Linux EMBEDDED

N **.1**

Nova
evo

HDMI | PVR | Time shift | DVB | DiSEqC | USB | MP3 | MKV file | YouTube

IMPORTANT NOTICE

■ Safety Precautions

Please read the following safety precautions carefully.

1. Disconnect the product from the mains before you start any maintenance or installation procedures.

2. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the product.

3. Before cleaning the unit, always disconnect the product from the main outlet.
    Dust the product using only a soft-dry cloth (no solvents of any kind).

4. Do not cover ventilation openings for proper ventilation.
    Do not stack electronic equipment or items such as papers, clothes etc. on top of the product.

5. Only use attachments / accessories specified by the manufacturer. Otherwise, it may be hazardous or cause damage to the product.
    Always be unplugged the receiver before connecting or disconnecting anything.

6. Do not install, place or operate the receiver near any heat source such as heat registers, radiators, stoves or other apparatus (including amplifiers) that produce heat.

7. Do not place the product on an unstable cart, stand, tripod, bracket or table where it can fall, to prevent serious injury and serious damage to the appliance.

8. Use only with the cart, stand, tripod, bracket, or table specified by manufacturer, or sold with the product. When a cart is used, use caution when moving the cart/product to avoid injury from tip over.

9. Unplug the product from the socket-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.

10. Do not open the cover. It is dangerous to touch the inside of the receiver due to possible electric hazard.

11. Do not insert or drop anything into the unit.

12. Do not use a damaged poser cord that may cause a fire and electric shock.

13. Do not touch a power cord with wet hand that may cause electric shock.

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

IMPORTANT NOTICE

TO REDUCE THE RISK OF ELECTIRC SHOCK, DO NOT REMOVE COVER OR BACK.
NO USER-SERVICEABLE PARTS INSIDE, REFER SERVICIG TO QUALIFIED SERVICE
PERSONNEL.

⚡	**CAUTION** RISK OF ELECTRIC SHOCK DO NOT OPEN	⚠
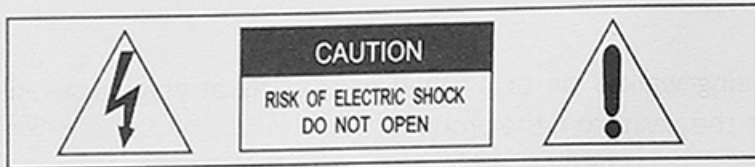
WARNING:

- To reduce the risk of fire or electric shock, do not expose this product to rain or moisture and extreme cold or direct sunlight.

- The socket-outlet should be installed near the equipment and should be easily accessible.

- The product should not be exposed to dripping or splashing and no objects filled with liquids, such as vases, should be placed on the product.

- Refer to qualified service personnel.

This symbol warns the user that un-insulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any part inside of the unit.

This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included. Therefore, it should be read carefully in order to avoid any problems.

CONTENTS

1.1 Main Features

- Fully compliant with MPEG-4 HD / H.264 (DVB-S/DVB-S2)
- SCPC/MCPC Receivable from C /Ku-Band Satellites
- Smartcard reader
- 10000 channels programmable
- Linux based operating system
- Support for most media file playback
- Time shift
- USB PVR ready
- Ethernet port for internet connection
- Electronic Program Guide
- Subtitle & Teletext supported
- DiSEqC 1.0 / 1.2 / USALS support
- Optical Digital Audio output (S/PDIF)
- MP3 playback
- Multiple USB ports support (Front and Rear)
- USB device management (file and folder delete)
- Backup / Restore function for channel data
- Easy software update through USB interface
- HDMI Video & Audio output
- Menu on the screen in HD
- Channel manager support (Favorite / Move / Delete / Lock / Skip / Rename)
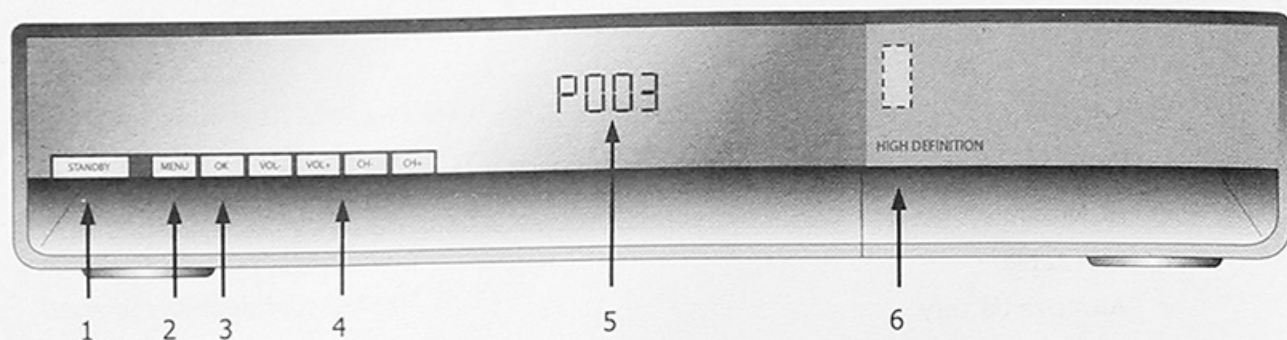- Support multiple OSD language
- User Friendly OSD

1.2 Accessories

- ✓ RCU
- ✓ User's manual
- ✓ HDMI cable
- ✓ RCA cable
- ✓ AAA size battery
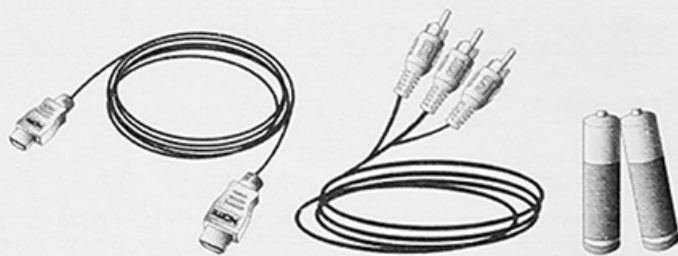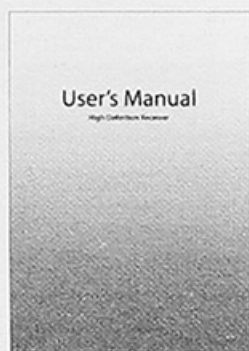
GETTING STARTED

1.3 Front panel

1	STAND BY	Standby mode [ON/OFF]
2	MENU	Normal mode : Display the main menu Menu mode : Go back to previous menu
3	OK	Normal mode : Display channel list Menu mode : Select menu item
4	NAVIGATION	Up/Dn : Channel change, Left/Right : Volume control
5	DISPLAY	7-segment display
6	USB	USB 2.0 Interface

1.4 Rear panel
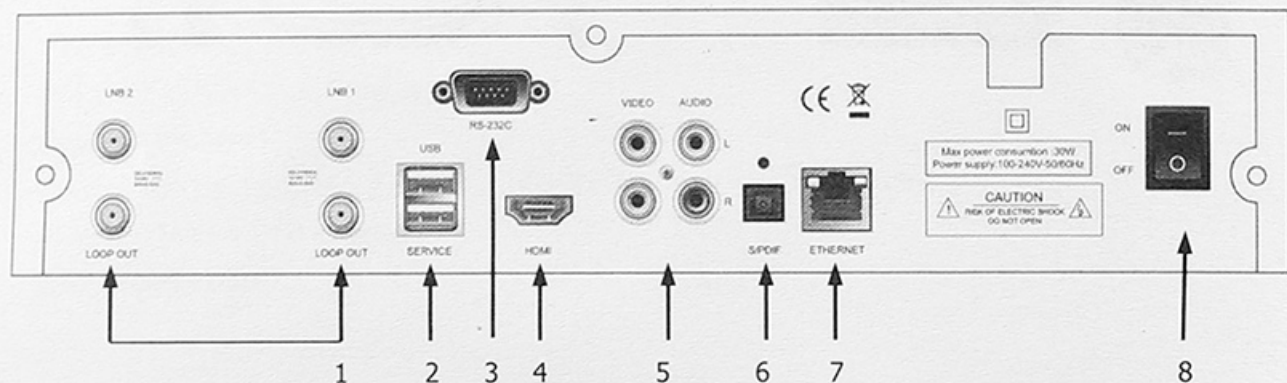
1	LNB IN	Connect satellite antenna cable
	LOOP OUT	Connect to another STB (LNB IN)
2	USB	Connect USB memory / USB HDD
3	RS-232C	Connect to PC
4	HDMI	Connect to TV
5	VIDEO	Composite video output
	AUDIO (L/R)	Stereo audio output
6	S/PDIF	Connect optical Digital Audio
7	RS-45	Ethernet
8	POWER SWITCH	AC Power ON/OFF switch

1.5 Remote Control Unit

| KEY	FUNCTION
⏻	Standby mode [ON/OFF]
🔇	Mute the sound
TV/RADIO	Switch TV/Radio mode
MEDIA	Display USB file manager
M.P	Switch to Multi-picture mode
SLEEP	Set sleep timer
#	Switch favorite group
VOL + –	Adjust the volume
INFO	Display information box
RECALL	Go back to previous channel
CH/PG ▲▼	Normal Mode : Change channel Menu Mode : Move menu item
OK	Normal Mode : Display channel list Menu Mode: Execute the select item
MENU	Normal Mode : Display the menu Menu model : Go back to previous menu
EXIT	Exit menu
HD	Display channel list (HD channel only)
SATELLITE	Display channel list sorted by satellite
PACKAGE	Display channel list sorted by package
FAVORITE	Display Favorite Channel List
CHANNEL	Display channel list sorted by FTA, CAS, All
SEARCH	Search channel by name
EPG	Display the Electronic Program Guide
SQ	Display Signal bar in full screen
ASPECT	Change screen size
V.MODE	Set screen format
SOUND	Change audio mode
T.TEXT	Display Teletext
SUBTITLE	Display Subtitle
LANG	Change audio language
	PVR control
PREV	Slow play backward
NEXT	Slow play forward
FR	Rewind
FF	Fast forward
RECORD	Start recording
PLAY	Play recorded file / MP3
PAUSE	Pause play / Time shift
STOP	Stop

