T+A

USER MANUAL

E-SERIES

MUSIC RECEIVER

Software Version V 2.6

Order No. 9103-0453 UK

Welcome.

We are delighted that you have decided to purchase a T+A product. With your new **Music Receiver** you have acquired a top-quality piece of equipment which has been designed and developed with the wishes of the audiophile music lover as absolute top priority.

This system represents our very best efforts at designing practical electronic equipment incorporating solid quality, user-friendly operation and a specification and performance which leaves nothing to be desired.

All these factors contribute to a piece of equipment which will satisfy your highest demands and your most searching requirements for a period of many years. All the components we use meet the German and European safety norms and standards which are currently valid. All the materials we use are subject to painstaking quality monitoring.

At all stages of production we avoid the use of substances which are environmentally unsound or potentially hazardous to health, such as chlorine-based cleaning agents and CFCs.

We also aim to avoid the use of plastics in general, and PVC in particular, in the design of our products. Instead we rely upon metals and other non-hazardous materials; metal components are ideal for recycling, and also provide effective electrical screening.

Our robust all-metal cases exclude any possibility of external sources of interference affecting the quality of reproduction. From the opposite point of view our products' electro-magnetic radiation (electro-smog) is reduced to an absolute minimum by the outstandingly effective screening provided by the metal case.

We would like to take this opportunity to thank you for the faith you have shown in our company by purchasing this product, and wish you many hours of enjoyment and sheer listening pleasure with your **Music Receiver**.

T+A elektroakustik GmbH & Co KG

"iPod is a trademark of Apple Inc., registered in the U.S. and other countries."

CE All the components we use meet the European safety norms and standards which are currently valid. The operation instructions, the connection guidance and the safety notes are for your own good - please read them carefully and observe them at all times.

This product complies with the Low Voltage Directive (73/23/EEC), EMV Directives (89/336/EEC, 92/31/EEC) and CE Marking Directive (93/68/EEC).

IMPORTANT! CAUTION!

This product contains a laser diode of higher class than 1. To ensure continued safety, do not remove any covers or attempt to gain access to the inside of the product.

Refer all servicing to qualified personnel.

The following caution label appear on your device:

Rear Panel:

CLASS 1
LASER PRODUCT

On the CD mechanism

CAUTION:	VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM
VORSICHT:	SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET NICHT DEM STRAHL AUSSETZEN
ATTENTION:	RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE EXPOSITION DANGEREUSE AU FAISCEAU
DANGER:	VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM

Contents

About these instructions

All the controls and functions of the **Music Receiver** which are frequently used are described in the first section of these operating instructions.

The second part - **'Basic settings, Installation, Using the system for the first time'** covers connections and settings which are very seldom required; they are generally required only when the machine is set up and used for the first time. Here you will also find a detailed description of the network settings required for connecting the **Music Receiver** to your home network.

Symbols used in these instructions

Caution!

Text passages marked with this symbol contain important information which must be observed if the machine is to operate safely and without problems.

This symbol marks text passages which provide supplementary notes and background information; they are intended to help the user understand how to get the best out of the machine.

italic Technical terms printed in italics are explained in detail at the end of the instructions.

Front panel controls

All the important functions of the **Music Receiver** can be operated using the buttons on the front panel. Direct-acting buttons are provided for fundamental functions such as source select, station change and track select. Functions not needed so frequently are controlled using the menus which are called up using the SRC / SYS / TONE MODE button.

All information relating to the machine's state, the current track and the associated transmitting station are displayed on the integral screen; the essential information is displayed in enlarged form in a context-sensitive manner in the main line of the screen, and is therefore easily legible even from some distance away. The following section explains the functions of the buttons on the machine, and the information provided on the screen.

ON

(On / Off switch)

A brief press on the ON button switches the unit on and off. When the machine is switched on, the indicator light above the button glows.

Caution!

The mains button is not a mains isolation switch. Even when the LED is not glowing, some parts of the machine are still connected to mains voltage.
If the machine is not to be used for a long period, we recommend that you turn it off using the mains switch located on the back panel.
If you switch off using the mains switch the current drain is 0 Watt. However, in this state the device cannot be switched on again using the remote control handset. When you wish to switch it on again, first move the mains switch to the '1' position.
If you wish to disconnect the machine completely from the mains supply, withdraw the mains plug at the wall socket.

🎧
(Phones / headphone)

Socket for stereo headphones with an impedance of at least 32 Ω.

The use of headphones
Continuous listening to programme material via earphones or head-phones at very high volume can result in permanent hearing loss. You can avoid damaging your health by not listening via headphones or ear-phones at high levels for long periods.

CD drawer

The CD drawer is located below the display. Please insert the disc with the label side facing upwards into the appropriate depression of the tray.

⏏

The drawer is opened and closed by pressing the ⏏ button.

DISC SCL

Selects the CD-Player or the Streaming Client function of the **Music Receiver** (Internet radio, access to music server, iPod playback)
Brief press: Selects the CD player
Long press: Selects the Streaming Client function

RADIO REC

Selects the FM tuner or the device connected to the REC input of the **Music Receiver** (recorder)
Brief press: Selects the FM tuner
Long press: Selects the REC input

A1 AUX / A2 DIG

A brief press on one of these buttons selects the analogue A1 AUX or the digital A2 DIG input you wish to use. Press the button repeatedly until the desired input is displayed on the screen.

If you wish to make the selection process easier, you can remove from the select list those sources which are not used in your system. See chapter **'System configuration menu** / **Source names'**.

SRC

Source menu

Opens the Setup menu for the source device just selected

SYS

System menu

Opens the '**System configuration' menu**
(for details see Chapter **'System settings'**)

TONE MODE

Brief press: Opens the tone control settings menu

Long press: When SCL (Streaming Client) is selected as source:
Switching between the USB inputs USB 1 (HDD) and USB 2 (iPod).
It is only possible to switch inputs in the top menu level of the SCL (main menu).

Navigation

◀ Back to the previous point / change button

▶ Confirms input / change button

▼ Selects the next point within a list / select button

▲ Selects the previous point within a list / select button

OK

Confirm button

■

Ends playback

I▶

Starts playback / halts playback (pause) / resumes playback after a pause

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ⓘ

Superimposing information
Brief press: Toggle switch between display of current music track and list navigation
Long press: Switches between different screen displays

☰

Calls up the Favourites list

◀◀ / ▶▶

Brief press: Selects the previous / next track or piece during playback.
Selects the next station in the favourite list

Long press: Fast forward / rewind: searches for a particular passage.
Tuner: Search

Button for switching ON and OFF the loudspeaker output.

VOL + / VOL -

Increase / decrease volume

The volume can be increased / decreased in steps by tipping one of the volume buttons. The current volume level is displayed on the display screen. If one of the buttons is kept pressed for approx.. 2 seconds the volume increases / decreases continuously until the button is released.

To prevent damage to the speakers the volume control stops at volume level 64. To adjust to higher levels, please press the VOL + button again. Now you can adjust to levels up to maximum.

Display

All the **Music Receiver's** display elements are grouped together in a clearly arranged screen area.

Protection Overheat

If the screen displays the message "PROTECTION" or "OVERHEAT", the protection circuit has switched off the speaker-outputs. For details see chapter "**Trouble shooting**".

Source display

The screen displays and symbols vary according to the currently active function (disc player, SCL, radio, external sources) and the type of music being played.

The basic sub-divisions of the screen:

- Screen area (a) displays information relating to the current piece of music. The essential information is displayed in the main line in enlarged form.
- The bottom line (c) displays additional information and context-sensitive operating information.

Symbol	Meaning
←	This symbol indicates that it is possible to switch to a higher menu level or select menu using the ◀ button.
↵	Indicates that the selected menu point / list point can be activated by pressing the ▶ button.
0/0	Position indicator in Select lists. The first figure indicates the current position in the list, the second figure the total number of list entries (list length).
iPod oder **HDD**	Indicates which USB socket is selected

The **Music Receiver** provides different screen displays for the Streaming Client and the radio.

- **Large-format display:**
  Enlarged display of the most important information, clearly legible even from a distance
- **Detail display:**
  Small-text display showing a large number of additional information points, e.g. bit-rate etc.

A long press on the ⏻ button on the remote control handset is used to switch between the display modes.

Remote Control

General Information

All the **Music Receiver's** mechanism control functions and auxiliary functions can be operated using the remote control system.

In general terms the remote control buttons have the same function as the corresponding buttons on the **Music Receiver's** front panel.

The infra-red sensor for the remote control system is located in the display area of the **Music Receiver.** There must be clear line-of-sight contact between the **FM100** handset and the screen.

The following tables show the remote control buttons and their functions when operating the machine.

(red)	Switches the **Music Receiver** on and off
	Direct source select buttons. If the integrated amplifier is switched off, these buttons switch it on and simultaneously select the corresponding source device.
SCL	**Music Receiver's** Streaming Client function (Internet Radio, access to music server, iPod playback)
DISC	**Music Receiver's** CD function
A1/PH D1	Brief press: A brief press on this button selects the analogue input you wish to use. Press the button repeatedly until the desired input is displayed on the screen.
A2/TV D2	**Brief press:** A brief press on this button selects the digital input you wish to use. Press the button repeatedly until the desired input is displayed on the screen.
A3/TUN RADIO	Brief press: **Music Receiver's** Radio function
REC	Selects the REC input of the **Music Receiver.**
1 2 abc ... 9 xyz 0 ␣	Direct alpha-numeric input, e.g. track number, fast station select, radio station. The 0 and 1 buttons are also used for non-standard characters. During text input you can switch between numeric and alpha-numeric input, and between capitals and lower case by pressing the ▲▼ button.
(yellow)	Switches sound on and off (MUTING)
- + (yellow)	Reduces / increases volume (volume control rocker) Performs the same function as the corresponding buttons on the **Music Receiver's** front panel**.**
	In Stand-alone mode: sound settings A brief press opens a menu offering the following set-up facilities, which vary according to the selected source: Balance / Treble / Bass / Loudness / Bandwidth / Oversampling The menu points are called up using the ▲ / ▼ buttons, and can be changed using the ◀ / ▶ buttons.

	Tuner	CD-Player	Streaming Client
	Navigation		Navigation
◀	Back to previous point	Rewind to search for a particular passage	Back to previous point
	During alpha-numeric character input you can erase a character with the ◀ button.		
▶	Confirms input	Fast-forward to search for a particular passage	- Opens a folder - Starts a piece of music - Selects an Internet radio station
▲	Selects the previous point within a list	Selects the next track during playback	Selects the previous point within a list
▼	Selects the next point within a list	Selects the previous track during playback	Selects the next point within a list
OK			Opens a folder Starts a piece of music
	Confirm buttons during input process		
	Chapter select / Track select / Search / Manual tuning		
⏮	Selects the previous station in the favourite list.	Selects the previous track during playback	Selects the previous piece in the playback list
◀◀	Brief press: Manual tuning Long press: Search	Rewind to search for a particular passage	Hold button pressed in for rewind
▶▶	Brief press: Manual tuning Long press: Search	Fast-forward to search for a particular passage	Hold button pressed in for fast forward
⏭	Selects the next station in the favourite list.	Selects the next track during playback	Selects the next piece in the playback list
⮌ (**REPEAT**)		Repeat function (see Chapter '***Operating the CD player***')	Repeat functions (not possible with all media) Brief press: Repeat Track, Repeat ALL, 'Normal' Long press: *Mix*-Mode (Shuffle) ON / OFF Brief button presses in MIX mode: Mix, Repeat Track, Reapeat Mix
■ (**STOP**)		Brief press: Halts playback Long press: Opens and closes the CD draw	Ends playback
⏯ (**PLAY**/ **PAUSE**)	Select station from Favourites list	• Starts playback (**Play** function) • During playback: halts (**Pause**) or resumes playback	• Starts playback (**Play** function) • During playback: halts (**Pause**) or resumes playback

	Tuner	CD-Player	Streaming Client
SYS	Opens the **System Configuration** menu (e.g. for adjusting screen brightness)		
SRC	Opens the Favourites menu when the Favourites list is displayed.		Brief press: Switches to main menu (Home) Long press: Opens the network configuration menu
(red)	Long press: Removes a favourite from the station list	Long press: Erases *playback program*	Long press: Removes a favourite from the Favourites list created on the **Music Receiver**
(green)	Adds a favourite to the station list	Activates playback programming Adds a *track* to the *playback program* during playback programming	Adds a favourite to the Favourites list created on the **Music Receiver**
(yellow)	Button for switching between **Stereo** and **Mono reception** The **Stereo** setting is constantly displayed in the screen window by a symbol. The **Mono** setting is constantly displayed in the screen window by a symbol.		the main menu is displayed: Toggle switch between inputs USB 1 and USB 2
(blue)			During character input: Switches between numeric and alpha-numeric input, and between capitals and lower case when pressed (repeatedly) In lists: Search function (Alpha search)
	Displays the Favourites list		Displays the Favourites list created on the **Music Receiver**
	Store button for fast station select		Store button for fast station select
		Switch CD-Text ON/OFF	Toggles the display between the ‚Now Playing' view and track list / station list navigation.
	Switches Radio-text ON/OFF		

FD 100 bi-directional radio remote control

The FD 100, a graphic radio remote control handset with integral colour screen, is designed to make the **Music Receiver** even more convenient to operate, and is available as part of the **T+A** accessory range. (see chapter 'FD 100 radio remote control')

The **Music Receiver** can be controlled by the **T+A** App 'TA Control' too.
For further information please visit our homepage
www.ta-hifi.com/app

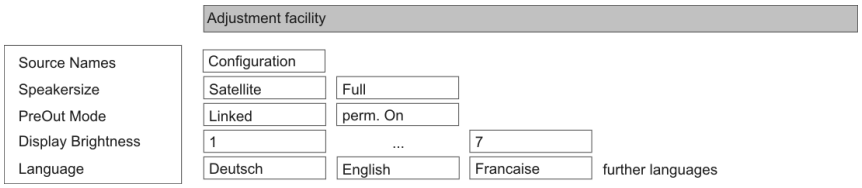
Basic settings of the Music Receiver

System Settings (System Configuration menu)

In the System Configuration menu general device settings are adjusted. This menu is described in detail in the following chapter.

