ICOM

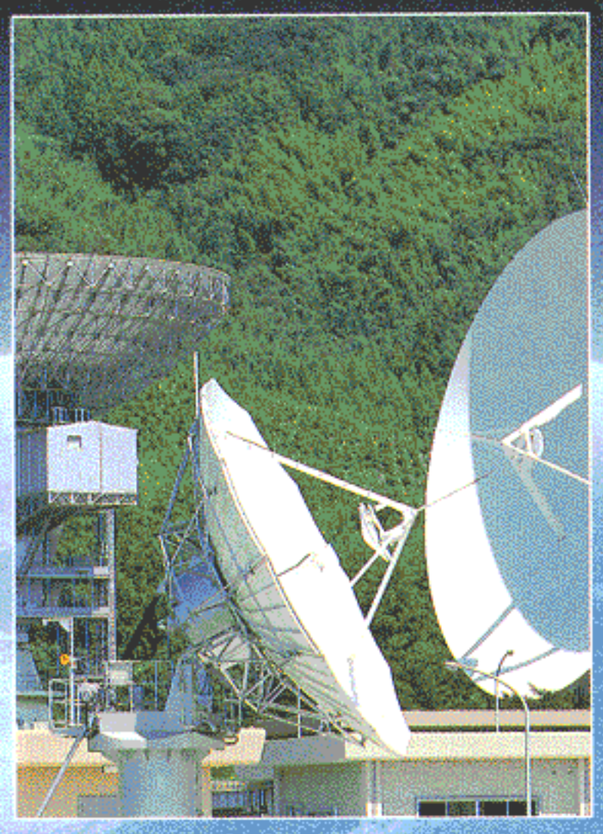
COMMUNICATIONS RECEIVER

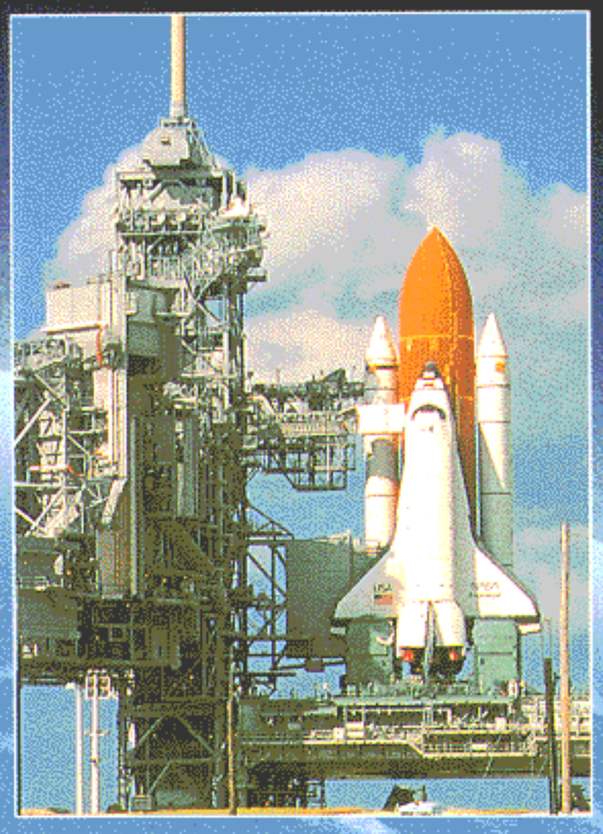
# IC-R8500


Icom Inc.

# Discover a world of information and intrigue.

Icom "next generation" technology brings you super wide band, all mode coverage from *HF to 2 GHz*, including shortwave and VHF/UHF, while maintaining a constant receive sensitivity. The IC-R8500 is not simply a scanner—it's a professional quality communications receiver with versatile features from high speed scanning to computer control.






COMMUNICATIONS RECEIVER

# IC-R8500

## ■ Wide frequency coverage

The IC-R8500 covers a wide frequency range continuously from 0.1 to 2000 MHz,* with 10 Hz resolution, while maintaining a high receive sensitivity. You can be sure that if there are any communications or broadcasts out there, you'll be able to hear them with a minimum of interference from other signals.

