User Manual

VR3

Thank you for purchasing VR3

▪ The VR3 Owner's Manual is for your convenience and safety when using this product.

▪ Before operating the VR3, and to take full advantage of this multi-functional navigation system, please read the manual carefully and follow its instructions.

▪ Depending on the navigation system model type, the contents of this owner's manual may vary. The navigation system and the owner's manual are subject to changes in function or performance without prior notice for the convenience of users.

▪ CNS Link will not be responsible for any equipment damage resulting from improper installation or use.

Safety precautions

For your safety, and that of your passengers, please follow these safety warnings.

▪ Make sure that the unit is installed securely to prevent the stand from coming off or moving during operation. It might cause an accident.

▪ The GPS receiver might not function normally in some cars that are UV coated, have tinted windows or have anti electromagnetic wave fitted. In these cases, please contact our sales representative to buy an external GPS antenna which is sold as an optional item

▪ GPS signals might be affected under expressways, in tunnels, or in built-up areas due to weak electrical waves.

▪ Use the navigation unit only for reference and do not place too much reliance on it. Map data must be updated annually to avoid erroneous directions.

▪ Do not use it where it is hot and humid. Install and keep the product out of direct sunlight to prevent it from damage due to overheating.

▪ Make sure that water or other liquids do not get inside the product. This could cause fire or electric shock.

▪ To reduce the risk or electric shocks, do not open the cover (or back). There are no user-serviceable parts inside.

▪ The GPS receiver operates optimally at 0℃ to 500℃. If the temperature inside of the car is too low or too high, the product might not function correctly. Make sure that the optimal temperature is maintained.

▪ If the windshield mount is attached to the glass of the vehicle for a long time, it might come off due to reduced adhesiveness.

▪ The memory card (SD or SDHC) could be damaged if used with any other devices.

▪ Do not remove the memory card (SD or SDHC) while the product is in operation. It may cause mechanical problems.

▪ Do not touch the product with wet hands. It might cause electric shock or damage.

▪ Do not disassemble or drop the product. It might cause damage or a mechanical breakdown.

▪ Use only the specified power adaptor. Using a different type of adaptor might cause damage or a mechanical breakdown.

▪ Touch the LCD with fingers or blunt devices only. If a sharp drill or a nail is used, it might cause damage.

▪ Use only soft and dry cotton cloth when cleaning the product. Do not use strong solvents such as alcohol, benzene, or thinners, as these might damage the surface of the product.

FCC compliance Information

This device complies with part 15 of FCC Rules. Operation is subject to the following two 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 the user

NOTE: This equipment has been tested and found to comply with the limits for 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:

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

Caution: Exposure to Radio Frequency Radiation.

To comply with FCC RF exposure compliance requirements, a separation distance of at least

20 cm must be maintained between the antenna of this device and all persons.

Table of Contents

1. Getting Started

◉ Components (default+option)

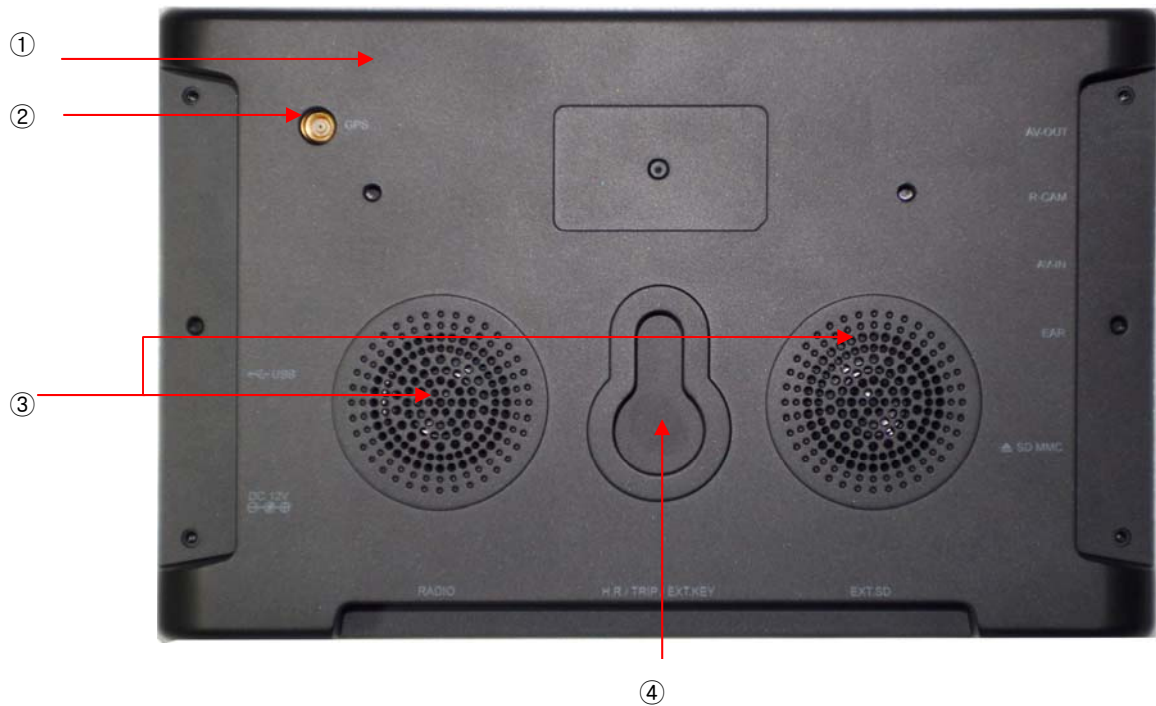|	
VR3 MAIN BODY	SD MEMORY CARD
CRADLE	SD CARD READER
CIGARETTEi JACK	AV IN CABLE
AC-DC ADAPTER	REMOCON

▣ External Appearance of VR3

(Front View)

②

(Front side information)

| 1	Touch screen	Operate all functions by touching the screen with the stylus pen provided.
2	Remote Control sensor	Operate various functions with Remocon (Option)

(Rear View)

(Rear Side Information)

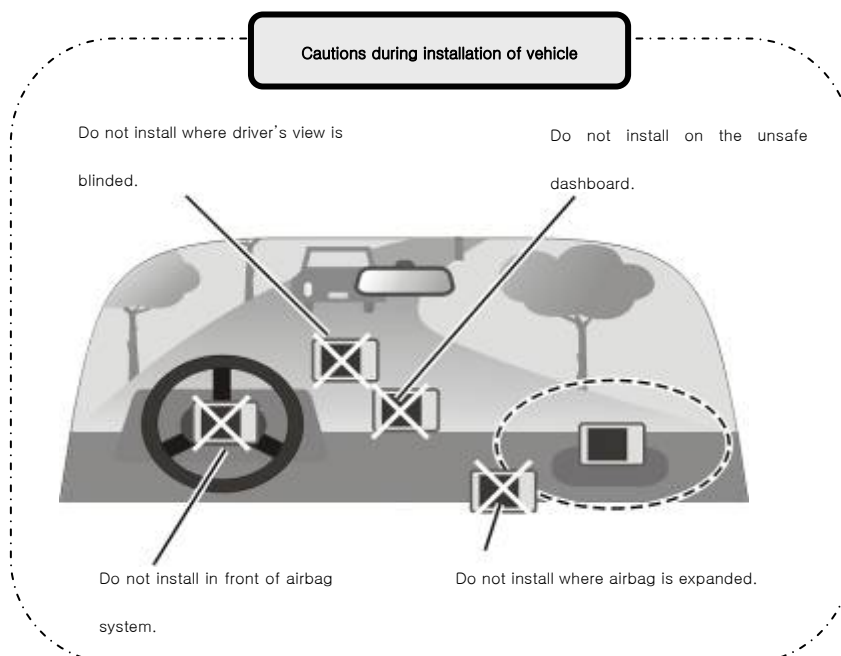| 1	GPS Antenna	Receives GPS signal from satellite. In order to make reception efficiency better, you should maintain the antenna horizontal to the sky.
2	External GPS Connection Terminal	External connection in order to improve reception efficiency of GPS. - For vehicles with tinted windshield or truck or bus. *sold separately
3	Speaker	Vocal guidance and audio output.
4	Mount Holder	Mount on the cradle

