ICOM INSTRUCTIONS

VHF DIGITAL TRANSCEIVER
IC-F5330D
UHF DIGITAL TRANSCEIVER
IC-F6330D

Thank you for choosing this Icom product.
READ ALL INSTRUCTIONS carefully and completely before using this product.

Icom is not responsible for the destruction, damage to, or performance of any Icom or non-Icom equipment, if the malfunction is because of:
- Force majeure, including, but not limited to, fires, earthquakes, storms, floods, lightning, other natural disasters, disturbances, riots, war, or radioactive contamination.
- The use of Icom transceivers with any equipment that is not manufactured or approved by Icom.

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Icom Inc.
1-1-32 Kamiminami, Hirano-ku, Osaka 547-0003, Japan
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IMPORTANT

SAVE THESE INSTRUCTIONS— This instruction sheet contains basic operating instructions for the transceiver.

This instruction sheet includes some functions that are usable only when your dealer presets them. The transceiver may have other functions and operations that are not described in this instruction sheet. Ask your dealer for preset function details.

EXPLICIT DEFINITIONS

WORD	DEFINITION
⚠ **DANGER!**	Personal death, serious injury or an explosion may occur.
⚠ **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.

PRECAUTIONS

⚠ **DANGER HIGH RF VOLTAGE! NEVER** touch an antenna or antenna connector while transmitting. This could cause an electrical shock or burn.

⚠ **DANGER! NEVER** operate the transceiver near unshielded electrical blasting caps or in an explosive atmosphere. This could cause an explosion and death.

⚠ **DANGER! NEVER** place the transceiver where air bag deployment may be obstructed during mobile operations.

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

⚠ **WARNING! NEVER** operate the transceiver during a lightning storm. It may result in an electric shock, cause a fire or damage the transceiver. Always disconnect the power source and antenna before a storm.

⚠ **WARNING! NEVER** let metal, wire, or other objects contact the transceiver inside or make incorrect contact with connectors on the rear panel. This could cause an electric shock or damage the transceiver.

⚠ **WARNING! NEVER** place the transceiver where the vehicle's normal operation may be hindered or where it could cause bodily injury.

⚠ **WARNING! NEVER** operate the transceiver if you notice an abnormal odor, sound, or smoke. Immediately turn OFF the power and remove the DC power cable. Contact your Icom dealer or distributor for advice.

⚠ **WARNING! NEVER** put the transceiver in an unstable place where the transceiver may suddenly move or fall. This could cause an injury or damage the transceiver.

CAUTION: DO NOT connect the transceiver to a power source of more than 16 V DC such as a 24 V battery. This could damage the transceiver.

CAUTION: DO NOT 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.

CAUTION: DO NOT expose the transceiver to rain, snow or any liquids. They could damage the transceiver and microphone.

CAUTION: DO NOT use the non-specified microphone. Other microphones have different pin assignments and may damage the transceiver.

CAUTION: DO NOT use the transceiver in areas with temperatures below –30°C (–22°F) or above +60°C (+140°F), or in areas subject to direct sunlight, such as the dashboard.

CAUTION: DO NOT place or leave the transceiver in excessively dusty environments. This could damage the transceiver.

CAUTION: DO NOT use harsh solvents such as Benzine or alcohol when cleaning. This could damage the equipment surfaces. If the surface becomes dusty or dirty, wipe it clean with a soft, dry cloth.

CAUTION: DO NOT reverse the DC power cable polarity. This could damage the transceiver.

NEVER place the transceiver in an insecure place to avoid inadvertent use by unauthorized persons.

NEVER operate the transceiver without running the vehicle's engine. The vehicle's battery will quickly run out when the transceiver transmits while the vehicle's engine is OFF.

BE CAREFUL! The transceiver may become hot after continuously transmitting for long periods of time.

For the European versions:

CAUTION: Hot surfaces. **DO NOT** touch the transceiver's surface after continuously transmitting for long periods of time. The transceiver's chassis radiates heat, and it will become hot to protect the power amplifier unit from overheating. Touching it may cause a burn.

About E-marking: Detailed installation notes for Icom mobile transceivers to be fitted into vehicles are available. Please contact your Icom dealer or distributor.

