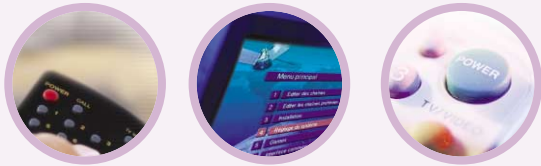


User's Manual

Free To Air

VS2000 **XTREME**



Digital Satellite Receiver

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Important Safety Instruction

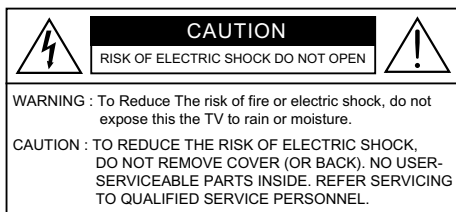
- 1) Read all of these instructions.
- 2) Save these instructions for later use.
- 3) Follow all warnings and instructions marked on the product.
- 4) Follow all instructions.
- 5) Do not use the apparatus near water.
- 6) Clean only with dry cloth.
- 7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet. Consult an electrician for replacement of the obsolete outlet.
- 10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- 11) Only use attachments/accessories specified by the manufacturer.
- 12) Do not place the apparatus on an unstable cart, stand or table. The apparatus may fall, causing serious damage to the apparatus.
- 13) Unplug this apparatus during lightning storms or when unused for long periods of time.
- 14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been moisture, does not operate normally, or has been dropped.
- 15) 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.



Shock Hazard Marking and Associated Graphical Symbols



Explanation of Safety Related Symbols



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance(servicing) instructions in the literature accompanying the appliance.

WARNING : To Reduce The risk of fire or electric shock, do not expose this the apparatus to rain or moisture.

The main socket-outlet for connecting mains plug shall be accessibly close to this apparatus

Declaration of Conformity

**FCC Rule : TESTED TO COMPLY WITH FCC PART 15, CLASS B
OPERATING ENVIRONMENT : FOR HOME OR OFFICE USE.**

FCC COMPLIANCE STATEMENT :

This device complies with part 15 of the FCC rules. Operation is subject to the following conditions :

- 1) This device may not cause harmful interference, and
- 2) This device must accept any interference received, including interference that may cause undesired operation.

INFORMATION TO USER:

This equipment has tested and found to comply with the limits of a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation, if this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient / Relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio / TV technician for help.

CAUTION : Changes or modifications not expressly approved by manufacturer responsible for compliance could void the user's authority to operate the equipment.

1. SAFETY PRECAUTIONS

*This receiver has been manufactured to satisfy the international safety standards.
Please read the following recommended safety precautions carefully.*

MAIN SUPPLY : AC 95V~240V 50 / 60 Hz

LOCATION : Locate the receiver indoor.

Locate receiver away from potential hazards such as houseplants, lighting, raining and direct sunlight.

OVERLOADING : Do not overload wall outlets, extension cords or adapters as this can result in fire or electrical shock.

LIQUIDS : Keep liquids away from the receiver.

CLEANING : Before cleaning, disconnect the receiver from the wall socket.
Use a cloth lightly dampened with water (no solvents) to clean the exterior.

VENTILATION : Do not block the receiver ventilation holes. Ensure that free airflow is maintained around the receiver.

Never set the receiver on soft furnishings or carpets. Do not use or store the receiver where it is exposed to direct sunlight, or near heater.

Never stack other electronic equipment on top of the receiver.

Place the receiver at least 30mm from the wall.

ATTACHMENTS : Do not use any attachment that is not recommended by the manufacturer, as it may cause a hazard or damage the equipment.

CONNECTION TO THE SATELLITE DISH LNB : The LNB connector cable has a voltage in its center core. It is therefore recommended that the receiver is disconnected from the mains power before connecting or disconnecting this cable.

FAILURE TO DO SO COULD DAMAGE THE LNB.

SERVICING : Do not attempt to service this product yourself. Any attempt to do so will make the warranty invalid. Refer all servicing to a qualified service agent.

LIGHTNING : If the receiver is installed in an area subject to intense lighting activity, protection devices for the receiver mains connector and modem telephone line are essential. The individual manufacturer's instruction for safeguarding other equipment, such as TV set, Hi-Fi, etc., connected to the receiver, must also be followed during lightning storms.

GROUNDING : The ground of the LNB cable must be directly connected to the system ground for the satellite dish. The grounding system must comply with local regulations.

2. GENERAL FEATURES

- Fully MPEG-2 & DVB Compliant
- Input Frequency 950~2150MHz
- Supports EPG, PIG
- Supports SCPC & MCPC from C / Ku-band
- 1 LNB Input Tuner with Loop Through IF Signal
- Tuner Symbol Rate : 1~45MS/s
- Fast Booting & Auto Scan
- Quick Channel Changing
- Max. 4000 Channels(TV & Radio) Programmable
- User Friendly 256 Colors OSD & Easy GUI
- A lot of OSD Language supported
- Radio Channel Background Display
- Favorite Channel List Programmable
- Master PIN Code Function & Parental Lock Function
- 100 Steps Volume Control
- Automatic Detection of Forward Error Correction
- Window based S/W Download Program Supported by RS232 Serial Port
- Set to Set Download (Main Program, Channel Data)
- 4:3, 16:9 Letter Box
- Support Closed Caption
- 7 Segment-4 Digit Display
- 5 Keys on the Front Panel (Power On/Off, Channel Up/Down, Volume Up/Down)
- Various LNB Polarity Control
 - 22KHz Switching Control
- 6 RCA Output for Video, Audio L/R, Component
- S/PDIF Output for Digital Audio
- S-VIDEO Output
- RF-Modulator Output
- Zoom function
- Multi Picture
- Blind Scan
- USALS

3. HOW TO CONNECT YOUR RECEIVER

Please DO NOT plug in the main power supply cord until you have finished all the connections.

1) LOCATION OF THE RECEIVER

Your receiver should be placed under proper ventilation.
Don't put in completely enclosed cabinet that will restrict the flow of air, Resulting overheating.
The location should be safeguarded from direct sunlight, excess moisture, rough handling or household pets.
Avoid stacking other electronic components on the top of the receiver.
The location should be safely accessible by the cable from your antenna system.

2) CONNECTING THE RECEIVER WITH DISH SYSTEM

After installing your dish system, connect the coaxial cable from LNB of your dish antenna to "LNB IN" terminal marked at the rear of the receiver.
All cable connectors should be finger tightened ; do not use any kind of wrench on the cable over connectors.
The cable should be 75Ω impedance coaxial twisted at the end with a "F" type connector.

