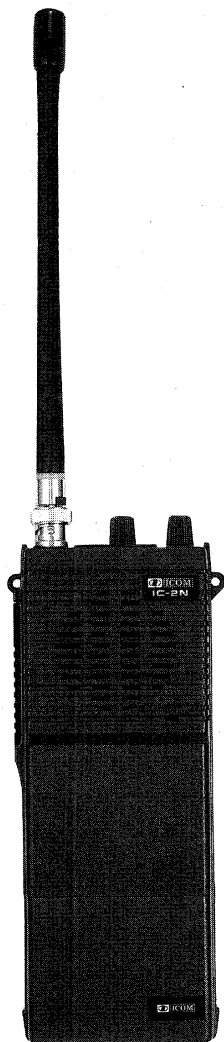


iCOM

INSTRUCTION MANUAL

144 MHz FM TRANSCEIVER

IC-2N



Icom Inc.

IMPORTANT

READ ALL INSTRUCTIONS carefully and completely for maximum performance and enjoyment of the **IC-2N**.

SAVE THIS INSTRUCTION MANUAL. This manual contain important safety and operating instructions for the **IC-2N**.

CAUTIONS

NEVER connect the transceiver to more than 11 V DC or to an AC power source.

NEVER allow children to touch the transceiver.

NEVER immerse the transceiver in water.

AVOID placing the transceiver in direct sunlight or subjecting it to temperatures below -10°C ($+4^{\circ}\text{F}$) or above $+60^{\circ}\text{C}$ ($+140^{\circ}\text{F}$).

NEVER disassemble the transceiver. No user-adjustable parts are contained within the transceiver. Also, the use of non-Icom battery packs/DC-DC converter may impair transceiver performance and invalidate the warranty.

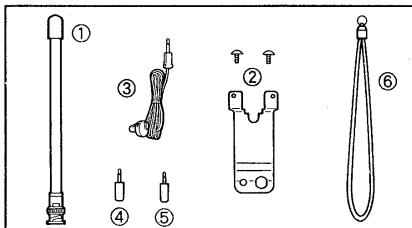
NEVER transmit without an antenna. This may damage the transceiver.

UNPACKING

Accessories included with the IC-2N:

- ① Flexible antenna 1
- ② Belt clip 1 set
- ③ Earphone 1
- ④ Earphone plug 1
- ⑤ Microphone plug 1
- ⑥ Handstrap 1

A battery case comes attached to the transceiver.

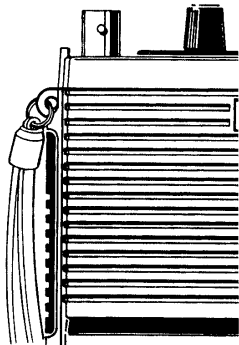


Thank you for purchasing the **IC-2N 144 MHz FM TRANSCEIVER**. Employing Icom's time-proven technology, this transceiver will provide you with years of simple, trouble-free operation.

1 ATTACHMENTS

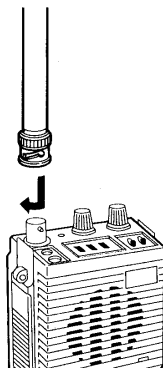
■ Handstrap

Attach the handstrap to the loop on either side of the transceiver as shown below.



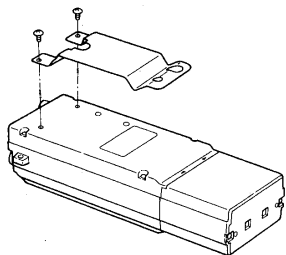
■ Antenna

Attach the supplied flexible antenna to the antenna connector on the top panel of the transceiver as shown below.



■ Belt clip

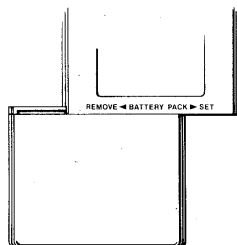
Attach the belt clip to the rear panel of the transceiver using the two supplied screws as shown below.

