

Even if you cannot access a D-STAR repeater, you can make Gateway calls with the DV Gateway function. The function has two modes, the Terminal mode and the Access Point mode.

① Other stations can also directly communicate using the DV Gateway function, only if they use call sign routing.

① When using the DV Gateway function, you cannot make a direct Local Area call.

D-STAR (Digital Smart Technology for Amateur Radio) is a digital radio protocol developed by JARL (Japan Amateur Radio League).

In this document, the following transceivers are described.

ID-31A PLUS/ID-31E PLUS/ID-51A (PLUS2)/ID-51E (PLUS2)/ID-52A/ID-52E/ID-50A/ID-50E/
ID-52A PLUS/ID-52E PLUS

① See page 2 for the combination of the transceiver and data cable.

① The ID-52A/ID-52E is used as an example.

① The ID-52A PLUS/ID-52E PLUS can simultaneously receive the Normal mode and the Terminal mode in the Dualwatch function.

IMPORTANT:

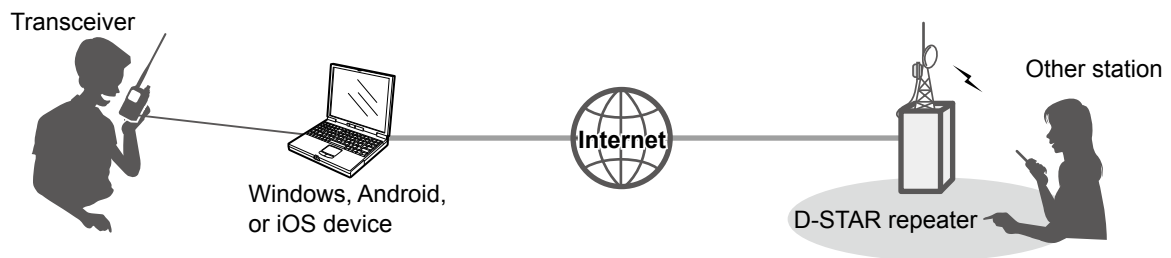
- Before operating in the Terminal mode or the Access Point mode, **BE SURE** to check your local regulations or laws.
- Register your call sign (MY) at a gateway server.*
- Register the Terminal/AP call sign that is set in the RS-MS3A, RS-MS3I, or RS-MS3W to the RS-RP3C GATEWAY CONTROL SOFTWARE as the access point.*

* Ask the gateway repeater administrator for details.

Terminal mode

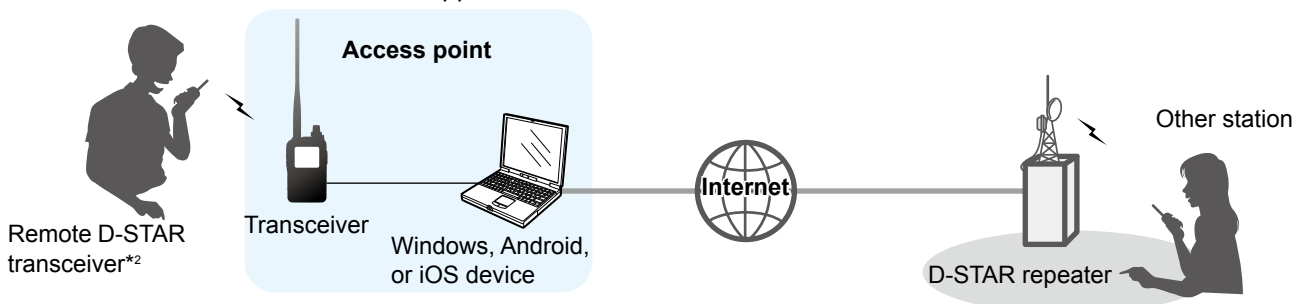
The Terminal mode enables you to make Gateway calls through the Internet by using a Windows, Android, or iOS device that is running the RS-MS3W, RS-MS3A, or RS-MS3I application.

In the Terminal mode, the transceiver does not transmit or receive RF signals through the antenna. The communication is routed through only the Internet.



Access Point mode

The Access Point mode enables you to use another D-STAR transceiver and remotely*1 make Gateway calls through an Access point transceiver when connected to a Windows, Android, or iOS device that is running the RS-MS3W, RS-MS3A, or RS-MS3I application.



*1 Within the transmit and receive range of the Access point transceiver. The range will vary, depending on the operating environment.

*2 Any model as long as the transceiver is D-STAR capable. Only one D-STAR transceiver can access the Access Point at the same time.

NOTE: When using the DV Gateway function

- When operating in the Access Point mode, you need two call signs. One for the Access Point transceiver and one for the Remote D-STAR transceiver. (p. 6)
- You need an Internet connection with an IPv4 Global IP address. If you use a cellular system, you need an IPv4 Global IP address assigned to your Windows, Android, or iOS device.

■ About the transceivers

In this document, using the following transceivers is described.

System requirements		ID-52A PLUS ID-52E PLUS	ID-52A ID-52E	ID-50A ID-50E	ID-51A (PLUS2) ID-51E (PLUS2) ID-31A PLUS ID-31E PLUS
RS-MS3W					
USB connection	• Requirement item	Supplied USB cable* ¹	USB cable* ² (User supplied)	Supplied USB cable* ¹	OPC-2350LU DATA CABLE* ³
	• Usable application version	Version 1.31 or later	Version 1.31 or later	Version 1.31 or later	OPC-2350LU DATA CABLE* ³
RS-MS3A					
Bluetooth connection	• Usable application version	Version 1.40 or later	N/A	N/A	N/A
	• Usable transceiver firmware version	Main CPU(CPU M) 1.10 or later	N/A	N/A	N/A
RS-MS3I					
Bluetooth connection	• Usable application version	Version 1.0.0 or later	N/A	N/A	N/A
	• Usable transceiver firmware version	Main CPU(CPU M) 1.10 or later	N/A	N/A	N/A

N/A: Not Applicable

*¹ If you do not use a supplied USB cable, confirm your USB cable meets the following conditions:

- Usable for data transfer and not for charging only.
- Fits the transceiver's USB port (Type-C) and your device's USB port.

*² Purchase the proper USB cable according to your device's USB port.

- For the Micro-B port: OPC-2417 DATA CABLE (USB Micro-B/USB Micro-B)
- For the Type-C port: OPC-2418 DATA CABLE (USB Micro-B/USB Type-C)
- For the Type-A port: User supplied (Usable for data transfer and not for charging only)

*³ If your Android device has a USB Type-C port, you need a USB On-The-Go (OTG) adapter to convert the data cable's plug to USB Type-C.

NOTE: When you use a PC, download the USB driver and the installation guide from the Icom website.

- When using the OPC-2350LU, enter "OPC-2350LU" into the Search box in the site.
- When using other cable, enter the transceiver's model name into the Search box in the site.

Icom website

<https://www.icomjapan.com/support/>

■ System requirements

(As of November 2024)

Software / Application	System requirements
When you use a PC RS-MS3W	Operating system Microsoft Windows 11 (64 bit) Microsoft Windows 10 (32/64 bit) ① Except for Windows on ARM. USB port A USB 1.1 or USB 2.0
When you use an Android device RS-MS3A	Data device for Android™ - Android™ version 8.0 or later The RS-MS3A has been tested with Android 8.x, 9, 10, 11, 12, 13 and 14. ① If your device is Android version 5.x.x to 7.XX, you can use RS-MS3A version 1.32, but cannot update RS-MS3A. ① If your device is Android version 4.x.x, you can use RS-MS3A version 1.20, but cannot update RS-MS3A. - USB host function on the Android™ device or Bluetooth function on the Android device ① The USB host function is needed to use a USB device with an Android device. To check whether or not your Android device has the USB host system, ask the Android device's manufacturer. ① Bluetooth connection is compatible with only the ID-52A PLUS/ID-52E PLUS.
When you use an iOS device RS-MS3I	Data device for iOS™ - iOS™ version 15 or later, iPadOS version 15 or later The RS-MS3I has been tested with iOS 15, 16, 17, 18, and iPadOS 15, 16, 17, 18. - Bluetooth function on the iOS™ device ① Bluetooth connection is compatible with only the ID-52A PLUS/ID-52E PLUS.

① Display indications may differ depending on the PC, Android, or iOS device's OS.

① In addition to this document, read the RS-MS3W, RS-MS3A, or RS-MS3I instruction manual. They can be downloaded from the Icom website.

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1 Preparation

■ Entering your call sign in the RS-MS3W, RS-MS3A, or RS-MS3I

◇ When operating in the Terminal mode:

IMPORTANT:

- Register your own call sign (MY) at a gateway server.*
- Register the Terminal/AP call sign that is set in the RS-MS3A, RS-MS3I, or RS-MS3W to the RS-RP3C as the access point.*

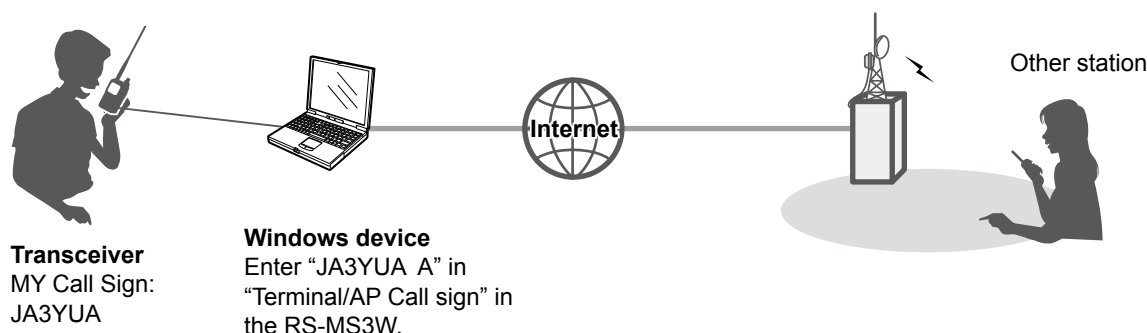
* Ask the gateway repeater administrator for details.

1. Open the RS-MS3W, RS-MS3A, or RS-MS3I on your Windows, Android, or iOS device.
2. Enter the connected transceiver's My Call Sign in "Terminal/AP Call sign."

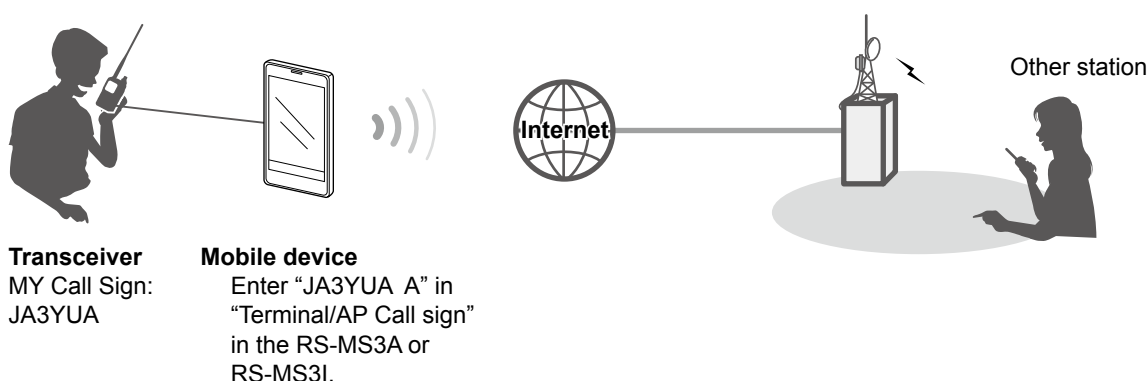
① Information

- The Terminal Call sign should be 8 characters. Enter spaces between MY Call Sign and the 8th character.
- Enter a unique ID suffix between A and Z, except for G, I, and S, at the end of MY Call Sign for the 8th character.
- Call signs shown below are just examples.

