



SETTING GUIDE

VHF REPEATER

ID-RP2010V

UHF REPEATER

ID-RP4010V

1.2GHz REPEATER

ID-RP1200VD

INTRODUCTION

1 USING THE UTILITY FOR ID-RP3

2 USING AN SD CARD

3 DIGITAL REPEATER SETTING

4 FM REPEATER SETTING

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INTRODUCTION

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

IMPORTANT

FIRST, CAREFULLY READ THE INSTRUCTION MANUAL boxed with the repeater.

SAVE THIS SETTING GUIDE— This guide contains advanced setting instructions for repeaters.

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1 USING THE UTILITY FOR ID-RP3

System requirements

The Utility for ID-RP3 is required to program the repeater or an optional UX-262 LTE unit. A PC with an OS and specifications shown below is required to use the utility.

Operating System (OS):

- Microsoft® Windows® 10 (32/64 bit)
 - Microsoft® Windows® 8.1 (32/64 bit)*
*Except for the "RT" version.
- ① This setting guide is based on using Windows 10.

USB:

- A USB 1.1 or 2.0
Use the USB cable supplied with the repeater to connect to the PC.
- USB driver
To use the USB cable, you must first install a USB driver. The latest USB driver and installation guide can be downloaded from the Icom website

https://www.icomjapan.com/support/firmware_driver/

Carefully read the guide, before installing the driver.

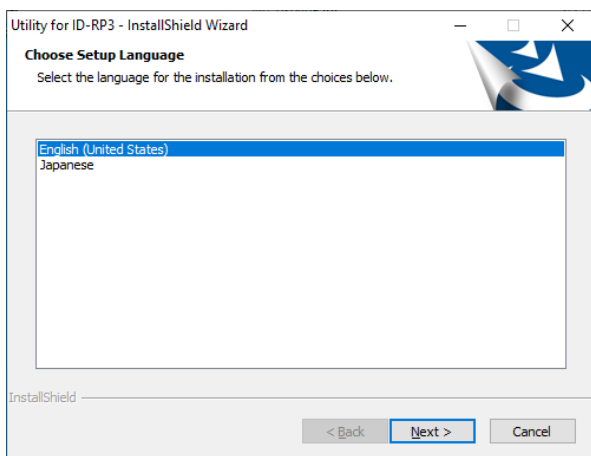
Programming information

- The utility has settings for an LTE network. An optional UX-262 LTE unit is required to use those settings. See the instructions that comes with the LTE unit for details of installing the unit into the repeater.
- To prevent data loss, you should read the repeater setting data and then save it to the PC, or copy the setting data (icf) of the SD card to the PC before programming.
- Before editing or entering new data, make a backup file onto your PC. A backup file enables easy restoring even if the setting data is accidentally deleted.
- While reading or writing (uploading) the data with the USB cable, **NEVER** turn OFF the repeater or the PC, and **NEVER** disconnect the USB cable. Otherwise, the data could be lost or deleted.
- While reading or writing the data to or from the SD card, **NEVER** remove the SD card or turn OFF the repeater. Otherwise, the data could be corrupted or the SD card could be damaged.

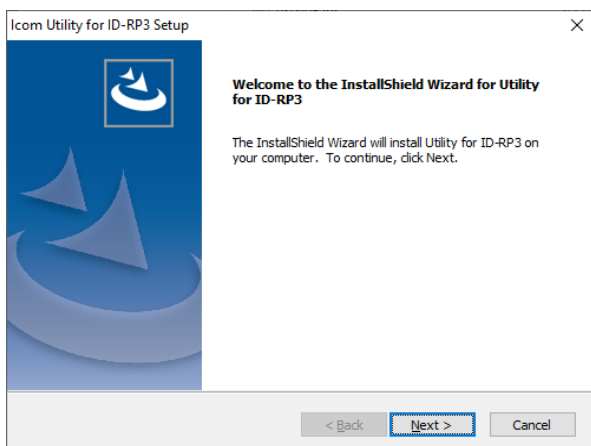
Installing the utility

When installing the utility, confirm Windows has completed its startup, and then log in as the administrator.

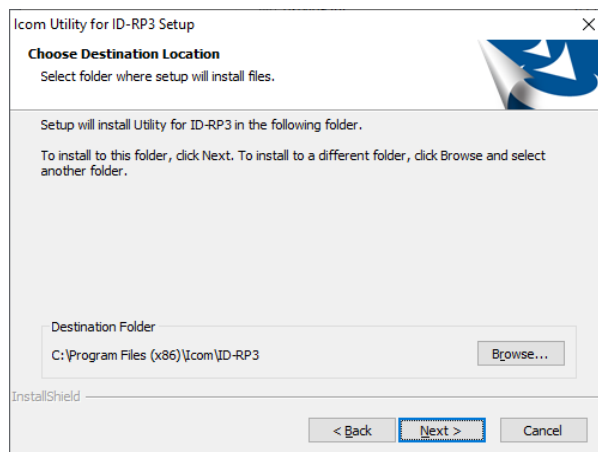
1. Confirm no other applications are running.
2. Double-click “setup.exe.”
 - ① If “User Account Control” is displayed, click <Yes> to continue.
3. “Choose Setup Language” is displayed. Select “English” (or “Japanese”) and then click <Next>>.



