

## BUILT-IN GPS FUNCTION ON/ OFF


- 1 Access Menu No. 400 and start the setting.



- 2 Select [On] or [Off].

**[On]:** Turns on the built-in GPS function.

**[Off]:** Turns off the built-in GPS function.

- When the built-in GPS receiver is On, the <  > indicator appears on the display during positioning.
- You must set the time zone beforehand, through Menu No. 950.
- When determining your position for the first time after the power supply is turned On, the clock data is automatically set and is updated once per day thereafter.

## Displaying Position Information

When the built-in GPS receiver is On, pressing [F], [MARK] will display "Latitude/longitude, time, altitude, heading, speed", then press [▶] to cycle the display between "Latitude/longitude, time, altitude, heading, speed" → "Target point distance, Travel direction" → "GPS satellite information".

- Press [◀] returns to the previous display.

**Latitude/longitude, Time, Altitude, Heading, Speed**



- ① Latitude
- ② Longitude
- ③ Grid square locator
- ④ Altitude
- ⑤ Time
- ⑥ Heading
- ⑦ Speed

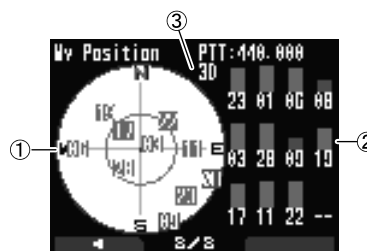
**Target point distance, Target direction**



- ① Target direction
- ② Target point distance

- When pressing [F] while the target point distance/ target direction is displayed, the North Up display (displays North as the top) changes to the Heading Up display (displays the current travel direction as the top) or vice-versa. In the Heading Up display, a "+" or "-" is used to help indicate the traveling direction.

## GPS satellite information



- ① Sky view
- ② Satellite signal-strength bars

- ③ 2D: Latitude/Longitude positioning

3D: Latitude/Longitude and Altitude positioning

- The sky view shows the satellites you are receiving. The satellite signal-strength bars indicate the strength of each satellite you are receiving. A solid bar indicates that the GPS satellite is ready for use.
- When only the frame of the signal-strength bar is displayed, no contact with the satellite has yet been made

### Note:

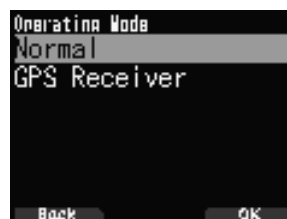
- ◆ When GPS cannot be received, turn the power ON in a clear environment (Open Sky).

## BUILT-IN GPS SETUP

You can select whether to use the transceiver function together with the built-in GPS receiver function or to use the built-in GPS receiver function only.

## Built-in GPS Operation Mode

- 1 Access Menu No. 403.



- 2 Select [Normal] or [GPS Receiver].

Restart information appears.

- 3 Press [A/B] to restart the transceiver with the selected mode.

**[Normal]:** The display continues to show your frequency. You can use it as a normal transceiver.

**[GPS Receiver]:** The display shows only GPS information. The transceiver transmit and receive capabilities are turned OFF, and only GPS operation is available.

### GPS Receiver mode display



## Key Operation in GPS Receiver Mode

When set to "GPS Receiver", you can operate only the following key functions.

### Key operations in [Latitude/longitude, Time, Altitude, Heading, Speed]

Key Name	Operation
[◀]	Switches to FM radio frequency screen when FM radio mode is On.
[▶]	Switches to [Target point distance and Heading] screen.
[MODE]	Switches to [Latitude and Longitude] copy selection screen.
[MENU]	Switches to the menu screen.
[A/B]	Switches to [Time] copy confirmation screen.
[F]	Switches between the North up and the Heading up.
[MARK]	Press [MARK]: Switches Mark waypoint list. Press [MARK] (1s): Switches to the registration mode of mark position.

### Key operations in [Target point distance, Target direction]

Key Name	Operation
[◀]	Switches to [Time, Altitude, Heading, and Speed] screen.
[▶]	Switches to [GPS satellite information] screen.
[MODE]	Switches to [Time, Altitude, Heading, and Speed] screen.
[MENU]	Switches to the menu screen.
[A/B]	Switches to [GPS satellite information] screen.
[F]	Switches between the North up and the Heading up.
[MARK]	Press [MARK] (1s): Switches to the registration mode of mark position.

### Key operations in [GPS satellite information]

Key Name	Operation
[◀]	Switches to [Target point distance and Target direction] screen.
[▶]	Switches to FM radio frequency screen when FM radio mode is On.
[MODE]	Switches to [Target point distance and Target direction] screen.
[MENU]	Switches to the menu screen.
[A/B]	Switches to FM radio frequency screen when FM radio mode is On.
[MARK]	Switches to the registration mode of mark position.

## Battery Saver (GPS Save)

This function will turn the GPS power source Off after the programmed timer expires if position data is not determined during the maximum catching time (approximately 5 minutes). To prevent unnecessary battery consumption, when there are many reception satellites, the GPS is stabilized and position data can be determined, the GPS power source repeatedly turns On and Off.

- 1 Access Menu No. 404.



- 2 Set GPS Off time to [Off], [1], [2], [4], [8], or [Auto].

**[OFF]:** The built-in GPS receiver function is always On.

**[1min] to [8min]:** When set to 1, 2, 4, or 8 minutes, the GPS off time starts at the selected duration if position data is not determined during the maximum catching time (approximately 5 minutes).

**[Auto]:** When set to Auto, the GPS Off time starts at 1 minute for the first time, then progresses to 2 minutes, 4 minutes and 8 minutes each additional time. The GPS Off time remains at 8 minutes thereafter. However, after having determined your position for the duration, if the GPS cannot pinpoint your location, the GPS Off time will restart at 1 minute.

### Note:

- ◆ Position precision may be improved by setting the Battery Saver (GPS Save) function to "Off".
- ◆ When GPS cannot be received, turn the power ON in a clear environment (Open Sky).

## GPS Data PC Output

Turn this function on when you want to send the built-in GPS receiver data (NMEA) from the USB connector or Bluetooth.

- 1 Access Menu No. 405.



- 2 Set PC Output to [Off] or [On].

**[Off]:** The built-in GPS receiver data (NMEA) is not output from the USB connector or Bluetooth.

**[On]:** The built-in GPS receiver data (NMEA) is output from the USB connector or Bluetooth.

### Note:

- ◆ When the built-in GPS receiver data (NMEA) is output, the communication speed (baud rate) is fixed to 9,600 bps.
- ◆ You can select USB or Bluetooth by Menu No. 981.

## MARK FUNCTION

You can register up to 100 points with the location's latitude, longitude, altitude, time, name, and icon in the Position Memory List.

### 1 Press [MARK] (1s).

The position memory store screen appears.



### 2 Select a position memory number.

### 3 Press [ENT].

The location information is registered.

## When Overwriting

When selecting the already registered position memory number, the overwrite confirmation screen appears.



### 4 Press [A/B].

The location information is overwritten.

## POSITION MEMORY LIST

You can register the following location information up to 100 points in the Position Memory List.

You can edit all information except Registration time manually.

- Position name
- Icon (APRS)
- Registration time
- Longitude
- Latitude
- Altitude

## Checking Registered Position Memory

### 1 Press [MARK].

The position memory list screen appears.



### 2 Select a list.

### 3 Press [ENT].

The position memory list details screen appears. Details of the position memory can be checked.



- When pressing [F], the North Up display (displays North as the top) changes to the Heading Up display (displays the current travel direction as the top) or vice-versa.

### 4 Press [MODE].

The position memory list screen reappears.

## Editing Position Memory

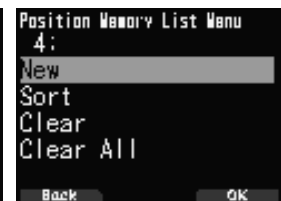
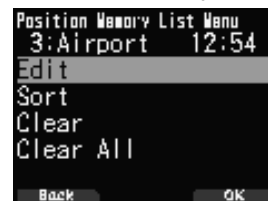
### 1 Press [MARK].

The position memory list screen appears.

### 2 Select a list.

### 3 Press [MENU].

The position memory list menu screen appears.



### 4 Select [Edit] or [New] and press [A/B].

The mode changes to position memory edit mode. The edit menu items are as follows.

- Name (position name)
- Position (latitude and longitude)
- Icon
- Altitude



## Editing the Name (Position Name)

### 1 Select [Name] and press [A/B].

The character input screen appears.

### 2 Select the characters.

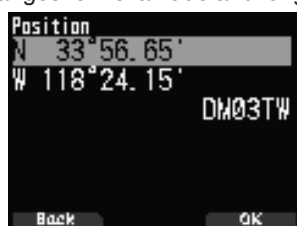
For the detailed character input procedure, refer to page 15.



## Editing the Position (Latitude and Longitude)

- 1 Select [Position] and press [A/B].

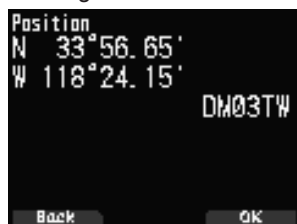
The mode changes to the latitude and longitude edit mode.



- 2 Select [N]/[S] or [E]/[W], and press [ENT].

[N]/[S]: Edits the latitude.

[E]/[W]: Edits the longitude.

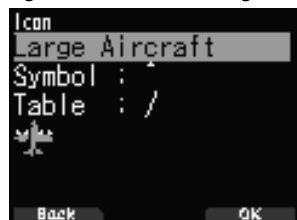


Key Name	Operation
[▲]/[▼] or [ENC]	Changes the item.
[◀]/[▶]	Moves the cursor.
[ENT]	Confirms the editing.
[MODE]	Cancels editing and returns to the previous screen.

## Editing the Icon

- 1 Select [Icon] and press [A/B].

The mode changes to the icon setting mode.



Key Name	Operation
[▲]/[▼]	Switches the station icon.
[ENT]	Cursor moves to [Symbol].
[A/B]	Confirms the station icon.