3) CONNECTING THE RECEIVER TO TV

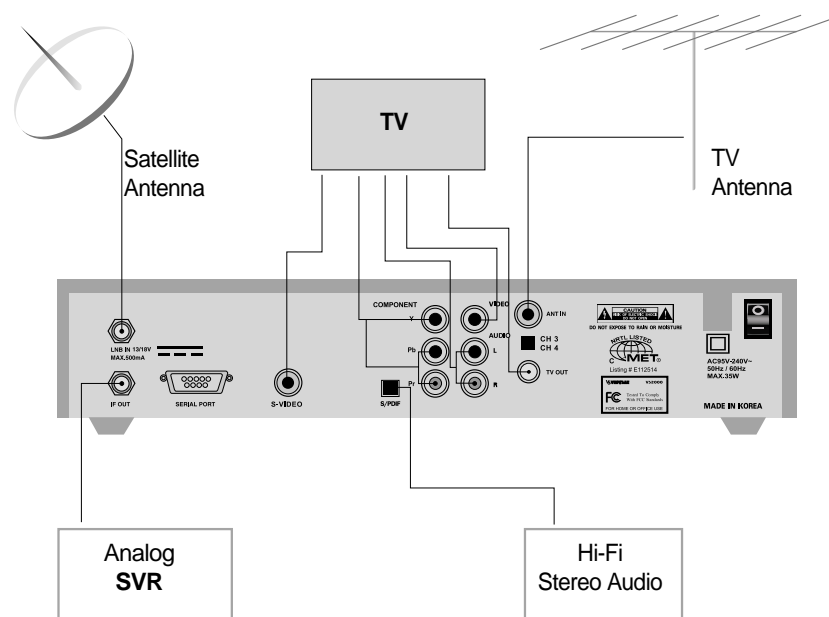
To connect the receiver with your television, you can follow three method ; through RF cable, RCA cable, COMPONENT cable and S-Video cable.
Connect the RF cable to the terminal marked "TV OUT" at the rear panel of the receiver and its other end to the TV RF input socket.

4) CONNECTING EXTERNAL AUDIO HI-FI SYSTEM

To connect any external Audio Hi-Fi system, the receiver has been provided with S/PDIF connector at the back of the receiver.

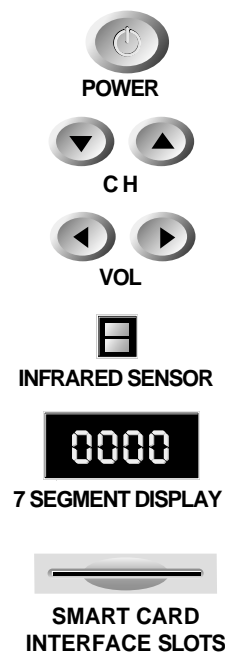
5) CONNECTING YOUR ANALOG RECEIVER

To facilitate the user using analog receiver to view analog channels, the receiver has been provided with a loop through terminal marked as "IF OUT".
Connect the coaxial cable from this terminal to the IF input terminal of your analog receiver.
Now by keeping the receiver in standby,
you will be able to tune and view analog channels from your analog receiver.



4. HARDWARE DESCRIPTION

4. A. FRONT PANEL



1) **POWER** : This key is used to turn the receiver on and off (stand by).

2) **CH** : These keys are used to change the channels.

3) **VOL** : These keys are used to increase and decrease the volume level manually.

4) **INFRARED SENSOR** : This is to receive the IR commands from the RCU. Do not block the view of the sensor.

5) **7 SEGMENT DISPLAY** : This SEGMENT display will show the current channel number. While the receiver is in stand by mode, the display will show the current time.

6) **SMART CARD INTERFACE SLOTS** : To watch scrambled channels you should insert a smart card into Smart Card Interface issued the service provider whom you subscribes to. Therefore you can watch only a specific range of channels with entitlements in smart card. The smart card includes information to decipher parameters necessary for descrambling the program. Please note that the gold chip on the smart card should face download and inward when you insert when you insert it into Smart Card Interface.

4. B. REAR PANEL

1) **LNB IN** : This port is to connect the coaxial cable from LNB of your Dish. The IF input is provided through this port and the input frequency range is 950~2150MHz. Also the voltage switching 13V and 18V is passed through this port.

2) **IF OUT** : To enable the connection of an analog receiver. The receiver is provided with this port. Connect this port to LNB IN port of the other receiver via RF Cable.

3) **SERIAL PORT** : This is used to connect your receiver with computer through a serial cable. This port can be used for upgrading software.

4) **S/PDIF DIGITAL OUTPUT** : This port is for the connection to the external Hifi system which has a optical S/PDIF input interface.

5) **VIDEO, AUDIO R/L, COMPONENT(Y ,Pb, Pr)**: These RCA connectors are used to connect any external video and audio.

6) **ANT IN** : This is used to connect your local RF channels to your TV through Loop.

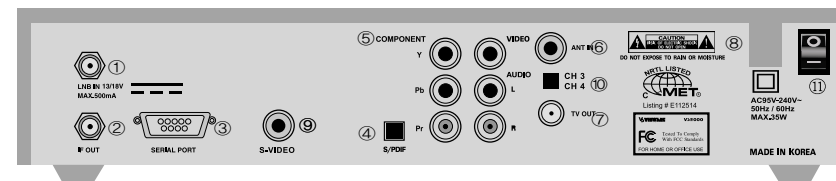
7) **TV OUT** : This is used to connect your TV through RF cable.

8) **POWER INPUT** : This is to plug in the AC main power cord. The input AC volts range is 95V~240V, 50/60Hz supply.

9) **S-VIDEO** : This is used to connect your TV through S-Video Cable.

10) **CH 3,4** : The switch select RF 3,4 channel number.

11) **POWER SWITCH** : This is swith to turn on and off the AC main power.



4. C. REMOTE CONTROL UNIT

- 1) **POWER** : This is used to switch the receiver to ON/STANDBY mode.
- 2) **MUTE** : This key is used to toggle between normal and muted audio.
- 3) **0-9 NUMERIC KEYS** : These keys are used to enter numeric values and to select the channel directly by entering its number.
- 4) **CH ▲ · CH ▼** : These keys are used to change channels and to browse the menu.
- 5) **VOL ► · VOL ◀** : These keys are used to vary the volume level and to change the cursor options in the menu.
- 6) **MENU** : This key is used to open up the menu.
- 7) **EXIT** : This key is used to exit from any menus.
- 8) **OK** : This key is used to enter and confirm any data to the receiver in the menu systems.
The Channel list can be accessed directly by pressing this Key in the normal view mode.
- 9) **Page Up** : This key is used to page up the menu.
- 10) **Page Down** : This key is used to page down the menu.
- 11) **FAV** : This key is used to switch between favorite lists.
- 12) **GUIDE** : This key is used to open up the Electronic Program Guide.
- 13) **i** : This key is used to view the channel information.
- 14) **🎵** : This key is used to toggle between the TV channel and the radio channel.

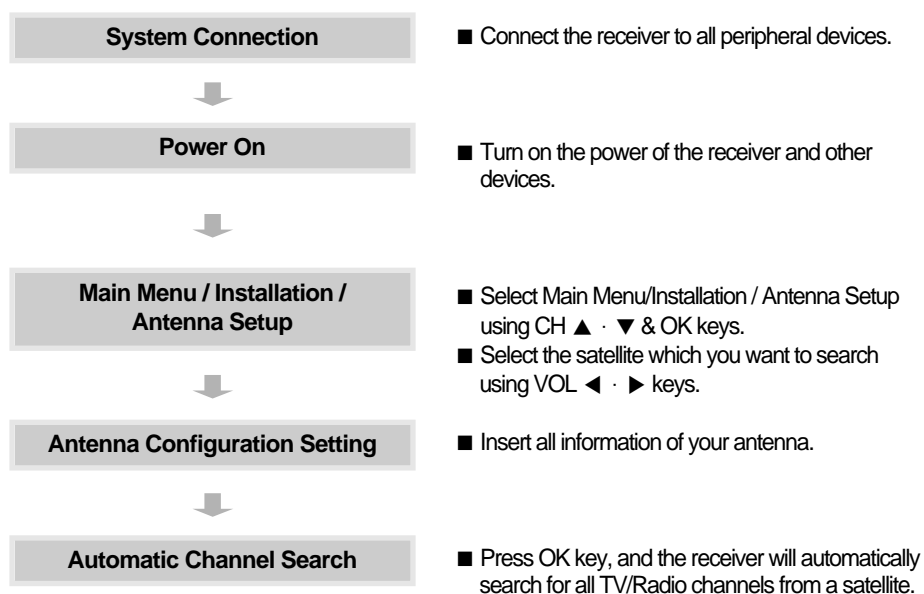
- 15) **LAST** : This key is used to return to the previous channel.
- 16) **AUDIO** : This key is used to select the soundtrack list for the current service and also used to select audio mode.
- 17) **PAUSE** : This key is used to pause the screen.
- 18) **SAT** : This key is used to select the satellite.
- 19) **F1, F2, F3, F4** : Function Keys.
- 20) **HELP** : This key is for Help.



