

**Digital Terrestrial
Receiver
High Definition
Power Plus HD2000
User's Manual**

Table of contents

1	INTRODUCTION	4
2	MAIN FUNCTIONS AND FEATURES	4
3	THE REMOTE CONTROL	5
4	FRONT AND REAR PANEL.....	7
4.1	REAR PANEL	7
4.2	FRONT PANEL	7
5	INSTALLATION	8
5.1	CONNECTING THE RECEIVER	8
5.2	INSTALLATION GUIDE.....	9
6	DAILY USE	9
6.1	INFO. KEY	9
6.2	AUDIO KEY	10
6.3	SUB KEY	10
6.4	RES. KEY	10
6.5	ASPECT RATIO	11
6.6	TELETEXT	12
6.7	EPG	12
6.8	TV CHANNEL AND RADIO CHANNEL LIST.....	12
6.9	FAVOURITE CHANNEL.....	13
6.10	DVR FUNCTION	13
6.10.1	INSTANT RECORDING.....	13
6.10.2	EPG RECORDING.....	14
6.10.3	TIMER RECORDING	14
6.10.4	TIMESHIFT	14
6.10.5	PLAYBACK RECORDED PROGRAM.....	15
6.10.6	MULTIMEDIA PLAYER.....	15
6.10.7	FORMAT PORTABLE HARD DISK.....	16
7	MENU	16
7.1	MAIN MENU	16
8	UPDATE THE RECEIVER BY USB2.0 INTERFACE.....	17
8.1	COPY THE UPDATE FILE TO THE USB DRIVE FROM PC	17
8.2	UPDATE THE RECEIVER BY USB INTERFACE	17
9	SPECIFICATION	18

IMPORTANT SAFETY INSTRUCTIONS



TO REDUCE THE RISK OF ELECTRIC SHOCK. DO NOT REMOVE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



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



This symbol indicates important instructions accompanying the product.

1 INTRODUCTION

This user manual is intended to guide you through the operation for the HD DVB-T FTA High Definition Digital Terrestrial Receiver.

The password may be required to make changes in the advanced option. Default password is “000000”.

2 MAIN FUNCTIONS AND FEATURES

This product is a high performance and cost-effective HDTV Terrestrial receiver. It fully complies with DVB-T FTA receiver requirement specifications. It provides users with all digital terrestrial TV and radio signals being broadcast in Standard Definition or High Definition.

Functions

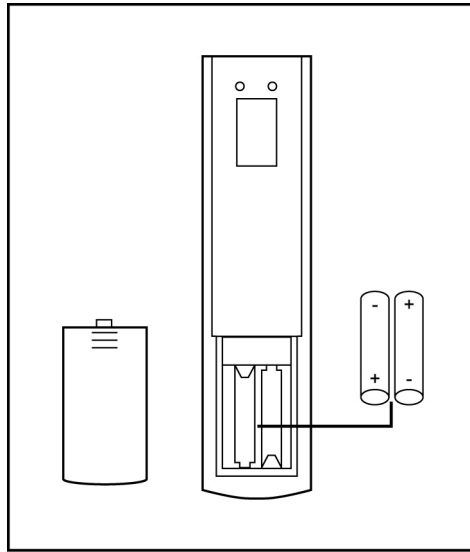
1. Fully compatible with DVB-T FTA digital standard
2. Fully compatible with MPEG-4 H.264/AVC High Definition Digital TV
3. Fully compatible with MPEG-2 High Definition and Standard Definition Output
4. Fully compatible with MPEG-1 Layer I & II, Dolby Digital Audio
5. VHF & UHF input and LOOP OUT
6. 1000 Channels capacity
7. Multi-bilingual OSD language , audio language and subtitle language supported
8. Fully support to Electronic Program Guide(EPG)
9. Support Auto search and Manual search
10. Parental control for channels
11. Plug and Play installation with an ease to use Menu System
12. S/PDIF Digital audio output interface.
13. Support 576i, 576P, 720P, 1080I , 1080P(50HZ)Video Resolution supported
14. Support 4:3 and 16:9 Aspect Ratio
15. DVB or EBU subtitle selected by the system based on availability on the network
16. Various channel editing function(Favorites, Move, Lock, Delete)
17. Support HDMI High Definition Multimedia Interface
18. Software upgrade via USB2.0 interface
19. High sensitivity, low Eb/No for receive Digital Television
20. USB 2.0 interface PVR and media player
21. Record digital television FTA program to a USB Flash Drive or an external USB portable hard disk and playback via USB2.0

