

Revision history

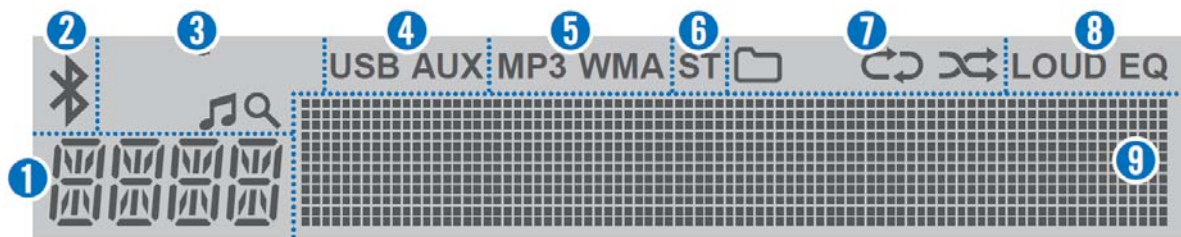
Ver.	Date	Comment	Writer	Remark
0.0	2022-12-27	First release	BD.OH	
1.0	2023-01-19	Radio Area Set modify Add USB average Power, error collection	BD.OH	

Template Revision History

Ver.	Date	Comment	Writer	Remark

Front View of product - RADIO, USB player, Bluetooth Audio (ARA-9010HB)

1. USB port with cover: Open the cover and connect the USB storage device.
2. ENTER/AST button with tune dial.
3. Display window for play / reception /menu state and information.
4. POWER button with VOLUME dial: turns power on, mute function on/off or selects a menu item (press), control the volume level or menu item.
5. AUX port with cover: Open the cover and plugging the external audio device.
6. Call / call end button:
 - when a call comes in: accepts a call(press); rejects a call (press and hold)
 - during a call connection: ends a call (press); switches between hands-free and private call modes (press and hold)
 - in standby mode: opens call list (press); makes a call a recently connected number (press and hold)
7. BAND button: enters Radio mode or changes the radio band (press).
8. Preset button:
 - Radio: Recall each stored station(press); store each station (press and hold).
 - USB: changes playback mode (press 1II, 2 RPT or 3 RDM buttons); shows available information about the current track (press 4 INFO button); move to folder down/up (press 5 D-/6 D+ buttons).
 - Bluetooth audio: pause/resume playback (press 1II); shows information of the connected Bluetooth device (press 4 INFO button).
9. MODE button: selects USB, Bluetooth audio or AUX play mode (press).
10. MENU button: enters Menu setting mode or returns to the previous menu (press).

Location of controls – Display Window (LCD)

1. Function display area for showing the function mode.
2. Bluetooth indicator for the Bluetooth connection.
3. Search indicator for USB play list.
4. USB/AUX indicators for the USB or External device connection.
5. MP3/WMA indicators for USB's Audio Stream detections.
6. ST (Stereo) indicators for FM stereo reception.
7. Playback mode indicators for USB playback mode.
 -  : Folder mode.
 -  : Repeat playback.
 -  : Random playback.
8. LOUD/EQ indicators for sound effect.
 - LOUD : Loudness mode.
 - EQ : EQ mode.
9. Multi-function display area for showing the play, reception or menu information.

Getting started – Turning the unit on/off

1. Turn your car's ignition key to ACC or IGN (ON) position.



2. Press the POWER button to turn the power on.

- If the source is ready, playback also starts.
- To turn on the power directly.

By connecting an USB into the USB port or pressing the BAND, MODE (while the USB is connected), you can also turn on the power and the unit then plays.



3. When power is on, press and hold the POWER button to turn power off.

Getting started – Adjusting volume directly

1. Turn the VOLUME dial to control volume.

- Available volume range: 00 (mute) ~ 41.

