

English user manual

Re:source  
M100 module

multimedia

**REVOX**

Dominating Entertainment.  
Revox of Switzerland.





## Welcome

With the Re:source Multimedia module, we have opened up completely new horizons for the Revox system.

Read on, if you want to find out which ones.

### The Program Director

As the name suggests, you won't just have access to a wealth of storage media. With Internet Radio, you will also have access to the whole world. The days are gone when Program directors decided what you could listen to and then subjected you to intrusive advertising and traffic reports as well. Now, you are your own Program director. You can select your own music genre of choice and listen to broadcasts at a time that suits you.

### The Language Trainer

Or how would it be if, just ahead of your holiday, you could listen again to the language of the country you are going to visit? No problem with Internet Radio. First select the continent and then the country and before you know it, Spanish, Creole or French will be coming at you out of the "ether".

### The iPod Connection

Your MMM will get on very well with your iPod. Just connect it to the MMM and using your Revox equipment, you can dive into the audiophile world offered by this clever little box of tricks.

### The Memory Stick

When connected to the USB socket, any memory stick and any USB hard disc\* can make its contribution to the media diversity of the MMM.

### The Music Folder

The MMM brings order into your favourite collection of CDs. Just pack all the tracks that make up your collection onto a network disc in the highest quality and then browse through them at your leisure, looking for long-lost tracks or rediscovering some old favourites. No more looking for CDs that have been put back into the wrong box!

### The Multiroom Factor

Many of your friends will also be comfortable in the world of Internet Radio and will appreciate a network player. But the MMM isn't just at your service in the main room but in every other room that your Multiroom system is connected to. And that could be as many as 32!

\* with FAT16/32 formatting

## Important advice

### Your network

The following description for the cabling and the setup makes the assumption that there is a functioning network with router available and operational.

**If you have any questions about the setup and configuration of your network or Internet access, please refer to your System administrator or an IT specialist of your choosing.**

### WLAN Wireless communication

An access point is required for the wireless communication between the MMM and the router. This can be an external unit or it can be integrated in the WLAN router.

### Internet Radio

If you want to use the MMM to receive Internet radio, there must be a broadband Internet access to the router. Setting up the Internet access may involve further costs. The management and use of the Revox Internet Radio Portal is free-of-charge and already included in the purchase price

### Software/Firmware version

#### MMM 06

The software version V2.16 requires the firmware Version **MMM+6\_SeDMP2 digital iPOD Revox v13708.16.bcd**

You can check or download the current firmware version using the *DMP User Interface*. To do this, enter the MMM's IP address into a Web Browser. The browser *Mozilla Firefox* has shown itself to be very reliable here. The MMM has to be connected with the network through a **LAN** to carry out the firmware update. Revox strongly advises against using a **WLAN** as this can lead to serious update errors, which can only be resolved at the company headquarters in Villingen, Germany.

### Scene control and MMM

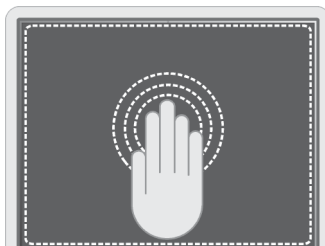
If the MMM is used as a source in a scene control, only the first 8 of the total of 16 scenes available can be used. Scenes 9-16 are not supported by the MMM. Scene control is described in the Multiroom Module manual.

## Starting MMM

The multimedia module can be started in 3 different ways:

### ① By touching the front panel

Touch the glass front panel of the Multimedia module, as shown in the picture on the right. If the M100 is switched off, the M100 basis now starts up and selects the last heard iRadio source. If, on the other hand, the M100 basis is already switched on, it switches over to the last iRadio station.



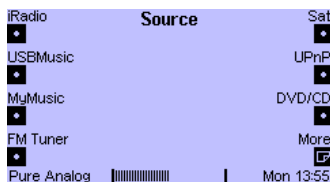
### ② M100 basis Welcome menu

The M100 basis has a proximity sensor. As soon as the M100's proximity sensor recognises that a hand or another object is approaching, it increases the background lighting and the **Welcome** menu appears. Now you have 5 seconds to select the source you want, by touching the corresponding sensor field. If no selection is made, the M100 basis returns to standby mode.



### ③ M100 basis Source menu

If the M100 basis is already operating, a source of the MMM can be called through the M100 basis Source menu. To do this, press the **Source** touch key on the M100 basis. The following menu field appears: The MMM module is activated by pressing the corresponding touch key.



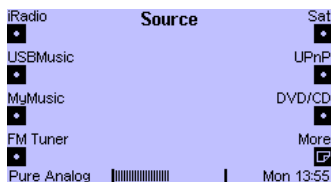
## MMM Operation

Once all the required settings have been made in the MMM Setup, the Multi Media Module (MMM) can be called in the M100 Source menu through the key on that were assigned through the Remote menu.

The manual always shows the M100 display view to illustrate working with the MMM. In terms of content, this display view is identical to that of the M217 wall display. The only difference is the resolution and/or modified structure for the selection of menu points.

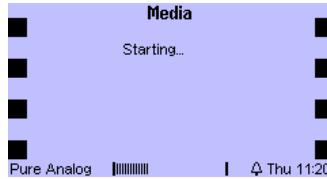
The most important menus and selection options available for operating the MMM through an M217/M218 display combination are shown on the next pages.

The MMM displays the new source **Media** in the Source menu.



Source menu with Media

The following Start screen appears in the initial seconds after calling the source **Media**:



During this start phase, the MMM searches for connected devices (USB storage, iPod) and/or network devices (NAS) and the Internet access for using Internet radio.

Once the Start phase is completed, the selection options that have been found are listed.



Detailed explanations of these options follow in the next chapters and you will be shown how you can define the search for particular tracks, albums or radio stations.

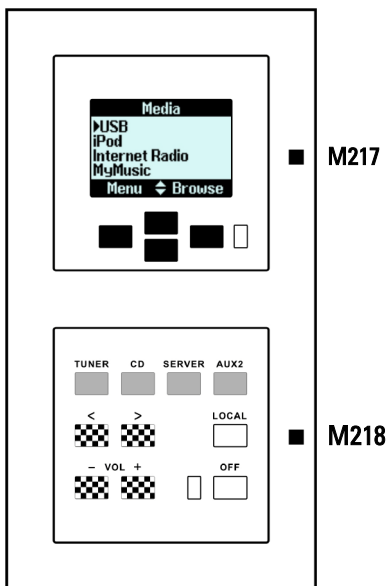



Wake up with the Multimedia module - See Page 56:


### Multiroom: Questions & Answers


## M217/ M218 Operation

Thanks to the sophisticated Revox Multiroom concept, it is possible to operate the Music server from each side room that is connected to the Multiroom system.



 Call directly a certain MMM source though the source keys on the M218 keyboard (grey keys) that you assigned in the *Remote* setup one of the MMM sources.

 In the same way you use the M218 keyboard to control the volume [Vol ±] as well as changing track [<>], assuming that the selection menu supports these chequered keys.

 Further operation of the Server is done through the touch keys on the M217 display (black keys).

## M217 Menu overview Part ①

The following menu overview shows the most important M217 menus for operating the MMM. As the selection menus are very dependant on the choice of devices connected to the MMM (USB, iPod, clients, etc.) it is possible that the graphics differ from your M217 menus.

### MMM Main menu



### USB selection by artist



### iPod selection



### Internet Radio selection





## M217 Menu overview

## Part ②

## Network client selection

```

Revox M37 MKII (Xi...
▶Artists
Genres
Years
Eras
Menu ◀ Browse
  
```

## Menu: Now Playing

```

Now Playing
▶Back MyMusic
Home
Status
+MyMusic
Cancel ◀ Select
  
```

## +MyMusic selection

```

Now Playing
Add entry
to MyMusic?
No ◀ Yes
  
```

You can add the radio station currently playing and/or the path to your favourite music tracks to the MyMusic category by pressing the **+MyMusic** softkey. We recommend however, only adding music storage paths to MyMusic that are always available.

## ABC search

```

MMM
[A]BCDEFGHI
JKLMNOPQR
STUVWXYZ
0123456789
Menu ◀ Select
  
```

The alphabetically sorted selection allows a specific selection based on names that start with a particular letter. This can be names of folders, titles or radio stations.

## Info window

```

Now Playing
ABBA
Super Trouper
Winner Takes It All
Menu ◀ Home
  
```

The **Info** softkey shows the status of the currently selected source. In the example shown on the left, the track *The Winner Takes It All* by *ABBA* from the album *Super Trouper* is playing.

## Menu selection

```

MMM
▶Back MyMusic
Home
Info
ABC...
Cancel ◀ Select
  
```

The **Menu** softkey opens the navigation or control page with the selection: **Back** , **ABC...** , **Home** , **(Info)** , **MyMusic**.

You will find a functional description for these selection options on the next page, chapter *General control softkeys*.

## General control softkeys

### Softkey **ABC...**

The alphabetically sorted selection allows a specific selection based on names that start with a particular letter. This can be names of folders, titles or radio stations. The ABC search can only be used with sorted lists. The following message appears with unsorted lists:

*„unsorted list..“*

### Softkey **Back**

This key returns you to the next highest menu level.

### Softkey **Browse**

The Browse softkey opens a folder or a category and takes you to the next selection level.

### Softkey **Home**

Returns you to the Main menu.

### Softkeys **Page**

Page up/down within a list.

### Softkeys **Select**

Line up/down within a list.

### Softkeys **Previous/ Next**

Scroll to next or previous track or radio station

### Softkeys **+MyMusic**

You can add the radio station currently playing and/or the path to your favourite music tracks to the MyMusic category by pressing the +MyMusic softkey. We recommend however, only adding music storage paths to MyMusic that are always available.

e.g. a path to a permanently connected USB hard disc.