- 2 Select [Symbol] or [Table] and press [ENT].

[Symbol]: Edits the symbol.

[Table]: Edits the table code.

Key Name	Operation
[▲]/[▼]	Switches to [Symbol] or [Table].
[ENT] or [A/B]	Changes to the selected setting mode.
[MODE]	Returns to the station icon selection.

## Editing the Altitude

- 1 Select [Altitude] and press [A/B].

The mode changes to the altitude setting mode.



Key Name	Operation
[▲]/[▼] or [ENC]	Changes the item.
[ENT]	Confirms the editing.
[MODE]	Cancels editing and returns to the previous screen.

## Sorting Position Memory List

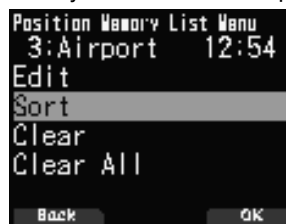
- 1 Press [MARK].

The position memory list screen appears.

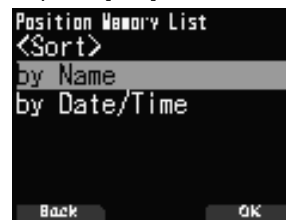
- 2 Select a list.

- 3 Press [MENU].

The position memory list menu screen appears.



- 4 Select [Sort] and press [A/B].



- 5 Select [by Name] or [by Date/Time] and press [A/B].

[by Name]: Sorts in name order.

[by Date/Time]: Sorts in date and time order.

## Clearing Position Memory

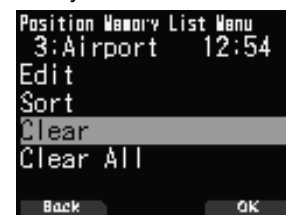
- 1 Press [MARK].

The position memory list screen appears.

- 2 Select a list.

- 3 Press [MENU].

The position memory list menu mode screen appears.

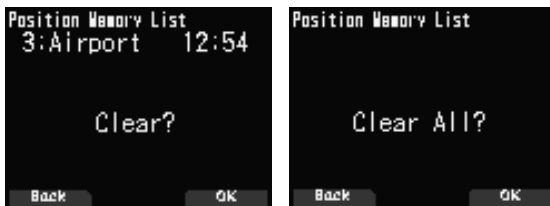


- 4 Select [Clear] or [Clear All] and press **[A/B]**.

The clear confirmation screen appears.

**[Clear]**: Clears the selected position memory.

**[Clear All]**: Clears all position memories.



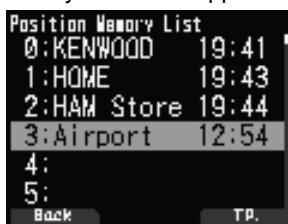
- 5 Press **[A/B]** to clear the position memory.

## TARGET POINT

You can register positional information for a target point.


- 1 Press **[MARK]**.

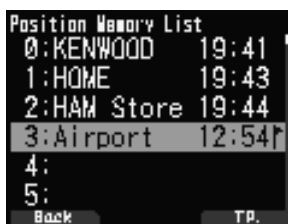
The position memory list screen appears.



- 2 Select a position memory number.

- 3 Press **[A/B]**.

The target point mark <  > appears to the right of the time. The target point mark disappears when pressing **[A/B]** again.



## Target point distance and Target direction

- 1 Press **[F]**, **[MARK]**

- 2 Press **[▶]**.

**[Target point distance and Target direction screen]** appears. When pressing **[F]** while the target point distance and target direction are displayed, the North Up display (displays North as the top) changes to the Heading Up display (displays the current travel direction as the top) or vice-versa.



## APRS DATA COMMUNICATION

- This function uses the APRS format for data communications including your station position, messages, etc.
- When data is received from another station directly, via digipeaters and/or IGate stations, the direction of the received station (from your station's perspective), their distance, and their grid square locator is displayed. Any comments sent by the other stations are also displayed.
- APRS (Automatic Packet Reporting System) is a worldwide system introduced by Bob Bruninga, WB4APR.  
< APRS® is a software program and registered trademark of Bob Bruninga, WB4APR.>  
Official APRS Website: <http://www.aprs.org>

## APRS Network

### Digipeater

- Digipeater (Digital Repeater) relays digital packet data. When a Digipeater receives a packet, it saves it to memory. When the reception ends, the packet data is re-transmitted on the same frequency. Using Digipeaters, it is possible to exchange APRS packets long distances.

### IGate

- IGate (Internet Gateway) is a very useful and important feature for APRS as well as Digipeater. IGate stations bridge APRS packets between RF and the Internet. By going through the IGate stations, you can enjoy the communication with the further distant stations which are not covered only by Digipeaters.

Digipeater stations and IGate stations are operated by the volunteer people in each region.

## BASIC SETTINGS

This part covers only the minimum necessary settings for basic operation as an APRS handheld portable station. Refer to the User Manual (detailed instruction manual) on the Website for more advanced settings.

### My Callsign

Program your Callsign using a maximum of 9 alphanumeric characters including SSID (Secondary Station Identifiers) such as -7, -9, or -14. Unless you program a Callsign, you cannot transmit APRS packets.

- 1 Access Menu No. 500.

The display for entering a Callsign appears.  
You can enter 0 to 9, A to Z, and -.



- 2 Press [ENT] to set the Callsign.

#### Note:

- ◆ For SSID characters, refer to the guideline on the Website (<http://aprs.org/aprs11/SSIDs.txt>) by Bob Bruninga, WB4APR.
- ◆ When all settings are blank, "NOCALL" is automatically set. In this case, the Position packet (Beacon), Object Packet, or Message packet cannot be transmitted.

## Selecting your Station Icon

- 1 Access Menu No. 501.



- 2 Select an icon which will be displayed on the monitors of other stations as your ID. You may select an icon depending on your current location. It is important that the icon conveys the operational status of the station as well as the SSID.

### Icon Examples

ICON	Meaning
	Person
	Bicycle
	Motorcycle
	Car
	Bus
	Railroad Engine
	Home



Bicycle icon selected

- 3 Press [A/B] to set your station icon.  
Press [MENU] to return to the previous screen.

#### Note:

- ◆ Set an icon that represents your operational status. (For example, setting an Aircraft icon or Balloon icon to a fixed station will cause confusion when a station receives a beacon.)

## Setting the Data Band Frequency

Set the data band frequency to the APRS network frequency. The default setting of the data band is band A.

You can change the data band to band B by Menu No. 506.

#### Note:

- ◆ The APRS network frequency will depend on what region of the world you are operating as follows:  
North America: 144.390 MHz, Europe: 144.800 MHz  
Australia: 145.175 MHz, New Zealand: 144.575 MHz  
Argentina: 144.930 MHz, Brazil: 145.570 MHz  
Japan: 144.640 MHz (9600 bps)/ 144.660 MHz (1200 bps)

## Setting APRS Data Communication ON

Press **[F]**, **[LIST]** to enter APRS mode.

Each time a new APRS packet is received, the frequency display is interrupted to show information as below.

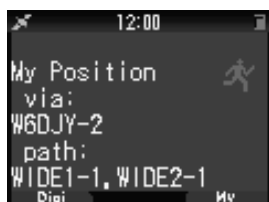


To return to the frequency screen, press any key except **[▶]** or **[A/B]**, or just wait for approximately 10 seconds.

## Transmitting APRS Beacon

Press **[BCN]** to transmit your APRS beacon (position packet). **<BCN>** icon is displayed and APRS beacon is automatically transmitted.

- When you receive an APRS beacon that you transmitted, the frequency screen is interrupted and "My Position" will appear on the display. This could happen when one or more digipeaters are used.



## ACCESSING RECEIVED APRS DATA

This transceiver is capable of receiving and storing APRS data received from up to 100 stations in memory. You can easily recall the information of the desired station.

### Station List

- Press **[LIST]** to show the list of stations.



- Press **[LIST]** (**1s**) to change the list type to **[Callsign + model name]**, **[Callsign + Time + QSY]**.

Key functions for station list are as follows.

Key Name	Operation
<b>[ENC]</b>	To select a station data.
<b>[▲]</b>	To move the cursor to the small list number (New receiving station).
<b>[▼]</b>	To move the cursor to the big list number (Old receiving station).
<b>[ENT]</b>	To enter the details of the selected station.
<b>[MODE]</b>	To move the cursor to the top list number.
<b>[MENU]</b>	To enter the station list Menu.
<b>[A/B]</b>	To delete the selected station data.
<b>[◀]</b>	To return to the frequency display.
<b>[PTT]</b>	To switch to the frequency display and transmit.

Key Name	Operation
<b>[LIST]</b>	To return to the frequency display.
	Press <b>[LIST]</b> ( <b>1s</b> ): To change the list type.

- Press **[ENT]** to select the desired station.

The details of station data are displayed.



Key functions for station data are as follows.

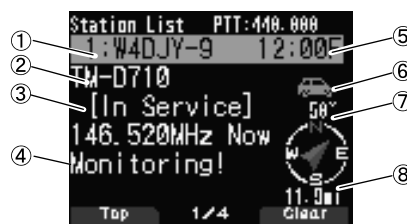
Key Name	Operation
<b>[ENC]</b>	To select a station data.
<b>[MODE]</b>	To move the cursor to the top list number.
<b>[◀]</b>	To return to the station list.
<b>[▶]</b>	To display the next page.
<b>[A/B]</b>	To delete the selected station. When "Clear ?" appears, press <b>[ENT]</b> to clear. Press <b>[A/B]</b> ( <b>1s</b> ): To delete all stations. When "Clear All ?" appears, press <b>[ENT]</b> . And when "Sure ?" appears, press <b>[ENT]</b> again to clear all.
<b>[MENU]</b>	To enter the station list Menu.
<b>[PTT]</b>	To switch to the frequency display and transmit.
<b>[LIST]</b>	To return to the frequency display.

