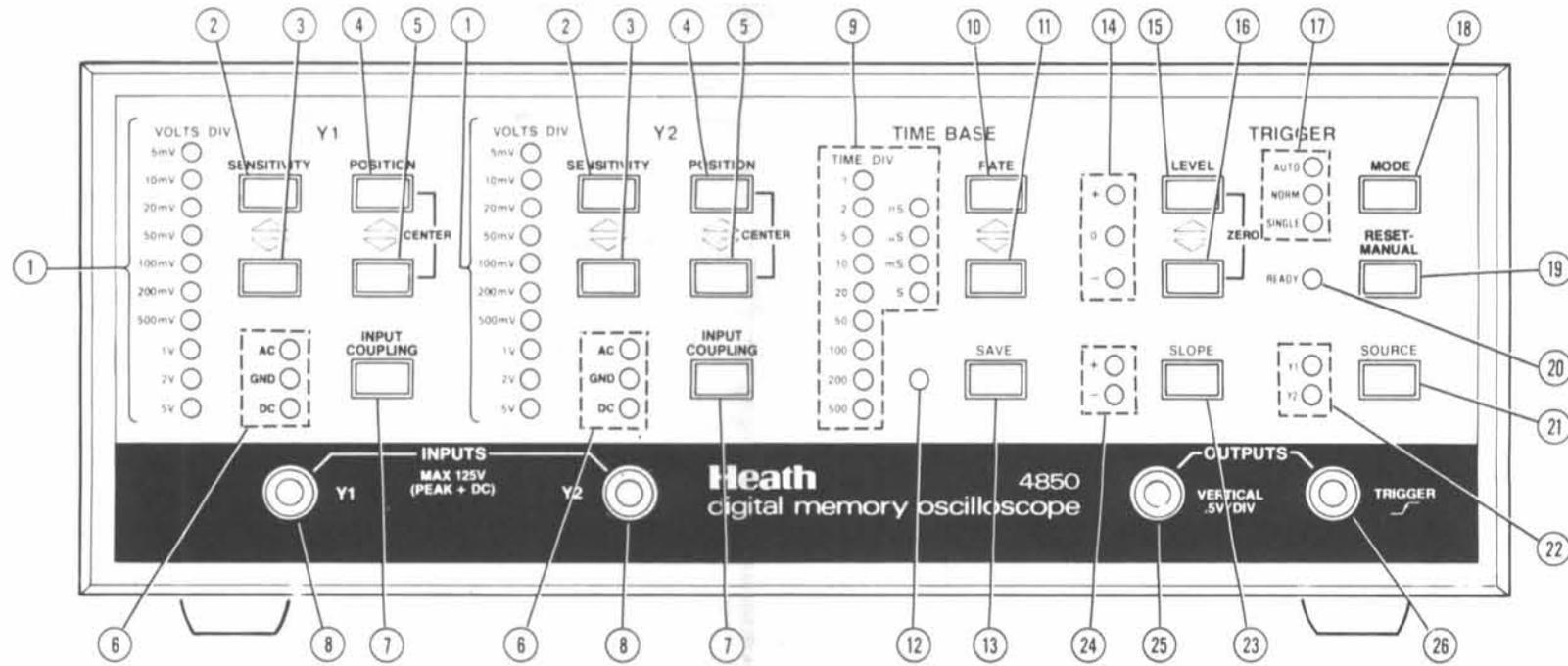
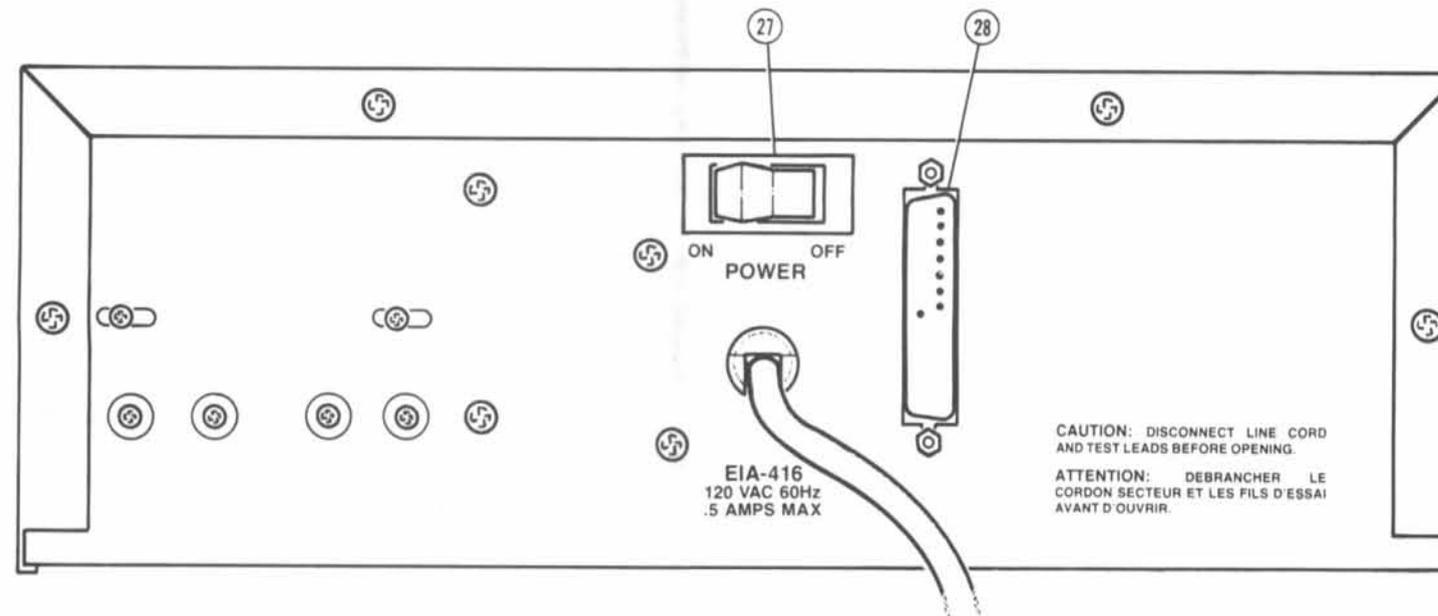


