



## INSTRUCTION MANUAL

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REMOTE CONTROL SOFTWARE  
**RS-R8600**

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### INTRODUCTION

#### 1 BEFORE USING CONTROL SYSTEM

#### 2 CONFIGURING THE SYSTEM THROUGH A LAN

#### 3 CONFIGURING THE SYSTEM THROUGH THE INTERNET

#### 4 ABOUT THE REMOTE UTILITY

#### 5 ABOUT THE REMOTE CONTROLLER

#### 6 TROUBLESHOOTING

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## INTRODUCTION

Thank you for choosing this Icom product. This product is designed and built with Icom's state of the art technology and craftsmanship. With proper care, this product should provide you with years of trouble-free operation.

This instruction manual contains detailed instructions on how to configure your own remote control system. Before reading this manual, please read the RS-R8600 Preparations that comes with the RS-R8600, for details on how to install the software.

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## IMPORTANT

**READ THIS INSTRUCTION MANUAL CAREFULLY** before attempting to configure the software.

**SAVE THIS INSTRUCTION MANUAL.** This instruction manual contains important safety and operating instructions for the RS-R8600.

### NOTE:

This instruction manual is based on Icom Remote Utility Version 2.00 and RS-R8600 Version 1.00.

- In this manual, Microsoft® Windows® 10 Home and Microsoft® Windows® 10 Pro are described as "Windows 10."
- Microsoft® Windows® 8.1 and Microsoft® Windows® 8.1 Pro are described as "Windows 8.1." The software cannot be used with "RT" versions of Microsoft® Windows® 8.1.
- Microsoft® Windows® 7 Home Premium, Microsoft® Windows® 7 Professional, and Microsoft® Windows® 7 Ultimate are described as "Windows 7."

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## PRECAUTIONS

The RS-R8600 is designed to remotely control the IC-R8600 receiver\* using the LAN port.

\* The IC-R8600 firmware needs to be updated to 1.20 or later.

Depending on the PC performance, OS, IP provider, connection type, condition and speed, and so on, the USB audio may be interrupted, or control by the PC software may get delayed.

If the CPU has a heavy load, the USB audio is easily interrupted. The settings of the audio player application may be changed after connecting a receiver to the PC.

To operate your PC and peripheral devices, follow the instructions provided in their manuals.

All copyrights associated with this manual and all intellectual property rights associated with the RS-R8600 software are held by Icom Inc. Unauthorized reproduction or transmission of this manual, or any part hereof, is prohibited.

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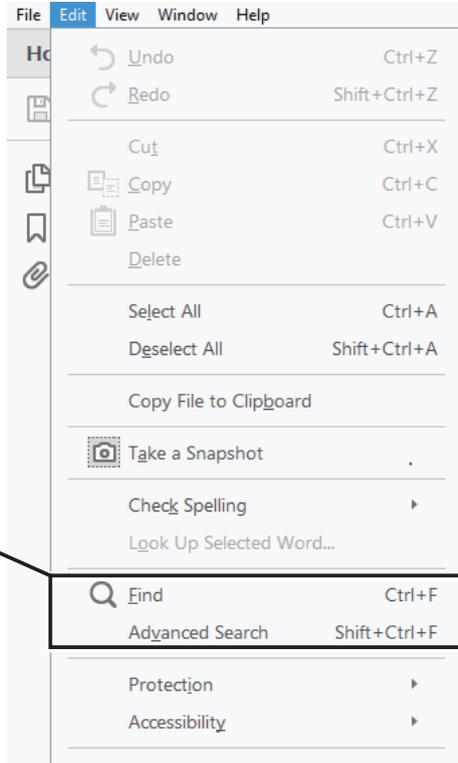
# Functions and features of Adobe® Acrobat® Reader®

The following functions and features can be used with Adobe® Acrobat® Reader®.

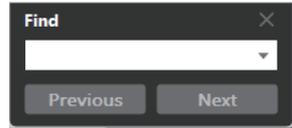
• **Keyword search**

Click “Find” (Ctrl+F) or “Advanced Search” (Shift+Ctrl+F) in the Edit menu to open the search screen. This is convenient when searching for a particular word or phrase in this manual. ① The menu screen may differ, depending on the Adobe® Acrobat® Reader® version.

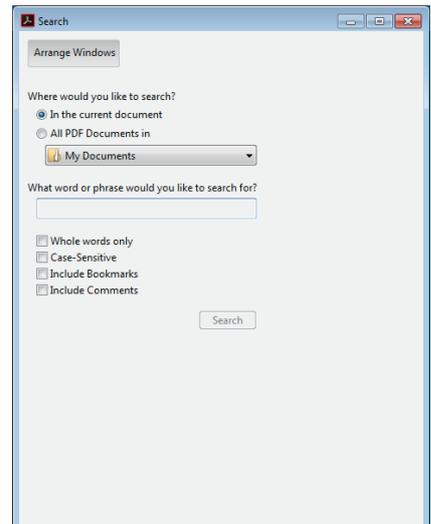
Click to open the find or search screen or advanced search screen.



• **Find screen**

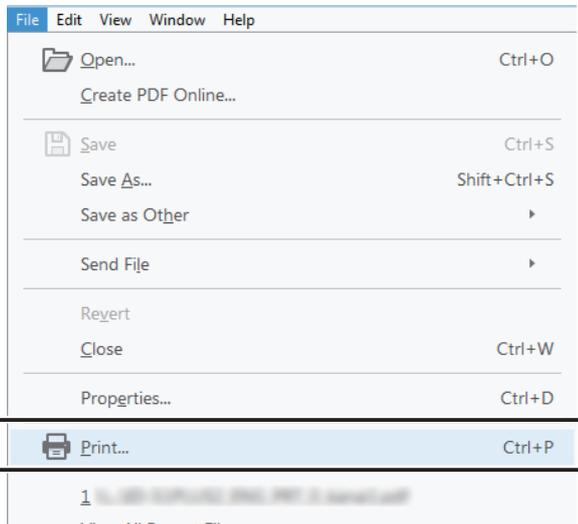


• **Advanced search screen**



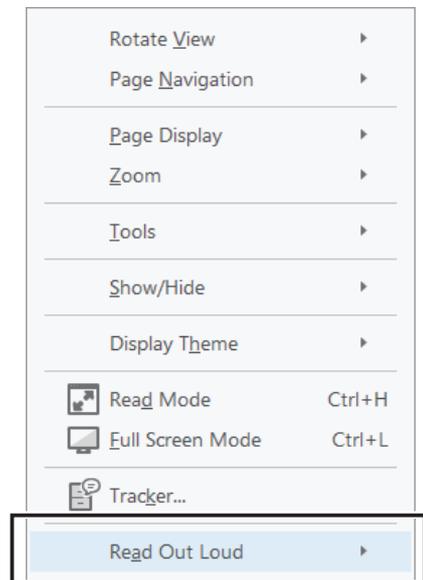
• **Printing out the desired pages.**

Click “Print” in the File menu, and then select the paper size and page numbers you want to print. ① The printing setup may differ, depending on the printer. Refer to your printer’s instruction manual for details. ② Select “A4” size to print out the page in the original manual size.



• **Read Out Loud feature.**

The Read Out Loud feature reads aloud the text in this PDF. Refer to the Adobe® Acrobat® Reader® Help for the details. (This feature may not be usable, depending on your PC environment including the operating system.)



① The screen may differ, depending on the Adobe® Acrobat® Reader® version.

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TABLE OF CONTENTS

|  |            |   |            |
|--|------------|---|------------|
| <b>INTRODUCTION</b> .....                          | <b>i</b>   | <b>4 ABOUT THE REMOTE UTILITY</b> .....       | <b>4-1</b> |
| <b>IMPORTANT</b> .....                             | <b>i</b>   | Setting your PC's environment.....            | 4-1        |
| <b>PRECAUTIONS</b> .....                           | <b>i</b>   | Server Registration.....                      | 4-2        |
| <b>Functions and features of</b>                   |            | ◇To add a Server.....                         | 4-2        |
| <b>Adobe® Acrobat® Reader®</b> .....               | <b>ii</b>  | ◇To change a server's properties .....        | 4-3        |
| <b>OVERVIEW OF THE RS-R8600</b> .....              | <b>iv</b>  | ◇To delete a server.....                      | 4-3        |
| <b>1 BEFORE USING THE REMOTE CONTROL</b>           |            | Connecting to a Server.....                   | 4-4        |
| <b>SYSTEM</b> .....                                | <b>1-1</b> | ◇Connecting to a Server.....                  | 4-4        |
| Firewall settings.....                             | 1-1        | ◇Disconnecting from a Server .....            | 4-4        |
| Adjusting the volume of your audio devices .....   | 1-5        | Connection setting.....                       | 4-5        |
| Receiver's presettings .....                       | 1-6        | Connecting to a receiver .....                | 4-6        |
| Selecting a connection method .....                | 1-7        | ◇Connecting to a receiver .....               | 4-6        |
| <b>2 CONFIGURING THE SYSTEM</b>                    |            | ◇Disconnecting a receiver .....               | 4-6        |
| <b>THROUGH A LAN</b> .....                         | <b>2-1</b> | Adjusting audio using the Remote Utility..... | 4-7        |
| Examples of the remote control system .....        | 2-1        | Recording function .....                      | 4-8        |
| Step 1. Settings on the receiver .....             | 2-2        | Disconnecting another users.....              | 4-9        |
| Step 2. Settings on the PC's Remote Utility        |            | <b>5 ABOUT THE REMOTE CONTROLLER</b> .....    | <b>5-1</b> |
| application.....                                   | 2-3        | About the Remote mode .....                   | 5-1        |
| Step 3. Remote control operation.....              | 2-7        | Using the RC-28.....                          | 5-1        |
| <b>3 CONFIGURING THE SYSTEM</b>                    |            | <b>6 TROUBLESHOOTING</b> .....                | <b>6-1</b> |
| <b>THROUGH THE INTERNET</b> .....                  | <b>3-1</b> |   |            |
| Examples of the remote control system              |            |   |            |
| through the Internet.....                          | 3-1        |   |            |
| About a public IP address and the Dynamic DNS      |            |   |            |
| service .....                                      | 3-2        |   |            |
| ◇To let PCs connect to the receiver using its      |            |   |            |
| public IP address.....                             | 3-2        |   |            |
| ◇To let PCs connect to the receiver using its      |            |   |            |
| domain name.....                                   | 3-3        |   |            |
| To enable remote control through the Internet .... | 3-4        |   |            |
| Step 1. Settings on the receiver .....             | 3-5        |   |            |
| Step 2. Settings on the PC's Remote Utility        |            |   |            |
| application.....                                   | 3-6        |   |            |
| Step 3. Remote control operation.....              | 3-10       |   |            |

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## OVERVIEW OF THE RS-R8600

- The RS-R8600 consists of the Remote Utility, used to configure a remote control system, and the Remote Controller, used to send CI-V commands to a receiver to remotely operate it.
- With the RS-R8600, you can configure a remote control system through a LAN or the Internet.

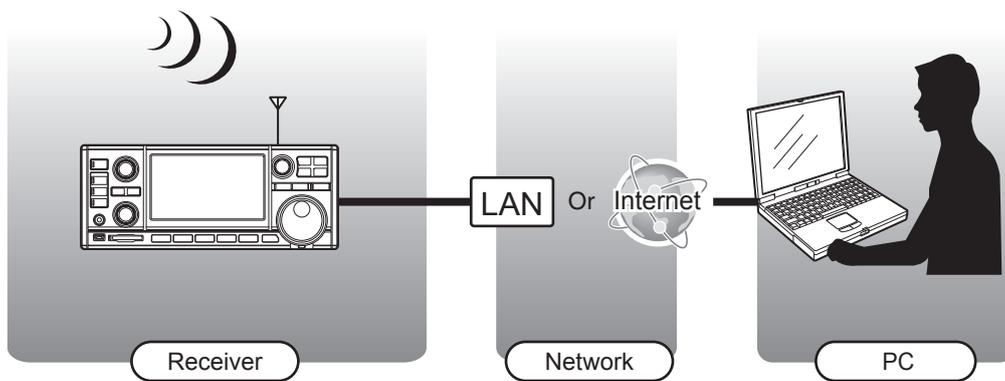
### About the remote control system

An RS-R8600 remote control system basically consists of following three components:

- Receiver
- Network (LAN or Internet)
- PC

The PC controls the receiver through the network (LAN or Internet).

① To control the receiver, the receiver must be connected to the network.



Routers or other devices are not shown.

**TIP:** The IC-R8600's built-in Server function enables the receiver to directly connect to a network. This enables remote control without needing a separate PC computer for the receiver.

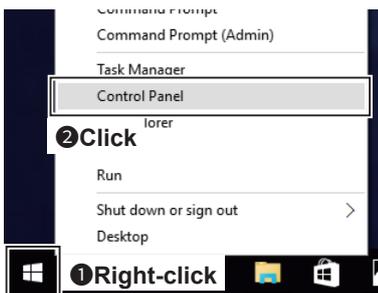
## Firewall settings

The Windows operating system includes a firewall setting standard. This is a security function that can prevent improper access to your PC from the Internet.

