

CyberLink
PowerDVD™
3.0

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PowerDVD

User's Guide

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1

The PowerDVD

In the beginning, when DVD technology began imprinting its infallible legacy onto the unsuspecting computer world, DVD playback software like PowerDVD was there every crucial step of the way. Now, as DVD mania sweeps across our burgeoning planet, PowerDVD is still perched atop the DVD software arena as the best and most recognized DVD software around.

PowerDVD simply exudes excellence. With exclusive features like skins selection, bookmarking, and unlimited screen capture, there are no legitimate competitors. Add to this PowerDVD's unparalleled video and audio quality, support for a vast array of hardware, closed captioning, and instant access to relevant DVD resources on the Internet through its own proprietary i-Power function, and it's no wonder PowerDVD is still the king and remains the number one choice in DVD technology.

MAIN FEATURES

High Definition Video Playback

- Supports full resolution video playback at 720 x 480 for NTSC and 720 x 576 for PAL
- Displays a vast array of viewing screens: normal display (4:3 video for 4:3 display); letterboxed (16:9 or wider video for 4:3 display); pan&scan (16:9 or 2:35:1 video for 4:3 or 16:9 display) and widescreen (16:9 video for 16:9 display). (Refer to Appendix A for more information.)
- Displays correct aspect ratio and deinterlaced video frame capturing
- Supports Motion Compensation/IDCT (Inverse Discrete Cosine Transform), VGA hardware acceleration information (refer to Readme file)
- Supports DVD (MPEG-2) and VCD (MPEG-1) video playback
- Enriched playback smoothness and removal of jitter/jerkiness
- Enhanced video quality in SWMC modules for MMX-only machines and IDCT module

Flawless Performing Audio Features

- Certified MMX Dolby Digital 2/4/6-channel decoder with (floating point) Pro-Logic decoder
- Supports SPDIF pass-thru for Dolby Digital (AC-3) and Digital Theater System (DTS) for enhanced audio fidelity
- Supports MPEG-2 audio and LPCM (Linear Pulse Code Modulation) software decoder
- Supports 2-ch surround effects including DS3D, A3D and QXpander for simulated surround audio effects
- Windows 2000 multi-channel (Creative!) and SPDIF (Crystal 654630/4624) support
- Supports Microsoft DirectSound standard interface for DVD video game play
- Supports 2-ch output with downmix algorithms (e.g. Stereo and Dolby Surround)

- Supports multi-channel output for mainstream sound cards
- Supports karaoke and MP3 playback

Complete Navigational Support

- Titles and chapters navigation through numerous and blazing fast methods
- Navigation slider allows a direct and instantaneous link to any scene
- Fast forward speeds of 1/2X, 1X, 1.5X, 2X, 3X, 4X, 6X, 8X
- Rewinding speeds of 1/2X, 1X, 2X, 4X, 8X
- Enhanced navigation speed/conformance (kernel loading speed/accurate random access)
- Step frame feature incorporating both forward and backward directions
- Digital zoom at 4x and 9x equipped with digital indicator
- AB repeat function that lets users set their personal scenes for repeating to your heart's delight

Excellence in Any Language

- Dual subtitles capability
- Closed Captioning support
- Languages and subtitles selection

Exclusive Features

- i-Power instantly takes you to the Internet!
- Provides an assortment of new skins to choose from!
- Bookmarks your favorite scenes
- Bookmark Viewer provides visual bookmarks display
- Capture your favorite DVD scenes that save to desktop or as an image file
- Parental control with multi-user administrative controls
- Color controls and screen size control
- Creates playlists along with shuffle and repeat functions for

video files

- Multiple angle selections
- CSS (Content Scrambling System) standard decryption compliant
- Implemented Analog Protection System (Macrovision) that supports PC to TV display
- WHQL (Windows Hardware Quality Labs) certified
- Supported file formats:
MPG, .VOB .ASF, .M1V, .M2V, .MOV, .QT, .AVI, .WMV, .DAT, .VRO, .WAV, .MID, .WM, WMA, MP2, MP3, .RMI

Unrivalled Hardware Compatibility

Works with all DVD-ROM drives, sound cards, VGA cards and motherboards. For a complete list of hardware compatibility tests from CyberLink's testing lab, please visit our website at:

<http://www.gocyberlink.com/>.

SPECIFICATIONS

Video

- MPEG-2 video streams comply with Main Profile at Main Level and Simple Profile at Main Level
- MPEG-1 video stream
- Supports .MPG, .VOB, .ASF, .M1V, .M2V, .MOV, .QT, .AVI, .WMV, .DAT, .VRO file formats

Audio

- Dolby Digital (AC-3) audio support for DVDs
 - Sampling rates: 32, 44.1, and 48KHz
 - Downmixing from 5.1 channels to 2 channels
- Linear PCM (LPCM)
 - Sampling rates: 48k and 96 kHz
 - Quantization level: 16, 20 and 24 bits per sample
 - Downmixing from 5.1 channel to 2 channels
- Also supports .WAV, .MID, .WM, WMA, MP2, MP3, .RMI files

Subtitles

- Number of subpictures: 2 (Closed Captioning and subtitles)
- Number of streams: 32 (DVD specifications' maximum)
- Picture data size: 52 KB (DVD specifications' maximum)

Navigational Features:

- Multiple languages: 8 (DVD specifications' maximum)
- Multiple subtitles: 32 (DVD specifications' maximum)
- Multiple angles: 9 (DVD specifications' maximum)
- Parental level control: 8 levels (DVD specifications' maximum)
- Menus: Title, Root, Audio, Subtitle, Chapter, Angle

- Multiple story lines
- Menu language selection
- Seamless camera angles
- Non-seamless camera angles
- PGC/Cell/VOBU Still
- Karaoke audio mode change

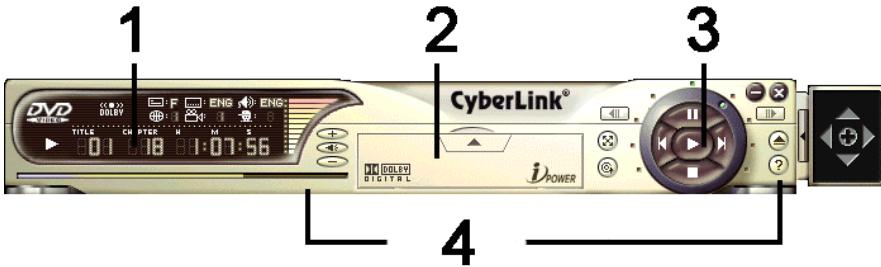
SYSTEM REQUIREMENTS

Please make sure your system meets the following minimal requirements before installation:

- Windows ME, 2000, 98, 95 or Windows NT4.0 SP5+ operating systems
- Intel Pentium II 350MHz with MMX technology or above
- DVD-ROM installed
- Audio card supporting 44.1KHz or 48KHz sampling rate
- 32MB main memory
- Hard disk requirement of at least 20MB
- Display card supporting DirectDraw Standard

2

A Visual Overview



- | | | | |
|---|---------------|---|---------------|
| 1 | Display Area | 3 | Control Wheel |
| 2 | Control Panel | 4 | Main Controls |



Note: This section only applies to the default skin of PowerDVD (i.e. Oscar). For other skins, functionality and descriptions are extremely similar.

DISPLAY AREA

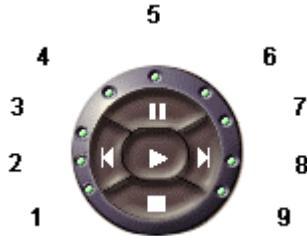
Icon	Description
	DVD video is the current media
	Digital files are the current media
	VCD is the current media
	Audio CD is the current media
	Stereo is the current audio mode
	Dolby is the current audio mode

Icon	Description
	4 speaker is the current audio mode
	6 speaker is the current audio mode
	SPDIF is the current audio mode
	Denotes current drive
	Denotes current subtitle
	Denotes current audio stream
	Denotes current region
	Denotes current angle
	Denotes current parental control

MAIN CONTROLS

Icon	Hot Key	Description
	Ctrl-N	Minimizes user interface
	Ctrl-X	Exits PowerDVD
	Z	Zooms to full screen and to windows mode
	O	Denotes Disc mode. Press to switch modes.
	O	Denotes File mode. Press to switch modes.
	Ctrl-E	Ejects discs from CD/DVD-ROM drive
	F1	Accesses online help
	+	Increases volume
	-	Mutes volume
	Q	Decreases volume
	/	Menu pad used to navigate between DVD title menu selections
	/	Number pad for entering numerical file or audio CD selections
	N/A	Click anywhere along the slider to navigate within a given chapter, VCD, CD or file

CONTROL WHEEL



1	8X Reverse	6	1X Forward
2	4X Reverse	7	2X Forward
3	2X Reverse	8	4X Forward
4	1X Reverse	9	8X Forward
5	Pause		



Note: The green point roughly marks the shuttling locations above. Forward speeds of 1/2X, 1.5X, 3X, and 6X and 1/2X rewinding speed are not pictured above but are sequentially located between their respective locations above.