Getting started – Muting the sound quickly

1. Press the MUTE button to turn mute on.

- "MUTE" will flash on the display and mute the sound.
- Press the MUTE button again or turn VOLUME dial to restore sound.

Getting started – Setting the sound

1. Press MENU button to enter the Settings menu mode.
 - After entering MENU mode, press MENU button to return to the previous item.



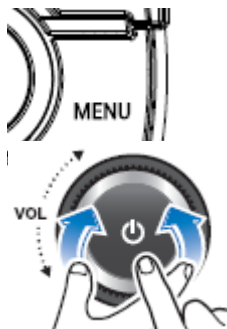
2. Turn VOLUME dial to select the "SOUND" or "EQUALIZER" as below, then press this dial.
 - SOUND: sets the sound mode.
 - EQUALIZER: selects the equalizer style.



3. Turn VOLUME dial to select the desired Sound setting mode, then press this dial.
 - BASS: sets the bass sound level (-5 ~ +5).
 - MIDDLE: sets the middle sound level (-5 ~ +5).
 - TREBLE: sets the treble sound level (-5 ~ +5).
 - BALANCE: sets the sound balance between the right and left speakers (LEFT 15 ~ RIGHT 15).
 - EQUALIZER: selects the one of the 7 EQ styles (EQ OFF, POP, ROCK, COUNTRY, VOICE, JAZZ, CLASSIC).
 - PREVIOUS: Return to previous menu screen.



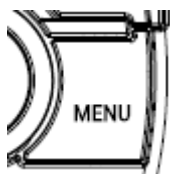
4. Turn VOLUME dial to adjust the value of the level, balance or style, then press this dial.

Getting started – Setting the system functions

1. Press MENU button to enter the Settings menu mode. Turn VOLUME dial to select "SYSTEM" as below, then press this dial.
2. Turn the VOLUME dial to select the "BT ON/OFF", "SCROLL", "LOUD" or "BEEP" then press this dial.
 - BT (Bluetooth) ON/OFF: activate (On) or deactivate (Off) the Bluetooth function. – (only ARA-9010HB).
 - SCROLL: activate (On) or deactivate (Off) the text scroll feature for LCD display screen.
 - LOUD: activate (On) or deactivate (Off) the loudness sound effect.
 - BEEP: activate (On) or deactivate (Off) the beep sound feature.
 - PREVIOUS: Return to previous menu screen.



3. Turn VOLUME dial to select ON or OFF, then press this dial.

Getting started – Setting the region

1. Press MENU button to enter the Settings menu mode. Turn VOLUME dial to select "AREA" as below, then press this dial.
 - AREA: sets the region for radio.
2. Turn the VOLUME dial to select the desired area as below, then press this dial.
 - If the region setting is not selected correctly to your country or region, the radio reception can not be received. Retry the setting the region of radio reception correctly.
 - The region setting is required only for the first time.

•ASIA/M.East

FM: 87.5 ~ 108.0 MHz (100 kHz step)

AM: 531 ~ 1,602 kHz (9 kHz step)

•AMERICA

FM: 87.5 ~ 107.9 MHz (200 kHz step)

AM: 530 ~ 1,710 kHz (10 kHz step)

•LATIN

FM: 87.5 ~ 108.0 MHz (100 kHz step)

AM: 530 ~ 1,710 kHz (10 kHz step)

•EUROPE

FM: 87.5 ~ 108.0 MHz (50 kHz step)

AM: 531 ~ 1,620 kHz (9 kHz step)

•JAPAN

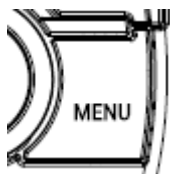
FM: 76 ~ 90 MHz (100 kHz step)

AM: 522 ~ 1,629 kHz (9 kHz step)

•Russia (OIRT)

FM: 65.0 ~ 74.0 MHz (30 kHz step)

AM: 522 ~ 1,602 kHz (9 kHz step)

Getting started – Checking/updating the system Software

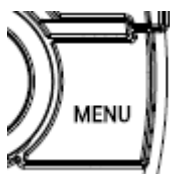
1. Press MENU button to enter the Settings menu mode. Turn VOLUME dial to select "SOFTWARE" as below, then press this dial.