5. SYSTEM SET-UP

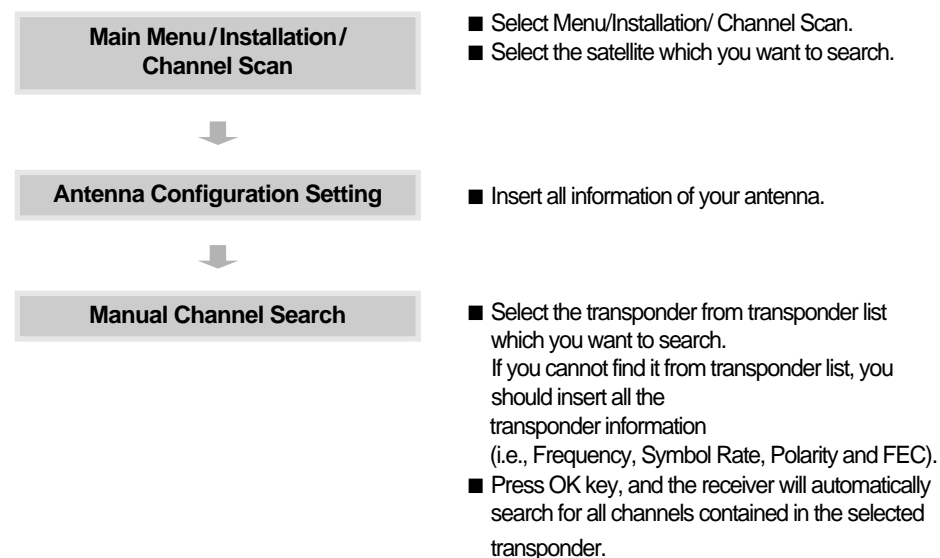
5.A. Automatic channel search for a satellite

You can automatically detect and save all TV and Radio channels of a satellite as follows :



5. B. Manual channel search for a transponder

You can automatically search and save all TV and Radio channels of a transponder as follows :



6. MENU OPERATION

The main menu is classified into five sub menus which will carry out the various operation individually.

1. MAIN MENU

After installing your dish system and receiver with appropriate connectors, plug in the AC main power and turn on the receiver.



Press the MENU key of the RCU. You will see the "Main Menu" on the TV screen as follow.

You can move into the desired submenu using the "up/down" keys (▲ · ▼) or numeric keys.

Press "OK" key to confirm your selection. If the "Main Menu" is locked, note that you should enter the PIN code in order to move into the corresponding submenu in case of "Edit Channels" menu, "Edit Favorites" menu and "Installation" menu.

The default factory PIN code is "0000".

Press the "menu" key or "exit" key to return to previous menu.

2. EDIT CHANNELS



You can edit channels on various channel lists - channel lock, delete channel, move channel, edit the name of a channel, and sort the channel list.

Select "Edit Channels" menu in main menu, and you will be asked to enter your PIN code. You can find the following "Edit Channels" screen by entering it.

1. A. CHANNEL LOCK

Select the "Channel Lock" icon using the left/right keys (◀ · ▶). Select the channel that you want to lock or unlock from the channel list using the "up/down" keys (▲ · ▼) and the "page up/down"

keys(▲ · ▼). Press the "OK" key to confirm your selection.

Also, you can use the "↔/↵" key to select either TV channel list or Radio channel list.

Once the channel is locked, every time you try to watch the program, you will be asked to enter PIN code. Press the "menu" key or "exit" key to return to previous menu.

2. B. DELETE CHANNEL

Select the "Delete Channel" icon using the "left/right" keys(◀ · ▶). Select the channel that you want to delete from the channel list using the "up/down" keys(▲ · ▼) and the "page up/down" keys(▲ · ▼). Press the "OK" key to confirm your selection. Also, you can use the "↔/↵" key to select either TV channel list or Radio channel list.

Press the "menu" key or "exit" key to return to previous menu.

2. C. MOVE CHANNEL

Select the "Move Channel" icon using the "left/right" keys(◀ · ▶). Select the channel that you want to move from the channel list using the "up/down" keys(▲ · ▼) and the "page up/down" keys(▲ · ▼). Press "OK" key to confirm your selection.

Move it to the position where you want to place it using the "up/down" keys(▲ · ▼) and the "page up/down" keys(▲ · ▼). Press the "OK" key to confirm. Also, you can use the "↔/↵" key to select either TV channel list or Radio channel list.

Press the "menu" key or "exit" key to return to previous menu.

2. D. EDIT CHANNEL NAME

Select the "Edit Channel Name" icon using the "left/right" keys(◀ · ▶). Select the channel that you want to edit from the channel list using the "up/down" keys(▲ · ▼) and the "page up/down" keys (▲ · ▼). Press "OK" key to confirm your selection.

Select the character which you want to edit using the browse keys(▲ · ▼,◀ · ▶). Press "OK" key to confirm. Save the character currently selected using the "F2" key. Also, you can use the "↔/↵" key to select either TV channel list or Radio channel list. Press the "menu" key or "exit" key to return to previous menu.

2. E. SORT CHANNEL LIST

Select the "Sort Channel List" icon using the "left/right" keys(◀ · ▶). Press "OK" key to confirm.

Select the sort type which you want to sort using the "up/down" keys(▲ · ▼). Press the "OK" key to confirm. Also, you can use the "↔/↵" key to select either TV channel list or Radio channel list.

Press the "menu" key or "exit" key to return to previous menu.

3. EDIT FAVORITES

You can edit the favorite channel list, such as add/delete a channel or move its position, which facilitates you to easily find your favorite channel from the favorite channel list.

The favorite channel is classified into one of 8 favorite categories depending on its genre.

Select "Edit Favorite" menu in main menu, and you will be asked to enter your PIN code.

You can find the following "Edit Favorite" screen by entering it.

3. A. ADD FAVORITE CHANNEL

You can choose TV channel list or Radio channel list in an alternative way by pressing the " " key on the RCU.



By pressing "FAV" key on the RCU, you can choose your favorite channel group out of 8 favorite groups. Select the "Add Channel" icon using the "left/right" keys(◀ · ▶). Select a channel that you want to add into the favorite channel list using the "up/down" keys(▲ · ▼) and the "page up/down" keys (▲ ▼). Press the "OK" key, and the selected channel will be added to the favorite channel list. Press the "menu" key or "exit" key to return to previous menu.

3. B. DELETE FAVORITE CHANNEL

You can choose TV channel list or Radio channel list in an alternative way by pressing the " " key on the RCU.

By pressing "FAV" key on the RCU, you can choose your favorite channel group out of 8 favorite groups.

Select the "Delete Channel" icon using the "left/right" keys(◀ · ▶).

Select a channel that you want to delete from the favorite channel list using the "up/down" keys(▲ · ▼) and the "page up/down" keys(▲ ▼). Press the "OK" key, and the selected channel will disappear from the favorite channel list.