### Note:

- When data from the 101st station is received, the oldest data in memory is replaced by that data.
- Each time a new APRS packet is received from the same station, the old data from that station (in memory) is replaced by new data.

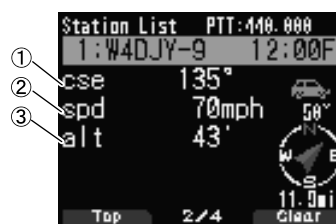
## Display Examples (Mobile station)

### Page 1:



- 1 Callsign
- 2 Situation
- 3 Position comment
- 4 Status text
- 5 Time
- 6 Station icon
- 7 Direction of the station
- 8 Distance from the station

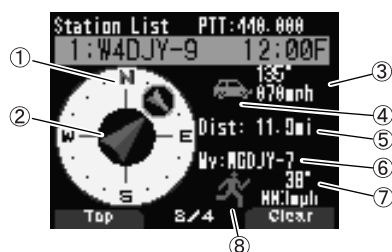
### Page 2:



- 1 Moving direction
- 2 Moving speed
- 3 Altitude

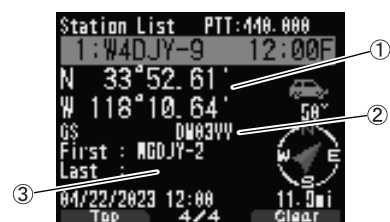


## Page 3:



- ① Moving direction of the other station ② Moving direction of the other station  
 ③ Speed and moving direction of the other station  
 ④ Station icon of the other station ⑤ Distance from the other station ⑥ My Callsign ⑦ Speed and moving direction of my station ⑧ My station icon

## Page 4:

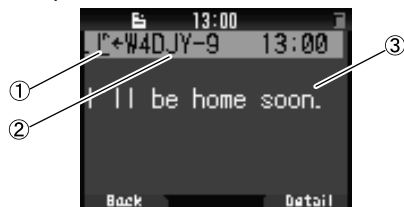


- ① Latitude, Longitude ② Grid square locator ③ Packet path (Digipeated route)

## APRS MESSAGE FUNCTIONS

## Receiving a Message

Each time a proper message is received, the frequency display is interrupted to show information as below:



- ① Meaning indicator ② Callsign (Sender) ③ Message

Key Name	Operation
[◀]/[MODE]	To return to the frequency screen.
[▶]	To move to the detail screen.
[A/B]	To move to the message screen.

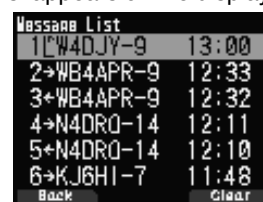
Meaning	
n	Message addressed to you
B	Bulletin message
!	Report by the National Weather Service
*	A message for which a reception acknowledgment was returned
G	Group message

- When a duplicate message from the same station is received, the reception interrupt display does not appear and an error tone sounds. When the frequency at that time appears on the display, "dM" (duplicate Message) and the calling station's Callsign appears on the display.

## Entering a Message

- 1 Press [MSG].

The message list appears on the display.



Key Name	Operation
[ENC]	To select a list number.
[◀]	To return to the frequency screen.
[▶]	To move to the detail screen.
[A/B]	To delete the message on the cursor.

- 2 Select a list number by [ENC] control and press [▶].

The message list Menu appears on the display.

First page:

Last page:



- ① Status ② Meaning indicator ③ Receiving message/sending message ④ Callsign ⑤ Message ⑥ Receive date ⑦ Receive time ⑧ Line number ⑨ Message group

- The display shows up to 67 characters of the message.
- The following indicators appear depending on the types of received messages.

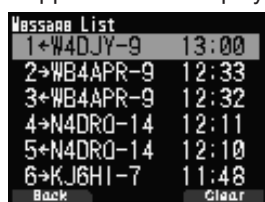
① Status	
n	"n" indicates the remaining number of times for transmitting the message
*	A message for which a reception acknowledgment was returned
.	A message transmitted 5 times (For a message, a reception acknowledgment was not returned.)
② Meaning	
n	Message addressed to you
B	Bulletin message
!	Report by the National Weather Service
③ RX or TX	
+	Received message
+	A message for transmitting



## Transmitting a Message

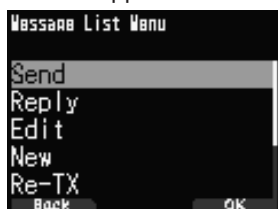
### 1 Press [MSG].

The message list appears on the display.



### 2 Press [MENU].

The message list Menu appears on the display.



### 3 Select [Reply], [Edit], or [New].

- When selecting [Edit], the original message is quoted and you can edit it.
- Enter the Callsign when selecting [New].



### 4 Enter the message



Key Name	Operation
[ENC]/[▲]/[▼]	To select a character.
[◀]	To move the cursor backward.
[▶]	To move the cursor forward.
[A/B]	To delete the message on the cursor.

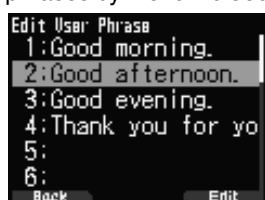
#### Note:

- When using the already registered user phrases, refer to the following step 5.

### 5 Enter the user phrase.

Press [F] to enter the message compilation mode.

You can select the user phrase among the already registered user phrases by Menu No.560.



### 6 Select [Send] and press [A/B] to send the message.

You can select the following items other than [Send], [Reply], [Edit], and [New] in message list Menu.

**[Re-TX]:** Send the message again.

**[Position]:** Search position information from a position list.

**[POS Request]:** The position data of the transmitting station is displayed (if the station data is available).

**[Unread]:** Change the existing reading message to unread message.

## Storing User Phrases

This function (clipboard image) allows you to paste phrases into the APRS message compilation mode. You can create up to 20 phrases each of which can consist of up to 32 characters.

### 1 Access Menu No. 560.

You can select from user phrase 1 to user phrase 20.



### 2 Press [ENT].

### 3 Store user phrase.

### 4 Press [ENT].

#### Note:

- The user phrase function can only be used in the message compilation mode.
- Before a message is copied, the number of letters cannot be guaranteed. Only the number of letters available will be copied, and the remainder will be truncated.

## SETTING NOTIFICATION SOUND

### RX Beep Type

This transceiver beeps each time it receives any type of APRS packets.

### 1 Access Menu No. 570.



### 2 Select [Off], [Message Only], [Mine], [All New], or [All].

**[Off]:** The APRS beep tone does not sound.

**[Message Only]:** Beep sounds only when a message is received at your station address.

**[Mine]:** Beep sounds when a message is received at your station address and your transmitted data is received by a digipeater.

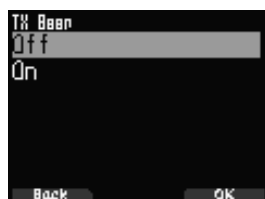
**[All New]:** Beep sounds when a message is received at your station address and new packet data is received.

**[All]:** Beep sounds when a message is received at your station address and duplicate data or invalid data is received.

## TX Beep

When your beacon is transmitted in a manner other than manually, you can select whether or not it emits a beep sound.

- 1 Access Menu No. 571.



- 2 Select [Off] or [On].

**[Off]:** A beep does not sound.

**[On]:** A beep sounds when a beacon is transmitted using **[PTT]** or when it is automatically transmitted. When auto-reply message sends a response, a beep will sound.

## Special Call

This function emits a special call sound when receiving an APRS message from a specific station.

- 1 Access Menu No. 572.



- 2 Set the Callsign (including SSID) of the station from which you want to receive a special call notification.

## D-STAR INTRODUCTION

- In the original D-STAR (Digital Smart Technologies for Amateur Radio) plan, JARL envisioned a system of repeaters grouped together into Zones.
- The D-STAR repeater enables you to call a D-STAR station in another area through the Internet.
- The transceiver can be operated in the digital voice mode, including low-speed data operation, for both transmit and receive.

### Note:

- ◆ Before starting D-STAR, the following steps are needed.  
**STEP 1:** Enter your Callsign in the transceiver.  
**STEP 2:** Register your Callsign to a gateway repeater.

## DV MODE/ DR (D-STAR REPEATER) MODE

DV (Digital Voice) mode is a mode you can use for direct call without using a repeater.

DR (D-STAR Repeater) mode is a mode you can use for D-STAR repeater operation. In this mode, you can select the preprogrammed repeater or frequency in "FROM" (access repeater), and UR Callsign in "TO" (destination), as shown below.

TO: Destination  
(CQ/Other area  
repeater/Specific  
station)  
FROM: Access  
repeater



DR mode (Main band)

## Communication in DR mode

In the DR mode, the transceiver has 3 communication ways.

### Local area call

- To call through your local area (access) repeater.

### Gateway call

- To call through your local area (access) repeater, repeater gateway and the Internet to your destination repeater or individual station's last used repeater, using Callsign routing.

### Call by Callsign designation

- To call by designating the Callsign of the specific station. This call is relayed automatically to the last accessed repeater.

## Basic operations in DR mode

- **Press [▲] (1s) to set "TO" (destination).**  
You can set "TO" in Local area call, Gateway call, and Call by Callsign designation, etc.
- **Press [ENT] (1s) to set "TO" (destination) by Call History.**  
You can recall in Gateway call, etc.
- **Press [▼] (1s) to set "FROM" (access repeater).**  
You can select "FROM" (access repeater) in Local area call and Gateway call.
- **Press [▶] (1s) to display the reception history list.**

### Note:

- ◆ The basic operations in DR mode are not supported in DV mode.
- ◆ The transceiver has a Time-Out Timer function for digital repeater operation. The timer limits a continuous transmission to approximately 10 minutes.

## REGISTER YOUR CALLSIGN AT A GATEWAY REPEATER

To use the Internet, you must register your Callsign with a repeater that has a gateway, usually one near your home location.

## Registration Process

This section describes the Callsign registration process at a repeater that is connected to the US Trust server.