Calling up and operating the menu

- Briefly press the SYS button on the front panel or on the remote control handset to call up the menu.
- When you open the menu, the following Select points appear on the screen:



- Use the ▲ / ▼ buttons to select a point in the menu.
- If you wish to change a selected menu point, first press the OK button, and then use the ◀ / ▶ buttons to alter it.
- **After making the change, press the OK button again to accept the new setting.**
- You can press the ■ button at any time to interrupt the process; the change is then abandoned.
- Press the SYS button again to leave the menu.

Source names
menu point

At this menu point you can activate and disable external sources, and assign a plain text name to each source; this name then appears in the screen displays.
When you call up this menu point using the OK button, a list of all the external sources of the **Music Receiver** appears. Each source is followed by the assigned name, or if you have disabled the source concerned the note 'disabled'.
If you want to activate / disable a source, or change the plain text name, navigate to the appropriate line.
To activate a source, press the green button; pressing the red button disables the source.
To change the plain text name, press the OK button once more. Change the name as you wish, then press OK to confirm your choice. This action stores the settings for the source.

When you call up Source Select using A1 / AUD / A2 / VID on the remote control handset or the source button A1 AUX / A2 DIG on the front panel, any disabled sources are suppressed. This makes it easier to select sources, and we recommend that you disable any sources not in use.

Speakersize
menu point

Loudspeaker

Sets the size and bass response of the loudspeaker

SATELLITE
for very small loudspeakers (satellite speakers) with limited bass response.

The low-frequency bass signals (below 100 Hz) of the main channels are mixed onto the subwoofer. If you are using SAT speakers a sub-woofer is a basic necessity, otherwise bass response will be inadequate.

FULL-RANGE
for larger speakers.

The full, unrestricted range of frequencies is reproduced via the main channels. If your system includes full-range speakers, no subwoofer is required. However, under certain circumstances the use of a large, high-power subwoofer may still be sensible in order to relieve the strain on the main loudspeakers during loud passages, and passages with extreme low-frequency content.

PreOut Mode
menu point

The preamp outputs (PreOut) can either switched ON and OFF together with the speaker outputs or they can be set to be permanently ON.
The „permanent ON“ setting can be useful for example to supply audio signals to an other room independently from the speaker state in the main room.

"**Linked**"
This setting enables the PreOut muting synchronously with the speaker outputs. Switching ON/OFF all outputs is achieved by pressing the -button (Mute).

"**perm On**"
This setting sets the PreOut outputs to be permantly switched ON.

Brightness
menu point
(screen brightness)

At this point you can adjust the brightness of the integral screen to suit your per-sonal preference for normal use; seven levels are available.

Language
menu point

In this menu point you define the language to be used for the displays on the screen of the front panel of the **Music Receiver**.

The language used for data transferred to the machine, e.g. from an iPod or other Internet radio station, is determined by the supplying device or the radio station; you cannot define the language on the **Music Receiver**.

Tone control settings
(Tone menu)

FM100 **Music Receiver**

The **Music Receiver** features a range of facilities for fine-tuning the sound to suit your personal preference, the listening environment and the particular recording currently being played. All the tone control settings are grouped in the TONE menu.

♪ TONE MODE brief press

Briefly press the ♪ button on the remote control handset to call up the balance and tone control functions. This action brings up a set-up window which displays the various adjustment options.

- Use the ▲ / ▼ buttons to select an adjustment option.
- The option displayed can now be changed using the ◄ / ► buttons.
- If no action is taken for a period of a few seconds, the set-up window disappears from the screen.

	Adjustment facility				
Balance L/R	xx L	...	centered	...	xx R
Tone Control	Off	On			
Treble	- 7	...	0	...	+ 7
Bass	- 7	...	0	...	+ 7
Loudness	Off	On			
Oversampling	FIR long	FIR short			

Balance L/R

This menu point is used to alter the balance in level between the left and right channels, e.g. to compensate for non-symmetrical loudspeaker positioning.

ⓘ The balance can be adjusted in increments of 1,25 dB; the screen always displays the current value.
The primary purpose of the Balance setting in the Tone menu is to compensate for inadequacies in the audio mix of the recording currently being played.

Tone Control

This menu point can be used to disable (by-pass) the **Music Receiver`s** tone controls.

To switch off the tone controls, select the “OFF” setting. When the tone controls are switched off, any adjustments you make to the following menu points “BASS” and “TREBLE” have no effect.

Bass / **Treble** (tone settings)

These two menu points can be used to alter the high-frequency (treble) and low-frequency (bass) settings when required.

ⓘ The primary purpose of the settings in the Tone menu is to compensate for inadequacies in the audio mix of the recording currently being played.

If you wish to alter the fundamental tone settings for your loudspeakers, you should make adjustments in the “Loudspeaker / Tone” menu.

Loudness

The **Music Receiver** is equipped with an automatic level-dependent volume control system (**LOUDNESS**), designed to compensate for the frequency-dependent sen-sitivity of the ear at very low volume, caused by the physiology of the human auditory system.

This set-up option switches the level-dependent volume control on and off.

Oversampling

A number of special settings are available for the **Music Receiver's** D/A converter; they are designed to fine-tune the characteristics of your amplifier to suit your listening preferences.

The **Music Receiver** can exploit two different filter types offering different tonal characters:

Oversampling 1 is a classic **FIR** filter with an extremely linear frequency response (FIR long).

Oversampling 2 is a peak-optimised filter – superb in 'timing' and dynamics (FIR short).

Please refer to the Chapter **'*Glossary / Supplementary Information, Digital Filter*'** for an explanation of the different filter types.

Recording with the Music Receiver

To create a recording with a recorder connected to the **Music Receiver's** tape connections **(REC)** first you have to select the recording source by pressing the appropriate source button e.g. (DISC SCL) After that start the recording function of your recording-device.
If your recorder is equipped with a monitor function you can monitor the recording by pressing the (REC) button on the remote control or by a long button press on the (RADIO REC) button on the front panel. By doing so the recording source remains unchanged but the listening source will be switched over to the recorders monitor output so that you can instantly monitor the recording in progress.

⚠ While recording the volume level of the **Music Receiver** should not be increased to values higher than 64. If this value is exceeded the level at the record-output will change.

The Music Receiver as a D/A Converter

General Information on D/A Converter Operation

The **T+A Music Receiver** can be used as a high-quality D/A converter for other devices such as satellite receiver, digital radio etc. which are fitted with poor-quality converters or no converter at all. The **Music Receiver** features five digital inputs on the back panel to allow this usage.

ⓘ Devices with an electrical co-axial output or an optical light-pipe output can be connected to the digital inputs of the **Music Receiver**. The **Music Receiver** accepts digital stereo signals conforming to the S/P-DIF norm with sampling rates of 32 to 96 kSps at the optical TOS-Link inputs and 32 - 192 kSps at the coaxial SP/DIF inputs.

D/A Converter Operation

Selecting a D/A Converter Source

Now repeatedly press the (A2 DIG) button on the front panel, or press the (A2/TV) button on the remote control handset, to select the digital input to which you have already connected the source device which is to be played.

As soon as the source device delivers digital music data, the **Music Receiver** automatically adjusts itself to the format and sampling rate of the signal, and you will hear the music.

Screen Display

ⓘ During D/A converter operations the **Music Receiver's** integral screen displays the characteristics of the digital input signal.

Operating the Tuner

RADIO

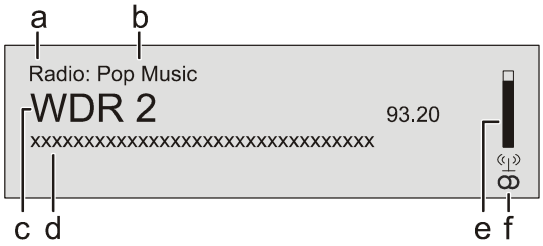
First press the RADIO button to select the integral tuner as the source.

When you select a station, the integral screen initially shows the reception frequency or the *RDS* station name.

Front panel display

The screen on the front panel displays all information in a clear form.

Field strength display:



a) When you are listening to a radio station in Tuner mode, the message **'Radio'** appears in the top line of the screen.

b) Here the music type or style is displayed, e.g. Pop Music.
This information is only displayed if the transmitting station broadcasts it as part of the *RDS* system. If you are listening to a station which does not support the *RDS* system, or only supports it in part, these information fields remain empty.

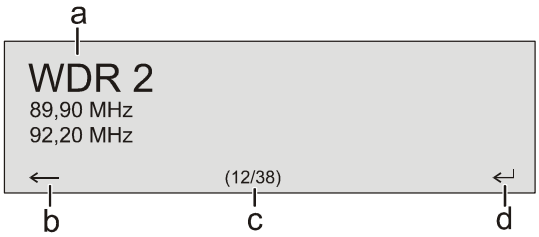
c) The frequency and / or the station name is displayed in enlarged form. If a station name is displayed, its frequency is shown at the end of the line.

d) These lines display information which is broadcast by the station (e.g. Radiotext).

e) The *field strength* and therefore the reception quality to be expected from the set transmitting station can be assessed from the field strength.

f) Display of Stereo **'∞'** / Mono**'●'**

Selecting a station using the Favourites list:



a) The selected station is displayed in enlarged form, and can be called up using the ▶ / ▮▶ / OK button.

b) Press the ◀ button to return to the station previously selected.

c) Position display in the Favourites list.

d) Press the ▶ / ▮▶ / OK button to select the station displayed in enlarged form.

Station Search

Holding one of the ◀◀ / ▶▶ buttons pressed in initiates a station search in the upward or downward direction. The station search stops automatically at the next station.

Favourites List and *Presets*

In addition to manual tuning and searching, the tuner of the **Music Receiver** also features a **Favourites list** and **Presets**, which provide a fast, convenient method of managing your preferred stations and calling them up at any time.

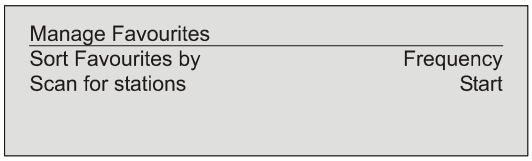
You can edit the Favourites list to suit your preferences (see section **'Adding stations to the Favourites list / Erasing stations from the Favourites list'**).

It is also possible to store the stations under a station number (Preset), and then to call it up directly by entering the station number. Presets are particularly useful if you wish to call up stations when the screen is not in sight (e.g. from an adjacent room), or via the domestic control system.

The Favourites List

Creating the Favourites list

When you have called up the Favourites list by pressing the (≣) button, you can press the (SRC) button to call up the Favourites menu, from which the following points can be selected using the (▲) / (▼) buttons:



Select the menu point **'Scan for stations'** and initiate the station search with the (OK) button. The screen displays the message **'Auto Store active',** and the **Music Receiver** now automatically stores up to sixty receivable stations in the Favourites list.

Sort function

The Favourites list can be sorted according to various criteria; these are selected in the menu point **'Sort Favourites by'**:

Frequency / Station name / Program ID

Now use the (◀) / (▶) buttons to select the desired sort criterion, and confirm your choice by pressing the (OK) button.

Selecting radio stations from the Favourites list

- Call up the Favourites list with the (≣) button, select a stored station from the Favourites list using the (▲) / (▼) buttons, and confirm your choice with the (▶) / (▮▶) / (OK) button.
- You can also select stations directly, without calling up the Favourites list as described above, by briefly pressing the (⏮) / (⏭) buttons.

Adding stations to the Favourites list

First set the desired station manually (by briefly pressing the (◀◀) / (▶▶) buttons) or using a search (holding the (◀◀) / (▶▶) buttons pressed in). As soon as the station is audible, you can add it to your Favourites list by pressing the (☺) button.

Erasing stations from the Favourites list

Open the Favourites list. Select the station you wish to erase from the list, hold the red (☹) button pressed in for a few seconds: the station is now removed from the Favourites list. After the erasure the tuner automatically switches to the next station in the Favourites list.

Presets

Calling up a *Preset*

At any time you can quickly call up a station stored as a Preset by entering its Preset number using the **F100's** numeric buttons (0) to (9).

Storing a *Preset*

- Select a station, either using the (⏮) / (⏭) buttons, or from the Favourites list.
- Call up the Store Preset function by pressing the (⮆) button.
- An input window now appears in which you can enter a number using the numeric buttons (0) to (9). The Preset is stored when you press a numeric button. The front panel screen briefly displays the message **'Preset Stored at'** to confirm this.

RDS functions

If the station being received is broadcasting relevant RDS data, the following information will be displayed on the screen:

- Station name
- Radiotext
- Programm type (genre)

Mono / Stereo

You can toggle the tuner of the **Music Receiver** between stereo and mono reception by briefly pressing the (I/II) button. The reception mode is shown on the screen by the following symbols:

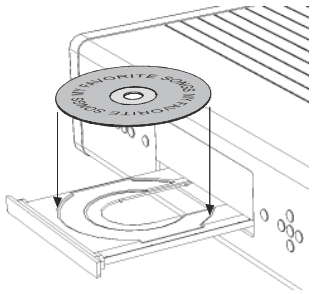
'●' (Mono) or **'OO'** (Stereo):

If the station you wish to listen to is very weak or very distant, and can only be picked up with severe background noise, you should always switch to MONO mode as this reduces the unwanted hiss significantly.