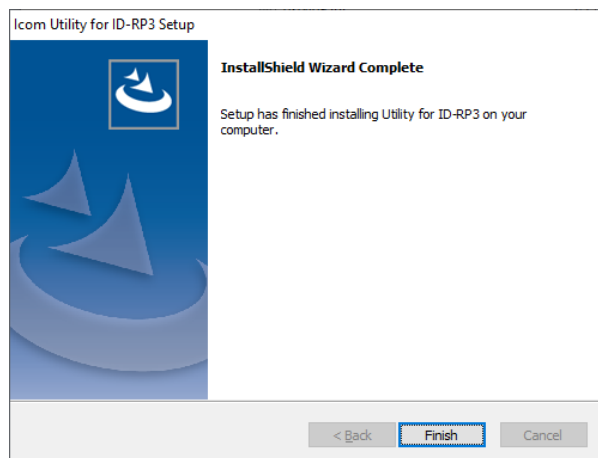
4. “Welcome to the InstallShield Wizard for Utility for ID-RP3” is displayed. Click <Next >>.



5. “Choose Destination Location” is displayed. Click <Next >>.
 - ① If desired, click <Browse...> to select another destination folder before clicking <Next >>.



6. After the installation has completed, “InstallShield Wizard Complete” is displayed. Click <Finish>.



7. An “ID-RP3” folder is created in the Windows Start menu, and a shortcut icon is created on the desktop.
 - ① You can uninstall the utility using the “Apps & features” in the “Apps” menu. To get started, click on Start > Settings > Apps > Apps & features.

TIP:

- See the Help file of the utility for assistance with the functions or settings. To open the Help file, click “Help” on the top menu of the programming software and select “Contents,” or simply push the [F1] key of the PC’s keyboard.
- The utility may be updated to add or improve functions. Ask your dealer for details of repeater’s firmware and utility compatibility if necessary. (The latest repeater firmware may not be compatible with an older version of the utility.)

Programming the repeater

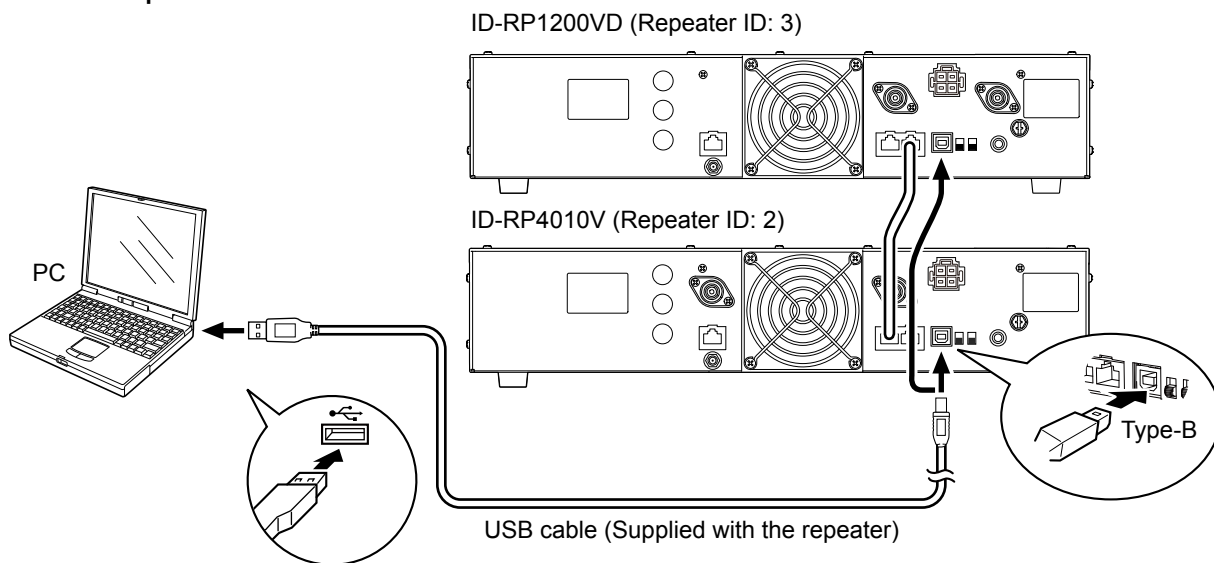
◇ Programming through a USB cable

1. Connecting the PC and repeater

Connect the PC that the utility and the USB driver have been installed in and the repeater, as shown below.

① Turn OFF the repeater when connecting.

Connection example:



NOTE:

- When using multiple repeaters, assign a different ID to each repeater, as shown above. This enables editing all repeaters settings by connecting any one repeater to your PC.
- To assign the ID, connect your PC to the [USB] port of the target repeater.
- The edited setting data of each repeater can be saved as a single setting file (icf).

TIP: Using the DD mode (For only the ID-RP1200VD)

Turn OFF the repeater once, set [DV/DD] select switch to [DD], and then restart the repeater.

The operating mode is not changeable while the repeater is ON, and not changeable by using the utility.