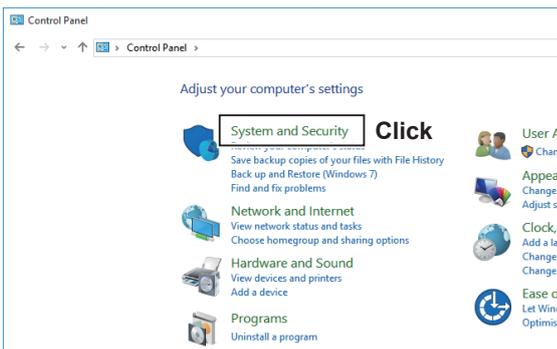
To let Remote Utility work properly, add it as an exception in the firewall.

### Windows 10

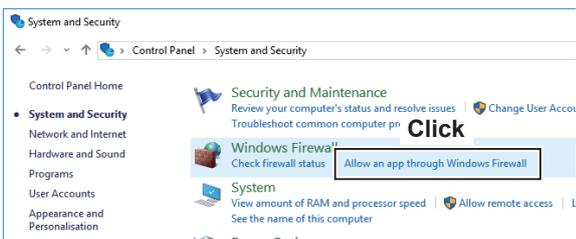
1. Right-click the Windows icon on the taskbar, then click "Control Panel."



2. Click "System and Security."

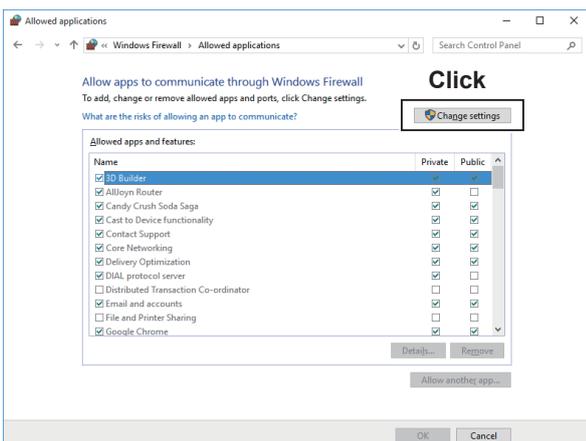


3. Click "Allow an app through Windows Firewall."

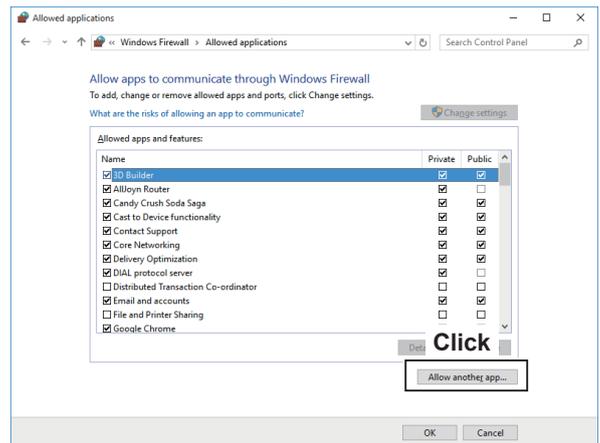


• The "Allowed applications" screen is displayed.

4. Click <Change settings>.

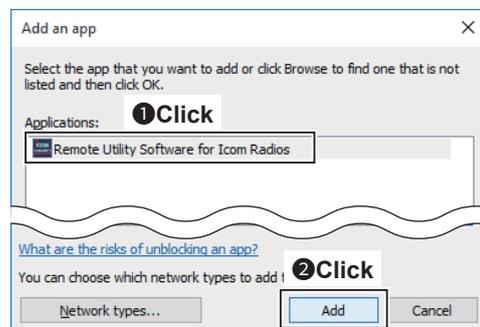


5. Click <Allow another app...>.



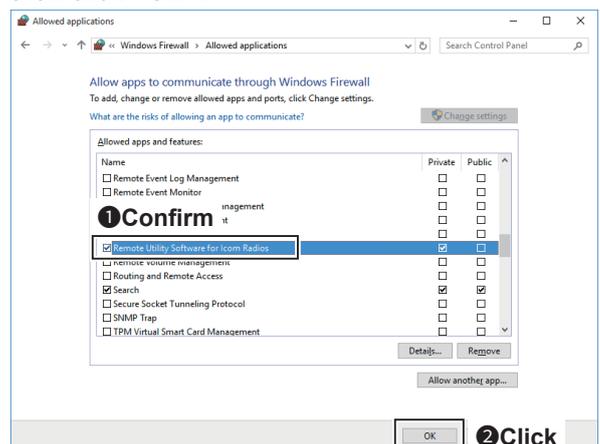
• The "Add an app" screen is displayed.

6. Click "Remote Utility Software for Icom Radios" and then click <Add>.



• Returns to the "Allowed applications" screen.

7. In the "Allowed apps and features" list, confirm that "Remote Utility Software for Icom Radios" is displayed and a check mark is in the box, and then click <OK>.

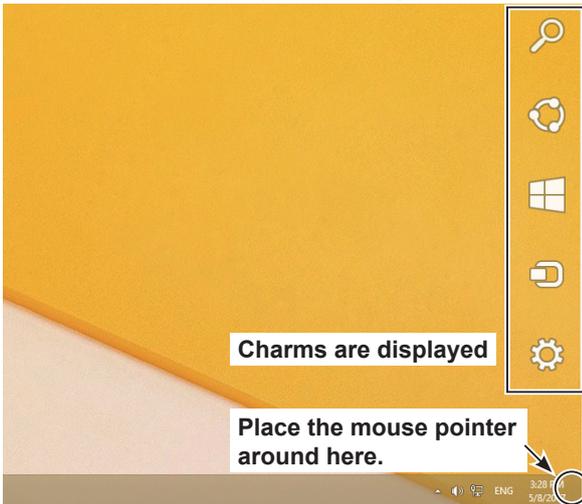


# 1 BEFORE USING THE REMOTE CONTROL SYSTEM

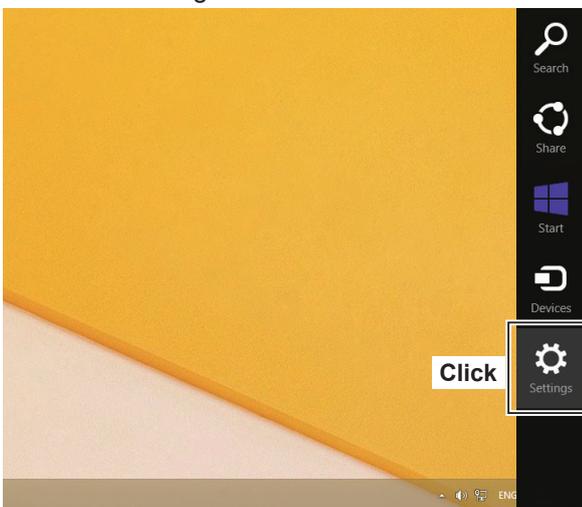
## Firewall settings (Continued)

### Windows 8.1

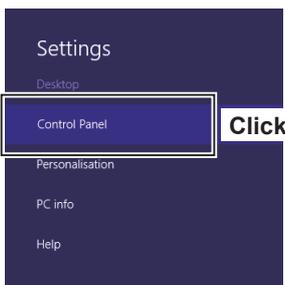
1. Place the mouse pointer in the bottom right corner of the screen.
  - The charms are displayed on the right of the screen.



2. Click the "Settings" charm.

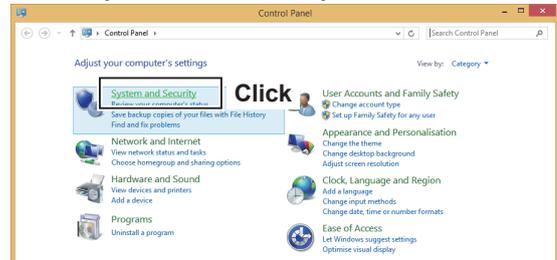


3. Click "Control Panel."



- The "Adjust your computer's settings" screen is displayed.

4. Click "System and Security."

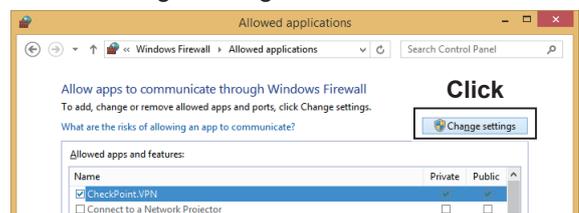


5. Click "Allow an app through Windows Firewall."

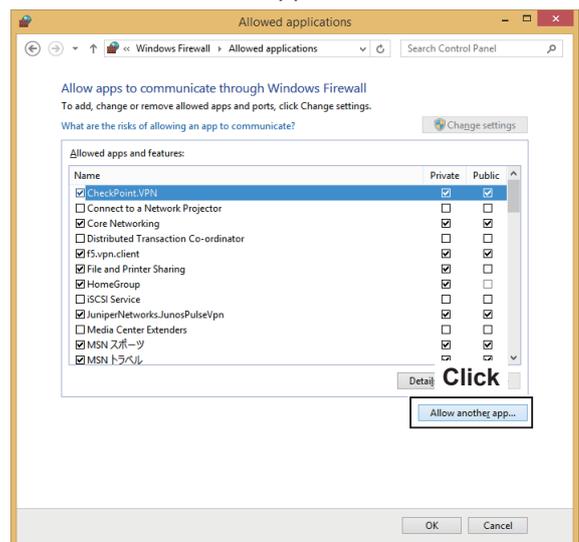


- The "Allowed applications" screen is displayed.

6. Click <Change settings>.



7. Click <Allow another app...>.



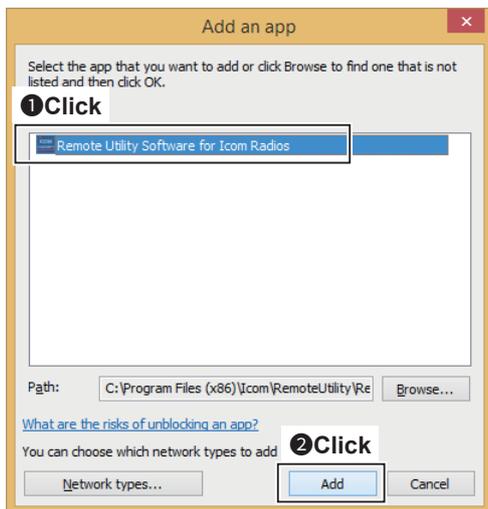
- The "Add an app" screen is displayed.

# 1 BEFORE USING THE REMOTE CONTROL SYSTEM

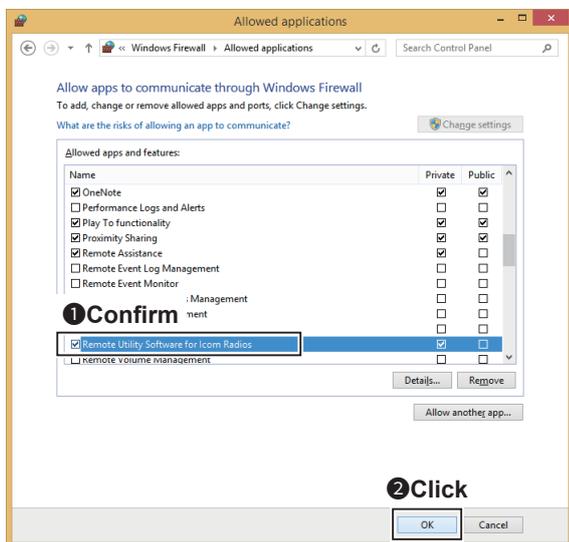
## Firewall settings

### Windows 8.1 (Continued)

8. Click “Remote Utility Software for Icom Radios” and then click <Add>.



- Returns to the “Allowed applications” screen.
9. In the “Allowed apps and features” list, confirm that “Remote Utility Software for Icom Radios” is displayed and a check mark is in the box, and then click <OK>.



# 1 BEFORE USING THE REMOTE CONTROL SYSTEM

## Firewall settings (Continued)

### Windows 7

1. Click "Control Panel" in the Start menu.
  - The "Adjust your computer's settings" screen is displayed.
2. Click "System and Security."

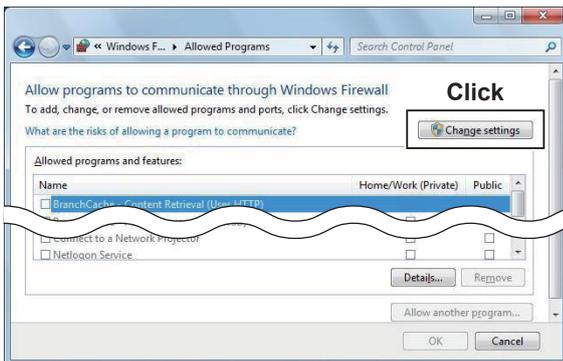


3. Click "Allow a program through Windows Firewall."

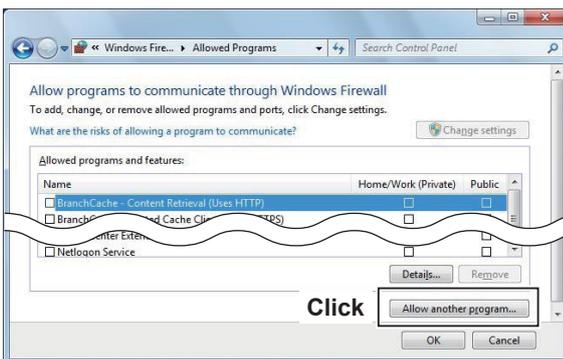


- The "Allowed Programs" screen is displayed.

