

T+A

USER MANUAL

K2 M

K2

Welcome.

We are delighted that you have decided to purchase a **T+A** product. With your new **K2** 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.

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.

All sub-assemblies and mains sections are designed to be extremely efficient. A European EUP directive will come into force in future, relating to energy efficiency and the avoidance of greenhouse gases which are harmful to the climate; the directive's requirements will be very stringent, but our equipment satisfies them in full even today.

Our range of accessories includes high-quality cables and connectors.

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 **K2**.

T+A elektroakustik GmbH & Co KG



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"Made for iPod" means that an electronic accessory has been designed to connect specifically to iPod and has been certified by the developer to meet Apple performance standards.

Apple is not responsible for the operation of this device or its compliance with safety and regulatory standards.

About these instructions

The **K2** is available in two versions: the **K2 M** with Streaming Client module, and the **K2** without network capability; these instructions apply to both versions. The 'Streaming Client' chapter and the network settings are irrelevant to the **K2** model.

The **K2** amplifier, with its five output stages, can be used in various ways: it can provide sound to two associated zones in a single room, or to two separate rooms.

It is also possible to use the **K2**'s integral output stages for audiophile bi-amping. For more details on these possible modes of operation please refer to the appropriate chapters.

All the controls and functions of the **K2** 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 **K2 M** to your home network.

For newcomers to networks we have prepared explanations of some of the important terms used in this technology and other background information in the Chapter '**Network Terminology**'.



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).

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Symbols used in these instructions



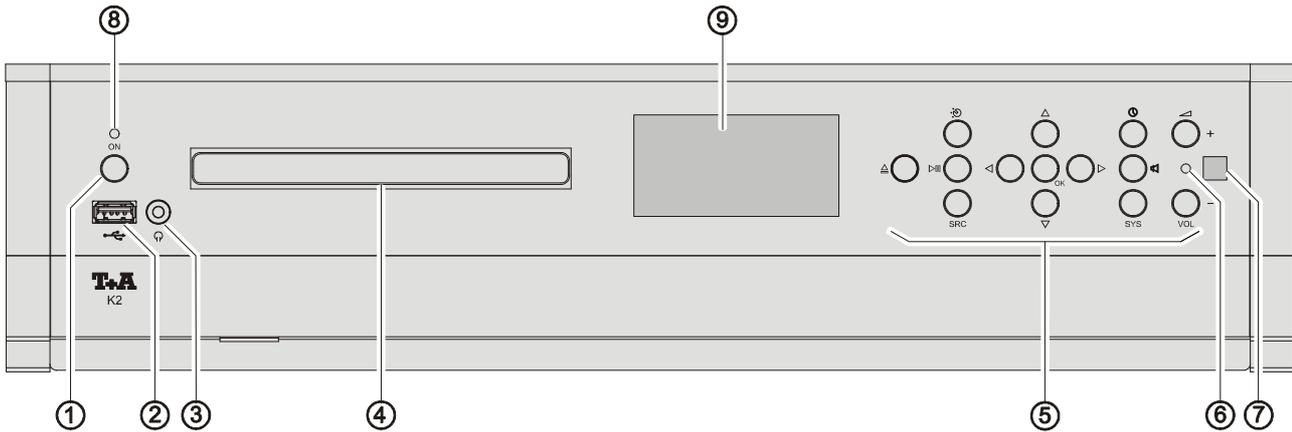
Caution!

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.

K2 Multi Source System



Controls

All the **K2**'s important functions can be operated using the buttons on the machine's front panel. Direct operating buttons are provided for basic functions such as selecting sources and tracks, whereas more rarely required functions are controlled by means of menus which are called up using the **SRC** / **SYS** / **OK** buttons.

The integral screen constantly displays all the information relating to the machine's current state, the track currently playing and the radio station currently tuned. The main item of information is emphasised on the screen in a context-sensitive manner, so that you can see it clearly from a distance. The following section describes the functions of the front panel buttons and the screen information in greater detail.

On / Off switch



(On and Off switch)

A brief press on the **ON** button switches the machine on and off.



Caution!

The mains button is not an isolation switch. Certain parts of the machine remain connected to mains voltage even when the screen is switched off and dark. If you know you will not be using the machine for a long period, we recommend that you disconnect it from the mains by withdrawing the mains plug from the wall socket.

Please see the chapter entitled 'Notes on Energy Saving' for details of current consumption.

Front panel connections



Socket for a USB memory stick.

This USB port can be used to reproduce **audio and video files**. The method of operation is described in the chapter entitled '**Operating the disc player (Media Player)**'.

The storage medium must be formatted using the FAT16 or FAT32 file system.

The USB memory can be powered via the USB port provided that its current drain is in accordance with the USB norm (< 500 mA).



Socket for stereo headphones with a minimum impedance of 50 Ω.

When headphones are plugged in, the loudspeakers connected to the K2 for the primary room (listening zone 1) are automatically switched off.



Note regarding the use of headphones

Continuous listening to programme material at very high volume using headphones or earphones can result in permanent loss of hearing. You can avoid subsequent health problems by avoiding continuous listening at high volume through headphones or earphones.

- ④ Disk drawer The drawer is opened and closed by pressing the  button. Alternatively the drawer can be opened with a long press on the  button on the remote control handset, and closed again by pressing the  button on the handset.

Operating button ⑤



Source select

Pressing this button selects the desired listening source. Press the button repeatedly until the desired listening source appears on the screen.

The signal generated by the selected source can now be reproduced via the loudspeakers. The signal is also present at the **TAPE-OUT** output sockets for recording.

Disc mechanism functions



STOP / OPEN

Buttons for stopping the disc, opening and closing the disc drawer.

Brief press: stop; with disc stopped: opens the disc drawer

Long press: opens the disc drawer immediately



PLAY / PAUSE

Starts playback

Halts current playback (pause)

Resumes playback after a pause

Menu functions



Source menu

Brief press: opens the menu for the selected source (DVD track menu, Tuner menu, etc.)

A long press opens the Setup menu for the source device just selected:

Source	Setup menu
Disc:	disc player setup (see chapter 'DVD player setup menu')
Streaming Client:	network setup (see chapter 'Network configuration')



System menu

Brief press: opens the '**System Configuration**' menu (for further details see the chapter entitled '**System settings**')



Timer menu

Brief press opens the alarm timer menu (see chapter entitled '**Alarm Timer**')



Returns to the previous point / change button



Confirms the input / change button



Selects the next point within a list / select button



Selects the previous point within a list / select button



Confirm / select button in menus and lists

A brief press selects the highlighted menu point / list point

Loudspeaker / Volume



Switches the loudspeaker output on and off:

If speakers are connected to loudspeaker output B, you can cycle through the following modes of operation by repeatedly pressing this button:

Brief press: loudspeaker group A → B* → A+B*

* only if loudspeakers B are connected

Long press: mute

A brief press on the  button terminates muting.



Increases / reduces volume

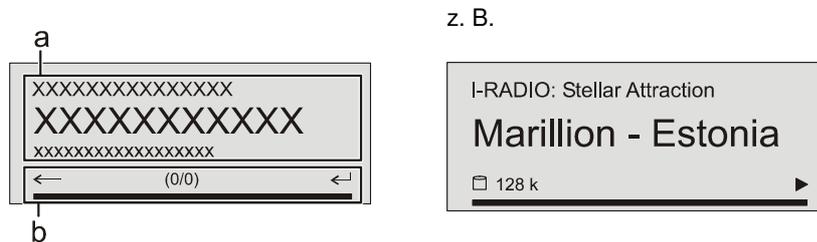
Display elements / Remote control receiver

- ⑥ **LED**
(between the buttons)
- The LED indicates the status of the loudspeakers:
- Blue → Loudspeaker group A
 - Green → Loudspeaker group B (only if loudspeakers B are connected)
 - White → Loudspeaker groups A+B (only if loudspeakers B are connected)
- The LED flashes if the loudspeakers are switched off (mute).
- Red → When the machine is switched on, the LED flashes red during the loudspeaker power-on delay period
The LED glows continuously red if the Protection circuit has been triggered and switched the device off, e.g. due to overloading or overheating. If this should happen, please switch the machine off and leave it for about five minutes. When the machine has cooled down, it should again work normally once switched back on. If this does not cure the problem, please read the notes in the chapter entitled '**Trouble-shooting**', and contact your specialist **T+A** dealer.

- ⑦ **Remote control receiver**
(behind the Perspex screen)
- ⓘ When using the remote control system please point the **F100 / FM100** handset in the direction of the receiver.
- The line of sight between the F100 / FM100 and the remote control receiver in the **K2** must not be interrupted by any obstacles. Installing the K2 behind the glass doors of a cabinet will also adversely affect the remote control system.
- It is essential to prevent potentially interfering light (from fluorescent lamps and energy-saving bulbs) falling directly on the receiver, as this may markedly reduce the effective range of the remote control system.

- ⑧ **Timer LED**
- The Timer LED lights up when the K2 is switched off and the Timer is active.
The Timer LED flashes when the Timer is switched on, and as long as the automatic power-off function is active. (see the chapter entitled '**Alarm timer**')

- ⑨ **Display**
- The graphic screen of the **K2** displays all information regarding the status of the machine, the music track currently being played and the radio station currently tuned. The display is context-sensitive and varies according to the capabilities and facilities of the service or medium to which you are currently listening.
- The most important information is highlighted on the screen in a context-sensitive manner. Supplementary information is displayed above and below the main text, or by means of symbols. The symbols used are listed and explained in the table below.
- The screen can be dimmed (see the chapter entitled '**System settings (System Configuration menu)**'), and can be adjusted to suit your personal preference and requirements.
- In Stand-by mode the screen can display the time of day (see the chapter entitled '**Alarm Timer, Alarm timer menu, menu point Screen brightness (Stdby)**').



The displays and symbols which appear on the screen vary according to the currently active function (SCL, Digital IN) and the type of music currently being played.

- The basic division of the screen area is as follows:
- The basic division of the screen area is as follows:
 - The bottom line (b) provides context-related supplementary information and operating notes.

Screen symbols and their meaning

	Making connection (Wait / Busy) The rotating symbol indicates that the K2 is currently processing a command, or is attempting to connect to a service. These processes may take some time to complete depending on the speed of your network and the load upon it. During such periods the K2 may be muted, and may not respond to the controls. Please wait until the symbol disappears, then try again.
	Indicates a music track which can be played , or a playlist .
	Indicates a folder which conceals further folders or lists.
	Indicates that a source is being reproduced via a cable connection .
	Indicates that a source is being reproduced via a radio connection .
	Indicates that the K2 is reproducing a station or playing back a music track.
	Pause indicator
	Buffer display (fullness indicator, memory display) and data rate indicator (if available): The higher the data rate, the better the quality of reproduction.
	Display of the elapsed playback time. This information is not available for all services.
	Indicates that the  button can be used to switch to a higher menu or select level.
0 / 0	Position indicator in select lists. The first number shows the current position in the list, the second number the total number of list entries (length of list).
	Indicates that the selected menu point or list point can be activated by pressing the  button.
ABC 123 abc	or or Display of the symbol input modes

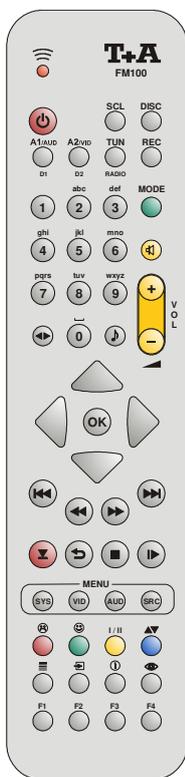
Remote control

Introduction

In general terms the function of the buttons on the remote control handset is the same as the corresponding buttons on the machine's front panel.

The Infra-Red sensor for the remote control system is located within the screen area of the **K2**. There must be unobstructed line of sight between the **F100 / FM100** and the machine's integral screen.

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



	Switches the device on and off
	Direct source select buttons
	Brief press: selects the K2 's Streaming Client function (Internet radio, access to music server) Long press: selects the iPod as source device
	Selects the K2 's disc player as source device
	Brief press: analogue input 1 of the K2
	Long press: digital input 1 of the K2
	Brief press: analogue input 2 of the K2
	Long press: digital input 2 of the K2
	Brief press: radio function of the K2
	
	Brief press: recorder input (TAPE) of the K2
	Direct alpha-numeric input, e.g. track number, quick station select, radio station Special characters are also assigned to the  and  buttons. During the text input process it is possible to switch between numerical and alpha-numeric input, and between capital and lower-case letters, using the  button.
	Switching between the following modes of operation: STEREO, 3-channel MUSIC, 3-channel MOVIE, VIRTUAL SURROUND.
	Brief press: Switches the loudspeakers on in turn: $A \rightarrow B \rightarrow A+B$ * only if loudspeakers B are connected Long press: Mute A brief press on the  button terminates muting.
	Reduces / increases volume (volume control rocker)
	Tone settings A brief press opens the menu for altering the tone settings: Treble / Bass / Loudness / Balance / Fader / Center / Sub-woofer / Sound (sound fields) The menu points are called up using the  /  buttons, and can then be altered using the  /  buttons. For a more detailed explanation please refer to the chapter entitled 'Tone settings' (TONE menu).