1.6 Connection Diagram
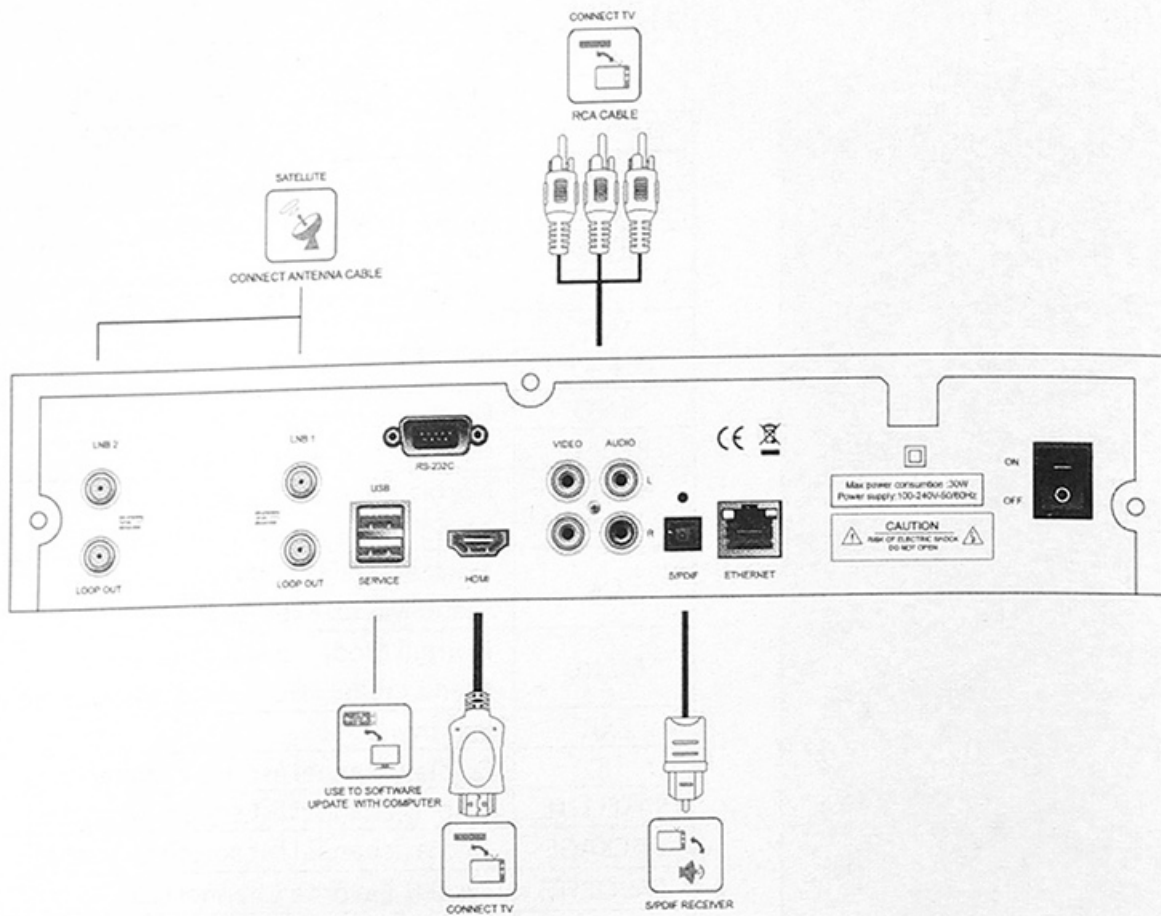
1) Connecting with HDMI cable

   Use HDMI cable as above connection illustration.

   HDMI has both audio and video therefore you don't need additional connection.

2) Connecting with Cinch cable

   Use 3-RCA cable consisted of video and stereo audio (left, right).

3) Connecting Antenna

   Connect coaxial cable from outside antenna to LNB IN port.

4) Connecting S/PDIF

   Use optical Digital Audio cable

5) Connecting USB

   Use USB memory or USB HDD for multimedia

## 2.1 Motorized setting (DiSEqC 1.2)

If you have DiSEqC 1.2 Motor box installed with your antenna, enable it in this menu to set it up as below picture.
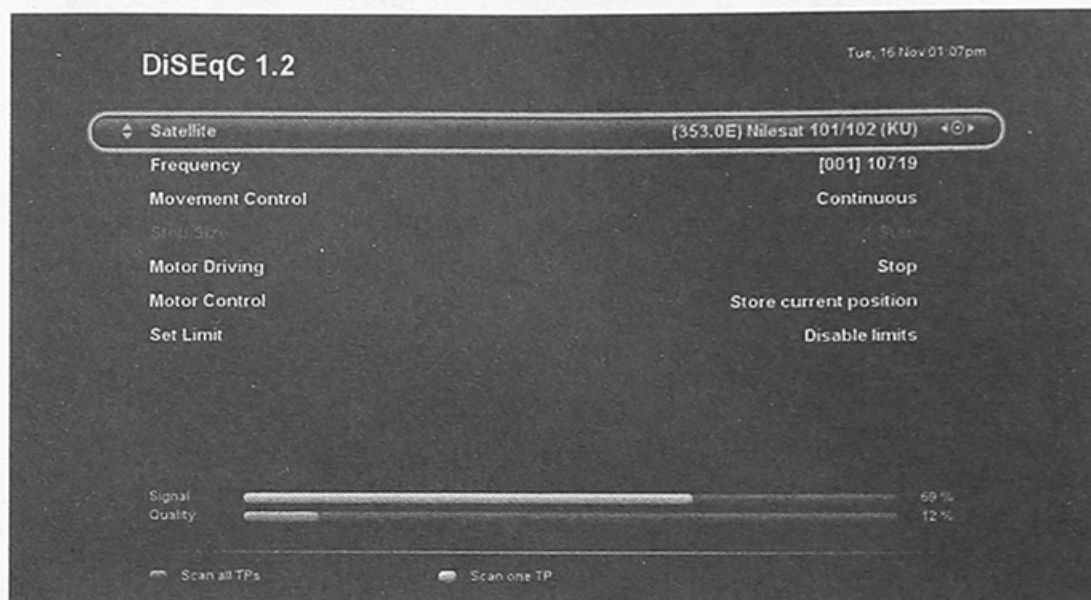
- ✓ Satellite – select satellite to setup
- ✓ Frequency – select TP frequency to search
- ✓ Movement control
    - Continuous : keep moving until press left/right button
    - Step : move one step as press left/right button
- ✓ Motor Driving – Move motor
- ✓ Motor control
    - Store Current Position : save satellite position with current setting value
    - Go to Stored Position : move to saved position
    - Go to 0 position : move to center position
    - Recalculate : recalculate position when you enter new value

2.1 Motorized setting (USALS)

Using USALS mode, you can select USALS in this menu to set it up as below picture.
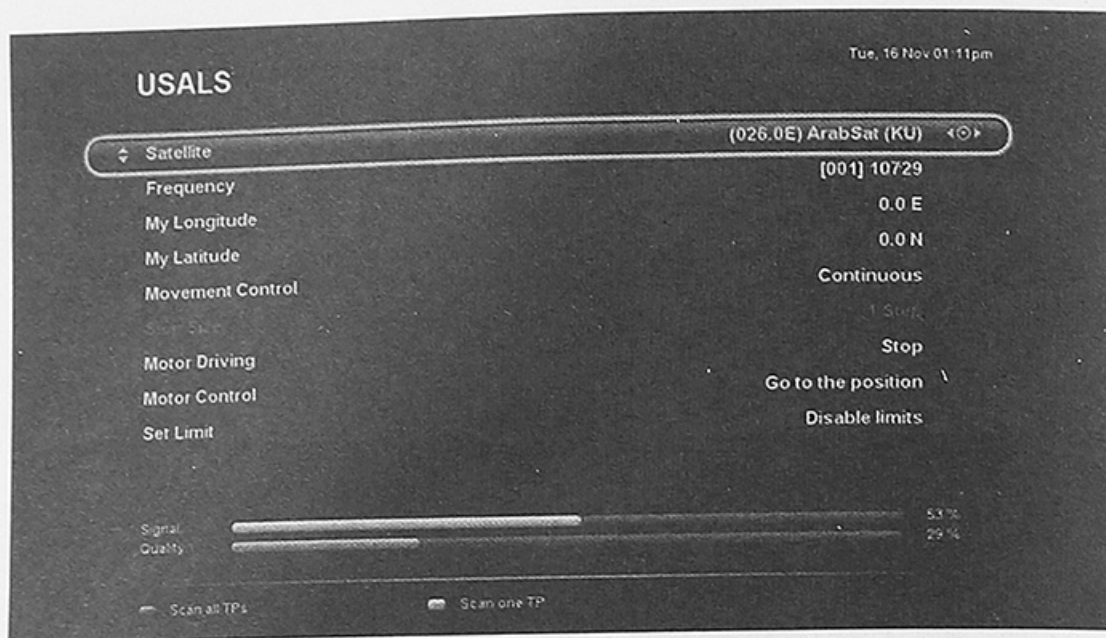
- ✓ Satellite – select satellite to setup
- ✓ Frequency – select TP frequency to search
- ✓ My Longitude – Enter longitude value of your position
- ✓ My Latitude – Enter latitude value of your position
- ✓ Movement control

  Continuous: keep moving until press left/right button

  Step : move one step as press left/right button
- ✓ Motor Driving – Move motor
- ✓ Motor control

  Go to the Position: move to selected satellite position

  Go to 0 position: move to center position
- ✓ Set Limit

  Disable limits: Set no limitation

  East limits: Set East limit

  West limits: Set West limit

2.2 Dish setting

Setup satellite to scan channels.
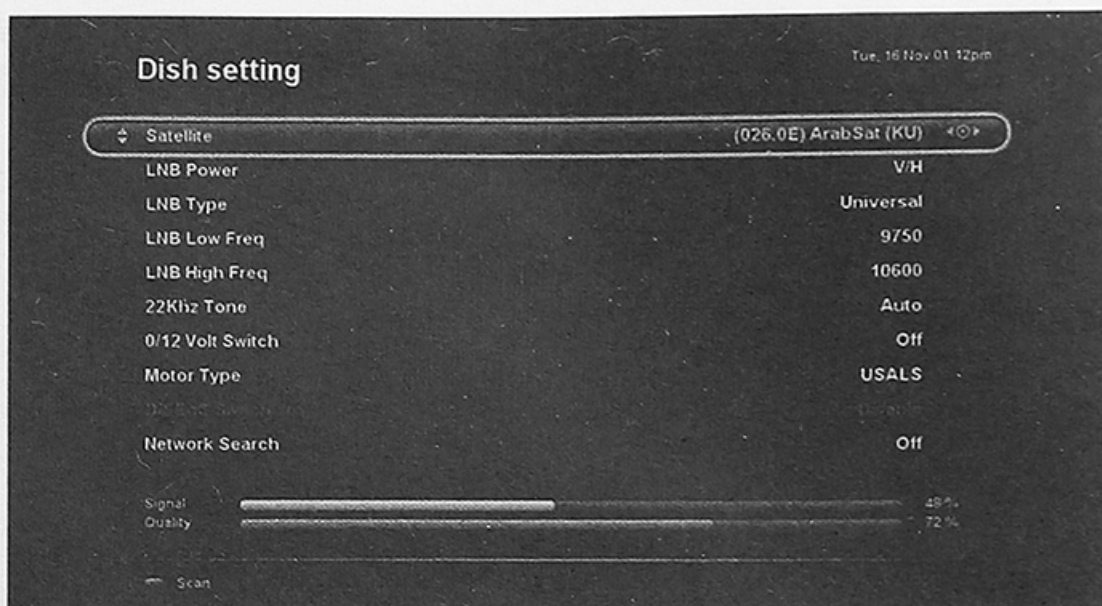
- ✓ Satellite – select satellite to setup.
    Press OK to open satellite list box and use Left/Right button.
- ✓ LNB Power – Select either V / H
- ✓ LNB Type – enter correct LNB type installed
- ✓ LNB Low Freq – Set correct value of your LNB
- ✓ LNB High Freq – Set correct value of your LNB
- ✓ 22KHz Tone – select ON/OFF if you are using 22KHz switch
- ✓ 0/12 Volt Switch – select 0 / 12 if you are using this switch
- ✓ Motor Type – Select either OFF / DiSEqC 1.2 / USALS
- ✓ DiSEqC Switch – select correct DiSEqC port number if you are using DiSEqC switch
- ✓ Network Search – Set it ON to use networked data to scan channels
- ✓ S/Q – signal strength / quality strength