4. Click <Change settings>.

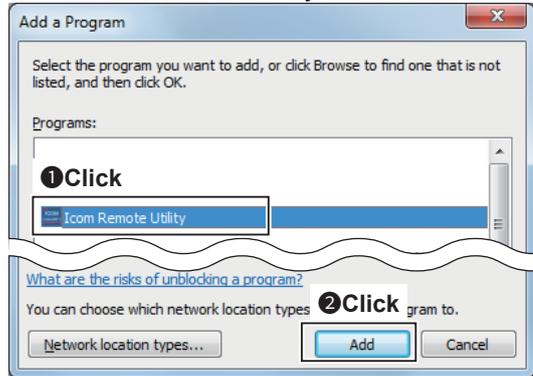


5. Click <Allow another program...>.

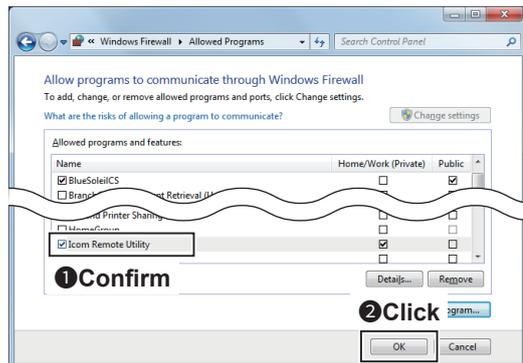


- The "Add a Program" screen is displayed.

6. Click "Icom Remote Utility" and then click <Add>.



7. In the "Allowed programs and features" list, confirm that "Icom Remote Utility" is displayed and a check mark is in the box, and then click <OK>.

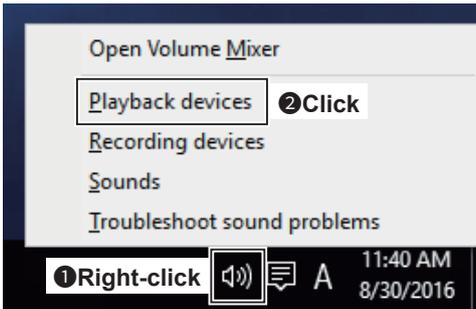


## Adjusting the volume of your audio devices

Before you start using the RS-R8600, the PC's audio volume must be set to a proper level. When several audio devices are used, you must individually set each one.

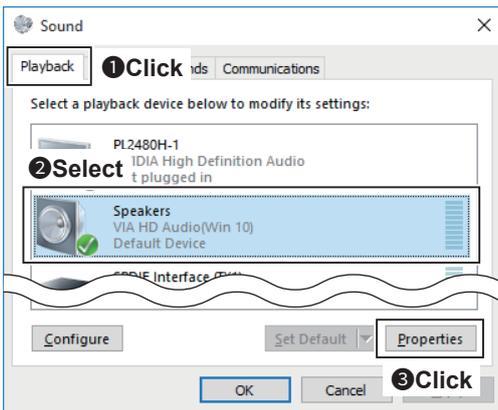
- Configurable items, displayed screens and terms that are used may differ, depending on your PC.
- These instructions are based on using Windows 10.

1. Right-click the speaker icon on the taskbar, then click "Playback devices."



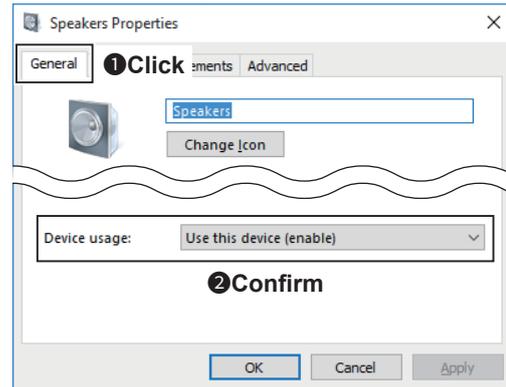
- The "Sound" screen is displayed.

2. Select the audio device that you will use, then click <Properties>.

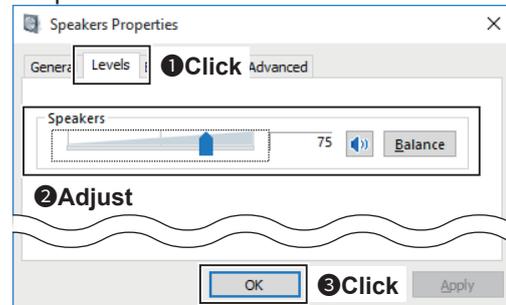


- The "Speaker Properties" screen is displayed.

3. Confirm "Use this device (enable)" is displayed in the Device Usage menu on the <General> tab.



4. Click the <Levels> tab. Adjust the speaker's audio level by moving the slide control to the right or left.
  - If the mute setting is turned ON in "Speakers" (🔇), click the icon to turn it OFF.After adjusting, click <OK> to close "Speaker Properties."



## Receiver's presets

The RS-R8600 remotely controls the receivers with the Network function using CI-V (Icom Communication Interface) commands.

See the CI-V command table in the receiver's instruction manual for details of the functions that can be controlled.

### The following manual settings are required when operating the RS-R8600

Properly preset the items in the table below for functions that cannot be controlled by CI-V commands, or for items that may cause unintended actions. See the receiver's instruction manual for details of the settings or operation.

| Genre    | Items                      | Contents   |
|----------|----------------------------|--|
| Function | Timer/Sleep Timer function | Set the timer to OFF or to your schedule   |
| Volume   | Volume for the RX audio    | Set the volume to a suitable level   |
| CI-V     | CI-V Baud Rate             | Desired Baud Rate<br>Example: Auto (Default)   |
|          | CI-V Address               | Desired CI-V Address<br>Example: 96h (Default)<br>① If other devices are connected to the system, make sure you do not to set a duplicate address. |

### The following settings are automatically set in the receiver

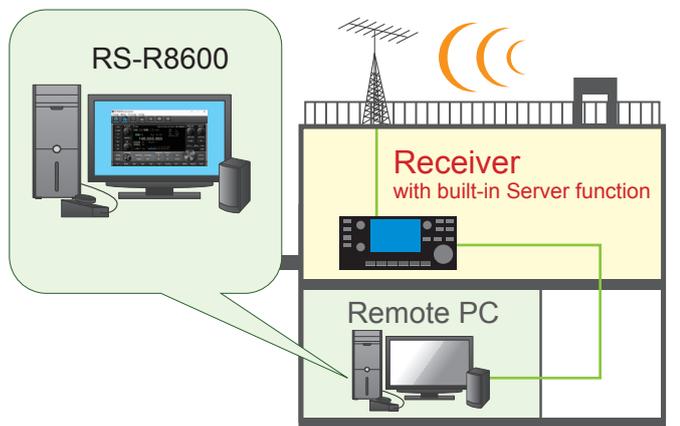
When the RS-R8600's Remote Controller connects to the receiver, and you select the model name on the Connect Setting screen, the following items are automatically set. If you manually operate the receiver, set these items.

| Genre    | Items                     | Contents                           |
|----------|---------------------------|------------------------------------|
| Function | Scan function             | Automatically cancels the scan.    |
|          | Scan Speech function      | Automatically set to OFF           |
|          | SSB/CW Synchronous Tuning | Automatically set to OFF           |
| Display  | Memory channel            | Automatically set to the VFO mode. |
| CI-V     | CI-V transceive           | Automatically set to ON.           |

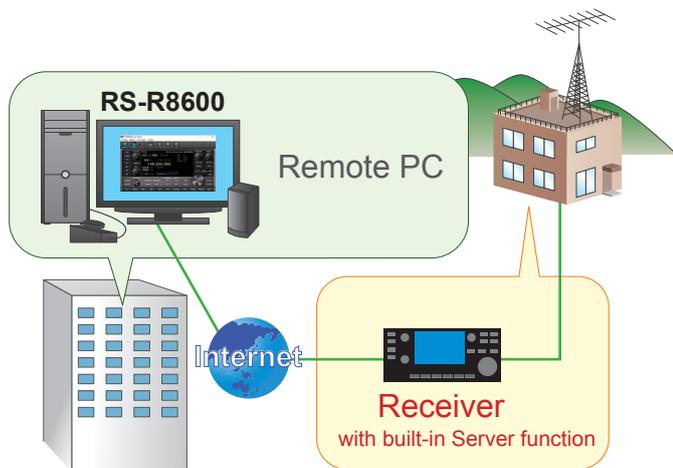
## Selecting a connection method

Select a connection method from the following:

When you want to configure the system through a LAN, see section 2.



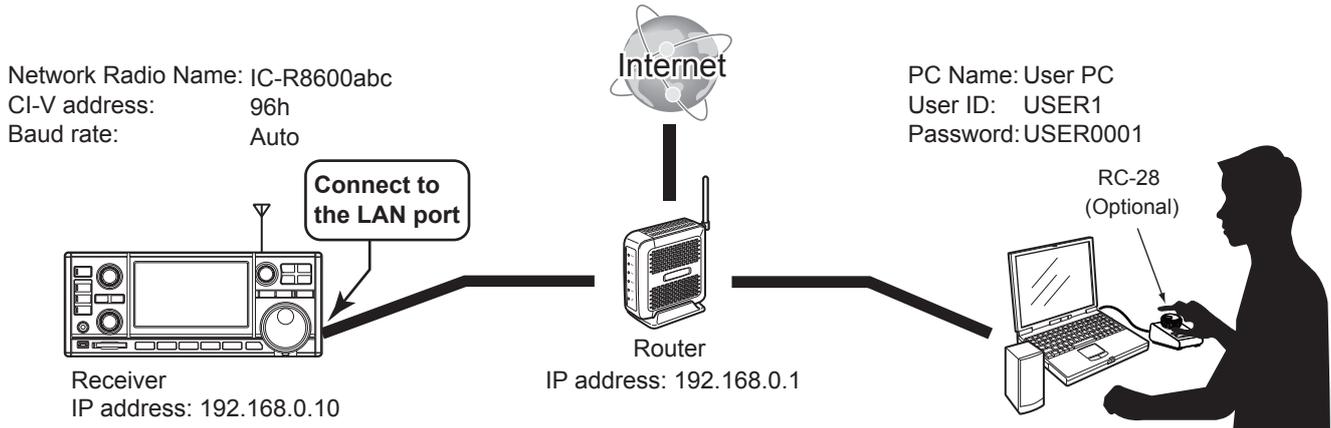
When you want to configure the system through the Internet, see section 3.



## Examples of the remote control system

This section explains the minimum required settings to configure a remote control system through a LAN, using the following illustration as an example.

- Only users whose ID and password are registered to the receiver can connect to it. **BE CAREFUL** in managing IDs and passwords.
- You can also refer to each application's help file for assistance with the functions and settings. While the application is open, push the [F1] key on the PC's keyboard to open the help file.



The user ID, password, and other settings in this illustration are only examples. Configure the system using your own settings.

### For your convenience:

If you use an RC-28 REMOTE ENCODER at the PC, you can use the RS-R8600 and feel like you are operating the actual receiver's main dial.

## Step 1. Settings on the receiver

This section describes how to setup the receiver.

**NOTE:**

When you change a setting that shows “(Valid after Restart),” you must restart the receiver after setting, so it will take effect.

After restarting, keep the receiver’s power ON, or remain in the remote standby mode.

**Network setting**

| Items                | Contents  |
|----------------------|---|
| DHCP*                | ON (Default)  |
| Network Name*        | A Network Name<br>Example: IC-R8600                       |
| Network Control      | OFF (Default) → ON  |
| Control Port (UDP)   | 50001 (Default)   |
| Serial Port (UDP)    | 50002 (Default)   |
| Audio Port (UDP)     | 50003 (Default)   |
| Internet Access Line | Your Internet access line type<br>Example: FTTH (Default) |

\* If you are using the IP address instead of the network name, set **DHCP** to OFF, and set the items shown below.

| Items           | Contents  |
|-----------------|---|
| DHCP            | ON (Default) → OFF  |
| IP Address      | An IP address that is not assigned to any other device.<br>Example: 192.168.0.10<br>(Default) |
| Default Gateway | An IP address of the LAN side on the router<br>Example: 192.168.0.1                           |

**User registration**

| Items                         | Contents   |
|-------------------------------|--|
| Network User1/2 ID            | A User ID<br>• Up to 16 characters<br>Example: USER1   |
| Network User1/2 Password      | A Password<br>• 8 to 16 characters<br>• At least two different characters must be used.<br>Example: USER0001 |
| Network User1/2 Administrator | NO (Default) → YES<br>• When the user is set as an administrator.  |

**To prevent unauthorized access:**

Set a long and strong password so that no one can possibly guess it.  
Mix upper and lower case letters, numbers or characters.

**Receiver registration**

| Items              | Contents  |
|--------------------|---|
| Network Radio Name | A Network Radio Name<br>• Up to 16 characters<br>Example: IC-R8600abc |

**Before setting a PC:**

Confirm the receiver settings described below, and keep the receiver’s power ON, or remain in the remote standby mode.

