

About the DV Gateway function

Even if you cannot access a D-STAR repeater, you can make Gateway calls with the DV Gateway function. There are 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 Local area call.

① In this document, the ID-51A (PLUS2)/ID-51E (PLUS2) is used as an example.

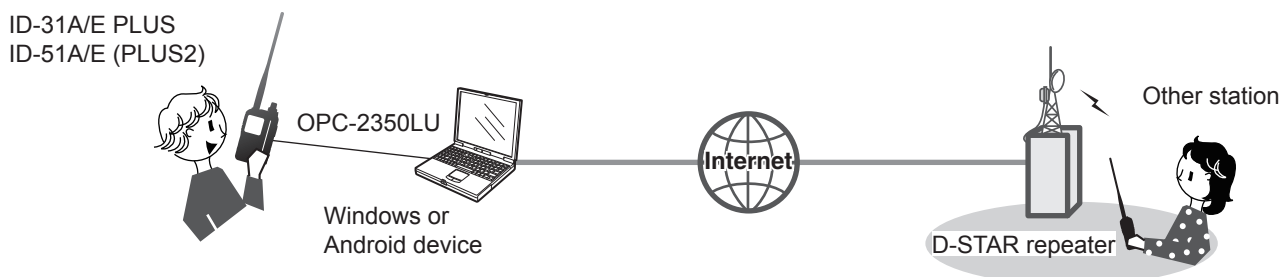
IMPORTANT:

- 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 or RS-MS3W to the RS-RP3C as the access point.*
- * Ask the gateway repeater administrator for details.

Terminal mode

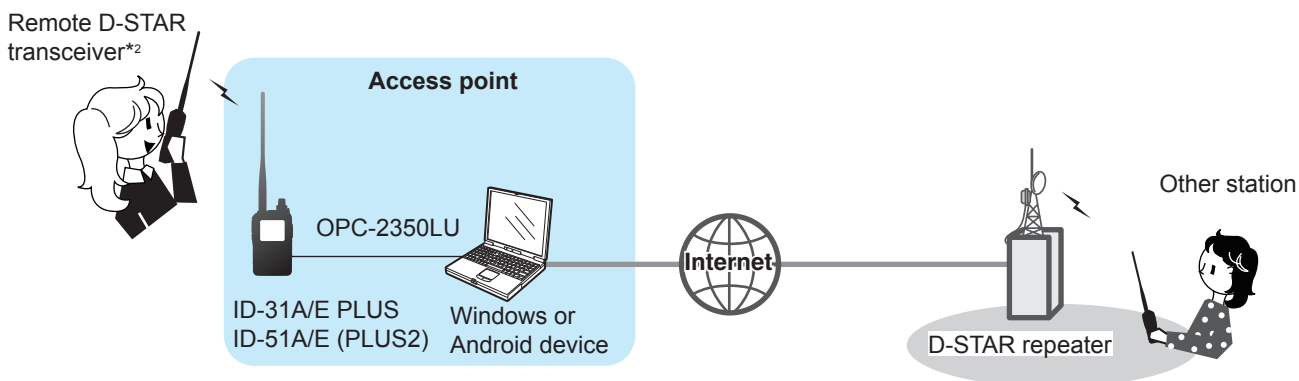
The Terminal mode enables you to make Gateway calls through the Internet by using a Windows or Android device that is running the RS-MS3W or RS-MS3A application.

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 or Android device that is running the RS-MS3W or RS-MS3A 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. 4)
- 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 or Android device.
- In addition to this document, read the RS-MS3W or RS-MS3A instruction manual. They can be downloaded from the Icom website. (pp. 9, 10)

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1 Preparation

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

◇ When operating in the Terminal mode:

IMPORTANT:

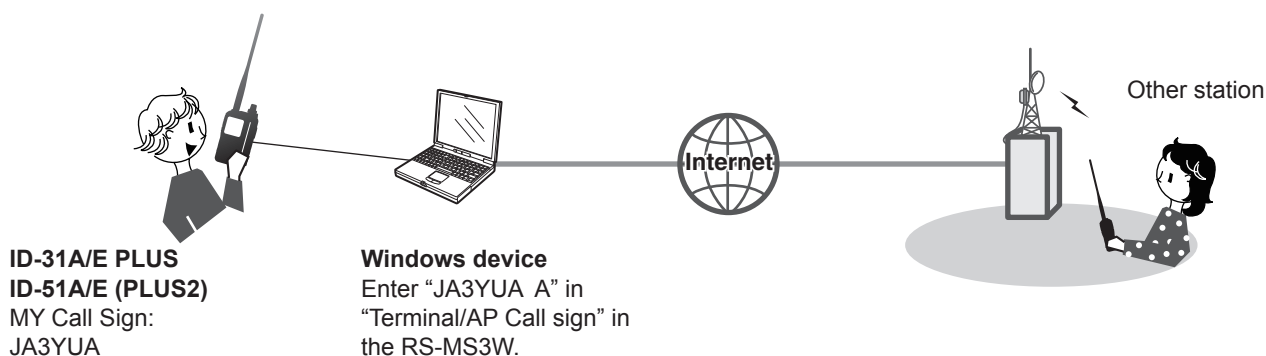
- Register your call sign (MY) at a gateway server.*
- Register the Terminal/AP call sign that is set in the RS-MS3A or RS-MS3W to the RS-RP3C as the access point.*
- * Ask the gateway repeater administrator for details.

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

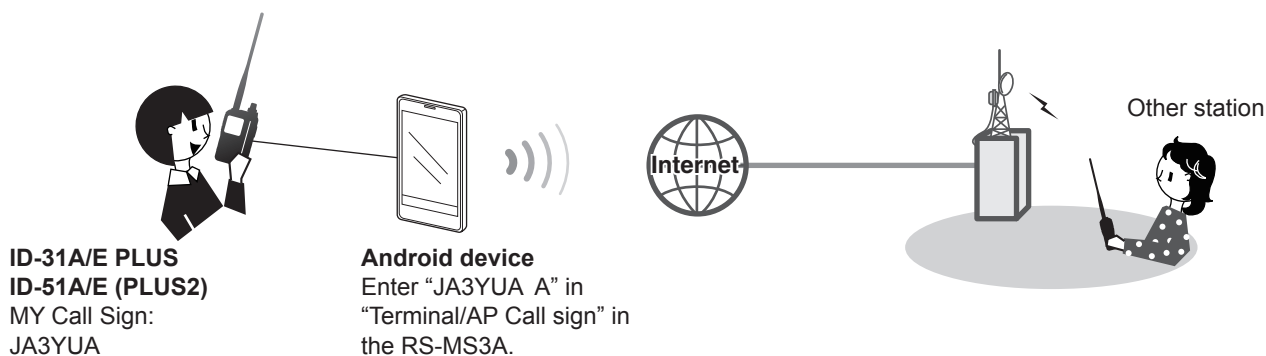
① Information

- 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 F 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 an Android device:



1 Preparation

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

◇ 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 or RS-MS3W to the RS-RP3C as the access point.*
- * Ask the gateway repeater administrator for details.

