# TOPFIELD

**DVB**
Digital Video
Broadcasting

DiSEqC1.2

# The User's Manual

FREE TO AIR
Digital Satellite Receiver

( TF3100FEi )

( TF3100FEP pro )
 **- Embedded Positioner**

Please read this User s Manual carefully.
The menu structure and specification can be changed without notice.

## TABLE OF CONTENTS

**Please read the following 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 STB.

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** :  Coins or other small objects must be kept away from the IRD

as  they can fall through the ventilation slots of the IRD and

cause serious damage.

**CLEANING** :  Disconnect the IRD from the wall socket before cleaning it.
Use a dry cloth lightly dampened(no solvents) to clean
the exterior of the IRD.

**VENTILATION** :  Do not block the decoder's ventilation slots.
Ensure that a free airflow is maintained around the IRD.
NEVER stand the IRD on soft furnishings or carpets.
Do not use or store the IRD where it is exposed to direct
sunlight or near a heater. NEVER stack other electronic
equipment on top of the IRD.

**ATTACHMENTS** :  Do not use any attachments that are not recommended as these
may cause hazards or damage the equipment .

**CONNECTION TO THE SATELLITE DISH LNB** :
Disconnect the IRD 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 yourself.
Refer all serving to qualified service agents.

**LIGHTNING** :  It is recommended that the IRD 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
IRD, 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 IRD indoor place properly to prevent  lightening,
raining and direct sunlight.

# INTRODUCTION

Thank you for purchasing the Digital Satellite Receiver (STB).
This Digital Satellite Receiver 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.

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 your 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 STB is easy to use and adaptable for future advances. Please be aware that new
software may change the functions of the STB.
If you have any difficulties concerning the operation of your STB, please refer to the
relevant section of this manual, including the 'Troubleshooting'. This Manual will
provide you with useful information on using the STB.

## CONTENTS

Please ensure that the following items are included with the STB.
   1) Remote control unit
   2) Batteries (size AAA)
   3) User's Guide (this document)

## FEATURES

Fully Compliant to DVB

Antenna/LNB control
- 22KHz mode On/Off
- 0/12V mode selection
- Automatic FEC Detection
- DiSEqC 1.0 & 1.2 compatible
- Built-In Positioner (High Power Azimuth Control-36DC,5A)  ....(**Positioner model only**)

Satellite/Channel support
- 3500 TV channels, 1500 Radio channels storable

Video/Audio
- Automatic and Manual 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

Teletext
 - Software emulation mode with always VBI insertion mode on.

Games are embedded.

## FRONT / REAR PANELS

1) Front Panel

**- STANDBY**
- The power button of STB (ON / Stand by)

**- LED**
- REMOTE
- STANDBY

**- CHANNEL**
- The channel buttons are to change channels.

.........................................................................................................................................................................................

2) Rear Panel

# (Non-Positioner model)
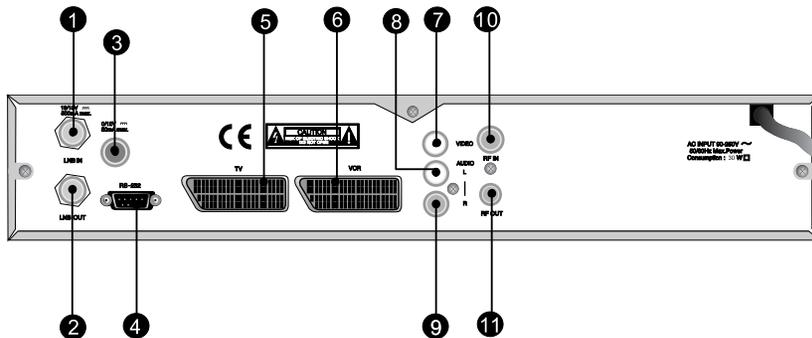
## (Embedded Positioner model)
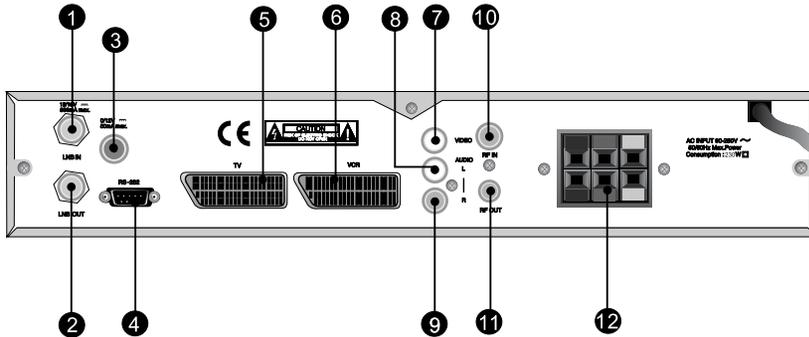
❶ LNB IN

    • Connects the satellite antenna cable.

❷ LNB OUT

    • Use it to connect to another STB.

❸ 0/12V OUTPUT

    • Chooses the LNB on the antenna.

❹ RS232

    • Upgrades the STB Program & software.

❺ TV SCART

    • Connects the TV SCART.

❻ VCR SCART

    • Connects the VCR SCART.

❼ VIDEO OUTPUT

    • Video output (YELLOW).

❽ AUDIO-LEFT INPUT

    • Audio input (WHITE).

❾ AUDIO-RIGHT INPUT

    • Audio input (RED).

❿ RF IN

    • Connects the TV antenna.

⓫ RF OUT

    • Connects the TV.

⓬ DISH CONTROL

    • Connects the actuated dish.

FRONT/REAR PANELS

❶ POWER Button ( ⏻ )

• Switches the STB between Operation and Standby mode.

❷ MUTE Button ( 🔇 )

• Enables/ Disables the Audio.

❸ Numeric Keys ( 1 ~ 9 )

• Selects the TV or Radio service channels and individual menu options.

❹ MENU Button (MENU)

• Displays the Menu on screen or returns to previous menu from submenu.

❺ GUIDE Button (GUIDE)

• Displays the EPG (Electronic Progam Guide) on screen only when available.

❻ V+/V- Buttons ( V- , V+ )

• Adjusts the volume (Increase/Decrease).

❼ P+/P- Buttons ( P+ , P- )

• Tunes to the next or previous service. Services up or down through the available services.

❽ OK Button ( OK )

• Displays Channel List on screen. Selects the item in the menu mode.

❾ EXIT Button (EXIT)

• Returns to the previous menu and the screen.

❿ INFO Button (INFO)

• Displays the program information box on the screen and removes it.

⓫ RECALL Button ( RECALL )

• Selects the previously viewed channel.
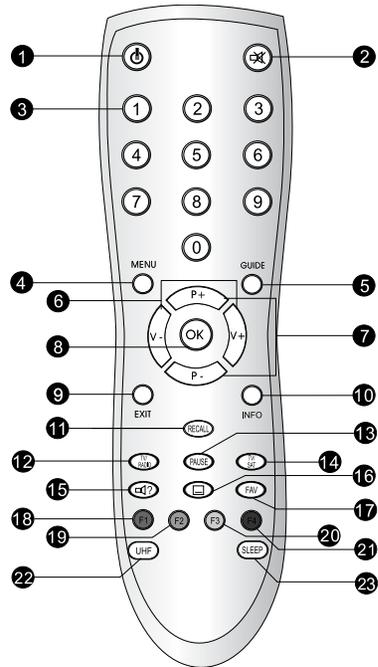
❿ TV/Radio Button ( 📺 )
 • Selects the TV/Radio mode.

⓭ PAUSE Button ( PAUSE )
 • Stills the playing picture.

⓮ TV/SAT Button ( 📺 )
 • Changes the terrestrial TV and Satellite mode.

⓯ SOUND Button ( 🔊 )
 • Selects LEFT/RIGHT/MONO/STEREO sound function.

⓰ SUBTITLE and TELETEXT Button ( 📺 )
 • Selects the subtitle language list for the current service.
 • Enables the teletext with software emulation.

⓱ FAV Button ( FAV )
 • Displays the favorite channel list.

⓲ 🔴 Button (Red)
 • Selects function. (F1)

⓳ 🟢 Button (Green)
 • Selects function. (F2)

⓴ 🟡 Button (Yellow)
 • Selects function. (F3)

㉑ 🔵 Button (Blue)
 • Selects function. (F4)

❷❷ UHF Button ( UHF )
 • Displays and alters the UHF setting in menu.