- Network Name or IP Address
- Network User ID and Password

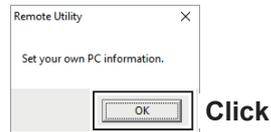
## Step 2. Settings on the PC's Remote Utility application

This section describes how to setup the PC.

① Before configuring the settings, connect a speaker to the PC.

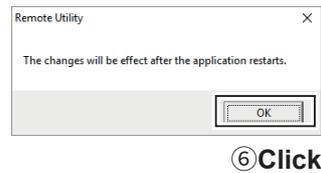
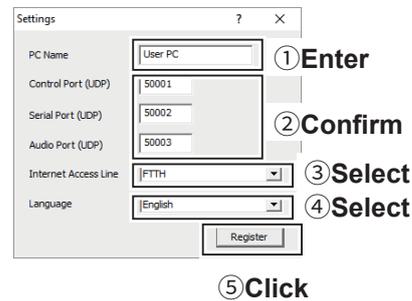
### 1 Open the Remote Utility.

1. Open "Icom Remote Utility."
2. "Please set your own PC information" is displayed, then click <OK>.
  - ① When you first open the Remote Utility, this screen is displayed.



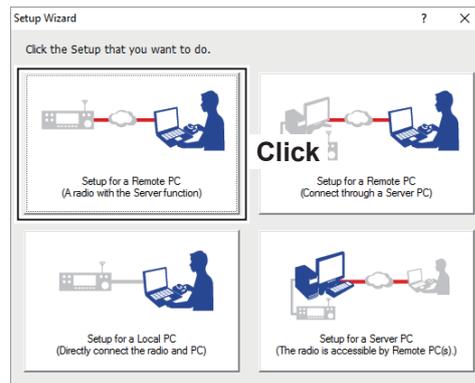
### 2 Configure the settings.

- ① When you first open the Remote Utility, this screen is displayed.
1. Enter a name for your PC of up to 16 characters. (Example: User PC)
  - ① **DO NOT** use the same name for more than one PC on your network.
2. Confirm the port numbers of the Control, Serial and Audio ports.
  - ① You should use the default port numbers for these ports.
3. Select your internet access line type.
4. Select the software display language.
  - ① The selected language will be used as the Help file language.
5. Click <Register> to save the settings.
6. Click <OK>, and then restart the Remote Utility.



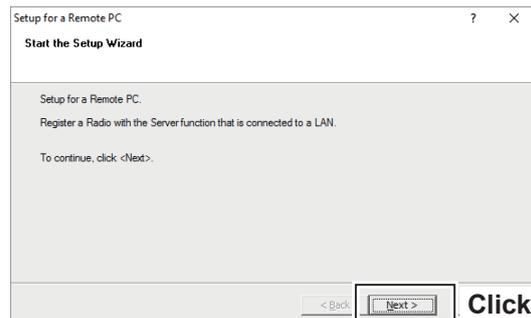
### 3 Click the Setup that you want to do.

- ① If no Servers and no radios are registered, this screen is displayed.
- Click **Setup for a Remote PC (A radio with the Server function)**.



### 4 Start the Setup Wizard.

Click <Next>>.



## 2 CONFIGURING THE SYSTEM THROUGH A LAN

### Step 2. Settings on the PC's Remote Utility application (Continued)

#### 5 Enter the Server Information.

1. Enter the receiver Network Name or IP Address.
2. Confirm the Control Port number.
  - ① You should use the default port number for this port.
3. Click <Next>>.

Add a Server

**Server Information**  
Enter the Server Address or Network Name and Control port.

Enter the Server Address or Network Name, and then click <Next>.  
If the Control port of the Server is changed, enter the number.

Server Address or Network Name: IC-R8600 ① **Enter**

Control Port (UDP): 50001 ② **Confirm**

< Back >Next > ③ **Click**

#### 6 Enter the User ID and Password.

1. Enter the User ID and Password that are registered to the receiver.
2. Click <Next>>.
  - After clicking <Next>>, connects to the Server.

Add a Server

**User ID and Password**  
Enter the User ID and Password to use to access the Server.

Enter the User ID and Password that are registered to the Server.  
Click <Next> to connect to the Server.

User ID: USER1 ① **Enter**

Password: \*\*\*\*\* ② **Enter**  
(Example: USER0001)

< Back >Next > Cancel ③ **Click**

#### NOTE:

If you cannot connect to the Server, an error dialog is displayed.

Click <<Back>, and confirm the settings.

Add a Server

**The Server Connection failed**

The Server is not found. Cannot connect to the Server.  
Click <Back> and confirm the Server address or Network name.  
Or click <Next> to save the Server.

< Back >Next > Cancel ③ **Click**

#### 7 Adding the Server has been completed.

1. Enter the Server Description.
  - ① The Server Address or Network Name is entered by default.
2. Click <Finish>.

Add a Server

**Add completed**

Adding the Server has completed.  
Enter the Server description. Click <Finish>, if there is nothing to change.

Server Description: IC-R8600 ① **Enter**

The following radios that are registered to the Server are added to the Radio List.  
To connect to the radio, using the Radio List screen.  
- IC-R8600abc

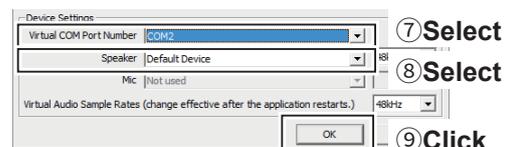
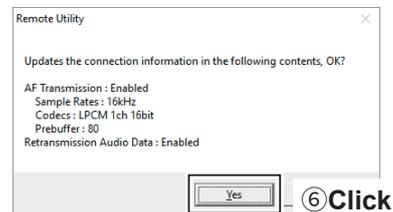
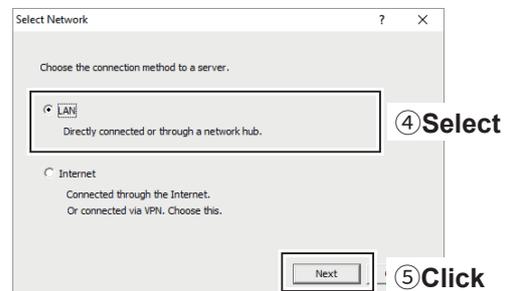
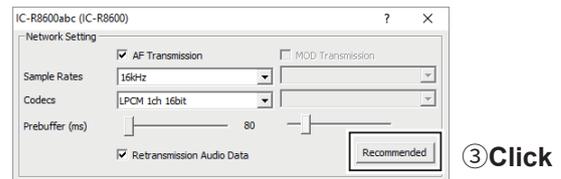
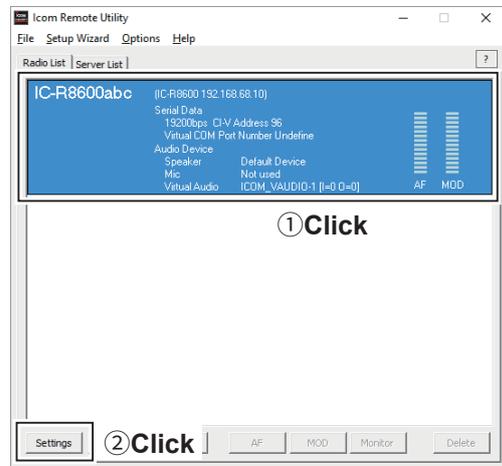
< Back >Finish ② **Click**

## 2 CONFIGURING THE SYSTEM THROUGH A LAN

### Step 2. Settings on the PC's Remote Utility application (Continued)

#### 8 Configure the settings to connect to the receiver.

1. Select the receiver.
2. Click <Settings>.
3. Click <Recommended>.
  - The Select Network screen appears.
4. Select **LAN**.
5. Click <Next>.
  - The recommended values for your network are displayed.
6. Click <Yes> to automatically set the displayed values in each field of the Network Setting, then close the Select Network screen.
7. Select a virtual COM port number.
  - The selected COM port number is used for CI-V operation with the receiver.
  - ① When you connect to the receiver with the control software, you have to set the COM port number.
8. Select an audio device that your speaker is connected, to output the received audio from the network.
9. Click <OK>.

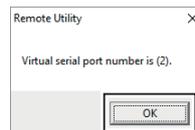
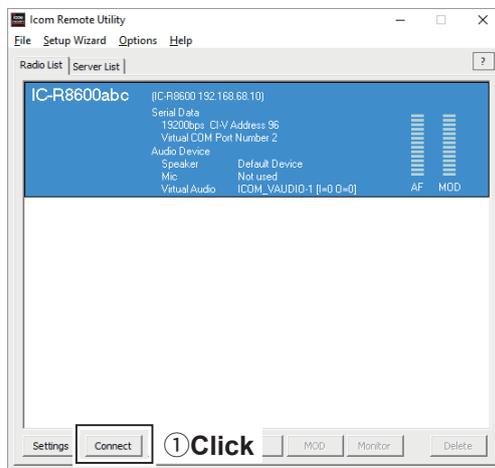


## 2 CONFIGURING THE SYSTEM THROUGH A LAN

### Step 2. Settings on the PC's Remote Utility application (Continued)

#### 9 Connect the receiver.

1. Click <Connect>.
2. Click <OK>.
  - “<<Connected>>” is displayed under the radio name when the connection has succeeded.
- ① If the connection fails, and an error screen is displayed, solve the problem using the “6. TROUBLESHOOTING” section. (p. 6-2)



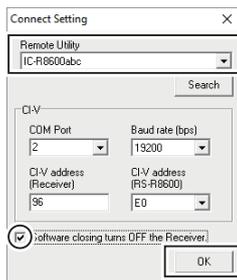
## Step 3. Remote control operation

This section describes how to connect and remotely control a receiver from a Remote PC using the Remote Controller.

- The description in this section is based on the assumption that the connection to the receiver using the Remote Utility has succeeded. (“<<Connected>>” is displayed under the radio name.)

### 1 Connect setting using the Remote Controller application

1. Open “RS-R8600 Remote Control.”
2. Click  in the toolbar, or click “Connect Setting...” in the Option menu.
  - The Connect Setting screen is displayed.
3. Select a receiver to access using the Remote Utility application, in **Remote Utility**.  
(Example: IC-R8600abc)
  - The CI-V settings are automatically loaded from the Remote Utility application to **CI-V**. The settings include the virtual COM Port number, receiver’s CI-V address and baud rate.
  - ① If the desired receiver is not displayed in **Remote Utility**, click <Search> to load the receiver’s information from the Remote Utility application.
4. Check “**Software closing turns OFF the Receiver.**” to turn OFF the receiver when the Remote Controller application is closed by clicking  or “Exit” on the File menu.
  - When the PC shuts down while the Remote Controller application is still running, the receiver’s power may not turn OFF.
5. Click <OK> to save the settings and close the screen.



③ Select

④ Click

⑤ Click

---

## 2 CONFIGURING THE SYSTEM THROUGH A LAN

### Step 3. Remote control operation (Continued)

#### 2 Connecting to the receiver using the Remote Controller application

Click <  > in the toolbar, or click “Connect ON” in the File menu.

- When the connection has succeeded, the receiver’s current data will be displayed on the main panel.

#### 3 Remote control operation

See the RS-R8600 Remote Controller’s Help file for remote operation details, such as how to change the frequency, or turn ON each function.

To display the Help file, click “Contents” in the Help menu on the Remote Controller application, or push the [F1] key on your PC’s keyboard.

#### When not using the receiver:

Follow the steps below to close and exit the remote control operation.

1. Disconnect the receiver from the Remote Controller application, and then close the Remote Controller application.
2. Disconnect the receiver from the Remote Utility application, and then close the Remote Utility application.
3. Turn OFF the receiver and the PC.
  - ① If you check “**Software closing turns OFF the Receiver.**” when you close the Remote Controller, the receiver’s power is also turned OFF.

**NOTE: DO NOT** allow the PC to go into the sleep or standby mode while using the RS-R8600. Otherwise, it might not work properly after the PC resumes normal activity.

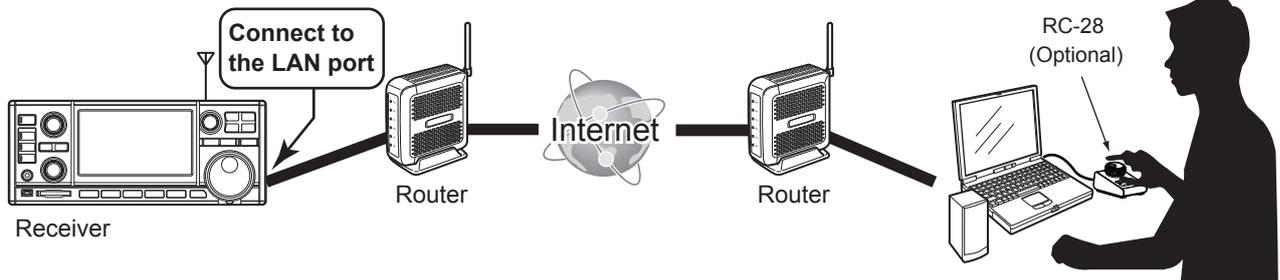
## Examples of the remote control system through the Internet

This section explains the minimum required settings to configure a remote control system through the Internet, using the following illustration as an example.

- Only users whose ID and password are registered to the receiver can connect it. **BE CAREFUL** in managing IDs and passwords.
- You can also refer to each application's help file for assistance with the functions and settings. While the application is open, push the [F1] key on the PC's keyboard to open the help file.

