# Exact Audio Helper for Exact Audio Copy v1.5

## Overview

#### Exact Audio Copy

- EAC is an excellent audio grabber which I'm using since many years to copy the tracks from my audio CDs.
- Exact Audio Helper has been tested with EAC v1.5 and v1.6.

#### Exact Audio Helper

- I created EAH (Exact Audio Helper) to automate EAC, so that CDs can be copied and tagged with minimum effort and mouse clicks.
- Download Exact Audio Helper which piggybacks on Exact Audio Copy, included in my EAH/AAH package.
- You may use Audacity Audio Helper for a similar automation to copy and tag files created by Audacity.

#### Requirements

- 1. Copy tracks compressed losslessly to my audio file server for home use. I use the FLAC codec for this.
- 2. Copy tracks compressed lossy with maximum compatibility and small file size to my audio file server for portable use. I use the MP3 codec for this, with the LAME encoder.
- 3. Simple and speedy copying and encoding
- 4. Every CD is processed only one time for both formats
- 5. Proper meta tagging
- 6. Replay Gain calculation in tags only, without modifying original compressed track file
- 7. Integrate Album Art into each track file
- 8. Compatible with the Logitech Media Server and Logitech Squeezebox
- 9. Compatible with Apple and Android portable devices

#### **Other encoders**

- EAH is built so that you can use any 2 encoders you prefer, as long as there is an encoder executable which you can set in EAC, and a meta tag executable which you can set in EAH's ini file
- There used to be a scripting extension called REACT (Run EAC Tasks), which was built for EAC version 0.99. It is not being maintained since 2008, and does not work with EAC version 1.0 and later. REACT supported MP3, FLAC, as well as AAC, WavPack, Ogg, and TAK, so if you need one of those change the encoder settings in the ini file of EAH. Refer to the REACT-track.cfg file for help on the encoder settings (see Exact Audio Copy v0.99 with Scripting support Run EAC Tasks).

2/15

## Installation

## **Ripping and tagging**

- 1. Download and install Exact Audio Copy
- 2. Download Exact Audio Helper and install the zip file to a portable directory. Create a tools folder within this directory to keep the executables required to run EAC and EAH.
- 3. Download the current 64 bit version of FLAC (as of 4 Sep 2020 this is version 1.3.2). Open the zip file and extract *flac.exe* and *metaflac.exe* from the *win64* folder to your *EAH tools* folder (a folder of your choice).
- 4. Download the current 64 bit version of LAME from Rarewares' LAME Bundles (as of 4 Sep 2020 this is version 3.100). Open the zip file and extract *lame.exe* and *lame\_enc.dll* to your *EAH tools* folder.
- 5. Download Akkurat's REACT mod, or this file react\_2.0.akku.b04.zip, in case the link is not active. Open the zip file and extract *metamp3.exe* from the *tools* folder to your *EAH tools* folder.
- 6. Download and install ImageMagic. There are many different versions available, you may choose to download a zip file without installer. Choose the *Portable Win64 static at 16 bits-per-pixel component*, you won't need HDRI. As of 4 Sep 2020 this is version 7.0.10-28. Open the zip file and extract *convert.exe* to your *EAH tools* folder.
- 7. Download and install the current 64 bit version of Album Art Downloader, as of 4 Sep 2020 this is version 1.0.5. Album Art Downloader needs the .NET 3.5 Framework to run, which you might need to install first.

## Trouble shoot encoder settings

### Mp3tag

Mp3tag is a powerful meta tag viewer and editor. Despite it's name it supports many different audio file formats:

- Advanced Audio Coding (AAC)
- Apple Lossless Audio Codec (ALAC)
- Audio Interchange File Format (AIF / AIFC / AIFF)
- Direct Stream Digital (DSF)
- Monkey's Audio (APE)
- Free Lossless Audio Codec (FLAC)
- Matroska (MKA / MKV)
- MPEG Audio Layer 3 (MP3)
- MPEG-4 (iTunes<sup>®</sup> compatible MP4 / M4A / M4B)
- Musepack (MPC)
- Ogg Vorbis (OGG)
- IETF Opus (OPUS)
- OptimFROG/OptimFROG DualStream (OFR/OFS)
- Speex (SPX)
- Tom's lossless Audio Kompressor (TAK)
- True Audio (TTA)
- Waveform Audio File Format (WAV)
- WavPack (WV)

• Windows Media Audio (WMA)

### mid3v2

mid3v2 is part of the Mutagen package which allows detailed analysis of MP3 meta tags.