Icon	Hot Key	Description
	Enter	Plays DVD, VCD, CD or files
	Space Bar	Pauses playback
	S	Stops playback
	N	Jumps to next chapter
	P	Returns to previous chapter
	Ctrl-B	Steps backward one frame
	T	Steps forward one frame

CONTROL PANEL



Hidden Control Panel



Disc Mode



File Mode

Icon	Hot Key	Description
	K	Switches among karaoke modes
	C	Captures video content as bitmap image files
	A	Switches among available angles
	R	Goes up to previous section when navigating DVD title menu selections
	X	Sets A and B points for repeating specific user-defined scenes during playback
	H	Switches among available audio streams
	Ctrl-R	Repeats titles, chapters or scenes
	U	Switches among available subtitles during playback
	L	Accesses all available menus
	Ctrl+F2	Bookmarks specific scenes in DVD
	F2	Directly goes to bookmarked scenes
	F3	i-Power takes you to the Internet directly
	Ctrl-C	Configuration settings are all located here

Icon	Hot Key	Description
	U	Shuffles playlists in File mode



Note: For further information on all the above functions, please go to the next chapter and the Control Panel section.

I-POWER

Icon	Description
	Goes back to previous Web page
	Goes to next Web page
	Stops loading Web page
	Refreshes Web page
	Returns to the i-Power home page
	Returns to PowerDVD and exits i-Power

3

Getting Started

REGIONAL CODE SETTINGS

Most of the DVD titles in today's markets are governed by a regional code that divides the world into six separate regions. This ensures maximization of revenues for motion picture studios' theatrical and home releases, whose timing vary from region to region.

- 1 Upon inserting your DVD, note the following dialog box:



- 2 Press **OK**. After the region has been set, this dialog box will no longer prompt you unless an encoded DVD title from another region is inserted.



Caution: *PowerDVD will only allow you to change the regional settings five times until the regional code is fixed. Subsequently, playback of DVD titles will be specific to one region. Some DVD titles may not be region-specific.*



Note: *The regional code settings' configuration depend on your hardware or software setup. Some hardware or software types may not allow region code settings.*

PLAYING DVD

Now you are ready to play DVDs. If you have already set your region code, skip 1:



- 1 Insert your DVD disc. Be sure you are in Disc mode. Press **Play**.
- 2 A warning message or copyright information will appear depending on the DVD title. Usually, this content cannot be skipped over.



***Note:** If the navigational slider's color is not uniform, some warning messages and the like may be skipped over. If the color is uniform, shuttling will be disengaged.*

- 3 After all the promotional content, you will be presented with the main menu. With your mouse, choose a selection and click once.



- 4 To use the **menu pad**, press the outer button to the farthest right of the user interface and a pad will appear (located to the right of Eject). Press the button in the middle to **Enter**.
- 5 The DVD will begin playing.
- 6 To **Stop** or **Pause**, press them accordingly.



***Tips:** If you press Stop, the DVD will cease to play. If you would like to watch the DVD again, you will have to endure the warning messages and the menu selections again. The most efficient way would be to go back to the title menu through the **Menu** command in the control panel.*

Step Frame Functions



These functions are available when the DVD is in pause mode. The **Step Forward** button will go forward one frame. The **Step Backward**

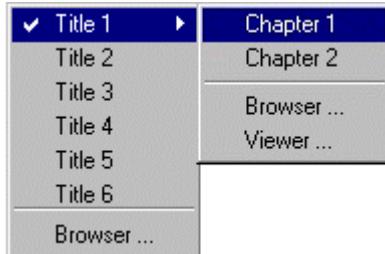


function steps backward but will only return to the I-frames within a group of frames. An I-frame makes up the reference frame within a group

of pictures (GOP), which is a technology that forms the basis of MPEG technology (refer to Appendix A for more information).

Playback Menu

Another great feature is a shortcut menu for titles and chapters. Point with your cursor and position it on the Play button. Then, **right click** for the menu:



The check mark signifies the current playback title while the arrows to the right of the title signify further selections in the form of chapters. Simply use your mouse and point it at the desired title and it will be highlighted. If there are further chapter selections, that menu will also appear (as demonstrated on the right above). Click once when you have decided on the chapter or title.

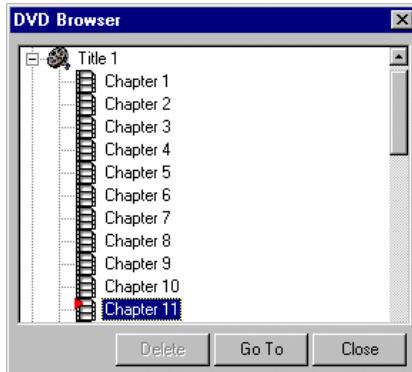


Info: Generally, a DVD title/movie consists of titles, with each title possessing a number of chapters.

Instead of calling out the chapters' menu, another method is to select the **Browser** by clicking once:

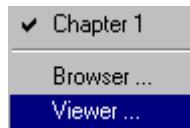


The **Browser** as shown:

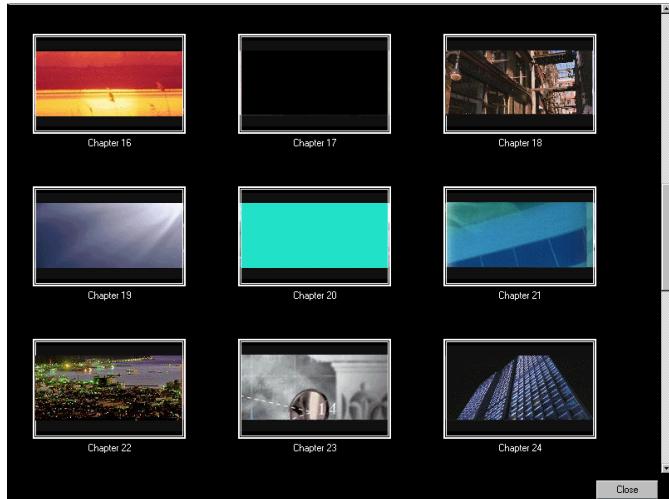


The red pointer signifies which chapter you are playing currently. Simply select a chapter and press **Go To** or **Close** to exit.

The Viewer



In the chapter menu pictured above, there is the Browser selection and also a **Viewer**. The Viewer is like the Browser except that it will display the first scene of each chapter visually! Pick one using your mouse and click it twice or press **Close** to exit.



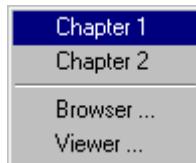
Navigating between Titles and Chapters



The Jump functions (**N**ext and **P**revious) can be employed only during playback or in pause mode. Simply press them to skip a chapter or to return to one.

Jump Menu

Point your mouse on the Jump functions and right click for the jump menu. It is exactly the same as the previous section's except that it only features the chapters' menu excluding the titles' menu:



Follow the instructions in the previous section in using the **B**rowser and **V**iewer.

Shuttling and Rewinding

Please refer to the last chapter and the Control Wheel section. Click along the outside perimeter for shuttling at various speeds. Designated points on the left side disclose reverse speeds of 1/2X, 1X, 2X, 4X, and 8X. The center point is Pause, while the right side disclose forward speeds of 1/2X, 1X (play), 1.5X, 2X, 3X, 4X, 6X, 8X.



Tips: *The slow motion speed are located between the pause and 1X (play). Click in a very precise fashion!*

Zooming



This function switches your screen mode from windows mode to full screen mode and vice-versa.

Disc and File Modes



The default will be the Disc mode. Press this button to switch to file or back to Disc mode depending on the media you want to play.



CONTROL PANEL FUNCTIONS

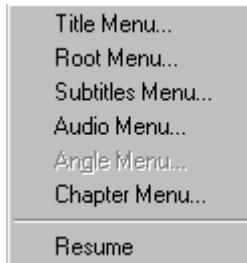
The control panel's cover can be hidden. Position the cursor in the upper center area of the control panel and a **Show/Hide (W)** hint will appear. Press once to hide the control panel and again to show.

Below are instructions in using the functions located within the control panel.