ⓘ When you store the station in the Favourites list, the settings you enter for this station are also stored, and are automatically restored the next time you call up the station.

Operating the CD player

Inserting a CD



- Open the CD drawer (⏏ on the front panel / ■ FM100)
- Place the disc **centrally** in the appropriate depression in the drawer, **with the side to be played facing down**.
- Close the CD drawer (⏏ on the front panel / ■ FM100)

When you close the drawer, the machine immediately reads the CD's 'Table of Contents'; the screen displays the message **'Reading'**. During this period all button-presses are ignored.

The screen then displays the total number of tracks on the CD in the drawer, e.g.: **'13 Tracks 60:27'**.

It is also shows the current mode of operation, e.g. ■

Playing a CD

Press the ▶ button on the front panel or on the FM100 remote control handset to begin the playback process. Playback starts, and the screen shows the mode of operation (▶) and the number of the track currently being played: **'Track 1'**.

The CD stops after the final track, and the screen again displays the total number of CD tracks and the overall running time.

Variations

If you press the ▶ / OK button after placing the CD in the machine, the drawer closes and playback starts with the first track.

The open drawer also closes if you enter the number of a track using the remote control handset.

You can interrupt playback at any time by pressing the ▶ button. During the interruption the screen displays the ⏸ symbol. Press the ▶ button again to resume playback.

Briefly pressing the ⏮ / ⏭ button during playback causes the player to skip to the start of the preceding / next track.

A brief press on the ■ button concludes playback.

A long press on the ■ button opens the CD drawer.

Track Select

During playback

Briefly press the ⏮ or ⏭ button repeatedly until the number of the track you want to hear appears on the integral screen.

Releasing the button interrupts playback briefly, and after this the desired track is played.

ⓘ You can also enter the number of the desired track directly using the numeric buttons on the remote control handset.

Playback mode

↩

Repeat

The CD player in the **Music Receiver** features various playback modes. During playback the current playback mode is shown on the screen.

Brief press:
Repeatedly pressing the ↩ button causes the machine to cycle through different playback modes.

'Repeat All' / **'Repeat Program'**	The tracks of the CD or a *playback program* are continuously repeated in the **preset sequence**.
'Repeat Track'	The track of the CD or a *playback program* which has just been played is continuously repeated.
'Normal' / **'Program'**	Normal playback of the whole disc, or normal program playback.

Mix mode

Long press:
Holding the ↩ button pressed in switches the machine to Mix mode. A second long press ends Mix mode.

'Mix' / **'Mix Program'**	The tracks of the CD or of a *playback program* are played in a **random sequence**.

In Mix mode the Repeat function can be called up with a brief press of the ↩ button.

'Repeat Mix' / **'Rpt Mix Program'**	The tracks of the CD or of a *playback program* are continuously repeated **in a random sequence**.

Fast Search

- Fast forward search (hold the ⏩ button pressed in)
- Fast reverse search (hold the ⏪ button pressed in)

Holding the button pressed in for a long period increases the rate (speed) of search. During the search process the screen displays the current track running time.

Playback Program

Creating a *Playback Program*

Explanation:

A playback program consists of up to thirty tracks of a CD stored in any order you like. This can be useful, for example, when you are preparing a cassette recording. A playback program can only be created for the CD currently in the disc drawer of the **Music Receiver**. The program remains stored until it is erased again, or until the CD drawer is opened.

Operation:

When you place the CD in the drawer, the screen displays the total number of tracks on the disc, e.g.: **'13 Tracks 60:27'**.

- Activating playback programming mode.

Press the ☺ button

The screen displays the message **'Add Track 1 to Program'** and **'0 Tracks** / **0:00 Program time'**.

- Repeatedly press the ⏮ or ⏭ button briefly until the number of the desired track appears on the screen after **'Track'**.
- Now store the track in the playback program by briefly pressing the ☺ button.

The screen shows the number of *tracks* and the total playing time of the playback program. Select all the remaining tracks of the program in the same manner, and store them by briefly pressing the ☺ button.

ⓘ It is also possible to enter the track directly using the numeric buttons, instead of using the ⏮ / ⏭ buttons. After you enter the number, press the ☺ button briefly to store the track, as described above.

If you store thirty tracks, the screen displays the message **'Program full'**.

The playback programming process is concluded when all the desired tracks have been stored.

- End the playback programming process.

Hold the ☺ button pressed in for about one second

Playing a playback **program**

The playback program can now be played.

- Start the playback process. ▶ button

Playback starts with the first track of the playback program. The screen displays the message **'Program'** while a playback program is playing.

The ⏮ and ⏭ buttons select the previous or next track, but only within the playback program.

Erasing a *playback program*

Briefly pressing ■ button in **STOP** mode opens the CD drawer, and thereby erases the playback program.

A playback program can also be erased without opening the CD drawer:

- Erase the playback program.

Hold the ☹ button pressed in again for about one second

The playback program is now erased.

Operating the Streaming Client

General Information on the Streaming Client

The **T+A Music Receiver** includes what is known as a 'Streaming Client'. This is a new class of playback devices for media content, providing a means of playing music which is stored on a vast variety of sources. These sources may be an iPod or a USB hard disc connected directly to the **Music Receiver**, but they may also be thousands of miles away (e.g. Internet radio station). The Streaming Client can access such remote sources via a home network and the Internet.

ⓘ The network configuration is explained in the Chapter **'Network configuration'**.

The **Music Receiver's** Streaming Client can access the following sources:

Local sources (direct connection)	**Remote sources (via home network or Internet)**
USB memory sticks and USB hard discs	Internet radio
iPod	NAS server (with UPnP-AV server)
	PC (with UPnP-AV server)

The media content formats which the **Music Receiver** can reproduce are very wide-ranging, and extend from compressed formats such as MP3, WMA, AAC and OGG Vorbis to high-quality non-compressed data formats such as FLAC and WAV, which are thoroughly audiophile in nature. A full listing of all possible data and playlist formats is included in the Specification, which you will find in the Appendix to these instructions.
Since virtually no read or data errors occur when electronic memory media are accessed, the potential reproduction quality is even higher than that of CD. The quality level may even exceed that of SACD and DVD-Audio.

The **Music Receiver** can also play back high-resolution audio formats (FLAC and WAV up to 192kHz / 32bit). High-resolution audio files can be played back from a USB hard disc connected to the unit, or via a network connection. However, if you wish to use a network for 192/32 reproduction, a cable network must be used since a WLAN network is not generally sufficient for the high data rates (see also the note in the chapter entitled **'Network configuration'**).

The music from the iPod is read out digitally, and converted into the analogue music signal by the high-quality internal T+A D/A converters. This technique produces the best possible quality of reproduction from an iPod.

ⓘ Digital audio output is supported by the following iPod models:

iPod nano (all models) **iPod classic** (all models)
iPod touch (all models) **iPhone** (all models)
iPod 5G
Earlier models of iPod only generate analogue audio output, and are not supported.

Select Lists

The music content to be played is chosen from Select Lists. These lists are operated using the navigation buttons (cursor buttons) which you will find on the remote control handset and on the front panel. All content can be accessed via the main menu. Internet Radio in particular offers a huge number of stations, which can result in long searches or periods of navigation. We therefore recommend that you store your preferred stations in a ***Favourites List***, as this makes them easy and fast to access, with no protracted searching. It is also possible to store Internet radio stations as ***Presets***, just as you do with normal radio; they can then be called up directly just by entering a number.

The media content can be listed according to various criteria - Internet radio stations e.g. by country of origin, genre or alphabetical, music from media servers e.g. by artiste, album, track, genre, etc.

ⓘ The exact form of the displayed list and the preparation of the content also depend to a large extent on the capabilities of the server, i.e. the full facilities of the **Music Receiver** cannot be exploited with all servers or media. You may therefore find that in many cases not all the functions described in these instructions can be used.

USB Inputs

USB1 (memory stick / HDD)
USB2 (iPod / iPhone)

The **Music Receiver** is equipped with two USB inputs on its back panel. One input is intended for USB memory sticks or hard discs, the other input can be used to connect an iPod or iPhone.
You can toggle between these inputs by a long button press on the TONE MODE button on the front panel or by pressing the I/II button of the remote control.
The currently selected input is displayed by the USB symbol and the mark "1" for the USB1 input (memory stick/HDD) or "2" for USB2 (iPod/iPhone).

In the HOME menu of the streaming client only the contents of the currently active USB device is displayed.

The following table shows the buttons on the remote control handset and the front panel, and their basic function when operating the Streaming Client:

SCL	Selects the Streaming Client as listening source.
SRC	Brief press: Switches to the main list (Home function) Long press: Opens the Configuration menu
TONE MODE	Long press: When SCL (Streaming Client) is selected as source: Switching between the USB inputs USB 1 (HDD) and USB 2 (iPod). It is only possible to switch inputs in the top menu level of the SCL (main menu).
▲ / ▼	**Selects** the menu point within a list
▶	**Opens a folder**, starts a piece of music or playlist
◀	**Back** to the next higher menu point
OK	Plays the selected track or folder During input operations: confirms the input
⏮ / ⏭	Selects the previous or next piece in the playback list. Hold button pressed in for fast forward and rewind search.
◀◀ / ▶▶	Hold button pressed in for fast forward and rewind search.
■	Ends playback **(STOP)**
⏯	• Starts playback of titles / folders (**PLAY function**) • Halts playback (**PAUSE**) or mute and resume, if available
☹	Long press: Removes a favourite from the Favourites list created on the **Music Receiver**
☺	Adds a favourite to the Favourites list created on the **Music Receiver**. If no memory space is available, the screen displays the message 'Favorite List Full'.
≣	Displays the Favourites list created on the **Music Receiver**.
⏏	*Preset* store button
⮌ **(not possible with all media)**	Repeated **brief presses** cycle through the repeat functions: → Rpt Trk, →Rpt All, →Normal **Rpt Trk** The current piece is repeated **Rpt All** All pieces in the current folder / the current playlist are repeated Normal Repeat function switched off Long press: Switches ***Mix* mode** (Shuffle) ON and OFF Subsequent brief button presses will cycle through the Mix Repeat operating modes: → Mix, → Rpt Trk, → Rpt Mix In Mix mode the pieces are played in a random order.
▲▼	During character input operations: Toggle switch: when pressed repeatedly this button toggles between numeric and alpha-numeric input, and between capitals and lower case While navigating through lists: Calls up the **Search function (Alpha search)**

Screen

All information relating to machine status, the current music track and navigation in lists is displayed on the **Music Receiver's** graphic screen. The display is context-sensitive, and varies in part according to the capabilities and facilities of the service to which you are currently listening.

The essential information is displayed in enlarged form in the main line of the screen. Supplementary information is shown above and below it in smaller lettering, or by symbols. The table below shows and explains the symbols employed.

The screen can display the following symbols:

	Making connection (Wait / Busy) The rotating symbol indicates that the **Music Receiver** is processing a command, or is making the connection to a service. These processes may take a little while, depending on the speed and current load of the network. During this period the **Music Receiver** may be muted, and may not respond to commands. If this should happen, please wait until the symbol disappears.
	Indicates a **playable music track** or a playback list (Playlist)
	Indicates a **folder,** concealing further folders or lists.
	Indicates that the listen source is connected by cable LAN.
	Indicates that the listen source is connected by wireless WLAN.
	Indicates that the **Music Receiver** is playing a station or a music track
	Pause indicator
128 kbpskBi	Buffer display (full indicator, memory indicator) and (if supporterd by the source) indication of bit-rate of the stream. The higher the bit rate, the better the audio quality will be.
1:20	Time display: elapsed playback time. This display is not available for all services.
	Indicates that it is possible to shift back by one level or selection using the ◀ button.
0 / **0**	Position indicator in a list, or when entering an address
	Indicates that it is possible to confirm the entry or selection with the ▶ button
ABC or **123** **or** **abc**	Character input mode indicator

Access to Media Content via the Main Menu (Home Menu)

Main Menu
(Home-Menu)

When you call up the Streaming Client by pressing the SCL button, the front panel screen displays a list containing the devices connected to the system, or accessible via the network, together with the Favourites folder, e.g.:

- USB / iPod *1)
- Internet Radio
- UPnP-AV Server (Media server) in the local network *2)
- Favorites

*1) Only the selected USB input is displayed.
Use the TONE MODE button on the front panel / I/II button on the remote control to switch between the USB inputs.

*2) To play back media files that are stored on PC's or NAS storage devices on your home network, a UPnP-AV server software must be installed on these devices to make the media content accessible through the network.

Selecting and Playing Media Content

You can now select a device or a service using the ▲ / ▼ buttons. The selected list point is shown enlarged, and can be called up by pressing the ▶ / OK button.

The content of the device is displayed in the form of a list. The individual list entries are followed either by a folder symbol ( ) or a note symbol (♫).

You can now again move to the individual list points using the ▲ / ▼ buttons, and open them with the ▶ / OK button.

If the list entry you open is a folder, the screen displays the contents of the folder: you can now navigate further within the new folder.

If the entry is followed by a note symbol, this indicates that the content is playable (pieces of music, playlists, radio station etc.). If you open an entry of this type, its content will be played.

The lists and music tracks you can see when you select a device vary according to the machine and the transferred data.