1 USING THE UTILITY FOR ID-RP3

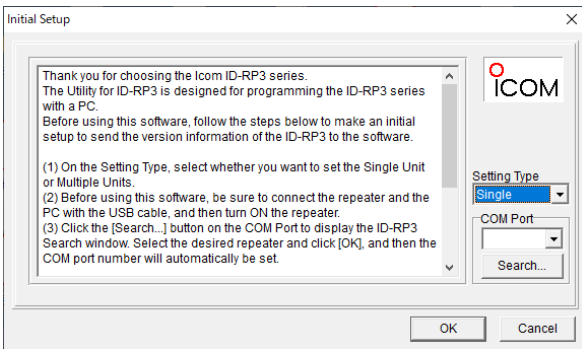
Programming the repeater

◇ Programming through a USB cable (Continued)

2. Making the Initial setup

When you start the utility, the Initial Setup window is displayed. Before using the software, follow the steps below to make the initial setup to send the repeater information.

1. Turn ON the repeater.
 - ① Turn ON all repeaters, if multiple repeaters are connected.
2. Double-click "ID-RP3" shortcut on the desktop.
 - The Initial Setup Window is displayed.
3. Select "Setting Type" according to the number of connected repeaters.
4. Set the appropriate COM port number.
 - ① Click <Search...> to display the Search window. Select the repeater and click <OK>, and then the COM port number will be automatically set in the input field.
 - ② You can also manually set the COM port number, or select it from the drop-down list, where the number(s) detected by the PC is/are displayed.
5. Click <OK> to open the programming screen.



NOTE:

- You can also open Initial Setup window from Start menu > "ID-RP3" folder > "Utility for ID-RP3 Initial Setup" icon.
- Setting type and COM port are also selectable from the Toolbar on the Programming screen.

About the Setting Type:

Select whether to use the utility for a single repeater or multiple repeaters.

- ① A confirmation dialog is displayed if the utility's Setting Type and read setting file (.icf)'s Setting Type does not match.
- ① Opening the utility without having Initial Setup may cause a mismatch between the utility's Setting Type and repeater configuration.

Single Unit

Common Setting	
Frequency	
RX Frequency	×
TX Frequency	×
TX/RX Frequency (DD)	—

Multiple Units


Common Setting		
	UHF (ID=2)	1.2G (ID=3)
Frequency		
RX Frequency	×	×
TX Frequency	×	×
TX/RX Frequency (DD)	—	

Programming the repeater

◇ Programming through a USB cable (Continued)

3. Reading the data from the repeater


Read the operating frequency and operating mode data (DV/FM/MIX) to the utility.

- Click “

4. Editing the data


Edit the setting data. See the Utility for ID-RP3 HELP that comes with the utility for details.

5. Writing the data to the repeater

- Click “


NOTE:

- Backup the read data to prevent data loss.
- If multiple repeaters are connected and recognized, all repeater data will be read.

TIP: You can also edit the setting file (icf) saved on your PC. Click “

- ① Confirm the file’s Setting type (Single unit or Multiple Units) matches with the current repeater settings.

TIP:

You can save the setting data to your PC. Click “

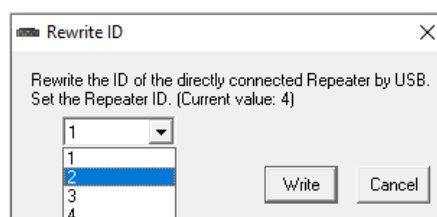
- ① If multiple repeaters are connected, the settings for all repeaters are saved as a single setting file (icf).

TIP: Assigning repeater ID

Assign different repeater IDs for each repeater when multiple repeaters are connected.

1. Connect your PC to the [USB] port of the target repeater.
2. Turn ON the repeater.
3. Open the Initial Setup window.
4. Set the COM port number to the port that the USB cable is connected to, and then click <OK>.
 - The programming screen is displayed.
5. Select <Rewrite ID> in the <Tool> menu.
 - The “Rewrite ID” window is displayed.

6. Select an ID to assign, and then click <Write>.



7. Select the Setting type on the Toolbar according to the number of the connected repeater. (<Setting Type>)

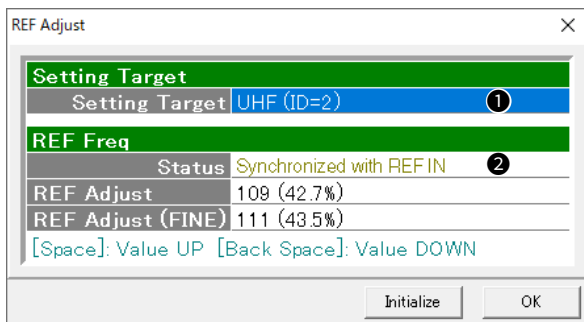
Programming the repeater

◇ Automatically adjusting the reference frequency

1. Connect the reference signal to the target repeater's [REF IN 10MHz] connector.
2. Confirm the repeater is turned ON.
 - ① If multiple repeaters are connected, confirm all of them are turned ON.
3. Open the utility.
4. Select "ON" in "Synchronize with REF IN," and then click "→" to write the settings to the repeater.



5. Select "REF Adjust" in the <Tool> menu.
 - The "REF Adjust" window is displayed.
6. Select the target repeater's ID in "Setting Target" (①).
7. Confirm "Synchronized with REF IN" is displayed in "Status" (②).
8. Click <OK> to close the window.

