



**UHF DIGITAL VOICE REPEATER**  
**ID-RP4000V**  
**Instruction Manual**

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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## IMPORTANT

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**READ THIS INSTRUCTION MANUAL CAREFULLY** before attempting to operate the repeater.

**SAVE THIS INSTRUCTION MANUAL.** This manual contains important safety and operating instructions for the ID-RP4000V.

Refer to the ID-RP2 instruction manual, supplied with the ID-RP2C, about D-star system repeater instruction, installation and precautions, etc. for details.  
Because of this instruction manual describes ID-RP4000V's particular installation and precautions only.

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## EXPLICIT DEFINITIONS

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| WORD             | DEFINITION  |
|------------------|---|
| <b>⚠ WARNING</b> | Personal injury, fire hazard or electric shock may occur.                               |
| <b>⚠ CAUTION</b> | Equipment damage may occur.   |
| <b>NOTE</b>      | If disregarded, inconvenience only. No risk or personal injury, fire or electric shock. |

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## PRECAUTIONS

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**⚠ WARNING RF EXPOSURE!** This device emits Radio Frequency (RF) energy. Extreme caution should be observed when operating this device. If you have any questions regarding RF exposure and safety standards please refer to the Federal Communications Commission Office of Engineering and Technology's report on Evaluating Compliance with FCC Guidelines for Human Radio Frequency Electromagnetic Fields (OET Bulletin 65).

**⚠ WARNING HIGH VOLTAGE! NEVER** attach an antenna or internal antenna connector during transmission. This may result in an electrical shock or burn.

**⚠ WARNING HIGH VOLTAGE! NEVER** install the antenna at any place that person touch the antenna easily during transmission. This may result in an electrical shock or burn.

**⚠ NEVER** apply AC to the [DC 13.8V IN] connector. This could cause a fire or ruin the repeater.

**⚠ NEVER** apply more than 16 V DC, such as a 24 V battery, to the [DC 13.8V IN] connector on the repeater. This could cause a fire or ruin the repeater.

**⚠ NEVER** let metal, wire or other objects touch any internal part or connectors on the repeater. This may result in an electric shock.

**⚠ NEVER** operate or touch the ID-RP4000V with wet hands. This may result in an electric shock or damage to the repeater unit.

**⚠ NEVER** expose the ID-RP4000V to rain, snow or any liquids. These units have no water protection.

**AVOID** using or placing the ID-RP4000V in areas with temperatures below  $-10^{\circ}\text{C}$  ( $+14^{\circ}\text{F}$ ) or above  $+50^{\circ}\text{C}$  ( $+122^{\circ}\text{F}$ ). Be aware that temperatures can exceed  $80^{\circ}\text{C}$  ( $+176^{\circ}\text{F}$ ), resulting in permanent damage to the repeater if left there for extended periods.

**AVOID** placing the ID-RP4000V in excessively dusty environments or in direct sunlight.

Place the repeater in a secure place to avoid inadvertent use by children.

DO NOT use chemical agents such as benzine or alcohol when cleaning, as they can damage the repeater's surfaces.

**DO NOT** modify the repeater for any reason.

Use the specified fuse only.

### ***For the U.S.A. only***

**CAUTION:** Changes or modifications to this repeater, not expressly approved by Icom Inc., could void your authority to operate this repeater under FCC regulations.

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# FOR CLASS B UNINTENTIONAL RADIATORS

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

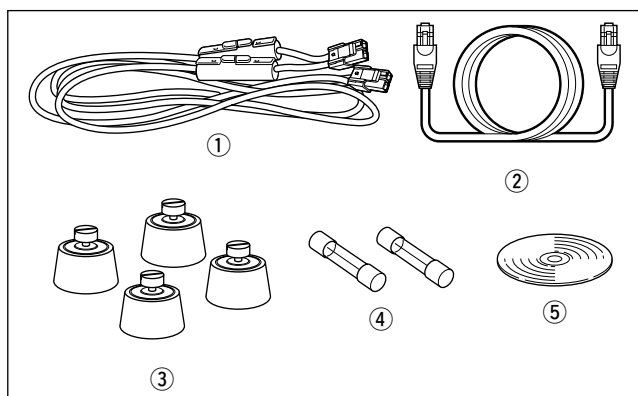
If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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## SUPPLIED ACCESSORIES



|   |   |
|---|---|
| ① Power cable (OPC-1309; approx. 1 m; 3.3 ft) ..... | 1 |
| ② Control cable (OPC-1069) .....                    | 1 |
| ③ Rubber feet .....                                 | 4 |
| ④ Spare fuses (FGB10A) .....                        | 2 |
| ⑤ Utility CD .....                                  | 1 |

# 1

## SYSTEM OUTLINE

The ID-RP4000V is installed into the Digital Smart Technologies for Amateur Radio (D-STAR) repeater system for operation.

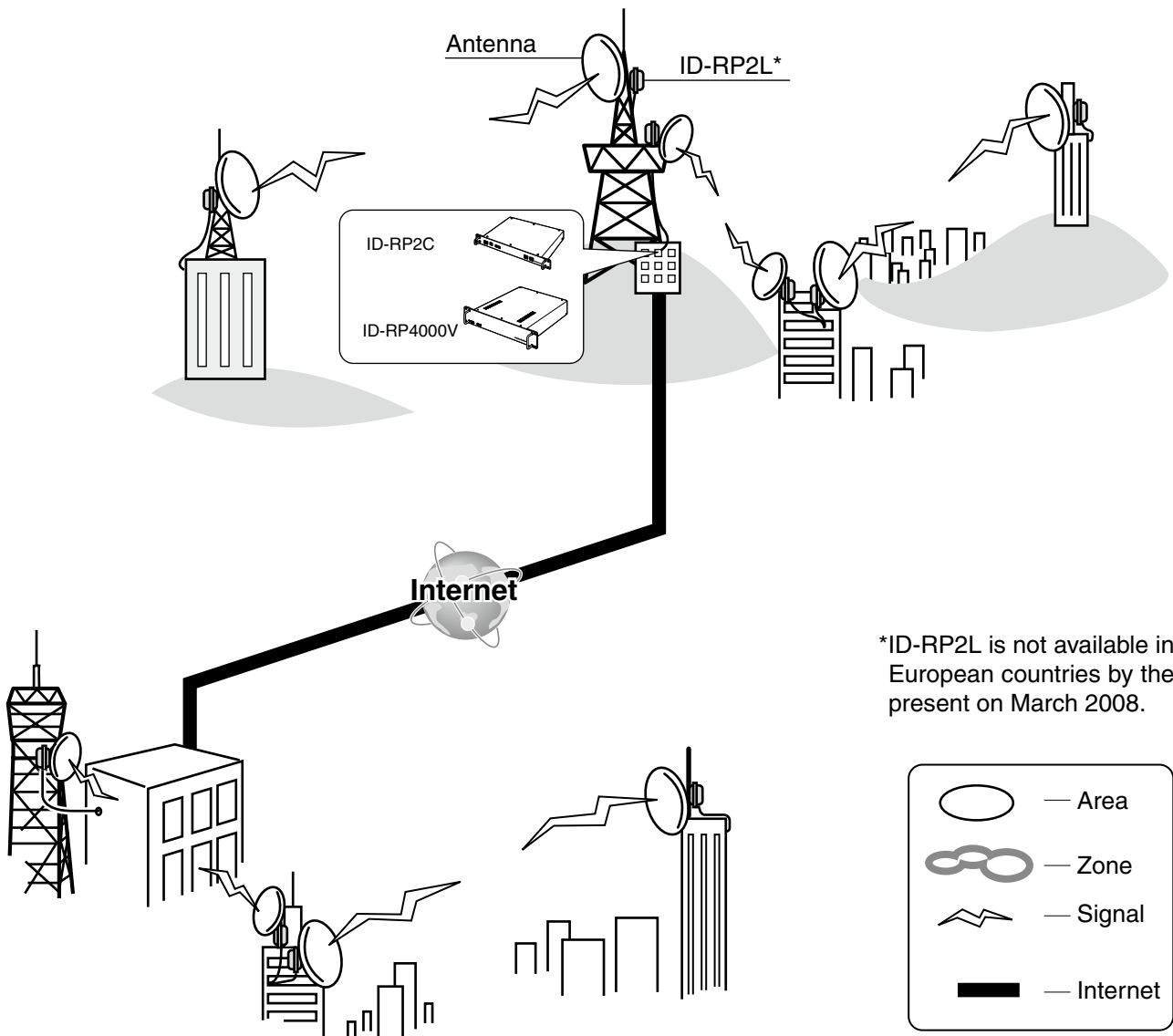
The ID-RP4000V never functions as a repeater without ID-RP2C, due to no relay function is built-in.

### ■ ID-RP4000V

- ID-RP4000V is a 440 MHz digital voice and slow-speed data repeater (4.8 kbps) and connects to the ID-RP2C.

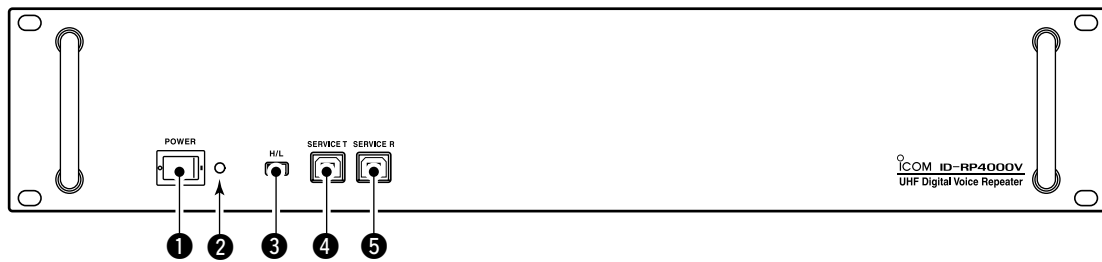
**NOTE:** No audio CODEC is performed in the ID-RP4000V, thus the ID-RP4000V receives and transmits 4.8 kbps serial data only.

