

Massoth Service Tool (MST)



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1. Introduction

This software is state of the art, has been accurately designed. It is free of charge, provided to the user exclusively for use with the Massoth products. Any other use is prohibited. The use of this software is at your own risk. Any liability - irrespective of the legal reason - and to the extent permitted by law, is excluded.

Particularly software defects or related documentation and information - especially in terms of their correctness, accuracy, freedom from intellectual property rights and copyrights of third parties, actuality, completeness and / or usability, except for willful misconduct or fraud - are not under liability.

Massoth makes every effort to keep its website free from any malware, however, this cannot be guaranteed for any provided software and information. The user is therefore advised to take precautionary measures and virus scanners before downloading any software, documentation or information itself.

The Massoth Service Tool can be downloaded free of charge from the Massoth website. Disclosure to third parties is not permitted. Changes in the MST programmer or download-offers from foreign servers are not permitted.

2. Program structure

The Massoth Service Tool (in the following referred to as MTS) unites the former DCC Programmer as well as the DiMAX Update Tool. You can now configurate your decoder as well as install new firmware and soundfiles. If you own a PC-Module, you can also use the 7 times faster fastspeed-update for the supported decoders - a specific susi-cable is required for this.

2.1 DCC Programmer-section

For many complex CVs, a simple tis now possible. Bit-wise calculations are no longer necessary. This will decrease the necessity to look up the decoder manuals.

First you create a decoder file using predefined templates, or you open a previously saved file. The data, which now may be edited, read and written, will be displayed. All data of the decoders are being saved in individual files. For saving data, the XML format has been preselected.

There are several templates of decoders by Massoth, LGB and Piko company available. Furthermore individual decoder layouts can be created. This way you can also use the program for decoders from other manufacturers. For sound decoders by Massoth different sounds can be selected. This way you get the matching function and sound texts to the loaded sound type. The function and sound texts can be changed later, or even be individually customized.





Figure 1: Starting window of the MST

The following programming modules are supported:

- LGB PC programming module (only DCC Programmer)
- Massoth PC programming module
- \bullet Massoth DIMAX Central Station 800Z, 1200Z and 1210Z (DCC-Programmer, Selfupdate and Update of Massoth Bus Devices)

2.2 Update-section

This function offers the option of firmware updates for your Massoth products: for example your decoders as well as central station. Products are viewed via image and text.

2.3 Sound-section (1))

In this section, you can install new soundfiles on your eMotion sound decoders.



3. Program Description

3.1 Basic Configuration



After starting the program, you will be led to the last used program mask (see figure 1). To configurate the interface the first time, please choose DCC-programmer on the left sided icon-menu.

To read and write decoder files/data you have to set up a connection to the PC-module as instructed in the following chapter. The MTS saves the settings for the next start.

If the programming module is connected to the MTS, it is displayed by an orange icon at the mentioned modules (as shown at the PC-module):

3.2 The interface



You can adjust the CVs values of your decoder even without having to connect it to your programming module.

But a transfer to your decoder can only be completed after a successful connection with your programming module.

To connect your programming module, first make sure that it is connected and activated properly.

Then click on "interface" and select configuration first(figure 2).

In the window that opens up (Figure 3), please select in the following order:

- 1: Your Programming Module
- 2: The COM port of the programming module
- 3: OK to save the settings

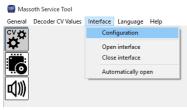


Figure 2: Interface configuration



Figure 3: Device selection

Now click again on the interface, then open interface (Figure 4). The following interface dialog (Figure 5) shows whether the opening of the interface was successful.

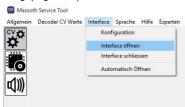


Figure 4: Open Interface



Figure 5: Interface dialog



If the window has automatically closed, you can also see in the status bar if the connection is active (Figure 6).

The DCC Programmer remembers the last setting of the interface. If you want the DCC Programmer at startup to automatically open the interface, you will need to activate this function under interface - automatic activation.

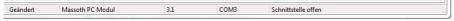


Figure 6: Status bar

You can alternatively open the interface by clicking the PC-Module icon while in DCC-Programmer mode.

