

Exhibit E

User's Manual

EFA CO.

FCC ID.:JJ6IRD2102S

DIGITAL SATELLITE RECEIVER

PROSAT-2102S

USER MANUAL

LNB DIGITAL SATellite RECEIVER
PROSAT-2102S
MAIN FEATURES

- DVB compliant system
- Menu-driven On-Screen-Display
- Full function infra-red remote control
- Adding new channels automatically/manually
- Channel information display
- Dish positioning Help menu
- TV format selection (16:9 / 4:3)
- LNB frequency setting
- Volume control with Mute function
- Two or One L-Band inputs with RF loop through
- S-VHS Video output
- High speed and RS-232C low speed data ports
- Optional smart card conditional access function

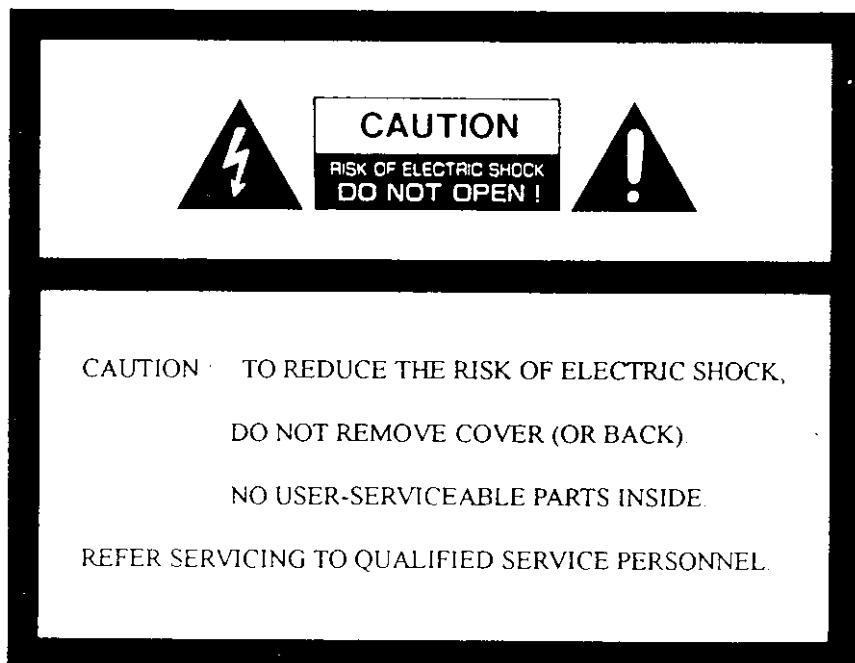
PROSAT

DE

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WARNING

**To prevent fire or shock hazard, do not expose
the unit to rain or moisture.**



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



This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included.

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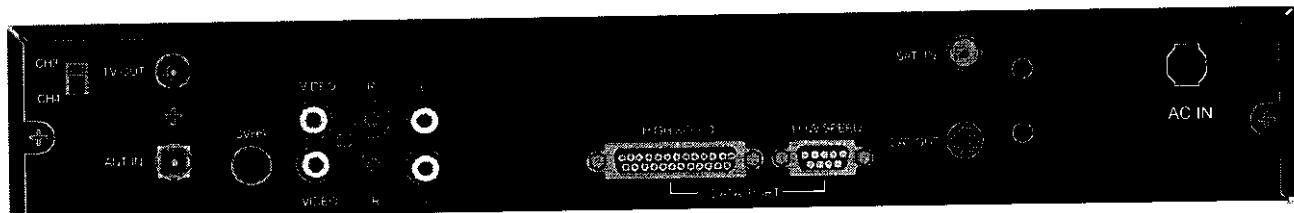
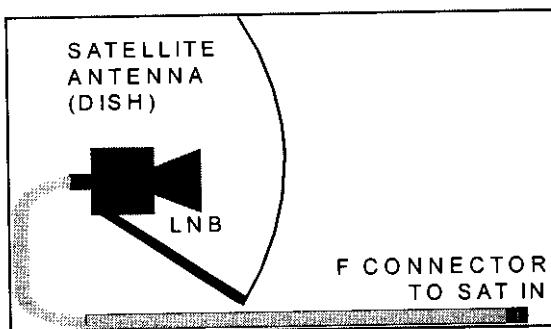
1. POWER UP:

The satellite receiver uses a universal power supply. It can therefore be plugged in any mains power (90 V to 260 V, 50 and 60 Hz).