1. Install Python. Go to the Microsoft Store, search for "python", and install Python 3.8. Check that it has properly installed with:

```
powershell python --version
```

2. Install Mutagen with:

powershell python -m pip install mutagen

- There will be a warning that the script directory is not in your path, so Windows cannot find the executables automatically. It will display something like "C:\Users\user\AppData\Local\Packages\PythonSoftwareFoundation.Python.3.8\_qbz5n2kfra8p0\L ocalCache\local-packages\Python38\Scripts"
- 4. Add this path to your user's environment, so you don't need to type the full path everytime you need to run *mid3v2.exe*. Open Windows' Start Search, type "env", then choose "Edit the system environment variables", and click the "Environment Variables..." button at the bottom.

## **Music player**

• Windows: Install foobar2000. It plays flac and mp3 files, and gives you comprehensive meta tag information on both formats.

## Configuration

Configuration of EAH is very flexible and can be adjusted to your EAC configuration. I have included my own setup in the walk through below, which adds proper meta tags, the album art image, and replay gain to each extracted track for mp3 and flac. To make EAC and EAH work together seamlessly I have also added the important settings of EAC to the walk through. EAH is configured completely independently from EAC, and does not modify any EAC settings or the registry. This keeps is transparent, but requires that you setup EAC properly in order to work with EAH.

## **EAC Configuration**

- After installing EAC, run EAC's Configuration Wizard to configure your basic settings. Go through the procedure of determining whether your CD reader can provide proper CR2 error feedback. To do this, copy a CD to a new disk and scratch this disk with a few scratches. If the CD reader can provide proper CR2 feedback, then EAC will detect a faulty CD within a few seconds, but will not detect any scratches on the original of the same CD.
- Check the Configuration walk through for details on how to setup one ore two encoders in EAC
- **Note**: ReplayGain is great for a music compilation of pop and rock, specially when you love to hear your music managed by playlists. But it is not recommended for classical music. Remove

the replay gain setting in EAH.ini, or create an alternative ini file you can use whenever you tag classical music tracks.

• **Note**: EAH will move all files to the destination directory and leave the work space empty after completion. If you interrupt the script (or something goes wrong) you need to delete these files manually.

### **MP3 Configuration**

- I found metamp3.exe to be the best tool to modify mp3 meta tags. The configuration options for mp3 are in the EAH.ini file, all entries are explained with some remarks.
- In EAC you need to configure the mp3 encoder as well. It is better and more flexible to select *User Defined Encoder*, enter the path to the executable, and add the following command line options:

```
-V4 --vbr-new --id3v2-only --replaygain-accurate --ignore-tag-errors --
ta "%artist%" --tt "%title%" --tl "%albumtitle%" --ty "%year%" --tn
"%tracknr1%/%numtracks%" --tg "%genre%" --tv "TPE2=%albumartist%" --tv
"TPE3=%albuminterpret%" --tv "TPOS=%cdnumber%/%totalcds%" --tv
"TCOM=%composer%" %source% %dest%
```

- See the Configuration walk through for details
- Tag field mappings
- ID3v2 frame specification

### **FLAC Configuration**

• In EAC you need to configure the flac encoder as well. Select *User Defined Encoder*, enter the path to the executable, and add the following command line options:

```
-8 -V -T "ARTIST=%artist%" -T "TITLE=%title%" -T "ALBUM=%albumtitle%" -
T "DATE=%year%" -T "TRACKNUMBER=%tracknr1%" -T
"TOTALTRACKS=%numtracks%" -T "GENRE=%genre%" -T
"ALBUMARTIST=%albumartist%" -T "PERFORMER=%albuminterpret%" -T
"DISCNUMBER=%cdnumber%" -T "TOTALDISCS=%totalcds%" -T
"COMPOSER=%composer%" %source% -0 %dest%
```

- See the Configuration walk through for details
- How to setup Exact Audio Copy for FLAC ripping
- metaflac documentation

### **Place holders**

EAH and AAH use the same place holders as EAC does. This table explains the place holders, and where they are available. You can use them for file names and other options where reference to album and track information is required.