*Some versions have restricted coverage. Refer to the specifications for details.

## ■ All mode capability

Radio signals are transmitted in a variety of modes. The IC-R8500's all mode capability allows you to receive signals in many different modes, from the world over. SSB (USB, LSB), CW, AM, FM and WFM are included, and, several 'specialty' modes, CW narrow,* AM wide, AM narrow and FM narrow are available to receive a variety of signals that require a matched passband width.

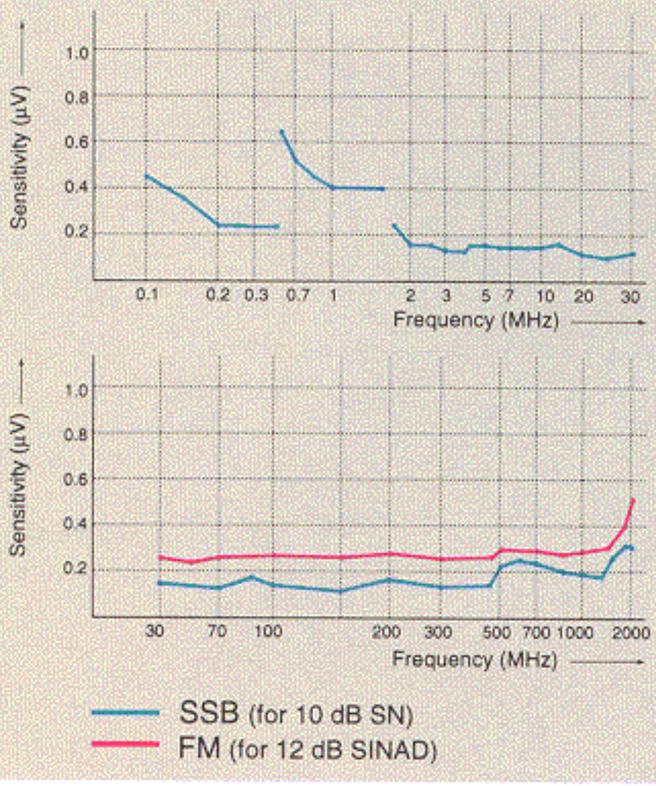
The optional TV-R7100 TV/FM ADAPTER allows you to view TV broadcasts (when connected to a CRT monitor) and listen to stereo FM broadcasts.

*Optional FL-52A is required.

## ■ Superior receive characteristics

The IC-R8500 has superb high receive sensitivity over its entire range, and the built-in, high quality crystal (TCXO) provides good frequency stability of less than ± 100 Hz below 30 MHz; less than ± 3 ppm above 30 MHz. The crystal is the reference for the PLL and DDS circuits to achieve these specifications.

**• Sensitivity characteristics**
(values are typical and not guaranteed)




## ■ Convenient features for receive

IF shift and APF (audio peak filter) functions are built-in—a first for a receiver in this class. IF shift is used to reduce interference from nearby signals. It does so by adjusting the center frequency of the IF filter. APF is used to reduce interference from signals superimposed over a desired signal by adjusting the center frequency of the audio filter. The APF is especially useful when receiving CW, but is also useful in other modes as a tone control.

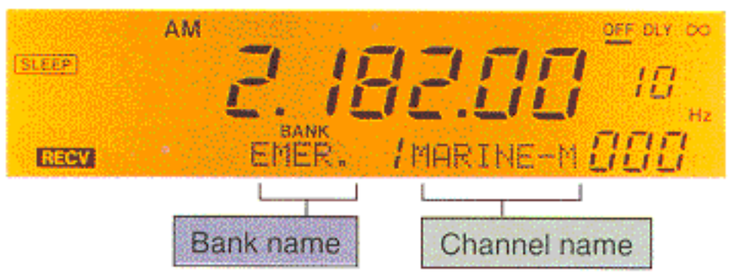
In addition, a noise blanker, RF attenuator and selectable AGC functions, clarify desired signals when experiencing various forms of interference. A digital AFC function tunes the receiver to the center of FM or WFM signals.

