Review

The Icom IC-T10 144/432MHz FM Handheld

I've said it before and I will say it again. Like it or not, the entry of the various Chinese manufacturers into the amateur radio handheld market has set a 'value' standard against which other units tend to be measured.

It's fair to say that those same Chinese handhelds do not always score so highly on the 'quality' standard – although some are very good indeed.

How then, does the new handheld from Icom, score? At the time of writing, Icom has two handhelds on the amateur radio market, the excellent ID-52E for D-STAR/FM and the new entrant, the IC-T10 which I'm looking at in this review.

What does Icom say about the IC-T10?

"The IC-T10 VHF/UHF dual-band Amateur handheld radio is built to the high-quality commercial spec that you would expect from Icom. The radio features a clear, easy-to-use layout, rugged commercial build, IP67 dust-tight specification and waterproofing, 1500mW loud audio and long-lasting Li-Ion battery life all making it an ideal radio for beginners and seasoned amateur radio enthusiasts alike.

Its strong Mil-Spec build and range of features will also make it a practical dual-band radio for voluntary amateur radio emergency services such as Raynet."

The features are listed as:

- 5W RF output in 144MHz and 430MHz.
- Large speaker provides 1500mW loud and intelligible audio.
- IP67 dust-tight and waterproof construction.
- Up to 11 hours operating time with supplied 2400mAh (typ.) Li-Ion battery pack.
- Home button on top panel provides quick access to calling channel.
- FM broadcast Rx: 76-108MHz.
- Built-in CTCSS/DTCS for repeater operation.

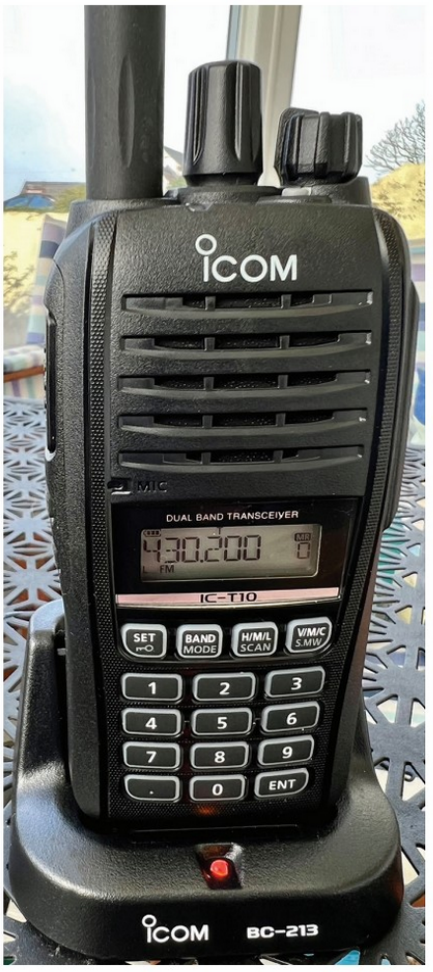

PHOTO 1: IC-T10 charging.

- 16 DTMF autodial memories.
- Priority, program, memory, skip and tone scan capabilities.
- Free downloadable CS-T10 programming software.
- Optional HM-222HLWP speaker microphone provides loud audio.
- DC power operation with optional AD-149H power supply adapter.
- Total of 208 memory channels with six-character channel names.
- Direct-conversion system eliminates IF stages.

Unboxing

Upon unboxing the IC-T10, the first impression is of a solid and well-built unit. It feels substantial without being too heavy. The battery clipped in positively. On arrival, there wasn't much charge in the battery, so I got the charger cradle out of the box, which is also rather better made than some of the cradles that are supplied with cheaper handhelds. The transformer, which plugs into the wall, comes supplied with a variety of adapters to deal with differing styles of electricity supply sockets – which might come in handy if you are travelling abroad. I snapped the UK three-pin adapter into the back of transformer and set the radio to charge up.

After a couple of hours, the radio was showing that it was fully charged, so I started to get things set up. A simple manual comes with the radio, but you can download an 'Advanced Manual' from the Icom UK website via: https://icomuk.co.uk/files/icom/PDF/advancedManuals/IC-T10_AM_0.pdf

I did resort to the manual for guidance on how to navigate the menu. I didn't find the menu as intuitive to use as I would have liked, but I quickly got used to it. In Set Mode, you select the item you want to change by tapping the 'set' key. If you overshoot the item that you want to change, you have to go all the way through all the items again, rather than being able to scroll back.