Alpha-Search
(Letter Search Function)

When you are navigating through lists you can call up the **Music Receiver's** letter search function at any time by briefly pressing the ▲▼ button. The screen now displays the message 'Search'. While this is on the screen, enter a letter or a numeral using the remote control handset; the letters assigned to the numeric buttons are printed below the buttons. To obtain a particular letter, press the appropriate button repeatedly until the correct letter appears on the screen. Before entering the next character you have to wait until the cursor is displayed again. After pressing the OK button or after a brief delay with no further input the **Music Receiver** moves to the first entry in the list which starts with the characters you entered.

Accessing Media Content using the Favourites List

The Favourites List

The Favourites list can be used to store your preferred Internet radio stations and the paths to your preferred music tracks. At any subsequent time you can then very quickly access these stations and tracks using the 'Favorites' entry in the Home Menu.

Adding Favourites to the List

If you are currently enjoying a particular Internet radio station, simply press the green ☺ button on the FM100 handset: this adds the station to the Favourites list.

ⓘ In principle you can also add pieces from a NAS server or a USB hard disc to your Favourites list, but we only recommend this if the content of the relevant storage medium is available at all times (e.g. permanently connected USB hard disc).

Calling up Favourites

Open the Favourites list using the ☰ button, then select an entry from the list using the ▲ / ▼ buttons. Start the track or the station by pressing the ▶ / ▶❙ / OK button.

Erasing Favourites

Entries are removed from the Favourites list by first selecting the entry to be erased using the ▲ / ▼ buttons, and then holding the red ☹ button on the FM100 handset pressed in for several seconds.

⚠ **Caution!**

Erase the paths to files on USB hard discs or UPnP-AV servers from the Favourites list using the ☹ button before you erase or move files.

Using *Presets*

Preset function

You can store Internet radio stations as ***Presets*** using the process familiar from FM radio. These stations can subsequently be called up directly using the numeric buttons on the FM100 remote control handset.

Storing a *Preset*

First select an Internet radio station (e.g. using the Home menu / Internet radio). When you hear the station, press the ⊡ button followed by a number 0 to 9. The station is now stored under this number.

It is possible to store a total of ten Presets under the numbers 0 to 9.

Calling up a *Preset*

Briefly press one of the numeric buttons 0 to 9. The associated Preset is now called up, and after a brief delay you will hear it.

ⓘ Presets are particularly useful when the front panel screen is not in view, but you wish to call up stations (e.g. when operating the system from an adjacent room, or when operating it via a domestic control system).

Adding Internet Radio Stations

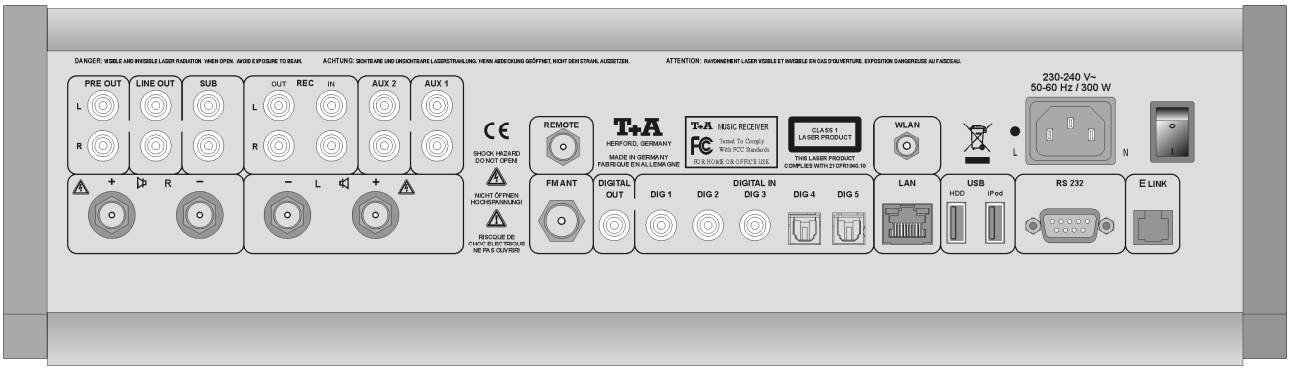
The lists of Internet radio stations displayed by the **Music Receiver** are very complete and comprehensive, but since new stations are constantly being added you may find that one of your favourite stations is not (yet) included in the Select lists.

In this case you can add the stations using the vTuner service (see also the Chapter **'vTuner Premium Service'**). The station added can then be accessed from the **Music Receiver's** main menu under the Internet Radio / Added Stations point.

Installation
Using the system for the first time
Safety notes

This section describes all those matters which are of fundamental importance when setting up and first using the equipment. This information is not relevant in daily use, but you should nevertheless read and note it before using the equipment for the first time.

Back panel connections



PRE OUT

Pre-amplifier output for external power amplifiers or active speakers.

LINE OUT

Analogue audio output (line output), e.g. for analogue recording equipment (TAPE recorder)

SUB

Outputs for connecting one or two active sub-woofers

ⓘ If a sub-woofer is employed, use the sub-woofer's controls to set the cut-off frequency and level to suit your satellite loudspeakers.

REC

Socket for a recorder (Tape, DAT recorder, etc.)

REC IN — Input for signals from the recorder

REC OUT — Output for the recorder's recording input

REC IN

AUX 1 / **AUX 2**

General-purpose pre-amplifier inputs with an input sensitivity of 250 mV / 20 kΩ.

ⓘ If you wish to connect a phono turntable, you must use an external phono pre-amplifier, e.g. PH 2000 MM or PH 2000 MC from the **T+A** accessory range. Alternatively you can use a **T+A** G1260R with integral phono pre-amplifier, which can be connected directly to the AUX inputs.

🔈 R und 🔈 L (loudspeaker terminals)

One pair of loudspeakers can be connected to the amplifier (SPEAKER **🔈 R** and SPEAKER **🔈 L**). The impedance of each speaker must not be lower than 4 Ω (DIN rating).

The output stages are designed to cope with a minimum load of 2 Ω, but continuous operation at very high volume produces high currents in the power output stages which can lead to overheating. This in turn trips the protective circuit which switches the amplifier off automatically.

⚠ Caution!
Make sure that the terminals are firmly screwed down, and that no short-circuits are possible as a result of projecting cable ends or errant wire strands.

ⓘ **Note:**

If the loudspeakers are to be used in countries outside the EU the red/black stoppers can be removed from the loudspeaker terminals. The speakers can then be connected using banana plugs.

The stoppers are simply a push-fit in the terminals, and can be prised out from the rear using a suitable tool such as a knife blade.

REMOTE

Radio aerial socket

Socket for subsequent upgrading of the **Music Receiver** with a radio gateway module for the **T+A** FD100 graphic remote control handset (in preparation).

FM ANT
(antenna input)

This FM antenna input can be connected to a normal 75 Ω FM home antenna or to TV/FM cable networks. For first-class reception quality a high-performance aerial system, competently installed, is a basic requirement.

DIGITAL OUT

Digital co-axial output for connection to an external digital/analogue converter with an co-axial cable.

ⓘ It is not always possible to produce a digital version for all media, as in some cases the original contains copy protection measures which prevent this.

DIGITAL IN

Inputs for digital source devices with optical or coaxial digital audio output.

WLAN

Input socket for WLAN antenna

ⓘ **Automatic Activation of the WLAN Module**

After powering on the **Music Receiver** detects if it is connected to a wired LAN Network.

If no wired LAN connection is found, the **Music Receiver** will automatically activate ist WLAN module and it will try to get access to your WLAN network.

⚠ **Attention!**

When WLAN shall be used, the LAN socket must be left unconnected.

LAN

Socket for connection to a wired LAN (Ethernet) home network.

ⓘ If a LAN cable is connected this will have priority over wireless WLAN networks. The WLAN module of the **Music Receiver** will automatically be disabled.

USB HDD

Socket for USB memory sticks and external hard discs

The storage device must be formatted with a FAT16 or FAT32 filesystem.

The USB device (example 2,5 inch HDD) can be supplied with power from the **Music Receiver** via the USB socket provided the power consumption of the USB device conforms to the USB standard.

USB iPod

Socket for iPods (use the original lead supplied with the iPod for this)

ⓘ Instead of connecting the iPod directly, you can use the **T+A** iPod Docking Station with USB connector (Order No. 4362 99301), which is available as an accessory.

RS 232

Interface for firmware upgrades

ⓘ This interface can also be used for control of the **Music Receiver** – for example in combination with a CRESTRON or AMX home automation system.

To enable device control via the RS232 interface, the **Music Receiver** must be equipped with a special firmware. A description of the control interface and the control protocol can be found in the download section of the **T+A** website (http://www.taelektroakustik.de).

E LINK

Control input / output for **T+A E** LINK – systems.

Mains switch

The primary mains switch is used to isolate the machine completely from the mains supply.

To operate the amplifier the primary mains switch must be moved to the '1' position.

Mains input

The mains cable is plugged into this socket.
For correct connections refer to the sections **'*Installation and wiring*'** and **'*Safety notes*'**.

Installation and wiring

Carefully unpack the **Music Receiver** and store the original packing materials carefully. The carton and packing are specially designed for this unit and will be needed again if you wish to move the equipment at any time.

Please be sure to read the safety notes in these instructions.

If the unit gets very cold (e. g. when being transported), condensation may form inside it. Please do not switch it on until it has had plenty of time to warm up to room temperature, so that any condensation evaporates completely.

Before placing the unit on a sensitive surface, please check the compatibility of the lacquer and the unit's feet at a non-visible point.

The unit should be placed on a rigid, level base. When placing the unit on resonance absorbers or de-coupling components make sure that they do not compromise the stability of the unit.

The quality and characteristics of the base on which your high-quality Hi-Fi equipment stands define the limits of sound quality which can be achieved. The base surface should be as heavy, rigid, hard and level as possible.

The receiver should be set up in a dry, well-ventilated site, out of direct sunlight and away from radiators.

The unit must not be located close to heat-producing objects or devices, or anything which is heat-sensitive or highly inflammable.

When installing the unit on a shelf or in a cupboard it is essential to provide an adequate flow of cooling air, to ensure that the heat produced by the unit is dissipated effectively. Any heat build-up will shorten the life of the unit and could be a source of danger. Be sure to leave at least 10 cm free space above the unit for ventilation. If the system components are to be stacked then the amplifier must be the top unit. Do not place any object on the top cover.

Mains and loudspeaker cables, and also remote control leads must be kept as far away as possible from signal leads and antenna cables. Never run them over or under the unit.

A complete connection diagram is shown in **'*Appendix A*'**.

Notes on connections:

- Be sure to push all plugs firmly into their sockets. Loose connections can cause hum and other unwanted noises.
- When you connect the input sockets of the amplifier to the output sockets on the source devices always connect like to like, i. e. **'R'** to **'R'** and **'L'** to **'L'**. If you fail to heed this then the stereo channels will be reversed.
- To achieve maximum possible interference rejection the mains plug should be connected to the mains socket in such a way that phase is connected to the mains socket contact marked with a dot (●). The phase of the mains socket can be determined using a special meter. If you are not sure about this, please ask your specialist dealer.

We recommend the use of the **T+A 'POWER LINE'** ready-to-use mains lead in conjunction with the **'POWER BAR'** mains distribution panel, which is fitted with a phase indicator as standard.

When you have completed the wiring of the system please set the volume control to a very low level before switching the system on.

The screen on the **Music Receivers** should now light up, and the unit should respond to the controls.

If you encounter problems when setting up and using the amplifier for the first time please remember that the cause is often simple, and equally simple to eliminate. Please refer to the section of these instructions entitled **'*Trouble shooting*'**.

Loudspeaker and signal cables

Loudspeaker cables and signal cables (inter-connects) have a significant influence on the overall reproduction quality of your sound system, and their importance should not be under-estimated. For this reason **T+A** recommends the use of high-quality cables and connectors.

Our accessory range includes a series of excellent cables and connectors whose properties are carefully matched to our speakers and electronic units, and which harmonise outstandingly well with them.

For difficult and cramped situations the **T+A** range also includes special-length cables and special-purpose connectors (e. g. right-angled versions) which can be used to solve almost any problem concerning connections and system location.

Mains cables and mains filters

The mains power supply provides the energy which your sound system equipment needs, but it also tends to carry interference from remote devices such as radio and computer systems.

Our accessory range includes the specially shielded **'POWER FOUR'** mains cable, ready-to-use **'POWER LINE'** mains cable with integrated shell-type filters and the **'POWER BAR'** mains filter distribution board which prevent electro-magnetic interference from entering your Hi-Fi system. The reproduction quality of our systems can often be further improved by using these items.

If you have any questions regarding cabling please refer to your specialist **T+A** dealer who will gladly give you comprehensive expert advice without obligation. We would also be happy to send you our comprehensive information pack on this subject.

Safety notes

All the components in this device fulfil the currently valid German and European safety norms and standards.

We ensure that our products are of consistently high quality, and meet all specifications, by checking all materials rigorously for quality, using meticulous production methods and subjecting each unit to a fully automatic computer-controlled final inspection.

For your own safety please consider it essential to read these operating instructions right through, and observe in particular the notes regarding setting up, operation and safety.

Installation

The unit must be set up in such a way that none of the connections can be touched directly (especially by children). Be sure to observe the notes and information in the section **'*Installation and Wiring*'**.

Power supply

The power supply required for this unit is printed on the mains supply socket. The unit must never be connected to a power supply which does not meet these specifications. If the unit is not to be used for a long period disconnect it from the mains supply at the wall socket.