Press the "menu" key or "exit" key to return to previous menu.

3. C. MOVE FAVORITE CHANNEL

You can choose TV channel list or Radio channel list in an alternative way by pressing the " " key on the RCU.

By pressing "FAV" key on the RCU, you can choose your favorite channel group out of 8 favorite groups.

Select the "Move Channel" icon using the "left/right" keys(◀ · ▶).

Select a channel that you want to move using the "up/down" keys(▲ · ▼). and the "page up/down" keys(▲ ▼). Press "OK" key to confirm your selection. Move it to the position where you want to place it using the "up/down" keys(▲ · ▼). and the "page up/down" keys(▲ ▼).

Press the "OK" key to confirm.

Press the "menu" key or "exit" key to return to previous menu.

3. D. RENAME FAVORITE GROUP

You can choose TV channel list or Radio channel list in an alternative way by pressing the " " key on the RCU.

By pressing "FAV" key on the RCU, you can choose your favorite channel group out of 8 favorite groups.

Select the "Rename Favorite Group" icon using the "left/right" keys(◀ · ▶).

Press the "OK" key and select the character which you want to edit using the browse keys(◀ · ▶, ▲ · ▼).

Press the "OK" key to confirm.

Save the character currently renamed using the "F2" key.

Press the "menu" key or "exit" key to return to previous menu.

3. E. SORT CHANNEL LIST.

You can choose TV Channel list or Radio channel list in an alternative way by pressing the " " key on the RCU.

By pressing "FAV" key on the RCU, you can choose your favorite channel group out of 8 favorite groups.

Select the "Sort Favorite List" icon using the "left/right" keys(◀ · ▶). Press "OK" key to confirm.

Select the sort type which you want to sort using the "up/down" keys(▲ · ▼).

Press the "OK" key to confirm.

Press the "menu" key or "exit" key to return to previous menu.



4. INSTALLATION

"Installation" menu helps you to setup a variety of parameters necessary for receiving signal, add new service, upgrade the new software and reset the channel data.

Select "Installation" menu in main menu, and you will be asked to enter your PIN code.

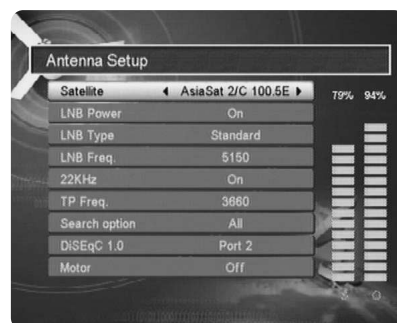
You can find the following "Installation" screen by entering it.

4.A. ANTENNA SETUP

Your receiver includes the preprogrammed information of transponders contained in various satellites.

You can update the transponder list preprogrammed for a satellite by adding a new transponder to it or modifying the information of the existing transponder. (Refer to the Channel Scan described in section 4.B) Select "Antenna Setup" menu in "Installation" menu and the following screen will be displayed.

Select the desired satellite using the "left/right" keys (◀ ▶). Set "LNB Power", "LNB Type", "LNB Freq", "22KHz", "Search Option", and "DiSEqC 1.0" fields to the appropriate value using the left/right keys (◀ ▶) at each field.



LNB Power

: Depending on the user's antenna LNB, you can supply either LNB power by setting "ON" or not by setting "OFF". Normally set this to "ON".

LNB Type

: You can select the LNB type.

LNB Freq.

: You can select the predefined LNB frequency or manually enter a specific frequency in MHz unit by pressing numeric keys.

22KHz

: In case you are using two antennas connected to a 22KHz tone switch box, you can supply either 22KHz by setting "ON" or off by setting "OFF" to select antenna.

Search option

: You can search all the free channels & scramble channels or only free channels or only scramble channels by setting the search option.

DiSEqC 1.0

: If you have DiSEqC box, you can choose port by selecting port number. Otherwise, choose "none".

Motor

: If you have a DiSEqC 1.2 motorised system, then you can take advantage of the DiSEqC 1.2 functions available. Choose Installer as Motor and press "F1" key. After that, adjust antenna direction using browse keys.

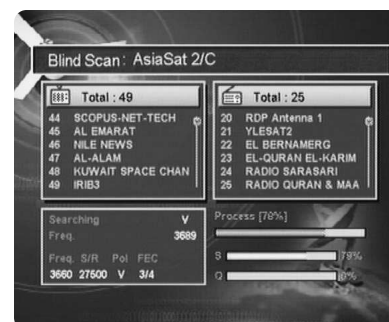
4. A. 1 Automatic Scan

Check the signal strength. Press "OK" key to start the scan procedure. You can see the progressive status of channel searching.

Please note that the scan procedure may take a few minutes.

Press the "menu" key or "exit" key to return to previous menu.

4. A. 2 Blind Scan



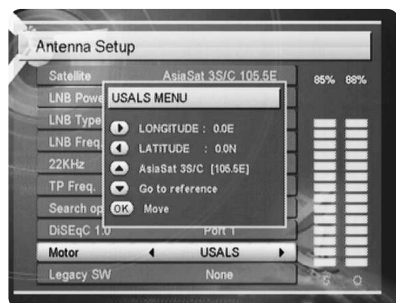
Blind Scan search the channel when you don't know the transponder information.

Press the F2 key to start the blind scan procedure and the following screen will be displayed.

Please note that the scan procedure may take a few minutes.

Press the "menu" key or "exit" key to return to previous menu.

4. A. 3 USALS



- Please go to Antenna Setup and select USALS from motor.
- Press F1 then Pop-up will be appeared.
- Press arrow button to write Longitude
- Press arrow button to write Latitude, then OK to work.

4. B. CHANNEL SCAN

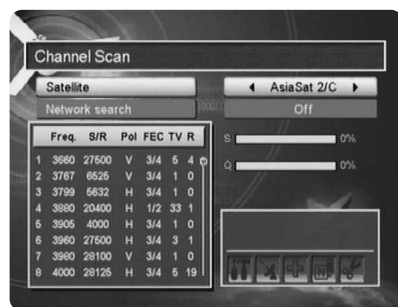
It will be more convenient to use "Channel Scan" procedure when you want to search channel for a specified transponder offered from the satellite. As in "Antenna Setup", "Channel Scan" also searches all channels broadcasted over a specific transponder using its predefined information. You can add a new transponder if you cannot find it on the predefined transponder list.

Select "Channel Scan" menu in "Installation" menu, and the following screen will be displayed.

4. B. 1 Channel Scan

Select the desired satellite using the "left/right" keys (◀ · ▶).

Select the "Antenna Configuration" icon using the browse keys(▲ · ▼, ◀ · ▶).



Press "OK" key, and set "LNB Power", "LNB Type", "LNB Freq", "22KHz", "Search Option", and "DiSEqC 1.0" fields to the appropriate value using the "left/right" keys(◀ · ▶) at each field. Check the signal strength and press "Exit" key.

Select the "Search/Edit TP" icon using the "left/right" keys(◀ · ▶). Press "OK" key, and select the desired transponder using the "up/down" keys (▲ · ▼). Press "OK" key to start the manual searching for selected transponder.

You can see the progressive status of channel searching.

