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 CAUTION

 RISK ELECTRIC SHOCK Do NOT OPEN

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

 CAUTION: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE

 Warning!

 Please do not insert metal or alien substance into the slots for the Modules and Cards.

 In doing so can cause damage to the PVR and reduce its life span.

WARNING Warning WARNING Warning WARNING

Please read the f	ollowing recommended safety precautions carefully for your safety.
MAINS SUPPLY :	90-250V AC 50/60 Hz.
OVERLOADING	Do not overload wall outlets, extension cords or adapters as these can result in fire or electrical shock.
LIQUIDS :	Keep liquids away from the PVR.
	The apparatus shall not be exposed to dripping or splashing and that no
	objects filled with liquids, such as vases, shall be placed on the apparatus.
SMALL OBJECTS	S : Coins or other small objects must be kept away from the PVR as they can fall through the ventilation slots of the PVR and cause serious damage.
CLEANING :	Disconnect the PVR from the wall socket before cleaning it. Use a dry cloth lightly dampened(no solvents) to clean the exterior of the PVR.
VENTILATION :	Do not block the decoder's ventilation slots. Ensure that a free airflow is maintained around the PVR. Never stand the PVR on soft furnishings or carpets. Do not use or store the PVR where it is exposed to direct sunlight or near a heater. Never stack other electronic equipment on top of the PVR.
ATTACHMENTS	: Do not use any attachments that are not recommended as these may cause hazards or damage the equipment.
CONNECTION TO	O THE SATELLITE DISH LNB : Disconnect the PVR from the mains before connecting or disconnecting the cable from the satellite dish. Failure to do so can damage the LNB.
SERVICING :	Do not attempt to service this product by yourself. Refer all serving to qualified service agents.
LIGHTNING :	It is recommended that the PVR should remain connected at all times to the mains supply and satellite dish (except when working on the LNB). However, the manufacturer's instructions for safeguarding other equipment connected to the PVR, i, e, TV set, must be followed during lightning storms. LNB and the modem telephone line are essential.
EARTHING :	The LNB cable must be earthed to the system earth for the satellite dish.
LOCATION :	Locate the PVR indoor place properly to prevent lightening, raining and direct sunlight.

INTRODUCTION

Thank you for purchasing the Personal Video Recorder (PVR). This PVR is fully compliant with the international DVB standard and thus transmits digital images, sounds, information guides and teletext directly to your TV through the satellite. Now you can comfortably see and receive digitally transmitted music, news, movie and sports satellite broadcasts in your office or at your home. The PVR records and playback satellite broadcasts. You can enjoy interesting games embedded in PVR.

In the Channel Search section, both the automatic channel search method and the manual search mode are provided. Also it supports DiSEqC 1.2, enabling you to move your antenna in order to focus preferred satellite. You can save up to 3500 TV and 1500 Radio channels and work around with the Favorite, Lock, Delete, Move and Sort functions. The Menu is very modern and supports different languages. All functions can be carried out using the remote control and some of the functions can also be carried out using the front panel.

The PVR is easy to use and adaptable for future advances. Please be aware that new software may change the functions of the PVR.

If you have any difficulties concerning the operation of your PVR, please refer to the relevant section of this manual, including the 'Troubleshooting'. This Manual will provide you with useful information on using the PVR.

CONTENTS

Please ensure that the following items are included with the PVR.

- 1) Remote control unit
- 2) Batteries (size AAA)
- 3) User's Guide (this document)

FEATURES

Fully Compliant to DVB.

Common Interface for Viaccess, Irdeto, Cryptoworks, Nagravision, Conax and Mediaguard.

Antenna/LNB control

- 22KHz mode On/Off
- 0/12V mode selection
- Automatic FEC Detection
- DiSEqC 1.0 & 1.2 compatible

Satellite/Channel support

- 3500 TV channels, 1500 Radio channels storable

Video/Audio

- Automatic PAL/NTSC selection
- Multi-lingual Audio support
- Automatic channel search

OSD (On Screen Display) support

- 256 color support.
- Multi-lingual menu text support.
- GMT and Time Offset support
- 10 favorite channel groups support
- Page Up/Page Down available on your channel list
- PIG (Picture In Graphic) support

Recording and playback

- Time shifting playback
- Recording by EPG
- Delayed Recording
- Fast and Slow Playback
- Bookmark
- Repeated Playback for selected interval
- Capable of editing recorded services
- About 12-25 hours recording capacity with a 40GB HDD

2 Tuners

- 2 Tuners for zapping while recording.
- 2 LNB inputs
- 2 RF signal loop through
- Independent LNB control

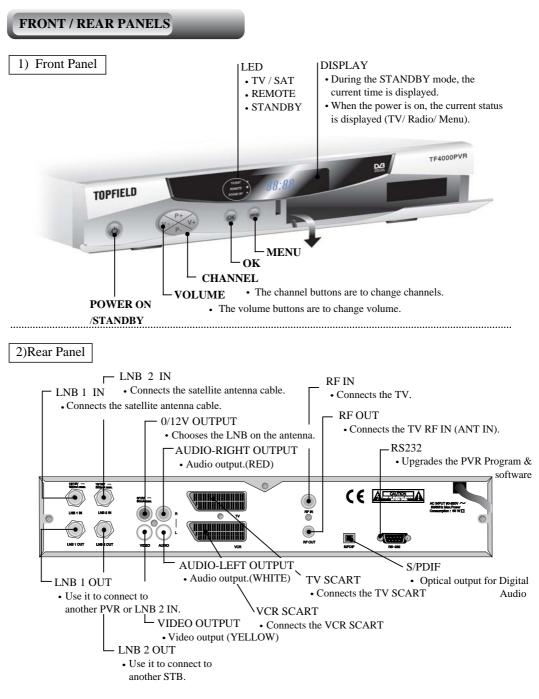
Teletext

- Software emulation mode with always VBI insertion mode on.

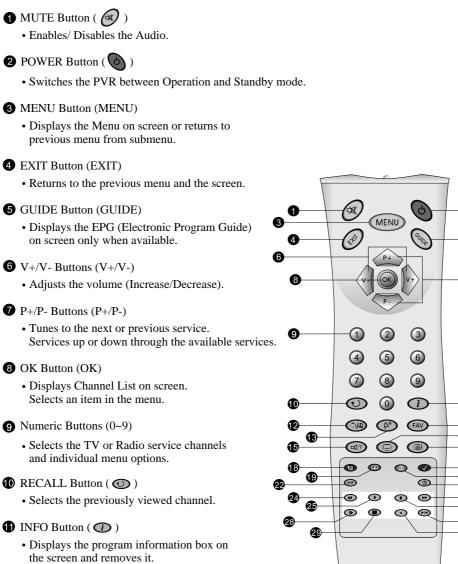
Embedded Conax(Embedded Conax model only)

Games are embedded.

S/PDIF output (Digital Audio Output)



REMOTE CONTROL UNIT (RCU)



🕑 TV/ Radio Button (🍘)

• Selects the TV/Radio mode.

