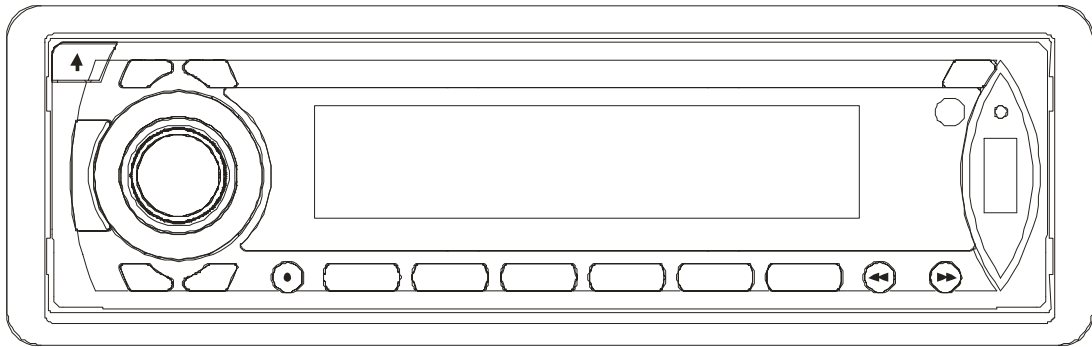


# OWNER'S MANUAL

## Mobile Audio System

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- **PLL Synthesizer Stereo Radio**
- **Digital Compact Disc Player/MP3 Player/WMA Player**
- **Automatic Memory Storing**
- **Fold Down Detachable Panel**
- **Preset Equalization**
- **Electronic Shockproof (ESP) Function**
- **USB Interface**
- **CD Changer Control (FOR CD CHANGER VERSION ONLY)**
- **Auxiliary Input Function (FOR AUX IN VERSION ONLY)**
- **Remote Control (OPTIONAL)**

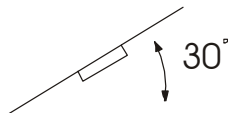
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# INSTALLATION

## Notes:

- Choose the mounting location where the unit will not interfere with the normal driving function of the driver.
- Before finally installing the unit, connect the wiring temporarily and make sure it is all connected up properly and the unit and the system work properly.
- Use only the parts included with the unit to ensure proper installation. The use of unauthorized parts can cause malfunctions.
- Consult with your nearest dealer if installation requires the drilling of holes or other modifications of the vehicle.
- Install the unit where it does not get in the driver's way and cannot injure the passenger if there is a sudden stop, like an emergency stop.
- If installation angle exceeds  $30^\circ$  from horizontal, the unit might not give its optimum performance.



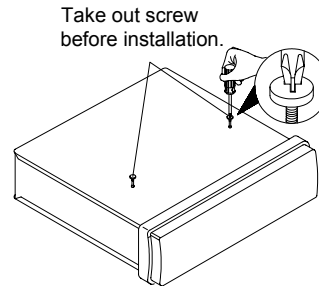
- Avoid installing the unit where it would be subject to high temperature, such as from direct sunlight, or from hot air, from the heater, or where it would be subject to dust, dirt or excessive vibration.

## DIN FRONT/REAR-MOUNT

This unit can be properly installed either from "Front" (conventional DIN Front-mount) or "Rear" (DIN Rear-mount installation, utilizing threaded screw holes at the sides of the unit chassis). For details, refer to the following illustrated installation methods.

## TAKE OUT SCREW BEFORE INSTALLATION

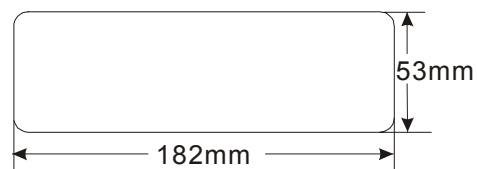
Before install the unit, please remove the two screws.



## DIN FRONT-MOUNT (Method A)

### Installation Opening

This unit can be installed in any dashboard having an opening as shown below:



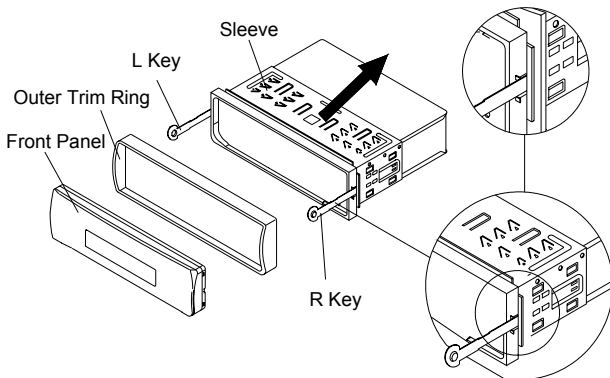
## Installing the unit

Be sure you test all connections first, and then follow these steps to install the unit.

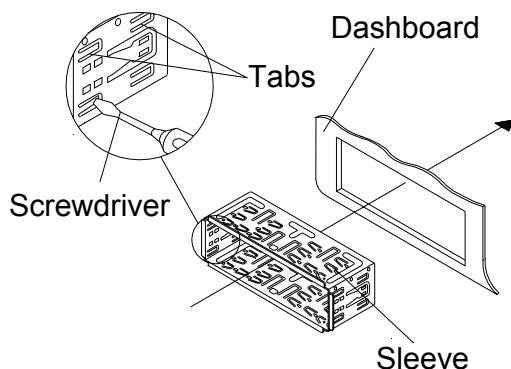
1. Make sure the ignition is turned off, and then disconnect the cable from the vehicle battery's negative (-) terminal.
2. Disconnect the wire harness and the antenna.
3. Press the release button on the front panel and remove the control panel (see the steps of "to detach the front panel").
4. Lift the top of the outer trim ring then pull it out to remove it.
5. The two supplied keys release tabs inside the unit's sleeve so you can remove it. Insert the keys as far as

# INSTALLATION

they will go (with the notches facing up) into the appropriate slots at the middle left and right sides of the unit. Then slide the sleeve off the back of the unit.



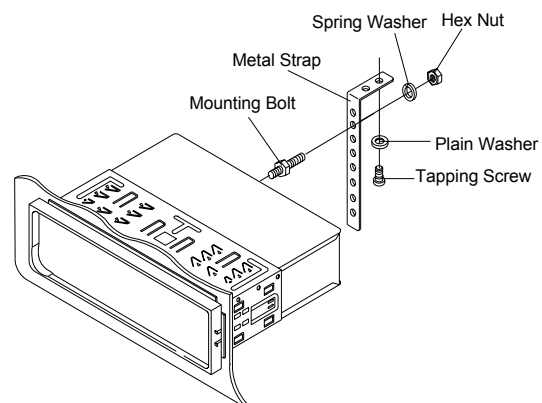
6. Mount the sleeve by inserting the sleeve into the opening of the dashboard and bend open the tabs located around the sleeve with a screwdriver. Not all tabs will be able to make contact, so examine which ones will be most effective. Bending open the appropriate tabs behind the dashboard to secure the sleeve in place.



