



INSTRUCTION MANUAL

COMMUNICATIONS RECEIVER

IC-PCR1500

Icom Inc.

FOREWORD

Thank you for purchasing this Icom product. The IC-PCR1500 COMMUNICATIONS RECEIVER is designed and built with Icom's state of the art technology and craftsmanship. With proper care, this product should provide you with years of trouble-free operation.

We want to take a couple of moments of your time to thank you for making your IC-PCR1500 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 IC-PCR1500.

◆ FEATURES

- *Wide frequency coverage with all mode receive*
- *Real-time bandscope function*
- *IF shift function function*
- *ANF and NR functions available (Only when the DSP unit is installed.)*

IMPORTANT

READ ALL INSTRUCTIONS carefully and completely before using the receiver.

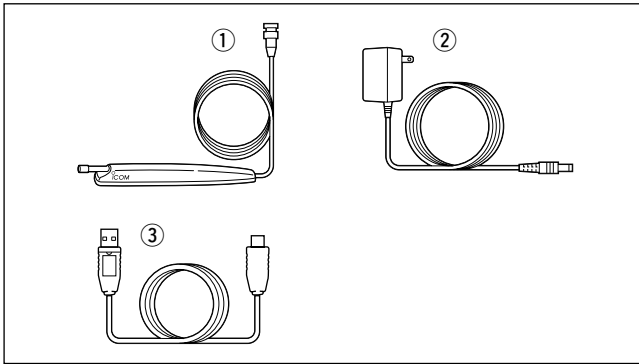
SAVE THIS INSTRUCTION MANUAL— This instruction manual contains important operating instructions for the IC-PCR1500.

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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SUPPLIED ACCESSORIES



① Antenna	1
② AC adapter	1
③ USB cable	1
④ CD	1
⑤ Leg pad	1

IBM is registered trademark of International Business Machines Corporation in the U.S.A. and other countries. Microsoft® and Windows® are registered trademarks of Microsoft Corporation in the U.S.A and other countries. Screen shots produced with permission from Microsoft Corporation. All other products or brands are registered trademarks or trademarks of their respective holders.

SYSTEM REQUIREMENTS

PC

- Microsoft® Windows® 98SE/Me/2000/XP is installed
- With USB port

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 receiver to an AC outlet. This may pose a fire hazard or result in an electric shock.

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

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

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

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

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

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

NEVER place the receiver 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.

AVOID using or placing the receiver in direct sunlight or in areas with temperatures below -10°C ($+14^{\circ}\text{F}$) or above $+60^{\circ}\text{C}$ ($+140^{\circ}\text{F}$).

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

AVOID setting the receiver in a place without adequate ventilation. Heat dissipation may be affected, and the receiver may be damaged.

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

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

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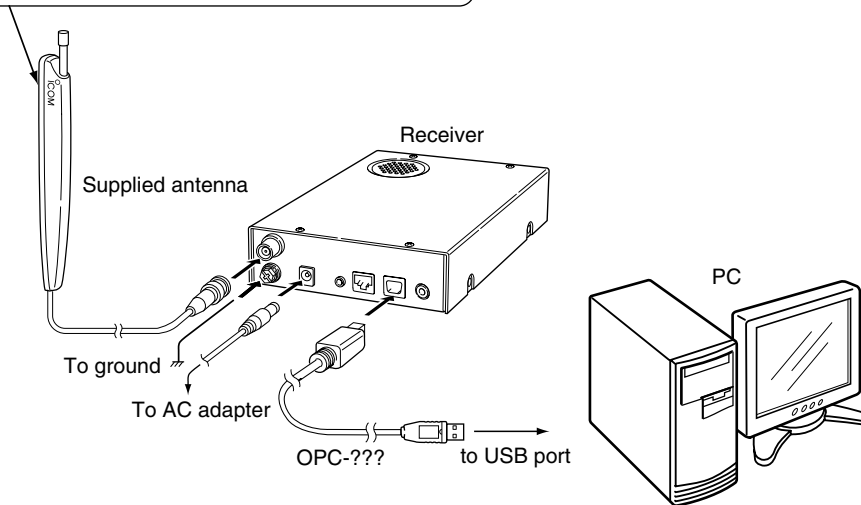
■ Hardware installation

Refer to the diagram below for connections.

See p. ?? when you install the antenna other than the supplied one.

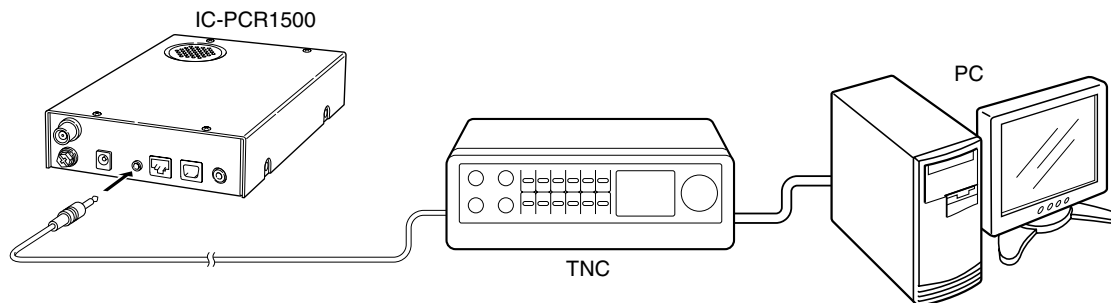
CAUTION: We do not guarantee the receiver's correct operation if you use an USB cable that has been extended or a cable other than the supplied one.

The double sided tape is set to the antenna holder. Remove the protective paper when the antenna is fixed to any place.



■ TNC connection

Refer to the diagram below for connections.
 The IC-PCR1500 can receive 9600 bps packet communication (AFSK). Connect the TNC (Terminal Node Controller) as follows.



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1 INSTALLATION

■ Mouse property setting

The IC-PCR1500 uses left and right buttons to rotate a control knob on the multi-function receiver screen or to call up the shortcut menu from the simple function receiver screen. Depending on the mouse property setting of the control panel, main and sub mouse button functions are alternated.

/// In this instruction manual, the operation is described with /// setting for right-handed (Windows® default setting).

◇ Setting the button configuration

- ① Select 'Settings' from the [Start] menu and click 'Control Panel.'
- ② Open the mouse control panel.
- ③ Select the button configuration to right- or left-handed.
- ④ Click [OK] to set and exit the control panel.

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

■ Microsoft® Windows® XP

- ① Connect the IC-PCR1500 to the desired USB port.
 - Push [POWER] to turn the power ON.
 - “Found New Hardware” appears as below.

- ② The “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>].

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2 DRIVER INSTALLATION

- ③ The wizard starts searching for the driver and shows the dialog below during search.
- ④ After the driver is found, the “Hardware Installation” dialog box appears as below.
Click [Continue Anyway] to start the installation.
- ⑤ Windows starts installing the USB driver.
- ⑥ After the installation is completed, click [Finish].

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

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

⑨ Windows starts installing the USB driver.

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2 DRIVER INSTALLATION

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

■ Microsoft® Windows® 98SE/ Me

- ① Connect the IC-PCR1500 to the desired USB port.
 - Push [POWER] to turn the power ON.
 - “New Hardware is found” dialog box appears.
- ② The “New Hardware Found” will come up as below. Click [Browse...].

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

- ③ Insert the supplied CD into the drive.
- ④ Click [▼] to select the appropriate CD-ROM drive then click “Driver” folder. After the driver is found, click [OK].

⑫ Eject the CD.

- Rebooting the PC is recommended.

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

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

■ Microsoft® Windows® 2000

- ① Connect the IC-PCR1500 to the desired USB port.
- Push [POWER] to turn the power ON.
 - “Found New Hardware” dialog box appears below.
- ② The “Found New Hardware Wizard” will come up as below.
Click [Next>].

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2 DRIVER INSTALLATION

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

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

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

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

 **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).

⑦ The "Found New Hardware" wizard appears again.

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2 DRIVER INSTALLATION

⑧ Click [Next>].

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

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

⑪ When 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).

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2 DRIVER INSTALLATION

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

⑬ Eject 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 98SE, Me and 2000.

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

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

⑤ Click the [Device Manager].

• Device Manager screen appears as below.

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

⑦ Confirm the USB serial port availability and the COM port number.
• The COM port number is used for the COM port setup. (p. ??)

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

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APPLICATION INSTALLATION

- ① Insert the CD into the CD drive.
- ② Open the CD drive contents via “My computer” or “Windows Explorer.”
 - “Driver” and “ICPCR1500” folders are available.
- ③ Double click “Setup.exe” file in “IC-PCR1500” folder.
- ④ After the preparation, the following dialog is displayed.
Click [Next>].

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

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

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

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

⑦ Eject the CD.

- The IC-PCR1500 shortcut icon is created on the desktop.
- Rebooting the PC is recommended.

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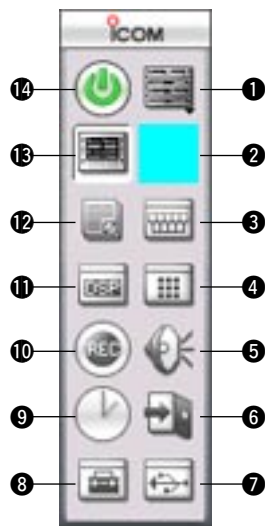
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■ Tool bar

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



① COMPONENT BUTTON (p. ??)

Click to toggle the Tuning panel screen (T), Mode panel screen (M), Meter/Scan panel screen (E) and Scope panel screen (S) appear/ disappear.

② COMPACT BUTTON (p. ??)

Click to display the compact screen.

③ DTMF REMOTE COMMANDER BUTTON (p. ??)

Click to toggle the DTMF remote commander screen appear/disappear.

④ MULTI CHANNEL MONITOR BUTTON (p. ??)

Click to toggle the multi channel monitor screen appear/disappear.

⑤ AUDIO SETTING BUTTON (p. ??)

Click to toggle the audio setting screen appear/disappear.

⑥ EXIT BUTTON

Click to quit the IC-PCR1500 program.

⑦ USB PORT SETTING BUTTON (p. ??)

Click to toggle the USB setting screen appear/disappear.

⑧ AUTO MODE SETTING/ SHORT CUT KEY SETTING BUTTON (p. ??)

Click to toggle the auto mode setting list and short cut key list screen appear/disappear.

⑨ TIMER SETTING BUTTON (p. ??)

Click to toggle the auto power OFF function is turned ON.

