



Heavy Duty AM/FM/CD Stereo Weather Band Radio, USB iPod® Control and Charging, Bluetooth® Hands Free Calling and Wireless Audio Streaming, Front/Rear Auxiliary Inputs and built in PA



Radio Engineering Industries, Inc.

Rev 0.1 Date: 12-22-14

24

Installation/ Operation Manual

50W x 4

CD-5000

Thank you for purchasing CD-5000 AM/FM/CD Receiver from REI. This product is designed and tested to with stand temperature and vibration extremes. Please read the owner's manual carefully before attempting to install this unit.

If you have an installation question or need installation assistance, please call the: SERVICE HOT LINE 1-877-726-4617 Toll Free USA & CANADA

IF ADDITIONAL INSTALLATION COMPONENTS ARE NECESSARY, CONTACT YOUR REI SALES REP FOR: ** OEM /FACTORY WIRING HARNESS ADAPTERS ** ANTENNAS & ANTENNA ADAPTERS ** SPEAKERS & GRILLS Radio Engineering Industries, Inc. 6534 "L" Street Omaha, Nebraska 68117 (800)228-9275 www.radioeng.com

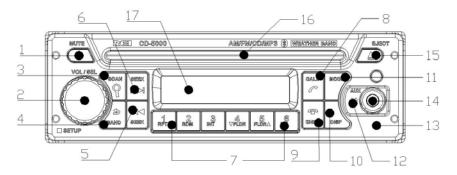
FEATURES:

Heavy Duty construction for Tough Environments Non-volatile memory back-up stores user settings when battery is disconnected 30 Day Clock back-up Output Power 50W x 4 Full Dot Matrix LCD display 10s Anti-skip Gear driven CD Mechanism 7 channel NOAA® Weather Band Tuner Electronic AM/FM Stereo Tuner Preset Up to 30 Radio Stations (18 FM, 12 AM) EURO and USA frequency bands MP3/WMA playback w/ ID3 Tag Support 2 Aux Inputs (Front 3.5mm Stereo Jack/Rear RCA) iPod® /iPhone® Charging and Playback Control via USB Bluetooth® audio Streaming w/ support for Hands Free calling Integrated Bluetooth® Microphone input Rear Channel Pre-amp outputs Built in PA input (Microphones & Adapter Sold Separately) ISO Connector for vehicles manufactured with the ISO connect harness

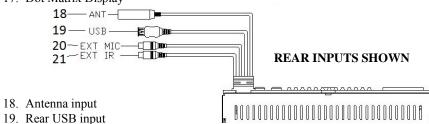
2

NOTES:

CONTROLS AND INDICATORS



- 1. Power/Mute Button
- Volume/Select Knob 2.
- 3. Scan /Search Button
- Band /Back Button 4.
- 5. Tune /Seek Down Button
- Tune /Seek Up Button 6.
- Preset Memory/Recall, Media Control Buttons 7.
- 8. Call Connect/Transfer Button
- 9. Call End Button
- 10. Display Button
- 11. Mode Select Button
- 12. Internal Bluetooth Microphone
- 13. Reset switch
- 14. Front AUX1 Input Jack
- 15. Disc EJECT Button
- 16. Disc Slot
- 17. Dot Matrix Display



3

- 20. Rear EXTERNAL Bluetooth Microphone input
- 21. Rear IR Remote extension input

22

OPERATION

1) Power/Mute Button

Press the Power Button to turn the unit ON or hold to turn the unit OFF. The button will illuminate RED when OFF and BLUE when ON. When ON, press to MUTE the audio on/off. Note: Radio can also be powered on by pressing any front button.

2) Volume/Select Knob

Rotate the knob left or right to change the volume level. Press the knob to select one of the following functions: VOL---BASS---TREB---BAL--FAD Upon choosing the function, rotate the knob to adjust the desired setting. PLEASE NOTE: If the Volume/Select Knob has not been adjusted for 3 seconds it will automatically revert back to the previous informational display.

Press and hold this button to access the radio SETUP MENU.

