having no form of filtering as you would in a superhet receiver. That is to do some additional filtering at the audio stages, where it is much easier to accomplish.

Even without filtering, the direct conversion receiver is still an extremely popular and efficient way of getting a first receiver going. The lack of selectivity, which as we have said can be improved with an audio filter, isn't such a disadvantage as you might think. The average human ear is an extremely good filter, and the audio image generated by any direct conversion receiver is for all practical purposes filtered out by the ears.

### Diodes and FET oscillators

In many of the FET oscillator designs which appear in these pages, there is often a diode connected from the gate of the FET to earth. A couple of people have asked what this is for, and whether it matters which way round it is.

Basically it is there to provide an AGC function. If you think about any oscillator, the circuit is an infinite loop, with the output being fed back to the input by one means or another. There has to be something which stabilises the output level at a constant point — if there wasn't the oscillation level would build up to infinity eventually which is clearly impossible. There are only two things which can stop this happening — either the oscillator limits, or there is some form of AGC present.

With the diode present, as the RF voltage from the oscillation increases just after switch on, the voltage on the gate will similarly increase, and be rectified by the diode, in turn causing a DC voltage to build up across the gate capacitor. This will be a negative voltage from the way the diode is connected, and it is this which provides some bias, driving the FET towards cut-off as it gets more negative. The amplitude of the oscillation thus decreases, until a point is reached at which it stabilises — that is when the gain is only just enough to keep the oscillator running. Or an AGC control.