ICOM®

INSTRUCTION MANUAL

VHF TRANSCEIVER

IC-F310
IC-F320

UHF TRANSCEIVER

IC-F410
IC-F420

SmarTrunk II™ Compatible

This device complies with Part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.

Icom Inc.

IMPORTANT

READ ALL INSTRUCTIONS carefully and completely before using the transceiver.

SAVE THIS INSTRUCTION MANUAL— This instruction manual contains important operating instructions for the **IC-F310, IC-F320, IC-F410** and **IC-F420 VHF/UHF TRANSCEIVERS**.

EXPLICIT DEFINITIONS

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

CE Versions of the IC-F310/F320/F410/F420 which display "CE" on the serial number seal, comply with the essential requirements of the 89/336/EEC directive for Electromagnetic Compatibility.

CAUTIONS

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

NEVER connect the transceiver to a power source of more than 16 V DC such as a 24 V battery. This connection will ruin the transceiver.

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

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.

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

USE supplied microphone only. Other microphones have different pin assignments and may damage the transceiver.

DO NOT use or place the transceiver in areas with temperatures below –30°C or above +60°C or, in areas subject to direct sunlight, such as the dashboard.

AVOID operate the transceiver without running the vehicle's engine. The vehicle's battery will quickly run out if the transceiver is in transmission while the vehicle's engine OFF.

AVOID placing the transceiver in excessively dusty environments.

AVOID placing the transceiver against walls. This will obstruct heat dissipation.

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

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

For U.S.A. only

CAUTION: Changes or modifications to this transceiver, not expressly approved by Icom Inc., could void your authority to operate this transceiver under FCC regulations.

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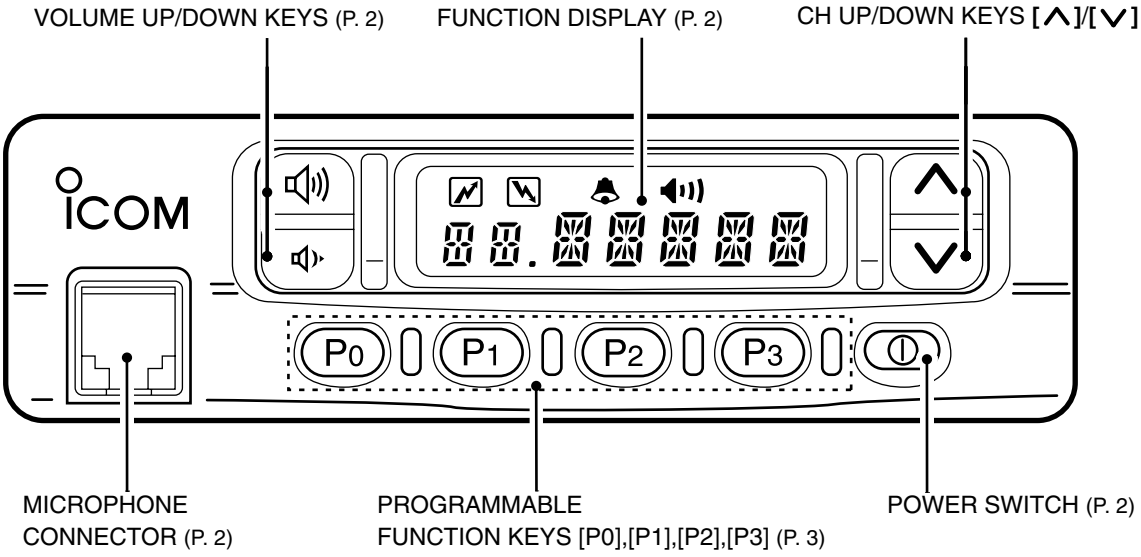
1 PANEL DESCRIPTION

■ Front panel



VOLUME UP/ DOWN KEYS
Push to adjust the audio output level.
• Minimum audio level is pre-programmed.

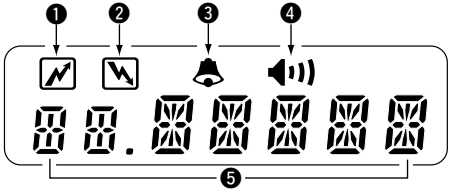
CH UP/DOWN [∧]/[∨] KEYS
•Push to select the operating channel.
•Can be programmed for one of several functions by your-dealer.