ABOUT GPS/GLONASS RECEIVER

DO NOT install the GPS antenna near the transceiver or the antenna.
A GPS or GLONASS receiver may not work if the transceiver transmits or receives in the frequency ranges as shown below.

For the IC-F5330D (Unit: MHz)

	GPS Receiver	GLONASS Receiver
Transmit	142.850 ~ 142.860	145.275 ~ 145.945
	157.135 ~ 157.145	159.805 ~ 160.540
Receive	146.845 ~ 147.110	149.745 ~ 150.790

For the IC-F6330D (Unit: MHz)

	GPS Receiver	GLONASS Receiver
Transmit		400.000 ~ 401.343
Receive	443.545 ~ 444.065	449.335 ~ 451.425

VOICE CODING TECHNOLOGY

The AMBE+2™ voice coding Technology embodied in this product is protected by intellectual property rights including patent rights, copyrights and trade secrets of Digital Voice Systems, Inc. This voice coding Technology is licensed solely for use within this Communications Equipment.
The user of this Technology is explicitly prohibited from attempting to extract, remove, decompile, reverse engineer, or disassemble the Object Code, or in any other way convert the Object Code into a human-readable form.
U.S. Patent Nos.
#8,359,197, #7,970,606, and #6,912,495 B2.

ABOUT CE AND DOC

CE Hereby, Icom Inc. declares that the versions of IC-F5330D and IC-F6330D which have the "CE" symbol on the product, comply with the essential requirements of the Radio Equipment Directive, 2014/53/EU, and the restriction of the use of certain hazardous substances in electrical and electronic equipment Directive, 2011/65/EU. The full text of the EU declaration of conformity is available at the following Internet address:
https://www.icomjapan.com/support/

DISPOSAL

The crossed-out wheeled-bin symbol on your product, literature, or packaging reminds you that in the European Union, all electrical and electronic products, batteries, and accumulators (rechargeable batteries) must be taken to designated collection locations at the end of their working life. Do not dispose of these products as unsorted municipal waste. Dispose of them according to the laws in your area.

SAFETY TRAINING INFORMATION

WARNING

Your Icom radio generates RF electromagnetic energy during transmit mode. This radio is designed for and classified as "Occupational Use Only," meaning it must be used only during the course of employment by individuals aware of the hazards, and the ways to minimize such hazards. This radio is NOT intended for use by the "General Population" in an uncontrolled environment.

For compliance with FCC and IC RF Exposure Requirements, the transmitter antenna installation shall comply with the following three conditions:

1. The transmitter antenna gain shall not exceed 0 dBi.
2. IC-F5330D:
   The antenna is required to be located outside of a vehicle and kept at a distance of 57 centimeters (23 inches) or more between the transmitting antenna of this device and any persons during operation. For small vehicle as worst case, the antenna shall be located on the roof top at any place on the center line along the vehicle in order to achieve 57 centimeters (23 inches) separation distance. In order to ensure this distance is met, the installation of the antenna must be mounted at least 57 centimeters (23 inches) away from the nearest edge of the vehicle in order to protect against exposure to bystanders.
   IC-F6330D:
   The antenna is required to be located outside of a vehicle and kept at a distance of 41 centimeters (17 inches) or more between the transmitting antenna of this device and any persons during operation. For small vehicle as worst case, the antenna shall be located on the roof top at any place on the center line along the vehicle in order to achieve 41 centimeters (17 inches) separation distance. In order to ensure this distance is met, the installation of the antenna must be mounted at least 41 centimeters (17 inches) away from the nearest edge of the vehicle in order to protect against exposure to bystanders.
3. IC-F5330D:
   Transmit only when people outside the vehicle are at least the recommended minimum distance of 136 centimeters (54 inches) away from the properly installed antenna. This separation distance will ensure that there is sufficient distance from a properly installed externally-mounted antenna to satisfy the RF exposure requirements in the applicable RF exposure compliance standards.
   IC-F6330D:
   Transmit only when people outside the vehicle are at least the recommended minimum distance of 117 centimeters (47 inches) away from the properly installed antenna. This separation distance will ensure that there is sufficient distance from a properly installed externally-mounted antenna to satisfy the RF exposure requirements in the applicable RF exposure compliance standards.