Using the Menus



Press this once after playback has begun (after the warning messages) or when the title menu is displayed and a menu will appear:



- For some DVD titles, the **Title** and **Root Menu** (for special features) are analogous. The functions of the remaining menus are similar to the menu items for DVD titles.
- On occasion, the **Subtitles Menu** is also analogous with the **Audio Menu**.
- Sometimes, DVD titles will not allow you to select menus other than the Title Menu. Users will have to directly go to the Title Menu of the DVD itself and access the settings through it if this is the case.
- Select **Resume** to return to the last scene during playback.



Note: When menu selections are grayed out, this signifies that the DVD title does not provide for such a selection.

Bookmarking Your Favorite Scenes



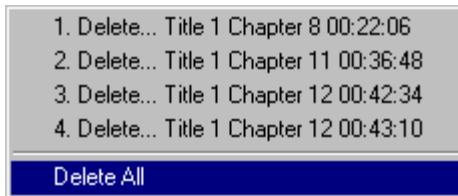
During playback, you may bookmark your favorite scenes for future reference! So anytime in the future when you would like to return to a specific scene, PowerDVD makes it splendidly easy. All you have to do is press the **Bookmark** button in the control panel when your favorite scene is playing.



The **Goto Bookmark** function directly goes to the next bookmark in chronological order located in the control panel. Press it during playback.

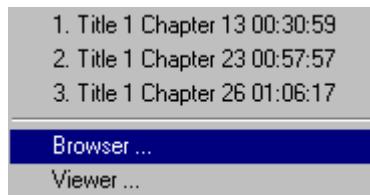
Bookmark Menu

Simply point your cursor over **Bookmark** after you have added a few bookmarks and right click:

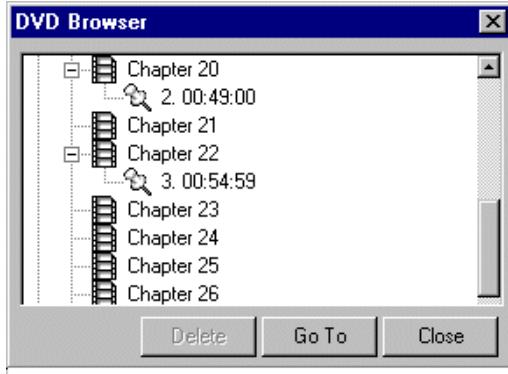


You may delete old bookmarks or delete them all at once by selecting **Delete All**.

Position the cursor over the **Goto Bookmark** button in the control panel and right click for this menu:

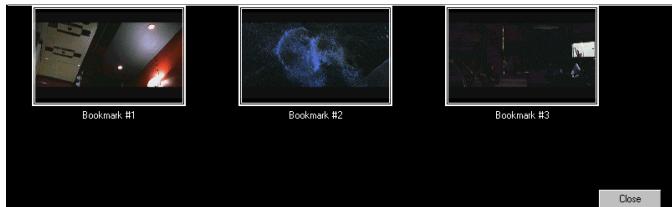


This provides a direct link to any bookmark. The **Browser** will display the bookmarks' locations as embedded in the chapters:



Select a chapter or bookmark and press **Go To** or **Close** to exit.

The **Bookmark Viewer** will display the first scene of every bookmark:



Repeating Your Favorite Scenes



Simply press the **Repeat** button during playback for repeating the chapter. To repeat titles, press twice.



AB Repeat

This function allows user to repeat any part of a DVD title they wish, like their favorite scenes.

- 1 During playback, set A by pressing the **AB Repeat** button at the beginning of the segment you would like to repeat.

- 2 **Press it again** in order to set B where you would like the segment to end. The segment will now repeat instantly and loop continuously.
- 3 To clear, press the **AB Repeat** button, **Repeat** button or navigate out of this segment's range (i.e. with the navigational slider, shuttle, or jumping to the next or previous chapters).

Capturing Your Favorite Scenes



During playback, simply press the **Capture** button to capture any video content. To be more precise, you may pause the scene or even play in slow motion and capture.



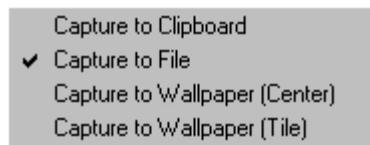
***Note:** The location of the captured images' can be set in the Configuration area and are saved in .BMP format. Go to the next chapter for more information.*



***Info:** .BMP (Bitmap) files are uncompressed image files that take up the most disk space as compared to compressed formats such as .JPG and .GIF image formats.*

Capture Menu

Position the cursor over the Capture button and right click for the Capture menu:



These are the same selections found in your Capture configuration area.

- **Capture to Clipboard** captures the image onto your Windows' clipboard.
- **Capture to File** will capture the image directly into a folder you have selected (go to the Capture configuration area to set the folder).

- **Capture to Wallpaper (Center)** will capture the image, place the image centered on your desktop in its original size, and save it automatically in your default Windows' System folder.
- **Capture to Wallpaper (Tile)** will capture the image, place the image on your desktop in its original size following a tile format, and save it automatically in your default Windows' System folder.

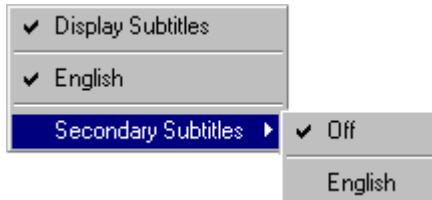
Displaying Subtitles



This feature, located in the control panel, is only available during playback. Press it to switch among subtitles, but the number of subtitles all depend on the DVD title.

Subtitles' Menu

Position your cursor above the **Subtitles** button and right click for the menu. Then pick a subtitle and click it for selection:



The **Secondary Subtitles'** selection points to the availability of Closed Captioning for a particular DVD title.

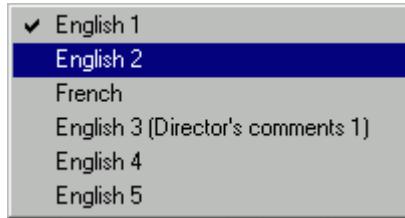
Switching Audio Streams



This feature is available during playback. Simply press to switch among the available audio streams (e.g. different languages) where the number of streams depend on the DVD title itself.

Audio Streams' Menu

Right click on the **Audio Streams** button to call up this menu:



Just select one and click.

Switching Among Available Angles



This feature has not gained prominence as of yet among DVD authors, but is available on occasion for music concert DVDs. Press this during playback to switch among available angles.

Selecting Karaoke Options



Be sure to look for the Karaoke Logo on the package for not all karaoke titles fully support Dolby AC-3.

- 1 Upon inserting your karaoke disc, be sure PowerDVD is in disc mode and your microphone is installed properly.
- 2 Press **Play** and then the menu screen will appear. Use your **Menu Pad** or choose a song by clicking on it with your mouse.
- 3 During playback, click on **Karaoke** and then select from: dual vocal channels on (**Vocal Both**), either **Vocal 1** or **Vocal 2** on, or have both off (**Vocal None**).
- 4 Begin singing!



Note: The above options' availability depend on the DVD title's authors.

Karaoke Menu

Position your cursor above the **Karaoke** button and right click for the menu:

- Vocal None
- Vocal 1
- Vocal 2
- Vocal Both

Click once on your selection.

PLAYING VCD



- 1 Insert the VCD and start PowerDVD. Press **Play**.
- 2 The VCD will begin playing, but don't look for any title menus and such because this isn't DVD technology!
- 3 All VCDs will have the capability of navigating, so put the navigational slider to full use and navigate as you like (refer to the Main Controls section in Chapter 2).

VCD Features

VCDs come in all shapes and sizes. Some function like audio CDs and have their own tracks/chapters so thus allowing PowerDVD to jump to next and previous chapters. Other VCDs do not allow for this function but make full use of the navigational slider, which is fully operational.

Here is the breakdown for functions that may be operational but dependent on the given VCD title:

- Shuttling backwards (rewinding)
- Jumping to Next or Previous chapters

Here is a list of the available configuration boxes:

- General
- Video
- OSD
- Capture
- Audio
- Information
- Skins

The ones missing as compared to the DVD configuration are Parental Control and Screen.

PLAYING FILES

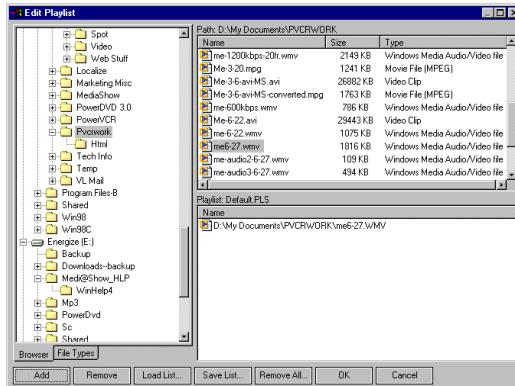


When you feel like playing files or audio CDs, simply switch the Disc mode into File mode and follow the instructions below to select, assemble, save, and rearrange Playlists for your viewing pleasure. Creating a playlist is your first step.