Mains leads / Mains plug

Mains leads must be deployed in such a way that there is no danger of damage to them (e. g. through persons treading on them or from furniture). Take particular care with plugs, distribution panels and connections at the device.

Unplugging the mains plug will disconnect the device from the mains for service and repair. Please make sure that the mains plug is easily accessible.

Enclosure openings

Liquid or particles must never be allowed to get inside the unit through the ventilation slots. Mains voltage is present inside the unit, and any electric shock could cause serious injury or death. Never exert undue force on mains connectors.

Protect the unit from drips and splashes of water; never place flower vases or fluid containers on the unit.

Supervision of device operation

Like any other electrical appliance this device should never be used without proper supervision. Take care to keep the unit out of the reach of small children.

Service, Damage

The case should only be opened by a qualified specialist technician. Repairs and fuse replacements should be entrusted to an authorised **T+A** specialist workshop. With the exception of the connections and measures described in these instructions, no work of any kind may be carried out on the device by unqualified persons.

If the unit is damaged, or if you suspect that it is not functioning correctly, immediately disconnect the mains plug at the wall socket, and ask an authorised **T+A** specialist workshop to check it.

Over voltage

The unit may be damaged by excess voltage in the power supply, the *mains circuit* or in aerial systems, as may occur during thunderstorms (lightning strikes) or due to static discharges.

Special power supply units and excess voltage protectors such as the **T+A 'Power Bar'** mains distribution panel offer some degree of protection from damage to equipment due to the hazards described above.

However, if you require absolute security from damage due to excess voltage, the only solution is to disconnect the unit from the mains power supply and any aerial systems.

To avoid the risk of damage by overvoltages we recommend to disconnect all cables from this device and your HiFi system during thunderstorms.

All mains power supply and aerial systems to which the unit is connected must meet all applicable safety regulations and must be installed by an approved electrical installer.

ⓘ Many insurance companies offer lightning damage insurance for electrical equipment as part of their household insurance service.

Approved usage

This device is designed exclusively for reproducing sound and/or pictures in the domestic environment. It is to be used in a dry indoor room which meets all the recommendations stated in these instructions.

Where the equipment is to be used for other purposes, especially in the medical field or any field in which safety is an issue, it is essential to establish the unit's suitability for this purpose with the manufacturer, and to obtain prior written approval for this usage.

T+A equipment which includes a radio or television receiving section must be operated within the stipulations laid down by the Post Office and the Telecommunications authorities in the country in which it is used.

This unit may only be used to receive or reproduce those transmissions which are intended for public reception. The reception or reproduction of other transmissions (e. g. police radio or mobile radio broadcasts) is prohibited.

Approval and conformity with EC directives

In its original condition the unit meets all currently valid European regulations. It is approved for use as stipulated within the EC.

By attaching the CE symbol to the unit **T+A** declares its conformity with the EC directives ***89/336/EEC***, amended by ***91/263/EEC***, amended by ***93/68/EEC***, and also ***73/23/EEC***, amended by ***93/68/EEC*** and the national laws based on those directives.

The original, unaltered factory serial number must be present on the outside of the unit and must be clearly legible! The serial number is a constituent part of our conformity declaration and therefore of the approval for operation of the device.

The serial numbers on the unit and in the original **T+A** documentation supplied with it (in particular the inspection and guarantee certificates), must not be removed or modified, and must correspond.

Infringing any of these conditions invalidates **T+A** conformity and approval, and the unit may not be operated within the EC. Improper use of the equipment makes the user liable to penalty under current EC and national laws.

Any modifications or repairs to the unit, or any other intervention by a workshop or other third party not authorised by **T+A**, invalidates the approval and operational permit for the equipment.

Only genuine **T+A** accessories may be connected to the unit, or such auxiliary devices which are themselves approved and fulfil all currently valid legal requirements.

When used in conjunction with auxiliary devices or as part of a system this unit may only be used for the purposes stated in the section **'*Approved usage*'**.

Disposing of this product

The only permissible method of disposing of this product is to take it to your local collection centre for electrical waste.

FCC Information to the user

Tested To Comply
With FCC Standards

FOR HOME OR OFFICE USE

(for use in the United States of America only)

Class B digital device – instructions:

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different form that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Network Configuration

General Information

The **Music Receiver** can be operated in wired LAN networks (*Ethernet LAN* or *Powerline LAN*) or in wireless networks (*WLAN*).

If you wish to use your **Music Receiver** in your home network, you must first enter the necessary network settings on the **Music Receiver**. This includes entering the network parameters such as the IP address etc. both for wired and wireless operation. If you wish to use a wireless connection, a number of additional settings for the WLAN network also have to be entered.

Please refer to the Chapter **'Glossary / Additional Information' and 'Network Terms'** for additional explanations of terminology relating to network technology.

In the following sections we assume that a working home network (cable network of WLAN network) **with router and (DSL) Internet access is present.**
If you are unclear about some aspect of installing, setting up and configuring your network, please address your queries to your network administrator or a network specialist.

High-resolution audio files via network
The **Music Receiver** can also play back high-resolution 192 kHz / 32-bit audio formats in the FLAC 192/32 and WAV formats. A WLAN connection is not generally sufficient to handle the large quantities of data. If you wish to play back high-resolution audio files via a network connection, please use a cable network exclusively.

Compatible hardware and UPnP servers

The marketplace offers a vast number of routers, NAS devices and USB hard discs made by a very wide range of manufacturers. **T+A** equipment is generally compatible with other makes of machine which bear the UPnP label. A list of devices which **T+A** has checked for compatibility can be found on the Internet at: http://www.taelektroakustik.de/hardware/comp_lan_hw.pdf.

Network Configuration Menu

All network settings are entered in the Network Configuration menu. This menu will vary slightly in appearance depending on the type of your network, i.e. whether you have a wired (LAN) or wireless (WLAN) network.

If in the Network Configuration Menu the entry 'Network IF Mode' is set to 'auto', the **Music Receiver** will check automatically if a LAN connection to a network is present. If a LAN connection is found, the machine will assume that this is to be used, and displays the network configuration menu for LAN networks.
If no LAN network is connected, the **Music Receiver** activates its WLAN module and displays the WLAN configuration menu when you call up the configuration menu. The menu for a WLAN network includes a number of additional menu points. The following sections explain how to use the menu, and the meaning of the individual menu points.

The Network IF Mode 'auto' is the default factory setting.In case of problems in combination with your hardware this automatic function can be switched to a fixed operation mode, e.g. only LAN.

Opening the Network Configuration Menu

First select the **Music Receiver's** Streaming Client function by pressing the SCL button.
Open the configuration menu with a long press on the SRC button on the FM100 remote control handset. You should now see the configuration menu on the front panel screen.

Operating the Menu, Changing and Storing IP Addresses

Use the ▲ / ▼ buttons in the menu to select the network parameter to be changed, and activate the entry with the OK button.

You can now change the setting using the following buttons, depending on the type of setting:

◀ / ▶ button	for simple selection (ON / OFF)
Numeric buttons 0 to 9	for entering IP addresses
Alpha-numeric input	for entering text

When the setting process is complete, or when you have entered the complete address, press the OK button to confirm your action.

Alpha-numeric entry

At certain points, e.g. for entering server names or passwords, it is necessary to input series of characters (strings). At such points you can enter letters, numbers and special characters by repeatedly pressing the numeric buttons on the FM100 remote control handset, as when writing SMS news. The assignment of letters to the buttons is printed below the buttons. Special characters can be accessed using the 0 and 1 buttons:

0	␣ 0 + - * / ^ = { } ( ) [ ] < >
1	. , ? ! : ; 1 \ " ' _ @ $ % & # ~

Use the blue ▲▼ button for toggling between numbers, capitals and lowercase letters. The bottom line of the screen shows which input mode is currently selected.

ⓘ At certain points (e.g. DNS server name) it is possible to enter both an alphanumeric string and an IP address. At these points an IP address should be entered like a string (with separating dots as special characters). In this case an automatic check for valid address ranges (0 … 255) is not carried out.

Closing the Menu

Once you have correctly set all the parameters, select the menu point **'Save and Restart'**, then press the OK button. This action causes the **Music Receiver** to accept the settings, and the machine restarts with the new network settings. After the restart you should see the available network media sources (Internet radio, UPnP-AV server, etc.) displayed in the main menu.

Interrupting the Menu without Storing the Settings

At any time you can leave the network configuration menu without making any changes to the network settings: this is done by pressing the ■ button, which takes you to the menu point **'Exit without saving'**. Pressing the OK button at this juncture interrupts and closes the menu.

The Configuration for a Wired Ethernet LAN or Power-Line LAN connection

Setting the Parameters for a Wired Network

- Connect the **Music Receiver** to an operational network or Power-Line modem using the LAN socket on the back panel.
- Switch the **Music Receiver** on, and select the Streaming Client function by pressing the SCL button.
- Call up the Configuration menu as described above. You should now see the menu reproduced below, displaying the network parameters. In the title line the message **'LAN'** should appear, indicating that the machine is connected to a wired LAN. If you see **'WLAN'** at this point instead, please check your network connection, and ensure that the network is switched on and operational.
- You can now select the individual menu points and adjust them to match your network conditions. The illustration below shows the possible button inputs after each menu point.

Network Parameter (LAN)		Possible entries
MAC	00:0e:9b:cc:a4:35	none
→ DHCP	Off	◄ / ►
Device IP	192.168.0.10	(0 ... 9)
IP mask	255.255.255.0	(0 ... 9)
Gateway IP	192.168.0.1	(0 ... 9)
DNS 1	192.168.0.1	(0 ... 9, A ... Z)
DNS 2	0.0.0.0	(0 ... 9, A ... Z)
Proxy	XXX	◄ / ►
Proxy IP	192.168.0.1	(0 ... 9, A ... Z)
Proxy port	8080	(0 ... 9)
Geräte Name	TA Music Player	(0 ... 9, A ... Z)
Network IF Mode	Auto	◄ / ►
Save and restart	Apply	OK
Exit without saving	Apply	OK

◄ / ►: Switching ON / OFF
(0...9): Numeric input, separating dots are automatically generated; input limited to valid addresses
(0...9, A...Z): Alpha-numeric input and special characters.
IP - separating dots must be entered as special characters.

The parameters illustrated above are only typical values.
Addresses and settings may require different values for your network.

Menu Point	Description
MAC	The MAC address is a hardware address which uniquely identifies your machine. The address displayed is determined by the manufacturer, and cannot be altered.
DHCP state	**ON** If your network includes a DHCP server, please select the ON setting at this point. In this mode an IP address is automatically assigned to the **Music Receiver** by the router. The screen shows only the MAC address and the message DHCP state ON. In this case the address input fields shown in the illustration do not appear in the menu. **OFF** If your network does not include a DHCP server, please select the OFF setting. In this mode you must configure the following network settings manually. Please ask your network administrator for the addresses to be entered for your network.
Device IP	IP address of the **Music Receiver**
IP mask	Network mask
Gateway IP	IP address of the router
DNS 1	Name / IP of the name server (optional)
DNS 2	Alternative name server (optional)
Proxy state	**ON** if a proxy server is present, otherwise **OFF**
Proxy IP	Address of the proxy server
Proxy port	Port number of the proxy server
Device Name	Name of the device which appears in the network
Network IF Mode	Networksetting: only WLAN, only LAN, or automatic setting
Save and Restart	Stores the network parameters, and restarts the **Music Receiver** with the new settings.
Exit without saving	Closes the menu: data already entered is discarded.

The Configuration for a WLAN connection

Setting the Parameters for a Radio Network

- Connect the WLAN aerial (supplied) to the **Music Receiver's** WLAN aerial socket, and ensure that no cable is attached to the **Music Receiver's** LAN socket.
- Switch the **Music Receiver** on, and select the Streaming Client function by pressing the SCL button.
- Now call up the Configuration menu as described above: with a long press on the SRC button. You should now see the menu reproduced below, displaying the network parameters.

Network Parameter (WLAN)		
MAC	00:0e:9b:cc:a4:35	
→ WLAN configuration	start	none
DHCP	Off	◄ / ►
Device IP	192.168.0.10	(0 ... 9)
IP mask	255.255.255.0	(0 ... 9)
Gateway IP	192.168.0.1	(0 ... 9)
DNS 1	192.168.0.1	(0 ... 9, A ... Z)
DNS 2	0.0.0.0	(0 ... 9, A ... Z)
Proxy	XXX	◄ / ►
Proxy IP	192.168.0.1	(0 ... 9, A ... Z)
Proxy port	8080	(0 ... 9)
Geräte Name	TA Music Player	(0 ... 9, A ... Z)
Network IF Mode	Auto	◄ / ►
Save and restart	Apply	OK
Exit without saving	Apply	OK

Searching for and Selecting the Network

First select the menu point **'WLAN configuration start'**, and activate it by pressing the OK button.
A menu appears showing these points:

- Rescan - initiates new search for accessible radio networks
- Set manually - adding a WLAN manually

After a brief delay the networks present in the vicinity are listed on the screen.

List of WLANs
→ Rescan
Set manually
XXXXX (name of network)
(1/3)

You can use the 'Rescan' function to start a new search for networks present in the vicinity.
Please select one of the networks located, and activate it by pressing the OK button.

Entering the Password (for encoded networks)

WLAN configuration	
→ Passphrase	.....
Save WLAN settings	Apply
(1/2)	

If your network is encoded, the window illustrated above now appears. Please enter the network password and confirm the entry by pressing OK. Now select the point 'Save WLAN settings' and confirm with OK.

ⓘ If a WEP code is used, the password must be entered as a hexadecimal code (0 - 9, A - F).

