Count on us!

$\overset{\circ}{i}$COM

INSTRUCTION MANUAL

DUAL BAND
FM TRANSCEIVER
IC-2330A

IMPORTANT

READ ALL INSTRUCTIONS carefully and completely before using the transceiver.

SAVE THIS INSTRUCTION MANUAL — This instruction manual contains important safety and operating instructions for the **IC-2330A**.

FOREWORD

Thank you for choosing this Icom product.

The **IC-2330A** is a 144 and 220 MHz dual band mobile transceiver. The **IC-2330A** is a compact, easy-to-operate, multi-function transceiver designed using Icom's state-of-the-art technology.

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CAUTIONS

NEVER connect the transceiver to an AC outlet or to a power source of more than 16 V DC. These connections will ruin the transceiver.

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

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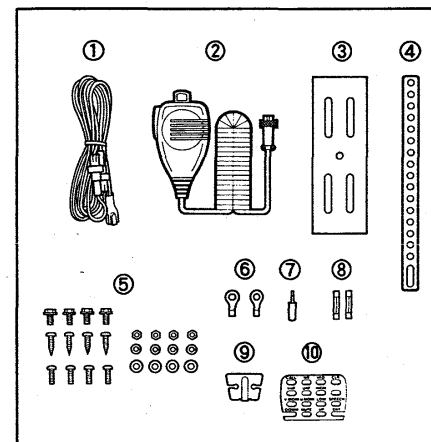
NEVER allow children to touch the transceiver.

DO NOT use or place the transceiver in areas with temperatures below −10 ℃ (+14 ℉) or over +60 ℃ (+140 ℉).

AVOID placing the transceiver in areas of direct sunlight, such as the dashboard.

BE CAREFUL! The heatsink may become hot when operating the transceiver continuously for long periods.

UNPACKING

Included accessories:	Qty.
① DC power cable (OPC-044B)	1
② Microphone (HM-56A)	1
③ Mounting bracket	1
④ Mounting support bracket	1
⑤ Mounting screws, nuts and washers	1 set
⑥ Cable lugs	2
⑦ External speaker plug	1
⑧ Fuses (15 A)	2
⑨ Microphone hanger	1
⑩ Microphone sheet for HM-56A	1

■ Front panel

144 VOLUME CONTROL [VOL] (p. 17)
Adjusts the 144 MHz band audio output level.

144 SQUELCH CONTROL [SQL] (p. 17)
Adjusts the 144 MHz band squelch threshold level.

TUNING CONTROL
Selects the operating frequency (p. 14), the memory channel (p. 28), the contents of the SET mode display (p. 12) and the scanning direction (pgs. 34, 35).

VFO/MHz SWITCH [V/MHz]
Selects VFO mode. (p. 13)

Selects the 1 MHz tuning step in VFO mode. (p. 15)

Selects the 10 MHz tuning step when pushed and held. (p. 15)

MEMORY/CALL CHANNEL SWITCH [M/CALL/PRIO]
Selects MEMORY mode or call channel. (pgs. 28, 31)

Activates the priority watch function when pushed and held. (pgs. 39, 40)

Cancels the priority watch function when the function is activated. (pgs. 39, 40)

BAND SWITCH [BAND/SUB]
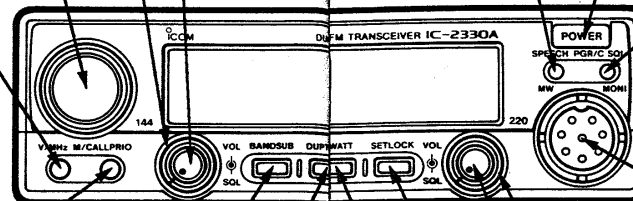Selects either 144 MHz or 220 MHz band for the MAIN band.

Activates the SUB band access function when pushed and held.

DUPLEX/TONE SWITCH [DUP/TONE]
Selects simplex, − duplex or + duplex. (p. 25)

Activates the subaudible tone encoder (p. 26); optional* pocket beep or tone squelch function (p. 48) when pushed and held.

* The UT-67 TONE SQUELCH UNIT is neccessary.

MEMORY WRITE SWITCH [SPEECH/MW]
Programs a memory channel or a call channel. (pgs. 29, 31)

Transfers the contents of a memory channel or a call channel to the VFO. (pgs. 30, 32)

Announces the operating band frequency in a synthesized voice when an optional UT-66 VOICE SYNTHESIZER UNIT is installed. (p. 22)

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

MONITOR SWITCH [PGR/C SQL/MONI]
Opens the accessing band squelch and monitors the transmit frequency when pushed and held. (pgs. 23, 25)

Activates the pager or code squelch function when an optional UT-55 DTMF ENCODER/DECODER UNIT is installed. (pgs. 42~47)

MICROPHONE CONNECTOR (p. 4)
Connects the supplied microphone or another suitable microphone.