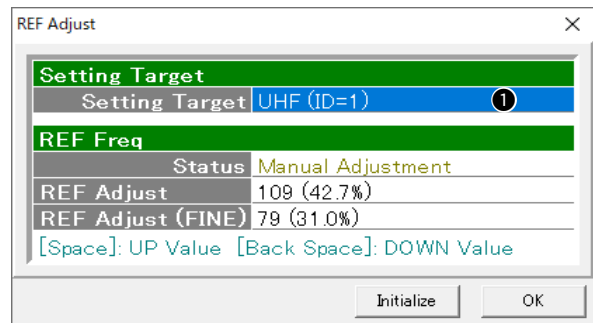


NOTE:

- It may take some time to synchronize with the reference frequency immediately after turning ON the repeater, or immediately after it starts transmission.
- If "Synchronization Error with REF IN" is displayed in "Status," check the reference frequency input level, impedance, and so on.

◇ Manually adjusting the reference frequency

1. Confirm the repeater is turned ON.
 - ① If multiple repeaters are connected, confirm all of them are turned ON.
2. Open the utility.
3. Select "REF Adjust" in the <Tool> menu.
 - The "REF Adjust" window is displayed.
4. Select the target repeater's ID in "Setting Target" (①).
 - "Manual Adjustment" is displayed in "Status."
5. Enter the value for "REF Adjust" and "REF Adjust (FINE)."
 - ① Click <Initialize> to reset to default.
 - ① If multiple repeaters are connected, repeat Step 4 and 5 for all repeaters.
6. Click <OK> to close the window.



NOTE:

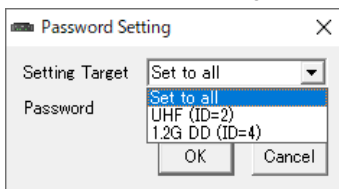
- The value entered for "REF Adjust" and "REF Adjust (FINE)" will be immediately applied to the repeater without clicking "Write -> Repeater" or "→".
- Manually adjusting the internal frequency may cause a frequency deviation since the suitable reference frequency differs, depending on the repeater.

Programming the repeater

◇ Setting a password for receiving an Emergency stop signal

Enter the password to accept receiving an Emergency Stop signal. The repeater stops operating or resumes operation when it received a signal with a password that matches the password set in this window.

1. Confirm the repeater is turned ON.
 - ① If multiple repeaters are connected, confirm all of them are turned ON.
2. Open the utility.
3. Select "Password Setting" in the <Tool> menu.
 - The "Password Setting" window is displayed.



4. Select the target repeater's ID in "Setting Target."
 - ① If multiple repeaters are connected, "Set to all" is selected in default.
 - ① When setting a different password for each repeaters, select the target repeater ID and repeat Step 4 and 5.
5. Enter the password.
 - ① You can enter the password with up to 8 characters.
6. Click <OK> to close the window.

NOTE:

- This window cannot be closed by clicking <OK> without entering anything.
- Rewrite the password displayed on "Password" text box to change the password.
- The password will be "PASSWORD" when you reset the repeater to default.
- The password will not be saved to a setting file (icf).

Programming the repeater

◇ Programming using an SD card

NOTE: Format the SD card on your PC before using.

1. Saving repeater setting to an SD card

- Enter the Maintenance mode, and then save the repeater setting data to an SD card. See page 10 for details.


2. Copying repeater settings to your PC

1. Remove the SD card, and then insert it into your PC.
2. Open the “Setting” folder on the SD card.
3. Copy the setting file (icf) to your PC.


3. Opening the utility

1. Double-click “ID-RP3” shortcut on the desktop.
 - The Initial Setup Window is displayed.
2. Click <Cancel> to display the programming screen.

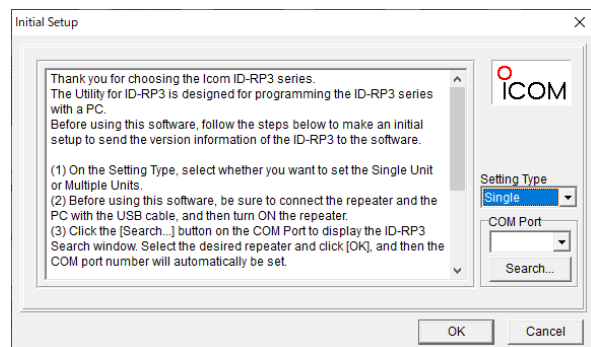
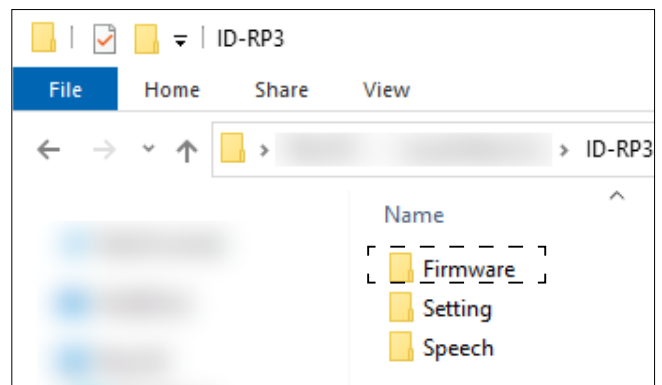
4. Editing the data

1. Click “” or select <Open...> in the <File> menu to open the data.
2. Edit the setting data. See the Utility for ID-RP3 HELP that comes with the utility for details.

