**26**

Export Audio Mixdown

Introduction

The Export Audio Mixdown function in Cubase Essential allows you to mix down audio from the program to a file on your hard disk. You always mix down an output bus. For example, if you have set up a stereo mix with tracks routed to a stereo output bus, mixing down that output bus would give you a mixdown file containing the whole mix.

Please note the following:

▪ The Export Audio Mixdown function mixes down the area between the left and right locators.

▪ When you mix down, you get what you hear – mutes, mixer settings and insert effects are taken into account.
Note though that you will only include the sound of the bus you select for mixdown.

▪ MIDI tracks are not included in the mixdown!
To make a complete mixdown containing both MIDI and audio, you first need to record all your MIDI music to audio tracks (by connecting the outputs of your MIDI instruments to your audio inputs and recording, as with any other sound source).

▪ A single instrument track can be directly exported as an audio mixdown.

Mixing down to an audio file

1. Set up the left and right locators to encompass the section you want to mix down.

2. Set up your tracks, so that they play back the way you want.
This includes muting unwanted tracks or parts, making manual mixer settings and/or activating the R (Read) automation buttons for some or all mixer channels.

3. Pull down the File menu and select "Audio Mixdown…" from the Export submenu.
The Export Audio Mixdown dialog appears.
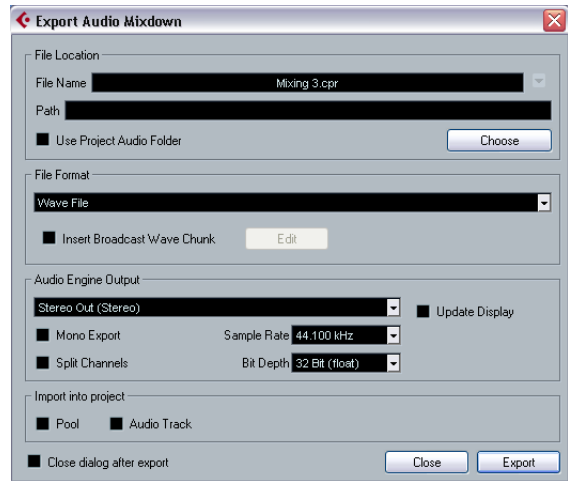
The available settings and options differ depending on the selected file format (see "The available file formats" on page 274).

4. In the File Location section at the top you can specify a name and path for the mixdown file.

Note that there are a number of options:

▪ Click the Options/Functions button to the right of the File Name field to open a pop-up menu.
▪ Select an entry from the Recent Paths sub-menu to reuse a path specified for a previous export.
▪ Select "Set File Name to Project Name" to use the project name for the export file.
▪ Enable the "Auto Update File Name" option (so that a check mark is displayed before it) to add a number to the specified file name every time you click the Export button.
▪ Activate the option "Use Project Audio Folder" to specify a path. This saves the mixdown file in the Project Audio folder.

5. Select a file format with the File Format pop-up menu.

6. Select the bus you want to mix down with the Outputs pop-up menu in the "Audio Engine Output" section.
This lists all output busses in the active project.

7. Activate the Split Channels option if you want to export all channels as mono files, or "Mono Export" if you want to export all channels as a single mono file.

8. Make additional settings for the file to be created.

This includes selecting sample rate, bit depth, etc. The available options depend on the selected file format – see "The available file formats" on page 274.

9. If you want to automatically import the resulting audio file back into Cubase Essential, activate the checkboxes in the "Import into project" section.

If you activate the "Pool" checkbox, a clip referring to the file will appear in the Pool. Activating the "Audio Track" checkbox as well, will create an audio event that plays the clip, and place it on a new audio track, starting at the left locator.

⇨ The Import options are only available if you have selected an uncompressed file format.

10. If you activate Update Display, the meters will be updated during the export process.

This allows you to check for clipping, for example.

11. Click Export.

A dialog with a progress bar is displayed while the audio file is created. If you change your mind during the file creation, you can click the Abort button to abort the operation.

▪ If the option "Close dialog after export" is activated, the dialog will be closed, otherwise it will be left open.

