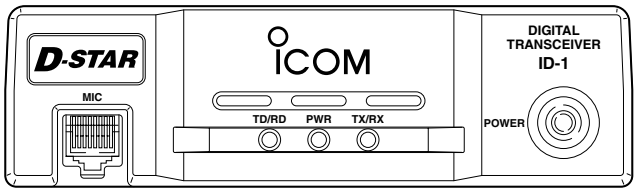
ICOM®

INSTRUCTION MANUAL

DIGITAL TRANSCEIVER

ID–1



Icom Inc.

FOREWORD

Thank you for purchasing this Icom product. The ID-1 DIGITAL TRANSCEIVER is designed and built with Icom's superior technology and craftsmanship. With proper care, this product should provide you with years of trouble-free operation.

We want to take a couple of moments of your time to thank you for making your ID-1 your radio of choice, and hope you agree with Icom's philosophy of "technology first." Many hours of research and development went into the design of your ID-1.

◇ *FEATURES*

- ❍ *Current FM, Digital Voice and Data modes available*
- ❍ *Standard PC control application via USB terminal connection*
- ❍ *Remote controller for current mobile transceiver style operation (optional for some versions)*
- ❍ *Standard 10BASE-T connector for data transmission/reception*

IMPORTANT

READ ALL INSTRUCTIONS carefully and completely before using the transceiver.

SAVE THIS INSTRUCTION MANUAL— This instruction manual contains important operating instructions for the ID-1.

EXPLICIT DEFINITIONS

WORD	DEFINITION
⚠ **WARNING!**	Personal injury, fire hazard or electric shock may occur.
CAUTION	Equipment damage may occur.
NOTE	Recommended for optimum use. No risk of personal injury, fire or electric shock.

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PRECAUTION

⚠ **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! NEVER** connect the transceiver to an AC outlet. This may pose a fire hazard or result in an electric shock.

⚠ **WARNING! NEVER** operate the transceiver while driving a vehicle. Safe driving requires your full attention—anything less may result in an accident.

⚠ **WARNING! NEVER** transmit without an operational antenna for 1.2 GHz operation. Transmission into a shorted or non resonant antenna may damage the transceiver.

⚠ **WARNING for data mode operation!** The saved file(s) in the shared folder may be modified or deleted, or unknown file(s) may be copied into the shared folder from the connected station when the transmission inhibit is released.

Icom Inc. assume no responsibility whatsoever for any damages or lost profits resulting from opportunities for signal communications being lost because of the failure, malfunction, poor condition, damage, or data loss of this unit or because of such external causes as power failure. Icom also dismisses all responsibility for demands made by a third party.

NEVER cut the DC power cable between the DC plug and fuse holder. If an incorrect connection is made after cutting, the transceiver may be damaged.

NEVER connect the transceiver to a power source of more than 16 V DC. This will damage the transceiver.

NEVER connect the transceiver to a power source using reverse polarity. This will damage the transceiver.

NEVER expose the transceiver to rain, snow or any liquids. The transceiver may be damaged.

NEVER operate or touch the transceiver with wet hands. This may result in an electric shock or damage to the transceiver.

NEVER place the transceiver where normal operation of the vehicle may be hindered or where it could cause bodily injury.

NEVER let objects impede the operation of the cooling fan on the rear panel.

PRECAUTION

DO NOT push the PTT when not actually desiring to transmit.

DO NOT allow children to play with any radio equipment containing a transmitter.

During mobile operation, **DO NOT** operate the transceiver without running the vehicle's engine. When the transceiver's power is ON and your vehicle's engine is OFF, the vehicle's battery will soon become exhausted.

BE CAREFUL! The transceiver will become hot when operating it continuously for long periods.

AVOID using or placing the transceiver in direct sunlight or in areas with temperatures below –10°C (+14˚F) or above +60°C (+140˚F).

AVOID the use of chemical agents such as benzine or alcohol when cleaning, as they can damage the transceiver's surfaces.

USE Icom microphones only (supplied or optional). Other manufacturer's microphones have different pin assignments and may damage the transceiver if attached.

DO NOT use the supplied CD for any other devices.
The CD is for the ID-1 only.

If a connection cable is disconnected or has a loose connection during operation, an error may occur. Connect the connectors correctly, and **DO NOT** touch the connectors during operation.

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

This device may cause signal interference when used in a domestic setting. When interference occurs, move this unit as far as possible away from the affected device.

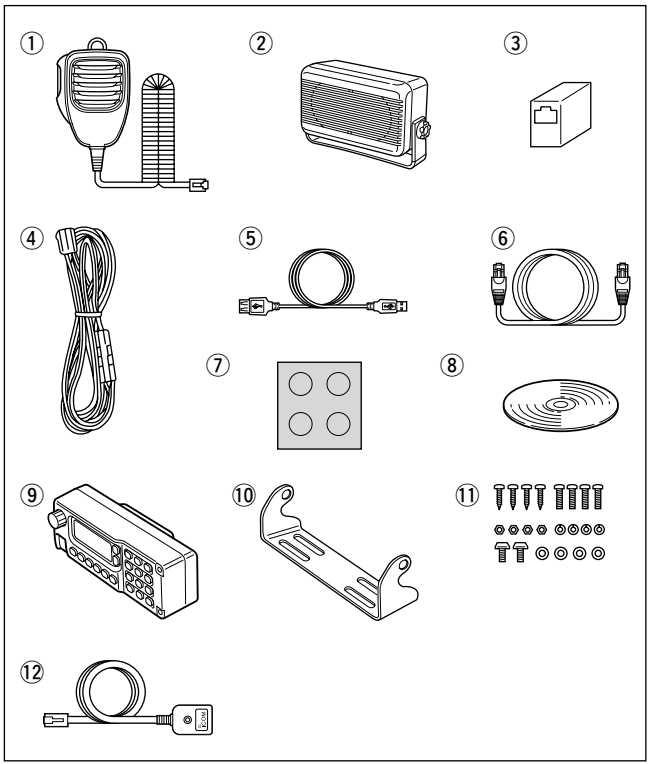
All copyrights associated with this manual and all intellectual property rights associated with the hardware and software of the ID-1 are held by Icom Inc.

Unauthorized reproduction or transmission of this manual, or any part hereof, is prohibited.

The content of this manual, the hardware and software associated with the ID-1, and the appearance of the ID-1 are all subject to change without notice.

For U.S.A. only
CAUTION: Changes or modifications to this device, not expressly approved by Icom Inc., could void your authority to operate this device under FCC regulations.

SUPPLIED ACCESSORIES



①Microphone (HM-118N) 1
②External speaker (SP-22) 1
③Ethernet cable coupler 1
④DC power cable (3 m; 9.8 ft) 1
⑤USB extension cable (1.5 m; 4.9 ft) 1
⑥Ethernet cable (3 m; 9.8 ft) 1
⑦Self-adhesive rubber feet 1
⑧Application CD 1
⑨Remote controller (RC-24)*.....1
⑩Mounting bracket for remote controller* 1
⑪Mounting screws, nuts and washers* .....1 set
⑫Mic extension cable (2.5 m; 8.2 ft)* 1

*Optional for some versions.

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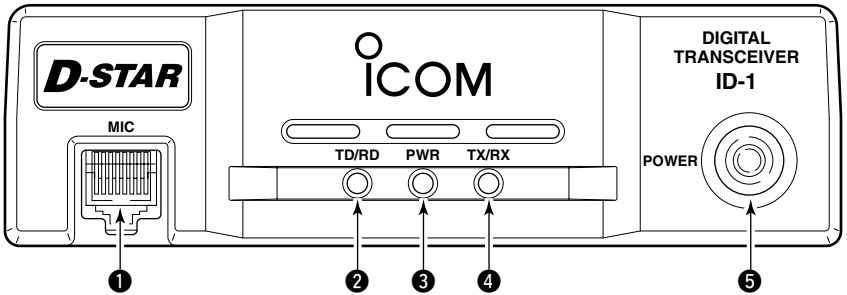
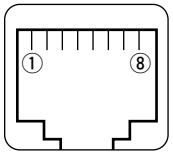
1 PANEL DESCRIPTION

■ Front panel



❶MICROPHONE CONNECTOR [MIC]
Connects the supplied microphone or the remote controller, RC-24 (optional for some versions).



Front panel view

① +8 V DC output (Max. 100 mA)
② Channel up/down
③ Data out
④ PTT
⑤ GND (microphone ground)
⑥ MIC (microphone input)
⑦ GND
⑧ Data IN

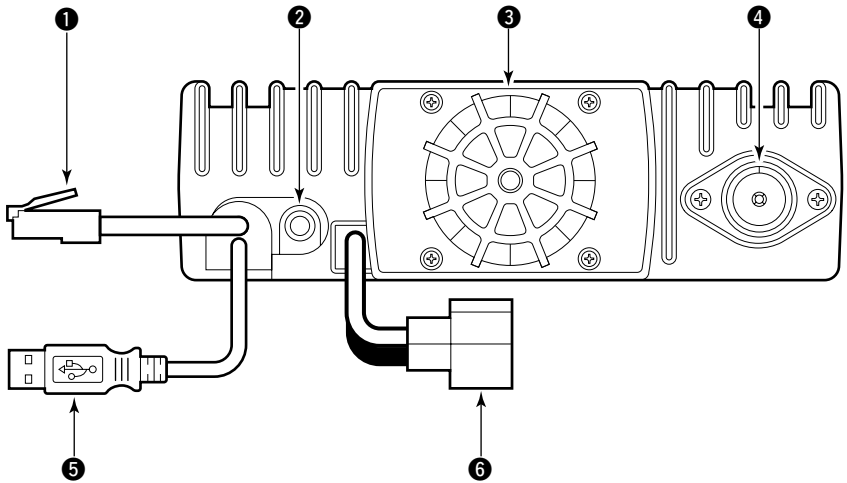
❷DATA TRANSMIT/RECEIVE INDICATOR
Lights green while receiving; lights red while transmitting data in data mode.

❸POWER INDICATOR
Lights while the transceiver power is turned ON.

❹TRANSMIT/RECEIVE INDICATOR
Lights green while receiving; lights red while transmitting in FM/digital voice mode.

❺POWER SWITCH [POWER]
Turns power ON and OFF when pushed for 1 sec.

■ Rear panel



❶ETHERNET RECEPTACLE (p. 17)
Connects to a PC directly, or via an extension cable.

❷EXTERNAL SPEAKER JACK [SP] (p. 16)
Connects the supplied (or optional) external speaker for voice reception.

❸COOLING FAN
The fan rotates when the internal temperature of the transceiver exceeds the preset value until the temperature drops. Also runs while receiving depending on the setting in set mode.

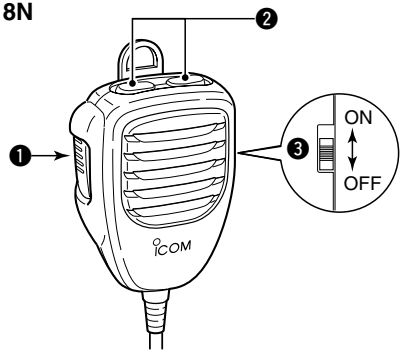
❹ANTENNA CONNECTOR (p. 13)
Connects a 50 Ω antenna with a type-N connector and a 50 Ω coaxial cable.

❺USB RECEPTACLE (p. 17)
Connects to a PC directly or via an extension cable.

❻POWER RECEPTACLE (p. 15)
Accepts 13.8 V DC ±15% with the supplied DC power cable.

■ Microphones (HM-118N)

• HM-118N



❶PTT SWITCH
Push and hold to transmit; release to receive.

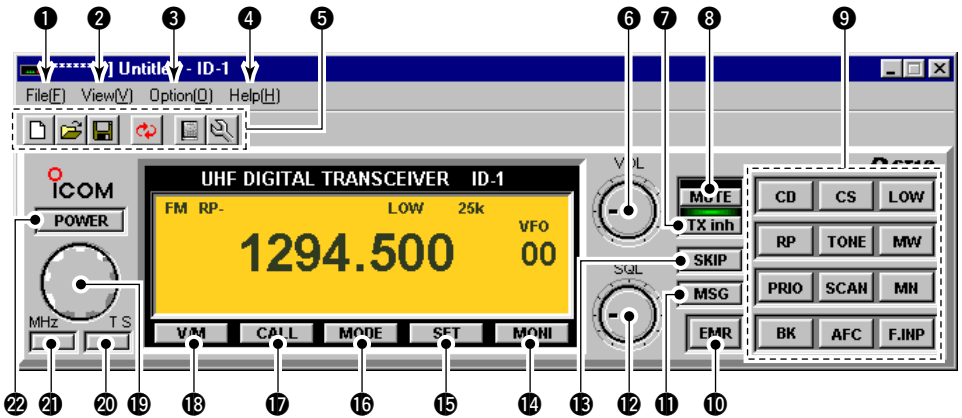
❷UP/DOWN SWITCHES [UP]/[DN]
Push either switch to change operating frequency, memory channel, etc.

❸UP/DN LOCK SWITCH
Slide to toggle [UP]/[DN] switches function ON and OFF.

■ Application screens (on PC screen)

◇ Main screen

*The application screen can be seen after the application installation. See page 30 for details.



❶FILE MENU

Click to display the file menu to perform the following operation.

- Transceiver initialization
- Opening a file
- Saving (over-write or with different file name) the set contents
- Reads the transceivers memory data (See **NOTE** on p. 6)
- Printing out the memory contents
- Quitting the application

❷VIEW MENU

Click to display the view menu to display the following screens or selections.

- Memory channel list screen
- Set mode screen
- Font size setting
- Tool bar indication ON/OFF
- My call sign screen

❸OPTION MENU

Click the option menu to display and set the following items.

- COM port setting screen
- "Wake up power ON" function

❹HELP MENU

Click the help menu to display the following screen.

- Help file
- Application version information

❺TOOL BAR

The following functions can be performed by clicking one of the desired short cut button.

- Transceiver initialization
- Opening a file
- Saving the file
- Reads the transceivers memory data (See **NOTE** on p. 6)
- Displays memory channel list screen
- Displays set mode screen

❻AUDIO VOLUME CONTROL [VOL]

Left clicking to decrease; right clicking to increase the audio volume level.

❼TRANSMIT INHIBIT BUTTON [TX inh]

Inhibits transmission during digital mode operation.

❽AUDIO MUTE BUTTON [MUTE]

Mutes the audio output.

❾FUNCTION BUTTONS

[CD] : Click to display and hide the Received call record screen.

[CS] : Click to display and hide the Select Call Sign screen.

[LOW] : Click to select the transmit output power from high and low.

[RP] : Click to select repeater shifting mode from RP–, RP+, RPS and simplex (no indication).

[TONE] : *During FM mode operation*
Click to select tone condition from repeater tone ON, tone squelch ON, pocket beep function ON and no tone operation.

[DSQL] : *During Digital voice mode operation*
Click to select squelch condition from digital code squelch ON, digital call sign squelch ON, pocket beep function ON and no digital squelch operation.

[MW] : Click to display and hide the Memory programming screen.

[PRIO] : Click to start and cancel priority watch function.

[SCAN] : Click to display the scan type selection screen. After the scan type selection, starts the scan.

[MN] : Click to switch the memory name indication ON and OFF during memory mode operation.

[BK] : Click to start break-in communication.

[AFC] : Click to turn the automatic frequency control function ON and OFF.

[F.INP] : Click to display and hide the Keypad screen.

⑩EMR MODE BUTTON [EMR]
Click to enter and exit EMR mode.

⑪MESSAGE BUTTON [MSG]
Click to turn the message screen indication ON and OFF.

⑫SQUELCH CONTROL [SQL]
Left click to decrease; right click to increase the squelch level.

⑬SKIP BUTTON [SKIP]
During memory mode, click to turn the skip setting for the selected memory channel ON and OFF.

⑭MONITOR BUTTON [MONI]
Click to turn the monitor function ON and OFF.
While the function ON, any squelches, such as tone squelch, are released and emits audio.

⑮SET MODE BUTTON [SET]
Click to display and hide the Set mode screen.

⑯OPERATING MODE BUTTON [MODE]
Click to select the operating mode from FM, digital voice (DV) and data (DD).

⑰CALL CHANNEL BUTTON [CALL]
Click to select a call channel (1–3).

⑱VFO/MEMORY MODE BUTTON [V/M]
Click to switch between VFO and memory mode.

⑲TUNING DIAL [DIAL]
Left click to decrease; right click to increase the operating frequency or memory channel.

⑳TUNING STEP BUTTON [TS]
Click to display the tuning step list.
After the tuning step selection, the list disappears.

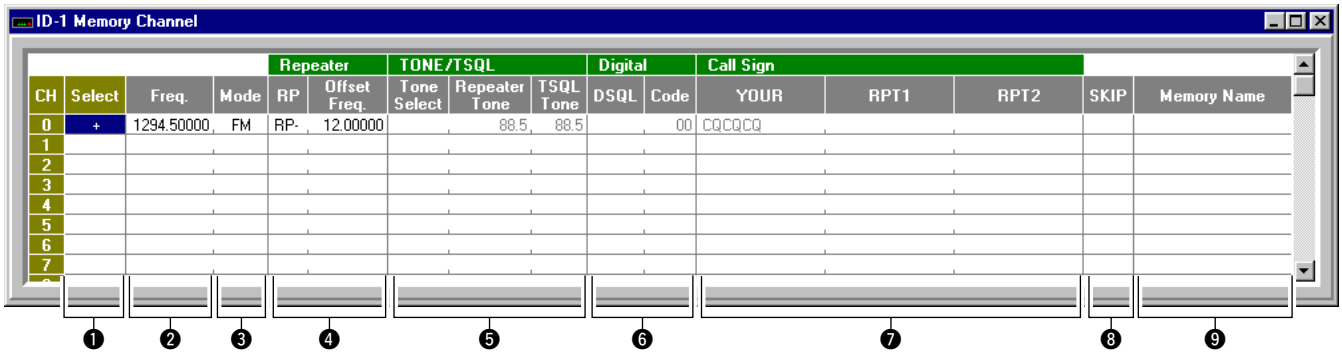
㉑1 MHz TUNING BUTTON [MHz]
Click to turn the 1 MHz tuning ON and OFF.
While the 1 MHz tuning is selected, "▼" icon appears.

㉒POWER BUTTON [POWER]
Click to turn the transceiver power ON and OFF.
Even the transceiver power is turned OFF, the control application is still running.

NOTE: While reading the transceiver's memory data
While reading the transceiver's memory data the "" button in the tool bar will change from Black to Red arrows.
It is not recommended to save data or initialize the transceiver while the program is downloading the memory channel data. If transceiver initialization or save data buttons are accidentally pushed, the dialog box shown below will appear.

It is recommended to click the cancel button to allow the task of reading the transceiver to be completed. Then try the initialization or saving data. Completion of the download is indicated when the arrows change from Red to Black.

◇ Memory channel list screen



❶CHANNEL SELECT

Select the memory channel for operation by double clicking and select “Move to this channel”.

“+” appears when the channel is selected.

❷PROGRAMMED FREQUENCY

Enter the desired operating frequency.

Select the desired frequency cell, then enter the desired frequency from the PC’s keyboard directly.

❸OPERATING MODE

To select the desired operating mode, double click the mode cell. Then click to select the desired operating mode, FM, DV (Digital Voice) or DD (Data mode).

❹REPEATER

Select the desired shift direction for repeater operation from RP–, RP+, RPS and Simplex in RP cell, and enter the desired offset frequency via the PC’s keyboard within 0 to 60 MHz range in Offset Freq. cell.

RP– : Negative shift
RP+ : Positive shift
RPS : For repeater operation in DD mode

❺TONE/TSQL

Select the desired tone function from TONE, TSQL and OFF in Tone Select cell, and select the desired tone frequency for each Repeater Tone and TSQL Tone from the list appeared by double clicking the cell.

TONE : Repeater tone ON
TSQL : Tone squelch ON

❻DIGITAL

Select the desired digital squelch function from digital code squelch, digital call sign squelch and OFF in DSQL cell, and enter the desired digital code number within 00 to 99 range for the digital code squelch function.

DSQL : Digital call sign squelch ON

CSQL : Digital code squelch ON

❼CALL SIGN

Enter the station's call sign that you want to call into YOUR cell, and repeater call sign into RPT1 and RPT2 cell.

❽SKIP SETTING

Turn the skip function ON (SKIP) and OFF.

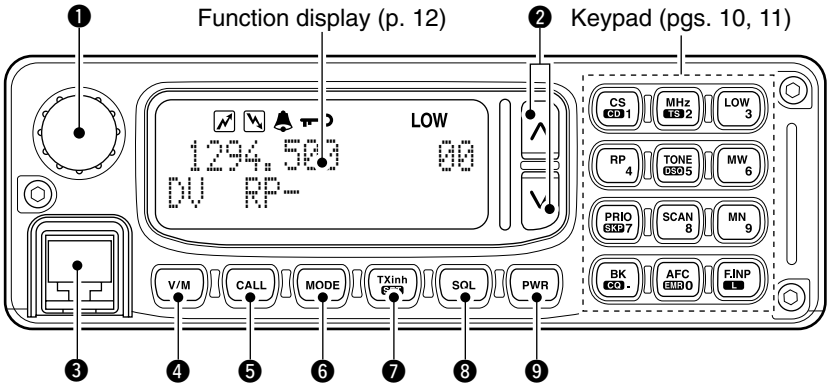
When ON is set, the memory channel will be skipped during memory scan.

❾MEMORY NAME

Enter the desired memory name.

Each name can have up to 10 characters.

■ Remote controller (RC-24; Optional for some versions)



❶TUNING DIAL [DIAL]
Selects the operating frequency (p. 35), memory channel (p. 72), the setting of the set mode value or condition and the scanning direction.

❷UP/DOWN SWITCHES [∧]/[∨]
➥ Adjusts the audio output level. (p. 34)
➥ After pushing [SQL], adjusts squelch level. (p. 33)

❸MICROPHONE CONNECTOR [MIC]
Connects the microphone, supplied with the transceiver.

❹VFO/MEMORY SWITCH [V/M] (p. 34)
Push to toggle VFO and memory mode.

❺CALL SWITCH [CALL] (p. 73)
Push to select and toggle call channel 1, 2 and 3.

❻OPERATING MODE SWITCH [MODE] (p. 38)
Push to select an operating mode from FM, DV (Digital Voice) and DD (Data mode).

❼TRANSMIT INHIBIT•SET MODE SWITCH [TXinh•SET]
➥ Push to inhibits a transmission during DD mode. (p. 67)
➥ Push to enter the message indication mode during DV mode. (p. 50)
➥ Push for 0.5 sec. to enter set mode. (p. 100)

❽SQUELCH SWITCH [SQL] (p. 33)
Push this switch then push either [∧] or [∨] switch to adjust the squelch level.

❾POWER SWITCH [PWR] (p. 33)
Turns power ON and OFF when pushed for 0.5 sec.

◇Keypad

CS CD 1

[CS•CD•1]
- ➥ Push to enter call sign select mode. (p. 40)
- ➥ Push for 0.5 sec. to enter received call record indication. (p. 47)
- ➥ After pushing [F.INP•L], input digit “1” for operating frequency or memory channel.

MHz TS 2

[MHz•TS•2]
- ➥ Push to select 1 MHz tuning. (p. 35)
- ➥ Push for 0.5 sec. to enter tuning step selecting condition. (p. 37)
- ➥ After pushing [F.INP•L], input digit “2” for operating frequency or memory channel.

LOW 3

[LOW•3]
- ➥ Push to toggle low and high transmit output power. (p. 45)
- ➥ After pushing [F.INP•L], input digit “3” for operating frequency or memory channel.

RP 4

[RP•4]
- ➥ Push to toggle repeater operating mode. (pgs. 58, 61, 67)
- ➥ After pushing [F.INP•L], input digit “4” for operating frequency or memory channel.

TONE DSQ 5

[TONE•DSQ•5]
- ➥ FM mode: Push to turn the repeater tone, tone squelch and pocket beep function ON and OFF.
- ➥ DV Mode: Push to turn the digital call sign, digital code squelch and pocket beep function ON and OFF.
- ➥ After pushing [F.INP•L], input digit “5” for operating frequency or memory channel.

MW 6

[MW•6]
- ➥ Push to enter select memory write condition. (p. 76)
- ➥ After pushing [F.INP•L], input digit “6” for operating frequency or memory channel.

PRIO SKP 7

[PRIO•SKP•7]
- ➥ Push to start and stop priority watch. (p. 91)
- ➥ Push for 0.5 sec. to set the selected memory channel as a skip channel during memory mode. (p. 88)
- ➥ After pushing [F.INP•L], input digit “7” for operating frequency or memory channel.

SCAN 8

[SCAN•8]
- ➥ Push to start and stop scanning. (p. 84)
- ➥ After pushing [F.INP•L], input digit “8” for operating frequency or memory channel.

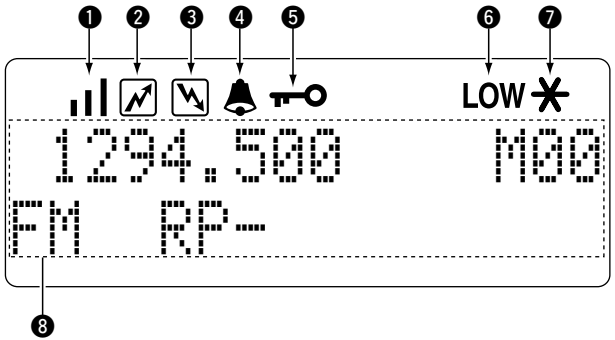
[MN•9]
- ➥ Push to select memory name or frequency indication during memory mode. (p. 82)
- ➥ After pushing [F.INP•L], input digit "9" for operating frequency or memory channel.

