

This guide contains instructions on how to configure the remote control system, and how to remotely control a radio.

If you are using one of the following radios and connecting to the network directly, see the Installation guide **B** (For radios with the Network function). (As of November 2016)

- IC-7851
- IC-7850
- IC-7800 (Firmware version 3.00 or later)
- IC-7700 (Firmware version 2.00 or later)

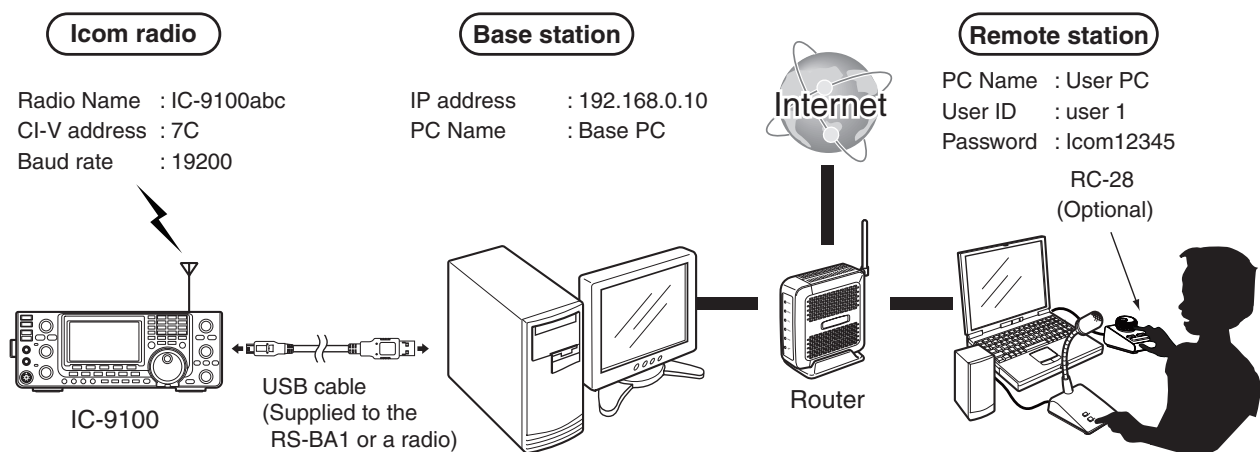
Before reading this guide, please finish the installation, using the RS-BA1 Preparations.

See the RS-BA1 Instruction Manual for detailed instructions.

■ Example of the remote control system

This guide explains the minimum required settings to configure a remote control system, taking the following illustration as an example. In this example, a radio is connected to the Base station's PC with the supplied USB cable, and a remote station remotely controls the radio through the network.

- We recommend that you place the Remote station's PC near to the Base station's PC and a radio, to check that the settings are correct, and that you can correctly control the radio.
- You need to register the ID and password to the Base station to enable the Remote station to access the Base station and the radio. **BE CAREFUL** in managing IDs and passwords.
- See the Instruction Manual, for detailed instructions on the RS-BA1.
You can also refer to each software's help file, for assistance with the functions and settings.
While the software is open, push the [F1] key of the PC's keyboard to open the help file.



NOTE:
The password, and other settings in this illustration are only an example. Please configure the system using your own settings.

For your convenience:
If you connect an RC-28 REMOTE ENCODER to the Remote station, you can use the RS-BA1 and feel like you are operating the actual transceiver's main dial, [TRANSMIT] key and so on.

Step1. Connect the radio to the Base station's PC

Before connecting the radio to the PC, please finish the installation for the Base station's PC and the Remote station's PC, using the RS-BA1 Preparations.

Select the connection pattern

Check the connector type on your radio and see the following chart to connect your radio to the Base station's PC. To connect an Icom CI-V command capable radio to the Base station's PC, you have to make connections for control command and audio communication.


RS-BA1 operation with the Base station's PC connected to the radio's ACC socket, MIC connector, or S/P DIF jack for audio communication cannot be guaranteed.

- This guide explains the USB connection as example. See the RS-BA1 Instruction Manual ("2. WHEN CONNECTING TO THE NETWORK THROUGH A PC" section) when connecting to the radio's [REMOTE] jack or [RS-232C] port.

Radio's connector	Outline		Model	Ref.
	Control command	Audio		
When connecting to the radio's [USB] port	Through a USB cable		IC-7100/IC-7200/IC-7300/IC-7410/IC-7600*/IC-7850/IC-7851/IC-9100	p. A-3
When connecting to the radio's [REMOTE] jack	Through the CT-17 CI-V LEVEL CONVERTER	Through an audio cable connected between the PC's audio terminal and the radio's [ACC] socket or [MIC] connector	All	RS-BA1 Instruction Manual
When connecting to the radio's [RS-232C] port	Through an RS-232C cable	Through an audio cable connected between the PC's audio terminal and the radio's [ACC] socket, [MIC] connector or [S/P DIF] jack	IC-7700/IC-7800*2	RS-BA1 Instruction Manual

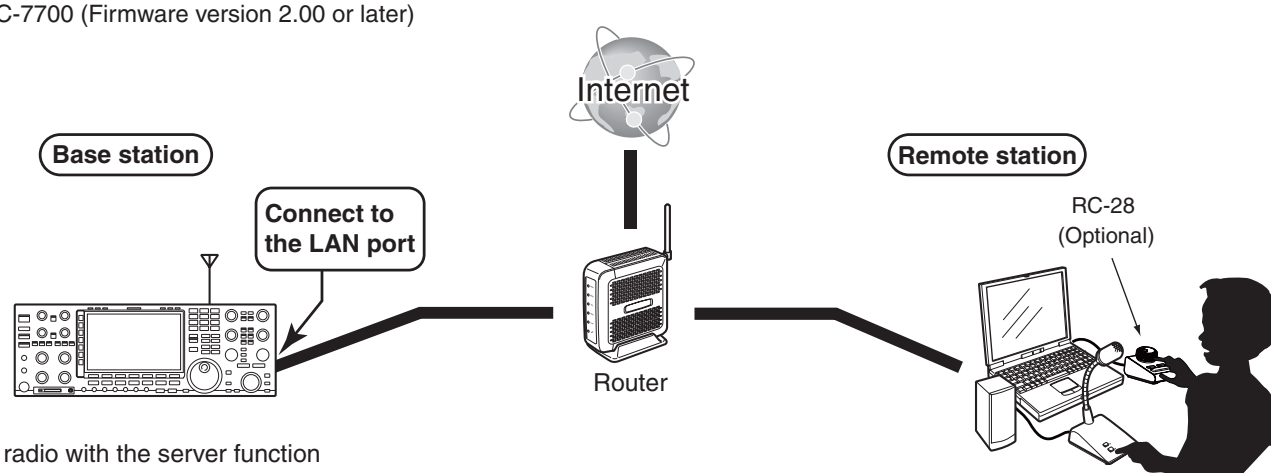
*1 When you turn your radio ON or OFF from the Remote Controller, connect to the radio's [Remote] jack.

*2 When you turn your radio ON or OFF from the Remote Controller, connect to the radio's [Remote] jack or to the network directly.

The Network function enables the radio to directly connect to the network. With this function, the base station PC is not necessary. See the Installation guide  (For radios with the Network function).

Radios with the Network function (As of November 2016)

- IC-7851
- IC-7850
- IC-7800 (Firmware version 3.00 or later)
- IC-7700 (Firmware version 2.00 or later)



The diagram illustrates a network setup. On the left, a 'Base station' (radio) is shown with a callout 'Connect to the LAN port' pointing to its rear panel. A thick line connects the Base station to a 'Router'. Above the Router is an 'Internet' icon. Another thick line connects the Router to a 'Remote station' which includes a laptop and a person. An optional 'RC-28' device is also shown connected to the laptop.

A radio with the server function

Step1. Connect the radio to the Base station's PC (Continued)

■ When connecting to the radio's [USB] port

For IC-7600 users

When you turn your radio ON or OFF from the Remote Controller, connect to the radio's [Remote] jack.

1. System requirements

- A PC that has a USB 1.1, 2.0 or 3.0 port
- Icom CI-V command capable radio that has a [USB] port (Type B/Mini-B)
- The USB cable (supplied to the RS-BA1 or a radio)

2. Install a USB driver

CAUTION:

- **NEVER** connect the radio to the PC with the USB cable until the USB driver installation has been completed.
- The driver is not supported by the Windows® automatic recognition system.

To use the USB cable between the radio and the PC, you must first install a USB driver.

- The USB driver comes with the RS-BA1. Or download from the Icom website.

NOTE: When a PC with USB 3.0 port is used for operating the radio, confirm the driver name. If the name "Silicon Laboratories CP210x USB to UART Bridge (Driver Removal)" is displayed on the Control Panel screen, uninstall it and then install the latest driver.

The latest driver and installation guide can be downloaded from here:

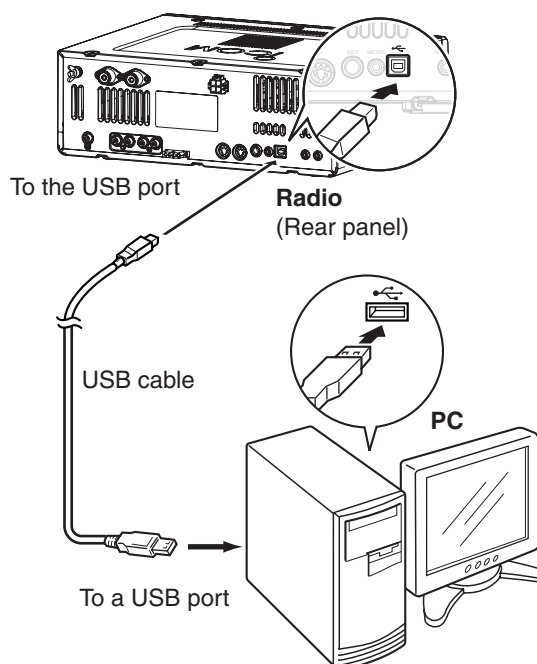
<http://www.icom.co.jp/world/index.html>

Read the installation guide before installing the driver.

3. Connect the radio to the Base station's PC

Connect the radio to the Base station's PC using the USB cable.

- This guide is based on using a Type B USB cable.



NOTE: If you connect a new USB audio device to your PC, the device selected as the default on your PC can be changed. Moreover, never connect another radio using a USB cable while the Remote Utility is open.

Step2. Radio's presets

The RS-BA1 remotely controls Icom radios using CI-V (Icom Communication Interface) commands. See the CI-V command table in the radio's instruction manual for details of the functions that can be controlled.

1. The following manual settings are required when operating the RS-BA1


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

NOTE:

- Remove the transverter from the radio, if it is connected.
- To prevent an accidental transmission, we recommend you remove any keyer, keypad or other external equipment connected to the radio.
- Set the radio to a normal operating mode. The radio cannot receive CI-V commands while in special modes, such as the firmware update mode or cloning mode.
- If the radio has a Time-Out Timer function, we recommend you enable it to prevent the radio from continuously transmitting.

Genre	Item	Model	Setting
Function	RIT function	All	Set to OFF.
	ΔTX function	All	Set to OFF.
	Simple band scope	IC-746PRO*/IC-7000*/IC-7100/IC-7400*/IC-9100	Set to OFF.
	SWR Measurement function	IC-746PRO*/IC-7000*/IC-7100/IC-7400*/IC-9100	Set to OFF.
	Timer/Sleep Timer function	Radios with the timer function	Set the timer to OFF or to your schedule.
	Weather Alert function	IC-7100	Set to OFF.
Display	RTTY decode screen	IC-746PRO*/IC-756PROIII*/IC-7400*	Exit the screen.
Volume	Volume for the RX audio	All	Set the volume to a suitable level.
CI-V	CI-V address	All	Set an appropriate CI-V address.
	CI-V baud rate	All	Set to 19200 bps (or Auto).
	CI-V USB Port	IC-7300/IC-7850 (Firmware version 1.10 or later)/ IC-7851 (Firmware version 1.10 or later)	To use the Scope function when connecting to the USB port, set to Unlink from [REMOTE].
	CI-V USB Baud Rate	IC-7300/IC-7850 (Firmware version 1.10 or later)/ IC-7851 (Firmware version 1.10 or later)	To use the Scope function when connecting to the USB port, set to 115200 (or Auto).
Set mode	USB Serial Function	Radios with a USB (B type) port	Set to "CI-V" for the selected connection type.
	RS-232C Function	Radios with an RS-232C port	Set to "CI-V" for the selected connection type.

*Operation on models without a USB connection cannot be guaranteed.

 If you are using the IC-PW1 with the transceiver, be sure to set the CI-V baud rate to 19200 bps. After changing the transceiver's CI-V settings, be sure to reset the CPU of the IC-PW1 and set the transceiver's CI-V settings on the IC-PW1. See the IC-PW1 instruction manual for details.

Step2. Radio's presetsings (Continued)

2. The following settings are automatically set to the radio

When the RS-BA1's Remote Controller connects to the radio, and you select the model name on the Connect Setting screen, the following may be automatically set, depending on the model. When you manually operate the radio, set these items as desired.

Genre	Item	Model	Action
Function	MAIN/SUB Tranking function	IC-7850 (Firmware version 1.10 or later)/ IC-7851 (Firmware version 1.10 or later)	Automatically set to OFF.
	RIT function	Radios with the Network function/ IC-7100 (Firmware version 1.10 or later)/ IC-7600 (Firmware version 2.00 or later)	Automatically set to OFF.
	ΔTX function	Radios with the Network function/ IC-7600 (Firmware version 2.00 or later)	Automatically set to OFF.
	SSB/CW Synchronous Tuning	All	Automatically set to OFF.
	Calibration Marker	Radios with Calibration Marker function	Automatically set to OFF.
	VOX function	All	Automatically set to OFF.
	Scan function	All	Automatically cancel the scan.
	RTTY filter	IC-746PRO*/IC-756PROIII*/IC-7400*	Automatically set to OFF.
	Twin Peak Filter	IC-746PRO*/IC-756PROIII*/IC-7400*	Automatically set to OFF.
Display	Dualwatch function	Radios with the Dualwatch function	Automatically set to OFF.
	SUB band	IC-9100	Automatically set to OFF.
	Memory channel/Call channel	All	Automatically set to the VFO mode.
Operating mode	DR (D-STAR® REPEATER) mode	Radios with the DV mode	Automatically set to OFF.
	Satellite mode	Radios with the Satellite mode	Automatically set to OFF.
CI-V	CI-V transceive	All	Automatically set to ON.
	CI-V 731 Mode	IC-746PRO*/IC-756PROIII*/IC-7400*	Automatically set to OFF.

*Operation on models without a USB connection cannot be guaranteed.

Step3. Before configuration

To configure the remote control system, the following settings are required.

◆ Firewall setting (RS-BA1 Instruction Manual p. 1)

To let the Remote Utility work properly, it must be added as an exception in the Firewall. See the RS-BA1 Instruction Manual for details.

◆ Volume adjustment for your audio devices (RS-BA1 Instruction Manual p. 7)

Before you start communicating using the RS-BA1, the PC's audio volume must be set to a proper level.

When your PC is used as a Base station, adjust the audio level of the device that is connected to your radio.

When your PC is used as a Remote station, adjust the audio level of the device that your microphone, speaker, or headset is connected to.

◆ To allow access from the Internet (RS-BA1 Instruction Manual p. 13)

If you configure the remote control system through the Internet, you need to configure your Base station and Remote station routers to allow access from the Internet.

Configure the port forwarding settings, and IP filter settings on your router, for port numbers 50001, 50002, and 50003 which are used for the Remote Utility.

See your router's manual for details of how to configure the settings.

See the RS-BA1 Instruction Manual ("1. BEFORE USING REMOTE CONTROL SYSTEM" section) for details.

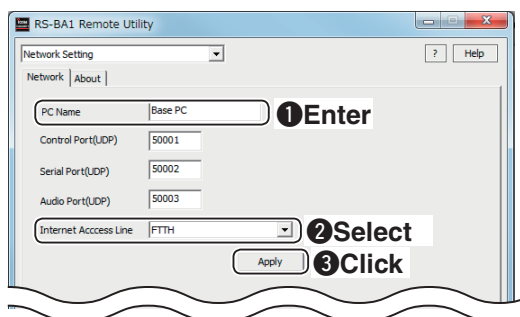
Step4. Configure the remote control system

1. Settings on the Base station's PC

This section describes how to setup the Base station (Server) PC. Before configuring the settings, turn on the radio. See the RS-BA1 Instruction Manual ("2. WHEN CONNECTING TO THE NETWORK THROUGH A PC" section) for details.

1 Network setting

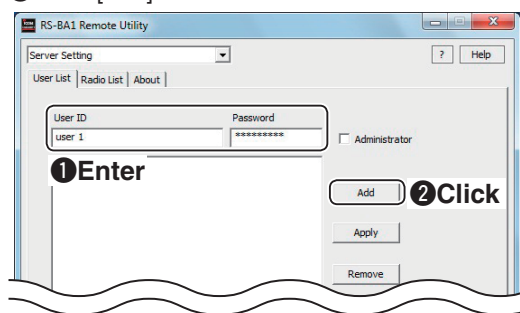
- ① Double-click the "Remote Utility" icon on your desktop to open the Remote Utility.
- ② "Please set your own PC information" appears, then click [OK].
- ③ The Network Setting screen appears. Configure the network settings as described below.
 - ① Enter a name for your PC in the "PC Name" field. (ex. Base PC)
 - ② Select your internet access line type in the "Internet Access Line" menu. (ex. FTTH)
 - ③ Click [Apply] to save the network settings.



- ④ After clicking, "Take effect after restarting the application" appears, then click [OK], and restart the Remote Utility.

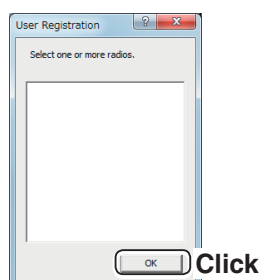
2 User registration

- ① Select the Server Setting mode from a drop-down list located at the top of the screen, and then click the [User List] tab.
- ② The User List screen appears, then register a Remote station as described below.
 - ① Enter a user ID in the "User ID" field. (ex. user 1), and then enter a password of eight characters or more, in the "Password" field. (ex. lcom12345)
 - ② Click [Add].



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.

- ③ When the User Registration screen appears, click [OK] and close the screen.



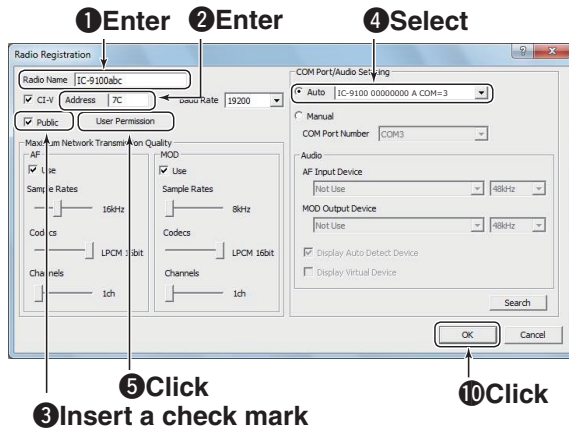
Step4. Configure the remote control system

1. Settings on the Base station's PC (Continued)

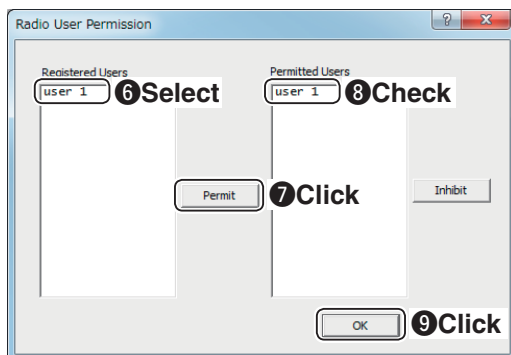
3

Radio registration

• Radio Registration screen



- ① Select the Server Setting mode from a drop-down list located at the top of the screen, and then click the [Radio List] tab.
- ② The Radio List screen appears, then click [Add].
- ③ The Radio Registration screen appears. Register a radio as described below.
 - If you are using the Spectrum Scope function with the IC-7851 or IC-7850 using a USB for the connection, select "115200" in the "Baud Rate" menu.
 - ① Enter a name for the radio in the "Radio Name" field. (ex. IC-9100abc)
 - ② Enter the radio's CI-V address in the "Address" field. (ex. 7C)
 - ③ Click the "Public" box to insert a check mark.
 - ④ Click the "COM Port/Audio - Auto" radio button.
 - Select an appropriate one from the drop-down list, then the COM port and audio device will be automatically set. (ex. IC-9100 00000000 A COM=3)
 - ⑤ Click [User Permission] to display the Radio User Permission screen.



- ⑥ Select the users to permit to use the radio in the "Registered Users" field. (ex. user 1)
- ⑦ Click [Permit].
- ⑧ Check if the selected users are permitted in the "Permitted Users" field.
- ⑨ Click [OK] to close the screen.
- ⑩ Click [OK] to save the settings and close the screen.

Step4. Configure the remote control system (Continued)

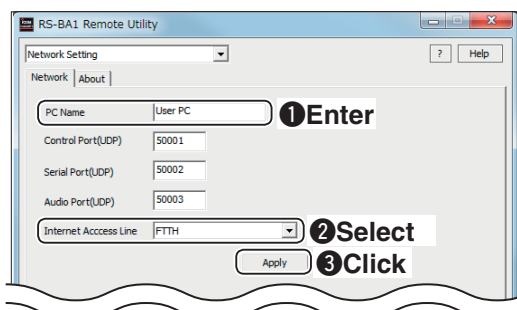
2. Settings on the Remote station's PC

This section describes how to setup the Remote station (Client) PC.

Before configuring the settings, connect a speaker and microphone, or headset to the Remote station's PC.
See the RS-BA1 Instruction Manual ("4. SETTINGS FOR A REMOTE STATION PC" section) for details.

1 Network setting

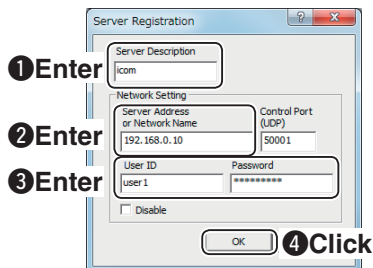
- ① Double-click the "Remote Utility" icon on your desktop to open the Remote Utility.
- ② "Please set your own PC information" appears, then click [OK].
- ③ The Network Setting screen appears. Configure the network settings as described below.
 - ① Enter a name for your PC in the "PC Name" field. (ex. User PC)
 - ② Select your internet access line type in the "Internet Access Line" menu. (ex. FTTH)
 - ③ Click [Apply] to save the network settings.



- ④ After clicking, "Take effect after restarting the application" appears, then click [OK], and restart the Remote Utility.

2 Connecting to the Base station

- ① Select the Radio Operation mode from a drop-down list located at the top of the screen, and then click the [Server List] tab.
- ② The Server List screen appears, then click [Add].
- ③ The Server Registration screen appears. Register a Base station as described below.
 - ① Enter a name for the Base station in the "Server Description" field. (ex. icom)
 - ② Enter the IP address, domain name or computer name of the Base station's PC in the "Server Address or Network Name" field. (ex. 192.168.0.10)
 - ③ Enter your user ID (ex. user 1) and password (ex. Icom12345) which are registered in the Base station, in the "User ID" and "Password" fields.
 - ④ Click [OK] to save the settings and close the screen.



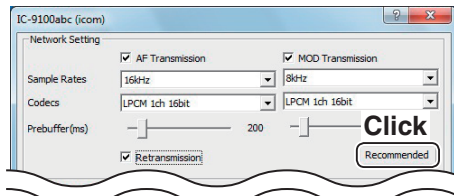
- ④ In the Server List screen, select the registered Base station, and then click [Connect].
 - "CONNECTING" appears under the Base station name when the connection has succeeded.

Step4. Configure the remote control system

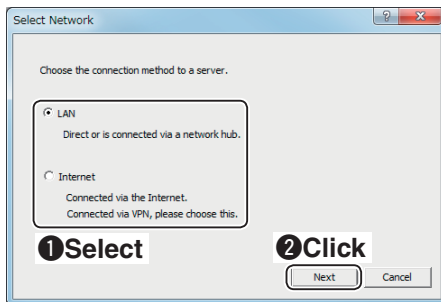
2. Settings on the Remote station's PC (Continued)

3 Connecting to the radio through a network

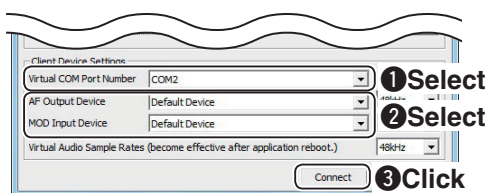
- ① Click the [Radio List] tab.
- ② The Radio List screen appears, then select a radio (ex. IC-9100abc), and then click [Settings].
- ③ The Connection Setting screen appears, then click [Recommended].



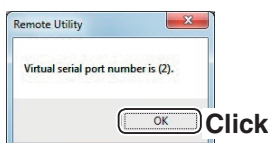
- ④ The Select Network screen appears. Select the connection to a radio, either through a LAN, or the Internet (ex. LAN), and then click [Next].



- ⑤ The recommended values for your network are displayed. Click [Yes] to automatically set the displayed values and close the Select Network screen.
- ⑥ In the Connect Setting screen, connect to the radio as described below.
 - ① Select a COM port number in the "Virtual COM Port Number" menu. (ex. COM2)
 - ② Select an audio device in the "AF Output Device" and "MOD Input Device" menu to which your speaker, microphone or headset is connected. (ex. Default Device)
 - ③ Click [Connect].



- ⑦ A dialog appears, showing the COM port number which is used to exchange CI-V commands between your PC and a radio, then click [OK].



- "<<CONNECT>>" appears under the radio name when the connection has succeeded.
 - When an error message is displayed, make sure that the Base station's Remote Utility has not been closed.

Step5. Remote control operation

This section describes how to connect and remotely control a radio from a Remote station, using the Remote Controller. See the RS-BA1 Instruction Manual ("5. REMOTE CONTROLLER'S BASIC OPERATION" section) for details.

- /// • Since cannot turn the radio ON or OFF with remote control operation, the radio must be turned ON.
- /// • The description in this section is based on the assumption that the connection to the radio using the Remote Utility has succeeded ("<<CONNECT>>" is displayed under the radio name).

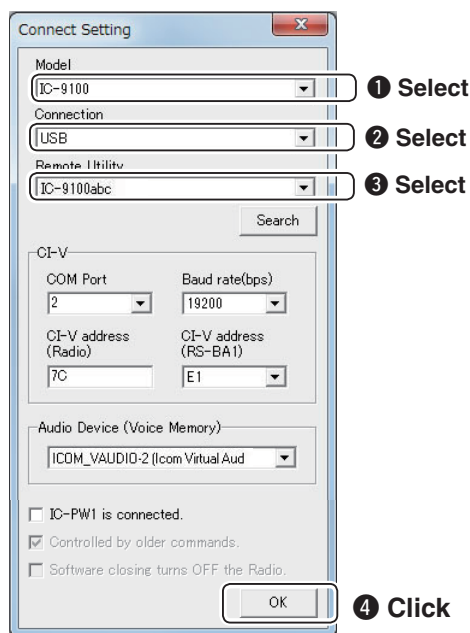
1 Connect setting using the Remote Controller

- ① Double-click the "Remote Control" icon on your desktop to open the Remote Controller.
- ② Click the icon to the right in the toolbar, or click "Connect Setting..." in the "Option" menu.
- ③ The Connect Setting screen appears.



Configure the connect settings as described below.

- ① Select a radio that you want to control in the "Model" menu. (ex. IC-9100)
- ② Select the connection between the transceiver and Base station in the "Connection" item. (ex. USB)
 - When the "MOD Select has also been changed." dialog is displayed, click [OK].
 - The confirmation dialog for the connection setting may be displayed, depending on the transceiver. If connected correctly, click [OK].
- ③ Select a radio that you are accessing using the Remote Utility, in the "Remote Utility" menu. (ex. IC-9100abc)
 - The CI-V settings are automatically loaded from the Remote Utility to the CI-V field. The settings include the virtual COM Port number, radio's CI-V address and baud rate and the virtual audio device for the Voice Memory function.
 - /// If the desired radio is not displayed in the "Remote Utility" menu, click [Search] to load the radios' information from the Remote Utility.
- ④ Click [OK] to save the settings and close the screen.



Step5. Remote control operation (Continued)

2 Connecting to the radio using the Remote Controller

Click the icon to the right in the toolbar, or click “Connect ON” in the “File” menu, to connect to the radio.



- When the connection has succeeded, the radio’s current data will be displayed on the main panel.
- The modulation input is automatically selected, depending on the setting in the “Connection” item. However, if you select other than “USB,” or you want to use other connector than USB port, see “Selecting a modulation input connector” described below for details.

3 Remote control operation

See the RS-BA1 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, or push the [F1] key on your PC’s keyboard.

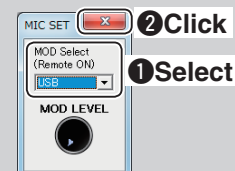
NOTE: DO NOT allow the PC to go into the sleep or standby mode while using the RS-BA1. Otherwise, it might not work properly after the PC resumes normal activity.

Importing the repeater list: You can easily program the DV mode repeater information by importing the repeater list preprogrammed for each radio. See the RS-BA1 Remote Controller’s Help file for importing details.

Selecting a modulation input connector

- ① Click [MIC SET] on the Remote Controller.
- ② The MIC SET screen appears.

Select an appropriate connector in the “MOD Select (Remote ON)” menu (ex. USB), to input transmit audio from the PC to the radio. Then, click the close button to close the screen.



When not using the radio:

- Disconnect the radio from both the Remote Controller and Remote Utility.
Even if you disconnect from the radio, it does not turn OFF the radio.
- When using a radio that can be turned ON or OFF with the CI-V Power ON/OFF command:
 - If you check the “Software closing turns OFF the Radio.” box, when you close the Remote Controller, the radio’s power is also turned OFF.
 - If you do not check the “Software closing turns OFF the Radio.” box, be sure to disconnect the radio from Remote Controller, first. And close the Remote Controller, and then close the Remote Utility.
- When you manually select the transmit audio input connector(s) to be used after finishing the Remote mode, right-click the icon to the right in the toolbar, or click “Remote Setting...” in the “File” menu to select.
 - Regularly, it automatically returns to the original setting before you start the Remote mode.



This guide contains instructions on how to configure the remote control system, and how to remotely control a radio with the Network function*.

Before reading this guide, please finish the installation, using the RS-BA1 Preparations.

See the RS-BA1 Instruction Manual for detailed instructions.

***Radios with the Network function**

- IC-7851
- IC-7850
- IC-7800 (Firmware version 3.00 or later)
- IC-7700 (Firmware version 2.00 or later)

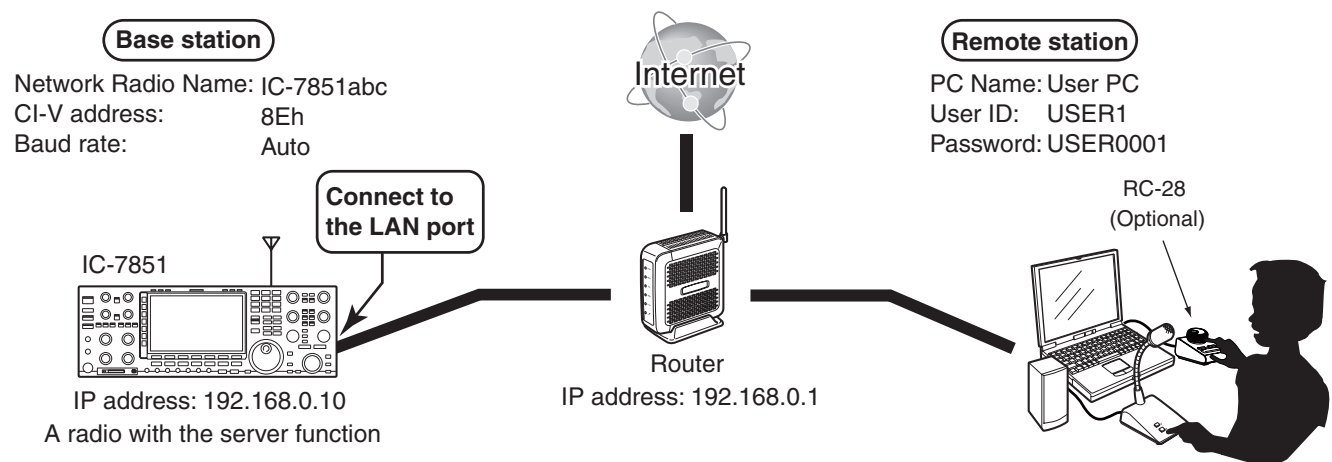
If you use other Icom radio, see the Installation guide A.

■ Example of the remote control system

This guide explains the minimum required settings to configure a remote control system, taking the following illustration as an example. In this example, a Remote station remotely controls a Base station radio through the network.

- We recommend that you place the Remote station's PC near the Base station to check that the settings are correct, and that you can correctly control the radio.
- Only users whose ID and password are registered on the Base station can access the Base station radio. **BE CAREFUL** in managing IDs and passwords.
- See the Instruction Manual for detailed instructions on the RS-BA1.
You can also refer to each software's help file for assistance with the functions and settings.
While the software is open, push the [F1] key of the PC's keyboard to open the help file.

These instructions are based on using the IC-7851.



NOTE:
The user ID, password, and other settings in this illustration are only an example. Please configure the system using your own settings.

For your convenience:
If you use an RC-28 REMOTE ENCODER at the Remote station, you can use the RS-BA1 and feel like you are operating the actual radio's main dial, transmit key and so on.

Step1. Radio's presets

The RS-BA1 remotely controls the radios with the Network function using CI-V (Icom Communication Interface) commands. See the CI-V command table in the radio's instruction manual for details of the functions that can be controlled.

1. The following manual settings are required when operating the RS-BA1

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 radio's instruction manual for details of the settings or operation.

NOTE:

- Remove any transverter that is connected to the radio.
- To prevent accidental transmission, remove any keyer, keypad or other external input equipment connected to the radio.
- We recommend you enable the Time-Out Timer function to prevent the radio from continuously transmitting.

Genre	Item	Setting
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 address	IC-7851/IC-7850: 8Eh, IC-7800: 6Ah, IC-7700: 74h (When another device is connected to the system, make sure you do not to set a duplicate address.)
	CI-V baud rate	Set to 19200 bps (or Auto)

/// If you are using the IC-PW1 with the transceiver, be sure to set the CI-V baud rate to 19200 bps. After changing the transceiver's CI-V settings, be sure to reset the CPU of the IC-PW1 and set the transceiver's CI-V settings on the IC-PW1. See the IC-PW1 instruction manual for details.

2. The following settings are automatically set to the radio

When the RS-BA1's Remote Controller connects to the radio, and you select the model name on the Connect Setting screen, the following items are automatically set. When you manually operate the radio, set these items as desired.