▪ If you have activated any of the "Import into project" options, the file will be imported back into the project.

When playing back the re-imported file in Cubase Essential, remember to mute the original tracks so that you really hear the correct file.

About the Import options dialog

If you activate any of the options in the Import section, the Import Options dialog will open when the export is complete. For a detailed description of the options in this dialog see "Import Medium…" on page 179.

The available file formats

The following pages describe the different export file formats, as well as their options and settings.

▪ AIFF files (see "AIFF files" on page 274).
▪ AIFC files (see "AIFC files" on page 275).
▪ Wave files (see "Wave files" on page 275).
▪ Broadcast Wave files (see "Broadcast Wave files" on page 275).
▪ Ogg Vorbis files (see "Ogg Vorbis files" on page 275).

▪ Windows Media Audio files (Windows only, see "Windows Media Audio files (Windows only)" on page 276).

MP3 export is available upon upgrade of Cubase Essential. Please contact your vendor for details.

AIFF files

AIFF stands for Audio Interchange File Format, a standard defined by Apple Inc. AIFF files have the extension ".aif" and are used on most computer platforms.

For AIFF files the following options are available:

Option	Description
File Name (File Location section)	In this field you can enter a name for the mixdown file.
Path (File Location section)	Here you can specify a path where you want the mixdown to be saved.
Use Project Audio Folder (File Location section)	If you activate this option, the mixdown file is saved in the Project Audio folder, as opposed to the specified path.
File Format pop-up menu (File Format section)	From this pop-up menu you can select the file format for the export, in this case "AIFF File".
Insert Broadcast Wave Chunk (File Format section)	This allows you to include information about the date and time of creation, a timecode position (allowing you to insert exported audio at the correct position in other projects, etc.) along with author, description and reference text strings in the exported file. Some applications may not be able to handle files with embedded info – if you get problems using the file in another application, turn off the option and re-export.
Edit button (File Format section)	By clicking this button the "Broadcast Wave Chunk" dialog opens where you can enter additional information that will be embedded in the exported files. Note that in the Preferences (Record–Audio–Broadcast Wave page) you can enter default text strings for author, description and reference that will automatically be displayed in the "Broadcast Wave Chunk" dialog.
Outputs pop-up menu (Audio Engine Output section)	This menu lists all output busses and channels in the active project. Simply select the bus or channel you want to mix down.
Mono Export (Audio Engine Output section)	If you activate this option, the exported audio is mixed down to mono.
Split Channels (Audio Engine Output section)	Activate this option if you want to export all channels as mono files.
Update Display (Audio Engine Output section)	If you activate this option, the meters will be updated during the export process. This allows you to check for clipping, for example.

Option	Description
Sample Rate (Audio Engine Output section)	This setting determines the frequency range of the exported audio – the lower the sample rate, the lower the highest audible frequency in the audio. In most cases, you should select the sample rate set for the project, since a lower sample rate will degrade the audio quality (mainly reducing the high frequency content) and a higher sample rate will only increase the file size, without adding to audio quality. Also consider the future usage of the file – if you e.g. plan to import the file into another application, you should select a sample rate supported by that application. If you are making a mixdown for CD burning, you should select 44.100 kHz, since this is the sample rate used on audio CDs.
Bit Depth (Audio Engine Output section)	Allows you to select 8, 16, 24 bit or 32 bit (float) files. If the file is an "intermediate mixdown" that you plan to re-import and continue working on in Cubase Essential, we recommend that you select the 32 bit (float) option. 32 bit (float) is a very high resolution (the same resolution as used internally for audio processing in Cubase Essential), and the audio files will be twice the size of 16 bit files. If you are making a mixdown for CD burning, you should use the 16 bit option, as CD audio is always 16 bit. In this case, we recommend that you activate the UV-22HR dithering plug-in (see the separate manual "Plug-in Reference" for details). This reduces the effects of quantization noise and artifacts from being introduced when converting the audio down to 16 bit. 8 bit resolution should only be used if required, since it will result in limited audio quality. 8 bit audio may be suitable in some multimedia applications, etc.
Pool (Import into project section)	Activate this option if you want to import the resulting audio file automatically back into the Pool. A clip referring to the file will appear in the Pool. If this option is activated, the Import Options dialog appears on export. For a description of the available settings, see "Import Medium…" on page 179.
Audio Track (Import into project section)	If you activate this option, an audio event that plays the clip will be created and placed on a new audio track, starting at the left locator. If this option is activated, the Import Options dialog appears on export. For a description of the available settings, see "Import Medium…" on page 179.
Close dialog after export	If this option is activated, the dialog will be closed after the export, otherwise it will be left open.