5. Writing the data to the repeater

1. Click “” or select “Save As...” in the <File> menu to save the data.
2. Copy the saved setting file (icf) to the “Setting” folder on the SD card.
3. Remove the SD card, and then insert it into the repeater.
4. Enter the Maintenance mode, and then write the setting data to the repeater. See page 10 for details.

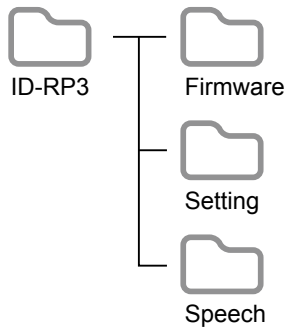
NOTE: If multiple repeaters are connected, only the repeater settings with the SD card inserted will be saved. To save all repeater’s settings into a single setting file (icf), read them to the utility using a USB cable, and then save them to an SD card.



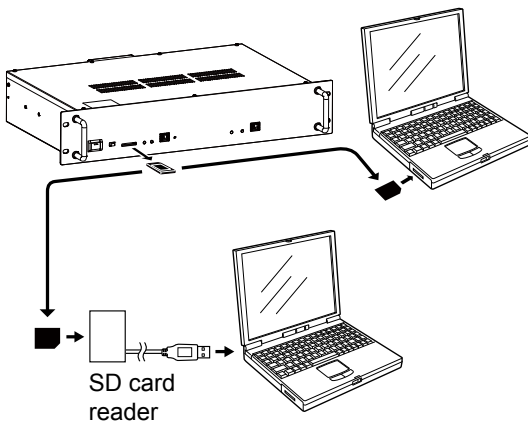
2 USING AN SD CARD

Preparation

1. Insert the formatted SD card to the repeater.
 - Folders will be created as shown below.



2. Remove the SD card, and then insert it into your PC.



3. Save the data to write to the repeater in the specified folder, as shown below.

Firmware folder:

Save the “dat” format firmware data when updating the repeater’s firmware.

- ① Only one firmware data file should be saved in the folder.

Setting folder:

Save the repeater’s setting data in the “icf” format.

- ① The filename should be “Setting.icf.”
- ① The repeater’s setting data will be saved as “SetYYYYMMDD_XX.icf.”

Speech folder:

Save the voice data used for reading out the callsign in the “wav” format.

- ① The filename should be “Speech.wav.”

NOTE:

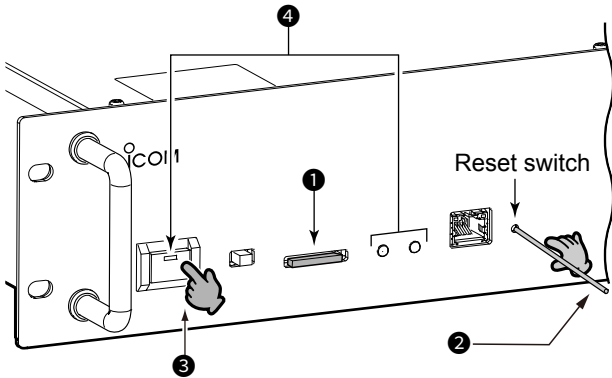
- The voice data must meet the following conditions:

- File format: wav
- Length: 10 seconds
- Sampling rate: 16 kHz
- Bit: 16 bit
- Channel: 1 ch
- Modulation: PCM

- The voice data saved in the repeater will not be deleted, even if the repeater is reset to default. To change the voice data, simply overwrite the old voice data on the repeater.

Using an SD card

1. Insert an SD card (①).
2. While holding down the Reset switch (②)*, turn ON the repeater(③).
*Hold down using the tip of the pen or pin.
3. Remove the pen or pin from the Reset switch.
 - The repeater enters to the Maintenance mode.
 - Indicators blink (④).



4. Operate as shown below.

Updating the firmware:

- Push [POWER].
 - [RX] (●) and [TX] (●) rapidly blink.

Reading the setting data:

- 1) Push the Reset switch.
 - [RX] (●) blinks once, and then [TX] (●) blinks twice.
 - The indicator on [POWER] (●) blinks.
- 2) Push [POWER].
 - [RX] (●) and [TX] (●) rapidly blink.

Reading the voice data for ID announce:

- 1) Push the Reset switch twice.
 - [RX] (●) blinks once, and then [TX] (●) blinks 3 times.
 - The indicator on [POWER] (●) blinks.
- 2) Push [POWER].
 - [RX] (●) and [TX] (●) rapidly blink.

Saving the settings to an SD card:

- 1) Push the Reset switch 3 times.
 - [RX] (●) blinks once, and then [TX] (●) blinks 4 times.
 - The indicator on [POWER] (●) blinks.
 - ① Push the Reset switch again to return to Step 1.
- 2) Push [POWER].
 - [RX] (●) and [TX] (●) rapidly blink.

5. [RX] (●) blinks twice, and then the [POWER] (●) blinks once, if the operation successfully finished.
 - ① [TX] (●) blinks if the operation fails.
 - ① If the operation fails, check the saved file name and data contents, and then retry from Step 2.