❷❸ SLEEP Button ( SLEEP )
 • Displays sleep time. When sleep time, the power automatically turns to the OFF mode and the STB to the STANDBY mode.

- First, connect both the satellite antenna and the TV line to the STB and switch the power on.

- In this manual there are some of the most common ways to connect the equipment: TV, VCR and STB.

- There are several ways of connecting the STB to the existing Audio/TV system. We recommend using 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 STB and the other end to a SCART socket on the TV.
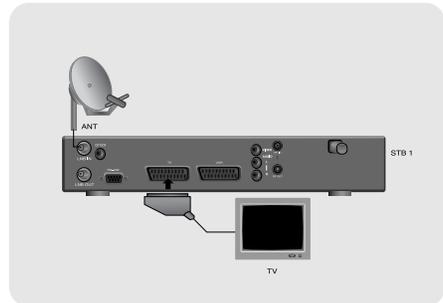


### 1-2) Connection to the VCR with the SCART Cable.

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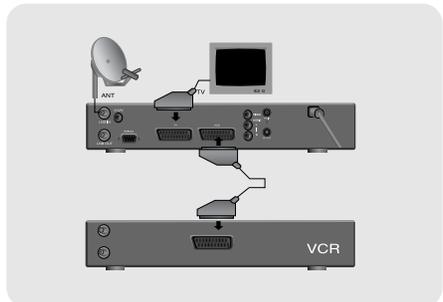


INSTALLATION

1-3) <u>Connection to the TV with the CINCH Cable.</u>

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 STB.
Connect the other end (3 connectors) to
the AUDIO-RIGHT input (red),
AUDIO-LEFT input (white) and the
VIDEO input (yellow) socket on the
TV or Hi-Fi.
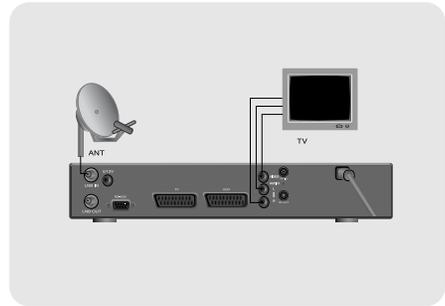
1-4) <u>Connection to the TV using the RF cable.</u>

Connect a terrestrial antenna to RF IN
socket on the STB.
Connect one end of the RF cable to the RF
OUT socket on the STB.
Connect the other end to the ANT IN socket
on the TV.
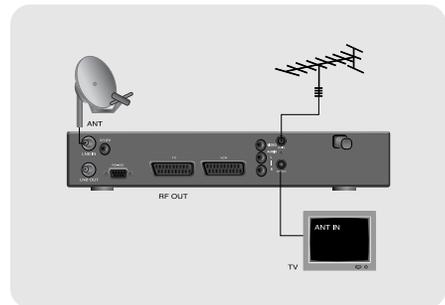
2) <u>Connection to the other Satellite Receiver.</u>

Connect the satellite cable to the LNB IN
socket on the STB. With a connector, connect
the LNB OUT socket on the STB and the
ANT IN socket of the other STB.
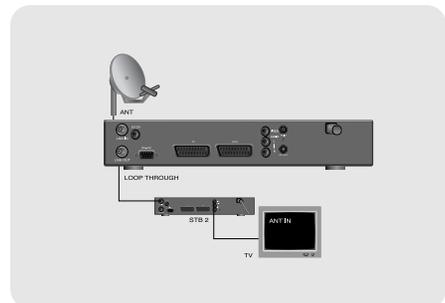
## 3. <u>Connection to the dish.</u> (Positioner model only)

3-1) <u>Connection to an actuated dish</u>

Connect the LNB IN socket of the STB
to the LNB.
Connect motor wires to M1 and M2.
Switch these connections if the motor
moves to the wrong direction.
Connect sensor wires to PULSE and
GND connector.
Connect a mechanical polarotor to +5V,
GND and SKEW connectors.
Improper connetion cause malfunction or may break down your STB and Motor
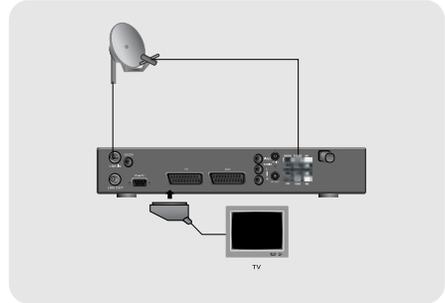
3-2) <u>Connection to an actuated dish with
C/Ku switch .</u>

Connect the cables from C and ku-band
LNB to 12 Volt C/Ku switch.
Connect the coaxial cable from the
0/12 Volt switch to LNB IN connector.
Connect the power cable which comes
from the 0/12 Volt switch to the 0/12V
connector.
Connect motor wires to M1 and M2.
Switch these connections if the motor
moves to the wrong direction.
Connect sensor wires to PULSE and GND connectors.
Connect a mechanical polarotor to +5V,GND and SKEW connectors.

INSTALLATION
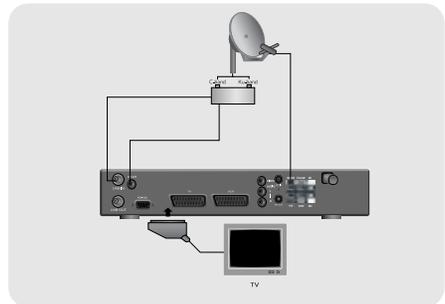
## GETTING STARTED

Press the Power ⏻ button to operate the STB from the STANDBY mode.
Now, the Info box will appear for a given time and disappear. Pressing the INFO 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 GUIDE button
to see not only the current channel's but also other channel's EPG without any time constraints.
Also, press the OK button to reserve and save the current service and to watch the broadcast
 automatically when it starts.

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

- Adjust your antenna through Dish Setting menu in installation menu.
- First, press the 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 OK 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 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 OK button.
- The search procedure will take a while. Press the OK 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
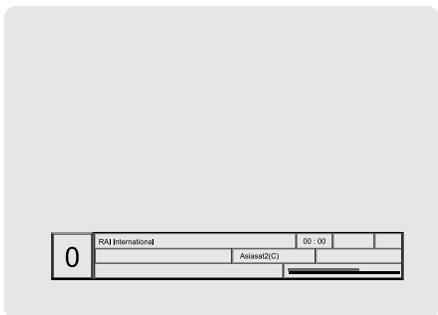
Press INFO key on the RCU to see the program information. The Information box displays as follows:

| 0 | RAI International | 00 : 00 |
|---|---|---|
| | Asiasat2(C) | |

- Channel Number
- Channel Name
- Detailed Program Information
- Signal Level & Quality
- Satellite Information
- Information of subtitle and / or teletext

## EPG (Electronic Program Guide)

**Program Guide**

| 1 | DWtv | |
|---|---|---|
| 00:00~00:00 ( 30 min ) | JOURNAL News - Busin... | TV |
| 00:00~00:00 ( 30 min ) | Germany Today | |
| 00:00~00:00 ( 30 min ) | JOURNAL Nachrichten... | |
| 00:00~00:00 ( 30 min ) | Im Focus | JOURNAL News - Business... |
| 00:00~00:00 ( 30 min ) | JOURNAL News - Busin... | |
| 00:00~00:00 ( 30 min ) | Insight | |

Press ● for multi-channel EPG.
Press ◎ for reserve selected program.
Press ◄► for Next/previous Channels.
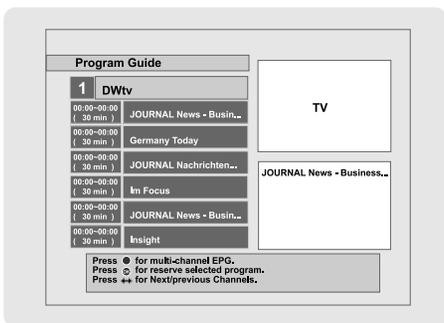
To use currently showing TV, and Radio services as well as to use next program schedules, press GUIDE button on the remote control unit.
If EPG is available on programs, you will see the detailed description of the programs, start/end time and programs schedules etc.
P+, P- and V-, V+ buttons will be used to move program and to see next program schedules. The OK button makes the reservation for the next program.
INFO button shows extended information of the current program.
TV/RADIO button will change the contents of EPG between TV and Radio services.

# Function Guide

## Subtitle

Subtitle Track
No 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 ☰ 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 STB.

