# USER MANUAL

ZAXCOM

ZAXCOM.COM

ZaxConvert

# Introduction

**What is MARF?**

Mobile Audio Recording Format or MARF is a proprietary file format used to record audio on Zaxcom compatible devices. MARF is an ultra-stable, lossless fault-tolerant format that keeps your audio safe up to the moment of power loss or premature card removal.

MARF files are recorded as .ZAX files in sequential order in what are called "segments." Timecode and metadata are preserved inside each .ZAX file. Audio files are also completely digital and securely encrypted. To convert MARF files to industry standard Broadcast WAV files or MP3 files, ZaxConvert software is required.

**What is ZaxConvert?**

ZaxConvert is a simple to use software utility available for both Windows and MAC compatible operating systems. ZaxConvert works by converting .ZAX files from a source to a desired output or destination folder. The software provides user-selectable parameters for output type, timecode, file name, track selection, sample rates, and file size. The software also allows for the entire file segment or a partial segment to be converted. In addition, a .CSV file is generated reflecting the metadata of the converted files.

Download the current version of ZaxConvert: *https://zaxcom.com/support/downloads/*

*Note:    If you are having trouble downloading, be sure to check your operating system's permissions and firewall settings.*

# Installing ZaxConvert

**Windows**

1. Unzip the ZaxConvert archive if required.
2. Move the ZaxConvert application to the desired location on your computer.
3. Double-click the ZaxConvert application to open the program.

*Note:   ZaxConvert is compatible with Windows 8 to 11.*
*LAME encoder v3.97 required for installation (included).*

**LAME version 3.97 required.**

**Warning!** Do not Install LAME version 3.99. You must use LAME version 3.97 on your PC. If you installed version 3.99, uninstall and manually search your computer for any LAME-related files and delete them before installing LAME 3.97.

**What is LAME?**

LAME is a high-quality MPEG Audio Layer III (MP3) encoder licensed under the LGPL. Zaxcom uses LAME to convert .ZAX files to .MP3 files. More info on LAME can be found at: ***https://lame.sourceforge.io***

**LAME Software Download**

A version of LAME is included in the ZaxConvert archive at the following link:
***https://zaxcom.com/support/downloads/***

**MAC**

1. Double-click the ZaxConvert .DMG file. .DMG files are image files and when opened appear as separate drive devices on your desktop.
2. Click OK on the license screen. This mounts a volume titled ZaxConvert on your desktop.
3. Drag the ZaxConvert Software to the desired location on your computer.
4. Drag the ZaxConvert volume on your desktop to the trash to remove it from your desktop. You may also leave it on your desktop and when you shut down it will automatically be removed.

*Note:   You can find the latest release notes for ZaxConvert at the end of this document.*