3) Scan/Search Button

Press and hold this button for 2 seconds to auto program available stations into the preset memory buttons. This function will erase previous memorized stations and store the newly searched stations. Once completed, the radio will scan for 5 seconds through each of the preset stations of either the AM or FM band and stop.

4) BAND/Back Button

Press this button to change radio bands as follows: FM1—FM2—FM3—AM1—AM2

5) TUNE/SEEK DOWN Button

Under Radio mode, press this button momentarily to manually tune downward. Press and hold a button and the radio will automatically seek to the previous radio station. When playing digital media, use this button to track backwards to the previous track. This button also functions as Weather Band Channel access. Under Weather Band mode, press this button to select Weather Band channels 1-7.

6) TUNE/SEEK UP Button

Únder Radio mode, press this button momentarily to manually tune upward. Press and hold a button and the radio will automatically seek to the next radio station. When playing digital media, use this button to track forwards to the next track. This button also functions as Weather Band Channel access. Under Weather Band mode, press this button to select Weather Band channels 1-7.

7) Preset Memory/Recall Buttons 1-6

Press these buttons momentarily to select the preset stations. Press and holding a button will set the current station to the button being pressed.

4

****Preset buttons are pre-assigned frequencies in Weather Band Mode.**

USB INTERFACE

USB Standard	USB1.1/2.0 (Full Speed)
Maximum Supply	
File System	Fat16/32

AUXILIARY INPUT SPECIFICATIONS

Input Voltage Maximum Voltage	1.2V
Input impedance	

DIMENSIONS

Chassis (W x H x D)	178mm (7") x 50mm (2") x 154mm (6")
Nosepiece (W x H x D)	8mm (7-3/8") x 58mm (2-1/4") x 17mm (5/8")
Weight	

*Due to continuous product improvement, specifications and design are subject to change without notice.

SPECIFICATIONS

AUDIO SECTION

Power supply voltage (negative ground)	
Standby Current.	
Max Current Consumption	10A
Speaker impedance	
Maximum Pre-output Voltage	

POWER OUTPUT

Continuous Output into 4Ω , @1KHz at 10 % THD	4 x 25Watts
Maximum Power Output (Volume control Maximum)	

FM TUNER

Range	(USA) 87.5 – 107.9 MHz
0	(EUR) 87.50 – 108.00 MHz
Usable Sensitivity (S/N = 30dB)	
Signal to noise ratio	
Stereo separation (@ 1K Hz)	

AM TUNER

Range	(USA)530 – 1,710 kHz
C C	(ÈUR) 522 – 1,620 kHz
Usable Sensitivity (S/N = 20dB)	
Signal to noise ratio (LEVEL60dbuV)	

WEATHER BAND TUNER

Range	162.400 –162.550MHz
Usable Sensitivity $(S/N = 20dI)$	B)0.7uV(-9dBuV)
	0dbuV)42dB

CD/PLAYER

Signal/Noise Ratio (1kHz)	
Frequency Response (+/- 1dB)	10 – 20,000Hz (+/-1dB)
Total Harmonic Distortion (1kHz)	less than 0.20% (1Khz)
MP3 decoding format	
WMA decoding format	Ver. 7, 7.1,8,9 (2ch audio)
-	(Windows Media Player)

BLUETOOTH®

Version	Bluetooth® 2.0 Certified
Frequency Range	
	+4dBm Max
	HFP 1.5, A2DP 1.2, AVRCP 1.0, & PBAP

20

8) CALL Button

Press this button to Place or Answer an incoming call when successfully paired using the Hands Free Profile on a Bluetooth® enabled phone. Press this button to transfer the call from the radio to the phone and vise versa.

9) END Button

Press this button to END a call when successfully paired using the Hands Free Profile on a Bluetooth® enabled phone. Press this button to quickly disconnect a paired device from the radio when in BT PHONE mode.

10) DISP Button

Press this button to change between Clock and Mode Information display.