When using a Windows device:



When using a mobile device:



NOTE for your own Call Sign on the Terminal mode (ID-52A PLUS/ID-52E PLUS only):

You can set your own call sign in terminal mode. ([MENU] > SET > My Station > **My Call Sign (TM)**)

① As the default, "Same as Normal DV" is selected. ([MENU] > SET > My Station > **My Call Sign**)

① If you edit My Call Sign (TM), your own call sign will also be changed.

1 Preparation

■ Entering your call sign in the RS-MS3W, RS-MS3A, or RS-MS3I

◇ When operating in the Access Point mode:

IMPORTANT:

- Register your call sign (MY) at a gateway server.*
- Register the Terminal/AP call sign that is set in the RS-MS3A, RS-MS3I or RS-MS3W to the RS-RP3C as the access point.*

* Ask the gateway repeater administrator for details.

1. Open the RS-MS3W, RS-MS3A, or RS-MS3I on your Windows, Android, or iOS device.
2. Enter your Access Point (AP) transceiver's My Call Sign in "Terminal/AP Call sign."

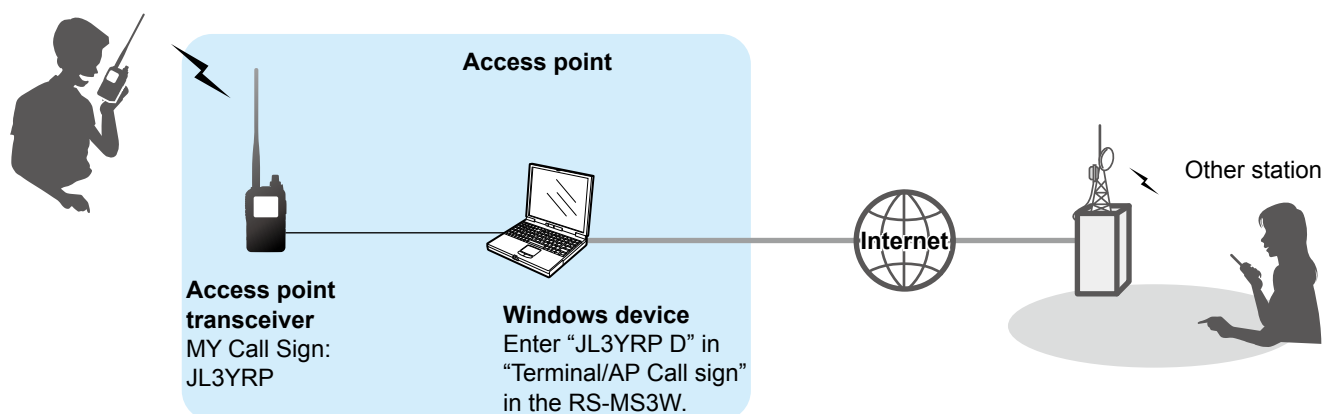
① Information

- The AP Call sign should be 8 characters. Enter spaces between MY Call Sign and the 8th character.
- Enter a unique ID suffix between A and Z, except for G, I, and S, at the end of the Access Point transceiver's MY Call Sign for the 8th character.
- Call signs shown below are just examples.

When using a Windows device:

Remote D-STAR transceiver*

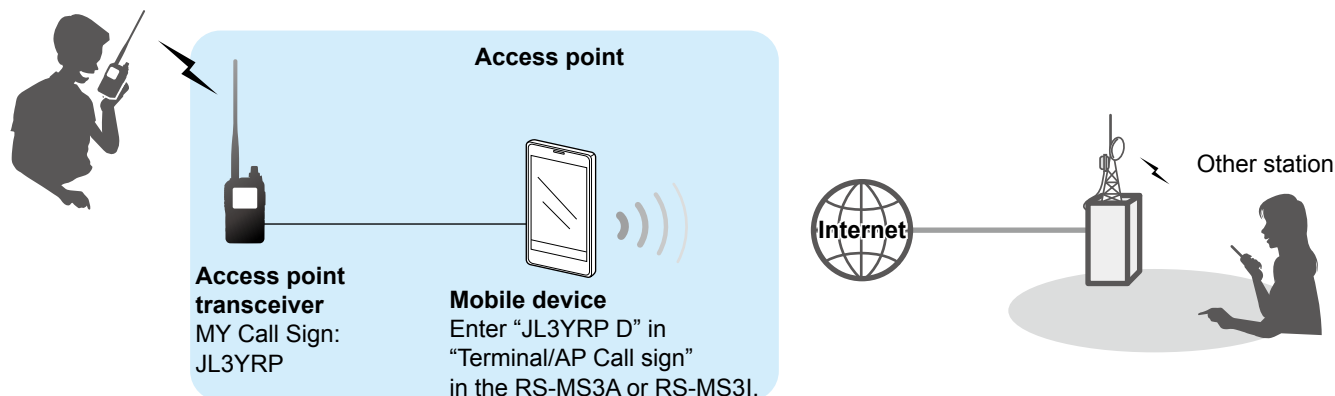
MY Call Sign: JA3YUA



When using a mobile device:

Remote D-STAR transceiver*

MY Call Sign: JA3YUA



* Any model as long as the transceiver is D-STAR capable.

Only one D-STAR transceiver can access the Access Point at the same time.

1 Preparation

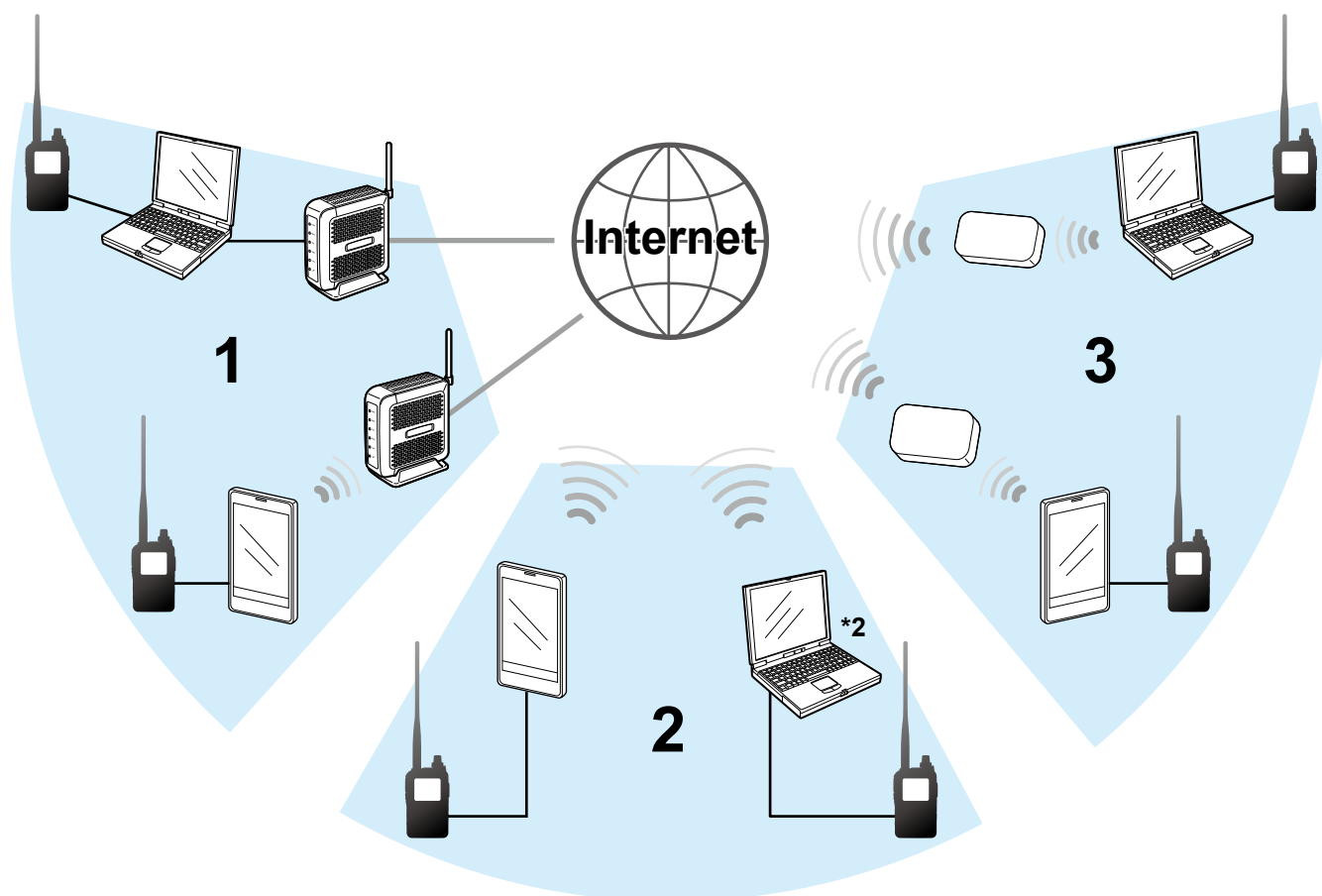
■ Setting up a network

Before using the DV Gateway function, you have to set up a network.

1. When connecting your device*¹ to the Internet using a router (p. 9)
2. When connecting your device*¹ to the Internet using a cellular system (p. 10)
3. When connecting your device*¹ to the Internet using a mobile router (p. 11)

*¹ Windows, Android, or iOS device

NOTE: Depending on your contract, you may be charged a large or additional communication fee. Ask your Internet service provider about the content of your contract.



*² You can use a cellular system compatible computer.

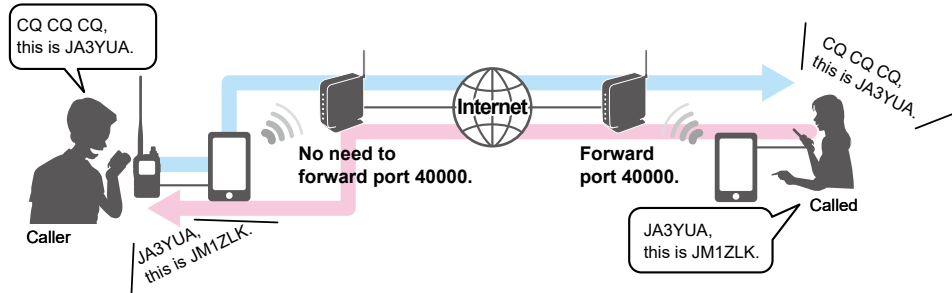
1 Preparation

■ Setting up a network

About the UDP Hole Punch function

When both the caller station and the called station use the Terminal or Access Point mode, the caller station does not need to:

- Assign an IPv4 Global IP address to the router's WAN port and forward port 40000 when connecting to the Internet using the router.
- Use a device assigned a static or dynamic IPv4 Global IP address.

