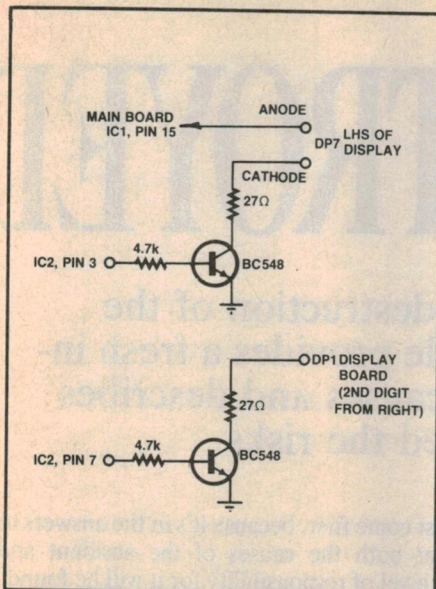## Extra decimal points for EA DFM

The EA Digital Frequency Meter described in December 1981 had no decimal point included in the display. Switching between ranges thus often gave a confusing readout. This was largely overcome by the addition of a decimal point driving circuit, published in EA, July 1982. However, there were still two ranges which did not have the decimal point included in the display.

This simple modification provides the decimal point display for the remaining two ranges. One of the decimal points could not normally be displayed because it would have been located to the left of the most significant digit, and the FND507 displays have right hand decimal points only. However, the decoded output for this decimal point is actually available from the decimal point driver at pin 3 of IC2.

In this circuit, an NPN driver transistor is used to drive a discrete LED positioned at the left hand extreme of the display. The anode is connected to pin 15 of IC1 on the main board — this will become DP7.

The second missing decimal point (DP1) is between the two least significant digits. The decoded output for this is available from pin 7 of IC2 of the DP driver — again through an NPN driver transistor. The track to DP0 must be cut to prevent it from lighting as well.

Eric Rodda,
Marion, SA.

**$15**

Modified audio generator

Several readers have contacted the designer of the high performance audio generator circuit published in the May 1986 CDI pages. Apparently, there is no source for the R54 thermistor used in that circuit, although the RA53 type is available from Radiospares Components (Part No. 151-114), 6c Durdans Ave, Rosebery, NSW 2018. Telephone (02) 669 3666.

The RA53 type can be directly substituted in the original circuit but the output level will be reduced to half its previous value. This problem can be overcome by modifying the output stage to provide a gain of two as shown in the diagram.

Readers are also advised that a standard dual-gang 10k potentiometer can be used in the circuit but try to find one where the maximum resistances of the two sections are within 10% of each other. Note also that if NE5534s are used, 22pF compensation capacitors between pins 5 and 8 are necessary. Finally, TL072 or RC4558 op amps can be substituted but with a slight increase in noise and distortion.

Phil Allison,
Summer Hill, NSW.
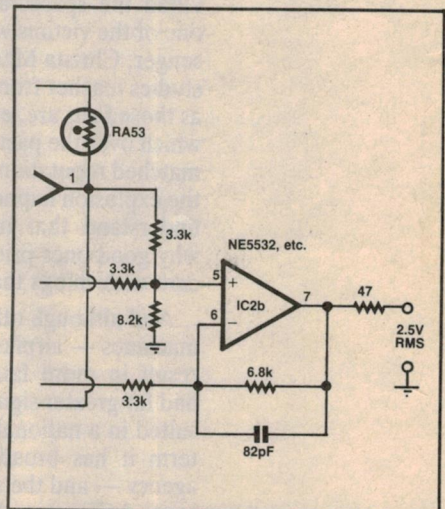
$10

Basic program for vented box enclosures

This short BASIC program for VZ computers will design the size of the vent needed in a bass reflex enclosure to tune it to a given frequency. It calculates the length of the vent from the given diameter, box volume and box frequency. Also the tuned frequency of an existing enclosure can be found from the cabinet volume and vent dimensions.

Surprising though it may be, the woofer size or type does not affect the tuned frequency; this means that you won't need any speaker data.

If the program gives a vent length of about 20mm then just a hole in the baffle is needed. Remember, however, that any vent should have a diameter not less than one quarter of the woofer diameter to prevent excessive air velocity.

For checking an existing design press RETURN when "BOX FREQ. HZ..." appears. This frequency is then calculated using the other data. If "NEW VENT DIAMETER MM." appears, enter a new larger diameter and try again since the desired frequency cannot be achieved with the previous value.

Phil Allison,
Summer Hill, NSW.

$20

```
10 CLS:PRINT
30 PRINT" PROGRAM TO CALCULATE VENTED"
35 PRINT"      BOX PARAMETERS"
40 PRINT" *************************":PRINT:PRINT
50 INPUT" BOX VOLUME LITRES ";VB:PRINT:IFVB<=0THEN50
60 INPUT" VENT DIAMETER MM. ";D:PRINT:IFD<=0THEN60
61 IFFB>0THEN100
70 INPUT" BOX FREQ. HZ. ....";FB:PRINT:IFFB>0THEN70
71 IFFB>0THEN100
80 INPUT" VENT LENGTH MM ...";L:PRINT:IFL>0THEN90
90 IF FB=0THEN130
100 L=2360*D^2/(VB*FB^2)-.8*D:IFL<0THENPRINT" NEW";:GOTO60
101 PRINT:PRINT
110 PRINT" VENT LENGTH  MM.  ";:PRINTUSING"####.#";L
111 PRINT" VENT AREA SQ.CM.  ";:PRINTUSING"####.#";7.85E-3*D^2
112 GOTO150
130 FB=((2360*D^2)/((L+.8*D)*VB))^0.5:PRINT:PRINT
140 PRINT" BOX FREQ. HZ.     ";:PRINTUSING"###.#";FB
150 PRINT" ==========================":FB=0
160 PRINT:PRINT:GOTO50
```