* FM100: optional accessory

	Radio	Streaming Client	Disc-Player	iPod
Navigation buttons				
	Back to the previous point	Back to the previous point During alpha-numeric character input the  button can be used to erase a character.	Cursor movement left	Back to the previous point
	Confirms the input	- Opens a folder - Starts a piece of music - Selects an Internet station	Cursor movement right	Confirms the input
	Selects the previous point within a list	Selects the previous point within a list	Cursor movement up	Selects the previous point within a list
	Selects the next point within a list	Selects the next point within a list	Cursor movement down	Selects the next point within a list
	Confirmation button during input procedures	Confirmation button during input procedures Opens a folder, starts a piece of music, selects an Internet station.	Confirmation button during input procedures	Confirmation button during input procedures

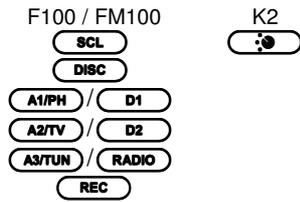
Disc mechanism control				
		Selects the previous piece in the playlist	Rewind / fast forward to search for a particular passage	Selects the previous piece in the playlist
 	Brief press: manual fine-tuning Long press: Search	Rewind / fast forward to search for a particular passage	Rewind / fast forward to search for a particular passage Repeatedly pressing this button varies the search speed. The search is terminated by pressing the  button.	Rewind / fast forward to search for a particular passage
		Selects the next piece in the playlist	Selects the next track during playback	Selects the next piece in the playlist
 (REPEAT)		Repeat function (see the chapter <i>'Operating the Streaming Client'</i>)	Repeat function (see the chapter <i>'Operating the disc player'</i>)	Repeat function (see the chapter <i>'Operating the iPod'</i>)
 (STOP)		Terminates playback	Brief press: halts playback Long press: opens and closes the CD drawer in STOP mode	Terminates playback and unloads the playlist
 (PLAY/ PAUSE)	Selects station from the Favourites list	<ul style="list-style-type: none"> Starts playback of titles / folders (Play function) During playback: halts playback (Pause) or resumes playback 	<ul style="list-style-type: none"> Starts playback (Play function) During playback: halts playback (Pause) or resumes playback 	<ul style="list-style-type: none"> Starts playback (Play function) During playback: halts playback (Pause) or resumes playback

	Radio	Streaming Client	Disc-Player	iPod
Menu functions				
	Opens the System configuration menu (e.g. for adjusting screen brightness)			
	Opens the Favourites menu if the Favourites list is currently displayed	Brief press: switches to the main (Home) menu Long press: opens the Network Configuration menu	Brief press: opens the Disc menu Long press: opens the DVD player setup menu	
Special functions				
 (red)	Long press: Removes a favourite from a station list	Long press: Removes a favourite from the Favourites list created on the K2		
 (green)	Adds a favourite to the Station list	Adds a favourite to the Favourites list created on the K2	Creates a playback program	
 (yellow)	Button for switching between Stereo reception (display ) and Mono reception (display )		DVD only Brief press during playback: switches between the sound tracks present on the disc	
 (blue)		During character input: Repeated presses switch between numerical and alpha-numeric input, and between capital and lower-case letters In lists: Search function (alpha search)		
	Displays the Favourites list	Displays the Favourites list created on the K2	DVD only During playback: selects the sub-title language and / or switches sub-titles on and off.	
	Memory button for quick station select	Memory button for quick station select	Switches between DVD mode and USB playback (front USB port)	
		Toggle switch between display of current music track and list navigation	Switches between play time displays	
			DVD only: if the angle symbol is displayed: switches between different camera angles	
				Shuffle function (see chapter ' Operating the iPod ')
		only when connected to a WLAN network: switch display to field strength indicator (for WLAN antenna adjustment)	ZOOM function (enlarged picture)	

Basic functions of the K2

This chapter describes the basic functions of the **K2**, which are always available, regardless of the currently selected source.

Source switching



The desired source is selected by pressing the source button  on the front panel, repeatedly if necessary.

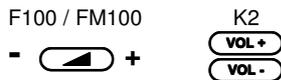
The source buttons on the F100 / FM100 remote control handset can be used to select the desired listening source directly. The buttons are assigned as follows:

Streaming Client	brief press on the  button
iPod	long press on the  button
Disc Player	brief press on the  button
REC/TAPE input	brief press on the  button
Radio	brief press on the  /  button
AUX input	brief press on the  /  button
TV input	brief press on the  /  button
DIG1 input	long press on the  /  button
DIG2 input	long press on the  /  button

Once you have switched the **K2** to the desired source, you can listen to that source and also record the signal using the recorder outputs (TAPE OUT).

Internal sources, iPods connected to the **K2** and source devices connected via the **T+A E LINK** system, can be controlled using the F100 / FM100 remote control handset or the front panel buttons, provided that they are selected as the current listening source. For details on operating the **K2**'s integral source devices please refer to the following chapters.

Volume control



The volume of the **K2** can be adjusted in fine increments using the  /  buttons on the machine's front panel, or -  + rocker on the remote control handset. A brief press of one of the volume buttons increases or reduces the volume level by one increment. Holding one of the volume buttons pressed in changes the volume level continuously.

Mode of operation



The mode of operation for loudspeaker group A can be selected using this button. The available modes are **STEREO** and **VIRTUAL SURROUND**. If your system includes a Centre loudspeaker, the three-channel modes **3-channel MUSIC** and **3-channel MOVIE** are also available.

The first press on the  button displays the mode of operation just selected on the integral screen. Further button-presses cycle through the available modes of operation.

Stereo

Reproduction only through the two primary loudspeakers (left / right) of loudspeaker group A.

Virtual surround

Virtual Surround reproduction via the loudspeakers of group A. In this mode of operation it is possible to achieve surround effects even without the presence of physical rear loudspeakers.

3-channel MUSIC
(can only be selected if a Centre loudspeaker is present)

This setting is for music reproduction through all three loudspeakers of group A (left / right / centre).

3-channel MOVIE
(can only be selected if a Centre loudspeaker is present)

Three-channel sound reproduction (left / right / centre), ideal for use with cinema films.



The **K2** features a digital room sound (sound field) processor, which can be used with two or three loudspeakers in the primary listening room. With three speakers (left / centre / right) it is possible to achieve more natural and spacious reproduction overall, without the familiar "acoustic hole" in the middle. For film playback an additional advantage is an improvement in localisation of speech and sound events on the screen.

If the **K2** is operated with just two loudspeakers (left / right), then only the operating modes STEREO and Virtual Surround are available.

Tone settings (Tone menu)

F100 / FM100



K2



Tone settings

The **K2** features a range of facilities designed to enable you to adjust the sound to suit your personal preferences, the physical arrangement of your system components, and the acoustics of your listening room. All these settings are adjusted in the tone control menu (TONE menu). The tone control menu can be called up using either the button on the remote control handset, or via the Tone menu point (tone settings) within the menu.

i The **K2** features automatic loudspeaker detection, which it invokes every time it is switched on to indicate which loudspeakers are connected to it.

Some points in the Tone menu only appear if the associated loudspeakers are actually connected to the system, and are switched on in the System menu. If the relevant loudspeakers are not present in the system, then the set-up points relating to them are not displayed. This restricts the task of operating the system to the facilities actually present, and considerably simplifies the procedure.

i If some menu points do not appear, even though the associated loudspeakers are correctly connected, please refer to the notes in the chapter entitled 'Trouble-shooting'.

Menu point	Adjustment range options:	Explanation:
Treble Bass	-12 ... 0 ... +12	These two menu points are used to adjust the treble and bass settings.
Loudness	off / on	The K2 features a volume-dependent tone correction system (LOUDNESS) which compensates for the frequency-dependent variation in the sensitivity of the ear at very low volume levels due to the physiology of the human auditory system. This set-up option is used to switch loudness on or off.
Balance Balance A L/R balance for loudspeaker group A	60L ... 0 ... 60R	This menu point is used for altering the level balance between the left and right loudspeakers, in order to compensate for an imperfect listening position. The level balance can be adjusted in increments of 1 dB; the current value is displayed on-screen.
Balance B L/R balance for loudspeaker group B (The menu point only appears if loudspeaker group B is connected)	60L ... 0 ... 60R	Setting as in the previous menu point, but for loudspeaker group B.
Fader Balance between loudspeaker groups A and B (The menu point only appears if loudspeaker group B is connected, and if two-room mode is switched off in the System menu.)	-15 ... 0 ... +15	The Fader function is used to adjust the balance between loudspeaker groups A and B, if these are located in the same room. If two-room mode is selected, this point is not displayed, since in this mode the volume of loudspeaker group B is controlled separately using the external remote control receiver.

Menu point	Adjustment range options:	Explanation:
<p>Center (This menu point only appears if a Centre loudspeaker is connected to the system)</p>	-15 ... 0 ... +15	<p>Menu point for adjusting Centre volume. We recommend a setting at which the Centre speaker fills the acoustic gap in the middle between the main loudspeakers, but is not quite detectable as a separate sound source.</p>
<p>Subwoofer (This menu point only appears if an external sub-woofer is connected to the system, and is switched on in the System Configuration menu / Loudspeaker menu.)</p>	-15 ... 0 ... +15	<p>This Menu point is used to adjust the volume level of the sub-woofer.</p> <p>Adjust the volume of the sub-woofer to suit the acoustic conditions in the listening room, and the volume of the other channels.</p>
<p>Sound (sound fields)</p>	<p>The following-setup options are intended for adjusting the reproduction of the K2 to suit the room acoustics.</p>	<p>Normal Linear, musical tone setting with no enhancements; recommended for normally damped listening rooms.</p> <p>Dynamic Linear sound image with good dynamics and precision Particularly recommended for rooms with severe damping, and loudspeakers which tend to emphasise bass.</p> <p>Warm If you prefer a relaxed sound image with slightly subdued treble, select the sound field option Warm.</p> <p>Speech This option improves speech clarity in spoken word programmes, documentaries and sports transmissions.</p> <p>Cinema Setting for use with cinema films, offering good dialogue comprehensibility.</p>

System settings (System Configuration menu)

The System Configuration menu is used for adjusting the general settings of the machine. This menu is described in detail in the following chapter.

Calling up and operating the menu

- The menu is called up by briefly pressing the **sys** button on the front panel or the remote control handset.
- Once the menu is open, the following select points appear on the screen:

Adjustment facility		
Tone	Settings	To Tone Controls menu
Sourcename	XXXXX	
Speaker	Configuration	To Loudspeaker menu
Video	Configuration	To Video setup menu
Audio delay	1	...
Brightness	0	...
Language	English	Deutsch further languages
		3
		30

- Use the **▲** / **▼** buttons to select a menu point.
- If you wish to change a selected menu point, first press the **OK** button, then change the value using the **◀** / **▶** buttons.
- To accept the change, press the **OK** button again after altering the setting.
- To quit **without** accepting a changed value, you can interrupt the procedure at any time by pressing the **■** button.
- Press the **sys** button again to leave the menu.

Menu point Tone

Using this menu point you can access the Tone menu by pressing the buttons on the **K2**.



This menu can also be called up directly by pressing the **♪** button on the F100 / FM100 remote control handset.

Menu point Sourcename

(This menu point only appears if a listening source is selected whose display name can be changed)

This menu point calls up an input window in which you can enter any name you like for the currently active listening source, i.e. to suit the type of device connected, which will then be displayed on the **K2**'s integral screen. For example, you might wish to assign the display name "Media Centre PC" to the DIG2 input.

After activating this menu point using the **OK** button, you can enter your preferred source name as if writing an SMS message, using the numeric buttons of the F100 / FM100 handset (see also the chapter entitled 'Network configuration, alpha-numeric inputs').

The input position can be altered using the **◀** / **▶** buttons.

When the name input process is complete, press the **OK** button to store it.

If necessary, the display name can be changed as often as you wish.

A name can only be entered for external source devices, i.e. those connected to the following inputs of the **K2**:

DIG1, DIG2, AUX, TV, REC / TAPE

Menu point
Loudspeaker
(Loudspeaker menu)

This menu point opens a sub-menu in which the settings for the loudspeakers can be altered.

Adjustment facility					
L / R	Full range	Bass extd.	40 Hz	...	150 Hz
Center	Full range	Bass extd.	40 Hz	...	150 Hz
Subwoofer	Off	40 Hz	60 Hz	100 Hz	150 Hz
SPK A stand	Free	Near to wall	In a corner		
SPK B stand	Free	Near to wall	In a corner		
2nd-Room	On	Off			

Sub-point
L/R

In this menu point you can set the loudspeaker type and, if appropriate, the cross-over frequency between the main loudspeakers (loudspeaker group A - left / right) and the sub-woofer.

If you are using full-range loudspeakers, please choose the "FULL RANGE" setting. For relatively small satellite speakers we suggest that you choose a cross-over frequency of 40Hz, 60Hz, 100Hz or 150Hz, depending on the size and bass performance of your loudspeakers.

This is the basic rule: the smaller the speaker cabinet, the higher the cross-over frequency should be. If no sub-woofer is present in the system, you should always select the "FULL RANGE" setting in any case.

The "Bass extd." setting is recommended for small loudspeakers such as small bookshelf units, if they are operated without a sub-woofer. At this setting the bass range of the speaker is extended to low frequencies.

Sub-point
Center
(This menu point only appears if a Centre loudspeaker is connected to the system)

Setting of loudspeaker type and cross-over frequency between the Centre loudspeaker and the sub-woofer.

The procedure is as described under the menu point 'L/R'.

i If this menu point does not appear, even though a Centre loudspeaker is connected to your system, please read the notes in the chapter entitled 'Trouble-shooting'.

Sub-point
Subwoofer

In this menu point you can set the cross-over frequency for your sub-woofer. If your system does not include a sub-woofer, you should choose the "OFF" setting.

If a sub-woofer is present and you are using satellite loudspeakers, the same cross-over frequency should be set here as in the previous menu point.

If you are using full-range loudspeakers which are supplied by a supplementary sub-woofer in the deep bass range, we recommend the 40 Hz setting.

Sub-point
SPK A stand

Please select one of the LS A set-up options free / near to wall / in a corner, according to the location of your primary loudspeakers.

If loudspeakers are set up close to a wall or a corner, the result may be a disproportionate boost to the low frequencies. To compensate for this effect the **K2** features a corrective circuit which you can set in this menu point for the main loudspeakers.

Sub-point
SPK B stand
(This menu point only appears if loudspeakers are connected to loudspeaker output B)

Settings as in the preceding menu point, but applicable to loudspeaker group B

Sub-point
2nd-room
(This menu point only appears if loudspeakers are connected to loudspeaker output B)

At this point you can determine whether loudspeaker group B is to form its own listening zone with separate volume control.

If you choose the OFF setting, the volume of the 'B' loudspeakers is controlled in tandem with the loudspeakers of group A (e.g. for two listening zones in one room).