# ZaxConvert Menu
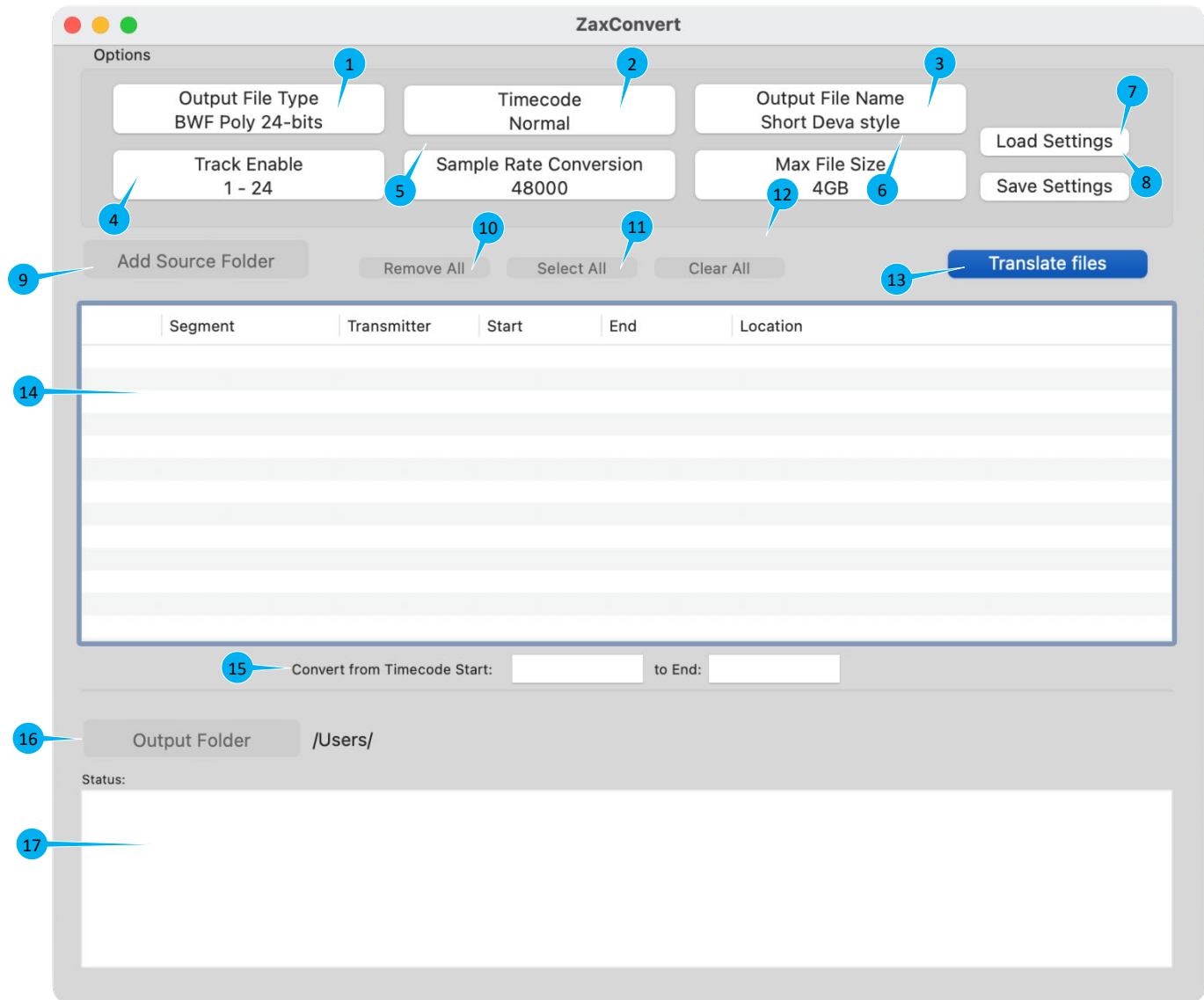


Menu items 1-6 have a Submenu that provides parameters for the desired output format.

**1. Output File Type**
- BWF POLY: Broadcast WAV Format Poly files are multi-channel files containing metadata.
- BWF MONO: Broadcast WAV Format Mono files are single channel files containing metadata.
- MP3: MPEG Audio Layer III (MP3) multi-channel files.
- MP3 MONO: MPEG Audio Layer III (MP3) single channel files.
  - o 16-bit: Select for 16-bits.
  - o 24-bit Select for 24-bits.
- Force 48K Stamp (DV 40): Select if a post facility is using a DV40 to force a 48K stamp.
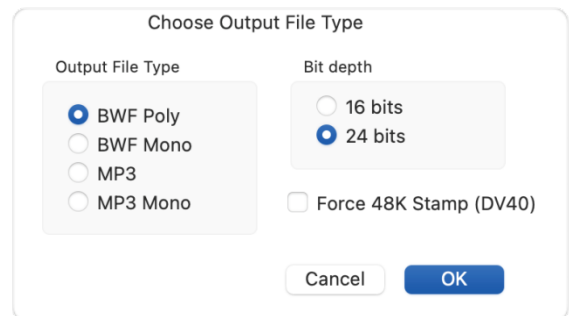
**2. Timecode**
- TC Pullup: Converts timecode to allow you to compensate for any mismatches.
- Normal: Converts timecode normally.
- TC Pulldown: Converts timecode to allow you to compensate for any mismatches.
- Timecode Offset (Milliseconds): You can offset the timecode in milliseconds.
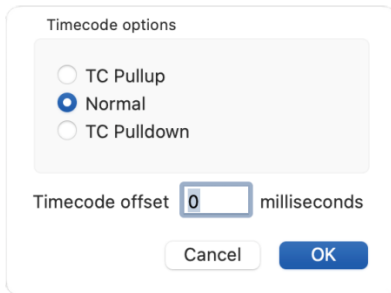
**3. Output File Name Options**

