

ENGLISH

Owner's Manual

GENESIS

NEW THINKING.
NEW POSSIBILITIES.



Thank you for purchasing this DIS Navigation system.

This user's manual explains how to use the HYUNDAI Motor DIS Navigation system.
Before using the product, read the contents of this user's manual carefully and use this product safely.

- The screens shown in this manual may differ with the actual screens of the product.
- The design and specification of this product may change without prior notification for product improvement.
- When transferring the vehicle to another individual, include this user's manual so that the next driver can continue its use.



www.nav2.com.cn

上海纳维信息技术有限公司

NAV2 (Shanghai) Co., Ltd.

All Map Database cannot be copied without permission.

**Important Notice: This is protected by P.R.CHINA. copyright laws. All rights
not expressly granted are reserved.**

You may not otherwise reproduce, modify and distribute the content without
NAV2's prior written consent.

Precautions for Safety

Safety notes



The lightning flash with the arrowhead symbol within an equilateral triangle is intended to alert the user about the

presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



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.



Always operate the vehicle in a safe manner. Do not become distracted by the vehicle while driving and always be fully aware of all driving conditions. Do not change settings or any functions.

Pull over in a safe and legal manner before attempting such operations.

To promote safety, certain functions are disabled unless the parking brake is on.

Precautions for Safety



To reduce the risk of electric shock, do not remove the cover or back of this product. There are no user-serviceable parts inside. Refer servicing to qualified service personnel.



When driving your vehicle, be sure to keep the volume of the unit low enough to allow you to hear sounds coming from the outside.



To reduce the risk of fire or electric shock, do not expose this product to dripping or splashing water, rain, or moisture.



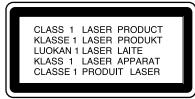
Do not drop it and avoid heavy impacts at anytime.



The driver should not watch the monitor while driving. If the driver watches the monitor while driving, it may lead to carelessness and cause an accident.

Precautions for Safety

CAUTION:



This product uses a Laser System.

To ensure proper use of this product, please read this owner's manual carefully and retain it for future reference. Should the unit require maintenance, contact an authorized service centre. Performing controls, adjustments, or carrying out procedures other than those specified herein may result in hazardous radiation exposure. To prevent direct exposure to

laser beam, do not try to open the enclosure.

Visible laser radiation when open. DO NOT STARE INTO BEAM.

WARNING:

- Don't use a cellular phone when you are driving. You must stop at a safe place to use a cellular phone.
- The use of the navigation radio by no means relieves the driver of his/her responsibilities. The highway code must always be observed. Always observe the current traffic situation.

- The applicable traffic regulations and the prevailing traffic situation always take precedence over the instructions issued by the navigation system if they contradict one another.

- For traffic safety reasons, use the navigation system menus only before starting a journey or when the vehicle is stationary.

- In certain areas, one-way streets and turn off and entry prohibitions (e.g. pedestrian zones) are not recorded. In areas such as these the navigation system will issue a warning. Pay

Precautions for Safety

particular attention to one-way streets and turn off and entry restrictions.

- The navigation system does not take the relative safety of the suggested routes into consideration.

Road blocks, building sites, height or weight restrictions, traffic or weather conditions or other influences which affect the route safety or travel time are not taken into consideration for the suggested routes. Use your own discretion in order to decide on the suitability of the suggested routes.

- The current legal road traffic

speed limit always takes priority over the values saved on the data. It is impossible to provide an assurance that the speed values of the navigation system will always match those of the current traffic regulations in every situation.

- Always observe the applicable legal speed limits the traffic regulations. The vehicle speedometer must always be given priority for display of the vehicle speed.
- Do not rely exclusively on the navigation system when attempting to locate an emergency service

(hospital, fire service etc.). It cannot be guaranteed that all available emergency services in your vicinity are saved in the database. Use your own discretion and abilities to secure help in such situations.

Precautions for Safety

CAUTION:

- Do not keep the navigation system running with the engine stopped. Doing so may discharge the vehicle battery. When you use the navigation system, always keep the engine running.
- When the driver wants to operate the navigation system, first park the vehicle in a safe location and set the parking brake. Operating the system while driving can distract the driver and may result in a serious accident.
- Do not disassemble or modify this system. If you do, it may result in accidents, fire, or electrical shock.
- Some states/provinces may have laws limiting the use of video screens while driving. Use the system only where it is legal to do so.
- Do not use your phone in private mode when you are driving. You must stop at a safe location to use it.

Table of Contents

Precautions for Safety	3	Video file Information	22	Remote control for rear seat (Option) -Type B	33
Safety notes	3	Using iPod Devices	22	Steering wheel remote con- trol	35
Table of Contents	8	Precautions upon using iPod	22		
		Supported iPod devices	23		
General Information	17	Cautions upon using SD Cards	24	Basic Operation	37
About Disc	17	Ejecting and Inserting SD Cards	24	Starting the system for the first time	37
Precautions upon Handling Discs	17	Usage of SD Cards	24	Turning the system off	37
Types of Playable Discs ..	18	Name of Each Component	25	AV OFF	38
NOTES ON COPYRIGHTS	19	Head unit	25	AV ON	38
DVD Region Code	19	Remote control for head unit - Driver Information System (DIS) Control	29	Adjusting the volume	38
PBC: Playback Control (Video CD only)	19	Remote control for rear seat (Option) -Type A	31	Resetting the System	38
If "Q" symbol appears... .	20			Using the controller	38
About USB	20			Using the Touch screen	39
MP3 file Information	22				
Image file Information	22				

Table of Contents

Radio Operation (FM/ AM)	40	Search.....46	Caption language (DVD Only)	55	
Listening to FM/AM radio	40	Seek	Voice language (DVD Only)	55	
Autostore.....	41	List.....48	Angle (DVD Only)	55	
Saving FM/AM preset....	41	Shuffle	DVD settings (DVD Only)..	56	
Reordering FM/AM preset	42	Repeat	Repeat (VCD only).....	56	
Scanning FM/AM broadcast station	43	Scan	Shortcut (VCD only).....	57	
Scanning preset stations...	43	Sound settings.....50	PBC On/Off (VCD only) ..	57	
Scanning all stations	43		Display settings.....58		
Sound settings	44		Sound settings.....58		
			DVD language code.....59		
 Audio CD/MP3 CD Operation	 45	 DVD/VCD Operation	 51	 Jukebox Operation	 63
Playing an Audio CD/MP3 CD	45	Playing a DVD/VCD	51	Playing Jukebox music...	63
Pause	45	Switching to Menu display or Full Screen Display.....	51	Pause	63
Skip.....	45	Skip.....52	Skip.....	63	
		Search.....53	Search.....	63	
		Seek	Seek	64	
		Title menu/Disc menu (DVD Only).....54	Cover flow view.....64		

Table of Contents

List	65	Viewing Jukebox image . .	70	Repeat	75
Shuffle	65	Switching to Menu display		Copying the USB music	
Scan	65	or Full Screen Display.....	70	file to Jukebox.....	75
Sound settings	65	Skip.....	70	Scan	75
Repeat	66	Zoom in/out.....	71	Sound settings.....	75
Playing Jukebox video . .	66	Slideshow.....	71	Playing USB video	76
Switching to Menu display		List.....	71	Switching to Menu display	
or Full Screen Display.....	67	Slideshow settings.....	72	or Full Screen Display.....	76
Pause	67	Display settings.....	72	Pause	77
Skip.....	67			Skip.....	77
Search.....	68			Search.....	77
Seek	68			Seek	77
List	68			List	77
Shuffle	68			Shuffle	77
Repeat	68			Repeat	78
Caption settings.....	68			Copying the USB video file	
Voice settings	69			to Jukebox.....	78
Display settings.....	69			Caption settings.....	78
Sound settings	69			Voice settings	78
DivX® VOD	69			DivX® VOD	78
		USB Operation	73		
		Playing USB music	73		
		Pause	73		
		Skip.....	73		
		Search.....	73		
		Seek	73		
		Cover flow view.....	73		
		List.....	74		
		Shuffle	75		

Table of Contents

Display settings.....	79	List.....	81	Starting the Bluetooth audio	85
Sound settings.....	79	Shuffle	82	Pause	85
Viewing USB image	79	Repeat	82	Skip.....	86
Switching to Menu display or Full Screen Display.....	79	Scan.....	82	Sound settings.....	86
Skip.....	79	Sound settings.....	82		
Zoom in/out.....	79				
Slideshow.....	80				
List.....	80				
Slideshow settings.....	80				
Copying the USB image file to Jukebox.....	80	Auxiliary Device Operation	83	Getting Started with Navigation	87
Display settings.....	80	Playing an AUX source . . .	83	Precautions for safe driving..	87
		Switching to Menu display or Full Screen Display dur- ing video playback.....	83	What is GPS?	88
iPod Operation	81	Display settings.....	84	About satellite signals. . .	88
Playing iPod	81	Sound settings.....	84	Acquiring satellite signals.	88
Pause	81			Operating Navigation Screen .	89
Skip.....	81			Map screen	89
Search.....	81	Bluetooth Audio	85	Zoom in/out.....	94
Seek	81	Playing Bluetooth audio . . .	85	Map scale	95
		Before playing the Bluetooth audio.....	85	Changing the route condi- tions.....	95
				Searching for POI.....	96

Table of Contents

Adding the position or camera to [My Places] menu.....	100	POI	108	Route Options.....	114
Scrolling map	100	Intersection	109	Editing Waypoint.....	115
Navigation volume.....	101	My Places	109	Load Tour.....	117
Map Setting	101	Adding to [My Places] menu.....	110	Route Overview.....	118
Making a call to POI.....	102	Deleting My Places.....	110	Route Info.....	118
Guidance to Previous Points	103	Editing My Places	111	Route Preview.....	119
General operations of quick menu.....	103	Phone Number	111	Bluetooth® Wireless Technology	125
General operations of [Navi Menu]	104	Emergency	112	Before Using the Bluetooth Handsfree	125
Searching for Destination of Navigation	105	Local Search	112	What is Bluetooth Wireless Technology?	125
POI Name	105	Home, Office, Special (1~2) ..	113	Precautions for Safe Driving.....	125
Address Search.....	107	Finding your Home, Office, or Special (1~2)	113	Cautions upon Connecting Bluetooth Phone.....	126
Previous Points	108	Using the [Route] Menu	114	Pairing and connecting the unit and a Bluetooth phone.....	126
		[Route] menu overview...	114		
		Canceling Route	114		

Table of Contents

When no phones have been paired.....	126	Call history	134	Navigation	140
When a phone is already paired.....	128	Making a call from call history	134	MAP	140
Disconnecting the connected phone	130	Downloading call history ..	135	Guidance.....	141
Deleting Bluetooth Devices ..	131	Contacts	136	Route/GPS	142
Making a call by entering phone number.....	131	Downloading mobile phone contacts.....	136	Initialize Setting.....	143
Making a call by redialing	132	Searching for contacts..	137	Sound	143
Making a call with speed dial numbers	132	Adding as a Favourite ...	137	Volume Control	143
Answering/Rejecting a call..	132	Favourites	138	Fade/Balance.....	144
Switching call to the mobile phone	133	Calling Favourites.....	138	Treble/Middle/Bass.....	144
Ending a call	133	Adding as a Favourite ...	138	Surround Effect.....	145
Using the menu during a phone call	134	Deleting Favourites.....	138	VIP Sound	145
		Setting Bluetooth		Speed Dependent Vol...145	
		Connection	139	Touch Tone	145
		Settings	140	Reset.....	146
		[Settings] menu overview	140	Display	146
				Set Video image	146
				Set LCD Brightness	147
				Illumination Settings.....	147
				Ratio.....	147

Table of Contents

Reset	148	Zoom In/Out.....	155	Using PGS (Parking Guide System) - Option	160
Bluetooth.	148	Search.....	156	About PGS (Parking Guide System)	160
Bluetooth Connection ..	148	Go to Page.....	156	PGS screen	160
Auto Connection Priority..	149	System Info	156	Garage parking.....	161
Device Information	149	Version.....	156	Parallel parking	162
Clock	151	Jukebox Info.....	157	Normal View.....	164
GPS Time	151	Update.....	157	Top View.....	165
Time Settings	151	Reset All.....	158	Rear view angle conversion.....	165
Daylight Savings Time...	152	Using Rear Camera		PGS setting.....	166
Clock Type	152	- Option	159		
Time Format.....	152	About Rear Camera	159		
General	153	Turning on the rear camera.....	159		
Language.....	153				
Keyboard.....	153				
Frame.....	154				
Rear Section Control (Option)	154				
E-Manual	155				
Skip.....	155				

Table of Contents

AVM (Around View Monitor) - Option	167	Blue Link®	173	Getting Started with Blue Link®	177
About AVM (Around View Monitor)	Before using Blue Link® .	173	Driving Info	177
Operating front AVM 167	What is Blue Link?.....	173	Send to Car (POI).....	178
Operating rear AVM 168	What Is Telematics?.....	173	Vehicle Diagnostics.....	179
AVM setting	169	About Transmission and Reception of Radio Waves ..	173	Blue Link® Settings.....	179
Warning display.....	170	Using the Rear View Mirror Key.....	174	Modem Information.....	179
Driver's door open indicator	170	Connecting with the Blue Link® Centre	174	Before Thinking There is a Product Defect	180
Front passenger's door open indicator	170	Connecting with Blue Link		Before Thinking the Product has Malfunctioned	183
Trunk open indicator	170	Destination Search Service..	175	Troubleshooting	185
Side mirror folding indicator	170	Blue Link® Safety and Security	175		
		Auto Crash Notification	175		
		SOS.....	175		
Climate Mode	171	Stolen Vehicle Recovery	176		
Operating Climate Mode .	171	Vehicle Slowdown	176		
		Vehicle Immobilization..	176		

Table of Contents

Trademarks and Licenses **190**

DivX®	190
iPod®	190
DOLBY	190
DTS	191
Bluetooth® Wireless Technology	191
Gracenote®	191

Specification **195**

AV/Navigation product specification	195
Blue Link® terminal product specification	198

General Information

About Disc

Precautions upon Handling Discs

- After using a disc, put the disc back in its original case to prevent disc scratches.
- Do not use abnormally shaped discs (8cm, heart-shaped, octagon-shaped) as such discs could lead to malfunctions.
- Do not clean discs with chemical solutions, such as record sprays, antistatic sprays, antistatic liquids, benzene, or thinners.
- Do not expose the disc to direct sunlight or high temperatures for prolonged

periods of time. Such exposure may lead to disc deformation.

- Upon playing a disc contaminated by dirt or other substances, the sound quality may deteriorate and result in skipping sounds. Writing on either side of the disc could result in damage to disc surfaces.
- Clean fingerprints and dust off the disc surface (coated side) with a soft cloth.
- Copy-protected CDs, such as S-type CDs, may not properly operate in the device. DATA CDs cannot be played.
(However, such discs may still abnormally operate.)
- Do not disassemble the device. Contact a designated service centre in case of malfunction. (Complete after service assistance will not be provided if the user disassembles the device.)
- Do not use water to clean the device. Exposure to water could lead to product malfunction.
- Do not introduce foreign substances into the disc insert/ eject slot. Introducing foreign substances could damage the device interior.
- The device may fail to properly operate in extremely hot or cold temperatures.

General Information

- Steam can become condensed on the fiber-optic lens due to rain, wet conditions, or upon operating the heating system. In such cases, discs may not be properly recognized. Remove the disc and wait until the moisture dries.
- Skipping may occur when driving on bumpy roads for prolonged periods of time or upon severe shock, audio may not play properly.
- Do not attach sticker or label on the disc. Sticker or label may fall off and damage the system.
- Do not insert two or more discs into the disc slot

simultaneously. It may damage the disc player.

- While disc is being inserted to the disc player by its self-loading mechanism, do not hold the disc or forcefully pull the disc. It may damage the disc player and the disc.
- Non-genuine discs may cause defective recognition or product disorder.

Types of Playable Discs



DVD-VIDEO (12 cm disc)



Video CD (12 cm disc)



Audio CD (12 cm disc)



CD-R/RW



In addition, this unit can play a DVD±R, DVD±RW, CD-R or CD-RW that contains audio titles, MP3 or WMA files.

Depending on the conditions of the recording equipment or the CD-R/RW (or DVD-RW, DVD+RW) disc itself, some CD-R/RW (or DVD-RW, DVD+RW) discs may not be played on the unit.

General Information

NOTES ON COPYRIGHTS

It is forbidden by law to copy, broadcast, show, broadcast via cable, play in public, or rent copyrighted material without permission.

This product features the copy protection function developed by Macrovision. Copy protection signals are recorded on some discs.

When playing the pictures of these discs on a unit, picture noise will appear. This product incorporates copyright protection technology that is protected by method claims

of certain U.S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision Corporation. Reverse engineering or disassembly is prohibited.

DVD Region Code

This instrument is manufactured according to the region code number recorded in the DVD. If the DVD region code number does not match the region number of this instrument, DVD may not be played. Use the DVD corresponding to your region.

PBC: Playback Control (Video CD only)

Playback control is available for Video CD (VCD version 2.0 disc formats). PBC allows you to interact with the system via menus, search functions,

General Information

or other typical computer-like operations. Moreover, still pictures of high resolution can be played if they are included in the disc. Video CDs not equipped with PBC (Version 1.1) operate in the same way as audio CDs.

If “” symbol appears

If “” symbol is displayed on the screen, the current screen will not be operated during the driving.

About USB

Connect the USB device after turning on the engine. The USB device may become damaged if it is already connected when the ignition is turned on.

- Files that are not standard format files will not be played.
- For MP3/WMA files, only music files with compression rates between 8 Kbps ~ 320 Kbps can be played.
- Heed caution to static electricity when connecting/disconnecting external USB devices.
- Encoded MP3 Players will not be recognized when connected as an external device.
- When connecting an external USB device, the device may not properly recognize the USB is in some states.
- Only USB devices formatted as FAT 12/16/32 are supported, and NTFS file system is not supported.
- Some USB devices may not be supported due to compatibility issues.
- Avoid contact between the USB connector with bodily parts/foreign objects.

General Information

- Repeated connecting/disconnecting of USB devices within short periods of time may result in product malfunction.
- Insert USB device after starting the car. If the car is started while USB device is inserted, it may damage USB device.
- The amount of time required to recognize the external USB device may differ depending on the type, size, or file formats stored on the USB. Such differences in required time are not indications of malfunction.
- The device may not recognize the USB device if separately purchased USB hubs and extension cables are being used. Connect the USB directly with the multimedia terminal of the vehicle.
- When application programs are installed to specific USBs, files may not properly play.
- The device may not operate normally if MP3 Players, cellular phones, digital cameras, or other electronic devices (USB devices not recognized as portable disk drives) are connected with the device.
- Charging through the USB may not work for some mobile devices.
- The device may not support normal operation when using a USB memory type besides Metal Cover Type USB Memory.
- The device may not support normal operation when using formats such as HDD Type, CF, or SD Memory.
- The device will not support files locked by DRM (Digital Rights Management).
- USB memory sticks used by connecting an Adaptor (SD Type or CF Type) may not be properly recognized.

General Information

MP3 file Information

- Sampling frequency: 8 ~ 48 KHz (MP3), 22.5 ~ 48 KHz (WMA)
- Bit rate: 8 ~ 320 Kbps (MP3), 20 ~ 320 Kbps (WMA)
- Version: v2, v7, v8, v9
- Playable file format: ".mp3"/ ".wma"

Image file Information

- Playable file format: ".bmp", ".jpg", ".gif", ".png", ".tif" (Max 5MB)
- It may not properly operate depending on the storage type.

Video file Information

- Video Resolution: 720 x 576 pixels (DivX), 1280 x 720 pixels (except DivX).
- Playable file format: ".avi", ".mpg", ".mpeg", ".divx", ".mp4"
- Subtitle format: ".smi"
- Video Codec: "DIVX3.11", "DIVX4", "DIVX5", "DIVX6"
- Audio Codec: "PCM", "MP3", "WMA", "WAV".
- If video and caption file names are different, caption may not be displayed.
- If DivX file format does not match main unit, it may not be played properly.

Using iPod Devices

Precautions upon using iPod

iPod® is a registered trademark of Apple Inc.

- Some iPods with unsupported communication protocols may not properly operate with the system.
- If the iPod malfunctions due to an iPod device defect, reset the iPod and try again. (To learn more, refer to your iPod manual.)

General Information

- During ACC ON state, connecting the iPod through the iPod cable (The cable that is supplied when purchasing iPod/iPhone product.) will charge the iPod through the system.
- The use of genuine iPod cables supplied by Apple is recommended. (The use of other products may result in noise or abnormal operation.)
- Within iPhones, streaming audio and iPod control may occasionally conflict. If problems persist, remove the iPhone and connect again.
- Use iPod with complete synchronization to iTunes. Unauthorized song addition may cause abnormal operation.
- If iPod and Bluetooth are connected simultaneously with the same iPhone, you cannot use Bluetooth audio function.
- If iPod touch or iPhone is used, iOS4.2 or greater is recommended.

Supported iPod devices

iPhone6, iPhone6 Plus
iPhone5C, iPhone5S, iPhone5
iPhone4S, iPhone4
iPhone3GS
iPod Touch (1st through 5th generation)
iPod Nano
iPod Classic

General Information

Cautions upon using SD Cards

Ejecting and Inserting SD Cards

- Ejecting and inserting SD cards while the system is operating may result in SD Card or System errors. To eject or insert the SD card, first turn off the system and the vehicle ignition.
- Eject/insert SD cards only to update the Map, Navi application and Navi S/W with a new version.
- When an SD Card with the new version is inserted, then the system will reboot automatically.

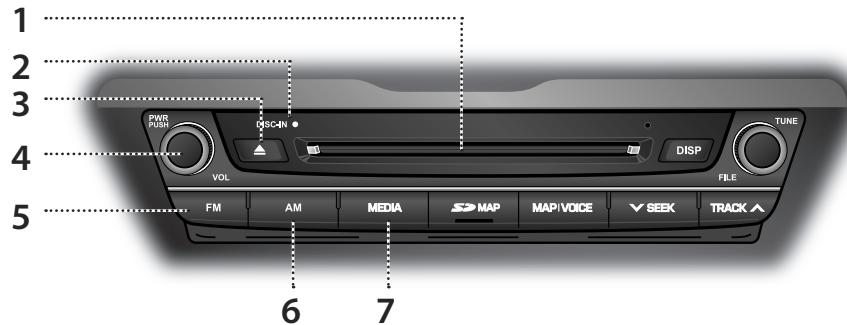
Usage of SD Cards

- The SD Card is formatted to include only Map, Navi application and Navi S/W with a new version.
- The SD Card cannot be used to save and play Music.
- Do not add, delete, or format files within the SD Card.

Name of Each Component

Head unit

The image of this product may be different from the actual product.



1. Disc slot

Insert a disc into the disc slot.

3. Disc eject (▲) button

Press to eject disc.

- Power off

Press and hold this button in power on status.

2. DISC IN indicator light (DISC-IN)

When a disc is inserted, the indicator is illuminated.

4. • PWR PUSH button

- Power on

Press this button in power off status.

• Volume control knob (VOL)

Turn left/right to control volume.

Name of Each Component

- **Audio on/off button**

Press this button to turn audio on or off in power on status.

- 5. **FM button**

Selects the FM1/FM2 band.

- 6. **AM button**

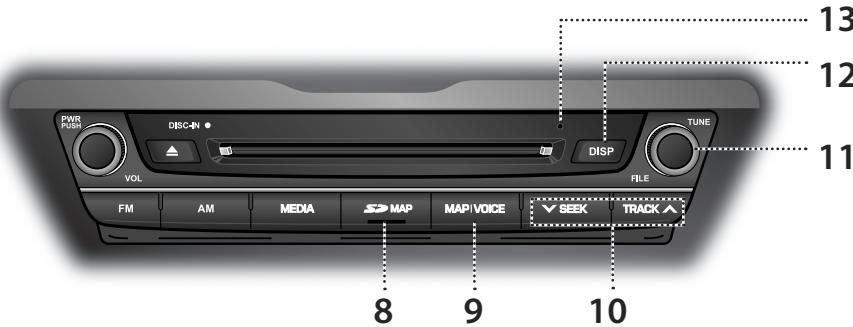
Selects the AM band.

- 7. **MEDIA button**

Press this button to move to the [Media] menu in media playing screen.

Press this button again to display the media playing screen.

Name of Each Component



8. SD map card slot

Insert the SD card into the slot.

9. MAP/VOICE button

- Press to display the map screen of the current location.
- Press to repeat the voice guidance on the map screen.

10. VSEEK/TRACK \wedge button

- When pressed momentarily (less than 0.8 sec.)
 - FM/AM mode: plays previous/next station.
 - In MEDIA mode: changes the track, file, or chapter.

Name of Each Component

- When pressed and held (0.8 sec. or longer)
 - FM/AM mode: changes the station until the button is released.
 - MEDIA mode: rewinds or fast forwards the track, file, or chapter.

11. TUNE/FILE button

- FM/AM mode: Turn to change the station.
- MEDIA mode: Turn to search for the desired track, file or chapter.

12. DISP button

- Press to turn the screen on or off.
- Press and hold to move to the [Display] menu screen.

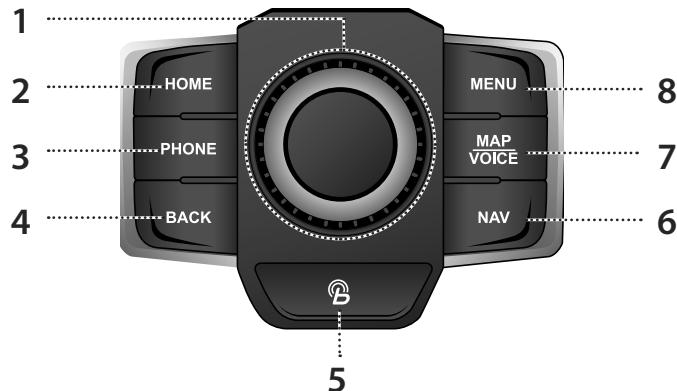
13. RESET hole

Press to reset the unit.

Name of Each Component

Remote control for head unit - Driver Information System (DIS) Control

The image of this product may be different from the actual product.



