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# Notice

Read this manual carefully and make sure you understand the provided instructions. For your safety, check what the result each action will be.

## Warnings, Cautions and Notes

Throughout the whole manual, pay special attention to the following marks that indicate hazardous situations.



### Caution

Indicates a situation which, if not avoided, could damage the equipment or apparatus.



### Warnings

Indicates a hazardous situation which, if not avoided, could result in serious injury.



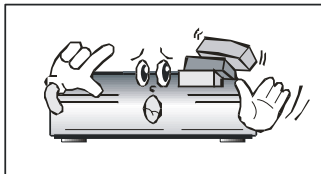
### Note

Indicates additional information to the user to make the user aware of possible problems and information of any importance to help the user to understand, to use and to maintain the installation.

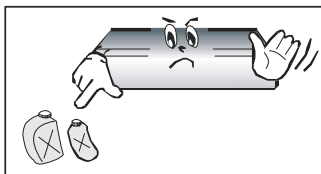
# Safety Information

This digital satellite receiver has been manufactured to comply with international safety standards. Please read the following safety precautions carefully.

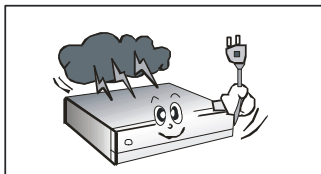
## Safety Instructions and Precautions



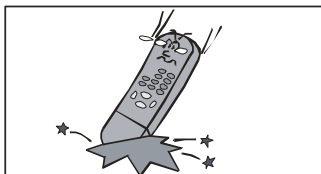
Avoid placing heavy things and blocking ventilation passage.  
(Passage blocking can cause fire)



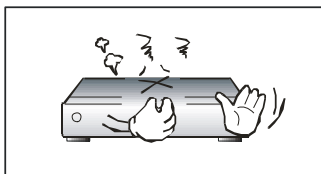
Avoid scrubbing the surface with Benzene or Volatile gasoline. Color can be damaged.



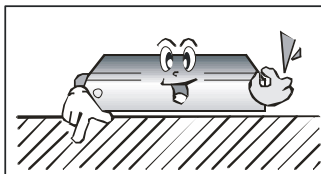
Leave the power and the antenna off for the long absence or during thunder storm.



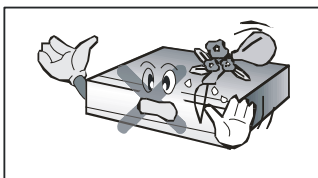
Avoid dropping and damaging Remote Control Unit.



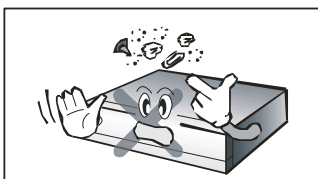
If there is smoke or burning smell, turn off & un-plug the set immediately. Contact your local repair center for advice.



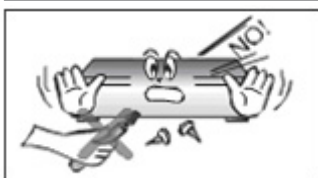
Avoid place the set on slippery and slant surface.



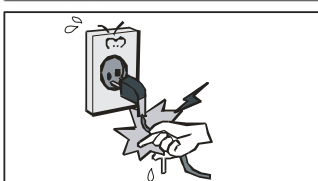
Keep away from the water.



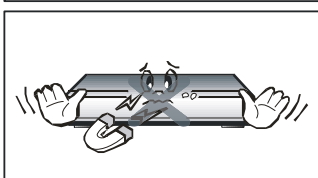
Clear off the dust. Dust or Metallic particles inside the set can cause fire and electric shock.



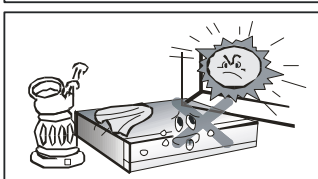
Avoid dissembling and assembling. Do not open the set.



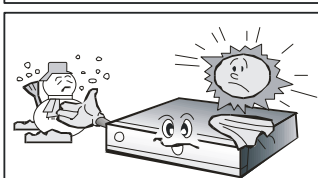
Do not snatch the cable to plug out.  
Do not move the set while power cord is plugged in.



Keep the distance from Magnetic items and Audio Speaker.



Place the set with the good ventilation and away from the direct sunlight and humidity.



Avoid the temperature of over 30C and below 5C.

# 1 Before You Begin

## 1.1 Features

---

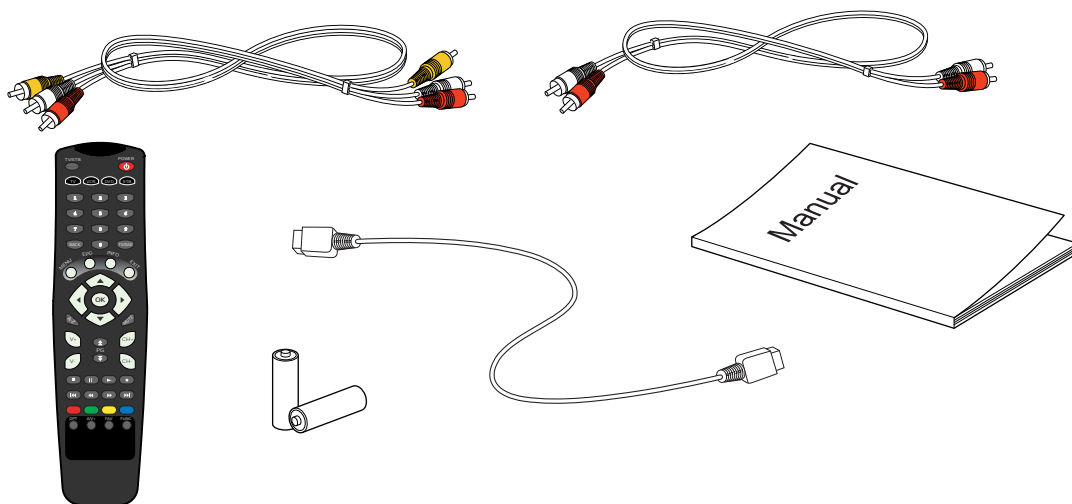
Brilliant On Screen Graphic  
MPEG-2 & MPEG-4 Fully DVB Compliant  
MPEG-2 Video (MP@ML), MPEG-1 Audio Layer1,Layer2  
LNB Controlling Logic  
SCPC/MCPC Receivable from C / Ku-Band Satellites  
Digital Tuner with Loop-through  
HDMI, Component, RGB/HV, S-Video, Composite Video, Audio L/R  
Wide Symbol Rate 1~45Mbps & Frequency Input 950 ~ 2150MHz  
DiSEqC 1.2 Supported  
S/PDIF AC3 Audio  
User friendly OSD Menu with Full Function  
256 Color Graphic User Interface  
Multi-language menu  
4-digit 7-segment LED Display  
Variable Aspect Ratio (4.3, 16:9) with Pan Vector or Letter Box  
EPG(Electronic Program Guide) for On-screen Channel Information  
Teletext and Subtitle Supported (VBI & OSD)  
Installation by Easy Setup Guide  
Capacity for Storing Multi Channel (FTA.2500 Channels, 500 Transponders)  
Favorite Channel and Parental Lock Function  
RS232C Port for Upgrading System Software  
Input Frequency 51~862 Mhz  
Implement complet DVB-T (ETS 300 744) standard  
2K and 8K transmission modes  
No=Hierarchial and Hierarchial support  
Optimized for both SFN and MFN enviroment



## 1.2 Accessories

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- Component video cable
- Stereo audio cable
- HDMI cable
- Operating instruction (this Manual)
- Remote Control
- AAA dry cell batteries x 2



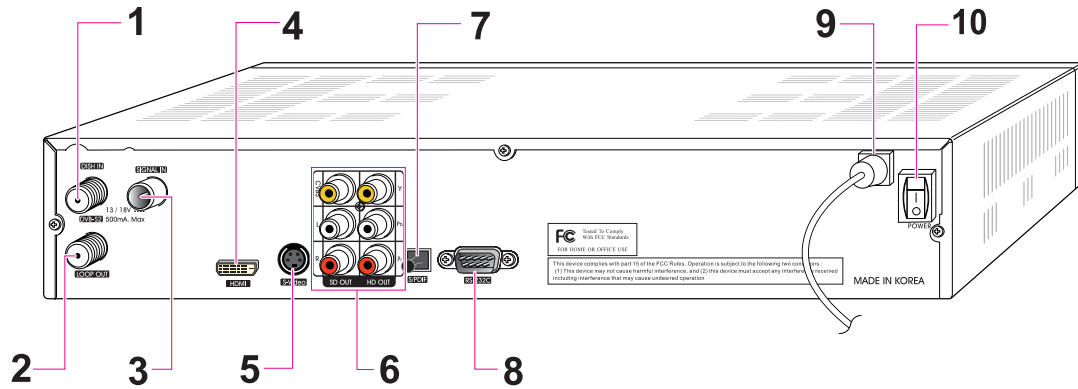
## 2 Controls and Functions

### 2.1 Front Panel

---

Item	Description
1. Power Button	Turns the receiver On/Off.
2 Menu/OK Button	Shows the Main menu in viewing mode. Activates the highlighted menu item in menu mode.
3. EXIT Button	Exit from the current menu or cancels the current progressing operation if applicable.
4. CH Up/Down Buttons (▲/▼)	Changes channels in viewing mode and moves the cursor up/down in menu mode.
5. Volume Up/Down Buttons (◀/▶)	Increases/ decreases the volume levels in viewing mode and changes settings in menu mode.
7. Display (4-digit 7-segment)	4-digit display of channel information. The red LED is the STAND BY indicator.