If you cannot find the desired transponder from the transponder list, you can add it by inputting appropriate parameter values for a new transponder using the "F1" key. When you want to change the parameter of an existent transponder, select the parameter using the "F1" key, change its value and press the "Exit" Key. Correctly set various parameters.

| | |
|--------------|--|
| Freq. | : Input the frequency of the transponder you want to find manually. |
| S/R | : Inputs the symbol rate of the transponder you want to find. |
| Pol. | : Select the polarization of the transponder you want to find. In the case of horizontal, 18V and in the case vertical, 13V are output through LNB line. |
| FEC | : Select the FEC of the transponder you want to find. You can select the value of 1/2, 2/3, 3/4, 5/6, 7/8 or auto. |

4. B. 2 ADD SATELLITE

You can add a new satellite. Select the "Add Satellite" icon using the "left/right" keys (◀ · ▶), and press the "OK" key.

Select the "Search/Edit TP" icon using the "left/right" keys (◀ · ▶). Press the "OK" key and add a new transponder using the "F1" key. You should set various parameters of the transponder.

The default name of the added satellites is "UserSAT-No."

4. B. 3 RENAME SATELLITE

You can also change the satellite name. Select the "Rename Satellite" icon using the "left/right" keys (◀ · ▶).

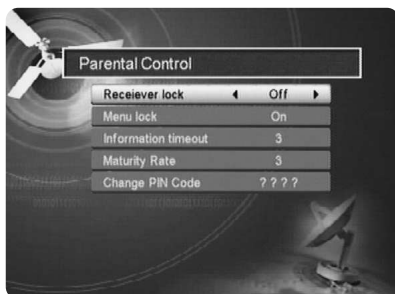
Press "OK" key and select the character which you want to edit using the browse keys (▲ · ▼, ◀ · ▶). Press the "OK" key to confirm. Save the character currently renamed using the "F2" key.

4. B. 4 DELETE SATELLITE

You can also delete the user satellite. Select the satellite that you want to delete from the satellite list.

Select the "Delete Satellite" icon using the browse keys (▲ · ▼, ◀ · ▶).

Press the "OK" key, and the selected satellite will disappear.



4. C. PARENT CONTROL

This function prevents children or unauthorized persons from watching programs. Also you can change PIN(Personal Identification Number) code.

Select "Parental Control" menu in "Installation" menu, and the following screen will be displayed.

4.C.1 Receiver Lock

To lock receiver, select "Receiver Lock" in the "Parental Control" menu and change it to "On" mode using the "left/right" keys (◀ · ▶).

4.C.2 Menu Lock

To lock the Main Menu, select "Menu Lock" in the "Parental Control" menu and change it to "On" mode using the "left/right" keys (◀ · ▶).

4.C.3 Change PIN Code

You can change your PIN code from factory default value "0000" as follow: Select "Change PIN Code" in the "Parental Control" menu using the "left/right" keys(◀ · ▶).

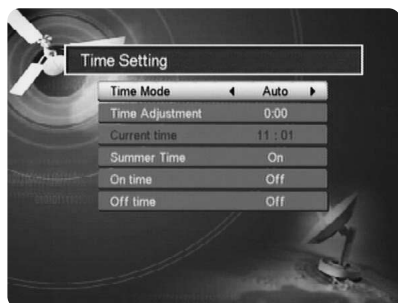
Press "OK" key. Then you will be asked for a new PIN code.

Once you enter a new PIN code, the receiver will ask you to enter it in again.

After you enter a new PIN code twice, the PIN code is changed permanently.

If you forget the PIN code, you have to contact the distributor to find out it.

4. D. TIME SETTING



You can change the time of your receiver and also switch on/off the timer function in this menu.

Select "Time Settings" item in the "Receiver Settings" menu and the following screen will be displayed.

| | |
|------------------------|---|
| Time Mode | : Select the time mode of your receiver. In Auto mode, your receiver will use the information from the satellite as time reference. In manual mode, you can set the time of your receiver manually. |
| Time Adjustment | : Set the time offset from the UTC (GMT). Useful in auto mode only. |
| Current time | : Set the current time manually. Useful in manual mode only. |
| Summer Time | : Enable or disable the Summer Time. Most European countries use the Summer Time. Useful in auto mode only. |
| On time | : Set the time when the receiver will be automatically turned on |
| Off time | : Set the time when the receiver will be automatically turned off. |



4. E. RECEIVER UPGRADE

You can upgrade the software of this receiver through serial port when the new software is released. Please contact the distributor for receiver upgrade. Distributor supports you useful information and new software for the receiver.

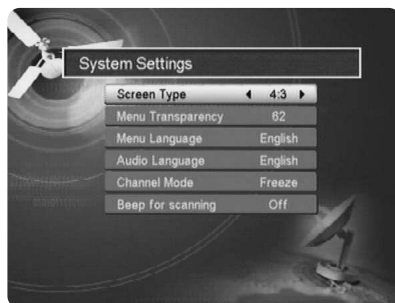
4. F. FACTORY DEFAULT

This is to restore the factory set values in case the user has encountered some problems after changing any new values of channel data and others which may be in error.

Select "Factory Default" menu in "Installation" menu and press "OK" key.

If you want to continue, select option "Yes". The receiver will be reset to settings automatically.

Please note that the "Factory Default" procedure may take a few minutes.



5. SYSTEM SETTINGS

This menu helps you to Set up video output mode, language, screen type and Select "System Settings" menu in main menu

| | |
|--------------------------|---|
| Screen Type | : You can choose either 4:3 or 16:9 according to the TV type. |
| Menu Transparency | : You can select the transparency of the menu. |
| Menu Language | : You can select the menu language. |
| Audio Language | : You can select the audio language. |
| Channel Mode | : You can select the channel mode when channel is changed. |
| Beep for scanning | : If this is "on" , receiver will beep out the signal status. |

Press the "menu" key or "exit" key to return to previous menu.

6. GAMES



This menu helps you play game called Tetris. In this game you can choose level from 1 to 9. Once you choose game menu from main menu, you can choose OK to start a game.

7. CHANNEL LIST

This menu helps you to easily select the channel that you want to watch.



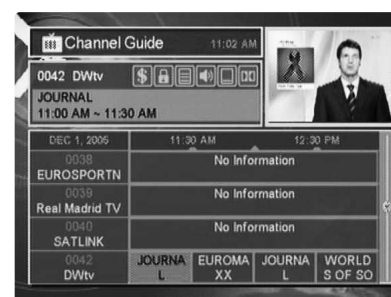
The channel list is separately constructed for each satellite. Press "OK" key, and the following screen will be displayed. You can get the information of channel number, channel name, and whether the program is scrambled or locked.

To watch a specific channel, first select it by pressing the "up/down" keys (▲, ▼) and the "page up/down" keys (⬆, ⬇). Then, press "OK" key. This enables you to move into that specific channel.

You can also select a specific satellite using the "SAT" key. When you press the "SAT" key, you can alternatively select TV or radio channel list. When you press Press the "menu" key or "exit" key to return to previous menu.

8. CHANNEL GUIDE

Press "GUIDE" key, and the following screen will be displayed. It will give the titles of the current and next programmes on different channels.

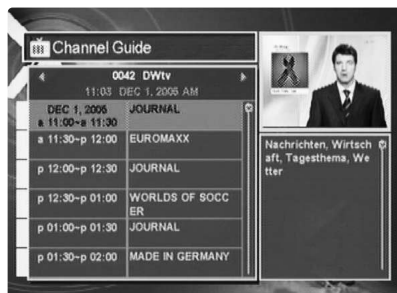


The information may include : current time / channel name, name of the current and next programme, the start and total time of the current programme, the start and total time of the next programme.

Programme information will be available only when it is included in the transmission.

When you press the "SAT" key, you can alternatively select TV or radio channel guide.