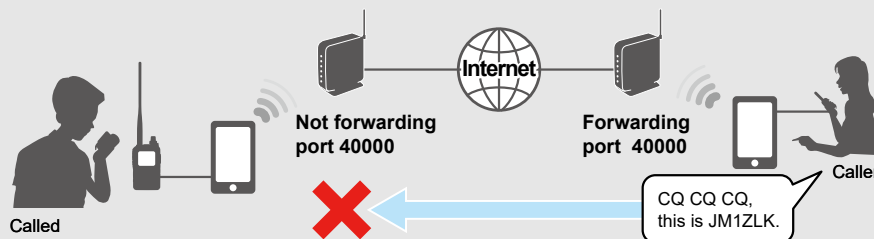


① Information

- Depending on your Network environment, you may not be able to use this function.
- The caller station must set "UDP Hole Punch" to "ON" in the RS-MS3W/RS-MS3A/RS-MS3I to use this function.
When not using this function, set "UDP Hole Punch" to "OFF."
- A few minutes* after the call, the caller station cannot receive from the called station. In this case, the caller station must transmit to the called station again.
* Less than 3 minutes, depending on the router.

NOTE:

- Use version of the RS-MS3W/RS-MS3A/RS-MS3I application software, as shown below.
RS-MS3W: version 1.30 or later
RS-MS3A: version 1.31 or later
RS-MS3I: version 1.0.0 or later
- The caller station cannot communicate with the called station when:
 - The caller station is using an earlier version software or firmware.
 - The called station using an earlier version software or firmware.
 - The called station calls through a local repeater instead of using the Terminal or Access Point mode.
- Even if using the latest version, the called station needs to forward port 40000 when connecting to the Internet using a router, or to use a device assigned a static or dynamic Global IP address to communicate with the caller station.



1 Preparation

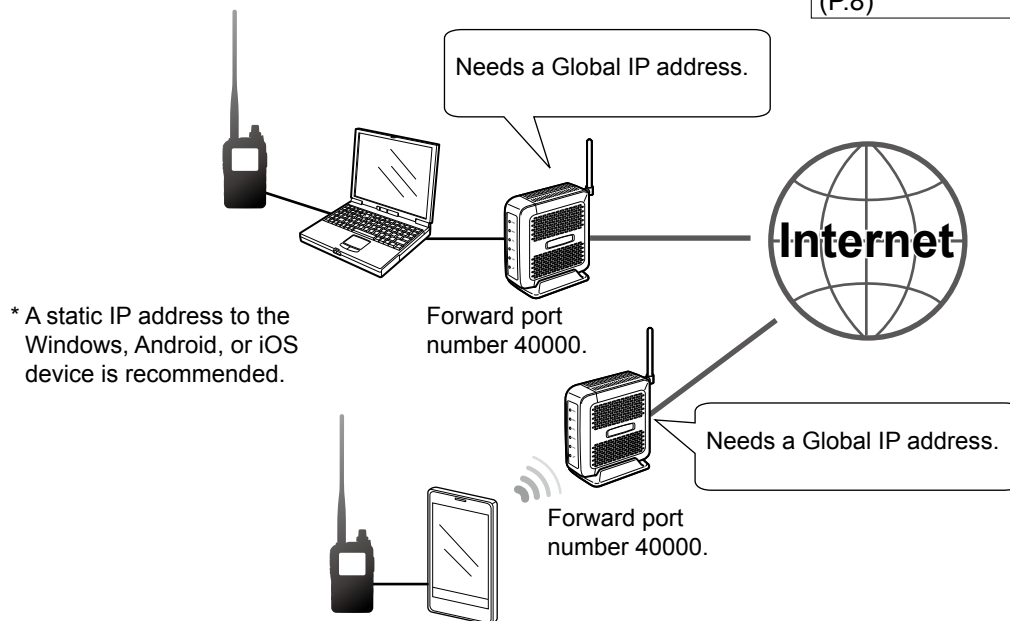
■ Setting up a network

◇ When connecting your device to the Internet using a router

The following are required to use the DV Gateway function.

- An Internet connection with an IPv4 Global IP address
- A static* local IP address set to your Windows, Android, or iOS device
- Port forwarding of port 40000

When Global IP address is not assigned or the port is not forwarded, see the “About the UDP Hole Punch function.” (P.8)



1. A Global IP address

A static or dynamic IPv4 Global IP address assigned to the router is needed.

- ① Your router may not have a Global IP address, depending on your Internet service provider.
Ask your Internet service provider about the Global IP address setting.

2. Setting a static local IP address to your device

When using a router, you need to set a static local IP address to the Windows, Android, or iOS device.

- ① Usable IP addresses differ, depending on your router. Ask the router's manufacturer for details.
- ① Do not set the same IP address to two or more devices that are connected to the same router.
- ① Ask your device's manufacturer about the setting details.

3. Port forwarding

When using a router, enable communication with the Internet, as described below.

- Forward the port number 40000 that is used in the RS-MS3W, RS-MS3A, or RS-MS3I.
- “UDP” should be used as the port protocol.
- Set a static local IP address in Procedure 2 (2. Setting a static local IP address to your device) as a destination port.
- ① Ask the router's manufacturer about how to forward the port.
- ① Only one Windows, Android, or iOS device connected to the router can use the DV Gateway function at the same time.
- ① Depending on the router settings, you must configure the IP filter settings. Check the router's manual on how to configure the settings.

→ When using a Windows device, go to “Setting up the RS-MS3W.” (p. 12)

→ When using an Android device, go to “Setting up the RS-MS3A.” (p. 13)

→ When using an iOS device, go to “Setting up the RS-MS3I.” (p. 15)

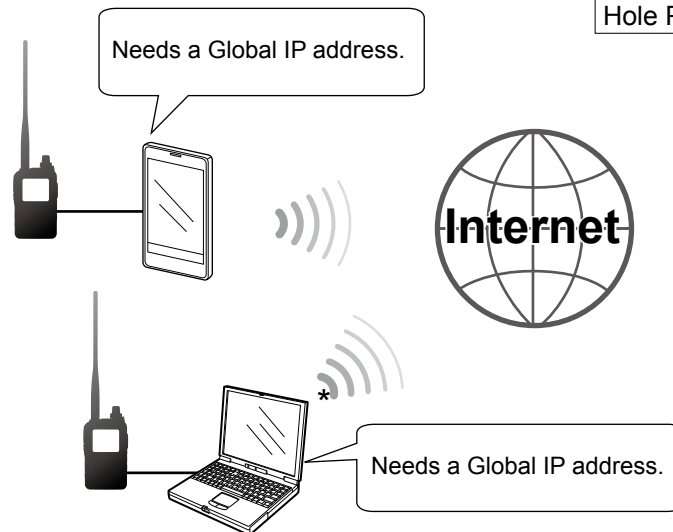
1 Preparation

■ Setting up a network

◆ When connecting your device to the Internet using a cellular system

A Global IP address is required to use the DV Gateway function.

When Global IP address is not assigned, see the “About the UDP Hole Punch function.” (P.8)



*You can use a cellular system compatible computer.

A Global IP address

A static or dynamic IPv4 Global IP address assigned to your Windows, Android, or iOS device is needed. Ask your Internet service provider to provide a Global IP address to your device.

NOTE:

- Turn OFF your Wi-Fi setting when you operate using a cellular system.
- Communication errors may occur when using a cellular system.
- Depending on your contract, you may be charged a large or additional communication fee. Ask your cellular system company about the content of your contract.

→ When using a Windows device, go to “Setting up the RS-MS3W.” (p. 12)

→ When using an Android device, go to “Setting up the RS-MS3A.” (p. 13)

→ When using an iOS device, go to “Setting up the RS-MS3I.” (p. 15)

1 Preparation

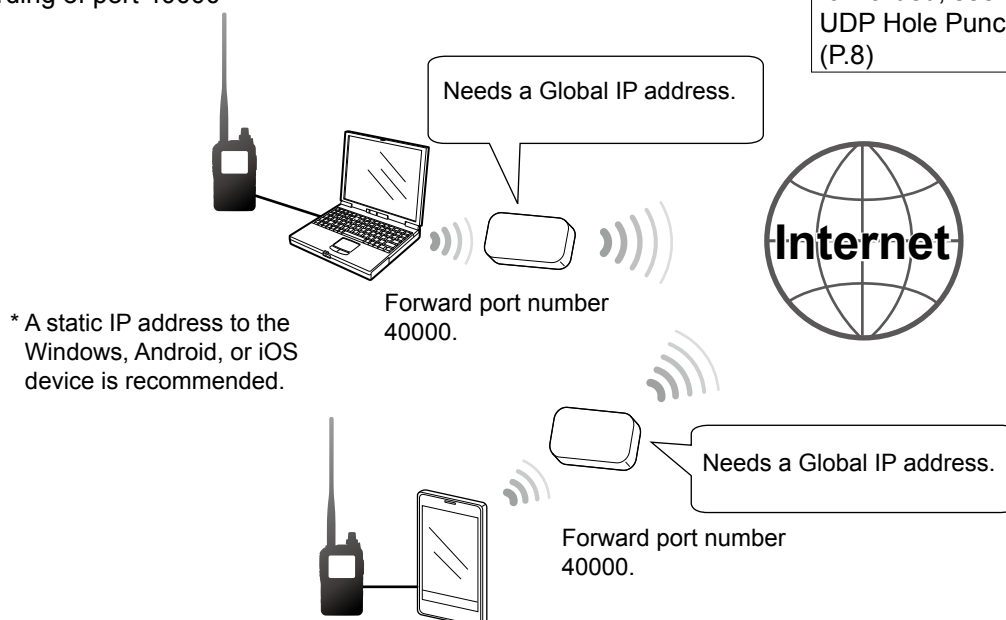
■ Setting up a network

◇ When connecting your device to the Internet using a mobile router

The following items are required to use the DV Gateway function.

- An Internet connection with an IPv4 Global IP address
- A static* local IP address set to your Windows, Android, or iOS device
- Port forwarding of port 40000

When Global IP address is not assigned or the port is not forwarded, see the “About the UDP Hole Punch function.” (P.8)



1. A Global IP address

A static or dynamic IPv4 Global IP address assigned to the router is needed.

- ① Your router may not have a Global IP address, depending on your Internet service provider.
Ask your Internet service provider about the Global IP address setting.

2. Setting a static local IP address to your device

When using a mobile router, you need to set a static local IP address to the Windows, Android, or iOS device.

- ① Usable IP address differs depending on your router. Ask the router's manufacturer for details.
- ① Do not set the same IP address to two or more devices that are connected to the same router.
- ① Ask your device's manufacturer about the setting details.

3. Port forwarding

When using a mobile router, enable communication with the Internet, as described below.

- Forward the port number 40000 to your cellular device.
- “UDP” should be used as the port protocol.
- Set a static local IP address in Procedure 2 (2. Setting a static local IP address to your device) as a destination port.
- ① Ask the mobile router's manufacturer about how to forward the port.
- ① Only one Windows, Android, or iOS device connected to the mobile router can use the DV Gateway function at the same time.
- ① Depending on the router settings, you must configure the IP filter settings. Check the router's manual on how to configure the settings.

→ When using a Windows device, go to “Setting up the RS-MS3W.” (p. 12)

→ When using an Android device, go to “Setting up the RS-MS3A.” (p. 13)

→ When using an iOS device, go to “Setting up the RS-MS3I.” (p. 15)

2 Setting up the RS-MS3W/RS-MS3A/RS-MS3I

■ Setting up the RS-MS3W

The RS-MS3W is a Windows application to use the DV Gateway function.

You can download it from the Icom website.

① See page 3 for system requirements.

◇ Installing the RS-MS3W

Download the latest RS-MS3W and its instruction manual from the Icom website.

