ICOM

D-STAR GUIDE

DUAL BAND TRANSCEIVER

ID-4100A
ID-4100E

This guide describes instructions for D-STAR basic operations.
See the Basic manual that comes with the transceiver, along with this guide.
For advanced features and instructions, see the Advanced manual that can be downloaded from the Icom website.

Icom Inc.

UNIQUE FUNCTIONS

This section introduces unique functions built into the ID-4100A/E.
ⓘ See the Advanced manual or "About the DV Gateway function" that can be downloaded from the Icom website for more details.

1	DV Gateway function

Even if you cannot access a D-STAR repeater, you can make a direct Gateway call through the internet using the optional OPC-2350LU DATA CABLE and a Windows® PC or Android® device.

NOTE: A Global IP connection is necessary for Windows® PC or Android® device.
See "About the DV Gateway function" that can be downloaded from the Icom website, http://www.icom.co.jp/world/ for details.
Enter 'ID-4100' into the Search box in the site.
Before you set up an access point, check any regulations or laws in your country.

Terminal mode
The Terminal mode enables you to make a direct Gateway call through the internet using the optional OPC-2350LU and a Windows® PC or Android® device.

ID-4100A/E

Internet
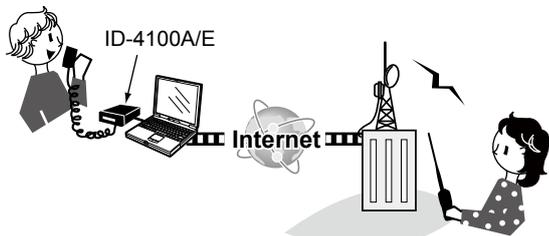
Access Point mode
The Access Point mode enables the D-STAR transceiver to make a Gateway call through an ID-4100A/E using the optional OPC-2350LU and a Windows® PC or Android® device.

ID-4100A/E

Internet
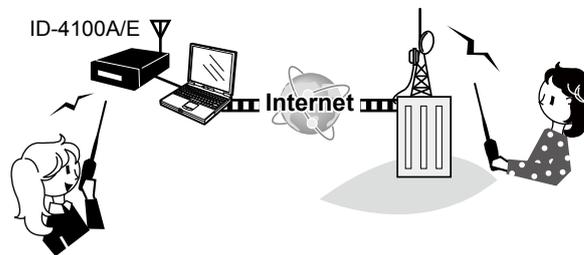
2 QSO Recording function

You can record the QSO audio and save it into the QSO/RX log file.
The log file stores following contents:
• RX Frequency
• Operating mode (DV is fixed)
• Call sign of the caller station
• Note after the call sign
• Call sign of the called station
• Access repeater call sign of the caller station
• Gateway repeater call sign of your local area repeater
• Message included in the received call (up to 20 characters)
• Repeater's Status
• Date and time the call was received
• BK call, EMR call
• Caller's latitude
• Caller's longitude
• Caller's altitude
• Caller's SSID
• Caller's D-PRS Symbol
• Caller's course
• Caller's speed
• GPS Time Stamp
• GPS Message

**NOTE:** This function requires a microSD card.

3 Auto Position Reply function

When you receive a call addressed to your own call sign, but are in a situation that makes it difficult to operate the transceiver, this function automatically replies with your own call sign and transmits your position.
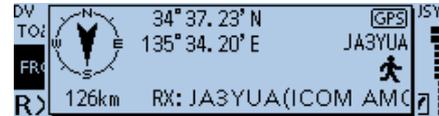
4 Near Repeater (DV/FM) search function

You can select near repeaters using the DR function.
The function can find only repeaters in your transceiver's repeater list.
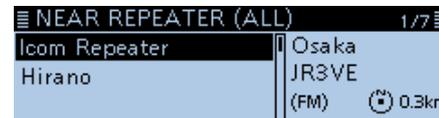
When FM repeater is selected.

UNIQUE FUNCTIONS

5   Add-on functions for D-PRS

D-PRS enables the transceiver to transmit or receive the Object[1], Item[2], or Weather[3] data in addition to position data.

With the D-PRS add-on functions, you can transmit or receive information such as an event, traffic, emergency or weather while making a voice call in the DV mode.

[1] Transmitting Object data such as an earthquake information, satellite track information, and so on. An Object contains a time stamp.

[2] Transmitting Item data such as a traffic accident, lighthouse, antenna, or DV access point location, and so on. An Item does not contain a time stamp.

[3] Transmitting weather information received from the weather device.

6   Voice TX function

You can transmit recorded audio once or repeatedly, which is useful for D-STAR events.
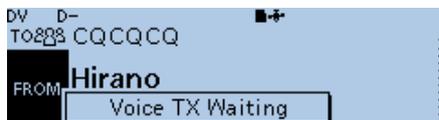
Repeat Voice TX Waiting screen

NOTE: This function requires a microSD card.

7   DV Fast data mode

In addition to low-speed data communication, you can send high-speed data using the DV Fast data mode.

The data speed of the DV Fast data mode is approximately 3480 bps, and is 3.5 times faster than the low-speed data communication mode of approximately 950 bps.

8   Connecting an Android™ or iOS™ device

You can connect a third party Android or iOS device to the transceiver when the optional UT-137 Bluetooth UNIT is installed.

When you connect an Android or iOS device to the transceiver, you can use the extended D-STAR functions with the RS-MS1A[1] or RS-MS1I[2], such as remote control operation or sending messages and/or pictures.

[1] Freeware application for an Android device.

[2] Freeware application for an iOS device.

TABLE OF CONTENTS

INTRODUCTION

■ Unique features of D-STAR

Easy Cross band operation through the repeater

You can communicate with any D-STAR station using the ID-4100A/E!
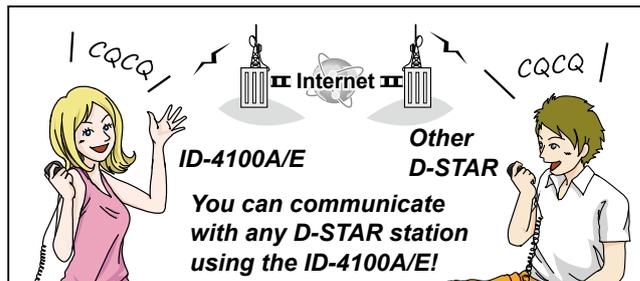
Easy call sign entry with the Repeater list or TX/ RX History

Easy Destination (To) setting!
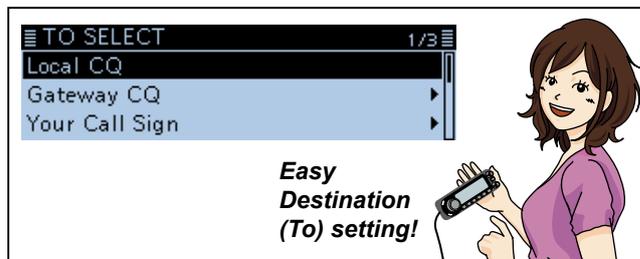
Call Sign Capture key [RX>CS] makes call sign capture easy.