7. Reconnect the wire harness and the antenna and be careful not to pinch any wires or cables.
8. Slide the unit into the sleeve until it locks into place.
9. To further secure the unit, use the supplied metal strap to secure the

back of the unit in place. Use the supplied hardware (Hex Nut (M5mm) and Spring Washer) to attach one end of the strap to the mounting bolt on the back of the unit. If necessary, bend the metal strap to fit your vehicle's mounting area. Then use the supplied hardware (Tapping Screw (5x25mm) and Plain Washer) to attach the other end of metal strap to a solid metal part of the vehicle under the dashboard. This strap also helps ensure proper electrical grounding of the unit.

Note to install the short threading terminal of the mounting bolt to the back of the unit and the other long threading terminal to the dashboard.



10. Reconnect the cable to the vehicle battery's negative (-) terminal. Then replace the outer trim ring and install the unit's front panel (see the steps of "to install the front panel").

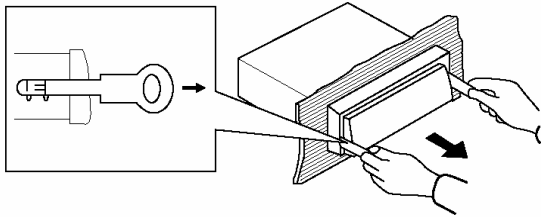
## Removing the unit

1. Make sure the ignition is turned off, then disconnect the cable from the vehicle battery's negative (-) terminal.
2. Remove the metal strap attached the back of the unit (if attached).
3. Press the release button to remove the front panel.

## INSTALLATION

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4. Lift the top of the outer trim ring then pull it out to remove it.
5. Insert both of the supplied keys into the slots at the middle left and right sides of the unit, then pull the unit out of the dashboard.



To fasten the unit to the factory radio mounting brackets.

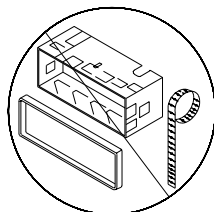
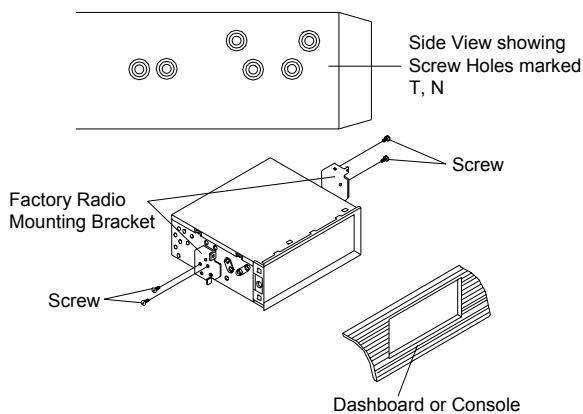
Align the screw holes on the bracket with the screw holes on the unit, and then tighten the screws (5x5mm) on each side.

Note: the outer trim ring, sleeve and the metal strap are not used for method B installation.

### ***DIN REAR-MOUNT (Method B)***

If your vehicle is a Nissan, Toyota, follow these mounting instructions.


Use the screw holes marked T (Toyota), N (Nissan) located on both sides of the unit to fasten the unit to the factory radio mounting brackets supplied with your vehicle.

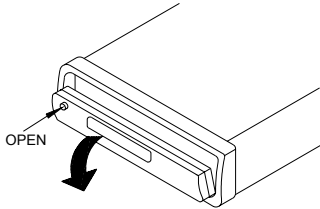


## USING THE DETACHABLE FRONT PANEL

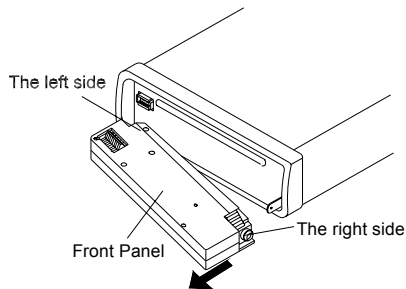
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### To Detach the Front Panel

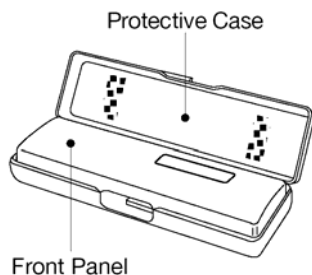
1. Press the  (open) button, then the front panel will be folded down.



2. To remove the front panel, lift it up at a little angle from horizontal position, then first pull out the right side and then pull out the left side.