[BK•CQ•.]
- ➥ Push to enable a break call during digital voice operation. (p. 110)
- ➥ Push for 0.5 sec. to select "CQ" as a call sign during digital voice operation. (p. 46)
- ➥ After pushing [F.INP•L], selects previous "MHz" digits frequency for operating frequency. (p. 36)

[AFC•EMR•0]
- ➥ Push to turn the AFC (Automatic Frequency Control) function ON and OFF. (p. 111)
- ➥ Push for 1.5 sec. to turn the EMR mode ON, and push for 0.5 sec. to turn the function OFF during digital voice mode operation. (p. 108)
- ➥ After pushing [F.INP•L], input digit "0" for operating frequency or memory channel.

[F.INP•L]
- ➥ Push to enable the direct frequency or memory channel number input.
- ➥ Push for 0.5 sec. to turn the RC-24 key lock function ON and OFF. (p. 38)

◇Function display



❶S/RF INDICATORS
- ➥ Shows the relative signal strength while receiving signals in 3 steps.
- ➥ Shows the output power level while transmitting.

❷TRANSMIT INDICATOR
Appears while transmitting.

❸BUSY INDICATOR
Appears when a signal is being received, the squelch is open, or the monitor function is activated.

NOTE: If this indicator appears and no audio is heard it is one of several conditions.
1. Verify audio level setting.
2. Verify connection of external speaker.
3. FM: Signal coming in, but does not match TSQL.
   Digital Voice: Incoming signal does not match call signs in the call sign squelch list.

❹POCKET BEEP INDICATORS (p. 94)
Appears when the pocket beep function is activated.

❺LOCK INDICATOR (p. 38)
Appears when the lock function is in use.

❻LOW POWER INDICATOR
Appears when low output power is selected.

❼MESSAGE INDICATOR
Blinks when a message is received. (p. 51)

❽MULTI-FUNCTION INDICATOR
Shows variety of information, such as the operating frequency, operating mode, memory names, set mode item and conditions.

2 INSTALLATION AND CONNECTIONS

■ Unpacking

After unpacking, immediately report any damage to the delivering carrier or dealer. Keep the shipping cartons.

For a description and a diagram of accessory equipment included with the ID-1, see ‘Supplied Accessories’ on p. iv of this manual.

■ Selecting a location

Select a location for the transceiver that allows adequate air circulation, free from extreme heat, cold, or vibrations, and away from TV sets, TV antenna elements, radios and other electromagnetic sources.

■ Antenna connection

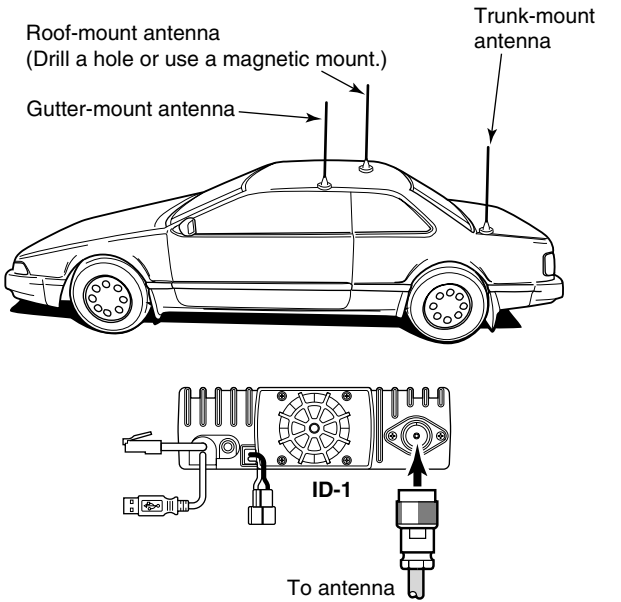
For radio communications, the antenna is of critical importance, along with output power and sensitivity. Select antenna(s), such as a well-matched 50 Ω antenna, and feedline. 1.5:1 or better of Voltage Standing Wave Ratio (VSWR) is recommended for your desired band. Of course, the transmission line should be a coaxial cable.

CAUTION: Protect your transceiver from lightning by using a lightning arrestor.

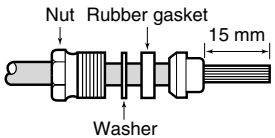
NOTE: There are many publications covering proper antennas and their installation. Check with your local dealer for more information and recommendations.

• Antenna location for mobile operation

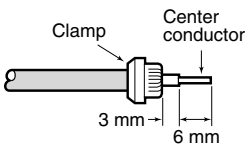
To obtain maximum performance from the transceiver, select a high-quality antenna and mount it in a good location. A non-radial antenna should be used when using a magnetic mount.



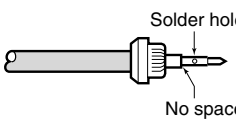
Type-N CONNECTOR INSTALLATION EXAMPLE

① 

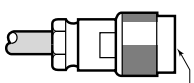
Slide the nut, washer, rubber gasket and clamp over the coaxial cable, then cut the end of the cable evenly.

② 

Strip the cable and fold the braid back over the clamp.

③ 

Soft solder the center conductor. Install the center conductor pin and solder it.

④ 

Carefully slide the plug body into place aligning the center conductor pin on the cable. Tighten the nut onto the plug body.

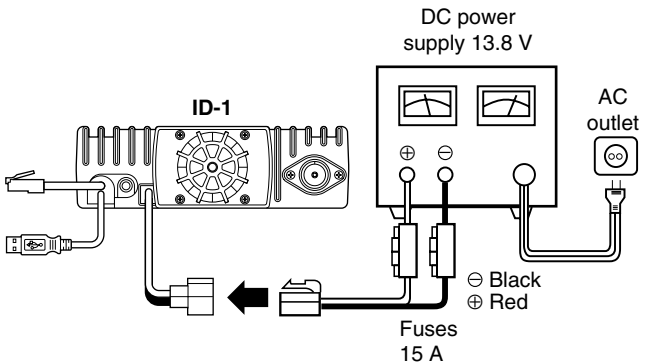
15 mm ≈ 19/32 in 6 mm ≈ 1/4 in 3 mm ≈ 1/8 in

■ Power supply connections

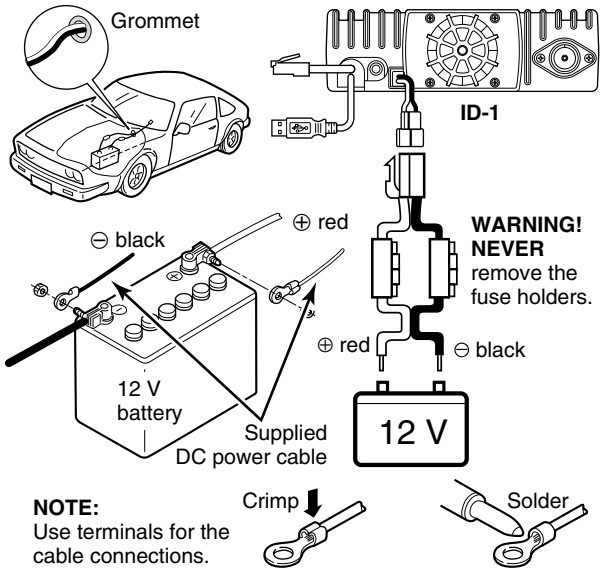
CAUTION: Before connecting the DC power cable, check the following important items. Make sure:
- The [POWER] switch is OFF.
- Output voltage of the power source is 12–15 V when you use a power supply.
- DC power cable polarity is correct.
  Red : positive ⊕ terminal
  Black : negative ⊖ terminal

Use a DC power supply with a 10 A capacity and above when operating the transceiver with AC power. Refer to the diagrams below.

• Connecting to a DC power supply



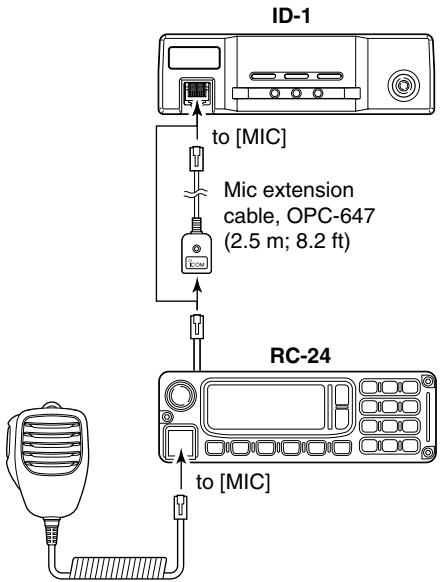
• Connecting to a vehicle battery



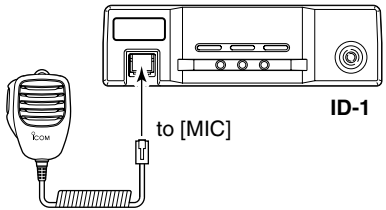
■ Microphone and speaker connections

Connect the supplied microphone to the [MIC] connector on the remote controller (RC-24) or front panel and the speaker to the [SP] connector on the rear panel as follows.

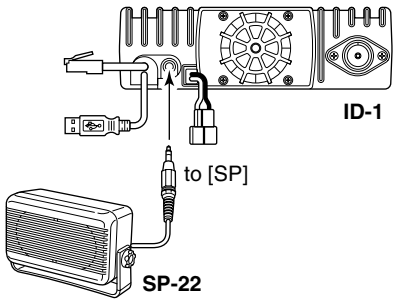
• Microphone connection through RC-24



• Microphone connection without RC-24



• Speaker connection

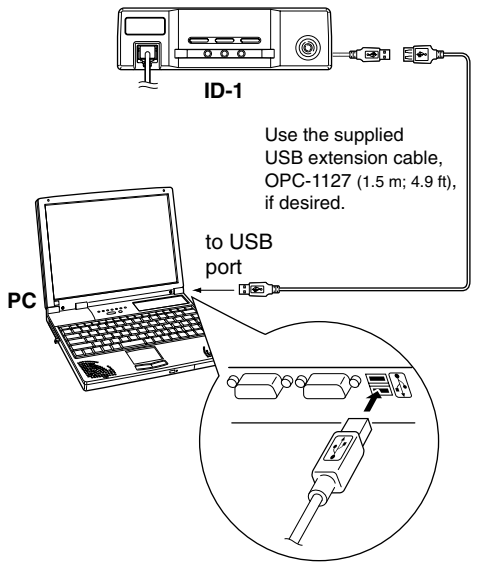


■ Connecting a PC

◇ PC connection for control

USB (Universal Serial Bus) cable is used for the connection between the ID-1 and a PC.

An USB extension cable, OPC-1127 (1.5 m; 4.9 ft), is supplied with the transceiver for extended connection.

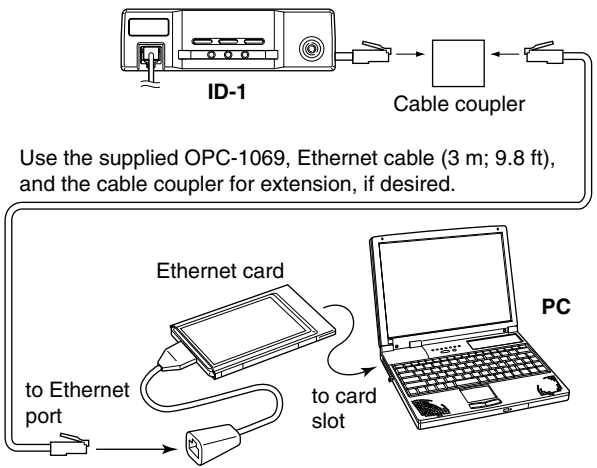


NOTE: When connecting the ID-1 and the PC through an USB hub, use the self-powered type.

◇ PC connection for data operation

Ethernet cable connection is additionally required for the data operation.

Connect the Ethernet receptacle to the Ethernet port on your PC directly or through the supplied extension cable with the cable coupler, if desired.



NOTE: When no Ethernet port is available with your PC, install an Ethernet card and it's driver before connecting the ID-1. Ask your local computer dealer for details about installing a Ethernet card to your computer.

The displayed dialog boxes or indications may differ slightly from the following instructions according to your system conditions, or environment.

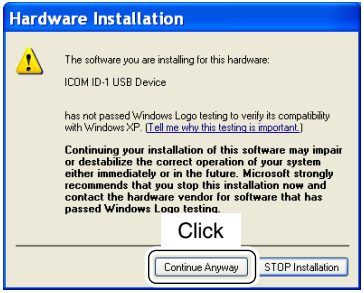
■ Microsoft® Windows® XP

①Connect the ID-1 to the desired USB port.
- Push [POWER] to turn the power ON.
- "Found New Hardware" appears as below.

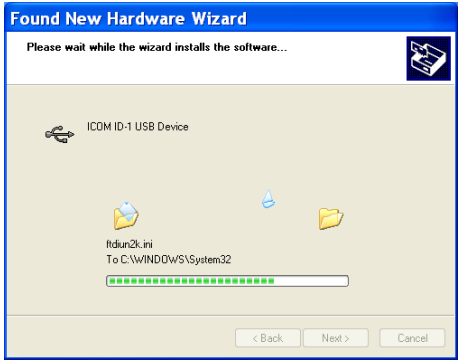
②The "Found New Hardware Wizard" will come up as below. Insert the supplied CD into the CD drive, select "Install the software automatically (Recommended)," then click [Next>].

③The wizard starts searching for the driver and shows the dialog below during search.

④After the driver is found, the “Hardware Installation” dialog box appears as below.
Click [Continue Anyway] to start the installation.

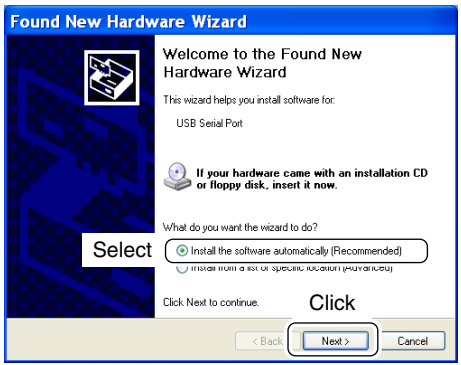


⑤Windows starts installing the USB driver.



⑥After the installation is completed, click [Finish].

⑦The “Found New Hardware Wizard” will come up again to install the USB serial port driver.
Select “Install the software automatically (Recommended),” then click [Next>].

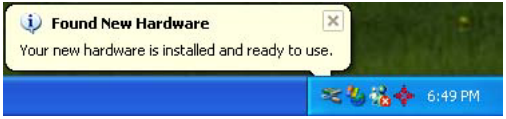


⑧After the driver is found, the “Hardware Installation” dialog box appears as below.
Click [Continue Anyway] to start the installation.

⑨Windows starts installing the USB driver.

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

⑪After clicking [Finish], the dialog appears as below.



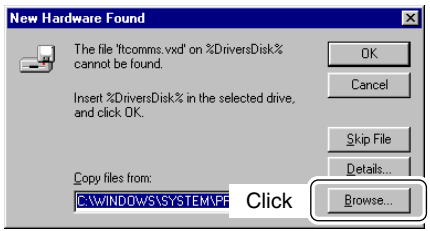
⑫Eject the CD.

• Rebooting the PC is recommended.

■ Microsoft® Windows® 98/Me

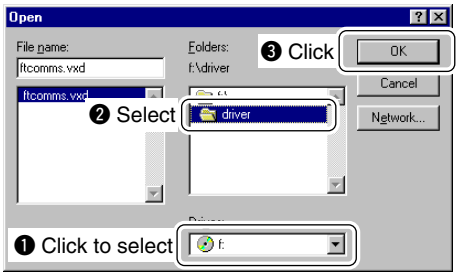
①Connect the ID-1 to the desired USB port.
- Push [POWER] to turn the power ON.
- "New Hardware is found" dialog box appears.

②The "New Hardware Found" will come up as below. Click [Browse...].

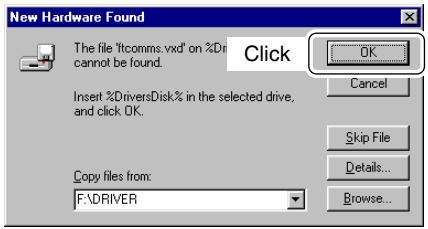


③Insert the supplied CD into the drive.

④Click [▼] to select the appropriate CD-ROM drive then click "Driver" folder. After the driver is found, click [OK].



⑤Click [OK].
- The driver installation starts.



⑥After the installation, eject the CD.
- Rebooting the PC is recommended.

■ Microsoft® Windows® 2000

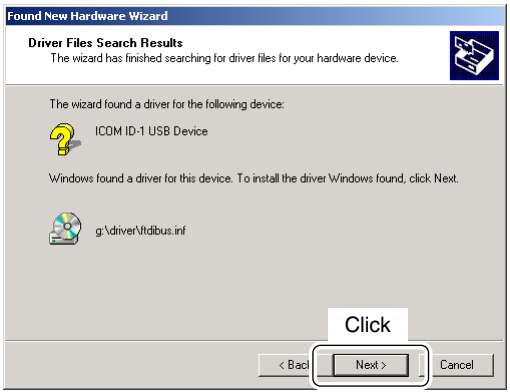
①Connect the ID-1 to the desired USB port.
- Push [POWER] to turn the power ON.
- "Found New Hardware" dialog box appears below.

②The "Found New Hardware Wizard" will come up as below. Click [Next>].

③Select "Search for a suitable driver for my device (recommended)," then click [Next>].

④Select “CD-ROM drives,” and insert the supplied CD into the CD drive, then click [Next>].

⑤When the driver is found, the following dialog is displayed. Click [Next>] to start the installation.



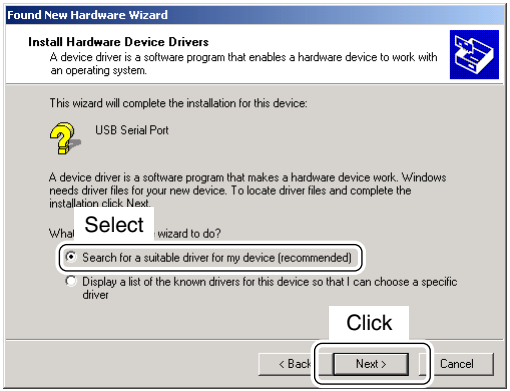
NOTE: When the appropriate driver is not found, a different dialog is displayed. In such case, click [<Back], select “Specify a location,” click [Next>], then type “D:\driver” in the text box to select the “Driver” folder in the CD (if CD drive is D).

⑥After the installation is completed, click [Finish].

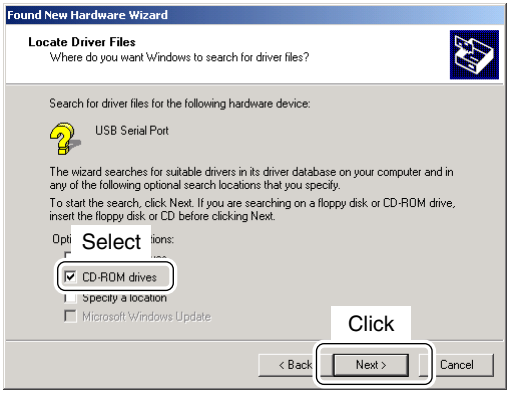
⑦The “Found New Hardware” wizard appears again.

⑧Click [Next>].

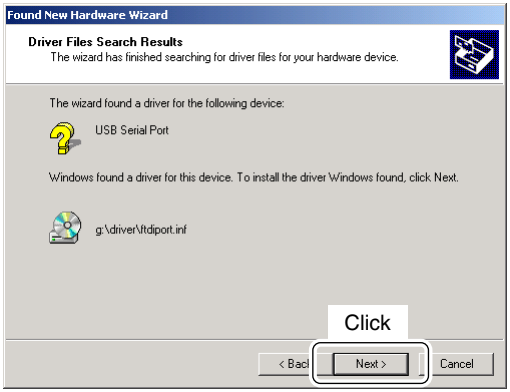
⑨Select “Search for a suitable driver for my device (recommended),” then click [Next>].



⑩Select “CD-ROM drives,” then click [Next>].



⑪When the driver is found, the following dialog is displayed. Click [Next>] to start the installation.



NOTE: When the appropriate driver is not found, a different dialog is displayed. In such case, click [<Back], select "Specify a location," click [Next>], then type "D:\driver" in the text box to select the "Driver" folder in the CD (if CD drive is D).

⑫After the installation is completed, click [Finish].

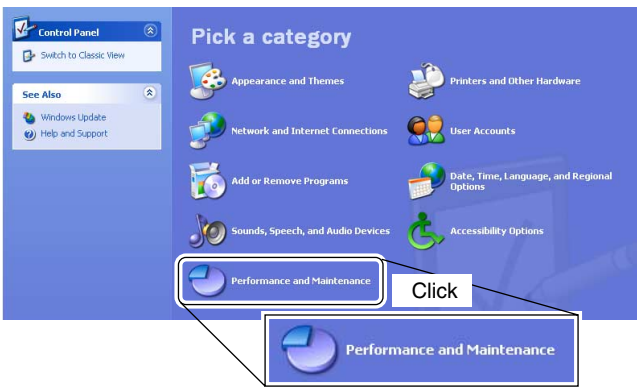
⑬Eject the CD.
- Rebooting the PC is recommended.

■ COM port confirmation

After the driver installation, confirm the driver availability and the port number are recommended.

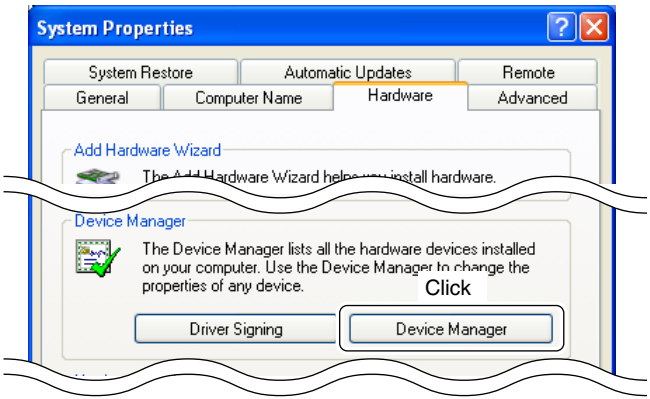
In this section, screen shots of Windows XP are used for instruction example. However, the instructions are similar to another operating systems, Windows 98, Me and 2000.

①Boot up the Windows.
②Select the “Control Panel” in the Start menu.
• Control panel appears as shown in the next step below.
③Click the “Performance and Maintenance.”
• Performance and Maintenance menu appears.

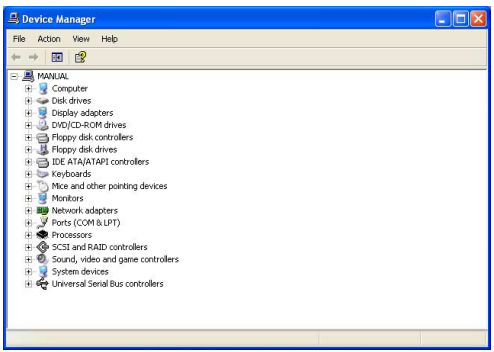


④Click the “System,” then click the “Hardware” tab in the displayed System Properties screen.

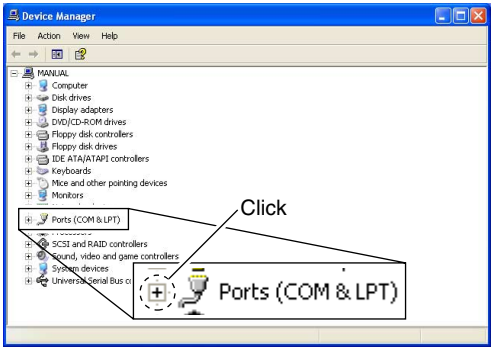
⑤Click the [Device Manager].



• Device Manager screen appears as below.



⑥Click "⊞" of the "Ports (COM & LPT)" to display the usable COM port and the port number.



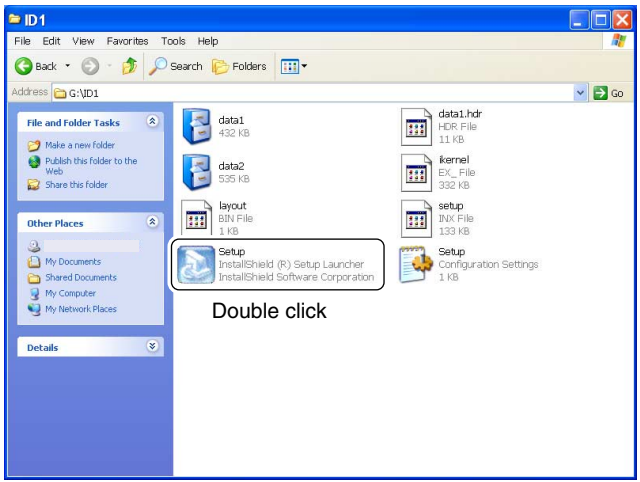
⑦Confirm the USB serial port availability and the COM port number.

• The COM port number is used for the COM port setup. (p. 32)

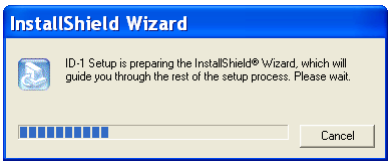
Confirm the USB serial port availability and the COM port number.
(In this example, the USB serial port number is "4.")

⑧Close the Device Manager, System Properties screen and then Control panel.

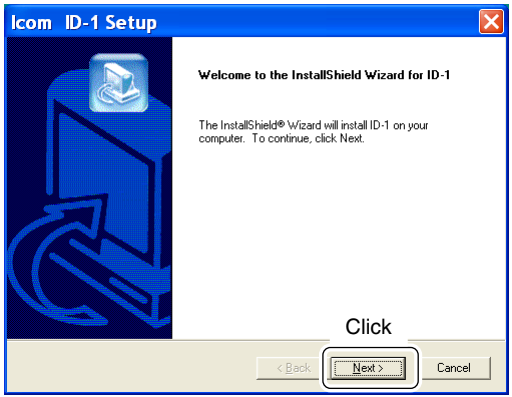
①Insert the CD into the CD drive.
②Open the CD drive contents via “My computer” or “Windows Explorer.”
• “Driver” and “ID1” folders are available.
③Double click “Setup.exe” file in “ID1” folder.