- Short Deva Style: This mode creates a WAV file of the format z001001.wav, where "z001" and the last 001 represents the segment number.
- Prefix Scene/Take to Filenames: This mode creates a WAV file of the format 1_T1_z001001.wav where the leading '1' is the scene, the T1 represents "Take 1" and z001001 means folder "z001" and the last 001 represents the segment number.
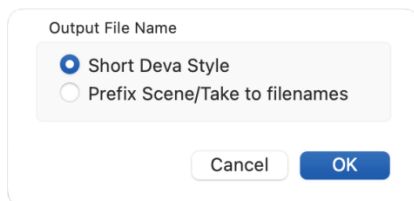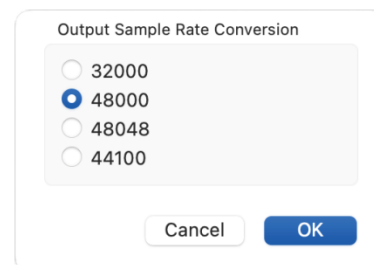
**4. Track Enable Options**
- Select Tracks to Convert: Allows you to select which tracks to convert.
- The Submenu provides an option to Select or Deselect All.
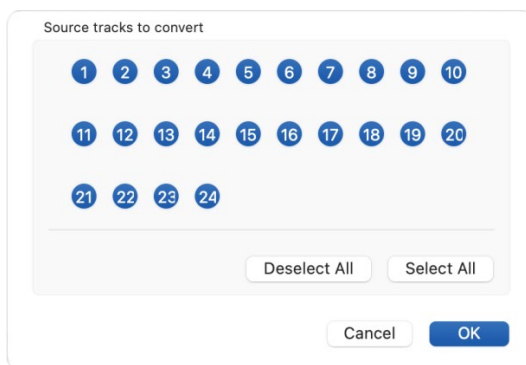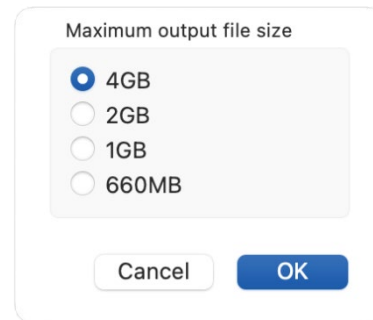
**5. Sample Rate Conversion**
- 32000: Select to convert to 32 kHz.
- 48000: Select to convert to 48 kHz.
- 48048: Select to convert to 48.048 kHz.
- 44100: Select to convert to 41 kHz.

**6. Max File Size**

        File Size Options:

- 4GB: Select to limit the file size to 4GB.
- 2GB: Select to limit the file size to 2GB.
- 1GB: Select to limit the file size to 1GB.
- 660MB: Select to limit the file size to 660MB.

*Note:*   *The Max File Size default setting is 4GB. If the size of the file to be translated exceeds this setting, the resulting translation will be divided into sequential files no larger than the maximum selected output size. For example, if 4GB is selected, 7GB of information will be translated to a 4GB file and a 3GB file.*