◇ Using the Maintenance mode

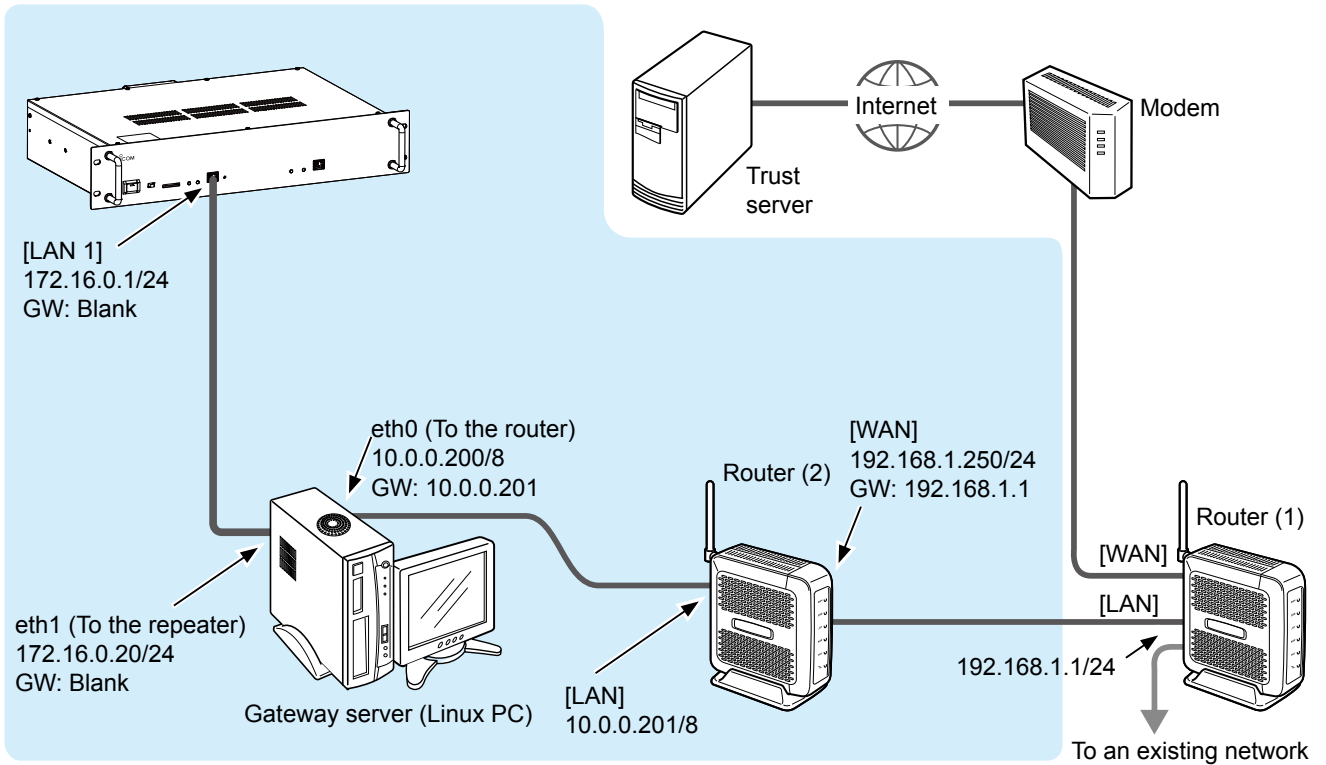
Use the Maintenance mode as shown below.

Operation	Status (● : TX ● : RX)
Push [POWER] (●) while holding down the Reset switch	Enter the Maintenance Mode. (Firmware Update mode is selected) (●.....●.....)
└ Push the Reset switch	Selecting the Setting Data Reading mode. (●.....●.....)
└ Push the Reset switch	Selecting the Voice Data Reading mode. (●.....●.....)
└ Push the Reset switch	Selecting the Setting Data Saving mode. (●.....●.....)
└ Push the Reset switch	Returns to the Firmware Update mode. (●.....●.....)
└ Push [POWER] (●)	Starts operating in the mode selected in Step 2. (●.....●.....)

3 DIGITAL REPEATER SETTING

Using a Gateway server

① IP addresses shown in the figure are examples. Set appropriate IP addresses according to your environment.



Utility for ID-RP3 settings (Common)

The settings shown below are the minimum required to use the Digital Repeater function. See the Utility for ID-RP3 HELP for more details for other setting items.

◇ RX Frequency/TX Frequency

Enter the repeater's receive/transmission frequency.

- ① "X" is displayed when frequencies are set to default.
- ① Confirm the entered frequency follows your local regulations.

DV mode:

Common Setting	
Frequency	
RX Frequency	x
TX Frequency	x
TX/RX Frequency (DD)	—

DD mode (For only the ID-RP1200VD):

Confirm the [DV/DD] switch on the repeater's rear panel is set to "DD."

Common Setting	
Frequency	
RX Frequency	—
TX Frequency	—
TX/RX Frequency (DD)	x

◇ Mode

Select the repeater's operating mode.

- ① Not selectable when configuring the DD mode ID-RP1200VD.

Common Setting	
Mode	
Mode	DV

◇ Call Sign

Enter the repeater call sign used for operation.

- ① An Emergency Stop command provided through LAN is usable by setting the call sign.

Common Setting	
Repeater Call Sign	
Call Sign	

◇ Squelch Level

Enter the squelch level at which the squelch just opens and the repeater starts operating.