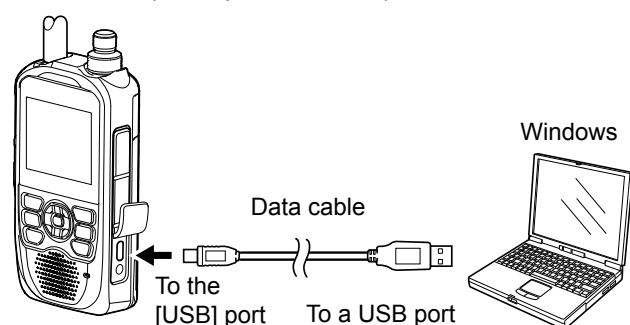
Read the RS-MS3W instruction manual on how to install the software.

① Search by "RS-MS3W."

<https://www.icomjapan.com/support/>

◇ Connecting the data cable

Connect the transceiver to the Windows using the data cable. (Example: ID-52A/E)



When using the ID-52A/ID-52E/ID-50A/ID-50E/ID-52A PLUS/ID-52E PLUS

Confirm the "USB Connect" in the Set mode is set to "Serialport."

([MENU] > SET > Function > **USB Connect**)

① For the ID-52A/ID-52E or ID-52A PLUS/ID-52E PLUS, "USB COM" is displayed when connecting to a PC in the Serialport mode.

When using the ID-31A PLUS/ID-31E PLUS/ID-51A (PLUS2)/ID-51E (PLUS2)

Connect the data cable to the [DATA] jack.

NOTE: Turn OFF the transceiver before connecting or disconnecting the data cable.

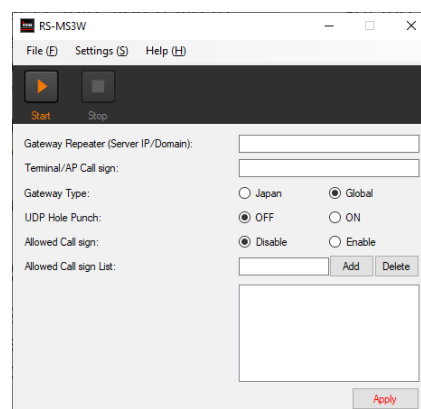
◇ COM port settings

Set the data port.

1. After connecting, turn ON the transceiver.
2. Click "Com Port (P)" in the "Settings (S)."
 - Com Port Setting window is displayed.
3. Select the COM port number that the data cable is connected to.
 - ① Click "▼" to display the COM ports on a drop-down list.
 - ① See the data cable's Installation Guide you can download on the Icom website, for details on checking the COM port number.
4. Click <OK>.

◇ Setting the RS-MS3W

Set the RS-MS3W to start using the DV Gateway function.



① The screen may be different, depending on the application version.

Read the RS-MS3W instruction manual about each setting item.

NOTE: About the Firewall setting

When you use a firewall security software, a communication error may occur by the firewall blocking the necessary ports or data. Before using the DV Gateway function, confirm that the RS-MS3W's communication is not blocked.

① Ask your firewall security software's manufacturer about the setting details.

2 Setting up the RS-MS3W/RS-MS3A/RS-MS3I

■ Setting up the RS-MS3A

The RS-MS3A is an application for Android device to use the DV Gateway function.

Download the application from Google Play.

① See page 3 for system requirements.

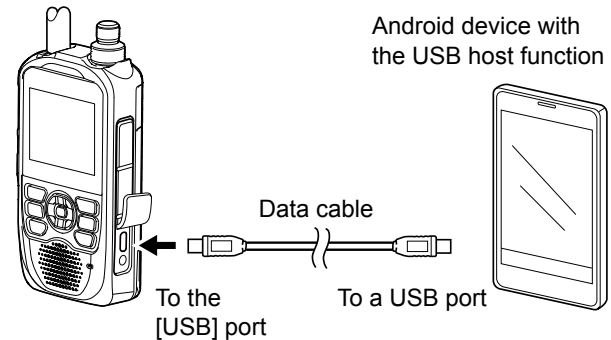
ID-52A PLUS/ID-52E PLUS can connect the transceiver to an Android device using the Bluetooth.

◇ Installing the RS-MS3A

1. Start the Android device.
2. Touch "Play store."
3. Enter "RS-MS3A."
 - ① Do not abbreviate the application name to certainly find it.
4. Touch "🔍 (search)"
5. Touch "RS-MS3A."
 - The RS-MS3A application information is displayed.
 - ① If your Android device is not compatible with the RS-MS3A, the application is not displayed.
6. Touch "Install."
7. Touch "Agree to download."
 - Starts installing the application.
 - After the installation is completed, the icon is displayed on your home screen.

◇ When connecting with the data cable

Connect the transceiver to the Android device using the data cable. (Example: ID-52A/E)



ID-52A/ID-52E:

- Connect the USB Micro-B connector (in the case of OPC-2417, the one with the white tube) to the transceiver and the other to an Android device.
- If "USB COM" is not displayed when connecting the transceiver to an Android device, set "USB Connect" to "Serialport."
([MENU] > SET > Function > **USB Connect**)

ID-50A/ID-50E or ID-52A PLUS/ID-52E PLUS:

Confirm the "USB Connect" in the Set mode is set to "Serialport."

([MENU] > SET > Function > **USB Connect**)

- When connecting the transceiver to an Android device, "USB COM" is displayed on the ID-52A PLUS/ID-52E PLUS.

ID-31A PLUS/ID-31E PLUS/

ID-51A (PLUS2)/ID-51E (PLUS2):

Connect the data cable to the [DATA] jack.

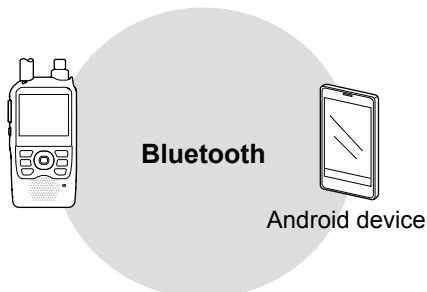
NOTE:

- Turn OFF the transceiver before connecting or removing the data cable.
- Remove the data cable when you do not use it. Otherwise, the battery will be quickly exhausted. If you want to reduce the battery consumption of your Android device while the data cable is connected, set the following item on the transceiver to "OFF."
([MENU] > SET > Function > **USB Power Input (Phone, Tablet, PC)**)
- If the application selection window is displayed, select "RS-MS3A" to start the application.

2 Setting up the RS-MS3W/RS-MS3A/RS-MS3I

■ Setting up the RS-MS3A

◇ When connecting to the Bluetooth function



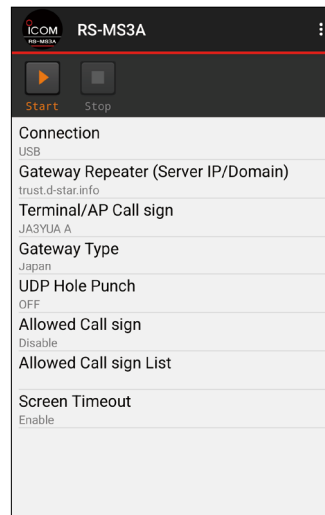
ID-52A PLUS/ID-52E PLUS:

Before connecting to an Android device, you must pair with it. See the transceiver's Advanced manual for connection details.

NOTE: Disconnect a paired the Android device when you are not using the RS-MS3A. When you leave it connected, the Android device's battery is quickly exhausted.

◇ Setting the RS-MS3A

Set the RS-MS3A to start using the DV Gateway function.



① The screen may be different, depending on the application version.

Read the RS-MS3A instruction manual about each setting item.

① Search by "RS-MS3A."

<https://www.icomjapan.com/support/>

NOTE for connecting with a USB cable:

When an Android device does not work properly, try moving the Access Point transceiver to a distant place from the Android device.

2 Setting up the RS-MS3W/RS-MS3A/RS-MS3I

■ Setting up the RS-MS3I

The RS-MS3I is an application for iOS device to use the DV Gateway function.

Download the application from App Store.

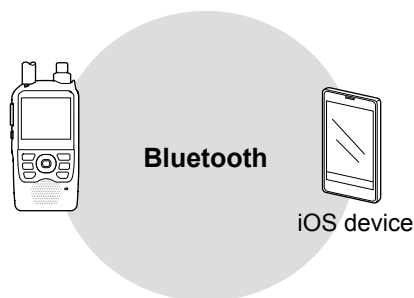
① See page 3 for system requirements.

ID-52A PLUS/ID-52E PLUS can connect the transceiver to an iOS device using the Bluetooth.

◇ Installing the RS-MS3I

1. Start the iOS device.
2. Touch "App Store."
3. Touch "🔍 (search)"
4. Enter "RS-MS3I." in the search field.
 - The RS-MS3I will be displayed as the search result.
 - ① You may need to enter "RS-MS3I" as a complete word to get the search result.
 - ① If your iOS device is not compatible with the RS-MS3I, the application is not displayed.
5. Touch "RS-MS3I."
6. Touch "<GET>."
 - Starts installing the application.
 - After the installation is completed, the icon is displayed on your home screen.

◇ Connecting to the Bluetooth function



ID-52A PLUS/ID-52E PLUS:

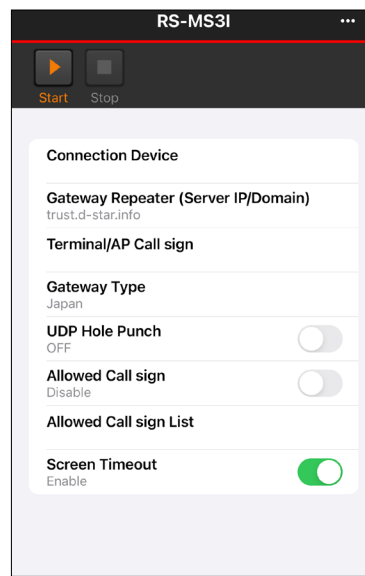
Before connecting to an iOS device, you must pair with it. See the transceiver's Advanced manual for connection details.

NOTE:

- You cannot pair with an iOS device in its Settings app. To pair with an iOS device, use Icom application.
- Disconnect a paired the iOS device when you are not using the RS-MS3I. When you leave it connected, the iOS device's battery is quickly exhausted.

◇ Setting the RS-MS3I

Set the RS-MS3I to start using the DV Gateway function.



① The screen may be different, depending on the application version.

Read the RS-MS3I instruction manual about each setting item.

① Search by "RS-MS3I."

<https://www.icomjapan.com/support/>

3 Terminal mode operation

■ Setting the Terminal mode

◇ When using the ID-31A/E PLUS, ID-51A/E (PLUS2), ID-52A/E, ID-50A/E

① In this document, the ID-52A/ID-52E is used as an example.

[Transceiver operation]

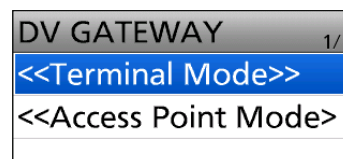
1. Push [MENU].

2. Select "DV Gateway."

3. Select "<<Terminal Mode>>."

When using the UDP Hole Punch function

Set "UDP Hole Punch" to "ON" in the RS-MS3W or RS-MS3A. (p. 8)



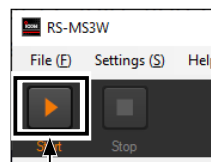
"TM" is displayed when using the ID-31A PLUS/ID-31E PLUS.

[Windows or Android operation]

① When using the RS-MS3A application, select "USB" in the RS-MS3A "Connection."

- Click (touch) <Start>  in the RS-MS3W or RS-MS3A.

① If an error message is displayed, see page 17 to read the tips to solve the problem.



