

reasonably cool, even after extended periods of operation and as noted earlier, the cooling fans are quiet.

Tuning up is of course no problem with the broadband PA, but a matching unit is almost a necessity if you are using any form of multiband antenna. All tuning was done at low power (around 10 watts) before increasing to full output for final tweaking. The presence of the automatic VSWR meter is of considerable assistance here, although I have some doubt as to the accuracy of the actual readings, although the null seems OK.

On SSB, it is necessary to get the ALC reading well up when transmitting — if the meter is only just kicking off the stop you will be losing a lot of available distortion-free power output. Several stations commented on the noticeable increase in received signal strength with the ALC well into its allowable limits, against a low reading, with no degradation of the signal quality, either on or off frequency. You can use the MONITOR facility to set up the processor level effectively and convince yourself that things sound OK. Power output was virtually constant across all the bands, the meter indicating in excess of 100 watts.

One of the joys of this rig is for the CW addict, as the benefits of full break-in working level the semi-break-in method (which this rig can also do) a long way behind. With full QSK, it is possible to return to receive between the individual dots and dashes of the transmission, allowing the other station to break-in (just like VOX working on SSB) or alert you to interference on the frequency. The lack of TX/RX relays makes this a very quiet operation and most enjoyable in practice.

## Receive

Most of the subjective evaluation of the transceiver was done on receive, and considering that you will spend a far longer period receiving than transmitting, it is the more important mode.

The sensitivity of the rig is such that one need not consider any extra RF amplification, and it is quite feasible to operate with the attenuator in on the lower bands without realising it. Dynamic range appears to live up to its claimed specification, with little sign of any problem except on 40 metres on occasions. The only untoward signs occur when the noise blanker is in use, and the blanking level above setting 6 or 7, when the dynamic range is greatly reduced, and distortion products become very apparent.

Suppression of the static clicks which abound most days using NB1 was effective, and this blanker was usually left on about setting 4 most of the time. Switching it out after a period of use showed how effective it was.

## Selectivity

Selectivity from the fitted standard filters was excellent, and the various passband tuning controls did their job very effectively. The SSB controls enabled virtually any interfering signal to be reduced or removed completely by varying the upper and lower filter cut-off frequencies which appear to be sharp, and in conjunction with the deep notch filter, anything left within the passband of the actual signal being received could be mostly eliminated. On CW, the VBT control is fairly effective, but the steepness of the skirts in the narrower positions could have been better. Reciprocal mixing from adjacent stations was non-existent unless the stations themselves were wide in the first place.

The AGC coped with all signals well, using SLOW for SSB and FAST for CW. Attack and recovery times were adequate with little 'pumping' on strong signals. When an unwanted strong signal was within the passband of a wanted weak signal, it was necessary to switch the AGC off, and reduce the RF gain to allow proper reception, but this is not a fault with the rig itself.

## Good audio

The audio system is one of the best I have heard, with no detectable distortion, even at volume levels from the internal speaker way above that possible with other rigs. You are unlikely to want an extension speaker even in a large room! The tone of the audio is pleasant and not tiring, although no adjustments such as tone control are provided.

## Tuning around

One of the other little extras is a bleeper! Well, no modern rig is complete without one. This one is not too obtrusive, and gives a stomachable utterance each time any frequency change is made with the select buttons, the RIT is selected or cleared, or the MEMORY button pushed.

Using the memories and dual VFOs is fairly easy after a few attempts, and besides split frequency working, it allows you to jump round bands and frequencies keeping an ear on QSOs, pile-ups etc, ready to jump in when the time comes.

Frequency stability is excellent, with just a slight shift during the first few minutes after switch on, but within specification. The 10Hz step rate of the VFO makes you think you have continuous tuning — you can only just detect the steps if you listen carefully. The only slight criticism is a clicking noise every even 2kHz as you tune rapidly, more apparent on AM than any other mode. The nicely balanced tuning mechanism is a treat compared to some

rigs with stiff controls, and although you can spin the dial effortlessly, it stops with a positive action, then only needs a light touch to get things just right.

## General coverage receive

Although I have no particular interest in general Short Wave DXing, the general coverage mode on receive makes this rig a natural for the purpose. You can hop around in 1MHz steps easily, using the amateur band buttons for rapid QSY near the band you want. Incidentally, continual pressing the UP/DOWN 1MHz buttons does not result in stepping, just a continuous bleep.

On AM, many DX stations were copied on the MW band, and the variable selectivity sorted them out at night with no problem. The reproduction quality of broadcast stations was adequate, although if you want to relax and use the RX for Radio 2, 3, or 4, you could do with a better speaker. It will go down to 100kHz, although the manual says 150kHz.

For frequency checking all the Standard Frequency and Time Transmissions are available of course. The receiver as supplied checked out accurately (within the digital readout resolution) on WWV and other transmissions.

## Conclusions

In my opinion there is no doubt that this transceiver is the best to pass through the shack so far. It is effortless to use and importantly, very quiet in operation with no RX/TX relay clatter. It has all the facilities you are likely to want and these all seem to perform as required, the only possible exception being the noise blanker, and even then only when blanking level is set high.

For the CW user, it is one of only a few rigs designed with CW in mind, and with the addition of one of the optional CW filters should please all but those who don't want to pay for SSB facilities.

I would criticise the manual in terms of lack of servicing info, but there again, the transceiver is a complex machine, and not suited to anything but expert twiddling. The lack of FM facilities may annoy some, especially if you want to use it for VHF transverting.

Bearing in mind the warnings about keeping the VSWR down, there appear to be no problems on transmit, and very few to receive.

If you want to spend the money, then if the review sample is representative, you should be very happy with your choice for some time to come. I shed a tear when it had to go.

*(Our thanks to Ham International for the loan of the review sample — Ed.)*