Common Setting	
Squelch	
Squelch Level	77 (30%)

◇ Selecting the output power

Select the Output power using the [H/L] switch on the repeater's front panel.

Utility for ID-RP3 settings (Gateway settings)

Settings shown below are required if operating the repeater as a Gateway.

◇ Using a Gateway server

1. Select "Use Gateway Server" in "Gateway" (①)
 ⓘ The option "Use Simple gateway" is usable only in Japan.
2. Enter the IP address of the port toward the repeater (②).
 ⓘ Enter the IP address according to your environment.
3. Enter the UDP port number (③).
 ⓘ Confirm the UDP port number is not a duplicate if using the Monitor function on the same IP address.

Digital Repeater	
Gateway	
Gateway	Use Gateway Server ①
Gateway Server	
IP Address	172. 16. 0. 20 ②
UDP Port	20000 ③
Monitor	
Monitor	Not Used
IP Address	172. 16. 0. 20
UDP Port	21000

TIP: Using the Gateway function with multiple repeaters

Only one of the multiply-connected repeaters can be set as a Gateway.

ⓘ "X" is displayed if multiple repeaters are set as a Gateway.

If the ID-RP1200VD in DD mode is included, set it as a Gateway.

ⓘ "X" is displayed if other repeater is set as a Gateway

UHF (ID=2) 1.2G (ID=3)	
Gateway	Not Used , Use Gateway Server

Utility for ID-RP3 settings (Network settings)

◇ Using a Gateway server

Using the DHCP client function:

Automatically gets the repeater IP address and Subnet mask from the connected router.

- Select "ON" in "DHCP."

Network	
LAN 1	
DHCP	ON
IP Address	172.16.0.1
Subnet Mask	255.255.255.0 (24bit)
Default Gateway	. . .
Primary DNS Server	. . .
Secondary DNS Server	. . .

◇ Time Settings

Turn ON or OFF the Network Time Protocol (NTP) function.

If the NTP function is turned ON, the repeater gets the exact time through a network.

- ① The setting required for giving a file-generating date when saving a setting file (icf).
- ① Use default NTP server address if there are no problem.

Network	
Time Set	
NTP Function	ON
NTP Server Address	time.nist.gov
UTC Offset	0:00

Manually entering the repeater IP address and Subnet mask:

1. Select "OFF" in "DHCP" (①).
2. Enter the fixed IP address and Subnet Mask (② ③).
 - ① If connecting the router that the DHCP Server function is enabled, set the IP address that is outside the range of the automatically assigned.
 - ① If connect to other network through the repeater, enter the same IP address as the target network.

Network	
LAN 1	
DHCP	OFF ①
IP Address	172.16.0.1 ②
Subnet Mask	255.255.255.0 (24bit) ③
Default Gateway	. . .
Primary DNS Server	. . .
Secondary DNS Server	. . .

4 FM REPEATER SETTING

Utility for ID-RP3 settings (Common)

The settings shown below are the minimum required to use the Analog Repeater function. See the Utility for ID-RP3 HELP for more details for other setting items.

◇ RX Frequency/TX Frequency

Enter the repeater's receive/transmission frequency.

- ① [TX] and [RX] indicators on the repeater's front panel blink in same interval if no frequencies are entered.
- ① "X" is displayed when frequencies are set to default.
- ① Confirm the entered frequency follows your local regulations.

Common Setting	
Frequency	
RX Frequency	X
TX Frequency	X
TX/RX Frequency (DD)	—

◇ Mode

Select the repeater's operating mode.

Common Setting	
Mode	
Mode	FM

◇ Call Sign

Enter the given repeater call sign.

- ① An Emergency Stop command provided through LAN also usable by setting the call sign.

Common Setting	
Repeater Call Sign	
Call Sign	

◇ Squelch Level

Enter the squelch level at which the squelch just opens and the repeater starts operating.

Common Setting	
Squelch	
Squelch Level	77 (30%)

◇ Selecting the output power

Select the Output power using the [H/L] switch on the repeater's front panel.

Utility for ID-RP3 settings (Analog Repeater)

◇ Band Width and Filter

Select the band used in FM mode operation.

If you select "Narrow," select the IF filter as well.

Analog Repeater	
TX/RX	
Band Width	Wide
Filter (Narrow)	10k

◇ Time-Out Timer

The Time-Out Timer function prevents an accidental prolonged transmission.

- ① Write the voice data to the repeater if you select "Voice" in "TOT ID Select" (p. 9).

Analog Repeater	
Time-Out Timer	
Time-Out Timer	ON
TOT Time	180sec
TOT ID Output	OFF
TOT ID Select	CW
TOT Penalty	ON
TOT Penalty Time	5sec

◇ Hang ON Timer

If the Hang ON Timer function is turned ON, the repeater continues transmitting downlink signals for a certain period of time, even if it is stopped receiving the uplink signal from a transceiver.

- ① If somehow the signal that reaches the repeater is interrupted, the signal transmitted from the repeater are also interrupted, which may cause noise on the receiving side. By adjusting the "Hang On Time" value, you can reduce the receiving side's noise.

Analog Repeater	
Hang ON Timer	
Hang ON Timer	ON
Hang ON Time	1.0sec

Utility for ID-RP3 settings (ID Output)

◇ ID Output settings

Set conditions for outputting an ID.

