



INSTRUCTION MANUAL

HF RECEIVER
IC-R72



IMPORTANT

READ THIS INSTRUCTION MANUAL CAREFULLY before attempting to operate the receiver.

SAVE THIS INSTRUCTION MANUAL. This instruction manual contains important safety and operating instructions for the IC-R72.

PRECAUTIONS

DISCONNECT the AC power cable from the receiver, and wait for a few minutes before performing AC fuse replacement or any internal work.

NEVER apply AC voltage that exceeds the suggested voltage for each version. This could cause a fire or ruin the receiver.

NEVER use non-rated fuses. Non-rated fuses could cause a fire or ruin the receiver.

NEVER let metal, wire or other objects touch any internal parts.

NEVER expose the receiver to rain, snow or any liquids.

NEVER allow children to touch the receiver.

EXPLICIT DEFINITIONS

Code	Definition
WARNING	Personal injury, fire hazard or electric shock may occur.
CAUTION	Equipment damage may occur.
NOTE	If disregarded, inconvenience only. No personal injury, risk of fire or electric shock.

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

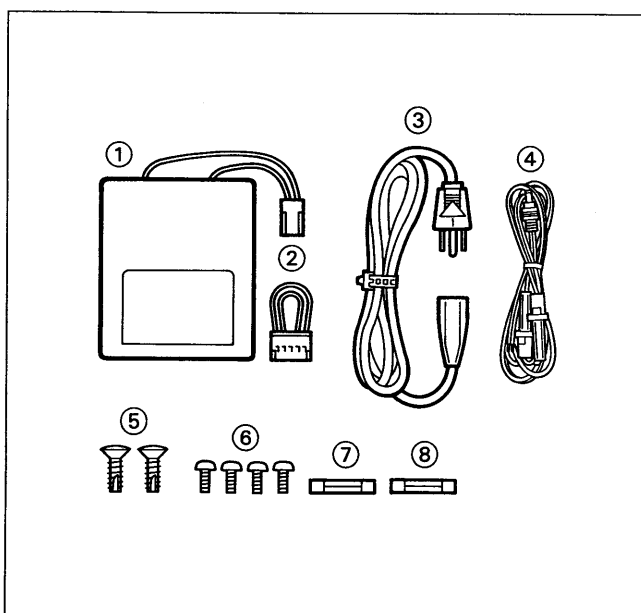
AVOID placing the receiver in excessively dusty environments or in direct sunlight.

AVOID placing the receiver against walls or putting anything on top of the receiver. This will obstruct heat dissipation.

RESPECT other peoples privacy. Information overheated but not intended for you cannot lawfully be used in any way.

If you purchase the IC-R72 battery type, **READ** p. 10 "Lead storage battery notes."

UNPACKING



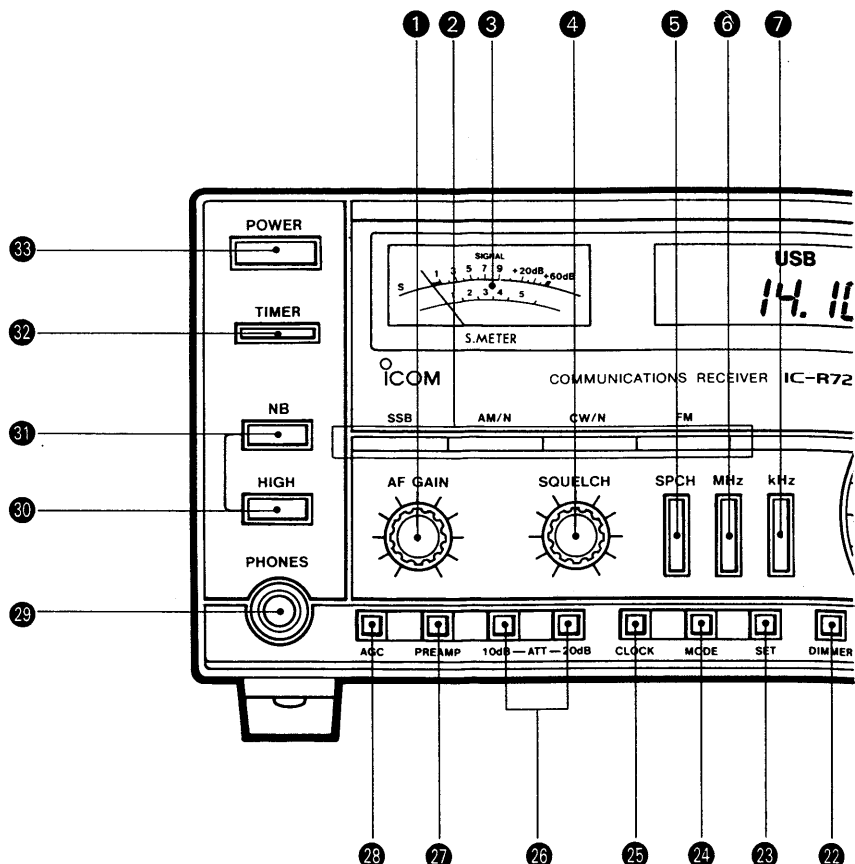
Accessories included with the IC-R72:	Qty.
① Back-up battery* ¹	1
② Jumper cable* ¹	1
③ AC power cable* ²	1
④ DC power cable (OPC-131)* ³	1
⑤ 4 × 12 mm self-tapping screws* ⁴	2
⑥ 3 × 6 mm self-tapping screws* ⁴	4
⑦ Spare fuses for AC power input* ⁵	1
⑧ Spare fuses for regulator circuit (FGB 2 A) ...	1

*¹ For battery type only.
*² AC type only.
OPC-034 (U.S.A. version)
OPC-492 (Europe, Germany versions)
OPC-085 (Australia version)
*³ For DC type only.
*⁴ For optional MB-23 installation.
*⁵ AC type only.
FGB 1 A (U.S.A version)
FGB 0.5 A (Europe, Australia versions)
FGMB 250 V 0.5 A (Germany version)

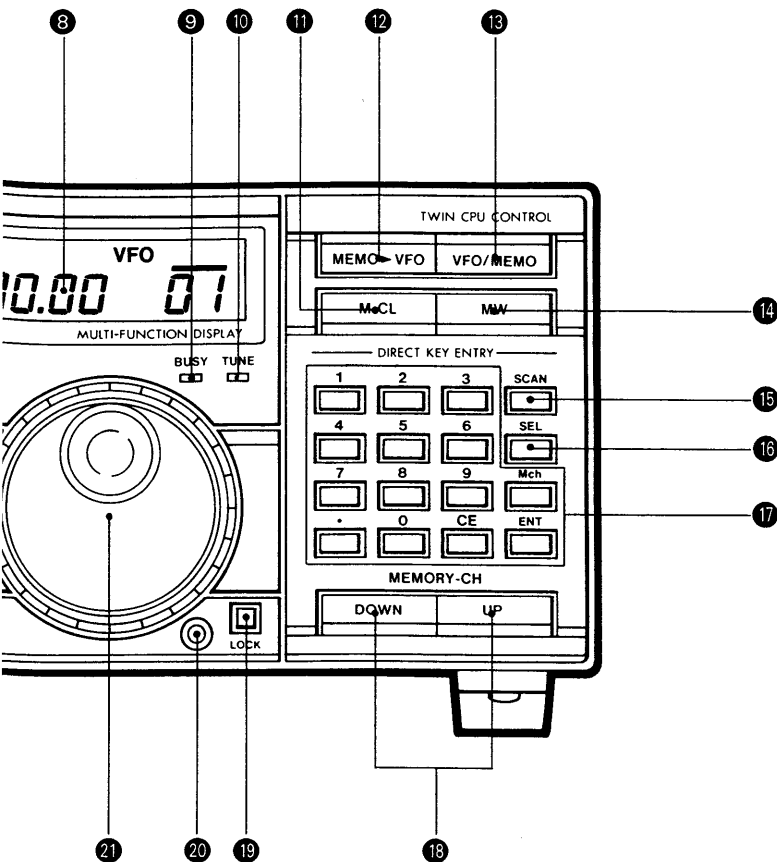
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■ Front panel



- 1 AF GAIN CONTROL [AF GAIN]** (p. 15)
Varies the audio output level.
- 2 MODE SWITCHES** (p. 16)
Select the desired operating mode.
- 3 S-METER [S.METER]**
Shows the strength of the receive signal.
- 4 SQUELCH CONTROL [SQUELCH]** (p. 15)
Varies the squelch threshold level.
- 5 SPEECH SWITCH [SPCH]** (p. 28)
Announces the displayed frequencies in English when an optional UT-36 VOICE SYNTHESIZER UNIT is installed.
- 6 MHz TUNING RATE SWITCH [MHz]** (p. 13)
Sets the tuning rate in MHz steps.
- 7 kHz TUNING RATE SWITCH [kHz]** (p. 13)
Sets the tuning rate in kHz steps.
- 8 FUNCTION DISPLAY** (p. 5)
See p. 5 for FUNCTION DISPLAY.
- 9 BUSY INDICATOR [BUSY]**
Lights up in green when the squelch opens.
- 10 TUNING INDICATOR [TUNE]**
Lights up in red when receiving the center of a signal in AM or FM mode.
• This indicator goes on and off according to modulation in AM mode.
- 11 MEMORY CLEAR SWITCH [M-CL]** (p. 18)
Clears the contents from the selected memory channel.
- 12 MEMORY DATA TRANSFER SWITCH [M▶VFO]** (p. 18)
Transfers the contents in the displayed memory channel into the VFO.
- 13 VFO/MEMORY SWITCH [VFO/MEMO]** (p. 17)
Selects a mode, VFO mode or MEMORY mode.
- 14 MEMORY WRITE SWITCH [MW]** (p. 18)
Stores the displayed frequency and mode into the selected memory channel.
- 15 SCAN SWITCH [SCAN]** (p. 19)
Starts and stops scanning.
- 16 SELECT SWITCH [SEL]** (p. 20)
Sets the displayed memory channel to the selected memory channel.
Starts the selected memory scan while scanning.

**17 KEYBOARD**

Sets the operating frequency, memory channel or time directly.

18 MEMORY CHANNEL UP/DOWN SWITCHES [DOWN]/[UP] (p. 17)

Changes memory channels.

19 DIAL LOCK SWITCH [LOCK] (p. 16)

Locks the main dial electronically.

20 BRAKE ADJUSTMENT SCREW (p. 26)

Adjusts the main dial tension.

21 MAIN DIAL

Changes the operating frequency.

Changes the time in CLOCK mode.

22 DIMMER SWITCH [DIMMER]

Changes brightness of the display backlight and the meter.

23 CLOCK SET SWITCH [SET] (p. 21)

Selects the clock setting condition.

24 CLOCK MODE SWITCH [MODE] (p. 21)

Changes items in CLOCK

25 CLOCK SWITCH [CLOCK] (p. 21)

Selects CLOCK mode.

26 ATTENUATOR SWITCHES [10dB]/[20dB] (p. 15)

Activate attenuators.

27 PREAMP SWITCH [PREAMP] (p. 15)

Activates the preamplifier.

- The preamplifier operates at 1.6 MHz and above.

28 AGC SWITCH [AGC] (p. 16)

Changes the time constant of the AGC circuit.

29 HEADPHONE JACK [PHONES]

Accepts headphones connection.

- When a headphones are inserted, the internal speaker does not function.

30 NB HIGH SWITCH [HIGH] (p. 16)

Selects the high level noise blanker.

31 NOISE BLANKER SWITCH [NB] (p. 16)

Activates the noise blanker circuit.

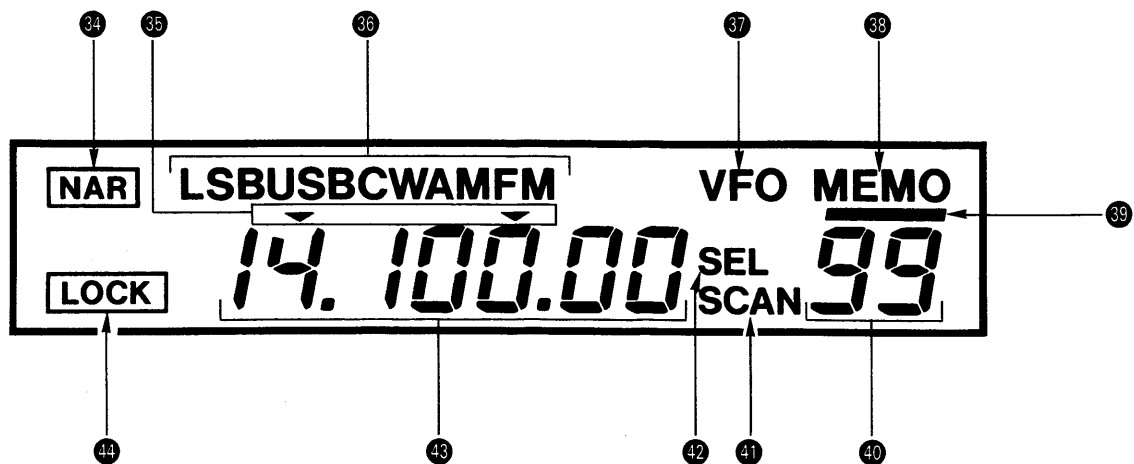
32 TIMER SWITCH [TIMER] (p. 23)

Activates the timer function.

33 POWER SWITCH [POWER]

Turns the power ON and OFF.

■ Function display



34 NARROW INDICATOR (p. 16)

Indicates that the IF narrow filter is selected in AM or CW mode.

- An optional CW narrow filter is necessary for CW narrow operation.

35 TUNING STEP INDICATORS (p. 13)

Point to the lowest digit changed when the main dial is rotated.

36 MODE INDICATORS (p. 16)

Show the operating mode.

37 VFO INDICATOR (p. 17)

Indicates that VFO mode is selected.

38 MEMORY INDICATOR (p. 17)

Indicates that MEMORY mode is selected.

39 MEMORY CHANNEL BLANK INDICATOR (p. 17)

Indicates that the displayed memory channel number has not been programmed (blank channel).

40 MEMORY CHANNEL READOUT (p. 17)

Shows memory channel numbers.

41 SCAN INDICATOR (p. 19)

Appears while scanning.

42 SELECTED CHANNEL INDICATOR (p. 20)

Indicates that the displayed memory channel is a selected memory channel.

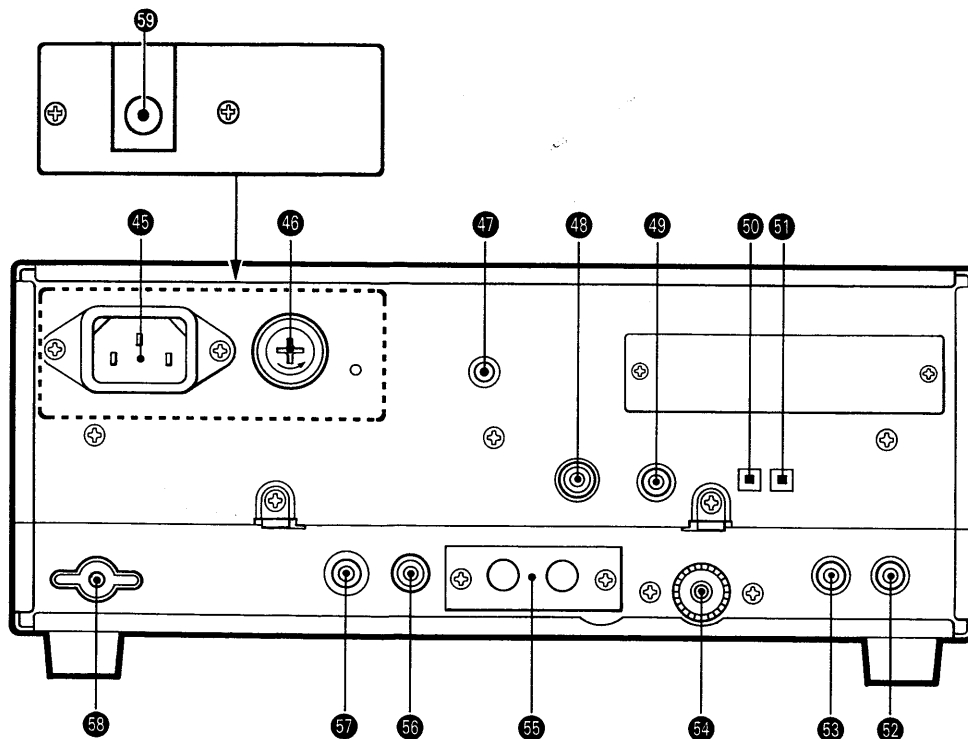
43 FREQUENCY READOUT (p. 14)

Shows the operating frequency or clock time.

44 LOCK INDICATOR (p. 16)

Appears when the dial lock function is activated.