## 2.2 Rear Panel



Item	Description
<b>1. DISH IN 13/18(14/19)V 500mA Max</b>	Connect the satellite dish.
<b>2. LOOP OUT</b>	Loop Out is a output port of the DISH IN signal.
<b>3. SIGNAL IN</b>	Connect the digital signal cable.
<b>4. HDMI</b>	Connect HDMI input of TV or PC monitor.
<b>5. S-VIDEO</b>	One 4-pin mini-DIN female connector for s-video output.
<b>6. CVBS OUT</b>	Using standard video cables, these jacks connect CVBS(Yellow).
<b>Stereo Audio OUT</b>	Using standard stereo audio cables, these jacks connect L/R(White, Red).
<b>YPbPr OUT</b>	Using standard A/V cables, these jacks connect Y/Pb/Pr(Green, Blue, Red) HD component video input.
<b>7. S/PDIF</b>	Output for connection to a digital amplifier.
<b>8. RS-232C</b>	Connects to a Set-top box or a PC serial port.
<b>9. Electric Inlet Lead</b>	90~240V AC(Auto-selectable), 50~60Hz. Make sure to check the power specification.
<b>10. Power Cord</b>	AC Power Switch.

## 2.3 Remote Control Unit

All receiver features can be controlled with the remote controller.

Button	Description
<b>1. POWER</b>	Turns the unit On and Off.
<b>TV/STB</b>	Switches between TV and STB.
<b>TV</b>	Mode indicator : Indicates operational mode of remote control.
<b>VCR</b>	
<b>DVD</b>	
<b>STB</b>	
<b>2. NUMERIC Buttons</b> (0 ~ 9)	Chooses channels and enters programming information.
<b>BACK</b>	Move to the previous channel.
<b>TV/RAD</b>	Switches between TV and Radio.
<b>3. MENU</b>	Display the main menu of the receiver and come out from inner level to viewing mode(Exit all).
<b>EPG</b>	Shows the TV/Radio Channel guide.
<b>INFO</b>	Shows the information of the Banner and EPG.
<b>EXIT</b>	Removes all on-screen displays and returns to TV viewing from any menu.
<b>4. ◀/▶</b> (◀/▶)	Moves left/right or change settings in menu mode. Changes channels in viewing mode.
<b>▲/▼</b> (▲/▼)	Moves up/down in menu mode.
<b>OK</b> (OK)	Confirms the choices and/or selections the highlighted menu item. While watching TV or listening to Radio, press the OK button and the channel list will appear.
<b>A-Z</b>	Sort the channels automatically in alphabetical order.
<b>MUTE</b>	Turns the sound on/off.
<b>5. V+/-</b>	Changes the volume level in viewing mode.
<b>CH+/-</b>	Changes channels in viewing mode.
<b>P+/-</b>	Selects other menu pages with sub-pages.

<b>6. (●)</b>	Select the option such as Audio Language, Teletext Language and Subtitle Language.
<b>(●)</b>	Select video mode (4:3, 4:3 Letter Box, 16:9) and audio mode (Left, Right, Stereo, Joint).
<b>(●)</b>	Select the group of satellite or favorite.
<b>(●)</b>	Selects the new features such as Zooming, Multi picture.
<b>7. OPT</b>	Select the option such as Audio Language, Teletext Language and Subtitle Language.
<b>A/V+</b>	Select video mode (4:3, 4:3 Letter Box, 16:9) and audio mode (Left, Right, Stereo, Joint).
<b>FAV</b>	Select the group of satellite or favorite.
<b>FUNC</b>	Selects the new features such as Zooming, Multi picture.

## 2.4 Programming the Remote Control to Operate Other Devices

---

### 1. Features

This project will be programmed and support **TV, VCR, DVD, CBL** for American.  
(chip : S3C80C5 OTP 24PIN, ROM SIZE : 16K)

\* The **TV, VCR, DVD** keys are used to select the device you want to control.

### 2. Digit Programming & Key Activation

#### 1) Using your DEVICE code No.

*Step 1.* Turn on your DEVICE

*Step 2.* Press **OK** Key and press DEVICE Key **in 2 seconds at the same time.**

- LAMP LED will blink twice

*Step 3.* Press three Digit Codes Number

- LAMP LED will blink
- If the Digit Codes Number is not pressed in the course of 5 seconds, this function is canceled.

*Step 4.* LAMP LED will blink twice.

- The current setting code is right
- If LAMP LED blink in 1 seconds, code is wrong.

#### 2) Search method-----If Your DEVICE Does Not Respond

*Step 1.* Turn on your DEVICE

*Step 2.* Press **OK** Key and press DEVICE Key **in 2 seconds at the same time**

- LAMP LED will blink twice

*Step 3.* Press **CH UP** or **CH DOWN** key until DEVICE turns off, one and one.

- LAMP LED will blink

- If the **CH UP** or **CH DOWN** key is not pressed in the course of 5 seconds, this function is canceled.

***If your DEVICE is turn off***

*Step4.* Press **OK** key

- LED will blink Twice

**\*\*Please use this method if none of the Set-Up Code numbers worked for your device during the three digit code method or if the manufacturer or brand for your device is not listed in Set-Up Code Tables.**

### **3. Special Function**

#### **1) Code No. Check**

If you want to know which Code No. was set,

*Step1.* Press **OK** Key and press **DEVICE** Key **in 2 seconds at the same time**

- LED will blink twice

*Step 2.* Press **FUNC** key

If the **FUNC** key is not pressed in the course of 5 seconds, this function is canceled.

*Step 3.* LED will blink twice

*Step4.* After 2seconds, LED will blink.

- LED will blink according to first, second and third digit for the current setup code.
- case of digit 0, the LED blinks 10 times.

#### **2) \*\*At RESET, DEVICE default code is 000**

## 2.5 Key Table

NO	KEY NAME	SAT	TV	VCR	DVD
1	TV	-	0		
2	VCR	-		0	
3	DVD	-			0
4	STB	-			
5	POWER	0AH	0	0	0
6	0	00H	0	0	0
7	1	01H	0	0	0
8	2	02H	0	0	0
9	3	03H	0	0	0
10	4	04H	0	0	0
11	5	05H	0	0	0
12	6	06H	0	0	0
13	7	07H	0	0	0
14	8	08H	0	0	0
15	9	09H	0	0	0
16	-	-	0	0	0
17	EPG	1AH			
18	INFO	42H			
19	EXIT	41H			
20	MENU	40H			
21	SAT	45H			
22	FAV	47H			
23	LANG	1BH			
24	MUTE	0CH	0	0	
25	A-Z	44H			
26	RED	16H			
27	GREEN	17H			
28	YELLOW	18H			
29	BLUE	19H			
30	PG +	4EH			
31	PG -	4BH			
32	TEXT	14H			
33	AUD	13H			



34	OK	0DH			
35	TV/RAD	1D H			
36	TV/STB	0FH			
37	UP	0BH			
38	DOWN	0EH			
39	LEFT	10H			
40	RIGHT	11H			
41	FUNC	46H			
42	SLEEP	12H			
43	RCL	43H			
44	-	-			
45	-	-			
46	CH +	1FH	0	0	0
47	VOL-	1CH	0	0	0
48	VOL+	15H	0	0	0
49	CH -	1EH	0	0	0
50	REC	-		0	
51	STOP	-		0	0
52	PAUSE	-		0	0
53	PLAY	-		0	0
54	REW	-		0	0
55	FF	-		0	0
56	SKIP-	-			0
57	SKIP+	-			0

## 2.6 Brand List

### 2.6.1 TV

AOC	005	003			
Admiral	041	031			
Aiko	014				
Akai	005				
Alaron	026				
Ambassador	024				
America Action	027				
Ampro	043				
Anam	027	047	048	049	
Audiovox	030	027	014	034	
Baysonic	027				
Belcor	003				
Bell&Howell	019	001			
Bradford	027				
Brockwood	003				
Broksonic	028	031			
CXC	027				
Candle	005	011			
Carnivale	005				
Carver	010				
Celebrity	050				
Cineral	030	014			
Citizen	012	005	011	006	014
Concerto	011				
Contec	027				
Craig	027				
Crosley	010				
Crown	027	006			
Curtis Mathes	007	010	019	008	030
	041	012	005	016	011
	001	006	022	032	038
	040				
Daewoo	030	003	006	014	034

	035				
Daytron	003				
Denon	016				
Dumont	002	003			
Dwin	044	036			
Electroband	050				
Emerson	019	028	031	027	029
	025	003	026	006	024
	034	035			
Envision	005				
Fisher	019				
Fujitsu	026				
Funai	027	026	023		
Futuretech	027				
GE	007	008	030	041	029
	025	004	015	038	040
Gibraltar	002	005	003		
Goldstar	005	025	003	011	
Gradiente	009	011			
Grunpy	027	026			
Hallmark	025				
Harley Davidson	026				
Harman/Kardon	010				
Havard	027				
Hitachi	016	011	018		
Infinity	010				
Inteq	002				
JBL	010				
JCB	050				
JVC	009	046			
KEC	027				
KTV	027	005	006		
Kenwood	005	003			
LG	011				
LXI	007	010	019	020	025
Logik	001				
Luxman	011				

