

receive, the notch can lock to another heterodyne rather than the original.

An led indicator shows when the notch filter VCO is locked and the system effectively follows any frequency shift in the heterodyne. The real pleasure was the apparent absence of the 'tuner-uppers' during QSO's!

It was with the KW2000A that the real advantages of the filter became very apparent. This old trusty rig boasts one early design mechanical filter only, and while SSB is not too difficult to cope with, CW even under middling conditions can be very trying — as for contests...

On SSB, with the Datong filter set to the same nominal bandwidth and cut-offs as the filter, immediate improvements became apparent with reduction in the high-frequency chatter from adjacent stations. Reducing the bandwidth under crowded conditions gave good copy when the normal bandwidth would have been impossible. The effects of strong signals actuating the AGC were not really a disadvantage, compared with the ability to copy the signal in the first place.

On CW the 2000A became a totally new rig with good single signal reception possible under very crowded conditions. At minimum bandwidth setting, which should be around 40Hz at 3dB, tuning of the received signal was quite critical, with little of the ringing normally obtained with this sort of bandwidth on an audio filter. Even fairly wide bandwidths were effective most of the time — the advantage of being able to vary the bandwidth to suit

Typical performance data

Auto notch filter

Filter type:	2-pole, constant Q, switched capacitor
Tuning range:	200 - 4000 Hz
Lock time:	Depends on signal strength; typically less than one second
Notch depth:	40 dbs
Filter Q:	10

Low and high pass filters

Filter type:	Both filters are five-pole elliptic function
Frequency range:	200 to 3500 Hz, linear tuning
Minimum stop band rejection:	40 dbs.
Rate of cut-off:	40 dbs in 500 Hz at 2 kHz, 40 dbs in 120 Hz at 500 Hz

Manual notch/peak filter

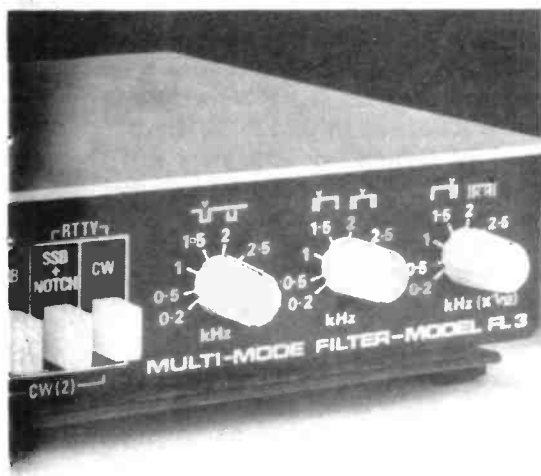
Filter type:	2-pole state variable, constant bandwidth
Frequency range:	200 to 3500 Hz, linear tuning
Notch width in "SSB + NOTCH" mode:	200 Hz at -6 dbs
Notch depth:	30 dbs

General

Bandwidth range	
"CW (2)" & "RTTY" modes:	100 to 1750 Hz at -6 dbs (10 poles total)
"CW" mode:	70 to 700 Hz at -6 dbs (12 poles total)
Input impedance:	5000 ohms
Overall voltage gain:	unity
Power output:	2 watts into 8 ohms with 15 v supply 1.5 watts into 4 ohms with 10 v supply
Output protection:	The output stage (LM380) is short-circuit proof and over-dissipation proof
Supply current:	85 mA zero volume 400 mA max. output
Supply voltage:	10 to 15 volts DC. Protected against reverse polarity
Size:	184mm wide x 153mm deep x 44mm high (7.2 x 6.0 x 1.7 inches) Feet add 10mm (0.4 inches) to height
Weight:	860 gms (31 ounces)

Accessories supplied: Input and output leads (phono plug to bare end), jack for DC power supply.

Optional extra: Mains power unit, AC mains to nominal 12 volts DC. MPU or MPU/1 for 240V, MPU/1A for 220V.



the conditions is very useful and beats an array of varying width fixed filters hands down.

Summary

The Datong FL3 filter can be thoroughly recommended, especially for the CW operator with an indifferent existing receiver. Even with a modern receiver, it can help to eliminate much of the remaining QRM, and is always under the control of the operator who can set the modes and bandwidths to suit the

conditions. The only gripe is the audibility of the VCO noted earlier, but this may not worry a large percentage of users, and only occurs when the automatic filter is not locked.

At a selling price around £129, the unit is not cheap, and it might be possible to ungrade your existing rig for this money. However, from the results obtained, the advantages could well outweigh the price for many people and you have the advantage of having it for the next rig you obtain.