## ■ Ample memory channels

The IC-R8500 has 1000 memory channels providing versatile operating possibilities. Each memory channel can store a frequency, mode (including passband width) and tuning step, etc.

To facilitate efficient use of the memory channels, they are divided into 20 banks of 40 channels each plus an auto memory write area of 100 channels and a skip area of 100 channels. Alphanumeric names can be assigned to the channels (up to 8 characters) and banks (up to 5 characters) for easy recognition.

In addition, there are 20 scan edge memory channels to store 10 sets of frequencies for programmed scan plus 1 priority channel for priority scan. And, the number of channels in each bank is user-assignable.




Memory editing capabilities include a memory copy and paste function for easy transferring of data from channel to channel.

## ■ RS-232C interface

An RS-232C serial port is located on the rear panel of the receiver for direct connection to a personal computer. Icom's CI-V data communications format allows you to control and monitor many receiver functions from your PC, as well as to read data or levels in the receiver, such as AF gain, squelch level, received signal strength, as well as receive frequency, channel names and many others.

## ■ Versatile scanning functions

For basic scanning, memory, priority and program scans are available. And, for more advanced needs, select, skip, auto write, and mode select scans can be selected.

The IC-R8500 scans very quickly and the speed is continuously adjustable up to 40 channels per second (in both memory and programmed scans) with a continuously adjustable delay time. Also, VSC (voice scan control) provides efficient scanning by skipping unmodulated signals. Customize the scan behavior to suit your needs.

## ■ Various tuning steps

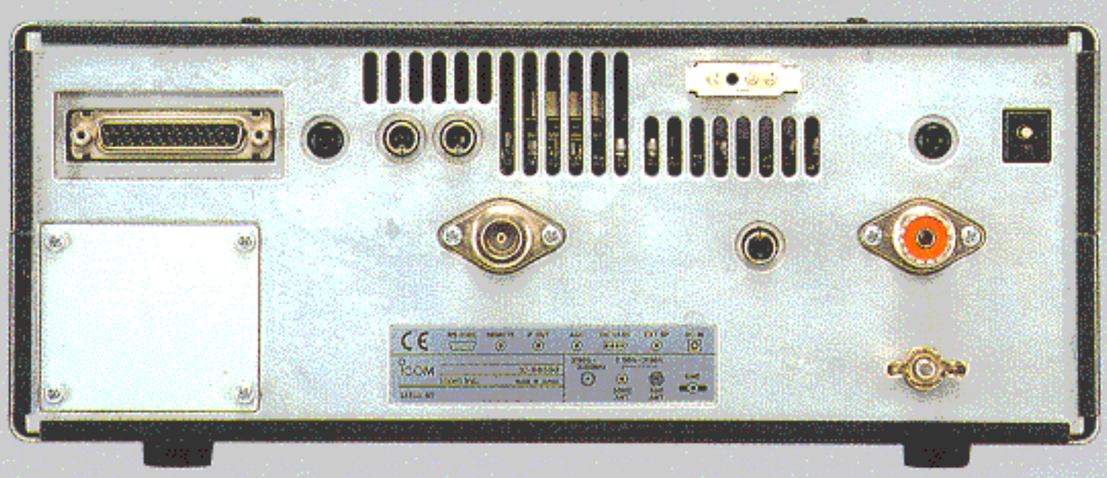
Two methods of frequency entry are available: using the tuning dial or direct frequency entry from the keypad. Use the method that best suits the situation. Numerous tuning steps are available for operating a wide variety of stations. They are 10, 50, 100 Hz, 1, 2.5, 5, 9, 10, 12.5, 20, 25, 100 kHz and 1 MHz.

