adaptiv

ADV-DVBT2

DVB-T2 DIVERSITY RECEIVER
USER MANUAL

DVBT2®

Important Safety Instructions and Caution

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK –
DO NOT REMOVE COVER (OR BACK)
NO USER-SERVICEABLE PARTS INSIDE REFER SERVICING
TO QUALIFIED SERVICE PERSONNE;
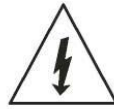
The lighting flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk at electric shock to persons.

The exclamation point within an equilateral triangle 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 APPLIANCE TO RAIN OR MOISTURE.

Please Read all of these instructions regarding your unit and retain them for future reference.

- Keep this manual handy as a reference for operating procedures and safety information.
- Do not insert irrelevant objects of any kind into this device through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock.
- Do not place this unit near liquids as electrical shock could result. Damages resulting from splashing liquids on the device may cause smoke and overheat.

On safety

- Do not attempt to install or serve your device on your own. Installation or serving by people without proper training and experience in electronic equipment and automotive accessories may be dangerous and could expose you to the risk of electric shock or other hazards.
- If the receiver does not work properly, please disconnect the power plug for safety. Contact your local dealer immediately for further technical support.
- If any solid object or liquid fall into the cabinet, disconnect the unit and have it checked by a qualified person before operating it any further.

Table of Contents

I. Introduction

I.1 ADV-DVBT2 Product Overview

ADV-DVBT2 is designed to access terrestrial DVB-T2 TV broadcasting services recently emerging in many regions. As a whole, the ADV-DVBT2 accepts signal inputs from DVB-T2 antennas, performs all required TV signal processing, and then generate analog/digital AV contents for display in monitors. With its state-of-the-art TV signal reception and Audio/Video processing techniques, ADV-DVBT2 promises to deliver users an easy access of local HD DVB-T2 TV programs.


Features Summary

TV
- Best-in-class sensitivity for mobile HD DVB-T2 reception
- Excellent mobility support
- Record TV/Radio programs on USB storage device
- +5V Phantom power output for active antenna

Robust Quality and Stylish GUI
- Stylish and user-friendly GUI
- Robust quality in both hardware and software

I.2 Unit Description

Front Side

(1) USB   (2) Power/IR   (3) Power (4) Operating
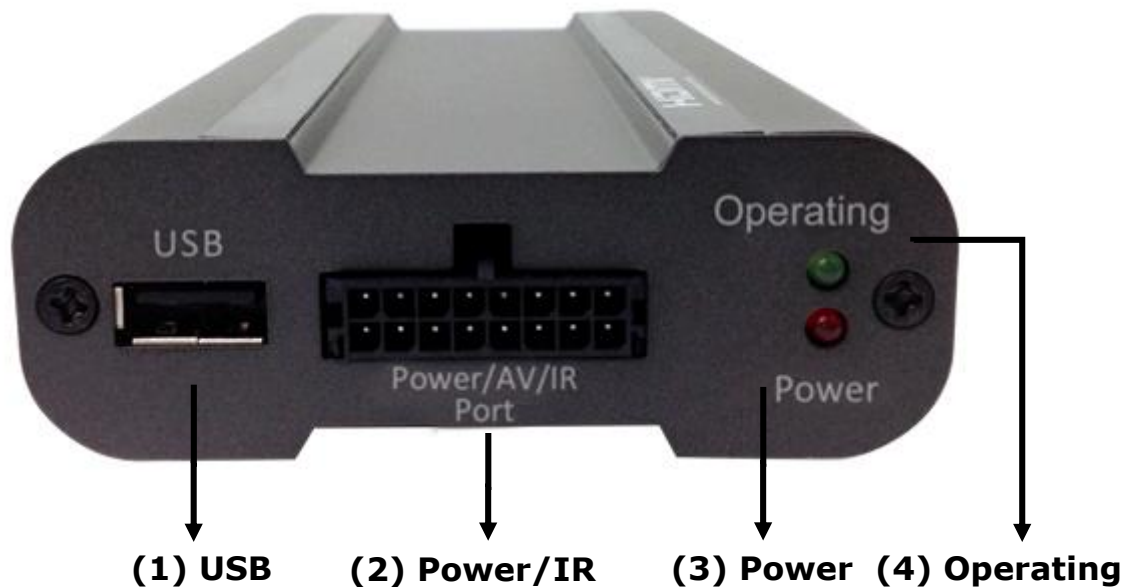
(1)	**USB port**: for software upgrade.
(2)	**Power/IR Port***: it is connected to either 12 V or 24 V in-car power supply and port for connecting the infrared receiver extension dongle.
(3)	**Power**: "Power" LED indicates if the 12V or 24V power supply has been successfully applied to the device.
(4)	**Operating**: the "Operating" LED indicates if the system is working.