**7. Load Settings -** Allows you to load previously saved settings.

**8. Save Settings -** Allows you to save current settings.

**9. Add Source Folder -** Select to load Source file(s). This can be a SD or CF card, or another destination.

**10. Remove All -** Removes all the files in the Conversion Box.

**11. Select All -** Selects all the files in the Conversion Box.

**12. Clear All -** Clears the selected segments in the Conversion Box.

**13. Translate -** Converts the selected segments in the Conversion Box.
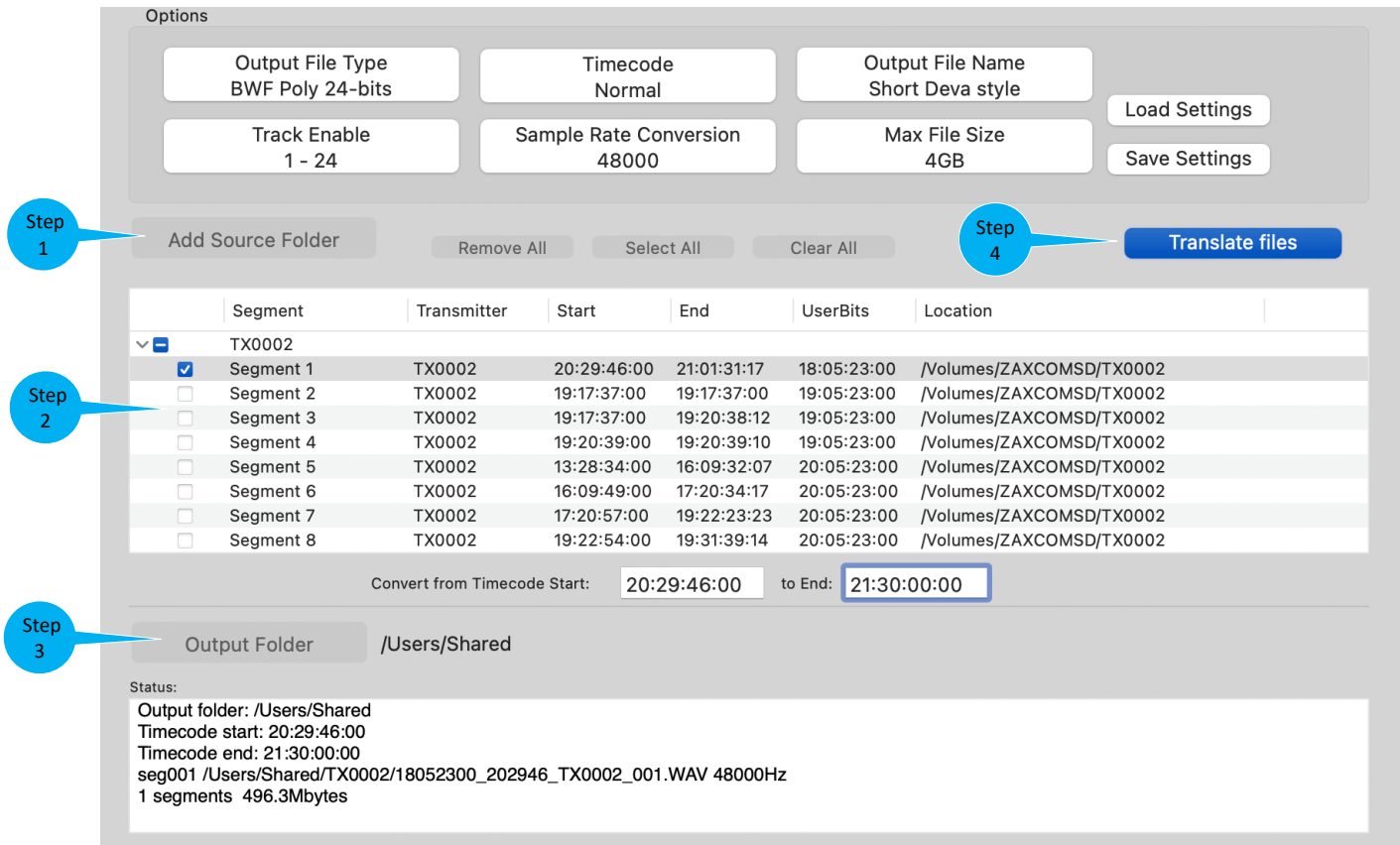
**14. Conversion Box -** View the current files loaded.

**15. Convert from Timecode Start/End -** Allows you to convert segments by inputting a specific timecode.

**16. Output Folder -** Allows you to select the output destination of the converted segments.

**17. Status Box -** Shows the current status of the converted segments.

# Converting Files



**Step 1: Add Source Folder**
- To convert a file, the lowest level folder containing the .ZAX files must be selected.
- Insert the recorded media into a card reader on the computer.
- Once the drive has mounted, click on Add Source Folder on the ZaxConvert Menu.
- Browse the drop down window for the mounted drive and select the appropriate folder.
- Once the source folder has been selected, all available .ZAX files in that folder are immediately displayed as a list.

*Note:    A card that has been formatted may appear to be full in the operating system's file browser but it will appear as empty in ZaxConvert.*

**Step 2: Selecting Files**
- ZaxConvert requires that a particular segment or segments be selected for translation. If no segments are selected, then no transfer will occur. If all segments are selected, all information on the card that falls within the timecode field will be translated. If only a particular segment or segments are selected, ZaxConvert will only translate those segments.

**Convert from Timecode Start/End:**
- When only a specific part of a segment is required to translate, you can use the Convert from Timecode Start/End option. For example, if only a portion of a long take is required to Translate.

- First check the desired segment(s).
- Input the timecode start and stop in the appropriate fields.
- Click Translate.

**Step 3: Add Output Folder**

- Once a Source Folder is selected, a Destination Folder for the converted files must also be selected. Click on Output Folder to choose a destination.

