

NCH Software

Switch Sound File Converter

This user guide has been created for use with
Switch Sound File Converter Version 10.xx

Technical Support

If you have difficulties using Switch Sound File Converter please read the applicable topic before requesting support. If your problem is not covered in this user guide please view the up-to-date Switch Sound File Converter Online Technical Support at

www.nch.com.au/switch/support.html.

If that does not solve your problem, you can contact us using the technical support contacts listed on that page.

Software Suggestions

If you have any suggestions for improvements to Switch Sound File Converter, or suggestions for other related software that you might need, please post it on our Suggestions page at

www.nch.com.au/suggestions/index.html.

Many of our software projects have been undertaken after suggestions from users like you. You get a free upgrade if we follow your suggestion.

Switch Sound File Converter

Contents

Switch Overview.....	3
How to Use Switch.....	4
What Formats Does Switch Support?.....	5
Converting Audio Streams or Difficult Files.....	8
Speech Recognition.....	9
Editing Audio in WavePad.....	10
Editing Audio Tags.....	11
Program Options.....	12
Using the Switch Command-line Tool.....	15
Encoder Options.....	21
Same as source.....	22
Converting M4P files.....	23
Shortcut Keys Reference.....	24
Output Options.....	25
Cloud Services.....	26
Converting audio files from archives.....	27
Volume adjustment and Effects.....	28
Send an Audio File.....	29
Upload to YouTube.....	30
Converting to CDA files.....	31
NCH Software Suite.....	32
Opus Encoder Options.....	33
Google Authorization Process on Windows XP and Vista.....	34
Software License Terms.....	35
Effects	
Normalize.....	38
Amplify.....	39
Compressor.....	40
Equalizer.....	43
Audio Cleanup	
Click/Pop Removal.....	46
Noise Reduction.....	47
Screen References	
Select Stream.....	48
Custom Resolution.....	49
Custom Resolution (360-Degree Video).....	50
Custom Frame Rate.....	51
Detected Format.....	52
Choose Base Folder to Mirror.....	53

Switch Overview

Switch is a program for converting audio files from one format to another. All major audio file formats can be loaded and converted, as well as some less well known formats.

Features

- Loads a variety of different audio file formats including Wave, MP3, Ogg, WMA and RealAudio + many others.
- Converts to a variety of output formats including Wave, MP3, AIFF, Vox, Raw, and many others.
- Also supports converting to Ogg, AAC, M4A and Flac formats (Plus version only).
- Ability to play tracks prior to conversion.
- Allows drag and drop of both files and folders.
- Perform batch conversions.
- Normalize while converting (evens out the volume level on convertings from different sources).
- Simple and intuitive interface.

System Requirements

- Windows 98/2000/Me/XP/2003/Vista/Win7/Win8/Win10.

Switch is just one component of the NCH Software Sound suite of audio software for business.

If you have not done so already, please visit <http://www.nch.com.au/software> to download many other audio related programs.

How to Use Switch

This is an overview of how to use Switch to convert your files from one format to another.

Adding and Removing Files

To convert your audio files into the desired format, begin by adding files into the file list window. Either click the "Add" button, or select File -> Add from the menu. In the browse window that opens, you can look for files of types mentioned on this page:

<http://www.nch.com.au/switch/kb/1405.html>.

Once your files have been added, if you wish to remove any of them, select the files and either click the "Remove" button, or select File -> Remove from the menu. To select multiple files at once, press the Ctrl key and left-click on the files you want to select. To highlight all the files, either select File -> Select All from the menu, or press Ctrl + A.

Playing Files

To play a file, double click it or left-click on the desired file and either click the "Play" button, or select File -> Play from the menu.

Selecting an Output Folder

Near the bottom of the main window, there is a field labeled "Save to Folder", where you can enter the file directory into which you wish to store the converted files. You can either type in the desired folder, or you can click the browse button on the right of the field. Doing so will bring up a window where you can browse for the destination directory on your hard drive. The last several directories you have chosen in the past are stored in a drop-down list, and can be accessed by clicking the arrow on the right side of the text field.

Selecting an Output Format and Configuring Encoder Options

The field labeled "Output Format" is where you can select the desired output file format for your files. Switch currently supports conversion to the file formats mentioned on this page:

<http://www.nch.com.au/switch/kb/1405.html>

Once you have selected a format to convert to, you can click the "Encoder Options" button to configure the settings for the format (see [Encoder Options](#) for more information on configuring options for any file format).

Converting Files

Once you have set the output folder and format, you can then select the files from the list you want to convert, and either click the "Convert" button, or select Convert -> Convert Files from the menu. If you hit the convert button without any files selected, all files in the list will be converted by default.

View Internal File Information

For those who are interested in the attributes or internal information of wave and mp3 files, Switch now has a feature that lets you access that information. For any wave, mp3 or dct file loaded into Switch, right-click on the file and select 'View Internal File Information' from the right-click menu.

View Extended Information

If you attempt to convert a file and something goes wrong with the conversion process, a short message will be displayed in the 'Extended Information' column in the Switch main window.

This message gives a brief summary of the specifics of the problem. If you wish to see a more detailed version of that message, right-click the file you attempted to convert and select 'View Extended Information'. You will see a pop-up window appearing that contains the more detailed message.

What Formats Does Switch Support?

Please refer to the following link for a list of formats currently supported by Switch:

[Click here to find out the formats supported by Switch](#)

There are a number of file formats that are only supported in the Switch Plus paid software version. These formats are also available, however, during the 14-day trial period of Switch Plus and during the first 14 days of Switch Free. These formats are as follows:

Convert From:

Audio formats:

- aac
- act/rcd/rec (newer version of format not supported)
- adts
- amr
- aif
- aifc
- aiff
- ape
- asf
- au
- caf
- cda
- dct
- ds2
- dss
- dts
- dvf (not all dvf recorders are supported)
- flac
- gsm/aiff
- it
- m3u
- m4a
- m4b
- m4r (iPhone ring tone)
- mid (General MIDI only)
- mpc
- mpga
- mp1
- mp2
- mp3
- moh
- msv (not all msv recorders are supported)
- pls
- ogg
- opus
- ra
- ram
- raw
- rec
- rcd

- rm
- rmj
- shn
- spx
- s3m
- voc
- vox
- wav
- wma
- wv
- xm
- 669

Video formats:

- 3gp
- asf
- avi
- flv
- mkv
- mod
- mov
- mp4
- mpeg
- mpg
- vob
- wmv

Convert To:

- aac
- ac3
- adts
- aif
- aifc
- aiff
- amr
- ape
- au
- caf
- cda
- dct
- dts
- flac
- gsm
- m3u
- m4a
- m4b
- m4r
- mov
- mp1
- mp2
- mp3
- mpc

- ogg
- opus
- pls
- raw
- rss
- spx
- txt (Speech Recognition)
- vox
- wav
- wma
- wpl

If you have files to convert of the above format types, we strongly encourage you to make the most of the trial period to ensure Switch does what you want it to do. Switch does *not* have extra supported formats that are only accessible after purchasing a license, all supported formats are available during the trial. What you see during the trial is exactly what you get after a license purchase.

Converting Audio Streams or Difficult Files

Switch now makes use of the [SoundTap Streaming Audio Recorder](#) as an option for converting files which it has problems with. To make use of this feature, select the option 'Convert Audio Stream' from the 'Convert' menu in Switch, then follow the three-step Wizard to convert your audio file.

- **Step 1:** Click the 'Start SoundTap Recorder' button to start SoundTap. If you do not have SoundTap installed, it will automatically download and install for you.
- **Step 2:** Choose whether you want to convert an audio stream through your web browser or a normal file off your computer's hard drive. If selecting to play a stream, enter the URL or web address of the page where you can normally hear the file being played in your web browser. If playing a file off your computer, load the file into any player that can play it, such as Windows Media Player. You can let the player start playing the file straight away, SoundTap will detect it playing and automatically start a new recording as appropriate.
- **Step 3:** Hit the 'Stop Recording Now' button to stop SoundTap recording the file. Next, go to the SoundTap main window and click the 'Find and Play' button to access your newly created file. Note that SoundTap will record only if there is audio playing, if you started the software too early or stopped it too late, then the extra gaps of silence will not be included in the recording.

Speech Recognition

Switch uses a speech recognition engine to generate a rough approximation of the words spoken in an audio file. To use this feature, just set the 'Output Format' to 'txt' and click 'Convert', this feature is available on windows vista and later version.