(Side View)
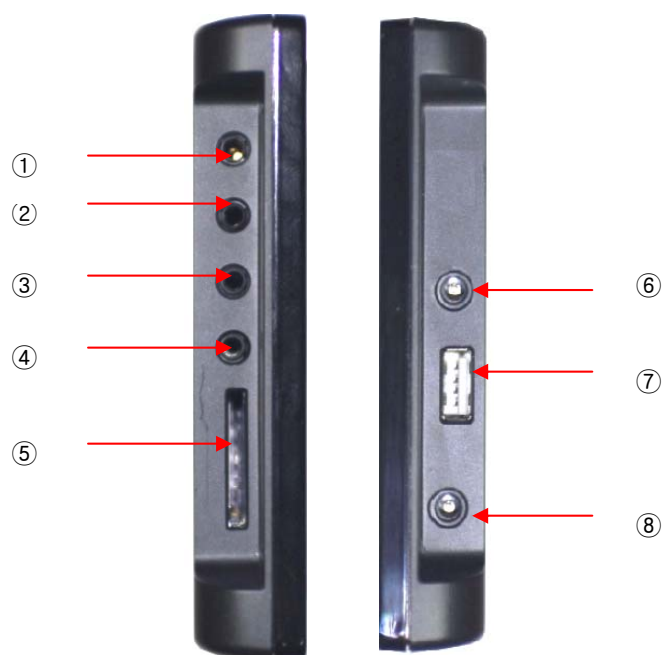
(Side Information)

1	AV-OUT (option)	Connect external video and audio device. It sends out composite video and stereo audio.
2	Rear-Cam	Connect a rear camera. It detects rear gear automatically. Refer to "using Rear-cam" for detailed information.
3	AV-in	Connect external video and audio device
4	Earphone Jack	Earphone connection jack
5	Memory Card Slot	SD/MMC memory card
6	IR	Connect external IR (remocon) receiver (option)
7	USB Host Slot	Connect external USB memory storage and play video or image files by using multimedia player or image viewer
8	Power Jack	Connect Cigar jack or Home AC-DC adapter

▣ Installing VR3 in Your Vehicle
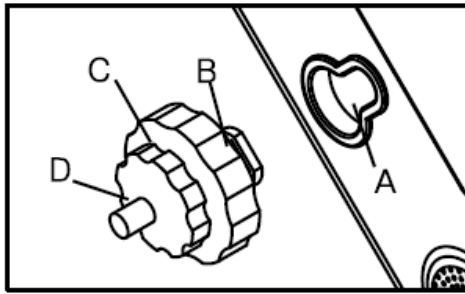
① Press the suction cup against windscreen
② Push and connect the projection B of cradle into A until securely fixed
③ Turn "C" in clock wise for fixing the device.
④ Turn "D" in clock wise to hold the device from releasing.
⑤ After installation, make sure the device is fixed firmly and then use it.

Cautions during installation of vehicle

Do not install where driver's view is blinded.

Do not install on the unsafe dashboard.

Do not install in front of airbag system.

Do not install where airbag is expanded.

▶Please make sure that the suction cup of the cradle is securely fixed to the windscreen, as it may become detached due to severe vibration of vehicle during travel.

▶When adjusting angle of the GPS receiver, make sure that it has a clear and horizontal view of the sky.

▶ If power from the cigarette jack is not connected, VR3 will not work.

▶Owing to high number of thefts, please remove your VR3 from view when you leave you car.

▶Please start your vehicle before connecting the cigarette jack.

◙ **Taking out Memory Card**

Press Memory Card lightly.

◙ **Turning Power On**

Connect power (cigar jack or AC adaptor) to the VR3.

1) After power is connected the LED on front panel turns on and after 2seconds the Logo Screen is displayed.
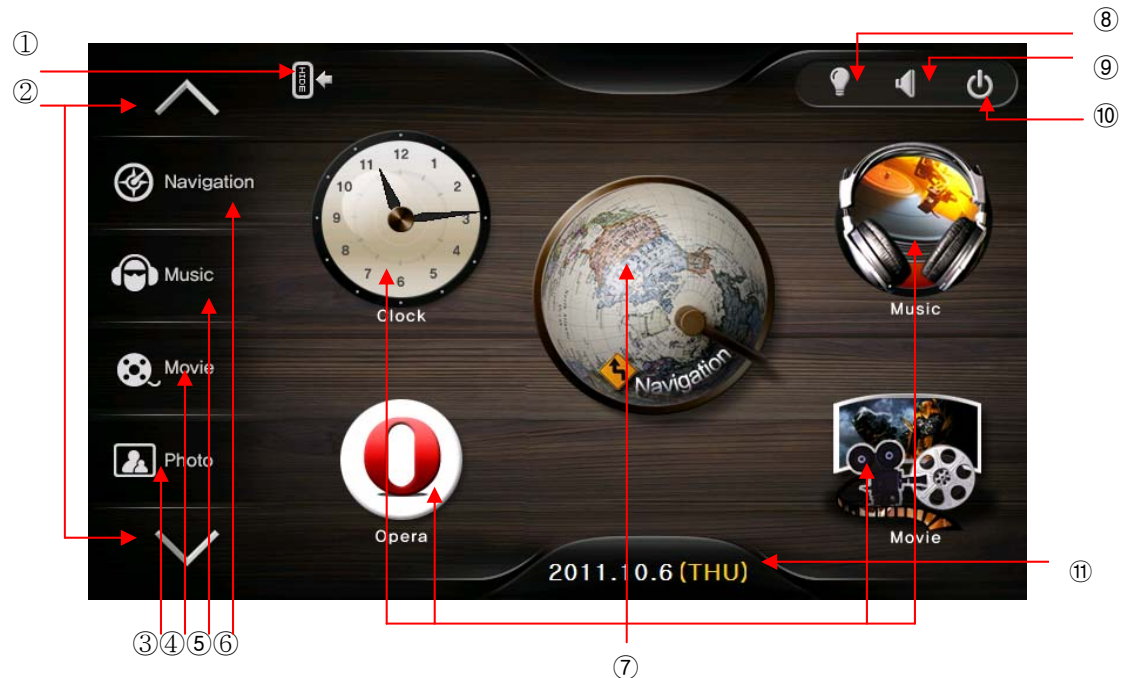

2) After about 10seconds Main Menu Screen is displayed.

◙ **Main Menu Screen**

The Main Menu consists of several program icons. Each program can be launched by touching the screen. If an application is already running you will switched back to it on the screen.

It supports multi-tasking, so you can listen to music while navigation is on.

Navigation instructions take precedence over other sound applications.