1. Controller

Tap or rotate to navigate through the menu screens.
For more details, refer to "Using the controller" on Page 38.

2. HOME button

Press to move to the [HOME] menu screen.

4. BACK button

Press to move to the previous screen.

3. PHONE button

Press to move to the Phone menu screen.

5. button

Press to move to the [Blue Link] menu screen.

Name of Each Component

6. NAV button

Press to move to the [Navigation] menu screen.

7. MAP/VOICE button

- Press to display the map screen of the current location.
- Press to repeat the voice guidance on the map screen.

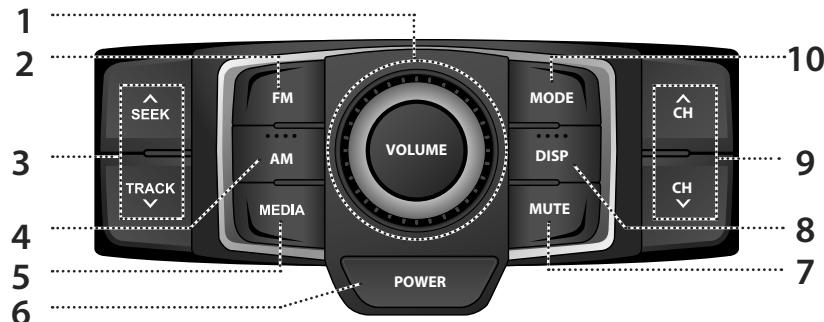
8. MENU button

Press to move to the pop-up menu in each mode.

Name of Each Component

Remote control for rear seat (Option) -Type A

The remote control for rear seat is an option for the customers who selected the option. The image of this product may be different from the actual product.



1. VOLUME button

Turn left/right to control volume.

3. ^ SEEK/TRACK V button

- When pressed momentarily (less than 0.8 sec.)

- FM/AM mode: plays previous/next station.

2. FM button

Selects the FM band.

- In MEDIA mode:
changes the track, file, or chapter.

- When pressed and held (0.8 sec. or longer)

- FM/AM mode: changes the station until the button is released.

- In MEDIA mode:
rewinds or fast forwards the track, file, or chapter.

4. AM button

Selects the AM band.

Name of Each Component

5. MEDIA button

Press this button to toggle the connected media source.

6. POWER button

Press this button to turn AV on or off in power on status.

7. MUTE button

Press to mute the sound.

8. DISP button

Press to turn the screen on or off.

9. \wedge CH/CH \vee button

Selects the radio presets.

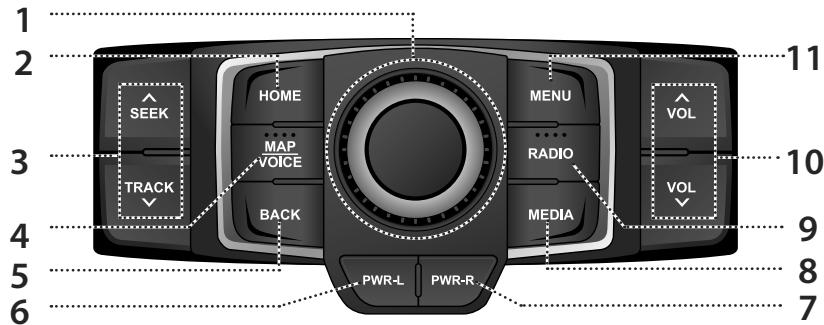
10. MODE button

- Each time this button is pressed, the mode is changed.
- If no media or disc is inserted, the mode will be skipped.
- When power is off, press the button to turn power back on.

Name of Each Component

Remote control for rear seat (Option) -Type B

The remote control for rear seat is an option for the customers who selected the option. The image of this product may be different from the actual product.



1. Controller

Tap or rotate to navigate through the menu screens.
For more details, refer to "Using the controller" on Page 38.

2. HOME button

Press to move to the [HOME] menu screen.

3. ▲SEEK/TRACK▼ button

- When pressed momentarily (less than 0.8 sec.)
 - FM/AM mode: plays previous/next station.
 - In MEDIA mode: changes the track, file, or chapter.
- When pressed and held (0.8 sec. or longer)
 - FM/AM mode: changes the station until the button is released.
 - In MEDIA mode: rewinds or fast

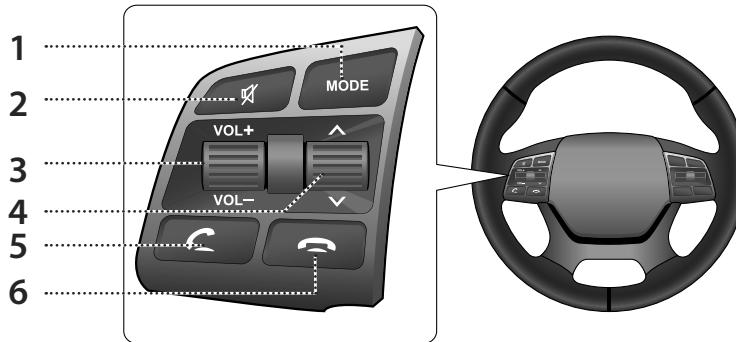
Name of Each Component

	forwards the track, file, or chapter.	6. PWR-L button Turns the left monitor for rear seat on/off.	9. RADIO button Selects the FM1/FM2/AM band.
4. MAP/VOICE button	<ul style="list-style-type: none">• Press to display the map screen of the current location.• Press to repeat the voice guidance on the map screen.	7. PWR-R button Turns the right monitor for rear seat on/off.	10. \wedgeVOL\vee button Press to control volume.
5 BACK button	Press to move to the previous screen.	8. MEDIA button Press this button to move to the [Media] menu in media playing screen. Press this button again to display the media playing screen.	11. MENU button Press to move to the pop-up menu in each mode.

Name of Each Component

Steering wheel remote control

The image of this product may be different from the actual product.



1. MODE button

- Each time this button is pressed, the mode is changed.
- If no media or disc is inserted, the mode will be skipped.

- Press and hold the button (over 0.8 seconds) to turn the AV on/off.
- When power is off, press the button to turn power back on.

2. MUTE button

Press to mute the sound.

3. Volume (VOL+/VOL-) button

Increases or decreases the volume level.

4. Seek up/down (Λ/V) button

- When pressed momentarily (less than 0.8 sec.)
 - FM/AM mode: plays previous/next station.
 - In MEDIA mode:

Name of Each Component

changes the track, file, or chapter.

- When pressed and held (0.8 sec. or longer)

- FM/AM mode: changes the station until the button is released.

- In MEDIA mode: rewinds or fast forwards the track, file, or chapter.

- Press and hold for redialing.

6. button

Press to hang up a call.

5. button

Press to operate Bluetooth Hands-Free function.

- Press to accept a call.
- Press to make a call from last calls.

Basic Operation

Starting the system for the first time

1. Press the engine start button.

Once the system is turned on, the booting process will start and the safety warning Page is displayed.



2. Press [Confirm].

If you want to change the system language, press [Language]. For more

details, refer to "Language" on Page 153.

! Note

- You cannot operate the system while it is booting up. It may take some time for all of features of the system boot up.
- The safety warning Page is displayed every time the ignition is turned on. The displayed warnings are related to safety, please closely read and comply with the safety warnings.

Turning the system off

Press and hold "PWR PUSH" on the head unit.

To turn the system on again, press "PWR PUSH" on the head unit.

! Note

Pay attention to the volume setting when turning the system on. A sudden output of extreme volume upon turning the system on could lead to hearing impairment. Adjust the volume to a suitable levels before turning off the system.

Basic Operation

AV OFF

Press "PWR PUSH" on the head unit when the AV is on.

AV ON

Press "PWR PUSH" on the head unit when the AV is OFF.

Adjusting the volume

Rotate the volume control knob (VOL) on the head unit.

! Note

When you turn the unit off, the current volume level is automatically memorized. Whenever you turn the system on, it operates at the memorized volume level.

Resetting the System

This feature is used to reset the system in the occurrence of an unforeseen error or problem. Press "RESET" button. (The use of a clip or pin is recommended when resetting the system.)



Using the controller

This control is used to move and select menus.

Controller	Description
	Move in the menu by turning the controller left/right.
	Push the controller up/down/left/right/diagonally to move in the menu.
	Press the controller to select menu.

Basic Operation

Using the Touch screen

Press the desired menu on the screen to select a menu.



Radio Operation (FM/AM)

Listening to FM/AM radio

1. Press "FM" or "AM" on the head unit or press [HOME]>[FM/AM].
2. Press [FM1], [FM2] or [AM] on the screen.
The FM1/FM2/AM screen of the most recent listened station is displayed.



3. Auto tuning:

Press "VSEEK/TRACKΛ" on the head unit.

- When a station is received, searching stops.

Manual tuning:

- Turn "TUNE/FILE" on the head unit in clockwise or counter-clockwise direction.
- The stations move up and down step by step.

Preset tuning:

From the 12 presets, select the station you want to listen to.



Radio Operation (FM/AM)

Autostore

A total of 36 stations with twelve preset stations each for FM1/FM2/AM mode can be saved.

1. Press [MENU] on the screen.
2. Press [Autostore] to save automatically receivable stations to Preset list.



! Note

While Autostore is operating, pressing [Autostore] again will cancel the function and play the previous station.

Saving FM/AM preset

12 preset stations each for FM/AM mode can be saved manually.

1. Select the band (FM1, FM2, AM) you want to store a station into.
2. Select the desired station.
3. Press [MENU] > [Save as preset].
4. Press the desired preset number.



The station is saved.

Radio Operation (FM/AM)

! Note

When the station is saved on a number of which another station has already been saved, the previously saved station is erased.

Reordering FM/AM preset

This function reorders the station saved to presets.

1. Select the band (FM1, FM2, AM) you want.
2. Press [MENU] > [Reorder presets].
3. Press the desired preset from the list.



4. Move up and down and press the selected preset, or drag it to the desired position.



Radio Operation (FM/AM)

Scanning FM/AM broadcast station

Scanning preset stations

This function scans the 12 stations saved as preset numbers in the current band for 5 seconds each.

1. Select the band (FM1, FM2, AM) you want.
2. Press [MENU] > [Presets scan].



! Note

When the scan is operating, pressing the controller will stop the function and remain on the stopped station.

Scanning all stations

This function scans all stations and plays only stations with superior reception for 5 seconds each.

1. Select the band (FM1, FM2, AM) you want.
2. Press [MENU] > [Scan all channels].



Radio Operation (FM/AM)

! Note

When the scan is operating, pressing the controller will stop the function and remain on the stopped station.

Sound settings

1. Press [MENU] > [Sound settings] in the radio screen.
2. For more details, refer to "Sound" on Page 143.

Audio CD/MP3 CD Operation

Playing an Audio CD/ MP3 CD

Insert a disc into the disc slot and playback will start automatically.



For example: Audio CD



For example: MP3 CD

! Note

To play the Audio CD or MP3 CD while a different source is playing, press [HOME] > [Media] > [Disc CD] or [Disc MP3].

Pause

Press [II] on screen or with the controller.

Press [▶] on screen or with the controller to play it again.

Skip

You can play the previous or next track/file.

Position	Description
Screen	<ul style="list-style-type: none">• Press [◀◀/▶▶].• Pressing [◀◀] after 3 seconds of playback time plays the current track/file from the beginning.

Audio CD/MP3 CD Operation

Position	Description
Head unit	<ul style="list-style-type: none">• Press "VSEEK/TRACK▲".• Pressing [VSEEK] after 3 seconds of playback time plays the current track/file from the beginning.

Position	Description
Controller	<ul style="list-style-type: none">• Push the controller left or right.• Push the controller left after 3 seconds of playback time plays the current track/file from the beginning.

Search	
	You can search for the track/file currently playing quickly.
Position	Description
Screen	Press and hold [◀◀/▶▶] and then release at the point you want.
Head unit	Press and hold "VSEEK/TRACK▲" and then release at the point you want.

Audio CD/MP3 CD Operation

Position	Description
Controller	Push and hold the controller left or right and then release at the point you want.

Seek

You can play the track/file directly by searching for the desired music.

Position	Description
Head unit	Turn "TUNE/FILE" to search for a desired track/file. If the desired track/file is displayed, press the "TUNE/FILE" to play the track/file.

Position	Description
Controller	Turn the controller to search for a desired track/file. If the desired track/file is displayed, press the controller to play the track/file.

Audio CD/MP3 CD Operation

List

You can play the desired track/file by searching the track/file list included in the disc.

1. Press [List] or press [MENU] > [List].



For example: Audio CD

- Press [MENU] > [Now playing] to move to the current playing screen.
2. Press the desired track/file.

Shuffle

All tracks/files can be played randomly.

1. Press [MENU] > [Shuffle].



For example: Audio CD

2. Press [On] or [Off].

! Note

You can set or cancel the Shuffle function by pressing [DISC] on the playing screen.

Repeat

The current playing track/file or folder is played repeatedly.

1. Press [MENU] > [Repeat].



For example: MP3 CD

2. Press the desired item.
 - [Repeat all]: Repeats all tracks/files.
 - [Repeat folder]: Repeats all files within the current folder. (MP3 CD only)
 - [Repeat one]: Repeats the current track/file.

Audio CD/MP3 CD Operation

! Note

You can change the Repeat function by pressing [◀/▶] / [⏯] on the playing screen.

⏯: Repeat all, ⏴: Repeat folder (MP3 CD only), ⏵: Repeat one

Scan

This function scans the beginning of each track/file for 10 seconds.

1. Press [MENU] > [Scan].



For example: MP3 CD

2. Press the desired item.

CD	Menu	Description
MP3 CD	All	Scans the beginning of each file for 10 seconds.
	Folder	Scans the beginning of all files within the current folder for 10 seconds.

CD	Menu	Description
Audio CD	-	Scans the beginning of each track for 10 seconds.

Audio CD/MP3 CD Operation

3. Press [■] to cancel the Scan function.



Sound settings

1. Press [MENU] > [Sound settings].
2. For more details, refer to "Sound" on Page 143.

DVD/VCD Operation

Playing a DVD/VCD

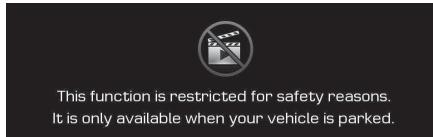
Insert a disc into the disc slot, with the label facing up.

Playback will start automatically. In some cases, the disc menu might appear.

! Note

- To play the DVD or VCD while a different source is playing, press [HOME] > [Media] > [DVD] or [VCD].
- If a menu screen is displayed, select the desired option by using the controller.
- Video is not available while driving.
(Because of traffic

regulations, video is only available while the vehicle is stopped.)



Switching to Menu display or Full Screen Display

Position	Description
Screen	Press the screen.
Controller	Push the controller up or down on full screen display mode.

! Note

Press [MENU] > [Full display] or wait 5 seconds to display full screen mode.

DVD/VCD Operation

Pause

Press [II] on screen or with the controller.

Press [▶] on screen or with the controller to play it again.

Skip

You can play the previous or next chapter/track.

Position	Description
Screen	<ul style="list-style-type: none">• Press [/].• Pressing [] after 3 seconds of playback time plays the current chapter/ track from the beginning.

Position	Description
Head unit	<ul style="list-style-type: none">• Press "VSEEK/ TRACKΛ".• Pressing [VSEEK] after 3 seconds of playback time plays the current chapter/ track from the beginning.

DVD/VCD Operation

Position	Description
Controller	<ul style="list-style-type: none">• Push the controller left or right.• Push the controller left after 3 seconds of playback time plays the current chapter/track from the beginning.

Search

You can search for the chapter/track currently playing quickly.

Position	Description
Screen	Press and hold [/] and then release at the point you want.
Head unit	Press and hold "VSEEK/TRACKΛ" and then release at the point you want.

Position	Description
Controller	Push and hold the controller left or right and then release at the point you want.

DVD/VCD Operation

Seek

You can play the chapter/track directly by searching for the desired chapter/track.

Position	Description
Head unit	Turn "TUNE/FILE" to search for a desired chapter/track. If the desired chapter/track is displayed, press the "TUNE/FILE" to play the chapter/track.

Position	Description
Controller	Turn the controller to search for a desired chapter/track. If the desired chapter/track is displayed, press the controller to play the chapter/track.

Title menu/Disc menu (DVD Only)

If the current title has a menu, the menu will appear on the screen.

1. Press [MENU] > [Title menu] or [Disc menu].



2. Scroll to the desired item.
3. Press [OK].

DVD/VCD Operation

Caption language (DVD Only)

Choose from all available caption languages.

1. Press [MENU] > [Caption language].



2. Select the desired caption language.

! Note

The caption language may vary depending on the title of DVD.

Voice language (DVD Only)

Choose from all available voice languages.

1. Press [MENU] > [Voice language].



2. Select the desired voice language.

! Note

The voice language may vary depending on the title of DVD.

Angle (DVD Only)

Choose from all available camera angles.

1. Press [MENU] > [Angle].



2. Select the desired angle.

! Note

The angle may vary depending on the title of DVD.

DVD/VCD Operation

DVD settings (DVD Only)

Set the default language.

1. Press [MENU] > [DVD settings].



2. Press the desired item.

- [DVD Caption Language]: Select the desired caption language.
- [DVD Voice Language]: Select the desired voice language.

- [DVD Menu Language]: Select the desired menu language.
3. Press [\leftarrow].

! Note

If there is no desired language, press [ETC]. Input the DVD language code, then press [Done]. Refer to "DVD language code" on Pages 59-62.

Repeat (VCD only)

The current track plays repeatedly.

1. Press [MENU] > [Repeat].



2. Press the desired item.

- [Repeat all]: Repeats all tracks.
- [Repeat one]: Repeats the current track.

! Note

You can change the Repeat function by pressing [\square/\square] on the playing screen.

\square : Repeat all,

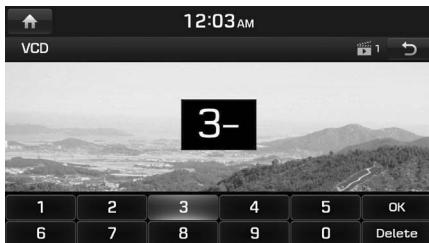
\square : Repeat one

DVD/VCD Operation

Shortcut (VCD only)

You can play the track directly by searching for the desired track.

1. Press [MENU] > [Shortcut].



2. Press [0]~[9] to select the desired track.
3. Press [OK].

PBC On/Off (VCD only)

When playing VIDEO CD with PBC functions (Version 2.0 discs), you can enjoy playing simple interactive software with search functions, etc.

PBC allows you to play VIDEO CD interactively by selecting the menus on the screen.

Also refer to instructions supplied with the disc, as the operating procedure may differ according to the VIDEO CD.

1. Press [MENU] > [PBC].



2. Press [0]~[9] to select the desired menu.



- Press [**◀ Prev**] or [**Next ▶**] to move to the previous or next Page.
 - Press [**↑**] to move to the upper menu.
 - If you press the wrong number, press [**☒**] to delete the inputted number.
3. Press [OK].

! Note

- If you press [MENU] > [PBC menu] when the PBC is On, the PBC menu is displayed on the screen.
- If you press [MENU] > [PBC] when the PBC is On, the PBC function is canceled.

Display settings

1. Press [MENU] > [Display settings].
2. For more details, refer to "Display" on Page 146.

Sound settings

1. Press [MENU] > [Sound settings].
2. For more details, refer to "Sound" on Page 143.

DVD/VCD Operation

DVD language code

Code	Country	Code	Country	Code	Country
0101	Afar	0214	Bengali	0821	Hungarian
0102	Abkhazian	0215	Tibetan	0825	Armenian
0106	Afrikaans	0218	Breton	0901	Interlingua
0113	Amharic	0301	Catalan	0905	Interlingue
0118	Arabic	0625	Frisian	0911	Inupiak
0119	Assamese	0701	Irish	0914	Indonesian
0125	Aymara	0704	Scots	0919	Icelandic
0126	Azerbaijani	0712	Gallegan	0920	Italian
0201	Bashkir	0714	Guarani	1222	Latvian
0205	Belarusian	0721	Gujarati	1307	Malagasy
0207	Bulgarian	0801	Hausa	1309	Maori
0208	Bihari	0809	Hindi	1311	Macedonian
0209	Bislama	0818	Croatian	1312	Malayalam

DVD/VCD Operation

Code	Country	Code	Country	Code	Country
1314	Mongolian	1914	Shona	0315	Corsican
1315	Moldavian	1915	Somal	0319	Czech
1318	Marathi	1917	Albanian	0325	Welsh
1319	Malay	1918	Serbian	0401	Danish
1320	Maltese	1919	Swati	0405	Germany
1325	Burmese	1920	Sesotho	0426	Bhutani
1401	Nauru	1921	Sundanese	0512	Greek
1405	Nepali	1922	Swedish	0514	English
1412	Dutch	1923	Swahili	0515	Esperanto
1415	Norwegian	2001	Tamil	0519	Spanish
1503	Occitan	2005	Telugu	0520	Estonian
1513	Oromo	2007	Tajik	0521	Basque
1912	Slovenian	2008	Thai	0601	Persian
1913	Samoan	2009	Tigrinya	0609	Finnish

DVD/VCD Operation

Code	Country	Code	Country	Code	Country
0610	Fijian	1121	Kurdish	1823	Kinyarwanda
0615	Faroese	1125	Kirghiz	1901	Sanskrit
0618	French	1201	Latin	1904	Sindhi
0923	Hebrew	1214	Lingala	1907	Sangho
1009	Yiddish	1215	Laotian	1908	Croatian
1001	Japanese	1220	Lithuanian	1909	Sinhalese
1022	Javanese	1518	Oriya	1911	Slovak
1101	Georgian	1601	Punjabi	2012	Tagalog
1111	Kazakh	1612	Polish	2014	Tswana
1112	Greenlandic	1619	Pushto	2015	Tongo
1113	Cambodian	1620	Portuguese	2018	Turkish
1114	Kannada	1721	Quechua	2019	Tsonga
1115	Korean	1813	Romance	2020	Tatar
1119	Kashmiri	1821	Russian	2023	Twi

DVD/VCD Operation

Code	Country
2111	Ukrainian
2118	Urdu
2126	Uzbek
2209	Vietnamese
2215	Volapuk
2315	Wolo
2408	Xhosa
2515	Yoruba
2608	Chinese
2621	Zulu

Jukebox Operation

Playing Jukebox music

You can play music files saved in Jukebox.

If there is no music file in Jukebox, copy the desired music file to Jukebox. For more details, refer to “Copying the USB music file to Jukebox” on Page 75.

1. Press [HOME] > [Media].
2. Press [Jukebox Music].

Jukebox music automatically plays.



! Note

If there are no songs, Jukebox music won't be available in [Media] screen.

Pause

You can pause the playing file. For more details, refer to “Pause” on Page 45.

Skip

You can play the previous or next file.

For more details, refer to “Skip” on Page 45.

Search

You can search for the file currently playing quickly.

For more details, refer to “Search” on Page 46.

Jukebox Operation

Seek

You can play the file directly by searching for the desired file.

For more details, refer to "Seek" on Page 47.

Cover flow view

You can play the desired album by searching the cover flow in Jukebox.

1. Press [MENU] > [Cover flow view].



2. Press the desired album.

- Press [MENU] > [View default player] to move to the current playing screen.
- Press [MENU] > [List] to move to the list menu.

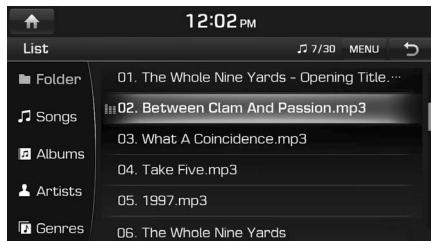
- Press [MENU] > [Shuffle] to set the Shuffle function.
- Press [MENU] > [Repeat] to set the Repeat function.
- Press [MENU] > [Scan] to set the Scan function.
- Press [MENU] > [Sound settings] to set the sound.

Jukebox Operation

List

You can play the desired file by searching the file list included in Jukebox.

1. Press [List] or press [MENU] > [List].



For example: Jukebox music screen

2. Select the desired file.
 - Press [MENU] > [Now playing] to move to the current playing screen.

- Press [MENU] > [Delete] to delete the desired file. For more details, refer to "Deleting My Places" on Page 110.
- Press [MENU] > [Clear Jukebox] to delete all files and playlists in Jukebox.
- Press [MENU] > [Storage capacity] to check the storage capacity saved in Jukebox.

Shuffle

All files can be played randomly.

For more details, refer to "Shuffle" on Page 48.

Scan

This function scans the beginning of each file for 10 seconds.

For more details, refer to Audio CD operation of "Scan" on Page 49.

Sound settings

1. Press [MENU] > [Sound settings].
2. For more details, refer to "Sound" on Page 143.

Jukebox Operation

Repeat

The current playing file is played repeatedly.

1. Press [MENU] > [Repeat].



2. Press the desired item.
 - [Repeat all]: Repeats all files.
 - [Repeat folder]: Repeats all files within current folder.
 - [Repeat one]: Repeats the current file.

! Note

You can change the Repeat function by pressing [□]/[◀]/[▶] on the playing screen.

[□]: Repeat all, [◀]: Repeat folder,

[▶]: Repeat one

Playing Jukebox video

You can play the video files saved in Jukebox.

If there is no video file in Jukebox, copy the desired video to Jukebox. For more details, refer to "Copying the USB video file to Jukebox" on Page 78.

1. Press [HOME] > [Media].
2. Press [Jukebox Video].

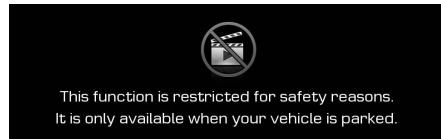
The Jukebox Video is played.

! Note

- If there are no videos, Jukebox video won't be available in [Media] screen.

Jukebox Operation

- Video is not available while driving.
(Because of traffic regulations, video is only available while the vehicle is stopped.)



Switching to Menu display or Full Screen Display

Position	Description
Screen	Press the screen.
Controller	Push the controller up or down on full screen display mode.

! Note

Press [MENU] > [Full display]
or wait 5 seconds to display
full screen mode.

Pause

You can pause the playing file.
For more details, refer to
“Pause” on Page 45.

Skip

You can play the previous or next file.
For more details, refer to “Skip” on Page 45.