During the DCC Programmer mode, the upper task bar consists of the following:

General - Online Update / Exit

Decoder CV Values - Load / Save decoder templates, decoder template management, adapt function text, select sound type and printing.

Interface - Select and open/close the interface

Language - Select language of the program

Help - logging data and information about the program

4. The DCC-Programmer

4.1 Decoder selection

Selecting "Decoder" you have the option to open an existing decoder XML file or open up a new blank one.

To open an existing decoder template - Open and select the appropriate file. To select a new template, click on New. This opens up a new tab (Figure 6).

Then click on Identification. The DCC programmer will then automatically try to identify the decoder (Figure 7). The result of this will be displayed in the next window in the right section.



Figure 6: Decoder selection



Figure 7: Identify Decoder

If the result does not meet your specific decoder, you can select the decoder under manufacturer and decoder templates yourself.

For any other decoders, not by Massoth, the automatic identification does not apply, you have to choose the template yourself.

By clicking OK, the appropriate layout will be uploaded.



4.2 The main window

After starting the program you are on the main page (see Figure 1).

4.2.1 General information decoder

In the upper part (Figure 8) you find the following information:



Figure 8: Main information

Vehicle: The vehicle name can individually be changed.

Decoder: The decoder type of the manufacturer **Template**: The name of the decoder layout **Manufacturer**: The manufacturer of the decoder.

ID: The NMRA code by the manufacturer

Version: The software version of the decoder. (Determined by CV values)

Sound Type: The selected sound type of the decoder

4.2.2 Status list

The status list (Figure 9) shows the following information:



Figure 9: Status list

- Name of the current decoder file,
- Whether the values of the decoder have been changed,
- The selected programming module,
- The version of the programming module (if determinable),
- The currently selected interface,
- · Whether the interface is open

4.2.3 Display of individual CVs

Below the general decoder information you can read and write the general and individual CVs (Figure 10).

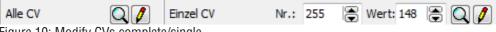


Figure 10: Modify CVs complete/single

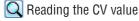
Depending on whether the interface is open, the read and write buttons are displayed. If the interface is closed, the symbols are displayed in gray and can't be activated.

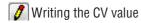
- Under "All CV" you can read/write all of the decoders CVs. Before writing, a safety check will be made.
- Under "Single CV", you can read and write the individual CVs. This also applies to CVs that are not included in the decoder file. These can also read and written. However, they are not



saved in the decoder file.

The icons have the following functions:





4.2.4 Decoder CVs

The various individual CVs are displayed in up to 7 different pages.

On the last page you can find a list of all CVs.

There are also CV indicators that combine multiple CVs, for example the characteristic curve. This indicator is dependent on the decoder template. This means, for a driving decoder without sound, there will be no sound CVs displayed - these pages are not available.

In the following you will find the pages of an example XLS decoder.

4.3 Editing CVs

4.3.1 Reading of all values of a decoder

First you will find an description of how to read all of the decoders CVs.

The connection to the programming module must be active. Then you can choose the decoder as shown in 4.1.

By clicking on "All CV- Read (icon), the DCC Programmer starts reading the values (Figure 11 + 12).

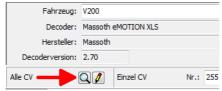


Figure 11: Read Decoder complete



Figure 12: Status window on reading

After this, all read values are listed on the 7 different pages (Figure 13).