If you select the ON setting, the volume of the 'B' loudspeakers can be controlled separately. This is only possible if you connect the E2000 external remote control receiver (supplied in the accessory pack) to the machine, and set it up in the second room.

i For more information relating to modes of loudspeaker operation please refer to the chapter entitled 'Listening zones and bi-amping'.

Menu point
Video

Adjustment facility			
Disc	HDMI	YUV	RGB ... further settings
TV	HDMI	YUV	RGB ... further settings
iPod	HDMI	YUV	RGB ... further settings
Dig-1	HDMI	YUV	RGB ... further settings
Dig-2	HDMI	YUV	RGB ... further settings
AUX	HDMI	YUV	RGB ... further settings
Recorder	HDMI	YUV	RGB ... further settings

This menu point opens a sub-menu where you can assign the audio inputs of the **K2** to the video inputs of a video monitor. The **K2** then switches the monitor on automatically when you select an AV source whose operation requires it. When you switch sources, the monitor's correct picture input is selected automatically.

If your system includes a video monitor, use this sub-menu to select the appropriate picture input of the monitor for each AV source which is connected to the monitor (picture) and the **K2** (sound).

i This menu is only relevant if the **K2** forms part of a system which includes a compatible Loewe or Metz monitor (television). This sub-menu is irrelevant if no video monitor is connected to the **K2**. If your system includes a Loewe or Metz monitor, you will also need the TV control lead with RS 232 connectors, available as an accessory from **T+A**.

Menu point
Sound delay

Every video monitor requires a certain amount of time to display the video signals (latency); this period may vary from monitor to monitor. If your monitor has a long latency, the result may be a perceptible time-lag between the picture and the sound. This is usually apparent when lip movements are not properly synchronised with the soundtrack.

To compensate for this effect the **K2** features a digital sound delay module (Lipsync) which can be used to synchronise picture and sound reproduction.

If necessary, set a delay time in this menu point which corresponds to your video monitor. If the latency of your monitor is not stated in its Specification, you will need to determine the appropriate value experimentally, e.g. by playing a DVD in the original speech version (non-synchronised version). During playback simply adjust the value for sound delay until the speaker's lip movements coincide with the sound.

Menu point
Brightness
(Screen Brightness)

At this point you can adjust the brightness of the **K2**'s integral screen to suit your personal preference in normal use. Seven levels are available.

Menu point
Language

In this menu point it is possible to determine the language which is to be used for the displays on the integral screen on the front panel of the **K2**.

The language used for any transferred data, e.g. from an iPod or an Internet radio station, is determined by the device itself or the radio station, and therefore **cannot** be selected on the **K2**.

Alarm Timer

The machine is fitted with an integral Timer module which can switch the **K2** on with a user-selectable source at a programmable time (alarm clock).

Selecting an alarm timer in the alarm timer menu switches on and activates the timer. The active alarm timer is indicated on the screen by the Timer LED, which glows constantly.

You can now switch the **K2** off. As long as the Timer LED is lit, the **K2** will switch itself on at the pre-set time.

Alarm

- with automatic power-off

When the Timer is active, the **K2** switches on at the programmed alarm time. When switched on, the Timer LED flashes.

One hour after the alarm time the **K2** switches itself off again automatically, unless you disabled the alarm function during that period.

If you disable the alarm function with a long press on the  button, the Timer LED ceases flashing. Now the Timer does **not** switch off **automatically** after an hour. If you wish to switch the machine off, you must do so manually.

Switching the Timer off

The alarm timer menu can be called up with a brief press on the  button; you can disable the alarm timer in that menu.

 The alarm timer menu can also be called up with a brief press on the  button when the machine is switched off; you can then carry out changes without having to switch on beforehand.

Alarm timer menu

Calling up and operating the menu

- The menu is called up with a brief press on the  button on the front panel.
- When you open the menu, you will hear the currently selected alarm source at the volume which you have set for the alarm function.

The screen displays the following select points:

Adjustment facility			
Alarm	Alarm Time 1	Alarm Time 2	Alarm Off
Alarm Time	00.00		
Alarm Source	Radio BFBS R1	Disc	Tone
Alarm Vol.	0		
Alarm Spk.	A	B	A+B
Time Mode	RDS	Summer time	Winter time
Set Time	00.00		
Brightn.Clk	Off	1	...
			4

- Use the  /  buttons to select a point in the menu.
- If you wish to alter a selected menu point, first press the  button, then use the  /  buttons to change it.
- To adopt the new setting, press the  button again after entering the change.
- To quit **without** accepting a change, you can interrupt the procedure at any time by pressing the  button.
- To leave the menu, press the  button on the front panel once more.

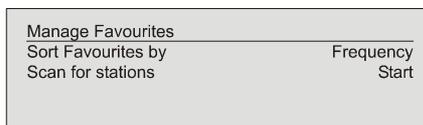
Menu point Select alarm time	In this menu point you can select whether the machine is to be switched on with an alarm, and - if so - with which alarm.
Menu point Set alarm time	Manual setting of the alarm time for the currently active alarm. Initially the change occurs slowly, but the rate of change increases if you hold the button pressed in.
Menu point Alarm source	Here you select the source which is to be switched on at the alarm time. If you select the menu point Radio, you can select the radio station of your choice from the Favourites list using the  /  buttons.
Menu point Alarm volume	 Alarm by radio: Take care to set a station which can actually be received. Alarm by disc: When you activate the alarm function please ensure that a playable CD is in the disc mechanism.
	At this point the alarm volume can be adjusted. If you change the volume, the system immediately adopts the indicated volume value, and the alteration in volume becomes audible.
Menu point Alarm_Lsp. (This menu point only appears if loudspeakers are connected to loudspeaker output B)	Here you select the loudspeaker group to be used for the alarm. The available options are loudspeaker groups A , B and A+B .
Menu point Clock mode	<p>In this menu point you can determine how the internal clocks is to be set.</p> <p>RDS: If you select the menu point RDS, you can select a radio station from the Favourites list using the  /  buttons. If you choose the 'Any' setting, the time of day will be read automatically from the RDS signal provided by the currently set station, and will be adopted by the machine; this occurs at night and about three minutes after switching on. If a station is selected, the time of day is automatically read out from the RDS signal at night. If the selected station is the current listening source, then the time of day is also taken from the machine when it is switched on. This only works if a good RDS signal can be received. It is not possible to adjust the time of day manually!</p> <p>Summer time: The time of day can be set manually in the menu point 'Set time of day'.</p> <p>Winter time: The time of day can be set manually in the menu point 'Set time of day'.</p>
Menu point Set time of day	<p>Manual adjustment of the internal clock to the correct time.</p> <p>Initially the adjustment occurs slowly, but if you hold the button pressed in, the rate of change increases.</p> <p> Manual adjustment is only possible if you have already selected Summer or Winter in the menu point 'Clock Mode'.</p>
Menu point Screen brightness (Stdby)	Here you can adjust the brightness of the integral screen in stand-by mode to suit your personal preference; the revised brightness setting takes effect immediately. The 'off' setting can only be selected if no alarm time is active.

Favourites List

Creating the Favourites list

The Favourites list allows the user to store preferred radio stations, i.e. those frequently selected.

When you have called up the Favourites list by pressing the  button (F100 / FM100), you can press the  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  button. The screen displays the message '**Auto Store active**', and the **K2** now automatically stores up to sixty receivable stations in the Favourites list.

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.

Sort function

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

Frequency Stations are sorted by frequency in ascending order (RDS stations only)

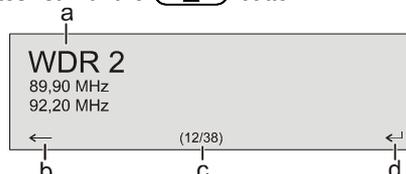
Station name Stations are sorted alphabetically by station name

Program ID Stations are sorted by station group (RDS stations only)

Now use the  /  buttons to select the desired sort criterion, and confirm your choice by pressing the  button.

Selecting radio stations from the Favourites list

- Call up the Favourites list with the  button.



- Use the  /  buttons to select a stored station from the Favourites list. The selected station is displayed in enlarged form.
 - Press the  button to return to the station previously selected.
 - Position display in the Favourites list.
 - Press the  /  /  /  button to select the station displayed in enlarged form.
- You can also select stations directly, without calling up the Favourites list as described above, by briefly pressing the  /  buttons in the Favourites list.

Presets

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 ( to ). The Preset is stored when you press a numeric button. The front panel screen briefly displays the message '**Preset Stored at**' to confirm this.

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 / FM100's** numeric buttons  to .

Operating the disc player (Media Player)

Basic functions

For all the functions described in this chapter the **Disc Player** must be selected as listening source. The disc player of the **K2** can play back audio and video content from discs (CD, DVD, MP3-CD, etc.) or from USB memory sticks which are connected to the **K2**'s front socket.

Disc functions

Inserting a CD

- Open the drawer by pressing the  button on the front panel of the **K2** (or by a long press on the  button of the F100 / FM100 handset).
- Place the disc in the **centre** of the appropriate depression in the disc drawer, **with the side to be played facing down**.
- Briefly press the  button on the front panel of the **K2** (or give a long press on the  /  button on the F100 / FM100) to close the drawer.

When the drawer is closed, the machine reads the disc. Once that is completed, you can start the disc.

-  If you see the message 'UNKNOWN' on the integral screen when the machine has read the disc, then the disc in the drawer is recorded in a format which the **K2** cannot play (see section 'Playable formats' at the end of the chapter).

Starting the disc

If the disc in the drawer is a **Music CD** or **Video CD** (VCD, S-VCD) you can start playback once the content has been read by pressing the  /  button.

The behaviour of a **DVD** after its content has been read is determined by the DVD itself, and may differ slightly from DVD to DVD. Generally a foreword appears on your screen automatically once the content has been read, followed by a menu (*DISC MENU*).

In this menu you can navigate your way around using the *cursor* buttons, and select various points such as language, sub-titles and sound format. To activate or select a menu point please use the *cursor buttons* to navigate to that point, then press the  button.

Once you have carried out all the settings you desire, you can start the film (usually by selecting the menu point 'Play film').

Opening the disc menu

(during playback)

The disc menu can be opened at any time during playback with a brief press on the  button on the remote control handset. This allows you to call up the functions of the disc menu at any time while you are watching the film.

USB functions

(front USB socket)

Audio and video files stored on a USB memory stick plugged into the AV USB socket on the machine's front panel can be played back by the **K2**'s disc player - provided that they are in a format which the machine supports.

Connecting and selecting a USB memory stick

To play a file first select the DVD player as source, then insert the USB memory stick in the USB port on the **K2**'s front panel. Now press the  button on the remote control handset in order to switch to the USB medium.

The content of the memory stick will now be displayed on the screen connected to the **K2**.

Selecting and playing back content

The cursor navigation buttons are used to select the medium and to control playback of the files.

-  For photographs the same functions are available as described in the chapter "Reproducing MP3 music and JPEG photos".

Playback functions

Track select
(during playback)

You can switch to the next and previous tracks on the disc using the  /  buttons on the remote control handset.

A track can also be selected directly by entering its track number using the numeric keypad on the remote control handset.

Pause
(during playback)

Pressing the  /  button halts playback. Press the  /  button to resume playback.

Search
(during playback)

The  /  buttons on the remote control handset are used to start a search process in the forward or reverse direction.

Repeatedly pressing these buttons varies the search speed. Press the  button to terminate the search.



CD-Text

If the CD being played contains CD text information (CD-Text), then it will be displayed on the screen connected to the system.

Auxiliary functions

Repeat function

The  button on the remote control handset cycles through the repeat functions of the K2. Press the button, repeatedly if necessary, until the desired repeat mode appears on the machine's integral screen.

The following repeat modes are available, depending on the disc format:

Display	Function	Disc format
 C	Repeat chapter	DVD
 T	Repeat scene	DVD
 1	Repeat track	CD, MP3
	Repeat folder	MP3
	Repeat entire disc	DVD, CD, (S)VCD
(no display)	Normal playback - no repeat	

Sub-title language
(DVD only)

The  button can be used during playback to select the sub-title language and / or switch sub-titles on and off.

Soundtrack
(DVD only)

A brief press on the  button during playback switches between the soundtracks present on the disc.

Camera angle
(DVD only)

If multiple camera angles are present for a particular sequence stored on a DVD, then a camera symbol will appear on the screen.

Pressing the  button, repeatedly if necessary, will then switch between the available camera angles.

Create a playback program

As an option, you can play back the tracks on the disc in the machine in the sequence you prefer. This is accomplished by creating a playback program for the disc.

Press the  button to open the input window, which will appear on your video monitor. Use the numeric buttons to enter the desired tracks in the input fields in your preferred order.

When you have entered all the tracks you wish to play, press the  / -buttons to select the 'Start' point, then confirm by pressing .

To interrupt the programming procedure, either select the 'End' point, or press the  button again.

Reproducing MP3 music and JPEG photographs

JPEG photos (slide show)

The K2 is capable of reproducing MP3 music discs, JPEG files and Picture Discs. These discs are usually controlled via an optional TV / video monitor, although limited operation of MP3 CDs is also possible without a TV / video monitor (see 'MP3 reproduction without screen').

After inserting the JPEG disc or selecting the USB memory stick the menu structure will be displayed on the screen / monitor.

You can select a folder by pressing the  / -button on the remote control handset, and open it with the  button on the handset. The desired picture can be selected using the  / -button.

It is also possible to skip forward or back by one whole page by pressing the  /  buttons; this makes it more convenient to navigate through menus which contain large numbers of entries.

Once you have selected a photo by pressing the  button, the slide show will commence in full-screen mode, starting with this picture, and will continue to the end of the folder.

Functions available during the slide show:

- **Halt / resume playback:**
the slide show can be halted and resumed again by pressing the  button on the remote control handset, or the  button on the machine's front panel.
- **Invert picture:**
the picture can be converted into its mirror-image around the longitudinal or lateral axis by pressing the  / -buttons.
- **Rotate picture:**
it is possible to rotate the picture to right or left using the  /  buttons.
- **Next / previous picture:**
the  /  buttons on the remote control handset can be used to jump to the next or previous picture. Since the new picture must first be loaded and processed for display on the video monitor, it may take a few seconds for the new picture to appear on your TV.
- **Preview:**
you can call up a picture preview from the current slide show by pressing the  button, in order to select a new picture.
- **End slide show:**
to terminate the slide show please press the  button.