MGA	017	005	025	003	
MTC	012	005	003	011	
Magnavox	010	005	026		
Majestic	001				
Marantz	010	005			
Mitsushita	042				
Magatron	025	016			
Memorex	019	042	031	017	025
	011	025			
Midland	007	002	008	006	015
Minutz	004				
Mitsubishi	041	017	025	003	
Motorola	041				
Multitech	027				
NAD	020	025	022		
NEC	005	003	011		
NTC	014				
Nikko	005	025	014		
Onwa	027				
Optimus	019	042	022		
Optonica	041	021			
Orion	028	031	026		
Panasonic	008	042			
Penney	007	020	008	012	005
	025	004	003	011	006
	015	040			
Pilco	010	031	005	016	003
Philips	010				
Pilot	005	003	006		
Pioneer	022				
Portland	003	006	014		
Prism	008				
Proscan	007				
Proton	025	032			
Pulsar	002	003			
Quasar	008	042	021		
RCA	007	008	041	003	013

	015	037	038	039	040
Radio Shack	007	019	021	027	005
	025	003	011	006	
Realistic	019	021	027	005	025
	003	011	006		
Runco	002	005	033		
SSS	027	003			
Sampo	005	006			
Samsung	012	005	025	003	011
	045				
Samsux	006				
Sansei	030				
Sansui	031				
Sanyo	019				
Scimitsu	003				
Scotch	025				
Scott	028	027	025	003	026
Sears	007	010	019	020	025
	026	011	023		
Semivox	027				
Semp	020				
Sharp	041	021	006		
Shogun	003				
Signature	001				
Sony	050				
Soundesign	027	025	026		
Squareview	023				
Starlite	027				
Supreme	050				
Sylvania	010	005			
Symphonic	023				
TMK	025	011	024		
Tandy	041				
Technics	008	042			
Technoi Ace	026				
Techwood	008	011			
Teknika	010	027	017	012	003

	026	011	001	006	014
Telefunken	011				
Toshiba	019	020	012		
Totevision	006				
Vector Research	005				
Victor	009				
Vidikron	010				
Vidtech	025	003			
Wards	010	021	005	025	004
	003	026	011	001	
White Westinghouse	031	034	035		
Yamaha	005	003			
Zenith	002	031	001	014	

### 2.6.2 VCR

Admiral	027	021			
Adventura	000				
Aiko	025				
Aiwa	005	000			
Akai	026				
America Action	025				
America High	004				
Asha	023				
Audiovox	005				
Beaumark	023				
Bell&Howell	017				
Brocksonic	021				
Broksonic	020	018	021	001	
CCE	015	025			
Calix	005				
Canon	004				
Carver	016				
Cineral	025				
Citizen	005	025			
Colt	015				
Craig	005	012	023	015	024

Curtis Mathes	013	004	026	028	
Cybernex	023				
Daewoo	010	025			
Denon	008				
Dynatech	000				
Electrohome	005				
Electroponic	005				
Emerex	002				
Emerson	005	020	000	018	009
	021	001	025		
Fisher	012	017			
Fuji	004	003			
Funai	000				
GE	013	004	027	023	
Garrard	000				
GoldStar	005	006			
Gradiente	000				
HI-Q	012				
Harley Davidson	000				
Harman/Kardon	016	006			
Harwood	015				
Headquarter	011				
Hitachi	000	008	026		
JVC	014	026			
Jensen	026				
KEC	005	025			
KLH	015				
Kenwood	014	026	006		
Kodak	004	005			
LXI	005				
Lloyd's	000				
Logik	015				
MEI	004				
MGA	023	009			
MGN Technology	023				
MTC	023	000			
Magnasonic	025				

Magnavox	004	007	016	000	019
Magnin	023				
Marantz	004	016			
Marta	005				
Matsushita	004	028	029		
Memorex	004	005	027	007	012
	023	000	017	021	011
	031	032			
Minolta	008				
Mitsubishi	027	014	009		
Motorola	004	016			
Multitech	000	015			
NEC	017	014	026	006	
Nikko	005				
Noblex	023				
Olympus	004				
Opimus	005	027	017	028	029
	030	031	032		
Orion	020	021	001		
Panasonic	004	028	022	029	031
Penny	004	005	023	008	006
Pentax	008				
Philco	004	021			
Philips	004	016			
Pilot	005				
Pioneer	014				
Profitronic	023				
Proscan	013				
Protec	015				
Pulsar	007				
Quarter	011				
Quartz	011				
Quasar	004	028	029	031	
RCA	013	004	027	023	008
	019				
Radio Shack	000				
Radix	005				



Randex	005				
Realistic	004	005	027	012	000
	017	011			
Runco	007				
STS	008				
Samsung	023	010	033		
Sanky	027	007			
Sansui	000	014	021	026	024
Sanyo	012	023	017	011	
Scott	020	010	018	009	
Sears	004	005	012	000	008
	017	011			
Semp	010				
Sharp	027				
Shintom	015				
Shogun	023				
Singer	015				
Sony	004	002	000	003	
Sylvania	004	016	000	009	
Symphonic	000				
TMK	023				
Tatung	026				
Teac	000	026			
Technics	004	028			
Teknika	004	005	000		
Thomas	000				
Toshiba	010	009			
Totevision	005	023			
Unitech	023				
Vector	010				
Vector Research	006				
Video Concepts	010				
Videosonic	023				
Wards	013	004	027	012	016
	023	000	008	015	019
White WestingHouse	021	025			
XR-100	004	000	015		

Yamaha	006			
Zenith	007	000	021	003

## TV/ VCR

America High	004	(TV use	008)	
Brocksonic	001			
Colt	015			
Cutis Mathes	004	(TV use	008)	
Daewoo	025			
Emerson	001			
Funai	000			
GE	004	(TV use	008)	
	013	(TV use	007)	
	027	(TV use	041)	023
Hitachi	004	(TV use	008)	000
HQ	000			
Lloyds	000			
MGA	023			
Megavox	016	(TV use	010)	
	004	(TV use	008)	000
Magnin	023			
Memorex	005	028	(TV use	042)
Mitsubishi	027	(TV use	041)	
Orion	001			
Panasonic	004	(TV use	008)	
	028	(TV use	042)	
Penney	004	(TV use	008)	023
	028	(TV use	042)	
Quasar	004	(TV use	008)	
	028	(TV use	042)	
RCA	013	(TV use	007)	
	004	(TV use	008)	
	027	(TV use	041)	
Sansui	000			
Sanyo	023			
Sear	000	005		

Sharp	027	(TV use	041)
Sony	002	(TV use	050)
Symphonic	000		
Zenith	000		

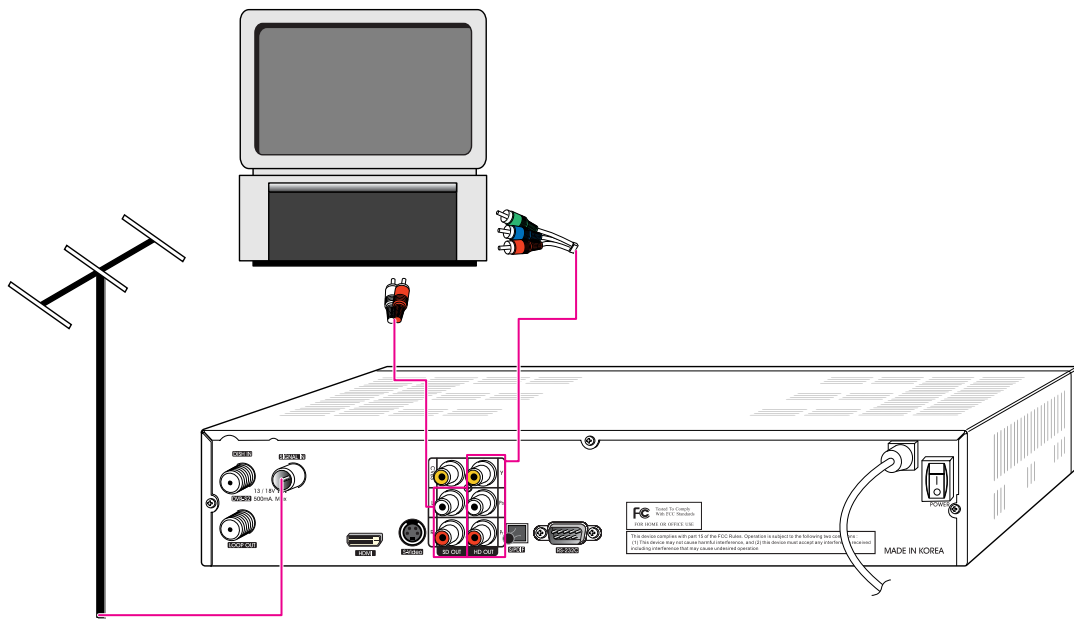
### 2.6.3 DVD

Apex	015			
China dvd	018			
Harman/Kardon	009			
JVC	008			
Kenwood	005			
Mitsubishi	001			
Panasonic	013			
Philips	006	006		
Pioneer	003	014	019	
Proscan	002			
RCA	002			
Samsung	017			
Sherwood	000	012	011	016
Sony	004			
Technics	013			
Theta Digital	014			
Yamaha	013	007		
Zenith	010			