2. CONNECTIONS TO THE SATELLITE RECEIVER:

2.1 Connect the cable coming from the satellite antenna to the SAT IN input using a F connector.

Check carefully that the F connector has been fixed without inducing a short circuit between the inside cable and the external ground cable.



2.2 If you are also using an analogue satellite receiver, connect its satellite input to the SAT OUT F connector of your .

2.3 If your TV is equipped with a SVHS input, connect it to the SVHS output of your. This will give you the best picture quality. Use the RCA L and R outputs to connect to the Left and Right Audio inputs of your TV set or of your Hi Fi.

2.4 If you cannot use the SVHS signal, connect the Video, L and R outputs to the A/V input of your TV and/or VCR. This will still give you the best picture quality the PAL and NTSC systems can achieve.

Alternately, you can connect the L and R plugs to your Hi-Fi Left and Right Aux input.

This will allow you to appreciate the digital sound quality of the Satellite programs.

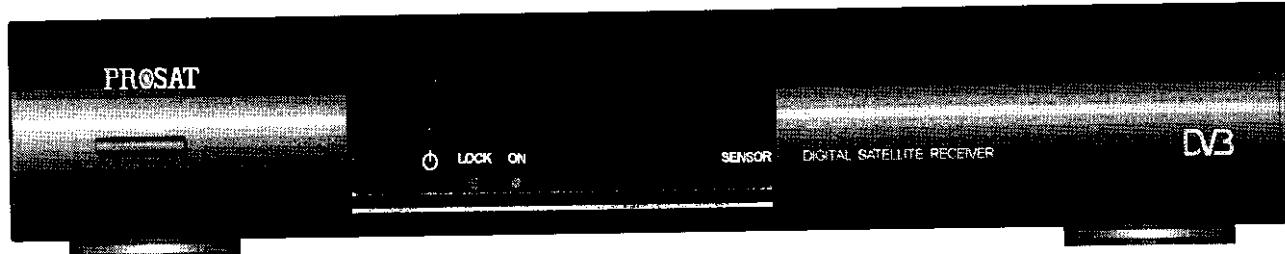
Alternately you can directly connect the SCART output to your TV or VCR if they are equipped with this kind of Input / Output.

2.5 If your TV and/or VCR is not equipped with A/V inputs, you can use the modulator output and connect it with a standard TV antenna cable to your TV and/or VCR antenna input.

3. FIRST POWER UP:

When you power up the right green LED switches ON.

If it turns ON and OFF, your satellite antenna cable has probably a short circuit. Verify the F connector.



If you already had a dish installed for an analogue receiver, you may see the yellow LED turn on. This indicates that you are already tuned. Otherwise you need to position your dish. The menus on your TV screen will help you to get a fast and good reception.

Anyway at this stage, you need to see the satellite picture on your TV screen.

Note: your receiver may have been reset at factory or by your distributor. You will then first see a screen requesting your initial password. Enter any 4 digit number, then press OK. Do not forget this number. If you are not requested to input your password, it has been already set to "1111".

3.1 Your first picture from your satellite receiver:

3.1.1 If your TV set is connected through the SVHS connector, select the SVHS input for your TV set. This is usually one of the Video inputs and has to be selected by the A/V menu of your TV set. If your TV set is connected by the SCART plug, and your TV set has several SCART inputs, use the TV remote control to select the one you have plugged your cable into.

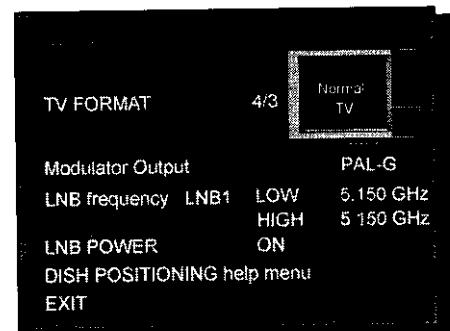
3.1.2 If your TV set is connected through the RCA connectors (Video, L an R), select the relevant A/V inputs by using the A/V menu or Remote control key of your TV set.