Back Side
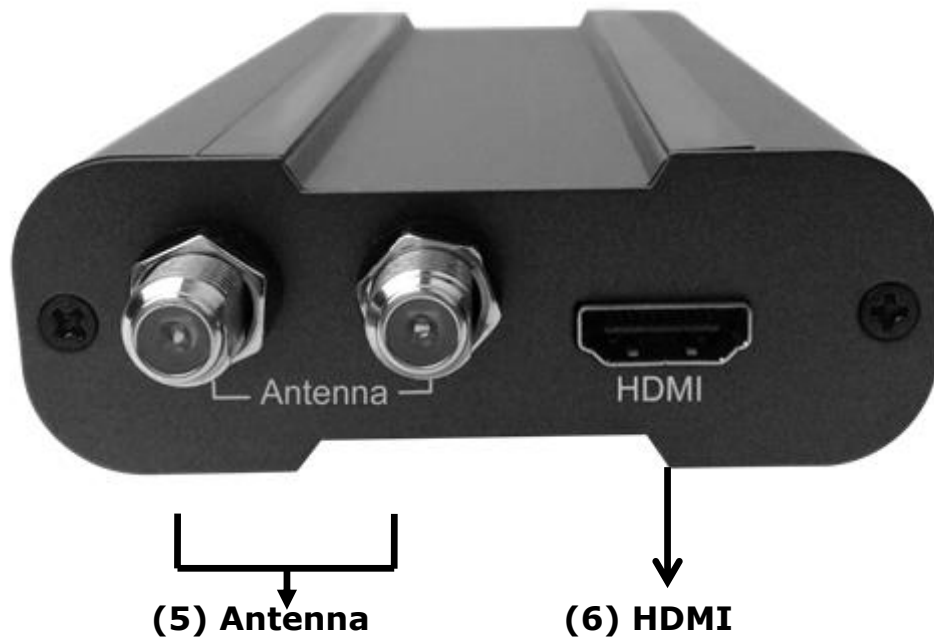
(5) Antenna   **(6) HDMI**

(5)   **Antenna**: Antenna input connector. *Note that +5V DC output for powering active antenna is also provided via this port.*

(6)   **HDMI**: The TV audio and video output (digital) via a HDMI port

*Please see next chapter for further information

Note: Connect antennas to the unit BEFORE turning on engine.
Please connect the antennas first and then turn on the unit. If users turn on the main unit and then connect the antennas later, the connected antenna will NOT be detected nor activated for receiving DVB-T signal as it should.

Warning: Make sure the power supply jack is correctly connected.
If this unit intends to use +12/24V power supply provided by vehicle via ACC route, please make sure the red wire is correctly connected with the ACC ignition for proper system operations.

Power I/O Port
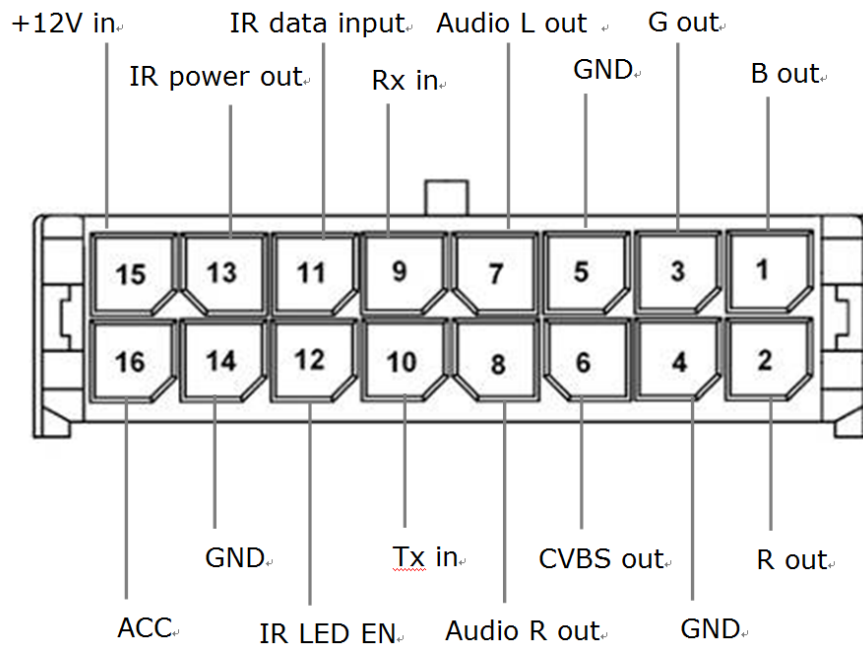
|			
1	B output	2	R output
3	G output	4	VIDEO_GND
5	AUDIO_GND	6	CVBS Video output
7	AUDIO L output	8	Audio R output
9	UART Rx input	10	UART Tx input
11	IR data input	12	LED_EN
13	IR power output	14	PWR_GND
15	+12V input	16	ACC input

I.3 Antenna Installation

In-car digital TV reception varies from vehicle to vehicle and the installer may need to try several mounting positions to determine the best one which provides strong and stable signal reception in your vehicle.

Important Notes on Antenna Installation: *for a better reception, please place the rod antenna **horizontally**, and keep the rod antenna **away from metals***.

Antenna Position

To extend the reception area, we recommend that one antenna is mounted at the front and one at the rear of the vehicle. Please refer to the diagram below for some recommended locations.