## 3. Connections

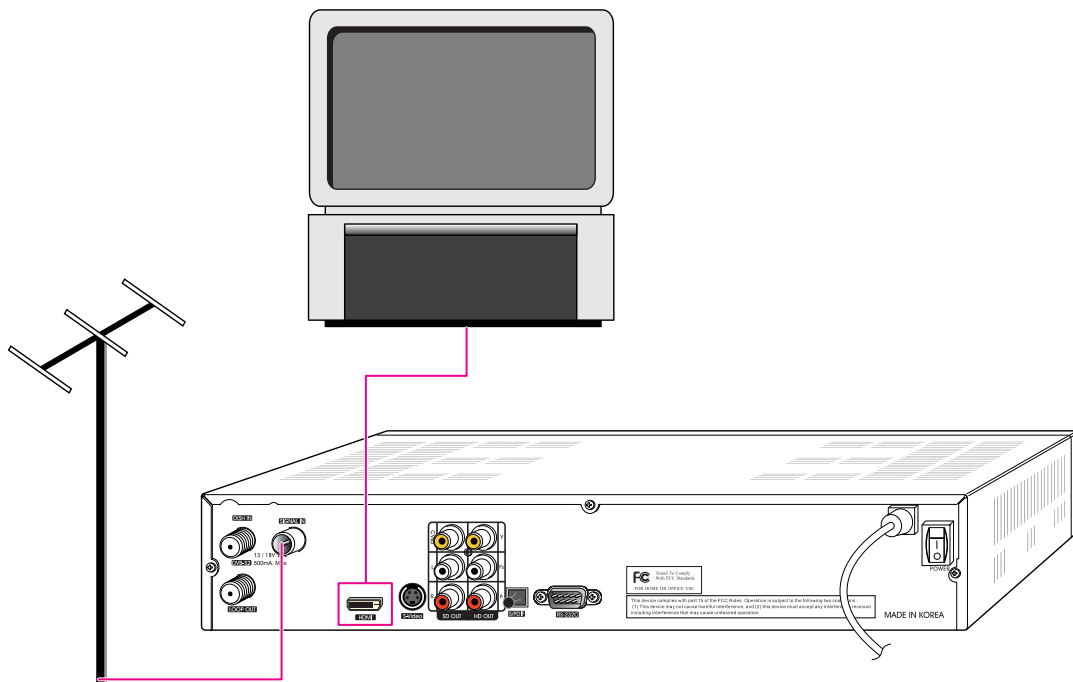
### 3.1 Connecting to TV

<Connecting to digital TV which can support HD resolution (1080i, 720p, 480p & 480i) using YPbPr port>



1. Connect STB's YPbPr OUT and audio L/R OUT to YPbPr IN and audio L/R IN of TV.
2. Set STB's video output mode to 1080i or 720p or 480p using 'FUNC' key of remote controller.  
Please check TV's user manual for detail connecting method of the YPbPr input port.

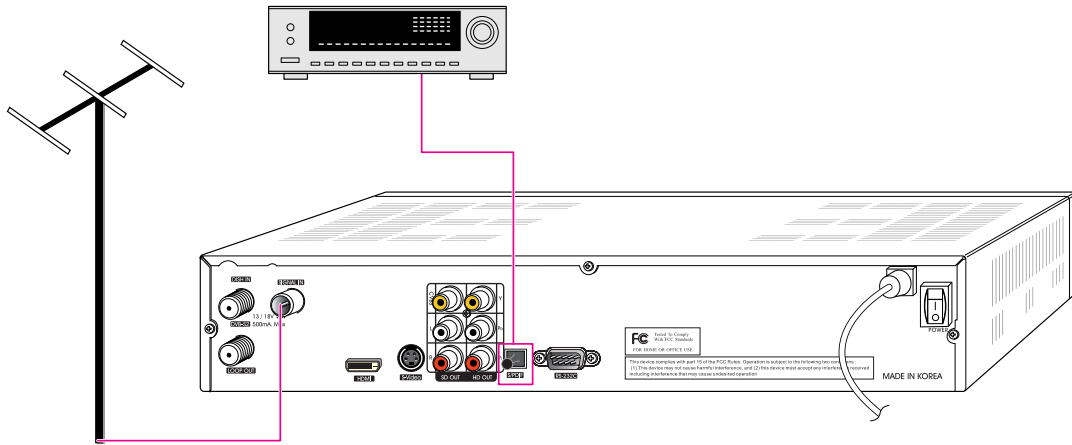
<Connecting to PC monitor or digital TV which has HDMI input port>



1. Connect STB's HDMI OUT to HDMI IN of monitor or TV.
2. Set STB's video output mode to 1080i or 720p or 480p using 'FUNC' key of remote controller.

*For the best access to HD programming at the highest available resolution, use this connection method.*

## <Connecting to A/V receiver (Dolby digital amplifier)>

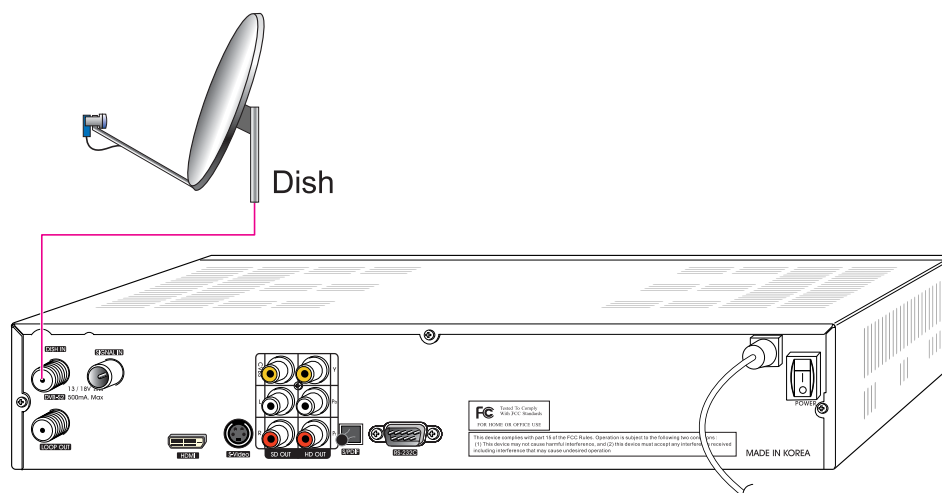


1. Connect STB's optical digital audio out to A/V receiver.
2. Go to TV Output menu and set "Dolby Digital(DD)" to enable.

## 3.2 Connecting to Dish

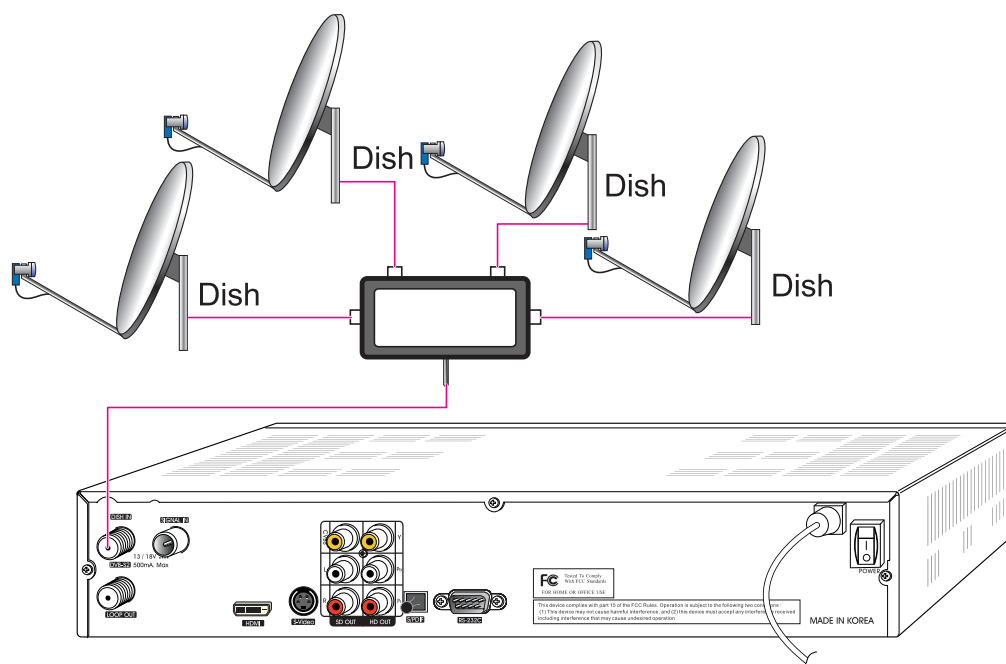
<Dish>

Connect the Satellite antenna cable to DISH IN.



