus, it can be used as third MP3 player, or as convenient preview player.
If no information has been available for this CD in the CDDB database, you can now enter it manually in the **File Info Box**. Now mark the titles to be read in with the left-hand check box, and click on **COPY**. All marked titles will now be read in. Progress is displayed in a status window.

**Query for several CDs (Batch-Function):**
As soon as an audio CD is inserted, BPM Studio will store the CD code. With the next CDDB query, it will be attempted to retrieve all information, for CDs not yet identified. You can save time, by inserting audio CDs, wait till their track numbers are displayed, and then click on the CDDB query button. Now all title lists of these CDs (if available) will be retrieved, and be available when the CD is inserted again. After completion the Internet connection will be terminated. You can also establish the connection manually via the pop up menu of the CDDB – button. On the CDDA-Copy register tab in Program Options different CDDB servers can be selected.

Information downloaded from the CDDB server will be stored by BPM Studio, and will be available without being online.

### 3.13.4. Copying Audio CDs (Ripping):
After successful CDDB query all CD titles will be displayed in the Play List.

It is mandatory to enter title information manually, or to download it from CDDB, BEFORE titles are being ripped. Otherwise BPM Studio can only use CD-Code, and track numbers as file name.
3.13.5. Encoder ( ): The encoder converts WAVE files into the MP3 format. Here you will find all previously read in audio-CDs, if you do not have activated the "COPY/ENCODE" option in the Program Options, before ripping. Also, the encoder can convert other, already present WAVE files, that have been ripped with other programs. Simply drag them out of the Windows Explorer, and drop them on the encoder Play List, or, add them with the button.

For screening, and controlling also the CD Player can be used. The files can be played, controlled, and edited with the File-Editor. Following, the marked part will be transferred to the MP3 format by clicking the button.

After compression is completed, you’ll find a new entry in the BPM file archive under NEW FILES with the actual date, in which the compressed files are being stored. This folder can be renamed with the RENAME button, or you can assign those titles to other present categories.

3.13.6. CD-Writer ( ): Produce your own audio CDs with your own mix or compilation - all with only one program: BPM Studio.

The integrated burner supports all common CD writers and media. Even burning MP3 files is no problem. Thus you can conveniently create backup copies, and quickly transfer play lists with the according tracks to another system.

Before you start to create CDs, we recommend that you make yourself familiar with the handling of CD-R’s, and CD-RW’s. Also check the CD Writer settings on the according register tab in the Program Options. In this manual, chapter Program Options, you’ll find all important instructions and explanations to optimally configure your CD Recorder. Once set up, the BPM Studio CD writer allows you to very simply and quickly create Audio- and Data-CDs.
3.13.7. Creating Audio CDs
Select this mode if you want to create a CD that can be played with any common CD player or changer. The maximum play length depends on the type of media you use, and vary between 74 and 80 minutes.

After confirming the dialog box by clicking [OK] the selected CD format will be displayed in the track list status bar.

Place the media to be recorded into the Recorder. The CD status indicator below the track list gives you information about this media, and the Recorder itself.

Now you can load any title or whole Play Lists in the writer's track list. This can be done in different ways

1.) Drag & Drop from the from Play Lists, file archive, or Play List archive.

2.) Via the clipboard, with “copy” and “paste” (Ctrl – C / Ctrl – V)

3.) With the button you can load any Play List present on the hard drive.

4.) With the button you can selected tracks directly from your hard drive.

It is not necessary to convert MP3 files into the WAVE format. All tracks can be loaded into the writer as MP3s. Decompression is done in real time during the burn process.

The title order can be modified by Drag&Drop.

Start writing with the button. In the following dialog fields, progress can be monitored, and modified.

At first, the Cue-Sheet will be created. It contains information that will be written onto the media parallel to the audio data, such as starting points, title length and (if the Recorder supports this function) CD text information. Upon completion, a dialog with the calculated data will appear.

Please avoid writing CDs over a network. If you use BPM Studio in a network, the CD Writer should be local, with the MP3 or WAVE files to be burned.
BPM Studio

Here you can check if all the data is correct, if so confirm with [next] and start the writing process. Of course you can still abort with [cancel].

The following status windows keeps you informed about the whole writing process.

The selected mode will be indicated in the status bar to the left.

Now insert the media into the Recorder. The CD status window to the right below the status bar indicates, as when creating audio CDs, the contents of the CD, and the Recorder.

Now you can load selected titles, complete Play Lists into the Recorder.

This can be done in various ways:

1.) Drag & Drop from the from Play Lists or file archive

2.) Via the clipboard, with “copy” and “paste” (Ctrl – C / Ctrl – V)

3.) With the button you can load any Play List present on the hard drive.

4.) With the button you can selected tracks directly from your hard drive.

The status bar to the left shows how much storage space on the media is already in use. Additionally a status bar to the right below the track list indicates the required disk space. (Pay attention not to exceed the media’s maximum play length when assembling the title list. If you do, an according message will warn you before the write process.)

Please make sure that with BPM Studio only work you authored, or work of which you are explicitly allowed by author or someone in lieu, will be copied. Otherwise you might commit the offense of copyright fraud, which is a federal felony, or be held liable by the author, or designated people in lieu of.

3.13.8. Creating data CDs

Select this mode if you would like to copy MP3 files already present on your system to a CD, that can later on be played on a PC with a standard CD ROM drive installed. Thus, you can back up files easily, or transfer them to another computer. The maximum available drive capacity depends on the used media, and usually varies between 650 to 700 MB.

Start a new CD project by clicking the button. In the following dialog box select ‘Data-CD”.

After successfully writing the CD, the drives slide will open, and you can take out the CD.

After successfully writing the CD, the drives slide will open, and you can take out the CD.
Start the writing process by clicking the button. In the following dialog field you can control the progress and manipulate the writing process. Explanations of the according dialog boxes can be found in the previous chapter “Audio-CD”

3.13.9. Systemtest in test mode
If you start the writing process with the button, it will only be simulated. Your computer will perform all actions that it would perform in a real write, with the exception that the laser will be disabled. This is very useful to test the system performance. The media will not be changed in this mode.

3.13.10. Deleting CD-RW’s
(If supported by the Recorder)
If a CD-RW (CD rewriteable) already containing data is inserted into the drive, you can delete this data by clicking the button.

Adding another Session:
(Data CD only)
You can add data to an unfinished media that contains data already, in a new session. To do so, the “import session” function on the CD-Writer register tab in Program Options must be enabled. When inserting such a media, the used storage capacity will be indicated in the status bar.