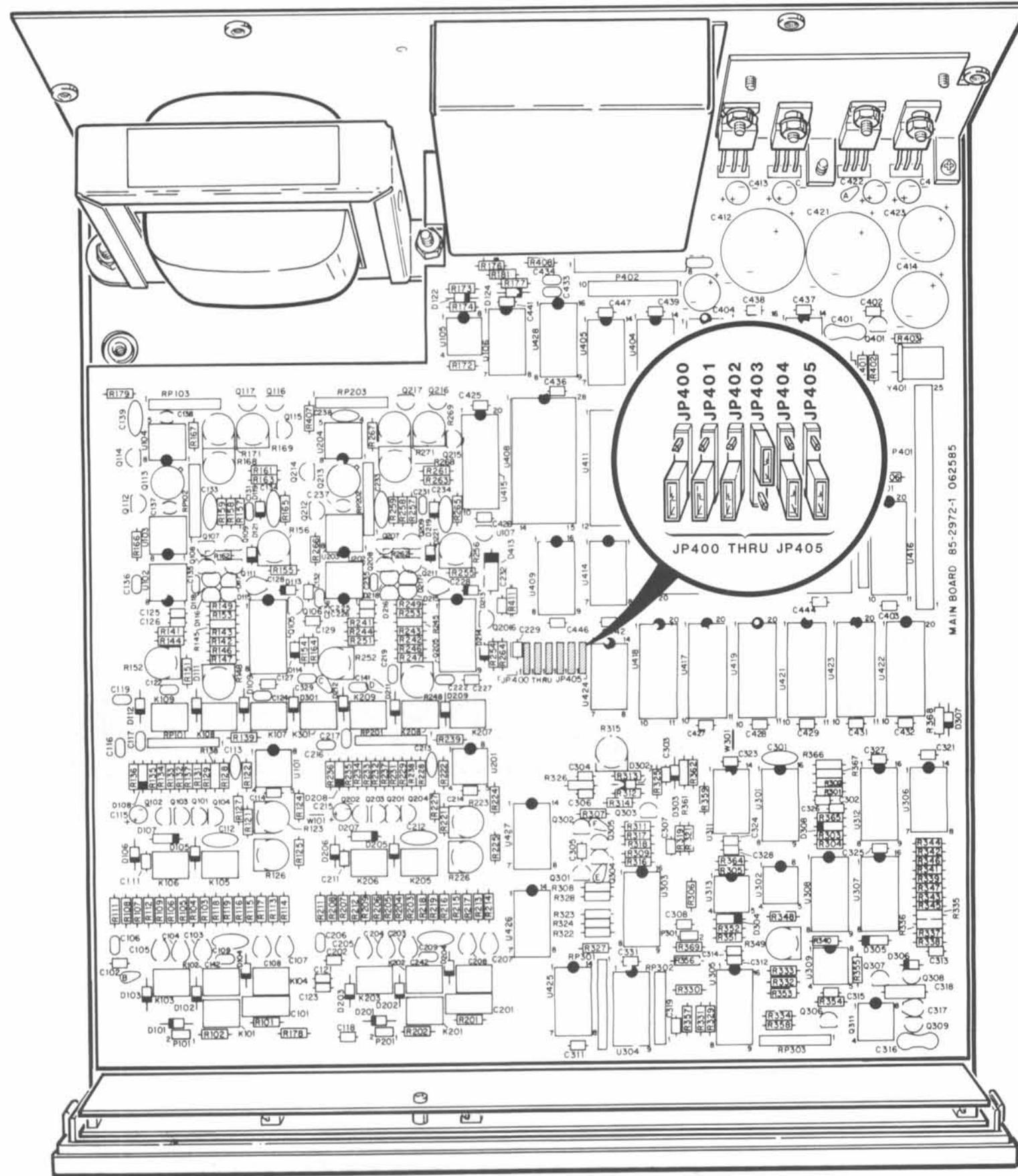
# ILLUSTRATION BOOKLET



PICTORIAL 1-1

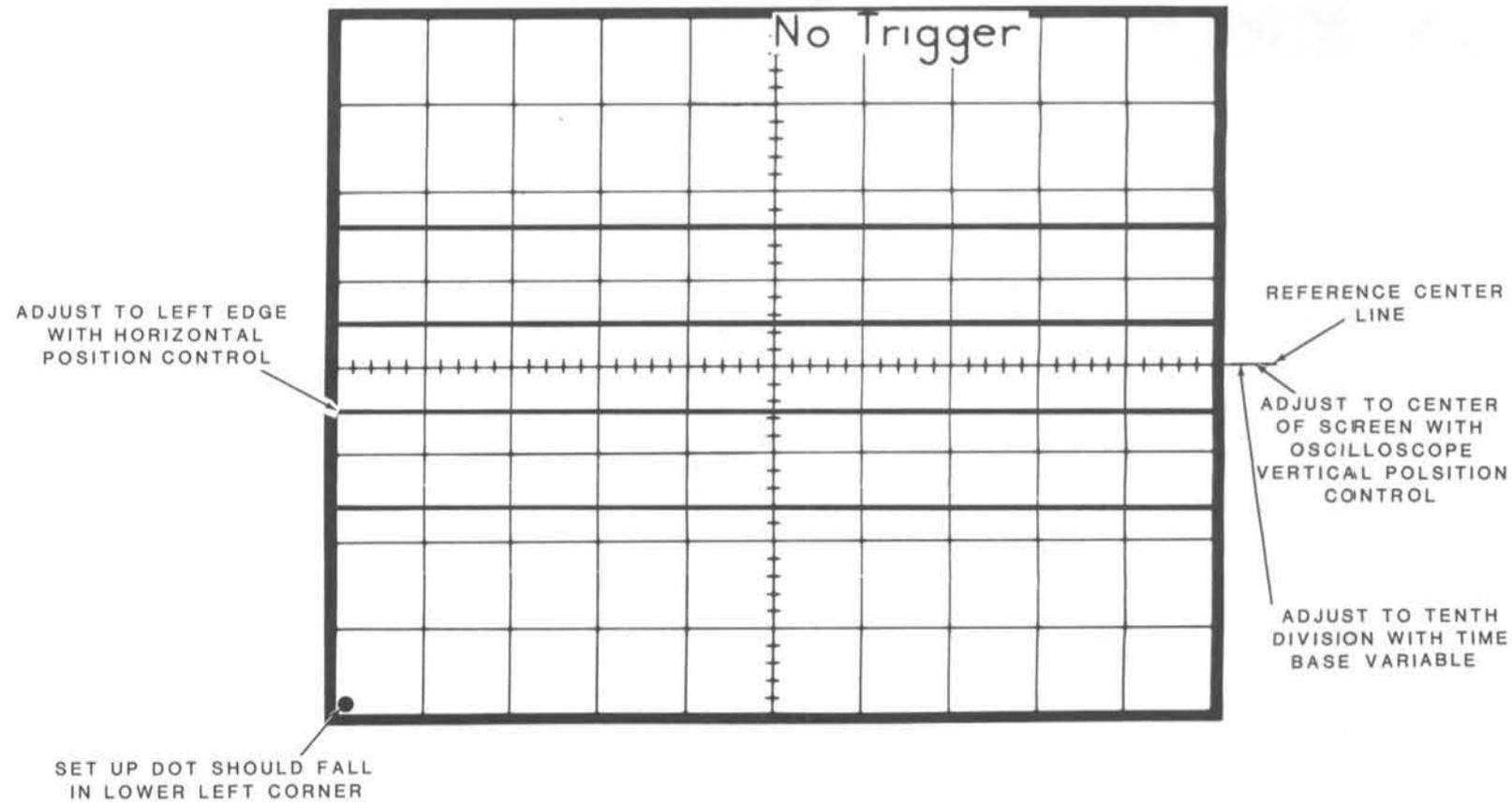


PICTORIAL 1-2

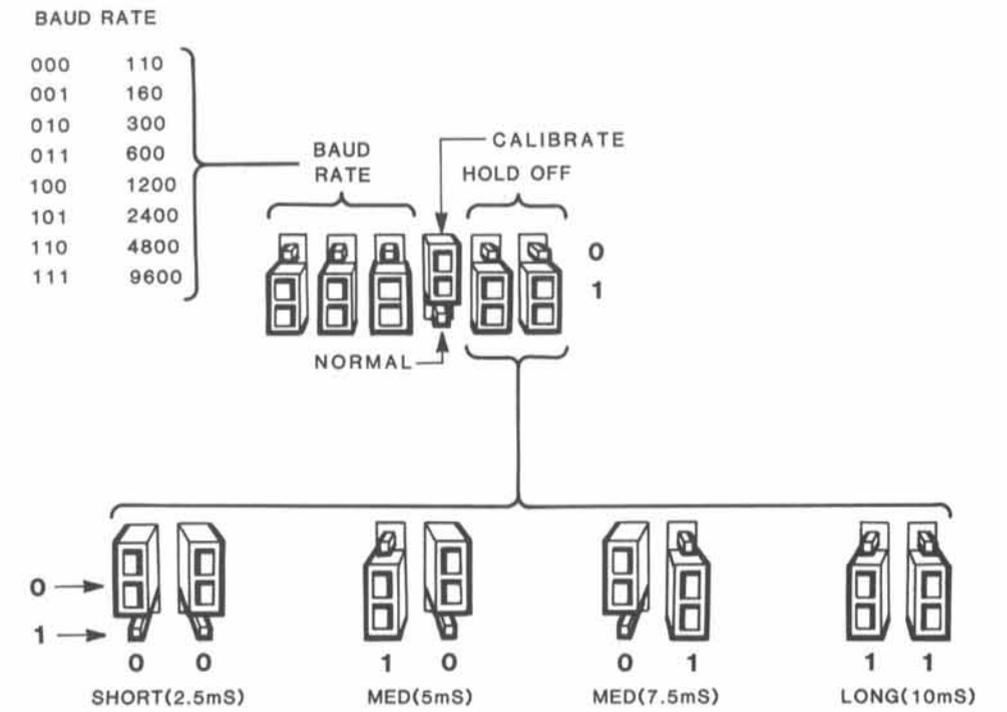


MAIN BOARD 85-2972-1 062585

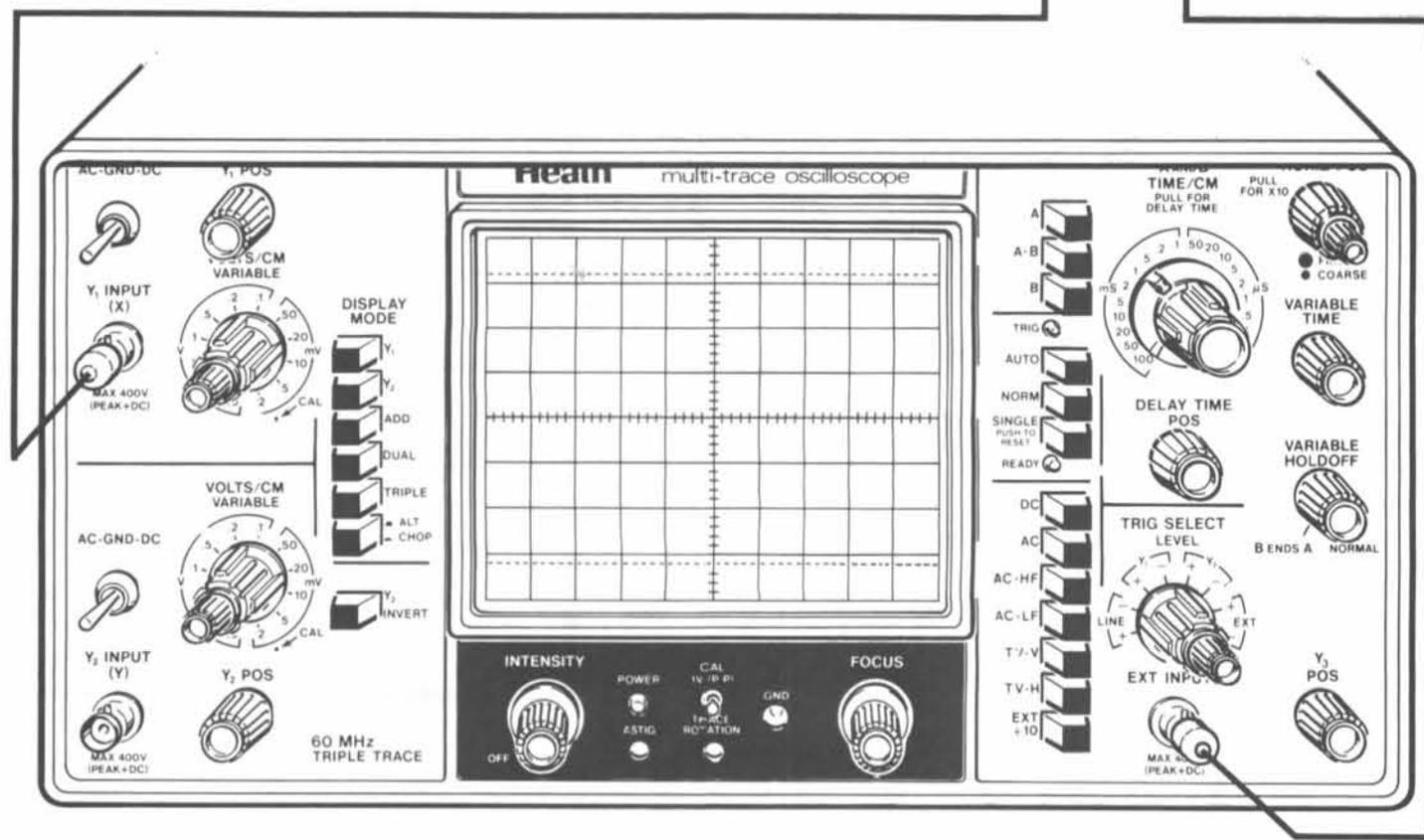
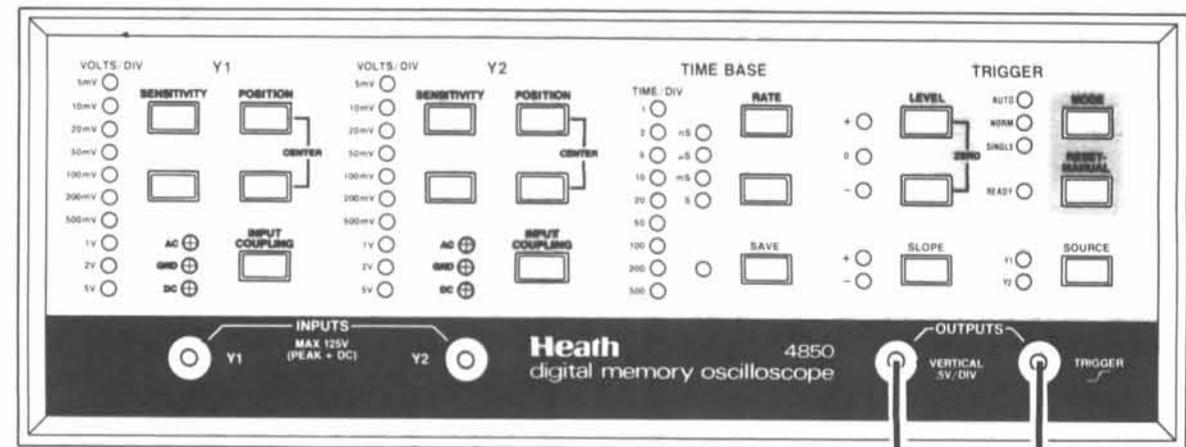
PICTORIAL 1-3



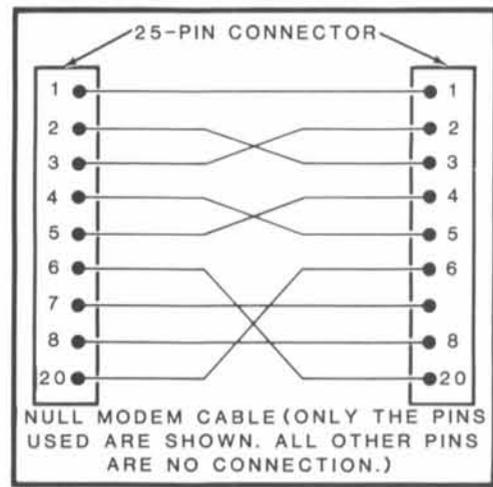
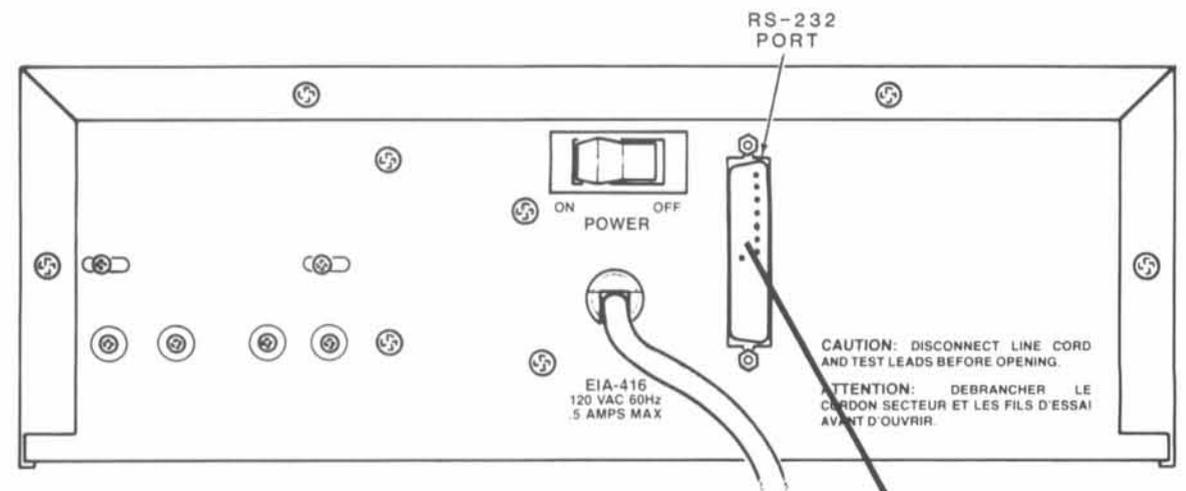
PICTORIAL 1-4



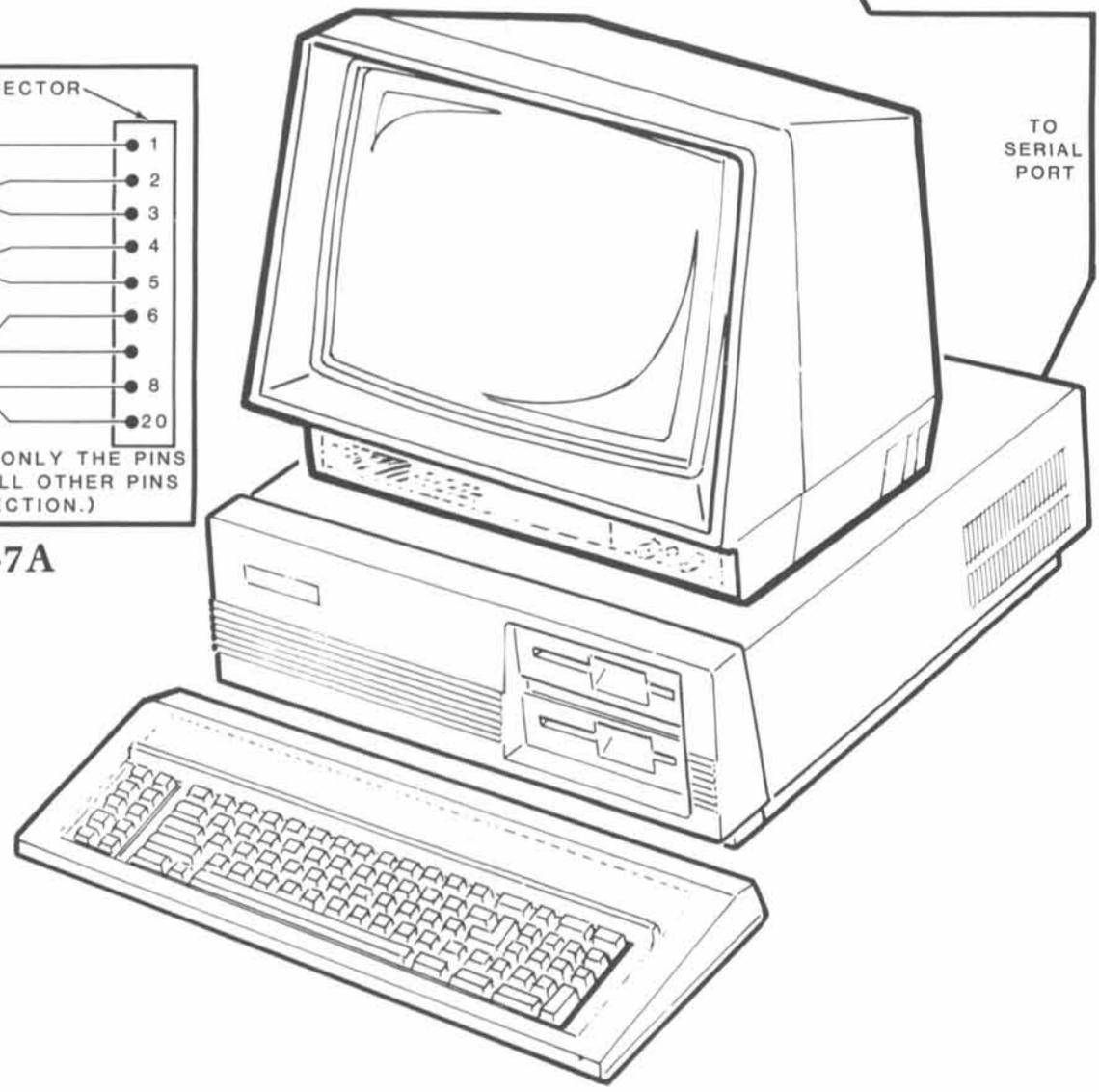
PICTORIAL 1-5



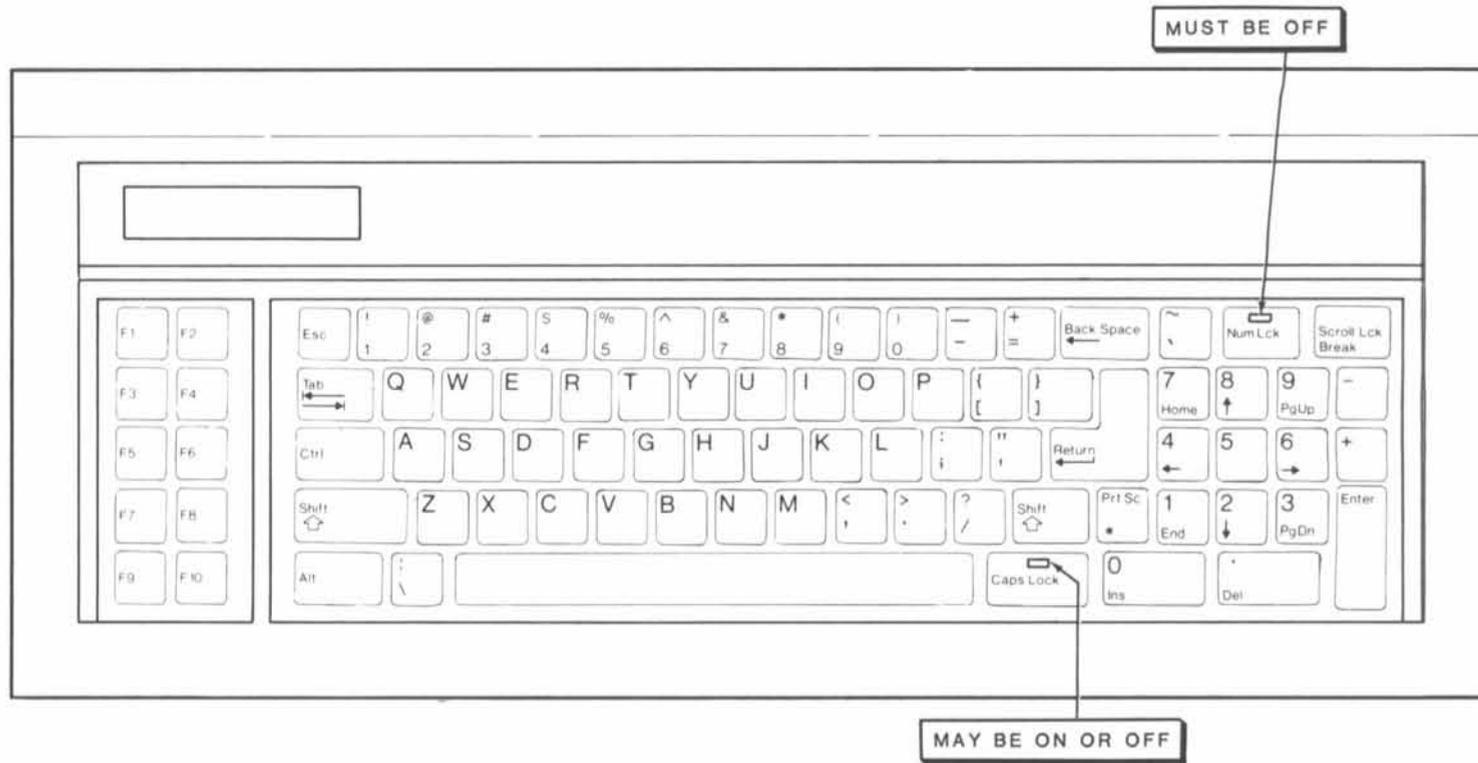
PICTORIAL 1-6



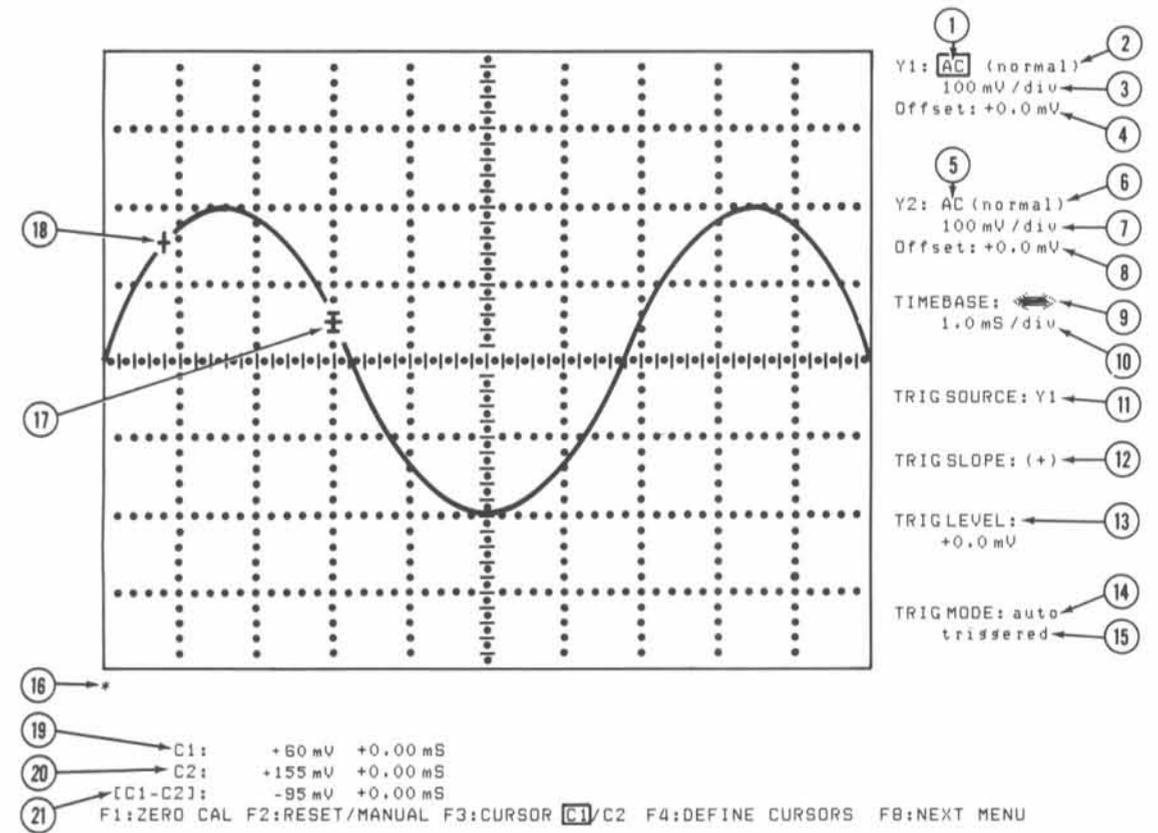
Detail 1-7A



PICTORIAL 1-7

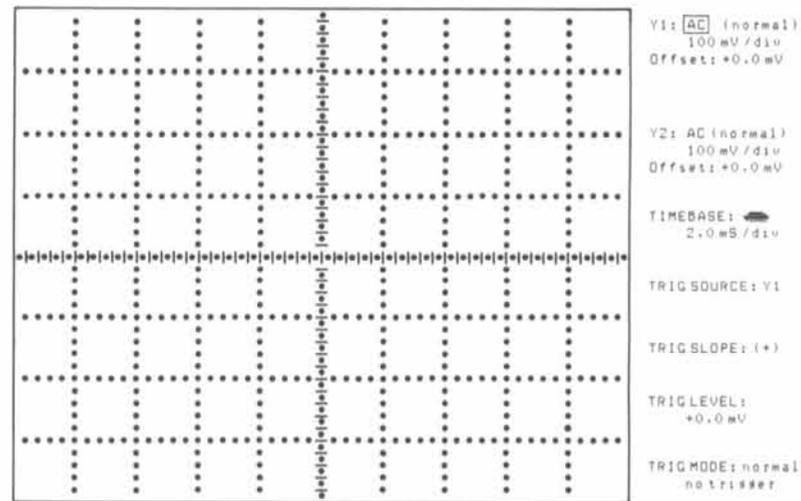


PICTORIAL 1-8



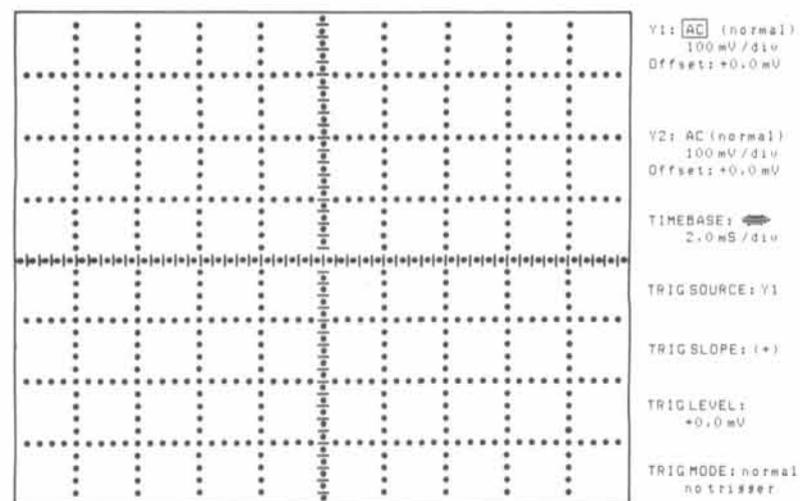
PICTORIAL 1-9

PART A



F1: ZERO CAL F2: RESET/MANUAL F3: CURSOR [C1]/C2 F4: DEFINE CURSORS F8: NEXT MENU

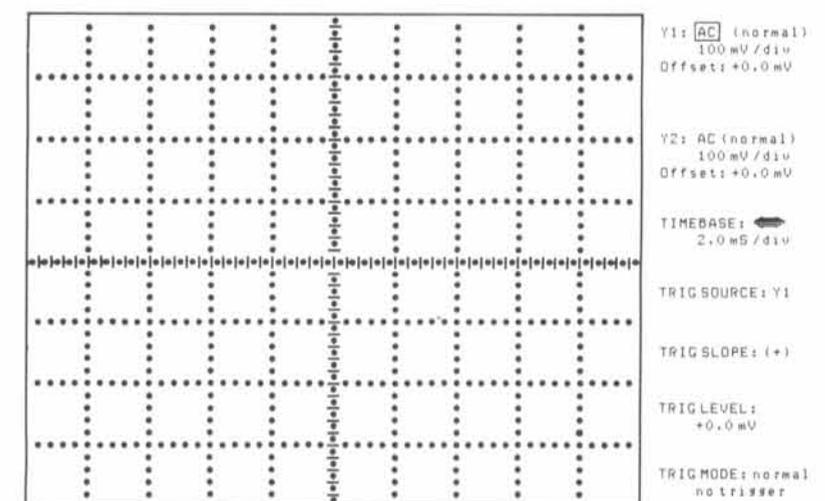
PART B



CHOOSE CHANNEL FOR CURSOR C1: 1)Y1 2)Y2 3) [OFF]