Configuration of Main Menu Screen

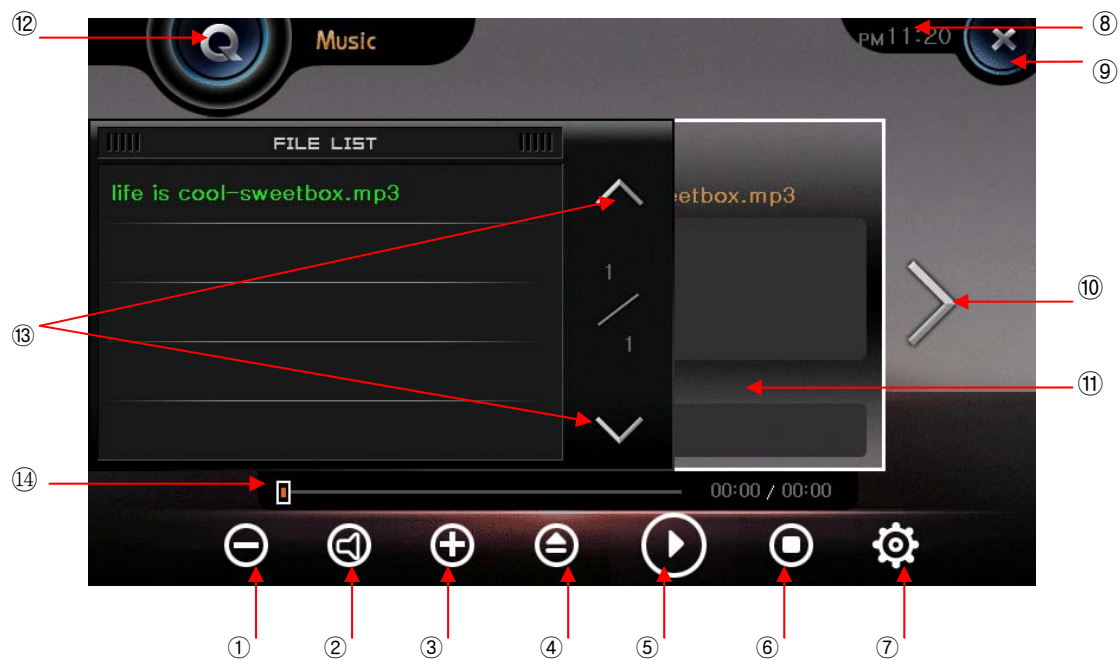| 1.Hide/show bar	An icon for hiding and showing main menu
2. Left Menu bar page movement key	Move to pre/next page of left menu bar
3. Photo	An icon to call Image viewer
4. Movie	An icon to call Video Player
5. Music	An icon to call Audio Player
6. Navigation	An icon to call Navigation
7. Quick Menu	Clock: Start the clock Opera: An icon start Internet Explorer Navigation : An icon start Navigation Music: An icon An icon start the Audio Player Movie: An icon start the Video Player
8. Brightness	Control brightness.
9. Volume	Control Volume.
10. Power on/off	An icon for power on/off status.
11. Time	Shows current date & time

*Note: * You can move an icon in left menu bar to wallpaper by dragging.

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2. Programs and its Basic Operation

◙ Using Music Icon

1) Getting started

Execute this by pressing Music icon on the Main Menu.

It plays music files.

1. Volume Down	Decrease volume
2. Mute	Mute sound
3. Volume Up	Raise volume
4. Play List Display	Change to play list display.
5. Play / Pause	Toggle between play and pause.
6. Stop	Stop playing.
7. Music configuration	Choose Play mode: Repeat one, Repeat all, Repeat all one time, Random Choose Equalizer type: Normal, Classic, Pop, Jazz, Dance
8. Time	Shows current time.
9. Close	Close the viewer and return to main menu.
10. Next	Skip to the next file

|	
11. Screen	– It shows file information, genre, and lyrics.
12. Main Menu	Return to main menu and continue to play the music.
13. Play List Page	Change play list page.
14. Progress Bar	Shows the process time of the current playing file.

◉ Using Movie Icon

1) Getting started

Execute this by pressing Movie icon on the Main Menu.

It plays video files.

1. Volume Down	Decrease volume
2. Mute	Mute sound
3. Volume Up	Raise volume
4. Play List Display	Change to play list display.
5. Play / Pause	Toggle between play and pause.
6. Stop	Stop playing.
7. Movie player configuration	Choose Play mode: Repeat one, Repeat all, Repeat all one time, Random Choose Screen type: Auto, 4:3, 16:9

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| 8. Time	Shows current time.
9. Close	Close the viewer and return to main menu.
10. Next	Skip to the next file
11. Screen	shows images (If you touch the screen it changes in full screen, and it returns to default screen once you touch again)
12. Main Menu	Return to main menu.
13. Play List Page	Change play list page.
14. Progress Bar	Shows the process time of the current playing file.

Full Screen

In full screen, there are unseen buttons as below.
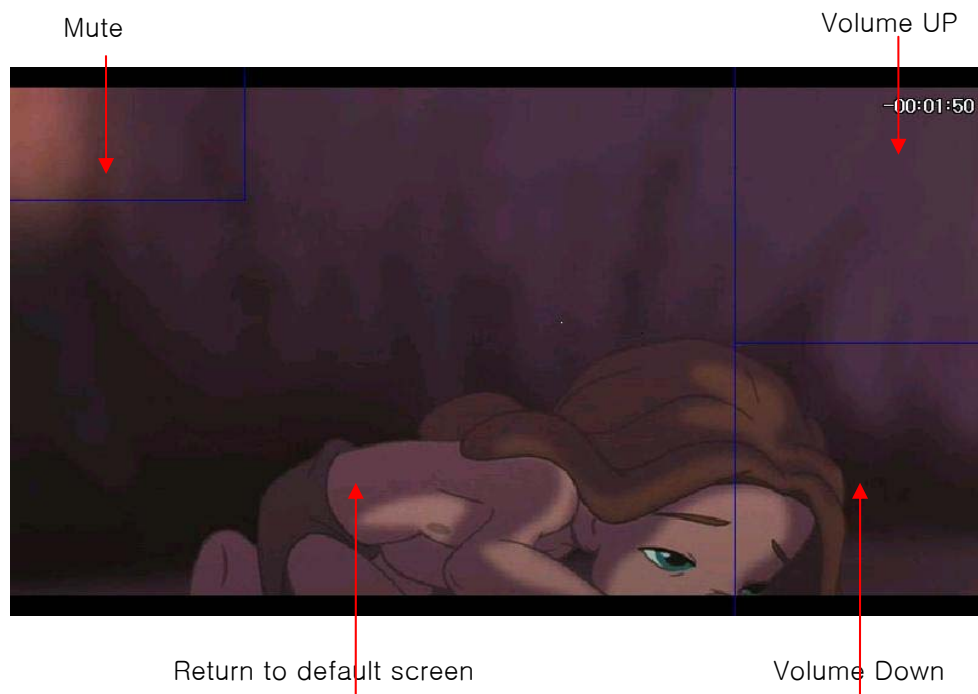
3) Available File Formats

Available Formats	Video Files (AVI,DIVX),　 MPEG4 Files(MP4,M4A), MPEG Movie Files (MPEG,MPG,MPV,DTA)
	MPEG Audio Files(MP1,MP2,MP3,MPA), Matroska Files (MKV, MKA)
	Ogg Vorbis Files (OGG, OGM)

* Note

Because of codec licensing some files may not play.

4) How to get the best from the Movie Player

In case of files using codec (avi, mpg, etc) we recommend you to convert the movie files into their optimal format as below.