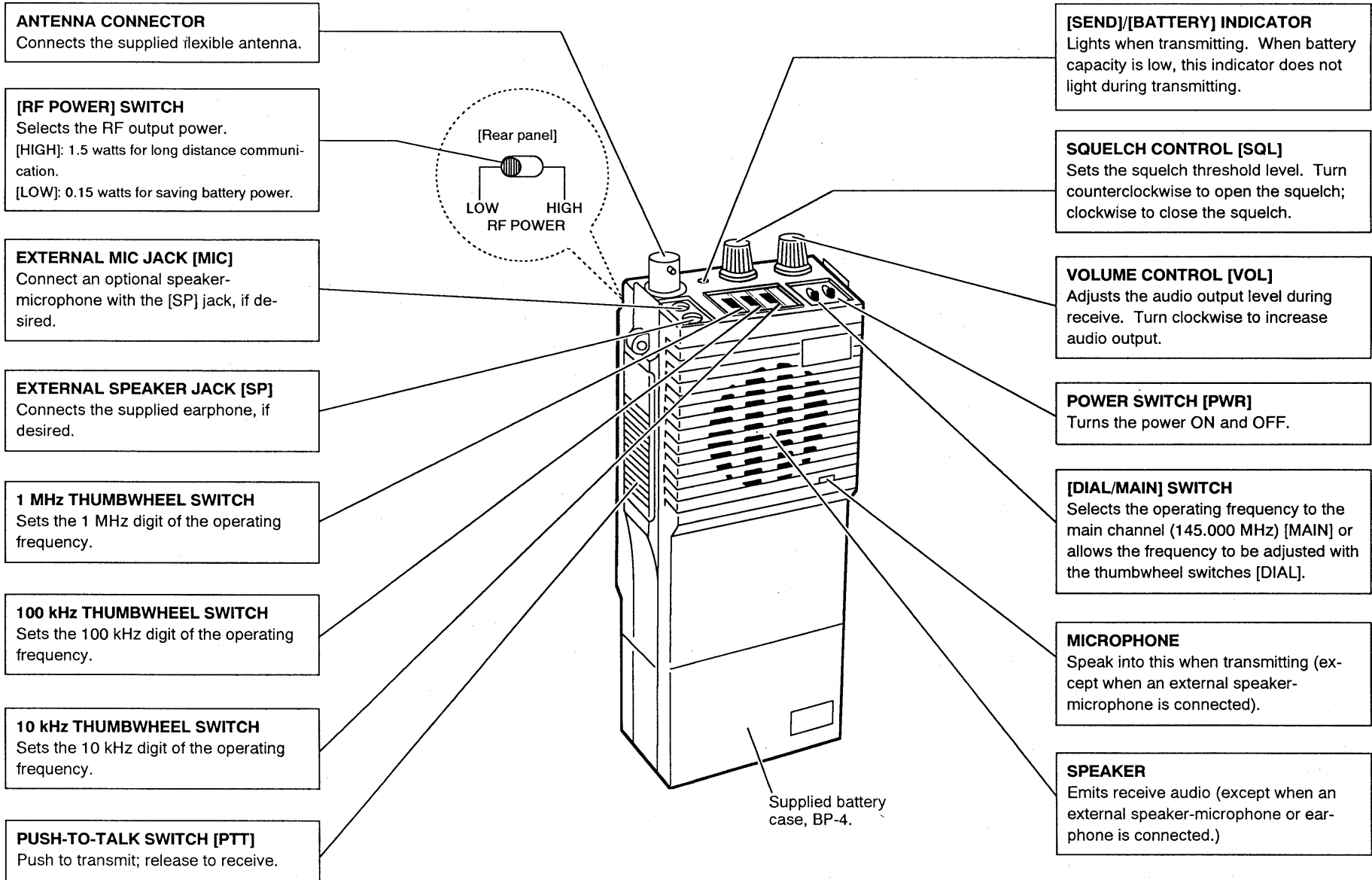


■ Battery case

To attach the battery case, mate the two notched metal guides of the battery pack with those of the transceiver, then slide the battery case into place until a click is heard.

Reverse this procedure to remove the battery case.





ANTENNA CONNECTOR
Connects the supplied flexible antenna.

[RF POWER] SWITCH
Selects the RF output power.
[HIGH]: 1.5 watts for long distance communication.
[LOW]: 0.15 watts for saving battery power.

EXTERNAL MIC JACK [MIC]
Connect an optional speaker-microphone with the [SP] jack, if desired.

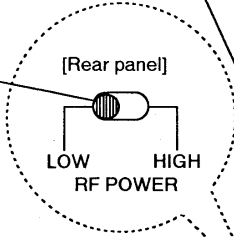
EXTERNAL SPEAKER JACK [SP]
Connects the supplied earphone, if desired.

