

User Manual

HDR-4100C/E

Thank you for purchasing a HUMAX product. Please read this user's manual carefully to be able to safely install, use and maintain the product at maximum performance. Keep this user's manual next to your product for future reference. The information in this user's manual is subject to change without notice. Please visit our website for updates.

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Warranty

The warranty does not cover parts which may become defective due to misuse of the information contained in this manual.

Meaning of Symbols



To reduce the risk of electric shock, do not remove cover (or back). No user serviceable parts inside. Refer servicing to qualified service personnel.



This symbol indicates dangerous voltage inside the product that presents a risk of electric shock or personal injury.



This symbol indicates important instructions accompanying the product.

Warnings, Cautions and Notes

Throughout the whole manual, pay special attention to the following marks that indicate hazardous situations.

Warning

Indicates a hazardous situation which could result in serious injury.

Caution

Indicates a situation which could damage the equipment or other apparatus.

Note

Indicates additional information to make the user aware of possible problems and information of any importance to help understand, use and maintain the installation.

Notice

WEEE Instructions



This product should not be disposed with other household wastes at the end of its working life. Please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources. This will prevent possible harm to the environment or human health from uncontrolled waste disposal.

Domestic users:

Please contact either the retailer where you purchased this product or their local government office for details of where and how they can take this item for environmentally safe recycling.

Business users:

Contact your supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.

Trademarks

- Manufactured under license from Dolby Laboratories. Dolby and the double-D symbol are trademarks of Dolby Laboratories.
- HDMI, the HDMI Logo, and High-Definition Multimedia interface are trademarks and registered trademarks of HDMI Licensing LLC.



This item incorporates copy protection technology that is protected by U.S. patents and other intellectual property rights of Rovi Corporation. Reverse engineering and disassembly are prohibited.

EU regulatory conformance

Hereby, HUMAX Co., Ltd, declares that this HDR-4100C/E is in compliance with the essential requirements and other relevant provisions of EC Directives:

- 2006/95/EC - LVD Directive
- 2004/108/EC - EMC Directive
- 2009/125/EC - ErP Directive
- 2009/65/EU - RoHS Directive

The product carries the CE mark applied onto it.

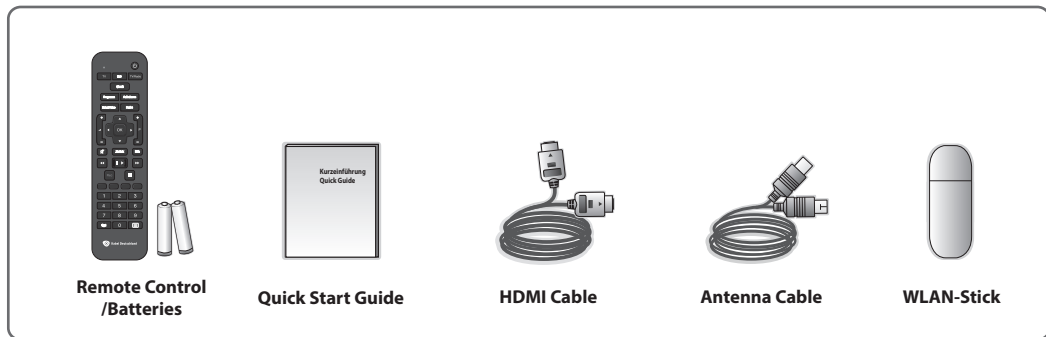


The Declaration of conformity made under EC Directives is available for viewing at the following location in the EU community:
<http://www.humaxdigital.com/global/support/support.html>

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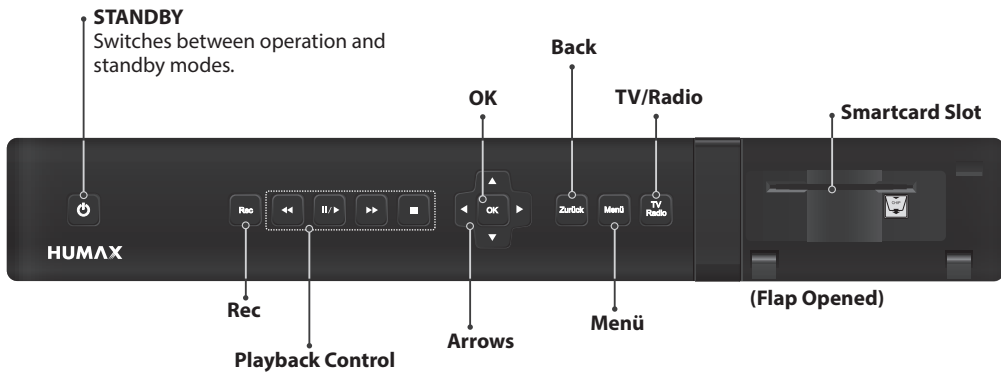
Quick Start Guide

1. Checking Accessories



2. Product Overview

Front Panel



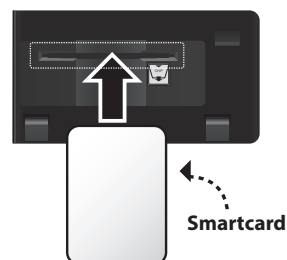
Note: The image shown may differ from the actual product.

Quick Start Guide

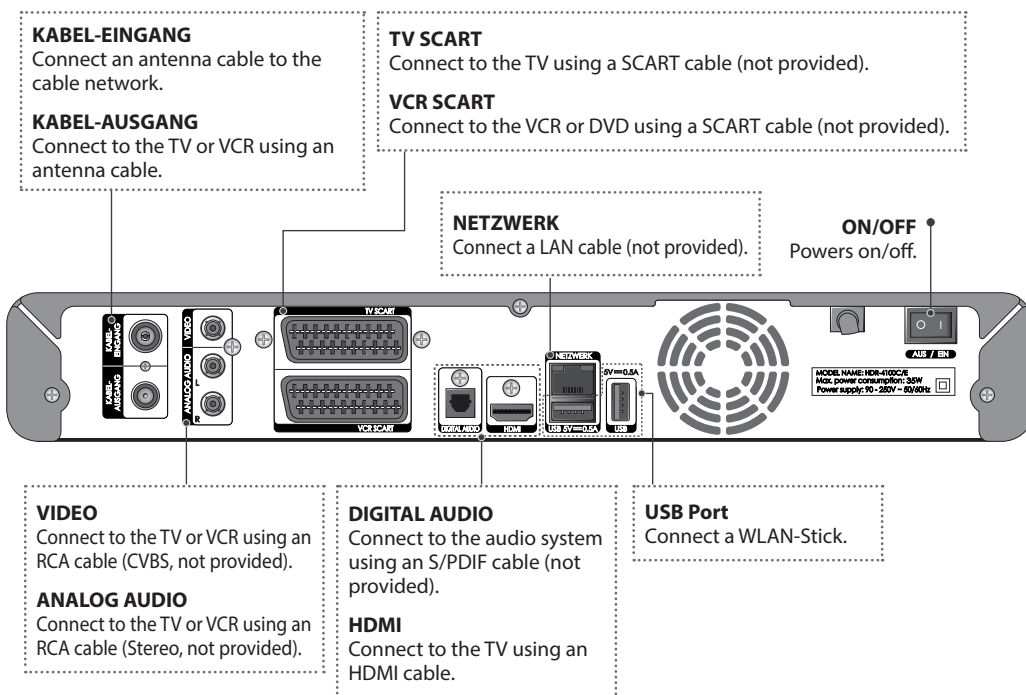
English

Inserting the Smartcard

1. Open the right-hand flap on the front panel to expose the card slot.
2. Hold smartcard horizontally with the electronic chip facing downwards.
3. Insert the smartcard into the slot.



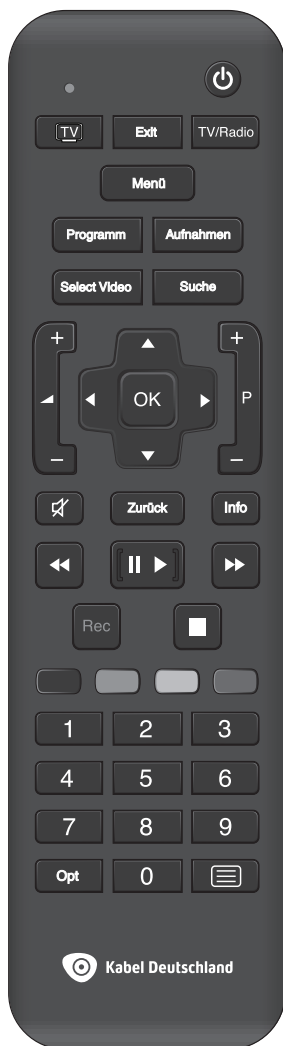
Rear Panel












Note: The image shown may differ from the actual product.

Quick Start Guide

Remote Control

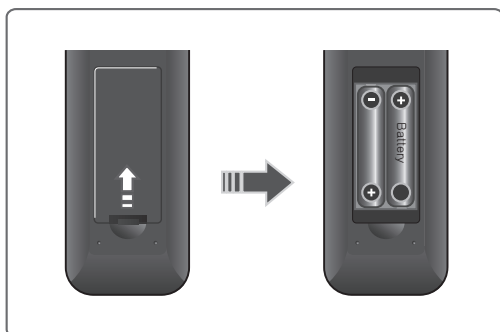


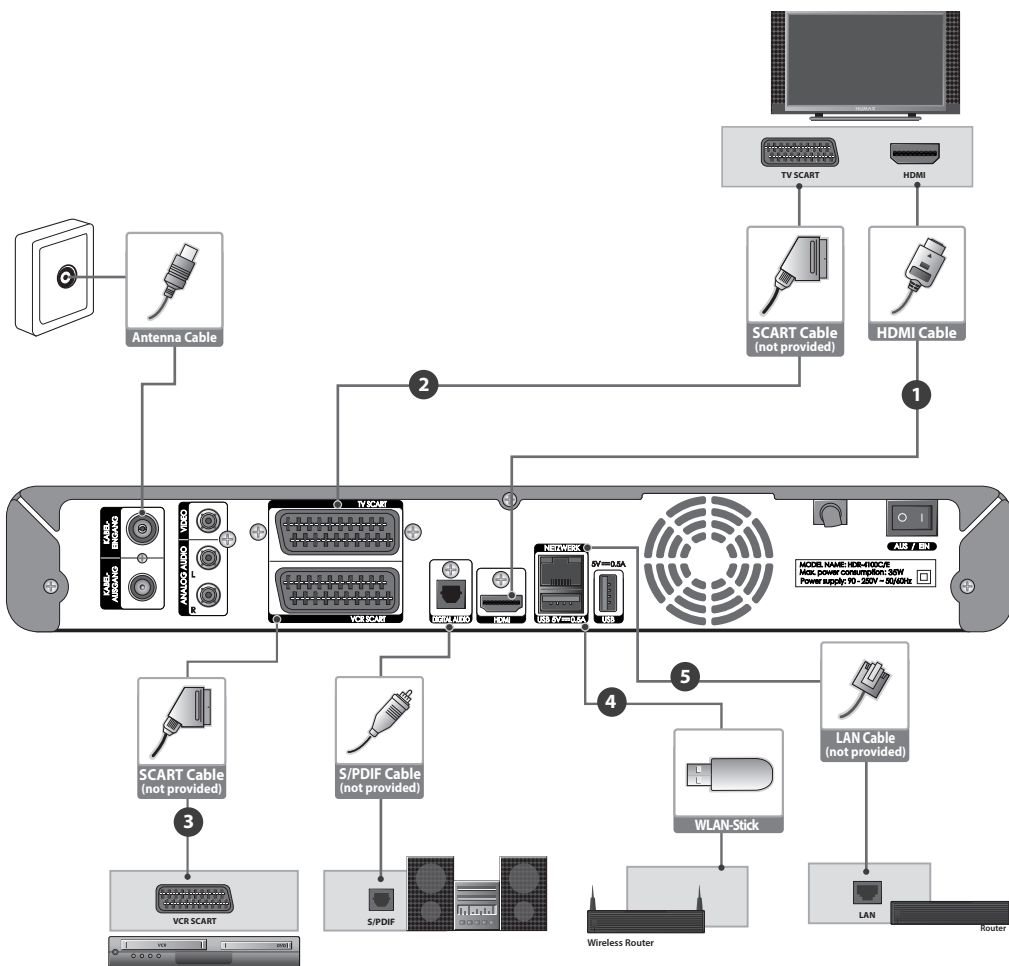
	STANDBY	Switches between operation and standby modes.
	TV	Controls TV.
	Exit	Exits all On-Screen Display (OSD) screens.
	TV/Radio	Switches between TV and radio modes.
	Menü	Displays the main menu.
	Programm	Displays the program guide.
	Aufnahmen	Displays the recording list.
	Select Video	Enters VOD service.
	Suche	Finds programs by genre or keyword.
		Adjusts the audio volume.
	ARROW Buttons	Moves the cursor up, down, left or right.
	OK	Selects a menu or confirms a selection.
	P +/-	Changes the channel or page.
	MUTE	Mutes audio.
	Zurück	Returns to the previous channel. Goes back to the previous screen.
	Info	Displays the program information.
	Playback Control Buttons	 Rewind,  Pause/ Play,  Fast Forward  Record,  Stop
	COLOUR Buttons	Colour keys for interactive applications.
	Opt	Displays the Audio/ Subtitle Language and Video Subchannel.
	NUMERIC Buttons	0-9
	Teletext	Enters the digital text service.

Note: The image shown may differ from the actual product.

Inserting Batteries

1. Press the hook upward and lift the battery cover off.
2. Insert the batteries (supplied) matching the plus(+) and minus(-) at each end.
3. Close the cover.





Connecting the Cable TV Line

Connect an antenna cable from your cable TV network to **KABEL-EINGANG** connector.

Connecting the TV

❶ TV with the HDMI connector

For the best picture quality, connect the product and TV using an HDMI cable.

❷ TV with the SCART connector

For good picture quality, connect the product and TV using a SCART cable (not provided).

