

COMMUNICATIONS RECEIVER

# IC-R20



*Icom proudly announces the debut of a new handheld receiver, the IC-R20. The IC-R20 will replace the IC-R10, however the IC-R20 is designed to set a new standard in the high-end receiver category. The IC-R20 performance is enhanced with dualwatch, built-in IC recorder, wideband coverage in all modes, high speed scan capability, Li-Ion battery pack and more. All this combined with Icom's reputation of superior technology will ensure the IC-R20's success and set the bench mark for others to follow.*

## SELLING POINTS

- **Dualwatch capability\***  
\* In selected bands.
- **0.150 to 3304.999MHz wideband coverage with SSB, CW, AM, FM, WFM modes**
- **Built-in 260 minute IC recorder**
- **Very high speed scanning—100ch/sec.\***  
\* VFO scan.
- **Total of 1250 memory channels**
- **11 hours of continuous receive capability \***  
\* FM mode , single receive.
- **Operating and charging from external power source**
- **Built-in ferrite bar antenna for AM and earphone cord antenna for FM broadcasts**
- **VSC, CTCSS and DTCS tone squelch**
- **Useful bandscope**

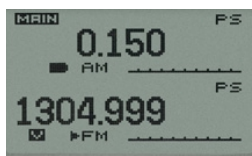
## FEATURES

### Ultra wideband receiver

The IC-R20 is the first handheld receiver which covers from 150kHz to 3304.999MHz in SSB and CW modes as well as AM, FM, WFM modes. Listen to virtually anything out there that's to be heard.

### Dualwatch capability

The IC-R20 is a dualwatch receiver, allowing you to receive two bands simultaneously. You can listen to a broadcast station, TV audio, ham, marine, aviation or other utility communications, while scanning or even watching another band. With the two tuning knobs on the top panel, operation such as tuning a channel while listening to another channel is made easy and the large display shows both band settings.



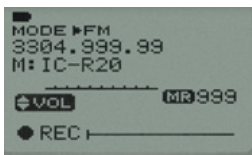
Band	Single receive (SSB, CW, AM, FM, WFM)	Dualwatch*2	
		VFO A (SSB, CW, FM, WFM, AM)	VFO B (FM, WFM, AM)
1M (150kHz-)	✓	✓	
AM	✓	✓	
5M	✓	✓	
50M	✓	✓	
FM	✓	✓	
Aviation (118MHz-)	✓	✓	✓*2
VHF	✓	✓	✓*2
300MHz	✓	✓	✓*2
UHF (-470MHz)	✓	✓	✓
800MHz	✓*1		✓
1GHz (-1304MHz)	✓*1		✓
2GHz (-3304MHz)	✓*1		

\*1 FM, WFM and AM modes only from 470-3304.999MHz.

\*2 When receiving in dualwatch, the combination of channels is limited to 150kHz to 469.999MHz (VFO A) and 118MHz to 174.999MHz or 330MHz to 1304.999MHz (VFO B).

### Built-in 260 minute IC recorder

The IC-R20 has 32MB IC recorder\*1. It provides up to 260 minutes (approx.) of recording time, soft partitioned up to 32 tracks. The recording qualities are selectable from HQ (High quality), SP (Standard play) and LP (Long play). When playing back the recorded contents, you can control the playing speed from  $\times 0.5$  to  $\times 1.5$  for quick search or to slow down fast speech for more clarity. The recorded contents can be transferred to a PC with the optional cloning software, CS-R20 and allows you to store and manage\*2 the



Recording Quality	HQ	SP	LP
Recording Time (approx.)	65 min.	130 min.	260 min.

recorded contents in your computer.

\*1 Records received radio audio only.

Cannot record external speech etc.

\*2 Cannot play recorded contents on your computer.

### 100 channel/sec. high speed scan

The IC-R20 has a 100\* channel/sec. high speed scan capability. This superior scanning power allows the utmost efficiency when searching over 3GHz of spectrum!

\* During VFO scan

- Full scan
- Band scan
- Programmed scan
- Memory scan
- Priority scan
- Tone scan
- Bank scan
- Skip scan
- Auto memory write scan

### Auto memory write scan

Auto memory write scan searches for a signal, and when a signal is detected, the received frequency is automatically stored into an auto memory write channel bank. Up to 200 auto memory write channels are available.