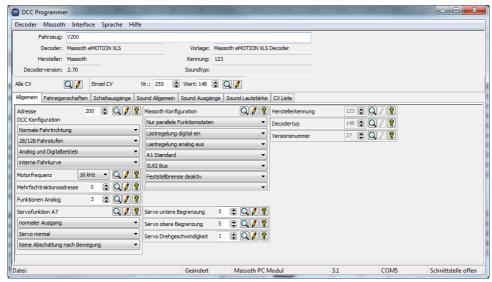
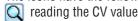
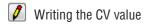


Figure 13: Results with current values in the general part

4.3.2 Meaning of symbols (icons)

The icons have the following functions:





Displays the description of a CV value

Figure 14: Help window

Sonderfunktion 2 (CV 57)
0 = Dauerbetrieb des Augsagns (normale Schaltfunktion)
1. 15 = Dauerhaft symmetrisches Blinken (0, 25sek pro Wert)
16 = Inwerse Kopplung zu Ausgang A1 bzw. A3
oder A5 (Wechselbinken)
464 = Kurzzestfunktion, Monoflop (0, 25sek pro Wert)

+128 = Asymmetrisches Blinken 1/3 an - 2/3 aus +192 = Asymmetrisches Blinken 2/3 an - 1/3 aus

Prints this output (only for switching or sound outputs)

Deactivated printing for this output

4.4 XLS with values read as an example

You can now edit any CV in the individual pages (reading, saving, de-/activate printing), you can change all the desired CVs and then all write together via "All CV".



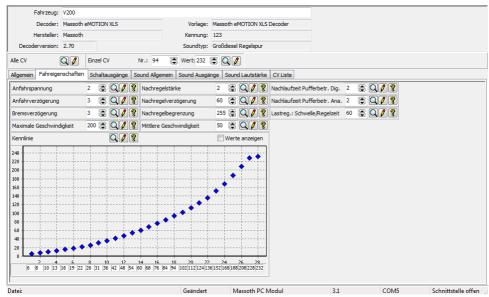


Figure 15: driving characteristics

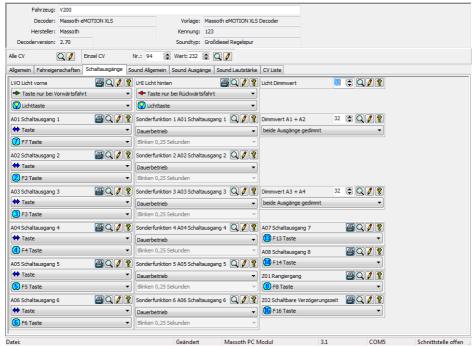


Figure 16: Switching outputs



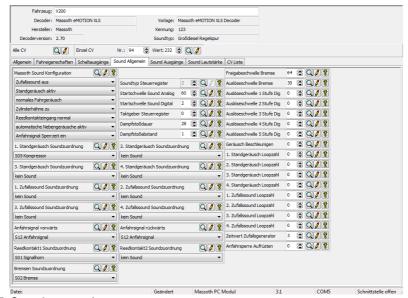


Figure 17: Sound - general

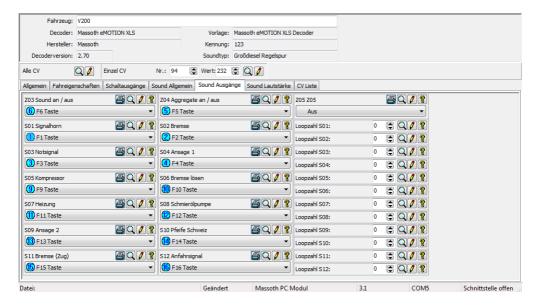


Figure 18: Sound outputs



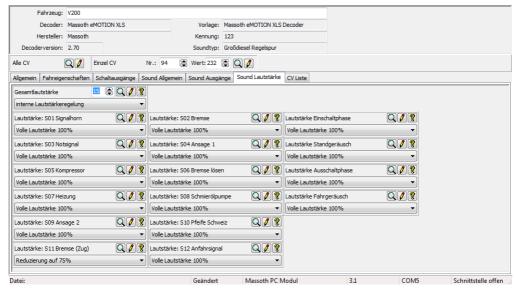


Figure 19: Sound volume

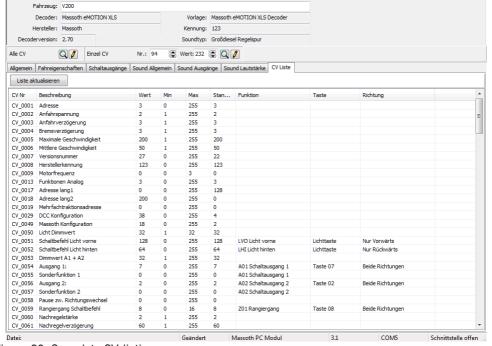


Figure 20: Complete CV-listing



Now you can edit any CV in the individual pages (reading, saving, de-/activate printing), you can change all the desired CVs and then all write together via "All CV".

