USER MANUAL

TV-700 FTA DVB-T
TV-701 CX DVB-T

conax

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WEEE (Waste Electrical and Electronic Equipment Directive)

If at any time in the future you should need to dispose of this product please note that: Waste electrical products should not be disposed of with household waste. Please recycle where facilities exist. Check with your Local Authority or retailer for recycling advice.

Disposing of the battery / batteries
Please check local regulations for disposal of batteries or call your local city office or your household waste disposal service or the shop where you purchased the product.

The battery / batteries should never be placed in municipal waste. Use a battery disposal facility in your neighborhood or community, if available.

Dear Customer,

We thank you for purchasing the TV-700 FTA / TV-701 CX DVB-T. The TV-700 FTA / TV-701 CX DVB-T is an ultra-modern, portable Digital television that has been developed to receive digital, DVB-T standard (digital video broadcasting terrestrial) TV and radio programs. We wish you many pleasant hours of watching TV or listening to the Radio. Personal Safety has been taken in consideration in the design and manufacturing this product, however any improper use or operation may result in an electrical shock, fire and/or any other hazards. To prevent these hazards it is strongly recommended to read this manual thoroughly and adhere to the following precautions:

IMPORTANT PRECAUTIONS

SAFETY PRECAUTIONS

- To prevent an electrical shock, do not open the housing of the unit, dangerous voltages may be present inside the unit.
- Do not expose to any rain and moisture or spill any liquid onto or in the unit and do not operate the product when your hands are wet, in a humid environment, near places of water, near objects filled with liquid, such as vases, to prevent any electrical shock or shortage.
- Never operate the product if it is moved from a cold environment to a warm one and vice versa. Moisture may form inside of the unit and as a result it may not operate properly.
- Never put any foreign objects into any other openings of the unit, to prevent any damage or electrical shock.
- In any case of malfunctioning, only have the product serviced by an approved and qualified service centre. Do not open the housing yourself.
- Do not clean with alcohol, clean the unit with a soft and dry cloth and only when the unit is disconnected from the power source.
- Like any digital terminal with an LCD screen, the TFT LCD screen is extremely fragile, it is made from glass and breakable. Utmost care should be taken of your unit since you are not covered, under warranty, for mechanical damage due to shock or dropping the unit.
- Do not install the unit near other electric devices. Never place the unit on another electric device, because the resulting overheating could prematurely age the components.
- In the event of a lightning storm, unplug all your electrical devices and this unit from the mains outlets – they might be subjected to damage not covered by any guarantee.
- Do not place this product on an unstable cart, stand, tripod, bracket or table. The product may fall, causing serious injury and serious damage to the product.
- This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided.

OPERATION PRECAUTIONS

- Only connect to a 12Vdc power source.
- Use only Rechargeable NiMH batteries.
- Avoid placing the product in direct sunlight, in areas with high levels of dust, high temperatures (over 40°C) or high humidity (over 90%).
- Do not turn on or off the product in short intervals. When turning the unit off, wait for at least 10 seconds prior to turning the unit on again.

WARNING!

This portable device is designed for stationary use only, e.g. on a desk or table. Although depending the DVB-T area you are in, the unit can be used while moving. However it is not designed and intended to be used as such and good and constant viewing of a TV signal can not be guaranteed. This is normal operation of the unit and is not a defect.

NOTE

- Please dispose empty batteries according the regulations in your country
- All On Screen Displays (OSD) and Pictures will be based on the English version.
- Design and Specifications may vary in the manual from the actual product in use.
- **Never** watch TV while driving a vehicle or boat!

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PREPARATION BEFORE USING THE TV-700 FTA / TV-701 CX DVB-T

Unpacking and checking the contents

Please check if the following items and accessories are included in the received package:

TV-700 FTA / TV-701 CX

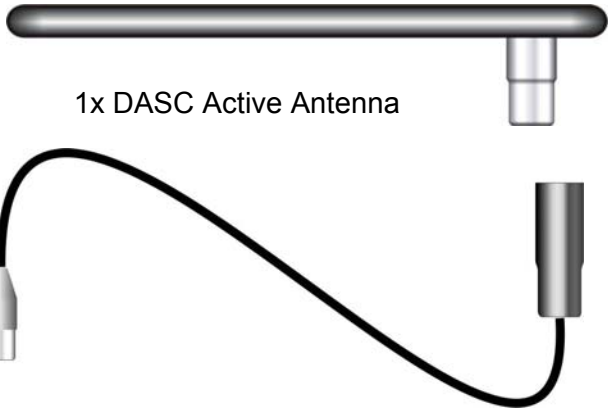
1x AC/DC Adapter

1x Remote control with CR 2025 battery

1x Audio / Video Cable

1x 12Vdc Cigarette Lighter Plug

1x NiMH battery charger and 6x 2300 mAh AA batteries



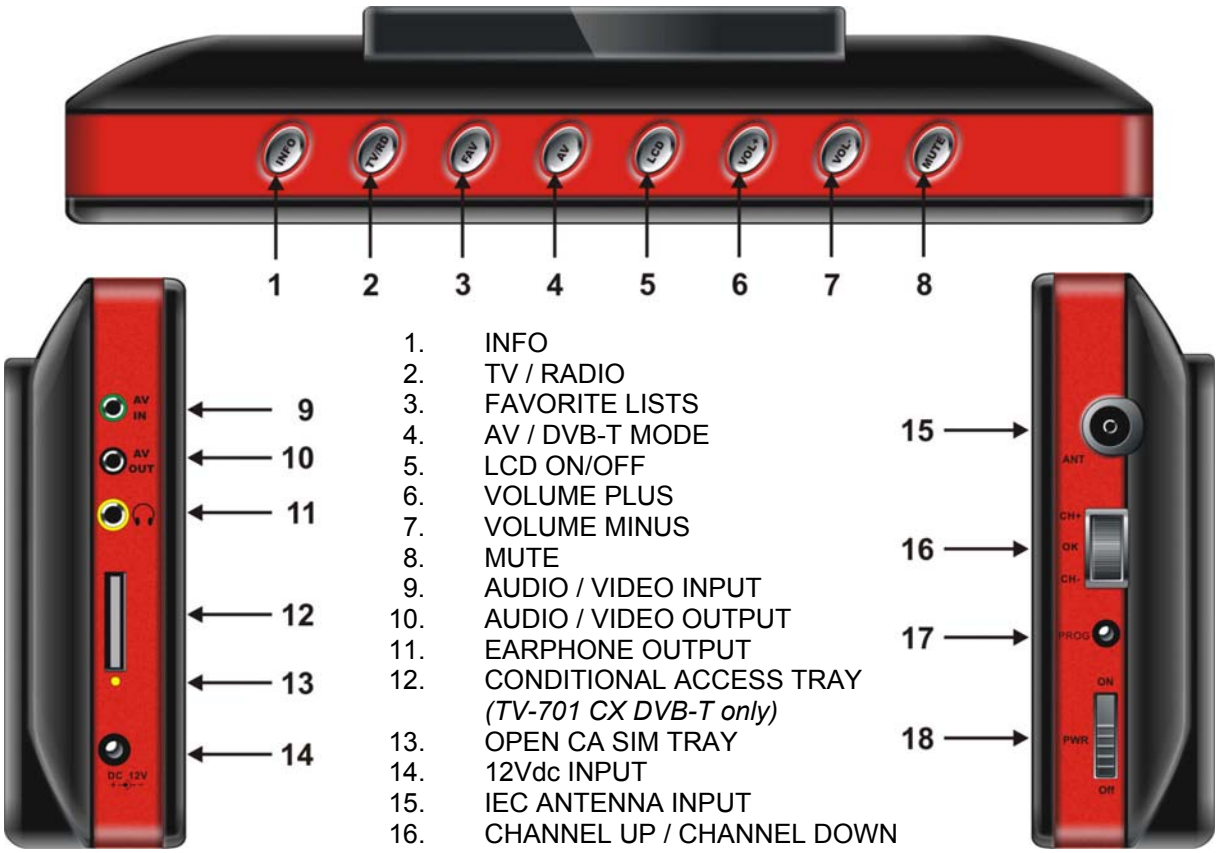
1x DASC Active Antenna

1x 5 meter Mini Coax extension cable

This User Manual.

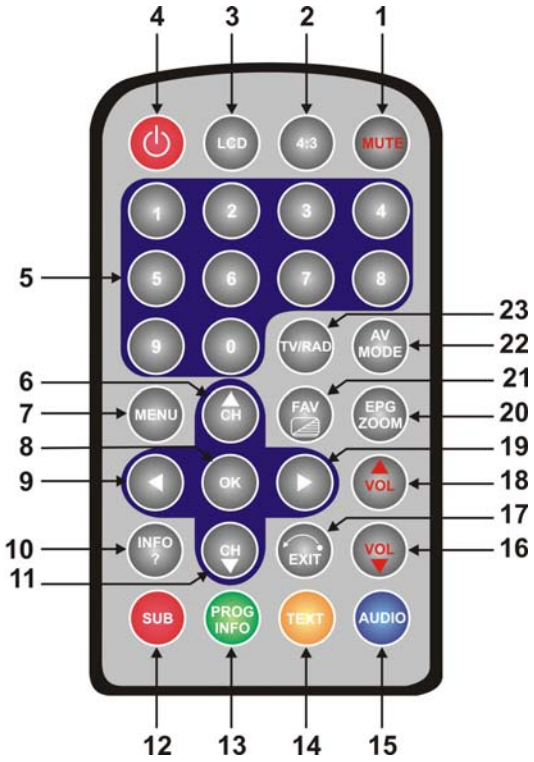
CONTROL REFERENCE GUIDE

The TV-700 FTA / TV-701 CX DVB-T



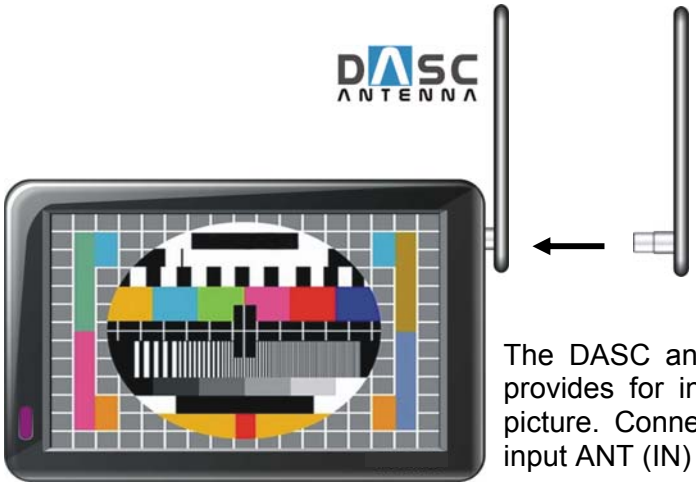
1. INFO
2. TV / RADIO
3. FAVORITE LISTS
4. AV / DVB-T MODE
5. LCD ON/OFF
6. VOLUME PLUS
7. VOLUME MINUS
8. MUTE
9. AUDIO / VIDEO INPUT
10. AUDIO / VIDEO OUTPUT
11. EARPHONE OUTPUT
12. CONDITIONAL ACCESS TRAY *(TV-701 CX DVB-T only)*
13. OPEN CA SIM TRAY
14. 12Vdc INPUT
15. IEC ANTENNA INPUT
16. CHANNEL UP / CHANNEL DOWN (press) OK
17. Factory program port *TV-700 FTA DVB-T only*
18. POWER ON/OFF

The IR Remote Control



1. MUTE
2. 4:3 / 16:9 RATIO
3. LCD ON/OFF
4. STANDY POWER ON/OFF
5. NUMBER KEYS [0..9]
6. CHANNEL UP
7. SETUP MENU
8. OK / SIGNAL INFO
9. LEFT ARROW
10. CHANNEL INFO / [?] FOR TELETEXT
11. CHANNEL DOWN
12. DVB-T SUBTITLES / RED TELETEXT
13. PROGRAM INFO / GREEN TELETEXT
14. TELETEXT / YELLOW TELETEXT
15. DVB-T AUDIO CHANNEL / BLUE TELETEXT
16. VOLUME DOWN
17. EXIT MENU / ONE STEP BACK
18. VOLUME UP
19. RIGHT ARROW
20. EPG / TELETEXT ZOOM
21. FAVORITE LISTS / TELETEXT+SCREEN
22. AV / DVB-T MODE
23. TV / RADIO MODE

INSTALLATION OF THE ACTIVE DASC ANTENNA



Thanks to its battery compartment and the DASC antenna, the unit can be used as a television in the garden, at the bus stop, on a restaurant terrace or wherever you want without a power supply or an antenna cable.

The DASC antenna (Digital Active Signal Collector) provides for interference free reception and a clear picture. Connect the DASC antenna to the antenna input ANT (IN) and switch the unit ON.

The DASC antenna is omni directional and is in all direction evenly sensitive. Yet, because the unit itself forms a ground-plane, the DASC will be a bit more sensitive in weaker reception areas and specific directions. This also is depending to the position of the unit towards the DVB-T transmission tower. Turn the unit slowly to see if reception improves.

Portable reception is possible only in those areas where a DVB-T signal can be received. ***Note:*** *obstacles, such as walls, trees and vehicles block TV waves, so reception will be better in clear areas. Only use the TV-700 FTA / TV-701 CX DVB-T outside in dry weather conditions. Do NOT use outside near water or in rain.*

If you use the TV-700 FTA / TV-701 CX DVB-T in a good indoor DVB-T reception area, then you can connect the DASC antenna directly onto the antenna input. When the result of the reception is not satisfactory, please install the antenna as described below.

See page 37 for DVB-T reception tips.

In several DVB-T area's the DVB-T signals are transmitted in a horizontal polarization. Although the DASC antenna is omni directional, in some cases you can receive better signals when you place the antenna horizontally.