1 MHz THUMBWHEEL SWITCH
Sets the 1 MHz digit of the operating frequency.

100 kHz THUMBWHEEL SWITCH
Sets the 100 kHz digit of the operating frequency.

10 kHz THUMBWHEEL SWITCH
Sets the 10 kHz digit of the operating frequency.

PUSH-TO-TALK SWITCH [PTT]
Push to transmit; release to receive.



[SEND]/[BATTERY] INDICATOR
Lights when transmitting. When battery capacity is low, this indicator does not light during transmitting.

SQUELCH CONTROL [SQL]
Sets the squelch threshold level. Turn counterclockwise to open the squelch; clockwise to close the squelch.

VOLUME CONTROL [VOL]
Adjusts the audio output level during receive. Turn clockwise to increase audio output.

POWER SWITCH [PWR]
Turns the power ON and OFF.

[DIAL/MAIN] SWITCH
Selects the operating frequency to the main channel (145.000 MHz) [MAIN] or allows the frequency to be adjusted with the thumbwheel switches [DIAL].

MICROPHONE
Speak into this when transmitting (except when an external speaker-microphone is connected).

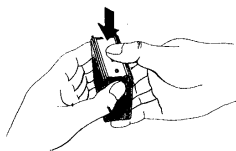
SPEAKER
Emits receive audio (except when an external speaker-microphone or earphone is connected.)

Supplied battery case, BP-4.

3

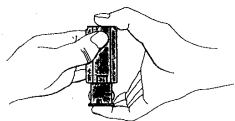
BATTERIES

■ Opening/closing the battery case



To open the battery case:

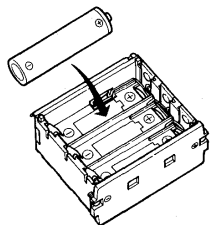
Push and hold the sides of the battery case and push down on the top aluminum panel.



To close the battery case:

Slide the battery holder into the battery case.

■ Installing batteries into the battery case



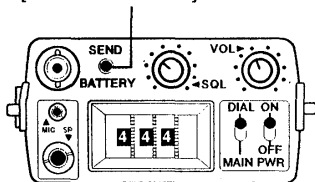
The battery case holds 6 AA type alkaline batteries. **BE SURE** to observe the correct polarity when installing the batteries.

- Rechargeable NiCd batteries may also be used.

To charge NiCd batteries, an optional BC-35 or BC-36 DESKTOP CHARGER is required.

■ When to replace the batteries

[SEND/BATTERY] indicator



If the [SEND]/[BATTERY] indicator does not light during transmission, the batteries are in need of replacing (or charging in the case of NiCds).

- Always replace ALL of the batteries at the same time.
- AVOID mixing battery types.

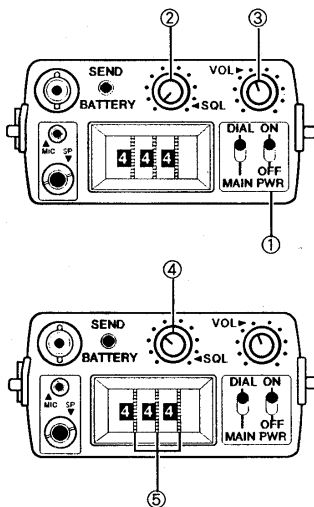
To prolong battery life:

- Minimize transmission times.
- Reduce volume during reception.
- Turn [PWR] OFF when not in use.

Before power ON

- Check that the batteries are correctly loaded into the battery case and that the battery case is properly connected to the transceiver. (See 3 BATTERIES)
- Make sure the supplied flexible antenna is properly connected. (See 1 ATTACHMENTS)

Receiving



- Turn [PWR] ON.
- Rotate [SQL] fully counterclockwise.
- Using the received noise as a reference, adjust the volume to the desired listening level using the [VOL] control.
 - Clockwise rotation increases the volume.
 - Lower volumes conserve battery power.
- Rotate [SQL] clockwise until the noise is just muted.
- Set the desired frequency using the THUMBWHEEL switches.
 - If the [DIAL]/[MAIN] switch is set to the [MAIN] position, the frequency is locked onto 145 MHz.