Editing Audio in WavePad

You may edit the selected file in the conversion list with an audio editor before conversion. To do so, click the Edit menu and select **Edit Audio in WavePad**. WavePad will open and your audio file will be loaded so you can perform basic editing, add sound effects, remove background noise, adjust frequencies, and more. Be sure to save any changes if you want the edited version to be converted in Switch.

To learn more about WavePad Audio Editing software, visit www.nch.com.au/wavepad

Editing Audio Tags

Switch supports editing tags to files of certain formats (e.g. ID3 tags for MP3 files, LIST INFO chunk of WAV files, etc). It also supports preserving tag information when converting to any supported formats.

Edit audio tags of a single file

To open the tag editor, select an audio file, click the Edit menu and select **Edit Audio Tags**.

Edit audio tags of multiple files

To open the tag editor, select two or more audio files, click the Edit menu and select **Edit Audio Tags**.

[Multiple Values] may be displayed if a tag has different values among files.

Edit audio tags of converted files

This function edits the tags of the output file. Function is enabled only after a successful conversion of a file.

To open the tag editor, select a file from the list, click the Edit menu and select **Edit Audio Tags of Converted Files**.

Saving to file

Select the course of action to take when saving tags to files. The options are:

- Apply changes to converted files only - Tags will be applied to succeeding conversions of the source file, but will not be saved to the source file.
- Apply changes to source files and converted files - Tags will be applied to the source file, and to succeeding conversions of the source file.

Tags will be applied to audio formats if the following conditions are met:

- File exists
- File is not Read-only
- File format supports metadata such as .aif, .aiff, .aifc, .flac, .m4a, .m4b, .m4r, .mp1, .mp2, .mp3, .ogg, .wav, and .wma.
- File is not part of an archive (Switch can open zip and rar files but only audio files will be listed or converted)

Restore Defaults

Click this button to restore previous settings by the user. Once the user clicks the OK button, the default values will be updated according to the latest values. Default values are specific per file.

Appearance

Tags which are not supported by the source file and the destination file format will have their values displayed as gray, or disabled for non-text controls (e.g. Artwork, Start/End date). For more information about tags, click [here](#).

Program Options

Open the Program Options by selecting File -> "Options" from the menu. In the window that pops up, you can configure the following options.

File

This dialog contains all options related to processing files. It is divided into a "Overwrite" section and an "Default Metadata" section.

Overwrite

Select the course of action to take when the destination file exists while converting files. The options are:

- Prompt for What to Do - always prompts whether you want to overwrite the file or not.
- Overwrite the file - overwrites the specific file being converted.
- Don't Convert the Original File - does not overwrite the specific file being converted
- Abort current and remaining conversions - cancels current file conversion and aborts all subsequent conversions as well.
- Append number to filename - appends a number to the filename of the converted file using a format that you can select. The format must include the strings "%filename%" and "%number%", but they may be in any order you like. You can add extra characters into the string and those characters will also appear in the converted file's filename.

Default Metadata

All converted files will include the default metadata entered in these fields:

- Comment - Description of the audio file or song.
- Copyright - Copyright information.
- Producer - Producer of the audio file.
- Encoder - Encoder of the audio file.
- Encoded By - Software used for encoding.

For more information about tags, click [here](#).

If title tag is empty, use file name

Not all source files have tags, which results in empty title tags after conversion. Check this box to use the file name as the title tag.

Conversions

This dialog contains all options related to converting files. It is divided into a "Formats" section and an "Errors" section.

Formats

Specify what to do if the file being converted is of the same format as the output format. The options are:

- Convert Anyway - converts the file as normal.
 - Check the sub-option if you don't want to recompress a file that has a source with a better compression rate
- Copy File Directly to Destination Folder - copies the file to the destination folder in its original non-converted form.
- Do Not Convert - do not convert the file at all.

Notes: The options in "Formats" will **always** be over-riden by the options specified in the "Overwrite" tab. For example, if you specify the "Convert Anyway" option in "Formats", but in "Overwrite" you specify "Don't Convert the Original File", then if the file exists the conversion will not go ahead.

Delete source file after conversion - if the conversion of the file was successful, then the original file will be deleted. If the conversion failed, the file will NOT be deleted. A successful conversion also includes copying of the file to the destination folder, as seen in the above option "Copy File Directly to Destination Folder".

Remember settings for reading files(only applicable to formats .raw and .vox)- If you are converting from .raw/.vox file. You can choose to use default Codec Settings for all other files of this type or set codec settings individually.

Errors

Specify what to do if there is an error produced with the file being converted. The options are:

- Prompt for What to Do - prompts whether you want to continue converting other files or abort converting altogether.
- Ignore Error and Continue Converting Other Files - continues converting other files even if any particular file produces errors.
- Abort File Conversions - cancels current file conversion and aborts all subsequent conversions as well.

Notes: If errors are produced on any file, they will be reported in the "Other Information" column for that file in the file list. To view extra information about the error, right click on the specific file and select "View Other Extended Information" from the menu (shortcut key Ctrl+E).

Audio Processing

To 'normalize' is to adjust the volume so that the loudest peak is equal to (or a percentage of) the maximum signal that can be used in digital audio. Usually you normalize files to 100% as the last stage in production to make it the loudest possible without distortion. Another reason to normalize is to have multiple tracks sound equally loud, or to have equal average loudness.

The 'Peak' normalization method finds the sample of the greatest magnitude within the file. Normalization is then done with this value as the peak. With the Normalize Peak Level set to 100% (0dB), the whole file will be amplified so that the peak reaches 0dB.

The 'Average Loudness (RMS)' normalization method normalizes according to the file's average loudness, or volume. Multiple files normalized to the same peak level using this method will have equal average loudness. The 'Normalize Peak Level' for this method should be set much lower than for the Peak method, because the average loudness will always be lower than the peak sample.

The 'Peak Loudness (RMS)' normalization method attempts to normalize according to how loud the loudest part of the file will sound. This is the best method to use to make multiple tracks sound equally loud. As with Average Loudness, the 'Normalize Peak Level' for this method should be set lower than for the Peak method, because the peak loudness is lower than the peak sample. The actual algorithm used takes the RMS of each 50ms window in the file, ranks the windows from loudest to quietest, and then takes the 95th percentile of these as the 'peak'. Note that no adjustment is made for humans' differing perception of different frequencies.

When there are several audio tracks in a video file, select default audio track to work with

Some video files may contain several audio tracks. Check this box to select the default audio track to work with. Uncheck to select a audio track manually.

Naming (Switch Plus feature only)

These options define how you wish to structure the output format of converted files. For .cda input files, the option 'Access Internet database to retrieve CD Album Details' will use your Internet connection to access the Album and Track name details from the MusicBrainz online database.

1. Artist - TrackName.ext
2. Album - Artist - TrackName.ext
3. Custom Setup (see below)

The Custom Setup is an advanced setting that allows you to decide how the output files will be stored on your computer. This involves the writing of a string of characters that denote information related to the file. An example of how to write a string is as follows:

[%artist% %album% %genre%]\{%tracknumber% %trackname% %year%}

This will convert your files to a folder named "Artist - Album - Genre", with filename "Tracknumber. Trackname - Year.fileextension".

All the arguments that can be used to form the custom string are as follows:

%artist% - the artist name

%album% - the album name

%extratrackinfo% - extra track information (may not exist in all cases)

%genre% - the genre of the album (e.g. rock, jazz)

%tracknumber% - the track number

%trackname% - the name of the extracted track

%year% - the year the album was released

[] - anything inside these brackets will be treated as a folder

{ } - anything inside these brackets will be treated as a filename

These details are viewable in Edit Audio Tags functionality (CTRL+T) of Switch.

You can have multiple levels of folders set up, but you are only allowed to have one filename specified in the string.

Other

This dialog contains general options that can't be grouped into a specific category.

Run in Background - Select the option "Run Switch in Background Mode" if you want Switch to convert your files but not slow down the performance of other applications you are using. Please note that this option may increase the time it takes for Switch to convert files, depending on the number of other applications you have running concurrently.

Sound Playback - Here you can select which audio device to use. Useful for computers with multiple sound cards installed.

Context Menu - Select this option to add a "Convert with Switch" option to the right-click File Explorer menu.

Confirmation - Select these options to be notified by Switch when you remove files from the list, or when your hard drive space drops below the specified amount.

Duplicate Files - To prevent slowing of Switch when working with long lists, select this option to prevent duplicate files from being added to the list.

Finishing Notification - When converting a long list of files, you may find it useful to use the finishing notification options to alert you to completion.