First contact

The display on the IC-T10 is fairly small so, depending on your eyesight, you may not be able to see the contents of the display so well at a distance or at odd angles.

With those reservations noted, I set about setting the IC-T10 to talk to my Allstar hotspot and, very quickly, I had set the frequency, CTCSS tone and saved those details to a memory. You can assign a text 'label' to a memory as an alternative to the frequency, should you wish. Using my hotspot, I connected to the GB3TD repeater in Wiltshire, by Echolink and placed a call through it. Rob, G4XUT replied and kindly confirmed that the audio quality was good and sounded like me. Whilst we're on the subject of using the radio to access the Allstar hotspot, the

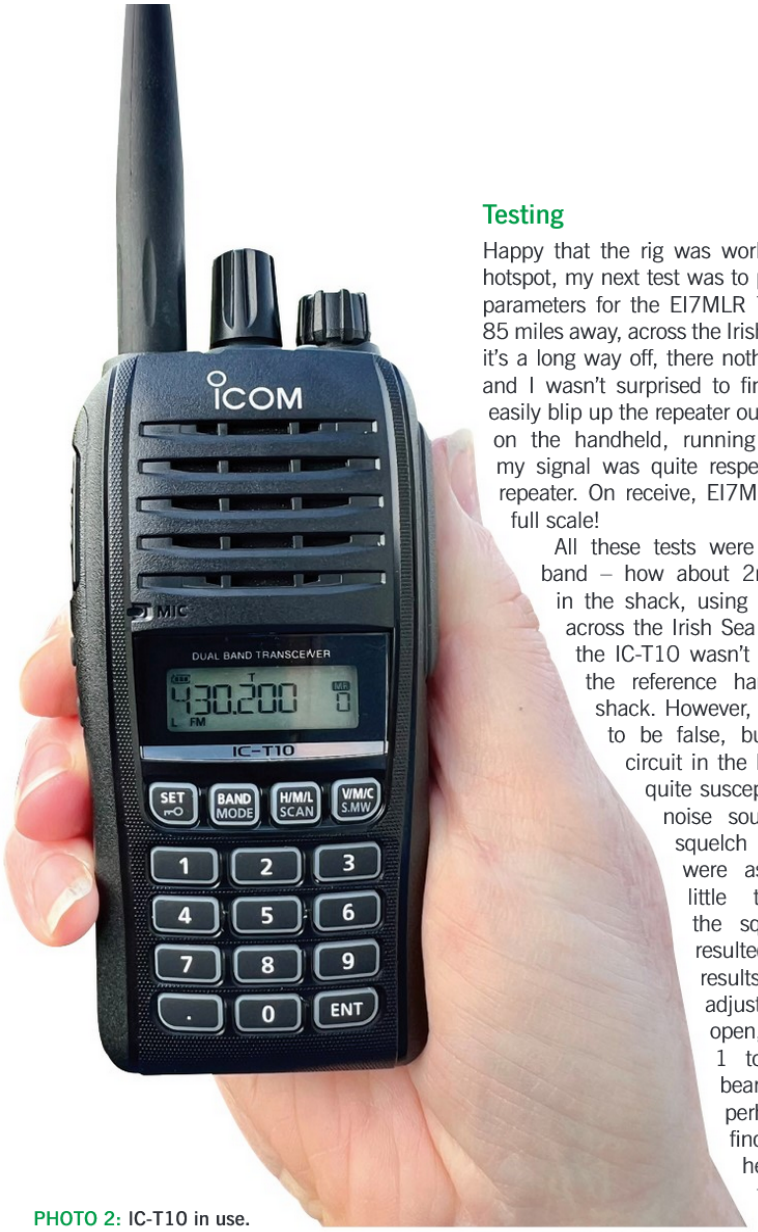

PHOTO 2: IC-T10 in use.

IC-T10 features DTMF memories as well as a keypad to allow you to send connection/disconnection strings as you wish.