Network Radio Name: IC-R8600abc  
 CI-V address: 96h  
 Baud rate: Auto

PC Name: User PC  
 User ID: USER1  
 Password: USER0001



The user ID, password, and other settings in this illustration are only examples. Configure the system using your own settings.

### For your convenience:

If you use an RC-28 REMOTE ENCODER at the PC, you can use the RS-R8600 and feel like you are operating the actual receiver's main dial.

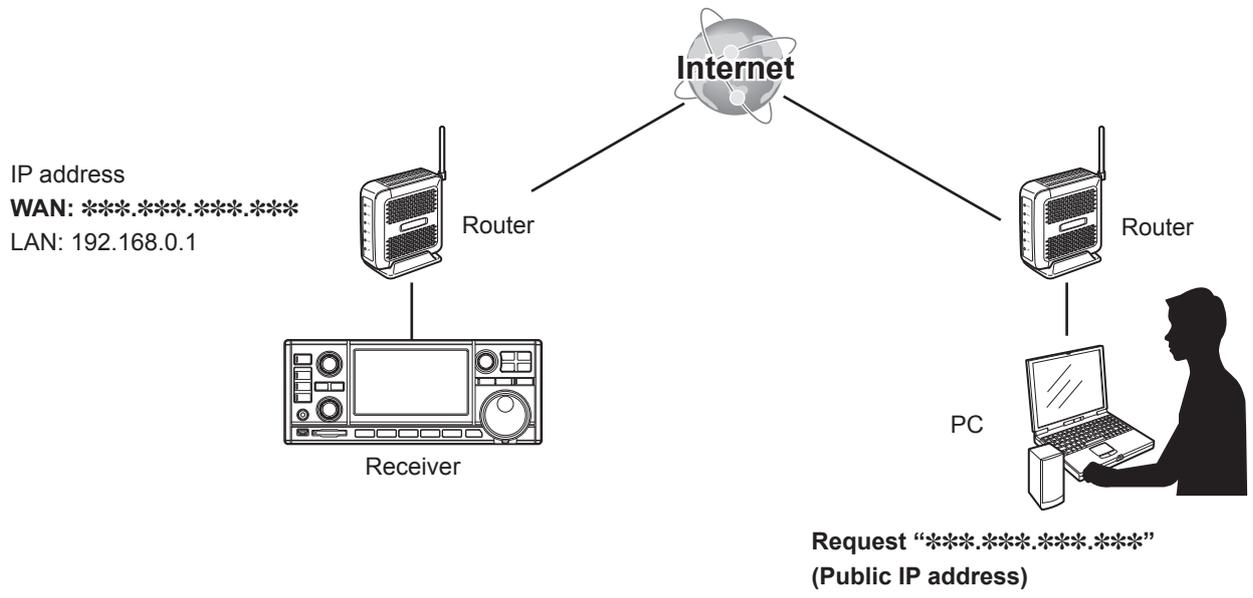
## About a public IP address and the Dynamic DNS service

If you configure the remote control system through the Internet, PCs can connect to the receiver using its public IP address or domain name.

### ◇ To let PCs connect to the receiver using its public IP address

A public IP address is an address that is accessible over the global Internet. Check the router's manual about how to configure your router to set the public IP address.

**NOTE:**  
If you have a dynamic public IP address, we recommend that you use the Dynamic DNS service to enable the PCs to connect to the receiver. (p. 3-3)  
① If the PC connected to the receiver is not using the Dynamic DNS service, you need to change setting of PC's Remote Utility to connect to the receiver each time its public IP address changes.

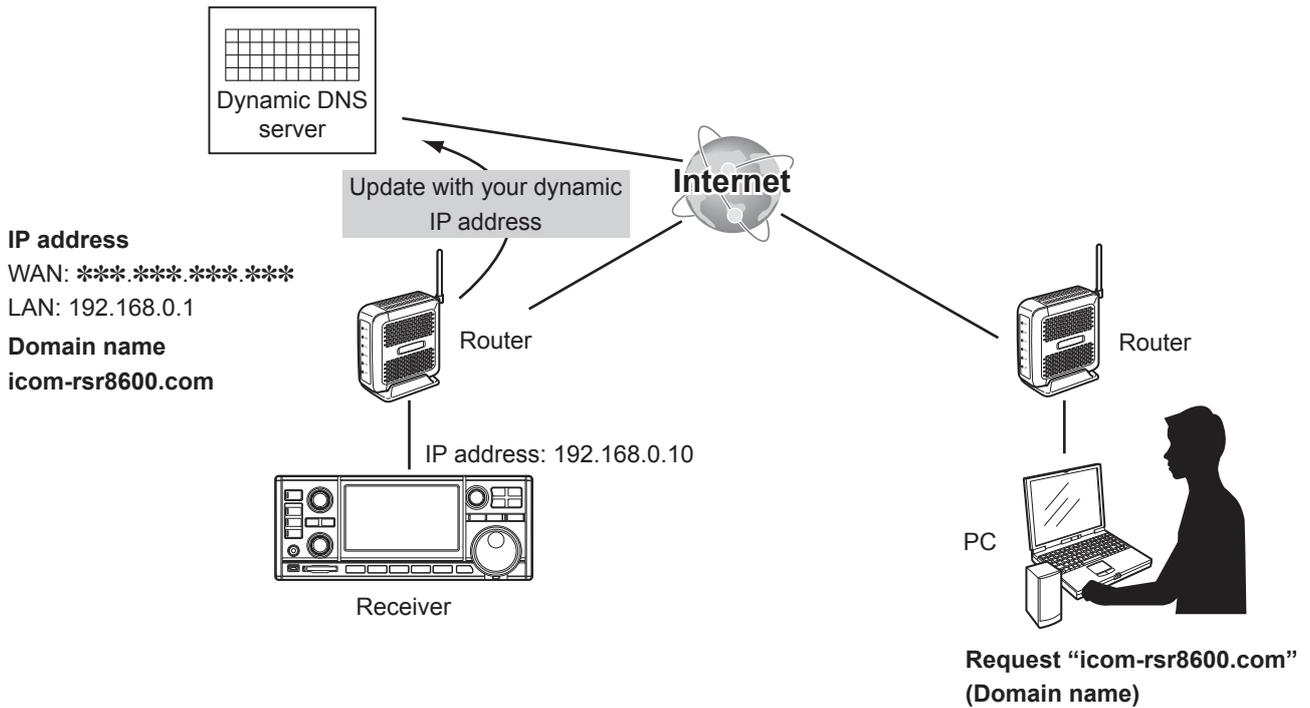


About a public IP address and the Dynamic DNS service (Continued)

◇ To let PCs connect to the receiver using its domain name

If you set up an account for a Dynamic DNS server, the DNS server resolves the domain name into your dynamic IP address. Using the domain name, PCs can connect to the receiver through the Internet, even if the receiver's public IP address is changed.

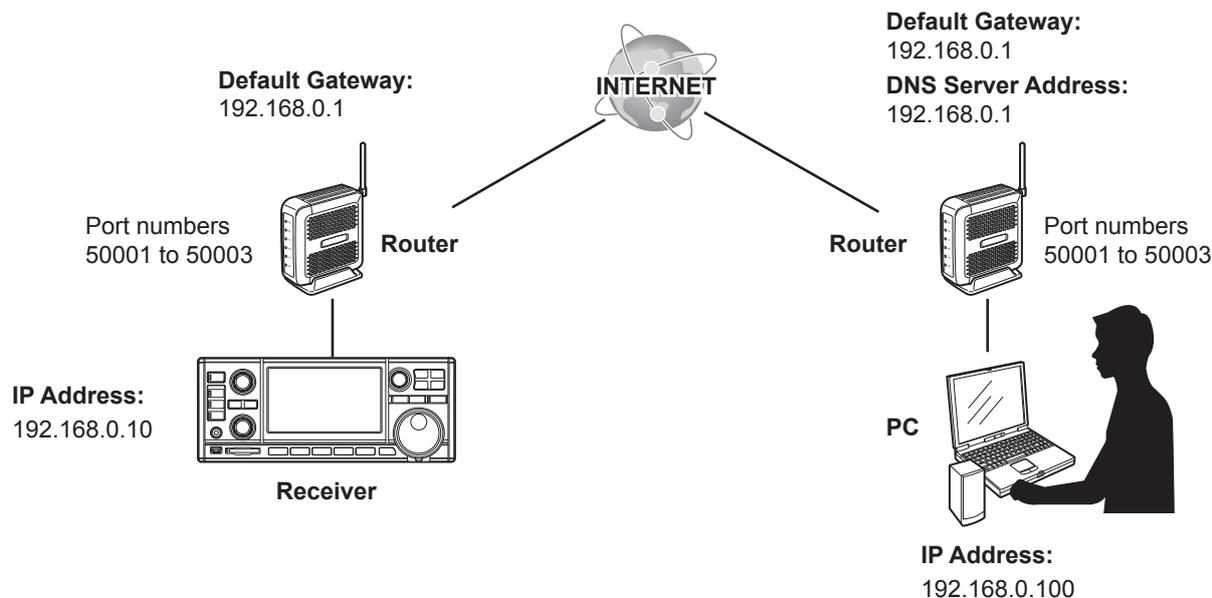
① Check the router's manual about how to configure your router to use the Dynamic DNS services.



## To enable remote control through the Internet

If you configure the remote control system through the Internet, you need to configure your router to enable connections from the Internet.

To enable connections, forward the port used with the Remote Utility.



### 1 Set the static local IP address to the receiver or PC.

You need to set a static local IP address to the receiver or PC.

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

#### Receiver setting

| Items              | Contents   |
|--------------------|--|
| DHCP               | ON (Default) → OFF   |
| IP Address         | An IP address that is not assigned to any other device.<br>Example: 192.168.0.10 (Default) |
| Default Gateway    | An IP address of the LAN side on the router<br>Example: 192.168.0.1                        |
| Control Port (UDP) | 50001 (Default)  |
| Serial Port (UDP)  | 50002 (Default)  |
| Audio Port (UDP)   | 50003 (Default)  |

### 2 Forward the port.

- Forward port numbers that are used for the RS-R8600. (Example: 50001 to 50003)
- "UDP" should be used as the port protocol.
- Set a static local IP address in Procedure 1 as a destination port.
- ① Check the router's manual about how to forward ports.
- ① Depending on the router settings, you must configure the IP filter settings. Check the router's manual how to configure the settings.

## Step 1. Settings on the receiver

This section describes how to setup the receiver.

### NOTE:

When you change a setting that shows “(Valid after Restart),” you must restart the receiver after setting, so it will take effect.

- After restarting, keep the receiver’s power ON, or remain in the remote standby mode.

### Network setting

| Items                | Contents  |
|----------------------|---|
| Network Control      | OFF (Default) → ON  |
| Internet Access Line | Your internet access line type<br>Example: FTTH (Default) |

### User registration

| Items                         | Contents   |
|-------------------------------|--|
| Network User1/2 ID            | A User ID<br>• Up to 16 characters<br>Example: USER1   |
| Network User1/2 Password      | A Password<br>• 8 to 16 characters<br>• At least two different characters must be used.<br>Example: USER0001 |
| Network User1/2 Administrator | NO (Default) → YES<br>• When the user is set as an administrator.  |

### To prevent unauthorized access:

Set a long and strong password so that no one can possibly guess it.

Mix upper and lower case letters, numbers or characters.

### Receiver registration

| Items              | Contents  |
|--------------------|---|
| Network Radio Name | A Network Radio Name<br>• Up to 16 characters<br>Example: IC-R8600abc |

### Before setting a PC:

Confirm the items described below, and keep the receiver’s power ON, or remain in the remote standby mode.

- Receiver’s public IP address or domain name
- Network User ID and Password

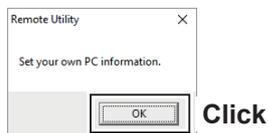
## Step 2. Settings on the PC's Remote Utility application

This section describes how to setup the PC.

① Before configuring the settings, connect a speaker to the PC.

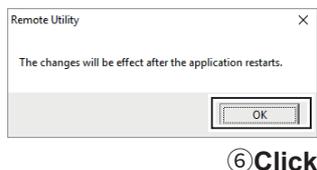
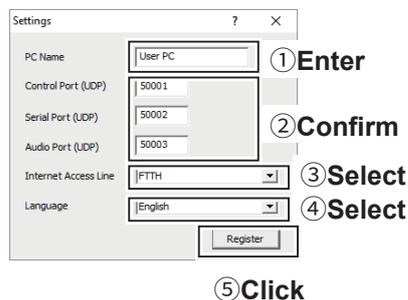
### 1 Open the Remote Utility.

1. Open "Icom Remote Utility."
2. "Please set your own PC information" is displayed, then click <OK>.
  - ① When you first open the Remote Utility, this screen is displayed.



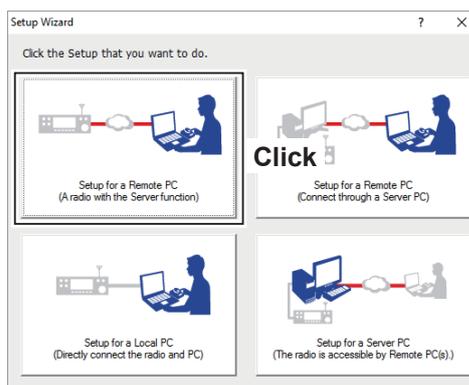
### 2 Configure the settings.