Front Location   **Rear Location**
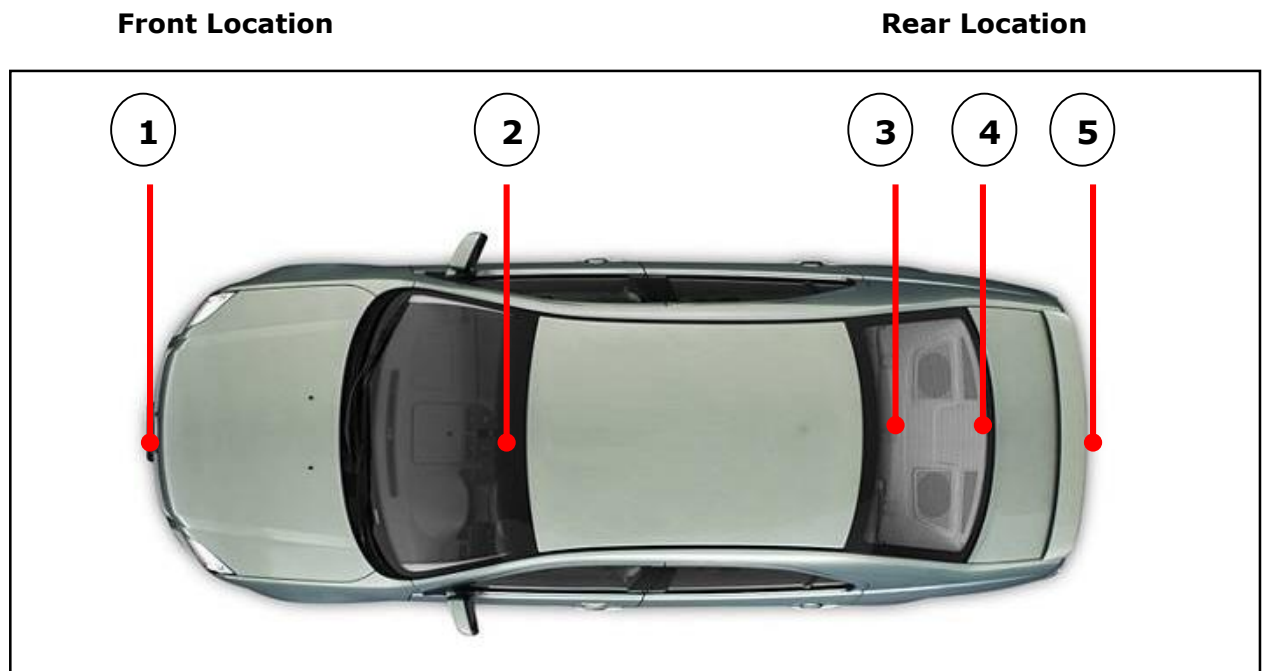
(1) Behind the Front Bumper, provided that it is not metal
(2) Top of Front Windscreen, at least 5cm away from metal body (in car)
(3) Top of Rear Windscreen, at least 5cm away from metal body (in car)
(4) Bottom of Rear Windscreen, at least 5cm away from metal body (in car)
(5) Behind the Rear Bumper, provided that it is not metal

*Noted: The DTV signal of position (2) ~ (4) is generally better than position (1) and (5). However, because the windshields of many cars are usually equipped with film coating (containing metal), the actual signal reception will be seriously degraded, depending on the extent of metal embedded within.

Antenna Cable Rounting

Once a suitable position is found, carefully route the antenna cables to the receiver unit and then connect to the Antenna Inputs on the DTV receiver.


*Note: Antennas should be placed horizontally.
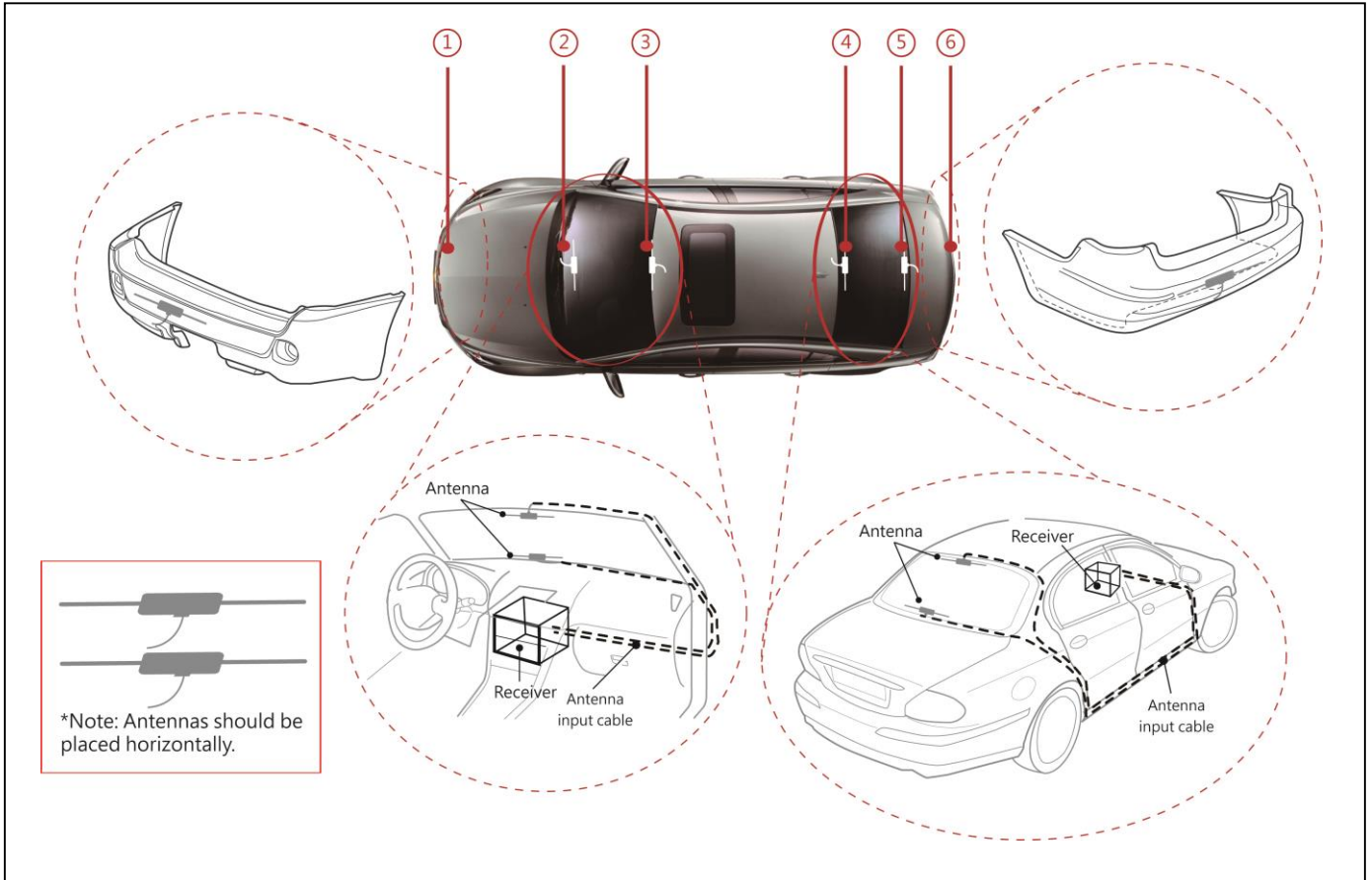
II. Quick Guide for First-time User