- Different frequencies are used for each transmission and reception in semi-duplex mode.
- The ID-RP4000V utility software, supplied with the ID-RP4000V, and a PC are required for both receive and transmit frequency settings.



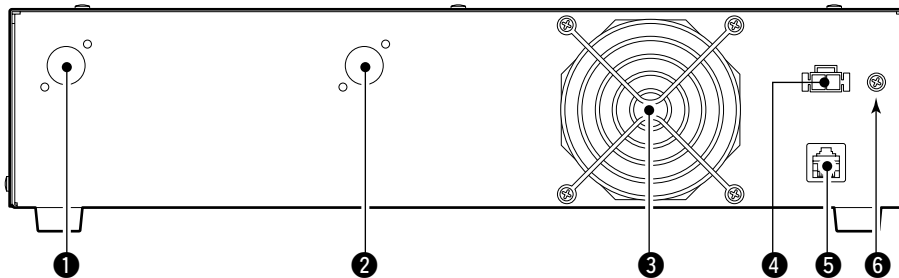
\*ID-RP2L is not available in European countries by the present on March 2008.

## ■ Front panel



- 1 POWER SWITCH [POWER]**  
The power switch for ID-RP4000V.
- 2 POWER INDICATOR**  
The LED indicator for the ID-RP4000V and lights when the power is turned ON.
- 3 HIGH/LOW POWER SELECT SWITCH [H/L]**  
Selects the transmit output power High (approx. 25 W) and Low (approx. 2.5 W).
- 4 SERVICE CONNECTOR T [SERVICE T] (p. 30)**  
Connects a PC via an USB cable (A-B type; purchase separately) to set the transmit frequency.
- 5 SERVICE CONNECTOR R [SERVICE R] (p. 30)**  
Connects a PC via an USB cable (A-B type; purchase separately) to set the receive frequency.

## ■ Rear panel



- 1 RECEIVE ANTENNA CONNECTOR [RX ANT]**  
(p. 5)  
Connect a 440 MHz band antenna through a duplexer.
- 2 TRANSMIT ANTENNA CONNECTOR [TX ANT]**  
(p. 5)  
Connect a 440 MHz band antenna through a duplexer.
- 3 COOLING FAN**
- 4 POWER CONNECTOR [DC13.8V] (p. 5)**  
Connects to ID-RP2C via the supplied DC power cable (OPC-1309) to be supplied the DC power.
- 5 [CONT I/O] (p. 5)**  
Connects to ID-RP2C via the supplied control cable for received or transmitted serial data communication.
- 6 GROUND TERMINAL [GND] (p. 4)**  
Connects to a ground to prevent electrical shocks, TVI, BCI and other problems.

# 3

## CONNECTIONS AND INSTALLATIONS

### ■ Precautions

**NEVER** expose the ID-RP4000V to rain, snow or any liquids.

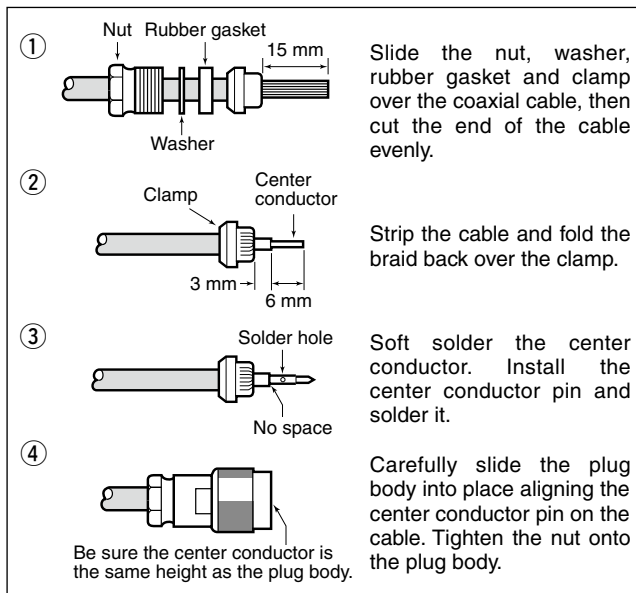
**NEVER** connect the repeater to a power source using reverse polarity. This will damage the repeater. And turn the repeater power OFF when connecting a power supply.

**AVOID** using or placing the ID-RP4000V in areas with temperature below  $-10^{\circ}\text{C}$  ( $+14^{\circ}\text{F}$ ) or above  $+50^{\circ}\text{C}$  ( $+122^{\circ}\text{F}$ ).

**AVOID** placing the ID-RP4000V in excessively dusty environments or in direct sunlight.

**AVOID** placing the ID-RP4000V against walls or putting anything on top of the units. This will obstruct heat dissipation.

### ◇ About coaxial cable



Use  $50\ \Omega$  of impedance for both antenna (at Feeding power point) and coaxial cable.

Type-N connector is used for the connection between ID-RP4000V and antenna.

**RECOMMENDATION:** Install a lightning protector between the ID-RP4000V and antenna.

### ■ About the power supply

Be sure to the DC power supply that used with the ID-RP4000V system is meet the followings:

Output voltage :  $13.8\ \text{V DC} \pm 15\%$

Current capacity : At least the total current consumption of the connected equipments.

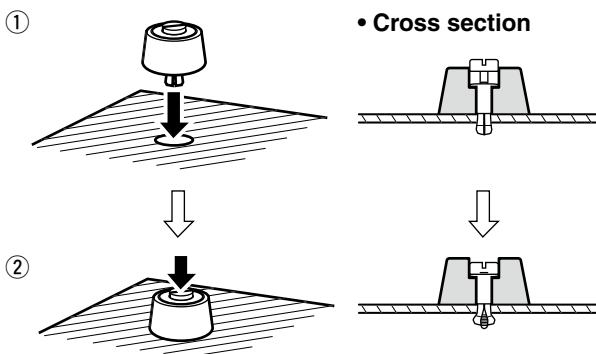
## ■ When install into system rack

The ID-RP4000V is designed to install into the 19-inch rack (EIA standard) directly.

Use the supplied bolts with the rack when fixing the ID-RP4000V.

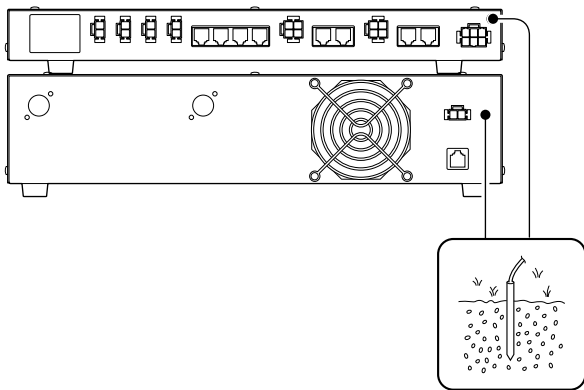
We recommend to use the rack that has rails due to the weigh of the ID-RP4000V is approx. 7.5 kg (16.5 lbs).

## ■ Rubber feet attachment



Attach the supplied rubber feet onto the bottom of the ID-RP4000V as shown at left when not installed into 19-inch rack. Desktop operation can be performed.

## ■ Grounding



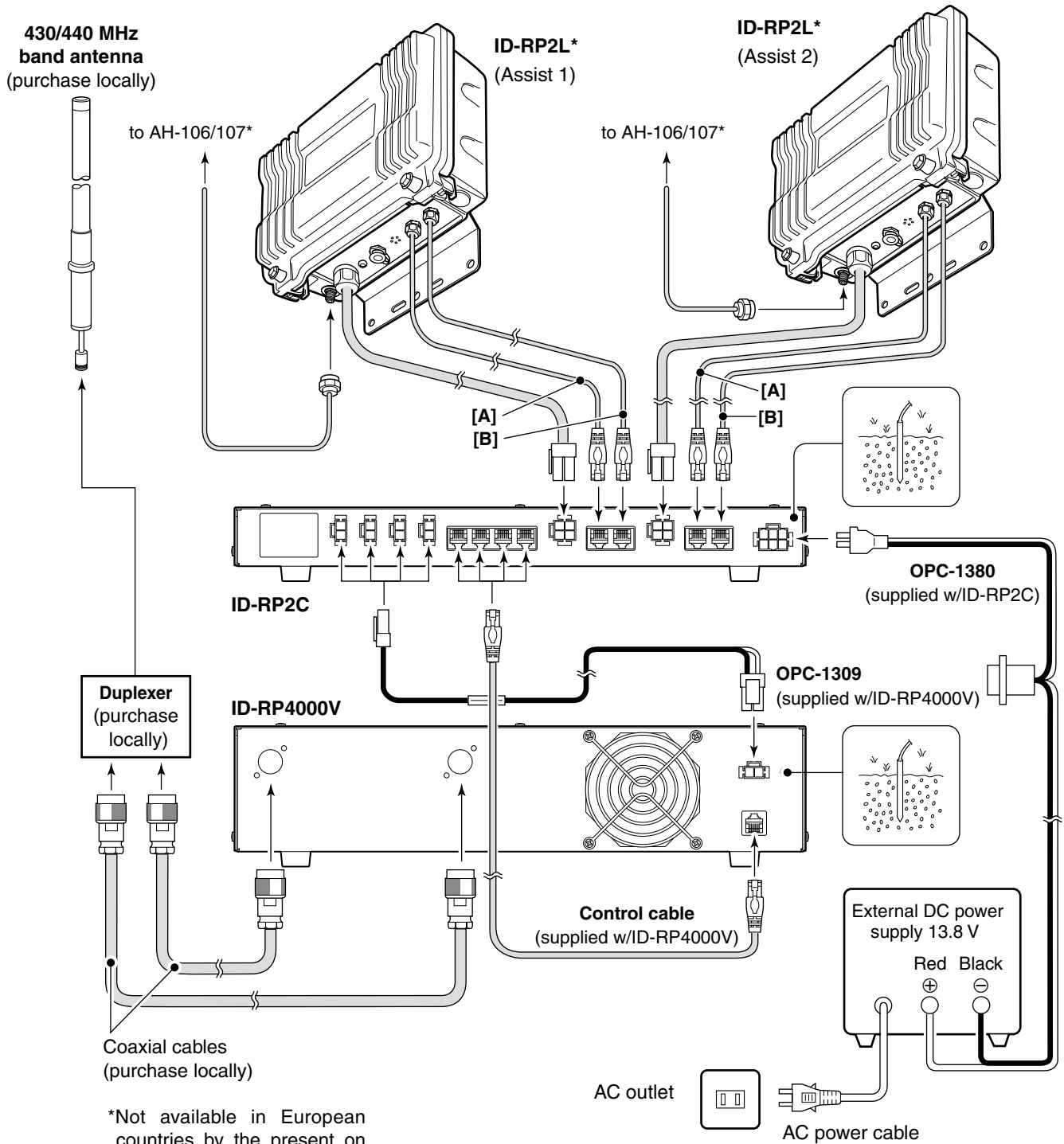
To prevent electrical shock, television interference (TVI), broadcast interference (BCI) and other problems, ground the transceiver through the GROUND terminal on the rear panel.