Genre	Item	Action
Function	MAIN/SUB Tranking function (For only the IC-7851, IC-7850)	Automatically set to OFF
	RIT function	Automatically set to OFF
	ΔTX function	Automatically set to OFF
	SSB/CW Synchronous Tuning	Automatically set to OFF
	Calibration Marker	Automatically set to OFF
	VOX function	Automatically set to OFF
	Scan function	Automatically cancel the scan
Display	Dualwatch function (For only the IC-7851, IC-7850, IC-7800)	Automatically set to OFF
	Memory channel	Automatically set to the VFO mode
CI-V	CI-V transceive	Automatically set to ON

Step2. Before configuration

To configure the remote control system, the following settings are required.

◆ Firewall setting (RS-BA1 Instruction Manual p. 1)

To let the Remote Utility work properly, it must be added as an exception in the Firewall. See the RS-BA1 Instruction Manual for details.

◆ To allow access from the Internet (RS-BA1 Instruction Manual p. 13)

If you configure the remote control system through the Internet, you need to configure the Base station and Remote station routers to allow Internet access.

Configure the port forwarding settings and IP filter settings on your router for port numbers 50001, 50002, and 50003 which are used for the Remote Utility.

See your router's manual for details of how to configure the settings.

◆ Volume adjustment for your audio devices (RS-BA1 Instruction Manual p. 7)

Before you start communicating using the RS-BA1, the PC's audio volume must be set to a proper level.

Adjust the audio level of the device that your microphone, speaker, or headset is connected to.

If you connect the microphone, speaker, or headset after setting the audio level, confirm the level has not changed.

See the RS-BA1 Instruction Manual ("1. BEFORE USING REMOTE CONTROL SYSTEM" section) for details.

Step3. Configure the remote control syytem

1. Setting the Network function on the radio

In this guide, explains how to set the radio for operating the remote control system through the LAN.

When using the remote control system using the Internet, read the RS-BA1 Instruction Manual (“3. WHEN CONNECTING TO THE NETWORK DIRECTLY” section).

This section describes how to setup the Base station. Before configuring the settings, turn ON the radio.

- ① Hold down [EXIT/SET] for 1 second to select the Set mode menu screen.
- ② Push [F-5•OTHERS] to enter the Others set mode.
- ③ Push [F-1•▲] or [F-2•▼] to select the desired item.
 - See the list as shown to the right for the setting items.
- ④ Adjust/select or enter the needed contents.
 - See the list as shown to the right for the setting contents.
 - Hold down [F-4•DEF] for 1 second to return them to their defaults.
 - See the RS-BA1 Instruction Manual for details.
- ⑤ Push [EXIT/SET] to exit the Set mode.

NOTE: When you change the setting that shows “(Valid after Reboot),” you have to reboot the radio after setting, so they will take effect.

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

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.

[Setting items and contents]

• Network setting (Except for the IC-7851 and IC-7850)

Items	Contents
Network Control	OFF (Default) → ON
IP Address	IP address that is not assigned to any other device. Example: 192.168.0.10 (Default)
Default Gateway	IP address of the LAN side on the router Example: 192.168.0.1
Control Port (UDP)	50001 (Default)
Serial Port (UDP)	50002 (Default)
Audio Port (UDP)	50003 (Default)
Internet Access Line	Your internet access line type Example: FTTH (Default)

[Setting items and contents]

• Network setting (For the IC-7851 and IC-7850)

Items	Contents
Network Control	OFF (Default) → ON
DHCP*	ON (Default)
Network Name*	Desired Network Name Example: IC-7851
Control Port (UDP)	50001 (Default)
Serial Port (UDP)	50002 (Default)
Audio Port (UDP)	50003 (Default)
Internet Access Line	Your internet access line type Example: FTTH (Default)

*If you are setting the IP address instead of the network radio name, set the DHCP item to OFF. For the other settings, refer to [Setting items and contents] in the left below column.

• Radio registration

Items	Contents
Network Radio Name	Desired Network Radio Name • Up to 16 characters Example: IC-7851abc
CI-V Address	Desired CI-V Address Example: the radios’ default setting. IC-7851/IC-7850: 8Eh IC-7800: 6Ah IC-7700: 74h
CI-V Baud Rate	Desired Baud Rate Example: Auto (Default)

• User registration

Items	Contents
Network User1/2/3 ID	Desired User ID • Up to 16 characters Example: USER1
Network User1/2/3 Password	Desired Password • 8 to 16 characters • At least two different characters must be used. Example: USER0001
Network User1/2/3 Administrator	NO (Default) → YES • In case the user is set as an administrator.

• Transmitting audio setting (For the IC-7800 and IC-7700)

Items	Contents
Network MOD Use	ON (Default)

Step3. Configure the remote control system (Continued)

2. Settings on the Remote station's PC

This section describes how to setup the Remote station (Client) PC.

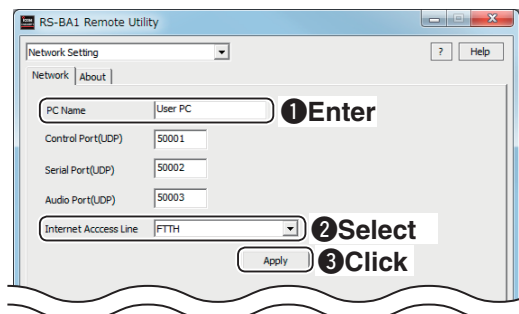
Before configuring the settings, connect a speaker and microphone, or a headset to the Remote station's PC.

Before configuring the settings, turn ON the radio.

See the RS-BA1 Instruction Manual ("4. SETTINGS FOR A REMOTE STATION PC" section) for details.

1 Network setting

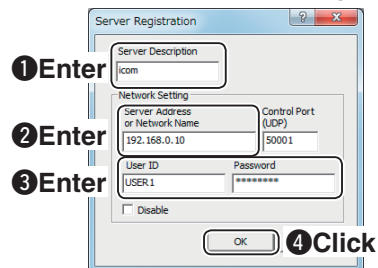
- ① Double-click the "Remote Utility" icon on your desktop to open the Remote Utility.
- ② "Please set your own PC information" appears, then click [OK].
- ③ The Network Setting screen appears. Configure the network settings as described below.
 - ① Enter a name for your PC in the "PC Name" field. (Example: User PC)
 - ② Select your internet access line type in the "Internet Access Line" menu. (Example: FTTH)
 - ③ Click [Apply] to save the network settings.



- ④ After clicking, "Take effect after restarting the application" appears, then click [OK], and restart the Remote Utility.

2 Connecting to the Base station (Server)

- ① Select the Radio Operation mode from the drop-down list located at the top of the screen, and then click the [Server List] tab.
- ② The Server List screen appears, then click [Add].
- ③ The Server Registration screen appears. Register a Base station as described below.
 - ① Enter a name for the Base station in the "Server Description" field. (Example: icom)
 - ② Enter the LAN's IP address or the network name of the Base station in the "Server Address or Network Name" field. (Example: 192.168.0.10)
 - ③ Enter your user ID (Example: USER1) and password (Example: USER0001) which are registered in the Base station, in the "User ID" and "Password" fields.
 - ④ Click [OK] to save the settings and close the screen.



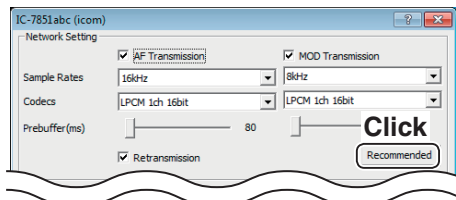
- ④ In the Server List screen, select the registered Base station name (Example: icom), and then click [Connect].
 - "CONNECTING" appears under the Base station name when the connection has succeeded.

Step3. Configure the remote control system

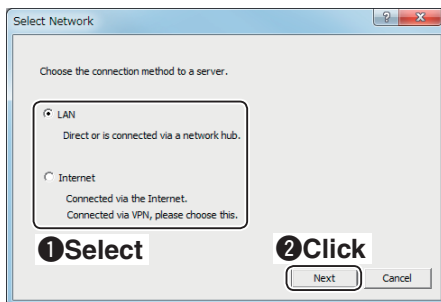
2. Settings on the Remote station's PC (Continued)

3 Connecting to the Base station (Radio)

- ① Click the [Radio List] tab.
- ② The Radio List screen appears, then select a radio name (Example: IC-7851abc), and then click [Settings].
- ③ The Connection Setting screen appears, then click [Recommended].



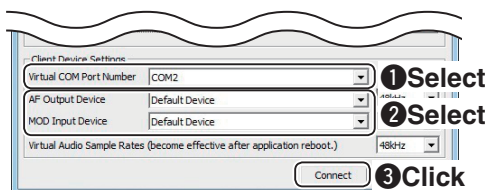
- ④ The Select Network screen appears. Select the connection to the radio, either through a LAN or the Internet (Example: LAN), and then click [Next].



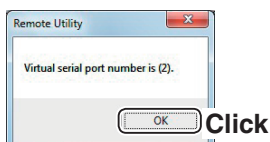
- ⑤ The recommended settings for your network are displayed. Click [Yes] to automatically set the displayed settings and close the Select Network screen.

- ⑥ In the Connect Setting screen, connect to the Base station as described below.

- ① Select a COM port number in the "Virtual COM Port Number" menu. (Example: COM2)
- ② Select an audio device in the "AF Output Device" and "MOD Input Device" menu to which your speaker, microphone or headset is connected. (Example: Default Device)
- ③ Click [Connect].



- ⑦ A dialog appears, showing the COM port number which is used to exchange CI-V commands between the Remote PC and the Base station, then click [OK].





- "<<CONNECT>>" appears under the radio name when the connection has succeeded.
 - When an error message is displayed, make sure that the Base station's Remote Utility has not been closed.

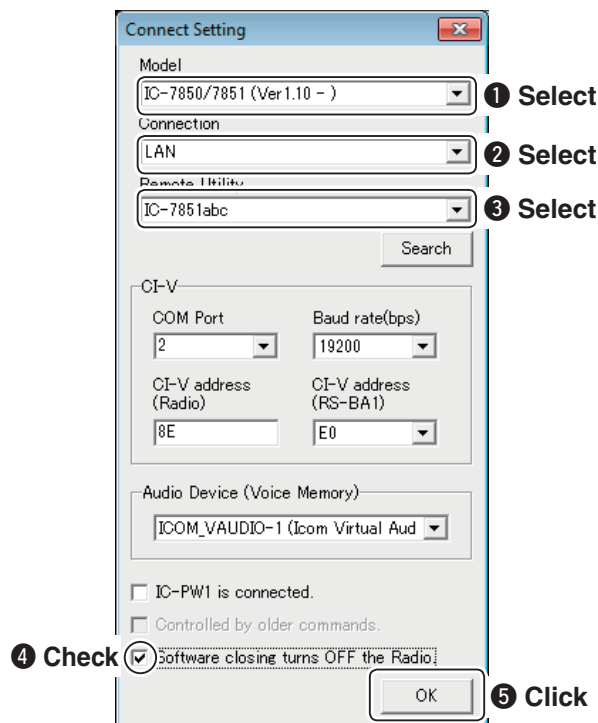
Step4. Remote control operation

This section describes how to connect and remotely control a radio from a Remote station using the Remote Controller. See the RS-BA1 Instruction Manual ("5. REMOTE CONTROLLER'S BASIC OPERATION" section) for details.

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

1 Connect setting using the Remote Controller

- ① Double-click the "Remote Control" icon on your desktop to open the Remote Controller. 
- ② Click the icon to the right in the toolbar, or click "Connect Setting..." in the [Option] menu.
- ③ The Connect Setting screen appears.
Configure the connect settings as described below.
 - ① Select the connecting radio in the "Model" menu.
(Example: IC-7850/IC-7851 (Ver1.10-))
 - ② Select "LAN" for the "Connection" item.
 - When the "MOD Select has also been changed." dialog is displayed, click [OK].
 - The confirmation dialog for the connection setting may be displayed, depending on the transceiver. If connected correctly, click [OK].
 - ③ Select a radio that you are accessing using the Remote Utility, in the "Remote Utility" menu.
(Example: IC-7851abc)
 - The CI-V settings are automatically loaded from the Remote Utility to the CI-V field. The settings include the virtual COM Port number, radio's CI-V address and baud rate and the virtual audio device for the Voice Memory function.
 - ▨ If the desired radio is not displayed in the "Remote Utility" menu, click [Search] to load the radios' information from the Remote Utility.
- ④ Check the "Software closing turns OFF the Radio." box to turn OFF the radio when the Remote Controller is closed by clicking the  button or [Exit] on the File menu.
 - When the PC is shut down while the Remote Controller is still running, the transceiver's power may not be turned OFF.
- ⑤ Click [OK] to save the settings and close the screen.



Step4. Remote control operation (Continued)

2 Connecting to the radio using the Remote Controller

Click the icon to the right in the toolbar, or click “Connect ON” in the [File] menu, to connect to the radio.

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



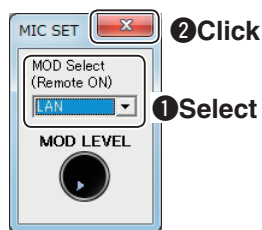
3 Selecting a modulation input connector

In order to transmit audio when remotely controlling the radio from the Remote Controller, configure the following settings, depending on the radio’s connector.

① Click [MIC SET] on the Remote Controller.

② The MIC SET screen appears.

Select an appropriate connector in the “MOD Select (Remote ON)” menu (Example: LAN), to input transmit audio from the PC to the radio. Then, click the close button to close the screen.



4 Remote control operation

See the RS-BA1 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, or push the [F1] key on your PC’s keyboard.

When not using the radio:

- Disconnect the radio from both the Remote Controller and Remote Utility.
- If you check the “Software closing turns OFF the Radio.” box, when you close the Remote Controller, the radio’s power is also turned OFF.
If you do not check the “Software closing turns OFF the Radio.” box, be sure to disconnect the radio from Remote Controller, first. And close the Remote Controller, and then close the Remote Utility.
- When you manually select the transmit audio input connector(s) to be used after finishing the Remote mode, right-click the icon in the toolbar, or click “Remote Setting...” in the [File] menu to select.
- Regularly, it automatically returns to the original setting before you start the Remote mode.



NOTE: DO NOT allow the PC to go into the sleep or standby mode while using the RS-BA1. Otherwise, it might not work properly after the PC resumes normal activity.



INSTRUCTION MANUAL

IP REMOTE CONTROL SOFTWARE **RS-BA1**

PREFACE

OVERVIEW OF THE RS-BA1

ABOUT THE COMMUNICATION
IN THE REMOTE CONTROL SYSTEM

1. BEFORE USING REMOTE CONTROL SYSTEM

SETTING ON THE BASE STATION'S PC

2. WHEN CONNECTING
TO THE NETWORK THROUGH A PC

3. WHEN CONNECTING
TO THE NETWORK DIRECTLY

4. SETTING FOR A REMOTE STATION PC

5. REMOTE CONTROLLER'S BASIC OPERATION

6. TROUBLESHOOTING

PREFACE

Thank you for purchasing the RS-BA1. The RS-BA1 is designed to remotely control an Icom radio through a network.

This instruction manual contains detailed instructions on how to configure your own remote control system. Before reading this manual, please read the RS-BA1 Preparations that come with the RS-BA1, for details on how to install the software and connect a radio to the Base station's PC.

ABOUT THE SUPPLIED GUIDES

The titles of the supplied guides described in this manual differ, depending on the version of your RS-BA1. **If the "Flow chart" is supplied**, refer to the table below to read the guides in order.

Guides in this manual	Guides supplied
Preparations	Installation Guide ①

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-BA1.

NOTE:

- This instruction manual is based on RS-BA1 Version 1.90.
- 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."
- Microsoft® Windows® 7 Home Premium, Microsoft® Windows® 7 Professional, and Microsoft® Windows® 7 Ultimate are described as "Windows 7."
- Microsoft® Windows Vista® Home Basic, Microsoft® Windows Vista® Home Premium, Microsoft® Windows Vista® Business and Microsoft® Windows Vista® Ultimate are described as "Windows Vista."

The software cannot be used with "RT" versions of Microsoft® Windows® 8.1.

PRECAUTIONS

IMPORTANT! To remotely control radios using the RS-BA1, **BE SURE** that you comply with your local regulations.

The RS-BA1 is designed to remotely control radios that have a USB port (Type B/Mini-B) or LAN port*. Proper audio communication cannot be guaranteed when you connect the Base station's PC to the radio's ACC socket, MIC connector, or S/P DIF jack.

*Only when using:

- IC-7851
- IC-7850
- IC-7800 (firmware version 3.00 or later)
- IC-7700 (firmware version 2.00 or later)

Depending on your radio, a few functions or modes cannot be used, or you will need to update the radio's firmware to operate a CW keyer, using the RS-BA1.

Depending on the PC performance (OS, environment, etc.), the USB audio may be interrupted, or a 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 installed audio player application may be changed after connecting a radio to the PC.

For the operation of your PC and peripheral devices, follow the instructions provided in the manuals that come with the PC and peripheral devices.

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ABOUT THIS INSTRUCTION MANUAL

To start using the RS-BA1, read this instruction manual in the following order.

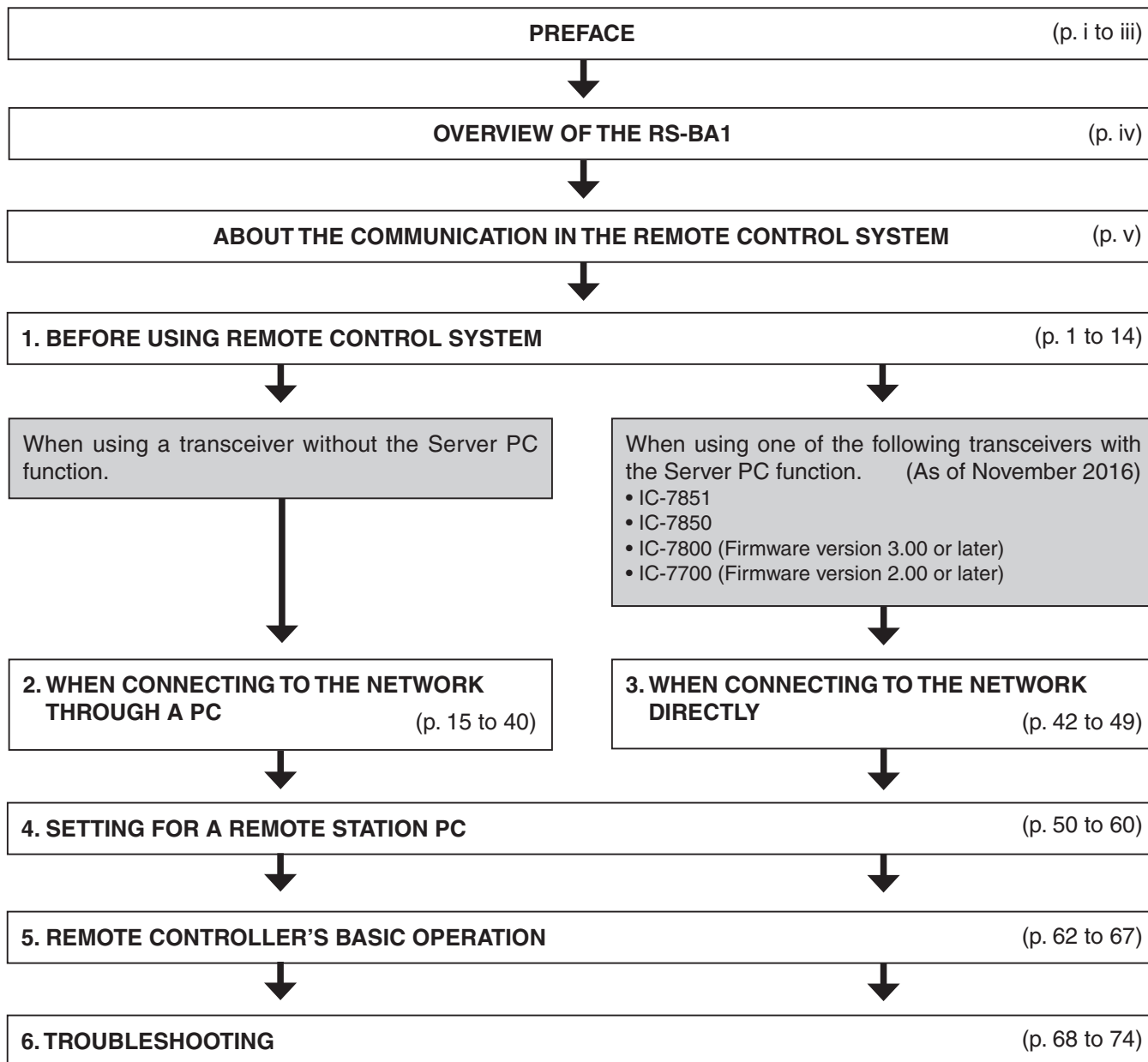


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The settings in this section are necessary only when using:
(As of November 2016)

- IC-7851
- IC-7850
- IC-7800 (firmware version 3.00 or later)
- IC-7700 (firmware version 2.00 or later)

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OVERVIEW OF THE RS-BA1

- The RS-BA1 consists of the Remote Utility, used to configure a remote control system, and the Remote Controller, used to send CI-V commands to a radio to remotely operate it.
- With the RS-BA1, you can configure a remote control system through the Internet, or a LAN.
- The RS-BA1 provides highly qualified audio communication between your PC and an Icom amateur radio through a USB port (Type B/Mini-B) or LAN port*.
- You can also control Icom radios with an RS-232C interface.
- * If you use the IC-7700, firmware version 2.00 or later installed, is required.
- If you use the IC-7800, firmware version 3.00 or later installed, is required.

About the remote control system

An RS-BA1 remote control system basically consists of following three components:

- Base station (Radio and Server)
- Network (Internet or LAN)
- Remote station (PC)

The Remote station controls the Base station radio through the network (internet or LAN).

To control the Base station radio, the radio should be connected to the network through a PC or directly.

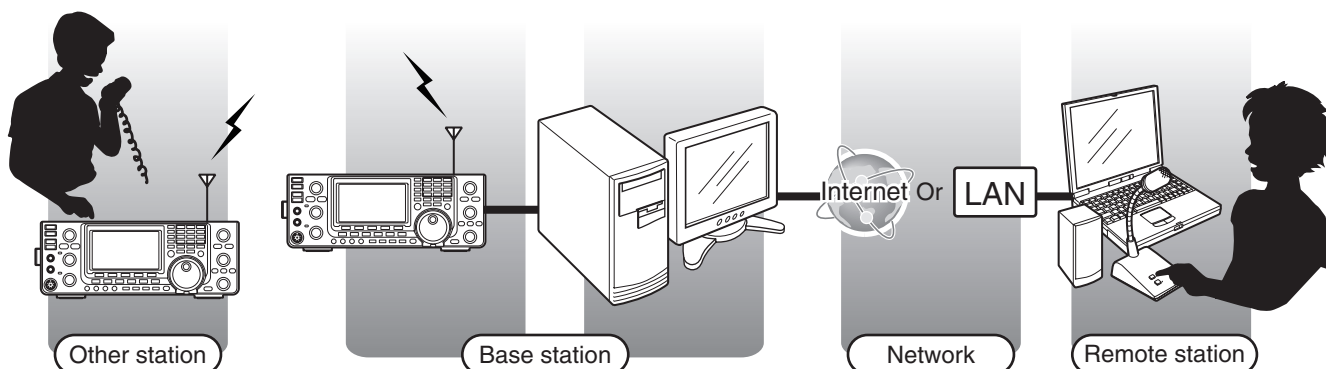
Most Icom radios need a PC, and use the PC as the Server to exchange CI-V commands, control command and audio with the Remote station through either the internet or LAN. (Fig. 1)

The radio has a built-in Network function that can be directly connected to the network. With this function, a Base station PC is not necessary. (Fig. 2)

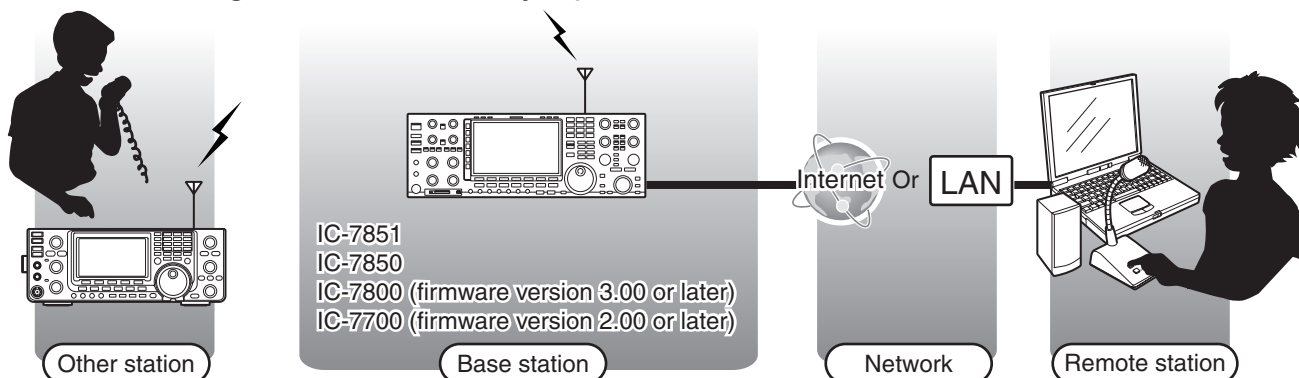
The radio is remotely controlled by the Remote station PC using the Remote Controller.

See the “5. REMOTE CONTROLLER’S BASIC OPERATION” section for more details. (p. 62)

When connecting to the network through a PC (Fig. 1)



When connecting to the network directly (Fig. 2)

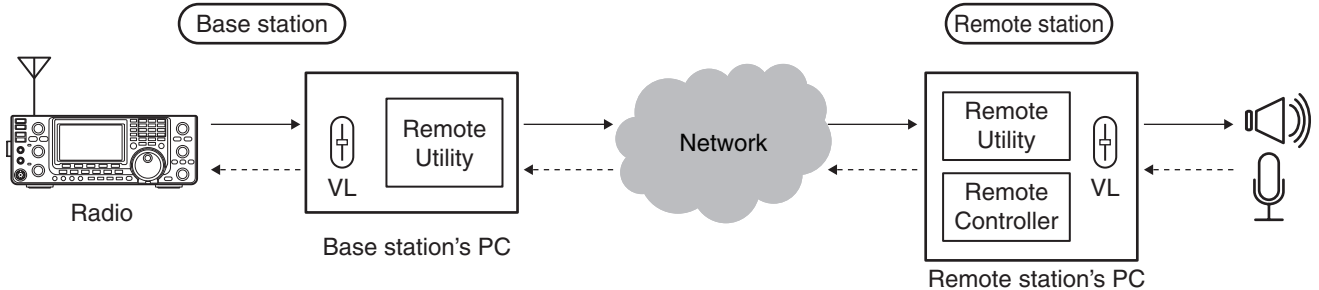


Routers or other devices are not shown.

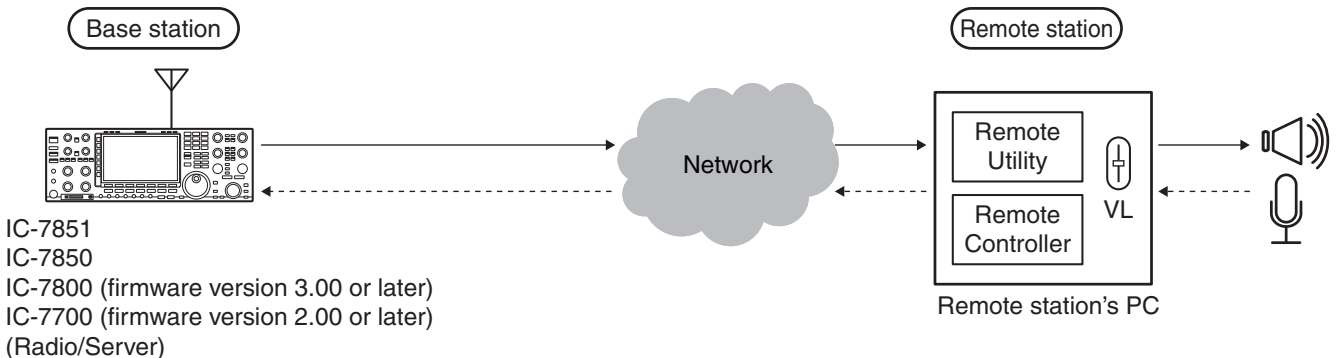
ABOUT THE AUDIO COMMUNICATION IN THE REMOTE CONTROL SYSTEM

In the remote control system, audio is exchanged between a Base station radio and the Remote station's PC, through Remote Utilities, as illustrated below.
The audio settings needed are described below.

When connecting to the network through a PC



When connecting to the network directly



—————> : Receive audio <----- : Transmit audio

◇ Base station settings for audio communication

When connecting to the network through a PC

- Audio level adjustment for an audio device (pp. 7 to 12)
- Audio device selection (p. 36)
- Audio sampling rate or audio codec setting (p. 36)

When connecting to the network directly

- Audio sampling rate or audio codec setting (p. 48)

◇ Remote station settings for audio communication

- Audio level adjustment for an audio device (pp. 7 to 12)
- Audio device selection (p. 56)
- Network audio quality adjustment (p. 55)
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- Modulation level adjustment (p. 65)

Before using the remote control system, the following settings are needed.

- Firewall setting (p. 1)
- Volume adjustment for your audio devices (p. 7)
- To allow access from the Internet
(The setting is necessary only when you configure the remote control system through the Internet.) (p. 13)

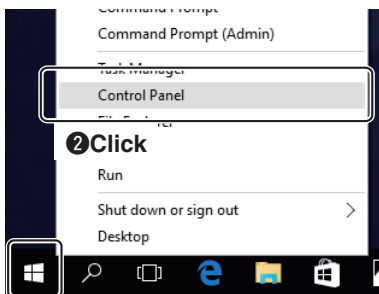
■ Firewall setting

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 to the Firewall.

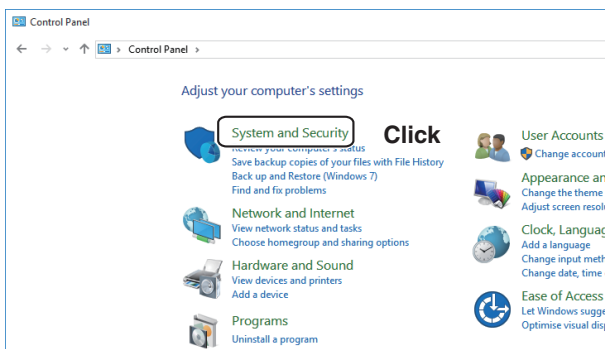
Windows 10

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

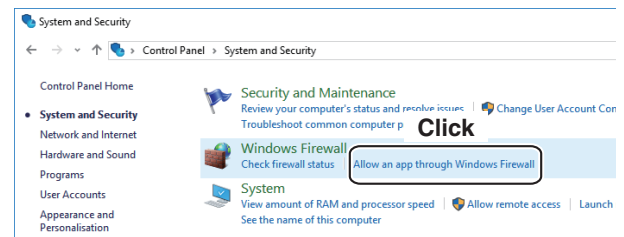


① Right-click

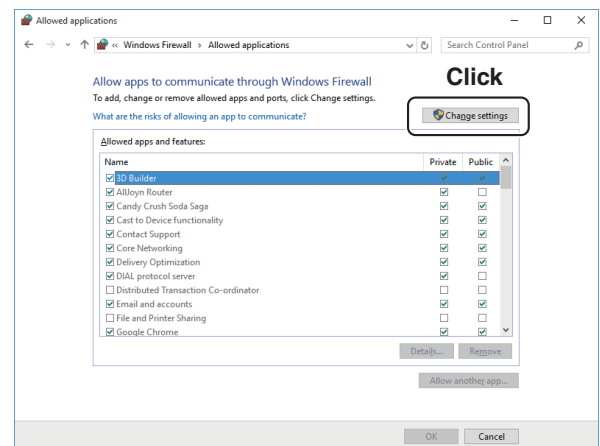
- ② Click [System and Security].



- ③ Click [Allow an app through Windows Firewall].



- ④ The "Allowed applications" screen appears, then click [Change settings].

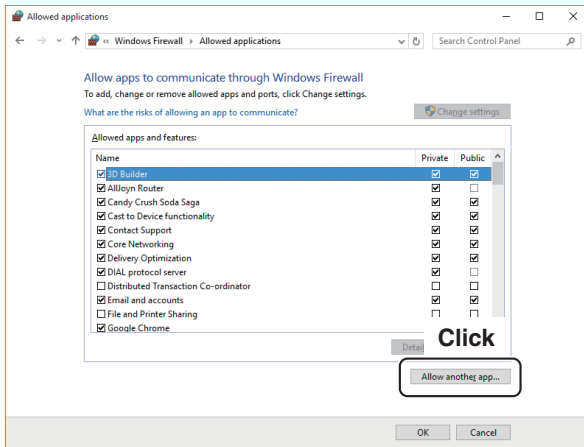


1 BEFORE USING REMOTE CONTROL SYSTEM

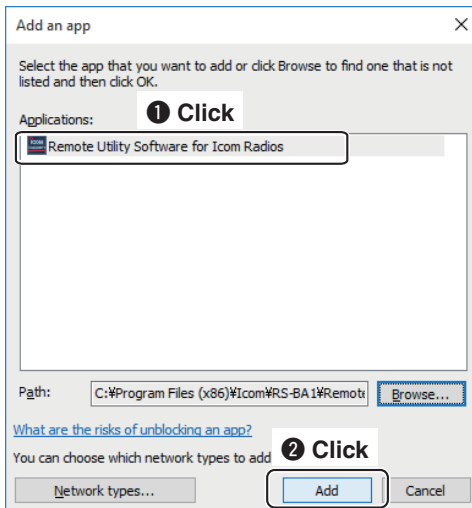
■ Firewall setting

Windows 10 (Continued)

⑤ Click [Allow another app...].

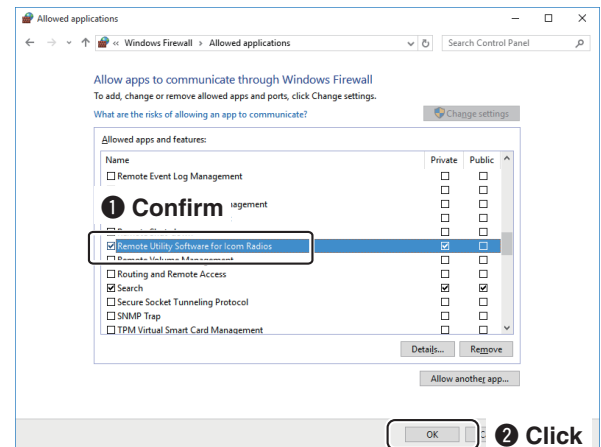


⑥ The “Add an app” screen appears. Click [Remote Utility] and then click [Add].



⑦ Returns to the “Allowed applications” screen.

In the “Allowed apps and features” list, confirm that [Remote Utility] is displayed and a check mark is in the box, and then click [OK].

