

# REVOX

**Re:control**

**M208 Manager**

***Configuration software***

***Version 1.0.3***

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## General

### The Configuration Software

The *M208-Manager* is a PC program with which the M208 can be programmed based on the wishes and needs of the enduser.

Additional to the source selection, the downloading of a new firmware for the processor it is also possible to make various even more specific configuration while using the „Advanced functions“ and the „Expert functions“.

In these modes the device configuration can be changed, Infrared codes can be red and the content of the M 208 can be copied.

This manual will explain to you in the first part the basic functions of the M 208 Manager. In the second part the functions for the advanced users are described.

### M208 Manager installation

After downloading the Software M208 from the Revox homepage ([www.revox.com](http://www.revox.com)) you can unpack the ZIP-File.

Start the installation with a double click on to the *setup.exe* file.



The installation guide will lead you through the installation process. Revox recommends **not to change** the proposed directory names.

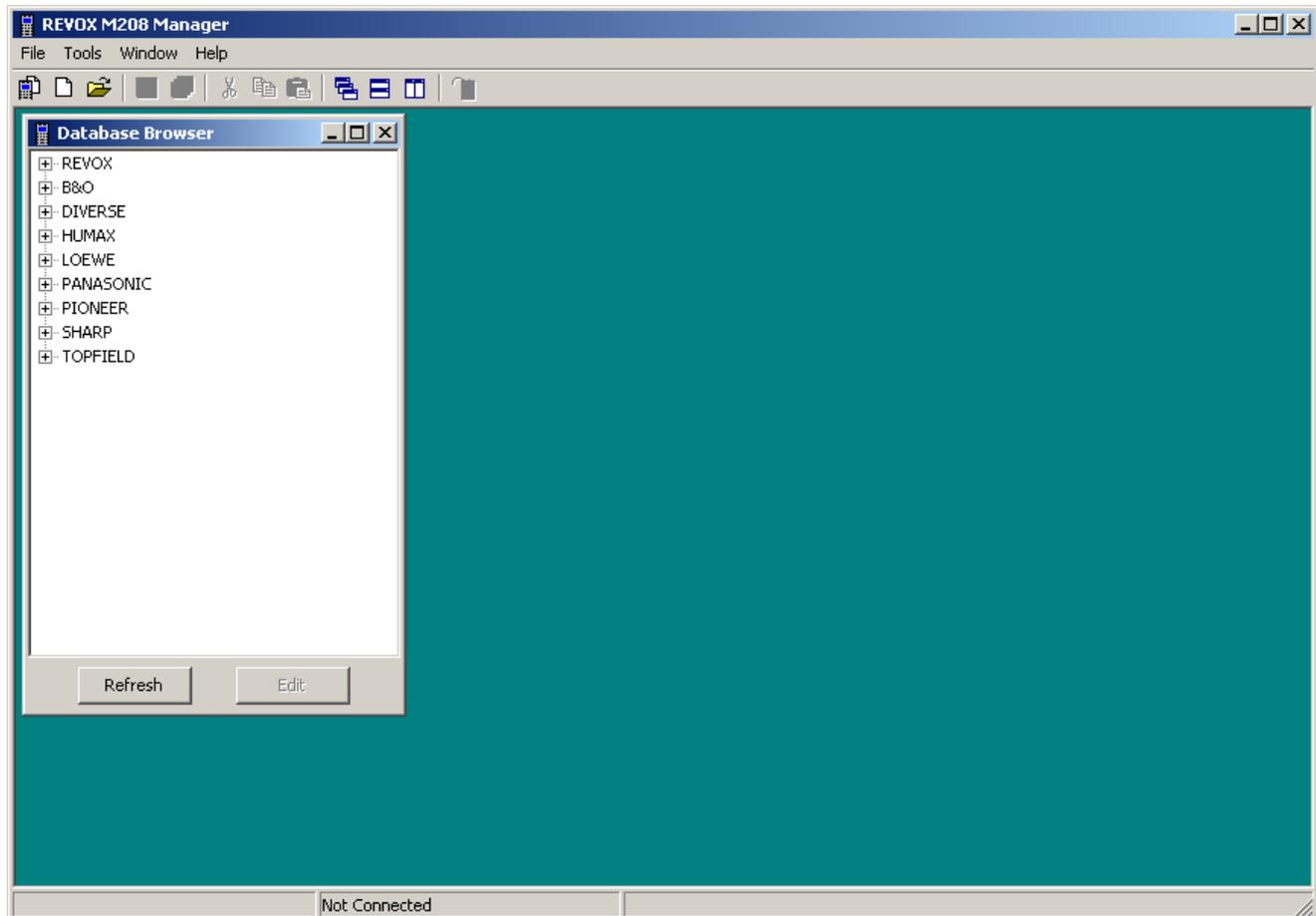
### M208 Manager already installed?

In case that you do have already an earlier version of the M 208 installed, please deinstall this SW with one of the deinstallation tools of Windows.

After the succesfull installation of the M 208 Manager an icon *M208 Project Manager* will appear in the Start directory of Windows.

## Starting the M208 Manager

After the installation you can start the M 208 Manager. The first window which you will see is the Database Browser. The Database Browser is a library of devices which are at the moment supported by Revox. The devices are ranked after the brand name of the products and will be from time to time updated by Revox.



## PC-Connection between PC and M208

On the lower part of the M208 there is the USB-connection which is called M208 link. You can find it underneath the cover. Via this connection you can download a new configuration of the M 208 from the PC.

Connect the M208 with the USB cable to your PC. The USB cable is part of the standard delivery package.

After connecting the M208 with the PC a new message will appear on the screen mentioning that a new device with the name **Revox M208-USB Link** has been found.

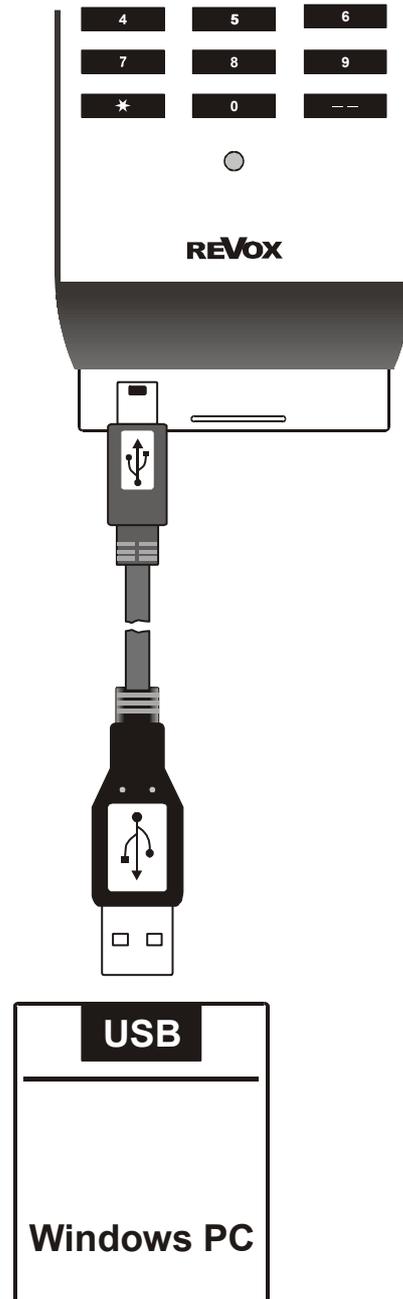
### Install the USB drivers

The Revox USB driver is not on the Windows operating system. This is the reason why the PC asks you to install the driver. Revox does not recommend to choose the windows option "search for drivers" but to indicate the following directory **C:\Programme\ Revox\ M208\ USB Driver**. In this directory your PC will find the needed driver named **208usb.sys**

Follow the Windows installation instructions and remove after the installation the USB cable from the M208. When reconnecting the M208 with the PC, your PC will recognize the M208 automatically.