3.1.3 If your TV set is connected through its antenna, tune your TV set to an unused channel.

You can then choose between two solutions:

- Either you tune your TV set to the channel used by the satellite receiver (the easiest way to find it is by selecting the auto scan or auto-tune function of your TV)

- Or you tune the IRD to the channel you intend to use on your TV set to receive the satellite programs. If you known the two digit channel number, just press these two digits on your satellite receiver remote control. Otherwise, you can scan all channels by pressing continuously the LEFT or RIGHT arrow keys of your satellite receiver remote control. As soon as you are tuned, you will see a display like this one:



Release immediately the Arrow key of your remote control. You are now ready for all needed set ups.

3.2 Setting your TV format:

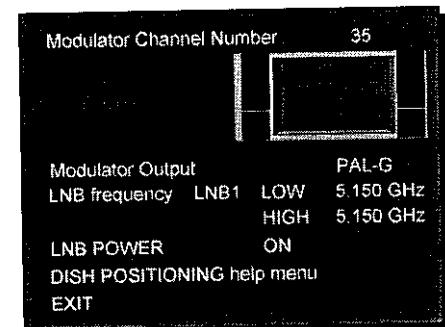
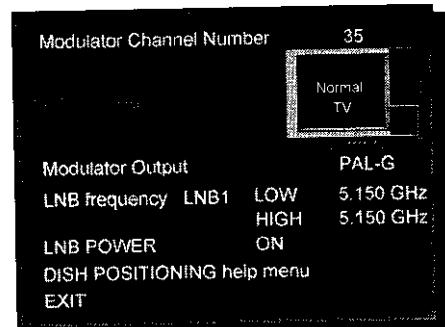
By using the DOWN key of your remote control, you can highlight the second line of the set-up menu.

If your TV set is a standard one, just leave the indication 4/3. In this mode, when the received program is in wide screen format, the picture is converted to the 4/3 aspect ratio so that your picture is not distorted.

If you are using a wide screen TV, press once the LEFT or the RIGHT arrow key of your remote control. This will bring the indication 16/9 on the screen. In this mode, you will get wide screen format programming in full screen while standard 4/3 aspect ratio programming will be converted by your TV set.

If you have chosen the 16/9 indication and you want to go back to 4/3, just press again the LEFT or the RIGHT arrow key.

If you want to quit the menu without storing the changes, press the NO key. If you want to quit and store the changes, press the OK key.



3.3 Setting your LNB frequency:

LNB stands for Low Noise Block converter. This is the little box, fixed on the satellite dish, which receives the signal from the satellite and converts it into a frequency which the tuner of your satellite receiver can then demodulate.

The LNB contains a local oscillator the frequency of which must be known by the receiver.

If you have acquired your satellite receiver in kit with a dish, the frequency of the LNB has already been set in factory.

Otherwise, or if you want to use an other LNB, you need to input the correct value of the LNB frequency. The correct value has been supplied to you with your LNB.

To change the default LNB frequency, press the DOWN key of your remote control until the LNB frequency line is highlighted. Then, each time you press the RIGHT or LEFT arrow key, you get a new standard value of the LNB frequency.

The list of frequencies is: 9.750, 10.000, 10.600, 10.750, 11.000, 11.250, 11.475, 5.150 GHz. Select the frequency used by your LNB.

Note 1: for C band, there is only one value which is 5.15 GHz. Please set the LOW and HIGH as the same value.

Note 2: for Universal LNB, please set LOW L/O to the value which is 9.750 and set the HIGH L/O to the value which is 10.600.

Note 3: If your LNB frequency is not in the list of standard values, you can directly key in the desired frequency.

If you want to quit the menu without storing the changes, press the NO key. If you want to quit and store the changes, press the OK key.

3.4 LNB ON/OFF:

The next line of the same page allows you to switch the power supply of the LNB ON or OFF. The OFF position is to be used only if you are connected to a Community antenna or if your installation is supplying the power to the LNB through an other equipment. The normal mode for a Direct To Home use is LNB ON.

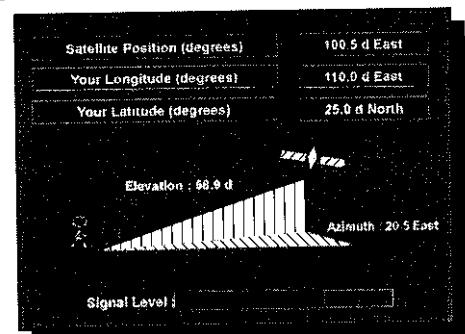
3.5 Dish Positioning help menu:

If your dish is not yet positioned, you should select the Dish Positioning help menu:
Press the DOWN key until the last line of the menu is highlighted, then press SELECT.

