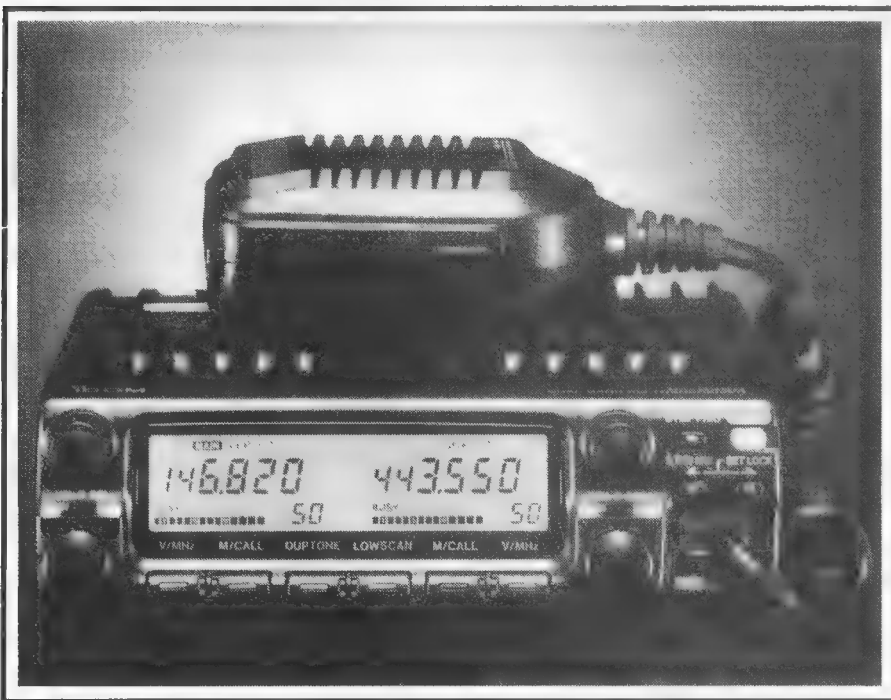


■ Equipment Review

ICOM IC-2350H Dual Band FM Transceiver

*Reviewed by Paul McMahon VK3DIP**



What Is It?

The IC-2350H is a dual band (2 m and 70 cm) FM mobile transceiver, with up to 50 watts of transmit output power on VHF and up to 35 watts of transmit output power on UHF. As received, the review set had wide coverage receive enabled with a 118 MHz - 174 MHz (VHF) and 320 MHz to 479 MHz (UHF) range. UHF also included an extra segment 830 MHz to 950 MHz. The unit is of mid-size (140 x 40 x 204.5 mm) and weight (1.2 kg). The review unit was kindly supplied by ICOM Australia and had the serial number 01906. Retail price is around \$1200.

First Impressions

The unit is solidly built and well laid out, with the usual dual symmetrical setup of display and knobs for frequency selection, etc. The microphone connector is, as seems to be becoming standard, one of those pseudo phone connector plastic click-in things. These are very easy to put in, but can be a bit fiddly to take out. I would also have some concern as to how many times you could do this, but I must admit to not having heard too many complaints myself about this sort of connector.

The unit is basic black with a large heat sink at the back and a large

easily-read display at the front. Audio quality seems good in subjective on-air tests; and the receiver sensitivity, unlike some of these sets I have tested, seems pretty flat across the ranges covered.

The manual, as per usual these days, could just about have referred to some other radio. No mention is made that the reception below 136 MHz is AM, nor that there is coverage of 830 MHz to 950 MHz. There is definitely an opportunity for some third party to do a better job of a user's guide.

The packaging was the standard styrofoam and cardboard but I was interested to see that the foam seemed to be formed for a slightly different shape set. Perhaps this is another sign of being frugal; or again, perhaps the box, like the manual, was put together before the design of the set was finalised.

Technical Bits

The receive frequency coverage of the review set as measured was 118 MHz - 174 MHz (VHF); and 320 MHz to 479 MHz and 830 MHz to 950 MHz (UHF). The segment 118-136 MHz seems to be basically set up for AM, while all other frequencies are set up for FM. Some mention of this in the manual would have been helpful. At one stage I thought my signal generator was not working properly.

On testing, however, the receiver seems to be very good with only about 8 dB ripple in the sensitivity across the VHF segment. UHF sensitivity also, while not measured directly, seemed to be quite flat, even up in the mobile phone area (the 830-970 MHz range). The transmitter does seem to be as advertised, that is 144-148 MHz and 430-440 MHz.

As usual, no circuit diagram was provided so, again, any real technical details are restricted to what small amount is in the manual and things which I could manage to measure from the outside.

As far as the bits from the manual are concerned we find that it has a dual conversion superhet with a 17.2 MHz and 30.85 MHz first IF on VHF and UHF respectively, with both bands using a 455 kHz second IF. Sensitivity for 12 dB SINAD is claimed as less than 0.16 μ V.

