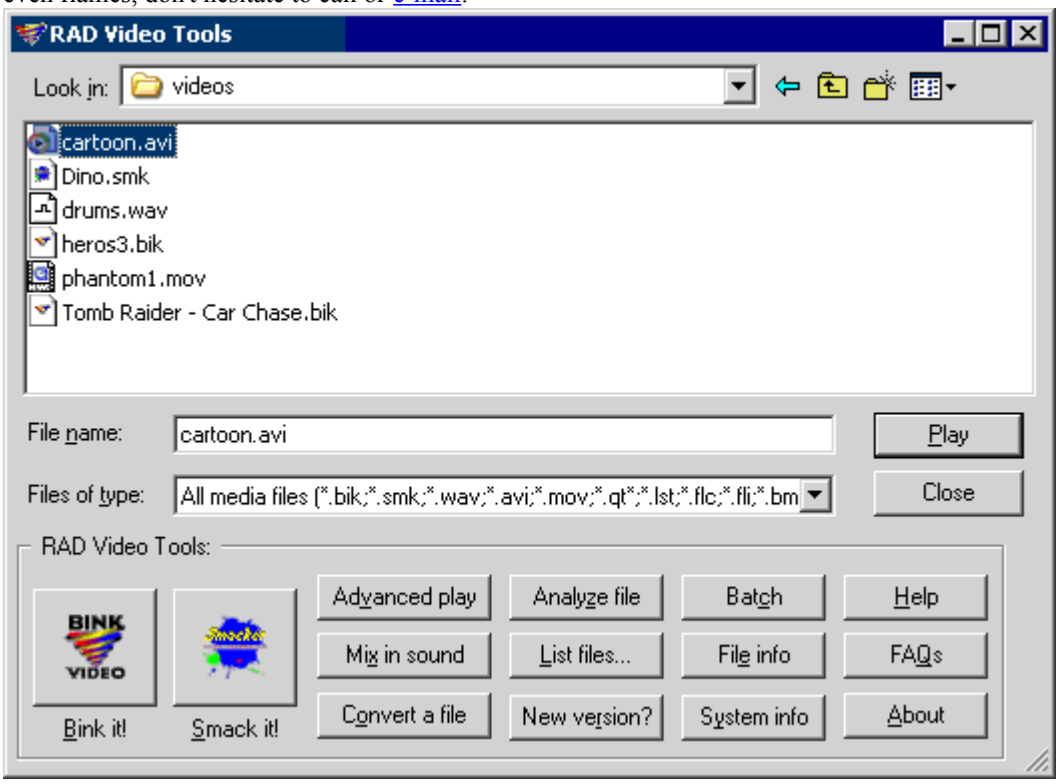
A Quick Introduction:

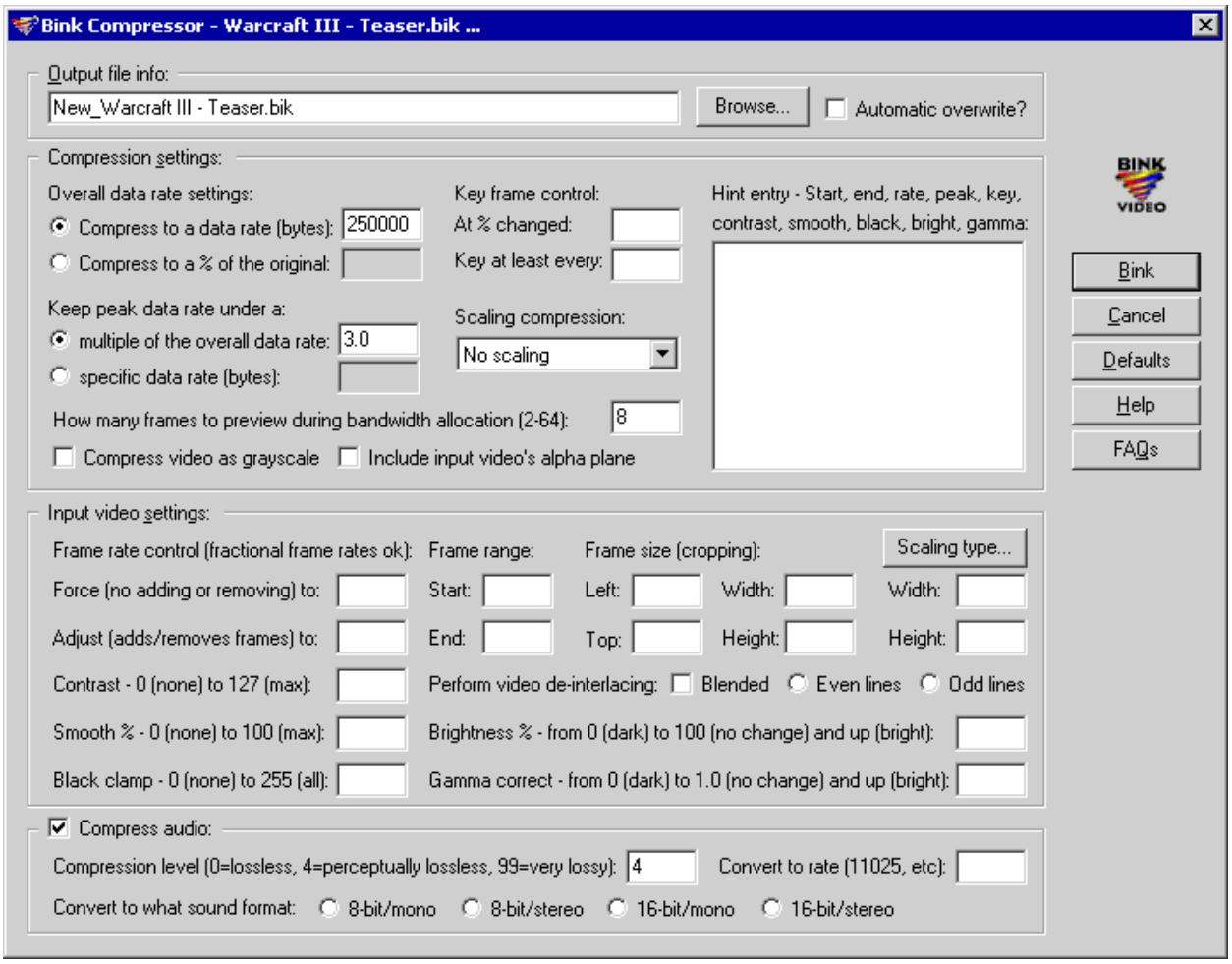
The RAD Video Tools are a set of utilities for processing video, animation, and sound data. They feature both of our video codecs: Bink Video, our latest 24-bit true-color codec, and Smacker, our 8-bit 256-color codec.
Bink Video is a "better-than-DVD" video codec. That is, it compresses better than DVD at up to three times the playback speed! Bink is a hybrid block-transform and wavelet codec that can encode your video using 16 different compression techniques (wavelet, DCT, motion compensation, a variety of vector quantizers, Smacker-style, and more). With all of these techniques in one codec, Bink can handle pretty much any type of video. It also has a psycho-acoustic based audio codec that is capable of 8 to 1 perceptually lossless compression, so your audio will sound as good as your video looks!
Smacker is our 256-color compressor for video and animation. It has used in all aspects of multimedia application design: cinematics, cut-scenes, video-sprites, transparent videos, single-image decompression, scrolling video backgrounds, and more. Smacker has been used in over 2,700 games because it's fast, it's easy-to-license, it has a terrific SDK, and its video quality is unrivaled in 256 color mode.
We hope the RAD Video Tools do everything you need them to! If you have any questions, comments, requests, or even flames, don't hesitate to call or e-mail.