■ Rear panel



- 45 AC POWER SOCKET [AC]** (p. 9) (AC type only)
Connects the AC power cable.
- 46 FUSE HOLDER [FUSE]** (p. 25) (AC type only)
Holds an AC power input fuse.
- 47 DC POWER JACK [DC]** (p. 10)
(Except for Germany version)
Connects the OPC-131 DC POWER CABLE* or an optional CP-11 CIGARETTE LIGHTER CABLE WITH NOISE FILTER.
*Supplied with DC type. Optional for AC type.
- 48 SPARE JACK [SPARE]**
No connection.
- 49 CI-V REMOTE CONTROL JACK [REMOTE]** (p. 12)
Connects an optional CT-17 CI-V LEVEL CONVERTER for computer control.
- 50 SCAN RESUME SWITCH [RESUME]** (p. 19)
Activates the scan resume function.
- 51 SCAN SPEED SWITCH [SPEED]** (p. 19)
Selects fast or slow scanning speed.
- 52 RECORDER REMOTE JACK [REC REMOTE]** (p. 11)
Controls the running of a tape recorder for recording. Connects to the REMOTE jack on a tape recorder.
- 53 RECORDER JACK [REC]** (p. 11)
Outputs an audio signal. Connect to the AUX or LINE IN jack on a tape recorder.
- 54 50 Ω ANTENNA CONNECTOR [50 Ω ANT]** (p. 7)
Connects a 50 Ω antenna through a coaxial cable with a PL-259 connector.
- 55 500 Ω ANTENNA TERMINALS [500 Ω ANT/GND]** (p. 7)
- [500 Ω ANT]: Connects a high-impedance antenna.
- [GND]: Connects ground for a high-impedance antenna.
- 56 MUTE JACK [MUTE]** (p. 12)
Mutes audio outputs and attenuates the receive signal input when grounded.
- 57 EXTERNAL SPEAKER JACK [EXT SP]**
Connects a 4~8 Ω external speaker.
• When an external speaker is connected, the internal speaker does not function.
- 58 GROUND TERMINAL [GND]** (p. 7)
Connect this terminal to a ground.
- 59 AC ADAPTER JACK [AC ADAPTER]** (p. 9) (DC type only)
Connects an optional AD-55 AC ADAPTER.

■ Unpacking

After unpacking, immediately describe any damage to the delivering carrier or dealer. Keep the shipping cartons. For a description and a diagram of accessory equipment included with the IC-R72, see UNPACKING on the inside front cover.

■ Back-up battery

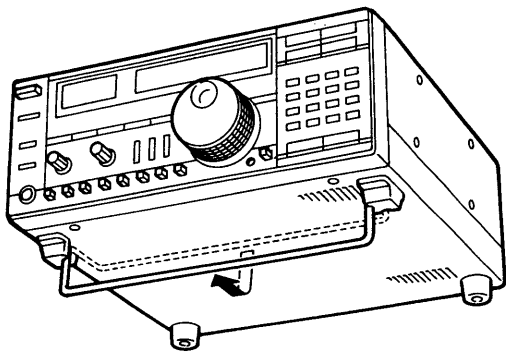
The IC-R72 battery-type has a lead storage battery as an accessory. Before turning power ON, install the battery in the receiver. See next page for installation.

■ Mounting the receiver

Select a location for the receiver that allows adequate air circulation and access to the front and rear panels. Do not place in areas subject to extreme heat, cold, or vibrations, or near TV sets, radios and electromagnetic sources.

For mobile installations, an optional IC-MB5 MOBILE MOUNTING BRACKET is available. Select a location which can support the weight of the receiver and does not interfere with the operation of the vehicle.

ADJUSTABLE ANGLES



The stand on the bottom of the IC-R72 gives the receiver two selectable angles.

■ Antenna

Antennas play a very important role in receiver operation. If the antenna is poor, your receiver cannot give you the best performance.

The IC-R72 has two types of antenna terminals. One is for 50 Ω antennas such as a dipole, ground plane antenna or a Yagi antenna, and another is for high impedance (approx. 500 Ω) antennas such as a long-wire antenna.

IMPORTANT

When using a long wire antenna:

- Use a wire as long as possible. Less than a 10 m (32.8 ft) wire cannot provide adequate sensitivity.
- **DO NOT** pass the wire through the front of the function display, as digital noise is received.
- An antenna coupler is effective for antenna matching.

NOTE: When 50 Ω and 500 Ω antennas are connected simultaneously, the IC-R72 may not operate to maximum capacity.

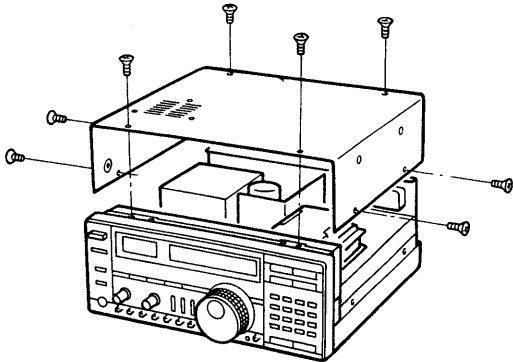
■ Grounding

To prevent accidents involving electricity and interference from a transceiver, ground the receiver through the [GND] terminal on the rear panel.

For best results, connect a heavy gauge wire or strap to a cold water pipe or long earth-sunk copper rod. Make the distance between the [GND] terminal and ground as short as possible.

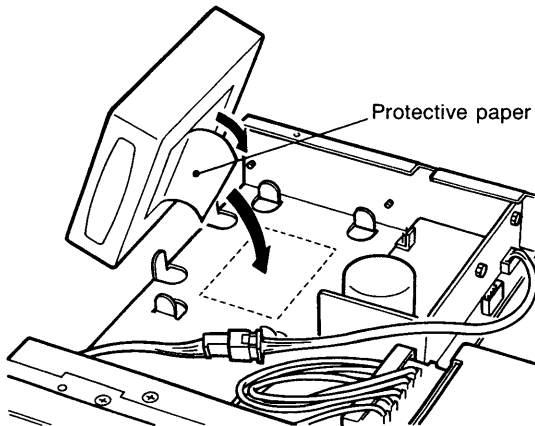
WARNING. NEVER use a gas pipe or electrical conduit pipe for grounding

BACK-UP BATTERY INSTALLATION (IC-R72 BATTERY TYPE)

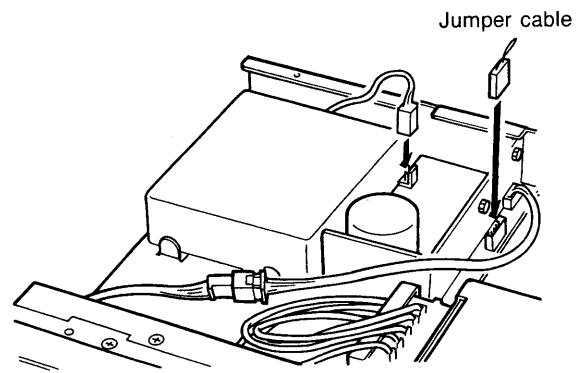


(Fig. 1)

- 1) **DISCONNECT** the AC or DC power cable.
- 2) Unscrew the 8 screws to remove the top cover as shown in the diagram. (Fig. 1)
- 3) Remove the protective paper attached to the supplied back-up battery to expose the adhesive strip.
- 4) Attach the back-up battery making sure of the direction as shown in the diagram. (Fig. 2)
- 5) Connect the battery cable, then connect the supplied jumper cable as shown in the diagram. (Fig. 3)
- 6) Replace the top cover.

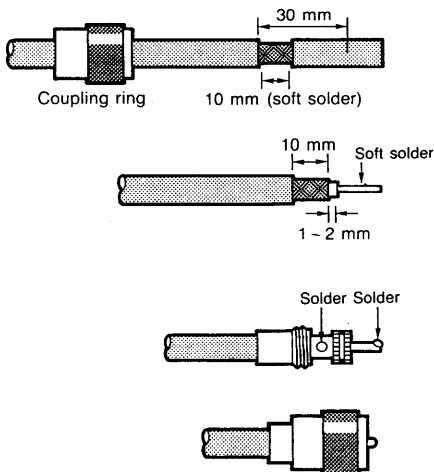


(Fig. 2)



(Fig. 3)

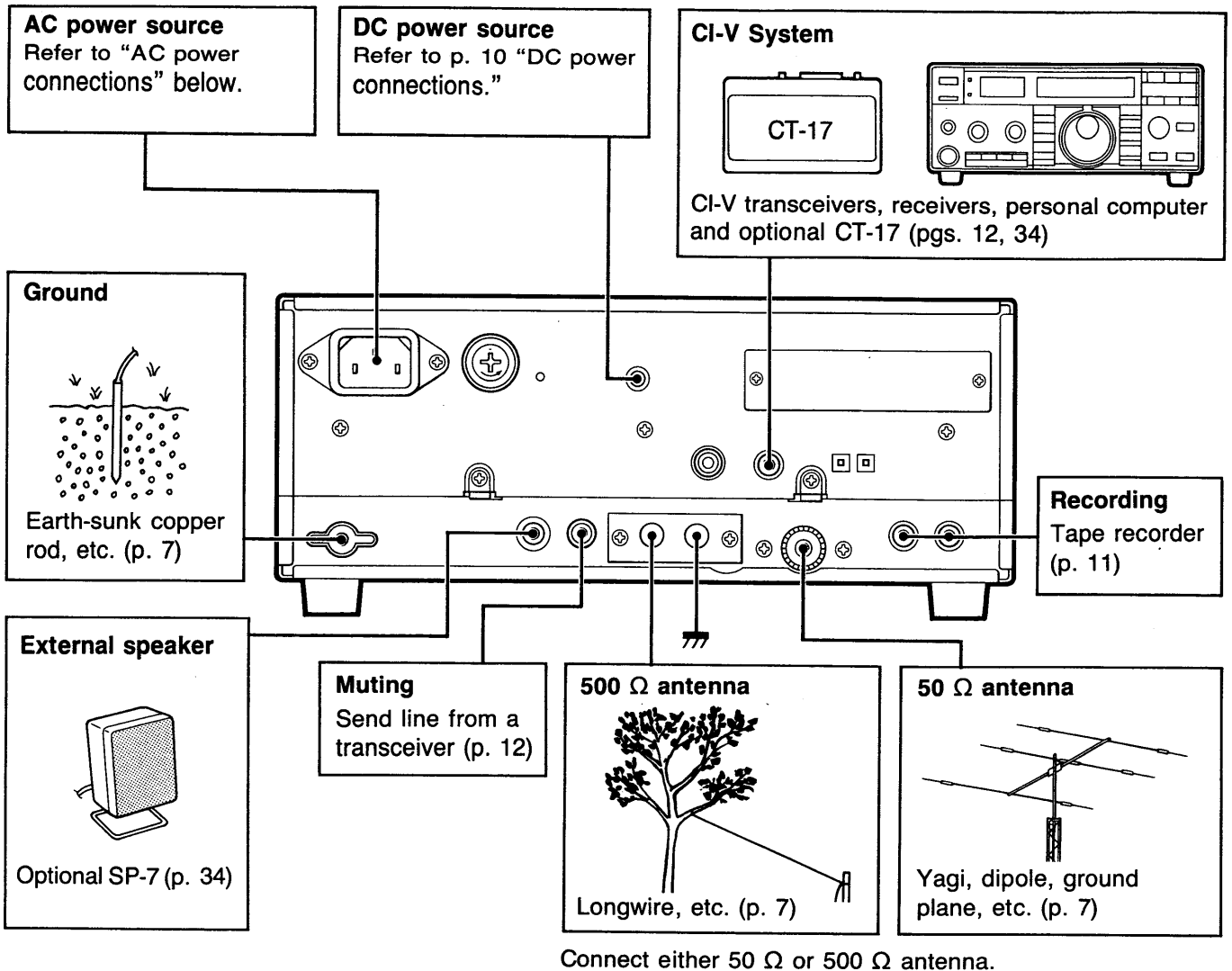
PL-259 CONNECTOR INSTALLATION



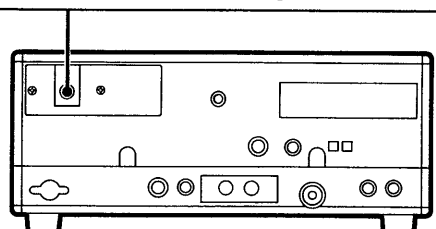
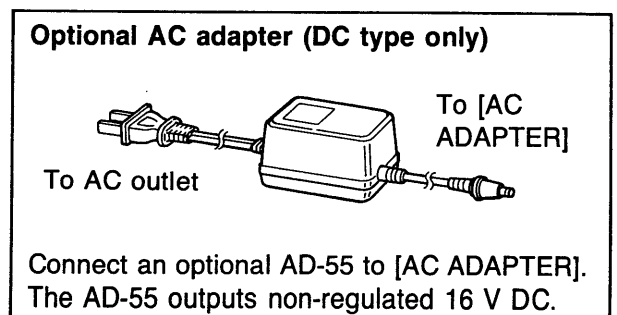
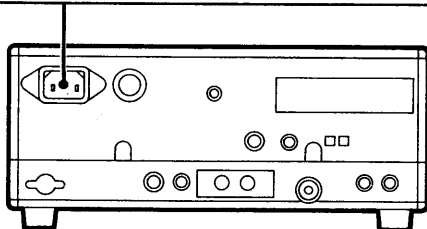
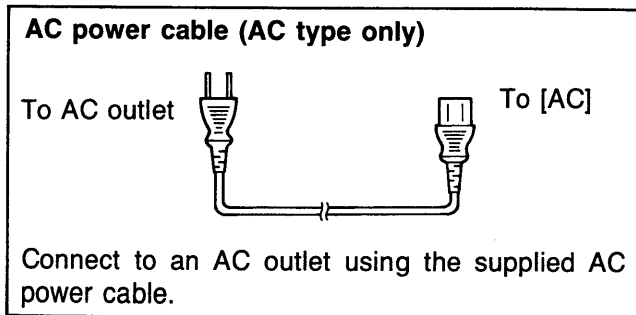
- 1) Slide the coupling ring over the coaxial cable.
- 2) Strip the cable as shown in the diagram and soft solder the center conductor.
- 3) Slide the connector body onto the cable and solder.
- 4) Screw the coupling ring onto the connector body.

10 mm \approx 5/8 in

■ Connections chart



■ AC power connections



■ DC power connections (Except for Germany version)

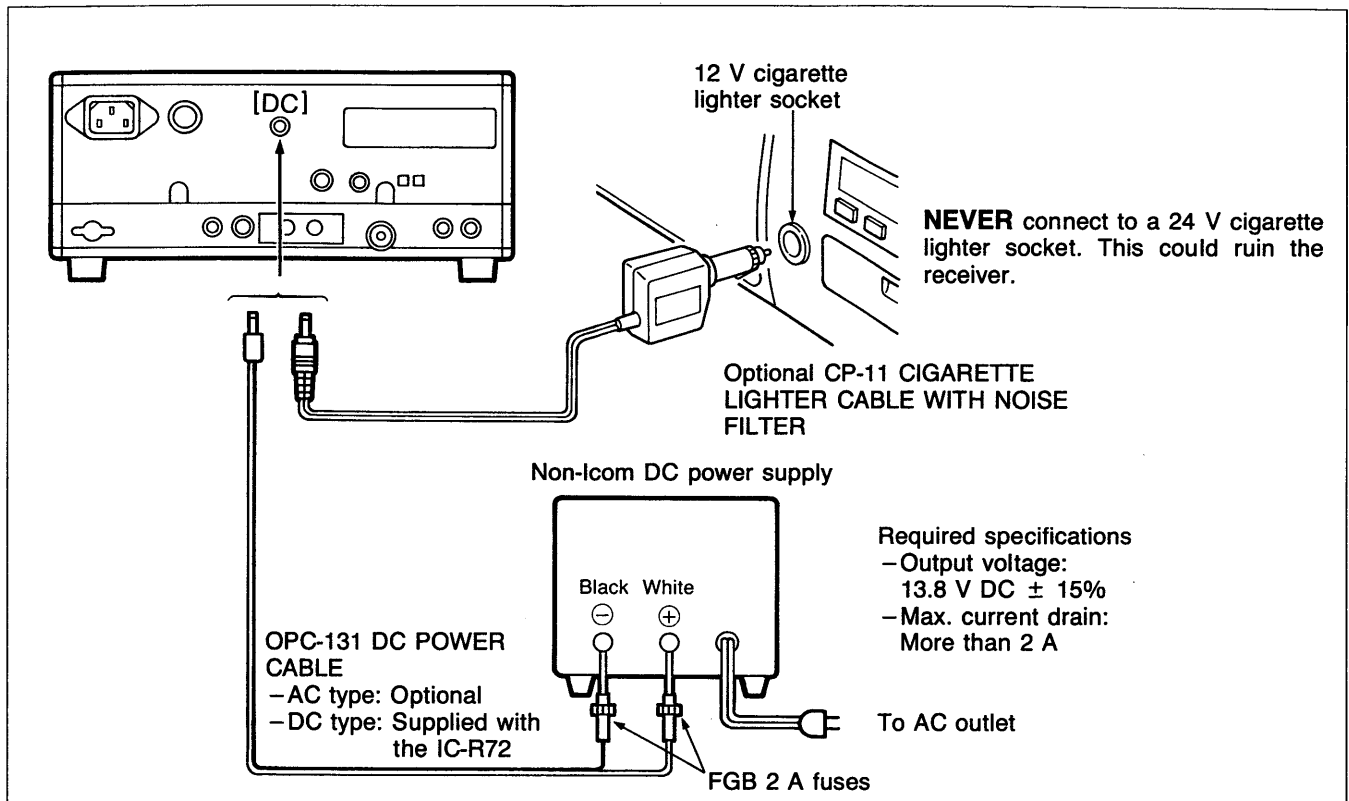
Before connecting the DC power cable, confirm the following:

For non-Icom DC power supply or vehicle battery connection, DC power cable polarity is correct.