Setting the Time:

With the radio's BLUE power light ON, press and hold this button until the hour display begins to flash. Rotate Volume/Select Knob to adjust the hour. Press the DISP button again, and the minute display will flash. Rotate VOL/SEL Knob to adjust the minute. Press either the DISP or VOL/SEL button to save the time on the LCD.

11) Mode Button

Press this button to navigate between modes: TUNER—WB—CD—BT PHONE—BT MUSIC (if paired)—AUX1—AUX2.

12) Internal Bluetooth® Microphone

Internal Microphone for Hands Free Bluetooth calling.

13) Reset Switch

In the unlikely event that the radio is not operating correctly, press the RESET button to restart the operating system of the radio.

14) Front AUX 1 Input Jack

The unit is equipped with a front panel 3.5mm auxiliary input (AUX 1) so you can connect your external portable audio player or portable satellite radio receiver. A second REAR (AUX 2) RCA jack is also included on the rear of the radio.

15) Disc EJECT button

With the radio ON, press this button to EJECT the Compact Disc from the radio.

16) Disc Slot

Insert a Compact Disc label side up here. The radio will switch modes and begin playback after the file is loaded.

17) Dot Matrix Display

LÉD Dot Matrix display shows the radios operational information.

*It may be necessary to adjust the volume level of your portable devise to achieve an optimal volume level.

5

WEATHER BAND MODE

NOAA National Weather Radio Broadcasts from over 380 Locations throughout the U.S. on seven VHF/FM frequencies. Tune to receive continuous weather information 24 hours a day on one of the following frequencies.

For local station listing see: http://www.nws.noaa.gov/nwr/nwrbro.htm

Press preset 1 to select weather band channel 1 - 162.400MHZ Press preset 2 to select weather band channel 2 - 162.425MHZ Press preset 3 to select weather band channel 3 - 162.450MHZ Press preset 4 to select weather band channel 4 - 162.475MHZ Press preset 5 to select weather band channel 5 - 162.500MHZ Press preset 6 to select weather band channel 6 - 162.525MHZ **Press SEEK UP/DOWN to select weather band channel 7 - 162.550 MHz

SETUP MENU

With the unit ON, press and hold the VOL/SEL button for 2 seconds. LCD will display MENU. Rotate the VOL/SEL knob to choose the option, then press to make a selection:

• SCROLL ON/OFF/ONCE

Choose how RDS, iPod®, and ID3 tag information is displayed on the LCD. With the scroll set to ON, information is repeated continuously on the front display. When set to ONCE, information is displayed only one time. When set to OFF, information is not displayed unless the user presses the DISPLAY button.

• WBALERT ON/OFF

Choose to turn the Weather Band Alert ON or OFF.

• RDS ON/OFF

Choose to turn the RDS (Radio Broadcast Data System) ON or OFF.

• BT SET

- BLUETOOTH ON/OFF (Must be set to ON to access further)
- > PAIR DEV
- ➢ SEL DEV
- DISCOVER ON/OFF
- ➢ ANSWER AUTO ON/OFF
- DELETE ALL NO/YES
- RINGER VOL SET
- ➢ SPEAKER SET FRONT ON/FRONT LEFT/FRONT RIGHT/ALL

• MIC CARBON/DYNAMIC

The first option is to select a correct PA input based on the microphone type you are using. Rotate VOL/SEL button to choose type:

DYNAMIC

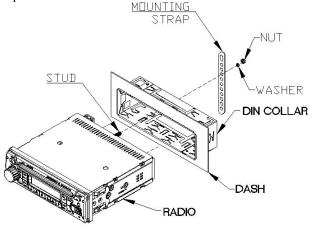
Microphone does NOT have on on-board volume control. PA volume control is built into the radio. Key the microphone to make adjustments.