A 6 Ð 16 610

0

🚯 TV/SAT Button (🕐) **23** SLEEP Button (**(**) • Changes the terrestrial TV and Satellite mode. • Displays sleep time. When sleep time, the power automatically turns to the OFF **1** FAV Button (FAV) mode and the PVR to the STANDBY mode. • Displays the favorite channel list. 24 @Button SOUND Button (💷) • Display the progress bar of time shifting or playback when no progress bar is displayed. Selects LEFT/RIGHT/MONO/STEREO Fast rewind when the progress bar is displayed. sound function. 2 💿 Button **(** SUBTITLE Button (**(**)) • Playback with normal speed. • Selects the subtitle language list for the current service. Button 26 · Pause TELETEXT Button () • Enables the teletext with software 27 Button emulation · Fast forward or fast motion playback. 18 👁 Button 28 💿 Button • Display recorded service list. • Slow motion playback. 19 Button 29 🗩 Button · Add or delete bookmark · Stop playback or recording. Button 20 30 💿 Button · Go to the previous bookmark Start recording 21 Button 31 🐵 Button • Display the recording or playback status. • Select the period for repeated playback. Starts instant playback if time shifting is enabled.

22 UHF Button (UHF)

• Displays and alters the UHF setting in menu.

INSTALLATION (Connection)

- First, connect both the satellite antenna and the TV line to the PVR and switch the power on.
- In this manual there are some of the most common ways to connect the equipment: TV, VCR and PVR.
- There are several ways of connecting the PVR to the existing Audio/TV system. We recommend one of the following setups.
- If you have problems with your connections and need help, contact your dealer or service provider.

1. Connection to TV, VCR and Hi-Fi

1-1) Connection to the TV with the SCART Cable.

Connect one end of the SCART cable to the TV SCART socket on the PVR and the other end to a SCART socket on the TV.



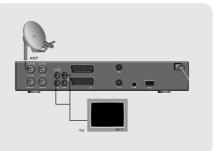
1-2) Connection to the VCR with the SCART Cable.

Connect one end of the SCART cable to the VCR SCART socket on the PVR and the other end to a SCART socket on the VCR.



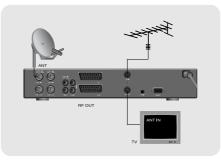
1-3) Connection to the TV with the CINCH Cable.

Connect one end (3 connectors) of the CINCH cable to the AUDIO-RIGHT (red), AUDIO-LEFT (white) and the VIDEO output (yellow) socket on the PVR. Connect the other end (3 connectors) to the AUDIO-RIGHT (red), AUDIO-LEFT (white) and the VIDEO input (yellow) socket on the TV or Hi-Fi.



1-4) Connection to the TV using the RF cable.

Connect a terrestrial antenna to RF IN socket on the PVR. Connect one end of the RF cable to the RF OUT socket on the PVR. Connect the other end to the ANT IN socket on the TV.



2. Connection to the Antenna.

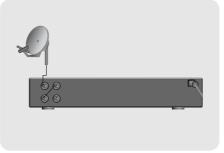
We recommend one of the following installation diagrams because of the LNB specifications for selecting RF signal band by DC voltage and 22Khz tone. If the PVR is installed with separated connection type, there is no restriction for zapping while recording.

2-1) Installing the PVR with two separated Antennas.

Installing the PVR with two separated Antennas. The **Connection Type** in **LNB setting** menu should be set to **Separated**.

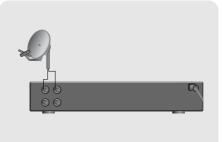


The **Connection Type** in **LNB setting** menu should be set to **Loop Through**. Tuner 1 and 2 can receive the RF signal of the same polarity and the same band.



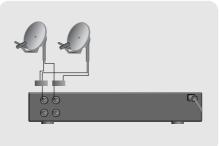
2-3) Installing the PVR with one dual LNB Antenna.

The **Connection Type** in **LNB setting** menu should be set to **Separated**.



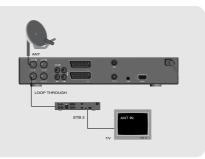
2-4) <u>Installing the PVR with two separated dual LNB</u> <u>Antennas and DiSEqC switches.</u>

The **Connection Type** in **LNB setting** menu should be set to **Separated**.



3. Connection to the other Satellite Receiver.

Connect the satellite cable to the LNB IN socket on the PVR. With other connector, connect the LNB OUT socket on the PVR and the LNB IN socket of the other PVR or STB.



GETTING STARTED

Press the Power button to operate the PVR from the STANDBY mode. Now, the Info Box will appear for a given time and disappear. By pressing the *i* button, the Info Box will remain on the screen. The display time of the Info Box is adjustable under the Installation menu of the Main menu.

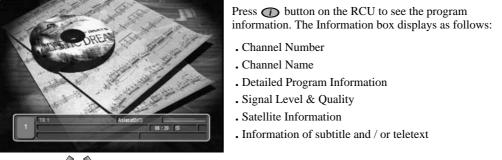
If the current broadcast has EPG (Electronic Program Guide) with it, press the button to see not only the current channel's but also other channel's EPG without any time constraints. Also, press button to reserve and save the current service and to watch the broadcast automatically when it starts.

IMPORTANT: Before taking charge of your new PVR, some important technical settings are essential.

- First, press the MENU (MENU) button on the RCU to make the Main Menu appear.
- Go to the LNB Setting menu under the Channel Search item of the Installation menu and press in button.
- The default PIN CODE is 0000.
- Choose the right parameters for Satellite Name, LNB Frequency, 22KHz, 12 V, DiSEqC 1.0, and Motorized System according to your LNB and satellite settings. If the right Satellite Name and LNB Frequency were not found in the list, call the dealer for satellite information.
- Then, press the MENU (MENU) button and go back to the Channel Search menu.
- Set the Search Mode to the Auto mode. (A Manual or Advanced Search can always be performed later on)
- Select the Start Search... item and press w button.
- The search procedure will take a while. Press while button when the searching process is over (100%) to confirm and save the new channel list.
- For further information, please refer to the LNB Setting item of the MENU OPERATIONS on this manual.

Function Guide

Information Box



By using $\langle \cdot |$, $| \cdot \rangle$ buttons, you can see the EPG of next event. To change volume level in this mode, press $\langle \cdot | , | \rangle$ buttons without no interval. Press *(***)** button once more, you can see the extended infomation of the current program.

EPG (Electronic Program Guide)

To remove info box, press 🕧 button once more.



To use currently showing TV, and Radio services as well as to use next program schedules, press 🛞 button on the remote control unit. If EPG is available on programs, you will see the detailed description of the programs, start/end time and programs schedules etc. (P_+) , (P_-) and $\langle \cdot |, | \cdot \rangle$ buttons will be used to move program and

to see next program schedules. The or button makes the reservation for the next program. (i) button shows extended information of the current program. Detuction will change the contents of EPG between TV and Radio services.

Subtitle



You can choose a language of subtitle using button on the RCU.

If a broadcaster provides subtitles, you can see symbol in the Information Box.

Teletext

If a broadcaster supports teletext, you can see \equiv symbol in the Information Box. There are VBI insertion mode and software emulation mode in teletext.

In the VBI insertion mode, which is always on, you can watch the teletext with your TV using the RCU of your TV. To watch teletext with VBI insertion, your TV must support teletext.

In the software emulation mode, you can watch the teletext even though your TV does not support teletext. You can watch the teletext using the RCU of PVR.