Power

The IC-T10 has three different power levels; High, Medium and Low, corresponding to 5, 2.5 and 0.5W respectively. The low power setting of 0.5W works well with the hotspot and should ensure that battery life is good, while the high setting of 5W should be adequate to give you good coverage from a hilltop.

The rig is dual band, covering 2m and 70cm. Receive coverage is 136-174MHz on VHF and 400-479MHz UHF, FM only. There's also a FM broadcast band radio covering 76-108MHz. Many manufacturers include broadcast band reception on handhelds. Do you find it useful? I can't say I do, but I might be the odd one out! I can see it might be useful or enjoyable when out camping or similar.

Testing

Happy that the rig was working ok on the hotspot, my next test was to program up the parameters for the EI7MLR 70cm repeater, 85 miles away, across the Irish Sea. Although it's a long way off, there nothing in the way and I wasn't surprised to find that I could easily blip up the repeater outside the house on the handheld, running 5W and that my signal was quite respectable into the repeater. On receive, EI7MLR was almost full scale!

All these tests were on the 70cm band – how about 2m? Initial tests in the shack, using another source across the Irish Sea suggested that the IC-T10 wasn't as sensitive as the reference handheld in the shack. However, that turned out to be false, but the squelch circuit in the IC-T10 seemed quite susceptible to a local noise source. With the squelch open, signals were as expected. A little tinkering with the squelch settings resulted in satisfactory results (you can adjust the squelch to open, auto or levels 1 to 9) – worth bearing in mind, perhaps, if you find you are not hearing things that you ought to on 2m.

I found the receive audio quality on the IC-T10 a little on the bassy side and lacking a little in top-end response. Having accused some other rigs recently of having been a bit too concentrated on the top-end response and lacking in lower frequencies, I wonder if I am getting grumpy and hard to please. Anyway, the T10 is perfectly acceptable in regard to audio, but I found it a little 'muddy'. On the positive side, though, there is plenty of audio and, although I didn't try it, I'd guess there was enough audio to be able to listen to the IC-T10 in a car that was in motion.

Programming

If you want to program the IC-T10 from your computer, the good news is that the programming software is free. However, you will need to get the optional OPC-478UC cable. I didn't have one of those, so I can't tell you about the process. Programming the radio from the front panel proved quite straightforward and I quickly programmed up a few of the memory channels with my Allstar hotspot and the local repeaters.

Memory and band scanning is available on the IC-T10 with all the usual facilities to set channels to be skipped and so on. If you're on a repeater, there's the ability to reverse the offset, in other words, to listen on the input. Unfortunately, though, there isn't a quick button to press which allows you to listen on the input. What you'd need to do is to setup another channel in memory, with the reverse duplex function enabled. You could quickly then switch between the two channels (make sure they are adjacent to each other in the memory bank!) to see if you can hear someone on the input.

It's probably worth pointing out that unlike some other handhelds, the IC-T10 doesn't allow you to listen on two bands at the same time – it's a single receiver. Having said that, with use of memory scanning, you could easily set it up to scan simplex calling channels and repeaters on both 2m and 70cm – so that shouldn't cause a problem.

Did I like the IC-T10?

I did. I thought it was a nice, well-built handheld and I liked the robust feel of the charging cradle too. I didn't love the menu, but I quickly got used to it and the display was a touch smaller than I would have preferred. As an IP67 rated device, it can be submerged in up to 1m of water for a 'prolonged' time – a feature I did not test! However, it does mean that if you are planning to use a handheld outside or even on a small boat, the IC-T10 might well fit your requirements.

Worth the price?

The million-dollar question: is it worth the retail price of £199.95? It's true that there are many dual band handhelds which come in at a fraction of the price of the IC-T10. Are they as well built? Probably not. Icom emphasise the 'professional' build quality in their advertising and I feel this is fair. The IC-T10, although simple, feels like a higher quality radio than the cheaper ones and feels less 'disposable' – you would like to hope that it would last longer than cheaper rigs and, if it did go wrong, you could stand a chance of having it repaired. Once programmed, it is very easy to use. I feel it is most likely to appeal to an outdoors radio enthusiast who wants a robust, simple and water-resistant dual-band handheld.

My thanks to Icom UK for the loan of the IC-T10 which is available from retailers at £199.95.

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