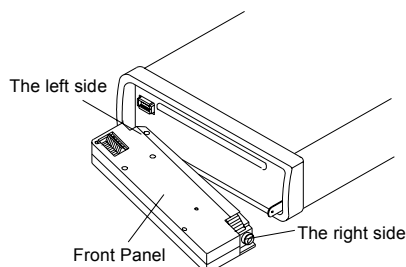


3. For safekeeping, store the front panel in the supplied protective case immediately after being removed.

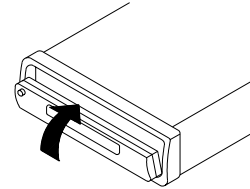



### To Install the Front Panel

1. To install the front panel, first insert the left side into proper position then insert the right side into place.



2. When the two sides fixed into place, push the front panel into main unit.



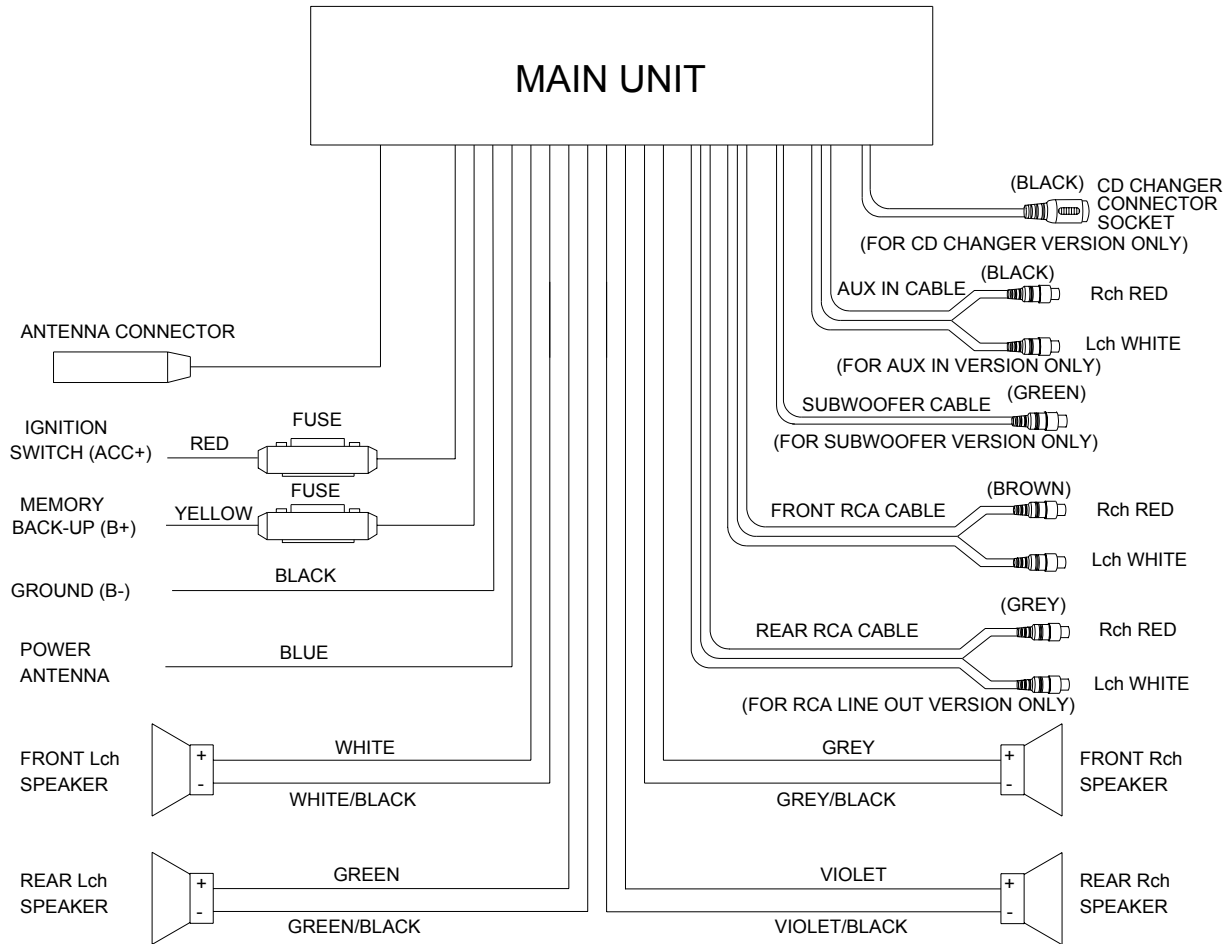
3. Note that if the front panel fails to lock in position properly, pressing control button may not function and the display may be missing some segments. Press the  (open) button and then reinstall the front panel again.

### Precautions when handling

1. Do not drop the front panel.
2. Do not put pressure on the display or control buttons when detaching or re-installing the front panel.
3. Do not touch the contacts on the front panel or on the main unit body. It may result in poor electrical contact.
4. If any dirt or foreign substances adhered on the contacts, they can be removed with a clean and dry cloth.
5. Do not expose the front panel to high temperatures or direct sunlight in anywhere.
6. Keep away any volatile agents (e.g. benzene, thinner, or insecticides) from touching the surface of the front panel
7. Do not attempt to disassemble the front panel.