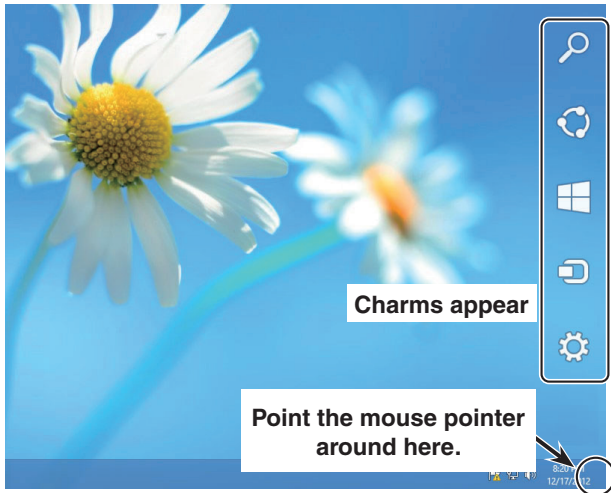


1 BEFORE USING REMOTE CONTROL SYSTEM

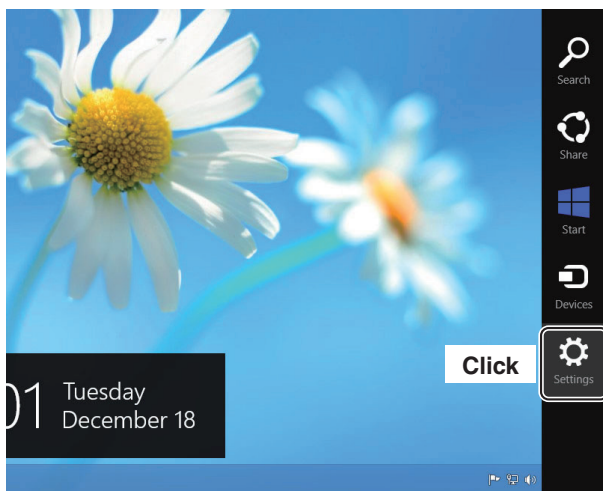
■ Firewall setting (Continued)

Windows 8.1

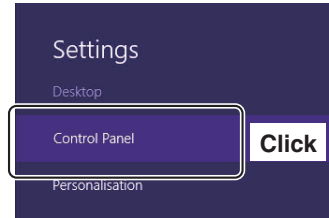
- ① Start Windows.
- ② Place the mouse pointer in the bottom right corner of the screen.
 - The charms appear on the right of the screen.



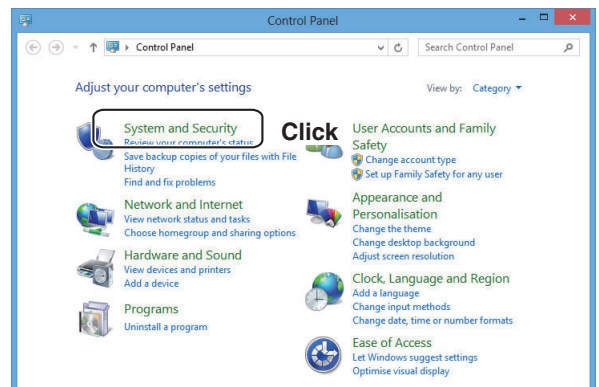
- ③ Click the "Settings" charm.



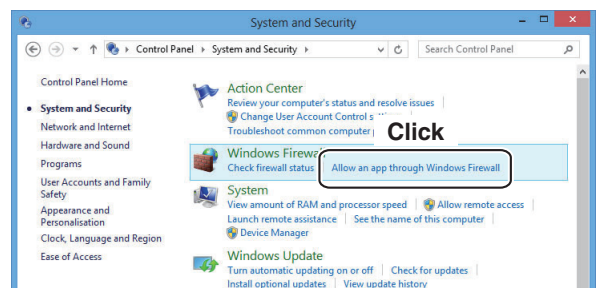
- ④ Click "Control Panel."



- ⑤ The "Adjust your computer's settings" screen appears, then click [System and Security].



- ⑥ Click [Allow an app through Windows Firewall].

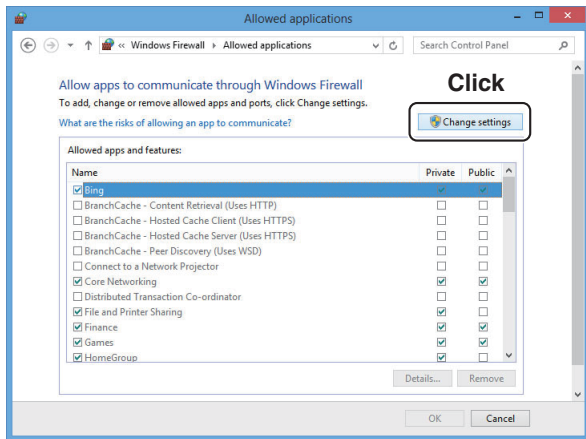


1 BEFORE USING REMOTE CONTROL SYSTEM

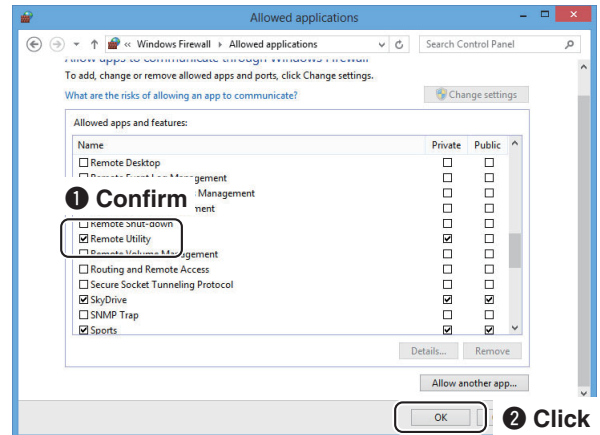
■ Firewall setting

Windows 8.1 (Continued)

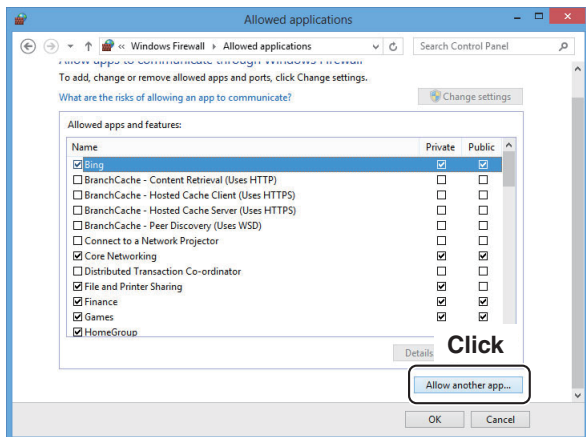
- ⑦ The “Allowed applications” screen appears, then click [Change settings].



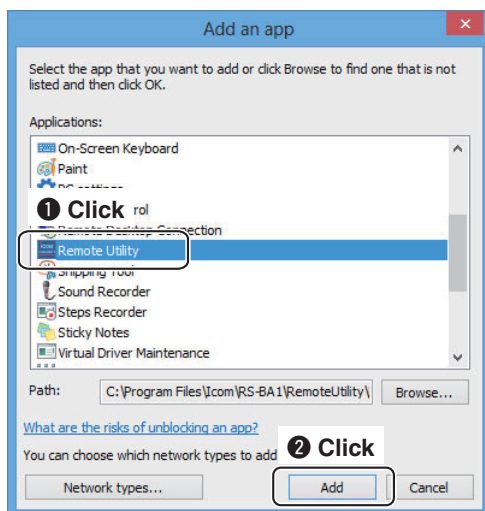
- ⑩ Returns to the “Allowed applications” screen. In the “Allowed apps and features” list, confirm that [Remote Utility] is displayed and a check mark is in the box, and then click [OK].



- ⑧ Click [Allow another app...].



- ⑨ The “Add an app” screen appears. Click [Remote Utility] and then click [Add].

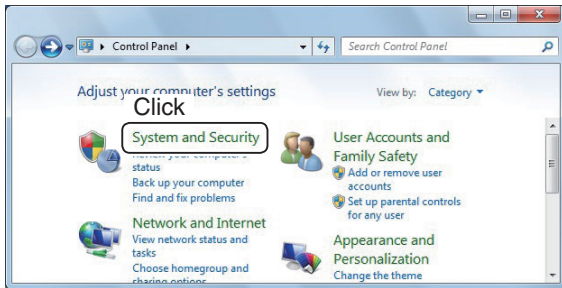


1 BEFORE USING REMOTE CONTROL SYSTEM

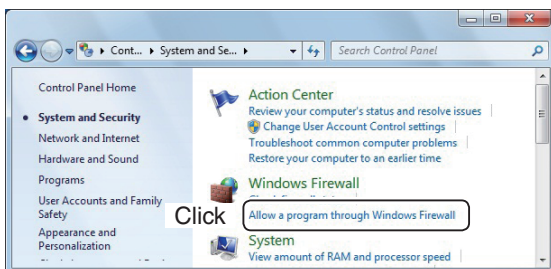
■ Firewall setting (Continued)

Windows 7

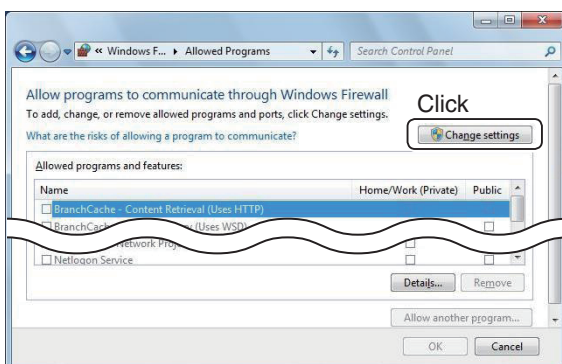
- ① Click [Control Panel] in the <Start> menu.
- ② The “Adjust your computer’s settings” screen appears, then click [System and Security].



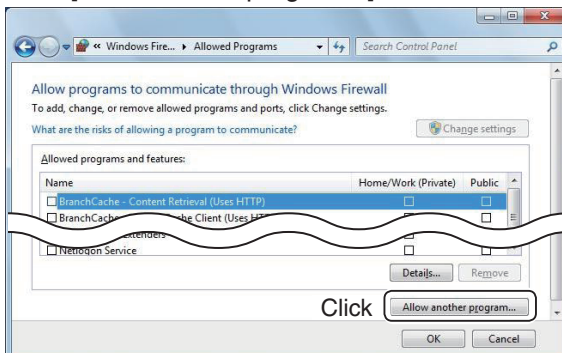
- ③ Click [Allow a program through Windows Firewall].



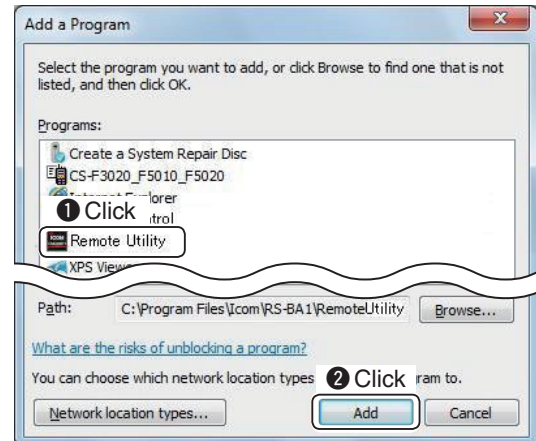
- ④ The “Allowed Programs” screen appears, then click [Change settings].



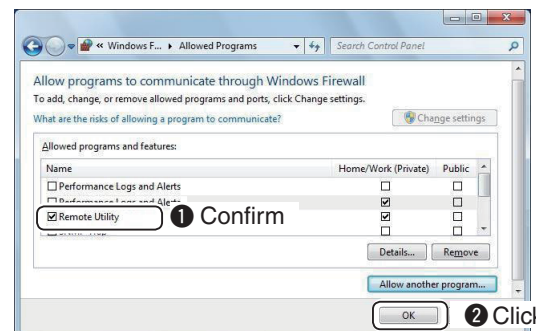
- ⑤ Click [Allow another program...].



- ⑥ The “Add a Program” screen appears. Click [Remote Utility] and then click [Add].



- ⑦ Returns to the “Allowed Programs” screen. In the “Allowed programs and features” list, confirm that [Remote Utility] is displayed and a check mark is in the box, and then click [OK].



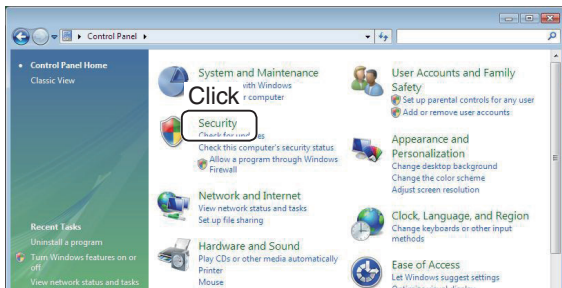
1 BEFORE USING REMOTE CONTROL SYSTEM

■ Firewall setting (Continued)

Windows Vista

① Click [Control Panel] in the <Start> menu.

② Click [Security].

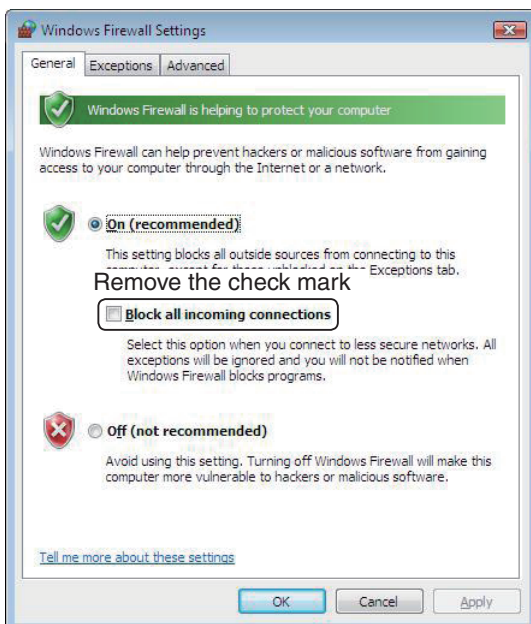


③ Click [Turn Windows Firewall on or off].

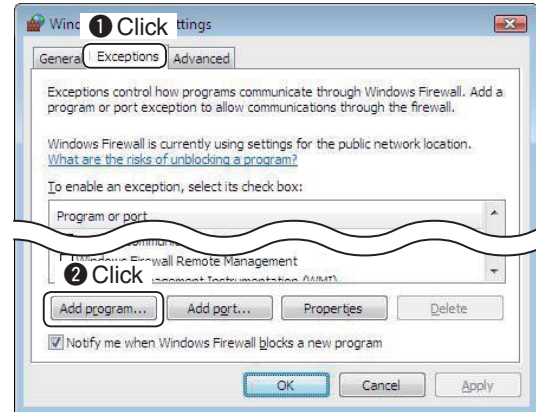


④ If the “User Account Control” screen appears, then click [Continue].

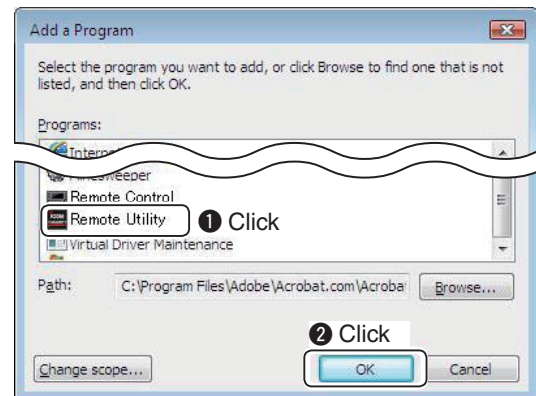
⑤ The “Windows Firewall Settings” screen appears. If a check mark is inserted in “Block all incoming connections,” click to remove it.



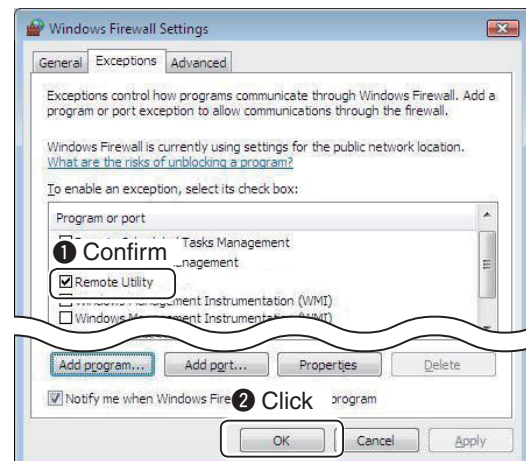
⑥ Click the [Exceptions] tab, then click [Add program...].



⑦ The “Add a Program” screen appears, then click [Remote Utility] and then [OK].



⑧ Returns to the [Exceptions] tab in the “Windows Firewall Settings” screen. In the “Program or port” list, confirm that [Remote Utility] is displayed and a check mark is in the box, then click [OK].



■ Volume adjustment for your audio devices

- When connecting to the network through a PC, the audio volume adjustment is needed for both the Remote and Base station PCs.
- When connecting to the network directly, the audio volume adjustment is needed for only the Remote station PC.

Before you start using the RS-BA1, the PC's audio volume must be set to a proper level.

When several audio devices are used, you must set each one individually.

- Configurable items, displayed screens and terms that are used may differ, depending on your PC.

When setting for the Base station PC

Adjust the audio volume input or output level from or to your radio.

In the "Playback devices" menu, you can adjust the modulation level sent to the radio.

In the "Recording devices" menu, you can adjust the audio input level from the radio.

Before adjusting, connect the radio and your PC, and turn ON the radio. (See page 16.)

When setting for the Remote station PC

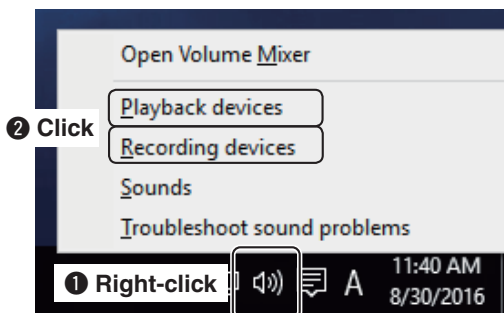
Adjust the volume level of the audio device that is connected to the PC.

In the "Playback devices" menu, you can adjust the output level of the speaker or headset.

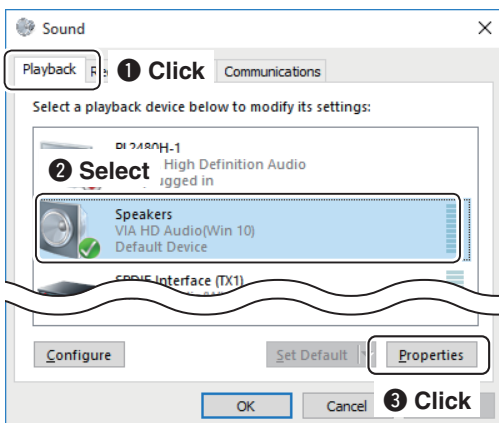
In the "Recording devices" menu, you can adjust the modulation level sent to the radio.

Windows 10

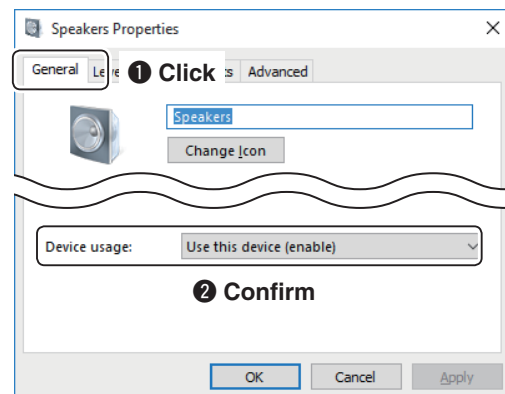
- ① Right-click the speaker icon on the taskbar, then click "Playback devices" or "Recording devices."



- ② The "Sound" screen appears, then click the [Playback] tab. In the list that appears, select the audio device that you will use, then click [Properties].



- ③ The "Speaker Properties" screen appears, then confirm "Use this device (enable)" is displayed in the **Device Usage** menu on the [General] tab.



1 BEFORE USING REMOTE CONTROL SYSTEM

■ Volume adjustment for your audio devices

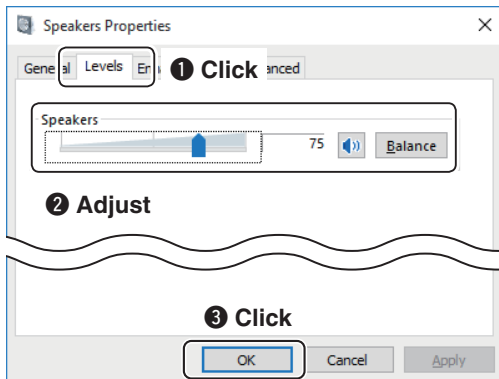
Windows 10 (Continued)

④ Click the [Levels] tab.

Adjust the speaker's audio level by moving the slide control to the right or left.

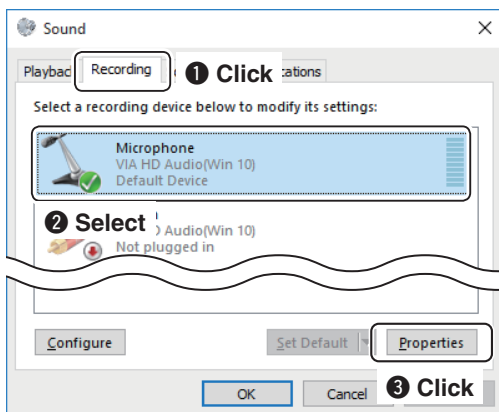
- If the mute setting is turned ON in "Speakers" (🔇), click the icon to turn OFF.

After adjusting, click [OK] to close "Speaker Properties."

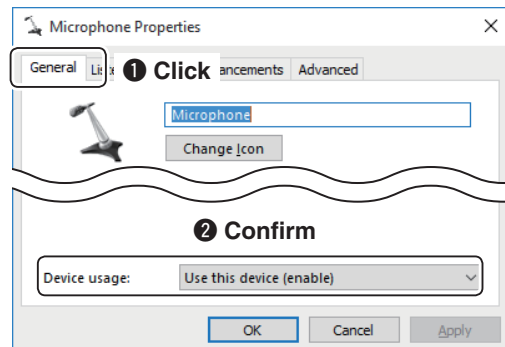


⑤ Click the [Recording] tab on "Sound."

In the list that appears, select the audio device that you will use, and then click [Properties].

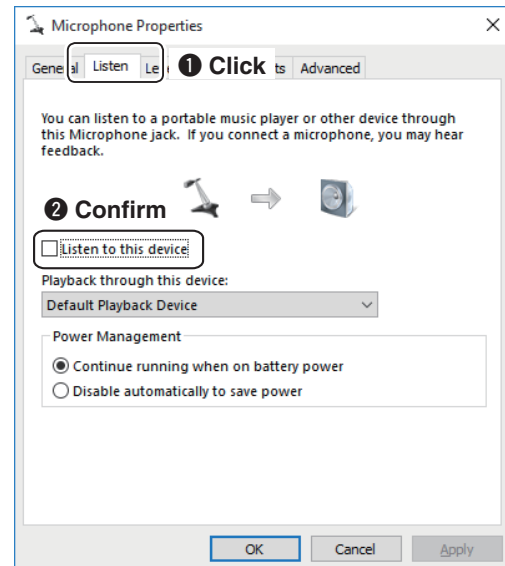


⑥ The "Microphone Properties" screen appears, then confirm "Use this device (enable)" is displayed in the **Device Usage** menu on the [General] tab.



⑦ Click the [Listen] tab.

If a check mark is inserted in "Listen to this device," click to remove it.

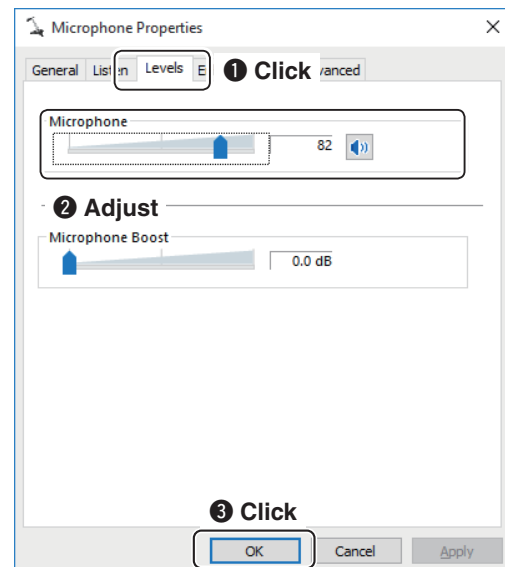


⑧ Click the [Levels] tab.

Adjust the microphone's audio level by moving the slide control to the right or left.

- If the mute setting is turned ON in "Microphone" (🔇), click the icon to turn OFF.

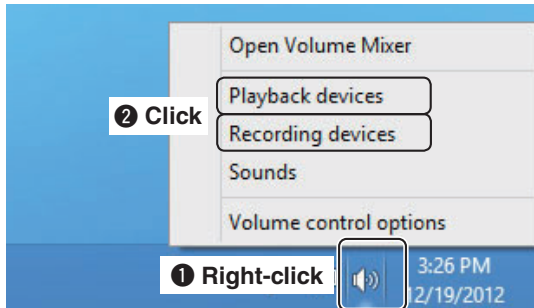
After adjusting, click [OK] to close "Microphone Properties."



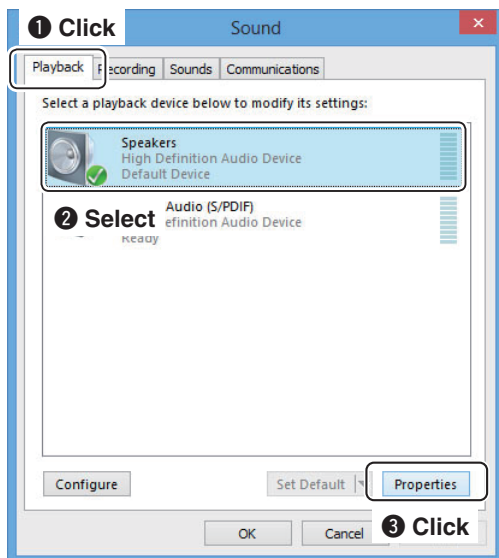
■ Volume adjustment for your audio devices (Continued)

Windows 8.1

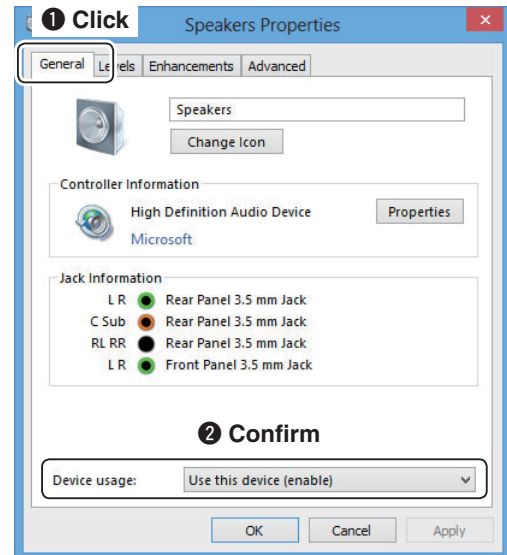
- ① Right-click the speaker icon on the taskbar, then click “Playback devices” or “Recording devices.”



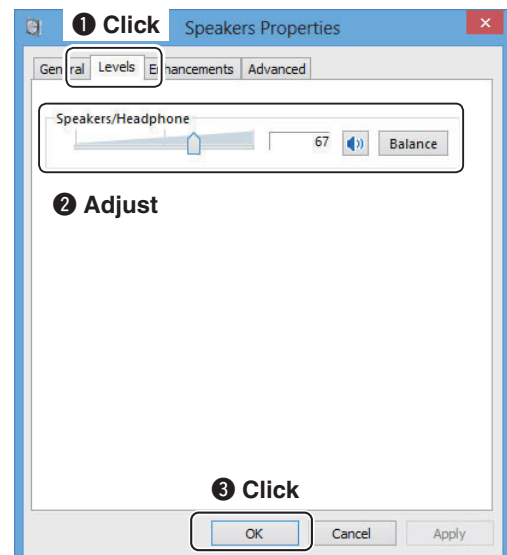
- ② The “Sound” screen appears, then click the [Playback] tab. In the list that appears, select the audio device that you will use, then click [Properties].



- ③ The “Speaker Properties” screen appears, then 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 OFF.
 After adjusting, click [OK] to close “Speaker Properties.”



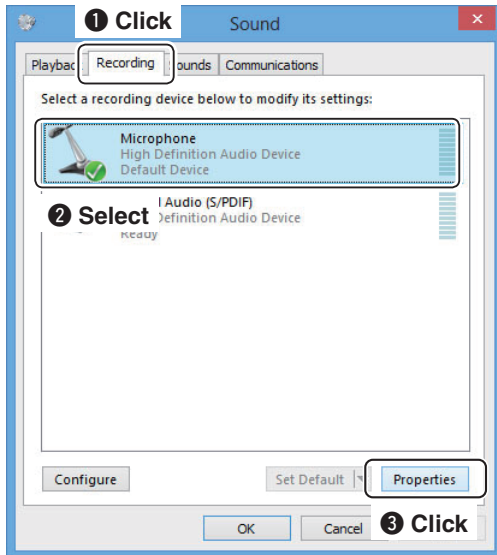
Continued on the next page.

1 BEFORE USING REMOTE CONTROL SYSTEM

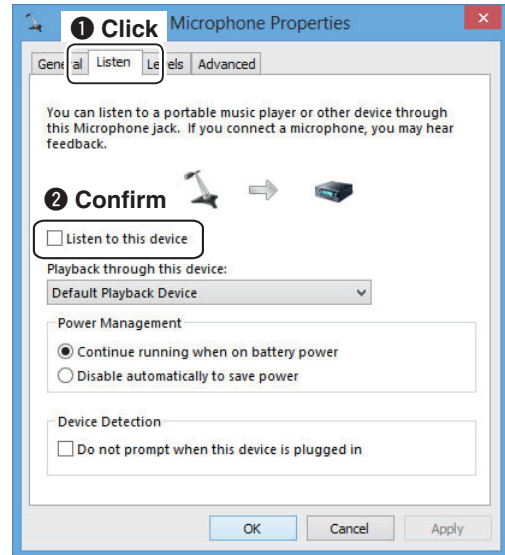
■ Volume adjustment for your audio devices

Windows 8.1 (Continued)

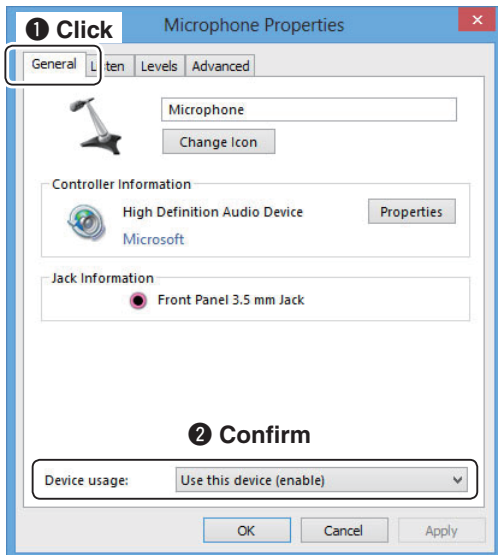
- ⑤ Click the [Recording] tab on “Sound.”
In the list that appears, select the audio device that you will use, and then click [Properties].



- ⑦ Click the [Listen] tab.
If a check mark is inserted in “Listen to this device,” click to remove it.

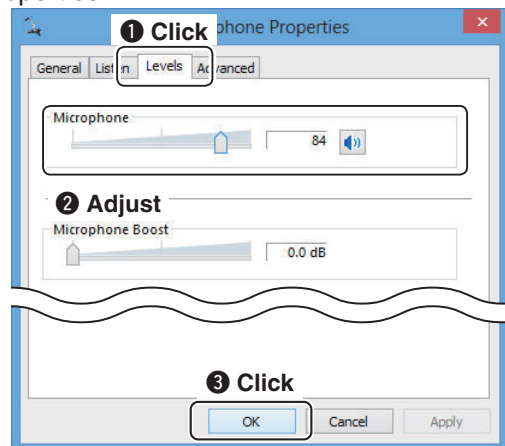


- ⑥ The “Microphone Properties” screen appears, then confirm “Use this device (enable)” is displayed in the **Device Usage** menu on the [General] tab.



- ⑧ Click the [Levels] tab.
Adjust the microphone’s audio level by moving the slide control to the right or left.
• If the mute setting is turned ON in “Microphone” (🔇), click the icon to turn OFF.

After adjusting, click [OK] to close “Microphone Properties.”

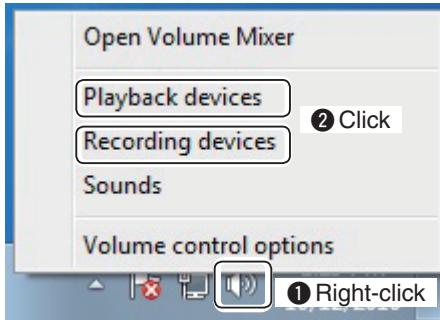


■ Volume adjustment for your audio devices (Continued)

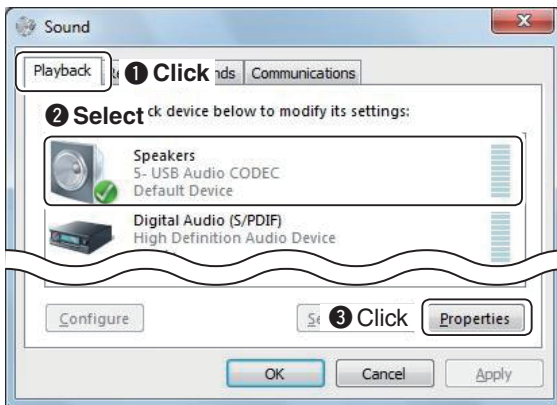
Windows 7/ Windows Vista

(This description is based on Windows 7.)

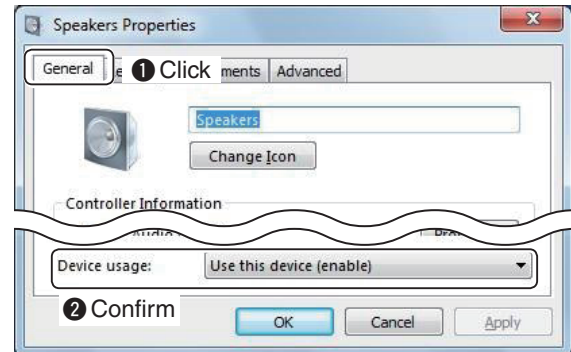
- ① Right-click the speaker icon on the taskbar, and click “Playback devices” or “Recording devices.”



- ② The “Sound” screen appears, then click [Playback]. In the list that appears, select the audio device that you will use, and then click [Properties].