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

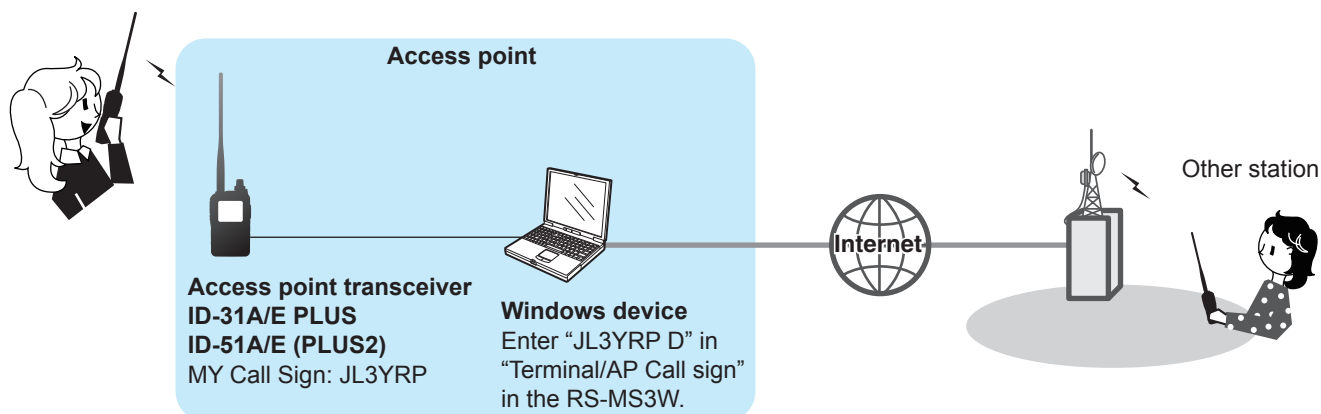
① **Information**

- 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 F 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***