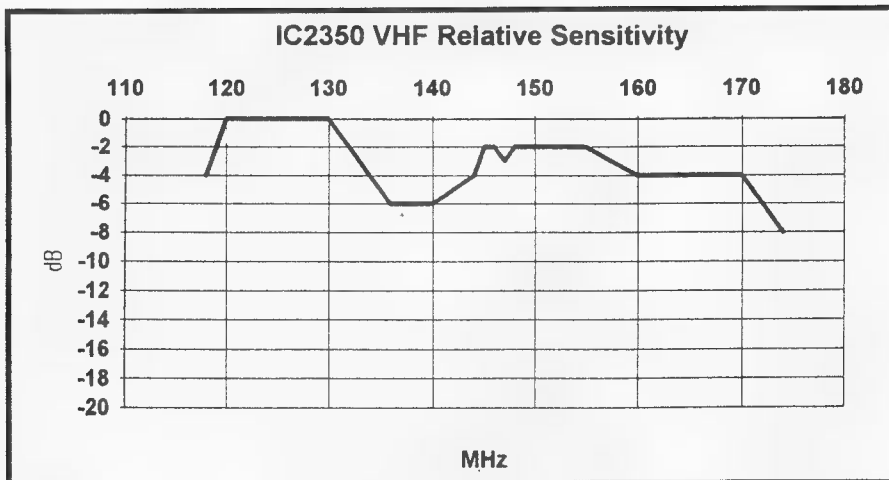


Figure 1

Selectivity is on a par with other like boxes, as is spurious and image rejection.

Audio output is claimed at better than 2.4 watts, and subjectively sounded clear and clean. For the transmitter, the rated power outputs were 50, 10, and 5 watts on VHF and 35, 10, and 5 watts on UHF. Peak current drain at maximum rated power out is given as 11.5 amps at 13.8 volts.

The set has 110 memories shared across the bands (100 normal, two call, and four scan edges), and has selectable tuning step sizes of 5, 10, 12.5, 20, 25, 30, and 50 kHz.

Tests

The results noted below are for the VHF side of the receiver, more because of the available test equipment rather than anything else. I feel, however, that they are probably

representative of the UHF band as well, based on "on-air" performance. The apparent fact that the set automatically selects AM for the segment 118-136 MHz was a bit of a surprise, as there was not even a hint of this in the manual. This is, however, a useful thing as this area contains the AM aircraft band.

The VHF receiver performance is shown in Fig 1.

The S meter was fairly linear in its operation, as shown in Fig 2. One strange thing, however, was that while the S meter had 14 little LCD squares, they only seem to come on in pairs. In effect, then, there are only seven segments leading to somewhat less resolution than might have been thought.

Operation

The fan on the back of the heat

sink made little noise, and could be set up to be on permanently, or only on transmit, etc if the noise was a problem. In a mobile environment, where the set is intended to be used, it would be pretty hard to notice the fan noise unless you had a very quiet car. The heat sink became warm after some time of continuous use, and the fan is definitely needed.

If this, and similar sets, are mounted in a vehicle, then you really should be careful where you mount them so that they have a good airflow, but remember that heat sinks can be bi-directional. I do, unfortunately, remember the time I mounted one radio in a car in an area with too good an airflow. In winter, during one long drive with the car heater on flat out, I discovered too late that the hot air from the car heater was blowing directly onto the set heat sink. The effect of this was that more heat was being transferred from the surroundings to the finals, than from the finals to the surrounds. The result? Exit stage left one expensive PA module.

As has been said already, the on-air performance was quite good, and the scanning and tuning functions were as you would expect - simple to use and could basically be worked out without recourse to the manual.

Conclusion

This is a fine mobile rig with a good wide-band, though not continuous coverage, receiver. I would be quite happy to have it in my car.

*47 Park Avenue, Wattle Glen VIC 3096

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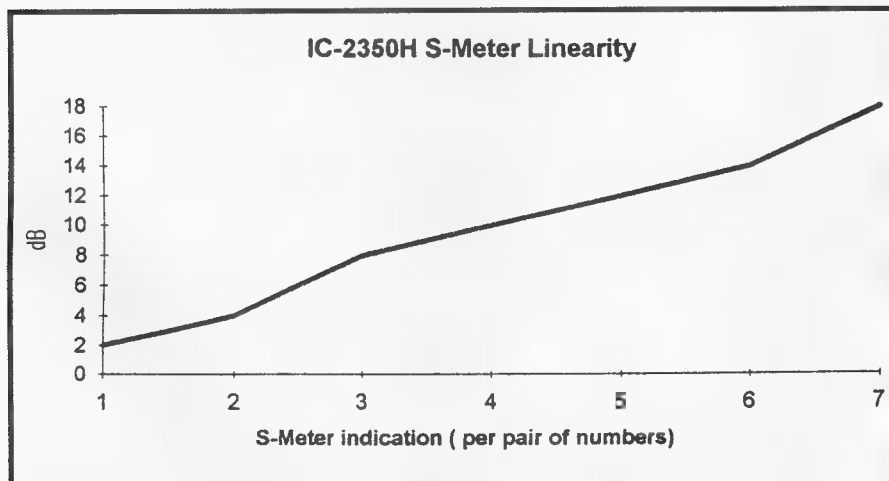


Figure 2

**Sign up a new
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