You will find at the end of this manual a list of satellites and their orbital position. Choose the satellite you want to receive and input the position on the first line by using the numerical keys.

To toggle between East and West, press the LEFT or the RIGHT arrow key.

Your manual also gives you a map of your region. Use it to find out what your longitude and your latitude are and input them on the second and third lines of this screen using the same method as above.



Your screen then shows the values in degrees of the elevation angle and the azimuth angle. The azimuth angle, is the angle measured from south to the direction of the satellite. Use a compass to adjust the horizontal direction of your dish accordingly.

The elevation angle is the angle from the horizon to the direction of the satellite, once you are facing the correct azimuth. Usually, the dish masts have a graduation in degrees which you can use to adjust the elevation to the shown value.

Exit this menu with the OK key, then press the MENU key and choose the ADD NEW CHANNELS MANUALLY option to select one of the frequencies used by the satellite you want to receive. Then only you should come back to the present menu for the exact positioning of your dish.

Once your dish is approximately pointing to the chosen satellite, move it very slowly in each direction until you get the LOCK indication on the front panel (yellow LED is ON) and then adjust it exactly to get the highest signal level indication.

Finally move to " EXIT "menu bar, then press the OK key. Everything is ready now for you to enjoy completely your satellite receiver.

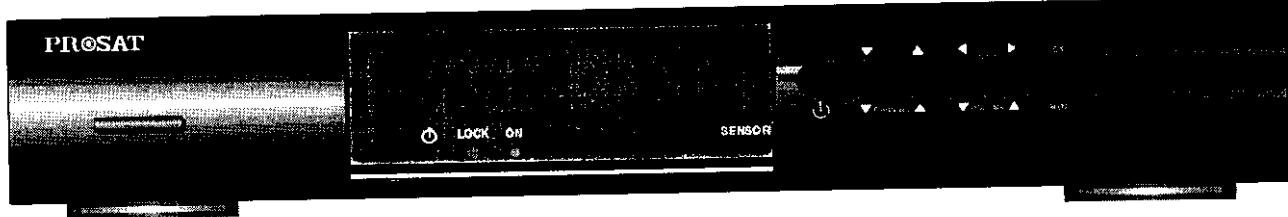
4. KEY FUNCTIONS:

The normal way to control your satellite receiver is through its remote control. You can however use the front panel keys for the most important functions.

4.1 Front panel keys:

4.1.1 0/1 key:

This key toggles between the STAND BY and the POWER ON mode. You can verify in which mode you are by watching the Right (green) and Left (red) LED:



- Red LED ON: STAND BY mode
- Green LED ON: POWER ON mode.

When you switch on , the last watched channel is tuned to.

4.1.2 CH- and CH+ keys:

Used to scan through all available channels while menu is off.

Used to select menu items while menu is on the screen.

4.1.3 Vol- and Vol+ keys:

Used to decrease/increase the sound volume while menu is off. Used to adjust or toggle the setting selected while menu is on the screen. In order to get the best performance, you should normally use the maximum level. This will give you the best total harmonic distortion (THD) and the best signal to noise ratio (S/N). However, if you hear distortion at this level, you can reduce the level until the sound is good. this may happen if the equipment you have connected cannot support the maximum audio level output by your satellite receiver .

The volume control is best used to adjust the volume of your satellite receiver to the same level as your TV so that no volume change occurs when switching from satellite to normal TV. The volume of both can then be controlled with the TV (or Hi-Fi, if used) remote control.

When the volume is set to its lowest value, sound is muted and the mute symbol appears on the screen.

4.1.4 Menu key:

Used to pop up the OSD menu while menu is off.

Used to act as OK key while menu is on the screen.

4.2 Remote Control keys:

4.2.1 0/1 key:

This key toggles between the STAND BY and the POWER ON mode. You can verify in which mode you are by watching the red and the green LED:

- Red LED ON: STAND BY mode
- Green LED ON: POWER ON mode.

When you switch on, the last watched channel is tuned to.

4.2.2 NUMERIC keys (0 to 9):

In normal display mode (when watching a TV program or listening to a radio channel), used to enter directly the channel number you want to tune to.