Important Note
A list of all supported CD Recorders can be found in the version history, which is delivered with every version of BPM Studio.
Please have understanding for the fact that we can not support every CD Recorder on the market. This is not the objective of BPM Studio, and it does not claim to be a full-featured CD recording program. Much more BPM Studio is primarily a DJ system for live performing.

Please make sure that in case of problems with burning CDs the first step should bee to reduce the speed. Not every media can record at any speed. Anyway you should disable auto load for every available CD player; otherwise problems may arise, especially when burning CDs.

Eject button opens the tray of the selected Recorder.
Select Recorder field. Select here which Recorder is to be used.
This chapter is supposed to give you a better understanding of the file formats, and endings supported by BPM Studio. Some of them can be deleted, for others it is recommended to leave them on your hard drive.

*.grp, *.idx, *.gps, *.plg, *.lst:
These files are used for the file- Play List archive. The *.gps, and *.idx files contain information about the structure of File- and Play List archive. For all titles in a major category of the File Archive, a [category name].grp file will be created containing all title information for this category. The Play List categories can be found in the *.plg files, and the Play Lists are stored as *.lst files. These are compatible with the directly store- and loadable Play Lists.

eq.eqp:
File for equalizer presets

Bpm.set:
Encrypted file for user information

*.bml, colors.cfg:
This file contains the skins for BPM Studio. The bitmaps are contained in the *.bml files, colors are defined in the file colors.cfg.

*.cut:
The cut format is available in the editors export function. In this case it is not the marked area that will be saved, but the Cue-Points, and marker information as links. Information that would otherwise only be available in the Play List or the file archive can be backed up separately this way.

*.~*:
Tilde files are created automatically as back ups of all files of File- and Play List Archive. (Either when exiting the program, or, when auto save is active, every 15 minutes.

*.scn:
Scan files will be created when needed by BPM Studio to position exactly in VBR files or very long MP3 files. They should not be deleted for:
1.) The Cue-Points will not be restored correctly since BPM Studio can’t jump to the exact position, which can cause a “jump” after addressing the Cue-Point.
2.) The *.scn files in auto play mode would have to be generated anew, to determine the actual lenght of the title.

*.mem:
Files for the saved files for the sampler functions of all files. (A.B.Exit-Loop)

*.cue:
Files for the Cue-Points of each file.

*.mem and *.cue files can be deleted. Of course all Cue-Points of a loop will be lost, it still can be useful to clean up every once in a while though

*.sdd:
Files for the peak files of the wave editor. They serve the editor in navigating in, and loading of files. These files can be deleted, the loading will take longer though.
3.15. Program Options

From any given pop up menu via options, the programs basic settings can be opened. These are split in 6 different areas, which can be selected on the 6 different register tabs.

3.15.1 Preset – Language and Skins:

Language Pack:
Select here your language preference. Should your language not yet be supported by BPM Studio you can, provided you’re interested, order our SDK language pack, and create a translation for your language.

Skin Pack:
Here you can select a skin. The list will display all available skins compatible with this version of BPM Studio installed in the folder ...\BPM Studio\Skins. The download area of the ALCATech website, information about new or updated skins can be obtained.

Pitch Range:
Defines the pitch area for sliders. This value will be overwritten when clicking on one of the three pitch area buttons. (see also 3.2./ player)

Presets – Language and Skins
Options - General settings
Audio I/O – Sound card configuration
Storing – Defining directories
CDDA-Copy – Adjusting CD parameters
CD-Writer – Settings for CD-Recorder

Bend Speed:
Defines the pitch bend area

Match Speed:
Defines the time for BPM match

Brake Speed:
Defines the time for the Brake function
3.15.2. Options –
General Settings

- **Load Wave Files**
  Scans for WAVE files at program starts, and loads such files.

- **Load Sub Directories**
  Program will load all subsequent directories of a selected folder.

- **Soft Pitch and Bend Changes**
  Allows for smooth operation of the sliders, and simulates the inertia of a vinyl album when using pitch bend.

- **Double Click loads Player**
  When double clicking a title in a Play List it will not be loaded into the preview player, but into the main player.

- **Ask before loading a player**
  Performs a security inquiry before the next title will be loaded.

- **Reload File in Single Play Mode**
  If Single Play is activated, the current track will be repeated on end.

- **Blink Display before file is done**
  10 sec. prior to the end of the current title, the display will blink in red.

- **Use Normalization if file is normalized**
  When check box is activated the settings of the normalized audio file will be used; otherwise they will be disregarded.

- **Use Silence Detection in AutoPlay**
  When activated, possible silence at the end of the title will be skipped. This is done to optimize title transitions in auto fade mode. This function will only work properly, if the title has been edited with the normalize function from version 4 on.

- **Check Play Lists when loading**
  When loading a Play List, presence of all list titles on the hard drive will be confirmed.

- **Show Playlist Columns**
  Shows vertical lines in head rows, and Explorer.

- **Show Mixer Levels**
  Activates level indicator in Mixer. (Requires some system resources)

- **Show Mixer beats**
  Activates beat indicator in Mixer.
Program Options

- **Remove Files from Playlist if played**
  The title will automatically removed from the Play List, once played.

- **Auto Cue (Skip Silence)**
  Possible silence at the beginning of the title will be skipped.

- **Auto Save**
  All settings and the state of the file archive will be stored every 15 minutes.

- **Alternate Bitmap Drawing**
  Use this option if you experience problems with your display, for example the slider look distorted.

- **Change Screen Resolution on Startup**
  At program start, the windows monitor resolution will automatically be set to 800x600

- **Delete Editor Peakfiles**
  At program end the peak files generated by File Editor will be deleted.

- **Scan VBR files**
  Activate this checkbox to enable exact positioning in files with variable bit rates.

- **Save ID3 tags**
  This program modifies the ID3 tag of the original MP3 File.

- **Write ID3v3 tags**
  The program writes the ID3 tag with the version 3. (It will not be accessible by older MP3 players anymore)

- **Lock Main Window Position**
  The position of the program’s main window on the screen will be locked.

- **Show Tooltips**
  Activates the “hints” function (Requires some system resource)

- **Alternate Cue-Play function**
  With this function activated, the player will play as long as the CUP button is held. Once released, the player will jump back to the Cue-Point.

- **Start as exclusive shell application**
  With this function, BPM Studio will be the exclusive application under Windows. Upon activating, a reset will be initiated, after which BPM Studio will be the exclusive application.

- **Aggressive refresh**
  This option causes a quicker display of the level indicator, the spectrum analyzer, and the title scrolling. On systems of lesser performance system resources can be freed, by deactivating this mode.