Video conversion
1. Resolution   : 640x480
2. Frame per second : 15-20 fps
3. Bit rate : 150 Kbps, (250 kbps for fast moving pictures)
4. Codec : divx4

Audio conversion
5. Bit rate : 64kbps
6. Sampling rate : 44KHz
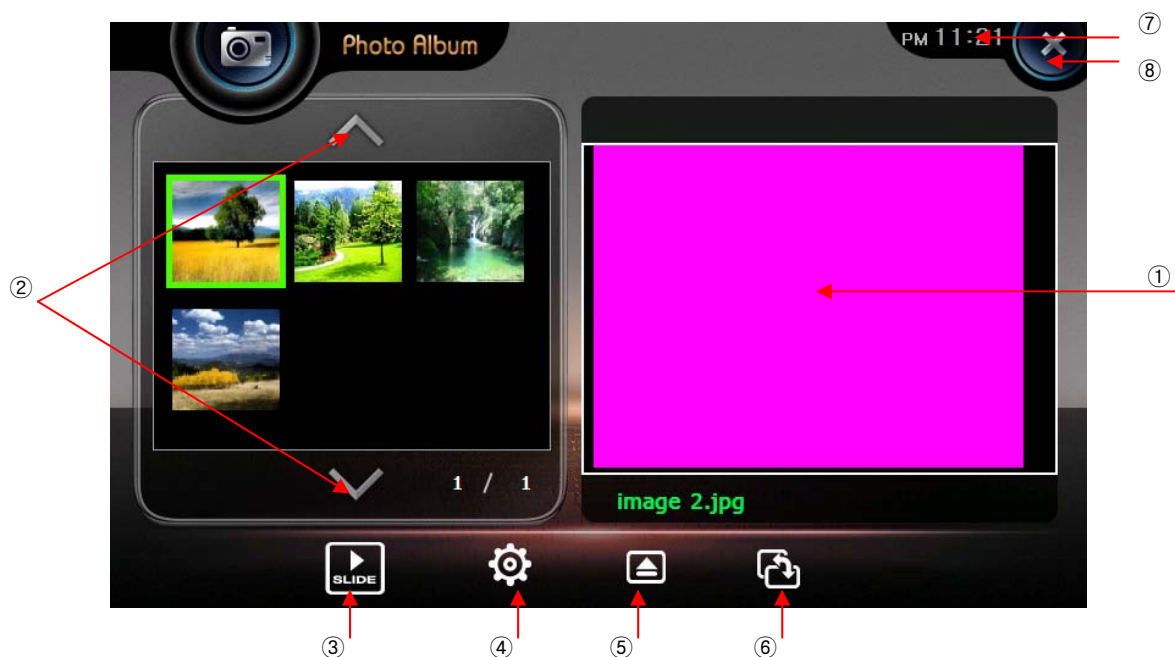7. Mode : stereo
8. Codec : mp3

5) To Close

Press the close button to close and get back to main menu.

▣ Using the Image Viewer

1) Getting Started

Launch this function by pressing Image Viewer icon picture in the Main Menu.

2) Configuration of Screen

1.	Screen	It shows images.
2.	Play List Page	Change play list page
3.	Play slide show	Show images in the play list one by one.
4.	Slide setting	Time setting for slideshow
5.	Open	Open an image on the memory card.
6	Rotate	Rotate the image to 90° clockwise.
7.	Time	Shows current time.
8.	Close	Close the viewer and return to main menu.

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Note: Press the Open button to select image files to display.

Be sure to save the selected play list and go back to the main play screen.
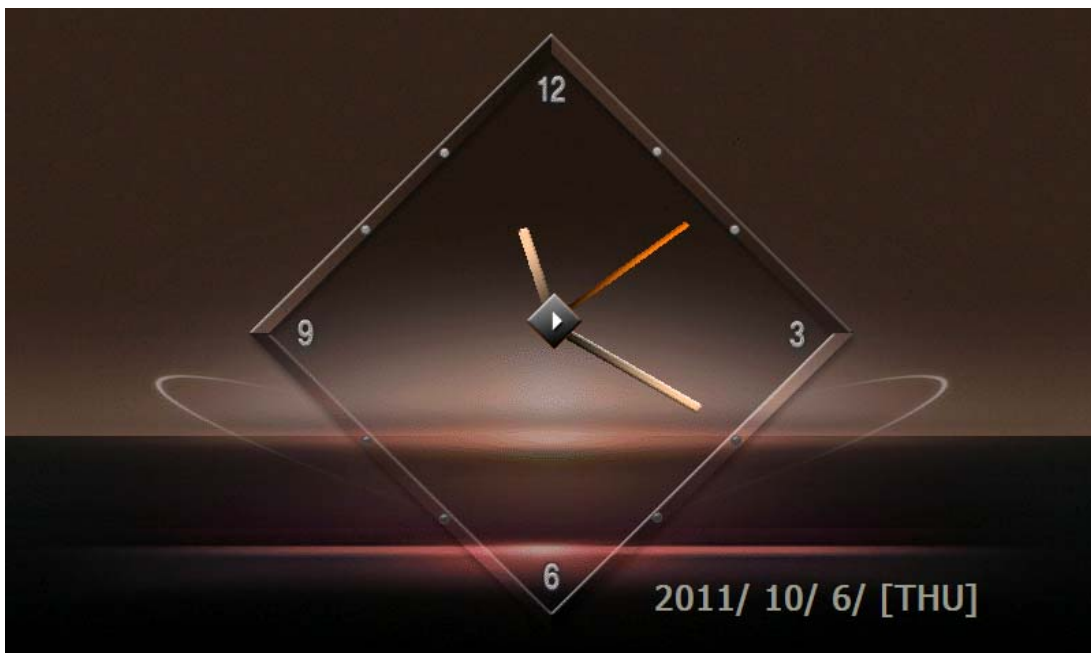
▣ Using the Clock

1) Getting Started

Start this by pressing the Clock icon in the Main Menu.

2) Configuration of Screen

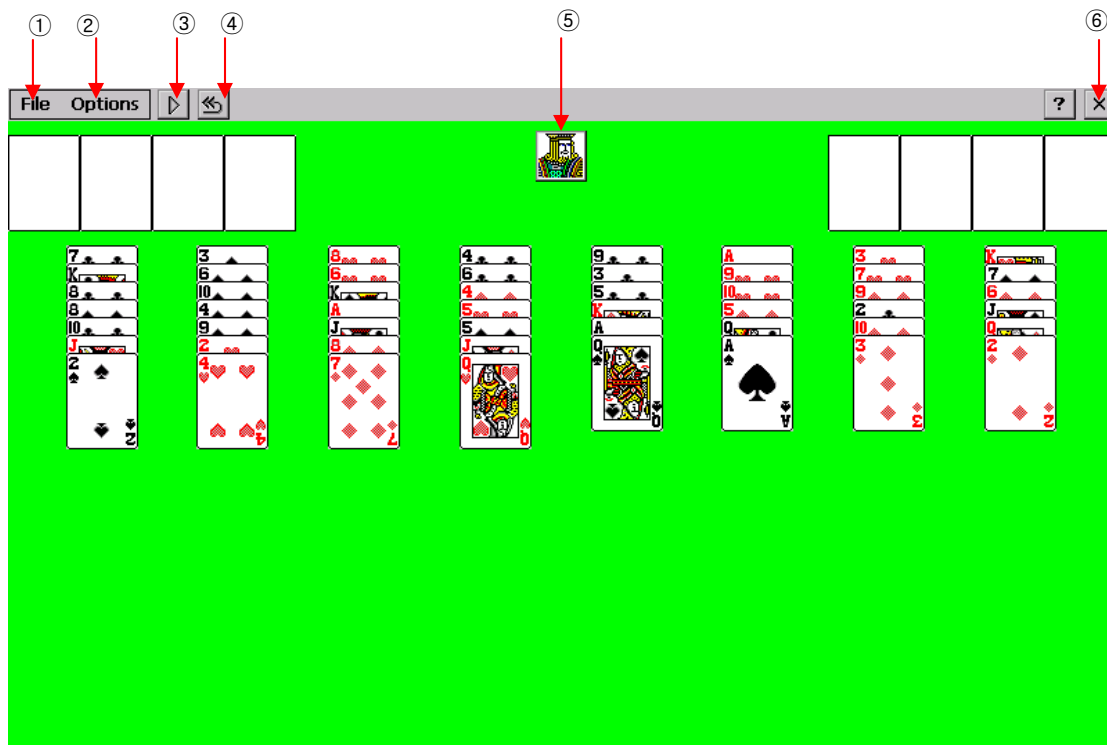The current date and time are displayed on the entire screen.

▣ Playing the Game

1) Getting Started

Launch this program by pressing the game icon on menu. This game is FreeCell.

