

# Massoth Service Tool Sound Modification



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#### 1. Introduction

The Massoth Service Tool (MST) offers the possibility to create your own sounds for Massoth sound decoder.

For this purpose, however, sound files must be prepared so that they can be used in the MST.

This preparation of the sounds is explained here.

Requires minimum V4.1 of the sound file for sound decoders.

## 2. Needed programs

We recommend the program "Audacity" for sound editing. Audacity is freely available and can be obtained here: http://www.audacityteam.org/

#### 2.1 Presets

After installing Audacity, open the program and make the settings. Click on "Edit" and at the bottom click on "Preferences". Then click on Quality

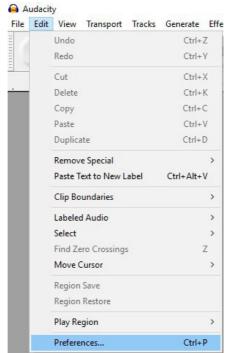


Figure 1: Change settings



Devices	Sampling				
Playback Recording	Default Sample Rate:	44100 Hz 🗸 🗸	12000		
Quality	Default Sample Format:	32-bit float		$\sim$	
Interface Tracks	Real-time Conversion				
Import / Export	Sample Rate Converter:	Medium Quality	~		
Extended Import Projects Libraries Spectrograms	Dither:	None	~		
	High-quality Conversion				
- Directories	Sample Rate Converter:	Best Quality (Slowest)	) ~		
- Warnings - Effects	Dither:	Shaped	~		
Keyboard					
Mouse					

## Figure 2: Setting menu

Set the standard sampling rate to "Other" and change it to 12000 Hz.

- Devices	Sampling				
Playback Recording	Default Sample Rate:	Other ~ 120	00		
Quality	Default Sample Format:	32-bit float	~		
- Interface - Tracks	Real-time Conversion				
Import / Export	Sample Rate Converter:	Medium Quality	~		
- Extended Import - Projects	Dither:	None	$\sim$		
- Libraries - Spectrograms	High-quality Conversion				
- Directories	Sample Rate Converter:	Best Quality (Slowest)	~		
· Warnings · Effects	Dither:	Shaped	$\sim$		
Keyboard					
Mouse					
				ОК	Cancel

Figure 3: Changing the Standard Sampling Rate



Edit chain processing now.

File	Edit View Transport Tracks	Generate	Effect A
	New		Ctrl+N
	Open		Ctrl+O
	Recent Files		>
	Close		Ctrl+W
	Save Project		Ctrl+S
	Save Project As		
	Save Compressed Copy of Project		
	Check Dependencies		
	Edit Metadata		
	Import		>
	Export Audio	Ctrl	+ Shift+ E
	Export Selected Audio		
	Export Labels		
	Export Multiple	Ctrl	+ Shift+ L
	Export MIDI		
	Apply Chain		
	Edit Chains		
	Page Setup		
	Print		
	Exit		Ctrl+O

Figure 4: Edit chain processing

Add new chain processing.

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ain	Num Command Parameters
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	03 - BO-
	Edt Chains ×
	Enter name of new dualn
	Pest
	OK Cancel
Add Remove	Rename Insert Delicte Move Up Move Down Defaults

Figure 5: Add chain processing

Then use "Insert" to add a new command "StereoToMono". Then insert command "Normalize".



	Select Command			Select Con	nmand			
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Insert Delete Move Up Move Down Defaults	Parameters			Parameters	ApplyGain=y	ves RemoveDcOffset	=yes Level=	-1,00
	Choose command			Choose command				
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	<		>	<				>

Figure 6: Add commands

## 3. Sound modification

## 3.1 Import sound

Here in this example we import a  $^*$ . mp3 file, but it can be any other format supported by Audacity.

Click on "File" - "Import" - "Audio".

Then select your sound file.

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Open	Ctrl+O	<i>₽</i> ↔ <b>*</b>	** 🖦 🙈 -M- I	Select one o	r more audio fil	es				×
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Figure 7: Importing sound



The sound file is now displayed graphically.