- **Ask before removing a file**
  When activated, a confirmation will be required before a title is removed from the player.

- **Hidden menus**
  This option causes all pop up menus to be reduced to the important functions. The complete menu can be viewed though by clicking on the last entry. If this is not selected, all entries will be shown.
3.15.3. Audio I/O-
Configuring the Sound Card

Driver
Here the device driver is selected. In the Private Edition only the Direct Sound driver is available.

Preload Size
Size of the internal playback buffer. Manipulate this value if you experience dropouts during playing, or the players don’t start clean.

Auto-Cue Level
Here the trigger level for the auto cue function (skip silence at title beginning) can be defined. This value can be set from –inf (absolute silence) to –30 dB (a quiet level).

☑ Soft Fades
BPM Studio fades all audio signals in, and out, smoothly before any audio title or cue. Thus it prevents possible disturbing noises / crackling.
3.15.4. Storing - Defining directories

Default Search Directory
In this folder all relevant application data will be stored. That for example would be the default Play Lists, the categories, and subcategories of the File Archive, Sample-Block information, the equalizer presets, and the CDDB title information of previously read in CDs. It is recommended not to change this folder.

Directory for the Ripper
In this folder the WAVE files to be compressed will be stored temporarily. This path can lead to another, bigger hard drive. For example if you would like to rip several CDs first and then encode them in one process. (See also CDDA options – copying, encoding)

Directory for MP3 encoding
In this folders the MP3 files will be stored after compression. It is recommended to create a separate folder (e.g. C:\MP3) in which all titles will be stored. This will make it easy to upgrade the system later on with additional hard drives. BPM Studio automatically scans all logical drives for present titles, if the original path should not be present anymore.

Directory for recorded files
Default folder for WAVE files for the Recorder.

If an extended mix is to be recorded in WAVE format, the file can easily exceed several GBs. For this, you can specify another folder on another hard drive.

Filenames
Here the filename, which later on will be generated by programs, will be defined. It is recommended to keep default values.
In case you have a large file archive of already present files without ID3 tags, and want to read it into BPM Studio, you can change the assignment temporarily.
3.15.5. CDDA Copy

Defining CDDA- and compression parameters

Block Count
Number of blocks on a media, that will be read if the CD-ROM drive is accessed.

Read CD Text Infos
Audio CDs that have text on them, will be read (will not work with older Audio CDs, or on older CD ROM drives)

Force Generic (NT)
Activate this option if you are having problems under Windows NT with a possibly loaded ASPI driver

Encode during Copy
Select this option if you want to read in audio CDs directly and convert them into MP3s, without temporarily storing them. Otherwise the ripper module will merely write files in the WAVE format, and copy them to their prospective folder. The conversion into the MP3 format will then be done in the encoder mode of the CD player / ripper.

CDDB Server
Here you can define the desired CDDB server. With a click on “GET LIST” the mirror server list will be loaded, and then the desired mirror server can be selected. When having problems with cddb.cddb.com try freecddb.freecddb.org.

Your email settings
To register with a CDDB server, your email address is required

CD-ROM
Select here the CD-ROM drive, for which adjustments are to be made.

Copy Mode: Burst Copy
Read and write access will be performed simultaneously

Copy Mode: Normal
Alternating read and write access will be performed

Copy Mode: Sector synchronization
In this mode an exact repositioning of the reader head is guaranteed in case the information flow should be interrupted. This is the safest mode, but also the slowest copy method.

CD Type
Here you can select out of the list of your CD-ROM drives. This setting is only necessary when you are experiencing problems while reading in CDs, and “AutoDetect” doesn't solve the problem.

Write RIFF Wave
Writes a MP3-Wave-File, that is compressed, but can still be played on most Windows players.

Format
This selection field shows all audio compression codes available on a system.

Format Options
Here the quality of the compression is defined. (Depending on file format). It should be at least a 128 kBit/s, 44,100 Khz stereo.
3.15.6. CD Writer
Adjusting Recorder Parameters

CD-ROM
Select a Recorder out of a list of all Recorders available in the system. The following six checkboxes indicate which functions are supported by the selected Recorder. Functions not supported by the selected Recorder will be displayed in gray. (Inactive)

Speed
Here the burner speed is defined. MAX adjusts the speed to the maximum possible on the selected Recorder. Decrease the speed if you frequently receive errors caused by the performance of your system, or the used media.

✔ Record Track-at-once
Track-at-once (TAO) is a writing method that for once (similar to disc-at-once) burns single session discs, and for the other (mainly) can be used to create multi session discs – which would actually not be able with DAO per definition. With TAO the laser will be switched off after writing each particular track, moved to the PMA to update the temporary table of contents, repositioned to the end point of the previously burned track, and switched back on to continue.

✔ Record Disc-at-once
Disc at Once is the writing method of choice when creating professional Audio-CDs and masters for commercial mass production. With this method a CD will be burned within one single session, and then closed. The laser writes without interruption the Lead-in with the table of contents, all tracks, and eventually the Lead-out. (This explains why a unusable through write interruption disc appears to be containing all tracks, even if the mistake occurred during the first track. The table of contents has been written first, thus the player “thinks” the listed tracks are really on the media.)

✔ Record MCN and ISRCs
The ISRC-Code (“International Standard Recording Code”) identifies a recording (in general this means a track). In principal therefor every track of a CD should have a ISRC code, which identifies it uniquely. This protocol is only mastered by newer CD burners.

✔ Record CD Text
A procedure developed by Sony® and Phillips®. With CD text audio players of the newest generation are capable of displaying name of artist, name of current title, and even annotations. The information of the ID3 tag will be added onto the media, if the Recorder supports this function

Example of CD-ROM drives capable of reading out CD-Text*:
- Plextor PX-40TS (SCSI)
- Sony CD-ROM CDU 711 (SCSI)
- Teac CD-524-EA-B (IDE)
- Teac CD-532-E-A (IDE)
- Teac CD-532-E-B (IDE)
- Teac CD-540 (IDE)
**BPM Studio**

**Program Options**

**Following CD Recorders are currently capable to read and write CD-Text***:

- Teac 56S/58S later than Firmware 1.0j (SCSI)
- Plexwriter 4220 later than Firmware 1.02 (SCSI)
- Plexwriter 8220 (SCSI)
- Ricoh 7040 later than Firmware 1.20 (SCSI & ATAPI)
- Ricoh 7060 later than Firmware 1.20 (SCSI & ATAPI)
- Sony 948S later than Firmware 1.0h (SCSI)
- Sony CDX 100 / 110 / 120 / 130 / 140 / 145
- HP 8100 / 8110 / 8200 / 8210 / 9100 / 9110
  (Same vendor as Sony)

To find regular CD players capable of reading CD-Text, visit your local consumer electronics store.