If the channel number you want to select has three digits (e.g. 123), just press the three digits one after the other. Do not wait more than two seconds between two digits.

If the channel number you want to select has less than two digits (e.g. 8), you can:

- either just press the channel number (8) and wait for two seconds
- or use initial zero(s) to make it a three digit number (008).

Every time you change channels, a banner is displayed which shows the new channel number, the service provider and the program name. The text slowly scrolls to the left to allow a full view of the text with easy to read characters.

4.2.3 MUTE key:

Pressing the mute key once will mute the output sound and display the mute icon.

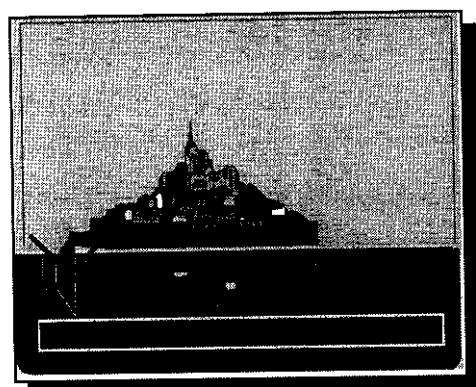
Pressing the mute key again cancels the mute icon and brings sound back to the last used volume.

4.2.4 Vol- and Vol+ keys:

Vol- and Vol+ keys are used to decrease or increase the sound volume. When either one of those keys is pressed, the volume bar graph is displayed with a cursor giving a visual representation of the set volume. Note that the recommended value is at maximum (totally to the right). Some equipment (TV or Hi Fi) may give better results at lower settings. The recommended range is indicated by a green coloured cursor.

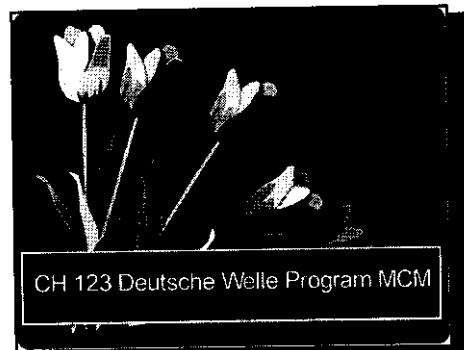
The lower values, indicated in blue or red, can be used temporarily, for instance during a phone call, if you do not want to mute the sound totally.

Note that the most left position is equivalent to a mute.



4.2.5 CH+ and CH- keys:

The CH+ and CH- (channel up and channel down) keys tune to the next/previous channel. Only channels which carry a program are used. If you are tuned to the highest numbered TV channel (e.g. channel 499) and you press the CH+ key, the receiver will tune to the first radio channel (e.g. channel 500). The reverse operation is obtained with the CH- key.



If you are tuned to the highest numbered radio channel and you press the CH+ key, the receiver tunes to the first TV channel. The reverse operation is obtained with the CH- key.

4.2.6 Info key:

Pressing the info key displays the channel number, the channel name and three numbers called PID (Packet IDentifier). These are technical identifiers for the picture, the sound and the clock of the program you are watching.

After a few seconds, the display goes back to normal (TV picture only or Radio back ground).

You can also cancel immediately the OSD by pressing the NO key.

4.2.7 Menu key:

Pressing the menu key shows the main menu.

Highlight the line you are interested in by using the **▲** (UP) or **▼** (DOWN) key , then press OK. This will bring you the selected sub-menu.

As in all menus, the last line shows a help text for the highlighted line.

Note: the SET UP menu is the menu described in paragraphs 3.1, 3.2, 3.3, 3.4 and 3.5.

The ADD NEW CHANNELS AUTOMATICALLY is described in paragraph 5.

The ADD NEW CHANNELS MANUALLY is described in paragraph 6.

4.2.8 The **▲** (UP) and **▼** (DOWN) keys:

The UP and DOWN keys are used to highlight a new line on a menu. UP highlights the line above. When the upper most line is highlighted, one more press on the UP key highlights the last line. The exception to this is when the current page is a continuation of a previous page. The UP key, when pressed from the first line, then brings the previous page back.

The reverse is valid for the DOWN key.

4.2.9 The **▶** (RIGHT) and **◀** (LEFT) keys:

The action of the RIGHT and LEFT keys depend on the highlighted menu line in which they are used. When a selection of predefined value is available, the RIGHT and LEFT keys allow to scan through the selection (e.g. LNB frequency or East/West flag)

When the highlighted line contains a value to be increased step by step, the RIGHT key allows to increment it while the left value will decrement it (e.g modulator output channel number).