In addition, a programmable tuning step is available. The programmable tuning step can be set (independently for each memory channel) to a value between 0.5 to 199.5 kHz, in 0.5 kHz steps.

## ■ Additional outstanding features

- 3 antenna connectors are provided: an SO-239 type and a phono (RCA) connector for below 30 MHz; a type-N connector for above 30 MHz
- S-meter squelch allows you to receive only those signals stronger than a pre-set level
- Easy-to-read analog S-meter and center frequency indicator
- Voice synthesizer (optional UT-102 required) announces the frequency setting
- Sleep timer (30, 60, 90, 120 min. selectable)
- REC and REC remote terminals are provided for tape recorder control and for recording received signals (received frequencies can also be recorded when the optional UT-102 is installed)

**• Rear view**



COMMUNICATIONS RECEIVER

# IC-R8500

## SPECIFICATIONS

• Frequency coverage

Unit: MHz

| | Frequency coverage |
|---|---|
| U.S.A. | 0.10000– 823.99999<br>849.00001– 868.99999<br>894.00001– 1999.99999* |
| Europe | 0.10000–1999.99999* |
| France | 0.10000– 87.50000<br>108.00000–1999.99999* |

*Specifications guaranteed: 0.1–1000 and 1240–1300 MHz.

• Mode : SSB (USB, LSB), AM (wide, normal, narrow), CW (normal, narrow*), FM (normal, narrow), WFM
*Optional filter required.

• Number of memory channels : 1000 (plus 20 scan edges and 1 priority channel)

• Antenna connector : Below 30 MHz SO-239 (50 Ω)/Phono [RCA (500 Ω)]
Above 30 MHz Type-N (50 Ω)

• Usable temperature range : –10°C to + 50°C (+14°F to +122°F)

• Frequency stability : Below 30 MHz ± 100 Hz (optional ±20 Hz)
Above 30 MHz ± 3 ppm (optional ±0.6 ppm)

• Tuning steps : 10, 50, 100 Hz; 1, 2.5, 5, 9, 10, 12.5, 20, 25, 100 kHz; 1 MHz or programmable (0.5–199.5 kHz/0.5 kHz steps)

• Power supply requirement : 13.8 V DC ±15% (negative ground)
or 117/220/240 VAC (with AD-55/A/V)

• Current drain (at 13.8 V DC) : Standby 1.8 A Max. audio 2.0 A

• Dimensions (projections not included) : 287(W) × 112(H) × 309(D) mm
11.3(W) × 4.4(H) × 12.2(D) in

• Weight : 7.0 kg (15.4 lb)

• Receive system : Superheterodyne

• Intermediate frequencies :

Unit: MHz

| Frequency band | 1st | 2nd | 3rd |
|---|---|---|---|
| 0.1– 29.99999 | 48.8 | 10.7 | 0.455* |
| 30.0– 499.99999 | 778.7 | 10.7 | 0.455* |
| 500.0–1024.99999 | 266.7 | 10.7 | 0.455* |

Note: Converter system is adopted above 1025 MHz. *Except WFM.

• Sensitivity

| Frequency band (MHz) | Mode | | | | | |
|---|---|---|---|---|---|---|
| | SSB/CW | AM | AM-N | AM-W | FM | WFM |
| 0.1–0.49999 | 1.0 µV | 6.3 µV | — | — | — | — |
| 0.5–1.79999 | 2.0 µV | 13.0 µV | — | — | — | — |
| 1.8–1.99999 | 0.25 µV | 3.2 µV | 2.5 µV | — | — | — |
| 2.0–27.99999 | 0.2 µV | 2.5 µV | 2.0 µV | — | — | — |
| 28.0–29.99999 | 0.2 µV | 2.5 µV | 2.0 µV | — | 0.5 µV | — |
| 30.0–999.99999 | 0.32 µV | 2.5 µV | 2.0 µV | 3.2 µV | 0.5 µV | 1.4 µV |
| 1240.0–1300.00000 | 0.32 µV | 2.5 µV | 2.0 µV | 3.2 µV | 0.5 µV | 2.0 µV |

Note: SSB, CW, and AM modes are measured at 10 dB S/N; FM and WFM modes at 12 dB SINAD.