Press Teletext ((\blacksquare)) button to watch the teletext with software emulation mode. Press Teletext (\blacksquare)) button or EXIT(\checkmark)) button to escape from teletext.

Soundtrack



You can choose a language of soundtrack using button on the RCU when a broadcaster supports various languages of soundtrack.

Also, it is possible to choose a mode among Stereo, Mono, Left and Right using the $\langle \cdot \rangle$, $\langle \cdot \rangle$ buttons on the RCU.

MENU OPERATIONS

Now this chapter assumes that the PVR system has been installed correctly, meaning:

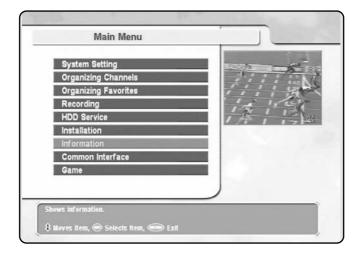
* The satellite dish for the PVR has been installed, connected to the PVR and correctly adjusted to the proper satellite.

* The PVR is connected to the TV.

* The RCU has batteries and ready to control the PVR.

If the PVR has not been installed or connected properly, please refer to the INSTALLATION (connection) menu on this manual.

Many of the functions of the PVR are available from the Main Menu. Press the (MENU) button to open it.



I. SYSTEM SETTING

I-1 TIME SETTING

Various time modes can be set, such as the current local time, the Power On/Off time and the Sleep Time. The exact local present time can be adjusted by using the GMT, the Time Offset and the Mode sub menus.

PLEASE NOTE: Configure the Local Time **before adjusting the** Wakeup Time, Power Off Time **or the** Sleep Time.

Local Time Setting	@ 22:01
Timer	Off
Wakeup Time	00:00
Wakeup channel	22
	HN Radio3
Power Off Time	00:00
Sleep Time	Disable
	1.

A. Local Time Setting



Press button at Local Time Setting item in the Time Setting menu to open the Local Time Setting menu. Inside the Local Time Setting menu, there are 4 sub menus: Mode, Local Time, GMT and Time Offset.

Mode

By using the , buttons, you can control the Auto/Manual mode. The Auto mode automatically updates the time settings by adding the GMT received from the satellite and the Time Offset value you have inserted. The Auto mode is recommended.

Local Time

The Local Time is adjustable only when the Mode is on the Manual mode. Adjust the current time, if necessary, by using the numeric buttons and the $\langle \mathbf{q}, \mathbf{p} \rangle$ buttons.

GMT

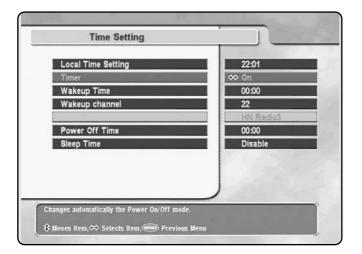
GMT is referred to the standard time of Greenwich. This cannot be changed.

Time Offset

The current time of the local area can be inserted. In another words, insert the time difference of the local time zone from the GMT. For example, if the local area is Seoul (the time difference from the GMT being 9), insert 9:00. The time is adjustable by using the $\langle \cdot , \cdot \rangle$ buttons, 15 minutes at a time.

19

B. Timer



Use the , buttons to select the On/Off mode. If the Timer item is set to On, the Wakeup Time item, the Wakeup Channel item and the Power Off Time item becomes adjustable.

C. Wakeup Time

The Wakeup Time item sets up the time the PVR automatically turns on. Insert the preferable Wakeup Time by using the numeric buttons and the buttons on the RCU. To disable the wakeup function, make the Timer item Off.

D. Wakeup Channel

The Wakeup Channel item automatically turns the PVR to the preset channel when it automatically turns on by the Wakeup function.

E. Power Off Time

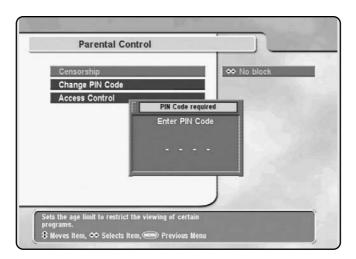
Local Time Setting	22:01
limer	Off
/akeup Time	00:00
Vakeup channel	22
	HN Radio3
ower Off Time	00:00
Sleep Time	↔ 100 min
leep Time	↔ 100 min
	1100

The Power Off Time menu sets the time of the PVR automatically turns off.

F. Sleep Time

The Sleep Time item is similar to the Power Off menu. The Sleep Time function turns off after the adjusted sleep time.

I-2. PARENTAL CONTROL



The age rating control, the PIN(Personal Identification Number) Code and the passwords to various menus can be configured. The PIN Code box will automatically appear when this menu is selected. The default PIN Code is 0000.

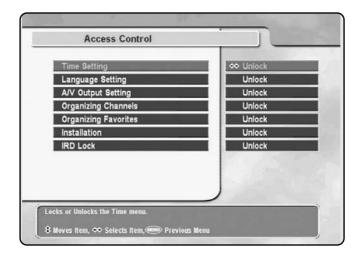
A. Censorship

The Censorship item blocks programs according to each specific setting. Use the , buttons to select the items below. No Block: Access to everyone. 4~18(age): Inaccessible for viewers within each minimum age limit. Total Block: Access to no one. If the channel is limitation free, the block function will not work.

B. Change PIN Code

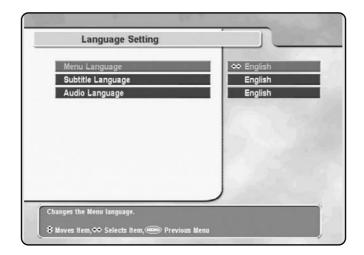
Go to the PIN Code item to configure new PIN Code. Press button, and a box will appear on the screen. Enter the PIN code by using the numeric buttons on your RCU.

C. Access Control



The Access Control menu controls access to 6 items: Time Setting, Language Setting, A/V Output Setting, Organizing Channels, Organizing Favorites and Installation. Press the , buttons to Lock/Unlock the access. Locking means controlling the access to specific menus with the PIN Code system. The default PIN Code is 0000.

I-3. LANGUAGE SETTING



There are many languages available for the menu. The default language is English.

A. Menu Language

It is an item for changing the language of the Main menu. Select the language which the menus will be shown in. [English / French / German / Italian / Spanish / Arabic / Greek / Turkish / Danish / Swedish / Norwegian]

B. Subtitle Language

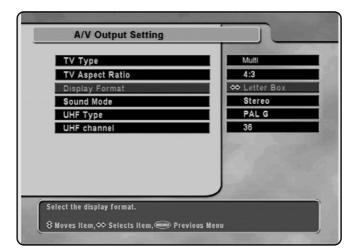
It is an item for changing the language of the subtitle. As long as the services support, the subtitle language is changeable by pressing button on your RCU. [English / French / German / Italian / Spanish / Arabic / Greek / Turkish / Danish / Swedish / Norwegian]

C. Audio Language

It is an item for changing the language of the Audio. The first audio language is set to English. If more than one audio language is transmitted, you may select one language among several languages transmitted by pressing **button**.