White : Positive (+) terminal
Black : Negative (-) terminal

For mobile operation, connect a 12 V battery.

NEVER connect a 24 V battery directly. This could ruin the receiver. Use a suitable DC-DC converter that outputs 12 V DC. Ask your Icom Dealer for details.



■ Lead storage battery notes (Battery type only)

The IC-R72 battery type has a lead storage battery. The battery operates the receiver for approx. 1 hr. in case of a power failure.

CAUTION: If the backup battery is over discharged, it cannot be recharged. For battery protection, read the following:

- **AVOID** using the battery when you can use an external power source.
- The battery should be charged constantly. **MAINTAIN** connection to an AC or DC power source even when the power is OFF.
- Turn the power OFF when the function display does not illuminate.
- **BE SURE** to turn the power OFF when the battery is exhausted. If the power is left ON, over discharging may occur.

■ Tape recorder connections

You can record received signals with your tape recorder through the [REC] jack in two ways. The audio output level is fixed for the AUX jack of a tape recorder, regardless of the [AF GAIN] position.

① Manual recording:

Turn on and off the tape recorder manually to record the received signal.

Connect a cable between the AUX jack on your tape recorder and [REC] on the IC-R72 rear panel.

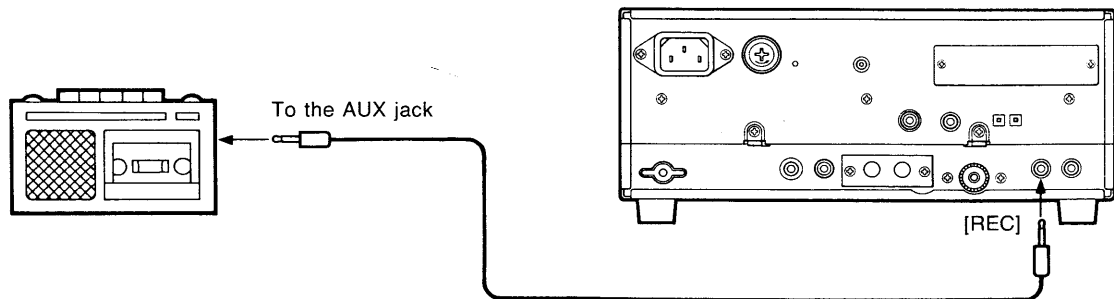
② Automatic recording:

The receiver controls tape recorder running through the [REC REMOTE] jack. When squelch opens, the tape recorder runs.

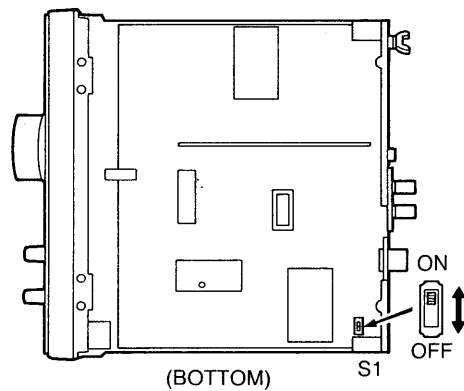
If the timer function is used, the recording is possible even when you are absent.

Set S1 to ON position and connect two cables as shown in the diagram below.

MANUAL RECORDING CONNECTION

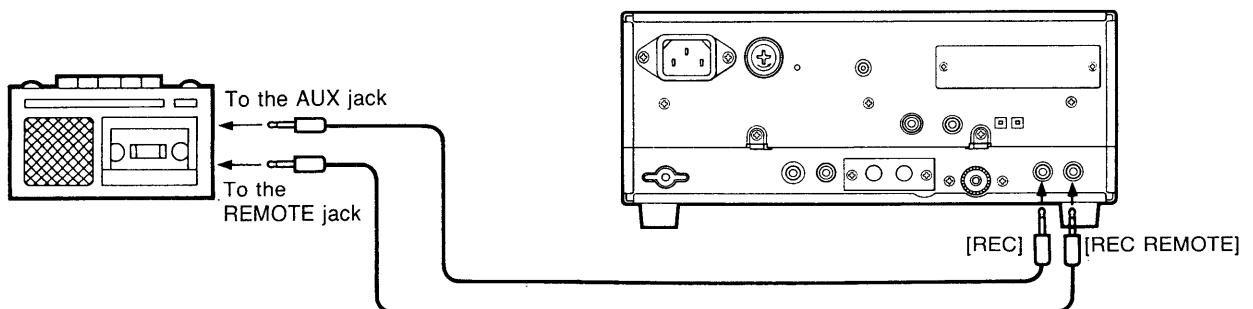


AUTOMATIC RECORDING CONNECTION



Set S1 on the MAIN unit to the ON position for automatic recording. See p. 31 for the position of the switch.

NOTE: When you operate the receiver normally, relay switching sound may be heard if S1 stays ON. Return S1 to OFF for your preference.

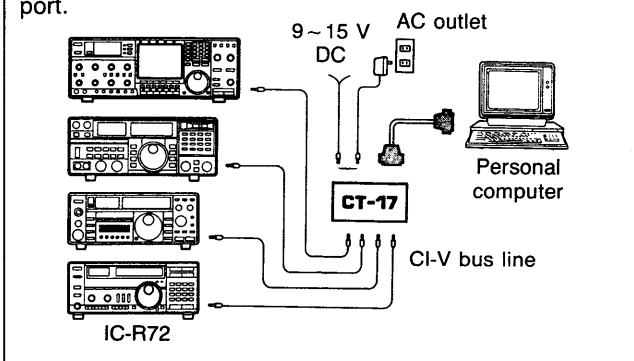


Remote jack (CI-V) information

The IC-R72 can be connected through an optional CT-17 CI-V LEVEL CONVERTER to a personal computer equipped with an RS-232C port. Icom Communication Interface-V (CI-V) controls frequency, mode, memory channels, etc.

CT-17 CONNECTION

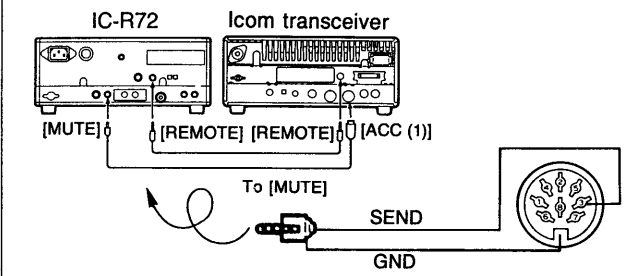
Up to four Icom CI-V transceivers or receivers can be connected to a personal computer equipped with an RS-232C port.



CONNECTION TO A TRANSCEIVER

For transceive operation, connect [REMOTE] to [REMOTE] of your Icom HF transceiver.

To protect the IC-R72 from RF power, connect [MUTE] to [ACC (1)] (Pin 3).



Setting the CI-V condition with the diode matrix

CI-V condition can be changed by diodes on the PLL unit. Refer to p. 31 "PLL unit" for diode locations.

BAUD RATE

Baud rate is the data transfer rate. The Icom standard CI-V baud rate is 1200 bps.

BAUD RATE (bps)	DIODE	
	D4	D5
9600	Insert diode	—
1200	—	Insert diode
300	Insert diode	Insert diode

: Default

FREQUENCY DATA

When connecting the receiver with the IC-735, change the value to 4 bytes.

FREQUENCY DATA	DIODE (D6)
4 bytes	No diode (Cut D6)
5 bytes	Insert diode

: Default

ADDRESS

You can set an independent address for your IC-R72. The IC-R72 has the address of 32H (50) as a default value.

Figures marked with an H are hexadecimals and bracketed figures () are decimals.

DIODE						
D57 (1)	D58 (2)	D59 (4)	D60 (8)	D61 (16)	D62 (32)	D63 (64)
—	Insert diode	—	—	Insert diode	Insert diode	—

: Default 32H (50)

TRANSCEIVE

Transceive operation is possible on the IC-R72 with an Icom HF transceiver.

TRANSCEIVE	DIODE (D64)
ON	Insert diode
OFF	No diode (Cut D64)

: Default

Setting the CI-V condition with the keyboard

With the keyboard you can change the transceive function and baud rate the same as with the diode matrix.

- 1) Turn OFF receiver power.
- 2) While pushing the following keys, turn ON power.

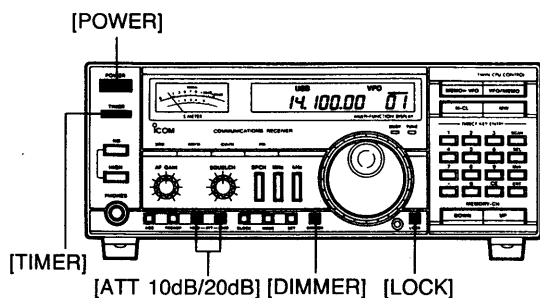
CONDITION	KEYS
Transceive ON	ENT + 2
Transceive OFF	ENT + 3
Transceive ON for IC-735	ENT + 4
Baud rate 9600	ENT + 5 or 6
Baud rate 1200	ENT + 7
Baud rate 300	ENT + 8
Returns to matrix setting	ENT + 1

Initial settings

NOTE: Follow all instructions in Section 2 before operating the receiver.

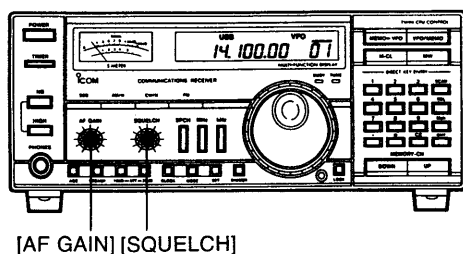
- 1) Make sure [POWER] is OUT, then connect the AC power cable into a domestic AC power outlet.
- 2) Make sure either antenna is securely connected to the proper antenna connectors.
- 3) Make sure the receiver is grounded through the [GND] terminal.
- 4) Be sure of connections when external equipment is connected.
- 5) Set switches and controls as shown in the table below.
- 6) Turn ON power.
- 7) If "[LOCK]" appears on the function display, push [LOCK] to release the dial lock function.

SWITCH	POSITION	SWITCH	POSITION
POWER	OFF (OUT)	TIMER	OFF (OUT)
DIMMER	OFF (OUT)	ATT 10 dB	OFF (OUT)
ATT 20 dB	OFF (OUT)		



CONTROL	POSITION	CONTROL	POSITION
AF GAIN	Fully CCW	SQUELCH	Fully CCW

CCW: Counterclockwise



Tuning step setting

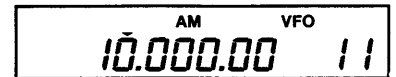
12 variations of tuning steps are available.

- 10 Hz, 1 kHz, 2 kHz, 3 kHz, 4 kHz, 5 kHz, 6 kHz, 7 kHz, 8 kHz, 9 kHz, 10 kHz and 1 MHz.

1 MHz, kHz, 10 Hz STEP SETTING

Push [MHz] and [kHz] to set the 1 MHz, kHz* and 10 Hz tuning steps.

1 MHz tuning step



kHz* tuning step



10 Hz tuning step



* Initial setting value is 1 kHz and can be changed in 1 ~ 10 kHz steps.

kHz STEP SETTING

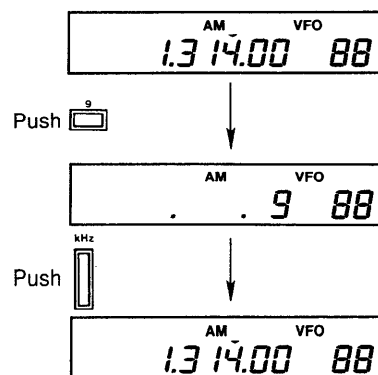
Use the keyboard to set 1 kHz ~ 10 kHz tuning steps.

- 1) Enter the desired kHz tuning step (1 ~ 10) from the keyboard.
- 2) Push [kHz] to set the tuning step.

NOTE: After setting kHz tuning steps using the keyboard, [kHz] acts as the set tuning step switch.

[EXAMPLES]

SETTING THE 9 kHz TUNING STEP



Now the 9 kHz tuning step has been selected.

■ Frequency settings

There are 2 ways to set a frequency: with the main dial or the keyboard.

• Using the main dial

- 1) Push [MHz] when the MHz tuning step indicator does not illuminate.
 - The MHz tuning step indicator appears.
- 2) Rotate the main dial to set the MHz digit.
- 3) Push [kHz].
 - The kHz tuning step indicator appears.
 - See the page at left for kHz step setting.
- 4) Rotate the main dial to set the kHz digit.
- 5) Push [kHz] again.
- 6) Rotate the main dial to set the 10 Hz digit.

• Using the keyboard

- 1) Push keys on the keyboard to enter the MHz digit (less than 2 digits).
 - If a wrong number is entered, push [CE] and start from the beginning.
 - When entering the same MHz digits as the frequency that is shown on the function display, push [·] before pushing the digit keys, then proceed to steps 3 and 4.
- 2) Push [·].
- 3) Push keys to enter the frequency below MHz digits.
 - When entering a wrong number, push [CE] and start from the beginning.
- 4) Push [ENT] to store the entered frequency.
 - When pushing [ENT] after entering MHz (less than 2 digits), the frequency of the previously entered MHz is automatically stored.

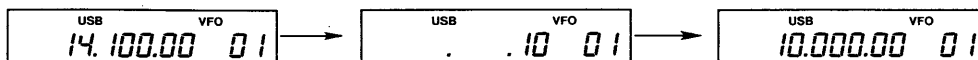
[EXAMPLES]

SETTING FREQUENCY AT 10.000 MHz USING THE KEYBOARD

Push keys



Display

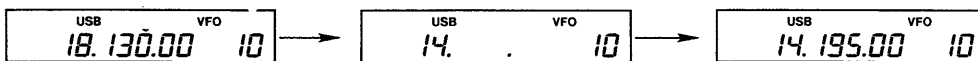


SETTING FREQUENCY AT 14.195 MHz USING THE KEYBOARD

Push keys



Display

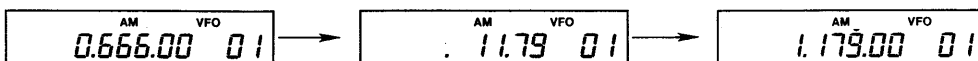


SETTING FREQUENCY AT 1179 kHz (1.179 MHz) USING THE KEYBOARD

Push keys

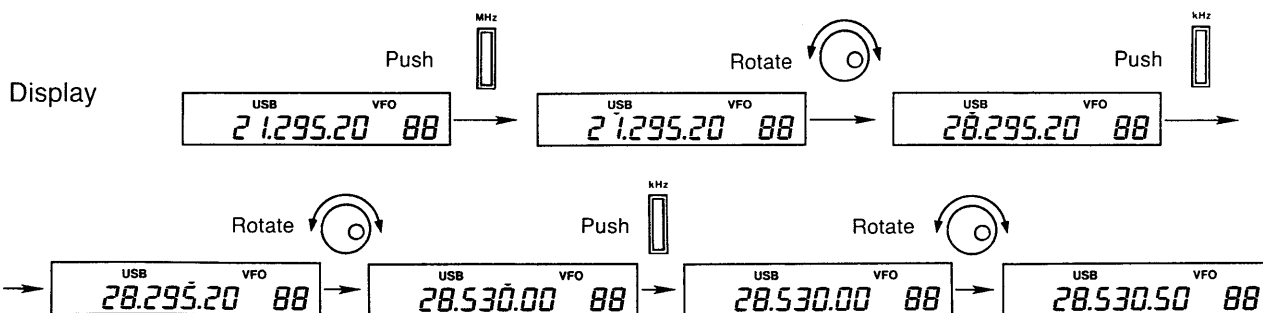


Display



CHANGING FREQUENCY FROM 21.2952 MHz TO 28.5305 MHz USING THE MAIN DIAL

Display



3 BASIC OPERATION

■ Receiving

- 1) Set switches and controls as described on p. 13.
- 2) Push [POWER] IN to turn on power.
- 3) Push the desired mode switch to set the operating mode.
 - Each push of [SSB] changes “LSB” and “USB”.
- 4) Set [SQUELCH] to max. counterclockwise.
- 5) Adjust [AF GAIN] to the desired audio level.
- 6) Set the desired receive frequency using the keyboard or the main dial. See p. 14 for details.
- 7) Rotate [SQUELCH] clockwise if you want to mute the audio noise.
 - The speaker emits audio when the squelch opens.

• Tuning with the main dial SSB OR CW MODE

Set the frequency at the point where you can hear the signal clearly.

AM OR FM* MODE

Set the frequency at the point where the [S. METER] indicates the max. signal strength.

- [TUNE] lights up in red.