File name: Enter the filename that you want to work with here. For example, if you just want to play a file, then just highlight it and click the "Play" button. You can change the default playback parameters in the "Advanced play" window.
Files of type: By default, the RAD Video Tools will display all media files, but you can use this pulldown to change the file selection list.
Bink it: This button opens the Bink compressor window where you can compress your movies with our true-color Bink codec.
Smack it: This button opens the Smacker compressor window where you can compress your movies with the Smacker codec.
Advanced play: The "Advanced Play" button opens the playback options screen, where you can customize the settings to use to on playback of your video. Advanced play options are available for Bink and Smacker files. If you've highlighted a Bink file, then the Bink Advanced play screen will open. Similarly, if you highlight a Smacker

file, and hit the "Advanced Play" button, then the Smacker Advanced play window, which is a little different, will open.
Mix in sound: This button opens the Bink or Smacker audio mixer. You only need to use the audio mixer when you want to replace or add another audio track to a video file. Normally, you won't have to utilize this feature, because our compressors will automatically compress the audio track of an AVI or QuickTime file in with the video frames.
Convert a file: The RAD converter can convert almost any type of file to another type. For example, you can convert a bunch of BMPs into an AVI, GIFs into JPEGs, Smackers into flics, QuickTimes into AVIs, wave files into different sample rates, 24-bit images into 8-bit images, etc.
Analyze file: The "Analyze" button opens one of the handiest features in the RAD Video Tools. It displays a visual representation of a Bink or Smacker file's data rate.
List files: You can create a list file by clicking this button. A list file is a text file that contains a list of other file names that you want to be treated as one big file. This allows you to compress multiple input files into one output file.
New version?: Use this to check your Bink version. It is a quick and easy way to make sure you're always using the latest-and-greatest update to the RAD Video Tools.
Batch: This button will start the RAD Batch editor. You can use the batch editor to create a list of tasks that can be run unattended.
File info: Click the "File info" button to display a description of the highlighted media file.
System info: The "System info" button displays information about your computer.
Help: A mouse click on the "Help" button will open your browser window to this Help page.
FAQs: If you click the "FAQs" button, your browser will open our Frequently Asked Questions page.
About: The "About" button will open a window that gives you version information on the RAD Video Tools.

Our new true-color codec, Bink, is a "better-than-DVD" video codec - it compresses better than DVD, and does so at up to three times the playback speed. Bink is a hybrid block-transform and wavelet codec, so it can encode your video using 16 different compression techniques (wavelet, DCT, motion compensation, a variety of vector quantizers, Smacker-style, etc)! Bink can handle any type of video you throw at it.
Compressing with Bink is so easy - just highlight the file that you want to compress, and then hit the "Bink It!" button. The Bink compressor window will pop up, looking something like this. Click on the screenshot for help, or use the following links to get right to the help topic you need.



Output file settings:

Enter the filename that you'd like to compress to in this field. You can use the Browse button to choose from a directory with your mouse. Use the "automatic overwrite" switch when you don't want Bink to ask you if you want to overwrite the destination filename. Note that Bink doesn't overwrite the destination filename until compression has been completed, so if you choose to overwrite a file accidentally, you can save it by cancelling the compression before it is finished.

Compression settings:

Overall data rate options:

- **Compress to a data rate:** This is the standard way to control the amount of compression Bink applies. Simply choose the output data rate that you want - 150000 for 1xCD-ROM, 300000 for 2xCD-ROM, etc. Bink is about 4 times better than Smacker, so if your Smacker data rate was 450000, then you'll probably be able to use 150000 with Bink.
  The data rate that you should use depends on mostly your target platform. Use this table to get a starting data rate, and then you can start moving the rate up or down depending on the quality and file size:

Platform	Data Rate

Modern PCs and Macs faster than 1.5 Ghz (P4, Athlons, G5s, Intel Macs) 1280x720 HD video	1200000 to 1800000
Slightly older PCs and Macs faster than 750 Mhz (P3, P4, P-Ms, Athlons, G4s or G5, etc) 640x480 video.	750000
Microsoft Xbox 1280x720 HD video	1200000 to 1800000 (check your gamma!)
Microsoft Xbox 640x480 video	750000 to 900000 (check your gamma!)
Microsoft Xbox 360 1280x720 HD video	1200000 to 1800000 (check your gamma!)
Nintendo DS 256x192 video	50000 to 75000 (check your gamma!)
Nintendo GameCube 640x480 video	500000 to 750000 (check your gamma!)
Sony PlayStation 2 640x480 video	500000 to 750000 (check your gamma!)
Old PCs and Macs: PIIs, old Athlons, old PIIIs, old G3s and G4s 640x480 video	450000
Really Old PCs and Macs: Pentiums, AMD K6s, G3s 512x384 video	250000

Note that you don't *have* to use these rates! If your CD or DVD is close to being full, then you can always lower the data rate to make a smaller file. These listed are should just be a starting point for you.

- **Compress to a percentage of the original:** This is an alternative method of controlling the compression ratio. It tells Bink to create a final file size that is based on the original file size - for example, if you enter 50, then you will get a Bink file that is pretty close to half of the input video file size. This is a nice option for times when the disk space footprint is more important than the data rate.