3 THE REMOTE CONTROL

Photograph	Key	Function
	MUTE	Disable Audio output
	STANDBY	Standby/on
	0.....9	0-9 numeral buttons, for input of numbers or for selecting a TV channel
	SWAP	Recall last channel while watching digital TV or listening to radio.
	TV/ R	Press TV/R key to switch between TV program and Radio program.
	RED	Function key in different page.
	GREEN	Function key in different page.
	YELLOW	Function key in different page.
	BLUE	Function key in different page.
	MENU	Display menu, press again to exit current menu
	EXIT	Back to previous menu
	INFO.	Press INFO. Key to display the information bar during watch program.
	EPG	Press EPG key to display 7 days EPG information.
	UP / DOWN	Move selection up/down within menus and lists, Select next/previous channel
	LEFT / RIGHT	While watching a channel, the LEFT/RIGHT buttons decreases or increases the audio output volume. Within a menu, press the LEFT button to return to previous menu and the RIGHT button to next menu
	OK	Call up a program list for the current channel while watching digital/TV or listening to the radio. In a menu, this button serves to confirm a selection.
	PGUP/ PGDW	Page up/down in lists
	FAV	Display favorites channel
	PVR	Display DVR manager page
	REC	Press REC key to record the current program during watch TV program
	STOP	Press STOP key to stop recording program or stop program during watch PVR program.
	PLAY/ PAUSE	Playing or pause the program during watch PVR program
	PIC.	Press PIC. key to select the picture settings
	ASPECT	Press ASPECT key to select suitable aspect ratio of the video output
	TELETEXT	TELETEXT function key
	SUBTITLE	Switch between different subtitles
	AUDIO	Press AUDIO key to set the audio track and audio mode
	RES.	Switch resolutions of video output

Battery Installation

Insert the batteries while observing the correct (+) and (-) polarities as illustrated below:



About the batteries

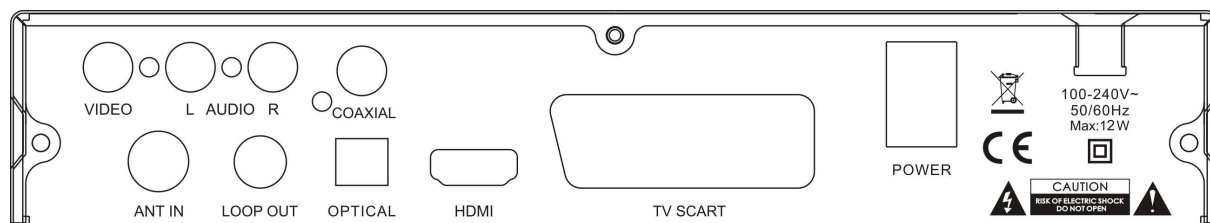
- If the remote control unit fails to work even when it is operated near the set top box, please replace the batteries.
- Use size UM-4 (AAA) batteries.
- Do not use rechargeable (Ni-Cd) batteries.
- Do not attempt to recharge, short circuit, disassemble heat or throw the batteries into the fire.
- Do not drop, step on or cause any impact to the remote control unit. This may damage it, resulting in malfunction.
- Do not mix old and new batteries.
- If the remote control unit is not going to be used for a long time, remove the batteries.

Caution

Keep batteries out of children's reach. If batteries are swallowed, contact a physician immediately.

4 FRONT AND REAR PANEL

4.1 REAR PANEL



(Pictures & Descriptions are for reference only, subject to our actual exiting products.)

Panel	
ANT IN	Digital Terrestrial TV Broadcast signal input
Loop Out	Output of antenna signal
Coaxial / Optical	Digital audio output
HDMI	Digital HDTV video output with HDCP
TV SCART	TV SCART Video signal output
Video	Composite video signal output
Audio L/R	Analogue Audio output
AC	AC 100-240V Power input

4.2 FRONT PANEL

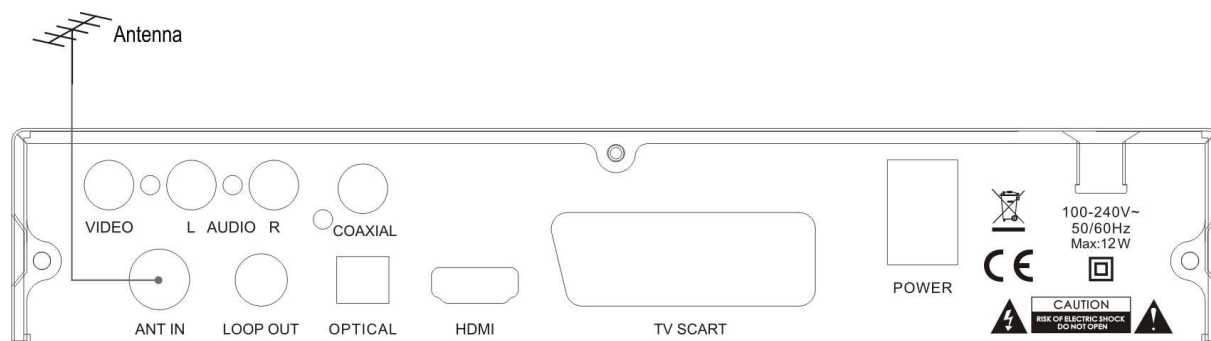
The red LED is a power indicator and the green LED is a signal indication.
User can access those function keys as follow: STANDBY, MENU, OK, CH+, CH-.