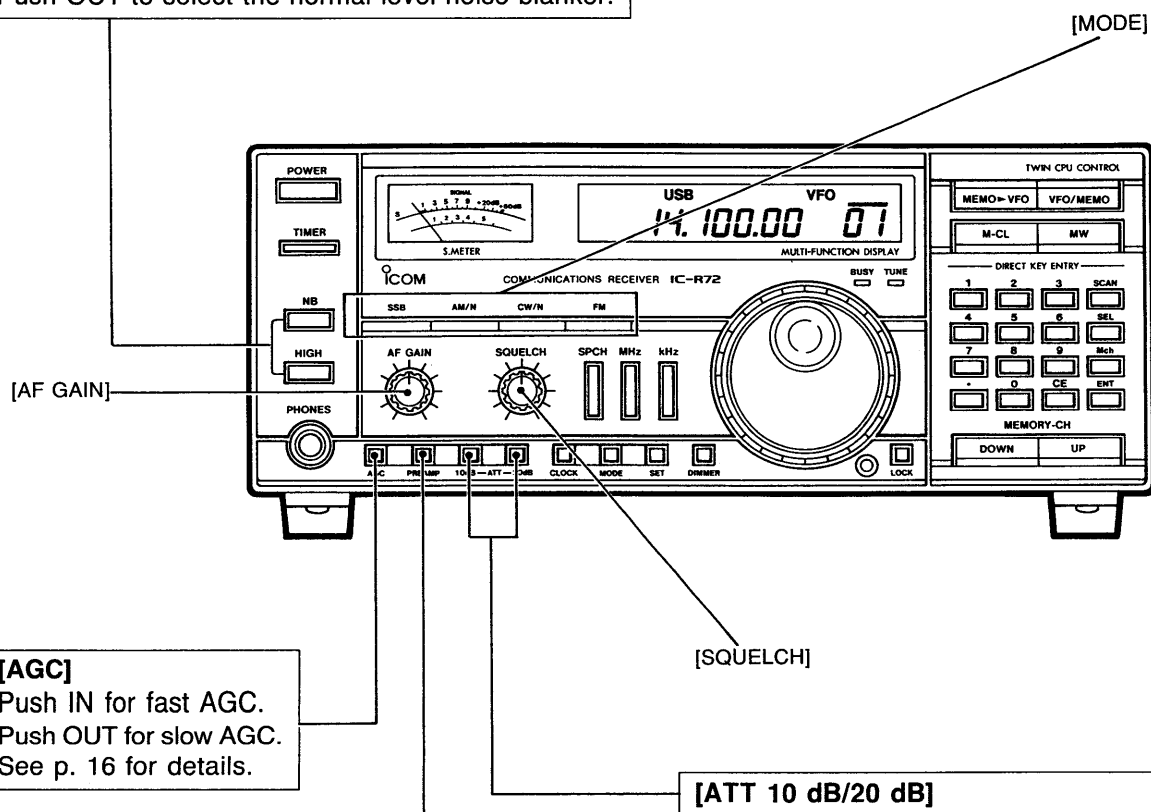
* An optional UI-8 FM RECEIVE UNIT is necessary.

[NB]

Push IN to activate the noise blanker circuit. See p. 16 for details.

[HIGH]

Push IN to select the high level noise blanker.
Push OUT to select the normal level noise blanker.



[AGC]

Push IN for fast AGC.
Push OUT for slow AGC.
See p. 16 for details.

[PREAMP]

Push IN for activating the built-in preamplifier when receiving a weak signal.

The preamplifier operates on frequencies greater than 1.6 MHz.

[ATT 10 dB/20 dB]

Use when excessively strong signals are received for preventing RF amplifier from distorting.

- Push IN [10 dB] to activate the 10 dB attenuator.
- Push IN [20 dB] to activate the 20 dB attenuator.
- Push IN both [10 dB] and [20 dB] to activate the 30 dB attenuator.

• Mode information

MODE	SELECTION	COMMUNICATIONS EXAMPLE	NOTE
AM	Push [AM] once for normal AM or twice for narrow AM.	Broadcasting band, citizen band, etc.	AM narrow mode is used for eliminating interference from frequencies near the operating frequency.
SSB	Push [SSB] once for USB or twice for LSB.	Amateur band, marine band, broadcasting band, citizen band, etc.	LSB is used only for 1.8~7 MHz amateur band.
CW	Push [CW] once for normal CW or twice for narrow CW.	All amateur bands, professional communications, etc.	CW narrow mode is only available when an optional CW narrow filter is installed.
FM (Optional)	Push [FM].	29 MHz amateur band, citizen band, etc.	

• AGC (Automatic Gain Control) function

AGC keeps audio output constant during fluctuations in signal strength. Moreover, AGC prevents irritating background noise from being heard during the short pauses in speech.

Select an AGC position fast or slow according to your preference.

FAST AGC:

Normally used when receiving a signal in CW or AM mode, or when searching for a signal with the main dial.

- Push IN [AGC].

SLOW AGC:

Normally used when receiving a signal in SSB mode.

- Push OUT [AGC].

In FM mode, AGC is not activated.

• NB (Noise Blanker) function

The noise blanker effectively reduces interference from pulse-type noise such as car ignition systems. The normal or high threshold level of the noise blanker can be selected.

Use the normal noise blanker to reduce normal noise.

- Push IN [NB] and push OUT [HIGH].

Use the high level noise blanker to reduce weak noise.

- Push IN both [NB] and [HIGH].

NOTE: When using the high level noise blanker, audio is easy to distort especially in AM mode.

• Dial lock function

The dial lock function electronically locks the main dial to prevent the frequency from changing accidentally.

- 1) Push [LOCK].

- "LOCK" appears.

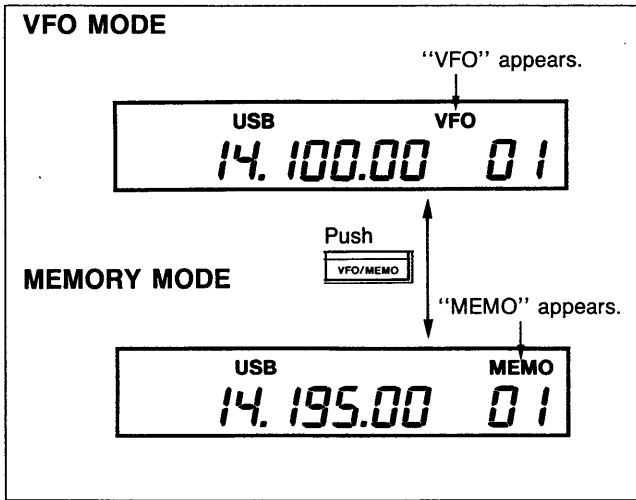
- 2) To release the function, push [LOCK] again.

- "LOCK" disappears.

The IC-R72 has 99 memory channels and 2 programmable scan edge channels separate from the memory channels. Each memory channel stores a frequency, mode and selected channel information.

Memory channels 80~99 are used for auto memory write scan. See p. 20 for details.

■ VFO and MEMORY mode selection



■ Memory channel selection

There are two ways to select the desired memory channel:

- Using the [UP]/[DOWN] switches
- Using the keyboard

• Using the [UP]/[DOWN] switches

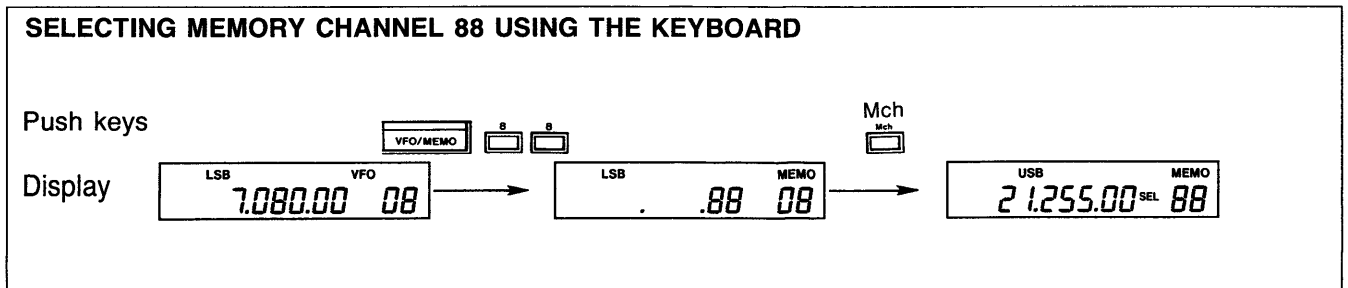
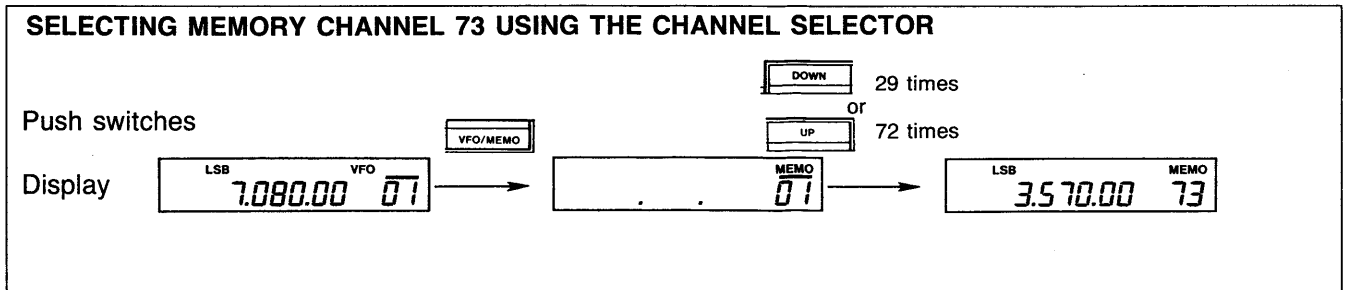
- 1) Push [VFO/MEMO] to select MEMORY mode.
 - “MEMO” appears.
- 2) Push [UP] or [DOWN] to select the desired memory channel.

• Using the keyboard

- 1) Push [VFO/MEMO] to select MEMORY mode.
 - “MEMO” appears.
- 2) Push keys for the desired memory channel number (1~99) using the keyboard.
 - If a wrong number is entered, push [CE] and repeat entering again.
- 3) Push [Mch] to recall the memory channel.

NOTE: When memory channels without information (blank channels) are selected, the frequency is not displayed. Only “—” and the memory channel number appear.

[EXAMPLES]



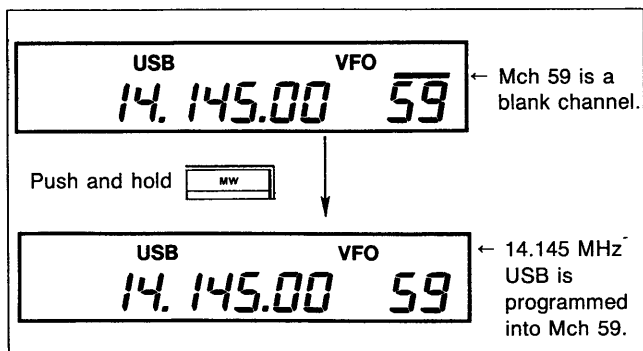
Memory writing

There are two ways to write a memory channel.

Writing in VFO mode

- 1) Push [VFO/MEMO] to select VFO mode.
 - "VFO" appears.
- 2) Set the desired frequency and mode. (p. 14)
- 3) Set the desired memory channel. (p. 17)
- 4) Push and hold [MW] until the receiver emits 3 beeps.
 - The information is stored in the memory channel.

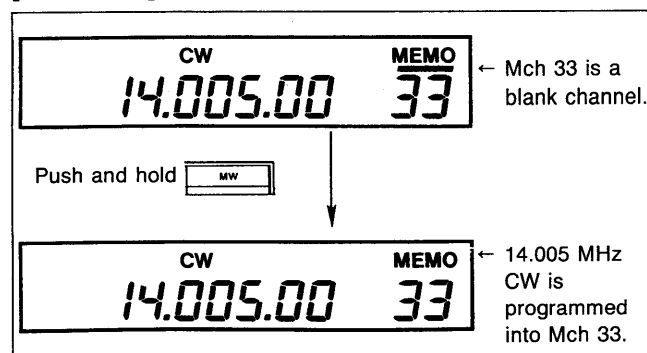
[EXAMPLE]



Writing in MEMORY mode

- 1) Push [VFO/MEMO] to select MEMORY mode.
 - "MEMO" appears.
- 2) Set the desired memory channel. (p. 17)
- 3) Set the desired frequency. (p. 14)
 - When the memory channel already contains information, set the frequency using the main dial or the keyboard.
 - When the memory channel is a blank channel, set the frequency using the keyboard.
- 4) Set the desired mode.
- 5) Push and hold [MW] until the receiver emits 3 beeps.
 - The information is stored in the memory channel.

[EXAMPLE]

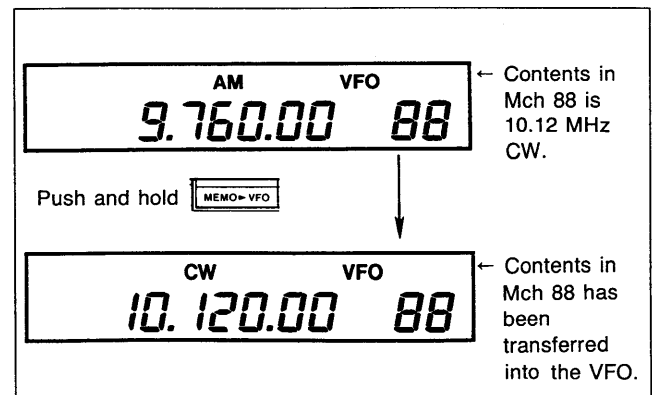


Frequency transferring

Desired information in a memory channel can be copied into the VFO.

- 1) Set the desired memory channel to be transferred.
 - Both MEMORY and VFO modes can be used.
- 2) Push and hold [MEMO►VFO] until the receiver emits 3 beeps.
 - The memory information is transferred into the VFO.

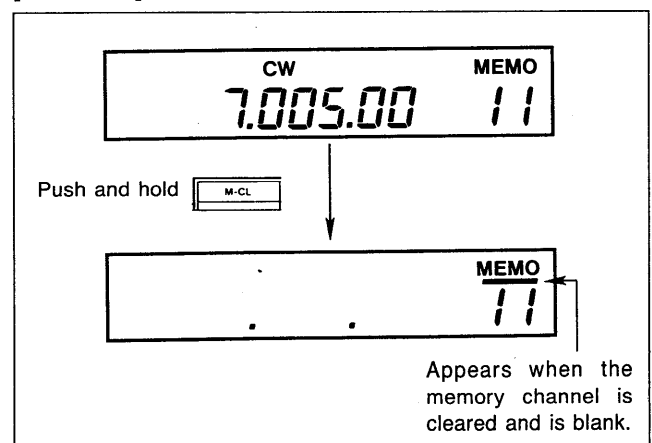
[EXAMPLE]



Memory clearing

- 1) Push [VFO/MEMO] to select MEMORY mode.
 - "MEMO" appears.
- 2) Select the memory channel to be cleared.
- 3) Push and hold [M-CL] until the receiver emits 3 beeps.
 - The memory contents have been cleared.

[EXAMPLE]



■ Scanning types

The IC-R72 is equipped with 4 separate scan types which provide tremendous scanning versatility at the touch of a few switches.

SCAN TYPE	FUNCTION
PROGRAMMED SCAN	Repeatedly scans between two user-programmed scan edges (P1 and P2).
MEMORY SCAN	Repeatedly scans all programmed memory channels.
SELECTED MEMORY SCAN	Repeatedly scans only selected memory channels with "SEL."
AUTO MEMORY WRITE SCAN	Scans the same way as programmed scan. However, when a signal is received, the received frequency is automatically stored in a memory channel of 80-99 in sequence. Activates only in AM or FM mode.

■ Presetting

• Setting squelch

Squelch setting for scanning

	PROGRAMMED SCAN	MEMORY or SELECTED MEMORY SCAN	AUTO MEMORY WRITE SCAN
SSB CW	Closed*	Closed	Not applicable
AM FM	Open or closed	Closed	Open or closed

Closed: Set [SQUELCH] to noiseless position.

Open: Set [SQUELCH] to desired position.

* When squelch is open, the scan starts but doesn't stop.

• Setting scan speed

Set the scan speed, fast or slow, using the [SPEED] switch on the rear panel.

- IN position: Fast scan.
- OUT position: Slow scan.

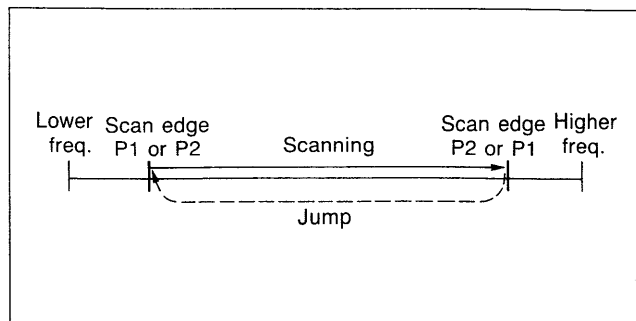
• Setting scan resume function

Set the scan resume function, ON or OFF, using the [RESUME] switch on the rear panel.

- IN position: Scan resumes 10 sec. after receiving a continuous signal, or 2 sec. after the signal disappears on a stopped frequency.
- OUT position: Scan is canceled when a signal is received.

■ Operation

• Programmed scan



- 1) Push [VFO/MEMO] to select the VFO mode.
- 2) Select the desired mode.
- 3) Set [SQUELCH].
 - See Setting squelch at left for details.
- 4) Push [SCAN] to start the scan.
 - "SCAN" appears and the receiver scans pre-programmed frequencies between P1 and P2. P1 and P2 can be changed. See below for changing scan edges.
- 5) To stop the scan push [SCAN] or rotate the main dial.

NOTE: While scanning on AM or FM mode, the scan only stops at the [TUNE] lighting up point.