Keep peak data rate under a:

- **Under a multiple of the overall data rate:** This option tells Bink to keep the peak data rate under the specified number times the overall data rate. For example, the default value for this option is 3.0 and the default overall data rate is 250,000 bytes per second. That means the peak data rate will be 750,000 bytes per second (3*250000). Bink will never let the data rate exceed this value. Usually, you shouldn't have to change this option.
- **Under a specific data rate (in bytes):** This option is an alternative method of controlling the peak data rate. This option tells Bink that the peak rate must never exceed this rate (bytes per second). Usually, you shouldn't have to change this option.

How many frames to preview during bandwidth allocation (2-64): This option controls how many frames Bink pre-analyzes to see if bandwidth can be borrowed for more difficult frames. For example, imagine an all black screen that suddenly flips to a full screen picture - Bink can steal the bandwidth from the easy-to-compress black frame and give it to the full screen picture frame (while never exceeding the peak data rate). This feature greatly improves Bink's output quality. Note that the higher the number that you choose for this setting, the more memory Bink will use while compressing. A good rule of thumb is to use 12 for CGI videos, and 8 for live video.
Compress video as grayscale: This option tells Bink to process the movie in grayscale, which gives you faster playback and better compression for grayscale movies.
Include input video's alpha plane: You can use this option to tell Bink to include the alpha plane from the original video. The alpha plane is a method of supplying transparency and translucency information. Right now, the only way to access this information is through the Bink SDK.
Key frame control:

- **At % changed:** This option lets you control the frequency at which key frames are inserted in the video stream. Key frames are frames that don't rely on previous frames for decompression (they contain no delta-ed or inter-frame compression information). Key frames are very expensive for Bink both in decompression time and bandwidth, so you should usually try to avoid them.
- **Key at least every:** Input a frame interval at which you want to have a key frame inserted. For a key frame insert every 100 frames, type 100 in this box.

Scaling compression: This option lets you use scaling compression to really shrink the size of your files. Most codecs use scaling compression internally, but Bink (and Smacker) allow you to control it explictly. Scaling compression takes a, say, 640x480 video and compresses it at 640x240 - then, at runtime, the Bink player stretches the video window back up to 640x480.

- **2x height doubled** is scaling along the height - each scanline is doubled at playback time.
- **2x height interlaced** is the TV-style (every other scanline is black) 2x height compression. This is faster at runtime than 2x height doubled.
- **2x width doubled** is scaling along the width - each column of pixels is doubled at playback time.
- **2x width and height doubled** is scaling along both the width and height - each column and each row is doubled at playback time .
- **2x width and height interlaced** is scaling along both the width and height - each column is doubled and every other scanline is black. This is faster at runtime than 2x width and height doubled.

Hint Window: The hint window allows you to set specific data rates for each individual frame in the movie. With Bink's new preview mode, you won't have to use this window much, but if you've got a stubborn video file that just won't compress the way you'd like it to - you can always use the hint window to override with precise settings.
You enter data into the hint window in this order - Start frame, End frame, Data Rate, Peak Rate, Key frame? (0=no, 1=yes), Contrast adjustment, Smoothing adjustment, black clamp adjustment, brightness adjustment, and gamma correction. You separate each number with a space, adn you can enter multiple lines by pressing Control-Enter.

Video settings:

Frame rate control:

- **Force (no adding or removing) to:** Input a new frame rate for the output file with this option (fractional rates are ok). The RAD Converter will not duplicate or remove frames during conversion to achieve the new rate. This value is specified in frames per second. You can also specify this value in milliseconds per frame by entering it as a negative number. You'll need to set this option when you compress still images, which have a default rate of 10 frames per second.
- **Adjust (adds/removes frames) to:** You can adjust to a new frame rate by duplicating or removing frames with this option. Say, for example, you had a 15 frames per second animation and you adjusted to 30 frames per second, then each frame of the movie would be processed twice.
  You would end up with twice as many frames, but they'd playback twice as fast. This option can also be used to make easier-to-playback movies - if you have a 24 fps movie that Bink can't quite keep up with, just use this option to drop it to an easier 12 fps. The value is specified in frames per second. You can also specify this value in milliseconds per frame by entering it as a negative number.

Frame range: Use this option to control what sections and pieces of the input file are actually processed. The "Start" and "End" fields let you set the beginning and ending frame numbers of the range to convert. Note that even if you use the "Adjust (adds/removes frames) to" feature, these fields use the original, "un-adjusted" frame numbers. The numbers are inclusive, so, for example, a start frame of 5 and an end frame of 6 would make a two frame output file.
Frame size (cropping): The left, top, "Width", and "Height" options tell the RAD Converter to process only a sub-rectangle of each video frame. This is a handy tool for making cropped versions of your videos. If you are both cropping and scaling, the cropping takes place after the resize.
Frame Scaling (resizing): The "Width", and "Height" options specify what size to resize the input video frames to. The "scaling type" button allows you to choose the method of resizing: high-quality (bi-cubic interpolation - usually the best quality, but sometimes a little fuzzy), medium quality (bi-linear interpolation), and low quality (where the pixels are just dropped or duplicated). Usually, you should just stick with high-quality mode.
Contrast increase: This filter allows you to increase the contrast of a video. Increasing the contrast will make the blacks blacker and the whites whiter. This almost always improves compression because it will make "almost black" pixels fully black. The contrast range is 0 (no contrast increase) to 127 (maximum increase). A good default value is 8.
Smoothing percentage increase: This filter allows you to smooth out the video. Smoothing a video blurs the pixels together giving smoother and easier to compress video frames. The smoothing range is 0 (no extra smoothness) to 100 (maximum blur). A good default value is 3 percent.

Black clamp: This filter hard clamps the pixels to fully black when each of the color values are below the specified value. This is another way to force "almost black" pixels to become fully black. It's especially good for video captured titles. For most video, however, the contrast control is the best way to get black pixels looking nice and dark. The clamp range is 0 (no clamp) to 255 (all colors forced to black). A good starting value is 20.
Video de-noising: This filter will clean up video by reducing by running a de-noise filter across the image. It's a good way to increase compression when you have poor quality input files.
Video de-interlacing: This filter will clean up interlaced video that was captured from a TV source. De-interlacing video isn't a perfect process - there is no one right way to de-interlace video, so we provide several different techniques. The first is simple "blend" mode - this causes the even and odd fields of the video to be blended together. You can also select to weight either the even or odd fields more heavily with the "even and odd lines" radio buttons. The other de-interlacing techniques just use the even or odd fields by themselves - to do this, just select even or odd without the checking "blend".
Brightness adjustment: This filter lets you increase or decrease the brightness of the input video frames. The brightness control is a percentage where 100% is the existing brightness, 10% is 10 percent of the existing brightness (or 10 times darker), and 200% is twice as bright.
Gamma correction: This filter lets you increase or decrease the gamma of the input video frames. Gamma is kind of like non-linear brightness - that is, the entire spectrum isn't all brightened by the same amount. The gamma correction range is from 0.0 (completely dark) to 1.0 (the existing level of gamma) to above 1.0 (which brightens the pixels). Gamma correction is usually used to adjust a Mac-authored movie that plays too dark on a PC. A gamma of 1.4 is usually about right for converting the gamma of a Mac input file to the same level of PC brightness.
If you have a movie that looks good on the PC and you want to use it on an Xbox, PS/2 or GameCube connected to a TV, then you **must** adjust the gamma (or the movie will be too bright and washed out). Use a factor of 0.88 to covert from PC gamma to TV gamma.