⑩ RECORDING BUTTON (p. ??)

Click to record the receiving signal.

⑪ DSP DIGITAL FILTER BUTTON (p. ??)

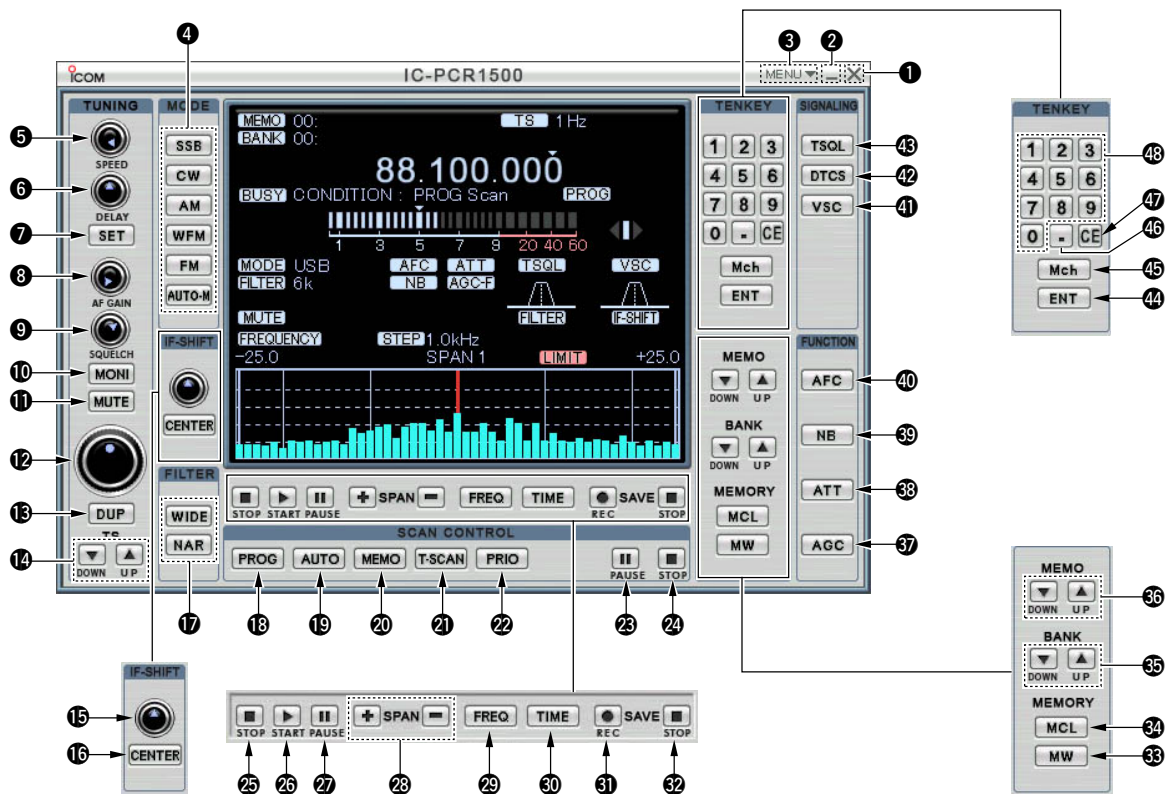
Click to toggle the DSP digital filter screen appear/disappear.

- ⑫ **MEMORY CHANNEL BUTTON** (p. ??)
Click to toggle the memory channel screen appear/disappear.
- ⑬ **COMMUNICATION RECEIVER BUTTON** (p. ??)
Click to display the communication receiver screen.
- ⑭ **POWER BUTTON** (p. ??)
Click to turn the PCR-1500 interface unit receive circuit and program ON or OFF.

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4 PANEL DESCRIPTION

Multi-function receiver screen



1 CLOSE BUTTON

Click to quit and exit the application screen.

2 MINIMIZE BUTTON

Click to minimize the application screen.

3 MENU LIST

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

- Turning the receiver power ON/OFF
- Creating a new file
- Opening a file
- Saving (over-write or with different file name) the set contents.
- Quitting the application

4 RECEIVE MODE BUTTONS [SSB], [CW], [AM], [WFM], [FM], [AUTO-M] (pgs. ??, ??)

Click to select a receive mode.

- When using [AUTO-M] (automatic mode), a receive mode, IF filter passband width, tuning step, etc., are selected automatically after inputting a frequency. (p. ??)

5 SCAN SPEED CONTROL [SPEED] (p. ??)

Click to set the speed at which scans search through frequencies/memories for signals.

- Right-click to increase the speed level.
- Left-click to decrease the speed level.

6 SCAN DELAY TIME CONTROL [DELAY] (p. ??)

Click to set the period in which a scan pauses after receiving a signal.

- Right-click to increase the period.
- Left-click to decrease the period.

7 SET BUTTON [SET]

Click to show the [Scan Delay] screen.

This screen is used for the settings of the scan function, band scope function, the automatic mode select function, etc.

8 AUDIO FREQUENCY GAIN CONTROL [AF GAIN]

Click to adjust the audio output level.

- Right-click to increase the audio output level.
- Left-click to decrease the audio output level.

9 SQUELCH CONTROL [SQUELCH] (p. ??)

Click to adjust the squelch threshold level.

The squelch removes noise output from the speaker (closed condition) when no signal is received.

- Right-click to close the squelch.
- Left-click to open the squelch.

10 MONITOR BUTTON [MONI] (p. ??)

Click to turn the monitor function ON or OFF.

The monitor function is used to temporarily open the squelch to listen to weak signal.

11 MUTE BUTTON [MUTE] (p. ??)

Click to turn the mute function ON or OFF.

This function is used to temporarily mute audio output.

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4 PANEL DESCRIPTION

■ Multi-function receiver screen (Continued)

12 TUNING DIAL (p. ??)

Click to set the receive frequency with the selected tuning step.

- Right-click to increase the frequency.
- Left-click to decrease the frequency.

13 DUPLEX BUTTON [DUP] (p. ??)

- ➔ Right-click to display the offset frequency setting screen.
- ➔ Left-click to set the duplex direction from OFF (no indication), DUP -, and DUP +.

14 TUNING STEP UP/DOWN BUTTONS [▲]/[▼] (p. ??)

- ➔ Right-click to display the tuning step setting screen.
- ➔ Left-click to select the tuning steps in order.

15 IF-SHIFT CONTROL (p. ??)

Click to set a signal passband position.

- Right-click to increase the signal passband position.
- Left-click to decrease the signal passband position.

16 CENTER KEY [CENTER] (p. ??)

After moving a signal passband position with clicking the IF-shift control, click to return to the center position.

17 IF FILTER BUTTONS [WIDE]/[NAR] (p. ??)

Click to change the IF filter in use.

- Click [WIDE] to select a wide filter.
- Click [NAR] to select a narrow filter.

*Usable IF filter is according to the receive mode.

18 PROGRAMMED SCAN BUTTON [PROG] (p. ??)

Click to start/stop a programmed scan.

- “PROG Scan” blinks during scanning.

19 AUTO MEMORY WRITE SCAN BUTTON [AUTO] (p. ??)

Click to start/stop an auto memory write scan.

- “AUTO Scan” blinks during scanning.

20 MEMORY SCAN BUTTON [MEMO] (p. ??)

Click to start/stop a memory scan.

- “MEMO Scan” blinks during scanning.

21 TONE SCAN BUTTON [T-SCAN] (p. ??)

Click to start/stop a tone scan.

- “TONE Scan” blinks during scanning.

22 PRIORITY SCAN BUTTON [PRIO] (p. ??)

Click to start/stop a priority scan.

- “PRIO Scan” blinks during scanning.

23 SCAN PAUSE BUTTON [PAUSE] (p. ??)

Push to pause/resume a scan.

- “Pause” blinks during scan is pausing.

24 SCAN STOP BUTTON [STOP] (p. ??)

Push to cancel a scan operation.

25 SWEEP STOP BUTTON [■] (p. ??)

Click to stop a band scope function.

26 SWEEP START BUTTON [▶] (p. ??)

Click to start the band scope function which is used to observe signal conditions around the receive frequency.

27 SWEEP PAUSE BUTTON [II] (p. ??)

Click to pause/resume a band scope sweeping.

NOTE: While using the band scope function, audio is not output. To monitor the frequency, push [II] to pause the function, or push [■] to cancel the function.

28 SPAN (TIME) UP/DOWN BUTTON [▲]/[▼] (p. ??)

When "FREQUENCY" table is displayed;

Click to select the band scope edge frequency.

When "TIME" table is displayed;

Click to select the time interval to show the receiving signal.

29 FREQUENCY BUTTON [FREQ]

Click to show the receiving signal relative to signal strength.

30 TIME BUTTON [TIME]

Click to show the receiving signal condition on that time.

31 REC BUTTON

Click to start recording of the receiving signal contents.

32 STOP BUTTON

Click to stop recording.

33 MEMORY WRITE BUTTON [MW] (p. ??)

Click to write the current receive frequency into the selected memory channel.

34 MEMORY CLEAR BUTTON [MCL] (p. ??)

Click to clear the unneeded (displayed??) memory channel contents.

35 BANK UP/DOWN BUTTONS [▲]/[▼] (p. ??)

Click to change the memory bank.

36 MEMORY CHANNEL UP/DOWN BUTTONS [▲]/[▼]

(p. ??)

Click to change a memory channel.

37 AUTOMATIC GAIN CONTROL BUTTON [AGC] (p. ??)

Click to turn the AGC (Automatic Gain Control) function ON or OFF.

- "AGC" appears when the AGC function is turned ON.

38 ATTENUATOR BUTTON [ATT] (p. ??)

Click to turn the ATT (Attenuator) function ON or OFF.

- "ATT" appears when the ATT function is turned ON.

39 NOISE BLANKER BUTTON [NB] (p. ??)

Click to turn the NB (Noise Blanker) function ON or OFF.

- "NB" appears when the NB function is turned ON.

40 AUTOMATIC FREQUENCY CONTROL BUTTON [AFC]

(p. ??)

Click to turn the AFC (Automatic Frequency Control) function ON or OFF.

- "AFC" appears when the AFC function is turned ON.

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4 PANEL DESCRIPTION

■ Multi-function receiver screen (Continued)

41 VOICE SCAN CONTROL BUTTON [VSC] (p. ??)

Click to turn the VSC (Voice Scan Control) function ON or OFF.

- “VSC” appears when the VSC function is turned ON.