2) Configuration of Screen

1	File	New game, Game restart, Game history, Close menus
2	Option	Select options for Menu Hide and Freecell Game
3	New game	Start new game
4	Game start	Restart game
5	Menu hide	Hide the top menu
6	Close	Close the game and return to main menu

In order to move a card, select (touch) the card to move and touch a new location to place it.

3) Close

Click the Close button on screen or Close in the file menu to exit the game and return to main menu.
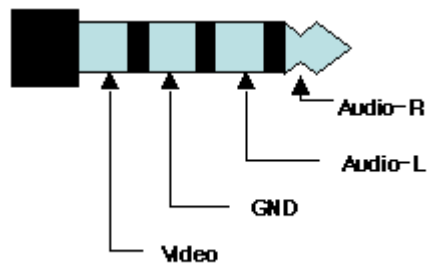
▣ Using AV-In

1) Getting Started

Connect the AV cable between AV device and AV-In jack.

Launch this function by pressing the AV-IN icon on the launcher screen to see the AV screen from the AV device

*Note: AV cable is supplied in separate sales and only the following pin type jack is supported

AV Connector assignment

2) Configuration of Screen

You can see the video screen and sound supplied from to AV-IN jack. If you touch the screen, current set volume, volume button, close button as shown below are displayed. These buttons disappear after 3 seconds

1	Mute	Mute sound
2	Volume UP	Increase volume
3	Volume DOWN	Decrease volume
4	Volume level bar	Show AV-IN volume level

3) Close

If you touch the screen, it returns to the main menu.

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▣ Using Setup

This consists of 7 icons. This can be operated by touching screen.

Getting Started
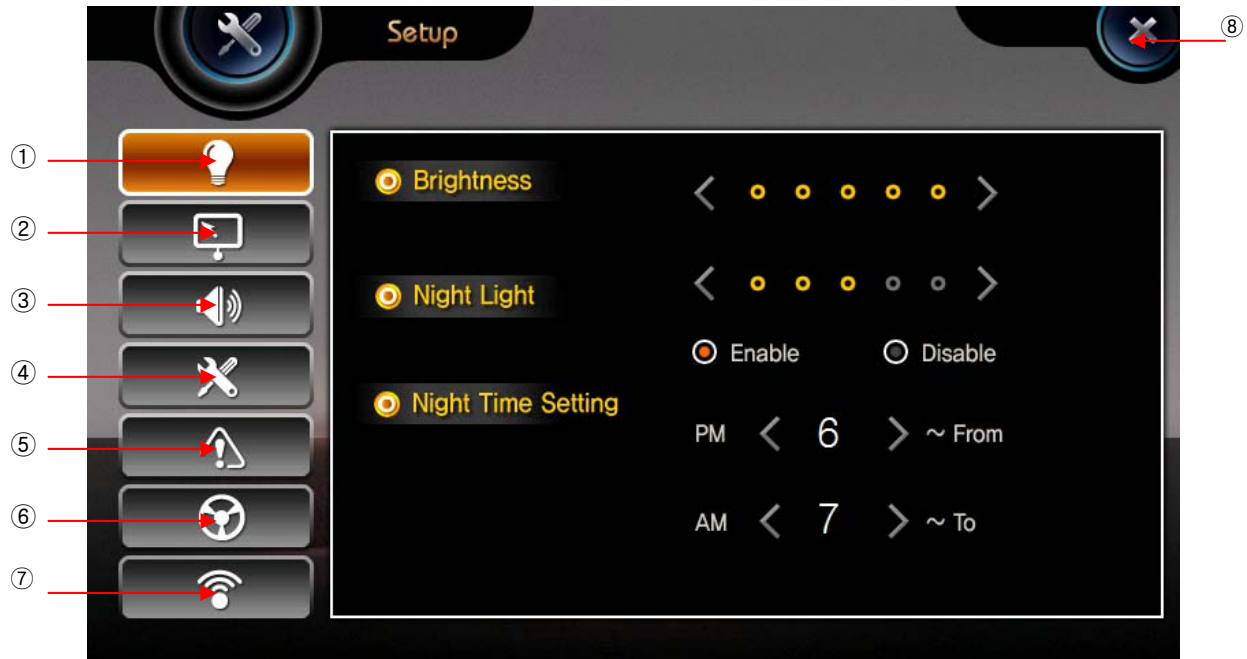
1.Brightness	Start the Back Light control settings.
2.Calibration	Calibrate the touch screen control
3.Sound setting	Start the Sound control settings.
4.System setting	Start Menu, Screen Saver, Background, Reset, Option settings.
5.System	Shows system information
6.Handle Remocon	For setting handle remocon
7.WiFi	For setting WiFi
8.Close	Go to main menu screen

1) How to Regulate LCD Brightness
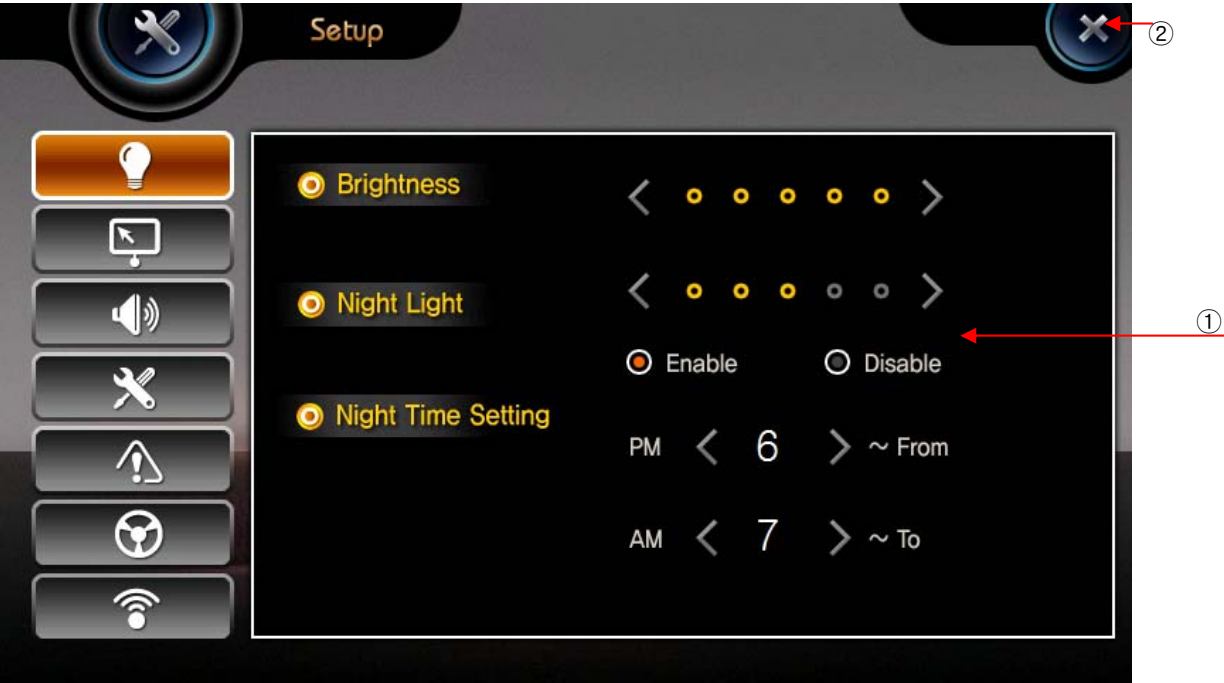
1.Backlight Control	Control the display backlight
2.Close	Return to main menu screen.