4.2.10 The OK key:

On a menu page which contains data, the OK key will store all the data of the screen, then go back to the previous menu or to the normal display mode.

On a line which allows to go into a sub-menu, the OK key will enter the sub-menu.

4.2.11 The NO key:

The NO key exits from any menu without storing any value.

The NO key can also be used to stop displaying any on-screen display like volume indication or information banner.

4.2.12 The PRF+ and PRF- keys:

Used to select preferred channel up or down.

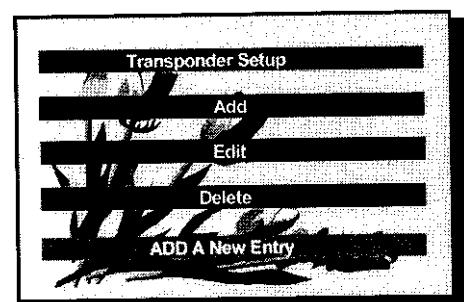
4.2.13 The SURF key:

Used to quickly select one specific channel alphabetically.

5. ADDING NEW CHANNELS :

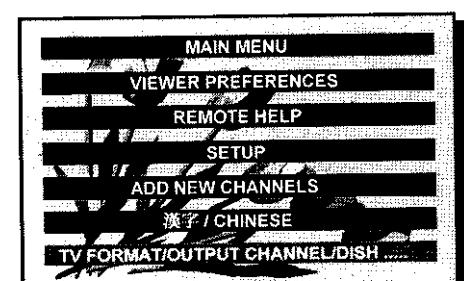
If you know the parameters of a new digital channel which you think your satellite receiver should receive but is not in its channel list, you can use the ADD NEW CHANNELS feature to check and add such new channel.

First, while in normal display, press the menu key, then press the ▼ (DOWN) key till the ADD NEW CHANNELS line is highlighted. Then press OK.



You can now select between ADD, EDIT and DELETE. DELETE should be used to remove a transponder which has ceased to operate, which you do not want to watch anymore or which you had stored twice.

ADD should be used to add a new transponder. EDIT allows you to change a transponder parameter. This is normally used only if you had input wrong parameters. EDIT acts as a combination of DELETE and ADD.



When you select EDIT or DELETE, the next menu on your screen allows you to select which transponder you want to edit or delete. This menu shows the complete list of transponders stored in your receiver. This is not the same as the list of programs (accessible by the SURF key) since each transponder can carry several programs.

If you had selected ADD or after having selected the transponder to edit, the transponder parameter menu is displayed.

You can find these parameters from several specialised magazines.

Using the numerical keys, enter the transponder frequency (e.g. 4.000)

Then press the ▼ (DOWN) key again to highlight the symbol rate line and input the symbol rate, using the numerical keys (e.g. 28125)

Then press the ▼ (DOWN) key to highlight the polarisation line. Use the ▲ (LEFT) or ▶ (RIGHT) key to toggle between Horizontal and Vertical or LHC and RHC polarisation.

Then press the ▼ (DOWN) key to highlight the LNB Switch line. Use the ▲ (LEFT) or ▶ (RIGHT) key to toggle between A and B.

Then press the ▼ (DOWN) key to highlight the 22KHz Mode line. Use the ▲ (LEFT) or ▶ (RIGHT) key to toggle between ON, OFF, AUTO, and DiSEqC.

When you are ready, press the OK key. Your receiver now tunes to the new parameters you just entered. If the screen stays black, check the LOCK LED on the front panel. If the front LED is ON and you see no picture after a few seconds, this means that the first program of the new transponder is scrambled. Use the SURF mode to try all the new channels you can now receive. If only scrambled channels are available from this new transponder, we advise you to delete this transponder.

If you have no picture and the LOCK LED is OFF, this means that your receiver could not lock to the parameters you have chosen. Check the frequency, the symbol rate and the polarisation. Note that some magazines give the data rate or bit rate instead of the symbol rate. Divide this number by two to find the symbol rate. Use the EDIT transponder menu to correct the data and try again.