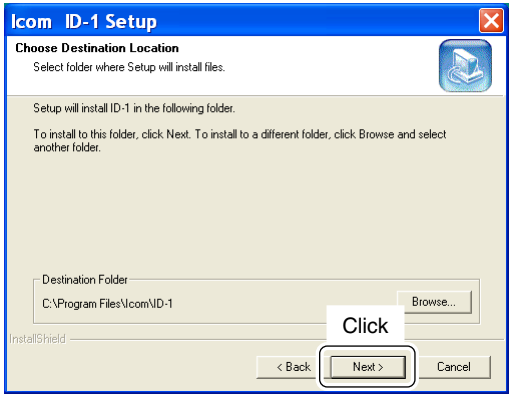
• The “InstallShield® Wizard” starts preparing the installation.



④After the preparation, the following dialog is displayed.
Click [Next>].

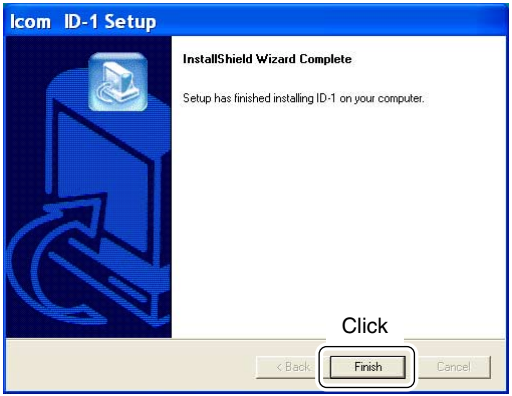


⑤Confirm the location, then click [Next>] to start the installation.



• Click [Browse...] then type the desired location if you specifying the installation location.

⑥After the installation is completed, click [Finish].



⑦Eject the CD.

• The ID-1 shortcut icon is created on the desktop.
• Rebooting the PC is recommended.

■ Preparation

◇ Turing power ON/OFF from the application

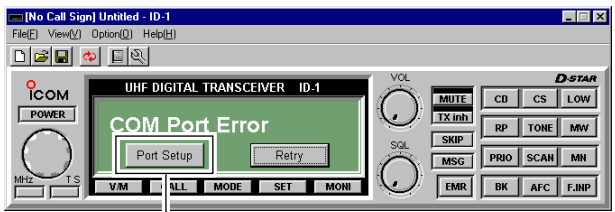
①Boot up Windows.

②Start the ID-1 application by double clicking the icon on the desktop, or select “ID-1” in the program menu.

- ID-1 main screen appears and “COM Port Error” may be displayed for 1st time as below.

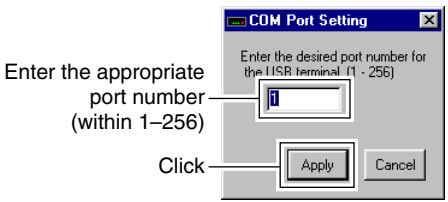
③Click [Port Setup].

- COM Port Setup dialog box appears.



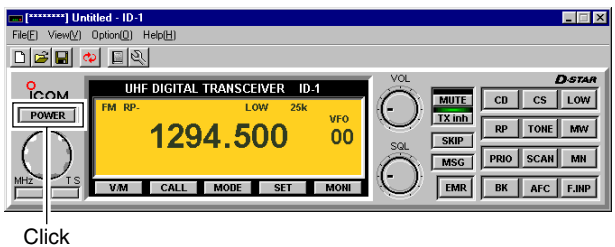
④Enter the appropriate COM port number from the PC’s keyboard within 1–256 range, then click [Apply].

- See pages 28, 29 for how to confirm the COM port number.
- The transceiver power comes up and the default frequency will be displayed on the main screen when the correct port number is entered.
- Once the COM port is set, this operation will not be necessary.
- When using multiple radios with the same Laptop, changing the COM Port number will be required each time a new radio is connected to the computer.



⑤Click [POWER] to turn the power OFF.

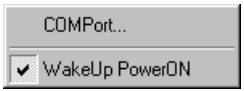
- The transceiver power can also be turned OFF by pushing [POWER] on the ID-1 front panel.



⑥To quit the application, select “Exit(X)” in the file menu, or click “ ✕ ” button on the top right corner of the screen.
• The application cannot be quit by turning OFF the transceiver’s power only. And also, the transceiver power is still ON even the application is quit without turning OFF with [POWER].

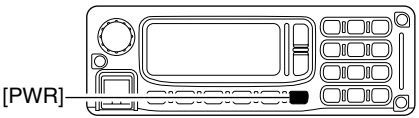
Hint!

The ID-1 has “WakeUp PowerON” function, which automatically powers ON when the application is started up.
To turn the function ON and OFF, select “Wakeup PowerON” item in option menu. “✔” appears when the function is activated.



◇ Turing power ON/OFF from the RC-24

➥Push [PWR] to turn the power ON.
• Pushing [POWER] on the ID-1 front panel also turns power ON.
• Push [PWR] (or [POWER] on the ID-1 front panel) for 0.5 sec. to turn the power OFF.

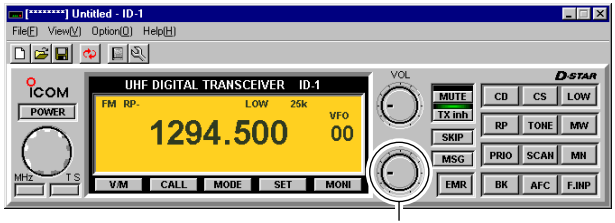


■ Squelch level adjustment

(FM mode only)

◇ From the application

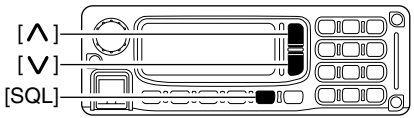
➥Set the pointer on [SQL] control then; right click to increase, left click to decrease the squelch level.
• Set [SQL] within 9–12 o’clock position is recommended.



Right click to increase; Left click to decrease

◇ From the RC-24

➥Push [SQL], then push [Λ] to increase, [V] to decrease the squelch level.
• “SQL” and set level appear on the function display.
• Set the squelch level within 9 to 19 is recommended.



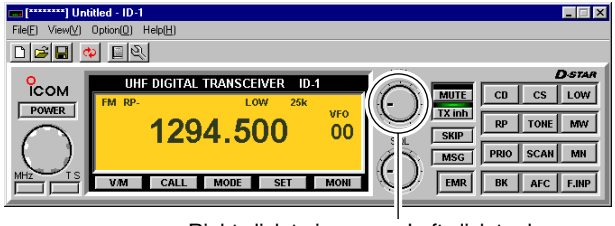
■ Audio level adjustment

◇ From the application

①Open the squelch.

- The monitor function is available to open the squelch without adjusting [SQL] level— click [MONI] to open and close the squelch.

②Set the pointer on [VOL] control then; right click to increase, left click to decrease the audio level.

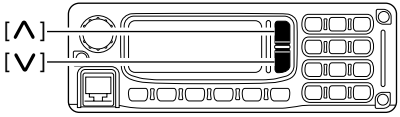


Right click to increase; Left click to decrease

◇ From the RC-24

➥ Push [∧] to increase, [∨] to decrease the audio level.

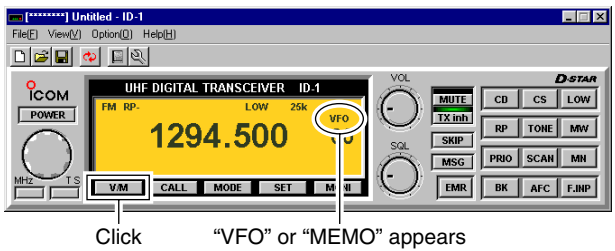
- "VOL" and set level appear on the function display.
- The audio level can be adjusted within 0 (no audio) to 32 (max. audio) levels.



■ VFO and memory mode

◇ From the application

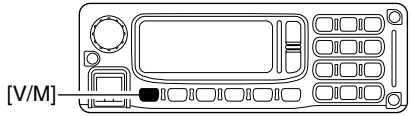
➥ Click [V/M] to toggle between VFO and memory mode.



◇ From the RC-24

➥ Push [V/M] to toggle between VFO and memory mode.

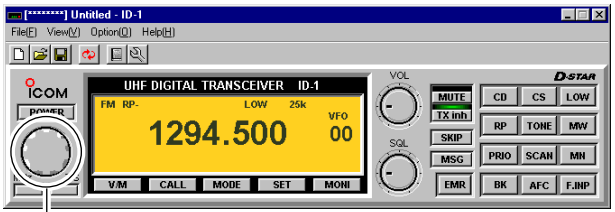
- "M" appears besides memory channel number when memory mode is selected.



■ Setting a frequency

◇ Using the application tuning dial

①Set the pointer on the tuning dial control then; right click to increase, left click to decrease the operating frequency.
- While clicking and holding either right or left button of the mouse, the operating frequency increases or decreases continuously.
- Operating frequency changes in the selected tuning steps. See page 37 for the tuning step selection.



Right click to increase; Left click to decrease

②To change the frequency in 1 MHz steps, click [MHz], then click (left or right) the tuning dial.
- "▼" appears above the 1 MHz digit when the 1 MHz tuning step is selected.

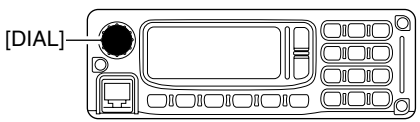
Hint!

[⇐] and [⇒] keys on the PC's keyboard also functions as the tuning dial.

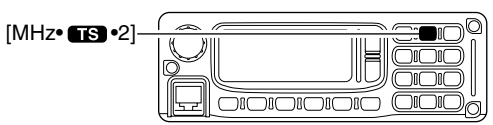
Press [⇐] to decrease; press [⇒] to increase the operating frequency.

◇ Using the RC-24 tuning dial

①Rotate [DIAL] to set the operating frequency.
- Operating frequency will be changed with the selected tuning steps. See page 37 for the tuning step selection.



②To change the frequency in 1 MHz steps, push [MHz•TS•2], then rotate the [DIAL].
- Below 1 MHz digits disappear when the 1 MHz tuning step is selected.

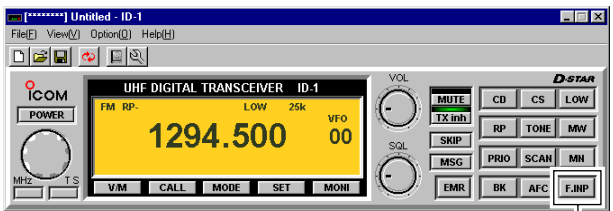


◇ Using microphone [UP]/[DN]

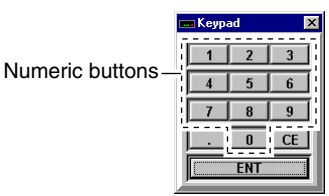
➥Push the microphone's [UP]/[DN] to set the operating frequency.
- While pushing and holding either [UP] or [DN], the operating frequency increases or decreases continuously.
- Operating frequency will be changed with the selected tuning steps. See page 37 for the tuning step selection.

◇ Direct frequency input from the application

①Click [F.INP].
- Keypad screen appears.



②Click 4 to 7 digit desired numeric buttons to enter the desired operating frequency within 1240.000 to 1300.000 MHz range.
- After the 7th digit is entered, the frequency automatically fixed and set to the transceiver.
- Click [ENT] to fix and set the frequency when 4 to 6 digits are entered.
- When a digit is mistakenly input, click [CE] to clear the input, then input from the 1st digit.
- Click [.] first, when changing frequency below 100 kHz digits.

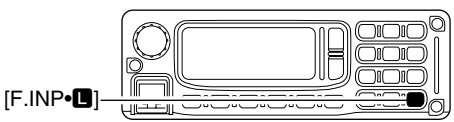


Hint!

The direct frequency input can also be performed from the PC's keyboard.
Enter the desired operating frequency via the PC's keyboard.
e.g. When entering 1295.575 MHz;
[1], [2], [9], [5], [.], [5], [7], [5]

◇ Direct frequency input from the RC-24

①Push [F.INP•L]
- Operating frequency disappears.



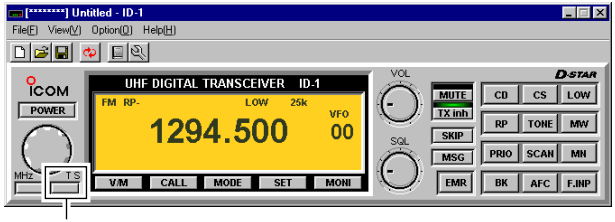
②Push the appropriate 7-digit keys to enter the desired operating frequency.
- After the 7th digit is entered, the frequency automatically fixed and set to the transceiver.
- When a digit is mistakenly input, push [F.INP•L] to clear the input, then input from the 1st digit.
- Push [BK• CQ •.] first, when changing frequency below 100 kHz digits.

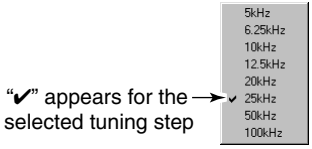
■ Tuning step selection

◇ Selecting with the application

➥ Click [TS], then select the desired tuning step from the list.

• 5, 6.25, 10, 12.5, 20, 25, 50 and 100 kHz tuning steps are available.

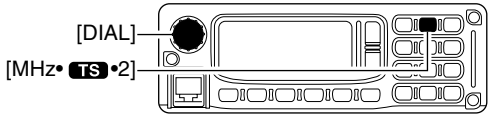




◇ Selecting with the RC-24

①Push [MHz• TS •2] for 0.5 sec.

• "TS" and the selected tuning step appear.



②Rotate [DIAL] to select the desired tuning step.

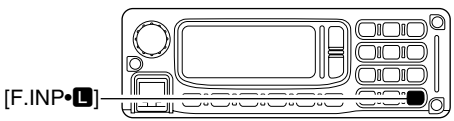
• 5, 6.25, 10, 12.5, 20, 25, 50 and 100 kHz tuning steps are available.

• When no operation is performed for 5 sec., both "TS" and tuning step selection indication disappear and the transceiver return to normal condition.

■ Lock function (RC-24 only)

To prevent accidental frequency changes and unnecessary function access, use the lock function.

➥ Push [F.INP•L] for 0.5 sec. to turn the lock function ON and OFF.
- " 🔑 " appears when the lock function ON.
- [PTT] (microphone), [∧], [∨], [SQL] and [LOW•3] can be used while the lock function is in use.

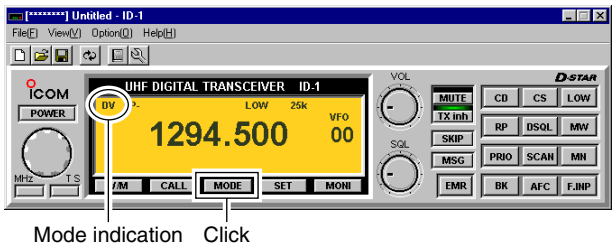


■ Operating mode selection

The ID-1 has 3 operating modes— FM, Digital voice and Data modes.

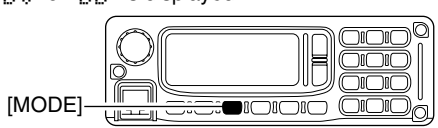
◇ Selecting with the application

➥ Click [MODE] to select the desired operating mode.
- DV for Digital voice, DD for Data mode.



◇ Selecting with the RC-24

➥ Push [MODE] to select the desired operating mode.
- "FM," "DV" or "DD" is displayed.

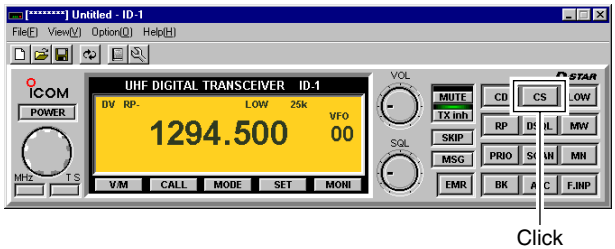


■ Your call sign setting

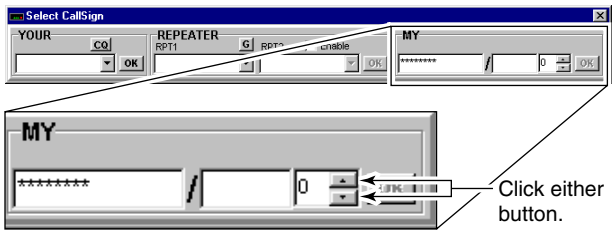
Your call sign must be programmed for both Digital voice and data modes communications.
Up to 5 call signs for your group members can be programmed.

◇ Setting with the application

①Click [CS].
• Select Call Sign screen appears.



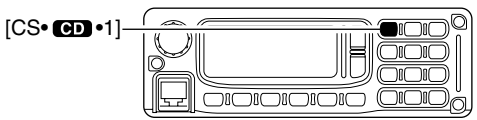
②Click either [▲]/[▼] button for “MY” to select the call sign channel.



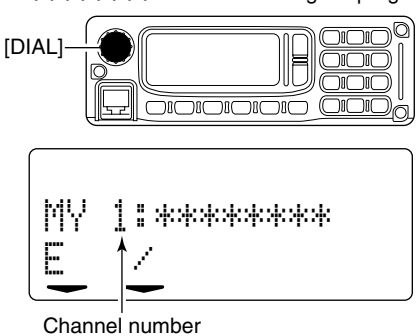
③Select “MY” text box then type your call sign from the PC’s keyboard.
④Click [OK] for “MY” to program.

◇ Setting with the RC-24

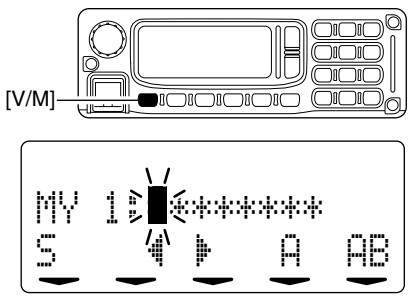
①Push [CS•CD•1] 4 times to enter call sign select mode and select My call sign item.
• "MY" call sign channel number and programmed call sign appear.



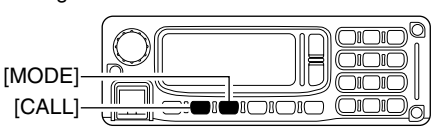
②Rotate [DIAL] to select the desired call sign channel.
• Displays "**********" when no call sign is programmed.



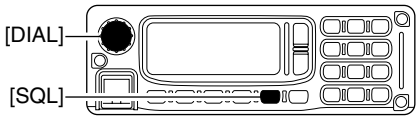
③Push [V/M] to enter the call sign edit condition.
• The 1st digit blinks.

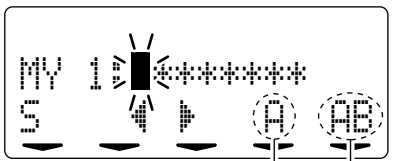


④Push [CALL] or [MODE] to select the digit to be edited.
• Pushing [CALL] moves the cursor to left; pushing [MODE] moves cursor to right.



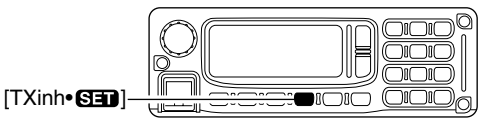
⑤Push [SQL] several times to select the desired character group, then rotate [DIAL] to select the desired character.
- AB : Alphabets (A to Z)
- 12 : Numbers (0 to 9)
- _/ : Symbols (space and /)

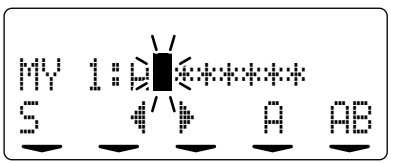




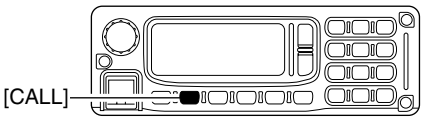
Shows the selected character.
Shows the selected character group.

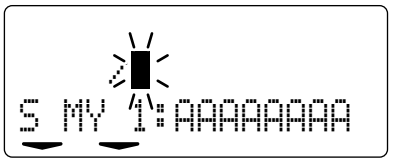
⑥Push [TXinh•SET] to enter the selected character.
- The cursor move to right automatically.



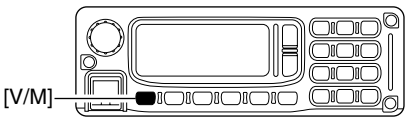


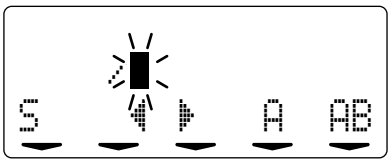
⑦Repeat the steps ④ to ⑥ to enter your call sign.
⑧Push [V/M] to fix the call sign and exit the edit condition.
⑨Push [CALL] to display the note.





⑩Push [V/M] to enter the note edit conditions.
- The 1st digit blinks.





⑪Repeat the steps ④ to ⑧ to enter the note.
- Up to 4-digit note can be set.

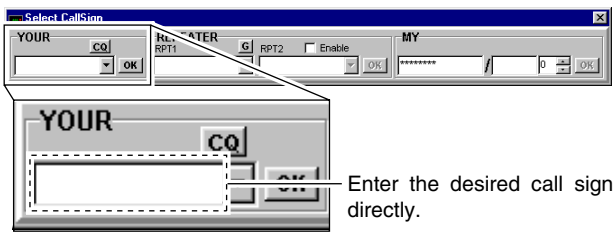
⑫Push [V/M] to fix the note and exit the edit condition.
⑬Push [CS•CD•1] to exit call sign select mode.

■ Station/Repeater call sign setting

Station call sign must be set for the specified station call as well as repeater operation in both Digital voice and data modes communications.

◇ Setting with the application

①Click [CS] to shows the Select Call Sign screen.
②Type the desired station/repeater call sign into the YOUR's text box directly.
• Call sign is also being programmed in RPT1 and RPT2.

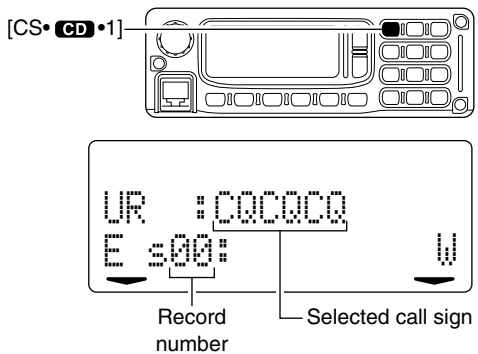


③Click [OK] to program.

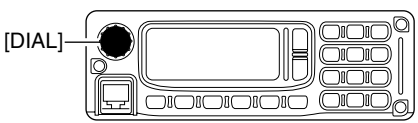
④Repeat steps ② and ③ to program another station call sign.

◇ Setting with the RC-24

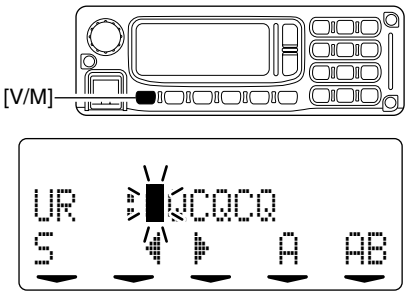
①Push [CS•CD•1] once to enter call sign select mode and select station call sign item.
• "UR" and the selected call sign appear in the upper line, station call sign channel number and programmed call sign appear in the lower line.



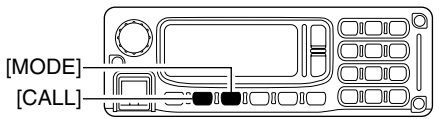
②Rotate [DIAL] to select the desired station call sign record channel to be programmed.



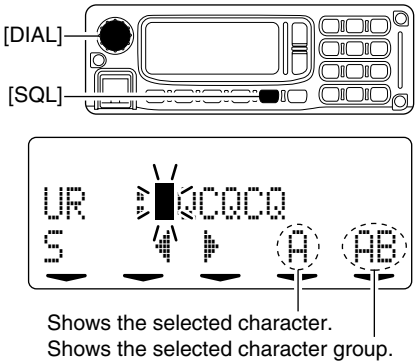
③Push [V/M] to enter the call sign edit condition.
• The 1st digit blinks.



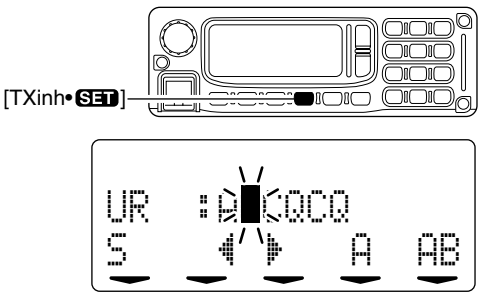
④Push [CALL] or [MODE] to select the digit to be edited.
• Pushing [CALL] moves the cursor to left; pushing [MODE] moves cursor to right.



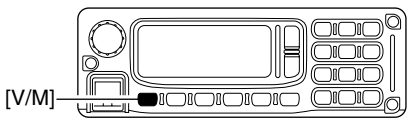
⑤Push [SQL] several times to select the desired character group, then rotate [DIAL] to select the desired character.
• AB : Alphabets (A to Z)
• 12 : Numbers (0 to 9)
• /_ : Symbols (space and /)

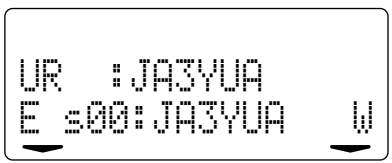


⑥Push [TXinh•SET] to enter the selected character.
• The cursor move to right automatically.