Step 1: Turn on the unit
1. Turn on the vehicles ACC or IGN. (or start the vehicle)
2. When the unit has power, the POWER LED indicator will illuminate RED.
3. Using the remote, press the POWER button to turn it on. Operating LED on the unit will illuminate Green when system is ON.

NOTE: *If the Operating LED does not turn on, please check if the remote battery is inserted properly.*

Operating LED

Power LED
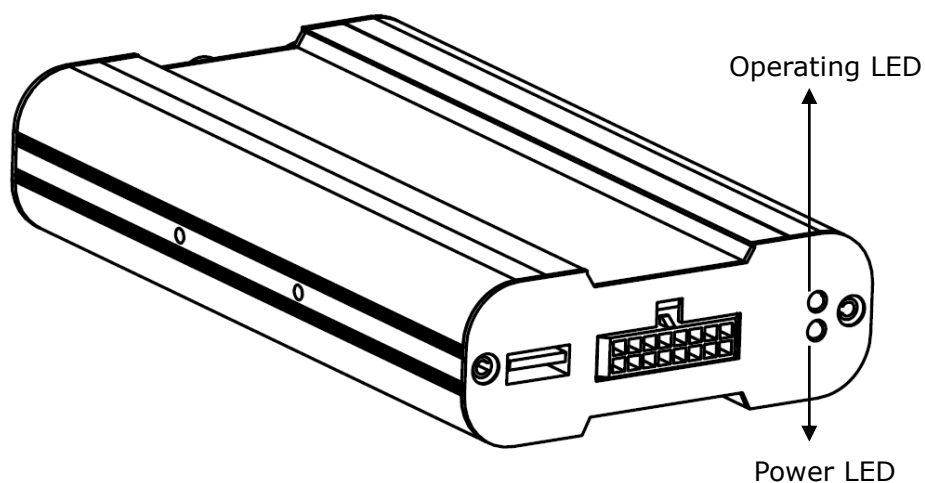
Step 2: Press [CH▲]/[CH▼] buttons to select "TV" options and press [OK] button to enter the TV mode. After that, the setup wizard screen shows up.

Step 3: Select your own OSD Language, your located region, whether it's summer time at present.

1. Use [CH▲]/[CH▼] buttons to highlight the item.
2. Use [VOL►] button to set the highlight item.
3. Press [CH▲]/[CH▼] buttons to scroll up and down the options.
4. Select one by pressing the [OK] button or exit the setting by pressing the [MENU] button.

NOTE: Time zone setting will be automatically updated once the region setting is changed.

Step 4: Perform auto search to find available DVB-T2 channels.

1. Use [CH▲]/[CH▼] buttons to highlight the Auto Search item.
2. Press [OK] button to start.
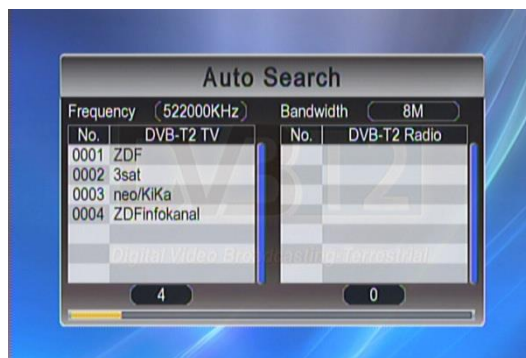
Step 5: Job well-done! You can now sit back and enjoy your mobile TV.

NOTE: Keep [OK] button pressed to change the aspect ratio of current TV program.

III. Operating ADV-DVBT2

III.1 TV Mode

1. On the home menu screen, use [VOL◄] and [VOL►] buttons to highlight the [TV] icon and press [OK] button to select it.
2. If there are TV channels stored in ADV-DVBT2 already, one can then select your preferred TV channel. Otherwise, one should configure the SET-UP wizard and then perform a channel scan to find possible TV channels. To tune TV programs (if any), one can press [CH▲]/[CH▼] buttons to select TV channel.
3. The TV service will start instantly.

Menu Selections Under TV mode

After entering the TV service, press [MENU] button to pop up TV menu options available. By navigating the different options, you can have access to channel list, channel setting, channel scan function, channel Information, TV audio settings, subtitle function, Display function and teletext services.