NOTE:

When using the unit inside or when you are in a reception area where the DVB-T signals are not so strong or are in a room with aluminum blinds or shielded/coated windows, then use the 5 meter extension coax cable and place the DASC antenna close to the window or even outside the window for better reception.

INSTALLATION OF ANY OTHER PASSIVE ANTENNA

For home usage, the TV-700 FTA / TV-701 CX DVB-T can be connected to an outside house antenna. Please note that the TV antenna coming from the roof should be connected directly to the antenna input designated ANT (IN). If the plug on your antenna cable is too short, use the antenna extension cable provided or use optional IEC extenders available in stores. When your antenna or connection cable is of the IEC type, screw the IEC Male - F Female tight to the IEC Female - F Male connectors. Place the extender into ANT (IN) and the antenna cable to the Extender. When your antenna connector is an F type, screw it tight to the IEC Male - F Female extender and connect the antenna cable to AV (IN).

Please note that the TV-700 FTA / TV-701 CX DVB-T should not be connected to a Cable TV system or to an antenna with a closed dipole. Also prevent any short circuit to the connector(s) or the coax cable. In the event an incorrect antenna is connected or a short circuit is present on the Antenna input the following message will be displayed:

Antenna Power Error! Please remove your Antenna or Antenna Cable. Refer to the User Manual

Switch off the TV-700 FTA / TV-701 CX DVB-T. Disconnect the antenna or cable and check for any irregularities or short circuits. In case a passive antenna is used, set the antenna power to OFF in the *Installation - Channel Search - Antenna* setting menu.

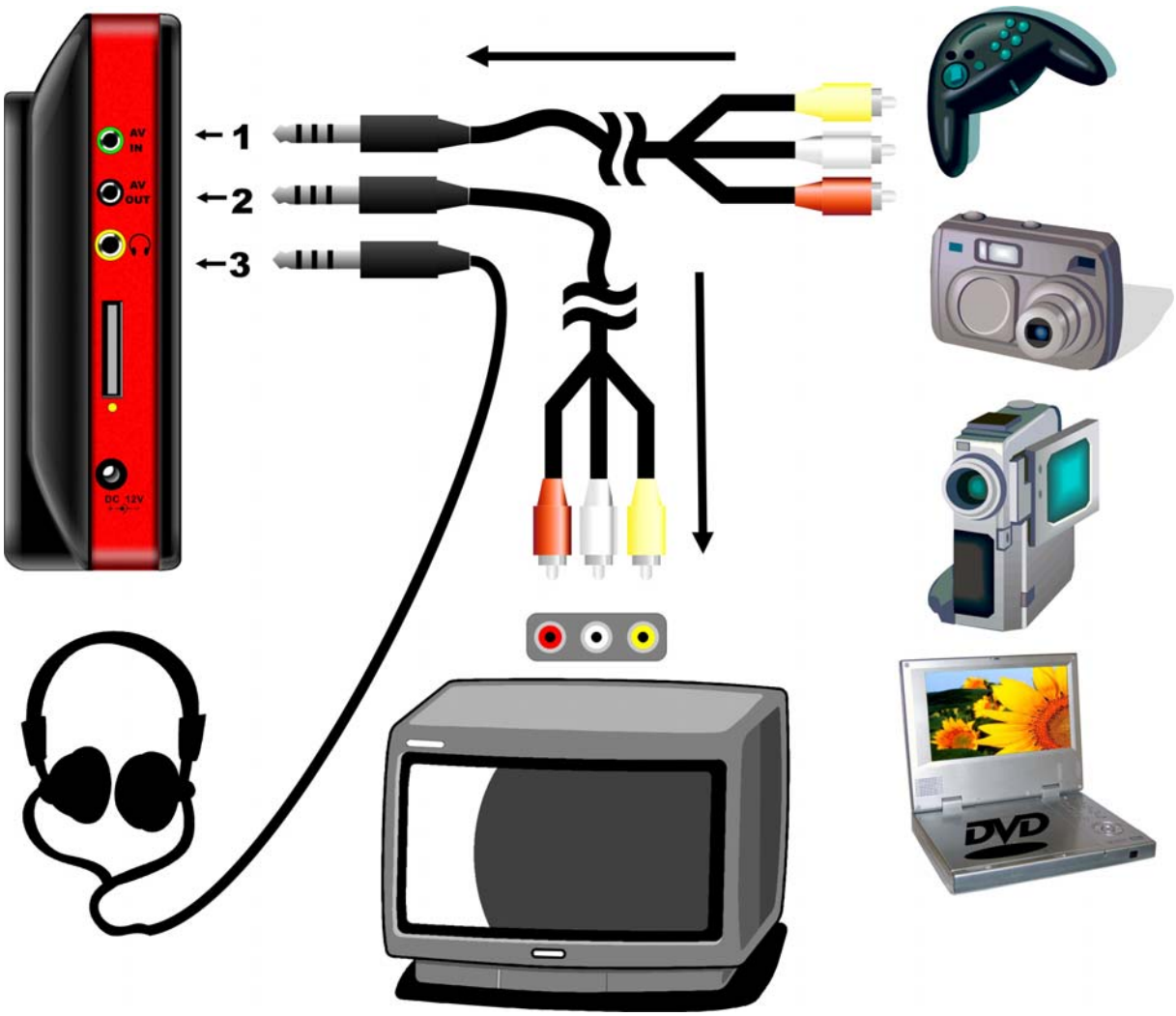
Calibration / Orientation of a house antenna

If no channel have been found on a normal house antenna, it is likely that it is pointing towards a transmitter which transmits only in analogue. If your zone is covered by digital transmission (DVB-T zone), it is because the transmissions come from another transmitter, and the orientation of your antenna needs to be modified.

Note: *not all existing antenna's that are used for analog reception of TV channels can be used for Digital reception.* If you are in doubt, obtain an UHF/VHF directional antenna having significant gain (at least 15 dB) and connect it to the ANT (IN) of the TV-700 FTA / TV-701 CX DVB-T. Now perform an automatic channel search (as described later in this manual). If no channels found, rotate the antenna by an eighth turn and perform another automatic search. If you do not find any channels, continue turning by an eighth turn and searching at each step. You should end up receiving various new channels.

INSTALLATION TO A TV SET AND AN EXTERNAL AV SOURCE

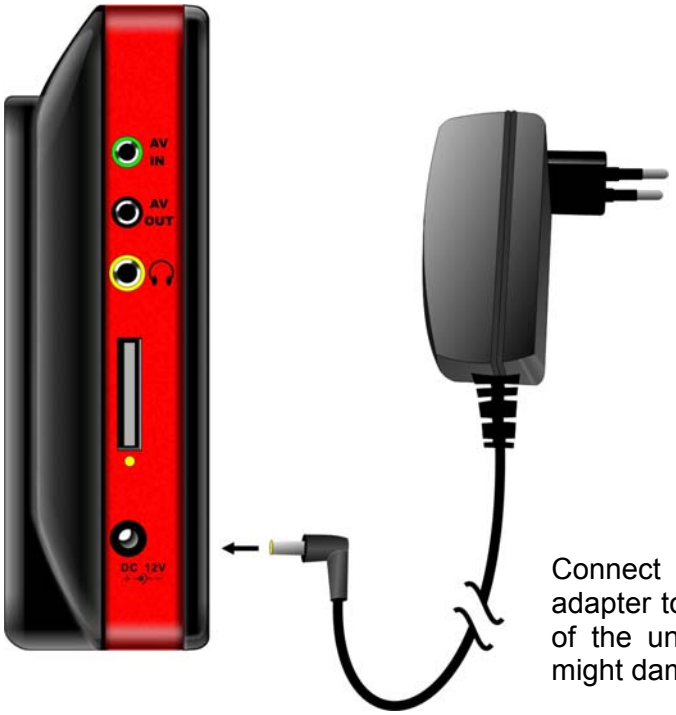
The TV-700 FTA / TV-701 CX DVB-T can be used as a digital receiver / settop box (STB). Either connect the DASC antenna to the antenna input ANT (IN) or connect the TV-700 FTA / TV-701 CX DVB-T to the external house antenna. **1)** AV OUT (Audio and Video) should then be connected to the AV input on the television set via the AV cable provided. Connect the TV-700 FTA / TV-701 CX DVB-T to the mains supply via the adapter. If your television set has no AV inputs, you can use an AV/scart adapter (not supplied as standard).



2) AV input is used to connect external Video sources to the TV-700 FTA / TV-701 CX DVB-T, such as Game pads or consoles, Digital (Video) Camera's, DVD players, etc. etc. Press the **AV** or **AV mode** key to switch to a connected source. Press one of these keys again to return to DVB-T mode.

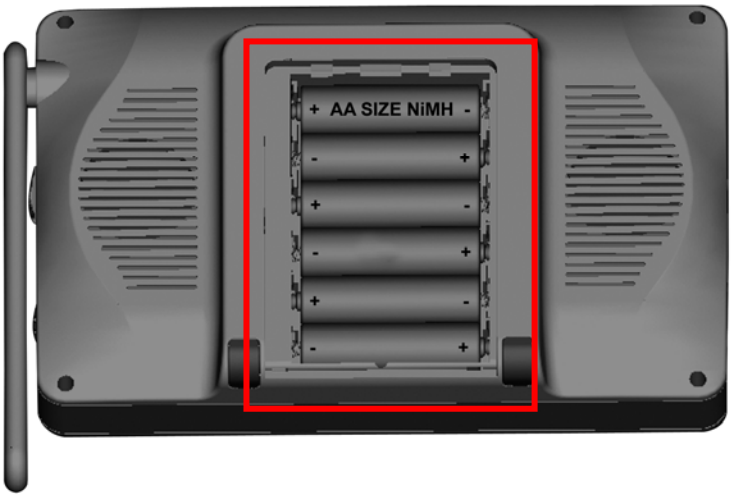
3) Connect a headset or earphones to listen to the sound in private.

INSTALLATION OF AC/DC ADAPTER AND BATTERIES



Connect the AC/DC adapter to a mains source of 100~240VAC / 50~60Hz

Connect the small connector of the AC/DC adapter to the DC 12V connection on the left side of the unit. Do not force or bend the plug, this might damage the connector.



Battery Operation

On the back of the TV-700 FTA / TV-701 CX DVB-T you will find the battery compartment. Open the battery cover by sliding it gently downwards. Place 6 pieces of rechargeable AA size NiMH batteries according the indication above. Please make sure the batteries are inserted according the above indicated polarity direction. Reversing the polarity may result in damage. It is not recommended to use regular Alkaline AA batteries due to the power requirement of the TV-700 FTA / TV-701 CX DVB-T. Alkaline batteries will have a short lifetime and may leak, causing damage to the unit not covered under warranty.

Note: *Do not short circuit the connections or the battery, this might damage the unit or battery and might lead to overloading the battery and can result in fire. During operation batteries will become warm, this is normal operation. When the unit is left unattended and unused for a long period of time, take out the batteries or unplug it from the mains outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and/or power-line surges. The TV-700 FTA / TV-701 CX DVB-T does NOT charge batteries that are placed inside the battery compartment.*

BASIC OPERATIONS REMOTE CONTROL

Power button on TV-700 FTA / TV-701 CX DVB-T

Slide the switch to the ON position to power ON the TV-700 FTA / TV-701 CX DVB-T. To fully switch off the power, slide the power button to the OFF position.

Stand-by key on IR Remote

The “Stand-by” key is used to put the TV-700 FTA / TV-701 CX DVB-T into the stand-by mode, the unit is still under power. If the unit is running on batteries, then it will still consume power from the batteries. To fully switch off the power, slide the POWER button on the TV-700 FTA / TV-701 CX DVB-T to the OFF position.

Note: *When the unit is switched ON, it takes 1-2 seconds for the boot-up procedure and during this time the LCD will remain black. This is normal operation.*

LCD

Press this key to switch OFF the LCD only. You can now listen to the audio only. Switching off the LCD reduces power consumption and will result in longer battery life. This is a particular handy feature when in Radio mode.

4:3

Press this key for the correct screen ratio. There are usually three different broadcast ratio’s for TV signals, e.g. 4:3, 16:9 and 16:9 widescreen. If the unit is receiving 16:9 signals, the screen is full screen. If the unit is receiving 16:9 widescreen signals, you will see black banners on the top and bottom of the screen. Press this key to display the TV image in full screen. If the unit is receiving a 4:3 signal, it is showing the image full screen, this means that the 4:3 image is stretched to fit the 16:9 screen format. To view the 4:3 TV signal in its original format press this key again. Toggle sequence: **Original signal → 16:9 full → 4:3 → Original signal**

MUTE

Press the Mute key to mute the volume. The MUTE icon will be seen on the LCD. To resume press mute again.

Number keys 0 .. 9:

The number key can be used for the direct program number entry, or to key-in the Parental access code. To choose channel 12, press first the [1] then the [2] directly thereafter.

▼▲►◄ keys

Navigation key, to navigate to left, right, up or down in menu selections.
Press the [▲CH] key to zap a channel up, press the [▼CH] to zap a channel down

TV/RAD key

Press this key to switch between TV and radio programs. If the transmitted DVB-T signal does not contain any radio programs, the screen will turn dark for a short time and the unit will fall back to the TV mode. (Radio availability is not supported by all providers)

AV MODE

Press this key to switch between DVB-T and an external connected Audio Video input source like a Digital (video) camera, game console, DVD player or alike.

MENU

Press the “Menu” key to enter the main menu.

FAV or ◄ or ►

Press these keys to call the TV Main List and Favorite List 1-4 and allow a fast navigation through the TV or Radio programs stored. Scroll to your desired selection with the ▲ or ▼ keys and press the [**OK**] key to zap to the desired program. In Teletext mode: Swithches the Teletext display to the transparent mode and back.