This key makes call sign capture easy!
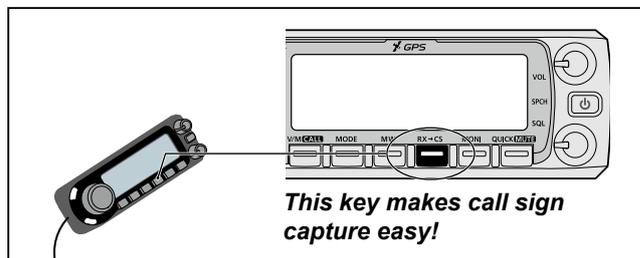
■ What is D-STAR?

- D-STAR is a digital protocol standard developed by JARL (Japan Amateur Radio League). The system includes the DV mode for Digital Voice and the DD mode for Digital Data communications.
- D-STAR supports a comprehensive repeater system linked through the Internet, enabling you to make QSOs with stations near or far from your location.

- D-STAR supports the DV mode at 4.8 kbps and your call sign, along with either a short message, or GPS data, can also be transmitted simultaneously with your voice audio.

Advanced Amateur radio technology of D-STAR

The DV mode has a bandwidth of only 6.25 kHz, compared to 16 kHz for the analog FM mode, with 5 kHz deviation that already meets any future narrow band plan. D-STAR utilizes the well-know GMSK modulation method that makes very efficient use of occupied bandwidth.

D-STAR (F7W)

fo
6 kHz
Frequency

10 kHz 10 kHz 10 kHz 10 kHz

20 kHz 20 kHz

FM (F3E)

fo
16 kHz
Frequency

10 kHz 10 kHz 10 kHz 10 kHz

20 kHz 20 kHz
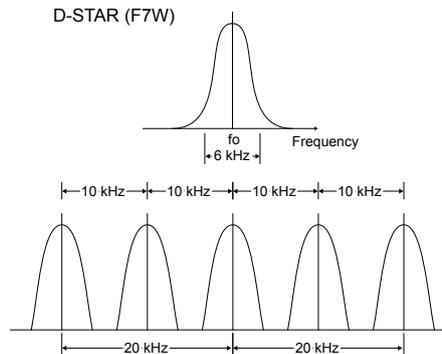
D-STAR operates in 10 kHz steps. The sound quality is good, even though the bandwidth is half of regular FM mode signals.
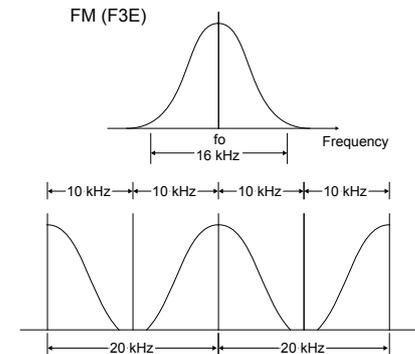
The regular FM mode occupies 20 kHz that is a double the bandwidth of D-STAR.

IMPORTANT!	Before starting D-STAR, the following steps are needed.
	STEP 1 Entering your call sign (MY) into the transceiver.
	STEP 2 Registering your call sign (MY) to a gateway repeater.
	STEP 3 Entering your D-STAR equipment into your registration form.
	→ You have completed the steps!! See pages 9 ~ 11 for details.

■ About the DR (D-STAR Repeater) function

You can easily use D-STAR repeaters with the DR (D-STAR Repeater) function. With this function, you can select the preset repeater or frequency in "FROM" (access repeater), and Your call sign in "TO" (destination) on the DR screen, as shown below.
ⓘ To display the DR screen, hold down [DR] for 1 second.
ⓘ On the DR screen, pushing [DR] toggles between "FROM" and "TO."

NOTE: If the repeater set in "FROM" (Access Repeater) has no Gateway, you cannot make a Gateway call.

Destination (Repeater/Station) ➡

Access repeater ➡

The DR screen

■ Ways to Communicate with the DR function

With the DR function, the transceiver has three ways to communicate, as shown below.
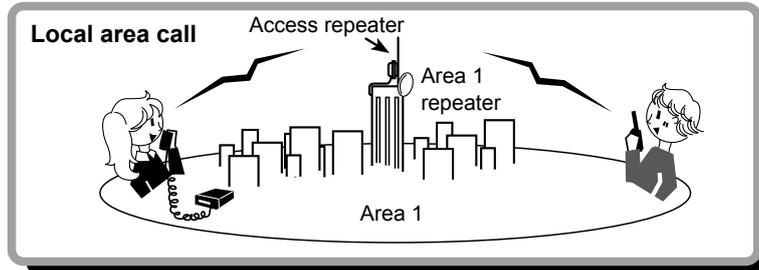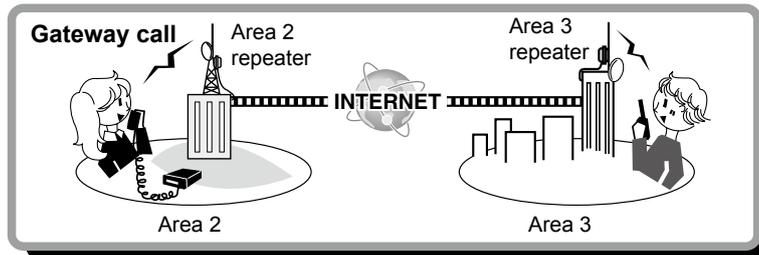
Local area call — Access repeater — Area 1 repeater — Area 1

To call through your local area (access) repeater.

Gateway call — Area 2 repeater — INTERNET — Area 3 repeater — Area 2 — Area 3

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 call sign routing.

Simplex call
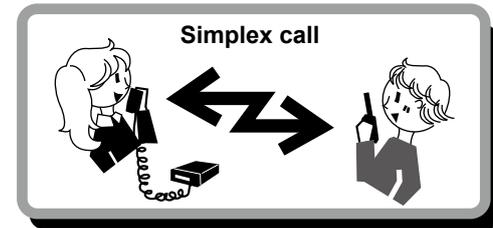
To call another station not using a repeater.

NOTE:
- Using the repeater list is required to use the DR function. (p. 25)
- Before operating in the duplex mode, be sure to check whether the repeater is busy, or not. If the repeater is busy, wait until it is clear, or ask for a "break" using a method acceptable to your local procedures.
- The transceiver has a Time-Out Timer function for DV operation. The timer limits a continuous transmission. Warning beeps will sound approximately 30 seconds before time-out and then again immediately before time-out.

■ Enter your call sign (MY) into the transceiver

To operate D-STAR, you must first enter your call sign into a MY call sign memory. You can enter up to 6 MY call signs, into MY call sign memory [MY1] ~ [MY6].