III.1.1 Channel List

This is to display channel information, preview the program, and to access the Electronic Program Guide (EPG) info.

a. **Channel List**
1. Select "Channel List" in the TV menu and press [OK] button. The "Channel List" will appear on screen. *NOTE: you can also press [EPG] button to enter "Channel List" while enjoying DVB-T2 TV.*
2. Press [CH▲]/[CH▼] buttons to scroll up/down the channel list to preview the program.

3. Press [VOL▶] button to show the schedule of the selected channel.
4. Press [EXIT]/[MENU] button to exit.

b. **Schedule**

1. Press [CH▲]/[CH▼] buttons to scroll up/down the date list to see program schedule of the corresponding date.
2. Press [VOL▶] button to activate program schedule.
3. Press [CH▲]/[CH▼] buttons to scroll up/down the program schedule to see previous/next program on the selected date.
4. To return back to date list, press [VOL◀] button
5. While in program schedule list, press [OK] button to see more information of the selected program.
6. Press [EXIT]/[MENU] button to return to "Channel List".

c. **Program information**

1. Press [EXIT]/[MENU] to return to "Schedule".

III.1.2 Channel Management

This is to reset and to edit the TV channel listing by using skip, move, and delete functions

1. Select "Channel Management" in the TV Menu and press [OK] button. The management screen will appear as on the picture on the right.

2. Press [CH▲]/[CH▼] buttons to scroll up/down the channel list. Press [OK] button to enter the editing menu for a chosen channel.
3. Press [EXIT]/[MENU] button to exit anytime.

▲Skip a Channel

1. After entering the channel editing menu, select the "SKIP" visual-button on screen by pressing [VOL▶]/[VOL◀] buttons.
2. Press [OK] button to activate or deactivate it.

*NOTE: this function **temporarily** removes the channel from the program list. Users can restore the channels by deactivating the function.*

▲Channel Movement

1. After entering the channel editing menu, select the "MOVE" visual-button on screen by pressing [VOL▶]/[VOL◀] buttons.
2. Use [CH▲]/[CH▼] buttons to move the channel up or down in the list.
3. Press [OK] button to save the new listing.

▲Channel Delete

1. After entering the channel editing menu, select the "DELETE" visual-button on screen by using [VOL▶]/[VOL◀] buttons.
2. Press [OK] button to delete the channel.

*NOTE: this function will **permanently** delete the channel from the current program list. Users restore the channels only by performing auto search.*

III.1.3 Auto Search

To search the available channels automatically

1. Browse the TV menu screen using [CH▲]/[CH▼] buttons to highlight the "Automatic Search" option.
   NOTE: you can also press [AUTO SCAN] button to enter "Automatic Channel Search" while enjoying DVB-T2 TV.
2. Press [OK] button to start the channel search.

III.1.4 Audio Selection

To select either master or secondary language as well as the audio channel of current service

1. Browse the TV menu screen using [CH ▲]/[CH ▼] buttons to highlight the "Audio" option. Press [OK] button to enter the "Audio" menu.
   NOTE: you can also press [AUDIO] button to enter "Audio" while enjoying DVB-T2 TV.

2. Use [VOL▶]/[VOL◀] buttons to select stereo/left/right audio channel. Scroll the available language using [CH▲]/[CH▼] buttons. Press [OK] button to select the language.

3. Press [EXIT]/[MENU] key to exit.

III.1.5 Channel Information

Provide the information of current service's system parameters and signal information

1. Browse the TV menu screen using [CH ▲]/[CH ▼] buttons to highlight the channel information option.
   NOTE: you can also press [INFO] button to enter "Channel Information" while enjoying DVB-T2 TV/Radio.

2. Press [OK] button to display the channel information.

3. Press [EXIT]/[MENU] button to exit
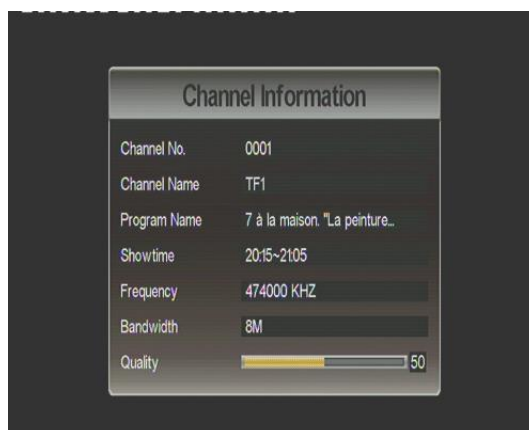
III.1.6 Aspect Ratio

To adjust aspect ratio and image width

1. Browse the TV menu screen using [CH
   ▲]/[CH ▼] buttons to highlight the
   "Aspect Ratio" option. Press [OK]
   button to enter the "Aspect Ratio"
   menu.
2. Use [VOL▶] buttons to enter and scroll
   [CH▲]/[CH▼] buttons. Press [OK]
   button to confirm your selection.
3. Press [EXIT]/[MENU] key to exit.