### Remark:

Each USB-Chip of the M208 Remote Control does have an individual code which will be saved by Windows. It is now possible that especially WIN98 tries to reinstall the driver, when you are connecting a second M 208 to the PC. Just ignore this message until Windows recognizes also this new M208.



# Working with the M208 Manager

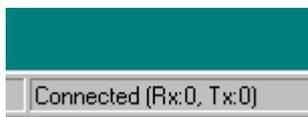
## Establish connection/ -Status

Start the M208 Manager. In case that you did not yet connect the M208 with the PC, you will see the message "not connected":



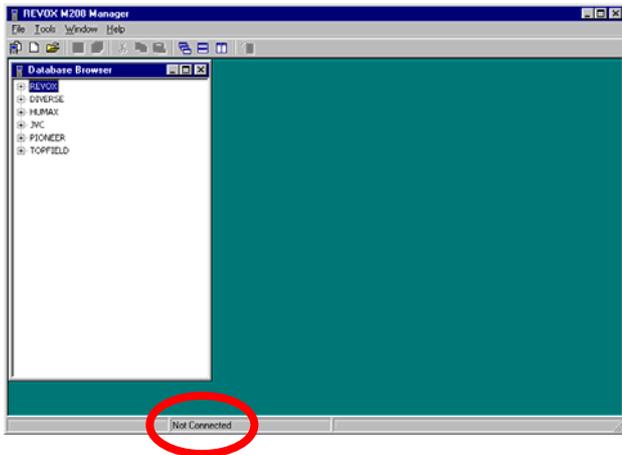
**Not Connected** means that no connection between the PC and the M208 has been established. The M208 has not been recognized by the PC yet.

Once the connection has been established or the installation of the USB driver has been completed the message changes to "Connected":



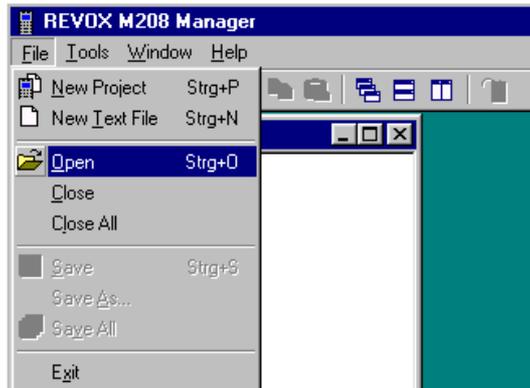
**Connected (Rx0, Tx0)** indicates that you are using now the M208 Manager for data transfers, whereas **Rx** and **Tx** shows the number of received or sent bytes.

## Status of the connection

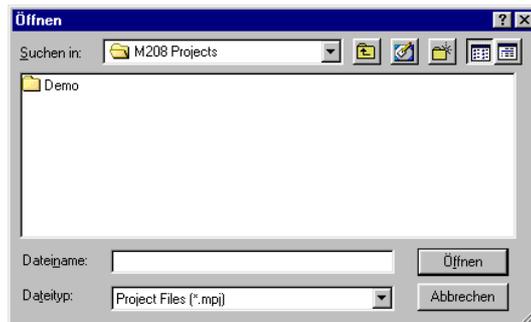


## Open a project

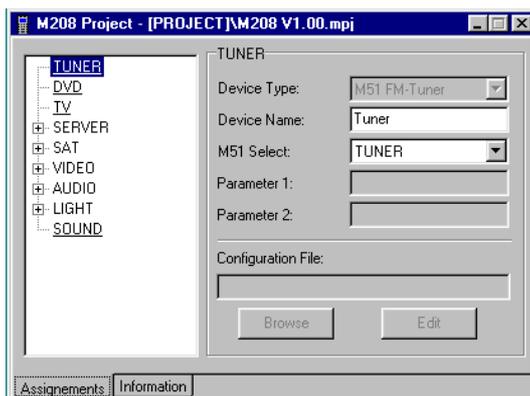
With *Open* you can open an existing project



In the second window you will have to choose the project.



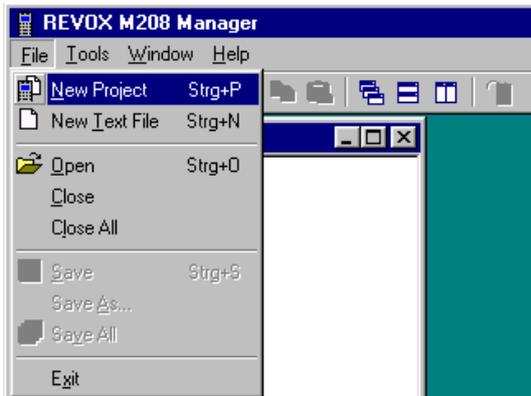
The command *Open* will open a project. In this example the project *M208 V1.00.mpj* was chosen.



**i** **mpj** All project names end with the extension **\*.mpj**

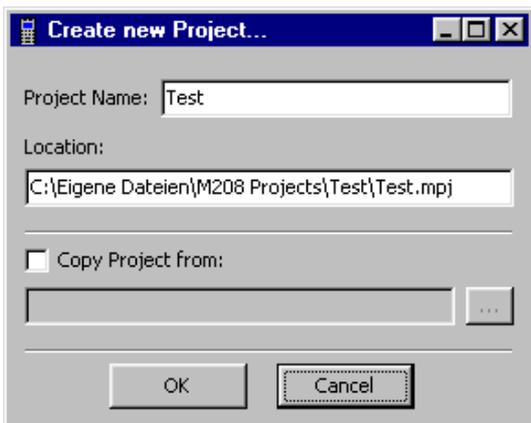
## Create a new project

In case you would like to create a new project, choose **New Project**.