CAUTION

To ensure that your exposure to RF electromagnetic energy is within the FCC and IC allowable limits for occupational use, always adhere to the following guidelines:

- **DO NOT** operate the radio without a proper antenna attached, as this may damage the radio and may also cause you to exceed FCC and IC RF exposure limits. A proper antenna is the antenna supplied with this radio by the manufacturer or an antenna specifically authorized by the manufacturer for use with this radio.
- **DO NOT** transmit for more than 50% of total radio use time ("50% duty cycle"). Transmitting more than 50% of the time can cause FCC and IC RF exposure compliance requirements to be exceeded. The radio is transmitting when the status indicator lights red. You can cause the radio to transmit by pressing the [PTT] switch.

Electromagnetic Interference/Compatibility
During transmissions, your Icom radio generates RF energy that can possibly cause interference with other devices or systems. To avoid such interference, turn off the radio in areas where signs are posted to do so. DO NOT operate the transmitter in areas that are sensitive to electromagnetic radiation such as hospitals, aircraft, and blasting sites.

FCC INFORMATION

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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

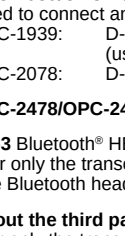
CAUTION: Changes or modifications to this transceiver, not expressly approved by Icom Inc., could void your authority to operate this transceiver under FCC regulations.

Internal Bluetooth unit information:
(For only the transceiver with the Bluetooth function)

FCC ID:	AFJ387300
IC:	202D-387300

SUPPLIED ACCESSORIES

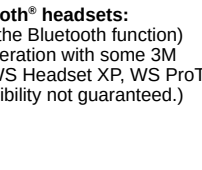
PoE compatible Microphone (Self grounding type)



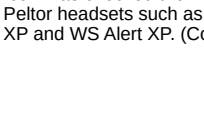
Microphone hanger and screw (4×16 mm)



DC power cable



Mounting bracket



Bracket bolts (M4×8 mm)

Mounting screws (M5×12 mm)

Self-tapping screws (5×20 mm)

Flat washers (M5)

Spring washers (M5)

Nuts (M5)

NOTE: Some accessories are not supplied, or the shape is different, depending on the transceiver version.

OPTIONS

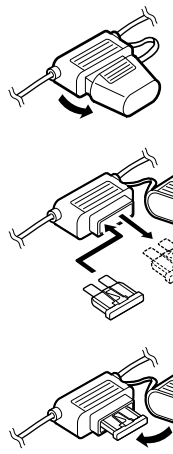
- **SP-30/SP-35/SP-35L** EXTERNAL SPEAKERS
  Input impedance: 4 Ω
  SP-35/SP-35L: Rated input 5 W, Maximum input 7 W
  SP-30: Rated input 20 W, Maximum input 30 W
- **OPC-1939/OPC-2078** ACC CABLES
  Used to connect an external device.
  OPC-1939: D-sub 15-pin, an external level converter (user supplied) is required.
  OPC-2078: D-sub 25-pin, built-in level converter
- **OPC-2478/OPC-2479** DC POWER CABLES
- **VS-3** Bluetooth® HEADSET
  (For only the transceiver with the Bluetooth function)
  The Bluetooth headset with a [PTT] switch.
- **About the third party Bluetooth® headsets:**
  (For only the transceiver with the Bluetooth function)
  Icom has checked the PTT operation with some 3M Peltor headsets such as the WS Headset XP, WS ProTac XP and WS Alert XP. (Compatibility not guaranteed.)

REPLACING FUSES

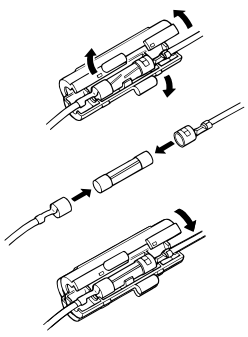
Fuses are installed in the supplied DC power cable. If a fuse blows, track down the source of the problem, repair it, and replace the damaged fuse with a new rated one.
ⓘ The shape of fuses and its cases are different, depending on the supplied DC power cable.
ⓘ Fuse rating: 32 V, 20 A for the OPC-2478
250 V, 10 A for the OPC-2479