Jukebox Operation

Search

You can search for the file currently playing quickly.

For more details, refer to "Search" on Page 46.

Seek

You can play the file directly by searching for the desired file.

For more details, refer to "Seek" on Page 47.

List

You can play the desired file by searching the file list included in Jukebox.

For more details, refer to "List" on Page 48.

Shuffle

All files can be played randomly.

For more details, refer to "Shuffle" on Page 48.

Repeat

The current playing file is played repeatedly.

For more details, refer to "Repeat" on Page 48.

Caption settings

1. Press [MENU] > [Caption settings].



2. Set the desired option.

- [View Subtitle]: Turns video subtitles on/off.
- [Caption Language]: Selects the desired caption language.
- [Font Size]: Adjusts the font size of video subtitles.

Jukebox Operation

Voice settings

1. Press [MENU] > [Voice settings].



2. Set the desired voice.

Display settings

1. Press [MENU] > [Display settings].
2. For more details, refer to "Display" on Page 146.

Sound settings

1. Press [MENU] > [Sound settings].
2. For more details, refer to "Sound" on Page 143.

2. After checking the registration code, register at <http://vod.divx.com>.

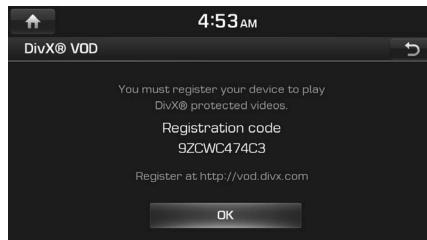
! Note

All the downloaded videos from DivX® VOD with this registration code can only be played back on this device.

DivX® VOD

You must register your device to play DivX® protected videos.

1. Press [MENU] > [DivX® VOD].



Jukebox Operation

Viewing Jukebox image

You can view the image files saved in Jukebox.

If there is no image file in Jukebox, copy the desired image to Jukebox. For more details, refer to "Copying the USB image file to Jukebox" on Page 80.

1. Press [HOME] > [Media].
2. Press [Jukebox Image].

The Jukebox Image is viewed.

! Note

If there are no images, Jukebox image won't be available in [Media] screen.

Switching to Menu display or Full Screen Display

Position	Description
Screen	Press the screen.
Controller	Push the controller up or down on full screen display mode.

! Note

Press [MENU] > [Full display] or wait 5 seconds to display full screen mode.

Skip

You can view the previous or next image.

Position	Description
Screen	Press [/].
Controller	Push the controller left or right.

Jukebox Operation

Zoom in/out

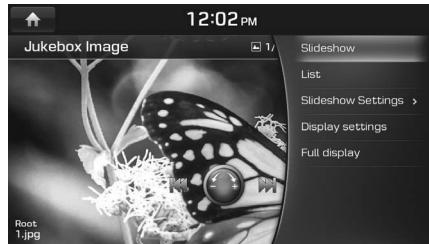
1. Turn the controller left or right.



2. Push the controller up, down, left or right to move the image.

Slideshow

1. Press [MENU] > [Slideshow].

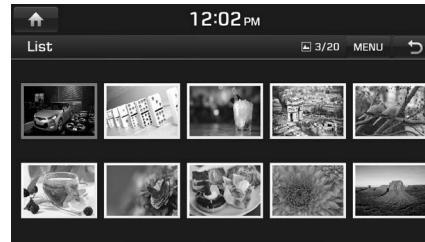


2. The slideshow is played.
2. Press the controller to stop the slideshow.

List

You can view the desired image by searching for image list included in Jukebox.

1. Press [List] or press [MENU] > [List].



2. Press the desired image.
 - Press [MENU] > [Now Playing] to move to the current playing screen.
 - Press [MENU] > [Delete] to delete the desired file.

Jukebox Operation

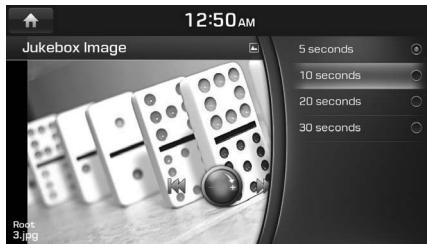
For more details, refer to "Deleting My Places" on Page 110.

- Press [MENU] > [Clear Jukebox] to delete all files and playlists in Jukebox.
- Press [MENU] > [Storage capacity] to check the storage capacity saved in Jukebox.

Slideshow settings

You can set the slideshow interval. The slideshow is played according to the time interval.

1. Press [MENU] > [Slideshow settings].



2. Press the desired slideshow interval.

Display settings

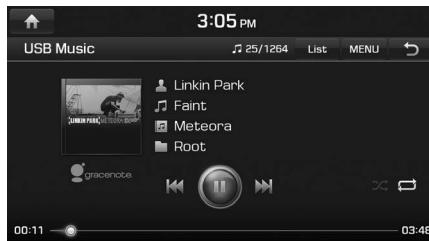
1. Press [MENU] > [Display settings].
2. For more details, refer to "Display" on Page 146.

USB Operation

Playing USB music

You can play music files saved in a USB memory device.

Connect a USB device to the USB port. Playback will start automatically.



! Note

To play USB music while a different source is playing, press [HOME] > [Media] > [USB Music], [Front USB Music] or [Rear USB Music].

Pause

You can pause the playing file.

For more details, refer to "Pause" on Page 45.

Skip

You can play the previous or next file.

For more details, refer to "Skip" on Page 45.

Search

You can search for the file currently playing quickly.

For more details, refer to "Search" on Page 46.

Seek

You can play the file directly by searching for the desired file.

For more details, refer to "Seek" on Page 47.

Cover flow view

You can play the desired album by searching the cover flow in USB.

1. Press [MENU] > [Cover flow view].



USB Operation

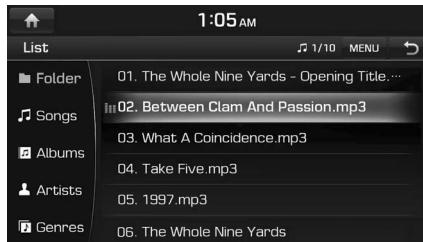
2. Press the desired album.
 - Press [MENU] > [View default player] to move to the current playing screen.
 - Press [MENU] > [List] to move to the list menu.
 - Press [MENU] > [Shuffle] to set the Shuffle function.
 - Press [MENU] > [Repeat] to set the Repeat function.
 - Press [MENU] > [Copy] to Jukebox] to copy the desired files to Jukebox. For more details, refer to "Copying the USB music file to Jukebox" on Page 75.

- Press [MENU] > [Scan] to set the Scan function.
- Press [MENU] > [Sound settings] to set the sound.

List

You can play the desired file by searching the file list included in USB.

1. Press [List] or press [MENU] > [List].



2. Press the desired file after searching for folder, songs, albums, artists, or genres.
 - Press [MENU] > [Now playing] to move to the current playing screen.

USB Operation

- Press [MENU] > [Copy to Jukebox] to copy the desired files to Jukebox.

Shuffle

All files can be played randomly.

For more details, refer to "Shuffle" on Page 48.

Repeat

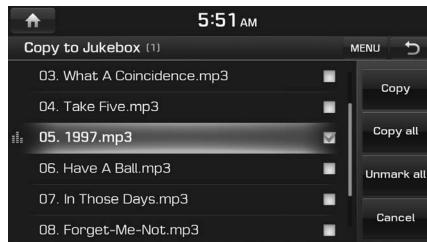
The current playing file is played repeatedly.

For more details, refer to "Repeat" on Page 66.

Copying the USB music file to Jukebox

You can copy the desired files to Jukebox.

1. Press [MENU] > [Copy to Jukebox].



2. Select the desired file, then press [Copy].

- [Copy]: Copies the selected file.
- [Copy all]: Copies all the files.

- [Unmark all]: Unmarks all the files.
- [Cancel]: Cancels the copy function.

Scan

This function scans the beginning of each file for 10 seconds.

For more details, refer to Audio CD operation of "Scan" on Page 49.

Sound settings

1. Press [MENU] > [Sound settings].
2. For more details, refer to "Sound" on Page 143.

USB Operation

Playing USB video

You can play video files saved in a USB memory device.

Connect a USB device to the USB port and playback starts automatically.

! Note

- To play USB Video while a different source is playing, press [HOME] > [Media] > [USB Video], [Front USB Video] or [Rear USB Video].
- Video is not available while driving.
(Because of traffic regulations, video is only available while the vehicle is stopped.)



Switching to Menu display or Full Screen Display

Position	Description
Screen	Press the screen.
Controller	Push the controller up or down on full screen display mode.

! Note

Press [MENU] > [Full display] or wait 5 seconds to display full screen mode.

USB Operation

Pause

You can pause the playing file.
For more details, refer to "Pause" on Page 45.

Skip

You can play the previous or next file.
For more details, refer to "Skip" on Page 45.

Search

You can search for the file currently playing quickly.
For more details, refer to "Search" on Page 46.

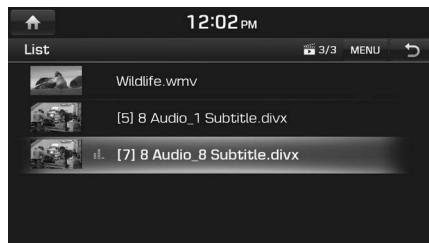
Seek

You can play the file directly by searching for the desired file.
For more details, refer to "Seek" on Page 47.

List

You can play the desired file by searching the file list included in USB.

1. Press [List] or press [MENU] > [List].



2. Press the desired file.

- Press [MENU] > [Now playing] to move to the current playing screen.
- Press [MENU] > [Copy to Jukebox] to copy the desired files to Jukebox.

Shuffle

All files can be played randomly.
For more details, refer to "Shuffle" on Page 48.

USB Operation

Repeat

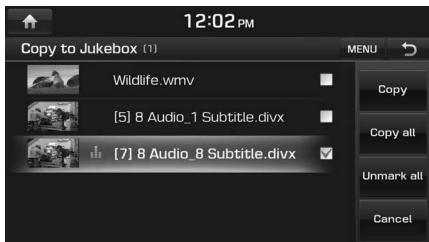
The current playing file is played repeatedly.

For more details, refer to "Repeat" on Page 66.

Copying the USB video file to Jukebox

You can copy the desired files to Jukebox.

1. Press [MENU] > [Copy to Jukebox].



2. Select the desired file, then press [Copy].

- [Copy]: Copies the selected file.
- [Copy all]: Copies all the files.
- [Unmark all]: Unmarks all the files.
- [Cancel]: Cancels the copy function.

Caption settings

You can set the caption.

For more details, refer to "Caption settings" on Page 68.

Voice settings

You can set the voice.

For more details, refer to "Voice settings" on Page 69.

DivX® VOD

You must register your device to play DivX® protected videos.

For more details, refer to "DivX® VOD" on Page 69.

USB Operation

Display settings

1. Press [MENU] > [Display settings].
2. For more details, refer to "Display" on Page 146.

Sound settings

1. Press [MENU] > [Sound settings].
2. For more details, refer to "Sound" on Page 143.

Viewing USB image

You can play image files saved in a USB memory device.
Connect a USB device to the USB port and playback starts automatically.

! Note

To play USB Image while a different source is playing, press [HOME] > [Media] > [USB image], [Front USB image] or [Rear USB image].

! Note

Press [MENU] > [Full display] or wait 5 seconds to display full screen mode.

Switching to Menu display or Full Screen Display

Position	Description
Screen	Press the screen.
Controller	Push the controller up or down on full screen display mode.

Skip

You can view the previous or next image.

For more details, refer to "Skip" on Page 70.

Zoom in/out

Turn the controller left or right.

For more details, refer to "Zoom in/out" on Page 71.

USB Operation

Slideshow

You can set the slideshow.

For more details, refer to "Slideshow" on Page 71.

List

You can view the desired image by searching the image list included in USB.

For more details, refer to "List" on Page 71.

Slideshow settings

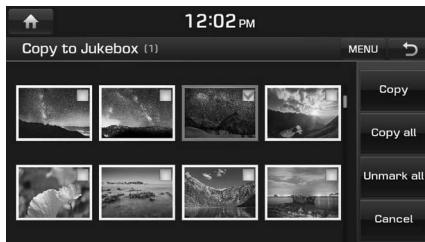
You can set the slideshow interval. The slideshow is played according to the time interval.

For more details, refer to "Slideshow settings" on Page 72.

Copying the USB image file to Jukebox

You can copy the desired files to Jukebox.

1. Press [MENU] > [Copy to Jukebox].



2. Select the desired file, then press [Copy].
 - [Copy]: Copies the selected file.
 - [Copy all]: Copies all the files.

- [Unmark all]: Unmarks all the files.

- [Cancel]: Cancels the copy function.

Display settings

1. Press [MENU] > [Display settings].
2. For more details, refer to "Display" on Page 146.

iPod Operation

Playing iPod

1. Use iPod exclusive cable to connect iPod to USB connector.
2. Press [Home] > [Media] > [iPod], [iPod (Front)] or [iPod (Rear)].
It runs iPod mode.

Pause

You can pause the playing file. For more details, refer to "Pause" on Page 45.

Skip

You can play the previous or next file. For more details, refer to "Skip" on Page 45.

Search

You can search for the file currently playing quickly. For more details, refer to "Search" on Page 46.

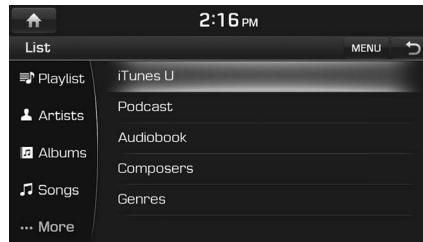
Seek

You can play the file directly by searching for the desired file. For more details, refer to "Seek" on Page 47.

List

You can play the desired file by searching the file list included in iPod.

1. Press [List] or press [MENU] > [List].



2. Press the desired file.

- Press [MENU] > [Now playing] to move to the current playing screen.
- Press [MENU] > [Edit category] to edit the

iPod Operation

category, then press the desired category. After moving to the desired category by turning the controller left or right, press the controller.

Shuffle

All files can be played randomly.

For more details, refer to "Shuffle" on Page 48.

Repeat

The current playing file is played repeatedly.

1. Press [MENU] > [Repeat].



2. Press the desired item.
 - [Repeat all]: Repeats all files.
 - [Repeat one]: Repeats the current file.

! Note

You can change the Repeat function by pressing [/] on the playing screen.

: Repeat all, : Repeat one

Scan

This function scans the beginning of each file for 10 seconds. For more details, refer to Audio CD operation of "Scan" on Page 49.

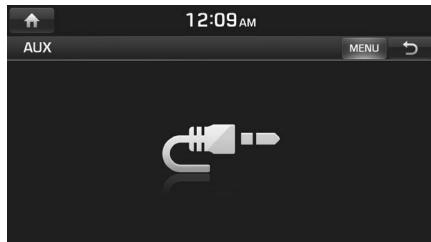
Sound settings

1. Press [MENU] > [Sound settings].
2. For more details, refer to "Sound" on Page 143.

Auxiliary Device Operation

Playing an AUX source

1. Connect an auxiliary device to the AUX terminal.

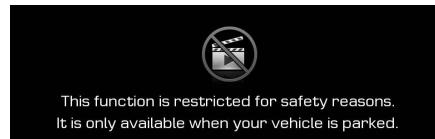


2. Play the auxiliary device.

! Note

- Some auxiliary devices that do not have the video source may not produce output to the video screen.
- If you want to play the auxiliary device when playing other source, press [HOME] > [Media] > [AUX].

- Video is not available while driving.
(Because of traffic regulations, video is only available while the vehicle is stopped.)



Switching to Menu display or Full Screen Display during video playback

Position	Description
Screen	Press the screen.
Controller	Push the controller up or down on full screen display mode.

! Note

Press [MENU] > [Full display] or wait 5 seconds to display full screen mode.

Auxiliary Device Operation

Display settings

1. Press [MENU] > [Display settings] on the menu display mode during video playback.
2. For more details, refer to "Display" on Page 146.

Sound settings

1. Press [MENU] > [Sound settings].
2. For more details, refer to "Sound" on Page 143.

Bluetooth Audio

Playing Bluetooth audio

Before playing the Bluetooth audio

- Music saved in the mobile phone can be played in the car through Bluetooth audio streaming.
- Bluetooth audio can be played only when a Bluetooth phone has been connected. To play Bluetooth audio, connect the Bluetooth phone to the car system. For more information on connecting Bluetooth, please refer to user's manual [Pairing and

connecting the unit and a Bluetooth phone] on Page 126.

- The audio streaming function may not be supported in some mobile phones. Only one function can be used at a time between the Bluetooth handsfree or Bluetooth audio function. For example, if you convert to the Bluetooth handsfree while playing Bluetooth audio, the music is discontinued.

Starting the Bluetooth audio

1. Press [HOME] > [Media].
2. Press [Bluetooth Audio].
The Bluetooth audio screen is displayed.



Pause

Press [**▶||**] on screen or with the controller.

Press [**▶||**] on screen or with the controller to play it again.

Bluetooth Audio

! Note

This feature may not be supported on some Bluetooth devices.

Skip

You can play the previous or next file.

For more details, refer to "Skip" on Page 45.

! Note

This feature may not be supported on some Bluetooth devices.

Sound settings

1. Press [MENU] > [Sound settings].
2. For more details, refer to "Sound" on Page 143.

Getting Started with Navigation

Precautions for safe driving

Please observe and comply with local traffic rules and regulations.

- For your safety, some features cannot be operated while driving for your safety. Features that cannot be operated will be disabled.
- The route displayed for destination guidance is a reference and the route guidance will take you to the vicinity of your destination. The highlighted route is not always; the shortest distance, the least congested, and in some cases might, not be the fastest route.

- Road, name, and POI information may not always been completely updated. Some places may not include up to date information.
- The car position mark does not always indicate your exact location. This system uses GPS information, various sensors, and road map data to display the current position. However, errors in displaying your location may occur if the satellite is transmitting inaccurate signals or two or less satellite signals can be received. Errors that occur in such conditions cannot be corrected.
- The position of the vehicle within the navigation may differ from your actual location depending on various reasons, including the satellite transmission state, vehicle state (driving location and conditions), etc. Additionally, the car position mark may differ from the actual position if the map data is different from the actual road landscape, such as changes due to the construction of new roads. If such differences occur, driving for a short period of time will automatically correct the position of the vehicle through map matching or GPS information.

Getting Started with Navigation

What is GPS?

The Global Positioning System (GPS) is a satellite-based navigation system made up of a network of 24 satellites placed into orbit by the U.S. Department of Defense.

GPS was originally intended for military applications, but in the 1980s, the government made the system available for civilian use.

GPS works in any weather conditions, anywhere in the world, 24 hours a day.

There are no subscription fees or setup charges to use GPS.

About satellite signals

Your unit must acquire satellite signals to operate. If you are indoors, near tall buildings or trees, or in a parking garage, the unit cannot acquire satellite signal.

Acquiring satellite signals

Before the unit can determine your current position and navigate a route, you must do the following steps:

1. Go outside to an area free from tall obstructions.
2. Turn on the unit.

Acquiring satellite signals can take a few minutes.

Getting Started with Navigation

Operating Navigation Screen

The navigation system displays various information on the screen.

Map screen



1. Clock display

Displays current time.

2. button

Press to move to [HOME] screen.

3. Map display

- Displays the direction of the map.

Press , or .

- (Heading Up (2D)): Displays always shows the vehicle's direction

as proceeding towards the top of the screen.

- (Bird view (3D)): The map displays always the basic outline and details of the surrounding roads and general area.

Getting Started with Navigation

-  (North Up (2D)): Displays always has north at the top of screen.

GPS signal state display

Displays the state of GPS signal reception.

- Active - color : GPS reception is satisfactory.
- Inactive - gray : GPS reception is unsatisfactory.

4. Navigation voice guidance on/off



Turns the navigation voice guidance On/Off. Press  or .

5. + button

Zoom in the map. Press  repeatedly.

Getting Started with Navigation



6. Map scale display

- Displays the current map scale.
- Sets the zoom level automatically to the guidance. For more details, refer to "Map scale" on Page 95.

7. [] button

Zoom out the map. Press [] repeatedly.

8. [MENU] button

Moves to quick menu screen. For more details, refer to "General operations of quick menu" on Page 103.

9. Route guidance

Displays the route guidance to the destination when a route is set.

10. Vehicle position

Displays current vehicle position and direction.

Getting Started with Navigation

11. Current position and Destination

Displays the Current position and Destination. Press to check the destination information.

12. Remaining distance / Remaining time

Displays the distance to the destination and the estimated time of arrival. Press to check the destination information.

13. Cancel Route

Cancels the route guidance to the destination.

14. Route Guidance Mode

Switches route guidance mode between preliminary guidance mode, highway mode, and turn by turn mode.

15. [Route Menu] button

Changes the route conditions when a route is set. For more details, refer to "Changing the route conditions" on Page 95.

Getting Started with Navigation



16. [Destination] button

Moves to [Destination] menu.

17. [Nearby Search] button

Finds a POI (Point Of Interest) near current position, destination or route. For more details, refer to "Searching for POI" on Page 96.

18. [Add Camera] button

Adds the current location of the camera. For more details, refer to "Adding the position or camera to [My Places] menu" on Page 100.

19. [Add to My Places] button

Adds frequently used address to [My Places] menu. For more details, refer to "Adding the position or camera to [My Places] menu" on Page 100.

Getting Started with Navigation

20. [Volume] button

Adjusts the navigation volume. For more details, refer to "Navigation volume" on Page 101.

21. [Map Setting] button

Moves to [Map Setting] menu. For more details, refer to "Map Setting" on Page 101.

22. [Navi Menu] button

Moves to [Navi Menu] screen. For more details, refer to "General operations of [Navi] menu" on Page 104.

Zoom in/out

Press [+] or [-] to set the zoom level on the map screen.



Zoom bar

! Note

- You can set the zoom level by directly pressing the zoom bar on the screen.
- Press [+] or [-] for over 1 second. The zoom will continuously change.

- If the zoom range limit is reached, the [+] / [-] button will be disabled.
- If you want to set the auto zoom, press **100m** **Auto**.

Getting Started with Navigation

Map scale

This function sets the zoom level automatically according to the road class.

Press [200m Auto] on the map screen.



Name	Description
200m Auto Scale Fix (inactive - "Auto")	Fix the displayed scale.

200m Auto Scale (active - "Auto")	Change the map scale automatically depending on the road class.
--------------------------------------	---

Changing the route conditions

You can set new route by searching for various route option when a route is set.

Cancel Route

You can cancel the route guidance to the destination. For more details, refer to "Canceling Route" on Page 114.

Reroute (Current Option)

You can check the entire route between your current location and your destination. For more details, refer to "Route Overview" on Page 118.

Route Options

You can modify the route conditions or confirm the route information. Set the appropriate route condition according to your purpose.

For more details, refer to "Route Options" on Page 114.

Edit Waypoint

The Edit Waypoint allows you to travel through the searched

Getting Started with Navigation

routes by editing the current route. For more details, refer to "Editing Waypoint" on Page 115.

Route Overview

You can check the entire route between your current location and your destination. For more details, refer to "Route Overview" on Page 118.

Route Info

This allows you to check the route information and search for new route by avoiding the selected street(s). You can select the desired item to check the map information. For more details, refer to "Route Info" on Page 118.

Route Preview

This allows you to check the detailed turn-by-turn list. For more details, refer to "Route Preview" on Page 119.

Multiple Route

"Multiple Route" shows the options of "Recommended" route and "Shortest" route. However, the "Shortest" route in most cases does not have traffic information, so the time to destination for the "Shortest" route may not always be accurate.

Searching for POI

POI search

You can find a POI (Point Of Interest) near current position, destination, route, scroll mark or city centre.

1. Press [MENU] > [Nearby Search].



- Press [Search by POI] to search for all the categories, then select the desired POI.

Getting Started with Navigation

2. Select one of POI category.



- Press [MENU] > [By Name] to arrange the list in name order.
- Press [MENU] > [By Distance] to arrange the list in distance order.
- Press [MENU] > [By Category] to arrange the list in category order.

3. Press the desired position.

- [Current]: Search for

POI's around the current position.

- [Destination]: Search for POI's around the destination when a route is set.
- [Route]: Search for POI's along route when a route is set.
- [Scroll mark]: Search for POI's around the current cursor when the map scrolled.
- [City]: Search for POI's around the city selected.

4. Press the desired item.



5. Press [Set as Destination].

When a route is set, press [Change Destination].

- If you want to add a waypoint when a route is set, press [Add Waypoint]. For more details, refer to "Adding waypoints" on Page 115.
- If you want to add the position to [My Places] menu, press [Add to My

Getting Started with Navigation

Places]. For more details, refer to “Adding the position or camera to [My Places] menu” on Page 100.

- If you want to find a POI (Point Of Interest) near current position, destination, route, scroll mark or city centre, press [POI]. For more details, refer to “Searching for POI” on Page 96.
- If you want to make a call, press [Call]. For more details, refer to “Making a call to POI” on Page 102.

! Note

When you set the [Multiple Route], follow steps 6.

6. Press the desired route.



- [Recommended]: Calculates the route based on the fastest arrival time.
- [Shortest]: Calculates the route based on the shortest distance.

7. Press [Start Guidance].



- Press [Route Options] to set the route option. For more details, refer to “Route Options” on Page 114.
- Press [Route Info] to check the route information. For more details, refer to “Route Info” on Page 118.
- Press [Route Preview] to scan the route. For more details, refer to “Route

Getting Started with Navigation

Preview" on Page 119.

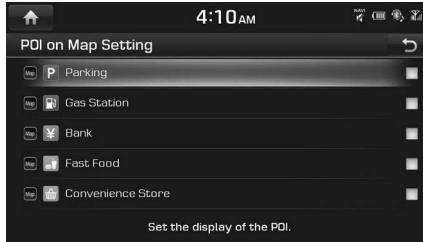
- Press [Edit Waypoint] to edit the route. For more details, refer to "Editing Waypoint" on Page 115.