- SOFTWARE: check/update the system software.



2. To check the system software, turn the VOLUME dial to select the "VERSION CHECK", then press this dial.
3. To update the system software, turn the VOLUME dial to select the "UPDATE", then press this dial.

- Download the latest system software to a USB device for update to this unit, then open the cover and plug the USB device to the USB port.
- Perform update with the start switch "ON" when the battery is sufficiently charged by driving the vehicle. When the battery is discharged while updating, the system may get damaged with the update stopped.

Getting started – Setting the Bluetooth mode (only ARA-9010HB)

1. Press MENU button to enter the Settings menu mode. Turn VOLUME dial to select "BLUETOOTH" as below, then press this dial.



- Bluetooth: Bluetooth setting mode.
2. Turn VOLUME dial to select the desired Bluetooth setting mode, then press this dial.
 - PAIR: register a Bluetooth device.
 - SELECT: selects/connects a device from registered Bluetooth devices.
 - DELETE: removes a device from registered Bluetooth device.
 - MIC VOL: adjusts the Bluetooth microphone.
 - H/F VOL: adjusts the Bluetooth hands-free volume.
 - Phone Book: activates/deactivates the phone book download feature from connected device.
 - BT INFO: shows the Bluetooth information of this system.
 - PREVIOUS: returns to previous menu screen.
 3. To change the connected Bluetooth device, turn the VOLUME dial to select the "SELECT", then press this dial. Turn the VOLUME dial to select the desired device list, then press this dial.
 4. To delete the Bluetooth device, turn the VOLUME dial to select the "DELETE", then press this dial. Turn the VOLUME dial to select the desired device list, then press this dial.
 - If the currently connected device is delete, this unit attempts to connect with the following priority Bluetooth device automatically.
 5. To adjust the Bluetooth microphone initial volume, turn the VOLUME dial to select the "MIC VOL", then press this dial. Turn the VOLUME dial to set desired Bluetooth microphone initial volume level, then press this dial.
 - The default setting is 3, the volume range is 1 ~ 5.
 6. To adjust the Bluetooth hands-free initial volume, turn the VOLUME dial to select the "H/F VOL", then press this dial. Turn the VOLUME dial to set

desired Bluetooth hands-free initial volume level, then press this dial.

- The default setting is 15, the volume range is 6 ~ 32.
7. To download the Phone book, turn the VOLUME dial to select the "Phone Book", then press this dial. Turn the VOLUME dial to select the "ENABLE", then press this dial.
- The phone book can download up to 1,000 phone numbers.

BLUETOOTH – Pairing/Connecting your device



1. Firstly, set up the Bluetooth device to be connected from the Bluetooth settings menu to enable other devices to search for the Bluetooth device. Press MENU button to enter the Menu settings mode.
2. Turn VOLUME dial to select the "BLUETOOTH" as below, then press this dial.
3. Turn the VOLUME dial to select the "PAIR", then press this dial.
 - When you first register, appear the "BT Pairing" on the display window, then search the Bluetooth devices for connection.
 - If a Bluetooth device is not connected, press and hold the  button to enter the pairing mode directly.
4. Search and select device "Device Name" in your Bluetooth device, then confirm.
 - The Bluetooth registration standby proceeds for 1 minute. If the registration is failed during 1minute, restart over from the beginning.
 - After a while, the Bluetooth device is automatically registered. When pairing is successful, the "Connected" and "Device name" will be displayed 3 seconds.
 - When your Bluetooth device is connected, "." appear on the display.

If the Bluetooth device is disconnected, "" disappear.