Press ▭ button twice to watch the teletext with software emulation mode.

Press ▭ button or EXIT button to escape from teletext.

## Soundtrack

Sound Track
AUTO
Track 01
Track 02
Track 03
Track 04
Track 05
Track 06
Track 07
Track 08

Sound Mode
◀   Mono   ▶
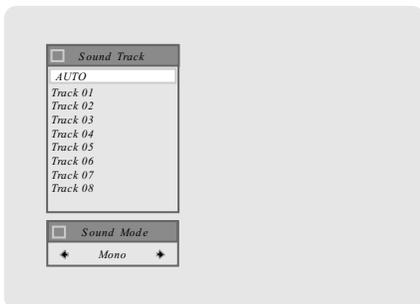
You can choose a language of soundtrack using ◁?) button on the RCU when a broadcaster supports various languages of soundtrack.

Also, it is possible to choose a mode among Stereo, Mono, Left and Right using the 〈ᵥ₋〉, 〈ᵥ₊〉 buttons on the RCU.

Now this chapter assumes that the STB system has been installed correctly, meaning:
* The satellite dish for the STB has been installed, connected to the STB and correctly adjusted to the proper satellite.
* The STB is connected to the TV.
* The RCU has batteries and ready to control the STB.
   If the STB has not been installed or connected properly, please refer to the INSTALLATION (connection) menu on this manual.

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

```
┌─────────────────────────────────────────────────────────┐
│                                                          │
│   ┌──────────────────────────────┐   ┌────────────────┐  │
│   │         Main Menu            │   │                │  │
│   └──────────────────────────────┘   │                │  │
│                                       │      TV        │  │
│   ┌──────────────────────────────┐   │                │  │
│   │ System Setting               │   │                │  │
│   │ Organizing Channels          │   │                │  │
│   │ Organizing Favorites         │   └────────────────┘  │
│   │ Installation                 │                        │
│   │ Information                  │                        │
│   │ Common Interface             │                        │
│   │ Game                         │                        │
│   └──────────────────────────────┘                        │
│                                                          │
│      ┌──────────────────────────────────────────────┐    │
│      │ System Setting.                              │    │
│      │ ↕ Moves Item,  ⊙ Selects Litem, ⦿ Exit      │    │
│      └──────────────────────────────────────────────┘    │
│                                                          │
└─────────────────────────────────────────────────────────┘
```
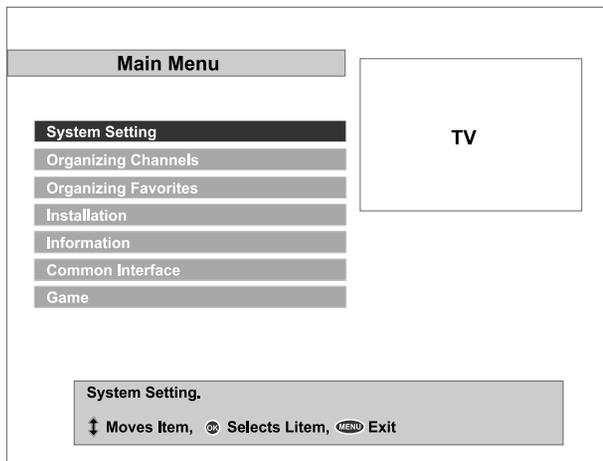
## I. SYSTEM SETTING

### 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.

| Time Setting | |
|---|---|
| Local Time setting | 08;19 |
| Timer | On |
| Wakeup time | 11:12 |
| Wakeup channel | 0 |
| | |
| Power Off Time | 00:00 |
| Sleep Time | Disable |

IRD will wakeup according to the Wakeup time

↕ Moves Item, ↔ Selects Litem, ⬛MENU Previous Menu

**A. Local Time Setting**
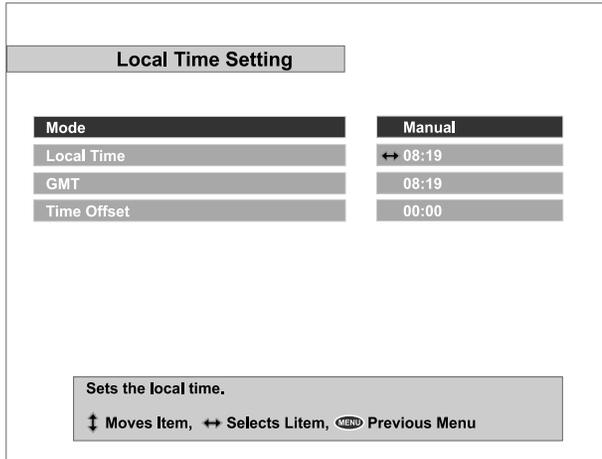


Press the (OK) button at Local Time Setting item in the Time Setting Menu to open the Local Time Setting menu. Inside the Local Time Setting menu, there are 4 sub menus: Mode, Local Time,GMT and Time Offset.

**Mode**

Bysing the ⟨ᵛ⁻, ᵛ⁺⟩ 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 ⟨ᵛ⁻, ᵛ⁺⟩ 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 ( v- , v+ ) buttons,15 minutes at a time.

## B. Timer

Time Setting

| | |
|---|---|
| Local Time setting | 08;19 |
| Timer | On |
| Wakeup time | ↔ 11:12 |
| Wakeup channel | 0 |
| | |
| Power Off Time | 00:00 |
| Sleep Time | Disable |

IRD will wakeup according to the Wakeup time

↕ Moves Item, ↔ Selects Litem, MENU Previous Menu

Use the ( v- , v+ ) 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 STB automatically turns on. Insert the preferable Wakeup Time by using the numeric buttons and the ( v- , v+ ) buttons on the RCU. To disable the wakup function, make the Timer item Off.

### D. Wakeup Channel

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

### E. Power Off Time

**Time Setting**

| | |
|---|---|
| Local Time setting | 08;19 |
| Timer | On |
| Wakeup time | 11:12 |
| Wakeup channel | 0 |
| | |
| Power Off Time | ↔ 12:00 |
| Sleep Time | Disable |

IRD will be on Standby mode after
the Power Off time is activated.
↕ Moves Item, ↔ Selects Litem, MENU Previous Menu

The Power Off Time item sets the time of the STB 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

```
                    Parental Control

     Censorship                          ↔ No block
     Change PIN Code
     Access Control        ☐  PIN Code required

                              Enter PIN code

                              #   #   -   -


       Sets the age limit to restriet the viewing of certain
       programs.
       ↕ Moves Item,  ↔ Selects Litem, (MENU) Previous Menu
```
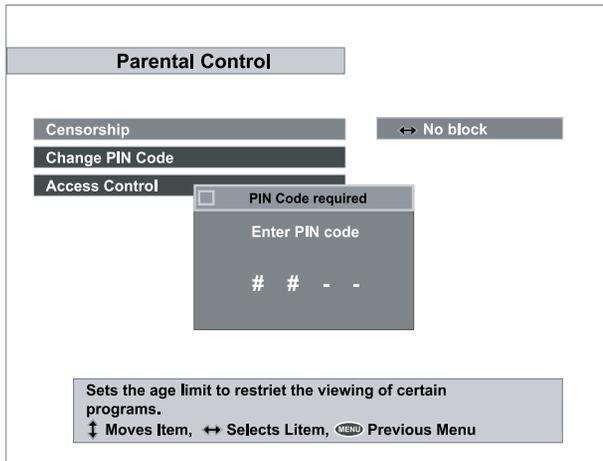
The age rating control, the PIN(Personal Identification Number) Code and the passwords to various menus can be configured. The PIN Code box will automatically appear when this menu is selected. The default PIN Code is 0000.

### 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 the (OK) button, and a box will appear the screen. Enter the PIN code by using the numeric buttons on your RCU.