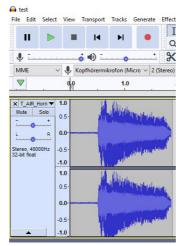


Figure 8: Edit sound file

There is a magnifying glass function to enlarge the image.



Figure 9: Magnifying function

After enlargement it looks like this.

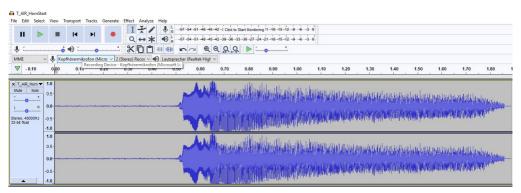


Figure 10: Enlarged view



## 3.2 Convert sound

Now the stereo sound has to be converted into a mono sound. The volume level should also be adjusted. This is now done by batch processing.

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	Save Compressed Copy of	of Project.			
	Check Dependencies				
	Edit Metadata				
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	Edit Cheim				
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elect Chain	
Chain MP3 Conversion	
MST	

Figure 11: Converting sound with chain (batch processing)

After the conversion, you will only see one sound channel as shown in Figure 12.

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Figure 12: After processing with the chain (batch processing)

How a sound file is edited can't be explained here. That's too extensive, so we will publish it in a video on Youtube.

Here we have marked the silent sequence (flat line at the beginning) and deleted it with Remove.



Figure 13: Display after removing the silent area

Now the project rate has to be changed in the lower left corner. Overwrite the value with 12000.

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Project Rate (Hz):	Snap To:	Selection Start:	• Er
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Figure 14: Changing the Project Frequency

Massoth

## 3.3 Export sound

Now the sound is exported as \*. wav.

The WAV file has the format 8 bit mono unsigned and 12KHz.

In the file dialog select "Other uncompressed files" and then set the properties as shown in the picture below.

Audio exportieren

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						oding: Unsig			

Figure 15: Export soundfile

Now the file is prepared for the Massoth Service Tool.

Note the maximum total duration of the possible sounds when creating your own additional sounds.

The display of the available time is explained on page 12.



## 4. Integration in MST

Basically you need the original sound of the decoder as a basis. If the sound has the required version, the "Copy" button is active. This creates an editable copy of the original sound.

Database:         980_045_015_01528_0_5200003_0ATA-pdf         C In Column         Image: Column		(8220063) LGB Diesel Switcher SND_MAS_JLS_DIESEL_8220063.emotion			4.1	
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30     S04     Amouncement	06 S06 Shunting comm. 2. (	couple	00			
99         509 Close short         Image: Close short	07 S07 Bad start		00			
10 S10 Rairoad crossing	08 S08 Announcement		00			
	09 S09 Close door		00	<b>7.</b> X		
11 S11Brake	10 S10 Railroad crossing		00			
	11 S11Brake		00	<b>-</b> ×		
12 \$12 Starting signal	12 S12 Starting signal		00	<b>7</b> ×		

Figure 16: Copying the original sound

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	11 S11Brake		000	
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Figure 17: Copy of the original sound



The following properties are available here.

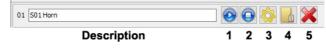


Figure 18: Edit Functions

In the white field you can enter a description of the new sound.

- 1 = Play sound
- 2 = Stop sound playback
- 3 = Edit sound file for loop (not yet realized)
- 4 = Insert new sound file
- 5 = Delete sound

The sound status display shows the assignment of the individual sounds. To the left of it is the percentage of the occupancy, to the right of it the total free space in seconds is displayed.

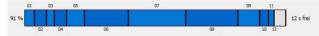


Figure 19: Sound Status Display

You must take this space into account when creating the additional sounds. If there is not enough free space, you may have to delete other sounds.

Adding in the MST is now very easy.

First click Button 4, then select the file previously created with Audacity.

With button 1 you can listen to the sound again.

If all sounds are changed, simply update the decoder, preferably via SUSI cable.







#### Massoth Elektronik GmbH

Frankensteiner Str. 28  $\cdot$  D-64342 Seeheim  $\cdot$  Germany FON: +49 (0)6151-35077-0  $\cdot$  FAX: +49 (0)6151-35077-44 eMail: info@massoth.de  $\cdot$  www.massoth.de