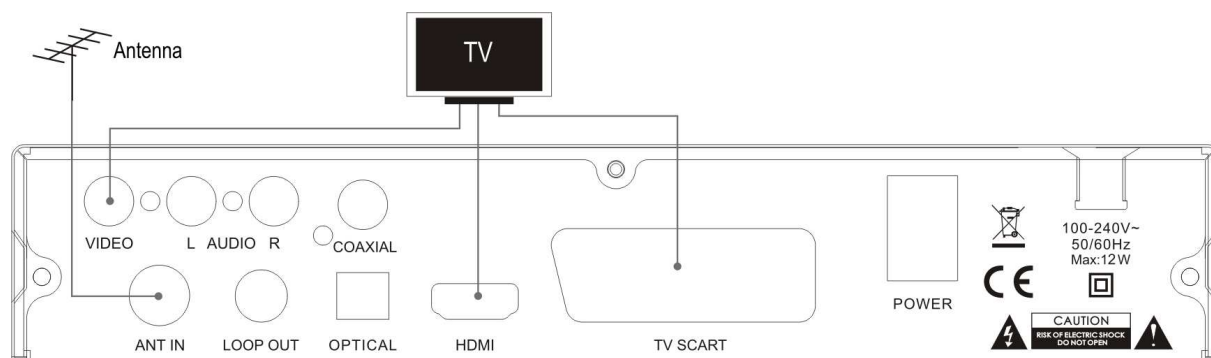
5 INSTALLATION

5.1 CONNECTING THE RECEIVER

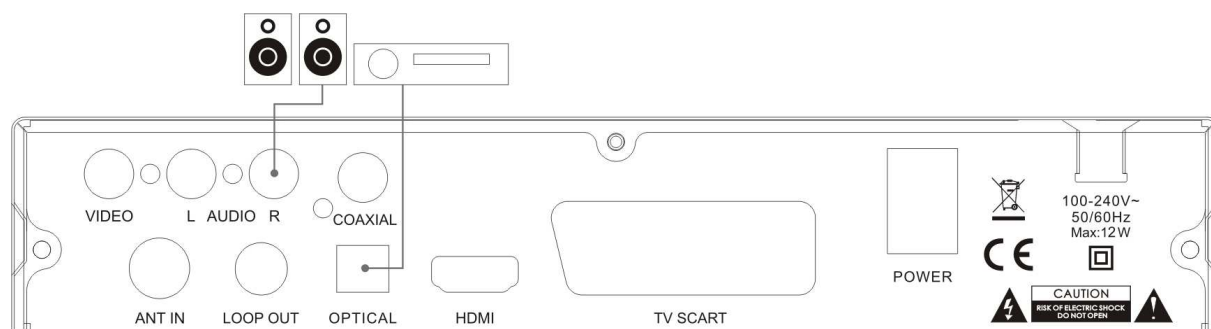
Connect the antenna to the receiver



Connect the receiver to your TV set using the Composite (Yellow socket for Video, White and Red sockets for Audio, AV Cable Supplied with receiver). SCART or HDMI connections.(Cable Sold Separately)



Connect the receiver to an amplifier using either SPDIF Digital Audio Output or the Analogue Audio Output(Red sockets for Audio, AV Cable Supplied with receiver).



5.2 INSTALLATION GUIDE

Follow the installation guide to enjoy your high definition digital TV world. Follow the help information at the bottom of the window to select OSD language and suitable country (Region) and start channel search .

If no channel is found during the channel searching process, the user may adjust the antenna position to obtain optimal TV signal.



6 DAILY USE

6.1 INFO. KEY

Press "INFO" key to display information bar during while viewing TV programs. Press the "INFO." key twice to display detailed program information while viewing TV programs..



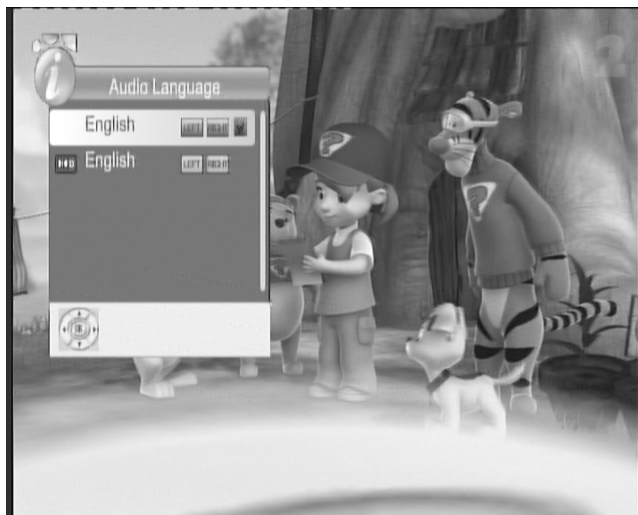
Base information bar



Further more information bar.