Press RED COLOR BUTTON to start searching

2.3 Edit TP

Add, Delete or Modify TP value of selected satellite.
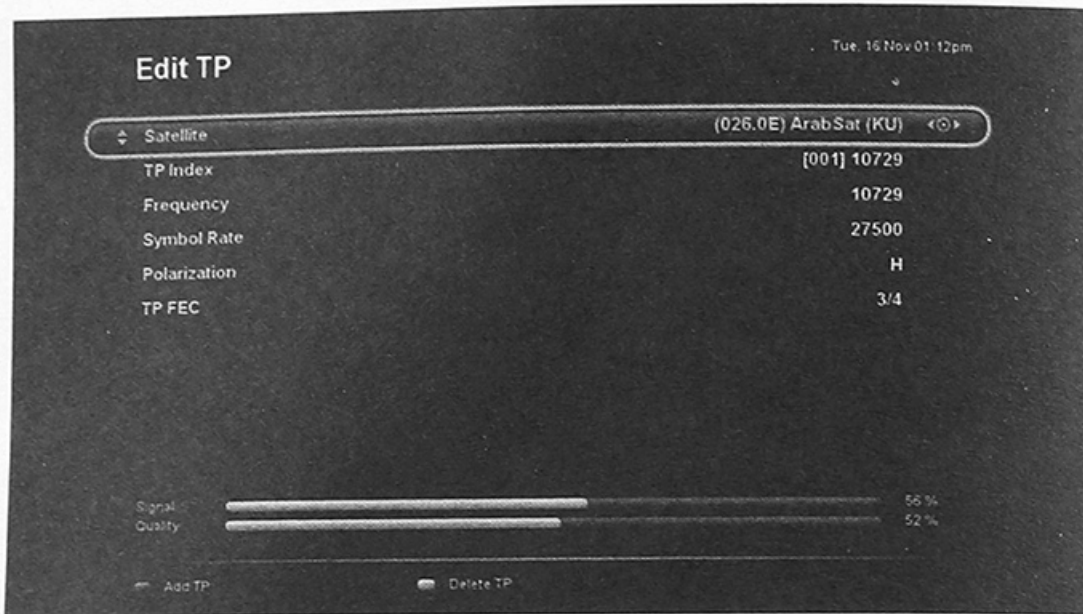
   ✓ Satellite – select satellite to setup.
   ✓ TP Index – TP number in numeric order
   ✓ Frequency – select TP frequency what you want to search
   ✓ Symbol rate – enter correct value for TP you selected
   ✓ Polarization – select either Horizontal (18V)/Vertical (13V)
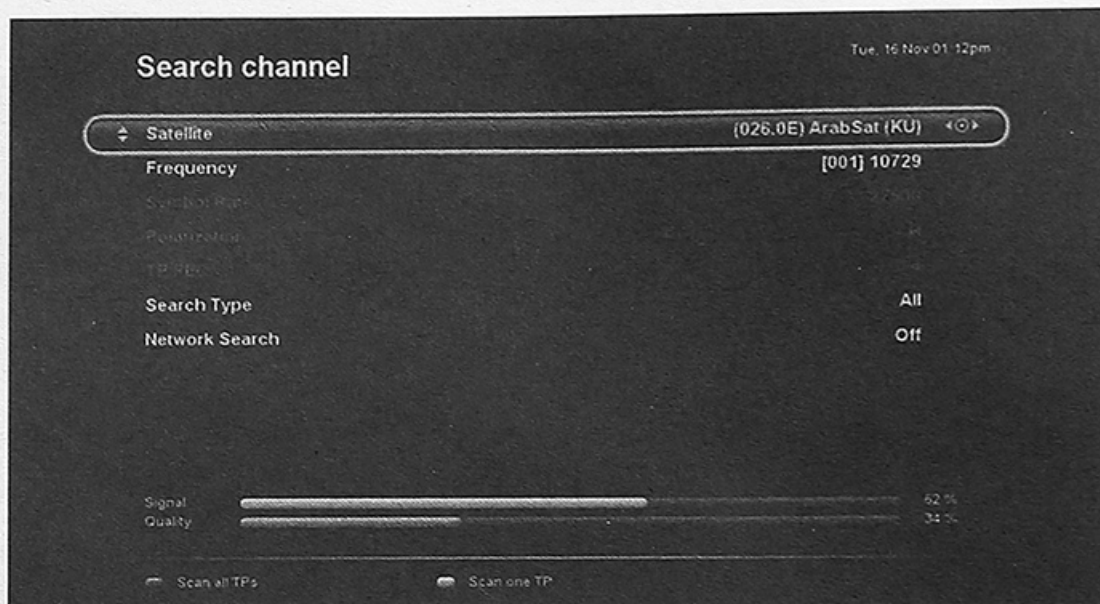   ✓ FEC – this will be enabled when you select DVB-S2 modulation

Press RED COLOR BUTTON to add new TP
Press GREEN COLOR BUTTON to delete existing TP

2.4 Search channel

Search channels for all TP or one TP only.

- ✓ Satellite – select satellite to scan.
- ✓ Frequency – select TP frequency what you want to search
- ✓ Symbol rate – enter correct value for TP you selected
- ✓ Polarization – select either Horizontal (18V)/Vertical (13V)
- ✓ TP FEC – this will be enabled when you select DVB-S2 modulation
- ✓ Search Type – Select either All / FTA / TV
- ✓ Network Search – Set it ON to use networked data to scan channels

Press RED COLOR BUTTON to scan all TP
Press GREEN COLOR BUTTON to scan one TP only

2.5 Add channel

Add channel with manual value.
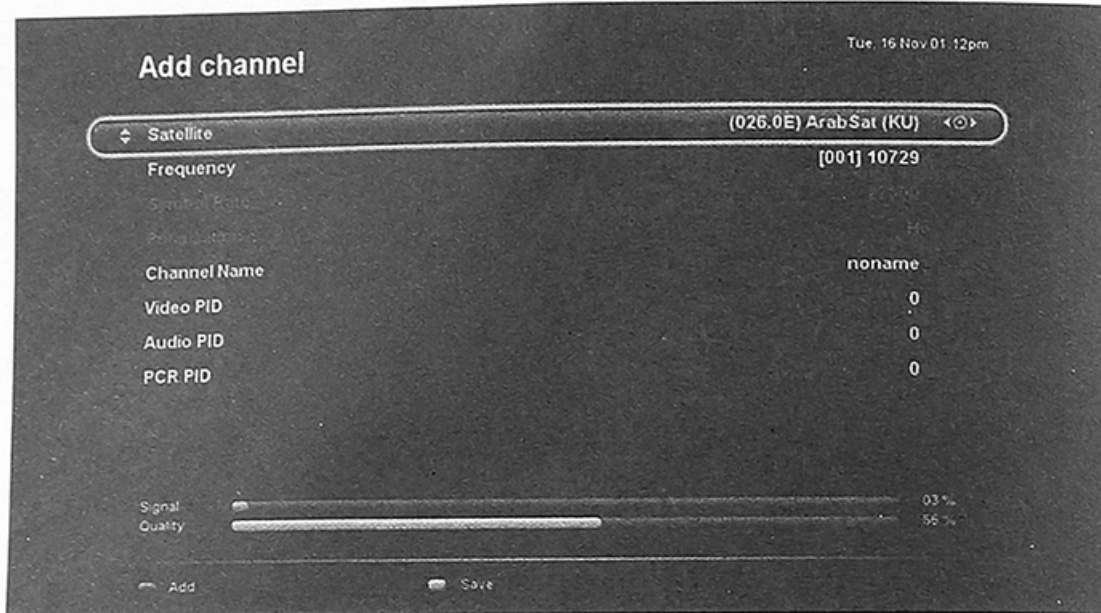
✓ Satellite – select satellite to setup.
✓ Frequency – Enter frequency value you want to add
✓ Symbol rate – Enter value to add
✓ Polarization – select either Horizontal (18V)/Vertical (13V)
✓ Channel Name – Set the name of the channel to add
✓ Video PID – Enter correct value of the channel to add
✓ Audio PID – Enter correct value of the channel to add
✓ PCR PID – Enter correct value of the channel to add

Press RED color button to add new TP as below
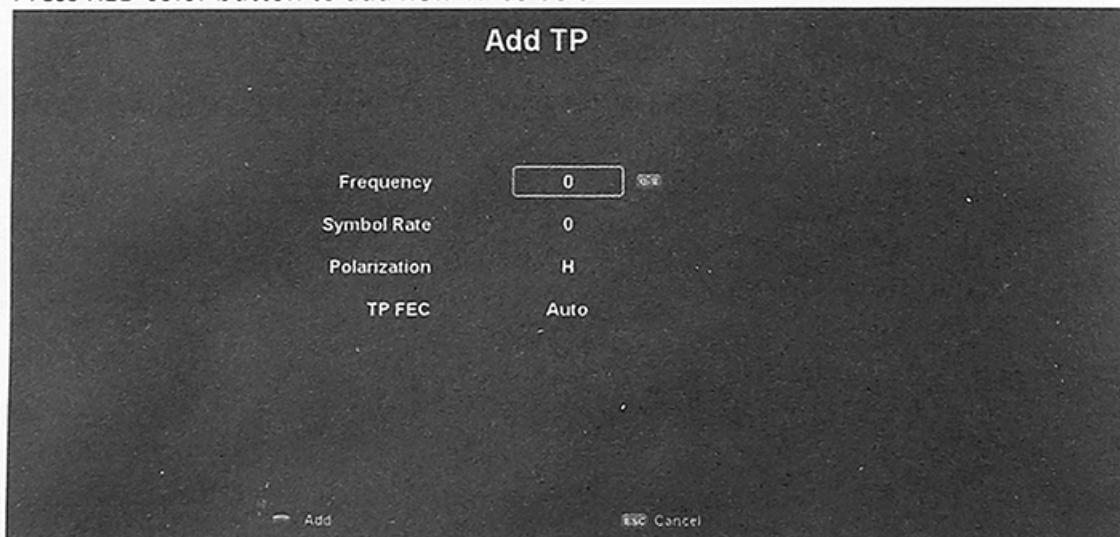
SYSTEM SETTING

3.1 Time setting

Time setting

↕ Timezone	(GMT) London	◄◉►
Daylight saving	Off	
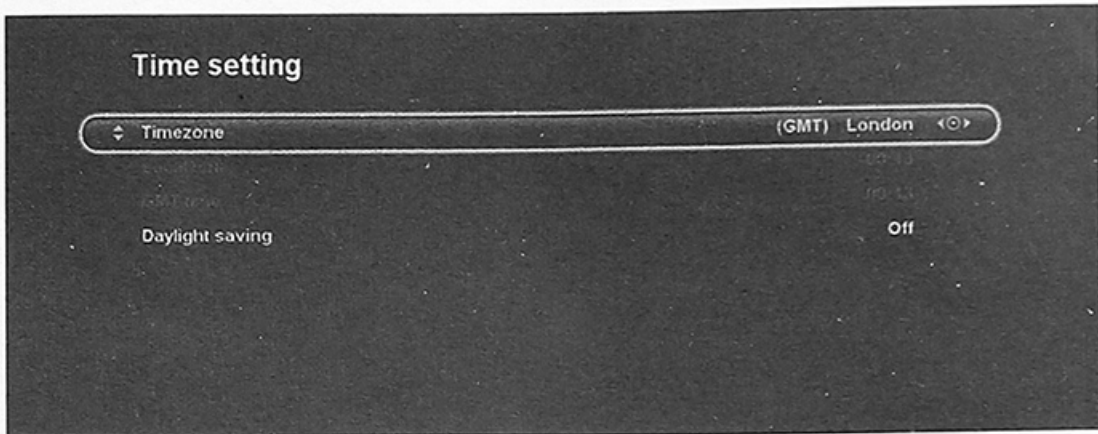
✓ Time zone – Select your location
✓ Local time – Display time of your location
✓ GMT time – Display GMT time
✓ Daylight saving – Set either ON / OFF