F1: ZERO CAL F2: RESET/MANUAL F3: CURSOR [C1]/C2 F4: DEFINE CURSORS F8: NEXT MENU

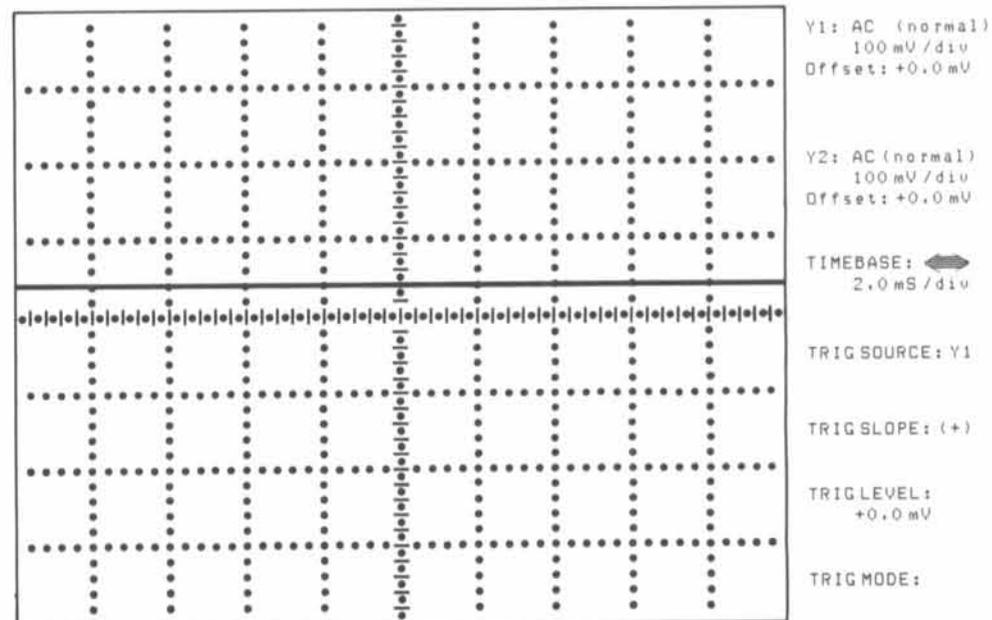
PART C



CHOOSE CHANNEL FOR CURSOR C2: 1)Y1 2)Y2 3) [OFF]

F1: ZERO CAL F2: RESET/MANUAL F3: CURSOR [C1]/C2 F4: DEFINE CURSORS F8: NEXT MENU

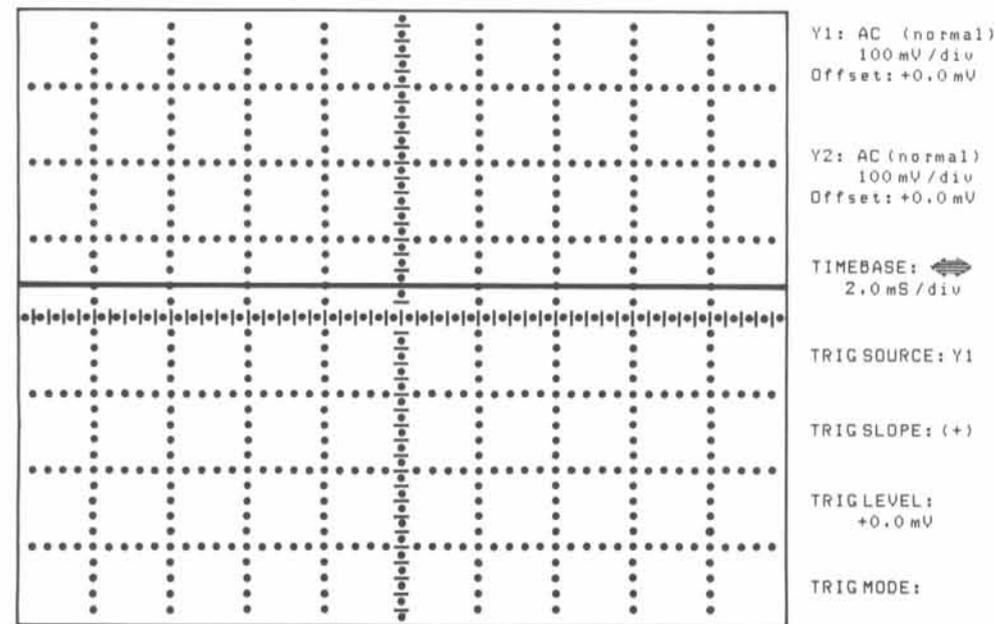
PICTORIAL 1-10



F5:SCOPE  /OFF F6:GRAT  /OFF F7:  LINE /DOT

F8:NEXT MENU

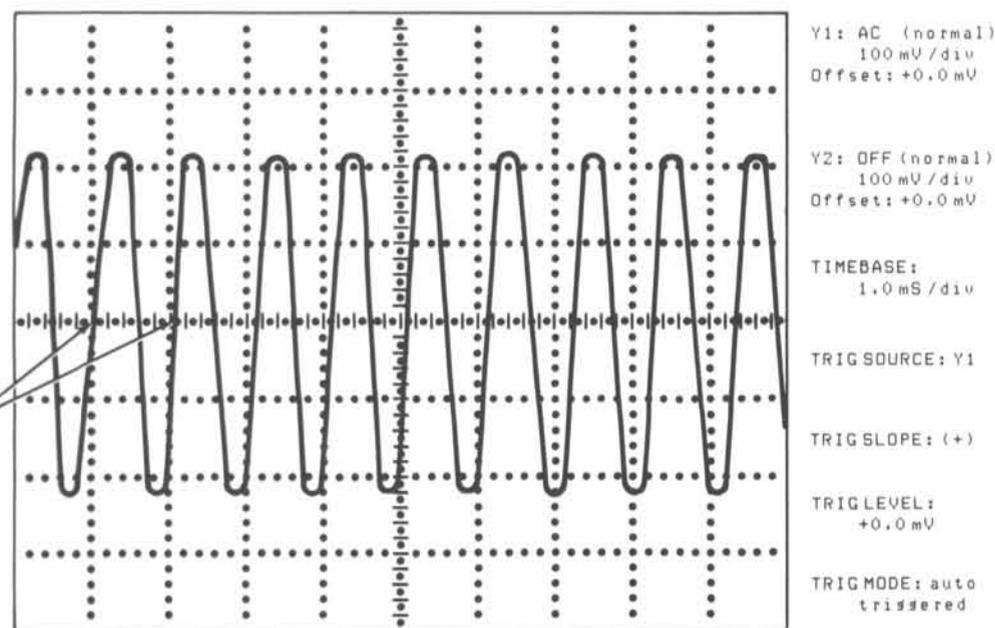
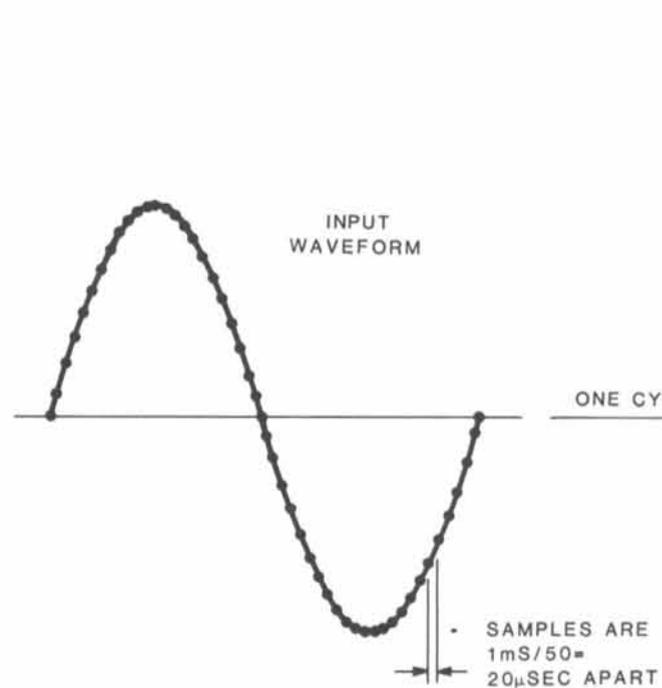
PICTORIAL 1-11



F5:MEMORY F6:AVERAGE F7:EXIT TO SYSTEM

F8:NEXT MENU

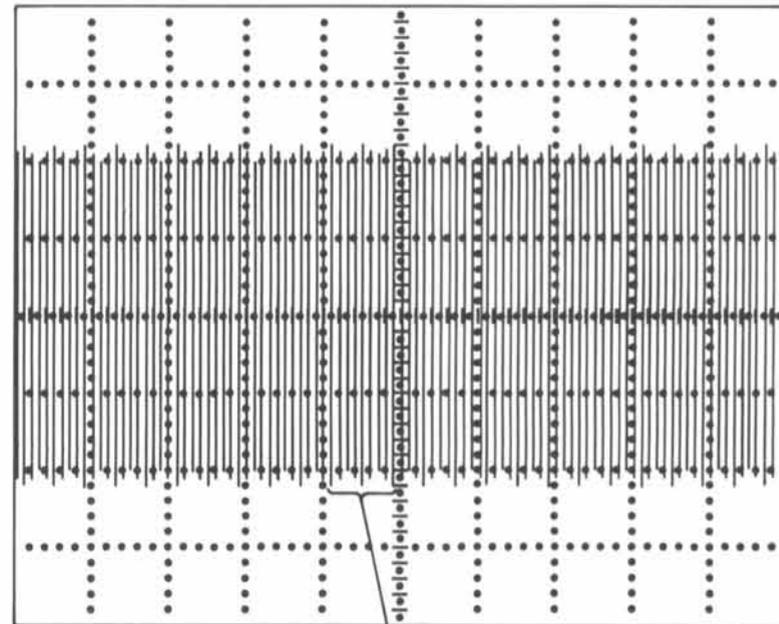
PICTORIAL 1-12



F5:MEMORY F6:AVERAGE F7:EXIT TO SYSTEM

F8:NEXT MENU

PICTORIAL 1-13



Y1: **AC** (normal)  
 100 mV/div  
 Offset: +0.0 mV

Y2: OFF (normal)  
 100 mV/div  
 Offset: +0.0 mV

TIMEBASE:  
 10.0 mS/div

TRIG SOURCE: Y1

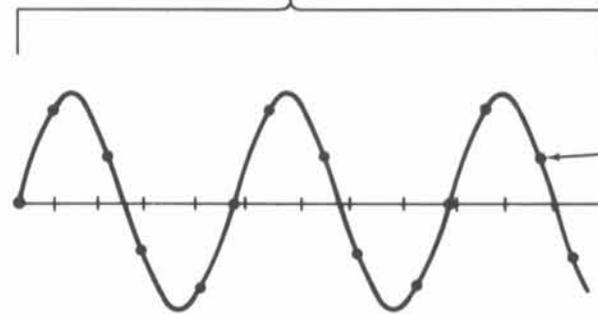
TRIG SLOPE: (+)

TRIG LEVEL:  
 +0.0 mV

TRIG MODE: auto  
 triggered

F5:MEMDRY F6:AVERAGE F7:EXIT TO SYSTEM

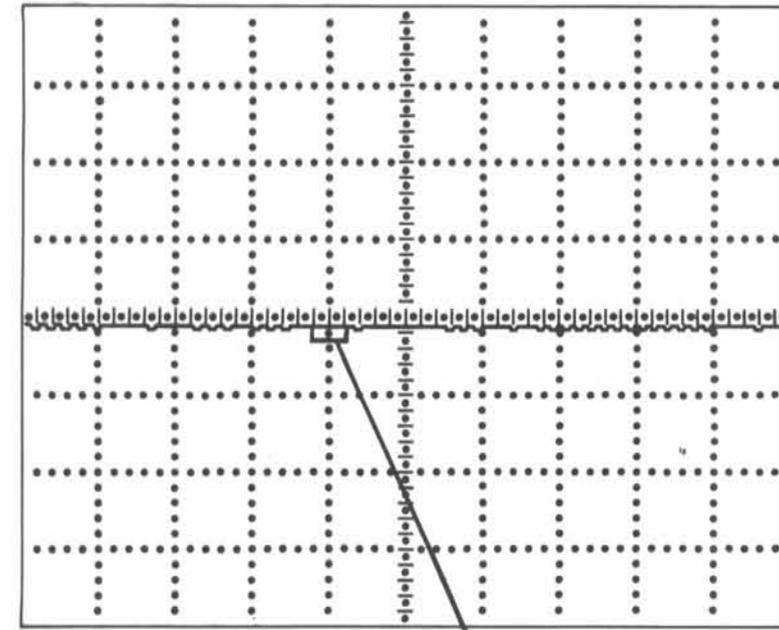
F8:NEXT MENU



INPUT WAVEFORM  
 SAMPLE POINTS

SAMPLE POINTS ARE  
 $10\text{mS}/50=200\mu\text{S}$  APART

PICTORIAL 1-14



Y1: **AC** (normal)  
 100 mV/div  
 Offset: -48.0 mV

Y2: OFF (normal)  
 100 mV/div  
 Offset: -12.0 mV

TIMEBASE:  
 50. mS/div

TRIG SOURCE: Y1

TRIG SLOPE: (+)

