VARIABLE BANDWIDTH CW FILTER

As the sunspots return and DX propagation conditions to improve, the age old problem with QRM begins to show up on the amateur bands. Fortunately, help is at hand. The circuit in figure 1 is a variable bandwidth CW filter using two IC's. The first IC is a 741 op amp used as an active filter and the second IC is a 386 audio amp IC. This circuit connects to the headphone or speaker jack of your HF rig. The volume is controlled by the volume control of your rig and R2 controls the bandwidth. There is plenty of audio to drive a small speaker or a pair of headphones.

This circuit is different from other active filter circuits because it provides an audio boost which more than compensates for any attenuation in the filter stage. Many active filter circuits do not have enough volume to make them useful for most operators. Capacitor C5 and R7 were added to prevent the LM386 IC from oscillating which is common with this family of IC's. Use good construction practices since this circuit contains a very large amount of gain at the selected bandwidth. To make life easier, only Radio Shack parts were used for those who hate mail order.

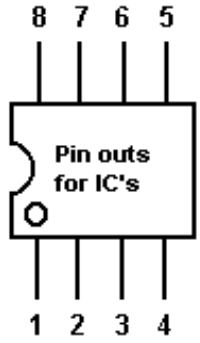
The circuit in Figure 1 has been shown to be most effective for older radios and QRP sets which lack adequate filtering.

DE N1HFX

Parts List

R1	100K resistor (brown, black, yellow)
R2	10K potentiometer
R3	330 ohm resistor (orange, orange, brown)
R4	220K resistor (red, red, yellow)
R5,R6	47K resistor (yellow, violet, orange)
R7	10 ohm resistor (brown, black, black)
C1,C2,C3	.01 microfarad capacitor (103 marking)
C4	10 microfarad electrolytic capacitor (observe polarity)
C5,C6	220 microfarad electrolytic capacitor (observe polarity)
IC1	741 op amp IC (use 8 pin socket)
IC2	LM386 audio amp IC (use 8 pin socket)

Note: All resistors are ¼ watt 5% tolerance unless otherwise specified.



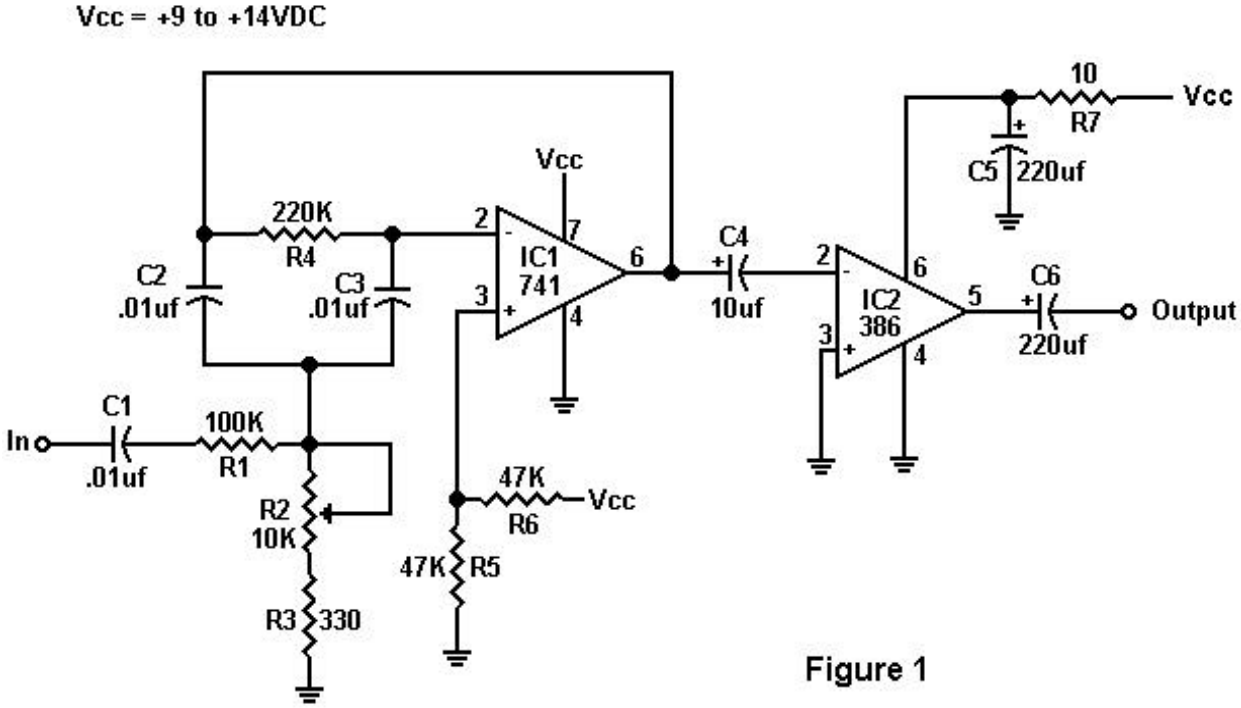

Vcc = +9 to +14VDC
10
R7
Vcc
C5 220uf
Vcc
220K
R4
C2
.01uf
C3
.01uf
IC1
741
C4
10uf
IC2
386
C6
220uf
Output
In
C1
.01uf
100K
R1
R2
10K
R3 330
47K
R6
Vcc
47K R5

Figure 1