

Exclusive!

Icom R20

Review

Dave Roberts has another attempt to 'beat the clock' whilst looking at the brand new and remarkable Icom R20 hand-held scanner.

Have you got a stop watch? If you have, then start it - NOW! I'll explain why in just a while. "Another parcel for you, David", said James my postman as he staggered to my gate under the weight of the mail. (He's quite formal and always calls me David). "Sorry I'm late. The van broke down. Sign here".

It was 1845 and I'd been watching the gate for his arrival for hours. I mean it's not every day you get a five hundred 'quid' Icom scanner delivered for you to play with.

Some hand-held scanning radios feel somehow **insubstantial**. Nothing that Icom has ever made gives that impression and the new Icom IC-R20 is no exception. It's a real handful but by no means too large in the fist. It's good of Icom to supply an R20 for me to have a 'peek' at and I was determined to make the most of it. The set came supplied with a moulded plug top charger/a.c. adapter, belt clip and a telescopic antenna. The handbook was in draft format and without it the R20 may have taken an hour or two to master. Checking the manual revealed that the set is fitted with a removable battery pack containing Lithium-ion rechargeable batteries. Li-ion cells are ideal for this application and it was good to see that they were easily removed to allow replacement if required and also to facilitate the use of normal AA cells should the need arise. Access to the battery compartment is via an easily opened battery 'gate' at the base of the set.

LF to Microwave

Looking at the very top of the R20 it was a relief to find a BNC socket mounted on the roof instead of the SMA type with which so many radios are afflicted these days. This enables various antenna options to be easily utilised, and you'll need 'em because this receiver covers from 150kHz



to over 3.3GHz. That's right - from long wave to microwave!

If like me the first thing that you do on receipt of a new 'toy' is to turn it on and try and get some sense out of it without even sully the virgin pages of the handbook, then you won't get far with the R20. I didn't. A previous user had partially programmed the receiver and had also altered the function of some of the 'soft' key controls.

I was lost! Looking at the handbook I discovered how to completely reset the unit and having done so I again consulted the manual and within a few minutes I'd grasped the logic behind the operation of the thing and in no time configured the radio to suit myself. Although it's not a scanner for those of us who suffer docuphobia, once I overcame my reluctance to read the manual I never looked back...easy...easy.

Firstly, I'll cover a few basic features of this little radio. When operating on frequencies from 150kHz to 470MHz the R20 can be switched to cover the following modes; c.w., l.s.b., u.s.b., a.m., n.b.f.m. and w.b.f.m. At frequencies above 470MHz the modes are restricted to a.m., n.b.f.m. and w.b.f.m. only.

There is a liquid crystal display on the front of the unit and this presents clear and sharp information to the user. Basic operation allows the receiver to be used as a single v.f.o. radio or as a twin-bander with two frequency bands or memory channels being displayed. There are a total of 1050 memories available including search band limits. When set to operate as a single band set the R20 provides coverage of the entire range on one band. If you choose to set it up as a 'dual watch' radio, thereby displaying a 'main' and a 'sub' band simultaneously the 'A' band (the upper one on the display) will only cover from 150kHz to 470MHz (all modes) and the 'B' band will only tune frequencies above 118MHz. The 'B' band will only operate in a.m., n.b.f.m. and w.b.f.m. modes.

As for the other features - well it's packed! Where do I

start? Oh yes, there are nine squelch levels or the squelch can be turned off. The setting that I preferred for normal scanning is the 'Auto' level. The R20 takes care of your squelch threshold using a noise pulse count system, whatever that is. It works well anyway. You can drop the squelch temporarily by simply pushing and holding the top button on the left hand side of the radio.

Should you require to monitor the input of a repeater or the other half of a two frequency simplex system then this is catered for with the R20. You enter the frequency split in the 'set' mode and then select whether the split is above or below the receive frequency that you have entered. Then, when you want to hear the other half of the contact, you hold the aforementioned squelch control.

Thanks For The...

... Memories. This set has more memories than Hugh Hefner. There are one thousand normal memory locations.



Nice belt clip.
However, note the
serial number!

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Add to that two hundred memories that can be utilised to automatically store frequencies heard during a search under the 'Auto-memory write' feature. Yes there's more! You can programme specific searches into the R20 using the fifty 'band edge' memories. Management of all these stored frequencies is a simple matter. The radio allows memories to be transferred to other memory locations and alpha-numeric tagging is also supported. There are 26 banks available in which to keep the stored frequencies. Frequency steps from 10Hz to 100kHz are programmable including 8.33kHz for airband and 9kHz is available for the medium wave broadcast band.

Entering known frequencies into the memory channels is really very simple. After having peeked at the instruction

book I ended up programming the channels at the rate of one a second. Programming is via a direct entry numerical keypad. I reckon you could certainly be holding a conversation while filling up the memories. It's that easy. Some people can't see the point of having a keypad beep function with tones to indicate the completion of tasks such as channel programming but this is the case where this facility comes into its own. Trust me - the beeper makes the task much swifter.

I tried to time the scan speed and from what I could figure the Icom is no slouch at around 23 channels per second, a respectable speed. The radio has numerous options with regard to scanning and priority channels.