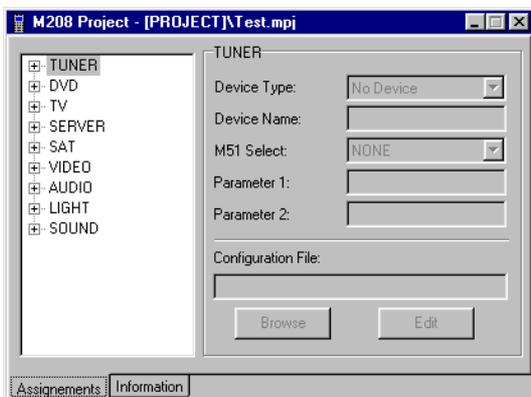


Introduce into the next window the name which you want to give to the project. In this example the project was named **Test**.

The M208 creates now automatically in the below shown chart under **Location** a directory named **Eigene Dateien\ M208 Projects** with the new project inside.

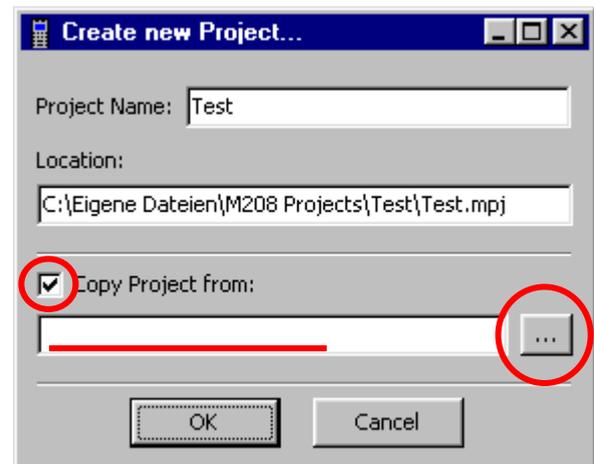


As a result the M208 Manager shows now the new project.



## Create a copy of a new project

Would you like to establish a new project which is based on an existing project, then activate with a click **Copy Project from:**



Now you can choose by clicking on [...] the path and finally to the project which shall serve as a base for creating a new project.

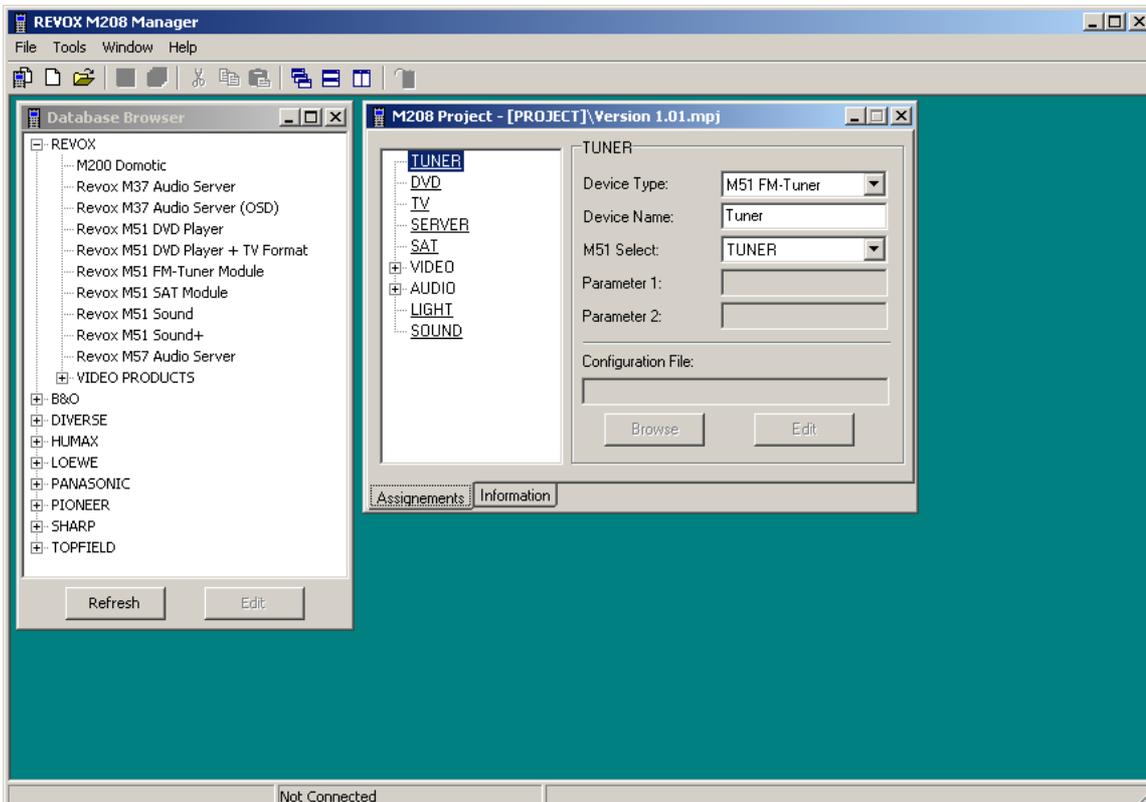
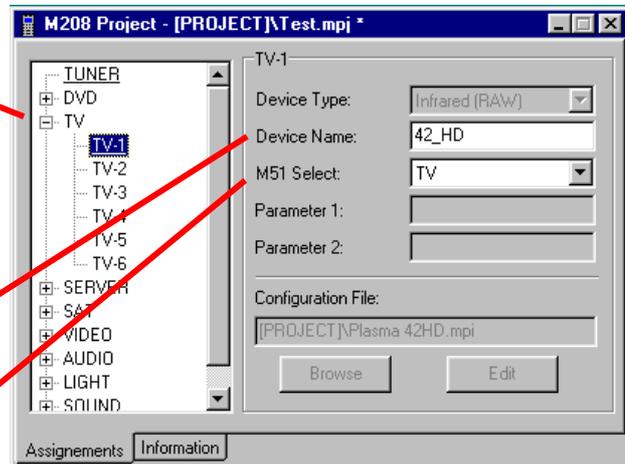
## Work on the project – Assignments

After you have created a new project the Manager shows you a new window *M208 Project* [name xyz]. In this window all 9 source buttons of the M208 can be seen. You can now put on each of these source buttons actual sources/products. It starts with the **TUNER** and ends with button **SOUND**.

Just proceed as follows:

- Each button can be configured individually. One button can control only one device or shows a selection of up to 6 products/sources (see TV).
- The wished product can be selected in the Database Browser and with Drag and Drop (or press with the right finger on to the right button of your mouse, keep it pressed, move the item to the button of the M 208 and let it drop there). In the example below the *Revox M51 FM-Tuner* is being dropped on to the button **TUNER** of the M208.
- In the field **Device Name** you can change the device name which shall appear in the Display of the M208. The name can contain up to 8 digits.
- **M51-Select** defines if, and which IR-code will be send after choosing a source button on the M208. You can choose from all on commands in the M51-products.