42 DTCS SETTING BUTTON [DTCS] (p. ??)

➔ Click to display the DTCS code setting screen, then click [▼] to select the desired code.

➔ Click the polarity radio button to select the polarity from Normal or Reverse.

- Available only when FM mode is selected.
- “DTCS” appears when the DTCS code and polarity are set.
- Click again to cancel the DTCS setting.

43 CTCSS SETTING BUTTON [TSQL] (p. ??)

Click to display the tone squelch frequency setting screen, then click [▼] to select the desired frequency.

- Available only when FM mode is selected.
- “CTCSS” appears when the tone squelch frequency is set.
- Click again to cancel the CTCSS setting.

44 ENTER KEY [ENT]

Click to enter the frequency when the desired receive frequency is input via the 10 keypad.

45 MEMORY CHANNEL KEY [Mch]

Click to call the memory channel when the desired channel number is input via the 10 keypad.

46 TENKEY— DECIMAL BUTTON [.]

Click to set the MHz digit when inputting a frequency via the 10 keypad.

47 TENKEY— CLEAR BUTTON [CE]

Click to clear the mistake while inputting a receive frequency or memory channel number via the 10 keypad.

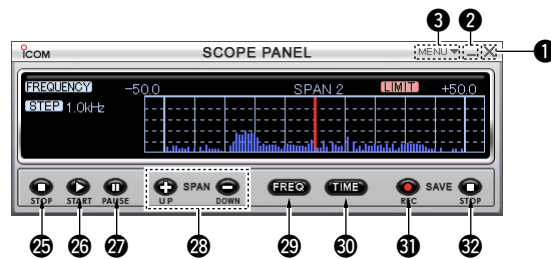
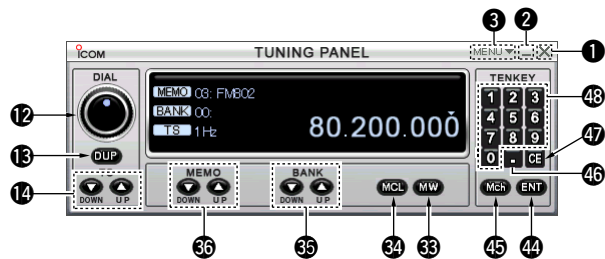
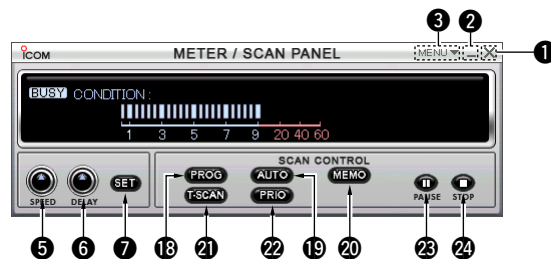
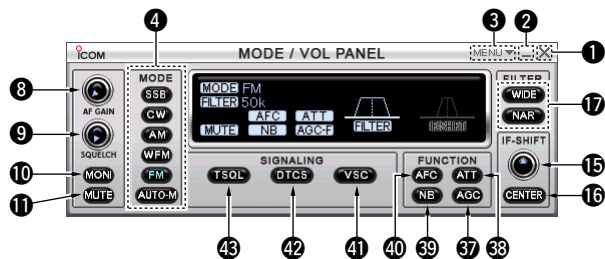
48 TENKEY— NUMERAL BUTTONS [1] to [0]

The numeral buttons can be used for several functions as below:

- Direct receive frequency input.
- Memory channel input.

■ Component screen

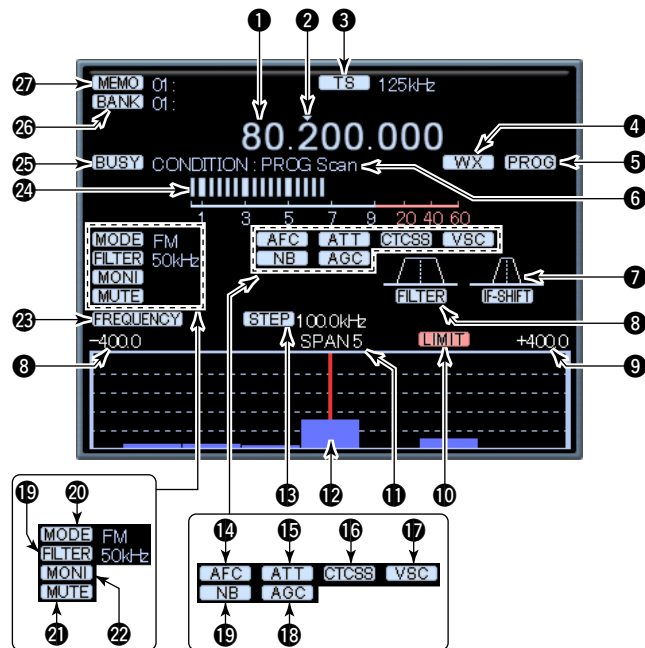
The setting items of a component screen are same with a multi-function receiver screen's one. Please refer to the explanations on pgs ?? to ??



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4 PANEL DESCRIPTION

■ Function display (for Multi-function receiver screen)



- 1 FREQUENCY READOUT** (p. ??)
Indicates the receive frequency and data as it is being input such as memory channel numbers, etc.
- 2 ?? INDICATOR** (p. ??)
Indicates the tuning digit.

- 3 TUNING STEP INDICATOR** (p. ??)
This is the frequency increment used when selecting a frequency using the tuning dial and when searching for signals using a scan function.
- 4 WEATHER INDICATOR** (p. ??)
Appears when weather function is turned ON. (USA version only)
- 5 SCAN INDICATOR** (p. ??)
“PROG,” “AUTO,” “MEMO,” “T-SCAN” or “PRIO” appears during scanning.
- 6 CONDITION INDICATOR** (p. ??)
“PROG Scan,” “AUTO Scan,” “MEMO Scan,” “TONE Scan” or “PRIO Scan” blinks during scanning.
- 7 IF-SHIFT INDICATOR**
Indicates the received signal passband position.
- 8 IF-FILTER PASSBAND WIDTH INDICATOR**
Indicates the current signal passband width.
- 9 MAXIMUM FREQUENCY SPAN INDICATORS** (p. ??)
➔ Indicate the upper and lower observable frequency limits around a receive frequency.
➔ In the diagram, the upper and lower limits are ± 500 kHz.
- 10 LIMIT INDICATOR** (p. ??)
Appears when the tuning step (**3**) is larger than the automatic sweep step (**13**) setting.
• The limit indicator is not indicated when the tuning step and the sweep step width are the same.

- ⑪ **FREQUENCY SPAN INDICATOR** (p. ??)
Indicates the frequency span selected with the [SPAN ▲] or [SPAN ▼] button.
- ⑫ **CENTER FREQUENCY INDICATOR** (p. ??)
Indicates the center frequency of the frequency span; this is for the currently received frequency.
- ⑬ **SWEEP STEP INDICATOR** (p. ??)
Indicates band scope sweep step.
- ⑭ **AFC INDICATOR [AFC]** (p. ??)
Appears when the AFC (Automatic Frequency Control) function is ON.
- ⑮ **ATTENUATOR INDICATOR [ATT]** (p. ??)
Appears when the ATT (Attenuator) function is ON.
- ⑯ **CTCSS/DTCS INDICATOR [CTCSS]/[DTCS]** (p. ??)
 - “CTCSS” appears when the tone squelch frequency is set.
 - “DTCS” appears when DTCS code and the polarity are set.
- ⑰ **VSC INDICATOR [VSC]** (p. ??)
Appears when the VSC (Voice Scan Control) function is ON.
- ⑱ **NB INDICATOR [NB]** (p. ??)
Appears when the NB (Noise Blanker) function is ON.
- ⑲ **AGC INDICATOR [AGC]** (p. ??)
Appears when the AGC (Automatic Gain Control) function is ON.
- ⑳ **IF FILTER INDICATOR** (p. ??)
Indicates the selected IF filter.
- ㉑ **RECEIVE MODE INDICATORS** (p. ??)
Indicate the current receive mode.
 - “WFM” lights in red when receiving a stereo broadcast program.

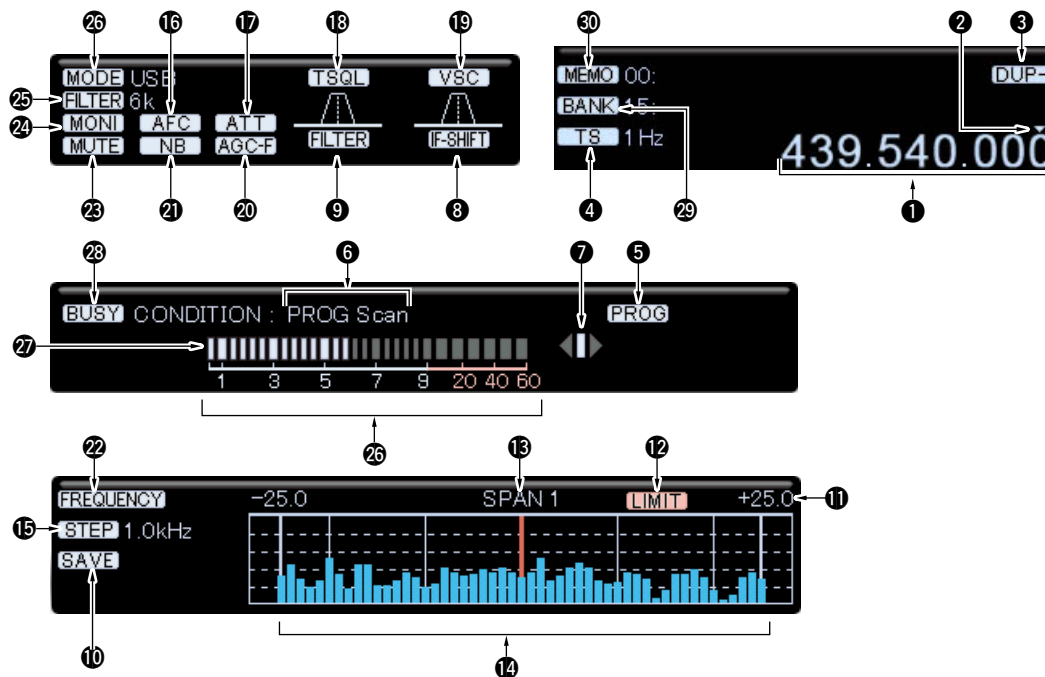
- ㉒ **MUTE INDICATOR** (p. ??)
Appears when the squelch circuit mutes the received audio signal.
- ㉓ **MONI INDICATOR** (p. ??)
Appears during monitoring the operating frequency.
- ㉔ **FREQUENCY/TIME INDICATOR [FREQUENCY]/[TIME]** (p. ??)
 - “FREQUENCY” appears when the receiving signal relative to signal strength is displayed.
 - “TIME” appears when the receiving signal condition on that time is displayed.
- ㉕ **S (SIGNAL) METER** (pgs. ??, ??)
Indicates the receive signal strength. Also indicates the S-meter squelch receive level set via the [SQUELCH] control.
- ㉖ **BUSY INDICATOR [BUSY]**
Appears when receiving a signal or when signal noise opens the squelch.
- ㉗ **MEMORY BANK INDICATOR** (p. ??)
Indicates the memory bank number (and name if it is set) being received.
- ㉘ **MEMORY CHANNEL INDICATOR** (p. ??)
Indicates the memory channel number (and name if it is set) being received.
 - The name darkens when the receive frequency changes from the stored one.