❸ VCR with the SCART connector

To record an event with your VCR, connect the product and VCR using a SCART cable (not provided).

Note:

- When using the digital audio system, connect the product and the digital audio system using an S/PDIF cable (not provided) for audio.
- Programs restricted by DRM (Digital Rights Management) may not be viewed via the HDMI cable. Connect using a SCART or composite cable (not provided).
- Connecting your TV directly to the audio/video output of the product will assure a more vivid picture and enhance your viewing enjoyment.

Connecting the Network

❹ Connecting to the Wi-Fi (Wireless LAN)

You can connect the network via the Wi-Fi access point.

1. Connect the Kabel Deutschland WLAN-Stick to the USB port.
2. To configure the wireless network, go to the **Menu > Settings > System set-up > Internet > Internet set-up**.

Note:

- Make sure the distance between the Wi-Fi access point and the product is not too far away. This may lower the quality of service.

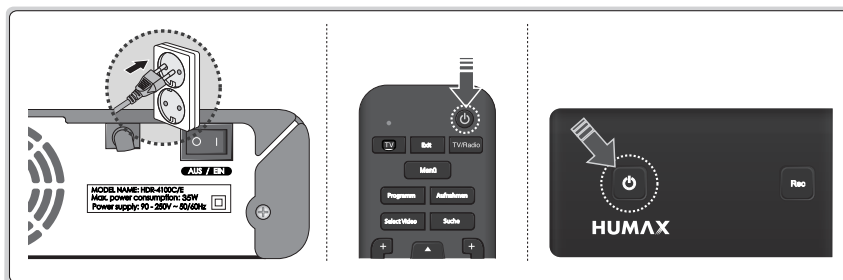
❺ Connecting to the LAN

Connect one end of the LAN cable (not provided) to the product and the other end to the LAN router.

Quick Start Guide

4. Powering On

1. Connect the power cord of the product to a wall outlet.
2. Ensure the **AUS/EIN** switch at the rear of the product is switched to **EIN**.
3. Power on by pressing the **STANDBY** button on the remote control or the **STANDBY** button at the front of the product.



5. Installation Wizard

In five steps, the installation wizard will guide you through the installation. Please follow the instructions on the screen carefully. If necessary, react with your remote control.

1 Channel search

The HD-Video-Recorder automatically searches for TV and radio channels and stores them in places 101 to 999. During the search you see a video introduction to the use and main functions of the device. You can stop this video at any time by pressing the stop button ■ on the remote control. After the completion of the channel search, the total number of TV and radio channels is displayed in the installation screen.

2 Set up favorite channels

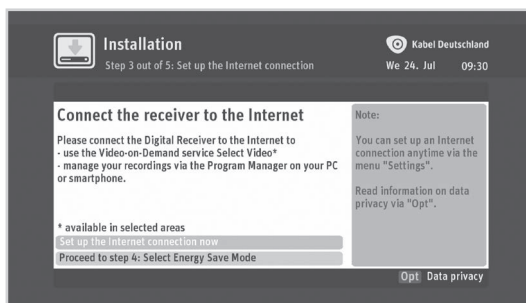
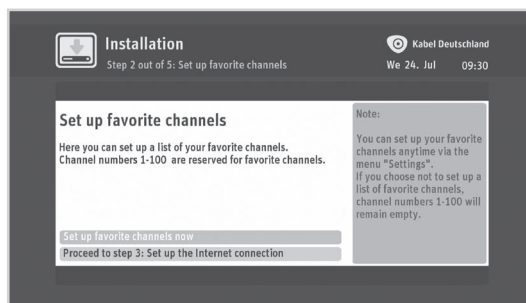
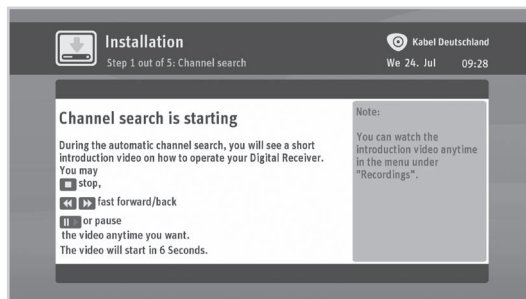
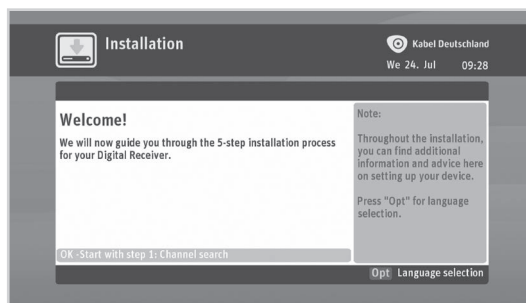
The channel search normally finds several hundred stations. You can now set up your favorite channels and their place in the list of favorite channels. Places 1 to 100 are reserved for your favorite channels.

Note: If you do not want to create a list now, skip this menu.

3 Setting up the internet connection

If you are connected to the internet you can use the Kabel Deutschland's online video store "Select Video". This service is not yet available everywhere in Germany.

On the TV screen you see how to connect the receiver to the internet. Select how to connect to the internet using the keys ▲▼ on the remote control: via the included wireless stick or via a network cable (LAN cable).



Quick Start Guide

Wireless LAN

If you want to connect via the WLAN-Stick, make sure that the WLAN-Stick is plugged into the USB port for WLAN-Stick under the network connector (RJ45) on the back of the HD-Video-Recorder and that the WLAN key is at hand. The wireless key is a string in the form of a password that protects access to your WiFi network from unauthorized third parties. The wireless key is usually found in the documentation of your wireless router. It is strongly discouraged to operate a WiFi network in Germany without protection by a wireless key for reasons of data protection, data security and for legal liability.

Now select the yellow highlighted line **Via the Kabel Deutschland wireless LAN stick** by pressing **OK** on your remote to establish an encrypted connection between WLAN-Stick and wireless router using a WLAN key.

You have additionally the option of selecting **Continue with WPS** using the arrow key ▼ on your remote control. WPS stands for Wi-Fi Protected Setup and is another technology for establishing wireless connections, but with lower level safety.

If wireless networks are in range, they are now displayed. Choose with the keys ▲▼ on the remote control, with which wireless network to connect the HD-Video-Recorder. When the name of the network is highlighted in yellow, select this network pressing **OK** on your remote.

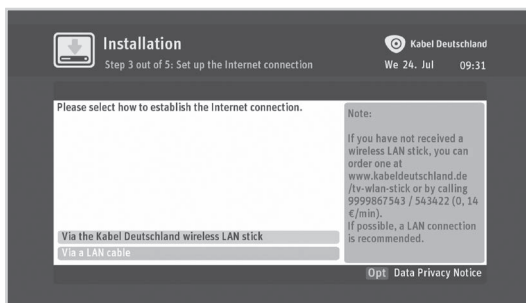
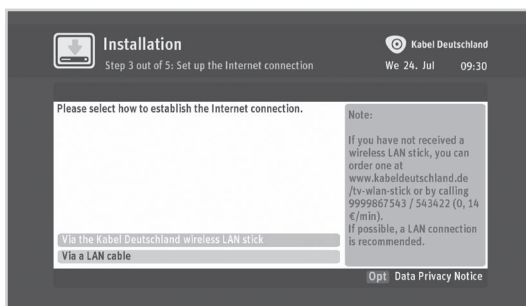
Now, an on-screen keyboard is displayed to type the WLAN key. The wireless key is usually between 8 and 63 characters long and can consist of numbers, letters and special characters. Usually you have to distinguish between lowercase and uppercase letters. To enter the WLAN key, move the yellow highlight using the four keys ▲▼◀▶ on your remote control to the first character of the WLAN key, and then press **OK** on your remote control. The character appears in the input line on the screen keyboard. Enter all characters of the wireless key. Use the **ABC** field in the screen keyboard and press **OK** on your remote to set the lowercase letters shown in the screen keyboard to uppercase if necessary. Use the field **!&?** in the on-screen keyboard and press **OK** on your remote to display the special characters available. If the key is entered completely and correctly, finish the input via the field **Input ready** in the on-screen keyboard and press **OK** on your remote control. Now, the HD-Video-Recorder checks the network and internet connection. If the HD-Video-Recorder is connected to the internet, the message **The internet connection has been set up** appears. In addition, the LED light flashes on the wireless stick.

Wired LAN

If you choose to connect via a network cable (LAN cable), check if the network cable is connected to the HD-Video-Recorder and to the router.

Select **Via a LAN cable**.

The device will automatically establish an internet connection.



4 Select energy mode

In the fourth step you decide whether your HD-Video-Recorder consumes less energy overall but starts slowly, or if you wish a rapid operation of the HD-Video-Recorder but want to take into account a higher overall energy consumption of the device.

Select one of the modes: **Active**, **Quick Start** and **Keep Standard**.

The default is the **Standard** mode, it causes the lowest power consumption and a longer start-up phase.

The **Active** mode has the highest power consumption and keeps the equipment ready at any time.

The **Quick Start** mode allows you to choose the times at which the device remains in **Active** mode and when it falls into the **Standard** mode.

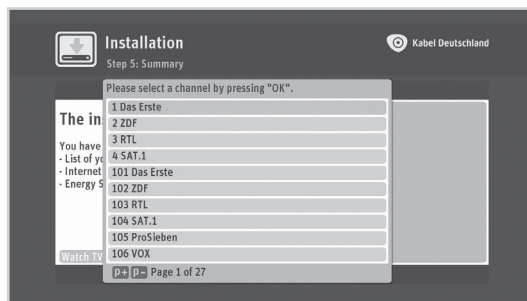
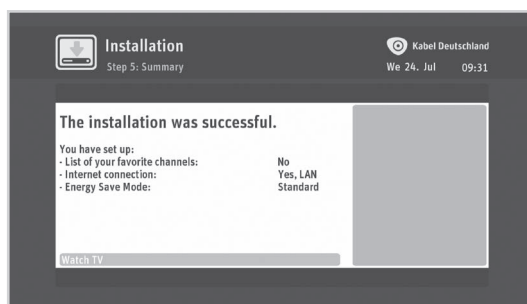
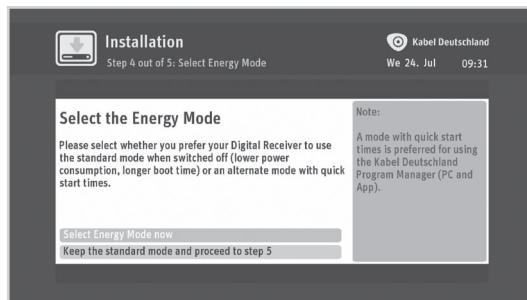
If you have selected the **Quick Start** mode, enter the start time, for example 1 7 0 0 for 17:00 hrs (=5 p.m.), using the number buttons on your remote control. Use the arrow button ▼ and press **OK** on your remote control, to select for how many hours the HD-Video-Recorder mode shall remain active. Use the arrow button ▼ and press **OK** on your remote control to choose on which days this mode should be active, for example, Daily or only on Mondays, Wednesdays and Sundays. Save your settings pressing **Zurück** on your remote. The message **The Energy Mode has been selected** appears on the TV screen, confirm it pressing **OK** on your remote.

You may press **Menü** on your remote control and **Settings** at any time to change the power mode later.

5 Summary

After choosing the power saving mode in step 5, you receive a summary of the successful installation. Now you will see a list of the settings you have made during the installation.

Please select a channel from the channel list to start watching TV.



Basic Operation

Changing Channels

You can change the channels in several ways.

- ❖ Press the **P+/P-** button.
- ❖ Enter the channel number directly (**0-9**).
- ❖ Go to **TV Program** by pressing **Programm** button and then select a channel.

Note:

- Press the **TV/RADIO** button to switch between TV and radio channels.
- Press the **ZURÜCK** button to return to the previous channel.

Volume / Mute

- ❖ To adjust the audio volume, press the **▲/+** button.
- ❖ To mute the audio temporarily, press the **MUTE** (🔇) button.

Note: The mute function remains set while you change channels.

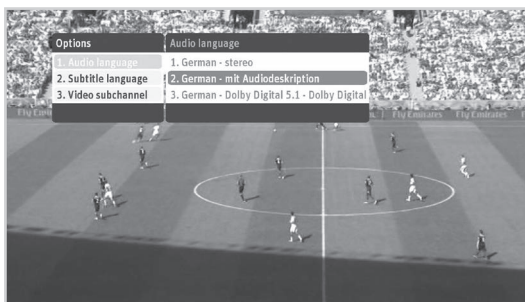


Audio / Subtitle

You can change the audio or subtitle language when the program supports multiple audio or subtitle languages.

1. Press the **Opt** button.
2. Select an option.
 - **Audio Language**
 - **Subtitle Language**
3. Select the language you want using the **▲/▼** button.

Note: You can also change the audio or subtitle language in **System setup** menu.



Video Subchannel

You can choose one of the subchannels when watching a channel that provides multiple video feeds.

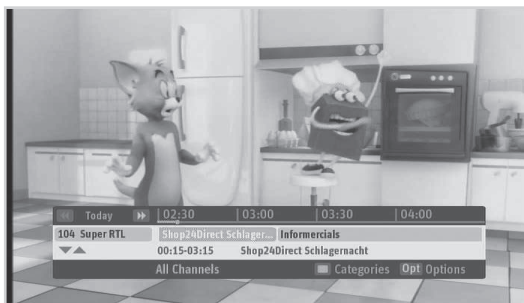
1. Press the **Opt** button.
2. Select **Video Subchannel** and press the **OK** button.
The available video subchannels will be listed.
3. Select an option and press the **OK** button.



Channel Banner

Channel banner is always displayed for a certain period of time whenever you change channels. You can also view the channel banner by pressing **OK** button while watching a program.

1. Use the **◀▶** button to move between programs.
Press the **OK** button. You can book the selected future program or set the favorite channel.
2. Use the **▲▼** button to view information of other channels. Press the **OK** button to tune the selected channel.
3. Use the **◀▶▶▶** button to view the programs of the previous or the next day.
4. Press the **YELLOW** button to sort channels by categories, favorite channels or alphabetically.
5. Press the **Opt** button to change the audio or subtitle language.