Just in case you want to see the signals as well as hear them, you've got it...there's a band scope facility too!

More Features

Now to tones. The R20 has the capability to decode CTCSS tones this allows it to determine which particular tone is being used on a specific channel. Also if the CTCSS frequency is known then this can be entered into the relevant channel memory. This prevents the audio stage firing up when the channel is in use by a user with a tone other than that programmed. The same goes for the Digital Tone Coded Squelch (DCTS) facility with normal and reverse polarity settings being available thereby doubling the available settings to 1008.

There's also a Voice Squelch Control that stops the squelch opening when blank carrier or data type signals are received and (in theory) only opens it up when voice is detected.

All the above features together with the r.f. gain and attenuator, power saving circuit, a noise blanker and an automatic noise limiter add up to one pretty awesome package. There's also a bar antenna built-in for medium wave reception.

OK, now that has given you a basic idea of the features on the R20, so how does it perform on air? Looking at the sensitivity figures published in the draft manual it appears that they measure up to other radios of the same type on the market. Starting at lower amateur frequencies it follows that the telescopic antenna supplied with the set isn't going to be too hot, so I plugged in my h.f. station dipole and the R20 came alive. Reception was clear and the sensitivity, from a users point of view sounded fine. The audio was a little sharp (i.e. tinny) for my taste on s.s.b. operation, but that's merely a personal view and what can you expect for such a small speaker?

I did notice that at some h.f. frequencies the display indicated around 1.4kHz high of the frequency actually being received. This is no big deal on a set of this type, and by no means unusual, but it's certainly worth mentioning.

As we move up through the frequency bands the Icom R20 performs very capably indeed. Of course broadcast bands are included and with the wide f.m. option the recovered audio is of good quality with 100mW being quoted as the maximum output to the speaker. Listening to Radio 4 on this set does, however, make sledgehammers and nuts spring to mind.

Through u.h.f. the set does just what it ought to and does it very well indeed. The sensitivity figures on the microwave bands would indicate that specialist antennas would be required, either that or close proximity to the transmission source. Not having a microwave source nearby I was unable to give the R20 an effective work out on bands above 1 GHz.

All-in-all this is a very good scanner. As it's made by Icom, I'd be very surprised if it wasn't. They have a top





notch reputation when it comes to communications gear and the R20 is a credit to them.

One Big Thing!

But there's one more thing. One big thing that in my opinion transforms this radio from a competent, capable receiver to a spectacular one.

There's a row of four buttons at the bottom of the keypad. They look just like controls for a tape recorder. Well that's pretty much what they are, but without the tape. Have you ever been monitoring on your receiver, heard something and thought, "Boy I wish I could have recorded that" Well now you can. Just hit the bottom right hand button marked 'REC' a little red light comes on and, yes, it's recording the audio. When you're ready to stop tap the one to the left of it and there's the audio recorded for posterity and labelled 'track 1'. Further recording events follow on numerically up to a total of 32 such tracks.

One touch recording on a scanner! Now that's very good.

Don't pause for breath here - there's more to come. You

can set up the receiver to record every time the squelch opens. The recording level is set automatically. This means that the radio can be set to scan a set of frequencies (or just left idling on one) and you can turn the speaker volume right down and go to bed. I did!

In the morning having showered and all the other things that blokes do, I wandered off to the R20 that I'd left connected to an outside antenna. I found that the sweet little thing had recorded plenty of action for me to play back while I fought with my computer. Now this isn't just neat - it's marvellous!

Now Stop That Stopwatch!

If you've been reading this at a fairly slow conversational speed it will have taken you around seven minutes. That's a whole lot of information, isn't it, and the R20 has more than enough capacity to store that much audio.

The Icom R20 has three record quality levels. Not surprisingly they are called 'Long Time', 'Normal' and 'Fine'. Well, I've tried 'Long Time' and 'Normal' and they both sound just fine to me. There is a very slight difference between the two but it's not anything that you'd really notice. The 'Fine' setting certainly provides the highest quality audio but the difference between the other two is not worth noting.

On the 'Fine' setting the set will store 65 minutes of audio, on 'Normal' 130 minutes are stored and wait for it...265 minutes of audio can be recorded on the 'Long Time' setting. That's four hours 25 minutes of good audio in a small radio.

This is not an April Fool. It works, I've used it!

You can play back the recorded audio at five different speeds too!

There will soon be software available to download the recordings and control the rig unfortunately it's not ready yet, but in any case you'll still be playing with the buttons when they bring it out.

I've run out of space. I can't go on about the 'soft' keys or the high tone filter.

I can think of many people who will feel that they need this radio to enhance their lives. It probably will. It's a really good set.

I've got to lie down!

Special thanks to John Turner of Icom UK who helped me when I had finger trouble.

The Icom R20 is available from all good radio stores, with a suggested retail price of £499.99. For more information contact Icom UK Ltd., Tel: **(01227) 741741** or web: **www.icomuk.co.uk**

If this has you tempted - next month we're offering an R20 as a prize thanks to Icom (UK) Ltd.

External connections, including CI-V computer interface.