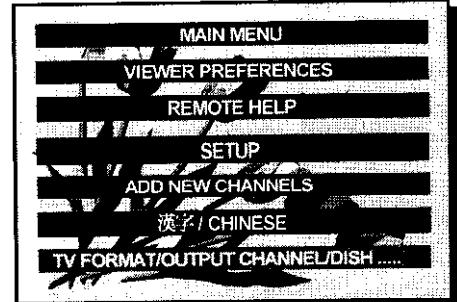
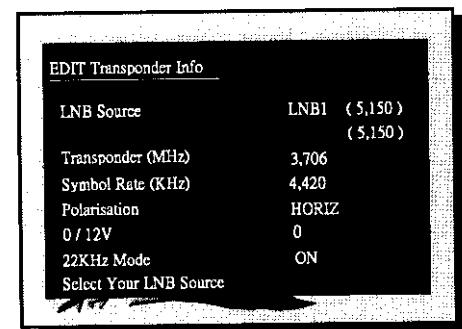
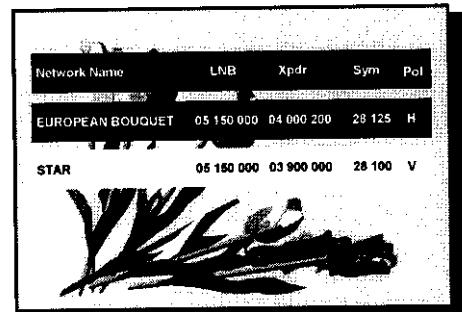
When you receive the new picture, press NO to get back to the main menu.

6. CHANGE THE OSD LANGUAGE MODE:

Your satellite receiver is able to display two language modes. One is English, the other is Chinese. The Chinese Mode refer to Chinese manual.

Press the menu key. The main menu is displayed on the screen:
Press the ▼ (DOWN) key till 漢字 / CHINESE is highlighted.

Press the OK key. This will bring you into the Chinese OSD Mode



7. VIEWER PREFERENCES:

Reminder: you can get out of any menu with the remote control NO key.

From the normal display mode, that is when you watch a program without any menu, you go into the main menu with the MENU key.

From the main menu select the viewer preference sub menu, then press OK.

You are now in the USER CONFIGURABLE PREFERENCES Menu.

7.1 ASSIGN CHANNEL NUMBERS:

The channels stored in your receiver may not be using the channel number you would have liked. You may want to have your 9 preferred channels stored from 1 to 9 or to have a channel name TV5 in channel number 5.

You can give to any stored channel a new channel number by using the ASSIGN CHANNEL NUMBERS sub menu: select this menu from the first line of the USER CONFIGURABLE PREFERENCES Menu.

Highlight the line of the channel the number of which you want to change. key in the three digit new channel number, then press OK.

The highlighted channel will now use the new channel number you just keyed in. If this number was used previously by an other channel, that channel will now use the old channel number of that channel which you changed (Swapping).

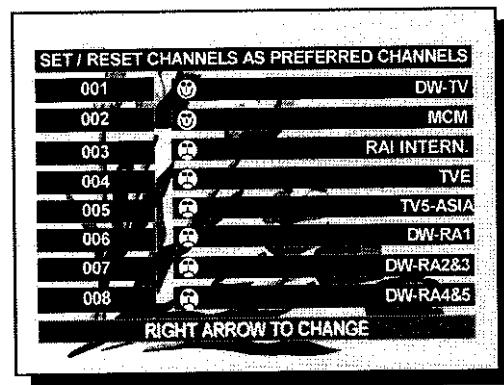
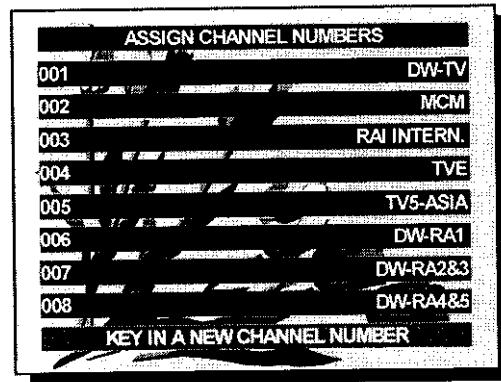
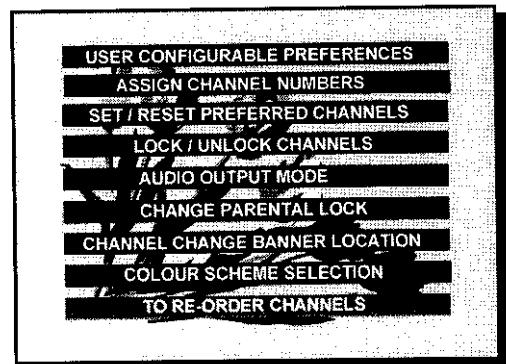
You can repeat this operation several times. Leave the menu with the NO key.