MP3 CD

When you insert an MP3 CD or select the USB memory stick, the Contents menu will be displayed on the screen.

It is possible to select an album folder by pressing the  / -button, and open it with the  button. The desired track can initially be selected with the help of the  / -buttons.

It is also possible to skip forward or back by one whole page by pressing the  /  buttons; this makes it more convenient to navigate through menus which contain large numbers of entries.

After selecting a track and confirming your choice with the  button, playback of the selected item begins, and continues to the end of the folder.

Functions during playback:

- By pressing the  / -buttons (yellow marker) you can select a track at which playback will resume when the  button is pressed. You can still see the currently playing track, as it is indicated by a white marker.
- Press the  /  buttons to start fast forward or rewind. A brief press on the  button at any time reverts to normal playback mode.
- Playback can be interrupted at any time by pressing the  /  buttons, and ended by pressing the  button.

Playable formats

The **K2** is capable of playing discs recorded using the following formats:

Audio formats

CD-Audio (CDDA, CD-R, CD-RW)
MP-3 CD (for MP3 - see information box below)

Video formats

DVD-Video (DVD, DVD-R, DVD-RW)
Video CD (VCD, S-VCD)
JPEG Picture CD



Requirements for MP3 discs

A wide range of different MP3 formats is in use. When creating an MP3 disc please keep to the format specifications stated below. If you stray from these specifications, it is possible that the disc will be unplayable, or the sound may break up or be distorted. Due to the large number of music tracks fitted on to MP3-CDs it may take longer than ten seconds for the machine to read the MP3 CD.

Only the first 'session' of multi-session discs is supported.

The following formats are supported:

- CDs to ISO 9660 formats
- max. 30 characters
- max. No. of folder levels: eight
- max. ALB No. 32
- supports VBR bit-rate
- supported sampling frequencies for MP3-CD: 32 kHz, 44.1 kHz, 48 kHz
- supported bit-rates for MP3-CD: 32, 64, 96, 128, 192, 256, 320 (kbps)

The following formats are **not** supported:

- Files with suffixes such as *.WMA, *.AAC, *.DLF, *.M3U, *.PLS
- File names including Chinese characters
- Discs whose recording session was not completed ('non session closed')
- Discs recorded using the UDF format
- Files containing ID3V2 tags

Compatibility with recordable media

The **K2** can play recordable discs (CD-R, DVD-R) and rewritable discs (CD/RW, DVD-RW) (see Specification) which satisfy the general standard for CD-Audio and DVD-Video respectively.



Due to the immense number of different types and makes of disc blank, disc recorder (burner) and disc burning software it is not possible to state a general guarantee of compatibility.

If compatibility problems arise, we recommend that you try a different make of disc blank, a different disc burner and / or different burning software.

Setup menu (DVD player configuration)

DVD player setup menu

 If your system does not include a TV / monitor, then you do not need to carry out any changes in the DVD player setup menu.

The DVD player in the **K2** has to be set up to match the characteristics of your TV set and your own preferred methods of operation. The necessary settings are grouped together in a 'DVD player setup menu' which is displayed on the screen connected to the system. In most cases the settings grouped together in the player setup menu only need to be adjusted once, i.e. when the machine is first installed. You will need the operating instructions supplied with your television to help you find the correct values.

The player setup menu is divided into the following sub-menus:

- **GENERAL SETUP PAGE**
In this sub-menu you can select all the general device settings such as screen language etc.
- **AUDIO SETUP PAGE**
This sub-menu is used to set the audio characteristics of Night mode.
- **VIDEO SETUP PAGE**
At this point you enter the picture settings, such as the screen format (normal 4 : 3 / wide-screen 16 : 9) etc.
- **PREFERENCE PAGE**
Here you can enter your personal preferences such as the soundtrack language, child security settings etc.

 The sub-menu "Preference page" can only be called up when no disc is playing (disc stopped).

The menu summary on the following page provides an overview of the player setup menu. The set-up facilities provided by the individual menus are explained in detail in the subsequent sections.

Operating the SETUP menu

Ensure that the disc player is selected as the listening source, that your TV set is switched on, and that the picture input (AV input) for the **K2** is selected.

The player setup menu is opened with a long press on the  button: please hold the button pressed in until the player setup menu appears on your screen. While this menu is open, the **K2**'s integral screen displays the message '**DISC SETUP**'.

You can now navigate around this menu using the *cursor buttons*, and enter your preferred settings. Once you have selected an entry, press the  button to confirm this; the setting is then accepted and stored.

When you first open the menu you will find yourself at the top line of the screen menu. Start by selecting the desired sub-menu (General setup page / Audio setup page / Video setup page / Preference page) using the  /  buttons.

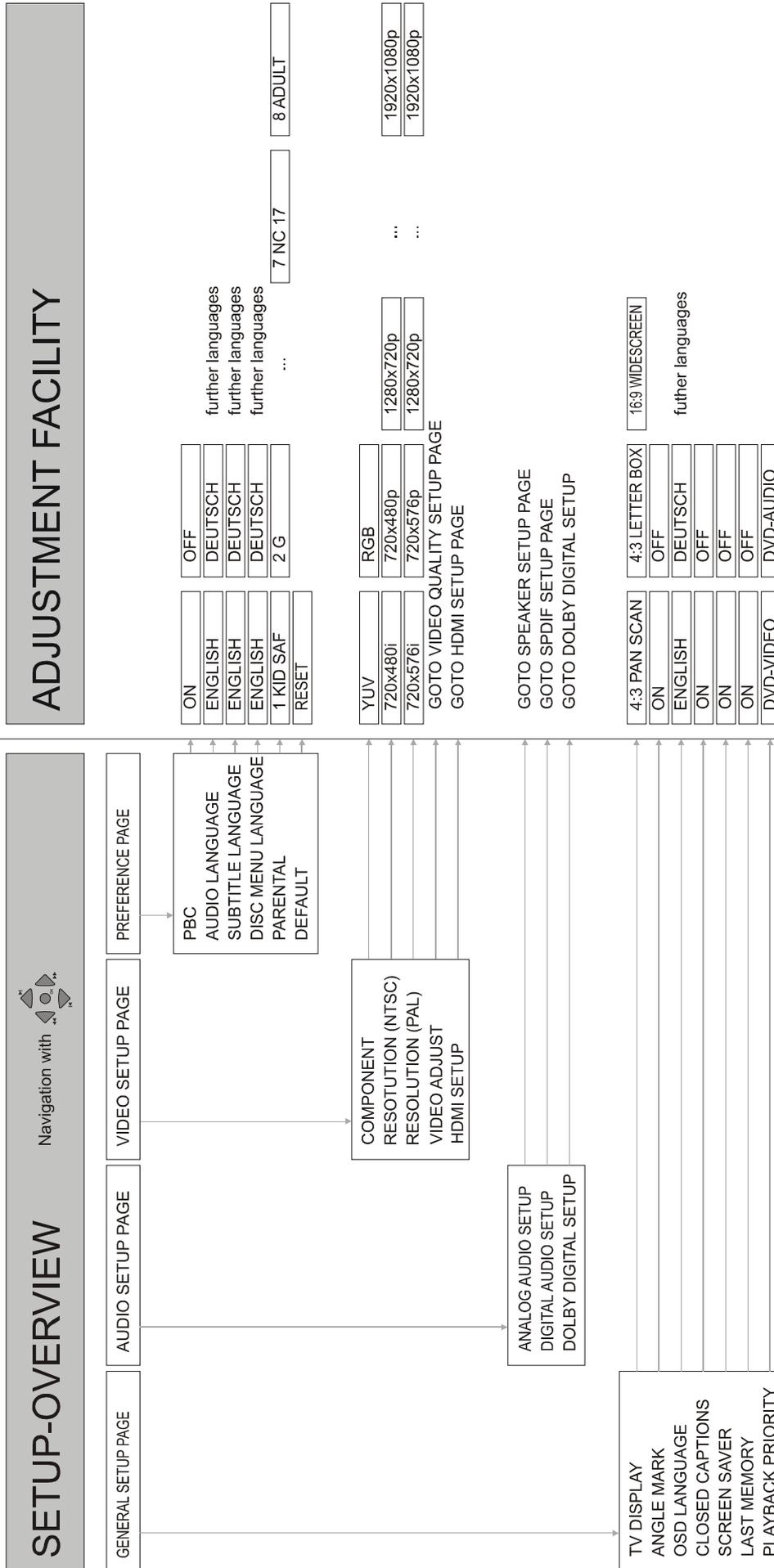
Pressing the -button opens the sub-menu of your choice. You can now move to any individual menu point using the  /  buttons.

If you wish to change the value of a menu point, press the  button and select the desired setting using the  /  buttons. Confirm your choice by pressing the  button; this confirms your selection and accepts the setting.

The  button takes you back to the next higher menu level.

Ending the SETUP menu

When you wish to leave the SETUP menu, press the  button, repeatedly if necessary, until you are returned to the top menu line again. Here you should select the point 'End SETUP menu', and confirm your choice by pressing the  button.



General setup page

Adjustment facility

- TV DISPLAY
- ANGLE MARK
- OSD LANGUAGE
- CLOSED CAPTION
- SCREEN SAVER
- LAST MEMORY
- PLAYBACK PRIORITY

4:3 PAN SCAN	4:3 LETTER BOX	16:9 WIDESCREEN
ON	OFF	
ENGLISH	DEUTSCH	further languages
ON	OFF	
ON	OFF	
ON	OFF	
DVD-VIDEO	DVD-AUDIO	

TV Display

In this menu you can set the **K2**'s picture output to suit the geometry of your TV set.

Note:

The format you choose must be available on the disc. If this is not the case, then the picture format settings have no effect on the picture during playback.

4:3 Pan Scan

For reproduction at full screen height: the central area of wide-screen films is reproduced full-format on 4:3 televisions. The parts of the picture not displayed are always the less important areas.

Pan Scan is only supported by a small number of DVDs.



4:3 Letterbox

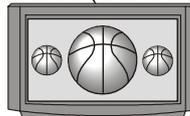
For a 'wide-screen' picture with black bars at the top and bottom of the screen. At this setting the TV reproduces the entire picture content of the DVD.

We recommend this setting for 4:3 televisions.



16:9 Widescreen

For reproduction on a wide-screen TV (16:9 format).



Angle mark

Here you can choose whether the camera angle symbol is to be superimposed when a DVD is being played, in order to alert you to the presence of multiple camera positions for a particular film scene.

OSD language

In this menu you determine the language to be used for the DVD player's setup menu.

Closed captions (Sub-titles for the deaf)

This setting determines whether sub-titles for deaf people are to be shown on-screen when a DVD is played.

Screen saver

The screen saver helps to prevent your TV screen suffering 'burn' damage, i.e. when a static image is displayed on the screen for an excessive period. If the screen saver is switched on, the TV screen is switched off after a while if playback is stopped or interrupted.

We particularly recommend that you invoke this function if you have a plasma or CRT monitor.

Last memory

If this function is activated, the **K2** remembers the scene at which the playback of a DVD was interrupted. When you switch the machine on again, the film restarts exactly at this point.

Playback Priority

In this menu point you determine the DVD player's behaviour with discs which also contain DVD audio data.

DVD Video With this setting only the DVD Video part of the disc is played.

DVD Audio With this setting it is possible to select from the Disc menu whether the DVD Video or DVD Audio part is to be played.

Audio setup page

ANALOG AUDIO SETUP
DIGITAL AUDIO SETUP
DOLBY DIGITAL SETUP

Adjustment facility

GOTO SPEAKER SETUP PAGE
GOTO SPDIF SETUP PAGE
GOTO DOLBY DIGITAL SETUP

Analog Audio setup

Adjustment facility

NIGHT MODE

ON

OFF

Night mode

Switching Night mode on causes the sound to be played back with reduced dynamic range.

Loud passages are reproduced more quietly. 'Night mode' is extremely suitable if you wish to avoid loud film sound effects disturbing other occupants or neighbours.

Digital Audio setup

Adjustment facility

DIGITAL OUTPUT

OFF

BITSTREAM

PCM

Digital output

At this menu point you can set the format which will be used to reproduce digital audio signals through the K2's digital output when you are playing a DVD.

OFF: The digital output is switched off for DVD playback.

ALL: All the sound formats are reproduced as they are included on the DVD. In particular, Dolby and dts soundtracks are reproduced in their undecoded form. This format is ideal if you are using an external surround decoder.

PCM: The sound formats are reproduced in decoded form as a two-channel downmix in PCM format. This setting is ideal for recording material using an audio recorder.

i For copyright reasons only signals from non copy-protected discs can be reproduced and recorded via the digital output. Copy-protected discs can only be reproduced for recording via the analogue TAPE OUT sockets.

Dolby Digital setup

Adjustment facility

COMPRESSION

OFF

1/8

1/4

...

FULL

Dynamic compression

Dynamic compression adjustment for DOLBY Digital encoded DVDs.

If you prefer sound reproduction with reduced dynamic range, you can set the level of dynamic compression at this point. At the OFF setting the sound is reproduced with full dynamic range; at the FULL setting the dynamic range is markedly reduced.

i The more strongly you limit the dynamic range, the smaller the difference between loud and quiet passages. Extreme audio effects with large jumps in level are reduced by the dynamic compression.

Video setup page

Adjustment facility

- COMPONENT
- RESOLUTION (NTSC)
- RESOLUTION (PAL)
- VIDEO ADJUST
- HDMI SETUP

YUV	RGB			
720x480i	720x480p	1280x720p	...	1920x1080p
720x576i	720x576p	1280x720p	...	1920x1080p

GOTO VIDEO QUALITY SETUP PAGE
GOTO HDMI SETUP PAGE

Component

At this point you can set the analogue component output to YUV or RGB reproduction.

The YUV picture norm is supported by most video monitors, and should normally be selected for use with analogue video monitors.