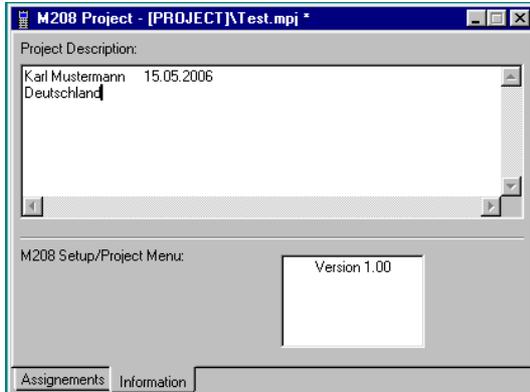
**Exception** when you choose: **NONE**  
 In this case in the product file (mpi) **POWER\_ON** is explicitly defined. Therefore this command will be send. In case there isn't any definition of **POWER\_ON**, no IR-command will be send while pressing the source button.



## Work on the project - *Information*

### Text field linked to the project

In the second register card *Information* you can enter a more detailed description of the project. This field is only visible in the M208 Manager.



### Text field M208 Remote Control

Would you like to show information or e.g. the customers name also on the M208 you can do this in the field *M208 Setup/ Project Menu*.

On the M208 you will be able to see the text which has been introduced in the above example:



## Download a project to the Remote Control

After you have configured all needed buttons and after saving the project to your PC you can start the download to the M208.

### Important Remark

The project will be saved on to the MMC-Memory card. Without a MMC card in the M208 the download will not work.

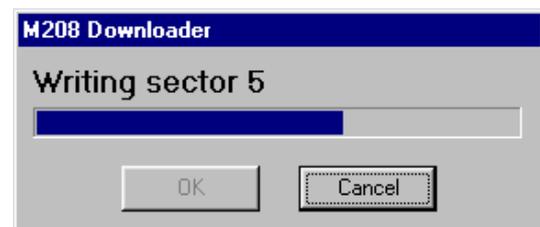
We recommend to use only the MMC cards of Revox. They have been tested by Revox and Revox assures their proper functioning and compatibility to the M208.

In order to start the download, you can choose either in the Menu **Tools** the option **Download To M208** or simply press the icon .

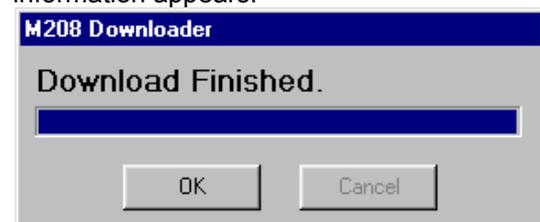
You can only make a download when the **M208 Project**-window is active. This means that the windows colour is different from the other colours of the non active windows (-Icon remains otherwise grey).



During the download you will be able to see for a short period of time an indication how far the download has advanced.

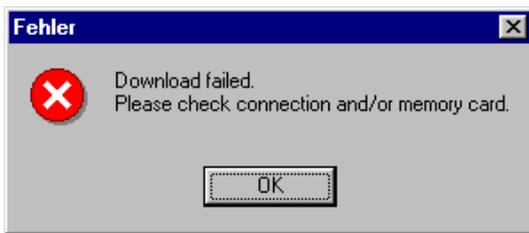


After finishing the download the following information appears:



## Downloadproblem

In case there was a problem during the downloading the following error message appears:



In case this happens please check the USB-connection and make sure that the MMC-card is correctly locked in the M208.

In case the MMC card is not properly locked in the M208 you may also see the below error message:

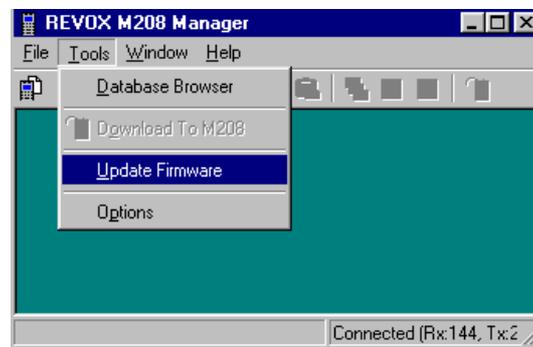


## Firmware Download

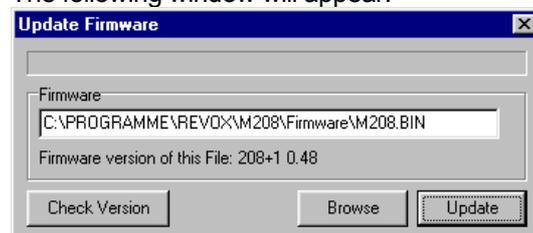
Besides the downloading of the projects, it is even possible to download the latest firmware. Firmware is that part of the Software which is saved on to the processor of the M208. The Firmware contains basic functions such as the operating system. Revox will regularly not only update the library of products but also the Database Browser and the Firmware.

You can find the latest Software Versions of the M208 always in the package which you have downloaded and which is normally stored under C:\Programme\Revox\M208\Firmware.

In order to download a new firmware on to the M208 Remote Control, start the M208 Manager again and select under **Tools** the option **Update Firmware**.



The following window will appear:



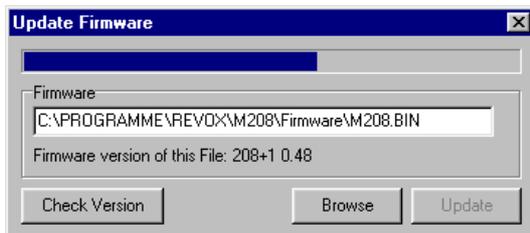
### Check the version of the Firmware

In a first step you can with **Check Version** control whether your M208 does actually work with an older version of Firmware. The latest version will be shown one line below. In our example this would be the Version 0.48.

### Loading of New Firmware

In the field **Update** you can start the loading of the new firmware on to the Remote Control. You can modify in the field **Browse** the directory name for the Firmware. With the standard configuration of the M208 Manager the path will always be correct.

During the Download a status information appears in the upper part of the screen.



After the update the following window appears:

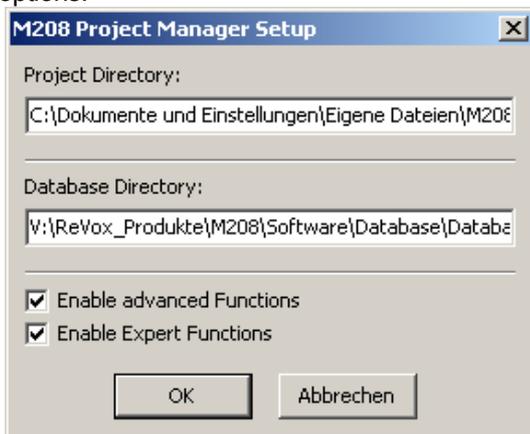


## Advanced Mode

The M208 Manager does provide an Advanced Mode which enables the user to make modifications two levels lower, on the level of the product files and their environment. After the first installation of the M208 you can activate the Advanced Mode by choosing in the Menu **Tools** and then the field **options**:



The following window appears showing the two options:



### Enable advanced Functions

This Mode allows the user to modify in the project window the **Device Type** for one product as well as to edit the device files (\*.mpi-Files).

