

# Manual

# TBS-Flash

Version 1.0.1.0

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# 1 Installation

## 1.1 System requirements

Microsoft Windows XP

Min. 1GHz and 256Mb Ram

Microsoft .NET 2.0 Framework

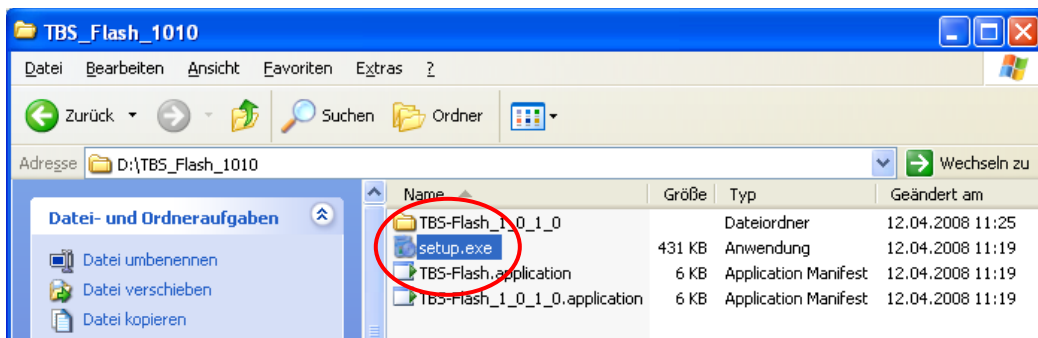
USB 1.1/2.0 or RS232 interface

## 1.2 TBS-Flash Installation

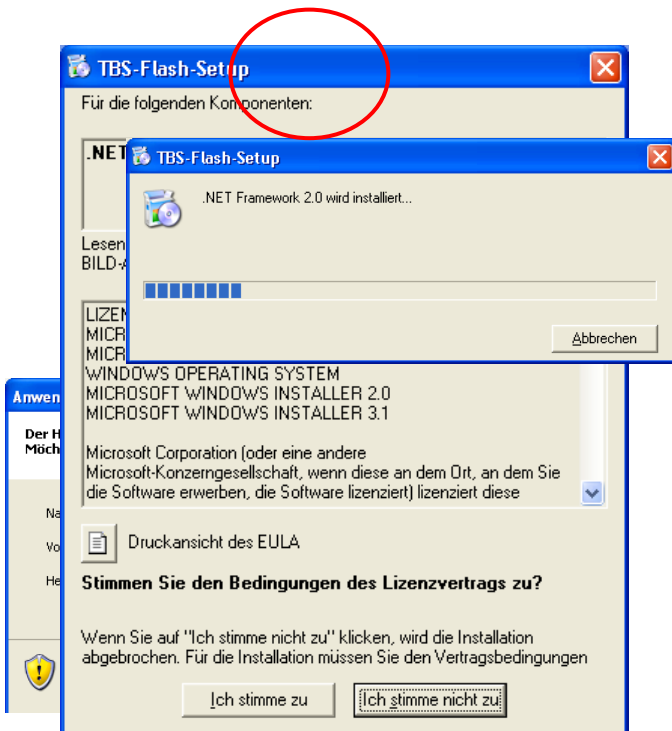
The latest version is available at:

[http://www.benedini.de/Home\\_D/Download/download.html](http://www.benedini.de/Home_D/Download/download.html)

Extract the ZIP-File and start **Setup.exe**



If the Microsoft .NET Framework 2.0 is not already installed at your PC, it is done automatically. A internet connection is necessary.



### 1.3 USB-Interface

If you want to use the USB programming cable, a special driver must be installed.

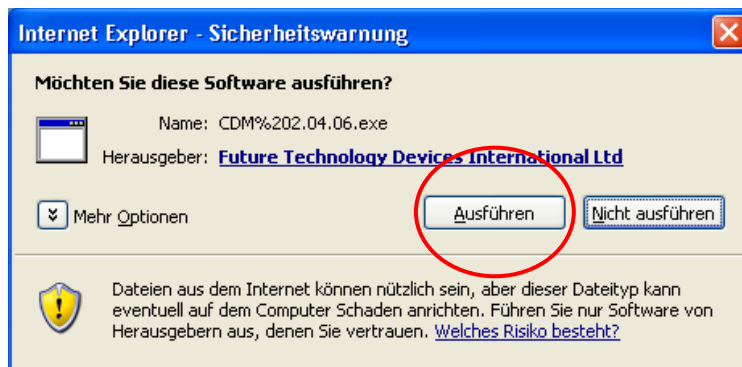
It is available at:

<http://www.ftdichip.com/Drivers/CDM/CDM%202.04.06.exe>

Further informations are available at the website of the USB chip manufacturer:

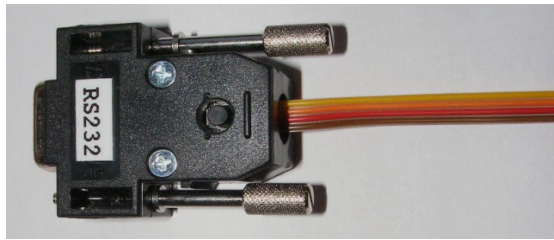
<http://www.ftdichip.com/Drivers/VCP.htm>

The driver should be installed **BEFORE** plugging the programming cable to the PC !!!



## 2 Connecting the soundunit to the PC

The soundunit is connected at the PC by the optional RS232 or USB programming cable.



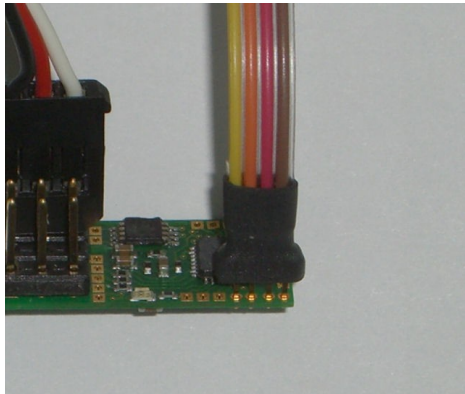
Serial Interface cable (RS232)



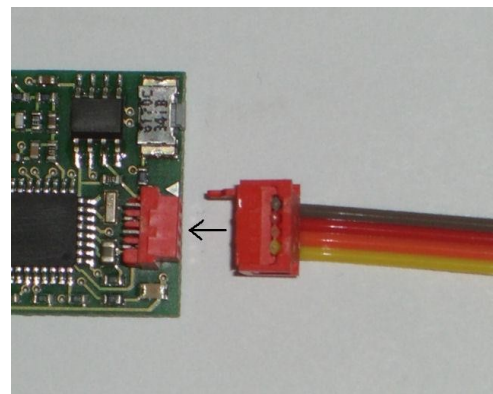
USB-Interface cable

Plug the programming cable to the soundunit as shown below:

**TBS-Micro:**



**TBS-Mini**



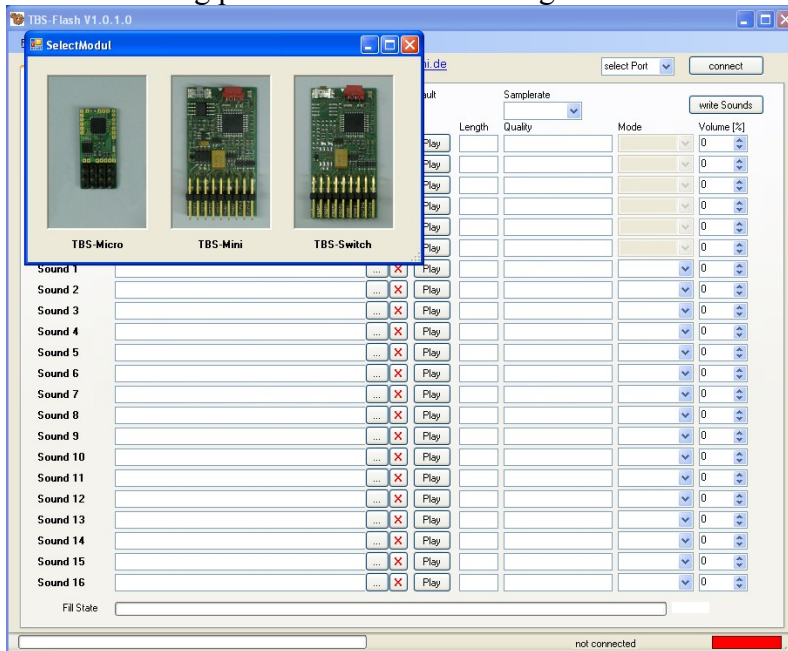
The soundunit must be powered during programming. This is done usually by the connected and powered receiver of your remote control.