! Note

The destination is saved in the [Previous Points] menu automatically. (Page 108)

Map Display Setting

1. Press [MENU] > [Nearby Search] > [POI on Map Setting].



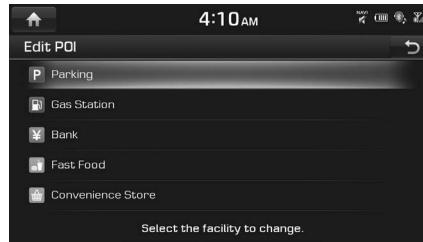
2. Mark or unmark the desired POI.

The map icon is displayed on the right of POI menu screen.

Editing POI category

You can edit the POI category displayed on POI menu screen.

1. Press [MENU] > [Nearby Search] > [Edit POI category].



2. Select the POI to edit.

Getting Started with Navigation



3. Select the the desired POI.

The selected POI appears on POI menu screen.

Adding the position or camera to [My Places] menu

You can add the current position or camera to [My Places] menu.

1. Press [MENU] > [Add to My Places] or [Add Camera].



2. The current position or camera is added to [My Places] menu.

! Note

Press [NAV] > [Destination] > [My Places] > [My Places] or [Camera] to check the added position.

Scrolling map

1. Press and drag the map area on the screen. The selected point will be centred on the screen and the scroll mark will be displayed.

Information about the marked point and straight line distance from the current position will be displayed at the centre of the screen.



Getting Started with Navigation

2. Press [MENU].
3. Follow steps 5~7 of the "POI search" on Page 96.

! Note

If a map area on the map screen is pressed, the map will continuously scroll in the corresponding direction until the pressing is released.

Navigation volume

Press [MENU] > [Volume] to adjust the volume.



- [Volume Control]: Adjusts the navigation volume.
- [Mute]: Sets the sound to mute.
- [Volume Ratio]: Sets the volume control to [Navigation Priority] or [Equal Priority].

Map Setting

Press [MENU] > [Map Setting] to set the screen.



- Press [Auto Scale] to set the map scale automatically depending on the road class.
- Press [3D Building On] to set whether to display the 3D map screen or not.
- [Right View Mode]:
 - Press [POI on Map Setting] to display the map screen.

Getting Started with Navigation

- Press [Show TBT List] to display the turn-by-turn list.
- [Map View]: Sets the map screen to [Heading Up], [3D View], or [North Up].
- [Another Setting]: Changes all the navigation settings. For more details, refer to "Navigation" on Page 140.

Making a call to POI

After searching for a POI, the POI phone number information can be used to make a call to the POI facility.

1. Use the various search methods, such as the map scroll function, POI search function, and destination search function to search for a POI.



2. Press [Call] on the menu screen.

3. Bluetooth is used to make a call to the POI facility.

! Note

- Making a call is not possible if there is no telephone information for a POI or if there is no mobile phone connected through Bluetooth.
- For more information of mobile phone authentication through Bluetooth or detailed information on conducting search, refer to [Pairing and connecting the unit and a Bluetooth phone], Page 126.

Getting Started with Navigation

Guidance to Previous Points

When starting the navigation, the "Previous Destinations" pop-up appears for about 10 seconds. The pop-up is displayed only when the navigation is started without the route planned.

Press one of the list.



! Note

Press [HOME] > [Settings] > [Navigation] > [Guidance] > [Show Previous Points] to set the previous points view.

General operations of quick menu

1. Press [MENU] on the map screen.

Or press [MENU] on the remote control for head unit on the map screen.



2. Press the preferred setting method.

- [Route Menu]: Changes the route conditions when a route is set. For more details, refer to "Changing the route conditions" on Page 95.
- [Destination]: Finds a destination by using the [Destination] menu. (Pages 105~113)
- [Nearby Search]: Finds a destination by searching for POI. (Page 96)
- [Add Camera]: Adds the current location of the camera. (Page 100)

Getting Started with Navigation

- [Add to My Places]: Adds the position to [My Places] menu. (Page 100)
- [Volume]: Adjusts the navigation volume. (Page 101)
- [Map Setting]: Sets items related with navigation settings. (Page 101)
- [Navi Menu]: Moves to the [Navi Menu] screen. (Page 104)

General operations of [Navi Menu]

1. Press [NAV] on the remote control for head unit.



2. Press the preferred setting method.

- [Destination]: Finds a destination by using the [Destination] menu. (Pages 105~113)
- [Route]: Changes the route conditions by using

the [Route] menu when the route is activated. (Page 114)

- [Setting]: Sets items related with navigation. (Page 140)

Searching for Destination of Navigation

POI Name

You can find the destination by POI name.

1. Press [MENU] or [NAV] > [Destination] > [POI Name].



- Press [北京] to select the desired province. "北京" is an example of screen.
- Select [Input Option] to select the input option of the keyboard.
- Press [?] to set the desired keyboard.

2. Input the desired facility name and press [?].



- Press [MENU] > [By Distance], [By Name] or [By Category] to arrange the list in distance, name or category order.
- Press [MENU] > [City Filter] or [Select Category] to select the desired city or category.

3. Press the desired POI.



4. Press [Set as Destination].

When a route is set, press [Change Destination].

- If you want to add a waypoint when a route is set, press [Add Waypoint]. For more details, refer to "Adding waypoints" on Page 115.
- If you want to add the position to [My Places] menu, press [Add to My

Searching for Destination of Navigation

Places]. For more details, refer to “Adding the position or camera to [My Places] menu” on Page 100.

- If you want to find a POI (Point Of Interest) near current position, destination, route, scroll mark or city centre, press [POI]. For more details, refer to “Searching for POI” on Page 96.
- If you want to make a call, press [Call]. For more details, refer to “Making a call to POI” on Page 102.

! Note

When you set the [Multiple Route], follow steps 5.

5. Press the desired route.



- [Recommended]: Calculates the route based on the fastest arrival time.
- [Shortest]: Calculates the route based on the shortest distance.

6. Press [Start Guidance].



- Press [Route Options] to set the route option. For more details, refer to “Route Options” on Page 114.
- Press [Route Info] to check the route information. For more details, refer to “Route Info” on Page 118.
- Press [Route Preview] to scan the route. For more details, refer to “Route Preview” on Page 119.

Searching for Destination of Navigation

- Press [Edit Waypoint] to edit the route. For more details, refer to "Editing Waypoint" on Page 115.

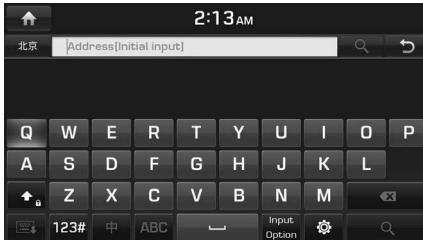
! Note

The destination is saved in the [Previous Points] menu automatically. (Page 108)

Address Search

You can find the destination by searching for an address.

1. Press [MENU] or [NAV] > [Destination] > [Address].



2. Enter the name of the province, Street, or house number corresponding to the desired destination.
3. Follow steps 4-6 of the "POI Name" on Page 105.

- Press [北京] to select the desired province. "北京" is an example of screen.
- Select [Input Option] to select the input option of the keyboard.
- Press [⚙️] to set the desired keyboard.

Searching for Destination of Navigation

Previous Points

You can find the destination to a location that you have previously set as the destination.

1. Press [MENU] or [NAV] > [Destination] > [Previous Points].



- [Destinations]: Displays previous destination places.
- [Start Points]: Displays previous departing places.

- [Searches]: Displays previously searched places.

- [All]: Displays all previous destinations, departing places, and searched places.

- Press [MENU] > [By Date], [By Name] or [By Category] to arrange the list in date, name or category order.

- Press [MENU] > [Delete] to select and delete items from various entries all at once.

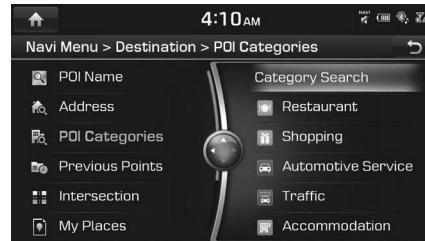
2. Press the preferred previous point from the list.

3. Follow steps 4-6 of the "POI Name" on Page 105.

POI

You can find a destination from various categories.

1. Press [NAV] > [Destination] > [POI Categories].



If you want to search for the POI category by name, press [Category Search]. Input the name, then press [🔍] to finish.

2. Select the desired item.
3. Follow steps 4-6 of the "POI Name" on Page 105.

Searching for Destination of Navigation

Intersection

You can find the destination by searching for the intersection.

1. Press [NAV] > [Destination] > [Intersection].



- Press [北京] to select the desired province. “北京” is an example of screen.
- Select [Input Option] to select the input option of the keyboard.

- Press [⚙️] to set the desired keyboard.
2. Enter the name of the first street or second street corresponding to the desired destination, then press [🔍].
 3. Follow steps 4-6 of the "POI Name" on Page 105.

My Places

You can find the destination to a location saved in the [My Places] menu. To utilize this function more effectively, destinations that you often travel to should be saved in advance.

First of all, store in the [My Places] menu through destination search function.

1. Press [NAV] > [Destination] > [My Places].



Searching for Destination of Navigation

- Press [MENU] > [By Name], [By Date] or [By Category] to arrange the list in name, date or category order.
 - Press [MENU] > [Add] to add a location to [My Places] menu.
 - Press [MENU] > [Delete] to select and delete items from various entries all at once.
 - Press [MENU] > [Edit] to edit items from various entries all at once.
2. Press the desired item from the list.
3. Follow steps 4-6 of the "POI Name" on Page 105.

Adding to [My Places] menu

1. Press [MENU] > [Add] from the [My Places] list.

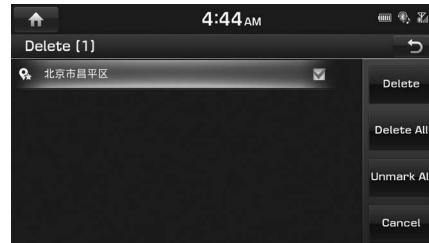


2. Select a desired location through destination search function.



Deleting My Places

1. Press [MENU] > [Delete] from the [My Places] list.



2. Select the desired item, then press [Delete].
 - [Delete]: Deletes the selected items.
 - [Delete All]: Deletes all items.
 - [Unmark All]: Unmarks all items.
 - [Cancel]: Exits delete screen.

Searching for Destination of Navigation

Editing My Places

1. Press [MENU] > [Edit] from the [My Places] list.
2. Select the item to edit.



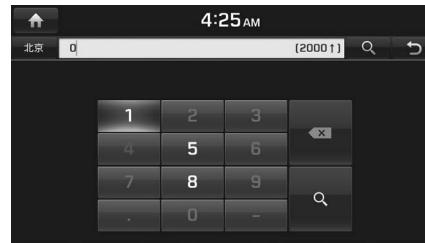
3. Edit the desired item.
 - [Name]: Change the name.
 - [Phone No.]: Enter the phone number.
 - [Symbol]: Set the symbol displayed on the map screen.

- [Map Name Display]: Set the name displayed on the map screen to On/Off.
- [Special]: Change the type saved in [My Places] menu.
- [Map Symbol Display]: Set the symbol displayed on the map screen to On/Off.
- [Sound notification]: Set the sound notification to On/Off.

Phone Number

If you know the phone number of the destination, you may use this function to find the destination.

1. Press [NAV] > [Destination] > [Phone Number].



- Press [北京] to select the desired province. "北京" is an example of screen.
2. Input the desired phone number and press [].

Searching for Destination of Navigation

3. Press the desired item.
4. Follow steps 4-6 of the "POI Name" on Page 105.

Emergency

You can find a destination by searching for a Police Station, Hospital, or Hyundai Dealership in emergency situations.

1. Press [NAV] > [Destination] > [Emergency] > [Police Station], [Hospital], or [Hyundai Dealership].



For example: Police Station

- Press [MENU] > [By Distance] or [By Name] to arrange the list in distance or name order.
- 2. Press the preferred item from the list.
- 3. Follow steps 4-6 of the "POI Name" on Page 105.

Local Search

Please join in Blue Link service to use Local Search.

1. Press [NAV] > [Destination] > [Local Search].



2. Enter the desired keywords and press [].
3. Select the desired item.
4. Follow steps 4-6 of the "POI Name" on Page 105.

Searching for Destination of Navigation

Home, Office, Special (1~2)

If your home location, office location, and special locations have been already saved in the [My Places] menu, it can be easily retrieved to set the route to your home location, office location and special locations.

First of all, store in the [My Places] menu through destination search function.

Registering Home, Office, or Special (1~2)

1. Press [MENU] > [Destination] > [Add Home], [Add Office], [Add Special1], or [Add Special2].

2. Select the desired position through destination search function.
3. Press [OK] when the destination search is complete. It is saved in the [My Places] menu automatically.

! Note

Press [NAV] > [Destination] > [My Places] > [Special] on the map screen to check items saved in the [My Places] menu.

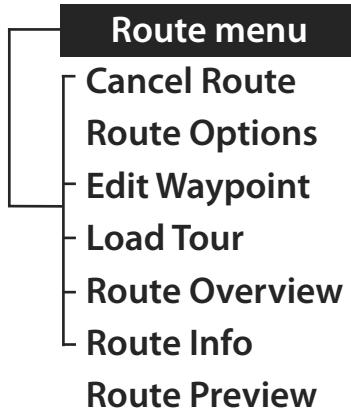
Finding your Home, Office, or Special (1~2)

1. Press [MENU] > [Destination] > [Home], [Office], [Special1], or [Special2].
2. Follow steps 4-6 of the "POI Name" on Page 105.

Using the [Route] Menu

[Route] menu overview

This allows you to change the route conditions by using the route menu when the route is activated.



Canceling Route

If you want to stop the route guidance when a route is active, press [MENU] > [Route Menu] > [Cancel Route] or press [NAV] > [Route] > [Cancel Route].

Route Options

You can modify the route conditions or confirm the route information. Set the appropriate route condition according to your purpose.

1. Press [NAV] or [MENU] > [Route] > [Route Options].



2. Set the desired options.

- [Recommended]: Calculates the route based on the fastest arrival time.
- [Shortest]: Calculates the route based on the shortest distance.
- [Minimize Freeway]: Searches for a route that minimizes or avoids the freeway.

Using the [Route] Menu

- [Minimize Tollroad]: Searches for a route that minimizes or avoids toll roads.
 - [Minimize Ferry]: Searches for a route that minimizes or avoids the use of ferries.
3. Press [Rerouting].

! Note

The items set by user may not be reflected depending on condition.

Editing Waypoint

This feature allows you to travel through the searched routes by editing the current route. Waypoints can be added/deleted/edited and the order can be changed.

Adding waypoints

1. Press [NAV] > [Route] > [Edit Waypoint].



2. Press [Add Waypoint].
3. Add the waypoint through destination search function.



4. If you want to add an waypoint, follow steps 2~3.
5. Press [Rerouting] > [Start Guidance].

Reordering Route

1. Press [NAV] > [Route] > [Edit Waypoint].
2. Press the desired item from the list.

Using the [Route] Menu



3. Press [Change List order].
 - Select [Map View] to see the map information.
 - Press [Delete] to delete the item.



4. Move the selected item up and down. Or Drag it to the desired position.

5. Press [Rerouting] > [Start Guidance].

Saving the route to the [Load Tour] menu

1. Press [NAV] > [Route] > [Edit Waypoint].
2. Press [Save Tour].
 - Select [Input Option] to select the input option of the keyboard.
 - Press [⚙] to set the desired keyboard.
3. Input the route name and press [➡].
It is saved in the [Load Tour] menu automatically.

! Note

Press [NAV] > [Route] > [Load Tour] to check the saved route.

Using the [Route] Menu

Load Tour

If the route have been already saved in the [Load Tour] menu, it can be easily retrieved to set the route.

To save the route, refer to the “Saving the route to the [Load Tour] menu” on Page 117.

1. Press [NAV] > [Route] > [Load Tour].



- Press [MENU] > [By Name] or [By Date] to arrange the list in name or date order.

2. Select the desired item.



3. Press [Rerouting] > [Start Guidance].

Deleting tour

1. Press [NAV] > [Route] > [Load Tour].
2. Press [MENU] > [Delete].



3. Select the desired item, then press [Delete].

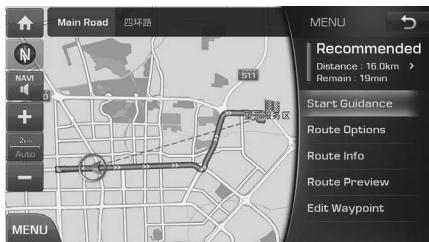
- [Delete]: Deletes the selected items.
- [Delete All]: Deletes all items.
- [Unmark All]: Unmarks all items.
- [Cancel]: Cancels the delete function.

Using the [Route] Menu

Route Overview

You can check the entire route between your current location and your destination.

1. Press [NAV] > [Route] > [Route Overview].



2. Press the desired item.
 - [Start Guidance]: Starts the route guidance.
 - Press [Route Options] to set the route option. For more details, refer to "Route Options" on Page 114.

"Route Options" on Page 114.

- Press [Route Info] to check the route information. For more details, refer to "Route Info" on Page 118.
- Press [Route Preview] to scan the route. For more details, refer to "Route Preview" on Page 119.
- Press [Edit Waypoint] to edit the route. For more details, refer to "Editing Waypoint" on Page 115.

Route Info

This allows you to check the route information and search for new route by avoiding the selected street(s).

1. Press [NAV] > [Route] > [Route Info].



- Select the desired item to see the map information. (For example: **安定门东大街** or **1/和平里东街/和平里**)

Using the [Route] Menu

2. Press [Avoid] to select the street(s) that you want to avoid.
3. Press [Recalculate] to plan new route.

Route Preview

This allows you to check the detailed turn-by-turn list.

1. Press [NAV] > [Route] > [Route Preview].

- : Move to the destination location.
- : Quick move to the specific position.
- : Close the route scan.



2. Press the desired item.

- : Move to the departure location.
- : Move to the previous position.
- : Move to the next position.

Terms and Conditions for Users

Limit for Personal Use: Users shall use the map data for personal and non-commercial use according to the rights granted. They shall not operate a service providing businesses, share map data, or use it for other similar purposes. Personal use includes (i) searching the data and (ii) saving it to copy the data. In these cases, no part of expressed trademark information can be deleted and the data cannot be modified in any way. Copying the data is limited to the conditions specified in the following clauses. Except where mandated by law, no part of the data can be regenerated, copied, modified, reverse-analyzed, or reverse-engineered, and the data cannot be transferred or transmitted for any purpose.

Restrictions: Regardless of the above clause, unless the owner of map data explicitly authorize, users shall not use the data for communication devices, systems, or programs that (a) are installed in or connected to their vehicles, or connected to the car navigation to provide GPS, dispatch and driving route information, or car management and any similar services. In addition, users (b) shall not use the data in locating positions, mobile and wireless devices, computer equipment or previously mentioned machines and communication devices. Such devices include mobile phones, lap tops, tablets, Pagers, and PDA (Personal Digital Assistant).

Restriction of Warranty: The owner of map data shall guarantee for 90 days that (a) the data can be used in accordance with the accompanying instructions and that (b) the support service provided to users conforms the instructions of the corresponding material. Additionally, the owner of map data shall promise to solve future problems by providing technical assistance and making commercially reasonable efforts.

Compensation to Users: The owner of map data is responsible for compensating users (a) by providing a refund of the payment (if it is the case) or (b) by maintaining, repairing, or exchanging data. In such cases, the data cannot fall under the restriction of warranty clause of the map data owner and involves returning the data to the owner and providing a copy of the receipt. The method of compensation is solely decided by the map data owner. Non-use of the data due to unforeseeable accidents, abuse and/or misuse shall void the effect of the warranty. The warranty period for data exchange period is either the remaining time on the initial warranty or 30 days, whichever is the longer. This compensation and product support services shall be provided only to those users with proof of purchase supplied by qualifying international stores.

Exclusion of Warranty: Within the extent of applicable laws, the owner and licensors (including licensors and operating companies) cannot provide explicit and implicit warranty of any quality, performance, merchantability, specific usability, ownership or prohibition of infringement other than the restriction of warranty clause specified above. When a particular warranty is applied according to relevant regulations, the above restriction of warranty clause might not apply to users.

Limited Liability: Within the extent of applicable laws, the owner and licensors of map data (including licensors and operating companies) are not liable to users for the following cases. When the information is used and possessed to incur direct/indirect damage and when injury and damage lead to various claims for damages, summons, investigations, or prosecution, they are not liable for such claims for damages and cause and effect of summons, investigations, or prosecution. When users use or cannot use the information, when the information has certain defects, and when such violation of clauses and conditions result in profits, income, loss, reduction, or decrease of contracts, or other direct/indirect, incidental, particular, derivative damages, they are not liable for the ensuing loss due to lawsuits caused by contracts, invasion of rights or warranty. The owner or licensors of map data notify the possibility of such loss in advance. Under any circumstances, the liabilities of the owner or operating companies do not exceed the amount the user paid for the service or product. Particular warranty liabilities can be applicable under the relevant laws allowing an exception for the above restriction of warranty clause for users.

Expert Management: Users shall abide by the relevant export regulations and shall not export a part of the data provided to them or products utilizing it into any areas not authorized or approved by the laws.

IP Protection: The ownership of the data belongs to NAV2 and operating companies under the protection of applicable copyright, other intellectual property laws and treaties. The data is supplied only with the authorization to use (not to sell).

Finality of Agreement: These terms and conditions constitute a complete agreement between the owner and licensors (including licensors and operating companies) of map data and users which they agreed upon. This supersedes all other written and/or oral agreements previously entered between the parties.

Applicable Regulations: These terms and conditions are subject to the laws of the People's Republic of China and are not effective in the following cases. (i) When the clauses are legally contradictory (ii) When the United Nations Convention on Contracts for the International Sale of Goods (CISG) applies. Users shall agree to be subject to the jurisdiction of Chinese judiciary agencies for conflicts, damage compensation, and claims resulting from the data supplied through this agreement.

Navigation Map Update

Please visit your local dealer to order a map update.

Bluetooth® Wireless Technology

Before Using the Bluetooth Handsfree

What is Bluetooth Wireless Technology?

- Bluetooth Wireless Technology refers to a short-distance wireless networking technology which uses a 2.45GHz frequency to connect various devices within a certain distance.
- Supported within PCs, external devices, Bluetooth phones, PDAs, various electronic devices, and automotive environments, Bluetooth Wireless Technology to be transmitted at high speeds

without having to use a connector cable.

- Bluetooth Handsfree refers to a device which allows the user to conveniently make phone calls with Bluetooth mobile phones through the system.
- The Bluetooth Handsfree feature may not be supported in some mobile phones.

Precautions for Safe Driving

- Bluetooth is a feature that enables drivers to use handsfree while driving. Connecting the head unit with a Bluetooth phone allows the user to
- conveniently make calls, receive calls, and manage the phone book. Before using Bluetooth Wireless Technology, carefully read the contents of this user's manual.
- Excessive use or operations while driving may lead to negligent driving practices and be the cause of accidents. Do not operate the device excessively while driving.
- Viewing the screen for prolonged periods of time is dangerous and may lead to accidents. When driving, view the screen only for short periods of time.

Bluetooth® Wireless Technology

Cautions upon Connecting Bluetooth Phone

- Before connecting the head unit with the mobile phone, check to see that the mobile phone supports Bluetooth features.
- If you do not want automatic connection with your Bluetooth device, turn the Bluetooth feature off of the Bluetooth device.
- Park the vehicle when pairing the head unit with the mobile phone.
- Some Bluetooth features may occasionally not

operate properly depending on the firmware version of your mobile phone. If such features can be operated after receiving a S/W upgrade from your mobile phone manufacturer, unpair all devices and pair again before use.

- When pairing and the head unit with the iPhone for the first time while your iPhone is connected to the USB port with iPhone cable, error message may be displayed on your iPhone.

Pairing and connecting the unit and a Bluetooth phone

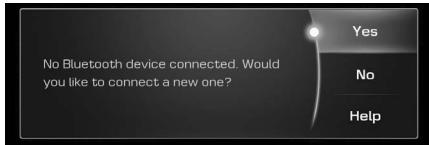
To use the Bluetooth feature, make sure the Bluetooth on your phone is turned on. Refer to your phone's user guide.

When no phones have been paired

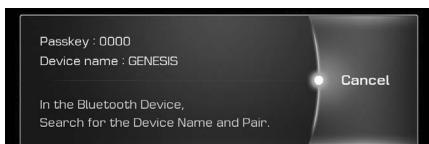
1. Press "PHONE" on the remote control for head unit or "C" on the steering wheel remote control.

Bluetooth® Wireless Technology

2. Press [Yes] to search for Bluetooth phones.

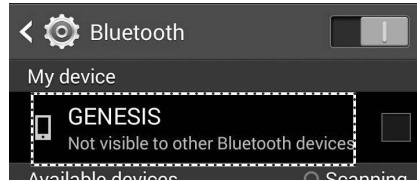


- [No]: Cancels Bluetooth connection.
- [Help]: Views the E-Manual related to pairing and connecting Bluetooth devices, and using Handsfree related features.

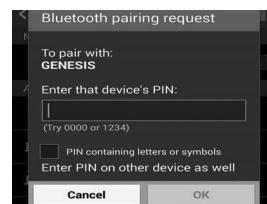


3. On your phone, initiate a

search for Bluetooth devices.
(The default device name is GENESIS.)

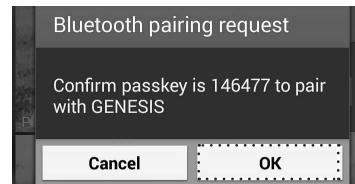


4. 1) If the SSP (Secure Simple Pairing) is not supported, input the passkey on your Bluetooth device.
(The default passkey is 0000.)



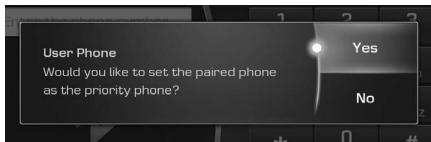
- 2) If the SSP (Secure Simple

Pairing) is supported, press [OK] on the pop-up screen of the your Bluetooth device.
(The pop-up screen may differ from the actual information of the Bluetooth device.)

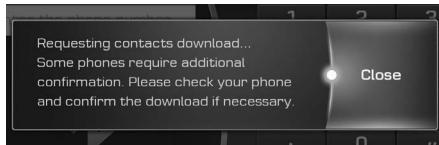


5. Press [Yes] to connect automatically to the unit and a Bluetooth phone preferentially after ignition switch is in ON position.