For best results, connect a heavy gauge wire or strap to a long earth-sunk copper rod.

Make the distance between the [GND] terminal and ground as short as possible.

**⚠ WARNING: NEVER** connect the [GND] terminal to a gas or electric pipe, since the connection could cause an explosion or electric shock.

## System connections





The USB (Universal Serial Bus) cable (A-B type; purchase separately) is used for the connection between ID-RP4000V and a PC.

So, the USB driver installation is required for the PC.

In addition, individual USB driver installation is required for each connector, because the communication port number difference.

In this instruction, describes with the installation of the ID-RP4000V [SERVICE T] connector for example.

**NOTE:**

The repeater unit connection may not be recognized with the PC according to the using USB cable length.

Use the shorter USB cable as possible is recommended.

## ■ Microsoft® Windows® XP (Service Pack 2)

- ① Start up the Windows.
  - Quit all applications if activated.
- ② Insert the CD that comes with the ID-RP4000V, into the CD drive.
- ③ Connect the PC and ID-RP4000V [SERVICE T] connector using with an USB cable (A-B type; purchase separately).
- ④ “Found New Hardware ID-RP4000V SERVICE T” appears as at left.

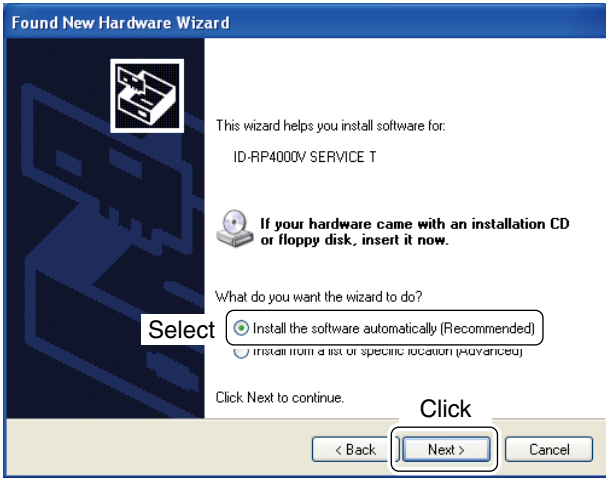


- ⑤ The “Found New Hardware Wizard” will come up as at left. Select “No, not this time” then click [Next>].



➤ Continue to the next page.

■ Microsoft® Windows® XP (Service Pack 2)— continued



⑥ When the dialog box as at left is displayed, select “Install the software automatically (Recommended),” then click [Next>].



⑦ The wizard starts searching for the driver and shows the dialog as at left during search.

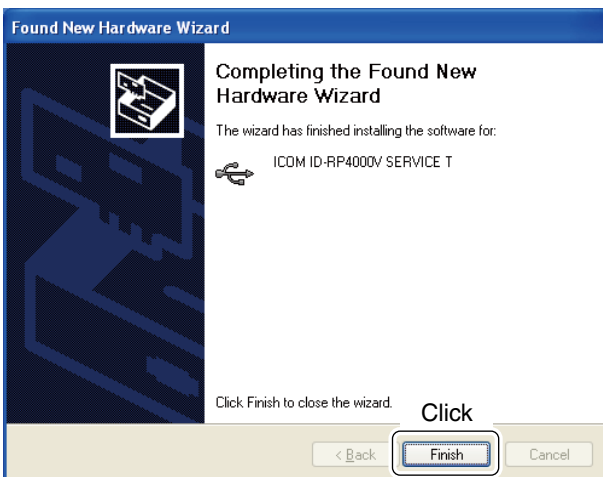


⑧ While searching the driver, the “Hardware Installation” dialog box appears as at left. Click [Continue Anyway] to start the installation.

/// **NOTE:** If the dialog as at left does not appear, select “Install from a list or specific location (Advanced)” in step ⑥, then select the driver folder in the CD.



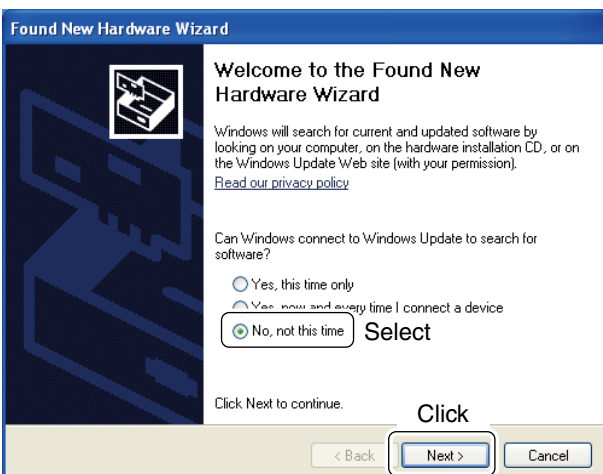
⑨ Windows starts installing the USB driver.




⑩ After the installation is completed, click [Finish].



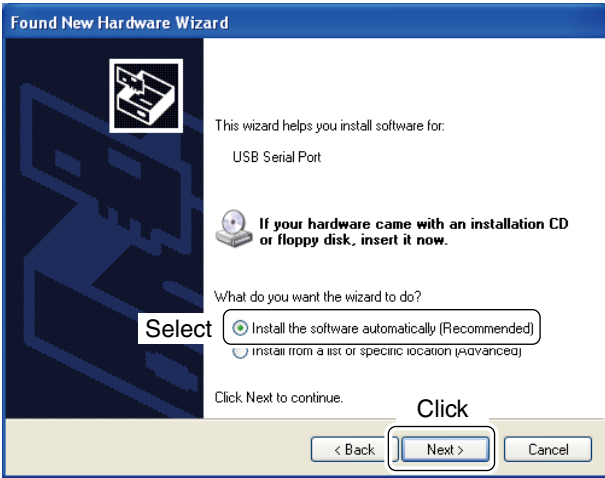
⑪ After clicking [Finish], “Found New Hardware USB Serial Port” appears as at left.



⑫ The “Found New Hardware Wizard” will come up as at left. Select “No, not this time” then click [Next>].

 Continue to the next page.

■ Microsoft® Windows® XP (Service Pack 2)— continued



⑬ Select “Install the software automatically (Recommended),” then click [Next>].

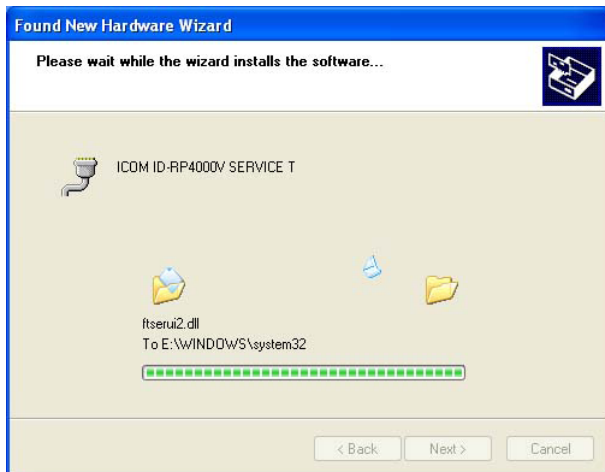


⑭ The wizard starts searching for the driver and shows the dialog as at left during search.



⑮ While searching the driver, the “Hardware Installation” dialog box appears as at left. Click [Continue Anyway] to start the installation.

/// **NOTE:** If the dialog as at left does not appear, select “Install from a list or specific location (Advanced)” in step ⑬, then select the driver folder in the CD.



⑩ Windows starts installing the USB driver.



⑪ After the installation is completed, click [Finish].



⑫ After clicking [Finish], "Found New Hardware Your new hardware is installed and ready to use" appears as at left.

⑬ Eject the CD.

- Rebooting the PC is recommended.

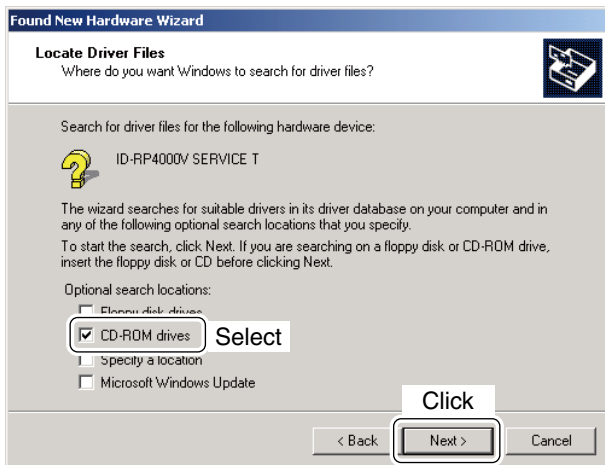
## ■ Microsoft® Windows® 2000



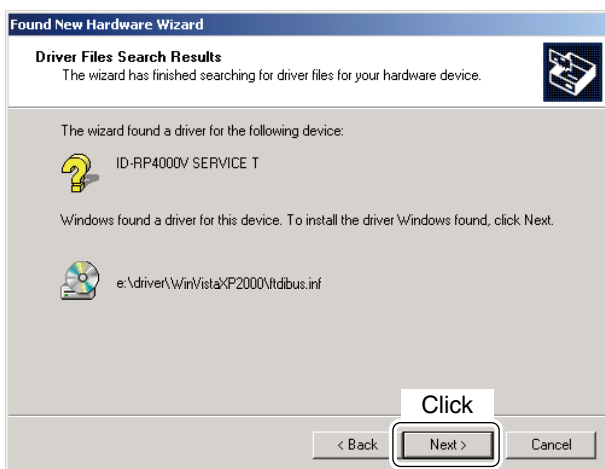
- ① Start up the Windows.
  - Quit all applications if activated.
- ② Insert the CD that comes with the ID-RP4000V, into the CD drive.
- ③ Connect the PC and ID-RP4000V [SERVICE T] connector using with an USB cable (A-B type; purchase separately).
- ④ “Found New Hardware ID-RP4000V SERVICE T” appears as at left.