- **Record on Rewriteable Discs**
  The Recorder supports writing on CD-RWs. Media that can be reused.

- **Record with Burn Proof**
  Burn Proof is a procedure developed by Sanyo® in which throughout the whole process of burning the Recorder's internal buffer is monitored. When system performance becomes slow, or even critical, the drive notices that a buffer underrun is unavoidable – and stops the burning procedure at a suitable location. This gives the buffer time to reload, the data is compared and synchronized, and the writing process continues right after where it stopped. This averts the media to become unusable, if the data throughput should be interrupted again.

- **Import Sessions**
  Sessions already present on the CD will be imported, the CD may not be finished though. Select this option if you want to write more data on a multi session CD. Important! When writing on a multi session CD without activated import, all previous sessions will be destroyed.

- **CD-ROM/XA**
  The CD-ROM/XA is a mixture of the specifications for CD-I, CD-ROM mode 2, and the current format for data CDs. Deactivate this option if you are having problems reading in the CDs created with BPM Studio. Some older CD-ROM drives do not support this format. When writing multi session CDs, this format is a requirement in most recorders.

- **Close Disc**
  Finalizes the CD after the burn procedure. Older CD-ROM drives can not read Data-CDs if they are not finalized. Audio CDs will always be finalized in general, since here it is not possible to write on the CD in several sessions.

- **Burn Proof**
  Activates the burn proof function of the recorder. (if any) Buffer underrun errors will be averted, and the burn process will be faster.

- **Eject Disc from Recorder**
  If this option is selected, the tray of the drive will automatically be opened when the burning process is complete.

- **Test Mode**
  When in test mode, writing will only be simulated. All functions of a “real” burn will be performed, with the exception that the laser is switched off. Thus the media will not be changed or damaged. This mode is used for troubleshooting, to avoid many plain media will turn out as scrap. Keep the function “Eject Disc from Recorder” activated, since many Recorders only allow another recording on the same media if it has been removed, put back into the device, and scanned back in anew.

* no Guarantee
**Pregap (sec)**
Here define the pause between tracks of a audio CD. For data CDs this function is obsolete.

**File / Disc Caching**
By using File / Disc caching, buffer underrun errors are mostly history. Also it allows for a more efficient use of the processor and other system resources.

**File/Disc Caching Options**

- **Enable Caching**
  Enables File/Disc Caching

- **Cache Size (MB)**
  Select cache size in MB. (Minimum is 1MB, max. is 32MB)
  Recommended cache sizes depending on available RAM:

<table>
<thead>
<tr>
<th>RAM</th>
<th>Rec. Cache Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>64MB</td>
<td>2 to 4 MB</td>
</tr>
<tr>
<td>128MB</td>
<td>4 to 8 MB</td>
</tr>
<tr>
<td>256MB</td>
<td>8 to 16 MB</td>
</tr>
</tbody>
</table>

Please do not exceed the maximum cache size. This could cause performance to decrease even more, than it would without activated caching.

**Full to Empty Ratio (%)**
Setting of data size to be read in, before the cache has to be refilled. If the ratio is 86% to 15% for example, the cache will be filled to a 100%, and after 15% of the data have been purged, refilled to a 100% again. (This cycle will be repeated, until no data to be cached is present anymore.) It has been proofed that this method is more efficient than trying to keep the cache filled to a 100% at any given time.

**CPU priority Level**
Selects the processor priority level of the cache process. For 99% of all systems the “normal” setting can be maintained.

A very extensive and clearly arranged documentation about CD-Rs, CD-RWs, Recorder, and file formats can be found at http://www.disc4you.de/kompendien/cd/

Please pay attention also to troubleshooting hints in chapter 3.15. CD Player / CD Writer of this Manual!
3.16.1. Normalize Function
Via the pop up menu in File Archive and the different play lists, the normalize-function can be activated. Use this function if a title playback is either too loud, or too quiet. If you activate this function in the categories window, all titles present on the system will be normalized. With large archives this procedure can take several days (!), therefore must only be applied to a title once. If new titles are added, this function will be applied, already normalized titles will not be scanned again though, which speeds up the procedure considerably.

During normalization the Peak- and RMS Values of all titles are determined, and a average value for the titles volume is calculated. The dynamic mostly stays unchanged, since only one amplification factor is applied and no dynamic adjustment.

3.16.2. Search Dialog
The search dialog is also accessible via the pop up menu in BPM File Archive or the button in the file lists. Here you can perform your search according to the following search criteria: BPM range, artist, title, title version and album. The search term or text string will always be compared exactly with the list entries. But you can also use wildcards. Here some examples: WEST* will find all titles with WESTBAM, WESTERNHAGEN, etc. *HAGEN will find all titles like WESTERNHAGEN, NINA HAGEN, etc. *EN* finds all titles containing an EN, e.g. DEN HARROW, or X-PERIENCE. If the search was successful, a new folder SEARCH RESULTS will be created in BPM File Archive in which the search results will be listed. If this folder should exits already, all files in it will be overwritten.

3.16.3. The back-up- and Update functions
Via the pop up menus of the Group window and the File Archive you can access the BackUp and Update function. The back up Function allows you to create a backup copy of the entire File Archive in a predefined folder. From there it can be restored later on. With this method a copy of the File Archive can be transferred to another PC also. The Update-Function offers two options. “Search Hard Drive” scans the entire system, including all connected network drives for playable titles, and lists them under NEW FILES + date. “Update Archive” removes all titles no longer present out of the File Archive, and lists all new titles in the NEW FILES category.

3.16.4. The PreAmp-Function (Limiter)
Within the equalizer the PreAmp function can be activated. This is recommended if the red “OVERFLOW” LED stays on permanently. This means the overall amplification is too high, which may cause distortions.

3.16.5. Interface for Visualization Plugins
Via the Recorder pop up menu the interface for WinAMP Visualization Plugins can be activated. In a list, the in the folder \BPM Studio\Studio\Plugin installed plugins are listed. Some of these plugins can be configured within the range of their functions. To do so, click on the button “Configure” and make the desired adjustments. To compensate for resource problems the “Priority” control is uses. ALCATech GmbH does not guarantee that BPM Studio will work with these Plugins.
4.01. Where can I get MP3 files?