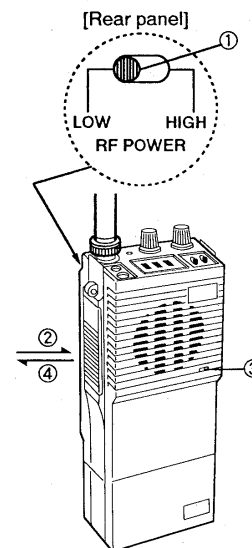
NOTE: If the squelch is unstable due to reception of weak or mobile stations, adjust the [SQL] further until the proper threshold is obtained.

Pre-operation

Set the transceiver as for receiving. (See Receiving.)

CAUTION: Transmitting without an antenna may damage the transceiver.

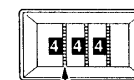
Transmitting



- Set the output power using the RF switch.
 - Select LOW (0.15 W) power to conserve battery power; if LOW power is insufficient to communicate, select HIGH (1.5 W) power.
- Push and hold [PTT] to transmit.
 - [SEND]/[BATTERY] indicator lights.
 - To prevent interference to other stations, listen on the frequency before transmitting.
- Hold the transceiver 10 to 15 cm from your mouth and speak into the microphone slowly and clearly at a normal voice level to prevent distortion.
- Release [PTT] to receive.
 - [SEND]/[BATTERY] indicator goes out.

Frequency Range Chart

1 MHz Thumbwheel	0	1	2	3	4	5	6	7	8	9
Frequency Band (MHz)	144	145	144	145	144	145	144	145	144	145



1 MHz Thumbwheel

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TROUBLESHOOTING

The IC-2N has been thoroughly tested at the factory before shipping to ensure maximum performance. If you encounter any problems while operating the transceiver, consult the chart below.

This chart is designed to help you solve problems which are not equipment malfunctions. If the problem cannot be resolved in this manner, consult your nearest Icom Dealer or Service Center.

PROBLEM	POSSIBLE CAUSE	SOLUTION
<ul style="list-style-type: none"> Power does not come on. 	<ul style="list-style-type: none"> Poor connection at the battery case. Reverse polarity of the batteries. 	<ul style="list-style-type: none"> Check the battery case connection and correct any problems. Reinsert the batteries, observing the correct polarity.
<ul style="list-style-type: none"> Speaker does not emit audio. 	<ul style="list-style-type: none"> [VOL] is rotated completely counterclockwise. [PTT] is pushed. [SQL] is rotated too far clockwise. External speaker-microphone or earphone is connected. The batteries are depleted. 	<ul style="list-style-type: none"> Rotate [VOL] clockwise to the desired level. Release the [PTT]. Rotate the [SQL] counterclockwise. Disconnect the external speaker-microphone or earphone. Replace the batteries.
<ul style="list-style-type: none"> Sensitivity is low and only strong signals are audible. 	<ul style="list-style-type: none"> Poor connection at the flexible antenna. The antenna feedline is cut or shorted. (When using an external antenna.) 	<ul style="list-style-type: none"> Connect the antenna properly. Check the feedline and correct any improper conditions.
<ul style="list-style-type: none"> RF output is low or nonexistent. 	<ul style="list-style-type: none"> RF power switch is set to the LOW position. Batteries are depleted. The antenna feedline is cut or shorted. 	<ul style="list-style-type: none"> Set the RF power switch to the HIGH position. Replace the batteries. Correct any problems with the antenna feedline.
<ul style="list-style-type: none"> No modulation. (When using an external speaker-microphone.) 	<ul style="list-style-type: none"> Poor connection at the MIC connector. MIC cable is cut. 	<ul style="list-style-type: none"> Connect the speaker-microphone properly. Repair/replace the cable.

Specifications

GENERAL

- Frequency coverage: 144.00–145.99 MHz
- Mode: FM
- Frequency stability: ± 1.5 kHz
- Power supply requirement: 6 to 11 V DC
- Usable temp. range: -10°C to 60°C
- Dimensions incl. battery case: 65(W) \times 165(H) \times 35(D) mm (projections not included)
- Weight: 490 g (including 6 dry cell batteries)

TRANSMITTER

- Output power: 1.5 W (High); 0.15 W (Low)
- Modulation system: Variable reactance freq. modulation
- Max. frequency deviation: ± 5 kHz