5. Repeat items 1~ 4 to register to add another Bluetooth device.
 - Up to 5 devices can be paired to this unit.
 - The last device connected to this unit is set to automatically connect to the highest priority.

BLUETOOTH – Playing the Bluetooth music

To play Bluetooth music

- A2DP (Advanced Audio Distribution Profile) : This function only operates with Bluetooth devices that support A2DP version 1.2 or above.
- Should be set to Stereo Headset in Bluetooth device type menu of your device



1. Press the MODE button repeatedly to select the BT Audio mode. Appears "" on display window and start playback.
 - If a Bluetooth device is not connected, you can not select.
 - If music is not yet playing from your mobile device after switching to Bluetooth Music (streaming audio) mode or after pressing Play on the mobile device itself, try to start music playback by pressing the Play button again.
 - The output music playback from Bluetooth devices with this unit.
 - There will be music playback automatically play upon entering since once played. It stops automatically when you exit from the music.
 - You can also phone or Bluetooth device other than the home screen mode, Bluetooth music play mode when entering and exiting, the device does not play automatically.

BLUETOOTH – Controlling the playback

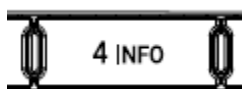
1. While playing, turn the TUNE/TRACK dial to moves to the previous or next track.

- Clockwise: move to the next file.
- Counter-clockwise: move to beginning of the current file or previous file.



2. While playing, press the [1 II] button to pause the track with "PAUSE" indicator.

- Press this button again to play the current track.

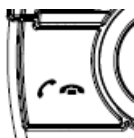


3. Press the [4 INFO] button to check the information of current connected device.

- About the music files are not displayed.
- During Bluetooth music playback, do not operate the music changes too quickly. Allow enough time for the machine-to-machine communication.

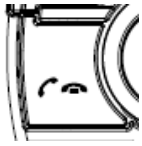
BLUETOOTH – Answering a call

- When a call comes in, the audio source is muted, and display the call information with ring tone.
- If the phonebook is not downloaded, only incoming phone number is displayed without the caller information.



1. To answer a call, press the  button or to reject a call press and hold the  button.

- When a call comes in, the audio source is muted.
- When a call is ended, this unit returns to the previous state media playback.

BLUETOOTH – Making a call from recent number

1. To call the recent connected number, press the  button to display recent call number.

- The recent calls list is displayed. Turn the VOLUME dial to select a recent call number, then press this dial to make a call.
- The recent calls list displays up to 10.



2. To call the last connected number directly, press and hold the  button.

BLUETOOTH – During a call ...

1. To adjust the a call volume, turn the VOLUME dial.
 - The call volume works with Bluetooth devices, and operates separately from the volume of this unit.



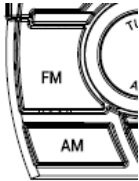
2. To deactivate the microphone, press the POWER button.
3. To switch from hands-free mode to the phone handset mode, press and hold the  button.

To returns the phone conversation to hands-free mode, press and hold the  button.

4. To end a call, press the  button.
 - End a call, then return to the playing state.

RADIO – Tuning in a radio station

1. Press the BAND or FM/AM button repeatedly to enter the radio band in order of FM1, FM2, FMA, AM1, AM2 or AMA.



- You can select the FM1, FM2, FMA or AM1, AM2, AMA radio band. While the Auto Store stations(AST) are stored, you can select the AMA or FMA band by additional.
- The previously chosen broadcasting station will be received.

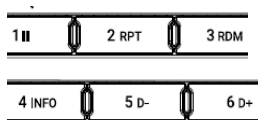


2. Turn the TUNE/TRACK dial to select the station.
 - Briefly turn this dial, plays previous/next frequency.
 - Turn and hold this dial, automatically search for station with superior reception.
 - Press this dial, starting from the current station, stations with superior reception are scanned for 5 seconds and the previous station is restored. During the seeking or scanning, if press or turn the dial left/right again, the selected station will begin playing.
 - During the FM reception, the Stereo [ST] indicator is on.