### 3 TBS-Flash

The software is launched by selecting:  
**START => Programme => TBS-Flash**

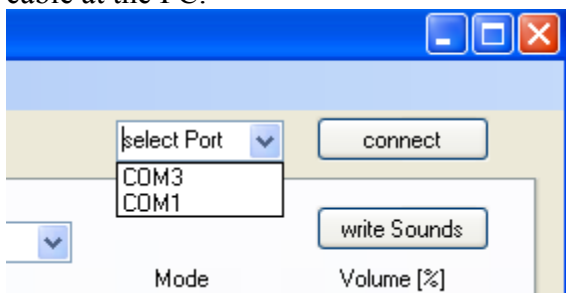
#### 3.1 Selecting the connected soundunit

After launching the TBS flash software you need to select the attached soundunit by clicking at the according picture. This can be changed later at the menu list too

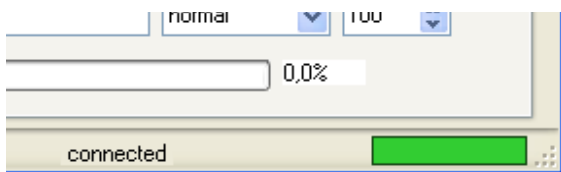


#### 3.2 Establishing the connection

Select the comport you want to use. If you have the RS232 cable, usually COM1 or COM2 are used. If you are using the USB cable, the according COM port appears after plugging the cable at the PC.