3.2 A/V output

A/V output

↕ Video format	PAL ◄◉►
Video resolution	1080i
Screen format	16:9
Display format	Letter-Box
Audio equalizer	None
Audio language	English
Subtitle language	English
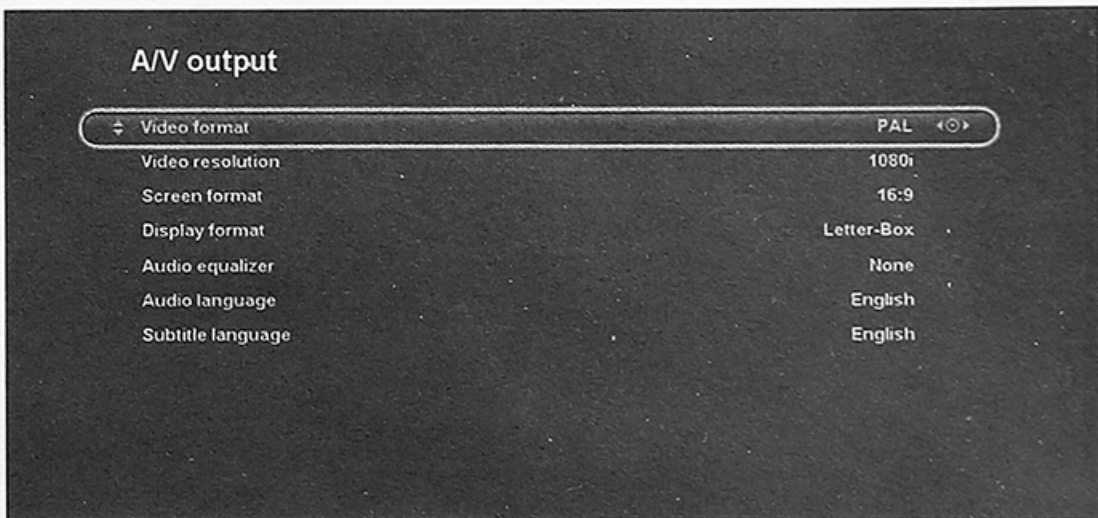
✓ Video format – Set either PAL / NTSC
✓ Video resolution – Set either 576i / 576p / 720p / 1080i
✓ Screen format – Set either 4:3 / 16:9
✓ Display format – Set either Letter-Box / Fit screen
✓ Audio equalizer – Set audio effect
   preset values are None / Pop / Home theater / Rock / Classic
✓ Audio language – Set audio language
✓ Subtitle language – Set subtitle language

3.3 OSD setting

OSD setting

| Menu language | English |
| Info-Box display time | 3 sec |
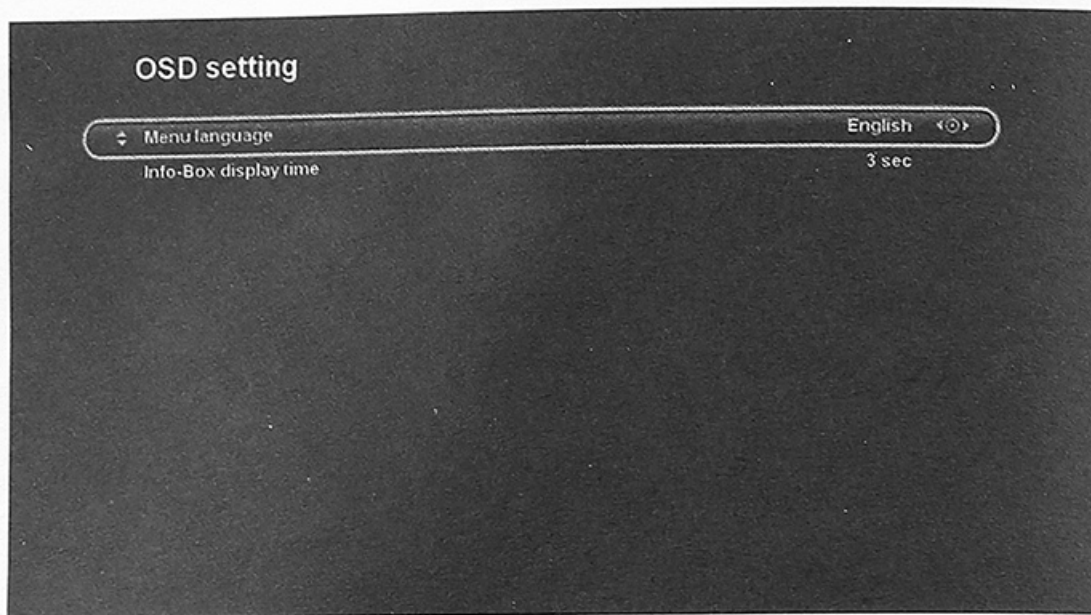
- ✓ Menu language – Set your language
- ✓ Info-Box display time – Set the duration of displaying info-Box

3.4 Security

Security

| New password | **** |
| Verify password | **** |

Menu lock

Enter the password.
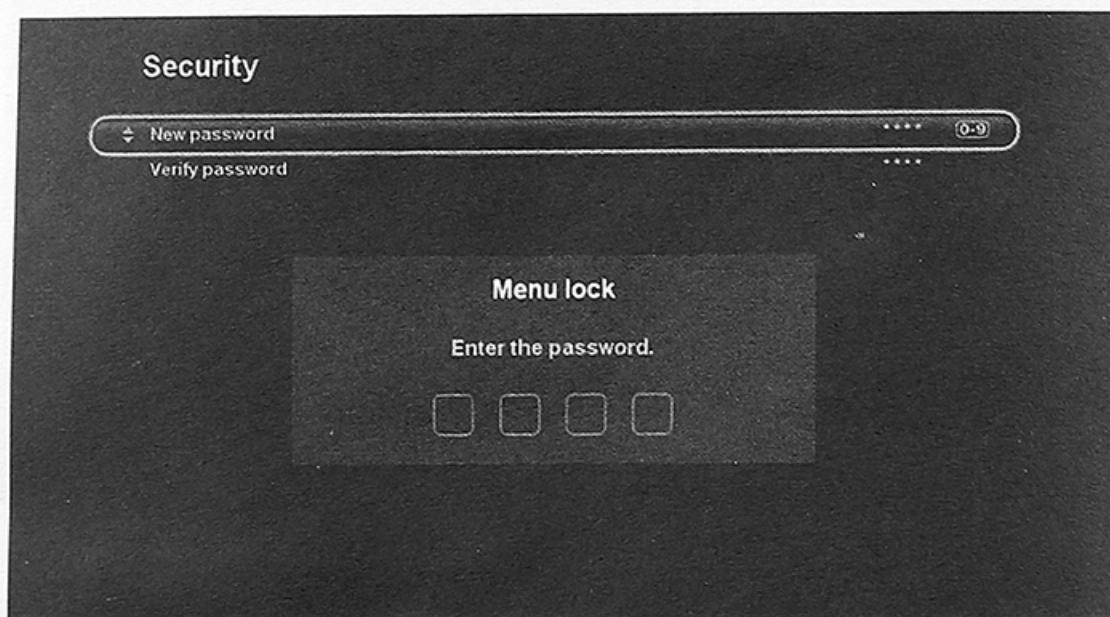
- ✓ New password – Enter new password
- ✓ Verify password – Enter password again for sure

3.5 Other setting

✓ Channel preview

On : channel changes as you move cursor in OK list

Off : channel change as you press OK button in OK list

3.6 Reset database

This will reset all the user setting to factory default value including channel data.
You may need to enter PIN code [Default PIN code is 0000] and you can change this code in [**SECURITY**] menu.

※ **Caution** : All Channel data will be deleted !!!

3.7 System information
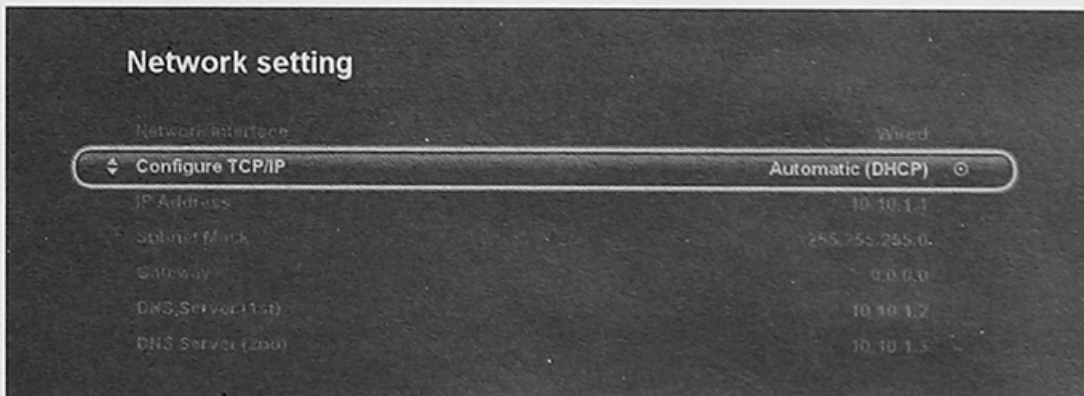
System information	
Model	CLS-HD (112)
H/W Version	v1.0
Loader Version	v0.0.2
Kernel Version	v2.7.5
S/W Version	v2.5.0
Database Version	v2.5.0

3.8 Network setting

Configure your network setting automatically (DHCP) or manually.

| Network setting	
Network Interface	Wired
Configure TCP/IP	Automatic (DHCP)
IP Address	10.10.1.1
Subnet Mask	255.255.255.0
Gateway	0.0.0.0
DNS Server (1st)	10.10.1.2
DNS Server (2nd)	10.10.1.3

For automatic setting, select DHCP then STB will configure the correct value.

For manual setting (if you're using static IP), select MANUAL then you can enter the value manually.