Place holder	Explanation	EAC	EAH	AAH
	Place holders available in EAC only			
%source%	source filename	Т	-	-
%dest%	destination filename	Т	-	-
%original%	original filename (without temporary renaming)	Т	-	-
%ishigh%	text between 2 such place holders only when "High quality" selected	A	-	-
%islow%	text between 2 such place holders only when "Low quality" selected	A	-	-
%haslyrics%	text between 2 such place holders only when lyrics exist	Т	-	-
%hascover%	text between 2 such place holders only when storing cd cover is enabled and cover exists	A	-	-
%crcenabled%	text between 2 such place holders only when "CRC checksum" selected	Т	-	-
%tracklen%	track duration	Т	-	-
%lengthmin%	track duration (minutes part)	Т	-	-
%lengthsec%	track duration (seconds part)	Т	-	-
%cddbtype%	freedb music type	Α	-	-
%cddbid%	freedb ID	Α	-	-
%lyrics%	lyrics	Т	-	-
%lyricsfile%	filename of lyrics text file	Т	-	-
%trackcrc%	CRC of extracted track	Т	-	-
%bitrate%	selected bitrate	Α	-	-
	Place holders available in EAH and AAH	-	-	
%tracknr%	track number (same as %tracknr2%)	Т	-	Т
%tracknr1%	track number (at least 1 digit)	Т	-	Т
%tracknr2%	track number (at least 2 digits)	Т	-	Т
%tracknr3%	track number (at least 3 digits)	Т	-	Т
%numtracks%	number of tracks on CD/album	A	-	Α
%cdnumber%	number of the CD	A	Α	Α
%totalcds%	total number of CDs in the given CD set	A	Α	Α
%title%	track title	Т	-	Т
%artist%	track artist	Т	-	Т
%genre%	music genre	A	Α	Α
%year%	year	A	Α	$A+T^1$
%composer%	track performer	Т	-	Т
%albumtitle%	CD title	A	Α	Α
%albumartist%	CD artist	Α	Α	Α
%albumcomposer%	CD composer	Α	Α	Α
%albuminterpret%	CD performer	A	Α	Α
%comment%	comment	Α	Α	Α
%coverfile%	filename of CD cover image	Α	Α	Α
%workspace%	working folder for temporary files	-	F	F
%scriptdir%	directory the script is run from	-	F	F
%username%	current user logged in to windows	-	Α	Α
%today%	today's date	-	Α	Α

Scope: A=album, T=track, F=folder, -=not available. <sup>1</sup>In AAH %year% is replaced with the *year* indicated for each track, if a track\_artists.txt file exists and the year is specified for the track, replaced with the "album" *year* taken from the GUI otherwise.

## Work flow

- 1. You should always make sure that your workspace (the extraction directory) is empty before you start a new session.
- 2. Start EAH which starts EAC and inserts an additional menu entry "Encode"

11 II	-RE WH16	NS401.02 Adapter:1 ID:0 ✓	CD Title The Ber CD Artist Frank Z CD Performer	appa	Year Genre F freedb	1991 Progressive Rock, Ja Jazz	CD Compo	oser							
	Select/	Deselect all	Set 🗎	/arious Artists'											CD cover
UAU	Track	Title	Artist	Composer	Lyrics	Start	Length	Gap	Size	Compr. Size	Read CRC	Test CRC	CRC	Pre-Emphasis	
	1	Heavy Duty Judy	Frank Zappa		Add	0:00:00.33	0:06:04.22	Unknown	61.28 MB	7.11 MB				No	
	2 1 2	Ring Of Fire	Frank Zappa		Add	0:06:04.55	0:02:00.55	Unknown	20.31 MB	2.35 MB				No	
CMP	Ø 🕫 3	Cosmik Debris	Frank Zappa		Add	0:08:05.35	0:04:32.28	Unknown	45.82 MB	5.31 MB				No	
	4	Find Her Finer	Frank Zappa		Add	0:12:37.63	0:02:42.22	Unknown	27.30 MB	3.16 MB				No	
	Ø 🕫 5	Who Needs The Peace Corps?	Frank Zappa		Add	0:15:20.10	0:02:40.30	Unknown	26.98 MB	3.13 MB				No	
IMG	6	I Left My Heart In San Francisco	Frank Zappa		Add	0:18:00.40	0:00:36.58	Unknown	6.18 MB	0.71 MB				No	
0.1	7 1 2	Zomby Woof	Frank Zappa		Add	0:18:37.23	0:05:41.45	Unknown	57.46 MB	6.67 MB				No	
	2 🕫 8	Bolero	Frank Zappa		Add	0:24:18.68	0:05:19.02	Unknown	53.66 MB	6.23 MB				No	
NR1	9 🕫 🖸	Zoot Allures	Frank Zappa		Add	0:29:37.70	0:07:07.25	Unknown	71.88 MB	8.34 MB				No	
3.	🗹 🚅 10	Mr. Green Genes	Frank Zappa		Add	0:36:45.20	0:03:40.45	Unknown	37.11 MB	4.30 MB				No	Image dimensions :
9	🗹 🚅 11	Florentine Pogen	Frank Zappa		Add	0:40:25.65	0:07:11.45	Unknown	72.60 MB	8.42 MB				No	
	12	Andy	Frank Zappa		Add	0:47:37.35	0:05:51.50	Unknown	59.16 MB	6.86 MB				No	First track number :
	🗹 🎜 13	Inca Roads	Frank Zappa		Add	0:53:29.10	0:08:19.35	Unknown	84.02 MB	9.75 MB				No	
	14	Sofa #1	Frank Zappa		Add	1:01:48.45	0:02:49.33	Unknown	28.50 MB	3.30 MB				No	Continue from last track nut
															Number Of CDs