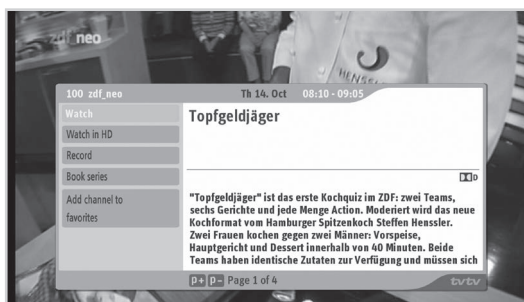
Note: You can also add or delete the favorite channels in **Favorites** menu.

Program Information banner

Provides you with detailed information about the current program.

1. Press the **Info** button.
2. Select an option.
 - **Watch:** Watches the current program.
 - **Watch in HD:** Watch the channel in HD if you have an activation for the selected channel.
 - **Record:** Records the current program.
 - **Add channel to favorites:** Adds channel to favorite.
3. Press the **OK** button.

Note: Press the **Exit** or **Info** button to exit.



TV Program

TV Program is an on-screen guide of grid type which displays the program information of channels in time and date order.

1. Press the **Menü** button.
2. Select **Program Guide**.



Navigation in TV Program

- Use the **▲/▼** button to navigate between channels.
- Use the **◀/▶** button to navigate between programs.
- Use the **◀◀/▶▶** button to view the programs one day earlier or later.
- Use the **P+/P-** button to change pages.
- Press the **YELLOW** button to select categories. Select **Favorite channels** to jump to favorite channels. Select **From A-Z** to sort channels alphabetically.
- Press the **Opt** button to display the program schedule which starts after 20:00.



Note:

- Press the **Programm** button to access the **TV Program** easily.
- Press the **TV/Radio** button to switch between TV and radio channel guides.
- Press the **Exit** button to exit.
- Press the **Zurück** button to go to the previous menu.

Watching a Program

1. Select a current program.
2. Press the **OK** button to exit the TV Program and watch the program.

Note: Press the **Info** button to view the detailed program information.



Booking a Program

1. Select a future program and press the **OK** button. The program information is displayed.
2. Select **Book episode** or **Record** and press the **OK** button. The booked program turns red.

Note:

- You can book a single episode. Select a future program and press the **Rec** button.
- Select **Add channel to favorites** to add this channel to the favorites.
- If the program information is unavailable, you can book a program manually.
- Refer to **Recording** for recording conflicts.



Pausing and Rewinding Live TV

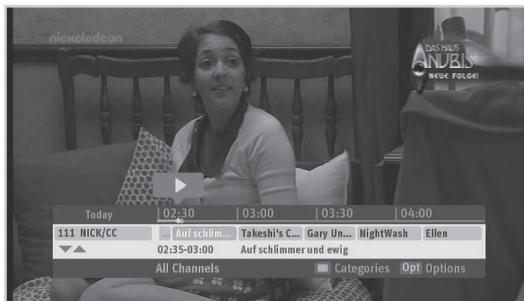
When you have to interrupt a watching for some reason, you can pause live TV and continue watching later at the desired point without missing the program using the time shifted recording function.

This function automatically saves the programs you watch to the built-in hard disk drive temporarily.

To pause the program you are watching

Press the **II▶** button again while watching live TV. Press the **II▶** button again to return (Pause function). The pause function creates a time offset between the live broadcast and the playback for the user.

Press the **■** button to end the time-shifted playback and go back to the live program.



To rewind and watch missed scenes

Press the **◀◀** button while watching live TV. Press the **II▶** button at the point where you want to start watching. You can pause, rewind or fast forward within the program.

You can rewind to the start point when you tuned into that channel. If you reach the start point while rewinding, the program is automatically paused.

Note:

- You can fast forward only when there is a time offset between the current watching point and the live broadcasting point caused by pause or fast rewind. You can fast forward up to the current broadcasting point.
- If you switch channel your current rewind opportunity gets lost and the device starts to record the currently watched channel.

You can watch a channel while recording other channels. You can record up to four channels at the same time (or three channels, respectively, when simultaneously watching another one).

Instant Recording

You can record the currently watching program instantly.

To instantly record the current program you are watching, press the **Rec** button.
The recording will start from the current broadcast point.

To stop recording, press the **Rec** button again and **OK** button.

Note:

- You can stop recording also in the channel banner. Select the recording program then press the **■** button.
- You can select record a single episode or whole series if the program belongs to a series.
- Recording less than 30 seconds will be deleted automatically after the recording ends.
- You can record the subchannel once you have tuned to the subchannel using the **Opt** button.



Recording

Booking a Single Episode

You can book recordings in **TV program** or the channel banner.

1. Select a future program and press the **OK** button.
2. Select **Record** then press the **OK** button.

Note:

- You can book a program by pressing the **Rec** button.
- To cancel, select the booked recording and press the **OK** button. Select **Cancel booking** and press the **OK** button.
- Press the **Programm** button to go to the **TV Program**.
- Recording will not stop even if you press the **STANDBY** button while recording.



Booking Whole Series

You can book whole series of the program.

1. Select a future program and press the **Info** button.
2. Select **Book Series** and press the **OK** button.

Note:

- To cancel, select the booked recording and press the **OK** button. Select **Cancel booking** and press the **OK** button.
- You cannot book a series recording for radio channels.

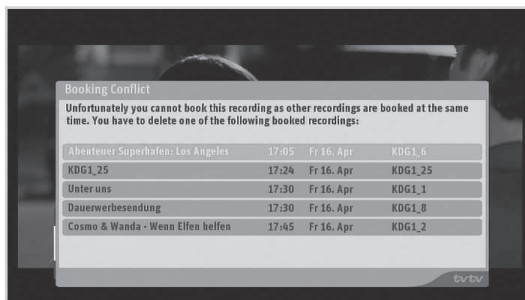


Booking Conflict

If the program start time of new booking and four other bookings is same, the conflicted program list will appear.

1. Select the program to cancel the booking and press the **OK** button.
2. Press the **Zurück** button to cancel the current booking.

If repeats are available, you can book a repeat of the conflicting program or cancel one of the other booked recordings.



Record Tuner Conflict

When a booked recording starts on a different channel while you are watching a channel and recording three other channels, a record tuner conflict occurs.

1. Select the program to cancel the booking and press the **OK** button.
2. Press the **Zurück** button to cancel the instant recording.



If repeats are available, you can book a repeat of the conflicting program or cancel one of the other recordings.

Recording

Live Tuner Conflict

When you change a channel while you are recording four channels and watching one of them, a live tuner conflict occurs.

1. Select the program to cancel the booking and press the **OK** button.
You can continue watching the channel.
2. Press the **Zurück** button to record the booked channel.

If repeats are available, you can book a repeat of the conflicting program or cancel one of the other recordings.



Managing Recordings

You can see the list of the booked, currently recording and recorded programs. You can manage the recorded programs.

1. Press the **Menü** button.
2. Select **Recordings**.
3. Select the recording you want and press the **OK** button.
4. Select an option.
 - **Play:** Plays the recording. You can select a position you want to start.
 - **Delete:** Deletes the recording.
 - **Lock recording:** Locks the recording from deletion when **Manage Disk** is set to **Automatic**.
 - **Organize:**

Create Folder	Creates a folder.
Move to Folder	Moves the recording to the folder you want.
Rename recording	Renames the recording using the keyboard.

5. Press the **OK** button.

Note:

- Press the **Aufnahmen** button to access the **Recordings** easily.
- Press the **Exit** button to exit. Press the **Zurück** button to go to the previous menu.
- Recordings with an expiry time will be deleted when the given number of days elapses. The number of days for viewing will be displayed.



Managing Recordings

Playing the recording

1. Select the recording you want and press the **OK** button.
2. Select **Play** and select an option.
 - **Play from start**
 - **Play from last viewed**
 - **Enter start position**
3. Press the **OK** button.



II►	Pause the scene. Press this button again to play in the normal speed.
◀◀	Rewind in x4, x10, x30 playback speed.
▶▶	Fast forward in x4, x10, x30 playback speed.
■	Stop

Note:

- Press the **Aufnahmen** button to access the Recordings easily.
- Press the **Exit** button to exit. Press the **Zurück** button to go to the previous menu.
- Recordings with an expiry time based on legal restrictions will be deleted when the given number of days elapses. The number of days for viewing will be displayed.
- You can play the recording in slow motion. Press II► button then press ▶▶ button.

Select Video (Video On Demand)

English

Select Video (Video On Demand) allows you to watch TV programs or movies over a network as part of an interactive broadcasting system (if already available in your region).

1. Press the **Menü** button.
2. Select **Select Video**.

You can watch available TV programs or movies after ordering or purchasing.



Note:

- Press the **Select Video** button to access the Video-on-Demand service Select Video easily.
- Press the **Exit** button to exit.
- Press the **Zurück** button to go to the previous menu.
- Make sure that the product is correctly connected to network and can access the internet.
- Enter your PIN to purchase new VoD content.

Search

With the search function you can search for any keyword.

An internet connection is necessary to use all functionalities of the search. The results do not only include television broadcasts from the EPG and your recordings but also the movies of online video library Select Video, if available in your region.

1. Press **Suche** on your remote to start the search.
2. To leave the search, press **Suche** or **Exit** button.

Note: You can also press **Menü** on your remote control and then use the four keys **▲▼◀▶** to select **Search**.

Search by keyword

1. Enter a keyword on the on-screen keyboard.
2. Select the characters and press **OK** button.

After entering the third letter, the search will start automatically and search results that contain the letters you type are displayed on the right.

If you are in the keyword list, you may wish to refine your search. To do this, press **►** button to proceed to the search filters. The filters **Search for keyword**, **Search for title only**, **Search for person only** refine your search.

Search by category

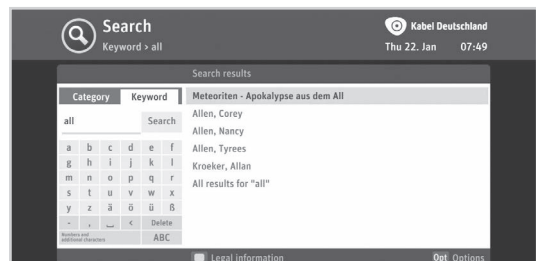
You also have the opportunity to search by category such as programs in a particular category (e.g. movie or sport).

1. Select **Category** and press **OK** or **▼** button.
2. Select a category from the list and press **OK** or **►** button.
3. For some categories more input is needed. E.g. if you select **Spielfilm** as category, another list is displayed in which a subset should be selected, such as **Action**, **Comedy**, **Krimi** etc.
4. If you want to refine your search, press **►** button to proceed the search filters. Filters like **Show all**, **Show TV only**, **Aufnahmen** etc. refine your search. In this case only results according to the chosen filter are displayed.

Search results

How to use the search results:

- Browse the list of results.
- To browse several pages of a results list, press **P+** and **P-** buttons.
- To display details like content or actors, select the title of the program.
- To record a current program or prepare a recording, select it and press **Rec** button.
- To leave the search, press **Suche** or **Exit** button.



If you have not established an internet connection you can use the local search. Press **Suche** on your remote to start the search. You can also press **Menü** on your remote control and then use the four keys **▲▼◀▶** to select **Search**.

Press **▼**, select **Search without Internet connection** and press **OK**.

Title/Actor

You can search for a program by entering the title or the actor name.

- On the Enter keyword tab, select at least three characters by using the four keys **▲▼◀▶** and the **OK** button on the virtual keyboard.
- Select the **List** entry on-screen to move to the list of keywords matching to the entered title/actor. If there are no titles or actors listed, the List is disabled.

Categories

You can search for a program by category.

- Select **Category** and press **OK** or **▶** button.
- For some categories more input is needed. E.g. if you select Spielfilm as category, another list is displayed in which a subset should be selected, such as Action, Comedy, Krimi etc.
- Press **OK** to view search results.

Settings

You can set options for system update, system setup, parental control, recordings, internet, favorites, service and system check.

Note: Press the **Exit** button to exit. Press the **Zurück** button to go to the previous menu.

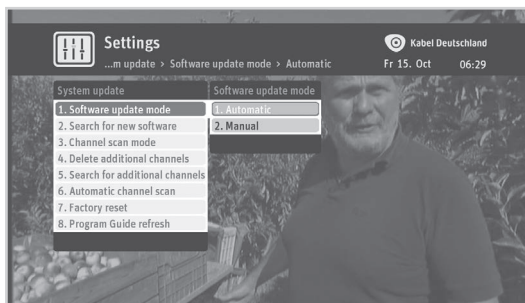
System update

Menü → Settings → System update

Software update mode

You can set to update the software automatically or manually.

1. Select **Software update mode**.
2. Select an option.
 - **Automatic:** Updates software automatically in standby.
 - **Manual:** Update software manually.



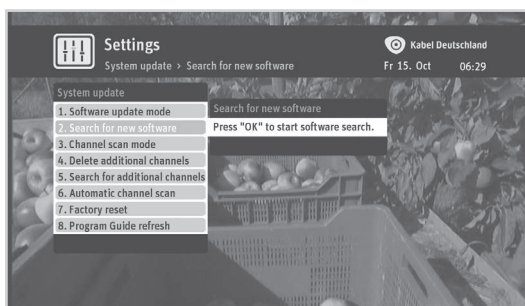
Search for new software

Select **Search for new software**.

Your digital receiver is searching for new software.

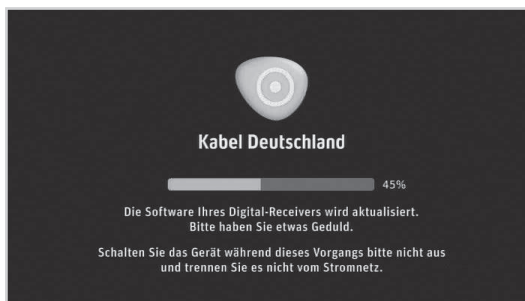
If manual Software Update Mode is selected, you can choose one of the following options.

- **Install now:** Your digital receiver will restart automatically, then the software update will be carried out.
- **Install from standby:** Software update will be carried out next time your digital receiver enters standby.
- **Install never:** Your digital receiver does not ask software update unless you search for new software again.