Network setting

Configure TCP/IP	Manual

Manual setting

IP Address	10	10	1	4
Subnet Mask	255	255	255	0
Gateway				
DNS Server (1st)	10	10	1	2
DNS Server (2nd)	10	10	1	3
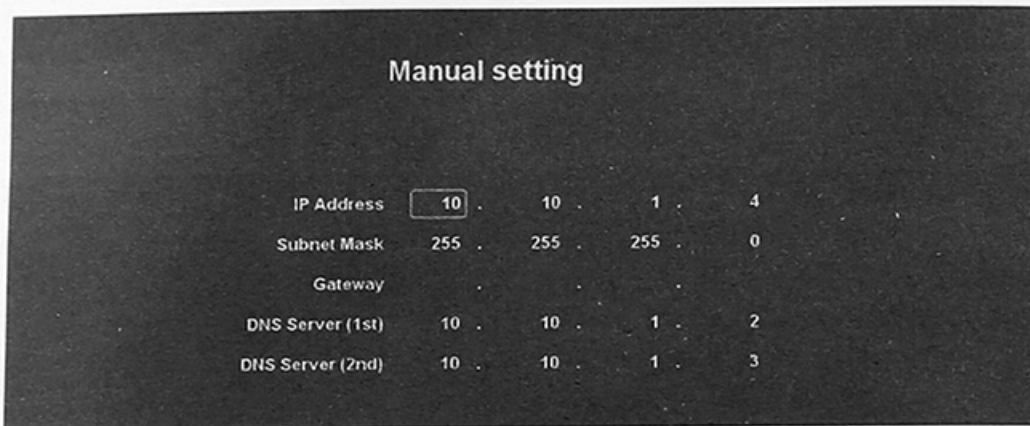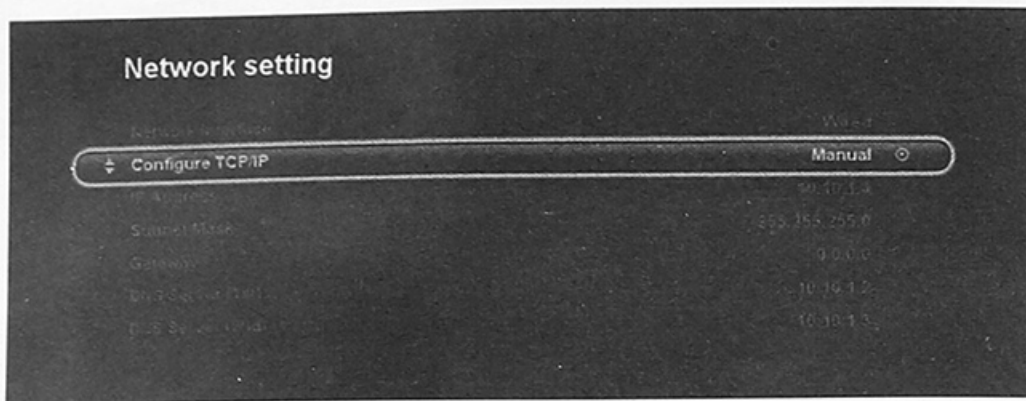
3.9 Smartcard

Display smartcard information...press OK to view detail.

Smartcard

Slot A	Conax
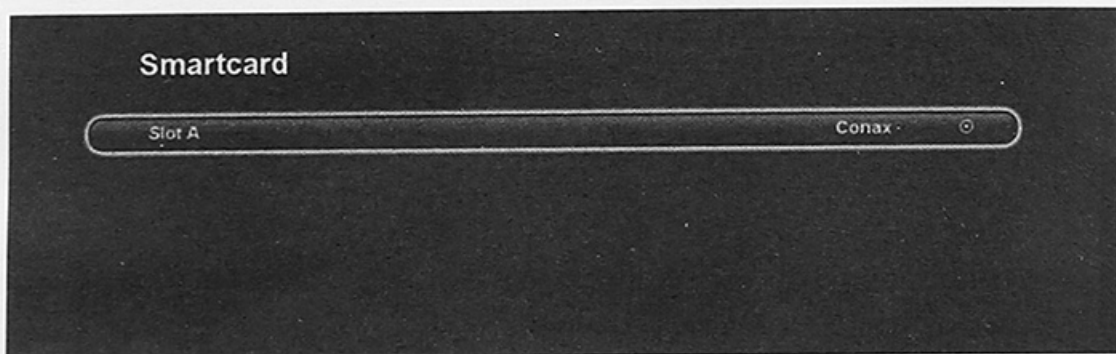
4.1 Edit favorite

Set channels to favorite group or remove back from favorite list.

◆ Setting up favorite list

Select channel you want to put favorite list

Press COLOR button to set the channel to favorite list

(RED for favorite list 1, GREEN for favorite list 2, YELLOW for favorite list 3, BLUE for favorite list 4)

To check each favorite list group, press WHITE button
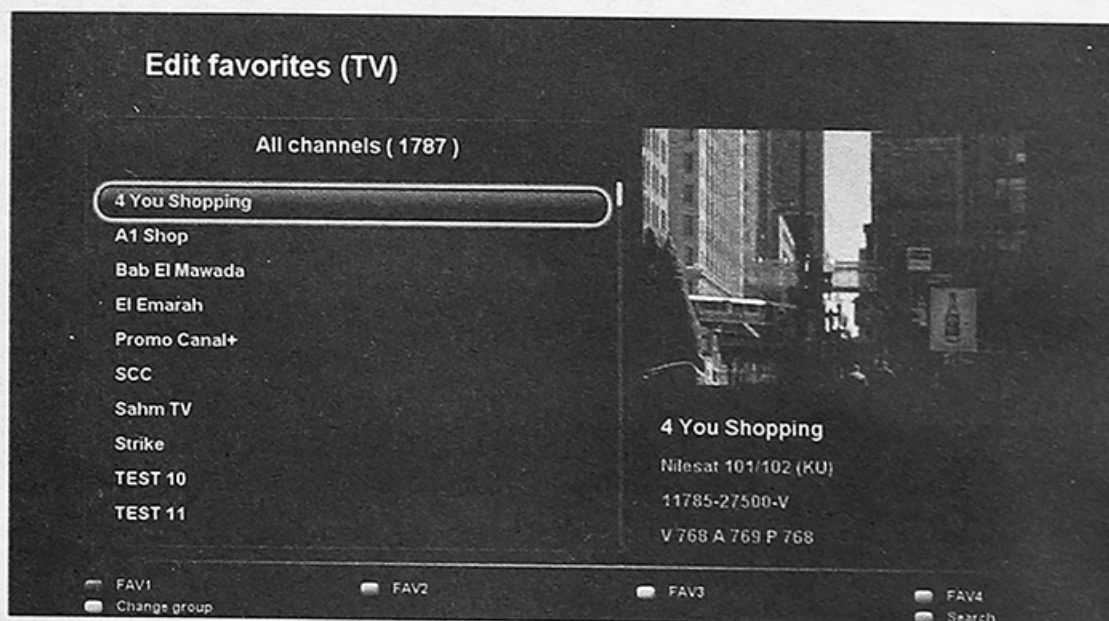
4.2 Edit channels

CHANNELS

Press RED button to change mode (Delete/Move/Lock/Skip/Rename).
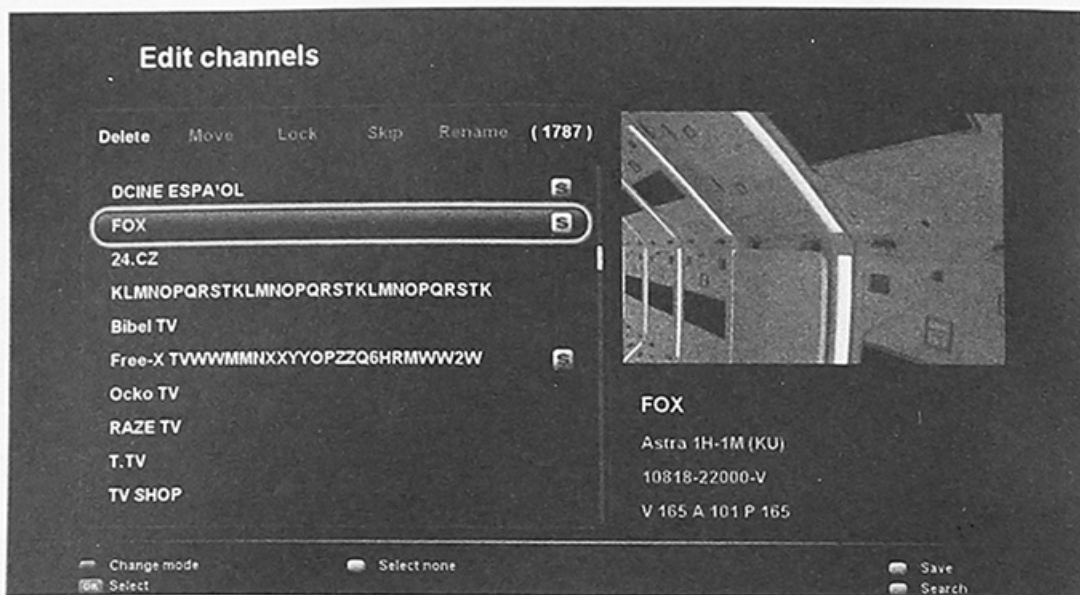
✓ Delete – Select channel by pressing OK button

       selected channel changes to yellow color, press OK again to unselect

       you can select multiple channels

       Press BLUE button to delete selected channel(s)

       Confirmation message will be displayed for sure as below
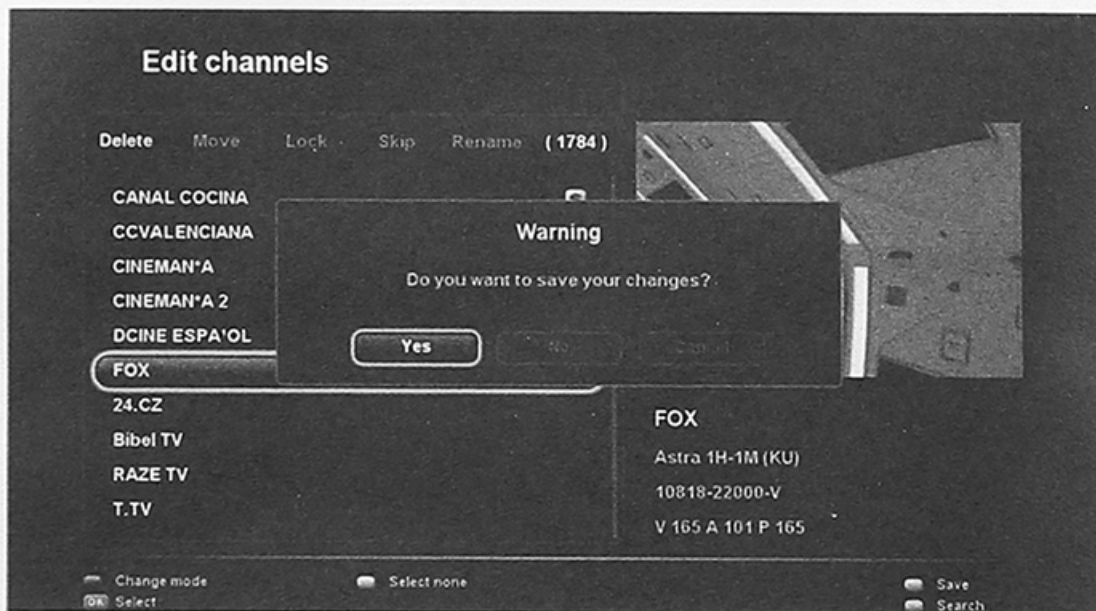
✓ Move – Select channel by pressing OK button

       Use UP/DOWN button to locate selected channel where you want to move

       Press OK to complete

✓ Lock – Select channel by pressing OK button

       selected channel changes to yellow color, press OK again to unselect

you can select multiple channels

Press BLUE button to lock selected channel(s)

✓ Skip – Select channel by pressing OK button

selected channel changes to yellow color, press OK again to unselect

you can select multiple channels

Press BLUE button to skip selected channel(s)