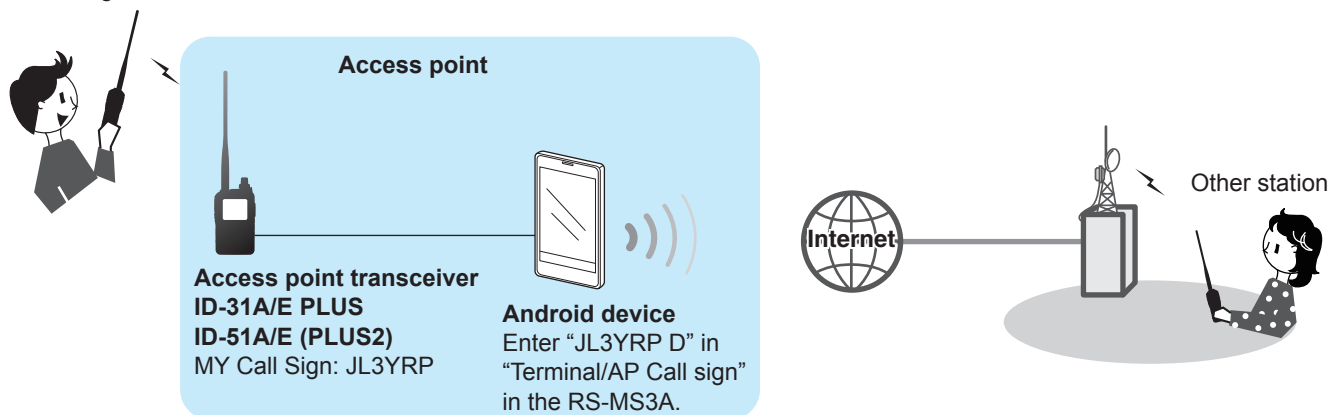
MY Call Sign: JA3YUA



When using an Android 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

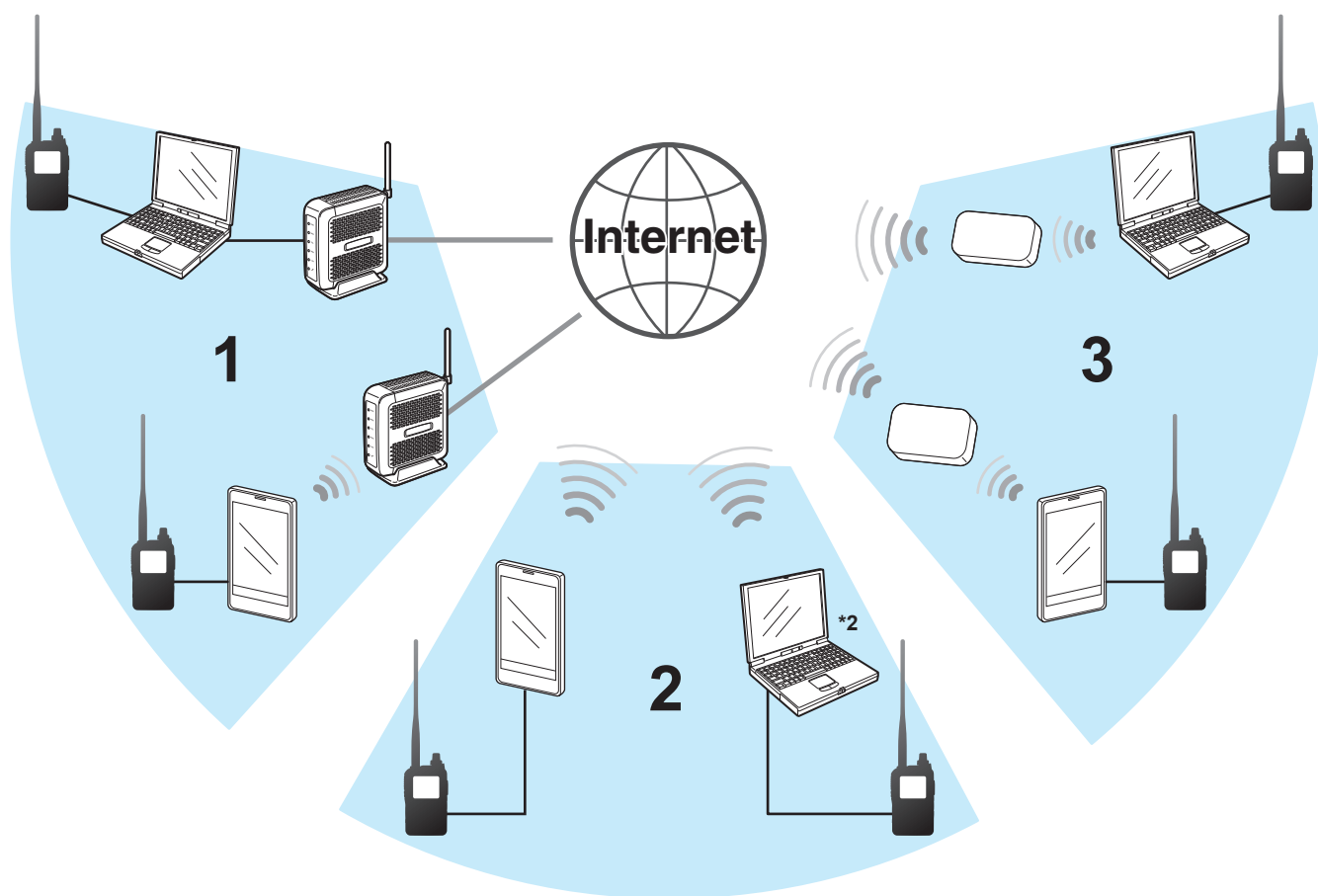
■ Setting up a network

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. 6)
2. When connecting your device^{*1} to the Internet using a cellular system (p. 7)
3. When connecting your device^{*1} to the Internet using a mobile router (p. 8)

^{*1} Windows or Android 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.

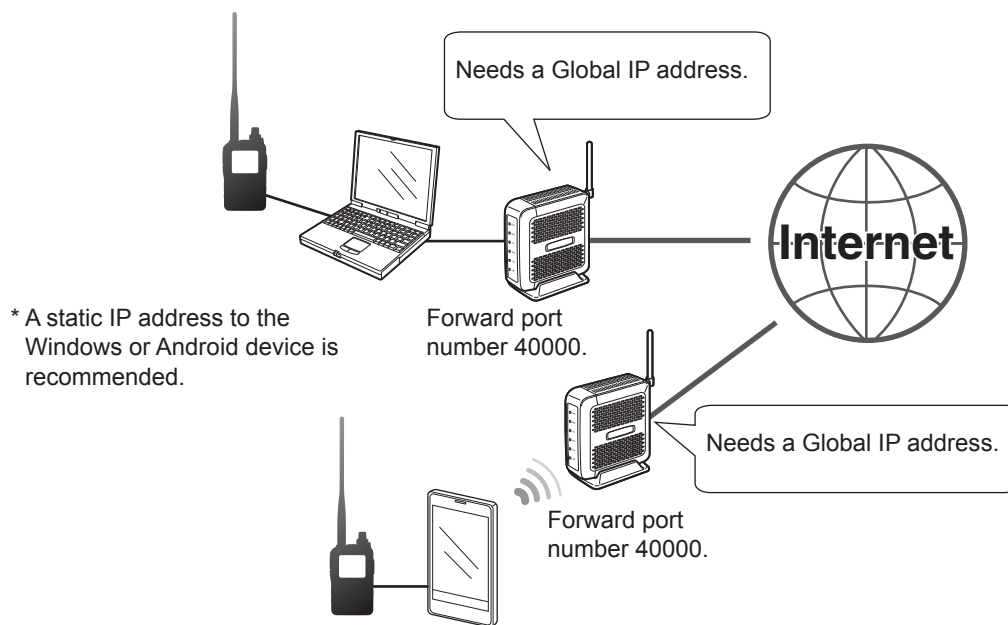
1 Preparation

■ Setting up a network

◇ 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 or Android device
- Port forwarding of port 40000



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 or Android 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 Windows or Android 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 or RS-MS3A.
- "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 or Android 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. 9)

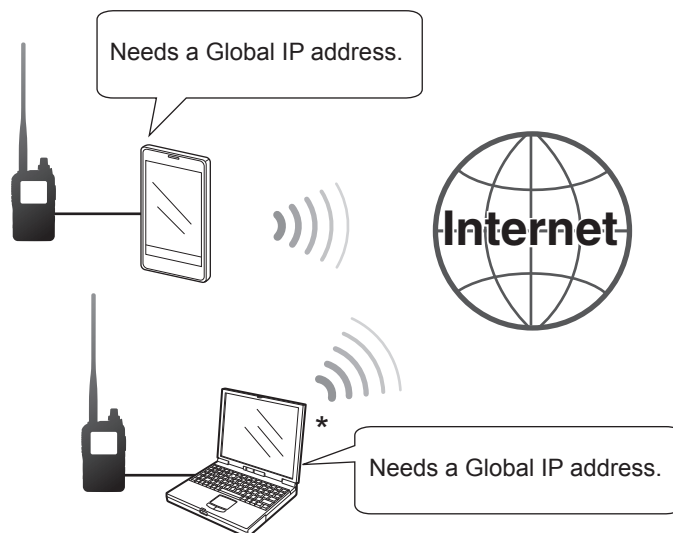
→ When using an Android device, go to "Setting up the RS-MS3A." (p. 10)

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.



*You can use a cellular system compatible computer.