- ⑤ The “Found New Hardware Wizard” will come up as at left.  
Click [Next->].

- ⑥ When the dialog box as at left is displayed, select “Search for a suitable driver for my device (recommended),” then click [Next->].



⑦ Select “CD-ROM drives,” then click [Next >].



⑧ When the appropriate driver is found, the dialog box appears as at left appears. Click [Next >] to start the installation.



⑨ After the installation is completed, click [Finish].



⑩ After clicking [Finish], “Found New Hardware USB Serial Port” appears as at left.

➤ Continue to the next page.

■ Microsoft® Windows® 2000— continued



⑪ The “Found New Hardware Wizard” will come up as at left. Click [Next->].

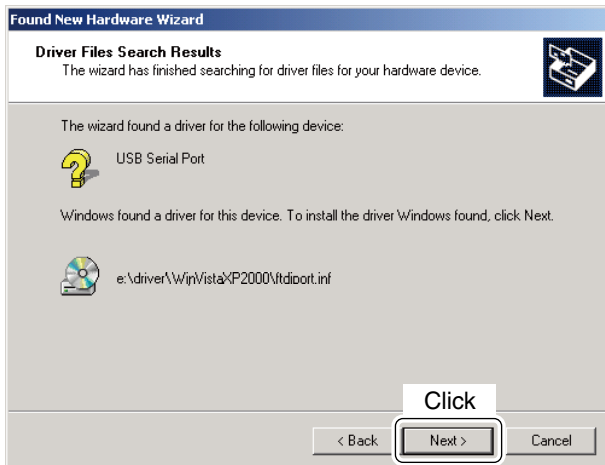


⑫ Select “Search for a suitable driver for my device (recommended),” then click [Next->].



⑬ Select “CD-ROM drives,” then click [Next >].





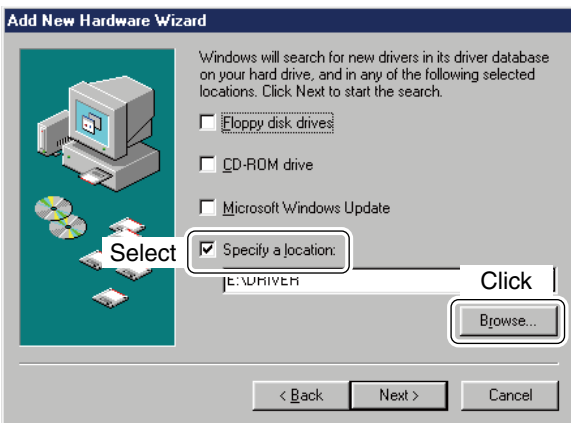
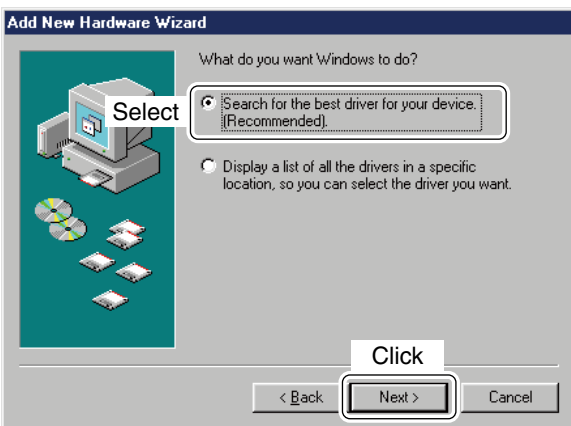
- ⑭ When the appropriate driver is found, the dialog box appears as at left appears. Click [Next >] to start the installation.



- ⑮ After the installation is completed, click [Finish].  
 ⑯ Eject the CD.  
 • Rebooting the PC is recommended.

## ■ Microsoft® Windows® 98SE/Me

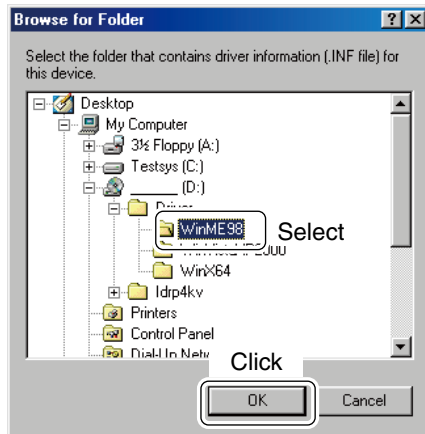
- ① Start up the Windows.
  - Quit all applications if activated.
- ② Insert the CD that comes with the ID-RP4000V, into the CD drive.
- ③ Connect the PC and ID-RP4000V [SERVICE T] connector using with an USB cable (A-B type; purchase separately).
- ④ The “Add New Hardware Wizard” will come up as at left.  
Click [Next>].



- ⑤ When the dialog box as at left is displayed, select “Search for the best driver for your device. (Recommended).”, then click [Next>].

- ⑥ Click to add the check mark, “✓”, into “Specify a location:,” then click [Browse...].

**NOTE:** Remove the check mark, “✓”, from “Floppy disk drive,” “CD-ROM drive” and “Microsoft Windows Update” to prevent the incorrect driver selection.




⑦ Double-click the “Driver” folder then select “WinME98” folder in the CD. Click [OK].



⑧ Confirm the driver folder in the CD is selected, then click [Next >].



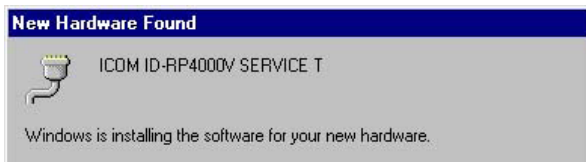
⑨ When the driver is found, the screen as at left appears. Click [Next >] to start the driver installation.

 Continue to the next page.

■ Microsoft® Windows® 98SE/Me— continued



⑩ After the installation is completed, click [Finish].

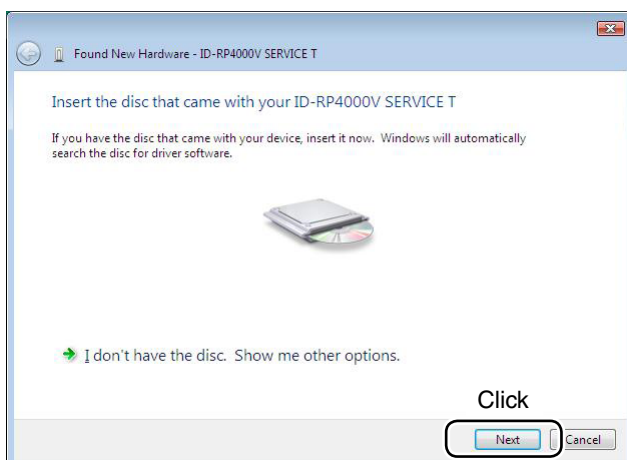
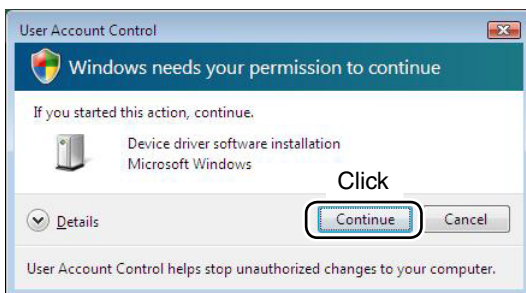
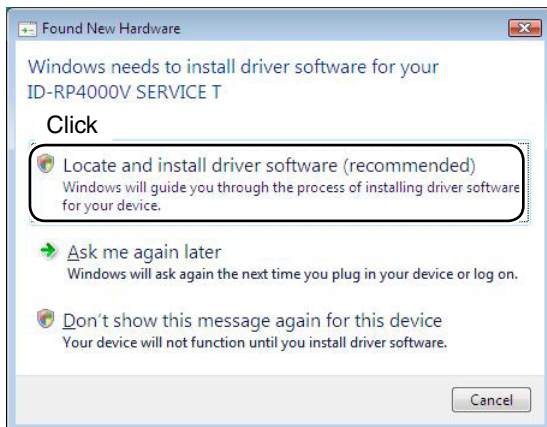


⑪ After clicking [Finish], “New Hardware Found ICOM ID-RP4000V SERVICE T” appears as at left.

⑫ Eject the CD.

- Rebooting the PC is recommended.

## ■ Microsoft® Windows Vista™



/// When the PC can be connected to the Internet, please make the PC stand-alone.

- ① Start up the Windows.
  - Quit all applications if activated.
- ② Insert the CD that comes with the ID-RP4000V, into the CD drive.
- ③ Connect the PC and ID-RP4000V [SERVICE T connector using with an USB cable (A-B type; purchase separately).
- ④ “Found New Hardware” appears as at left. Click “Locate and install driver software (recommended)”.

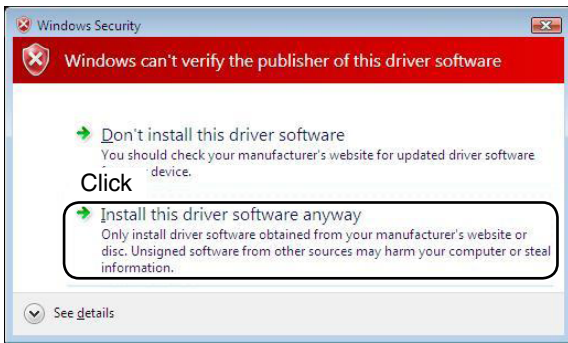
- ⑤ In case “User Account Control” dialog box appears as at left, click [Continue].