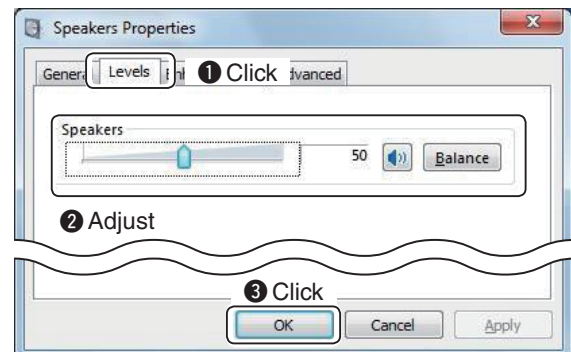


- ③ The “Speaker Properties” screen appears, then confirm “Use this device (enable)” is displayed in the **Device Usage** menu on the [General] tab.



- 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 OFF.

After adjusting, click [OK] to close “Speaker Properties.”



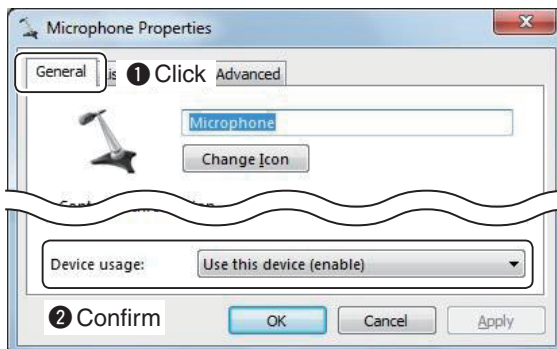
■ Volume adjustment for your audio devices

Windows 7/ Windows Vista (Continued)

- ⑤ Click the [Recording] tab on “Sound.”
In the list that appears, select an audio device that you will use, then click [Properties].



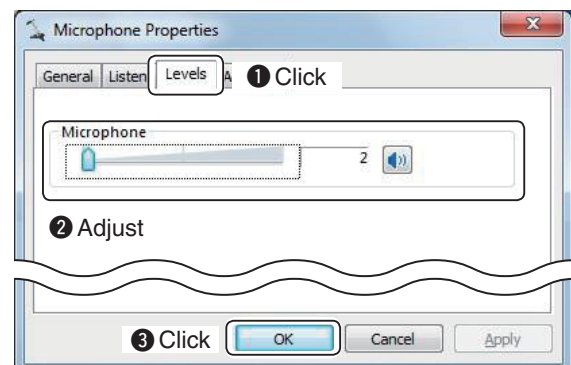
- ⑥ The “Microphone Properties” screen appears, then confirm “Use this device (enable)” is displayed in the **Device Usage** menu on the [General] tab.



- ⑦ Click the [Listen] tab.
Confirm that a check mark is not inserted in “Listen to this device.”
• If you use the Windows Vista, the [Listen] tab does not appear.



- ⑧ Click the [Levels] tab.
Adjust the microphone’s audio level by moving the slide control to the right or left.
After adjusting, click [OK] to close “Microphone Properties.”
• When the mute setting is turned ON in “Microphone Properties,” click the icon to turn OFF.
• If you use the Windows Vista without any Service Pack installed, and use “USB Audio CODEC” as the audio device, the [Levels] tab’s sheet is not displayed.



NOTE:
If you use the Windows 7 and use “USB Audio CODEC” as the audio device, set the audio level to 2. Setting the level to 3 or higher can distort the audio.

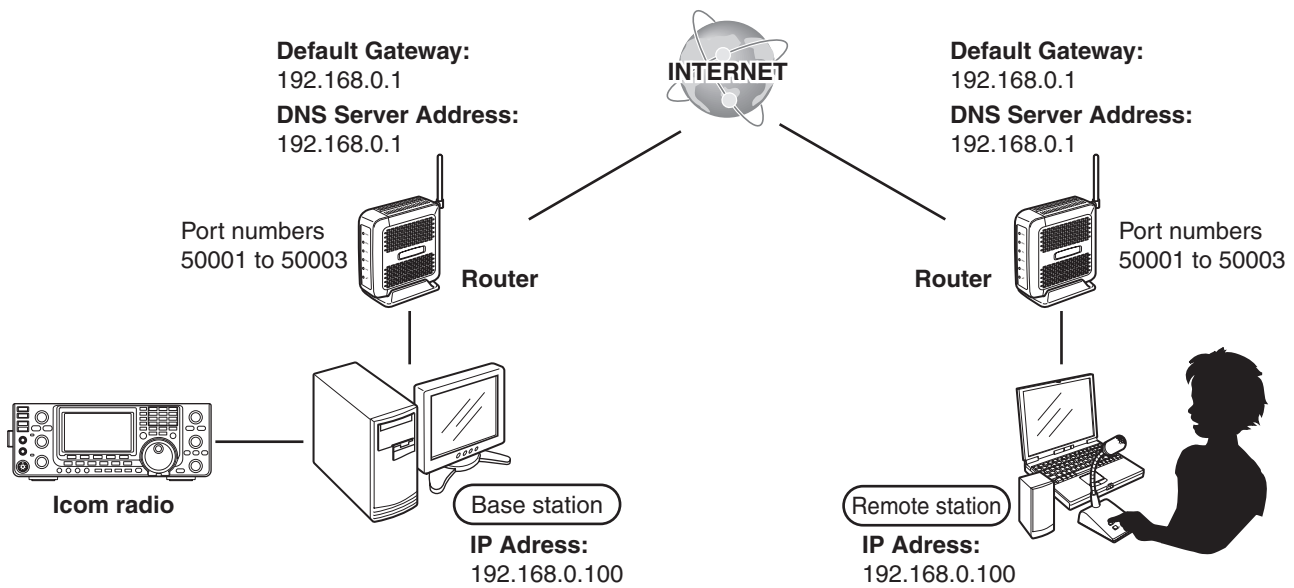
■ To allow access from the Internet

Only when you configure the remote control system through the Internet, you need the following settings on your router.

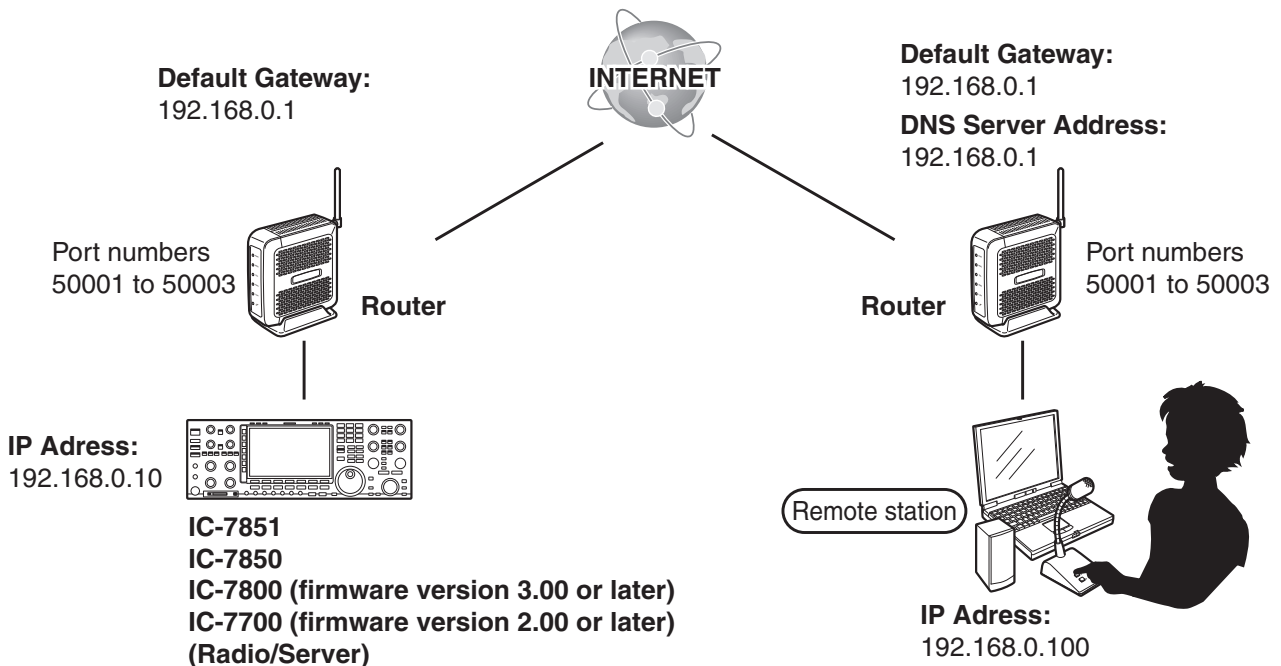
If you configure the remote control system through the Internet, whether you are operating as a Base station or a Remote station, you need to configure your router to allow access from the Internet.

To allow the access, configure the 3 port numbers used with the Remote Utility (Example: 50001 to 50003). Ask the router's manufacturer about how to forward the port.

When connecting to the network through a PC



When connecting to the network directly



1 BEFORE USING REMOTE CONTROL SYSTEM

■ To allow access from the Internet (Continued)

When connecting to the network through a PC PC (Remote Utility) setting

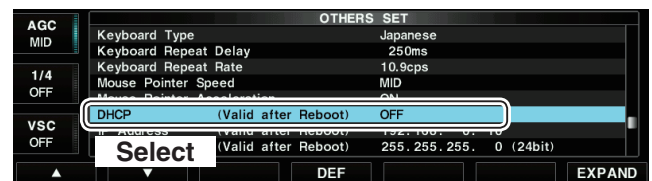
- ① Enter the fixed IP address, if you use DHCP.
- ② Enter the default gateway and DNS server address of the router.
- ③ After setting, start the WWW browser to confirm you can access the internet.

Router setting

Please refer to your router's manual for details of how to configure the settings.

When connecting to the network directly Radio setting

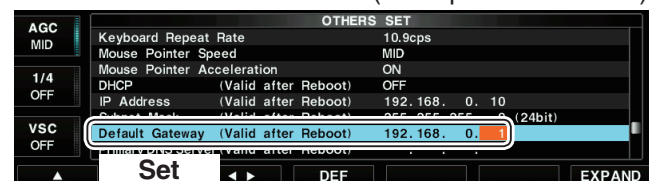
- ① Hold down [EXIT/SET] for 1 second to select the Set mode menu screen.
- ② Push [F-5•OTHERS] to enter the Miscellaneous (Others) set mode.
 - For the IC-7800 and IC-7700, go to step ⑤.
- ③ Push [F-1•▲] or [F-2•▼] to select "DHCP."
- ④ Rotate the main dial to select "OFF."



- ⑤ Push [F-1•▲] or [F-2•▼] to select "IP Address."
- ⑥ Push [F-3•◀▶] to select the desired part, then rotate the main dial to set the fixed IP address.
(Example: 192.168.0.10)



- ⑦ Push [F-1•▲] or [F-2•▼] to select "Default Gateway."
- ⑧ Push [F-3•◀▶] to select the desired part, then rotate the main dial to set the default gateway of the router.
(Example: 192.168.0.1)



- ⑨ Reboot the radio
The settings will take effect after rebooting.

Router setting

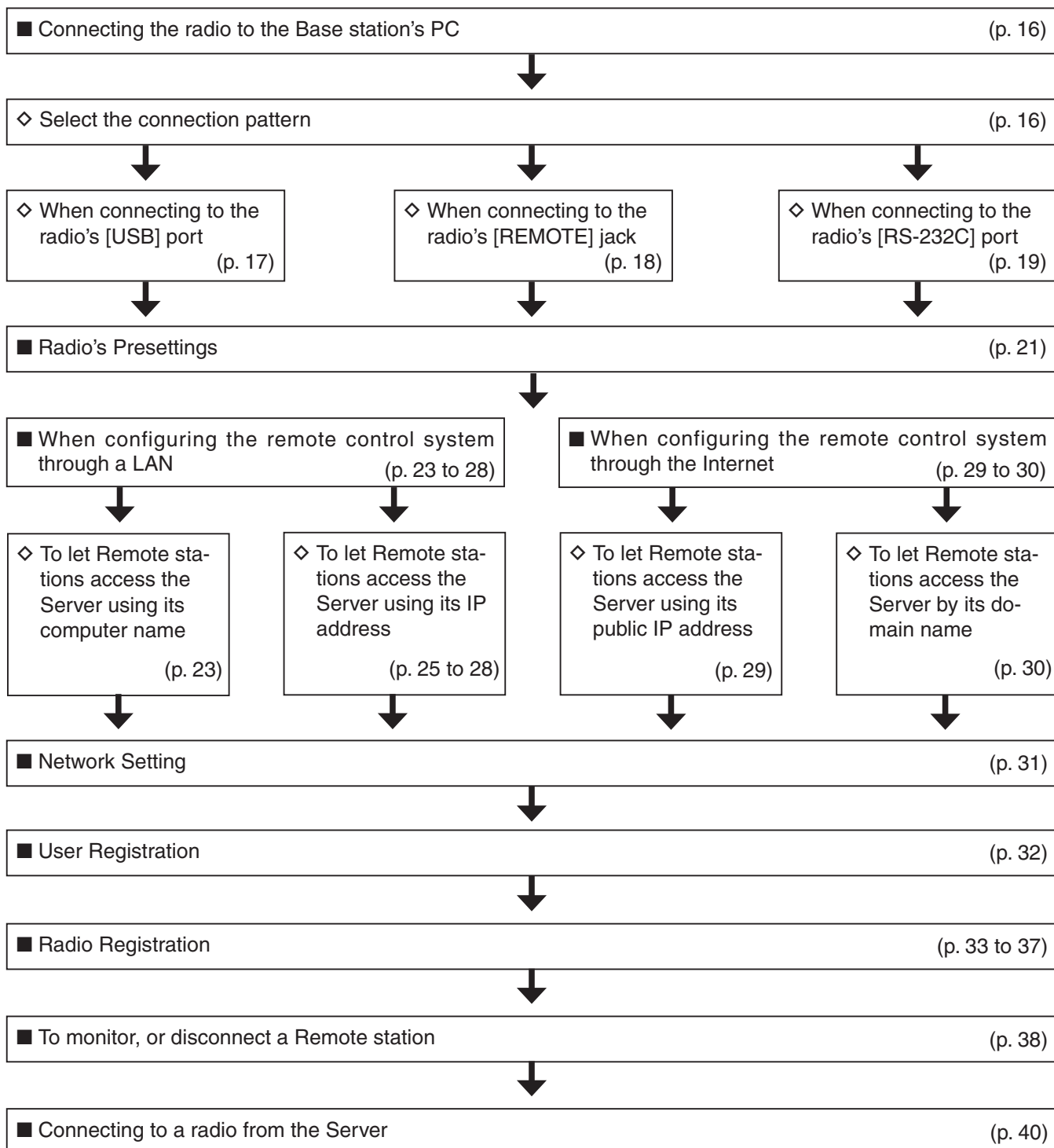
Please refer to your router's manual for details of how to configure the settings.

If you are using one of the following radios, skip this section and go to section 3. (p. 42)

- IC-7851
- IC-7850
- IC-7800 (Firmware version 3.00 or later)
- IC-7700 (Firmware version 2.00 or later)

(As of November 2016)

When connecting to the network through a PC, read this instruction manual in the following order.



■ Connecting the radio to the Base station's PC

Before connecting the radio to the PC, please finish the installation for the Base station's PC and the Remote station's PC, using the RS-BA1 Preparations.

◇ Select the connection pattern

Check the connector type on your radio and see the following chart to connect your radio to the Base station's PC. To connect an Icom CI-V command capable radio to the Base station's PC, you have to make connections for control command and audio communication.

RS-BA1 operation with the Base station's PC connected to the radio's ACC socket, MIC connector, or S/P DIF jack for audio communication cannot be guaranteed.

- This guide explains the USB connection as example. See the RS-BA1 Instruction Manual when connecting to the radio's [REMOTE] jack or [RS-232C] port.

Radio's connector	Outline		Model	Ref.
	Control command	Audio		
When connecting to the radio's [USB] port	Through a USB cable		IC-7100/IC-7200/ IC-7300/IC-7410/ IC-7600 ^{*1} /IC-7850/ IC-7851/IC-9100	p. 17
When connecting to the radio's [REMOTE] jack	Through the CT-17 CI-V LEVEL CON- VERTER	Through an audio cable connected between the PC's audio terminal and the radio's [ACC] socket or [MIC] connector	All	p. 18
When connecting to the radio's [RS-232C] port	Through an RS-232C cable	Through an audio cable connected between the PC's audio terminal and the radio's [ACC] socket, [MIC] connector or [S/P DIF] jack	IC-7700/IC-7800 ^{*2}	p. 19

^{*1} When you turn your radio ON or OFF from the Remote Controller, connect to the radio's [Remote] jack.

^{*2} When you turn your radio ON or OFF from the Remote Controller, connect to the radio's [Remote] jack or to the network directly.

■ Connecting the radio to the Base station's PC (Continued)

◇ When connecting to the radio's [USB] port

For IC-7600 users

When you turn your radio ON or OFF from the Remote Controller, connect to the radio's [Remote] jack.

1. System requirements

- A PC that has a USB 1.1, 2.0 or 3.0 port
- Icom CI-V command capable radio that has a [USB] port (Type B/Mini-B)
- The USB cable (supplied to the RS-BA1 or a radio)

2. Install a USB driver

CAUTION:

- **NEVER** connect the radio to the PC with the USB cable until the USB driver installation has been completed.
- The driver is not supported by the Windows® automatic recognition system.

To use the USB cable between the radio and the PC, you must first install a USB driver.

- The USB driver comes with the RS-BA1. Or download from the Icom website.

NOTE: When a PC with USB 3.0 port is used for operating the radio, confirm the driver name. If the name "Silicon Laboratories CP210x USB to UART Bridge (Driver Removal)" is displayed on the Control Panel screen, uninstall it and then install the latest driver.

The latest driver and installation guide can be downloaded from here:

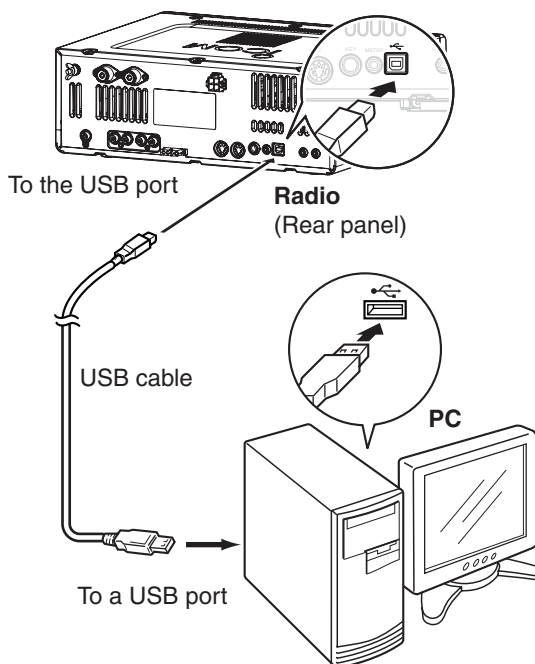
<http://www.icom.co.jp/world/index.html>

Read the installation guide before installing the driver.

3. Connect the radio to the Base station's PC

Connect the radio to the Base station's PC using the USB cable.

- This guide is based on using a Type B USB cable.



NOTE: If you connect a new USB audio device to your PC, the device selected as the default on your PC can be changed. Moreover, never connect another radio using a USB cable while the Remote Utility is open.

■ Connecting the radio to the Base station's PC (Continued)

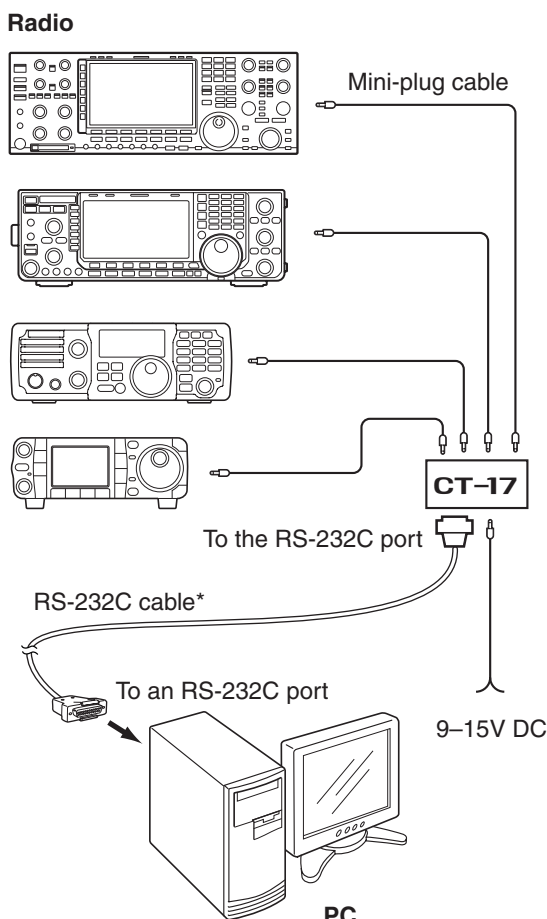
◇ When connecting to the radio's [REMOTE] jack

1. System requirements

- A PC that has an RS-232C port
- Icom CI-V command capable radio that has a [REMOTE] jack
- The optional CT-17 CI-V LEVEL CONVERTER (Two mini-plug cables are included.)
- An RS-232C cable (purchase separately)
- Stereo audio cables (purchase separately)

2. Connect a remote control system

Connect the CT-17 to the base station's PC, which enables the CI-V communication between them.



*CT-17 accepts only an RS-232C cable. The use of an RS-232C-USB converter is not guaranteed.

3. Connect an audio system

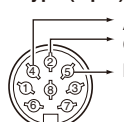
Connect an audio cable between the PC's audio port and the radio's [ACC] socket or [MIC] connector to enable audio communication between them. See the radio's instruction manual for details on the connector.

Radio → **PC**
 AF (Output) → LINE IN/MIC IN (Input)
 MOD (Input) ← LINE OUT (Output)

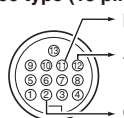
• Connect to the [ACC] socket

(Rear panel view)

IC-7600 type (8 pin)



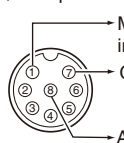
IC-7000 type (13 pin)



• Connect to the [MIC] connector

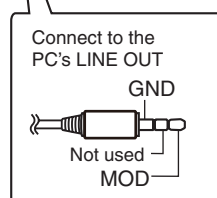
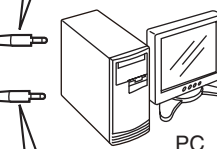
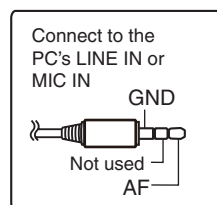
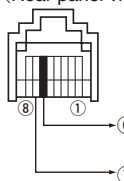
IC-7600 type (8 pin)

(Front panel view)



IC-7000 type (Modular)

(Rear panel view)



• When using the [MIC] connector, NEVER directly connect an audio cable between the radio's Microphone input and PC. It can cause a malfunction without adding the Electrolytic capacitor, as illustrated above.

• NEVER connect a monaural plug to the PC's LINE OUT. It can cause a malfunction.

■ Connecting the radio to the Base station's PC (Continued)

◇ When connecting to the radio's [RS-232C] port

For IC-7800 users

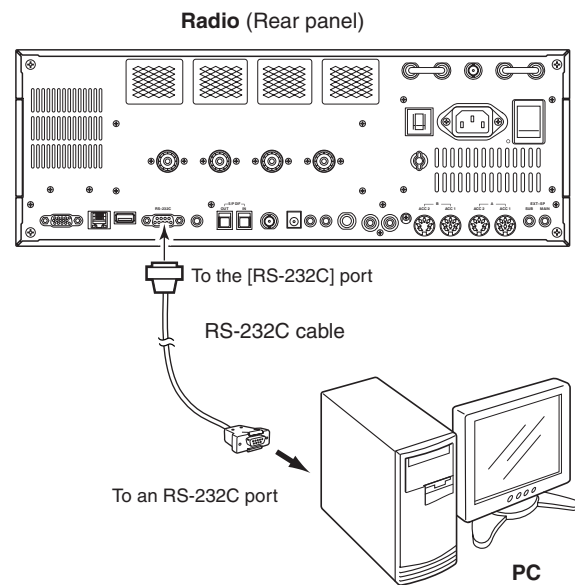
When you turn your radio ON or OFF from the Remote Controller, connect to the radio's [Remote] jack or to the network directly.

1. System requirements

- A PC that has an RS-232C port
- Icom CI-V command capable radio that has an [RS-232C] port
- An RS-232C cable (purchase separately)
- Two S/P DIF digital cables or stereo audio cables (purchase separately)

2. Connect a remote control system

Connect an RS-232C cable between the radio and the base station's PC.



2 WHEN CONNECTING TO THE NETWORK THROUGH A PC

■ Connecting the radio to the Base station's PC

◇ When connecting to the radio's [RS-232C] port (Continued)

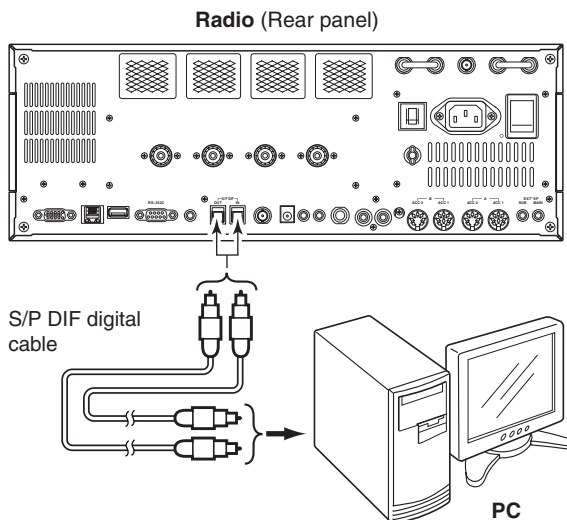
3. Connect an audio system

Connect an audio cable between the PC's audio port and the radio's [S/P DIF] jack, [ACC] socket or [MIC] connector to enables audio communication between them.

See the radio's instruction manual for details on the radio's connector.

• Using the [S/P DIF] jack

Radio		PC
S/P DIF OUT (Output)	➔	S/P DIF IN (Input)
S/P DIF IN (Input)	➔	S/P DIF OUT (Output)

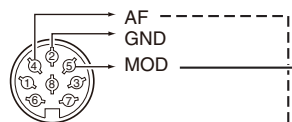


• Using other than the [S/P DIF] jack

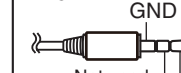
Radio		PC
AF (Output)	➔	LINE IN/MIC IN (Input)
MOD (Input)	➔	LINE OUT (Output)

• Connect to the [ACC] socket

(Rear panel view)

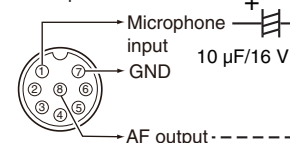


Connect to the PC's LINE IN or MIC IN



• Connect to the [MIC] connector

(Front panel view)



Connect to the PC's LINE OUT



• When using the [MIC] connector, NEVER directly connect an audio cable between the radio's Microphone input and PC. It can cause malfunction without adding the Electrolytic capacitor, as illustrated above.

• NEVER connect a monaural plug to the PC's LINE OUT. It can cause a malfunction.

■ Radio's presetting

The RS-BA1 remotely controls Icom radios using CI-V (Icom Communication Interface) commands. See the CI-V command table in the radio's instruction manual for details of the functions that can be controlled.

◇ The following manual settings are required when operating the RS-BA1

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

NOTE:

- Remove the transverter from the radio, if it is connected.
- To prevent an accidental transmission, we recommend you remove any keyer, keypad or other external equipment connected to the radio.
- Set the radio to a normal operating mode. The radio cannot receive CI-V commands while in special modes, such as the firmware update mode or cloning mode.
- If the radio has a Time-Out Timer function, we recommend you enable it to prevent the radio from continuously transmitting.

Genre	Item	Model	Setting
Function	RIT function	All	Set to OFF.
	ΔTX function	All	Set to OFF.
	Simple band scope	IC-746PRO*/IC-7000*/IC-7100/ IC-7400*/IC-9100	Set to OFF.
	SWR Measurement function	IC-746PRO*/IC-7000*/IC-7100/ IC-7400*/IC-9100	Set to OFF.
	Timer/Sleep Timer function	Radios with the timer function	Set the timer to OFF or to your schedule.
	Weather Alert function	IC-7100	Set to OFF.
Display	RTTY decode screen	IC-746PRO*/IC-756PROIII*/IC-7400*	Exit the screen.
Volume	Volume for the RX audio	All	Set the volume to a suitable level.
CI-V	CI-V address	All	Set an appropriate CI-V address.
	CI-V baud rate	All	Set to 19200 bps (or Auto).
	CI-V USB Port	IC-7300/ IC-7850 (Firmware version 1.10 or later)/ IC-7851 (Firmware version 1.10 or later)	To use the Scope function when connecting to the USB port, set to Unlink from [REMOTE].
	CI-V USB Baud Rate	IC-7300/ IC-7850 (Firmware version 1.10 or later)/ IC-7851 (Firmware version 1.10 or later)	To use the Scope function when connecting to the USB port, set to 115200 (or Auto).
Set mode	USB Serial Function	Radios with a USB (B type) port	Set to "CI-V" for the selected connection type.
	RS-232C Function	Radios with an RS-232C port	Set to "CI-V" for the selected connection type.

* Operation on models without a USB connection cannot be guaranteed.

/// If you are using the IC-PW1 with the transceiver, be sure to set the CI-V baud rate to 19200 bps. After changing the transceiver's CI-V settings, be sure to reset the CPU of the IC-PW1 and set the transceiver's CI-V settings on the IC-PW1. See the IC-PW1 instruction manual for details.

■ Radio's presets (Continued)

◇ The following settings are automatically set to the radio

When the RS-BA1's Remote Controller connects to the radio, and you select the model name on the Connect Setting screen, the following may be automatically set, depending on the model. When you manually operate the radio, set these items as desired.

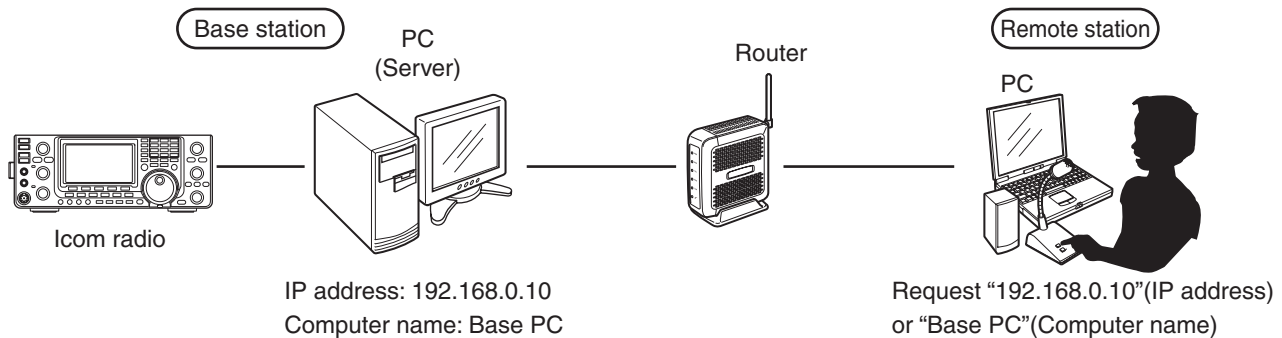
Genre	Item	Model	Action
Function	MAIN/SUB Trunking function	IC-7850 (Firmware version 1.10 or later)/ IC-7851 (Firmware version 1.10 or later)	Automatically set to OFF.
	RIT function	Radios with the Network function/ IC-7100 (Firmware version 1.10 or later)/ IC-7600 (Firmware version 2.00 or later)	Automatically set to OFF.
	ΔTX function	Radios with the Network function/ IC-7600 (Firmware version 2.00 or later)	Automatically set to OFF.
	SSB/CW Synchronous Tuning	All	Automatically set to OFF.
	Calibration Marker	Radios with Calibration Marker function	Automatically set to OFF.
	VOX function	All	Automatically set to OFF.
	Scan function	All	Automatically cancel the scan.
	RTTY filter	IC-746PRO*/IC-756PROIII*/IC-7400*	Automatically set to OFF.
	Twin Peak Filter	IC-746PRO*/IC-756PROIII*/IC-7400*	Automatically set to OFF.
Display	Dualwatch function	Radios with the Dualwatch function	Automatically set to OFF.
	SUB band	IC-9100	Automatically set to OFF.
	Memory channel/Call channel	All	Automatically set to the VFO mode.
Operating mode	DR (D-STAR® REPEATER) mode	Radios with the DV mode	Automatically set to OFF.
	Satellite mode	Radios with the Satellite mode	Automatically set to OFF.
CI-V	CI-V transceive	All	Automatically set to ON.
	CI-V 731 Mode	IC-746PRO*/IC-756PROIII*/IC-7400*	Automatically set to OFF.

* Operation on models without a USB connection cannot be guaranteed.

■ When configuring the remote control system through a LAN

If you configure the remote control system through a LAN, Remote stations can access the Server using its computer name or IP address.

The example below describes how to find out the PC (Server)'s computer name, or IP address, to be requested by Remote stations.



◇ To let Remote stations access the Server using its computer name

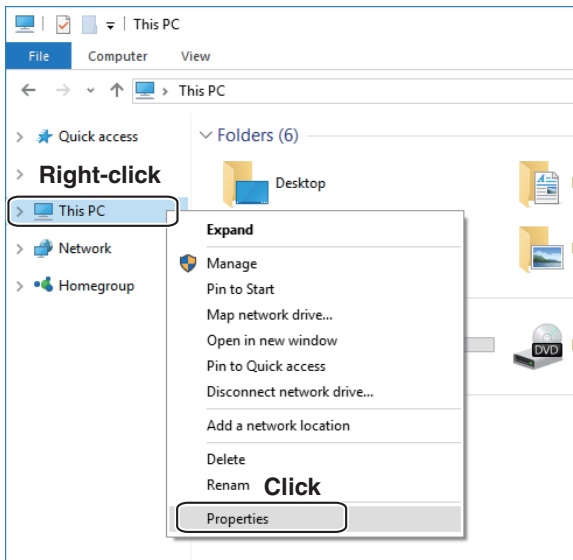
A computer name is used on networks to identify a particular workstation on the network. Find out your PC's computer name to let Remote stations access the Server using it.

Windows 10

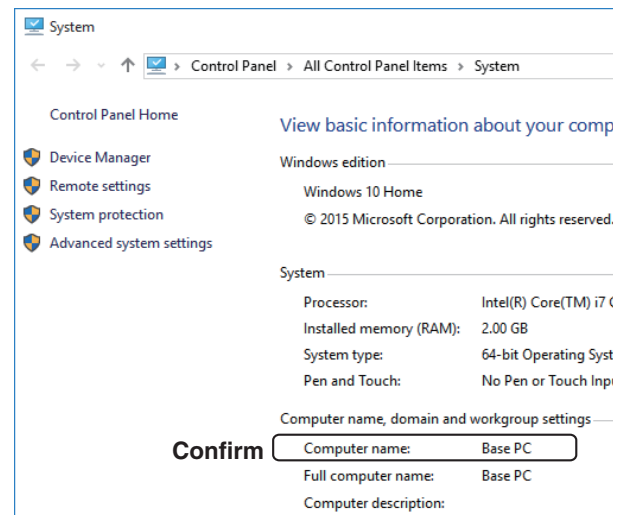
① Click the folder icon on the taskbar.