6.2 AUDIO KEY

The program may have multilingual audio language and the audio broadcast on different audio mode such as Left, Right. All the available audio languages will display on the audio track windows while you press AUDIO key. The screenshot is illustrated this. If there is no audio output after you select the audio language, it indicates that there is no audio on the current audio mode, so you have to select preferable audio mode.



6.3 SUB KEY

The program may have multilingual subtitle information. All available subtitle languages will be displayed in the subtitle information window when you press the SUBTITLE key. The screenshot is illustrates this. Follow the help information on the subtitle windows to select preferred subtitle.

- Press SUB key to display all the subtitle languages while watching TV.
- Press UP/DOWN key to move and Press OK key to select the subtitle language.
- Press SUB or EXIT key to exit the subtitle language menu.

Note: if you select the Subtitle Language to OFF, the subtitle language will disappear



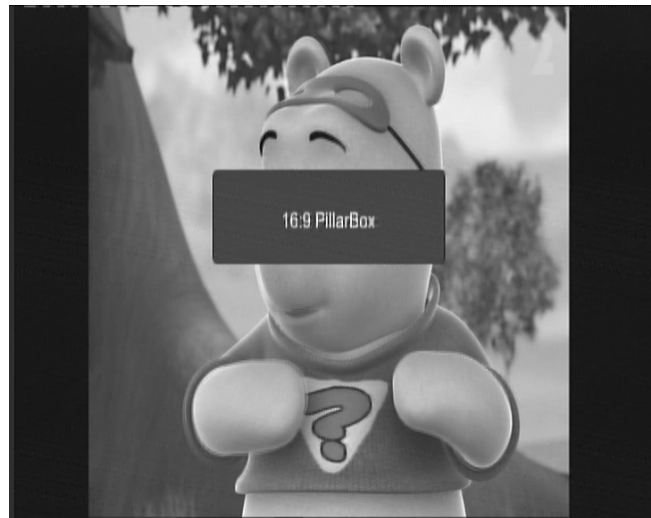
6.4 RES. KEY

The video programs may have different resolutions 720×576i/p, 1280×720p and 1920 × 1080i and 1920 × 1080p. Normally, the standard definition programs have 720×576i and high definition programs have 1280 × 720p and 1920×1080i and 1920×1080p. The screenshot is illustrated this. In order to get excellent quality on the TV screen, press RES key on the remote control to display the resolution control window. The screenshot is illustrated this. In the resolution window you will find 576i, 576p, 720p, 1080i and 1080p.



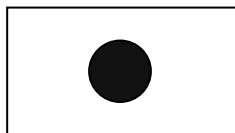
6.5 ASPECT RATIO

The aspect ratio of the video can be 4:3 (also know as Anamorphic Image) or 16:9 (also know as widescreen TV). In order to get excellent quality on the TV set, press the ASPECT key to set suitable aspect ratio. The screenshot of the aspect ratio window is illustrated.



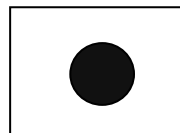
Here is a description of the aspect ratio conversion mode chosen, the received stream and the user's television set aspect ratios.

16:9 Stream on a 16:9 TV



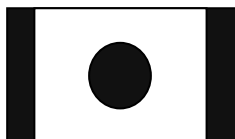
Whatever the mode

4:3 Stream on a 4:3 TV

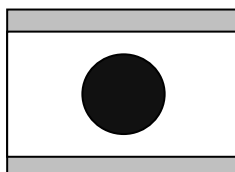


Whatever the mode

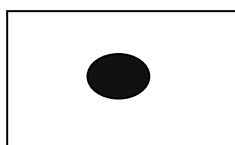
4:3 Stream on a 16:9 TV



Letter-box



Pan and scan

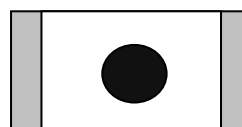


Full Screen

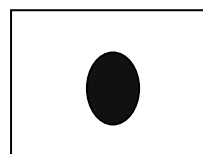
16:9 Stream on a 4:3 TV





Letter-box



Pan and scan



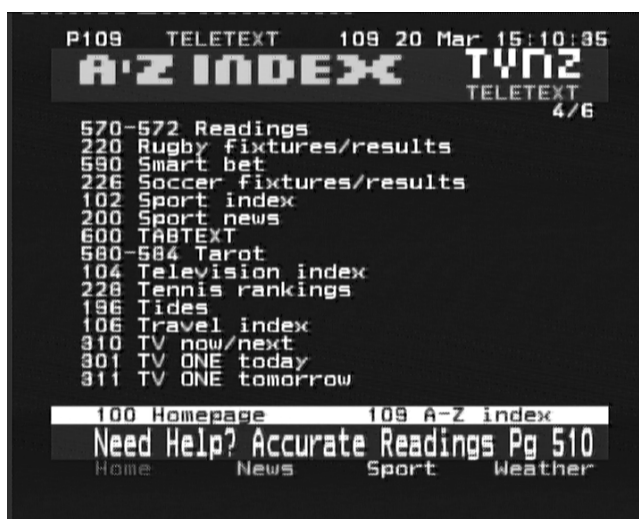
Full Screen

 Display black bars
 Not display area of the stream

6.6 TELETEXT

Press TELETEXT key to launch the TELETEXT window during any TV channels. The entire TELETEXT with different language will display on the TELETEXT window.