Creating Playlists



- 1 First press the **Mode** button via user interface if you haven't done so to switch to File mode.
- 2 Then, press **Menu** for the **Playlist** dialog box. Begin selecting your file(s) by exploring your hard drives (left side) and selecting folders which have video and audio content. Press **Add** or **Remove** as you are creating your list.



Tips: *If playing more than one file, be sure to consider the order in which you add to the Playlist, for this order will be final unless you use the shuffle or repeat functions.*

- 3 Switch to **File Types** (default is Browser) and select the desired files to be displayed so as to speed up your search. Press **Clear All** to reset your file types.



Tips: You may also enlarge your window by pointing to the right corner and resizing the dialog box accordingly.

- 4 Press **Load List...** if you have playlists in the .PLS or .M3U format.
- 5 If you would like to save your newly created playlist, press **Save List...** after you are done. Choose a location and press **Save**.
- 6 Press **OK** after you are satisfied with your current list.
- 7 Now, press **Play**. Use the **Shuffle** (explained below), **Repeat** (explained in previous chapter) or **Number Pad** (explained below) for added convenience.

Shuffling



After creating a playlist with more than one file, press **Shuffle**. Files will then be played randomly.

Using the Number Pad



After you have created a playlist or have inserted an audio CD, directly enter the disc track or file you want to play. Your entry will appear in the display area.

PLAYING AUDIO CD

For playing audio CDs, you may use the Disc or File mode.

Using the Disc Mode to Play CDs



- 1 Open PowerDVD, insert your audio CD and press **Play**.
- 2 To alter your Audio CD Playlist, press **Menu** during playback or during pause mode.



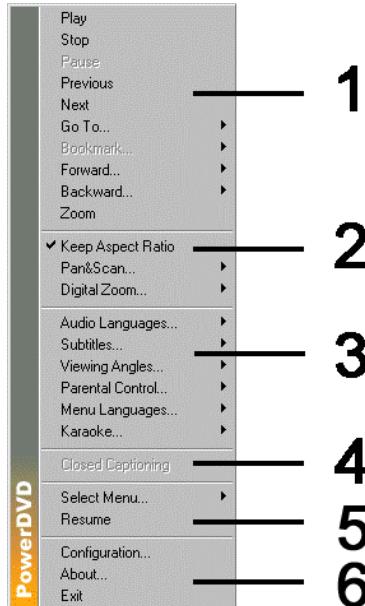
- 3 For the default setting, your Playlist will duplicate all the tracks available on your audio CD, from the left section, as pictured above.
- 4 Press **Clear** to clear your Playlist and start from scratch. Select tracks and press **Add** to add to your Playlist. For selecting multiple tracks, depress <CTRL> when selecting or depress <SHIFT> to select tracks in a row.
- 5 Press **Reset** to return to the default setting.
- 6 Press **OK** when you are finished.

Using the File Mode to Play CDs

Refer to the **Playing Files** section located before the previous section.

EXPRESS MENU

A quick and handy feature, simply click on the right button during playback mode when the cursor is positioned on the video window to activate the Express Menu.



1. Navigation Section

- The basic **Control Wheel** controls (Play, Stop, Pause and etc.) can be found in Chapter 2.
- The **Go To** option is similar to the menu list found when you right click on Play or the Jump functions. It provides a list of all the titles and subsequent chapters including a **Browser** and the **Viewer** which displays chapters visually (refer to Chapter 3 and the Navigating Between Chapters and Titles section for more information).
- The **Bookmark** function is an added feature here that provides the same functions as the Bookmark button and its menu. (refer

to Chapter 3 and the Bookmarking Your Favorites Scenes section for more information)

- **Zoom** can be found in Chapter 3 in the Zooming section.

2. Screen Section

- The **Keep Aspect Ratio** option will keep the original aspect ratio of your video content and window.
- The **Pan&Scan** feature is available for widescreen aspect ratio titles (optimal with 16:9 and 2:35:1) enhanced DVD titles which enables users to view content without black bars similar to T.V. as opposed to letterboxed screens (refer to the Screen Configuration section in the next chapter or Appendix A for more information).

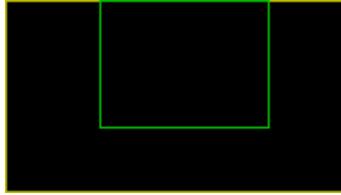


Note: When using Pan&Scan, it is possible to move the video screen simply by clicking on it and holding it down. A hand icon will appear as you drag the screen left or right. The drawback is that you will be unable to view the entire screen area at once.

Digital Zoom

This will be the only area where you may access this state-of-the-art robust feature that allows you to zoom in on any of your favorite DVD scenes.

- 1 The **full screen** mode must be employed.
- 2 Then, right click for the Express Menu and select **Digital Zoom... > 4X or 9X**.
- 3 Now, simply click and drag the screen to the area where you want to zoom in. The upper left corner of your screen will display the zoomed in area in relation (green border) to normal screen mode (orange border).



Digital Zoom 4X located in Upper Left Hand Corner

- 4 To return to the full screen mode, return to the Express Menu (right-click) and choose **Digital Zoom... > Off**.

3. Control Panel Section

- Please refer to the Control Panel section in Chapter 3.

4. Closed Captioning



Info: Basically, closed captioning is made available by national organizations and are tailored towards the hearing impaired. The captions are found in video content and in the form of text located somewhere on the picture. Closed captions, as opposed to open captions, are hidden in the video signals and need a special decoder.

- If this is supported by your DVD title, the selection will be available for selection.

5. Menu Section

- Please refer to the Control Panel section in Chapter 3 for more details.

6. Main Section

- Please refer to the next Chapter for more information on Configuration.

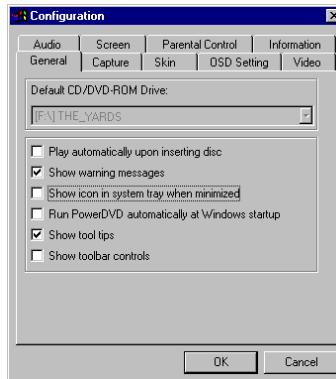
4

Configuration

GENERAL CONFIGURATION



This is the default configuration setting suited for users in managing their DVD preferences.



- In case you have multiple drives, the **Default Drive** option let's you select the most appropriate drive. Otherwise, the default setting should be correct. It will also display the title of the current disc.
- Check the **Play automatically upon inserting disc** if you would like PowerDVD to automatically play discs whenever they are inserted.
- Check the **Show warning messages** if you would like to display warnings and additional information.
- **Show icon in system tray when minimized** displays the PowerDVD in the lower right corner of your screen area (by the time) in the system tray when minimized.
- When **Run PowerDVD automatically at the Windows'**

startup is checked, every time you turn on your computer, PowerDVD will start (in Windows OS mode).

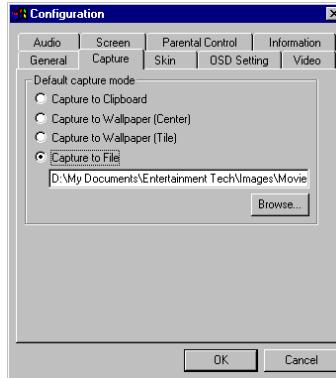


Note: The latter two options may be linked, so on occasion, if one is checked, the other will automatically be checked too.

- **Show Tool Tips** will display a hint, in the form of a yellow text box, that will reveal what the function is whenever your cursor is positioned over a specific function or feature.
- **Show toolbar controls** will create a PowerDVD user interface toolbar with the most often used controls located on the top of the screen, which will be hidden when not activated, for easier access and unbridled convenience.

Go to another configuration area or press **OK** when you are finished.

CAPTURE CONFIGURATION



This provides the same functions as the Capture menu detailed in the last Chapter. The file designation for capturing frames is C:\Program Files\Cyberlink\PowerDVD\Images\PDVD_.bmp. Select **Browse** to select another folder. Go to another configuration area after you are finished or press **OK**.

SKIN CONFIGURATION

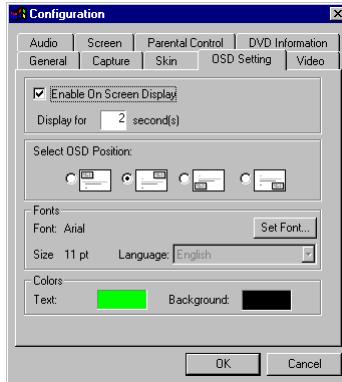


This configuration lets you be in charge of your PowerDVD appearance.