There are other systems as well, and they have their own registration process. For information on how to register on one of them, contact the administrator of a repeater that uses the alternate system.

- 1 Access the following URL to register your callsign.

<https://regist.dstargateway.org>



- 2 The "D-STAR Gateway System (REGIST)" screen appears. Click **[Register]** to start the New User registration.
- 3 Follow the registration instructions on the registration screen.
- 4 When you receive a notification from the administrator, your Callsign registration has been approved, but the whole process is not yet complete.

### Note:

- ◆ It may take a few hours for the administrator to approve you.
- 5 After your registration is approved, log in your personal account with your registered Callsign and password. After you have logged in, click **[Personal Information]**. The following screen appears.



- 6 Follow the "Registration Instructions" on the website to register your D-STAR equipment information.
- 7 When your registration is complete, log out of your personal account, and start using the D-STAR network.

### Note:

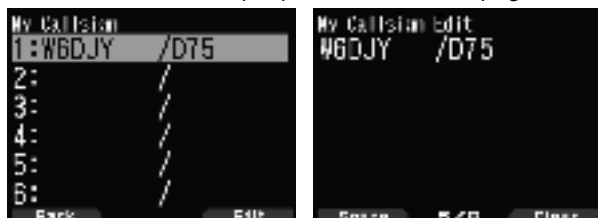
- ◆ You must register your D-STAR equipment before you can make calls through the gateway.

## MY CALLSIGN

Set your Callsign to the transceiver in DV/DR mode. Transmission in DV/DR mode will not be possible if you do not set your Callsign.

Up to 6 Callsigns can be registered. For your Callsign, you can register a Callsign that is within 8 characters and any memo (name or rig name, mobile operation destination, etc.) that is within 4 characters after a slash (/).

- 1 Access Menu No. 610.
- 2 Select a number for registration and press **[A/B]**.
- 3 Input your Callsign.
  - For the character input procedure, refer to page 15.



- 4 Press **[ENT]**.  
Your Callsign is set.

### Note:

- ◆ The Callsign that can be registered is the one shown on your certificate. A nickname or the like cannot be registered.

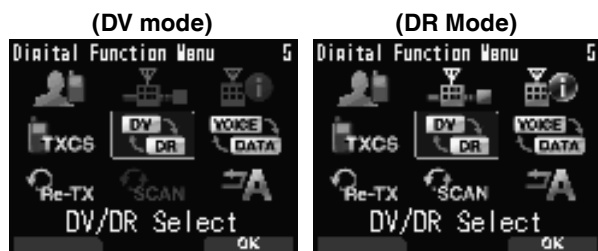
## DIGITAL FUNCTION MENU

This menu switches the functions to use for operation in digital mode.

### How to Use the Digital Function Menu

- 1 Press **[MODE]** to enter DR mode.
- 2 Press **[F]**, **[MODE]**.

The Digital Function Menu appears.



- 3 Select an item in the Digital Function Menu and press **[A/B]**.

The setting menu for the selected item appears. For the detailed setting procedures, refer to the pages for each function.

### Note:

- ◆ If you select DV/DR or Data Mode, the setting is changed and return to the previous screen.

The following table shows the items in the Digital Function Menu in DV mode and DR mode.

The items are different in DV mode and DR mode.

DR mode	DV mode
1 Destination Select	1 Destination Select
2 Route Select	
3 Repeater Detail	
4 CS Setting	4 CS Setting
5 DV/DR	5 DV/DR
6 Data Mode	6 Data Mode
7 TX History	7 TX History
8 DR Scan	
9 Auto Reply	9 Auto Reply

## SIMPLEX CALL

Simplex call can be used for direct communication between a pair of transceivers without using a repeater. Simplex call can be operated only in DV mode.



**Example:** Outputting CQ at 446.100 MHz

- 1 Set the frequency to 446.100 MHz with **[▲]/[▼]** or **[ENC]** control.
- 2 Press **[MODE]** to enter DR mode.  
When the mode is already DV mode, move to step 4.
- 3 Switch to DV mode in the Digital Function Menu.
- 4 Select [Destination Select] in the Digital Function Menu.  
The destination selection screen appears.
- 5 Select [Local CQ] and press **[ENT]**.  
[CQCQCQ] is set to [TO].
- 6 Press **[PTT]** to transmit.

### Note:

- ◆ Receive at the frequency at which you will attempt to transmit and check that there will be no interference with other stations.
- ◆ When you set DV mode for the first time, [CQCQCQ] is set to [TO].
- ◆ Simplex call in digital mode can be operated only in DV mode.

## LOCAL AREA CALL

A local area call (local CQ) is the output of a CQ through only one repeater. A call can be made by setting a local CQ to "TO" and pressing [PTT].

### Setting the Access Repeater (FROM)

- 1 Press [MODE] to enter DR mode.
- 2 Press [▼] (1s).  
The FROM selection screen appears.
- 3 Select [Repeater List] and press [ENT].  
The world region, country, and group select screen appears.
- 4 Select your area group and press [ENT].  
The repeater list selection screen appears.
- 5 Select a nearby repeater and press [ENT].  
The access repeater is set to [FROM].

### Setting the Local CQ (TO)

- 1 Press [▲] (1s).  
The destination selection screen appears. This screen also appears when selecting [Destination Select] in the Digital Function Menu.
- 2 Select [Local CQ] and press [ENT].  
CQCQCQ is set to [TO].

### Checking Whether Signals Reach the Repeater

- 1 Press [PTT] (1s) and transmit.
- 2 Check the response.  
If < 📶 > appears within 3 seconds, this indicates that signals are reaching the repeater you are using and signals are being output normally from the destination repeater. However, < 📶 > does not appear if there is an access from another station within 3 seconds. (Refer to the chart on page 40 in detail.)

### Transmitting

Press [PTT] to transmit.

## GATEWAY CALL

A gateway call can be made by setting the area repeater to output the CQ to [TO] and pressing [PTT].

A gateway CQ is the output of a CQ to an area that is different from that of your station through a repeater connected to the Internet. A call can also be made to an area signals cannot directly reach because of the connection to the Internet.

### Setting the Access Repeater (FROM)

Set a near repeater to [FROM].

### Setting the Destination Repeater (TO)

- 1 Press [▲] (1s).  
The destination selection screen appears. This screen also appears when selecting [Destination Select] in the Digital Function Menu.
- 2 Select [Gateway CQ] and press [ENT].  
The repeater list appears.
- 3 Select the destination repeater and press [ENT].  
The repeater is set to [TO].

### Checking Whether Signals Reach the Repeater (TO)

- 1 Press [PTT] (1s) and transmit.
- 2 Check the response.  
If < 📶 > appears within 3 seconds, this indicates that signals are reaching the destination repeater through the Internet and signals are being output normally from the destination repeater. However, < 📶 > does not appear if there is an access from another station within 3 seconds.

### Transmitting

Press [PTT] to transmit.

## CALLSIGN DESIGNATION

A call by Callsign designation can be made by setting the Callsign of the other party to [TO] and pressing PTT. A call to the specific station is relayed automatically to the last accessed repeater, so a call can be made without knowing the area in which the other station is currently located.

### Setting the Access Repeater (FROM)

Set a near repeater to [FROM].

### Setting the Destination (TO)

- 1 Press [▲] (1s).  
The destination selection screen appears. This screen also appears when selecting [Destination Select] in the Digital Function Menu.
- 2 Select [Individual] and press [ENT].  
The Callsign list appears.
- 3 Select the Callsign and press [ENT].  
The individual Callsign and name are set to [TO].
- 4 Press [PTT] to transmit.

## CALLSIGN LIST

Up to 300 Callsigns of the other stations can be registered. Names and any memo can also be registered instead of Callsigns. The registered names are displayed in the TX History and RX History.

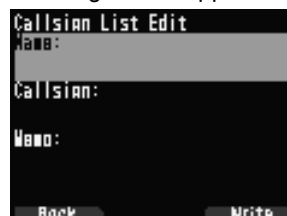
### Editing the Callsign

You can edit the information of the Callsign.

- 1 Access Menu No. 220.  
The Callsign list selection screen appears.



- 2 Press [A/B].  
The Callsign list editing screen appears.



- 3 Select the item and press **[ENT]**.  
The editing screen for the selected item appears.  
You can register or edit the name, Callsign, and memo, etc.
- 4 Press **[ENT]** after editing.  
Editing are completed and the Callsign list editing screen appears.
- 5 Press **[A/B]**.  
The Callsign list selection screen appears.


### Sorting the Callsign

You can sort the Callsign list.

- 1 Press **[MODE]** in the Callsign list selection screen.  
The move position selection screen appears.
- 2 Select a move position and press **[A/B]**.  
When you move an item to the end of the list, select [Move to End] and press **[A/B]**.

### DIRECT REPLY

This function allows you to reply to a received call by simply pressing **[PTT]** while displaying the interrupt screen in DV and DR mode. The default setting is [On]. When a repeater signal is received in a DR mode and you immediately reply to a CQ or a call to your Callsign, the transmission setting is temporarily changed automatically and you can reply by simply pressing **[PTT]**.

The  icon appears in the interrupt screen when a direct reply is possible in receiving a call. If **[PTT]** is pressed when this icon appears, the setting is automatically changed to the reply setting and transmission becomes possible.

#### Entire interrupt screen



#### Half interrupt screen

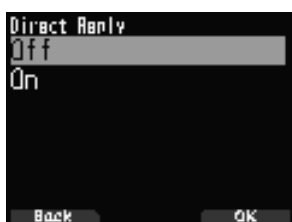


#### Note:

- ◆ The change of the transmission setting are temporary. After display hold time elapses, it returns to the previous transmission setting.
- ◆ When receiving the repeater frequency in DV mode, you can not reply to a received call by pressing **[PTT]**.

### Setting Direct Reply to Off

- 1 Access Menu No. 612.



- 2 Select [Off].

