

The filter skirts are claimed to be steeper than those of multipole crystal filters, and with the variable low and high-pass cut-offs, could be equated to the latest IF shift/width systems in terms of facilities. Computer generated response curves for the FL3 in various modes are given in the instruction leaflets, and reproduced here for comparison with the actual laboratory results on the review sample. A minimum stop band rejection of 40dB was aimed at.

Facilities

The filters' input is intended to be connected to the speaker or headphone socket of the receiver, with output either into an external speaker (1.5W into 4 ohms at 10v) or headphones with an overall gain of unity. The output (LM380N) is short circuit proof.

The FL2 has a number of selectable modes, suited for SSB, AM, CW, SSTV and RTTY, with the addition of one automatic, and one manual notch filter, the latter also

usable as a peak filter. The best way of explaining operation is to show how each mode operates individually.

SSB, AM & SSTV

For all of these modes, where a bandpass characteristic is required, the 'SSB' button is depressed, followed by adjustment of the two right hand controls. The first sets the lower cut-off frequency of the filter — normally this would be around 2.500Hz, as otherwise too much intelligibility is lost on a voice signal. The upper cut-off can then be adjusted to suit the interference conditions prevailing, down to a limit of around 1.5kHz for SSB, before quality suffers too much.

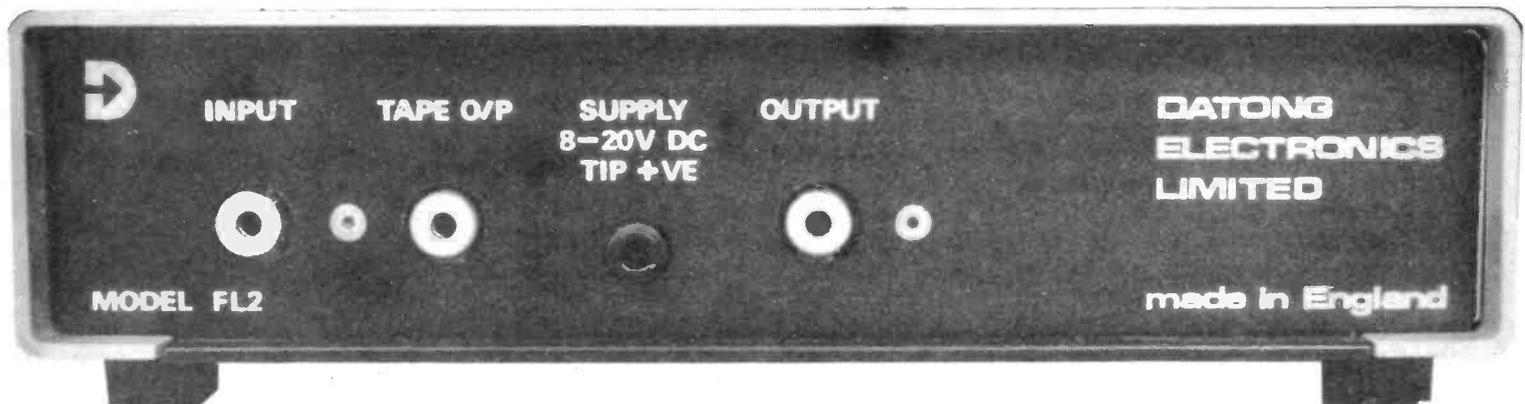
Heterodynes within the passband can be removed either by the automatic notch filter, or by manual filter (or two heterodynes removed using both!). As the notch is fairly narrow (200Hz claimed) it can be difficult to tune this accurately, so an additional mode — "SSB + PEAK" is provided where the in-

terference can be peaked first (using the left potentiometer), and the mode then changed to "SSB + NOTCH" to eliminate the whistle.

It is possible to switch the filter effectively out of circuit, whilst retaining the same audio output, by depressing the "SSB + PEAK" and "SSB" buttons together. This sets the filters to their extreme limits and disables control by the potentiometers, enabling comparison of the effect of the settings against the no-filter position. This feature was extensively used during evaluation.

CW

In CW mode, all filters are combined to provide 12 poles of filtering with good skirt selectivity, and a peaked response. In use, the functions of the potentiometers change, with the centre knob providing the peak frequency (calibrated), and the right-hand control the passband width (un-calibrated). A minimum bandwidth of 40Hz @ 3dB is claimed, with minimal ringing of the filter.



The unit plugs into the external speaker/ AF output socket of the receiver. After processing the signal, the unit will drive a loudspeaker directly