- 3. Multi-CD album: set Number of CDs and CD Number first.
- 4. If you have a Compilation CD, set the *Various Artists* checkbox. The *CD Artist* field will be replaced with the string for Various Artists as set in EAH.ini. In case you have a Compilation CD but you want to assign a main artist to this CD, this is possible too. In this case, set the checkbox, then overwrite the CD Artist field with the main artist.
- Select Encode -> Copy & encode tracks or Shift-F5. This is the same as invoking EAC's built-in function Action -> Copy Selected Tracks -> Compressed... and is repeated here for convenience. All tracks will be copied from CD and encoded with the encoders as defined in the EAC configuration.

-STBD-	RE WH16	NS40 1.02 Adapter: 1 ID: 0	Copy & encode tracks Get album art RG & Cover Art & file tracks Multi CD file rename	Shift-F5 Shift-F9 Ctrl-F9	ever Heard	Year 15 Genre Pri freedb Ja	191 ogressive Rock, Ja zz	CD Compo	oser							CD cover
	Track	Title	About EAH		oser	Lyrics	Start	Length	Gap	Size	Compr. Size	Read CRC	Test CRC	CRC	Pre-Emphasis	]
	⊻ #=1 √ #=2	Ring Of Fire	Frank Zappa			Add	0:06:04.55	0:06:04.22	Unknown Unknown	61.28 MB 20.31 MB	2.35 MB				No	
MP	√ #4 3 √ #4 4	Cosmik Debris	Frank Zappa Frank Zappa			Add	0:08:05.35	0:04:32.28	Unknown	45.82 MB	5.31 MB				No	
	S 1 5	Who Needs The Peace Corp	s? Frank Zappa			Add	0:15:20.10	0:02:40.30	Unknown	26.98 MB	3.13 MB				No	
MG	⊻∎6 ∑∎7	I Left My Heart In San Franc Zomby Woof	isco Frank Zappa Frank Zappa			Add Add	0:18:00.40 0:18:37.23	0:00:36.58 0:05:41.45	Unknown Unknown	6.18 MB 57.46 MB	0.71 MB 6.67 MB				No	
2		Bolero	Frank Zappa			Add	0:24:18.68	0:05:19.02	Unknown	53.66 MB	6.23 MB				No	>
221	∑ <b>#</b> 10	Mr. Green Genes	Frank Zappa Frank Zappa			Add	0:36:45.20	0:07:07:25	Unknown	37.11 MB	4.30 MB				No	Image dimensions : Image size :
9	√ # 11 √ # 12	Florentine Pogen	Frank Zappa Frank Zappa			Add	0:40:25.65	0:07:11.45	Unknown	72.60 MB	8.42 MB 6.86 MB				No	
	✓ # 13	Inca Roads	Frank Zappa			Add	0:53:29.10	0:08:19.35	Unknown	84.02 MB	9.75 MB				No	First track number :
	✓ <b>#</b> 14	Sofa #1	Frank Zappa			Add	1:01:48.45	0:02:49.33	Unknown	28.50 MB	3.30 MB				No	
																Number Of CDs CD Number