Note:

- Do not power off the receiver to get automatic update.
- If you refuse to download the new software, you may not have additional service.



Channel scan mode

You can set to scan channels automatically or manually.

1. Select **Channel scan mode**.
2. Select an option.
 - **Automatic:** Scans for new channels automatically in standby.
 - **Manual:** Scans for new channels manually.



Delete additional channels

You can delete the additional channels detected by frequency based scan (see also “Search for additional channels”).

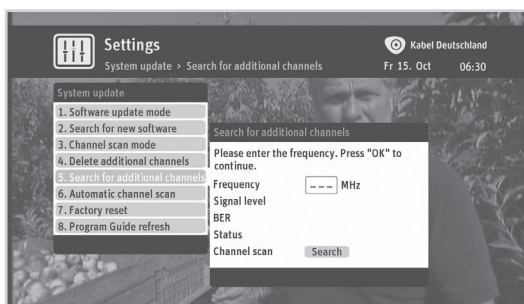
1. Select **Delete additional channels**.
2. Select the additional channels you want to delete.
3. Press the **OK** button.



Search for additional channels

You can search additional channels which may not be found by installation wizard.

1. Select **Search for additional channels**.
2. Enter the frequency.
3. Select **Search** and press the **OK** button.



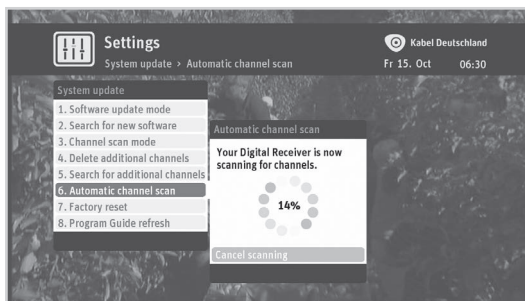
Settings

Automatic channel scan

You can scan channels automatically.

Select **Automatic channel scan**.

Your digital receiver starts a network scan.



Factory reset

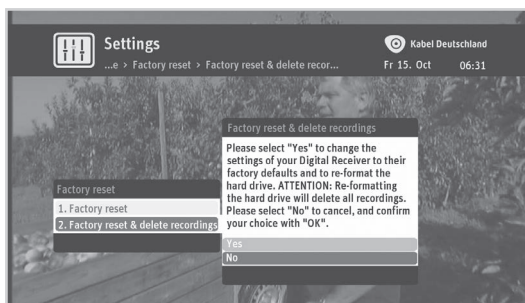
You can set the system to the factory reset with or without deleting all recordings.

1. Select **Factory reset**.
2. Select **Yes** and press the **OK** button.

With deleting recordings

1. Select **Factory reset & delete recordings**.
2. Select **Yes** and press the **OK** button.

Note: Please note that once you perform the factory reset, all user settings will be reset to the factory settings. After completing the factory reset, the installation wizard will appear automatically after a few seconds.

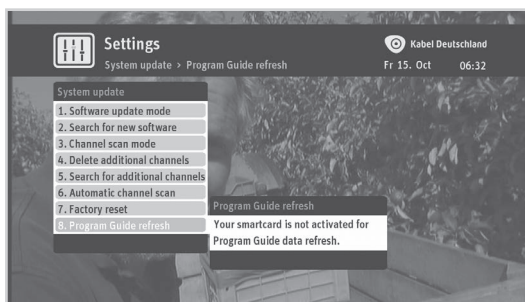


Program Guide refresh

You can update the electronic program guide if necessary.

Select **Program Guide refresh**.

The message **Program Guide refresh in progress...** is displayed.



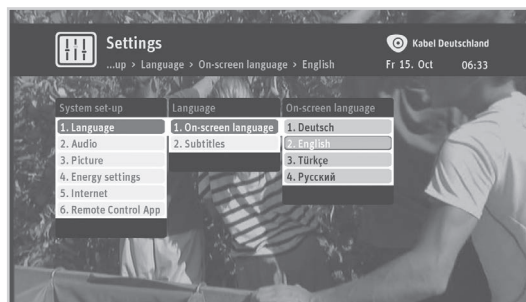
System set-up

Menü → Settings → System set-up

Language

You can select the language for on-screen language and set to display subtitle.

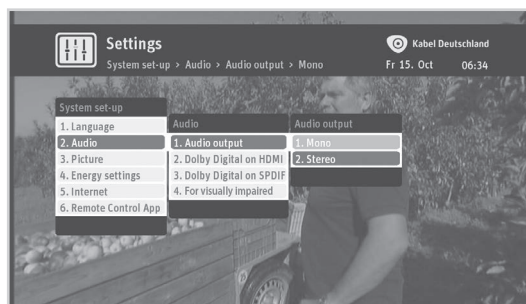
1. Select **Language**.
2. Select **On Screen Language** and select the language you want.
3. Select **Subtitles** and select the language you want.
4. Press the **OK** button.



Audio

You can select digital audio output.

1. Select **Audio**.
2. Select an option.
 - **Audio Output:** Select **Mono** or **Stereo**.
 - **Dolby Digital on HDMI/SPDIF:** Outputs Dolby Digital from HDMI/SPDIF if set to **On**. PCM audio is output, if set to **Off**.
 - **For visually impaired:** This audio is supplement with the sounds that aid to understand the action on the screen.
3. Press the **OK** button.



Settings

Picture settings

You can set the picture.

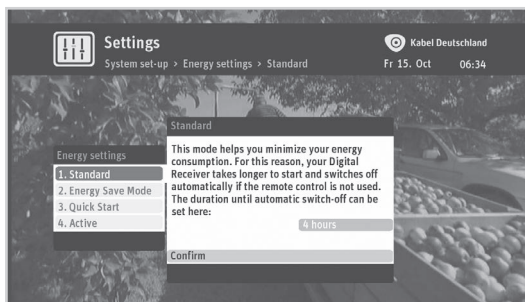
1. Select **Picture**.
2. Select an option.
 - **TV SCART:** FBAS – RGB – S-Video
 - **VCR SCART:** FBAS – S-Video
 - **SCART-Switching:** Switches aspect ratio between 4:3 and 16:9 modes when the SCART cable (not provided) is connected.
 - **HDMI Screen Resolution:** 576i - 576p - 720p - 1080i
 - **Banner Timeout:** 5sec – 10sec
 - **OSD Transparency:** None – 10% - 30% - 50%
 - **Start Channel:** Tunes the default channel when powering on.
3. Press the **OK** button.



Energy settings

You can decide whether your receiver consumes less energy overall, but starts slowly, or if you wish a rapid operation of the receiver, but want to take into account a higher overall energy consumption of the device.

1. Select **Energy settings**.
2. Select an option.
 - **Standard:** This mode helps you minimize your energy consumption. For this reason your Digital Receiver takes longer to start and switches off automatically if the remote control is not used. The duration until automatic switch-off can be determined.
 - **Energy Save Mode:** In the Energy Save Mode your Digital Receiver consumes little energy on standby. In contrast to the standard mode the receiver does not switch off automatically.
 - **Quick Start:** In the quick start mode you can set on which days, at what time and for how long your receiver automatically turns on from standby mode to active mode. The receiver switches to active mode for the duration you determined.
 - **Active:** In the Active Mode your digital receiver is always available and boots within seconds. In this mode the device has the highest power consumption.
3. Press the **OK** button.



Internet

With an internet connection additional offers from Kabel Deutschland are available. To use them, you need to connect your receiver to the internet, either through the wireless stick or via a network cable (LAN cable).

Note: Make sure that you have either the wireless stick connected via a USB port or a LAN cable to the network port on the receiver.

Internet Setup

Note: If the network does not appear in the list, you must configure it manually.

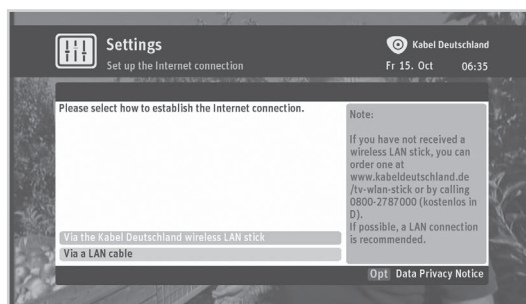
1. Select **Internet**.
2. Select **Internet set-up**.
3. Select **Via the Kabel Deutschland wireless LAN-Stick** or **Via a LAN-cable**.

Using the Kabel Deutschland wireless stick

1. Select **Via the Kabel Deutschland wireless LAN-Stick**.
2. Select **Continue with security key for wireless LAN** or **Continue with WPS**.

Note:

- The wireless key is a string in the form of a password that protects access to your wireless internet access from unauthorized third parties. The wireless key is usually found in the documentation of your wireless router. It is strongly discouraged to operate a WiFi network in Germany without protection by a wireless key for reasons of data protection, data security and for legal liability reasons.
- If you want to connect to your wireless router via WPS, you have the option of selecting WPS. WPS stands for Wi-Fi Protected Setup and is another technology for establishing wireless connections, but with lower level safety.



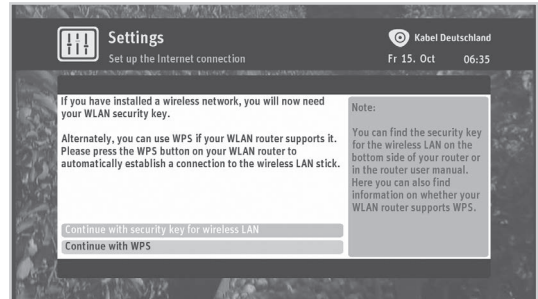
Settings

➤ Continue with wireless key

1. Select **Continue with security key for wireless LAN**.
2. The device now searches for available wireless networks. Select the wireless network you would like to connect to.
3. Enter your wireless key.

Now an on-screen keyboard is displayed to type the WLAN key. The wireless key is usually between 8 and 63 characters long and can consist of numbers, letters and special characters. Usually you have to distinguish between lowercase and uppercase letters. To enter the WLAN key, move the yellow highlight using the four keys ▲▼◀▶ on your remote control to the first character of the Wi-Fi key, and then press **OK** on your remote control. The character appears in the input line on the screen keyboard. Enter all characters of the wireless key. Use the **ABC** field in the screen keyboard and press **OK** on your remote to set the lowercase letters shown in the screen keyboard to uppercase if necessary. Use the field **!&?** in the on-screen keyboard and press **OK** on your remote to display the special characters available. If the key is entered completely and correctly, finish the input via the field **Input ready** in the on-screen keyboard and press **OK** on your remote control.

Now, the receiver checks the network and internet connection. If the receiver is connected to the internet, the message **The Internet connection has been set up** appears. In addition, the LED light flashes on the wireless stick.



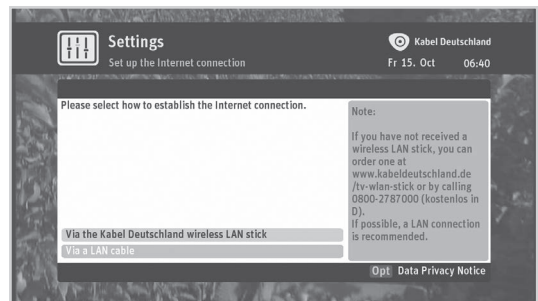
➤ Continue with WPS

1. Select **Continue with WPS**.
2. The device detects the internet connection and sets it up automatically.

Note: For a WPS connection your receiver has to be prepared. The settings for a WPS connection have to be made in the software menu of your router. In addition some routers asked for WPS activation on the router device itself.

Setting up an internet connection via network cable (LAN cable)

1. Select **Via LAN cable**.
2. The device detects the internet connection and sets it up automatically.



Settings

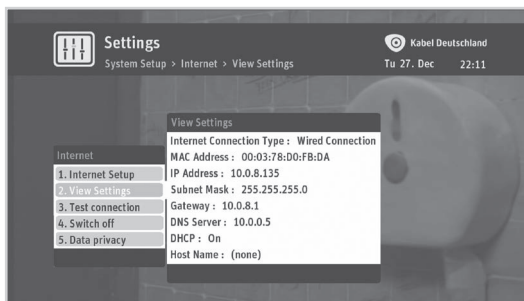
English

View Settings

With this menu you can view the internet settings of the device.

Select **View Settings**.

Now the the settings of internet connections are displayed.

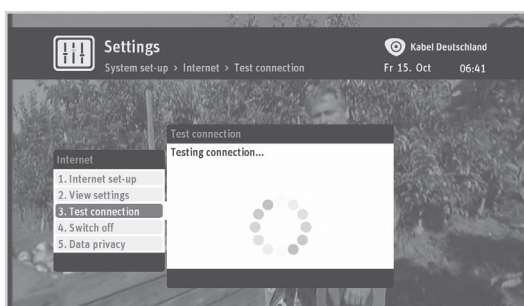


Test connection

In this menu you can test your internet connection.

Select **Test connection**.

The receiver tests the connection and displays the result on the TV screen.



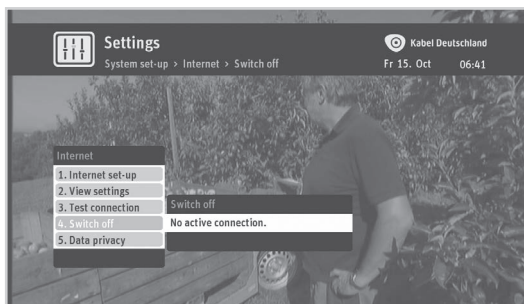
Switch off

With this menu you can turn off the internet connection.

1. Select **Switch off**.

A message is displayed: **If you switch off now you will lose all functions using the Internet connection. Most important examples are Video-on-Demand (if available), Keyword.**

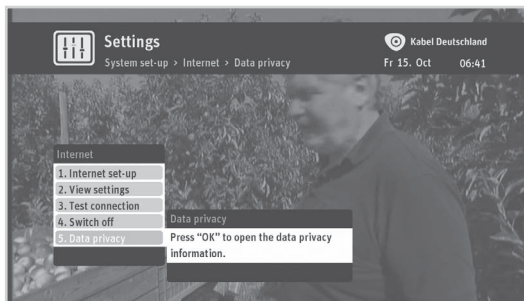
2. To turn off the connection press **OK** two times. To leave the connection turned on press **Zurück**.