Please do not confuse this with the *Favorites* softkey that calls an existing Internet Radio Favorites list.

## NOTE

The MMM is purely a reproduction medium that plays the content of different media such as USB storage, iPod, Internet radio, etc.

The MMM cannot modify the content of these media or delete parts or add new items.

## Shuffle

The **Shuffle** function allows the playback of tracks in a random order. Depending on the selection criterion you use to activate the Shuffle function, either only the tracks within an album are played in a random order (*Albums*) or all the tracks on the iPod (*Songs*).



Before the Shuffle function can be selected, a track must have been started through the **Play** function.

Shuffle mode is automatically deactivated, as soon as you select a different selection criterion or if you switch to another media source.

## Repeat

With the **Repeat** function, you can repeat individual tracks (*Repeat On*) or complete folders, (Albums, Songs, etc.) (*Rpt All*). Before the Repeat function can be selected, a track must have been started through the **Play** function.



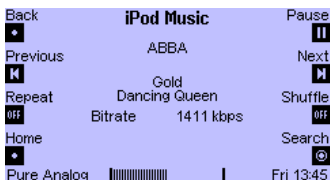
The required function can be set in an endless loop by repeated pressing of the Repeat touch key.

**Repeat Off**  
**Repeat On**  
**Rpt All**

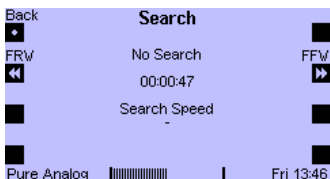


## Fast wind with search

The **Search** function enables jumping to a particular time-position through fast forward or rewind.



The following display appears when the Search menu is called:



The search can now be started with the FFW & FRW (fast forward/fast rewind) softkeys. Different search speeds are available: 3x, 6x, 12x, 24x.

The **Play** softkey stops the fast winding and returns the device to Play mode. **Back** closes the Search menu.



## Info - Status overview

The **Info** softkey shows the status of the currently selected source.



In the example shown below, the track *When I Kissed The teacher* by ABBA from the Album *Arrival* is playing. This title was stored with a data rate of 192 Kbps.



### Bit rate [kpps]

The data rate with which the selected radio station transmits or a track was compressed.

### Buffer [%]

The filling level of the MMM data buffer that is used to balance out MMM fluctuations in the data streaming. The buffer display should always be 100%. If it reaches 0%, playback is stopped until data is received again.

## USB

The **USB** menu enables access to content on connected USB storage media (USB Memory stick\*, external USB hard disc\* with its own power supply).



All tracks and music folders are displayed after the USB selection is made. You can make your selection using the **Page** and **Select** navigation softkeys. The **Browse** softkey opens folders containing more than one track.



The **Play** softkey only appears once a track is available for selection. Press **Play** to start the playback of the title:



The softkey **Pause** gives you the opportunity to pause the playback.



You can scroll to the preceding or the following track within the folder / album respectively, using the **Previous** and **Next** softkeys.

The **Shuffle**, **Repeat** and **Search** functions are described in detail in the chapter General control softkeys – see pages 9-10.

**i**

The track names are defined by the names of the music files. ID3 tags are not supported for selection.

\*with FAT16/32 formatting

## iPod

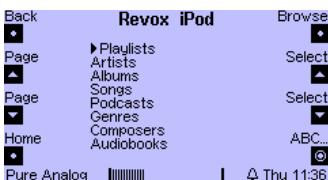
The **iPod** menu allows access to content on the connected iPod.



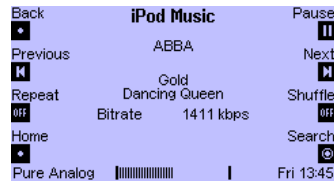
The selection options in the iPod menu are predefined by the iPod and are not handled by the MMM controller. For this reason, it is possible that new or modified selection options will be added in the future. At the time of printing this manual, the following selection criteria were available:

- Playlists
- Artists
- Albums
- Songs
- Genres
- Composers
- Audiobooks

You can make your selection using the **Page** and **Select** navigation softkeys. The individual selection criteria are selected with the **Browse** softkey.



Press **Play** to start the playback of the title:



You can scroll to the preceding or the following track respectively within the list / album, using the **Previous** and **Next**

Use **Pause** to interrupt the playback.

The **Shuffle**, **Repeat** and **Search** functions are described in detail in the chapter General control softkeys – see pages 9-10.

## NOTE

### iPod name

The headline of the display shows the name of the iPod that was assigned to it with *iTunes*, in this case *ReVox iPod*.

### Charging the iPod battery

Your iPod's battery is charged up during operation. In standby mode charging only takes place when an external power supply is used. See page 47 & 48.

## Internet Radio

The selection **Internet Radio** gives you access to thousands of radio stations available from around the world. As well as the linguistic diversity available, you can also make specific selection based on particular musical directions (**Genres**).

**Podcasts** offer even more individuality. Podcasts are broad-casts such as news programs, magazine shows, crime dramas, comedies, etc. that are started when you select them. You don't switch onto a program that is currently running as is usual when listening to (internet) radio. You actively start the playback of a program.

### Starting Internet Radio

Select the menu point **Internet Radio** in the Main menu.



The current selection options are displayed:



The selection options in the Internet Radio menu are being constantly been adapted to meet customer requirements. For this reason, it is possible that new or modified selection options will be added in the future. At the time of printing this manual, the following selection criteria were available:

- Favorites
- Added Stations
- Device location (country)
- Location
- Genre
- Podcasts By Location
- Podcasts By Genre
- New Stations
- Most Popular Stations

### ➔ Favorites

Your favourite radio stations or groupings that you have previously organised through *Revox Internet Audio Portal* are listed under *Favorites*. How to do this and what you have to take into account is described in the chapter *Setting up Internet Radio* on page 18.

### ➔ Added Stations

The selection *Added stations* lists those radio stations that you added yourself in the *Revox Internet Audio Portal* (see chapter *IAP*, page 34), as these are not listed by default. You need the URL, the Internet path, of the operator of the radio station to be able to add a new Internet radio station in the IAP. You will usually find this on the provider's homepage or you can display them in a media player.

### ➔ Device location (country)

Your MMM knows which country it is in through its IP address. Using this information, it offers the user direct access to the selection of national radio stations. This shortens the time needed to make your selection as you don't have to go through the continent and country selections first.

Correspondingly, an MMM that is located in London (UK), will show **United Kingdom** here.

### ➔ Location

Selection of radio station by countries. Searching for the required radio stations is made quick and specific through the classification in Continents ↘ Countries ↘ Genre.

### ➔ Genre

Listing of radio stations based on certain music directions such as rock, jazz, folk, etc. Within the genre, the individual radio stations are either listed alphabetically (*All Stations*) or by the countries offering this type of music.

### ➔ Podcasts By Locations

Listing of podcast transmissions based on the country/continent where the provider is located.

### ➔ Podcasts By Genres

Listing of podcast transmission based on the genre, which these transmissions are assigned to.

### ➔ New Stations

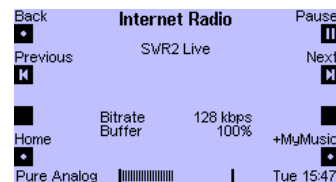
New radio stations are being added somewhere in the world every day. As you won't want to go to the effort of searching for new radio station arrivals every day yourself, these are listed in the selection *New Stations*.

### ➔ Most Popular Stations

Listing of the Internet radio stations that are currently being listened to the most.

### Internet radio playback

The following display appears after a station has been selected:



Using the **Previous** and **Next** touch keys, you can scroll to the preceding or the following transmission within the list respectively.

**Pause** interrupts playback, if it is a Podcast transmission [📖]. On the other hand, in the case of a live streaming from a radio station, the pause function is deactivated.



## Shortening access times

When you store stations or podcasts through the Internet radio option into the **MyMusic** folder, a list path is created in the background.

If a **MyMusic** entry is now called, the receiver uses this list path as the route to find the corresponding radio station.

The more entries there are in the list, the more time the receiver needs to find the entry again.

It makes sense then to select the shortest list path when adding a **My Music** entry for radio stations or podcasts that you call up on a daily basis.

As a rule this is a call that is made through the Favourites list that you create in the (*Online Services*) option in the Revox Internet Audio Portal (see Page 44).

**Path:** [Internet Radio](#) > [Favourites](#) > [Favourites Group](#)

A good alternative without the Internet Portal is:

**Path:** [Internet Radio](#) > [Device Location \[Country\]](#) > [Genre](#)

The longest access times result from using the following selection to search for the station:

**Path:** [Internet Radio](#) > [Countries](#) > [Continent](#) > [Country](#) > [All Stations](#)

By employing a more elegant call-up strategy, you can achieve access times that are 5-times faster.

## UPnP-AV Server

Network servers that support the UPnP-AV standard can be accessed through the network (LAN or WLAN). The most usual instance of such a server is a NAS hard disc.

The name of a media server is defined at the server itself.

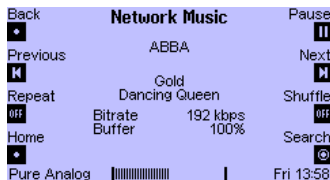


It is however possible to use a normal PC as a network server. This though requires a UPnP-AV software so that the MMM can find a play stored music files. Such a software is offered, for example, by the company *Twonky Vision* with the software *TwonkyMusic*.

The way a menu from such an UPnP-AV server looks can be very different, depending on the configuration.



Menu from the Revox M37 MK2 Music server



You can make your selection using the **Page** and **Select** navigation softkeys, as with all other media content. The individual selection criteria are selected with the **Browse** softkey.

Use **Pause** to interrupt the playback.

The **Shuffle**, **Repeat** and **Search** functions are described in detail in the chapter General control softkeys – see pages 9-10.