- ① When you first open the Remote Utility, this screen is displayed.
1. Enter a name for your PC of up to 16 characters. (Example: User PC)
  - ① **DO NOT** use the same name for more than one PC on your network.
2. Confirm the port numbers of the Control, Serial and Audio ports.
  - ① You should use the default port numbers for these ports.
3. Select your internet access line type.
4. Select the software display language.
  - ① The selected language will be used as the Help file language.
5. Click <Register> to save the settings.
6. Click <OK>, and then restart the Remote Utility.



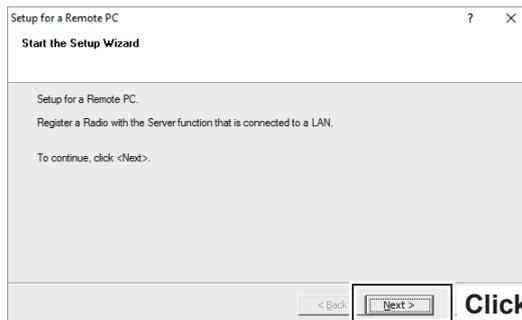
### 3 Click the Setup that you want to do.

- ① If no Servers and no radios are registered, this screen is displayed.
- Click **Setup for a Remote PC (A radio with the Server function)**.



### 4 Start the Setup Wizard.

Click <Next>>.



### 3 CONFIGURING THE SYSTEM THROUGH THE INTERNET

#### Step 2. Settings on the PC's Remote Utility application (Continued)

##### 5 Enter the Server Information.

1. Enter the receiver's domain name or public IP Address.  
① You should use the default port number for this port.
2. Confirm the Control Port number.
3. Click <Next>>.

##### 6 Enter the User ID and Password.

1. Enter the User ID and Password that are registered to the receiver.
2. Click <Next>>.
  - After clicking <Next>>, connects to the Server.

#### NOTE:

If you cannot connect to the Server, an error dialog is displayed.

Click <<Back>, and confirm the settings.

##### 7 Adding the Server has been completed.

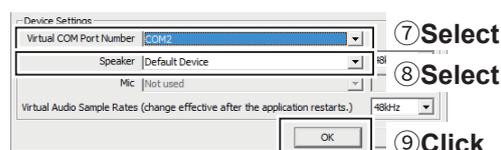
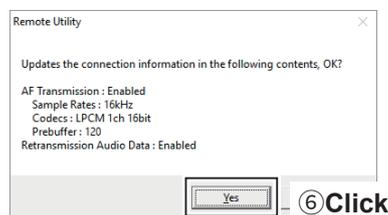
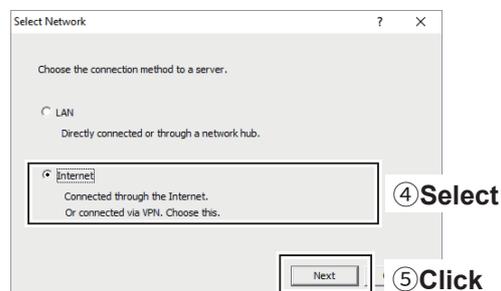
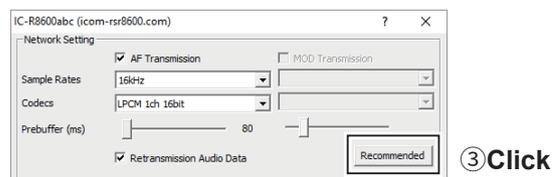
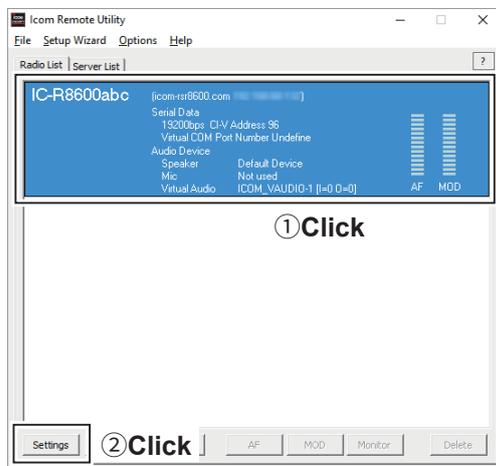
1. Enter the Server Description.  
① The Server Address or Network Name is entered by default.
2. Click <Finish>.

### 3 CONFIGURING THE SYSTEM THROUGH THE INTERNET

#### Step 2. Settings on the PC's Remote Utility application (Continued)

#### 8 Configure the settings to connect to the receiver.

1. Select the receiver.
2. Click <Settings>.
3. Click <Recommended>.
  - The Select Network screen appears.
4. Select **Internet**.
5. Click <Next>.
  - The recommended values for your network are displayed.
6. Click <Yes> to automatically set the displayed values in each field of the Network Setting, then close the Select Network screen.
7. Select a virtual COM port number.
  - The selected COM port number is used for CI-V operation with the receiver.
  - ① When you connect to the receiver with the control software, you have to set the COM port number.
8. Select an audio device that your speaker is connected, to output the received audio from the network.
9. Click <OK>.

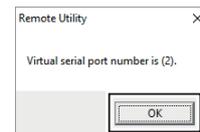
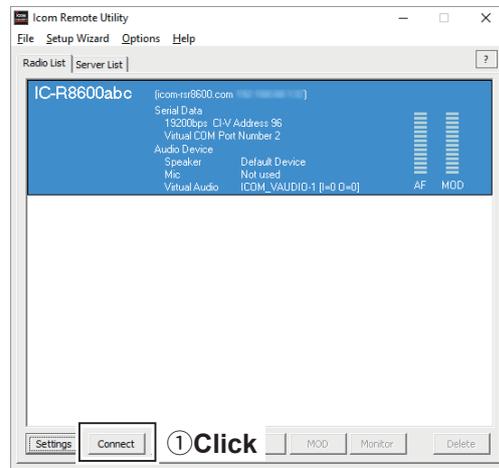


### 3 CONFIGURING THE SYSTEM THROUGH THE INTERNET

#### Step 2. Settings on the PC's Remote Utility application (Continued)

##### 9 Connect the receiver.

1. Click <Connect>.
2. Click <OK>.
  - “<<Connected>>” is displayed under the radio name when the connection has succeeded.
  - ① If the connection fails, and an error screen is displayed, solve the problem using the “6. TROUBLESHOOTING” section. (p. 6-2)



② Click

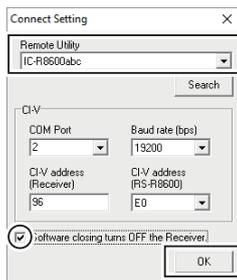
## Step 3. Remote control operation

This section describes how to connect and remotely control a receiver from a Remote PC using the Remote Controller.

- The description in this section is based on the assumption that the connection to the receiver using the Remote Utility has succeeded. (“<<Connected>>” is displayed under the radio name.)

### 1 Connect setting using the Remote Controller application

1. Open “RS-R8600 Remote Control.”
2. Click  in the toolbar, or click “Connect Setting...” in the Option menu.
  - The Connect Setting screen is displayed.
3. Select a receiver to access using the Remote Utility application, in **Remote Utility**.  
(Example: IC-R8600abc)
  - The CI-V settings are automatically loaded from the Remote Utility application to **CI-V**. The settings include the virtual COM Port number, receiver’s CI-V address and baud rate.
  - ① If the desired receiver is not displayed in **Remote Utility**, click <Search> to load the receiver’s information from the Remote Utility application.
4. Check “**Software closing turns OFF the Receiver.**” to turn OFF the receiver when the Remote Controller application is closed by clicking  or “Exit” on the File menu.
  - When the PC shuts down while the Remote Controller application is still running, the receiver’s power may not be turned OFF.
5. Click <OK> to save the settings and close the screen.



③ Select

④ Click

⑤ Click

---

## 3 CONFIGURING THE SYSTEM THROUGH THE INTERNET

### Step 3. Remote control operation (Continued)

#### 2 Connecting to the receiver using the Remote Controller application

Click <  > in the toolbar, or click “Connect ON” in the File menu.

- When the connection has succeeded, the receiver’s current data will be displayed on the main panel.

#### 3 Remote control operation

See the RS-R8600 Remote Controller’s Help file for remote operation details, such as how to change the frequency, or turn ON each function.

To display the Help file, click “Contents” in the Help menu on the Remote Controller application, or push the [F1] key on your PC’s keyboard.

#### When not using the receiver:

Follow the steps below to close and exit the remote control operation.

1. Disconnect the receiver from the Remote Controller application, and then close the Remote Controller application.
2. Disconnect the receiver from the Remote Utility application, and then close the Remote Utility application.
3. Turn OFF the receiver and the PC.
  - ① If you check “**Software closing turns OFF the Receiver.**” when you close the Remote Controller, the receiver’s power is also turned OFF.

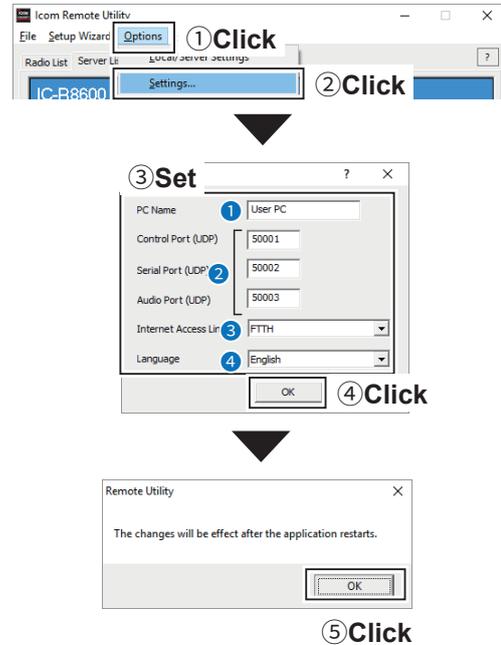
**NOTE: DO NOT** allow the PC to go into the sleep or standby mode while using the RS-R8600. Otherwise, it might not work properly after the PC resumes normal activity.

## Setting your PC's environment

Configure your PC's environment in the Remote Utility.  
The settings will take effect after rebooting the Remote Utility.

- ① When you first open the Remote Utility, the Settings screen is displayed.  
After configuring the settings, you can display other setting screens.

1. Click "Options."
  2. Click "Settings."
  - The "Settings" screen is displayed.
  3. Configure the settings.
  4. Click <OK> to save the settings.
  - The "Take effect after restarting the application" dialog is displayed.
  5. Click <OK>.
- The settings will take effect after restarting the Remote Utility.



### ① PC Name

Enter a name for your PC of up to 16 characters.  
**DO NOT** use the same name for more than one PC on your network.

### ② Port numbers

Enter the port numbers of the Control, Serial, and Audio ports.  
You should use the default port numbers for these ports.

### ③ Internet Access Line

Select your internet access line type.

### ④ Language

Select the software display language.  
The selected language will be used as the Help file language.

#### NOTE:

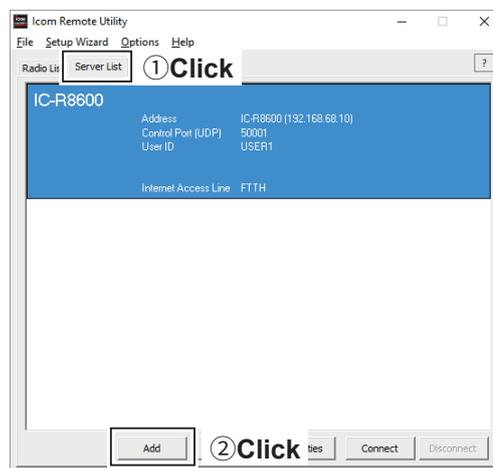
If you configure the remote control system through the Internet, and change the port number of the Control, Serial or Audio port, you should reconfigure the port forwarding settings and the IP filter settings on your router.  
(p. 3-4)

## Server Registration

To connect to a receiver through the network, Remote PCs should first connect to a Server using the Remote Utility. Before connecting, enter the Server information.

### ◇ To add a Server

1. Click <Server List>.
  2. Click <Add>.
    - Set the Server information according the displayed screen.
- ① When connecting to a receiver through a LAN, see page 2-3 about the settings. When connecting to a receiver through the Internet, see page 3-6.



### NOTE:

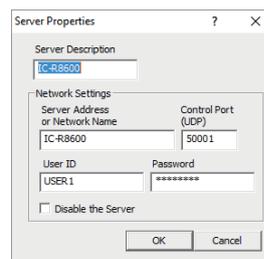
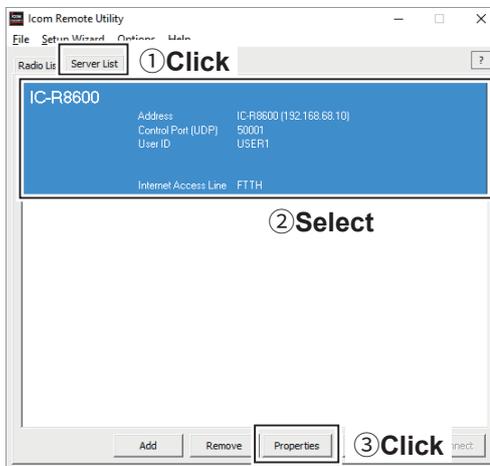
When you add a server from the Setup Wizard screen, click **Setup for a Remote PC (A radio with the Server function)**.