2) Calibration

If you feel that the touch panel is not accurate, you can calibrate it with this application.
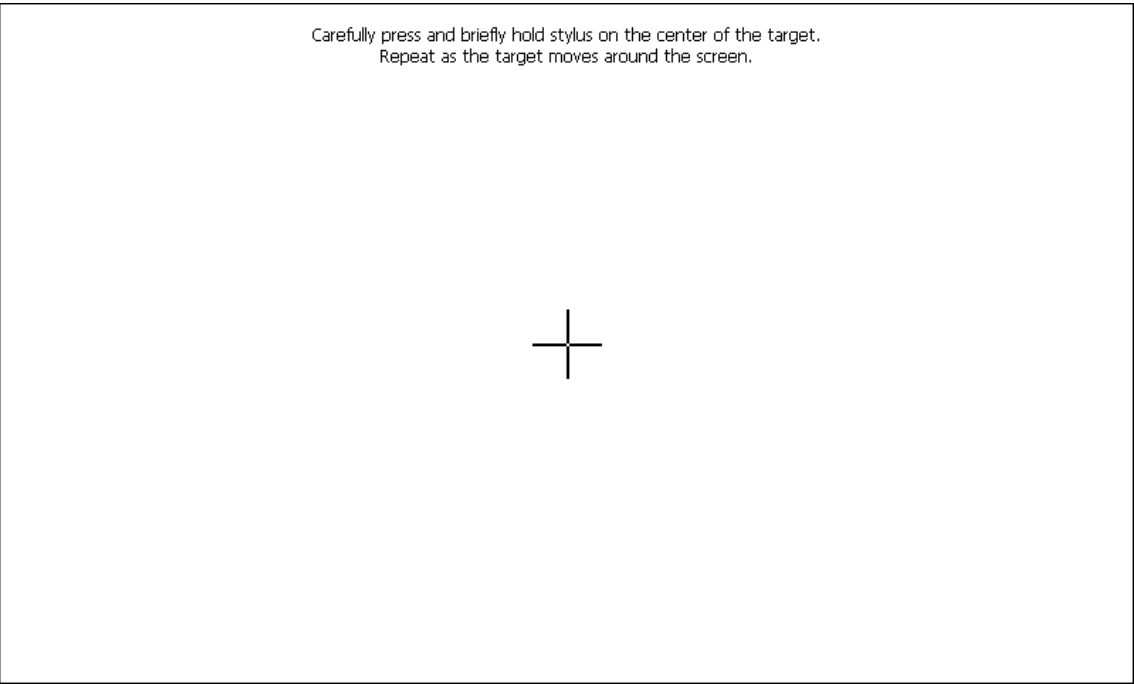
3) Sound setting

1 Sound	Select the Button sound and System Starting Sound
2 Close	Return to main menu screen.

4) System setting
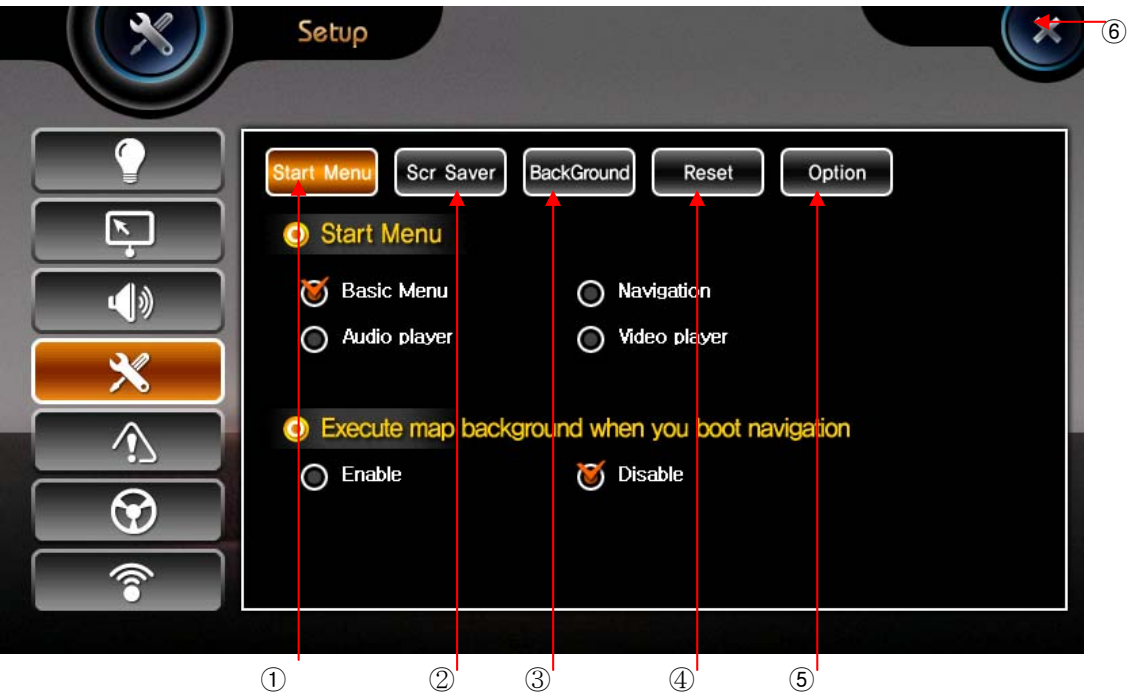
1	Start Menu	Select start menu – basic menu, navigation, Audio player, Video player
2	Screen Saver	Select screen saver – Disable, Clock, Calendar, Image, GPS mode
		Select Clock–Digital Clock, Analog Clock1, Analog Clock2

3	Background	Update Booting image
4	Reset	Select GPS Rest, OS Upgrade, Factory Reset.
5	Option	Select TV OUT-Enable, Disable.
6	Close	Return to main menu screen.

<mark>*note: GPS reset should be activated in the open sky after closing all programs. Wait for about 5minute and check the GPS signal reception in map.</mark>