TRIG LEVEL:  
 +0.0 mV

TRIG MODE: auto  
 triggered

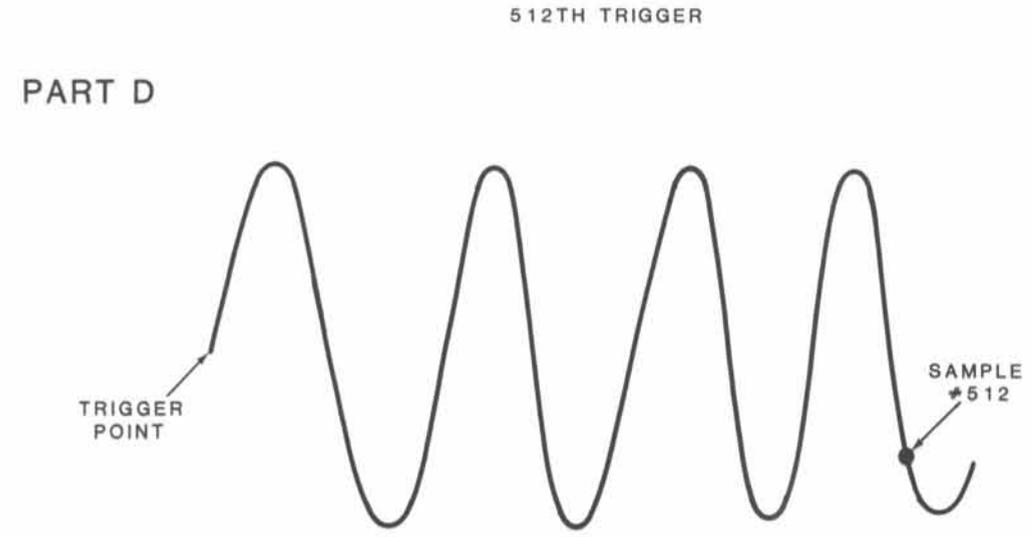
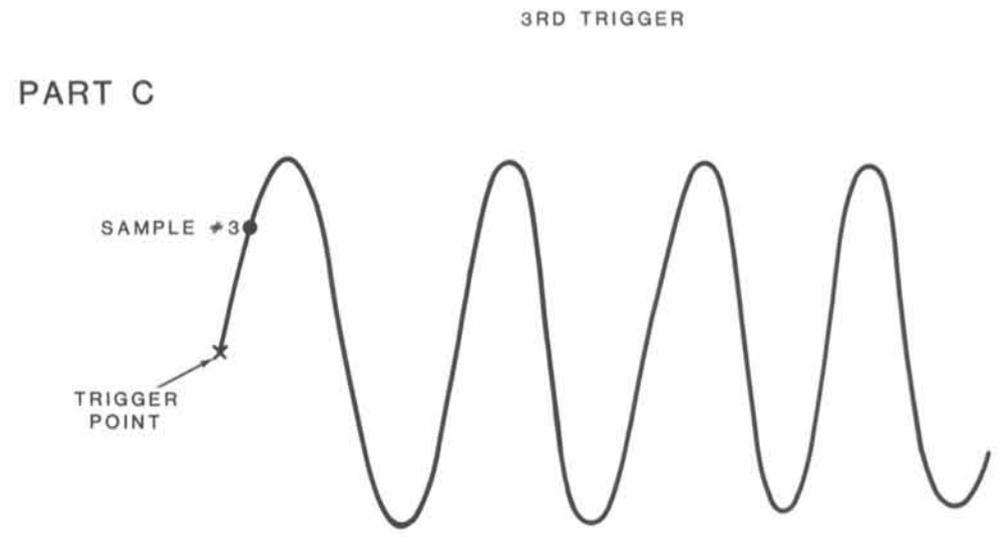
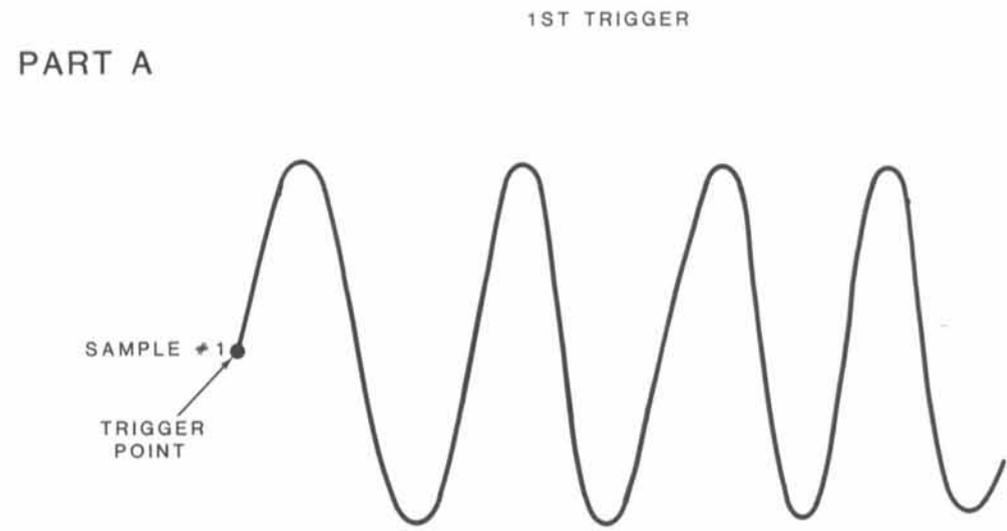
F5:MEMDRY F6:AVERAGE F7:EXIT TO SYSTEM