*Note:    For best results, choose an output destination other than the source folder card and avoid transferring files directly to the desktop of your computer. If converting files to a desktop, create a new folder on the desktop and select that new folder as a destination for the translated files.*

**Step 4: Translate Files**

- After a Source Folder and Output Folder are selected, as well as your parameters and selected segments, click Translate. The Status field will display the processes at work during the translation and will prompt the user when finished. The translated files will be available in the selected Output Folder.

# Partial Formats and Recovery



## Partial Formats

In rare instances, a card that has not been formatted after recording may not display .ZAX files in the Conversion Box after being selected as the Source Folder. This can happen when a card is ejected too early from a device, before it has completed mirroring, or if the .ZAX files have been deleted. In this instance a Partial Format may aid in recovery.

### Performing a Partial Format on a Digital Recording Wireless transmitter or Miniature Recorder
- Return the card to the device.
- Select the Format Card menu, and press <u>DOWN 5 times</u> instead of pressing UP 5 times. This will cancel the format, and the transmitter will populate the card with a new set of .ZAX files.

### Performing a Partial Format on a Nova or Nomad
- Return the card to the device.
- In the Format Primary page, press <u>Pre Fader Listen (PFL) 1 button 2 times</u> instead of pressing STAR twice. The recorder will revert to the card's FAT32 format and renew the .ZAX files.

### Performing a Partial Format on a Deva 24
- Return the card to the device.
- In the 'Format Primary' page, select 'Partial Format'.

*Note:   In most instances, the partial formatting process successfully generates a set of MARF files that will populate the ZaxConvert Conversion Box.*

## Recovery

In instances where a Partial Format is unsuccessful or in cases where corrupted sectors may have resulted in a loss of audio, some additional tools are available that may aid in file recovery.

### Recovery Software for SD cards*
This program is only for audio recorded onto an SD card from a Digital Recording Wireless transmitter, Miniature Recorder, or Camera Link.
   *http://www.zaxcomftp.com/fileshare/software/zaxconvert_6.29-recovery.exe*

### Recovery Software for CF cards*
This program is only for audio recorded onto a CF card from a Deva, Nova, or Nomad.
   *http://www.zaxcomftp.com/fileshare/software/ZaxFile509.exe*

*\*Note:  Recovery Software is only available for PC using Windows XP to Windows 11.*

**Recovery Software Instructions for SD Cards**

- Insert the SD card onto a computer and see if it contains .ZAX files through Windows Explorer. It should contain a file called ZDIR.ZZZ and files called ZBLK000xx.ZAX files.
- If **NO** ZDIR.ZZZ or ZBLK000xx.ZAX files appear then perform a Partial Format to recover the .ZAX files. <u>Refer to instructions on how to perform a Partial Format above.</u>

   *Note:    ZDIR.ZZZ and ZBLK000xx.ZAX files should appear on the card before performing a full recovery. Performing a Partial Format can add the .ZAX files onto the SD card.*

- If the .ZAX files appear on the SD card prior or after performing a Partial Format; run the files through ZaxConvert Recovery as you would ZaxConvert.
- Download the ZaxConvert Recovery application onto your computer.
- Double-click ZaxConvert 629 Recovery icon.

   *Note:    If Windows says it cannot run the program, press More on the Windows dialog window and then Allow to bypass Windows Defender's security. If you have another anti-virus, you may need to allow it as an exception.*

- Insert the SD card into the computer.
- Choose the SD card as the Source Folder. Once ZaxConvert Recovery has finished scanning the card, you should see the audio files populate in the Conversion Box.

   *Note:    If the card storage size is large it may appear to freeze for a minute while it scans the card. ZaxConvert Recovery will not write to the card.*

   *Note:    There may be several copies of the files displayed. If hundreds of files are found and you know there are only eight files, look at the audio segments' timecode and user bits and size to determine which files to select for translation. Usually, the first few audio files are what need to be recovered.*

- Choose the segment or segments to translate from the Conversion Box.
- Click Translate.

**Troubleshooting:**
If ZaxConvert Recovery cannot find any files, the directory structure may have been corrupted. Try taking the ZDIR.ZZZ file from a separate freshly formatted card and use it to replace the ZDIR.ZZZ file on the bad card. Then try rerunning ZaxConvert Recovery.