Bluetooth® Wireless Technology



When you approve in the mobile phone, the mobile phone contacts and the latest call list are downloaded.



6. When your phone is successfully connected, the phone screen is displayed on the screen. When the connection fails, a failure message is displayed on the screen.



<Phone screen>

Once Bluetooth connection is successful, the name of the connected mobile phone will become displayed on the phone screen and Bluetooth handsfree functions will operate.

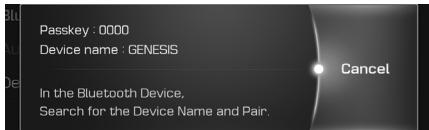
When a phone is already paired

1. Press [HOME] > [Settings] > [Bluetooth] > [Bluetooth Connection].

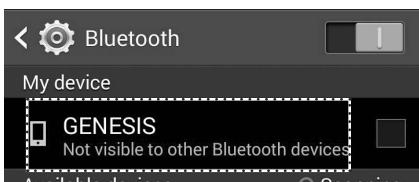


- 2) 1) Select the device you want to connect.
2) If there is no device you want to connect, press [New device].

Bluetooth® Wireless Technology



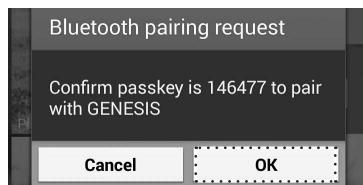
3. On your phone, initiate a search for Bluetooth devices. (The default device name is GENESIS.)



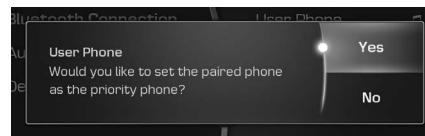
4. 1) If the SSP (Secure Simple Pairing) is not supported, input the passkey on your Bluetooth device. (The default passkey is 0000.)



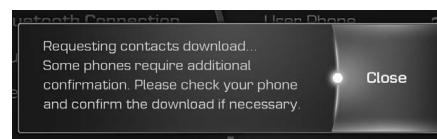
- 2) If the SSP (Secure Simple Pairing) is supported, press [OK] on the pop-up screen of the your Bluetooth device. (The pop-up screen may differ from the actual information of the Bluetooth device.)



5. Press [Yes] to connect automatically to the unit and a Bluetooth phone preferentially after ignition switch is in ON position.



When you approve in the mobile phone, the mobile phone contacts and the latest call list are downloaded.



6. When your phone is successfully connected, the

Bluetooth® Wireless Technology

Bluetooth settings screen is displayed on the screen. When the connection fails, a failure message is displayed on the screen.



<Bluetooth settings screen>

! Note

- For safety reasons, pairing a Bluetooth phone is not possible when the vehicle is in motion. Park the vehicle in a safe location

to pair a Bluetooth phone. It is possible to pair up to 5 mobile phones. In order to pair a new phone when there are already 5 mobile phones paired, you must first delete one of the previously paired phones.

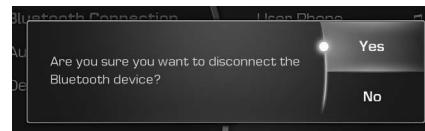
- Some functions may not be supported due to limited Bluetooth compatibility between the car system and mobile phone.
- When a Bluetooth device is connected, a new device cannot be paired. If you want to pair a new phone, first disconnect the connected Bluetooth device.

Disconnecting the connected phone

- Press [MENU] > [Connection settings] > [Bluetooth Connection] on the phone screen.



- Select the connected phone.



- Press [YES].

Bluetooth® Wireless Technology

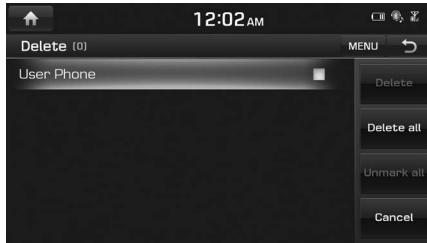
! Note

If you want to connect the disconnected phone again, select the disconnected phone.

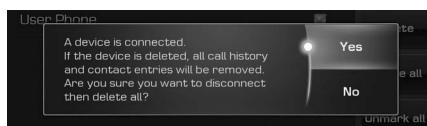
Deleting Bluetooth Devices

If you no longer need to use a phone, you can delete the Bluetooth devices. Note that deleting a Bluetooth device will delete all call history and contact entries.

1. Press [MENU] > [Connection settings].
2. Press [MENU] > [Delete] on the Bluetooth settings screen.



3. Select the phone you want to delete and press [Delete].
 - [Delete all]: Deletes all items.
 - [Unmark all]: Unmarks all items.
 - [Cancel]: Exits delete screen.
4. Press [Yes] on the pop-up screen.



Making a call by entering phone number

Connect your unit and Bluetooth phone before making a call.

1. Enter the phone number using the keypad on the phone screen.
2. Press on the phone screen or "C" on the steering wheel remote control.

! Note

If you press the wrong number, press to delete the inputted number one digit at a time.

Bluetooth® Wireless Technology

Making a call by redialing

Press and hold  on the phone screen or  on the steering wheel remote control.

! Note

Redialing is not possible when there is no dialed call history.

Making a call with speed dial numbers

Press and hold speed dial number using the keypad on the phone screen.

Only speed dial numbers already saved on the mobile phone can be used for speed

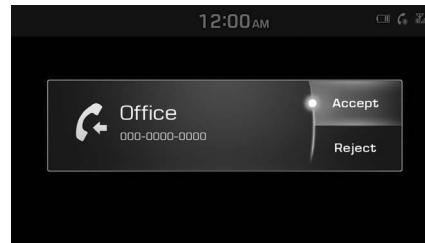
dial calls. Up to 2-digit speed dial numbers are supported.

! Note

For 2-digit speed dial numbers, press and hold the 2nd digit to make a call to the speed dial number.

Answering/Rejecting a call

1. If there is an incoming call, a popup message will appear.
2. Press [Accept] to answer the call.



To reject a call, select [Reject].

! Note

- If the Call-ID service is available, the caller's phone number is displayed.

Bluetooth® Wireless Technology

- If caller's phone number is saved in the phone book, the caller's name is displayed on the unit.
- Upon receiving a call, the [Reject] function may not be supported in some mobile phones.

Switching call to the mobile phone

1. If you want to switch the call to the mobile phone while talking on the car handsfree, press [Use priv.]. As shown below, the call is switched to the mobile phone.



2. If you want to switch the call to the car handsfree while talking on the

mobile phone, press [Use handsfree].

The call is switched to the car handsfree.

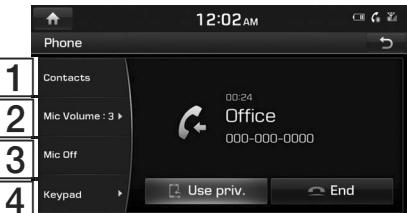
Ending a call

1. To end a call, press [End] on the phone screen or " " on the steering wheel remote control.
2. The call is ended.

Bluetooth® Wireless Technology

Using the menu during a phone call

When making a call, you can use the following menu items.



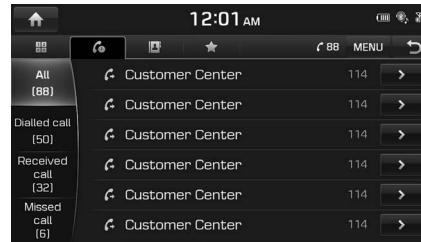
Position	Description
1 Contacts	Displays the Contacts list.

2	Mic Volume	Displays the Mic Volume settings. You can adjust the in-call volume that the other party hears (level 1 - 5).
3	Mic On/Off	Turns the Mic On/Off.
4	Keypad	Moves to a screen for entering ARS numbers.

Call history

Making a call from call history

1. Press [**6**] on the phone screen.



2. Press [All], [Dialed call], [Received call], or [Missed call].
 - [All]: Displays all call history list.
 - [Dialed call]: Displays the outgoing call history list.

Bluetooth® Wireless Technology

- [Received call]: Displays the incoming call history list.
 - [Missed call]: Displays the missed call history list.
3. Press the entry you want to call.

! Note

The call history may not be saved in the call history list in some mobile phones.

Downloading call history

You can download the call history information from your mobile phone.

1. Press [] > [MENU] > [Download] on the phone screen.



2. Press [Yes].



! Note

- Up to 50 received, dialed, and missed call history lists can be downloaded.
- The download feature may not be supported in some mobile phones. Check to see that the Bluetooth device supports the download feature.

Bluetooth® Wireless Technology

Contacts

1. Press [] on the phone screen.

The contacts are displayed on the screen.



<Contacts screen>

2. Select the contact you want to call from the list of contacts.



3. Press the phone number to make a call.

Downloading mobile phone contacts

Up to 5,000 mobile phone contacts can be downloaded.

1. Press [] > [MENU] > [Download] on the phone screen.



2. Press [Yes].



The present phone book is deleted and phone book of connected phone is duplicated.

! Note

- Upon downloading mobile phone contacts, the previous data is deleted.

Bluetooth® Wireless Technology

- This feature may not be supported on some mobile phones.

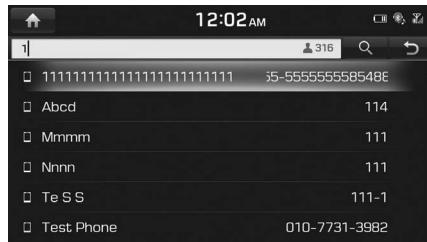
Searching for contacts

- Press [] > [MENU] > [Search contacts] on the phone screen.



- Select [Input option] to select the input option of the keyboard.
- Press [] to set the desired keyboard.

- Enter the name or phone number, press [].



- Select the contact you want to call.

Adding as a Favourite

- Press [] on the phone screen.
The contacts are displayed on the screen.
- Select the contact from the list of contacts.



- Press [MENU] > [Add to favourites] on the phone screen.



! Note

Added Favourites can be viewed by pressing [] in the phone screen.

Bluetooth® Wireless Technology

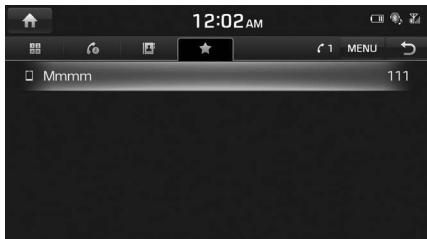
Favourites

Calling Favourites

If the phone number has been already stored in the Favourites, it can be easily called.

First of all, add the phone number in the Favourites. Refer to "Adding as a Favourite" on Page 138.

1. Press [★] on the phone screen.



<Favourite screen>

2. Select the desired Favourite.

Adding as a Favourite

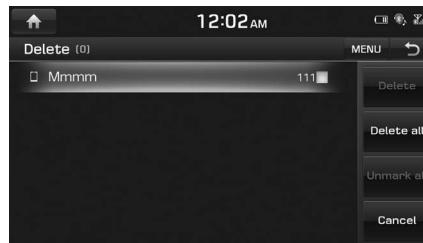
1. Press [★] on the phone screen.
2. Press [MENU] > [Add new] on the Favourites screen.



3. Select the contact from the list of contacts.
4. Press the phone number.

Deleting Favourites

1. Press [★] on the phone screen.
2. Press [MENU] > [Delete] on the Favourites screen.



3. Select the item you want to delete and press [Delete].
 - [Delete]: Deletes the selected items.
 - [Delete all]: Deletes all items.
 - [Unmark all]: Unmarks all items.
 - [Cancel]: Exits delete screen.

Bluetooth® Wireless Technology

Setting Bluetooth Connection

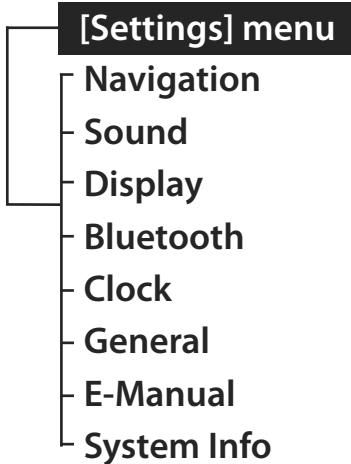
1. Press [■], [●], [□], or [★] on the phone screen.
2. Press [MENU] > [Connection settings] on the Favourites screen.



3. For more details, refer to "Bluetooth" on Page 148.

Settings

[Settings] menu overview



Navigation

This menu describes navigation settings.

MAP

This menu is used to change map settings.

1. Press [HOME] > [Settings] > [Navigation] > [MAP]. Or press [NAV] > [Setting] > [MAP].



2. Select the desired items.

- [Display Mode]: Sets the Display Mode to [Auto-Illumination], [Daylight] or [Night].
 - [Auto-Illumination]: Adjusts the brightness automatically according to surrounding brightness.
 - [Daylight]: Always keeps the brightness on high regardless of surrounding brightness.
 - [Night]: Always keeps the brightness on low regardless of surrounding brightness.

Settings

- [Map View]: Sets the map screen to [Heading Up], [3D View], or [North Up].
- You can select [3D Building On] or [Auto Scale] to set the desired map screen.
- [Map Font]: Sets the Map Font to [Small], [Medium] or [Large].
- [Map Display]: Sets the Map Display to [Trajectory Show] or [Trajectory Reset].
 - [Trajectory Show]: Sets whether to show the trajectory passed by the vehicle or not.
 - [Trajectory Reset]: Resets the trajectory passed by the vehicle.

Guidance

This menu is used to change the guidance settings.

1. Press [HOME] > [Settings] > [Navigation] > [Guidance]. Or press [NAV] > [Setting] > [Guidance].



2. Select the desired items.

- [Volume Ratio]: Sets the Volume Control to [Navigation Priority] or [Equal Priority].
 - [Navigation Priority]:

Navigation guidance volume is louder than audio volume.

- [Equal Priority]: Audio volume and navigation guidance volume are in identical volume.
- [Voice Guidance]: During the navigation mute, it sets/cancels whether to use camera guide. You can set to [Off], [Sound Effect], [Voice Guidance].
- [Speed Alert Guidance]: During the driving on expressway or on general road, it guides when a traffic camera approaches

Settings

- within the set distance.
 - [Distance on Expressway]: Sets the camera guide point to [300m], [500m], [700m], or [1 km] on expressway.
 - [Distance on Way]: Sets the camera guide point to [100m], [300m], or [500m] on general road.
 - [Type]: Sets the traffic camera guides such as [Fixed Camera], [User Camera], etc.
- [Curve Alert]: Sets whether to guide the curve points when driving or not.

- [Show Previous Points]: Changes the previous destination view setting when starting Navigation. When this is selected and when navigation is started without a route planned, a list of previous destination will be displayed.
- [Guide gas station when fuel is low]: You can set to display popup asking whether to search the surrounding gas stations when the low fuel warning lamp of the vehicle is lighted.

- [Destination Time Set]: You can set the time of route guide to expected remaining time to the destination or to expected arrival time.

Route/GPS

This menu is used to change the Route/GPS settings.

1. Press [HOME] > [Settings] > [Navigation] > [Route/GPS]. Or press [NAV] > [Setting] > [Route/GPS].



Settings

2. Select the desired items.
 - [Multiple Route]: Set whether to search for the Multiple Route or not.
 - [Satellite Status]: Check the GPS information.

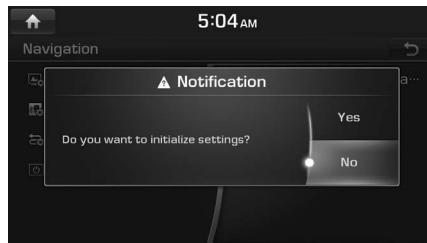
! Note

“Multiple Route” shows the options of “Recommended” route and “Shortest” route. However, the “Shortest” route in most cases does not have traffic information, so the time to destination for the “Shortest” route may not always be accurate.

Initialize Setting

This menu is used to reset all [Navigation] settings.

1. Press [HOME] > [Settings] > [Navigation] > [Initialize Setting] > [Navigation Setting Initialize]. Or press [NAV] > [Setting] > [Initialize Setting] > [Navigation Setting Initialize].



2. Press [Yes].

Sound

This menu is used to adjust the sound effects for the whole system.

Volume Control

This menu is used to set the volume control.

1. Press [HOME] > [Settings] > [Sound] > [Volume Control].



2. Select the desired item.
 - [Navigation guidance]

Settings

sound preferred]:
Navigation guidance
volume is louder than
audio volume.

- [Same volume ratio]:
Audio volume and
navigation guidance
volume are in identical
volume.

Fade/Balance

This menu is used to set the sound position. For example, you can set the sound close to the driver-seat so that the volume is relatively lower in the passenger or rear seats.

1. Press [HOME] > [Settings] > [Sound] > [Fade/Balance].



2. Adjust the Fade/Balance.

! Note

Press [Reset] to restore sound to the centre position.

Treble/Middle/Bass

This menu is used to set the Treble/Middle/Bass.

1. Press [HOME] > [Settings] > [Sound] > [Treble/Middle/Bass].



2. Adjust the Treble/Middle/Bass.

! Note

Press [Reset] to restore sound to the centre position.

Settings

Surround Effect

This menu is used to turn the Surround effect on/off.

Press [HOME] > [Settings] > [Sound] > [Surround Effect].



VIP Sound

This menu allows you to optimize the sound for the VIP seat.

Press [HOME] > [Settings] > [Sound] > [VIP Sound].



Speed Dependent Vol.

This menu is used to automatically control the audio volume according to the speed of the vehicle.

Press [HOME] > [Settings] > [Sound] > [Speed Dependent Vol.].

Touch Tone

This menu is used to play a beep sound whenever you operate the touch screen.

Press [HOME] > [Settings] > [Sound] > [Touch Tone].

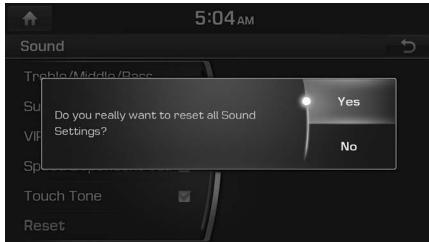


Settings

Reset

This menu is used to reset all [Sound] settings.

1. Press [HOME] > [Settings] > [Sound] > [Reset].



2. Press [Yes].

Display

This menu is used to control the display brightness and image rate for the whole system.

Set Video image

The Screen adjustment can be set in video modes, such as DVD, VCD, Jukebox video, USB video, or AUX video.

1. Press [MENU] > [Display settings] > [Set Video image].



2. Select the desired options.

- [Brightness]: Adjusts the brightness.
- [Contrast]: Adjusts the contrast.

- [Saturation]: Adjusts the saturation.

! Note

Press [Reset] to restore items to the centre position.

Settings

Set LCD Brightness

This menu is used to set the LCD brightness.

1. Press [HOME] > [Settings] > [Display] > [Set LCD Brightness].



2. Adjust the LCD Brightness.
 - [LCD Brightness] or [Front Seat LCD Brightness]: Adjusts the Front Seat LCD Brightness.
 - [Rear Seat LCD Brightness]: Adjusts the

Rear Seat LCD Brightness.
(Option)

- [Reset]: Resets the LCD Brightness.

Illumination Settings

This menu is used to set the screen brightness by illumination.

1. Press [HOME] > [Settings] > [Display] > [Illumination Settings].



2. Select the desired options.

- [Auto-illumination]: Adjusts the brightness automatically according to surrounding brightness.
- [Daylight]: Always keeps the brightness on high regardless of surrounding brightness.
- [Night]: Always keeps the brightness on low regardless of surrounding brightness.

Ratio

The screen ratio is used to set in video modes, such as DVD, VCD, Jukebox video, USB video, or AUX video.

Settings

1. Press [HOME] > [Settings] > [Display] > [Ratio].

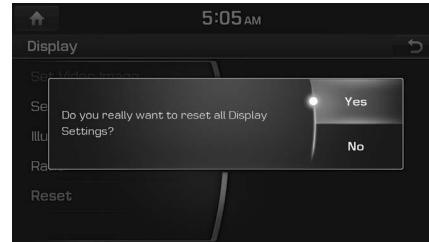


2. Select the desired option.
 - [Full display]: Displays the full screen.
 - [Normal view]: Displays the 4:3 screen with the black bar appeared at the left and right side.

Reset

This menu is used to reset all [Display] settings.

1. Press [HOME] > [Settings] > [Display] > [Reset].



2. Press [Yes].

Bluetooth

This menu describes Bluetooth settings.

Bluetooth Connection

This menu is used to pair and connect the head unit and a Bluetooth phone.

1. Press [HOME] > [Settings] > [Bluetooth] > [Bluetooth Connection].



2. Follow steps 2-6 of the "When a phone is already paired" on Page 128.

Settings

Auto Connection Priority

If auto connection priority is turned on, a Bluetooth device will automatically be connected according to the option setting when the car ignition is turned on.

1. Press [HOME] > [Settings] > [Bluetooth] > [Auto Connection Priority].



2. Press the desired item.

! Note

If the [No phone selected] is chosen, the Bluetooth system will try to connect to the last connected phone, then to all paired phones.

Device Information

This menu allows you to control additional Bluetooth® Wireless Technology related settings.

1. Press [HOME] > [Settings] > [Bluetooth] > [Device Information].



2. Press the desired item.
 - [Device name]: Changes the Bluetooth device name of the vehicle.

Settings

- [Passkey]: Changes the passkey required to connect a Bluetooth device to the car.
- [Reset]: Deletes all paired devices and resets the bluetooth settings.

Device name

1. Press [HOME] > [Settings] > [Bluetooth] > [Device Information] > [Device name].



2. Input the desired name using the keypad, then press [].

! Note

The default device name is set to GENESIS.

Passkey

1. Press [HOME] > [Settings] > [Bluetooth] > [Device Information] > [Passkey].



2. Input the passkey using the keypad.

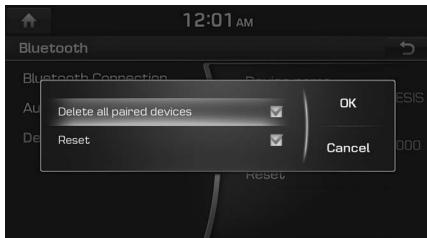
! Note

The passkey is a 4-digit authentication code used for a Bluetooth connection between the mobile phone and car system. The default passkey is set to 0000.

Settings

Reset

1. Press [HOME] > [Settings] > [Bluetooth] > [Device Information] > [Reset].



2. Press the desired items.
 - [Delete all paired devices]: Deletes all paired devices.
 - [Reset]: Resets the bluetooth settings.
3. Press [OK].

Clock

This menu describes clock settings.

GPS Time

This menu is used to display time according to the received GPS time.

Press [HOME] > [Settings] > [Clock] > [GPS Time].



! Note

When the GPS Time is turned off, you can set the time manually.

Time Settings

1. Press [HOME] > [Settings] > [Clock] > [Time Settings].



2. Set the time, then press [OK].

! Note

- Time settings cannot be used when GPS time is set. To set the time manually, change [GPS Time] setting to off, and set the time.
- The default settings of [Daylight Savings Time] is set to off.

Settings

Daylight Savings Time

This menu is used to turn on/off daylight savings time feature.

Press [HOME] > [Settings] > [Clock] > [Daylight Savings Time].



Note

When Daylight Savings Time is turned on, the clock is adjusted forward one hour.

Clock Type

This menu is used to set the type of clock displayed when the system power is turned off.

1. Press [HOME] > [Settings] > [Clock] > [Clock Type].



2. Select [Digital] or [Analogue].

Time Format

This function is used to convert the digital clock display between 12 hour/ 24 hour systems.

1. Press [HOME] > [Settings] > [Clock] > [Time Format].



2. Select [12 Hr] or [24 Hr].

Settings

General

Language

This menu is used to set the language of the system display.

1. Press [HOME] > [Settings] > [General] > [Language].



2. Select the desired language.

Keyboard

This menu is used to change the type of keyboard used within the system for each language.

The set keyboard will be applied to all input modes across the entire system.

1. Press [HOME] > [Settings] > [General] > [Keyboard].



2. Press [Korean keyboard], [English keyboard] or [Default keyboard].

Item	Description
QWERTY/ 퀵티	Keyboard similar to the one used within a computer.
ABCD/ ㄱㄴㄷㄹ	Keyboard with characters arranged in alphabetical order.
Chinese Keyboard	Keyboard for Chinese.
Korean Keyboard	Keyboard for Korea.

Settings

Frame

This menu is used to select the screen displayed when the system power is turned off.

1. Press [HOME] > [Settings] > [General] > [Frame].



2. Press the desired item.

- [None]: No image is displayed.
- [Clock]: Displays the clock on the screen.

Rear Section Control (Option)

This menu is used to turn the screen for rear seat on/off or to lock the function for rear seat.

1. Press [HOME] > [Settings] > [General] > [Rear Section Control].



2. Press the desired item.

- [Display]: Select [On] or [Off] to turn the screen for rear seat on/off.

- [Lock rear controls]: Locks or unlocks the function for rear seat.

Settings

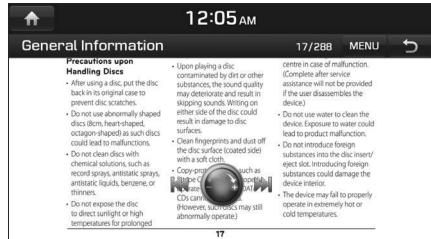
E-Manual

You can see the E-Manual.

1. Press [HOME] > [Settings] > [E-Manual].



2. Press the desired item.



<E-Manual screen>

Skip

You can see the previous or next Page.

- Push the controller left or right.
- Press [**◀◀/▶▶**] on the screen.