- ① To display the Setup Wizard screen, click **Setup Wizard** on the top menu.

Server Registration (Continued)

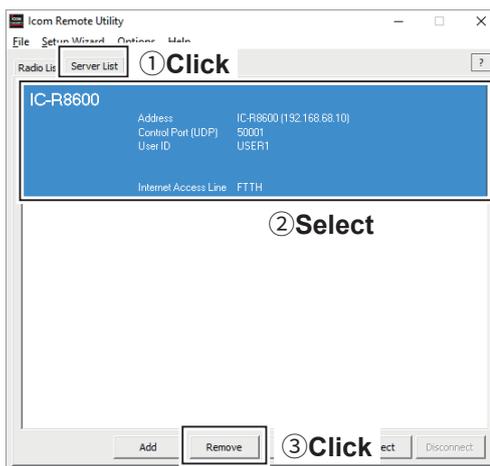
◇ To change a server's properties

1. Click <Server List>.
2. Select a server.
3. Click <Properties>.
4. Change the settings, and then click <OK>.



◇ To delete a server

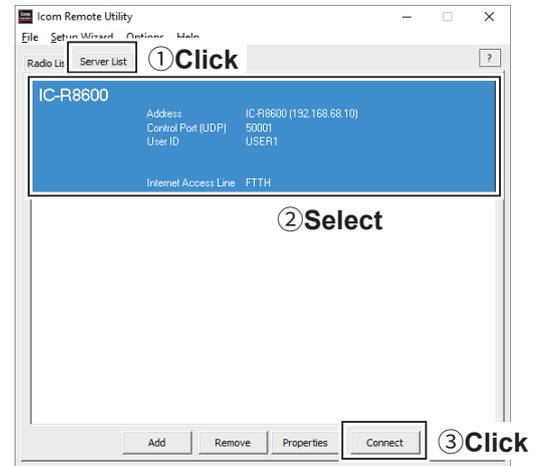
1. Click <Server List>.
2. Select a server.
3. Click <Remove>.



## Connecting to a Server

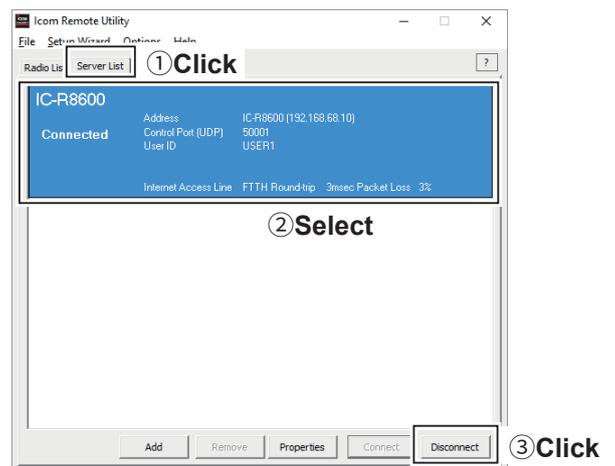
### ◇ Connecting to a Server

1. Click <Server List>.
  2. Select a server.
  3. Click <Connect>.
    - “Connected” is displayed under the Server name when the connection has succeeded.
- ① If the connection fails, and an error screen is displayed, solve the problem using the “6. TROUBLESHOOTING” section. (p. 6-1)



### ◇ Disconnecting from a Server

1. Click the <Server List> tab.
2. Select the connected server.
3. Click <Disconnect>.



## Connection setting

When the connection to the Server has succeeded, the receivers are displayed on the Radio List screen. Select a receiver from the list, then connect it to the network using the Remote Utility.

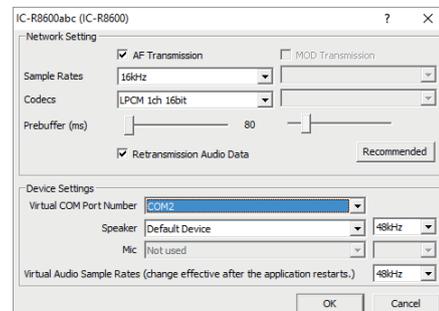
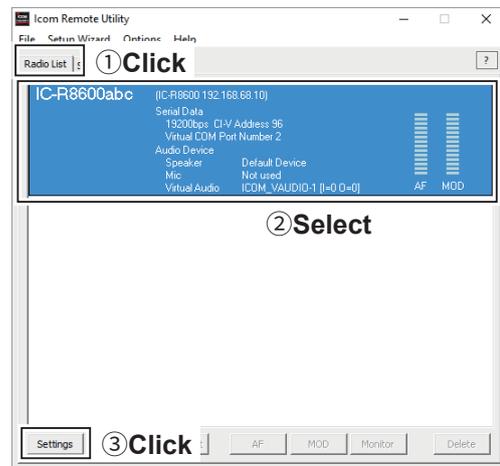
You have to configure the network audio quality and devices to connect.

① To control the receiver, connect to the receiver using the Control software.

**NOTE:**

If the connection setting is finished, you can simply connect to the receiver by selecting it in the Radio List screen and then clicking <Connect>.

1. Click <Radio List>.
2. Select a receiver.
3. Click <Settings>.  
① Receivers that are “<<Connected>>” or “Offline,” the Connection Setting cannot be changed.

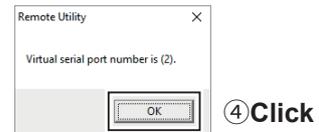
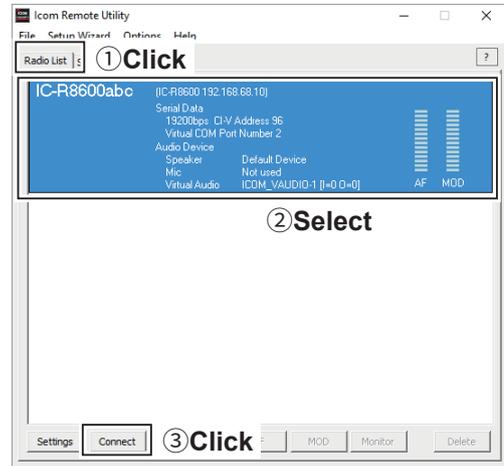


## Connecting to a receiver

If the connection setting is finished, you can simply connect to the receiver by selecting it in the Radio List screen and then clicking <Connect>.

### ◇ Connecting to a receiver

1. Click <Radio List>.
2. Select a receiver.
3. Click <Connect>.
4. Click <OK>.
  - “<<Connected>>” is displayed under the radio name when the connection has succeeded.
  - ① If the connection fails, and an error screen is displayed, solve the problem using the “6. TROUBLESHOOTING” section. (p. 6-2)

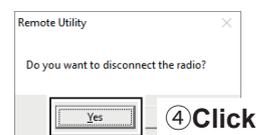
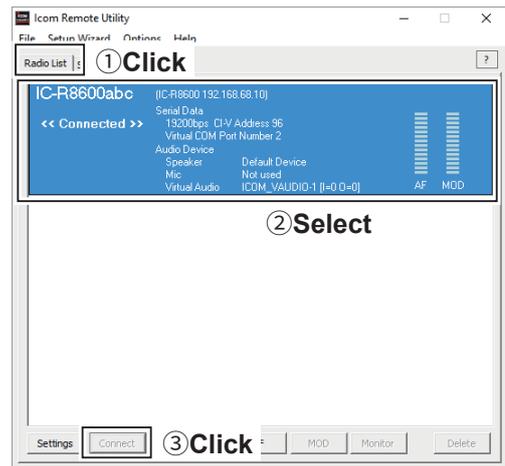


### ◇ Disconnecting a receiver

1. Click <Radio List>.
2. Select a receiver with “<<Connected>>” under its name.
3. Click <Disconnect>.
  - “Do you want to disconnect the radio?” is displayed.
4. Click <Yes> to disconnect the receiver.

#### NOTE:

- Be sure to disconnect when not using the receiver. Otherwise, other users cannot connect to it.
- The administrators can terminate a connection between another user and a receiver. If “<<Connected>>” disappears while connecting to a receiver, the administrator may terminate the connection.



## Adjusting audio using the Remote Utility

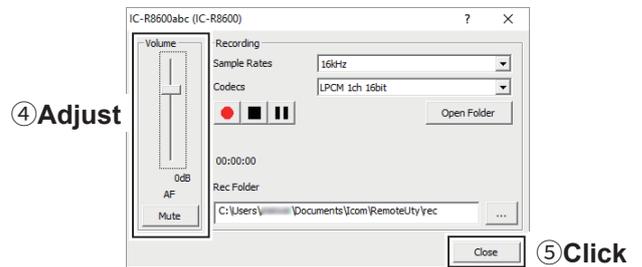
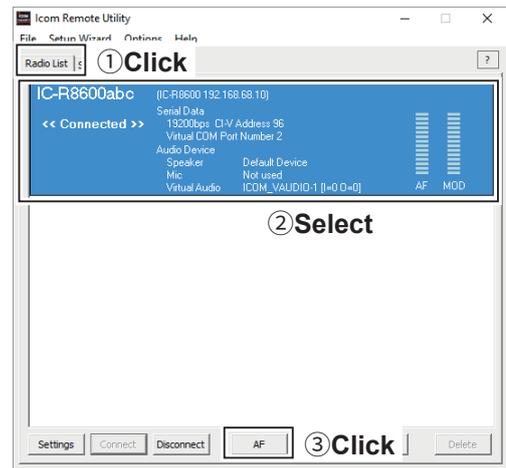
While connected to a receiver, you can adjust the received audio volume through the network using the Remote PC's Remote Utility.

The description in this section is based on the assumption that the connection to the receiver has succeeded. (“<<Connected>>” is displayed under the radio name.)

1. Click <Radio List>.
2. Select a receiver with “<<Connected>>” under its name.
3. Click <AF>.
4. Slide the adjustment bar on the Volume field up or down to adjust the received audio volume level.
  - ① Click <Mute> to mute the audio, and click once again to hear the audio.
5. Click <Close> to close the screen.

**NOTE:**

- The AF adjustment bar on the Volume field moves together with the AF control of the Remote Controller. However, if you use another control software, the audio volume level on the network can only be adjusted with the Remote Utility.
- You cannot adjust the received audio volume level of the receiver's speaker, with the Remote Utility. Use the AF control on the receiver to adjust it.



## Recording function

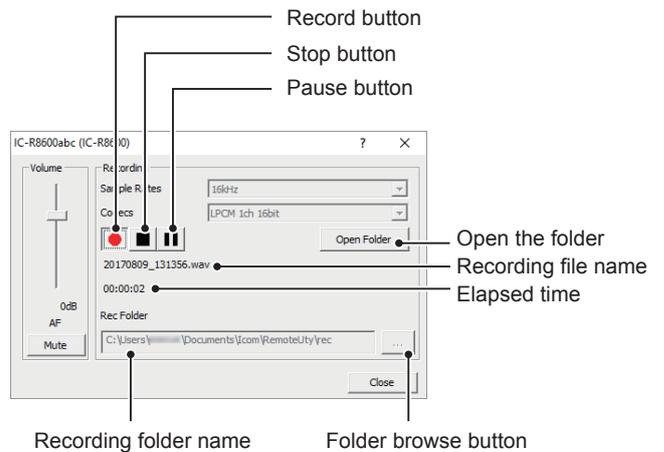
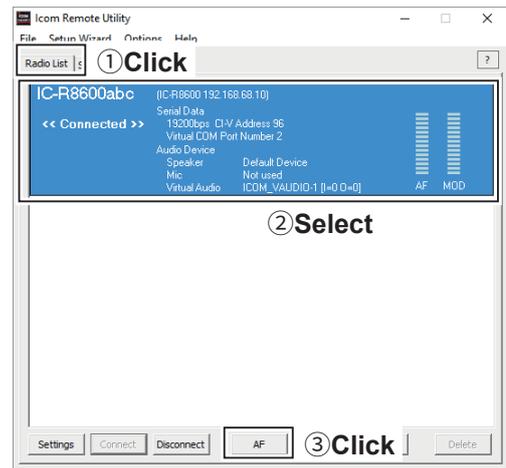
While connected to a receiver, you can record the received audio and save it into the PC's hard disk using the Remote PC's Remote Utility.

The description in this section is based on the assumption that the connection to the receiver has succeeded. ("<<Connected>>" is displayed under the radio name.)

1. Click <Radio List>.
2. Select a receiver with "<<Connected>>" under its name.
3. Click <AF>.
4. Click < [Red Dot] > to start recording.  
 ⓐ While recording, click < [Pause] > to pause.
5. Click < [Black Square] > to stop recording.