⑦Repeat the steps ④ to ⑥ to enter the desired station or repeater call sign.
⑧Push [V/M] to program the call sign and exit the edit condition.





⑨Repeat steps ② to ⑧ to program another station/repeater call signs.

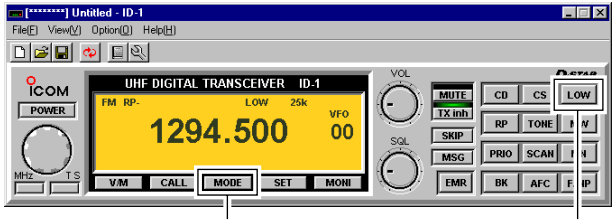
✔ For your information:
Station and/or repeater call sign can be programmed from Received call record when a call is received.
See page 47 for details.

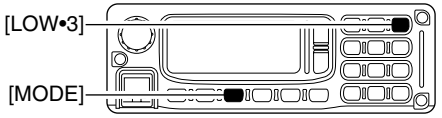
■ FM mode operation

①Set the desired frequency in VFO mode from the application or the RC-24. (pgs. 35, 36)
- Set the squelch (p. 33) and volume (p. 34) level as desired.

②Select FM mode with [MODE].

③Click [LOW] in the application (main screen); or push [LOW•3] on the RC-24 to select the desired output power.
- "LOW" appears when low power is selected; disappears when high power is selected.





④Push and hold [PTT] to transmit and speak into the microphone at normal voice level.

⑤Release [PTT] to return to receive.

■ Digital voice mode operation

①Set the desired frequency in VFO mode from the application or the RC-24. (pgs. 35, 36)
- Set the volume (p. 34) level as desired.

②Select DV (Digital voice) mode with [MODE].

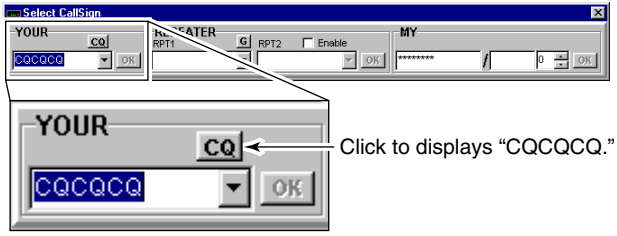
③Click [LOW] in the application (main screen); or push [LOW•3] on the RC-24 to select the desired output power.
- "LOW" appears when low power is selected; disappears when high power is selected.

◇ When sending a CQ

④Select "CQ" as the call sign.

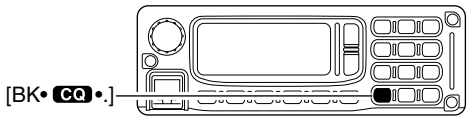
Application

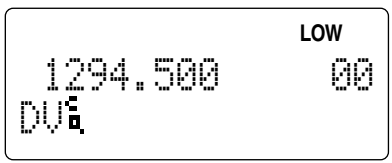
- Click [CS] to shows the Select Call sign screen.
- Click "CQ" button of "YOUR" to display "CQCQCQ."
- Click [OK].



RC-24

- Push [BK•CQ•.] for 0.5 sec.
  - " " appears beside the operating mode indication, "DV."



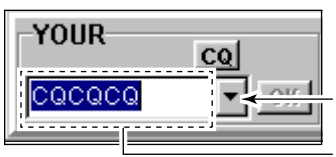


◇ When calling the desired station

④ Set the desired call sign.

Application

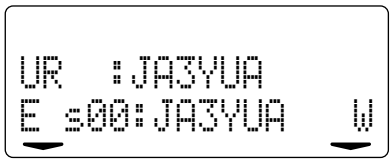
- Click [CS] to shows the Select Call sign screen.
- Click [▼] to select the desired call sign (previously called), or enter the desired call sign into the text box directly.
- Click [OK].



Click to select the desired call sign (programmed) ; or enter the desired call sign directly.

RC-24

- Push [CS•CD•1].
- Rotate [DIAL] to select the desired call sign (programmed), or push [V/M] then set the desired call sign (see pgs. 42–44), then push [SQL] for 0.5 sec.
- Push [CS•CD•1] 4 times to exit call sign select mode.



⑤ Push and hold [PTT] to transmit and speak into the microphone at normal voice level.

- Transmit indicator appears and the RF meter shows the output power.
- The programmed your ("MY") call sign is displayed on the RC-24 function display.

⑥ Release [PTT] to return to receive.

- The other station call sign will be received.
- Up to 10 received call signs can be stored into the received call record automatically. See page 47 for details.

NOTE: The digital modes operation is vastly different than FM. One of the differences is in the digital modes the squelch does not function, changing the squelch setting or pressing the moni button will not open to hear the hiss of "White Noise."

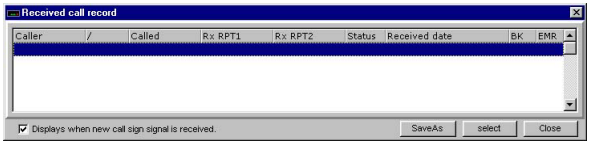
■ When receiving a Digital call

When an individual station call is received, the calling station call sign can be stored into the received call record.
The record screen will automatically be displayed when an individual station call is received.

The record is cleared once turning power OFF.

◇ Received call record— application

①When a call is received during Digital mode operation, both Voice and Data, the Received call record screen appears automatically by default.
- Various information, such as calling station, called station, repeater call signs, status, date and calling type, are listed.

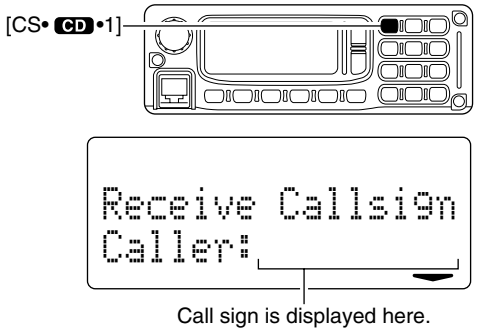


②To reply to a call, click to select the desired call record then click [select] button in the screen.
- The "Caller –>" call sign is set for call.
- Also, the set call sign is programmed for station/repeater call sign selection list automatically.

③To close the screen, click [Close] button or "✕" in the screen, or click [CD] in the main screen.

◇ Received call record— RC-24

①To confirm the received calls, push [CS•CD•1] for 0.5 sec. to enter receive call sign indication mode.
- "Caller" call sign is displayed.



②Push [CS•CD•1] to change the record content.
- "Called," "RxRPT1" and "RxRPT2" are available.

③Rotate [DIAL] to see the other call records.

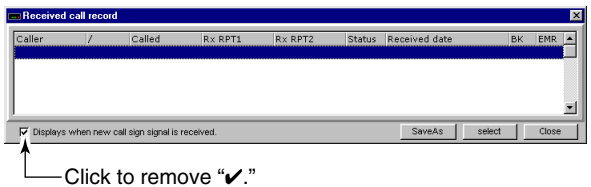
④To reply a call, select the desired call record then push [SQL] for 0.5 sec.
- The call sign is set for the reply call.
- Also, the set call sign is programmed for station/repeater call sign selection list automatically.

⑤To return to operating condition, push [CS•CD•1] for 0.5 sec. again.

◇ Automatic received call record indication

The automatic Received call record screen indication can be deactivated, if desired.

①Click [CD] to display the Received call record screen.
②Click “Displays when new call sign signal is received” to turn the automatic indication ON and OFF.
- ON (“✔”) : The record screen automatically appears when a call is received. (default)
- OFF (no “✔”) : The record screen appears only when [CD] is clicked.



✔About status indication

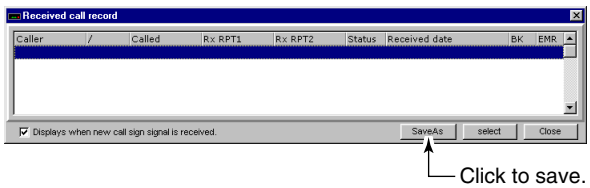
A status is indicated in digital repeater operation as follow;

RPT UP : When receiving the signal that another station accessing to the repeater.
UR? : When the target station does not reply the call.
RPT? : When the linking repeater is unable to found.

◇ Saving the received call record

The displaying contents of the Received call record screen with the operating frequency and mode, can be saved into the PC.

➥Click [SaveAs] to save the contents into the PC.
- Specify the desired file name and select saving location.
- The file is saved in “csv” format.



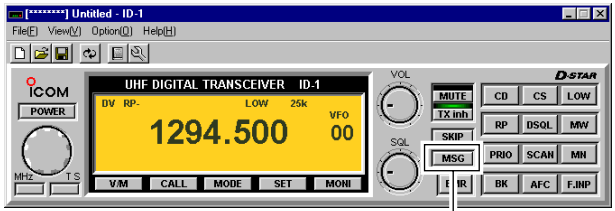
NOTE: The saved data can not be re-loaded with the ID-1 control application. Load the file with a spreadsheet software for log management, etc.

■ Short message function

ID-1 has a short message function in Digital Voice mode operation. This function allows simultaneous 20-character (max.) message transmission or reception with the voice communication.

◇ Short message operation— application

①During Digital Voice operation, click [MSG].
- Set the desired operating frequency and call sign, etc., in advance.
- "Message Reception and Transmission" screen appears.



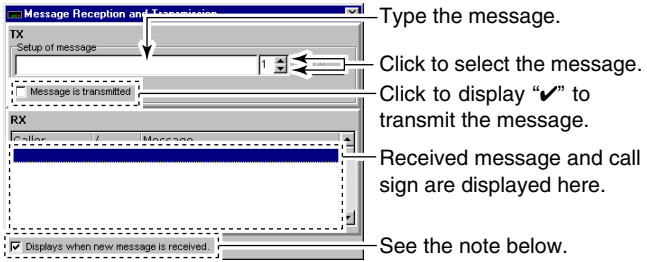
②Type the desired message into the "Setup of message," then click [OK].
- Up to 20-character message can be set.
- Up to 6 messages can be stored for transmission.
- When selecting a stored message, click [▲]/[▼].

③Click "Message is transmitted" check box to display "✔" mark.

④Push [PTT] to make a call.
- The message is transmitted immediately with your voice.
- When transmitting continuously, the message is transmitted in each 30 sec.

⑤When a message is received, the contents and the call sign are displayed in the RX area.
- Up to 20 messages can be stored for reception.
- The same message sending from the same call sign station won't be displayed repeatedly.

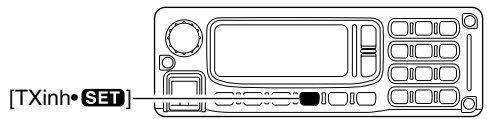
⑥To close the screen, click "✕" in the screen, or click [MSG] in the main screen.

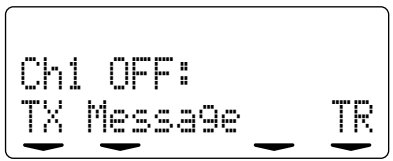


NOTE:
The "Message Reception and Transmission" screen displayed automatically when a new message is received in default setting. This can be turned OFF if desired.
- ON ("✔") : The screen automatically appears when a new message is received. (default)
- OFF (no "✔") : The screen appears only when [MSG] is clicked.

◇ Short message operation— RC-24

①During Digital Voice operation, push [TXinh•SET].
- Set the desired operating frequency and call sign, etc., in advance.
- "TX Message" appears.

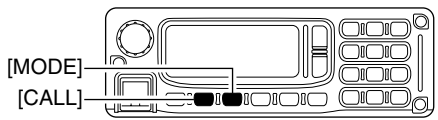




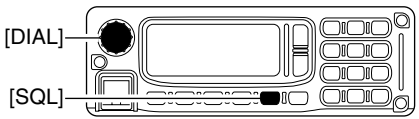
②Rotate [DIAL] to select the desired message channel.
- Ch1 to Ch6 are available.

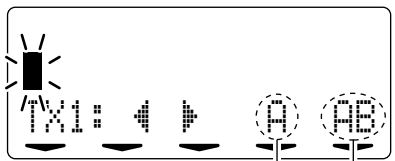
③Push [V/M] to enter the message edit condition.

④Push [CALL] or [MODE] to select the digit to be edited.
- Pushing [CALL] moves the cursor to left; pushing [MODE] moves cursor to right.



⑤Push [SQL] several times to select the desired character group, then rotate [DIAL] to select the desired character.
- AB : Alphabets (A to Z)
- ab : Alphabets (a to z)
- 12 : Numbers (0 to 9)
- _/ : Symbols (space and /)
- !" : Symbols (! " # $ % & ' ( ) ✱ + , – . : ; < = > ? @ [\ ] ^ _ ` { | } ~)





⑥Push [TXinh•SET] to enter the selected character.
- The cursor move to right automatically.

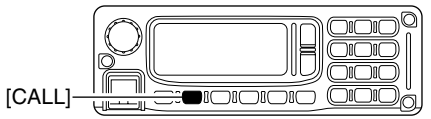
⑦Repeat the steps ④ to ⑥ to enter the desired station or repeater call sign.

⑧Push [V/M] to program the call sign and exit the edit condition.

☞*Continue to the next page*

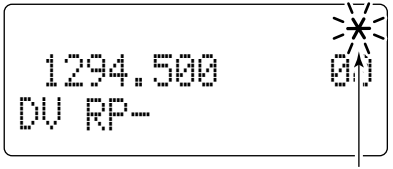
◇ *Short message operation— RC-24 (continued)*

⑨Push [CALL] to turn the message transmission ON.



⑩Push [PTT] to make a call.
- The message is transmitted immediately with your voice.
- When transmitting continuously, the message is transmitted in each 30 sec.

⑪When a message is received, the message indicator, "✱," blinks.
- Only 1 message can be stored for reception in the RC-24.
- The same message sending from the same call sign station won't be displayed repeatedly.
- The message in the RC-24 will be cleared when ID-1 is powered OFF.

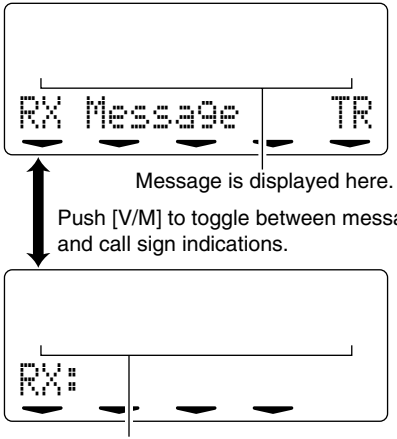


Message indicator blinks.

⑫Push [TXinh•SET] then push [SQL] to select "RX Message" indication.
- The message indicator "✱," disappears.

⑬Push [CALL] or [MODE] to scroll the message manually.
- Pushing [CALL], scrolls the message to left; pushing [MODE] scrolls the message to right.

⑭Push [V/M] to display the call sign.
- Push [CALL] or [MODE] to scroll the note, if necessary.



⑮Push [TXinh•SET] to return to exit from the message indication condition.

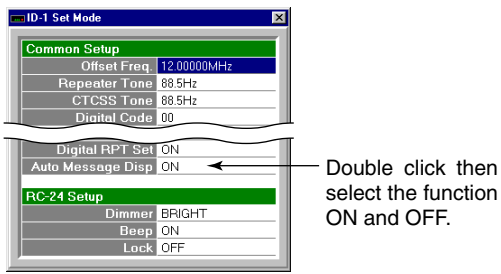
◇ Automatic message indication

The received message can be displayed on the RC-24 without selecting the "RX Message" indication.

• *Setting from the application*

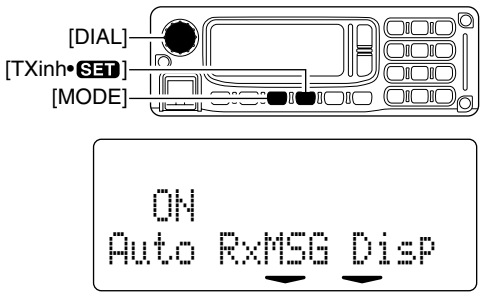
①Displays set mode screen by performing one of the following operations.
- Select "Edit SetMode(C)..." in view menu.
- Click "" button in tool bar.
- Click [SET].
- Press [F7] key on the PC keyboard.

②Double click "Auto Message Disp" cell, then select the function ON and OFF.
• To close the screen, click "" or repeat the operation as step ①.



• *Setting from the RC-24*

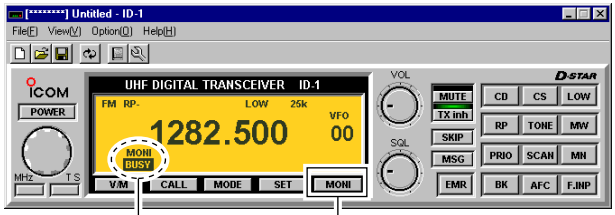
①Push [MODE] several times to select DV or DD mode.
②Push [TXinh•SET] for 0.5 sec. to enter set mode.
③Push [MODE] or [TXinh•SET] to select "Auto RxMSG Disp" item.
④Rotate [DIAL] to turn the function ON and OFF.
⑤Push [PWR] momentarily to exit set mode.

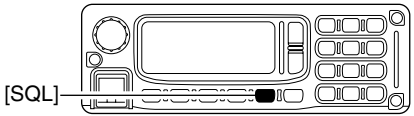


■ Monitor function

The monitor function releases all squelch mutes, noise squelch, tone squelch, digital code squelch and digital call sign squelch, to monitor the signal on the displayed frequency.

➥ Click [MONI] in the application (main screen); or push and hold [SQL] on the RC-24 to activate the monitor function.
- "MONI" and "BUSY" appear for FM mode, "MONI" appears for DV and DD mode operation when the function ON. (main screen)
- "↘" appears on the RC-24 function display while holding [SQL] for FM operation.
- The displayed frequency shifts when duplex (RP– or RP+) is set.





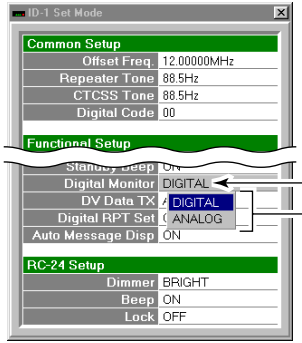
◇ Monitoring mode selection

Under normal settings, an FM mode signal cannot be heard, even when the monitor is turned ON. There is an exception, and this is when you have the Digital monitor set to the Analog mode. This will allow an FM mode signal to "Break-in" during digital communications.

• *Setting from the application*

① Displays set mode screen by performing one of the following operations.
- Select "Edit SetMode(C)..." in view menu.
- Click "↘" button in tool bar.
- Click [SET].
- Press [F7] key on the PC keyboard.

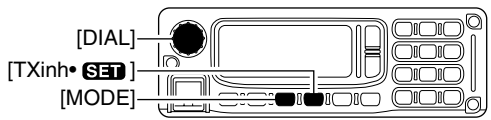
② Double click "Digital Monitor" cell, then select the desired monitoring mode from "DIGITAL" and "ANALOG."
- ANALOG: FM mode, DIGITAL: Digital
- To close the screen, click "✕" or repeat the operation as step ①.

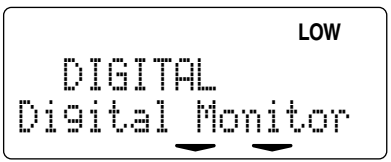


Double click the Digital. Monitor cell, then select the desired monitoring mode.

• Setting from the RC-24

①Push [MODE] several times to select digital mode.
②Push [TXinh•SET] for 0.5 sec. to enter set mode.
③Push [MODE] or [TXinh•SET] to select "Digital Monitor" item.
④Rotate [DIAL] to select the desired monitoring mode.
• ANALOG: FM mode, DIGITAL: Digital
⑤Push [PWR] momentarily to exit set mode.

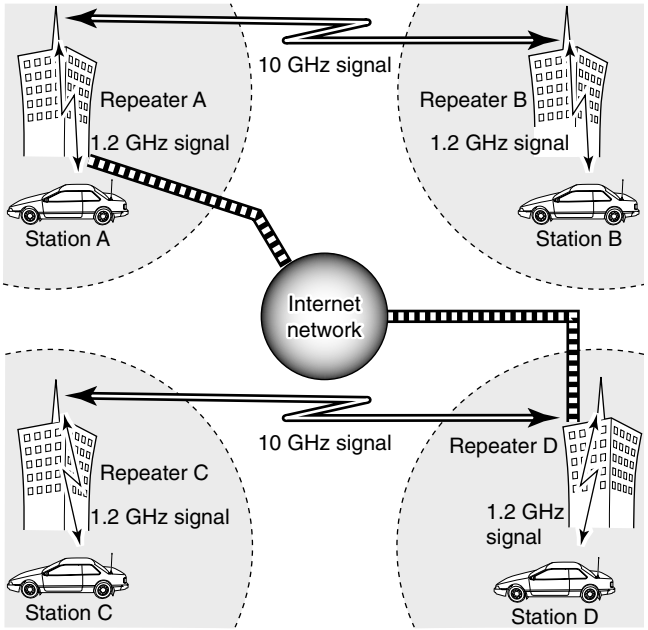




■ About D-STAR system

In the D-STAR system, repeater linking via a 10 GHz band backbone and internet network (gateway connection) capabilities are available. This system allows you to much wider coverage range during Digital voice mode operation.

• D-STAR system outline



For current existing repeater operation, stations that are communicating must be in the same repeater's operating area. However, in the D-STAR system as in the illustration at left, the repeaters can be linked via the system repeaters (with a 10 GHz signal). Thus stations A and B can communicate even though they are in different repeater operating areas.

Also, the D-STAR system repeaters are connectable through the internet network— gateway connection capability.

For example, when station B uses the gateway connection station B can communicate with the station C!
By using the gateway connection, long distance communication like DX operation may be possible with 1.2 GHz digital voice!

In the D-STAR system, independent repeater's operating area is called as Area and a group that linking repeaters via a 10 GHz backbone is called as Zone.

About time-out timer function
The ID-1 has a time-out timer function for digital repeater operation. The timer limits a continuous transmission for approx. 10 min. Warning beeps will sound before 30 sec. (approx.) and just before the timer functioning.

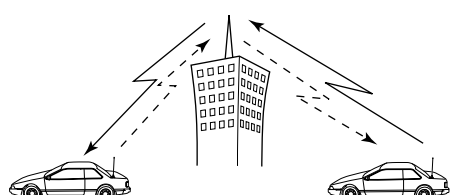
■ General

Repeaters allow you to extend the operatable range, and also to cover blind zones. Because a repeater has much higher output power than the typical transceiver, and has a wider coverage area.

Normally, a repeater has independent frequency for each receive and transmit, and a subaudible tone may be required to accessing a repeater.

Refer to an amateur radio handbook or a ham magazine for details of local FM repeater, such as repeater input/output frequencies and location.

Repeater example;
Receives the 1269.975 MHz signal and the detected audio signals are transmitted on 1289.975 MHz simultaneously.



Station A:
Tx: 1269.975 MHz
Rx: 1289.975 MHz

Station B:
Tx: 1269.975 MHz
Rx: 1289.975 MHz

◇ Repeater operation flow chart

Step 1:
Set the desired operating mode.

Step 2:
Set the desired receive frequency (repeater output frequency).

Step 3:
Set the duplex (shift) direction (–duplex or +duplex).
- Set the offset frequency (shift value), if required.

Step 4 for FM mode:
Set the subaudible tone (repeater tone) encoder function ON.
- Set the subaudible tone frequency, if required.

Step 4 for Digital voice mode:
Set the desired repeater call sign.
- Set the desired linked repeater call sign, if required.

• The ID-1 USA version has the auto repeater function. Thus the step 3 (and 4 in FM mode) may not be necessary, depending on the setting.
• Repeater settings can be stored into a memory channel.

■ Accessing an FM repeater

◇ Setting from the application

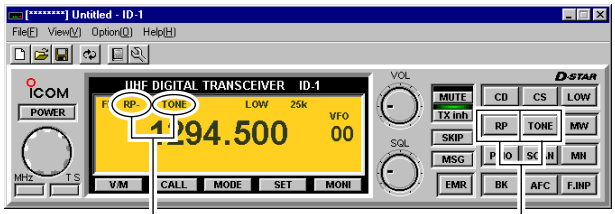
①Click [MODE] to select FM mode.
- "FM" appears.

②Set the desired receive frequency (repeater output frequency).

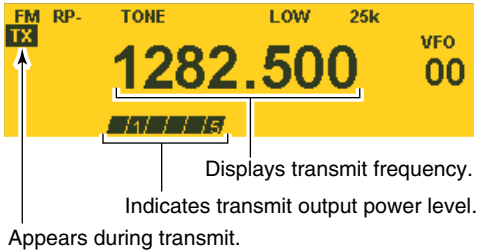
③Click [RP] several times to select minus or plus duplex.
- "RP–" or "RP+" appears.
- 12 MHz is set as the default for the USA version. Refer to page 60 for offset frequency setting.

④Click [TONE] to turn the repeater tone encoder ON.
- "TONE" appears.
- 88.5 Hz is set as the default. Refer to page 59 for tone frequency setting.

NOTE for the USA version: During the auto repeater function ON, the steps ③ and ④ are not necessary, depending on the settings. See page 106 for the auto repeater function.



⑤Push and hold [PTT] to transmit.
- The display frequency automatically changes to the transmit frequency (repeater input frequency).
- If the repeater indicator, "RP–" or "RP+," and "TX ERR" blink, confirm that the duplex direction and the offset frequency (p. 60) is set correctly.



⑥Release [PTT] to receive.

⑦Click [MONI] to check whether the other station's transmit signal can be received directly.

⑧To return to simplex operation, click [RP] several times to clear the "RP–" or "RP+" indicator.

⑨To turn OFF the repeater tone encoder, click [TONE] several times until no tone indicators appear.

