WIRE WRAPPING A SOUND BOARD FOR THE C1

PARTS LIST

- **1** SN76477 Sound generator
- 2 8212 8-bit port (or 74412)
- 2 7430 8 input NAND
- 2 7406 hex inverter
- 1 74138 or 74L138 decoder
- 1 2N2222A NPN transistor
- 1 2N2907 PNP transistor
- 1 8 ohm speaker
- 2 N8T28 ic chips **
- 8 1 meg potentiometers (pots)
- 2 1K resistors
- 1 3.9K resistor
- 1 100K resistor
- 1 4.7K resistor
- 1 6.8K resistor
- 1 10K resistor
- 1 15K resistor
- 1 18K resistor
- 1 22K resistor
- 1 27K resistor
- 1 33K resistor
- 1 47K resistor
- 5 .01 uf capacitors
- 3 .1 uf caps
- 1 .05uf cap
- 1 390 pf cap
- 1 10 uf cap
- 1 40-pin DIP cable **
- 1 perf board for IC circuit
- 5 14-pin wire wrap sockets
- 3 16-pin wire wrap sockets
- 2 24-pin wire wrap sockets
- 1 28-pin wire wrap socket
- 1 40-pin wire wrap socket

(Parts available from RADIO SHACK/TANDY stores, POLY PAKS (P.O. Box 942, South Lynfield, Mass 01940) or HOBBYWORLD (19511 Business Center Drive, Northridge, CA 91324 - (800) 423-5387; CA: (800) 382-3651)

Parts marked with and astrick available from HOBBYWORLD.

[handwritten notes:]
2 500K
1 330K
1 220K
1 100K
1 4.7K
1 10K
1 470K

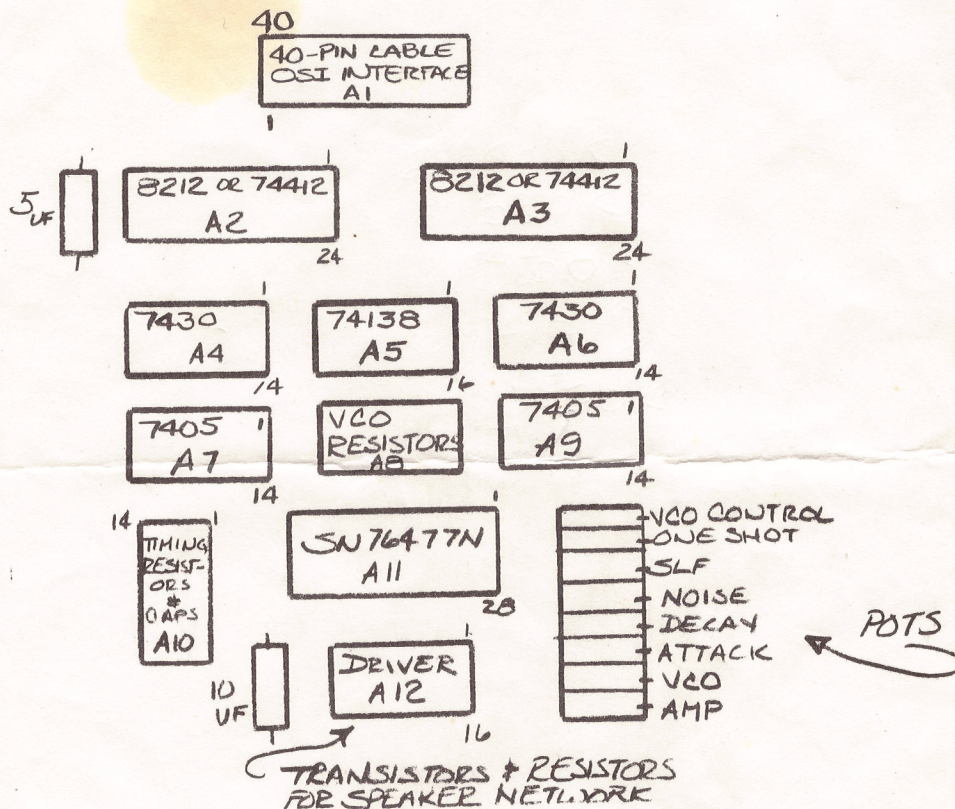*[handwritten:] 12" AP 924136-12R*

TOOLS REQUIRED: Solder, soldering iron, wire wrap tool, hand tools (cutters, needle nose, etc.), ohm meter.

ASSEMBLY PROCESS

1) obtain all parts
2) Place all IC sockets on the board using double sided tape to hold in place. On back of perf board mark all chips as to type, and mark power pins. Suggested arrangement of chips in given in fig. 1. Note: resistors, capacitors and transistors are placed in IC sockets.
3) Wirewrap all the positive power pins together. Solder a 3' piece of red wire to one of the pins. Repeat for the ground pins. Solder a black piece of wire to one of the pins.
4) Wire wrap circuit according to the schematic. Check off each connection as it is made. (a high-lighter pen is good for this, as you can see through it.) When installing potentiometers, adjust

each one to the value given in the schematic.