- Select your preferred user interface or skin and check **Use random skin at startup** to use random skins every time you start PowerDVD.
- To select a new skin, click on its name (the preview will be provided below).

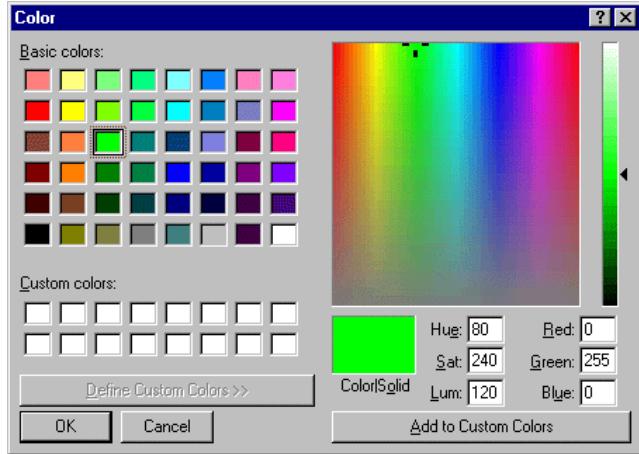
Go to another configuration area or press **OK** when you are finished.

OSD SETTING CONFIGURATION



This configuration controls the On Screen Display, which informs users when a function is in use and the current status of PowerDVD.

- Check **Enable On Screen Display** to enable.
- In the next field, set the time (seconds) you would like the OSD to be displayed for.
- For **Select OSD position**, choose among the four locations that will display the OSD.
- For the next **Fonts** section, press **Set Font** to select another font and if the **Language** field is not grayed out, choose the preferred language.
- For the **Colors** section, click on the color boxes directly to change the text or the background colors. The following will appear:

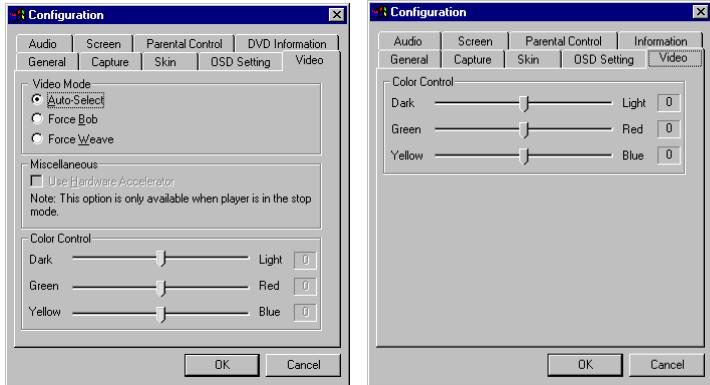


- Choose a basic color or customize your own color by changing the Hue, Saturation, Luminosity, Red, Green or Blue numerical fields.
- Or, you may directly click the color matrix on top of the aforementioned fields (horizontal alters the hue while clicking vertical alters the saturation) and the color chosen will be instantly displayed below in the **Color/Solid** section (the bar to the farthest right alters luminosity).
- After you have customized it, press **Add to Custom Colors** and it will be displayed in the Custom colors section on the left. Choose your custom color by clicking on it and press **OK**.

Go to another configuration area or press **OK** when you are finished.

VIDEO CONFIGURATION

Depending on your PowerDVD model, there will be two different configuration boxes:



- For the **Video Mode** section, the default setting is **Auto-select**. Video content encoded from an interlaced signal would use the **Bob** mode. The **Weave** mode is preferred for titles with video content encoded from the original film. The Auto-select mode will first use Weave mode to ensure quality and later switch to Bob mode if interlaced content is detected. For more information on interlaced and non-interlaced signals and worldwide television standards, please refer to Appendix A.



Note: Removal of motion artifacts is not available under Weave mode, but is available under the Bob mode where they are removed with minor video quality loss.

- The next selection is **Use Hardware Accelerator**. Check here if you would like to activate IDCT and Motion Compensation (refer to the next section for more information). By enabling User Hardware Accelerator, some features will be unavailable. Please refer to the Readme file for a complete list of supported display chips.



Info: This option is specially designed for display chips with advanced video acceleration functions such as Motion Compensation and

IDCT (Inverse Discrete Cosine Transform). When both functions are activated, IDCT can accelerate DVD playback by transferring approximately 70% of the DVD decoding process onto the card itself.

Display Chip Features' Availability	Pure Software	Hardware Accelerator Enabled
Color Control	√	*N/A
Capture Frame	√	N/A

Video features affected by **Use Hardware Accelerator**

N/A = Not available

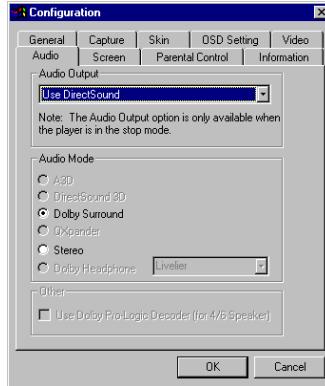
* NVidia display chips allow brightness controls adjustment

- For adjusting the **Color Control**, simply drag and release brightness or one of the colors when in playback or pause mode. The counter to the right of each color displays the degree of modification.



Caution: *Certain controls and other Video Mode selections will be unavailable if PowerDVD is utilizing hardware acceleration for movie playback. Refer to the chart above.*

AUDIO CONFIGURATION



- Depending on your software, choose the best suited **Audio Output** by clicking once and making your selection from the drop-down menu.
 - **DirectSound** is Microsoft's application programming interface (API) and makes up the wave-audio component of the DirectX® API (refer to below for more information or Appendix A).



Info: DirectSound provides low-latency mixing, hardware acceleration, and direct access to the sound device all the while maintaining compatibility with existing device drivers. It also enables wave sound capture and playback, and supports property sets that enable application developers to take advantage of extended services offered by sound cards and their associated drivers.

- **WaveOut** is also an API developed by Microsoft but unlike DirectSound, it offers no hardware assistance, precedes DirectSound in the realm of audio technology, and is the most basic audio output method employed by all CPUs running Windows OS.
- The **SPDIF** is an advanced technological **Digital Interface**, as opposed to transferring signals via conventional analog interfaces, designed by the **Sony** and **Philips** corporations. If the SPDIF/AC3 is automatically selected, you'll be able to enjoy true 6 speaker output quality. Note that the rest of the audio surround options will be unavailable if SPDIF is in use

with the same holding true if the **4** or **6 Speaker** selections are chosen.

- The **4** or **6 Speaker** selections are for computers which are equipped with 4 or 6 speakers. After choosing this selection, the **Dolby Pro-Logic Decoder** option found at the bottom will be available for selection.
- The majority of **Audio Mode** selections will depend on the previous **Audio Output** section. If you choose **Use DirectSound** or the **WaveOut** option, **Dolby Surround** and **Stereo** (referred to as downmixed stereo channels as opposed to true surround sound) will be available for selection. **A3D** and **QXpander** is OEM optional and may not be available for selection.
- The **Dolby Headphone** (optional) section's description is as follows:
 - **Reference** simulates a small, well-damped private room appropriate for both movies and music-only recordings. It is equivalent to the Dolby Headphone "Reference Room" and is provided on all Dolby Headphone equipped products.
 - **Livelier** simulates a more acoustically "live" room particularly suited for music listening (e.g. intimate jazz clubs).
 - **Larger** simulates larger venues like a concert hall or movie theater.
- The **Dolby Pro-Logic** option will be available only under the 4 or 6 Speaker audio output and allows users to experience an enhanced simulated surround sound as opposed to normal Dolby Surround (left, right, surround) by supplying a higher separation among four channels (left, center, right and surround) and more accurate sound positioning.



***Note:** If the SPDIF Output is enabled, the volume control for PowerDVD will be disabled as your decoder assumes the task. For the latest in PowerDVD's SPDIF support features, please refer to the Readme file.*

More Technical Information

For more technically-oriented users, provided are the following summary tables illustrating the specific capacities for audio configuration:

Effects Applicable \ Audio Output	SPDIF for AC-3 Output	DirectSound	WaveOut
A3D	N/A	*	N/A
DS3D	N/A	*	N/A
Dolby Surround	N/A	√	√
Stereo	N/A	√	√

Audio Output and Effects Applicable

* Depends on sound cards' support for 3D sound

Audio Stream Type \ Audio Output	SPDIF for AC-3 Output	DirectSound	WaveOut
DTS	√	N/A	N/A
AC-3	√	√	√
MPEG Audio	N/A	√	√
LPCM	N/A	√	√

Audio Output and Audio Stream Types

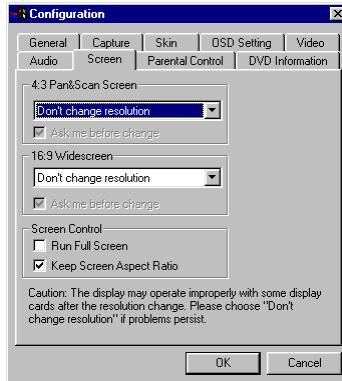
Effects Applicable \ Audio Stream Type	AC-3	MPEG Audio	LPCM
A3D	√	√	√
DS3D	√	√	√
Dolby Surround	√	N/A	N/A

Effects Applicable \ Audio Stream Type	AC-3	MPEG Audio	LPCM
Dolby Pro-Logic	√	N/A	N/A
Stereo	√	√	√

Audio Stream Types and Effects Applicable

N/A=Not available

SCREEN CONFIGURATION



This configuration allows for modifications according to preferences.