Press the "menu" key or "exit" key to return to previous menu.



When you press "GUIDE" key again, Daily Guide will be displayed. You can see all events for selected channel.

9. AUDIO

Press "AUDIO" key.

Select the audio mode which you want using the "left / right" keys (◀, ▶).

Some programs are broadcasted with one or more alternative language soundtracks.

You can select the preferred audio language for soundtrack using the "up/down" keys (▲, ▼).

10. ZOOM FUNCTION

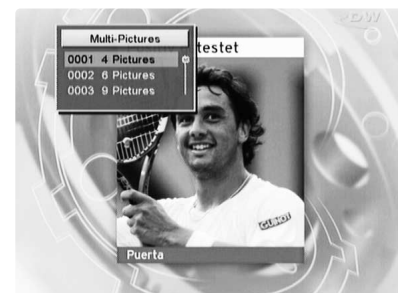


On the live TV screen or paused TV screen, you can magnify some region of TV screen. Press "F4" key and the ZOOM box will be display.

You can use following keys.

- Up/Down/Left/Right keys (▲, ▼, ◀, ▶): Move the ZOOM box
- Page Up/Page Down keys (▲, ▼): Increase or decrease the ZOOM box
- OK key (OK): Watch the ZOOM box to full screen or return to ZOOM box
- Exit key (EXIT): Return to the live screen

11. MULTI PICTURE



You can use the Multi-picture Function using F1 key. You can watch four, six or nine pictures at the same time using this function. And select the number of pictures using (▲, ▼) keys and press OK. After that, you can see the Multi-Picture Screen. Also you can select the channel using (◀, ▶, ▲, ▼) keys and OK key in the Multi-picture Screen. The channel of your selection is only live signal when you selected one channel of the several channels. The channels of which is not selected are just the pictures.



4 Picture

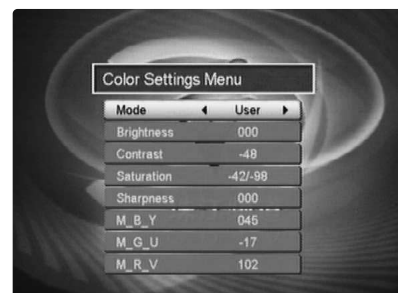


6 Picture



9 Picture

12. COLOR SETTING MENU



You can adjust the color setting to take the enhanced TV screen. Press "F2" key then below screen will display.

| | |
|---|---|
| Mode | : You can select this to "Default" or "User" When "Mode" is "User", you can change each color value. |
| Brightness Contrast Saturation Sharpness | : If your receiver connected to TV by using "VIDEO" or "S-VIDEO" Connector, these items will change the color setting of TV screen. |
| M_B_Y M_G_U M_R_V | : If your receiver connected to TV by using "Component cable "(Y-Pb-Pr)", these three items will change the color setting of TV screen. |

7. TROUBLE SHOOTING

| Problem | Solution |
|---|---|
| About the Receiver | |
| Does not display LED on the front panel or the receiver has no power. | <ul style="list-style-type: none"> - Connect the power cord to the power outlet properly. - Check if the receiver is in standby mode. |
| No pictures on the screen | <ul style="list-style-type: none"> - Check if the video output port is firmly connected to the Tv. - Check if you have selected the correct channel or video output on your TV. |
| No sound | <ul style="list-style-type: none"> - Connect the audio cords properly. - Check the volume level of the TV. - Press "MUTE" key. |
| Remote Control does not operate | <ul style="list-style-type: none"> - Point remote control directly towards the receiver. - Check and replace batteries. |
| Poor picture quality | <ul style="list-style-type: none"> - Check the signal strength in the "Antenna Setup" menu. - If this is low, try adjusting the alignment of your dish. |
| On - Screen Error Messages | |
| Searching Signal | <ul style="list-style-type: none"> - Connect the antenna cable properly. - Check the LNB. Please replace LNB if necessary. - Check the position of the dish. Please realign dish if necessary. - Check the signal strength in the "Antenna Setup" menu. |
| Unrecognized smartcard | <ul style="list-style-type: none"> - Check the smartcard. |
| Please insert your smartcard | <ul style="list-style-type: none"> - Insert the smartcard. |

8. TECHNICAL SPECIFICATIONS

1. Power Supply

| | |
|---------------|---------------------------|
| Type | : SMPS |
| Input Voltage | : AC 95V~240v 50Hz / 60Hz |
| Fuse Rating | : 250V/T2A |

2. Tuner

| | |
|--------------------|--|
| Input Frequency | : 950~2150MHz |
| Input Signal Level | : -65~-25dBm |
| Input Impedance | : 75Ω Unbalanced |
| Connector Type | : 'F' Type Female |
| LNB Power Supply | : 13V/18V, Max 500mA with Short Circuit Protection |
| 22KHz Tone | : Frequency 22± 4KHz, Amplitude 0.6±0.2Vpp |
| DiSEqC | : 1.0 & 1.2 Version Compatible |
| Channel Selection | : PLL Frequency Synthesizer |

3. Demodulator

| | |
|-------------|--|
| Type | : QPSK Demodulation(DVB-S) |
| Symbol Rate | : 1~45 MS/s |
| Inner FEC | : Viterbi Convolutional Coding Rate 1/2, 2/3, 3/4, 5/6, 7/8 |
| Outer FEC | : Reed Solomon Coding(204,188) T=8 |

4. Video Decoder

| | |
|-------------------|----------------------------------|
| System Decoding | : MPEG-2 ISO/IEC 13818-2 |
| Profile and Level | : MPEG-2 MP@ML |
| Data Rate | : 1~15 MB/s |
| Video Formats | : 4:3(Normal) & 16:9(Widescreen) |

5. Audio Decoder

| | |
|--------------------|--|
| System Decoding | : MPEG-1 ISO/IEC 11172-3 Layer I & II |
| Audio Mode | : Mono, Dual, Stereo, Joint Stero |
| Sampling Frequency | : 32, 44.1, 48 KHz |

6. Audio/Video Output

| | |
|---------------|----------------------|
| Audio Output | : 2 ×RCA Cinch |
| Video Output | : 1 ×RCA Cinch |
| Digital Audio | : 1 ×S/PDIF(Optical) |
| S-Video | : 1 ×S-VIDEO |
| COMPONENT | : 3 ×RCA Cinch |

7. RF Modulator

| | |
|-------------------|-------------------|
| Modulator Output | : CH3~4 |
| Video Type | : NTSC |
| Output Connector | : "F" Type Female |
| Ant. IN Connector | : "F" Type Female |

8. Serial Data Interface

| | |
|----------------|---------------------------|
| Signal | : RS-232, Max. 115200 bps |
| Connector Type | : 9 Pin D-Sub(male) |

9. Embedded Descramble

X Crypt Conditional Access System

Programing The Remote Control

There are two ways to program the remote control ; Automatic Code Search or Direct Entry

Using Automatic Code Search

1. Turn on the component you want to control (**TV**, **VCR** or **DVD**)
2. Press and hold the component key you want to program. Holding the component key until the LED on the remote control turns on, then release the key.
3. Point the remote at the component, press and release the **UP** (▲) button, then wait three seconds or until the LED stops flashing.

At this point the remote control is searching for the correct code to program. If, after three seconds, the component you want to control does not turn off, press and release **UP** (▲) button again to tell the remote to search the next set of codes.

Continue pressing and releasing **UP** (▲) button until the component turns off.

4. If the component you want to control **does** turn off;
Press and release **OK** button, then the LED blinks three times.