1KHz  
 SINE  
 WAVE  
 INPUT  
 WAVEFORM

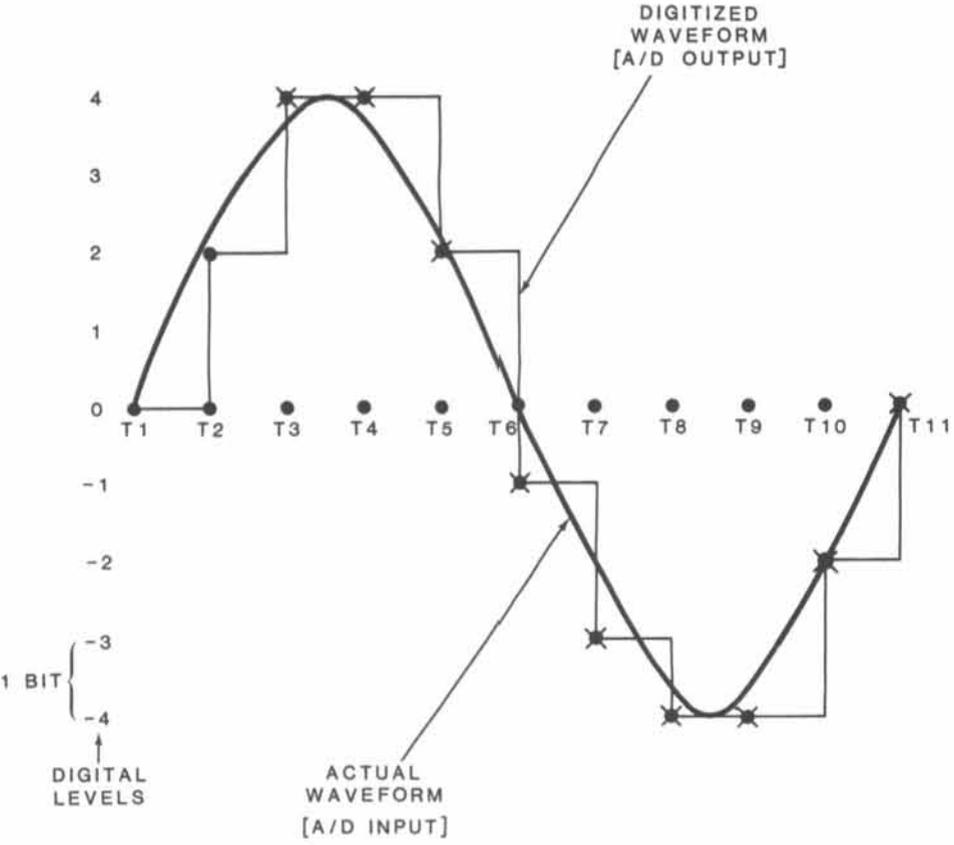
SAMPLE  
 POINTS

SAMPLE POINTS ARE  
 $50\text{mS}/50=1\text{mS}$  APART

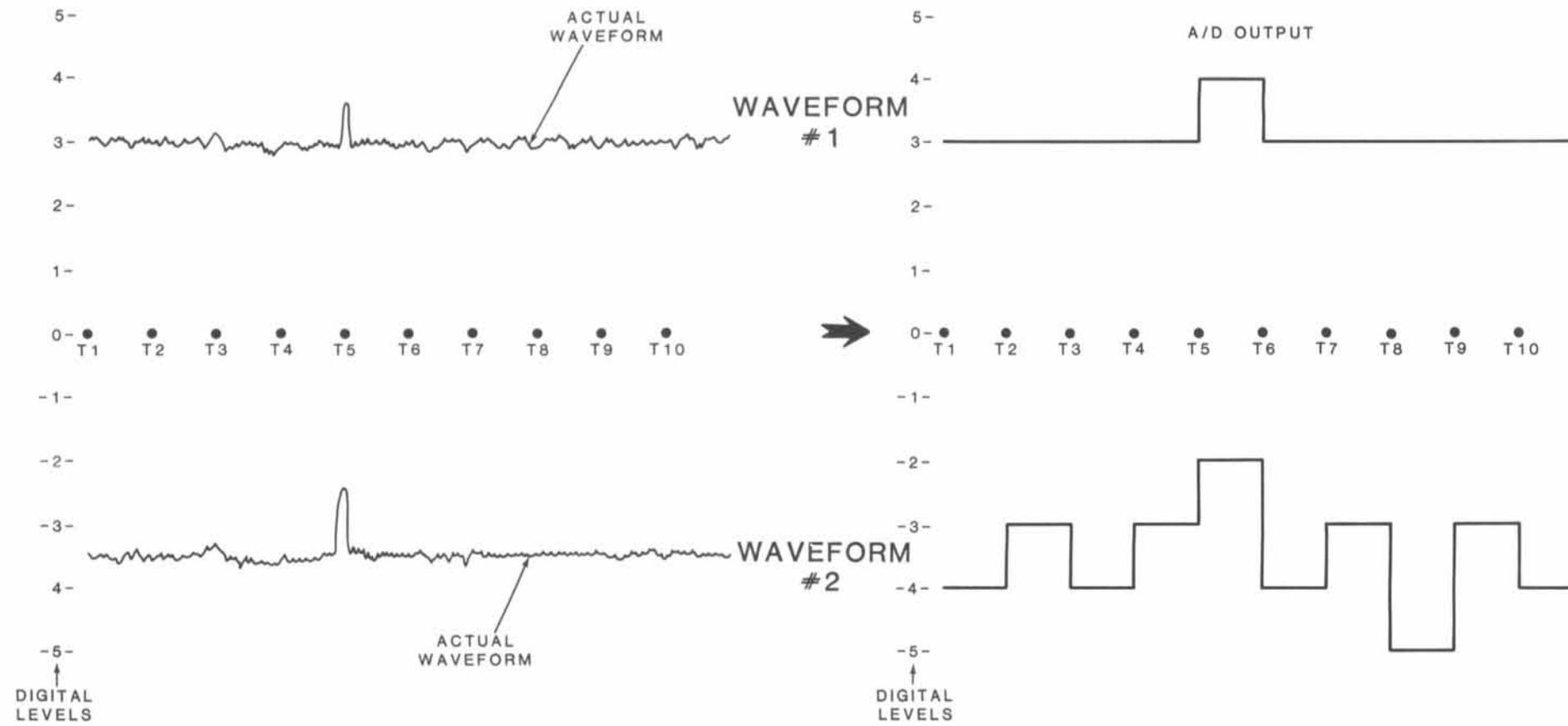
PICTORIAL 1-15



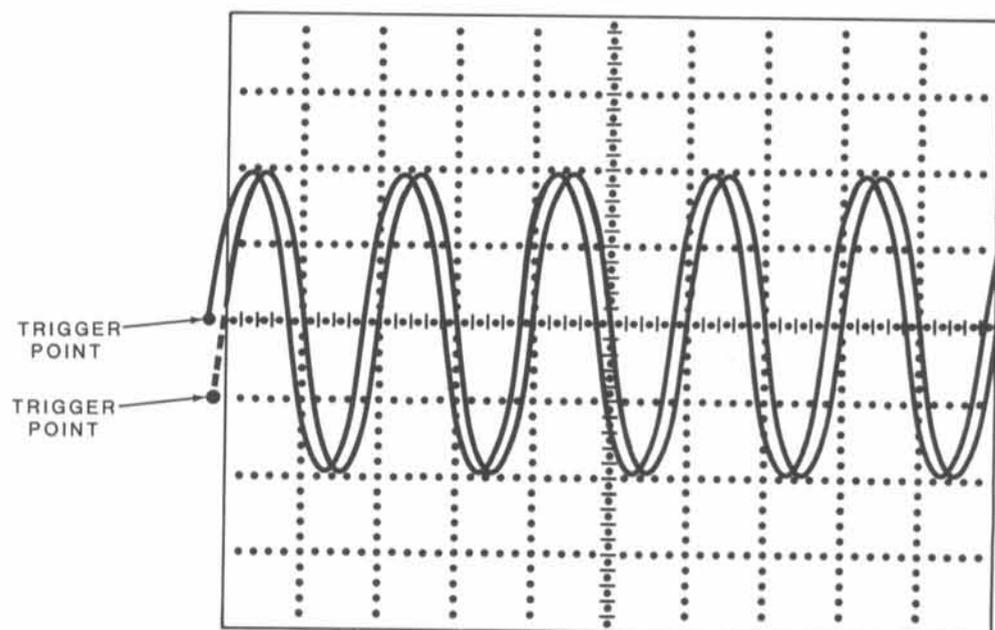
PICTORIAL 1-16



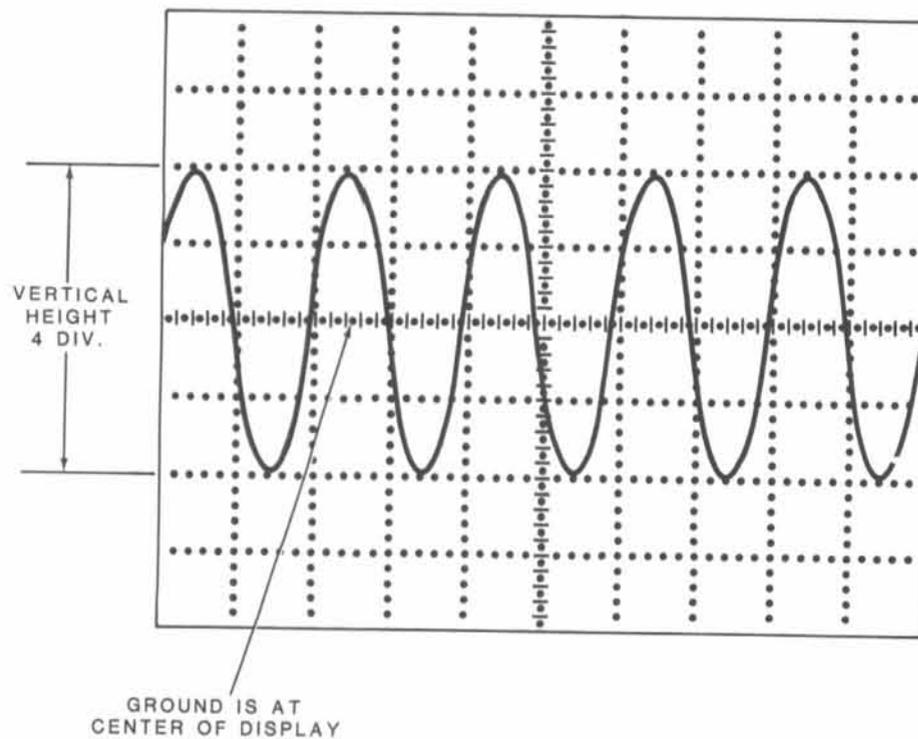
PICTORIAL 1-17



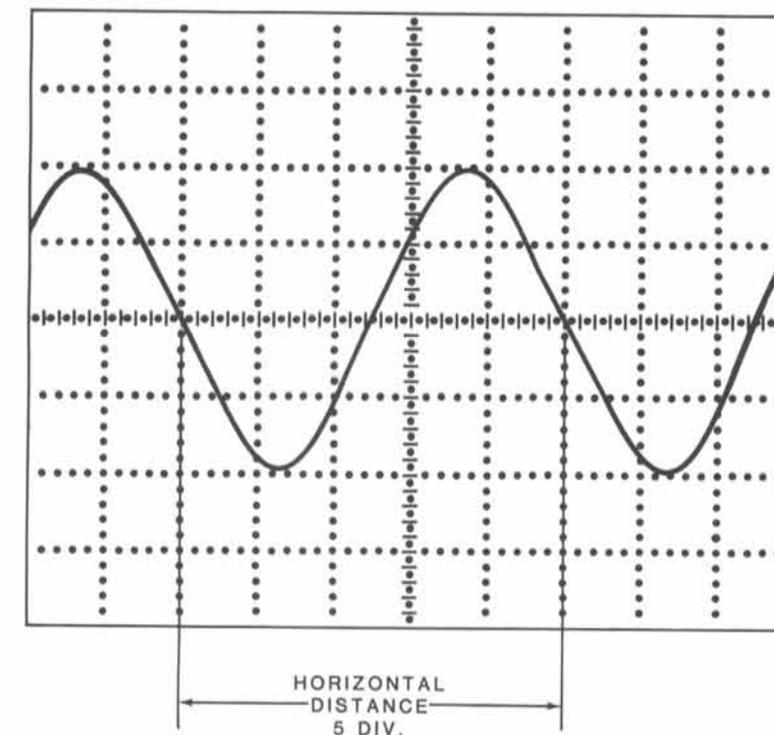
PICTORIAL 1-18



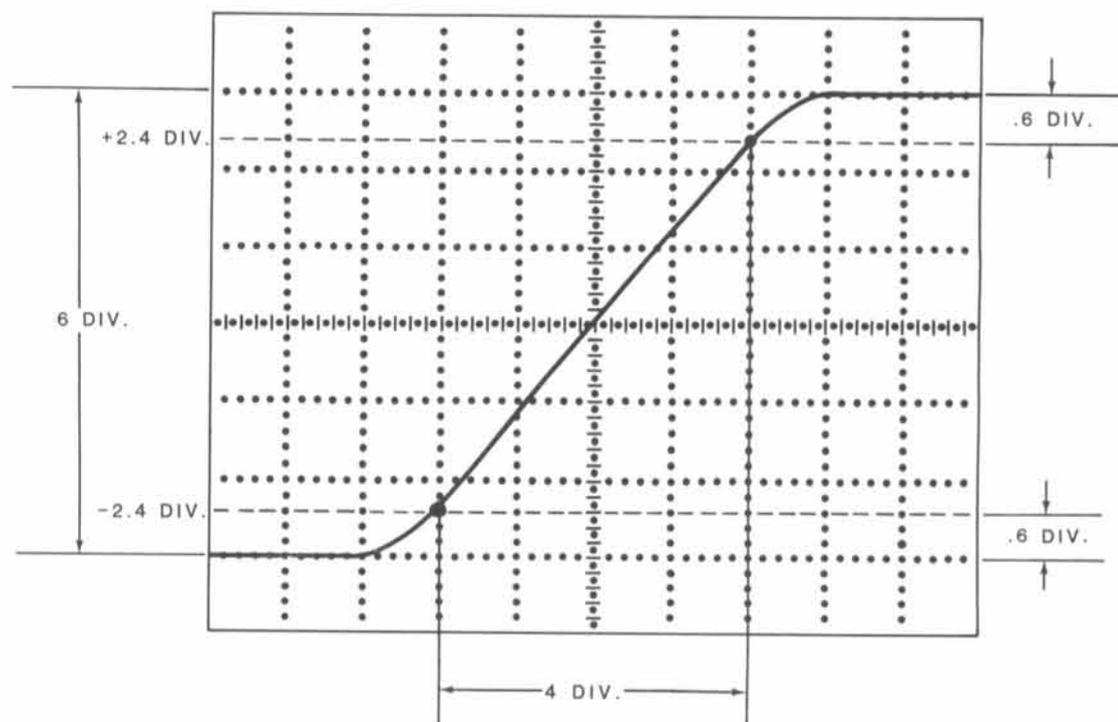
PICTORIAL 1-19



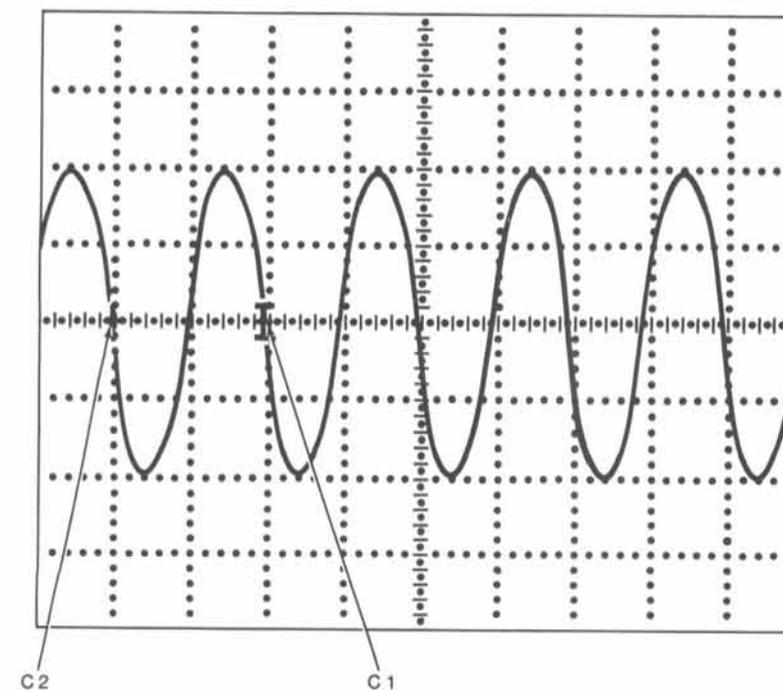
PICTORIAL 1-20



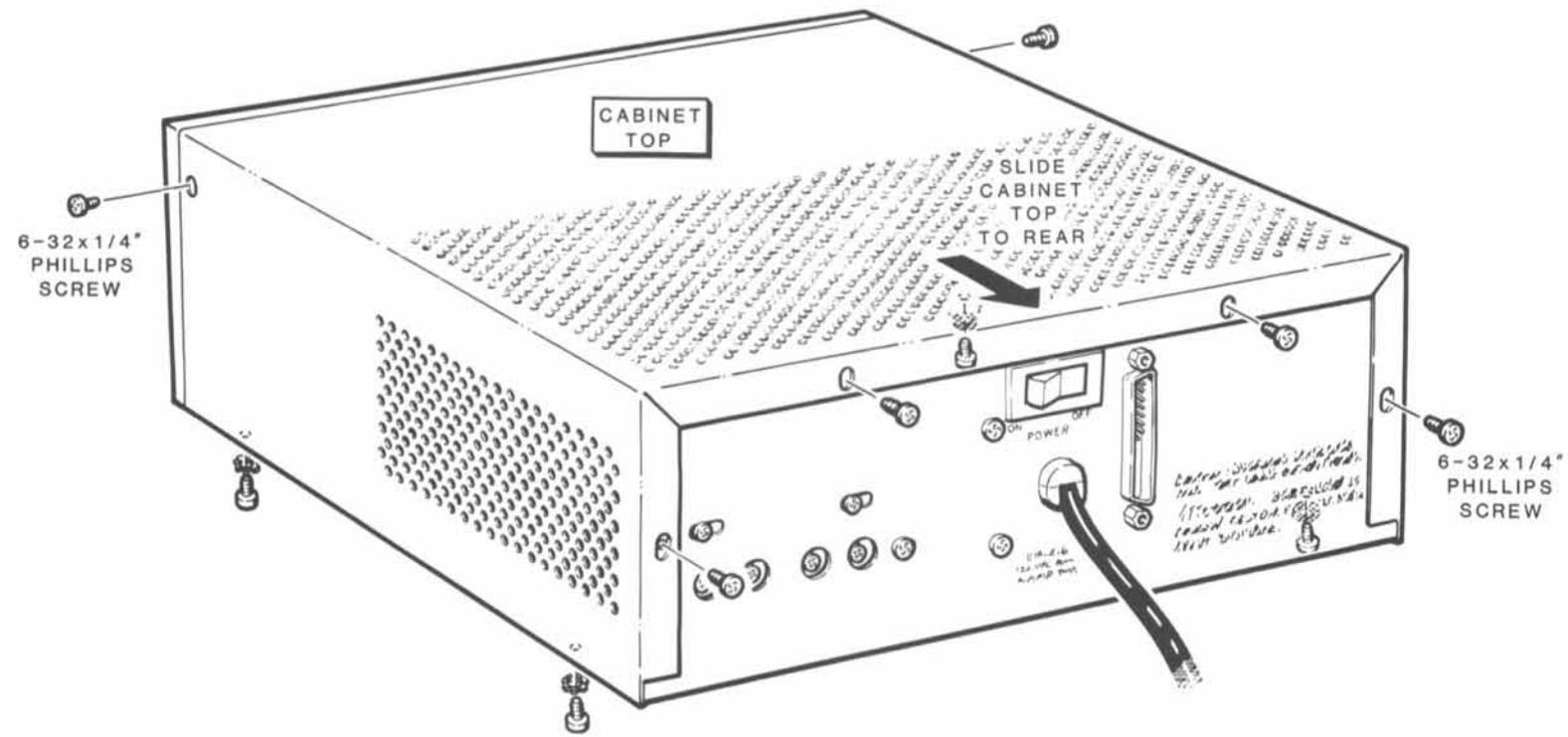
PICTORIAL 1-21



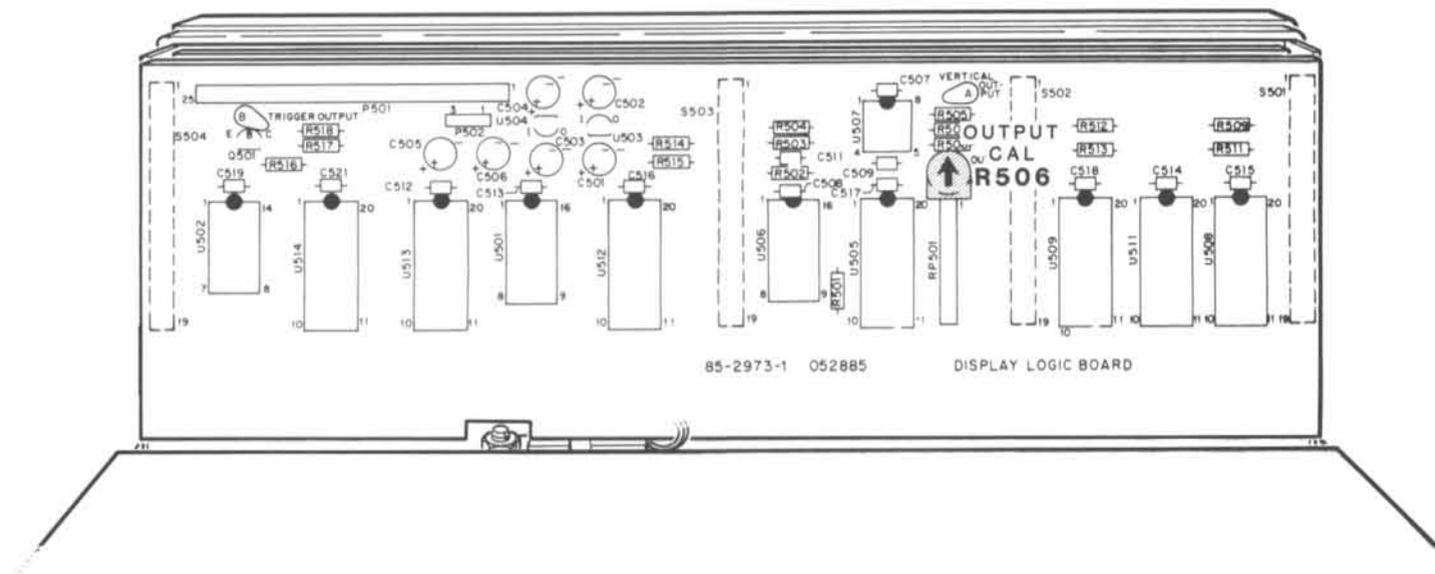
PICTORIAL 1-22



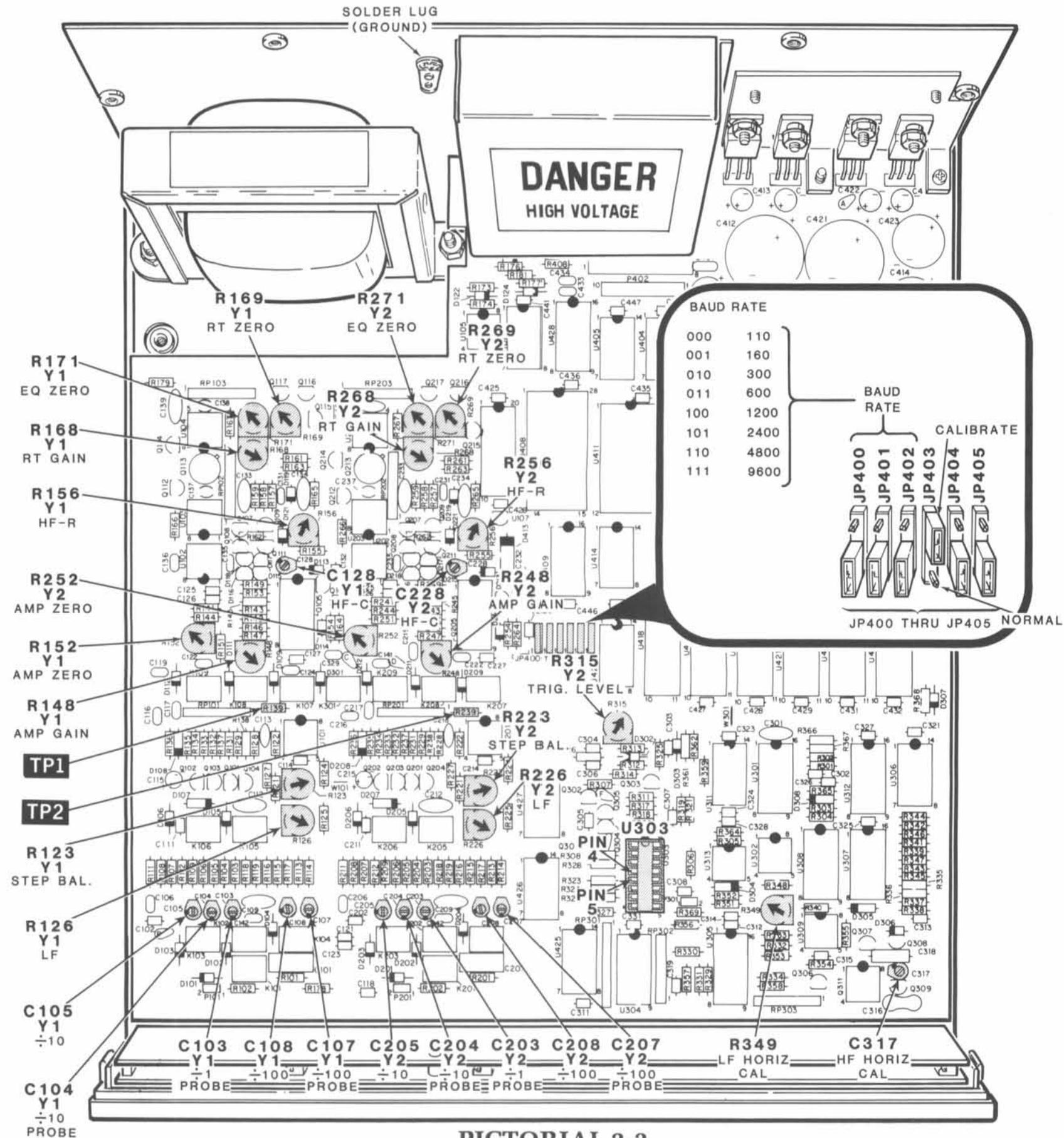
PICTORIAL 1-23



PICTORIAL 2-1



PICTORIAL 2-2



PICTORIAL 2-3

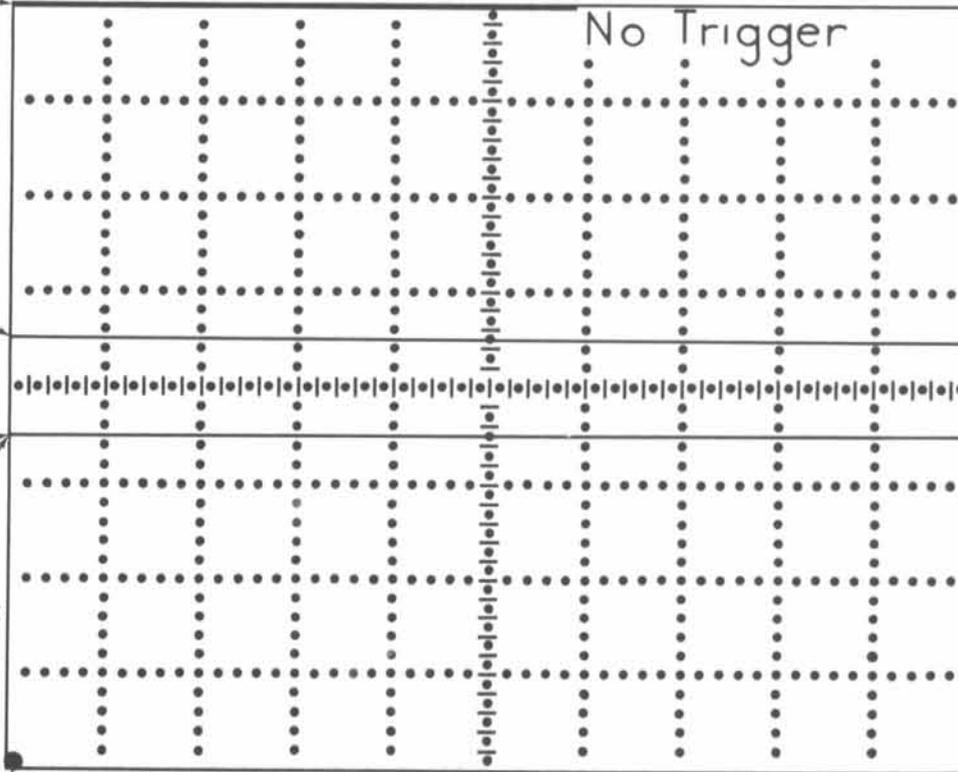
ADJUST ON TOP GRATICLE LINE WITH OUTPUT CAL CONTROL R506

ADJUST NEAR CENTER WITH Y1 RT CONTROL R171

ADJUST NEAR CENTER WITH Y2 RT CONTROL R271

ADJUST TO LEFT EDGE WITH OSCILLOSCOPE HORIZ POSITION CONTROL

SET UP DOT SHOULD FALL IN LOWER LEFT CORNER



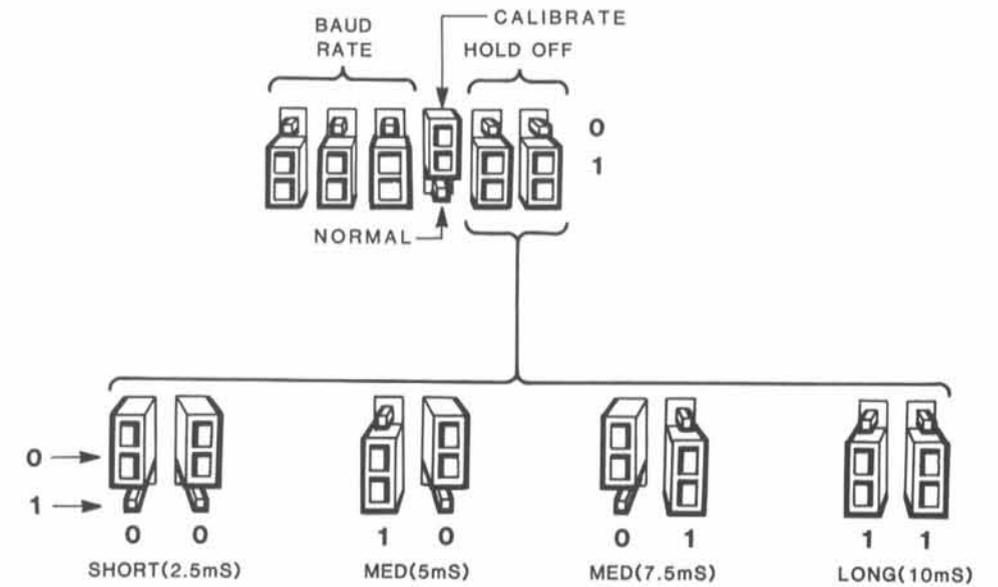
No Trigger

REFERENCE CENTER LINE

ADJUST TO CENTER WITH OSCILLOSCOPE POSITION CONTROL

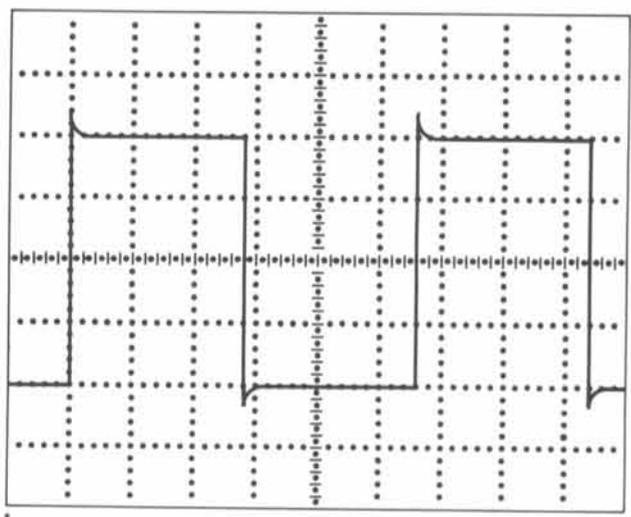
ADJUST ON 10TH DIV WITH OSCILLOSCOPE TIME BASE VARIABLE

PICTORIAL 2-4

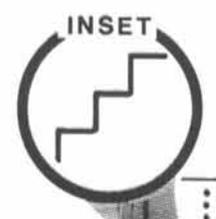
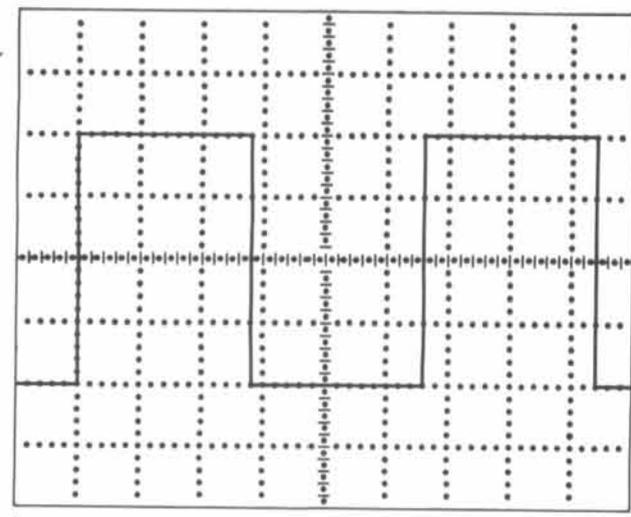