6

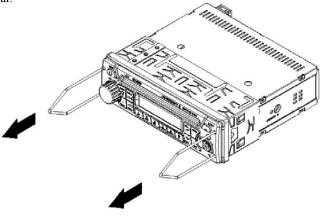
TROUBLE SHOOTING

Problem	Cause	Solution
Backlighting is on, but no LCD display	No power to BATTERY wire or blown 10A main fuse.	Check for both ACC & BATTERY voltage with Multi-meter, check all fuses.
No sound	Speakers not connected; speakers connected with bad splices; Speakers shorted to ground; speaker load is not within 4-8 Ω .	Connect speakers to harness; check all spliced wires; verify speakers not shorted to chassis; verify total speaker impedance. Check volume level.
Public Address can NOT be audible over speakers	PA setting in MENU is wrong; microphone is pinned wrong; wrong microphone type is used. Microphone is defective.	Turn the volume up on the microphone or radio when the LCD display's MIC; Check that the correct microphone type is connected. Check the PA setting's in the radio's menu.
LCD Display says MIC and front controls are locked	PA system is triggered	Remove microphone connection and verify correct pinning and or type, replace microphone. Reset the unit.
Cannot tune radio stations	The antenna cable is not connected. The signal is too weak. The radio is in the wrong frequency steps.	Connect the antenna cable. Check the frequency spacing in the radio's SERVICE menu.
USB media not playing, or says loading.	Media is the wrong file type.	Convert files to a usable format, see file requirements section of the manual.
Audio is distorted or low.	Source audio level is too weak or overdriven. Bitrate of audio file is too large.	Adjust the volume level of the auxiliary source. Change the sample frequency or Bitrate of the file.
iPod® screen displays "loading" for a long period of time.	Device is not a supported device. The radio supports a majority of iPod® models, but not all are guaranteed.	Wait for iPod® to load or reconnect 30-pin plug. If still loading, then device is not supported, or has low battery. Use the AUX input or a Bluetooth® connection instead.
The Radio does NOT respond to the front buttons	An error in operation has occurred	Reset the unit from the front panel.
The Radio does not charge my device	The device requires additional current via the USB to charge the device	Unplug and try again. The USB cannot support more than 5V/500mA.

3. If additional support is needed, bend the included support bracket, and secure it to the vehicle using a screw. Secure the opposite end to the radio's rear stud using the nut and washer provided.



4. To remove the radio, insert the two release keys into the holes on the front face of the radio. The tools must be inserted with the notched side facing the radio. Slide the keys foreword until you hear a click. Then pull the radio out, releasing it from the DIN collar.



18

CARBON

Microphone has on on-board volume control. Radio will not control the volume.

Press VOL/SEL knob to make the desired selection.

• BRIGHTNESS 0-35

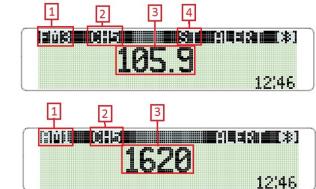
Rotate the VOL/SEL knob to choose the desired CONTRAST level of the display. Press the VOL/SEL knob to select.

• VER 1.00

This is the firmware version present on the radio. Not all features described in this manual may be available on the radio at this time.

To save and exit MENU mode, press and hold the VOL/SEL button. Note: Menu will exit automatically after 5 continuous seconds without saving any selections.

RADIO OPERATION



1. AM/FM Preset Mode

Press the BAND button to switch from FM-1, FM-2, FM-3, AM-1, or AM-2.

7

2. Preset Number

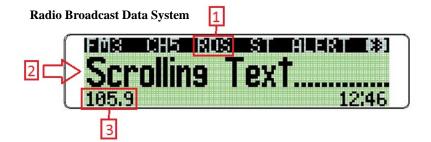
Displays the Preset Channel of the frequency.

3. Frequency Display

Displays the Frequency of the current tuned station.

4. Stereo Indicator

Displays when the FM frequency is tuned in Stereo.



1. RDS Display Indication

When RDS is set to ON in the MENU, FM station's receiving RDS data will display this indicator.

2. RDS Text Information



dios button to choose a preferred display option.

RT (Radio Text)

Information such as the title and artist of the currently playing song. **PS (Programe Service)**

Information such as the call letters or station identity name.

3. FM Frequency Display

Displays the alternate location of the FM frequency when RDS is set to ON.