Right Click

Use this options page to define some customized shortcut commands which you can access from your File Explorer right click menu. Check the boxes below to add the shortcut to the right click menu. Use the pull down lists to specify which conversion format each customized shortcut should use. Each command will be executed using your current settings for the conversion format you have selected. For example: let's say you select '.wav' as your conversion format. You can now right click on a supported audio file and click 'Convert to .wav using Switch'. Switch will now automatically convert the selected file using your last .wav conversion settings.

- **Right click option 1** Check this box to add customized command number 1 to your File Explorer right click menu.
- **Right click option 2** Check this box to add customized command number 2 to your File Explorer right click menu.
- **Right click option 3** Check this box to add customized command number 3 to your File Explorer right click menu.

Using the Switch Command-line Tool

The Switch command-line tool allows you to use Switch to convert files from the Windows command line. This can be used to let other software convert files with Switch or to automate batch conversion.

The Switch executable is usually located at "C:\Program Files\NCH Software\Switch\switch.exe"

Usage: switch.exe [options] [files to add]

"Options" is where you can issue a series of commands to Switch. The options are:

-convert - convert all files loaded into Switch.

-clear - remove all files loaded into Switch.

-addfolder [FOLDER_NAME] - add a folder of files into Switch.

-format [FORMAT_NAME] - specify the output file format for which to convert the loaded files.

The format names are the file extensions for each format (e.g. .wav, .mp3).

-outfolder [FOLDER_NAME] - specify the output folder to store the converted files. Do NOT end the folder path with a backslash '\' character.

-settempfolder [FOLDER_NAME] - specify the temporary folder that Switch will store files in when playing or converting files. If the specified folder is not valid then no action will take place.

-overwrite [OVERWRITE_FLAG] - specifies what to do when the converted file already exists.

The flags are "PROMPT" (Prompt for What to Do), "ALWAYS" (Overwrite the File), "NEVER" (Don't Convert the Original File), "CANCEL" (Abort All Conversions), "APPENDNUMBER [format]" (Append number to filename - [format] is optional, if blank it will use the format already specified in Switch).

-settings [FORMAT_NAME] [SETTINGS_OPTIONS] - specifies the settings configuration to use for the specified format. For more detail on what parameters to use, see further down the page.

-insettings [FORMAT_NAME] [SETTINGS_OPTIONS] - specifies the settings configuration to use for formats requiring decoding prior to conversion (e.g. .vox, .raw) For more detail on what parameters to use, see further down the page.

-hide - hide the Switch window.

-show - show the Switch window.

-exit - exit Switch.

"Files to Add" is where you type in the files you want to load into Switch. All typed filenames must use the full filepath of the name, and circumfix with inverted commas.

Examples:

```
switch.exe -format MP3
```

```
switch.exe -outfolder "C:\My Music";
```

```
switch.exe -hide
```

```
switch.exe "C:\My Documents\sound.mp3"
```

```
switch.exe -convert "C:\My Music\music.mp3" -format .wav -overwrite ALWAYS
```

```
switch.exe -convert "C:\My Music\music.ogg" -format .mp3 -overwrite APPENDNUMBER  
"%filename%-%number%"
```

Unless you are in the Switch folder you will need to replace "switch.exe" from above with the full path "C:\Program Files\NCH Software\Switch\switch.exe" like this:

```
"C:\Program Files\NCH Software\Switch\switch.exe" -convert "C:\My Music\music.mp3" -format WAV
```

Settings Options:

The following details what parameters to enter when using the "-settings" and "-insettings" options. Note the order in which the parameters are written is the order in which they must be typed. Additionally, all parameters must be entered otherwise the command will not take effect.

WAV [CODEC] [SAMPLE_RATE] [CHANNELS]

To set WAV default settings, type **-settings .wav default**

- CODEC - valid values are:
 - "PCM8" - 8 bit PCM Uncompressed
 - "PCM16" - 16 bit PCM Uncompressed
 - "PCM24" - 24 bit PCM Uncompressed
 - "PCM32" - 32 bit PCM Uncompressed
 - "GSM" - GSM 6.10
 - "GSMN" - GSM 6.10 Native
 - "IMAADPCM" - IMA ADPCM
 - "MSADPCM" - Microsoft ADPCM
 - "ALAW" - CCITT A-Law
 - "ULAW" - CCITT u-Law
- SAMPLE_RATE - entered in Hz (e.g. 8000). To use the same sample rate as input source file, use "auto"
- CHANNELS - valid values are:
 - If CODEC is "PCM8" / "PCM16" / "PCM24" / "PCM32", use either of the following: 1 (Mono), 2 (Stereo), 6 (for 5.1 Channels), 8 (for 7.1 Channels), "auto" (To use the same number of channels as input source file)
 - If CODEC is "IMAADPCM" / "MSADPCM" / "ALAW" / "ULAW", use either of the following: 1 (Mono), 2 (Stereo)
 - If CODEC is "GSM" / "GSMN", you can omit the value because the only option is 1 (Mono)

Note the possible combination of values that can be entered depend largely on the codec, so you would have to open Switch and determine beforehand what values you can use for the codec in question.

Examples:

- -settings .wav default
- -settings .wav PCM32 48000 auto
- -settings .wav PCM16 auto auto
- -settings .wav GSM 8000
- -settings .wav ALAW 44100 2

MP3 ENCODER_TYPE CBR[BITRATE] [HIGH_QUALITY] VBR[MIN_BITRATE]

[MAX_BITRATE] [QUALITY] [CHANNEL_MODE] [ERROR_PROTECT]

ENCODER_TYPE - either "CBR" or "VBR"

CBR OPTIONS:

- BITRATE - entered in kbps e.g. 128
- HIGH_QUALITY - either "TRUE" or "FALSE"

VBR OPTIONS:

- MIN_BITRATE - entered in kbps e.g. 128
- MAX_BITRATE - entered in kbps e.g. 192
- QUALITY - a value from 0 to 9
- CHANNEL_MODE - either "STEREO", "JOINT", "FORCE" or "MONO"
- ERROR_PROTECT - either "TRUE" or "FALSE"

Examples:

- -settings .mp3 CBR 128 TRUE STEREO TRUE
- -settings .mp3 VBR 128 192 4 MONO FALSE

OGG

ENCODER_TYPE Quality[QUALITY] VBR[MIN_BITRATE] [MAX_BITRATE] [CHANNELS]
[STRIP_COMMENTS]

ENCODER_TYPE - either "Quality" or "VBR"

Quality OPTIONS:

- **QUALITY** - a value between 0 and 10

VBR OPTIONS:

- **MIN_BITRATE** - entered in kbps e.g. 128
- **MAX_BITRATE** - entered in kbps e.g. 192
- **CHANNELS** - either 1 or 2
- **STRIP_COMMENTS** - either "TRUE" or "FALSE"

Examples:

- -settings .ogg Quality 5 2 TRUE
- -settings .ogg VBR 96 192 1 FALSE

WMA [CODEC_INDEX] [SAMPLE_RATE] [BITRATE] [CHANNELS]

CODEC_INDEX - this value should be an integer of 0 or greater. The maximum value will depend on which wma codecs you have installed on your computer. The value you specify corresponds directly to the index of the WMA codec pulldown list in the WMA settings dialog. For example, if you prefer to use the first value listed in the pulldown list, specify 0 here. If you prefer to use the second specify 1.

SAMPLE_RATE - Specify the target sample rate of the conversion in Hz. eg. 44100.

BITRATE - Specify the target bitrate of the conversion in bps. eg. 128000.

CHANNELS - Specify 1 for Mono or 2 for Stereo.

Examples:

- -settings .wma 1 44100 192000 2

SPX [MODE] [VALUE] ([AGC] [DENOISE])

MODE - Defines what mode of encoding to perform. Must be one of the following values:

- **Preset**
- **CBR** (Constant Bitrate defined in bps)
- **VBR** (Variable Bitrate defined in bps)
- **ABR** (Average Bitrate defined in bps)

VALUE - This parameter depends on the **MODE** you specified in the first parameter:

- **Preset** - a value between 0 (lowest quality and highest compression) and 10 (highest quality and lowest compression).
- **CBR** - the bitrate at which the audio will be encoded at.
- **VBR** - the maximum bitrate at which to encode the audio.
- **ABR** - the average bitrate at which to encode the audio.

AGC - this is an optional parameter which will turn the Speex encoder's Adaptive Gain Control on.

Denoise - this is an optional parameter which instructs the Speex encoder to denoise the input before encoding.