A Global IP address

A static or dynamic IPv4 Global IP address assigned to your Windows or Android 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. 9)

→ When using an Android device, go to “Setting up the RS-MS3A.” (p. 10)

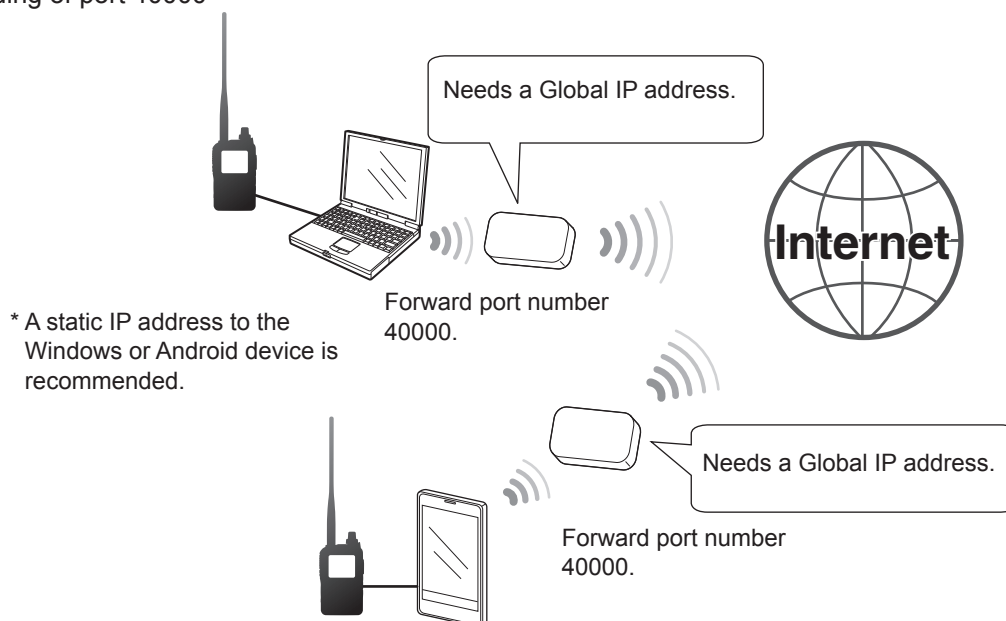
1 Preparation

■ 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 or Android device.
- Port forwarding of port 40000



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 or Android 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 Windows or Android 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 or Android 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. 9)

→ When using an Android device, go to "Setting up the RS-MS3A." (p. 10)

2 Setting up the RS-MS3W/RS-MS3A

■ 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.

◇ System requirements

The following are required to use the RS-MS3W.
(As of October 2017)

• Operating System (OS)

Microsoft® Windows® 7 (32/64bit)
Microsoft® Windows® 8.1 (32/64bit)
(Except for Microsoft® Windows® RT.)
Microsoft® Windows® 10 (32/64bit)

① You cannot use Windows Mobile.

• USB port

USB 1.1 or 2.0 port

• Data cable

OPC-2350LU DATA CABLE (purchase separately)

NOTE: Before using the data cable, you have to install its USB driver. The latest USB driver and Installation Guide for the OPC-2350LU can be downloaded from “Options” section towards the bottom of the firmware page on the Icom website. Carefully read the guide, before installing the driver.

<http://www.icom.co.jp/world/support/download/firm/>

◇ Installing the RS-MS3W

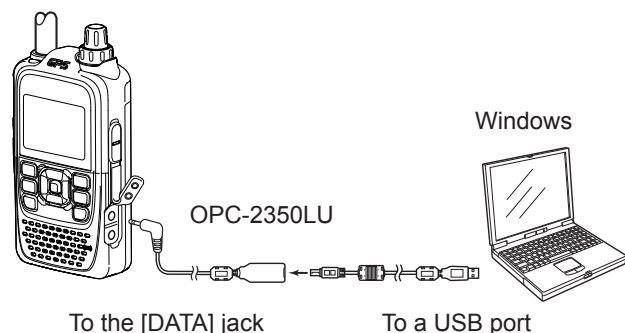
Download the latest RS-MS3W and its instruction manual from the Icom website.
Read the RS-MS3W instruction manual on how to install the software.

① Search by “RS-MS3W.”

<http://www.icom.co.jp/world/support/download/firm/>

◇ Connecting the OPC-2350LU

Connect the transceiver to the Windows using the OPC-2350LU.



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

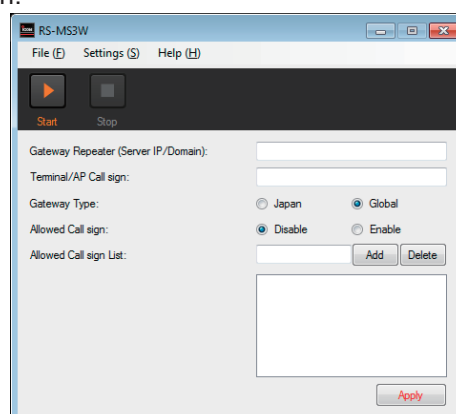
◇ COM port settings

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

■ 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.

◇ System requirements

The following are required to use the RS-MS3A.
(As of October 2017)

- **Android device**

- Android 4.0 or later with the USB host function
- ① The RS-MS3A has been tested with Android 4.x.x, 5.x.x, and 6.x.x.

TIP: 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.

- **Data cable**

OPC-2350LU DATA CABLE (purchase separately)

NOTE:

Some functions may not be usable:

- depending on other applications installed in the Android device
- depending on the memory capacity

For operations or settings of the Android device, read the Android device's instruction manual.

- ① Display indications may differ depending on the OS version or settings.

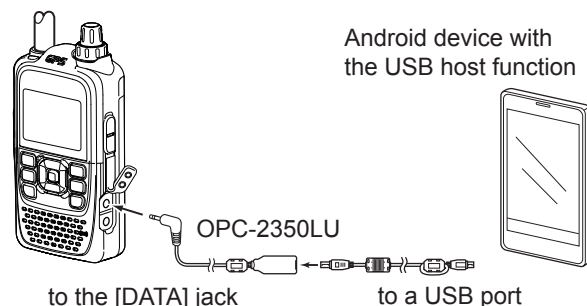
◇ Installing the RS-MS3A

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.



← RS-MS3A icon

◇ Connecting the OPC-2350LU

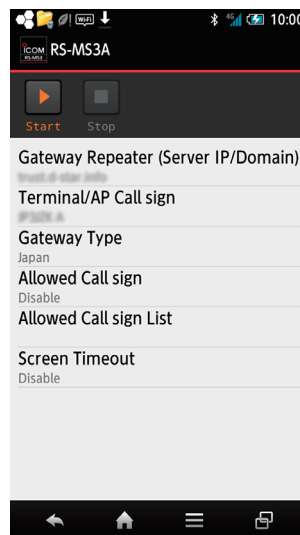


NOTE:

- Turn OFF the transceiver before connecting or removing the cable.
- Remove the OPC-2350LU when you do not use the cable. Otherwise, the battery will be quickly exhausted.
- If the application selection window is displayed, select "RS-MS3A" to start the application.

◇ 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."

<http://www.icom.co.jp/world/support/download/firm/>

NOTE: When the Android device does not work properly, try putting the Access Point transceiver in a distant place from the Android device.