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### Important: Folder name **Music** !

The MMM can only find your music tracks on the media server if they are located in a folder called **Music**. Other folder names are not recognised.

This folder can be displayed with another name than Music in the media server MMM folder. This is very much dependant on the settings and the various models of these media servers. In the example shown above, the network folder *Music* is shown in the display headline as **Network Music**.

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① You will find a small overview of UPnP software for Windows, Mac and Linux on Page 51 under Network Terminology

## My Music

The Favourites selection MyMusic, on the start page covers all your favourite radio stations that you have added through the MMM menu.

Select MyMusic directly through the **MyMusic** softkey or go through the menu with the **Browse** softkey.



A list appears with previously stored favourite music tracks and/or radio stations. Each entry that is listed here has been added with the **+MyMusic** softkey.



You can make your selection using the **Page** and **Select** navigation softkeys. You start the playback with the **Play** softkey.

### ① Favorites - Internet radio

You will find the second selection of favourites with the name **Favorites** in the Internet radio area. This selection can only be organised through the *Revox Internet Audio Portal* at a PC and it contains Internet radio stations. How you organise them is described in the next chapter.

- see *Internet Radio setup*-

### Deleting a MyMusic entry

Entries / paths can be deleted from the MyMusic list with the **Remove** softkey. The actual music track remains on the storage medium. Only the link is deleted.

## M208 Operation - MyMusic

There is a separate mpi file called *Revox Multimedia Module* in the *M208 Project Manager* device library, for controlling the MMM in the *MyMusic* area.

As the description in this manual relates to the system software V2.00+, it is important to use the corresponding *M208 Project Manager V2.01* or higher. The MMM doesn't support older versions.

You can transfer all entries in the *MyMusic* area to the M208 remote control with the MMM user interface.

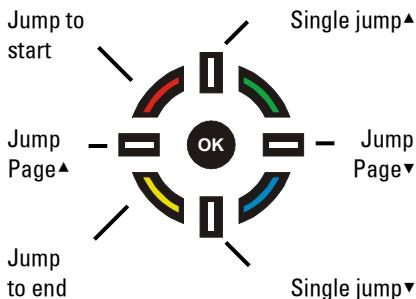


After synchronising, select the required *MyMusic* entry using the navigation compass and confirm this with the **OK** key. Shortly after pressing the OK key, playback of the corresponding track or Internet radio program will start.

### ① Multiroom operation

This control option can be used both in the main room and in all additional rooms.

There are several navigation options to help you find the desired entry in the list in the shortest time:

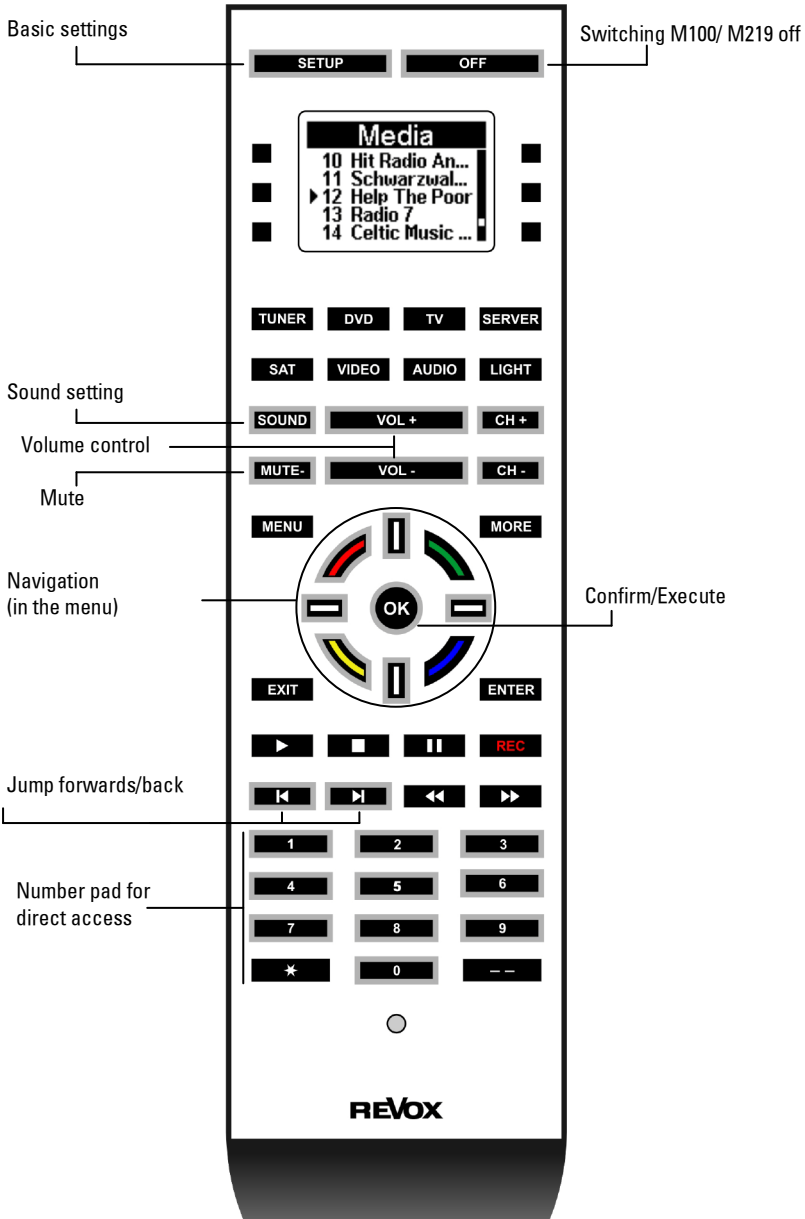


A synchronisation with the M208 should always be carried out if you modify any of the *MyMusic* entries in the MMM by adding new ones or deleting existing ones. Otherwise, wrong *MyMusic* entries will be called.

### ① Synchronisation with the M208

How to carry out a synchronisation with the M208 remote control is described in the chapter *Synchronising MyMusic*.

## M208 Remote control



## Synchronising MyMusic

The following display appears the first time the MMM is started on the remote control:



The **MyMusic** selection has not yet been synchronised in this constellation.

Connect the M208 with the supplied USB cable to the M208 Link interface for synchronisation. The Link interface for its part is connected to the M100 through a cable to the M Link.

Once the connection is established, select the source key at the M208 where the MMM controller is stored and press the **SETUP** key. Confirm the setting

▶ **Synchronize** with the **OK** key.



### Important advice

The M208 remote control must not be operated while synchronisation is running.

Synchronisation now starts and only takes a few seconds. When the synchronisation is complete, the following display appears:



Now, all stored *MyMusic* entries appear in the display the next time the MMM controller is called. The display order is determined by the order they were stored in the MMM.



A synchronisation with the M208 should always be carried out if you modify any of the *MyMusic* entries in the MMM by adding new ones or deleting existing ones. Otherwise, wrong *MyMusic* entries will be called.

# Setup Internet Radio

The list of radio stations that appears in the **Internet Radio** category in your Multimedia Module is made available by a service provider and transferred to your MMM through the Internet connection. You can extend and edit the ***Favorites*** and ***Added Stations*** lists in the *Internet Radio* menu in the **Online Services** category as you wish, through Revox's Internet Portal.

This is done as follows: Open your Internet Browser and call the Revox Homepage under:

- www.revox.de**                      Germany
- www.revox.ch**                    Switzerland
- www.revox.com**                 English

Under the option "Online Services", call the Revox **Internet Audio Portal**, where you can register and configure your MMM.

Revox-Online-Service

To the *Internet Audio Portal* ⇨





## IAP Registration page

Dominating Entertainment  
Revox of Switzerland

Member Login

Email address


Password

[Forgot your password?](#)

Not a member? [Register here.](#)

English Dansk Português  
Español Norsk Italiano  
Français Svensk Nederlands  
Deutsch Suomi

[About us](#) [Contact us](#)



**REVOX**

Dominating Entertainment.

[Create account login](#)

1. Please enter the ID# for your MultiMedia Modul (Please refer to your MultiMedia Modul instruction manual to find your ID#):

ID#:

2. Type in your Email Address, then enter in your Password twice to verify accuracy, click the register link to continue.  
Please keep track of your password since it will be used every time you log in to your account.

E-Mail address:

Password: **Must be at least 6 characters**

Enter password again:

Register for our monthly e-newsletter

First Name

Last Name

Email

Phone

### NOTE

If you are using several MMMs, each one has to be registered individually.

### Register for online newsletter

If required, you can subscribe to the free-of-charge Revox Newsletter, which is sent by e-mail. To do this, you just have to complete the corresponding fields and set the checkbox in the corresponding field.

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You can transfer a one-time generated **Favorites** list from one MMM to all other MMMs.

This is also done in the IAP under the section:

My account

⇒ [My preferences](#)

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## Managing the Revox IAP

Once you have registered, you can make a selection for the extensive pool of radio stations and add it to the favourites list (*Favorites*), add new radio stations to *Added Stations* or search for podcasts.

The transfer of the lists to your MMM happens automatically over the Internet connection. Shortly after editing your list or adding new stations in the IAP, you will find these changes on your MMM.

Currently, you can make selections on the Internet Audio Portal according to the following criteria:

### *Browse Stations*

- By location
- By genre
- By language
- New stations

### *Browse Podcasts*

- By location
- By genre


The screenshot shows the REVOX website interface. At the top left, it says "Dominating Entertainment Revox of Switzerland". Below this is a search bar and buttons for "Stations" and "Podcasts". A navigation menu on the left includes "Browse Stations" (By location, By genre, By language, New stations) and "Browse Podcasts" (By location, By genre). Under "My account", there are links for "My favourites", "My added stations", and "My preferences". At the bottom left, there are language options: English, Dansk, Português, Español, Norsk, Italiano, Français, Svensk, Nederlands, Deutsch, Suomi, and "About us Contact us Logout".