### Total of 1250 memory channels, 26 memory banks with 8-character comment

The IC-R20 has 1000 regular channels (includes 10 pre-set channel), 50 scan edges, 200 auto memory write scan and 70 TV (audio) channel memories. Each regular channel stores an 8-character alphanumeric name, including 5 icons, modes, tone frequency, skip information and so on. Our exclusive DMS (Dynamic Memory Scan) system divides these memories into 26 groups, A to Z, and allows you to scan selected banks by simply adding and deleting bank links. The Preset channel memorizes up to 10 of your favorite channels for easy recall. In addition, TV channels and short wave broadcast stations are preprogrammed.

### 11 hours\* of continuous receive capability

The IC-R20 has a very effective power saving design for long operation. A Lithium-Ion battery pack, BP-206 provides 11 hours of continuous receive in FM mode\* and there is virtually no memory charging issues with Li-Ion technology. Power by 3 alkaline cells is also possible.

\* Single receive.

### Operating and charging from external power

The IC-R20 has an external DC power jack for operation with the AC adapter, BC-149A/D or the optional cigarette lighter cable, CP-18A/E. The Li-Ion battery pack is simultaneously charged during operation. An external 6.0V DC ( $\pm 5\%$ ) power source is acceptable.

### Built-in ferrite bar antenna for AM and earphone cord antenna for FM broadcasts

A built-in ferrite bar antenna clearly catches AM broadcast stations with good sensitivity. When you listen to FM broadcast stations with the optional earphone, SP-13, the antenna type is selectable from cord or whip in set mode.

## FEATURES

### VSC, CTCSS and DTCS tone squelch

The VSC (Voice squelch control) opens the squelch only when a modulated signal is detected and ignores unmodulated, beat noise signals. The CTCSS and DTCS tones provide quiet stand-by while waiting for a matched tone signal. This is convenient for monitoring a specified repeater, station etc. Tone scan detects a tone frequency used in a channel. The pocket beep function alerts you with a beep sound when a matched tone signal is received.

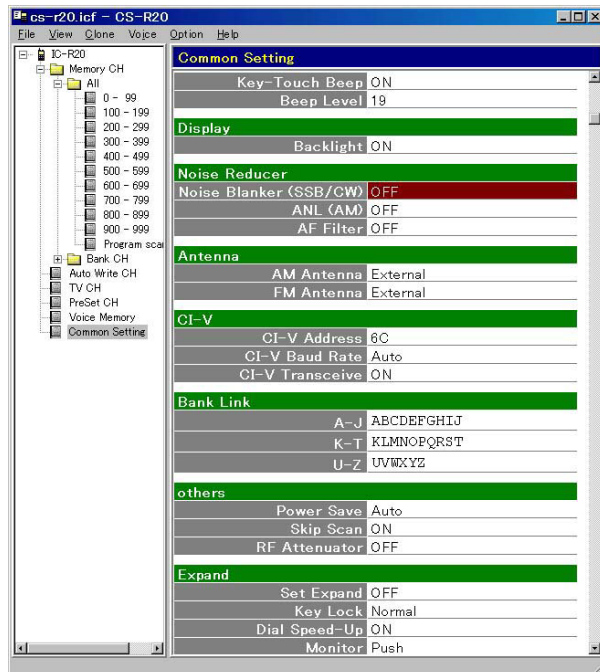
### Useful bandscope

Easily find busy channels or unoccupied frequencies within a specified bandwidth (from 1kHz to 100kHz). All signals are visually shown on the screen and AF output is emitted while sweeping the range.



### PC programming capability

With the optional cloning software, CS-R20, memory contents such as frequencies, channel name, bank name, set mode items, etc can be programmed easily. A USB cable for connecting between IC-R20 and a PC will be supplied with the CS-R20.



Screen shot of the CS-R20.

### Noise reduction functions

- Noise blanker (SSB, CW)...Eliminates pulse type noise.
- ANL (Auto Noise Limiter, AM only)...Reduces noise components.
- AF Filter ...A low pass filter for suppressing high tone audio, and reduces high tone distortion.
- Attenuator and RF gain control...30dB (approx.) of attenuator and RF gain control are built-in.
- AFC function (Auto Frequency Control)...Allows you to help fine tune the FM band. "<" or ">" are shown on the display showing the direction of actual signal.

### Other features

- Optional CT-17, CI-V controller for PC remote control
- Weather alert function (U.S.A. version only)
- Dial speed up function...When rotating the tuning knob rapidly, the tuning speed automatically speed up.
- Scan pause setting (2–20 seconds and hold) and scan resume (0–5 seconds and hold) setting
- Auto power off (30–120 minutes and busy)...Busy setting turns off the IC-R20 when no signal is received for 3 minutes.
- Various key lock functions...All, No SQL, No VOL and Normal lock settings
- Rotary selector and up/down buttons are reversible

## SPECIFICATIONS

Specifications described below are target values. They may be subject to change.  
DO NOT incorporate this information in your advertisements until it has been confirmed.