NOTE: Your MY call sign must match the call sign registered on a gateway repeater. (p. 11)

Example: Enter "JA3YUA" as your own call sign into [MY1].

Step 1: Display the MY CALL SIGN edit screen

My Station > **My Call Sign**

1. Push [MENU].
2. Rotate [DIAL] to select "My Station," then push [↵].
   • Displays the MY STATION screen.
3. Select "My Call Sign," then push [↵].
   • Displays the MY CALL SIGN screen.
4. Select MY call sign memory, then push [QUICK]. (Example: "1:")
5. Select "Edit," then push [↵].

   • Displays the MY CALL SIGN edit screen.
   (Example: MY CALL SIGN (MY1*))
   *The memory number selected in step 4 is displayed.

Step 2: Enter your own call sign

1. Enter your own call sign, then push [↵].
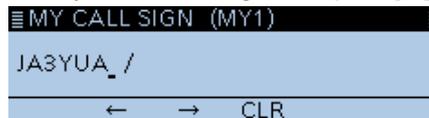
   • Sets the entered call sign.
2. Select the entered call sign, then push [↵].

   • Sets the call sign to be used as MY call sign.
3. Push [MENU].
   • Returns to the standby screen.

Operations for a text entry

[MENU]
Cancels

[DIAL] (Rotate)
Selects

[↵]
Sets

[RX→CS]
Clears

[MW]
Moves the cursor
to right

[ᔦ]
Cancels

[MODE]
Moves the cursor
to left
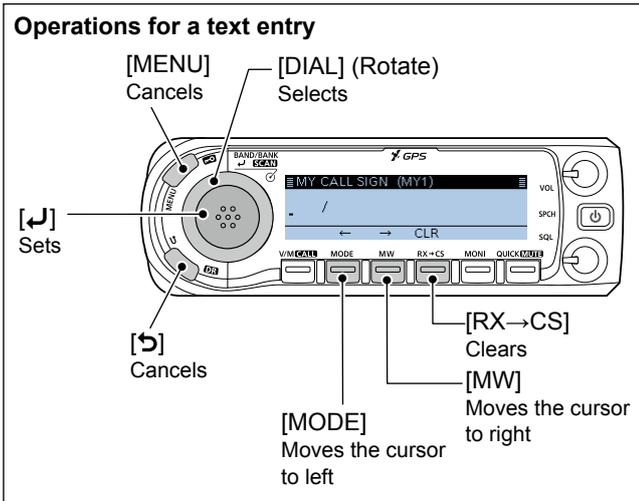
TIP: You can enter a note of up to 4 characters, such as the model of the transceiver, name, area name, and so on, after your call sign.

1. After entering a call sign, push [MW] several times until the cursor moves to the right of the "/."

   ≣ MY CALL SIGN (MY1)

   JA3YUA /_

   ←   →   CLR
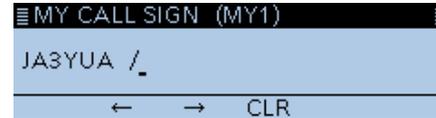
2. Enter a 4 character note. (Example: 4100)

   ≣ MY CALL SIGN (MY1)

   JA3YUA /4100

   ←   →   CLR

■ Register your call sign at a gateway repeater

To make a gateway call through the Internet, you must register your call sign at a repeater that has a gateway, usually one near you.

About the registration process described:
This section describes the call sign 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.

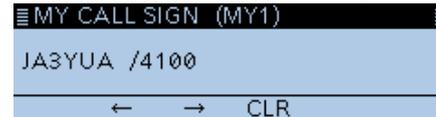**If needed, ask the gateway repeater administrator for call sign registration instructions.**

Step 1: Access the call sign registration screen

1. Access the following URL to find the gateway repeater closest to you.
    http://www.dstarusers.org/repeaters.php
2. Click the call sign of the repeater that you want to register to.
3. Click the "Gateway Registration URL:" link address.
4. The "D-STAR Gateway System" screen is displayed. Click [Register] to start the New User registration.

Step 2: Register your call sign

1. Follow the registration instructions found there.
2. When you receive a notification from the administrator, your call sign registration has been approved.

NOTE: It may take a few days for the administrator to approve you.

Step 3: Register your personal information

After your registration is approved, log in your personal account with your registered call sign and password.

Step 4: Register your D-Star equipment

1. Register your D-STAR equipment information.
   Ask the gateway repeater administrator for details.
2. 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.

D-STAR OPERATION

■ Making a Simplex call

This section describes the simplex operation (through no repeater) on the DR screen.

NOTE: Depending on the transceiver's version, the frequencies may be different. Check for usable frequencies for your operating area.

What is a Simplex Call?
A simplex call is a direct call to another station on a single frequency, not using a repeater.

Example: Making a simplex call on 433.450 MHz.

Step 1: Set "FROM" (Simplex channel)

1. Hold down [DR] for 1 second to display the DR screen.
2. Select "FROM," then push [↵].
   • Displays the FROM SELECT screen.
   ⓛ On the DR screen, pushing [DR] toggles between "FROM" and "TO."
3. Rotate [DIAL] to select "Repeater List," then push [↵].
   • Displays the REPEATER GROUP screen.
4. Select "Simplex," then push [↵].
5. Select the desired frequency, then push [↵].

• Return to the DR screen, and the selected frequency is displayed in "FROM."
• "CQCQCQ" is displayed in "TO."
ⓛ If a station call sign is set in "TO," select "Local CQ" in the "TO SELECT" screen to set "CQCQCQ" in "TO."

Step 2: Hold down [PTT] to transmit

• Displays 🔳 TX 🔳 while transmitting.

NOTE: You can change the simplex frequencies on the MENU screen. See the Advanced manual for details. (Section 4)
(DV memory > **Repeater List**)

TIP: When you make a simplex call in the VFO mode, the LCD changes, as shown below. See the Advanced manual for details. (Section 4)

■ Accessing repeaters

This section describes how to check whether or not you can access your local area repeater (Access repeater), and if your signal is successfully sent to a destination repeater.

> **TIP:** If your call sign (MY) has not been set, or your call sign and equipment have not been registered at a D-STAR repeater, see pages 9 ~ 12.

Step 1: Set "FROM" (Access repeater)

1. Hold down [DR] for 1 second to display the DR screen.
2. Select "FROM," then push [↵].
   • Displays the FROM SELECT screen.
   ① On the DR screen, pushing [DR] toggles between "FROM" and "TO."
3. Rotate [DIAL] to select "Repeater List," then push [↵].
   • Displays the REPEATER GROUP screen.
4. Select the repeater group where your access repeater is listed, then push [↵].
5. Select your access repeater, then push [↵]. (Example: "Hirano")

• Returns to the DR screen, and the selected repeater name is displayed in "FROM."

① Even if you select just the repeater name, the repeater call sign, its frequency, duplex setting, frequency offset and Gateway call sign are automatically set.