### Enable Expert Functions

In this Mode three additional tools can be used:

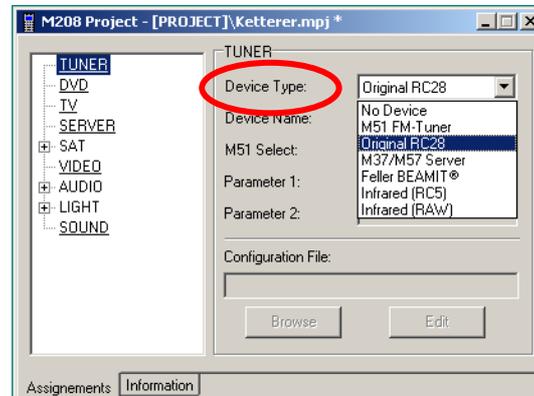
- IR Scope
- MMC Data Viewer
- Display Dump

### Important

By editing the product files (mpi-Files) you may destroy the ability of the M208 to control properly the devices. Revox is not able to give support for problems occurring in the Expert Mode.

## Advanced Functions

In the Mode *Advanced Functions* the user can define in an opened project the data respectively the device type (**Device Type**). Additionally the two functions **Browse** and **Edit** are available.



## Device Type

The Device type indicates the IR-Format which is being used by the device. The product type is already predefined in the mpi-File and should only be changed when another product is being defined.

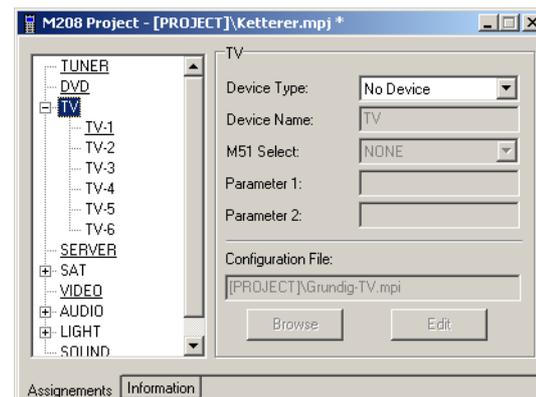
The following product types are listed on the Manager:

- **No Device [0]**

There isn't any device defined for this button.

**Exception:** With this device button a selection of up to 6 products shall be possible. In order to do this **No Device** has to be selected in order to appear in the Main Menu

Example under **TV**:



- **M51 FM-Tuner [1]**

With this adjustment the Tuner of the M51 will be selected automatically- this includes the synchronisation routines. (Remark: Please check the SW and HW requirements)

## Device Type

### Original RC28 [2]

Like with other Revox Remote Controls such as the RC28 all commands of the M208 are being send with RC5-product address, which have been selected under **M51 Select**.

#### Example: M51 Select: AUX2

All buttons such as e.g. CH+ are being send as a RC5-Code with the RC5 address Aux2. Softkeys can in the RC28 adjustments not be defined.

### M37/ M57 Server [3]

With this adjustment the Menu of the Server will be selected directly. This includes the synchronisation routine. (Please verify the system requirements for the Server-/Communication Module).

### Feller BEAMIT® [4]

Choose this adjustment when you do have a light control BEAMIT of Feller at home.

### Infrared (RC5) [5]

Choose this adjustment when the product does contain product files (mpi-File) and IR-datas on a RC5 basis. The used frequency is automatically 36kHz. The RC5-code is equipped with a Toggle-Bit function.

### Infrared (RAW) [6]

This adjustments is to be chosen in case that the product file (mpi-File) does contain IR-datas on a RAW-basis. RAW datas define an IR code based on:

- Frequency (IR\_CARRIER), -
- Repetitions breaks (IR\_PAUSE) and
- Rate of Repetitions (IR\_REPEAT)
- Impulse-/ Pause-duration (IR\_TIMEx)

The way and if at all an IR code is being repeated, is defined in the mpi-File with the from Revox developed syntax.

In the mpi-File the allocation of the **Device Type** is done with figures:

0 = No Device	4 = Feller Beamit
1 = M51 FM-Tuner	5 = Infrared RC5
2 = Original RC28	6 = Infrared RAW
3 = M37/ M57 Server	7 = M51 SAT Module

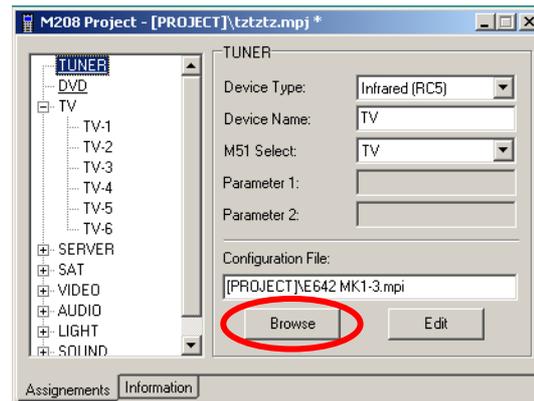
### M51 SAT Module

With this adjustment the Menu of the SAT will be selected directly. This includes the synchronisation routine. (Please verify the system requirements for the SAT- /Communication Module).



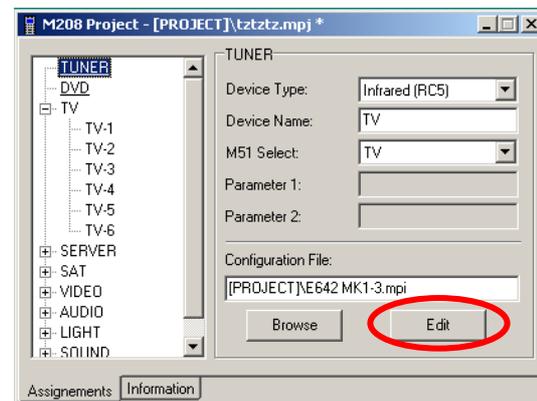
Further information to the creation of a product file mpi you can get from the chapter *product file mpi*.

## Browse



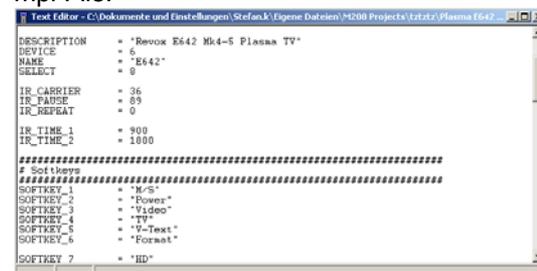
Normally all mpi-Files, which are needed during the creation of a project can be copied out of the *Database Browser* into the Project-Files under their own names. From there they can be integrated into a mpi-File.

## Edit



The function **Edit** enables the user to modify the shown mpi-File.

With **Edit** a text editors appears, which shows the mpi-File:



After you have modified the mpi-file you can save the file. Without saving the modified version all changes will disappear when you close this window.



