

## CHANNEL EXTENSION MODULES

# UR-FR5300 UR-FR6300

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

If you are installing this product into the IC-FR5300/IC-FR6300, refer to their instruction manual for installation details.

## EXPLICIT DEFINITIONS

WORD	DEFINITION
<b>WARNING!</b>	Personal injury, fire hazard or electric shock may occur.
<b>CAUTION</b>	Equipment damage may occur.
<b>NOTE</b>	If disregarded, inconvenience only. No risk of personal injury, fire or electric shock.

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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## FCC INFORMATION

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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

## VOICE CODING TECHNOLOGY

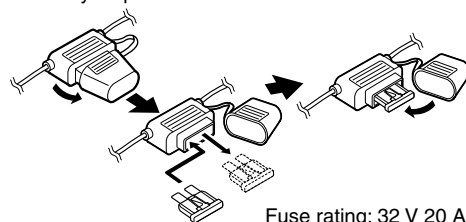
The AMBE+2™ voice coding Technology embodied in this product is protected by intellectual property rights including patent rights, copyrights and trade secrets of Digital Voice Systems, Inc. This voice coding Technology is licensed solely for use within this Communications Equipment. The user of this 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. #8,595,002, #8,359,197, #8,315,860, #8,200,497, #7,970,606, and #6,912,495 B2.

## REPLACING FUSE

If a fuse blows, or the repeater stops functioning, find the source of the problem, repair it, and then replace the damaged fuse with a new rated one.

**CAUTION: DO NOT** replace the fuse with the DC power cable connected to the power source. Disconnect the cable to prevent electric shock and/or equipment damage.

**USE** only a specified fuse.



Fuse rating: 32 V 20 A

## PRECAUTIONS

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

**WARNING HIGH RF VOLTAGE! NEVER** install the antenna at any place that person easily touch the antenna while transmitting. This could cause an electrical shock or burn.

**WARNING! NEVER** apply AC power to the DC power receptacle on the repeater rear panel. This could cause a fire or damage the repeater.

**WARNING! NEVER** apply more than 16 V DC to the DC power receptacle on the repeater rear panel. This could cause a fire or damage the repeater.

**WARNING! NEVER** remove the fuse holder on the DC power receptacle on the repeater rear panel. Excessive current caused by a short could cause a fire or damage the repeater.

**WARNING! NEVER** reverse the DC power cable polarity. This could cause a fire or damage the repeater.

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

**WARNING! NEVER** operate or touch the repeater with wet hands. This could cause an electric shock or damage to the repeater.

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

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

**CAUTION: DO NOT** expose the repeater to rain, snow or any liquids. They could damage the repeater.

**CAUTION: DO NOT** use or leave the repeater in areas with temperatures below -25°C (-13°F) or above +55°C (+131°F); European or Australian versions, below -30°C (-22°F) or above +60°C (+140°F); other versions. Be aware that temperatures can exceed 80°C (+176°F), resulting in permanent damage to the repeater if left there for extended periods.

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

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

**CAUTION: DO NOT** put anything on top of the repeater. This will obstruct heat dissipation.

**CAUTION: DO NOT** use non-Icom microphones. Other manufacturer's microphones may have different pin assignments, and could damage the connector and/or the repeater.

**BE CAREFUL!** The heatsink will become hot when continuously operating the repeater for long periods of time.

**NEVER** leave the repeater in an insecure place to avoid use by unauthorized persons.

## For European versions



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

## ABOUT CE AND DOC



Hereby, Icom Inc. declares that the versions of UR-FR5300 and UR-FR6300 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

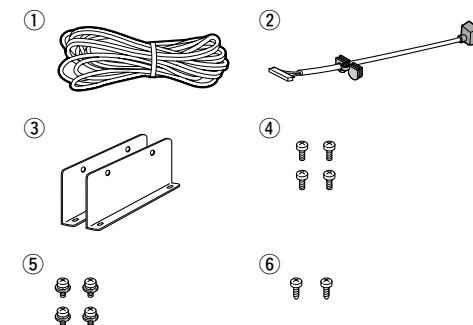


The crossed-out wheeled-bin symbol on your product, literature, or packaging reminds you that in the European Union, all electrical and electronic products, batteries, and accumulators (rechargeable batteries) must be taken to designated collection locations at the end of their working life. Do not dispose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

## SUPPLIED ACCESSORIES

① DC power cable .....	1
② Control cable .....	1
③ Angles .....	2
④ Screws (M4 × 8 mm) .....	4
⑤ Set screws (M3 × 6 mm) .....	4
⑥ Tapping screws (M3 × 8 mm) .....	2

1 mm ≈ 1/32 inch



## SAFETY TRAINING INFORMATION



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 two conditions:

- The transmitter antenna gain shall not exceed 0 dBi.
- UR-FR5300:
  - Transmit only when people are at least the recommended minimum distance of 60 centimeters 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.
- UR-FR6300:
  - Transmit only when people are at least the recommended minimum distance of 50 centimeters 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.



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 "TX 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.

## POWER SUPPLY CONNECTION

Confirm the repeater is OFF before connecting the DC power cable.

**⚠ WARNING! NEVER** apply more than 16 V DC to the DC power receptacle on the repeater rear panel. This could cause a fire or damage the repeater.