Data Privacy

In this menu you can view the privacy information.

1. Select **Data privacy**.
2. The privacy policy is displayed.



Settings

Parental Control

You can change your receiver PIN using the **NUMERIC(0-9)** buttons.

Menü → Settings → Parental Control

Change PIN

1. Select **Change PIN**.
2. Enter the current Parental Control PIN.
3. Enter the new Parental Control PIN.
4. Enter the new Parental Control PIN again to confirm.

Note:

- You can check the default Parental Control PIN on the smartcard.
- If you have forgotten your Parental Control PIN, please contact your cable operator.
- If you enter the wrong Parental Control PIN three times, you will be blocked to change Parental Control PIN for 10 minutes.



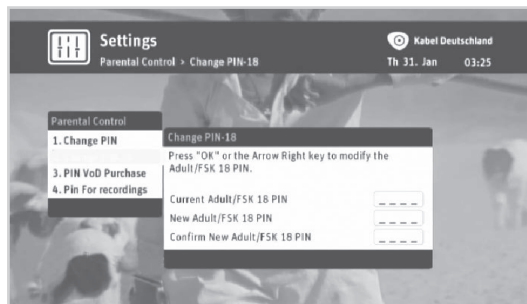
Change PIN-18

You can change the Adult/FSK 18 PIN to prevent your child to access to VoD adult contents.

1. Select **Change PIN-18**.
2. Enter the current Adult/FSK 18 PIN.
3. Enter the new Adult FSK 18 PIN.
4. Enter the new Adult FSK 18 PIN again to confirm.

Note:

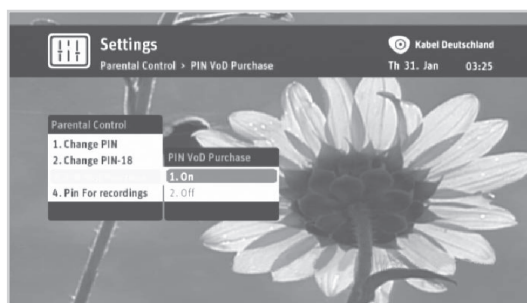
- The Adult/FSK 18 PIN will be provided to customers who passed age verification process.
- If you have forgotten your Adult/FSK 18 PIN, please contact your cable operator.
- If you enter the wrong Adult/FSK 18 PIN three times, you will be blocked to change Adult/FSK 18 PIN for 10 minutes.



PIN VoD Purchase

You can set to enter your PIN when you purchase new VoD content.

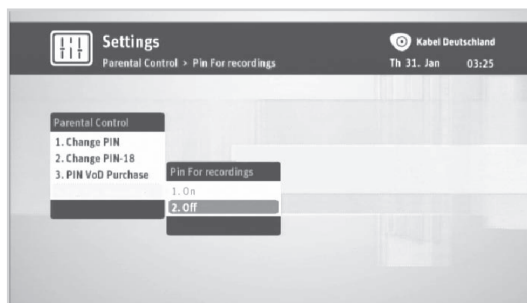
1. Select **PIN VoD Purchase**.
2. Select **On** or **Off**.



PIN For recordings

You can set the Pin for recordings to prevent your kids from viewing the locked recordings.

1. Select **Pin For recordings**.
2. Select **On** or **Off**.



Settings

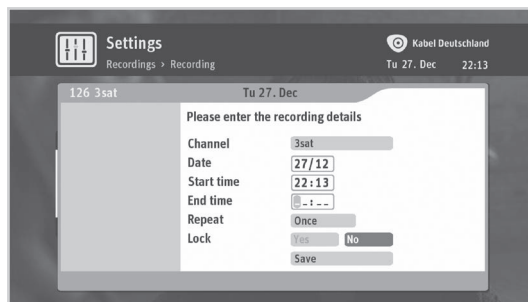
Recordings

Menü → Settings → Recordings

Recording

You can book the recording at the time you set manually.

1. Select **Recording**.
2. Enter the recording details.
 - **Channel:** Select the channel to record.
 - **Date:** Enter the date.
 - **Start/End time:** Enter the time you want.
 - **Repeat:** Select the repeat of recording.
 - **Lock:** Select **Yes** to lock the recording.
3. Select **Save** and press the **OK** button.



Manage Disk

You can decide how to manage the disk automatically or manually.

1. Select **Manage Disk**.
2. Select an option.
 - **Automatic:** Deletes the oldest recordings automatically. You can book more programs for recording that would fit in the available disk space.
 - **Manual:** Deletes recordings manually. You cannot book the programs for recording that would fill the disk.
3. Press the **OK** button.



Format Disk

You can delete all recordings from the built-in hard disk drive.

1. Select **Format Disk**.
2. Select **Yes** and press the **OK** button to format the hard disk drive.
Your digital receiver will restart after the formatting is complete.



Guard Time

You can set the additional time before the recording starts and after the recording ends to prevent from missing scenes.

1. Select **Guard Time**.
2. Select an option.
 - **Automatic:** Adds guard time automatically depending on the TVTV data.
 - **Manual:** Enter the minutes to add before or after recording.
3. Press the **OK** button.



Settings

Favorites

You can add, delete or rearrange the favorite channels.

Menü → Settings → Favorites

Adding Favorite Channels

1. Select **Add**.
2. Select the channel to add and press the **OK** button. To release a selection, press the **OK** button again.
3. Press the **Zurück** or ◀ button.
4. Press the **OK** button.



Deleting Favorite Channels

1. Select **Delete**.
2. Select the channel to delete and press the **OK** button. To release a selection, press the **OK** button again.
3. Press the **Zurück** or ◀ button.
4. Press the **OK** button.



Rearranging Favorite Channels

1. Select **Rearrange**.
2. Select the channel and press the **OK** button.
3. Move the channel to the position you want by pressing ▲/▼ button, then press the ◀ button.
4. Press the **OK** button.

Note:

- Press the **YELLOW** button to select a category within the Favorites list.
- Press the **P+/P-** button to change the page in the list.



Service

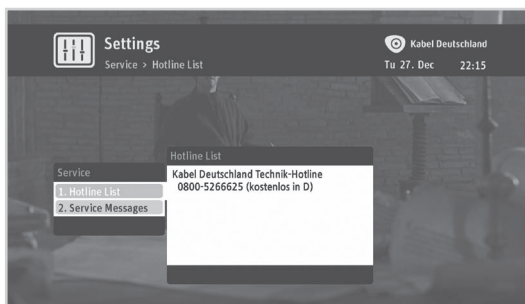
You can view Hotline list and service messages.

Menü → Settings → Service

Hotline List

You can view the Hotline list provided by the operator.

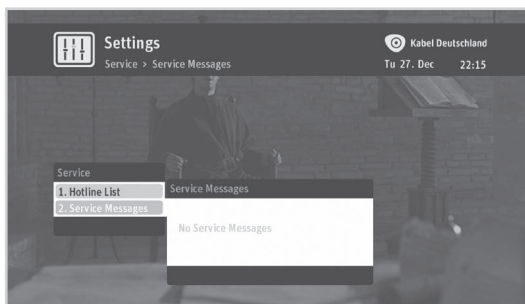
Select **Hotline List**.



Service Messages

You can view the service messages.

Select **Service Messages**.



Settings

System check

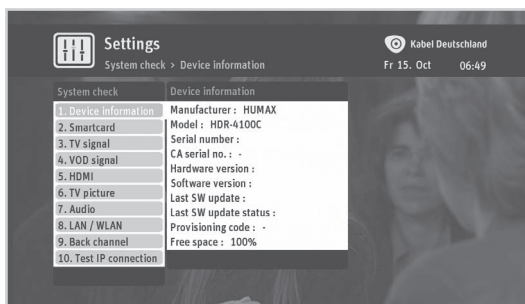
You can check system such as Device information, smartcard, TV signal, HDMI, TV picture, Audio, LAN/WLAN, Back channel and Test IP connection.

Menü → Settings → System check

Device information

You can view the device information such as Manufacturer, Model Name, STB Serial No., Hardware Version, Software Version etc.

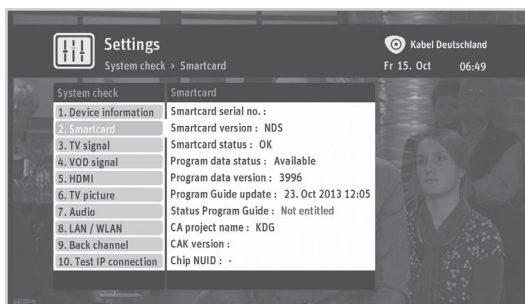
Select **Device information**.



Smartcard

You can view the smartcard information such as smartcard serial number, version, status, update date of program guide data.

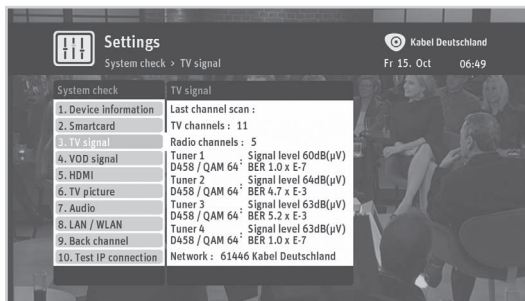
Select **Smartcard**.



TV signal

You can view the number of TV and radio channels scanned by the receiver and broadcast signal strength.

Select **TV signal**.



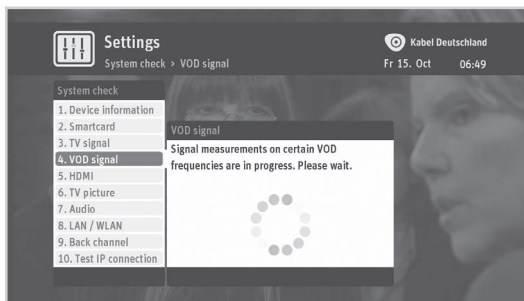
Settings

English

VOD signal

You can view the signal strength on certain VOD frequencies.

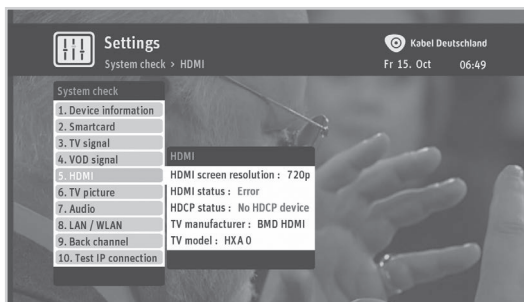
Select **VOD signal**.



HDMI

You can view the currently configured HDMI resolution, HDCP status and information about the TV set connected through HDMI.

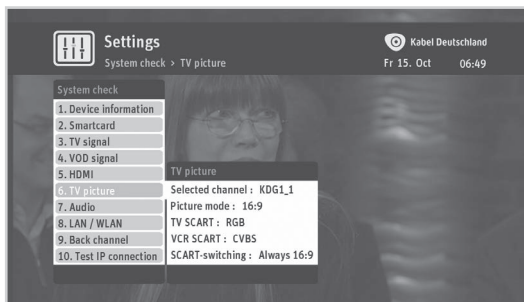
Select **HDMI**.



TV picture

You can view the channel name, channel number of the currently selected channel for the live viewing, the TV picture mode and the settings on TV SCART and VCR SCART.

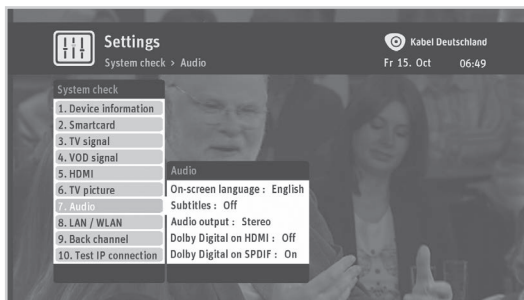
Select **TV picture**.



Audio

You can view audio information such as On-screen language, Subtitle mode, Dolby Digital modes.

Select **AUDIO**.

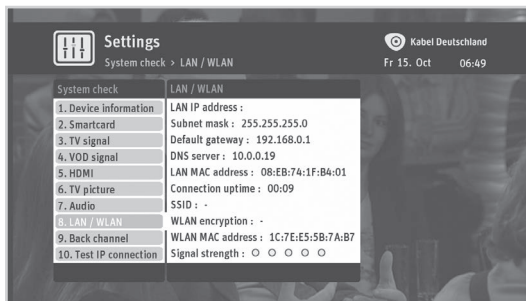


Settings

LAN/WLAN

You can view the current status of LAN/WLAN settings.

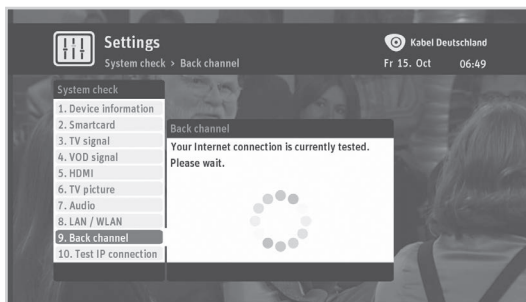
Select **LAN/WLAN**.



Back channel

You can view the availability status of DNS, ACS, VOD portal, VOD SRM servers, IP Connection.

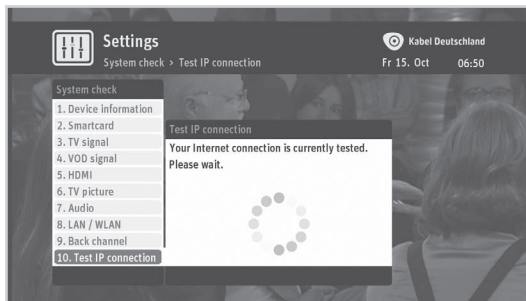
Select **Back channel**.



Test IP connection

You can test IP connection.

Select **Test IP connection**.