Note: Teletext services may not be available in some areas.

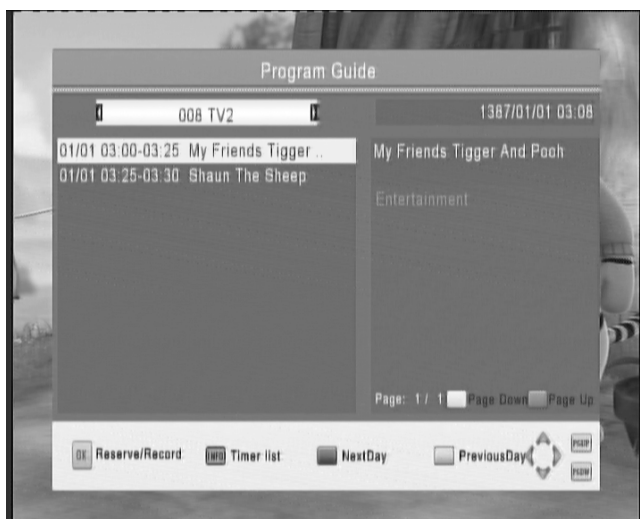


6.7 EPG

Press EPG key to display the weekly Electronic Program Guide. This displays a 7 Day Electronic Program Guide for all programs being broadcast from all broadcasters.

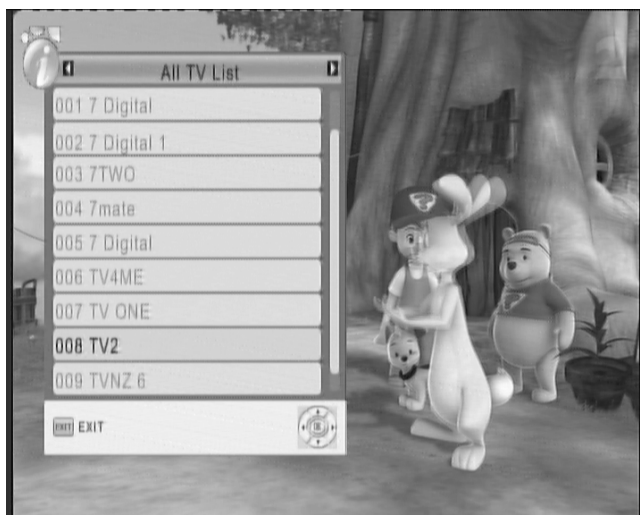
1. Top of information is a current date.
2. Press UP/DOWN key to move to the service.
3. Press OK key to select current service to Schedule view or recording;
4. Press INFO key to display Schedule scheme.
5. Press Green key to display the current Channel previous Day from weekly EPG information.
6. Press RED key to display the current Channel Next Day information from weekly EPG.

Press EXIT key to exit the EPG Menu.



6.8 TV CHANNEL AND RADIO CHANNEL LIST

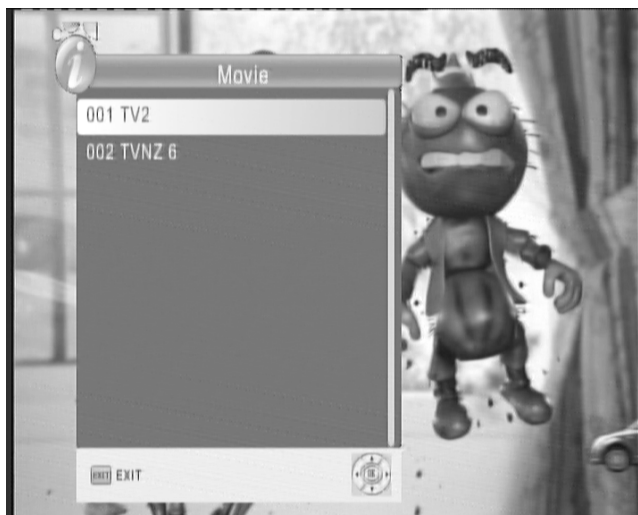
Press OK key to display a list of available TV and Radio channels. Follow the help information at the bottom of the window to select preference channel.



6.9 FAVOURITE CHANNEL

You can add preferred channels to a favourite's channel list on the channel edit window. Press FAV key to launch your favorite's channel list.

- i. Press the FAV key to display the favourite list.
- ii. Press the UP/DOWN key to select the preferred list you want and press the OK key.
- iii. Press the LEFT/RIGHT key to switch the favourite type
- iv. Press the EXIT key to close the favourite list.