## C. Access Control

```
┌──────────────────────────────────────────────────────┐
│                                                      │
│         ┌────────────────────────┐                   │
│         │     Access Control     │                   │
│         └────────────────────────┘                   │
│                                                      │
│   ┌──────────────────────────┐   ┌────────────────┐  │
│   │ Time setting             │   │     Unlock     │  │
│   ├──────────────────────────┤   ├────────────────┤  │
│   │ Language Setting         │   │     Unlock     │  │
│   ├──────────────────────────┤   ├────────────────┤  │
│   │ A/V Output Setting       │   │     Unlock     │  │
│   ├──────────────────────────┤   ├────────────────┤  │
│   │ Organizing Channels      │   │     Unlock     │  │
│   ├──────────────────────────┤   ├────────────────┤  │
│   │ Organizing Favorites     │   │      Lock      │  │
│   ├──────────────────────────┤   ├────────────────┤  │
│   │ Installation             │   │   ↔  Lock      │  │
│   ├──────────────────────────┤   ├────────────────┤  │
│   │ IRD Lock                 │   │     Unlock     │  │
│   └──────────────────────────┘   └────────────────┘  │
│                                                      │
│      ┌───────────────────────────────────────────┐   │
│      │ Locks or Unlocks Installation menu.       │   │
│      │                                           │   │
│      │ ↕ Moves Item,  ↔ Selects Litem, MENU Previous Menu │
│      └───────────────────────────────────────────┘   │
│                                                      │
└──────────────────────────────────────────────────────┘
```
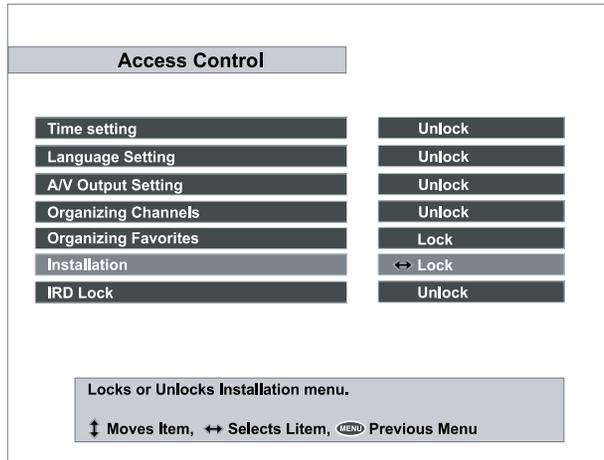
The Access Control menu controls access to 6 items: Time Setting, Language Setting, A/V Output Setting, Organizing Channels, Organizing Favorites and Installation. Press the ⟨, ⟩ buttons to Lock/Unlock the access. Locking means controlling the access to specific menus with the PIN Code system. The default 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 the ⬚ button on your RCU.

[English / French / German / Italian / Spanish / Arabic / Greek / Turkish / Danish / Swedish / Norwegian]
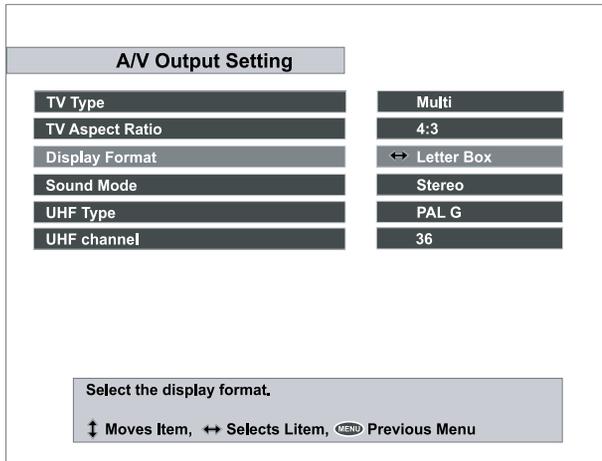
C. **Audio Language**

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 the ⊲⑦ button.

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

## I-4. A/V OUTPUT SETTING

**A/V Output Setting**

| TV Type | Multi |
|---|---|
| TV Aspect Ratio | 4:3 |
| Display Format | ↔ Letter Box |
| Sound Mode | Stereo |
| UHF Type | PAL G |
| UHF channel | 36 |

Select the display format.

↕ Moves Item, ↔ Selects Litem, MENU Previous Menu

The STB has many A/V Outputs. Control this menu properly according to external components connected to the STB. 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 (◁·, ·▷) 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 (v-, v+) buttons.

## D. Sound Mode

Allows you to configure the sound mode. Select the Stereo, Mono, Left and Right modes by using the (v-, v+) buttons. The Sound mode is configurable later on by using the (◁?) button on your RCU.
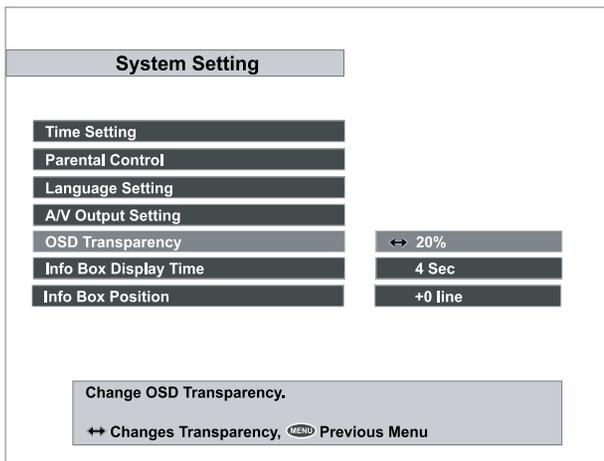
## E. UHF Type

Allows you to change the UHF Type. Select the PAL G, PAL I, PAL K modes by using the (v-, v+) buttons.

## F. UHF Channel

Choose the UHF Channel by using the (v-, v+) buttons. The default UHF channel is CH36.

## I-5. OSD Transparency
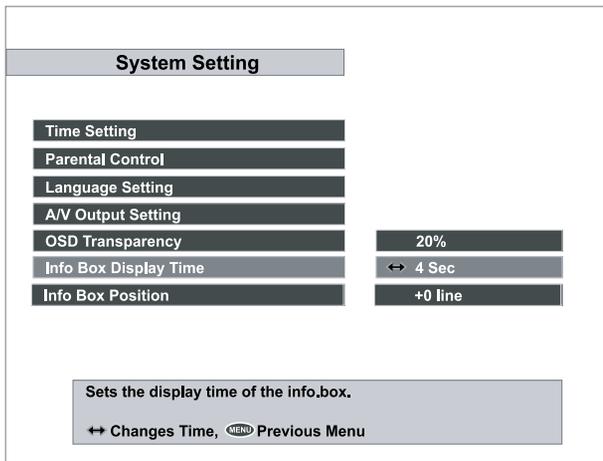
Adjusts the OSD transparency level of all kinds of menus. The available levels are ranging from 0% to 50%.

| System Setting | |
|---|---|
| Time Setting | |
| Parental Control | |
| Language Setting | |
| A/V Output Setting | |
| OSD Transparency | ↔ 20% |
| Info Box Display Time | 4 Sec |
| Info Box Position | +0 line |

Change OSD Transparency.

↔ Changes Transparency, (MENU) Previous Menu

## 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 | |
| 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.

↔ Changes Time, MENU Previous Menu

## I-7. Info Box Position

Adjusts the position of the Info Box. Allows you to change the position by using the ⌐V-⌐,⌐V+⌐ buttons.

## II. ORGANIZING CHANNELS
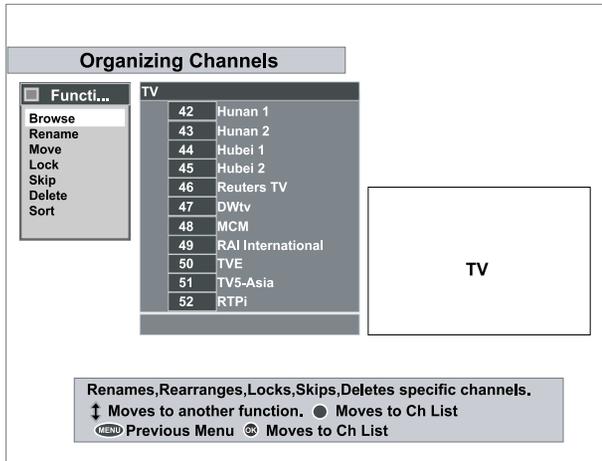


This mode can be used to rename, reorder, lock, hide and to delete TV Services.

### A. Browse

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

### B. Rename

Use the ⟨P+⟩, ⟨P-⟩ buttons to select Rename item and press the (OK) button to move the cursor to the Channel List. Press (OK) button to display keyboard, and rename the channel. After renaming it, be sure to save it by pressing the (OK) button at Save item.

### C. Move

You can reorder and move the service to the preferred position. Mark the desired channel to move and press (OK) button. Use the ⟨P+⟩, ⟨P-⟩ buttons to choose the Move mode.