SETTING THE SCAN EDGE FREQUENCIES

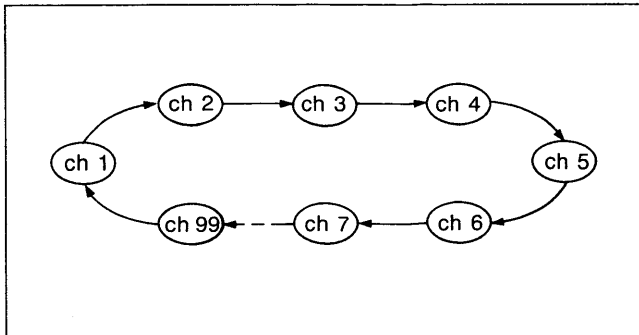
- 1) Push [VFO/MEMO] to select MEMORY mode.
- 2) Push [DOWN] or [UP] several times to call up the programmable scan edge P1.
 - P1 is next to memory channel 99.
- 3) Program the desired lowest/highest scan edge frequency.
 - See Memory writing for details. (p. 18)
- 4) Push [UP] to call up the programmable scan edge P2.
- 5) Program the desired highest/lowest scan edge.

CONVENIENT

Push the 1, 0, 0 digits on the keyboard, then push [Mch] for quick channel P1 selection.

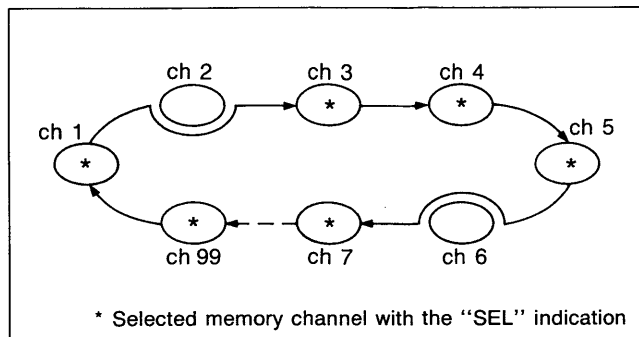
Push the 1, 0, 1 digits on the keyboard, then push [Mch] for quick channel P2 selection.

• **Memory scan**



- 1) Push [VFO/MEMO] to select MEMORY mode.
- 2) Set [SQUELCH] to the noiseless position.
- 3) Push [SCAN] to start the scan.
 - "SCAN" appears.
- 4) To stop the scan, push [SCAN] or rotate the main dial.

• **Selected memory scan**



More than 2 selected memory channels are necessary to activate the scan.

Before activating the scan, set the desired memory channels to the selected memory channels. See the instructions below.

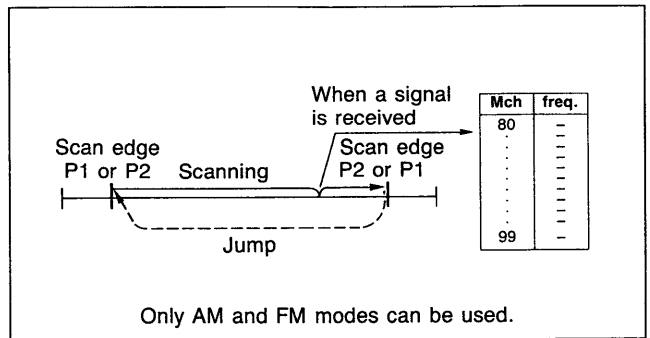
SETTING THE SELECTED MEMORY CHANNELS

1. Select the desired memory channels in MEMORY mode.
2. Push [SEL] to set the memory channel to the selected memory channel.
 - "SEL" appears.
3. To clear "SEL", push [SEL] again.

- 1) Push [VFO/MEMO] to select MEMORY mode.
- 2) Set [SQUELCH] to the noiseless position.
- 3) Push [SCAN] to start the memory scan.
 - "SCAN" appears.

- 4) Push [SEL] during memory scan to start the selected memory scan.
 - "SEL" appears continuously.
- 5) To cancel the scan, push [SCAN] or rotate the main dial.

• **Auto memory write scan**



CAUTION: When starting the auto memory write scan, the programmed contents in the 80 ~ 99 memory channel range are erased.

- 1) Set the programmed scan edges.
 - See p. 19 Setting the scan edges frequencies.
- 2) Push IN the [RESUME] switch on the rear panel to activate the resume function.
- 3) Push [VFO/MEMO] to select VFO mode.
- 4) Set the operating mode, AM or FM.
 - For selecting FM mode, an optional UI-8 FM RECEIVE UNIT is necessary.
 - SSB and CW modes cannot be used.
- 5) Push [SCAN] to start the programmed scan.
 - "SCAN" appears.
- 6) Push [MW] to start the auto memory write scan.
 - Memory channel number 80 appears and blinks.
 - If the receiver receives a signal while scanning, that frequency will be written into a memory channel in sequence between memory channels 80~99.
- 7) To stop the scan, push [SCAN] or rotate the main dial.

NOTE: The scan automatically stops if the scan writes frequencies up to memory channel 99.

6

CLOCK AND TIMER OPERATION

■ Clock and timer mode

The IC-R72 has a built-in 24-hour-clock with 3 kinds of timer functions as at right.

ON/OFF-TIMER:

Automatically turns power ON and OFF at preset time.

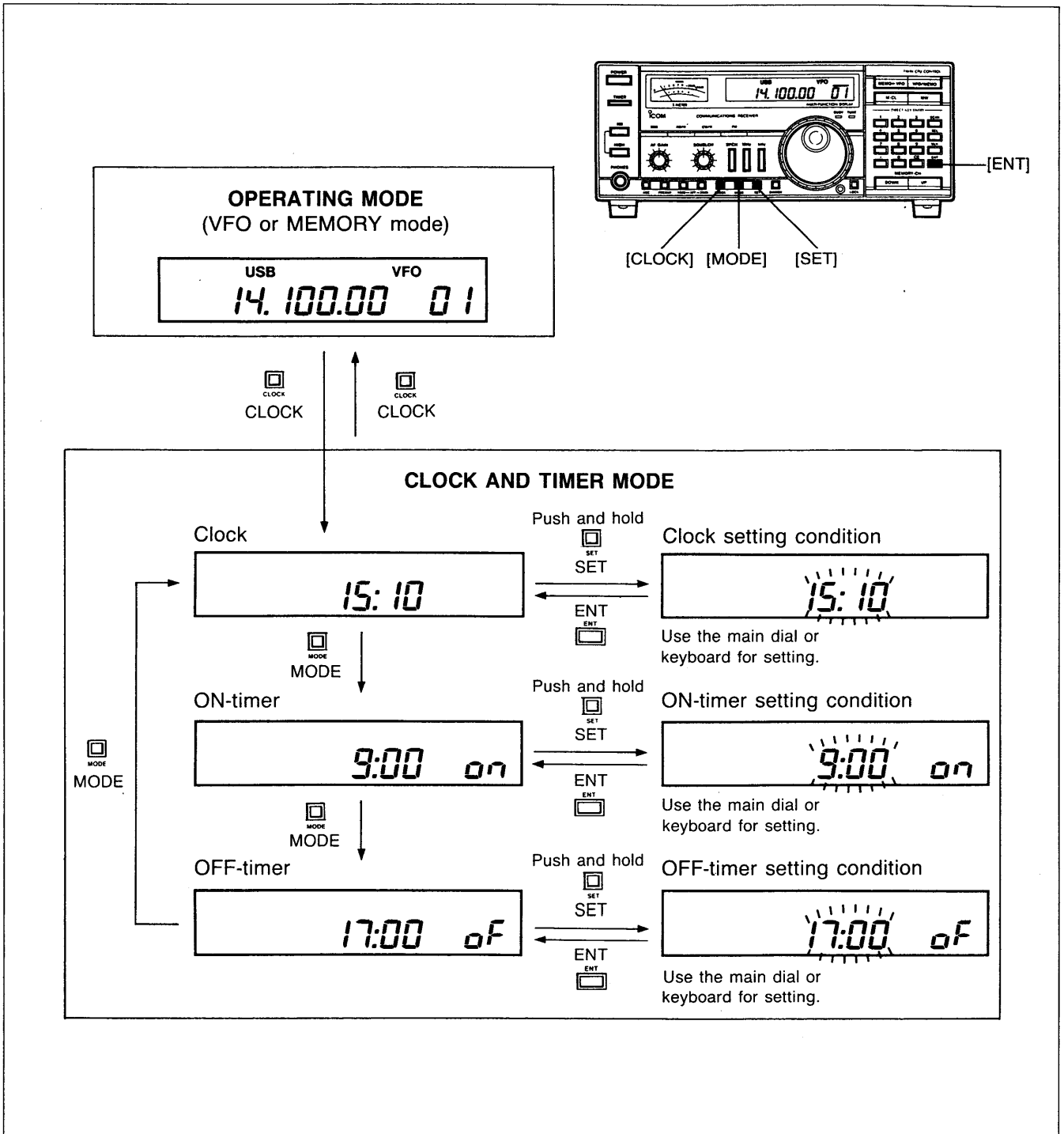
ON-TIMER:

Automatically turns power ON at preset time.

OFF-TIMER:

Automatically turns power OFF at preset time.

• Clock and timer mode chart



■ Clock adjustment

There are two ways to adjust the built-in clock.

- Using the main dial
- Using the keyboard

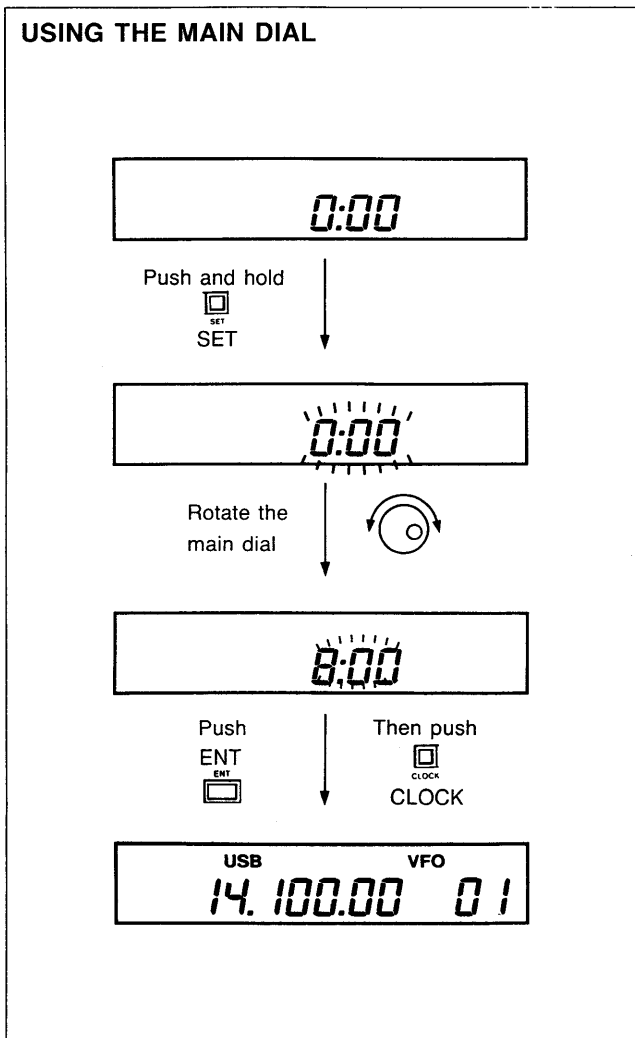
• Using the main dial

- 1) Push OUT [TIMER].
- 2) Push [CLOCK] to select CLOCK mode.
 - The function display shows the time.
- 3) Push and hold [SET] until the receiver emits 3 beeps.
 - The displayed time blinks.
- 4) Rotate the main dial to adjust the time.
- 5) Push [ENT] on the keyboard to set the time.
- 6) To return to the previous mode, push [CLOCK] again.

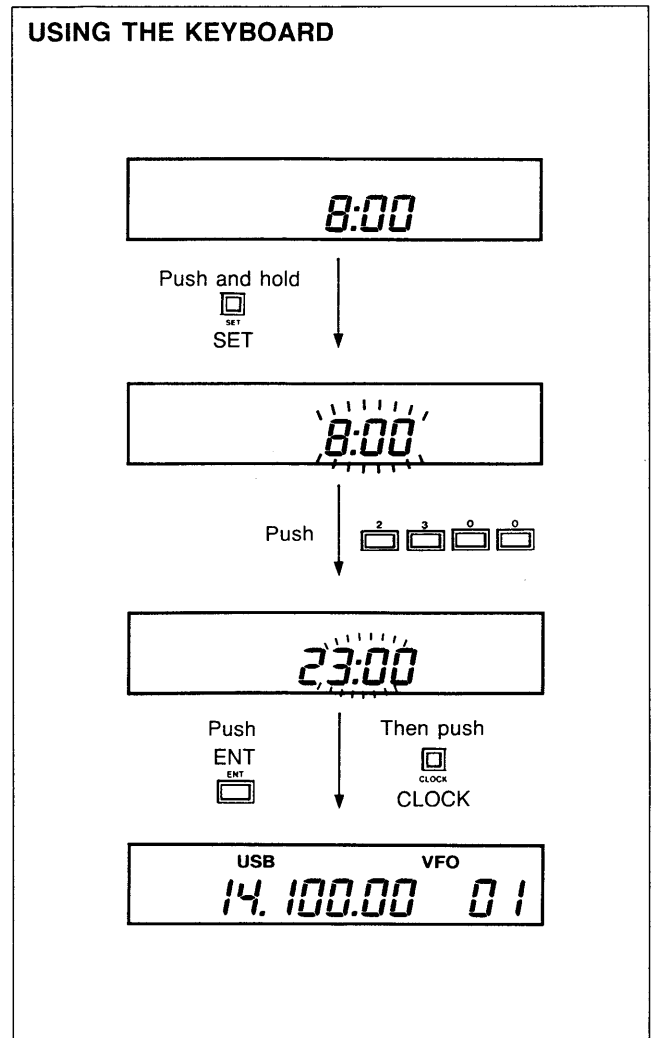
• Using the keyboard

- 1) Push OUT [TIMER].
- 2) Push [CLOCK] to select CLOCK mode.
 - The function display shows the time.
- 3) Push and hold [SET] until the receiver emits 3 beeps.
 - The displayed time blinks.
- 4) Enter the time using the keyboard.
 - 8:25 : Push the [0], [8], [2], [5] keys.
 - 14:57 : Push the [1], [4], [5], [7] keys.
- 5) When entering a wrong digit, push the [CE] key, then enter again.
- 6) Push [ENT] to set the time.
 - The receiver does not accept 24:00 or above. Return to step 3.
- 7) To return to the previous mode, push [CLOCK].

[EXAMPLE]



[EXAMPLE]



6 CLOCK AND TIMER OPERATION

■ Timer operation

The ON-timer, OFF-timer and ON/OFF-timer turn ON and OFF the receiver power at the preset time.

• Activating the ON-timer

- 1) Set the ON-timer time. (See at right for details.)
- 2) Push IN [TIMER].
 - The display backlight is turned off.
 - Clock appears.
- 3) When the preset ON-time comes on, the receiver power is turned ON automatically.

• Activating the OFF-timer

- 1) Set the OFF-timer time. (See at right for details.)
- 2) Push IN [TIMER].
- 3) When the preset OFF-time comes on, the receiver emits 5 beeps, then the receiver power is turned OFF automatically.
 - Clock continues appearing.

• Activating the ON/OFF-timer

- 1) Set the ON-timer and OFF-timer times. (See at right for details.)
- 2) Push IN [TIMER].
- 3) When the preset ON-time comes on, the receiver power is turned ON automatically.
- 4) When the preset OFF-time comes on, the receiver emits 5 beeps, then the receiver power is turned OFF automatically.

NOTE: When resetting the timer time, push OUT [TIMER], then reset.

SETTING ON-TIME AND OFF-TIME

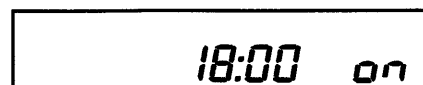
- 1) Push OUT [TIMER].
- 2) Push [CLOCK] to select CLOCK mode.
 - The function display shows clock.
- 3) Push [MODE] to select the ON-timer or OFF-timer display.
 - "on" appears when selecting the ON-timer.
 - "oF" appears when selecting the OFF-timer.
- 4) Push and hold [SET] until the receiver emits 3 beeps.
 - The displayed time blinks.
- 5) Set the desired time to be turned ON or OFF using the main dial or keyboard as described on p. 22 Clock adjustment.
- 6) Push [ENT] to set the time.
- 7) To return to the previous mode, push [CLOCK].

CANCELING ON-TIMER/OFF-TIMER

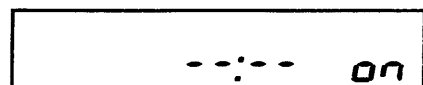
- 1) Proceed in steps 1 ~ 3 in the box above.
- 2) Push [SET]. DO NOT hold the switch.
 - The displayed time changes to "--:--", and the timer is canceled (time is masked).
- 3) To reset the ON-timer/OFF-timer, push [SET] again.
 - "--:--" changes to the preset time.
- 4) To return to the previous mode, push [CLOCK].

[EXAMPLE]

ON-timer is available. (preset time: 1800)



ON-timer is canceled (masked).
↑ SET
↓ SET



NOTE: If the [SET] switch is held for more than 3 sec., the receiver goes into the timer setting condition.