Step 2: Set "TO" (Destination)

1. Push [DR] to select "TO," then push [↵].
   • Displays the TO SELECT screen.
2. Rotate [DIAL] to select "Gateway CQ," then push [↵].
   • Displays the REPEATER GROUP screen.
3. Select the repeater group where your destination repeater is listed, then push [↵].
4. Select your destination repeater, then push [↵]. (Example: "Hamacho")

• Returns to the DR screen, and the selected repeater name is displayed in "TO."

■ Accessing repeaters (Continued)

Step 3: Check whether you can access the repeater

Hold down [PTT] for approximately 1 second to access the repeater.

DV D− ■·÷ **TX**
TO🔲Hamacho
JP1YIU A
FROM Hirano
UR: /JP1YIUA

ⓘ If you get a reply call, or "UR?" is displayed on the LCD within 3 seconds, your signal reached your access repeater and your call was successfully sent from your destination repeater.

DV D− ■·÷ BUSY
TO🔲Hamacho
JP1YIU A
FROM Hirano
UR?: JP3YHH A (Hirano)
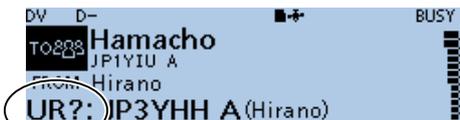
UR?: JP3YHH A(Hirano)

Successfully sent!

TIP: See page 31 for status indications after a reply is received.

■ Using the RX history

When a DV call is received, the call signs of the caller, the called station and the called station's access repeater are stored in the RX history file. Up to 50 calls can be stored. Even if you turn OFF the transceiver, the RX history is retained.
This section describes how to display the RX history screen and how to save the call sign to memory.

When receiving a call from "JM1ZLK."

DV D− BUSY
TO🔲CQCQCQ
FROM Hirano
455.555 JP5HH A
RX: JM1ZLK
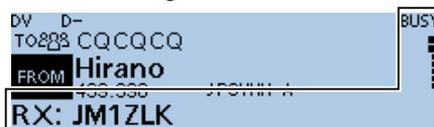
The S-meter and the caller's call sign are displayed.

Step 1: To display a received call sign

1. Push [QUICK].
2. Rotate [DIAL] to select "RX History," then push [↵].
   • Displays the RX HISTORY screen.
   ⓘ You can display other RX history by rotating [DIAL].

RX HISTORY screen (RX01)

Received date and time

Record number →

≣ RX HISTORY 15:42 1/10≣
RX01: 2017/03/21 7:27 GW
JM1ZLK /4100 →CQCQCQ
HELLO CQ D-STAR

Caller station
ⓘ A note may be displayed after "/".

RX message

Called station
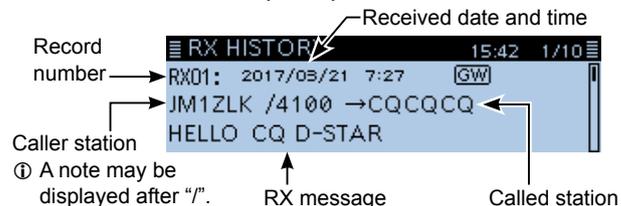
Step 2: Save the destination call sign into your call sign memory from RX History

1. Rotate [DIAL] to select the RX HISTORY record with the call sign that you want to save to memory.
2. Push [↵].
   • Displays the RX HISTORY detail screen.
3. Push [QUICK].
4. Rotate [DIAL] to select "Add To Your Memory," then push [↵].
5. Select the call sign that you want to save, then push [↵]. (Example: "JM1ZLK")

6. Select "NAME," then push [↵].
7. Enter a name of up to 16 characters, then push [↵].
8. Select "<<Add Write>>," then push [↵].
   • The confirmation dialog "Add write?" is displayed.
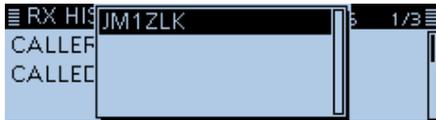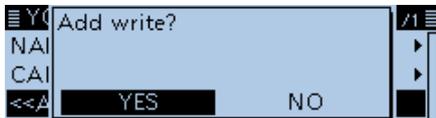9. Select <YES,> then push [↵].

   • Returns to the RX HISTORY DETAIL screen.

Operations for a text entry

[MENU] Cancels
[DIAL] (Rotate) Selects a character
[↵] Sets
[⤴] Cancels
[MODE] Moves the cursor to left
[RX→CS] Clears
[MW] Moves the cursor to right
[QUICK] Selects the entry mode
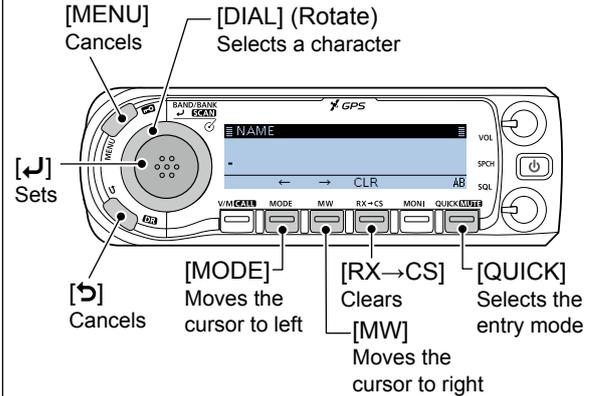
• Push [MODE] or [MW] to move the cursor.
• Rotate [DIAL] to select a character.
• Push [QUICK] to display the Entry Mode Select window.
• In the Entry Mode Select window, rotate [DIAL] to select the desired entry mode, then push [↵].
• Usable caracters are A to Z, a to z, 0 to 9, ! " # $ % & ' ( ) * + , - . / : ; < = > ? @ [\ ] ^ _ ` { | } ˜ (space).
• Push [RX→CS] to clear the selected character.
• Continuously holding down [RX→CS] clears characters.

■ Capturing a call sign

After you receive a signal, the calling station's call sign can be captured by touching the Call Sign Capture key ([RX→CS]) for 1 second. After releasing, you can quickly and easily reply to the call.
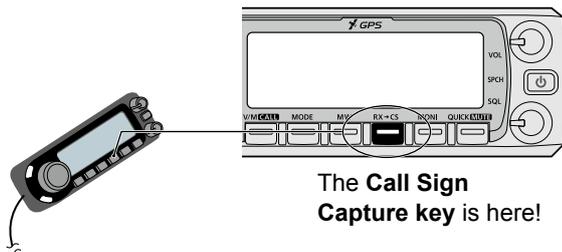ⓘ If you want to select another call sign in the RX history, push [RX→CS], then rotate [DIAL].

What is the Call Sign Capture key?
Touching the Call Sign Capture key for 1 second sets the last received station's call sign as a temporary destination, and makes replying quick and easy.

The **Call Sign Capture key** is here!
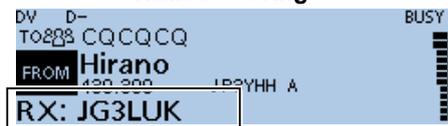
While receiving

└── When receiving a call from "JG3LUK."