RADIO – Saving radio stations manually

- You can save up to 6 preset channels each for FM1, FM2, AM1,AM and AM2 band. If change the stations while driving, use preset button to prevent accidents.

1. Press the BAND or FM/AM button repeatedly to select the band.



2. After selecting the frequency, press and hold the PRESET [1II] ~ [6 D+] button.
3. The frequency is saved to the selected preset button.

- A total of 24 frequencies with 6 preset frequencies each for FM1/FM2/AM1/AM2 modes can be saved.

RADIO – Saving radio stations automatically

- You can save up to 6 preset channels automatically each for FMA and AMA band.

1. Press the BAND or FM/AM button repeatedly to enter the radio band.

- The previously chosen broadcasting station will be received.



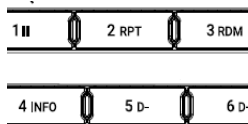
2. Press and hold the AST button to automatically save receivable frequencies to Preset button.

- Up to 6 stations can be stored in each of the FMA and AMA band.

RADIO – Listening to a preset station

1. Press the BAND or FM/AM button repeatedly to enter the radio band.

- You can select the FM1, FM2, FMA or AM1, AM2, AMA radio band. While the Auto Store stations(AST) are stored, you can select the AMA or FMA band by additional.
- The previously chosen broadcasting station will be received.



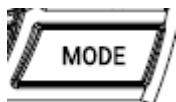
2. Press the PRESET [1II] ~ [6 D+] button.

- From the 6 presets, select the frequency you want to listen to.

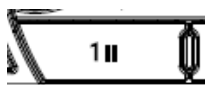
USB Player - Playing an USB device



1. Open the cover, plug the USB device(included MP3/WMA media file) to the USB port.
 - Once a USB is connected, USB will automatically start playing from the first file within the USB.
 - If a previously played USB is reconnected, then the file after the most recently played file is played.
 - If a different USB is connected or the file information within the USB was changed, then the USB will start playing from the first song within the USB.

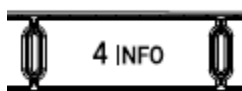


2. When an USB device to be played is already connected, press the MODE button to play USB device.
 - The previously selected file is played.



3. While playing, press the [1||] button to pause the file.

USB Player – Changing the song information



1. Press the [4 INFO] button repeatedly to display information about the file being played.
 - The information displayed includes the file name, playing time, ID3 Tag or folder name information saved with the song.
 - If there is no information on the playing file, the unit will display "NO INFO", and then file name.

USB Player – Controlling the playback



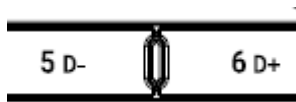
1. While playing, turn the ►►| TRACK |◄◄ dial left/right to moves to the previous or next track.
 - Clockwise: move to the next file.



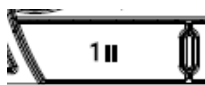
- Counter-clockwise: move to the previous file.
2. While the ►► I TRACK I ◀◀ dial is being turned and held, the file will rewind or fast forward at high speed. Once released, the file will begin playing at normal speed.

- Clockwise: fast forward.
- Counter-clockwise: fast rewind
- The search function works but search speed is not constant. While fast forwarding or rewinding, the playback sound is not output.

3. Press the [5 D-] or [6 D+] button to moves to the previous or next folder.



- [5 D-] press: move to previous folder.
- [6 D+] press: move to next folder.
- While folder moving, the folder name will be displayed briefly.

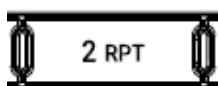


4. While playing, press the [1 II] button to pause the track.
- Press the button again to play the current track.



5. To find the song you want to play directly, press the 🔍 (Search) button.
- Turn the ►► I TRACK I ◀◀ dial to select the desired file name, then press this dial.