### D. Lock

You can restrain and lock the use of 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 ride and skip the services. In order to unlock the skip function, press the (OK) button on the skipped channel. The skipped channels will not be visible on channel list.
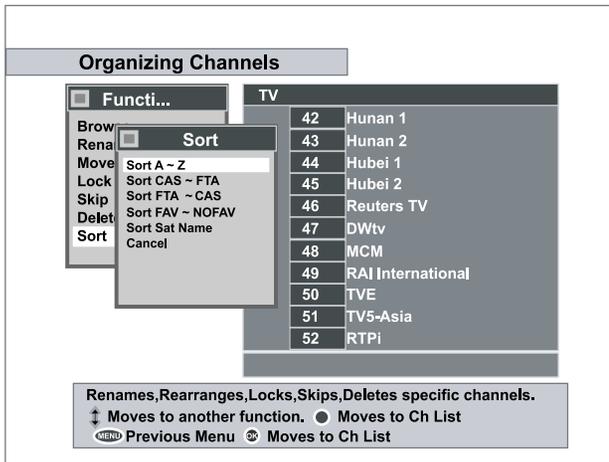
### F. Delete

Press (OK) 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.
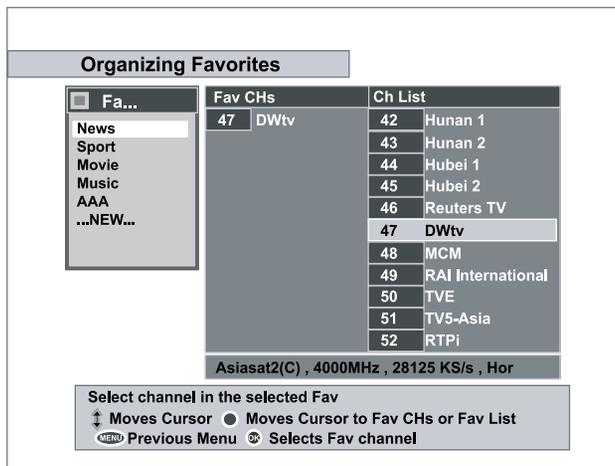
**NOTE: Deleted channels are permanently deleted. The only way to reobtain is to perform a new channel search.**

### G. Sort

You can sort and rearrange the sequence for the services.

```
Organizing Channels
┌─────────────────────────────────────────────┐
│  ☐ Functi...        TV                       │
│  Brow              42   Hunan 1              │
│  Rena   ☐  Sort    43   Hunan 2              │
│  Move   Sort A ~ Z 44   Hubei 1              │
│  Lock   Sort CAS ~ FTA  45   Hubei 2         │
│  Skip   Sort FTA ~ CAS  46   Reuters TV      │
│  Delet  Sort FAV ~ NOFAV                     │
│  Sort   Sort Sat Name   47   DWtv            │
│         Cancel     48   MCM                  │
│                    49   RAI International     │
│                    50   TVE                  │
│                    51   TV5-Asia             │
│                    52   RTPi                 │
│                                              │
│  Renames,Rearranges,Locks,Skips,Deletes specific channels. │
│  ↕ Moves to another function.  ● Moves to Ch List          │
│  MENU Previous Menu  OK Moves to Ch List                   │
└─────────────────────────────────────────────┘
```

**III. ORGANIZING FAVORITES**



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 the (OK) button.

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

## IV. INSTALLATION

### Installation

LNB Setting
Channel Search
Dish Setting
Motorized DiSEqC1.2
SAT/TP Edit
Factory Setting
Transfer Program to Other IRD
Transfer Data to Other IRD

Configures LNB & DiSEqc.

⬍ Moves Item,  ⓄⓀ Enter LNB Menu, ⟨MENU⟩ Previous Menu

## IV-1.LNB Setting

### LNB Setting

| Satellite Name | ⓄⓀ Asiasat2 (C) |
| LNB Frequency | 5150 MHz |
| LNB Power | On |
| 22Khz | Off |
| 12V | Off |
| DiSEqC 1.0 | Disable |
| Channel Search | |

Select the satellite name of the dish.
Preess OK to see the list.
⬍ Moves Item,  ↔  Selects Item, ⟨MENU⟩ Previous Menu

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 STB.

For the LNB Settings, move the cursor to INSTALLATION item and press (OK) button.

Then, set the cursor to the LNB Setting item and press (OK) button.

**A. Satellite Name**

Press the (OK) 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. 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 ⟨v-⟩ or ⟨v+⟩ 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.**

**C. LNB Power**

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

**D. 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.

### E. 12V

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

### F. DiSEqC 1.0

The STB is designed to be DiSEqC 1.0 compatible. This allows multiple antennas to be connected to the STB at the same time. If 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, MiniB or Disable according to the option or the configuration of DiSEqC switch box or antenna.

### G. Channel Search

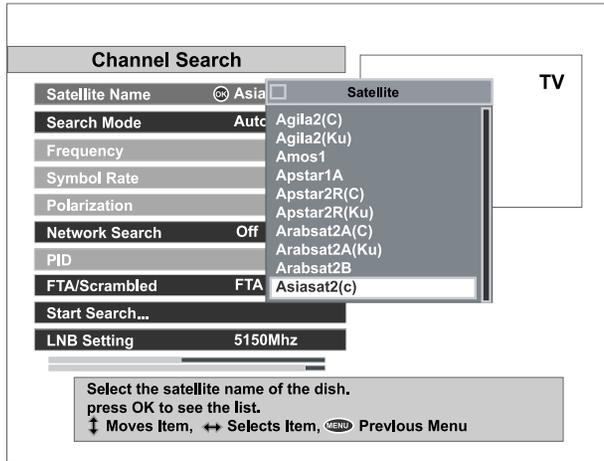To go to channel search menu directly from LNB setting menu, press (OK) button at this item.

## IV-2. Channel Search

| Channel Search | |
|---|---|
| Satellite Name | ⊙ Asiasat2(C) |
| Search Mode | Auto |
| Frequency | |
| Symbol Rate | |
| Polarization | |
| Network Search | Off |
| PID | |
| FTA/Scrambled | FTA + CAS |
| Start Search... | |
| LNB Setting | 5150Mhz |

TV

Select the satellite name of the dish.
press OK to see the list.
↕ Moves Item,  ↔ Selects Item,  (MENU)Previous Menu

## A. Satellite Name



Press the (OK) 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

```
                    Channel Search
        Satellite Name          Asiasat2(C)
        Search Mode             Manual                  TV
        Frequency               4000 MHz
        Symbol Rate             28125 KS/S
        Polarization            Horizontal
        Network Search
        PID                 OK  Auto/Auto/Aut
        FTA/Scrambled           FTA + CAS
        Start Search...
        LNB Setting             5150Mhz

          Select mode:auto,none or numerie

          ↕ Moves Item,  ↔ Selects Item,  MENU  Previous Menu
```
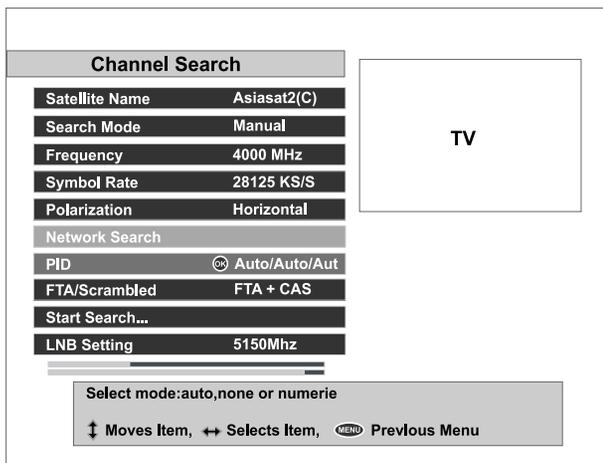
There are 4 search modes, Auto, Manual, Advanced and SMATV. The Auto mode enables to search using the information the STB has. On the other hand, there will be a need to know in advance the frequencies and the symbol rates before using the Manual mode. On the Advanced mode, enter the Audio PID, Video 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 (OK) button to enter Video/Audio/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/PCR PID change, press (OK) button at this item.

**H. FTA/ Scrambled**

Choose your favorable channels among FTA only / CAS only / FTA+CAS.