[English / French / German / Italian / Spanish / Arabic / Greek / Turkish / Danish / Swedish / Norwegian]

I-4. A/V OUTPUT SETTING



The PVR has many A/V Outputs. Control this menu properly according to external components connected to the PVR. Configurations concerning Audio and Video can be made here.

A. TV Type

Enables the setting of the TV standard. For automatic PAL/NTSC selection, set to Multi.

B. TV Aspect Ratio

Enables the setting of the screen format of the TV. Select 4:3 or 16:9 mode by using $\langle \cdot \rangle$, by buttons.

C. Display Format

Enables the setting of the screen format of the TV. Select the Letter Box or Center extract mode of 16:9 pictures by using , by buttons.

D. Sound Mode

Allows you to configure the sound mode. Select the Stereo, Mono, Left and Right modes by using the , buttons. The Sound mode is configurable later on by using the button on your RCU.

E. UHF Type

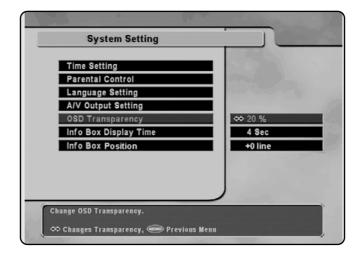
Allows you to change the UHF Type. Select the PAL G, PAL I, PAL K modes by using the $\langle \cdot |, \cdot \rangle$ buttons.

F. UHF Channel

Choose the UHF Channel by using the $\langle \mathbf{q}, \mathbf{p} \rangle$ buttons. The default UHF channel is CH36.

I-5. OSD Transparency

Adjusts the OSD transparency level of all kinds of menus. The available levels are ranging from 0% to 50%.



I-6. Info Box Display Time

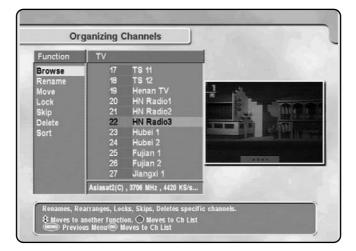
Adjusts the time-out of the Info Box. Sets the period of time the Info Box is displayed on screen. The adjustable time is from 0 to 30 seconds.

System Setting	
Time Setting	
Parental Control	A CONTRACTOR OF THE OWNER
Language Setting	
A/V Output Setting	
OSD Transparency	20 %
Info Box Display Time	↔ 4 Sec
Info Box Position	+0 line
Sets the display time of the info-box.	

I-7. Info Box Position

Adjusts the position of the Info Box. Allows you to change the position by using the $\langle\!\!\!\!\!\!\!\!\!\!\!\rangle$, $|\!\!\!\!\!\!\!\!\!\rangle$ buttons.

II. ORGANIZING CHANNELS



This mode can be used to rename, reorder, lock, hide and delete TV Services.

A. Browse

Press whether button. Now, browsing through the Organizing Channels is possible. Press assigned buttons on the help message.

B. Rename

Use (P_{+}) , (P_{-}) buttons to select R e n a m e item and press the (w) button to move the cursor to the Channel List. Press (w) button to display keyboard, and rename the channel. After renaming it, be sure to save it by pressing the (w) button at S a v eitem.

C. Move

You can reorder and move the service to the preferred position. Mark the desired channel to move and press button. Use buttons to choose the Move mode.

D. Lock

You can restrain and lock the services. From here, locking (and later unlocking) channels in any of the lists is possible e.g. in order to prevent children from watching it. If a locked service is selected, enter the PIN code in order to enjoy it.

E. Skip

You can hide and skip the services. In order to unlock the skip function, or press button on the skipped channel. The skipped channels will not be visible on channel list.

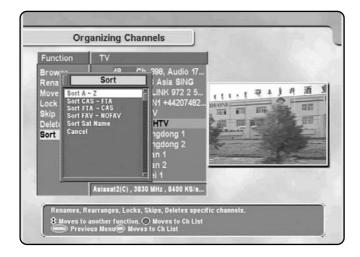
F. Delete

Press button to delete channels. The delete function differs from the skip function as it deletes the channel completely. Whereas, the skip function just makes the channel invisible.

NOTE: Deleted channels are permanently deleted. The only way to reobtain is to perform a new channel search.

G. Sort

You can sort and rearrange the sequence for the services.



III. ORGANIZING FAVORITES

Fav List	Fav CHs	TV Ch List
News Sports Movie Music NEW		17 TS 11 18 TS 12 19 Henan TV 20 HN Radio1 21 HN Radio2 22 HN Radio3 23 Hubei 1 24 Hubei 2 25 Fujian 1 26 Fujian 2 27 Jiangxi 1
	Asiasat2(C) , 370	6 MHz , 4420 KS/s , Hor

This mode is helpful in adding and deleting services to and from the favorite group.

Under the menu Organizing Favorites, there are three different modes: Fav List, Fav CHs and Ch List. On the Fav List mode, four standard lists are selected as the default menus: News, Sports, Movie and Music. Up to 10 lists including these lists can be added and renamed.

When deleting a service, select a service in the Fav CHs section and press the assigned button on the help message.

To add services into Favorites, locate the cursor to the desired service and press button.

Even in the Favorite CHs, you will see basic satellite & Channel information.

IV. Recording

This menu shows some options for recording.

	lecording	Peking
Satellite	Asiasat2(C)	Tako
Channel	66 DWtv	P g Reglink
Mode	Quick	Success of Success
Duration	2 hour 0 min	inder a
File Name	JOURNAL Nachric	
Start		
Stop		
Delayed Recor	ding	No Recording
Edit Reservatio	n	1932 MB Free
Select the satell		-

IV-1. Satellite

Press button to display the satellite list. Select a satellite that includes the channel to be recorded.

IV-2. Channel

Press or button to display the channel list. Select a channel to be recorded.

IV-3 Mode

There are two recording modes.

To record the selected service immediately, select the Quick mode. To record current event including the data of the time shifting buffer, select Current Event mode. The Current Event mode is valid only when the event information of the channel exists.

IV-4. Duration

To change the duration of the recording time, press $\langle \mathbf{v} | \mathbf{v} \rangle$ button.

IV-5. File Name

To change the file name of the service to be recorded, press in button at this item.

IV-6. Start

To start recording, press or button at this item.

IV-7. Stop

To stop recording, press (or) button at this item.

IV-8. Delayed Recording

In this menu you can reserve delayed recording.

Dela	yed Recording	105 Ab
Satellite Channel Mode Date Start Time Duration OK Recording	Asiasat2(C) 52 NMTV One Time 2/07/2001 (Mon) 09:51 30 min	
Select the satell	ite to record. ® Selects Item, @@ Exit	

A. Satellite

Press button to display the satellite list. Select a satellite that includes the channel to be recorded.

B. Channel

Press or button to display the channel list. Select a channel to be recorded.

C. Mode

There are 3 or 4 different modes.

Select One Time to record the channel only once.

Select Every Day to record the same channel at the same time of every day. Select Weekly to record the same channel at the same time on the same weekday. Select Every Weekend to record the same channel at the same time on every weekend. This menu is enabled when the Date menu is set to Saturday or Sunday.

D. Date

To change the recording start date, press $\langle \cdot \rangle$ or $\langle \cdot \rangle$ button.