3 Terminal mode operation

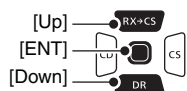
■ Setting the Terminal mode

① In this document, the ID-51A (PLUS2)/ID-51E (PLUS2) is used as an example.

[Transceiver operation]

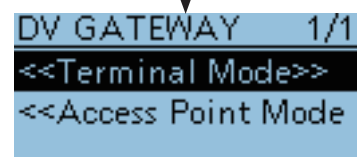
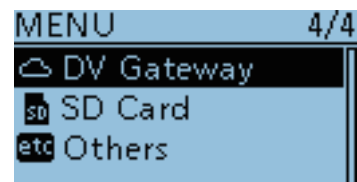
1. Push [MENU].

2. Select "DV Gateway."



Select operation:
Push [Up] or [Down] to select an item, and then push [ENT].

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

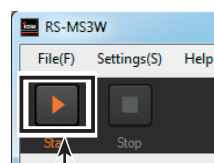


"TM" is displayed when using the ID-31A PLUS/ID-31E PLUS.

[Windows or Android operation]

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

① If an error message is displayed, see page 24 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 window or "DV Gateway" on the MENU screen.

① To display the Quick Menu window, 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)
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

■ Operating in the Terminal mode

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

- Push D-pad (Ent) to display the TO SELECT screen. (p. 13)
 - ① You can select the “Local CQ,” but cannot make a call.
- 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.
- Hold down [CD] for 1 second to display the RX HISTORY screen.
- Push [MENU] to enter or exit the MENU screen.
- Hold down [LOCK] for 1 second to turn the Key Lock function ON or OFF.
- Push [QUICK] to enter or exit the Quick Menu* screen.
- Hold down [SPCH] for 1 second to audibly announce the displayed Call Sign.
 - ① Hold down [QUICK] for 1 second when using the ID-31A PLUS/ID-31E PLUS.
- Hold down [CS] for 1 second to enter the Operating Call Sign Select mode.
- Hold down [RS→CS] for 1 second to display the RX History list.

- Rotate [VOL] to adjust the audio volume level.
- Rotate [DIAL] to set “TO” (Destination). (p. 13)
- Hold down [⏻] for 1 second to turn the transceiver ON or OFF.
 - 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 screen) in the Terminal mode.

<<Normal Mode>>
Group Select
Repeater Detail
DTMF TX
Voice TX
GPS Information
GPS Position
Display Type
DSQL
Voltage
<<REC Start>>
<<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

3 Terminal mode operation

■ Operating in the Terminal mode

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

The destination repeater or station must be set in “TO” when you make a call in the DV mode. You have 7 ways to set the destination.

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

Setting by rotating [DIAL]

Rotate [DIAL] to select the repeater or Your Call Sign.

(This operation is disabled when “CQCQCQ” is set.)

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

TIP: How to change the repeater group:

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

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

To make a Gateway CQ call

“Gateway CQ” setting (p. 14)

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. 15)

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

① You cannot make a call through a reflector.

To select from RX History

Setting from the RX History*

When you receive a call, the repeater or calling station data is saved in RX History.

You can 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.

You can select the destination from the record.

To directly enter the destination station call sign

Direct Input (UR)*

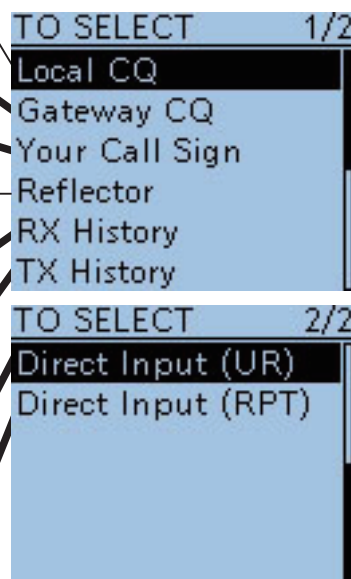
Directly enter the destination station’s call sign.

To directly enter the destination repeater call sign

Direct Input (RPT)*

Directly enter the destination repeater’s call sign.

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


3 Terminal mode operation


■ Operating in the Terminal mode


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

Example: Making a Gateway CQ call

1. Push [ENT].
 - Displays the TO SELECT screen.
2. Select “Gateway CQ.”

[Up] → 

[ENT] → 

[Down] → 

Select operation:
Push [Up] or [Down] to select an item, and then push [ENT].
3. Select the repeater group where your destination repeater is listed.
(Example: “11: Japan”)
4. Select your destination repeater.
(Example: “Hamacho”)
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.
 - ① If you cannot receive a reply, see page 25 to read the tips to solve the problem.

TO SELECT 1/2
Local CQ
Gateway CQ
Your Call Sign



REPEATER GROUP 2/4
07: Europe Southern
08: Europe Western
09: Germany
10: Italy
11: Japan
12: Latin America



RPT LIST GRP 11 2/10
Funabashi
Koga
Yokohama Konan
Hamacho
Nishi-Tokyo
TOKYO JP1YIU A



TM DV 12:00
TO Hamacho
JP1YIU A
FROM JA3YUA
UR:/JP1YIUA

3 Terminal mode operation

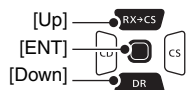
■ Operating in the Terminal mode

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

Example: Making a call to a specific station

1. Push [ENT].
 - Displays the TO SELECT screen.

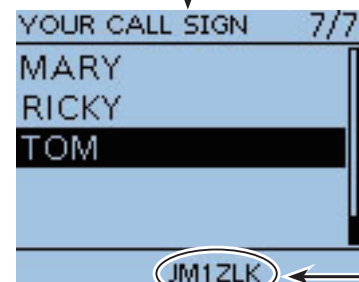
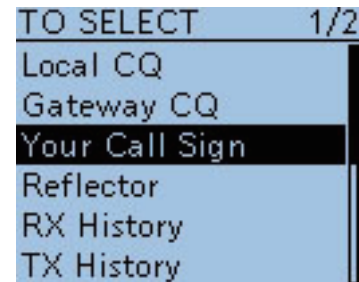
2. Select “Your Call Sign.”



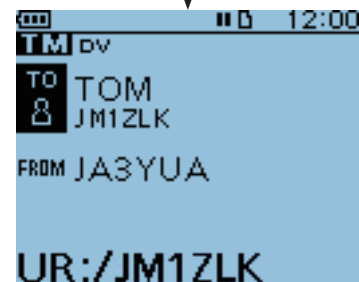
Select operation:
Push [Up] or [Down] to select an item, and then push [ENT].