- Depending on your screen type, change your resolution to a larger or smaller one by clicking on the drop-down menus of **4:3 Pan&Scan Screen** and **16:9 Widescreen**. Usually, the default set by your CPU will be suffice.



Note: Depending on the movie title, some DVDs may be better suited for the 16:9 widescreen other than the standard 4:3 letterbox screen.

- Click on **Run full screen** if you would like the playback default to use your monitor's maximum screen area. Click on **Keep screen aspect ratio** if you would like the default to be keep the original DVD-authored aspect ratio of the DVD (e.g. 2:35:1).

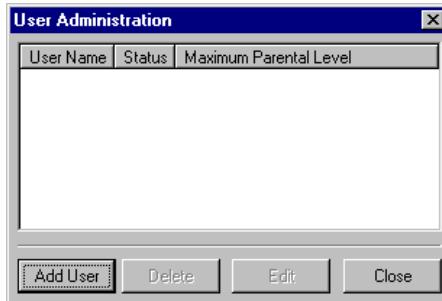
PARENTAL CONTROL

After installing PowerDVD, the default operation mode is a single-user mode that grants you the privilege to access all levels of DVD titles. PowerDVD's **Parental Control** configuration restricts viewers' contents similar to the one imposed by movie theater studios. Provided below is a ratings' guide and instructions for setting multi-user modes to restrict access privileges:

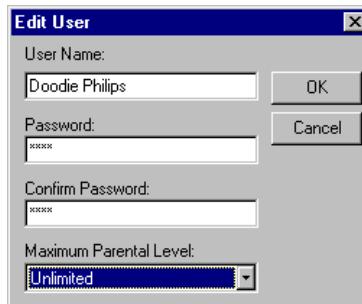


Rating	Description
G	Suitable for general audiences
PG	Parental guidance suggested
PG-13	Parental guidance suggested; unsuitable for children under 13
R	Restricted
NC-17	Adult theme or content, not suitable for children under 17

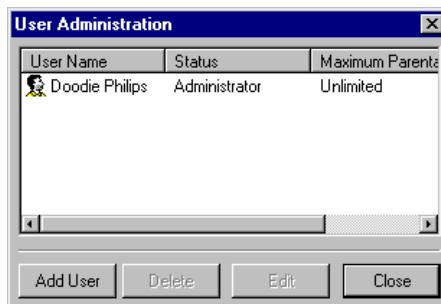
- 1 Call up the Express Menu and select **Parental Control** or go to the control panel and click on **Configuration**.
- 2 Select **Administration**.



- 3 Click on **Add User**.
- 4 Fill in the proper fields and create a password. Then, select **Unlimited** in the Maximum Parental Level field. Press **OK**.



- 5 The following dialog box appears after completing the first step:

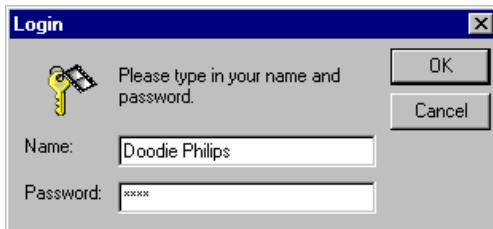


- 6 The next step is to add users and limit their access accordingly. Repeat steps 3-7 from above to add more users.

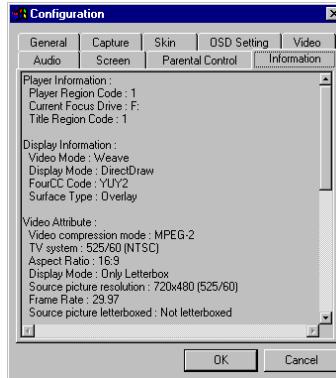


Caution: *The initial user will be identified as the default administrator with the sole right to add, delete and edit users' privileges. If the administrator does not have unlimited access, some higher-rated DVDs titles will be inaccessible. Administrators should select the unlimited access option.*

- 7 The next time a DVD title with parental control restrictions is inserted, users will be requested to login. After startup, this dialog box will appear. Type in your name and the correct password and press **OK** to begin DVD playback.



INFORMATION



Player Information

The region code for the player and the DVD is displayed here along with the DVD-ROM drive designation.

Display Information

- **Video Mode:** Described in the previous **Video Configuration** section.
- **Display Mode:** N/A is displayed during stop mode. Usually DDraw (DirectDraw) is shown if hardware was set up properly. If GDI is displayed, the VGA card driver or Microsoft DirectX driver was not installed properly.
- **FourCC:** Four CC is a Windows' designation for the digital video format standard. Often YV12, YUY2, UYVY, or MCS3 is displayed which may include other formats. After installing PowerDVD, the diagnostic program will automatically determine the best format. However if Display Mode shows GDI, N/A is displayed for this field.
- **Surface Type:** The default commonly used that supports display captions is the "overlay mode."



Tips: We recommend using DDraw compliant display cards so as to utilize the Overlay feature.

Video, Audio and Subpicture Attributes

These attributes outline the statistics of the current DVD or VCD and only some will be explained briefly. Please refer to Appendix A for more information. For the video attribute:

- The **compression mode** for DVD is MPEG-2 and for VCD, MPEG-1.
- The first figure for **TV system** is the number of horizontal lines. The second is number of fields (e.g. 525/60 is standard for NTSC television signals).
- The **aspect ratio** depends on the DVD title. 16:9 is the ratio for most widescreen titled DVDs and widescreen televisions nowadays.
- **Source picture resolution** is the size of the resolution. The MPEG-2 or DVD standard is 720 x 480.
- **Frame rate** is number of frames per second. 30 is the standard for NTSC and MPEG-1 and 2.
- **Source picture letterboxed** denotes if DVD title is letterboxed (ratio is 4:3).
- **Bitrate** is the bitrate size for the particular scene that is being decoded.

For the audio and subpicture attributes:

- The **audio coding** mode is the decoding mode, for example, Dolby AC-3.
- The **sampling rate** determines the sound frequency range. The higher the better quality.
- **Number of audio channels and streams** basically calculate the number of streams (i.e. languages, commentaries or karaoke). Each stream will have a different audio channels' sum. For e.g., some streams may support Dolby Digital 5.1, and some may just be your basic 2 channels.
- **Bitrate** is naturally a lot smaller in size as compared to video here and is measure in kilobits per second as opposed to megabits per second.

- For the **Subpicture attribute**, there is only a tally of the number of subtitles available along with closed captioning.

Hardware Information

Not displayed in the above graphic, Hardware Information displays which CPU instruction sets PowerDVD is optimized for:

- IA (Intel Architecture) MMX Technology
- The IA Streaming SIMD Extension
- 3DNow! Technology
- Enhanced 3D Now! Technology

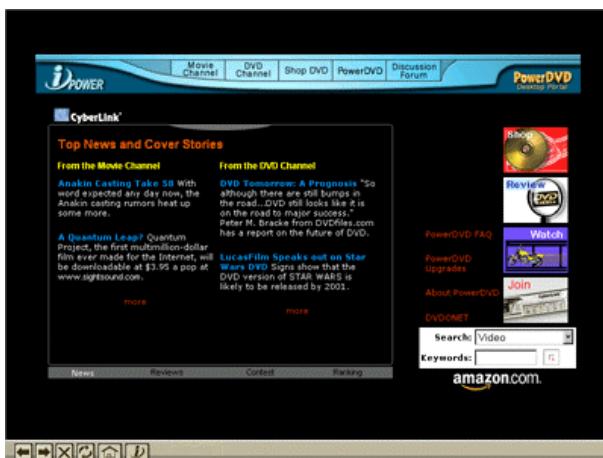
The first two are Intel Architecture (IA) technology while the last two belong to its competitor, AMD (Advanced Micro Devices).