The main content area features the REVOX logo and a large image of a car stereo head unit. Below the image, it says "Dominating Entertainment." and "United Kingdom". There are dropdown menus for "View by: All Stations (592)" and "Sort by: Alpha A-Z". A "Next page" link is visible in the top right of the content area.

Station name	Location	Genre	Stream
1 Mix Radio House	Internet Only	Dance	MP3 192K
1 Mix Radio Trance	Internet Only	Electronica	MP3 192K
108 Xtra	United Kingdom	Electronica	MP3 128K
10Radio	Somerset United Kingdom	Variety	MP3 96K
1Radio	Internet Only	Variety	MP3 64K
2 Ten FM	Reading United Kingdom	Electronica	WMA 128K
209 Radio	Cambridge United Kingdom	Public	MP3 40K
2BR	Burnley United Kingdom	Pop	WMA 64K
2CR FM	Bournemouth United Kingdom	Pop	WMA 128K
3FM	Douglas United Kingdom	Top 40	WMA 64K
60 North FM	Shetland United Kingdom	World Europe/Folk	WMA 130K

Radio station listing in the IAP













## Adding radio stations to FAVORITS

Clicking on the  in the station list adds the corresponding radio station to the favourites in the MMM's *Internet Radio* selection.

This opens the window shown on the right where you can decide which favourite group the radio station should be added to or if you want to create a new favourites group for it.

A **maximum of 9 groups** can be generated to organise your favourites.



View		Sort		<a href="#">Previous page</a> <a href="#">Next page</a>			
by:	All Stations (592) ▼	by:	Alpha A-Z ▼	Station name	Location	Genre	Stream
	 BBC Radio 1Xtra		London United Kingdom	Hip Hop/R&B	WMA 64K		
	 BBC Radio 2 UK Only		London United Kingdom	Variety	WMA 64K		
	 BBC Radio 3 UK Only		London United Kingdom	Classical/Jazz/World	WMA 64K		
	 BBC Radio 4 LW UK Only		London United Kingdom	News Talk	WMA 64K		
	 BBC Radio 4 UK Only		London United Kingdom	News Talk	WMA 64K		
	 BBC Radio 5Live International		London United Kingdom	News/Sports	WMA 48K		

## Synchronising MMM devices

If you own several Revox devices (Multimedia Module, S118, S119, S120 of the Joy series), you can synchronise your Favourites list and added radio stations with each other. This means you create your Favourites list one time and it can then be called from all registered Joy devices.

### Several devices, one account

The easiest way is to enter the **individual** MAC addresses the first time you register each device but give the **same** e-mail address and the **same** password for all devices (see the **red** box below).

### Several devices, different accounts

If you have generated several devices with different accounts (e-mail address + password), you can retrospectively synchronise them with each other (see the **blue** box below). Here, you simply enter the accounts of the devices, which should also use these Favourites. If Favourites have already been created for the other devices, these are not displayed. If you use an individual account for the devices, only **one** device should also be assigned to this, as otherwise there can be link-up conflicts.

The screenshot shows the Revox website interface. At the top left, it says "Dominating Entertainment Revox of Switzerland". Below this is a search bar and navigation options for "Stations" and "Podcasts". There are sections for "Browse Stations" and "Browse Podcasts" with sub-options like "By location", "By genre", and "By language". A "My account" section includes "My favourites", "My added stations", "My preferences", and "Manage Favorites". At the bottom left, there are language options: English, Dansk, Português, Español, Norsk, Italiano, Français, Svensk, Nederlands, Deutsch, Suomi, and "About us", "Contact us", "Logout".

The main content area features the Revox logo and the slogan "Dominating Entertainment." Below this is a section titled "Synchronise your favourites" with a checkbox. A text block explains: "This feature allows you to keep the same favourite stations and added stations across all MultiMedia Moduls you own. If you create the same user name and password for multiple devices, then they will automatically become synchronised. Use the options below to add or remove a device."

A red-bordered box highlights a table of "Synchronised group" entries:

Email	ID #	
revoxr.nzlezler@revox.de	001A2B54894B	Unsynchronise
revoxr.nzlezler@revox.de	001A2B8DEEDE	Unsynchronise
revoxr.nzlezler@revox.de	001A2B8DF0DF	Unsynchronise
revoxr.nzlezler@revox.de	0011F6A63E63	Unsynchronise
revoxr.nzlezler@revox.de	0011F6A6A36A	Unsynchronise
revoxr.nzlezler@revox.de	001A2B8DEEDE	Unsynchronise

A blue-bordered box highlights a form titled "Enter the email address and password of the MultiMedia Modul you want to synchronise with." containing fields for "Email address" and "Password", and a submit button.

## Setup menu Multimedia module

The Setup menu offers all basic setting options that are not needed every day, such as searching for stations or storing them.

The Multimedia Setup is called by starting the *Media* source and then pressing and holding the **Timer** touch key on the M100 basis for approximately 2 seconds. Then select the **Source** touch key that appears in the Setup menu. The following display appears:



If you can make an input through the M100 basis touch slider in any of the following chapters, this is indicated by the following symbol:

The input range appears in the display in two square brackets [...].

The following symbol additionally draws your attention to it in the manual:




All settings that are needed to set the MMM up are done on a total of eleven Setup pages, whereby only the relevant pages are shown. Setup pages that you don't need because of a setting you have made are hidden.

Example: Setup #6  
*Use DHCP? YES*

By selecting *YES* the settings on #7 and #8 in the IP and DNS area respectively are automatically made by the MMM. These Setup pages therefore, are not shown. You switch directly from Setup #6 to Setup #9.

### Important advice

The following description for the Setup makes the assumption that there is a functioning network with router available and operational.

There is no further explanation of the specialist terminology used in the individual chapters. You will find an extensive description of these in the previous chapter "Glossary NETWORK TERMINOLOGY" 

**If you have any questions about the setup and configuration of your network or Internet access, please refer to your System administrator or an IT specialist of your choosing**

### Setup #1

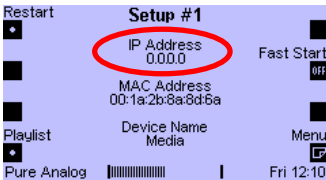
#### IP Address



The first page shows the IP address that the MMM used to login to the network.



If the MMM could not login because of an incorrect Setup setting or because of a network problem, the following display appears in the IP Address area:



In this case, you should check the network and/ or the settings you made.

#### Restart

The MMM must be restarted using the **Restart** softkey if Setup changes have been made, in order for the changes to be applied. This softkey is only available on Setup #1.

#### MAC Address



Display of the MAC address that has been uniquely assigned to this MMM.

This is important for logging in to the *Revox Internet Audio Portal (IAP)*

The MAC address must be defined **WITHOUT** the colons shown here, in order to log the MMM in to the *Revox Internet Audio Portal*, which offers the configuration of the Internet radio.



Example above:

**MAC Address:** 00:1a:2b:8a:8d:6a  
**Revox IAP:** 001A2B8A8D6A

#### Device Name

The name of the iRadio is always used as the **Device name**, irrespective of whether this is shown or not. Setup #2 shows you how can generate a new name. The Device name is only of interest, in order, for example, to be able to differentiate between different MMM modules within a Re:system device when setting it up.

## Setup #1

### Playlists for M-Text

Within a building control system, it is possible to call up playlists through the MMM, from the module software version 2.10.

Other applications and functions are not affected by this menu.

The playlist must be created first before it can be called up through M-Text. The MMM can work with playlists in M3U and PLS formats. The maximum length of a playlist name is **16** characters.

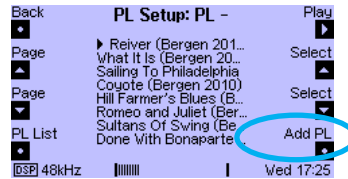
The **Playlist** softkey starts the selection menu and leads to the MMM's root folder.



Here you select a folder (USB, Music Server, ...) where you have saved the playlists that you have created. Open a playlist at the lowest level and select any track.



Now the **Add PL** softkey appears.



Pressing this softkey adds the selected playlist to the playlist setup. If the playlist is already in the list, the **Del PL** softkey appears to allow the list to be deleted.

The figure below shows the list of the playlists that have been added, "Playlist1" to "Playlist 5". A maximum of 8 playlists can be added and/or can be called up through M-Text.



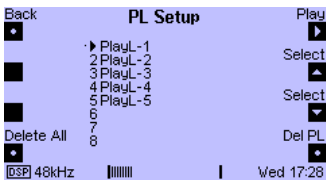
### Important:

A list that is going to be edited on the storage medium, e.g. NAS, must be removed from the 1 - 8 list first. When editing is complete, it can be added back in, so that it can be controlled with M-Text again.

## Setup #1

### Deleting playlists

If a playlist is to be deleted completely, it has to be removed from the MMM list of playlists first, before it is then removed from the storage medium. This prevents paths that are no longer valid from being stored in the MMM.



### Delete All

All of the stored playlists will be deleted.

### Del PL

Only the selected playlist will be deleted.

You can leave the MMM playlist editor again with the **Exit** softkey.



## Setup #1 – Fast Start

### Quickstart function

The MMM 06 has a quickstart mode (Fast Start), that reduces the switch-on time to just a few seconds. In this way, the MMM processor is no longer put in standby when switching off, but maintains a permanent connection to the individual MMM sources.



This quickstart mode can be activated (ON/OFF) with the **Fast Start** softkey.

### Important advice

**Fast Start (ON)** is only supported, if an **external** power supply is used.

Refer also to description on Page 47-48.

## Setup #1 – iPod fast charging

### Fast charging

The MMM 06 uses a USB connection for connecting Apple devices (iPod, iPhone, iPad), which they can also be charged over.

