Icom IC-RX7

By Larry Van Horn, N5FPW

First, a disclaimer: I have never been a big fan of wideband radios *per se*. I have always felt if you want a good shortwave radio, you should buy one. And if you want a good scanner, buy one of those. You won't get both in one package.

So, when I was given the Icom IC-RX7 to test, I figured I would be getting pretty much the same I have seen over the years – mediocre performance in both the HF and VHF/UHF spectrums. But, after conducting a *First Look* test of this handheld, I am pleased to announce it is one of my favorite wideband handhelds.

❖ Case, Controls and the Antenna

This is one nice compact handheld package. It has a slim and stylish design and has a splash resistant construction with an ingress protection code of IPX4. It measures 2.25 (W) x 3.1 (H) x 0.8 (D) inches (57 x 128 x 23 mm) – projections not included), and it weighs just 7.1 ounces (200 kg) with BP-244 and antenna attached.

The unit has a backlit, full dot-matrix display that uses an amber color backlight. The screen is a bit small and dim for my taste and old eyes, but it is capable of displaying a lot of information. One of the more unique aspects of this display are the 23 icons that are available for category programming: truck, bus, car, race car, taxi, motorcycle, train, ship, yacht, aircraft, glider, ham, ham HH, radio, TV, emergency, fire, weather, human, animal, building, house and program search. The unit has a menu screen that is used for programming values and checking on the conditions of various scanner functions.

The RX7 controls and jacks are well laid out and include a keyboard (with 4-way cursor buttons for quick navigation to menus and settings.); front panel speaker; an external 6 VDC In jack and external speaker clone jack (both with rubber covers) on the right side panel, and a multi-function control dial on the top panel.

The unit comes with a screw-on (SMA connector) whip antenna that is also located on the top panel.

❖ What's under the hood?

There are other controls and options that are built-in. There are built-in RF-gain control and attenuator controls; a built-in AM bar antenna; an earphone antenna function for FM broadcast reception, and an auto power save function.

There are quite a few control options that are part of the software menu system (mentioned above). Some of these options include: AM and FM antenna selections, RF gain levels and attenuator on/off, auto power on/off and power save modes, dial acceleration, key lock type, CI-V settings, AF filter, and tone control (bass and treble). Tone control functions and the audio filter are available for the AM/WFM modes only.

Other notable features include high speed scan and high speed search (100 channels/sec); CTCSS/DTCS decode with pocket beep function; and a VSC (Voice Squelch Control). The IC-RX7 comes with preset memory channels for ham radio, air band, railroads, and car racing and more. You select your desired listening subject and, with the push of the "Scan" button, the unit automatically finds active channels within the selected area of interest.

The unit also has a one-touch search button. The channel mode and channel step are preprogrammed for each frequency range. Using this feature you can search for new active channels within a designated frequency range or fixed category with a push of the "Search" button. The auto memory write function automatically stores detected channels in your memory.

The RX7 has a three-level memory arrangement. The total of 1650 memory channels can be classified three different ways: by "Category" (up to 26 categories), by "Group" (up to 100) and by "Memory Name" (up to 100). An alphanumeric name of up to 16 characters may be used for each channel, and up to 6 channels can be stored per "Memory Name" heading. In addition, each "Category" can be labeled with one of the aforementioned display icons for faster recognition.

The unit can be programmed using the optional CS-RX7 software (which we did not test), and you can clone RX7 units using optional cloning cables.

❖ What's in the box?

In addition to the handheld, accessories included in the box include a hand strap, rubber duck antenna, belt clip, battery pack (BP-244), battery charger (BC-149A or D), and a printed instruction book, plus other miscellaneous papers.

❖ Overall Rating and Final Thoughts

First, I found the instruction book easy to use and well laid out, something I have come to expect from Icom. Most of the operating functions used within this unit have become standard with Icom rigs over the last few years, so if you have mastered a previous Icom handheld scanner or radio, some of the basic programmed functions will be familiar to you.

Using just the whip and built-in antennas, I found overall reception good, better than most of the wideband handhelds I have tested. It has some nice functionality when it comes to frequency programming flexibility. It has a good feel when you hold the rig, good construction, and accessing the basic functions of the scanners is intuitive.