• Squelch sensitivity (threshold/tight) :

| | | |
|---|---|---|
| 1.8–29.99999 MHz | SSB, CW, AM-N | 10 µV/320 mV |
| | AM, AM-W | 0.5 µV/320 mV |
| 28–29.99999 MHz | FM | 0.5 µV/320 mV |
| 30–1000, 1240–1300 MHz | FM, AM, AM-W | 0.4 µV/320 mV |
| | WFM, SSB, CW, AM-N | 4.5 µV/320 mV |

• Selectivity :

| | |
|---|---|
| WFM | More than 150 kHz/–6 dB |
| FM, AM-W | More than 12 kHz/–6 dB |
| FM-N, AM | More than 5.5 kHz/–6 dB |
| AM-N, SSB, CW | More than 2.2 kHz/–6 dB |

• Spurious and image rejection ratio : 1.8–29.99999 MHz More than 60 dB
30–1000/1240–1300 MHz 50 dB (typical)

• Audio output power (at 13.8 V DC) : More than 2.0 W at 10% distortion (8 Ω)

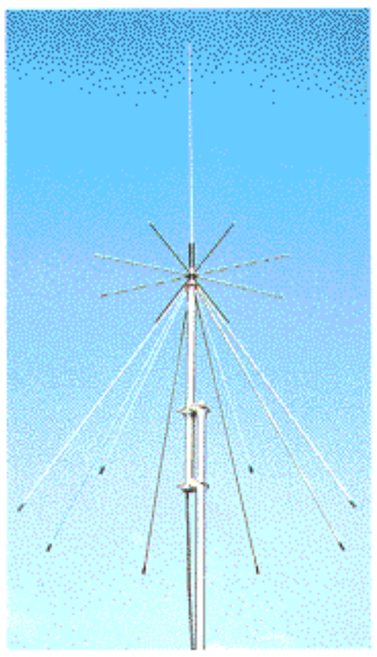
• IF shift variable range : More than ±1.2 kHz

• External speaker connector : 2-conductor 3.5 mm (⅛")/4–8 Ω

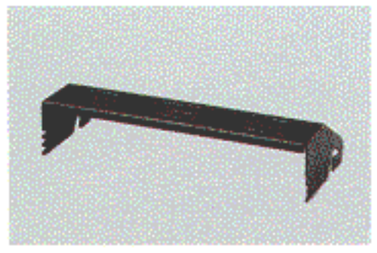
**All stated specifications are subject to change without notice or obligation.**

## OPTIONS

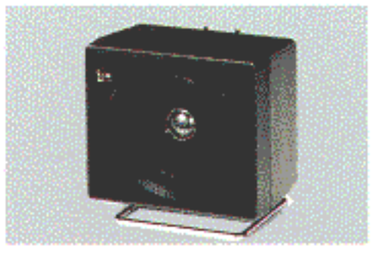
Available options may vary between countries.



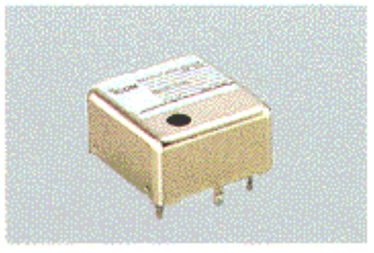
**AH-7000** SUPER WIDEBAND OMNIDIRECTIONAL ANTENNA
Frequency coverage: 25–1300 MHz



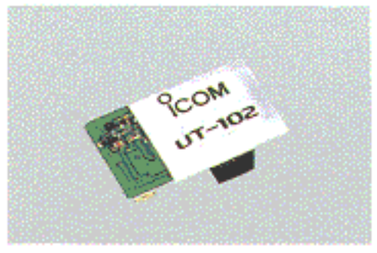
**IC-MB12** MOBILE MOUNTING BRACKET
Receiver mounting bracket for mobile operation.