Audio settings:

Compression level: This option controls how much audio compression Bink applies. Bink's powerful audio codec is capable of up to 10 to 1 compression in perceptually lossless mode (which basically means you can save a ton of space in your audio tracks without hearing any compression artifacts). Quality level 4 is perceptually lossless on most files, and many files can even use a setting of 5 or 6. Settings of 9 and higher get pretty noisy.
Convert to rate/format: These settings let you convert the sound format as it is compressed into the Bink file. They are there for your convenience, but for maximum quality, you should always start with original high-quality recordings. The RAD Converter can convert a 22 Khz file up to a 44 Khz file, but it can't make it magically sound any better that the original 22 Khz

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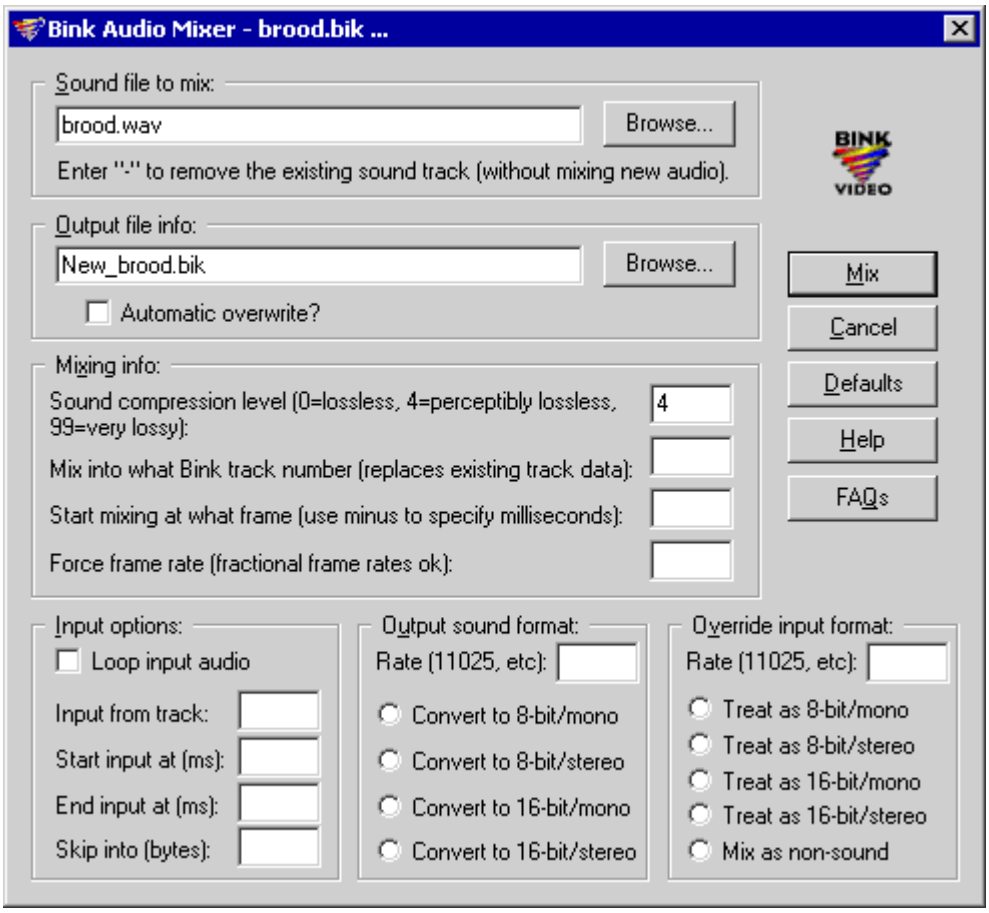
Bink Tips:

- Use the Contrast filter to darken the blacks in your videos - this will give better looking compression and will look nicer too. A good starting range is 8 to 16.
- Use the data rate table above to pick a appropriate starting data rate.
- If you are compressing for Xbox or GameCube, make sure to use a gamma setting of 0.88 to adjust for the gamma difference between TVs and PCs.
- Use the Smoothing filter to smooth your videos slightly when compressing. This will usually give better compression. Start with a smoothing value of 3 percent.
- Put our Preview feature to work for you! The Preview button lets you play the Bink video up to the most recently compressed frame. That means you can look at the frames that have been compressed before Bink is done with the whole file! You can avoid wasted time if you use this button to check out compression settings "real-time", rather than waiting for long periods only to discover that you've got a compression setting that you don't like.
- Note that you can also stop the compression process at any time and simply keep the frames that have been completed up to that point.

- If you want to test a lot of difference settings, use the start and end frame options just to experiment on a portion of the video (so you don't have to wait for the entire video to finish).

Mixing audio is the process of interleaving little bits of sound data into each video frame. Normally, you won't have to perform this task, because Bink will compress the audio track of an AVI or QuickTime automatically as it compresses the video frames. You only need to use the mixer when you want to replace or add another audio track to a Bink file.
Bink supports any number of audio tracks in a Bink video file, but it can currently only play one audio track for each movie (you can play two movies each with their own sound track, though). Bink's support for any number of audio tracks is a handy feature because you can put multiple languages in one Bink file and select between them at



runtime.
To mix audio into a Bink file, just highlight a Bink file and an audio file to mix in (hold down the Control key while clicking your mouse to highlight more than one file at a time). Once the files are selected, click the "Mix in Audio" button to open the mixer window. The mixer window will open with the following options. You can click on the screenshot, or select from the following links to jump right to the help topic you need.

Sound file to mix:

This option lets you change the sound file that the mixer is going to use for the sound track. This is convenient when you want to compress an audio file in another directory. If you want to remove an audio track, use "-" for the sound file name to mix.