Examples:

- -settings .spx Preset 1 Denoise
- -settings .spx VBR 192000 AGC Denoise
- -settings .spx CBR 128000

MPC [QUALITY_PRESET]

- **QUALITY_PRESET** - one of the following: Thumb, Radio, Standard, Extreme, Insane

Example: -settings .mpc Standard

APE [QUALITY_PRESET]

- **QUALITY_PRESET** - one of the following: Fast, Normal, High, Extra High, Insane

Example: -settings .ape Normal

AIFF [SAMPLE_RATE] [CHANNELS]

- **SAMPLE_RATE** - one of the following: 6000, 8000, 11025, 16000, 22050, 32000, 44100, 48000, 64000, 88200, 96000, 196000

- **CHANNELS** - either 1(Mono) or 2(Stereo)

Example: `-settings .aiff 44100 1`

AAC/M4A **ENCODER_TYPE** **ABR**[**BITRATE**] **VBR**[**QUALITY**] [**FORCE_MPEG2**] [**TNS**]

ENCODER_TYPE - either "ABR" or "VBR"

ABR OPTIONS:

- **BITRATE** - entered in kbps e.g. 128

VBR OPTIONS:

- **QUALITY** - a value between 0 and 10
- **FORCE_MPEG2** - either "TRUE" or "FALSE"
- **TNS** - either "TRUE" or "FALSE"

Examples:

- `-settings .aac ABR 128 FALSE FALSE`

- `-settings .m4a VBR 100 TRUE TRUE`

FLAC [**COMPRESSION_LEVEL**] [**SAMPLE_RATE**] [**CHANNELS**]

COMPRESSION_LEVEL - a value between 0 and 8

- **SAMPLE_RATE** - entered in Hz e.g. 8000

- **CHANNELS** - either 1 or 2

Example: `-settings .flac 6 44100 2`

VOX/RAW [**CODEC**] [**SAMPLE_RATE**] [**CHANNELS**]

(Note: applies to both "-settings" and "-insettings" commands)

- **CODEC** - a number between 0 and 8, representing the codec type. The codecs on offer are (in order):

- Dialogic ADPCM
- G.711 uLaw
- G.711 aLaw
- 16 bit PCM (Intel Endian)
- 8 bit unsigned
- 8 bit signed
- 16 bit PCM (Big Endian)
- 32 bit float (Intel Endian)
- 32 bit float (Big Endian)

- **SAMPLE_RATE** - entered in Hz e.g. 8000

- **CHANNELS** - either 1 or 2

Examples:

- `-settings .vox 0 44100 2`

- `-settings .raw 3 32000 1`

- `-insettings .vox 2 22050 2`

- `-insettings .raw 4 8000 1`

AMR [**BITRATE**]

- **BITRATE** - the bitrate at which you want to encode the AMR file (in kbps). The choices are 4.75, 5.15, 5.9, 6.7, 7.4, 7.95, 10.2 and 12.2.

Examples:

- `-settings .amr 4.75`

- `-settings .amr 10.2`

DCT [**SAMPLE_RATE**] [**CHANNELS**]

- **SAMPLE_RATE** - one of the following: 8000, 11025, 16000, 22050

- **CHANNELS** - one of the following: 0(Same as source channels), 1(Mono), 2(Stereo), 6(5.1 Channels), 8(7.1 Channels)

Example: `-settings .dct 11025 1`

M3U/PLS/WPL/RSS[URL]

- URL - the URL of the site where you will host the playlist file. URLs should start with the http:// or ftp:// protocol string as appropriate.

To configure the settings for the generated MP3 file, use the standard MP3 settings syntax to configure it (i.e. -settings .mp3 etc. etc.)

Examples:

- -settings .rss "http://www.music.com/"
- -settings .m3u "http://livebands.com/rock/"
- -settings .pls "ftp://latinmusic.net/samba/"

Volume and Audio Cleanup:

The following are used to set the options for amplify, normalize, pop reduction, and noise reduction. Note the order in which the parameters are written is the order in which they must be typed. All parameters must be entered, otherwise the command will use default values. Any value entered out of range will automatically be adjusted to the nearest valid value

-amplify [VALUE] - increase / decrease the loudness or volume ([more info](#)). You can disable the feature by **-amplify off**.

- VALUE - unit is in dB ranging from -40db to 40db.

Examples:

- -amplify -30
- -amplify off
- -amplify (Note: No amplification will be applied)
- -amplify 0 (Note: 0 means no amplification will be applied)
- -amplify 41 (Note: 41 is out of range. 40 will be used instead)

-normalize [TYPE] [VALUE] - adjust the volume so that the loudest peak is equal to (or a percentage of) the maximum signal that can be used in digital audio ([more info](#)). You can disable the feature by **-normalize off**.

- TYPE - Either "PEAK", "RMS", "PEAKRMS", or "PRESET"
- VALUE -
 - If TYPE is either "PEAK", "RMS", or "PEAKRMS", unit is in dB ranging from -40db to 0db.
 - If TYPE is "PRESET", the value can be either one of the following:
 - 0 - Simple Peak
 - 1 - Simple Peak, 3dB Headroom
 - 2 - Simple Peak, 6dB Headroom
 - 3 - Simple Peak, 9dB Headroom
 - 4 - Simple Peak, 12dB Headroom
 - 5 - Equal Average Loudness
 - 6 - Equal Average Loudness, Extra Headroom
 - 7 - Equal Percieved Loudness
 - 8 - Equal Percieved Loudness, Extra Headroom

Examples:

- -normalize PEAK -20
- -normalize PRESET 4
- -normalize off
- -normalize (Note: If no parameters entered, default values will be used: TYPE: PEAK, VALUE: 0)
- -normalize RMS (Note: If no VALUE entered, default value of 0 will be used)
- -normalize PRESET 9 (Note: 9 is out of range. 8 will be used instead)

-popreduction [CLICK_SENSITIVITY] [CLICK_LENGTH] - remove click and pop sounds from recordings ([more info](#)). You can disable the feature by **-popreduction off**.

- CLICK_SENSITIVITY - unit is in % ranging from 1% to 100%.
- CLICK_LENGTH - unit is in milliseconds ranging from 1 to 1000.

Examples:

- -popreduction 30 420
- -popreduction off
- -popreduction (Note: If no parameters entered, default values will be used: CLICK_SENSITIVITY: 50, CLICK_LENGTH: 450)
- -popreduction 30 (Note: If no CLICK_LENGTH entered, 450 will be used)
- -popreduction 101 400 (Note: 101 is out of range for CLICK_SENSITIVITY. 100 will be used instead)
- -popreduction 45 0 (Note: 0 is out of range for CLICK_LENGTH. 1 will be used instead)

-noisereduction [THRESHOLD] [NOISE_GATE] - reduce noise in audio ([more info](#)). You can disable the feature by **-noisereduction off**.

- THRESHOLD - unit is in % ranging from 1% to 50%.
- NOISE_GATE - unit is in dB ranging from -40dB to 0dB.

Examples:

- -noisereduction 30 -10
- -noisereduction off
- -noisereduction (Note: If no parameters entered, default values will be used: THRESHOLD: 30, NOISE_GATE: -30)
- -noisereduction 20 (Note: If no NOISE_GATE entered, -30 will be used)
- -noisereduction 0 -15 (Note: 0 is out of range for THRESHOLD. 1 will be used instead)
- -noisereduction 20 -41 (Note: -41 is out of range for NOISE_GATE. -40 will be used instead)

-compressor [PRESET] - A dynamic range compressor limits the volume levels of a sound recording so that it stays within a certain loudness range. ([more info](#)). You can disable the feature by **-compressor off**.

- PRESET - the value can be either one of the following (See [link](#) for description):
 - 0 - Default
 - 1 - Fast
 - 2 - Smooth
 - 3 - Heavy
 - 4 - Hard Limit
 - 5 - Soft Limit
 - 6 - Noise Gate

Examples:

- -compressor 2
- -compressor off
- -compressor (Note: If no PRESET entered, 0 will be used)
- -compressor 7 (Note: 7 is out of range for PRESET. 6 will be used instead)

-equalizer - An equalizer changes the frequency response of a signal so it has different tonal qualities. ([more info](#)). This command just turns on / off the equalizer. Use **-equalizer off** to turn off. Equalizer values needs to be set in the Switch window.

Examples:

- -equalizer
- -equalizer off

Encoder Options

This page provides links to our knowledge base pages for information on the settings available for each encoder supplied with Switch.

- [aac / m4a / m4r encoder options](#)
- [caf encoder options](#)
- [aiff encoder options](#)
- [au encoder options](#)
- [flac encoder options](#)
- [rss / m3u / pls / wpl encoder options](#)
- [mp3 encoder options](#)
- [ogg encoder options](#)
- [opus encoder options](#)
- [raw / vox encoder options](#)
- [wav encoder options](#)
- [amr encoder options](#)
- [ape encoder options](#)
- [mpc encoder options](#)
- [spx encoder options](#)
- [wma encoder options](#)

Same as source

For some formats, this is an encoder option when you want the sample rate and number of channel(s) of output file to be the same as input source. Please be careful when using this option because the specific sample rate and number of channel(s) on the input may not be available for the output format. In this case, the conversion may fail or just use a default valid encoding option.