E. Start Time

To change the recording start time, press $\langle \mathbf{v} \rangle$ or $\langle \mathbf{v} \rangle$ button or enter the time using the numeric buttons

F. Duration

To change the recording duration, press $\langle \cdot |$ or $\langle \cdot |$ button.

G. OK

To confirm the setting for the delayed recording, press with button. Be sure to confirm it if you want to register the current setting for delayed recording.

IV-9 Edit Reservation

In this menu you can check, edit and cancel the delayed recordings.

Edit	Reservation	Vancouver
List	MBC TV-LINK-4	Trests
Channel	73 MBC TV-LINK	Las Angeles
Date	6/10/2033 (Thu)	
Mode	Weekly	
Start Time	14:03	
Duration	1 hour 0 min	
Save	ويعيد والشرجات	
Cancel		
Recording		
0.1.1.1		
Select the reserv	ved name in the delayed record	ing List

A. List

Press or button to display the reserved list. Select one of the reserved items.

B. Channel

This item displays the channel name to be recorded.

C. Date

This item displays the recording start date.

D. Mode

There are 3 or 4 different modes.

Select One Time to record the channel only once.

Select Every Day to record the same channel at the same time of every day. Select Weekly to record the same channel at the same time on the same weekday. Select Every Weekend to record the same channel at the same time on every weekend. This menu is enabled when the Date menu is set to Saturday or Sunday.

E. Start Time

This item displays the recording start time.

F. Duration

This item displays the recording duration.

G. Save

This item enables you to save the reservation.

H. Cancel

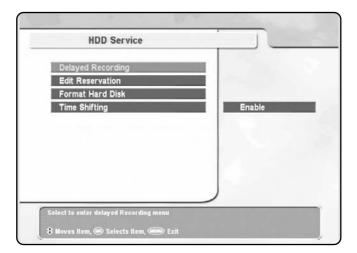
To delete the registration of the selected delayed recording, press or button at this item.

I. Recording

To go to the Recording menu, press or button at this item.

V. HDD Service

You can use this menu to manage the HDD and the functions related to the HDD



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V-1. Delayed Recording

Refer to IV-8. Delayed Recording.

V-2. Edit Reservation

Refer to IV-9. Edit Reservation.

V-3. Format Hard Disk

To format the HDD in PVR, press we button at this item. Format Hard Disk will delete all the data and the files in HDD permanently. If a new HDD is installed, it should be formatted by this PVR. The file structure of the PVR is different from that of PC. You cannot use the Time shifting, Recording and Playback functions with an

You cannot use the Time shifting, Recording and Playback functions with an unformatted HDD.

V-4. Time Shifting

To enable time shifting function, select Enable.

If the Time Shifting is enabled, this PVR records the current channel in normal play. And, you can take advantage of the time shifting function.

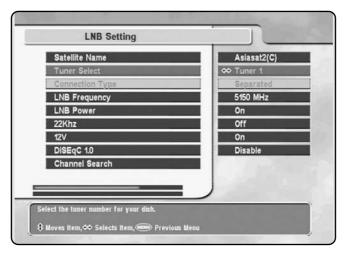
To disable time shifting function, select Disable. If you don't want to use time shifting function, disable the time shifting to reduce the power consumption.

VI. INSTALLATION

Installation	
LNB Setting	
Channel Search	
Services Copy	
Motorized DiSEqC1.2	
SAT/Tp Edit	
Factory Setting	
Transfer Program to Other IRD	
Transfer Data to Other IRD	
	/
Configures LNB & DiSEqC.	

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VI-1. LNB Setting



The Low Noise Blockdown Converter (LNB) amplifies the signal received by the satellite dish and lowers the frequency of the signal. The signal is then fed from the LNB at the dish via cable to the PVR.

For the LNB Settings, move the cursor to Installation item and press we button. Then, move the cursor to the LNB Setting item and press button.

A. Satellite Name

Press the *w* button to display the Satellite List. The Satellite name list is put in alphabetical order. Select one of the preprogrammed satellites that correspond to the value of the antenna. If the desired satellite name is not in the list, then select Others.

B. Tuner Select

Select a tuner for channel searching from the selected satellite.

C. Connection Type

If two tuners share one LNB as the diagram 2-2) on page 12, select Loop Through. If a service is being recoded, the other tuner can receive only the signal of the same band and polarity as being recorded in this configuration.

If the tuners are connected to separated LNBs (or Dual LNB), select Separated. There is no restriction as in the LOOP Through configuration.

D. LNB Frequency

Select the L.O. Frequency set to antenna. The LNB Frequency of 5150, 9750, 10600, 10750, 11475 MHz or Universal can be selected by using the value or value button.

NOTE: If the Universal LNB is selected, both 9750 and 10600 MHz are supported at the same time, and therefore the 22 KHz tone setting is not required.

E. LNB Power

Select LNB power ' On' for internal and ' Off ' for external.

F. 22 KHz

If you are using a 22 KHz tone switch box, make 22 KHz tone switch enable or disable to select LNB or antenna.

G. 12V

Use it if the switch box is controlled by 12V DC.

H. DiSEqC 1.0

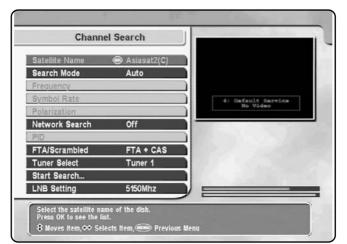
The PVR is designed to be DiSEqC 1.0 compatible. This allows multiple antennas to be connected to the PVR at the same time. If you are using two or more fixed antennas or LNBs, then it is recommended to use a DiSEqC 1.0 switch.

Select from 1 of DiSEqC to 4 of DiSEqC, Mini A, Mini B or Disable according to the option or the configuration of DiSEqC switch box or antenna.

I. Channel Search

To go to Channel Search menu directly from LNB Setting menu, press we button at this item.

VI-2. Channel Search



A. Satellite Name

Press the *button to display the Satellite List Box. The Satellite name list is put in alphabetical order. Select one of the preprogrammed satellites that correspond to the value of the antenna. If the desired satellite name is not in the list, then select Others.*

B. Search Mode

There are 4 search modes, Auto, Manual, Advanced and SMATV. The Auto mode enables to search using the information the PVR has. On the other hand, there will be a need to know in advance the frequencies and the symbol rates before using the Manual mode. On the Advanced mode, enter the Audio PID, Video PID or the PCR PID. The SMATV mode is used to special purposes on satellite master antenna TV system.

C. Frequency

Enter the Transponder's Frequency by using the numeric buttons on your RCU.

D. Symbol Rate

Enter the Transponder's Symbol Rate by using the numeric buttons on your RCU.

E. Polarization

Choose the type of polarization, either the Horizontal or the Vertical.

F. Network Search

This Network Search item can be used if the Search mode is set to the Manual or Auto mode. If the Network Search item is set to On and the NIT (Network Information Table) is available, the Transponder's information can be found.

G. PID

Press or button to enter Video, Audio and PCR PID's.

1) Video PID

Insert the Video PID by using the numeric buttons on your RCU.

2) Audio PID

Insert the Audio PID by using the numeric buttons on your RCU.

3) PCR PID

Insert the PCR PID by using the numeric buttons on your RCU.

4) SAVE

To ensure the above Video, Audio and PCR PID change, press or button at this item.