The charging current can be increased to 1.0 A for Apple devices with a charging current that is higher than 0.5 A, if the Fast Start module is active and if an external power supply has been selected.



Fast charging can be activated (ON/OFF) with the **iPod 1 A** softkey.

### Please note:

Fast charging is not available if Fast Start is OFF.

### Setup #2

The individual MMM sources can be renamed and hidden on the second Setup page.

The hide function is active by default when Page #2 is called. This is shown through the status display: **Source On/Off**

You can toggle between the **Edit name** and **On/Off** (hide sources) functions with the **Mode** softkey.

The **Submenu** softkey activates a comfort function for the M217 wall-mounted display.

### Hiding MMM sources

#### [Source On/ Off]

5 media sources are available in the MMM:

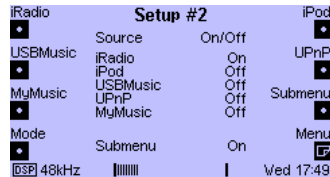
- iRadio (Internet radio)
- iPod (iPhone)
- USBMusic (USB stick, HDD)
- UPnP (Music sever, PC, etc.)
- MyMusic



These 5 MMM sources can be seen in the Sources menus on the M51, M10 or M100 Re.system devices. In practice, normally only those sources that are used regularly or are even available are made visible.

In order to be able to hide sources in the Source menu, press the **Mode** softkey until **Source On/off** appears in the status display.

Now, each individual source can be hidden (off) or displayed (on) with the corresponding source softkey, e.g. iPod. A maximum of 4 sources can be hidden so that at least one source is always visible in the Sources menu.



## Setup #2 - [Source On/ Off]

### ! Follow me function

It is important that only **one** source is visible (on), in order to be able to take one MMM source from one side room to another. If 2 or more sources are displayed, a direct switch to the selected source is made.

#### *Example: Follow me - active*

You are listening to an iPod in Room 1 and then you go to Room 2 and press the Tuner (-> Internet Radio) button on the wall-mounted display. If the Follow me function is active, you will now hear the iPod in Room 2 as well, even through the button is assigned to the Internet Radio. You will of course be able to select from all available MMM sources in Room 2 later by going through the **Home** menu.

#### *Example: Follow me - not active*

You are listening to an iPod in Room 1 and then you go to Room 2 and press the Tuner (-> Internet Radio) button on the wall-mounted display. Now the iPod playback is interrupted and the Internet Radio plays the last station to have been selected.

### Note

Each time the equipment is restarted, the last source to have been selected is played.

*Exception with the iPod:* If the iPod was the last selected source before the equipment was switched off, the system starts up with the last Internet Radio station to have been listened to.

### Hidden, but still available

Sources that have been hidden no longer appear in the **Remote** setup (see basic description of the Re:system devices) and therefore, cannot be used for a direct call through a button.

But you don't have to do without hidden sources. You can still continue to reach these indirectly through the **Home** menu of the visible source(s).

```

Network Music
  ABBA

  Arrival
  Dancing Queen
Menu ◀ Home
  
```

### Setup #2 [Edit Name]

The MMM offers you the option of assigning freely definable names in the Source menu. Simply give a name that you can assign clearly. This can be up to 8 characters long. In this way, a clear differentiation can be made if several MMMs are installed.



The name of the iRadio is always used as the **Device name**, irrespective of whether this is shown or not - see Setup #1.

In order to be able to rename sources, press the **Mode** softkey in Setup #2 until **Source Edit Name** appears in the status display.

Now using the source softkeys, e.g. iRadio, each individual source can be renamed. To do this, a modification menu opens. The following functions are available there to you for changing names:



The **Cursor** touch keys move the [ ] cursor left and right respectively.

The **Delete** touch key deletes a character where the [ ] cursor is positioned.

The **Insert** touch key inserts a character to the left of the [ ] cursor.

The **Store** touch key saves the currently display name and returns you to the Tuner menu.

The **Cancel** touch key returns you to the Tuner menu without saving the changes you have made.

### Restoring standard names:

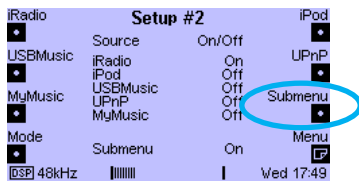
Delete all the characters in a source's name and then confirm this with the **Store** button.

[ ] \_ \_ \_ \_ \_ + Store = [Media]

## Setup #2 - Submenu

### Activating M217 submenu

If the Follow me function is activated (Setup #2, only **one** MMM source visible), a submenu can be activated additionally as a comfort function (Submenu **On**), that allows two further sources to be selected directly through the M217 wall-mounted display, within 10 seconds.



### Display on the M217

A) Submenu active (On)



B) Submenu deactivated (Off)



The MMM source Network Music (UPnP) has been selected in the figure above. Within 10 seconds, the **My Music** or **Internet** source can be selected directly through the two softkeys (not shown here) on the M217 display.

If you don't want to make a selection in the submenu but rather want to navigate further, simply press one of the two softkeys  $\blacklozenge$ .

The standard view, as shown in Figure B then appears immediately.

Submenu display, based on the visible MMM sources:

Source **On** → **Submenu**

iRadio → MyMusic + UPnP

Network → iRadio + MyMusic

MyMusic → UPnP + iRadio

iPod/ USB → MyMusic + UPnP

① UPnP = Network Music

### Submenu is not displayed?

If the submenu is activated in Setup #2 (Submenu **On**), but two or more sources are made visible, the submenu function does not work.

**Solution:** Hide all sources except one.

①

The submenu is also available in the Main room if the wall-mounted display (M217 + M218) is directly connected to a Re:system device.

## Setup #3



### SSID [...]



Here, you enter the name of your network's **SSID**\*.



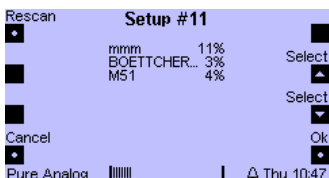
The [...] cursor is moved left and right with the **← SSID →** touch keys. The **Insert** touch key insert a character to the left of the [...] cursor. The **Delete** touch key deletes the character where the [...] cursor is currently positioned.

\* Do not use SSID names with blanks and / or special characters.

### SSID search

Alternatively, you can execute a search with the **Scan** touch key, followed by a listing of all the networks found.

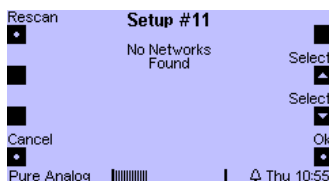
Example of an SSID list:



The list is displayed in Setup #11. If, unexpectedly, the required network is not visible, it is possible that the Access Point (WLAN Router) is badly positioned or the

MMM aerial is not lined up correctly. Change the position and carry out a new search with the **Rescan** touch key.

If the required network is not found even though all conditions are fulfilled and the following display appears, it is possible that the cabled access (LAN) is already in place or the network name, (SSID), is hidden by the Access Point. In this case, the SSID must be entered manually, see **SSID**.



### Select network

If the required network is visible, you select it with the **Select** touch keys and confirm your choice with the **OK** touch key. You quit Setup #1 with the **Cancel** touch key. The existing setting in Setup #3 is retained..

## Setup #3



### Security Mode

The encryption method can be selected or modified to that of the WLAN router with the **Security** softkey.



There are three options. You can make your choice from an endless loop using the **Security** touch key.

**None**

**WEP**

**WPA-PSK**

**WPA2-PSK**



⇒ **None** There is no encryption!

⇒ **WEP**

⇒ **WPA-PSK**

⇒ **WPA2-PSK**

### Setup #4 and #5 with restart

Further Setup pages (#4 for WPE settings and #5 for WPA(2)-PSK settings) are now accessible, depending on the selected encryption method.

Carry out a restart of the MMM with the **Restart** softkey, after configuring Setup pages #4 and/or #5. Otherwise, the existing encryption method is retained.

**Setup #4 [⇒ WPE]****WEP Key [...]**

WEP encryption is done using a **WEP key** that is defined once for the router and all WLAN devices.

Enter your WLAN network WEP key here.



The [...] cursor is moved left and right with the **← WEB Key →** touch keys. The **Insert** touch key insert a character to the left of the [...] cursor. The **Delete** touch key deletes the character where the [...] cursor is currently positioned.

**NOTE**

A change in this menu requires a restart to be carried out.

**Authentication (WEP)**

The MMM offers both the WEP authentications *Open* and *Shared*.

The required authentication can be set through the **WEP Auth** touch key.

**NOTE**

A change in this menu requires a restart to be carried out.



## Setup #5 [⇒ WPA(2) PSK]



### WPA(2) Key [...]



WPA encryption is done using a **WPA(2) key** that is defined once for the router and all WLAN devices.

Enter your WLAN network WPA(2) key here.



The [...] cursor is moved left and right with the **← WPA Key →** touch keys. The **Insert** touch key insert a character to the left of the [...] cursor. The **Delete** touch key deletes the character where the [...] cursor is currently positioned

### NOTE

A change in this menu requires a restart to be carried out.

### WPA Cipher

The MMM offers both **AES** and **TKIP** as WPA cipher (encryption standard).

The required encryption standard can be set through the **WPA Chph.** Touch key.

### NOTE

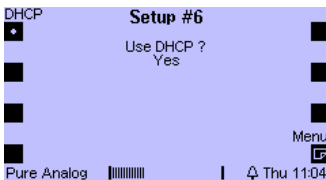
A change in this menu requires a restart to be carried out.

## Setup #6



## DHCP

Using the DHCP touch key, you can define whether logging in to the network should be done automatically **DHCP** ⇒ **Yes**, or whether the required setting will be made manually **DHCP** ⇒ **No**.