III.1.7 Subtitle

To activate or deactivate the subtitle function

1. Browse the TV menu screen using [CH
   ▲]/[CH ▼] buttons to highlight the
   "Subtitle" option. Press [OK] button to
   enter the "Subtitle" menu.
   NOTE: you can also press [RED]●
   button to enter "Subtitle" while
   enjoying DVB-T2 TV/Radio.
2. Use [VOL▶]/[VOL◀] buttons to select
   stereo/left/right audio channel. Scroll
   the available language using
   [CH▲]/[CH▼] buttons. Press [OK] button to activate the subtitle.
3. Press [EXIT]/[MENU] key to exit.
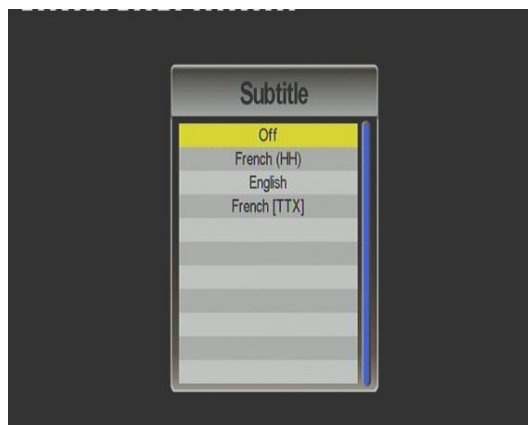
III.1.8 AFS Setting

To set up AFS mode. There are three AFS mode available:

A. OFF: turning OFF AFS function
B. Manual: when signal is weak, after certain seconds AFS period time, for the continuous reception of current TV program the unit will first search a new available frequency from existing database. If none was found, user has to manually perform channel search procedures either via DVB-T menu option "Auto Search".
C. Auto: when signal is weak, after certain seconds AFS period time, for the continuous reception of current TV program the unit will first search a new available frequency from existing database. If none was found, unit will automatically perform channel search procedures after user-defined tuning period time.

1. Browse TV menu using [CH▲]/[CH▼] button and press [OK] button to enter "AFS Setting"
2. Press [VOL▶] button and use [CH▲]/[CH▼] to scroll up/down the options.
3. Select one by pressing [OK] button or exit the setting by pressing [MENU]/[EXIT] button.
4. After adjusting, press [MENU]/[EXIT] button to leave "AFS Setting" menu.
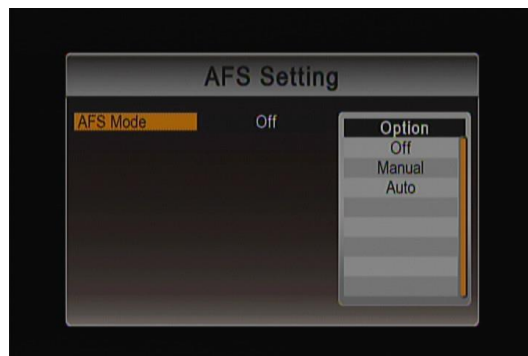
What is AFS? AFS or Auto Frequency Switch is a smart feature that allowing user to watch a channel when moving between 2 cities/areas where the channel is broadcasted in different frequencies. For example, channel "ABC" in city A is broadcasted in frequency 474MHz. In city B, this channel "ABC" is broadcasted in frequency 490MHz. With this feature, when user moving from city A to city B or vice versa, user can keep watching the channel "ABC" without having lost the signal neither performing auto search to find the new frequency in city B.

III.1.9 Display Setting

To set up and adjust the image with preference.

1. Press [CH ▲]/[CH ▼] buttons to highlight the item you want to adjust.
2. Press [OK] button and use [CH▲]/[CH ▼] to scroll up and down the options.
3. Select one by pressing the [OK] button or exit the setting by pressing the [EXIT]/[MENU] button.
4. After adjusting, press [EXIT]/[MENU] button to exit the "Display Setting".
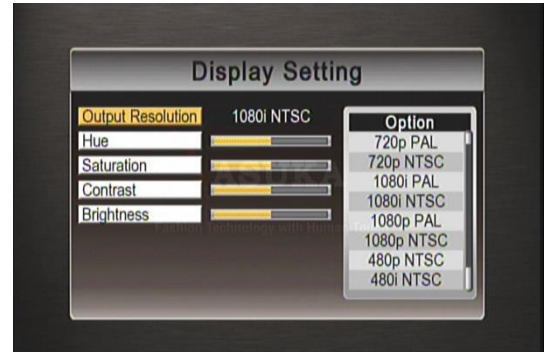
III.1.10   TV Record Function

During TV or Radio mode, press [REC] to start recording TV/Radio programs. When unit is start recording, ●REC icon will appear on the upper left screen & the timer menu (disappear in 10 sec without control) will appear on the lower left screen simultaneously.

> **NOTE:**
> a. *Please ensure that a USB Storage device is connected to the unit before recording.*
> b. *While turn off the ACC/IGN, the unit will continue recording if recording time not over yet. The unit will automatically turn off while the recording is finished.*

1. Recorded TV programs can be played back in Movie mode. And the recorded Radio programs can be played back in Music mode.

Important notes:

i.   *A recorded program will be stored in a default folder named as "Recorded_TV". The file types will be ".tsv" file for TV program and ".tsa" file for Radio.*

ii.   *The file is named as (Channel Name) + (RecordedDate_RecordedTime)*

iii.   *Maximum file size of FAT/FAT32 is 4 GB, so if the file exceeds this size, it will cut the recorded file into 2 parts.*

iv.   *1 GB storage can record approximately 45 minutes.*

v.   *Storage files system support FAT/FAT32/NTFS format.*

vi.   *Generally all USB 2.0 can be used as recorded file storage. However, there are cases when the USB in-car DVB-T2 receiver can't store recorded programs. It's strongly suggested to format the USB storage device before it's inserted into the in-car DVB-T2 receiver unit.*

vii.   *WARNING! Please do not edit the "*.PLT" & "RECORD.TMP" files. Modifying/deleting this file will cause error on recorded file.*