② Right-click "This PC," and then click "Properties."



③ The "System" screen appears, then confirm the name that is displayed in the **Computer name** field.



2 WHEN CONNECTING TO THE NETWORK THROUGH A PC

■ When configuring the remote control system through a LAN

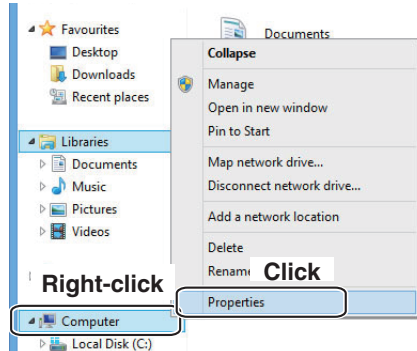
◇ To let Remote stations access the Server using its computer name (continued)

Windows 8.1

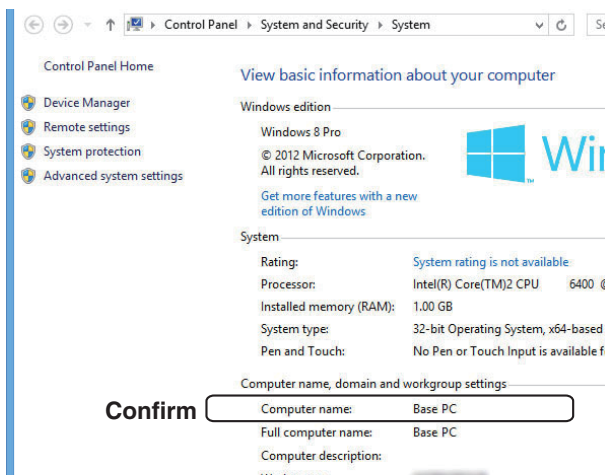
① Click the folder icon on the taskbar.



② Right-click "Computer," and then click "Properties."



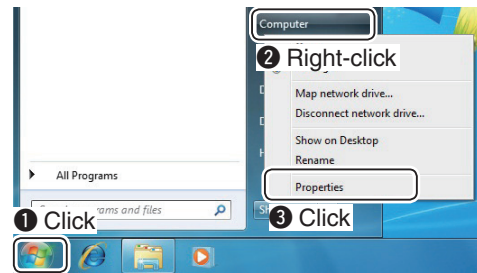
③ The "System" screen appears, then confirm the name that is displayed in the **Computer name** field.



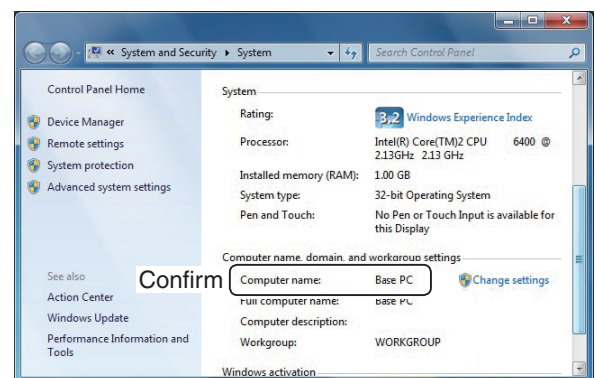
Windows 7/ Windows Vista

(This description is based on Windows 7.)

① Right-click [Computer] in the <Start> menu, and then click [Properties].



② The "System" screen appears, then confirm the name that is displayed in the **Computer name** field.



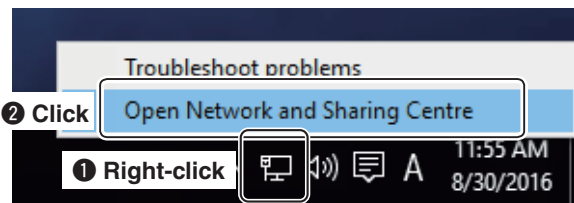
■ When configuring the remote control system through a LAN (Continued)

◇ To let Remote stations access the Server using its IP address

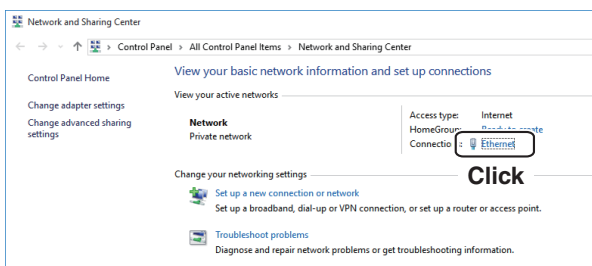
An IP address is a numerical label that is assigned to devices participating in a computer network. Find out your PC's IP address to let Remote stations access the Server using it.

Windows 10

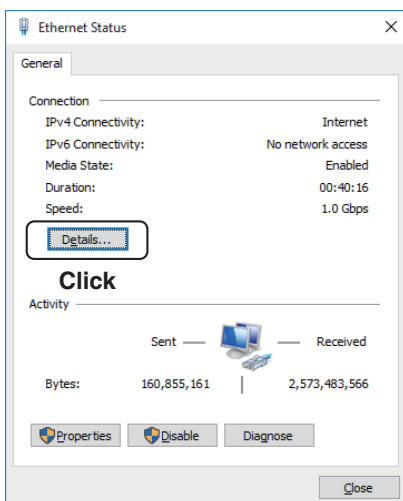
- ① Right-click the Network icon on the taskbar, and then click [Open Network and Sharing Center].



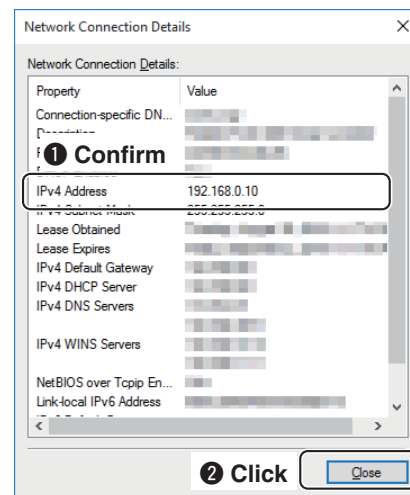
- ② The "Network and Sharing Center" screen appears, then click [Ethernet].



- ③ The "Ethernet Status" screen appears, then click [Details...].



- ④ The "Network Connection Details" screen appears, then confirm the IP address that is displayed in the **Address** field. Click [Close] to close the window.



When the **DHCP Enabled** field is set to "Yes" in the "Network Connection Details" screen, the DHCP server assigns a dynamic IP address to your PC. Because of this, Remote stations will have to match the IP address each time to access the Server. If the **DHCP Enabled** field is set to "Yes," we recommend that you let Remote stations access the Server using its computer name. (p. 23)

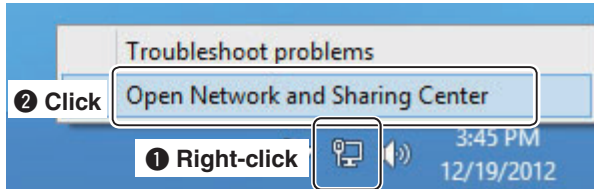
2 WHEN CONNECTING TO THE NETWORK THROUGH A PC

■ When configuring the remote control system through a LAN

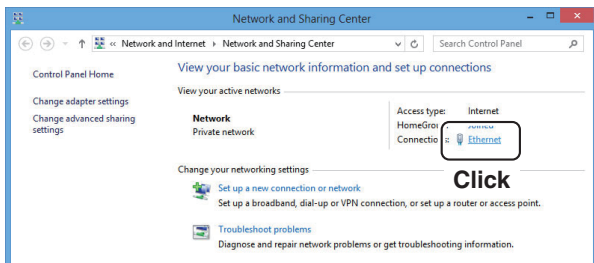
◇ To let Remote stations access the Server using its IP address (continued)

Windows 8.1

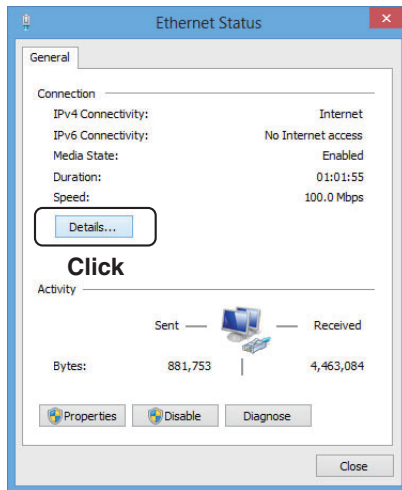
- ① Right-click the Network icon on the taskbar, and then click [Open Network and Sharing Center].



- ② The “Network and Sharing Center” screen appears, then click [Ethernet].

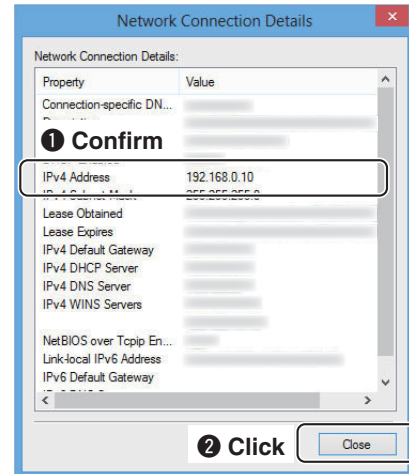


- ③ The “Ethernet Status” screen appears, then click [Details...].



- ④ The “Network Connection Details” screen appears, then confirm the IP address that is displayed in the **Address** field.

Click [Close] to close the window.



When the **DHCP Enabled** field is set to “Yes” in the “Network Connection Details” screen, the DHCP server assigns a dynamic IP address to your PC.

Because of this, Remote stations will have to match the IP address each time to access the Server.

If the **DHCP Enabled** field is set to “Yes,” we recommend that you let Remote stations access the Server using its computer name. (p. 23)

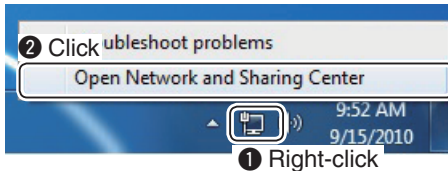
2 WHEN CONNECTING TO THE NETWORK THROUGH A PC

■ When configuring the remote control system through a LAN

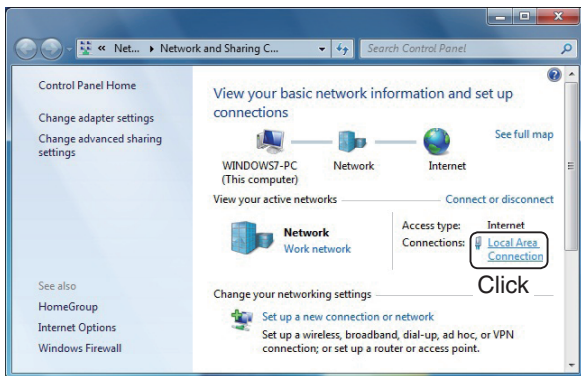
◇ To let Remote stations access the Server using its IP address (continued)

Windows 7

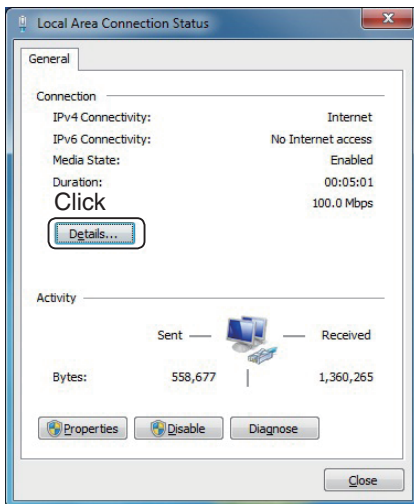
- ① Right-click the Network icon on the taskbar, and then click [Open Network and Sharing Center].



- ② The “Network and Sharing Center” screen appears, then click [Local Area Connection].

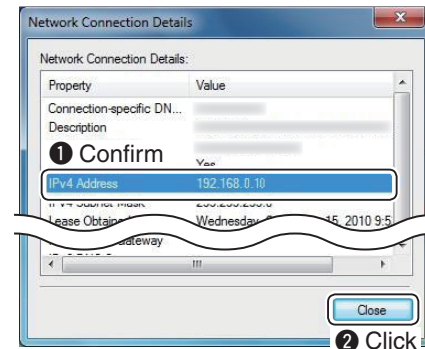


- ③ The “Local Area Connection Status” screen appears, then click [Details...].



- ④ The “Network Connection Details” screen appears, then confirm the IP address that is displayed in the **Address** field.

Click [Close] to close the window.



When the **DHCP Enabled** field is set to “Yes” in the “Network Connection Details” window, the DHCP server assigns a dynamic IP address to your PC.

Because of this, Remote stations will have to match the IP address each time to access the Server.

If the **DHCP Enabled** field is set to “Yes,” we recommend that you let Remote stations access the Server using its computer name. (p. 23)

2 WHEN CONNECTING TO THE NETWORK THROUGH A PC

■ When configuring the remote control system through a LAN

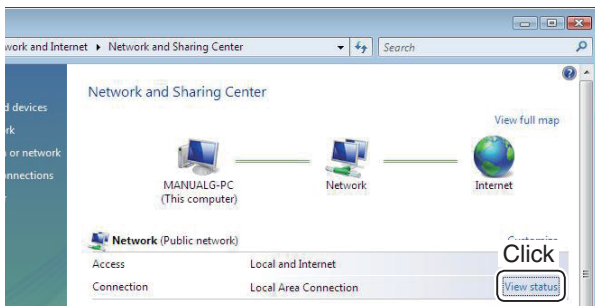
◇ To let Remote stations access the Server using its IP address (continued)

Windows Vista

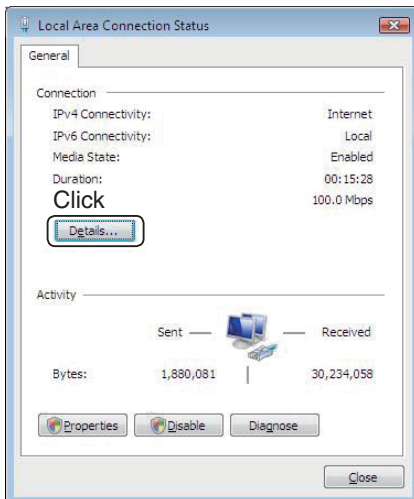
- ① Right-click [Computer] in the <Start> menu, then click [Properties].



- ② The “Network and Sharing Center” screen appears, then click [View status].

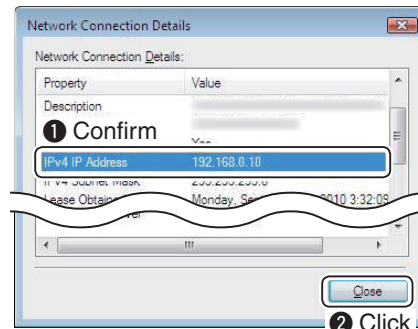


- ③ The “Local Area Connection Status” screen appears, then click [Details...].



- ④ The “Network Connection Details” screen appears, then confirm the IP address that is displayed in the **IP Address** field.

Click [Close] to close the window.



When the **DHCP Enabled** field is set to “Yes” in the “Network Connection Details” window, the DHCP server assigns a dynamic IP address to your PC.

Because of this, Remote stations will have to match the IP address each time to access the Server.

If the **DHCP Enabled** field is set to “Yes,” we recommend that you let Remote stations access the Server using its computer name. (p. 23)

■ When configuring the remote control system through the Internet

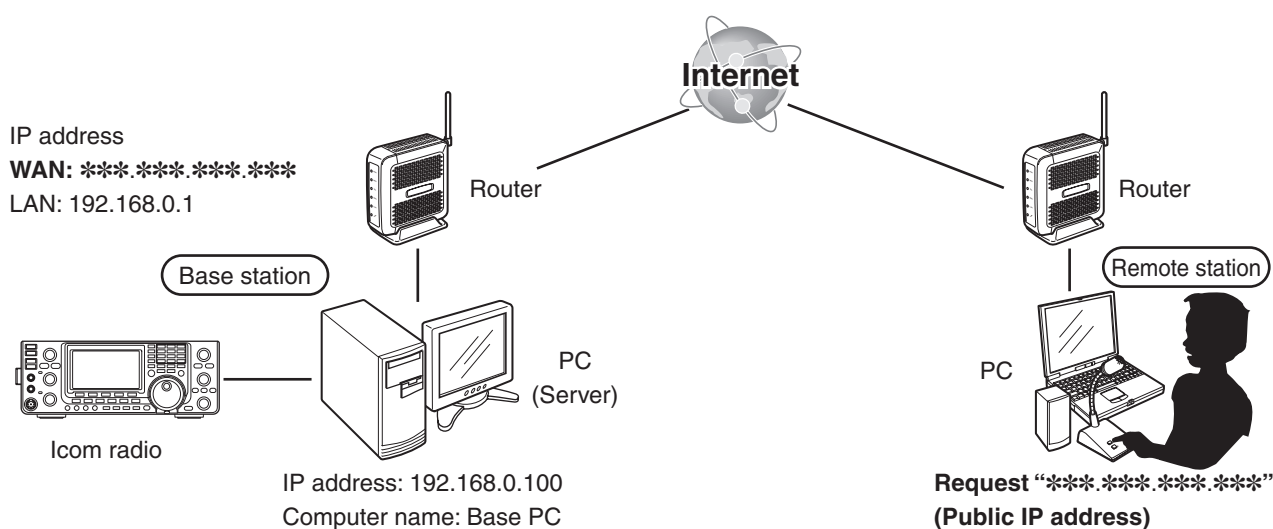
If you configure the remote control system through the Internet, Remote stations can access the Server using its public IP address. If you utilize a Dynamic DNS service, Remote stations can access the Server by not only its public IP address, but also by its domain name.

◇ To let Remote stations access the Server using its public IP address

A public IP address is an address that is accessible over the global Internet. If you use a dynamic public IP address, it is chosen from a pool of available addresses and changes each time you connect to the Internet. Because of this, Remote stations will have to match the IP address each time to access the Server.

If you use a dynamic public IP address, we recommend that you utilize the Dynamic DNS service to allow the Remote stations to access the Server using its domain name, or use a static public IP address.

Ask the router's manufacturer about how to configure your router to set the public IP address.

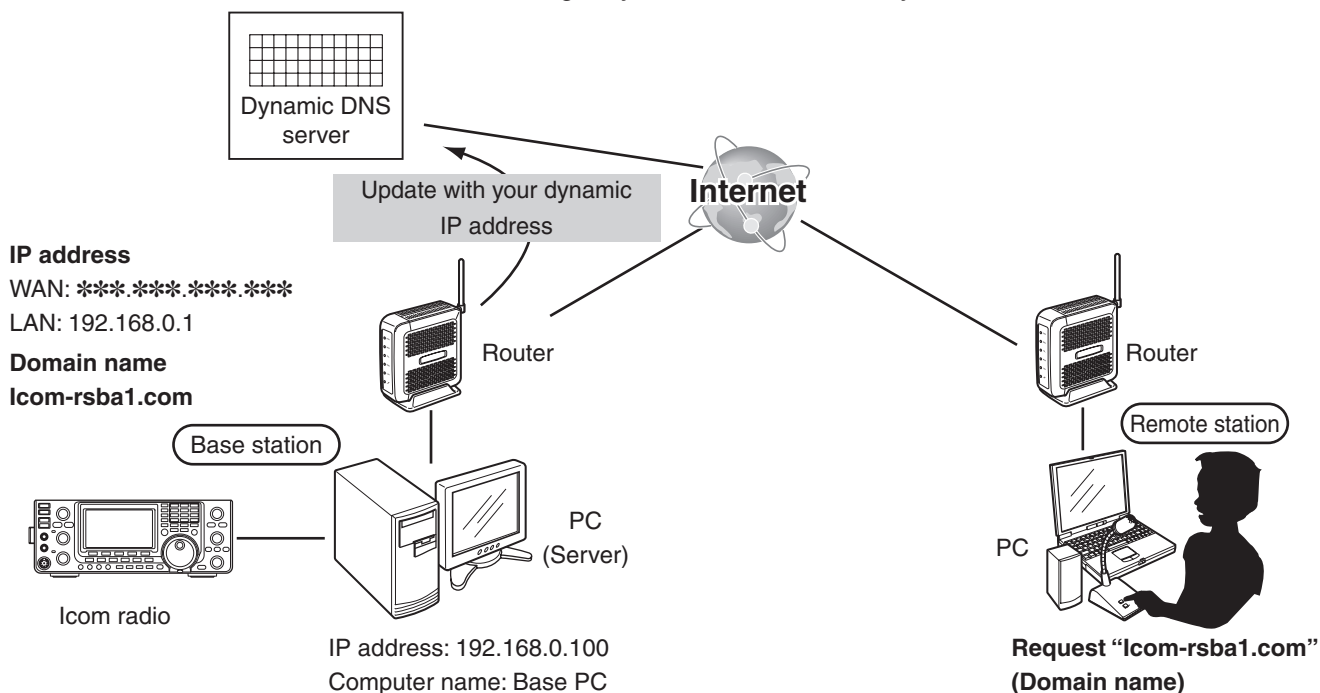


■ When configuring the remote control system through the Internet (Continued)

◇ To let Remote stations access the Server by its domain name

If you set up an account for a Dynamic DNS server, you can configure your router to update the Dynamic DNS server with your dynamic IP address. Even if you don't have a static public IP address, you can allow Remote stations to access the Server through the Internet, using its domain name.

Ask the router's manufacturer about how to configure your router to use the Dynamic DNS services.



■ Network setting

Configure your PC's network environment in the Base station's Remote Utility.

The settings will take effect after rebooting the Remote Utility.

When you first open the Remote Utility, the Network Setting screen appears.

After configuring your network environment, you can display other setting screens.

- ① In the Remote Utility, open the Network screen.

How to open: Select the 'Network Setting' mode, then click the [Network] tab.

- ② Enter a name for your PC in the **PC Name** field, of up to 16 characters.

DO NOT use the same name for more than one PC on your network.

- ③ Confirm the port numbers of the Control, Serial and Audio ports.

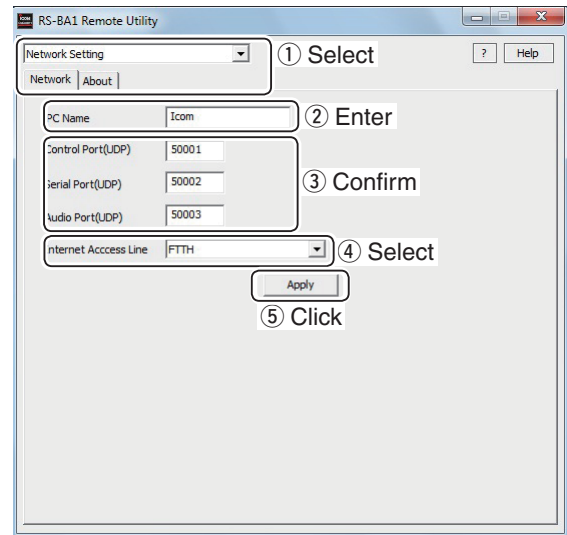
You should use the default port numbers for these ports.

- ④ Select your internet access line type in the **Internet Access Line** menu.

- ⑤ Click [Apply] to save the network settings.

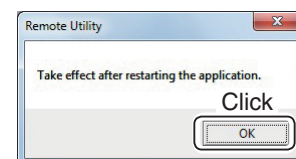
After clicking, the "Take effect after restarting the application" screen appears, then click [OK].

The settings will take effect after rebooting the Remote Utility.



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 configure the port forwarding settings and the IP filter settings on your router once again. (p. 13)

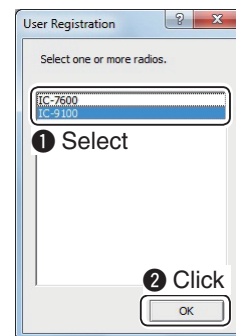
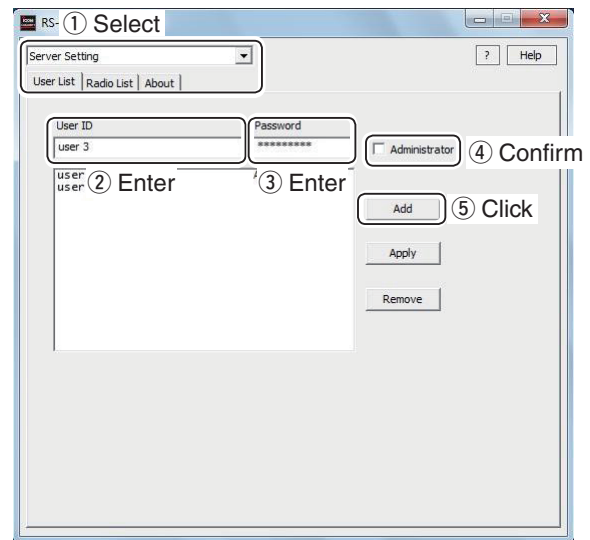


■ User registration

In the Base station's Remote Utility, register users (Remote Stations) to allow them to access the Server. The Server verifies the user ID and password when users attempt to access the Server. If the User ID or password is incorrect, the Remote station cannot access the Server.

◆ To register a user

- ① In the Remote Utility, open the User List screen.
How to open: Select the 'Server Setting' mode, then click the [User List] tab.
- ② Enter a user ID in the **User ID** field, of up to 16 characters, case-sensitive.
You cannot register an already registered ID.
- ③ Enter a password in the **Password** field, of 8 to 16 characters, case-sensitive.
At least two different characters must be used.
- ④ To set the user as an administrator, click the **Administrator** box to make a check mark.
Administrator users can terminate a connection between another user and a radio. (p. 39)
- ⑤ Click [Add] to save the settings.
After clicking, the User Registration screen appears. Select radios that you allow the user to use.
• If there are multiple radios to allow the user to use, select of those radios.
After selecting, click [OK] to save the settings and close the screen.



NOTE:

- To remove a user from the User List, select its user ID, and then click [Remove].
The user will not be able to access the Server.
- If you select radios to allow a user to use in the User Registration screen, the user's user ID is automatically registered in the radio's Permitted Users list. (p. 35)

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.

■ Radio registration

In the Base station's Remote Utility, register the radios that are physically connected to your PC.
See page 16 to connect a radio to your PC.

• Radio Registration screen

◇Radio's basic information setting (p. 34)

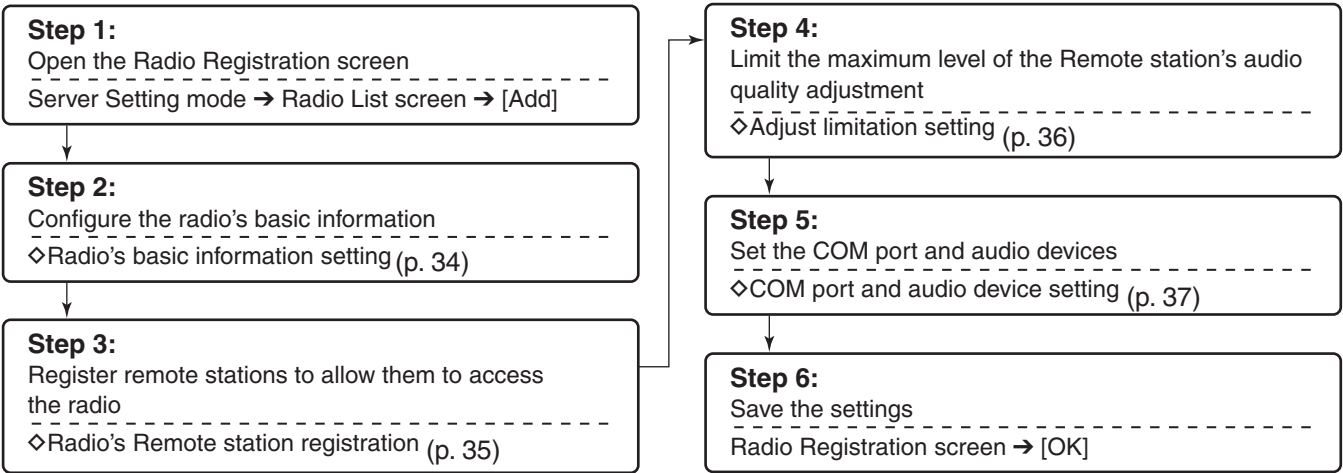
◇Radio's Remote station registration (p. 35)

◇Adjust limitation setting (p. 36)

◇COM port and audio device setting (p. 37)

◇ To register a radio

Procedure



NOTE:
To remove a radio from the Radio List screen, select it in the list, and then click [Remove].

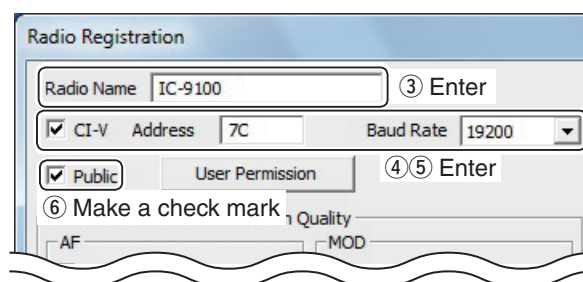
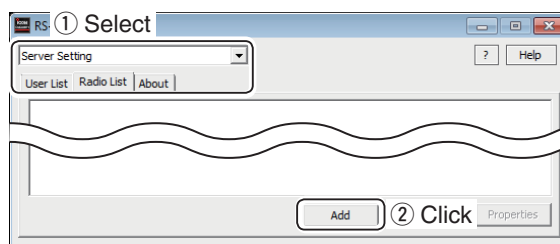
■ Radio registration (Continued)

◇ Radio's basic information setting

- ① In the Base station's Remote Utility, open the Radio List screen.

How to open: Select the 'Server Setting' mode, then click the [Radio List] tab.

- ② Click [Add] to display the Radio Registration screen.
- ③ Enter a name for the radio in the **Radio Name** field, of up to 16 characters.
- ④ Click the **CI-V** box to make a check mark, then enter the radio's CI-V address in the **Address** field.
- ⑤ Select the radio's baud rate in the **Baud Rate** menu.
- ⑥ Click the **Public** box to make a check mark.
- ⑦ Click [OK] to save the settings, and close the screen.



NOTE:

- Be sure to enter the same CI-V address and the baud rate that are programmed into the radio. If the radio's baud rate is set to "Auto," select "19200" in the **Baud Rate** menu.
- If you are using the Spectrum Scope function with the IC-7850, IC-7851, or IC-7300 using a USB for the connection, select "115200" in the **Baud Rate** menu.
- See page 21 for details of radio's presetting.
- See the radio's instruction manual for details on how to confirm the radio's CI-V address and baud rate, or how to change them.
- To not allow Remote stations to access a radio, remove the check mark from the **Public** box.

■ Radio registration (Continued)

◇ Radio's Remote station registration

You can select which Remote stations are allowed them to access the radio.

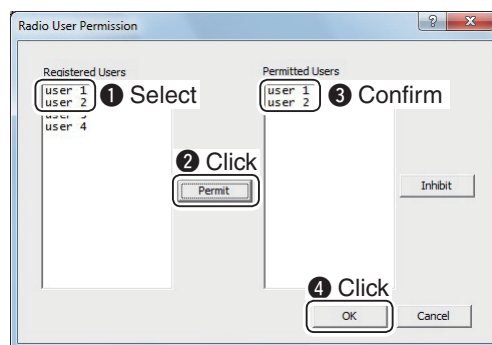
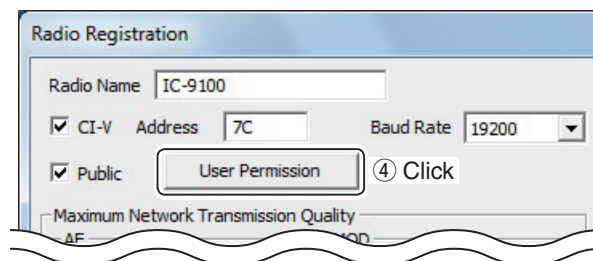
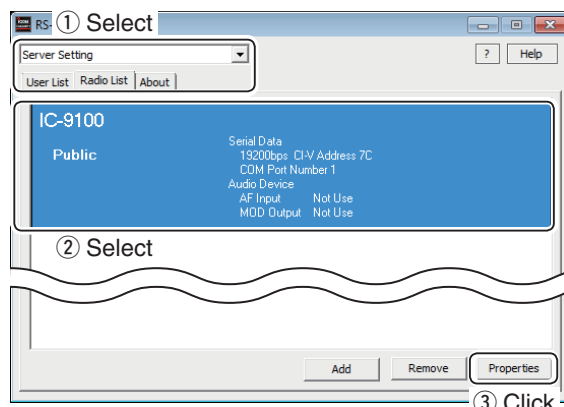
- ① In the Base station's Remote Utility, open the Radio List screen.

How to open: Select the 'Server Setting' mode, then click the [Radio List] tab.

- ② Select a radio.
- ③ Click [Properties] to display the Radio Registration screen.
- ④ Click [User Permission].
- ⑤ The Radio User Permission screen appears. Select Remote stations in the **Registered Users** list, then click [Permit]. Confirm the selected Remote stations are displayed in the Permitted Users list, then click [OK] to close the screen.
- ⑥ Click [OK] in the Radio Registration screen to save the settings and close the screen.

NOTE:

- To remove a Remote station from the Permitted Users list, select it in the list, and then click [Inhibit].
- When you newly register a Remote station, you can select radios in the User Registration screen to allow the Remote station to use them. (p. 32)



■ Radio registration (Continued)

◇ Adjust limitation setting

Remote stations can adjust the sound quality or audio codec. Higher audio qualities will increase the amount of data, which may overload the Base station's PC, and may influence other application on the PC.

The Server can limit the maximum level of the sound quality or audio codec.

Remote stations cannot program higher values than the values programmed at the Server.

- ① In the Base station's Remote Utility, open the Radio List screen.

How to open: Select the 'Server Setting' mode, then click the [Radio List] tab.

- ② Select a radio.
- ③ Click [Properties] to display the Radio Registration screen.

- ④ Confirm that a check mark is in the **AF - Use** and **MOD-Use** box.

- ⑤ In the **Sample Rates** bar, limit the receive or transmit audio sampling rate that Remote stations can adjust.

Higher sampling rates will improve the audio quality. However, they also increase the amount of data, which can cause voice delay or jumpiness, depending on the network condition.