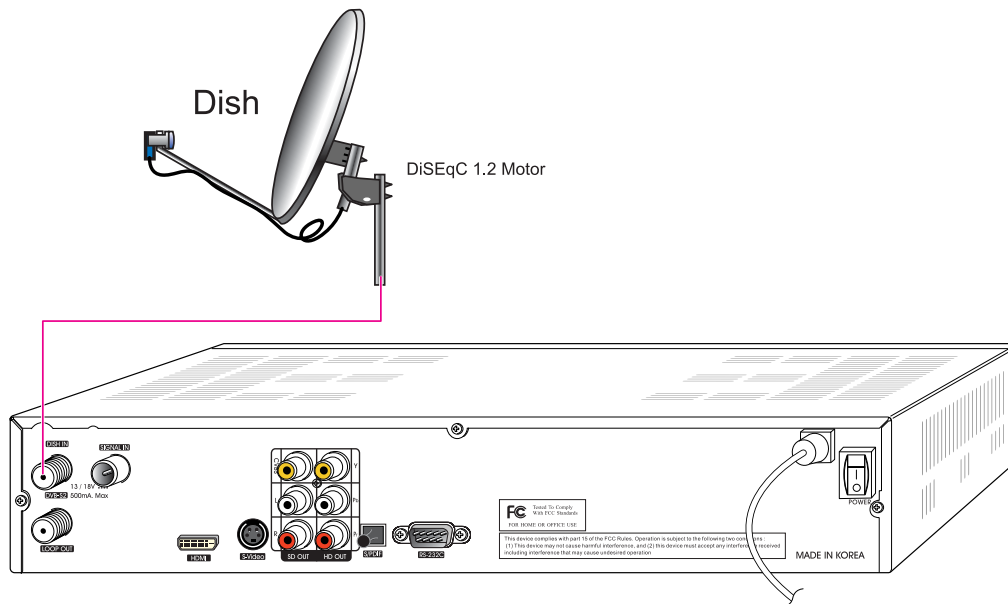
### <Fixed Dishes Using a DiSeqC switch>

Connect the output of DiSeqC 1.0 to DISH IN of the receiver.



## <Motorized Dish Using DiSEqC 1.2>

Connect the output of DiSEqC 1.2 to DISH IN of the receiver.







## 4. Menu Overview

### 4.1 Menu Instruction



Press the MENU button to display the main menu. You can select the sub menu using the ▲/▼/◀/▶ button. The selected sub menu becomes highlighted.

When you have selected the sub menu you want, press the  button.

When you want to return to the previous menu, press the  button.

When you want to return to the live screen, press the Menu button.

### 4.2 Menu Help

In the menu, short information is displayed at the bottom of the screen.



: Using ▲/▼ button.



: Using P+/P- button.



: Using ◀/▶ button.



: Using  button.



: Using Opt, A/V+, Fav button.



: Using  button.



: Numerical button or ◀ Button.

## 4.3 Menu Structure

---

In the menu, short information is displayed at the bottom of the screen.

### Installation

Dish : Select the dish and LNB settings for channel search.

Auto Scan : Search the whole channel automatically without inputting the special parameters.

Manual Scan : Search the channel manually with user's inputting parameters.

### Option

TV Output : Select the video or audio output.

Language : Select the display language, audio language, and subtitle language.

Time Setting : Setting current time.

Parental Control : Change the password and select the censorship classification

OSD Display : Setting OSD display time and transparency.

### Channel

Sorting : Choose the channel sort type, such as by Transponder, Network, CAS.

Reservation : Reserving channels you want to record at your desired time.

Delete : Delete the channels such as Favorite, TV/Radio CAS, etc.

### Advanced

Reset Factory Default : Restore the receiver to the default values.

Channel Upload : Transfer the programs from receiver to receiver or PC.

S/W Upload : Transfer the software from receiver to receiver or PC.

### Status

Information : Check the version of satellite receiver.

## 5. Menu Operation

### 5.1 First Installation

You can install the receiver using First Installation for your convenience.

'First Installation' allow you to set your receiver using simple procedure.

1. Select the desired language using the ▲/▼ button.
2. Press the **OK** button to confirm and go to the next step.



1. Select the desired satellite using the ▲/▼ button.
2. Press the **OK** button to confirm and go to the next step.



1. Select LNB Type using the ▲/▼ button.
2. Press the **OK** button to confirm and go to the next step.



1. If you use a DiSEqC 1.0 switch, select DiSEqC option using the ▲/▼ button.
2. Press the **OK** button to confirm and go to the next step.



1. After all settings are done, press the button to start scanning.

If you want to know more detail description about each procedure, please refer to the following installation part in 5.2.



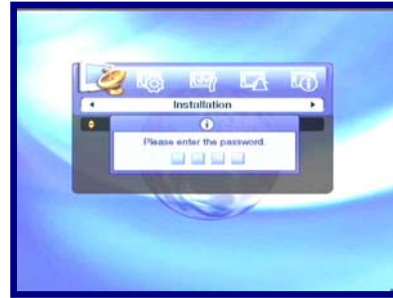
Previous Step button : If you want to go to the previous step, press the **Opt** button and then you can reset options.

Cancel and Exit button : If you want to skip 'First installation', press the **Exit** button.

## 5.2 Installation

### 5.2.1 Dish

1. Press the **Menu** button to display the main menu.
2. Press the **OK** button on the sub menu. The password pop-up window appears. All sub menus such as Dish, Auto Scan, Manual Scan, and Transponder Edit on the Installation are locked by password. The default password is "0000".



Use the **▲/▼** button, you can move upwards and downwards in this mode.

In any item, such as Dish, Satellite, Transponder, etc. if you want to check the detail view, use the **◀/▶** button.



1. Press the **◀/▶** button, the right screen shows the pre-selected 32 satellite lists.
2. Select the desired satellite, and press the **OK** button. Then change the satellite column will be by the desired Satellite name.

If you can't find the desired satellite, select any satellite and press the **OK** button.



1. Press the **◀/▶** button to watch the satellite in the pre-programmed lists. Press the **OK** button to replace the Current satellite with the selected satellite.



1. Press the ◀/▶ button, the right screen shows the transponder lists.
2. Press the OK button to select other transponder. If you select one of the alternative satellite names, the transponder list is changed automatically according to the selected satellite name.



1. Select one of the LNB Power types using the ◀/▶ button.

You can select LNB Power value as 13/18V normally or if the distance between antenna and receiver is further than 60m, you can select LNB Power value as 14/19V.



1. Select the LNB Type value.

If you have selected User Single or User Dual, enter LNB frequency value directly, and press the OK button. If you select LNB Type value as 9750/10600, 9750/10750 or User Dual, 22KHz value is fixed to auto mode, in other case you can select a value depending on usage of 22KHz tone switch box.



1. Select Switch Type if used.
2. If you use a DiSEqC 1.0 switch, select DiSEqC on the Switch Type.
3. Select one of the DiSEqC inputs from the Option.



1. Select Switch Type.
2. If you use a DiSEqC 1.1 switch, select SMATV on the Switch Type.
3. Enter a value with the numeric key. (950~2150).




1. Select Switch Type.
2. If you use a DiSEqC 1.2 motor, select the Motor on the Switch Type.
3. Change position of your Motor through the Option.



### *DiSEqC 1.2 Options*

Move West-East : Press the ◀/▶ button to move the motor.

Store Position : Press the  button to save the current position.

Go to Position : Press the  button to move the motor to the stored position.

Go to Reference : Press the  button to move the motor to the 0 position.

Set West Limit : Press the  button to fix West limit.


Set East Limit : Press the  button to fix East limit.

Enable Limit : Press the  button to change the limit.

(Set West Limit & Set East Limit can be available with Disable Limit status)

1. Select Switch Type.
2. If you use a USALS motor, select from the Switch Type using the ◀/▶ button.
3. Change position of your USALS motor through the Option.



Go to Position : Press the  button to move the motor to the position calculated by the longitude and latitude.

1. Select legacy switch type.



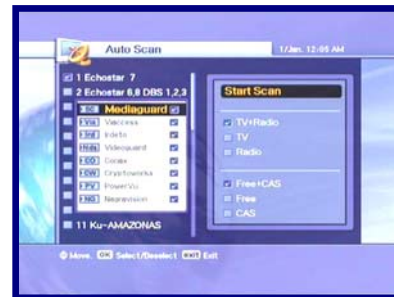
### 5.2.2 Auto Scan

You can search the channels offered by the satellite for which your antenna has been configured.

1. Select the satellite for scanning using  $\blacktriangle/\blacktriangledown$  button and press the **OK** button.
2. The check mark indicates which satellite has been marked for scanning.
3. Press the  $\blacktriangle/\blacktriangledown$  button, select scan option using  $\blacktriangle/\blacktriangledown$  button, and press the **OK** button.
4. If you want to scan the satellite move to "Start Scan" and press the **OK** button.



1. Select Free+CAS or CAS using the  $\blacktriangle/\blacktriangledown/\blacktriangleleft/\blacktriangleright$  button.
2. Press the **Opt** button, CAS Pop-up window will appear.
3. Select the kind of CAS using the  $\blacktriangle/\blacktriangledown$  button.
4. Press the **OK** button.
5. If you want to scan the satellite, move to "Start Scan" and press the **OK** button.



1. The left window shows TV channels and the right window shows Radio channels during the scanning process. White channel names are new channels downloaded to your receiver. Black channel names are already existing channels.





1. If you press the **OK** button when scanning for channels, pop-up window appears.
2. When you complete scanning for channels, a similar pop-up menu appears.
3. If you want to save the updated channels, select 'Yes'.