Step 1: Set the received call sign to "TO" (Destination)

Hold down [RX→CS] for 1 second.
• Announces the station call sign.

ⓘ When a received signal is weak or during a DV scan, the call sign may not be correctly received. In that case, you cannot capture the call sign.

Step 2: Hold down [PTT] to transmit

• Displays 	TX 	 while transmitting.

ⓘ Push [RX→CS] to return to the previous call sign setting.

■ Making a Local area call

A Local area call can be made when "Local CQ" is used to set "CQCQCQ" in "TO" (Destination).

> **What is a Local Area Call?**
> To call through only your local area (access) repeater.
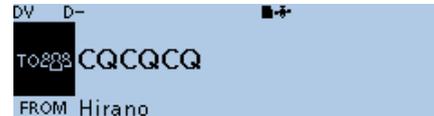
Step 1: Set "FROM" (Access repeater)

1. Hold down [DR] for 1 second to display the DR screen.
2. Select "FROM," then push [↵].
   • Displays the FROM SELECT screen.
   ① On the DR screen, pushing [DR] toggles between "FROM" and "TO."
3. Rotate [DIAL] to select "Repeater List," then push [↵].
   • Displays the REPEATER GROUP screen.
4. Select the repeater group where your access repeater is listed, then push [↵].
5. Select your access repeater, then push [↵].
   • Returns to the DR screen, and the selected repeater name is displayed in "FROM."

(Example: Your access repeater is set to "Hirano.")

Step 2: Set "TO" (Destination)

1. Push [DR] to select "TO," then push [↵].
   • Displays the TO SELECT screen.
2. Rotate [DIAL] to select "Local CQ," then push [↵].
   • Returns to the DR screen, and "CQCQCQ" is displayed in "TO."

Step 3: Hold down [PTT] to transmit

• Displays **TX** while transmitting.
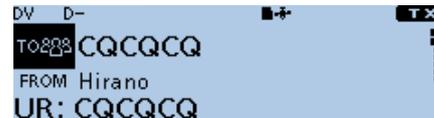
> **TIP:** The Local CQ call is used to call anyone, but you can call a specific station by simply saying their call sign.

■ Making a Gateway Repeater call

A Gateway call can be made when a destination repeater is selected in "TO" (Destination).

> **What is a Gateway Repeater Call?**
> To call through your local area (access) repeater, repeater gateway, and the Internet to your desired destination repeater.

Step 1: Set "FROM" (Access repeater)

1. Hold down [DR] for 1 second to display the DR screen.
2. Select "FROM," then push [↵].
   • Displays the FROM SELECT screen.
   ➀ On the DR screen, pushing [DR] toggles between "FROM" and "TO."
3. Rotate [DIAL] to select "Repeater List," then push [↵].
   • Displays the REPEATER GROUP screen.
4. Select the repeater group where your access repeater is listed, then push [↵].
5. Select your access repeater, then push [↵].
   • Returns to the DR screen, and the selected repeater name is displayed in "FROM."

(Example: Your access repeater is set to "Hirano.")

Step 2: Set "TO" (Destination)

1. Push [DR] to select "TO," then push [↵].
   • Displays the TO SELECT screen.
2. Rotate [DIAL] to select "Gateway CQ," then push [↵].
   • Displays the REPEATER GROUP screen.
   ➀ If the selected Access repeater does not connect to the gateway, **XGW** is displayed. In that case, you cannot select "Gateway CQ."
3. Select the repeater group where your destination repeater is listed, then push [↵].
4. Select your destination repeater, then push [↵].
   • Returns to the DR screen, and the selected repeater name is displayed in "TO."

(Example: The destination repeater is set to "Hamacho.")

Step 3: Hold down [PTT] to transmit

• Displays **TX** while transmitting.

■ Calling an individual station

You can make a call to an individual station when the station call sign is selected in "TO" (Destination).
When you call an individual station call sign through a gateway, your call is automatically sent to the last repeater that the station accessed. So, even if you don't know where the station is, you can make a call using call sign routing.

Step 1: Set "FROM" (Access repeater)

1. Hold down [DR] for 1 second to display the DR screen.
2. Select "FROM," then push [↵].
   • Displays the FROM SELECT screen.
   ⓘ On the DR screen, pushing [DR] toggles between "FROM" and "TO."
3. Rotate [DIAL] to select "Repeater List," then push [↵].
   • Displays the REPEATER GROUP screen.
4. Select the repeater group where your access repeater is listed, then push [↵].
5. Select your access repeater, then push [↵].
   • Returns to the DR screen, and the selected repeater name is displayed in "FROM."

(Example: Your access repeater is set to "Hirano.")

Step 2: Set "TO" (Destination)

1. Push [DR] to select "TO," then push [↵].
   • Displays the TO SELECT screen.
2. Rotate [DIAL] to select "Your Call Sign," then push [↵].
   • Displays the YOUR CALL SIGN screen.
3. Select your destination station, then push [↵].
   • Returns to the DR screen, and the selected station name is displayed in "TO."



(Example: The destination station is set to "Station1.")

Step 3: Hold down [PTT] to transmit

• Displays **TX** while transmitting.

■ Connecting to a Reflector

◇ What is the reflector?

A reflector is a special server connected to the Internet and running a version of dplus software. If the dplus software is installed on your access repeater, it provides various functions including gateway and reflector linking capabilities (It is known as the D-STAR reflector system). The D-STAR reflector system enables a number of D-STAR repeaters anywhere to link to a reflector. This means that when you transmit through a D-STAR repeater linked to a reflector, your voice can be heard on other repeaters linked to the reflector, and you can hear other stations that are connected to the reflector.

D-STAR reflector system

Access repeater

INTERNET

INTERNET

INTERNET

CAN

UK

AUS

Reflector

USA
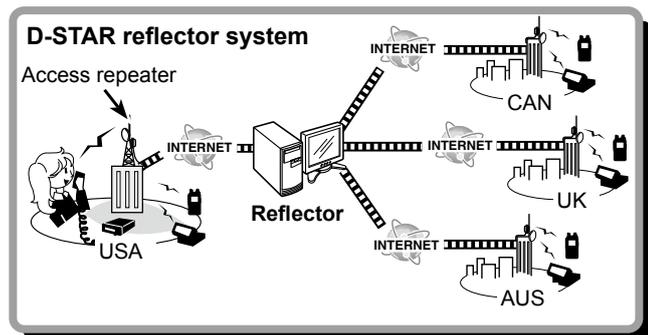
◇ Linking to a reflector

If your repeater is not currently linked to a reflector, or you want to change to another reflector, you can do so following the steps below. Before linking to another reflector, be sure to unlink the current reflector. (p. 23)

Direct inputting a reflector

Example: Directly enter "REF010BL."