Further information concerning the creation of a product file can be found in the chapter *product-File mpi*.

## Product-File mpi

Each device is based on a text-file with the ending mpi. In this file all functions and declarations for the control of a device is defined.

### Example:: M51-DVD Player

```
#####
# Device:          M51 DVD Player
# Remote Name:    RC28
# Type:           Infrared (RC5)
# Written by:     Stefan N.
# Version:        1.00
# Date:           17.05.2006
#####
```

```
DESCRIPTION      = "Revox M51 DVD Player"
DEVICE           = 5
NAME             = "DVD"
SELECT          = 2
```

```
#####
# Softkeys
#####
SOFTKEY_1        = "Sound"
SOFTKEY_2        = "Angle"
SOFTKEY_3        = "Subtitle"
SOFTKEY_4        = "Setup"
```

```
Sound            = $142B
Angle            = $141F
Subtitle         = $142D
Setup            = $1435
```

```
#####
# Hardkeys
#####
```

```
NUM_0            = $1400
...
NUM_9            = $1409
OK               = $142C
RED              = $142B
GREEN            = $142C
YELLOW          = $142D
BLUE             = $142E
```

```
TRACK_UP        = $1420
TRACK_DOWN      = $1421
SCAN_UP         = $1434
SCAN_DOWN       = $1432
PLAY            = $1428
PAUSE           = $1430
STOP            = $1436
MENU            = $1422
EXIT            = $142E
POWER_OFF       = $140C
POWER_ON        = $143F
```

```
#####
# X-References
#####
UP               = "CHANNEL_UP"
DOWN             = "CHANNEL_DOWN"
RIGHT            = "VOLUME_UP"
LEFT             = "VOLUME_DOWN"
PAUSE           = "PLAY"
```

← # define lines without functions  
 ← the to be controlled product  
 ← Name of the Remote control if known  
 ← Type IR-Code  
 ← Editors name  
 ← Version-Number  
 ← Date of the latest modifications

← Indication in the Database Browser  
 ← Device Type, here 5 = Infrared RC5  
 ← Name in the Display of the M208 (max. 8 letters/numbers)  
 ← Defines which IR-code will be send while pressing the button.

← Definition of Softkeys which are shown in the Display of the M208. Too long names will be shown as XXX.

← Name of the softkeys  
**Softkeys may not have the same names as Hardkeys!!!**

← IR-Code of the Softkeys; here RC5-Code

← Definition of the M208-buttons. All buttons except the 9 device buttons are being described here. Buttons without use can be left away.

← The style of writing is strictly defined by the operating system of the M 208.

← Defines allocations of one IR code to several buttons, the so called X-Preferences

← e.g. the button Up does have the same function as the button CHANNEL\_UP

## Declaration and Syntax mpi-File

Basically the mpi-files do define the functions and attributes of the product-file. The definitions in the mpi-file do have priority to the adjustments made in the Setup Menu of the M208 Remote Control.

Example:IR-Power

In the Setup of the M208 the factory setting is *IR-Power : Low*

But in the mpi-File IR-power was defined as follows:

IR\_POWER = 2 (High).

In this case the Remote Control will always send with high IR power (High).

### DESCRIPTION

The definition in the DESCRIPTION File indicates the name with which the mpi-File is shown in the **Database Browser** of the M208-Manager. Therefore the name of the mpi-file can be different from the name shown in the Database Browser. This enables a good description of the products in the Database Browser and a windows compatible naming of the mpi files.

Definition of the Mpi-File: **DESCRIPTION** = " xxx"

**Example:**

Device-File: M51 DVD.mpi

DESCRIPTION = "Revox M51 DVD Player"

### SELECT

**SELECT** defines if and which IR Code will be send by the Remote Control. You can choose from all on-commands of the M51 devices.

**Exception when choosing: NONE**

In case that in the product file (mpi) **POWER\_ON** is explicitly defined, this command will be send. If there is no definition for **POWER\_ON** no IR-command will be send while pressing the device button.

Choose in the 208 Manager:

**M51 Select**

Definition in the mpi file:

**SELECT =**

- 0 = None
- 1 = Tuner
- 2 = DVD
- 3 = Tape/ Rec-In
- 4 = Server/ Aux1
- 5 = Aux2
- 6 = Aux3
- 7 = Local
- 8 = TV
- 9 = Video1
- 10 = Video2
- 11 = Video3
- 12 = Video4

### NAME

The definition of name indicates which name shall appear in the header of the M208-Display. The display can only show 8 digits properly, additional digits will only be shown with ... .

Definition in mpi-file: **NAME** = " xxx"

**Example:**

NAME = "DVD"

Indication in the M208-Display:

<b>DVD</b>	
Sound	Angle
Subtitle	Setup

### DEVICE

**DEVICE** defines the IR-Dataty. See also chapter *Advanced Functions*.

Selection field in the M208 Manager: **Device Type**  
Associated definitions in the Mpi-File: **DEVICE =**

- 0 = No Device
- 1 = M51 FM-Tuner
- 2 = Original RC28
- 3 = M37/ M57 Server
- 4 = Feller Beamit
- 5 = Infrared RC5
- 6 = Infrared RAW

### IR\_POWER

**IR\_POWER** defines the power the IR codes are sent. There are two power levels existing:

IR-Power: Low Range : approx. 20 m\*

IR-Power: High Range: approx. 40 m\*

\*no obstacles

Selection field in the M208 Setup: **IR-Power**

Associated definition in the Mpi-File: **IR\_POWER =**

- 0= Default
- 1 = LOW
- 2 = HIGH

IR\_POWER = 0 selects the IR power which is defined in the Setup of the M208.

\* The Range is correlated to the sensitiveness of the IR Receiver and the position the product has been installed.

### # (Remark)

With the special sign # you can introduce comments into the mpi-files, which do not have a function.



## IR-RC5 Definition

### How is the RC5-Code constructed?

RC5 is the most often used Remote Control Code which is also being used by Revox. Each RC5 codes consists out of 14 BIT, which are successive send to the receiver:

- 2 Startbits (always "1")
- 1 Toggel bit (alternating 1" or "0')
- 5 Address bits
- 6 Command bits

The Startbits are used to synchronize the IR-Receiver with IR-Transmission. The receiver adjusts its amplification settings on to the signal.

The Toggelbit changes its value with each press of a button. That way the long pressing of a button can be differentiated from the alternating pressing of the same button.

The address bits define the device. Up to 32 devices can be controlled.

The command bits contain the commands of the device. Like that up to 64 different commands can be send for each device.

The carrier frequency for each device is 36 kHz.

### RC5-Code of the M208

Is a device defined as a RC5-Code in the mpi-file the address and the command has to be indicated. Start- and Toggelbits are generated automatically from the M208. Address and commands are indicated in hexadezimal digits.