BPM Studio will be delivered without any MP3 Files. Our systems are designed for you to copy your Audio CDs to your computers hard drive, and save them as MP3 Files. Thus you can be assured that there will be no loss in quality, and playability of the titles. But also the most MP3 titles from other systems, as well as MP2, and WAVE files can be played with BPM Studio. Step-by-step instructions on how to copy CDs, and creating a File Archive can be found in the First Steps chapter of this manual. You can also utilize other encoders from other vendors, be aware though, that quality differs between different encoders.

Legal reminder:
BPM Studio may only be used to copy/encode titles if you are the author, or if the author, or a person owning the copyrights has authorized you to do so. Otherwise you take the risk that you make yourself liable to prosecution, res. to be held liable by the copyright owner. Please pay attention to laws and regulations regarding the use of MP3 files. You can inform yourself about these either with the regional office of the GEMA, or on the Internet at www.gema.de. If you use BPM Studio outside of Germany, please refer to the according institutions representing artist, and record company rights.

4.02. How can I play MP3 files?

BPM Studio offers two independent Players for playing MP3 files, which provide all functions of a professional double-CD-player for DJs. A requirement to use BPM Studio that there are already MP3 files saved on a PC. These will be read in, and displayed in the play lists, at the first program start after the installation. The players will automatically play the play list in descending order.

1.) At any given time titles can be added to the Play List by clicking the button at left lower corner of the Play List. The title selected in the File Archive will be added to the play list. If no title is selected, a Explorer window will open showing the directory of your hard drive(s). Select here the MP3 files to be inserted, and confirm with OK. The selected MP3 files will now be inserted into the play list.

2.) Load a given title out of a Play List or the File Archive into one of the two players by Drag&Drop. To do so, move the mouse pointer over the title, press the left mouse button, and hold it down. The mouse pointer will change into two little musical notes. Now move the mouse pointer over one of the two players, and let go of the button. The title will be loaded into the player, and the red LED display over the [CUE] button will come on. A click on the [PLAY] button starts the playback.
BPM Studio saves the title order in the play lists below the two players. The player will now play those titles in the order of this list. You can modify this list to your liking, add titles, delete titles, rearrange the title order, or save the list for further use. It is also possible to enter a title a couple of times repeatedly, or in different positions on the list. All modifications made to the list, (for example with the File Editor) will be stored, and will be available when loading this list again. During this process only the title information get modified, the MP3 files themselves will stay at their location.

This part of the manual only covers handling of single play lists.

4.03.1. Adding titles to a play list
1.) Click on the button, in the bottom left corner of the play list. The title selected from the File Archive will now be inserted into the play list at the predefined spot. If no title is selected, a Explorer window will open showing the root directory of your hard drive.

2.) Now select the MP3 files to be inserted, and click OK to confirm. The selected titles will be inserted into the play list.

You can also pull complete categories from the File archive into a play list. The titles will be added. Pull a complete category on a player, and the old list will be replaced with the new one.

4.03.2. Modifying the title order
Via Drag&Drop the order of titles can be modified. Click on a title, and drag it to another position within the list. A little red arrow to the left in the list simplifies sorting in.

4.03.3. Storing a Play List
Click on . An Explorer window will open in which you can specify a name, and a folder for the play list to be saved. OK confirms, and the play list will be stored under this name.

4.03.4. Loading a Play List from Hard Drive
Click on . A Explorer window will open, from which you can load BPM Studio play lists (*.pls), as well as other formats like for example WinAMP play lists. The previously loaded list will be lost though.

4.03.5. Adding title sequences to an already loaded list
In the File Archive select the desired titles to be added. By holding the [Ctrl] key down, you can select and deselect multiple titles. When all desired songs are selected, click on one of the selected titles, and drag the whole block into the play list window of the player, and drop them.
BPM Studio offers convenient options on how the informations attached to a title are managed. These informations are stored in the ID3 tags of the files themselves, and in the play list files (*.pls)

1.) Point the mouse pointer on the title to be modified.

2.) With the right mouse button / pop up menu select the “Properties” point. Alternatively you can also use the button.

3.) The File Info Box will be opened:

Here all information contained in the ID3 tag will be displayed. If you want to modify any of the information, simply overwrite it, and confirm with OK. The information will be updated in the ID3 tag, as well as in the Play List.

To the right of the BPM field, the complete path to this MP3 file will be displayed. If there is not enough space, you can move the mouse pointer over it, and the whole path will be displayed as tool tip.

With the BPM... button you can open the BPM Counter module, and be able to determine the BPM value directly out of the properties dialog, and save it.

Edit... will start the File Editor with the selected title.

In the chapter File Properties Dialog you can find further information and descriptions about modifying title information.

When you select several files, and open the File Properties Dialog, a checkbox will appear beside every entry. If this checkbox is marked, the modification in the according field will be applied to all titles. This is especially useful if several titles are to be assigned to a particular genre, or album title.
Many functions and perfected modules are in BPM Studio available for copying and archiving audio-CDs. How you can transfer your existing CD collection to the BPM Studio system, is explained in the following section.

Requirements:
Music in the MP3 format occupies about 1 MB of hard drive space for 1 minute of music. This means that on a hard drive with 30 GB capacity approximately 8,000 to 10,000 titles with an average length of 3.5 minutes can be stored. The Audio-CDs are read in with the CD-ROM drive and copied to the hard drive. This procedure is also called “ripping”. The speed of this process mainly depends on the quality of the drive. But also the performance of the overall system is important, for example if copying and encoding are to be done in one single process.

After the installation of BPM Studio, MP3 files will be stored in the \DATA folder on drive C by default. We recommend, when using the program professionally, to install a second (or even more) additional hard drive/s, and to move the MP3 folder accordingly to the new hard drive. This can be done in the Program Options, “storage” register tab.
Optimally create a \MP3 folder on the new hard drive, and select this folder as standard for MP3 files. BPM Studio will then store all ripped, and encoded files in this folder.

A large relief, when adopting title lists on the PC, is the global CD database on the Internet. There, the title information of the most known and current CDs are stored, and can be downloaded for free. BPM Studio has a built in CDDB inquiry function, to be started over the button. If a particular CD can not be found in this database, an alternative CDDB-database can be defined in the Program Options. Or, the information can be entered manually in the file properties dialog.
To be able to use the CDDB inquiry you need a Internet connection either over the dial up network adapter of Windows, or through a real Internet connection through a masked network. Standard Proxy software for Windows only offers HTTP and FTP services. If you own a UNIX system as gateway, activate masquerading, and enter the IP Address of the gateway into the network settings of Windows. If you use programs like WinGate, or AVM KEN!, please activate the SOCKS Proxy in these programs, res. install the proper client software on the BPM Studio PC. You can get more help from about this topic from your system administrator, or your local PC store.