The RGB setting is intended primarily for projectors and professional monitors with a video input to the "RGB /Sync_on_Green" standard. Select this mode of operation only if a suitable monitor is connected. It is not suitable for normal TV sets with Scart-RGB inputs.



If you choose an incorrect picture norm the result may be that the picture fails, or the screen remains black. If this should occur, please set the resolution back to the last working value immediately.

Please also read the notes in the chapter 'Trouble-shooting, Picture'.

Resolution (NTSC) Resolution (PAL)

In the RESOLUTION menu point you can determine the resolution for the DVD player's YUV and HDMI outputs.

The available resolutions are from 480i to 1080p. Resolutions for PAL monitors are indicated by a letter P, resolutions for NTSC monitors by a letter N.



The resolutions available to you are always restricted to those for the picture norm (PAL or NTSC) which you have selected using the switch on the back panel. For this reason please ensure that this switch is set to the position appropriate to your TV set before you set your preferred resolution.



Before you set the resolution manually, please check the maximum resolution which your video monitor can reproduce, and the picture norms it supports. Do not select a resolution which your monitor cannot process.

Choosing too high a resolution or an incorrect picture norm can result in the monitor refusing to display a picture; alternatively the screen may simply remain black.

If this should occur, please set the resolution back to the last functioning value immediately.

Please note also the information in the chapter 'Trouble-shooting, Picture'.



When you connect your monitor to the analogue YUV or RGB output, the picture is only reproduced in resolutions higher than 480p (NTSC) or 576p (PAL) if the DVD manufacturer has permitted high-resolution analogue output. In the case of copy-protected DVDs the output is normally limited to the values stated above.

For copyright reasons, the output of all DVDs, including copy-protected discs, at maximum resolution is only permitted via the digital HDMI output.

Video Adjust (Quality Setup / Picture settings)

Adjustment facility					
SHARPNESS	HIGH	MEDIUM	LOW		
BRIGHTNESS	-20	...	0	...	+20
CONTRAST	-16	...	0	...	+16
GAMMA	HIGH	STANDARD	LOW	NONE	
HUE	-9	...	0	...	+9
SATURATION	-9	...	0	...	+9
LUMA DELAY	0T	1T			

Pressing the **OK** button at the Picture settings menu point opens the menu for individual picture settings.

In this menu you can adjust the picture parameters brightness, contrast, sharpness etc. to suit your exact personal preferences.

HDMI setup

Adjustment facility		
HDMI	ON	OFF

At the menu point HDMI setup you can switch the **K2**'s HDMI output off and on. We recommend that you switch it off if you are using an analogue video monitor with the **K2**.

Preference page

 The sub-menu 'Preference page' can only be called up with the disc stopped.

Adjustment facility

PBC
AUDIO LANGUAGE
SUBTITLE LANGUAGE
DISC MENU LANGUAGE
PARENTAL
DEFAULT

ON	OFF	
ENGLISH	DEUTSCH	further languages
ENGLISH	DEUTSCH	further languages
ENGLISH	DEUTSCH	further languages
1 KID SAF	2 G	... <input type="text" value="7 NC 17"/> <input type="text" value="8 ADULT"/>
RESET		

PBC

The display check function (VCD 2.0 only) can be set to '**ON**' or '**OFF**'. If you select '**On**', the disc menu (if available on the disc) will be displayed on your television.

Audio

Sub-titles

Disc menu

Here you can select the language you prefer for menus or synchronised speech in the sub-menus Audio, Sub-title and Disc. If your chosen language is not available on the disc, the base language on the disc will be used instead.

Parental

Some DVDs may feature child protection which is assigned to the entire disc or particular scenes on the disc. This function enables you to define a limit for reproduction. The categories range from 1 to 8 and are country-specific. It is possible to prevent the playback of particular discs which are unsuitable for your children, or to allow alternative scenes to be played on discs which include this facility.

Home-recorded discs, VCD, SVCD and CD discs do not feature this type of categorisation, and the same rule applies to most illegal DVDs.

 A few DVDs do not feature categorisation even though the film category is printed on the disc sleeve. The categorisation function does not work with this type of disc.

The default password is as follows: 3308

Default

Selecting the 'Reset' menu point for the basic settings returns all the settings to the factory default values, with the exception of your child protection password.

Operating the Streaming Client (K2 M only)

General Information on the Streaming Client

The **T+A K2** 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 **K2**, 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.

- i** The Streaming Client must be registered to your network before it can receive music data via your home network and the Internet. To accomplish this you have to enter some data relating to your LAN or WLAN home network. The process for setting up the network connection is explained later in the chapter entitled '**Network configuration**'.

The **K2** 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
	NAS server (with UPnP-AV server)
	PC (with UPnP-AV server)

The media content formats which the **K2** 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.

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.

- i** 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 **K2** 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.

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

Main Menu (Home-Menu)

When you call up the Streaming Client by pressing the  /  button, the front panel screen displays a list of accessible media sources:

- USB
- Internet Radio
- UPnP-AV Server (Media-Server) in the local network *)
- Favorites



-  *) 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  /  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  /  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 **K2** 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 up to four letters or numerals 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  button or after a brief delay with no further input the **K2** moves to the first entry in the list which starts with the characters you entered. If the text searched for is not found the best matching result will be shown. You can abort the search using the -button.

Select Repeat functions



Repeated **brief presses** cycle through the repeat functions:

→ Rpt Trk ( 1), → 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 ( 1), → Rpt Mix ()

In Mix mode the pieces are played in a random order.

Accessing Media Content using the Favourites List

The Favourites List	<p>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.</p>
Adding Favourites to the List	<p>If you are currently enjoying a particular Internet radio station, simply press the green  button on the F100 / FM100 handset: this adds the station to the Favourites list.</p> <p> 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).</p>
Calling up Favourites	<p>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  /  button.</p>
Erasing Favourites	<p>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 F100 / FM100 handset pressed in for several seconds.</p> <p> 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.</p>
Using Presets	
Preset function	<p>You can store Internet radio stations as Presets using the process familiar from VHF radio. These stations can subsequently be called up directly using the numeric buttons on the F100 / FM100 remote control handset.</p>
Storing a Preset	<p>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  to . The station is now stored under this number.</p> <p>It is possible to store a total of ten Presets under the numbers  to .</p>
Calling up a Preset	<p>Briefly press one of the numeric buttons  to . The associated Preset is now called up, and after a brief delay you will hear it.</p> <p> 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).</p>

Adding Internet Radio Stations

The lists of Internet radio stations displayed by the **K2** 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 **K2** main menu under the Internet Radio / Added Stations point.

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

	Selects the Streaming Client as listening source.
	Brief press: Switches to the main list (Home function) Long press: Opens the Configuration menu
	Selects the menu point within a list
	Opens a folder , starts a piece of music
	Back to the next higher menu point
	Opens a folder , starts a piece of music During input operations: confirms the input
	Selects the previous or next piece in the playback list
 (K2M Front 	Hold button pressed in for fast forward and rewind search
	Ends playback (STOP)
	<ul style="list-style-type: none"> 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 K2M
	Adds a favourite to the Favourites list created on the K2M . If no memory space is available, the screen displays the message 'Favorite List Full'.
	Displays the Favourites list created on the K2M .
	<i>Preset store button</i>
 (not possible with all media)	<p>Repeated brief presses cycle through the repeat functions:</p> <p>→ Rpt Trk, →Rpt All, →Normal</p> <p>Rpt Trk The current piece is repeated</p> <p>Rpt All All pieces in the current folder / the current playlist are repeated</p> <p>Normal Repeat function switched off</p> <p>Long press: Switches Mix mode (Shuffle) ON and OFF</p> <p>Subsequent brief button presses will cycle through the Mix Repeat operating modes:</p> <p>→ Mix, → Rpt Trk, → Rpt Mix</p> <p>In Mix mode the pieces are played in a random order.</p>
	<p>During character input operations:</p> <p>Toggle switch: when pressed repeatedly this button toggles between numeric and alpha-numeric input, and between capitals and lower case</p> <p>While navigating through lists:</p> <p>Calls up the Search function (Alpha search)</p>

Operating the iPod

Once you have used the lead supplied to connect the **K2** to the iPod, you can operate its basic functions using the buttons on the remote control handset or the front panel. While the iPod is in use, its integral screen provides information on the track currently playing, and the iPod's operating status. When an iPod is inserted in the Dock, its battery is automatically recharged.

Selecting the iPod as source

Select the iPod as source by pressing the  button on the remote control handset ( front panel button) (you may have to press several times).

The iPod is now displayed on-screen as the source device.

The iPod as audio source

Information on the piece of music being played is displayed on the iPod's integral screen. We recommend that you leave the iPod's screen backlight switched on permanently to ensure that it is clearly legible.

The behaviour and method of operating the iPod are determined by the iPod itself. In general terms the function of the buttons of the K2 or the F100 / FM100 remote control handset are as follows:

Start and pause playback



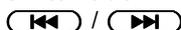
The  /  buttons on the remote control handset or the front panel are used to start and pause playback on the iPod (PLAY / PAUSE function).

Stop playback



Pressing the  button halts iPod playback and unloads the playlist.

Switch track



A brief press on the  /  buttons during playback causes the iPod to jump to the next or previous piece of music within the current playlist.

Search for a passage



The  /  buttons on the remote control handset can be used to search for a passage within the current piece of music (fast forward / rewind)

Select Repeat functions



A brief press on the  button on the remote control handset leafs through the iPod's various repeat functions in turn:
Icons on the iPod indicate the currently selected mode.

Select Shuffle functions



A brief press on the  button on the remote control handset leafs through the iPod's random functions in turn.
Icons on the iPod indicate the currently selected mode.

Menu navigation



Returns to previous point / to the next higher menu level

Confirms input / Selecting a menu point

Selects the previous point within a list

Selects the next point within a list

Confirmation button when entering data

The iPod as video source

The fundamental rule is that the **K2** can reproduce the video content stored on some iPod models on a screen connected to the system, as well as music.

The method of operating the iPod when playing video material varies slightly from model to model, and it is possible that not all video functions will be supported.

If you cannot access all the video functions of your iPod using the remote control handset, or if you only have remote control of the audio functions, then we recommend that you use the iPod's controls to operate the system.

- i** The iPod only generates video content as a standard video signal (FBAS).
If you are using the YUV Component or HDMI output for DVD playback, you will also need to connect a standard video lead between the K2's VIDEO OUT / CVBS output and the video monitor in order to play iPod video files.
For playing iPod video material select the AV input on your video monitor to which this video lead is connected.
- i** The PAL / NTSC change-over switch (on the back panel) and the settings you have entered in the Setup menu for the DVD player (DVD player configuration) 'General settings, TV screen' and 'Video settings' also affect the iPod.

Use with an iPhone

The **K2** can also be used with an iPhone as source device.

- i** Many models generate a warning regarding telephone use, but this is not relevant to the **K2**, and can be ignored.

Special features when operating an iPhone

The first step is to select the iPhone as source with a long press on the **SCL** button (); the iPhone must then be unlocked. For safety reasons this cannot be carried out using the remote control handset - please use the slider on the iPhone screen.

The iPod function of the iPhone can be activated by pressing the right-hand cursor button (). This causes the main menu of the iPod module to be displayed on the iPhone's integral screen.

In the main menu of the iPod module the playback category (Lists, Interpret, Track, Video, etc.) can be selected using the left-hand cursor button (.

Within the lists you can navigate up and down using the  and  buttons.

Press the  button to make a selection; pressing the  button takes you back one menu level.

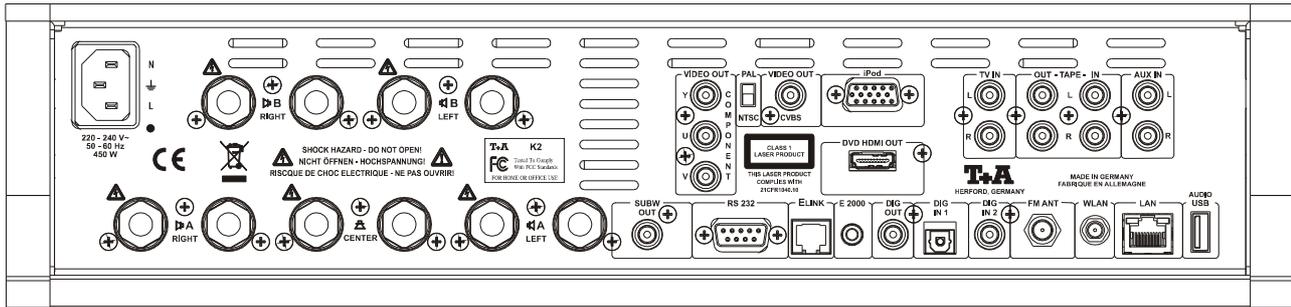
Installation

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.

Connections



Mains input

The mains lead is plugged into this socket.

For correct mains connection please read the notes in the chapters ‘Using the system for the first time, Wiring’ and ‘Safety Notes’.

A, B and C (LS terminals)

The primary pair of loudspeakers is connected to the **A** loudspeaker output. The impedance of each speaker must be at least 4 Ω.

It is important to enter the size of your loudspeakers correctly in the ‘Loudspeaker settings’ menu (chapter ‘System settings, Loudspeakers’).

i If you are using mini-loudspeakers (known as Satellite speakers) as your main loudspeakers, it is really essential to include a sub-woofer in the system.

A Centre loudspeaker is optional.

If you connect a Centre speaker, the **K2** automatically detects its presence. Enter the appropriate settings for Centre mode in the ‘Loudspeaker settings’ menu (chapter ‘System settings, Loudspeakers’).

If the Centre loudspeaker is not detected automatically, please read the notes in the chapter entitled ‘Trouble-shooting, Sound’.

The speakers set up in the neighbouring room or the second listening zone should be connected to the **B** loudspeaker output (Remote Speaker). Please note that the impedance of each speaker should be no lower than 4 Ω.

If Loudspeakers B are not detected automatically, please read the notes in the chapter entitled ‘Trouble-shooting, Sound’.



Caution!

It is important to tighten the screw-terminals firmly, and to eliminate stray strands of wire which could cause short-circuits.