3. Select the destination. (Example: “TOM”)
 - “TOM” 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.
 - ① If you cannot receive a reply, see page 25 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

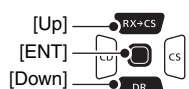
In this section, set an Access Point transceiver.

① In this document, the ID-51A (PLUS2)/ID-51E (PLUS2) is used as an example.

[Access Point transceiver operation]

1. Push [MENU].

2. Select “DV Gateway.”



Select operation:

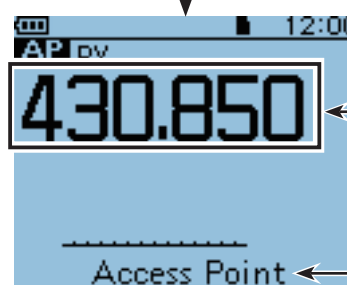
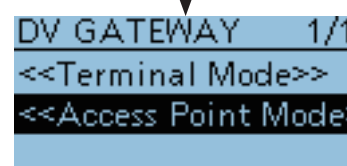
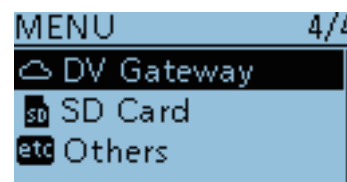
Push [Up] or [Down] to select an item, and then push [ENT].

3. Select “<<Access Point Mode>>.”

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.



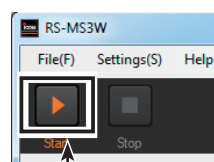
Set the operating frequency

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

[Windows or Android operation]

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

① If an error message is displayed, see page 24 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 window or “DV Gateway” on the MENU screen.

① To display the Quick Menu window, 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.)
Receive mode: DV mode*
Dualwatch function: OFF* (Only when using the ID-51A (PLUS2)/ID-51E (PLUS2).)
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.

- Hold down [CD] for 1 second to display the RX HISTORY screen.
- Push [SQL] to turn the Monitor function ON or OFF.
 - 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.
- Push [MENU] to enter or exit the MENU screen.
- Hold down [LOCK] for 1 second to turn the Key Lock function ON or OFF.
- Push [QUICK] to enter or exit the Quick Menu* screen.
- Hold down [SPCH] for 1 second to audibly announce the displayed frequency and the operating mode.
 - ① Hold down [QUICK] for 1 second when using the ID-31A PLUS/ID-31E PLUS.
- Push [V/MHz] to select 1 MHz or 10 MHz tuning steps. (p. 18)
- Hold down [LOW] for 1 second to suit your operating requirements to select the transmit output power between S-Low, Low1, Low2, Mid, and High.
 - 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.

- Rotate [VOL] to adjust the audio volume level.
- Rotate [DIAL] to set the operating frequency. (p. 16)
- Hold down [⏻] for 1 second to turn the transceiver ON or OFF.
 - 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 screen) in the Access Point mode.
 (“Band Select” is displayed only when using the ID-51A (PLUS2)/ID-51E (PLUS2).)

<<Normal Mode>>
Band Select
TS
GPS Information
GPS Position
Home CH Set
Voltage
<<REC Start>>
<<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 11

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

4 Access Point mode operation

■ Operating in the Access Point mode

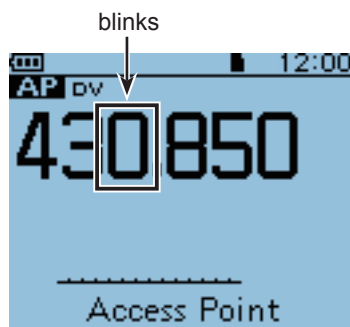
◇ About the Quick Tuning function

1. While in the VFO mode, push [V/MHz] to select the 1 MHz or 10 MHz* tuning step.

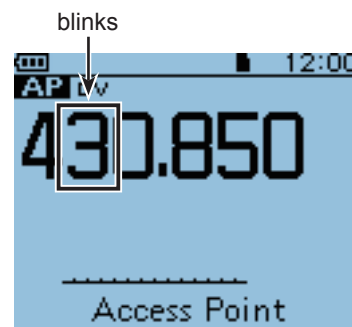
* You can select the 10 MHz step only when using the ID-51A (PLUS2)/ID-51E (PLUS2).

① When the 1 MHz step is selected, the 1 MHz digit blinks.

② When the 10 MHz step is selected, the 10 MHz digit blinks.



When the 1 MHz step is selected



When the 10 MHz step is selected

2. While the selected digit is blinking, rotate [DIAL] to set an operating frequency in 1 MHz or 10 MHz steps.

① When 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

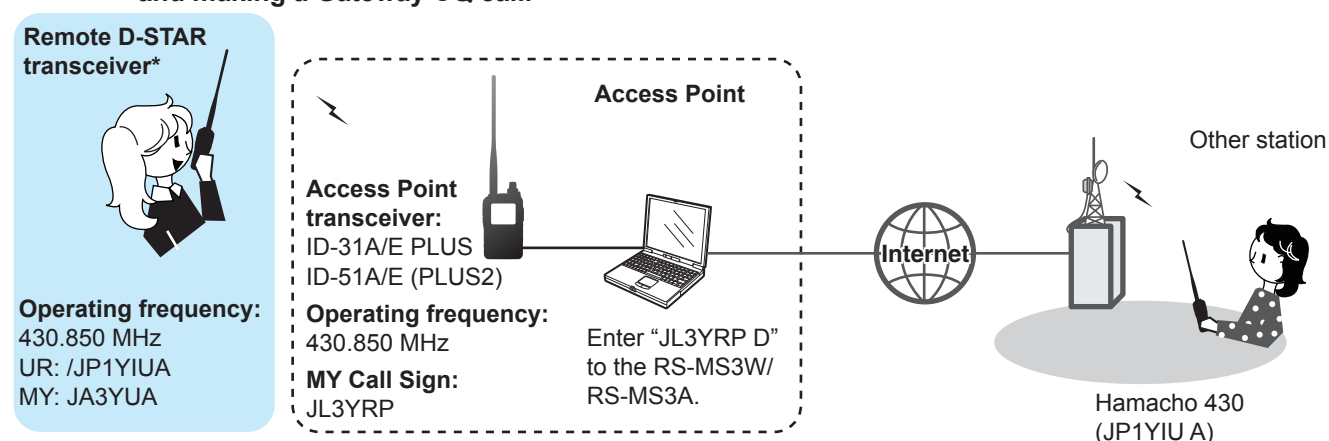
In this section, set a Remote D-STAR transceiver you are going to operate.