Zoom In/Out

In the electronic manual screen, if you turn the controller left/right, you can enlarge/reduce, and if you push the controller up/down/left/right, you can move it up/down/left/right.

to prevent scratch,
sc (8cm, heart
shape) is used, it may
chemical solvent
zone, or thinner.
it will damage disc

- too high or low temperature.
 - On a rainy or humid day, or right after turning on the heater inside the car, moisture may be formed on the lens. In such case, instrument cannot read the disc, and it will not properly operate. Take out the disc and wait until the moisture is dried up.
 - If you drive on a rough road surface for a long time, or when a severe shock is imposed on the vehicle, disc may not be played properly.
- If you do not attach a sticker label on the disc. Sticker on disc may fall off and damage the system.
- Do not insert two or more discs into the disc slot simultaneously. It may damage

and instrument type.	
Playable disc	Digital media
DVD video	DVD video
Video CD (VCD)	Digital Video
Music CD (Audio CD)	Digital audio
CD-R/RW	Digital recording

Settings

Search

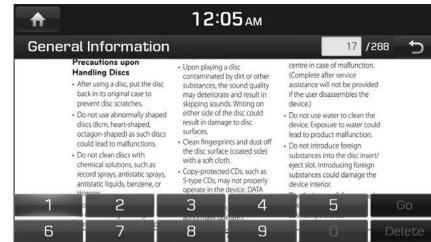
1. Press [MENU] > [Search] on the E-Manual screen.



2. Input the desired text and press [].

Go to Page

1. Press [MENU] > [Go to Page] on the E-Manual screen.



2. Input the desired Page number and press [Go].

System Info

Version

This menu option is used to view the system information.

Press [HOME] > [Settings] > [System Info] > [Version].



! Note

The software information may differ from the actual information of the vehicle.

Settings

Jukebox Info

This menu is used to display the capacity of the stored data on the Jukebox.

1. Press [HOME] > [Settings] > [System Info] > [Jukebox Info].



2. Press [Format] to delete all data stored on the Jukebox.

Update

To order the latest map and software updates, please visit <http://www.mapnsoft.com>. For more details about updates, check out the website before proceeding.

For system's software security, new function addition, and map update, you need an update. The latest map and software file can be downloaded from the web site <http://www.hyundai-mnsoft.com>, and you can update through USB or SD card. For details about update, check out the web site before proceeding.

1. Press [HOME] > [Settings] > [System Info] > [Update].



2. After inserting the USB or SD card with the update file, press [Update].
Once updating is complete, the system will automatically restart.

! Note

- This product requires regular updates for software corrections, new functions

Settings

- and map updates. Updating may require up to 1 hour depending on the data size.
- Turning off the power or ejecting the USB during the update process may result in data loss. Make sure to keep the ignition on and wait until updating is complete.
 - Map and Navi software updates can be downloaded from the designated website (<http://www.mapnsoft.com>) and updated through the SD card.
 - Please use only the SD card that was included with the vehicle purchase.

- The use of a separately purchased SD card may result in damage due to heat related deformation.
- Product malfunctions caused by the use of separately purchased SD cards shall not be covered within the product warranty.
- Repeatedly connecting/ disconnecting the SD card in a short period of time may cause damage to the device.

Reset All

This menu is used to reset all settings specified by the user.

1. Press [HOME] > [Settings] > [System Info] > [Reset All].



2. Press [Yes].

Using Rear Camera - Option

About Rear Camera

- Rear camera is an option for the customers who selected the option.
- In this instrument, for the safety of the user, a rear camera that can secure the rear view during the backward driving is connected.
- After the vehicle is started, if the transmission lever is put to R, the rear camera power is automatically turned on, and the rear camera starts operation.
- If you change the transmission lever location from R to another position, rear camera stops.

Turning on the rear camera

1. When the vehicle is started, put the transmission lever to R position.



! Note

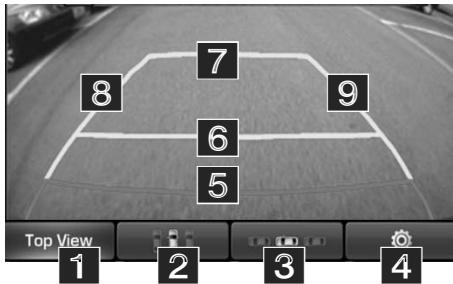
Rear camera has an optical lens to secure wide view, so there is a little difference in the distance shown on the screen. For safety, make sure to check the rear, left, and right view by yourself.

Using PGS (Parking Guide System) - Option

About PGS (Parking Guide System)

- PGS (Parking Guide System) is an option for the customers who selected the option.
- In this instrument, for the safe parking of the user, a parking guide system which is displayed when gear is at R position is installed.
- After the vehicle is started, if the transmission lever is put to R, the PGS (Parking Guide System) automatically starts operation.
- If the transmission lever is changed from R to another position, PGS (Parking Guide System) operation stops.

PGS screen



- 1** [Top View]/[Normal View]: It changes the rear viewing angle shown through the camera.
- 2** [Garage parking mode]: It moves to garage parking mode.
- 3** [Parallel parking mode]: It moves to parallel parking mode.

- 4** [Steering wheel icon]: It moves to [Voice parking guidance], [Guideline Display], [Sync Guidelines with Steering] setting screen.
- 5** Red line: 0.5m from the rear bumper of the vehicle
- 6** Yellow line 1: 1.0m from the rear bumper of the vehicle
- 7** Yellow line 2: 3.0m from the rear bumper of the vehicle
- 8** Yellow line 3: The tracking path of the vehicle's driver seat side wheel
- 9** Yellow line 4: The tracking path of the vehicle's front passenger seat side wheel

Using PGS (Parking Guide System) - Option

Garage parking

The garage parking 1st step driving path tracking marking is as follows.



- 1** Red line: 0.5m from vehicle's rear bumper
- 2** Yellow line: 3.0m from vehicle's rear bumper
- 3** Green line: 6.0m from vehicle's rear bumper

! Note

- If you press [], it moves to the previous screen.
- If the vehicle speed exceeds about 10 km/h, it displays the path synchronized with the steering and the straight backward path as in the initial operation mode.

Garage parking is composed of 2 steps.

- 1st step

It is the step when the driver moves the vehicle for garage parking, stops at an adequate location, presses [], and adjusts the steering wheel to the parking space.

As in the following figure, the driver adjusts the steering wheel to the parking space direction, and when the backward driving starts, (after having vehicle speed) it moves to the next step after a few seconds.

Using PGS (Parking Guide System) - Option

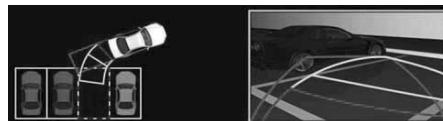


- 2nd step

It displays the path synchronized with the steering and the straight backward path as in the initial operation mode.

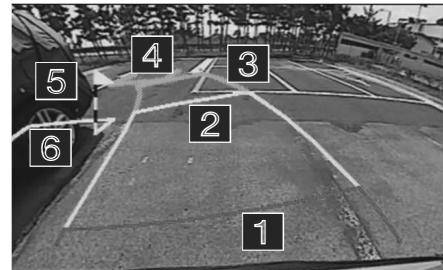
Maintain the steering wheel angle adjusted in the previous step, move to the front of the parking space, and the driver locates the vehicle parallel in the parking space considering the surrounding conditions.

If the steering is adjusted to the neutral position, the garage parking guide ends, and it returns to the initial operation mode. The path synchronized with steering in step 2 is the same as Page 164 "Normal view".



Parallel parking

Guideline synchronized with steering in the parallel parking mode is as follows.



- 1 Red line: about 0.5m from vehicle's rear bumper
- 2 Yellow line: about 3m from vehicle's rear bumper
- 3 Green line: about 6m from vehicle's rear bumper
- 4 Green line: expected space of the parked vehicle in the parallel parking
- 5 Flag: supplementary tool to adjust the starting

Using PGS (Parking Guide System) - Option

location of the vehicle during the parallel parking (end of the bumper of the parked vehicle)

- 6** Yellow line: area of another vehicle already parked

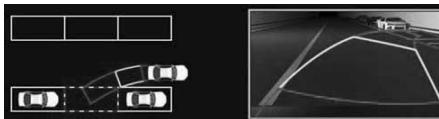
! Note

There is a little difference in the distance shown on the screen and the actual distance. For safety, make sure to check the rear, left, and right view by yourself.

Parallel parking is composed of 3 steps.

- 1st step

In PGS screen, press [].



The driver stops the vehicle so that the parallel line matches the parking space, and the blue line at the rear part of the front vehicle meets the red line. When you adjust the steering wheel to the parking space direction, only the corresponding guideline is displayed. The parking guide

line blinks until the green guideline synchronized with steering matches the green parking space line. To stop the blinking, adjust the steering wheel within certain angle, and if you start backward driving, it moves to the next step.

- 2nd step



If the vehicle starts to move backward maintaining the steering angle suggested in the previous step, the green

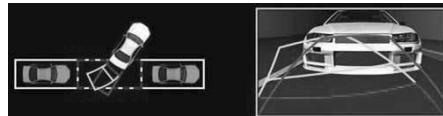
Using PGS (Parking Guide System) - Option

guide line (①) is displayed as in the 2nd step figure.

The driver moves the vehicle backward until the inner guide line of the parking space (②) matches the green guide line.

At stopped state, if you adjust the steering wheel more than certain angle toward the opposite direction, it moves to the last step.

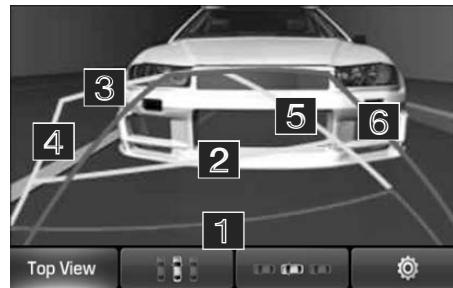
- 3rd step



As in the initial operation mode, it displays the path synchronized with steering and the straight backward path. By considering the surroundings, move the vehicle parallel in the parking space. If you adjust the steering to the neutral position, the parallel parking guide ends and it returns to the initial operation mode.

Normal View

1. In top view screen, if you press [Normal View], it switches to normal view.



- 1 Red line: 0.5m from vehicle's rear bumper
- 2 Yellow line 1: 1.0m from vehicle's rear bumper
- 3 Yellow line 2: 3.0m from vehicle's rear bumper

Using PGS (Parking Guide System) - Option

- 4** Yellow line 3: vehicle path of the left side wheel in the vehicle's driver seat side
- 5** Yellow line 4: vehicle path of the right side wheel in the vehicle's front passenger seat side
- 6** Blue line: steering neutral path

Top View

1. In normal view screen, if you press [Top View], it switches to top view. It is the screen looking down the rear direction of the vehicle from above, and the screen composition is as follows.



- 1** Red line: 0.5m from vehicle's rear bumper
- 2** Yellow line: 1.0m from vehicle's rear bumper

Rear view angle conversion

- Top view (top part viewing angle): It provides a viewing angle looking down the rear direction of the vehicle from above.



- Normal view (rear viewing angle): It provides general rear viewing angle with perspective.



Using PGS (Parking Guide System) - Option

PGS setting

If you press [⚙️] button, it moves to 3 types of setting screens.



- [Sync guidelines with steering]: Sets/releases expected driving path display interfacing the steering angle during the backward driving.

- [Voice parking guidance]: Sets/releases voice guide function during parking.
- [Guideline Display]: Sets/releases expected forward driving path display in mutual steering angle state during the backward driving.

AVM (Around View Monitor) - Option

About AVM (Around View Monitor)

- AVM (Around View Monitor) is an option that is provided to the customers who selected the option.
- Through the 4 cameras installed on the vehicle, it can view front, back, left and right side.
- While vehicle is started, if gear is put to R position, it automatically starts AVM (Around View Monitor).
- If gear is changed from R to P position, AVM (Around View Monitor) operation stops.

Operating front AVM

After starting the vehicle, if you press  after putting gear to N or D, front AVM starts.



1 Warning display: driver seat/front passenger seat door and side mirror, and trunk open status are displayed.

2 Front camera screen: screen of the front of the vehicle is displayed through camera

3 AVM side camera screen: According to the selected display contents, it displays AVM or left or right side screen.

4  (Front + AVM display): It displays vehicle's front screen and all direction (AVM) screens at the same time.

5  (Front display): It only displays vehicle's front screen.

6  (Front + left side display): It displays the vehicle's front screen and left front screen at the same time.

AVM (Around View Monitor) - Option

7  (Front + right side display): It displays the vehicle's front screen and right side screen at the same time.

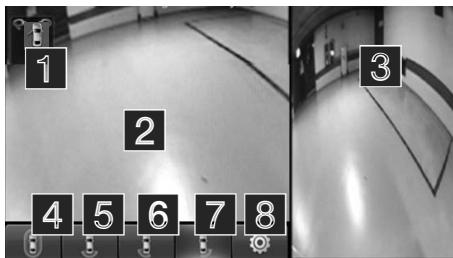
8  (AVM setting): It displays AVM setting menu.

! Note

While front AVM is running, if you drive at about 20 km/h or more, AVM is turned off. At this state, even if you drive at about 20 km/h or less, AVM is remained at OFF state.

Operating rear AVM

After starting the vehicle, if you put gear at R position, rear AVM starts.



1 Warning display: driver seat/front passenger seat door and side mirror, and trunk open status are displayed.

2 Rear camera screen: screen of the rear of the vehicle is displayed through camera

3 AVM side camera screen: According to the selected display contents, it displays AVM or left or right side screen.

4  (Rear + AVM display): It displays vehicle's rear screen and all direction (AVM) screens at the same time.

5  (Rear display): It only displays vehicle's rear screen.

AVM (Around View Monitor) - Option

6  (Rear + left side display): It displays the vehicle's rear screen and left rear screen at the same time.

7  (Rear + right side display): It displays the vehicle's rear screen and right rear screen at the same time.

8  (AVM setting): It displays AVM setting menu.

! Note

AVM (Around View Monitor) camera has an optical lens to secure wide view, so there is a little difference in the distance shown on the screen. For

safety, make sure to check the rear, left, and right view by yourself.

AVM setting

If you press  button, it moves to 3 types of setting screens.



• [General]: It sets/resets guide line steering interface and approaching obstacle warning display function.

• [Front View Mode]: It sets the front camera's initial screen as initial view. (Around view, front view, driver seat side front, and front passenger seat side front)

• [Rear View Mode]: It sets the rear camera's initial screen as initial view. (Around view, rear view, driver seat side rear, and front passenger seat side rear)

AVM (Around View Monitor) - Option

Warning display



Driver's door open indicator

When the driver's door is open, "█" (red color on left door) indicator is displayed on the top left of the screen.

Front passenger's door open indicator

When the front passenger's door is open, "█" (red color

on right door) indicator is displayed on the top left of the screen.

Trunk open indicator

When trunk is open, "█" (red color on trunk) indicator is displayed on the top left of the screen.

Side mirror folding indicator

When the side mirror is folded, "█" (side mirror) indicator is displayed on the top left of the screen.

Climate Mode

Operating Climate Mode

1. Press the CLIMATE key to display the Climate information screen.



- 1** Blower direction: It displays the set blower direction.
- 2** Outside temperature: It displays the current temperature outside the vehicle.

- 3** Front passenger seat set temperature: It displays the set temperature of the front passenger seat.
- 4** Driver seat set temperature: It displays the set driver seat temperature.
- 5** AUTO: It is displayed when AUTO button is selected, and the blower level and cooling/heating are automatically operated according to the set temperature.
- 6** A/C: It is displayed when A/C button is selected, and air conditioner is operated for vehicle cooling.
- 7** Blower level: It displays the set blower level
- 8** SYNC: When SYNC button is selected, front passenger seat temperature is set based on driver seat
- 9** Excessive indoor CO₂ display: It is displayed when excessive indoor CO₂ is detected. (If this information is displayed, driving

Climate Mode

fatigue may occur, so ventilate to circulate indoor air.)

- 10 MENU: It moves to climate menu screen. You can turn on/off the functions for Rear Climate, Smart Vent, and Auto Defog.



- Rear Climate: Turns Climate Control for the rear seats on or off. (If the air vent for rear

seat is closed, the [Rear Climate] menu is deactivated.)

- Smart Vent: When humidity and carbon dioxide levels inside the car increase while Climate Control is turned off, air is automatically expelled to maintain a comfortable environment.
- Auto Defog: Automatically operates the air conditioner to create a flow of air to clear the windshield.

! Note

While other modes (AV, Navigation, etc.) are in operation, if climate operation key is pressed, climate status is displayed at the top part of the screen.

Before using Blue Link®

What is Blue Link?

This is a Hyundai telematics service based on our cutting-edge IT system that makes your driving experience more convenient and fun and features safety, security, vehicle diagnostics, remote control and even smartphone synchronization functions.

Enjoy a smarter driving style with Blue Link.

What Is Telematics?

The word "Telematics" stems from the combination of telecommunications and

informatics, and refers to an information system that provides a variety of driving information through the built-in terminal by analyzing each symptom and driving state. This allows for a much safer and more comfortable driving experience.

About Transmission and Reception of Radio Waves

Connection to the Blue Link Centre or wireless data transmission may be disrupted in the following places.

For radio wave transmission/reception status, refer to the status displayed on the Blue Link screen.

It is recommended that you use the Blue Link system when the antenna icon () shows four bars or more.

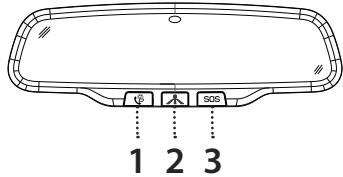
Places where Blue Link may be disrupted depending on the transmission/reception status:

- Inside tunnels
- Mountainous areas or dense forest
- Roads close to cliff edges
- Densely built-up areas
- On highways or roads underneath higher interchange roads
- Inside buildings

Blue Link®

Using the Rear View Mirror Key

Selecting the Rear View mirror key will allow you to make service required inquiries, place info searches, and emergency rescues by connecting to the Blue Link Centre. Such features can be used only after subscribing to the Blue Link service.



1. (Blue Link) button

Calls or ends the Blue Link call.

2. (Blue Link Destination Search Service) button

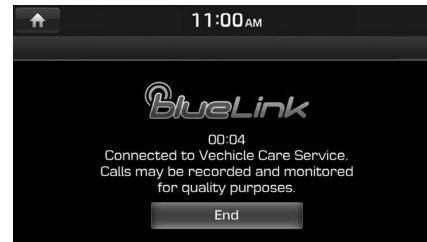
Calls or ends the Blue Link Destination Search Service.

3. SOS button

Calls or ends SOS call.

Connecting with the Blue Link® Centre

1. Press [] on the Rear View Mirror to connect with the Blue Link Centre.



Connecting with Blue Link Destination Search Service

1. Press [] on the Rear View Mirror to connect with the Blue Link Destination Search Service.



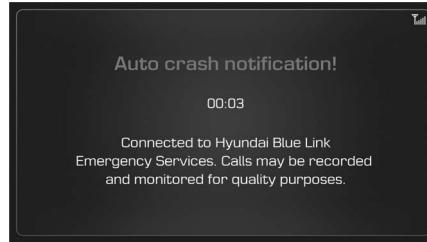
Blue Link® Safety and Security

Auto Crash Notification

Provides immediate assistance when an accident occurs and an airbag is deployed.

In this event, an ACN signal, containing customer and location information, will automatically be transmitted to the response centre.

Upon receipt of the signal, a response specialist will attempt to establish voice communications with the vehicle occupants and forward any pertinent information to Blue Link emergency services.

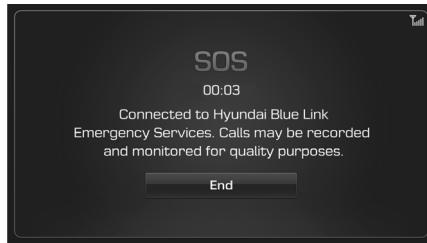


SOS

Customers request emergency Blue Link emergence services by pressing the dedicated "SOS" button in the vehicle. This action transmits vehicle information and location to specially trained response specialists, who assist in coordinating the dispatch of appropriate emergency assistance to the customer.

Blue Link®

The response specialist remains on the line with the customer until advised assistance has arrived.



Stolen Vehicle Recovery

In the event a customer's vehicle is reported stolen (and a stolen vehicle report has been filed with the appropriate police department), the response centre can provide assistance to the police in an attempt to recover the vehicle.

Vehicle Slowdown

Used with Stolen Vehicle Recovery, this enables law enforcement to gradually reduce the engine power of the vehicle, thus slowing it down to safe levels. A warning shall be transmitted to the driver prior to the slowdown procedure.

Vehicle Immobilization

Used with Stolen Vehicle Recovery, this enables law enforcement to send a signal to the vehicle which immobilizes the engine management system, thus preventing startup. This

capability is only valid when the ignition is off, but can be saved for later immobilization if the vehicle is on or in motion at the time of signal transmission.

Getting Started with Blue Link®

Use Blue Link features such as Driving Info and Vehicle Diagnostics. Blue Link features can be used after activating the service. A separate fee may be charged for using Blue Link, and features may differ according to your service plan.

1. Select [HOME] > [Blue Link].



- [Driving Info]: Displays

information such as Driving Time/Idle Time, Deceleration/Acceleration Distribution, Driving Speed and Driving Distance.

- [Send to Car (POI)]: Displays information about places received via Blue Link Destination Search Service.
- [Vehicle Diagnostics]: Inspects vehicle malfunctions and provides diagnostics.
- [Blue Link Settings]: Displays modem information.

Driving Info

This service can be used while your car is stopped and the engine is on.

1. Select [HOME] > [Blue Link] > [Driving Info].

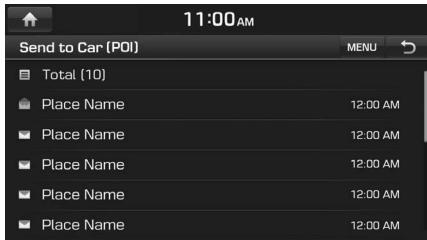


2. Select [MENU] > [Update] to receive up-to-date driving information.

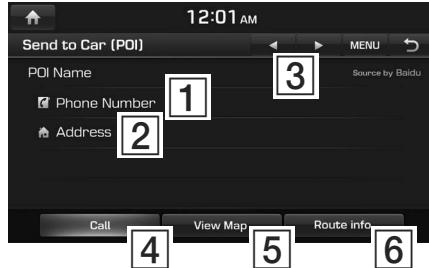
Send to Car (POI)

You can check information about Places received via Blue Link Destination Search Service. To use the "Send to Car (POI)" function, first you need to sign up to the Blue Link.

1. Select [HOME] > [Blue Link] > [Send to Car (POI)].



2. Select the desired place.



Feature	Description
1 Phone Number	Displays the phone number of a selected place.
2 Address	Displays the address of a selected place.

Feature	Description
3 ◀/▶	(Previous/Next)
4 Call	Press [Call] to make a call.
5 View Map	Press [View Map] to display the address on the map.
6 Route info	Press [Route info] to display the route information on the map.

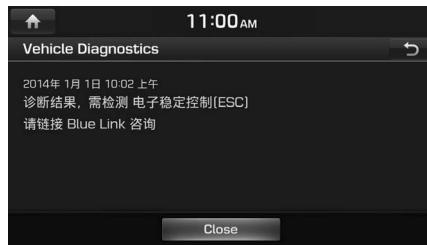
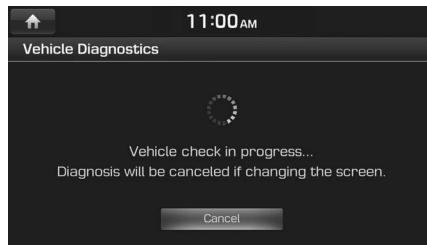
Vehicle Diagnostics

You can have your vehicle inspected only after stopping the vehicle because some control units can't be diagnosed while driving.

Vehicle Diagnostics will be canceled if you switch to another screen while diagnosis is in progress.

To receive result details, you need to first sign up to the Blue Link.

1. Select [HOME] > [Blue Link] > [Vehicle Diagnostics].



Blue Link® Settings

Modem Information

This feature is used to show the ICCID, IMEI modem information.

Select [HOME] > [Blue Link] > [Blue Link Settings] > [Modem information].



Before Thinking There is a Product Defect

The current position as shown on the navigation may differ from the actual position under the following conditions. The following occurrences are not malfunctions:

- When driving on Y-shaped roads with narrow angles the current position may be displayed in the opposite direction
- Within city streets, the current position may be displayed on the opposite side or on an off-road position
- When changing the zoom level from maximum to a different level, the current

position may become displayed on a different road

- If the vehicle is loaded onto a ferry or a car transport vehicle, the current position may become stalled on the last position prior to loading
- When driving on a spiral-shaped road
- When driving in mountain regions with sharp turns or sudden brakes
- When entering a road after passing an underground parking structure, building parking structure, or roads with many rotations
- When driving in heavy traffic with frequent starts and stops
- When driving under slippery conditions, such as heavy sand, snow, etc.
- When the tires have recently been replaced (Especially upon use of spare or studless tires).
- When using tires of improper size
- When the tire pressure for the 4 tires are different
- When the replacement tire is worn or used (Especially studless tires having passed a second season).
- When driving near high-rise buildings
- When a roof carrier has been installed

Before Thinking There is a Product Defect

- When a long distance route is calculated while driving on an expressway, in such cases, continued driving will automatically enable the system to conduct map matching or use updated GPS information to provide the current position (In such cases, up to several minutes may be required)

Correct route guidance may not occur due to search conditions or driving position. The following occurrences are not malfunctions:

- Guidance to go straight may be given while driving on a straight road
- Guidance may not be given even when having turned at an intersection
- There are certain intersections in which guidance may not occur
- A route guidance signaling for a u-turn may occur in some No u-turn intersections

- Route guidance signaling entrance into a No-entry zone may occur (No-entry zone, road under construction, etc.)
- Guidance may be given to a position that is not the actual destination if roads to reach the actual destination do not exist or are too narrow
- Faulty voice guidance may be given if the vehicle breaks away from the designated route. (e.g. if a turn is made at an intersection while the navigation provided guidance to go straight.)

Before Thinking There is a Product Defect

These situations may occur after conducting route calculation. The following occurrences are not malfunctions:

- Guidance may be given to a position differing from the current position when turning at an intersection
- When driving in high speeds, route recalculation may take a longer period of time
- Route guidance signaling for a u-turn may occur in some No u-turn intersections
- Route guidance signaling entrance into No-entry zone may occur. (No-entry zone, road under construction, etc.)
- Guidance may be given to a position removed from the actual destination if roads to reach the actual destination do not exist or are too narrow
- Faulty voice guidance may be given if the vehicle breaks away from the designated route (e.g. If a turn is made at an intersection while the navigation provided guidance to go straight.)