## FREQUENCY AND TX POWER

### UR-FR5300 VHF Digital Repeater

Version	Frequency Range	Output Power
USA	136 – 174 MHz	50 W
EXP-01/EXP-03		
CAN		
AUS		
EXP-02	25 W	
EUR		

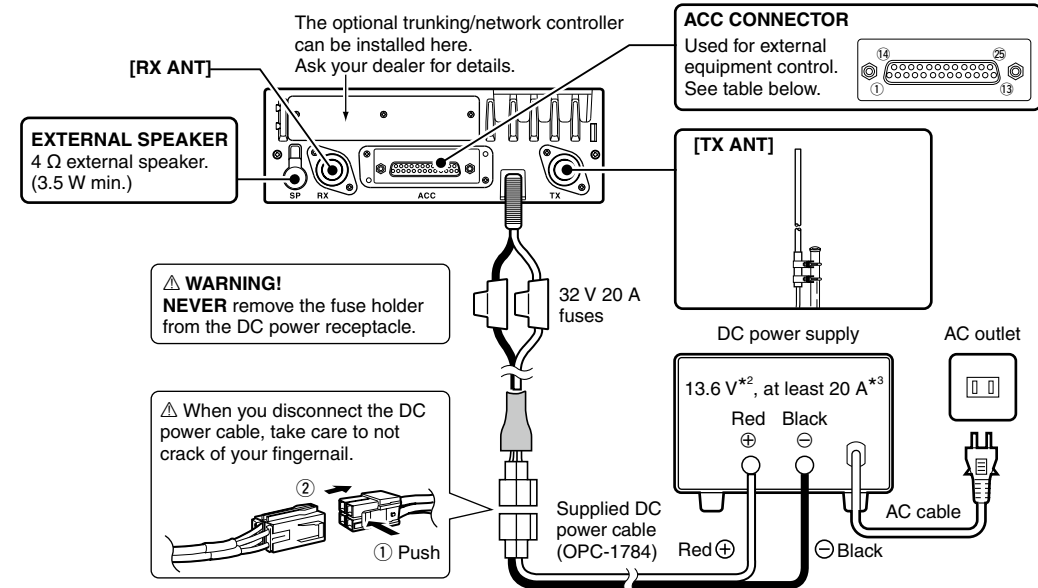
- Channel spacing
  - USA: 7.5 kHz, 15 kHz
  - EXP-01/03, CAN, AUS: 6.25 kHz, 12.5 kHz, 25 kHz
  - EXP-02, EUR: 6.25 kHz, 12.5 kHz, 20 kHz, 25 kHz

### UR-FR6300 UHF Digital Repeater

Version	Frequency Range	Output Power
USA-01/USA-04	400 – 470 MHz	50 W
EXP-01/EXP-06		
CAN		
EXP-03/EXP-08	330 – 400 MHz	25 W
USA-03/USA-06	450 – 512 MHz	
EXP-05/EXP-10	450 – 520 MHz	
AUS	400 – 470 MHz	25 W
EXP-02		
EUR		

- Channel spacing
  - USA: 6.25 kHz, 12.5 kHz
  - EXP-01/03/05/06/08/10, CAN, AUS: 6.25 kHz, 12.5 kHz, 25 kHz
  - EXP-02, EUR: 6.25 kHz, 12.5 kHz, 20 kHz, 25 kHz

## REAR PANEL CONNECTION



### • ACC connector

Pin No.	Pin Name	Description	Specification
1	NC	No connection	—
2	TXD	Input terminal for serial communication data.	—
3	RXD	Output terminal for serial communication data.	—
4	RTS	Input terminal for request-to-send data.	—
5	CTS	Output terminal for clear-to-send data.	—
6	NC	No connection	—
7	GND	Serial/digital signal ground	—
8	MOD IN	Modulation input from an external terminal unit.	Input level: 85 mV rms
9	DISC OUT	Output terminal for AF signals from the AF detector circuit. Output level is fixed, regardless of the [AF] control setting.	Output level: 300 mV rms
10	EXT. D/A	Output terminal. The desired function can be assigned.* <sup>1</sup> (Default: Null)	—
11	VCC	13.6 V DC output * <sup>2</sup>	Output current: Less than 100 mA
12, 13	NC	No connection	—
14	GND	Ground	—
15	EXT.I/O 15	A desired function can be assigned.* <sup>1</sup> (Default: Null)	—
16	EXT.I/O 16	A desired function can be assigned.* <sup>1</sup> (Default: P0 Monitor Output)	—
17	EXT.I/O 17	A desired function can be assigned.* <sup>1</sup> (Default: Busy Output)	—
18, 19	EXT.I/O 18 EXT.I/O 19	A desired function can be assigned.* <sup>1</sup> (Default: Null)	—
20	NC	No connection	—
21	EXT.I/O 21	A desired function can be assigned.* <sup>1</sup> (Default: Analog Audible Output)	—
22	AF OUT	The AF detector Output.	—
23	EXT.I/O 23	A desired function can be assigned.* <sup>1</sup> (Default: Mic Mute Output)	—
24, 25	EXT.I/O 24 EXT.I/O 25	A desired function can be assigned.* <sup>1</sup> (Default: Null)	—

\*<sup>1</sup> This connection is used to activate the cooling fan on the front panel.

\*<sup>2</sup> 13.2 V for European or Australian versions.

\*<sup>3</sup> 10 A for 25 W versions.