EPG / ZOOM

Press this key to enter the Electronic Program Guide (EPG) schedules

When in Teletext mode, this key switches the Teletext Display to Double height, switches between Upper and lower half of the Teletext screen by pressing the key insequence. Press the key again for normal full screen Teletext.

VOL▲ / VOL▼

Press this key to raise or lower the volume from 0 - 20. Default volume setting is 10.

INFO / ?

Press this key to view the current running program information (quick EPG). In Teletext mode (?): press this key to show the hidden information on a TXT page.

EXIT

The exit key is used to come back from the different sub-menus to a higher level in the menu structure or to quit the menu mode.

Subtitle key

The subtitle key activates the DVB-T inherent subtitles (if available and supported by the provider) Select the desired subtitle with the arrow keys and press OK.

PROG INFO

Press this key to view the current running program information (quick EPG).

TEXT

Press this key to enter the Teletext mode (if available and supported by the provider)

AUDIO key

Using the AUDIO key you can select - if available - the sound language reproduced. A user feed back is given via a OSD display e.g. “English” or “GERMAN” Select the desired Audio stream and press OK.

OK

When in menu selections, press OK to confirm your selection. When watching TV or listing to the radio, press OK to get short channel information. Press OK again within 5 seconds to get full channel information (Video PID, Audio PID, Frequency, Bandwidth, Signal Strength, Signal Quality). Press OK again or wait for ±5 seconds to go back to normal TV screen.

RED, GREEN, YELLOW, BLUE

In several Menu items, the colors of the buttons represent a certain function, refer to the menu item in this manual. In Teletext mode the color buttons can be used for quick page selections. (if available and supported by the provider)

BASIC OPERATION TV-700 FTA / TV-701 CX DVB-T

Power button on TV-700 FTA / TV-701 CX DVB-T

Slide the switch to the ON position to power ON the TV-700 FTA / TV-701 CX DVB-T. To fully switch off the power, slide the power button to the OFF position. ***Note:*** *When the unit is switched ON, it takes 1-2 seconds for the boot-up procedure and during this time the LCD will remain black. This is normal operation.*

CH+ / OK / CH-

Slide up [▲CH+] to zap a channel up, slide down [▼CH -] to zap a channel down. Best operation of this button is when you rub the switch with a flat positioned finger. When you try to slide the button with your fingertip, changing channels might be difficult.

Press this button for the **OK** function.
When in menu selections, press this button to confirm your selection. When watching TV or listing to the radio, press this button to get short channel information. Press again within 5 seconds to get full channel information (Video PID, Audio PID, Frequency, Bandwidth, Signal Strength, Signal Quality). Press again or wait for ±5 seconds to go back to normal TV screen.

INFO

Press this key to view the current running program information (quick EPG).

TV/RD

Press this key to switch between TV and radio programs. If the transmitted DVB-T signal does not contain any radio programs, the screen will turn dark for a short time and the unit will fall back to the TV mode. (Radio availability is not supported by all providers)

FAV

Press these keys to call the TV Main List and Favorite List 1-4 and allow a fast navigation through the TV or Radio programs stored. Scroll to your desired selection with the CH+ or CH- keys and press the [**OK**] key to zap to the desired program.

In Teletext mode: Switches the Teletext display to the transparent mode and back.

AV

Press this key to switch between DVB-T and an external connected Audio Video input source like a Digital (video) camera, game console, DVD player or alike.

LCD - Brightness, Contrast, Saturation and Hue adjustment

Press this key to switch off the LCD only. You can now listen to the audio only. Switching off the LCD reduces power consumption and will result in longer battery life. This is a particular handy feature when in Radio mode.

Press and *hold* press the LCD key until you see the LCD setup screen. Adjustments can be made for Brightness, Contrast, Saturation and Hue. Press the VOL + or VOL - key to increase or decrease the value. Press the LCD key again to toggle to the next selection. If no action is done within 5 seconds the screen will disappear automatically.

VOL+ / VOL-

Press this key to raise or lower the volume from 0 - 20. Default volume setting is 10.

MUTE

Press the Mute key to mute the volume. The MUTE icon will be seen on the LCD. To resume press mute again.

MENU / SETUP DESCRIPTION

First Time Setup

The *First time Installation* Menu is displayed on the first start-up of the TV-700 FTA / TV-701 CX DVB-T or after a full reset - re-installation and the first boot procedure. This screen only appears once, but can be modified in the *Regional Settings* menu. The Setup is mainly self-explanatory and selected menu items are well explained in the menu screens.

Language Selection: Select your desired language with ► / ◄ arrow keys. Then press the down ▼ arrow key. ***Note:*** *In the sub-menu Language, many languages can be selected. When "Deutsch" is selected, all menus, sub-menus, and messages will be displayed in German.*

Country Selection: Select the country where you are and will start scanning DVB-T signals. Depending on the Language selection also the Country name will change. Then press the down ▼ arrow key.

Start Channel Search: Press the **OK** key. The unit will start scanning the DVB-T frequency and you will see "Search in process" blinking.

Once the automatic channel search mode is started, the following screen will display information on the progress of the search and the programs that has been found. The reception parameters frequency and bandwidth, the signal strength of the channel, the number of TV and Radio programs, as well as the names of the programs are displayed.

Note: *If Australia is selected as country, appropriate bandwidth and frequency parameters are automatically selected.*

Please wait until the automatic channel search mode has finished. If you want to stop the channel search, press the **RED** key to cancel.

When the automatic channel search mode is completed, press the **BLUE** key to close the menu. The information about the found channels is automatically stored in memory. The TV-700 FTA / TV-701 CX DVB-T switches to the first program found and plays the content of this program. If the automatic search is canceled (**RED** key), the results will not be stored.

Main Menu Navigation key usage

Key	Function
RED	Function depending menu item
GREEN	Function depending menu item
YELLOW	Closes the sub-menu and returns back one menu level
BLUE	Exit directly the menu and returns to TV viewing mode
EXIT	Go back one selection or in main menu, exit the settings menu
OK	Confirm selection
ARROW UP ▲	Go to the menu item above the current selection. If the first item of the list is selected, the selection jumps over to the last item in the list.
ARROW DOWN ▼	Go to next menu item of the list below the current selection. If the last item of the list was selected, the selection jumps over to the first item in the list.
ARROW RIGHT ►	Scrolls through the menu items
ARROW LEFT ◄	Scrolls backward thought the menu items

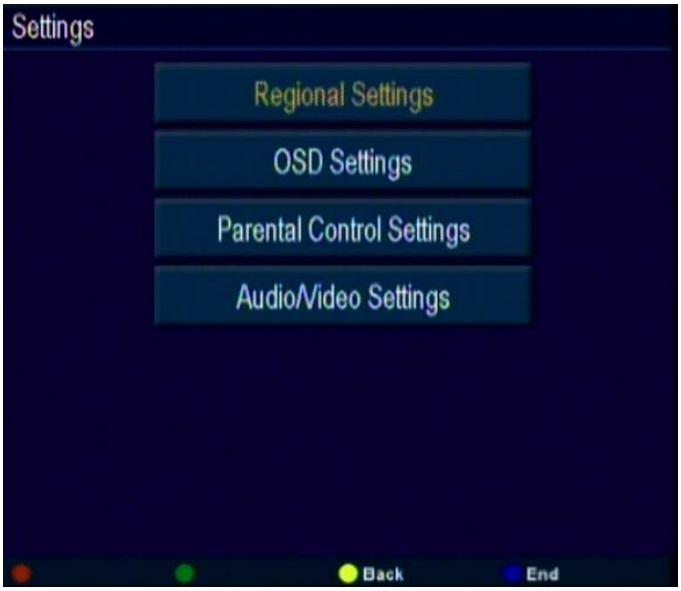
Use these keys to navigate through the following settings menus:

Main Menu

Press the **MENU** key to enter the main menu. The Main Menu is the starting point for to change all possible settings. The list of menus and sub-menus, as well as the interaction between the menus are given in more detail throughout this manual.

Press the **EXIT** or **BLUE** key to return to the TV image. Highlight the desired menu selection and press **OK** to enter the sub-menu.

Settings



In the settings menu the following sub menus can be selected: Regional Settings, OSD Setting, Parental Control Setting, Audio/Video Settings. Highlight the desired menu selection and press **OK** to enter the sub-menu.

Press the **YELLOW** or **EXIT** key to return one level in the sub-menu or press the **BLUE** key to return to the TV image.

Regional settings

In this sub-menu the language of choice can be set for the menu, audio and DVB-T subtitles. Changing the *Language* will change immediately the menu items in the corresponding language. Select the *Audio Language* of your choice, if this language is available in the audio stream it will be language you will hear with the TV image. *Subtitling Language* is set to OFF as default. Select the *Subtitling Language* of your choice, if this language is available in the DVB-T signal it will be displayed with the TV image. ***Note:*** *The availability of multiple Audio signals or DVB-T subtitles is provider dependent and may not be available with all channels.*

Set the *Timezone* to the area where the TV-700 FTA / TV-701 CX DVB-T is used. The current time is transmitted within DVBT signals and is based on the GMT time zone. During the Winter Time period set the *Daylight Saving Time* to OFF to display the correct time. During Summer Time period set the *Daylight Saving Time* to ON to display the correct time.

Press the **YELLOW** or **EXIT** key to return one level in the sub-menu or press the **BLUE** key to return to the TV image.

OSD Settings

In this sub-menu the setting can be set for the On-Screen-Display information. Select at *Info Display Time* the seconds (3, 5 0r 10 seconds) a menu item will appear on screen after which it will disappear automatically.

The appearance of the menu can be changed into another color. Select the color of your choice in *Design Monde.*

LCN Channel Numbering can be set to ON to list TV channels with their Logical Channel Number. Depending the DVB-T area and provider, TV channels have an assigned and predefined Logical Channel Number. When LCN Channel Numbering is set to OFF, the TV channels found will get a channel number in order of their frequency and will be listed in that order in the TV Main List. When LCN Channel Numbering is set to ON and LCN information is available in the transmission, the channels will be listed with their respective LCN number. See chapter LCN for more information.

The *Signal Bar* can be displayed on screen constantly when this selection is set to ON. Default is OFF and the signal bar is not displayed on screen. The signal bar displays the Signal Quality and Field Strength. This is particularly handy for tuning an (outside) antenna adjustment during an installation. While calibrating or orientating an (outside) antenna the signal field strength and quality will rise or decrease. Align the antenna such that maximum field strength and quality is displayed.

Press the **YELLOW** or **EXIT** key to return one level in the sub-menu or press the **BLUE** key to return to the TV image

When no DVB-T signal is present the Signal Bar shows no indication and the Antenna is stroked out.

Parental Control Settings

The TV-700 FTA / TV-701 CX DVB-T is delivered with a *Parental Control function*. This function is set to OFF by default. The secret code (PIN) is default 00000. We advise you to change this code. When the *Power-on Lock* is set to ON and the TV-700 FTA / TV-701 CX DVB-T is switched OFF, the next time the TV-700 FTA / TV-701 CX DVB-T is switched ON you will be prompted to enter the PIN code. The number keys “0 ... 9” need to be used in order to key-in the pin code. In case the PIN code is correct, the unit will start. In case the PIN code is incorrect, it will ask again to key-in the correct PIN code.

Note: *Keep your new secret PIN code in a safe place. Once you have entered a new code and do not remember anymore the code, there is no possibility to start up the unit.*

Press the **YELLOW** or **EXIT** key to return one level in the sub-menu or press the **BLUE** key to return to the TV image.

Audio/Video Settings

In this sub-menu the preset Volume level can be set in sequence of **LOW** → **MID** → **HIGH**

Press the **YELLOW** or **EXIT** key to return one level in the sub-menu or press the **BLUE** key to return to the TV image.

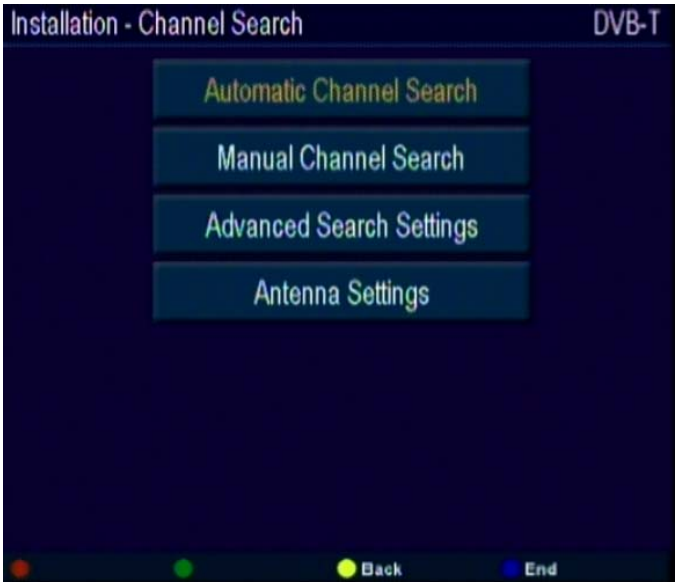
Installation

The *Installation* sub-menu enables repeating the automatic or manual search mode, sorting the channels, resetting the settings to factory default or a full system reset (re-installation).

Press the **YELLOW** or **EXIT** key to return one level in the sub-menu or press the **BLUE** key to return to the TV image.

Channel Search

Highlight *Channel Search* and press **OK** to enter the sub-menu with the different search modes.



Automatic Channel Search

Highlight the *Automatic Channel Search* and press **OK**. The search will start immediately. The graphical user interface of the automatic search mode is already introduced in chapter: *First Time Setup mode*.

Manual Channel Search

It is possible to set channels that do not fit to the standard RF channel raster implemented for the different countries. Highlight *Frequency* and press **OK**. *Channel frequency* can set manually using the number keys “0 ... 9” e.g. 578000. If a wrong frequency is entered, the last entered frequency or a default frequency will be used for scanning.