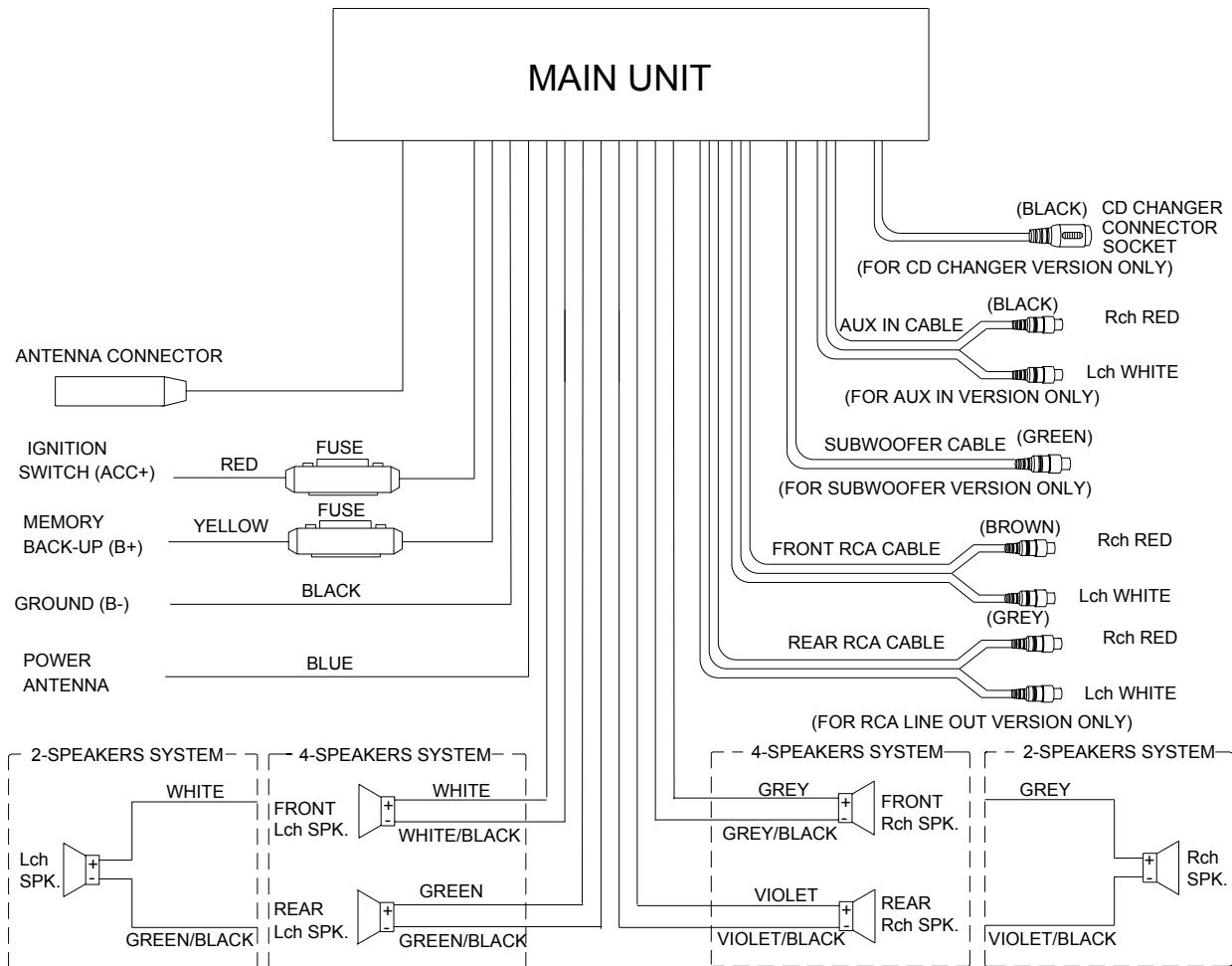
# WIRING CONNECTION

FOR 4x25W OR 4x40W SYSTEM



# WIRING CONNECTION

## FOR 4x7W OR 2x25W SYSTEM

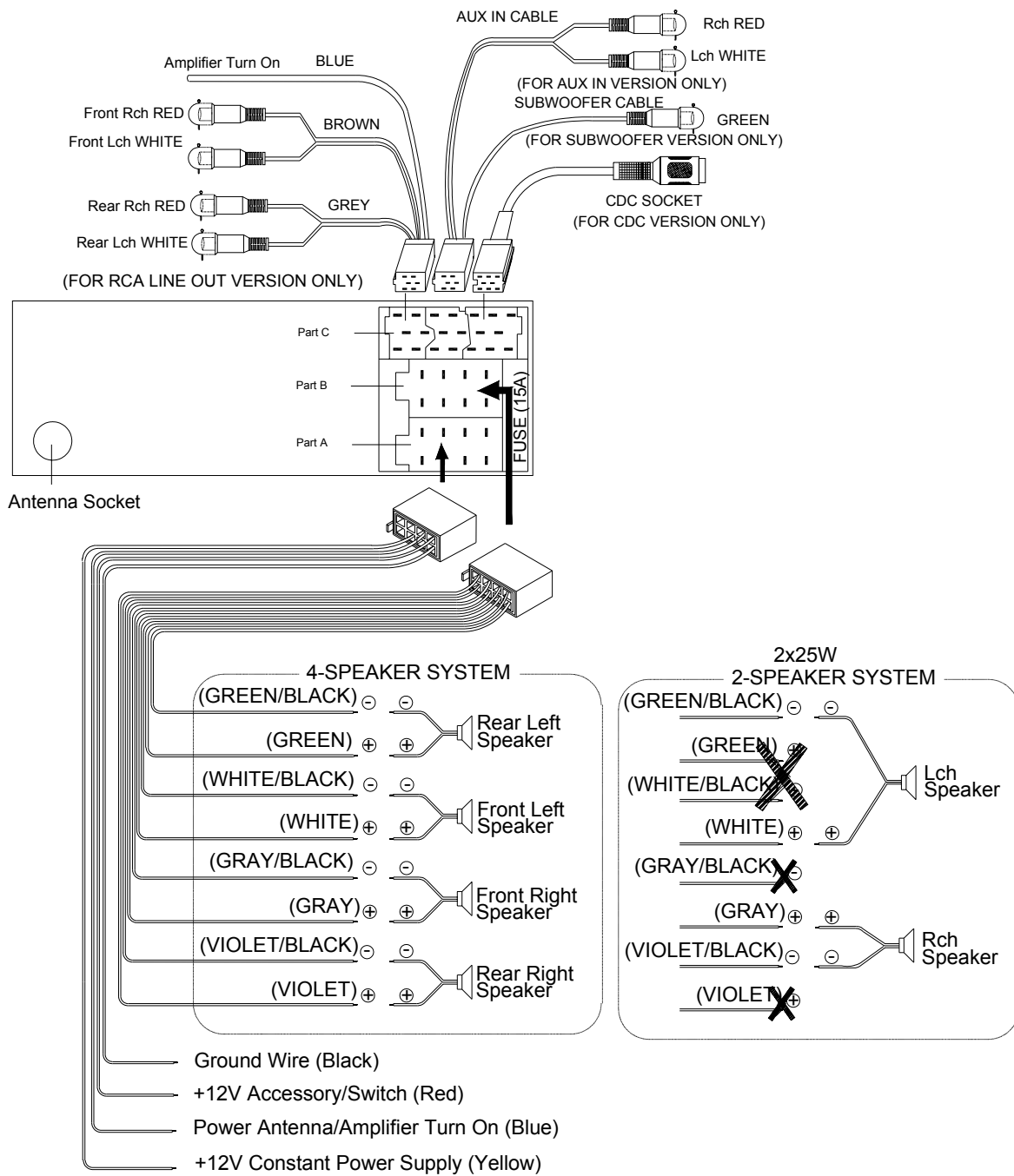


- Note:**
1. For 2-speakers system, green, violet, white/black and grey/black wire leads are unconnected and isolated.
  2. For 2-speakers system, keep the fader indicator at center position to maintain the existing volume level.