NOTE: Use only specified fuses (10 A or 20 A).
25 W transceiver: 10 A, 45 W or 50 W transceivers: 20 A

OPC-2478



OPC-2479



Fuse Coding explanation:

OPC-2478

Fuse Coding:	FUSE 32 V 20 A
Fuse Voltage Rating:	32 Volts
Fuse Current Rating:	20 Amperes

OPC-2479

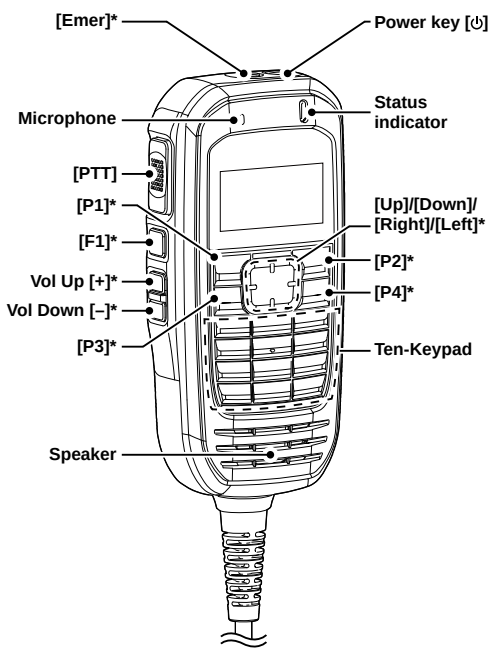
Fuse Coding:	FUSE 250 V 10 A
Fuse Voltage Rating:	250 Volts
Fuse Current Rating:	10 Amperes

ANTENNA

A key element in the performance of any communication system is the antenna. Contact your dealer for information regarding antennas and how to install them.

PANEL DESCRIPTION

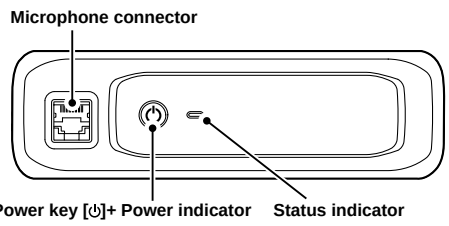
◇ Microphone



*The assigned function may differ, depending on the presetting. Ask your dealer or the transceiver's administrator for details.

Status indicator:
Lights red: Transmitting
Lights green: Receiving or squelch is open.

◇ Main unit

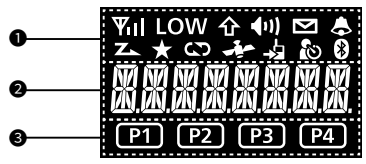


Microphone connector:
PoE output voltage: 54 V
PoE output current: 0.6 A

Power indicator:
Lights orange: Power ON
Lights green: Connected with the microphone.
Lights red: Disconnected from the microphone.

Status indicator:
Lights red: Transmitting
Lights green: Receiving or squelch is open.

FUNCTION DISPLAY



❶ ICON AREA
Displays the icons, as shown below.

	Displays the relative receive signal strength level.
LOW	Displayed when the low output power is selected.
	Displayed when the Shift function is ON. The user can use a Dealer Assignable key's secondary function in the Shift mode. Ask your dealer for details.
	Displayed when the channel is in the audible (unmuted) mode.
	Blinks after messages (Message or Status Message) have been received.
	Displayed when a matching signal is received, depending on the presetting.
	(For only the transceiver with the Bluetooth function) • Blinks when the Bluetooth function is ON. • Displayed when the transceiver is paired with a Bluetooth device.
	• Blinks while scanning. • Displayed when a scan is paused.
	Displayed when the channel is selected as a scan target channel.
	• Displayed when the Encryption function is ON. • Blinks when decoding an encrypted signal.
	• Displayed when valid position data is received. • Blinks when searching for satellites.
	Displayed when the Talk Around function is ON.
	Displayed when the Lone Worker function is ON.

❷ ALPHANUMERIC READOUT
Displays messages such as channel text.

❸ DEALER ASSIGNABLE KEY ICONS
Displayed while the function assigned to [P1], [P2], [P3], or [P4] is operating.
ⓘ May not be displayed, depending on the assigned function.