Menu Map

Program Guide		
Recordings		
Select Video		
Search		
Settings	System update	Software update mode Search for new software Network scan mode Delete additional channels Search for additional channels Automatic channel scan Factory reset Program Guide refresh
	System set-up	Language Audio Picture Energy setting Internet Remote Control App
	Parental control	Change PIN Change PIN-18 Conf. VoD Purchase PIN VoD Purchase
	Recordings	Recording Manage disk Format disk Guard time
	Favorites	Add Delete Rearrange
	Service	Hotline List Service Messages
	System check	Device information Smartcard TV signal VOD signal HDMI TV picture Audio LAN / WLAN Back channel Test IP connection

Appendix

Specification

Tuner & Channel	
No. of Tuners	4
RF input Connector	IEC 169-2, female (PAL)
RF loop through Connector	IEC 169-2, male (PAL)
Input frequency range	51 MHz to 862 MHz
Input Impedance	75 Ω unbalanced
Signal Level	-15 to +15 dB μ V @ 64, 128-QAM, -12 to +15 dB μ V @ 256-QAM
Modulation	QAM (DVB-C), Compliant to EN 300 429
Symbol rate	3 to 7 MHz
Constellation	16, 32, 64, 128, 256-QAM
Audio/Video Decoding	
Audio Decoding	MPEG I Layer 1,2,3, AAC, AAC+ Dolby Digital, Dolby Digital Plus
Audio Mode	Single/Dual mono/Stereo/Joint stereo
Video Decoding	SD MPEG2, HD MPEG4 and SD MPEG4 (H.264/AVC)
Video Format	4:3, 16:9, Letterbox
Video Resolution	1080i, 720p, 576p, 576i
Memory	
Flash Memory	4MB NOR Flash + 256MB NAND Flash
RAM	320 MB
EEPROM	32 KB
Audio/Video In/Out	
Video	TV-SCART(CVBS,RGB), RCA(CVBS), HDMI
Audio	TV SCART, S/PDIF(Digital Audio Output), RCA(Audio L/R), HDMI
Hard Disk	
HDD	1TB
Data In/Out	
USB	USB 2.0 Host (5V \approx 500mA Max.)
RJ-45	Ethernet 10/100Mbps

Power Supply	
Input Voltage	90-250V a.c., 50/60Hz
Type	SMPS
Power Consumption	Max. 35 W (Standby: Under 1 W)
Protection	Separate internal fuse. The input should be protected against lightning.
Physical Specification	
Size (w/h/d)	380 mm × 55 mm × 245 mm
Weight	2.8 kg

Note: The specifications are subject to change without notice.

Service and Support

In the design of this product was taken great care to ensure the maximum quality possible.

However in the rare event that you have any problems with the product and need advice or support you can be confident that we will do our best to help you.

If you experience technical problems with the product you can call Kabel Deutschland directly:

0800 / 52 666 25
(call free of charge from Germany)
Mon - Sun, 0:00 - 24:00

Appendix

Safety Warning

This product has been manufactured to comply with international safety standards. Please read the following safety precautions carefully.

Safety Instructions and Precautions

1. MAINS SUPPLY

- Operate this product only from the type of power supply indicated on the marking label. If you are not sure of the type of power supplied to your home, consult your local power company.
- Disconnect the product from the mains before you start any maintenance or installation procedures.

2. OVERLOADING

- Do not overload a wall outlet, extension cord or adapter as this may result in electric fire or shock.

3. LIQUID

- The product should not be exposed to liquid of any kind. In addition, no objects filled with liquid should be placed on the apparatus.

4. CLEANING

- Disconnect the product from the wall outlet before you clean it.
- Use a moist cloth to clean the product. Do not use solvents. Wipe the surface gently with a soft cloth as it may get scratched.

5. VENTILATION

- Make sure that the slots on the sides of the product are not blocked. It is necessary to have a sufficient airflow into the unit.
- Do not put the product on soft surfaces.
- Do not put objects on the product. This will block the ventilation or cause damage to the surface.

6. ATTACHMENTS

- Do not use any unsupported attachments as these may be hazardous or cause damage to the product.

7. LIGHTNING, STORM OR NOT IN USE

- Unplug the product from the wall outlet and disconnect the antenna during a thunderstorm or when left unattended and unused for long periods of time. This will prevent damage to the unit due to lightning and power-surges.

8. EXTRANEIOUS OBJECTS

- Do not insert anything through the openings in the unit, where they can touch dangerous voltage points or damage parts.

9. REPLACEMENT OF PARTS

- When replacement of parts is required, be sure the service technician uses replacement parts specified by the manufacturer or those that have the same characteristics as the original part. Unauthorized substitution may result in additional damage to the unit.

10. CONNECTION TO THE CABLE TV SIGNAL

- Connect all components before plugging any power cords into the wall outlet. Always turn off the product, TV and other components before you connect or disconnect any cables.

11. CONNECTION TO THE TV

- Disconnect the product from the mains before connecting or disconnecting the cable from the TV. Failure to do so can damage the TV.

12. LOCATION

- Place the product indoors to avoid exposing it to lightning, rain or sun. Do not place it near a radiator or heat register.
- We recommend that the product has 10 cm clearance from any other appliances susceptible to electromagnetic influences, such as a TV or a VCR.
- Do not block the openings with any object, and do not place the product on a bed, sofa, rug, or other similar surface.
- If you place the product on a rack or a bookcase, ensure that there is adequate ventilation and that you have followed the manufacturer's instructions for mounting.
- Do not place the product on an unstable cart, stand, tripod, bracket, or table where it can fall. A falling product can cause serious injury to a child or adult, and serious damage to the appliance.
- No naked flame sources, such as lighted candles, should be placed on the apparatus.

Warning

1. To avoid damage of the power cord or plug

- Do not modify or process the power cord or plug arbitrarily.
- Do not bend or twist the power cord.
- Make sure to disconnect the power cord holding the plug.
- Keep heating appliances as far as possible from the power cord in order to prevent the cover vinyl from melting.
- The mains plug, as a disconnection device, shall remain readily accessible by the user.

2. To avoid electrical shock

- Do not open the main body.
- Do not insert metal or inflammable objects inside the product.
- Do not touch the power plug with wet hands.
- Disconnect the power cord in case of lightning.

3. To avoid damage of product

- Do not use the product when it is out of order. If you continue to use the product when defective, serious damage can be caused. Make sure to contact your local product distributor if the product is out of order.
- Do not insert metal or alien substance into the slots for the modules or smartcards (where applicable). It may cause damage to the product and reduce its life span.

4. To avoid damage of the hard disk drive

- Do not move the product or turn the power off suddenly while the hard disk drive is running.
- The company shall not be liable for any corruption of data on the hard disk drive caused by carelessness or misuse.

Appendix

Trouble Shooting

Before contacting your local service centre, please read the tips below carefully. If the problem persists after completing the following procedure, please contact your local product distributor or service centre for further instructions.

1. No light on the **STANDBY** button on the front panel (The product will not switch on.)

- Check the main power cable and make sure it is plugged into a suitable power outlet.
- Check that the mains supply is switched on.
- Connect the power cable to a different power outlet.
- Check that the power switch is on at the rear of the product (where applicable).

2. No picture

- Make sure that the product is powered on and in operation mode. (Press the **STANDBY** button)
- Make sure that the AV cable is firmly connected to the TV.
- Make sure that the antenna cable is properly connected to the product.
- Be sure to activate channel search.
- Check the brightness level of the TV.
- Check if the channel is currently on air. Contact the broadcaster to ensure that the channel is running.
- Press the **SOURCE** button if the product is in external input mode (where applicable).

3. Poor picture/sound quality

- Make sure there is no mobile phone or microwave oven near the product.
- Keep the power and the RF cables apart from each other.

Note: Poor sound and picture quality due to weather conditions cannot be accepted as a malfunction of product.

4. No or poor sound

- Check that your AV cable is connected correctly.
- Check the volume levels of your TV set and the product.
- Check if the product or TV is on mute.
- Check audio type or soundtrack option (where applicable).

5. Remote control does not operate

- To control the product, the top end of the remote control should point directly towards the receiving part of the product.
- Remove and reinsert the batteries in the remote control.
- Replace the batteries in the remote control for a new set.
- Set the remote control to STB or PVR mode, if you are using the universal remote control (where applicable).

6. Cannot book recordings

- Check that no previous booking are conflicting with the new booking.

7. Channel search does not work

- Make sure that your cable is connected correctly.

8. Cannot update new software

- You can get an update. If you put the product into **STANDBY** mode over night it will search for new software. Updates will be downloaded automatically. You can search for new software in the Settings area (Menü > Settings > 1. System Update > 2. Search for New Software). If the product does not find newer software, this means that no software update is available.

9. Cannot watch scrambled channels

- Check that you have the appropriate smartcard. Reinsert the smartcard and make sure it initialises correctly.
- Check in the Settings menu that the product is detecting the smartcard.
- Check in the Settings menu that you have a valid and working subscription to the channels you wish to view.
- Ensure that the smartcard is not damaged.

10. Cannot watch pay channels

- Check in the Settings menu that you have a valid and working subscription to the channels you wish to view.
- Contact your network operator for more information.

11. The product makes a humming noise

- The noise is from the fan; the hard disk is operating normally. This kind of noise is inevitable but seldom noticeable.

12. Cannot record programmes

- The hard disk is full. Delete unnecessary programs and make space for new recording.
- Check if recording is conflicted with another channel. Stop the current recording, book a repeat if available or wait until the recording is finished.
- Check that the product is switched on (at least in STANDBY mode) when recording starts.

13. Cannot operate TSR (Time Shifted Recording)

- TSR may not be available during recording. Wait until recording is finished.
- Delete unnecessary recordings and make space for new recording.

14. Cannot playback

- To playback the recorded file of a scrambled channel, use the smartcard. In case it has been a long time since you last recorded, this may not work. Contact the cable operator.
- The signal during recording may be weak or the hard disk too full.

15. Cannot change channels while recording

- Certain channels may not be changed due to restriction of the tuner or connection type.

Appendix

Setting Universal Remote Control

Set up the universal remote control so that you can control your TV with this universal remote control. The LED lights red when the TV mode is selected.

Programming the universal RCU

There are two ways to set up the universal remote control.

Brand Set Up

1. Press the hold **TV** and **Menü** buttons for 3 seconds. The LED blinks twice.
2. Enter the 4 digit code for the TV code set. Every time a number is entered, the LED blinks. When the fourth digit is entered, the LED blinks twice if the entered code is valid. If the code is invalid, the LED blinks 6 times and your digital receiver exits the set up mode. Repeat the previous steps.

Note: Press the **TV** and **0** simultaneously for 3 seconds to return to the default.

Auto Brand Search

The top brands have a Brand ID which has four digits with the most significant digit a 9. You do not have to enter the TV Code Set repeatedly when the code is invalid.

1. Press and hold the **TV** and **Program** buttons for 3 seconds. The LED blinks twice.
2. Enter the 4-digit code for Brand ID. Every time a number is entered, the LED blinks. When the fourth digit is entered, the LED blinks twice and remains on. It searches through all code-sets linked to the automatically.
3. Press the **STANDBY** button continuously. The LED turns off during transmission. Repeat until the TV turns off.
4. When the TV turns off, release the **STANDBY** button. Turn on the TV with the original TV remote control.
5. Press **TV** button for 3 seconds to confirm the code.

Querying the 4-digit code

You can find out the 4-digit code of the TV universal code that is active.

Pressing **1** and **Info** buttons will blink out the first digit of the TV code number; **2** and **Info** buttons will blink out the second digit, **3** and **Info** the third digit and **4** and **Info** buttons the fourth digit. No blinks indicate a zero.

Note: The TV universal code number blink-out will return the universal code number and not the brand number.

Volume unlock set up

To switch on Volume Unlock

Press and hold the **Exit** and **Mute** buttons simultaneously for at least 3 seconds. The LED blinks twice to indicate a successful set-up.

Once this volume unlock is set up, the TV volume buttons send TV volume codes and the receiver volume buttons send the receiver volume codes.

To return to volume punch-through to TV

Press and hold the **TV** and **Mute** buttons simultaneously for at least 3 seconds. The LED blinks twice to indicate a successful set-up.

If a new TV code is programmed, the volume buttons send TV volume codes – in other words the receiver volume buttons punch through to TV codes.

Resetting Universal Remote Control

Press and hold the **Menü**, **Text** and **STANDBY** buttons simultaneously for 3 seconds. The LED blinks twice. After reset, the LED will blink two times again.