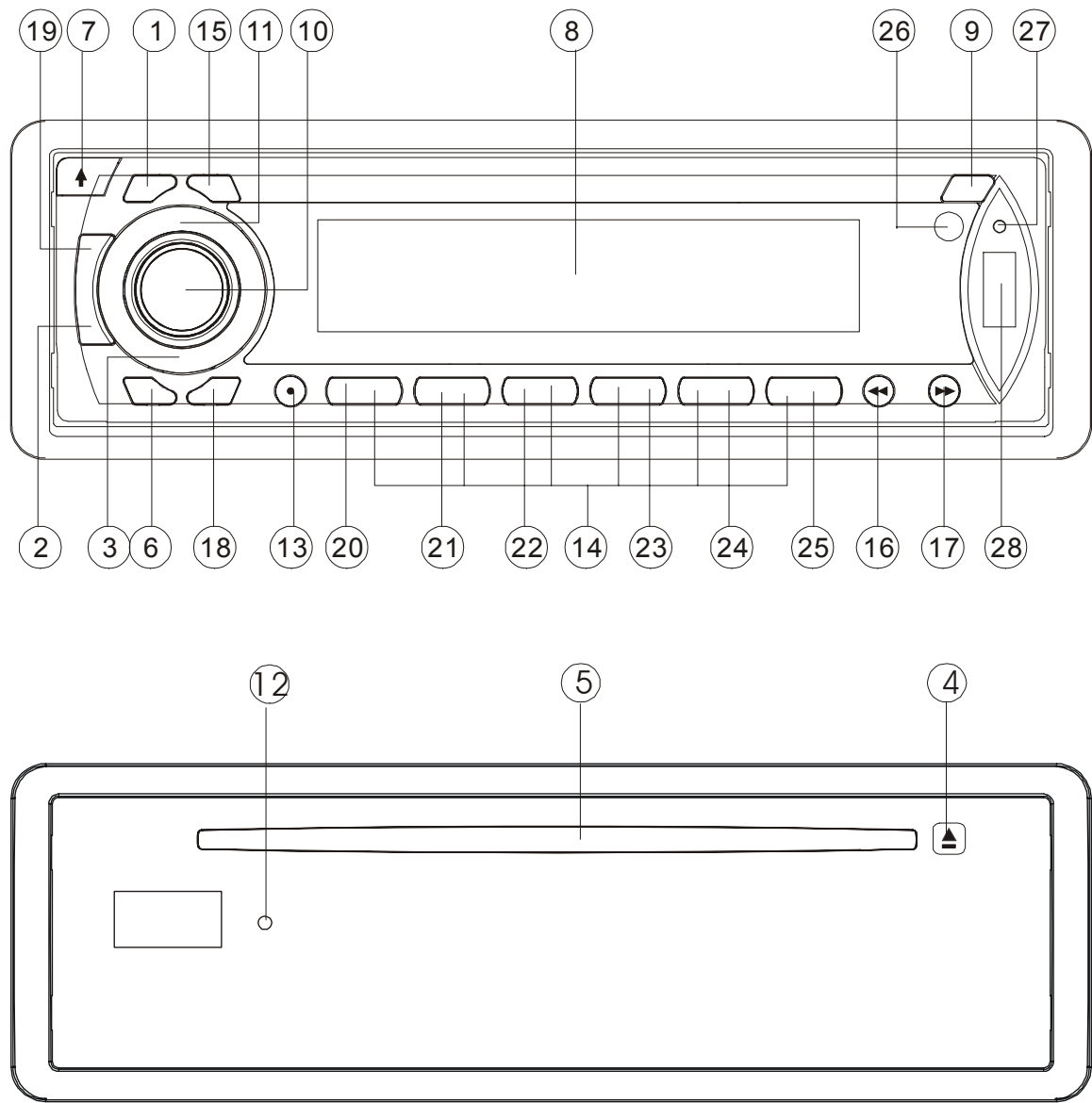
# WIRING CONNECTION

## ISO CONNECTION



# OPERATION

## LOCATION OF KEYS



## OPERATION

### SWITCHING ON/OFF THE UNIT (FOR LCD VERSION ONLY)

Switch on the unit by pressing any button (except **↑** button (7) and **▲** button (4)).  
When system is on, press **PWR** button (9) to turn off the unit.

### SWITCHING ON/OFF THE UNIT AND ILLUMINATING (FOR VFD VERSION ONLY)

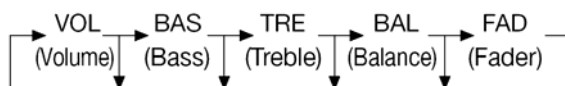
Switch on the unit by pressing any button (except **↑** button (7) and **▲** button (4)).  
When system is on, press **PWR/DIM** button (9) shortly to control the brightness of VFD. Press it for several seconds to turn off the unit.

### FACEPLATE RELEASE

Press **↑** button (7) to detach the removable faceplate.

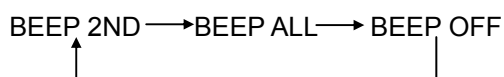
### SOUND ADJUSTMENT

Press **PUSH SEL** button (10) to select the desired adjustment mode. The adjustment mode will change in the following order:



By rotating the knob (10) clockwise or counter-clockwise, it is possible to adjust the desired sound quality.

Press and hold the **SEL** button (10) for several seconds to enter into the selection for the situation of beep sound, then rotate the knob (10) clockwise or counter-clockwise to select as follows:



- BEEP 2ND mode:  
The beep is only generated when all allowed double function button is pressed long (several seconds).  
e.g.  
When preset button is pressed.  
When **BND/LOU/ENT** button (13) is pressed.  
When **AS/PS** button (18) is pressed.

- BEEP ALL mode:  
The beep is generated when every button is pressed.
- BEEP OFF mode:  
The beep is disabled.

### LOUDNESS

Press **BND/LOU/ENT** button (13) for several seconds to reinforce the bass output. Press it for several seconds again to release this function.

### SET THE CLOCK

Press the **DSP** button (15), the clock is shown on the display. Then hold down the button until the clock flashes. Then press the **TUN/TRK** **▶** button (17) to change hours or **TUN/TRK** **◀** button (16) to change minutes.

### MUTE

Press **MUT** button (3) to mute down the sound instantly. If any button is pressed in the mute state, the mute state is released.

### EQUALIZATION

Press and hold **EQ/REC** button (11) for several seconds to turn on equalization function and to select desired audio mode. There are five kinds of mode as below:  
(FOR LCD VERSION ONLY)



(FOR VFD VERSION ONLY)



### SUBWOOFER (OPTIONAL)

Press **MOD** button (6) for several seconds to toggle sub-woofer output. Press it for several seconds again to release this mode.

### LIQUID CRYSTAL DISPLAY (FOR LCD VERSION ONLY)

### VACUUM FLUORESCENT DISPLAY (FOR VFD VERSION ONLY)

Exhibit current frequency and activated

## OPERATION

functions on the display (8).

### FLASHING LED

If the front panel does not install in the main unit, the LED (12) will be flashing.

### REMOTE SENSOR (OPTIONAL)

Point the remote control handset to the remote sensor **IR** (26). Press the function keys on the handset to control the system.

### ESP FUNCTION

If the unit has the electronic shockproof function, it can be shockproof about several tens of seconds.

### RESET FUNCTION

**RESET** button (27) must be activated with either a ballpoint pen or thin metal object. The **RESET** button is to be activated for the following reasons:

- Initial installation of the unit when all wiring is completed.
- All the function buttons do not operate.
- Error symbol on the display.

Note: if press **RESET** button (27), the unit can't work yet, please use a cotton swab soaked in isopropyl alcohol to clean the socket on the front panel.

## RADIO OPERATION

### • SWITCHING TO RADIO MODE

Press **MOD** button (6) shortly to select radio mode, the radio mode appears in the display together with the memory band and frequency.

### • SELECTING THE FREQUENCY BAND

At radio mode, press **BND/LOU/ENT** button (13) shortly to select the desired band.

