

IC-RP1510 VHF REPEATER



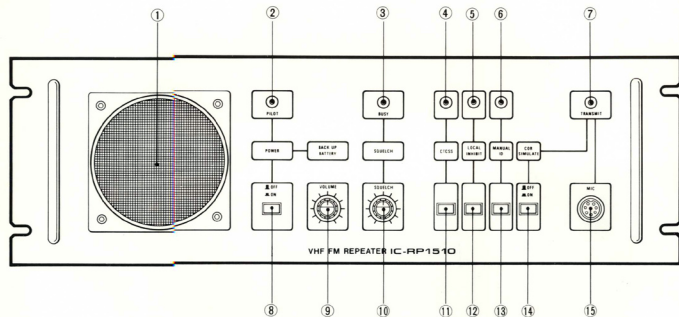
Standard features include:

- 2 versions; 25 or 50 watt power output.
- Selectable CTCSS.
- DTMF on-air control.
- Battery back-up facility.
- Local control.
- Heavy-duty power supply.
- Call sign identification.
- Time-out timer.
- Synthesized frequencies.
- Rack mounting.

**ICOM**

CONTROL FUNCTIONS

Front Panel



Key to diagram:

1. **Internal speaker**
This speaker is used for monitoring received signals. (See item 9.)
2. **Pilot indicator**
This indicator lights up when the power switch is pushed IN.
● In AC operation: Lights up in yellow
● In DC operation: Lights up in red
3. **Busy indicator**
This indicator lights up when the repeater squelch is open. (See item 10.)
4. **CTCSS indicator**
This indicator lights up when the tone squelch function is ON. (See item 11.)
5. **Local inhibit indicator**
This indicator lights up when the local inhibit function is ON. (See item 12.)
6. **Manual ID indicator**
This indicator lights up while the ID signal is being transmitted. (See item 13.)
7. **Transmit indicator**
This indicator lights up when the repeater is transmitting. (See items 14, and 15.)
8. **Power switch**
This switch turns the repeater ON and OFF. (See item 2.)
9. **Volume control**
This control varies the audio output level from the monitor speaker. Clockwise rotation increases the level.
10. **Squelch control**
This control sets the squelch threshold level for receive signals. Clockwise rotation increases the squelch threshold level. (See item 3.)

11. CTCSS

(Continuous Tone Controlled Squelch System) Switch
This switch turns the tone squelch function ON and OFF alternately and can be remote-controlled. (See item 4.)
OFF condition: The CTCSS indicator does not light up. The repeater functions as an open repeater that transmits all received signals regardless of subaudible tones.
ON condition: The CTCSS indicator lights up. The repeater is set in tone squelch operation and opens when a signal with a specified subaudible tone superimposed on it is received, and transmits signals carrying the specified subaudible tone.

12. Local inhibit switch

This switch turns the repeater status alternately ON and OFF and can be remote-controlled. (See item 5.)
OFF condition: The local inhibit indicator does not light up. The repeater functions as an ordinary repeater.
ON condition: The local inhibit indicator lights up. The repeater functions as an ordinary transceiver.

13. Manual ID (Identifier) switch

This switch allows an identifier signal to be sent manually. Each push of the switch sends an ID signal. The manual ID indicator lights up while sending the ID out. (See item 6.)

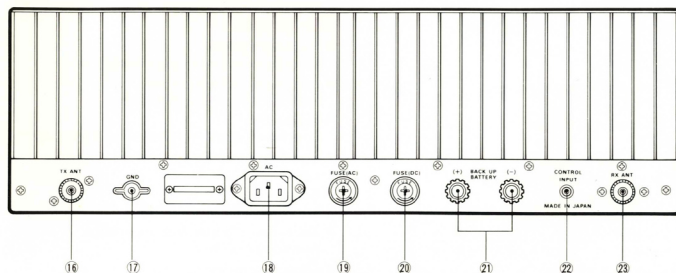
14. COR (Carrier Operated Relay) Simulate switch

This switch sets the repeater in transmit mode continuously, and can be used for checking repeater functions such as hang-up time, time-out timer, etc. (See item 7.)