Setup pages #7 and #8, where the corresponding settings (IP, Gateway, DNS, etc.) can be made, are accessible if you select the setting **DHCP** ⇒ **No**. You get to these Setup pages with the **Menu** touch key.

You get directly to Setup page #9 where the Proxy setting can be made, if you select the setting **DHCP** ⇒ **Yes**.

**NOTE**

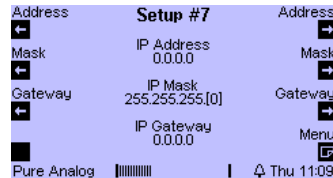
A change in this menupoint requires a restart to be carried out.

## Setup #7



## IP-Address [...]

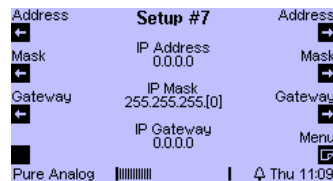
The 4 blocks of the IP address that the MMM should have, are set using the two **Address** touch keys.



In a network of DHCP-enabled LAN devices, you must always ensure that these are **NOT** given the MMM's IP.

## IP Mask [...]

The 4 blocks of the IP subnet mask that the MMM should have, are set using the two **Mask** touch keys.

**NOTE**

A change in these two menupoints requires a restart to be carried out.

## Setup #7



### IP Gateway [...]

Access to the Internet is defined through the two **Gateway** touch keys.



If such a data exchange should be done outside the LAN, the IP Gateway must be configured according to the on-site requirements.

#### NOTE

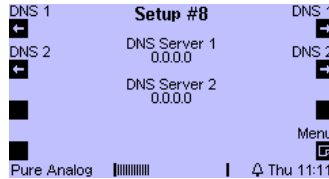
A change in these two menupoints requires a restart to be carried out.

## Setup #8



### DNS Server 1 / 2 [...]

The IP addresses of the DNS serves 1 and 2 can be entered using the **DNS 1** and **DNS 2** touch keys respectively.



#### NOTE

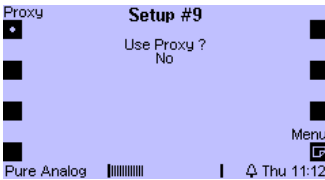
If the MMM is connected with a standard (WLAN) router, the IP address of this router can simply be entered here.


In this case, the DNS address of the second server (2) does not have to be configured.

A change in one of these two menupoints requires a restart to be carried out.

**Setup #9**
 **Proxy Server**

You can define whether communication should be done using a Proxy server with the **Proxy** touch key.



The setting **Use Proxy ?** ⇒ **Yes**, makes Setup page #9 accessible, where the corresponding settings (Proxy address, Port) can be made. You get to this Setup page with the **Menu**  touch key.

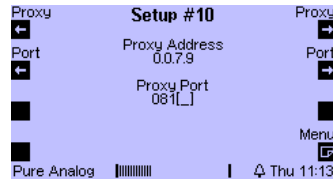
With the setting **Use Proxy ?** ⇒ **No**, Setup page #9 is skipped.

**NOTE**

A change in this menu requires a restart to be carried out.

**Setup #10****Proxy Server Address [...]**

The 4 blocks of the Proxy Server address is defined using the two **Proxy** touch keys.

**Proxy Server Port [...]**

The corresponding Proxy Server port can be defined using the two **Port** touch keys.

**NOTE**

A change in these two menu points requires a restart to be carried out.

## Server module installation

For installation, the multimedia module needs a 2-way or 4-way module carrier that it is located in. This module carrier is mounted on the left, right or underneath the M100 basis. The pictures here show an M100 basis with a 2-way and a 4-way module carrier installed. The installation of the module carrier is fully explained in the M100 basis User manual.



## M100 basis installation versions

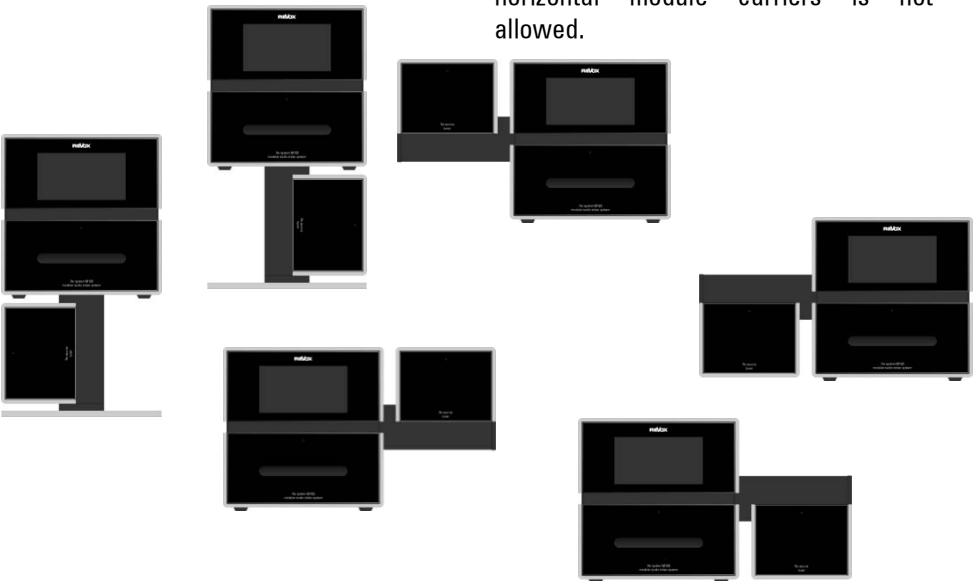
The M100 system gives you a lot of freedom when installing your modules. The pictures below show the version options for a multimedia module with a 2-way module carrier. You have the same version options of course with a 4-way module carrier. Only two rules have to be followed:

### *Rule 1*

The number of modules is limited to 4, both horizontally and vertically.


### *Rule 2*

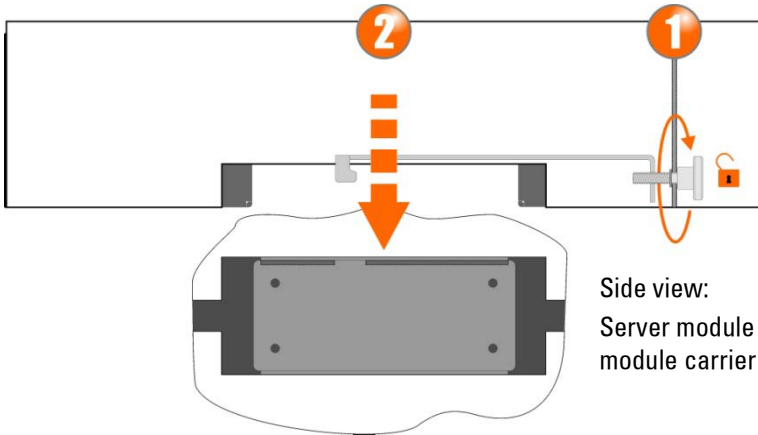
Horizontally, up to 2 module carriers can be added (left or right). Vertically on the other hand, only one module carrier can be added. A combination of vertical and horizontal module carriers is not allowed.



### Installation steps 1/2

1

Loosen the locking screw on the back of the module in a counter-clockwise direction in the direction of the  symbol until you feel a resistance. The two locking hooks located on the underneath of the module are now brought to a position so that you can attach the module. Continue with point 2.



2


Position the module on the module carrier making sure that the locking hooks are located over the corresponding cut-outs in the module carrier. Shortly before the plug-in card is seated flat on the module carrier, you will feel a mechanical resistance, caused by the bus board contact strip.

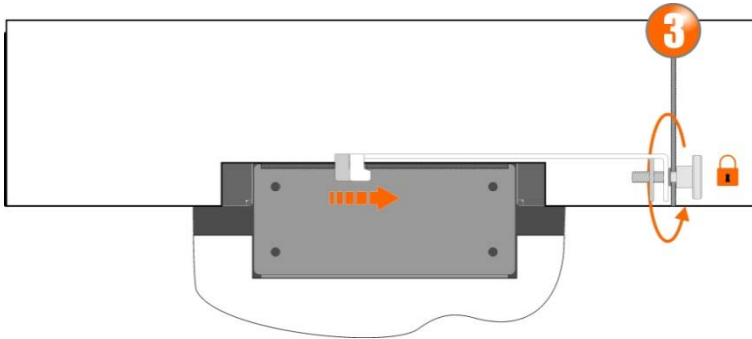


Rear view:  
Multimedia module with locking screw

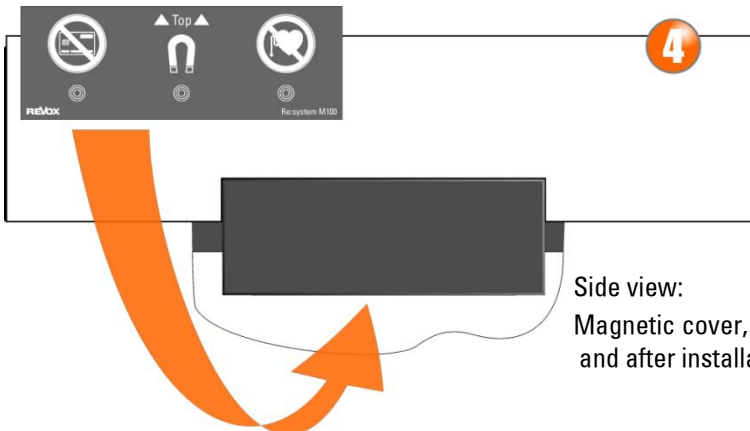
## Installation steps 3/4

**3**

In the third step, the module is now locked onto the module carrier. This is done by turning the locking screw in a clockwise direction towards the  symbol until a clear, mechanical resistance is felt. The module is now securely fixed to the module carrier.