If you are using the system outside the countries of the EU, you can remove the red / black stoppers from the loudspeaker terminals. The speakers can then be connected using banana plugs.

The stoppers are only a push-fit, and can easily be levered out of the rear of the terminals using a suitable tool, such as a knife blade.

The **T+A** accessory range includes a range of high-quality cables which are an exact match to **T+A** equipment.

SUB

Output socket for an active sub-woofer. The sub-woofer is optional.



If your system includes a sub-woofer, it must be switched on in the loudspeaker menu (see chapter ‘System settings, Loudspeaker’).



If **no** sub-woofer is present, it is important to disable the sub-woofer in the loudspeaker menu (see chapter ‘System settings, Loudspeaker’). The correct setting is ‘Ext. sub-woofer off’.

If the sub-woofer is not disabled in the ‘Loudspeaker settings’ (chapter entitled ‘System settings’), the low-frequency range will be missing from the sound since no sub-woofer is present to reproduce it.

VIDEO OUT	<p>YUV Component Video output for connecting a video monitor fitted with a corresponding Component Video input. The video signals of the internal DVD player are present at this output. The YUV signals of an iPod connected to the system can also be reproduced in this way, provided that it supports this video norm; in this case you will need to set the iPod to YUV mode.</p> <p>i The output of the DVD player can deliver standard or progressive video signals; progressive video signals provide better picture quality. In this case the monitor must be designed to accept progressive input signals. The output signals can be set to standard or progressive signals in the Setup menu of the disc player (see the chapter entitled 'DVD player setup menu').</p>
PAL / NTSC	Change-over switch for the DVD output signal between PAL and NTSC video norm. PAL is used primarily in Europe, NTSC in the USA.
VIDEO OUT / CVBS	<p>Output socket for connecting a video monitor with Composite (FBAS) signal input.</p> <p>The video signals of the internal DVD player are present at this output. The K2 can also reproduce signals from a video-capable iPod connected to the system.</p>
iPod	Socket for an iPod (an adapter lead is included in the accessory pack).
DVD HDMI OUT	<p>HDMI output for Plasma / LCD panel or projector.</p> <p>The video signals of the internal DVD player can be made available at this output. To accomplish this you must switch on the option HDMI output in the setup menu of the disc player (see chapter 'DVD player setup menu').</p>
TV IN	Sound input for TV sound reproduction.
TAPE OUT / TAPE IN	Sockets for an audio recorder (Tape, DAT, etc.).
AUX IN	<p>Universal pre-amplifier input.</p> <p>i Can be upgraded to a phono input using the T+A PH2000 external phono pre-amplifier.</p>
RS 232	<p>Software update interface</p> <p>i This port can also be used to provide control of device functions from a computer, making it possible to control the K2 remotely using a home automation system such as those made by CRESTRON, AMX, etc.</p> <p>For external control the K2 must be equipped with special software. For detailed information regarding the RS 232 interface, protocols and command lists please refer to the Technology and Download area of the T+A website: http://www.taelektroakustik.de.</p>
ELINK	Control output socket for the T+A E LINK – system.
E2000	Input socket for the T+A E 2000 remote control receiver for use in a neighbouring room.
DIG OUT	Digital co-axial output for connecting an external digital / analogue converter using a co-ax lead.
DIG IN 1 / DIG IN 2	Inputs for digital source devices with optical or co-ax digital output (SP-DIF). Supported sample rates are: 44.1 and 48 kHz
FM ANT (aerial input)	The K2 features a 75 Ω aerial input FM ANT , which is suitable both for a normal domestic aerial and a cable connection. For first-class reception quality a high-performance, professionally installed aerial system is indispensable.

WLAN
(K2 M only)

Aerial socket for receiving WLAN signals.

The aerial can be unscrewed from the aerial base and screwed directly into the socket.



Automatic activation of the WLAN module

Every time you switch the **K2** on, the machine checks whether it is connected to a wired Ethernet or Powerline network via its LAN socket (see below).

If it finds no connection to a wired network, the **K2** activates its WLAN module and attempts to connect to a radio network.



Caution!

The LAN socket must be left vacant if you are using a WLAN connection.

LAN
(K2 M only)

Socket for a wired network (LAN).



If a LAN is connected, the LAN connection has priority, and the WLAN is disabled.

AUDIO USB
(K2 M only)

Socket for a USB memory stick or an external hard disc.

Files from a medium connected to this socket are reproduced via the Streaming Client (SCL). Only audio files can be played in this way.

The storage medium must be formatted using the FAT16 or FAT32 file system.

The USB storage medium can be powered directly via the USB port provided that its current drain is in accordance with the USB norm. Normalised 2.5" USB hard discs can be connected directly, i.e. without a separate mains PSU.

Listening zones and bi-amping

The **K2** can provide a signal to two supplementary speakers (loudspeaker group B) in addition to the primary speakers (loudspeaker group A).

There are two possible operating modes for these loudspeakers:

One-room mode with two listening areas

The volume of the group B speakers is controlled in tandem with the main loudspeakers. A typical use for this mode of operation would be for providing sound in a second listening zone (e.g. dining area) in the same room. It is possible to set a difference in level between loudspeaker groups A and B using the FADER function (see the chapter entitled "Tone settings"), if you find that the volume needs to be reduced slightly in one of the zones. Groups A and B can also be switched on and off separately, so that you can restrict the music to one zone at any one time.

One-room mode with bi-amping

One-room mode is an excellent choice for the arrangement known as bi-amping. This involves setting up separate amplifiers and separate speaker leads to feed the bass and mid-range / high-frequency systems of your loudspeakers, and provides a further improvement in sound quality. Bi-amping is only possible if the loudspeakers are equipped with bi-wiring terminals.

In a bi-amping arrangement the bass drive units of the loudspeakers connected to the system are connected to the loudspeaker output B terminals, and the mid-range / high-frequency drive units to the loudspeaker output A terminals. For bi-amping operation you should set the FADER to 0, and select the stereo mode of operation (without Centre speaker).

Two-room mode

In this mode the volume level of group B is controlled independently of group A. To accomplish this it is necessary to connect the E2000 remote control receiver (included in the accessory pack) to the **K2**, and install it in the adjacent room. If you now alter the volume in the adjacent room using the remote control handset, the change only affects the volume of loudspeaker output B; the volume level in the primary room is unchanged. Loudspeaker output B can only be switched on and off using the remote control handset in the adjacent room.

Installation and wiring

Carefully unpack the **K2** 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.

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. Make sure there are no loose objects on the support surface which could cause rattling noises or resonance effects.

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 **K2** 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.

Changing the batteries

The battery compartment can be opened by pressing in the locking surface and sliding the cover down and off. 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 should 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.

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 2006/95/EC and 2004/108/EC 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.

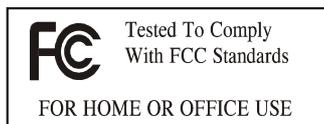
When used in conjunction with auxiliary devices or as part of a system this unit may only be used for the purposes stated in the section '**Approved usage**'.

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



(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 from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Network Configuration (K2 M only)

General Information

The **K2** can be operated in wired LAN networks (*Ethernet LAN* or *Powerline LAN*) or in wireless networks (*WLAN*).

If you wish to use your **K2** in your home network, you must first enter the necessary network settings on the **K2**. 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 or 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.

Compatible hardware and UPnP servers

The market offers a vast number of routers, NAS devices and USB hard discs made by a huge variety of manufacturers. **T+A** devices are generally compatible with other makes of machine which bear the UPnP label. A list of units which **T+A** has checked for compatibility can be found on the Internet under 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 the **K2** detects a LAN connection to a network when you switch it on, 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 **K2** 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.

Opening the Network Configuration Menu

First select the **K2** Streaming Client function by pressing the  /  button.
Open the configuration menu with a long press on the  button on the F100 / 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  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  to  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  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 F100 / 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  and  buttons:

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

Use the blue  button for toggling between numbers, capitals and lower-case 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 alpha-numeric 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  button. This action causes the **K2** 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.

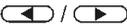
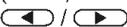
Interrupting the Menu without Storing the Settings

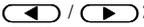
At any time you can leave the network configuration menu without making any changes to the network settings: this is done by pressing the  button, which takes you to the menu point '**Exit without saving**'. Pressing the  button at this juncture interrupts and closes the menu.

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

Setting the Parameters for a Wired Network

- Connect the **K2** to an operational network or Power-Line modem using the LAN socket on the back panel.
- Switch the **K2** on, and select the Streaming Client function by pressing the  /  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	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)
Dev. Name	XXXXX	(0 ... 9, A ... Z)
Save	Apply	
Exit	Apply	

- : 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	<p>ON</p> <p>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 K2 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.</p> <p>OFF</p> <p>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.</p>
Device IP	IP address of the K2
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
Dev. Name	User-selected name under which the device appears in the network
Save and Restart	Stores the network parameters, and restarts the K2 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 **K2** WLAN aerial socket, and ensure that no cable is attached to the **K2** LAN socket.
- Switch the **K2** on, and select the Streaming Client function by pressing the  /  button.
- Now call up the Configuration menu as described above: with a long press on the  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
DHCP	Off
Device IP	192.168.0.10
IP mask	255.255.255.0
Gateway	192.168.0.1
DNS 1	192.168.0.1
DNS 2	0.0.0.0
Proxy	XXX
Proxy IP	192.168.0.1
Proxy port	8080
Dev. Name	XXXXX
Save	Apply
Exit	Apply

Searching for and Selecting the Network

First select the menu point '**WLAN configuration start**', and activate it by pressing the .

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 .

Entering the Password (for encoded networks)

WLAN	
→ Passphrase
Save	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 . Now select the point 'Save WLAN settings' and confirm with .



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

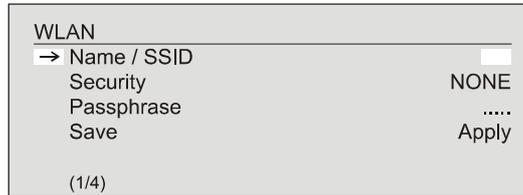
Please enter the settings for the remaining network parameters as described earlier in the section entitled '**Setting the Parameters for a Wired Network**'.

Storing Network Settings and Restarting

Finally select the menu point 'Save and Restart', and press the  button; this action accepts the settings, and restarts the **K2** with the new settings.

Special case:
Manual Network Entry

The **K2** automatically searches for accessible radio networks, and lists them when you call up the menu point 'WLAN Configuration'. However, the **K2** 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.



The screenshot shows a menu titled 'WLAN' with the following options and values:

→ Name / SSID	
Security	NONE
Passphrase
Save	Apply

(1/4)

After successfully entering all the data, please select the point 'Save WLAN Settings', and confirm by pressing the **OK** button. Your **K2** 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 (K2 M only)

The list of radio stations displayed by your **K2** 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 of your **K2**; 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), 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.

The screenshot shows the vTuner website interface. At the top, there is a language selection bar with flags for various countries and a 'My Preferences' link. The main header features the vTuner logo and a navigation menu with 'Logout', 'STATUS', '9754 Stations Available', '9649 Podcasts', and 'New Stations'. Below this is a section for 'My Favourite Groups' with a 'Trance' link. The 'My Added Stations' section displays a table with columns for Station Name, Location, Genre, and Stream. An example station is 'Stellar Attraction' from 'Great Britain' with a 'Rock (Progressive MP3)' genre. There is an 'Add Another Station' button and a search bar. Below the search bar are options to 'Browse Stations by Format', 'Browse Stations by Location', and 'Browse Stations by Language'. A detailed list of genres is provided, including Music (Adult Contemporary, Alternative, Ambient, Big Band, Bluegrass, Blues, Celtic, Christian Contemporary, Christian Rock, Classic Rock, Classical, College, Country, Dance, Electronica, Folk, Gospel, Hard Rock, Hip-Hop, Holiday, Jazz, Latin Hits, New Age, Oldies, Public, R&B, Reggae, Rock, Show Tunes, Smooth Jazz, Soft Rock, Soundtracks, Top 40, Variety, World, World Asia, World Europe, World Hawaiian, World India, World Middle East, World Native American, World Tropical), Talk (Business News, Comedy, Government, News), News Talk, News Updates, Radio Drama, Religious, Scanner, Sports, Talk, and Weather.

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 **K2** 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 **K2**.

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 **K2**. 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.

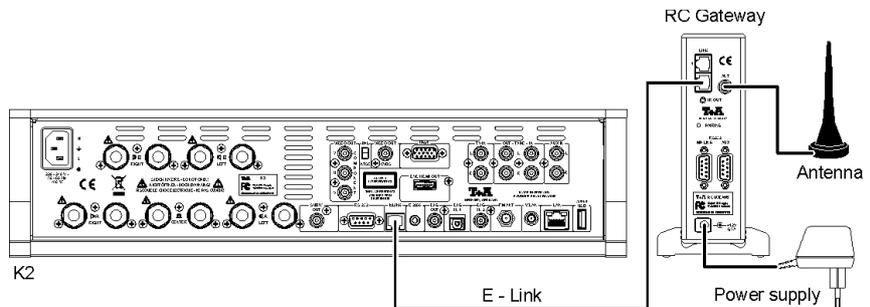
Another method of finding the URL is to search for it using an Internet searching service such as Shoutcast (www.shoutcast.com). Once you have found your station, click on the 'Tune In' switch: this will normally open your media player, and the station should play. In most cases you can set Media Player 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

Connecting the radio aerial

The K2 can be controlled remotely using the FD 100 bi-directional radio remote control handset if a RC Gateway is connected; 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 K2'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.

Since the FD 100 operates by a radio link, an RC Gateway must be connected to the K2. The aerial should be free-standing in order to obtain maximum effective range.



Pairing the FD 100

Before the K2 can be controlled using the FD 100, the remote control handset must first be registered to the K2. 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 K2 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 K2.
- 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 K2 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 K2 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 K2, 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.

Displaying iPod content on the FD 100 graphic remote control handset

Setting 1

Music and video playback

The **K2M** offers two methods of playing and operating an iPod.