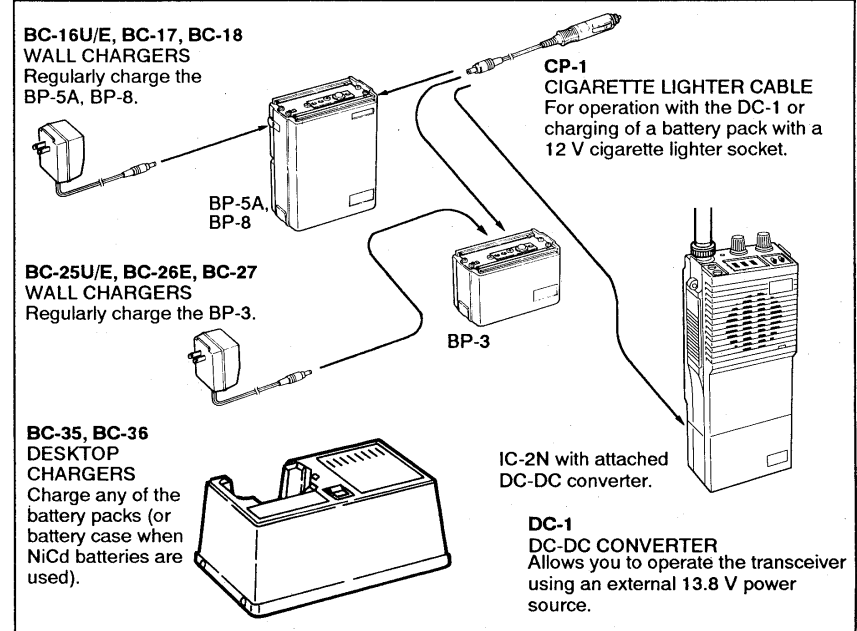
- Spurious emissions: Less than -60 dB
- Microphone impedance: 2 k Ω
- Current drain: 550 mA (High); 220 mA (Low)

RECEIVER

- Receive system: Double-conversion superheterodyne
- Sensitivity: Less than $0.5 \mu\text{V}$ for 12 dB SINAD
- Squelch sensitivity: Less than $0.4 \mu\text{V}$
- Spurious response rejection: More than 60 dB
- Audio output power: More than 300 mW
- Audio output impedance: 8 Ω
- Current drain: 130 mA (max. audio); 20 mA (squelched)

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

CHARGERS AND CABLES



Options

CAUTION: The use of non-Icom battery packs/chargers may impair transceiver performance and invalidate the warranty.

BATTERY PACKS/CASE

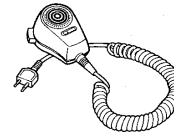
MODEL	CAPACITY	OUTPUT VOLTAGE	CHARGING PERIOD				EXTERNAL DC POWER SOURCE	HEIGHT (mm)
			BC-35 BC-36	BC-25U/E BC-26E BC-27	BC-16U/E BC-17 BC-18	CP-1		
BP-2	450 mAh	7.2 V	1.5 hrs.	N/A	N/A	N/A	N/A	39
BP-3	270 mAh	8.4 V	15 hrs.	15 hrs.	N/A	15 hrs.	15 hrs.	39
BP-4	AA size \times 6	7.2 V/9.0 V*	15 hrs.†	N/A	N/A	N/A	N/A	49
BP-5	450 mAh	10.8 V	1.5 hrs.	N/A	N/A	N/A	N/A	56
BP-5A	450 mAh	10.8 V	1.5 hrs.	N/A	15 hrs.	15 hrs.	15 hrs.	80
BP-8	800 mAh	8.4 V	3 hrs.	N/A	15 hrs.	15 hrs.	15 hrs.	80

*7.2 V with NiCd batteries and 9.0 V with dry cell batteries.

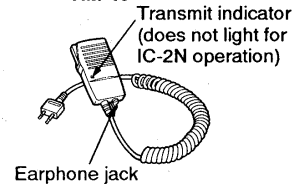
†Charge ONLY NiCd batteries. Other batteries may rupture or explode if you attempt to recharge them.

SPEAKER-MICROPHONES

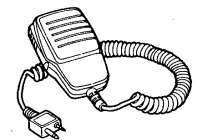
HM-9



HM-46



HM-54



OTHERS

MB-16

MOBILE BRACKET



MB-16D

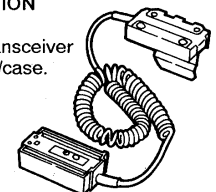
WALL BRACKET



CP-10

BATTERY SEPARATION CABLE

For separating the transceiver from the battery pack/case.



For mounting the transceiver in a vehicle or to a wall.

Count on us!