1. Hold down [DR] for 1 second to display the DR screen.
2. Select "TO," then push [↵].
   • Displays the TO SELECT screen.
   ⓘ On the DR screen, pushing [DR] toggles between "FROM" and "TO."
3. Rotate [DIAL] to select "Reflector," then push [↵].
   • Displays the REFLECTOR screen.
4. Select "Link to Reflector," then push [↵].
   • Displays the "Link to Reflector" screen.
5. Select "Direct Input," then push [↵].
6. Rotate [DIAL] to select the reflector number.
   (Example: 010)

   ≣ Link to Reflector

   REF010AL

   ←　　→

7. Push [MW](→) to move the cursor to the right box.

8. Rotate [DIAL] to select the module letter. (Example: B)

9. Push [↵].
   • Returns to the DR screen, and "Link to Reflector" and "REF010BL" are displayed in "TO."

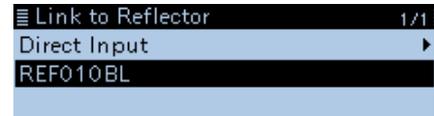10. Hold down [PTT] to link to the reflector.
   • Displays **TX** while transmitting.

Using the TX History

The TX History stores the up to 5 reflectors that your access repeater linked before.

Example: Select the "REF010BL" in the TX History.

1. Hold down [DR] for 1 second to display the DR screen.
2. Select "TO," then push [↵].
   • Displays the TO SELECT screen.
   ① On the DR screen, pushing [DR] toggles between "FROM" and "TO."
3. Rotate [DIAL] to select "Reflector," then push [↵].
   • Displays the REFLECTOR screen.
4. Select "Link to Reflector," then push [↵].
   • Displays the "Link to Reflector" screen.
5. Select the reflector that you want to link to.
   (Example: "REF010BL")

   • Returns to the DR screen, and "Link to Reflector" and "REF010BL" are displayed in "TO."
6. Hold down [PTT] to link to the reflector.
   • Displays **TX** while transmitting.

■ Connecting to a Reflector (Continued)

◇ Using a reflector

1. Hold down [DR] for 1 second to display the DR screen.
2. Select "TO," then push [↵].
   • Displays the TO SELECT screen.
   ① On the DR screen, pushing [DR] toggles between "FROM" and "TO."
3. Rotate [DIAL] to select "Reflector," then push [↵].
   • Displays the REFLECTOR screen.
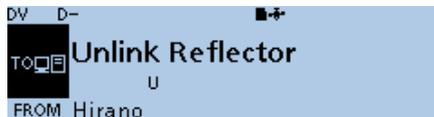4. Select "Use Reflector," then push [↵].
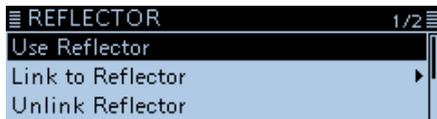
   • Returns to the DR screen, and "Use Reflector" and "CQCQCQ" are displayed in "TO."
5. Hold down [PTT] to transmit.
   • Displays **TX** while transmitting.

◇ Unlinking a reflector

Before trying to link to another reflector, be sure to unlink the current connected reflector.

1. Hold down [DR] for 1 second to display the DR screen.
2. Select "TO," then push [↵].
   • Displays the TO SELECT screen.
   ① On the DR screen, pushing [DR] toggles between "FROM" and "TO."
3. Rotate [DIAL] to select "Reflector," then push [↵].
   • Displays the REFLECTOR screen.
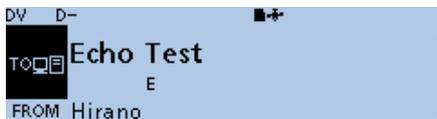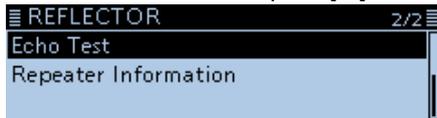4. Select "Unlink Reflector," then push [↵].

   • Returns to the DR screen, and "Unlink Reflector" and "U" are displayed in "TO."
5. Hold down [PTT] to unlink the reflector.
   • Displays **TX** while transmitting.

◇ Reflector Echo Testing

You can transmit a short message, and after releasing [PTT], your message will be played back. It is a useful check of how well your signal is getting into the repeater, and you can use it to verify that your repeater is operating normally.

1. Hold down [DR] for 1 second to display the DR screen.
2. Select "TO," then push [↵].
   • Displays the TO SELECT screen.
   ① On the DR screen, pushing [DR] toggles between "FROM" and "TO."
3. Rotate [DIAL] to select "Reflector," then push [↵].
   • Displays the REFLECTOR screen.
4. Select "Echo Test," then push [↵].

   • Returns to the DR screen, and "Echo Test" and "E" are displayed in "TO."
5. Hold down [PTT] and speak into the microphone.
   • Displays **TX** while transmitting.
6. Release [PTT] to hear your message.

◇ Requesting repeater information

When you send the repeater information command, an ID message is sent back.

1. Hold down [DR] for 1 second to display the DR screen.
2. Select "TO," then push [↵].
   • Displays the TO SELECT screen.
   ① On the DR screen, pushing [DR] toggles between "FROM" and "TO."
3. Rotate [DIAL] to select "Reflector," then push [↵].
   • Displays the REFLECTOR screen.
4. Select "Repeater Information," then push [↵].
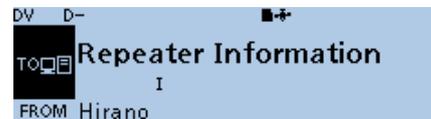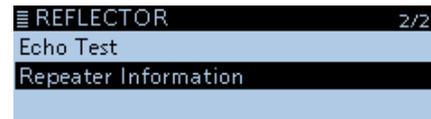
   • Returns to the DR screen, and "Repeater Information" and "I" are displayed in "TO."
5. Hold down [PTT] to send the repeater information command.
   • Displays **TX** while transmitting.
6. Release [PTT] to hear the repeater ID message.

■ Updating the repeater list

For easy operation, a repeater list is preloaded into your transceiver.
This section describes how to manually update the repeater list using a microSD card.
You can download the latest repeater list from the Icom website.

NOTE: Before using a microSD card, see the Basic manual section 7 for details of a card.

Step 1: Downloading the latest repeater lest

1. Access the following URL to download the latest data.
   http://www.icom.co.jp/world/support/download/firm/index.html
   • The latest repeater list (CSV: Comma Separated Values file) and settings file (ICF file) are contained in the downloaded ZIP file.
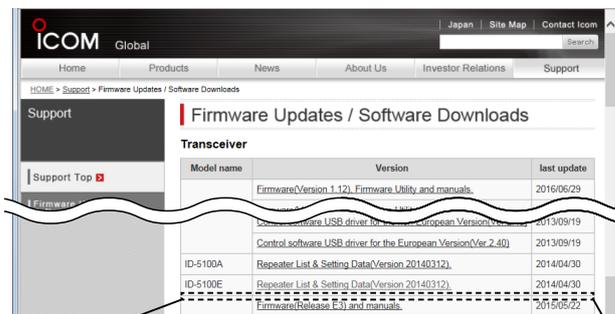
   File Name: 4100_EXP_170208.zip

   Depending on the updated file date.