- ⑥ When the dialog box as at left is displayed, click [Next].

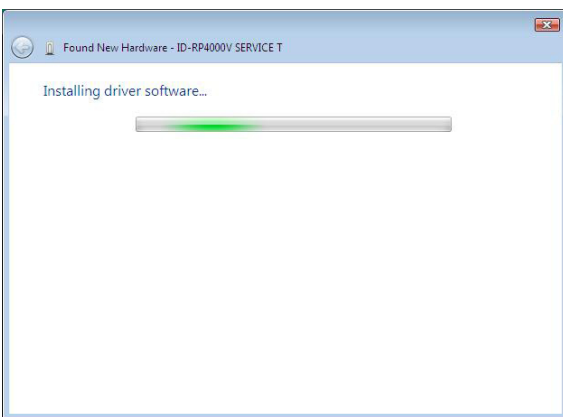
➤ Continue to the next page

## 4 DRIVER INSTALLATION

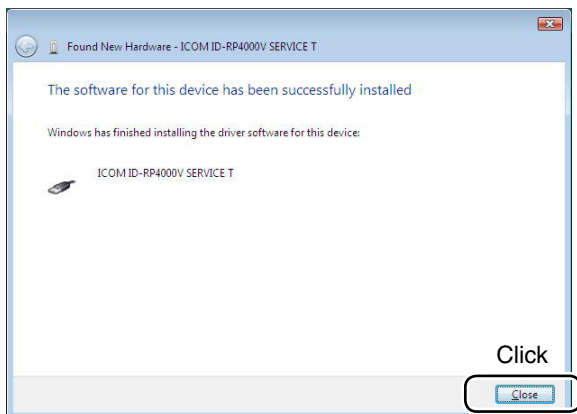
### ■ Microsoft® Windows Vista™— continued



- ⑦ The dialog box as at left is displayed. Click "Install this driver software anyway" to start the installation.



- ⑧ The wizard starts searching for the driver and shows the dialog as at left during search.



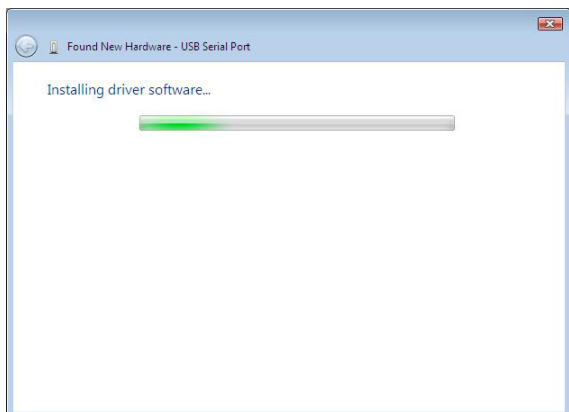
- ⑨ After the installation is completed, click [Close].



- ⑩ When the “Found New Hardware -USB Serial Port” appears as at left, click [Next].



- ⑪ The dialog box as at left is displayed. Click “Install this driver software anyway” to start the installation.

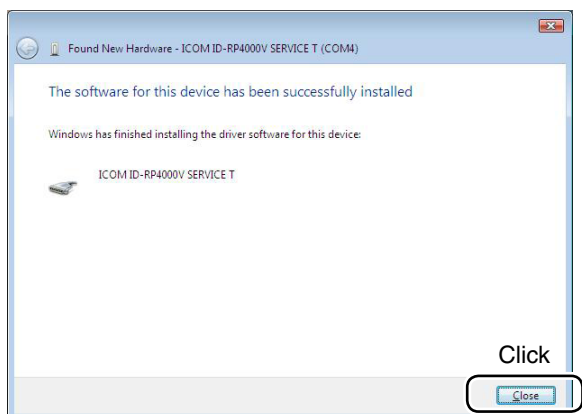


- ⑫ The wizard starts searching for the driver and shows the dialog as at left during search.

➤ *Continue to the next page*

## 4 DRIVER INSTALLATION

### ■ Microsoft® Windows Vista™— continued



⑬ After the installation is completed, click [Close].

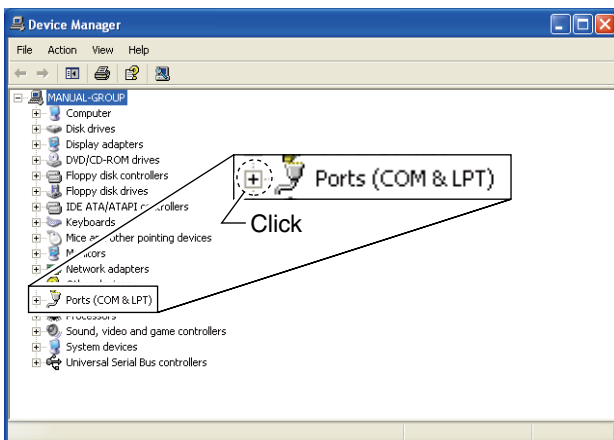
⑭ Eject the CD.

- Rebooting the PC is recommended.



## ■ COM port confirmation

### ◇ Microsoft® Windows® XP/2000



After the driver installation, confirm the driver availability and the port number are recommended. In this section, COM port number confirmation of the ID-RP4000V [SERVICE T] connector is used for instruction example.

- ① Start up Windows.
- ② Connect the PC and the ID-RP4000V [SERVICE T] connector through an USB cable (A-B type; purchase separately).
- ③ Right click “My Computer” then select “Properties.”
  - “My Computer” is available in <Start> menu with Windows XP.
- ④ “System Properties” screen appears as at left. Click [Hardware] tab and then click [Device Manager].

- ⑤ “Device Manager” screen appears. Click “+” of Ports (COM&LPT).

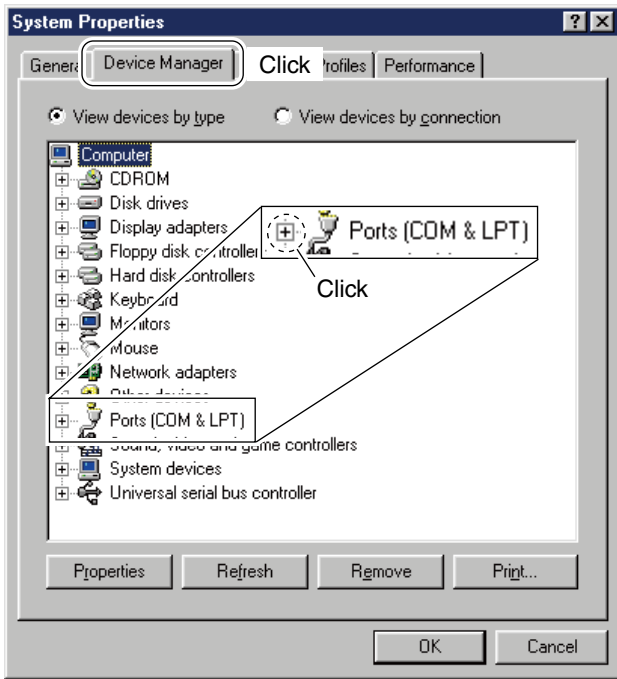
- ⑥ Confirm “ICOM ID-RP4000V SERVICE T (COM\*)” is displayed.
  - If not displayed, or few COM port numbers are displayed at the same time, the driver installation may not be installed properly. Un-install the USB driver then re-install the driver again in such cases.

**NOTE:** “\*” is the COM port number, that is used for the communication setting with the utility software.

**<e.g.: When driver re-installation is required>**  
“ICOM ID-RP4000V SERVICE T (COM\*)” (COM\*)”

◇ Microsoft® Windows® 98SE/Me

- ① Start up Windows.
- ② Connect the PC and the ID-RP4000V [SERVICE T] connector through an USB cable (A-B type; purchase separately).
- ③ Right click "My Computer" then select "Properties."
- ④ "System Properties" screen appears as at left. Click [Device Manager] tab.
- ⑤ Click "+" of Ports (COM&LPT).



Check the connected unit and connector names, and COM port number.  
(In this example, the USB serial port number is "3.")

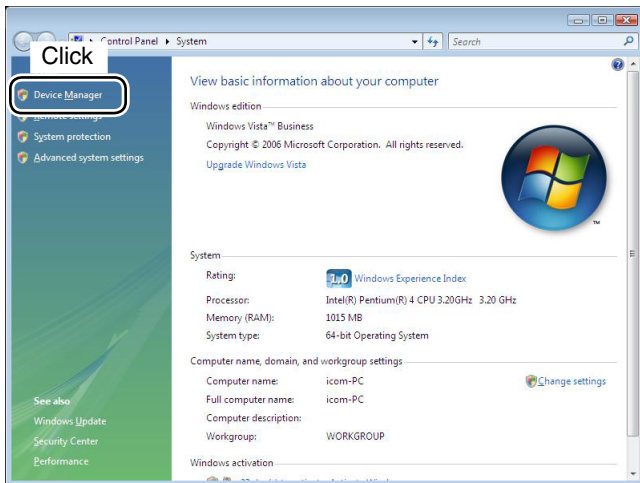
- ⑥ Confirm "ICOM ID-RP4000V SERVICE T (COM\*)" is displayed.
  - If not displayed, or few COM port numbers are displayed at the same time, the driver installation may not be installed properly. Un-install the USB driver then re-install the driver again in such cases.