- 6. After all tracks have been copied, hit the "OK" button, then select "Create Log" and "Save", which saves the log file to the extraction directory, then hit "OK" to finish extraction.
- 7. Multi-CD album: select Encode -> Multi CD file rename. I prefer to have all music files in one directory for multiple CD albums, rather than having them split into different album names. All tracks which are not renamed yet will be renamed with the CD Number in front of the file name. For example, file "01 First track.mp3" becomes "1-01 First track.mp3". This is necessary to separate the tracks from the different CDs in the set, and is the better way than EAC's built-in

Continue from last track number functionality. The file rename does not affect track naming.

- 8. **Multi-CD album**: repeat step 5-7 for all CDs in the set.
- Select Encode -> Get album art or Shift-F9 to open AlbumArtDownloader.exe, find a cover file, and save it to the work space. If a jpg image file already exists in work space, or in the "AlbumArtPath" (which is in EAH.ini settings), then this step is not necessary and can be skipped.
- 10. Finally, select RG & Cover Art & file tracks or Ctrl-F9 to compute replay gain, add the cover art image file to each track, add the comment as set in the EAH.ini file, and move all tracks to the folder for encoded tracks as set in EAH.ini. It is easy to organize your music into a structure like "flac/artist name/album name" or "mp3/artist name/album name".

## Configuration walk through

## **EAC Options**

In tab *General*, enable "Show status dialog after extraction", "wait for external compressors", and chose the "language"

Character Replacements	Catalog	Directories	Write	Interface	Audio Plugin
Extraction Gene	eral Tools	s Normali	ze Fi	lename	Additional Filename
🔽 Use alternate CD	play routines				
🔲 Disable 'CD Auto:	start' for audio and d	ata CDs while EAC	running		
🗹 On unknown CD:		automatically ad	cess online me	etadata databas	e
		🔿 open CD inform	ation dialog		
🗹 Display times usin	g frames				
🗹 Ask before overw	riting files				
🗹 Correct bug of wr	ong filename order ir	Windows multiple I	ile dialog		
🕞 how status dialo	g after extraction				
🖂 Beep after extrac	tion finished				
🔲 Eject CD after ex	raction finished				
On extraction offer th	e possibility to		O shut dow	n computer	
vait for ext	ernal compressors		O restart co	mputer	
<u> </u>			<ul> <li>hibernate</li> </ul>	computer	
EAC language selecti	on		-		
Use language		(	English		~
Create log	files always in englisl	n language			

### In tab Filename and Additional Filename, set the Naming scheme to "%tracknr2% %title%"

Character Replac	ements	Catalog	Directories	Write	Interface	Audio Plugin
Extraction	General	Tool	ls Normal	ize	Filename	Additional Filename
Construction	n of save filena	mes				
	%ittle%	4 191				
Use vari	ous artist nami	ng scheme				
%tracknr2%	%title%					
%title% %artist% %composer? %tracknr1% %tracknr2% %tracknr3% %lengthmin? %lengthsec? %year% %albumtite? %albumtite? %albumtist %albumiter %albumiter %comment? %totalcds% %cdnumber? %codbtype? %cddbtype?	- 	Track title Track artist Track compos Track number Track number Track number Track duratior Track duratior Release year CD title CD artist CD composer CD title CD artist CD composer CD performer CD comment Number of CD Number of the Total number ID3 music type freedb music type freedb ID	er (at least 1 digit) (at least 2 digits) (at least 3 digits) n (minutes part) (seconds part) (seconds part) CD within a set of tracks on the CD e ype			
For example	: [: spaces by un	%albumtitle%\(; derscores	%tracknr2%) %title%	- %artist%		

In tab *Extraction*, enable "Lock drive tray during extraction", set Extraction and compression priority to "Normal", and Error recovery quality to "High"