The reception band will change in the following order:

→FM1→FM2 →FM3 →AM/MW →LW

### • SELECTING STATION

Press **TUN/TRK** ► button (17) or **TUN/TRK** ◀ button (16) shortly to

activate automatic seek function. Press for several seconds until "**MANUAL**" appears on the display, the manual tuning mode is selected. If both buttons have not been pressed for several seconds, they will return to seek tuning mode and "**AUTO**" appears on the display.

### • LOCAL/DISTANT

Press **LOC** button (1) to select between local and distant stations. Local setting for reception of strong station, and a distant setting for reception of weaker stations. This function is effect during AUTO SEEK operation.

### • AUTOMATIC MEMORY STORING & PROGRAM SCANNING

#### - Automatic memory storing

Press **AS/PS** button (18) for several seconds, the radio searches from the current frequency and checks the signal strength until one cycle search is finished. And then 6 strongest stations are stored into the corresponding preset number button.

#### - Program scanning

Press **AS/PS** button (18) shortly to scan preset station. When the field strength level is more than the threshold level of stop level, the radio is holding at that preset number for several seconds with release mute, then searches again.

### • STATION STORING

Press any one of the preset buttons (14) (1 to 6) to select a station, which had been stored in the memory. Press this button for several seconds (until 2ND beeps come out), current station is stored into the number button.

### • MONO/STEREO

Press **MON** button (2) to select mono or

## OPERATION

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stereo mode. You can sometimes improve reception of distant stations by selection mono operation.

- **SCAN**

Press **SCN** button (19) to set the function to scan mode, which scanning to higher frequency station with receivable signal and keep on each station for several seconds.

### CD OPERATION

- **SWITCHING TO CD MODE**

If there is no CD inserted in the driver:

Gently insert the CD with the printed side uppermost into the CD compartment until you feel some resistance. The CD is drawn into the driver automatically. CD playback begins.

If a CD is already inserted in the driver:

Keep pressing **MOD** button (6) shortly until the CD mode display appears.

- **SELECTING TRACKS**

Press **TUN/TRK** ◀ button (16) or **TUN/TRK** ▶ button (17) to move to the previous track or the following track. Track number shows on display.

Hold **TUN/TRK** ◀ button (16) or **TUN/TRK** ▶ button (17) to fast reverse or fast forward. CD play starts from when you release the button.

- **PAUSING PLAYING**

Press **PAU** button (20) to pause CD player. Press it again to resume play.

- **PREVIEWING ALL TRACKS**

Press **SCN** button (21) to play first several seconds of each track on the current disc. Press again to stop intro and listen to track.

- **REPEATING THE SAME TRACK**

Press **RPT** button (22) to continuously repeat the same track. Press it again to stop repeat.

- **PLAYING ALL TRACKS IN RANDOM**

Press **SHF** button (23) to play all tracks on CD in random order. Press again to cancel the function.

- **EJECTING A DISC**

Press ▲ button (4) to stop CD playing and eject the disc from the disc slot (5).

**Note:** When you first play a CD and when whichever track is playing, press M5 button (24) or M6 (25), the unit will search the disc again and start to play the first track. Later, there is no function of pressing M5 button (24) or M6 button (25).

### CDC OPERATION (FOR CDC VERSION ONLY)

You can connect a CD changer to the unit with CDC operation version only.

Information on handling CDs, inserting CDs and operating the CD changer can be found in the operating instructions supplied with your CD changer.

- **SWITCHING TO CDC MODE**

Keep pressing **MOD** button (6) shortly until the CDC mode display appears. Playback begins with the first CD that the CD changer detects.

- **SELECTING TRACKS**

Press **TUN/TRK** ◀ button (16) or **TUN/TRK** ▶ button (17) to move to the previous track or the following track. Track number shows on display.

Hold **TUN/TRK** ◀ button (16) or **TUN/TRK** ▶ button (17) to fast reverse or fast forward. CD play starts from when you release the button.

- **PAUSING PLAYING**

Press **PAU** button (20) to pause CD player. Press it again to resume play.

- **PREVIEWING ALL TRACKS**

Press **SCN** button (21) shortly to play first several seconds of each track on

## OPERATION

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current disc. Press and hold **SCN** button (21) for several seconds to play first several seconds of the first track on each disc in the CD magazine. Press it again to stop intro and listen to track.

- **REPEATING INDIVIDUAL TRACKS OR WHOLE CDs**

Press **RPT** button (22) shortly to continuously repeat the same track.

Press and hold **RPT** button (22) for several seconds to continuously repeat all tracks on the current disc. Press it again to stop repeat.

- **PLAYING ALL TRACKS IN RANDOM**

Press **SHF** button (23) shortly to play all tracks on the current disc in random order. Press and hold **SHF** button (23) for several seconds to select a disc in random and play the selected disc in random order. Press it again to cancel the function.

- **SELECTING DISC**

Press **CD-** button (24) to select previous disc and **CD+** button (25) to select next disc.

### MP3 OPERATION

- **SWITCHING TO CD (MP3) MODE**

If there is no MP3 disc inserted in the driver:

Gently insert the MP3 disc with the printed side uppermost into the disc slot (5) until you feel some resistance. The MP3 disc is drawn into the driver automatically. The MP3 playback begins.

If a MP3 disc is already inserted in the driver:

Keep pressing **MOD** button (6) shortly until the CD (MP3) mode display appears.

- **EJECTING A DISC**

Press **▲** button (4) to stop MP3

playing and eject the disc from the disc slot (5).

- **SELECTING TRACKS IN SINGLE STEP**

Press **TUN/TRK ◀** button (16) or **TUN/TRK ▶** button (17) to move to the previous track or the following track. Track number shows on display.

- **SELECTING DIRECTORY UP/DOWN**

Press **DIR ▼** button (24) or **DIR ▲** button (25) to select directory downward or upward. If the MP3 disc does not contain any directory, there is no function of pressing **DIR ▼** button (24) or **DIR ▲** button (25).

- **PAUSING PLAYING**

Press **PAU** button (20) to pause MP3 player. Press it again to resume play.

- **PREVIEWING ALL TRACKS**

Press **SCN** button (21) to play first several seconds of each track on the current disc. Press again to stop intro and listen to track.

- **REPEATING THE SAME TRACK**

Press **RPT** button (22) to continuously repeat the same track. Press it again to stop repeat.

- **PLAYING ALL TRACKS IN RANDOM**

Press **SHF** button (23) to play all tracks on MP3 disc in random order. Press again to cancel the function.

- **SELECTING TRACKS BY AS/PS/D-AUD BUTTON**

**AS/PS** button is assigned as Digital Audio Mode selection button in MP3 operation.

When pressed, it is activated as selecting each mode of Digital Audio.

