

Icom IC-F6021

Icom IC-F6021 Mobile Radio User Manual

Model: IC-F6021

1. INTRODUCTION

The Icom IC-F6021 is a robust mobile UHF transceiver designed for reliable communication in various professional environments, including businesses and emergency services. This radio operates within the 400-470 MHz frequency range with a powerful 45 watts output. It features 128 channels across 8 memory banks, a 4-watt front-mounted speaker, and 6 customizable programmable buttons. The IC-F6021 is built to MIL standards with a heavy-duty aluminum case, ensuring durability. It also includes built-in 2-Tone, 5-Tone, CTCSS, and DTCS capabilities for advanced signaling.

1.1. What's in the Box

- IC-F6021 Mobile Transceiver Unit
- HM-152 Handheld Microphone
- Microphone Hanger Kit
- DC Power Cable
- Mounting Kit and Hardware
- Key Assign Stickers
- User Manual



Image 1.1: The Icom IC-F6021 Mobile Radio, showing the main unit, handheld microphone, and mounting accessories.

2. SAFETY INFORMATION

Read all instructions carefully before operating the radio. Failure to follow these guidelines may result in injury, equipment damage, or voiding of the warranty.

- **Power Supply:** Connect the radio only to a 12V DC power source. Ensure correct polarity to prevent damage.
- **Antenna:** An external antenna (not included) is required for operation. Do not transmit without a properly connected antenna.
- **Mounting:** Securely mount the radio using the provided kit to prevent it from becoming a projectile during sudden stops or impacts.
- **Heat:** Do not operate the radio in extremely hot environments or block its ventilation.
- **Interference:** Be aware that radio transmissions can interfere with other electronic devices.
- **Servicing:** Refer all servicing to qualified Icom technicians. Unauthorized modifications can be dangerous and will void the warranty.

3. PRODUCT OVERVIEW

3.1. Key Features

- UHF Frequency Range: 400-470 MHz
- Output Power: 45 Watts
- Channel Capacity: 128 channels, 8 memory banks
- Speaker: 4-watt front-mounted speaker
- Programmable Buttons: 6 customizable buttons
- Signaling: Built-in 2-Tone, 5-Tone, CTCSS, and DTCS capabilities
- Durability: Heavy-duty aluminum case, rated to MIL standards
- Compatibility: Designed as a companion radio for IC-F4021 two-way radios

3.2. Controls and Indicators

The IC-F6021 features an intuitive layout for ease of use. Key controls typically include a power switch, volume knob, channel selector, and several programmable function buttons. The front panel also houses

the speaker and a display for channel information. The HM-152 microphone includes a PTT (Push-To-Talk) button and may have additional function buttons depending on programming.

4. SETUP

4.1. Mounting the Radio

1. Select a secure, flat location in your vehicle or desired installation area that allows for good ventilation and easy access to controls.
2. Use the provided mounting bracket as a template to mark drilling locations.
3. Drill pilot holes and secure the mounting bracket using the supplied screws and hardware.
4. Slide the radio into the mounting bracket and secure it with the provided thumb screws or locking bolts.

4.2. Power Connection

1. Connect the red wire of the DC power cable to the positive (+) terminal of your 12V DC power source (e.g., vehicle battery).
2. Connect the black wire of the DC power cable to the negative (-) terminal of your 12V DC power source or a good chassis ground.
3. Plug the power cable connector into the DC IN jack on the rear of the radio.

4.3. Antenna Connection

An external UHF antenna (not included) is required for proper operation. Ensure the antenna is tuned for the 400-470 MHz frequency range.

1. Connect the coaxial cable from your external antenna to the antenna connector (typically a SO-239 type) on the rear of the radio.
2. Ensure the connection is tight but do not overtighten.

4.4. Microphone Connection

1. Plug the HM-152 handheld microphone connector into the microphone jack on the front panel of the radio.
2. Secure the microphone hanger in a convenient location for easy access.

5. OPERATING INSTRUCTIONS

5.1. Powering On/Off

Press and hold the power button (usually marked with a power symbol) on the radio's front panel until the display illuminates. To power off, press and hold the same button until the display turns off.