USB Player – Change the playback mode



1. Press the [2 RPT] button to select the Repeat playback mode.
- 🔁 On : The current file plays repeatedly.
 - 📁🔁 On : The current folder plays repeatedly.
 - Off : Cancels repeat playback.



2. Press the [3 RDM] button to select the Random playback mode.

-  On: All files of current folder play in random order.
-  On: All files of USB device play in random order.
- Off: Cancels random playback.

USB Player – Handling precautions for USB device

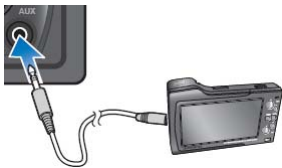
- The device will only recognize USB devices formatted in FAT 16/32. When formatting the external USB device, the device may not properly recognize a Byte/Sector selection other than 512 Bytes or 2,048 Bytes.
- The amount of time required to recognize the external USB device may differ depending on the type, size, or file formats stored on the USB. Such differences in the required time are not indications of malfunction. Please wait the period of time required to recognize the device.
- This unit can recognize maximum 9,999 files and 256 folders into the USB device.
- The device may not recognize the USB device if separately purchased USB hubs and extension cables are being used.
- 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).

AUX Player – Listening to auxiliary audio equipment

- By connecting an optional portable audio device to the AUX input jack (stereo 3.5pi) on the unit and then simply selecting the source, you can listen on your car speakers.



- Turn the VOLUME dial left to decrease the volume level.
 - The AUX volume can also be controlled separately through the connected device.



- Turn the external audio equipment off. Open the cover, connect the audio output of the external audio equipment to AUX input terminal on the unit.
- Turn the external audio equipment on. Start playback of the external audio equipment at a moderate volume.



- Press the MODE button repeatedly to select the AUX function.
- Set your usual listening volume by turn the VOLUME dial left/right on the unit.
 - Once the connector is disconnected, the previous mode will be restored.
 - AUX mode can be used only when an external audio player has been connected.

Specifications – General section

Power supply	Rated Voltage : DC 12V , DC 24V Tolerance Voltage : DC 9.0 V ~ 36.0 V
Operating Current	2.0A under at 24V 4 ohm 1W Max 10A
Speaker	4 ~ 8 ohms
Output Power	MAX 20W x 2CH at 4 ohm

Specifications – FM/AM radio section

Frequency Range	Default – ASIA/M.east FM : 87.5MHz ~ 108.0MHz AM : 531kHz ~ 1602kHz ● Other AREA : refer to "Setting the region"
Usable sensitivity	FM : 12dBuV under, at S/N 30dB over AM : 37dBuV under, at S/N 20dB over
S/N	FM : S/N 50dB over AM : S/N 40dB over
FM Stereo Separation	25dB over at 1kHz/60dBuV

Specifications – Front USB/ Rear USB section

F/R USB Version	1.1 full speed & 2.0 high speed support
T.H.D	3% under at 1kHz
Dynamic Range	85dB over at 1kHz
S/N	50dB over at 1kHz
Channel Separation	40dB over at 1kHz
INPUT Socket	TYPE A Standard
Output Power	5V (±5%) / 1.1A limit TYPE, MAX 1.5A Over Voltage and Current Protection
Battery Charging (BC)	BC 1.2 / DCP/ SDP support
Play Music File	MP3, WMA
USB support format	FAT16 or FAT32 (NTFS , other format Not Support

Specifications – Bluetooth section (only ARA-9010HB)

BT Version	V 4.1 + EDR
Output Power	+4dBm Max (power class 2)
Function / Profile	● HFP (hands free profile) ● A2DP (advanced audio distribution profile) ● AVRCP (audio/video remote control profile) ● PBAP (phone book access profile)

FCC Information to User

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

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

Caution

Modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Compliance Information : This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation

IMPORTANT NOTE:

FCC RF Radiation Exposure Statement:

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.