6.10 PVR FUNCTION

By connecting an external USB disk or USB Hard Drive (sold separately) you can Record, Timeshift and Playback TV programs. There are 3 types of recording options. They are:

6.10.1 Instant recording

Press the REC. key to start an instant recording of the current TV program being viewed. The recording symbol will be displayed on the top left hand corner of the screen.

Press INFO. key to get further more information of instant recording. Press STOP key to stop instant recording.



6.10.2 EPG recording

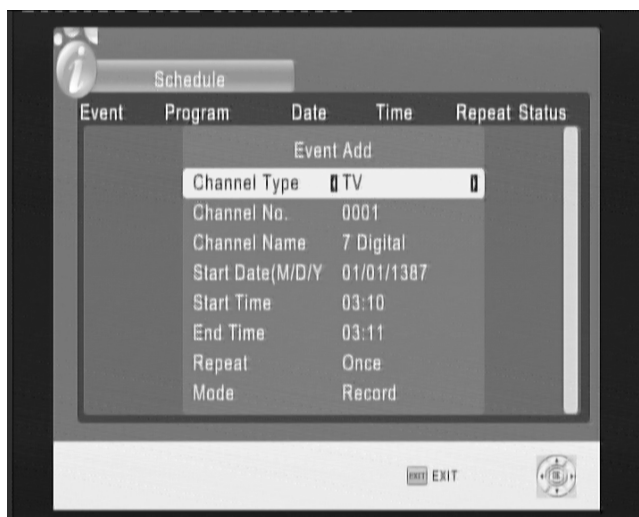
You will never miss your favourite program again by selecting programs to be recorded via the EPG.

Press the EPG key to display the Electronic Program Guide. Highlight the program you wish to record using the left and right arrow keys.

Press OK key on the selected program to set the EPG recording.

You can edit or delete the scheduled EPG recording event in the schedule window which is now displayed.

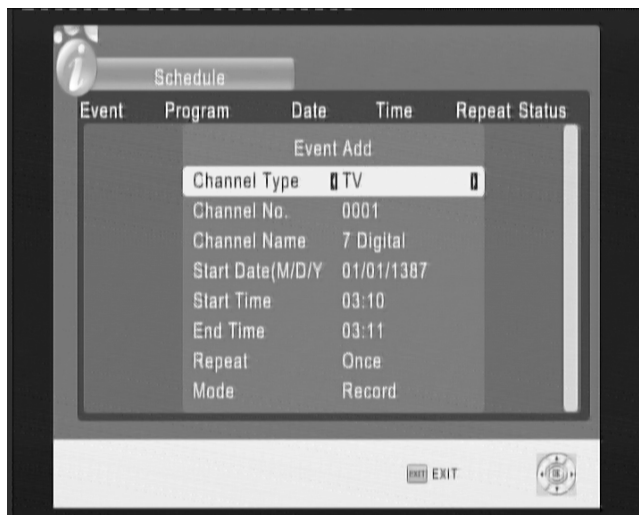
1. Press LEFT/RIGHT key to choose the channel.
2. Press LEFT/RIGHT key to choose the Schedule Mode.
3. Press "0...9" number key on the remote control to set the Event time.
4. Press OK key to confirm.
5. Press EXIT key to exit.



6.10.3 Timer recording

You can set a manual timer recording to record at specific time.

Press the EPG key and press the INFO key. This will display the Schedule window. In this menu select the parameters of the time frame to be recorded. Channel Type, Channel No., Start Time and End time, Repeat and Mode.



6.10.4 Timeshift

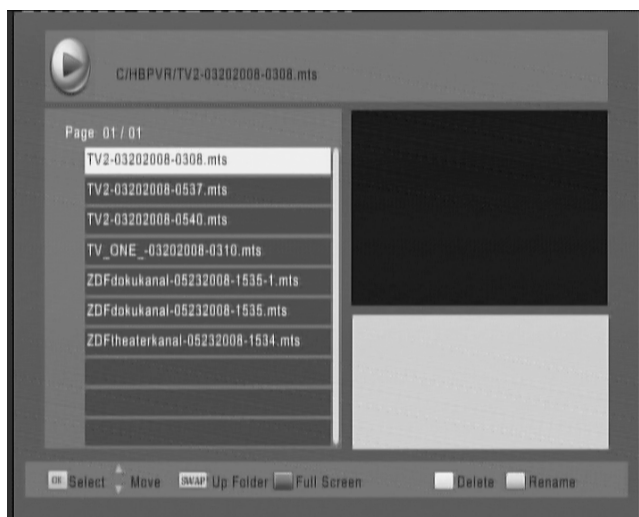
Press the REC key to start Recording first, then Press Play key to start timeshift function. In the function of timeshift you can Press the YELLOW key to FF. or Press the GREEN key to REW .It support the speed X2、 X4、 X8、 X16、 X32, and you can Press the pause key to pause the program during watch program You can Press the STOP key to stop the timeshift function, and you must press the STOP key again to stop the Recording



6.10.5 Playback recorded program

Press PVR key to display the recorded program. Follow the help information to preview, playback the recorded program and edit the recorded program.