Converting M4P files

M4P files are songs purchased via Apple iTunes, and they are protected by Apple's "Fairplay" DRM (Digital Rights Management). M4A files may be DRM protected as well and are treated the same as M4P files.

M4P files can only be opened with iTunes on a computer or devices such as iPod, iPhone or iPad. The computer or device should be authorised using an iTunes account prior to playing, transferring or burning the files.

Switch cannot play nor convert an M4P file but you can obtain an unprotected (M4A) version of the file using iTunes.

There are two ways to unprotect an M4P file:

1. Using iTunes Plus

Please follow the steps in the Apple web page

- [Apple information about iTunes Plus](#)

2. Burn Audio CD in iTunes and convert the audio CD using Switch

Please follow the steps below to burn the M4P files to an Audio CD using iTunes.

- 1. Open iTunes and login using Apple ID and password.
- 2. Make a new Playlist and add MP4 files you wish to convert.
- 3. Insert a blank CD or a virtual CD.(see Note)
- 4. Select the Playlist.
- 5. Select menu File->Burn Playlist to Disk.
- 6. In the Burn Settings dialog select Audio CD and Gap between songs set to None.
- 7. click Burn to start writing to CD and wait until iTunes finishes writing the CD.
- 8. Open Switch.
- 9. Select menu File->Add CD to import the CD into Switch.
- 10. Select desired output format and click Convert. Switch will convert all tracks in the CD to the new format.

Note:

It is possible to use a Virtual CD by installing a virtual CD software. In this case no real CD is required. In Burn Settings (Step 6) select a virtual CD drive instead of a real CD drive.

Shortcut Keys Reference

Add Files	Alt+A
Add Folder	Alt+F
Add CD	F4
Add DVD	F6
Remove	Delete
Remove All Files	Alt+E
Remove Unsupported Files	Ctrl+U
Show Full Menu	Alt
Play/Pause File	Space
Close Play Window	Esc/Enter
Select All	Ctrl+A
Open Application Options	Ctrl+O
Open Encoder Options	Alt+O
Open Volume Options	Ctrl+B
Convert Files	F3
Edit Audio Tag	Ctrl+T
Convert Audio Stream	Ctrl+N
View Internal File Information	Ctrl+F
View Extended Information	Ctrl+E
Exit Program	Alt+F4
Help Documentation	F1
Edit file (in WavePad)	F8
Go to Start (in Play Window)	Home
Go to End (in Play Window)	End
Rewind (in Play Window)	Arrow Left
Forward (in Play Window)	Arrow Right

Output Options

Sets options used for conversion such as encoder settings, and metadata written to the output file.

To set output options, click the **Options...** button near the selection of Output Format

Encoder Options

For information about encoder options, go to [Encoder Options](#) topic.

Default Metadata

All converted files will include the default metadata entered in these fields:

- Comment - Description of the audio file or song.
- Copyright - Copyright information.
- Producer - Producer of the audio file.
- Encoder - Encoder of the audio file.
- Encoded By - Software used for encoding.

For more information about tags, click [here](#).

If title tag is empty, use file name

Not all source files have tags, which results in empty title tags after conversion. Check this box to use the file name as the title tag.

Restore Defaults

Click this button to restore previous settings by the user. Once the user clicks the OK button, the default values will be updated according to the latest values

Cloud Services

Add File from Cloud

Switch allows you to open files from Dropbox, Google Drive, or OneDrive. They are cloud-based storage services that let you upload, store, access and share your files from anywhere. For Dropbox the first 2 GB, for OneDrive the first 5 GB, and for Google Drive the first 15 GB of storage are free, but additional storage packages are available for a monthly fee.

To set up this option, you need to have an existing Dropbox, Google, or OneDrive account. Using 'Add file from Cloud Service...' option under the 'File' menu of Switch or the pull down list of 'Add File(s)', you can choose one of the above cloud services. After authenticating with your account, you will be able to navigate through the folders to select the desired file and open it in Switch.

To log in with a different user account, please check the "Login as different user" box.

Upload to Cloud

Switch allows you to upload your audio files to different Cloud services including Google Drive, Dropbox, and OneDrive.

To upload to Cloud, you can do one of the following options:

- Go to Tools menu, and click "Upload to Cloud..."
- Go to Convert menu, and click "Convert and Upload to Cloud..." - this will let you convert a file first, then upload the output file

Before uploading, Switch will prompt you to choose any of the Cloud services and its target folder where you can upload the file.

Converting audio files from archives

Switch can add audio files directly from archive files for conversion to other formats.

Valid archive formats are:

- .zip
- .rar
- .zab

To add audio files from an archive file:

- Click the Add File(s) button on the toolbar
- Select Archived Files (*.zip,*.rar) from the format box dropdown list located above the "Open" and "Cancel" buttons
- Select the desired archive file
- Click "Open". Switch will add the audio files from the selected archive file

Volume adjustment and Effects

Switch can adjust volume of the file with these options:

Amplify

To 'amplify' is to increase the loudness or volume. The volume is entered in dB. To make the volume louder, enter value greater than 0dB. To make the volume softer, enter value less than 0dB. Selecting 0dB doesn't have any change.

Normalize

To 'normalize' is to adjust the volume so that the loudest peak is equal to (or a percentage of) the maximum signal that can be used in digital audio. Usually you normalize files to 100% as the last stage in production to make it the loudest possible without distortion. Another reason to normalize is to have multiple tracks sound equally loud, or to have equal average loudness.

Click/Pop Removal

Remove click and pop sounds from the file. It is ideal for those who have recorded music onto their computer from LP records and want to repair any defects caused by dust and scratches on the vinyl.

Noise Reduction

There are two ways of reducing noise. The "Spectral Subtraction" method - used where noise is really a problem - and the "Multiband Noise Gates" method - used just automatically on voice recording jobs.

Sometimes using both (spectral always must be first) then multiband gates works very well.

Dynamic Range Compressor

A Dynamic Range Compressor limits the volume levels of a sound recording so that it stays within a certain loudness range.

An example of where it is used is in TV broadcasting, where it ensures that the volume levels of ads are perceived as being louder than the television program itself (without any change in the actual broadcast volume).

It also has a use for recording audio from one medium to another, where the two mediums are not capable of handling the same range of volume levels (e.g. A CD can handle a much greater range than a cassette tape).

Equalizer

An equalizer changes the frequency response of a signal so it has different tonal qualities. You will see a dialog containing three different Equalizer representations. Use the tabs at the top to select between the Visual Equalizer, Graphic, and Parametric Equalizer views.

Preview

The result of applying certain effects can be previewed using the play button in the Effect dialog. If you modify the effect parameters while previewing the file, you should hear the changes taking place. For this to work properly, we recommend using either ASIO or DirectSound as your sound playback system.

Send an Audio File

Send an Audio File

Switch allows you to send the file by either email or direct internet connection. You can select how to send a file by either of the following:

- Go to Tools menu, and click "Send Files..."
- Go to Convert menu, and click "Convert and Send Files..." - this will let you convert a file first, and send the output file

Email

If you select this option, Switch will send the file as an attachment to an email.

Enter the email address of the recipient in the Email Address box.

Email - Settings

By default Switch uses the MAPI system to send email using your existing email software (Eudora, Outlook, Lotus Notes etc.). To use this you must have email software installed and set as the "default MAPI server". The advantage of this system is that your email software manages the email. However, there can be some problems with some email software. If you have MAPI problems, try the alternative internal SMTP.

If you select the "Internal Simple SMTP" option, email is sent directly by Switch to your server. You must enter the SMTP mail host used by your ISP for sending of mail (call them if you do not know it).

If, when using Internal Simple SMTP, it does not work, it might be that your server requires an authenticated login (a username and password) to send email. If so, append :username:password to the SMTP server (i.e. smtp.yourserver.com:username:password).

Direct Internet Connection

Switch can send files directly to an internet server. This is faster than the email option but requires that your recipient have access to a web hosting (FTP) service to store the files.

Select the Direct Internet Connection option and enter the Server, User Name, Password and Directory as setup for your FTP server for your recipient.

Upload to YouTube

Switch allows you to upload audio files to YouTube by converting them to a video file.