**NOTE:** "\*" is the COM port number, that is used for the communication setting with the utility software.

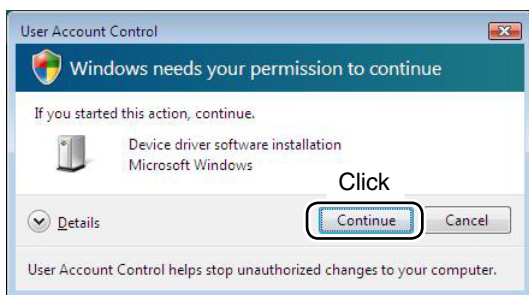
**<e.g.: When driver re-installation is required>**  
"ICOM ID-RP4000V SERVICE T (COM\*) (COM\*)"

◇ Microsoft® Windows Vista™

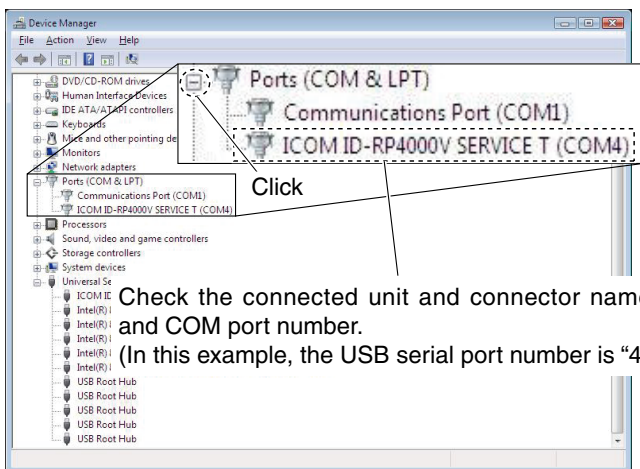
- ① Start up Windows.
- ② Connect the PC and the ID-RP4000V [SERVICE T] connector through an USB cable (A-B type; purchase separately).
- ③ Right click "Computer" then select "Properties."  
• "Computer" is available in <Start> menu with Windows Vista.
- ④ "System Properties" screen appears as at left. Click [Device Manager].



- ⑤ In case "User Account Control" dialog box appears as at left, click [Continue].



- ⑥ "Device Manager" screen appears. Click "+" of Ports (COM&LPT). Confirm "ICOM ID-RP4000V SERVICE T (COM\*)" is displayed.  
• If not displayed, or few COM port numbers are displayed at the same time, the driver installation may not be installed properly. Un-install the USB driver then re-install the driver again in such cases.



**NOTE:** "\*" is the COM port number, that is used for the communication setting with the utility software.

**<e.g.: When driver re-installation is required>**  
"ICOM ID-RP4000V SERVICE T (COM\*) (COM\*)"

## ■ USB driver un-installation

**IMPORTANT!**

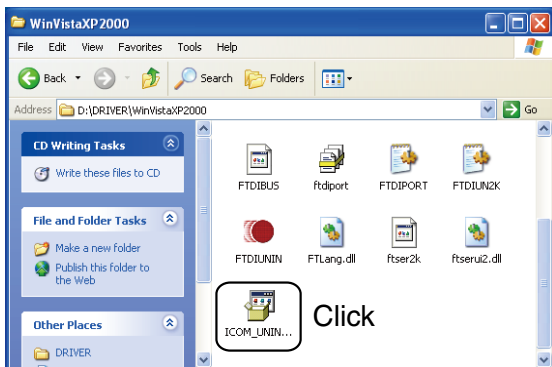
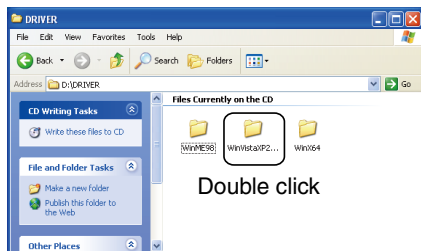
As described at first of this section, USB driver is installed for each unit and connector.

However, only one USB driver can be un-installed when using “Add and Delete” included in OS. So, you should perform the USB driver un-installation with the following instructions.

Un-install the USB drivers as follows.

In this section, describes the un-installation instruction with Windows XP for example.

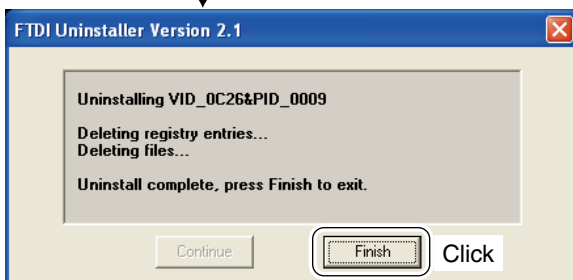
- ① Start up Windows.
- ② Insert the CD that supplied with the ID-RP4000V into the CD drive.
- ③ Open the CD drive directory using “My Computer” or “Explorer.”
  - Contents of the CD are displayed.
- ④ Double click the “Driver” and then the appropriate folder for your OS to open and display the folder contents.



- ⑤ Run the appropriate ‘exe’ file according to the OS.
  - **For Windows XP/2000** : “ICOM\_UNIN\_NT.EXE”
  - **For Windows 98SE/Me** : “ICOM\_UNIN\_9x.EXE”



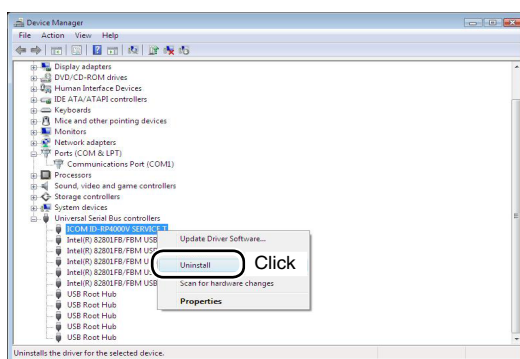
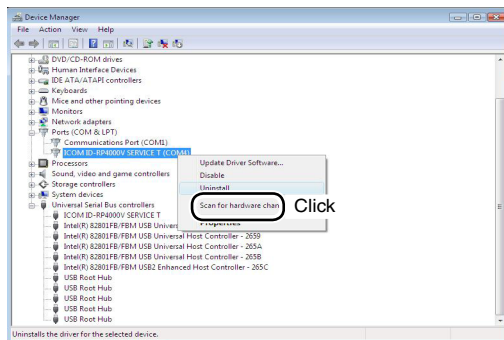
- ⑥ The un-installer starts automatically.
  - The un-installer starts several times according to the number of installed USB drivers.
  - When the dialog box as at left is displayed, make sure no equipment is connected to the USB port, then click [Continue].
  - When the screen as at left below appears after the un-installation, click [Finish].



### ◇ Microsoft® Windows Vista™

Manual un-installation from each unit and connector is needed when using Microsoft® Windows Vista™.

In this section, describes the un-installation instruction with the ID-RP4000V [SERVICE T] for example.



- ① Start up Windows.
- ② Connect the PC and the ID-RP4000V [SERVICE T] connector through an USB cable.
- ③ Open the “Device Manager” screen.
  - See “■ COM port confirmation (p 24)” to open the “Device Manager” with Microsoft® Windows Vista™.
- ④ Click “+” of Ports (COM&LPT). Right click the “ICOM ID-RP4000V SERVICE T (COM\*)”, then select “Uninstall”.

- ⑤ Click to add the check mark, “✓,” into “Delete the driver software for this device.” then click [OK].

- ⑥ Right click the “ICOM ID-RP4000V SERVICE\*”, then select “Uninstall”.

- ⑦ Click to add the check mark, “✓,” into “Delete the driver software for this device.” then click [OK].

/// **NOTE:** Un-install the USB drivers for ID-RP4000V [SERVICE R] with the same manner.

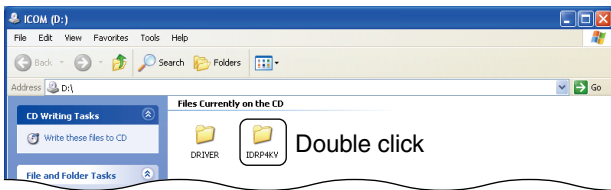
# 5

## UTILITY INSTALLATION

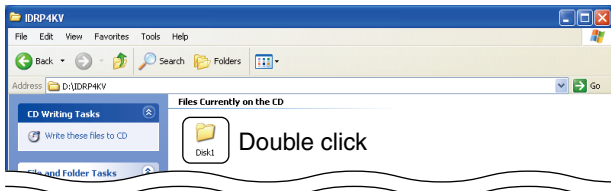
The utility is used for the setting of call sign and operating frequencies.

### Installation

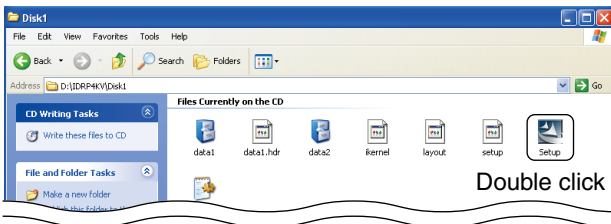
- 1 Start up Windows.
  - Quit all other applications if running.
- 2 Insert the CD, supplied with the ID-RP4000V, into the CD drive.
- 3 Displays the contents of the CD using with the “My Computer” or “Explorer.”
- 4 Double click “IDRP4KV” folder.  
Contents of the folder are displayed.



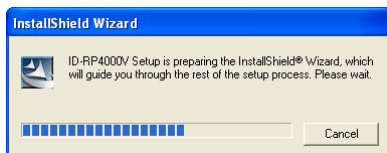
- 5 Double click “Disk1” folder.  
Contents of the folder are displayed.



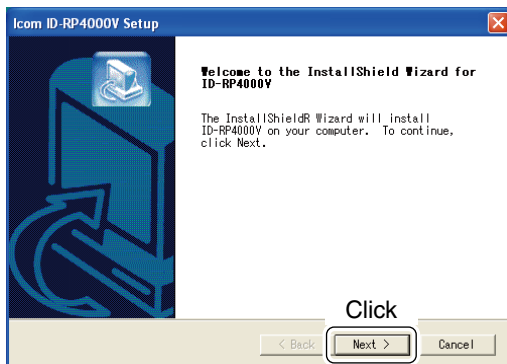
- 6 Double click “SETUP.EXE” file.