WEATHER BAND ALERT



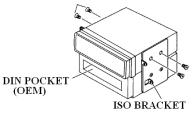
1. Weather Band ALERT Status Indication

When Weather Band alert is set to ON, ALERT is displayed in the LCD window. The National Weather Service will send a 1050 Hz tone alarm before most warning and many watch messages are broadcast. The tone will activate and switch to the alert frequency even if the audio is turned off. After the alert message has completed, the radio will return to the previous mode.

8

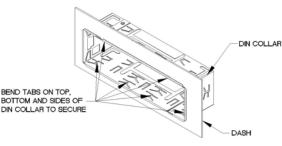
ISO INSTALLATION

1. For installations that do NOT require the use of the DIN collar. The radio has threaded holes in the chassis side panels for ISO mount applications. If necessary, four M5x10mm screws are included with the hardware pack to assist you.

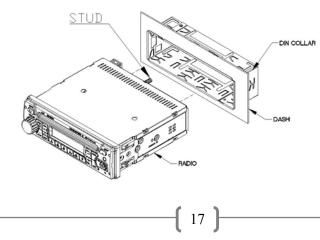


INSTALLING THE RADIO

1. Place the DIN collar into the dash opening. Bend the tabs outward as shown on the drawing below to lock into place.



2. Pass the harness and antenna cable through the DIN collar, and connect to the back of the radio. Verify clearance; then gently insert the radio into the DIN Collar until both spring clips are locked into place.

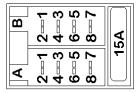


ELECTRICAL CONNECTIONS

Follow this easy wiring diagram when installing Radio and Speakers. **Warning:**

*This radio is designed for 12V DC Negative Ground Systems Only.

**Shorting or grounding any of the speaker wires can damage the radio and is not covered by warranty.

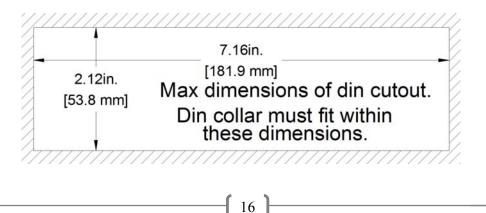


	Conn A	Conn B	
1	NONE	1	RR+
2	NONE	2	RR-
3	NONE	3	RF+
4	ACC +12V	4	RF-
5	NONE	5	LF+
6	NONE	6	LF-
7	BATTERY +12V	7	LR+
8	GROUND	8	LR-

**NOTE: BOTH THE RADIO'S BATTERY +12V & ACC +12V POWER WIRES MUST BE CONNECTED FOR OPERATION.

REQUIRED RADIO DIMENSIONS

Verify the radio will fit by following the suggested dimensions below. Carefully cut or file as necessary until the sleeve easily slides into the opening.



CONNECTING A NEW BLUETOOTH® DEVICE

To connect your Bluetooth® device to the Radio, the device must first be paired. You will need to verify that "BLUETOOTH" is set to "ON". (See BT SET menu), and verify that "DISCOVERY" is set to "ON". (See BT SET menu).

Pairing the Your mobile device with the Head Unit

Your mobile phone can initiate a search for new devices and pair to the unit. The following paragraph describes the pairing process:

NOTE: Procedures for pairing mobile phones may vary slightly from manufacturer to manufacturer.

- 1. Verify that the Radio is powered up and ON.
- 2. Set the Bluetooth® function of the Mobile Device to ON.
- 3. Access the" Look for devices" feature of the Mobile device and begin searching. After searching, the Radio should appear in the list of devices as CD-5000BT. Press to accept.



4. A prompt to bond should appear on your Mobile device. Press to accept and continue the process. The device will then ask for the passkey, enter it on the mobile device.

NOTE: Some mobile devices require the passkey to connect. If your moblie device requires the passkey, you will need to enter it now. The default code is "0000".



5. After entering the passkey, press OK. The Mobile device should display connected. The Radio's Bluetooth® icon should appear in the upper right hand corner of the screen.