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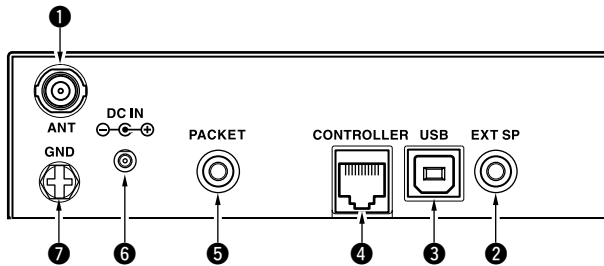
4 PANEL DESCRIPTION

■ Function display (for Component screen)

The setting items of a component screen are same with a multi-function receiver screen's one. Please refer to the explanations on pgs ?? to ??



■ Rear Panel



1 ANTENNA CONNECTOR [ANT]

Connects a 50 Ω antenna with a BNC connector and a 50 Ω coaxial cable.

2 EXTERNAL SPEAKER JACK [EXT SP]

Connects an 8 Ω external speaker.
 • Audio output power is more than 0.5 W.

3 USB RECEPTACLE [USB]

Connects to a PC via an extension cable.

4 CONTROLLER [CONTROLLER]

Connects to a controller via an extension cable.

5 DATA SOCKET [PACKET]

Connects a TNC (Terminal Node Controller), etc. for data communications. The receiver can receive 9600 bps packet communication (AFSK.)
 • See p. ? for connection information.

6 POWER RECEPTACLE [DC IN]

Accepts 12 V DC ±15% with the supplied DC power cable.


⚠ **NOTE: DO NOT** use a cigarette lighter socket as a power source when operating in a vehicle. The plug may cause voltage drops and ignition noise may be superimposed onto receive audio.

7 GROUND TERMINAL [GND]

Connect this terminal to a ground.

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■ Launching the IC-PCR1500

- ① Before launching the IC-PCR1500 program, make sure the receiver's power ON. Then launch the IC-PCR1500 program. (p. ??)
- ② Click " " on the tool bar to turn the IC-PCR1500 ON.
- ③ Click the desired icon (multi-function receiver, component or simple) on the tool bar to select the receiver screen that you want to use.

■ Changing the receiver screen

Click the desired tool bar icon that you want to use.

- Click [Receiver] for the multi-function receiver screen.
- Click [Comp] for the component screen.
- Click [Simple] for the simple screen.

■ Closing the IC-PCR1500

◇ Using the multi-function receiver screen or component screen

Click [Close] in the menu list, or close button ([X]) to quit the IC-PCR1500 program.


- Click [Close] in the menu list, or close button (X) in each [TUNING PANEL], [MODE/VOL PANEL], [METER/SCAN PANEL] and [SCOPE PANEL] when the component screen is displayed.

◇ Simple screen

Click

■ Quitting the IC-PCR1500

◇ Using the multi-function receiver screen or component screen

Click “

◇ Simple screen


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■ Receiving

Make sure the hardware installation is finished. (p. ??)

◇ Using the multi-function receiver screen or component screen

- ① Click “- Right-click to increase the audio level.
- Left-click to decrease the audio level.
- When clicking and holding [AF GAIN], the audio level scrolls up or down.
- Push the PC's [↑] (UP) or [↓] (DOWN) key also sets the audio level.
- ③ Click [SQUELCH] to set the squelch level.
 - Right-click to increase the squelch level (tight squelch).
 - Left-click to decrease the squelch level (loose squelch).
 - When clicking and holding [SQUELCH], the squelch level scrolls up or down.
- ④ Set the receive frequency and mode. (pgs. ??, ??)
- ⑤ When receiving a signal on the set frequency, squelch opens and the receiver emits audio.
 - “BUSY” appears and the S-meter indicator shows the relative signal strength for the received signal.

■ Setting a frequency

Depending on the situation, the receive frequency can be set using the following methods. Frequencies can be set from 0.01000 to 3299.00000 MHz.

◇ Using the tuning dial

- ➔ Click [DIAL] to set the receive frequency with the selected tuning step.
 - Right-click to increase the frequency.
 - Left-click to decrease the frequency.
 - The frequency changes according to the preset tuning steps. See p. ?? for selecting the tuning step.
 - When clicking and holding either button the frequency scrolls up or down.

◇ Using the 10-keypad

- ➔ Click the desired numeral buttons, then click [ENT] to set the frequency.
 - When making a mistake while inputting a frequency, click [CE] to clear the input and return to the previous frequency.
 - When you want to change the 100 kHz digit and below, click [•] first, then the numeral buttons and then [ENT].
 - When you want to set the 100 kHz digit and below to 0, input the MHz digits and then click [ENT].
 - When inputting a frequency outside of the allowed receive frequency range, the previously selected frequency is automatically selected after clicking [ENT].

◇ Using the PC keyboard

- Push the desired numeral keys on the PC keyboard, then push [Enter] to set the frequency.
 - When inputting from the keyboard, click anywhere in the receiver screen first, then begin inputting from the keyboard.
 - When making a mistake while inputting a frequency, click [CE] on the receiver screen to clear the input and return to the previous frequency.
 - When you want to change the 100 kHz digit and below, push [•] first, then the numeral keys and then [Enter].
 - When you want to set the 100 kHz digit and below to 0, input the MHz digits and then push [Enter].
 - When inputting a frequency outside of the allowed receive frequency range, the previously selected frequency is automatically selected after clicking [Enter].

■ Squelch level setting

The squelch function sets a minimum receive signal level below which no audio is emitted from the speaker. This conveniently prevents noise and static from being emitted when receiving weak signals or no signals at all.

Further setting of squelch removes weak signals. The remove level is displayed on the S-meter (S-meter squelch). The squelch does not open if a signal below the set S-meter level is received.

◇ Using the multi-function receiver screen or component screen

- Click [SQUELCH] to set the squelch level.
 - Right-click to increase the squelch level (tight squelch).
 - Left-click to decrease the squelch level (loose squelch).
 - When clicking and holding [SQUELCH], the audio level scrolls up or down.
 - The S-meter squelch level is displayed in the function display.

◇ Using the simple function receiver screen

- ① Click [MENU] and select the 'Function controller' when it is not displayed.
- ② Click [SQL Δ] or [SQL ▽] on the function controller to select the desired squelch level.
 - The S-meter squelch level is displayed under the frequency indication.

5 BASIC OPERATION

■ Setting a tuning step

When using the tuning dial to change the frequency, or when a scan function is activated, the frequency changes in increments determined by the set tuning step. This can be changed if desired.

The following tuning step are available.

- 1 Hz • 10Hz • 20 Hz • 50 Hz • 100 Hz
- 500Hz • 1 kHz • 2.5 kHz • 5 kHz • 6.25 kHz
- 8.33 kHz • 9 kHz • 10 kHz • 12.5 kHz • 15 kHz
- 20 kHz • 25 kHz • 30 kHz • 50 kHz • 100 kHz
- 125 kHz • 150 kHz • 200 kHz • 500 kHz • 1 MHz
- 10 MHz • USER*

*When “USER” is selected, the tuning step, set in “USER TS Setting” screen, is selected.

◇ Tuning step selection

- Right-click [TS ▲] or [TS ▼] to display a tuning step list, then select the desired tuning step.
- Left-click [TS ▲] or [TS ▼] to set the desired tuning step in order.
 - The selected tuning step is displayed in the function display.

◇ Setting the user tuning step

- Right-click [TS ▲] or [TS ▼] to display a tuning step list, then select “USER TS Setting.” You can edit the desired tuning step from 0.001 kHz–9999.998 kHz (in 0.001 step) directly.

■ Receive mode selection

Receive modes are determined by the physical properties of the radio signals. The receiver has 6 receive modes: SSB LSB, CW, AM, WFM and FM modes. The mode selection is stored independently in each memory channels.

Typically, AM mode is used for the AM broadcast stations (0.495–1.620 MHz) and air band (118–135.995 MHz), and WFM is used for FM broadcast stations (76–107.9 MHz).

When using [AUTO-M] (automatic mode), a receive mode, IF filter passband width, tuning step, etc., are selected automatically after inputting a frequency. (p. ??)

- Click [SSB], [CW], [AM], [WFM], [FM] or [AUT-M] to select the desired receive mode.
 - Clicking [SSB] toggles the USB and LSB mode.


■ Automatic mode selection

An automatic mode function is available to automatically set the receive mode, IF filter passband width, tuning step, etc. after inputting a frequency.

Each click of the [AUTO-M] button toggles the automatic mode function ON and OFF.

◇ Setting the automatic mode function

The default setting for the automatic mode function can be added to, changed or deleted. Up to 20 ranges can be memorized into the automatic mode function settings.

① Click “

② Click the [Auto Mode] tab to display the automatic mode list.

- ③ Click a cell in the [Freq Low] column and the desired line.
- ④ Input the lower frequency of the frequency range from the keyboard, then push [Enter].
- When nothing is input into the [Freq Low] or [Freq High] column, settings for other columns cannot be made.
 - When inputting a new frequency, other data automatically appears in the other column.
 - To delete a frequency range setting, enter [0] or [Space] into the [Freq Low] column from the keyboard.
- ⑤ Input the higher frequency of the frequency range into the [Freq High] column, push the [Enter] key.
- ⑥ Set other data such as mode, tuning step, etc., if desired.
- Double-click the desired cell, select the desired item and double-click the selection.
- ⑦ Click the close button ([X]) to close the setting screen.