Output file settings:

Enter the filename that you'd like to mix into in this field. You can use the Browse button to choose a directory with your mouse. Use the "automatic overwrite" switch when you don't want Bink to ask you if you want to overwrite the destination filename.

Mixing settings:

Sound compression level: The Sound compression level controls how much audio compression Bink applies. Bink's powerful audio codec is capable of up to 10 to 1 compression in perceptually lossless mode (which basically means you can save a ton of space in your audio tracks without hearing any compression artifacts). Bink compresses 44Khz data the best, and because it compresses the data so well, you should just get used to leaving 11 and 22 Khz behind. Bink still supports 11 and 22 Khz, but the compression ratios are lower (3 to 1 and 5 to 1). Quality level 4 is perceptually lossless on most files, and many files can even use a setting of 5 or 6. Settings of 9 and higher get pretty noisy.
Mix into Bink track ID: This option lets you choose a specific track ID number to mix the audio into. Track ID numbers are completely under your control - you can use whatever number you like - they don't have to be contiguous, monotonic, or even increasing. If you use a track ID that alreay exists in the file, then that track data is replaced with the new track data.
Start mixing at what frame number: Here is where you choose the frame number that you want the mixing to begin on. Actually, the mixing really always starts from the first frame, and this function pads the input data with enough silence to cause the sound track to begin exactly on your chosen frame number. You can also use a millisecond offset by entering a negative number. For example, 2000 would start the sound 2 seconds into the movie.
Force frame rate: Use this option to force a new frame rate on the output Bink file. You'll need to set this option when you compress still images, because they have a default rate of 10 frames per second.

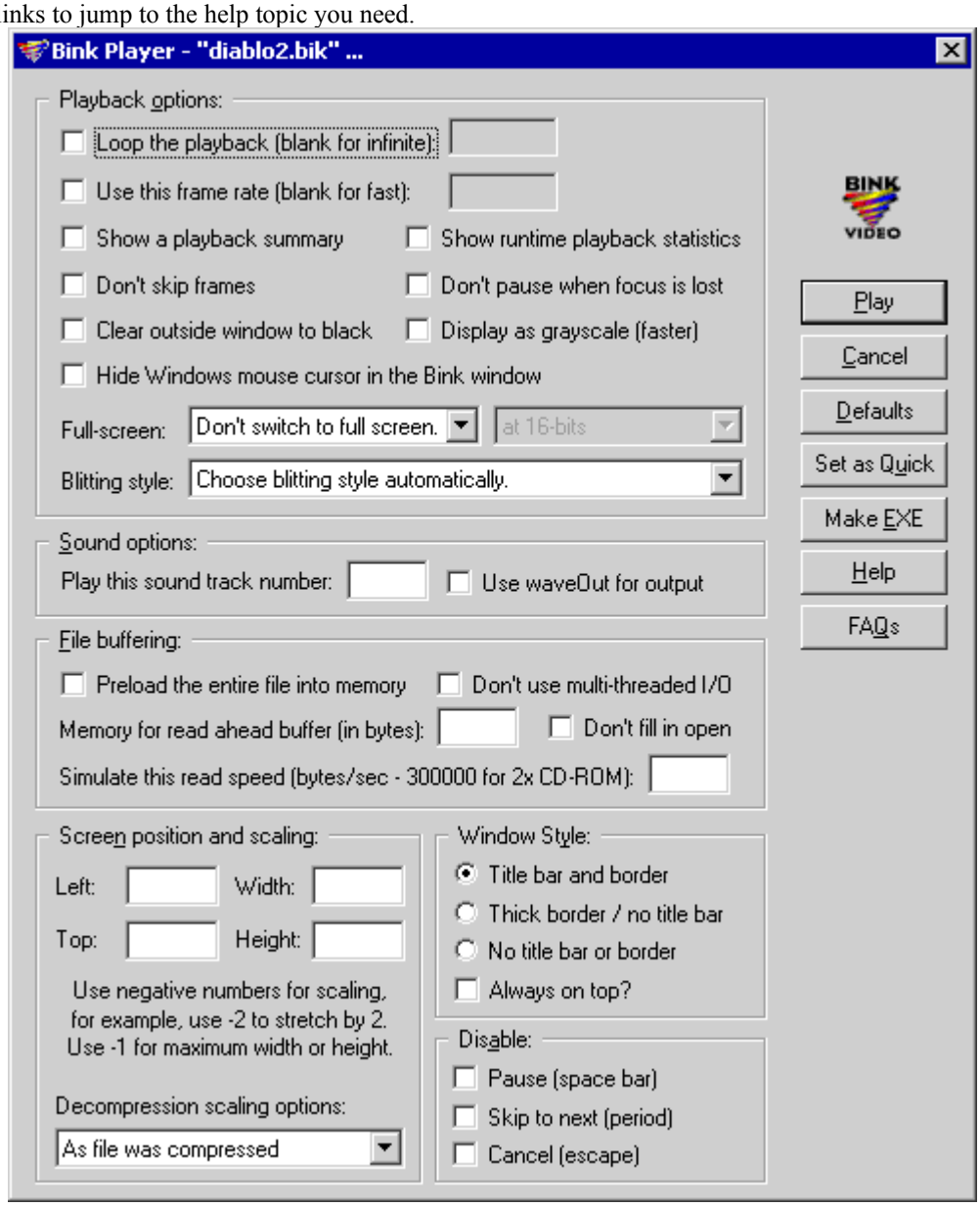
Audio settings:

Convert Audio: Check this box to convert the audio from the input file. If you are converting just audio, then the output file will be a wave file. If you are converting video and audio, then the output file will be an AVI file.
Input Options:

- **Loop input audio:** This option tells Bink to loop the audio throughout the entire Bink movie.
- **Input from track:** This option tells the RAD Converter what track to read the audio from. It supports both Video for Windows and QuickTime formats.
- **Start input at (ms):** This switch, in combination with the following "End input" are the tools you need for mixing a specific sub-section of audio data out of a larger sound file. This is the start point of your range -- it is specified in milliseconds.
- **End input at (ms):** This switch defines the end point of a specific sub-section of audio data out of a larger sound file. This value is specified in milliseconds.
- **Skip into (bytes):** This field tells the RAD Converter to skip into the specified sound file before beginning the mixing process. It is usually used with the "Override input format" fields to skip over an unsupported sound format header.

Convert output format: These fields allow you to convert to another sound format during compression. They are there for your convenience, but for maximum quality, you should always start with original high-quality recordings. The RAD Converter can convert a 22 Khz file up to a 44 Khz file, but it can't make it magically sound any better that the original 22 Khz.
Override input format: These fields **force** a new format - they don't convert! This is usually only used with RAW sound files that have no header information to identify their sound format.