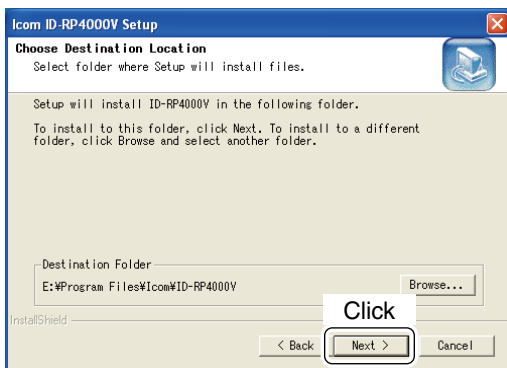


- 7 “InstallShield Wizard” screen appears.

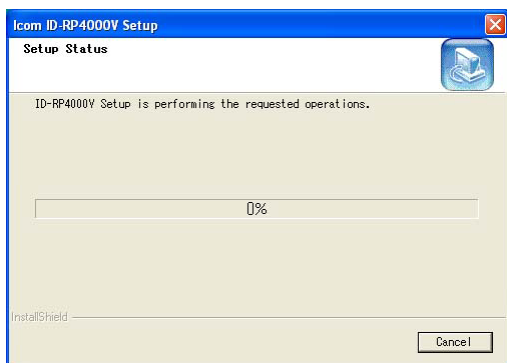


- 8 Click [Next>].

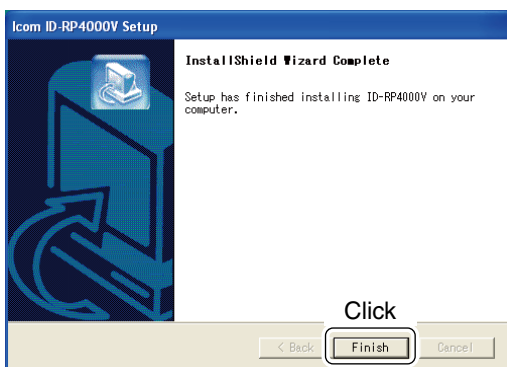




- ⑨ “Choose Destination Location” screen appears.
- When installing the utility into the displayed location, click [Next>].
  - When installing into a different location, click [Browse...], select the desired location and then click [Next>].



- ⑩ Starts the utility installation.

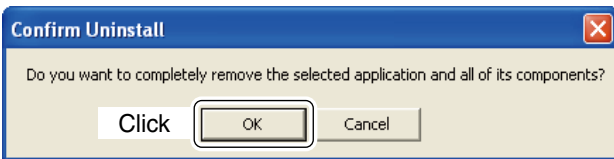
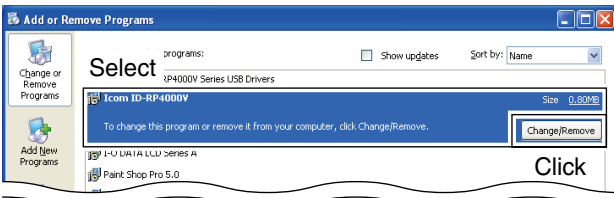
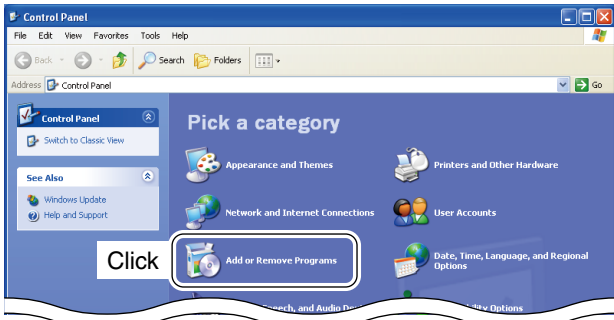


- ⑪ “InstallShield Wizard Complete” screen appears when the installation is finished.
- Click [Finish] to complete the installation.
- ⑫ Eject the CD from the CD drive, then reboot the PC.

## ■ Un-installation

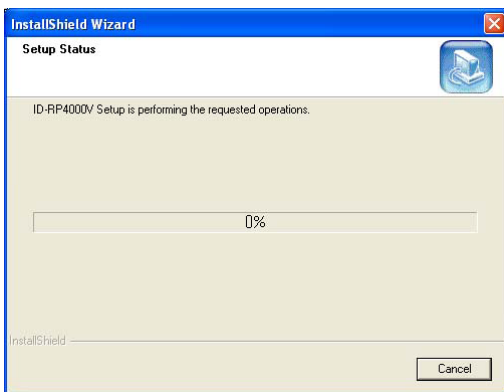
Un-install the utility software using with the standard application of the OS, “Add and Remove Programs,” as follows.

- ① Open “Control Panel.”
  - “Control Panel” is located in “Setting” in <Start> menu for Windows® 98SE/Me/2000 or Windows Vista™.
- ② Click “Add or Remove Programs.”

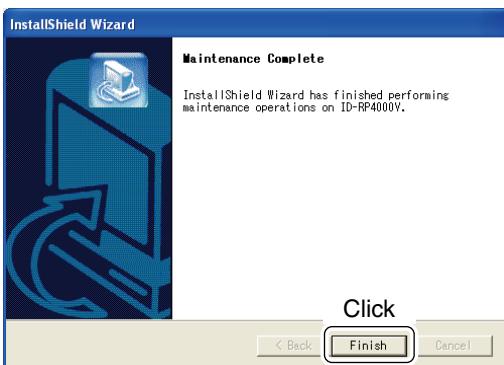


- ③ Select “Icom ID-RP4000V,” then click [Change/Remove].

- ④ “Confirm Uninstall” screen appears, click [OK].



- ⑤ The screen at left appears when the un-installation starts.



- ⑥ The screen at left appears when the un-installation is completed.
  - Click [Finish].

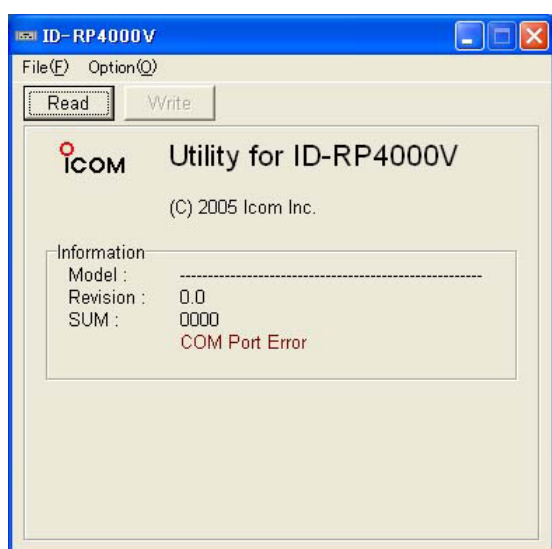


## Frequency setting for ID-RP4000V

### NOTE:

The repeater unit connection may not be recognized with the PC according to the using USB cable length.

Use the shorter USB cable as possible is recommended.

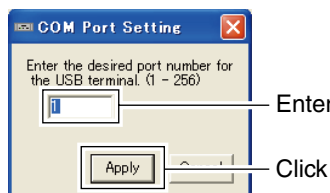


- ① Start up the PC.
- ② Connect an USB cable (A-B type; purchase separately) between PC's USB port and ID-RP4000V [SERVICE T] or [SERVICE R] connector, then turn the ID-RP4000V power ON.
  - Connect an USB cable to [SERVICE R] when setting receive frequency.
  - Connect an USB cable to [SERVICE T] when setting transmit frequency.
- ③ Start up the ID-RP4000V utility. Double click the "ID-RP4000V" icon on the desktop or select the "ID-RP4000V" in "Program" in "Start" menu.
- ④ The screen as at left appears, then the dialog below is displayed.
  - Click [OK].



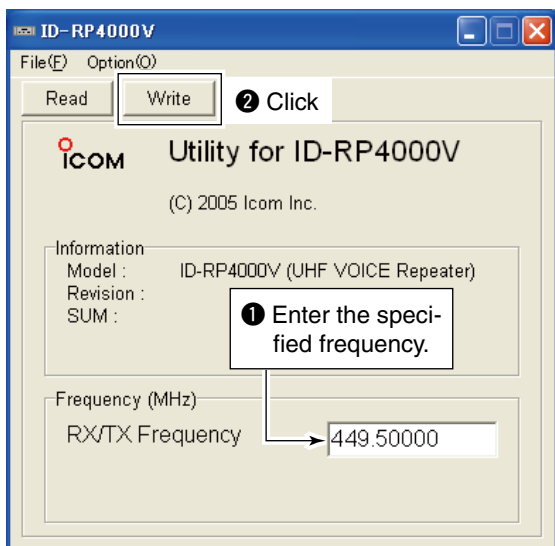
- NOTE: The screen, described in steps ④, appears instead of these screens when the correct COM port number is set.

- Click <Option (O)> menu then select <COM Port(P)...>. Enter the allocated number of the ID-RP4000V [SERVICE T/R] connector then click [Apply] in the displayed "COM Port Setting" screen.



- NOTE: See pages 22 to 24 for the COM port number confirmation details.

- ⑤ The utility reads the ID-RP4000V setting and the screen as at left appears when the correct COM port number is set.
- ⑥ Enter the specified receive and transmit frequencies into "RX/TX Frequency" column.
- ⑦ Click [Write] to program the set frequencies into the ID-RP4000V.



# 7 MAINTENANCE

## ■ Troubleshooting

If your repeater seems to be malfunctioning, please check the following points before sending it to a service center.