The first setting - which is also the default - provides a means of playing music content and video content. In this case you carry out navigation tasks on the iPod's screen, and control operations on the K2M or directly on the iPod. In this mode the iPod is displayed as its own source, assuming that it is connected. In this setting the FD 100 can only control the iPod. The iPod itself does not pass any information to the K2M in this mode, for which reason the FD 100 is also unable to display any information.

Setting 2

Music playback only

The second option is to switch control to the Streaming Client, which provides a convenient method of controlling the iPod using the FD 100. In this mode of operation the iPod does pass the information required to the K2M, but in this case video playback via the K2M is not supported by the iPod; this configuration therefore only permits pure audio playback. The iPod no longer appears as its own source; instead it features in the list of available streaming client media and devices. In this mode navigation and operation of the iPod are carried out exclusively via the K2's 'Streaming Client' source. The iPod is operated in the same way as described in the operating instructions for the streaming client.



If you wish to see the content and information on the FD100's screen during navigation and playback of the iPod, this is only possible in the second setting (navigation on the K2's integral screen), as the iPod only provides the information required for the display in this mode.

This is the procedure for switching the K2M between the two iPod modes:

- Switch the device on from stand-by, and directly afterwards hold the  button pressed in until the "Software Update Menu" appears.
- Use the  button to switch to the "iPod info on" menu point, then activate this point by pressing the  button.
- You can now select the desired setting using the  /  buttons, and confirm your choice with the  button.
- The final step is to close the menu by pressing the  button.

It is not necessary to change any settings on the iPod.

Activating optional functions

The **K2M** features the facility to release optional (extra-cost) functions by entering a four-digit code, such as the gapless function.*
This is the procedure for entering the code:

Activating optional functions (code entry)

- Switch the machine on using the **ON**-button, and immediately afterwards hold the **▼** button pressed in until the "Software Update Menu" appears.
- Use the **▼** button to move the arrow downwards on the screen until the menu point "Code" is selected.
- You will now see the message "starting SCL", followed by "- - -" (or an already activated option; the latter can be overwritten)
- Activate the input process by pressing the **OK** button.
- Enter the code using the **0** to **9** buttons on the remote control handset.
- To accept the code you have entered, press the **OK** button when you have finished the data entry process.
- The screen now displays "starting SCL".
- When the code has been verified, you will see a message such as "GAPL ok" for the release of gapless music playback.

* This function may require a software update



You can obtain the code required for the release process by completing an on-line form, which you will find on the **T+A** website (www.taelektroakustik.de) in the Support area under Hardware / Software. You can also contact us by telephone on [0049] 5221-76760, or by post.

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.

General:

Machine does not switch on (the screen remains dark).

Cause 1:
Mains lead not plugged in correctly.

Remedy:
Check connection, push connector in firmly.

Cause 2:
Mains fuse burned out.

Remedy:
Have the mains fuse replaced by an authorised specialist workshop. The rating of the replacement fuse must agree with the specification printed on the unit.

Machine responds correctly to manual operation of the buttons, but can not be controlled by IR remote control.

Cause 1:
Incorrectly inserted batteries or flat batteries in the remote control handset.

Remedy:
Re-install batteries correctly or fit new ones.

Cause 2:
The remote control transmitter has no direct line-of-sight with the unit.

Remedy:
Make sure that the remote control transmitter has direct line-of-sight contact with the receiver - note that glass doors can interrupt the connection.

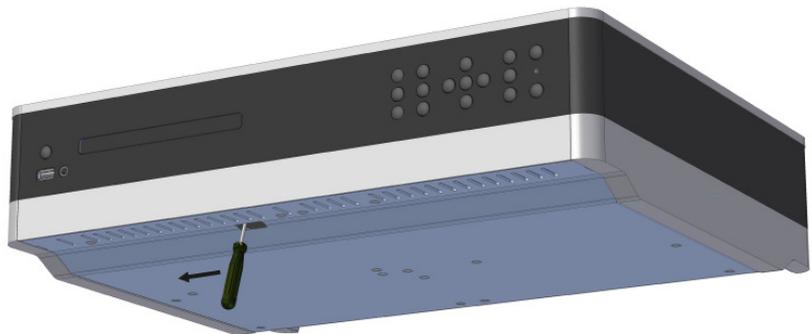
Maximum range between transmitter and receiver: approx. 8 metres.

Be sure to position the receiver where it is not subjected to direct sunlight or very bright artificial light. Fluorescent tubes and energy-saving lamps are powerful sources of interference.

Disc drawer does not open.

Cause:
Mechanical blockage, jammed disc, faulty disc mechanism.

Remedy:
Open the disc drawer manually.
First switch the machine off (disconnect the mains plug). You will find an opening in the bottom through which you can disengage the disc drawer by pushing the white disengagement slider fully to the left using a suitable screwdriver. This will cause the drawer to open by a few millimetres, and you can then extend it fully by hand..



Sound:

The K2 has not detected the Centre loudspeaker or the loudspeakers connected to output B. The associated setup options in the loudspeaker configuration menu and / or the tone control menu are not displayed.

Cause 1:

Loudspeaker cables not connected correctly.

Remedy:

Please check the loudspeaker leads for possible damage. Inspect the cable terminals on the **K2** and the loudspeaker cabinets, and check that they are making proper contact.

Cause 2:

The loudspeakers connected to the system are fitted with a capacitor in their cross-over input (known as "high-pass filtered" loudspeakers).

Remedy:

A resistor (470 Ohm / 5 W) can be wired in parallel with the loudspeaker; this will enable the K2 to detect such speakers.

If you have queries about this, please contact your local specialist dealer, or refer to the **T+A** Service on the e-mail address 'e-service@taelektroakustik.de'.

Loudspeaker group B cannot be switched on and off using the remote control handset in the main listening room.

Cause 1:

The "Two-room" mode of operation is set to "ON" in the System Configuration - Loudspeaker settings.

Remedy:

In two-room mode, loudspeaker output B can only be controlled using the remote control receiver in the adjacent room. Use the appropriate remote control handset to control loudspeaker group B, or set two-room mode to "OFF".

Cause 2:

The loudspeakers connected to the system are fitted with a capacitor in their cross-over input (known as "high-pass filtered" loudspeakers).

Remedy:

A resistor (470 Ohm / 5 W) can be wired in parallel with the loudspeaker; this will enable the **K2** to detect such speakers.

If you have queries about this, please contact your local specialist dealer, or refer to the **T+A** Service on the e-mail address 'e-service@taelektroakustik.de'.

Very weak bass response**Cause 1:**

The loudspeakers are connected out of phase.

Remedy:

Check that the positive terminal of each loudspeaker is connected to the appropriate positive loudspeaker terminal on the **K2**.

There are also Test-CDs which provide a simple means of determining correct loudspeaker phase. Please ask your local specialist dealer about this.

Cause 2:

You have set a cross-over frequency ((40, 60, 100 or 150Hz) for the L / R primary loudspeakers (and perhaps also for the Centre speaker) in the System settings / Loudspeaker configuration sub-menu, even though no sub-woofer is present in the system.

Remedy:

Either connect a sub-woofer to the system, or select the "Full-range" setting in the Loudspeaker configuration menu for the L / R main loudspeakers (and also for the Centre, if present). If you are using small loudspeakers, select the "Extended" setting.

Cause 3:

In the Systems settings - Loudspeaker configuration sub-menu you have selected one of the settings "in the corner" or "close to wall", although the speakers are free-standing.

Remedy:

Select the loudspeaker position "Free" in the Loudspeaker configuration menu.

Cause 4:

Unfavourable loudspeaker position, or loudspeakers too small for the size of room.

Remedy:

Alter the position of the speakers in order to achieve a more effective radiation pattern.

Try out the "Extended" setting in the System settings menu - Loudspeaker configuration sub-menu for the L / R main loudspeakers, and perhaps also for the Centre speaker, in order to expand the bass response.

Picture:

No picture from the DVD player.

Cause 1:
Video lead not connected, or defective.

Remedy:
Connect the video lead properly; have the lead checked by an expert.

Cause 2:
Video monitor not set to the correct picture input, or an incorrect video norm selected for the input.

Remedy:
Select the picture input (AV input) on the video monitor to which your **K2** is connected.

If you are using a SCART input, please check whether the video norm (FBAS, S-Video, RGB, YUV) is set to match the output of the **K2** which is in use.

Cause 3:
In DVD player setup (video settings) you have selected a resolution which is not compatible with the TV set or video monitor connected to the system, and can therefore not be displayed by the monitor.

Remedy:
Reset the system to standard video output. This is the procedure:

- Switch the device off, then on again.
- Select Disc as source.
- Hold the **SRC** button pressed in until the message "Settings" appears on the **K2**'s integral screen.
- Now hold the F1 button on the remote control handset pressed in until you see the message "Resolution Reset" on the screen.
- The **K2** is now reset back to standard video output. You should see a picture on your monitor, in which case you can return to the DVD menu "Video settings" and select the resolution you wish to use. However, please ensure that the resolution you select is also supported by your video monitor.

The monitor displays no picture, or an error message, when you change the screen resolution in the DVD player setup menu.

Remedy:
While the Setup menu is open (integral screen shows '**DISC SETUP**'), you can reset the monitor to the basic video setting with the lowest standard resolution by pressing the **F1** button (Reset interlaced) or a long press on the **F2** button (Reset progressive).

If you have already left the menu, switch the system on, select the disc player as listening source (**DISC** button) and open the Setup menu with a long press on the **SRC** button.

Incorrect colour rendition during DVD playback when using the K2's Component Video output.

Cause 1:
The video norm setting for the **K2**'s Component output (DVD setup, menu "Video settings - Component") does not coincide with the setting on your video monitor.

Remedy:
Set the same picture norm, e.g. "YUV" on the **K2** and the video monitor.

Cause 2:
The video monitor is not set to the correct picture input, or the wrong video norm is selected for the input.

Remedy:
Select the picture input (AV input) on the video monitor to which your **K2** is connected.

If you are using a SCART input, check whether the video norm setting (FBAS, S-Video, RGB, YUV) is set to match the output on the **K2** which is in use.

When the picture norm “RGB” is selected for the Component output in the DVD player setup menu, the picture is not correct when a DVD is played.

Cause 1:

The K2's output signal in RGB mode is what is known as an RGB signal with Sync on Green. This signal is not compatible with the RGB signal with FBAS Sync, as used in Scart connections, and cannot be processed by all video monitors. It is intended primarily for use with professional projectors.

Remedy:

Ensure that the monitor or projector connected to the system is capable of processing “RGB / Sync on Green” signals.

If this is not possible, use the Component video norm YUV.

No picture from the iPod.

Cause 1:

Video output switched off at the iPod.

Remedy:

Switch on video output on your iPod.

Cause 2:

A standard analogue video lead (FBAS) is not connected between the K2 and the video monitor.

Remedy:

The iPod only generates video signals in standard video form (FBAS). If you use the analogue component output (YUV) or the digital HDMI output for DVD playback, an FBAS video lead must be connected between the K2 and the video monitor in addition to the YUV or HDMI lead.

Switch your iPod's video output on, and select the video input on your monitor to which the FBAS output of the K2 is connected.

Cause 3:

Your iPod does not support video output.

Remedy:

Ensure that you are using a model of iPod which supports video output.

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 quality 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:

Network parameters not properly configured.

Remedy:

Configure the network parameters correctly (see chapter '**Network configuration**').

Cause 5 (operation without network connection):

For proper operation the **K2** needs at least one properly connected network device. This can be a LAN or WLAN network or a USB storage device.

Remedy:

If the **K2** shall be operated without network (LAN / WLAN) please connect at least a USB stick.

The message 'Track not found' is displayed

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 **K2**.

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 **K2** will re-start the network communication. After re-start please choose a music title or internet radio station and start playback.

<p>Transmission interruptions occur when listening to internet radio stations.</p>	<p>Cause 1: The capacity of the internet radio station's server is at it's limit.</p> <p>Remedy: Choose a different station.</p> <hr/> <p>Cause 2: Network problems occurred.</p> <p>Remedy: Check your network (see above).</p>
<p>Some internet radio stations can not be received</p>	<p>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.</p> <p>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.</p>
<p>Bad sound quality bei certain internet radio stations</p>	<p>Cause: The station transmits with a low audio bandwidth (low bitrate).</p> <p>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</p>
<p>USB Storage device is not recognised</p> <p>or</p> <p>Interruptions and / or jerky reproduction of audio or film material</p>	<p>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.</p> <p>Remedy: Only use USB storage devices that conform to the USB standard or use storage devices with own power supplies.</p> <hr/> <p>Cause 2: The storage device is not formatted with an appropriate file system.</p> <p>Remedy: The K2 accepts storage devices with FAT16 or FAT32 file systems.</p> <p>Note: For big music archives we recommend to use a NAS (network attached storage) device with a UPnP-AV server to which the K2 will connect via your home network.</p> <hr/> <p>Cause 3: The data transfer rate of the memory unit is too low, or the memory unit is not compatible with the K2's USB port.</p> <p>Remedy: It is not possible to guarantee general compatibility with all devices on the market due to the wide variety of USB memory media available. If you encounter a persistent problem, we suggest that you try a different type of USB memory unit.</p> <hr/> <p>Cause 4: The USB memory unit is connected to the USB socket using a lead, rather than directly.</p> <p>Remedy: Many USB extension leads are not suitable for the high data transfer rates which occur during the Streaming process. Use only high-quality certified cables, and ensure that the wire length is as short as possible (<50cm).</p>

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 blocks of digits with numbers in the range 0 to 255, 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.: **K2** 192.168.001.001, **NAS**: 192.168.001.002, **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 K2** 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 K2** 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 K2 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 K2 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 K2 to access media files stored on these devices. Examples for UPnP-AV server software compatible with the K2 : <u>Windows:</u> - Twonky Media Server http://www.twonkyvision.de/ - Windows Media Player 11 http://www.microsoft.com/windows/windowsmedia/de/default.aspx <u>Linux:</u> - 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 market offers a vast number of routers, NAS devices and USB hard discs made by a huge variety of manufacturers. T+A devices are generally compatible with other makes of machine which bear the UPnP label. A list of units which T+A has checked for compatibility can be found on the Internet under http://www.taelektroakustik.de/hardware/comp_lan_hw.pdf .