◇ Setting from the RC-24

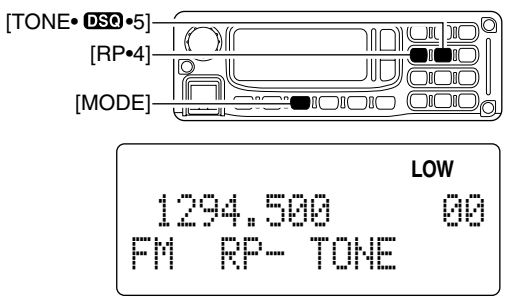
①Push [MODE] to select FM mode.
- "FM" appears.

②Set the desired receive frequency (repeater output frequency).

③Push [RP•4] several times to select minus or plus duplex.
- "RP—" or "RP+" appears.
- 12 MHz is set as the default. Refer to page 60 for offset frequency setting.

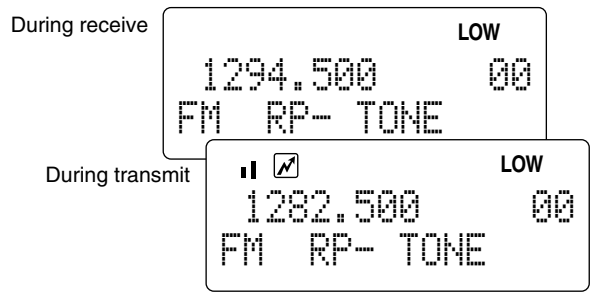
④Push [TONE•DSQ•5] to turn the repeater tone encoder ON.
- "TONE" appears.
- 88.5 Hz is set as the default. Refer to page 59 for tone frequency setting.

NOTE for the USA version: During the auto repeater function ON, the steps ③ and ④ are not necessary, depending on the settings. See page 106 for the auto repeater function.



⑤Push and hold [PTT] to transmit.
- The display frequency automatically changes to the transmit frequency (repeater input frequency).
- If the repeater indicator, "RP—" or "RP+" blinks, confirm that the offset frequency (p. 60) is set correctly.

⑥Release [PTT] to receive.



⑦Push and hold [SQL] to check whether the other station's transmit signal can be received directly.

⑧To return to simplex operation, push [RP•4] several times to clear the "RP—" or "RP+" indicator.

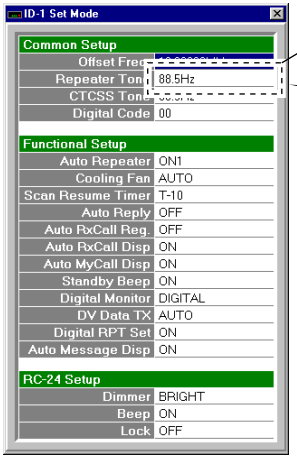
⑨To turn OFF the repeater tone encoder, push [TONE•DSQ •5] several times until no tone indicators appear.

■ Repeater tone frequency setting

◇ Setting from the application

①Displays set mode screen by performing one of the following operations.
- Select “Edit SetMode(C)...” in view menu.
- Click “ ” button in tool bar.
- Click [SET].
- Press [F7] key on the PC keyboard.

②Double click “Repeater Tone” frequency cell, then select the desired frequency from the displayed list.
• To close the screen, click “ ” or repeat the operation as step ①.



Double click

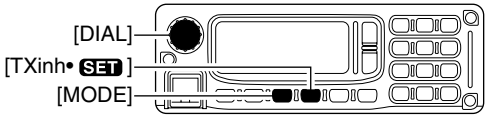
Appears

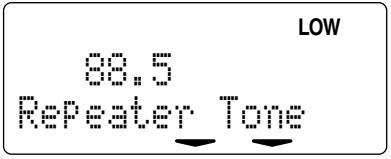
67.0	94.8	131.8	171.3	203.5
69.3	97.4	136.5	173.8	206.5
71.9	100.0	141.3	177.3	210.7
74.4	103.5	146.2	179.9	218.1
77.0	107.2	151.4	183.5	225.7
79.7	110.9	156.7	186.2	229.1
82.5	114.8	159.8	189.9	233.6
85.4	118.8	162.2	192.8	241.8
88.5	123.0	165.5	196.6	250.3
91.5	127.3	167.9	199.5	254.1

Select from the above list.

◇ Setting from the RC-24

①Push [MODE] several times to select FM mode.
②Push [TXinh•SET] for 0.5 sec. to enter set mode.
③Push [MODE] or [TXinh•SET] to select “Repeater Tone” item.
④Rotate [DIAL] to select the desired tone frequency.
• See the table below for the available frequencies.
⑤Push [PWR] momentarily to exit set mode.





• Available tone frequencies

(unit: Hz)

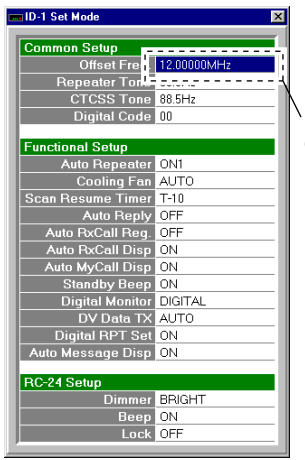
67.0	79.7	94.8	110.9	131.8	156.7	171.3	186.2	203.5	229.1
69.3	82.5	97.4	114.8	136.5	159.8	173.8	189.9	206.5	233.6
71.9	85.4	100.0	118.8	141.3	162.2	177.3	192.8	210.7	241.8
74.4	88.5	103.5	123.0	146.2	165.5	179.9	196.6	218.1	250.3
77.0	91.5	107.2	127.3	151.4	167.9	183.5	199.5	225.7	254.1

■ Offset frequency setting

◇ Setting from the application

①Displays set mode screen by performing one of the following operations.
- Select “Edit SetMode(C)...” in view menu.
- Click “ ” button in tool bar.
- Click [SET].
- Press [F7] key on the PC keyboard.

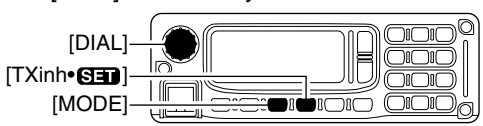
②Double click “Offset Freq” frequency cell, then enter the desired frequency within 0 to 60.000 MHz range.
• To close the screen, click “ ” or repeat the operation as step ①.

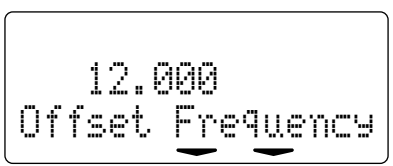


Double click, then enter the desired offset frequency.

◇ Setting from the RC-24

①Push [MODE] several times to select FM mode.
②Push [TXinh•SET] for 0.5 sec. to enter set mode.
③Push [MODE] or [TXinh•SET] to select “Offset Frequency” item.
④Rotate [DIAL] to set the desired offset frequency.
• The tuning step, previously selected in VFO mode, is used for the setting.
⑤Push [PWR] momentarily to exit set mode.





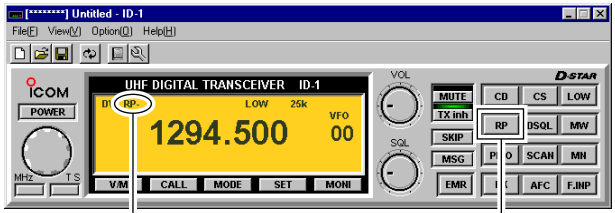
■ Accessing a Digital repeater

◇ Setting from the application

①Click [MODE] to select DV (Digital voice) mode.
- "DV" appears.

②Set the desired receive frequency (repeater output frequency).

③Click [RP] several times to select the repeater mode.
- Select "RP–" or "RP+."



④Click [CS] to display the Select Call Sign screen, then set your call sign in "MY."
- Click [▲]/[▼] to select the programmed your call sign.
- When your call sign is not programmed, enter your call sign into the text box directly.

⑤Set the desired station call sign in "YOUR."

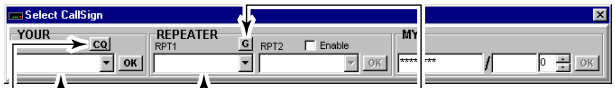
• When sending a CQ

- Click [CQ] to displays "CQCQCQ" then click [OK].

• When calling the desired station

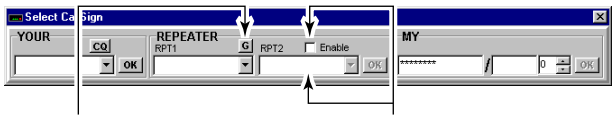
- Click [▼] to select the call sign.
  - When the desired call sign is not programmed, enter the desired call sign into the text box directly.

⑥Set the desired near-by repeater call sign in "RPT1" then click [OK].
- Click [▼] to select the call sign.
- When the desired repeater call sign is not programmed, enter the call sign into the text box directly.
- When linking repeaters via internet network (gateway connection), clicking [G] may be necessary depending on the repeater system.



; or click to display "CQCQCQ" for CQ call.

⑦Click "Enable" to display "✔," then set the near-by repeater call sign from the desired station in "RPT2" then click [OK], if necessary.
- Click [▼] to select the call sign.
- When the desired repeater call sign is not programmed, enter the call sign into the text box directly.
- When linking repeaters via internet network (gateway connection), clicking [G] may be necessary depending on the repeater system.



⑧ Push and hold [PTT] to transmit; release [PTT] to receive.
⑨ Click [RP] several times until the “RP–” or “RP+” indicator disappears to return to simplex operation.

Hint!
When using the gateway connection capabilities, the D-STAR system repeater automatically searches for the nearest repeater from the desired station that you want to call even when you don’t know the desired station is in which Area or Zone.

How to make a CQ call to another Zone?
When you want to make a CQ call to another Zone, set the call signs as follows.
e.g.: Another Zone’s repeater call sign= xx0xxx,
the nearest repeater call sign= xx1xxx
the gateway repeater call sign= xx2xxx

① Enter “/xx0xxx” into “YOUR” (or “UR” in RC-24).
② Enter “xx1xxx” into “RPT1” (or “RPT1” in RC-24).
③ Enter “xx2xxx_G” into “RPT2” (or “RPT2” in RC-24).
*Some repeater system requires the “G” setting with clicking [G] in “Select Call Sign” screen or pushing [∧] for 0.5 sec. on RC-24).

For practical digital repeater operation
When using a digital repeater in digital voice mode, the transmission must be performed after the repeater signal disappears completely. Otherwise the communication error may occur.

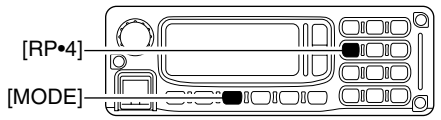
NOTE: The required call sign settings may differ according to the repeater system (Area or Zone). Ask the repeater system manager for setting details.

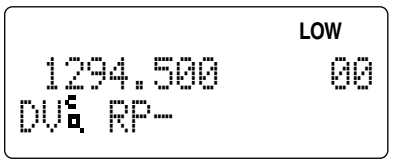
◇ Setting from the RC-24

①Push [MODE] to select DV (Digital voice) mode.
- "DV" appears.

②Set the desired receive frequency (repeater output frequency).

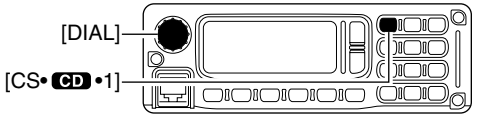
③Push [RP•4] several times to select the repeater mode.
- Select "RP–" or "RP+."

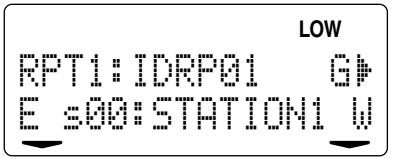




④Push [CS•CD•1] to enter call sign select mode, then rotate [DIAL] to select the desired station call sign.
- When sending a CQ, push [BK•CQ•.] for 0.5 sec. to displays "CQCQCQ."
- Refer to the pages 42 to 44 for call sign setting when the desired call sign is not programmed.

⑤Push [CS•CD•1] one more time to select "RPT1," then rotate [DIAL] to select the desired repeater call sign.
- Refer to the pages 42 to 44 for call sign setting when the desired call sign is not programmed.
- Push [CS•CD•1] one more times again to select "RPT2" then set the desired repeater call sign when using the repeater linking capability.
- When linking repeaters via internet network (gateway connection), pushing [∧] for 0.5 sec. may be necessary depending on the repeater system.





⑥Push [CS•CD•1] once or twice to exit call sign select mode.

⑦Push [PTT] to transmit, release [PTT] to receive.

⑧To clear "RP–" or "RP+" push [RP•4] once or twice.

■ General

The ID-1 allows you to not only for the voice communications but also the data communications with Data mode.

The data communication functions as a wireless LAN unit with up to 128 kbps (theoretical value) of data transmission speed. Any data files can be copied to the connected PC.

Internet accessing* is also provided with Data mode operation when gateway connection is used.
*Contract with a gateway repeater manager is additionally required.

■ Precaution

⚠ **WARNING!** The saved file(s) in the shared folder may be modified or deleted, or unknown file(s) may be copied into the shared folder from the connected station when the transmission inhibit is released.

Icom Inc. assume no responsibility whatsoever for any damages or lost profits resulting from opportunities for signal communications being lost because of the failure, malfunction, poor condition, damage, or data loss of this unit or because of such external causes as power failure. Icom also dismisses all responsibility for demands made by a third party.

The transmitting data may be received and decrypted by a third party/station due to the ID-1 transmits data without encryption.

Connect the ID-1 and PC via Ethernet cable for Data mode operation in advance. (see p. 17)

Disconnect the PC from any other network, another ISP, LAN, etc., is recommended. Network error may be occurred.

For data transferring (PC-to-PC communication), a fixed IP address must be assigned, the same workgroup setting and have shared folder must be held for both PCs.

Make sure the Ethernet cable, as well as the coupler connections are secure. Loose connections may cause a data transmission error during Data operation.

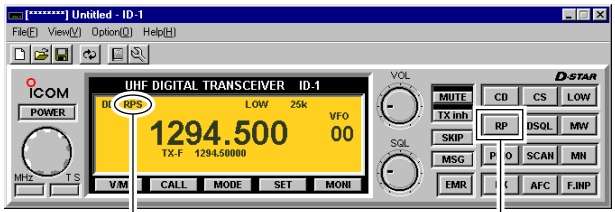
■ Internet access

◇ Setting from the application

①Click [MODE] to select DD (Data) mode.
- "DD" appears.

②Set the near-by repeater frequency.

③Click [RP] several times to select "RPS".

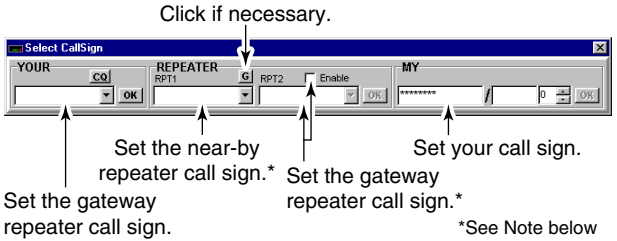


④Click [CS] to display the Select Call Sign screen, set your call sign in "MY" then click [OK].
- Click [▲]/[▼] to select the programmed your call sign.
- When your call sign is not programmed, enter your call sign into the text box directly.

⑤Set the gateway repeater call sign in "YOUR" then click [OK].
- Click [▼] to select or enter the call sign into the text box directly.

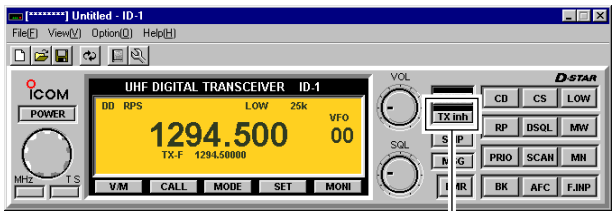
⑥Set the desired near-by repeater call sign in "RPT1."
- Click [▼] to select or enter the call sign into the text box directly.

⑦Set the gateway repeater call sign in "RPT2" then click [OK].
- Click [Enable] ("✔" appears) to enable "RPT2" call sign setting.
- Click [▼] to select or enter the call sign into the text box directly.
- When the gateway repeater require the "G" setting, click [G].



NOTE: When the near-by repeater is gateway repeater, set the call sign into "RPT1" then click [OK], and skip step ⑦.
- When the repeater requires the "G" setting, click [G].

⑧Click [TX inh] to release transmission inhibit.
- The transmit inhibit indicator (above [TX inh]) turns OFF.
- Starts accessing to the gateway repeater.



⑨Start up a web browser then access to the desired web site.

⑩Click [TX inh] again to disconnect (inhibit the transmission) from the gateway repeater.

Hint!

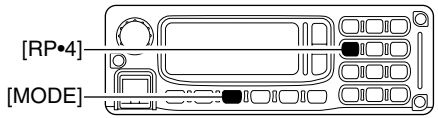
When starting up an E-mail application at step ⑨, you can access to the mail server to send or receive an E-mail.

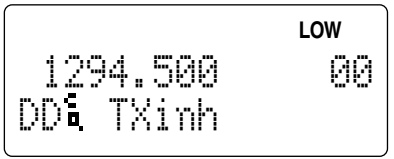
◇ Setting from the RC-24

①Push [MODE] to select DD (Data) mode.
- "DD" appears.

②Set the near-by repeater frequency.

③Push [RP•4] several times to select "RPS."
- "RPS" displayed briefly.



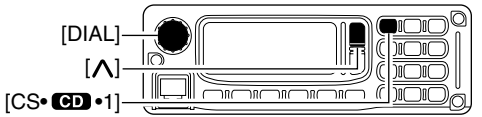


④Push [CS•CD•1] to enter call sign select mode, then rotate [DIAL] to select the gateway repeater call sign.
- Refer to the pages 42 to 44 for call sign setting when the desired call sign is not programmed.

⑤Push [CS•CD•1] one more time to select "RPT1," then rotate [DIAL] to select the desired near-by repeater call sign.
- Refer to the pages 42 to 44 for call sign setting when the desired call sign is not programmed.

⑥Push [CS•CD•1] one more time to select "RPT2," then rotate [DIAL] to select the gateway repeater call sign.

⑦Push [∧] for 0.5 sec. to enable the gateway connection, when the repeater requires the "G" setting.
- "G" appears beside the call sign.



NOTE: When the near-by repeater is gateway repeater, push [∧] for 0.5 sec. (if necessary) after the call sign setting into "RPT1" in step ⑤ and skip step ⑥.

⑧Push [CS•CD•1] once (or twice) to exit call sign select mode.

⑨Push [TXinh•SET] to release transmission inhibit.
- "RPS" appears instead of "TXinh" indication.
- Starts accessing to the gateway repeater.

⑩Start up a web browser then access to the desired web site.

⑪Push [TXinh•SET] again to disconnect (inhibit the transmission) from the gateway repeater.

■ Data transferring

NOTE: Set a fixed IP address, the same workgroup and a shared folder for each PC, as well as the call sign setting each other for direct data transferring between ID-1s. In this case, the steps ③, ⑤ to ⑦ are not necessary.

◇ Setting from the application

①Click [MODE] to select DD (Data mode).
- "DD" appears.

②Set the desired frequency.

③Click [RP] several times to select "RPS," when connecting the PC through repeater/s.

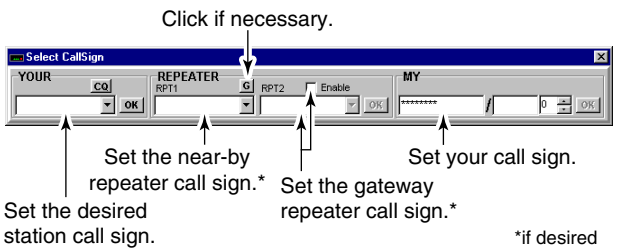
④Click [CS] to display the Select Call Sign screen, set your call sign in "MY" then click [OK].
- Click [▲]/[▼] to select the programmed your call sign.
- When your call sign is not programmed, enter your call sign into the text box directly.

⑤Set the desired station call sign in "YOUR" then click [OK].
- Click [▼] to select or enter the call sign into the text box directly.

For direct data transferring between ID-1s, go to step ⑧.

⑥Set the desired near-by repeater call sign in "RPT1," if desired.
- Click [▼] to select or enter the call sign into the text box directly.

⑦Set the gateway repeater call sign in "RPT2," then [OK], if desired.
- Click [Enable] ("✔" appears) to enable "RPT2" call sign setting.
- Click [▼] to select or enter the call sign into the text box directly.
- When the gateway repeater require the "G" setting, click [G].



NOTE: When the near-by repeater is gateway repeater, set the call sign into "RPT1" then click [OK], and skip step ⑦.
- When the repeater requires the "G" setting, click [G].

⑧Click [TX inh] to release transmission inhibit.
- The transmit inhibit indicator (above [TX inh]) turns OFF.
- Starts accessing to the desired station (via repeater/s).

⑨Open "Network Computers."
- The shared folder of the desired station appears.
- It may takes a minutes until the shared folder appears according to the conditions, or PC performance.

⑩Open the shared folder, then drag and drop the desired file to transferring.

⑪Click [TX inh] again to disconnect (inhibit the transmission) from the connected PC.

◇ Setting from the RC-24

①Push [MODE] to select DD (Data) mode.
- "DD" appears.

②Set the desired frequency.

③Push [RP•4] several times to select "RPS," when connecting the PC through repeater/s.
- "RPS" displayed briefly.

④Push [CS•CD•1] to enter call sign select mode, then rotate [DIAL] to select the desired station call sign.
- Refer to the pages 42 to 44 for call sign setting when the desired call sign is not programmed.

For direct data transferring between ID-1s, go to step ⑧.

⑤Push [CS•CD•1] one more time to select "RPT1," then rotate [DIAL] to select the desired near-by repeater call sign, if desired.
- Refer to the pages 42 to 44 for call sign setting when the desired call sign is not programmed.

⑥Push [CS•CD•1] one more time to select "RPT2," then rotate [DIAL] to select the gateway repeater call sign, if desired.

⑦Push [∧] for 0.5 sec. to enable the gateway connection, when the repeater require the "G" setting.
- "G" appears beside the call sign.

NOTE: When the near-by repeater is gateway repeater, push [∧] for 0.5 sec. (if necessary) after the call sign setting into "RPT1" in step ⑤ and skip step ⑥.

⑧Push [CS•CD•1] once (or twice) to exit call sign select mode.

⑨Push [TXinh•SET] to release transmission inhibit.
- "RPS" appears instead of "TXinh" indication.
- Starts accessing to the desired PC (via repeater/s).

⑩Open "Network Computers."
- The shared folder of the desired station appears.
- It may takes a minutes until the shared folder appears according to the conditions, or PC performance.

⑪Open the shared folder, then drag and drop the desired file to transferring.

⑫Push [TXinh•SET] again to disconnect (inhibit the transmission) from the gateway repeater.

■ Low-speed data communication

In addition to the data communication, a low-speed data communication capability is available.
Low-speed data communications require narrow passband width, thus digital voice mode is used and provides a simultaneous operation with voice and data.

①Set the desired frequency.
②Select DV (Digital voice) mode.
• Click [MODE] on the main screen or push [MODE] on the RC-24.
③Set another settings, such as repeater, digital code squelch, transmit output power.
④Click "✕" or select "Exit(X)" in File menu to quit the application.

NOTE: The application must be quit during low-speed data operation. The application and a low-speed data communication software cannot be operated simultaneously, due to both of data passing through the ID-1 USB port.

⑤Start up the low-speed data communication application.
⑥Set the application as follows.
• Port : The same COM port number as ID-1's
• Baud rate : 19200 bps
• Data : 8 bit
• Parity : None
• Stop : 1 bit
• Flow control : Xon/Xoff

⑦Push and hold [PTT] to transmit, release to receive the data.
• Refer to the instruction of the application that how to send or receive data.

NOTE:
• A communication error may occur depending on the combination of the OS used, and the low-speed data communication application installed in your PC.
• "Packet-loss" (loosing a part of data) may occur when communicating through internet network. When "Packet-loss" occurs, [TX/RX] indicator lights orange.
• ASCII code's characters are only usable.

■ General description

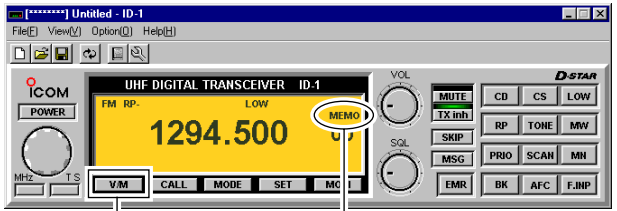
The transceiver has 105 memory channels including 2 scan edge memory channels (1 pair), and 3 call channels. Each of these channels can be individually programmed with operating frequency (pgs. 35, 36), operating mode (p. 38), repeater mode (pgs. 57, 58, 61–63), offset frequency (p. 60), subaudible tone encoder or tone squelch and its tone frequency (p. 59), Digital squelch and its station call sign (pgs. 92–99), repeater call signs (RPT1 and RPT2; pgs. 61–63), skip information* (p. 88) and memory names (pgs 80–82).

*Except scan edges and call channels.

■ Memory channel selection

◇ Selecting with the application

①Click [V/M] to select memory mode.
- "MEMO" appears.



• *Dial selection*

②Left click or right click on [DIAL] to increase or decrease the memory channel number.
- The programmed memories can only be selected.

• *Direct channel number input*

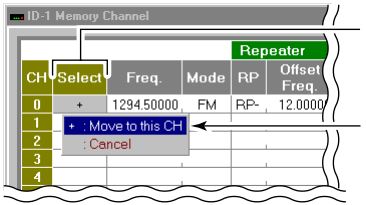
②Click on [F.INP] to display keypad screen.

③Click the appropriate numeral keys to select the desired memory channel.
- When selecting a channel 00 to 09, click [0] first then click [0]–[9], or click [0]–[9] then click [ENT].
- PC keyboard can also be used for the direct channel selection.