Appendix

Brand name	Brand ID	Code Set									
A.R. Systems		0583									
Accent		0583	0064								
Accec		0039									
Acer	9001	1366	1671	2217	1536	1430					
Acoustic Solutions		1694									
Adcom		0652									
Admiral		0120	0445	0114	0291						
Advent		0903									
AEG	9002	0633	2123	1399	2048	1064	1583	2193	1582	1190	2266
Agef		0114									
Aim		0064	0583								
Aiwa	9003	0728	0732	1943	1532						
Akai		0388	0235	0398	0064	0460	0218	1892	1286	1275	
		1962	2048	2123	1335	0633	0613	1064	0500	0675	
		0839	0583	0575	0507	0658	0291	0205	0062	0036	
		0245	0579	0741	0742						
Akiba		0245	0064	0583	0321						
Akura		1694	1672	1797							
Alkos		0062									
Allorgan		0321									
Allstar		0064	0583								
Amoi	9004	1556	2369								
Amstrad		0036	0291	0398	0245	0064	0583	0460	1064	0675	2009
		1847									
Anam National		0677									
Andersson	9005	1190	1612	1176							
Anglo		0036	0291								
Anitech		0036	0291	0064	0583						
Ansonic		0397	0064	0583	0036	0695	0438	0274	1464	0039	
AOC	9006	1615	0652	2138							
Apollo		0500									
Ardem		0513	0064	0583							
Arena		0064									
Aristona		0583	0064	0039							
Art Mito		1612	1847								
ASA		0132	0373	0097	0114						
Asberg		0064	0583								
Asora		0036									
Astro		0667									
Atec		1633									
Atlantic		0064	0583								
Atori		0036									
Audiosonic		0064	0583	0136	0741	0742	0397	0291	0245	0513	2010
Audioton		0513	0397	0291							
Autovox		0114	0571	0376	0274						
Avol		1847									
Axxent		0036									
B&D		1244									
Baier		0903	1399	2266							

Appendix

English

Brand name	Brand ID	Code Set									
Bang & Olufsen	9007	0592	0647	0114	1647						
Barco		0579									
Basic Line		0064	0695	0583	0036	0245	1064				
Bauer		1642									
Baur		0562	0222	0539	0064	0583	0581	0218	0388	0571	0376
		1532	1037								
Beaumark		0205									
Beko	9008	0741	0513	0742	0064	0633	1679	2227	1827	0397	0835
Bennett		0583	0064								
BenQ	9009	1589	1601								
Beon		0064	0583	0445							
Best		0397	0448								
Bestar		0064	0583	0397							
Black Diamond		1064	0583	1190							
Blackway		0245									
Blaupunkt	9010	0581	0222	0562	0218	0227	0354	0197			
Blue Media		1633									
Blue Sky		0064	1064	0741	0514	0695	0742	0835	1390	1341	1943
		1270	0652	1679	0651	1936	0583	0245			
Boman		1399									
Bondstec		0274									
Boots		0036									
Bosch		0354									
BPL		0064	0583								
Brandt		0652	0136	0223	0314	0362	0498	0370	0587		
Brandt Electronique		0314	0362								
Brinkmann		0064	0583	0695	0546	0445	0513				
Brother		0291									
Bruns		0114	0513								
BSR		0321	0579	0388							
BTC		0245									
Bush	9011	1064	1679	0741	1943	0695	1672	0546	1694	0064	0583
		1736	335	0805	0614	1286	2154	0688	1583	0514	1176
		1353									
Canton		0245									
Capsonic		0291									
Carad		0637	0064	0583	0695	1064					
Carrefour		0097	0064	0583							
Cascade		0036	0064	0583							
Casio		0064	0583	0376							
CAT	9012	1709	2182								
Cathay		0064	0583								
Centrum	9013	1064									
Centurion		0064	0583								
Century		0114	0274								
CGE		0101	0445	0274	0579	0397					
Cimline		0036	0262	0245							
Cinex	9014	1583	0675								

Appendix

Brand name	Brand ID	Code Set									
City		0036									
Clarivox		0445	0064	0583	0097						
Clatronic	9015	1399	0633	0245	0064	0583	0741	1704	0036	0398	0675
		0397	0274	0291	1190						
Clayton		1064									
Concorde		0036									
Condor	9016	0036	0397	0438	0445	0064	0274	0291			
Conia		1672									
Conrac		0835									
Conrad		0064	0583								
Contec		0036	0038	0291	0064	0583					
Continental Edison		0136	0223	0314	0514						
Cosmel		0036	0064	0583							
Crosley		0114	0274	0101	0579						
Crown	9017	0064	0513	0633	1064	0742	0514	0235	0445	0397	0741
		0036	1679	0695	0448	0680					
CS Electronics		0245	0274								
CTC		0274									
Cybertron		0245									
Cytronix		1325									
D.Boss		1501	0064								
Daewoo	9018	0661	0688	0526	1936	1822	0064	0651	2302	0741	0583
		0036	0907	1334	0903	0892	1639	0245	1164	2064	
Dainichi		0245									
Dantax		0397	0513	0741	0633	0742					
Daytek		1403									
Daytron		0036	0064	0583							
de Graaf		0235	0575								
Dell		1430									
Denver	9019	1704	1216	2077	0614	2123	2048	1661	1872	2272	0064
		2015	1736	1847							
Desmet		0064	0583	0036	0114						
Diamant		0064	0583								
DiBoss		0064	0583	1501							
Digatron		0064	0583								
Digihome		1694									
Digiline		0064	0583	0132	0695						
Digimate		0917									
Digital Device		1633									
Digitek		1736									
Digivision		0388									
DigiX		0907									
DiK		0064	0583								
Dixi		0036	0064	0583	0274	0114					
DMTECH	9020	2028	1991								
Domland		0421									
Doric		0376									
Dream Vision		1731	1781								
DTS		0036									

Appendix

English

Brand name	Brand ID	Code Set									
Dual	9021	1064	2268	0064	1229	0546	0579	1264	1164	0571	0805
		0421	1294	0376	0370	1399	1190	0658	1176	2059	0379
Dumont		0114	0097								
Dunai		0571									
Durabrand		0064	1464	0583	2015	1679					
D-Vision		2009	0064	0583							
Dynatron		0064	0583	0039							
e:max	9022	1399	1558								
Edison-Minerva		0514									
Electrion		1612									
Elekta		0036	0064	0583	0291						
ELG		0064	0583								
Elin		0064	0583	0132	0575	0388	0376	0036			
Elite		0245	0064	0583							
Elta		0036	0291								
Emco		0274									
Emerson		0114	0274	1936	0513	0397	0695	0064	0583	0398	0097
		0388	0651								
Emprex		1816									
Epson	9023	0858									
Erres		0064	0583	0039							
ESC		0064	0583								
Estèle		0579									
Etron		0064	0583	0036							
Eurofeel		0291									
EuroLine		0064	2077								
Euroman		0291	0064	0583	0448	0397					
Europa		0064	0583								
Europhon		0064	0583	0274	0579						
Evesham		1694									
Exquisit		0064	0583	0274							
Fast		1928									
Fenner		0036									
Finlux	9024	1694	0064	0583	1583	2009	1612	1398	0132	1275	0373
		0741	0835	0658	0519	0507	0500	0445	0579	0742	0097
		0114	0438								
Firstline		0064	0583	0695	0741	0651	0036	1390	1190	1398	1639
		1335	0376	0262	0235	0388	1064	0835	0321	0274	0579
		1936	0438	0571							
Fisher		0235	0397	0114	0388	0579	0571	0376			
Force		1176									
Formenti		0064	0583	0513	0114	0579					
Formenti-Phoenix		0579									
Fortress		0120	0114								
Fraba		0064	0583	0397							
Friac		0036	0064	0583	0448	0397	0526	0682	0637		
Frontech		0274	0291	0376	0036						
Fujitsu		0036	0379	0064	0583	0388					
Fujitsu General		0036									

Appendix

Brand name	Brand ID	Code Set									
Fujitsu Siemens	9025	1693	1325	0835	2201	1275	1190	1286			
Funai	9026	1844	1421	1064	1693	1622	0695	0741	0291	0321	
Future		0064	0583								
Galaxi		0064	0583	0388							
Galaxis	9027	0397	0064	0445	0583						
Galeria		0036									
GBC		0579	0036	0245							
GE		0370									
GEC		0388	0376	0064	0583						
Geloso		0274	0036	0579							
General Electric		0370	0314								
General Technic		0036									
Genexxa		0245	0064	0583	0036						
Gericom	9028	1244	1633	0892	1325	1233	0907	0835	1748		
Goldfunk		0695									
GoldStar	9029	0064	0583	0274	0388	0741	0633	0036	0136	0742	0397
Gooding		0514									
Goodmans		1286	1275	1822							
Gorenje		0397	0448								
GPM		0245									
Graetz	9030	0388	0398	1190							
Gran Prix		0675									
Grundig	9031	0222	1250	0562	0097	1609	0581	0064	0218	0561	2227
		1286	1827	0205	0583	1064	1694	0784	1403	0470	1335
		2266	2152	0514	2154	1962	1943	0397	0036	0614	0370
H&B		0835	2028								
Haier	9032	1642									
Halifax		0291									
Hanimex		0245									
Hanns.G		1640									
Hannspree	9033	2054	2245	1640	1378	2241					
Hanseatic	9034	0546	0064	0661	2028	0526	0688	0652	0421	0741	1991
		0835	0388	0513	0583	0036	0571	0321	0114	0376	0397
Hantarex		0036	0064	0583							
Hantor		0064	0583								
Harsper		0892									
Harwa	9035	1223	1534	1296							
Hauppauge		0064	0583								
HB		1399									
HCM		0036	0064	0583	0245	0445	0291				
Hedzon		0583	0064								
Hema		0036									
Highline		0291	0064	0583							
Hisense	9036	1390	2125	2064	1341						
Hit		0114									
Hitachi	9037	1603	0508	0605	1799	1064	2234	0526	0771	0064	1072
		1511	1221	0252	1508	2241	1881	0388	0661	0746	1190
		1612	1176	0824	2154	0507	0904	0519	1164	0575	0376
		0500	0911	1694	0579	0223	0370	0136	0132	0205	

Appendix

English

Brand name	Brand ID	Code Set									
Hitachi Fujian		0135	0252								
HMV		0114									
Höher		0741	1583	0892	1190						
Hugoson		1693									
Humax	9038	1566	1322	1848	1562						
Hyper		0036	0274								
Hypersonic		0388									
Hypson		0064	0583	0741	0742	0291	1064	0695	0513		
Hyundai	9039	1308	1495	1179	0903	1559	1403	0892	1321	1501	1583
		1633	0805	1639							
Iberia		0064	0583								
ICE	9040	0398	0245	0291	0064	0036					
Ices		0245									
Ict		0064	1164	0583							
IIsonic		1403									
Iiyama	9041	0904	0917	2281	1244						
Ikasu		1704									
Imperial	9042	0445	0579	0274	0101	0223	0397	0064	0376		
Indiana		0064	0583								
InFocus	9043	1457	1233								
Ingelen		0514	0637	0741	0388	1464					
Ingersoll		0036									
Inno Hit		0036	0064	0583	0245	0274	1190	1612			
Innovation		0546	0064	0583							
Innowert		0892	1325								
Interactive		0064	0583	0039	0114	0539	0354	0388	0397	0136	0438
Interbuy		0036	0064	0291	0274	0539	0583				
Interfunk		0064	0583	0039	0114	0539	0354	0388	0397	0136	0376
		0274	0227								
Internal		0064	0583	0651	0526	1936					
Intervision		0064	0398	0546	0513	0397	0421	0514	0245	0291	0274
		0036	0583								
Isukai		0245	0064	0583							
ITC		0579									
ITS		0064	0398	0245	0291	0036	0583				
ITT	9044	2152	0575	0388	0507	0376	0500	0373	0235	0613	0637
ITT Nokia	9045	0388	0575	0500	0507	0376	0373	0235	0613	0633	0637
		0658									
ITV		0291									
Jean		1540									
JEC		0062									
JGC		1704	1736								
Jubilee		0583									
JVC	9046	0680	1845	1680	0398	2145	0633	0758	0120	0245	0677
		0445									
Kapsch		0388									
Karcher	9047	0633	1583	0448	0805	0064	0637	0741	0397	0583	0291
		2152	1335	2009							
Kathrein		0583	0064	0907							

Appendix

Brand name	Brand ID	Code Set									
Kawa		0398									
Kendo	9048	1612	1064	0637	0438	1176	0397	0064	1464	0513	0675
		0274	0546	0262	1164						
Kennedy		0579									
Kiton		0583	0064	0695							
Kobra		1325									
Kolster		0064	0583	0376	0274	0245					
Konka		0064	0583	0398	0741	0445	0245	2056			
Kontakt		0514									
Korpel		0064	0583								
Korting		0114	0448	0397							
Kotron		0291									
Koyoda		0036									
Kriesler		0039									
Kuba		0376									
Kuba Electronic		0376									
Kyoshu		0445	0291								
L&S Electronic		0892	0741								
LaSAT		0513	0397								
Lava		1501									
Leader		0036									
Lemair		0438									
Lenco		0064	0036	1822	0583	0614	1064	2010			
Lentec		1558									
Lesa		0274									
Levis Austria		0064	0583								
Lexsor		1223	1534								
Leyco		0291	0064	0583	0321						
LG	9049	1450	2209	0205	1869	0741	1690	1867	0064	1332	1664
		1748	0583	1566	0742	0136	0274	0388	0397	0036	
Liesenkötter		0064	0354	0039	0583						
Lifetec	9050	0064	0695	1064	1164	0546	2028	0245	0036	0741	0682
		1275	1286	0291							
Loewe	9051	0539	0660	1911	0817	1863	0114	1817	0682	0397	
Logik		0038	0398	0907	1244	1064	2056	1672			
Logix		0695	0546								
Luma		0064	0438	0583	0036						
Lumatron		0064	0583	0388	0291						
Luxor		0507	0519	0376	0388	0235	0575	0373	0500	1064	0658
Madison		0064	0583								
Magnavox		0064	0583								
Magnum	9052	0675	0741	0064	0742	1316					
Mandor		0291									
Manesth		0064	0583	0262	0291	0062	0321				
Manhattan		0064	0583	0695	1064	0805					
Maqma	9053	1816	1633	1325	1729	1736					
Marantz		0064	0583	1559							
Mark		0064	0583	0036	0741	0742					
Master's		0526	0064								

Appendix

English

Brand name	Brand ID	Code Set									
Masuda		0398									
Matsui		1190									
Matsushita		0677									
Maxim		2009	1583								
Medialine		1233	1991								
Mediator		0064	0583	0039							
Medion	9054	0835	1275	0741	1768	0583	1176	1229	1583	0064	0907
		1064	1612	1694	0272	1164	1464	0695	1943	2028	0539
		1248	1233								
Megas		0637									
MEI		1064	0064	0583							
Meletronic		0373	0064	0539	0136	0370	0274	0222	0688	0741	1679
		0314	0583	0651	0661	0388	0218	0132	0036	0507	0519
		0438	0376								
Memorex		0036									
Memphis		0036									
Mercury		0064	0036	0583							
Metz	9055	0474	1560	0773	0394	0415	1190	0695	0114	0064	0222
		0562	0561	0581	0218						
Micromaxx	9056	1399	0741	0064	0695	0835	1064	2028			
Microstar		0835									
Minato		0064	0583								
Minerva	9057	0514	1275	0581	0562	0222	0097	0561	0218	0135	
Minoka		0064	0583								
Mirai	9058	1693	2099	1879							
Mitsubishi	9059	0135	0064	0562	0539	1064	0583	0114	0235		
Mivar		0397									
Monaco		0036									
Morgan's		0064	0583								
MTC		0397	0376	0539	0388						
MTlogic		1335									
Multitec		0695	1064	1583	2009	0064	0583	0513			
Multitech		0376	0036	0513	0064	0397	0583	0274	0291	0579	
Musikland		0064	0245	0274	0583						
Mx Onda		1672	1847								
Myryad		0583	0064								
NAD		0892									
Naiko		0064	0633	0583							
Nakimura		0064	0583								
NEC	9060	2171	0197	0272	1731	0036	0064	0038	0526	0688	0732
		0731	0680								
Neckermann		0064	0218	0397	1532	1037	0561	0376	0114	0274	0438
		0539	0227	0581	0583	0579	0354	0445			
NEI		0064	0583	0398	1064						
Neon		1759									
Neovia		1233	0892	1991	1398	0903	1403				
Nesco		0274									
Netway		2136									
Neufunk		0064	0036	0583	0637	0245	0741				