15. Mic Connector

Connects the supplied IC-HM4 microphone.
When the local inhibit switch is OFF: Microphone signals are superimposed on receive signals when the PTT switch is pushed.
When the local inhibit switch is ON: The PTT switch on the microphone is pushed IN and the repeater functions as an ordinary transceiver when the microphone is used.

Rear Panel



Key to diagram:

16. **Transmit antenna connector**
This connector outputs RF output power. Connect a coaxial cable between the connector and the transmitter connector of the duplexer.
17. **Ground terminal**
Connect a ground cable to this terminal. Be sure to ground the repeater to a good earth point to protect the repeater and prevent electrical shocks.
18. **AC Power socket**
The AC power socket connects the repeater to an AC outlet via the supplied AC cord.
19. **AC Line fuse holder**
This holder contains the fuse for the AC power supply. Use the spare fuses provided to replace an old or damaged fuse.
● AC 117V type: 5A
● AC 220 or 240 typed: 3A
20. **DC Line fuse holder**
This holder contains the 10A fuse for the DC power supply. Use the spare fuses provided to replace an old or damaged fuse.
21. **DC Power input terminals**
Connects a DC power source such as a 12V-type storage battery for DC operation. This battery is used for the repeater backup battery when power is interrupted during AC operation.
22. **Control signal input jack**
This jack is used for controlling repeater functions such as tone squelch or local inhibit by DTMF tones from external equipment.
23. **Receiver antenna connector**
This connector receives incoming signals from the antenna sent through the duplexer. Connect a coaxial cable between this connector and the receive connector on the duplexer. Icom now offer an in-house software modification service enabling radios to be supplied to match existing systems.

Specifications

General

- Frequency coverage:
136 ~ 140MHz or 150 ~ 174MHz
- Number of channels:
1
- Modes:
F3 (16KOF3E)
- Repeater control system:
Carrier or Tone squelch operating system
- Power supply voltage:
AC 117V, 220V, 240V DC 13.8V
- Power consumption:
Max. 125W
- Usable temperature range:
-10°C ~ +60°C
- Antenna impedance:
50Ω
- Frequency stability:
Less than ±0.0005% (±5ppm)
- Dimensions:
480(W)mm x 150(H)mm x 400(D)mm
- Weight:
19.0kg

Control Unit

- Tone decoder (Tone squelch)
Frequency:
88.5Hz ±0.5% (other frequencies available)
Sensitivity:
Less than 6dB SINAD
Response time:
250msec. or less
- Control function
Hang-up time:
Within 5sec. (selectable)
ID sending speed:
3wpm to 20wpm with 800Hz tone
ID interval time:
First transmission after 2 to 3 min. transmission
Remote control system:
DTMF control
The IC-RP1510 comes complete with IC-HM4 fist mic. Desk top and telephone style handsets are also available. Repeater case not included, unit comes ready for rack mounting.
Icom now offer an in-house software modification service enabling radios to be supplied to match existing systems
NB. Specification differs slightly for 50 watts version

E. & O. E.

Transmitter

- RF output power:
25W
- Modulation system:
Variable reactance frequency modulation
- Frequency deviation:
Subject to model
- S/N ratio:
More than 40dB for 70% modulation at 1000Hz
- Spurious emissions:
Less than -60dB below carrier output power

Receiver

- Receiver system:
Double-conversion superheterodyne
- Intermediate frequencies:
1st IF 21.8MHz 2nd IF 455kHz
- Sensitivity:
Less than 0.32μV (-117dBm) for 12dB SINAD
- Squelch sensitivity:
Less than 0.2μV
- Selectivity:
Less than 25kHz at -60dB
- Spurious response rejection ratio:
More than 70dB
- Desensitization:
More than 70dB
- Intermodulation response:
More than 60dB
- AF output power:
1.7W at 10% distortion with an 8Ω load



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If no dealer is shown contact:

Icom (UK) Ltd.

Sea Street, Herne Bay, Kent CT6 8LD.
Tel: (0227) 741741. Fax: (0227) 360155
Telex: 965179 ICOM G.

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