• *Selecting from Memory Channel screen*

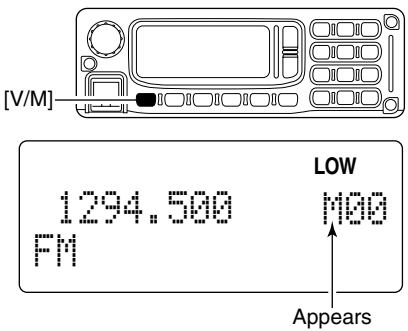
②Display the Memory channel screen.
- Select "Edit Memory Channel(M)..." in View menu.
- Click "[ ]" in tool bar.
- Press [F6] key on the PC keyboard.

③Double click, or right click the desired channel's "Select" cell, then select "+ : Move to this CH" to select the desired memory channel.
- Click the desired memory channel's "Select" cell, then press [Enter] while pressing [Ctrl] key on the PC keyboard.



◇ Selecting with the RC-24

①Push [V/M] to select memory mode.
• "†" appears beside the channel number indication.



• *Dial selection*

②Rotate [DIAL] to select the desired memory channel.
• The programmed memory channels can only be selected.
• Microphone's [UP]/[DN] switches can also be used for the selection.

• *Keypad selection*

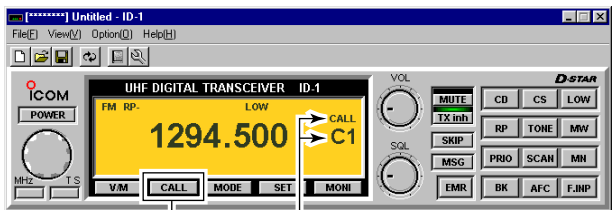
②Push [F.INP•L] then push the appropriate digit keys to select the desired memory channel.
• Channel number indication disappear after pushing [F.INP•L].
• When selecting a channel 00 to 09, push [AFC•EMR•0] first then push [AFC•EMR•0]–[MN•9].

■ Call channel selection

Call channel is pre-programmed memory channel that can be accessed by simply clicking call channel button.
The transceiver has 3 call channels.

◇ Selecting with the application

①Click [CALL] to select memory mode.
• "CALL" and "C" appear.



• *Dial selection*

②Left click or right click on [DIAL] to increase or decrease the call channel number.

• *Direct channel number input*

②Click on [F.INP] to displays keypad screen.
③Click the appropriate numeral key ([1], [2] or [3]) to select the desired call channel.
• PC keyboard can also be used for the direct channel selection.

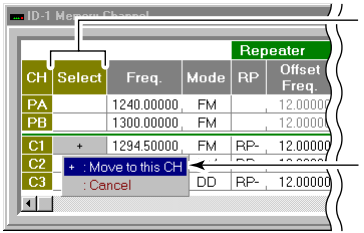
• *[CALL] key selection*

②Click [CALL] each time to select C1 to C3 in sequence.

• *Selecting from Memory Channel screen*

②Display the Memory channel screen.
- Select “Edit Memory Channel(M)...” in View menu.
- Click “ ” in tool bar.
- Press [F6] key on the PC keyboard.

③Double click, or right click the desired channel’s “Select” cell, then select “+ : Move to this CH” to select the desired call channel.
- Click the desired call channel’s “Select” cell, then press [Enter] while pressing [Ctrl] key on the PC keyboard.

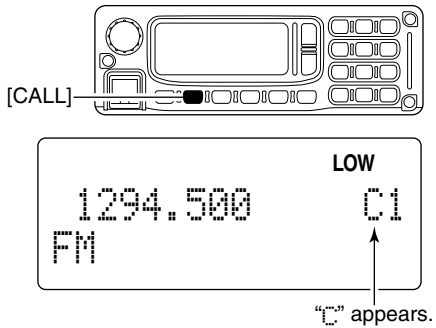


Double click the desired channel’s “Select” cell.

Select “+ : Move to this CH”.

◇ Selecting with the RC-24

①Push [CALL] to select call channel
- “ ” appears beside the channel number indication.



• *Dial selection*

②Rotate [DIAL] to select the desired call channel.
- Microphone’s [UP]/[DN] switches can also be used for the selection.

• *Keypad selection*

②Push [F.INP•L] then push the appropriate digit key ([CS•CD•1], [MHz•TS•2] or [LOW•3]) to select the desired call channel.
- Channel number indication disappear after pushing [F.INP•L].

• *[CALL] selection*

②Push [CALL] each time to select C1 to C3 in sequence.

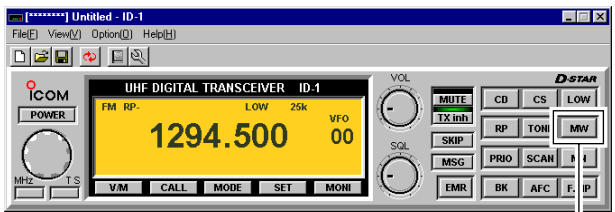
■ Programming a memory/call channel

VFO settings, including the set mode contents such as repeater tone frequency, offset, can be programmed into a memory and call channel.

◇ Programming from the application — main screen

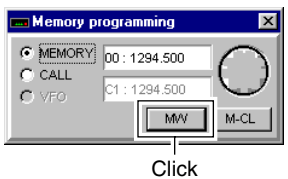
①Set the desired frequency in VFO mode.
- ➥ Set the operating mode with [MODE].
- ➥ Set the frequency using [DIAL] or keypad.
- ➥ Set other data (e.g. station call sign, tone information, etc.) if required.

②Click [MW] to display the Memory programming screen.



③Select the desired memory or call channel number by right clicking or left clicking on the [DIAL] in the screen.
- Click “MEMORY” to select memory, or click “CALL” to select call channel.

④Click [MW] on the Memory programming screen to program.

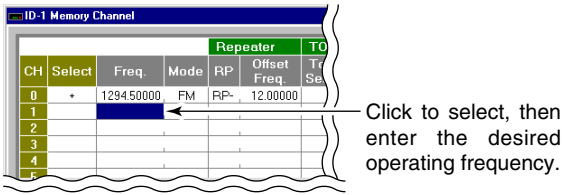


⑤To close the Memory programming screen, click [MW] on the main screen again or click “✕.”

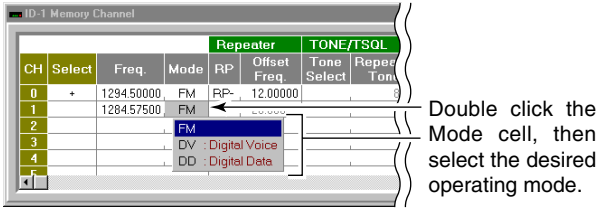
◇ Programming from the application — Memory Channel screen

①Display the Memory channel screen.
- Select “Edit Memory Channel(M)...” in View menu.
- Click “ ” in tool bar.
- Press [F6] key on the PC keyboard.

②Click to select the “Freq.” cell of desired memory or call channel, then enter the desired operating frequency from the PC keyboard directly.



③Double click the Mode cell in the same memory/call channel, then select the desired operating mode.



④Set the other items as follows.

- **Repeaters— RP**

Double click the cell, then select the desired duplex condition.

- **Repeaters— Offset Freq.**

Click to select the cell, then enter the desired offset frequency from the PC keyboard directly.

- **TONE/TSQL— Tone Select**

Double click the cell, then select the desired tone condition.

- **TONE/TSQL— Repeater Tone, TSQL Tone**

67.0	94.8	131.8	171.3	203.5
69.3	97.4	136.5	173.8	206.5
71.9	100.0	141.3	177.3	210.7
74.4	103.5	146.2	179.9	218.1
77.0	107.2	151.4	183.5	225.7
79.7	110.9	156.7	186.2	229.1
82.5	114.8	159.8	189.9	233.6
85.4	118.8	162.2	192.8	241.8
88.5	123.0	165.5	196.6	250.3
91.5	127.3	167.9	199.5	254.1

Double click the cell, then select the desired tone frequency.

- **Digital— DSQL**

Double click the cell, then select the desired digital squelch condition.

- **Digital— Code**

Click to select the cell, then enter the desired digital code number from the PC keyboard directly.

• **Call Sign— YOUR, RPT1, RPT2**
Click to select the cell, then enter the desired station or repeater call sign from the PC keyboard directly.

• **SKIP**

Double click then select the skip condition.
• Not selectable for the scan edges and call channels.

• **Memory Name**
Click to select the cell, then enter the desired memory name from the PC keyboard directly.

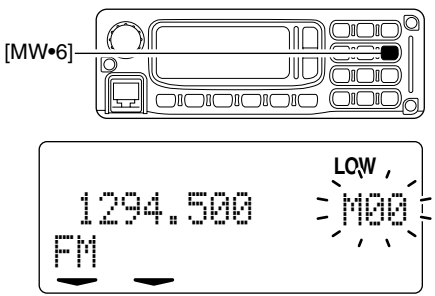
⑤Repeat the steps ② to ④ to program another memory or call channels.

⑥To close the Memory Channel screen, click "□" in tool bar or click "×."

◇ Programming with the RC-24

①Set the desired frequency in VFO mode.
➥ Set the operating mode with [MODE].
➥ Set the frequency using [DIAL] or keypad.
➥ Set other data (e.g. station call sign, tone information, etc.), if required.

②Push [MW•6] momentarily.
• The previously selected memory channel number blinks.



③Rotate [DIAL] to select the desired memory/call channel to be programmed.
• Push [V/M] to select the previously selected memory channel (the same memory channel as displayed at step ②), push [CALL] to select call channel 1.
• Select "MC1" as the call channel 1, "MC2" as the call channel 2 and "MC3" as the call channel 3.

④Push [MW•6] for 0.5 sec. to program.
• 3 beeps sound.
• Memory channel number automatically increases when continuing to push [MW•6] after programming.

■ Copying a memory contents

This function copies a memory channel's contents to VFO (or another memory/call channel). This is useful when searching for signals around a memory channel frequency and for recalling the offset frequency, subaudible tone frequency etc.

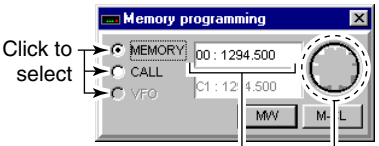
◇ Copying from the application — main screen

①Select the desired memory/call channel to be copied with [DIAL] or keypad.
- Click [V/M] or [CALL] to select memory or call channel, if necessary.

②Click [MW] to display the Memory programming screen.

③Click to select the desired mode (MEMORY, CALL or VFO) to be copied to.

④Select the desired memory or call channel number by right clicking or left clicking on the [DIAL] in the screen.



Shows the selected memory channel number and previously programmed frequency.

Right click to move memory channel number up.
Left click to move memory channel number down.

⑤Click [MW] on the Memory programming screen to copy.

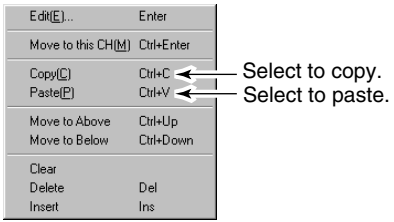
⑥To close the Memory programming screen, click [MW] on the main screen again or click "✕."

◇ Copying from the application — Memory Channel screen

①Display the Memory channel screen.
- Select "Edit Memory Channel(M)..." in View menu.
- Click "▣" in tool bar.
- Press [F6] key on the PC keyboard.

②Right click any cell of the desired memory/call channel to be copied, except "Select," then select "Copy(C)" from the displayed menu as below.
- After selecting a cell of the desired memory channel, press [C] key while [Ctrl] key is pressed and held— these key actions are the same as the mouse operation above.

③Right click any cell of the desired memory/call channel to be copied to, except "Select," then select "Paste(V)."
- After selecting a cell of the desired memory channel, press [V] key while [Ctrl] key is pressed and held— these key actions are the same as the mouse operation above.

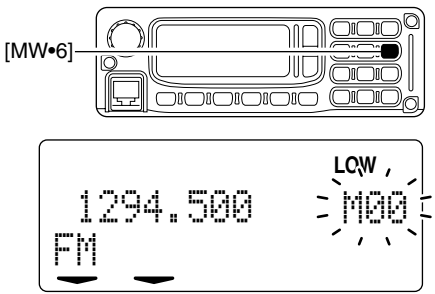


NOTE: Copying a memory/call channel contents to VFO is not possible from the Memory Channel screen.

◇ Copying with the RC-24

①Select the desired memory or call channel with [DIAL] or keypad to be copied.
- Push [V/M] or [CALL] to select memory mode or call channel, if desired.

②Push [MW•6] momentarily.
- The previously selected memory channel number blinks.



③Rotate [DIAL] to select VFO, the desired memory or call channel to be programmed.
- Select "M– –" when copying to VFO.
- Select "M00" to "M99" when copying to memory channel.
- Select "MC1" to "MC3" when copying to call channel.
- The display shows the currently programmed frequency and settings.
- Push [V/M] to select a blank memory channel, push [CALL] to select call channel 1.

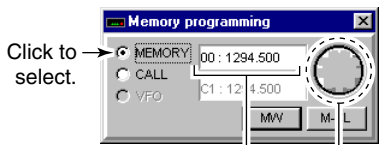
④Push [MW•6] for 0.5 sec. to program.
- 3 beeps sound.

■ Memory clearing

Contents of programmed memories can be cleared (blanked), if desired.

◇ Clearing from the application — main screen

①Click [MW] to display the Memory programming screen.
②Click to select the "MEMORY."
③Select the desired memory channel number to be cleared by right clicking or left clicking on the [DIAL] in the screen.



Shows the selected memory channel number and previously programmed frequency.

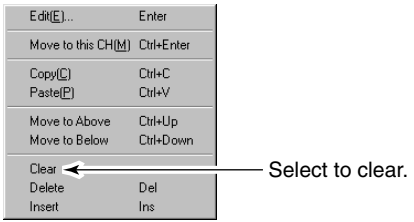
Right click to move memory channel number up.
Left click to move memory channel number down.

④Click [M-CL] on the Memory programming screen to clear the contents.
⑤To close the Memory programming screen, click [MW] on the main screen again or click "×."

◇ Clearing from the application — Memory Channel screen

①Display the Memory channel screen.
- Select “Edit Memory Channel(M)...” in View menu.
- Click “ ” in tool bar.
- Press [F6] key on the PC keyboard.

②Right click any cell of the desired memory channel to be cleared, except “Select,” then select “Clear” from the displayed menu as below.



◇ Clearing with the RC-24

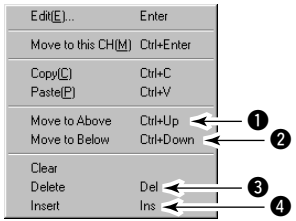
①Push [V/M] to select VFO mode.

②Push [MW•6] momentarily.
- “ ” blinks.

③Select the desired memory channel with [DIAL] or keypad to be cleared.

④Perform the following operations within 2 sec.
- Push [MW•6] momentarily.
- Push [MW•6] for 0.5 sec. again.
- The programmed frequency disappears and the selected memory channel number blinks.

✔ For your convenience— Memory Channel screen other operations



❶Move to above (Press [Ctrl] and [⇑] keys at the same time) swaps the selected Memory Channel with the Channel above it.

❷Move to below (Press [Ctrl] and [⇓] keys at the same time) swaps the selected Memory Channel with the Channel below it.

❸Delete [Del]
Deletes the selected Memory Channel and moves the Memory Channels up one Memory Channel location.

❹Insert [Ins]
Inserts an empty Memory Channel above the selected Memory Channel and moves the Memory Channels down one Memory Channel location.

■ Programming memory name

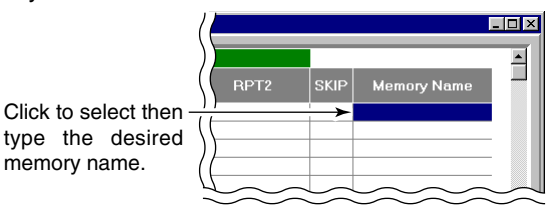
Each memory channel can be programmed with an alphanumeric channel name for easy recognition and can be indicated independently by channel. Names can be a maximum of 10 characters.

◇ Programming from the application

①Display the Memory Channel screen.
- Select “Edit Memory Channel(M)...” in View menu.
- Click “ ” in tool bar.
- Press [F6] key on the PC keyboard.

②Click to select “Memory Name” cell of the desired memory channel.

③Type the desired 10-character memory name from the PC keyboard.



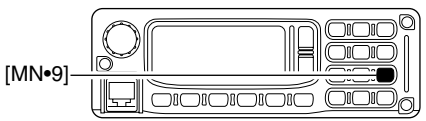
④To close the Memory Channel screen, click “ ” on the main screen or repeat the step ①.

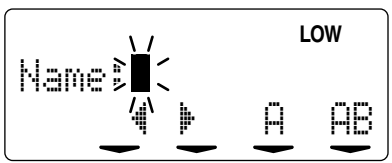
◇ Programming with the RC-24

①Push [V/M] to select memory mode.

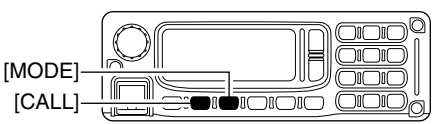
②Select the desired memory channel with [DIAL] or keypad.

③Push [MN•9] for 0.5 sec. to enter memory name programming condition.
- 1 short and 1 long beep will sound.

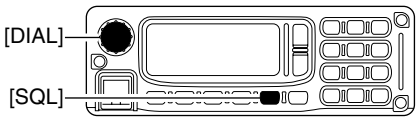


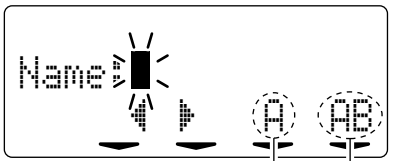


④Push [CALL] or [MODE] to select the digit to be edited.
- Pushing [CALL] moves the cursor to left; pushing [MODE] moves cursor to right.



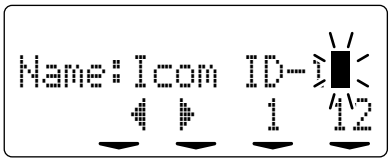
⑤Push [SQL] several times to select the desired character group, then rotate [DIAL] to select the desired character.
- AB : Alphabets (Capital: A to Z)
- ab : Alphabets (Small letter: a to z)
- 12 : Numbers (0 to 9)
- _/ : Symbols (space and /)
- !" : Symbols (! " # $ % & ' ( ) ✱ + , – . : ; < = > ? @ [\ ] ^ _ ` { | } ~)





⑥Push [TXinh•SET] to enter the selected character.
- The cursor move to right automatically.

⑦Repeat the steps ④ to ⑥ to enter the desired memory name.



⑧Push [MN•9] for 0.5 sec. to program the memory name and exit the edit condition.
- 1 short and 1 long beep will sound.
- Return to memory mode automatically.

⑨Repeat steps ② to ⑧ to program another memory names.

■ Memory name indication

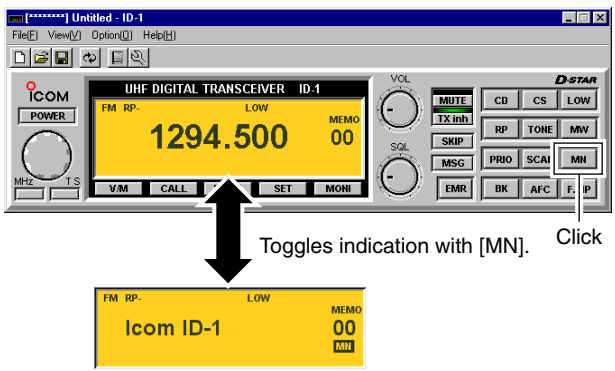
During memory mode operation, the programmed memory name can be displayed instead of the programmed frequency for your preference.

◇ Selecting from the application

①Click [V/M] to select memory mode, if necessary.
- "MEMO" appears.

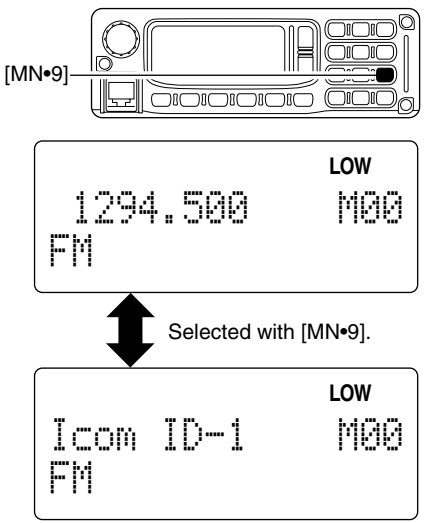
②Click [MN] to show the programmed memory name.
- "MN" appears.
- When no memory name is programmed, the programmed frequency is displayed.

③To cancel the indication, click [MN] again.



◇ Selecting with the RC-24

①Push [V/M] to select memory mode.
②Select the desired memory channel with [DIAL] or keypad.
③Push [MN•9] momentarily to toggle the indication between programmed memory name and frequency.
- "MN ON" or "MN OFF" displayed for a while when memory name indication or frequency indication is selected, respectively.



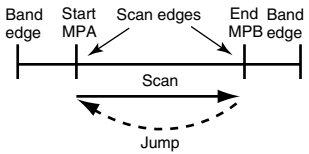
11 SCAN OPERATION

■ Scan types

Scanning searches for signals automatically and makes it easier to locate new stations for contact or listening purposes.

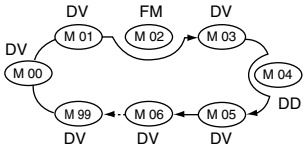
There are 3 scan types and 4 resume conditions to suit your operating needs.

PROGRAMMED SCAN



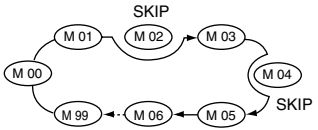
Repeatedly scans between two user-programmed frequencies. Used for checking for frequencies within a specified range such as repeater output frequencies, etc.

MODE SELECT SCAN



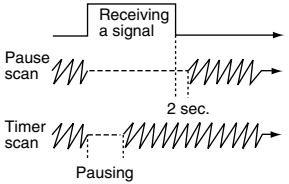
Repeatedly scans all memory channels with the selected operating mode.

MEMORY SCAN



Repeatedly scans memory channels except those set as skip channels. Used for often-called channels and for bypassing normally busy channels such as repeater frequencies.

SCAN RESUME CONDITION (p. 89)



4 resume conditions are available: 3 timer scans and pause scan. When receiving a signal, pause scan pauses until the signal disappears; timer scans pause for 5, 10 or 15 sec.

■ Scan start/stop

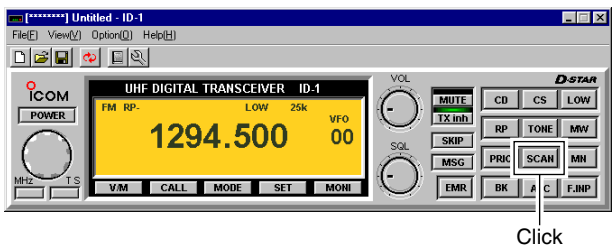
◇ Preparation

Set the scan resume condition (p. 89); program the scan edges (pgs. 85–87); program 2 or more memory channels (pgs. 74–76); set skip settings (p. 88), if desired.

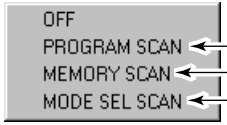
◇ Scanning from the application

①Select VFO mode for programmed scan; or memory mode for memory/mode select scan with [V/M].
- Select a memory channel which the desired operating mode is programmed.

②Click [SCAN].



③Select the desired scan type.
- After the selection, the selected scan starts.



Selectable when VFO has been selected.

Selectable when memory mode has been selected.

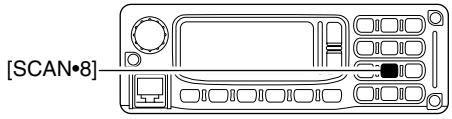
*The above list indication is for instruction description only. In the actual application clearly shows the selectable items only.

④To cancel the scan, click [SCAN] again then select “OFF.”

◇ Scanning with the RC-24

①Select VFO when programmed scan; or select memory mode when memory/select mode scan with [V/M].
- Select a memory channel which the desired operating mode is programmed.

②Push [SCAN•8] momentarily to start programmed or memory scan; push [SCAN•8] for 0.5 sec. to start select mode scan.
- Decimal point, “ ”, blinks during programmed scan; “ ” indicator blinks during memory/select mode scan.



③To cancel the scan, push [SCAN•8] momentarily.

11

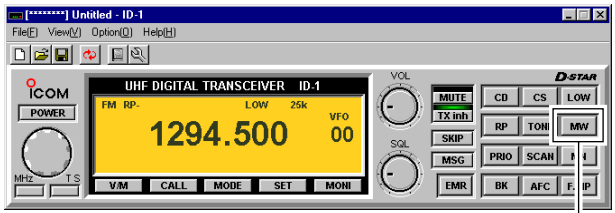
■ Programming scan edge channels

Scan edges can be programmed in the same manner as memory channels. Scan edges are programmed into scan edges PA and PB, in memory channels.

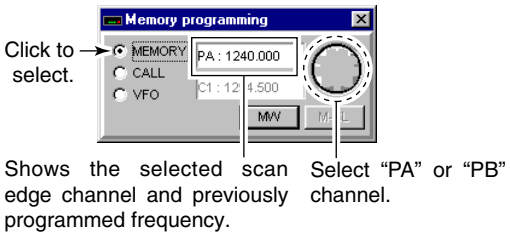
◇ Programming from the application — main screen

①Set the desired scan start frequency in VFO mode.
- ➥ Set the operating mode with [MODE]
- ➥ Set the frequency using [DIAL] or keypad.
- ➥ Set other data (e.g. station call sign, tone information, etc.) if required.