If you still cannot recover the files, try performing a regular format of the card in a transmitter, Miniature Recorder, or Camera Link. Then try ZaxConvert Recovery again. In this case, it's best to copy the SD card files onto a computer before performing the full format so you will have a backup of the original card.

**Recovery Software Instructions for CF Cards**
The enclosed ZaxFile509.exe file may have been renamed to ZaxFile509.EX~ if this ZIP file was sent via email since many anti-virus programs will reject EXE files. If needed, please rename the file to ZaxFile509.exe and copy this file to the folder called C:\WINDOWS\SYSTEM32 (or somewhere in your DOS path).

Connect your PRIMARY disk from your Deva, Nova, Nomad, or MAXX to your PC running Windows XP through Windows 11. If you use a CF card, you can plug the card into a CF reader. You should see a drive called X: or G:

> *Note:    If you have any other drives called "X:" or maybe F: (especially network drives), you will need to*
> *disconnect or un-mount them first for the Deva drive to show up.*

The ZaxFile509.exe program must be run in a DOS prompt:

- Click on the START button in Windows and select "RUN"
- type CMD in the prompt to start a DOS window
- In the DOS window type:
  - C: <enter> (if you are copying the Deva files to another drive, type the drive letter here instead of C:)
  - CD \ <enter>
  - MKDIR devafiles <enter> (this step is optional – it makes a folder called devafiles)
  - CD devafiles <enter> (this step is optional – it changes the current folder to devafiles)

> *Note:    These commands should have created a folder called devafiles (or whatever name you want) and will*
> *move you into that folder.*

You may now run the program:

- Type: ZaxFile509 to see a list of options:

  **------- ZaxFile conversion utility revision ZFPC-x5.09 ---------**
  Usage: ZaxFile Source Drive: -switches
     -D3: prints raw recovered directory listing from a 3.xx disk
     -R: recover and mirror a folder (ignores directory info)
     -N: try to use original folder name in WAV file name
     -S: search a folder for corrupted audio headers (no mirror)
     -24: chooses 24 bit output files
     -16: chooses 16 bit output files
     -BWFM: chooses BWF MONO file type
     -BWFP: chooses BWF POLY file type
     -BWFMF: chooses BWF MONO file type (DV40/Deva2 style sample rate stamp)
     -BWFPF: chooses BWF POLY file type (DV40/Deva2 style sample rate stamp)
     -PU or –PD: pulls timecode up or down by 0.1 percent
     -FRx: chooses frame rate: pulls timecode up or down by 0.1 percent
       0 = 23.98
       1 = 24
       2 = 25
       3 = 29.97 (default)
       4 = 29.97DF
       5 = 30
       6 = 30DF
     -Gxxx: dumps xx sectors to Dump.bin starting at beginning of volume
     -G: attempts to display disk's geometry
     -L: forces LINEAR audio mode
   Example: ZaxFile508 x: -fr0

Assuming the primary CF drive comes up as drive letter X. Type the following to create 30 frames per second, 24bit poly files: zaxfile509 X: -FR5 –N

> *Note:    The –N will try to recover the folder name in the WAV file name.*

You need to specify a frame rate for the files using the FRx option.
   FRx chooses frame rate:
       0 = 23.98

        1 = 24
        2 = 25
        3 = 29.97 (default)
        4 = 29.97DF
        5 = 30
        6 = 30DF

A file called INFO.TXT will maintain a log of all your activity.

You can press CTRL-C to stop the program.

The program may take an hour to complete and will create folders called F001, F002, etc., in the folder that the program was run from. These folder names will not match your original folder names. To determine the proper folder locations open the INFO.TXT file and search for the word FOLDER. That will show you what each folder's original name.

# ZaxConvert Release Notes

6.50 Aug 16 2021
- Fixed problems with processing Nomad primary cards

6.49
- UserBits field on main page should work now

6.48 Mar 5 2020
- Tried to make older firmware (v3.13) Deva24 disks work but still can't (just use v6.40)

6.47 Jan 2020
- Made MAC version

6.46 Dec 16 201
- Fixed noise problem with MP3 and 16-bit files for Nova

6.45 Sep 19 2019
- Fixed problem with converting Nova files

6.43 Feb 18 2019
- Fixed compatibility problem with Nomad and Maxx

6.41 Sep 26 2018
- Changes to try to get TX name to be the folder name for each segment instead
of picking the first name for the destination folder name