BASIC OPERATION

◇ Turning ON the transceiver

- Hold down [⏻] for more than 2 seconds until the Status indicator or Power indicator lights orange.

NOTE: Entering the password may be required to turn ON the transceiver, depending on the presetting.
Ask your dealer or the transceiver's administrator for details.

◇ Receiving

1. Push [Up] or [Down] to select a channel.
2. When a call is received, the Status indicator lights green.
   ⓘ Push [+] or [–] to adjust the audio output level to a comfortable listening level.

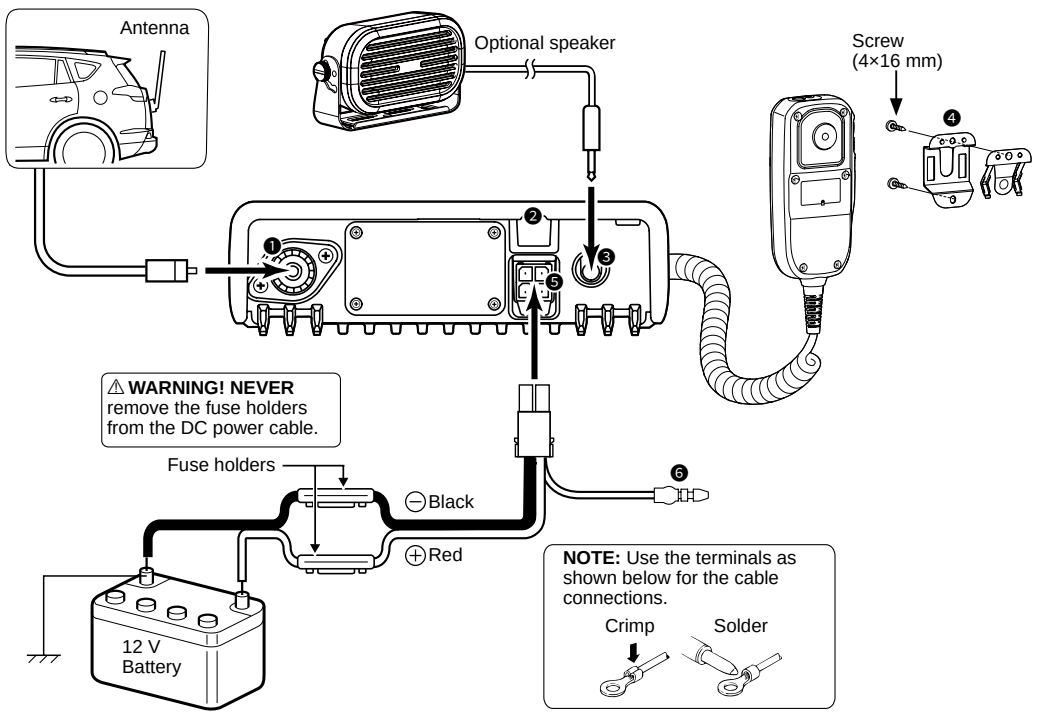
◇ Transmitting

CAUTION: DO NOT transmit without an antenna.

1. Wait until the channel is clear to avoid interference.
2. While holding down [PTT], speak at your normal voice level.
3. Release [PTT] to receive.

IMPORTANT:
To maximize the readability of your signal:
1. After pushing [PTT], pause briefly before you start speaking.
2. Hold the microphone 5 ~ 10 cm (2 ~ 4 inches) from your mouth, then speak at your normal voice level.

CONNECTIONS



❶ ANTENNA CONNECTOR
Connect an antenna. Contact your dealer about antenna selection and placement.

❷ ACC CABLE CONNECTOR
Attach an optional ACC cable to connect an external device through D-Sub 15 pin or 25 pin cable. Contact your dealer about the cable attachment.

❸ EXTERNAL SPEAKER JACK
Connect a 4 ~ 8 Ω external speaker.

❹ MICROPHONE HANGER
The microphone ON/OFF hook function is usable without the vehicle's ground.

❺ DC POWER CONNECTOR
Connect a 12 V DC battery. Pay attention to polarities.

CAUTION: DO NOT connect to a 24 V battery. This will damage the transceiver.