Before Thinking the Product has Malfunctioned

1. Errors which occur during the operation or installation of the device may be mistaken as a malfunction of the actual device.
2. If you are having problems with the device, try the suggestions listed below.
3. If the problems persist, contact your dealer.

Problem	Possible Cause
There are small red, blue, or green dots on the screen	Because the LCD is manufactured with technology requiring high point density, a pixel or lighting deficiency may occur within 0.01% of total pixels.
The sound or image is not working	<ul style="list-style-type: none">• Has the Switch for the vehicle been turned to [ACC] or [ON]?• Has the SYSTEM been turned OFF?
The screen is being displayed but sound is not working	<ul style="list-style-type: none">• Has the volume been set to a low level?• Has the volume been muted?
When the power is turned on, the corners of the screen are dark	<ul style="list-style-type: none">• The display appearing somewhat dark after prolonged periods of use is normal with LCD panels. It is not a malfunction.• If the screen is very dark, contact your nearest Hyundai dealer for assistance.

Before Thinking the Product has Malfunctioned

Problem	Possible Cause
Sound is working from only one speaker	Are the positions of Fader or Balance sound controls adjusted to only one side?
Sound does not work in AUX mode	Are the audio connector jacks fully inserted into the AUX terminal?
The external device is not working	Is the external device connected with a standard connector cable?
When turning power on, the most recent mode screen is not displayed	<p>Within modes that play files by reading external sources, such as discs, USB, iPod, or Bluetooth® streaming mode, the most recently played mode screen prior to turning off power may not properly load.</p> <ul style="list-style-type: none">• If there is no disc or the corresponding device is not connected, the mode operated prior to the most recent mode will operate.• If the previous mode still cannot be properly played, the mode operated prior to that will operate.

Troubleshooting

Problem	Possible Cause	Countermeasure
The power does not turn on.	The fuse is disconnected.	<ul style="list-style-type: none">Replace with a suitable fuse.If the fuse is disconnected again, please contact your Hyundai dealer.
	Device is not properly connected.	Check to see that the device has been properly connected.
The system does not play.	The disc has not been inserted or has been inserted upside down.	Insert the disc properly so that the sides are facing the correct direct.
	The disc has been contaminated.	Wipe away dirt and other foreign substances from the disc.
	The vehicle battery is low.	Charge the battery if the problem persists, contact your point of purchase or service centre.
	A disc not supported by the device has been inserted.	Insert a disc which is supported by the device.

Troubleshooting

Problem	Possible Cause	Countermeasure
The image color/tone quality is low.	The brightness, saturation, and contrast levels are not set properly.	Properly adjust the brightness, saturation, and contrast levels through Display Settings.
Sound does not work.	The volume level is set to the lowest level.	Adjust the volume level.
	The connection is not proper.	Check to see that the device has been properly connected.
	The device is currently fast-forwarding, rewinding, scanning.	The sound will not work when the device is fast-forwarding, rewinding, or scanning.

Troubleshooting

Problem	Possible Cause	Countermeasure
The sound or image quality is low.	The disc is dirty or scratched.	Wipe off water or dirt from the disc. Do not use a disc which has been scratched.
	Vibration is occurring from where the conversion switch has been installed.	The sound may be short circuited and the image distorted if the device vibrates.
	Image color/tone quality is low.	The device will return to normal once vibrations stop.

Troubleshooting

Problem	Possible Cause	Countermeasure
The USB does not work	USB memory is damaged.	Please use after formatting the USB into FAT 32 format.
	USB memory has been contaminated.	Remove any foreign substances on the contact surface of the USB memory and multimedia terminal.
	A separately purchased USB HUB is being used.	Directly connect the USB memory with the multimedia terminal on the vehicle.
	A USB extension cable is being used.	Directly connect the USB memory with the multimedia terminal on the vehicle.
	A USB which is not a Metal Cover Type USB Memory is being used.	Use standard USB Memory.
	An HDD type, CF, SD Memory is being used.	Use standard USB Memory.
	There are no music files which can be played.	Only MP3, WMA file formats are supported. Please use only the supported music file formats.

Troubleshooting

Problem	Possible Cause	Countermeasure
The iPod is not recognized even though it has been connected	There are no titles which can be played.	Use iTunes to download and save MP3 files into the iPod.
	The iPod firmware version has not been properly updated.	Use iTunes to update the firmware version and reconnect the iPod with the device.
	The iPod devie does not recognize downloads.	Reset the iPod and reconnect with the device.

Trademarks and Licenses

DivX®



- **ABOUT DivX® VIDEO:** DivX® is a digital video format created by DivX, LLC, a subsidiary of Rovi Corporation. This is an official DivX Certified® device that has passed rigorous testing to verify that it plays DivX video. Visit divx.com for more information and software tools to convert your files into DivX videos.
- **ABOUT DivX® VIDEO-ON-DEMAND:** This DivX Certified® device must be registered in order to play

purchased DivX Video-on-Demand (VOD) movies. To obtain your registration code, locate the DivX VOD section in your device setup menu. Go to vod.divx.com for more information on how to complete your registration.

- DivX Certified® to play DivX® video, including premium content.
- DivX®, DivX Certified® and associated logos are trademarks of Rovi Corporation or its subsidiaries and are used under license.

- Covered by one or more of the following U.S. patents: 7,295,673; 7,460,668; 7,515,710; 7,519,274

iPod®

iPod® is a registered trademark of Apple Inc.

DOLBY



Manufactured under license from Dolby Laboratories. Dolby and double-D symbol are trademarks of Dolby Laboratories.

Trademarks and Licenses

DTS



For DTS patents, see <http://patents.dts.com>. Manufactured under license from DTS Licensing Limited. DTS, the Symbol, & DTS and the Symbol together are registered trademarks, and DTS Digital Surround is a trademark of DTS, Inc. © DTS, Inc. All Rights Reserved.

Bluetooth® Wireless Technology



The Bluetooth Wireless Technology word mark and logos are registered trademarks owned by Bluetooth Wireless Technology SIG, Inc.

Gracenote®



CD, DVD, Blu-ray Disc, and music and video-related data from Gracenote, Inc., copyright © 2000 to present Gracenote. Gracenote

Software, copyright © 2000 to present Gracenote. One or more patents owned by Gracenote apply to this product and service. See the Gracenote website for a non-exhaustive list of applicable Gracenote patents. Gracenote, CDDB, MusicID, MediaVOCS, the Gracenote logo and logotype, and the "Powered by Gracenote" logo are either registered trademarks or trademarks of Gracenote in the United States and/or other countries. Music and video recognition technology and related data are provided by Gracenote®.

Trademarks and Licenses

Gracenote is the industry standard in music recognition technology and related content delivery. For more information, please visit www.gracenote.com.

Portions of the content is copyright © Gracenote or its providers.

Gracenote® End User License Agreement

This application or device contains software from Gracenote, Inc. of Emeryville, California ("Gracenote"). The software from Gracenote (the "Gracenote Software")

enables this application to perform disc and/or file identification and obtain music-related information, including name, artist, track, and title information ("Gracenote Data") from online servers or embedded databases (collectively, "Gracenote Servers") and to perform other functions. You may use Gracenote Data only by means of the intended End-User functions of this application or device. You agree that you will use Gracenote Data, the Gracenote Software, and Gracenote Servers for

your own personal non-commercial use only. You agree not to assign, copy, transfer or transmit the Gracenote Software or any Gracenote Data to any third party. YOU AGREE NOT TO USE OR EXPLOIT GRACENOTE DATA, THE GRACENOTE SOFTWARE, OR GRACENOTE SERVERS, EXCEPT AS EXPRESSLY PERMITTED HEREIN.

You agree that your non-exclusive license to use the Gracenote Data, the Gracenote Software, and Gracenote Servers will terminate if you violate these

Trademarks and Licenses

restrictions. If your license terminates, you agree to cease any and all use of the Gracenote Data, the Gracenote Software, and Gracenote Servers. Gracenote reserves all rights in Gracenote Data, the Gracenote Software, and the Gracenote Servers, including all ownership rights. Under no circumstances will Gracenote become liable for any payment to you for any information that you provide. You agree that Gracenote, Inc. may enforce its rights under this Agreement against you directly in its own name. The Gracenote service

uses a unique identifier to track queries for statistical purposes. The purpose of a randomly assigned numeric identifier is to allow the Gracenote service to count queries without knowing anything about who you are. For more information, see the web Page for the Gracenote Privacy Policy for the Gracenote service. The Gracenote Software and each item of Gracenote Data are licensed to you "AS IS." Gracenote makes no representations or warranties, express or implied, regarding the accuracy of any Gracenote

Data from in the Gracenote Servers. Gracenote reserves the right to delete data from the Gracenote Servers or to change data categories for any cause that Gracenote deems sufficient. No warranty is made that the Gracenote Software or Gracenote Servers are error-free or that functioning of Gracenote Software or Gracenote Servers will be uninterrupted. Gracenote is not obligated to provide you with new enhanced or additional data types or categories that Gracenote may provide in the future and is free to

Trademarks and Licenses

discontinue its services at any time.

GRACENOTE DISCLAIMS ALL WARRANTIES EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE, AND NON-INFRINGEMENT. GRACENOTE DOES NOT WARRANT THE RESULTS THAT WILL BE OBTAINED BY YOUR USE OF THE GRACENOTE SOFTWARE OR ANY GRACENOTE SERVER. IN NO CASE WILL GRACENOTE BE LIABLE FOR ANY CONSEQUENTIAL OR

INCIDENTAL DAMAGES OR FOR ANY LOST PROFITS OR LOST REVENUES.

© Gracenote, Inc. 2009

Specification

AV/Navigation product specification

Common	Power Supply	DC 14.4 V
	Operating Power	DC 9 V ~ DC 16 V
	Current Consumption	Maximum 5 A
	Dark Current	Maximum1 mA
	Operating Temperature	-20 °C ~ +70 °C
	Storage Temperature	-40 °C ~ +85 °C
	Dimensions (Head unit)	274.82 (W) x 108.38 (H) X 202.26 (D) mm
	Weight (Head unit)	2.7 kg

Bluetooth	Supported Profile	HFP(1.6), A2DP : (1.2) , AVRCP (1.3)
	Supported Bluetooth Specification	3.0
	Frequency Range	2402 MHz ~ 2480 MHz
	Output (Class2)	1.0 dBm
	Number of Channels	79

Specification

Radio	AM	
	Tuning range	531 kHz ~ 1602 kHz
	Sensitivity	35 dBuV
	Frequency response	30 Hz ~ 10000 Hz
	Signal-to-noise ratio	Minimum 45 dB
	FM	
	Tuning range	87.5 MHz ~ 108.0 MHz
	Sensitivity	12 dBuV
	Frequency response	30 Hz ~ 10000 Hz
	Signal-to-noise ratio	Minimum 50 dB

CD/ DVD	FORMAT	CD-DA, CD-R, CD-RW, MP3, DVD (12 cm disc only)
	Interface	Serial (TAB2)
	Signal-to-noise ratio	Minimum 70 dB
	Frequency response	20 Hz ~ 20 kHz (± 3 dB)
	Distortion ratio	0.03%

Specification

TFT-LCD	Screen Size	233.95 mm (9.2 inches) 204 (W) x 114.72 (H) mm (Active area)
	Resolution	921,600 pixel
	Operating Method	TFT (Thin Film Transistor) Active Matrix, In Plane Switching (IPS),
	Viewing Angle	Viewing Angle free (R/L 178(Min), U/D 178(Min.))
	Internal Lighting	LED

- To obtain the source code under GPL, LGPL, MPL and other open source licenses, that is contained in this product, please visit <http://opensource.lge.com> . In addition to the source code, all referred license terms, warranty disclaimers and copyright notices are available for download. LG Electronics will also provide open source code to you on CD-ROM for a charge covering the cost of performing such distribution (such as the cost of media, shipping and handling) upon email request to opensource@lge.com. This offer is valid for three (3) years from the date on which you purchased the product.
- Designs and specifications are subject to change without prior notice.

Specification

Blue Link® terminal product specification

Common	Current Consumption	2.5 A
	Dark current after 96h	After Acc off and 96 hours (Maximum 0.8 mA or less)
	Dark current within 96h	After Acc off, average current in 96 hours (Maximum 10 mA or less)
	Name of the equipment (model name)	Unit Assy I-BOX (TS340B1CX)

HSDPA	Frequency	TX : 1920 MHz ~ 1980 MHz RX : 2110 MHz ~ 2170 MHz
	Reception sensitivity	-106 dBm under (BER=0.1 % under)
	Max RF Output Power	20.3 dBm ~ 25.7 dBm (Power Class 3, conducted)

Specification

	Frequency	TX : 880 MHz ~ 915 MHz (GSM) 1710.2 MHz ~ 1784.9 MHz (DCS) RX : 925 MHz ~ 960 MHz (GSM) 1805.2 MHz ~ 1879.8 MHz (DCS)	SRRC Certification	CMIIT	2013CJ1876
GSM900/ DCS1800	Reception sensitivity	GSM: -104 dBm under (Class II RBER= 2.4 % under) DCS: -102 dBm under (Class II RBER= 2.4 % under)			<ul style="list-style-type: none">For more information on open licenses and legal notices, refer to the website below. http://www.mobiszone.co.kr/front/mall/jsp/manual/avn_download_center/manual.jsp
	Max RF Output Power	31 dBm ~ 35 dBm MAX (GSM, Power Class4) 28 dBm ~ 32 dBm MAX (DCS, Power Class1)			

LGE Open Source Software Notice

Product Type	DH AVN
Model Number/Range	LND2000

Those products identified by the Product Type and Model Range above from LG Electronics, Inc. ("LGE") contain the open source software detailed below. Please refer to the indicated open source licences (as are included following this notice) for the terms and conditions of their use.

Component(s)	License
Alsa Utils, anaconda, Diskless Remote Boot in Linux (DRBL), Endian Firewall Community, htop, Init Scripts, kmod, Linux Kernel, mkinitrd, S8500_Kernel_2.6.32, Sys K Logd, Sys Linux, udev, udisks, Util-Linux, uxlauch	GPL 2.0

Component(s)	License
Alsa Libraries, alsa-plugins, Glib, glibc, gst-plugins-bad, gst-vaapi, gstreamer, GStreamer FFmpeg Plugin, GSTREAMER PLUGINS-BASE, GSTREAMER PLUGINS-GOOD, GSTREAMER PLUGINS-UGLY, GSTREAMER PLUGINS-VA, gstreamer0.10, libdsme, libudev, meego, Nokia GPL QT License Header, Nokia Qt SDK, PulseAudio	LGPL 2.0/2.1
MediaInfoLib	LGPL 3.0

The source code for the above may be obtained free of charge from LGE at <http://opensource.lge.com>. LGE will also provide open source code to you on CD-ROM for a charge covering the cost of performing such distribution (such as the cost of media, shipping and handling) upon email request to opensource@lge.com. This offer is valid for three (3) years from the date on which you purchased the product.

Please be informed that LG Electronics products may contain open source software listed in the tables below.

Component(s)	License
License	LGPL 2.0/2.1
DBUS MBS	Academic Free License v2.1
bugengine, cmake, dash, libguess, qserialport, qt-components, snull, sudo	BSD License
handset-sound-theme	Creative Commons Attribution-Share Alike 3.0
United States License	
EMGD library, libmowgli-2, libva, xorg-server	MIT License
Amiri font	SIL OPEN FONT LICENSE
ZenLib	zlib/libpng License
base64 Ren- Nyffenegger (generic), Lightfeather 3D Engine (0.9.0)	zlib/png License

GPL 2.0

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundations software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each authors protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyones free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Programs source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the

Program subject to these terms and conditions. You may not impose any further restrictions on the recipients exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting

the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the

terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

one line to give the programs name and an idea of what it does.

Copyright (C) yyyy name of author

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA. Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode: Gnomovision version 69, Copyright (C) year name of author Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w. This is free software, and you are welcome to redistribute it under certain conditions; type `show c for details.

The hypothetical commands `show w and `show c should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w and `show c; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program `Gnomovision (which makes passes at compilers) written by James Hacker.

signature of Ty Coon, 1 April 1989 Ty Coon, President of Vice

LGPL 2.0/2.1

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc. 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know

that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers

Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification").

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine- readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a “work that uses the Library” with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a “work that uses the library”. The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a “work that uses the Library” uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

- b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.
- c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally. NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS"

WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and an idea of what it does.> Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free

Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

signature of Ty Coon, 1 April 1990

Ty Coon, President of Vice

That's all there is to it!

LGPL 3.0

GNU Lesser General Public License

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates the terms and conditions of version 3 of the GNU General Public License, supplemented by the additional permissions listed below.

0. Additional Definitions.

As used herein, "this License" refers to version 3 of the GNU Lesser General Public License, and the "GNU GPL" refers to version 3 of the GNU General Public License.

"The Library" refers to a covered work governed by this License, other than an Application or a Combined Work as defined below.

An "Application" is any work that makes use of an interface provided by the Library, but which is not otherwise based on the Library. Defining a subclass of a class defined by the Library is deemed a mode of using an interface provided by the Library.

A "Combined Work" is a work produced by combining or linking an Application with the Library. The particular version of the Library with which the Combined Work was made is also called the "Linked Version".

The "Minimal Corresponding Source" for a Combined Work means the Corresponding Source for the Combined Work, excluding any source code for portions of the Combined Work that, considered in isolation, are based on the Application, and not on the Linked Version.

The "Corresponding Application Code" for a Combined Work means the object code and/or source code for the Application, including any data and utility programs needed for reproducing the Combined Work from the Application, but excluding the System Libraries of the Combined Work.

1. Exception to Section 3 of the GNU GPL.

You may convey a covered work under sections 3 and 4 of this License without being bound by section 3 of the GNU GPL.

2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:

- a) under this License, provided that you make a good faith effort to ensure that, in the event an Application does not supply the function or data, the facility still operates, and performs whatever part of its purpose remains meaningful, or
- b) under the GNU GPL, with none of the additional permissions of this License applicable to that copy.

3. Object Code Incorporating Material from Library Header Files.

The object code form of an Application may incorporate material from a header file that is part of the Library. You may convey such object code under terms of your choice, provided that, if

the incorporated material is not limited to numerical parameters, data structure layouts and accessors, or small macros, inline functions and templates (ten or fewer lines in length), you do both of the following:

- a) Give prominent notice with each copy of the object code that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the object code with a copy of the GNU GPL and this license document.

4. Combined Works.

You may convey a Combined Work under terms of your choice that, taken together, effectively do not restrict modification of the portions of the Library contained in the Combined Work and reverse engineering for debugging such modifications, if you also do each of the following:

- a) Give prominent notice with each copy of the Combined Work that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the Combined Work with a copy of the GNU GPL and this license document.
- c) For a Combined Work that displays copyright notices during execution, include the copyright notice for the Library among these notices, as well as a reference directing the user to the copies of the GNU GPL and this license document.

- d) Do one of the following:
 - o 0) Convey the Minimal Corresponding Source under the terms of this License, and the Corresponding Application Code in a form suitable for, and under terms that permit, the user to recombine or relink the Application with a modified version of the Linked Version to produce a modified Combined Work, in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.
 - o 1) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (a) uses at run time a copy of the Library already present on the user's computer system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version.
- e) Provide Installation Information, but only if you would otherwise be required to provide such information under section 6 of the GNU GPL, and only to the extent that such information is necessary to install and execute a modified version of the Combined Work produced by recombining or relinking the Application with a modified version of the Linked Version. (If you use option 4d0, the Installation Information must accompany the Minimal Corresponding Source and Corresponding Application Code. If you use option 4d1, you must provide the Installation Information in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.)

5. Combined Libraries.

You may place library facilities that are a work based on the Library side by side in a single library together with other library facilities that are not Applications and are not covered by this License, and convey such a combined library under terms of your choice, if you do both of the following:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities, conveyed under the terms of this License.
- b) Give prominent notice with the combined library that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions of the GNU Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library as you received it specifies that a certain numbered version of the GNU Lesser General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that published version or of any later version published by the Free Software Foundation. If the Library as you

received it does not specify a version number of the GNU Lesser General Public License, you may choose any version of the GNU Lesser General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide whether future versions of the GNU Lesser General Public License shall apply, that proxy's public statement of acceptance of any version is permanent authorization for you to choose that version for the Library.

Academic Free License v2.1

v.2.1

This Academic Free License (the "License") applies to any original work of authorship (the "Original Work") whose owner (the "Licensor") has placed the following notice immediately following the copyright notice for the Original Work: Licensed under the Academic Free License version 2.1

- 1) Grant of Copyright License. Licensor hereby grants You a world-wide, royalty-free, non-exclusive, perpetual, sublicenseable license to do the following:
 - a) to reproduce the Original Work in copies;
 - b) to prepare derivative works ("Derivative Works") based upon the Original Work;
 - c) to distribute copies of the Original Work and Derivative Works to the public;
 - d) to perform the Original Work publicly; and e) to display the Original Work publicly.
- 2) Grant of Patent License. Licensor hereby grants You a world-wide, royalty-free, non-exclusive, perpetual, sublicenseable license, under patent claims owned or controlled by the Licensor that are embodied in the Original Work as furnished by the Licensor, to make, use, sell and offer for sale the Original Work and Derivative Works.

- 3) Grant of Source Code License. The term "Source Code" means the preferred form of the Original Work for making modifications to it and all available documentation describing how to modify the Original Work. Licensor hereby agrees to provide a machine-readable copy of the Source Code of the Original Work along with each copy of the Original Work that Licensor distributes. Licensor reserves the right to satisfy this obligation by placing a machine-readable copy of the Source Code in an information repository reasonably calculated to permit inexpensive and convenient access by You for as long as Licensor continues to distribute the Original Work, and by publishing the address of that information repository in a notice immediately following the copyright notice that applies to the Original Work.
- 4) Exclusions From License Grant. Neither the names of Licensor, nor the names of any contributors to the Original Work, nor any of their trademarks or service marks, may be used to endorse or promote products derived from this Original Work without express prior written permission of the Licensor. Nothing in this License shall be deemed to grant any rights to trademarks, copyrights, patents, trade secrets or any other intellectual property of Licensor except as expressly stated herein. No patent license is granted to make, use, sell or offer to sell embodiments of any patent claims other than the licensed claims defined in Section 2. No right is granted to the trademarks of Licensor even if such marks are included in the Original Work. Nothing in this License shall be interpreted to prohibit Licensor from licensing under different terms from this License any Original Work that Licensor otherwise would have a right to license.

- 5) This section intentionally omitted.
- 6) Attribution Rights. You must retain, in the Source Code of any Derivative Works that You create, all copyright, patent or trademark notices from the Source Code of the Original Work, as well as any notices of licensing and any descriptive text identified therein as an "Attribution Notice." You must cause the Source Code for any Derivative Works that You create to carry a prominent Attribution Notice reasonably calculated to inform recipients that You have modified the Original Work.
- 7) Warranty of Provenance and Disclaimer of Warranty. Licensor warrants that the copyright in and to the Original Work and the patent rights granted herein by Licensor are owned by the Licensor or are sublicensed to You under the terms of this License with the permission of the contributor(s) of those copyrights and patent rights. Except as expressly stated in the immediately proceeding sentence, the Original Work is provided under this License on an "AS IS" BASIS and WITHOUT WARRANTY, either express or implied, including, without limitation, the warranties of NON-INFRINGEMENT, MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY OF THE ORIGINAL WORK IS WITH YOU. This DISCLAIMER OF WARRANTY constitutes an essential part of this License. No license to Original Work is granted hereunder except under this disclaimer.

8) Limitation of Liability. Under no circumstances and under no legal theory, whether in tort (including negligence), contract, or otherwise, shall the Licensor be liable to any person for any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or the use of the Original Work including, without limitation, damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses. This limitation of liability shall not apply to liability for death or personal injury resulting from Licensor's negligence to the extent applicable law prohibits such limitation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion and limitation may not apply to You.

9) Acceptance and Termination. If You distribute copies of the Original Work or a Derivative Work, You must make a reasonable effort under the circumstances to obtain the express assent of recipients to the terms of this License. Nothing else but this License (or another written agreement between Licensor and You) grants You permission to create Derivative Works based upon the Original Work or to exercise any of the rights granted in Section 1 herein, and any attempt to do so except under the terms of this License (or another written agreement between Licensor and You) is expressly prohibited by U.S. copyright law, the equivalent laws of other countries, and by international treaty. Therefore, by exercising any of the rights granted to You in Section 1 herein, You indicate Your acceptance of this License and all of its terms and conditions.

10) Termination for Patent Action. This License shall terminate automatically and You may no longer exercise any of the rights granted to You by this License as of the date You commence an action, including a cross-claim or counterclaim, against Licensor or any licensee alleging that the Original Work infringes a patent. This termination provision shall not apply for an action alleging patent infringement by combinations of the Original Work with other software or hardware.

11) Jurisdiction, Venue and Governing Law. Any action or suit relating to this License may be brought only in the courts of a jurisdiction wherein the Licensor resides or in which Licensor conducts its primary business, and under the laws of that jurisdiction excluding its conflict-of-law provisions. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any use of the Original Work outside the scope of this License or after its termination shall be subject to the requirements and penalties of the U.S. Copyright Act, 17 U.S.C. § 101 et seq., the equivalent laws of other countries, and international treaty. This section shall survive the termination of this License.

12) Attorneys Fees. In any action to enforce the terms of this License or seeking damages relating thereto, the prevailing party shall be entitled to recover its costs and expenses, including, without limitation, reasonable attorneys' fees and costs incurred in connection with such action, including any appeal of such action. This section shall survive the termination of this License.

13) Miscellaneous. This License represents the complete agreement concerning the subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable.

14) Definition of "You" in This License. "You" throughout this License, whether in upper or lower case, means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with you. For purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

15) Right to Use. You may use the Original Work in all ways not otherwise restricted or conditioned by this License or by law, and Licensor promises not to interfere with or be responsible for such uses by You.

This license is Copyright (C) 2003-2004 Lawrence E. Rosen. All rights reserved.

Permission is hereby granted to copy and distribute this license without modification. This license may not be modified without the express written permission of its copyright owner.

BSD License

- bugengine

Copyright 1999 Precision Insight, Inc., Cedar Park, Texas. (copyright may need to be changed)

Copyright 2000 VA Linux Systems, Inc., Sunnyvale, California.