Highlight *Bandwidth* to select 6, 7 or 8 Mhz depending the DVB-T network in your region.

Highlight *Manual Channel Search* and press **OK** to start the search for channels

The search will start directly for the selected frequency and channels found will be displayed. The graphical user interface of the manual search mode is equal to the automatic search mode already introduced in chapter: *First Time Setup mode*.

Outdoor Antenna Orientation in manual search

You must know at least one frequency and bandwidth on which channels are transmitted in your region. (e.g. Frequency 578Mhz at bandwidth 8 Mhz). Start scanning as described above. Wait for a few seconds and watch the Signal Level graphic display. If it does not show any indication, turn the antenna to maximize the signal. Press the **YELLOW** or the **EXIT** key to return to the manual search menu and start the search sequence again. When you approach the direction of the transmitter, the Signal Level should rise and if channels are found, they will be displayed in the list.

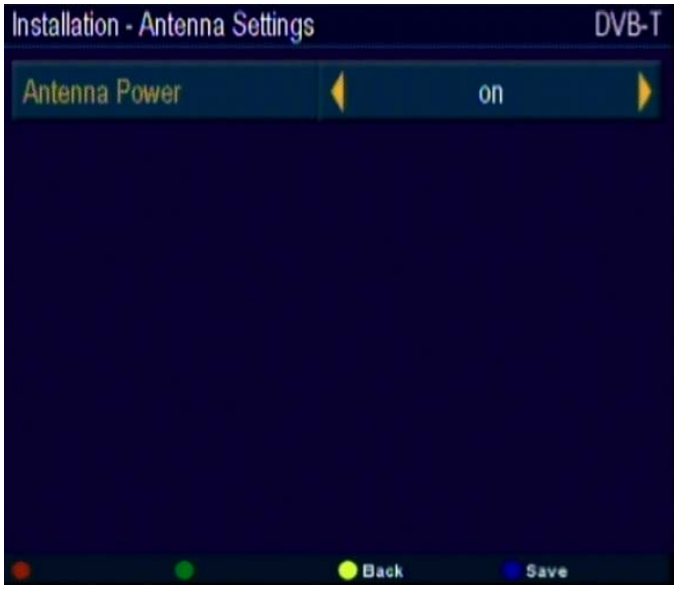
If the Signal Level never rises, it is because the channel number you have chosen is incorrect, or transmission is too distant for your (directional) antenna or there is no DVB-T transmission in your area.

Advanced Search Settings

In this sub-menu, it is possible to select special functions in the search mode. The selection can be made using the ARROW keys. *FTA = Free - To - Air channels.

Mode	Selection 1	Selection 2	Selection 3
Search Service Type	Radio & TV	Only TV	Only Radio
Search Scrambling Type	FTA / Pay TV	Only Pay TV	Only FTA
Search Adding Mode	Add	Replace	Clear all
Search Sorting Mode	No Sorting	LNC Sorting	No Sorting

Antenna Settings



In this sub-menu the antenna power can be set ON or OFF. ON is the default and means 5Volt is present on the IEC antenna connector. For active antenna's like the DASC antenna, this selection must be set to ON. For use of passive our outdoor antenna's this selection must be set to OFF.

Logical Channel Number

When there is a Logical Channel Number present in the DVB-T signal and LCN is switched ON and LCN sorting is switched selected, then the channels will be sorted and placed according their LCN number. The channels will be displayed in the TV Main List as follows (LCN mode is on and LCN sorting is on):

1 CH1
2 CH2
3 CH3
4 TV5 → **(channels with LCN first, LCN mode is ON, LCN sorting is selected)**
CNN
ZDF → **(followed by channels without LCN)**
… etc.

When LCN is turned on, but there is no channel number available in the signal, the listing is without numbers in front of the channel , for example:

CH1
CH2
CH3
TV5
Etc. → **(channels without LCN and LCN mode is ON)**

When LCN is off, the channels may not particular be in this order. With a channel search the station order can be based on frequency order as follows:

1 CH1
2 TV5
3 CH3
4 CH2
5 ZDF
6 CNN → **(LCN mode is off)**

Channel Sorting

In this sub-menu the TV and Radio channel lists can be sorted or edited. Based on the TV or the Radio channel lists, a personal favorite program lists can be created.

Edit TV or Radio Main List

Highlight *Edit TV Main List* and press **OK**

In this sub-menu the channels can be placed in a preferred order. Highlight the channel of your choice and press **OK**

Now move the selected channel to the preferred order with the ▼or ▲ arrow and press **OK** The selected channel is now moved to the desired channel number. Repeat this sequence for all channels you want to move.

Highlight a channel, press **OK** and press the **RED** key to delete the channel from the channel list. Please be aware that when the channel is deleted and you want to have it in the list again, a new channel search must be performed.

Press the **YELLOW** or **EXIT** key to return one level in the sub-menu or press the **BLUE** key to save the channel order and return to the TV image.

The *Radio Main list* can be edited in a similar way.

Edit TV or Radio Favorite list

Highlight Edit TV Favorite list and press **OK**

There are four favorite lists available in which TV channels can be stored. This is particularly handy when in regions for the same TV channel different frequencies are used. For example TV1 is on frequency 474Mhz in region 1 and on 578Mhz in region 2. TV1 is listed twice in the *TV Main List* with the corresponding frequency. In this menu you can store the channels in the respective favorite list, so TV1 with frequency 474Mhz is stored in Favorite List 1 and TV1 with frequency 578Mhz in Favorite List 2. When traveling to these regions, it is not necessary to perform a new channel scan. Just select your favorite list and select the channel you want to watch.

Highlight *TV Favorite 1* and press **OK**

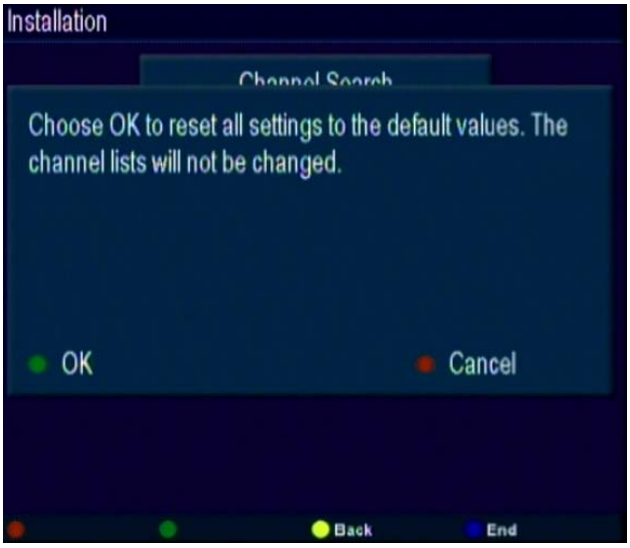
Now scroll to the desired channel with the ▼or ▲ arrow and press **OK** to move the selected channel to the favorite list. Press the ► arrow to move from the *TV Main List* to the *TV Favorite List*. To sort the favorite list to your channel order preference, highlight the channel you want to move and press **OK.** Move the channel to its desired channel number with the ▼or ▲ arrow and press **OK.** The selected channel is now moved to the desired channel number. Repeat this sequence for all channels you want to move.

Highlight a channel in the *TV Favorite List* and press the **RED** key to delete the channel from the channel list. Please be aware that when the channel is deleted and you want to have it in the list again, a new channel search must be performed. Press the **YELLOW** or **EXIT** key to return one level in the sub-menu or press the **BLUE** key to save the channel order and return to the TV image.

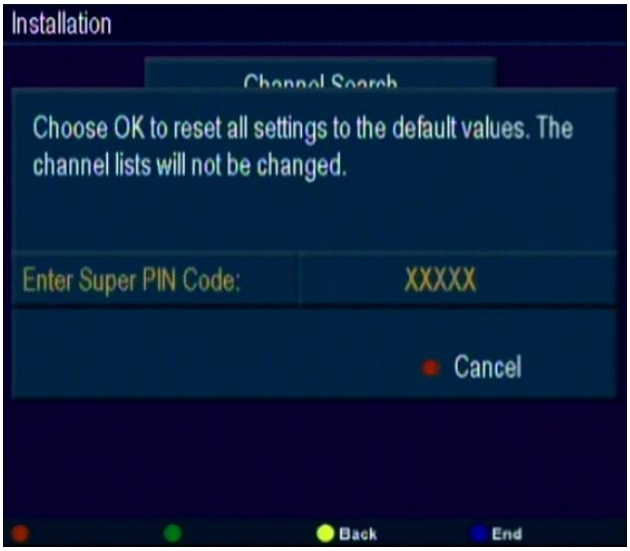
The *Radio Favorite lists* can be edited in a similar way.

Reset Settings

In the installation menu, select *Reset Settings* and press **OK**. The following screen will be displayed.



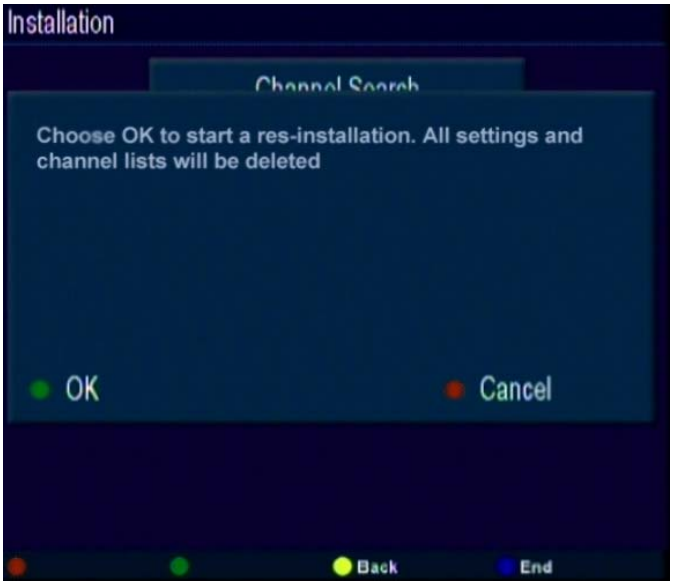
Press the **GREEN** key to reset all settings to the factory default setting. All scanned and stored channels will remain in memory. Press the **RED** key to cancel this operation.



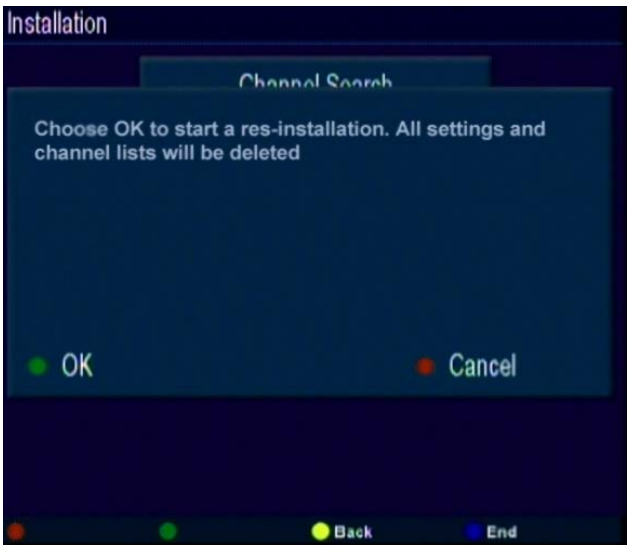
After pressing the **GREEN** button you will be prompted to enter the Super Pin Code: Enter **32168** with the number keys after which the reset procedure will start. Press the **RED** key twice to cancel this operation before entering the Super Pin Code. ***Note:*** *after pressing the last 8 it looks like nothing is happening, however the unit is resetting in the background.* ***DO NOT*** *switch OFF the unit or remove power, this might damage the unit and result in incorrect operation.*

Re-Installation

In the installation menu, select *Re-Installation* and press **OK**. The following screen will be displayed.



Press the **GREEN** key to reset all settings to the factory default setting. All scanned and stored channels will remain in memory. Press the **RED** key to cancel this operation.



After pressing the **GREEN** button you will be prompted to enter the Super Pin Code: Enter **32168** with the number keys after which the reset procedure will start. Press the **RED** key twice to cancel this operation before entering the Super Pin Code. ***Note:*** *after pressing the last 8 it looks like nothing is happening, however the unit is resetting in the background.* ***DO NOT*** *switch OFF the unit or remove power, this might damage the unit and result in incorrect operation.*

After the re-installation is finished, the *First Time Setup* screen will be visible. For correct operation it is recommended to switch OFF the unit with the unit's power button (18). Wait a few seconds and power the unit ON. The *First Time Setup* screen will be visible. See chapter *First Time Setup* for details.