PICTORIAL 2-5

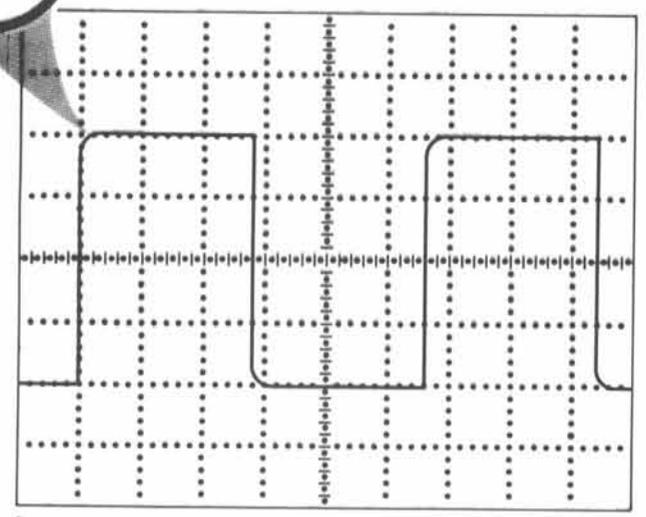
WRONG



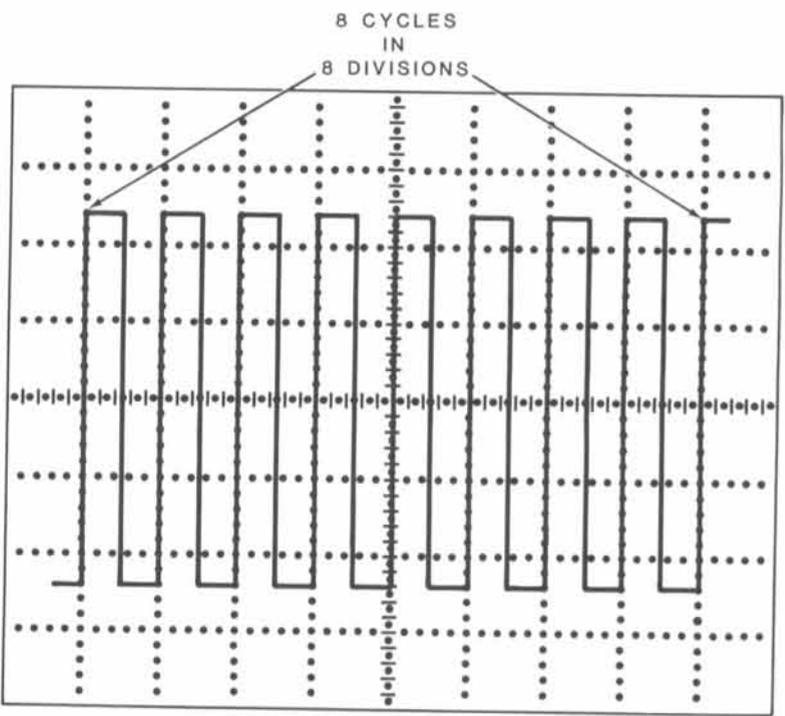
RIGHT



WRONG



PICTORIAL 2-6



Y1: AC (normal)  
100 mV/div  
Offset: +0.0 mV

Y2: OFF (normal)  
100 mV/div  
Offset: +0.0 mV

TIMEBASE:   
200 μS/div

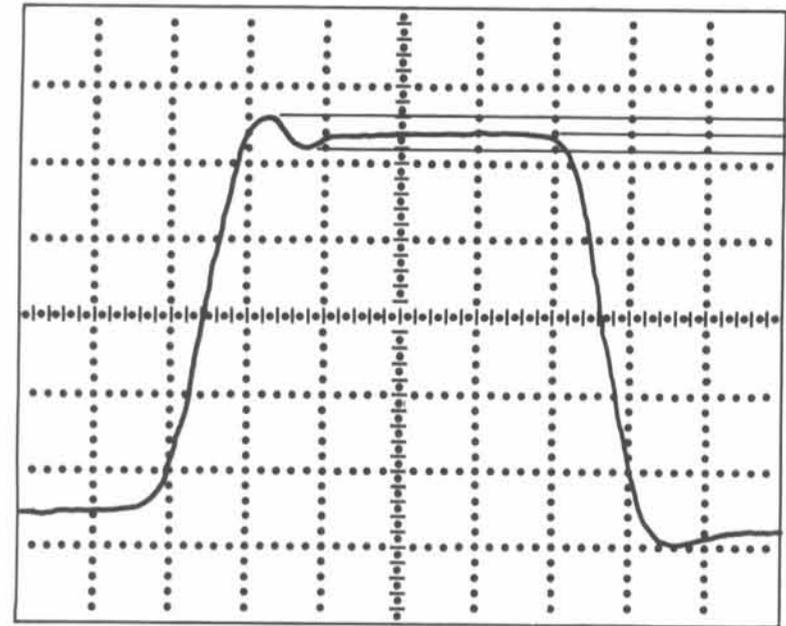
TRIG SOURCE: Y1

TRIG SLOPE: (+)

TRIG LEVEL:  
+0.0 mV

TRIG MODE: auto  
triggered

PICTORIAL 2-7



Y1: AC (normal)  
20 mV/div  
Offset: +0.0 mV

Y2: AC (normal)  
20 mV/div  
Offset: +0.0 mV

TIMEBASE:   
10 ns/div

TRIG SOURCE: Y1

TRIG SLOPE: (+)

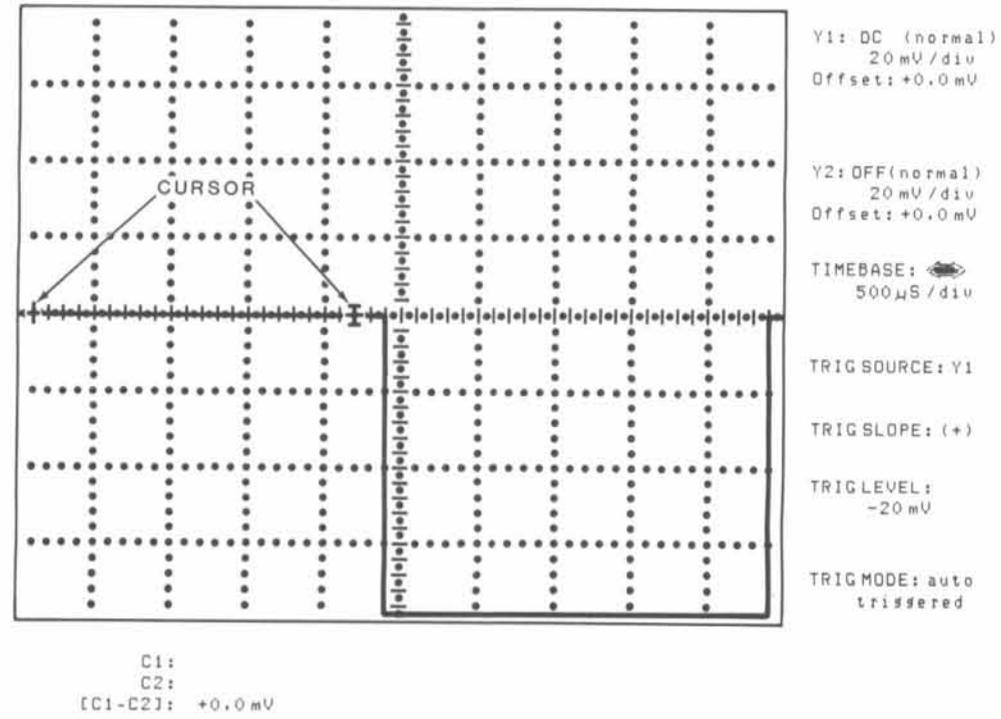
TRIG LEVEL:  
+0.0 mV

TRIG MODE: auto  
triggered

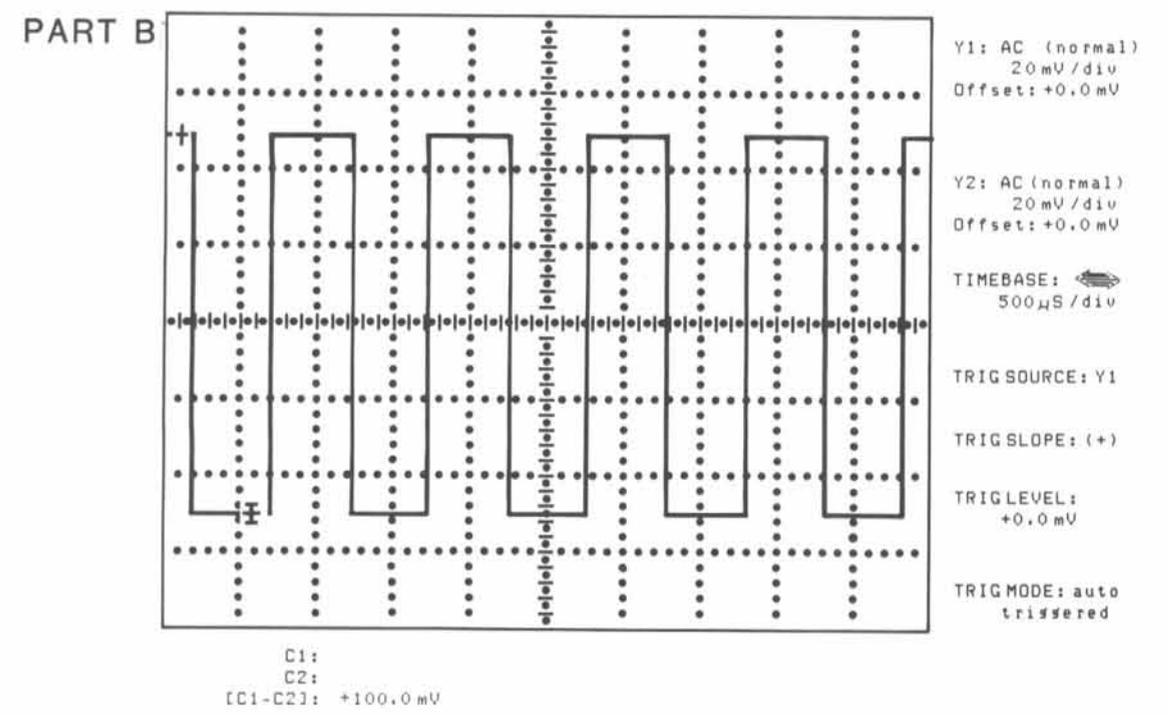
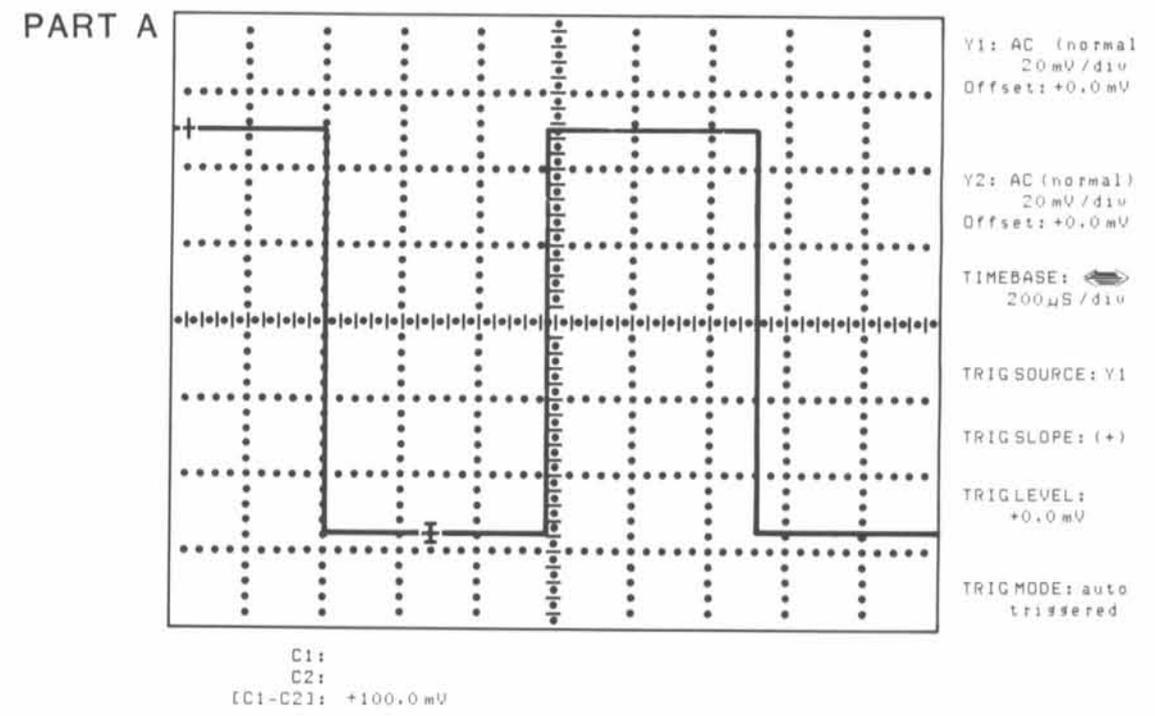
.1 DIV.  
(1/2 MINOR DIV.)

.2 DIV.  
(1 MINOR DIV.)