Character Replacements       Catalog       Directories       Write       Interface       Audio Plugins         Extraction       General       Tools       Normalize       Filename       Additional Filename         Image: File processing offset samples with silence       Image: Filename       Additional Filename         Synchronize between tracks       Delete leading and trailing silent blocks       Image: Filename       Image: Filename         Skip track extraction on read or sync errors       Skip track extraction after duration longer than       4       times realtime         After each       60       mins of extraction, cool down the drive for       Image: Filename         Image: The covery quality       Filename       A higher error recovery quality will slow down extraction on read and sync errors.	- Alexandra						
Extraction       General       Tools       Nomalize       Filename       Additional Filename            Fill up missing offset samples with silence </th <th>Character Repl</th> <th>acements</th> <th>Catalog</th> <th>Directories</th> <th>Write</th> <th>Interface</th> <th>e Audio Plugins</th>	Character Repl	acements	Catalog	Directories	Write	Interface	e Audio Plugins
<ul> <li>Fill up missing offset samples with silence</li> <li>Synchronize between tracks</li> <li>Delete leading and trailing silent blocks</li> <li>Skip track extraction on read or sync errors</li> <li>Skip track extraction after duration longer than</li> <li>After each</li> <li>60 mins of extraction, cool down the drive for</li> <li>is mins</li> <li>ock drive tray during extraction</li> <li>Extraction and compression priority</li> <li>Normal</li> <li>Error recovery quality</li> <li>A higher error recovery quality will slow down extraction on read and sync errors.</li> </ul>	Extraction	General	Tools	Normali	ze	Filename	Additional Filename
Error recovery quality High A higher error recovery quality will slow down extraction on read and sync errors.	<ul> <li>Fill up</li> <li>Synch</li> <li>Delete</li> <li>Skip t</li> <li>Skip t</li> <li>After</li> <li>After</li> <li>ock</li> </ul>	missing offset sa nronize between e leading and tra rack extraction a each mins drive tray during and compressio	amples with silen tracks iling silent blocks in read or sync e ifter duration long 60 m extraction	ce rrors ger than nins of extraction, o	ool down tł	4 times realt he drive for	ime
High A higher error recovery quality will slow down extraction on read and sync errors.	Fror reco	veru qualitu	~		r	· ··· ·	
	Ellion leco	very quality	~	A higher error re- and sync errors.	covery quali	ity will slow down	extraction on read

In tab *Directories*, chose the directory for the temporary files, which must be the same directory as set for option "Workspace" in EAH.ini

options						?	
Extraction	General	Tools	Normalize		Filename	Additional Filena	ame
Character Repla	cements	Catalog	Directories	Write	Interface	Audio Plu	igins
Standard o	directory for extra	ction					
🔿 Ask ev	very time (default	showing last use	d directory)		200		
💿 Use th	is directory	C (	D:\Music\			Browse	

In tab *Character Replacements*, change the replacement settings to your preference, I prefer to replace double quotes " with single quotes ', "?" with an empty string, "'" with "!", and ":" with ";". Refer to the Limitations below for further information about the character replacements in file names.

Extraction	General	Tools	Normali	ze	Filename	Addition	nal Filenan	ne
Character Repl	acements	Catalog	Directories	Write	Interfac	e A	udio Plug	ins
"         \ <td< th=""><th>he following cha</th><th>racters in filenan</th><th>nes by the given re</th><th>placement :</th><th>strings</th><th></th><th></th><th></th></td<>	he following cha	racters in filenan	nes by the given re	placement :	strings			

## **Compression Options**

In tab External Compression and Additional External Compression, select "Use external program for compression", "User Defined Encoder", matching "file extension", "Program, including path, used for compression", "Additional command-line options", "Bit rate", "Delete WAV after compression" (for External Compression only), "High quality", and un-check "Add ID3 tag"

mpression	n options				?	
Vaveform	External Compression	Additional External Compress	sion Comment	ID3 Tag		
~						
	Use external program f	or compression			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
Pa	rameter passing scheme	e 🗕 📥	User Defined En	coder	~	
Us	e file extension :		.mp3			
Pro	ogram including path, us	ed for compression				
0:	\PortableCustom\EAH\	tools\lame.exe			Browse	
Δd	ditional command-line or	ations :	MAvbr.newic	13v2.onlureplaug	ain-accuratei	
Au	altonal command-line of			1072-011y -replayg		
Bit	rate :	> 160 kBit/s			~	
	Delete WAV after com	pression		High quality		
	Use CRC check		01	ow quality		
G	Add ID3 tag		0	16-18		
	Check for external prov	rame return code				
¥.	check for external proj	grams recum code				
	Test encoder					
				C	OK Ca	ncel