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5 BASIC OPERATION

■ Monitor function

This function is used to listen to weak signals without disturbing the squelch setting or to open the squelch manually even when mute functions such as the tone squelch are in use.

- Click [**MONI**] to monitor the operating frequency.
 - “MONI” appears.

■ Mute function

This function is used to mutes the received audio signal.

- Click [**MUTE**] to temporarily mute audio output.
 - “MUTE” appears.

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■ Duplex operation

Duplex communication uses 2 different frequencies for transmitting and receiving. Generally, duplex is used in communication through a repeater, some utility communications, etc.

During duplex operation, the transmit station frequency is shifted from the receive station frequency by the offset frequency. Repeater information (offset frequency and shift direction) can be programmed into memory channels. (p. ??)

- ① Set the receive frequency (repeater output frequency).
- ⑤ Right-click **[DUP]** to display the offset frequency setting screen.
- ⑥ Set the desired offset frequency within 0.000000–1000.000000 MHz range, then click **[OK]**.
- ② Left-click **[DUP]** to set the duplex direction from OFF (no indication,) DUP–, or DUP+.
- ③ Click **[MONI]** to monitor the transmit station frequency (repeater input frequency).
The displayed frequency shifts the offset frequency when monitor function is in use.

■ IF filter selection

Increasing or decreasing the width of incoming signals can help eliminate interference. Available filters vary according to the receive mode. See the table below.

IF filter	2.8 kHz	6 kHz	15 kHz	50 kHz	230 kHz
USB/LSB	○	○	—	—	—
CW	○	○	—	—	—
WFM	—	—	—	○	○
AM	○	○	○	○	—
FM	—	○	○	○	—

○: Available; —: Not available

- ➔ Click the **[WIDE]** or **[NAR]** buttons to toggle between filter widths.

■ Attenuator function

Strong signals (such as from broadcast stations, pocket beepers, nearby amateur radio stations, etc.) can cause distortion of receive signals. The attenuator function can reduce signal strength of interfering signals by approx. 20 dB.

- ➔ Click **[ATT]** to turn the ATT (Attenuator) function ON or OFF.
 - “ATT” appears when the ATT function is turned ON.

■ AFC function

The AFC (Automatic Frequency Control) function tunes the displayed frequency automatically when an off-center frequency is received. It activates in FM/WFM modes only.

- ➔ Click [AFC] to turn the AFC (Automatic Frequency Control) function ON or OFF.
 - “AFC” appears when the AFC function is turned ON

■ NB function

The NB (noise blanker) function removes pulse-type noise when USB, LSB, CW or AM mode is selected.

- ➔ Click [NB] to turn the NB (noise blanker) function ON or OFF.
 - “NB” appears when the NB function is turned ON.

■ AGC function

The AGC (Automatic Gain Control) function controls receiver gain to produce a constant audio output level even when the received signal strength is varied by fading, etc.

- ➔ Click [AGC] to turn the AGC (Automatic Gain Control) function ON or OFF.
 - “AGC” appears when the AGC function is turned ON.

■ VSC function

When the VSC (Voice Scan Control) function is ON, the received signals while scanning or when selecting a station and which open the squelch but are not modulated (contain no voice or music, etc. components) are muted. The BUSY indicator still lights even no audio is emitted.

- ➔ Click [VSC] to turn the VSC (Voice Scan Control) function ON or OFF.
 - “VSC” appears when the AFC function is turned ON.

■ IF shift function

The IF shift function electronically changes the center of the IF (intermediate frequency) passband frequency to reject interference. It activates in SSB/CW modes only.

- ① Adjust the [SHIFT] control for a minimum interference signal level.
 - The audio tone may be changed while the IF shift is in use.
- ② Set the shift control to its center position when there is no interference.

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■ General

The receiver has 2600 memory channels for storage of often-used frequencies. Total of 26 memory banks are available for usage by group, etc., and 100 channels are assigned into a bank.


◇ Memory channel contents

The following information can be programmed into memory channels:

- Memory channel name
- Operating frequency (p. ??)
- Duplex direction (p. ??)
- Offset frequency (p. ??)
- Receive mode (p. ??)
- IF filter selection (p. ??)
- Attenuator ON/OFF (p. ??)
- Tuning step (p. ??)
- Select memory scan setting (p. ??)
- Memory skip scan setting (p. ??)
- Squelch control system ON/OFF and its frequency or code (p. ??)
- Remark (memory channel comment) (p. ??)

■ Bank name programming

Each memory bank can be programmed with an alphanumeric bank name for easy recognition and can be indicated independently. Names can be a maximum of 20 characters.

- ① Click " on the tool bar to call up the [Memory Channel Editor] screen if it is not displayed.
- ② Click [**▲**] or [**▼**] to select a memory bank.
- ③ Click the bank name dialog box.
 - A cursor starts blinking.
- ④ Program the desired bank name (up to 20-character) from the PC keyboard, then push [Enter].
 - The programmed name is displayed on the function display.
- ⑤ After programming, click close button ([**X**]) to close the memory channel list screen.

■ Memory channel selection

◇ Using the ▲/▼ button on the multi-function receiver screen or component screen

- ① Click [BANK ▲] or [BANK ▼] to select the desired memory bank.
- ② Click [MEMO ▲] or [MEMO ▼] to select the desired memory channel.

◇ Using the [Mch] button on the multi-function receiver screen or component screen


Click numeral buttons (1 to 0) to input the desired memory channel number, then click [Mch] to select the memory channel.

- When making a mistake while inputting a memory channel, click [CE] to clear the input and return to the previous frequency indication.

◇ Using the simple function receiver screen

- ① Click the [BANK] button and select a desired memory bank.
- ② Click a numeral button, [1] – [5], to select memory channels 1 – 5.
 - Use the memory list screen to select memory channels 6 to 50.

◇ Using the memory channel list screen

- ① Click  on the tool bar to call up the [Memory Channel Editor] screen if it is not displayed.
- ② Click [▲] or [▼] or select a bank name with [▼] to select a memory bank.
- ③ Click the desired memory channel to be called up, then click [RX Entry] to set the edited data to the multi-function receiver screen or component screen.

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■ Memory channel clearing

◇ Using the multi-function receiver screen or component screen

- ① Click **[BANK ▲]** or **[BANK ▼]** to select the memory bank, including the unneeded memory channel.
- ② Click **[MEMO ▲]** or **[MEMO ▼]** to select the unneeded memory channel to be cleared.
- ③ Click the **[MCL]** to clear the memory channel contents.

◇ Using the memory channel list screen

- ① Click “

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■ Memory channel programming


100 memory channels are assigned into a memory bank (0 to 25), and the following information can be stored.

- Bank name, memory name, frequency, duplex direction, offset frequency, mode, filter, attenuator, tuning step, select memory scan, skip channel, tone squelch and remark.

◇ Using the multi-function receiver screen or component screen

- ① Click **[BANK ▲]** or **[BANK ▼]** to select a memory bank to be programmed.
- ② Click **[MEMO ▲]** or **[MEMO ▼]**, or click numeral buttons (1 to 0) to input the desired memory channel number, then click **[Mch]** to select a memory channel to be programmed.
- ③ Set a frequency, mode, etc. that you want to memorize.
- ④ Click the **[MW]** to program the displayed frequency into the selected memory channel.

◇ Using the memory channel list screen

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■ Editing the memory channel list screen


◇ Editing the memory name

- ① Click " on the tool bar to call up the [Memory Channel Editor] screen if it is not displayed.
- ② Click [**▲**] or [**▼**], or select the bank name (p. ??) with [**▼**] to select the desired memory bank.
- ③ Select the desired memory channel.
- ③ Double-click [**Name**] cell on the desired memory channel.
 - A cursor starts blinking.
- ④ Edit the desired memory name (up to ??-character) from the PC keyboard, then push [Enter] to input.

◇ Program the edited data to the receiver screen

- ① Click " on the tool bar to call up the [Memory Channel Editor] screen if it is not displayed.
- ② Click [**▲**] or [**▼**], or select the bank name (p. ??) with [**▼**] to select the desired memory bank.
- ③ Select the desired memory channel.
- ④ Click the [**RX Entry**], or right-click the cell then click [**RX Entry**] to program the edited data to the multi-function receiver screen or component screen.

◇ Calling up the memory channel data from the receiver

- ① Click " on the tool bar to call up the [Memory Channel Editor] screen if it is not displayed.
- ② Click [**▲**] or [**▼**], or select the bank name (p. ??) with [**▼**] to select the desired memory bank.
- ③ Select the desired memory channel.
- ③ Click the [**MW**] to call up the displayed memory channel data on the multi-function receiver screen or component screen.


◇ Memory channel insert/delete

Insert:

New blank channels can be inserted into the channel list. Channels, below the cursor, are shifted down automatically.

Delete:

Unnecessary channels can be deleted from the list. Channels, below the cursor, are shifted up automatically.

- ① Click " on the tool bar to call up the [Memory Channel Editor] screen if it is not displayed.
- ② Click [**▲**] or [**▼**] or select a bank name with [**▼**] to select a memory bank.
- ③ Right-click a cell on the desired channel that you want to insert/delete, then click [**Insert**] or [**Delete**] from the list to insert/delete the channel at the selected position.

■ Saving memory channel data

The memory channels can be stored as a PC file.

◇ Using the multi-function receiver screen or component screen

- ➔ Select [Save] or [Save As] on the [File] menu to back up memory channel data.

◇ Using the simple function receiver screen

- ➔ Select [Save] or [Save As] in the [File] menu on the shortcut menu to back up memory channel data.

■ Opening memory channel data

The stored memory channel data into the PC can be loaded.

◇ Using the multi-function receiver screen or component screen

- ➔ Select [Open] on the [File] menu to open memory channel data.

◇ Using the simple function receiver screen

- ➔ Select [Open] in the [File] menu on the shortcut menu to open memory channel data.

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■ Creating a new memory channel data file

The new memory channel data file can be created.

◇ Using the multi-function receiver screen or component screen

➤ Select [New] on the [File] menu to make a new file for memory channel data.

◇ Using the simple function receiver screen

➤ Select [New] in the [File] menu on the shortcut menu to make a new file for memory channel data.

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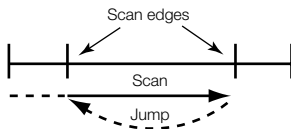
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Scan types

PROGRAMMED SCAN

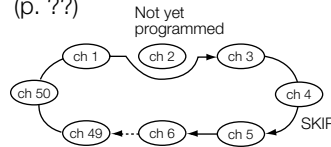
(p. ??)