#### Note:

- ◆ You can change the display hold time by Menu No. 643.
- ◆ Direct reply is not possible when display method (Menu No. 640) is set to [Off].
- ◆ When the direct reply is set to [On], the interrupt screen of DV and DR mode is displayed in priority than APRS mode.

### CALL HISTORY

You can call easily by setting the received party to the destination from a Call History even if you do not use a direct reply function.

Up to 20 TX History and 100 RX History can be stored as a Call History in DV and DR mode. The Call History is not cleared when the power is switched [Off].

- 1 Press **[MODE]** to enter DR mode.
- 2 Press **[ENT] (1s)**.

The Call History screen appears.





- 3 Select a list and press **[ENT]**.

The transmission setting is changed and returns to the frequency screen.

#### Note:

- ◆ Pressing **[ENT] (1s)** does not work in DV mode. Press **[F]**, **[MODE]**, select [Destination Select] in the Digital Function Menu, and select Call History.

## Chart for checking whether signals reach the repeater


Phenomenon	Cause	Treatment
No message is returned from the access repeater after transmission. (S-meter indicator also does not move.)	In case that the selection for the repeater you are using (access repeater) is incorrect.	Set the correct access repeater to [FROM].
	In case that the repeater frequency is incorrect (or the duplex setting is incorrect).	Set the repeater frequency (or the duplex setting) correctly.
	In case that it is out of the repeater area (or the signal does not reach the repeater).	Move to a location where the signal reaches the repeater or access another repeater that the signal will reach.
The access repeater Callsign and <  > appear after transmission.	In case that your Callsign is not registered to the D-STAR management server or the registered information is different.	Register your Callsign to the D-STAR management server or check the registered information.
	In case that the other station's Callsign is not registered to the D-STAR management server or the registered information is different.	Check the registration status of the other station's Callsign on the D-STAR management server (only when the other station is open in public.)
The destination repeater Callsign and <  > appear after transmission.	In case that a destination repeater can not be reached or the destination repeater is in use.	Wait a while and call again.



## TURNING ON/ OFF THE Bluetooth FUNCTION

You can turn On/ Off the Bluetooth function.

### 1 Access Menu No. 930.

When the Bluetooth function is turned on, <  > appears on the display.



[On]: Turns on the Bluetooth function.

[Off]: Turns off the Bluetooth function.

## Connecting with a Headset (Pairing)

When connecting the transceiver with a Bluetooth compatible device, you need to first pair the devices. Pairing is a function for registering devices for a Bluetooth connection as a connection pair.

The following explains how to connect via Bluetooth using the example of a commercially available headset.

### Note:

- ◆ For the device to be connected with the transceiver via Bluetooth, be sure to purchase a headset or other device that is compatible with Bluetooth. Also refer to the instruction manual of the device.
- ◆ A connection may not be possible depending on the specifications or settings of the device. There is no guarantee that the transceiver will be able to communicate wirelessly with all Bluetooth devices.

- 1 Access Menu No. 930 to turn on the Bluetooth function.
- 2 Place the headset (device to be connected) near the transceiver.
  - Place it within approximately 1 meter each other.
- 3 Set the headset (device to be connected) to the pairing mode (Bluetooth connection standby state).
  - For how to enable the pairing mode, refer to the instruction manual of the headset (device to be connected).
- 4 Access Menu No. 932. A device search begins and the recognized device is added to the Bluetooth device search list.



### 5 Select the device to be connected.

When connecting the device that is already selected, move to step 6.


- If you select the device and press [▶], the Bluetooth device information screen appears. You can confirm the device name, device address, and device class.



### 6 Press [A/B].

[Connecting. . .] screen appears.

### 7 Make the connection operation by the headset.

When the headset is connected, <  > appears on the display.

- Since the connection operation depends on the headset, refer to the instruction manual of the headset.



### Note:

- ◆ The volume of the headset can not be adjusted by the [VOL] control of the transceiver. Adjust the volume by the headset volume.

## Entering the PIN Code

When searching for the device, you may be requested to enter the PIN code depending on the device to be connected.

### When Requested to Enter the PIN Code

- The PIN code input screen appears. Refer to the instruction manual of the device to be connected and enter the PIN code using the number keys and press [A/B].
- If you press [▶] when the PIN code input screen is displayed, the Bluetooth device information screen appears. You can confirm the device name, device address, and device class.

### Note:

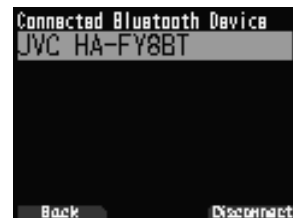
- ◆ The PIN code differs depending on the device to be connected. Refer to the instruction manual of the Bluetooth device and enter the correct PIN code.

## Disconnecting from a Bluetooth device

You can disconnect a connected Bluetooth device to stop communication.

- 1 Access Menu No. 933.
- 2 Select the device.

- When disconnecting the device that is already selected, move to step 3. If you press [▶], the Bluetooth device information screen appears. If you select the device to be disconnected and press [▶], the Bluetooth device information screen appears. You can confirm the device name, device address, and device class. Pressing [MODE] returns to the previous screen.



### 3 Press [A/B].

The disconnection process begins.

- If 30 seconds or more passes during the disconnection process, the Bluetooth device disconnection failure screen appears. Pressing [A/B] returns to the frequency screen. Perform the procedure again from step 1.

# microSD MEMORY CARD

## SUPPORTED microSD MEMORY CARD

### Note:

- ◆ A microSD memory card or microSDHC memory card is not supplied with this transceiver. Purchase a commercially available product.
- ◆ A microSDXC memory card can not be used with this transceiver.

The following table shows the microSD memory card and microSDHC memory card for which JVCKENWOOD has verified operation.


In this manual, microSD memory cards and microSDHC memory cards are referred to as microSD memory cards.

Memory Card	Size
microSD	2 GB
microSDHC	4 GB
	8 GB
	16 GB
	32 GB
	32 GB

- Regardless of the above table, JVCKENWOOD does not guarantee the operation of all microSD memory cards.
- The operation of a microSD memory card formatted with other than the transceiver is not guaranteed.
- The larger the capacity of the microSD memory card used, the longer it takes to recognize the microSD memory card.
- Please note that the data in the microSD memory card may be damaged or erased in cases such as the following.
  - If the microSD memory card is removed without performing the [Safely Remove] operation (unmount).
  - If the battery pack or battery case is removed during operation.
  - If the battery pack or alkaline batteries run out of power during operation.
  - If the power from an external power supply suddenly stops without installing the battery pack.

## INSERTING/ REMOVING A microSD MEMORY CARD

### Inserting (Mounting) a microSD Memory Card

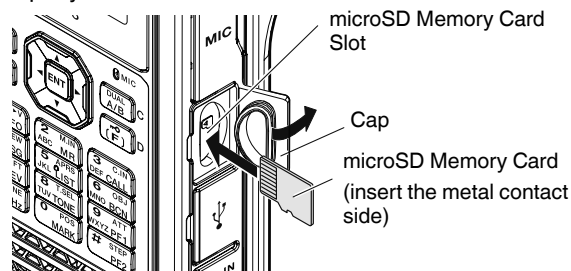
- 1 Switch OFF the power of the transceiver.
- 2 Open the cap of the microSD memory card slot on the side.
- 3 Insert the microSD memory card.
  - With the contacts of the microSD memory card at the front, insert the microSD memory card into the [microSD memory card slot] until you hear it lock into place with a click. The transceiver automatically recognizes the microSD memory card and <  > flashes on the display. It changes to always displayed if the card enters the readable/writable state correctly.

### Note:

- ◆ When inserting a microSD memory card, do not touch its contacts.
- ◆ Do not remove a microSD memory card while data is being written or read. Doing so may cause the data on the microSD memory card to be damaged or erased.

- 4 Close the cap.

Close the cap of the microSD memory card slot on the side properly.



### Note:

- ◆ Do not insert a microSD memory card the opposite way around or use force to insert it. Doing so may damage the microSD memory card or slot.

## Removing (Unmounting) a microSD Memory Card

When removing a microSD memory card, be sure to perform the operation to safely remove (unmount) it.

### Note:

- ◆ Removing a microSD memory card without unmounting it correctly may damage it.

- 1 Access Menu No. 820.

The microSD memory card is unmounted. When unmounting is completed, the completed confirmation screen appears.

- 2 Press [A/B].

Unmounting completes and the frequency screen reappears.

- 3 Remove the microSD memory card.

- When removing a microSD memory card, push until you hear it unlock with a click and remove it.

## FORMATTING A microSD MEMORY CARD

When using a new microSD memory card, format the microSD memory card as described below. All the data in the microSD memory card will be erased when the microSD memory card is formatted.

- 1 Insert the microSD memory card into the transceiver.
- 2 Switch ON the power of the transceiver.
- 3 Access Menu No. 830.

The format confirmation screen appears.



- 4 Press [A/B].

Formatting begins. When formatting is completed, the completed confirmation screen appears.

- 5 Press [A/B] again.

Formatting completes and the frequency screen reappears.

# RECORDING

## RECORDING FUNCTION

You can record communications to a microSD memory card.

- Recording is performed when transmitting and when the squelch is open. When transmission stops or the squelch closes, recording is paused.
- Up to approximately 18 hours (2 GB) can be recorded to one file. When the file being recorded exceeds 2 GB, recording continues with a new file.
- Recording files are named as follows.

**Example:** 12202023\_132051.wav (TH-D75A)

20122023\_132051.wav (TH-D75E)

(File for which recording started at 13:20:51 on December 20, 2023.)

- The recording audio file format is WAV.

**Number of bits:** 16 bits

**Sampling frequency:** 16 kHz

**Number of channels:** 1 (monaural)

- If the auto power off (APO) time elapses during recording, recording stops and turns the power OFF.

### Note:

- ◆ For how to insert a microSD memory card, refer to page 42.
- ◆ The transceiver only supports recording to a microSD memory card.
- ◆ A microSD memory card or microSDHC memory card is not supplied with this transceiver. Purchase a commercially available product.