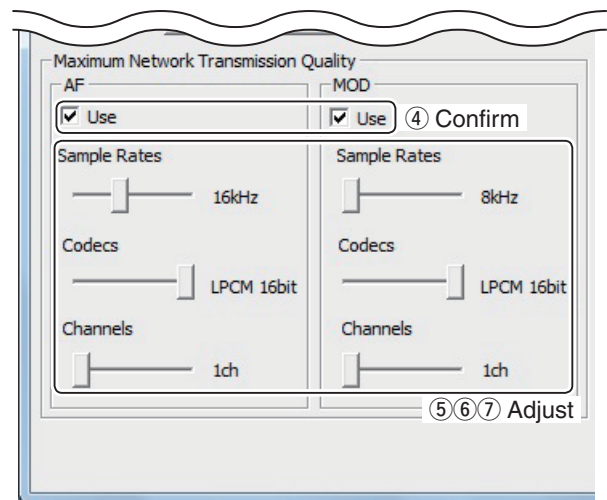
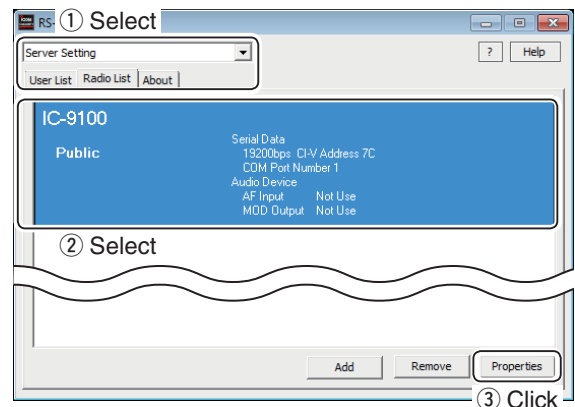
Lower sampling rates will decrease the audio quality. However, they also decrease the amount of data.

- ⑥ In the **Codecs** bar, limit the received or transmit audio codec that Remote stations can adjust.

- ⑦ In the **Channels** bar, select whether or not to allow Remote stations to select stereo sound.

When you select "1 ch" (monaural), Remote stations cannot program "2 ch" (stereo).

- ⑧ Click [OK] to save the settings and close the screen.



■ Radio registration (Continued)

◇ COM port and audio device settings

Set the COM port that is used to transmit CI-V commands, or audio devices which are used for the audio communication.

The explanation is based on when you connect a radio to your PC using a USB cable.

After connecting and turning ON the radio, make the following settings.

- ① In the Base station's Remote Utility, open the Radio List screen.

How to open: Select the 'Server Setting' mode, then click the [Radio List] tab.

- ② Select a radio.

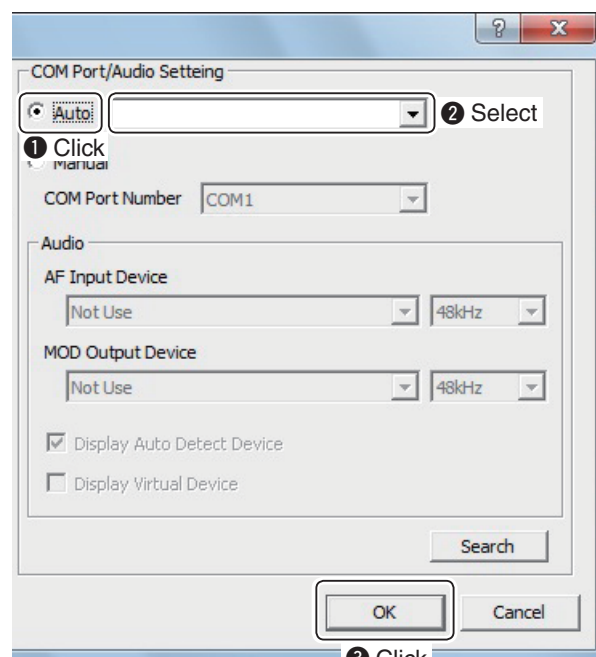
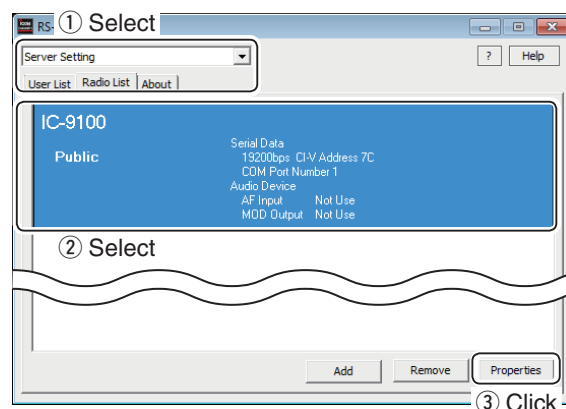
- ③ Click [Properties] to display the Radio Registration screen.

- ④ Click the **COM Port/Audio Setting - Auto** radio button.

Radios that are connected to your PC using a USB cable are displayed in the drop-down list.

Select an appropriate radio from the list, then the COM port and audio device are automatically set.

- ⑤ Click [OK] to save the settings and close the screen.



③ Click

NOTE:

When you physically connect a radio to your PC using other than a USB cable, select "Manual."

In this case, you should manually select a COM port to which the radio is connected in the **COM Port Number** menu.

You should also select an appropriate audio device to which the radio is connected in the **AF Input Device** and **MOD Output Device** menus.

■ To monitor, or disconnect a Remote station

When you are operating as a Base station, and a Remote station is accessing a radio that is physically connected to your PC, you can monitor the received and transmitted audio.

- To monitor, you should connect a speaker to your PC.

Moreover, you can terminate the connection between the Remote station and the radio.

Besides Base stations, administrator Remote stations can also terminate a connection between another Remote station and a radio.

◇ To monitor the received or transmitted audio

- ① In the Base station's Remote Utility, open the Radio List screen.

How to open: Select the 'Radio Operation' mode, then click the [Radio List] tab.

- ② Select a radio with "Busy" under its name.

The operating user's name (**PC Name** that the Remote station set in the Network Setting screen), and its IP address are displayed under "Busy."

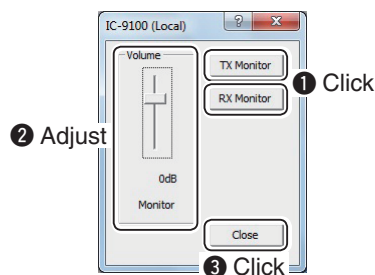
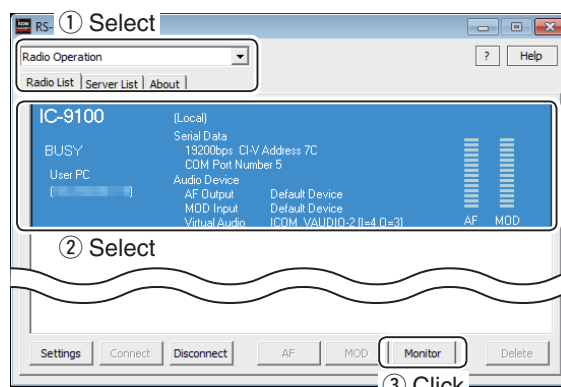
- ③ Click [Monitor] to display the Monitor screen.

- ④ Click [TX Monitor] to turn the Transmit Monitor function ON or OFF.

Click [RX Monitor] to turn the Receive Monitor function ON or OFF.

Slide the adjustment bar on the **Volume** field up or down to adjust the monitoring audio volume level.

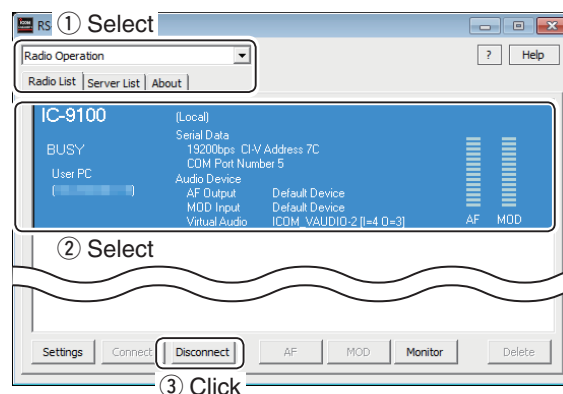
- ⑤ Click [Close] to close the screen.



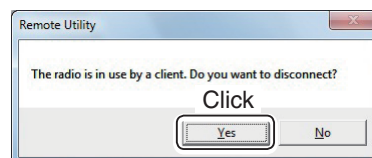
■ To monitor, or disconnect a Remote station (Continued)

◆ To terminate a connection

- ① In the Base station's or in the administrator Remote station's Remote Utility, open the Radio List screen.
How to open: Select the 'Radio Operation' mode, then click the [Radio List] tab.
- ② Select a radio with "Busy" under its name.
 The operating user's name (**PC Name** that the Remote station set in the Network Setting screen), and its IP address are displayed under "Busy."
- ③ Click [Disconnect].
- ④ "The radio is in use by a client. Do you want to disconnect?" appears. Click [Yes] to terminate the connection.



NOTE:
 When you terminate a connection, no dialog appears on the disconnected Remote station's Remote Utility.



■ Connecting to a radio from the Server

When you are operating as a Base station, you can access a radio which is physically connected to your PC (Server).

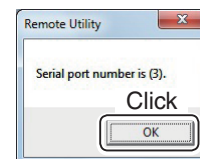
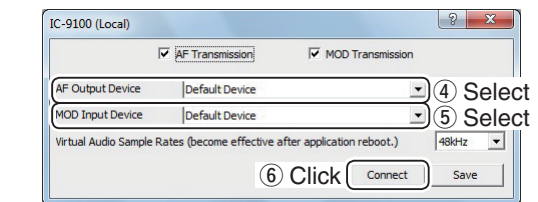
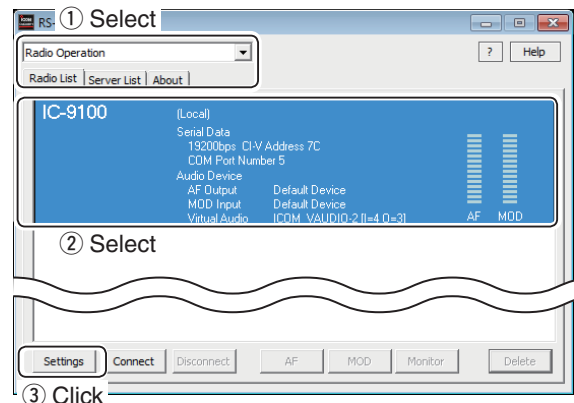
- For audio communication, you should connect a speaker and microphone, or headset to your PC.
- To control the radio, connect to it using a control software.

◇ Connecting to a radio

- ① In the Base Station's Remote Utility, open the Radio List screen.

How to open: Select the 'Radio Operation' mode, then click the [Radio List] tab.

- ② Select a radio which is physically connected to your PC (Server).
- ③ Click [Settings] to display the Connection Setting screen.
 - Radios that are connected with the Remote Utility of the Server PC, the Connection Setting cannot be changed.
- ④ Select an audio device in the **AF Output Device** menu to which your speaker is connected. Radio's received audio will be heard from the device.
- ⑤ Select the audio device in the **MOD Input Device** menu to which your microphone is connected. You can input transmit audio in the device to send to the radio.
- ⑥ Click [Connect].
- ⑦ A dialog showing a port number, which is used to exchange CI-V commands between your PC and a radio, appears. Click [OK] to save the settings and access the radio.
 - "<<CONNECT>>" appears under the radio name when the connection has succeeded.
 - When you connect to the radio using a control software, you have to set the port number shown above.



■ Connecting to a radio from the Server (Continued)

◆ Disconnecting from a radio

① In the Base station's Remote Utility, open the Radio List screen.

How to open: Select the 'Radio Operation' mode, then click the [Radio List] tab.

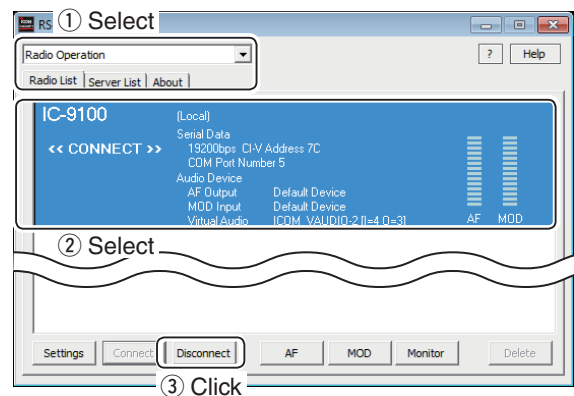
② Select a radio with "<<CONNECT>>" under its name.

③ Click [Disconnect].

④ "Do you want to disconnect the radio?" appears. Click [Yes] to disconnect the radio.

NOTE:

Be sure to disconnect from the radio when not using it. Otherwise, other Remote stations cannot connect to it.



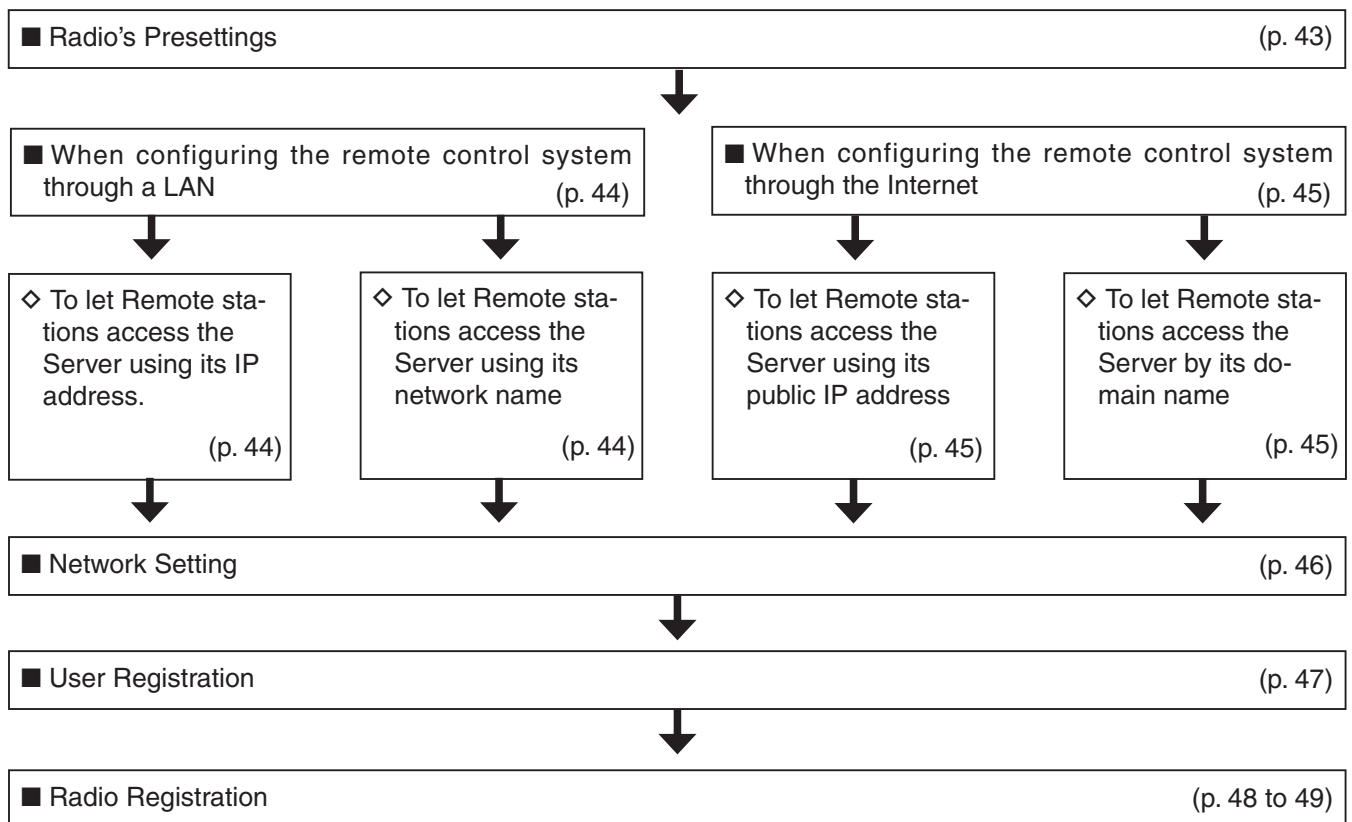
The settings in this section are necessary only when using one of the following radios.

- IC-7851
- IC-7850
- IC-7800 (Firmware version 3.00 or later)
- IC-7700 (Firmware version 2.00 or later)

If you use other Icom radio, skip this section and go to section 4. (p. 33)

(As of November 2016)

When connecting to the network directly, read this instruction manual in the following order.



■ Radio's presetting

The RS-BA1 remotely controls the radios with the Network function using CI-V (Icom Communication Interface) commands.

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

◇ The following manual settings are required when operating the RS-BA1

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 radio's instruction manual for details of the settings or operation.

NOTE:

- Remove any transverter that is connected to the radio.
- To prevent accidental transmission, remove any keyer, keypad or other external input equipment connected to the radio.
- We recommend you enable the Time-Out Timer function to prevent the radio from continuously transmitting.

Genre	Item	Setting
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 address	Desired CI-V Address Example: the radios' default setting. IC-7851/IC-7850: 8Eh, IC-7800: 6Ah, IC-7700: 74h (When another device is connected to the system, make sure you do not to set a duplicate address.)
	CI-V baud rate	Set to 19200 bps (or Auto)

/// If you are using the IC-PW1 with the transceiver, be sure to set the CI-V baud rate to 19200 bps. After changing the transceiver's CI-V settings, be sure to reset the CPU of the IC-PW1 and set the transceiver's CI-V settings on the IC-PW1. See the IC-PW1 instruction manual for details.

◇ The following settings are automatically set to the radio

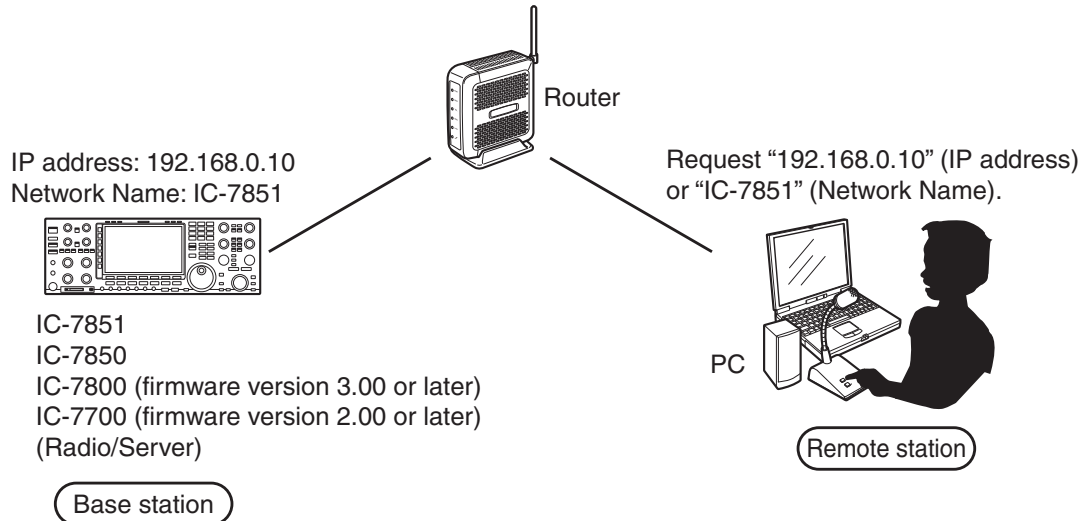
When the RS-BA1's Remote Controller connects to the radio, and you select the model name on the Connect Setting screen, the following items are automatically set. When you manually operate the radio, set these items as desired.

Genre	Item	Action
Function	MAIN/SUB Tranking function (For only the IC-7851, IC-7850)	Automatically set to OFF
	RIT function	Automatically set to OFF
	ΔTX function	Automatically set to OFF
	SSB/CW Synchronous Tuning	Automatically set to OFF
	Calibration Marker	Automatically set to OFF
	VOX function	Automatically set to OFF
	Scan function	Automatically cancel the scan
Display	Dualwatch function (For only the IC-7851, IC-7850, IC-7800)	Automatically set to OFF
	Memory channel	Automatically set to the VFO mode
CI-V	CI-V transceive	Automatically set to ON

■ When configuring the remote control system through a LAN

If you configure the remote control system through a LAN, Remote stations can access the Server using its IP address.

The example below describes how to find out the Base station's IP address, to be requested by Remote stations.



For the IC-7850 and IC-7851 users:

The DHCP function is set to ON as default. We recommend that you assign the server using the network name. If you want to assign the server using an IP address, set the "DHCP" item OFF in the Others set mode.

◇ To let Remote stations access the Server using its IP address

An IP address is a numerical label that is assigned to devices participating in a computer network. Check your radio's IP address to let Remote stations access the Server.

- ① Hold down [EXIT/SET] for 1 second to select the Set mode screen.
- ② Push [F-5•OTHERS] to enter the Others set mode.
- ③ Push [F-1•▲] or [F-2•▼] to select "IP Address."
- ④ Check the IP address that is displayed in the IP Address field. (Example: 192.168.0.10)



- ⑤ Push [EXIT/SET] twice to exit the Set mode.

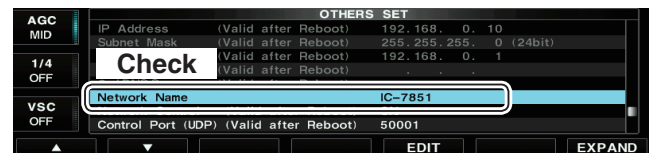
◇ To let Remote stations access the Server using its network name

A network name is an identification information assigned to each device participating in a computer network.

Check your radio's network name to let Remote stations access the Server.

- This function is only for the IC-7850 and IC-7851 transceivers.

- ① Hold down [EXIT/SET] for 1 second to select the Set mode menu screen.
- ② Push [F-5•OTHERS] to enter the Others set mode.
- ③ Push [F-1•▲] or [F-2•▼] to select "Network Name."
- ④ Check the network name that is displayed in the Network Name field. (Example: IC-7851)



- ⑤ Push [EXIT/SET] twice to exit the Set mode.

■ When configuring the remote control system through the Internet

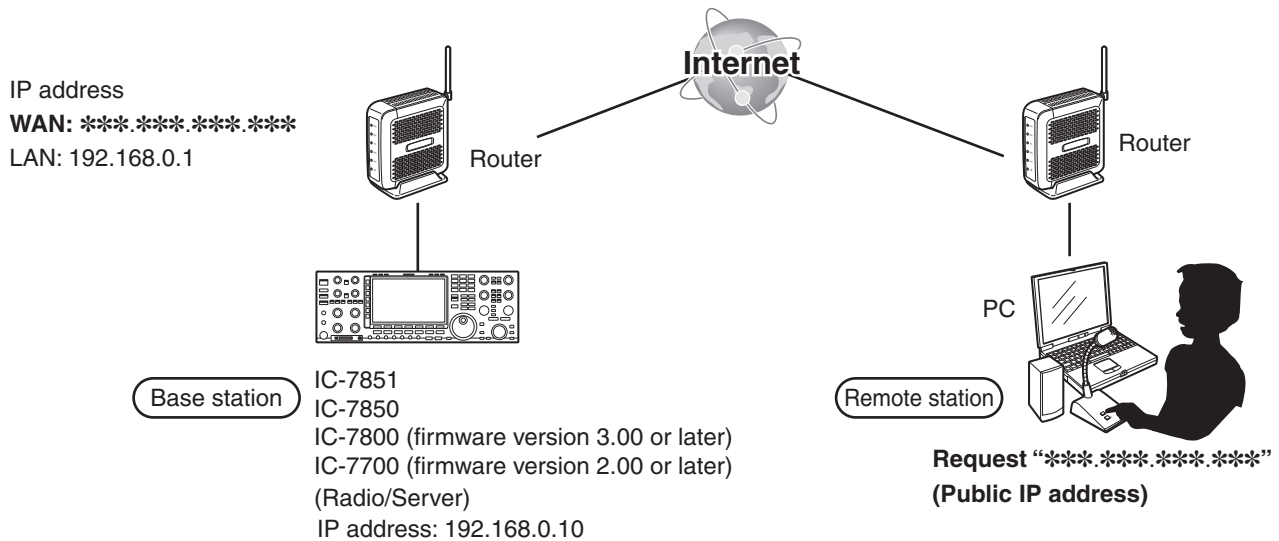
If you configure the remote control system through the Internet, Remote stations can access the Server using its public IP address. If you utilize a Dynamic DNS service, Remote stations can access the Server by not only its public IP address, but also by its domain name.

◇ To let Remote stations access the Server using its public IP address

A public IP address is an address that is accessible over the global Internet. If you use a dynamic public IP address, it is chosen from a pool of available addresses and changes each time you connect to the Internet. Because of this, Remote stations will have to match the IP address each time to access the Server.

If you use a dynamic public IP address, we recommend that you utilize the Dynamic DNS service to allow the Remote stations to access the Server using its domain name, or use a static public IP address.

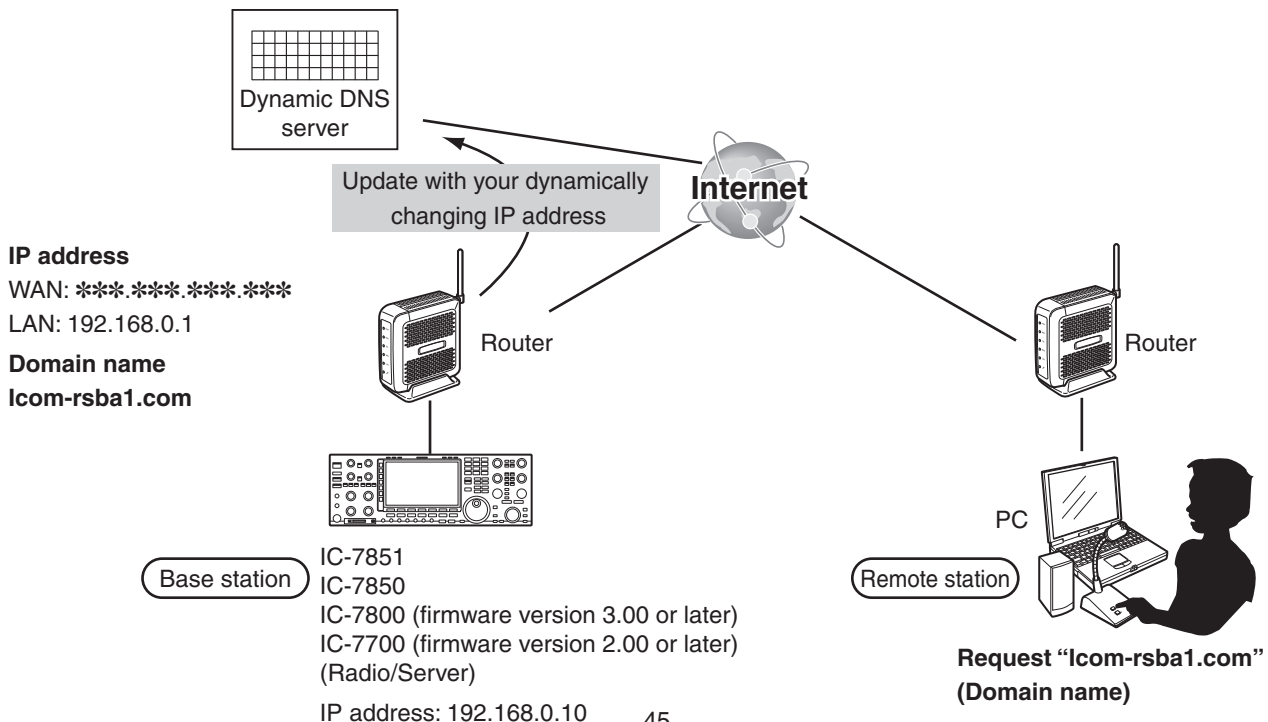
Ask the router's manufacturer about how to configure your router to set the public IP address.



◇ To let Remote stations access the Server by its domain name

If you set up an account for a Dynamic DNS server, you can configure your router to update the Dynamic DNS server with your dynamic IP address. Even if you don't have a static public IP address, you can allow Remote stations to access the Server through the Internet, using its domain name.

Ask the router's manufacturer about how to configure your router to use the Dynamic DNS services.



■ Network setting

Configure the network environment of your radio (IC-7700 with firmware version 2.00 or later, IC-7800 with firmware version 3.00 or later, or an IC-7850 or IC-7851) in the Others set mode. The settings will take effect after rebooting the radio.

1. “Network Control” setting

- ① Hold down [EXIT/SET] for 1 second to select the Set mode menu screen.
- ② Push [F-5•OTHERS] to enter the Others set mode.
- ③ Push [F-1•▲] or [F-2•▼] to select “Network Control.”
- ④ Rotate the main dial to select “ON.”



NOTE:

If you select “OFF,” the Remote station cannot access the radio.

2. “Default Gateway” setting

NOTE:

This setting is necessary when the remote control system is configured through the Internet.

- ⑤ Push [F-1•▲] or [F-2•▼] to select “Default Gateway.”
- ⑥ Push [F-3•◀▶] to select the desired address part, then rotate the main dial to set the IP address of the LAN side on the router. (Example: 192.168.0.1)

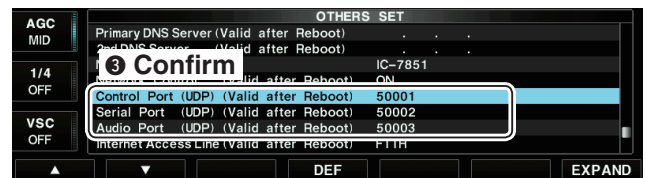


3. “Control Port (UDP)”

“Serial Port (UDP)”

“Audio Port (UDP)” confirmation

- ⑦ Push [F-1•▲] or [F-2•▼] to show “Control Port (UDP),” “Serial Port (UDP)” or “Audio Port (UDP).”
- ⑧ Confirm the port numbers of the Control, Serial and Audio ports. You should use the default port numbers for these ports.



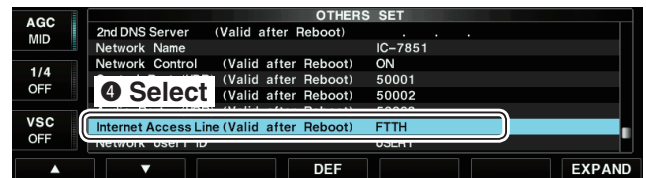
NOTE:

If you configure the remote control system through the Internet, and change the port number of the Control, Serial or Audio port, you should configure the port forwarding settings and the IP filter settings on your router once again. (p. 13)

If you change the port number, you can hold down [F-4•DEF] for 1 second to return them to their default value.

4. “Internet Access Line” setting

- ⑨ Push [F-1•▲] or [F-2•▼] to select “Internet Access Line.”
- ⑩ Rotate the main dial to select your internet access line type in the **Internet Access Line** item.
 - FTTH: Fiber To The Home
 - ADSL/CATV: ADSL or Cable television



5. Saving the settings

- ⑪ Reboot the radio. The settings will take effect after rebooting.

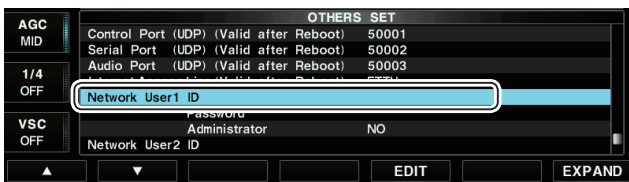
■ User registration

In the set mode menu screen, register users (Remote station) to allow them to access the Server. The Server verifies the user ID and password when Remote stations attempt to access the Server. If the User ID or password is incorrect, the Remote station cannot access the Server.

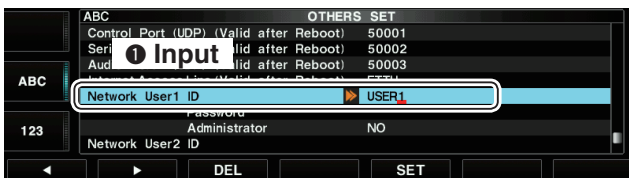
◇ To register a user

1. “User ID” setting

- ① Hold down [EXIT/SET] for 1 second to select the set mode menu screen.
- ② Push [F-5•OTHERS] to enter the Others set mode.
- ③ Push [F-1•▲] or [F-2•▼] to select “Network User 1 ID.”



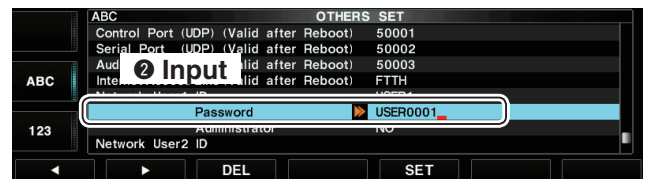
- ④ Push [F-5](EDIT) to enter the User ID Edit mode.
- ⑤ Rotate the main dial to input a user ID of up to 16 characters.
 - Push [ABC] or [abc] to toggle between upper and lower case letters.
 - Push [123] or [Symbol] to toggle between numerals and symbols.
 - You cannot register an already registered ID.
 - Push [F-1•◀] or [F-2•▶] for cursor movement.
 - Push [F-3•DEL] to delete the selected character.
 - You can input an ID using a keyboard, connected to the radio.



- ⑥ Push [F-5](SET) to set the User ID.

2. “Password” setting

- ⑦ Push [F-1•▲] or [F-2•▼] to select “Password.”
- ⑧ Push [F-5](EDIT) to enter the Password Edit mode.
- ⑨ Rotate the main dial to input a Password of 8 to 16 characters, case-sensitive.
At least two different characters must be used.



- ⑩ Push [F-5](SET) to set the Password.

3. Setting the user as an administrator

- ⑪ Push [F-1•▲] or [F-2•▼] to select “Administrator.”
- ⑫ Rotate the main dial to select “YES” to set the user as an administrator.
Administrator Remote stations can terminate a connection between another Remote station and a radio.



▨ If necessary, repeat steps ③ through ⑫ to register other users.

- ⑬ Push [EXIT/SET] twice to exit the Set mode.

NOTE:

To remove a Remote station from the User List, select “Network User1 ID,” “Network User2 ID” or “Network User3 ID,” and then push [F-3](DEL) on the edit mode to delete the User ID.
The deleted Remote station will not be able to access the Server.

To prevent unauthorized access:

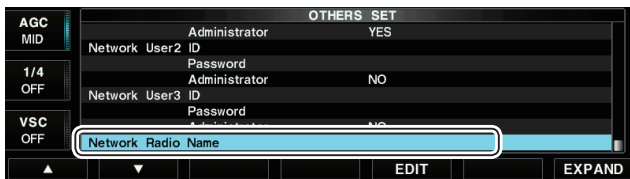
Set a long and strong password so that no one can possibly guess it.
Mix upper and lower case letters, numbers or characters.

Radio registration

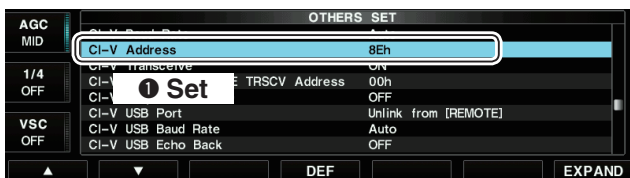
In the set mode menu screen, register the radios to be used with the Server.