### I. Start Search...

Searches for digital channels after the configuration of the LNB is over. To stop the searching process on the way, press either the $\boxed{\text{MENU}}$ button or the $\boxed{\text{EXIT}}$ button. This menu will be shown as long as the STB is searching for channels. All channels found will be listed in two columns on the screen; with TV channels in one column
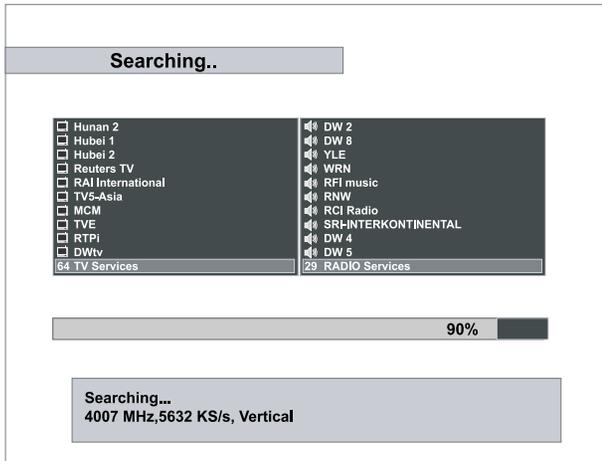


and Radio channels in the other. Please note that the search procedure may take a few minutes. When the search procedure is completed, the screen will show how many TV and Radio channels have been found. Press (OK) button to save the channels.

### J. LNB Setting

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

## Positioner Setting Guide

For the viewing of certain programs and satellites, the satellite and the antenna has to be configured. This is possible through the Motorized Dish Setting menu.
**NOTE: The positioner should be installed correctly, before proceeding this part of manual.**

### Installation

**Warning: Disconnect STB from mains supply, before installing the positioner and/or skew motors.**

### Positioner

There are 4 wires from actuator motor. That is to say, M1, M2, Pulse(or reed) and GND wires. Please check and follow the procedures.

A. Connect the GND wire to the GND terminal on your STB.

B. Connect the motor wires of actuator to the motor terminal(M1,M2) on your STB.

    ⎾ **Caution** ⏋ **: Please do not connect the pulse(or reed) wires to the motor terminals(M1,M2) on STB. It may break down your STB and Motor.**

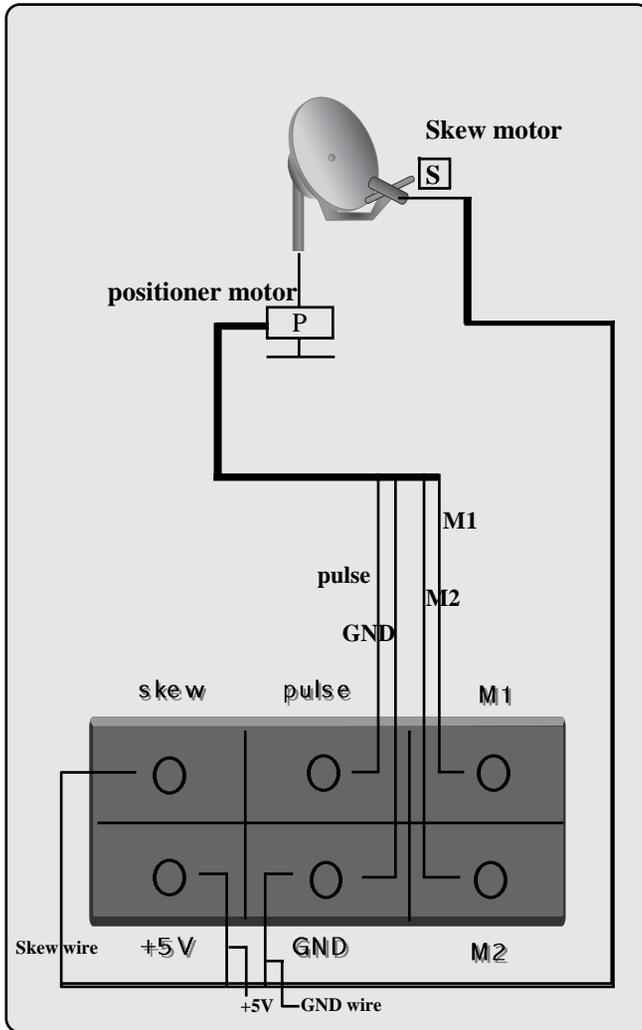C. Connect the reed wires of actuator to the 'Pulse' terminal on your STB.

    ⎾ **Caution** ⏋ **: Please do not connect the motor wires(M1,M2) to the pulse terminal on STB. It may break down your STB and motor.**
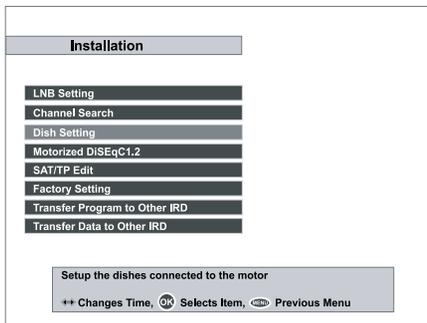
### Skew

There are 3 wires from skew motor. That is to say, +5V, Skew and GND wires. Please check and follow the procedures.

A. Connect the GND wire of skew motor to the GND terminal on your STB.

B. Connect the +5V wire of skew motor to the +5V terminal on your STB.

C. Connect the skew wire of skew motor to the Skew terminal on your STB.

<code>Caution</code> : **Please do not exchange the above three wires. It May break down your STB and skew motor.**

## IV-3.  Dish Setting

Installation

LNB Setting
Channel Search
Dish Setting
Motorized DiSEqC1.2
SAT/TP Edit
Factory Setting
Transfer Program to Other IRD
Transfer Data to Other IRD

Setup the dishes connected to the motor

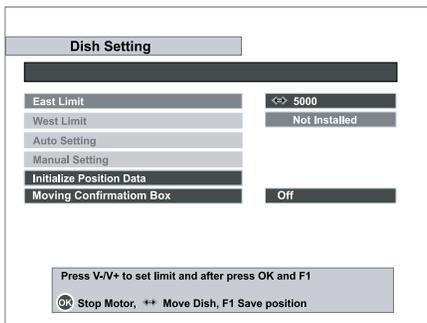↔ Changes Time, OK Selects Item, ⬜ Previous Menu

First, go to the Motorized Dish Setting under
the Installation-Dish Setting-Auto Setting menu.
Please note that the ⬡ button always indicates
the eastern direction and similarly the ⬡
button always the western direction.

**IMPORTANT: After the configurations, "saving" the information is crucial!
Press the red (F1) button to save the settings.**

Before setting the antenna position, the East Limit and the West limit have to be set.

### A. East Limit

Dish Setting

East Limit                    ⬥ 5000
West Limit                    Not Installed
Auto Setting
Manual Setting
Initialize Position Data
Moving Confirmatiom Box       Off

Press V-/V+ to set limit and after press OK and F1

OK Stop Motor,  ↔  Move Dish, F1 Save position

Press the ⬡ button to move and adjust the
motor to a certain position of the East limit.
Save it by pressing **red (F1)** button.
The indicated number will be set as 1000.

## B. West Limit

| Dish Setting | |
|---|---|
| | |
| East Limit | ◁▷ 1000 |
| West Limit | 1000 |
| Auto Setting | |
| Manual Setting | |
| Initialize Position Data | |
| Moving Confirmatiom Box | Off |

Press V-/V+ to set limit and after press OK and F1

OK Stop Motor, ↔ Move Dish, F1 Save position

Press the ⟨·⟩ button to move and adjust the motor to a certain position of the West limit. Save it by pressing **red (F1)** button.
The indicated number will increase from 1000.

The dish limits are now saved in the receiver and the dish is positioned to the most western limit.

**CAUTION: If you do not have a movable dish, just press the  red(F1) button twice to program the East and the West limit in the same position. This will be indicated by a numeric value of 1000 for both limits**.

There are two main ways of configuring the antenna: the Auto and the Manual setting.

## C. Auto Setting

| Motorized Dish Setting | |
|---|---|
| Configure the most western satellite and press F1 | |
| Satellite Name | ◁▷ Asiasat2(C) |
| LNB Satting | |
| Frequency | 3640 / 27850 / H |
| Position | E .... W |
| Align dish | E  W |
| Skew | Not Set |
| Channel Search | |
| Positioned Satellite | |
| EL                WL 1000 | |

Select the satellite name of the dish.
Press OK to see the list.
↕ Moves Item,F1 Save Position,F2 Go to the Position

The Auto Setting consists of 4 main steps: configuring the most western,middle and the most eastern satellite and the specific Satellite you want to set.