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

MEMORY SCAN

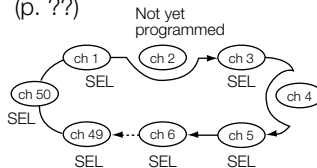
(p. ??)



Repeatedly scans memory channels within a memory bank (0–25).

SELECT MEMORY SCAN

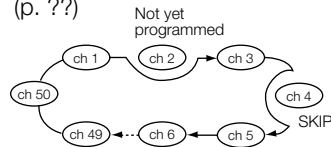
(p. ??)



Repeatedly scans only select memory channels within a memory bank. This function can be turned ON/OFF in [Memory SCAN] tab. Select channels can be set in the memory list screen.

MEMORY SKIP SCAN

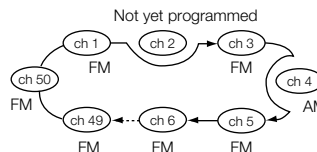
(p. ??)



Skips unwanted memory channels that inconveniently stop scanning. This function can be turned ON/OFF in [Memory SCAN] tab. Skip channels can be set in the memory list screen.

MODE SELECT MEMORY SCAN

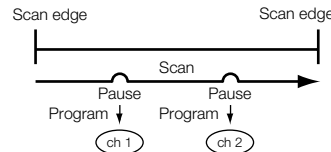
(p. ??)



Repeatedly scans only selected mode channels within a memory bank. This function can be set in [Memory SCAN] tab of the setting screen.

AUTO MEMORY WRITE SCAN

(p. ??)



The frequencies that the programmed scan stops are automatically programmed into a selected memory bank.

■ Scan resume condition

When receiving a signal, scan automatically pauses on that signal. The scan resume condition sets the time that the scan pauses before resuming or whether scan stops instead of pausing.

◇ Using the multi-function receiver screen or component screen

- ① Click the [SET] button to call up the [Scan Delay] screen if it is not displayed.
- ② Select the scan delay condition from “Pause until Signal Disappears”, “Delay Volume” or “Scan Stop.”

(a) ‘Pause until Signal disappears’

Scan pauses when receiving a signal and remains paused until the signal disappears.

(b) ‘Delay Volume’

When setting a delay time using the [DELAY] control (on multi-function receiver screen or component screen), scan pauses when receiving a signal and then resumes after the specified delay.

(c) ‘Scan Stop’

When a signal is received during scan, scan stops and does not resume.

- ③ Select a restart delay time from [Restart Delay]. This setting is valid when selecting (a) or (b) in step ②.
 - **0 Sec.** : Scan resumes immediately after the signal disappears.
 - **1 Sec.** : Scan resumes 1 sec. after the signal disappears.
 - **2 Sec.** : Scan resumes 2 sec. after the signal disappears.
- ④ Click the close ([X]) button to close the setting screen.

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■ Scan speed setting

The searching speed of frequencies or memory channels is variable.

- Click the [SPEED] control (on multi-function receiver screen or component screen) to set the speed at which scans search through frequencies/memories for signals.
 - Right-click to increase the speed level.
 - Left-click to decrease the speed level.
 - When clicking and holding the control, the scan speed increases or decreases continuously.
 - When clicking and holding [SPEED], the scan speed scrolls up or down.

■ Programmed scan

Programmed scan automatically searches for signals within a specified frequency range.

▨ For programmed scan, scan edges must be programmed in advance. See the next step for details.

◇ Setting scan edges

Settings such as frequency range, receive mode, tuning step, etc. must be set in advance. Up to 50 settings can be programmed.

- ① Right-click the [PROG] button to call up the Program Scan setting screen if it is not displayed.
- ② Click the [Program Scan] tab to show the program list.
- ③ Input the start frequency into [Freq Low] cell from the keyboard, then push [Enter].

Other items are set automatically when [Freq Low] cell is entered.

▨ Program the start frequency first, otherwise no setting can be done except for the name.
- ④ Set data into other cells if desired, then click the close ([X]) button to close the setting screen.

◇ Starting a programmed scan

- ① Make sure the squelch is set to the threshold point. (closed condition)
- ② Right-click the [PROG] button to call up the Program Scan setting screen if it is not displayed.
- ③ Click the [Program Scan] tab to show the program list.
- ④ Enter the programmed scan range number to be scanned in [Program No], then click the close ([X]) button to close the setting screen.
- ⑤ Click the [PROG] button to start programmed scan.
 - “PROG Scan” blinks while scanning.
- ⑥ To stop the scan, click [STOP] or [PROG].
 - When the frequency is changed after cancelling a scan and a new scan is activated, scan starts from the starting frequency of the specified frequency range. When the frequency is not changed, scan starts from the previously stopped frequency.

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8 SCAN OPERATION

■ Auto memory write scan

Auto memory write scan does the same as the programmed scan and then writes paused signal frequencies into memory channels of a specified memory bank. Scan edges must be programmed in advance. (p. ??)

◇ Using the multi-function receiver screen or component screen

- ① Make sure the squelch is set to the threshold point. (closed condition)
- ② Right-click the [AUTO] button to call up the Auto MW Scan setting screen if it is not displayed.
- ③ Enter the programmed scan range number to be scanned in [Program No].
- ④ Select a memory bank to be written, then click the close ([X]) button to close the setting screen.
 - To clear the selected memory bank contents, click [All Clear].
- ⑤ Click the [AUTO] button to start auto memory write scan.
 - “AUTO Scan” blinks while scanning.
- ⑥ To stop the scan, click [STOP] or [AUTO].

■ Memory/bank scan

This function searches all memory channels in a selected memory bank.

◇ Using the multi-function receiver screen or component screen

- ① Make sure the squelch is set to the threshold point. (closed condition)
- ② Click [**BANK ▲**] or [**BANK ▼**] to select the desired memory bank.
 - When using the memory list screen, click [**▲**] or [**▼**], or select a bank name with [**▼**] to select a memory bank.
- ③ Right-click the [**MEMO**] button to call up the Memory Scan setting screen if it is not displayed.
- ④ Select the bank scan condition from “Current Bank”, “Select Bank” or “All Bank.”
 - (a) ‘**Current Bank**’
Scans memory channels within the current bank.
 - (b) ‘**Select Bank**’
Scans memory channels within the selected bank (“Sel” setting is turned ON in this screen).
 - (c) ‘**All Bank**’
Scans memory channels within all banks.

- ⑤ Make sure the check boxes are not checked (✓), then click the close ([**X**]) button to close the setting screen.
- ⑥ Click the [**MEMO**] button to start memory scan.
 - “MEMO Scan” blinks while scanning.
- ⑦ To stop the scan, click [**STOP**] or [**MEMO**].

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8 SCAN OPERATION

■ Versatile memory scan

You can set the memory scan conditions using the Memory Scan setting screen.

- ① Right-click the [MEMO] button to call up the Memory Scan setting screen if it is not displayed.
- ② Check the desired check boxes, then click the close ([X]) button to close the setting screen.
 - When selecting the [SEL] box (select memory scan), only selected memory channels ("SEL" setting is turned ON in memory channel list screen) are scanned.
 - When selecting the [SKIP] box (memory skip scan), skip channels ("SKIP" setting is turned ON in memory channel list screen) are not scanned.
 - When selecting the [MODE SEL] box (mode select memory scan), only memory channels that receive mode setting are matched to [Select Mode] selection as below are scanned.

③ Click the [MEMO] button to start the desired memory scan.

④ To stop the scan, click [STOP] or [MEMO].

- All settings can be used simultaneously.
- SEL, SKIP and receive mode can be set in the memory list screen.
- At least 2 memory channels must be programmed with the desired condition for scan to proceed.

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Priority watch types

Priority watch checks for signals on the frequency every 5 sec. while operating on a VFO frequency or scanning. The receiver has 2 priority watch types to suit your needs.

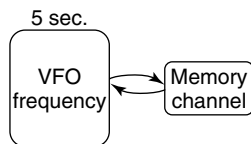
The watch resumes according to the selected scan resume condition. See p. ?? for details.

NOTE: If the pocket beep function is activated, the receiver automatically selects the tone squelch function when priority watch starts.

MEMORY CHANNEL WATCH

While operating on a frequency, priority watch checks for a signal on the selected memory channel every 2 to 60 sec.

- A memory channel with skip information can be watched.



Priority watch operation

Using the multi-function receiver screen or component screen

- ① Set the receive frequency. (pgs. ??, ??)
- ② Right-click the [PRIO] button to call up the Priority Scan setting screen if it is not displayed.
- ③ Set the watching channel in [Scan Channel].
- ④ Set the watching interval from 2 to 60 sec in [Priority Interval], then click the close ([X]) button to close the setting screen.
- ⑤ Click the [PRIO] button to start priority scan.
 - “PRIO Scan” blinks while scanning.
 - The receiver checks the memory channel according to the setting interval.
 - The watch resumes according to the selected scan resume condition. (p. ??)
 - While the watch is pausing, pushing [??] resumes the watch manually.
- ⑥ To stop the scan, click [STOP] or [PRIO].

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10 TONE SQUELCH OPERATION

■ Tone/DTCS squelch operation

The tone or DTCS squelch opens only when receiving a signal with the same pre-programmed subaudible tone or DTCS code, respectively in FM mode. You can silently wait for the specified signal using the same tone.

◇ Tone squelch frequency setting

- ① Click [FM] to select FM mode.
- ② Click [TSQL] to turn the tone squelch ON.
 - “TSQL” appears in the function display.
- ③ Right-click [TSQL] to display the [TSQL] setting screen.
- ④ Click [▼] to select the desired tone squelch frequency.
 - 51 tone frequencies from 67.0 to 254.1 Hz are available.
- ⑤ Check the [Reverse Action] check box to mute the received audio signal when the received signal's tone is matched.
 - “ ” appears in the function display.
- ⑥ Click the close button ([X]) to close the [TSQL] setting screen.
- ⑦ When the received signal includes a matching tone, squelch opens and the signal can be heard.
 - When the [Reverse Action] check box is checked in step ⑤, the received audio signal is muted.
 - When the received signal's tone does not match, tone squelch does not open, however, the S-indicator shows signal strength.
- ⑧ Click [TSQL] again to cancel the tone squelch.
 - “TSQL” disappears.