#### Syntax:

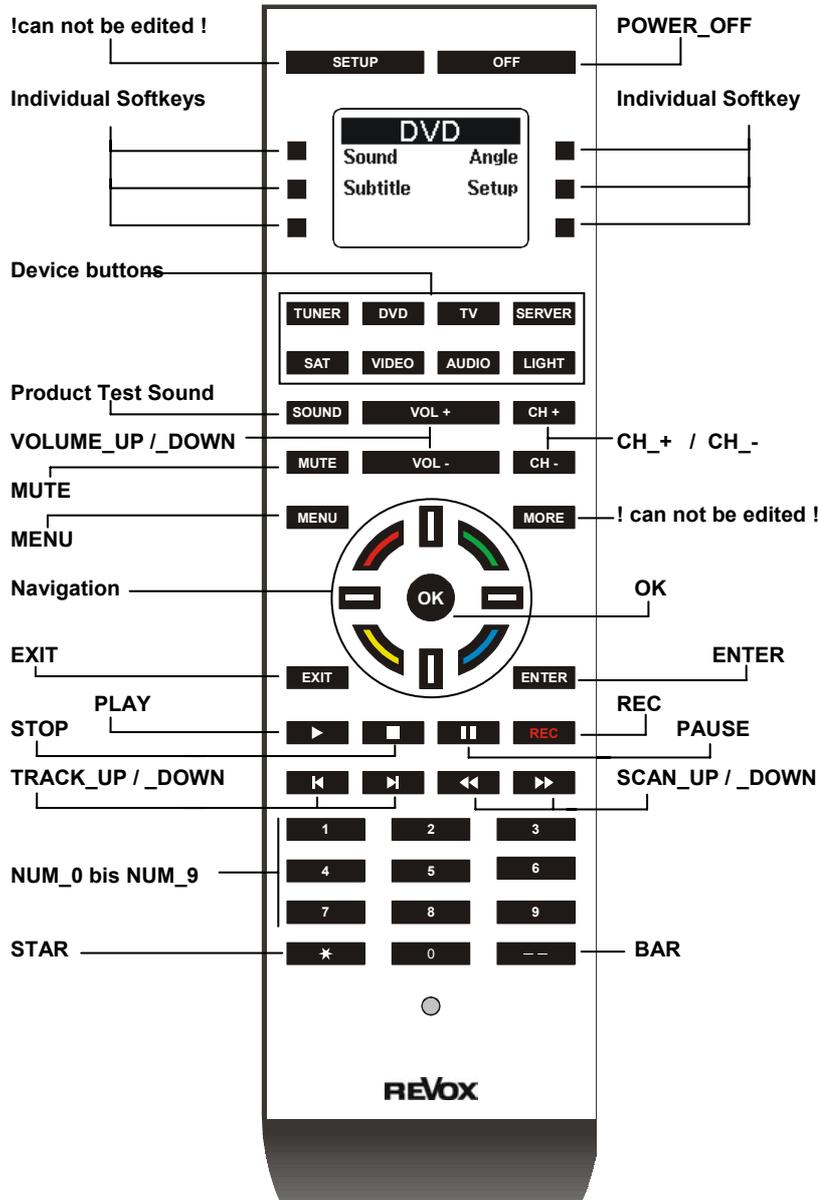
Hardkey /Softkey = \$ [Address][Command] (hex)

Example: Revox DVD  
 Address DVD: 14 h  
 Command *Sound*: 2B h

Sound	= \$142B	⇐ Softkeys
Angle	= \$141F	
Subtitle	= \$142D	
Setup	= \$1435	
.		
.		
NUM_0	= \$1400	⇐ Hardtkeys
NUM_1	= \$1401	
.		
.		
NUM_6	= \$1406	
NUM_7	= \$1407	
NUM_8	= \$1408	
NUM_9	= \$1409	

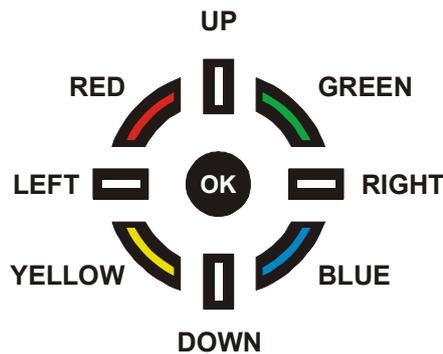
### Definition Hardkeys

The hardkeys are preset in the mpi-file. You always have to follow this writing style. It is important to differentiate between capitals and lower case letters!



### Navigation Cross

The navigation cross is being described in the mpi-file as follows:



## Definition Softkeys

The arrangement of the softkeys is defined by their numbering.

Unused Softkeys still have to be listed, but without any text. As a text all german letters without any umlauts (ö,ü,ä ...) and special characters can be used.

You should not exceed 8 digits per softkey. Capital and lower case letters are possible.

### Syntax:

SOFTKEY\_X = "xxx"

### Beispiel

```
SOFTKEY_1 = "Text"
SOFTKEY_2 = "Power"
SOFTKEY_3 = "EPG"
SOFTKEY_4 = "OPT+"
SOFTKEY_5 = "TV_Radio"
SOFTKEY_6 = "Source"
```

```
SOFTKEY_7 = ""
SOFTKEY_8 = ""
SOFTKEY_9 = "Last"
SOFTKEY_10 = "Info"
SOFTKEY_11 = "List"
SOFTKEY_12 = "Wide"
```

A Space in the description of the softkey is generated by the sign "\_".

### Example:

```
SOFTKEY_5 = "TV_Radio"
```

Display M208: TV Radio

## Special Softkeys- "Rocker"

Besides the standard location of the softkeys as right and left column, it is also possible to create a „Rocker“ to typically linked functions, e.g. +/- Volume.

Example:

Sound		Page 1	Page 2 ...
- Center +		← line 1	line 4
- Surround +		← line 2	line 5
- Subwoofer +		← line 3	line 6

The corresponding Syntax:

```
SOFTKEY_1 = "-\1"
SOFTKEY_2 = "Center;+"
SOFTKEY_3 = "-\2"
SOFTKEY_4 = "Surround;+"
SOFTKEY_5 = "-\3"
SOFTKEY_6 = "Subwoofer;+"
```

### Syntax: left Softkey

SOFTKEY\_X = "x\Zeile"

### Syntax: right Softkey

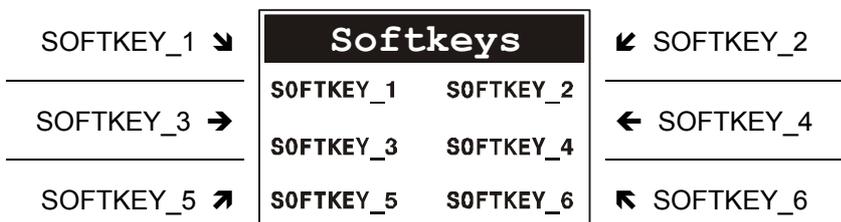
SOFTKEY\_X+1 = "Center text; y"

The allocation of IR-Codes in this example are done as follows:

```
-\1 = $1019
Center;+ = $1018
-\2 = $101B
Surround;+ = $101A
-\3 = $1017
Subwoofer;+ = $1016
```

## Allocation Softkeys

### Page 1



### Page 2



## Cross References [X-References]

With the definition of cross references you can put the same command on to two different buttons (Hard- or Softkeys) the IR code does not have to be executed twice.