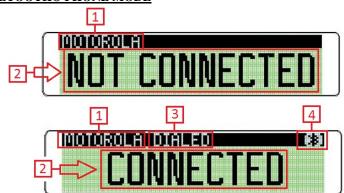
NOTES:

- Only ONE mobile device can be paired with the Radio at a time.
- Turn "DISCOVERY OFF" to disable any unwanted Bluetooth® devices.
- After turning off the ignition, the Radio will automatically search for the last-connected Bluetooth® device, and if possible, restore the connection.

9

• This Radio does NOT support HSP (Head Set Profile)

BLUETOOTH® PHONE MODE



1. Bluetooth Phone ID

Displays the ID of previously paired Bluetooth Phones. Rotate to the VOL/SEL knob to display other paired devices and press the VOL/SEL to initiate re-connection.

2. Display information

Shows the connection status and phone number of the incoming or outgoing call. **3. Options Menu**

When connected to a Bluetooth Enabled phone, Rotate the VOL/SEL knob to access DIALED, RECEIVED, MISSED, or PHONEBOOK.

- > **DIALED** Displays all dialed calls from the currently connect phone.
- RECEIVED Displays all answered incoming calls from the currently connect phone.
- > MISSED Displays all missed calls from the currently connect phone.
- PHONEBOOK Displays the contacts currently stored on the connected phone. Some phones require the user to accept the radio's permission to view contacts before displaying them on the radio.

The use can rotate and choose using the VOL/SEL button and press it to also select the desired number. Use the button to return to the previous menu.

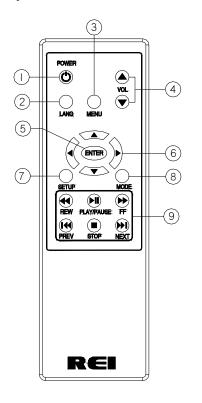
Once the phone number is displayed, press the CALL button to place the call. **4.** Connection Status

10

Displays the Bluetooth® icon connection status of the radio.

OPTIONAL REMOTE CONTROL

*Requires 2AA Batteries



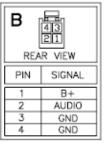
- (1) Power Button
- (2) Language Button (N/A)
- (3) Menu Button (N/A)
- (4) Volume Up/Down Buttons
- (5) Enter Button (N/A)
- (6) Scroll Buttons (N/A)
- (7) Setup Button (N/A)
- (8) Mode Button
- (9) Playback Buttons

PA OPERATION (microphone sold separately)

Connect a PA microphone into the 4-pin connector. Microphone has priority over all other audio modes and mute's the source audio being played when keyed. When the PA is triggered, the front display will show MIC, until the trigger is un-keyed. Once released, it will return to the previous source mode at the previous volume level

The PA operates regardless of radio status, as long as both ACC and Battery power is applied to the radio.

When set to CARBON mode, the volume of the PA is only adjustable on the microphone itself. When set to DYNAMIC mode, the volume level is adjustable only when keyed from the front using the VOL/SEL button. A rear view of the radio's PA pin connection option is shown below:



FRONT VIEW	
PIN	SIGNAL
1	TRIGGER
2	AUDIO
3	SHIELD
4	GND

Dynamic PA

Carbon PA

NOTE:

For easy viewing at night, the backlighting will <u>always</u> be on when ACC +12V DC switched power is applied. Backlighting will only shut off when the switched ACC +12V DC power is removed. <u>If the radio's LCD does NOT</u> <u>come on and display the clock, verify that the BATTERY +12V DC power wire is installed correctly.</u>

iPod® and iPhone® are trademarks of Apple Inc., registered in the U.S. and other countries. Functionality may vary by model number, operation is not guaranteed.

The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by REI under license.

14



BLUETOOTH® STREAMING AUDIO MODE

The unit allows you to play back audio files from your mobile device using a Bluetooth® connection. The Radio can control a Bluetooth® audio player via Advanced Audio Distribution Profile (A2DP) or Audio/Video Remote Control Profile (AVRCP). Bluetooth® audio players (or Bluetooth® adapters) compatible with these profiles can be connected to this Radio. Verify the device is connected via Bluetooth®, then Touch the MODE button on the front to access BT AUDIO.