BPM Studio Private Edition doesn’t include an Encoder. All Functions concerning MP3 Encoding will only work if you have already installed a MP3 Codec on your PC.
Ripping Audio-CDs:
1.) Switch to the CD-Player of BPM Studio by clicking the Ripper button. Insert a audio-CD into the CD-ROM drive. After a couple of seconds, all titles on the CD should appear in the players Play List. Since BPM Studio doesn’t know this CD yet, all titles will be displayed as TRACK – followed by their title number.

2.) Now click on the CDDB button. Provided Windows has a Internet connection set up, the PC will log on to the Internet, connects to the CDDB (central disc data base for audio-CDs) and try’s to retrieve the information for the CD in the drive.

3.) After successful CDDB query all titles of the CD will be listed.

If no information was provided in the CDDB for this particular CD, at this point enter them manually, in the file properties dialog. Now mark the titles to be read in with the according checkbox to their left in the list, and click on Copy. All marked titles will now be read in. The progress will be displayed in a status window.

After successful encoding all files will automatically listed in the File Archive’s “NEW FILES” category. For clearer appearance a subfolder with the current date will be created. (See also screen shot at end of page)

In the chapter CD Player you can read up more functions available for convenient audio-CD read in BPM Studio. You can, for example, read in whole CDs as one track, or retrieve the CD information for several CDs with one single CDDB query.

Creating an own File Archive:
BPM Studio can manage several ten thousands of titles. At such vast numbers, it is easy to loose track, if titles are not assigned to different general categories. For this purpose the File Archive is used. In the screen shot to the side you can see an example structure of an archive of this kind. It consists of a number of categories, and sub categories that can be opened and closed by double click. After the initial installation or after reading in CDs you’ll find new titles here that can be assigned to categories according to your preference. The archive shown here consists of the following categories:
NEW FILES:
This category will automatically created by the ripper, whenever new CDs are read in. The date, of when the CD was ripped, will be used as sub category. In this sub category you will then find all the titles that have been read in at this particular day.

FIND RESULTS:
This category will be created from BPM Studio after the initial installation, when all hard drives are scanned for MP3 files. This category will contain sub categories, sorted by drive letter, in which all found MP3 files will be located.

DEFAULT:
If you do not wish to make further modifications in different categories res. subcategories, you can sort in all titles here. Otherwise just leave the groups empty. This particular group/category is necessary for BPM Studio to work properly, and can not be deleted.

ARTIST:
This category is created individually. As sub categories, different artists are defined. In one of these sub categories all titles of a certain artist present on the system are listed. This is very useful if you have a lot of titles from one particular artist, or whole albums are intended to be saved together. The sub category MIKE OLDFIELD for example contains a second branch sub category called TUBULAR BELLS, in which all titles of this particular album are saved.

TIME:
This also individually created category utilizes different times as sub directories. Here titles are saved for which not the artist, but the release date is used as index.

Of course these are only examples. Every user should create a File Archive according to his own needs, and in the for him most overviewable fashion, so it can be browsed quickly during events.

Independent of the File Archive structure, it is recommended to use the search function, to find a particular title.

Drag&Drop out of the group window:
You can drag a whole group out of the group window (to the left in File Archive or Play List Archive), and drop it on a player. The previous play list will then be replaced with the new titles. If you drag the titles into a play list, they will all be amended to this list.
4.06. How do I use the Sampler most efficient?

With the sampler of BPM Studio you can load short jingles, loops, and sound effects, and then replay them by the click of a button. The maximum length of such a sample in BPM Studio LE is 20 seconds. As in the two players the playback will start exactly when the sampler button is clicked. This is achieved by utilizing very fast Direct Sound drivers, or the Kernel Driver developed by ALCATech. Learn now, how you can load and play samples with the sample player.

1.) Look up a jingle in your Play Lists. (You can also use a regular title, merely 20 seconds will be loaded in the sampler though.

2.) Drag the title onto the desired button of the sampler, e.g. 2. To do so, place your mouse pointer over the title, push the left mouse button and hold it down, while you point at the desired button with the pointer now. Then let go. The sampler LED will shortly change its color from green to red, thus indicating that the sample has been loaded. When the sample is loaded completely, the digit on the Sampler Button will become brighter, this making it easier to determine which buttons have samples assigned.

3.) Now click on the sampler button. The sample will be played. For the duration of the sample playback can be stopped, by clicking the same button again (not in scratch mode). You can also start the sample with the number block on your PCs keyboard or with the sample block of the remote control unit (not RCP-1001). These buttons work parallel.

Through the pop up menu two different playback modes can be selected for the sample player.

4.06.1. Single Play:
When this option is activated (a little check mark can be seen in front of the entry) a possible still playing other sample will be stopped. Only ONE sample will be played at a time.

You can also load a sample directly from the hard drive, via the pop up menu. To do so point on the desired button, and click the right mouse button. In the appearing menu select “Load”, and select the desired file in the Explorer window popping up. Confirm with OK.
4.6.3. Configuring the Sample Player:
BPM Studio supports output of the different devices, through different sound card channels. If not enough channels are available though the sample player can share the two output channels of player A and B. In Program Options, register tab Audio I/O, simply the same channel as for player A, is entered for the sample player. When using BPM Studio, the assignment keys are used to select if the output is combined with that of player A or B. Please be aware that shifting the title takes a couple of seconds. This will also be indicated by the sampler LED, when turns green again, the sampler is ready.

4.06.2. Scratch mode:
When this option is activated (a little check mark can be seen in front of the entry), upon clicking the same button again the sample will not be stopped, but restarted. With this function a sample can for example be played repeatedly to the beat of the title.

The volume of the sample player can be adjusted at the two [VOLUME] controls. Also the speed of the sample player, (Pitch) can be manipulated:
5.01. Keyboard use

Keyboard use

BPM Studio

5.01. Keyboard use
Keyboard use

General functions:

Menu key: opens the context menu

Insert:
1. Add records to the list with focus
2. Add new group
3. Alt+Insert: Add new subgroup

Space: Play/Stop Monitor
oder Expand/Collapse Group

F1: Help

CTRL-P, SHIFT-P, ALT - P:
Loads a track from a selected playlist into a respective Player (CTRL for Player A, SHIFT for Player B, ALT for CD-Player) by inserting the selected title into the playlist of this player after the current loaded title.