Click



Touch

TIP: Canceling the Terminal mode

[Windows or Android operation]

1. Click (touch) <Stop>  in the RS-MS3W or RS-MS3A.

[Transceiver operation]

2. Select "<<Normal Mode>>" in the Quick Menu or "DV Gateway" on the MENU screen.

① To display the Quick Menu, push [QUICK].

NOTE: In the Terminal mode

- The Power Save function and the Time Out Timer function are not activated.
- The Following items are automatically set.

ID-31A PLUS/ID-31E PLUS	ID-51A (PLUS2)/ID-51E (PLUS2)/ID-52A/ID-52E/ID-50A/ID-50E
Receive mode: DV mode	Receive mode: DV mode
DR function: ON*	DR function: ON (MAIN band)*
FROM: MY Call Sign	FROM: MY Call Sign
	Dualwatch function: OFF*

* These settings do not return to the previous settings even if you cancel the Terminal mode.

- The Terminal mode is not automatically canceled even if you turn OFF the transceiver, then ON it again.

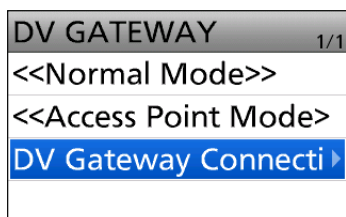
3 Terminal mode operation

■ Setting the Terminal mode

◇ When using the ID-52A/E PLUS

[Transceiver operation]

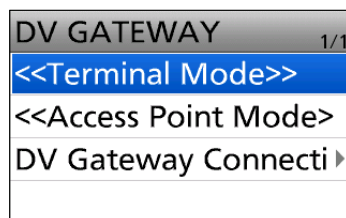
1. Push [MENU].
2. Select "DV Gateway."
3. Select "DV Gateway Connection."



4. Select "USB" or "Bluetooth."



5. Select "<<Terminal Mode>>."



- ① ID-52A PLUS/ID-52E PLUS can change the MAIN band or SUB band in the terminal mode.

When using the UDP Hole Punch function

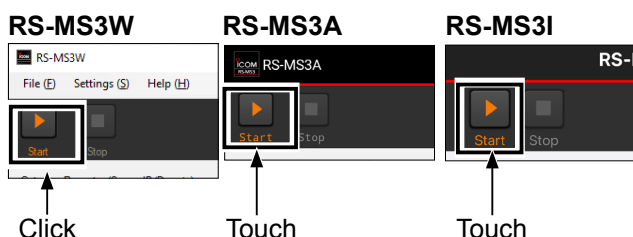
Set "UDP Hole Punch" to "ON" in the RS-MS3W, RS-MS3A, or RS-MS3I. (p. 8)

[Windows, Android, or iOS operation]

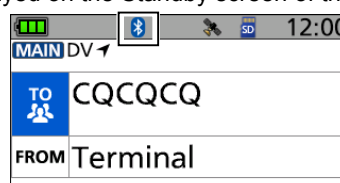
① When using the RS-MS3A application, select "Bluetooth Connection Device" or "USB" in the RS-MS3A "Connection."

- Click (touch) <Start> in the RS-MS3W, RS-MS3A, or RS-MS3I.

① If an error message is displayed, see page 31 to read the tips to solve the problem.



- For Bluetooth connection, the Bluetooth icon is displayed on the Standby screen of the transceiver.



TIP: Canceling the Terminal mode

[Windows, Android, or iOS operation]

1. Click (touch) <Stop> in the RS-MS3W, RS-MS3A, or RS-MS3I.

[Transceiver operation]

2. Push [VFO/MHz].
 - ① You can also cancel by selecting "<<Normal Mode>>" in the Quick Menu or "DV Gateway" on the MENU screen. To display the Quick Menu, push [QUICK].

NOTE: In the Terminal mode

- The Power Save function and the Time Out Timer function are not activated.
- The Following items are automatically set.
 Receive mode: DV mode
 DR function: ON (MAIN band)*
 FROM: MY Call Sign
 * These settings do not return to the previous settings even if you cancel the Terminal mode.
- The Terminal mode is not automatically canceled even if you turn OFF the transceiver, then ON it again.

3 Terminal mode operation

■ Operating in the Terminal mode

You can operate the transceiver as described below in the Terminal mode.

What you can do while in the Terminal mode	
Display the TO SELECT screen.	Push [ENT].
Switch transmit or receive.	Hold down [PTT] or release it to transmit or receive. ① While transmitting, the TX/RX indicator lights orange. ① While receiving, the TX/RX indicator lights green. ① While receiving a signal through the Internet, you cannot transmit.
Display the RX HISTORY screen.	Hold down [CD] for 1 second.
Open the MENU screen.	Push [MENU].
Turn the Key Lock function ON or OFF.	Hold down [LOCK] for 1 second.
Open the Quick Menu*.	Push [QUICK].
Audibly announce the displayed Call Sign.	Hold down [SPCH] for 1 second. ① Hold down [QUICK] for 1 second when using the ID-31A PLUS/ID-31E PLUS.
Enter the Operating Call Sign Select mode.	Check in the "Call Sign" setting. ([MENU] > SET > Call Sign) ① When using the ID-51A (PLUS2)/ID-51E (PLUS2)/ID-31A PLUS/ID-31E PLUS, hold down [CS] for 1 second.
Display the RX History list.	Hold down [RX→CS] for 1 second.
Adjust the audio volume level.	Rotate [VOL].
Set "TO" (Destination).	Rotate [DIAL].
Turn the transceiver ON or OFF.	Hold down [⏻] for 1 second. ① The Terminal mode is not automatically canceled even if you turn OFF the transceiver, then ON it again.

* You can select the following items (Quick Menu) in the Terminal mode.

<<Normal Mode>>
Group Select
Repeater Detail
DTMF TX
Voice TX
GPS Information
GPS Position
Display Type
D.SQ ("DSQ" for the ID-51A (PLUS2)/ID-51E (PLUS2)/ ID-31A PLUS/ID-31E PLUS)
Voltage
<<REC Start>>
<<FM Radio ON>> (For only the ID-52A PLUS/ID-52E PLUS)
<<FM Radio Mode>> (For only the ID-52A PLUS/ID-52E PLUS)
<<GPS Logger Only>>

TIP: See the transceiver's manual about each key operation.

ID-31A PLUS/ID-31E PLUS
Basic manual Section 2, 3, 11
Advanced manual Section 4, 11

ID-51A (PLUS2)/ID-51E (PLUS2)
Basic manual Section 2, 4, 6
Advanced manual Section 8, 9, 16

ID-52A/ID-52E/ID-50A/ID-50E/
ID-52A PLUS/ID-52E PLUS
Basic manual Section 2, 3, D-STAR OPERATION
Advanced manual Section 5, 12

3 Terminal mode operation

■ Operating in the Terminal mode

◇ Setting “TO” (Destination) to make a call

“CQCQCQ,” the destination repeater, or station call sign must be set in “TO” when you make a DV mode call.

You have 7 ways to set the destination.

By rotating [DIAL]

Rotate [DIAL] to select the repeater or Your Call Sign displayed on the DR screen. (This operation is disabled when “CQCQCQ” is set.)

① You can select the “Local CQ,” but cannot make a call.

To make a Gateway CQ call

“Gateway CQ” setting (p. 20)

Select a repeater from the Repeater List, if you want to make a Gateway call.

To make a call to a specific station

“Your Call Sign” setting (p. 21)

Select the station call sign in the Your Call Sign list.

① You cannot make a call through a reflector.

To select from RX History

Setting from the RX History*

When you receive a call, repeater or caller station data is saved in RX History. Select the destination from the record.

To select from TX History

Setting from the TX History*

When you make a call, the destination repeater or called station data is saved in TX History. Select the destination from the record.

To directly enter the destination station call sign

Direct Input (UR)*

Directly enter the destination station’s call sign.

To directly enter the destination repeater call sign

Direct Input (RPT)*

Directly enter the destination repeater’s call sign.

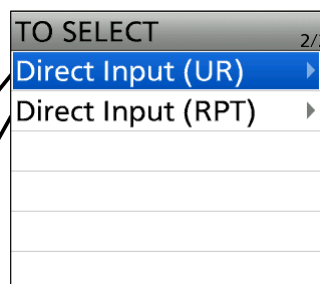
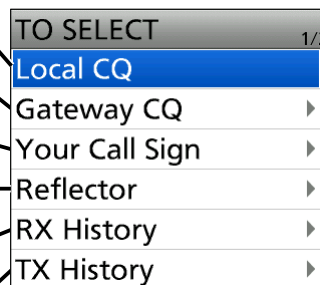
NOTE: In the Terminal mode, you can make a Gateway CQ call or a call to a specific station using call sign routing.

TIP: How to change the repeater group:

When “Gateway CQ” is selected, you can change the repeater group.

To change the repeater group on the DR screen, push [QUICK], then select “Group Select.”

TO SELECT screen



* See the transceiver’s Advanced manual for details.

ID-31A PLUS/ID-31E PLUS: Section 4

ID-51A (PLUS2)/ID-51E (PLUS2): Section 8

ID-52A/ID-52E/ID-50A/ID-50E/

ID-52A PLUS/ID-52E PLUS: Section 5

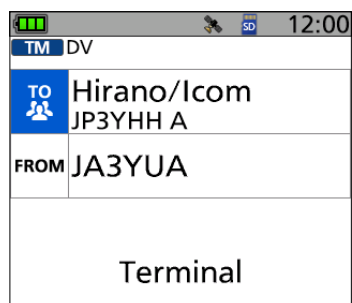
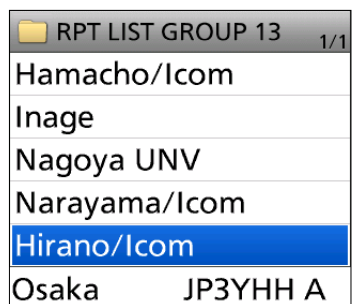
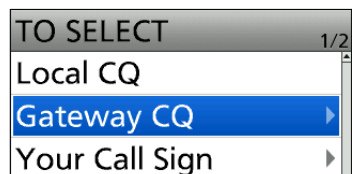
3 Terminal mode operation

■ Operating in the Terminal mode

◇ Setting “TO” (Destination) to make a call

Example: Making a Gateway CQ call

1. Push [ENT].
 - Displays the TO SELECT screen.
2. Select “Gateway CQ.”
3. Select the repeater group where your destination repeater is listed.
(Example: “13: Japan”)
4. Select the destination repeater.
(Example: “Hirano/Icom”)
5. Hold down [PTT] to transmit.
 - While transmitting, the TX/RX indicator lights orange.
 - ① While receiving a signal through the Internet, you cannot transmit.
6. Release [PTT] to receive.
 - ① If you cannot receive a reply, see page 33 to read the tips to solve the problem.