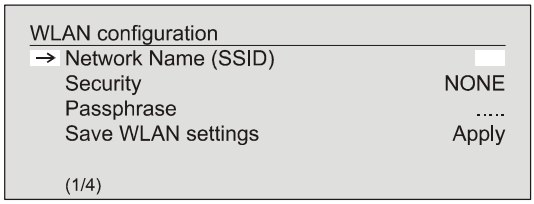
Please enter the settings for the remaining network parameters as described earlier in the section entitled **'Setting the Parameters for a Wired Network'**.

Storing Network Settings and Restarting

Finally select the menu point 'Save and Restart', and press the OK button; this action accepts the settings, and restarts the **Music Receiver** with the new settings.

Special case:
Manual Network Entry

The **Music Receiver** automatically searches for accessible radio networks, and lists them when you call up the menu point 'WLAN Configuration'. However, the **Music Receiver** can only locate networks which broadcast their SSID network identity. For security reasons many radio networks do not transmit the SSID (if you are not sure about this, ask your network administrator). In such cases the network cannot be found and displayed automatically, i.e. it must be set up manually. This is the purpose of the menu point 'Set Manually'. If you select this menu point, you will see the input window reproduced below; you can enter the parameters for your network at this point.



After successfully entering all the data, please select the point 'Save WLAN Settings', and confirm by pressing the OK button. Your **Music Receiver** now accepts the data you have entered relating to the WLAN network, and moves on to the subordinate menu in which you can set the remaining network parameters, as described earlier in the section entitled **'Setting the Parameters for a Wired Network'**.

You can now leave the Configuration menu by selecting the menu point 'Save and restart'.

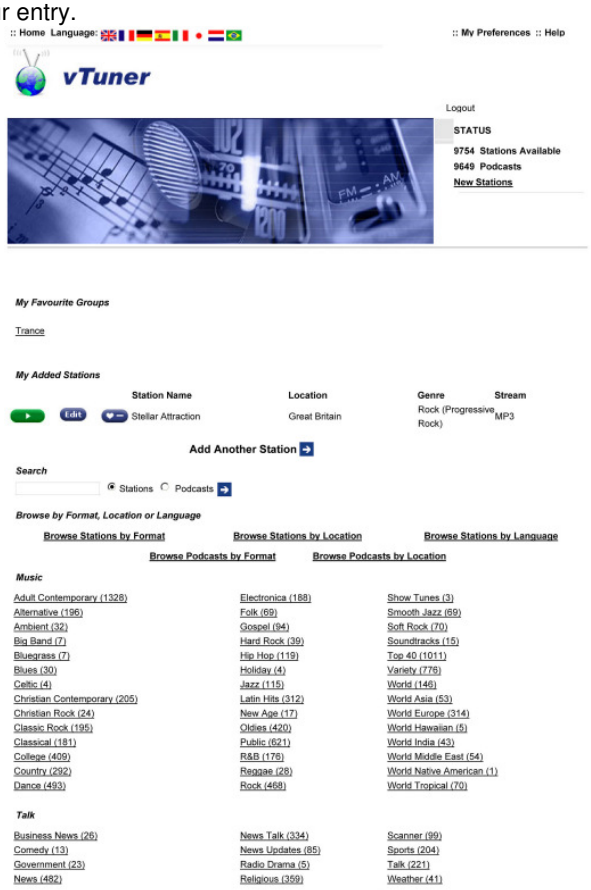
The vTuner Premium Service

The list of radio stations displayed by your **Music Receiver** is prepared by an Internet Service Provider, and transferred to your machine by data transfer. You can expand and edit the 'Favourite Groups' and 'Added Stations' list to suit your preferences via the Internet portal of your service provider, using the main menu point 'Internet Radio'. This is the procedure:

Open your Internet browser and call up the following web address:
http://ta.vtuner.com

The first time you register you should enter the MAC address (ID#) of your **Music Receiver**; the MAC address provides unique identification of your machine. The MAC address can be found in the Configuration menu (hold the SRC button pressed in, during Streaming Client operation), and consists of six pairs of characters, e.g.: 00:0e:9b:cc:a4:35. You do not need to enter the separating colons when you enter this data. MAC addresses are in hexadecimal format, i.e. the address consists only of the letters a to f, and the numbers 0 to 9.

Confirm your entry.



You must register with vTuner in order to be able to use the service; you can register via your e-Mail address and a password. Please follow the instructions stated by the service provider.

Now you can select radio stations from the comprehensive inventory provided by vTuner, and store them in lists. The lists are transferred to your **Music Receiver** automatically via your Internet connection. Shortly after you have edited lists on the vTuner page, or stored new stations, you will find that they are available on your **Music Receiver**.

Notes regarding Internet Radio:

- Not all stations are always accessible
  - Not all stations transmit 24 hours
  - Stations are no longer accessible
  - Capacity exhausted
- Transmission breaks off
  - (Internet) network problems
  - Server capacity exhausted

Setting up new Internet Radio Stations

On the vTuner Internet site you can also set up new stations which are not (yet) included in the Select lists. This is accomplished by registering with vTuner and logging on. Click on the point **'**My Added Stations**'**. An input mask appears in which you can enter the data for your station. After a brief period you will be able to access the newly set-up station via the menu system of your **Music Receiver**. You will find the station under Internet Radio / Added Stations.

Finding a Station URL

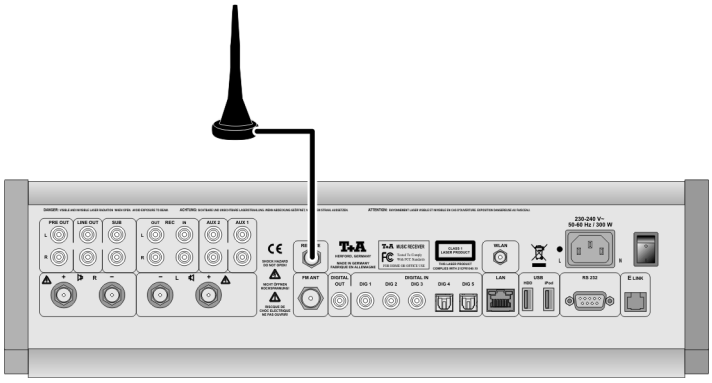
ⓘ You require the URL (Internet address) of any radio station you wish to set up on the vTuner service. You will generally find the URL on the station's website.
Another method of finding the URL is to search for it using an Internet searching service such as Shoutcast (www.shoutcast.com). Once you have found your station, click on the 'Tune In' switch: this will normally open your media player, and the station should play. In most cases you can set Media Player to display the 'Streaming Properties'. For example, using the popular Winamp Player, simply right-click on the entry for the currently playing station in the player's Playlist window. A menu now opens, and clicking on the point 'View File Info' opens an information box which displays the streaming properties including the URL.

FD 100 Radio Remote Control

The **Music Receiver** can be controlled remotely using the **FD 100** bi-directional radio remote control handset if a Gateway module is installed; this is available as an optional extra. The **FD 100** features an integral full-colour screen which provides a convenient means of controlling virtually all the Music Receiver's functions, even when there is no direct line-of-sight contact with it. The handset can also display information relating to the selected source or the medium currently playing.

Connecting the radio aerial

Since the **FD 100** operates by a radio link, an aerial must be connected to the **Music Receiver**. This is plugged into the socket on the **Music Receiver** marked 'Remote ANT'. The aerial should be free-standing in order to obtain maximum effective range.



Pairing the FD 100

Before the **Music Receiver** can be controlled using the FD 100, the remote control handset must first be registered to the **Music Receiver**. This process is known as pairing, and only has to be carried out once. The procedure is as follows:

- Press the SYS button on the **Music Receiver** to call up the Configuration menu, then select the 'FD 100 pairing' menu point using the ▼ button.
- To confirm the pairing process of the **FD 100,** press the OK button until the menu entry changes to 'waiting for FD 100'. (the function remains active for thirty seconds).
- Locate the SYS button on the **FD 100** and hold it pressed in to open the **FD 100's** System Settings menu.
- Now select the 'Start pairing' point, and press the OK button: the remote control handset automatically seeks the **Music Receiver**.
- Once the device is found, you will see in the display header the on-screen message 'Pairing successful'. At the same time changes the menu entry of the **Music Receiver** to 'Done'. If you wish, you can change the name of the device at this point (eg. 'Living room').
- Confirm the name with the OK button.
- For faster access the **Music Receiver** can also be assigned to a Hotkey; this is the next step (see **FD 100** operating instructions).
- Select one - or optionally none - of the 'F' buttons, and confirm your choice by pressing the OK button.
- The **FD 100** is now paired with the **Music Receiver**, and is ready for use.

For detailed information on using the **FD 100** please refer to the operating instructions supplied with the remote control handset.

The **Music Receiver** can be controlled by the T+A App 'TA Control' too.
For further information please visit our homepage
www.ta-hifi.com/app

Trouble shooting

Many problems have a simple cause and a correspondingly simple solution. The following section describes a few difficulties you may encounter, and the measures you need to take to cure them. If you find it impossible to solve a problem with the help of these notes please disconnect the unit from the mains and ask your authorised **T+A** specialist dealer for advice.

Machine does not switch on (blue LED does not light up).	**Cause 1:** Mains lead not plugged in correctly. **Remedy:** Check connection, push connector in firmly.
	Cause 2: Mains switch on the back panel not switched on. **Remedy:** Switch the mains switch on.
No output signal to the loudspeakers; the screen displays the message "PROTECT" or "OVERHEAT" (PROTECTION circuit has been triggered).	**Cause 1:** The PROTECTION circuit has tripped due to overheating or overloading. **Remedy:** Reduce volume and wait for about 20 seconds. If the unit does not switch on again automatically, it has become too hot and should be left switched off for a few minutes to cool down.
	Cause 2: Short-circuit in the speaker leads, e. g. stray wire ends touching at the speaker terminals, or mechanical damage to the cables. **Remedy:** Check speaker leads and terminals, twist wire ends together neatly, replace damaged cables.
	Cause 3: Overloading due to poor earth contact. **Remedy:** Disconnect input cable and wait to see if the amplifier switches back on again; if so, check the input lead and replace if necessary.
Unit switches off repeatedly at fairly high volume levels.	**Cause 1:** Overheating due to heat build-up. **Remedy:** Set up the unit in such a way that an unobstructed flow of cooling air is guaranteed.
	Cause 2: Overheating through insufficient loudspeaker impedance. **Remedy:** Use only loudspeakers of at least 4 Ω impedance (DIN rating). That means a minimum impedance of > 3.2 Ω.
Flat sound image, insufficient bass response.	**Cause:** The loudspeaker cables are connected with reversed polarity. **Remedy:** Check the speaker connections at the loudspeakers and at the amplifier's speaker terminals; correct if necessary.
Device switches itself off automatically. Switching on again causes the the machine to switch off again	**Cause:** Extreme overheating, or short-circuit at the loudspeaker outputs. **Remedy:** Check for possible short-circuits at the loudspeaker terminals and leads. Allow the machine to cool down for about twenty minutes, then attempt to switch it on again. If this is still unsuccessful, an internal fault could be present (e.g. blown fuse). In this case please contact your specialist **T+A** dealer.
Loud humming noise from the loudspeakers.	**Cause:** Poor contact between the Cinch plugs and sockets, or a faulty Cinch cable. **Remedy:** Please check all connections and cables thoroughly.

Tuner

Whistling or whispering noises from the speakers.	**Cause:** The antenna lead is routed too close to a mains, remote control or audio signal cable. **Remedy:** Move the leads so that they are spaced well apart. Use the domestic (loft or outside) antenna or a cable connection.
The RDS station name does not appear in the display.	**Cause 1:** The station is not broadcasting **RDS** information.
	Cause 2: Reception is poor, interference is severe, or the *field strength* (signal strength) is low. **Remedy:** Select only those stations which can be received with a strong signal: hiss-free and without interference.
The unit can be operated normally, but very few stations or none at all can be picked up.	**Cause:** The antenna system or antenna cable is faulty. **Remedy:** Check the antenna lead for good contact at the antenna socket (at the wall) and in the back of the tuner. As a test, try using the system with a trailing antenna. If you can now receive stations reasonably well, we recommend that you call out an expert antenna technician to check your antenna system.

CD player

The screen displays the message 'No Disc' when you close the CD drawer.	**Cause 1:** CD not inserted correctly. **Remedy:** Place CD centrally in the drawer, printed face up.
	Cause 2: CD dirty. **Remedy:** Clean disc and insert again.
	Cause 3: CD damaged in the Table of Contents (*TOC*) area. **Remedy:** No remedy; the CD is unusable.
	Cause 4: The CD player has become very cold (e. g. in transit) and condensation has formed on the laser sensor optics. **Remedy:** Allow the unit to warm up for about an hour in a warm, well ventilated location.
CD playback stops or 'jumps'.	**Cause 1:** CD damaged or dirty. **Remedy:** Clean CD. A damaged CD cannot be repaired!
	Cause 2: The CD uses a copy protection system which does not conform to the CD-Audio standard (Red Book Standard) **Remedy:** Take back the CD to the dealer and ask for a proper CD according to the general CD standard.