CTRL-Q, SHIFT-Q:
Loads a track from the FileArchive into the left or right playlist (after the selected title in the playlist)

ALT - Q:
Loads a track from the FileArchive into the Waitlist (after the selected title in the Waitlist)

Other functions:
Toggle + P: Load selected Track into Player
Toggle + Q: Load selected Track in Playlist
Toggle + Y: Pitch reset
Toggle + Z: Pitch on/off

Clipboard functions (Windows compatible):
CTRL-A: Select all
CTRL-C (CTRL-Insert): Copy
CTRL-V (SHIFT-Insert): Paste
CTRL-X (SHIFT-Delete): Cut

Alt + A: AutoFade on / off
Alt + B: BPM counter
Alt + C: Clear List or Clear Groups
Alt + D: Load Directory
Alt + E: File Editor
Alt + F: Start Manual Fade
Alt + G: Show Group-File Archive
Alt + H:
Alt + I: File Info Box
Alt + J:
Alt + K:
Alt + L: Load list (or load files into File Archive)
Alt + M: Show Mixer
Alt + N: Normalize
Alt + O: Options
Alt + R: Show Ripper
Alt + S: Search files
Alt + T:
Alt + U:
Alt + V:
Alt + W:
Alt + X: Exit

Sampler's control:
5.02. Tips and Instructions

General information: 
Usually BPM Studio works with all sound cards serving DirectSound, installing one driver for all available channels.

If you experience any problems, you should at first (as a rule) load the newest driver for your sound card, searching for it on the Web Site of the manufacturer. Normally drivers are continuously updated and as the sound card is the most important system component for BPM Studio, you should regularly check if a new driver is available.

The distribution of resources:
The BPM Studio evaluates all frames of a MP3 file and needs therefore a little more resources than other simple MP3 player as WinAmpTM for example. BPM Studio has essentially a much greater function range than this player and a direct comparison does not make any sense. So, we should point out, that all sound cards possess their own, free IRQ and that is no other card or PC element uses it.
Also other components like hard disk, CD-Rom or graphic card play a role which is not to underestimate for the total performance of a system. It is also recommended to use a PC exclusively for BPM Studio (for professional use).

Driver latency:
Under „latency“, we understand the „delay“ between a command as for example ‘Play’, ‘Pause’ or ‘Stop’ and the moment the sound card reacts to these commands and begins play for example. Fundamentally ‘latency’ depends on the used driver type and partially on the driver too. As lower the latency of a driver is, the more qualified is the driver for exact Beat-mixing.

5.03. Contact, support

ALCATech GmbH assures the technical support by e-mail. Your questions by e-mail please send to support@alcatech.de

Please remember to give your Registration number and program version.

Updated: 03/15/2015.

More information, description of our current sound card tests, program updates and answers to frequently asked questions (FAQ), can be found on our web site: www.alcatech.com
5.04. Glossary

Application
Software programs that perform different tasks that otherwise wouldn't be accomplished by an operating system itself. Examples of such applications are: a text-editing program such as Microsoft WORD, a bookkeeping program and BPM Studio.

ASF
Abbreviation for Advanced Streaming Format. It is a streaming format for files developed by Microsoft.

Beat
A repeating sound that defines speed and tempo of a title and is normally produced by an instrument such as a drum for example.

Bit
A Bit is the smallest unit for binary data. With a Bit exactly two different states (0 and 1) are representable. (Bit = binary digit). A Bit is also a position in the dual system. Most of the PCs and also the modern information technology are based on this numerical system.

Bit Rate
The bit rate is a measure for the transmission speed of binary information. The scale unit for the bit rate is bps (bits per second, number of transmitted bits at one second). The maximal bit rate of a connection is also named as "bandwidth". As greater the bandwidth, as bigger is the transmission speed. Some standard bit rates are e.g.: 96 Kbit, 128 Kbit, 196 Kbit, 244 Kbit. As higher bit rates allow to transfer more information a better sound quality is obtainable. But a higher bit rate is always associated with a higher demand on memory space, as you have to store more information as well.

Buffer
A memory space where data is held temporarily before final treatment. BPM Studio loads the title from the hard disk into the buffer for a few seconds and then uncompresses it before the sound card receives it. Thanks to this action, no lockups or other malfunctions occur.

Configuration
"To configure" means to adapt the hardware and software to meet your own needs. BPM Studio has a lot of possible different configurations in the program options context menu. Please, read the program options section in this manual for a detailed description of each selection.

Constant Bit Rate
It means simply that the bit rate is not changed during the copying or encoding. (See VBR also - Variable Bit Rate)

Cue
A cue is a position within a title that the player recognizes as a beginning point. BPM Studio makes it possible to set up different Cue-Points for a title. You can also start playing within a title from this place.

Cursor
Symbol which shows on the monitor the position of the next input. The traditionally cursor (e.g. at a DOS operating system) was displayed as a simply, blinking underline. Since the era of grafical user interfaces and operating sytems the cursor can change its design in accordance with its function.

Desktop
The desktop or the background is what you see on your computer monitor before you start any other programs. This is the place where you start to work with other programs or files that you may open.
Glossary

Dialogue box
The Dialogue box is a window that you can use to communicate with the computer or application. Dialog boxes give you information on the progress of a working application and offer you the option to put that information to the use in the application. For example BPM Studio will show the program options as a dialog box.

Directory
A directory is an area on the hard disk designated for storage for data files and other directories. As an example, you would store all of your music titles in a directory.

Driver
A driver is a program that determines how a computer will communicate with a peripheral device such as a sound card or video card. The manufacturers of the peripherals create the drivers. We recommend always visiting the manufacturer homepage of your sound card and other peripherals to find the newest information about their drivers.

Dynamics
Dynamics (or dynamic volume) in regard to sound is a range between the smallest and the greatest value of volume (the softest and the loudest position). If the possibility to copy or play silence or loudness is greater, then greater the dynamics will be. It is also valid in the same way in the recording of audio signals.

Encode, Encoder, Encoding
To encode (code) means to transfer messages or files into an encrypted form. Code is a system of rules that is applied to transform a message into an impossible form so that it can only be read by authorized persons (normally to keep a message in secrecy). Another way to encode is by decreasing the number of determined rules used by an application with regards to huge data transfer without a considerable loss of content. MP3 files are created as audio files by using an audio Codec that holds only a fraction of the original size of the file. The reading of AUDIO CDs is also called 'ripping'.

In this process, titles are copied from the CD as WAVE files to the hard disk. Then, an encoder will read these files and transform them into MP3 FORMAT. BPM Studio also offers the option to encode the CDs into MP3 format immediately during reading ('ripping'). You can activate that option (rip and encode) in the program options - > option CDDA.