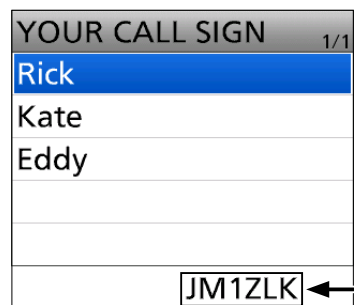
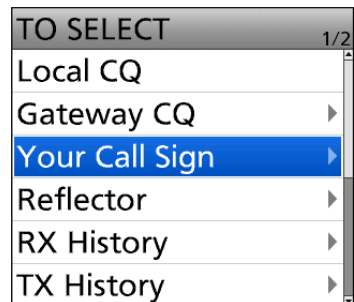
3 Terminal mode operation

■ Operating in the Terminal mode

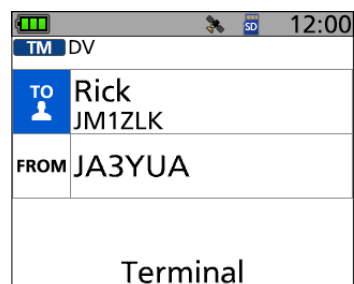
◇ Setting “TO” (Destination) to make a call

Example: Making a call to a specific station

1. Push [ENT].
 - Displays the TO SELECT screen.
2. Select “Your Call Sign.”
3. Select the destination. (Example: “Rick”)
 - “Rick” is displayed in “TO.”
4. Hold down [PTT] to transmit.
 - While transmitting, the TX/RX indicator lights orange.
 - ① While receiving a signal through the Internet, you cannot transmit.
5. Release [PTT] to receive.
 - ① If you cannot receive a reply, see page 33 to read the tips to solve the problem.



← The call sign of the selected station is displayed.



4 Access Point mode operation

■ Setting the Access Point mode

◇ When using the ID-31A/E PLUS, ID-51A/E (PLUS2), ID-52A/E, ID-50A/E

In this section, set an Access Point transceiver.

① In this document, the ID-52A/ID-52E is used as an example.

[Access Point transceiver operation]

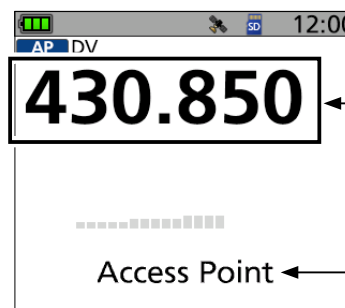
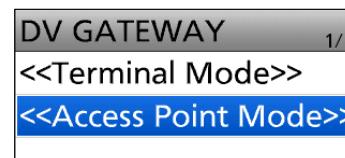
1. Push [MENU].
2. Select "DV Gateway."
3. Select "<<Access Point Mode>>."

When using the UDP Hole Punch function

Set "UDP Hole Punch" to "ON" in the RS-MS3W or RS-MS3A. (p. 8)

4. Rotate [DIAL] to set the operating frequency.
 - ① The frequency is used to communicate with the Remote D-STAR transceiver.
 - ① In the Access Point mode, you can change the operating frequency.

NOTE: BE SURE to check your local regulations or laws to select the appropriate operating frequency.



Set the operating frequency

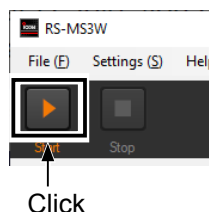
"AP" is displayed when using the ID-31A PLUS/ID-31E PLUS.

[Windows or Android operation]

① When using the RS-MS3A application, select "USB" in the RS-MS3A "Connection."

- Click (touch) <Start>  in the RS-MS3W or RS-MS3A.

① If an error message is displayed, see page 31 to read the tips to solve the problem.



Click



Touch

TIP: Canceling the Access Point mode

[Windows or Android operation]

1. Click (touch) <Stop>  in the RS-MS3W or RS-MS3A.

[Access Point transceiver operation]

2. Select "<<Normal Mode>>" in the Quick Menu or "DV Gateway" on the MENU screen.
 - ① To display the Quick Menu, push [QUICK].

NOTE: In the Access Point mode

- The Power Save function is not activated.
- Following items are automatically set.
 - Operating mode: VFO mode*
 - Frequency band: VHF* (Only when using the ID-51A (PLUS2)/ID-51E (PLUS2) and the AIR band is set.)
VHF* or UHF* (Only when using the ID-52A/ID-52E/ID-50A/ID-50E, when a frequency that is in the AIR band is selected, when a frequency that is out of the amateur radio band is selected, or when a frequency that cannot be set in the DV mode is selected.)
 - Receive mode: DV mode*
 - Dualwatch function: OFF* (Only when using the ID-51A (PLUS2)/ID-51E (PLUS2)/ID-52A/ID-52E/ID-50A/ID-50E.)
 - Duplex mode: OFF*
- * These settings do not return to the previous settings even if you cancel the Access Point mode.
- The Access Point mode is not automatically canceled even if you turn OFF the transceiver, then ON it again.

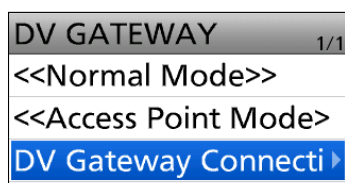
4 Access Point mode operation

■ Setting the Access Point mode

◇ When using the ID-52A/E PLUS

[Access Point transceiver operation]

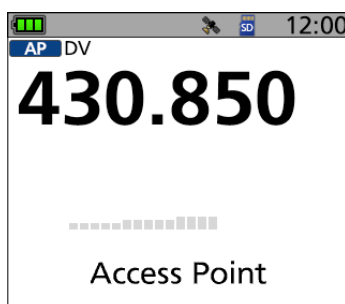
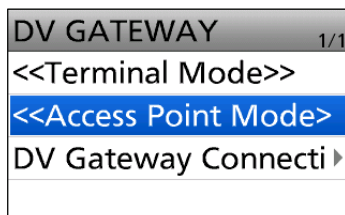
1. Push [MENU].
2. Select “DV Gateway.”
3. Select “DV Gateway Connection.”



4. Select “USB” or “Bluetooth.”



5. Select “<<Access Point mode>>.”



6. Rotate [DIAL] to set the operating frequency.
① The frequency is used to communicate with the Remote D-STAR transceiver.
① In the Access Point mode, you can change the operating frequency.

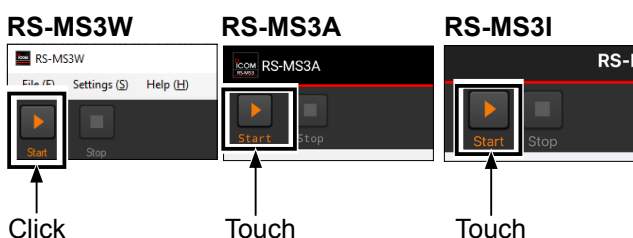
NOTE: BE SURE to check your local regulations or laws to select the appropriate operating frequency.

When using the UDP Hole Punch function

Set “UDP Hole Punch” to “ON” in the RS-MS3W, RS-MS3A, or RS-MS3I. (p. 8)

[Windows, Android, or iOS operation]

- ① When using the RS-MS3A application, select “Bluetooth Connection Device” or “USB” in the RS-MS3A “Connection.”
- Click (touch) <Start> in the RS-MS3W, RS-MS3A, or RS-MS3I.
① If an error message is displayed, see page 31 to read the tips to solve the problem.



- For Bluetooth connection, the Bluetooth icon is displayed on the Standby screen of the transceiver.



TIP: Canceling the Access Point mode

[Windows, Android, or iOS operation]

1. Click (touch) <Stop> in the RS-MS3W, RS-MS3A, or RS-MS3I.

[Access Point transceiver operation]

2. Select “<<Normal Mode>>” in the Quick Menu or “DV Gateway” on the MENU screen.
① To display the Quick Menu, push [QUICK].

NOTE: In the Access Point mode

- The Power Save function is not activated.
- Following items are automatically set.
Operating mode: VFO mode*
Frequency band: VHF* or UHF* (Only when a frequency that is in the AIR band is selected, when a frequency that is out of the amateur radio band is selected, or when a frequency that cannot be set in the DV mode is selected)
- Receive mode: DV mode*
- Dualwatch function: OFF*
- Duplex mode: OFF*
- * These settings do not return to the previous settings even if you cancel the Access Point mode.
- The Access Point mode is not automatically canceled even if you turn OFF the transceiver, then ON it again.

4 Access Point mode operation

■ Operating in the Access Point mode

You can operate the Access Point transceiver as described below in the Access Point mode.

What you can do while in the Terminal mode	
Display the RX HISTORY screen.	Hold down [CD] for 1 second.
Turn the Monitor function ON or OFF	Push [SQL]. ① Rotate [DIAL] while pushing [SQL] to adjust the squelch level. A weaker signal than the set squelch level is not transmitted through the Internet.
Open the MENU screen.	Push [MENU].
Turn the Key Lock function ON or OFF.	Hold down [LOCK] for 1 second.
Open the Quick Menu*.	Push [QUICK].
Audibly announce the displayed Call Sign.	Hold down [SPCH] for 1 second. ① Hold down [QUICK] for 1 second when using the ID-31A PLUS/ID-31E PLUS.
Select 1 MHz or 10 MHz tuning steps.	Push [VFO/MHz]. ① Push [V/MHz] when using the ID-31A PLUS/ID-31E PLUS/ID-51A (PLUS2)/ID-51E (PLUS2)/ID-50A/ID-50E. ① You cannot select 10 MHz tuning steps in the ID-31A PLUS/ID-31E PLUS/ID-52A/ID-52E/ID-50A/ID-50E/ID-52A PLUS/ID-52E PLUS.
Select the transmit output power.	Hold down [LOW] for 1 second to select the transmit output power between S-Low, Low1, Low2, Mid, and High. ① Hold down [LO] for 1 second to open the Select Output Power window when using the ID-52A/ID-52E/ID-50A/ID-50E/ID-52A PLUS/ID-52E PLUS. ① No icon appears when high power is selected. ① “SLO,” “LO1,” “LO2,” or “MID” appears when S-low, Low 1, Low 2, or Mid power is selected.
Adjust the audio volume level.	Rotate [VOL].
Select an operating frequency.	Rotate [DIAL].
Turn the transceiver ON or OFF.	Hold down [⏻] for 1 second. ① The Access Point mode is not automatically canceled even if you turn OFF the transceiver, then ON it again.

* You can select the following items (Quick Menu) in the Access Point mode.

<<Normal Mode>>
Band Select* ¹
TS
ATT* ^{1,2,3}
GPS Information
GPS Position
Home CH Set
Voltage
<<REC Start>>
<<GPS Logger Only>>

*¹ “Band Select” and “ATT” are not displayed when using the ID-31A PLUS/ID-31E PLUS.

*² “ATT” is not displayed when using the ID-51A (PLUS2)/ID-51E (PLUS2).

*³ Not displayed when using the Access Point mode on the B band.

TIP: See the transceiver’s manual about each key operation.

ID-31A PLUS/ID-31E PLUS
Basic manual Section 2, 3, 11
Advanced manual Section 11

ID-51A (PLUS2)/ID-51E (PLUS2)
Basic manual Section 2, 4, 6
Advanced manual Section 9

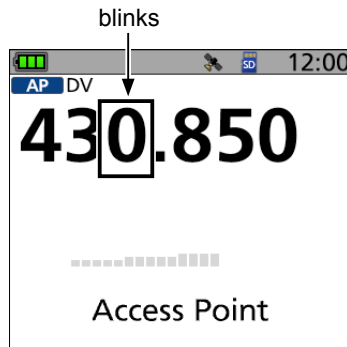
ID-52A/ID-52E/ID-50A/ID-50E/
ID-52A PLUS/ID-52E PLUS
Basic manual Section 2, 3, D-STAR OPERATION
Advanced manual Section 5

4 Access Point mode operation

■ Operating in the Access Point mode

◇ About the Quick Tuning function

1. In the VFO mode, push [VFO/MHz].
 - Enters the 1 MHz Tuning Select mode, and the 1 MHz digit blinks.
 - ① Push [V/MHz] when using the ID-31A PLUS/ID-31E PLUS/ID-51A (PLUS2)/ID-51E (PLUS2)/ID-50A/ID-50E.
 - ① You can select the 10 MHz step by pushing [V/MHz] again only when using the ID-51A (PLUS2)/ID-51E (PLUS2).