H. FTA/ Scrambled

Choose your favorable channels among FTA only, CAS only and FTA+CAS.

I. Tuner Select

Select a tuner for channel searching from the selected satellite.

J. Start Search...

Hunan 2 Hubei 1 Hubei 2 Reuters TV R4I International TV5-Asia MCM TVE RTPi DWty 54 TV Services	 DW 2 DW 8 WRN RFI music RW RCI Radio SRI-INTERKONTINENTAL DW 4 DW 5 29 RADIO Services
	9196

Searches for digital channels after the configuration of the LNB is over. To stop the searching process on the way, press either the vertex button or the vertex button. This menu will be shown as long as the PVR is searching for channels. All channels found will be listed in two columns on the screen; with TV channels in one column and Radio channels in the other. Please note that the search procedure may take a few minutes. When the search procedure is completed, the screen will show how many TV and Radio channels have been found. Press with to save the channels.

K. LNB Setting

To go to LNB Setting menu directly from Channel Search menu, press without on at this item.

VI-3 . Service Copy

This item enables you to copy the service list of one tuner to that of the other.

A. Tuner 1 to Tuner 2

Copy the service list of Tuner 1 to that of Tuner 2.

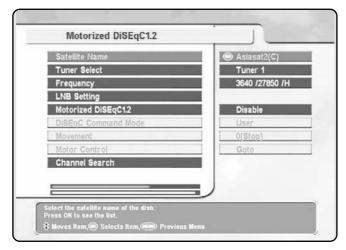
B. Tuner 2 to Tuner 1

Copy the service list of Tuner 2 to that of Tuner 1.

C. All

Add the service list of Tuner 1 and Tuner 2 and save it to that of Tuner 1 and Tuner 2.

VI-4 . Motorized DiSEqC 1.2



If you have DiSEqC 1.2 motorized system, then you can use the DiSEqC 1.2 functions. **. Satellite Name**

A selection of satellite names that will be used to identify a motor position.

- . Tuner Select: Select a tuner for channel searching from the selected satellite.
- . Frequency: Selects the frequency to catch the strong signal.
- **. DiSEqC Command Mode** : Change the current mode between User and Installer modes.

-User: This mode is used to fine-tune the position of the motor for better reception. -Installer: This mode is used to search for the position of a satellite manually.

. Movement: In case of User mode, the movement is adjustable by fine-tuning.

In case of Installer mode, the movement is adjustable by East, West going command.

. Motor Control

- Goto : Moves the motor to the stored position of the selected satellite.
- Store : Stores the current position of the motor for the selected satellite.
- Reset : Resets all stored position of the motor relative to the "0" position (Installer mode only).
- Recalculate : Recalculates the position of the Stab Rotor motor.
- Limit E , Limit W: Limits east and west position.
- Limit Off: Removes the limitation.
- Goto Ref: Goes to reference.

• Channel Search: After saving the DiSEqC configuration at the highest signal quality, press of button to start channel searching of the selected satellite.

VI-5. SAT/Tp Edit

Satellite Name	Siasat2(C)
requency	3640 MHz
Symbol Rate	27850 KS/s
olarization	Horizontal
SAT Name Edit	
Add new TP	
Delete TP	
dd Satellite	
Delete Satellite	
Channel Search	

A. Satellite Name

By pressing (button, you can see the listed satellite names. Then, using (, , ,) or (buttons, you can select satellite.

B. Frequency

By pressing \bigcirc button, you can see the all frequencies of transponders of a satellite, and also you can select a frequency. Or, by pressing $\textcircled{}_{22}$, $\textcircled{}_{22}$, $\textcircled{}_{22}$, $\textcircled{}_{22}$ buttons, you can select and view a frequency one by one.

C. Symbol Rate

You can see the symbol rate of the specified satellite on the right side of the menu.

D. Polarization

You can select the polarization from Horizontal and Vertical.

E. SAT Name Edit

You can change the name of the satellite by this menu.

Press button to display a keyboard. There are several items such as Other, Save and Space in the keyboard.

By selecting Other item, you can see a new alphabet character sets. The Space item means a space between two characters. And the Save item is used to confirm the new name of the satellite.

Notes: You can move the cursor in the satellite name row by $\langle \cdot | e^{i\theta} \rangle$ or $\langle \cdot | e^{i\theta} \rangle$ and column by $\langle \cdot | e^{i\theta} \rangle$ or $\langle \cdot | e^{i\theta} \rangle$ button.

F. Add New TP

In case of new transponder information is added by broadcaster, you can add new TP(transponder) information and enjoy new services.

Before adding new TP information, you should know the frequency, symbol rate and polarization types.

After adding new information, you should confirm the new information by pressing without button at O K item.

G. Delete TP

By selecting this item, you can delete the selected TP (Transponder) information.

H. Add Satellite

Using this menu, you can add new satellite name by keyboard, then it will be added in the Satellite Name menu.

I. Delete Satellite

By selecting this item, you can delete the selected satellite information.

J. Channel Search

It is used to go to Channel Search menu directly from SAT/Tp Edit menu.

VI-6. Factory Setting

LNB Setting			
Channel Search		and the	
Services Copy Motorized DiSEqC1 SAT/Tp Edit Factory Setting Transfer Program Transfer Data to C	Confirm Reset All Data? Yes No		

All the stored data can be reset just like it was manufactured.

VI-7.Transfer Program to Other PVR

It is used to transfer PVR program to other PVR for upgrading the PVR. Notes: Please proceed this menu with connecting the PVR of same model and same specification.

VI-8.Transfer Data to Other PVR

It is used to transfer PVR Data such as satellite/TP information to other PVR for upgrading the PVR.

Notes: Please proceed this menu with connecting the PVR of same model and same specification.

VII. INFORAMTION

You can check the PVR version and refer the calendar.

VII-1. PVR STATUS

IRD Status	
System ID	
Loader Version	
Device Version	
Application Version	
Last Update	

Check the PVR's system information. It shows the PVR's:

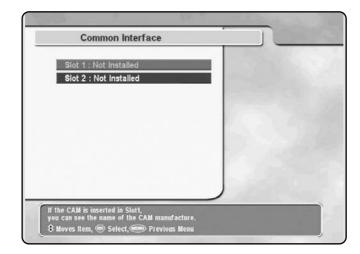
- v System ID
- v Loader Version
- v Device Version
- v Application Version
- v Last Update

Jun	e 2001	-			_	-
Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

VII-2. CALENDAR

Press the $\sqrt[n]{}$ or $\sqrt[n]{}$ button to select the year. Press the $\sqrt[n]{}$ or $\sqrt[n]{}$ button to select the month.

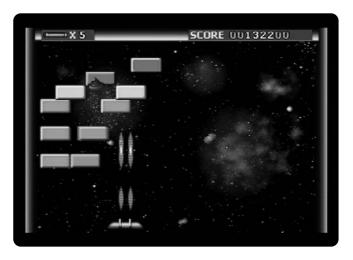
VIII. COMMON INTERFACE



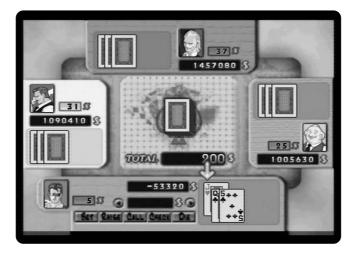
The menu differs according to each inserted CAM. If the module has not been installed yet, the phrase 'Not Installed' will be accordingly indicated.