Encryption
Data translation into an appropriate code to protect information against unauthorized use by other persons. To be able to read coded files, you must have access to a code (or to a password) that authorizes you to decipher the coded information.

File
Data collection (based on an application or program) of a determined type put on a computer, on floppy disks, on CD etc. Each file is stored under an attributed name so that it's quick to find for later use.

Format
This is the preparation of a data medium (for example: a hard disk) to store files. This is usually done during the first installation of an operating system on a hard disk. It is also done to any additional hard disk in a PC. Format is a word that determines arrangement based on rules. For example, there are left hand and right hand text formats and there are determined audio file formats like WAVE, MP2 and MP3.

Icon
A small image on the Desktop that symbolizes or represents a program or file. You can see examples of different icons on your Desktop. Normally, they are arranged on left side of the screen as 'Recycle Bin', 'My Computer', and 'My Documents'. They are also called 'shortcut icons'. Programs associated with an icon will start by double clicking on the icon.
**ID3 Tag**
This is a feature of MP3 technology that gives the user the possibility of storing information regarding the MP3 within the MP3 itself. Basically, there are two types of ID3 tags: the old ID3-Tag, which is the fundamental tag and also the ID3V3 tag, which is a more developed tag. BPM Studio supports both formats and gives you the option to choose the one you want to use. We recommend using the ID3V3 Tag, because it can contain much more information than the original tag. The choice for which tag is used is made in the program options.

**Interface**
This is the medium between hardware, software and the user. Basically, it allows the user to communicate with the PC in a simple way.

**Joint Stereo**
This means that the encoder dynamically chooses an encoding algorithm according to the contents of the audio file for each separate frame. This way each frame is encoded with the best possible quality. The file size is simultaneously reduced thanks to a better compression ratio. These files are also known as VBR files. BPM Studio can play these files without any problems.

**Kbit (kilobit)**
A kilobit corresponds to 1024 bits (1 kBit = 1024 bits). The BPM Studio glossary definition should not be confused with the metric system definition where kilo is 1000.

**Metronome**
This is a device that utters a fixed or continual sound (Tick, Whistle or blinking light). It is primarily used by musicians to maintain a desired beat or play speed of a title so that it is not slower or faster than what is designated.

**Midi**
Midi is a serial communication protocol between electronic musical instruments and effect devices. It serves to enlarge the sound capacities of a device. An example of this would be a PC with MIDI software.

**Modem**
This makes it possible for a PC or similar device to connect to the Internet through a telephone line. A modem (MOdulator / DEModulator) transforms digital signals from the PC into analog tones in preparation to send them across telephone lines. This is needed because traditional telephone lines can only support analog signals. Modems are mostly used to connect to the Internet. There are also modems that send data digitally. An example of this type of modem is an ISDN modem. ISDN works on a dedicated digital telephone line instead of an analog line.

**Module**
Hardware or software that is a part of a bigger system and represents influences to this system. A software module is a program that is developed to take over a specific part of a bigger program. The virtual Player, Mixer and CD - Player/Encoder are modules of BPM Studio. These modules are available in some or all versions of software.

**MP3**
This is a file format developed by Fraunhofer IIS in Germany. It contains compressed audio and ID3 tag information. MP3’s are intelligently compressed and are adapted to the sensibility of the human hearing and acoustic susceptibility. It dynamically takes away all of the redundant, non-essential and not perceptible information and only stores the necessary information for Hi-fi quality play. The file size can be minimized to 1/8th and 1/19th of the original Wave file size. Thanks to the MP3 Format, it was possible for the first time to transfer music through Internet in Hi-fi quality with minimal download times. Larger and larger hard disks make it possible to store more music titles directly on your computer. As a result of all this, it was possible for BPM Studio to be developed and introduced as a MP3 technology into the DJ field.

**Parameter**
A parameter is a factor that determines a range of variations. By adding parameters to the end of a program command line, you can make the program run differently. A few examples of parameters in BPM Studio are: buffer size, data path and compression rate.
Peripheral
An auxiliary device, such as a printer, modem, storage system or external Remote Control Unit that works in conjunction with a computer.

Pitch
Professional CD players allows the user to change the playback speed of a track. This is necessary e.g. for synchronizing two titles with different speed (BPM - beats per minute) resp. playback with the same speed. The measure of the changed speed in contrast to the original speed is called "pitch" and is stated in percent. A pitch value of +100% means that the title will be played with the double speed, -50% plays the title with the half of the speed.

Pitch Bend
Using the Pitch Bend function a temporary increasing or decreasing of the pitch is possible. This is useful if two titles, already played back with the same speed, shall be synchronized in beat. By pressing a Pitch Bend button the speed will be increase or decrease continuously. At releasing the button the title returns continuously to its originally speed as well. With the Pitch Bend buttons the beats of two titles can synchronized exactly and very small corrections of both players are possible.

Rip, Ripping
Ripping is act of reading an Audio CD using the CD-ROM drive of a computer and storing the information onto a hard disk. IBM PC's use the Wave format for ripping and Mac computers use the AIFF format. The generation of an MP3 file can happen either after a rip or simultaneously as the rip is being performed.

Root Directory
When a floppy or hard disk is formatted for use, this particular directory is created. It is called the Root Directory. It contains important systematic files and is the first level for subdirectories.

Selection box
This is a text box that enables a choice between 'ON' and 'OFF' or 'Yes' or 'No'.

Subdirectory
This is a directory within a directory. Subdirectories are used to organize files. This makes it easier to find files.

Tempo
Tempo is the original speed of a title. The song writer or interpreter defines this speed. With the Pitch function of most professional CD players, and BPM Studio as well, this speed can be changed in a wide range.

Text field
This is a rectangular box where text can be entered. There are many different ways to use these Text boxes for example: changing standard text entries or other pretending text (if the change is allowed), entering necessary program information to enable the program to work and also editing title entries in the ID3V3 tags for later use.

Track
We refer to a Track as recorded title, a piece of music or a song.

VBR Files
Compared to CBR (Constant bit rate), the encoder analyzes the title's VBR (variable bit rate) and chooses an exact compression algorithm for every frame adapted by the MP3 encoding. This allows for better compression at higher bit rates compared to the compression of a simple signal or CBR.

WAVE file
This format is used by Windows to store audio signals free of sound quality loss. Examples of sources of this sound quality could be: Audio CD's, Film soundtracks and records. All signals are copied exactly. The quality in the WAV file is the same as in the original data. But, in order to have this kind of quality it is necessary to have a large amount of free hard disk space.