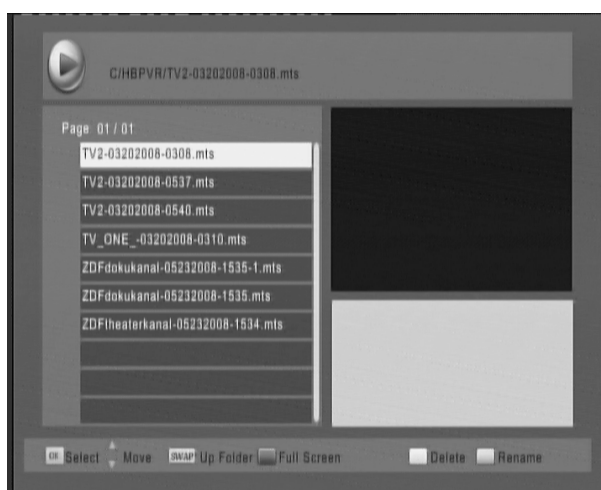
1. Press UP/DOWN key on the remote control to move the cursor in the recorded program list and press OK key to play highlighted file.
2. Press Swap key to return to upper folder/menu;
3. Press RED key to switch between Preview/Full screen;
4. Press GREEN key to Rename the current file while the file is not playing;
5. Delete highlight the file then press the Yellow key while the files is not playing.



6.10.6 Multimedia player

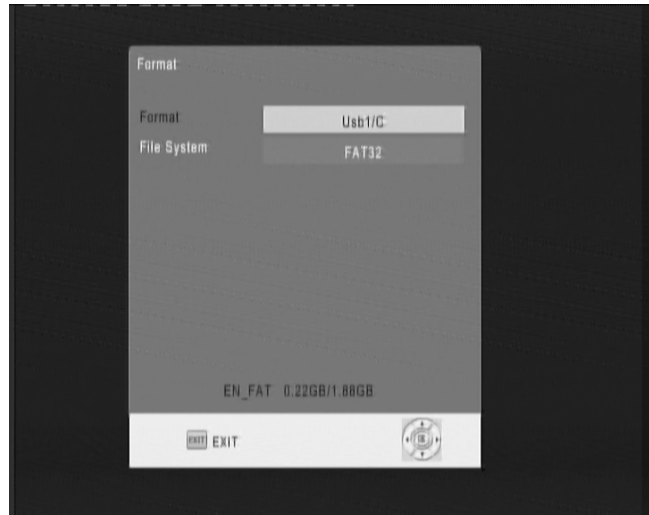
A multimedia player feature also has been integrated on the receiver. Press the MENU key and select USB using the UP/DOWN arrow keys. Press the OK key and select Multimedia to display the multimedia player window. In this window you have a choice of MUSIC, PHOTO, MOVIE AND PVR. Select your preference using the UP and Down arrow keys and press the OK key. Supported files are listed below. NTFS, FAT32 file systems are supported. PVR key to display multimedia player window. You could show your preference photo, playing music and movie on multimedia player. Known supported files are listed below. NTFS, FAT32 file system could be supported at the moment.

Player	Supported file
Photo	JPEG, BMP, PNG
Music	*.wma, *.mp3, *.m4a, *.aac
Movie	*.avi, *.mpg, *.dat, *.vob, *.div, *.mov, *.mkv, *.mjpeg, *.ts, *.trp, motion jpeg



6.10.7 Format portable hard disk

Formatting of a hard disk function is also available. Formatting your hard disk will delete all data on the hard disk. It is strongly recommended to backup all the data on the hard disk prior to formatting.



7 MENU

7.1 MAIN MENU

Most function is available on main menu. Follow the operation help information on the bottom of the menu to modify preference option. A password will be required when you attempting to modify the settings. Press note the Default password is "000000".