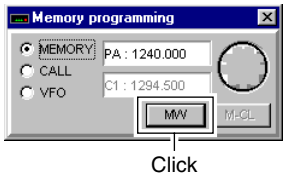
②Click [MW] to display the Memory programming screen.



③Select the memory channel “PA” by right clicking or left clicking on the [DIAL] in the screen.
- Click to select “MEMORY” if call is selected.



④Click [MW] on the Memory programming screen to program.



⑤Set the desired scan end frequency in VFO mode as the step ①.

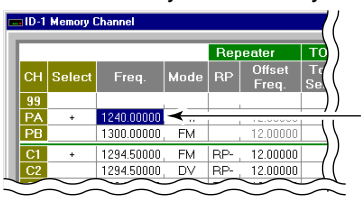
⑥Select the memory channel “PB,” then click [MW] in Memory programming screen to program.

⑦To close the Memory programming screen, click [MW] on the main screen again or click “✕.”

◇ Programming from the application — Memory Channel screen

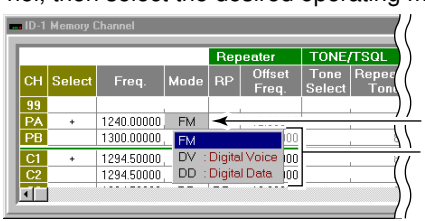
①Display the Memory channel screen.
- Select “Edit Memory Channel(M)...” in View menu.
- Click “▣” in tool bar.
- Press [F6] key on the PC keyboard.

②Click to select the “Freq.” cell of either the scan edge channel, PA or PB, then enter the desired operating frequency from the PC keyboard directly.



Click to select, then enter the desired scan edge frequency.

③Double click the Mode cell in the same memory/call channel, then select the desired operating mode.



Double click the Mode cell, then select the desired operating mode.

④Set the other items as follows.

- **Repeaters— RP**

Double click the cell, then select the desired duplex condition.

- **Repeaters— Offset Freq.**

Click to select the cell, then enter the desired offset frequency from the PC keyboard directly.

- **TONE/TSQL— Tone Select**

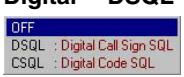
Double click the cell, then select the desired tone condition.

- **TONE/TSQL— Repeater Tone, TSQL Tone**

67.0	94.8	131.8	171.3	203.5
69.3	97.4	136.5	173.8	206.5
71.9	100.0	141.3	177.3	210.7
74.4	103.5	146.2	179.9	218.1
77.0	107.2	151.4	183.5	225.7
79.7	110.9	156.7	186.2	229.1
82.5	114.8	159.8	189.9	233.6
85.4	118.8	162.2	192.8	241.8
88.5	123.0	165.5	196.6	250.3
91.5	127.3	167.9	199.5	254.1

Double click the cell, then select the desired tone frequency.

- **Digital— DSQL**



Double click the cell, then select the desired digital squelch condition.

- **Digital— Code**

Click to select the cell, then enter the desired digital code number from the PC keyboard directly.

• Call Sign— YOUR, RPT1, RPT2
Click to select the cell, then enter the desired station or repeater call sign from the PC keyboard directly.

• Memory Name
Click to select the cell, then enter the desired memory name from the PC keyboard directly.

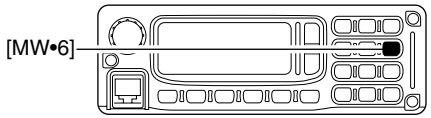
⑤Repeat the steps ② to ④ to program another scan edge channel.

⑥To close the Memory Channel screen, click "▣" in tool bar or click "✕."

◇ Programming with the RC-24

①Set the desired scan edge frequency in VFO mode.
➥ Set the operating mode with [MODE]
➥ Set the frequency using [DIAL] or keypad.
➥ Set other data (e.g. station call sign, tone information, etc.) if required.

②Push [MW•6] momentarily.
• Memory channel number blinks.



③Rotate [DIAL] to select a scan edge channel to be programmed.
• Select "PA" as the PA, "PB" as the PB channel.

④Push [MW•6] for 0.5 sec. to program.
• 3 beeps sound.
• Scan edge channel number automatically increases when continuing to push [MW•6] after programming.

⑤Repeat the steps ① to ④ to program the another scan edge channel.

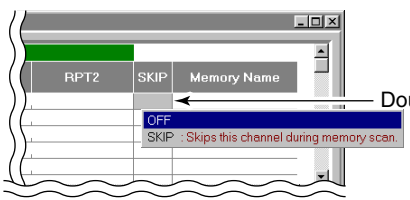
■ Skip channel setting

The memory skip function speeds up scanning by checking only those memory channels not set as skip channels. Set skip channels as follows.

◇ Setting from the application

①Display the Memory channel screen.
- Select “Edit Memory Channel(M)...” in View menu.
- Click “ ” in tool bar.
- Press [F6] key on the PC keyboard.

②Double click the “SKIP” cell of the desired memory channel, then select the skip condition from “OFF” and “SKIP.”
- “SKIP” indicator appears on the main screen when “SKIP” is selected.
- Scan edge and call channels cannot be selected as the skip channel.

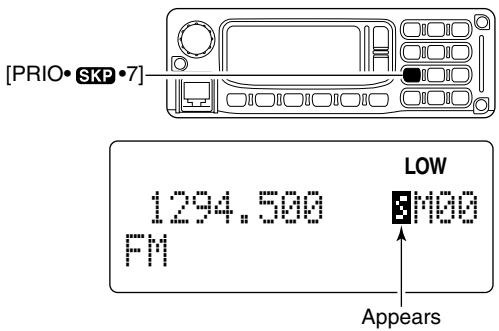


③Repeat the step ② to set the skip condition for another memory channels, if desired.

◇ Setting from the RC-24

①Select the desired memory channel.
➥ Push [V/M] to select memory mode.
➥ Select the desired memory channel number with [DIAL] or keypad.

②Push [PRIO•SKP•7] for 0.5 sec. to turn the skip setting ON and OFF.
- “S” appears when the skip setting ON.



■ Scan resume condition

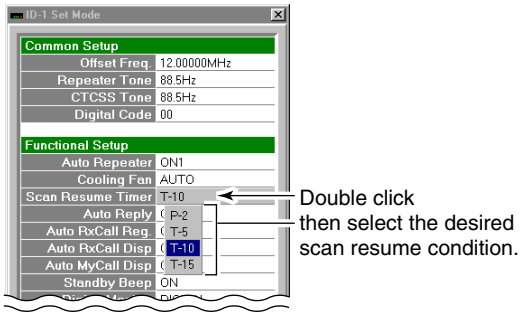
USING SET MODE

The scan resume condition can be selected as timer or pause scan. The selected resume condition is also used for priority watch. (pgs. 86, 87)

◇ Setting from the application

①Display the Set Mode screen.
- Select “Edit Set Mode(C)...” in View menu.
- Click “” in tool bar.
- Press [F7] key on the PC keyboard.

②Double click the “Scan Resume Timer” cell, then select the desired scan resume condition from “P-2,” “T-5,” “T-10” and “T-15.”



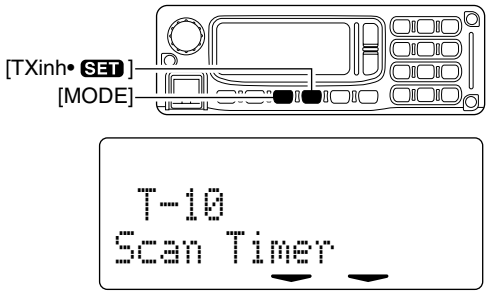
• Resuming conditions
- “P-2” : Scan pauses until the signal disappears and then resumes 2 sec. later.
- “T-5” : Scan pauses 5 sec. while receiving a signal.
- “T10” : Scan pauses 10 sec. while receiving a signal.
- “T-15” : Scan pauses 15 sec. while receiving a signal.

③To close the Set Mode screen, click “” in tool bar or click “×.”

◇ Setting from the RC-24

①Push [TXinh•SET] for 0.5 sec. to enter set mode.

②Push [MODE] or [TXinh•SET] several times to select “Scan Timer” item.
- Select “ON” for “Extension” item in advance.



③Rotate [DIAL] to select the desired scan resume condition.
- See “*•Resuming conditions*” above.

④Push [PWR] momentarily to exit set mode.

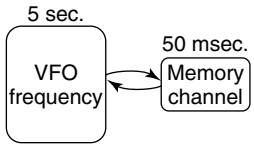
■ Priority watch types

Priority watch checks for signals on a VFO frequency every 5 sec. while operating in memory mode. The transceiver has 2 priority watch types to suit your needs. You can also transmit on the VFO frequency while the priority watch operates.

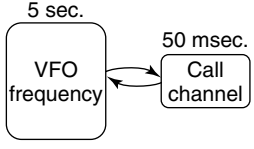
The watch resumes according to the selected scan resume condition. See previous page for details.

☞ **NOTES:** If the pocket beep function is activated, the transceiver automatically selects the tone squelch function when priority watch starts.

MEMORY CHANNEL WATCH
While operating on a VFO frequency, priority watch checks for a signal on the selected memory channel every 5 sec.



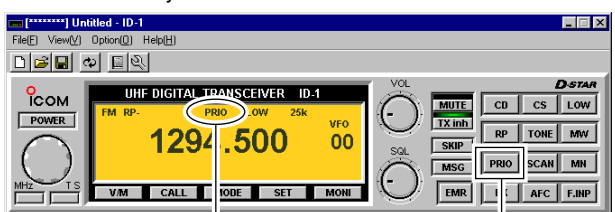
CALL CHANNEL WATCH
While operating on a VFO frequency, priority watch checks for signals on the call channel every 5 sec.



■ Priority watch operation

◇ Operating from the application

①Select VFO mode; then, set an operating frequency.
②Set the watch channel(s).
For memory channel watch:
Select the desired memory channel.
For call channel watch:
Select the desired call channel by clicking [CALL], then click (left or right) on the [DIAL].
③Click [PRIO] to start the watch.
- "PRIO" appears during priority watch.
- The transceiver checks the memory or call channel every 5 sec.
- The watch resumes according to the selected scan resume condition. (p. 89)
- While the watch is pausing, clicking the [PRIO] resumes the watch manually.



Appears during priority watch. Click

④Click [PRIO] again to stop the watch.

◇ Operating from the RC-24

①Select VFO mode; then, set an operating frequency.
②Set the watch channel(s).

For memory channel watch:

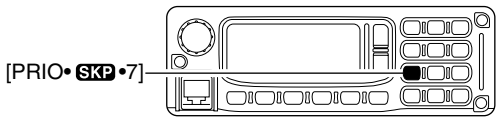
Select the desired memory channel.

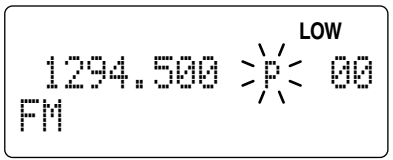
For call channel watch:

Select the desired call channel by clicking [CALL], then click (left or right) on the [DIAL].

③Push [PRIO•SKP•7] to start the watch.

- "P" blinks during priority watch
- The transceiver checks the memory or call channel every 5 sec.
- The watch resumes according to the selected scan resume condition. (p. 89)





④Push [PRIO•SKP•7] again to stop the watch.

■ Pocket beep operation

This function uses subaudible tones in FM; digital code or call sign in Digital voice mode for calling and can be used as a “common pager” to inform you that someone has called while you were away from the transceiver.

In addition, if the received signal includes matched digital code, any calls, even a CQ call, can be received when using the pocket beep function with digital code. However, when using the call sign squelch for the pocket beep, the signal that containing your call sign (when another station calling you) can only be received.

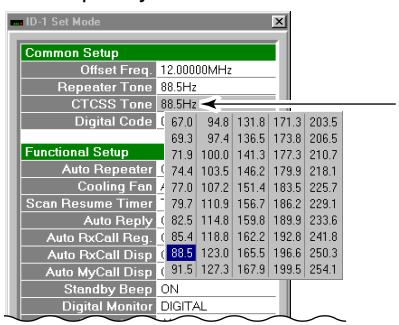
◇ Setting from the application

①Set the desired operating frequency and mode (FM or Digital voice).

• Using the CTCSS — in FM mode

②Displays the Set Mode screen.
- Select “Edit Set Mode(C)...” in View menu.
- Click “” in tool bar.
- Press [F7] key on the PC keyboard.

③Double click the “CTCSS Tone” cell, then select the desired tone frequency.



④Click [TONE] (FM mode) once or twice until “PBEEP” appears to turn the pocket beep function ON.

⑤When a signal with matched tone signal is received;
- The transceiver emits beep tones.
- Shows “PBEEP” and “ PBEEP ” indications alternately.

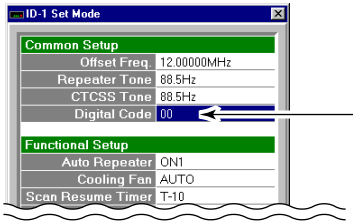
⑥Push [PTT] to answer.
- The pocket beep function is cancelled and the tone squelch or digital code squelch operation is selected automatically.
- “TSQL” indication appears instead of “PBEEP.”

⑦Click [TONE] once to cancel the tone squelch function.
- “TSQL” indication disappears.

• Using the digital code squelch— in Digital voice mode

②Displays the Set Mode screen.

③Double click the “Digital Code” cell, then enter the desired code number within 00 to 99.



④Click [DSQL] several times until “CBEEP” appears to turn the pocket beep function ON.

⑤When a signal with matched digital code is received;
- The transceiver emits beep tones.
- Shows “CBEEP” and “ CBEEP ” indications alternately.

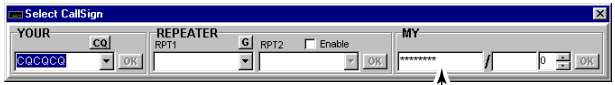
⑥Push [PTT] to answer.
- The pocket beep function is cancelled and the digital code squelch operation is selected automatically.
- “CSQL” indication appears instead of “CBEEP.”
- When the called station call sign is not selected in “YOUR” (in Select Call Sign screen), click [CD] to display Received Call Record screen, select the call then click [Select] to set the call sign before pushing [PTT].

⑦Click [DSQL] several times to cancel the digital code squelch function.
- “CSQL” indication disappears.

• Using the call sign squelch— in Digital voice mode

②Click [CS] to display Select Call Sign screen.

③Select or enter the desired call sign in “MY.”
- After the setting, click [OK].



④Click [DSQL] several times until “DBEEP” appears to turn the pocket beep function ON.

⑤When the signal with matched call sign is received;
- The transceiver emits beep tones.
- Shows “DBEEP” and “ DBEEP ” indications alternately.

⑥Push [PTT] to answer.
- The pocket beep function is cancelled and the call sign squelch operation is selected automatically.
- “DSQL” indication appears instead of “DBEEP.”
- When the called station call sign is not selected in “YOUR” (in Select Call Sign screen), click [CD] to display Received Call Record screen, select the call then click [Select] to set the call sign before pushing [PTT].

⑦Click [DSQL] several times to cancel the call sign squelch function.
- “DSQL” indication disappears.

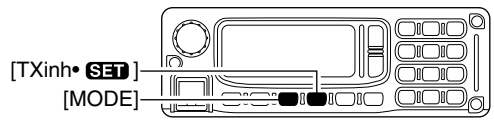
◇ Setting from the RC-24

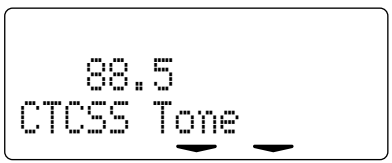
①Set the desired operating frequency and mode (FM or Digital voice).

• Using the CTCSS— in FM mode

②Push [TXinh•SET] for 0.5 sec. to enter set mode.

③Push [MODE] or [TXinh•SET] several times to select "CTCSS Tone" item.





④Rotate [DIAL] to select the desired tone squelch frequency.
- After the selection, push [PWR] momentarily to exit set mode.

⑤Push [TONE•DSQ•5] once or twice to turn the pocket beep function ON.
- "🔔" and "TSQL" appear.

⑥When a signal with matched tone is received the transceiver emits beep tones and "🔔" indicator blinks.

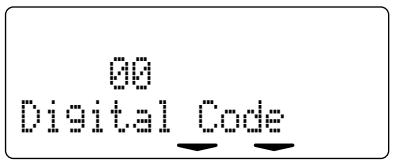
⑦Push [PTT] to answer.
- "🔔" indicator disappears.

⑧Push [TONE•DSQ•5] once to cancel the tone squelch function.
- "TSQL" disappears.

• Using the digital code squelch— in Digital voice mode

②Push [TXinh•SET] for 0.5 sec. to enter set mode.

③Push [MODE] or [TXinh•SET] several times to select "Digital Code" item.



④Rotate [DIAL] to select the desired code number.
- After the selection, push [PWR] momentarily to exit set mode.

⑤Push [TONE•DSQ•5] several times until "🔔" and "CSQL" appear to turn the pocket beep function ON.

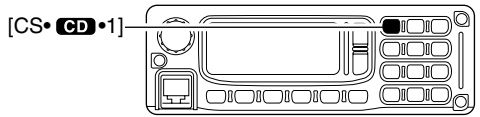
⑥When a signal with matched digital code is received;
- The transceiver emits beep tones.
- "🔔" indicator blinks.

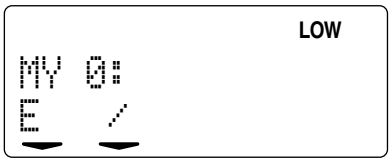
⑦Push [PTT] to answer.
- "🔔" indicator disappears.
- When the called station call sign is not selected in "UR," push [CS•CD•1] for 0.5 sec. to display receive call sign indication mode then push [SQL] for 0.5 sec. to set the call sign before pushing [PTT].

⑧Push [TONE•DSQ•5] once to cancel the digital code squelch function.
- "CSQL" disappears.

• Using the call sign squelch— in Digital voice mode

②Push [CS•CD•1] 4 times ("MY" selection), then rotate dial to select the desired call sign.





③Push [CS•CD•1] again to exit call sign selecting condition.

④Push [TONE•DSQ•5] several times until "🔔" and "DSQL" appear to turn the pocket beep function ON.

⑤When a signal with matched call sign is received the transceiver emits beep tones and "🔔" indicator blinks.

⑥Push [PTT] to answer.

- "🔔" indicator disappears.
- When the called station's call sign is not selected in "UR," push [CS•CD•1] for 0.5 sec. to display receive call sign indication mode then click [SQL] for 0.5 sec. to set the call sign before pushing [PTT].

⑦Push [TONE•DSQ•5] once to cancel the call sign squelch function.

- "DSQL" disappears.

■ Tone/Digital code/call sign squelch operation

The tone, digital code or call sign squelch opens only when receiving a signal with the same pre-programmed subaudible tone, digital code or call sign, respectively.

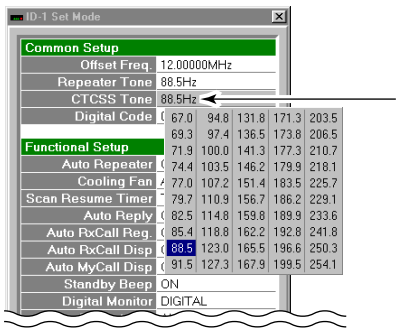
◇ Setting from the application

①Set the desired operating frequency and mode (FM or Digital voice).

• Using the CTCSS — in FM mode

②Displays the Set Mode screen.
- Select “Edit Set Mode(C)...” in View menu.
- Click “” in tool bar.
- Press [F7] key on the PC keyboard.

③Double click the “CTCSS Tone” cell, then select the desired tone frequency.



Double click, then select the desired tone frequency.

④Click [TONE] once or twice until “TSQL” appears to turn the tone squelch function ON.

⑤When a signal with matched tone signal is received the squelch opens and the signal can be heard.
- When the received signal includes an unmatched tone, the squelch does not open. However, the S/RF indicator shows the received signal strength.

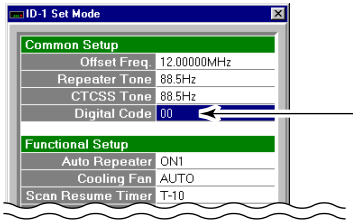
⑥Push [PTT] to answer.

⑦Click [TONE] once to cancel the tone squelch function.
- “TSQL” indication disappears.

• Using the digital code squelch— in Digital voice mode

②Displays the Set Mode screen.

③Double click the “Digital Code” cell, then enter the desired code number within 00 to 99.



④Click [DSQL] several times until “CSQL” appears to turn the pocket beep function ON.

⑤When a signal with matched digital code is received, the squelch opens and the signal can be heard.

- When the received signal includes an unmatched code, the squelch does not open. However, the S/RF indicator shows the received signal strength.

⑥Operate the transceiver in the normal way (push [PTT] to transmit; release to receive).

- When the called station’s call sign is not selected in “YOUR” (in Select Call Sign screen), click [CD] to display Received Call Record screen, select the call then click [Select] to set the call sign before pushing [PTT].

⑦Click [DSQL] several times to cancel the digital code squelch function.

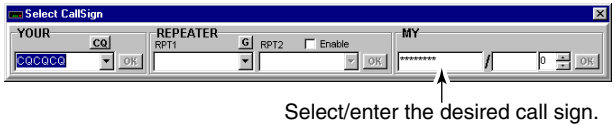
- “CSQL” indication disappears.

• Using the call sign squelch— in Digital voice mode

②Click [CS] to display Select Call Sign screen.

③Select or enter the desired call sign in “MY.”

- After the setting, click [OK].



④Click [DSQL] several times until “DSQL” appears to turn the call sign squelch function ON.

⑤When a signal with matched call sign is received, the squelch opens and the signal can be heard.

- When the received signal includes an unmatched call sign, the squelch does not open. However, the S/RF indicator shows the received signal strength.

⑥Operate the transceiver in the normal way (push [PTT] to transmit; release to receive).

- When the called station’s call sign is not selected in “YOUR” (in Select Call Sign screen), click [CD] to display Received Call Record screen, select the call then click [Select] to set the call sign before pushing [PTT].

⑦Click [DSQL] several times to cancel the call sign squelch.

- “DSQL” indication disappears.

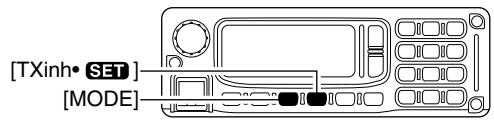
◇ Setting from the RC-24

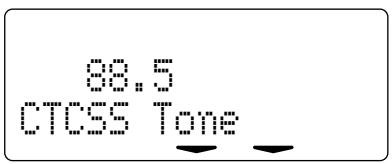
①Set the desired operating frequency and mode (FM or Digital voice).

• Using the CTCSS— in FM mode

②Push [TXinh•SET] for 0.5 sec. to enter set mode.

③Push [MODE] or [TXinh•SET] several times to select "CTCSS Tone" item.





④Rotate [DIAL] to select the desired tone squelch frequency.
- After the selection, push [PWR] momentarily to exit set mode.

⑤Push [TONE•DSQ•5] once or twice to turn the tone squelch function ON.
- "TSQL" appear.

⑥When a signal with matched tone is received, the squelch opens and emits received signal.
- When the received signal includes an unmatched tone, the squelch does not open. However, the S/RF indicator shows the received signal strength.

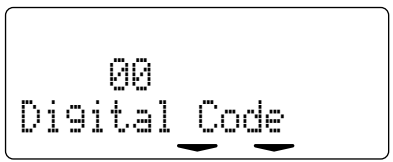
⑦Push [PTT] to answer.

⑧Push [TONE•DSQ•5] once to cancel the tone squelch function.
- "TSQL" disappears.

• Using the digital code squelch— in Digital voice mode

②Push [TXinh•SET] for 0.5 sec. to enter set mode.

③Push [MODE] or [TXinh•SET] several times to select "Digital Code" item.



④Rotate [DIAL] to select the desired code number.
- After the selection, push [PWR] momentarily to exit set mode.

⑤Push [TONE•DSQ•5] several times "CSQL" appears to turn the digital code squelch function ON.

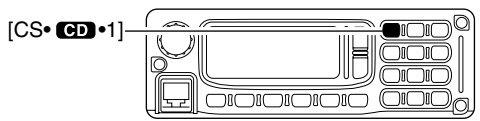
⑥When a signal with matched digital code is received, the squelch opens and emits received signal.
- When the received signal includes an unmatched code, the squelch does not open. However, the S/RF indicator shows the received signal strength.

⑦Push [PTT] to answer.
- When the called station call sign is not selected in "UR," push [CS•CD•1] for 0.5 sec. to display receive call sign indication mode then push [SQL] for 0.5 sec. to set the call sign before pushing [PTT].

⑧Push [TONE•DSQ•5] once to cancel the digital code squelch function.
• "DSQL" disappears.

• Using the call sign squelch— in Digital voice mode

②Push [CS•CD•1] 4 times ("MY" selection), then rotate dial to select the desired call sign.



③Push [CS•CD•1] again to exit call sign selecting condition.
④Push [TONE•DSQ•5] several times until "DSQL" appears to turn the call sign squelch function ON.
⑤When a signal with matched call sign is received, the squelch opens and emits received signal.
• When the received signal includes an unmatched call sign, the squelch does not open. However, the S/RF indicator shows the received signal strength.

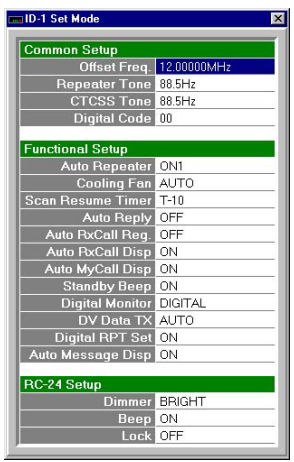
⑥Push [PTT] to answer.
• When the called station's call sign is not selected in "UR," push [CS•CD•1] for 0.5 sec. to display receive call sign indication mode then push [SQL] for 0.5 sec. to set the call sign before pushing [PTT].