**1) Most Western Satellite**

. *Satellite Name* : Press the (OK) button to display the satellite list. Choose the desirable most western satellite among the list by highlighting it and press the (OK) button.

. *Frequency* : Press the (OK) button to display the frequency list. Any frequency will function. Please contact the installer or the service provider for more specific information.

. *Position dish* : Press the button to search and allocate the antenna to the adequate position. The positioning procedure might not succeed the first time. Repeat the procedure, if it is needed. As you press the / buttons, the cursor will subsequently move to the left/right until it finds the matching position. As soon as the cursor finds the position, the signal quality(yellow bar) will appear. If the signal strenth is appear, the motor will be stopped.

. *Align dish* : In the position, move the dish to obtain the highest signal quality using the or buttons.

. *Press the* **red (F1)** *button to save it!*

**NOTE: There could be an error, though rare, concerning the misplacement of east and west positions. Please check the position of the Antenna Positioner for the best solution.**

**2) Middle Satellite**

. *Repeat the first 2 steps(Satellite Name, Frequency) as listed above.*

. *Position dish* : Press the button to search and allocate the antenna to the adequate position. The positioning procedure might not succeed the first time. Repeat the procedure, if it is needed. As you press the / button, the cursor will subsequently move to the left/right until it finds the matching position. As soon as the cursor finds the position, the signal quality (yellow bar) will appear. If the signal strenth is appear, the motor will be stopped.

. *Align dish* : In the position, move the dish to obtain the highest signal quality using the or buttons.

. *Press the* **red (F1)** *button to save it!*

### 3) The Most Eastern Satellite

. *Repeat the first 2 steps(Satellite Name, Frequency) as listed above.*

. **Position dish** : Press the ⟨ button to search and allocate the antenna to the adequate position. The positioning procedure might not succeed the first time. (Repeat the procedure, if it is needed.) As you press the ⟨ / ⟩ button, the cursor will subsequently move to the left/right until it finds the matching position. As soon as the cursor finds the position, the signal quality (yellow bar) will appear.

. **Align dish** : In the position, peak the dish to obtain the highest signal quality using the ⟨ or ⟩ buttons.
Press the **red (F1)** button to save it!

### 4) Program Satellites

Now go to the Satellite Name section and press (OK) to display the satellite list. Accordingly, check all satellites you want to positioned between the most western and the most eastern satellite using the (OK) button. Press the **red (F1)** button to save it. Let the receiver calculate all intermediate satellite positions. All selected satellite positions are now stored.

The STB now has programmed the position of all selected satellites. Next step is to store all channels on the satellite. Under the same Dish Setting menu, go to the Channel Search section. Select the Start Search... section to launch the searching procedure and to store all channels.

Repeat this procedure for all satellites.

### D. Manual Setting

| Motorized Dish Setting | |
|---|---|
| Satellite Name | ⟨⟩ Asiasat2(C) |
| LNB Satting | |
| Frequency | 3640 / 27850 / H |
| Position | E .... W |
| Align dish | E  W |
| Skew | Not Set |
| Channel Search | |
| Positioned Satellite | |
| EL          WL 1000 | |

Select the satellite name of the dish.
Press OK to see the list.
↕ Moves Item,F1 Save Position,F2 Go to the Position

1) **Satellite Name** : Press the (OK) button to display the satellite list. Choose the desirable most western satellite among the list by highlighting it and pressing the (OK) button.

2) **Frequency** : Press the (OK) button to display the frequency list. Any frequency will function. Please contact the installer or the service provider for more specific information.

3) **Position dish** : Press the ⟨√⟨ button to search and allocate the antenna to the adequate position. The positioning procedure might not succeed the first time. Repeat the procedure, if it is needed. As you press the ⟨√⟨ / ⟨√⟩ buttons, the cursor will subsequently move to the left/right until it finds the matching position. As soon as the cursor finds the position, the quality signal (yellow bar) will appear.

4) **Align dish** : In the position, peak the dish to obtain the highest signal quality using the ⟨√⟨ or ⟨√⟩ buttons.
   . *Press the* **red (F1)** *button to save it!*

5) **Channel Search** : Select Start Search... to store all channels.

   **NOTE: There could be an error, though rare, concerning the misplacement of east and west positions. Please check the position of the Antenna Positioner for the best solution.**

**E. Initialize Position Data**
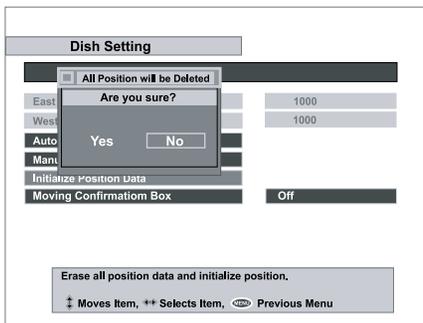


You can initialize all stored position data when you want set up new satellite position.

**F. Moving Confirmaton Box**

If this item is set to Off, you need not confirm the moving when channel is changed to other satellite.
If this item is set to On, you have to confirm the moving antenna position when channel is changed to other satellite.

---

**IV-4 . Motorized DiSEqC 1.2**



```
              Motorized  DiSEqC1.2

    Satellite Name                          ◄►  Asiasat2(C)
    Frequency                                   3640 / 27850 / H
    LNB Setting
    Motorized DiSEqC1.2                          Disable
    DiSEqC1.2 Command Mode                       User
    Movement                                     0(Stop)
    Motor Control                                Goto
    Channel Search


    Select the satellite name of the dish.
    Press OK to see the list.
    ⬍ Move Item,  OK  Selects Item,  MENU  Previous Menu
```

If you have DiSEqC 1.2 motorised 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.

. **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**
- G o t o : Moves the motor to the stored position of the selected satellite.
- S t o r e : Stores the current position of the motor for the selected satellite.
- R e s e t : Resets all stored position of the motor relative to the "0" position.
  (I n s t a l l e r mode only)
- R e c a l c u l a t e : Recalculates the position of the Stab Rotor motor.
- L i m i t  E , W: Limits east and west position.
- L i m i t  O F F : Setting of the limitation.
- G o t o  R e f : Goes to reference.

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

## IV-5. SAT/Tp Edit

### SAT/Tp Edit

| | |
|---|---|
| Satellite Name | (OK) Asiasat2(C) |
| Frequency | 3640  MHz |
| Symbol Rate | 27850 KS/s |
| Polarization | Horizontal |
| SAT Name Edit | |
| Add new TP | |
| Delete TP | |
| Add Satellite | |
| Delete Satellite | |
| Channel Search | |

Select the satellite name of the dish.
Press OK to see the list.
↕ Moves Item, ↔ Selects Item, (MENU) Previous Menu

**A. Satellite Name**

By pressing (OK) button, you can see the listed satellite names .
Then,using ⟨P+⟩, ⟨P-⟩, (◁ or ▷) buttons, you can select satellite.

**B. Frequency**

By pressing (OK) button, you can see the all frequencies of transponders of a satellite,
and also you can select a frequency. Or, by pressing ⟨P+⟩ , ⟨P-⟩ , (◁ or ▷) buttons,
you can select and view a frequency one by one.

**C. Symbol Rate**

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

**D. Polarization**

You can select the polarization from Horizontal and Vertical modes.

**E. SAT Name Edit**

You can change the name of the satellite name by this menu.
Press (OK) 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 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 (◁ or ▷) and column
by ⟨P+⟩ or ⟨P-⟩ 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
(OK) button at OK 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
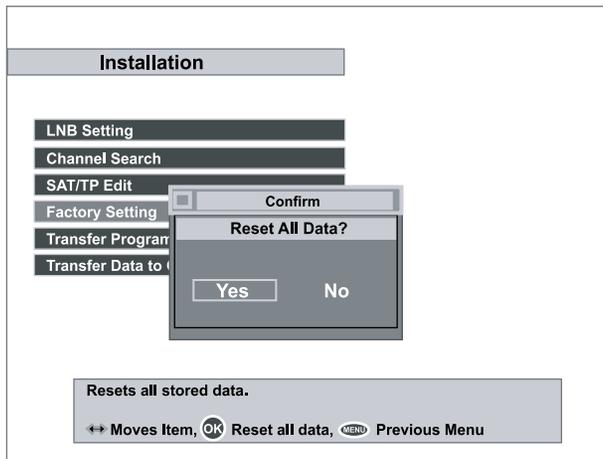added in the Satellite Name menu.