AIFC files

AIFC stands for Audio Interchange File Format Compressed, a standard defined by Apple Inc. These files support compression ratios as high as 6:1 and contain tags in the header. AIFC files have the extension ".aifc" and are used on most computer platforms.

AIFC files support the same options as AIFF files.

Wave files

Wave files have the extension ".wav" and are the most common file format on the PC platform.

Wave files support the same options as AIFF files.

Broadcast Wave files

Concerning audio, Broadcast Wave files are the same as regular Wave files, but without compression. To create a Broadcast Wave file, select Wave as the file format and activate the Insert Broadcast Wave Chunk option. Click Edit if you wish to edit the chunk information, otherwise the defaults as specified in the Preferences (Record–Audio–Broadcast Wave page) will be used. Broadcast Wave files have the extension ".wav".

Broadcast Wave files support the same options as AIFF files.

Ogg Vorbis files

Ogg Vorbis is an open source, patent-free audio encoding and streaming technology, offering compressed audio files (extension ".ogg") of small size, but with comparatively high audio quality.

For Ogg Vorbis files the following options are available:

Option	Description
File Name (File Location section)	In this field you can enter a name for the mixdown file.
Path (File Location section)	Here you can specify a path where you want the mixdown to be saved.
Use Project Audio Folder (File Location section)	If you activate this option, the mixdown file is saved in the Project Audio folder, as opposed to the specified path.
File Format pop-up menu (File Format section)	From this pop-up menu you can select the file format for the export.
Quality fader (File Format section)	The Ogg Vorbis encoder uses variable bit rate encoding, and the Quality setting determines between which limits the bit rate will vary. Generally speaking, the higher the Quality setting, the higher the sound quality but also the larger the files.
Outputs pop-up menu (Audio Engine Output section)	This menu lists all output busses and channels in the active project. Simply select the bus or channel you want to mix down.

Option	Description
Mono Export (Audio Engine Output section)	If you activate this option, the exported audio is mixed down to mono.
Split Channels (Audio Engine Output section)	Activate this option if you want to export all channels as mono files.
Update Display (Audio Engine Output section)	If you activate this option, the meters will be updated during the export process. This allows you to check for clipping, for example.
Close dialog after export	If this option is activated, the dialog will be closed after the export, otherwise it will be left open.

Windows Media Audio files (Windows only)

This is a format developed by Microsoft Inc. Due to the advanced audio codecs and lossless compression used, WMA files can be decreased in size with no loss of audio quality. The files have the extension ".wma".
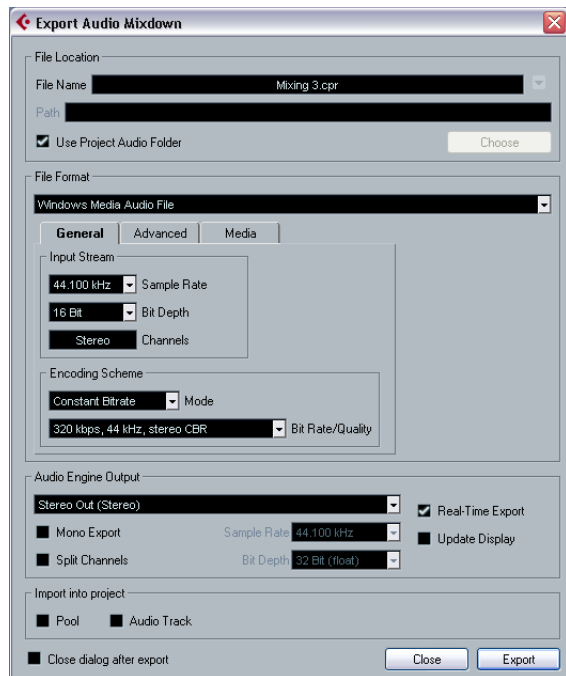
Exporting a WMA mixdown

⇨ Depending on the chosen output, not all options may be shown.