   Depending on the transceiver version.
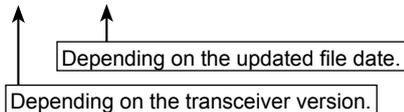
TIP: This guide describes when the file name is "4100_EXP_170208.zip," for example.

ID-4100A/E's latest repeater list is uploaded to "Cloning software(Rev. MM) and manuals" in the Icom website screen.
• The displayed contents may differ.

| ID-4100A ID-4100E | Repeater List & Setting Data(Version ∗∗) | 20yy/mm/dd |

2. Decompress the compressed file that is downloaded from the Icom website.
   "4100_EXP_170208" folder will be created on the same place where the downloaded file is saved.

Step 2: Inserting the microSD card into a PC

Turn OFF the transceiver, then remove the microSD card from the transceiver. And then, insert it into the microSD card drive or a memory card reader* on your PC.
*User supplied.
• To use the microSD card with the ID-4100A/E, format the card, even preformatted microSD cards for PCs or other uses. See the Basic manual section 7 for details.
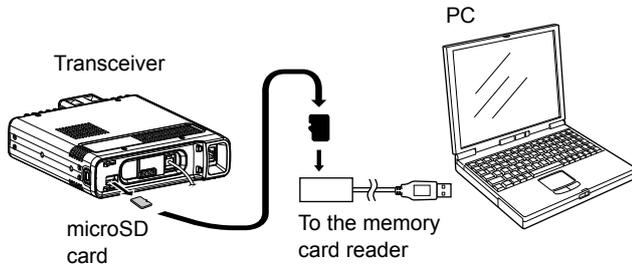
Step 3: Copying the latest CSV file to the microSD card

1. Double-click the "4100_EXP_170208" folder created on the same place where the downloaded file is saved.
2. Copy the CSV file (Example: "4100_EXP_170208.csv") in the folder to the "RptList" folder ("ID-4100" > "Csv" > "RptList") of the microSD card.

TIP: You can copy one or more CSV files in the folder, but the transceiver imports only one file.
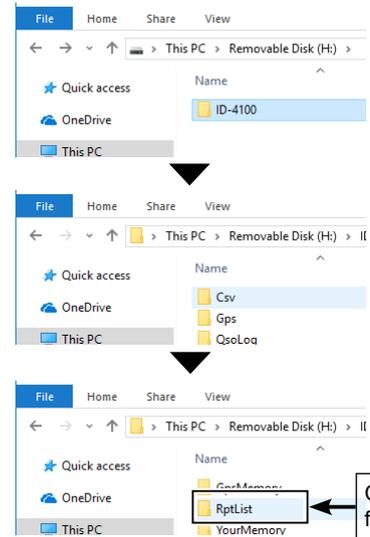

Copy the CSV file in this folder.

D-STAR OPERATION

■ Updating the repeater list (Continued)

Step 4: Removing the microSD card

Turn OFF the transceiver, then remove the microSD card from your PC, and insert it into the transceiver's slot.

> **TIP:** Icom recommends that you save the current data before loading other data into the transceiver.

Transceiver

PC

microSD card

From the memory card reader
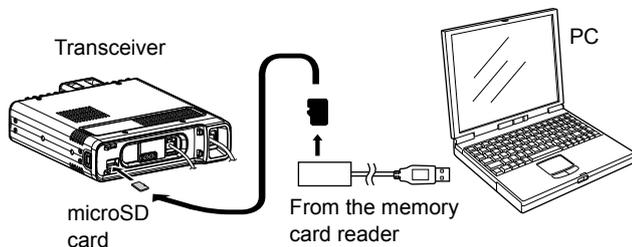
Step 5: Updating the repeater list

SD Card > Import/Export > **Import**

1. Push [MENU].
2. Rotate [DIAL] to select "SD Card," then push [↵].
   • Displays the SD CARD screen.
3. Select "Import/Export," then push [↵].
   • Displays the IMPORT/EXPORT screen.
4. Select "Import," then push [↵].
   • Displays the IMPORT screen.
5. Select "Repeater List," then push [↵].
   • Displays the REPEATER LIST screen.

6. Select the CSV file to be loaded, then push [↵].
   • The confirmation dialog "Keep 'SKIP' settings in Repeater List?" is displayed.
7. Select <YES> or <NO>, then push [↵].
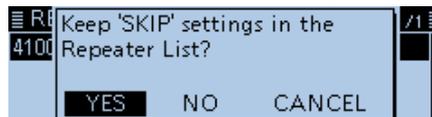
   • YES: Retains the skip settings of the repeater list.
   • NO: Does not retain the skip settings of the repeater list.
   • CANCEL: Cancels to import, then returns to the REPEATER LIST screen.
   • The confirmation dialog "Import file?" is displayed.
8. Select <YES>, then push [↵].
   • Starts to import.
   ⓘ While importing, "IMPORTING" and a progress bar are displayed.
9. After importing ends, "COMPLETED!" is displayed.
10. To complete the importing process, reboot the transceiver.

> **TIP:** If you copy the ICF file to [Setting] of the microSD card, the repeater list can be updated with the same procedures. In that case, select "Load Setting" on the SD CARD screen. And on the LOAD FILE screen, select "Repeater List Only."
> (SD Card > **Load Setting**)

■ "FROM" (Access repeater) setting

Setting by [DIAL]
Select the preset repeater by rotating [DIAL] on the DR screen.

When you know your access repeater

From the repeater list
When your access repeater is in your transceiver's repeater list, you can select it by selecting the repeater area and name, if entered, or call sign.

When you don't know which repeater you can access.

Search for a repeater using the DR scan
The Normal DR scan searches for output repeater frequencies or simplex signals.
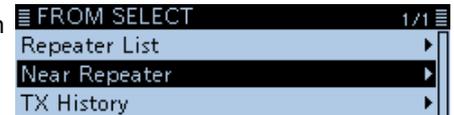You can also find FM repeaters.
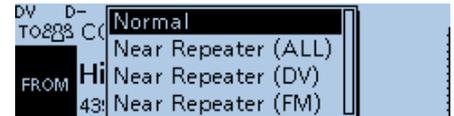
Search for the nearest repeater
Searches for the nearest repeater by using your location and the repeater's location where entered in the Repeater List.
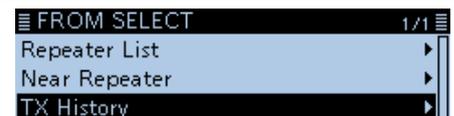The nearest repeaters in your transceiver's Repeater List are displayed as selectable choices.
You can select the desired nearby repeater type (DV or FM).