5. Menu in DCC Programmer mode

There is one difference in the task bar between DCC Programmer mode and Update/Sound mode.

5.1 Decoder CV Values

5.1.1 New

Here you can create a new decoder file. This opens up a dialog tab.

Here you choose the manufacturer and the decoder template or activate the automatic detection. See 4.1.

5.1.2 Open

You can open a saved decoder file. It always shows the last taken path.

The standard path is "PROGRAMPATH \ decoder".

5.1.3 Close

The current decoder is being closed. If you apply any changes to the current decoder, you will be asked if you want to save these.

5.1.4 Save

This will save the current decoder under its file name.

5.1.5 Save as

To save the current decoder with a new file name.

5.1.6 Print

You can print the data of the decoder. A preview will be shown (Figure 21).



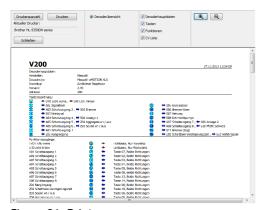


Figure 21: Print

5.1.7 Adapt function texts

Here you can adjust the function and sound texts individually.

For example:

Instead of "Output 01" You can choose the text " 01 steam generator". This way you know when programming, that the steam generator is connected to output 01.

After pressing the OK button, all function and sound texts will be overwritten.

For safety, there is still a query before that.

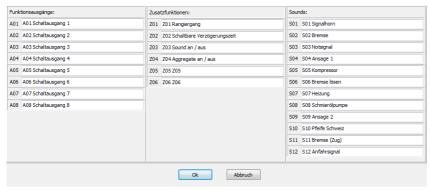


Figure 22: Adjust function texts

5.1.8 Select type of sound (sound decoders only)

If you have a Massoth sound decoder, you can adjust the sound type here.

A list of the possible types of sounds will be displayed. You can filter this list by the type of train.

After pressing the OK button, all function and sound texts will be overwritten.

For safety, there is still a query before that.



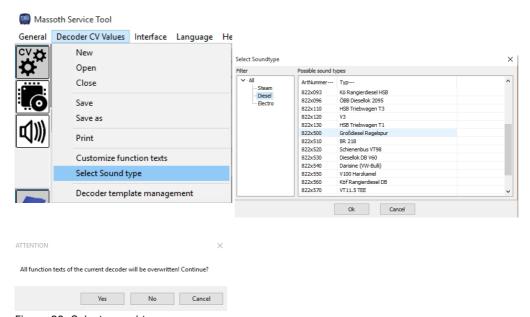


Figure 23: Select sound type

5.1.9 Decoder Template Management

Although we would prefer, if you were exclusively using Massoth decoders, you can still set up templates for decoders by other manufacturers.

When creating a template a few things need to be considered in order to be able to integrate this template into the program. Therefore, we advise that only users with the necessary knowledge of computer science will do this. If you should have problems with understanding the instructions in this manual, please do not proceed creating individual templates. For each decoder template, there is a file in which the template's features are being saved. These features will be applied to the decoder later.

After opening up the the decoder Template Management via File - decoder template management the following window appears:



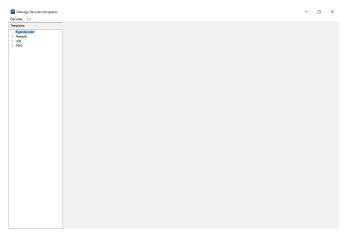


Figure 27: Decoder template management

You can now create a new decoder by clicking Decoder - Add Decoder.

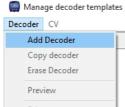


Figure 28: Add Decoder

The configuration menu for the new decoder will now appear. Please select the suitable parameters of your new decoder and save with OK.