## RECORDING AUDIO FILES

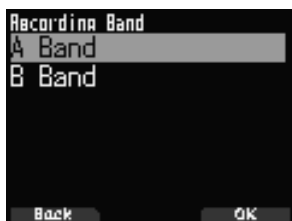
### Selecting the Recording Band

Select the recording band A or B.

- 1 Access Menu No. 302.

**[A Band]:** Records the sound of the band A.

**[B Band]:** Records the sound of the band B.



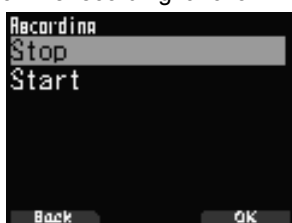
### Recording Communication Audio

Set the recording function on to start recording. Even if the recording function is on, recording will not start while the squelch is closed.

- 1 Access Menu No. 301.

**[Stop]:** Turns off the recording function.

**[Start]:** Turns on the recording function.



Recording paused

Recording

### Note:

- ◆ If there is no free space on the microSD memory card when recording starts or after recording has been started, a warning tone sounds and the insufficient microSD memory card space screen appears. Replace the microSD memory card with another one.

## PLAYING AUDIO FILES

- 1 Access Menu No. 300.

The recording file list appears. Recorded audio files can be played and cleared.

### Note:

- ◆ When the recording function is on, the recording file list does not appear.

- 2 Select the file.

- 3 Press **[MENU]**.

The recording file list menu appears.



- 4 Select **[Play]** and press **[A/B]**.

Playback begins. When playback finishes, the recording file list reappears.

### Key Operations in playing audio files

Key	Action
[ENT]	Pauses playback. Pressing it again resumes playback.
[MENU]	Stops playback. Pressing it again returns to the frequency screen.
[◀]	Holding down performs fast reverse playback. Releasing it resumes playback.
[▶]	Holding down performs fast forward playback. Releasing it resumes playback.
[▲]	Plays the file immediately above the file selected in the recording file list.
[▼]	Plays the file immediately below the file selected in the recording file list.

## CLEARING AUDIO FILES

- 1 Access Menu No. 300.

The recording file list appears.

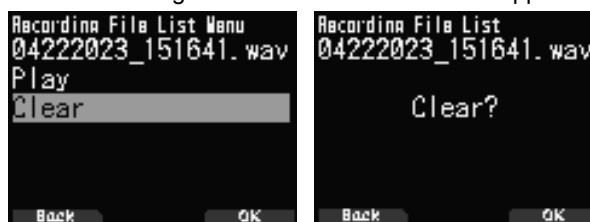
- 2 Select the file.

- 3 Press **[MENU]**.

The recording file list menu appears.

- 4 Select **[Clear]** and press **[A/B]**.

The recording file clear confirmation screen appears.



- 5 Press **[A/B]**.

The file is cleared and the recording file list reappears.

# FM RADIO

The transceiver can receive FM radio broadcasts. You can listen to FM radio while simultaneously monitoring two signals as well as while waiting for a CQ or a call from an acquaintance, or waiting for an APRS call. When the band A or B receives a signal (call from another party) and squelch is open, the radio sound is muted so that you can hear the other party's voice.

## Note:


- ◆ You can not turn on the FM radio mode when selecting the following frequency bands in band B. (LF/MF(AMBC), HF, 50, FMBC)
- ◆ You can not turn on the FM radio mode when priority scan (Menu No. 134) or WX alert is On (Menu No. 105).

## TURNING ON FM RADIO MODE

- 1 Access Menu No. 700.

[On]: Turns on the FM radio function.

[Off]: Turns off the FM radio function.

When this is set to [On], the mode becomes FM radio mode, the frequency screen appears, and the FM radio icon  appears.



- 2 Select a frequency with [▲]/[▼] or [ENC] control.



## Note:

- ◆ When receiving the signals for bands A and B while displaying FM radio mode screen, the frequency screen for bands A and B or interrupt screen appear. After the signal reception is finished, FM radio mode screen appears again in a few seconds.

## Frequency Direct Entry (Direct Station Selection)

- 1 Press [ENT].

The mode becomes frequency direct input mode.



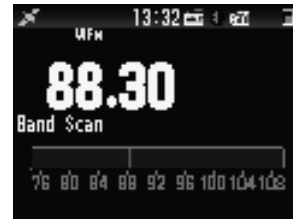
- 2 Enter a frequency using the number keys.



## Radio Scan

- 1 Press [A/B].

The MHz dot flashes and scanning begins. Change the scan direction with [▲ / ▼] or [ENC] control. When a broadcast station with a signal is found, scanning stops at that frequency, <<Tuned>> is displayed and scanning ends.



- 2 Press [A/B], and Radio scan stops.

## EDITING THE FM RADIO MEMORY CHANNEL LIST

FM broadcast stations for up to ten channels can be registered to the FM radio memory channel list. You can assign names and edit the registered broadcast stations.

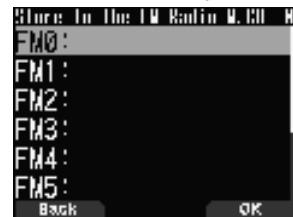
## Registering FM Radio Stations

Register the FM radio stations you listen to frequently to FM radio memory channels.

- 1 Switch to FM radio mode and select a broadcast station you wish to register.

- 2 Press [F], [MR].

The store in the FM radio memory channel screen appears.



- 3 Select the channel and press [ENT].

The FM radio station is registered and the FM radio memory channel list appears.



- 4 Press [◀].

The frequency screen reappears.

### Selecting a FM Radio Station

Select a registered FM radio station from the FM radio memory channel list.

- 1 Access Menu No. 710.

The FM radio memory channel list appears.



- 2 Select the channel and press [ENT].

Select from FM0 to FM9.



### Clearing FM Radio Stations

Clear the FM radio stations you do not listen to any more from the FM radio memory channels.

- 1 Access Menu No. 710.

The FM radio memory channel list appears.

- 2 Select the channel you wish to clear.

Select from FM0 to FM9.

- 3 Press [MENU].

The FM radio memory channel list menu appears.



- 4 Select [Clear Memory] and press [A/B].

The FM radio memory clear confirmation screen appears.



- 5 Press [A/B].

The FM radio station is cleared, and the FM radio memory channel list menu reappears.

### Switching Between FM Radio Mode and FM Radio Memory Mode

#### FM radio mode

This mode allows you to receive an FM radio broadcast by setting a frequency.

#### FM radio memory mode

This mode allows you to call up memory channels for which frequencies have been registered in advance. A channel indication from FM0 to FM9 is displayed in FM radio memory mode.

- 1 Press [MODE].

Each press switches between FM radio mode and FM radio memory mode.



FM radio mode



FM radio memory mode

#### Note:

- ◆ When no broadcast stations are registered in FM radio memory channel list, you can not switch to the FM radio memory mode.

#### Key Operations in FM Radio and FM Radio Memory Mode

Key Name	Operation
[◀]	Pauses FM radio mode, and return to FM radio mode after a few seconds.
	Switches to [GPS satellite information] screen when the GPS operation mode is GPS Receiver mode.
[▶]	Pauses FM radio mode, and return to FM radio mode after a few seconds.
	Switches to [time, Altitude, Heading, and Speed] screen when the GPS operation mode is GPS Receiver mode.
[ENT]	Switches to frequency direct input mode. (in FM radio mode)
	Displays the FM radio memory channel list. (in FM radio memory mode)
[MODE]	Switches between FM radio mode and FM radio memory mode.
[A/B]	Performs a radio scan (Seek).
Keypad	Pauses FM radio mode, and return to FM radio mode after a few seconds.

# SPECIFICATIONS

## TH-D75A/ TH-D75E SPECIFICATIONS

GENERAL				
Frequency Range	Band-A	TX: 144 - 148 (TH-D75A), 144 - 146 (TH-D75E), 222 - 225 (TH-D75A), 430 - 450 (TH-D75A), 430 - 440 (TH-D75E) MHz		
	Band-B	RX: 136 - 174, 216 - 260 (TH-D75A only), 410 - 470 MHz RX: 0.1 - 76, 76 - 108 MHz (WFM) 108 - 524 MHz		
Mode	TX	F3E, F2D, F1D, F7W		
	RX	F3E, F2D, F1D, F7W, J3E, A3E, A1A		
Operating Temp. Range		-20 °C ~ +60 °C (-4 °F ~ +140 °F)		
	with Incd. KNB-75LA	-10 °C ~ +50 °C (+14 °F ~ +122 °F)		
Frequency Stability		±2.0 ppm		
Antenna Impedance		50 Ω		
Operating Voltage	DC IN	DC 11.0 - 15.9 V (STD: DC 13.8 V)		
	BATT	DC 6.0 - 9.6 V (STD: DC 7.4 V)		
Current Consumption (TYP.)	TX	EXT.PS 13.8 V / Battery:7.4 V		
		H	M	L EL
	DC IN	1.4 A	0.9 A	0.6 A 0.4 A
	BATT	2.0 A	1.3 A	0.8 A 0.5 A
Current Consumption (TYP.)	RX			
	SINGLE	260 mA	(Rated Power)	
		135 mA	(SQ Close)	
		48 mA	(Avg. Save on)	
	DUAL	310 mA	(Rated Power)	
		185 mA	(SQ Close)	
		50 mA	(Avg. Save on)	
	GPS logger mode	115 mA		
Battery Life	Approx.	Single, Save on, Rate 6:6:48 sec, GPS off		
		H	M	L EL
	KNB-75LA (1,820 mAh)	6 hours	8 hours	12 hours 15 hours
	KBP-9 (Alkaline AAAx6)	-----	-----	3.5 hours -----
		Approx. 10 % shorter when GPS is ON		
Dimensions (W x H x D)		Projections not included		
	with KNB-75LA	56.0 x 121.9 x 32.9 mm (2.20 x 4.80 x 1.30 inch)		
	with KBP-9	56.0 x 121.9 x 35.0 mm (2.20 x 4.80 x 1.38 inch)		
Weight (net)	Body only	202 g (7.13 oz)		
	with KNB-75LA	345 g (12.2 oz) (w/ Antenna, Belt Clip)		
	with KBP-9	360 g (12.7 oz) (w/ Antenna, Belt Clip, AAAx6 Battery)		