Streaming Client

The streaming client can not connect to a network. **On the display the indication 'SCL Connecting...' is displayed.**	**Cause 1 (cable LAN):** Network cable not properly connected **Remedy:** Connect network cable, check connection to router
	Cause 2 (wireless LAN): WLAN antenna not connected or placed in a location with bad reception quality **Remedy:** Connect WLAN antenna properly and find a location with good reception quality. Set the transmission power output of your WLAN router to maximum. Try to establish a network connection first in a location close to the WLAN router. If this succeeded try to connect to WLAN from a more remote location. Experiment with antenna position and try to find a location with better reception quality.
	Cause 3 (wireless LAN): WLAN reception qualiy bad (low field strength). Possibly too much attenuated by walls/ceilings on the transmission path. **Remedy:** Optimize location of receiver and transmitter antennas. **Alternative:** If transmission problems persist a so called ‚Power Line' network might be good alternative to establish a good and stable network connection. The best, safest and most secure network however will always be a cable LAN network.
	Cause 4: Netzwork parameters not properly configured. **Remedy:** Configure the network parameters correctly (see chapter **'Network configuration'**).
	Cause 5 (operation without network connection): For proper operation the **Music Receiver** needs at least one properly connected network device. This can be a LAN or WLAN network or a USB storage device. **Remedy:** If the **Music Receiver** shall be operated without network (LAN / WLAN) please connect at least a USB stick.
The message 'Track not found' is displayd	**Cause:** The music file on the storage device or on the music server was deleted or the internet radio station is not available at the moment. **Remedy:** Choose an other music title or radio station. If the station or title is not available any more it should be deleted from the Favourites List (if stored there).
The message 'Format Error' is displayed	**Cause:** The title is stored / the radio station is transmitting in a format that can not be decoded by the **Music Receiver**. **Remedy:** Choose an other title or station.
The message 'network problems – restarting' is displayed	**Cause:** Network problems in your home network or on the internet occurred; the connection was interrupted. **Remedy:** When encountering a network problem or interruption the **Music Receiver** will re-start the network communication. After re-start please choose a music title or internet radio station and start playback.

Transmission interruptions occur when listening to internet radio stations.	**Cause 1:** The capacity of the internet radio station‘s server is at it‘s limit. **Remedy:** Choose a different station.
	Cause 2: Network problems occurred. **Remedy:** Check your network (see above).
Some internet radio stations can not be received	**Cause:** The internet radio station has been switched off, it transmits only at certain hours of the day or it has changed ist internet address. **Remedy:** Try to get information from the website of the station regarding transmission hours ans internet address (URL). Try to establish a connection to the station at a later time.
Bad sound quality bei certain internet radio stations	**Cause:** The station transmits with a low audio bandwidth (low bitrate). **Remedy:** Use stations transmitting at least at 128 kBit/s. This is the lowes recommended bitrate for adequate sound quality. For good sound quality we recommend high bitrates like 320 kBit/s
USB Storage device is not recognised	**Cause 1:** The storage device (especially USB hard discs without separate power supply) draws more electrical current from the USB interface than is permitted by the USB standard. **Remedy:** Only use USB storage devices that conform to the USB standard or use storage devices with own power supplies.
	Cause 2: The storage device is not formatted with an appropriate file system. **Remedy:** The **Music Receiver** accepts storage devices with FAT16 or FAT32 file systems. **Note:** For big music archives we recommend to use a NAS (network attached storage) device with a UPnP-AV server to which the **Music Receiver** will connect via your home network.
Problems occur with high-resolution audio formats (HD audio) (FLAC and WAV 192/32).	**Cause:** The **Music Receiver** is receiving audio data via a WLAN connection. WLAN con-nections do not provide reliable quality, and in most cases are not adequate for HD audio. **Remedy:** If you want to play back HD audio formats via a network connection, please use a LAN cable network.

iPod

The iPod is not recharged.	**Cause:** An iPod connected to the USB socket is only charged if the **Music Receiver** is switched on. **Remedy:** To recharge the iPod, please switch on the **Music Receiver**.

Glossary / Supplementary Information

Playbackprogram

The **Music Receiver** gives the user the opportunity to seek particular tracks on a CD for playback, to store this selection in a playback program and play it, or to record it to tape.

CD

Compact Discs (CD) are digital data media which need to be handled carefully. These are the basic rules:

- The surface of a CD should only ever be cleaned with a soft dry cloth. Never wipe it in a circular motion, i. e. along the tracks.
- Never use petrol, paint thinners, disc cleaners or similar materials on compact discs.
- CDs must be handled carefully in order to avoid serious damage to the surface. Severely scratched surfaces, writing on the disc or applying self-adhesive labels may result in the CD player being unable to read the data.
- CDs should not be heated or bent. This means that they should be stored in a position and attitude which meet these requirements.

Oversampling

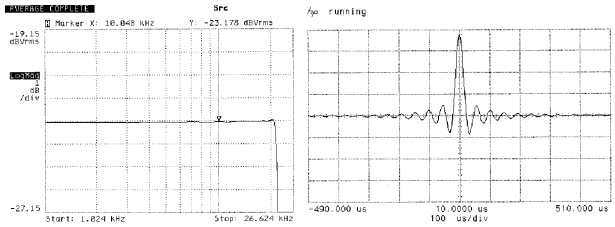
Digital audio signals are stored with a certain sampling rate of for example 44.1 kHz - i. e. for each second of music 44.100 sampled values are available for each channel. In the **Music Receiver** the digital audio signals are converted (upsampled) to a much higher sample rate (352,8 or 384 kHz) before they are converted to analog signals by the D/A converter. This process delivers a very much better, more finely graduated signal to the converter, which can then be converted with correspondingly higher precision.

For the upsampling of the digital audio signals different algorithms are implemented in the **Music Receiver**. You can choose between these algorithms during music playback.

The different algorithms are described in more detail below.

OVS 1 (Standard FIR filter)

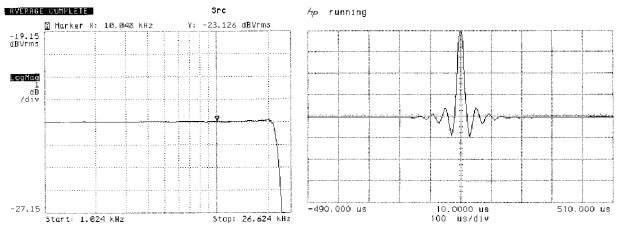
The long FIR filter is the standard oversampling process in digital technology, offering extremely linear frequency response, very high damping, linear phase charac-teristics and constant group delays. The disadvantage is the pre- and post-echoes which are added to the signal. These „time domain errors“ tend to affect the music signal’s dynamics, precision and naturalness, and reduce spatial orientation.



Frequency response and transient characteristics of the long FIR filter

OVS 2 (Impulse optimised filter)

By shortening the filter length (lower number of filtercoefficients) the time domain errors are reduced resulting in a better impuls response (less filter ‚ringing‘) Acoustically such a shorter filter will have a slightly less accurate frequency response but higher dynamics and better imaging.



Frequency response and transient characteristics of the short FIR filter

E LINK

Control interface for remote control of **T+A** systems. The CD player / **Music Receiver** receives the infra-red remote control signals and passes then on to the power amplifier and to the source devices.

Field strength

The electrical field strength is a measurement of the level (strength) of the radio signal supplied by the antenna. In general terms, the higher the field strength of the tuned station, the better the reception quality. Signal field strength is determined primarily by the following factors:

1. Distance from radio transmitter
2. Obstacles (mountains etc.) between transmitter and receiver
3. Transmitter output power
4. Quality and direction of the receiver antenna system.

Point 4 is of crucial importance here. It is impossible to obtain good reception with a poor aerial system.

Your specialist **T+A** dealer will be glad to advise you on the subject of installing or improving your aerial system, taking your specific local reception conditions into account.

FM
= Frequency Modulation

All FM radio transmitters use the **'FM'** method of modulation. This technology provides maximum possible sound quality and interference suppression.

Cable Network

When the **Music Receivers**'s tuner was being developed the requirements of the European cable network were given high priority. The tuner copes very well with excessive signal levels, and its high selectivity avoids many of the problems involved with cable operation, without any reduction in reproduction quality.

MIX

In MIX-Mode (Shuffle) the titles of a CD or the titles of a program are played back in a random order.

Muting =
Hiss suppression

The **Music Receiver** features automatic hiss suppression which cuts out the annoying hissing sound between radio stations, and suppresses very weak stations which cannot be received with reasonable quality.

Preset
= station memory

The **Music Receiver** can store all the settings for stations, any of which can be recalled simply by pressing a button.

RDS
= Radio Data System

Many radio stations broadcast supplementary digital information simultaneously with the programme. The **Music Receiver** is equipped with an RDS decoder, and displays the station name of RDS transmitters in plain text on its alpha-numeric screen. This is a great advantage when searching for particular stations.

SINGLE CD

A Single CD‘ is a CD with smaller diameter and a shorter play time. The **Music Receiver** can play back CD singles. Please insert these discs into the depression at the center of the disc tray.

Standby

The **Music Receiver** can be switched on from the Standby state from the remote control handset.

TOC

The **TABLE OF CONTENT** of a CD is located at the inner diameter of the disc and contains important information about the structure of the disc. If the TOC-section of a CD is damaged or covered by fingerprints etc. the CD can not be played back properly.

TRACK

Track is the term for a single item or piece of music on a CD. The tracks and their individual length are stated on the CD sleeve.

NETWORK TERMINOLOGY

General information

The Switch ensures that the individual components within a network are connected correctly. This is only possible if it can identify each device within the network unambiguously; this is the reason why every component is assigned a form of “house number” (IP address). The IP address consists of four number blocks each containing three digits separated by dots (e.g. 192.168.1.1).

Each of the individual number blocks may contain values between 1 and 254 (the values 0 and 255 are reserved for certain special functions, and should therefore not be used). However, if the network is to operate reliably, the network owner should only select addresses designed for home network use - i.e.: the first two number blocks should always be 192.168.xxx.xxx; the third block can be selected without restriction within the above limits (but should be the same for all devices on the network), and the fourth block must distinguish each device uniquely (e.g.: **Music Receiver** 192.168.001.001, NAS: 192.186.001.002, PC: 192.168.001.003, ...).

If this local network is to include Internet music sources (Internet radio) as well as physical devices, then the **T+A Music Receiver** must have access to the Internet. This facility is provided by a device such as a router with connection to the DSL network. This router is also a constituent part of the network, and is assigned its own IP address. The **T+A Music Receiver** must also be informed of the address of the router (Gateway) to enable it to gain access to the outside world.

Please ensure that the first three blocks of the Device IP, Gateway IP and DNS 1 share the same address space (e.g. 192.168.0.xxx). The fourth block assigns a unique address (house number) to the components in the local network. This number must not be present more than once in the local network.
The Device IP mask should always be assigned the address 255.255.255.0.

DNS

The Domain Name System (DNS) is one of the most important services on the Internet. Its primary task is to convert “Internet addresses”, such as www.taelektroakustik.de, into the associated IP address. In most home networks the router carries out the DNS function.
If you decide to configure your network manually (without DHCP), then simply enter the address of your router as the DNS address when configuring the network.

Ethernet-LAN

Wired network. Interference-free network technology, with the drawback of having to deploy a network cable.

Gateway

The computer or router in your network which is responsible for managing data traffic between your home network and the outside world (i.e. the Internet).

Client

Network device which obtains data from the network, decodes it and converts it into, for example, analogue music signals which can then be reproduced via an amplifier and loudspeakers. Streaming Clients also contain functions for displaying media content, and for navigating on the Internet or servers.

DHCP

DHCP is an abbreviation of **D**ynamic **H**ost **C**onfiguration **P**rotocol. The primary purpose of DHCP is to enable Clients to obtain your network configuration automatically from a server or router.

IP-Adresse

Network address. Each device in the network requires an IP address at which it can be accessed, and by which it is unambiguously identifiable. No individual network address may be present more than once. This is important if you are entering network addresses manually. If the addresses in your network are assigned by DHCP, you do not need to worry about IP addresses at all, as the DHCP server manages the addresses automatically without your intervention.

NAS
(Network Attached Storage)

Network storage facility. This is generally a very large-capacity (> 200 GB) storage device to which other devices have access. If the NAS server includes a UPnP-AV server service, then the **Music Receiver** has access to media files stored on the NAS, and can play them back.

Powerline-LAN

In a Power-Line LAN data is transferred via the existing mains power cabling. Devices known as “Power-Line modems” are required at the transmitting and receiving end. In most cases Power-Line offers relatively problem-free data transfer with adequate data rates for audio streaming. We recommend Power-Line modems with bit rates of 85 or 200 Mbit/s.

Proxy server

A Proxy or Proxy server is a computer in the network which is capable of carrying out data transfers faster and more efficiently, and can increase security through the use of access control mechanisms. Most home networks do not include a proxy server. In this case there is no need to enter a Proxy address when configuring the **Music Receiver** network.

Router

Central network device which creates and manages the connections between the network devices. In most networks the router also assumes the function of Gateway to the outside world.

Server

Network device which provides data and services for other devices in the network. For example, a UPnP-AV server typically stores audio / video data, and makes it available to other devices (the Streaming Clients). Many UPnP-AV servers also offer functions such as cataloguing, and easy identification of media content using criteria such as artiste, album name, genre, etc.

UPnP-AV

Network protocol that makes media files available on the home network.

On PCs and NAS storage devices a UPnP-AV server software must be installed to enable the **Music Receiver** to access media files stored on these devices.

Examples for UPnP-AV server software compatible with the **Music Receiver**:

Windows:

- **Twonky Media Server**
  http://www.twonkyvision.de/
- **Windows Media Receiver 11**
  http://www.microsoft.com/windows/windowsmedia/de/default.aspx

Linux:

- **Mediatomb**
  http://mediatomb.cc/
- **GmediaServer**
  http://www.gnu.org/software/gmediaserver/

WLAN
(also W-LAN, Wireless LAN)

Radio network. The network is connected by means of radio waves operating in the 2.4 GHz frequency band. Radio networks are easy to install as no cables have to be deployed, but they are often problematic and unreliable - especially when the transmission distances are substantial. Power-Line networks, which can also be installed without separate cabling, are a better choice in many situations. In every case the deployment of a network cable is the most reliable and problem-free technology for data transfer.