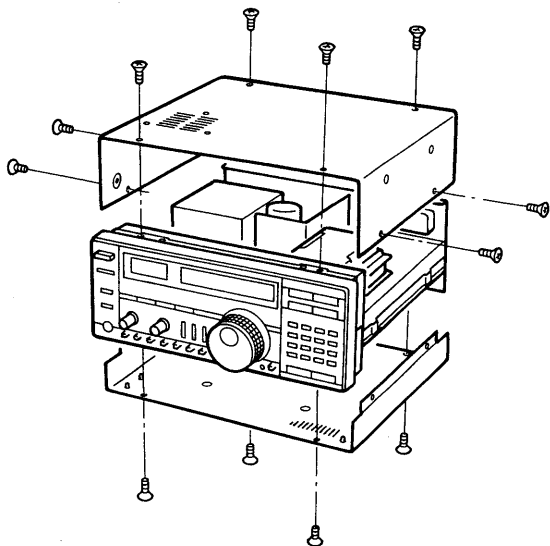
Disassembly

Follow the receiver disassembly procedures shown here when you want to install an option or replace a component.

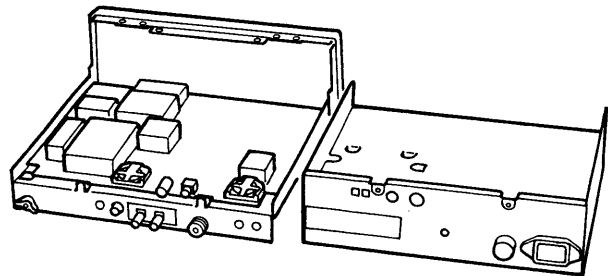
⚠ WARNING: DISCONNECT the AC power cable or AC adapter before performing any work on the receiver.

- 1) To remove top and bottom covers, unscrew the 12 screws as shown in the diagram. (Fig. 1)
- 2) To remove the REG unit, unscrew the 4 screws and disconnect 2 connectors as shown in the diagram. (Fig. 2).
- 3) Remove the REG unit as shown in the diagram. (Fig. 3)
- 4) To remove the PLL unit, unscrew the 8 screws on the PLL unit and disconnect the 4 connectors on the MAIN unit as shown in the diagram. (Fig. 4 and 5)

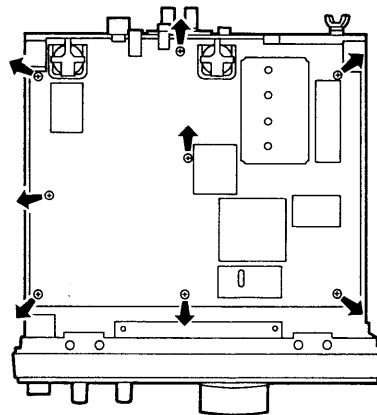
REMOVING COVERS (Fig. 1)



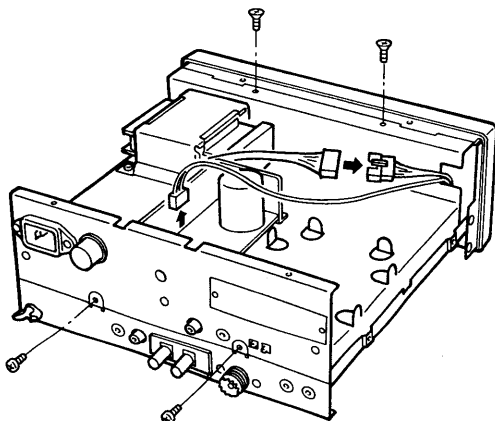
REMOVING THE REG UNIT (Fig. 3)



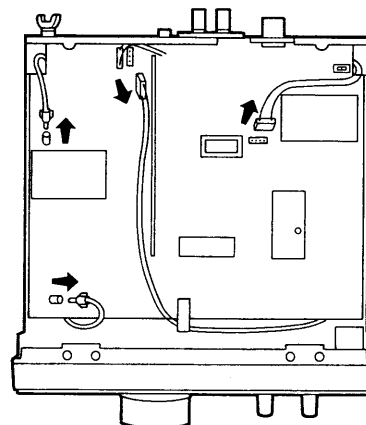
REMOVING THE PLL UNIT SCREWS (Fig. 4)



REMOVING THE REG UNIT SCREWS (Fig. 2)



REMOVING THE MAIN UNIT CONNECTORS (Fig. 5)



■ Fuse replacement

If a fuse blows, find the source of the problem, then replace the damaged fuse with a new, rated fuse.



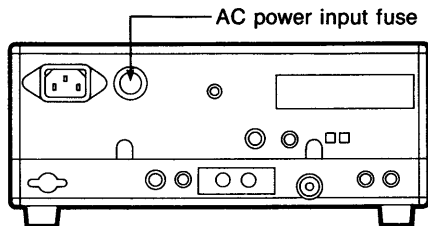
The IC-R72 has the following fuses for circuit protection.

- AC power input fuse (AC type only)
- Regulator circuit fuse (AC and DC types)
- DC power cable fuse (DC type only)

• **AC power input fuse (AC type only)**
During AC operation, this fuse may blow.

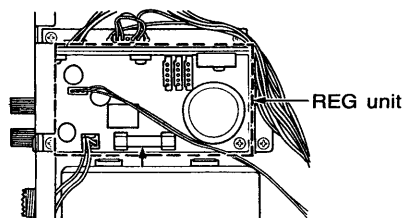
- 1) Unscrew the [FUSE] holder on the rear panel using a Phillips screwdriver.
- 2) Replace the damaged fuse with a new, rated fuse.

Voltage	Fuse rating
100 or 117 V AC	FGB 1 A
240 V AC	FGB 0.5 A
220 V AC	FGMB 250 V 0.5A



• **Regulator circuit fuse (AC and DC types)**
During AC or AC adapter operation, this fuse may blow. The regulator circuit fuse is located on the REG unit.

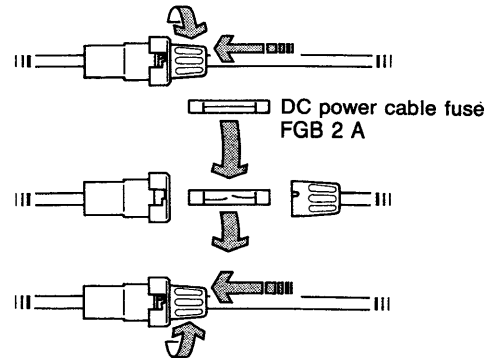
- 1) Remove the top cover. (p. 24)
- 2) Replace the damaged regulator fuse with a new, FGB 2 A fuse.



Regulator circuit fuse FGB 2 A

- 3) Replace the top cover.

• **DC power cable fuse (DC type only)**
During DC operation using the OPC-131 DC POWER CABLE, this fuse may blow. Replace the damaged DC power cable fuse with a new, FGB 2 A fuse.



■ CPU resetting

Only when the CPU malfunctions, reset the CPU.

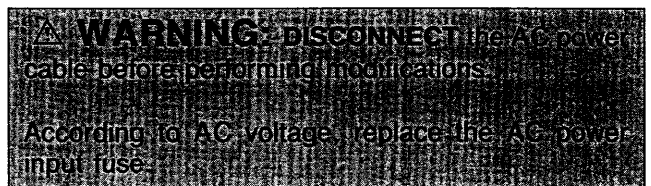
NOTE: CPU resetting clears all memory channel contents and other settings to their initial settings before shipping.

- 1) Turn the power OFF.
- 2) While pushing [MW], turn the power ON.
- 3) Release [MW].

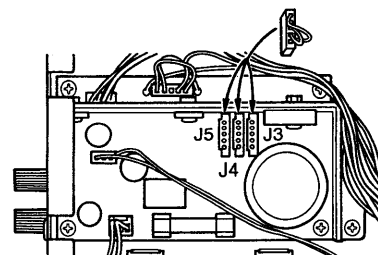
■ AC voltage modifications

(AC type, except for Germany)

Usable AC voltage varies according to versions. However, usable AC voltage can be modified.



- 1) Remove the top cover. (p. 24)
- 2) Change jumper connections on the REG unit.



Voltage	Jumper
100 V AC	J3
117 V AC	J4
240 V AC	J5

- 3) Replace the top cover.

■ Back-up batteries

The IC-R72 has two lithium back-up batteries: one for the clock and another for memory back-up.

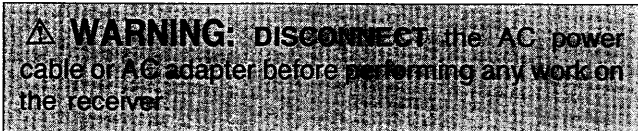
CLOCK BATTERY

The usual life of the clock battery is approx. 2 years after shipment from the factory. If the clock is slow or if there is a numbering malfunction, replace the battery with a new one.

MEMORY BACK-UP BATTERY

The usual life of the memory back-up battery is approx. 5 years. When the battery is exhausted, the receiver operates normally but the receiver cannot retain memory information.

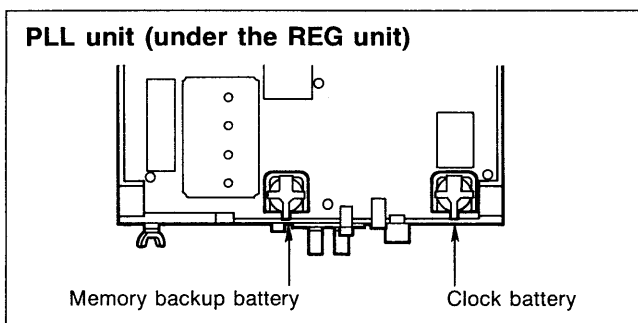
• Back-up battery replacement



- 1) Turn power OFF.
- 2) Disconnect the AC or DC power cable.
- 3) Remove covers and the REG unit following the disassembly procedures on p. 24.
- 4) The batteries are attached to the PLL unit.
- 5) Pull up the battery latch, then remove the exhausted battery.
- 6) Insert a new battery (CR2032) with the proper polarity.
 - Make sure the ⊕ side of the battery is up.

CAUTION: BE CAREFUL! Battery installation with reverse polarity will damage the internal circuit.

- 7) Assemble the receiver, then reset the CPU. (p. 25)
- 8) Adjust the clock time and program memory channels if desired.



■ Beep tone ON/OFF

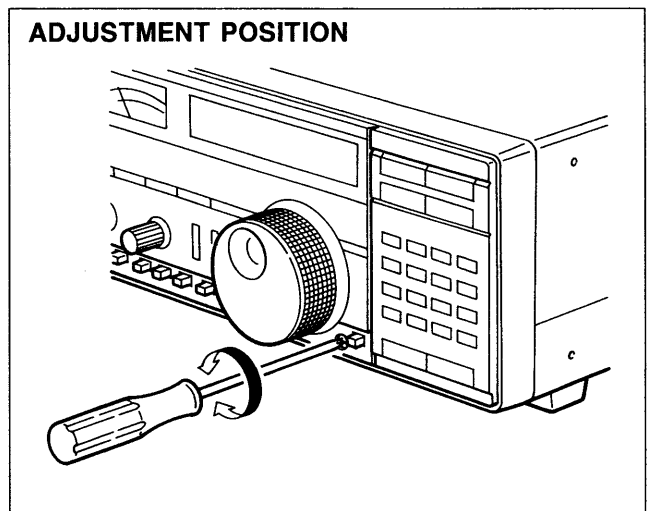
The receiver emits a beep tone each time a switch is pushed. The beep tone can be deactivated.

- 1) Turn power OFF.
- 2) Push and hold [ENT] and [·], and turn the power ON.
- 3) Release switches.
 - Now the beep tone is deactivated.
- 4) To re-activate the beep tone, repeat steps 1~3 again.
- 5) The sound level of the beep tone can be adjusted. (p. 31)

■ Main dial brake adjustment

The tension of the main dial can be adjusted to suit your operating requirements.

- 1) The brake adjustment screw is located on the right side of the main dial.
- 2) Turn the brake adjustment screw clockwise or counterclockwise to a comfortable tension level while turning the main dial continuously and evenly in one direction.



■ Cleaning

If the receiver becomes dusty or dirty, wipe it clean with a dry, soft cloth.

AVOID the use of strong chemical agents such as benzene or alcohol, as they may damage the receiver's surfaces.

■ Troubleshooting

The following chart is designed to help you correct problems which are not equipment malfunctions.

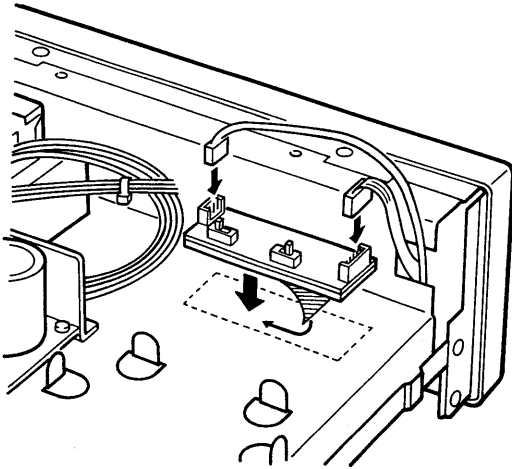
If you are not able to locate the cause of a problem or solve it through the use of this chart, contact your nearest Icom Dealer or Service Center.

PROBLEM	POSSIBLE CAUSE	SOLUTION	REF.
<ul style="list-style-type: none"> Power does not come on when [POWER] is pushed IN. 	<ul style="list-style-type: none"> Power cable is improperly connected. A fuse is blown. [TIMER] is pushed IN. External power source voltage is low (e.g. when using a car battery). 	<ul style="list-style-type: none"> Reconnect the power cable securely. Check for the cause, then replace the fuse with a spare one. <ul style="list-style-type: none"> AC power input (AC type only) Regulator circuit (AC and DC types) DC power cable (DC type) Push [TIMER] out to turn OFF. Check the power voltage with the receiver turned ON. 	<ul style="list-style-type: none"> p. 10 p. 25 p. 13
<ul style="list-style-type: none"> No sound comes from the speaker. 	<ul style="list-style-type: none"> Volume level is too low. The squelch is closed. An external speaker or headphones are in use. The receiver is in CW narrow mode. 	<ul style="list-style-type: none"> Rotate [AF GAIN] clockwise to obtain a suitable listening level. Rotate [SQUELCH] counterclockwise to open the squelch. Check the external speaker or headphone plug connection. Operating CW narrow mode requires either the FL-100 or FL-101 (sold separately). 	<ul style="list-style-type: none"> p. 15 p. 15 p. 9 p. 29
<ul style="list-style-type: none"> Sensitivity is low. 	<ul style="list-style-type: none"> The antenna feedline is cut or shorted. An antenna is not connected. Attenuators are ON. 	<ul style="list-style-type: none"> Check the feedline and correct any improper conditions. Connect an antenna. Push OUT ATT [10 dB] and [20 dB]. 	<ul style="list-style-type: none"> p. 7 p. 7 p. 15
<ul style="list-style-type: none"> Receive signal is distorted with strong signals. 	<ul style="list-style-type: none"> The high level noise blanker is activated. The noise blanker function is turned ON. The wrong mode switch is pushed. 	<ul style="list-style-type: none"> Push [HIGH] out to select the normal noise blanker. Push [NB] OUT to release the function. Push the correct mode switch. 	<ul style="list-style-type: none"> p. 15 p. 15 p. 16
<ul style="list-style-type: none"> The displayed frequency does not change properly. 	<ul style="list-style-type: none"> The dial lock function is activated. The internal CPU has malfunctioned. 	<ul style="list-style-type: none"> Push [LOCK] to release the function. Turn the power OFF. Then turn the power ON again while pushing [MW] for resetting CPU. 	<ul style="list-style-type: none"> p. 16 p. 25
<ul style="list-style-type: none"> Scan does not operate properly. 	<ul style="list-style-type: none"> Both scan edges are set improperly for Programmed or Auto memory write scan. Same frequencies are programmed in all memory channels or only one memory channel is programmed. 	<ul style="list-style-type: none"> Reset scan edges. Program different frequencies into memory channels. 	<ul style="list-style-type: none"> p. 19 p. 18
<ul style="list-style-type: none"> Auto memory write scan does not function. 	<ul style="list-style-type: none"> SSB or CW mode is selected. 	<ul style="list-style-type: none"> Select AM or FM (optional) mode. 	<ul style="list-style-type: none"> p. 20
<ul style="list-style-type: none"> Scan does not stop even when receiving strong signals. 	<ul style="list-style-type: none"> The squelch is open when operating programmed scan on SSB or CW mode. 	<ul style="list-style-type: none"> Turn [SQUELCH] clockwise until noise disappears. 	<ul style="list-style-type: none"> p. 19
<ul style="list-style-type: none"> All programmed memories have been erased. 	<ul style="list-style-type: none"> The backup battery is empty. 	<ul style="list-style-type: none"> Replace the backup battery. 	<ul style="list-style-type: none"> p. 26
<ul style="list-style-type: none"> Timer does not function even when the timer has been set. 	<ul style="list-style-type: none"> [TIMER] is not pushed ON. 	<ul style="list-style-type: none"> Push [TIMER] IN. 	<ul style="list-style-type: none"> p. 23
<ul style="list-style-type: none"> Clock cannot be set. 	<ul style="list-style-type: none"> Timer is activated. 	<ul style="list-style-type: none"> Push [TIMER] out. 	<ul style="list-style-type: none"> p. 22
<ul style="list-style-type: none"> The clock time is incorrect. 	<ul style="list-style-type: none"> The clock battery is empty. 	<ul style="list-style-type: none"> Replace the clock battery. 	<ul style="list-style-type: none"> p. 26

■ UT-36 VOICE SYNTHESIZER UNIT

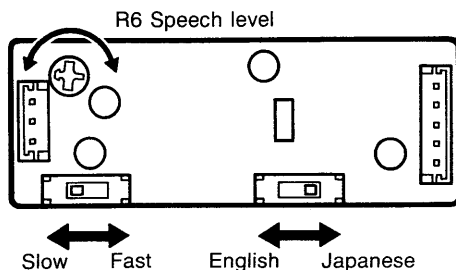
The UT-36 VOICE SYNTHESIZER UNIT announces the receiving frequency when the [SPCH] switch is pushed.