System Information

Select this sub-menu form the main menu to see the system information of the TV-700 FTA / TV-701 CX DVB-T. A screen will be displayed like the one below. ***Note****: the information displayed on your unit might be different as what is displayed in this image.*

SCREEN INFORMATION AND EPG

TV or Radio Main List

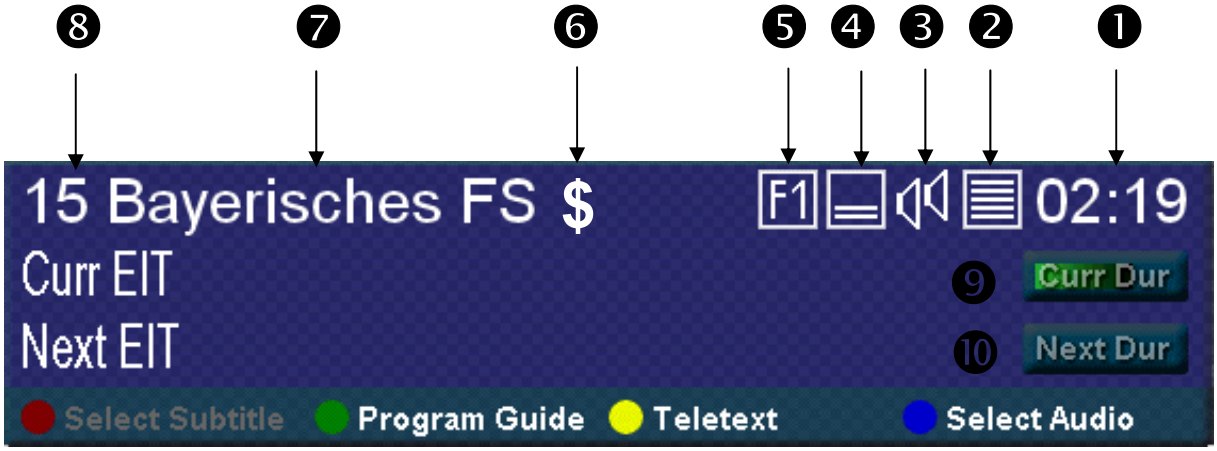
Pressing the **FAV** or ◄ or ► arrow key, the menu *TV Main List* will be opened. Pressing one of these keys in sequence will enable you to toggle from *TV Main List → TV Favorite List 1 → TV Favorite List 2 → TV Favorite List 3 → TV Favorite List 4*. The program currently watched is highlighted. The arrow keys ▲ or▼ or the **CH+** or **CH-** button is used to select another program.

In radio mode, this selection work in a similar way.

Info Banner

With any channel change, an information banner automatically appears and displays the Now & Next TV program information and provides added information about the program selected:

1) Current time
2) Teletext availability
3) Availability of multiple Audio Channels
4) Availability of (multiple) Subtitles
5) Info about the selected favorite list
6) $ Sign indicates a Pay TV Channel
7) Channel name
8) Channel number
9) Start time and Duration of the current program
10) Start time and Duration of the next program



During a TV or Radio program the “Info Banner” can be activated by pressing the **OK** key. The banner will be displayed several seconds and will disappear automatically.

When the Teletext Icon is visible, press the **YELLOW** key to enter into the Teletext pages.

When the Multiple Audio Icon is visible, press the **BLUE** key to select one of the available audio languages. The available languages will be shown on screen. For example ENGLISH and GERMAN. Highlight on of the streams and press **OK**. In case UNKOWN is displayed, it means that there is either no second audio stream or no information on the type of language available.

When the Subtitle Icon is displayed, press the **RED** key to select one of the available DVB-T subtitle languages. The available languages will be shown on screen. For example ENGLISH and GERMAN. Highlight on of the subtitles and press **OK**. In case UNKOWN is displayed, it means that there is either no DVB-T subtitle or no information on the type of language available.

Press the **GREEN** or **INFO / ?** key to display the EPG information of the current running program.

In case the program information is long and exceeds the available size of the page, it is displayed in two or even more pages. Use the ▼ and ▲ keys to switch to the next page.

Press the **GREEN** key again to see the next program information.

Press the **EXIT** key or press the **BLUE** key to return to the TV image.

Note: *The availability of program information is provider dependent and may not be available with all channels.*

Electronic Program Guide (EPG)

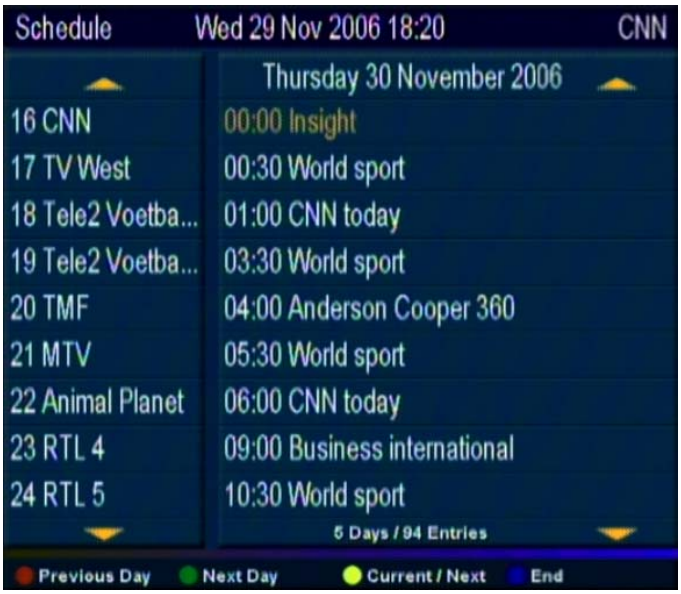
In TV or Radio mode, press the **EPG** key to launch the 7-day EPG.

Note: *The availability of program information is provider dependent and may not be available with all channels.*

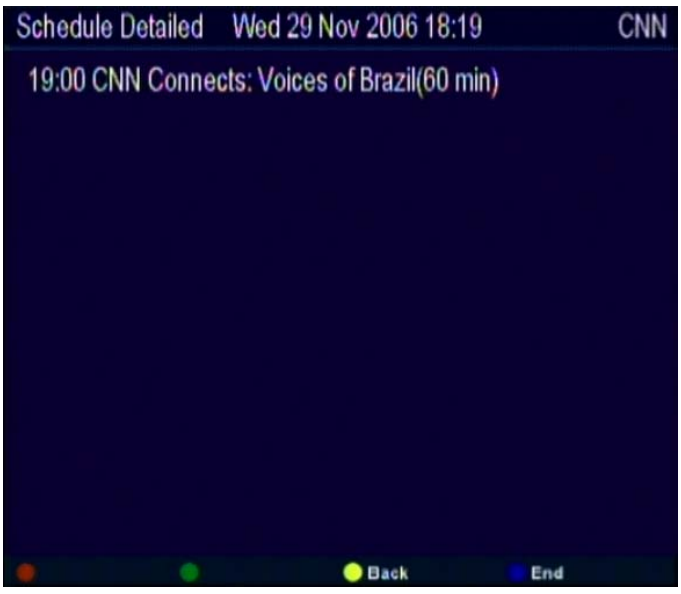
As can be seen in the upper right corner of the screen, the program CNN was selected. The information presented is based on the DVB EIT schedule broadcast by the TV station or the operators. The first day of the presented schedule events is the current day. The information given for the selected event are: start time, short description, end time and duration, elapsed time, and rating.

Press the **GREEN** key to access the events covering the next (seven) days (only if transmitted by the TV station or the operator). Hereunder an example is seen of *Next Day* events. Press the **GREEN** key in sequence to view the events of the day selected. Press the **RED** key to go to the previous day. Press the **YELLOW** key to go to the current day and program.

In the EPG listing below, use the ◄ key to switch to the TV channel list. The ▲and ▼keys allow to change to another TV channel in the current list. Highlight the TV channel of choice and press **OK**. The corresponding EPG information will now be loaded, this can take several seconds. This is also indicated with the blue progress bar visible in the screen. Press the ►key to return to the events list. The current running program will be highlighted.



The ▲and ▼keys allow to change to another event in the current event list. Press the **OK** key and an additional screen will pop up to present added information about the selected event.



Press the **YELLOW** or **EXIT** key to return one level in the EPG-menu or press the **BLUE** key to return to the TV image.

Teletext Operation

The TV-700 FTA / TV-701 CX DVB-T supports Teletext up to L2.5 decoding with VBI data service re-insertion.

Note: *The TV-700 FTA / TV-701 CX DVB-T does not support Interactive Text (MHEG5) as commonly used in the United Kingdom.*

Press the yellow **TEXT** key while watching a TV channel and the Teletext pages will be loaded.

Note: *The availability of Teletext is provider dependent and may not be available with all channels*

Press the **EXIT** key to resume normal TV viewing.

The size of the Teletext display can be switched between normal and double height. Press the **EPG/ZOOM** key once to zoom in to the top half of the viewed Teletext page. Press **EPG/ZOOM** again to zoom in to the bottom part of the viewed Teletext page. Press **EPG/ZOOM** again to return to full page viewing.

TOP ZOOM

BOTTOM ZOOM

Depending the provider, you will see Red, Green, Yellow and Blue information on the bottom of the screen. Press the corresponding color Key on the remote to jump to the Teletext information pages indicated by the color.

Press the **FAV** key to activate the transparent mode of the Teletext display. Teletext is now displayed together with the TV signal.

In certain Teletext pages (like puzzle pages) information is hidden. This information can be revealed by pressing the **INFO / ?** key.

Channel Information

While watching TV or listening to the Radio, press the **OK** key once. You will see the *Info Banner* on screen. Press the **OK** key again before the *Info Banner* disappears and the following screen will be displayed for several seconds.

Displayed are the Video PID (Packet Identifier), Audio PID, the channel frequency and bandwidth as well as the Info Banner and the Field Strength / Signal Quality indicator bar.

The Video PID defines the data sub stream containing the video signal. Radio signals, which by definition don't contain any video signal, carry the value 8191 (this means empty) in the Video PID.

If there is no interaction for a few seconds or when the **OK** key is pressed again, normal TV viewing will resume.

When in the *OSD Settings* menu *Signal Bar* is set to **ON**, the above information will be seen every time a channel is changed. After a few second the information will disappear automatically, but the Signal Bar will stay present on screen.

Radio Mode

Press the **TV/RAD** key to switch to the DVB-T radio mode.

Note: *The availability of DVB-T Radio is provider dependent and may not be available with all channels or in your area.*

All information and settings as described for TV mode is available for Radio mode with the exception of Teletext.

Press the **TV/RAD** key again to return to TV mode.

In Radio Mode, press **LCD** to turn off the LCD and save power. To turn on the LCD, press the LCD button again.

ABBREVIATIONS AND GLOSSARY (INFORMATIVE)

24 Hour Channels	Channels that are only broadcasted at certain hours of the day. Depending network provider, the channel information is available in the DVB-T stream and the TV-700 FTA / TV-701 CX DVB-T receiver is programmed to list these channels in the TV or Radio list after an Automatic or Manual Scan.
Conditional Access (CA)	Conditional access refers to methods that scramble or encrypt the program or private data so that it may be received only by 'authorized' receivers.
Carrier-to-Noise Ratio (C/N or CNR)	A measurement of the received carrier power relative to the power of background noise at the receiver input.
COFDM	A method of coded OFDM used by DVB for digital terrestrial television broadcasting (see OFDM).
DASC	Digital Active Signal Collector. A specially designed mini Active antenna to receive DVB-T signals on portable receivers.
Digital	Nature of signals utilized in modern transmissions. Compared to analogue, digital clutters the spectrum less (all available frequencies). With constant bandwidth, digital broadcasts more channels than analogue. Digital channels have been in existence for several years on cable and satellite. In time they will replace analogue channels in Terrestrial transmission. Note: the same channel can be transmitted in both analogue and digital form.
Digital Video Broadcast (DVB)	The digital video broadcast is a consortium of manufacturers, research institutes, and broadcast organizations principally located in Europe but spread throughout the world. The Project has produced a series of interlinked broadcasting standards for satellite, cable and terrestrial.
DVB-T	Abbreviation for Digital Video Broadcasting Terrestrial = terrestrial digital television. TV reception is only possible in DVB-T transmission zones. The DVB-T terrestrial digital television broadcasting specification is based on a transmission system of COFDM carrying program and data as MPEG packets. It was approved by the Steering Board, in December 1995 and subsequently accepted by ETSI as a European Standard. The work was based on a set of user requirements produced by the Terrestrial Commercial Module of the DVB Project. DVB members contributed to the technical development of DVB-T through the DTTV-SA (Digital Terrestrial Television—Systems Aspects) of the Technical Module.
EPG	Electronic Program Guide. Broadcasters using DVB, transmit program schedule information in Event Information Tables (EIT) tables. These tables may be in several different forms containing - immediate information (EIT now/next, also known as EIT pf - present/following) and in limited cases, future program information (known as EIT schedule) – related to the transport stream carrying the EIT or other (broadcasters') transport streams.
ETSI	European Telecommunication Standards Institute, the major European Standards publishing body
Free-To-Air broadcaster (FTA)	FTA broadcasters offer their programs and related material, where receivable, to be freely accessed by the public. This contrasts with subscription or pay broadcasters that impose a charge on a viewer/listener to access their material. FTA broadcasters may be government, community or commercially (advertising) funded.
Forward Error Correction (FEC)	Methods of improving the ability to recover error-free data from a transmission or storage system usually by adding extra data (about the payload data) before transmission. For example in DVB-T, a system of FEC referred to as 'Viterbi' or 'inner' coding can be set to different levels from 7/8 to 1/2 with 1/2 providing the most error protection. Further error protection known as Reed-Solomon adds a further 16 bytes to the 188 Byte MPEG-2 transport stream packet making a new packet size of 204 bytes.
Guard Interval	In order to use all same channel signals and reflections not arriving at the receiver simultaneously, the first part of the transmitted signal is not used for data transmission. This part is called the guard interval and can be set to various lengths such as 1/4, 1/8, 1/16or 1/32.
International Organization for Standardization (ISO)	An international Standards body, commonly known as the International Standards Organization.
ITU-R	International Telecommunication Union Radio communication. An international Standards body and a part of the ITU, based in Geneva which is the recognized Standards publisher for broadcast radio and television transmission standards and Standards on international program exchange.
LCN	Logical Channel Number
MFN (Multi Frequency Network)	A network of DVB-T Stations using various radio frequency channels
Moving Picture Experts Group (MPEG)	A voluntary body ISO/IEC Joint Technical Committee 1, Sub Committee 29/Working Group 11 which has and continues to develop Standards for digital compressed moving pictures and associated audio. MPEG Standards are published in the ISO/IEC 11172 (MPEG-1), and ISO/IEC 13818 (MPEG-2) series of documents.
MPEG-1 & MPEG-2	Also refer to entry under 'Moving Pictures Experts Group (MPEG). These are the most common video and audio compression schemes now in use. MPEG-1 was used for lower data rate video on early CDi and Video CDs. MPEG-2 provides for better quality (at higher data rates) and is used in a variety of professional and consumer applications on terrestrial, satellite and cable broadcast and DVD.
MPEG-1 layer II audio	The compressed audio Standards of MPEG-1 were published in the 1993 International Standard ISO/IEC 11172-3. This dealt with mono and two-channel stereo sound coding, at sampling frequencies commonly used for high quality audio (48, 44.1 and 32 kHz). Compared to Layer I, Layer II is able to remove more of the signal redundancy and to apply the psychoacoustic threshold more efficiently. The development of audio standards for MPEG-2 resulted in the 1995 International Standard ISO/IEC 13818-3.