220 SQUELCH CONTROL [SQL] (p. 17)
Adjusts the 220 MHz band squelch threshold level.

220 VOLUME CONTROL [VOL] (p. 17)
Adjusts the 220 MHz band audio output level.

SET MODE SWITCH [SET/LOCK]
Accesses SET mode and advances the SET mode display. (p. 12)

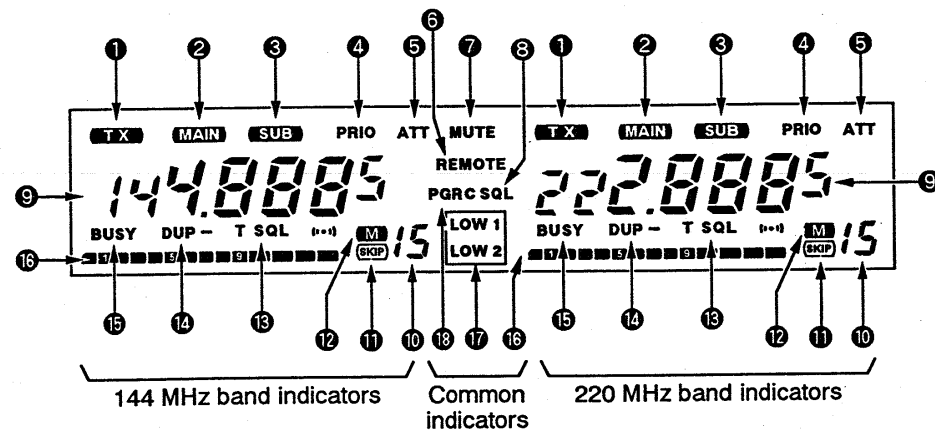Activates the lock function when pushed and held. (p. 13)

TRANSMIT POWER SWITCH [LOW/ATT]
Selects 1 of the 3 transmit output power levels. (p. 23)

Activates the RF attenuator function when pushed and held. (p. 18)

Reverses the SET mode display in SET mode. (p. 12)

■ Function display

144 MHz band indicators
Common indicators
220 MHz band indicators

❶ TRANSMIT INDICATORS (p. 24)
Appear while transmitting.

❷ MAIN BAND INDICATORS
Appear above the frequency readout of the MAIN band.

❸ SUB BAND ACCESS INDICATORS
Appear when the SUB band access function is activated. (p. 19)

Blink when optional External DTMF Remote is activated. (p. 59)

❹ PRIORITY WATCH INDICATORS
(pgs. 39, 40)
Appear when priority watch is activated.

❺ RF ATTENUATOR INDICATORS
(p. 18)
Appear when the RF attenuator is in use.

❻ REMOTE INDICATOR
Appears when optional Mic or External DTMF Remote is on standby. (p. 56)

Blinks when optional Mic or External DTMF Remote is in use. (pgs. 57, 59)

❼ MUTE INDICATOR (p. 58)
Appears when the optional AF mute function is in use. The HM-56A and the optional UT-55 are necessary.

❽ CODE SQUELCH INDICATOR
(p. 47)
Appears when the optional code squelch function is in use.

❾ FREQUENCY READOUTS
Display the operating frequencies (except during SET mode).

❿ MEMORY CHANNEL READOUTS
Display the memory channel numbers. (p. 28)
• A large "L" appears when the lock function is activated. (p. 13)
• A large "C" appears while on the call channel. (p. 31)
• A small "c" appears when VFO mode is selected from the call channel.

⓫ SKIP INDICATORS (p. 36)
Appear when the displayed memory channel is programmed as a skip channel.

⓬ MEMORY INDICATORS (p. 28)
Appear when MEMORY mode is selected.

⓭ TONE INDICATORS
"T" appears when the subaudible tone encoder is turned ON. (p. 26)

"T SQL" appears when the optional tone squelch function is used. (p. 50)

"T SQL (•••)" appears when the optional pocket beep function is in use. (p. 49)

⓮ DUPLEX INDICATORS (p. 25)
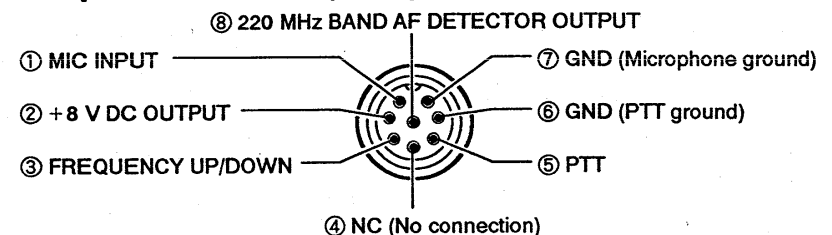"DUP –" or "DUP" appear when semi-duplex is selected for repeater operation.