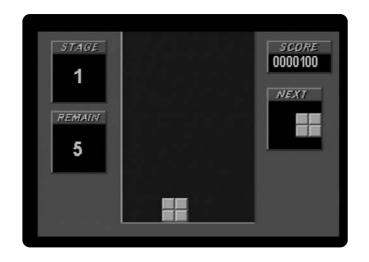
X-1. ExBlock



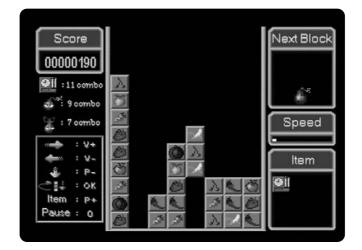
X-2. Poker



X-3. Bricks Lay



X-4. Bomb Hexa



HOW TO RECORD AND PLAYBACK THE PVR

Time Shifting

1. To enable Time Shifting option should be enabled. To find the Time Shifting option menu, follow the steps below.

(Main Menu) > (HDD Service) > (Time Shifting) > (Enable)

- 2. Press **()** button to display Time Shifting progress bar.
- 3. To go to the desired playback position, press 🕢 button or 🅞 button. This function is valid while the Time Shifting progress bar is displayed.
- 4. To remove the Time Shifting progress bar at once, press \bigcirc or PLAY(\bigcirc) button.
- 5. To play the live video, press $STOP(\bigcirc)$) button.
- 6. To start Instant Playback, press velocity button. The start position of the playback goes 10 seconds back per each pressing of velocity button.

Recording while Time Shifting

- 1. Press **()** button to display Time Shifting progress bar.
- 2. To go to the desired position, press 🕢 button or 🅟 button.
- 3. Press RECORDING (••••••) button to start recording.
- 4. The recording will be started from the selected position.
- 5. Press STOP() button to stop Time Shifting.

6. Press STOP () button again to stop recording.

Caution : If the recording time is less than about 1 minute, recording will not be done successfully.

Recording, Checking and Editing reserving

To record services, refer to the following steps. There are four kinds of recording references.

Caution : If the recording time is less than about 1 minute, recording will not be done successfully.

1.Immediate Recording by RECORDING () button

a. Recording

Press RECORD(•) button to record the channel you are watching. To specify the stop time, go to Recording menu and modify Duration item. To go to the Recording menu, press RECORDING (•) button once more.

b. Checking

A **Recording Icon** (\bullet) will be displayed on the upper rightmost of the TV screen if the recording is in progress. For more information, press CHECK(\bigcirc) button or INFORMATION (\bigcirc) button.

c. Stop

Press $STOP(\bigcirc)$ button and select Yes to confirm the immediate stop.

2.Immediate Recording by Menu Selection

	a. Recording To go to Recording menu, press (MENU) button and select Recording item by pressing (a) button. Select the options that you want to record with. Select Start item and press (a) button. For detailed information, refer to the explanation of Recording menu in Menu operations.
references.	
lone	 b. Checking and modification A Recording Icon () will be displayed on the upper rightmost of the TV screen if the recording is in progress. For more information, press INFORMATION () button or CHECK () button. To check and modify the recording options, go to Recording menu.
	c. Stop Press STOP () button and select Yes to confirm the immediate stop.
em.	Otherwise, go to Recording menu and press is button at Stop item.
e more.	3. Delayed Recording
V screen) button	a. Recording Go to Recording menu and press is button at the Delayed Recording item. Set the options that you want to record with. Press is button at OK item. For detailed information, refer to the explanation of Recording menu in Menu operations.
ур.	b. Checking To check the reserved recordings, go to Edit Reservation menu of Recording menu.

c. Canceling

To cancel the reserved recording, go to Edit Reservation menu of Recording menu. Press what the cancel item.

4. Recording by EPG

a. Recording

Press GUIDE() button to display EPG. Select a service that you want to record, and press RECORDING () button. Instead of RECORDING () button, two times pressing of button is valid for delayed recording. The **Recording mark** (**R**) will be displayed.

b. Checking

Press GUIDE() button to display EPG. The reserved services for delayed recording will be marked with a **Recording mark**(**R**).

c. Canceling

Press GUIDE() button to display EPG.

To cancel a reservation of delayed recording, select the service you want to cancel and press RECORDING (
) button again. Instead of RECORDING (
) button, will disappear.

Playback a Recorded Service

1.Press the red button(()) to display the recorded service list.

2.Select a recorded service at the list.

3.Press (OK) button to start playback.

Stop

1.To stop playback, press $STOP(\bigcirc)$ button.

2. This function is available for playback.

Pausing

To pause the picture or playback, press $PAUSE(\bigcirc)$ button. Press $PAUSE(\bigcirc)$ button or $PLAY(\bigcirc)$ button to quit pausing.

1. Pausing from live video

If the PAUSING is kept more than 5 seconds with enabled Time Shifting mode, the play mode is changed to time-shifted playback. The video continues from the paused image when resumed from PAUSING.

2.Pausing from Time Shifting

The video continues from the paused image when resumed from PAUSING.

3. Pausing from Playback

The video continues from the paused image when resumed from PAUSING.

Slow Motion Playback

- 1. To playback in slow motion(without sound), press the SLOW () button.
- 2. Slow motion speed can be adjusted by pressing the SLOW () button repeatedly.
- 3. There are 7 steps in slow motion playback.
- 4. Press $PLAY(\bigcirc)$) button to resume playback with normal speed.
- 5. The slow motion function is available for the playback and the time-shifted playback.

Fast Motion Playback

- 1. If there is a Time Shifting or Playback progress bar, remove the progress bar by pressing PLAY()) button.
- Press button for fast motion playback. To change the playback speed, press
 button repeatedly.
- 3. There are 4 steps in fast motion playback.
- 4. Press $PLAY(\bigcirc)$) button to resume playback with normal speed.
- 5. The slow motion function is available for the playback and the time-shifted playback.

Fast Forwarding and Rewinding

- 1. Press () button to display Time Shifting or Playback progress bar.
- 2. To go to the desired playback position, press button or button. This function is valid while the progress bar is displayed.
- 3. To remove the progress bar at once, press \bigcirc button.

Reverse Playback

seconds.

- 1. Press () button to display the Time Shifting or Playback progress bar.
- To rewind with motion, press button without the progress bar. The reverse motion is not so much smooth as fast motion playback because of the limitation of the characteristics of MPEG signal. Sometimes you may encounter the message The service is not running.. on the reverse playback of scrambled data. The message will be disappeared in a few

Bookmark

You can jump to a position directly by bookmark function in playback and time-shifted playback.

To search positions very quickly and easily, use bookmarks.

1. Adding a bookmark

To add a bookmark, press BOOKMARK () button at the position you want to add it.

2. Going to a bookmark Press GO TO BOOKMARK ()) button to jump to the previous bookmark.

Then, the PVR plays from the book marked position.

3. Deleting a bookmark

To remove a bookmark, select the bookmarked position by GO TO BOOKMARK () button and press BOOKMARK () button.

4. 30 sencods forward

If there is no bookmark, the PVR plays every 30 seconds forward by pressing BOOKMARK () button.