Multiplexer (Mux)	A physical device which is capable of inserting data into and extracting data from an MPEG-2 transport stream.
NorDig	A Scandinavian organization specifying a common platform for Digital Television to be used within the Nordic region (Denmark, Finland, Iceland, Norway and Sweden). The NorDig test specifications (NorDig Unified 1.0.2) are regarded as one of the most strict in the world and are followed by many broadcasters, network operators and manufacturers of receivers.
On-Screen Display (OSD)	On screen display of menu for user's setup of receiver's operating parameters. Also refers to display of choices and interaction with receiver and/or program.
Orthogonal Frequency Division Multiplexing (OFDM)	A modulation system which uses a very large number of separate radio frequency carriers each of which carries a small proportion of the total information content to be sent. DVB based digital television broadcasts use Coded OFDM.
Packet Identifier (PID)	A unique integer value used to identify elementary streams of a program in a single- or multi-program MPEG-2 stream. Carried within each 4byte packet header (13 bits).
Phase Alternate Line (PAL)	An analog encoding system for color television. Compatible with analog monochrome systems of the same scanning rates. It has a high frequency sub carrier to carry two color component signals, similar to the principles used in NTSC but alternates the phase of one of the color signals so that the receiver may correct color errors with a delay line.
Polarisation	Orientation of the wave transmitted by the transmitter. The majority of emissions are horizontal, some are vertical.
Quadrature Amplitude Modulation (QAM)	A method of modulating digital signals onto a radio-frequency carrier signal involving both amplitude and phase coding.
Quadrature Phase-Shift Keying (QPSK)	A method of modulating digital signals onto a radio-frequency carrier signal using four phase states to code two digital bits.
Service multiplex and transport	In an MPEG system, 'service multiplex and transport' refers to the division of the digital data stream into 'packets' of information and the means of uniquely identifying each packet or packet type. Also the appropriate methods of multiplexing these video data stream packets with audio data stream packets and ancillary data stream packets into a single data stream consisting of a sequence of 188-byte transport packets.
Service Information (SI)	In an MPEG data stream, Service information (SI) is included within a DVB MPEG-2 transport stream to assist the user in selection of services and/or events within the digital multiplex, and so that the receiver can automatically configure itself for the selected service. Information carried within SI allows for identification of services or events for the user and may also provide information on services carried by different multiplexes and even other networks. SI data complements the Program specific information (PSI) tables by providing other data to aid automatic tuning of decoders, and information intended for display to the user. In general, SI augments and extends the relevant PSI specified in ISO/IEC 13818-1 (MPEG-2 Systems), the Program association table (PAT) and Program map table (PMT).
SFN (Single Frequency Network)	A network of synchronized DVB-T stations sharing the same radio frequency channel and transmitting identical signals.
Transmitter	Pylon fitted with antennas which re-transmits channels (digital or analogue) and to which directional antenna's should be directed. Note: a transmitter does not necessarily have to transmit all available channels.
Transport Stream (TS)	In MPEG-2, a packet-based method of multiplexing into a single stream, one or more packetised elementary streams each consisting of related digital streams of various material. This material may be video, audio and other information such as teletext, bit-mapped subtitles.
Transport stream packets	A way of breaking up the continuous stream of MPEG compressed video, audio and other data for ease of passing through various transmission systems such as broadcast. In MPEG-2, the packet length is 188-bytes including a 4-byte header which contains a 'PID' for identification. The 184 byte payload may include data from the PES packets (i.e. video, audio, etc.), information on the format of the contents (PSI) and/or adaptation fields or stuffing bytes.
UHF-Channel	In UHF, the channels are numbered from 21 to 69 and in frequency range 470 to 582 MHz (Band IV) and 582 to 862 MHz (Band V)
Vertical Blanking Interval (VBI)	Present in conventional, uncompressed TV signals, this unseen space at the top of a TV picture is now used to carry ancillary data, such as teletext including closed captions.
VHF-Channel	In UHF, the channels are numbered from 5 to 12 and in frequency range 174 to 230 MHz (Band III)

TECHNICAL SPECIFICATIONS

TV-700 FTA / TV-701 CX DVB-T

Enjoy watching Digital Terrestrial TV or listen to DVB-T Radio

This Ultra Slim Line and Modern designed Pocket TV is your ideal travel companion and is suitable for reception of Digital Terrestrial Television and Radio channels at the Office, at Home, outside at a Picknick or wherever you are. Operate the unit on NiMH AA batteries (not included) or on 12Vdc with the AC/DC adapter and enjoy watching your favorite TV channels or listen to your favorite Radio music, anywhere, anytime. ***Note:*** *Only to be used in countries and areas where there is a coverage of DVB-T signals (also known as DTT - TNT - TDT)*

Features:

- 7 Inch DVB-T receiver for reception of Free To Air Digital Terrestrial Television and Radio Signals
- Supports Logical Channel Number (LCN),
- Special language character sets for menus and DVBT subtitles (French, Finnish etc.)
- Supports Multiple Audio Streams
- Four Favorite lists for TV and Radio
- Signal Quality & Strength indicator
- Teletext (L2.5) with 1000 pages memory
- Full Electronic Program Guide (EPG now/next)
- Additional Audio Video input, to use the unit as a TFT color LCD screen in combination with a mobile DVD player, Camcorder or Game console
- Composite Video output & Stereo Audio output
- Easy to navigate and understand Multilingual OSD (On Screen Display)
- IR Remote control operation
- Built-in High Quality Stereo Speakers
- 3,5mm headphone output
- Normal IEC connector for External Antenna
- Operates with AC/DC adapter on 12Vdc (Min. 1000mA) or 6x AA NiMH batteries
- (TV-700 FTA / TV-701 CX DVB-TA only) Adjustable Digital Active Signal Collector Antenna (DASC) for strong signal reception of DVB-T signals. (Horizontal and Vertical)
- Operation Temperature: Temp: -0°C ~ +70°C
- Storage Temperature: Temp: -30~ +80°C

Including:

- AC/DC adapter
- IR remote control
- CR2025 IR battery
- Audio/Video Cable
- User Manual
- DASC Antenna
- 5 Meter mini coax extension cable
- 12Vdc cigarette lighter plug
- Battery Charger and 6 x 2300mAh NiMH AA batteries

Processor:

- Embedded 32-bit RISC processor
- Transport stream filtering and de-multiplexing
- DVB descrambling
- Video: ISO/IEC 13818-2 MPEG-2 Video MP@ML & ISO/IEC 11172-2 MPEG-1 Compliant
- Audio: ISO/ IEC 13818-3 MPEG-2 layer I, II audio decoding
- Sampling Frequency: 32KHz, 44.1 KHz, 48 KHz
- High-performance 2-D graphics accelerator

COFDM demodulator:

- Fourth-generation
- Ultimate DVB-T digital reception according to ETS 300 744
- Meets the relevant international DVB-T receiver specifications: NorDig-Unified v1.0.2, DTG, EICTA, and others
- Cutting-edge digital filtering techniques
- Superior digital and adjacent channel performance (> −40 dB QEF)
- High-performance A/D converter and PLL (Phase Lock Loop)
- Exceptional performance in multi-path and dynamic echo conditions
- Supports Single Frequency Networks (SFNs) and indoor reception
- UHF and VHF band-scan in <20 s
- Module QPSK, QAM16, QAM64
- Wave form COFDM
- Demodulation: QPSK, QAM 16, QAM 64
- Mode: 2K, 8K
- Guard Interval 1/4, 1/8, 1/16, 1/32
- FEC 1/2, 2/3, 2/4, 5/6, 7/8

Digital Terrestrial Tuner:

- Mini Tuner
- BAND III, IV and V (174~860 MHz Frequency Range - VHF/UHF)
- Band 6MHZ, 7MHZ or 8MHZ
- Input Level: -85 ~ -12dBm
- Input Impedance: 75 Ohm
- (TV-700 FTA / TV-701 CX DVB-T only) Active 5Vdc IEC connection (protected)

AV Input / Output, Headphone output:

- Video Output Level: 1.0 Vp-p
- Video Output Impedance: 75 Ohm
- Audio Output frequency Range: 20Hz ~ 20KHz

7 Inch TFT color LCD

- 7 Inch Wide View (16:9) TFT Color LCD (analog)
- High Resolution: 1440 (480x3) x 234 Pixels
- Anti-reflection against daylight
- Low power LED Backlight Technology

DASC ANTENNA:

What is DASC technology?

DASC stands for Digital Active Signal Collector and is an antenna technology is developed in Europe for the TV-700 FTA / TV-701 CX DVB-T for strong reception of the DVB-T signals and To overcome the passive Antenna drawbacks. Metal (rod) antennas are not designed for broadband reception, have no filters built-in and have no amplification. Reception is only possible in the areas where a strong and clear DVB-T signal is present. Even then reception can be distorted (resulting in jittered or frozen images and squeaking sounds). When an amplifier is used with a metal rod antenna, it will not improve it's reception, it will only amplify all the noise, making it even worse. The DASC antenna is eliminating all these annoyances with a special amplifier and special built-in filters, improving reception considerably and resulting in an exceptionally better reception even in those difficult reception areas.

The big difference between a passive and an active antenna is seen in these area's where the signals become weak or difficult due to echo's in the signal. The latter happens a lot in populated area's with high buildings, like the many flat apartments in for example Spain. Secondly you will notice it in these area's where the providers have set up their network for reception of the DVB-T signal with outside aerials. Most European countries have a network like this with exception of the Netherlands and parts of Germany where they simply use very high powered transmitters.

The DASC antenna is perfectly matched with the TV-700 FTA / TV-701 CX DVB-T and has the following key features:

- Broadband reception in miniature size (150 – 900Mhz).
- Can be easily mounted on the TV-700 FTA / TV-701 CX DVB-T.
- High effective passive signal collection for high Signal-to-noise ratio.
- Low noise integrated amplifier
- Optimized internal gain of 14dB
- Low-pass filtering for suppression of GSM, DECT, and other carriers > 862MHz.
- High-pass filtering for suppression of impulsive noise, public broadcasting < 470MHz.
- Receives DVB-T signals OMNI-Directional (in all directions)
- Receives DVB-T signals in Band III, IV and V (6, 7 and 8 MHz)
- Receives DVB-T signals in horizontal and Vertical transmission modes
- Low-loss IEC-connector

Dimensions

- Unit: 187x120x37mm

Weight

- Unit: ±550 gr (without batteries)

DVB-T RECEPTION TIPS

DVB-T reception is subjected to reception areas. Every country that has setup a DVB-T network, has set it up differently form other countries. In fact most countries has set up their network for reception of the DVB-T signals with outside antenna's. Only in a certain radius of the Transmitter DVB-T signals can be received inside a building. Even then it depends on the building construction and the surrounding environment. There are countries that transmit DVB-T signals with over 100MegaWatt, and there are countries that transmit with 10MegaWatt and everything in between. Then signals can be transmitted in Horizontal or Vertical polarization or a mix of the two and in Band III, IV and V. At this moment of time only in Germany and Australia are broadcasting also on Band III. Many tests were done in Europe with different antenna's and found out that the reception with a metal rod antenna is not good and optimum. The Metal rod antenna is not made for Broadband reception.

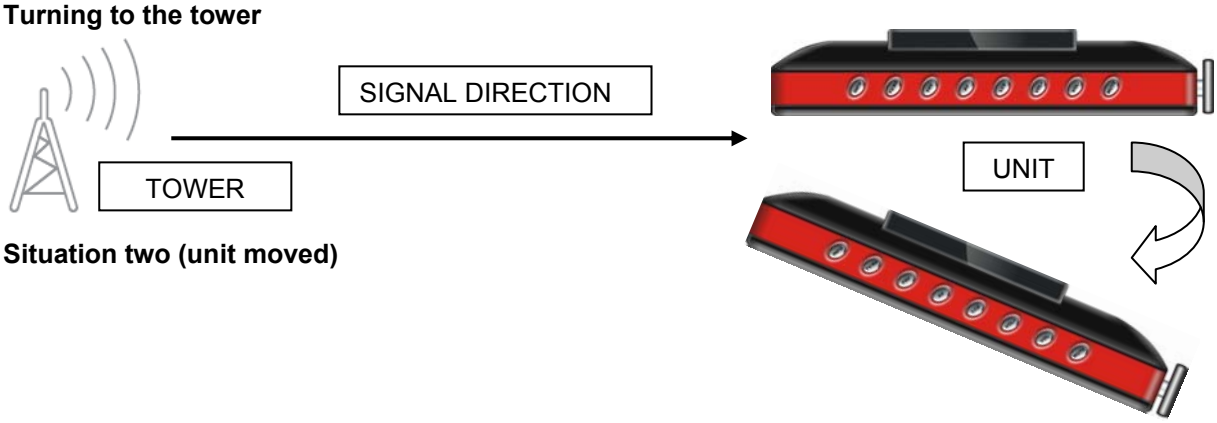
Reception inside depends totally on the DVB-T network and how it is set-up. Even when a network is created for inside reception, then it depends on how the location is. When you have windows with sun protection layer or mirror windows, then these layers are actually blocking DVB-T signals. Concrete buildings, metal roofing, lowered ceilings, nearby tall buildings, bridges, trees etc, all can have an impact on the correct reception inside a home.