### 5.2.3 Manual Scan

1. Change to the specific values you want to scan.
2. Press the **OK** button to start the manual scan.



Dish : The target satellite for the manual scan.

Frequency : The frequency of the transponder you want to find manually.

Polarity : The polarity of the transponder you want to find.

Symbol Rate : The symbol rate of the transponder you want to find.

Code Rate : The code rate of the transponder you want to find.

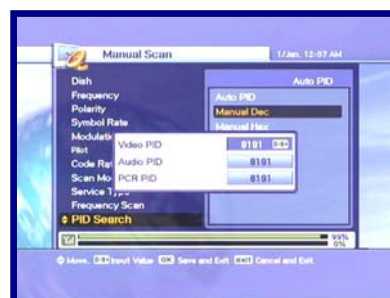
Scan Mode : In the Free Channel mode, the receiver scans all channels without scrambled service.


Service Type : The selection of TV, Radio and TV & Radio.

Network Search : When enable, the receiver searches for more transponders using the network index table.

PID Search : Search using Auto PID, Manual Dec and Manual Hex.


1. When you select Manual Dec option, a pop-up menu appears.
2. Enter the value of Video PID, Audio PID and PCR PID with numeric keys.
3. Press the **OK** button to scan PIDs or press the **OK** button to make the pop-up menu disappeared.



1. When you select the Manual Hex option, a pop up menu appears.
2. Enter the value of Video PID, Audio PID and PCR PID with pop-up keypad.
3. Press 'Done' on the pop-up keypad to save PIDs or press the  button to make the pop-up menu disappeared.








#### 5.2.4 Transponder Edit

1. Press the Opt button to select the satellite in the left screen or the transponder in the right screen.
2. Select one of Delete, Edit or Add from the pop-up window. (The satellite and transponder cannot be deleted if the channels of the selected satellite have already been Downloaded)
3. If you press the  button, the current changing state will be saved and exit.



### 5.3 System Setting

#### 5.3.1 A/V Output Setting

1. Select the TV output options using the , , ,  button.
2. If you press the  button, the changed state will be saved and exit.



TV Screen : Select the screen format of your TV.(4:3, 4:3 Letter Box, 16:9)

Dolby Digital(DD) : Set the Channel to display the audio and video signal on your TV.

### 5.3.2 Language

1. Select the language options using the ▲/▼/◀/▶ button.
2. Press the **OK** button to change the selected language.



Display : Change the language used in the OSD and Menus.

Audio 1-2 : Change the language that you listen to audio in.

Subtitle 1-2 : Change the language that you watch the subtitle in.

### 5.3.3 Time Setting

1. Setting current time using the ▲/▼/◀/▶ button.
2. If you press the **OK** button, current changing state will be saved and exit.



Time Mode (TDT, USER).

TDT : Receive the time from broadcaster.

USER : Set the time directly by user.

Offset : Set the time difference between GMT and the local time.

Day light saving : Day light saving will work only in case of 'Enable' mode.

Start day : Day light saving start day.

End day : Day light saving end day.

### 5.3.4 Security Setting

1. If you want to change the password, press the ◀/▶ button, following message requiring new password will be displayed.
2. Change the password into new one by numeric button.
3. To ensure your change, you are supposed to input a password once more.



1. Select your desired rating level using the ◀/▶ button.
2. Press the **OK** button to save and exit. Rating mode allows you to block channel according to the age level you have set.



View All : All channels can be watched.

7 : Channels are blocked under the age of 7.

12 : Channels are blocked under the age of 12.

15 : Channels are blocked under the age of 15.

18 : Channels are blocked under the age of 18.

You have to enter password to watch the channels which is blocked by the age level.

### 5.3.5 OSD Setting

1. Select the options using the ▲/▼/◀/▶ button.
2. If you press the **OK** button, current changing state will be saved and exit.




Banner display time : Banner will disappear after setting time passed.(1~9).

Screen Saver : Screen Saver is a function to protect your TV in case Radio status or in Menu.  
(Disable, 5, 10, 20, 30, 60, 120 Minutes)

OSD Mixweight : Select the OSD transparent type. (Low, Middle, High).

## 5.4 Channel

### 5.4.1 Sorting

1. Select Sorting Type using the ◀/▶ button.
2. If you press the  button, current changing state will be Saved and exit.



Transponder : Channels are sorted into transponder order..

Network : Channels are sorted into service provider order.

CAS : Channels are sorted into Scramble channels and Free channels order.

### 5.4.2 Reservation

You can reserve a Channel at your desired time. In this mode, you can reserve channels up to 8.

1. Press the Opt button to edit the reserved channel. And then use the ▲/▼/◀/▶ button to the detail setting for your reservation.












1. To add more, press the A/V+ button. Press the Fav button to delete the reservation.
2. After all settings are done, press the button to save and exit.



If it is duplicated with the time zone that was already registered at a reservation list, the alarm message appears which it is not able to register.


In this case, you must register a reservation for other time zone.



-  : Just one time action (After action was done, event will be deleted on the list.)
-  : Action execution in weekday
-  : Action execution in weekend
-  : Action execution weekly
-  : Action execution in every day
-  : Radio channel(FTA, CI)
-  : Radio channel(PVR only)
-  : TV channel(FTA, CI)
-  : TV channel(PVR only)

### 5.4.3 Delete

You can delete channels. You can select not only Mode such as Channel and Favorite, but also Option such as TV, Radio and etc.

1. Select the Mode and Option you want to delete channels using the ▲/▼/◀/▶ button.
2. Press the  button to delete and exit.



## 5.5 Advanced

### 5.5.1 Reset Factory Default

1. If you want to change the set into the default values, press the **OK** button. The following confirmation window will appear.
2. If you select 'Yes', the system will be reset to the primitive state like new receiver.



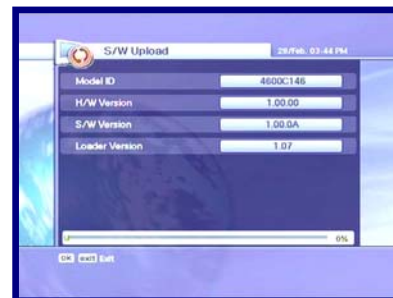
### 5.5.2 Channel Upload

1. Connect the receiver with other receiver or PC through RS-232 cable.
2. For the target receiver, turn the AC Power off, then turn on again.
3. You can watch the transfer status of software.



### 5.5.3 S/W Upload

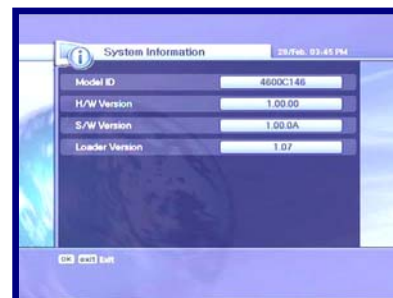
1. Connect the receiver with other receiver or PC through RS-232 cable.
2. For the target receiver, turn the AC Power off, then turn on again.
3. You can watch the transfer status of software.



## 5.6 Status

### 5.6.1 System Information

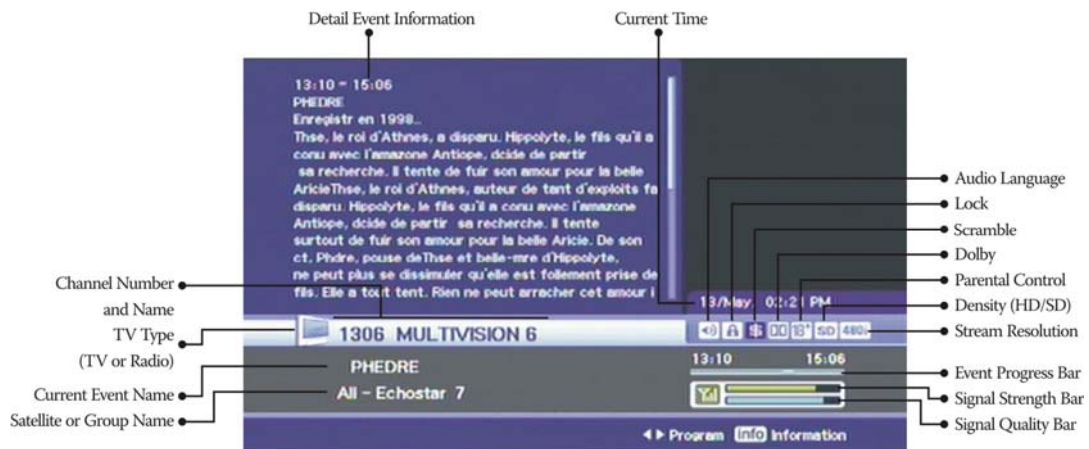
1. You can watch the system information such as Model ID, Hardware version, Software version, and Loader version.





## 6. Viewing General Information

### 6.1 Banner Information



1. Whenever you press the INFO button, the banner information window appears for a few seconds.



1. If you press the INFO button again on the banner, the detail EPG window appears.
2. If you press the **OK** button, information and EPG window will disappear.
3. Press the **P+-** button and then you can change the channel.
4. If '►' exists on the Banner, press the **◀/▶** button and then you can watch the next EPG.