5) System

It shows the version information on embedded applications.
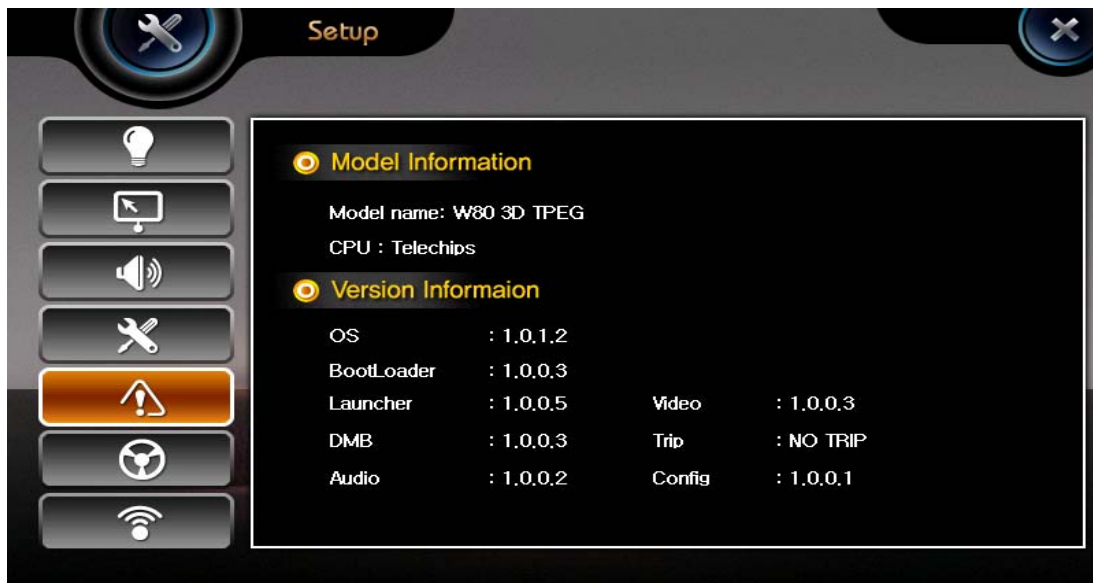
6) Handle remocon setting
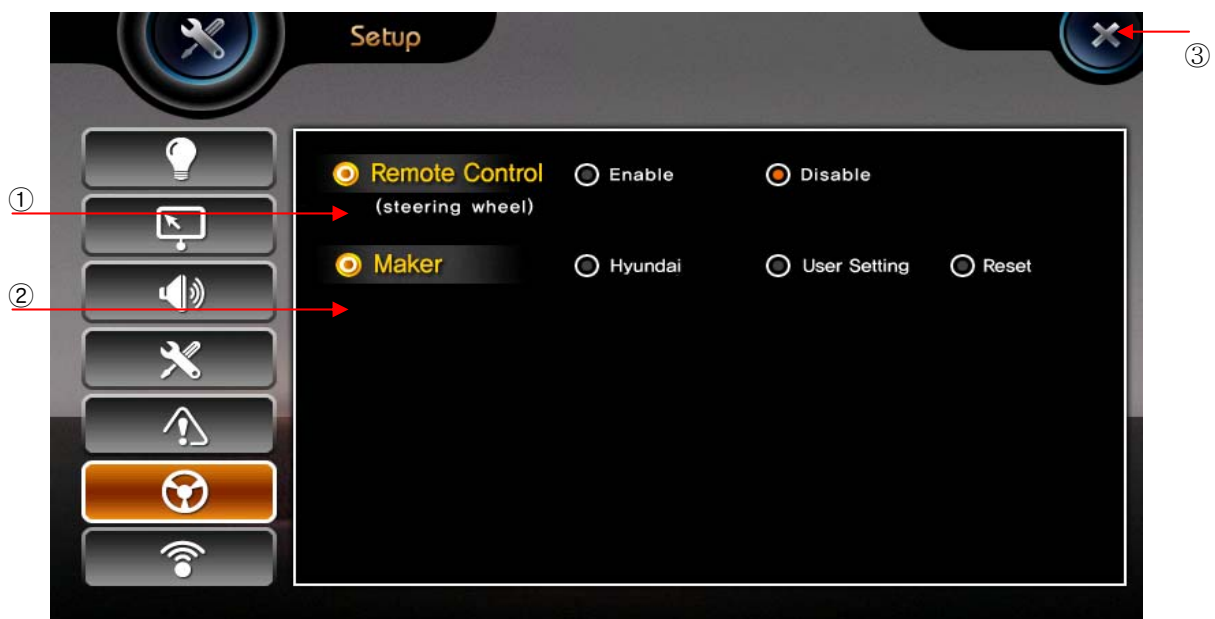
1 Remote Control	Select Remote Control-Enable, Disable.
2 Maker	Select Maker type-Hyundai, User Setting, Reset
3 Close	Return to main menu screen.

In case of user setting, after you select a button you have to click same button in car handle remocon within 3 seconds. If it is late "time is over" message is shown. If you see this message you have to do same procedure again.

7) WiFi

A. Shows WiFi Setting information.

1 WiFi Status	Select WiFi Status-ON, OFF
2 WiFi Network	WiFi will be automatically shows on the list.
3 Close	Return to Setup menu.

B. Shows IP Setting information.

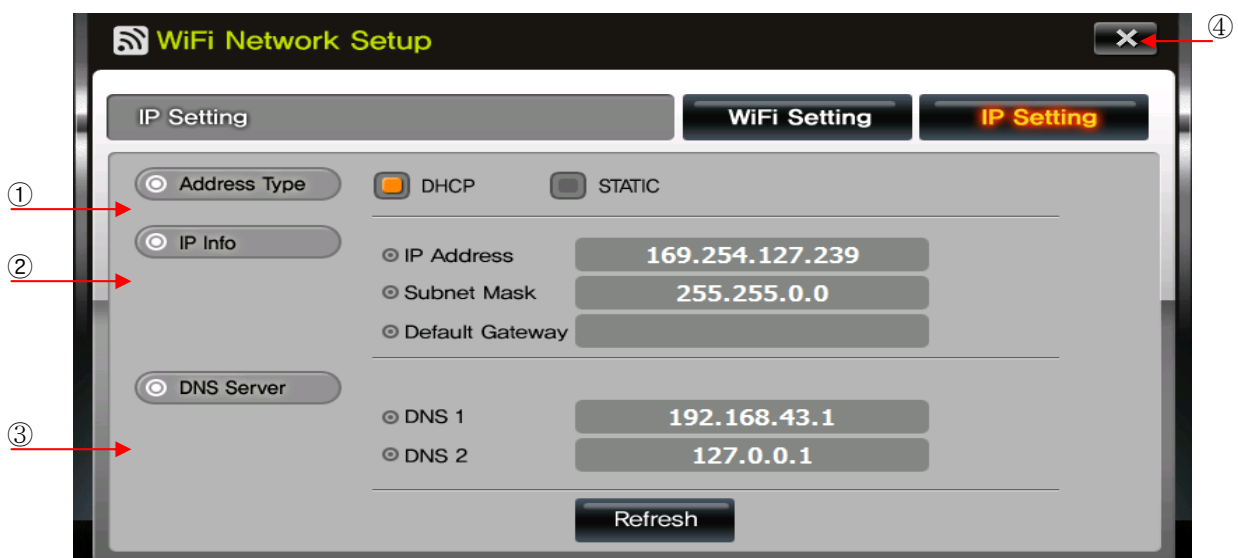| 1 Address Type	Select Address Type-DHCP, STATIC
2 IP Info	Shows IP Address, Subnet Mask, Default Gateway
3 DNS Server	Shows DNS1, DNS2
4 Close	Return to Setup menu.

8) Close

By pressing Close button on screen you can return to Main Menu.

3. Additional Functions

▣ Multi Tasking

Multi Tasking means that you can use several application programs simultaneously. For example, you can use Navigation and Music Player at the same time.

If you want Multi Tasking for those two programs, launch one first. Then press the Menu Button on the front panel and return to the Main Menu. If you press another program's icon, it operates together with the previous program. On Screen you will see the Navigator program and sound comes from Music Player. When Navigation instructions come up the multimedia player sound is muted.

To change between the applications press the Menu Button and return to the Main Menu and then click the required program icon.

▣ How to Regulate LCD Brightness

Select Configuration on Main Menu screen and then select Bright icon. Regulate brightness from Back Light regulation menu.
Or you can change it from pop up button.

▣ Quick View Function

After power is detected to the device, even though the device is not booted if rear gear is set you can see rear view through rear camera.

▣ Parking Line Display

It shows parking line when rear view camera is working. If you touch in left upper side parking line is disappeared, and if touch again it is appeared

◙ Screen Save

The screen saver starts after 10 seconds of inaction. The Analogue clock is displayed.

Touch the screen to exit the screen saver.

◉ Using Remocon (Optional)

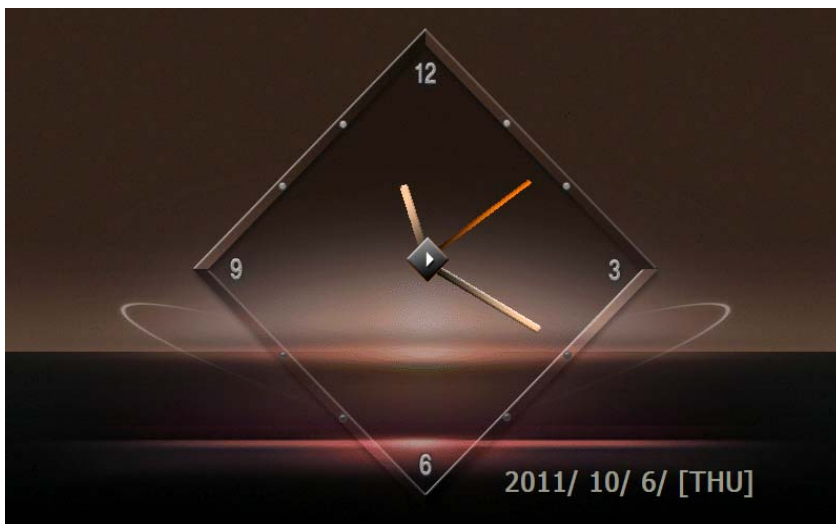| POWER	Turn on and off screen and sound.
MUTE	Mute sound
OK	Confirm
VOL ▲	Maximize volume
VOL ▼	Minimize volume
◄◄ CH	Move previous in multimedia player
CH ►►	Move next in multimedia player
NAVI	Launch navigation
MULTI	Launch multimedia program
AV IN	Launch HandsFree (AV in for Non HandsFree model)
PHOTO	Launch photo album
BRIGHT ▲	Maximize screen brightness
BRIGHT ▼	Minimize screen brightness
Clock	Launch clock
MENU	Return to main menu

4. Common Knowledge on GPS

◉ What is GPS?