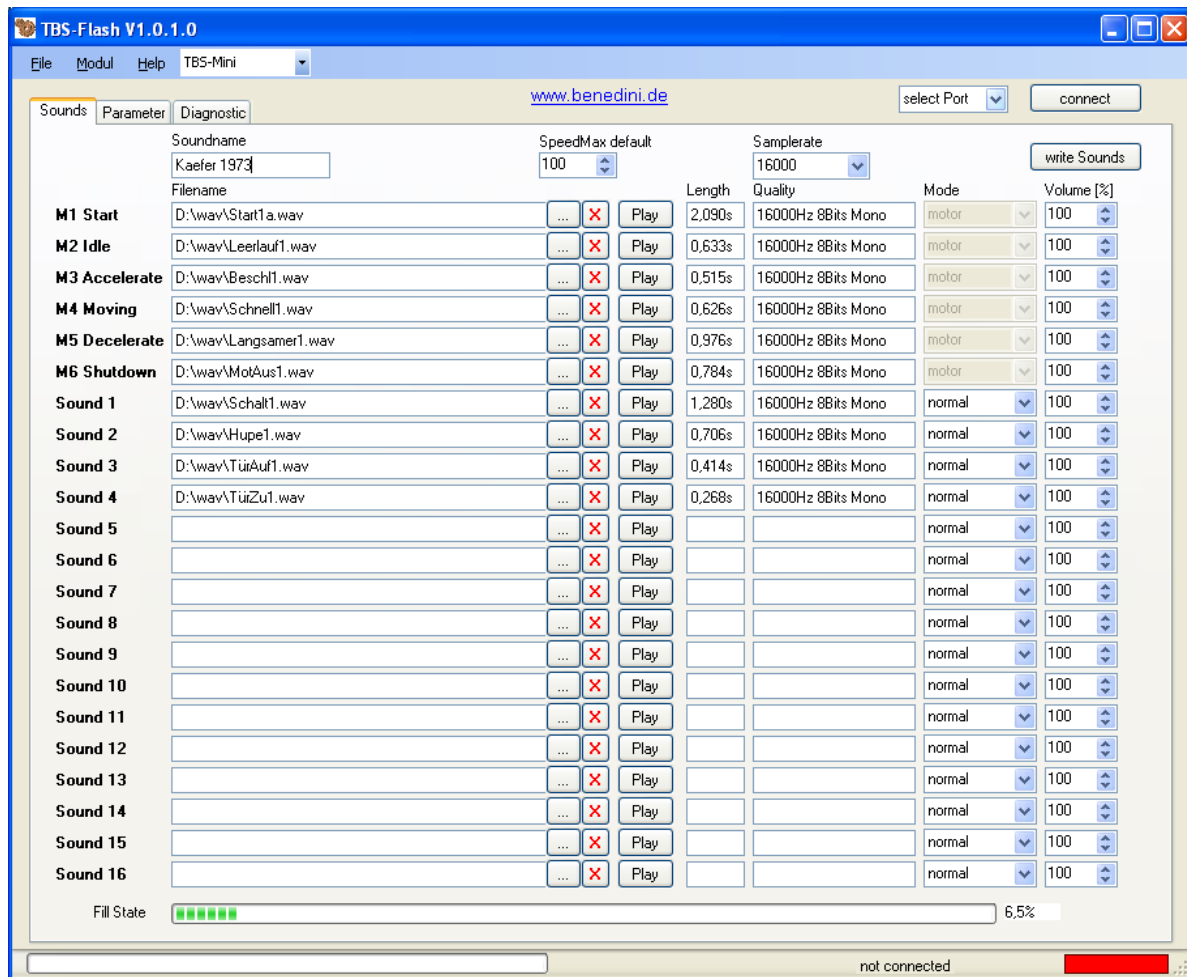


The connection indicator must change to green after pushing the connect button.



## 4 Sounds

At the „Sounds“ Tab, you can create and edit your personal soundfile:



- Soundname: Name of the Sound, it will be stored within the Soundfile.  
SpeedMax default: max. soundspeed at full speed of the model  
Samplerate: Sample rate at which the sounds are played by the soundunit.  
All sounds must have the same sample rate!  
Fill State: Indicates the fill state of the soundunit memory.  
TBS-Micro: 512kByte                      TBS-Mini 2MByte.

### 4.1 Soundfile open / store

Predifined .TBS soundfiles can be opened and stored at:

**File => Open Soundfile or Save Soundfile.**

The file contains all sounds and the according settings.

### 4.2 Soundfile containing Demo-Sounds

A collection of predefined soundfiles is available at [www.benedini.de](http://www.benedini.de). They are protected against usage at other soundunits. You can listen them by using the TBS Flash software. The beginning and end of each protected soundsections is played at reduced volume. In this case the play buttons are labeled with “Demo”.

If such a soundfile is loaded onto the soundunit, it is played normally.

### 4.3 Creating a soundfile

To create a soundfile you need recordings in .WAV format.

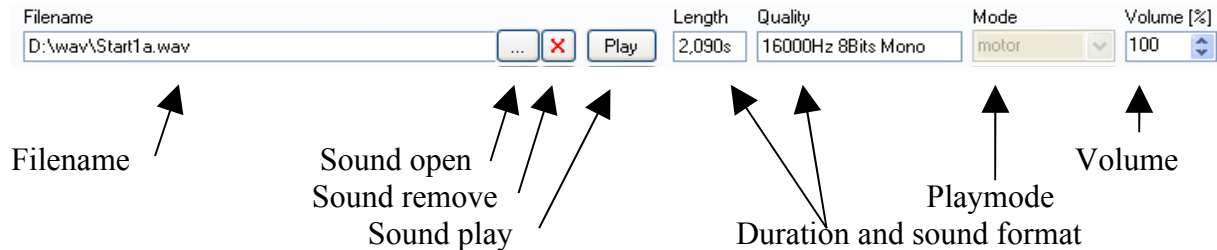
The following formats are supported:

8Bit, 16Bit, Mono and Stereo at 8000Hz, 11025Hz, 16000Hz or 22050Hz sample rate.