Notes on Energy Saving

The **K2** fulfils the latest directives regarding energy saving (EuP directive). Its modern mains power supply and switch-mode output stage design make a substantial contribution to this. The internal micro-processor always ensures that sub-assemblies which are not required for the current process are automatically switched off. In Stand-by mode the current drain varies according to the functions of the K2M which are still active. The following table gives details:

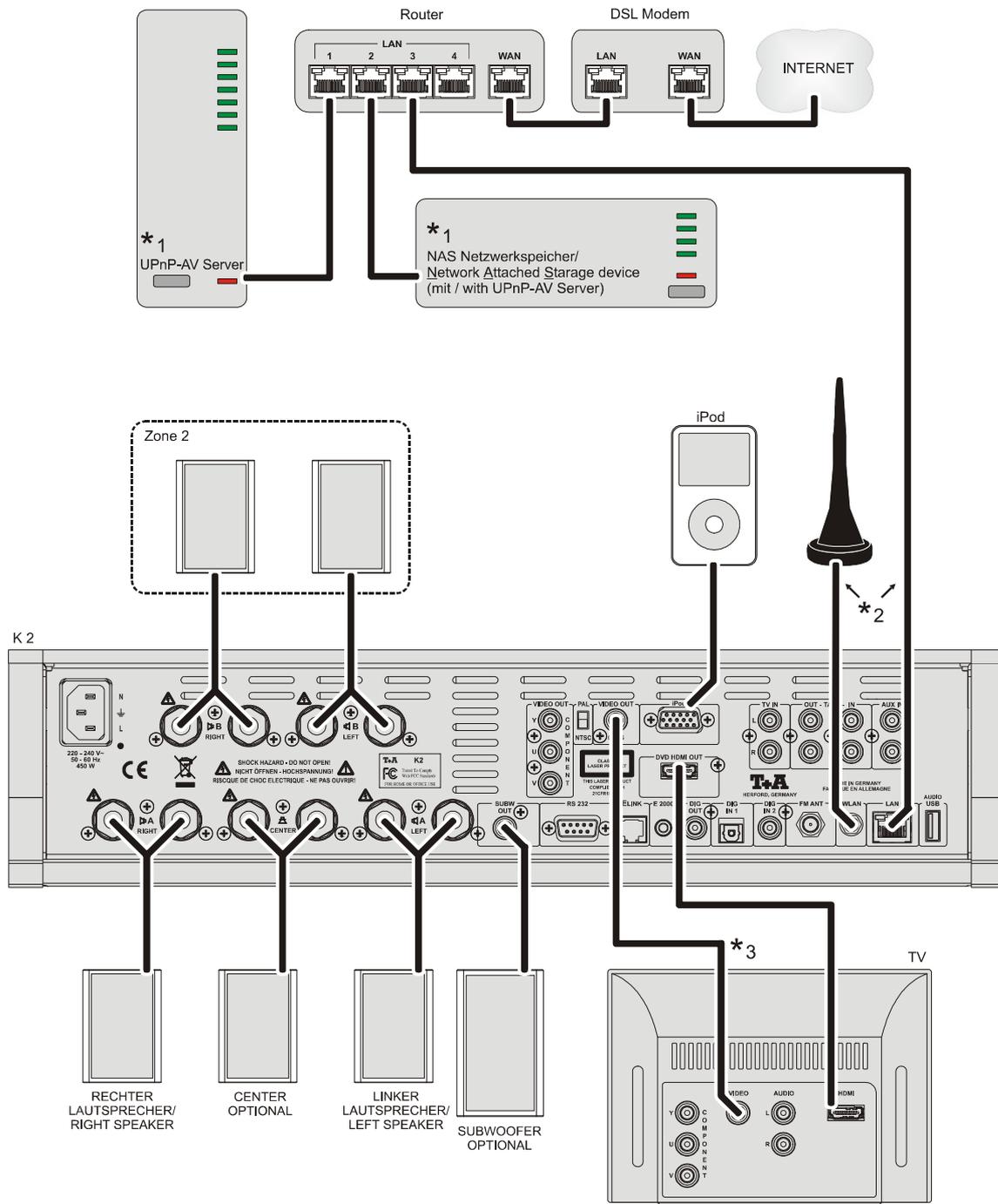
Clock / Alarm function off Screen off	Clock or alarm function on Screen brightness = min.	Screen brightness = max.
0,5 W	3 W	4 W

Anhang Appendix

Anhang / Appendix A

Anschluss-Schema / Wiring diagram

HDMI-Verdrahtung / HDMI cabling



Attention!

A properly set up home network with router must be installed and in operation to use the K2.

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.

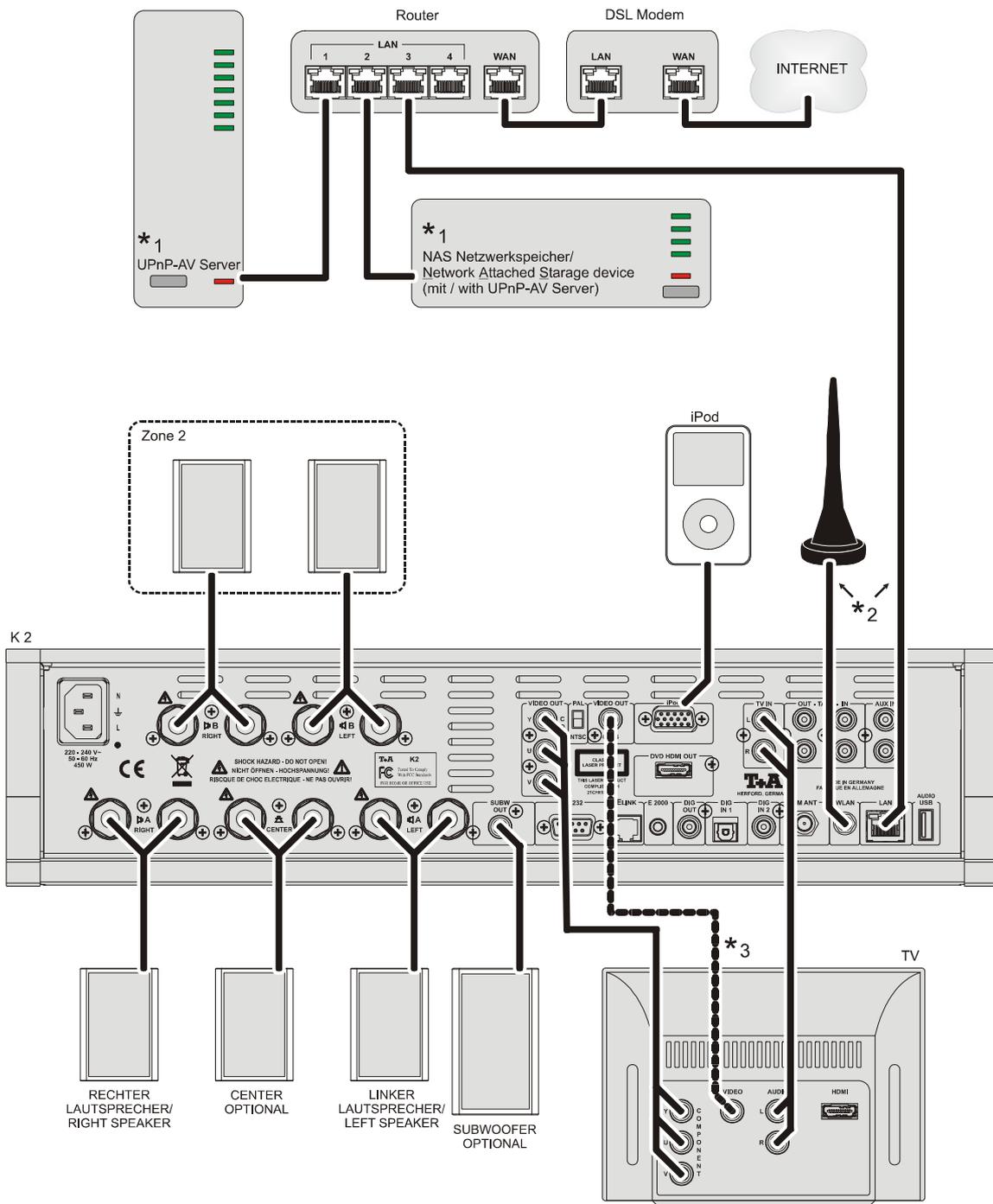
*1 Musik Server with UPNP-AV server software installed

*2 Connection either via Cable-LAN oder Wireless-LAN

*3 If you wish to access iPod video, you must complete a standard video connection in addition to the HDMI connection, as iPods do not support digital HDMI picture output.

Anschluss-Schema / Wiring diagram

AUDIO-Video-Verdrahtung / AUDIO Video cabling



Attention!

A properly set up home network with router must be installed and in operation to use the K2.

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

*3 If your TV does not feature a YUV input, please use the video connection. If you wish to transfer videos from the iPod, please complete a standard video connection in addition to the YUV connection, in order to view iPod videos on your TV.

Anhang / Appendix B

Technische Daten / Specification

Verstärkerteil / Amplifier Section		
Externe Eingänge / External inputs		Aux, TV, Tape - 2 V / 20 kΩ iPod (mit Steuerung / with control)
Kopfhörerausgang / Headphone output		für dynamische Kopfhörer > 30 Ω for dynamic headphones > 30 Ω
Aufnahmeausgänge / Recording outputs		1 V, 150 Ohm
Nennleistung pro Kanal (Stereo) / RMS power output per channel	8 Ω / 4 Ω	95 W / 150 W
Impulsleistung / Peak power output	8 Ω / 4 Ω	130 W / 230 W
Klirrfaktor / T.H.D.		< 0,005 %
Intermodulation / I.M.D.		< 0,005 %
Kanaltrennung / Channel separation		> 65 dB
Frequenzgang / Frequency response		1 Hz – 60 kHz
Betriebsarten / Operating Modes		
Lautsprechergruppe A / Speaker group A	Stereo (2.0 + 2.1), 3-Kanal (3.0 + 3.1), Virtual Surround	Stereo (2.0 + 2.1), 3-Channel (3.0 + 3.1), Virtual Surround
Lautsprechergruppe B / Speaker group B	Stereo (2.0)	Stereo (2.0)
Bassmanagement, Übergangsfrequenzen / Bass management / x-over frequencies	Vollbereich, Erweitert, 40, 60, 100, 150 Hz	Full range, Extended, 40, 60, 100, 150 Hz
Tunerteil / FM Tuner Section		
Empfangsbereich / Tuning range		87,5 – 108 MHz
Empfindlichkeit / Sensitivity		2 μV
Übersteuerungsfestigkeit / max. input level		> 125 dBμV
Stereoübersprechdämpfung / Crosstalk		> 40 dB
RDS-Funktion / RDS functions	Stationsname, Radiotext, Uhrzeit	Station Name, Radiotext, Time
Streaming Client (Model K2M only)		
Formate / Formats		MP3, WMA, (WMDRM 10), AAC, FLAC, WAV, OGG-Vorbis
Medienserver / Media server	UPnP AV + DLNA-kompatible Server, vTuner Internet Radio Service	UPnP AV + DLNA comatible servers, vTuner Internet Radio Service
Schnittstellen / Interfaces		USB 2.0, LAN, WLAN
iPod-Schnittstelle / iPod dock		
		Wiedergabe von Audio- und Videodateien vom iPod inkl. Steuerung und Fernbedienung des iPod Playback of audio and video files from the iPod; the iPod can be controlled and remote-controlled

DVD-Player		
Laufwerk / Mechanism	Linearantrieb mit Doppellasersystem (650 + 785 nm)	Linear Drive with double laser system (650 + 785 nm)
D / A-Wandler / D/A Converter	24 Bit, 192 kHz	
Digitalausgang / Digital output	SP-DIF, Coax 0,5 V / 75 Ω, LPCM (IEC 958) Dolby digital (AC3), dts (IEC 1937)	
Tonformate / Audio formats	LPCM, MPEG, Dolby digital, dts	
Videoausgang / Video output	Composite (FBAS), YUV Interlaced + Progressive, HDMI 1.2 PAL, NSC Bildformate 16:9, 4:3 Letterbox, Pan Scan	Composite (CVBS), YUV Interlaced + Progressive, HDMI 1.2 PAL, NSC Screen formats 16:9, 4:3 Letterbox, Pan Scan
Diskformate / Disc formats	Audio	CD, CD-R, CD/RW, MP3, Hybrid SACD CD Layer
	Video	DVD-Video, DVD-R, DVD-RW, VCD, S-VCD
	Foto	JPEG, Picture CD
Funktionen / Special functions	Abspielprogramm, Wiederholfunktionen, CD-Text, MP3 ID3 v2 Display, Trickmodi (Zeitlupe, -raffer, Standbild), Kamerawinkel, Zoom, Bildoptimierung, Vorschau, Rotieren	Play-Program, Repeat functions, CD-Text, MP3, ID3 v2 display, special playmodes (slow motion, time lapse, freeze frame), camera angle, zoom, picture optimisation, picture preview, picture rotate
RS 232 Steuerschnittstelle / RS 232 control interface	zur Steuerung von entsprechend ausgestatteten Metz oder Loewe TV-Geräten	for controlling suitably equipped Metz or Loewe TV sets
Ausstattung, Zubehör / Additional Features / Accessories	Fernbedienung, IR-Empfänger E 2000, Uhr, Weckfunktion, WLAN Antenne (nur K2 M), iPod Anschlußkabel	Remote control F100, IR receiver E2000, integrated clock with alarm function, WLAN antenna (K2 M only), iPod connecting cable
Optionales Zubehör / Optional accessory	Fernbedienung FM100	FM100 remote control
Leistungsaufnahme / Pwr consumption	max. 600 W, Standby 0,5 W	

Technisch begründete Änderungen vorbehalten. / We reserve the right to alter specifications.

T+A elektroakustik GmbH & Co. KG

Herford

Deutschland * Germany