Bink playback is quick and simple - just highlight a file and click play. Bink does, however, have many options for advanced playback. To access the advanced Bink options, highlight a Bink file and then click on the "Advanced play" button. The following window will appear. You can click on different sections of the picture, or use the following table of links to jump to the help topic you need.



Playback settings:

Loop the playback (blank for infinite): This option tells Bink to loop the Bink movie over and over. You can choose a specific number of loops or simply leave the count blank for infinite looping until you press escape.
Use this frame rate (blank for fast): This option tells Bink to use the specified frame rate to playback the movie. You will usually just leave the frame rate blank on this option, which tells Bink to play flat out as fast as it can.
Show a playback summary: This option tells Bink to display a summary window when playback is finished. This summary contains all kinds of handy info, including the number of skipped frames, the speed of the IO device,

percentage of time spent in various parts of Bink, and more. This summary is crucial if you're having playback problems -- these stats will help you pinpoint the problem area.
Show runtime playback statistics: This is one of my favorite features in Bink. Use this switch to display runtime information about the playback at the top of the video window. It's even cooler than the summary window because this data is constantly updated during playback - it's a piece of cake to find playback problems, since you just watch the runtime info where the IO buffer full percentage is displayed. If the buffer empties, then Bink is going to start skipping frames. Bink displays: the frame number, the current frame rate, the IO buffer filled percentage, the decompress time, the blitting time, the reading time, and the last one second's data rate.
Don't skip frames: This option tells Bink to never skip frames. If the video starts lagging behind, then the audio will start to skip.
Don't pause when focus is lost: Bink normally pauses playback when you switch to another window, but this switch tells Bink to keep on playing. Note: some DirectDraw drivers don't clip the window display correctly, so your video may bleed through.
Clear outside window to black: This option tells Bink to center the window with all black around the edges.
Display as grayscale: This option tells Bink to dispaly the movie in grayscale mode (this is much faster than color mode, so you can use it if you have a slower machine).
Hide Windows mouse cursor in the Bink window: If you use this switch, Bink will hide the mouse cursor when it is within the confines of the Bink window.
Full-screen: This pull-down allows you to use a full-screen mode. Note that not all screen modes and color depths are supported by all video cards and/or DirectDraw drivers. You can choose both the resolution and the color depth to use. Many video cards only support accelerated video playback in certain resolutions and color depths.
Blitting style: Use this pull-down to choose the blitting technology to display the video frames. Bink uses a colorspace called YUV (YCrCb to be perfectly accurate), rather than RGB.
You can use Bink's software YUV to RGB converters, but if you have a good video card, all of this processing can be handled by the video card. One catch, though - different video cards support different YUV formats (kind of like they support different 16-bit RGB formats - 565, 555, for example), so Bink supports conversion to three types of YUV surfaces: YV12, YUYV, and YUY2. Most video cards support at least one of these YUV formats with hardware.
Video cards use two different techniques for display of YUV data - overlays and blitting conversion.
Overlays seem like black magic - they are high color surfaces that float above the normal desktop (kind of like a hardware window). They can even display high-color data while in 256 color mode on some video cards! Overlays are the very best way to display Bink video, if your video card supports them. But watch out - overlays can sometimes have bugs that cause Bink movies to look odd - if you suspect this is happening, use the software blitter to see if there's any improvement in the appearance of the video.
Blitting conversion means that the pixels are converted from YUV color to RGB format while the data is being copied to the screen. Almost all video cards (even old ones), support hardware blitting conversion, usually even with stretching and shrinking for free. Bink can still fall back to its internal software mode, if necessary.

Audio settings:

Play this sound track number: This option lets you choose which audio track number to play. Choose the same number that you set when you originally mixed in the audio track.
Use waveOut for output: This option tells Bink to use the old waveOut sound drivers instead of DirectSound. This is useful on machines with old sound cards or jumpy sound drivers.

Buffering settings:

Preload the entire file into memory: If checked, this will load all of the video data into memory. It allows you to save the read time completely.
Don't use multi-threaded I/O: This option tells Bink not to do its file IO on a background thread. You should normally not have to mess with this option, but it you have an ancient CD-ROM driver and your video is skipping, then this is a good place to start experimenting.

Memory for read ahead buffer: This option controls how much memory Bink allocates to read ahead in the movie. The larger the buffer, the less chance of a frame being dropped due to slow IO. Bink uses one second of the toughest segment of frames in a video by default.
Don't fill in open: This option tells Bink not to completely fill the read ahead buffer when the file is loaded. You can use this option to force Bink to start playing your movie immediately, but it is at the risk of skipping early in the movie.
Simulate this read speed: This setting tells Bink to simulate the entered playback rate. This is handy to test how your video will playback on a CD-ROM without having to go through the trouble of burning a CD-R disc. This value is in bytes per second (not kilobytes per second), so, to simulate a double-speed CD-ROM, use 300000.

Presentation settings:

Screen position and scaling: This option lets you choose the offset and the width and height on the screen as well as a zoom setting. You can use a negative number to scale. For example, -2 would mean play back the movie twice as large. -1 means fill the entire the screen. Most video cards have video acceleration that makes zoomed video playback possible - if you don't have hardware blitting or overlays, then the video will still zoom, it's just going to be really slow.
Scaling: This option lets you force one of the Bink software scaling modes. Normally, you'll just use whatever scaling compression that the movie was compressed with. You can override the file's default with 2x height doubled, 2x height interlaced, 2x width doubled, 2x width and height doubled, 2 width and height interlaced, and a run-time only option: 1x interlaced. 1x interlaced is great for slow machines - the output is interlaced, but it will cut the blitting CPU time in half!
Win Style: This feature controls the style of the playback window - you can choose title bar and border, thick border / no title bar, or no title bar and border at all. You can also force the window to always remain on top.
Disable: This feature lets you turn off certain input keys during video playback.

Buttons:

Once you set your playback options, just click the **Play** button to view the Bink file.
If you'd like to return all of the settings back to their original defaults, you can click the **Defaults** button.
Finally, use the **Set as Quick** button to set the current Bink playback options for quick playback. Quick playback mode is used when double-clicking on a Bink file in Explorer, previewing during a compression, or clicking on the Play button on the main RAD Video Tools window.

This is a list of frequently asked questions about Bink. Almost all common questions are handled here, so whenever you are having trouble, come here first!
If you don't find the answers you need here, or in the rest of the help files, or in the Smacker FAQs, please e-mail our technical support staff.