2. Rotate [DIAL].
 - The blinking digit is changed.
3. Push [VFO/MHz].
 - Exits the 1 MHz Tuning Select mode.
 - ① When using ID-51A (PLUS2)/ID-51E (PLUS2) and the 10 MHz step is selected, push [V/MHz] to cancel the Quick Tuning function.

NOTE:

- To prevent interfering, hold down [SQL] to listen on the channel before transmitting.
- **BE SURE** to check your local regulations or laws to select the appropriate operating frequency.

4 Access Point mode operation

■ Making a Gateway call through the Access point transceiver

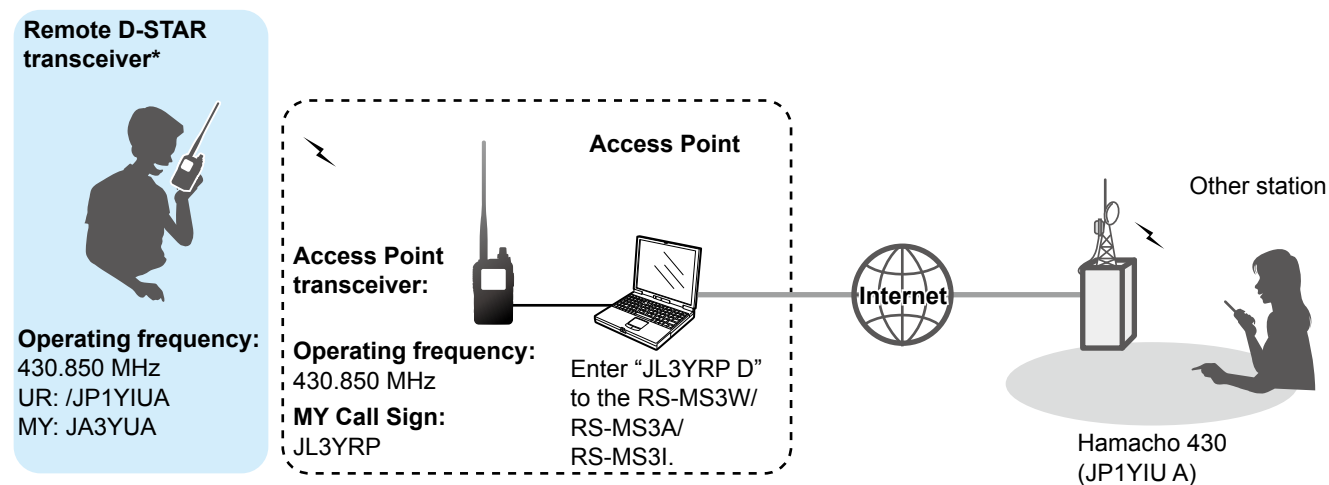
In this section, set a Remote D-STAR transceiver you are going to operate.

① Read the Remote D-STAR transceiver's instruction manual for setting details.

NOTE: While in the Access Point mode, you can make a Gateway CQ call or a call to an individual station using call sign routing.

① You can select the "Local CQ," but cannot make a call.

Example: When setting the operating frequency to 430.850 MHz, and making a Gateway CQ call.



* Any model as long as the transceiver is D-STAR capable.

Only one D-STAR transceiver can use the Access Point at the same time.

4 Access Point mode operation

■ Making a Gateway call through the Access point transceiver

◇ When using the DR function

NOTE: If you have imported the Repeater List, you have to register the Access Point information again because the Repeater List is overwritten.

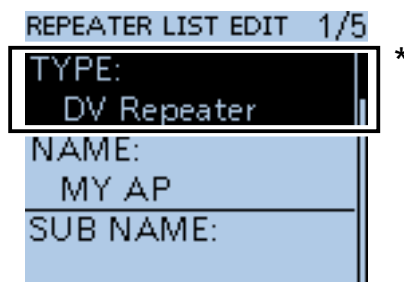
In this document, the ID-51A (PLUS2)/ID-51E (PLUS2) is used as a Remote D-STAR transceiver as an example.

1. Register the Access Point information to the Repeater List

① Register the Access Point information in the MENU screen.

(MENU > DV Memory > **Repeater List**)

1. Select a group you want to add your Access Point information.
2. After selecting a group, open the Repeater List Edit screen. (QUICK MENU > **Add**)
3. Set "DV Repeater" to "TYPE." *
① "DV Repeater" is used for Repeater operation in the DV mode.
4. Enter your favorite name into "NAME" and "SUB NAME." (Example: MY AP)



REPEATER LIST EDIT 1/5

TYPE:
DV Repeater

NAME:
MY AP

SUB NAME:

* For only the ID-31A/E PLUS, ID-51A/E (PLUS), or ID-51A/E (PLUS2)

5. Set the Access Point transceiver's call sign to "CALL SIGN."
(Example: JL3YRP)
① After setting "CALL SIGN," "GW CALL SIGN" is automatically set.



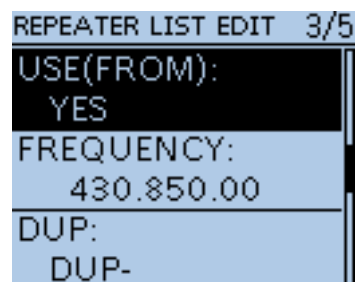
REPEATER LIST EDIT 2/5

CALL SIGN:
JL3YRP

GW CALL SIGN:
JL3YRP G

GROUP:
20 Simplex

6. Set "YES" to "USE (FROM)."
7. Set the Access Point transceiver's operating frequency to "FREQUENCY."
(Example: 430.850)
8. Set "DUP" to "DUP-."



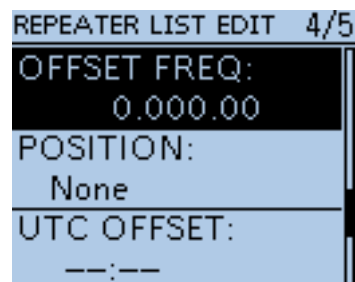
REPEATER LIST EDIT 3/5

USE(FROM):
YES

FREQUENCY:
430.850.00

DUP:
DUP-

9. Set "0.000.00" to "OFFSET FREQ."
10. Select "<<Add Write>>" and write the Access Point information.



REPEATER LIST EDIT 4/5

OFFSET FREQ:
0.000.00

POSITION:
None

UTC OFFSET:
--:--

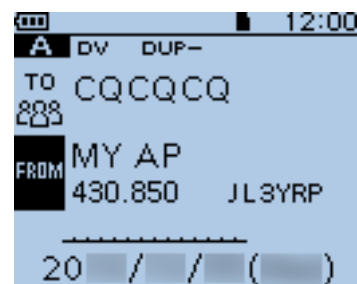
4 Access Point mode operation

■ Making a Gateway call through the Access point transceiver

◇ When using the DR function (Continued)

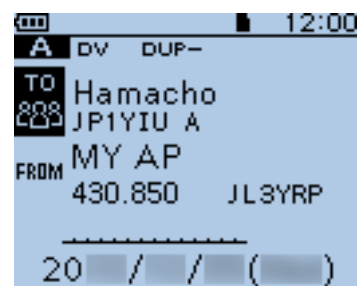
2. Set the Access Point using the DR function

Set the Access Point registered in Procedure 1
(1. Register the Access Point information to the
Repeater List) to "FROM."



3. Set "TO" and transmit

1. Set "TO" destination.
(Example: Hamacho 430)
① You can select the "Local CQ," but cannot make a call.
2. Hold down [PTT] to transmit.
3. Release [PTT] to receive.
① If you cannot receive a reply, see page 35 to read the tips to solve the problem.



4 Access Point mode operation

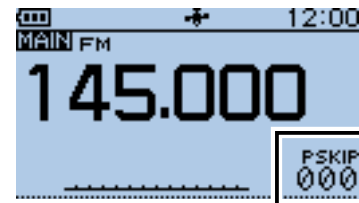
■ Making a Gateway call through the Access point transceiver

◇ When not using the DR function

In this document, the ID-51A (PLUS2)/ID-51E (PLUS2) is used as a Remote D-STAR transceiver as an example.

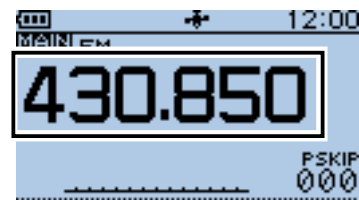
1. Enter the VFO mode.

Push [V/MHz].



2. Set the operating frequency.

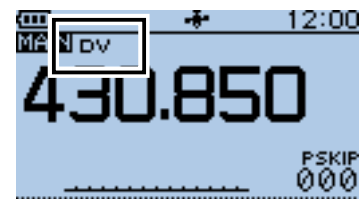
Rotate [DIAL] to set the frequency that is set to the Access Point transceiver. (Example: 430.850)



3. Set the Receive mode to "DV mode."

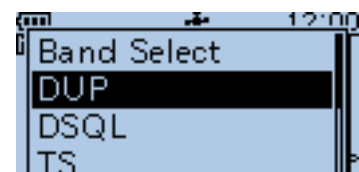
Push [MODE] several times until "DV" is displayed.

① When the "GPS TX Mode" is set, "DV-G" or "DV-A" is displayed.

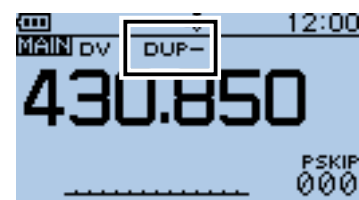
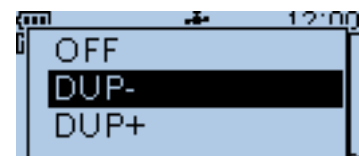


4. Set the duplex direction.

1. Push [QUICK].
2. Select "DUP."



3. Select "DUP-."



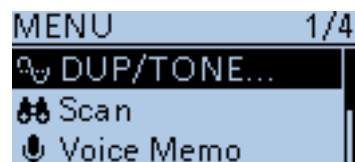
4 Access Point mode operation

■ Making a Gateway call through the Access point transceiver

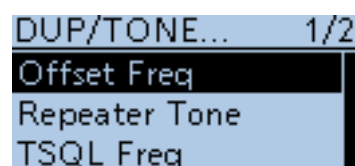
◇ When using the DR function (Continued)

5. Set the frequency offset.

1. Push [MENU].
2. Select "DUP/TONE...."



3. Select "Offset Freq."

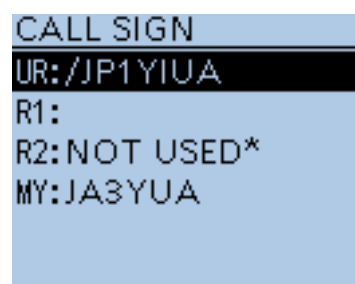


4. Set "0.000.00."
5. Push [MENU].
 - Returns to the standby screen.



6. Set the destination station call sign to "UR."

1. Hold down [CS] for 1 second to enter the Operating Call Sign Select mode.
2. Select "UR."
3. Set the destination repeater or destination station's call sign.
 - ① In the Access Point mode, you can select the "CQCQCQ" but cannot make a call.
4. Push [MENU].
 - Returns to the standby screen.



7. Hold down [PTT] to transmit.

1. Hold down [PTT] to transmit.
 2. Release [PTT] to receive.
- ① If you cannot receive a reply, see page 35 to read the tips to solve the problem.