ALL sounds within a soundfile MUST have the same format!

A soundfile is containing 6 engine states that are played accordingly the model state.

In addition up to 16 independent special sounds are possible.



**Playmode** settings:

Normal:

Sound is played completely after triggering. If the the trigger button is still pressed when the sound ends, it is repeated.

Loop:

Sound is played in a loop. Pushing the trigger button starts the sound. If pushed again the sound is stoped.

Dynamic in:

A dynamic sound can consist of 3 sections. F.e. A serine may have a start up section, a regular working section and a slow down section. "Dynamic in" is played once. If it is finished the following sound of the list is entered and repeated. This sound must be set to "Dynamic loop".

Dynamic loop:

Is played as long as the dynamic sound is triggered.

Dynamic out:

Is played if the trigger button is released. This sound must be located in the soundlist right after the "Dynamic loop" sound.

A dynamic sound consisting of only two sections is also possible. (Danamic Loop **in** and **out**).

**Volume**

The volume of each soundsection can be adjusted individually. Avoid increasing the volume too much. This will lead to distortions. The new volume settings are stored in the .TBS soundfile. If you reload this soundfile the volume is set back to 100%.

### 4.4 Soundfile transfer into the soundunit

Soundfile transfer is started by the "write Sounds" button or by selecting

**Modul => Write Sounds**

The soundunit must be connected !