III.2 System Settings

This is the system settings menu screen. Users can adjust the country/language setting, monitor port setting, reset default, and proceed to a software upgrade. Use [CH ▲]/[CH ▼] buttons to highlight the desired item and press [OK] button to select one.
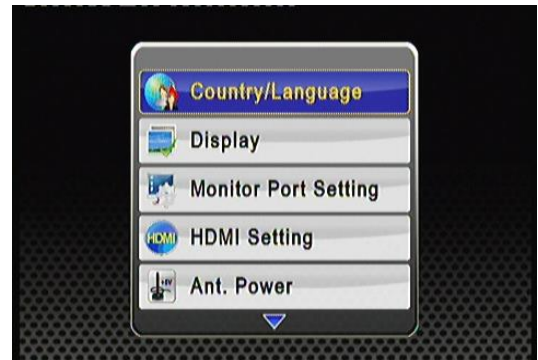
III.2.1 Country/Language

To set up the OSD language and DVB-T2 regional settings

1. Press [CH▲]/[CH▼] buttons to highlight the item you want to adjust.
2. Press [VOL▶] button and use [CH ▲]/[CH▼] to scroll up and down the options.
3. Select one by pressing the [OK] button or exit the setting by pressing the [EXIT]/[MENU] button.
4. After adjusting, press [EXIT]/[MENU] button to exit the "Country/Language" menu.

III.2.2 Display Setting

To set up and adjust the image with preference.

1. Press [CH▲]/[CH▼] buttons to highlight the item you want to adjust.
2. Press [OK] button and use [CH▲]/[CH▼] to scroll up and down the options.
3. Select one by pressing the [OK] button or exit the setting by pressing the [EXIT]/[MENU] button.
4. After adjusting, press [EXIT]/[MENU]
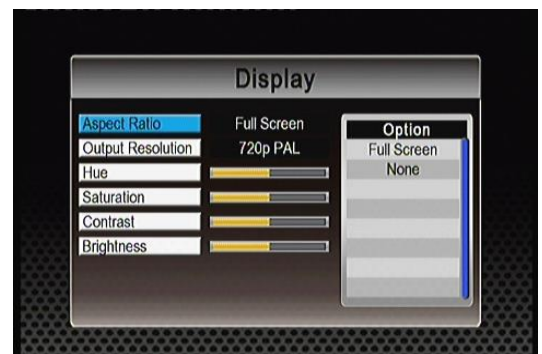
button to exit the "Display Setting".

III.2.3 Monitor Port Setting

To choose AV output through different format

1. Press [CH▲]/[CH▼] buttons to highlight the item.
2. Press [VOL▶] enter and use [CH▲]/[CH▼] to scroll up and down the options.
3. Select one by pressing the [OK] button or exit the setting by pressing the [EXIT]/[MENU] button.
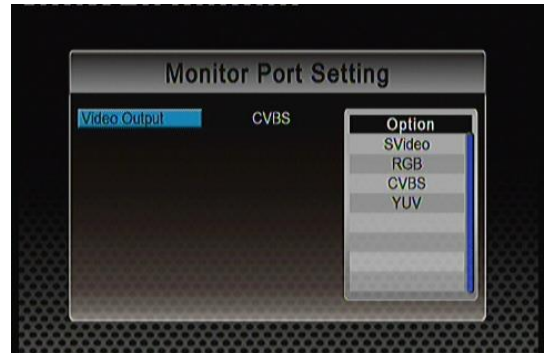4. After adjusting, press [EXIT]/[MENU] button to exit the "Monitor Port Setting".
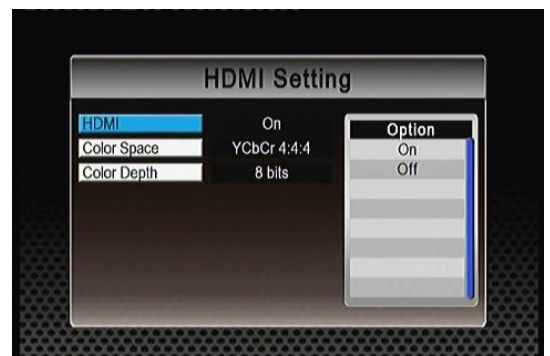
III.2.4 HDMI Setting

To choose AV output through HDMI and adjust output color

5. Press [CH▲]/[CH▼] buttons to highlight the item.
6. Press [VOL▶] enter and use [CH▲]/[CH▼] to scroll up and down the options.
7. Select one by pressing the [OK] button or exit the setting by pressing the [EXIT]/[MENU] button.
8. After adjusting, press [EXIT]/[MENU] button to exit the "HDMI Setting".

III.2.5 Antenna Power Output (+5V)

+5V **To provide/stop providing antenna phantom power**

1. Press [CH ▲]/[CH ▼] buttons to highlight the item you want to adjust.
2. Press [VOL►] button and use [CH ▲]/[CH▼] to scroll up and down the options.
3. Select one by pressing the [OK] button or exit the setting by pressing the [EXIT]/[MENU] button.
4. After adjusting, press [EXIT]/[MENU] button to exit the "Antenna Power Output " setting.