※ Skipped channel(s) won't be accessible by neither OK list

nor channel change until released

✓ Rename – Select channel by pressing OK button then keyboard box will be displayed
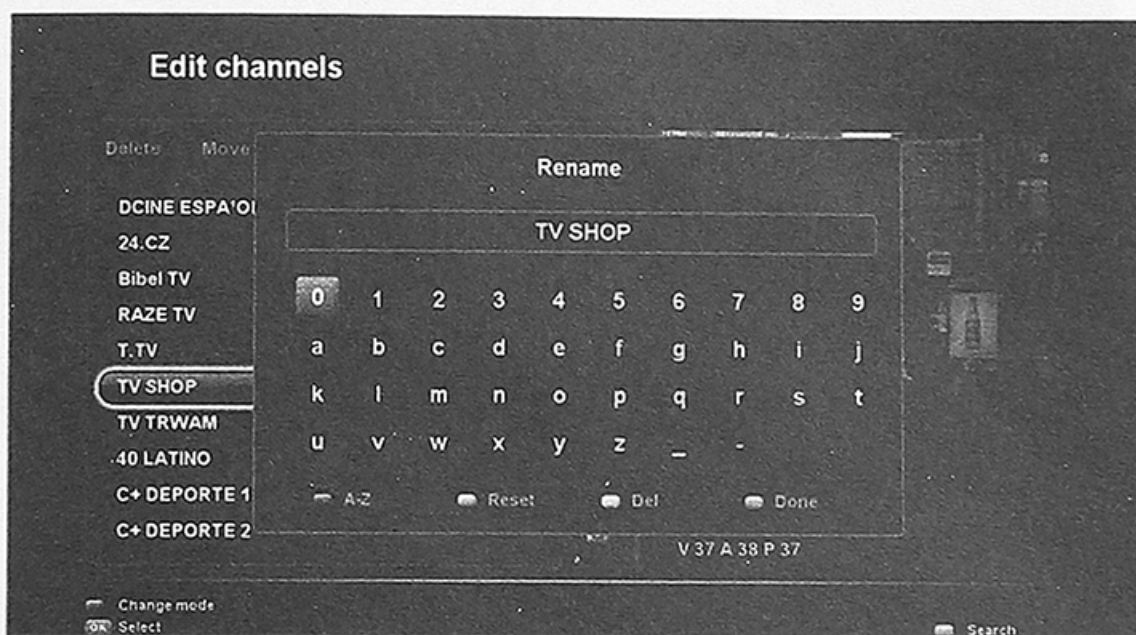
◆ Command

a-z : small letter

A-Z : capital letter

Reset : delete all

Del : delete last letter

Done : complete operation

4.3 Delete SAT/TP

Delete either satellite or TP.

※ **Caution** : Deleting satellite will delete TP and scanned channels belonged to the satellite.
In the same way, deleting TP will delete scanned channels belonged to the TP
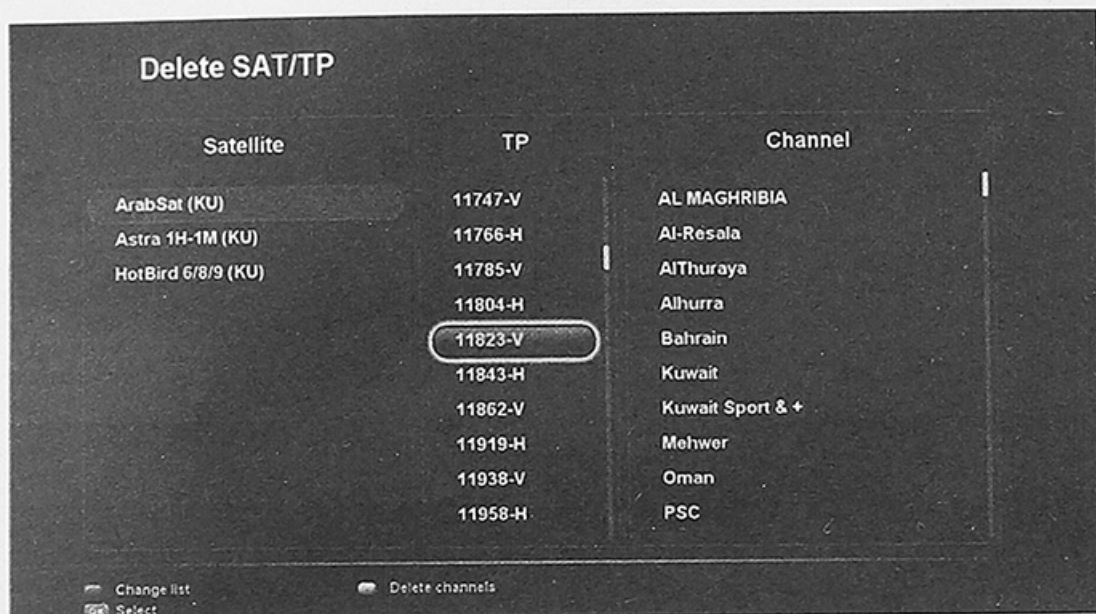
◆ Deleting satellite
Locate cursor on satellite you want to delete by pressing RED button, then press GREEN button

◆ Deleting TP
Locate cursor on satellite you want to delete by pressing RED button, then press GREEN button
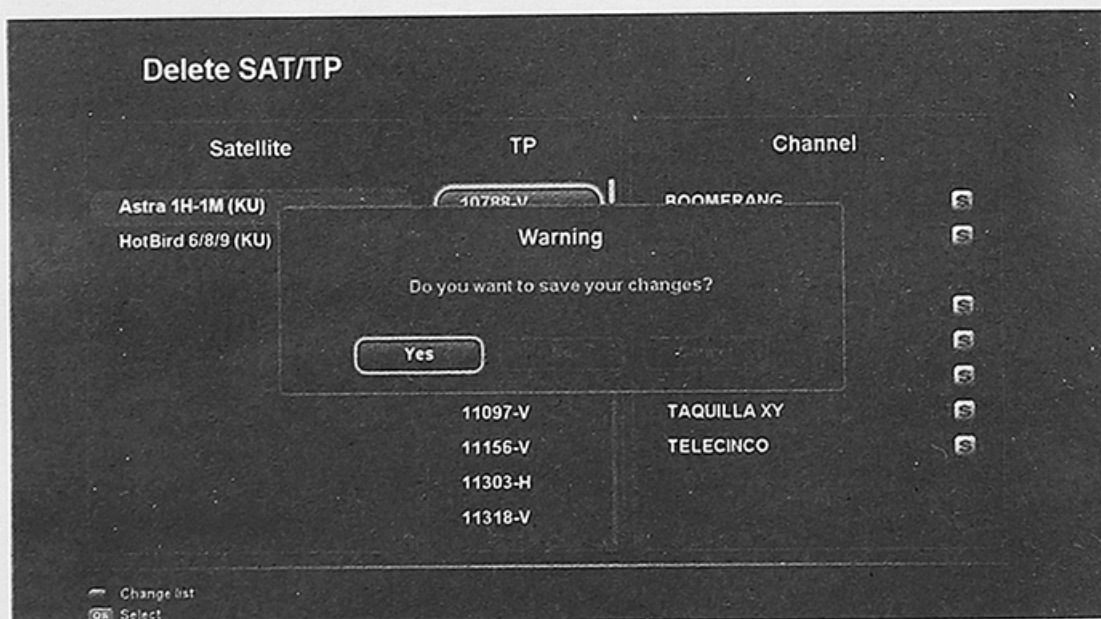
5.1 Upgrade firmware

Locate cursor to firmware file (*.bin) then firmware information will be displayed automatically on the right side as below picture.

Brief information of firmware file will be displayed at the right side when it's selected

Press OK to start upgrade
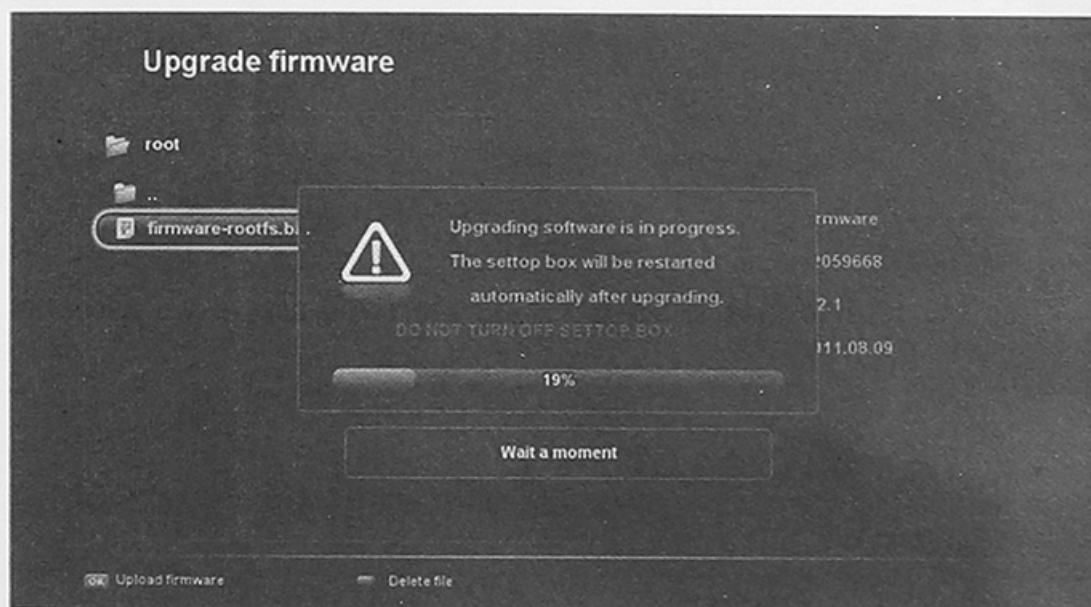
※ Receiver will reboot automatically when upgrade done.
   Check [SYSTEM SETTING] > [SYSTEM INFORMATION] to verify upgrade operation is done well.

5.2 Channel data

Back up channel data into USB memory or restore it from USB.

◆ Back up

Press GREEN button [Backup channel-data], and select YES on confirmation box then backup file will be created.

(CH-DATA******_01.DAT, ****** means year, month, date)
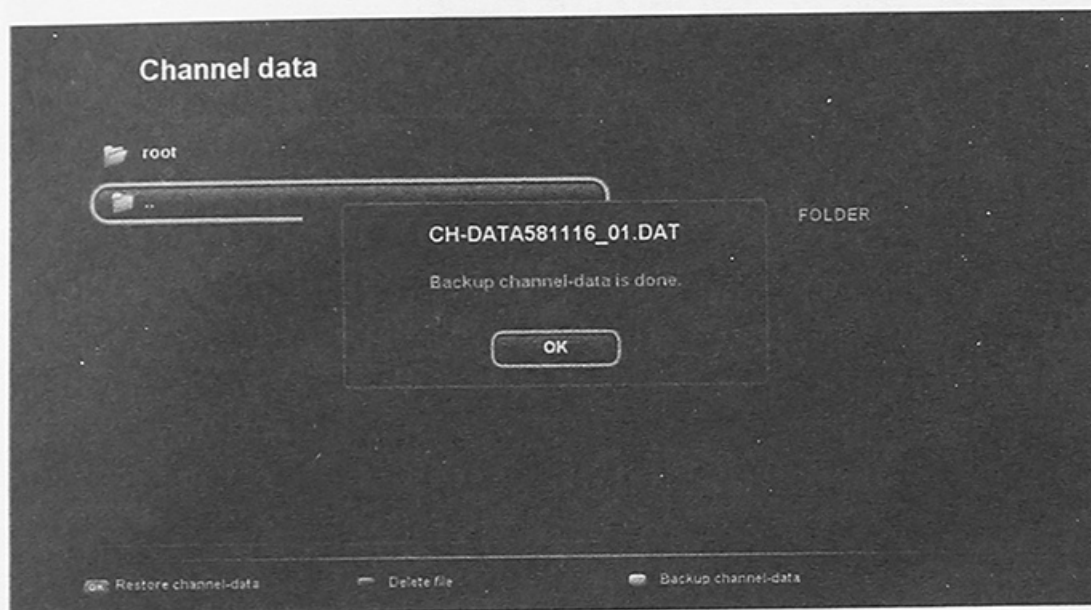
◆ Restore

Select channel data file by pressing OK button and select YES on confirmation box.

