

ALC circuit to the 25E is used, and again the power outputs can be reset if needed.

### IC45-E PLL Circuit

The PLL unit is basically similar to the 25-E, but with naturally different frequencies. The local oscillator is slightly different in that it needs to generate two different frequencies, either 33.0942 for receive, or 34.9109MHz for transmit, both doubled, then tripled to around 200MHz for mixer injection. With both the 25 and 45E, the odd 5kHz shift at signal frequency is achieved by diode switching a capacitor in series with the LO crystal (at 70cm the shift is only 2.5kHz as the final signal is doubled).

Similarly, the VCO runs at 204.1/215MHz (receive/transmit), and is controlled as for the 25-E but using a 5kHz reference frequency. The CPU unit is as the 25-E.

### The rig in use

To the reviewer, a transceiver specifically designed for mobile operation should also be designed to allow operation while driving a potentially lethal piece of

machinery at speed. In modern cars, there is less and less opportunity to mount the rig in an optimum position ie, near eye level, where you can keep your eyes on the road. Thus the location tends to be on or under a shelf around knee level, or in the central console. Also bear in mind that the more visible the rig, the more likely you are to be parted company with it.

While both transceivers offer many facilities, and make excellent base stations, their use under mobile conditions is less than optimum. Being small, the controls are necessarily grouped closely together, and some thought is necessary to select the correct controls when actually driving. Both the volume and squelch controls are very small and fiddly to use, and the visibility of the displays has already been commented upon.

The most annoying feature of both rigs is that you are likely to be continuously adjusting the squelch control due to a lack of hysteresis. Neither rig has any tail to the squelch, or put another way, there is no delay between the signal going and the squelch switching off. The result is continual chattering if any signals near the threshold setting are encountered — this of course happens all the time and actually

prevents copy of otherwise readable weaker signals, forcing you to back the squelch control right off to get a readable signal. Again, diving into the circuit could eliminate this problem. Icom squelch is usually 'soft' with a slowly decaying time constant present, so why the departure?

### An overdone rig?

The microphone step controls get over the visibility problem to some extent, but can you avoid the temptation to look at the display to check that you are actually where you think? One school of thought says that a mobile rig should be as simple as possible, and that these transceivers are overdoing the facilities (witness the huge popularity of the IC240 — which had a minimum of controls but most of the needed facilities — there has to be a reason for its reappearance as the IC24-G, although no comments at present on the thumbwheel switches when mobile...). Some of the proliferation of facilities must be due to competitive action between the manufacturers, vying for a new market position. At least the thing didn't beep at you everytime a button was pushed.

If you are willing to ignore these