Radio's basic information setting

- ① Hold down [EXIT/SET] for 1 second to select the set mode menu screen.
- ② Push [F-5•OTHERS] to enter the Others set mode.
- ③ Push [F-1•▲] or [F-2•▼] to select "Network Radio Name."
- ④ Push [F-5](EDIT) to enter the Network Radio Name Edit mode.



- ⑤ Rotate the main dial to input a Network Radio Name of up to 16 characters.
 - Push [ABC] or [abc] to toggle upper and lower case letters.
 - Push [123] or [Symbol] to toggle between numerals and symbols.
 - Push [F-1•◀] or [F-2•▶] for cursor movement.
 - Push [F-3•DEL] to delete the selected character.
 - You can input an ID using a keyboard connected to the radio.
- ⑥ Push [F-5](SET) to set.
- ⑦ Push [F-1•▲] or [F-2•▼] to select "CI-V Address."



- ⑧ Rotate the main dial to input a CI-V address.
- ⑨ Push [F-1•▲] or [F-2•▼] to select "CI-V Baud Rate."



- ⑩ Rotate the main dial to select the baud rate.
- ⑪ Push [EXIT/SET] twice to exit the Set mode.

Adjust limitation setting

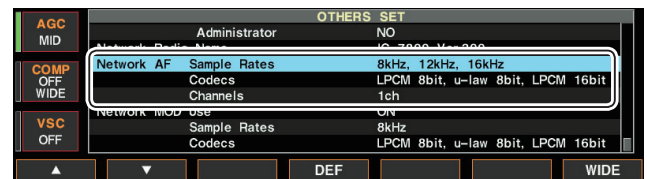
Remote stations can adjust the sound quality or audio codec. Higher audio qualities will increase the amount of data, which can cause voice delay or jumpiness, depending on the network condition.

The Server can limit the maximum level of the sound quality or audio codec.

Remote stations cannot program higher values than the values programmed here.

- The following settings are not included with the IC-7850 and IC-7851. However, the settings are originally fixed in those transceivers.

- ① Hold down [EXIT/SET] for 1 second to select the Set mode menu screen.
- ② Push [F-5•OTHERS] to enter the Others set mode.
- ③ Push [F-1•▲] or [F-2•▼] to select "Network AF Sample Rate."



- ④ Rotate the main dial to limit the received audio sampling rate that Remote stations can adjust. Higher sampling rates will improve the audio quality. However, they also increase the amount of data, which can cause voice delay or jumpiness, depending on the network condition.

Lower sampling rates will decrease the audio quality. However, they also decrease the amount of data.

- For the IC-7850 and IC-7851, the rates are fixed to: 8kHz, 12kHz, 16kHz, 24kHz, 48kHz.

- ⑤ Push [F-1•▲] or [F-2•▼] to select "Network AF Co-decs."

- ⑥ Rotate the main dial to limit the received audio codec that Remote stations can adjust.

- For the IC-7850 and IC-7851, the codecs are fixed to: LPCM 8bit, u-law 8bit, LPCM 16bit.

- ⑦ Push [F-1•▲] or [F-2•▼] to select "Network AF Channels."

- ⑧ Rotate the main dial to select whether or not to allow Remote stations to select stereo sound.

When you select "1ch" (monaural), Remote stations cannot program "2ch" (stereo).

If the Remote station selects "2ch," stereo output (L=Main band; R=Sub band).

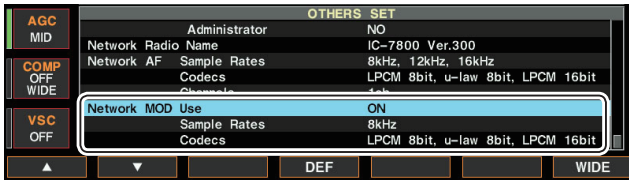
- For the IC-7850 and IC-7851, the channel is fixed to "2ch."

3 WHEN CONNECTING TO THE NETWORK DIRECTLY

■ Radio Registration

◇ Adjust limitation setting (continued)

- ⑨ Push [F-1•▲] or [F-2•▼] to select “Network MOD Use.”



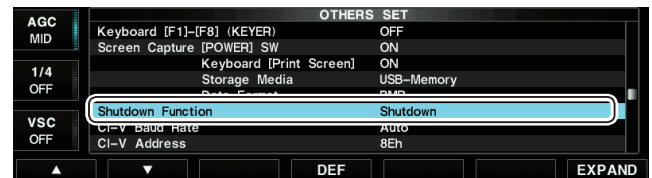
- ⑩ Confirm that “ON” is selected in “Network MOD Use.”
- For the IC-7850 and IC-7851, the function is fixed to “ON.”
- ⑪ Push [F-1•▲] or [F-2•▼] to select “Network MOD Sample Rate.”
- ⑫ Rotate the main dial to limit the modulation audio sampling rate that Remote stations can adjust. Higher sampling rates will improve the audio quality. However, they also increase the amount of data, which can cause voice delay or jumpiness, depending on the network condition. Lower sampling rates will decrease the audio quality. However, they also decrease the amount of data.
- For the IC-7850 and IC-7851, the rates are fixed to: 8kHz, 12kHz, 16kHz, 24kHz, 48kHz
- ⑬ Push [F-1•▲] or [F-2•▼] to select “Network MOD Codecs.”
- ⑭ Rotate the main dial to limit the modulation audio codec that Remote stations can adjust.
- For the IC-7850 and IC-7851, the codecs are fixed to: LPCM 8bit, u-law 8bit, LPCM 16bit.
- ⑮ Push [EXIT/SET] twice to exit the Set mode.

Standby mode setting

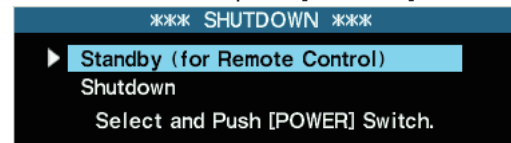
To remotely control the transceiver using the RS-BA1, the transceiver’s power must be either turned ON or set in the standby mode.

Follow the steps described below to set the transceiver in the standby mode.

- ① Hold down [EXIT/SET] for 1 second to select the set mode menu screen.
- ② Push [F-5•OTHERS] to enter the Others set mode.
- ③ Push [F-1•▲] or [F-2•▼] to select “Shutdown Function.”



- ④ Rotate the main dial to select “Standby/Shutdown.”
- ⑤ Push [EXIT/SET] twice to exit the Set mode.
- ⑥ Hold down [POWER] for 1 second.
- ⑦ Make sure that “Standby (for Remote Control)” is selected, and then push [POWER].



- The transceiver is set to the standby mode and the LED above [POWER] blinks orange.

Information:

While “Standby (for Remote Control)” is selected in step ⑦, and [POWER] is pushed on the Others set mode after setting the radio network, the transceiver will be turned OFF instead of being in the standby mode.

Follow the steps below to set the standby mode.

- ① Push [POWER] to turn ON the transceiver.
 - ② Push [POWER] again.
 - ③ When the screen in step ⑦ is displayed, make sure “Standby (for Remote Control)” is selected, and then push [POWER].
- The transceiver is set in the standby mode, and the LED above [POWER] blinks orange.

■ Network setting

Configure your PC's network environment in the Remote station's Remote Utility.

The settings will take effect after rebooting the Remote Utility.

When you first open the Remote Utility, the Network Setting screen appears.

After configuring your network environment, you can open other setting screens.

- ① In the Remote Utility, open the Network screen.

How to open: Select the 'Network Setting' mode, then click the [Network] tab.

- ② Enter a name for your PC in the **PC Name** field, of up to 16 characters.

DO NOT use the same name for more than one PC on your network.

- ③ Check the port numbers of the Control, Serial and Audio ports.

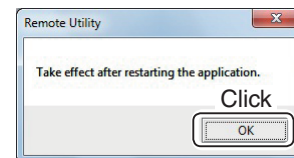
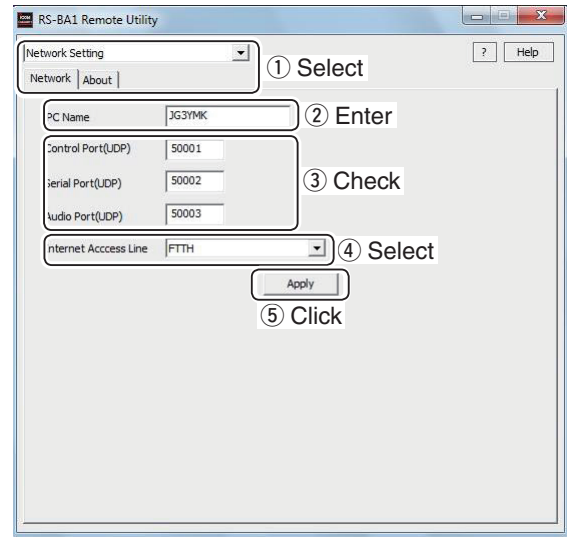
You should use the default port numbers for these ports.

- ④ Select your internet access line type in the **Internet Access Line** menu.

- ⑤ Click [Apply] to save the network settings.

After clicking, the "Take effect after restarting the application" screen appears, then click [OK].

The settings will take effect after rebooting the Remote Utility.



NOTE:

If you configure the remote control system through the Internet, and change the port number of the Control, Serial or Audio port, you must configure the port forwarding settings and the IP filter settings on your router once again. (p. 13)

■ Connecting to the Server

To connect to a radio through the network, Remote stations should first connect to a Server using the Remote Utility. Before connecting, register the Server information.

◇ Server registration

When connecting to the network through a PC

Before registering the Server information, be sure to confirm the following data:

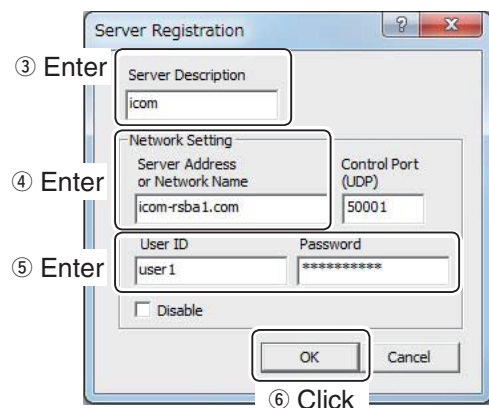
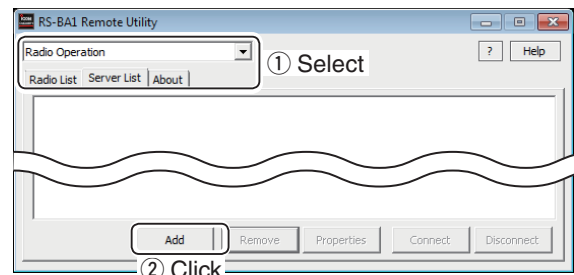
- IP address, public IP address, domain name or computer name of the Base station's PC. (pp. 15 to 61)
- Your user ID and password that are registered in the Base station's Remote Utility. (p. 32)

- ① In the Remote Utility, open the Server List screen.

How to open: Select the 'Radio Operation' mode, then click the [Server List] tab..

- ② Click [Add] to display the Server Registration screen.
- ③ Enter a name in the **Server Description** field to be displayed in the Server List screen.
- ④ Enter the IP address, domain name or computer name of the Base station's PC in the **Server Address or Network Name** field.
- ⑤ Enter your user ID and password that are registered in the Base station's Remote Utility, in the **User ID** and **Password** fields.
- ⑥ Click [OK] to save the data, then close the screen.

/// **NOTE:** To remove a Server from the Server List, select it in the list, then click [Delete].



■ Connecting to the Server (Continued)

◇ Server registration (Continued)

When connecting to the network directly

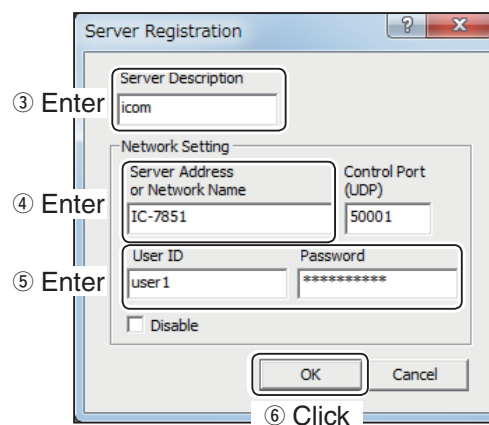
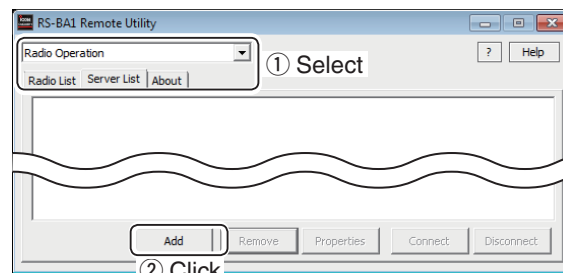
Before registering the Server information, be sure to confirm the following data:

- IP address of the radio or network name*. (p. 55)
- Domain name or public IP address of the Base station. (pp. 55 to 55)
- Your user ID and password that are registered in the radio. (p. 47)

- ① In the Remote Utility, open the Server List screen.
How to open: Select the 'Radio Operation' mode, then click the [Server List] tab.
- ② Click [Add] to display the Server Registration screen.
- ③ Enter a name in the **Server Description** field to be displayed in the Server List screen.
- ④ Enter the IP address of the radio, or the network name* in the **Server Address or Network Name** field.
- ⑤ Enter the user ID and password that are registered in the radio, in the **User ID** and **Password** fields.
- ⑥ Click [OK] to save the data, then close the screen.

*For only the IC-7850 and IC-7851.

/// **NOTE:** To remove a Server from the Server List, select it in the list, then click [Delete].



■ Connecting to the Server (Continued)

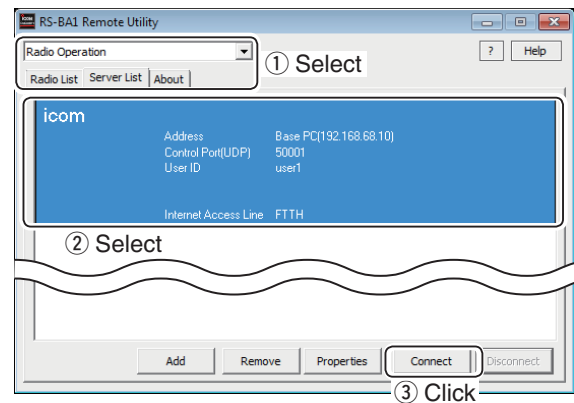
◇ Connecting to the Server

- ① In the Remote station's Remote Utility, open the Server List screen.

How to open: Select the 'Radio Operation' mode, then click the [Server List] tab.

- ② Select a Server.
- ③ Click [Connect].
 - "CONNECTING" appears under the Server name when the connection has succeeded.

/// If the connection fails, and an error screen is displayed, solve the problem using the "6. TROUBLESHOOTING" section. (p. 68)

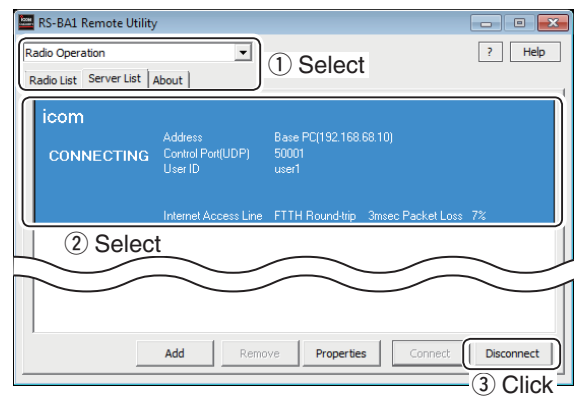


◇ Disconnecting from the Server

- ① In the Remote station's Remote Utility, open the Server List screen.

How to open: Select the 'Radio Operation' mode, then click the [Server List] tab.

- ② Select the connecting Server name.
- ③ Click [Disconnect].



■ Connecting to a radio

When the connection to the Server has succeeded, the radios that are physically connected to the Server are displayed on the Radio List screen of the Remote station's Remote Utility.

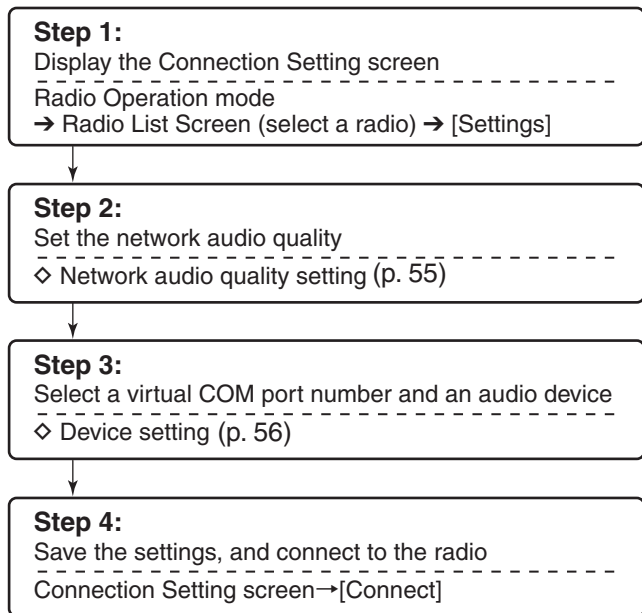
Select a radio from the list, then connect it to the network using the Remote Utility.

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

- To control the radio, connect to the radio using the Control software.

◇ Connecting to a radio

Procedure



NOTE:

- If the connection setting is finished, you can simply connect to the radio by selecting it in the Radio List screen and then clicking [Connect].
- “<<CONNECT>>” appears under the radio name when the connection has succeeded.
- If the connection fails, and an error screen is displayed, solve the problem using the “6. TROUBLE-SHOOTING” section. (p. 69)

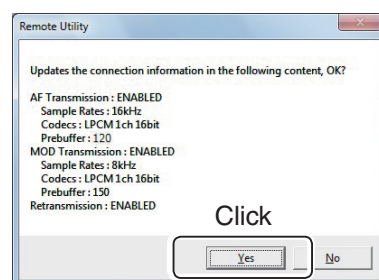
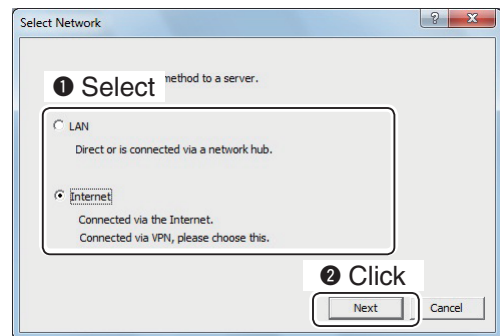
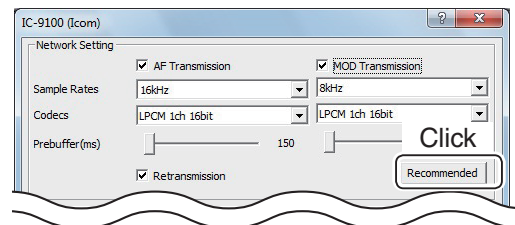
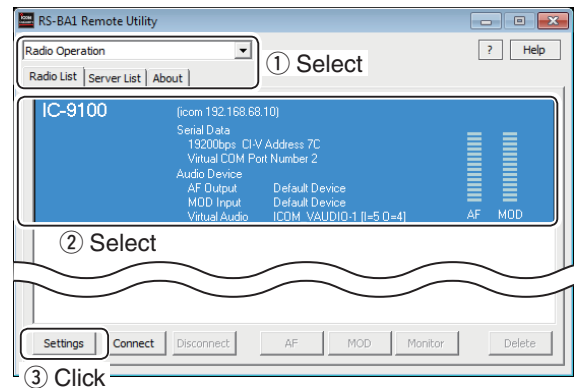
■ Connecting to a radio (Continued)

◇ Network audio quality setting

- ① In the Remote station's Remote Utility, open the Radio List screen.

How to open: Select the 'Radio Operation' mode, then click the [Radio List] tab.

- ② Select a radio.
- ③ Click [Settings] to display the Network Setting screen.
- ④ Click [Recommended].
- ⑤ The Select Network screen appears.
Select the connection to a radio either through a LAN, or the Internet, and then click [Next].
- ⑥ The recommended values for your network are displayed. Click [Yes] to automatically set the displayed values in each field of the Network Setting, then close the Select Network screen.
- ⑦ Click [Save] in the Connection Setting screen to save the settings, and close the screen.
 - To use the IF signal for receiving, set "Sample Rates" to 48 kHz.



■ Connecting to a radio (Continued)

◆ Device setting

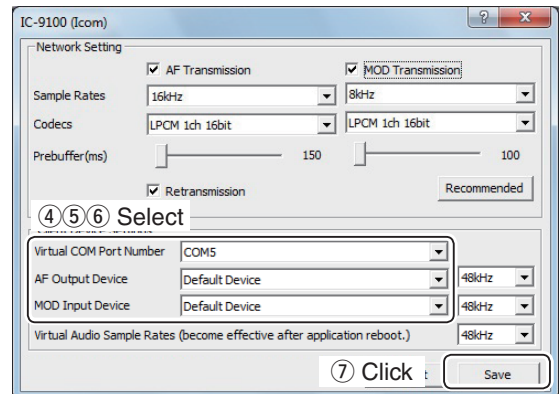
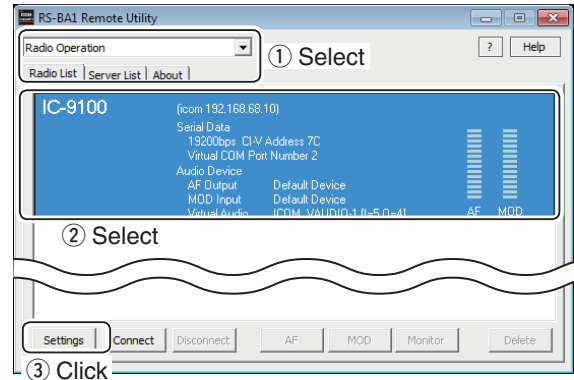
- ① In the Remote station's Remote Utility, open the Radio List screen.

How to open: Select the 'Radio Operation' mode, then click the [Radio List] tab.

- ② Select a radio.
- ③ Click [Settings] to display the Connection Setting screen.
 - Radios that are "<<CONNECT>>" or "OFFLINE," the Connection Setting cannot be changed.
- ④ Select a COM port number in the **Virtual COM Port Number** menu.
 - The selected COM port number is used for CI-V operation with the radio.

/// When you connect to the radio with a control software, you have to set the COM port number.

- ⑤ Select an audio device in the **AF Output Device** menu to which your speaker is connected, to output the received audio from the network.
- ⑥ Select an audio device in the **MOD Input Device** menu to which your microphone is connected, to transmit the input audio to the network.
- ⑦ Click [Save] to save the settings, and close the screen.



■ Connecting to a radio (Continued)

◆ Disconnecting from a radio

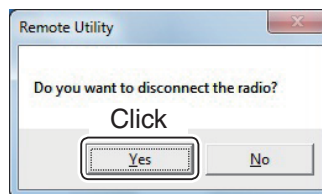
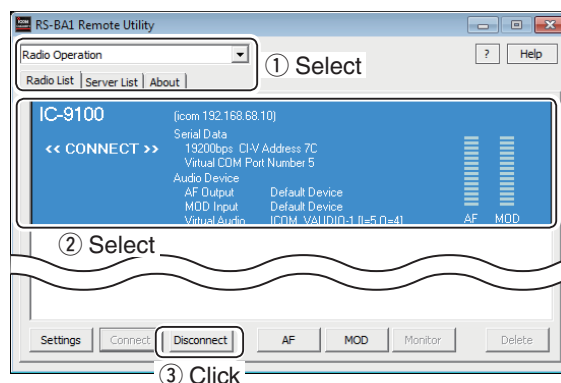
- ① In the Remote station's Remote Utility, open the Radio List screen.

How to open: Select the 'Radio Operation' mode, then click the [Radio List] tab.

- ② Select a radio with "<<CONNECT>>" under its name.
- ③ Click [Disconnect].
- ④ "Do you want to disconnect the radio?" appears. Click [Yes] to disconnect the radio.

NOTE:

- Be sure to disconnect when not using the radio. Otherwise, other Remote stations cannot connect to it.
- The Server or administrator Remote stations can terminate a connection between another Remote station and a radio. If "<<CONNECT>>" disappears while connecting to a radio, the Server or authorized Remote station may terminate the connection.



■ Audio adjustment using the Remote Utility

While connected to a radio, you can adjust the received and transmit audio volume through the network using the Remote station's Remote Utility.

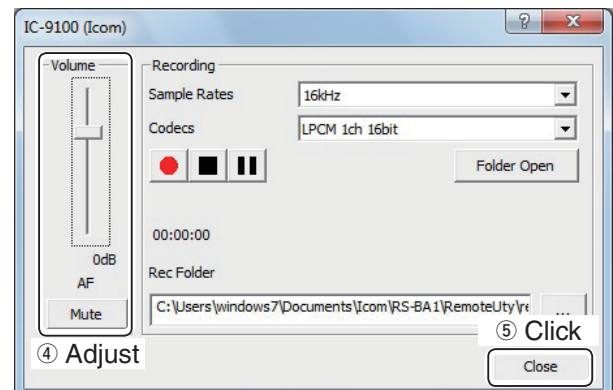
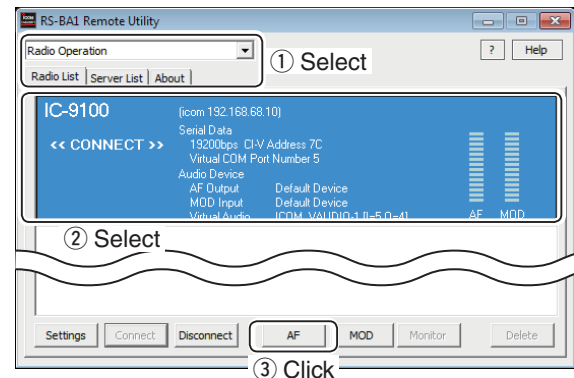
The description in this section is based on the assumption that the connection to the radio has succeeded (“<<CONNECT>>” is displayed under the radio name).

◇ Received audio volume adjustment

- ① In the Remote station's Remote Utility, open the Radio List screen.

How to open: Select the 'Radio Operation' mode, then click the [Radio List] tab.

- ② Select a radio with “<<CONNECT>>” 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.
 - 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 radio's speaker, with the Remote Utility. Use the [AF] control on the radio to adjust it.

4 SETTINGS FOR A REMOTE STATION PC

■ Audio adjustment using the Remote Utility (Continued)

◆ Transmit audio volume adjustment

① In the Remote station's Remote Utility, open the Radio List screen.

How to open: Select the 'Radio Operation' mode, then click the [Radio List] tab.

② Select a radio with "<<CONNECT>>" under its name.

③ Click [MOD].

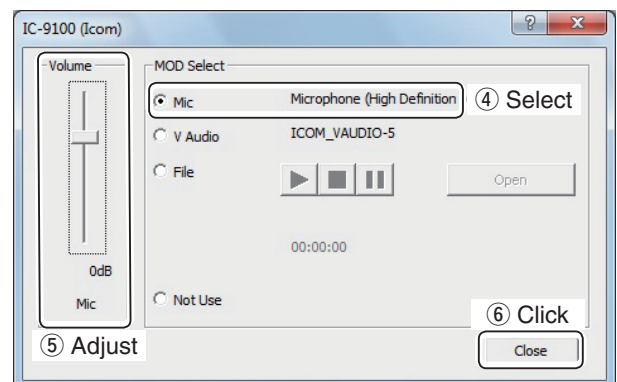
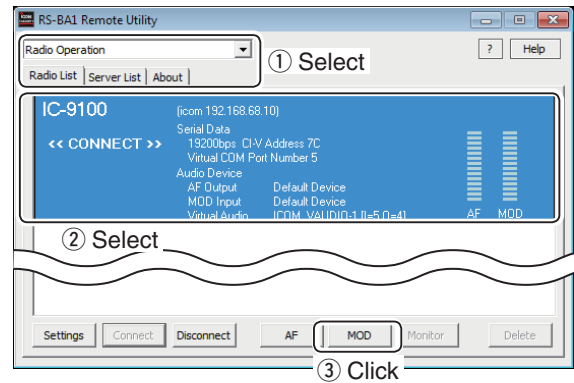
④ Select "Mic" on the **MOD Select** field.

⑤ Slide the adjustment bar on the Volume field up or down to adjust the transmit audio volume level.

⑥ Click [Close] to close the screen.

NOTE:

You cannot adjust the modulation input level of the radio with the Remote Utility. Adjust the modulation input level of the radio in the radio's Set mode, or using the Remote Controller. (p. 55)



■ Recording and playback functions




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

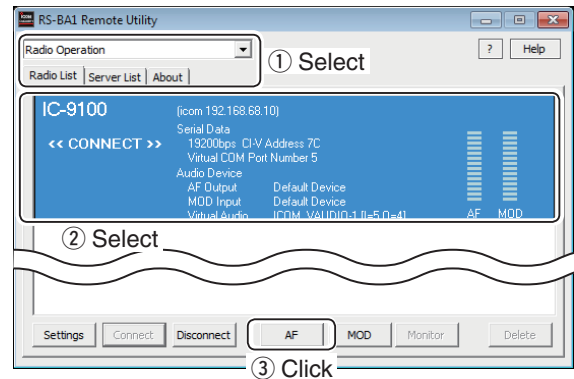
Also, you can transmit an audio file to the radio using the Remote Utility.

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


◇ Recording received audio

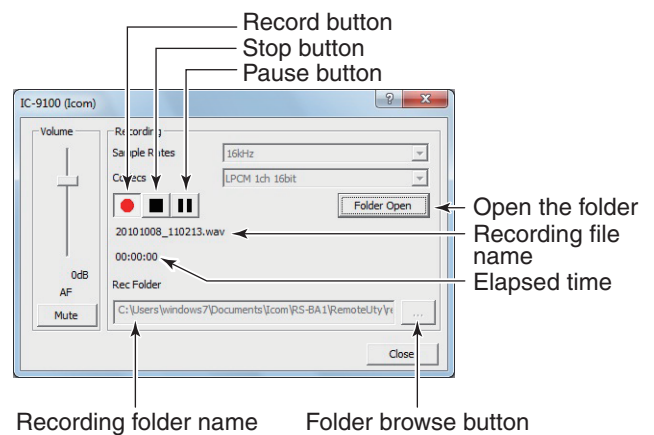
Follow the steps below to record the received audio.

- ① In the Remote station's Remote Utility, open the Radio List screen.
How to open: Select the 'Radio Operation' mode, then click the [Radio List] tab.
- ② Select a radio with "<<CONNECT>>" under its name.
- ③ Click [AF].
- ④ Click [] to start recording.
 - While recording, click [] to pause.
- ⑤ Click [] 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 the [] button, 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.



■ Recording and playback functions (Continued)

◇ Playing back/transmitting an audio file

Follow the steps below to play back/transmit an audio file.

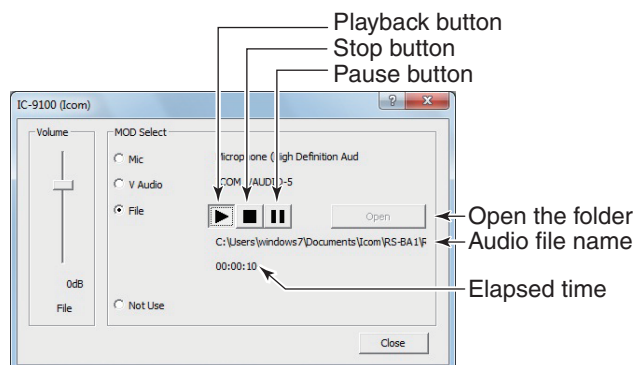
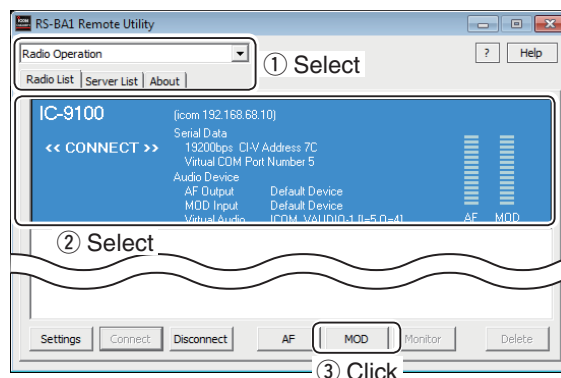
- ① In the Remote station's Remote Utility, open the Radio List screen.

How to open: Select the 'Radio Operation' mode, then click the [Radio List] tab.

- ② Select a radio with "<<CONNECT>>" under its name.
- ③ Click [MOD].
- ④ Select "File" on the **MOD Select** field.
- ⑤ Click [Open] to select an audio file* to play or transmit.

* Only uncompressed, linear, PCM WAV files are supported.

- ⑥ Click [▶] to start playing/transmitting.
 - While playing/transmitting, click [⏏] to pause.
- ⑦ Click [■] to stop playing/transmitting.



NOTE:

You can also use the Remote Controller's Voice Memory function to play back or transmit an audio file.

See the Remote Controller's help file for details. To display the help file, click "Contents" in the Help menu on the Remote Controller, or push the [F1] key on your PC's keyboard.

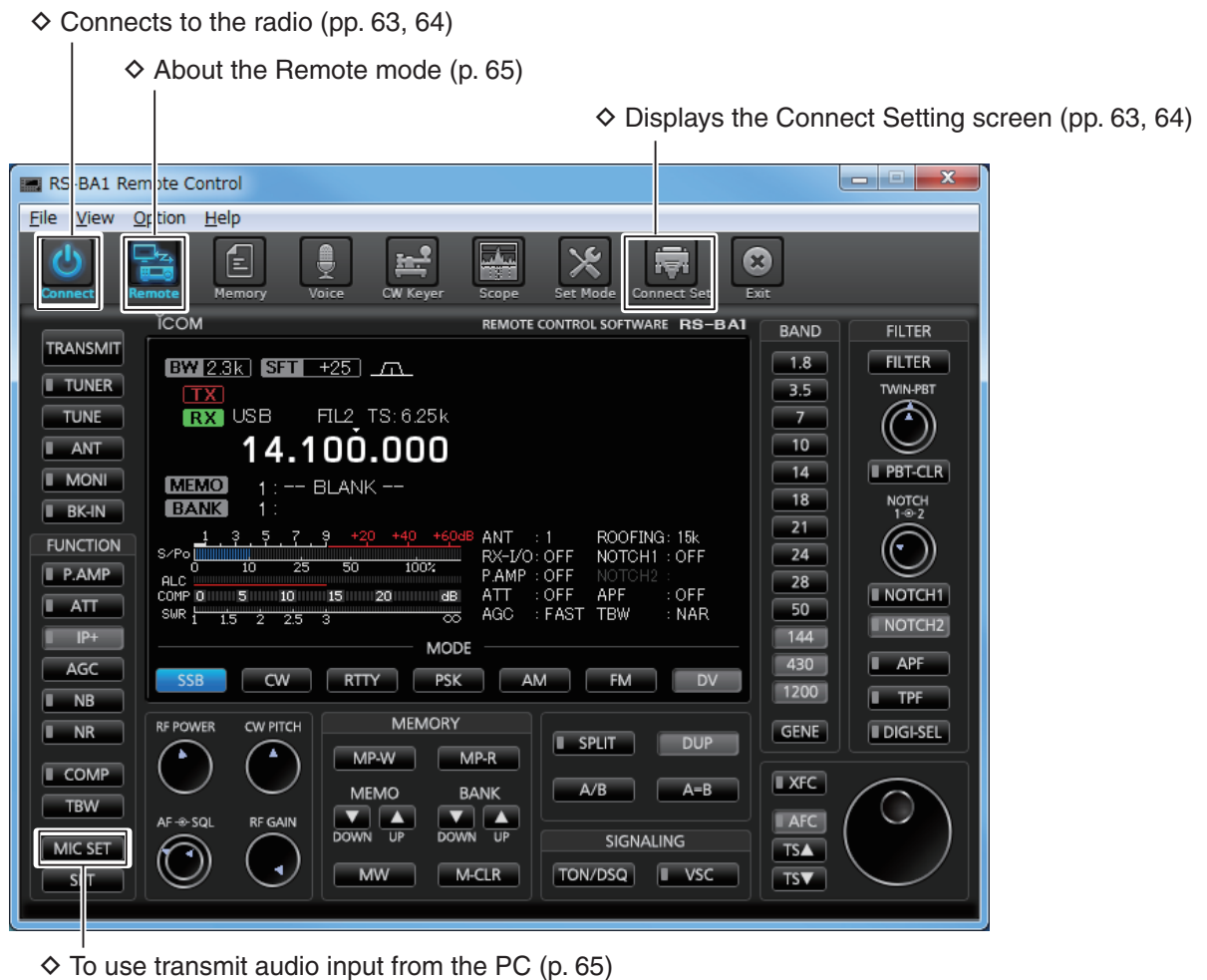
■ Connecting to a radio with the Remote Controller

This section describes how to connect to a radio and remotely control it using the Remote Controller.