5

i-Power

PORTAL PAGE CONTENT

The i-Power function is the wave of the future with its precocious characteristics and functionality. Powered by an embedded browser and exceptional links to any kind of DVD information under the sun, i-Power hopes to serve your creative nature unconditionally (as shown below).



DVD aficionados, fans, and beginners will truly appreciate the convenience of **i-Power** and its direct and instantaneous link to the Internet. Buying, researching, and searching for DVDs online has never been more fun or accessible, especially after watching a powerful and provoking DVD title that leaves you breathless and wanting for more.

Simply click on i-Power in the control panel to access the embedded browser known as i-Power and visit the links to express your thoughts and ideas on individual titles, surf to the **Movie Channel** section for

heaps and piles of entertainment news and movie industry gossip, go shopping for the newest DVDs at **Shop DVD**, visit the **DVD Channel** for all the latest in DVD technology, take a gander around the **Contest** section for your chance to win incredible prizes, stroll around the **Rankings** area to see which movies and DVDs are setting the world on fire, link up with the **PowerDVD** section for updates on your software DVD player, check out the latest in **Reviews**, and finally, hit the **Discussion Forum** to fully express yourself!

ACTIVATING I-POWER



- 1 Press **i-Power** located in the control panel.
- 2 Click on any of the links. Press **Back** and **Forward** as you please.
- 3 Press **Home** to return to the initial i-Power portal page.

6

Technical Support

Before asking CyberLink Corp. for technical support, please refer to this user's guide or online help for more information. If your problem is still not resolved, the following section provides ways to obtain technical support:

WEB SUPPORT

Solutions to your problem are available 24 hours a day at our Web sites in Taiwan, USA, or Japan:

www.gocyberlink.com

www.cli.co.jp

You may also find solutions in the FAQ section or at our Web sites. In addition to frequently asked questions, we also provide troubleshooting techniques, the latest in product news, and other relevant information.

EMAIL/FAX SUPPORT

In order to answer your technical questions as quickly as possible, please send email to: powerdvd@gocyberlink.com. Or fax us at: (886) 2-8667-1467.



***Note:** Technical support is only offered to registered users, so please make sure to jot down your Product Key located on your CD case when emailing or faxing.*

TELEPHONE SUPPORT

Users are welcome to call the CyberLink's Technical Support Hotline at (886) 2-8667-1298. Phone support hours are Monday to Friday, 9:00 AM - 5:00 PM (GMT +8:00) Taiwan local time excluding holidays. When calling for support, please have your computer ready and provide us with the following information:

- your registered Product Key
- the product version
- Windows' OS version
- hardware types (capture card, sound card, VGA card) and their specifications
- warning messages displayed
- detailed problem description and when it occurred



***Note:** Technical support is only offered to registered users, so please make sure your Product Key is ready when calling.*

A

Appendix A

WHAT IS MPEG?

MPEG, simply, is an acronym short for the Moving Picture Experts Group which belongs to the family of ISO/IEC standards (International Organization for Standardization and International Electrotechnical Commission). It is a compression technology for digital video and audio signals intended for consumer distribution. Included in the MPEG family are:

- MPEG-1 (Audio/Video)
- MP3 or MPEG-1 Audio Layer 3 (Audio)
- MPEG-2 (Audio/Video)
- MPEG-4 (Interactive Multimedia System)
- MPEG-7 (Multimedia Database & Retrieval)

MPEG technology is defined as a bit-stream representation for synchronized digital audio and digital non-interlaced or interlaced (MPEG-2 includes both) video compressed to fit into a certain bandwidth:

- MPEG-1 -- 1.5-4.0 Mbps (megabits per second)
- MPEG-2 -- 4.0-10.0 Mbps

MPEG is responsible for multiplexing and synchronizing one video stream with a single or multiple audio streams. MPEG-1 was designed to reproduce VHS/VCR quality in a digital format, while the MPEG-2 concept, similar to MPEG-1, is intended to cover a wider range of applications including DVD quality and its primary goal of an all-digital transmission of broadcast TV at coded bitrates between 4 and 9 Mbps.

PAN&SCAN, LETTERBOX, & WIDESCREEN

Ever since the conception of DVDs, you have heard of this terminology repeatedly but never had a clue as to what they are. You're in luck, because this section is exactly intended for explaining these prevalent DVD terms.

Starting off, everyone should consider the transference and hardship of all those involved when a movie has had its run at the box office (or your local theater) and is about to be shipped onto DVD, VCD, LD (laserdisc), or even VHS. The majority of movies are filmed using width to height ratios of 2:35:1 to 1:66:1. Why you may ask? Simple. Our eyes are suited for viewing "wider" screens, for it basically is in line with our vision. You may even proclaim that the standard televisions nowadays are ill-suited for our dear eyes but movie theaters' screen sizes are perfect for viewing video content.

Transferring is tremendously tricky, so that's where Pan&Scan, letterbox, and widescreen displays come into play:

- The **Pan&Scan** feature is available for some DVD software or hardware players that allow users to watch the movie in its original aspect ratio (i.e. a lot wider than 4:3) without those black bars! Since most users have standard television sets (4:3), they won't be able to view the entire area at the same time but are allowed to control which portion they want to view.
- **Letterbox** simply means a 4:3 or 1:33:1 ratio, which describes TV set ratios found in the majority of everyone's home. When watching movies with wider screen ratios on your letterboxed TV, the sides are cut off. If you see black bars, that means the screen ratio is not 4:3 and therefore more closely resemble its original screen aspect ratio, but you are sacrificing screen area when this occurs.
- **Widescreen's** ratio is 16:9 or 1:66:1 where widescreen TVs will soon replace all those 4:3 letterbox TVs once everyone saves up! New TVs, such as HDTVs (High Definition Television), will utilize this ratio.

NTSC AND PAL

The NTSC (National Television Systems Committee) and PAL (Phase Alteration Line) are television standards used for commercial television broadcasting around the world. Both NTSC and PAL use interlaced content at thirty frames per second (approx. 60 fields) and 25 frames per second (approx. 50 fields) respectively.

Because fields in interlaced signals are independent of other fields within a given frame, problems arise when two fields—containing different imagery data—are interleaved for display on non-interlaced computer monitors. When video imagery with superfluous movement is displayed, it usually causes motion artifacts (visual imperfections). DVD titles whose content originates directly from films produced from Hollywood studios (24 frames/second) won't possess motion artifacts.

WHAT IS DIRECTSHOW?

Formerly known as ActiveMovie back in the prehistoric days, Microsoft's DirectShow is a multimedia architecture and a dramatic improvement over the previous one known as the Media Control Interface (MCI). Because of the inherent limitations of the 16-bit MCI such as the requirement of bloated single-function drivers, DirectShow was designed to accommodate the vast array of new and emerging multimedia hardware and technologies that the aforementioned could not. Based on Microsoft's Component Object Model (COM), MCI's major headache of inconsistent interfaces is now a thing of the past when using the multithreading and multitasking DirectShow.

DirectShow is one of the DirectX technology components which also includes DirectDraw, DirectSound, DirectInput, Direct3D, and DirectAnimation, DirectMusic, DirectInput, and etc. DirectX, a set of low-level application programming interfaces (APIs) for creating high-performance multimedia applications with its overriding design goal being speed, was originally designed to enhance Windows 95's gaming platform. But with the advent of the DVD, DBS and a host of other technologies, today it serves as the gateway in accessing different hardware peripherals and acting as an integral part of Windows OS (98 and ME editions) and Windows NT 5.0

PowerDVD is fully compliant with DirectX technology. One of the essential components of PowerDVD is DirectDraw, which accesses hardware directly and thereby increases graphics speed. It gives developers a common user interface and works in conjunction with HAL (Hardware Abstraction Layer) and HEL (Hardware Emulation Layer). HAL allows developers to access hardware devices without explicit knowledge of the brand's model or its details. HEL is where DirectX features can be emulated if the device itself does not support those features.

For more information, please visit www.microsoft.com/directx/default.asp.

Glossary

3D Now!

3DNow!™ is an advanced instruction set developed by AMD. It is composed of instructions which support SIMD floating point, DSP, and integer operations.

4 or 6 Speaker

An audio selection, this is 4 or 6 downmixed stereo channels (as opposed to true surround sound).

A3D

By Aureal™ sound cards, it enhances audio for use on your PC.

AC-3

Dolby AC-3 is a flexible audio data compression technology capable of encoding a range of audio channel formats into a low rate bitstream. Eight channel configurations are supported, ranging from conventional mono or stereo to a surround format with six discrete channels (left, center, right, left surround, right surround and subwoofer). The AC-3 bitstream specification permits sample rates of either 48 kHz, 44.1 kHz, or 32 kHz, and supports data rates ranging from 32 kbps (kilobits-per-second) to 640 kbps.