“Searching track directly” => “Searching Directory or File Name” => “Navigation” from root by **TUN/TRK UP/DOWN** buttons => “Navigation” from current

## OPERATION

directory by **TUN/TRK UP/DOWN** buttons.

### □ Searching Track Directly

Press **AS/PS (D-AUD)** button for one time. It enters into "Searching track directly" in Digital Audio CD. The unit searches the track selected by following direct numeric buttons: **M1-M6, MOD (7), TUN/TRK DOWN (8), TUN/TRK UP (9), DSP(0)**.

If selected three digits, the unit searches the track at once. If selected one or two digits, the unit wait for **ENT (BND/LOU)** button for seconds. The unit searches the track after few seconds, even if the enter button is not pressed.

### □ Searching Directory or File Name

Press **AS/PS (D-AUD)** button for two times. It enters into "Searching Directory or File Name" in Digital Audio CD.

The unit searches files and directories that have the same character which is inputted by the user pressing the corresponding buttons listed on the Table 1 below.

Explain as follows:

- Use the corresponding buttons to select the characters A to Z, blank, 0 to 9, **\_**, **-**, **+**.
- Press **PUSH SEL** button to confirm entry of each characters.
- Press **BND/LOU (ENT)** button to start the title search.

In case the selected title is a directory name, display will show ( ' '), then

- Use the **TUN/TRK UP/DOWN** buttons to list all songs under this directory and select the title.
- Press **BND/LOU (ENT)** button to confirm and start the play.
- Repeat the above steps if the newly selected title is again a directory.

### □ Searching From Root Directory

Press **AS/PS (D-AUD)** button for three times. The unit searches fire or directory from root by **TUN/TRK UP/DOWN** buttons. (D-DIR icon turns on if the name is directory). Display will list all available directories and songs. Select the desired directory/songs by using **TUN/TRK UP/DOWN** buttons and **BND/LOU (ENT)** button to confirm. If the selected title is a song, it starts to play.

If the selected title is a directory name, display will show ( ' '), then

- Use the **TUN/TRK UP/DOWN** buttons to list all songs under this directory and select the title.
- Press **BND/LOU (ENT)** button to confirm and start the play.
- Repeat the above steps if the newly selected title is again a directory.

### □ Searching From Current Directory

Press **AS/PS (D-AUD)** button for four times. The unit searches fire or directory from current directory by **TUN/TRK UP/DOWN** buttons. (D-DIR icon turns on if the name is directory). The current directory name is displayed for a second and the currently playing file name is displayed (selected). The user can select the directory or file in the directory by **TUN/TRK UP/DOWN** buttons. The selected file can be played by pressing **BND/LOU (ENT)** button.

"MP3" icon turns on when MP3 disc is played and blinks when it is in navigation mode.

## OPERATION

### • DISPLAY INFORMATION

Press **DSP** button to show the following information, such as the clock, ID3 TAG (if available: song title, directory name, artist name, other contents...) (FOR WITH MP3 ID3 FUNCTION VERSION ONLY) and other information.

KEY Assigned IN Searching mode (Table 1)

AS/PS	Mode Select
BND/LOU	ENTER
M1	A, B, C, 1
M2	D, E, F, 2
M3	G, H, I, 3
M4	J, K, L, 4
M5	M, N, O, 5/Directory DOWN
M6	P, Q, R, 6/Directory UP
MOD	S, T, U, 7
TUN/TRK DOWN	V, W, X, 8
TUN/TRK UP	Y, Z, SPACE, 9
SEL	CHARACTER SHIFT RIGHT
DSP	_, -, +, 0
VOLUME KNOB	CHARACTER SELECT (A, B~8,9,0)

VOLUME KNOB (ENCODER) & TUN/TRK UP/DOWN buttons:

Searching file and directory during Navigation.

### WMA OPERATION

The unit that can play the WMA disc and the operation is the same with MP3 operation described above.

### USB PLAY OPERATION

In the front panel of the unit, there is an USB interface (28). You can connect an USB driver through this interface (28).

For the unit with no SD/MMC interface, when you connect an USB driver through

the interface, the unit will search the MP3 files or WMA files in the USB driver and start to play MP3 files or WMA files automatically. If in other mode, you can also press **MOD** button to select USB mode.

When playing the MP3 files or WMA files in the device, the operation is the same with the MP3 operation described above.

#### Note:

- The main unit can only support the standard USB-memory disc which is approved by Microsoft.
- USB MP3 player is not a standard which means different brand name or different models have their own standard. So our product cannot support every MP3 player.
- When connecting an MP3 player and there has normal battery in the player (non rechargeable battery), you should remove the battery from the MP3 player then connect it to the USB interface. Otherwise, it may cause battery burst.
- When in USB play mode, be sure not to remove the USB driver from the USB interface.

### RECORD OPERATION

This unit provides record function. In radio, CDP mode, CD Changer or AUX mode, press **EQ/REC** button (11) shortly to activate RECORD mode. The unit will record files to USB and the format of the files is ".WMA". The unit can find and play the record files in the device that connected to the unit through the USB interface. There will be shown "file name" during recording.

Press **EQ/REC** button (11) shortly again to complete recording.



## OPERATION

### Notes:

- During recording, be sure not to remove the external device from the USB interface or turn off the power or switch off the ACC wire. Otherwise, it may destroy the record files and the USB interface may cause a malfunction.
- During recording in one mode, be sure not to switch to another mode (such as radio, CD, CDC or AUX mode). You must press **EQ/REC** button (11) shortly to complete recording, then you can change the current mode.
- When playing MP3/MWA disc, the unit cannot record files to USB.

### MIXED-CD OPERATION (FOR WITH MIXED-CD OPERATION VERSION ONLY)

If available, the unit can play the mixed-CD disc (the disc contains both CD audio tracks and MP3 files).

When you insert a mixed-CD disc into the CD slot, it starts to play the CD audio tracks. And the operation is the same with the CD operation described as above.

If you want to switch to play MP3 files, press **M5** button (24) or **M6** button (25), it will search the disc over again and start to play the MP3 files. And the operation is the same with the MP3 operation described as above.

If you want to revert to play CD audio tracks, press **M5** button (24) or **M6** button (25) repeatedly, when it jumps to the end (i.e. when it selects the first directory or the last directory), and then press **M5** button (24) or **M6** button (25) again, it will start to play the CD tracks again.

In this way, you can switch between playing CD audio tracks or MP3 songs repeatedly.

### SUPPORTED WMA DECODING MODES

The WMA (Windows Media Audio decoder library for the embedded ARM environment supports the following Window Media Audio decoding modes.