※ **Caution :** Receiver will reboot automatically

5.3 File browser

Browsing USB memory and delete files or folders

Select / unselect files or folders by pressing WHITE button then press RED button to delete.
Supported file system of USB device is FAT32.

6.1 Movie

Select movie file in USB manager and press OK to play.

File name being played is displayed upper left corner.
Control : Play, Pause, Prev, Next, Stop

MEDIA

6.2 Music

Select mp3 file in USB manager and press OK to play with visual player program.

As cursor move on mp3 file list, album art and tag information are displayed.
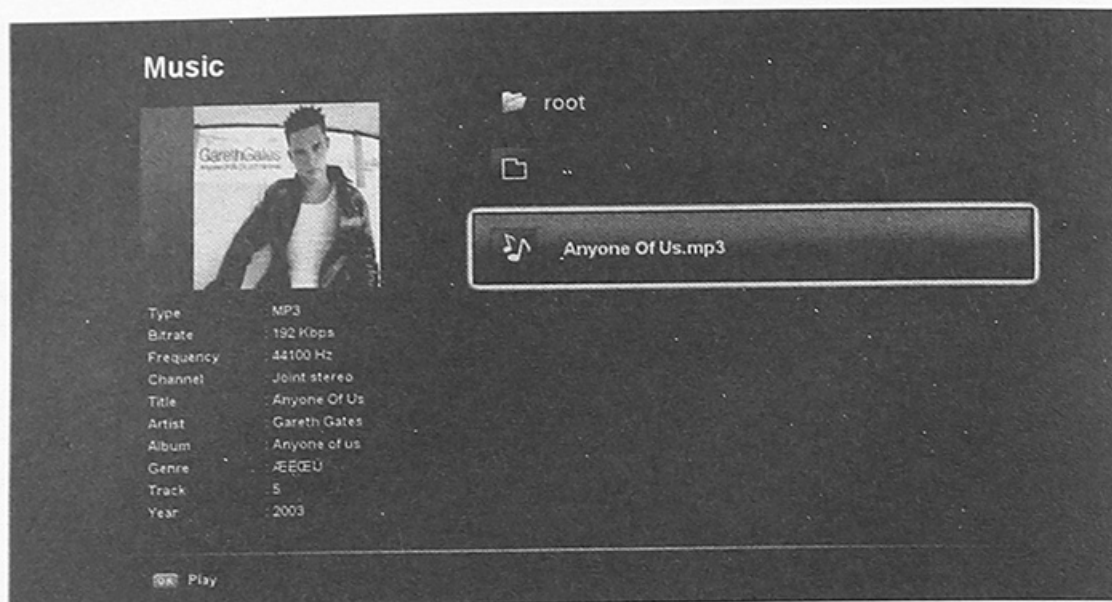
Press OK on selected mp3 file to play.
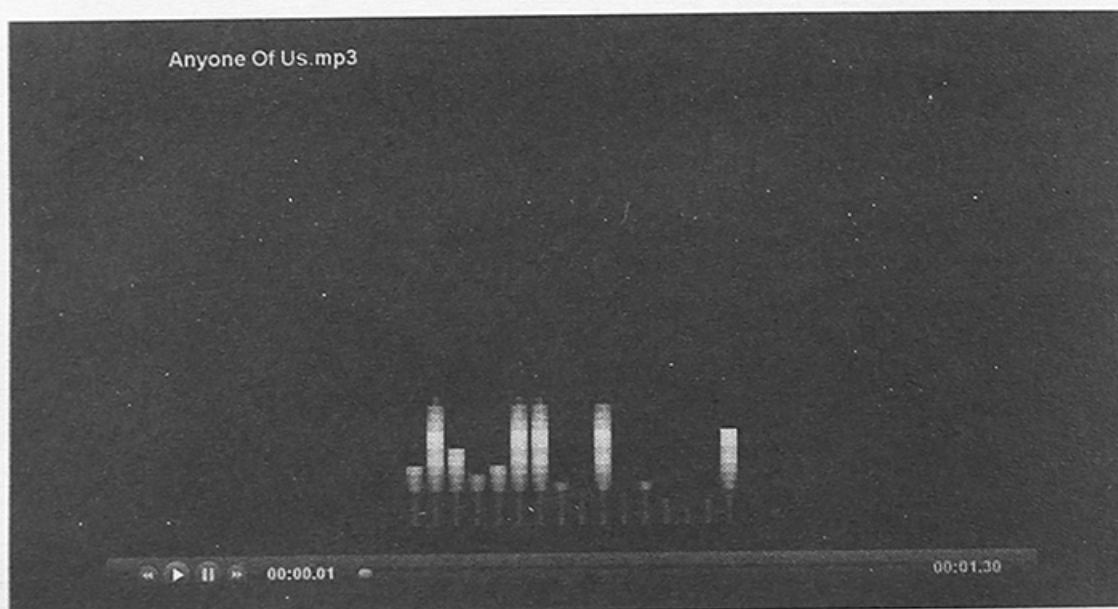
File name being played is displayed upper left corner.

Control : Play, Pause, Prev, Next, Stop

6.3 PVR (playback)

Select recorded file in file list and press OK to play.

As cursor move on movie file list, still image and tag information are displayed.

File name being played is displayed upper left corner.
Control : Play, Pause, Prev, Next, Stop
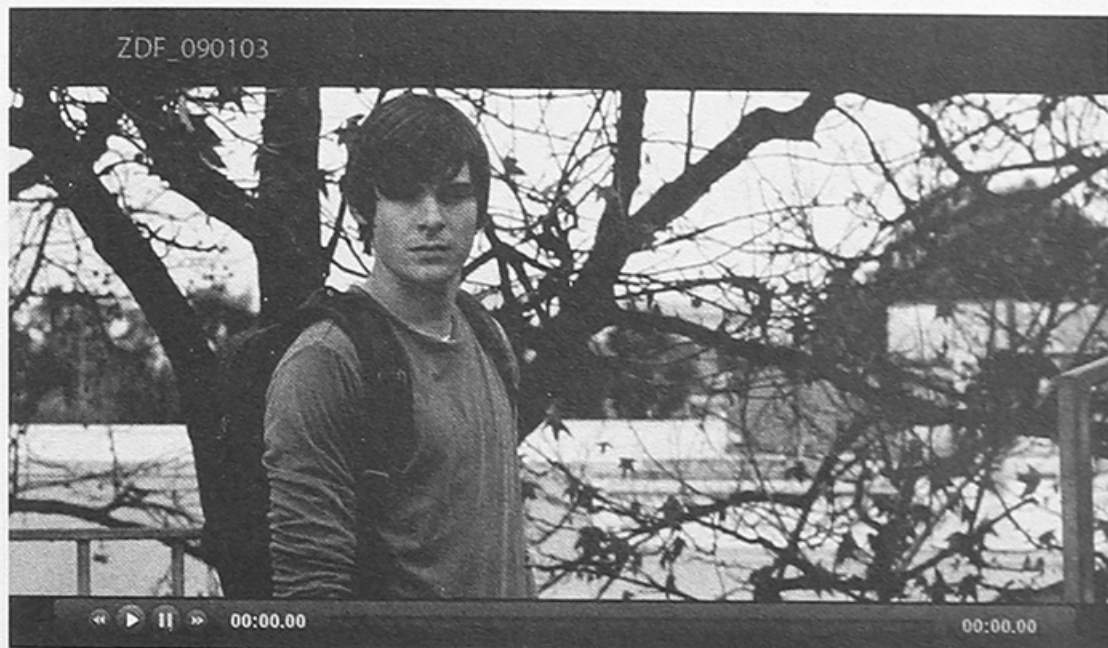
9.1 Electronic Program Guide

To display program guide (current and next program) for currently viewing channel, press [EPG] button on RCU then you will see below picture.
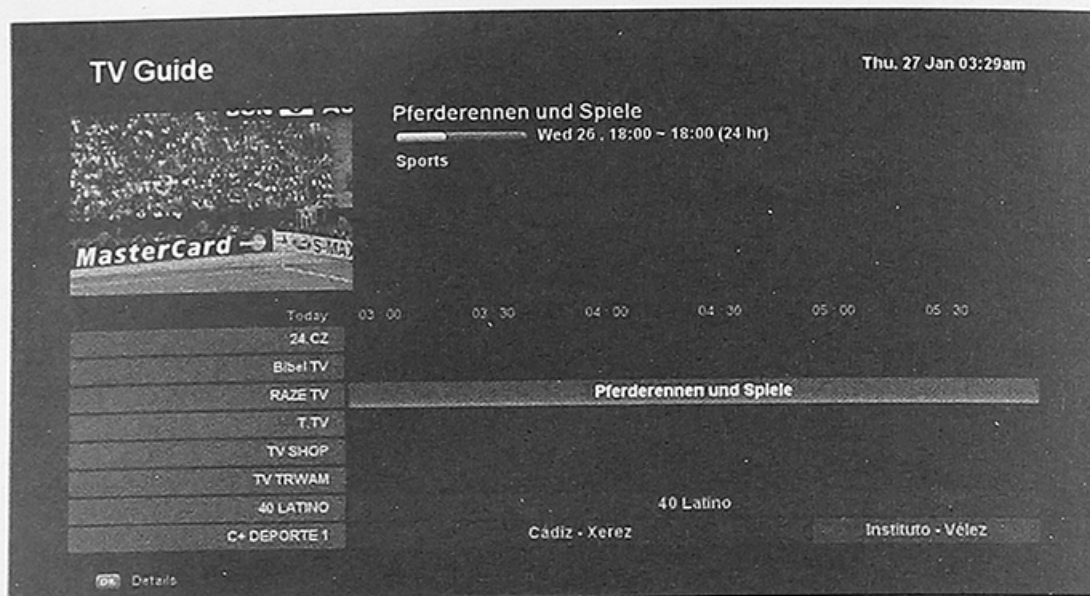
▲▼ Button : Change channel

