



## Reciprocal mixing

We also had a look at the reciprocal mixing performance. At a 100kHz spacing I am delighted to say that the ratio is better than 100dB, which is excellent. Close in, at 20kHz, the ratio of 90dB is again excellent, but I again have reservations on my test equipment, for the Mutek front end is probably better still, possibly by quite a good margin. I am, therefore, in the throes of organising some special very quiet crystal controlled oscillators at various frequencies, to see if we can get even better measurements in future. These measurements, though, already far surpass those of other black boxes that I have looked at in the last six months. The indicated frequency accuracy was pretty good at +100Hz indicated. We did not note any drift after the equipment had stabilised after a few minutes.

We had a look at the FM alignment, and this seemed to be very well done, since we could get no improvement in overall FM sensitivity if we off-set the generator either way.

We only had a brief look at the transmitter side as this is not affected by the Mutek modifications. The output power was quite even across the band on FM and SSB, the

SSB power being just slightly higher than FM or CW. The output power is adjustable down to a very low level on FM only, unfortunately. The FM carrier frequency accuracy was well within 200Hz, whilst on CW there was an off-set from the dialled frequency of +700Hz. My personal preference is for a CW output tone to be at the dialled frequency, and one can then put in a fixed off-set on receive. This allows you, without off-set, to zero beat a signal, and measure a frequency accurately. Icom's philosophy is completely valid and may well be preferred by most readers, for the chances are that when you turn a receiver into a CW carrier at a reasonable audio beat note, the transmit off-set will place your CW carrier in the right territory. This may not be accurate enough though, if you are doing moonbounce experiments, etc.

We had a brief look at the harmonic output, which will be seen to be perfectly reasonable in the table.

## Subjective Tests

I've used this rig for a while both barefoot, and driving a Dressler linear. Everyone reported the barefoot transmission to be quite narrow, and the quality acceptable

(but not particularly good), on SSB. On FM, transmitted and received quality was excellent, but received SSB was about the worst I have heard for a long time, only as regards audio quality, for the RF and IF performance was fabulous.

We found one or two annoying ergonomic points: Sometimes if you switch from SSB mode, you will get an FM frequency which will be off-set no matter what you do with normal tuning. You don't seem to be able to get rid of this unless you go back to SSB, correct it and then return to FM. Pushing the step button twice can sometimes also correct it. Other functions seemed to work quite normally, the squelch working on SSB and CW as well as FM, with variable threshold. Three memories are incorporated, and these are fairly easy to use, but unfortunately you cannot VFO from them. It is not possible to obtain repeater shift directly unless you have previously programmed the 600kHz difference between VFO A and B. Furthermore, you have to switch the backup on two positions on the VFO switch, then allow normal or reverse repeater operation, which is retained when you turn the rig off, if you have remembered to install the backup battery! I much like the tuning ergonomics, SSB being in 100Hz or 1kHz steps (5 or 50kHz per revolution), or 1kHz and 5kHz steps for FM with 50 or 250kHz per rev tuning. There is a snag here, though, for if you are on the 5kHz step mode, and you tune the dial fairly fast, the rig misses many beats since the optical step detector is just not fast enough to follow. (*more likely that PLL goes out of lock — Ed.*) This was extremely annoying for me as I am blind, and it could be aggravating for quite a few people.

An auxillary socket on the back enables many remote control functions to be obtained, many accessories being available for this. Various pins gave some useful functions, including external PTT, an 8-volt on TX rail (limited current, though, of only 5mA), and external ALC input.

## Conclusions

I hope the reader will appreciate that space precludes a more detailed explanation of the many functions and controls, in order to devote most of the space to a deep