Bink Frequently Asked Questions

Question	Answer
When running on a modern AMD CPU, my video skips - my machine is really fast, why is this happening?	There is a bug in the Windows system timer code when running on some AMD CPUs. The easiest way to work around it is to edit your c:\boot.ini file with Notepad, and add the switch "/usepmtimer" (without the quotes) onto the end of the Windows lines under the [operating systems] section, and then reboot.
When I compressing or converting some movies, I don't get any sound or I get an "error opening audio file" message - what's up?	The RAD Video Tools uses QuickTime to import compressed sound formats. Make sure you have the latest version of QuickTime from www.apple.com installed with **all** of the optional components. Since almost all computers have QuickTime installed, this usually means that the optional components are missing. To fix this, redownload QuickTime and choose "custom" installation -

	then mark all of the optional components and wait for everything to be downloaded and installed. If that doesn't help, then you may be trying to convert a protected movie. QuickTime allows the movie creators to mark a movie as playback only - no saving or exporting allowed. When this happens, Bink can still read the video, but the audio is locked into the QT file. This is just a QuickTime copy protection feature - there is no way around it.
I get a "Windows crashed while reading this file", or "Windows crashed when writing the video frame", or "Windows crashed while submitting new audio", or "QuickTime crashed when reading this file", etc. What's going on?	This is not a Bink error. This means that Windows or QuickTime crashed when we asked it to perform a task (like decompressing or compressing a frame). There is nothing RAD can do about these problems - this is a problem with either Windows, QuickTime, the input file that you are using (it could be corrupted), or the codec that you are using. We can't help you with these errors, because it isn't in our code. For technical support, you can try contacting your hardware manufacturer, Microsoft, Apple, or the codec vendor.
Can Bink read my AVI files that are larger than 2 GBs?	It does now! We now include a DirectShow importer and it can read AVI files larger than 2 GB (which are technically OpenDML files).
Can Bink convert to an AVI file that is larger than 2 GBs?	No, we use Windows to write out the AVI file which uses the original AVI format, rather than the OpenDML extensions.
Is there a way to automatically choose the output AVI codec in batch mode?	Sorry, but no, there isn't. We create the AVI file using the high level Windows AVIFile functions (which always ask for the parameters).
How can I make self-running videos (EXE files)?	To compile your videos into an EXE file, first highlight one or more Bink or Smacker files on the main window, and then click the "Advanced play" button. Next, choose the options that you wish to embed into the EXE file. Finally, click the "Make EXE" button.
How can I make screen saver videos (SCR files)?	To compile your videos into a screen saver, first highlight one or more Bink files on the main window, and then click the "Advanced play" button. Next, choose the options that you wish to embed into the screen saver. Next, click the "Make EXE" button. Finally, click the "create as screen saver" check box. Once the SCR file is created, copy it into your main windows directory (usually c:\ windows or c:\winnt), and it will appear on the list of screen savers in the screen saver control panel.
Do you support converting from or to MPEG video files?	Our new DirectShow importer reads MPEG, MPEG-2, MPEG-4, WMV, and ASF files. Basically, if you can view the movie in Media Player, we can read it now. However, we do not write to MPEG videos. Our only output video format is AVI.
How do you create a Bink audio stream using the old audio codec format (for use with applications using an old version of Bink)?	To do this, just add 100 to the compression level in the compressor or mixer. For example, instead of level "4", use level "104".
I get an "Error opening, 'filename'" message when compressing or converting one of my files.	This just means Bink doesn't have an importer for the file that you are trying to convert. This can happen for one of the following reasons: • It's a QuickTime movie and you don't have QuickTime installed. • It's an AVI or QuickTime movie that uses a video codec that isn't installed or is installed improperly.

	• It's a QuickTime with other non-video tracks (like button and input tracks) that prevent Bink from playing the movie. Some QT files make the user click on a "play" button to start the movie. There isn't a way to convert these movies. • It's simply a corrupted file. Basically, when you get this error, the only recourse is to create the file in another format - try an uncompressed AVI or a QT. Please note that RAD does not provide technical support for files that cannot be imported - you must simply use another format. If you didn't create the original file, and therefore cannot convert to another file format, then you will not be able to use the RAD Video Tools on that file.
I get an "Error creating the output AVI file" message when converting one of my files to an AVI.	This message means that Windows failed to create the new AVI file. This can happen for one of the following reasons: • 1) You are trying to create a file on a read-only device like a CD-ROM. • 2) You are trying to create a file in a directory where you have insufficient file rights. • 3) You don't have enough disk space to create the new file. • 4) If none of the other problems are the cause, then that usually means you have a corrupted Windows multimedia subsytem. This happens when either: 1. your machine wasn't originally setup with any multimedia functions at all (older Win98 installations have this problem) 2. one of the Windows codecs is corrupted and is preventing Windows from creating any AVI files. If you have this unfortunate problem, then the only solution that we have heard to be successful is a re-installation of the operating system.
I have a high-end video card (like a FireGL or an Intergraph Wildcat). The Bink video window is all black, or the player crashes immediately. What can I do?	High-end video cards usually have great OpenGL drivers, but not-so-great DirectDraw drivers (which Bink uses by default). Switching the blitting style to "DIBSection" on these cards will usually work great. You set the "DIBSection option in the Advanced Player options off the main RAD Video Tools window.
I get noise and patterns in the black areas of my video. What can I do to fix this?	Turn up the contrast adjustment in the Bink compressor window. The higher the contrast, the blacker your blacks will appear. Try starting with 20 and adjust up or down from there.
How can I play a PC EXE compiled Bink file on the Macintosh?	Download the latest Mac Bink Player, highlight the EXE file and click Play!
How do I change the default playback options when I double click on a movie in the main window or from the Windows Explorer?	First, highlight a Bink file, then click the "Advanced play" button, choose the default settings you'd like, and then click the "Set as Quick" button.
When I play back my Bink movies the window is all black or all bright purple - what's up?	This usually means you have a bad DirectDraw video driver. When this problem occurs, your video driver is telling Bink that it is capable of a certain type of video playback which it really cannot perform. If this happens, the video frames won't be displayed by your video driver, and you see all black, or all purple. To fix this problem, you can either try to find newer video drivers,