◀▶ Button : Change time table

OK Button : Display full EPG
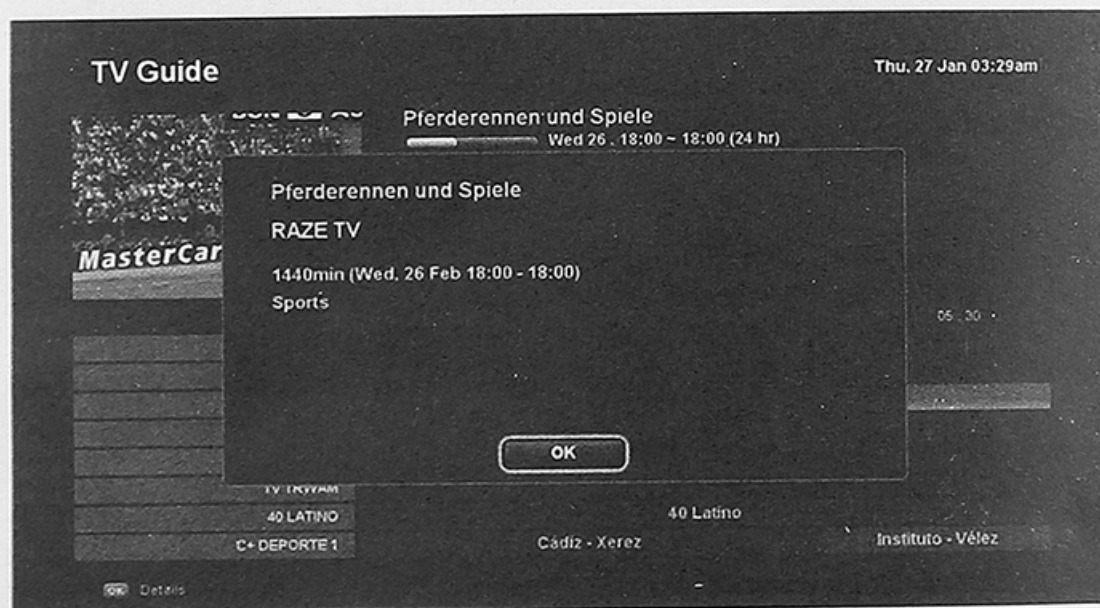
9.2 Channel list

Press OK button in live screen then channel list box will be available as below picture.
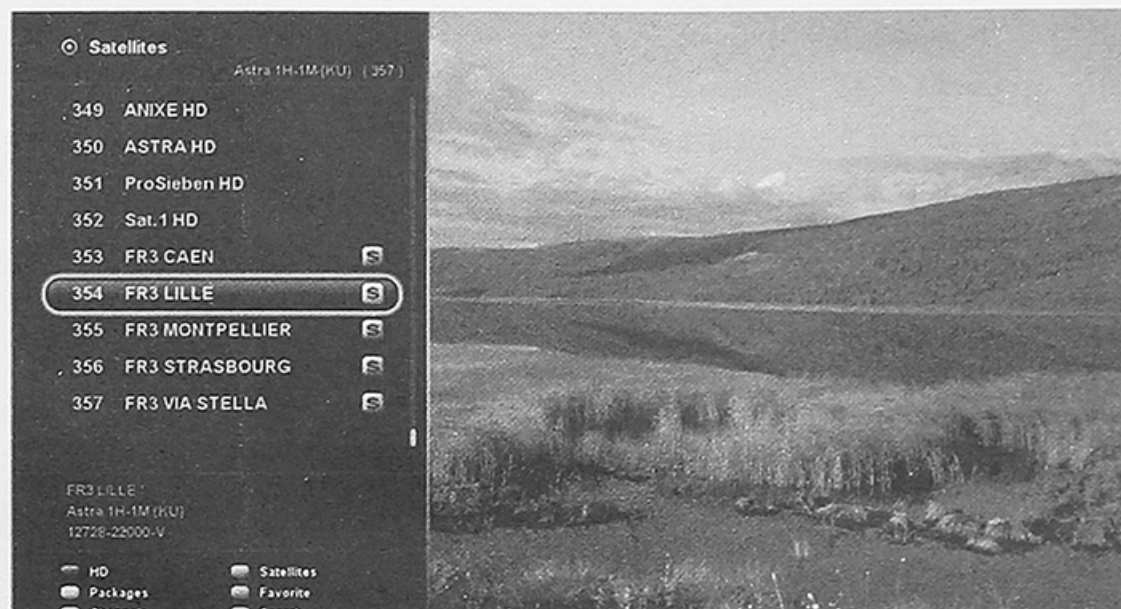
- ✓ TV/Rad – Switch TV channel list to Radio channel list, vice versa.
- ✓ HD – Display only HD channels.
- ✓ Package – Sorted list by package order
- ✓ Channels – Switch between ALL / FTA / Scramble channels
- ✓ Satellite – Sorted list by satellite order
- ✓ Favorite – Switch Favorite group
- ✓ Search – Find channel by entering name in screen keypad

9.3 Infobox

Press INFO button while you're in live screen then infobox will give you detailed information on watching channel.
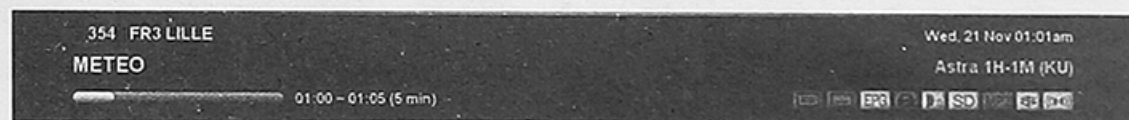
◆ Infobox icons description
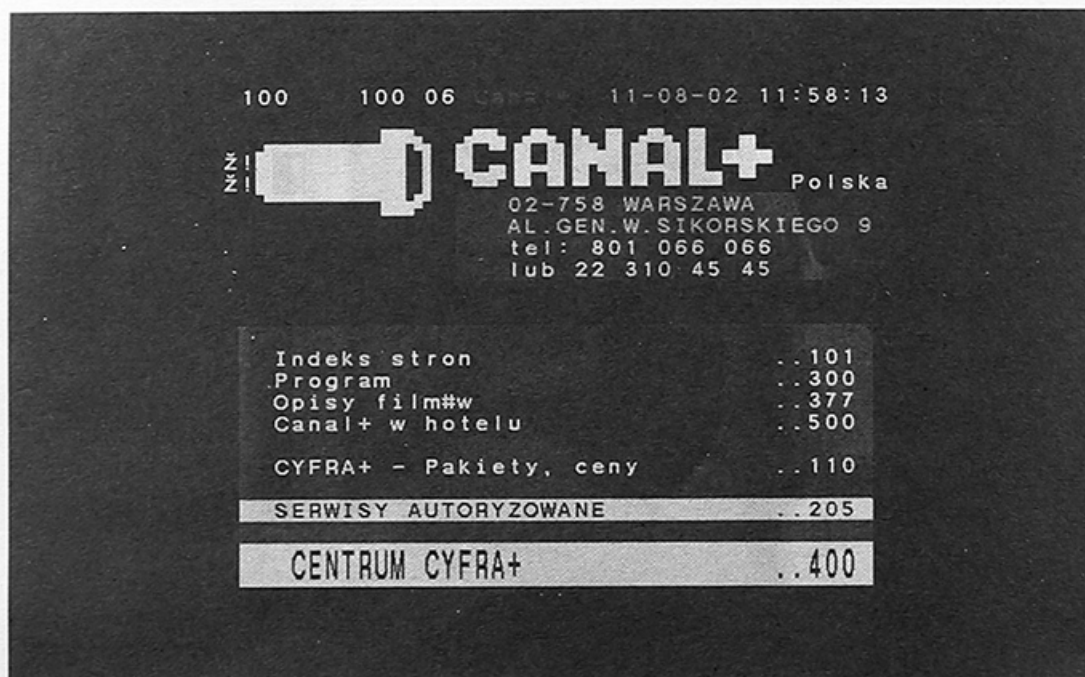
▭	Teletext
▭	Subtitle
EPG	Electronic Program Guide
🔒	Locked
🔊	Audio language
HD	High definition channel
AC3	AC-3 digital audio
$	Scrambled channel
(◖◗)	Audio mode

9.4 Teletext

Press T.Text button on RCU to invoke teletext information. This service is available only with the channel that serve teletext.

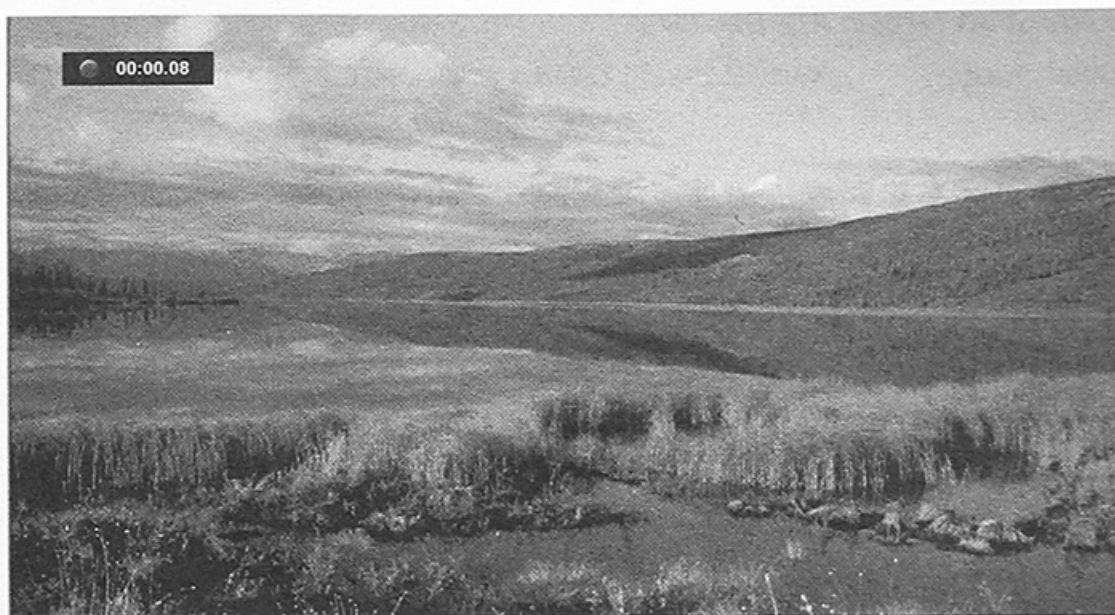You may need to enter PIN code if you set teletext lock option ON in [SECURITY] menu.

To browse detailed information on Teletext, enter numbers with RCU as seen on category screen.

9.5 Recording

To record current watching channel, press RECORD [●] button on RCU then recording will be immediately started.

Small message box on the upper left corner show recording time.

To stop recording, press STOP [■] button.

SPECIFICATIONS

Tuner & Decoder

Tuner	DVB-S/S2 support
Frequency range	950 ~ 2150 MHz
DISEqC	1.0 / 1.2 / USALS
LNB	13 / 18V, 22 KHz Tone, DiSeqC 1.2 support
Demodulation	QPSK, 8PSK, 16APSK, 32APSK
Symbol rate	1 ~ 45 MS/s 10 ~ 31 MS/s

MPEG Transport Stream A/V Decoding

Transport stream	MPEG-2 ISO/IEC 13818-1
Profile level	MPEG-2 MP@HL, MPEG-4 AVC, DivX
Audio decoding	MPEG-1 Layer1,2&3(MP3), MPEG-2 layer2, MPEG-2 AAC
Video resolution	1080i, 720p, 576p, 576i
Audio mode	Stereo L/R

Main system

Main CPU	32bit RISC CPU
Memory	DDR 256Mbyte
Flash Memory	16M byte

Front panel

Control buttons	Up, Down, Left, Right, Ok, Menu, Exit, Power
USB	1 X USB 2.0
Smartcard	1 slot Compliance to IS7816

A/V & Data interface

RCA A/V	CVBS, Audio L/R
S/PDIF	Digital Audio Output (Optical)
USB	USB 2.0 Host Support
HDMI	Support HDMI 1.3 (DVI mode support)
RS-232C	9 pin D-sub
RJ-45	Ethernet

Power Supply

Type	SMPS
Input range	AC 100V-240V~, 50/60 Hz
Power Consumption	Max 35W