- Go to Tools menu, and click "Upload to YouTube"
- Go to Convert menu, and click "Convert and Upload to YouTube" - this will let you convert a file first, and upload the output file

Converting to CDA files

Why CDs are needed to convert .cda (Compact Disk Audio) file?

The .cda files that we see in our Windows explorer are generated by the Windows CD drivers. They act as a pointer or shortcut to the CD location of a specific track only and do not contain any musical information, or the actual audio file or music.

Thus, if then we attempt to convert a .cda file, it will require the CD that contains the actual audio file. If CD is not available during the .cda conversion, you will get an error as it cannot find the audio file that it points to.

NCH Software Suite

This is a useful way to browse all the software available from NCH Software

You can see a set of products by type like Audio, Video and so on and view the product. From there you can try out the product and it will download and install it for you to trial. If you already have the product installed then you can click "Run It Now" and the program will be launched for you.

There is also a list of features for products in the category. Click on a feature, such as "Edit a Video File", to install a product with that ability.

Search

Search our website for products matching any keywords you type.

See more of our software

Browse our website for more software.

Subscribe to our newsletter

You can subscribe to our newsletter for announcements of new releases and discounts. You can unsubscribe at any time.

See the latest discounts for purchase

See the latest discounts we are offering for purchasing our products.

Opus Encoder Options

Encode audio into the Opus format.

Bitrate

Target bitrate in kbit/sec (6-256 per channel) In VBR mode this specifies the average rate for a large and diverse collection of audio. In CVBR and Hard-CBR mode it specifies the specific output bitrate. Default for ≥ 44.1 kHz input is 64kbps per mono stream, 96kbps per coupled pair.

Use default bitrate encoding

In default mode, encoder will choose bitrate automatically. For ≥ 44.1 kHz input is 64kbps per mono stream, 96kbps per coupled pair.

Use variable bitrate encoding

In VBR mode the bitrate may go up and down freely depending on the content to achieve more consistent quality.

Use constrained variable bitrate encoding

Outputs to a specific bitrate. This mode is analogous to CBR in AAC/MP3 encoders and managed mode in vorbis coders. This delivers less consistent quality than VBR mode but consistent bitrate.

Use hard constant bitrate encoding

With hard-cbr every frame will be exactly the same size, similar to how speech codecs work. This delivers lower overall quality but is useful where bitrate changes might leak data in encrypted channels or on synchronous transports.

Down mix (None)

Don't down mix, keep the channels same as source.

Downmix to mono

Force to Downmix to mono.

Downmix to stereo

Downmix to stereo if input channels > 2 .

Google Authorization Process on Windows XP and Vista

Extra steps are required to give Switch authorization to upload to Google Drive and/or YouTube when running on Windows XP or Windows Vista:

1. Click **Authorize...** in the **Authorization** dialog.
2. In the web page that opens, sign in to your Google account, if required.
3. Confirm that you authorize Switch to access the requested features.
4. Copy the **Authorization Code** provided by Google and paste it in the **Authorization confirm** dialog in Switch.
5. Click **Ready** to confirm that authorization is complete.

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7. Use of data collected by the software is subject to the NCH Software Privacy Statement which allows automatic anonymized collection of usage statistics in limited circumstances.

8. Choice of Law. If you reside in the United States, your relationship is with NCH Software, Inc, a United States company, and this agreement is governed by the laws and courts of Colorado. If you reside anywhere in the world outside of the United States, your relationship is with NCH Software Pty Ltd, an Australian company, and this agreement is governed by the laws and courts of the Australian Capital Territory. Such courts have continuing and exclusive jurisdiction over any dispute between you and us, regardless of the nature of the dispute.

9. U.S. Customers Only: Arbitration Agreement and Class Action Waiver: PLEASE READ THIS CAREFULLY. IT MAY AFFECT YOUR RIGHTS.

If you reside in the United States, NCH Software and you agree to arbitrate all disputes and claims between us. This agreement to arbitrate is intended to be broadly interpreted. References to "NCH" "you," and "us" include our respective subsidiaries, affiliates, agents, employees, predecessors in interest, successors, and assigns. This arbitration agreement does not preclude you from bringing issues to the attention of U.S. federal, state, or local agencies. Such agencies can, if the law allows, seek relief against us on your behalf. This Agreement evidences a transaction in interstate commerce, and thus the Federal Arbitration Act governs the interpretation and enforcement of this provision. This arbitration provision shall survive termination of this Agreement.

A party who intends to seek arbitration must first send to the other, by certified mail, a written Notice of Dispute ("Notice"). The Notice to NCH should be addressed to:

Legal Department
NCH Software, Inc.
6120 Greenwood Plaza Blvd, Ste 120
Greenwood Village CO, 80111
USA

("Notice Address"). The Notice must (a) describe the nature and basis of the claim or dispute; and (b) set forth the specific relief sought ("Demand"). If NCH and you do not reach an agreement to resolve the claim within 30 days after the Notice is received, you or NCH may commence an arbitration proceeding. The amount of any settlement offer made by NCH or you shall not be disclosed to the arbitrator.

A. The arbitration will be governed by the Commercial Arbitration Rules and the Supplementary Procedures for Consumer Related Disputes (collectively, "AAA Rules") of the American Arbitration Association ("AAA"), as modified by this Agreement, and will be administered by the AAA. The AAA Rules are available online at adr.org, by calling the AAA at 1-800-778-7879, or by writing to the Notice Address. The arbitrator is bound by the terms of this Agreement. All issues are for the arbitrator to decide, including issues relating to the scope and enforceability of the arbitration provision. Unless NCH and you agree otherwise, any arbitration hearings will take place in Greenwood Village Colorado. If your claim is for \$10,000 or less, we agree that you may choose whether the arbitration will be conducted solely on the basis of documents submitted to the arbitrator, through a telephonic hearing, or by an in-person hearing as established by the AAA Rules. If your claim exceeds \$10,000, the right to a hearing will be determined by the AAA Rules. Regardless of the manner in which the arbitration is conducted, the arbitrator shall issue a reasoned written decision. NCH will pay all AAA filing, administration, and arbitrator fees for any arbitration initiated in accordance with the notice requirements above. If, however, the arbitrator finds that either the substance of your claim or the relief sought in the Demand is frivolous or brought for an improper purpose then the payment of all such fees will be governed by the AAA Rules. In such case, you agree to reimburse NCH for all monies previously disbursed by it that are otherwise your obligation to pay under the AAA Rules. In addition, if you initiate an arbitration in which you seek more than \$75,000 in damages, the payment of these fees will be governed by the AAA rules.

B. The arbitrator may award declaratory or injunctive relief only in favor of the individual party seeking relief and only to the extent necessary to provide relief warranted by that party's individual claim. **YOU AND NCH AGREE THAT EACH MAY BRING CLAIMS AGAINST THE OTHER ONLY IN YOUR OR ITS INDIVIDUAL CAPACITY, AND NOT AS A PLAINTIFF OR CLASS MEMBER IN ANY PURPORTED CLASS OR REPRESENTATIVE PROCEEDING.** Further, unless both you and NCH agree otherwise, the arbitrator may not consolidate more than one person's claims, and may not otherwise preside over any form of a representative or class proceeding. If this specific provision is found to be unenforceable, then the entirety of this arbitration provision shall be null and void.

C. Notwithstanding any provision in this Agreement to the contrary, we agree that if NCH makes any future change to this arbitration provision (other than a change to the Notice Address) you may reject any such change by sending us written notice within 30 days of the change to the Arbitration Notice Address provided above. By rejecting any future change, you are agreeing that you will arbitrate any dispute between us in accordance with the language of this provision.

D. To opt out of this Arbitration Agreement and class action waiver send an Opt Out notice to the Notice Address stating "I am electing to opt out of the Arbitration Agreement and class action waiver contained in the Legal Terms applicable to my purchase of an NCH product." Your Opt Out Notice must include the date and proof of purchase. The Opt Out Notice must be postmarked no later than thirty (30) days after the date of purchase. A separate Opt Out Notice must be sent for each product purchased.

Effects - Normalize

Normalize

To 'normalize' is to adjust the volume so that the loudest peak is equal to (or a percentage of) the maximum signal that can be used in digital audio. Usually you normalize files to 100% as the last stage in production to make it the loudest possible without distortion. Another reason to normalize is to have multiple tracks sound equally loud, or to have equal average loudness.

The 'Peak' normalization method finds the sample of the greatest magnitude within the file. Normalization is then done with this value as the peak. With the Normalize Peak Level set to 100% (0dB), the whole file will be amplified so that the peak reaches 0dB.