For MP3 encoding I chose a medium bit rate of 160 kBit/s, which ensures good audio quality with relatively small file size. These files are used on mobile devices, a higher bit rate would probably remain unnoticed on such devices. I would set the following command line options, which ensure all meta tags are set except replay gain, cover art image, and comment, as these will be set through EAH and set in EAH.ini under "MetaOpt":

```
-V4 --vbr-new --id3v2-only --replaygain-accurate --ignore-tag-errors --ta
"%artist%" --tt "%title%" --tl "%albumtitle%" --ty "%year%" --tn
"%tracknr1%/%numtracks%" --tg "%genre%" --tv "TPE2=%albumartist%" --tv
"TPE3=%albuminterpret%" --tv "TPOS=%cdnumber%/%totalcds%" --tv
"TCOM=%composer%" %source% %dest%
```

For FLAC encoding I chose the highest bit rate of 1024 kBit/s, which ensures best possible audio quality. These files are used on my HIFI audio system at home, where I don't want to compromise on audio quality. I would set the following command line options, which ensure all meta tags are set except replay gain, cover art image, and comment, as these will be set through EAH and set in EAH.ini under "AddMetaOpt":

```
-8 -V -T "ARTIST=%artist%" -T "TITLE=%title%" -T "ALBUM=%albumtitle%" -T
"DATE=%year%" -T "TRACKNUMBER=%tracknr1%" -T "TOTALTRACKS=%numtracks%" -T
"GENRE=%genre%" -T "ALBUMARTIST=%albumartist%" -T
"PERFORMER=%albuminterpret%" -T "DISCNUMBER=%cdnumber%" -T
"TOTALDISCS=%totalcds%" -T "COMPOSER=%composer%" %source% -o %dest%
```

In tab *ID3 Tag*, check "Write ID3V2 tags using UTF16", un-check "Write ID3V1 tags", "Use ID3V1.1 tags instead of ID3V1.0 tags", "Add cover image to ID3V2 tag", and "Write cover image into extraction folder" (all of which will be handled by EAH)

Compression	n options					?	×
Waveform	External Compression	Additional External Compression	Comment	ID3 Tag			
	Write ID3 V1 tags Write ID3 V2 tags, usir	ng a padding of			4 🔶 kB		
	Use ID3 V1.1 tags inst Use ID3V2.4.0 tags ins	ead of ID3 V1.0 tags stead of ID3V2.3.0 tags					
	Use track format xx/xx	in ID3V2 tags (e.g. 01/16)					
	Write ID3V2 tags using	UTF16					
2	Add cover image to ID: Write cover image into	3V2 tag					
9	Namening scheme:	%albumartist% - %albumtitle	%				
					ОК	Cano	el

## **Trouble Shooting / Limitations**

### **Trouble Shooting**

- Use Verify Audio Helper (VAH.exe) to make sure your destination folders are in sync, if you use 2 encoders. There is no separate help file, but the app is self explanatory, and the settings in the ini file are simple.
- 2. Set \$debug = 1 in the source file and run in from within the Autolt environment

#### Limitations

- 1. Track names cannot start with 1 or 2 digits followed by a hyphen and 2 or 3 digits, if the track is part of a MultiCD when tagging.
- 2. If a track name contains more than 1 dot before the extension (e.g. Even in the Quietest Moments....mp3), then all but 1 dot are removed from the track file name, because metamp3.exe cannot handle it. The resulting file name would be something like 01 Even in the Quietest Moments.mp3. This does not apply if the multiple dots are in the middle or at the beginning of the track name.
- 3. Illegal file name characters are removed from the track file name, but not from the track title in the meta tags. Illegal characters are defined in EAC or in the ini file, see EAC Options Character Replacements. You need to add character ' to that list, which *metamp3.exe* cannot handle. There might be more characters *metamp3.exe* cannot handle, which I did not find yet. You can find them when you observe the output after invoking function "RG & Cover Art & file tracks" and check the total files processed. If that number is lower than the number of tracks in EAC check which file does not get processed by *metamp3.exe*.

Here is how to deal with these limitations:

 Remove the hyphen between the digits before encoding. Complete encoding, tagging and moving all tracks to the destination folder, then modify the title tag of these files manually with Mp3tag.

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