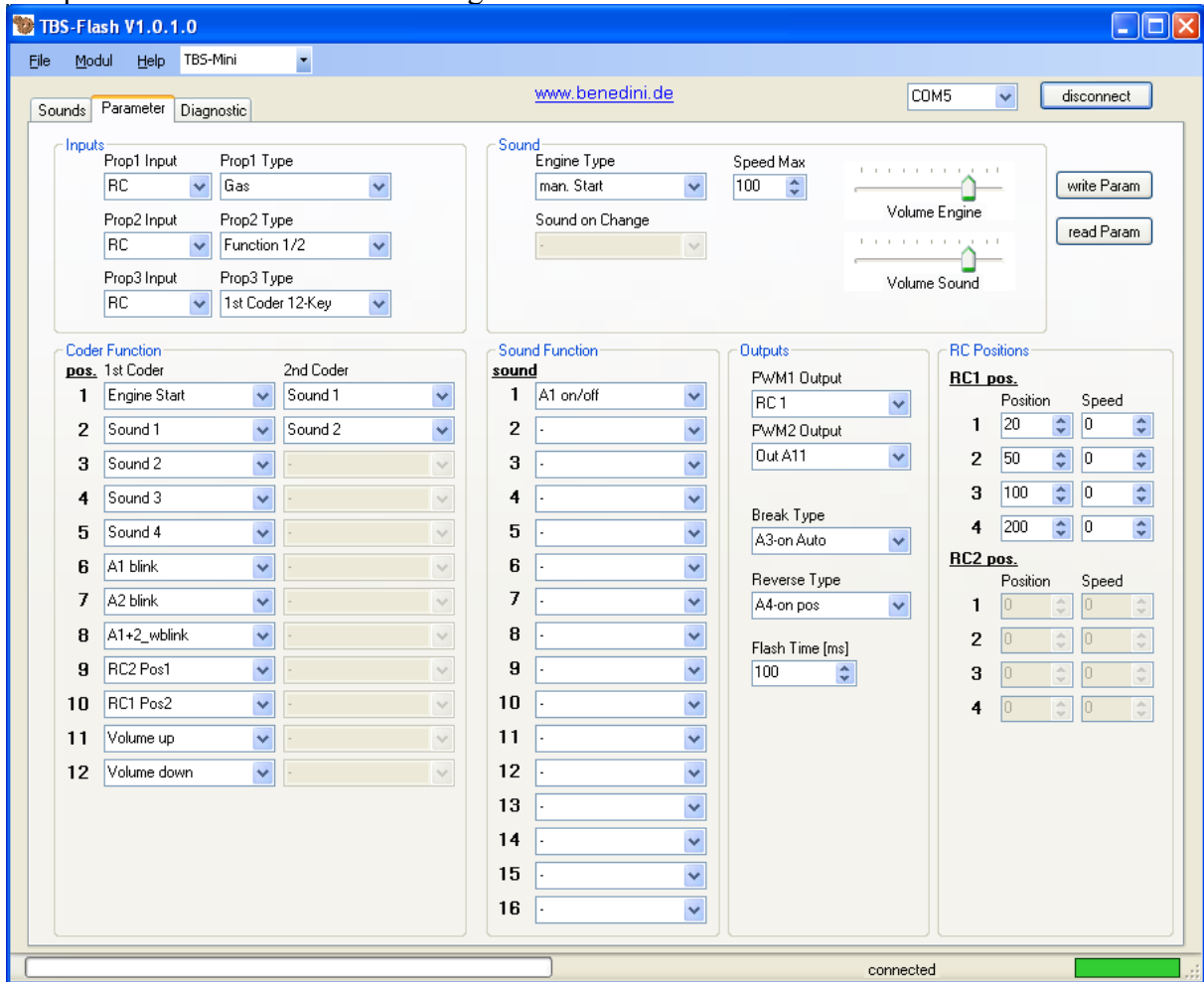
At first the soundmemory is going to be erased (erase flash) which takes about 10s.

Then the sounddata will be transferred which may take some **minutes!**



## 5 Parameter

The parameter tab contains all settings about the behaviour of the soundunit.



### 5.1 Parameter open / store

All settings are stored at a .TBP-file: **File => Open Parameter** or **Save Parameter**.

### 5.2 Parameter transfer

The soundunit must be „connected“ (Status green) for the parameter transfer.