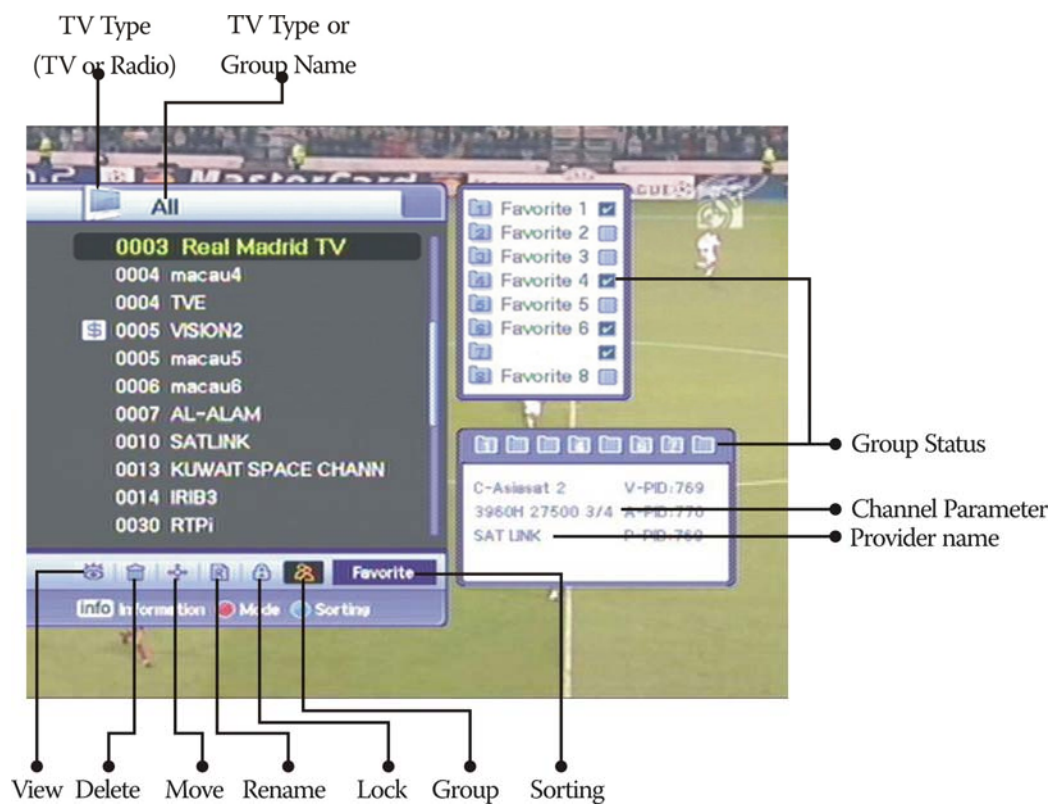


## 6.2 TV & Radio changing

While watching TV or listening to Radio, you can select TV or Radio using the TV/Rad button.



## 6.3 TV or Radio Channel Lists



### 6.3.1 Watching Mode

While watching TV or listening to Radio, you can watch the channel list. Press the **OK** button to display the channel list. You can watch several icons at the bottom of the channel list. Each icon has a special and convenient function for user. If you want to change the mode, press the **Opt** button to go to the desired icon.

1. Press the **OK** button or **A-Z** button. If you want to view the sorted channel list, press the **A-Z** button.
2. Press the **▲/▼** button to move the cursor.
3. Press the **OK** button to watch the desired channel.
4. If you want to hide the channel list, press the **Opt** button.



When you want to sort the channels, press the **A-Z** button.

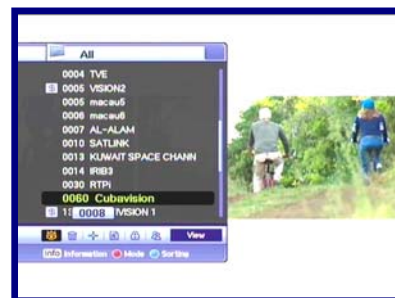
When you want to change the TV/Radio mode, press the **TV/Rad** button.

When you want to watch the next or previous channel page, press the **P+-** button.

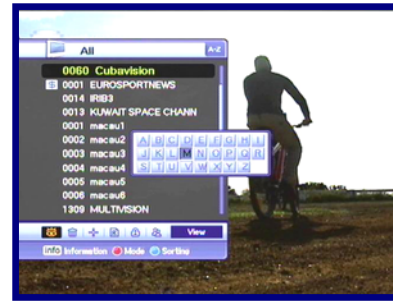
1. Press the **INFO** button to watch the information for a selected channel.
2. Press the **EXIT** button to hide the information.



1. If you know the correct channel-number to watch, press the number using the numeric button.



1. If you want to go Alphabetic move, you must change the channel list to the sorted status. To become the sorted status, press the A-Z button on the channel list or on the Live screen.
2. Press the numeric button. Then Alphabetic Pad will appear.
3. You can select the Alphabet using the numeric key(1-9)/▲/▼/◀/▶ button.
4. Press the **OK** button. If the selected channel by user input-letter not exists, there will be any change.



### 6.3.2 Delete Mode

1. Select the Delete Icon using the Opt button.
2. Select channel you want to delete using the ▲/▼ button. Press the **OK** button. Checked sign will be marked on the right side of the channel name.
3. Press the **EXIT** button to save and exit.










### 6.3.3 Move Mode

1. Select the Move Icon using the Opt button.
2. Select the channel which will be located in other position.
3. Press the **OK** button, and then a sign which indicates "move" will be marked on the right side of the channel name.
4. Set the new position using the ▲/▼ button.
5. If you want to complete moving channel, press the **OK** button. Then "move" sign will disappear on the right side of the channel name.
6. Press the **EXIT** button to save and exit.



### 6.3.4 Rename Mode

1. Select Rename Icon using the Opt button.
2. Select the channel to rename and press the  button. And then a small editing name window will be displayed.
3. You can write each letter of the channel name using the /// button and the  button.
4. After renaming is done, select Done tab and then press the  button.
5. Press the **EXIT** button to exit.



You can change the Favorite group name.

1. Select the desired group.
2. Change the name of group according to above procedures.

<Remark>

It is impossible that Delete & Group function can be changed in grouping mode.



Space : Write between two characters.



Back : Delete characters.

Caps : Change between caps and lower case letter.

Done : To save the change.

Cancel : Exit rename mode.

### 6.3.5 Lock Mode

1. Select Lock Icon using the Opt button.
2. Select the channel to be locked and press the  button.
3. Set the password. Locking mark will appear on the left side of the Channel name. To cancel it, just press the  button.
4. Press the **EXIT** button to save and exit.



### 6.3.6 Group Mode

You can make the group up to the 8th group. It can accommodate 100 Channels in one group. So you can get 800 favorite channels.

1. Select Group Icon using the Opt button.
2. Select the channels that you want to make favorite channel list.
3. Press the **OK** button, and then a small favorite Window will appear on the right side of the screen.
4. Choose the group number using the **▲/▼** button and press the **OK** button. To cancel it, just press the **OK** button again.
5. If you want to select other channel in current group, press the **◀/▶** button. And then highlighted channel will be showed on the channel list.
6. Press the **OK** button to set the group with selected group using the **◀/▶** button.
7. Press the **EXIT** button to save and exit.

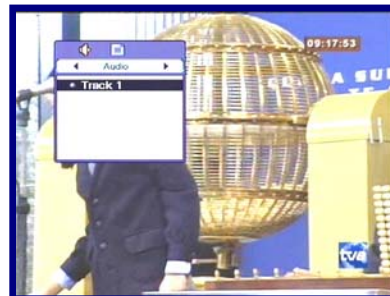


## 6.4 Option

While watching TV or listening to Radio, press the Opt button. You can watch small pop-up window. You can select a option.(Audio Language, Teletext Language, Subtitle Language) If you want to change the option mode, press the ◀/▶ button.

### 6.4.1 Audio Language

1. Select the 'Audio' using the ◀/▶ button.
2. Press the ▲/▼ button to select a desired audio language.
3. Press the OK button to change the audio language.



### 6.4.2 Close Caption

1. Select the 'Close Caption' using the ◀/▶ button.
2. Press the ▲/▼ button to select enable.
3. Press the OK button.
4. You can watch the Close Caption contents in the language if it is available.



## 6.5 A/V+

While watching TV or listening to Radio, press the A/V+ button. You can watch small pop-up window. You can select a option.(Audio Mode, Video Mode) If you want to change the option mode, press the ◀/▶ button.

### 6.5.1 Audio Mode

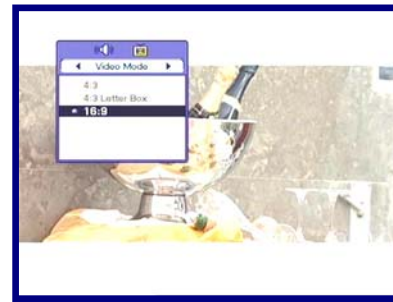
1. Select the 'Audio Mode' using the ◀/▶ button.
2. Press the ▲/▼ button to set the output direction for speakers.  
(STEREO, LEFT, RIGHT, JOINT)
3. Press the OK button to save and exit.





### 6.5.2 Video Mode

1. Select the 'Video Mode' using the ◀/▶ button.
2. Press the ▲/▼ button to set screen format of your TV.
3. Press the OK button to save and exit.