The 'Average Loudness (RMS)' normalization method normalizes according to the file's average loudness, or volume. Multiple files normalized to the same peak level using this method will have equal average loudness. The 'Normalize Peak Level' for this method should be set much lower than for the Peak method, because the average loudness will always be lower than the peak sample.

The 'Peak Loudness (RMS)' normalization method attempts to normalize according to how loud the loudest part of the file will sound. This is the best method to use to make multiple tracks sound equally loud. As with Average Loudness, the 'Normalize Peak Level' for this method should be set lower than for the Peak method, because the peak loudness is lower than the peak sample. The actual algorithm used takes the RMS of each 50ms window in the file, ranks the windows from loudest to quietest, and then takes the 95th percentile of these as the 'peak'. Note that no adjustment is made for humans' differing perception of different frequencies.

Effects - Amplify

Amplify

To 'amplify' is to increase the loudness or volume. The volume is entered in dB. To make the volume louder, enter value greater than 0dB. To make the volume softer, enter value less than 0dB. Selecting 0dB doesn't have any change.

Effects - Compressor

Dynamic Range Compressor

A dynamic range compressor limits the volume levels of a sound recording so that it stays within a certain loudness range.

An example of where it is used is in TV broadcasting, where it ensures that the volume levels of ads are perceived as being louder than the television program itself (without any change in the actual broadcast volume).

It also has a use for recording audio from one medium to another, where the two mediums are not capable of handling the same range of volume levels (e.g. A CD can handle a much greater range than a cassette tape).

The Dynamic Range Compressor dialog has two tabs: "Simple" and "Graphic". Changing settings on the Simple tab will also change the graph on the Graphic tab, but not vice versa as the graph allows more control. There is also an "Advanced Compressor Settings" dialog for adjusting more advanced features.

The Simple Tab

The "Simple" tab of the Dynamic Range Compressor dialog contains settings called "Limiter", "Compressor", and "Noise Gate". While these sound like three different things, they are more accurately viewed as three different ways of using the dynamic range compressor.

The "Limiter" defines the maximum decibel level that the sound recording will be allowed to rise up to. So if, for example, the Limiter Threshold was set to -2dB, then you would never hear the volume level of the recording get louder than -2dB. Any signal over the limiter threshold would be clipped, which would probably cause distortion. Note that setting the Limiter Threshold to 0dB effectively turns the limiter off, because 0dB represents the loudest signal possible in a digital recording.

The "Compressor" reduces the volume of any sound which exceeds its "Threshold" setting. When a signal exceeds the threshold, the compressor gradually attenuates the sound to bring it down below the dB level, and does it in such a way that the listener will not be aware the attenuation is occurring. The compressor differs from the limiter in that the compressor does allow sounds to go above its threshold (for a short time), whereas the limiter does not.

The "Ratio" setting defines the ratio of the reduction in volume of sounds which exceed the compressor threshold. For example, if the ratio is 4:1 and the volume exceeds the threshold by 4dB, then the volume will be reduced to only exceed the threshold by 1dB. Note that a ratio of 1:1 means that there will be no change in volume; it effectively turns the compressor off.

The "Noise Gate" works similarly to the Compressor, except that it reduces the volume of sound below its Threshold. This can be useful for reducing or removing softer background noise from a recording.

You will find that the maximum Compressor Threshold you can set is the same as the current Limiter Threshold value. This basically means that, in any situation, the sound will start to attenuate at the Compressor Threshold, but will never be heard louder than the Limiter Threshold. Similarly, the maximum Noise Gate Threshold you can set is the same as the current Compressor Threshold.

The Graphic Tab

The "Graphic" tab of the Dynamic Range Compressor dialog shows a graph which represents the relationship between input and output volumes. The horizontal axis shows input volumes in dB from -60dB to 0dB. The vertical axis shows output volumes on the same scale. The graph will be changed by changes to settings on the Simple tab, but changes to the graph will not be reflected on the Simple tab, because it is possible to represent a wider variety of settings on the graph than is possible in the controls on the Simple tab. When the dynamic range compressor is applied it will use the settings from the Graphic tab.

To change the graph, click and drag the black vertex markers, or click anywhere else to create a new vertex. To remove a vertex, right-click on it.

Advanced Compressor Settings

Clicking on the "Advanced" button in the Dynamic Range Compressor dialog will open the Advanced Compressor Settings dialog. In it are controls for the following properties of the compressor:

-Input Level Sensing - Peak or RMS:

-This controls how the compressor determines the audio level. "Peak" sensing looks at the highest point in the window of audio which it examines. It will almost always give a higher reading than "RMS" sensing, which uses an average, or Root Mean Square of the window to determine the audio level. RMS sensing more closely corresponds to the audio level which a human listener would perceive.

-Compressor Response:

-

-Attack:

-The time (between 0 and 1000 milliseconds) that it will take to apply the gain adjustment. The total gain adjustment required will be gradually introduced over this period.

-Release:

-The time (between 0 and 5000 milliseconds) that it will take to remove the gain adjustment once gain adjustment is no longer needed. This is the opposite of attack.

-WindowLength:

-The length (between 10 and 50 milliseconds) of the window to use when calculating the current audio level. A shorter window responds to level changes more rapidly, but anything less than 50ms will start to respond inconsistently to bass, since 50ms (20Hz) is the wavelength of the lowest human-audible sound.

-LookAhead:

-How far ahead (between 0 and 100 milliseconds) to look at the input level when determining the output gain adjustment. This can cause the compressor to start responding to a change in volume before it happens. If this value is the same as the attack time, then the full gain adjustment could be made by the time the louder signal is reached.

-Side-Chain Equalizer:

-This determines how strongly the compressor should weight different audio frequencies when determining the input level. For example, to compress only when there is a loud bass sound, turn the Bass level up and/or reduce the MidRange and High levels.

-Auto Makeup Gain:

-When this option is selected compressor automatically makes up the gain lost in the compression process. Select this option if you want to amplify the compressor output to the original audio level.

Dynamic Range Compressor Presets

The following presets have been defined for your convenience. A preset will change the settings of the dynamic range compressor, after which you can make further adjustments if necessary. The presets are: -Default:

-Pressing the "Default" button will cause the compressor to have no effect. It sets the output levels to be exactly the same as the input levels, and also resets the advanced settings to their defaults.

-Fast Compressor:

-This compression preset will cause any spikes over -20dB to be rapidly reduced, but will not cause distortion. It uses peak input level sensing and a fast attack, which will reduce the volume of transient sounds (such as a snare drum hit), but may also change their characteristic sound. Compare this with the Smooth Compressor preset below.

-Smooth Compressor:

-This preset reduces the volume more gradually when the signal climbs above -20dB. The slow attack time will mean that transients (such as snare drum hits) will not be changed, or if they are then they will be uniformly reduced, thus their characteristic sound will not be significantly altered.

-Heavy Compressor:

-This preset uses a lot of compression whenever the average volume climbs over -30dB, resulting in a very uniform dynamic range. This can be useful for making the quieter parts of music with a large dynamic range (such as classical music) easier to hear in noisier environments, such as in a car or a restaurant.

-Hard Limit:

-This preset does not allow any sounds to exceed -12dB. This may cause distortion due to clipping in some tracks.

-Soft Limit:

-This limit allows short spikes over -6dB, but will prevent longer durations of audio over this threshold.

-Noise Gate:

-This will remove soft sounds from a track. This can be useful for removing the crackle of a record player during silences, or background noises in a dictation.

Effects - Equalizer

Equalizer

An equalizer changes the frequency response of a signal so it has different tonal qualities. After you select Effects menu -> Equalizer you will see a dialog containing three different Equalizer representations. Use the tabs at the top to select between the Visual Equalizer, Graphic and Parametric Equalizer views.

Visual Equalizer

Left click on any point to create a new band point. To remove a band point right click on it. To assist you with shaping the Equalizer graph in the way you want, there is a preset list that displays the most common sorts of filters used in the Equalizer graph. You can choose any preset filter from the list and then manipulate the filter to achieve the effect you desire. The list of filters to choose from and how you can shape them are explained below. Note that all fields where a frequency value is entered can have a maximum value of 20000 (Hertz).

Graphic Equalizer

The Graphic Equalizer uses discrete sliders to set the gain or attenuation of a signal at a particular frequency. You can select how many sliders you would like to manipulate by entering a value between 3 and 20 in the box at the top of the display. When you change the number of sliders you would like to utilize, the frequencies are automatically allocated to best span the audible frequency range from 20Hz to 20kHz. Selecting presets allows you to easily configure common filters such as low pass or high pass. Note that when you change the Graphic Equalizer, the Visual and Parametric Equalizer views are not changed, as the changes in the three views are not compatible.