In order to do this, you do insert one time the IR-code for the button (Hard or Softkeys) and do introduce afterwards in the X-References the additional buttons which shall use the same IR code.

### Example TV-Remote Control

The M 208 does have a navigation cross as well as separate buttons for the volume +/- and the channels +/- . By using the cross references it is now possible to put on to the buttons left/right of the navigation cross the same codes as on the volume +/- buttons.

Such a x-reference looks then as follows:

```
#####  
# X-References  
#####  
VOLUME_UP    = "RIGTH"  
VOLUME_DOWN  = "LEFT"
```

Such a X-Reference can be realised between Hard- and Softkeys, between Hard- and Hardkeys and between Soft- and Hardkeys.

## Chain of commands [Macro]

Using a macro you can define a chain of commands, which are triggered by a single button. This increases the comfort of use significant, e.g. as several devices can be switched on at once.

To use macros the software version of the M208 has to be 0.70 or higher. If necessary update your M208 with the latest software.

Syntax of a macro example:

① ALL\_ON = " TV:Power, 2 ; SOUND: DVD\_ON "

② STAR = " TV2:Video; LIGHT:OK,4; SAT:Power "

### Explanation to ①

Macro start: ALL\_ON (self defined softkey)

Device 1: TV  
 Command 1: Power  
 Pause 1: yes, 2 x 100 ms = 200 ms  
 Device 2: SOUND  
 Command 2: DVD\_ON  
 Pause 2: no  
 End

### Explanation to ②

Macro start: STAR (predefined hardkey)

Device 1: TV2  
 Command 1: Video  
 Pause 1: no  
 Device 2: LIGHT  
 Command 2: OK  
 Pause 2: yes, 4 x 100 ms = 400 ms  
 Device 3: SAT  
 Command 3: Power  
 Pause 3: no  
 End

## General explanation

Macro start: Macros can either be started from a softkey or a hardkey.

Device: All of the 9 device buttons of the M208 can be defined as (macro) device. Again each device button can contain up to 6 single devices. A single device consists out of a mpi-file, which actually represents e.g. the Revox plasma 42HD on the TV device button.

Valid devices:

TUNER, DVD, TV, SERVER, SAT,  
 VIDEO, AUDIO, LIGHT, SOUND

If there is more than one device (mpi-file) assigned to a device button, the assignment is defined by the number 1 to 6.

TUNER	
Device 1	Device 2
Device 3	Device 4
Device 5	Device 6

Device-Assignment

Example: TV2 or SAT4

This variable definition of a macro, which is not fixed to a special device, offers the big advantage to be able to exchange devices without defining a new macro, as long as the commands, e.g. Power (for the macro) exists also at the new device. Therefore it is important for the softkey definition that certain commands always use the same description, e.g. Power. - Note upper and lower case -

Command: As a command all within the mpi-file defined hard- and softkeys can be used. The commands for the M51 sources are reside within the sound.mpi file. The following commands are available there:

TUNER_ON	LOCAL_ON
DVD_ON	VIDEO1_ON
TV_ON	VIDEO2_ON
AUX1_ON	VIDEO3_ON
AUX2_ON	VIDEO4_ON
AUX3_ON	SERVER_ON
TAPE_ON	M51_OFF

- Note upper and lower case -

Pause: the number behind the command, separated by a comma, is defining the delay to the next sent command  
 Delay time: number x 100 ms

Example: STAR= "TV2:Video,4;SAT:Power"  
 Delay time: 400 ms

Max. length of a macro: 256 signs (complete line)

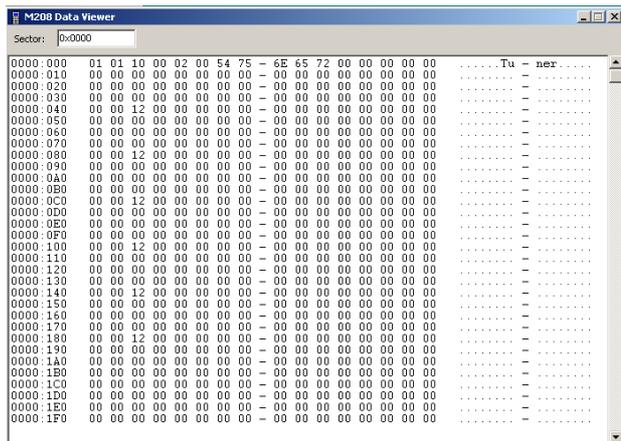
## Expert-Functions

When choosing in the Menu *Option* and then *Tools* you can in the Expert-Functions see 3 additional functions:

- MMC Data Viewer
- Display Dump
- IR Scope

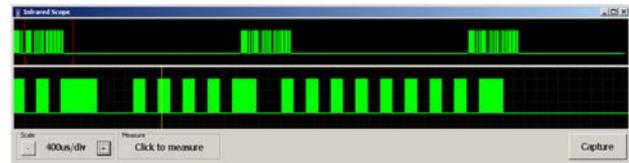
### MMC Data Viewer

The MMC Data Viewer shows the memory content of the MMC card.



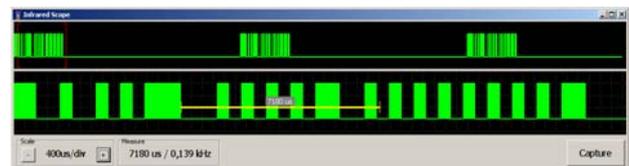
### IR Scope (BETA-Version)

The IR-Scope can make an IR-code visible. In order to do that the M208 does have to be connected with the PC.



Using the measuring feature **Measure** you can mark two points of the IR-signal with the mouse cursor. The IR-Scope shows in the lower toolbar the time and the corresponding frequency which is belonging to these two points.

If you want to measure the carrier frequency take a package of 10 impulses to reduce rounding and metering errors. In this case the read off frequency has to be multiplied by 10.



### Display Dump

From the Display Dump the content of the M208-Display can be copied into a temporary file in order to further process them in other windows programs.



#### Procedure

1. Connect the M208 through the USB-cable with the PC and start the Display Dump.
2. Choose on the M208 the Display the setting you want to copy.
3. Decide whether the USB Icon shall be shown and whether a Display Border around the Display shall be shown.
4. By using the button **Refresh** you renew the content of the display.
5. The button **Copy to Clipboard** copies the display content into the temporary memory.

## **System Requirements**

### **Operating System:**

WIN 98, WIN 2000, WIN XP

### **Available Memory on the HD:**

5 MB

### **Working Memory available:**

256 MB

### **USB-Interface 1.0 or 2.0**

### **Description of Version: 1.0.0**