1. Bluetooth Phone ID

Displays the ID of the paired Bluetooth Phone you are trying to stream audio from.

2. Connection Status

Displays the Bluetooth® icon connection status of the radio

Press the PLAY/PAUSE button to listen to audio. While listening to audio the following functions are available:

- **SEEK UP** button: Touch to play the next track.
- PLAY/PAUSE button: Touch to pause playback. Touch again to resume playback.
- **SEEK DOWN** button: Touch to play the previous track.

NOTE:

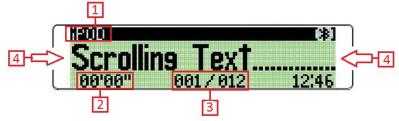
When there is an incoming call, the song will be paused. After the incoming call is finished, the screen will return to the music function screen and playback will continue.

11

Functionality may vary depending on the profile or device used.

iPod®/iPhone® OPERATION

To listen to audio through your apple device, verify that a 30-pin USB extension is connected to the USB pigtail on the rear of the radio. Next, connect the 30-pin cable to the Apple device. Once connected, the radio will automatically switch the source to iPod® and begin charging the device. If the device has enough battery power. It will begin playback.



- 1. Operational Mode
- 2. Shows the elapse time of the audio track.
- 3. Indicates the file number and number of files in the folder.
- 4. Displays the Track Title, Artist, and Album information of the file if available.

When connected, the user can playback specific files or folders. First press the SEARCH \mathbf{Q} button. The user can then rotate the VOL/SEL knob to select one of the following search options:

- Playlists
- Podcasts
- Audiobooks
- Songs
- Albums
- Artists

Press the VOL/SEL knob to choose. To return to a previous menu, press the RETURN **b** button and choose again using the VOL/SEL knob. Use the radio's SEEK up/down buttons to change tracks, or the bill button to PAUSE or PLAY the track.

To return to the iPod® source from any other source menu, touch MODE on the front panel until the iPod® icon is shown on the front display.

AUX OPERATION

Press the MODE button on the front panel until the display shows either AUX 1 or AUX2. AUX 1 uses the front 3.5mm audio input while AUX 2 uses the rear RCA L/R audio inputs. It may be necessary to adjust the VOLUME level of the AUXILARLY input device if too little or too much signal is present.



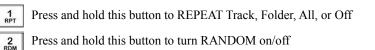
12

USB/CD OPERATION

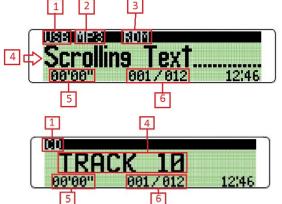
3 INT

6

Insert a CD into the disc slot, or connect a USB storage device to the unit. The radio will automatically switch MODE'S and begin playback after the media is successfully loaded. Use the SEEK UP/DOWN buttons to change tracks. If playing compressed digital media, use the FOLDER UP/DOWN UP/DOWN buttons to select the desired folder for playback.



- Press and hold this button to select INTRO on/off during playback
- Press this button to PAUSE/PLAY the media



- 1. Operational Mode
- 2. Compressed media file format

Displays either WMA or MP3 Compressed media file format file formats.

- 3. Playback Mode of Operation
- Displays either RDM, INT, RPT or nothing at all
- 4. Shows the Track number of the ID3 tag information of the MP3 file.

Press the DISPLAY button to switch from Title, Artist, or Album information

- 5. Shows the elapse time of the audio track.
- 6. File number and number of files in the folder.

AUDIO FILE REQUIREMENTS (.MP3/.WMA using ISO9660 formatting)

- The MP3 files with a sampling rate between 16 kHz & 48 kHz. And bitrates between 32 to 384 kbps. (44.1khz/128kbps or higher is recommended)
- The WMA file with a sampling rate of 32, 44.1, or 48 kHz. And a bitrates between 62 to 192 kbps. (44.1khz/128kbps is recommended)

NOTE:

This Radio does not support playback of aac (.m4a, MPEG-4) audio.