• Available tone squelch frequencies list

67.0	79.7	97.4	118.8	146.2	167.9	186.2	206.5	241.8
69.3	82.5	100.0	123.0	151.4	171.3	189.9	210.7	250.3
71.0	85.4	103.5	127.3	156.7	173.8	192.8	218.1	254.1
71.9	88.5	107.2	131.8	159.8	177.3	196.6	225.7	
74.4	91.5	110.9	136.5	162.2	179.9	199.5	229.1	
77.0	94.8	114.8	141.3	165.5	183.5	203.5	233.6	

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◇ DTCS code setting

- ① Click [FM] to select FM mode.
- ② Click [DTCS] to turn the DTCS squelch ON.
 - “DTCS” appears in the function display.
- ③ Right-click [DTCS] to display the [DTCS] setting screen.
- ④ Click the [▼] to select the desired DTCS code.
 - 104 DTCS code from 023 to 754 are available.
- ⑤ Check the [Reverse Action] check box to mute the received audio signal when the received signal’s tone is matched.
 - “ ” appears in the function display.
- ⑥ Click the close button ([X]) to close the [DTCS] setting screen.
- ⑦ When the received signal includes a matching code, squelch opens and the signal can be heard.
 - When the [Reverse Action] check box is checked in step ⑤, the received audio signal is muted.
 - When the received signal’s code does not match, tone squelch does not open, however, the S-indicator shows signal strength.
- ⑧ Click [DTCS] again to cancel the DTCS squelch.
 - “DTCS” disappears.

• Available DTCS code list

023	054	125	165	245	274	356	445	506	627	732
025	065	131	172	246	306	364	446	516	631	734
026	071	132	174	251	311	365	452	523	632	743
031	072	134	205	252	315	371	454	526	654	754
032	073	143	212	255	325	411	455	532	662	
036	074	145	223	261	331	412	462	546	664	
043	114	152	225	263	332	413	464	565	703	
047	115	155	226	265	343	423	465	606	712	
051	116	156	243	266	346	431	466	612	723	
053	122	162	244	271	351	432	503	624	731	

■ DTCS polarity setting

As well as a code setting, the polarity setting is also available for the DTCS operation. When a different polarity is set, the DTCS never releases audio mute even when a signal with a matching code number is received.

- ① Click [FM] to select FM mode.
- ② Click [DTCS] to turn the DTCS squelch ON.
 - “DTCS” appears in the function display.
- ③ Right-click [DTCS] to display the [DTCS] setting screen.
- ④ Select the DTCS polarity from “Normal” and “Reverse” in [Polarity].
- ⑤ Click the close button ([X]) to close the [DTCS] setting screen.

■ Pocket beep operation

This function uses subaudible tones for calling and can be used as a “common pager” to inform you that someone has called while you were away from the receiver.

- ① Click [FM] to select FM mode.
- ② Click [TSQL]/[DTCS] to turn the tone/DTCS squelch ON.
 - “TSQL”/“DTCS” appears in the function display.
- ③ Right-click [TSQL]/[DTCS] to display the [TSQL]/[DTCS] setting screen.
- ④ Check the [P.Beep] check box to turn the pocket beep function ON.
 - “ ” appears in the function display.
- ⑤ Click the close button ([X]) to close the [TSQL]/[DTCS] setting screen.

■ Operation

The band scope function allows you to visually check a specified frequency range or receiving signal condition on the specified time period.

- Receive audio is muted while monitoring the band scope.
- Push the pause button ([||]) to pause sweeping and receive the audio.

◇ Using the frequency indication on the multi-function receiver screen or component screen

- ① Click [FREQ] to select the indication of the receiving signal relative to signal strength while sweeping.
- ② Click the sweep start button ([▶]) to begin a sweep; signal conditions appear starting from the center of the range.
 - Conditions over the entire set frequency span can be observed around the center frequency of the currently received frequency.
- ③ Click [SPAN +] or [SPAN -] to select the sweep width through SPAN1 (± 25.0 kHz) to SPAN6 (± 500 kHz).
- ④ Click [TS ▲] or [TS ▼] to select the sweep tuning step.
 - "LIMIT" appears when a tuning step larger than the sweep step range is selected.
- ⑤ Click the waveform to select the frequency of the signal.
 - Click [||] to pause a sweep and monitor the frequency. Repeat to resume the sweep.
 - While pausing the band scope, you can select the frequency by clicking the waveform. The current receive frequency is marked by a dotted line and the previous receive frequency is displayed at center.

- ⑥ Click the sweep stop button ([■]) to stop a sweep.

◇ About the limit indicator

When using the band scope function and the selected tuning step (TS) is outside the automatic sweep step setting, [LIMIT] appears in the band scope display. This indicates that the tuning step (TS) and the sweep step width are not the same.

◇ Using the time indication on the multi-function receiver screen or component screen

- ① Click **[TIME]** to select the indication of the receiving signal condition on the specified time period while sweeping.
- ② Click the sweep start button (**[▶]**) to begin a sweep; signal conditions appear starting from the center of the range.
 - Conditions over the entire set frequency span can be observed around the center frequency of the currently received frequency.
- ③ Click **[TIME +]** or **[TIME -]** to select the time interval through 100 min to 50 min, 30 min to 15 min, 10 min to 5 min and 3 min to 1.5 min.
- ⑤ Click the waveform to select the frequency of the signal.
 - Click **[II]** to pause a sweep and monitor the frequency. Repeat to resume the sweep.
 - While pausing the band scope, you can also select the frequency by clicking the waveform. The current receive frequency is marked by a dotted line and the previous receive frequency is displayed at center.
- ⑥ Click the sweep stop button (**[■]**) to stop a sweep.

■ Changing the automatic sweep step limit

The frequency steps used while sweeping are automatically set according to the tuning step. However, these steps can be defined using the [BAND Scope] tab on the setting screen.

- ① Right-click the [FREQ] button to call up the Band Scope setting screen if it is not displayed.
- ② Click the desired frequency step range from in the [Automatic Sweep Step Limit].
 - The sweep step range can be selected from one of 1 kHz to 100 kHz, 1 kHz to 50 kHz or 1 kHz to 25 kHz.
- ④ Click the close (**[X]**) button to close the setting screen.

■ Band scope option

The following optional functions are available for the band scope function. These settings can be defined using the [Band Scope] screen.

● WFM Monitor function

The band scope function is normally used in AM and FM modes only. This function allows it to be used as waveform monitor in WFM mode.

● 1/2 sweep step function

This function sets the sweep step in half of the tuning step, doubling the sweep resolution.

- ① Right-click the [FREQ] button to call up the Band Scope setting screen if it is not displayed.
- ② Check the desired check boxes in [Option], then click the close ([X]) button to close the setting screen.
- ③ Click the close ([X]) button to close the setting screen.

■ Pick up signal function

When you find a signal you want to listen to when using the band scope function, click over the signal location in the band scope display. The receive frequency moves to that frequency.

While pausing the band scope, you can also select the displayed signal frequency by clicking the waveform. In this case, the receive frequency is marked by a dotted line and the previously received frequency is displayed at center.

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■ Saving the sweeping data


The band scope sweep data can be stored as a PC file.

◇ Using the multi-function receiver screen or component screen

- ① Click the recording start button ([●]) to start recording the receiving signal contents while sweeping.
 - You can save the recording contents with the desired file name in the [File Name] box.
 - The following data are saved.
 - Recording start day and time
 - Center frequency
 - Sweeping frequency
 - Sweeping time
 - Electrolytic strength
- ② Click the recording stop button ([■]) to stop recording.


■ Operation

The computer can be remotely controlled using DTMF codes in FM mode. When receiving a programmed DTMF code, the IC-PCR1500 displays a message, activates a program/screen saver or plays a Windows' sound file.

- ① Select FM mode.
- ② Click “” on the tool bar to call up the [DTMF Remote Commander] screen if it is not displayed.
- ③ Click [ON/OFF] on the DTMF Remote Commander screen to toggle the DTMF decoder circuit ON and OFF (the LED lights when the function is ON).
- ④ Click the [REMOTE] button to toggle the DTMF remote function ON and OFF (the LED lights when the function is ON).

NOTE: When receiving a signal including a DTMF code, the received code is displayed in the DTMF indicator window. Up to 24 digits of the latest received DTMF code are displayed.

◇ Setting the DTMF receive code

- ① Click “” on the tool bar to call up the [DTMF Remote Commander] screen if it is not displayed.
- ② Click [SET] to call up the receive code setting screen.
- ③ Click the desired tab from [1] to [5] for the receive code setting.
- ④ Enter the desired key code in the [Receive CODE] field using the keyboard.
 - 0 to 9, A, B, C, D, E (*), and F (#) can be used.
- ⑤ Select the desired action from “Display Message”, “Action Execute File” or “Play.WAV File” when the received code is matched to the [Receive CODE] setting.
 - (a) ‘Display Message’
 - To display a entered message in the text box.
 - (b) ‘Action Execute File’
 - To execute a file, enter the file name, including full path name, or select a desired file after pushing the [...] button.
 - (c) ‘Play.WAV File’
 - To play a file, enter the file name, including full path name, or select a desired file after pushing the [...] button.
- ⑥ Click the close button ([X]) to close the DTMF Remote Commander screen.

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13 AUDIO SETTING SCREEN

■ Operation

The Audio Setting screen can be set the AF gain for the receiver/PC, mute function ON/OFF, beep emission condition and beep emission type.

◇ To calling up the audio setting screen

➔ Click “

■ The AF gain/mute setting

- ① Call up the [Audio Setting] screen if it is not displayed as at left.
- ② Click [Receiver] or [PC] radio button to select the AF gain setting for the receiver or PC.
- ③ Click [◀]/[▶] to adjust the AF gain level.
- ④ Check the [Mute] check box to turn the mute function ON/OFF. When this function is turned ON, the received audio signal is muted.
 - “MUTE” appears.
- ⑤ Click the close button ([X]) to close the Audio Setting screen.

■ Beep setting

- ① Call up the [Audio Setting] screen if it is not displayed as at left.
- ② Check the [Write/Clear/Error Beep] check box to turn the beep emission ON when memory write, memory clear and error.
- ③ Click [...] to select the wave file to set the beep emission type.
- ④ Enter the beep repeat time period in [Repeat (1–60)] from 1 to 60.
- ⑤ Click the close button ([X]) to close the Audio Setting screen.

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14 SHORTCUT KEY OPERATION

■ Operation

Shortcut keys will help you to provide an easier and usually quicker operation from a PC key board.