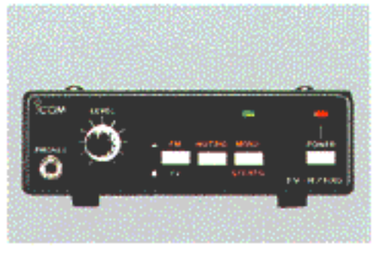
**SP-7** EXTERNAL SPEAKER
Input impedance: 8 Ω
Max. input power: 5 W



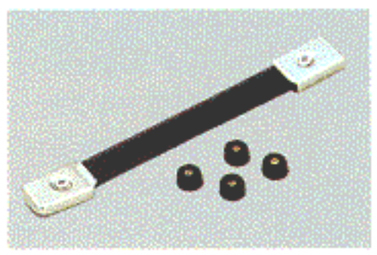
**CR-293** HIGH STABILITY CRYSTAL UNIT
Frequency stability: ± 0.5 ppm at 0°C to +60°C




**UT-102** VOICE SYNTHESIZER UNIT
Provides audible confirmation of an accessed band's frequency.



**TV-R7100** TV/FM ADAPTER
For TV broadcast reception and FM stereo reception.



**MB-23** CARRYING HANDLE
For easy portable operation.

**SP-21** EXTERNAL SPEAKER
Input impedance: 8 Ω
Max. input power: 5 W

**FL-52A** CW NARROW FILTER
Center freq.: 455 kHz
Bandwidth: 500 Hz/–6 dB

**AD-55/A/V** AC ADAPTER
Allows you to power the receiver via domestic AC.

**RS-R8500** REMOTE CONTROL SOFTWARE
Remotely controls the IC-R8500 from an IBM® compatible PC.
IBM® is a registered trademark of International Buisiness Machines.


**Icom Inc.** 6-9-16, Kamihigashi, Hirano-ku, Osaka 547-0002, Japan Phone: 06 793 5302 Fax: 06 793 0013

**Count on us!**

### Icom America Inc.
<Corporate Headquarters>
2380 116th Avenue N.E., Bellevue, WA 98004, U.S.A.
Phone : (425) 454-8155 Fax : (425) 454-1509
URL : http://www.icomamerica.com

<Customer Service>
Phone : (425) 454-7619

### Icom Canada
A Division of Icom America Inc.
3071 #5 Road, Unit 9, Richmond, B.C., V6X 2T4, Canada
Phone : (604) 273-7400 Fax : (604) 273-1900

### Icom (Australia) Pty. Ltd.
A.C.N. 006 092 575
290-294 Albert Street, Brunswick, Victoria, 3056, Australia
Phone : 03 9387 0666 Fax : 03 9387 0022

### Asia Icom Inc.
6F No. 68, Sec. 1 Cheng-Teh Road, Taipei, Taiwan R.O.C.

### Icom (Europe) GmbH
Communication Equipment
Himmelgeister Str. 100, D-40225 Düsseldorf, Germany
Phone : 0211 346047 Fax : 0211 333639
URL : http://www.icomeurope.com

### Icom Telecomunicaciones s.l.
"Edificio Can Castanyer" Crta. Gracia a Manresa km. 14,750
08190 Sant Cugat Del Valles Barcelona, SPAIN
Phone : (3) 589 46 82 Fax : (3) 589 04 46
E-mail : icom@lleida.com

### Icom (UK) Ltd.
Unit 9, Sea St., Herne Bay, Kent, CT6 8LD, U.K.
Phone : 01227 741741 Fax : 01227 741742
URL : http://www.icomuk.co.uk

### Icom France S.a
Zac de la Plaine, Rue Brindejonc des Moulinais
BP 5804, 31505 Toulouse Cedex, France
Phone : 561 36 03 03 Fax : 561 36 03 00
URL : http://www.icom-france.com


Your local distributor/dealer:

DS9803C  Printed in Japan