**4**

In the last step, the magnetic cover is installed on the module carrier. Please take note of the safety advice printed on it.



### Turning the front glass

Depending on the installed configuration, (see picture on the right), it can be necessary to turn the front glass so that the printing is not upside down. The multimedia module front glass is held in place by four concealed magnets and accordingly, can be removed for this purpose.

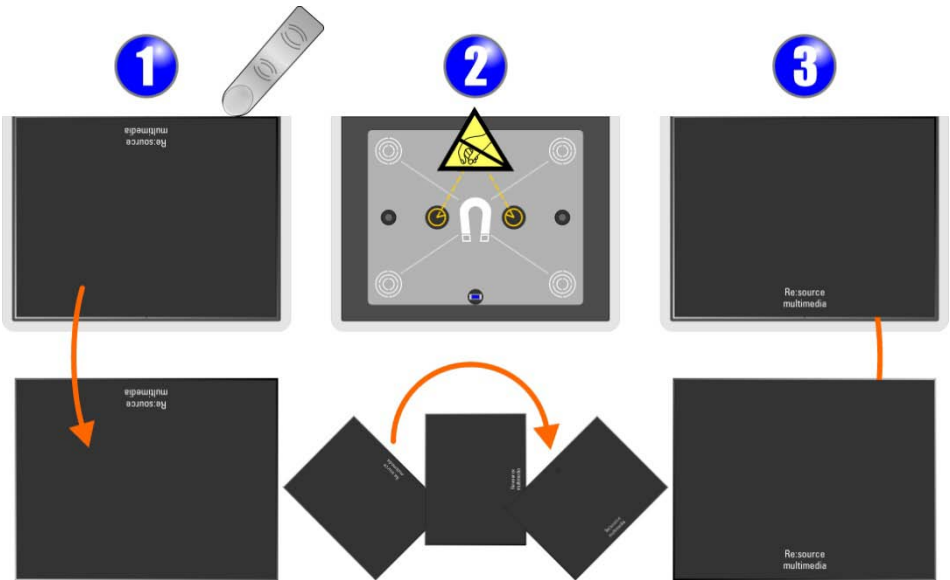


- 1 Lift the glass front off the front of the module by levering it gently at the bottom edge, using a fingernail.
- 2 Turn the front glass
- 3 Carefully reposition the front glass on the front of the module.

#### Important advice



During the modification, two gold contact springs are exposed, which should not be touched. Otherwise, the proximity processor that carries out the touch function when the unit is in operation could be damaged.





## Connection panel



<sup>1</sup> The USB storage may not exceed the maximum power consumption as defined by USB specifications. You should only use USB hard discs with their own power supply or memory sticks.

### **2 Charging the iPod battery**

Your iPod's battery is charged up during operation. In standby mode charging only takes place when an external power supply is used.

#### ► **WLAN**

Connection for the WLAN aerial – included with the accessories. The aerial must be installed to set up data communication to the MMM using a wireless LAN. The WLAN connection is deactivated if a LAN connection is established.

#### ► **LAN**

RJ45 connector for a LAN router in the network.

The WLAN connection is deactivated as soon as a LAN connection is established.

#### ► **iPod/ iPhone<sup>2</sup> / USB<sup>1</sup>**

USB-A connection for Apple iPod and iPhone products as well as external USB mass storage, e.g. USB stick up to 32 Gb, that is formatted with the FAT16 or FAT32 file system.

Charging current for Apple devices, max. 1.0 A.

(Fast Start *ON*+ iPod 1A *OM*)

#### ► **DC IN**

Connection for external power supply. 5 DVC/3A pluggable power supply is included in the scope of delivery.

-> see Fast Start mode (Chapter *Setup #1*)

## External Power Supply

Generation 6 of the MMM can be operated with an external power supply. This makes it possible to put the MMM into a quickstart mode (Fast Start), which significantly shortens access times to the individual MMM sources after start-up.

Additionally, Apple devices can now be charged-up up to 1 ampere of standby mode.

Instead of one, it is now possible to operate several MMMs in parallel in an installation, if these are supplied from an external power supply.

An overview shows what options are available:

Max. number MMM	M100
Without external power supply ; Fast Start <b>OFF</b>	1 pc.
With external power supply ; Fast Start <b>OFF</b>	4 pc.
With external power supply; Fast Start <b>ON</b>	4 pc.

### Important advice

*Fast Start*(ON) is only functionally supported, if an external power supply is used. Without external power supply *Fast Start* must be deactivated (OFF).

## Network terminology

### General

The network switch ensures the correct connections between the individual components. In order to make this possible, each device within a network must be capable of being uniquely identified. Each component therefore, is given its own address, the so-called IP address. The IP address is made up four blocks of numbers, each of which can contain up to three digits. These blocks of numbers are separated by a full stop, e.g. 192.168.1.1.

Each of the individual blocks of digits can have a value between 1 and 254. The values 0 and 255 are in part reserved for special functions and therefore shouldn't be used. In order to ensure a secure function of your network, addresses from the pre-defined range should be used, i.e.: fundamentally, the first two blocks should be 192.168.xxx.xxx; the third block can be selected from the values in the range mentioned above (must be the same for all the devices within a network however) and the fourth block should be used to differentiate each device, e.g.:

MMM	192.168.001.001
NAS:	192.168.001.002
PC:	192.168.001.003

If you don't just want to use devices within the local network but also music sources from the Internet (Internet radio), the MMM must have the possibility of being able to access the Internet. This can be achieved, for example, through a router with a connection to a DSL network. This router is also a part of the network and will be assigned its own IP address. In order to enable this connection to

the outside world actually to be established, the MMM must additionally be informed of the address of the router (Gateway).

It must be ensured that the first three blocks of the Device IP, the Gateway IP and the DNS 1 are within the same address range, e.g. 192.168.0.xxx. The fourth block assigns a unique address ("house number") to the components in the local network. This number may only occur once within the local network. The Device IP mask should always be given the address 255.255.255.0.

### DNS

The **Domain Name System** (DNS) is one of the most important services in the Internet. Its main task is that of converting Internet address like www.revov.de for example, into its corresponding IP address. As a rule, the router in home networks fulfils the function of the DNS.

If you should decide for the manual network configuration (without DHCP), just enter the address of your router as the DNS address during network configuration.

### LAN

#### Local Area Network

##### Local cabled network

A LAN connection to the MMM is the most fault-tolerant and problem free transmission technology, which offers much more security against eavesdropping than WLANs or Power LANs.

### Gateway

The computer or router in your network through which the data traffic with the world outside your network, i.e. the Internet is handled.

### Client

Network device that draws data out of the network, decodes it and converts it for example, into analogue music signals, which then can be played through amplifiers and speakers. Streaming clients also contain functions for displaying media content and for navigating in the Internet or on servers.

### DHCP

DHCP is an abbreviation for **D**ynamic **H**ost **C**onfiguration **P**rotocol. DHCP is primarily used to enable clients to fetch their network configuration automatically from a server or router. The MMM supports DHCP.

### IP Address

Network address. Each device in the network needs an IP address through which it can be reached and uniquely identified. Network addresses may not occur twice. This is important if network addresses are assigned manually. If addresses are issued in your network through DHCP, you don't need to worry about the IP address assignment as the DHCP server automatically handles the question of address management.

### MAC Address

The MAC address (**M**edia **A**ccess **C**ontrol) is the unique hardware address that is used for the unambiguous identification of the device in the network.

With the MMM, the MAC address can either be read out in Setup on Page #1 or alternatively, if it has not yet been installed, from the MAC sticker on the back of the module.

### NAS

**N**etwork **A**ttached **S**torage. As a rule, this is a storage device with a very large capacity > 500 GB, which other devices can access. If the NAS server contains an UPnP-AV server service, the MMM can access and play media files that are stored on the NAS.

#### *Recommendations NAS*

- **Revox** S37 RipNAS
- **Synology**
- **QNAP** with *Twonky Media Server*
- **Buffalo** *Link Station*

### Power Line – LAN

With the Power Line LAN, data is transmitted through the existing power cable network. So-called Power Line Modems are required on the transmitter and receiver side. As a rule, Power Line LANs offer reasonably fault-free data transmission with a data rate sufficient for audio streaming. We recommend Power Line Modems with bit rates of 200 or 600 MBit/s.

## NETWORK TERMINOLOGY

### Proxy Server

A proxy or proxy server is a computer in the network that makes data transfer quicker and more efficient and that can also increase security by deploying access control mechanisms. Usually, you do not find proxy servers in home networks. In such a case, you don't need to define a proxy address during the MMM network configuration.

The **MMM** allows the use of a proxy server.

### Router (WLAN Router)

A central network device that establishes and manages the communication between the network devices.

Current devices increasingly combine the function of the router with the function of an access point for wireless data communication. These combi-devices are often referred to as WLAN routers.

Normally, the (WLAN) router in a network takes on the function of the gateway to the outside world.

### Server

A network device that makes data and services available for other devices in the network. A UPnP-AV server stores for example, audio and video media data and makes this data available to other devices, the streaming clients. Often, UPnP-AV servers also offer functions for the cataloguing and easy identification of medial content according to criteria such as artist, album name, genre, etc.

### SSID

**S**ervice **S**et **I**dentifier / Network name. SSID designates the identification of a radio network that is based on IEEE 802.11. Each WLAN has a configurable, so-called SSID or **ESSID** (**E**xtended **S**ervice **S**et **I**Dentifier), to identify the radio network.

The SSID character string can be up to 32 characters long. It is configured in the base station (WLAN router / Access point) of a wireless LAN and defined on all the clients that should have access to it. Do not use SSID names with blanks / special characters.

### UPnP-AV

*Universal Plug and Play – Audio Video*

Network standard that makes media content, e.g. on PCs or NAS discs accessible in networks.