⑦Push [TONE•DSQ•5] once to cancel the call sign squelch function.
• "DSQL" disappears.

■ Set mode

◇ Set mode operation with the application

①Select “Edit Set Mode(C)...” in View menu, click “” in tool bar or press [F7] key on the PC keyboard.
• Set Mode screen appears.
②Double click the desired item, then select or enter the desired value or condition.
③To close the Set Mode screen, click “” in tool bar, click “” or press [F7] key.

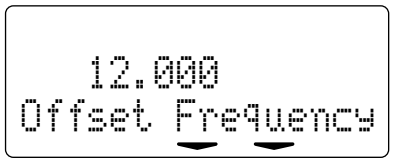


◇ Set mode operation with the RC-24

①Push [TXinh•SET] for 0.5 sec.
②Push [MODE] or [TXinh•SET] to select the desired item.
③Rotate [DIAL] to select the desired value or condition.
④To exit set mode, push [PWR] momentarily.

◇ Offset Freq. (Offset Frequency)

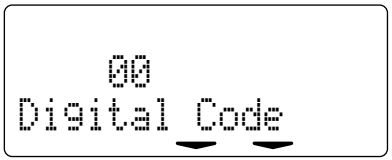
Sets the duplex offset frequency within 0 to 60 MHz range. During duplex (repeater) operation, transmit frequency shifts the set frequency. (default value may differ depending on versions)



◇ Digital Code (Digital Code)

☞ This item appears only when entering set mode from **digital** modes.

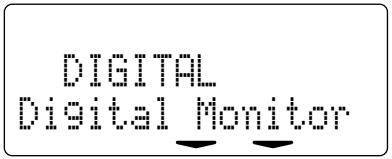
Sets the desired digital code for digital code squelch operation. Total of 100 codes (00–99) are available. (default: 00)



◇ Digital Monitor (Digital Monitor)

☞ This item appears only when entering set mode from **digital** modes.

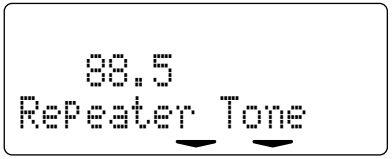
Sets the desired monitoring mode during digital mode operation from "DIGITAL" and "ANALOG." (default: DIGITAL)
Select "ANALOG" when using FM mode for monitoring.



◇ Repeater Tone (Repeater Tone)

☞ This item appears only when entering set mode from **FM** mode.

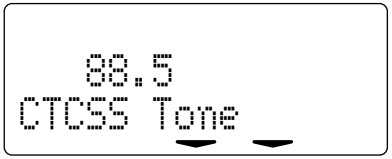
Sets subaudible tone frequency (encoder only) for repeater operation. Total of 50 tone frequencies (67.0–254.1 Hz) are available. (default: 88.5 Hz)



◇ CTCSS Tone (CTCSS Tone)

☞ This item appears only when entering set mode from **FM** mode.

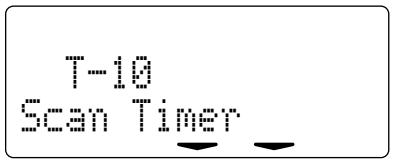
Sets subaudible tone frequency (both encoder and decoder) for tone squelch operation. Total of 50 tone frequencies (67.0–254.1 Hz) are available. (default: 88.5 Hz)



◇ Scan Resume Timer (Scan Timer)

Selects scan resume timer from T-15, T-10 (default), T-5 and P-2.

- SCT-15/10/5 : Scan pauses for 15/10/5 sec., then resumes.
- SCP-2 : Pause on a signal until signal disappears, then resumes 2 sec. after the signal disappears.

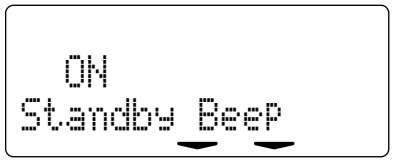


◇ Standby Beep (Standby Beep)

☞ This item appears only when entering set mode from **Digital** modes.

Turns the beep emission capability when the communicating station finishes transmitting or the receive signal disappears.

(default: ON)



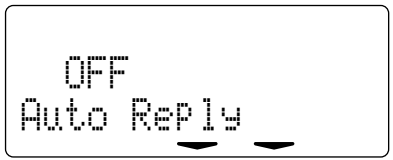
◇ Auto Reply (Auto Reply)

☞ This item appears only when entering set mode from **Digital** modes.

During Digital mode operation, auto reply function is available. This function replies to an individual station call even you are away from the transceiver.

After the manual transmission (pushing [PTT]), the Auto Reply setting is return to OFF automatically.

(default: OFF)

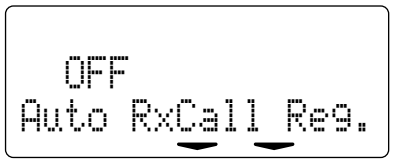


◇ Auto RxCall Reg. (Auto RxCall Reg.)

☞ This item appears only when entering set mode from **Digital** modes.

When an individual station call is received, the calling station call sign can be stored automatically. The stored call sign can be re-called when selecting a station or repeater call sign.

(default: OFF)

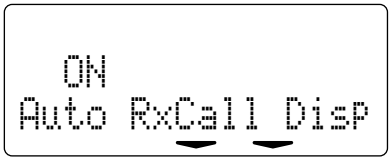


◇ Auto RxCall Disp (Auto RxCall DisP)

☞ This item appears only when entering set mode from **Digital** modes.

When an individual station call is received, the calling station call sign can be displayed on the RC-24 function display.

(default: ON)

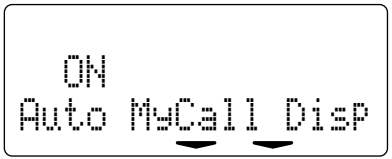


◇ Auto MyCall Disp (Auto MyCall DisP)

☞ This item appears only when entering set mode from **Digital** modes.

When operating in a Digital mode, your programmed call sign can be displayed on the RC-24 function display during transmit.

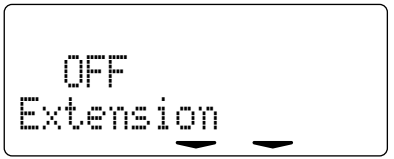
(default: ON)



◇ (Extension: Available in RC-24 only)

This item turn expanded set mode ON and OFF.

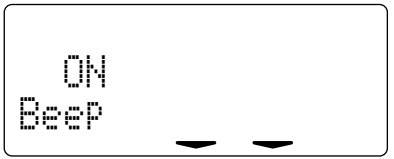
The expanded set mode includes infrequently changed values or conditions of functions. When OFF (default) is selected, the following 4 items, key touch beep, dimmer, cooling fan and auto repeater, are hidden.



◇ Key touch beep (BeeP)

The key-touch beep for the RC-24 can be turned OFF for silent operation.

(default: ON)

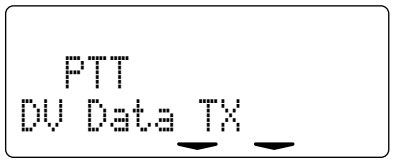


◇ DV Data Tx (DV Data TX)

☞ This item appears only when entering set mode from **Digital** modes.

Selects the transmission condition for the low-speed data operation from PTT and AUTO.

- PTT : Transmits the entered text when [PTT] is pushed. (default)
- AUTO : Transmits the entered text when the PC keyboard operation is performed. (The transceiver has 500 msec. carrier sense operation before transmit.)

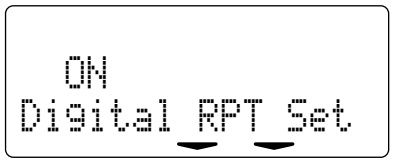


◇ Digital repeater set (Digital RPT Set)

☞ This item appears only when entering set mode from **Digital** modes.

Selects the automatic repeater call sign setting capability during digital repeater operation from ON and OFF.

- ON : The call sign that is included in the down-link signal from the accessed repeater is set into “RPT1” of the select call sign screen automatically, even when accessing the repeater with a wrong call sign setting. (default)
- OFF : The repeater call sign setting won’t be changed.



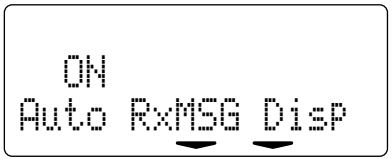
◇ Auto message indication

(Auto RxMSG Disp)

☞ This item appears only when entering set mode from **Digital** modes.

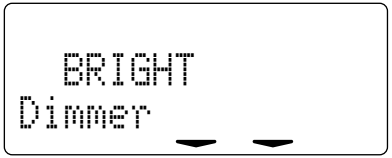
Selects the automatic received message indication capability during digital voice mode operation from ON and OFF.

- ON : Displays and scrolls the message on the RC-24 function display automatically when a short message is received. (default)
- OFF : The message can only be displayed when "RX Message" indication is selected.



◇ Dimmer (Dimmer)

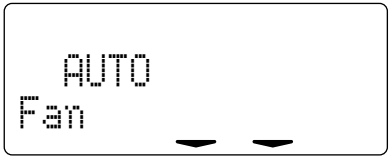
Select the RC-24 LCD backlight brightness from bright, dark and OFF. (default: BRIGHT)



◇ Cooling Fan (Fan)

Selects the cooling fan control condition from Auto and ON.

- AUTO : The fan rotates when the internal temperature of the transceiver exceeds the preset value until the temperature drops. (default)
- ON : The fan continuously rotates.



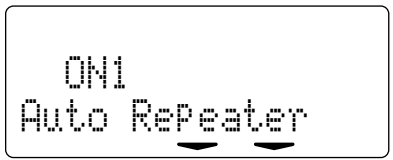
◇ Auto Repeater (Auto Repeater)

U.S.A. version only

☞ This item appears only when entering set mode from **FM** mode.

The auto repeater function automatically turns ON or OFF the duplex operation with a specified shift direction and tone encoder, when the operating frequency falls within or outside of 1282.000–1295.000 MHz range. The offset and repeater tone frequencies are not changed by the auto repeater function. If necessary, reset these frequencies

- OFF : The auto repeater function is turned OFF.
- ON1 : Activates for duplex only. (default)
- ON2 : Activates for duplex and tone.



◇ Lock (Available in Set Mode screen only)

Turn the RC-24 lock function ON and OFF.

When “ON” is selected, locks the connected RC-24 key operation, except [PWR], [∧], [∨], [SQL] and [LOW•3]. (Pushing [F.INP•L] for 0.5 sec. is possible to release the lock function.)

■ EMR mode operation

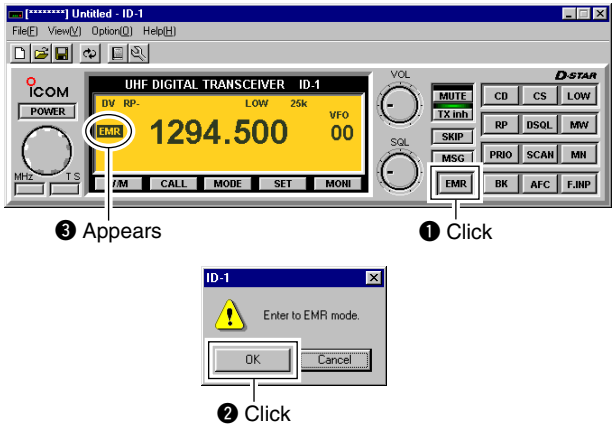
The EMR mode is available for Digital voice mode operation. In the EMR mode operation, no call sign setting is necessary. When an EMR mode signal is received, the audio (voice) will be sound in the specified level even the volume setting is set to counterclockwise position (‘0’ level).

◇ Operating from the application

①Set the desired frequency and select either Digital voice mode.

②Click [EMR], then click [OK] in the appeared confirmation dialog box to set the transceiver into EMR mode.

• “EMR” appears.



③Operate the transceiver normal way.

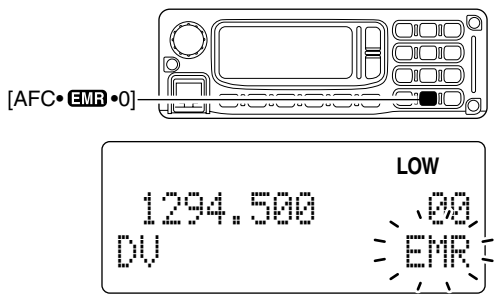
④To cancel the EMR mode, click [EMR] again, then click [OK] in the appeared confirmation dialog box to exit the transceiver from EMR mode.

• “EMR” disappears.

◇ Operating from the RC-24

①Set the desired frequency and select either Digital voice mode.

②Push [AFC•EMR•0] for 1.5 sec. (until 3 short and 1 long beeps sound) to set the transceiver into EMR mode.
- "EMR" blinks.



③Operate the transceiver normal way.

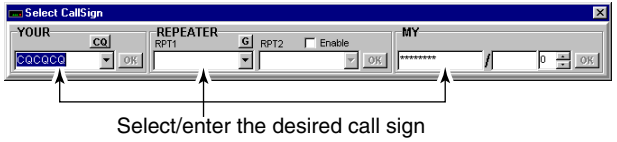
④To cancel the EMR communication mode, push [AFC•EMR •0] for 0.5 sec. (until 1 long beep sounds) to exit the transceiver from EMR mode.
- "EMR" disappears.

■ Break-in communication

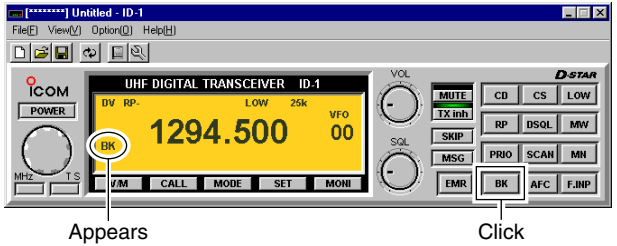
The break-in function allows you to break into an another stations communications in both Digital voice and data modes operation.

◇ Operating from the application

①While receiving an another stations communication, set the either station/repeater call sign into “YOUR” or “RPT1/2” and your call sign into “MY” in Select Call Sign screen.



②Click [BK].
- “BK” appears.



③When both stations are in standby, transmit to send a break-in call.
- Programmed call sign station receives the break-in call as well as your call sign.

④Wait for the reply call from the station who receive the break-in call.

⑤After receive the reply call, communicate normal way.

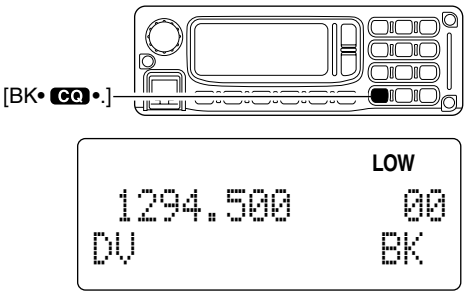
⑥To cancel the break-in, click [BK].
- “BK” disappears.

◇ Operating from the RC-24

①While receiving an another stations communication, push [CS•CD•1] then set the either station/repeater call sign into "UR" or "RPT1/2" and your call sign into "MY."

②Push [BK•CQ•.].

• "BK" appears.



③When both stations are in standby, transmit to send a break-in call.

• Programmed call sign station receives the break-in call as well as your call sign.

④Wait for the reply call from the station who receive the break-in call.

⑤After receive the reply call, communicate normal way.

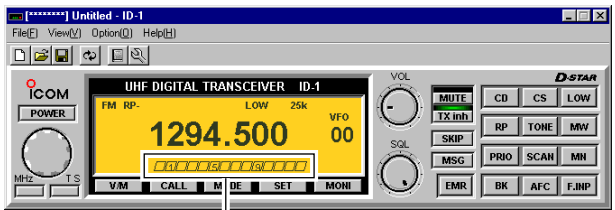
⑥To cancel the break-in, push [BK].

• "BK" disappears.

■ S-meter squelch

The ID-1 has an S-meter squelch. The S-meter squelch allows you to set a minimum signal level needed to open the squelch.

➥ Set [SQL] clockwise past the 12 o'clock position in the application (main screen) to activate the S-meter squelch.
- S-meter squelch level can be adjusted between 12 o'clock and fully clockwise position.
- When setting the squelch from the RC-24, a level greater than '19' activates the squelch attenuator.
- The S/RF meter shows the set level with the reversed indication.

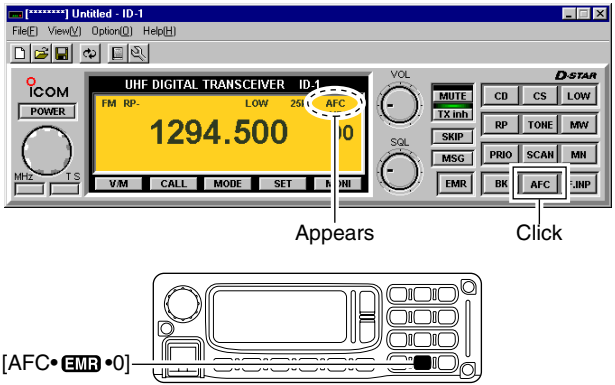


NOTE: The squelch attenuator functions even when the monitor function is in use. Thus set the [SQL] within 10 to 12 o'clock position (12 to 19 level when setting with the RC-24) is recommended when using the monitor function.

■ AFC function

The AFC (Automatic Frequency Control) function tunes the displayed frequency automatically when an off-set frequency is received. It activates in FM and Digital voice modes only.

➥ Click [AFC] in the application (main screen); or push [AFC•EMR•0] on the RC-24 to turn the AFC function ON and OFF.
- "AFC" appears when the function ON.



NOTE: The AFC function may not tune the signal properly when a weak signal is received and/or strong nearby signals are received.

■ CPU reset

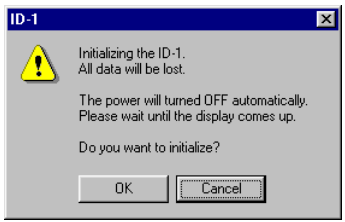
The function display may occasionally display erroneous information (e.g. when first applying power). This may be caused externally by static electricity or by other factors.

If this problem occurs, turn power OFF. After waiting a few seconds, turn power ON again. If the problem persists, perform the following procedure.

IMPORTANT!:
Resetting the transceiver **CLEARS** all memory information and initializes all values in the transceiver.

◇ Resetting from the application

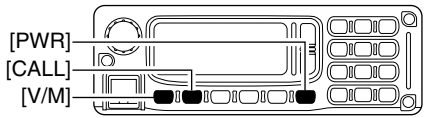
①Select “Transceiver Initialization(N)” in the File menu; or while pressing and holding [Ctrl], press [N] key on the PC keyboard.
• A confirmation dialog appears.

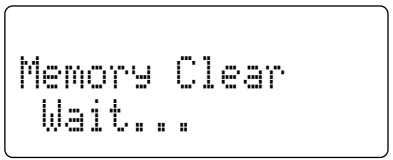


②Click [OK] to reset the CPU.

◇ Resetting from the RC-24

➥ While pushing and holding [V/M] and [CALL], turn power ON.
• “Memory Clear Wait...” displayed then shows the initial condition.





■ Troubleshooting

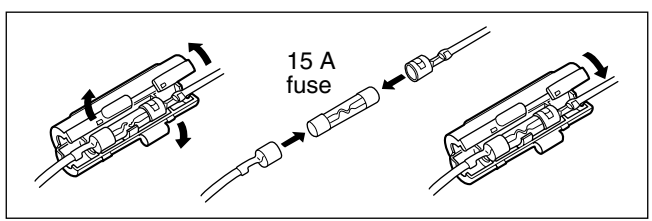
If your transceiver seems to be malfunctioning, please check the following points before sending it to a service center.

PROBLEM	POSSIBLE CAUSE	SOLUTION	REF.
Does not turn on.	• Power connector has a poor contact. • Polarity of the power connection is reversed. • Blown fuse.	• Check the connector pins. • Re-connect the power cable observing the proper polarity. Replace the fuse if damaged. • Check the cause, then replace the fuse.	— pgs. 15, 114 p. 114
No sound comes from the speaker.	• Volume is too low. • Squelch is set too high. • A selective call or squelch function is activated such as pocket beep or tone squelch.	• Set the volume to a suitable level. • Set the squelch level to the threshold. • Turn the appropriate function OFF.	p. 34 p. 33 pgs. 92 to 99
Sensitivity is low and only strong signals are audible.	• Antenna feedline or the antenna connector has a poor contact or is short circuited. • Squelch attenuator function is activated.	• Check, and if necessary, replace the feedline or solder the antenna connector again. • Set squelch between 10–12 o'clock position (application) or 12 to 19 level (RC-24).	pgs. 13, 14 p. 33
No contact possible with another station.	• The other station is using tone squelch. • The transceiver is set to duplex.	• Turn the tone squelch function ON. • Set to simplex.	p. 92 pgs. 57 , 58
Repeater cannot be accessed.	• Wrong offset frequency is programmed. • Wrong subaudible tone frequency is programmed.	• Correct the offset frequency. • Correct the subaudible tone frequency.	p. 60 p. 59
Frequency cannot be set.	• The frequency lock function is activated. • Priority watch is paused on the watching frequency.	• Turn the function OFF. • Cancel the watch.	p. 38 pgs. 90, 91
Some memory channels cannot be selected via the tuning dial.	• The memory channel number has not yet been programmed.	• Program the memory channel.	pgs. 74–76

PROBLEM	POSSIBLE CAUSE	SOLUTION	REF.
Scan does not operate.	• The squelch is open. • Only 1 memory channel is programmed or other channels are set as skip channels. • Priority watch is activated.	• Set the squelch to the threshold point. • Program other memory channels or cancel the memory skip function in the desired channels. • Cancel the watch.	p. 33 pgs. 74 to 76 pgs. 90, 91
The function display shows erroneous information.	• The CPU is malfunctioning.	• Reset the CPU.	p. 112
Data communication cannot be made properly	• Ethernet cable has a poor connection.	• Re-connect the Ethernet cable. • Replace the Ethernet cable.	p. 17

■ Fuse replacement

If the fuse blows or the transceiver stops functioning, find the source of the problem if possible, and replace the damaged fuse with a new, rated one (FGB 15 A) as shown at right.
The DC power cable has 2 fuses, one each for positive (+; red) and negative (–; black) line.



16 SPECIFICATIONS AND OPTIONS

■ Specifications

◇ GENERAL

- Frequency coverage : 1240.000–1300.000 MHz
- Type of emission : FM, GMSK (Digital)
- Transmission speed (theoretical value):
  - Data 128 kbps
  - Digital voice 4.8 kbps
- Codec : AMBE (2.4 kbps)
- Number of memory channels:
  105 (incl. 2 scan edges and 3 calls)
- Frequency resolution : 5, 6.25, 10, 12.5, 20, 25, 50, 100 kHz
- Operating temperature range:
  –10°C to +60°C; +14˚F to +140˚F
- Frequency stability : ±2.5 ppm (–10˚C to +60°C)
- Power supply requirement: 13.8 V DC ±15%
- Current drain (at 13.8 V DC; approx.):
  - Transmit at 10 W Less than 7 A
  - Receive max. audio Less than 1.5 A
- Antenna connector : Type-N (50 Ω)
- Dimensions (proj. not included):
  - Main Unit 141(W) × 40(H) × 165.8(D) mm
    $5\frac{9}{16}$(W)×$1\frac{9}{16}$(H)×$6\frac{17}{32}$(D) in
  - Remote controller (RC-24)
    150(W) × 50(H) × 49.5(D) mm
    $5\frac{29}{32}$(W)×$1\frac{31}{32}$(H)×$1\frac{15}{16}$(D) in
- Weight (approx.) :
  - Main unit 1.2 kg; 2 lb 10 oz
  - Remote controller 220 g; 7.7 oz

◇ TRANSMITTER

- Modulation system :
  - FM Variable reactance frequency modulation
  - Digital Quadrature modulation
- Output power : 10/1 W
- Max. frequency deviation : ±5.0 kHz (FM)
- Spurious emissions : Less than –50 dB
- Microphone connector : 8-pin modular jack (600 Ω)

◇ RECEIVER

- Receive system :
  - FM, Digital voice Triple-conversion superheterodyne
  - Data Double-conversion superheterodyne
- Intermediate frequencies :
  - FM, Digital voice 1st: 243.95 MHz, 2nd: 31.05 MHz, 3rd: 450 kHz
  - Data 1st: 243.95 MHz, 2nd: 10.7 MHz
- Sensitivity (FM: at 12 dB SINAD/Digital: at BER 1×10^{-2}):
  - FM Less than 0.18 µV
  - Digital voice Less than 0.35 µV
  - Data Less then 1.58 µV
- Squelch sensitivity (threshold):
  Less than 0.18 µV (FM only)

• Selectivity (typical) :

FM	More than 12 kHz/6 dB
	Less than 30 kHz/60 dB
Digital voice	More than 6 kHz/6 dB
	Less than 18 kHz/50 dB
Data	More than 140 kHz/6 dB
	Less than 520 kHz/40 dB

• Spurious and image rejection:
More than 50 dB

• AF output power (at 13.8 V DC):
More than 2.0 W at 10% distortion with an 8 Ω load

• Ext. speaker connectors : 2-conductor 3.5 (d) mm (⅛″)/8 Ω

◇ SYSTEM REQUIREMENTS

• Microsoft® Windows® 98/98SE/Me/2000/XP
• An USB port
• Ethernet port (for Data operation)

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

■ Options

HM-118N HAND MICROPHONES
RC-24 REMOTE CONTROLLER UNIT
MB-17A MOBILE MOUNTING BRACKET
OPC-440/OPC-647 MIC EXTENSION CABLES
OPC-440: 5.0 m (16.4 ft); OPC-647: 2.5 m (8.2 ft)
SP-7/SP-10/SP-22 EXTERNAL SPEAKERS

Count on us!

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