Pushing the „read Param“ button launches the read out of the actual settings of the soundunit. After changing them according to your needs they are stored again at the unit by pushing the „write Param“ button.

### 5.3 Parameter settings

#### 5.3.1 Inputs

The inputs PROP1, PROP2, PROP3 can be configured to **RC-Signal-Input** or to **analog voltage input** 0-3.3V (f.e. Potentiometer control).

The working mode of each input can be set at the „Prop Type“ input field:

Gas	Speed signal from receiver
2nd Gas	Second speed signal (tracked vehicles)
1st Coder 2Key	3-position switch selects up to 12 sounds/funktionen from 1stCoder
1st Coder 12Key	Encoder selects sound/function from 1stCoder
2nd Coder 2Key	3-position switch selects up to 12 sounds/funktionen from 1stCoder
Function 1/2	3-position switch selects sound/function 1+2 from 2ndCoder
Sound on Change	As long signal changes sound is played (f.e. Sound as long as a servo is moving)

### 5.3.2 Sound

Engine Type: **Autostart** starts the engine at first acceleration. If the engine is 20s idle it is shut down.

**Man.Start** starts the engine manually by a trigger. This needs a spare proportional channel equipped with the encoder or a so-called 3-position switch. This switch has momentary contacts to both sides.

**Motorsound** is playing a special sound while moving the channel.

Speed max: Max. soundspeed at models full speed.

100 represents a 100% soundspeed increase = doubled soundspeed.

Sound on Change: Selection of the sound which is played if a input is set to “sound on change”

Volume Engine: Volume of the engine sound sections M1-M6

Volume Sound: Volume of the special sound sections 1-16

### 5.3.3 Encoder Functions

By using the so-called “encoder” you can select up to 12 functions/sounds.

Funktion	Beschreibung	M i c r o	M i n i t c h	S w i t c h
Engine Start	Start or Stop Motor	X	X	
Sound 1	Start Sound	X	X	
Sound 2	Start Sound	X	X	
Sound 3	Start Sound	X	X	
Sound 4	Start Sound	X	X	
Sound 5	Start Sound	X	X	
Sound 6	Start Sound	X	X	
Sound 7	Start Sound	X	X	
Sound 8	Start Sound	X	X	
Sound 9	Start Sound	X	X	
Sound 10	Start Sound	X	X	
Sound 11	Start Sound	X	X	
Sound 12	Start Sound	X	X	
Sound 13	Start Sound	X	X	
Sound 14	Start Sound	X	X	
Sound 15	Start Sound	X	X	
Sound 16	Start Sound	X	X	
A1 on/off	Switch output on and off (toggle)	X	X	X
A2 on/off	Switch output on and off (toggle)	X	X	X

A3 on/off	Switch output on and off (toggle)	X	X	X
A4 on/off	Switch output on and off (toggle)	X	X	X
A5 on/off	Switch output on and off (toggle)	X		
A6 on/off	Switch output on and off (toggle)	X		
A7 on/off	Switch output on and off (toggle)	X		
A8 on/off	Switch output on and off (toggle)	X		
A9 on/off	Switch output on and off (toggle)	X		
A10 on/off	Switch output on and off (toggle)		X	X
A11 on/off	Switch output on and off (toggle)		X	X
A1 on	Switch output as long key is pressed (momentary contact)	X	X	X
A2 on	Switch output as long key is pressed (momentary contact)	X	X	X
A3 on	Switch output as long key is pressed (momentary contact)	X	X	X
A4 on	Switch output as long key is pressed (momentary contact)	X	X	X
A5 on	Switch output as long key is pressed (momentary contact)	X		
A6 on	Switch output as long key is pressed (momentary contact)	X		
A7 on	Switch output as long key is pressed (momentary contact)	X		
A8 on	Switch output as long key is pressed (momentary contact)	X		
A9 on	Switch output as long key is pressed (momentary contact)	X		
A10 on	Switch output as long key is pressed (momentary contact)		X	X
A11 on	Switch output as long key is pressed (momentary contact)		X	X
A1 flash	Flash output (=> see Flash Time !)	X	X	X
A2 flash	Flash output (=> see Flash Time !)	X	X	X
A3 flash	Flash output (=> see Flash Time !)	X	X	X
A4 flash	Flash output (=> see Flash Time !)	X	X	X
A5 flash	Flash output (=> see Flash Time !)	X		
A6 flash	Flash output (=> see Flash Time !)	X		
A7 flash	Flash output (=> see Flash Time !)	X		
A8 flash	Flash output (=> see Flash Time !)	X		
A9 flash	Flash output (=> see Flash Time !)	X		
A10 flash	Flash output (=> see Flash Time !)		X	X
A11 flash	Flash output (=> see Flash Time !)		X	X
A1 blink	Direction flashlight, f.e. left	X	X	X
A2 blink	Direction flashlight, f.e. right	X	X	X
A1+2_wblink	Warning lights	X	X	X
A3 time	Output timed (1s)	X	X	X
A8+9 dblink	Two outputs doubleflashing (slow)	X		
A8+9 dflash	Two outputs doubleflashing (fast)	X		
A1+2 dblink	Two outputs doubleflashing (slow)	X	X	X
A1+2 dflash	Two outputs doubleflashing (fast)	X	X	X
Volume up	Increasing volume	X	X	
Volume down	Decreasing volume	X	X	
RC1 Pos1	Servo output #1 to position #1		X	X
RC1 Pos2	Servo output #1 to position #2		X	X
RC1 Pos3	Servo output #1 to position #3		X	X
RC1 Pos4	Servo output #1 to position #4		X	X
RC2 Pos1	Servo output #2 to position #1		X	X
RC2 Pos2	Servo output #2 to position #2		X	X
RC2 Pos3	Servo output #2 to position #3		X	X
RC2 Pos4	Servo output #2 to position #4		X	X
RC1 plus	Servo output #1: Move positive as long button pressed		X	X
RC1 minus	Servo output #1: Move negative as long button pressed		X	X
RC2 plus	Servo output #2: Move positive as long button pressed		X	X
RC2 minus	Servo output #2: Move negative as long button pressed		X	X