	switch video cards completely, or experiment with the other blitting styles in the Advanced Bink Playback screen.
How can I remove a Bink or Smacker audio track?	Highlight the file, hit "Mix in Sound" and for the filename enter '-' (a single minus sign), enter the track number that you want to remove and then hit "Mix..."
How can I convert an EXE compiled Bink or Smacker file to an AVI file?	Just highlight the EXE file and hit the convert button.
How do I redistribute Bink files?	We have several options for redistributing Bink files. We have tried to handle most licensing situations, but it you don't see a license that works for you - just give us a call. We're happy that you're using Bink, and we want to make distribution easy! 1. Your first distribution option is to accompany your Bink files with one of the players from the RAD Video Tools. These utilities all display a RAD Game Tools credit. You can distribute these utilities for no licensing fees as long as you do NOT circumvent this notice. Any attempt to hide the notice voids your right to distribute the files. 2. The second distribution option is to simply license a version of the Bink Player that doesn't display the RAD Game Tools credit. The "silent" version of the player is available on a per-site, unlimited-products basis. 3. The last distribution option is our Bink SDK. With the SDK, you have complete control over the entire Bink decompression process. The Bink SDK is licensed on a per-product or per-site basis. Again, we are committed to making distribution easy, so if you have any questions about the distribution options, just give us a call at 425.893.4300, or drop us an E-mail.
I keep having to change the current directory back and forth. Is there a better way to do this?	Sure, just open two copies of the RAD Video Tools and set two different current directories.
How can I play multiple Bink files in a row (or compile multiple Bink files into one EXE)?	Just highlight the multiple files by holding down the control key before clicking the "Advanced Play" button.
How can I batch process files?	The RAD Video Tools now have a batch processing editor built right in. Just set the switches that you want to use and then click the "Batch" button. The RAD Batch Editor window will open and you'll be able to control the batch steps to perform. Additionally, most of the RAD Video Tools are accessible as stand-alone utilities, so you can use them in standard DOS batch files. • Bink compressor: bink.exe • Bink mixer: binkmix.exe • Bink converter: binkconv.exe • Bink player: binkplay.exe • Smacker compressor: smack.exe • Smacker mixer: smackmix.exe • Smacker player: smackplw.exe To get a list of the available switches for each command, simply run the command from the DOS command line with no parameters at all. A help

	window will appear with all of the available switches. To use these commands in a batch file, you need to know two tricks. First, tell the batch file to wait until the Bink command finishes before continuing to the next line in the batch file. To do this under Windows 95/98/NT, simply preceed each line in the batch file with "start /w". Secondly, you need to tell Bink not to wait for the Done button to be pressed before exiting. We need the commands to exit immediately so that the batch file can continue running. To do this, add a "/#" to the end of the Bink command. So, for example, to compress a file, you would use a command something like this: "start /w bink input.avi output.bik /#"
How can I automatically choose the output AVI codec to use when converting to an AVI file?	You can't, unfortunately. Windows pops up the dialog when we create the AVI file, so you have to manually choose the codec.
How do I compress QuickTime files?	Simply install QuickTime from Apple's web site, and Bink will be able to compress or convert your files directly.
Is there going to be a Mac version of Bink?	There already is! You can download the Bink for Mac player now, or contact RAD to get a Bink for Mac SDK CD. Our phone number is 425.893.4300.
Will there be a Bink Xtra for Macromedia Director?	Probably not. We have discontinued the Smacker and Miles Xtra product lines , so it's doubtful we'll re-enter this market.
Can I stream Bink files off the Internet?	No, not yet. We will probably add this feature in the future, though.
Is there going to be a scripting language for Bink like Smackscript?	Nope, right now there are no plans in the works to develop a scripting language for the Bink Video product.
How can I extract the original Bink from an EXE compiled Bink or Smacker file without recompressing it?	Highlight the EXE file, and hit "Mix in Sound". For the sound input name, enter '-' (a single minus sign), and then enter -1 for the track number (a track number that can't exist in the Bink file). Then hit Mix - the mixer will then copy the Bink file out of the EXE file.
How can I update the switches or the built-in player in an EXE compiled Bink or Smacker file?	Highlight the EXE and choose "Advanced play" - the EXE settings will be used in the Advanced Player. To change them, choose "Make EXE" and remake a new EXE with new settings (and it will contain the latest player version).
How do I create a "super-palette" from multiple input graphics files?	The RAD Video Tools uses a very sophisticated color reduction system that creates unbelievable 256 color images. You can use this same color reducer to create super-palettes for a level or an entire game. Here's what you need to do: 1. From the main menu of the RAD Video Tools, highlight all of the files that you want to evaluate. 2. Click on the "List files..." button and save the list file. 3. Highlight any one of the single files, and click the "Convert a file" button to open the RAD Converter. 4. In the "Convert Video" section, enter 1 for the "End frame" of the "Frame number range". (We only need to process one frame to get the

	super-palette). 5. In the "Convert Video" section, select the "Output as 256 Colors" option. 6. In the "Use palette from" option, select "File", and enter (or browse for) the name of the list file. 7. Click the Convert button and the RAD Converter will create a one-frame file that contains your new super-palette.
How can I convert from one graphics file format to another? For example, BMPs to FLC, GIFs to JPGs, TGAs to PCXs, FLC to TIFs, etc?	Use the Convert button in the RAD Video Tools to convert from one file format to another. 1. highlight the file (or files) that you want to convert 2. click the "Convert a file" button to open the RAD Converter</LI 3. click the "Output Type" button to choose the output type 4. hit the "Convert" button at the right. Note that the RAD Video Tools can also convert a series of single image files into an AVI or FLC and vice versa too!
How can I convert from one sound format to another?	Use the Convert button in the RAD Video Tools to convert from one file format to another. 1. highlight the input WAV file 2. click the "Convert a file" button to open the RAD Converter 3. change the options on the "Convert Audio" section to the output sound format you want 4. hit the "Convert" button at the right.
How can I join multiple graphics files together?	Use list files to join files together. 1. from the the main screen of the RAD Video Tools, highlight the files that you want to join 2. click the "List files..." button 3. set the order of the files, and save the list file 4. click the "Close" button to return to the main screen 5. at the main screen, select the list file you just made, and hit the "Convert a file" button 6. finally, click the "Convert" button to the right side of the screen to start the joining.
How can I join multiple sound files together?	Use the Convert button to join multiple sound files together. 1. highlight the files that you want to join 2. click the "Convert a file" button 3. click the "Output Type" button to choose the output format type 4. hit the "Convert" button at the right.
Can I crop my video? How can I process just a portion of a frame?	Processing a portion of a frame is often referred to as "cropping" the frame. Bink, Smacker and the converter all allow you to select offsets and a width and height so you can compress a subset of the video frame.