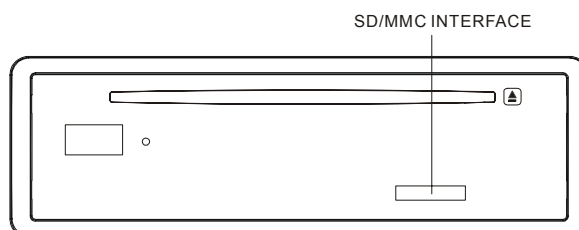
Sampling rate (kHz)	Bit rate (bps)	Audio type
8.0	5000,6000,8000	Mono
8.0	12000	Stereo
11.025	8000,10000	Mono
16.0	10000,12000,16000	Mono
22.05	16000	Mono
22.05	20000	Stereo
32.0	20000	Mono
44.1	32000	Mono
44.1	64000,80000,96000,128000,160000,192000	Stereo

### CAUTION:

When there are important files in the USB device, do not connect it to the main unit to play. And don't play the CD-R/RW disc that has important files in it. Because any wrong operation may cause files loss. And our company assumes no responsibility for this.

### SD/MMC OPERATION (OPTIONAL)

According to the customer's need, the unit will add a SD/MMC interface. See below, the SD/MMC interface is on the housing of the unit.



When you insert a SD/MMC card in the SD/MMC interface, the unit will search the MP3 files or WMA files in the card and start to play MP3 files or WMA files automatically. The operation is the same with the MP3 operation described above. If in other mode, you can also press **MOD** button to select SD/MMC mode.

## OPERATION

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In record mode, it will record to USB first. If USB is full, it will record to SD/MMC. The corresponding operation and cautions please refer to the record operation to USB.

When there is no USB driver in the USB interface, you cannot record to SD/MMC directly.

When there are important files in the SD/MMC card, do not connect it to the main unit to play.

### DISC NOTES

#### A. Notes on discs:

1. Attempting to use non-standard shape discs (e.g. square, star, heart) may damage the unit. Be sure to use round shape CD discs only for this unit.
2. Do not stick paper or tape, etc, onto the label side or the recording side of any discs, as it may cause a malfunction.
3. Dirt, dust, scratches and warping discs will cause misoperation.

#### B. Notes on CD-Rs (recordable CDs)/CD-RWs (rewritable CDs):

1. Be sure to use discs with following marks only for the unit to play:



2. The unit cannot play a CD-R and CD-RW that is not finalized. (Please refer to the manual of your CD-R/CD-RW recorder or CD-R/CD-RW software for more information on finalization process).
3. Depending on the recording status, conditions of the disc and the equipment used for the recording, some CD-Rs/CD-RWs may not be played on this unit. (see \*1)

\*1: To have more reliable play back, please see following recommendations:

- a. Use CD-RWs with speed 1x to 4x and write with speed 1x to 2x.
- b. Use CD-Rs with speed 1x to 8x and write with speed 1x to 2x.

- c. Do not play a CD-RW which has been written for more than 5 times.

#### C. Notes on MP3 files (MP3 Version Only):

1. The disc must be in the ISO9660 level 1 or level 2 format, or Joliet or Romeo in the expansion format.
2. When naming a MP3 file, be sure the file name extension is “.MP3”.
3. For a non-MP3 file, even though the file name extension is “.MP3”, the unit cannot recognize it.

# SPECIFICATION

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## GENERAL

Power Supply Requirements	: DC 12 Volts, Negative Ground
Chassis Dimensions	: 178 (W) x 160 (D) x 50 (H)
Tone Controls	
- Bass (at 100 Hz)	: $\pm 10$ dB
- Treble (at 10 kHz)	: $\pm 10$ dB
Maximum Output Power	
- Version V	: 4x7 watts or 2x25 watts
- Version Z	: 4x25 watts
- Version Y	: 4x40 watts
Current Drain	
- Version V	: 5 Ampere (max.) (For Normal Power Version)
- Version Z	: 10 Ampere (max.) (For High Power Version)
- Version Y	: 15 Ampere (max.) (For High Power Version)

## CD PLAYER

Signal to Noise Ratio	: More than 55 dB
Channel Separation	: More than 45 dB
Frequency Response	: 40Hz – 18 kHz

## RADIO

	<b>For 3 Bands (Europe)</b>	<b>For 2 Bands (Europe)</b>	<b>For 2 Bands (U.S.A.)</b>
	<b>FM</b>	<b>FM</b>	<b>FM</b>
Frequency Coverage	87.5 to 108 MHz	87.5 to 108 MHz	87.5 to 107.9 MHz
IF	10.7 MHz	10.7 MHz	10.7 MHz
Sensitivity (S/N=30dB)	4 $\mu$ V	4 $\mu$ V	4 $\mu$ V
Stereo Separation	>25dB	>25dB	>25dB
	<b>MW</b>	<b>MW</b>	<b>AM</b>
Frequency Coverage	522 to 1620 kHz	522 to 1620 kHz	530 to 1710 kHz
IF	450 kHz	450 kHz	450 kHz
Sensitivity (S/N=20dB)	36 dBu	36 dBu	36 dBu
	<b>LW</b>		
Frequency Coverage	144 to 288 kHz		
IF	450 kHz		
Sensitivity (S/N=20dB)	38 dBu		

## **TROUBLE SHOOTING**

Before going through the checklist, check wiring connection. If any of the problems persist after checklist has been made, consult your nearest service dealer.

<b>Symptom</b>	<b>Cause</b>	<b>Solution</b>
No power.	The car ignition switch is not on.	If the power supply is connected to the car accessory circuits, but the engine is not moving, switch the ignition key to "ACC".
	The fuse is blown.	Replace the fuse.
Disc cannot be loaded or ejected.	Presence of CD disc inside the player.	Remove the disc in the player, then put a new one.
	Inserting the disc in reverse direction.	Insert the compact disc with the label facing upward.
	Compact disc is extremely dirty or defective disc.	Clean the disc or try to play a new one.
	Temperature inside the car is too high.	Cool off or until the ambient temperature return to normal.
	Condensation.	Leave the player off for an hour or so, then try again.
No sound.	Volume is in minimum	Adjust volume to a desired level.
	Wiring is not properly connected.	Check wiring connection.
Sound skips.	The installation angle is more than 30 degree.	Adjust the installation angle less than 30 degree.
	The disc is extremely dirty or defective disc.	Clean the compact disc, then try to play a new one.
The operation keys do not work.	The built-in microcomputer is not operating properly due to noise.	Press the RESET button.. Front panel is not properly fix into its place.
The radio does not Work. The radio station automatic selection does not work.	The antenna cable is not connected.	Insert the antenna cable firmly.
	The signals are too weak.	Select a station manually.