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 a 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.

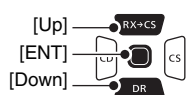
In this document, the ID-51A (PLUS2)/ID-51E (PLUS2) is used as a Remote D-STAR transceiver as an example.

1. Register the Access Point information to the Repeater List

- ① Register the Access Point information in the MENU screen.

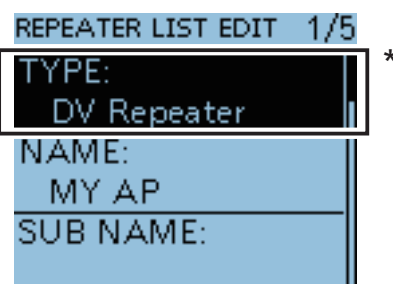
(MENU > DV Memory > **Repeater List**)

1. Select a group you want to add your Access Point information.



Select operation:
Push [Up] or [Down] to select an item, and then push [ENT].

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)

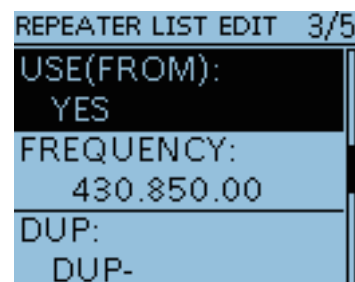


* For only the ID-31A/E PLUS, ID-51A/E (PLUS), or ID-51A/E (PLUS2)

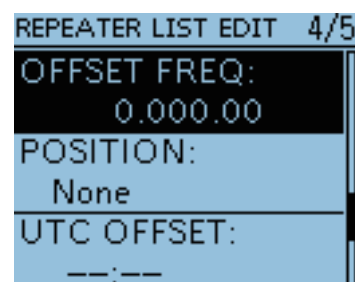
5. Set the Access Point transceiver's call sign to "CALL SIGN."
(Example: JL3YRP)
- ① After setting "CALL SIGN," "GW CALL SIGN" is automatically set.



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-."



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



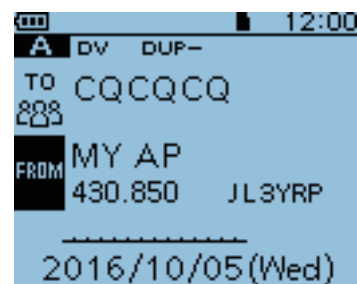
4 Access Point mode operation

■ Making a Gateway call through the Access point transceiver

◇ When using the DR function (Continued)

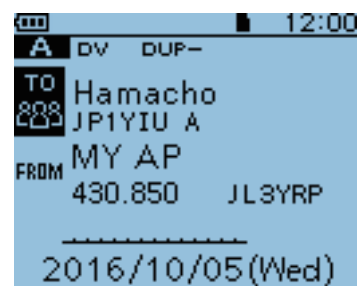
2. Set the Access Point using the DR function

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.
① If you cannot receive a reply, see page 25 to read the tips to solve the problem.



4 Access Point mode operation

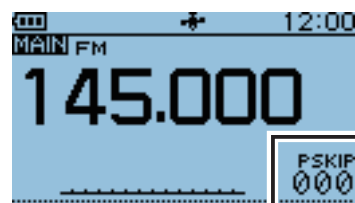
■ Making a Gateway call through the Access point transceiver

◇ 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.

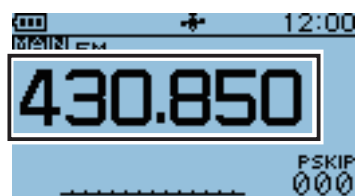
1. Enter the VFO mode.

Push [V/MHz].



2. Set the operating frequency.

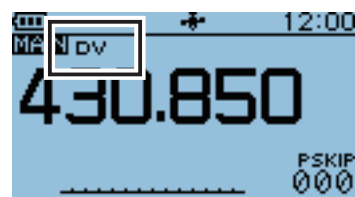
Rotate [DIAL] to set the frequency that is set to the Access Point transceiver. (Example: 430.850)



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

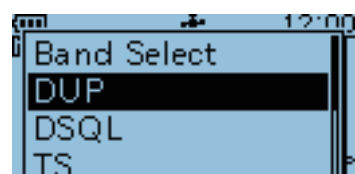
Push [MODE] several times until "DV" is displayed.

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

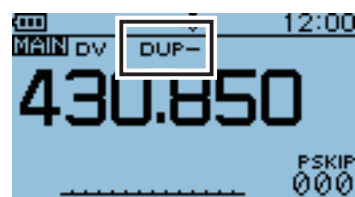
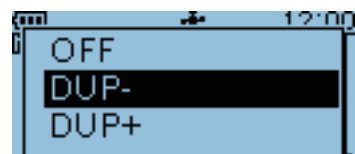


4. Set the duplex direction.

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



3. Select "DUP-."



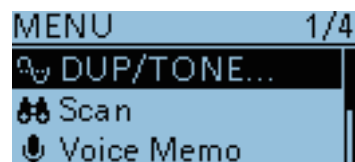
4 Access Point mode operation

■ Making a Gateway call through the Access point transceiver

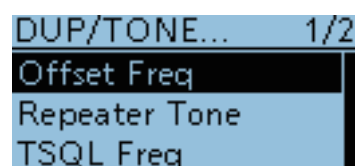
◇ When using the DR function (Continued)

5. Set the frequency offset.

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



3. Select "Offset Freq."

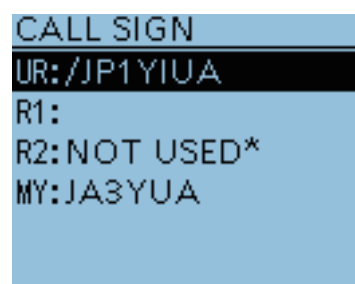


4. Set "0.000.00."
5. Push [MENU].
 - Returns to the standby screen.



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 If you cannot receive a reply, see page 25 to read the tips to solve the problem.

5 Troubleshooting

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

If an error message is displayed when clicking (touching) <Start>  in the RS-MS3W or RS-MS3A, 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.