Using Direct Entry Method

1. Turn on the component you want to control (**TV**, **VCR** or **DVD**)
2. Locate the enclosed Code List. Find your brand of the component you want to control.
3. Press and hold the component key you want to program. Holding the component key until the LED on the remote control turns on, then release the key.
4. Enter 3-digit code from the code list, then the LED blinks three times.
5. If you get no response, repeat these steps using the next code listed for your brand until the component responds to the remote control command.

Changing Volume Lock

Locking the volume controls to a single device makes it easier to control volume, without having to guess whether the volume will change. If you lock the remote's volume controls to the TV (for example), you will always be able to change the volume to the level you want, without having to adjust it on multiple devices.

If you want to lock the volume for the DVD component ;

1. Press and hold the DVD component key until the LED on the remote control turns on.
2. Enter 3-digit code, **9 9 9**.
3. Press and release the DVD component key, then the LED blinks three times.

Unlocking volume control ;

If you want to unlock the volume for the DVD component ;

1. Press and hold the DVD component key until the LED on the remote control turns on.
2. Enter 3-digit code, **9 9 9**.
3. Press and release the DVD component key, then the LED blinks three times.

Brand List for TV

| | |
|---------------|---------------------|
| A Mark | 151 |
| Abex | 130 |
| Admiral | 013 131 166 |
| Aiko | 009 |
| Akai | 014 |
| Alleron | 056 |
| Amtron | 030 |
| Anam National | 015 030 |
| AOC | 016 017 018 019 140 |
| | 141 169 |
| Apex | 181 |
| Audiovox | 030 |
| Belcor | 016 |
| Bell & Howell | 013 042 058 |
| Broksonic | 016 182 |
| Brokwood | 016 |
| Candle | 016 |
| Carver | 012 |
| Celebrity | 014 |
| Citizen | 009 010 016 018 030 |
| | 042 096 139 173 |
| | 011 016 018 |
| Colortyme | 016 |
| Concerto | 016 |
| Contec / Cony | 005 006 007 030 |
| Coronado | 151 |
| Craig | 030 |
| Crosley | 012 |
| Crown | 030 |
| Curtis Mathes | 008 012 016 018 042 |
| | 045 058 096 139 172 |
| | 173 |
| Daewoo | 000 001 009 016 017 |
| | 018 116 139 151 167 |
| Daytron | 016 018 139 |
| Dimensia | 045 |
| Dumont | 016 125 |
| Dynatech | 016 |
| Electroband | 014 |
| Electrohome | 002 003 014 015 016 |
| | 018 |
| Emerson | 004 005 016 018 020 |
| | 021 022 023 024 025 |
| | 026 027 028 029 030 |
| | 031 032 033 034 035 |
| | 036 037 038 039 042 |
| | 056 058 114 139 142 |
| | 143 151 167 178 |
| Envision | 016 018 |
| Fisher | 042 057 058 059 144 |
| Fujitsu | 056 |
| Funai | 030 056 |
| GE | 003 015 016 018 045 |
| | 060 061 062 078 132 |
| | 147 148 149 174 |
| Gilbralter | 016 |
| Grundty | 056 |
| Hallmark | 016 018 |
| Hitachi | 005 006 007 016 018 |
| | 067 068 069 100 101 |
| | 102 103 104 105 106 |
| | 107 108 109 119 123 |
| | 124 143 151 161 171 |
| | 179 |
| Infinity | 012 |
| JBL | 012 |

| | |
|-----------------|---------------------|
| JC Penney | 003 006 010 016 017 |
| | 018 041 045 055 060 |
| | 061 064 078 095 096 |
| | 117 130 132 139 |
| Jensen | 016 018 |
| JVC | 005 006 007 046 047 |
| | 048 061 068 128 129 |
| | 133 158 178 |
| Kawasho | 014 016 018 |
| KEC | 151 |
| Kenwood | 002 016 018 |
| Kloss Novabeam | 030 049 065 |
| KMC | 151 |
| KTV | 030 066 139 142 |
| LG(Goldstar) | 002 005 016 017 018 |
| | 055 063 064 120 127 |
| | 130 139 151 |
| Logik | 013 |
| Luxman | 016 018 |
| LXI | 012 018 040 041 042 |
| | 045 058 132 |
| Magnavox | 002 010 012 016 018 |
| | 043 044 049 050 065 |
| | 079 110 111 112 151 |
| | 013 |
| Majestic | 012 016 018 051 067 |
| Marantz | 012 016 018 051 067 |
| Megatron | 018 067 |
| Memorex | 013 017 018 042 056 |
| | 058 |
| MGA | 002 003 016 017 018 |
| | 052 053 059 |
| Midland | 130 |
| Mitsubishi | 002 003 016 017 018 |
| | 052 053 054 059 115 |
| Montgomery Ward | 013 |
| Motorola | 015 131 |
| MTC | 016 017 018 096 |
| Multitech | 030 |
| Multivision | 076 |
| NAD | 018 040 041 134 171 |
| NEC | 011 015 016 017 018 |
| Nikko | 009 018 |
| Onwa | 030 |
| Optimus | 134 171 |
| Optonica | 075 131 |
| Orion | 032 168 |
| Panasonic | 015 061 138 152 175 |
| Philco | 002 005 010 012 015 |
| | 016 017 018 043 049 |
| | 050 065 151 |
| Phillips | 002 005 010 012 015 |
| | 016 043 049 065 070 |
| | 077 078 079 151 |
| Pilot | 016 |
| Pioneer | 016 018 071 072 134 |
| | 143 171 |
| Portland | 009 016 017 018 139 |
| | 151 |
| Price Club | 096 |
| Prism | 061 |
| Proscan | 045 132 |
| Proton | 005 016 018 073 |
| Pulsar | 016 |
| Quasar | 015 061 066 074 175 |
| Radio Shack | 042 058 |

| | |
|-------------------------|---------------------|
| Radio Shack / Realistic | 005 016 018 030 042 |
| | 045 058 075 130 139 |
| RCA | 002 015 016 017 018 |
| | 019 045 090 091 092 |
| | 093 094 099 118 132 |
| | 135 136 143 153 162 |
| | 167 172 176 180 |
| Realistic | 042 058 |
| Runco | 125 |
| Sampo | 016 018 130 139 |
| Samsung | 000 002 005 008 016 |
| | 017 018 095 096 097 |
| | 130 139 151 163 |
| Sansui | 168 |
| Sanyo | 016 042 053 057 058 |
| | 085 098 137 144 |
| Scott | 005 016 018 021 030 |
| | 032 056 |
| Sears | 002 006 007 012 016 |
| | 018 040 041 042 045 |
| | 047 056 057 058 059 |
| | 086 087 132 144 151 |
| Sharp | 005 016 018 023 026 |
| | 075 080 088 089 113 |
| | 131 139 151 |
| Shogun | 016 |
| Signature | 013 |
| Sony | 014 150 157 159 164 |
| | 170 177 |
| Soundesign | 010 016 018 030 056 |
| SSS | 016 |
| Starlite | 030 |
| Sylvania | 002 010 012 016 018 |
| | 043 044 049 050 065 |
| | 079 081 146 |
| Symphonic | 020 030 056 160 |
| Tandy | 131 |
| Tashiko | 041 |
| Tatung | 015 |
| Technics | 061 |
| Techwood | 016 018 061 |
| Teknika | 005 006 007 009 010 |
| | 012 013 016 017 018 |
| | 030 044 056 096 138 |
| | 139 151 175 |
| Telecaption | 082 |
| Tera | 016 |
| Thomson | 154 |
| TMK | 016 |
| Toshiba | 040 041 042 058 082 |
| | 083 086 096 145 146 |
| | 155 156 183 |
| Totevision | 139 |
| Universal | 060 078 |
| Vidikron | 012 |
| Vidtech | 016 |
| Wards | 002 012 013 016 017 |
| | 018 020 021 043 044 |
| | 045 049 056 060 065 |
| | 075 078 079 084 151 |
| Yamaha | 002 016 017 018 |
| Zenith | 013 016 121 122 125 |
| | 126 165 |