GPS (Global Positioning System) is a system to provide services such as position, speed and time measurement using satellite that was developed by U.S. Department of Defense. There are 24 satellites available currently as a standard.

[24 satellites available]

GPS can perform accurate measurement of three dimensional position, altitude and time. It can provide service continuously for 24 hours, is strong against weather conditions, interference and obstruction, and has a feature to use global common coordinate system. To know an exact position you can use a GPS receiver, and receive a signal simultaneously from at least 4 satellites

GPS satellite C, Distance C, and positioning point
Intersection point of 3 sections, Principle of GPS positioning

GPS Satellite B

GPS Satellite C

GPS Satellite A

Distance B

Distance C

Distance A

Measuring point

(Intersection point of 3 sections)

[How to measure position via GPS]
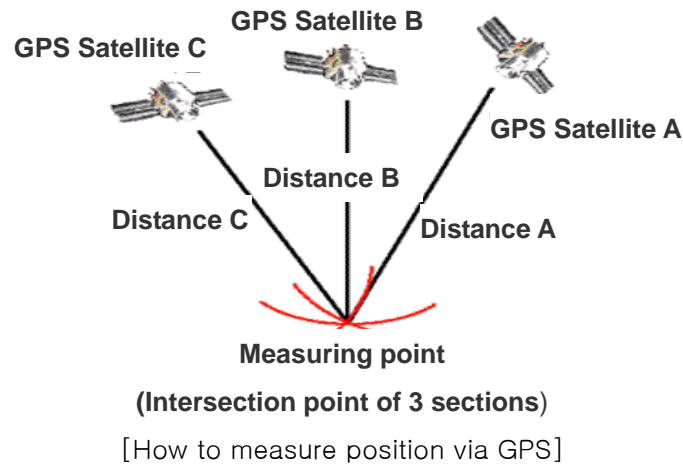
GPS is accompanied with about 5m~15m error even though SA does not activate during single positioning (absolute positioning, 1 point positioning) where position is measured by only one receiver, so the single positioning method is being utilized mainly for navigation such as vehicle, ship, aircraft, etc. or in GIS field where allowable error is relatively big rather than for measurement.

◙ Cause of Error Occurrence in GPS

Factors dropping accuracy in position measurement of GPS can be largely classified into 3 parts.

First, errors occurring due to structure factors include satellite time error, satellite position error, refraction in ionosphere and troposphere, noise, multi-path, etc.; secondly, there is geometrical error due to arrangement situation of satellite; and lastly, there is SA (Selective Availability) that is the biggest error factor.

Potential combination of all these factors brings about very big error result, which is called UERE (User Equivalent Range Error). Each error varies greatly depending on time and place.

- Satellite time error 0-1.5 m
- Satellite position error 1- 5 m
- Refraction in ionosphere 0-30 m
- Refraction in troposphere 0-30 m
- Receiver noise 0-10 m
- Multi-path 0-1 m
- SA(Selective Availability) 0-70 m

In C/A code, horizontal error combined with all errors is 28m when SA does not activate and 100m when SA activates.

SA code means enlargement of error range so that United States may limit use by non-allowed GPS satellite users during military operation.

Basically, GPS is not much affected by weather. It cannot be said that there is no effect at all, but there is no absolute effect. Depending on situation, as sunspot activity of sun becomes active, if magnetic field change around earth becomes severe, GPS reception cannot be well performed.

◉ **Cautions during Use of GPS**
　① Do not dissemble, repair, or remodel it randomly.
　② Pay attention not to pour water or liquid.
　③ Avoid use in environments with shock, high temperature, high humidity, etc.
　④ Use it by avoiding the following conditions.
- Tree foliage.
- Next to tall buildings, beneath bridge, beneath elevated road.
- Inside buildings, tunnels, aircraft, ships etc.
- Beneath other objects blinding GPS antenna parts, etc.
- When covered by the palm of a hand.
- Do not put gold, metallic objects, or electric wave emitting objects around GPS. Do not leave GPS for long time where there is severely high or low temperature.

5 Support Guide

◉ **Self Check List before contacting technical support**

The following checklist will be helpful in solving problems encountered while using your navigation system. Before reviewing the following checklist, check the equipment connection and operation procedure.

Screen is blank.	• Verify if power is applied to the device.
Navigation does not start.	• Verify that SD card containing the navigation program is inserted.
GPS does not operate well.	• Verify that there is no equipment blocking to the GPS antenna. • Verify that the vehicle has clear line of sight to the sky (it is not in an underground parking lot or inside tunnel).

If system still does not operate normality please contact a dealer or customer services.

◙ Cautions during Use

① Only use the power adaptor provided with this navigation system.
   If other adapters are used, there is a risk of system malfunction and fire.
② Be careful that no foreign materials enter your CNS7100, as this may seriously damage the internal parts.
③ Do not give severe shock to adaptor or dissemble it, as it may cause damage, explosion, or fire.
④ Do not use in a humid environment, nor submerge directly into water.
⑤ Do not disassemble the device.
⑥ Do not put this near magnets, including large speaker, as the Memory Contents may be erased or LCD screen may be damaged.
⑦ Back up important data at all times.
   Data may be damaged or deleted due to unscheduled reset.
⑧ Please store your stylus pen keep safely and keep out of reach of children, as this may cause serious injury.

◙ Product Specification

Division	Contents
CPU	Telechips TCC8900 Dual Core 1.4Ghz(720Mhz + dsp700MHz)
ROM	128MB NAND Flash
RAM	512MB DDR2
OS	MS Windows CE.NET 6.0 (core version)
POWER INPUT	12V/24V 1.5A, Rebooting protection circuit
LCD	Samsung TFT Touch screen LCD, 24bit full color, 7"Landscape (16:9 Picture Ratio, 800*480 WVGA)
Display Brightness	350 cd/m
SD/MMC	SD card 1 Slot (upto 8GB), External SD BOX connected
WiFi (Module)	AW-GH32/Marvell Module, 802.11/b/g
Multi Media Format	VideoFile (AVI,DIVX), MPEG4 File(MP4,M4A), MPEG Movie File (MPEG,MPG,MPV,DTA) MPEG Audio File (MP1,MP2,MP3,MPA), Matroska File (MKV, MKA), Ogg Vorbis File (OGG, OGM)
Image	JPG,TIF,PNG
Audio	Earphone-Stereo output port 1 Speaker-1W (built in) 36π (Stereo) x 2
GPS	SiRF Star – III
Interface	USB-USB2.0 Host IR receiver-Receiver 1Port AV-in: For connecting external video player

	AV-out: For connecting external monitor R-cam: For connecting rear camera , Auto detect Serial Port: 2 ports
Weight	360g
Dimension(WxHxD)	196 mm x　120 mm x　16.5 mm
OPERATING TEMPERATURE	−10℃ ～ 60℃