5.2. Adjusting Volume

Rotate the volume knob (typically labeled 'VOL' or with a speaker icon) clockwise to increase the audio output and counter-clockwise to decrease it. Adjust to a comfortable listening level.

5.3. Channel Selection

Use the channel selector knob or the UP/DOWN buttons (if available) to cycle through the programmed channels. The selected channel number or name will be displayed on the screen.

5.4. Transmitting and Receiving

- **Receiving:** Ensure the radio is powered on and the volume is adjusted. The radio will automatically receive signals on the selected channel.
- **Transmitting:** Before transmitting, listen to ensure the channel is clear. Press and hold the PTT (Push-To-Talk) button on the microphone. Speak clearly into the microphone. Release the PTT button to return to receive mode.

5.5. Using Programmable Buttons

The IC-F6021 features 6 programmable buttons. Their functions are set during programming and can include features like scan, monitor, high/low power, or direct access to specific channels. Refer to your radio's specific programming configuration for their assigned functions.

5.6. Signaling Functions (2-Tone, 5-Tone, CTCSS, DTCS)

The radio supports various signaling formats. When a channel is programmed with 2-Tone, 5-Tone, CTCSS (Continuous Tone-Coded Squelch System), or DTCS (Digital Tone-Coded Squelch), the radio will only open its squelch and allow audio through when it receives a signal containing the correct tone or code. This helps to filter out unwanted communications. Up to ten 2-tone and eight 5-tone codes can be decoded per channel.

6. MAINTENANCE

6.1. Cleaning

- Wipe the radio's exterior with a soft, dry cloth.
- For stubborn dirt, use a cloth lightly dampened with water and a mild detergent, then wipe dry.
- Do not use strong solvents, alcohol, or abrasive cleaners, as these can damage the casing and labels.

6.2. General Care

- Keep the radio away from direct sunlight and extreme temperatures.
- Avoid exposing the radio to excessive dust or moisture. While the radio is water-resistant, it is not submersible.
- Ensure all connectors (power, antenna, microphone) are clean and securely fastened.

7. TROUBLESHOOTING

If you experience issues with your IC-F6021, refer to the following common troubleshooting steps:

- **Radio does not power on:** Check the power cable connection to both the radio and the power source. Verify the 12V DC power source is active and the fuse in the power cable is intact.
- **No audio from speaker:** Ensure the volume knob is turned up. Check if the squelch is set too high (if adjustable). Verify the microphone is properly connected.
- **Cannot transmit or poor transmission:** Check the antenna connection. Ensure the PTT button is fully pressed. Verify the selected channel is configured for transmission.
- **Poor reception:** Check the antenna connection and its condition. Ensure the antenna is suitable for the UHF band. Verify the squelch level is not set too high.
- **Intermittent operation:** Check all cable connections for looseness or damage. Ensure the radio has adequate ventilation to prevent overheating.

If the problem persists after attempting these steps, contact Icom customer support or an authorized service center.

8. SPECIFICATIONS

Feature	Specification
Brand	Icom
Model Number	IC 6021 (Mfr Part Number: ICOM F6021 51)
Frequency Range	400-470 MHz
Number of Channels	128
Output Power	45W
Speaker Output	4 Watts (front mount)
Signaling	2-Tone, 5-Tone, CTCSS, DTCS
Case Material	Heavy Duty Aluminum
MIL Standard Rating	810F
Water Resistance Level	Water Resistant
Included Components	HM-152 handheld microphone, mic hanger kit, power cable, mounting kit and hardware, key assign stickers, user manual
Compatible Devices	Icom IC-F4021 two-way radios, external antennas
Color	Black

9. WARRANTY AND SUPPORT

The Icom IC-F6021 Mobile Radio is covered by a manufacturer's warranty. For specific warranty terms and conditions, please refer to the warranty card included with your product or visit the official Icom website. For technical support, service, or inquiries regarding parts, please contact Icom customer service directly. Ensure you have your model number and serial number available when contacting support.