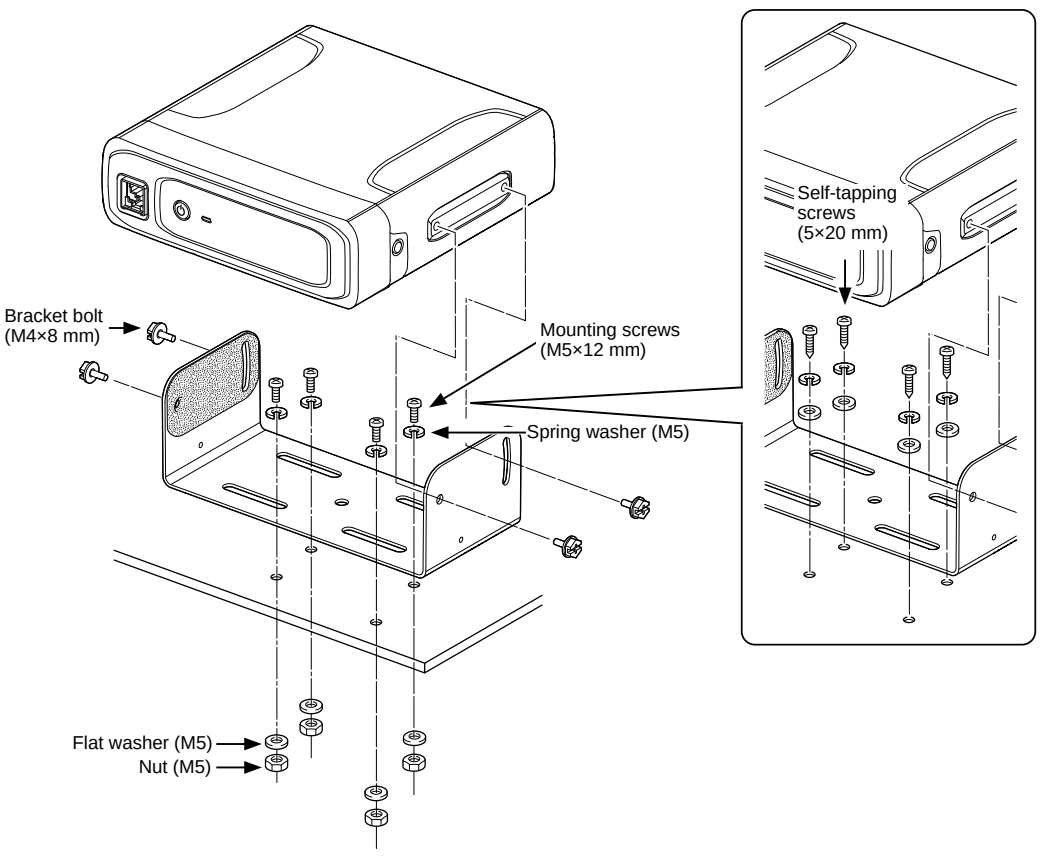
❻ IGNITION LEAD
Connects to an ignition line.

MOUNTING THE TRANSCEIVER

Mount the transceiver on a flat surface using the mounting bracket supplied with your transceiver.

1. Drill 4 holes on a flat surface where you want to install the mounting bracket.
   ⓘ When using the supplied nuts: Approximately 5.5 ~ 6 mm (d)
   ⓘ When using the supplied self-tapping screws: Approximately 2 ~ 3 mm (d)
2. Attach the mounting bracket on the flat surface using the supplied screws, nuts, and washers.
3. Attach the transceiver to the mounting bracket using the supplied bracket bolts.

Mounting example:



TECHNICAL INFORMATION

IC-F5330D VHF Digital transceiver:

Frequency Range	Output Power
136 – 174 MHz	25 W

• Channel spacing: 6.25 kHz*, 12.5 kHz, 20 kHz, 25 kHz

*For only the Digital mode

TECHNICAL INFORMATION

IC-F6330D UHF Digital transceiver:

Frequency Range	Output Power
400 – 520 MHz	25 W

• Channel spacing: 6.25 kHz*, 12.5 kHz, 20 kHz, 25 kHz

*For only the Digital mode