TRANSMITTER				
RF Power Output		EXT.PS 13.8 V / Battery:7.4 V		
		H	M	L EL
		5 W	2 W	0.5 W 0.05 W
Modulation	FM	Reactance Modulation		
	DV	GMSK Reactance Modulation		
Modulation Deviation	FM	±5.0kHz		
	NFM	±2.5kHz		
Spurious Emissions				
	HI / MID	-60 dBc or less		
	L	-50 dBc or less		
	EL	-40 dBc or less		
Microphone Impedance		2 kΩ		

## TH-D75A/ TH-D75E SPECIFICATIONS

RECEIVER		Band A	Band B
Circuitry			
F3E, F2D, F1D, F7W J3E, A3E, A1A		Double Super Heterodyne Triple Super Heterodyne	
IF Frequency			
1st IF		57.15 MHz	58.05 MHz
2nd IF		450 kHz	450 kHz
3rd IF		J3E, A3E, A1A	10.8 kHz
Sensitivity (TYP.) Amateur Band			
FM 12dB SINAD			
FM/ NFM 144 MHz		0.18/ 0.22 uV	0.19/ 0.24 uV
FM/ NFM 220 MHz (TH-D75A only)		0.18/ 0.22 uV	0.20/ 0.25 uV
FM/ NFM 430 MHz		0.18/ 0.22 uV	0.20/ 0.25 uV
DV PN9/GMSK 4.8kbps, BER 1%			
144 MHz (TH-D75A)		0.22 uV	0.22 uV
144 MHz (TH-D75E)		0.20 uV	0.22 uV
220 MHz (TH-D75A only)		0.22 uV	0.24 uV
430 MHz		0.22 uV	0.22 uV
SSB 10 dB S/N			
AM 10 dB S/N			0.16 uV
AM 10 dB S/N			0.50 uV
AM 10 dB S/N			
0.3 - 0.52 MHz			4 uV
0.52 - 1.8 MHz			1.59 uV
1.8 - 54 MHz			0.63 uV
54 - 76 MHz			1.12 uV
118 - 174 MHz			0.50 uV
200 - 250 MHz			0.63 uV
382 - 412 MHz			1.12 uV
415 - 524 MHz			1.12 uV
FM 12dB SINAD			
28 - 54 MHz			0.32 uV
54 - 76 MHz			0.56 uV
118 - 144 MHz		0.36 uV	0.36 uV
148 - 175 MHz			0.36 uV
200 - 222 MHz			0.36 uV
225 - 250 MHz			0.36 uV
382 - 400 MHz			0.50 uV
400 - 412 MHz		0.36 uV	0.36 uV
415 - 430 MHz		0.36 uV	0.36 uV
450 - 490 MHz		0.36 uV	0.36 uV
490 - 524 MHz			0.63 uV
SSB 10 dB S/N			
1.8 - 54 MHz			0.40 uV
54 - 76 MHz			0.79 uV
144 - 148 MHz			0.16 uV
222 - 225 MHz			0.20 uV
430 - 450 MHz			0.16 uV
FM BC Band			
WFM 30 dB S/N			
76 - 95 MHz			1.59 uV
95 - 108 MHz			2.00 uV
Squelch (TYP.)		0.18 uV	0.25 uV
Spurious Rejection			
144 MHz		50 dB or more	45 dB or more
430 MHz		50 dB or more	40 dB or more
IF Rejection		60 dB or more	55 dB or more
Channel Selectivity			
-6 dB		12 kHz or more	
-50 dB		30 kHz or less	
Audio Output		7.4 V, 10% Dist.	400 mW or more / 8 $\Omega$



## SPECIFICATIONS

### TH-D75A/ TH-D75E SPECIFICATIONS

Bluetooth	
Version, Class	Version 3.0, Class 2
Output Power	-6 < P <sub>av</sub> < 4 dBm
Modulation Characteristics	$140 \leq \Delta f_{1\text{avg}} \leq 175 \text{ kHz}$
Initial Carrier Frequency	$-75 \leq f_o \leq +75 \text{ kHz}$
Carrier Frequency Drift	$\pm 25 \text{ kHz}$ (One Slot packet) $\pm 40 \text{ kHz}$ (Three Slot Packet) $\pm 40 \text{ kHz}$ (Five Slot Packet)
GPS	
TTFF (Cold start)	Approx. 40 sec
TTFF (Hot start)	Approx. 5 sec.
Horizontal Accuracy	10 m or less
Receive Sensitivity	Approx. -141 dBm (Acquisition)
Ta = 25°C, Open sky	

#### Note:

◆ Specifications are subject to change without notice, due to advancements in technology.

Concerning the received frequency display, an unmodulated signal may be received. This is according to the set intrinsic frequency form.

	<Band A>	<Band B>
V x U reception	$(V_{RX} + 57.15 \text{ MHz}) \times n - (U_{RX} - 58.05 \text{ MHz}) \times m = \pm 57.15 \text{ MHz}, \pm 58.05 \text{ MHz}$ Example) Band A: 146.000 MHz, Band B: 147.6625 MHz, Band B receives un unmodulated signal.	
U x V reception	$(U_{RX} - 57.15 \text{ MHz}) \times n - (V_{RX} + 58.05 \text{ MHz}) \times m = \pm 57.15 \text{ MHz}, \pm 58.05 \text{ MHz}$ Example) Band A: 440.000 MHz, Band B: 147.6625 MHz, Band A receives un unmodulated signal.	
U x U reception	$(U_{RX} - 57.15 \text{ MHz}) \times n - (U_{RX} - 58.05 \text{ MHz}) \times m = \pm 57.15 \text{ MHz}, \pm 58.05 \text{ MHz}$ Example) Band A: 431.84375 MHz, Band B: 440.000 MHz, Band B receives un unmodulated signal.	
V x 220M reception	$(V_{RX} + 57.15 \text{ MHz}) \times n - (220M_{RX} + 58.05 \text{ MHz}) \times m = \pm 57.15 \text{ MHz}, \pm 58.05 \text{ MHz}$ Example) Band A: 145.740 MHz, Band B: 223.500 MHz, Band B receives un unmodulated signal.	
220M x V reception	$(220M_{RX} - 57.15 \text{ MHz}) \times n - (V_{RX} + 58.05 \text{ MHz}) \times m = \pm 57.15 \text{ MHz}, \pm 58.05 \text{ MHz}$ Example) Band A: 223.500 MHz, Band B: 147.535 MHz, Band B receives un unmodulated signal.	
U x 220M reception	$(U_{RX} + 57.15 \text{ MHz}) \times n - (220M_{RX} + 58.05 \text{ MHz}) \times m = \pm 57.15 \text{ MHz}, \pm 58.05 \text{ MHz}$ Example) Band A: 439.780 MHz, Band B: 223.550 MHz, Band B receives un unmodulated signal.	

V<sub>RX</sub>: VHF reception frequency, U<sub>RX</sub>: UHF reception frequency, 220M<sub>RX</sub>: 220 MHz band reception frequency  
 n and m are arbitrary integers.

