

power. The 980 comes with a fairly beefy transformer, and a very large heatsink, plus a fan. The fan does a good job of keeping things cool, the only problem is that it isn't very quiet, and it tends to run all the time, even on receive. This is a positive distraction and would seem to indicate that something isn't quite right with the PSU rating or cooling arrangements. The fan could be expected to run on transmit, but on receive?

Circuit

The FT-980R is a triple conversion superhet, with a claimed receive dynamic range of 95dB (using the narrow CW filter). Certainly, listening didn't show any problems with respect to this, and it will be interesting to see the lab figures, as some of the other rigs reviewed haven't matched their claimed figures. A switched attenuator (10/20/30dB) is provided but it wasn't needed during the review, except to help with one very local station running maximum power.

RF amplification is used at the front end (2SK125s) preceded by lowpass filtering, then by bandpass filtering (separate banks for general coverage and amateur bands). 2SK125s are also used in the first and second IFs, all to aid strong signal handling. The majority of the main selectivity is at the second IF of 9MHz, with the optional narrow and FM filters at 455kHz (the third IF).

As can be seen from the block diagram, the synthesiser circuit is quite complex, using a 30MHz reference oscillator (this can just be heard on receive but isn't of any consequence). With 10Hz steps, the tuning is smooth and very similar to a continuously tunable VFO.

The PA unit uses two MRF422s to develop 100W PEP SSB output, and 50W on FM/FSK. The power output meter seems fairly accurate, as does the SWR meter.

The 980 on the air

The rig was used for a period of several weeks with the usual set up of a G5RV multiband antenna, and an HQ-1 beam, plus a Transmatch type ATU. Conditions on 10 metres were not at their best, so other than the odd CQ little use was made of this band. The majority of QSOs were on 80,40 and 20 metres, with some CW on 10 and 18MHz.



Handbook and extras supplied with the rig – but the microphones are extra. The mains lead came with a European-type plug.

Table 1 Lab test results

Receive Mode

1) Receiver sensitivity for 12dB SINAD, USB mode

Frequency (MHz)	Sensitivity (μ V p.d.)
2	0.2
3.7	0.18
7.05	0.2
14.2	0.2
21.2	0.25
28.5	0.25

2) Set to CW (minimum bandwidth), repeat at 14.2 MHz: 0.36 μ V p.d. for 12 dB SINAD.

3&4) Dynamic range measurement: unfortunately there were problems with the dynamic range test which only came to light after the rig had been returned to the supplier. This makes it impossible for us to calculate the dynamic range figure. However, the Australian magazine *Amateur Radio Action* measured 103dB, which is quite a bit better than Yaesu's claimed figure of 95dB with the 300Hz filter in circuit.

S-meter Calibration

5) Set to 7.05 MHz.

S-meter reading	Input Level
S1	4 μ V p.d.
S3	14 μ V p.d.
S5	36 μ V p.d.
S7	80 μ V p.d.
S9	180 μ V p.d.
+10	450 μ V p.d.
+20	1.2mV p.d.
+30	3.6mV p.d.
+40	11.0mV p.d.

6) A 50 ohm dummy load was plugged into the aerial socket and the receiver tuned across the amateur bands. No spurious whistle above