

small slide faders allowing adjustment of VOX gain, VOX delay, anti-VOX and scanning speed (this is also controlled by the 10/100Hz step switch). The loudspeaker is mounted in the top, and whilst this will usually be convenient, it could be a nuisance in some positions in a car. You might have to plug in an external speaker. Underneath the front of the rig is a level tilt bar which lifts the front of the rig up when it is resting on a table, and this was rather nice. On the back of the rig is a heavy duty 13V power socket (lead supplied with heavy duty fuse), $\frac{1}{4}$ " key jack, external speaker 3.5mm jack, an SO239 RF in/output socket and a large wing nut terminal for earth connection. Three multi-pin standard Trio DIN type sockets are provided. The REMOTE socket has seven pins with interconnections for external ALC, loudspeaker output, a pin which shorts to deck on TX for controlling an external linear (for example) and an external PTT line. The ACCESSORY socket had eight pins, and this can be connected to external equipment requiring logic information from the TS430 regarding the band in use. A 12V DC voltage on TX only is available on one of the pins, and another pin, when grounded externally, reduces the rig's output power to about 50W. Amongst the eight pins on the TRANSVERTER socket are provisions for input/output and controlling an external transverter.

At this point I would like to criticise rather heavily the unhelpful manual since it is very difficult to find out more details of these pin connections and there seems to be generally a considerable lack of basic information as compared with Yaesu and Icom instruction books. On the back panel of the rig is an enormous heat sink, and built into this is quite a powerful fan which comes on as and when the temperature of the heat sink demands it.

The rig is reasonably compact, and contains a remarkable number of facilities and has room for many options

when one considers its size and weight. (275 x 105 x 335mm abd 6.5 kg).

Subjective comments

I used the rig on SSB, and briefly on CW, over a period of two weeks on a number of bands, and found it very easy to use, although it took some time to work out how to operate all the facilities. Transmitted audio quality frequently received favourable comments, the compressor being liked as well. The transmission seemed to have a good deal of punch to it, and was very clean, all listeners finding the transmission quite narrow even when the processor was in use. It was such a pity that Ham International could not supply the FM board because I would have liked to have tried the rig on 29.6 MHz, the international 10m FM calling frequency. The three new bands, in the 10, 18 and 24MHz segments were not supplied 'enabled', although ones supplied by Lowe electronics normally have this provision.

Although I was concerned that the tuning rate was not exactly 10/100kHz per rev, the tuning ergonomics were very good indeed. The scan buttons on the microphone operated in the same way as usual, again the scanning speed being controlled by the slider on the top of the rig, and the step switch. Even when the rig is in the 'amateur bands only' mode, rather than the general coverage 1MHz up/down steps mode, complete receive coverage is possible by continuing tuning below or above the appropriate amateur band. I tuned all the way from 30MHz down to 0Hz to check on this, not quite wearing out my finger in the process. However, the absence of a slip ring around the finger hole, (such as on the TS830) is a pity. This makes it possible to whizz up and down very rapidly. On my scan across the frequency coverage of the rig I noticed a large number of minor sprogs, and one extremely bad major one,

this check being carried out with a screened dummy load screwed onto the aerial socket, and even with a ferrite ring close to the set on the 13V lead. The bad sprog was audibly over S9 at 21.562MHz, although the meter only read S3 on it. The minor 'birdies' would not be disturbing on lower frequencies, but you might be very slightly disturbed by one or two which were equivalent to an audible S3 to S5 or so on the 10m band, which did not, however, register on the S meter. The worst ones were on 28.888, and 28.921MHz.

I checked the performance audibly on 160, 80 and 40 metres, both during the day and at various times in the evening, and I was impressed with the clean reproduction of DX and local stations, with no apparent cross mod or RFIM problems, the 20dB attenuator taking good care of this when signal strengths were way up well after dark. The RF sensitivity appeared to be adequate even on 10 metres, although the IC740, for example, is slightly better. Selectivity seemed to be good, but rejection of extremely strong CW well off channel did not seem to be as good as that on one or two competitive rigs. The T-notch filter was extremely good, indeed one of the best that I have measured in some time.

It is unfortunate that only one AGC speed is available, and I felt that this was sometimes rather fast, particularly on strong 80 metre stations. If, however, you consider putting in the attenuator during the daytime on 80 metres, then even fairly strong signals will become a little hissy with the attenuator in. Turning the RF gain control down (with attenuator out) improved the sound quality. What upsets me a little about an AGC that acts a little too quickly is that voices tend to pump, and background noise in the shack, including reverberation, becomes too audible. I cannot remember a receiver built specifically for amateur use that had an AGC facility that I would have regarded as too slow. I do like the option of twiddling with the recovery speed, which is what is lacking here. I also note that there is no apparent way of turning the AGC off, a useful facility for CW reception sometimes.

The IF shift control, which is usefully centre indented, and thus marking a nominal centre position, was very useful. Sometimes this facility is termed 'bandpass tuning', and basically alters the position of the filter with reference to where an injected carrier would have to be correctly inserted to demodulate the SSB at the right pitch. It can, for example, give you the pass band from say 100Hz to 2.5kHz, or from 500Hz to 2.9kHz if you prefer male voices to change sex! It can also be used more seriously to filter out, or at least to reject more efficiently, carriers or interference just off frequency. As the narrow SSB filter and CW filters were not

Rear view showing heatsink and quiet cooling fan