INSTALLATION LOCATION



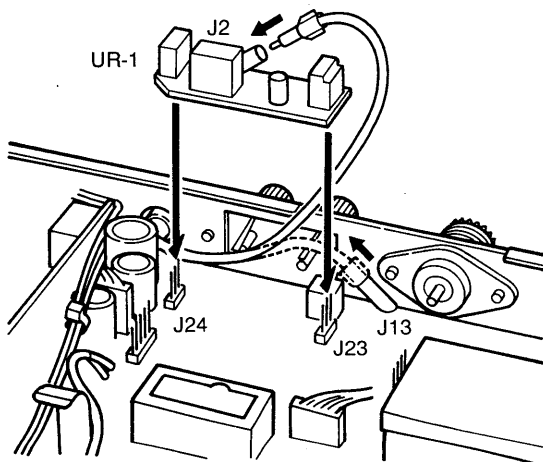
- 1) Disconnect the AC or DC power cable.
- 2) Remove the top cover. See p. 24 for details.
- 3) Connect 2 connectors (3 pins and 5 pins) inside the IC-R72 to the UT-36.
- 4) Remove the protective paper attached to the bottom of the UT-36 to expose the adhesive strip.
- 5) Attach the UT-36 to the REG unit properly as shown in the diagram at left.
- 6) Set the language, speech speed and speech level as shown in the diagram at left.
- 7) Replace the top cover.

• Switches location on the UT-36



■ UR-1 RECEIVER PROTECTOR UNIT

The UR-1 RECEIVER PROTECTOR UNIT protects the front end circuit of the receiver from extremely strong signals.



- 1) Disconnect the AC or DC power cable.
- 2) Remove the bottom cover. See p. 24 for details.
- 3) Properly insert the UR-1 to J23 and J24. See the diagram at left.
- 4) Remove the coaxial cable from J13, then insert the cable into J2 on the UR-1.
- 5) Replace the bottom cover.

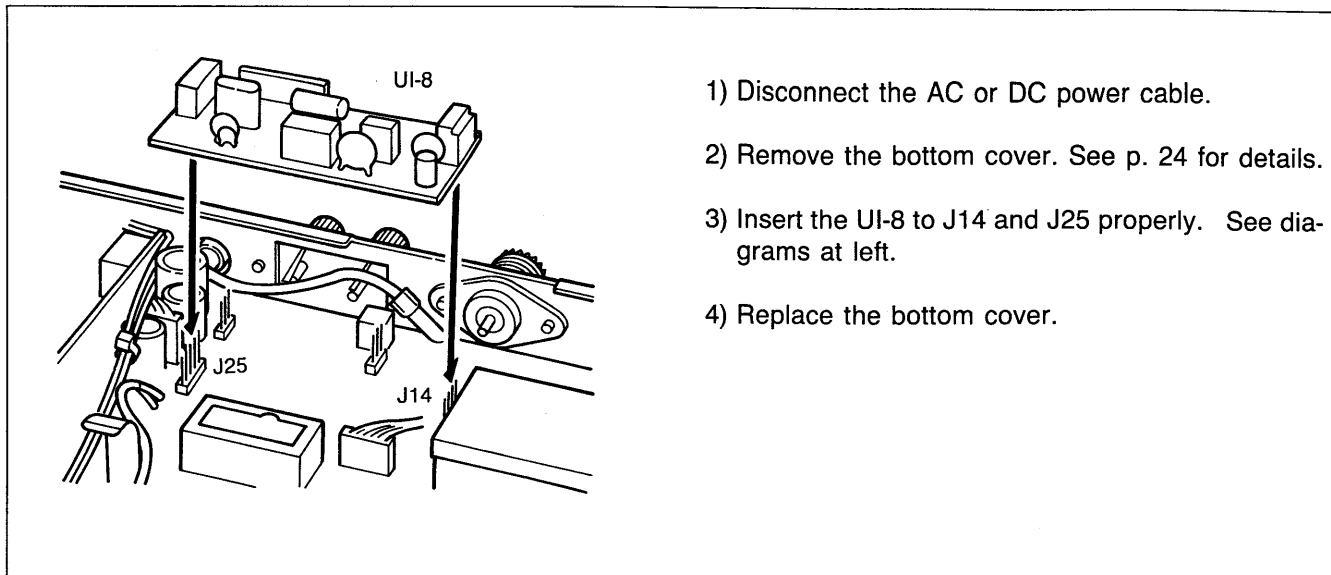
CAUTION: Make sure of the correct direction of the UR-1 when inserting. The receiver cannot operate if the installation is incorrect.

UR-1 SPECIFICATION

Frequency range	0.1 ~ 30 MHz
Operating range	+20 dB ~ +40 dBm
Releasing level	More than 0 dBm
Insertion loss	Less than 1 dB

■ UI-8 FM RECEIVE UNIT

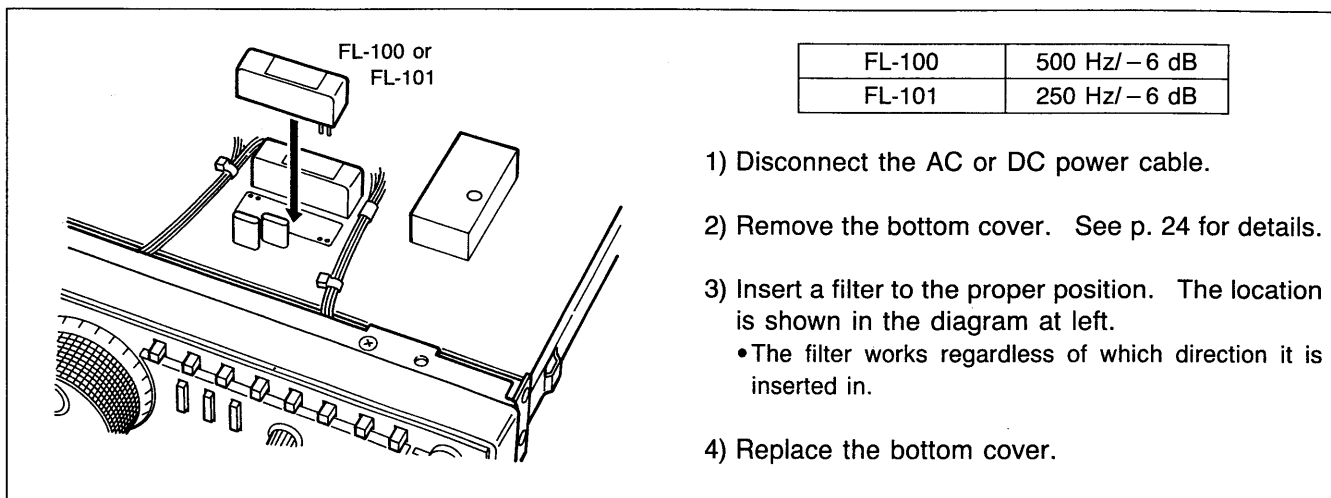
The UI-8 FM RECEIVE UNIT allows you to operate FM mode.



- 1) Disconnect the AC or DC power cable.
- 2) Remove the bottom cover. See p. 24 for details.
- 3) Insert the UI-8 to J14 and J25 properly. See diagrams at left.
- 4) Replace the bottom cover.

■ CW NARROW FILTERS

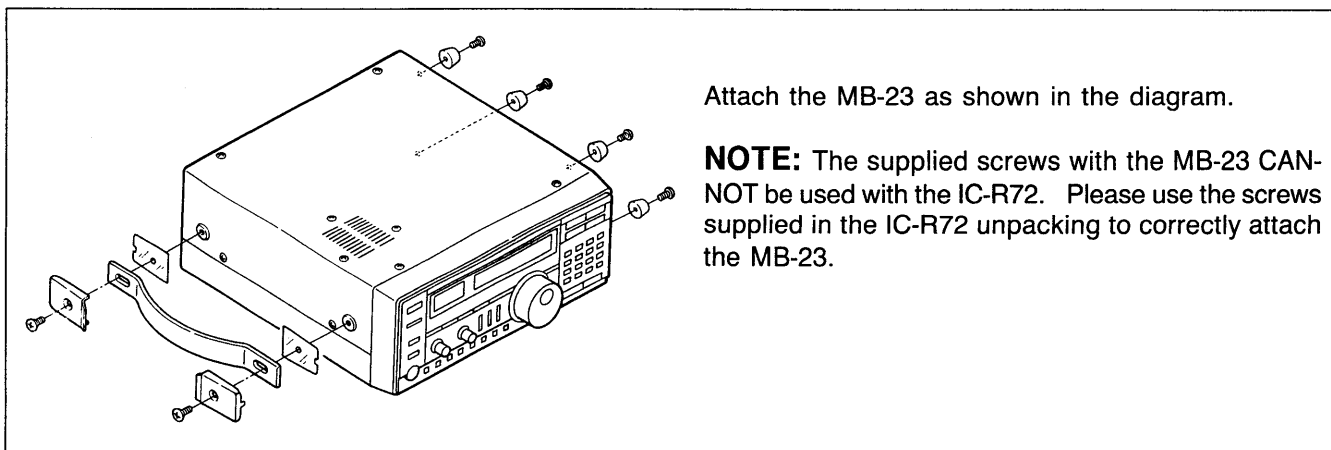
The FL-100 and FL-101 CW NARROW FILTERS are available.



- 1) Disconnect the AC or DC power cable.
- 2) Remove the bottom cover. See p. 24 for details.
- 3) Insert a filter to the proper position. The location is shown in the diagram at left.
 - The filter works regardless of which direction it is inserted in.
- 4) Replace the bottom cover.

■ MB-23 CARRYING HANDLE

The handle allows you to easily carry and transport the receiver.



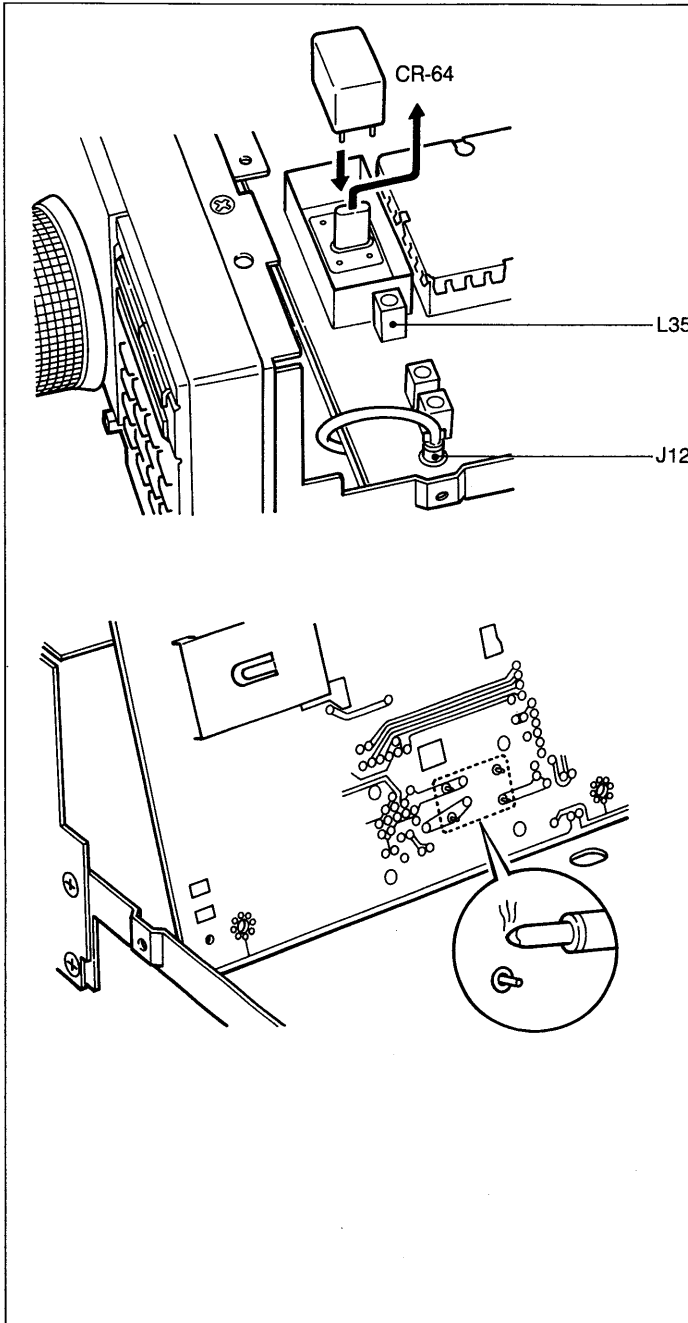
Attach the MB-23 as shown in the diagram.

NOTE: The supplied screws with the MB-23 **CAN NOT** be used with the IC-R72. Please use the screws supplied in the IC-R72 unpacking to correctly attach the MB-23.

■ CR-64 HIGH-STABILITY CRYSTAL UNIT

By replacing the original crystal unit with the CR-64, the total frequency stability of the receiver will be improved.

A frequency counter is necessary for the unit adjustment.

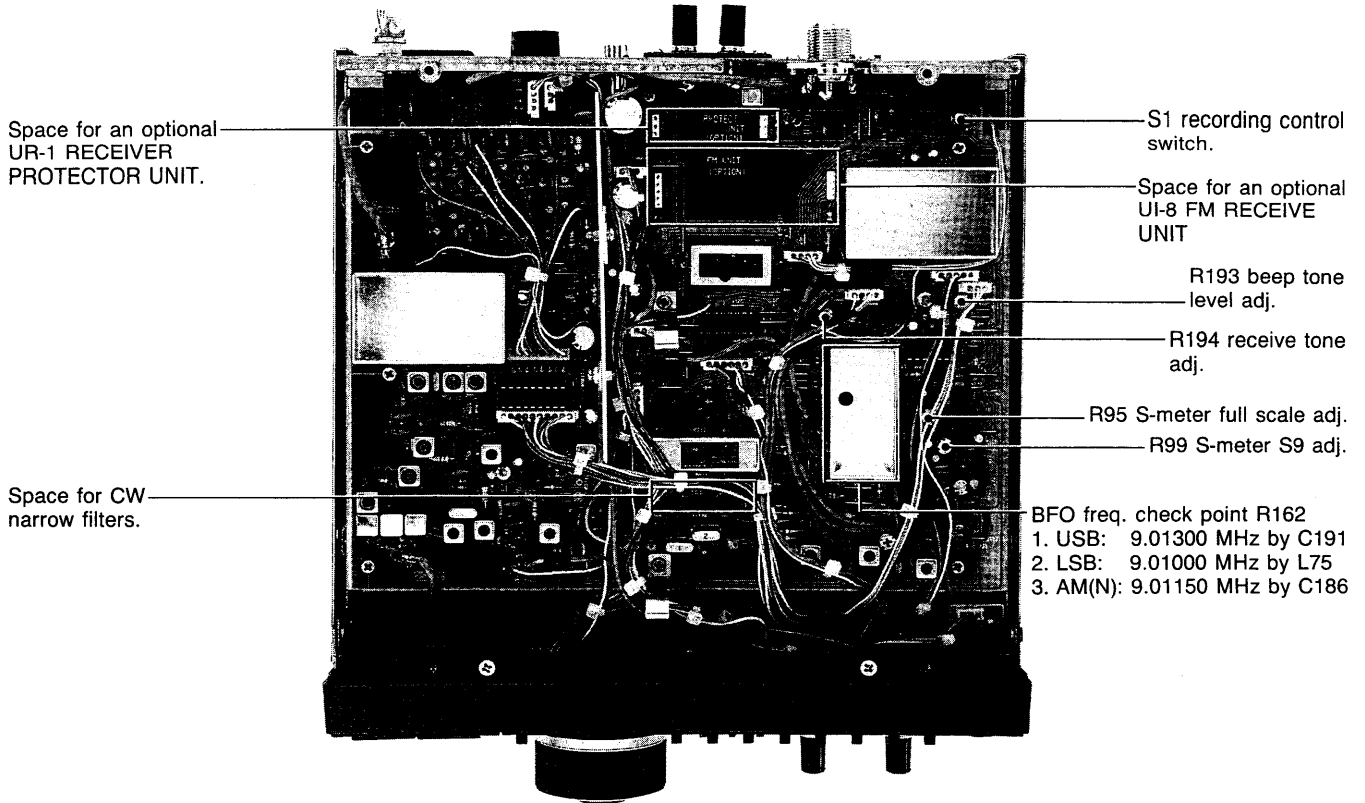


- 1) Disconnect the AC or DC power cable.
- 2) Remove covers, the REG unit and the PLL unit as shown in the disassembly procedures on p. 24.
- 3) Remove the crystal unit from the P.C. board.
- 4) Unsolder the 4 positions on the P.C. board where the CR-64 will be installed. Use a de-soldering braid.
- 5) Install the unit flush with the P.C. board and in the proper direction.
 - For correct installation, symbols on the bottom of the CR-64 must be identically matched with symbols on the P.C. board.
- 6) Bend the unit leads flush with the foil side of the P.C. board and solder them.
- 7) Trim the leads even with the solder points.
- 8) Replace the P.C. board.
- 9) Adjust a reference frequency.
- 10) Replace the REG unit and covers.