① Write a voice data to the repeater if you select "Voice" in "ID Select" (p. 9).

Analog Repeater	
ID Output (Log-IN)	
ID Output	ON
ID Select	CW
Log-In Delay Time	0.30sec
ID Output (Log-OFF)	
ID Output	OFF
ID Select	CW
Log-OFF Delay Time	0.05sec
ID Output (While Repeater is Active)	
ID Output	ON
ID Select	CW
Interval Time	600sec
ID Output (While Repeater is Stand-by)	
ID Output	ON
ID Select	CW
Interval Time	600sec

◇ ID Output settings (Common)

Set mixing volume levels for in case of outputting an ID while the repeater operates.

Analog Repeater	
ID Output (Common)	
ID TX Limit Interval Time	0sec
CW ID Mixing Volume	26 (10%)
Voice ID Mixing Volume	128 (50%)
Voice Audio Mixing Volume	255 (100%)

◇ ID Output settings (CW)

Set key speed, CW pitch, and code for outputting an ID by CW.

Analog Repeater	
ID Output (CW)	
Key Speed	25 (10WPM)
CW Pitch	600Hz
Code	

Utility for ID-RP3 settings (Signaling)

◇ Signaling (TX) settings

Tone settings for downlink signal.

Analog Repeater	
Signaling (TX)	
Tone	OFF
CTCSS Freq	88.5
DTCS	023
DTCS Polarity	Normal

◇ Signaling (RX) settings

Tone settings for uplink signal.

Analog Repeater	
Signaling (RX)	
Tone	OFF
CTCSS Freq	88.5
DTCS	023
DTCS Polarity	Normal

Utility for ID-RP3 settings (Network settings)

◇ [LAN 1] port settings

Using the DHCP client function:

Select "ON" in "DHCP" to get an IP address from existing network.

Network	
LAN 1	
DHCP	ON
IP Address	10. 0. 0.201
Subnet Mask	255. 0. 0. 0 (8bit)
Default Gateway	10. 0. 0.200
Primary DNS Server	10. 0. 0.200
Secondary DNS Server	.

Manually entering an IP address:

Select "OFF" in "DHCP," and then enter a fixed IP address and Subnet mask.

Network	
LAN 1	
DHCP	OFF
IP Address	192.168. 0.200
Subnet Mask	255.255.255. 0 (24bit)
Default Gateway	.
Primary DNS Server	.
Secondary DNS Server	.

◇ Time settings

Turn ON or OFF the Network Time Protocol (NTP) function.

If the NTP function is turned ON, the repeater gets the exact time through a network.

- ① The setting required for giving a file-generating date when saving a setting file (icf).
- ② Use default NTP server address if there are no problem.

Network	
Time Set	
NTP Function	ON
NTP Server Address	time.nist.gov
UTC Offset	0:00

5 RESETTING

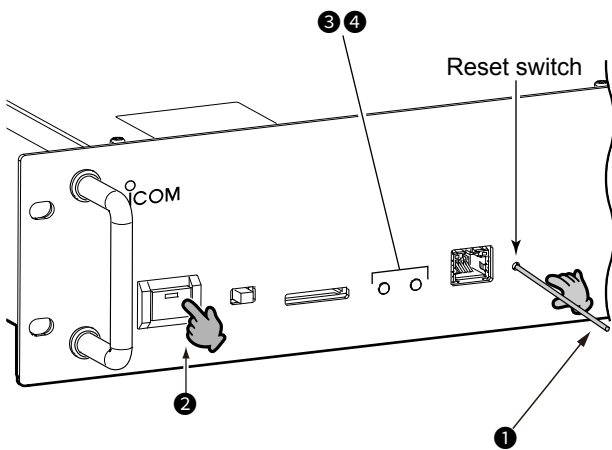
Resetting the repeater

Reset the repeater if somehow the repeater does not properly operate.

1. Turn OFF the repeater.
2. Remove the DC power cable.
3. Wait for few seconds, and then attach the DC power cable.
4. Turn ON the repeater.

If the trouble is not solved, reset the repeater as shown below.

NOTE: If possible, backup the repeater settings before resetting.



1. While holding down the Reset switch (1)*, turn ON the repeater (2).
 - ① Keep holding down the Reset switch for 10 seconds, until the indicators blink (3).
 - *Hold down using the tip of the pen or pin.
2. Remove the pen or pin from the Reset switch.
3. Push the Reset switch again.
 - The Indicators slowly blink (4).

6 ERROR INDICATION

The Receive indicator [RX] (☀) and Transmit indicator [TX] (☀) on the repeater indicates an error, as shown below.

① If multiple errors occur, the indicators will light up in the order shown below. When one error is resolved, the light that indicated it disappears.

No.	TX		RX		Error	Ref.
1	☀	Repeats blinking twice (1 second cycle) and turning off for 3 seconds.	-	-	<ul style="list-style-type: none"> • Firmware version inconsistency (CPU, DSP, FPGA) • Startup failure 	-
					Unable to detect a Gateway server connection.	pp.13, 14
2	-	-	☀	Repeats blinking twice (1 second cycle) and turning off for 3 seconds.	Failed to synchronize reference frequency.	p. 6