There are a few negatives and one of the big ones is the lack of trunk radio system capability. I am still surprised that some of the

MT RATING: 2 3/4 STARS

★★★☆☆

MT FIRST LOOK RATING (0-10 SCALE)

Audio Quality	6
Audio Levels	6
Backlight/Display	6
Battery Life	8
Ease of Use	7
Feature Set	6
Keyboard/Button/Control Layout	8
Overall Construction	8
Overall Reception	7
Owners Manual	10
Sensitivity	(FM mode) 7
	(AM and WFM mode) 5
Selectivity	7

major manufacturers (such as Icom, Alinco, and Yaesu, to name a few) who cater to the scanner marketplace, still have not jumped on this bandwagon. With more and more public safety systems using this technology in today's RF environment, the lack of trunk tracking and APCO digital decoding capability weakens the feature set considerably.

Other areas which can use some improvement: the audio is tinny and somewhat weak (75mW into an 8 ohm load, versus 310 mW into a 24 ohm load on the Uniden BC396XT we recently tested). The display is hard to view in low and some bright light situations, with no built-in ability to adjust its brightness. Lighted keys would also be an improvement in most low light and night scanning situations.

The Icom IC-RX7 sells for $364.00 retail and is available at the usual amateur radio stores.

So, if you are looking for a nice analog, no trunking scanner with some HF capability that can be easily carried around, the Icom IC-RX7 will fill that niche quite nicely.

ICOM IC-RX7 HANDHELD

General Specifications
Frequency Range (U.S version):
  0.150-823.995 MHz; 849.0-868.995 MHz; and 894.0-1300.000 MHz.
Mode: AM, FM, and WFM
Tuning Steps: 5, 6.25, 7.5, 8.33, 9, 10, 12.5, 15, 20, 25, 30, 50, 100, 200 kHz
Scan/Search Speeds: 100 channels per second/ 30 steps per second
Number of Memory Channels: 1650
Usable Temperature Range: -10°C to +60°C;

+14°F to +140°F
Current Drain (at 3.0 V DC): Rated audio: 150 mA;
  standby: 100 mA; and power saved: 35 mA
Power Supply Requirement: 3 x AA (R6) Ni-Cd or alkaline cells,
  3.7V/1100mAh Li-Ion battery back supplied
Antenna Connector: SMA (50 ohms)
Dimensions: 2.25(W) x 3.1(H) x 0.8(D) inches
  (57 x 128 x 23 mm) (projections not included)
Weight: 7.1 oz. (200 kg)

Receive Specifications (Manufacturer Supplied)
Receive System: Triple conversion superheterodyne
Intermediate Frequencies: 1st: 429.1 MHz, 2nd: 19.65 MHz, 3rd: 450 kHz
Sensitivity (except spurious points; typical):
FM mode (measured at 12 dB SINAD)

1.625 - 5.0000 MHz	0.56 μV
5.000 - 29.995 MHz	0.25 μV
30 - 117.995 MHz	0.20 μV
118 - 174.995 MHz	0.18 μV
175 - 329.995 MHz	0.22 μV
330 - 429.995 MHz	0.25 μV
430 - 449.995 MHz	0.22 μV
450 - 469.995 MHz	0.25 μV
470 - 999.995 MHz	0.28 μV
1000 - 1309.995 MHz	0.35 μV

WFM mode (measured at 12 dB SINAD)

76 - 108 MHz	0.78 μV
175 - 221.995 MHz	1.78 μV
470 - 770 MHz	2.50 μV

AM mode (measured at 12 dB SINAD)

0.495 - 4.995 MHz	2.50 μV
5.000 - 29.995 MHz	1.78 μV
118 - 136 MHz	1.78 μV
222 - 246.995 MHz	1.78 μV
247 - 329.995 MHz	1.78 μV

Selectivity: AM, FM – More than 12 kHz/-9 dB, Less than 30 kHz/60 dB,
  and WFM – more than 150 kHz/-6 dB
Audio Output Power: 75 mW typical, at 10% distortion with an 8 ohm load.
External Speaker Connector: 3-conductor 3.5(d) mm (1/8")/8 ohms

These specifications are subject to change without notice.

THE WORLD IS WAITING FOR YOUR WORDS OF WISDOM

Well, maybe not, but it was good alliteration!

Still, if you know your radio, there could be some money and a free subscription in it for you. If you think you have some words of wisdom to pass along about scanning, SWLing, utilities, using your equipment, new technology, etc, let us know!

Write Rachel Baughn, Editor, editor@monitoringtimes.com and make your best pitch! For more information see w*ww.monitoringtimes.com/html/writers_guidelines.html*