◇ To assign a shortcut key

- ① Click “” on the tool bar to call up the [Setting] screen if it is not displayed.
- ② Click [Hotkey Setting] tab to display the shortcut key list.
- ③ Select the category from “General”, “Tuning”, “Mode”, “Scan” and “Recording” in [Category].
- ④ Select the desired action in [Action].
 - Selectable items are differ according to [Category] setting.
- ⑤ Enter the desired shortcut key or combination of keys that executes a specific function in [Key].
 - [Ctrl], [Shift] and [Alt] keys act as shortcut key with another key combination.
 - Some keys cannot be set as shortcut key.

- [Add] : Add the assigned shortcut key to the list.
- [Set] : Set the changing of the shortcut key content.
- [Sort] : Sort the shortcut key in the list in order.
- [Delete] : Delete the shortcut key from the list.
- [Default] : Reset the shortcut list to the default setting.


[Example]: Assign “AM mode selection” to [Ctrl] + [A] key

- ① Select “Mode” in [Category].
- ② Select “AM” in [Action].
- ③ Click [Key] dialog box, then push [Ctrl] and [A] key.
 - “Ctrl + A” is indicated in the [Key] dialog box.
- ④ Click [Add] to add the shortcut combination keys to the list.

■ Multi channel monitor programming

The receiver has 250 multi channels. Total of 10 memory banks are available for usage by group, etc., and 25 channels are assigned into a bank.

Repeatedly scans only the channels that has been entered in the multi channel monitor screen, and makes you to check the received signals visually.

- ① Click “- The channel name, frequency and S-meter are displayed on the programmed channel.
- ⑤ Click the close button ([X]) to close the [Multi CH Monitor] screen.

◇ Multi channel programming details

The multi channel programming is same as the memory channels. See the following pages for the multi channel programming details.

- Bank name programming (p. ??)
- Editing the memory channel list screen (p. ??)
- Saving memory channel data (p. ??)
- Opening memory channel data (p. ??)
- Creating a new memory channel data file (p. ??)

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■ Multi channel monitor operation

- ① Click " on the tool bar to call up the [Multi CH Monitor] screen if it is not displayed.
 - The channel name, frequency and S-meter are displayed on the programmed channel.
- ② Click [] to select the desired bank.
- ③ Click the [START] button to start a scan.
 - "SCANNING" blinks in the dialog box.
 - The [START] button changes to the [STOP] button.
 - The background color is according to the receiving signal level.
 - Black: Non programmed channel.
 - Dark gray: S-meter level is below S3.
 - Pale gray: S-meter level is above S3/below S9.
 - Red: S-meter level is above S9.
- ④ Click the desired channel screen to monitor.
 - Scan is cancelled.
- ⑤ Click [STOP] button to stop the scan.

16 SPECIFICATIONS AND OPTIONS

■ Specifications

◇ GENERAL

• Frequency coverage		(MHz)
U.S.A	: 851.000–866.9999	
	: 896.000–1299.9999	
	: 1300.000–1810.9999	
	: 1852.000–1867.9999	
	: 1897.000–2811.9999	
	: 2853.000–2868.9999	
	: 2898.000–3299.9999	
France	: 50.200–51.2000	
	: 87.500–108.000	
	: 144.000–146.000	
	: 430.000–440.000	
	: 1240.000–1300.000	
Other than above	: 0.010–3299.9999	
	*Guaranteed: 0.495–3000.000 MHz range only	
• Type of emission	: FM, AM, WFM, USB, LSB, CW	
• Number of memory channels	: 1050 (incl. 50 scan edges)	
• Frequency resolution	: 1 Hz, 10 Hz, 20 Hz, 50 Hz, 100 Hz, 500 Hz, 1 kHz, 2.5 kHz, 5 kHz, 6.25 kHz, 8.33 kHz, 9 kHz, 10 kHz, 12.5 kHz, 15 kHz, 20 kHz, 25 kHz, 30 kHz, 50 kHz, 100 kHz, 125 kHz, 150 kHz, 200 kHz, 500 kHz, 1 MHz, 10 MHz	
• Operating temperature range	: –10°C to +60°C; +14°F to +140°F	
• Frequency stability	: ±3 ppm (–10°C to +60°C)	
• Power supply requirement	: 12.0 V DC ±15%	
• Current drain		
(at 12.0 V DC: approx.)	: standby	0.65 A (typical)
	max. audio	1.2 A
• Antenna connector	: BNC (50 Ω)	
• Dimensions (proj. not included)	: 146(W) × 41(H) × 206(D) mm 5¾(W) × 1½(H) × 8½(D) in	
• Weight (approx.)	: 1.2 kg; 2 lb 10 oz	

◇ RECEIVER

• Receive system	: Triple-conversion superheterodyne and down converter	
• Intermediate frequencies	: 1st: 266.700 MHz, 2nd: 10.700 MHz 3rd: 450 kHz (except for WFM mode)	
• Sensitivity:		
	FM (1 kHz/3.5 kHz Dev.; 12 dB SINAD)	
	28.000–29.999 MHz	: Less than 0.63 μV
	30.000–49.999 MHz	: Less than 0.63 μV
	50.000–239.999 MHz	: Less than 0.5 μV
	240.000–279.999 MHz	: Less than 0.5 μV
	280.000–299.999 MHz	: Less than 0.5 μV
	300.000–699.999 MHz	: Less than 0.5 μV
	700.000–1299.999 MHz	: Less than 0.63 μV
	1300.000–2299.999 MHz	: Less than 5.6 μV
	2300.000–3000.000 MHz	: Less than 18 μV
	WFM (1 kHz/52.5 kHz Dev.; 12 dB SINAD)	
	50.000–699.999 MHz	: Less than 1.4 μV
	700.000–1299.999 MHz	: Less than 1.8 μV
	1300.000–2299.999 MHz	: Less than 18 μV
	2300.000–3000.000 MHz	: Less than 56 μV
	AM (1 kHz/30% MOD.; 10 dB S/N)	
	0.495–1.799 MHz	: Less than 25 μV
	1.800–14.999 MHz	: Less than 2.5 μV
	15.000–49.999 MHz	: Less than 2.5 μV
	50.000–299.999 MHz	: Less than 2 μV
	300.000–699.999 MHz	: Less than 2 μV
	700.000–1299.999 MHz	: Less than 2.5 μV

SSB/CW (10 dB S/N)

0.495–1.799 MHz	: Less than 5 μ V
1.800–14.999 MHz	: Less than 0.5 μ V
15.000–49.999 MHz	: Less than 0.5 μ V
50.000–699.999 MHz	: Less than 0.4 μ V
700.000–1299.999 MHz	: Less than 0.5 μ V

• Sensitivity (threshold) :

FM (1 kHz/3.5 kHz Dev.; 12 dB SINAD)

28.000–29.999 MHz	: Less than 0.63 μ V
30.000–49.999 MHz	: Less than 0.63 μ V
50.000–239.999 MHz	: Less than 0.5 μ V
240.000–279.999 MHz	: Less than 0.5 μ V
280.000–299.999 MHz	: Less than 0.5 μ V
300.000–699.999 MHz	: Less than 0.5 μ V
700.000–1299.999 MHz	: Less than 0.63 μ V
1300.000–2299.999 MHz	: Less than 5.6 μ V
2300.000–3000.000 MHz	: Less than 18 μ V

WFM (1 kHz/52.5 kHz Dev.; 12 dB SINAD)

50.000–699.999 MHz	: Less than 5.6 μ V
700.000–1299.999 MHz	: Less than 7.1 μ V
1300.000–2299.999 MHz	: Less than 71 μ V
2300.000–3000.000 MHz	: Less than 220 μ V

AM (1 kHz/30% MOD.; 10 dB S/N)

0.495–1.799 MHz	: Less than 18 μ V
1.800–14.999 MHz	: Less than 0.89 μ V
15.000–49.999 MHz	: Less than 0.89 μ V
50.000–299.999 MHz	: Less than 0.71 μ V
300.000–699.999 MHz	: Less than 0.71 μ V
700.000–1299.999 MHz	: Less than 0.89 μ V

SSB/CW (10 dB S/N)

0.495–1.799 MHz	: Less than 71 μ V
1.800–14.999 MHz	: Less than 7.1 μ V
15.000–49.999 MHz	: Less than 7.1 μ V
50.000–699.999 MHz	: Less than 5.6 μ V
700.000–1299.999 MHz	: Less than 7.1 μ V

- Selectivity :
- SSB/CW/AM : More than 2.8 kHz/–6 dB (typical)
- SSB/CW/AM/FM : More than 6.0 kHz/–6 dB (typical)
- AM/FM : More than 15 kHz/–6 dB (typical)
- AM/FM/WFM : More than 50 kHz/–6 dB (typical)
- WFM : More than 230 kHz/–6 dB (typical)
- AF output power (at 12.0 V DC) : More than 0.5 W at 10% distortion with an 8 Ω load
- Ext. speaker connectors : 2-conductor 3.5 (d) mm ($1/8$ ")/8 Ω
- Data connectors : 2-conductor 3.5 (d) mm ($1/8$ ")/100 K Ω

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Count on us!

#22 Europe

<Intended Country of Use>			
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<input checked="" type="checkbox"/> AUT	<input checked="" type="checkbox"/> NED	<input checked="" type="checkbox"/> POR	<input checked="" type="checkbox"/> DEN
<input type="checkbox"/> GBR	<input checked="" type="checkbox"/> BEL	<input checked="" type="checkbox"/> ITA	<input checked="" type="checkbox"/> FIN
<input checked="" type="checkbox"/> IRL	<input checked="" type="checkbox"/> LUX	<input checked="" type="checkbox"/> GRE	<input checked="" type="checkbox"/> SUI
<input checked="" type="checkbox"/> NOR			

#23 U.K.

<Intended Country of Use>			
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<input type="checkbox"/> AUT	<input type="checkbox"/> NED	<input type="checkbox"/> POR	<input type="checkbox"/> DEN
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<input type="checkbox"/> NOR			

#26 France

<Intended Country of Use>			
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<input type="checkbox"/> AUT	<input type="checkbox"/> NED	<input type="checkbox"/> POR	<input type="checkbox"/> DEN
<input type="checkbox"/> GBR	<input type="checkbox"/> BEL	<input type="checkbox"/> ITA	<input type="checkbox"/> FIN
<input type="checkbox"/> IRL	<input type="checkbox"/> LUX	<input type="checkbox"/> GRE	<input type="checkbox"/> SUI
<input type="checkbox"/> NOR			