AMD

Advanced Micro Devices. It is the world's second largest microprocessor company.

aspect ratio

When watching DVD, screen ratios are usually 16:9 (widescreen) or 4:3 (TV). The Keep Aspect Ratio option will keep the original aspect ratio of your video content and window despite modifications.

bob

When watching DVD, video content encoded from an interlaced signal would use the bob mode, a deinterlacing technique as opposed to weave. Bob plays video content at twice it's frame rate while each frame is displayed in only one of the fields. This makes the image appear to bob up and down a bit, especially when text is displayed, but doing so eliminates horizontal streaking. The bob mode is only useful for NTSC/PAL content such as movie trailers.

chapter

For DVDs, chapters make up one title. There are roughly 20+ chapters for the entire length of one DVD movie.

CSS

Content Scrambling System. A system designed by the motion picture industry, the consumer electronics industry, and finally the computer industry, to prevent the illegal copying of content stored on DVD discs.

deinterlace

Deinterlaces interlaced video content, especially from TV signals or before capturing video content (see interlace for more details).

DirectSound

This application programming interface (API) is the wave-audio component of the DirectX® API. DirectSound provides low-latency mixing, hardware acceleration, and direct access to the sound device all the while maintaining compatibility with existing device drivers. It also enables wave sound capture and playback, supports property sets that enable application developers to take advantage of extended services offered by sound cards and their associated drivers.

DirectX

Microsoft DirectX® is a set of low-level application programming interfaces (APIs) for creating high-performance multimedia applications with its overriding design goal being speed. It includes DirectDraw, Direct3D, DirectSound, DirectMusic, DirectInput, etc.

Dolby AC-3

Refer to AC-3.

Dolby Digital 5.1 Surround Sound

True surround sound with 5 discrete audio channels with the .1 representing the subwoofer (digital format).

Dolby Surround

Downmixed stereo audio channels as opposed to true surround sound.

downmix

The process of combining 5 or more discrete digital audio signals into 2 channels.

DTS

An audio encoding format similar to Dolby Digital, DTS offers theater system sound with at least six discrete audio channels but is compressed at a lower rate as compared to Dolby Digital.

DVD

Digital Versatile Disc. DVD is a high capacity CD-size disc for video, multimedia, games and audio applications.

DVD-ROM

A read-only format, it is similar to the CD-ROM format for compact discs but holds up to 4.7 GB (current generation).

DVD-Video

This term is usually reserved for DVDs that serve entertainment purposes, like DVD movie titles. It will replace VHS tapes entirely this decade.

encoding

To change or translate into code. For software, encoding is used for video and audio references like encoding analogue format into digital.

FourCC

Four CC is a Windows' designation for the digital video format standard.

frame rate

For video content, the frame rate measures how many still frames per second. The higher the better when capturing video content with motion.

GOP

Group of Pictures. A MPEG compression technology, the GOP concept reduces the temporal redundancy across frames (from frame to frame) for video content and consists of I, B, P frames.

GUI or UI

Graphical user interface. The appearance or outlook of a given software application. Sometimes is referred to as user interface (UI) for short.

Hardware Abstraction Layer

HAL allows developers to access hardware devices without explicit knowledge of the brand's model or its details and works in conjunction with DirectX.

hardware accelerator

It eases CPU loading by selecting the hardware to handle the bulk of a given task. Some features may not be available when selected.

Hardware Emulation Layer

HEL is where DirectX features can be emulated if the device itself does not support those features.

IA

Intel Architecture. It is the abbreviation given to technology developed by Intel Corp.

IA Streaming SIMD Extensions

It defines a new Single Instruction, Multiple Data (SIMD) architecture for floating-point operations.

I-frame

A.k.a. intra pictures, I-frame is typically the first frame of each GOP (apart of video compression technology used by MPEG), is moderately compressed, and serves as the reference points for random access and can be likened to images.

instruction sets

The operating instructions that tell a chip how to perform software functions and direct operations within the microprocessor.

IDCT

Inverse Discrete Cosine Transform. Is a decoding and spatial compression technique for DVD playback that uses an arithmetic operation.

interlaced video content

Describes video content within a given frame where there are 2 imagery data fields, even and odd, that are scanned separately (e.g. NTSC & PAL television signals). This usually poses a problem when interlaced content meets non-interlaced mediums like computer monitors, which only displays non-interlaced content.

letterbox

A format for viewing DVDs, letterboxed DVDs are shrunk from original widescreen aspect ratios to 4:3 (e.g. movies are all filmed in widescreen ratios of 16:9 or larger) where black stripes become evident on the top and bottom of a 4:3 screen but preserves the original aspect ratio (no cropping).

LPCM

Linear Pulse Code Modulation. It is used for audio CD players for converting digital signals into analogue.

MMX Technology

Developed by Intel, MMX technology is for instruction sets and boasts 3 primary architectural design enhancements as compared to the previous Pentium processor.

motion compensation

A decoding technique and advanced video acceleration function found on some display chips that speed up DVD playback by transferring the decoding process onto the card itself.

MPEG

Moving Picture Experts Group. A family of international standards used for coding audio/video information into digital format. Currently, in the year 2000, MPEG-2 is the standard for digital video formats and MP3 for strictly digital audio formats.

non-interlaced video content

Describes video content within a given frame that do not consist of distinct imagery data fields. (e.g. computer monitors)

NTSC

National Television Systems Committee. Is a standard format adopted by the FCC for television broadcasts in the United States, Japan, Canada, and Mexico. Specs: 525 lines of resolution per frame at 30 fps.; 60 Hz field frequency; requires a 6 MHz analog channel for transmission.

PAL

Phase Alteration Line. Is the standard format for television broadcasts in West Germany, Great Britain and most of the Western European nations.

pan&scan

A software feature available for certain DVDs where the original widescreen aspect ratios (1:66 and above) can be altered to a 4:3 letterbox ratio. The user will be allowed to pan&scan during playback while the black bars will disappear.

quantization

The process of converting a sampled sound into a digital value.

QXpander

QXpander is a 3D soundfield enhancer, i.e. it takes the inherent stereo sound information (differential stereo content) and applies 3D processing proportionately. The result is two-channel stereo output providing a dramatic widening of the perceived sound field.

region code protection system

Used for DVDs worldwide, it is a six-region copy protection and locking system to control the timing of theatrical releases worldwide.

resolution

A synonym for sharpness in regards to imagery detail, it is measured in lines or megahertz.

sampling rate

Sampling rate determines the sound frequency range (corresponding to pitch) which can be represented in digital waveform. The range of frequencies represented in a waveform is often called its bandwidth.

SPDIF

Sony/Philips Digital InterFace. The SPDIF is an advanced technological Digital Interface, as opposed to transferring signals via conventional analog interfaces, designed by the Sony and Philips corporations.

stereo

Two independent audio channels but bitrate remains constant while the channels' split may vary.

stream

Streams are in the form of video or audio which are transferred usually on the Internet in real-time or on DVD discs.

subtitles

A translation of words spoken in a motion picture printed at the bottom of the frames.

surface type

Conveys information as to the current overlay mode.

system tray

Systray.exe is a tool for system taskbar notifications. The taskbar provides a location for programs and hardware devices to display icons.

title

DVDs consist of less than 10 titles for every DVD movie. Titles consist of chapters.

VCD

Video Compact Disc. Generally for video applications employing MPEG-1 technology, video quality is not as detailed as DVD and has similar technology to that of audio CDs.

video overlay mode

Video Overlay is the ability to superimpose computer graphics over a live or recorded video signal and store the resulting video image on hard disk.

WaveOut

Is an API developed by Microsoft but unlike DirectSound, it offers no hardware assistance, precedes DirectSound in the realm of audio technology, and is the most basic audio output method employed by all CPUs running Windows OS.

weave

For deinterlacing content, weave mode the default for DVD titles to ensure quality. It switches to bob mode if interlaced content is detected because you may see horizontal streaking when interlaced content is played (for non-movie data with NTSC/PAL content like movie trailers).

widescreen

Points to devices with aspect ratios of 16:9 (width:height) or greater which is better suited and in line with human vision.

Windows Media Format

This format is optimized for streaming and playing back audio, video, and script data and is primarily used in streaming presentations over the Internet. The main format used is .WMV in combination with Microsoft's Windows Media Player.

WMA

Windows Media Audio. A Windows Media proprietary streaming audio format typically used to download and play files or to stream content.

WMV

Windows Media Video. A Windows Media proprietary streaming audio/video format typically used to download and play files or to stream content and is the main streaming format used for Microsoft's Windows Media Player.