Recording The Descrambled Live Service

- 1. Select the live video you want to record. Descramble the service with a proper CAM and smart card. The live service should play well with the proper CAM and smart card.
- 2. Start recording according to the recording procedure.
- 3. During recording, don't change the channel neither try the time shifting function.

Caution : If there is any disturbance such as channel changing or time shifting during recording, scrambled service will be recorded.

If the recording time is less than about 1 minute, recording will not be done successfully.

Descrambling Services

- 1. Select and play back a service you want to descramble. Descramble the service with a proper CAM and smart card. The live service should play well with the proper CAM and smart card.
- 2. Press **b**utton to display Playback progress bar.
- 3. To go to the desired position, press 🕢 button or 🅟 button.
- 4. Start playback. The video should be descrambled with a proper CAM and smart card. The fast/slow motion descrambling is possible by fast/slow motion playback.
- 5. Start recording by RECORDING () Button.
- 6. The video displayed on TV will be recorded.
- 7. Press STOP () button to stop recording.
- 8. Press STOP () button again to stop playback

Caution : If the descrambling time is less than about 1 minute, descrambling will not be done successfully.

Copying from Recorded Service

- 1. Select and play back a service to copy it.
- 2. Press **()** button to display Playback progress bar.
- 3. To go to the desired position, press 🕢 button or 🅟 button.

- Start playback the recorded video you want to copy. The fast/slow motion copying is possible by fast/slow motion playback.
- 5. Start copying by RECORDING () Button.
- 6. The video displayed on TV will be copied.
- 7. Press STOP () button to stop copying.
- 8. Press STOP () button again to stop playback

Caution : If the copying time is less than about 1 minute, copying will not be done successfully.

Cut Out Selected Region

- 1. Start playback a recorded service.
- 2. Press **()** button to display **Playback progress** bar.
- 3. To specify one end of region, press the **button** with the progress bar.
- 4. Move the cursor by pressing (or (v)) or (or (v))) button.
- 5. To cut out selected region, press the 🕜 button once more.

Time Shifting while Recording

During recording, Time Shifting is possible only in the recorded channel.

Zapping while Recording

- With Separated mode in LNB setting menu. For the tuner being recorded with, all the channels in the same TP can be selected. For the other tuner, all the scanned channels can be selected.
- With Loop Through mode in LNB setting menu.
 For the tuner being recorded with, all the channels in the same TP can be selected.
 For the other tuner, all the channels of the same polarity and the same band as being recorded channel can be selected.

Repeat mode

The repeat mode works only in playback mode. It does not work in time shifting mode. There are two repeat modes.

1. Repeating the whole selected service.

- a. Start playback a recorded service.
- b. Press **b** button without the progress bar to repeat the whole selected service.
- c. Press **button** once more to cancel the repeating playback.

2 Repeating the selected region.

- a. Start playback a recorded service.
- b. Press button to display **Playback progress** bar.
- c. To specify one end of region, press the 🕑 button with the progress bar.
- d. Move the cursor by pressing (r v) (or v) or (r v) (or v) button.
- e. To specify the other end of region, press the **b** button once more.
- f. Press **button** once more to cancel the repeating playback.

TROUBLESHOOTING (Q & A)

Problem	Possible Causes	What to do
Nothing appears on the Front Panel.	The main power cable is not connected.	Check that the main power cable is plugged into the power socket.
No sound or picture, but the front panel shows the time or :	PVR is in standby mode.	Turn the power ON.
No Picture, No Sound.	 The satellite dish is not pointing at the satellite. No Signal or Weak Signal. LNB is faulty. The UHF Button is "pushed down". 	 Adjust the dish. Check the settings in one of the channel search submenus. Check the cable connections. Replace the LNB. Get out of the UHF mode.
The Remote Control Unit (RCU) is not working.	 No Batteries. The RCU is incorrectly aimed. The PVR is in standby mode. 	 Change the batteries (both). Aim the RCU properly to the PVR. Change the mode to the normal mode.
You have forgotten your secret PIN Code.		Contact your Service Provider.
Time Setting is wrong.	The Time is not set properly.	Adjust the Time on the Menu.
2 broadcasts overlap.	The channels are not configured properly on the RF mode.	Set the channels in the RF mode under the A/V setting of the Menu between 21 to 69 on the TV.
The CAM is not working.	The CAM is not installed properly.	Check that the CAM has been correctly inserted.
Black Screen.	The CAM is not working correctly.	Eject the CAM and reinsert it again.

SPECIFICATIONS

I. PVR SPECIFICATIONS

Item	Specification		
Power	90 - 250VAC, 50 / 60Hz		
Input Frequency	950 - 2150 MHz		
DATA Service	1 RS - 232C, 115kbps		
SCART	2 SCARTs : 1 VCR, 1 TV		
A/V OUT	1Video / 2 Audio (left and right)		
Digital Audio Out	SPDIF		
LNB Power	Convertible 13.5/18V (500mA max)		
Modulation / FEC Type	QPSK / Multiple convolution coding (DVB Compliant)		
DiSEqC	DiSEqC 1.0 / 1.2 compatible		
Tone Switching	22 KHz		
RF Modulator	UHF Ch. 21-69 with PAL I/G/K		
Specification	MPEG - 2/DVB Compliant SI		
Video Compression	MP@ML in MPEG-2		
Aspect Ratio	4:3 or 16:9		
On-Screen Display	256 colors with full resolution		
EPG	Supported		
Common Interface	Viaccess , Irdeto , Cryptoworks , Conax, Nagravision , Mediaguard		

II. CHANNEL PROCESSING

Item	Specification
Input Frequency Range	950 - 2150 MHz
Number of Channels	3500 TV Cannels and 1500 Radio Channels
Tuning System	PLL Digital Synthesis Channels
Tuning Step Size	125 KHz Max
Modulation	QPSK (DVB Specification)
Inner FEC	Rates: 1/2, 2/3, 3/4, 5/6, 7/8 (DVB Specification)
Outer FEC	Reed Solomon Coding RS (204, 188, t=8)
Input Symbol Rate	2 to 45 Ms/s
IF Bandwidth	27MHz
Connector Type	F Type (IEC 169 - 24 female)

III. MPEG AUDIO

Item	Specification
Operation Mode	Mono, Left, Right and Stereo
Sampling Rates	32, 44.1 and 48 kHz
Resolution	18 bit digital to analogue Converters

IV. VIDEO SPECIFICATIONS

Item	Specification
Specification	Meets ETR 154 amended in ALM-95-021
TV System	PAL I ,G,K
Video Decoding	ISO / IEC 13818-2, MP@ML
Video Resolution	720 pixels \times 576 lines \times 25 frames per sec.

V . **RF MODULATOR**

Item	Specification
Features	Input RF bypass Supported.
Connector	IEC Coaxial female 9.5 mm.(IEC 168-2)
Channel Range	CCIR UHF E 22-69 adjustable
Pre-Set Channel	Channel 36 (or TBD)

VI. POWER SUPPLY

Item	Specification
Input Voltage	90 - 250VAC, 50 / 60Hz
Туре	SMPS
Power Consumption	Max.55Watt
Standby Power	10Watt
Protection	Separate internal fuse

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