7.2 SET/RESET PREFERRED CHANNELS:

While you can tune to all channels with the CH- or CH+ key, you may want to surf through a reduce number of channels. Those channels are your preferred channels.

From the USER CONFIGURABLE PREFERENCES Menu, select the SET/RESET PREFERRED CHANNELS sub menu.

To mark any channel as a preferred channel, put a smiling face on it: select the relevant line, then press the right arrow key. To de-select a preferred channel, press the right arrow key again.



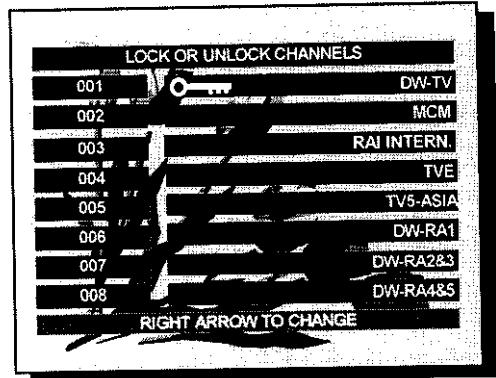
7.3 LOCK/UNLOCK CHANNELS:

If you want to prevent your children from watching some channels, you can lock them with the LOCK/UNLOCK CHANNELS submenu which you access from the USER CONFIGURABLE PREFERENCES Menu.

A locked channel is indicated by the KEY icon.

You can toggle between locked and unlocked with the RIGHT arrow key.

If you press NO, you will quit this menu without storing the new state. If you press OK, you will be requested to enter the password (4 digits plus OK). This will store the new lock keys.



7.4 CHANGE PARENTAL LOCK:

You can access this menu from the USER CONFIGURABLE PREFERENCES Menu.

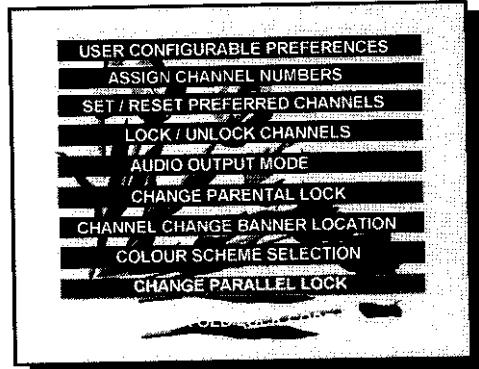
It allows you to change your password.

Be careful. If you forget your password, you will have to call your distributor to find out how to restore it. The procedure is not in this manual in order to maintain the secrecy from your children.

Enter your old code (password), then OK

Enter your new code, then OK (twice)

The new code is now your new password.



7.5. CHANGE BANNER LOCATION:

When you tune to a channel, the channel number is displayed with the channel name for a few seconds on the screen. By default, this display is on the bottom of the screen, you can change this position to the top of the screen by selecting this function in the USER CONFIGURABLE PREFERENCES Menu.

7.6 COLOUR SELECTION MENU:

This menu can be accessed from the USER CONFIGURABLE PREFERENCES Menu.

If you do not like one or more of the colours used in the menus, this is the place to change it.

Select the colour you want to change with the Left, Right, UP and Down arrow keys, then press OK.

You can now change individually the Red, Green and Blue components of the selected colour. As the values are changed, you can see the result on the selected rectangle. Press OK again to store the new colour.

Press NO to get out of this menu.



TECHNICAL CHARACTERISTICS:

POWER SUPPLY:

Universal Automatic Switched Mode Power Supply 90 V to 260V, 50 and 60 Hz.

TUNER:

Frequency range: 950 to 2 150 MHz

Bandwidth: 27/36 MHz

VIDEO OUTPUT:

On TV plug: Composite PAL (for 50 Hz pictures) or NTSC (for 60 Hz pictures), 1 Vpp on 75 Ohm load.

AUDIO R/L OUTPUT:

1 Vrms on RCA plug.

MODULATOR:

NTSC-M, CH3,4

Notice : The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.