### 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.

**IV-6. Factory Setting**

**Installation**

LNB Setting
Channel Search
SAT/TP Edit
Factory Setting
Transfer Program
Transfer Data to

**Confirm**
**Reset All Data?**

Yes        No

Resets all stored data.

↔ Moves Item, OK Reset all data, MENU Previous Menu

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

**IV-7.Transfer Program to Other IRD**

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

**IV-8.Transfer Data to Other IRD**

It is used to transfer data such as satellite/TP information to other IRD for
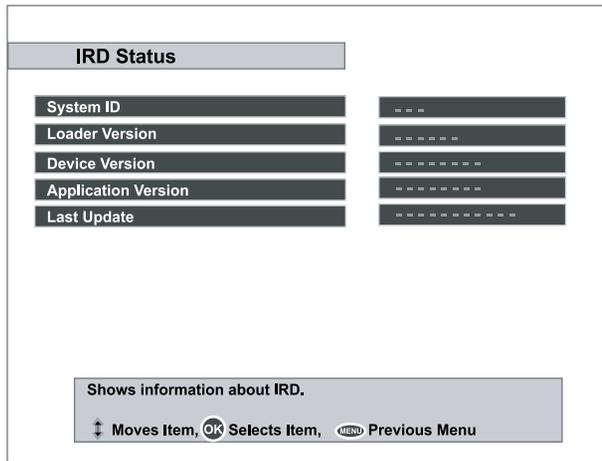upgrading the IRD.
**Notes: Please proceed this menu with connecting the IRD of same model and
same specification.**

**V. INFORAMTION**

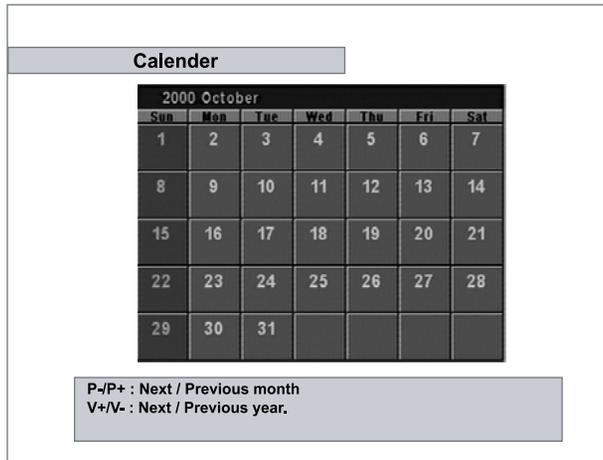You can check the STB version and refer the calendar.

**V-1. IRD STATUS**



Check the IRD's system information. It shows the IRD's:
- ∨ System ID
- ∨ Loader Version
- ∨ Device Version
- ∨ Application Version
- ∨ Last Update

## V-2.  CALENDAR

**Calender**

| | 2000 October | | | | | |
|---|---|---|---|---|---|---|
| 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 | 31 | | | | |

**P-/P+ : Next / Previous month**
**V+/V- : Next / Previous year.**

Press the ⊘or ⊘ button to select the year. Press the ⊘or ⊘ button to select the month.

## Ⅵ. GAME

### Ⅵ-1. Block



### Ⅵ-2. Poker
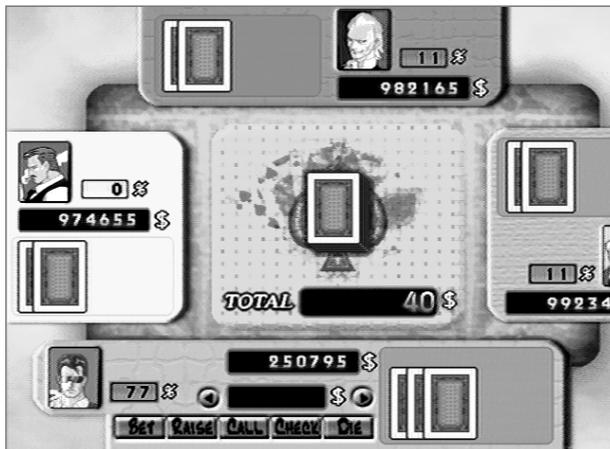
## Ⅵ-3. Bricks Lay
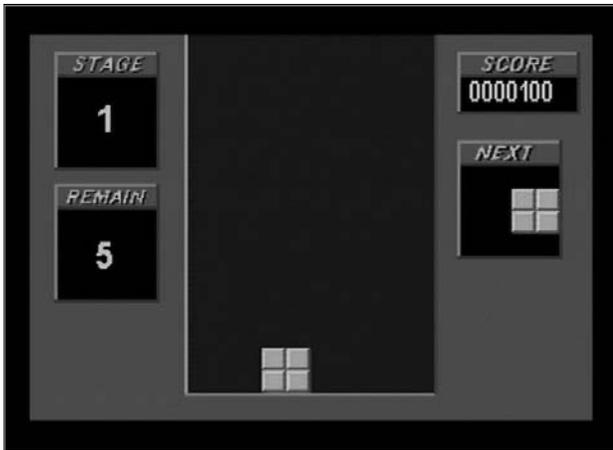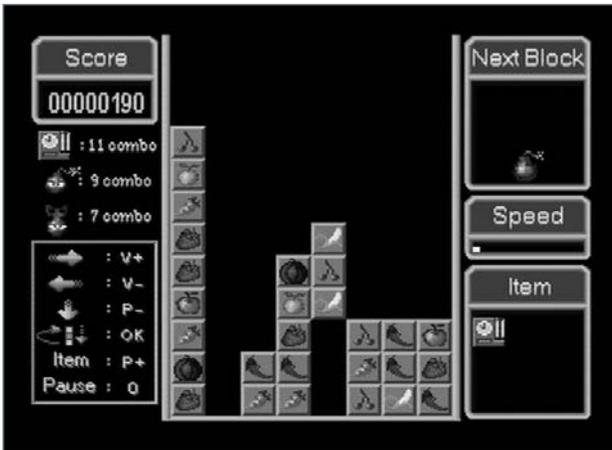


## Ⅵ-4. Bomb Hexa

| 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 -- : -- | STB is in standby mode. | Turn the power ON. |
| No Picture, No Sound. | • The satellite dish is not pointing at the satellite.<br>• No Signal or Weak Signal.<br>• LNB is faulty.<br>• The UHF Key is "pushed down". | • Adjust the dish.<br>• Check the settings in one of the channel search submenus.<br>• Check the cable connections.<br>• Replace the LNB.<br>• Get out of the UHF mode. |
| The Remote Control Unit (RCU) is not working. | • No Batteries.<br>• The RCU is incorrectly aimed.<br>• The STB is in standby mode. | • Change the batteries (both).<br>• Aim the RCU properly to the STB.<br>• 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. |

## Ⅰ. STB 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 |
| CINCH A/V Out | 1Video / 2 Audio (left and right) |
| LNB Power | Convertible 13.5/18V (500mA max) |
| Modulation / FEC Type | QPSK / Multiple convolution coding (DVB Compliant) |
| DiSEqC Bus | DiSEqC Ver. 1.0 / 1.2 compatible |
| Tone Switching | 22 KHz |
| RF Modulator | UHF Ch. 21-69 with PAL I/G/B |
| 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 |

## Ⅱ. CHANNEL PROCESSING

| Item | Specification |
|---|---|
| Input Frequency Range | 950 - 2150 MHz |
| Number of Channels | 3500 TV Channels 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-1. **POWER SUPPLY  (Non-Positioner model only)**

| Item | Specification |
|------|---------------|
| Input Voltage | 90 - 250VAC, 50 / 60Hz |
| Type | SMPS |
| Power Consumption | Max.30Watt |
| Standby Power | 8Watt |
| Protection | Separate internal fuse |

## Ⅵ - Ⅰ. POWER SUPPLY  (Embedded Positioner model only)

| Item | Specification |
|------|---------------|
| Input Voltage | 90 - 250VAC, 50 / 60Hz |
| Type | SMPS |
| Power Consumption | Max.230Watt |
| Standby Power | 8Watt |
| Protection | Separate internal fuse |

## Ⅶ. POSITIONER  (Embedded Positioner model only)

| Item | Specification |
|------|---------------|
| Satellite Position | 50 |
| Azimuth Control | 4 push terminals (M1,M2,Pulse,GND) |
| Output Power | 36VDC, 5A Max |
| Sensor Type | Reed Switch |