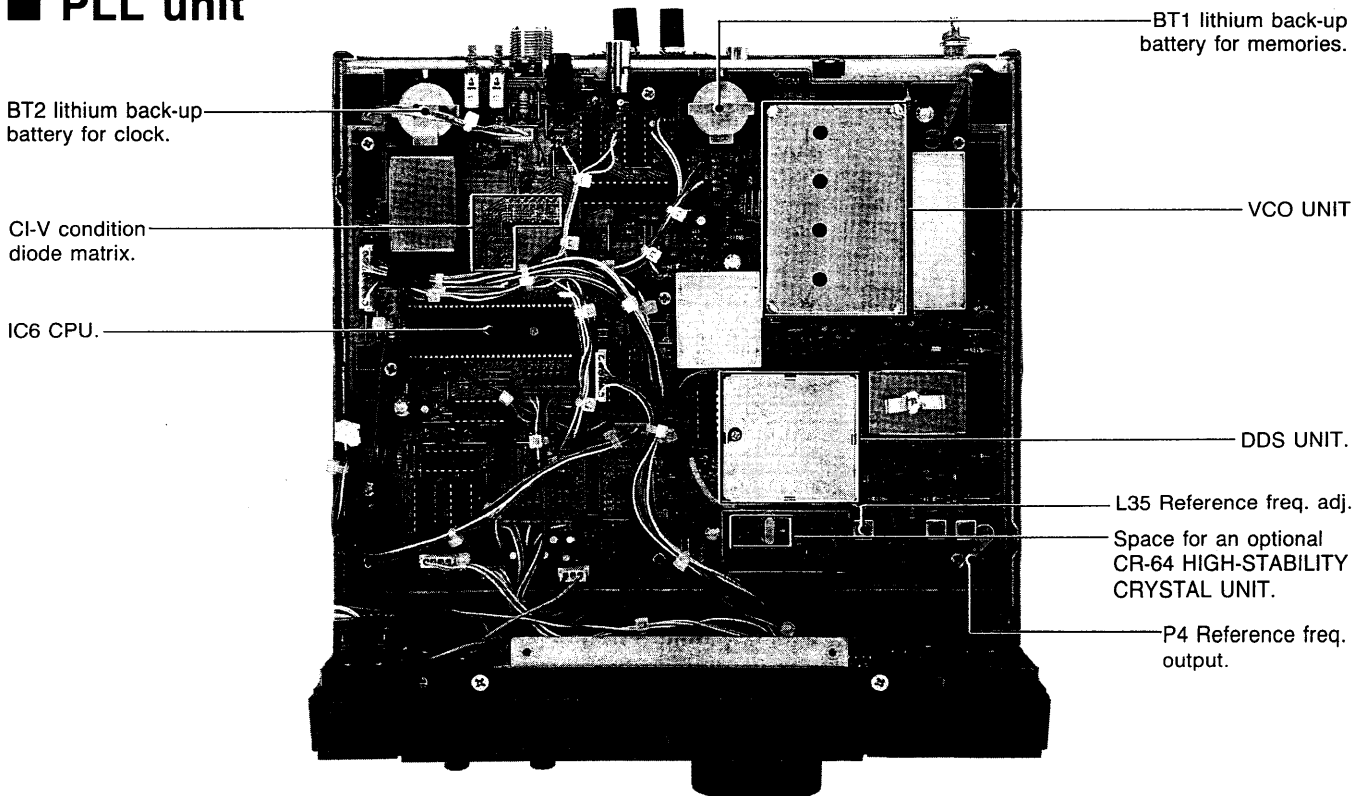
REFERENCE FREQUENCY ADJUSTMENT

- 1) Disconnect the coaxial cable from J12.
- 2) Connect a frequency counter to J12.
- 3) Adjust L35 to set the counter frequency to 61.44 MHz
- 4) Replace the coaxial cable.

■ Main unit

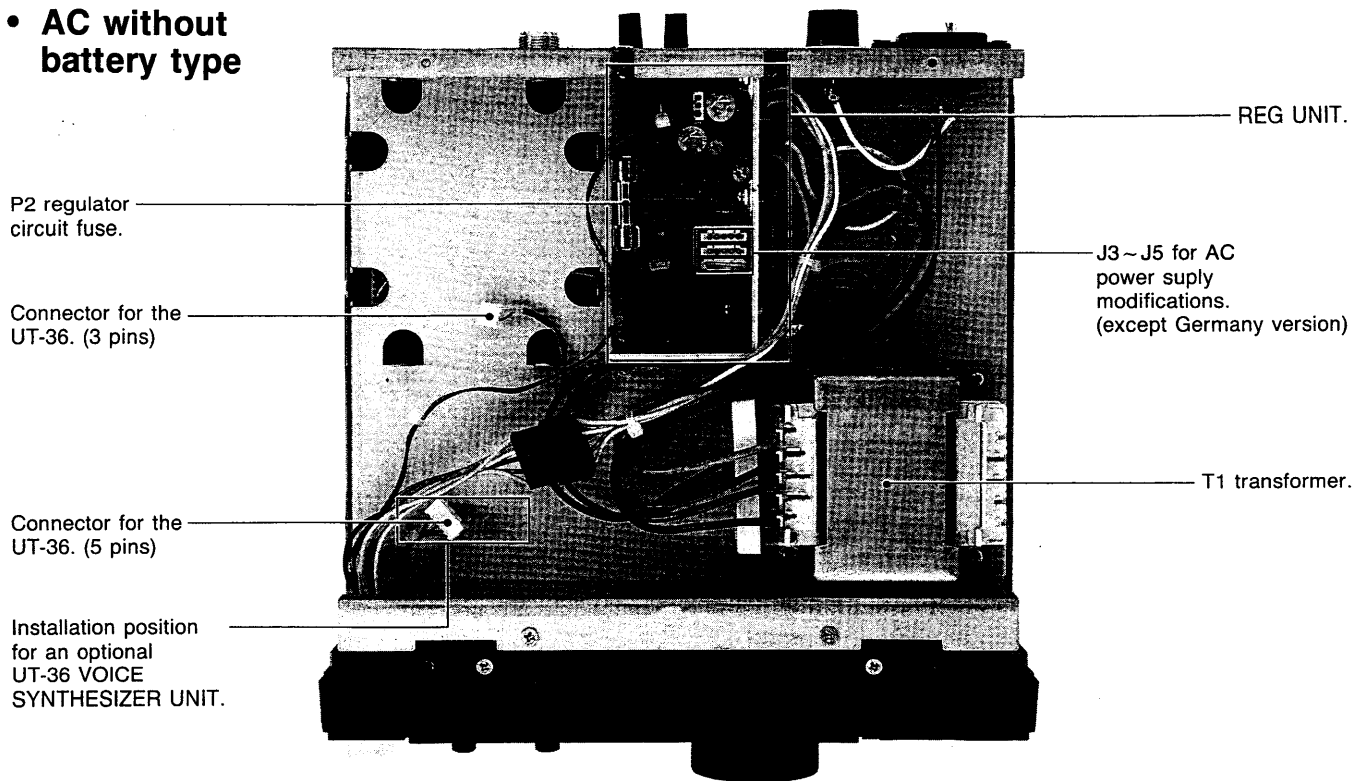


■ PLL unit

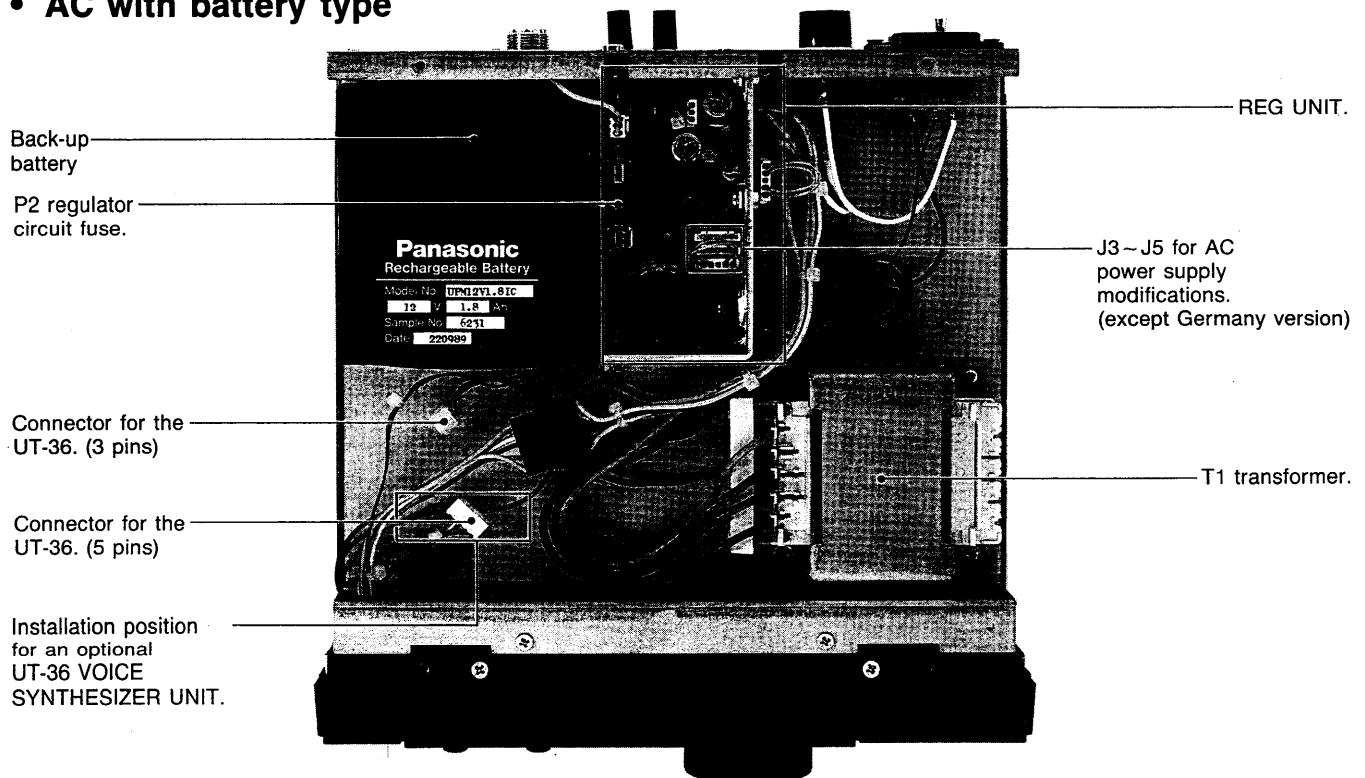


■ Regulator (REG) unit

• AC without battery type



• AC with battery type



Above photo shows the IC-R72 U.S.A. version.

10 SPECIFICATIONS

- Frequency coverage :

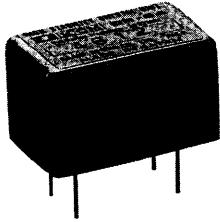
Version	Frequency coverage
U.S.A., Europe Australia	30 kHz ~ 30 MHz*
Germany	150 kHz ~ 26.1 MHz

*Specifications guaranteed 100 kHz ~ 30 MHz
- Mode : SSB (A3J), AM (A3), FM (F3), CW (A1)
(Optional UI-8 is required for FM mode.)
- Power supply requirement :
 - AC type 100, 117, 240 V AC (220 V AC only for Germany version)
 - DC type 16 V DC (AC adapter jack)
 - AC and DC types 13.8 V DC \pm 15% (DC power jack, 230 V AC for AC adapter)
- Antenna impedances : 50 Ω or 500 Ω (unbalanced)
- Current drain (13.8 V DC) : Squelched 1.0 A
Max. audio output 1.2 A
- Usable temperature range : $-10^{\circ}\text{C} \sim +60^{\circ}\text{C}$ ($+14^{\circ}\text{F} \sim +140^{\circ}\text{F}$)
- Frequency stability :
 - Less than ± 200 Hz ($+25^{\circ}\text{C}$; $+77^{\circ}\text{F}$, 1 min. ~ 1 hour after power is ON)
 - Less than ± 30 Hz ($+25^{\circ}\text{C}$; $+77^{\circ}\text{F}$, after 1 hour)
 - Less than ± 350 Hz ($0^{\circ}\text{C} \sim +50^{\circ}\text{C}$; $+32^{\circ}\text{F} \sim +122^{\circ}\text{F}$)
- Dimensions : 241(W) x 94(H) x 229(D) mm
9.5(W) x 3.7(H) x 9.0(D) in
(projections not included)
- Weight :

AC without battery type	4.8 kg ; 10.6 lb
AC with battery type	5.5 kg ; 12.1 lb
DC without battery type	3.7 kg ; 8.2 lb
DC with battery type	4.4 kg ; 9.7 lb
- Sensitivity :
 - 0.1 ~ 1.8 MHz
 - SSB, CW Less than 2.0 μV for 10 dB S/N
 - AM Less than 12.6 μV for 10 dB S/N
 - 1.8 ~ 30 MHz (preamp ON)
 - SSB, CW Less than 0.16 μV for 10 dB S/N
 - AM Less than 2.0 μV for 10 dB S/N
 - 28 ~ 30 MHz (preamp ON)
 - FM Less than 0.5 μV for 12 dB SINAD
- Squelch sensitivity (threshold) :
 - SSB Less than 10 μV
 - FM Less than 0.4 μV
- Selectivity :
 - SSB, CW, AM narrow
 - More than 2.3 kHz/ -6 dB
 - Less than 4 kHz/ -60 dB
 - AM
 - More than 6 kHz/ -6 dB
 - Less than 20 kHz/ -50 dB
 - FM
 - More than 15 kHz/ -6 dB
 - Less than 30 kHz/ -50 dB
- Spurious and image rejection : More than 70 dB
- Audio output power : More than 2 W at 10% distortion with an 8 Ω load
- Audio output impedance : 8 Ω

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

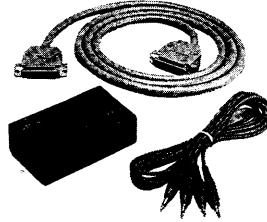
CR-64 HIGH-STABILITY CRYSTAL UNIT



Contains a temperature-compensating oven heater and crystal unit.

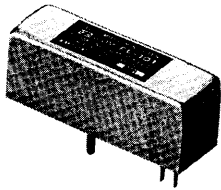
- Frequency stability :
±0.5 ppm (-10°C~+60°C;
+14°F~+140°F)

CT-17 CI-V LEVEL CONVERTER



For remote receiver control using a personal computer equipped with an RS-232C port. You can change operating frequencies, memory channels, etc., with your computer.

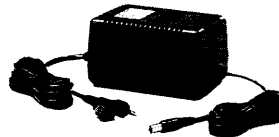
FL-100 AND FL-101 9 MHz CW NARROW FILTERS



Have good shape factor and provide you with better CW reception.

- FL-100 : 500 Hz/-6 dB
- FL-101 : 250 Hz/-6 dB

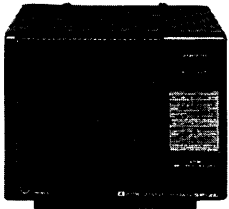
AD-55 AC ADAPTER



For the IC-R72 DC type only. Allows you AC operation.

- Input : 230 V AC
50 Hz
- Output : 16 V DC
Max. 1.5 A

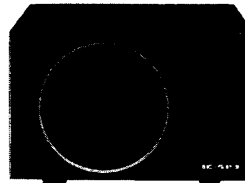
SP-20 EXTERNAL SPEAKER WITH AUDIO FILTER



An external speaker with audio filters. Received audio quality can be changed with filters.

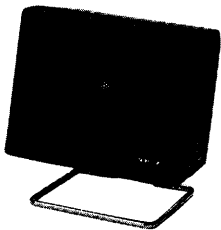
- Input impedance : 8 Ω
- Max. input power : 5 W

IC-SP3 EXTERNAL SPEAKER



- Input impedance : 8 Ω
- Max. input power : 4 W

SP-7 EXTERNAL SPEAKER



Size and style match the IC-R72.

- Input impedance : 8 Ω
- Max. input power : 5 W

OTHER OPTIONS

• CP-11 CIGARETTE LIGHTER CABLE WITH NOISE FILTER

Allows you to use the IC-R72 through a 12 V cigarette lighter socket. Cannot be used for Germany version.

• IC-MB5 MOBILE MOUNTING BRACKET

Receiver mounting bracket for mobile operation.

• MB-23 CARRYING HANDLE

Carrying handle for easy portable operation.

• OPC-131 DC POWER CABLE

The same type as supplied with DC type. Allows you to use the IC-R72 through non-Icom DC power supply or 12 V vehicle battery.

• UI-8 FM RECEIVE UNIT

Adds FM mode capability to the IC-R72.

• UR-1 RECEIVER PROTECTOR UNIT

Protects the IC-R72 receiver front end circuits from extremely strong signal input.

• UT-36 VOICE SYNTHESIZER UNIT

Announces the displayed frequency in English or Japanese. Speech speed can be changed in 2 steps.

Count on us!