Parametric Equalizer

The Parametric Equalizer is similar to the Graphic Equalizer, but with more control. Here you can adjust the frequency and bandwidth of the individual sliders by left clicking on the frequency or Q values below each slider. Frequency must be set between 20Hz and 20,000 Hz. The Q parameter must be set between 0.05 and 20. A higher Q causes the gain or attenuation peak at the frequency to be much sharper, and therefore less likely to impact adjacent frequency content, while a lower Q applies the modification more smoothly across the frequency spectrum.

-Band Pass Filter

-Keeps only those frequencies in the audio between a certain range. -Start Frequency

-The lower cutoff frequency value, in Hertz.

-End Frequency

-The upper cutoff frequency value, in Hertz.

-Slope Length

-The width of the slope extending from the lower and upper cutoff points, in Hertz.

-Amplitude

-The degree that the frequencies outside the cutoff range are suppressed. 6dB means the volume is reduced to one-half, 12dB means the volume is reduced to one-quarter. Maximum value is 60dB.

-Band Stop/Cut Filter

-Keeps all frequencies in the audio except those between a certain range.

-Start Frequency

-The lower stop frequency, in Hertz.

-End Frequency

-The upper stop frequency, in Hertz.

-Slope Length

- The width of the slope extending from the lower and upper stop points, in Hertz.
- Rejection
 - The degree that the frequencies inside the stop range are suppressed. 6dB means the volume is reduced to one-half, 12dB means the volume is reduced to one-quarter. Maximum value is 60dB.
- High Pass Filter
 - Keeps only those frequencies in the audio above a certain value.
- Pass Frequency
 - The point at which all frequencies above are to be kept, in Hertz.
- Slope Length
 - The width of the slope extending from the pass frequency, in Hertz.
- Low Pass Filter
 - Keeps only those frequencies in the audio below a certain value.
- Pass Frequency
 - The point at which all frequencies below are to be kept, in Hertz.
- Slope Length
 - The width of the slope extending from the pass frequency, in Hertz.
- Notch Filter
 - Attenuates the frequencies in the specified range to very low levels and passes all other frequencies unaltered. There is no slope - frequencies are either attenuated or not.
- Start Frequency
 - The lower cutoff frequency value, in Hertz.
- End Frequency
 - The upper cutoff frequency value, in Hertz.
- Boost Filter
 - Either attenuates or boosts frequencies in the specified range and passes all others unaltered.
- Start Frequency
 - The lower boost/cut frequency value, in Hertz.
- End Frequency
 - The upper boost/cut frequency value, in Hertz.
- Slope Length
 - The width of the slope extending from the lower and upper boost/cut points, in Hertz.
- Amplitude
 - The degree that the frequencies inside the boost/cut range are either boosted or cut. 6dB means the volume is boosted to twice the original amount, and 12dB means the volume is boosted to four times the original amount. 20dB.
- High Pass Shelf Filter
 - Attenuates signals of frequencies below the cut frequency and passes all others unaltered.
- Start Frequency
 - The lower cut frequency value, in Hertz.
- Slope
 - The width of the slope extending from the lower and upper cut points, in Hertz.
- Rejection
 - The degree that the frequencies inside the cut range are cut. 6dB means the volume is attenuated to about half the original level, and 12dB means the volume is attenuated to about a quarter of the original level.
- Low Pass Shelf Filter
 - Attenuates signals of frequencies above the cut frequency and passes all others unaltered.
- Start Frequency

- The lower cut frequency value, in Hertz.
- Slope
- The width of the slope extending from the lower and upper cut points, in Hertz.
- Rejection
- The degree that the frequencies inside the cut range are cut. 6dB means the volume is attenuated to about half the original level, and 12dB means the volume is attenuated to about a quarter of the original level.

If you are using the equalizer simply to drop lower frequencies, you should always try the High Pass filter first (Effects menu -> High Pass Filter), because it is better and faster for very low frequencies.

Audio Cleanup - Click/Pop Removal

Click/Pop Removal

This tool is designed to remove click and pop sounds from recordings. It is ideal for those who have recorded music onto their computer from LP records and want to repair any defects caused by dust and scratches on the vinyl.

-Click Sensitivity

-This is the degree of aggressiveness (as a percentage) that will be applied by the tool when searching for click and pop artifacts. If you don't know what to enter, you can start by leaving it at 50%. The more a piece of audio is damaged, the higher you may have to set it. Moderately damaged audio can require settings of 60% - 80%. Be careful though - if you set it too high, the tool will start thinking parts of the audio are actually clicks/pops. If you set it too low of course, the tool will think some clicks/pops are part of the audio. Try experimenting to find the right value, and note that the level you apply to one file may be different to the level you apply in another file.

-Maximum Click Length

-This is the maximum length that a click lasts in your audio, in milliseconds. As a general guide, use 450ms if you don't know what to enter. 350ms is appropriate for audio with only small amounts of defects, whereas 550ms or 650ms is appropriate for audio with lots of defects.

Audio Cleanup - Noise Reduction

There are two ways of reducing noise. The "Spectral Subtraction" method and the "Multiband Noise Gates" method.

Sometimes using both (spectral always must be first) then multiband gates works very well.

- Spectral Subtraction
 - This approach leaves Switch to estimate what is noise and what is not. Used where noise is really a problem.
- Multi-Band Noise Gate
 - Removes all the audio data below a given threshold in the audio file. A good noise threshold for most audio files is usually between -30dB and -20dB. Used just automatically on voice recording jobs.

Screen References - Select Stream

Select an audio stream **Audio Stream:**

Select an audio stream from the file

Don't ask me again

Suppress the popup dialog to select audio stream

Screen References - Custom Resolution

This dialog allows you to set up the resolution for your video during saving. To set a custom resolution, click the Save button on the toolbar and select the Disc: Make Data Disc, Computer/Data, Portable Device, Image Sequence, or Stereoscopic 3D options. From the Resolution drop menu, select Custom.

In the Custom Resolution dialog that opens, input the width and height in pixels and click OK. If **Keep aspect ratio** checkbox is available, you can check it to retain the same aspect ratio when changing the width or height.

Screen References - Custom Resolution (360-Degree Video)

This dialog allows you to set up the resolution for your 360-degree video during saving. To set a custom resolution, click the Save button on the toolbar and select the 360 Video File option. From the Resolution drop menu, select Custom.

In the Custom Resolution dialog that opens, input the width and height in pixels and click OK. The width must be exactly double the height for 360-degree videos.

Screen References - Custom Frame Rate

This dialog allows you to set up the frame rate (number of frames per second) for your video. To set a custom frame rate, click the Save button on the toolbar and select either of the Disc: Make Data Disc, Computer/Data, Portable Device, or Stereoscopic 3D options. From the Frame Rate drop menu, select Custom.

In the Custom Frame Rate dialog that opens, input the frame rate and click OK.

The default frame rate is **Variable Frame Rate (VFR)** but the dialog allows the user to select **Constant Frame Rate (CFR)** by selecting the **Constant frame rate** checkbox.

Screen References - Detected Format

This dialog shows you the detected format of the video sequence during the saving process. To detect the format of your video, click the Export Video button on the Home tab bar and select either of the following options: Video File, 3D Video File, Portable Video, Lossless Video, DVD Movie Disc, DVD Data Disc, Image Sequence, YouTube, Flickr, Dropbox, Google Drive, OneDrive, or Vimeo.

Click the Detect button next to the Preset field. Detect will adjust the video output resolution format based on your monitor screen size.

If you want to use a different format you can select the format from the Preset drop-down list. Click OK to use the selected format as the output format.

Screen References - Choose Base Folder to Mirror

This feature allows you to copy the folder structure (folders and their subfolders) of your "base" folder into another location. This is ideal for if you want to convert your entire music library, including it's folder structure, to a new location.

Choose base folder to mirror

Click this checkbox if you want the folders that contain the files you have added to Switch to be copied with the newly converted files.

When you hit the convert button a window will open asking you to choose your base folder to copy. This folder needs to contain (at some point) all the files you have added to switch for conversion. For example, if you have added all the files in "C:\MyMusic\artists\albums" your choices for base folder would be "MyMusic", "Artists" and "Albums."

The new base folder and all its subfolders will be copied to the output location you have specified in the output field in Switch. So if your output folder has been set to "C:\Documents\Converted Music" and you specify your base folder as "C:\MyMusic" the converted files will be copied to "C:\Documents\Converted Music\MyMusic.." with the folders that contain your music being recreated there.

Screen References - Speech Recognition Settings

Switch uses a speech recognition engine to generate a rough approximation of the words spoken in an audio file. Choose a engine and profile from the list.