5) Refer to the C1 layout (fig. 2), for where to install the 8T28's and the 40-pin DIP cable. Solder the power leads to the correct terminals' on the power supply.

6) Enter the sound generator demo program into the computer. It is intended to show you some of the basic sounds the sound generator can produce. The output addressing chart will help you write programs utilizing the sound board.
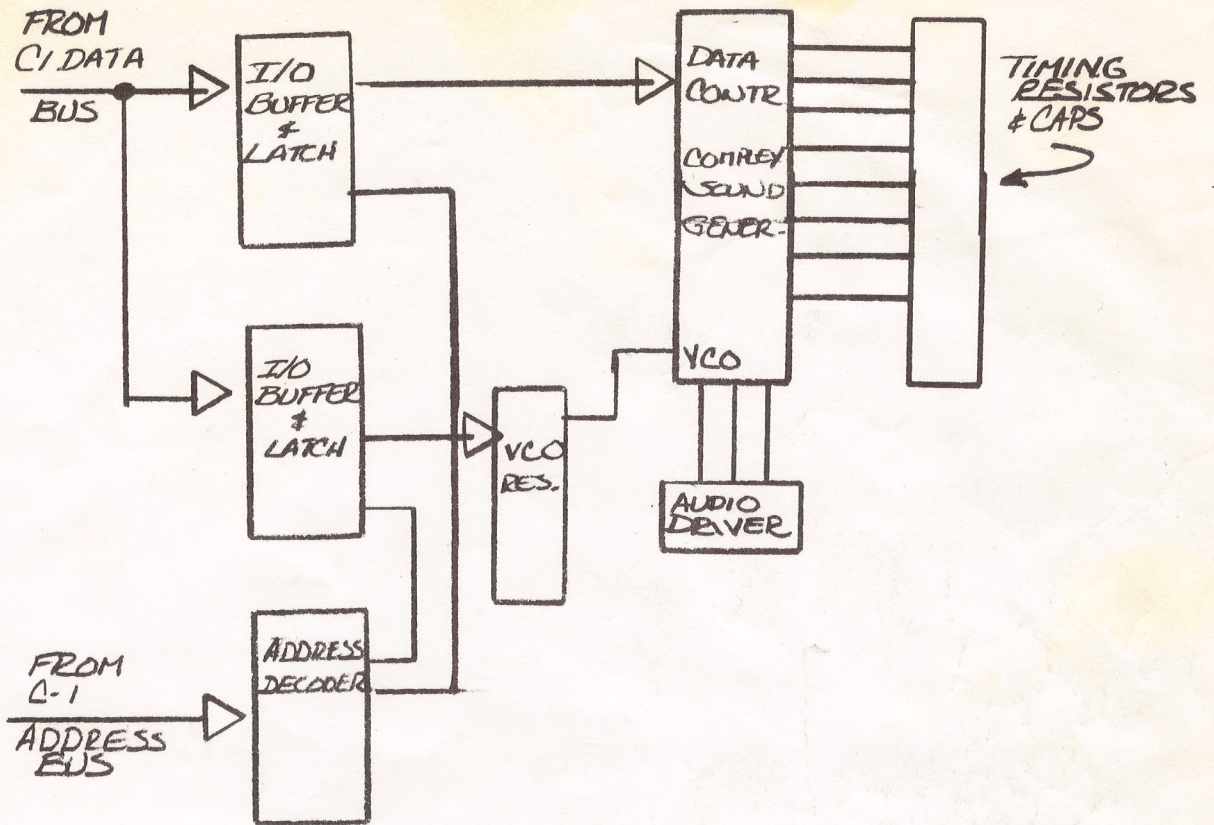
SOUND GENERATOR BOARD LAYOUT (FIG. 1)

POWER PIN CHART

IC #	IC	+5 VOLT	GROUND
		PIN #	
A1	INTERFACE RIBBON CABLE	—	40
A2 & A3	8212 OR 74412	24, 2, 13	12
A4	7430	14	7
A5	74138	16	8
A6	7430	14, 6, 11, 12	7
A7 & A9	7405	14	7
A11	SN 76477	15, 19, 18	2

BLOCK DIAGRAM

FROM
C1 DATA
BUS

I/O
BUFFER
&
LATCH

I/O
BUFFER
&
LATCH

ADDRESS
DECODER

FROM
C-1
ADDRESS
BUS

VCO
RES.

DATA
CONTR

COMPLEX
SOUND
GENER.

VCO

TIMING
RESISTORS
& CAPS

AUDIO
DRIVER

C1 - SUPERBOARD LAYOUT
(FIG. 3)

INSTALL 8T28's
HERE

6502

8T
28

8T
28

7412S

7412S

747S

747S

J1

40
PIN
EXPANS.
CONNECT-
OR

KEYBOARD

SOCKET FOR
RIBBON CABLE