Brand List for VCR

| | | |
|-----------------|-----|---|
| Admiral | 031 | 046 |
| Adventura | 029 | |
| Aiko | 015 | |
| Aiwa | 029 | |
| Akai | 007 | 008 009 035 041 |
| Allegro | 030 | |
| America Action | 015 | |
| American High | 026 | 027 |
| Anam | 026 | 027 |
| Asha | 000 | |
| Audiovox | 017 | |
| Beaumarck | 000 | |
| Bell & Howell | 004 | |
| Broksonic | 005 | |
| Calix | 017 | |
| Candle | 000 | 017 |
| Canon | 026 | 027 |
| Capehart | 034 | |
| Carver | 001 | |
| CCE | 015 | 021 |
| Citizen | 000 | 015 017 018 019 025 044 |
| Colortyme | 002 | |
| Craig | 000 | 017 021 028 |
| Curtis Mathes | 000 | 002 019 022 025 026 027 045 |
| Cybernex | 000 | |
| Daewoo | 015 | 018 029 034 044 |
| Daytron | 034 | |
| Dimensia | 022 | 045 |
| Dynatech | 029 | |
| Electrophonic | 017 | |
| Emerson | 005 | 007 016 017 018 023 026 029 041 |
| Fisher | 004 | 013 014 028 |
| Funai | 029 | |
| Garrard | 029 | |
| GE | 000 | 006 022 026 027 045 |
| Go Video | 039 | 040 |
| Gradiente | 029 | |
| Harley Davidson | 029 | |
| Harman Kardon | 001 | 002 |
| Harwood | 021 | |
| Hitachi | 012 | 020 024 029 035 |
| J. C. Penney | 000 | 002 003 004 005 012 017 020 021 024 026 027 |
| Jensen | 020 | 024 035 |
| JVC | 002 | 003 004 025 033 035 042 |
| Kenwood | 002 | 003 004 019 025 035 042 |
| KLH | 021 | |
| Kodak | 017 | 026 |
| LG(GoldStar) | 002 | 017 025 |
| Lloyd's | 029 | |

| | |
|-----------------------|---|
| Logik | 021 |
| LXI | 017 |
| Magnavox | 001 011 026 027 |
| Magnin | 000 |
| Marantz | 001 002 003 004 019 025 026 |
| Marta | 017 |
| Matsushita | 026 |
| Memorex | 000 004 011 017 026 028 029 031 046 |
| MGA | 016 023 041 |
| MGN Technology | 000 |
| Minolta | 012 020 024 |
| Mitsubishi | 016 020 023 024 041 042 |
| Montgomery Ward | 031 046 |
| Motorola | 026 031 046 |
| MTC | 000 |
| Multitech | 000 019 021 029 |
| NEC | 002 003 004 019 025 035 042 |
| Nikko | 017 |
| Noblex | 000 |
| Olympus | 026 |
| Optimus | 017 031 046 |
| Optinica | 010 |
| Panasonic | 026 027 |
| Pentax | 012 019 020 024 025 |
| Pentax Research | 025 |
| Philco | 026 027 |
| Phillips | 001 010 026 |
| Pilot | 017 |
| Pioneer | 003 024 042 |
| Portland | 019 034 044 |
| Proscan | 006 022 045 |
| Quasar | 026 027 |
| Radio Shack | 010 017 046 |
| Radio Shack/Realistic | 000 004 010 013 014 016 017 026 027 028 029 031 |
| Radix | 017 |
| Randex | 017 |
| RCA | 000 006 007 012 020 022 024 026 036 045 |
| Realistic | 000 004 010 013 014 016 017 018 026 027 028 029 031 046 |
| Ricoh | 043 |
| Runco | 011 |
| Samsung | 000 009 018 040 047 |
| Sansui | 003 035 042 |
| Sanyo | 000 004 028 037 |
| Scott | 005 018 023 |
| Sears | 004 012 013 014 017 020 024 026 028 029 |
| Sharp | 010 016 031 044 046 |
| Shintom | 008 020 021 |

| | |
|-----------------|---|
| Shogun | 000 |
| Signature | 031 046 |
| Singer | 021 026 043 |
| Sony | 008 |
| STS | 012 026 |
| Sylvania | 001 023 026 027 029 |
| Symphonic | 029 |
| Tandy | 004 |
| Tashiko | 017 |
| Tatung | 035 |
| Teac | 029 035 |
| Technics | 026 |
| Teknika | 017 026 029 |
| TIVO | 048 049 050 051 052 |
| TMK | 000 |
| Toshiba | 013 018 023 024 041 |
| Totevision | 000 017 |
| Unitech | 000 |
| Vector Research | 002 003 018 019 |
| Video Concepts | 002 003 018 019 041 |
| Videosonic | 000 |
| Wards | 000 001 010 012 016 017 018 020 021 024 026 029 031 046 |
| XR-1000 | 021 026 029 |
| Yamaha | 002 003 004 025 035 |
| Zenith | 008 011 029 030 043 |
| Zonda | 030 |

Brand List for DVD

| | | |
|------------|-----|-----------------------------|
| Aiwa | 000 | 019 |
| Allegro | 099 | 100 |
| Alpine | 001 | |
| Apex | 004 | 006 008 009 |
| Blaupunkt | 003 | 041 |
| Bose | 093 | |
| Broksonic | 007 | 101 |
| Clarion | 022 | |
| Classic | 023 | |
| Daewoo | 010 | |
| Denon | 005 | 011 036 037 |
| Emerson | 038 | 039 |
| Fisher | 040 | |
| Funai | 039 | |
| GE | 002 | 041 048 |
| Go Video | 094 | 100 |
| GPX | 049 | |
| Hitachi | 018 | 042 043 050 051 |
| JVC | 014 | 029 032 095 |
| Kenwood | 033 | |
| Konka | 017 | 024 |
| Magnavox | 026 | 034 |
| Memorex | 035 | |
| Mintek | 044 | |
| Mitsubishi | 015 | |
| NAD | 038 | |
| Nakamichi | 045 | |
| Norcent | 046 | 047 |
| Onkyo | 052 | |
| Oritron | 081 | |
| Panasonic | 025 | 053 054 055 059 060 061 |
| Philips | 026 | 031 056 |
| Pioneer | 016 | 057 058 077 078 |
| Proscan | 002 | 079 |
| Qwestar | 080 | 081 |
| RCA | 002 | 003 067 092 096 |
| Sampo | 068 | |
| Samsung | 069 | 070 071 097 |
| Sansui | 072 | |
| Sanyo | 020 | 073 098 |
| Sharp | 074 | 075 |
| Sherwood | 076 | |
| Sony | 012 | 021 027 062 063 064 065 066 |
| Sylvania | 039 | |
| Teac | 084 | |
| Technics | 085 | |
| Techwood | 086 | |
| Toshiba | 013 | 028 087 088 089 102 |
| Yamaha | 082 | 090 091 |
| Zenith | 030 | 083 099 |