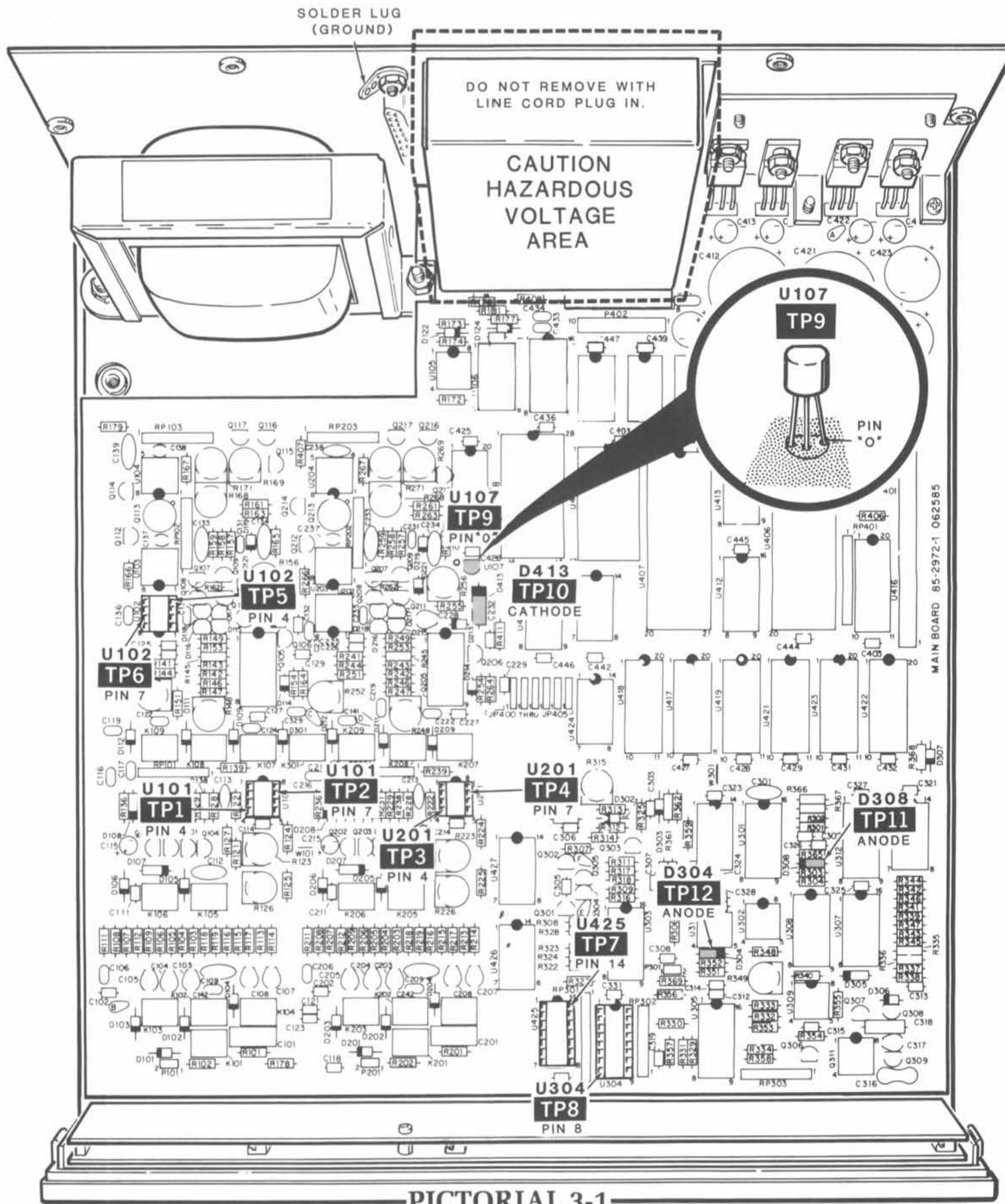
PICTORIAL 2-8



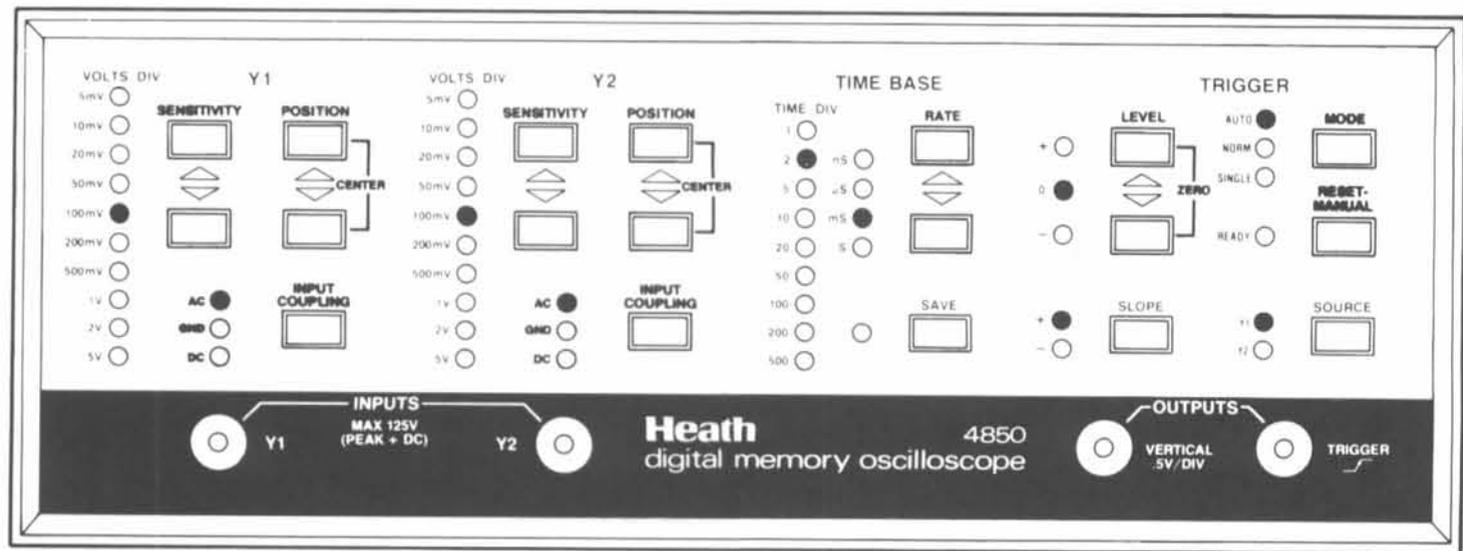
PICTORIAL 2-9



PICTORIAL 2-10

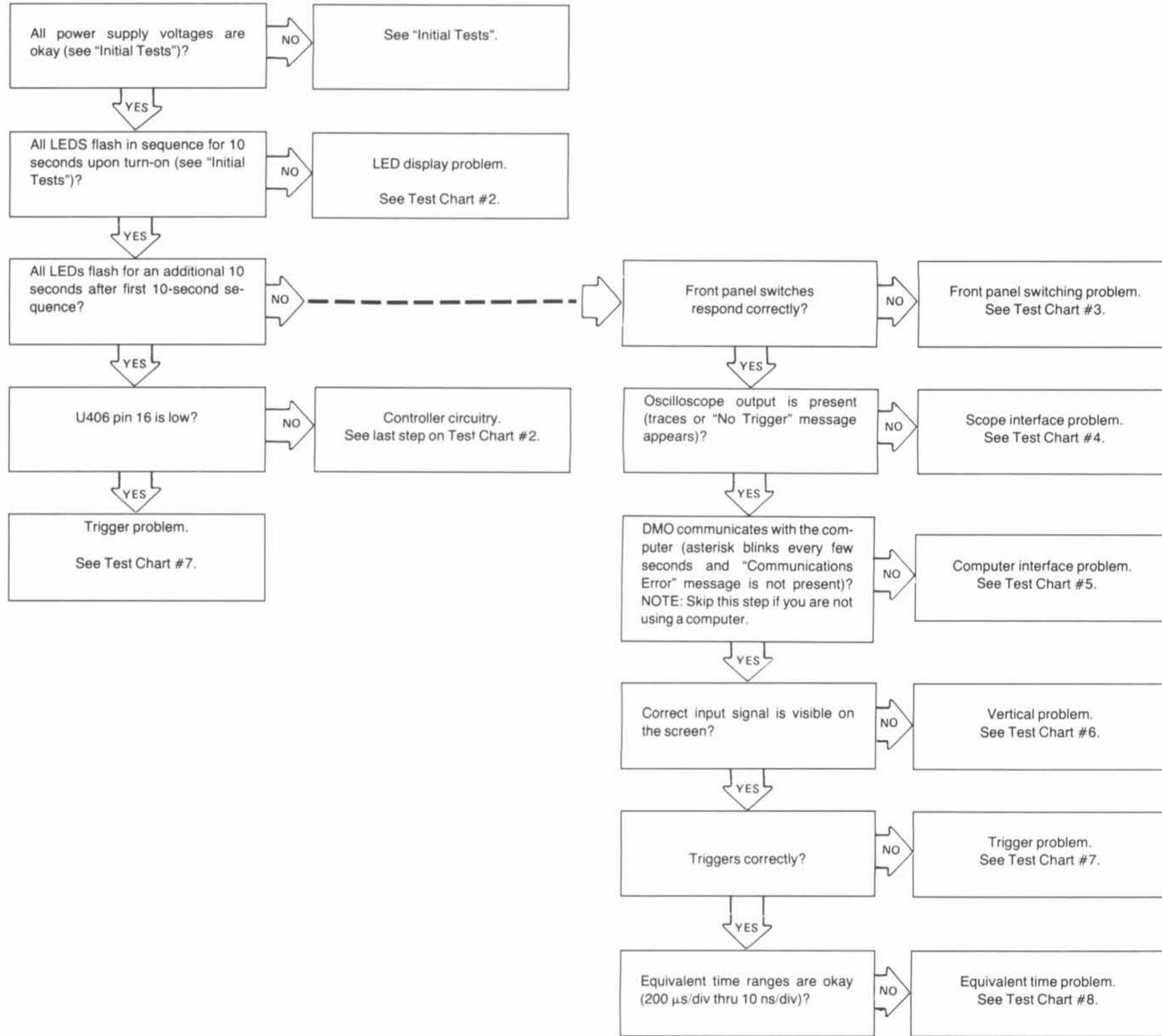


PICTORIAL 3-1



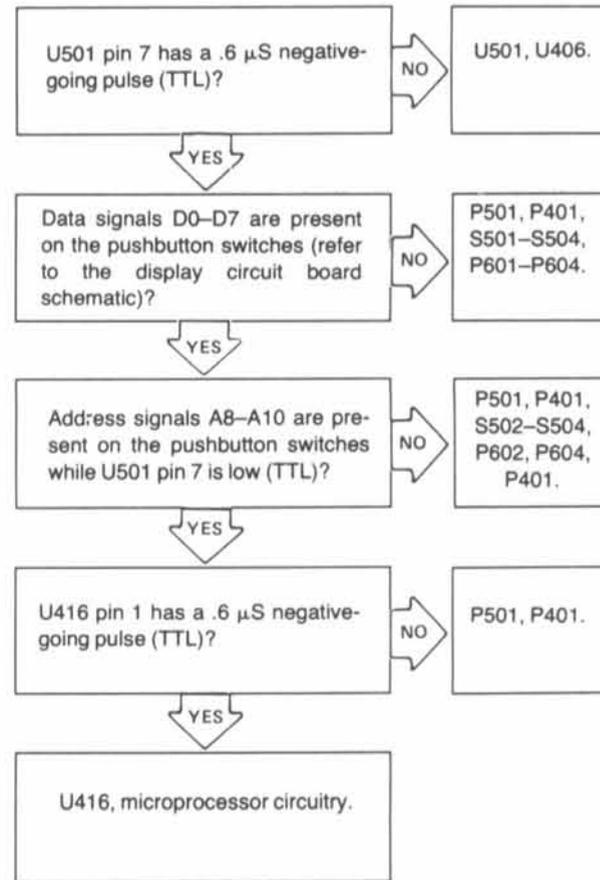
PICTORIAL 3-2

### TEST CHART #1 — GENERAL

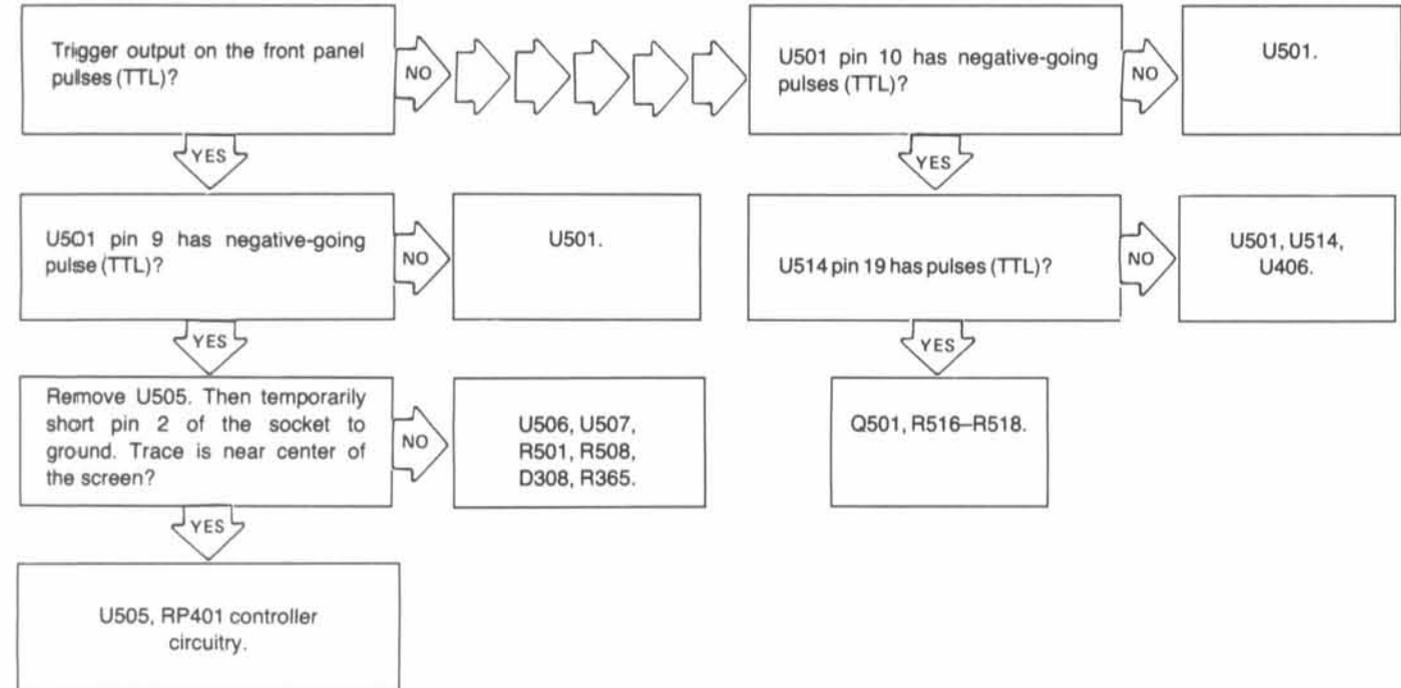




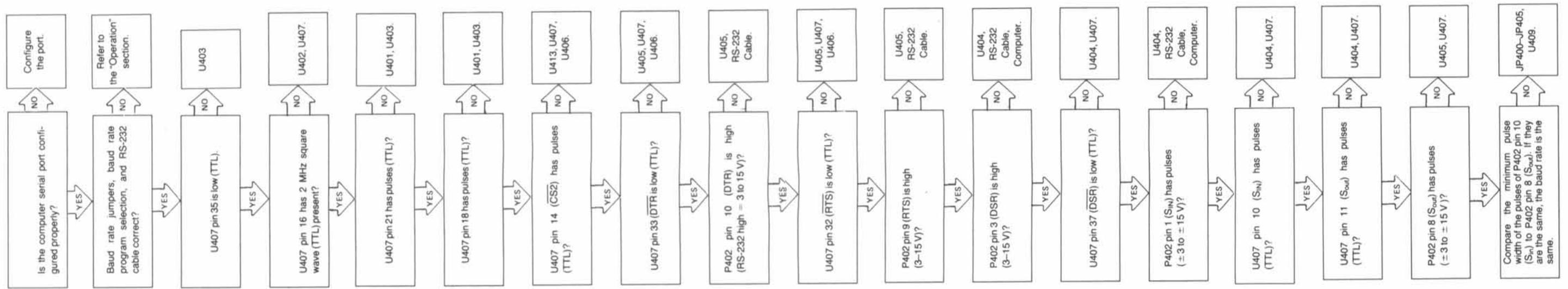
### TEST CHART #3 — FRONT PANEL SWITCHING



### TEST CHART #4 — SCOPE INTERFACE

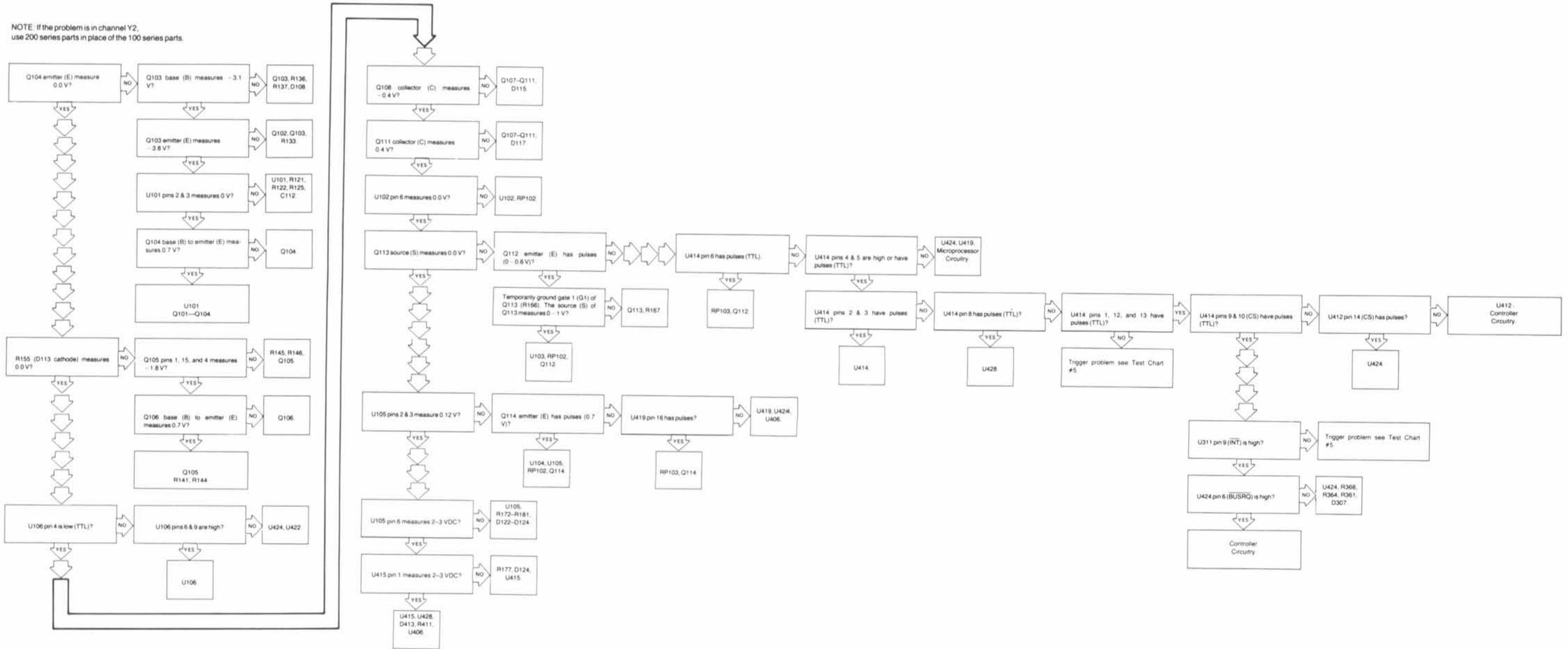


## TEST CHART #5 — COMPUTER INTERFACE

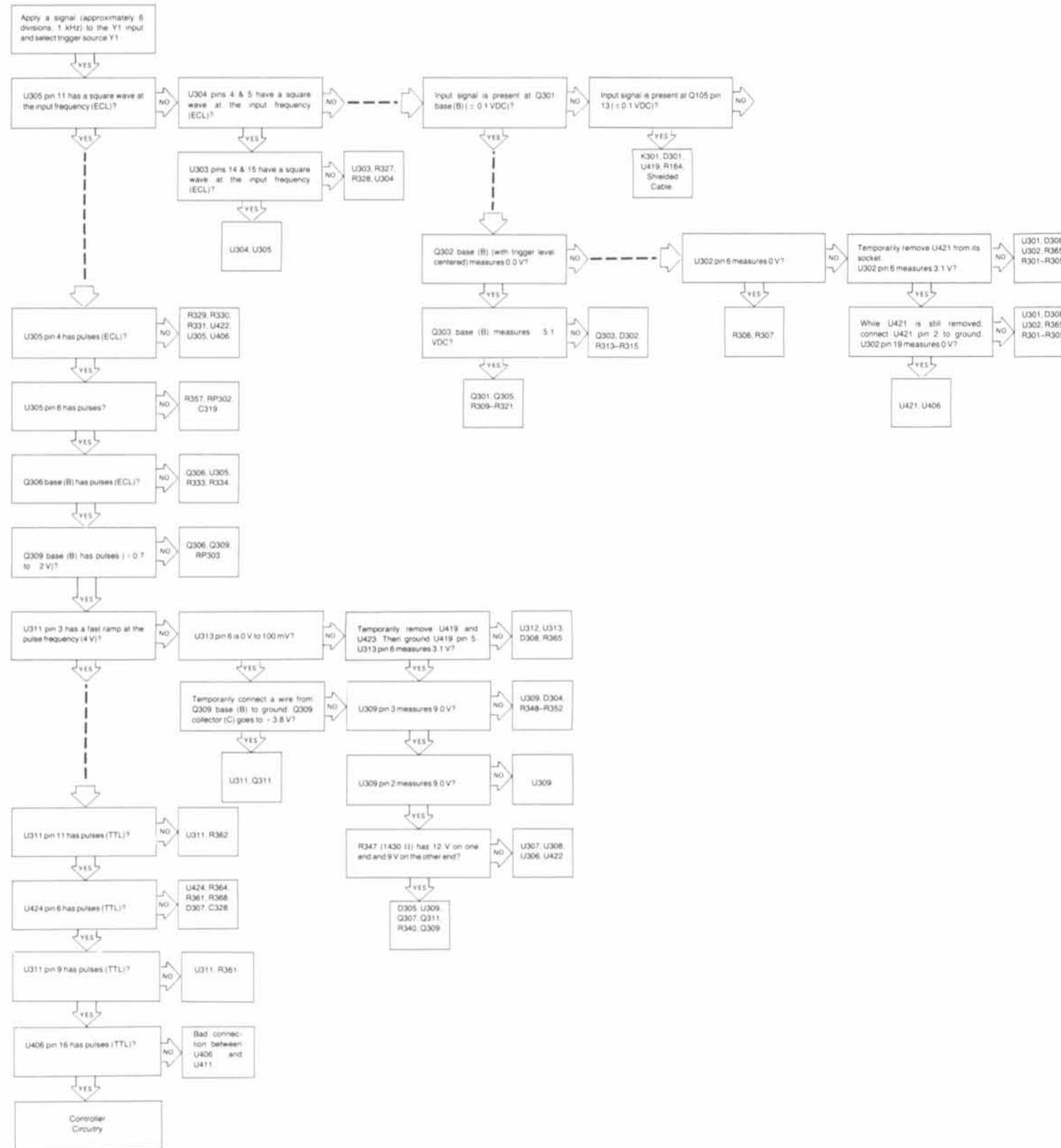


# TEST CHART #6 — VERTICAL

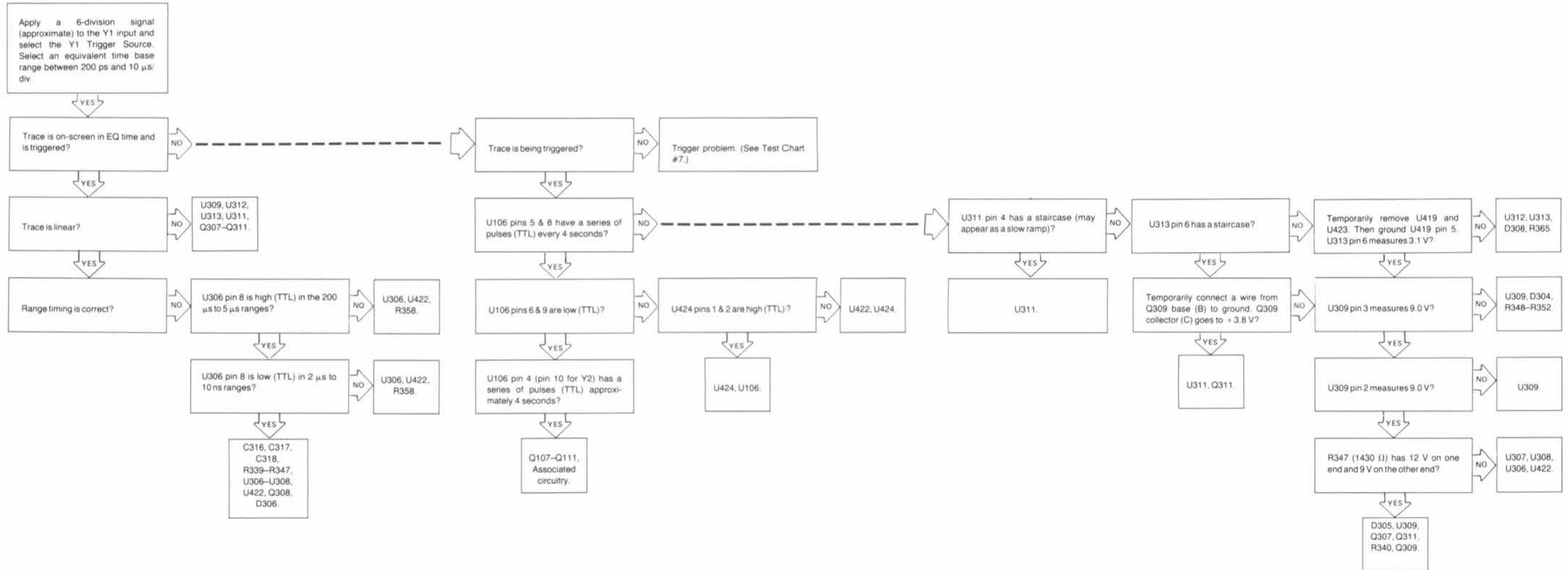
NOTE: If the problem is in channel Y2,  
use 200 series parts in place of the 100 series parts.

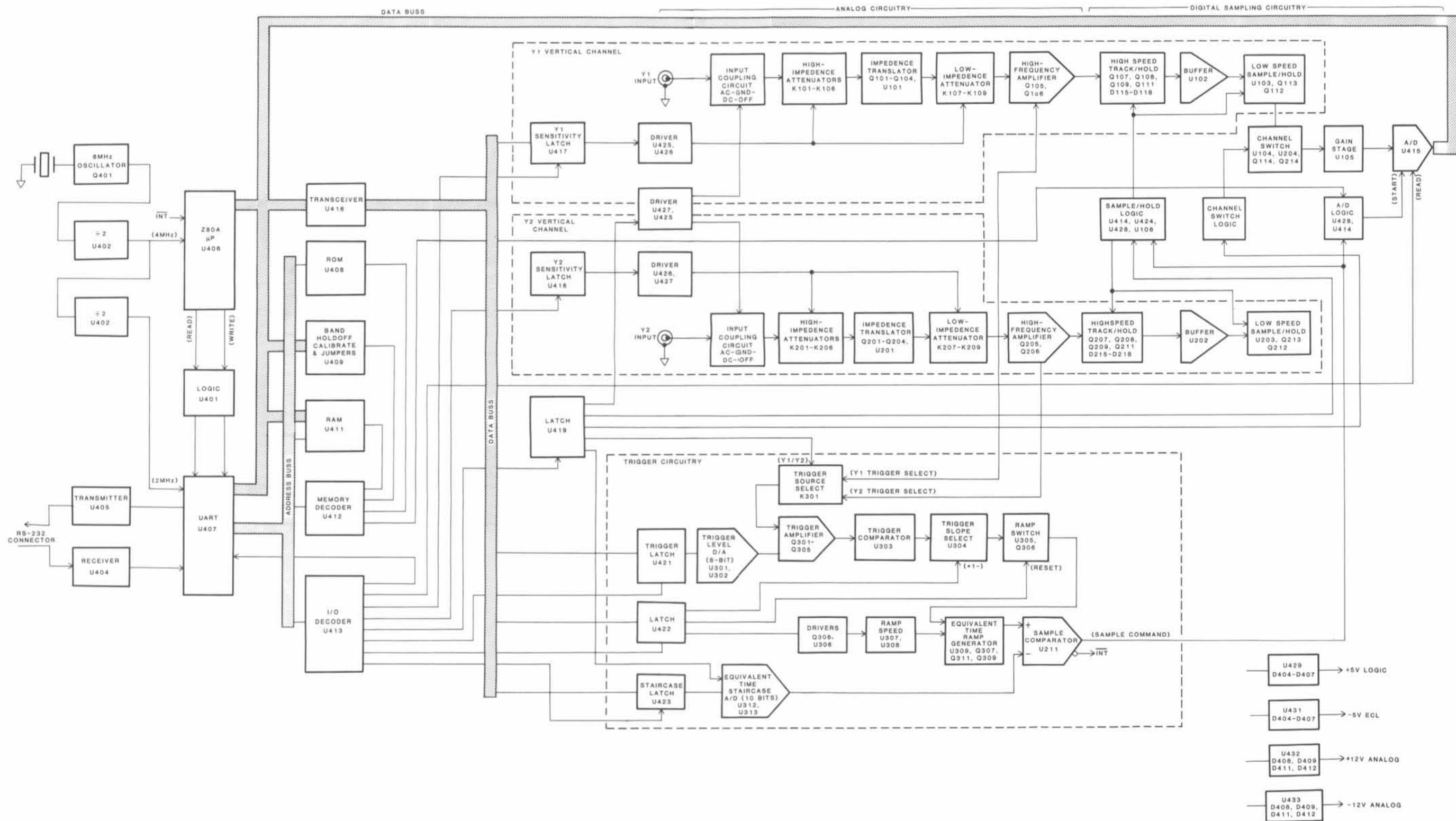


# TEST CHART #7 — TRIGGER



## TEST CHART #8 — Equivalent TIME



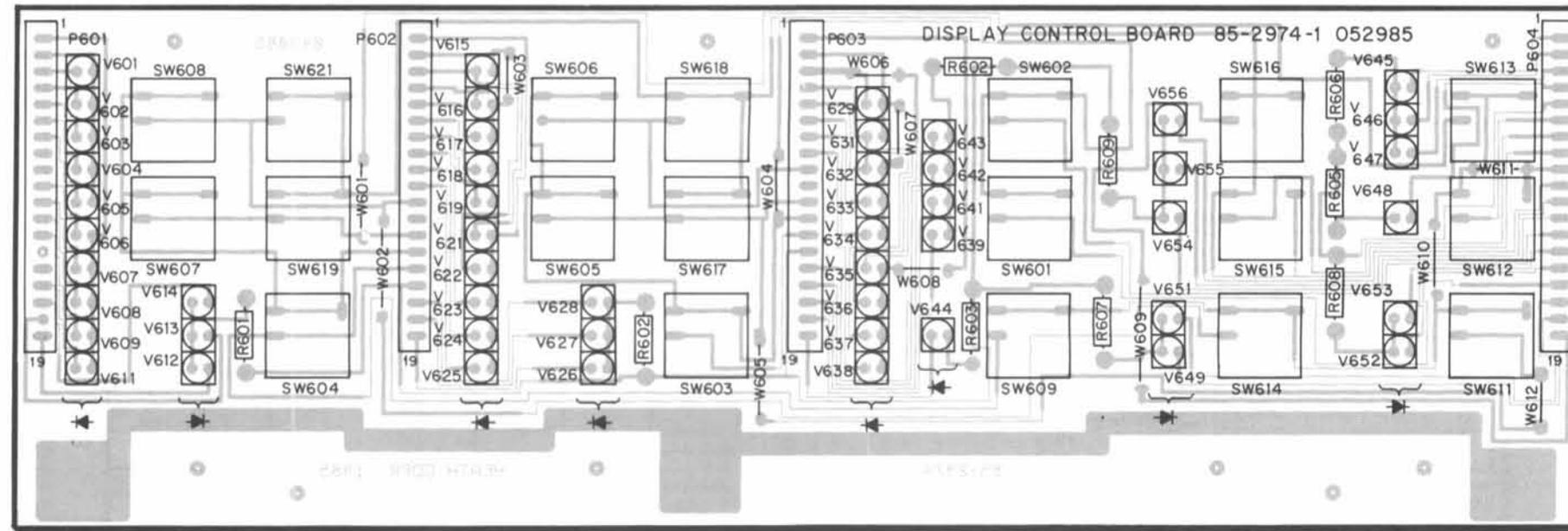


**BLOCK DIAGRAM**

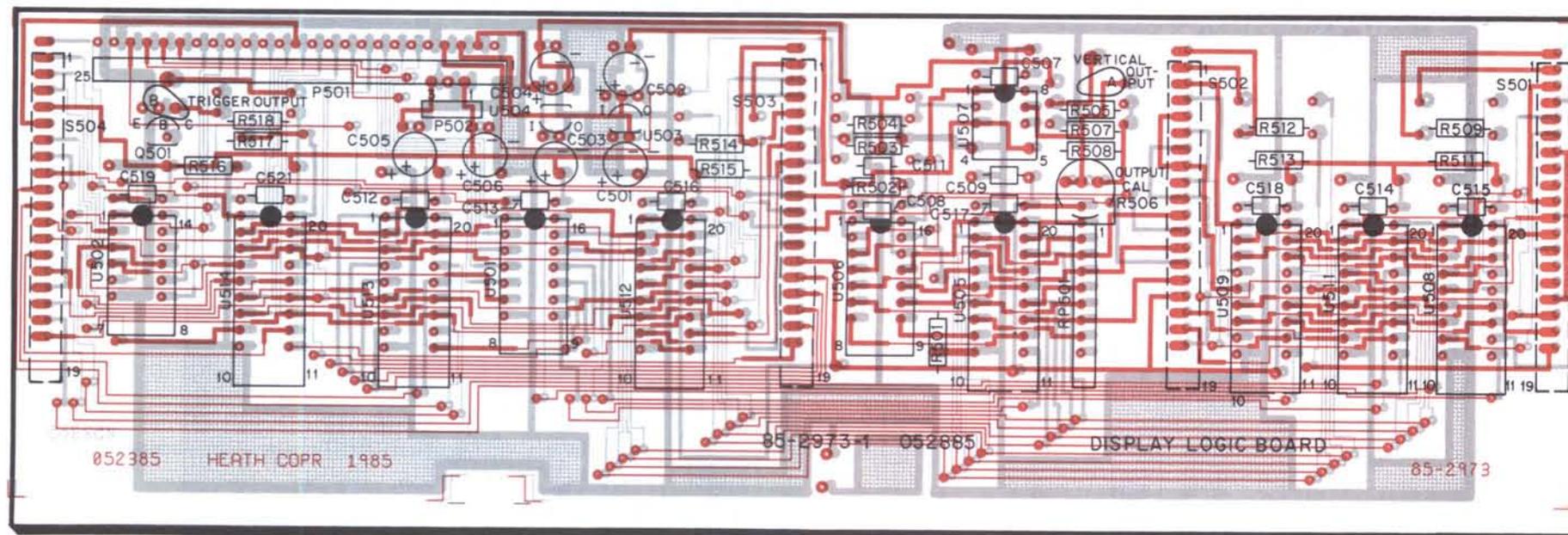
# CIRCUIT BOARD X-RAY VIEWS

NOTE: To find the PART NUMBER of a component for the purpose of ordering a replacement part:

- A. Find the circuit component number (C305, R301, etc.) on the appropriate X-Ray View.
- B. Locate this same number in the "Circuit Component Number" column of the corresponding "Parts List."
- C. Adjacent to the circuit component number, you will find the PART NUMBER and DESCRIPTION which you must supply when you order a replacement part.

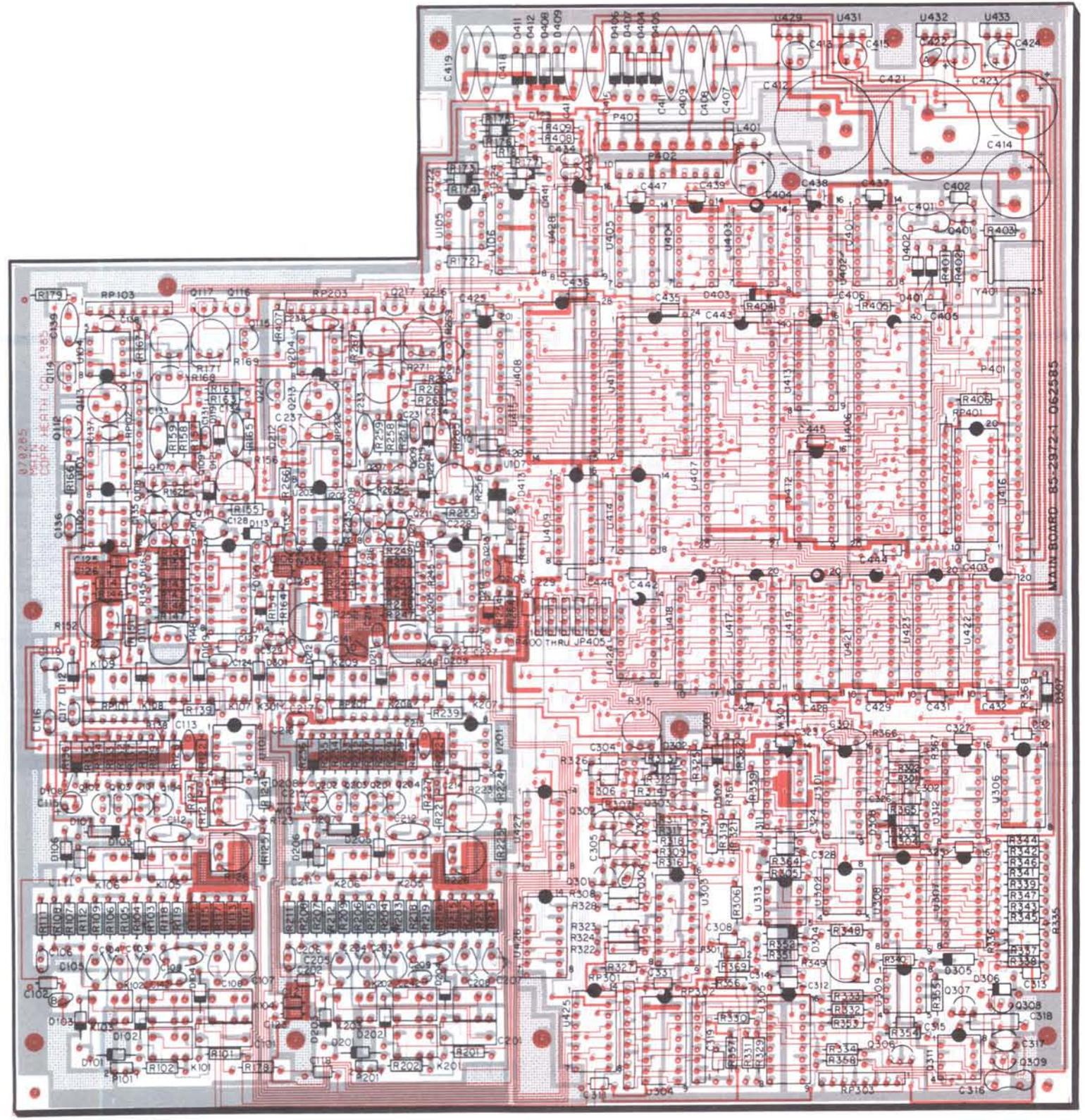


**Display Control Circuit Board**  
(Shown from the component side.)



### Display Logic Circuit Board

(Shown from the component side. The foil on the component side is shown in red.)



**Main Circuit Board**

(Shown from the component side. The foil on the component side is shown in red.)

The waveforms represent some of the signals that are present in the DMO circuitry. They may help you understand the circuit operation during troubleshooting. The locations of these waveforms are indicated on the schematic by their corresponding numbers inside a  $\circ$  symbol.