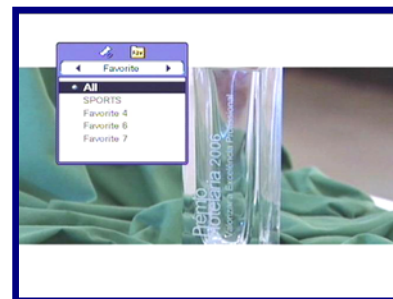


## 6.6 Fav

While watching TV or listening to Radio, press the Fav button. You can watch small pop-up window. You can select a Favorite group.

### 6.6.1 Satellite

1. Select the 'Satellite' using the ◀/▶ button.
2. Press the ▲/▼ button to select a Satellite.
3. Press the OK button, then you can watch the channel list of selected Satellite.



### 6.6.2 Favorite

1. Select the 'Favorite' using the ◀/▶ button.
2. Press the ▲/▼ button to select a group.
3. Press the OK button, then you can watch the channel list of selected group.



## 6.7 A-Z

While watching TV or listening to Radio, press the A-Z button. You can watch sorted channel list.

## 6.8 EPG

Press the EPG button and the electronic channel guide appears if applicable.  
Time intervals are arranged in a row and Channel lists are shown in a column.

### 6.8.1 EPG Information

1. Press the ◀/▶ button to change time interval.
2. Press the ▲/▼ button to watch the guide about the channel, and then press the INFO button, the detail EPG window will appear.
3. Press the OK button to exit.



Press the Opt button to reserve channels with event. If you want to know the detail  
Description about reservation, refer to the reservation description in chapter 5.4.2.  
Press the INFO button to watch the detail EPG.




## 7. ATSC Menu Overview


### 7.1 Menu Instruction

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Press the MENU button to display the main menu. You can select the sub menu using the ▲/▼/◀/▶ button. The selected sub menu becomes highlighted.

When you have selected the sub menu you want, press the  button.

When you want to return to the previous menu, press the  button.

When you want to return to the live screen, press the Menu button.

### 7.2 Menu Help

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In the menu, short information is displayed at the bottom of the screen.



: Using ▲/▼ button.



: Using P+/P- button.



: Using ◀/▶ button.



: Using  button.



: Using Opt, A/V+, Fav button.



: Using  button.



: Numerical button or ◀ Button.

## 7.3 Menu Structure

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In the menu, short information is displayed at the bottom of the screen.

### Installation

Auto Scan : Search the whole channel automatically without inputting the special parameters.

Manual Scan : Search the channel manually with user's inputting parameters.

### System Setting

A/V Output Setting : Select the video or audio output.

Language : Select the display language, audio language, and subtitle language.

Time Setting : Setting current time.

Parental Control : Change the password and select the censorship classification

OSD Display : Setting OSD display time and transparency.

### Channel

Sorting : Choose the channel sort type, such as by Transponder, Network, CAS.

Reservation : Reserving channels you want to record at your desired time.

Delete : Delete the channels such as Favorite, TV/Radio CAS, etc.

### Advanced

Reset Factory Default : Restore the receiver to the default values.

Channel Upload : Transfer the programs from receiver to receiver or PC.

S/W Upload : Transfer the software from receiver to receiver or PC.

### Status


System Information : Check the version of satellite receiver.

## 8. Menu Operation

### 8.1 Installation

#### 8.1.1 Installation




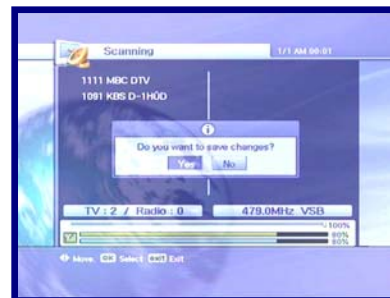
1. Press the Menu button to display the main menu.
2. Press the  button on the sub menu. Some sub menus such as Auto Scan. Manual Scan on the Installation are locked by password, and the password pop-up window appears. The default password is "0000".

#### 8.1.2 Auto Scan


1. The left window shows TV channels and the right window shows Radio channels during the scanning process. White channel names are new channels downloaded to your receiver. Black channel names are already existing channels.



1. If you press the  button when scanning for channels, pop-up window appears.
2. When you complete scanning for channels, a similar pop-up menu appears.
3. If you want to save the updated channels, select 'Yes'.



### 8.1.3 Manual Scan

1. Change to the specific values you want to scan.
2. Press the  button to start the manual scan.



Channel	: The target channel number for the manual scan.
Frequency	: The frequency of the channel you want to find manually.
Network Search	: When enable, the receiver searches for more channels using the network index table.
PID Search	: Search using Auto PID, Manual Dec, Manual Hex

# Additional Information

## A.1 Troubleshooting

There may be various reasons behind receiver problems. Check the receiver according to the procedures described below.

If you can't solve your problem even after following the troubleshooting procedures, please contact the dealer. Do not open the receiver cover. It may cause a dangerous situation.

Symptom	Cause	Remedy
<b>The front panel doesn't display any message.</b>	The power cord is not plugged in.	Check that the power cable is plugged in to the wall outlet.
<b>No picture or sound.</b>	Wrong connection of the Audio/Video output of the receiver to TV.	Connect the Audio/Video output of the receiver to TV correctly.
	Wrong connection of the antenna.	Connect the antennal cable correctly.
	No or Bad signal message appears.	Check other device connected between Antenna and the receiver, or adjust the antenna position.
	Audio muting	Press the MUTE button
	TV Power	Turn TV on.
<b>No picture.</b>	The receiver can't receive the signal.	Check the antenna cable, replace the cable, or connect the cable to the receiver tightly.
	Incorrect values of some tuner parameters.	Set the values of tuner parameters correctly. Refer to the Installation menu.
<b>No or bad signal.</b>	The UHF Antenna is not Pointing.	Adjust the antenna.
	Signal too strong.	Connect the signal attenuator to the signal input.
	Antenna is too small.	Change to a larger antenna.
<b>The remote controller does not operate.</b>	The batteries of the remote controller are not inserted or exhausted.	Check whether the batteries are inserted correctly in your remote controller. Check and replace the batteries of the remote controller.
<b>Poor picture quality.</b>	Signal loss cable.	Change the antenna power in Antenna menu.
<b>Less channels in scanning.</b>		

## A.2 Technical Specifications

### 1. Tuner & Demodulator

Parameter	Specifications
Input Frequency Range	950MHz to 2150 Mhz
RF Input Signal Level	-25 to -65dBm
RF Impedance	75
IF Bandwidth	55MHz/8MHz(Under 5Msps)
LNB Power	13/18DC, 14/19V +/-5%, 0.5Amax, 0.8Apeak overload protected
LNB Tone Switch	22kHz +/-2kHz, 0.6Vpp +/-0.2V
DiSEqC Control	Version 1.2, Tone burst A/B
Demodulation	QPSK, QAM256, VSB, 64QAM
Symbol Rate	1~45Msps/SCPC, MCPC

### 2. MPEG

Parameter	Specifications
Transport Stream	MPEG-2 ISO/IEC 13818 Transport Stream Specification
Input Rate	Max. 15Mbit/s
Video	MPEG-2 MP@ML
Audio	MPEG-1/2 Audio Layer 1,2
Aspect Ratio	4:3, 16:9
Video Resolution	720x480p(PAL), 720x480i(NTSC), 1080i
Audio Mode	Stereo, Dual channel, Joint stereo, Mono
Audio Sampling Frequency	32/44.1/48kHz

### 3. Connector

Port	Specifications
LNB IF input	F type, IEC 169-24 Female
LNB IF Loop-through Output	F type, IEC 169-24 Female
S-VHS	Y, C
RCA	Stereo,CVBS
Component	Y,Pb,Pr
SPDIF	Fiber-Optic connection(Digital Audio Output)
Serial Port	RS232C D-sub male type

### 4. Power Supply

Parameter	Specifications
Input Voltage	90~260VAC(SMPS)
Power Consumption	Max. 27W
Weight	Appr. 1.5KG
Operating Temperature	0°C~40°C
Storage Temperature	-40°C~65°C

## A.3 Glossary of Terms

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### **DiSEqC**

Digital Satellite Equipment Control.

### **EPG**

Electronic Program Guide. Software that enables viewers to navigate easily among the large selection of channels provided by the digital technology and choose the service they desire.

### **FEC**

Forward Error Correction. Correction of faulty bits in the received signal.

### **LNB(Low-Noise Block converter)**

The LNB is an electronic unit mounted on the satellite dish. It receives the signals reflected by the dish and converts them to signals that can be used by Satellite receiver.

### **Parental control**

A feature that allows parents to lock programs that they consider unsuitable for their children. A locked channel or program can only be unlocked with the password.

### **PIN code**

Personal Identification Number. A four-digit code that is used for locking/unlocking channels and programs, as in the parental control feature.

### **Polarization**

Polarization allows several programmes to be fitted into the same frequency band.

The signals from a satellite are transmitted either with linear (vertical or horizontal) polarization or circular (right or left) polarization.

### **RS 232**

Serial communication standard data port.

### **Satellite dish**

A dish-shaped antenna to receive signals from a satellite. The dish focuses the signals into the LNB.



## **Scrambled satellite TV programme**

Some satellite TV programmes are transmitted in scrambled form. A smartcard, and possibly a CA module is needed to view such programmes.

## **Symbol rate**

Size of the digital package transmission