A UPnP-AV software must be installed on PCs /NAS storage so that the **MMM** can access the stored media data.

Below, you will find a short overview of UPnP software that is suitable for the different operating systems:

#### Windows:

##### **Twonky Media Server**

<http://www.twonkyvision.de/>

##### **Windows Media Player 11**

<http://www.microsoft.com/windows/windowsmedia/de/default.aspx>

#### Mac:

##### **Twonky for Mac**

<http://www.twonky.com/>

#### Linux:

##### **Mediatomb**

<http://mediatomb.cc/>

##### **GmediaServer**

<http://www.gnu.org/software/gmediaserver/>

**WLAN** (W-LAN, Wireless LAN)

Radio network. Network connection is done using radio waves in the 2.4 GHz frequency range. Radio networks are easy to install as no cables have to be laid but are often problematic and unreliable, particularly over longer transmission distances. In many cases, Power Line networks that also don't require any cabling are a better choice.

---

In each case, the installation of a network cable is the most fault-tolerant and problem free transmission technology. An additional point is that cabled networks don't produce any electro smog.

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**WPA****Wi-Fi Protected Access (WPA)**

WPA contains the architecture of WEP, but offers additional protection through dynamic keys that are based on the following (*Cipher*) standards:

- *Temporal Key Integrity Protocol* (TKIP) -
- Advanced Encryption Standard* (AES)

WPA offers **Pre- Shared Keys** (PSK) for authentication or **Extensible Authentication Protocol** (EAP) through IEEE 802.1x.

The **MMM** is based on the authentication PSK and supports both the WPA encryption TKIP and AES.

**WEP**

**Wired Equivalent Privacy** (WEP) is the previously used standard encryption algorithm for WLANs. It should control access to the network as well as ensuring the confidentiality and integrity of the data. Because of various weak spots, the process is considered to be unsafe. For this reason, WLAN installations should use the more secure WPA encryption. See WPA.

With WPE authentication, a distinction is drawn between two processes:

***Open***

*Open System Authentication* is the standard authentication. The WEP key is used at the same time for authentication: Each client with the correct WEP key gets access to the network.

**Shared**

*Shared Key Authentication* is reputed to be the more secure version. In this case, authentication is done through the Challenge-Response authentication, with a secret key. However, the Challenge-Response process is also based on WEP and demonstrates the same weaknesses.

The **MMM** offers both *Open* and *Shared* WEP authentication.

**Wi-Fi**

Certificate for WLAN products that work according to IEEE802.11 standards and are compatible with other products.

## Network: Questions & Answers

### NETWORK QUESTIONS / TIPS

#### NETWORK IS OK BUT THERE IS NO SOUND.

You should be aware that the MMM cannot support all data formats that are available on the Internet. It can occur that a station cannot be played. See *Technical data*

Other reasons why your Internet Radio doesn't play:

- Not all radio stations broadcast 24/7
- Radio stations may not be available any more
- The Revox equipment is muted
- The provider's (Radio Sender/ Provider) server capacity is fully utilised

Transmission within your network breaks down because:

- (Internet) network problems
- Server capacity fully utilised

### NETWORK QUESTIONS / TIPS

#### The connection is lost after a few minutes:

This is a system-based characteristic of the UPnP standard. Active communication starts on a port with a number higher than 1024 and then changes regularly during operation. Not all firewall programs recognise this knocking on different doors as a continuous connection. Depending on the configuration, the firewall may decide against an unknown client in case of doubt.

Depending on the firewall software, this can be resolved through the following actions:

- By using a fixed IP and without DHCP, define the MMM as a so-called Trusted Host, i.e. a device from which all communication is considered to be trustworthy.
- Allow the server to accept incoming and outgoing communication with the MMM over ports 1024 - 65535.

Activate the exception setting for "UPnP Framework", e.g. Windows XP Firewall or activate "Permit UPnP communication".

**NETWORK QUESTIONS / TIPS**

**The MMM finds my Access Point, however my computer is not displayed.**

- Make sure you have installed a UPnP server on your computer and that this is activated. Depending on the amount of data and the software, it can take a few seconds before the option appears as a selection on the MMM.
- You have activated a MAC address filter on your router. In this case, add the MMM MAC address to your router configuration. You will find this on Setup page #1.
- Your router only assigns fixed IPs. Deactivate DHCP and enter a fixed IP address both in the MMM and the router.

**My Access Point's SSID is not listed.**

- The MMM can only find your Access Point if it is within range. Reduce the distance to the Access Point and try again.
- Depending on the configuration, the router's SSID may be hidden. If this option is activated, the SSID must be entered manually on page #3 of the MMM Setup menu.

**NETWORK QUESTIONS / TIPS**

**A lot of Access Points are displayed that are unknown to me.**

If several Access points, for example those installed in neighbouring buildings are available to the MMM, these will also be listed. Select your Access Point and continue with the configuration.

**The MMM indicates to me that my network is encrypted.**

Your network is protected against external attacks with an encryption (WEP / WPA). Enter your key in the MMM Setup so that the MMM is identified as "User" in the network.

**Where do I get my key from?**

If you installed your network yourself, you will have defined it as part of that work. Otherwise, you will get it from your System Administrator

**Can other data on my network hard disc or server be read or viewed?**

No, the MMM can only receive data that is released by the UPnP server. In this way, the MMM only accesses your files. Other data on your server is not transferred and cannot be viewed.



**NETWORK QUESTIONS / TIPS****Network activity?**

Two LEDs are integrated in the MMM network socket, which display bus activity. If the network connection is working, the orange LED lights up permanently while the flashing of the green LED indicates that data exchange is taking place.

**Point-to-Point**

If the MMM is connected directly to a PC without using a router, cabling is done using a **Cross Over Cable**.

**Distribution with Router**

If the MMM is connected to the network through a router, a **Patch Cable (1:1)** is to be used.

**Network setting?**

Have all the MMM Setup settings been correctly applied and has a restart been carried out following any changes?

**Ping test?**

Does the MMM respond to a Ping attempt? Is it recognised in the network? The MMMs deployed or assigned IP address can be seen on Setup page #1.

**NETWORK QUESTIONS / TIPS****Encryption protocol?**

Is the implemented encryption protocol (WEP, WPA-SK) and/or the corresponding key correct?

**My WLAN connection?**

Was my Access Point / WLAN router selected or one from a neighbouring system selected, which because of its locational proximity, can also be received?

## Multiroom- Questions & Answers



### Wake-up function with MMM

The MMM can also be used to wake you over the Multiroom system.

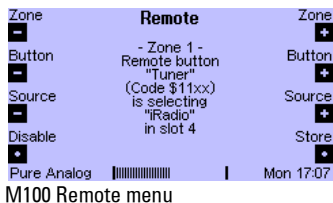
The following has to be taken into account:

#### Remote setting

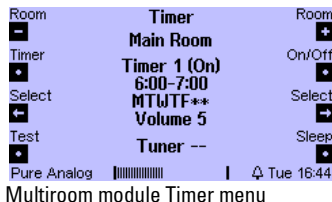
The Multiroom module timer (MTR) makes three sources available to choose from, which are called as soon as the timer is switched on. **Tuner**, **DVD/CD** and **Aux/Server** can serve as variables (Remote button).

When selecting the source, you should be aware that the source is selected, which was assigned through the **Remote** menu to the *Tuner*, and/or *DVD/CD* and *Aux/Server* Remote button respectively.

In the example below for example, the MMM source *iRadio* was assigned to the **Tuner** Remote button.



In order that *iRadio* is used as the Timer source, the source variable **[Tuner]** must be selected in the timer programming for this assignment example.



You will find further information on this topic in the *M100 basis* chapter under the **REMOTE**function.

The following fallbacks have been implemented to ensure that you can be sure of your wake-up call even if there is failure of the network, router or server:

- > No stream (iRadio) available for more than 30 seconds?
- >> Play the iRadio station that is stored in MyMusic
- > No playback of MyMusic entries possible / available?
- >> Playback from USB stick<sup>1</sup>

<sup>1</sup> USB stick: mp3 file in the **Root** folder - subfolders are **not** used!

## Appendix

### Warranty

Warranty covers a period of 24 months from the purchasing date.

Your specialist dealer is your first contact if you need service help. If he can't give you the help you need, send the MMM module carriage free and without any accessories to your national Sales Office. Please supply a complete description of the fault together with your address.

### Scope of delivery

- Multi Media Module
- iPod adapter cable (0.8m)
- WLAN aerial
- WLAN area extension

### Note Copyright

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## Technical Data

<b>Playable formats</b>	
Streaming Client <sup>1</sup> :	WAV (96 kHz,32 bit), FLAC (24 bit), AIFF (32 bit), AAC, MP3 (cbr +vbr, 320 kB), OGG-Vorbis, WMA XXX HD-Audioformate (nicht über WLAN) XXX HD-Audio format (not via WLAN)
Playlists:	M3U, PLS
Internet Radio Data Base	Revox Internet Audio Portal (Online Services)
Supported Mediaserver	Connect Server (WMDRM10) UPnP-AV 1.1 und DLNA compatible Server Microsoft WindowsMedia

<b>Interfaces</b>	Ethernet 10/100, WLAN 802.11b/g, USB <sup>2</sup> 2.0, iPod
-------------------	---

<b>WLAN</b>	
Operation distance	300m open space 30-100 m in Building (depending on building design)

<b>Audio data</b>	<b>Measured data</b>	<b>Measuring conditions</b>
Distortion factor	< 0.006 %	Streaming Client mp3/ 192 kps
Signal-to-noise ratio	> 95 dB	Filter 100Hz, 22 kHz
Channel separation	> 95 dB	1 kHz

<sup>1</sup> The audio formats listed must be supported by the UPnP server so that the MMM can play them. It is not enough for the audio files simply to exist on the server.



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