8 UPDATE THE RECEIVER BY USB2.0 INTERFACE

8.1 COPY THE UPDATE FILE TO THE USB DRIVE FROM PC

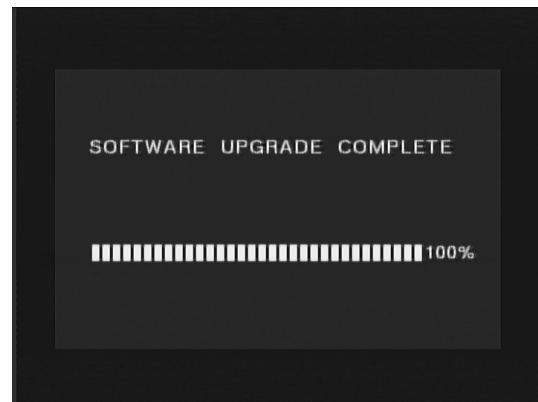
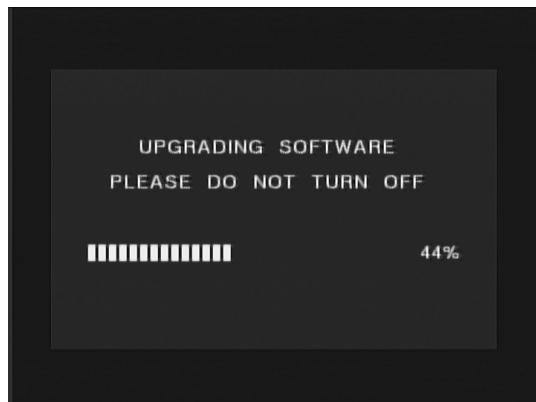
1. Please visit our website or contact our customer service to obtain the latest software for updating your receiver.
2. Plug the USB drive to the PC and backup the entire data of the USB drive. Right click the USB drive and select Format item. Format the USB drive as FAT32 file system.
3. Copy the update file that name , for example "Flash.bin" to the root of the USB drive. Then remove the USB drive from the PC.

Warning: The USB interface is for software upgrade of the Receiver only using a USB Flash Drive with FAT32 file system format. The USB interface could not support the USB Flash drive that with U3 PRO System. Never connect a portable hard disk to the USB interface of the Receiver.

8.2 UPDATE THE RECEIVER BY USB INTERFACE

1. Plug the USB drive that with the update file to the USB interface of the receiver.
2. Go to main menu and press "666666" to start upgrade process. While the upgrade progress showing 100% and update finish, remove the USB flash drive and power on the receiver again.
3. Please set the receiver to the factory settings after reboot the receiver

NOTE: Please do not remove the USB drive from the receiver and power off the receiver during upgrading process. Otherwise the receiver may not work properly.



9 SPECIFICATION

Tuner	
Input Connector	IEC 16902. Female
Input Frequency Range	VHF&UHF
Num of RF Inputs	1
Input impedance	75 ohm
RF output Connector	(bypass)IEC 169-2 Male
Loop through	47-862MHz

Demodulation	
Standard	ETSI EN300 744
Guard interval Modes	1/32,1/16,1/8 Active Symbol duration
FEC Modes Rate	1/2,2/3,3/4,5/6,7/8
Carriers/Constellation	All modes supported including non hierarchical
Demodulation	COFDM(QPSK/QAM16/QAM64) 2K and 8K
Network	SFN
Channel bandwidth	7MHz &8MHz wide channel

System Resources	
SDRAM memory	64 MB DDR2 SDRAM
FLASH memory	4 MB NOR FLASH
Display Panels	7 SEGMENTS LED
Graphic resolution	ARGB8888

Video Decoder	
Standard	ISO/IEC 13818-2 and ISO/IEC 14496-10
Transport stream	ISO/IEC 13818-1
Video decoding	MPEG-2 SD/HD (MP@ML and MP@HL), MPEG-4 H.264/AVC SD/HD JPEG,BMP,PNG, Motion JPEG AVI, VOB, MOV, MKV
Aspect ratio	4:3, 16:9

Audio Decoder	
Standard	ISO/IEC13818-3 TR1011154
Audio decoding	MPEG-1 and MPEG-2 Layer I & II, Dolby Digital Audio, E-AC3,WMA and HE-AAC Digital Audio
Dolby Digital (AC-3)	Stereo down-mixing to analog and digital audio outputs (including HDMI). For digital outputs, L-PCM stereo encoding is provided
Sample rate	32 kHz, 22.1 kHz, 44.1KHz,48 kHz

Subtitles & Teletext	
Subtitle	DVB Subtitle
TELETEXT	EBU Teletext

Rear Panel	
ANT IN	Digital Terrestrial TV Broadcast signal input
Loop Out	Output of antenna signal
Coaxial / Optical	Digital audio output
HDMI	Digital HDTV video output with HDCP
TV SCART	TV SCART Video signal output
Video	Composite video signal output
Audio L/R	Analogue Audio output
AC	AC 100-240V Power input

Front Panel	
Bi-colored LED	Red/Green to indicate the various states of the STB
7- segments LED	To display the channel number or /and other information
USB	USB 2.0
Keys	STANDBY, MENU, OK, CH+, CH-.

Accessories	
Remote control unit	IR(36Hz)RC3/ other on request (38kHz)NEC
Batteries	2 xAAA
User Manual	1 in English
RCA cable	1

Power	
AC input range	100-240v
Power consumption	<8W WITHOUT PVR
Standby consumption	<1W (without LED display)

Physical	
Operating Temperature	+5 ~ 45 °C
Storage Temperature	-10 ~ +70 °C
Size (L x W x H) (mm)	220*115*40mm
Size packaging	225*225*60mm
Weight	< 1kgs