III.2.6 Version / Upgrade

To upgrade the user interface software version

1. Insert the USB device which contains the software upgrade file into the USB slot.
2. After entering the Version/Upgrade menu, press [OK] button to start the upgrade.
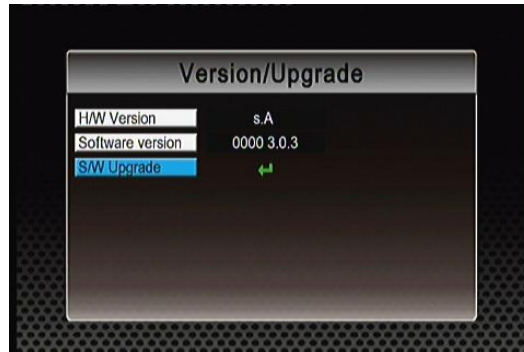
III.2.7 Reset Default

To reset all settings to factory default

1. Press [CH▲]/[CH▼] buttons to highlight "Reset Default" option and press [OK] to enter.
2. Press [OK] to reset system's settings to factory default.
3. Press [EXIT] to exit.

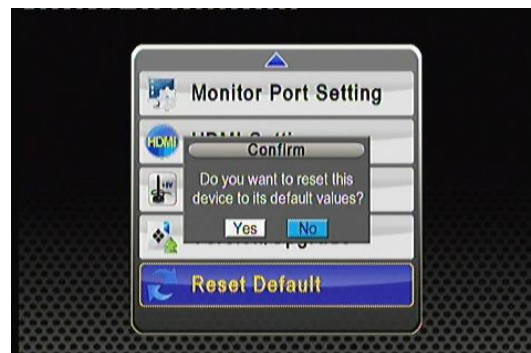# IV. Trouble Shooting Q&A

Most of the troubleshooting issues can be easily solved. The common cases and their respective solutions are listed in the table below. If the problem persists, please contact the after sales service.

Problem	Possible Reason	Solution
No picture, no audio.	The power cord is not properly inserted into the unit.	Check the power wire connection.
	The unit is not switched on.	Press [POWER] button.
	Unit is in stand-by mode.	Press [POWER] button.
In DVB-T2 mode, the number of DVB-T2 channels is not as much as we expected.	The number of available channels is limited due to the local broadcasting system. The available channels can vary depending on the area.	Perform "Auto Search" or "Manual Search" to rescan all the channels.
	The signal quality of some TV channels is too low.	Please use active antennas instead of passive antennas for better reception quality.
	Some TV channels are not available.	Only the locally free broadcasted channels can be viewed. They can differ depending on the area.
In DVB-T2 mode, all of the channels show "no signal or random mosaic tiles appear on the display."	Some TV channels signal quality is too low.	Please use active antennas instead of passive antennas for better reception quality.
	The antennas are not properly connected.	Please check the connection of the antennas.
	No DVB-T2 service is provided in the area.	Check your country DVB-T2 coverage map. It is not possible to watch digital TV/listen to digital radio in non-covered areas.
	Incorrect Regional Setting	Please check whether "Regional Setting" is correct, and perform "Auto Search" to rescan all of the channels.

Problem	Possible Reason	Solution
In DVB-T2 mode, no video or audio and "Scrambled" message appears on the screen	No Smart card is inserted	"Scrambled" message will appears when the TV/Radio signal received is paid-TV. To watch these channels, please insert a valid smart card into HRV CA slot.
	Smart card is out of date	Please check your subscription date. If your subscription date already out-of-date, please contact your service provider to extend your subscription.
The video is fine but there is no sound.	The audio volume is too low.	Press [VOL▶] button to raise the volume.
	The audio is muted.	Press [MUTE] button to disable the mute function.
The remote control does not work	No power.	Check the remote control battery. *NOTE: the remote control is supplied with a small plastic insulator that must be removed for the unit to function. Check that the plastic insulator has been removed.*
	No "line-of-sight" between unit and controller	Ensure there are no obstacle between the controller and the unit.

V. Specification

Features	
Digital TV reception	Support DVB-T2 television broadcast standard
Advanced functions	Support TV-recording (record on USB device), and AFS(Auto Frequency Switch) function
RF Input	
Antenna	Active antenna supported (F-Connector)
Frequency range	VHF (170-230 MHz) and UHF band (470-862 MHz)
RF input impedance	75 Ohm
Channel bandwidth	6/7/8 MHz
TV System	
Transmission standard	ETSI EN 302-755 v1.3.1 standard Support all DVB-T2 modes, including, ● Single and multiple-PLPs ● SISO and MISO transmission
Video/Audio decoder	Real time 1080P Full-HD Video Decoder: - MPEG-2(ISO/IEC 13818-2) SD& HD - H.264 (MPEG-4 AVC, ISO/IEC 14496-10) SD & HD
S/W Feature	
OSD Language	English, German, French, Portuguese, Spanish, Italian, Dutch, Finnish, Traditional Chinese, Thai
Features	DVB-T2 TV, Auto Channel Search, Multi–Language EPG, Teletext, Subtitle
TV/Radio Recording	Record TV programs on USB device
Media format	
Media port	USB
Audio format	MP3, WAV, ASF(option), AAC(option), WMA(option), RM(option)
Video format	MPEG-I/II/IV, VOB, AVI, DivX, Xvid, MKV, TS, MOV, RMVB(option), FLV(option), WMV(option), ASF(option)
Subtitle format	SRT, SUB, SSA, ASS, SMI, PSB, TXT, IDX
Recorded file format	*.tsv (TV recording)
Interface	
USB port	Support USB 2.0 host (for playback and for TV/Radio recording)
Power/IR port	Combination of power input, ACC input, IR CVBS, Video/Audio GND, and RGB output
HDMI port	Type-A connector, HDMI 1.3 transmitter 1080 supported

Power	
Input voltage	12-24 V DC
Power consumption	4.5 W
Dimension and Weight	
Dimension	79*29*138 mm
Weight	310 g