If you use the TV-700 FTA / TV-701 CX DVB-T in a good outdoor or indoor DVB-T reception area, then you can connect the DASC antenna directly onto the antenna input. The DASC antenna provides for interference free reception and a clear picture.

The DASC antenna is omni directional and is in all direction evenly sensitive. Therefore in good DVB-T signal area's it does not matter how the antenna is "pointing" and the direction of the unit itself is of no influence.

In weaker DVB-T area's
In weaker reception areas , the DASC will be a bit more sensitive to the direction of the unit because the TV-700 FTA / TV-701 CX DVB-T itself forms a ground-plane and depending to the position of the unit towards the DVB-T transmission tower, turn the TV-700 FTA / TV-701 CX DVB-T slowly to see if reception improves. (This only when the DASC Antenna is directly placed on the unit.)

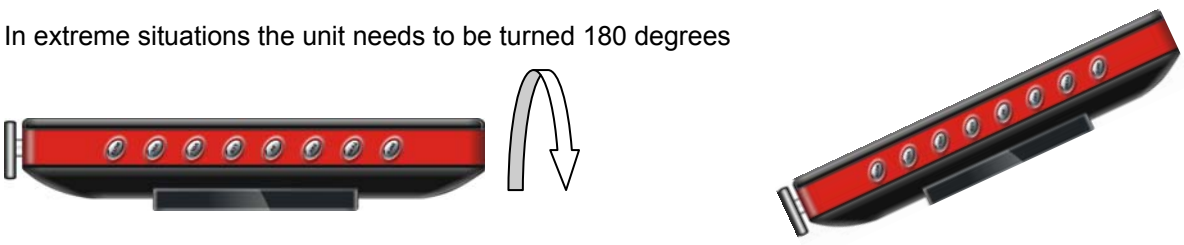
Turning to the tower



Situation two (unit moved)

Turn the unit into a direction to see if there is an improvement in receiving channels and turn it again into the other direction to receive the other channels.

In extreme situations the unit needs to be turned 180 degrees



In several DVB-T area's the DVB-T signals are transmitted in a horizontal polarization. Although the DASC antenna is omni directional, in some cases you can receive better signals when you place the antenna horizontally.

Using the extension coax

When using the TV-700 FTA / TV-701 CX DVB-T inside or when you are in a reception area where the DVB-T signals are not so strong or are in a room with aluminum blinds or shielded/coated windows or are experiencing bad reception, then use the 5 meter extension coax cable and place the DASC antenna close to the window or even outside the window for better reception. The coax cable is specially made and is a class A broadband cable. The end of the cable fits over the DASC antenna to make a splash water tight connection.

Please note that DVB-T signal close to the ground are weaker than signals higher above ground. In Theory good signal starts from approx. 1.25 meter from the ground.

Never place the antenna close to metal objects, computers, stereo installations, TV sets, telephones or any house hold appliances because this can influence reception quality.

THE BATTERY CHARGER

The supplied charger is only to be used indoors. Only use to charge NiMH rechargeable AA size batteries. Do not place or charge any other type of battery in this charger as it may damage the charger or result into fire.

The charger is an overnight charger and to charge empty 2300 mAh battries to their full capacity, it is advised to have them charged for at least 18 hours. (for example overnight).

Place the batteries with the correct polarity as shown on the label. Do not place the batteries in the charger with reversed polarity, this might damage the charger or result into fire.

During charging the batteries become hot. This is normal operation. Do not overcharge the batteries or leave them for more than 24 Hours inside the charger as they might become overheated and might explode or cause fire.

Once the batteries are charged, take them out of the charger and let them cool down before using them in the TV-700 FTA / TV-701 CX DVB-T

CONAX SMART CARD OPERATION (TV-701 CX ONLY)

The TV-701 CX DVB-T is equipped with a Smartcard reader (sim type format) and has embedded Conax Conditional Access (CA) software to decrypt scrambled Pay TV channels. For watching Pay TV channels, a subscription from a Digital TV or Radio provider is needed and a CA Smartcard.

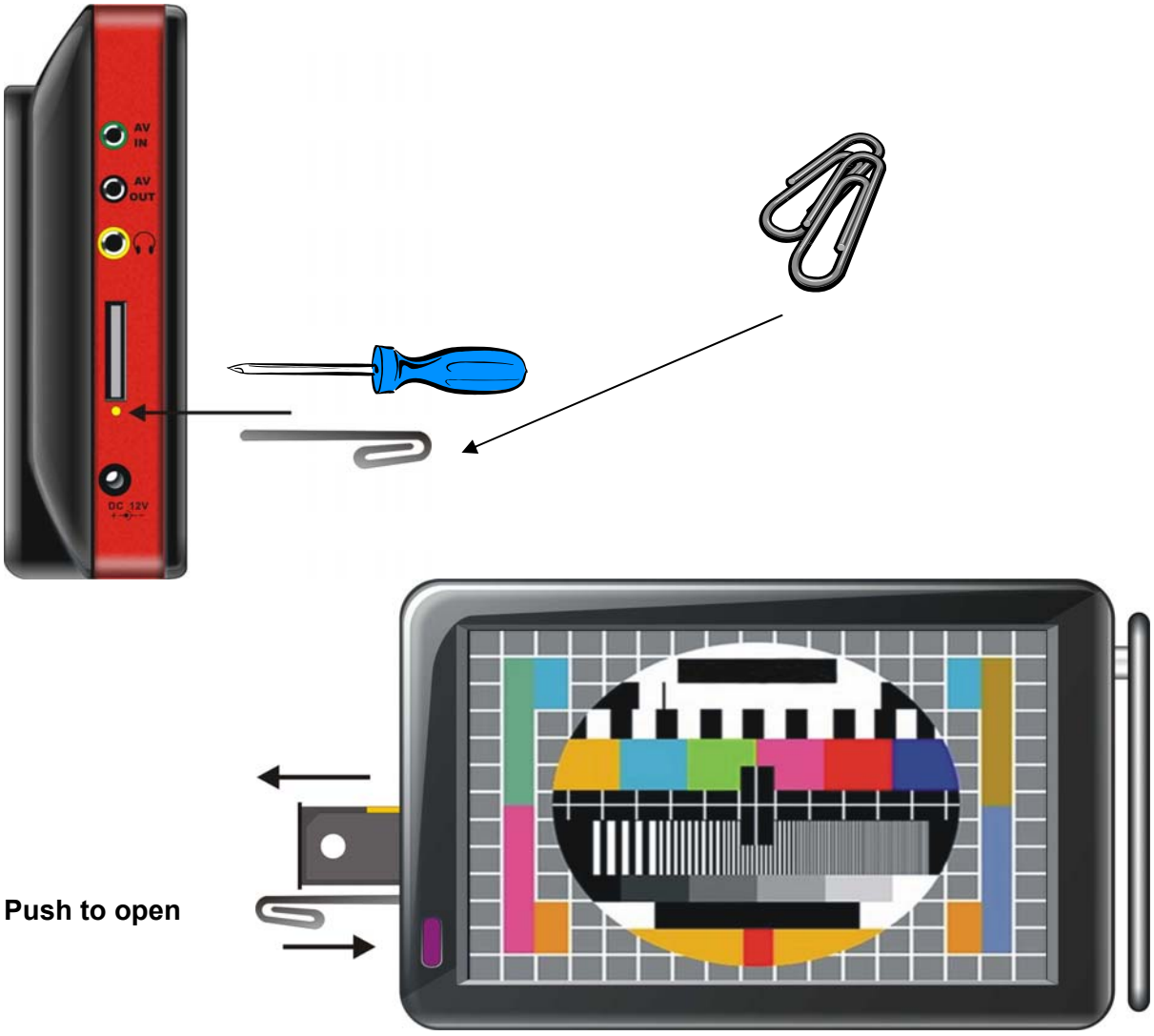
The TV-701 CX DVB-T is making use of the newest type Smartcard with a pop-out Sim-type card.

Example of normal Smartcard

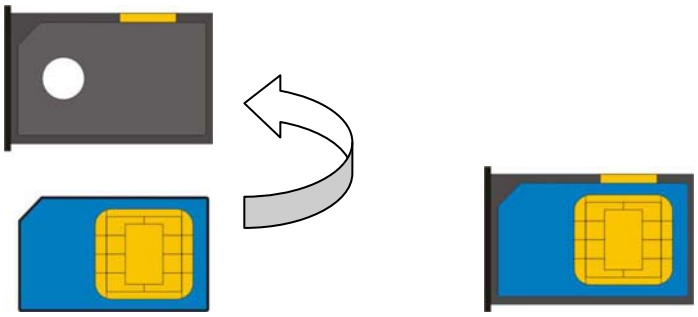
Sim type Smart card, popped out

How to place the Smartcard into the TV-701 CX DVB-T

On the left side of the TV-701 CX DVB-T the small Smartcard tray is located. Under this tray is a small hole. Bend a large paperclip open or use a small precision screw driver that fits into the hole. Now press the paperclip or the screwdriver into this hole, to open the tray.

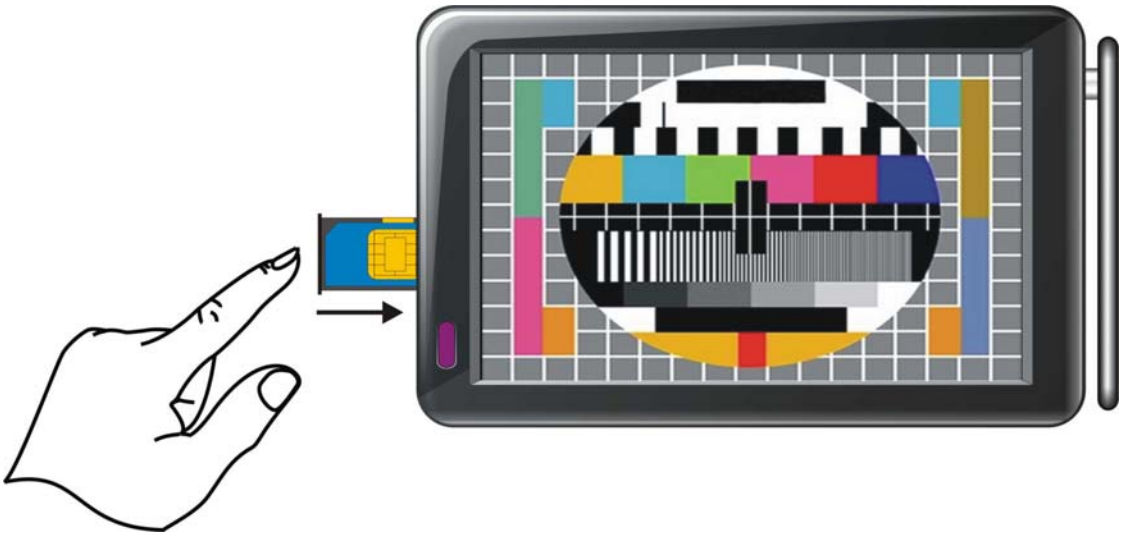


Take the tray fully out of the TV-701 CX DVB-T. Now place the small Smartcard with the gold contact points upward into the tray.



NOTE: Do not place a Mobile Phone Sim card into the tray and the unit. This may damage the unit and/or the Sim card.

Slide the tray with the Smartcard gently back into the TV-701 CX DVB-T, the gold contact need to face forward and press the tray firmly into place.



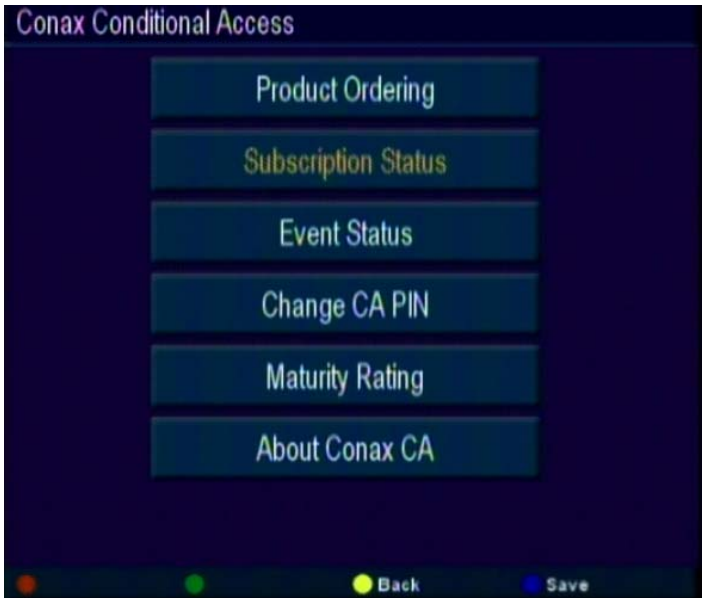
The Smartcard is now correctly placed into the unit and operational when the subscription is activated.