There are two ways to connect to the radio with the Remote Controller:

1. Connecting to the radio through a network using the Remote Utility (p. 63)
2. Directly connecting to the radio that is physically connected to your PC, instead of using the Remote Utility (p. 64)

When using the Network function of the radio (IC-7700 with firmware version 2.00 or later, IC-7800 with firmware version 3.00 or later, or an IC-7850 or IC-7851), connect to the radio through the network.



NOTE:

See the RS-BA1 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, or push the [F1] key on your PC's keyboard.

■ Connecting to a radio with the Remote Controller (Continued)

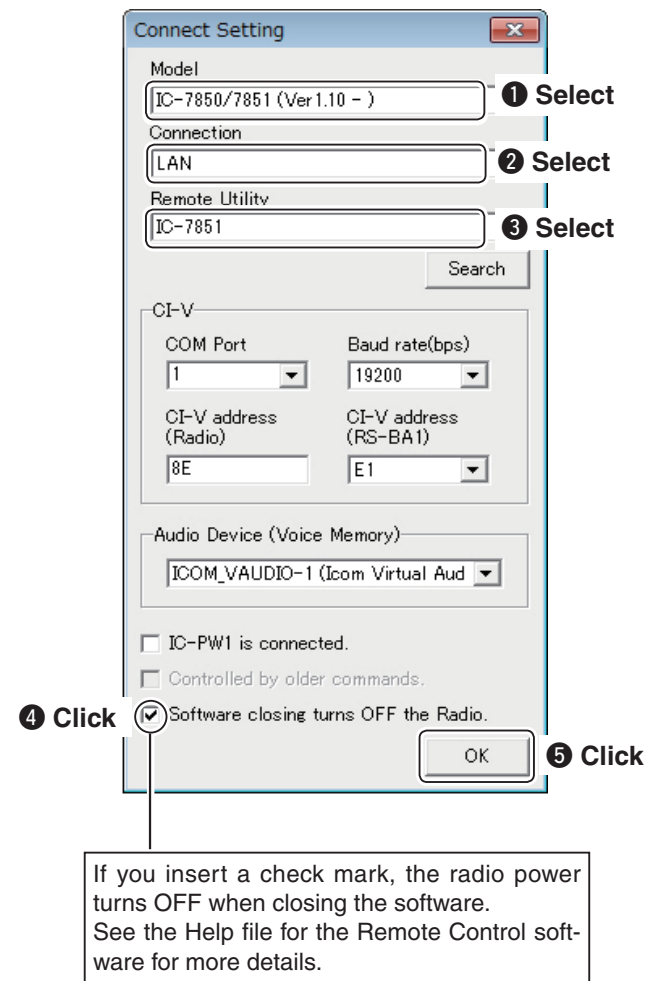
◇ Connecting to a radio through a network

To connect to a radio through a network using the Remote Controller, first you have to access the radio using the Remote Utility.

To connect the radio using the Remote Utility, see page 40 when you are operating as the Server, or see page 54 when you are operating as a Remote station.

- ① Double-click the "Remote Control" icon on your desktop to open the Remote Controller.
- ② Click the icon in the toolbar as shown to the right, or click "Connect Setting..." in the [Option] menu, to display the Connect Setting screen.
 - The Connect Setting cannot be set while the radio is connected.
- ③ Select a radio that you want to control in the **Model** menu.
 - The items that cannot be used in the selected model will be grayed out.
- ④ Select how to connect to the transceiver between REMOTE, REMOTE/RS-232C, RS-232C, LAN, and USB.
 - The selectable device differs, depending on the transceiver.
 - When the "MOD Select has also been changed." dialog is displayed, click [OK].
 - The confirmation dialog for the connection setting may be displayed, depending on the transceiver. If connected correctly, click [OK].
- ⑤ Select a radio that you are accessing with the Remote Utility, in the **Remote Utility** menu.
 - The CI-V settings are automatically loaded from the Remote Utility to the **CI-V** field. The settings include the virtual COM Port number, the radio's CI-V address and baud rate and the virtual audio device for the Voice Memory function.
 - /// If the desired radio is not displayed in the **Remote Utility** menu, click [Search] to load the radios' information from the Remote Utility.
- ⑥ Click the **Software closing turns OFF the Radio.** box to make a check mark to turn OFF the radio when the Remote Controller is closed by clicking the <[Exit]> button or [Exit] on the File menu.
 - Only for transceivers that can be turned ON or OFF with the CI-V Power ON/OFF command.
 - When the PC is shut down while the Remote Controller is still running, the transceiver's power may not be turned OFF.
- ⑦ Click [OK] to save the settings, and close the Connect Setting screen.

- ⑧ Click the icon in the toolbar as shown to the right, or click "Connect ON" in the [File] menu, to connect to the radio.
 - When the connection has succeeded, the radio's current data will be displayed on the main panel.
 - If the connection fails, and an error screen is displayed, solve the problem using the "6. TROUBLESHOOTING" section. (p. 68)
 - To disconnect from the radio, click the icon as shown to the right, or click "Connect OFF" in the [File] menu.
 - The radio will be turned OFF if it can be turned ON or OFF with the CI-V Power ON/OFF command.



◇ Directly connecting to a radio

If a radio is physically connected to your PC, you can directly access the radio using the Remote Controller, instead of using the Remote Utility.

- When you are operating a radio on the remote control system with the Remote Controller, without having used the Remote Utility to connect, let other users know that the radio is being used.

① Double-click the “Remote Control” icon on your desktop to open the Remote Controller.

② Click the icon in the toolbar as shown to the right, or click “Connect Setting...” in [Option] menu, to display the Connect Setting screen.



③ Select a radio that you want to control in the **Model** menu.

- The items that cannot be used in the selected model will be grayed out.

④ Select how to directly connect to the radio in the **Connection** menu.

- When the “MOD Select has also been changed.” dialog is displayed, click [OK].
- The confirmation dialog for the connection setting may be displayed, depending on the transceiver. If connected correctly, click [OK].

⑤ Select “Not Use” in the **Remote Utility** menu.

⑥ Select the COM port number to which the radio is connected, in the **COM Port** menu.

⑦ Enter the radio's CI-V address in the **CI-V address (Radio)** field, and select the radio's baud rate in the **Baud rate (bps)** menu.

If the radio's baud rate is set to “Auto,” select “19200” in the **Baud Rate (bps)** menu.

If you are using the Spectrum Scope function with the IC-7850, IC-7851, or IC-7300 using a USB for the connection, select “115200” in the **Baud Rate** menu.

- See page 21 for details of radio's presetting.
- To check or change the radio's CI-V address and baud rate settings, see the instruction manual that comes with the radio.

⑧ Click the **Software closing turns OFF the Radio** box to make a check mark to turn OFF the radio when the Remote Controller is closed by clicking the <[X]> button or [Exit] on the File menu.

- Only for transceivers that can be turned ON or OFF with the CI-V Power ON/OFF command.
- When the PC is shut down while the Remote Controller is still running, the transceiver's power may not be turned OFF.

⑨ Click [OK] to save the settings, and close the Connect Setting screen.



⑩ Click the icon in the toolbar as shown to the right, or click “Connect ON” in the [File] menu, and connect to the radio.

- When the connection has succeeded, the radio's current data will be displayed on the main panel.
- If the connection fails, and an error screen is displayed, solve the problem using the “6. TROUBLESHOOTING” section.(p. 68)

• To disconnect from the radio, click the icon as shown to the right, or click “Connect OFF” in the [File] menu.



- The radio will be turned OFF if it can be turned ON or OFF with the CI-V Power ON/OFF command.

The image shows the 'Connect Setting' dialog box with the following fields and steps:

- Model:** IC-7100 (Ver1.10 -) (Step 1: Select)
- Connection:** USB (Step 2: Select)
- Remote Utility:** Not Use (Step 3: Select)
- Search:** (button)
- CI-V:**
 - COM Port:** 1 (Step 4: Enter)
 - Baud rate(bps):** 19200 (Step 4: Enter)
 - CI-V address (Radio):** 7C
 - CI-V address (RS-BA1):** E0
- Audio Device (Voice Memory):** Realtek Digital Output (Realtek)
- ☐ IC-PW1 is connected.
- ☐ Controlled by older commands.
- ☒ Software closing turns OFF the Radio. (Step 5: Click)
- OK** (Step 6: Click)

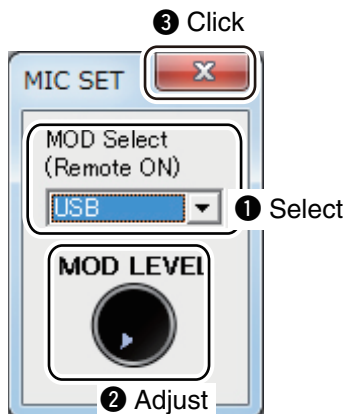
If you insert a check mark, the radio power turns OFF when closing the software. See the Help file for the Remote Control software for more details.

■ Connecting to a radio with the Remote Controller (Continued)

◇ To use transmit audio input from the PC

In order to use the transmit audio input from the PC when remotely controlling the radio using the Remote Controller, configure the following settings, according to the connection between the radio and the Base PC. If you operate in the Remote station side, confirm the radio's connector that is connected to the Base PC.

- ① Connect to a radio with the Remote Controller. (pp. 63, 64)
- ② Click [MIC SET] to open the MIC SET screen.
- ③ Select an appropriate connector in the **MOD Select (Remote ON)** menu, to input transmit audio from the PC to the radio.
The options differ, depending on the radio selected in the **Model** menu in the Connect Setting screen.
 - Right click [MOD LEVEL] to rotate clockwise, or left click it to rotate counterclockwise, to adjust the input level from the connector.
- ④ Click [X] to close the screen.



◇ About the Remote mode

When connected to the radio, 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 radio's current state, but also to remotely control it.

When you want the Remote Controller to only check the radio's current state, or when you want to inhibit the Remote Controller from transmitting CI-V commands, while you manually operate the radio, turn OFF the Remote mode.

To turn OFF the Remote mode

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



To turn ON the Remote mode

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



Information

You can select the desired connector(s) for transmit audio input when the Remote mode is OFF.

- See the Remote Controller's help file for "Remote Setting" details.

NOTE: DO NOT allow the PC to go into the sleep or standby mode while using the RS-BA1. Otherwise, it might not work properly after the PC resumes normal activity.

■ To exit the Remote Controller

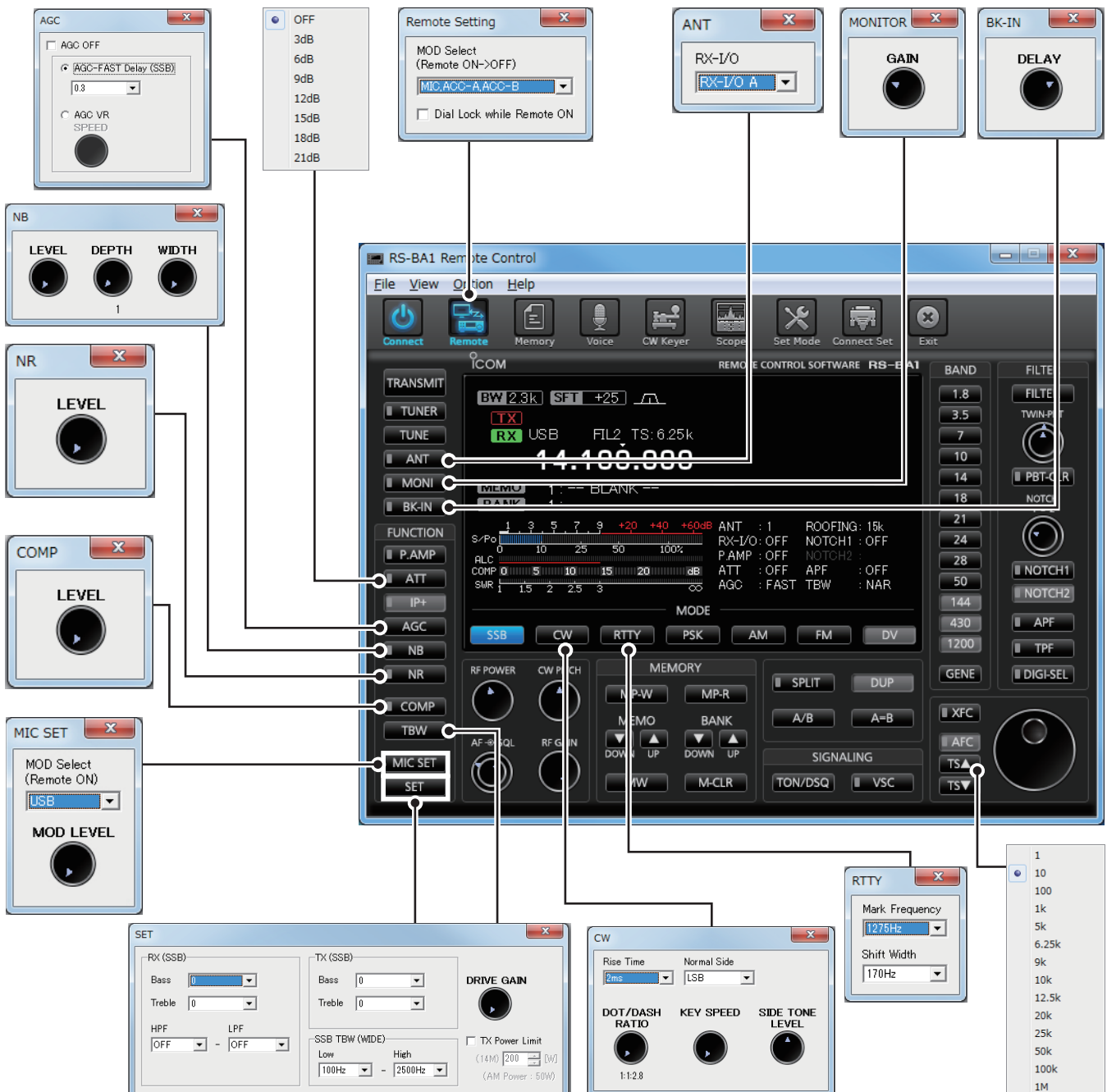
Follow the steps below to close and exit the remote control operation.

- ① Disconnect the radio by clicking <🔌> in the Remote Controller.
- ② Close the Remote Controller.
- ③ Disconnect the radio connected to the Remote Utility on the Remote Station.
- ④ Close the Remote Station on the Remote Utility.
- ⑤ If you are connecting the radio through the PC, close the Remote Utility on the Base Station.
- ⑥ Turn OFF the Radio and the PC.
 - If you are using a radio that can be turned ON or OFF with the CI-V Power ON/OFF command, the radio is turned OFF when the radio is disconnected using the Remote Controller.

■ Operating guide

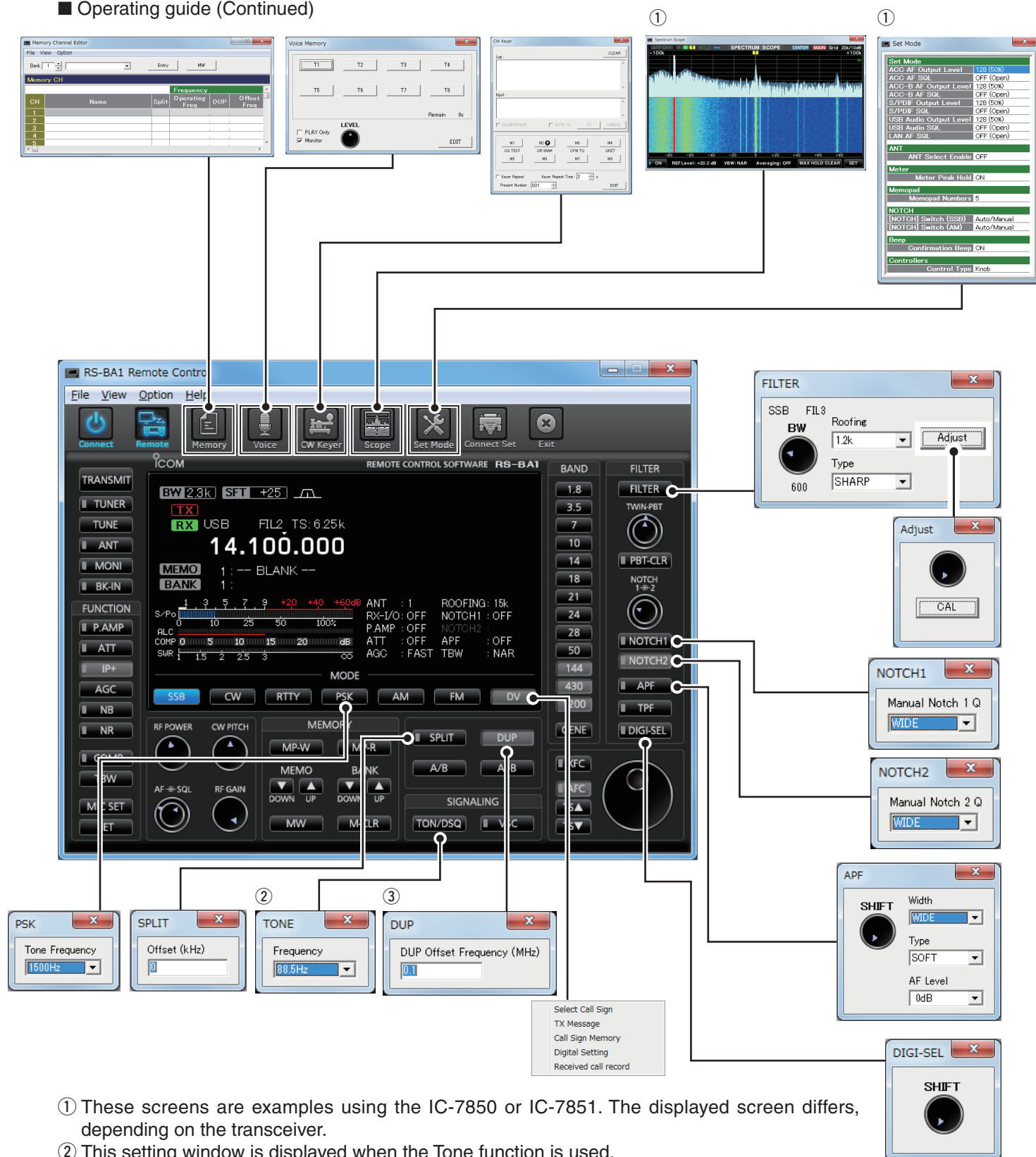
The following windows are displayed by 'right-clicking' on each button on the Remote Controller.

• The windows that are displayed by 'left-clicking,' the buttons are marked in white (Example: MIC SET).



5 REMOTE CONTROLLER'S BASIC OPERATION

■ Operating guide (Continued)



NOTE:

- There are items you cannot set, depending on the connected radio.
- RS-BA1 is for the single band operation.
- Knobs can be changed to sliders on the Set Mode screen for the volume, squelch settings and so on.

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 station with the Remote Utility

/// You can configure the Server information in the Server Registration screen (Radio Operation mode → Server List screen → [Add] or [Properties]).

○ “CONNECT NG” is displayed under the Server name



“CONNECT NG”

Possible cause 1

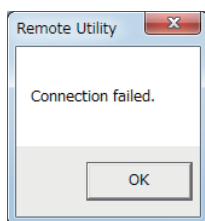
An incorrect IP address, domain name, computer name* or network name is entered to request a connection to the Server.

/// If the Remote Utility cannot get the Base station's IP address using the domain name, computer name or network name that you entered, “Cannot resolve the name” is displayed next to the name.

Solution

- ① Check the Base station's IP address, domain name, computer name* or network name. (pp. 15 to 32, 45, 42)
- ② Enter the Base station's correct IP address, domain name, computer name* or network name in the **Server Address or Network Name** field in the Server Registration screen.

*Only When connecting to the network through a PC



The connection error message

Possible cause 2

The control port number is different than that of the Base station.

Solution

- ① Check the Base station's control port number*. (p. 31)
- ② Enter the correct port number in the **Control Port (UDP)** field in the Server Registration screen.

* The default number is “50001.”

Possible cause 3

The virtual driver is not installed in the Remote station's PC.

Solution

Install the virtual driver in the Remote station's PC.
(See the RS-BA1 Preparations for details.)

○ “LOGON NG” is displayed under the Server name



“LOGON NG”

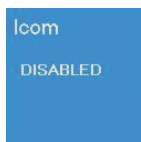
Possible cause

The user ID or password is different than that in the Base station's Remote Utility.

Solution

- ① Check the Remote station information registered in the Remote Utility. (p. 32)
- ② Enter the correct user ID and password into the **User ID** and **Password** fields in the Server Registration screen.

○ “DISABLED” is displayed under the Server name



“DISABLED”

Possible cause

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

Solution

Enable the Server by removing a check mark from the **Disable** box in the Server Registration screen.

/// **NOTE:** If you could not solve the problem after trying the above solutions, check the following on the Base station side.

When connecting to the network through a PC:

- Is the Remote Utility activated?
- Is the Remote Utility added as an exception in the Firewall? (pp. 1 to 6)
- Is your Remote station information registered in the Remote Utility's User List screen? (p. 32)

When connecting to the network directly:

- Is the radio turned ON?
- Is the “Network Control” item set to “ON” in the Others set mode? (p. 46)
- Is your Remote station information registered in the Others set mode? (p. 47)

Problem: Cannot access a radio with the Remote Utility

The description in this part is based on the assumption that the connection to the Server has succeeded (“CONNECTING” is displayed under the Server name).

○ “BUSY” is displayed under the radio name



“BUSY”

Possible cause

Another user is currently operating the radio.

Solution

Wait for “BUSY” to disappear.

/// If you are operating as the Base station, or as an administrator Remote station, you can terminate a connection between another Remote station and a radio. (p. 38)

○ “CONNECTING ERROR” is displayed under the radio name



“CONNECTING ERROR”

Possible cause 1

Access to the selected radio is inhibited by the Server.

Solution

Allow the Remote station to access the radio with the Base station’s Remote Utility. (p. 54)

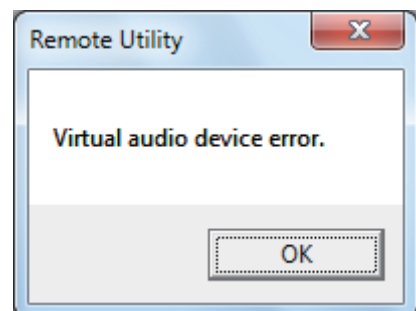
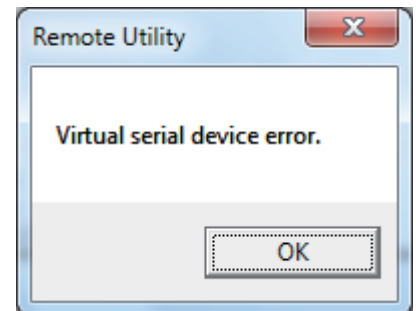
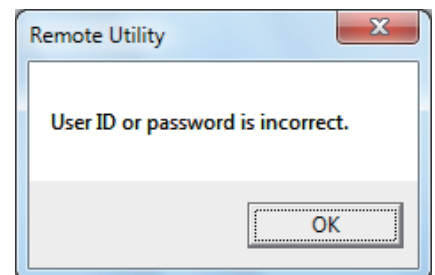
Possible cause 2

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

Solution

Check the Firewall settings for both the Base station and Remote station.

When using the internet, also check the router’s port forwarding settings. (p. 13)

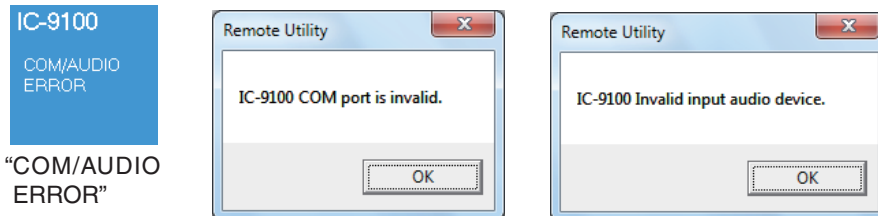


Problem: Cannot access a radio with the Remote Utility (Continued)

The description in this part is based on the assumption that the connection to the Server has succeeded ("CONNECTING" is displayed under the Server name).

○ **"COM/AUDIO ERROR" is displayed under the radio name**

The following messages are displayed for all possible causes described below.

**Possible cause 1**

An audio device or COM port has been added to the PC, or removed from the PC. For the USB device, the USB port number has been changed.

Solution

The COM port number or the audio device name may have been changed. Reregister the radio in the Server Setting mode → Radio List screen. (p. 33)

Possible cause 2

The audio or serial wiring is disconnected.

Solution

If you are using the USB serial conversion cable or a USB audio, make sure the USB cable is firmly connected.
Make sure the 3.5 (d) mm (1/8") audio cable is firmly connected.

Possible cause 3

Other applications are using the COM port.

Solution

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

Possible cause 4

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.

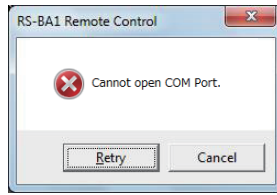
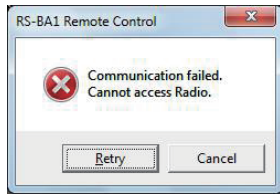
NOTE: If you could not solve the problem after trying the above solutions, check the following on the Base station side.


When connecting to the network through a PC:

- Is the radio turned ON?
- Are the correct COM port number and audio device to which the radio is connected selected in the Radio Registration screen (Server Setting mode → Radio List screen → [Properties])?
- Is the Server not directly accessing the radio using the Remote Controller, without having used the Remote Utility to connect to the radio?

When connecting to the network directly:

- Is the radio turned ON?
- Is the radio in the remote standby mode?

Problem: Cannot access a radio with the Remote Controller

To access a radio with the Remote Controller, configure the connection settings in the Connect Setting screen. (pp. 63, 64)
Click the Connect Setting icon () on the toolbar, or click “Connect Setting...” in the [Option] menu to open the screen.

○ **When connecting to the radio through the network using the Remote Utility**

Possible cause 1

Connecting to the radio is unsuccessful using the Remote Utility.

Solution

Try again to connect to the radio in the Radio List screen (Radio Operation mode). (pp. 40, 54)

- “<<CONNECT>>” appears under the radio name when the connection is successful.

Possible cause 2

In the **CI-V** field 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 radio in the **Remote Utility** menu.

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

Possible cause 3

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 on the Base station side.

When connecting to the network through a PC

- Are the same CI-V address and baud rate that are programmed into the radio set in the Radio Registration screen (Server Setting mode → Radio List screen → [Properties])?

When connecting to the network directly

- Is the radio turned ON?
- Is the radio in the remote standby mode?

○ **When directly accessing the radio without using the Remote Utility**

Possible cause 1

An incorrect COM port number is selected in the Remote Controller’s Connect Setting screen.

Solution

- ① Check the COM port to which the radio is connected, on your PC’s Device Manager.
- ② Select the correct COM port number in the **COM Port** menu in the Remote Controller’s Connect Setting screen.

Possible cause 2

The CI-V address or baud rate is different than that are programmed into the radio.

Solution

- ① Check the radio’s CI-V address and baud rate.
See the radio’s instruction manual to confirm them.
- ② Enter the radio’s correct CI-V address in the **CI-V address (Radio)** field, and select the radio’s correct baud rate in the **Baud rate (bps)** menu, in the Remote Controller’s Connect Setting screen.
If the radio’s baud rate is set to “Auto,” select “19200” in the **Baud rate (bps)** menu.
If you are using the Spectrum Scope function with the IC-7850, IC-7851, or IC-7300 using a USB for the connection, select “115200” in the **Baud Rate** menu.

Possible cause 3

Other applications are using the COM port.

Solution

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

Problem: Cannot properly control the radio with the Remote Controller**Possible cause 1**

The same CI-V address is being used by a control software other than the Remote Controller.

Solution

Select an address other than "E0" in the **CI-V Address (RS-BA1)** menu in the Remote Controller's Connect Setting screen. However, this solution does not always solve the problem.

Possible cause 2

In the Remote Controller's Connect Setting screen, a different model name is selected for the radio that you attempt to control.

Solution

Select the proper model name in the **Model** menu in the Connect Setting screen.

NOTE:

If you could not solve the problem after trying the solutions described on the previous page and above, check the following on the Base station side.

- Is there any radio that has 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 radio has succeeded ("<<CONNECT>>" is displayed under the radio name).

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 the **AF Output Device** menu in the Connection Setting screen (Radio Operation mode → Radio List screen → [Settings]). (pp. 40, 56)

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 the **AF Output Device** menu, 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. (pp. 7 to 12)

Windows 8.1, Windows 8, Windows 7 and Windows Vista have the Volume Mixer function that can adjust each application's audio level. If you use Windows 7 or Windows Vista, please check that the Remote Utility or the control software is not muted, or set to an appropriate volume level.

Possible cause 5

Audio output is disabled in the Remote Utility.

Solution

Insert a check mark in the **AF Transmission** box in the Connection Setting screen (Radio Operation mode → 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 Operation mode → Radio List screen → [AF]). (p. 45)

NOTE:

If you could not solve the problem after trying the solutions described on the previous page, check the following on the Base station side.

When connecting to the network through a PC

- Is the volume level of the audio device to which the radio is connected set to an appropriate level?
- Is there a check mark in the **AF - Use** box in the Radio Registration screen (Server Setting mode → Radio List screen → [Properties])?

When connecting to the network directly

- Is the “Network AF” items set to an appropriate level in the Others set mode?

Problem: The transmit audio cannot be output

- The description in this part is based on the assumption that the connection to the radio has succeeded (“<<CONNECT>>” is displayed under the radio name).
- To check the Remote station’s transmit IF signals, use the Transmit Monitor function with the Base station’s Remote Utility, or place a receiver near the Remote station’s or Base station’s PC.

Possible cause 1

The microphone is not turned ON, or the input level is too low.

Solution

Turn the microphone ON and adjust the input level.

Possible cause 2

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

Solution

Select the appropriate audio device in the **MOD Input Device** menu in the Connection Setting screen (Radio Operation mode → Radio List screen → [Settings]). (pp. 40, 56)

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 the **MOD Input Device** menu, please keep that in mind.

Possible cause 3

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

Solution

Adjust the input level of the audio device. (pp. 7 to 12)

Possible cause 4

Audio input is disabled in the Remote Utility.

Solution

Insert a check mark in the **MOD Transmission** box in the Connection Setting screen (Radio Operation mode → Radio List screen → [Settings]).

Possible cause 5

The input level is too low in the Remote Utility.

Solution

Adjust the input level in the Transmit Audio Adjustment screen (Radio Operation mode → Radio List screen → [MOD]). (p. 58)

Possible cause 6

An incorrect connector is selected in the Remote Controller.

Solution

Select the proper radio’s connector which is connected to the Base station’s PC, in the **MOD Select (Remote ON)** menu in the Remote Controller’s MIC SET screen. (p. 65)

NOTE:

If you could not solve the problem after trying the above solutions, check the following on the Base station side.

When connecting to the network through a PC

- Is the input level of the audio device to which the radio is connected set to an appropriate level?
- Is there a check mark in the **MOD - Use** box in the Radio Registration screen (Server Setting mode → Radio List screen → [Properties])?

When connecting to the network directly

- Is the “Network MOD” items set to an appropriate level in the Others set mode?

Problem: The received audio is interrupted

Possible cause 1

The network data transfer is excessive.

Solution

Select a lower sampling rate value in the **Sample Rates** menu, or a different codec in the **Codecs** menu, in the Connect Settings screen (Radio Operation mode → Radio List screen → [Settings]). 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 the **Prebuffer (ms)** field in the Connection Setting screen (Radio Operation mode → Radio List screen → [Settings]). 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

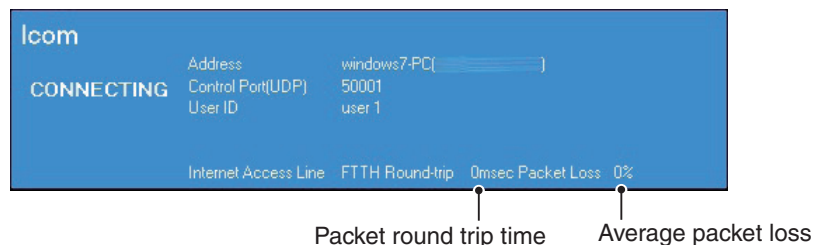
Shutdown other applications, if running.

Solution 2

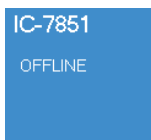
Reduce the number of radios you are accessing with the Remote Utility.

NOTE:

- If you are accessing the radio through a network, removing a check mark from the **Retransmission** box in the Connection Setting screen (Radio Operation mode → Radio List screen → [Settings]) can solve the problem.
- 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



"OFFLINE"

Possible cause 1

The radio is "OFFLINE."

Solution

Click [Connect] on the Server List screen to connect to the server.



"<<CONNECT>>"

Possible cause 2

"<<CONNECT>>" is displayed.

Solution

Click [Disconnect] on the Server List screen to disconnect from the radio.

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

Possible cause 1

The Remote Controller is connected to the radio.

Solution

Click [] to disconnect from the radio.

Count on us!