When the "FROM" data is stored in the TX History.

Setting from the TX History
Select a repeater that you have accessed before, from the TX History record.

■ "TO" (Destination) setting

Setting by rotating [DIAL]:
Rotate [DIAL] to select the repeater or Your Call Sign that is displayed on the DR screen. (This operation is disabled when "CQCQCQ" is set.)

TIP: After you receive the individual station or repeater's signal, the call sign can be captured by holding down the Call Sign Capture key ([RX>CS]), and you can quickly and easily reply to a call.

To make a Local Area CQ call:
Set "CQCQCQ" in "TO" (Destination).

To make a call to a specific station:
Select the station call sign in the Your Call Sign.

To select from RX History:
When you receive a call, the repeater or caller station data is stored in RX History. You can select the destination from the record.

To directly enter the destination station call sign:
Directly enter the destination station's call sign.

To make a Gateway CQ call:
Select a repeater from the repeater list, if you want to make a Gateway call.

To make a call through a reflector:
Select a reflector that is connected to the repeater you want to call through.

To select from TX History:
When you make a call, the destination repeater or called station data is stored in TX History. You can select the destination from the record.

To directly enter the destination repeater call sign:
Directly enter the destination repeater's call sign.

TO SELECT 1/3
Local CQ
Gateway CQ
Your Call Sign

TO SELECT 2/3
Reflector
RX History
TX History
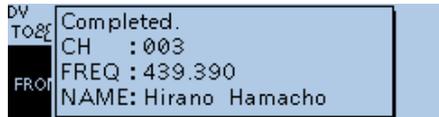
TO SELECT 3/3
Direct Input (UR)
Direct Input (RPT)

■ Saving settings

When "FROM" (Access repeater) and "TO" (Destination) settings are saved, the settings can be selected by rotating [DIAL].

Step 1: Saving settings into memory

1. On the DR screen, select the settings to be saved into memory .
2. Hold down [MW] for 1 second.

• The memory contents are briefly displayed, then the operating data is saved into a blank channel.
• "FROM" and "TO" names are automatically entered as the Memory name. (Up to 16 alphanumeric characters.)

Step 2: View the saved contents

3. Push [V/M] several times until you enter the Memory mode.
   • Pushing [V/M] toggles between the VFO and Memory modes.
4. Rotate [DIAL] to select the saved channel. (Example: "003")

TIP: Checking the Memory contents
You can check the Memory contents on the MEMORY LIST screen.

Example: Checking the contents of Memory channel 3.

Manage Memory > **Memory CH**

1. Push [MENU].
2. Select "Manage Memory," then push [↵].
3. Select "Memory CH," then push [↵].
   • Displays the MEMORY CH screen.
4. Select "ALL," then push [↵].
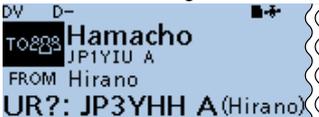   • Displays the ALL screen.
5. Select "003," then push [↵].
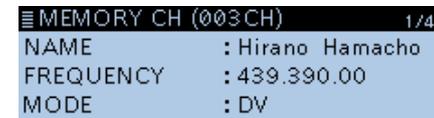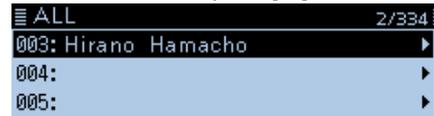
• Displays the data in Channel 3 on the MEMORY CH (003CH) screen.
ⓛ You can select a page by rotating [DIAL].
6. Push [MENU].
   • Returns to the standby screen.

TROUBLESHOOTING

■ When receiving no reply

To communicate through the repeater, your signal must access to the repeater. The following chart is designed to help you correct problems which are not equipment malfunctions.

PROBLEM	POSSIBLE CAUSE	SOLUTION	REF.
After your call, the repeater does not return a status reply.	• The repeater setting is wrong. • Your transmission did not reach the repeater.	• Select the correct repeater. • Correct the repeater frequency, frequency offset, or duplex settings. • Wait until you are closer to the repeater and try again. • Try to access another repeater.	p. 28 — — —
After your call, the repeater replies 'UR?' and its call sign. DV D– ■✦ TO888 **Hamacho** JP1YIU A FROM Hirano **UR?: JP3YHH A** (Hirano)	The call was successfully sent, but no station immediately replied.	Wait for a while, and try again.	—
After your call, the repeater replies 'RX' or 'RPT?' and the access repeater's call sign. DV D– ■✦ TO888 **Hamacho** JP1YIU A FROM Hirano **RPT?: JP3YHH A** (Hiran	• Your own call sign (MY) has not been set. • Your own call sign (MY) has not been registered on a gateway repeater, or the registered contents do not match your transceiver's setting.	• Set your own call sign (MY). • Register your own call sign (MY) on a gateway repeater, or confirm the registration of the call sign.	p. 9 p. 11
After your call, the repeater replies 'RPT?' and the access repeater's call sign.	The call sign of the destination repeater is wrong.	Correctly set the destination repeater call sign.	—

PROBLEM	POSSIBLE CAUSE	SOLUTION	REF.
After your call, the repeater replies 'RPT?' and the destination repeater's call sign.	• The repeater cannot connect to the destination repeater. • The repeater is busy.	• Check the repeater setting. • Wait for a while, and try it again.	—
Even holding down [DR], the DR screen is not displayed.	• There is no repeater list in your transceiver. • The Lock function is activated.	• Import the repeater using a microSD card. • Directly enter the Repeater list data into the transceiver. • Hold down [LOCK] for 1 second to turn OFF the Lock function.	p. 25 AM* Sec. 4 —
Even holding down [RX→CS], the received call sign will not set to the destination call sign.	• The call sign has not been correctly received. • When a received signal is weak, or a signal is received during scanning, the call sign may not be received correctly. In that case, "--------" is displayed and error beeps sound, and a reply call cannot be made.	Try it again, after the transceiver has correctly received the call sign.	—
A Local area call can be made, but the Gateway call or destination station call cannot be made.	• MY call sign has not been registered on a D-STAR repeater. • The repeater set in "FROM" (Access Repeater) has no Gateway.	• Register your own call sign (MY) on a gateway repeater, or confirm the registration of the call sign. • Check the repeater setting.	p. 11
"L" is displayed on the LCD. DV D− Ⓛ ■+❖ TO☎❚ Hamacho JP1YIU A	While receiving through the internet, some packets may be lost due to network error (poor data throughput performance).	Wait a while, and try it again. ⓘ When the transceiver receives corrupted data, and misidentifies it is as Packet Loss, "L" is displayed, even if it is a Local area call.	—
"DV" and "FM" icons alternately blink.	While in the DV mode, an FM signal is received.	Use a different operating frequency until there are no FM signals on the original frequency.	AM* Sec. 4

* "AM" indicates the PDF type Advanced manual.

INDEX

MEMO

Count on us!

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