The following options are available:

General tab

In the Input Stream section, you set the sample rate (44.1, 48 or 96 kHz) and the bit resolution (16 bit or 24 bit) of the encoded file. These should be set to match the sample rate and bit resolution of the source material. If no value matches that of your source material, use the closest available value that is higher than the actual value. E.g. if you're using 20 bit source material, set the bit resolution to 24 bit rather than 16 bit.

⇨ The setting in the Channels field depends on the chosen output and cannot be changed manually.

The settings in the Encoding Scheme section are used for defining the desired output from the encoder. Make settings appropriate for the intended use of the file. If the file will be downloaded or streamed on the Internet, you might not want too high bit rates, for example. See below for descriptions of the options.

▪ Mode

The WMA encoder can use either a constant bit rate or a variable bit rate, or it can use lossless encoding for encoding to stereo. The options on this menu are as follows:

Mode	Description
Constant Bitrate	This will encode to a file with a constant bit rate (set in the Bit Rate/Channels menu, see below). Constant bit rate is preferably used if you want to limit the size of the final file. The size of a file encoded with a constant bit rate is always the bit rate times the duration of the file.
Variable Bitrate	Encodes to a file with a variable bit rate, according to a quality scale (the desired quality is set in the Bit Rate/Channels menu, see below). When you encode with variable bit rates, the bit rate fluctuates depending on the character and intricacy of the material being encoded. The more complex passages in the source material, the higher the bit rate – and the larger the final file.
Lossless	Encodes to a file with lossless compression.

▪ Bit Rate/Quality

This menu allows you to set the desired bit rate. The available bit rate settings vary depending on the selected mode and/or output channels (see above). If the Mode "Variable Bitrate" is used (see above), the menu allows

you to select from various levels of desired quality, with 10 being the lowest and 100 the highest. Generally, the higher the bitrate or quality you select, the larger the final file will be.

Advanced tab

▪ Dynamic Range Control

These controls allow you to define the dynamic range of the encoded file. The dynamic range is the difference in dB between the average loudness and the peak audio level (the loudest sounds) of the audio. These settings affect how the audio is reproduced if the file is played on a Windows XP computer with a player from the Windows Media series, and the user activates the special "Quiet Mode" feature of the player to control the dynamic range.

The dynamic range is automatically calculated during the encoding process, but you can specify it manually as well.

If you want to manually specify the dynamic range, first put a checkmark in the box to the left by clicking in it, and then enter the desired dB values in the Peak and Average fields. You can enter any value between 0 and -90 dB. Note, however, that it is usually not recommended to change the Average value, since it affects the overall volume level of the audio and therefore can affect the audio quality adversely.

The Quiet Mode in a Windows Media player can be set to one of three settings. Below, these settings are listed together with an explanation of how the Dynamic Range settings affect them:

▪ Off: If Quiet Mode is off, the dynamic range settings that were automatically calculated during the encoding will be used.
▪ Little Difference: If this is selected and you have not manually changed the dynamic range settings, the peak level will be limited to 6 dB above the average level during playback. If you have manually specified the dynamic range, the peak level will be limited to the mean value between the peak and average values you specified.
▪ Medium Difference: If this is selected and you have not manually changed the dynamic range settings, the peak level will be limited to 12 dB above the average level. If you have changed the dynamic range, the peak level will be limited to the peak value you specified.

Media tab

In these fields you can enter a number of text strings with information about the file – title, author, copyright information and a description of its contents. This information will then be embedded in the file header and can be displayed by some Windows Media Audio playback applications.

Export Audio Mixdown