TIP: When the settings are saved into a memory channel, you can quickly select them. Read the Remote D-STAR transceiver's instruction manual for details.

5 Troubleshooting

■ Error messages of the RS-MS3W, RS-MS3A, and RS-MS3I

If an error message is displayed when clicking (touching) <Start>  in the RS-MS3W, RS-MS3A or RS-MS3I, read the following chart. If you are unable to locate the cause of a problem or solve it through the use of this chart, contact your Icom Dealer or Service Center.

MESSAGE	POSSIBLE CAUSE	SOLUTION	REFERENCE
Gateway Repeater (Server IP/Domain) cannot be found.	- The gateway repeater address is not correctly entered. - Your device does not connect to the Internet.	- Correctly enter the gateway repeater address. - Connect your device to the Internet, and check whether or not you can access to a web site on the web browser.	RS-MS3W, RS-MS3A, RS-MS3I's instruction manual —
Terminal/AP Call sign is incorrect.	The Terminal/AP call sign is not correctly entered.	Correctly enter the call sign. ① The call sign consists of 8 characters. - Enter a space for the 7th character. - Enter a desired ID suffix between A and Z, except for G, I, and S, for the 8th character.	RS-MS3W, RS-MS3A, RS-MS3I's instruction manual
The USB cable is not connected.(1 * *)*	<When using the RS-MS3W> The transceiver and Windows device are not correctly connected. <When using the RS-MS3A> The transceiver and the Android device are not correctly connected.	- Check whether or not the transceiver and Windows device are correctly connected. - Check whether or not the transceiver and the Android device are correctly connected.	p. 12 p. 13
The USB cable is not connected.(2 * *)*	- The transceiver is not turned ON. - The transceiver is in the Normal mode. <When using the RS-MS3A> The transceiver is set for the Bluetooth connection.	- Turn ON the transceiver. - Enter the Terminal mode or the Access Point mode. - Change the "DV Gateway Connection" in the transceiver to "USB." ([MENU] > DV GW > DV Gateway Connection)	— pp. 32, 23 p. 17
Bluetooth has been disconnected.	- The transceiver is not turned ON. - The transceiver is far from your Android or iOS device. - Microwave ovens or Wireless LAN may cause interference. <When using the RS-MS3I> You touch <Stop> .	- Turning ON the transceiver. - Decrease the space between the transceiver and your Android or iOS device. - Use your Bluetooth device away from the other devices, or stop using those devices. - Touch <Start>  to connect again.	— — — —

* * *: Error code

5 Troubleshooting

■ Error messages of the RS-MS3W, RS-MS3A, and RS-MS3I

Bluetooth connection failed.	- The device name displayed in the application is not the transceiver that you want to connect to. - The transceiver is set for the USB connection.	- Update the Bluetooth connection and confirm it matches the device name. ([MENU] > SET > Bluetooth Set > Bluetooth Device Information) - Change the "DV Gateway Connection" in the transceiver to "Bluetooth." ([MENU] > DV GW > DV Gateway Connection)	— p. 17
Failed to connect to the network.	The application cannot create a socket for sending and receiving data.	- Check whether or not the port number (40000/40002) competes with other application. If so, stop the competing application. - Restart the RS-MS3W, RS-MS3A, or RS-MS3I. If an error message does not disappear, restart Windows, Android, or iOS device.	— —
RS-MS3W/RS-MS3A - A Network error occurred. RS-MS3I - An error has occurred.	System error occurs when receiving data from network.	Restart the RS-MS3W, RS-MS3A, or RS-MS3I. If the error message does not disappear, restart Windows, Android, or iOS device.	—
RS-MS3W/RS-MS3A Failed to start the service.	- The gateway repeater address or Terminal/AP call sign is not correctly entered. - System error occurs when the service started.	- Correctly enter the gateway repeater address or Terminal/AP call sign. - Restart the RS-MS3W, or RS-MS3A. If an error message does not disappear, restart Windows or Android device.	RS-MS3W, RS-MS3A's instruction manual —

5 Troubleshooting

■ Troubleshooting for the Terminal mode operation

The following chart is designed to help you correct problems which are not equipment malfunctions.

If you are unable to locate the cause of a problem or solve it through the use of this chart, contact your Icom Dealer or Service Center.

MESSAGE	POSSIBLE CAUSE	SOLUTION	REFERENCE
After your call, the repeater does not return a status reply.	- Transceiver connection is wrong. - You did not click (touch) <Start>  in the RS-MS3W, RS-MS3A, or RS-MS3I. "Allowed Callsign" is set to "Enable" in the RS-MS3W, RS-MS3A, or RS-MS3I.	- Check the connection between the transceiver and the Windows device, or the transceiver and the Android/iOS device. - Click (touch) <Start>  in the RS-MS3W, RS-MS3A, or RS-MS3I. - Set "Disable" to "Allowed Callsign" in the RS-MS3W, RS-MS3A, or RS-MS3I.	— RS-MS3W, RS-MS3A, RS-MS3I's instruction manual
After your call, the repeater replies "UR?," Your own call sign (MY) and ID suffix "G."	- The call was successfully sent, but no station immediately replied. - The destination network is down.	- Wait for a while, and try again. - Wait for the destination network to be restored.	— —
After your call, the repeater replies "RX" or "RPT?" and Your own call sign (MY) and ID suffix "G."	- Your call sign (MY) has not been registered at a gateway server. - The Terminal/AP call sign that is set in the RS-MS3A, RS-MS3W, or RS-MS3I has not been registered to the RS-RP3C as the access point. - Destination station's call sign (UR) has not been registered to the gateway server, or the registered contents do not match your transceiver's setting.	- Register your call sign (MY) at a gateway server. - Register the Terminal/AP call sign that is set in the RS-MS3A, RS-MS3W, or RS-MS3I to the RS-RP3C as the access point. - Check the destination station's register information.	Basic manual*, p. 5 — —
After your call, the repeater replies 'RPT?' and call sign of the destination repeater.	- The repeater cannot connect to the destination repeater. - The repeater is busy.	Wait for a while, and try again.	—
"L" appears on the LCD.	While receiving through the Internet, some packets may be lost due to network error (poor data throughput performance).	- It is not a malfunction, and no action is required. ① If "L" continues to be displayed on the LCD, confirm the network and Bluetooth settings and connection condition. ② When the transceiver receives corrupted data, and misidentifies it as Packet Loss, "L" is displayed.	—
You can transmit, but cannot receive from the destination repeater.	- A Global IP address is not used. - The router or mobile router's port is not correctly forwarded. - The firewall is blocking the necessary port.	- Check the Internet connection and use a Global IP address. - If the Global IP address cannot be used, set "UDP Hole Punch" to "ON" in the RS-MS3W, RS-MS3A, or RS-MS3I. - Forward the router or mobile router's correct port. - Check your firewall settings.	pp. 7 ~ 11 p. 8 pp. 7 ~ 11 p. 12

* See ID-31A PLUS/ID-31E PLUS Basic manual Section 11, ID-51A (PLUS2)/ID-51E (PLUS2) Basic manual Section 2, or ID-52A/ID-52E/ID-50A/ID-50E/ID-52A PLUS/ID-52E PLUS Basic manual D-STAR GUIDE.

5 Troubleshooting

■ Troubleshooting for the Access Point mode operation

The following chart is designed to help you correct problems which are not equipment malfunctions.

If you are unable to locate the cause of a problem or solve it through the use of this chart, contact your Icom Dealer or Service Center.

MESSAGE	POSSIBLE CAUSE	SOLUTION	REFERENCE
After your call, the repeater does not return a status reply. (No S-meter indication)	- The wrong Access Point is selected in the Remote D-STAR transceiver. - The manually entered frequency or duplex setting is wrong in the Remote D-STAR transceiver. - The transmission from the Remote D-STAR transceiver did not reach the Access Point. - You did not click (touch) <Start>  in the RS-MS3W, RS-MS3A, or RS-MS3I. - The Remote D-STAR transceiver's call sign has not been added to "Allowed Call Sign List" in the RS-MS3W, RS-MS3A, or RS-MS3I, when "Allowed Call sign" is set to "Enable."	- Set the correct Access Point to "FROM." - Set the correct frequency or duplex setting. - Move to the place where the Remote D-STAR transceiver can reach the Access Point. - Click (touch) <Start>  in the RS-MS3W, RS-MS3A, or RS-MS3I. - Add the Remote D-STAR transceiver's call sign to "Allowed Call Sign List" in the RS-MS3W, RS-MS3A, or RS-MS3I.	— — — RS-MS3W, RS-MS3A, RS-MS3I's instruction manual
After your call, the repeater replies "UR?," the Access Point call sign and ID suffix "G."	- The call was successfully sent to the Access Point, but no station immediately replied. - The destination network is down.	- Wait for a while, and try again. - Wait for the destination network to be restored.	— —
After your call, the repeater replies "RX" or "RPT?" and the Access Point call sign and ID suffix "G."	- The Remote D-STAR transceiver's call sign has not been set to the transceiver. - Your call sign (MY) has not been registered at a gateway server. - The Terminal/AP call sign that is set in the RS-MS3A or RS-MS3W has not been registered to the RS-RP3C as the access point. - Destination station's call sign (UR) has not been registered to the gateway server, or the registered contents do not match your transceiver's setting. - A wrong destination repeater's call sign is set to "TO." - The RS-MS3W, RS-MS3A, or RS-MS3I's settings are wrong. - Destination station that uses the Terminal mode or Access Point mode does not transmit periodically.	- Set the Remote transceiver's call sign has not been set to the transceiver. - Register your call sign (MY) at a gateway server. - Register the Terminal/AP call sign that is set in the RS-MS3A or RS-MS3W to the RS-RP3C as the access point. - Check the destination station's register information. - Set the correct destination repeater's call sign to "TO." - Correctly set the RS-MS3W, RS-MS3A, or RS-MS3I. - Destination station makes a call.	The Remote D-STAR transceiver's instruction manual — RS-MS3W, RS-MS3A, RS-MS3I's instruction manual —

5 Troubleshooting

■ Troubleshooting for the Access Point mode operation

MESSAGE	POSSIBLE CAUSE	SOLUTION	REFERENCE
After your call, the repeater replies 'RPT?' and the access repeater's call sign.	The destination repeater is in use.	Wait for a while, and try again.	—
"L" appears on the LCD.	While receiving through the Internet, some packets may be lost due to network error (poor data throughput performance).	- It is not a malfunction, and no action is required. ① If "L" continues to be displayed on the LCD, confirm the network and Bluetooth settings and connection condition. ① When the transceiver receives corrupted data, and misidentifies it as Packet Loss, "L" is displayed.	—
"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.	Advanced manual*
You can transmit, but cannot receive from the destination repeater.	- Global IP address is not used. - The router or mobile router's port is not correctly forwarded. - The communication is interfered with the firewall setting.	- Check the Internet connection and use a Global IP address. - If the Global IP address cannot be used, set "UDP Hole Punch" to "ON" in the RS-MS3W, RS-MS3A, or RS-MS3I. - Forward the router or mobile router's correct port. - Check your firewall settings.	pp. 7 ~ 11 p. 8 pp. 7 ~ 11 p. 12

* See the ID-31A PLUS/ID-31E PLUS Advanced manual Section 4, ID-51A (PLUS2)/ID-51E (PLUS2) Advanced manual Section 9, or ID-52A/ID-52E/ID-50A/ID-50E/ID-52A PLUS/ID-52E PLUS Advanced manual Section 5.