Figure 29: New Decoder parameter

You will find you newly constructed decoder right here:



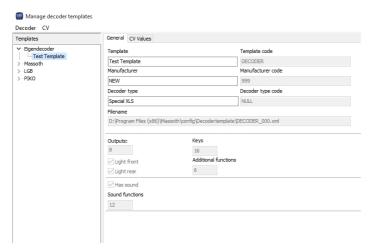


Figure 30: Newly constructed Decoder

Please select your required CVs in the displayed table. By clicking the preview symbol you can now look at your new template. You also have the opportunity to move the individual areas.

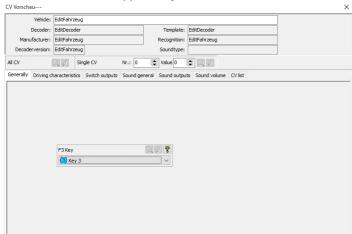


Figure 31: Preview of the newly constructed decoder

By closing this window, you will be back in the previous menu.

With "CV Position" you choose on which page the dialog will appear.

With SWITCHING OUTPUT you choose the function of the individual switching outputs.

The values are preset, you can make your choice.



You can also copy an existing decoder. For this, please select the appropriate decoder and click **DECODER - COPY DECODER**.

The copy will then be stored under Individual decoder and can be edited.

All preset decoders are read-only!

6. Menu in Update/Sound mode 🐻 🕬

6.1 Firmware/Sound

You now have the option to install updatefiles that are not contained in the MTS via update/ fastupdate.

6.1.1 File update

Please choose a file for the standard update on the programming track.

6.1.2 File fastupdate

You can choose a file for the fastupdate via SUSI cable. Please note that the fastupdate is only available for firmware version >V3.5. The USB PC module must be at least V3.3 firmware. For more information please check our WIKI (wiki.massoth.de).

7. Firmware Updates 🎜



To enter the update mode, please click the update icon.

It will display 3 subcategories:

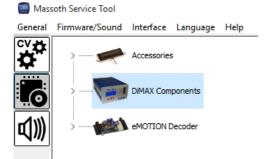


Figure 29: Basic window Firmware Update

- DiMAX components (DiMAX and other updateable Massoth Bus equipment)
- eMotion decoders (updateable decoders)
- accessories (updateable accessories)



Clicking the arrow in front of the icon opens up further subcategories. The PC module for example:

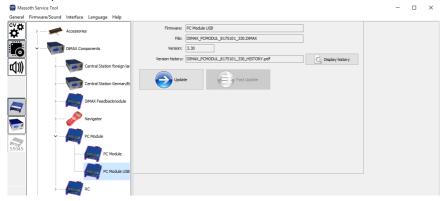


Figure 30: Firmware Update PC Module USB

If you click on data sheet you can view the history of the product versions. While connected to the pc module, please check the firmware version that is displayed at the bottom. If the version is less than V3.3 please go ahead and update in order to use the fastupdate function.

7.1 Perform update (standard mode)

As previously mentioned, the update performance is described with the example of the USB PC module.

Please connect the component that is to be updated with the programming module.

NOTE: According to the module and product further steps might be necessary, please check the specific product manuals.

Please connect the module to the power supply. Connect the module via USB to the PC. If not already done, please select and open the correct interface. Clicking the update button you start the update process.

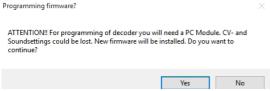


Figure 31: Confirm Update

Please confirm the update.



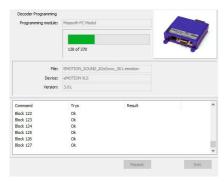


Figure 32: Window on Update



Figure 33: Completion of the update process

A signal-horn signalizes the Update completion (PC loudspeaker required). Your PC should now have installed the newest firmware version.

Some products can be updated via fastupdate (decoders), as instructed in chapter 8.1.