### 5.3.4 Sound Functions

If a soundfunction is defined for a sound, it is triggered automatically together with the sound. F.e. You may flash a LED together with a gun sound.

### 5.3.5 Outputs

Some outputs have extended functionality:

**PWM 1 Output** and **PWM 2 Output** can be configured for switching output (OUT A10/A11) or can be used to provide RC signals (RC1/RC2, only TBS-Mini or -Switch) to control a common servo.

**Break Type:** A output is switched on if the speed channel is moved fast to neutral. This can be used to trigger brake lights.

**Reverse Type:** A output can be switched at moving back- or forwards (A4 on pos/neg). Pos/Neg defines the direction.

**Flash Time:** This defines the on duration of a output defined for flashing. Value is entered in ms units.

### 5.3.6 RC Positions (Only TBS-Mini or TBS-Switch)

Each RC signal output (RC1 and RC2) has four predefined positions. It is possible to define the speed at which the servo moves to them:

- 0 => move directly (without speed setting)
- 1 => move slowly
- 255 => move fast

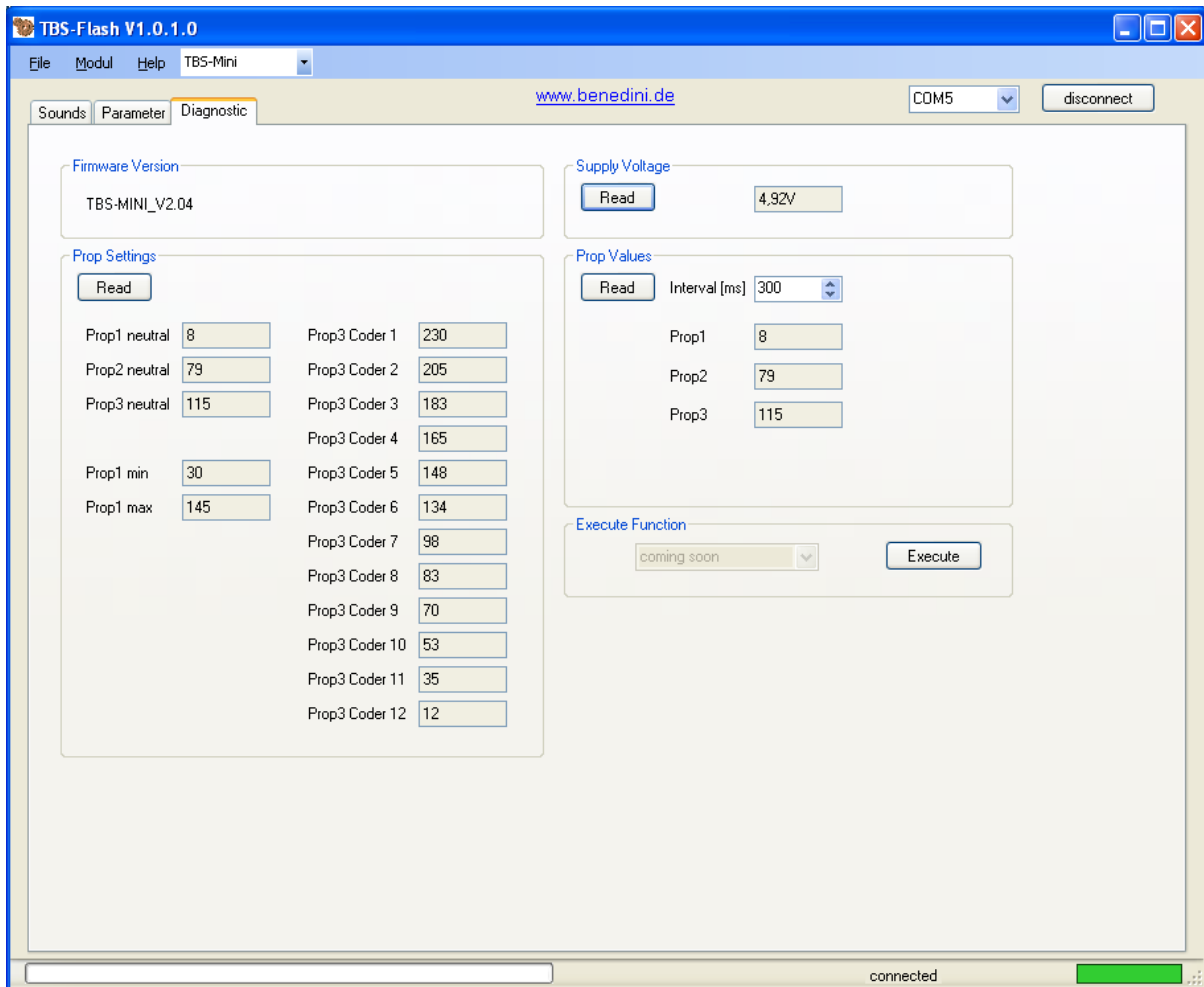
## 6 Diagnoses

This TAB is used for testing and debug purposes. If the soundunit is “connected”, values can be read by the according “read” buttons.

**Supply Voltage:** Current supply voltage of the unit

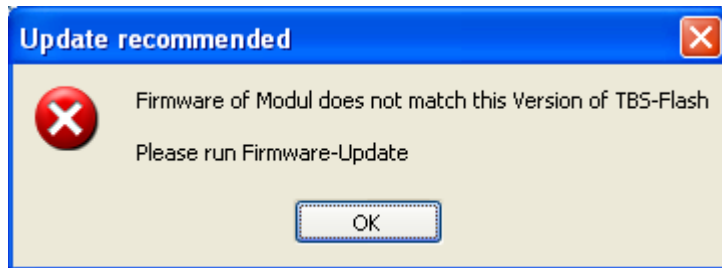
**Prop.Settings:** Indicates the already teached RC signal values

**Prop.Values:** Currently received RC signals, read at the set “interval” rate



## 7 Firmwareupdate

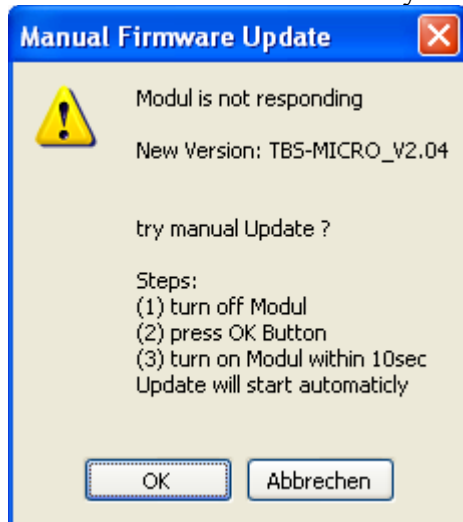
The firmware of a connected soundunit must be consistent to the used TBS-Flash version. If not, it is detected by TBS Flash and you are asked to run a firmware update.



The update is started at: **Modul => Firmwareupdate**  
The module must be already "connected".



If the Firmware was erased or is damaged you must start the update manually as described in the window below. Make sure you set the right COM-port !



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## **Technical changes reserved**

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