It is advisable to scan channels newly, please refer to the Installation section of this manual. Pay-TV channels show a dollar sign ($) behind the channel name, to indicate that these channels are scrambled. For example: **Discovery Channel $**

When the Smartcard is inactive, incorrect placed, defective or removed and a scrambled channel is selected, the following screen will be shown:

Pay TV Settings

Press **MENU** on the remote and enter the **Settings** → **Pay TV Settings** menu and the Pay TV Settings menu will be displayed as below:

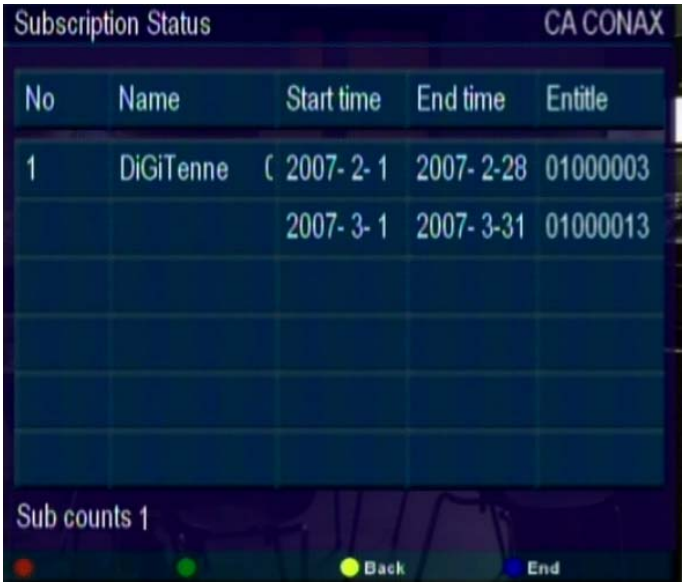


Note: Product Ordering is not a selectable menu item.

Press the **YELLOW** or **EXIT** key to return one level in the sub-menu or press the **BLUE** key to save the selection.

Subscription Status

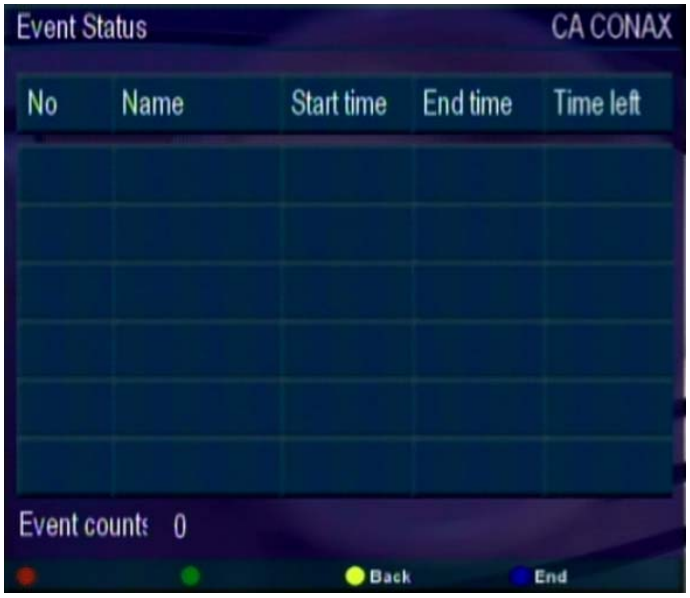
Select Subscription Status with the ▼or ▲ arrow and press **OK,** the following menu screen will be displayed where the current status of a subscription is shown. Information displayed is depending the subscription provider.



Press the **YELLOW** or **EXIT** key to return one level in the sub-menu or press the **BLUE** key to save the selection.

Event Status

Select Event Status with the ▼or ▲ arrow and press **OK,** the following menu screen will be displayed where the current status of an event is shown. Information displayed is depending the subscription provider and availability of events.



Press the **YELLOW** or **EXIT** key to return one level in the sub-menu or press the **BLUE** key to save the selection.

Channel Security

Channels can be secured in two different levels:

1) Via the provider subscription
2) Via the PIN-code of the provided Smartcard

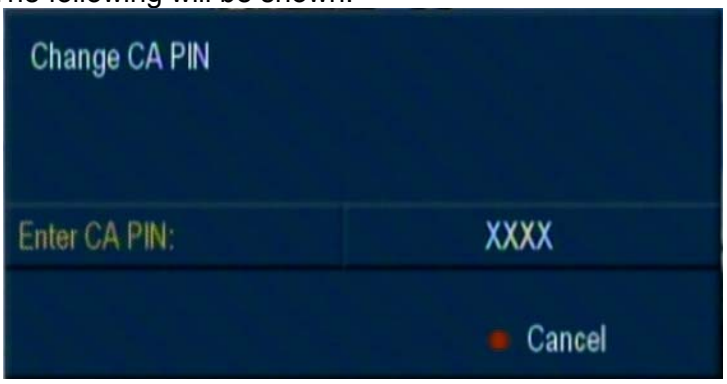
The safest security level is via the subscription, thereafter the Smartcard.

Secure channels via a subscription

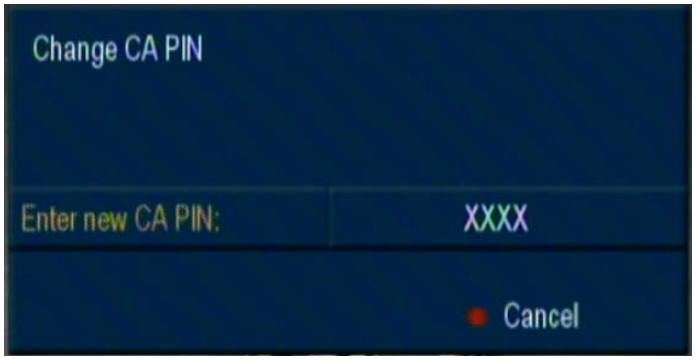
Normally subscriptions do not contain X-rated Erotic movie channels and/or other special channels for which a special subscription is needed. A subscription provider normally will secure these special channels and only will unlock them when you have ordered these channels. **Please note:** when a secured channel is selected, a PIN code will be asked to be entered.

Secure channels via a PIN-code of the Smartcard

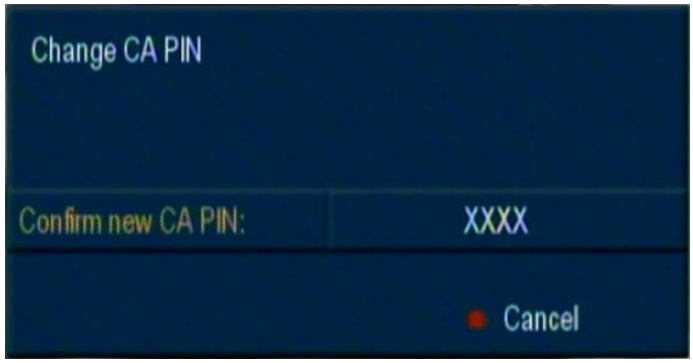
Press **MENU** on the remote and enter the **Settings** → **Pay TV Settings** menu, select **Change CA PIN**. The following will be shown:



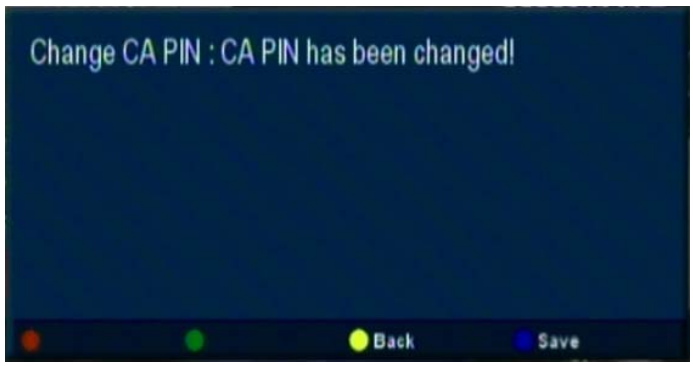
Key in the original (currently existing) PIN number. Mostly this PIN number is **1234**. It is advisable to change this standard provided PIN number. After the PIN is keyed in, key in the NEW PIN as in below menu:



After the NEW PIN is keyed in, a confirmation of the NEW PIN is needed. Key in the NEW PIN again as in below menu:



The new PIN has been updated successfully if the new PIN has been confirmed correctly and the following image is shown:



Press the **YELLOW** or **EXIT** key to return one level in the sub-menu or press the **BLUE** key to save the selection.

Note: Write your newly entered PIN code down and store it safely. If the new PIN code is not remembered, then the Smartcard can only be unlocked and provided from a standard PIN code by your subscription provider.

Activate or deactivate the PIN code of the Smartcard

If a special channel subscription is ordered, like an Erotic channel, then this channel is standard secured with the PIN code of the Smartcard. The security can be removed by changing the Maturity rating.

Press **MENU** on the remote and enter **Settings → Pay TV Settings** menu, select **Maturity Rating**

The PIN code needs to be keyed in, in order to view the Maturity rating menu. Key in the standard PIN code **1234** if this PIN code has not been changed into a personal PIN code as described above.

When an incorrect PIN code is entered WRONG CA PIN will be displayed in the above screen. After the correct PIN code is entered the following menu will appear:

By default the rating is set to G, general Audience, which means that the special Channels are secured with a PIN code and this PIN code needs to be keyed in before the channel can be viewed.

Select the rating that is required with the ◄or ► arrow key and as advised by your subscription provider (for example X - Erotic) to deactivate the PIN code for these special channels.

Select with the ▼or ▲ arrow **Change Card Level** and press **OK**. On the bottom and middle of the screen **SUCCESS** will be displayed indicating that the rating has been changed.

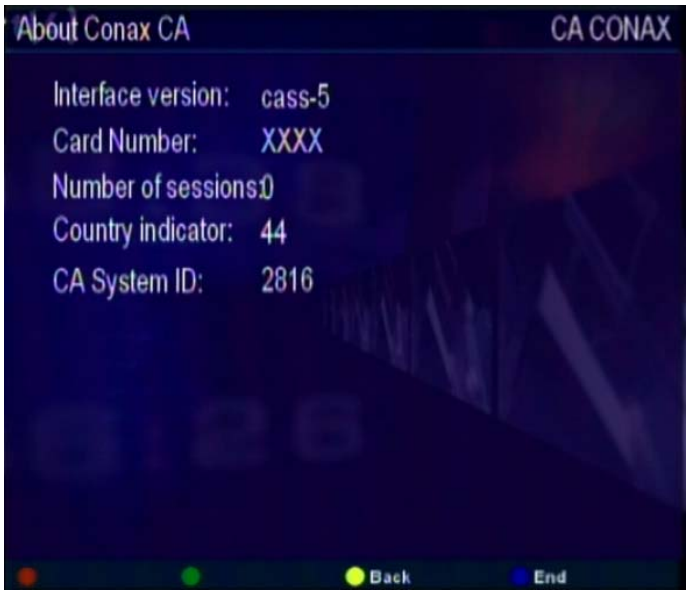
To activate the PIN code again for the special channels, set the Maturity Rating back to G.

Press the **YELLOW** or **EXIT** key to return one level in the sub-menu or press the **BLUE** key to save the selection.

Note: Depending your provider, certain channels may have ratings as shown in the above menu, please refer to your subscribers instructions to select the right Maturity rating to deactivate the PIN code.

About Conax CA

Select About Conax CA with the ▼or ▲ arrow and press **OK,** the following menu screen will be displayed where the current Interface Version, Subscription Smartcard number, Number of Sessions, Country Indicator and CA System ID is displayed. Information displayed is depending the subscription provider.



Press the **YELLOW** or **EXIT** key to return one level in the sub-menu or press the **BLUE** key to save the selection.

Channel changing behavior

Changing channels (zapping) between Free-To-Air channels will be quick and are equal to analog TV zapping experience. Changing from a Free-To-Air channel to a Pay-TV Channel ($) or from a Pay-TV Channel ($) to another Pay-TV Channel $ will be slower, since the information from the signal needs to be compared with the card and decrypted, so that the selected channel can be viewed descrambled. Changing channels may take up to 2 seconds before a TV image is seen. This is not a defect, but normal operation of the unit.

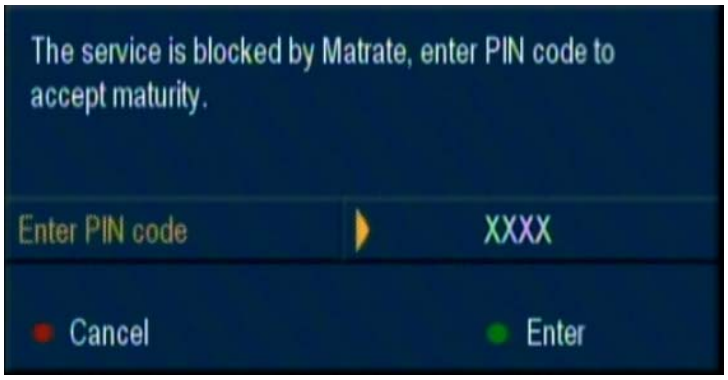
Warning screens

The following warning screens might be shown on screen, depending the cause of the situation, subscription of the provider and the provider network.

No card inserted
Incorrect Conax card
Incorrect card
Communication with card failed
No access
Ordering
Enter CA PIN to order:
Start viewing
Minutes viewing time left:
Enter CA PIN to start viewing:
No access - geographical blackout
Maturity lock
Current card level
Current program rating
Enter CA PIN to unlock
No access - network block

Maturity Channel Selection

In case a channel is selected that is rated as a Maturity channel X and Maturity rate is set to G, PG or A, a screen will be displayed as following:



Key in the CA PIN code provided or the newly created CA PIN code and press on the **Green** button on the Remote to enter the Maturity rated channel. In some cases you will see for a few seconds the screen below, due to the fact that the channel information is checked before the channel is opened for viewing. This screen will also be shown if an incorrect PIN code is keyed in. To key in again a PIN code, press CH + or CH- to go back and forth to the Maturity channel. The PIN code will be asked again.

In case Maturity rating was set to X and a Maturity channel is selected, normal viewing will start without ask in for the PIN code.

Note: A subscription to Maturity channels with your provider is needed to view these channels.

Subscription ended

In case a subscription period is ended the following message is displayed when Pay TV channel is selected or being viewed during the switch off of the subscription:

Contact your provider to inform about your subscription and activation of your Smart Card.

HELP DESK SERVICE

Kjaerulff 1

Note: