

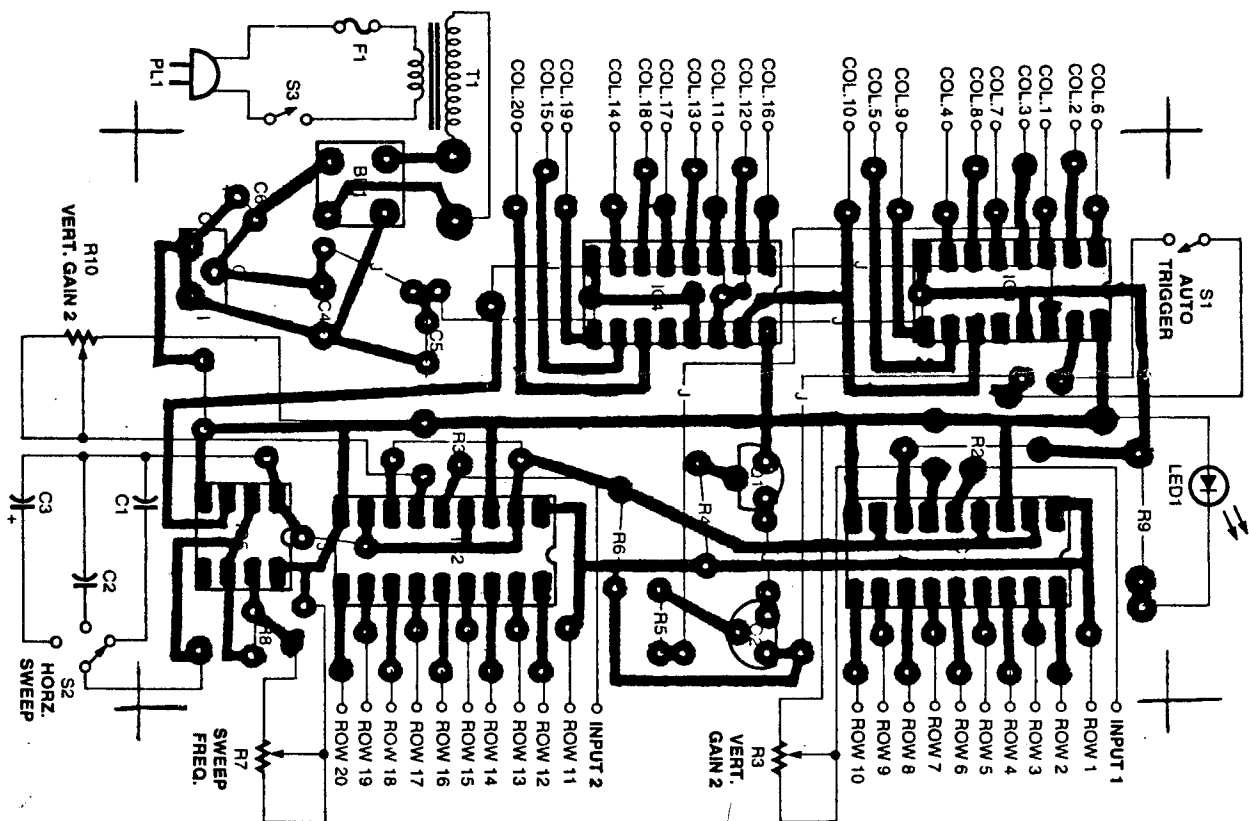
SOLID STATE MATRIX DISPLAY O-SCOPE

THE EASY WAY, JAMECO COMPANY HAS
EVERY PART FOR THIS PROJECT.

THIS MODEL USES 20 5X7 LED ARRAYS TO FORM A 20X20 DISPLAY OF LED MATRIX'S. IC1 AND IC2 FORM THE VERTICAL CIRCUIT AND THE HORIZONTAL IS FORMED BY TWO MORE CHIPS, IC3 AND IC4. THE CLOCK SIGNAL IS SUPPLIED BY A 555 TIMER (IC5).

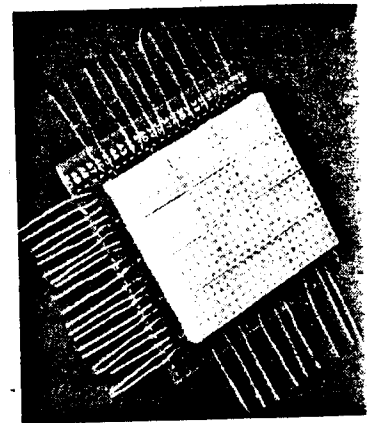
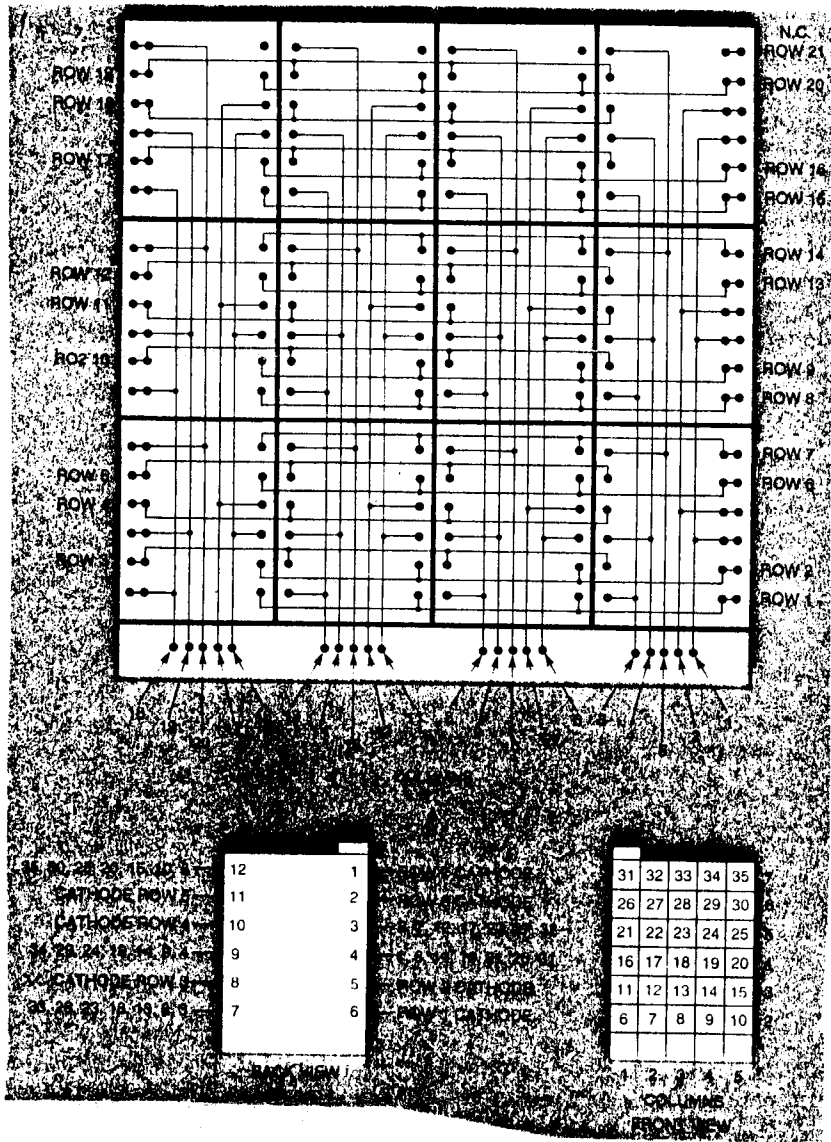
JUST FOLLOW THE DIRECTIONS AND DIAGRAMS CLOSELY AND YOU WILL HAVE ONE IN NO TIME.

BELOW IS THE PARTS LIST AND PARTS LAYOUT DIAGRAM.



THE MATRIX DISPLAY IS COMPOSED OF 12PIN 5X7 LED DISPLAYS, 20 OF THEM.

HERE IS THE LAYOUT ON PERFBOARD OF HOW THEY SHOULD BE WIRED.

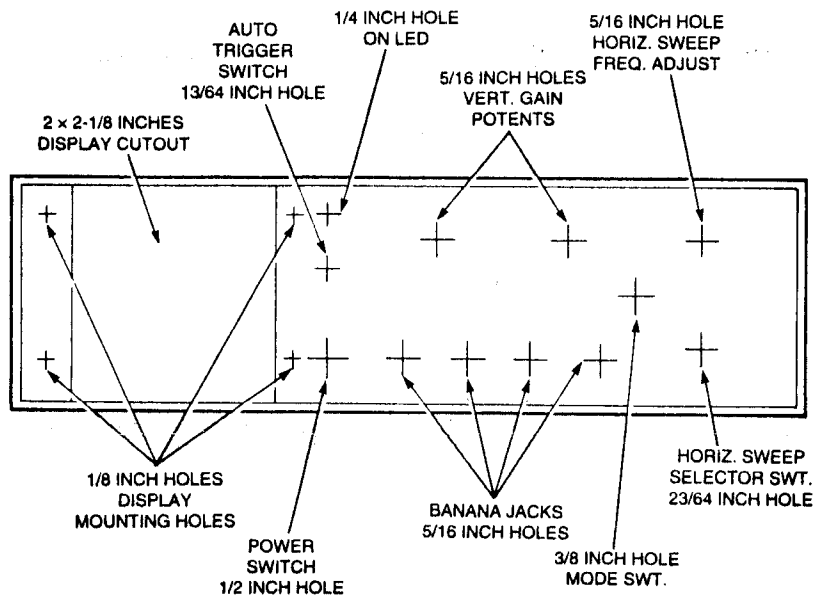
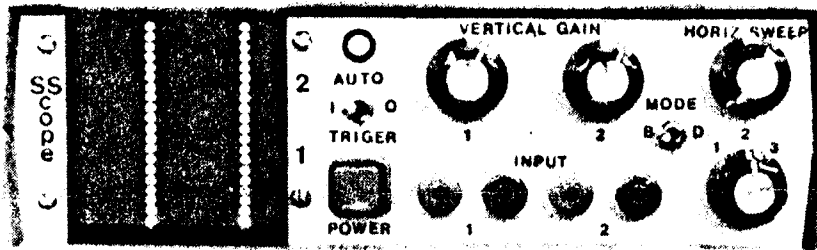


IT IS IMPORTANT THAT YOU USE THE CORRECT PARTS AND THE CORRECT DISPLAYS.

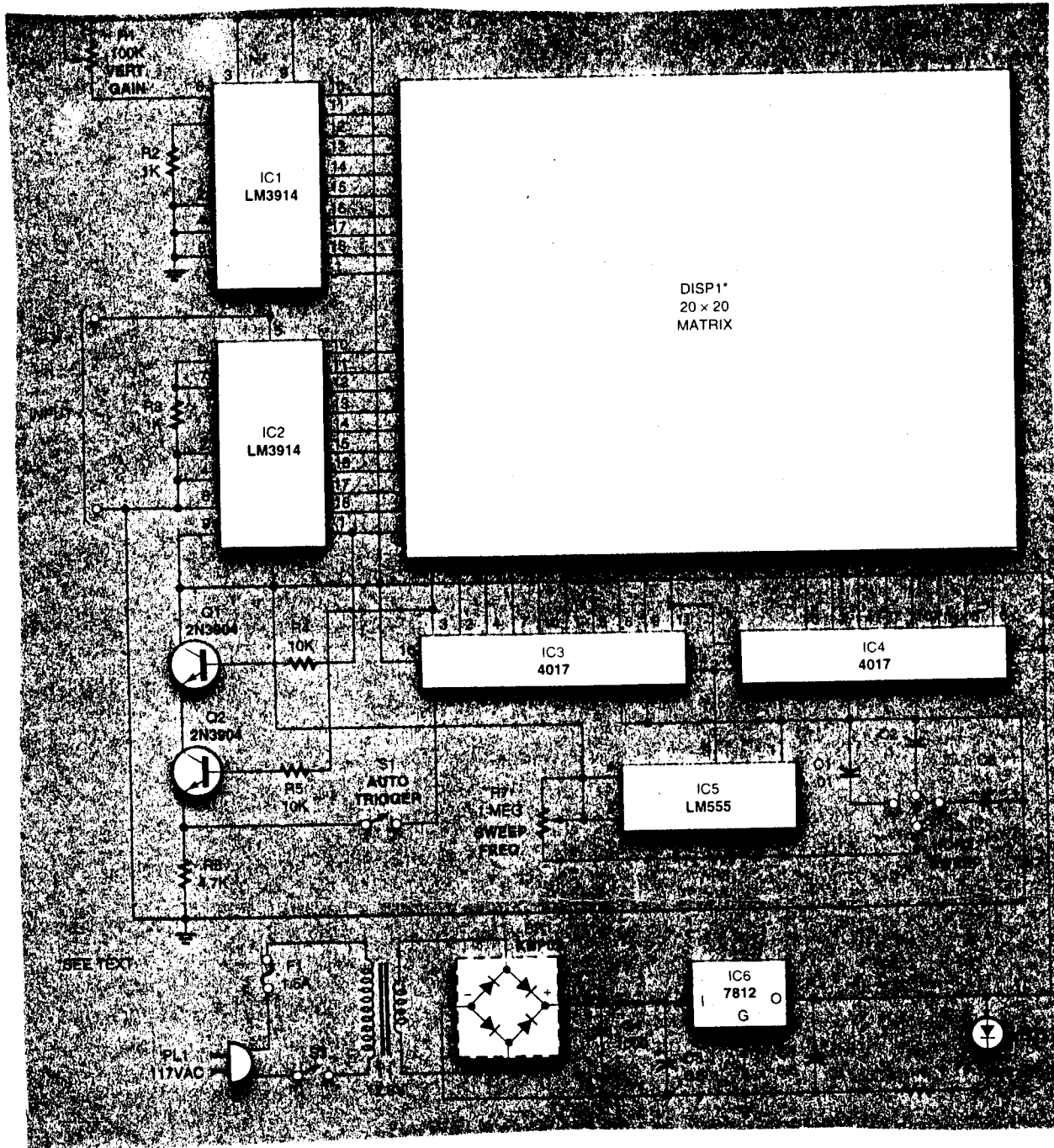
IT IS ALSO POSSIBLE TO CONNECT A CRYSTAL OSCILLATOR UP TO THE CLOCK INPUT TO ACHIEVE HIGHER FREQ RESPONSES.

HERE IS THE AUTHORS FINAL PROJECT. THE CASE CAN BE PURCHASED FROM MOUSER OR JAMECO, ITS THE SMALLER OF THE TWO.

HERE IS A DIAGRAM OF THE FACE PLATE OF THE CASE AND WHERE TO PLACE THE HOLES. THE CASE IS 2 1/2 X 8 1/2 X 6.



SCHEMATIC DIAGRAM



IT IS IMPORTANT TO USE TECH2000 TRANSFER PAPER WHEN MAKING YOUR CIRCUIT BOARDS. IF YOU NEED SOME WE SELL IT FOR \$1.50 PER SHEET. SINGLE SIDED BOARD ONLY.

HERE IS THE BOARD LAYOUT DIAGRAM:

SEMICONDUCTORS

- IC1, IC2—LM3914 dot/bar display driver, integrated circuit
- IC3, IC4—4017 decade counter/divider, integrated circuit
- IC5—555 oscillator/timer, integrated circuit
- IC6—7812 12-volt, 1-amp voltage regulator, integrated circuit
- Q1, Q2—2N3904 general-purpose NPN transistor
- BR1—KBP02 full-wave bridge rectifier
- DISP1—Twelve HDSP-L203 dot matrix display (see text)
- LED1—Light-emitting diode (any color)

RESISTORS

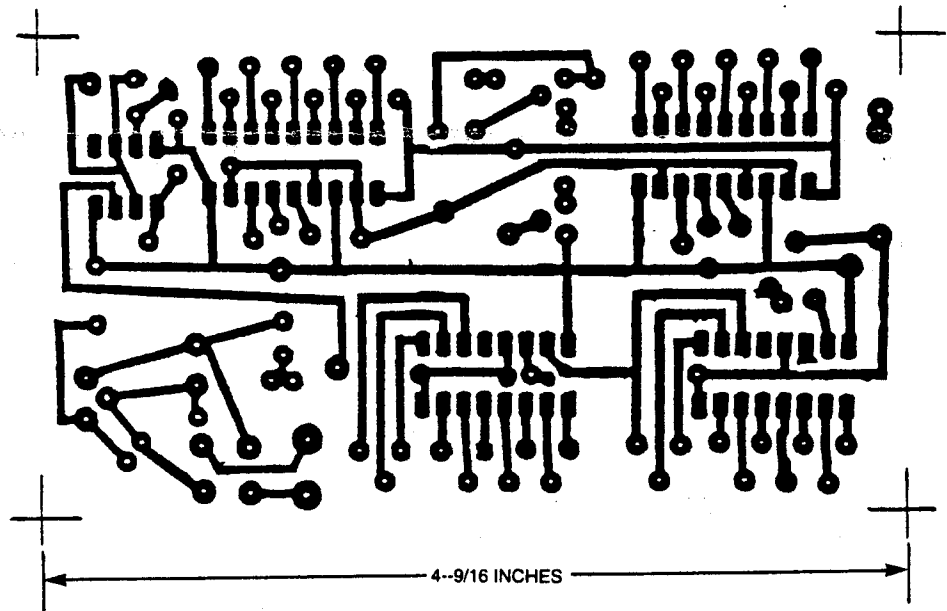
- R1, R10—100,000-ohm potentiometer
- R2, R3, R8, R9—1000-ohm
- R4, R5—10,000-ohm
- R6—4700-ohm
- R7—1-megohm panel mount potentiometer

CAPACITORS

- C1—0.01- μ F Mylar
- C2—0.1- μ F Mylar
- C3—1- μ F, 35-WVDC, electrolytic
- C4—1000- μ F, 35-WVDC, electrolytic
- C5, C6—6.8- μ F, 35-WVDC, Tantalum

ADDITIONAL PARTS AND MATERIALS

- S1—SPST toggle or push button switch
- S2—SP3T rotary switch
- S3—SPST miniature or micro toggle switch
- S4—SPST power switch
- T1—12.6 volt, 1-amp step down transformer
- PL1—117-volt AC line cord with molded plug
- F1—1.5-amp fuse



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