### ■ GENERAL

- Frequency coverage (Unit: MHz):
  - U.S.A., EUR, UK, SEA, 0.150–1304.999\*
  - CAN, EXP01, EXP02 1305.000–3304.999
  - \* Cellular blocked in the U.S.A. version.
  - FRA 0.150– 29.999, 50.200– 51.200,  
87.500–108.000, 144.000– 146.000,  
430.000–440.000, 1240.000–1300.000
- Mode\* : USB, LSB, CW, AM, FM, WFM  
\* Depends on operating band.
- No. of memory channels: 1250 (1000 regular, 50 scan edges and 200 auto memory write scan)
- Usable temperature range : –10°C to +60°C  
+14°F to +140°F
- Tuning steps : 0.01, 0.1, 1, 5, 6.25, 8.33, 9, 10, 12.5, 15, 20, 25, 30, 50, 100kHz
- Standard battery : 3 AA (R6) (4.5V) or BP-206 (3.7V)
- External power supply : 6.0V DC ±5%  
(with BC-149A/D, CP-18A/E)
- Current drain (at 3.7V DC, single receive, IC recorder OFF):
  - Rated audio 150mA typ. (Backlight OFF)
  - Stand-by 100mA typ. (Backlight OFF)
  - Power save 35mA typ. (1:4 duty)
- Antenna Impedance : 50Ω (BNC)
- Dimensions (W×H×D) : 60×142×34.8 mm  
(projections not included) 2<sup>3</sup>/<sub>8</sub>×5<sup>19</sup>/<sub>32</sub>×1<sup>3</sup>/<sub>8</sub> in
- Weight (approx.): : 320g; 11.3oz  
(with antenna. and BP-206)

### ■ RECEIVER

- Receiver system : Triple-conversion superheterodyne + Down converter
- Intermediate frequencies : 1st 266.70MHz, 429.1MHz  
2nd 19.65MHz  
3rd 450kHz
- Sensitivity (except spurious points; single receive):

FM	1.620– 4.999MHz	0.56μV
(at 12dB SINAD)	5.000– 221.999MHz	0.4μV
	330.000– 832.999MHz	0.56μV
	833.000–1304.999MHz	0.71μV
	1330.000–2304.999MHz	5.6μV
	2330.000–2999.999MHz	18μV
WFM	76.000– 108.000MHz	1.8μV
(at 12dB SINAD)	175.000– 221.999MHz	1.8μV
	470.000– 769.999MHz	2.5μV
AM (at 10dB S/N)	0.495– 4.999MHz	2.2μV
	5.000– 29.999MHz	1.4μV
	118.000– 135.999MHz	1.4μV
SSB, CW	0.495– 4.999MHz	0.4μV
(at 10dB S/N)	5.000– 29.999MHz	0.25μV
	50.000– 53.999MHz	0.25μV
	118.000– 146.999MHz	0.25μV
	330.000– 469.999MHz	0.32μV
- Selectivity :

SSB, CW	More than 1.8kHz/–6dB
FM, AM	More than 12kHz/–6dB
	Less than 30kHz/–60dB
WFM	More than 150kHz/–6dB
- Audio output power : 100mW typ. at 10% distortion with an 8Ω load
- Ext. speaker connector : 3-conductor 3.5 (d) mm (1/8")/8Ω

## OPTIONS

- **BC-149A/D** WALL CHARGER  
6V DC, 1A output AC adapter.
- **BC-156\*** DESKTOP CHARGER  
For rapid charging of battery pack, BP-206.  
An AC adapter, BC-124, is supplied with the charger.  
Charging time: approx. 2.5 hours.
- **BP-206** Li-Ion BATTERY PACK  
3.7V/1650 mAh Lithium Ion battery pack.
- **CP-18A/E** CIGARETTE LIGHTER CABLE  
6V DC, 2A output from 12V cigarette lighter socket.
- **CS-R20\*** CLONING SOFTWARE  
USB cloning cable supplied with the cloning software. Allows quick and simple setting of receiving frequencies, memory names, etc, from a PC (Microsoft® Windows® 98/Me/XP/2000).

- **CT-17** CI-V LEVEL CONVERTER
- **LC-158\*** CARRYING CASE  
Helps protect the receiver from scratches, etc.
- **MB-86** SWIVEL BELT CLIP
- **MB-98** BELT CLIP  
Alligator type. same as supplied.
- **SP-13** EARPHONE  
Provides clear audio in noisy environment.

\*New option

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