Appendix

Brand name	Brand ID	Code Set									
New Tech		0064	0036	0583	0370						
Nikkai		1704									
Nikkei	9061	0741									
Noblisko		0097									
Nokia	9062	0500	0507	0388	0613	0575	0658	0633	0376	0373	0235
		0519	0637	0136							
Nordmende	9063	1440	0136	0587	2358	2356	0314	1316	0498	2359	0223
		0741	0362	0370	1612	2034	2028	1694	1286	0064	0222
Normerel		0064	0583								
Novak		0039	0064	0583							
Novatronic		0064	0132	0583							
Novita		1612									
Nurnberg		0388									
Oceanic		0388	0321	0235	0500	0575	0507	2028			
Odeon		0291									
Odys	9064	2416	1822								
Okano		0291	0036	0397	0064	0583					
Olidata		1403									
Omega		0291									
Onwa		0398	0245	0460							
Optoma	9065	1781	1701								
Orbit		0064	0583								
Orion	9066	2034	2032	0470	0741	0262	0682	0064	2135	0321	0583
		2027	0907	0382	1943	1223	0571	0291	0038	0036	
Orline		0064	0245	0583							
Ormond		0695	1064	0064	0583						
Osio		0064	0583								
Oso		0245									
Osume		0245	0064	0583							
OTIC		1672	2010								
Otto Versand		1532	1037	0120	0539	0064	0583	0274	0036	0370	0546
		0579	0218	0388	0262	0136	0321	0253	0561	0562	0222
		0571	0376	0581							
Pacific		0064	0583	1164	1264	0741	1064	0470	1399		
Palladium	9067	0397	0438	0376	0682	0741	0546	0064	0445	0218	1532
		0561	0227	0581	0354	0114	0274	0579	0583	1037	2009
Panama		0036	0291	0064	0583	0274					
Panasonic	9068	0677	1663	1677	0253	1337	1362	0575	0394	0388	0064
Papouw		0064	0583								
Pathe Cinema		0376	0579	0397							
Pathe Marconi		0136	0223								
Pausa		0036									
Perdio		0064	0583								
Perfekt		0064	0583								
Philco		0114	0101	0445	0274	0579	0397	0064	0583	0546	
Philips	9069	0583	1533	0064	1771	0666	1894	0632	1610	1522	2042
		1273	1482	0039	0799	0581	0036	0388	0227	0114	0370
Phocus	9070	1335	0741	1316	1679	1827					
Phoenix		0064	0583	0397	0513	0114	0579				

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English

Brand name	Brand ID	Code Set									
Phonola		0064	0583	0039	0114						
Pioneer	9071	1484	1287	0706	0193	0787	0064	0388	0136	0513	0539
		0397	0370	0314							
Pionier		0397	0513								
Plantron		0583	0291	0036	0064						
Playsonic		0741	0064	0742	1827	1679					
Polaroid	9072	1768	2152	1672	1550	1747					
Policom		0136	0223	0388	0097	0101	0114	0562			
Poppy		0036									
Portland		0651	1936								
Powerpoint		0514	0064	0583	1797						
Prandoni-Prince		0274	0388								
Prima		0036	0291	1296	1534	1223					
Prinz		0571	0376	0388							
Profex		0036	0388								
Profi		0036									
Profilo		1583									
Profitronic		0064	0583								
Proline		0064	0583	0652	0661	0438	0039	1403	1540	1064	
Prosonic		0695	0741	1759	2117	2272	0064	0583	0397	0398	
Protech		0064	0583	0036	0274	0376	0291	0445	0695	0579	0513
		1064									
Proview		1672									
Provision	9073	1064	1558	0064	0583	0741	1399				
Pye		0064	0583	0039	0114	0581	0376				
Pymi		0036									
QONIX		1661									
Quadral		0245									
Quasar		0274	0892	0036							
Quelle		0064	1532	1037	0038	0136	0539	0373	0448	0579	0036
		0583	0222	0227	0291	1064	0321	0274	0101	0354	0097
		0132	0695	0562	0571	0376	0581	0218	0388		
Radiola		0064	0583	0039							
Radiomarelli		0114	0274	0064	0583						
RadioShack		0064	0583								
Radiotone	9074	0695	0675	0064	0036	1064	0397	0445	0291		
Rank		0097									
RBM		0097									
Recor		0064	0583								
Rectiligne		0064	0583								
Red Star		1583									
Rediffusion		0388	0575	0373							
Redstar		0064	0583								
REEL Multimedia		1451									
Reflex		0064	0583	1064	0695						
Relisys		1768	1672	0904	1233	1325	1403	1612	1639	0892	0903
Revox		0064	0835	0583	0397						
Rex		0438	0274	0291							
RFT	9075	0291	0114	0397	0064	0583	0513				

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Brand name	Brand ID	Code Set									
Ricoh		0064	0583								
Roadstar		1064	0742	0741	0036	0064	1216	1582	1353	0583	0445
		0695	1464	0245	0291	1943					
Robotron		0114									
Rowa		0583	0291	0036	0614	0064					
Royal Lux		0448	0397	0362							
Rukopir		0583	0064								
Saba	9076	0652	0362	0136	0587	0370	0114	0223	0498	0314	1064
		0388	0575	0525	1615	0741	0583				
Sagem		0637	0857	1340	0645						
Saivod		0064	0583	0695	1064						
Salora		0376	0388	0575	0235	0579	0507	2152	1264	0658	1583
		0805	1398	1229							
Salsa		0362									
Samsung	9077	2078	0839	1485	0645	1339	0614	2164	1276	1657	1705
		2121	0671	0583	1262	0064	0036	0793	1659	0397	0546
		0291									
Sansui		0064	0583	0398	1962						
Santon		0036									
Sanyo	9078	0235	1235	1674	1612	0036	1694	0571	1676	1064	1675
		0135	0197	0731	0397	0038					
Save		0064	0583								
SBR		0064	0583	0039							
Schaub Lorenz	9079	0741	2127	1399	0513	0575	0633	1398	0388	1221	0376
		2152	1694	1390							
Schneider	9080	0583	1164	0064	1064	2155	1644	0695	0546	0379	0039
		0571	1501	0376	1395	0274	0741	1399	2009	0421	1264
		0398	0388	0245	0370	1943	0097	0675			
Scott		1216	2010								
Seaway		0661									
SEG	9081	1064	0695	1190	0064	1176	1936	1464	0651	0579	0583
		1928	1612	1694	0036	2088	0514	0661	0291	0245	0376
		0274									
SEI		0114	1532	1037	0579	0571	0376	0321	0064	0583	
Sei-Sinudyne		0321	1532	1037	0579	0571	0064	0583	0114		
Seleco		0438	0398	0291	0373						
Sencora		0036									
Sentra		0062	0245	0036	0376						
Sharp	9082	1686	0120	1220	1420	1614	2241	1846	1613	0321	0227
		0680									
Shintoshi		0064	0583								
Shivaki		0064	0583	0470	0205						
Siarem		0579	0114								
Siemens	9083	0222	0581	0218	0562	0227	0354	0064	0561	0583	0388
Siera		0064	0583	0039	0614						
Siesta		0397									
Silva		0388	0675	0064	0583						
Silva Schneider		1583	2193	0675	2152						
Silver		0388	0742								

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English

Brand name	Brand ID	Code Set									
Simz		1847									
Singer		0036	0114	0064	0583	0274	0362				
Sinudyne		1399	0114	0262	0321	0579	0388	0633	0571	0376	1532
		1037	0064	0583							
Sky		1540	1640	1633	1772	0688	0892	0907	0205	1531	1642
		1403									
Skymaster		0132									
Sliding		0892	0907	1399	1395						
Smaragd		0514									
Soemtron		0892	1325								
Sogo		1403									
Solavox		0388	0575	0064	0583						
Sonawa		0245									
Soniko		0064	0583								
Sonitron		0235	0397								
Sonoko		0064	0583	0036	0291						
Sontec		0064	0583	0397	0321	0036					
Sony	9084	1852	1532	1678	1778	1037	0038	1712	0861	0064	0120
		0197	0101								
Sound & Vision		0245	0064	0583							
Soundwave		0064	0583	0445	0742						
Standard		0064	0583	1064	0245	0036					
Starion		1064									
Starlite		0036	0579	0064	0583	0291					
Starmedia		2136									
Stenway		0245									
Stern		0291	0438								
Strato		0064	0583	0291	0036						
Strong		0064	0583	1190	1176	1064					
Sungoo		2064									
Sunic Line		0064	0583								
Sunstar		0398	0064	0583	0036	0291					
Sunstech		2028	1991								
Sunwood		0036	0064	0583							
SuperTech		0036	0064	0583	0245						
Supra		0036									
Susumu		0362	0245	0314							
Sutron		0036									
Swedx		1633									
Swissline		0274									
Swisstec		1531									
Sysline		0064	0583								
T+A		0474									
Tandberg		0394	0438	0136	0223	0388					
Tandy		0245	0274	0120							
Targa		0645	2272	1398	1294						
Tatung	9085	1747	1275	0064	0583	1399	1286	1583	1398	0038	
TCM		2028	1335	0741	1316	0835					
TEC		0036	0274	0498	0362	0579	0064	0583	0388		

Appendix

Brand name	Brand ID	Code Set									
Tech Line		0064	0583	0695	1464	1190					
Tech Lux		1216									
Technica		2009									
TechniSat	9086	1294	0667	0064	2182	0583	0682				
Technisson		0741	1316	1679							
Technotrend		1729	2182	1558							
Techvision		1736	1558								
Techwood		1190	1064	1694							
Teco		1340	2136	1550							
Tedelex		0633	0064	0036	0235	0614	0583				
Teiron		0036									
Telefunken	9087	0289	0652	0498	0128	0362	0136	0314	0525	0370	0587
		0101	0064	0513	0741	1583	0373	0223			
Telefusion		0064	0583								
Telemeister		0064	0583								
Telesonic		0064	0583								
Telestari	9088	2345	0064	2117	0583						
Teletech	9089	0064	0695	1064	0036	0274					
Teleton		0376									
Televideon		0579									
Televieview		0064	0583								
Tensai		0245	0064	0583	0321	0036	0132	0398	0274	0742	1064
Tenson		0036									
Tesla		0064									
Tevion	9090	1275	1164	0741	0583	1583	1064	2050	0695	0835	1768
		0675	2268	1316	1827	2117	1612	0892	1286	0064	
Texet		0036	0245								
Thomson	9091	0652	0587	0314	0370	0362	0498	0136	1615	0223	2155
		0064	0376	0579							
Thorn		0135	0136	0252	0370	0097	0128	0388	1532	1037	0562
		0038	0039								
Thorn-Ferguson		0362	0062								
Tokyo		0062									
Topline		0695	1064								
Toshiba	9092	1535	0535	0062	0745	1609	0580	1764	1316	0222	1457
		1064	0268	1583	1962	0645	0677	1972	1731	0097	1943
		0036	0136								
Towada		0376	0579								
Toyoda		0036									
Trakton		0291									
Triad		0583	0245	0036	0064						
Trio		1672									
Tristar		0291	0245								
TVTEXT 95		0583									
Uher		0064	0583	0445	0513	0397	0507				
Ultravox	9093	0064	0114	0274	0579	0583					
Unic Line		0064	0583	0500	0376						
United		1679	1847	1797	0583	1943	1064	0614	2009	2227	0741
		0064	0742								

Appendix

English

Brand name	Brand ID	Code Set									
Universum	9094	1064	0064	0373	1190	0695	1464	0500	0438	0132	0507
		1264	0036	0388	0291	0354	0562	0097	0519	1928	0579
		0038	0539	1176	0658	0397	0274	0645	0571	0581	0445
		0448	0197	0136	0101	0227	2201	0376	0222	1532	0321
		1037									
Univox		0064	0583	0114							
V7 Videoseven	9095	1244	1693	2281	0907	1403	1294				
Vestel		1064	1190	1612	1694	0064	0695	0579	0583		
Vexa		0036	0064	0583							
Videologic		0245									
Videosat		0274									
VideoSystem		0064	0583								
Viewpia		0903									
ViewSonic	9096	1569	1615	1540	2136	2138					
Vision		0064	0583								
Vistar		0388									
Vortec		0064	0583								
Voxson		0114	0064	0583	0445	0205					
Waltham		1064	0470	0445	0314	0064	0583	0695	0136		
Watson	9097	0064	1064	0546	0036	0695	1275	1403	1464	0354	0421
		0245									
Watt Radio		0571	0376	0579	0513						
Wega		0064	0583	0114							
Wegavox		0036	0064	0583							
Welltech		1679									
Weltblick		0064	0583								
Weltstar		1064									
Weston		0064	0583								
White Westinghouse		0064	0583	0651	1936						
Wilson		0583									
Windy Sam		0583									
World-of-Vision	9098	0907	1759	2028	0917	0892	1316	1325	0904	1633	1244
Xomax		1797									
Xoro	9099	1816	2094	1534	2173	1223	1244	1270	2172		
Xrypton		0064	0583								
Yakumo	9100	1640	2324								
Yamaha		0677	0824	1553	1603						
Yokan		0064	0583								
Yoko		0064	0583	0245	0291	0036	0448	0397	0274		
Yorx		0245									

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