Compatible hardware and UPnP servers

The marketplace offers a vast number of routers, NAS devices and USB hard discs made by a very wide range of manufacturers. **T+A** equipment is generally compatible with other makes of machine which bear the UPnP label. A list of devices which **T+A** has checked for compatibility can be found on the Internet at: http://www.taelektroakustik.de/hardware/comp_lan_hw.pdf.

Maintenance

Changing the batteries:

To open the battery compartment disconnect the latch by pressing in, then lift the cover out. Remove the old cells and fit two new dry cells of the **LR 03 (MICRO)** type in the battery compartment, taking care to fit them with correct polarity. Please remember that **all the cells must be replaced** at the same time.

⚠ **Caution!**
Batteries shout not be exposed to excessive heat like sunshine, fire or the like.

ⓘ **Disposing of exhausted batteries:**

Exhausted batteries must never be thrown into the household waste! They should be returned to the battery vendor (specialist dealer) or your local toxic waste collection point, so that they can be recycled or disposed in a proper way. Most local authorities provide collection centres for such waste, and some provide pick-up vehicles for old batteries.

Care of the unit:

Always disconnect the unit from the mains supply before cleaning it.

The surfaces of the case should be wiped clean with a soft, dry cloth only.

Never use solvent-based or abrasive cleaners!

Before switching the unit on again, check that there are no short-circuits at the connections, and that all cables are plugged in correctly.

Software update

Software update generally:

Software updates keep your **Music Receiver** up-to-date. They bring new optimisations like faster opearation and new features which were not available at the time the device was produced.

ⓘ It may occur that after a software update some of your user defined settings like network parameters or favourite stations are lost and have to be restored after the update**.**

Automatic software update:

If the **Music Receiver** is connected to the internet it will priodically check if a new software version is avalable. In case a new version is found, your MusicReceiver will inform you on its display at the time it is switched OFF.

If this happens you have three choices which can be selected by the ◁ and ▷ buttons. A press on the OK button will execute your selection.

① "Yes" ->The update will be downloaded from the internet and installed. The MusicReceiver will switch OFF automatically after the update is complete.

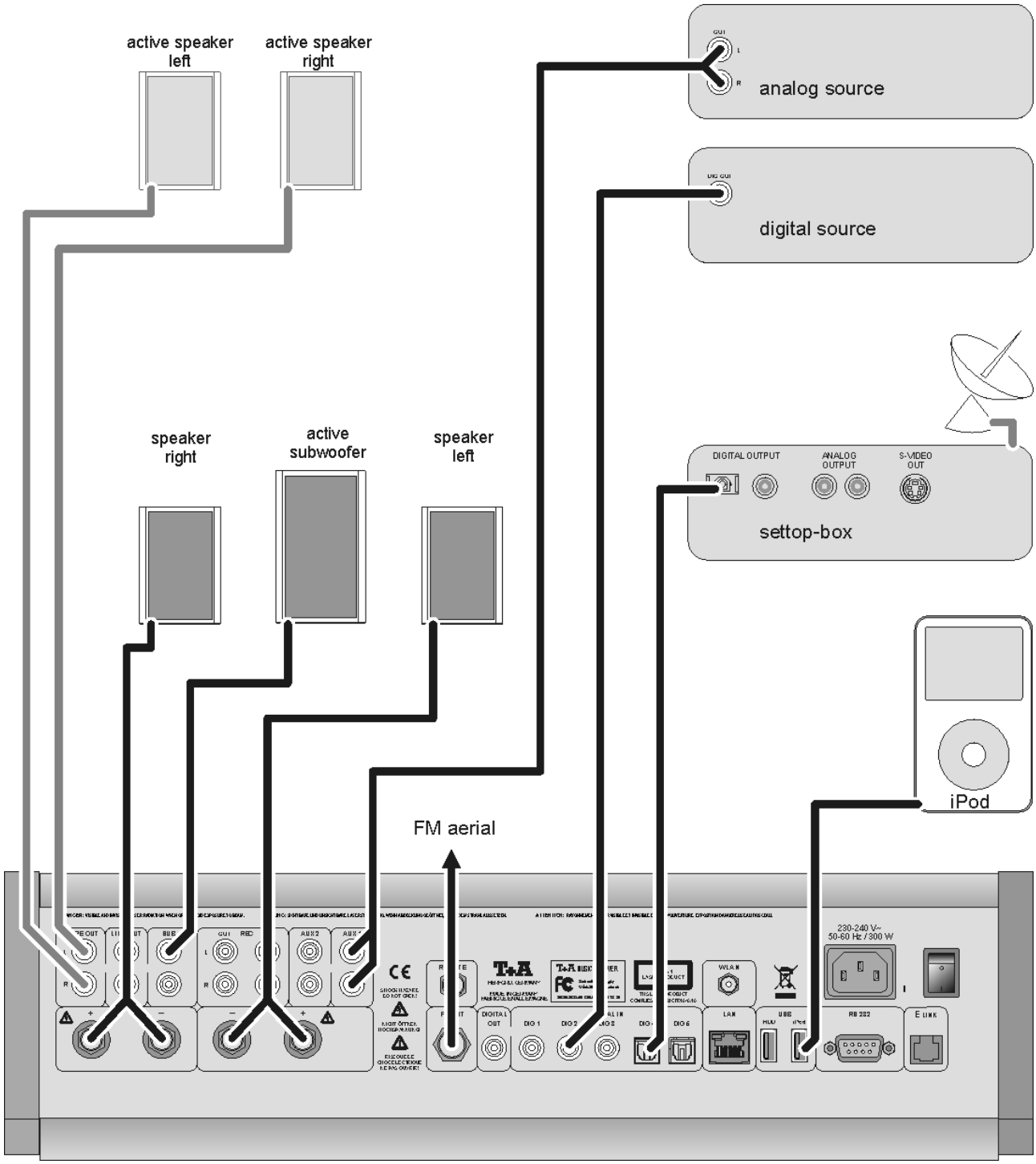
② "Later" ->The update information will be automatically displayed again after a while giving you the possibility to carry out the update at a later time.

③ "No" ->This software update is ignored and not installed. You will be asked again when the next software version is available.

Anhang
Appendix

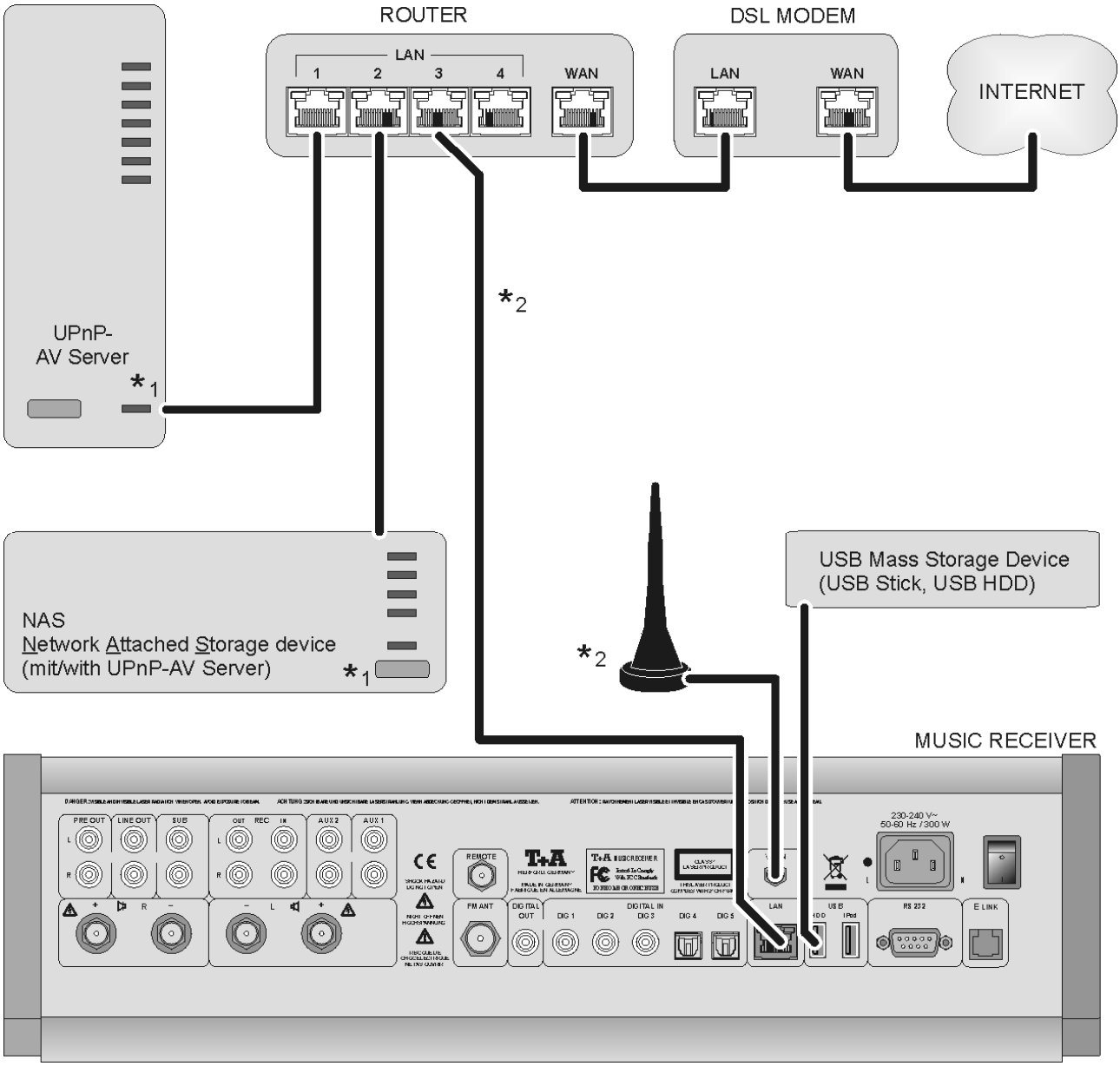
Appendix A

Wiring diagram



* As an alternative to passive loudspeakers it is possible to use active speakers, which are connected to the pre-amplifier output.

External output stages can also be connected to the pre-amplifier output.
The volume control for the pre-amplifier output operates in parallel with the left and right output stages.



Attention!

A properly set up home network with router must be installed and in operation to use the **Music Receiver**.
For the use of internet radio a DSL access to the internet is needed.

For questions regarding setting up your network and internet connection please ask your system administrator or any network specialist.

*1 Musik Server with UPnP-AV server software installed
*2 Connection either via Cable-LAN oder Wireless-LAN; FLAC / WAV 192/32 via LAN only

Appendix B

Specification

Nominal output per channel		2 x 160 Watt into 4 Ohm, 2 x 94 Watt into 8 Ohm
Peak output		2 x 220 Watt into 4 Ohm, 2 x 150 Watt into 8 Ohm
Frequency response		+/- 3 dB: 1 Hz – 60 kHz
Total harmonic distortion		< 0,01 %
Intermodulation		< 0,01 %
Channel separation		> 80 dB
Inputs	analogue	3 x high-level 250 mV – 2,5 V / 20 kOhm
	digital	SP/DIF (16 - 24 Bit): 3 x co-ax (192 kSps), 2 x TOS-Link (96 kSps) 2 x USB for iPod and hard disc
Outputs	analogue	Pre-amplifier otuput, Line Out, Tape Out (Stereo 2,5 V_{eff} / 22 Ohm) Headphone > 50 Ohm
	digital	1 x co-ax, IEC 60958 (CDDA/LPCM)
CD player		CD/DA, CD-R, CD Text
Streaming Client formats		MP3, WMA, AAC, OGG-Vorbis, FLAC (192/32 über LAN), WAV (192/32 via LAN), AIFF, ALAC
Playlists		PLS, M3U, ASX (if supported by server)
Supported media servers		UPnP 1.1, UPnP AV, Microsoft Windows Media Connect Server (MS DRM10), vTuner Internet Radio Service, DLNA compatible servers
Standards		DLNA UPnP, MS-DRM 10, Designed to play Plays for sure guidelines
Features		Web server (remote PC Web browser control) vTuner, Internet Radio Station database (automatic updates over Internet)
Interfaces		USB 2.0 for hard disc, iPod with control system and display, LAN, W-LAN, RS 232 update and control interface
Radio		FM Radio 87,5 – 108 MHz, sensitivity 2 µV, overload damping > 40 dB, RDS functions, station lists, station memory (presets)
D/A converter		32-bit, 384 kHz Sigma Delta, 8-times oversampling, double-mono
Analogue filter		Phase-linear 3rd order Bessel filter, 100 kHz
Frequency response		2 Hz – 20 kHz 44.1 kSps 2 Hz – 22 kHz 48.0 kSps 2 Hz – 40 kHz 96.0 kSps 2 Hz – 80 kHz 192.0 kSps
Total harmonic distortion		< 0,001 %
Signal : noise ratio		109 dB
Channel separation		106 dB
Accessories		Incl. System remote control handset FM100, W-LAN aerial
Mains socket		100 – 240 V, 50 / 60 Hz
Power consumption	max.	300 Watt
Standby		< 1 Watt
Optional accessories		iPod docking station, FD100 bi-directional radio remote control handset with screen

We reserve the right to alter specifications.

T+A elektroakustik GmbH & Co. KG

Herford

Deutschland * Germany