**NOTE:**

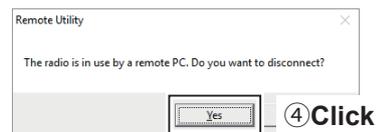
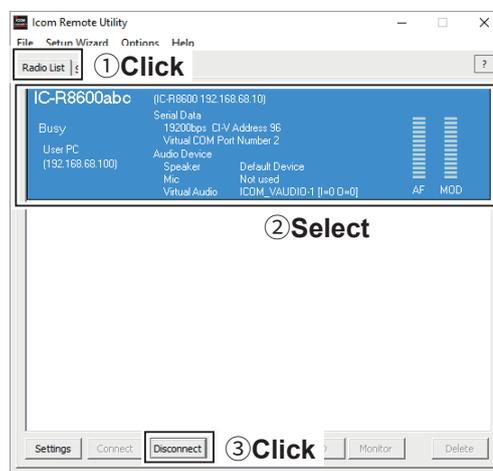
- When you click <Folder Open>, the folder in which the recording file is stored will be displayed.
- If you want to change the recording folder, click < [Ellipsis] >, then select a folder in the Browse For Folder screen.
- Adjust the sample rate frequency and codec to record the audio according to the recording purpose. When you record the audio received from the network, we recommend that you set the same sample rate frequency and codec that are programmed in the Connection Setting screen.



## Disconnecting another users

The administrators can terminate a connection between another user and a receiver.

1. Click <Radio List>.
2. Select a receiver with "Busy" under its name.
  - ① The operating user's name (PC Name that the user set in the Settings screen), and its IP address are displayed under "Busy."
3. Click <Disconnect>.
  - "The radio is in use by a remote PC. Do you want to disconnect?" is displayed.
4. Click <Yes> to terminate the connection.
  - ① When you terminate a connection, no dialog is displayed on the disconnected user's Remote Utility.



## About the Remote mode

When connected to the receiver, the Remote Controller automatically turns ON the Remote mode. While the Remote mode is ON, the Remote Controller transmits CI-V commands not only to check the receiver's current state, but also to remotely control it. When you want the Remote Controller to only check the receiver's current state, or when you want to inhibit the Remote Controller from transmitting control commands, while you manually operate the receiver, turn OFF the Remote mode.

### To turn OFF the Remote mode

Click the right icon in the toolbar, or click "Remote OFF" in the File menu.



### To turn ON the Remote mode

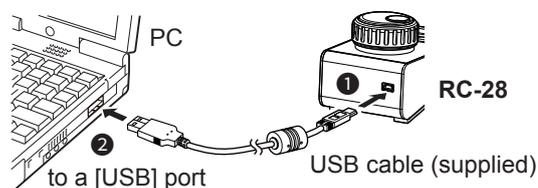
Click the right icon in the toolbar, or click "Remote ON" in the File menu.



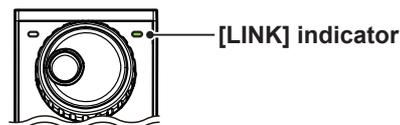
## Using the RC-28

If you connect an optional RC-28 REMOTE ENCODER to the Remote PC, you can use the RS-R8600 and feel like you are operating the actual receiver's main dial.

1. Connect the RC-28 to the PC that has RS-R8600 installed.
  - **DO NOT** connect the RC-28 to the PC with other than the supplied USB cable or through any USB hub. The RC-28 may not work properly.
  - ① When you connect the RC-28 to the PC for the first time, wait until "Device driver software installed successfully." is displayed.



2. Start up the RS-R8600 Remote Control software.
  - The [LINK] indicator on the RC-28 lights green.



3. Now you can control the assigned functions of the RS-R8600 using the RC-28.

### NOTE:

If the [LINK] indicator does not light, check the following.

1. Click "USB Dial..." in the Option menu to open the USB Dial Setting screen.
2. If **Select Device** is set to "Not Use," set it to the RC-28's serial number.  
(Example: RC-28 02XXXXX)

The following descriptions are possible causes and solutions for the problem you are experiencing. If you cannot solve the problem after trying these solutions, please contact your nearest Icom Dealer or Service Center.

### Problem: Cannot access a Server from a remote PC with the Remote Utility

- ① You can configure the Server information in the Server Properties screen.  
(Server List screen → <Properties>)

#### “Connection Failed” is displayed under the Server name

IC-R8600

Connection  
Failed

##### Possible cause 1

An incorrect IP address, domain name, or network name is entered to request a connection to the Server.

- ① If the Remote Utility cannot get the receiver’s IP address using the domain name or network name that you entered, “Cannot resolve the name” is displayed next to the name.

##### Solution

1. Check the receiver’s IP address, domain name, or network name. (pp. 2-2, 3-2)
2. Enter the receiver’s correct IP address, domain name, or network name in **Server Address or Network Name** in the Server Properties screen.

##### Possible cause 2

The control port number is different than that of the receiver.

##### Solution

1. Check the receiver’s control port number\*. (pp. 2-2, 3-4)
2. Enter the correct port number into **Control Port (UDP)** in the Sever Properties screen.

\* The default number is “50001.”

#### “Logon Failed” is displayed under the Server name

IC-R8600

Logon  
Failed

##### Possible cause

The user ID or password is different than the one in the receiver.

##### Solution

1. Confirm the Remote PC information registered in the receiver. (pp. 2-2, 3-5)
2. Enter the correct user ID and password into **User ID** and **Password** in the Sever Properties screen.

#### “Disable” is displayed under the Server name

IC-R8600

Disabled

##### Possible cause

The Server is set to “Disable,” to inhibit connecting to it.

##### Solution

Enable the Server by removing a check mark from **Disable** in the Sever Properties screen.

#### NOTE:

If you could not solve the problem after trying the above solutions, check the following.

- Is the receiver turned ON?
- Is **Network Control** set to “ON”? (pp. 2-2, 3-5)
- Is the virtual driver installed in the PC? (See the RS-R8600 Preparations for details.)

**Problem: Cannot access a receiver with the Remote Utility**

The description in this part is based on the assumption that the connection to the Server has succeeded.

- “Connected” is displayed under the Server name when the connection is successful.

-----  
**“Busy” is displayed under the radio name**



**Possible cause**

Another user is currently operating the receiver.

**Solution**

Wait for “Busy” to disappear.

- ① If you are operating as an administrator, you can terminate a connection between another user and a receiver. (p. 4-9)

-----  
**“Connect Error” is displayed under the radio name**



**Possible cause**

The serial port number (default: 50002) or the audio port number (default: 50003) is not connected.

**Solution**

Check the Firewall settings for the Remote PC.

When using the internet, also check the router’s port forwarding settings. (p. 3-4)

-----  
**“COM/Audio Error” is displayed under the radio name**



**Possible cause 1**

Other applications are using the COM port.

**Solution**

If other applications are running at the same time, close them.

**Possible cause 2**

Started the Remote Utility right after the PC has booted.

**Solution**

Wait for a while after the PC has booted, and then start the Remote Utility.

**NOTE:**

If you could not solve the problem after trying the above solutions, check the following.

- Is the receiver turned ON or in the remote standby mode?

**Problem: Cannot access a receiver with the Remote Controller**

---

① To access a receiver with the Remote Controller, configure the connection settings in the Connect Setting screen. Click < > in the toolbar, or click “Connect Setting...” in the Option menu to open the screen. The description in this part is based on the assumption that the connection to the receiver using the Remote Utility has succeeded.

- “<<Connected>>” is displayed under the radio name when the connection is successful.

**Possible cause 1**

In **CI-V** of the Remote Controller’s Connect Setting screen, the CI-V settings are different than that in the Remote Utility.

**Solution**

In the Connect Setting screen, click <Search>, and then select the correct receiver in the Remote Utility menu.

- The CI-V settings are automatically loaded from the Remote Utility.

**Possible cause 2**

Other applications are using the COM port.

**Solution**

If other applications are running at the same time, close them.

**NOTE:**

If you could not solve the problem after trying the above solutions, check the following.

- Is the receiver turned ON or in the remote standby mode?

---

**Problem: Cannot properly control the receiver with the Remote Controller**

---

**Possible cause**

The same CI-V address is being used by other control software.

**Solution**

Select an address other than “E0” in **CI-V Address (RS-R8600)** in the Remote Controller’s Connect Setting screen. However, this solution does not always solve the problem.

**NOTE:**

If you could not solve the problem after trying the solutions, check the following.

- Are there any radios that have the same CI-V address in the system?

---

**Problem: The received audio cannot be heard**

---

The description in this part is based on the assumption that the connection to the receiver has succeeded.

- “<<Connected>>” is displayed under the radio name when the connection is successful.

**Possible cause 1**

The speaker is not turned ON, or the volume level is too low.

**Solution**

Turn ON the speaker, or adjust the volume level.

**Possible cause 2**

An earphone or other device is connected to the computer in place of the speaker.

**Solution**

Disconnect the device.

**Possible cause 3**

The appropriate audio device is not selected in the Remote Utility.

**Solution**

Select the appropriate audio device in **Speaker** in the Connection Setting screen.

(Radio List screen → <Settings>) (pp. 2-5, 3-8)

- ① If you connect a new USB audio device to your PC, the audio device which is selected as a default device in your PC can be changed. If you select “Default Device” in **Speaker**, please keep that in mind.

**Possible cause 4**

The volume level of the audio device is set to too low on your PC.

**Solution**

Adjust the volume level of the audio device. (p. 1-5)

- ① The PC has the Volume Mixer function that can adjust each application’s audio level. Confirm that the Remote Utility or the control software is not muted, or set it to an appropriate volume level.

**Possible cause 5**

Audio output is disabled in the Remote Utility.

**Solution**

Insert a check mark in **AF Transmission** in the Connection Setting screen.

(Radio List screen → <Settings>)

**Possible cause 6**

The volume level is too low, or the mute is turned ON in the Remote Utility.

**Solution**

Adjust the volume level in the Received Audio Adjustment screen.

(Radio List screen → <AF>) (p. 4-7)

**Problem: The received audio is intermittent**

**Possible cause 1**

The network data transfer is excessive.

**Solution**

Select a lower sampling rate value in **Sample Rates**, or a different codec in **Codecs**, in the Connect Settings screen. (Radio List screen → <Settings>)

① First, select the lowest value. If the received audio is not interrupted with the setting, try a higher value, and adjust to an appropriate value.

**Possible cause 2**

The capacity of the prebuffer is not enough.

**Solution**

Select a longer value in **Prebuffer (ms)** in the Connection Setting screen.

(Radio List screen → <Settings>)

① Select as short a value as possible, because longer prebuffers can cause a delay, and make it difficult to adjust the audio level.

**Possible cause 3**

Your PC is overloaded.

**Solution 1**

Shutdown other applications, if running.

**Solution 2**

Reduce the number of receivers you are accessing with the Remote Utility.

**NOTE:**

- If you are accessing the receiver through a network, removing a check mark from **Retransmission** in the Connection Setting screen can solve the problem. (Radio List screen → <Settings>)
- You can check the simplified packet round trip time, and the average packet loss in the Remote Utility's Server List screen.

**Problem: The connect settings cannot be changed**



**Possible cause 1**

The receiver is “Offline.”

**Solution**

Click <Connect> on the Server List screen to connect to the server.



**Possible cause 2**

“<<Connected>>” is displayed.

**Solution**

Click <Disconnect> on the Radio List screen to disconnect from the receiver.

---

### **Problem: The connect settings cannot be changed using the Remote Controller**

---

#### **Possible cause**

The Remote Controller is connected to the receiver.

#### **Solution**

Click <  > to disconnect it from the receiver.

**Count on us!**



# Operating Guide

The following windows are displayed by right-clicking on each button on the Remote Controller.

① The windows that are displayed by left-clicking, the buttons are marked in white (Example: Memory Channel Editor).

The diagram illustrates the RS-R8600 Remote Control software interface and its associated settings windows. The central interface shows the main control panel with various buttons and knobs. The following windows are displayed:

- Memory Channel Editor:** Shows a list of memory channels (00-10) and a table for editing channel names.
- Spectrum Scope:** Displays a spectrum plot with parameters like REF Level, VBW, and Averaging.
- Scan:** Includes controls for PROG, AUTO, MEMO, STOP, SPEED, PAUSE, RESUME, and buttons for EDGE LOAD, TEMP SKIP, PSKIP, RECALL, and REDCALL.
- RX History:** Shows a table of received signals with columns for Frequency, Mode, Caller, Called, I.DSQL Code, RXRPT1, RXRPT2, and Received date.
- Set Mode:** Configures various modes like Set Mode, AF/AF SQL, USB (Front) AF SQL, USB (Rear) AF SQL, LAM AF SQL, Meter, Meter Peak Hold, NOTCH, and Confirmation Beep.
- AGC:** Adjusts AGC-SLOW Delay (AM) and AGC levels (10dB, 20dB, 30dB).
- NR:** Adjusts NR LEVEL.
- NB:** Adjusts NB LEVEL, DEPTH, and WIDTH.
- FILTER:** Configures SSB, BW, and FIL2 Type.
- NOTCH:** Configures Manual Notch Q.
- AFC:** Includes an AFC Limit checkbox.
- DUP:** Configures DUP Offset Frequency (MHz).
- Tone Control:** Adjusts Bass, Treble, HPF, and LPF for FM.
- Digital Setting:** Configures Digital Monitor, D-STAR, and NXDN settings.
- Mode-specific windows:**
  - FM:** TSQ, DTCS, CSQ.
  - D-STAR:** CSQ.
  - P25:** NAC.
  - dPMR:** Common ID, CC.
  - NXDN:** RAN.
  - DCR:** UC.

Buttons on the central interface are marked with white circles, indicating they are left-clicked. The displayed windows differ according to the selected receive mode.