POWER SWITCH
Turns the power ON and OFF.
• The following functions are available at power ON as options:
  • Automatic scan start
  • Password prompt

MICROPHONE CONNECTOR
Connect the supplied microphone or optional DTMF microphone for SmarTrunk II™ operation here.
NEVER connect other microphones. The pin assignments may be different and the transceiver may be damaged.

MICROPHONE
The supplied microphone has a PTT switch and a hanger hook.
• The following functions are available when the microphone is on or off hook:
  • Automatic scan start when hung on.
  • Automatic priority channel selection when off.
  • Sets to 'Inaudible' condition (mute condition) when hung on.
  • Sets to 'Audible' condition (unmute condition) when off.

■ Function display



❶ TRANSMIT INDICATOR
•Appears while transmitting or sending a 5-tone code.
•When internal temperature increases to a specific level, the transmit indicator blinks to indicate that the power down circuit has been activated.

❷ BUSY INDICATOR
Appears while the channel is busy.

❸ BELL INDICATOR
Appears or blinks when the specified 5-tone call is received.

❹ AUDIBLE INDICATOR
Appears when the channel is in the 'Audible' condition (unmute condition).

❺ ALPHANUMERIC DISPLAY
NOTE: When the alphanumeric display blinks transmitting becomes impossible. In this case check that the antenna is not mis-matched or that DC battery voltage has not dropped below 8 V.

■ Programmable function keys

The following functions can be assigned to **[P0], [P1], [P2], [P3], [∧]** and **[∨]** programmable function keys.
Consult your Icom Dealer or System operator for details concerning your transceivers programming.
In the following explanations, programmable function names are bracketed, the specifc switch used to activate the function depends on programming.

CH UP
CH DN

CH UP AND DOWN KEYS

- Select an operating channel.
- Select a transmit code channel after pushing the [**TX CH**] key.
- Select a DTMF channel after pushing the [**DTMF**] key.
- Select a scan group after pushing and holding the [**SCAN**] key.

CH 1
CH 2
CH 3
CH 4

OPERATING CHANNEL KEYS

Select an operating channel directly.

PRI A
PRI B

PRIORITY CHANNEL KEYS

Select priority A or priority B channel with each push.

BANK

BANK KEY

Select a bank (a group of 16 channels).

- When the optional UT-105 is installed, push one or more times to select a channel bank for conventional channels or SmarTrunk II™ channels.

SCAN

SCAN START/STOP KEY

Push this key to start scanning; and push again to stop.

NOTE: Place the microphone on hook to start scanning.
Take the microphone off hook to stop scanning.

Push and hold this key to indicate the scan group, then push to select the desired group.

TAG

SCAN TAG KEY

Adds or deletes the selected channel to the scan group.

BEEP

BEEP

Push to turn the beep tones ON/OFF.

ABOUT CE

CE Versions of the IC-F410/S which display the "CE" symbol on the serial number seal, comply with the essential requirements of the European Radio and Telecommunication Terminal Directive 1999/5/EC.

This warning symbol indicates that this equipment operates in non-harmonised frequency bands and/or may be subject to licensing conditions in the country of use. Be sure to check that you have the correct version of this radio or the correct programming of this radio, to comply with national licensing requirement.

<Intended Country of Use>

☐ GER	☐ NED	☐ ITA
☐ AUT	☐ BEL	☐ GRE
☐ GBR	☐ LUX	☐ SWE
☐ IRL	☐ ESP	☐ DEN
☐ FRA	☐ POR	☐ FIN

INSTALLATION NOTES

The installation of this equipment should be made in such a manner as to respect the EC recommended electromagnetic field exposure limits (1999/519/EC).

The maximum RF power available from this device is 25 watts. For vehicle installations it is recommended that the antenna be positioned on the roof, centrally if possible. The roof will permit the antenna to operate more efficiently as well as screen the occupants from excessive electromagnetic fields. Boot mount or on-glass antenna are best avoided. The transmitter should neither be continuously operated for long periods if any person is within a distance of 2 metres of the antenna, nor operated at all if any person is touching the antenna.

In all cases any possible risk depends on the transmitter being activated for long periods. (actual recommendation limits are specified as an average of 6 minutes) Normally the transmitter is not active for long periods of time. Some radio licenses will require that a timer circuit automatically cuts the transmitter after 1–2 minutes etc.

Similarly some types of transmitter, SSB, CW, AM, etc. have a lower 'average' output power and the perceived risk is even lower.