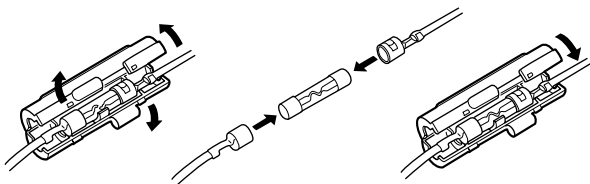
| PROBLEM   | POSSIBLE CAUSE  | SOLUTION   | REF.          |
|---|---|--|---------------|
| Does not turn ON.   | <ul style="list-style-type: none"><li>• Power connector has a poor contact.</li><li>• Blown fuse.</li></ul> | <ul style="list-style-type: none"><li>• Check the connector pins and re-connect the DC power cable.</li><li>• Check for the cause, then replace the fuse.</li></ul>                  | p. 5<br>p. 31 |
| No transmit output power, or only few output power.           | <ul style="list-style-type: none"><li>• Antenna or coaxial cable has problems.</li></ul>                    | <ul style="list-style-type: none"><li>• Check, and if necessary, replace the coaxial cable or solder the antenna connector again.</li></ul>  | pgs. 3, 5     |
| Sensitivity is low and only strong signals are operatable.    | <ul style="list-style-type: none"><li>• Antenna or coaxial cable has problems.</li></ul>                    | <ul style="list-style-type: none"><li>• Check, and if necessary, replace the coaxial cable or solder the antenna connector again.</li></ul>  | pgs. 3, 5     |
| Does not function even a signal is received.                  | <ul style="list-style-type: none"><li>• The repeater controller, ID-RP2C, setting is wrong.</li></ul>       | <ul style="list-style-type: none"><li>• Read the instruction manual of the ID-RP2 (supplied with the ID-RP2C) and correct the setting of the repeater controller, ID-RP2C.</li></ul> | —             |
| PC does not recognize the repeater                            | <ul style="list-style-type: none"><li>• Too long USB cable is used.</li></ul>                               | <ul style="list-style-type: none"><li>• Use a shorter USB cable.</li></ul>   | p. 6          |
| The settings cannot be programmed into the repeater properly. | <ul style="list-style-type: none"><li>• Too long USB cable is used.</li></ul>                               | <ul style="list-style-type: none"><li>• Use a shorter USB cable.</li></ul>   | p. 30         |

## ■ About cleaning

DO NOT use chemical agents such as benzine or alcohol when cleaning, as they can damage the repeater's surfaces.

## ■ Fuse replacement

If the fuse blows or the repeater stops functioning, find the source of the problem if possible, and replace the damaged fuse with a new, rated one as shown below.



Fuse: FGB10A

## ■ Specifications

### ◇ General

|                                |       |  |
|--------------------------------|-------|--|
| • Frequency range              | :     |  |
| U.S.A.                         | Tx/Rx | 440 to 450 MHz   |
| Europe                         | Tx/Rx | 430 to 440 MHz   |
| • Type of emission             | :     | F1D (GMSK; F7W for system operation)   |
| • Frequency stability          | :     | ±0.8 kHz (based on 25°C; +77°F)  |
| • Frequency resolutions        | :     | 5/6.25 kHz   |
| • Antenna connector            | :     | Type-N (impedance: 50 Ω)   |
| • Communication speed          | :     | 4.8 kbps   |
| • Power supply requirement     | :     | 13.8 V DC ±15% (negative ground)   |
| • Current drain                | :     | Tx (High)           Less than 7.0 A<br>Tx (Low)            Less than 3.0 A<br>Rx Stand-by        Less than 0.7 A |
| • Usable temperature range     | :     | -10°C to +50°C; +14°F to +122°F  |
| • Dimensions (proj. not incl.) | :     | 483(W)×88(H)×428(D) mm; 19(W)×3 <sup>15/32</sup> (H)×16 <sup>27/32</sup> (D) in.                                 |
| • Weight (approx.)             | :     | 7.5 kg; 16 lb 9 oz   |

### ◇ Transmitter

|                                  |   |  |
|----------------------------------|---|--|
| • Tx output power (at 13.8 V DC) | : | High                23–30 W<br>Low                 2–3 W |
| • Modulation system              | : | Quadrature (244.8 MHz)                                   |
| • Occupied bandwidth             | : | Less than 5.5 kHz  |
| • Spurious emissions             | : | Less than -60dB  |

### ◇ Receiver




|   |   |  |
|---|---|--|
| • Receive system                        | : | Double-conversion superheterodyne                          |
| • Intermediate frequencies              | : | 1st                 70.0 MHz<br>2nd                455 kHz |
| • Sensitivity (BER 1×10 <sup>-2</sup> ) | : | Less than 0.45 μV  |
| • Adjacent channel selectivity          | : | More than 65 dB (20 kHz offset)                            |
| • Intermodulation rejection ratio       | : | More than 65 dB (±20 kHz/40 kHz)                           |
| • Receive spurious                      | : | Less than -57 dBm  |
| • Spurious and image rejection ratio    | : | More than 70 dB  |

All stated specifications are subject to change without notice or obligation.

## ■ System units

|            |                                    |
|------------|------------------------------------|
| ID-RP2D*   | 1.2 GHz DATA REPEATER              |
| ID-RP2V*   | 1.2 GHz DIGITAL VOICE REPEATER     |
| ID-RP2L*   | 10 GHz MICROWAVE LINK REPEATER     |
| ID-RP2000V | VHF DIGITAL VOICE REPEATER         |
| AH-106*    | 10 GHz PARABOLIC ANTENNA (800 (d)) |
| AH-107*    | 10 GHz PARABOLIC ANTENNA (450 (d)) |
| AH-108*    | 1.2 GHz COLLINEAR ANTENNA          |

\*Not available in European countries by the present on March 2008.

|   |   |
|---|---|
|    | <h3 style="margin: 0;">DECLARATION OF CONFORMITY</h3>   |
| <p><b>We Icom Inc. Japan</b><br/>1-1-32, Kamiminami, Hirano-ku<br/>Osaka 547-0003, Japan</p> <p>Declare on our sole responsibility that this equipment complies with the essential requirements of the Radio and Telecommunications Terminal Equipment Directive, 1999/5/EC, and that any applicable Essential Test Suite measurements have been performed.</p> <p><b>Kind of equipment: UHF DIGITAL VOICE REPEATER</b></p> <p><b>Type-designation: ID-RP4000V</b></p> <hr/> <p><b>Version (where applicable):</b><br/>This compliance is based on conformity with the following harmonised standards, specifications or documents:</p> <ul style="list-style-type: none"> <li>i) <u>EN 301 489-1 V1.4.1 (2002-08)</u></li> <li>ii) <u>EN 301 489-15 V1.2.1 (2002-08)</u></li> <li>iii) <u>EN 301 783 V1.1.1 (2000-09)</u></li> <li>iv) <u>EN 60950-1 (2001): A11:2004</u></li> <li>v) _____</li> </ul> | <div style="text-align: center;">  </div> <p><u>Düsseldorf 10th Aug. 2007</u><br/>Place and date of issue</p> <hr/> <p>Icom (Europe) GmbH<br/>Himmelgeisterstraße 100<br/>D-40225 Düsseldorf</p> <p>Authorized representative name</p> <p>H. Ikegami<br/>General Manager</p> <div style="text-align: center;">  </div> <p>Signature</p> <p style="text-align: center; font-weight: bold; font-size: 1.2em;">Icom Inc.</p> |



Versions of the ID-RP4000V which display the “CE” symbol on the serial number seal, comply with the essential requirements of the European Radio and Telecommunication Terminal Directive 1999/5/EC.



This warning symbol indicates that this equipment operates in non-harmonised frequency bands and/or may be subject to licensing conditions in the country of use. Be sure to check that you have the correct version of this radio or the correct programming of this radio, to comply with national licensing requirement.

### List of Country codes (ISO 3166-1)

|    | Country        | Codes |    | Country        | Codes |
|----|----------------|-------|----|----------------|-------|
| 1  | Austria        | AT    | 18 | Liechtenstein  | LI    |
| 2  | Belgium        | BE    | 19 | Lithuania      | LT    |
| 3  | Bulgaria       | BG    | 20 | Luxembourg     | LU    |
| 4  | Croatia        | HR    | 21 | Malta          | MT    |
| 5  | Czech Republic | CZ    | 22 | Netherlands    | NL    |
| 6  | Cyprus         | CY    | 23 | Norway         | NO    |
| 7  | Denmark        | DK    | 24 | Poland         | PL    |
| 8  | Estonia        | EE    | 25 | Portugal       | PT    |
| 9  | Finland        | FI    | 26 | Romania        | RO    |
| 10 | France         | FR    | 27 | Slovakia       | SK    |
| 11 | Germany        | DE    | 28 | Slovenia       | SI    |
| 12 | Greece         | GR    | 29 | Spain          | ES    |
| 13 | Hungary        | HU    | 30 | Sweden         | SE    |
| 14 | Iceland        | IS    | 31 | Switzerland    | CH    |
| 15 | Ireland        | IE    | 32 | Turkey         | TR    |
| 16 | Italy          | IT    | 33 | United Kingdom | GB    |
| 17 | Latvia         | LV    |    |                |       |



**Count on us!**

#11 (Europe)

|                           |    |                          |    |                          |    |                          |    |                          |    |                          |    |
|---------------------------|----|--------------------------|----|--------------------------|----|--------------------------|----|--------------------------|----|--------------------------|----|
| <Intended Country of Use> |    |                          |    |                          |    |                          |    |                          |    |                          |    |
| <input type="checkbox"/>  | AT | <input type="checkbox"/> | BE | <input type="checkbox"/> | CY | <input type="checkbox"/> | CZ | <input type="checkbox"/> | DK | <input type="checkbox"/> | EE |
| <input type="checkbox"/>  | FI | <input type="checkbox"/> | FR | <input type="checkbox"/> | DE | <input type="checkbox"/> | GR | <input type="checkbox"/> | HU | <input type="checkbox"/> | IE |
| <input type="checkbox"/>  | IT | <input type="checkbox"/> | LV | <input type="checkbox"/> | LT | <input type="checkbox"/> | LU | <input type="checkbox"/> | MT | <input type="checkbox"/> | NL |
| <input type="checkbox"/>  | PL | <input type="checkbox"/> | PT | <input type="checkbox"/> | SK | <input type="checkbox"/> | SI | <input type="checkbox"/> | ES | <input type="checkbox"/> | SE |
| <input type="checkbox"/>  | GB | <input type="checkbox"/> | IS | <input type="checkbox"/> | LI | <input type="checkbox"/> | NO | <input type="checkbox"/> | CH | <input type="checkbox"/> | BG |
| <input type="checkbox"/>  | RO | <input type="checkbox"/> | TR | <input type="checkbox"/> | HR |                          |    |                          |    |                          |    |