8. Soundupdates 🐠

To enter the soundupdate mode please click the sound icon. It will show 5 subcategories:



Figure 34: Basic window Sound update



NOTE: Depending on the version that you downloaded from the WIKI, not all soundfiles are available in the MTS as shown in the following picture:



Figure 35: Windows on missing soundfile

While the basic version only contains some soundfiles, the full version offers all of them. You can update online from the basic to the full version, see chapter 9.1.1. You can now choose the subcategory to get to the fitting soundfile.

You now have the option to install the sound via regular update or fastupdate (standard update described in chapter 7.1).

8.1 Perform fastupdate

To perform the fastupdate, firmware version V3.5 or more is required.

You also need a USB PC module with the specific SUSI cable.

The update time is 7 times faster than the regular update.

Please select the fitting decoder and sound.

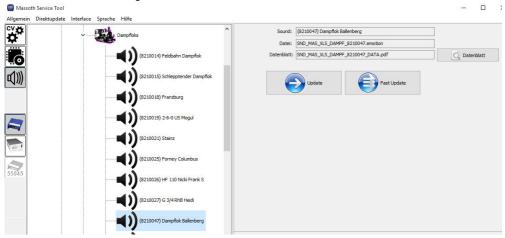


Figure 36: Soundupdate

For the fastupdate the decoder is only required to be connected to the SUSI cable. Clicking the data sheet button you can view the pdf sound file of the decoder.

Start and confirm the update process by clicking the update button.



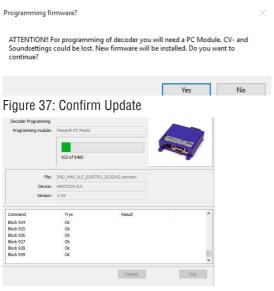


Figure 38: Window on Update

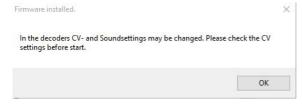


Figure 39: Completion of the Update

Also confirm the completion of the update.

The completion is signalized by a signal-horn (PC loudspeaker required).

Your decoder should now have installed the requested soundfile.

9. General task bar (all modes)

9.1 General

9.1.1 Online Update

Here you have the opportunity to update the DCC Programmer online to the newest version. Massoth Electronik GmbH regularly offers new updates or decoder templates for download. They will be uploaded on the company's FTP Server.

To run an online update, please select General - Online Update. The dialogue window will then open up.





Figure 40: Update window

As soon as the FTP connection is established, the "Check for Updates" button becomes active. Please select now, if soundfiles should be checked also. Now click the "Check for Updates" button in order to search for newer files. If everything is already up to date you will see this dialogue:

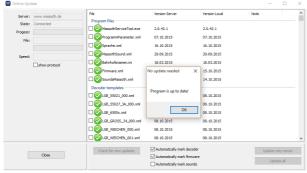


Figure 41: Program is up-to-date

This program is up to date. You still have the option for a complete program update by selecting the "Update all files" button. If there are any new files available you have the option to "Update new files".



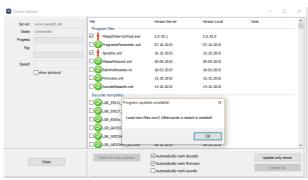


Figure 42: Updates available

By activating **SHOW PROTOCOL** you can record the FTP process. After the update is completed the MST closes up.

9.1.2 Exit

You will exit the program. If you made any changes to the current decoder, you will be asked if you want to save these.

9.2 Interface

The Interface will be described in chapter 3.2.

9.3 Language

Here you can choose german and english menu language. The current decoder will closed and reloaded for any change of language to be effective.

9.4 Help

9.4.1 Logfiles

Here you can activate the Log-file (Figure 43)

You can record the interface data and save it in a file. This can be useful for finding faults. For this you need to activate "Record log".

Note: If you are recording the log data, it is also being done while you have the log window closed. This can accumulate a large amount of data. With "Record Log" you can save the recorded data into a file.



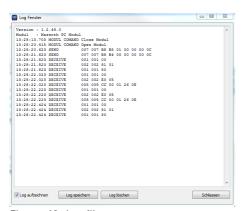


Figure 43: Logfile

9.4.2 Info

Here you will get program information (version)



Figure 44: Program information



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