⓯ BUSY INDICATORS
Appear when a signal received or when the squelch is open.

⓰ S/RF INDICATORS
Display the relative strength of a received signal. (p. 17)

Display the selected output power while transmitting. (p. 23)

⓱ LOW POWER INDICATORS (p. 23)
Appear when low power 1 or 2 is selected on the MAIN band.

⓲ PAGER INDICATOR (pgs. 45, 46)
Appears when the optional pager function is activated.
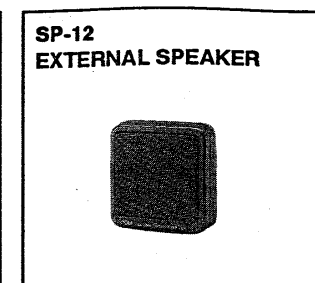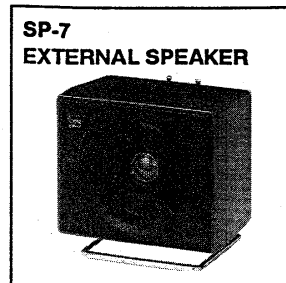
■ Microphone connector (front panel view)

⑧ 220 MHz BAND AF DETECTOR OUTPUT

① MIC INPUT
② +8 V DC OUTPUT
③ FREQUENCY UP/DOWN
④ NC (No connection)
⑤ PTT
⑥ GND (PTT ground)
⑦ GND (Microphone ground)

		144 MHz BAND	220 MHz BAND
Frequency coverage		Tx: 144~148 MHz	222~225 MHz
		Rx: 136~174 MHz*	
		* Guaranteed range is 144.00~148.00 MHz.	
Mode		FM	
Frequency stability		± 10 ppm	
Antenna impedance		50 Ω (nominal)	
Power supply requirement		13.8 V DC ± 15% (negative ground)	
Usable temperature range		−10°C ~ +60°C; +14°F ~ +140°F	
Dimensions (Projections not included)		140(W) × 40(H) × 165(D) mm 5.5(W) × 1.6(D) × 6.5(D) in	
Weight		1.25 kg; 2.8 lb	
Output power	High	45 W	25 W
	Low 2	10 W	
	Low 1	5 W	
Modulation system		Variable reactance frequency modulation	
Max. frequency deviation		± 5 kHz	
Spurious emissions		Less than −60 dB	
Microphone impedance		600 Ω	
Current drain	High	10.5 A	7.5 A
	Low 2	5.5 A	6.0 A
	Low 1	4.0 A	4.5 A
		at 13.8 V DC, typical	
Receive system		Double-conversion superheterodyne	
Intermediate frequencies	1st	17.2 MHz	21.8 MHz
	2nd	455 kHz	
Sensitivity		Less than 0.16 μV for 12 dB SINAD	
Squelch sensitivity		Less than 0.13 μV at threshold	
Selectivity		More than 15 kHz/ −6 dB Less than 30 kHz / −60 dB	
Spurious response rejection		More than 60 dB	
Audio output power		More than 2.4 W at 10% distortion with an 8 Ω load	
Audio output impedance		8 Ω	
Current drain	Rated audio	1.8 A	
	Squelched	1.2 A	
		at 13.8 V DC, typical	

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

SP-7 EXTERNAL SPEAKER

SP-10 EXTERNAL SPEAKER

SP-12 EXTERNAL SPEAKER

SM-8 DESKTOP MICROPHONE

SM-20 DESKTOP MICROPHONE

HS-15 FLEXIBLE MOBILE MICROPHONE

Used with the HS-15SB.

HM-56A HAND MICROPHONE
Has a DTMF function and 14 DTMF memory channels. Necessary for Mic DTMF Remote. Also has a 1750 Hz tone call function. Same as the supplied one.

HM-58 HAND MICROPHONE

HS-15SB SWITCHBOX
For the HS-15.

MB-27 MOBILE MOUNTING BRACKET
Same as the supplied one.

MB-34 JOINT PLATES
Used for stacking the IC-449A, IC-1201A, etc.

OPC-044B DC POWER CABLE
Same as the supplied one.

IC-PS30 DC POWER SUPPLY
13.8 V DC, 25 A.

SM-6 DESKTOP MICROPHONE

UT-55 DTMF ENCODER/DECODER UNIT
Provides pager and code squelch functions. Necessary for Mic or External DTMF Remote.

UT-66 VOICE SYNTHESIZER UNIT
Announces the operating band frequency.

UT-67 TONE SQUELCH UNIT
Provides pocket beep and tone squelch functions. Also functions as a subaudible tone encoder.