All Rights Reserved.

Permission is hereby granted, free of charge, to any person obtaining copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice (including the next paragraph) shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL PRECISION INSIGHT AND/OR ITS SUPPLIERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

- cmake

CMake - Cross Platform Makefile Generator

Copyright 2000-2009 Kitware, Inc., Insight Software Consortium
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the names of Kitware, Inc., the Insight Software Consortium, nor the names of their contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED

WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

- dash

Copyright (c) 1989-1994 The Regents of the University of California. All rights reserved.

Copyright (c) 1997 Christos Zoulas. All rights reserved.

Copyright (c) 1997-2005 Herbert Xu <herbert@gondor.apana.org.au>. All rights reserved.

This code is derived from software contributed to Berkeley by Kenneth Almquist.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

- libguess

Copyright (c) 2000-2003 Shiro Kawai

Copyright (c) 2005-2010 Yoshiki Yazawa
Copyright (c) 2007-2010 William Pitcock

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the authors nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT,

INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

- qserialport

Copyright (C) 2011 Nokia Corporation and/or its subsidiary(-ies). All rights reserved.
Contact: Nokia Corporation (qt-info@nokia.com)

This file is part of the Qt Components project.

You may use this file under the terms of the BSD license as follows:

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of

conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

* Neither the name of Nokia Corporation and its Subsidiary(-ies) nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE."

- qt-components

Copyright (C) 2011 Nokia Corporation and/or its subsidiary(-ies). All rights reserved.

Contact: Nokia Corporation (qt-info@nokia.com)

This file is part of the Qt Components project.

You may use this file under the terms of the BSD license as follows:

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of Nokia Corporation and its Subsidiary(-ies) nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"
AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED

WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

- snull

Copyright (C) 2001 Alessandro Rubini and Jonathan Corbet

Copyright (C) 2001 O'Reilly & Associates

The source code in this file can be freely used, adapted, and redistributed in source or binary form, so long as an acknowledgment appears in derived source files. The citation should list that the code comes from the book "Linux Device Drivers" by Alessandro Rubini and Jonathan Corbet, published by O'Reilly & Associates. No warranty is attached; we cannot take responsibility for errors or fitness for use.

- sudo

Sudo is distributed under the following license:

Copyright (c) 1994-1996, 1998-2013

Todd C. Miller <Todd.Miller@courtesan.com>

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Sponsored in part by the Defense Advanced Research Projects Agency (DARPA) and Air Force Research Laboratory, Air Force Materiel Command, USAF, under agreement number F39502-99-1-0512.

The file redblack.c bears the following license:

Copyright (c) 2001 Emin Martinian

Redistribution and use in source and binary forms, with or without modification, are permitted provided that neither the name of Emin Martinian nor the names of any contributors are used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The files getcwd.c, glob.c, glob.h and snprintf.c bear the following license:

Copyright (c) 1989, 1990, 1991, 1993

The Regents of the University of California. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR

BUSINESS INTERRUPTION)

HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The file fnmatch.c bears the following license:

Copyright (c) 2011, VMware, Inc.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- * Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- * Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- * Neither the name of the VMware, Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL VMWARE, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF

THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. The file getopt_long.c bears the following license:

```
/*
 * Copyright (c) 2000 The NetBSD Foundation, Inc.
 * All rights reserved.
 *
 * This code is derived from software contributed to The NetBSD Foundation
 * by Dieter Baron and Thomas Klausner.
 *
 * Redistribution and use in source and binary forms, with or without
```

* modification, are permitted provided that the following conditions
* are met:
* 1. Redistributions of source code must retain the above copyright notice, this list of conditions
and the following disclaimer.
* 2. Redistributions in binary form must reproduce the above copyright notice, this list of
conditions and the following disclaimer in the
* documentation and/or other materials provided with the distribution.
*
* THIS SOFTWARE IS PROVIDED BY THE NETBSD FOUNDATION, INC. AND CONTRIBUTORS
* ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED
* TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
* PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE FOUNDATION OR CONTRIBUTORS
* BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
* SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
* INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
* POSSIBILITY OF SUCH DAMAGE.
*/

The embedded copy of zlib bears the following license: Copyright (C) 1995-2012 Jean-loup Gailly and Mark Adler

This software is provided 'as-is', without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software.

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. This notice may not be removed or altered from any source distribution.

Jean-loup Gailly Mark Adler
jloup@gzip.org madler@alumni.caltech.edu

Creative Commons Attribution-Share Alike 3.0 United States License

- handset-sound-theme

THE WORK (AS DEFINED BELOW) IS PROVIDED UNDER THE TERMS OF THIS CREATIVE COMMONS PUBLIC LICENSE ("CCPL" OR "LICENSE"). THE WORK IS PROTECTED BY COPYRIGHT AND/OR OTHER APPLICABLE LAW. ANY USE OF THE WORK OTHER THAN AS AUTHORIZED UNDER THIS LICENSE OR COPYRIGHT LAW IS PROHIBITED.

BY EXERCISING ANY RIGHTS TO THE WORK PROVIDED HERE, YOU ACCEPT AND AGREE TO BE BOUND BY THE TERMS OF THIS LICENSE. TO THE EXTENT THIS LICENSE MAY BE CONSIDERED TO BE A CONTRACT, THE LICENSOR GRANTS YOU THE RIGHTS CONTAINED HERE IN CONSIDERATION OF YOUR ACCEPTANCE OF SUCH TERMS AND CONDITIONS.

1. Definitions

"Adaptation" means a work based upon the Work, or upon the Work and other pre-existing works, such as a translation, adaptation, derivative work, arrangement of music or other alterations of a literary or artistic work, or phonogram or performance and includes cinematographic adaptations or any other form in which the Work may be recast, transformed, or adapted including in any form recognizably derived from the original, except that a work that constitutes a Collection will

not be considered an Adaptation for the purpose of this License. For the avoidance of doubt, where the Work is a musical work, performance or phonogram, the synchronization of the Work in timed-relation with a moving image ("synching") will be considered an Adaptation for the purpose of this License.

"Collection" means a collection of literary or artistic works, such as encyclopedias and anthologies, or performances, phonograms or broadcasts, or other works or subject matter other than works listed in Section 1(f) below, which, by reason of the selection and arrangement of their contents, constitute intellectual creations, in which the Work is included in its entirety in unmodified form along with one or more other contributions, each constituting separate and independent works in themselves, which together are assembled into a collective whole. A work that constitutes a Collection will not be considered an Adaptation (as defined below) for the purposes of this License.

"Creative Commons Compatible License" means a license that is listed at <http://creativecommons.org/compatiblelicenses> that has been approved by Creative Commons as being essentially equivalent to this License, including, at a minimum, because that license: (i) contains terms that have the same purpose, meaning and effect as the License Elements of this License; and, (ii) explicitly permits the relicensing of adaptations of works made available under that license under this License or a Creative Commons jurisdiction license with the same License Elements as this License.

"Distribute" means to make available to the public the original and copies of the Work or Adaptation, as appropriate, through sale or other transfer of ownership.

"License Elements" means the following high-level license attributes as selected by Licensor and indicated in the title of this License: Attribution, ShareAlike.

"Licensor" means the individual, individuals, entity or entities that offer(s) the Work under the terms of this License. "Original Author" means, in the case of a literary or artistic work, the individual, individuals, entity or entities who created the Work or if no individual or entity can be identified, the publisher; and in addition (i) in the case of a performance the actors, singers, musicians, dancers, and other persons who act, sing, deliver, declaim, play in, interpret or otherwise perform literary or artistic works or expressions of folklore; (ii) in the case of a phonogram the producer being the person or legal entity who first fixes the sounds of a performance or other sounds; and, (iii) in the case of broadcasts, the organization that transmits the broadcast.

"Work" means the literary and/or artistic work offered under the terms of this License including without limitation any production in the literary, scientific and artistic domain, whatever may be the mode or form of its expression including digital form, such as a book, pamphlet and other writing; a lecture, address, sermon or other work of the same nature; a dramatic or dramatico-musical work; a choreographic work or entertainment in dumb show; a musical composition with or without words; a cinematographic work to which are assimilated works expressed by a process analogous to cinematography; a work of drawing, painting, architecture, sculpture, engraving or lithography; a photographic work to which are assimilated works expressed by

a process analogous to photography; a work of applied art; an illustration, map, plan, sketch or three-dimensional work relative to geography, topography, architecture or science; a performance; a broadcast; a phonogram; a compilation of data to the extent it is protected as a copyrightable work; or a work performed by a variety or circus performer to the extent it is not otherwise considered a literary or artistic work.

"You" means an individual or entity exercising rights under this License who has not previously violated the terms of this License with respect to the Work, or who has received express permission from the Licensor to exercise rights under this License despite a previous violation.

"Publicly Perform" means to perform public recitations of the Work and to communicate to the public those public recitations, by any means or process, including by wire or wireless means or public digital performances; to make available to the public Works in such a way that members of the public may access these Works from a place and at a place individually chosen by them; to perform the Work to the public by any means or process and the communication to the public of the performances of the Work, including by public digital performance; to broadcast and rebroadcast the Work by any means including signs, sounds or images.

"Reproduce" means to make copies of the Work by any means including without limitation by sound or visual recordings and the right of fixation and reproducing fixations of the Work, including storage of a protected performance or phonogram in digital form or other electronic medium.

2. Fair Dealing Rights. Nothing in this License is intended to reduce, limit, or restrict any uses free from copyright or rights arising from limitations or exceptions that are provided for in connection with the copyright protection under copyright law or other applicable laws.

3. License Grant. Subject to the terms and conditions of this License, Licensor hereby grants You a worldwide, royalty-free, non-exclusive, perpetual (for the duration of the applicable copyright) license to exercise the rights in the Work as stated below:

to Reproduce the Work, to incorporate the Work into one or more Collections, and to Reproduce the Work as incorporated in the Collections;

to create and Reproduce Adaptations provided that any such Adaptation, including any translation in any medium, takes reasonable steps to clearly label, demarcate or otherwise identify that changes were made to the original Work. For example, a translation could be marked "The original work was translated from English to Spanish," or a modification could indicate "The original work has been modified";

to Distribute and Publicly Perform the Work including as incorporated in Collections; and,
to Distribute and Publicly Perform Adaptations.

For the avoidance of doubt:

Non-waivable Compulsory License Schemes. In those jurisdictions in which the right to collect royalties through any statutory or compulsory licensing scheme cannot be waived, the Licensor reserves the exclusive right to collect such royalties for any exercise by You of the rights granted under this License;

Waivable Compulsory License Schemes. In those jurisdictions in which the right to collect royalties through any statutory or compulsory licensing scheme can be waived, the Licensor waives the exclusive right to collect such royalties for any exercise by You of the rights granted under this License; and,

Voluntary License Schemes. The Licensor waives the right to collect royalties, whether individually or, in the event that the Licensor is a member of a collecting society that administers voluntary licensing schemes, via that society, from any exercise by You of the rights granted under this License.

The above rights may be exercised in all media and formats whether now known or hereafter devised. The above rights include the right to make such modifications as are technically necessary to exercise the rights in other media and formats. Subject to Section 8(f), all rights not expressly granted by Licensor are hereby reserved.

4. Restrictions. The license granted in Section 3 above is expressly made subject to and limited by the following restrictions:

You may Distribute or Publicly Perform the Work only under the terms of this License. You must include a copy of, or the

Uniform Resource Identifier (URI) for, this License with every copy of the Work You Distribute or Publicly Perform. You may not offer or impose any terms on the Work that restrict the terms of this License or the ability of the recipient of the Work to exercise the rights granted to that recipient under the terms of the License. You may not sublicense the Work. You must keep intact all notices that refer to this License and to the disclaimer of warranties with every copy of the Work You Distribute or Publicly Perform. When You Distribute or Publicly Perform the Work, You may not impose any effective technological measures on the Work that restrict the ability of a recipient of the Work from You to exercise the rights granted to that recipient under the terms of the License. This Section 4(a) applies to the Work as incorporated in a Collection, but this does not require the Collection apart from the Work itself to be made subject to the terms of this License. If You create a Collection, upon notice from any Licensor You must, to the extent practicable, remove from the Collection any credit as required by Section 4(c), as requested. If You create an Adaptation, upon notice from any Licensor You must, to the extent practicable, remove from the Adaptation any credit as required by Section 4(c), as requested.

You may Distribute or Publicly Perform an Adaptation only under the terms of: (i) this License; (ii) a later version of this License with the same License Elements as this License; (iii) a Creative Commons jurisdiction license (either this or a later license version) that contains the same License Elements as this License (e.g., Attribution-ShareAlike 3.0 US)); (iv) a Creative Commons Compatible License. If you license the Adaptation under one of the licenses mentioned in (iv), you must comply with the terms of that license. If you license the Adaptation under the terms of any of the licenses mentioned in (i), (ii) or (iii) (the "Applicable License"), you must comply with the terms of the Applicable License generally and the following provisions: (I) You must include a copy of, or the URI for, the Applicable License with every copy of each Adaptation You Distribute or Publicly Perform; (II) You may not offer or impose any terms on the Adaptation that restrict the terms of the Applicable License or the ability of the recipient of the Adaptation to exercise the rights granted to that recipient under the terms of the Applicable License; (III) You must keep intact all notices that refer to the Applicable License and to the disclaimer of warranties with every copy of the Work as included in the Adaptation You Distribute or Publicly Perform; (IV) when You Distribute or Publicly Perform the Adaptation, You may not impose any effective technological measures on the Adaptation that restrict the ability of a recipient of the Adaptation from You to exercise the rights granted to that recipient under the terms of the Applicable License. This Section 4(b) applies to the Adaptation as incorporated in a Collection, but this does not require the Collection apart from the Adaptation itself to be made subject

to the terms of the Applicable License. If You Distribute, or Publicly Perform the Work or any Adaptations or Collections, You must, unless a request has been made pursuant to Section 4(a), keep intact all copyright notices for the Work and provide, reasonable to the medium or means You are utilizing: (i) the name of the Original Author (or pseudonym, if applicable) if supplied, and/or if the Original Author and/or Licensor designate another party or parties (e.g., a sponsor institute, publishing entity, journal) for attribution ("Attribution Parties") in Licensor's copyright notice, terms of service or by other reasonable means, the name of such party or parties; (ii) the title of the Work if supplied; (iii) to the extent reasonably practicable, the URI, if any, that Licensor specifies to be associated with the Work, unless such URI does not refer to the copyright notice or licensing information for the Work; and (iv) , consistent with Ssection 3(b), in the case of an Adaptation, a credit identifying the use of the Work in the Adaptation (e.g., "French translation of the Work by Original Author," or "Screenplay based on original Work by Original Author"). The credit required by this Section 4(c) may be implemented in any reasonable manner; provided, however, that in the case of a Adaptation or Collection, at a minimum such credit will appear, if a credit for all contributing authors of the Adaptation or Collection appears, then as part of these credits and in a manner at least as prominent as the credits for the other contributing authors. For the avoidance of doubt, You may only use the credit required by this Section for the purpose of attribution in the manner set out above and, by exercising Your rights under this License, You may not implicitly or explicitly assert or imply any connection with, sponsorship or endorsement

by the Original Author, Licensor and/or Attribution Parties, as appropriate, of You or Your use of the Work, without the separate, express prior written permission of the Original Author, Licensor and/or Attribution Parties.

Except as otherwise agreed in writing by the Licensor or as may be otherwise permitted by applicable law, if You Reproduce, Distribute or Publicly Perform the Work either by itself or as part of any Adaptations or Collections, You must not distort, mutilate, modify or take other derogatory action in relation to the Work which would be prejudicial to the Original Author's honor or reputation. Licensor agrees that in those jurisdictions (e.g. Japan), in which any exercise of the right granted in Section 3(b) of this License (the right to make Adaptations) would be deemed to be a distortion, mutilation, modification or other derogatory action prejudicial to the Original Author's honor and reputation, the Licensor will waive or not assert, as appropriate, this Section, to the fullest extent permitted by the applicable national law, to enable You to reasonably exercise Your right under Section 3(b) of this License (right to make Adaptations) but not otherwise.

5. Representations, Warranties and Disclaimer

UNLESS OTHERWISE MUTUALLY AGREED TO BY THE PARTIES IN WRITING, LICENSOR OFFERS THE WORK AS-IS AND MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND CONCERNING THE WORK, EXPRESS, IMPLIED, STATUTORY OR OTHERWISE, INCLUDING, WITHOUT

LIMITATION, WARRANTIES OF TITLE, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NONINFRINGEMENT, OR THE ABSENCE OF LATENT OR OTHER DEFECTS, ACCURACY, OR THE PRESENCE OR ABSENCE OF ERRORS, WHETHER OR NOT DISCOVERABLE. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES, SO SUCH EXCLUSION MAY NOT APPLY TO YOU.

6. Limitation on Liability. EXCEPT TO THE EXTENT REQUIRED BY APPLICABLE LAW, IN NO EVENT WILL LICENSOR BE LIABLE TO YOU ON ANY LEGAL THEORY FOR ANY SPECIAL, INCIDENTAL, CONSEQUENTIAL, PUNITIVE OR EXEMPLARY DAMAGES ARISING OUT OF THIS LICENSE OR THE USE OF THE WORK, EVEN IF LICENSOR HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

7. Termination

This License and the rights granted hereunder will terminate automatically upon any breach by You of the terms of this License. Individuals or entities who have received Adaptations or Collections from You under this License, however, will not have their licenses terminated provided such individuals or entities remain in full compliance with those licenses. Sections 1, 2, 5, 6, 7, and 8 will survive any termination of this License.

Subject to the above terms and conditions, the license granted here is perpetual (for the

duration of the applicable copyright in the Work). Notwithstanding the above, Licensor reserves the right to release the Work under different license terms or to stop distributing the Work at any time; provided, however that any such election will not serve to withdraw this License (or any other license that has been, or is required to be, granted under the terms of this License), and this License will continue in full force and effect unless terminated as stated above.

8. Miscellaneous

Each time You Distribute or Publicly Perform the Work or a Collection, the Licensor offers to the recipient a license to the Work on the same terms and conditions as the license granted to You under this License.

Each time You Distribute or Publicly Perform an Adaptation, Licensor offers to the recipient a license to the original Work on the same terms and conditions as the license granted to You under this License.

If any provision of this License is invalid or unenforceable under applicable law, it shall not affect the validity or enforceability of the remainder of the terms of this License, and without further action by the parties to this agreement, such provision shall be reformed to the minimum extent necessary to make such provision valid and enforceable.

No term or provision of this License shall be deemed waived and no breach consented to unless such waiver or consent shall be in writing and signed by the party to be charged with such

waiver or consent.

This License constitutes the entire agreement between the parties with respect to the Work licensed here. There are no understandings, agreements or representations with respect to the Work not specified here. Lessor shall not be bound by any additional provisions that may appear in any communication from You. This License may not be modified without the mutual written agreement of the Lessor and You.

The rights granted under, and the subject matter referenced, in this License were drafted utilizing the terminology of the Berne Convention for the Protection of Literary and Artistic Works (as amended on September 28, 1979), the Rome Convention of 1961, the WIPO Copyright Treaty of 1996, the WIPO Performances and Phonograms Treaty of 1996 and the Universal Copyright Convention (as revised on July 24, 1971). These rights and subject matter take effect in the relevant jurisdiction in which the License terms are sought to be enforced according to the corresponding provisions of the implementation of those treaty provisions in the applicable national law. If the standard suite of rights granted under applicable copyright law includes additional rights not granted under this License, such additional rights are deemed to be included in the License; this License is not intended to restrict the license of any rights under applicable law.

Creative Commons Notice

Creative Commons is not a party to this License, and makes no warranty whatsoever in connection with the Work. Creative Commons will not be liable to You or any party on any legal theory for any damages whatsoever, including without limitation any general, special, incidental or consequential damages arising in connection to this license. Notwithstanding the foregoing two (2) sentences, if Creative Commons has expressly identified itself as the Licenser hereunder, it shall have all rights and obligations of Licensor.

Except for the limited purpose of indicating to the public that the Work is licensed under the CCPL, Creative Commons does not authorize the use by either party of the trademark "Creative Commons" or any related trademark or logo of Creative Commons without the prior written consent of Creative Commons. Any permitted use will be in compliance with Creative Commons' then-current trademark usage guidelines, as may be published on its website or otherwise made available upon request from time to time. For the avoidance of doubt, this trademark restriction does not form part of the License.

Creative Commons may be contacted at <http://creativecommons.org/>.

MIT License

- EMGD library

Copyright 1999 Precision Insight, Inc., Cedar Park, Texas. (copyright may need to be changed)

Copyright 2000 VA Linux Systems, Inc., Sunnyvale, California.

All Rights Reserved.

Permission is hereby granted, free of charge, to any person obtaining copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice (including the next paragraph) shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL PRECISION INSIGHT AND/OR ITS SUPPLIERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN

ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

- libmowgli-2

Copyright (c) 2005-2012 atheme.org and individual contributors as listed in specific source headers.

Permission to use, copy, modify, and/or distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice is present in all copies.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

- libva

Copyright (c) 2007 Intel Corporation. All Rights Reserved

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sub license, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice (including the next paragraph) shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT. IN NO EVENT SHALL PRECISION INSIGHT AND/ OR ITS SUPPLIERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

- xorg-server

Copyright © 2000-2001 Juliusz Chroboczek

Copyright © 1998 Egbert Eich

Copyright © 2006-2007 Intel Corporation

Copyright © 2006 Nokia Corporation

Copyright © 2006-2008 Peter Hutterer

Copyright © 2006 Adam Jackson

Copyright © 2009 NVIDIA Corporation

Copyright © 1999 Keith Packard

Copyright © 2007-2009 Red Hat, Inc.

Copyright © 2005-2008 Daniel Stone

Copyright © 2006-2009 Simon Thum

Copyright © 1987, 2003-2006, 2008-2009 Sun Microsystems, Inc.

Copyright © 2006 Luc Verhaegen

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice (including the next paragraph) shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

SIL OPEN FONT LICENSE

- Amiri font

Copyright (c) 2010-2013, Khaled Hosny (<khaledhosny@eglug.org>)

This Font Software is licensed under the SIL Open Font License, Version 1.1.

This license is copied below, and is also available with a FAQ at: <http://scripts.sil.org/OFL>

SIL OPEN FONT LICENSE Version 1.1 - 26 February 2007

PREAMBLE

The goals of the Open Font License (OFL) are to stimulate worldwide development of collaborative font projects, to support the font creation efforts of academic and linguistic communities, and to provide a free and open framework in which fonts may be shared and improved in partnership with others.

The OFL allows the licensed fonts to be used, studied, modified and redistributed freely as long as they are not sold by themselves. The fonts, including any derivative works, can be bundled, embedded, redistributed and/or sold with any software provided that any reserved names are not used by derivative works. The fonts and derivatives, however, cannot be released under any other type of license. The requirement for fonts to remain under this license does not apply to any document created using the fonts or their derivatives.

DEFINITIONS

"Font Software" refers to the set of files released by the Copyright Holder(s) under this license and clearly marked as such. This may include source files, build scripts and documentation.

"Reserved Font Name" refers to any names specified as such after the copyright statement(s).

"Original Version" refers to the collection of Font Software components as distributed by the Copyright Holder(s).

"Modified Version" refers to any derivative made by adding to, deleting, or substituting -- in part or in whole -- any of the components of the Original Version, by changing formats or by porting the Font Software to a new environment.

"Author" refers to any designer, engineer, programmer, technical writer or other person who contributed to the Font Software. PERMISSION & CONDITIONS

Permission is hereby granted, free of charge, to any person obtaining a copy of the Font Software, to use, study, copy, merge, embed, modify, redistribute, and sell modified and unmodified copies of the Font Software, subject to the following conditions:

- 1) Neither the Font Software nor any of its individual components, in Original or Modified Versions, may be sold by itself.
- 2) Original or Modified Versions of the Font Software may be bundled, redistributed and/or sold with any software, provided that each copy contains the above copyright notice and this license. These can be included either as stand-alone text files, human-readable headers or in the appropriate machine-readable metadata fields within text or binary files as long as those fields can be easily viewed by the user.

- 3) No Modified Version of the Font Software may use the Reserved Font Name(s) unless explicit written permission is granted by the corresponding Copyright Holder. This restriction only applies to the primary font name as presented to the users.
- 4) The name(s) of the Copyright Holder(s) or the Author(s) of the Font Software shall not be used to promote, endorse or advertise any Modified Version, except to acknowledge the contribution(s) of the Copyright Holder(s) and the Author(s) or with their explicit written permission.
- 5) The Font Software, modified or unmodified, in part or in whole, must be distributed entirely under this license, and must not be distributed under any other license. The requirement for fonts to remain under this license does not apply to any document created using the Font Software.

TERMINATION

This license becomes null and void if any of the above conditions are not met. DISCLAIMER

THE FONT SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF COPYRIGHT, PATENT, TRADEMARK,

OR OTHER RIGHT. IN NO EVENT SHALL THE COPYRIGHT HOLDER BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, INCLUDING ANY GENERAL, SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF THE USE OR INABILITY TO USE THE FONT SOFTWARE OR FROM OTHER DEALINGS IN THE FONT SOFTWARE.

zlib/libpng License

- ZenLib

Copyright (C) 2002-2003 Jérôme Martinez, Zen@MediaArea.net

This software is provided 'as-is', without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software.

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as

being the original software.

3. This notice may not be removed or altered from any source distribution.

zlib/png License

- base64 Ren- Nyffenegger (generic)

Copyright (C) 2004-2008 René Nyffenegger

This source code is provided 'as-is', without any express or implied warranty. In no event will the author be held liable for any damages arising from the use of this software.

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of this source code must not be misrepresented; you must not claim that you wrote the original source code. If you use this source code in a product, an acknowledgment in the product documentation would be appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original source code.

3. This notice may not be removed or altered from any source distribution. René Nyffenegger
rene.nyffenegger@adp-gmbh.ch

- Lightfeather 3D Engine (0.9.0)

Copyright (c) 2004-2007 The Lightfeather Maintainers and Contributors. This software is provided 'as-is', without any express or implied warranty.

In no event will the authors be held liable for any damages arising from the use of this software.

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software.

If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.

2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.

3. This notice may not be removed or altered from any source distribution.