6.40 May 31 2018
- This does not work with Nomad files!
- Allowed MAC version to select more than 16 tracks
- Maximum allowed folder count is now 124

6.39 May 24 2018
- This does not work with Nomad files!
- Fixed BWF WAV header creation problems introduced in 6.38
- Allowed more than 16 track names in the BWF iXML chunk

6.38 May 23 2018 (DO NOT USE)
- Increased size of BWF header to 2048*3 (was still only 4096) to allow for more track names

6.37 May 14 2018
- This does not work with Nomad files!
- Fixed saving user settings when it comes to track count (higher than 16 tracks)
- Increased number of tracks in sound report file header from 12 to 24

6.36 Apr 23 2018
- This does not work with Nomad files!
- Changed MAX_DISKS from 4 to 30 so lots of SD cards can be translated at once (not really working)

6.35 Mar 21 2018
- This does not work with Nomad files!
- Fixes for compatibility with Deva24

6.33 Oct 6 2016
- Fixed missing track names in sound report

6.32 Apr 4 2016
- Increased folder count to 96

6.31 Oct 2 2015

- Increased max folder count to 50
- Fixed Mac version's file name mode dialog box

6.30 Aug 3 2015
- Fixed possible crashing problem

6.29 Jun 9 2015
- Fixed max folders still only going up to 18 (should be 28 now)

6.28 Apr 21 2015
- Fixed repeating timecode when WAV files are automatically broken up due to large size
- (Bug: still does not go past 18) increased maximum allowed folder count from 18 to 28

6.27 Sep 23 2014
- Removed extra comma in frame rate string was "24/1," // FRAME_RATE_24

6.25 Jul 16 2014
- Fixed sound report file when creating multiple folders
- Made TRX/ZFR WAV files appear in their own folder like Deva
- Added support for Scene Take file name option

6.24 Jun 19 2014
- Prevented some corrupted cards from causing problems

6.22 Feb 4 2014
 fixed sample rate conversion bugs for XR format

6.21 Feb 3 2014 (broken)
Support for XR (extended range) recording format

6.19 Aug 31 2013
- Fixed problem with making MP3s from a single track file

6.18 Aug 27 2013
- Added MP3 support for Deva/Fusion/Nomad/Maxx when translating multiple tracks ZaxConvert mixes all the selected tracks to one mono MP3 track
-  MP3 and MP3 MONO are the same thing for a Deva/Fusion/Nomad/MAXX and 16bit is always forced

6.17 Aug 2013
- Added support for MAXX CF cards (no MP3 support for Nomad, Maxx or Deva)

6.16 Jul 5 2013
- Removed math for TCSkew if it is zero (just in case)
- Changed Timecode pulldown value from 1.001001001001 to 1.001

6.15 Jun 19 2013
- We now assign the track number in the WAV file to be the TRX's UNIT code for use by
post so their tracks don't pile up when using more than one TRX or ZFR recording

6.14 May 24 2013
- This feature is not here! See version 6.15
- We now assign the track number in the WAV file to be the TRX's UNIT code for use by post so their tracks
don't pile up when using more than one TRX or ZFR recording

6.13
- Removed the 10 track limit and allows up to 16 tracks

6.12
- Fixes missing track names in sound report file

6.11-Lion
- Fixes problem with new MAC operating systems

6.11
- Fixed problem with MAC not working if the TX_NAME string is corrupted

6.10
- Fixed missing iXML CHANNEL and INTERLEAVE INDEX when the user did not name a particular track. This is needed when using IXML PRO software by Gallery

6.09
- Added support for storing Userbit date into BWF header
- Fixed some issues with Sound Report generation

6.08
- Added time code offset feature (offset in + or - milliseconds) greyed out sample rate conversion box when loading a Deva disk

6.07
- Fixed crashing problem with very old TRX files

6.06
- Added support for SD card latency debug info

6.05
- Fixes some issues with time code that wraps around 24 hours
- Note: It is not recommended to record a segment when timecode wraps from 23:59:59 to 00:00:00. In this case the ending timecode values in the ZaxConvert display will be greater than 24 hours. If this is the case you may use a timecode range that is greater than 24 hours to extract a user-specified timecode range.

6.04
- Fixes a bug that caused the Timecode to be stamped incorrectly when translating using the a Timecode range

6.03
- Fixes a bug that caused the last segment on a TRX900 SD card to be ignored

# Product Support

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