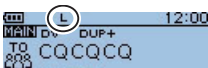
MESSAGE	POSSIBLE CAUSE	SOLUTION	REFERENCE
Gateway Repeater (Server IP/Domain) cannot be found.	<ul style="list-style-type: none"> The gateway repeater address is not correctly entered. Your Windows or Android device does not connect to the Internet. 	<ul style="list-style-type: none"> Correctly enter the gateway repeater address. Connect your Windows or Android device to the Internet, and check whether or not you can access to a web site on the www browser. 	RS-MS3W, RS-MS3A's instruction manual —
Terminal/AP Call sign is incorrect.	<ul style="list-style-type: none"> The Terminal/AP call sign is not correctly entered. 	Correctly enter the call sign. ① The call sign consists of 8 characters. <ul style="list-style-type: none"> Enter a space for the 7th character. Enter a desired ID suffix between A to F for the 8th character. 	RS-MS3W, RS-MS3A's instruction manual
The USB cable is not connected.(1 * *)	<ul style="list-style-type: none"> <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. 	<ul style="list-style-type: none"> 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. 9 p. 10
The USB cable is not connected.(2 * *)	<ul style="list-style-type: none"> The transceiver is not turned ON. The transceiver is in the Normal mode. 	<ul style="list-style-type: none"> Turn ON the transceiver. Enter the Terminal mode or Access Point mode. 	— pp. 11, 16
Failed to connect to the network.	<ul style="list-style-type: none"> The application cannot create a socket for sending and receiving data. 	<ul style="list-style-type: none"> Check whether or not the port number (40000/40002) competes with other application. If so, stop the competing application. Restart the RS-MS3W or RS-MS3A. If an error message does not disappear, restart Windows or Android device. 	— —
A Network error occurred.	<ul style="list-style-type: none"> System error occurs when receiving data from network. 	<ul style="list-style-type: none"> Restart the RS-MS3W or RS-MS3A. If an error message does not disappear, restart Windows or Android device. 	—
Failed to start the service.	<ul style="list-style-type: none"> The gateway repeater address or Terminal/AP call sign is not correctly entered. System error occurs when the service started. 	<ul style="list-style-type: none"> 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.

PROBLEM	POSSIBLE CAUSE	SOLUTION	REFERENCE
After your call, the repeater does not return a status reply.	<ul style="list-style-type: none"> Transceiver connection is wrong. You did not click (touch) <Start>  in the RS-MS3W or RS-MS3A. "Allowed Callsign" is set to "Enable" in the RS-MS3W or RS-MS3A. 	<ul style="list-style-type: none"> Check the connection between the transceiver and the Windows device, or the transceiver and the Android device. Click (touch) <Start>  in the RS-MS3W or RS-MS3A. Set "Disable" to "Allowed Callsign" in the RS-MS3W or RS-MS3A. 	<p>—</p> <p>RS-MS3W, RS-MS3A's instruction manual</p>
After your call, the repeater replies "UR?," Your own call sign (MY) and ID suffix "G."	<ul style="list-style-type: none"> The call was successfully sent, but no station immediately replied. 	<ul style="list-style-type: none"> Wait for a while, and try again. 	—
After your call, the repeater replies "RX" or "RPT?" and Your own call sign (MY) and ID suffix "G."	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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. 	Basic manual*
After your call, the repeater replies 'RPT?' and call sign of the destination repeater.	<ul style="list-style-type: none"> The repeater cannot connect to the destination repeater. The repeater is busy. 	<ul style="list-style-type: none"> Wait for a while, and try again. 	—
<p>"L" appears on the LCD.</p> 	<ul style="list-style-type: none"> While receiving through the Internet, some packets may be lost due to network error (poor data throughput performance). 	<ul style="list-style-type: none"> Wait for a while, and try again. ① 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.	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Check the Internet connection and use a Global IP address. Forward the router or mobile router's correct port. Check your firewall settings. 	<p>pp. 5 ~ 8</p> <p>pp. 5 ~ 8</p> <p>p. 9</p>



* See ID-31A PLUS/ID-31E PLUS Basic manual Section 11 or ID-51A (PLUS2)/ID-51E (PLUS2) Basic manual Section 2.

5 Troubleshooting

■ Troubleshooting for the Access Point mode operation

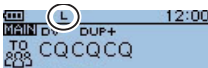
The following chart is designed to help you correct problems which are not equipment malfunctions.

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.

PROBLEM	POSSIBLE CAUSE	SOLUTION	REFERENCE
After your call, the repeater does not return a status reply. (No S-meter indication)	<ul style="list-style-type: none"> 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 or RS-MS3A. The Remote D-STAR transceiver's call sign has not been added to "Allowed Call Sign List" in the RS-MS3W or RS-MS3A, when "Allowed Call sign" is set to "Enable." 	<ul style="list-style-type: none"> 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 or RS-MS3A. Add the Remote D-STAR transceiver's call sign to "Allowed Call Sign List" in the RS-MS3W or RS-MS3A. 	<p>—</p> <p>—</p> <p>RS-MS3W, RS-MS3A's instruction manual</p>
After your call, the repeater replies "UR?," the Access Point call sign and ID suffix "G."	<ul style="list-style-type: none"> The call was successfully sent to the Access Point, but no station immediately replied. 	<ul style="list-style-type: none"> Wait for a while, and try again. 	—
After your call, the repeater replies "RX" or "RPT?" and the Access Point call sign and ID suffix "G."	<ul style="list-style-type: none"> 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 or the RS-MS3A's settings are wrong. Destination station that uses the Terminal mode or Access Point mode does not transmit periodically. 	<ul style="list-style-type: none"> 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 or the RS-MS3A. Destination station makes a call. 	<p>The Remote D-STAR transceiver's instruction manual</p> <p>—</p> <p>RS-MS3W, RS-MS3A's instruction manual</p> <p>—</p>

5 Troubleshooting

■ Troubleshooting for the Access Point mode operation

PROBLEM	POSSIBLE CAUSE	SOLUTION	REFERENCE
After your call, the repeater replies 'RPT?' and the access repeater's call sign.	<ul style="list-style-type: none"> The destination repeater is in use. 	<ul style="list-style-type: none"> Wait for a while, and try again. 	—
"L" appears on the LCD. 	<ul style="list-style-type: none"> While receiving through the Internet, some packets may be lost due to network error (poor data throughput performance). 	<ul style="list-style-type: none"> Wait for a while, and try again. ① When the transceiver receives corrupted data, and misidentifies it as Packet Loss, "L" is displayed. 	—
"DV" and "FM" icons alternately blink.	<ul style="list-style-type: none"> While in the DV mode, an FM signal is received. 	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Check the Internet connection and use a Global IP address. Forward the router or mobile router's correct port. Check your firewall settings. 	pp. 5 ~ 8 pp. 5 ~ 8 p. 9

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