19.2 MHz x n (n = mutiple)

55.95 MHz x n (n = mutiple)

Around 11.0592 MHz x n (n = mutiple) reception

144.385 MHz

147.465 MHz

Around 224.25 MHz reception

442.385 MHz

- Hereby, JVCKENWOOD Europe B.V. declares that the radio equipments described in this instruction manual are in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address. (Note: The detail type designations are described in the EU declaration of conformity.)
- Par les présentes, JVCKENWOOD Europe B.V. déclare que les équipements de radio décrits dans ce manuel d'instructions sont conformes à la directive 2014/53/EU. Le texte intégral de la déclaration UE de conformité est disponible à l'adresse internet suivante. (Remarque : Les désignations de types détaillés sont décrites dans la déclaration UE de conformité.)
- Por la presente, JVCKENWOOD Europe B.V. declara que los equipos de radio descritos en este manual de instrucciones se encuentran en conformidad con la Directiva 2014/53/EU. El texto completo de la declaración de conformidad de la UE se encuentra disponible en la siguiente dirección de Internet. (Nota: las designaciones del tipo de detalle se describen en la declaración de conformidad de la UE).
- Con la presente, JVCKENWOOD Europe B.V. dichiara che gli apparecchi radio descritti in questo manuale di istruzioni sono conformi alla Direttiva 2014/53/EU. Il testo integrale della Dichiarazione di conformità UE è disponibile al seguente indirizzo Internet. (Nota: le designazioni dettagliate del tipo sono descritte nella Dichiarazione di conformità UE.)
- Hiermit erklärt JVCKENWOOD Europe B.V., dass die in dieser Bedienungsanleitung beschriebenen Funkgeräte der Richtlinie 2014/53/EU entsprechen. Der vollständige Wortlaut der EU-Konformitätserklärung ist unter der folgenden Internetadresse verfügbar. (Hinweis: die detaillierten Typenbezeichnungen sind in der EU-Konformitätserklärung angegeben.)
- JVCKENWOOD Europe B.V. verklaart hierbij dat de in deze handleiding beschreven radioapparatuur voldoet aan Richtlijn 2014/53/EU. De volledige tekst van de EU-conformiteitsverklaring is beschikbaar op het volgende internetadres. (Opmerking: de typeaanduidingen in detail worden beschreven in de EU-conformiteitsverklaring.)
- Δια του παρόντος, η JVCKENWOOD Europe B.V. δηλώνει ότι οι ραδιοφωνικές συσκευές που περιγράφονται στο παρόν εγχειρίδιο οδηγιών είναι σε συμμόρφωση με την οδηγία 2014/53/EU. Το πλήρες κείμενο της δήλωσης συμμόρφωσης ΕΕ είναι διαθέσιμο στην παρακάτω διαδικτυακή διεύθυνση. (Σημείωση: Ο λεπτομερής ονομασμός τύπου περιγράφονται στη δήλωση συμμόρφωσης ΕΕ.)
- Dearbhaíonn JVCKENWOOD Europe B.V., leis seo, go bhfuil an trealamh raidió, mar a gcuirtear síos air sa lámhleabhar treoracha seo, i gcomhréir leis an Treoir 2014/53/EU. Gheobhaidh tú teacs iomlán den dearbhú comhréireachta AE ag an seoladh idirlín mar seo a leanas. (Nóta: Tugtar cur síos ar na mion sonrúcháin sa dearbhú comhréireachta AE.)
- Käesolevaga JVCKENWOOD Europe B.V. kinnitab, et käesolevas kasutusjuhendis kirjeldatud raadioseadmed vastavad direktiivile 2014/53/EU. EL-i vastavusdeklaratsiooni täistekst on kättesaadav järgmiselt veebiaadressilt. (Märkus: Detailide tüüpe nimetused on kirjeldatud EL-i vastavusdeklaratsioonis.)
- Ovime JVCKENWOOD Europe B.V. izjavljuje da su radio uređaji opisani u ovom priručniku u skladu s Direktivom 2014/53/EU. Cjelokupan tekst EU izjave o sukladnosti dostupan je na sljedećoj internet adresi. (Napomena: detaljne oznake tipa opisane su u EU izjavi o sukladnosti).
- JVCKENWOOD Europe B.V. intygar härmed att radioutrustningen som beskrivs i denna bruksanvisning överensstämmer med direktiv 2014/53/EU. Den fullständiga texten med EU-försäkringen om överensstämmelse finns tillgänglig på följande internetadress. (OBS: De fullständiga typbeteckningarna beskrivs i EU-försäkringen om överensstämmelse.)
- Spoločnosť JVCKENWOOD Europe B.V. týmto vyhlasuje, že rádiové zariadenia popísané v tomto Návode na obsluhu sú v súlade so Smernicou 2014/53/EU. Úplné znenie Vyhlásenia o zhode EÚ je k dispozícii na nasledovnej internetovej adrese. (Poznámka: Podrobné typy označení sú popísané vo Vyhlásení o zhode EÚ).
- S tem JVCKENWOOD Europe B.V. izjavlja, da je radijska oprema, opisana v teh navodilih za uporabo, v skladu z Direktivo 2014/53/EU. Celotno besedilo izjave o skladnosti za EU je na voljo na naslednjem spletnem naslovu. (Opomba: podrobne označbe tipov so opisane v izjavi o skladnosti za EU.)
- JVCKENWOOD Europe B.V. tímto prohlašuje, že rádiová zařízení popsáná v tomto návodu k obsluze jsou v souladu se směrnicí 2014/53/EU. Úplné znění prohlášení o shodě výrobku s požadavky EU je k dispozici na následující internetové adrese. (Poznámka: Podrobná typová označení jsou popsána v EU prohlášení o shodě.)
- JVCKENWOOD Europe B.V. erklærer herved, at radioudstyret beskrevet i denne betjeningsvejledning er i overensstemmelse med direktivet 2014/53/EU. Den fulde ordlyd af EU-overensstemmelseserklæringen er tilgængelig på følgende internetadresse. (Bemærk: Typebetegnelserne i detaljer er beskrevet i EU-overensstemmelseserklæringen.)
- Ezennel a JVCKENWOOD Europe B.V. kijelenti, hogy a jelen használati utasításban leírt rádiós berendezések megfelelnek a 2014/53/EU irányelvnek. Az EU megfelelőségi nyilatkozat teljes szövege a következő webcímen érhető el. (Megjegyzés: A részletes típusmegjelölést az EU megfelelőségi nyilatkozata írja le.)
- JVCKENWOOD Europe B.V. vakuuttaa täten, että tässä käyttöoppaassa kuvutat radiolaitteet noudattavat 2014/53/EU-direktiiviä. Koko EU-vaatimus tenmukaisuusvakuutusteksti on saatavilla seuraavasta Internet-osoitteesta. (Huom.: yksityiskohtaiset tyyppinimet on kerrottu EU-vaatimustenmukaisuusvakuutuksessa.)
- С настоящото JVCKENWOOD Europe B.V. декларира, че радио съоръженията, описани в това ръководство са в съответствие с Директива 2014/53/EU. Пълният текст на ЕС декларацията за съответствие е на разположение на следния интернет адрес. (Забележка: Наименованията на типа детайл са описани в ЕС декларацията за съответствие.)
- Deste modo, a JVCKENWOOD Europe B.V. declara que os equipamentos de rádio descritos neste manual de instruções estão em conformidade com a Diretiva 2014/53/EU. O texto integral da declaração de conformidade da UE está disponível no seguinte endereço de Internet. (Nota: As designações de tipo em detalhe são descritas na declaração de conformidade da UE).
- JVCKENWOOD Europe B.V. niniejszym oświadcza, że urządzenia radiowe opisane w niniejszej instrukcji są zgodne z dyrektywą 2014/53/EU. Pełny tekst deklaracji zgodności UE jest dostępny pod następującym adresem internetowym. (Uwaga: oznaczenia typów są szczegółowo opisane w deklaracji zgodności UE).
- Hawnhekk, JVCKENWOOD Europe B.V. tiddikjara li t-tagħmir tar-radju deskritt f'dan il-manwal tal-istruzzjoni huwa konformi mad-Direttiva 2014/53/EU. It-test shiħ tad-dikjarazzjoni ta' konformità tal-UE huwa disponibbli fl-indirizz tal-Internet segwenti. (Nota: Id-deskrizzjonijiet tad-dettalji tat-tip huma deskritti fid-dikjarazzjoni ta' konformità tal-UE.)
- JVCKENWOOD Europe B.V. ar šo deklarē, ka šajā rokasgrāmatā aprakstītā radioaparātūra atbilst direktīvas 2014/53/EU prasībām. Pilns ES atbilstības deklarācijas teksts ir pieejams tālāk norādītajā tīmekļa vietnē. (Piezīme. Detalizēti tipu apzīmējumi ir aprakstīti ES atbilstības deklarācijā).
- Šiuo dokumentu „JVCKENWOOD Europe B.V.“ pareiškia, kad šiame instrukcijų vadove aprašoma radijo įranga atitinka Direktyvą 2014/53/EU. Visas ES atitikties deklaracijos tekstas pateikiamas toliau nurodytu interneto adresu. (Pastaba: tikslūs tipo pavadinimai aprašyti ES atitikties deklaracijoje.)
- Prin prezenta, JVCKENWOOD Europe B.V. declară că echipamentele radio descrise în acest manual de instrucțiuni sunt în conformitate cu Directiva 2014/53/EU. Textul complet al declarației de conformitate UE este disponibil la următoarea adresă de internet. (Notă: Desemnările de tip detaliate sunt descrise în declarația de conformitate UE.)
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- Hereby, JVCKENWOOD U.K. Limited declares that the radio equipments described in this instruction manual are in compliance with Radio Equipment Regulations 2017. The full text of the UK declaration of conformity is available at the following internet address. (Note: The detail type designations are described in the UK declaration of conformity.)

<https://www.kenwood.com/cs/com/ecdoc/>



#### Access the following URL for the precautions to use this product and for the simple guide.

Refer to the "SIMPLE GUIDE". Reportez-vous au «GUIDE SIMPLE». Consultez la "GUÍA SENCILLA". Fare riferimento alla "GUIDA RAPIDA". Siehe die "EINFACHE ANLEITUNG". Raadpleeg de "EENVOUDIGE GIDS". Ανατρέξτε στον "ΑΠΛΟΣ ΟΔΗΓΟΣ". Féach an "TREOIR SHIMPLÍ". Vaadake "KIIRJUHEEND". Pogledajte "KRATKI VODIČ". Se "SNABBGUIDE". Prečítajte si „STRUČNÁ PRÍRUČKA“. Glejte "KRATKA NAVODILA". Viz „JEDNODUCHÝ NÁVOD“. Se "ENKEL GUIDE". Lásd az "EGYSZERŰ KÉZIKÖNYV". Katso "YKSINKERTAINEN OPAS". Обърнете се към "ОСНОВНО РУКОВОДСТВО ЗА ЕКСПЛУАТАЦИЯ". Consulte o "GUIA SIMPLES". Zapoznaj się z „INSTRUKCJA UPROSZCZONA”. Irreferi ghall- "GWIDA SEMPLIČI". Skatiet "VIENKĀRŠĀ PAMĀCĪBA". Žr. „PAPRASTAS VADOVAS“. Consultati „GHID SIMPLU“. "KOLAY KILAVUZ" bakın.

<https://manual.kenwood.com/files/B5K-0412-00.pdf>



#### Eski Elektrikli ve Elektronik Cihazların ve Pillerin İmhası Hakkında Bilgi (ayrı atık toplama sistemlerine sahip olan ülkelerde geçerlidir)



Bu sembolü (üzeri çizili çöp bidonu) içeren ürün ve piller evsel atık çöpleri ile birlikte atılamaz. Kullanılmış elektrikli ve elektronik cihaz ve piller, bu tür maddeleri ve bunların yan ürünlerini iş lemeye elverişli bir geri kazanım tesisine gönderilmelidir. Size en yakın geri kazanım tesisinin konumunu öğrenmek üzere yerel yetkililerinize danışın. Doğru geri kazanım ve atık uzaklaştırma yolları, sadece öz kaynakların korunmasına yardımcı olmakla kalmayıp ayrıca sağlığınıza ve çevreye olacak zararlı etkilerini engellemeye yardımcı olur.

Bu ürün 28300 sayılı Resmi Gazete'de yayımlanan Atık Elektrikli ve Elektronik Eşyaların Kontrolü Yönetmeliğe uygun olarak üretilmiştir.

