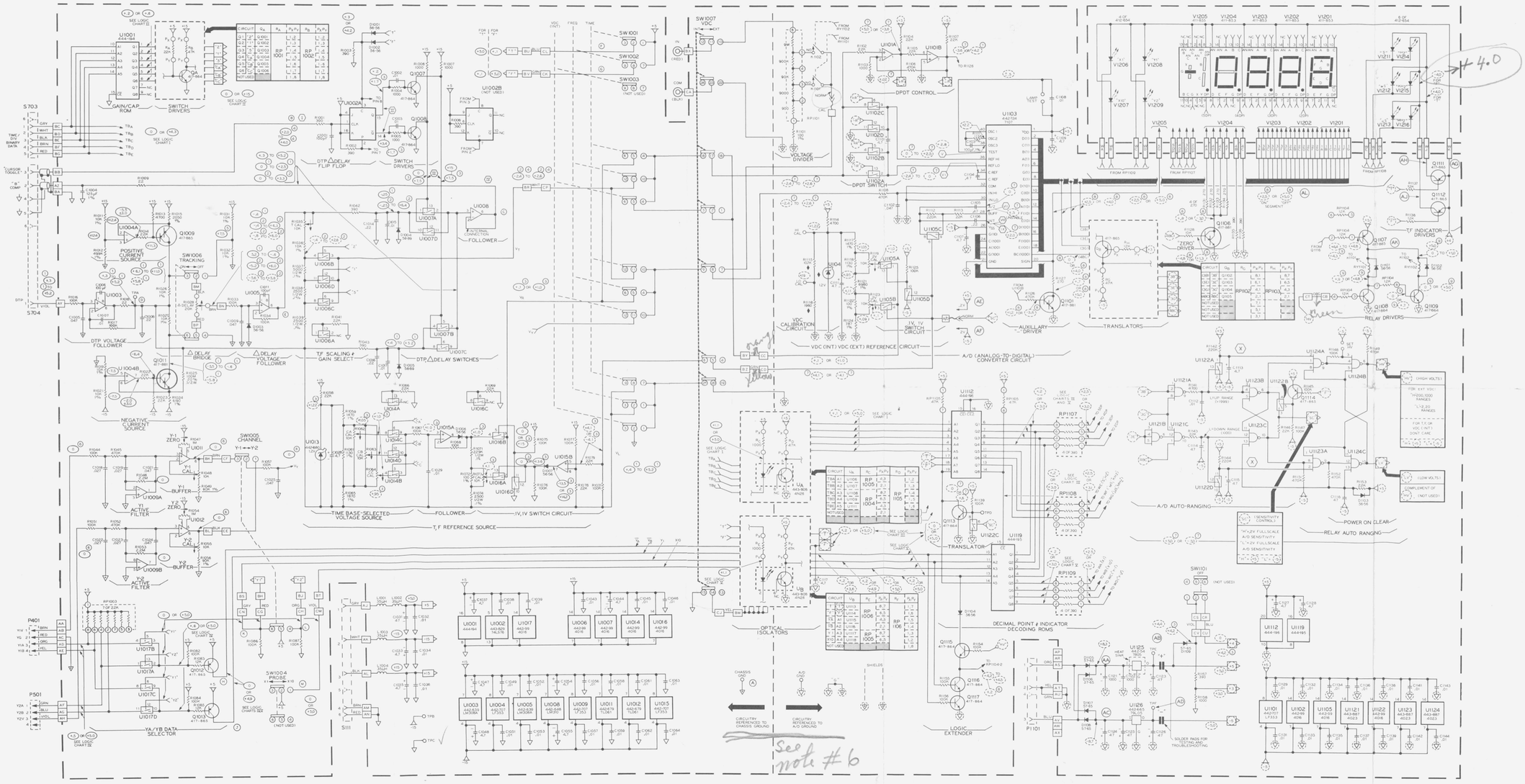

SCHEMATIC OF THE HEATHKIT® TIME-VOLTAGE MODULE MODEL IOA-4200

NOTES:

1. REFER TO THE CIRCUIT BOARD X-RAY VIEWS FOR THE PHYSICAL LOCATION OF PARTS.
2. REFER TO THE COMPONENT IDENTIFICATION SECTION FOR THE TOLERANCE AND RATING OF COMPONENTS SHOWN ON THE SCHEMATIC.
3. ALL CAPACITOR VALUES ARE IN µF UNLESS OTHERWISE INDICATED.
4. ALL RESISTORS ARE 1/4-WATT, 5% UNLESS OTHERWISE SPECIFIED. ALL RESISTOR VALUES ARE IN OHMS (k=1000, M=1,000,000).
5. ALL SWITCHES ARE SHOWN IN THE "OUT" POSITION.
6. ALL GROUND SYMBOLS, POWER SUPPLY CONNECTIONS, CONTROL SIGNALS, ETC. WITH A DASHED OUTLINE ARE REFERENCED TO THE "A/D GND" CONNECTOR. ALL OTHER GROUND SYMBOLS ETC. ARE REFERENCED TO THE "CHASSIS GND" CONNECTOR.
7. ▽ INDICATES POWER GROUND.
8. ▽ INDICATES LOW-NOISE GROUND.
9. □ INDICATES A WIRE CONNECTION TO THE CIRCUIT BOARD.
10. ▭ INDICATES A JUMPER CONNECTION BETWEEN CIRCUIT BOARDS.
11. ○ INDICATES A TEST POINT OR TEST CONNECTOR.
12. ⊣⊢ INDICATES A CIRCUIT BOARD FOIL SOLDER PAD.
13. ◆ INDICATES PART OF CALIBRATION ASSEMBLY (100-1807).
14. ○ WITH A NUMBER, INDICATES A SWITCH OR COMPONENT LUG CONNECTION.
15. ○ WITH A LETTER, INDICATES A TEST POINT LOCATION FOR "INITIAL TESTS".
16. ⬡ INDICATES A WAVEFORM LOCATION. REFER TO THE "WAVEFORMS" SECTION OF THE MANUAL.
17. CIRCUIT COMPONENT NUMBERS ARE IN THE FOLLOWING GROUPS:
    - 1000-1099 PARTS ON THE MODULE MAIN BOARD IN CIRCUITRY REFERENCED TO THE "CHASSIS GND" CONNECTOR.
    - 1100-1199 PARTS ON THE MODULE MAIN BOARD IN CIRCUITRY REFERENCED TO THE "A/D GND" CONNECTOR.
    - 1200-1299 PARTS ON THE MODULE DISPLAY BOARD.
18. ⬭ INDICATES VOLTAGE FOR ANY CONTROL SETTING WITH THE "OFF" SWITCH PUSHED IN.
19. ⬭ (1) INDICATES A VOLTAGE DEPENDENT ON THE DTP CONTROL SETTING WITH "T" FUNCTION SELECTED AND △DELAY CONTROL AT CCW.
20. ⬭ (2) INDICATES A VOLTAGE DEPENDENT ON THE △ DELAY CONTROL SETTING WITH "T" FUNCTION SELECTED AND DTP CONTROL AT CCW.
21. ⬭ (3) INDICATES A VOLTAGE FOR ANY CONTROL SETTING WITH "T" SWITCH PUSHED IN.
22. ⬭ (4) INDICATES AN APPROXIMATE VOLTAGE DEPENDENT ON THE A TIMEBASE SWITCH SETTING.
23. ⬭ (5) VOLTAGE IS +5.5 VDC WITH TRACKING SWITCH PUSHED IN.
24. ⬭ (6) INDICATES A VOLTAGE DEPENDENT ON THE Y1 (OR Y2) INPUT VOLTAGE. VOLTAGES SHOWN ARE FOR Y1 (OR Y2) INPUT SWITCH SET TO "GND" POSITION.
25. ⬭ (7) INDICATES A VOLTAGE DEPENDENT ON THE A/D (U1103) INPUT VOLTAGE.
26. ⬭ (8) INDICATES A VOLTAGE FOR "ON" OR "OFF" DISPLAY SEGMENTS.
27. ⬭ (9) VOLTAGE WHEN "ENABLED" FOR EXT VDC FUNCTION RANGE GROUPS: I.E., 2/20 OR 200/2000.

NOTE: ALL VOLTAGES WERE MEASURED AT NOMINAL (120VAC) LINE VOLTAGE WITH A 10MΩ(OR HIGHER) INPUT IMPEDANCE DC VOLTMETER. VOLTAGES ARE MEASURED WITH RESPECT TO THE APPROPRIATE GROUND CIRCUIT (SEE NOTE 6). VOLTAGES MAY VARY ±10% EXCEPT AS SHOWN.

Part of 595-2985

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