

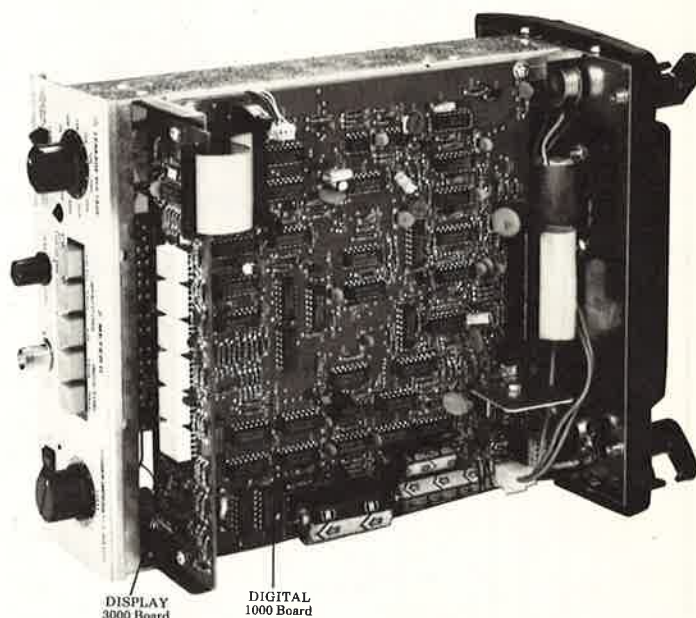
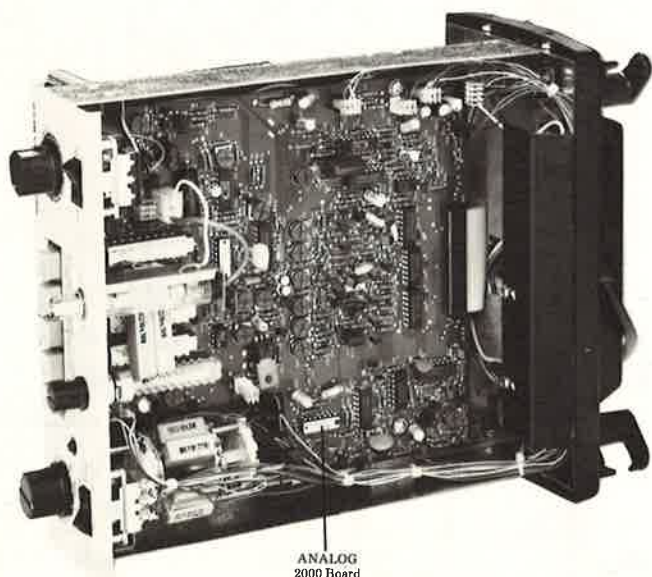
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LC75

Z METER 2

CAPACITOR — INDUCTOR ANALYZER

Schematic & Parts List

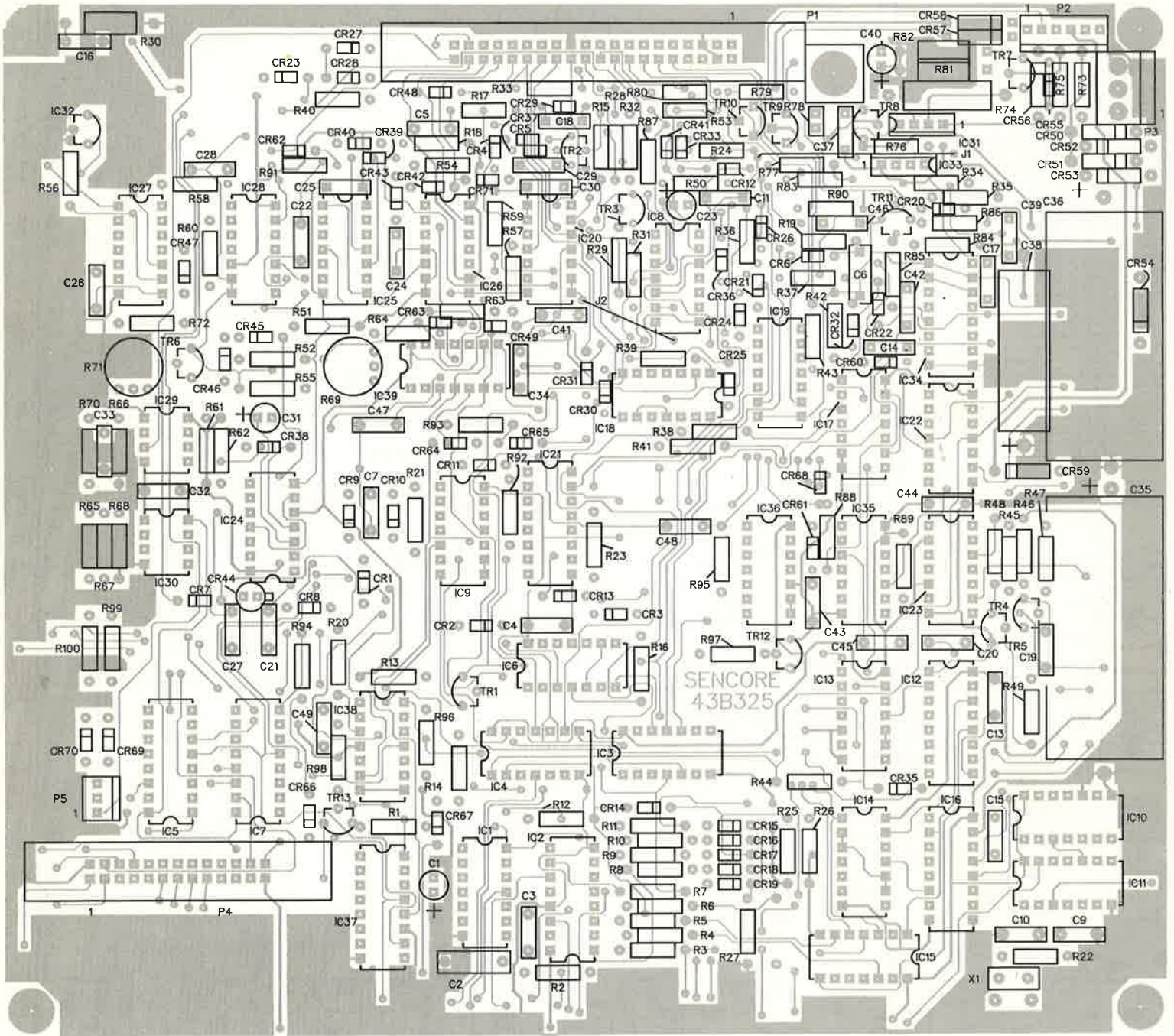


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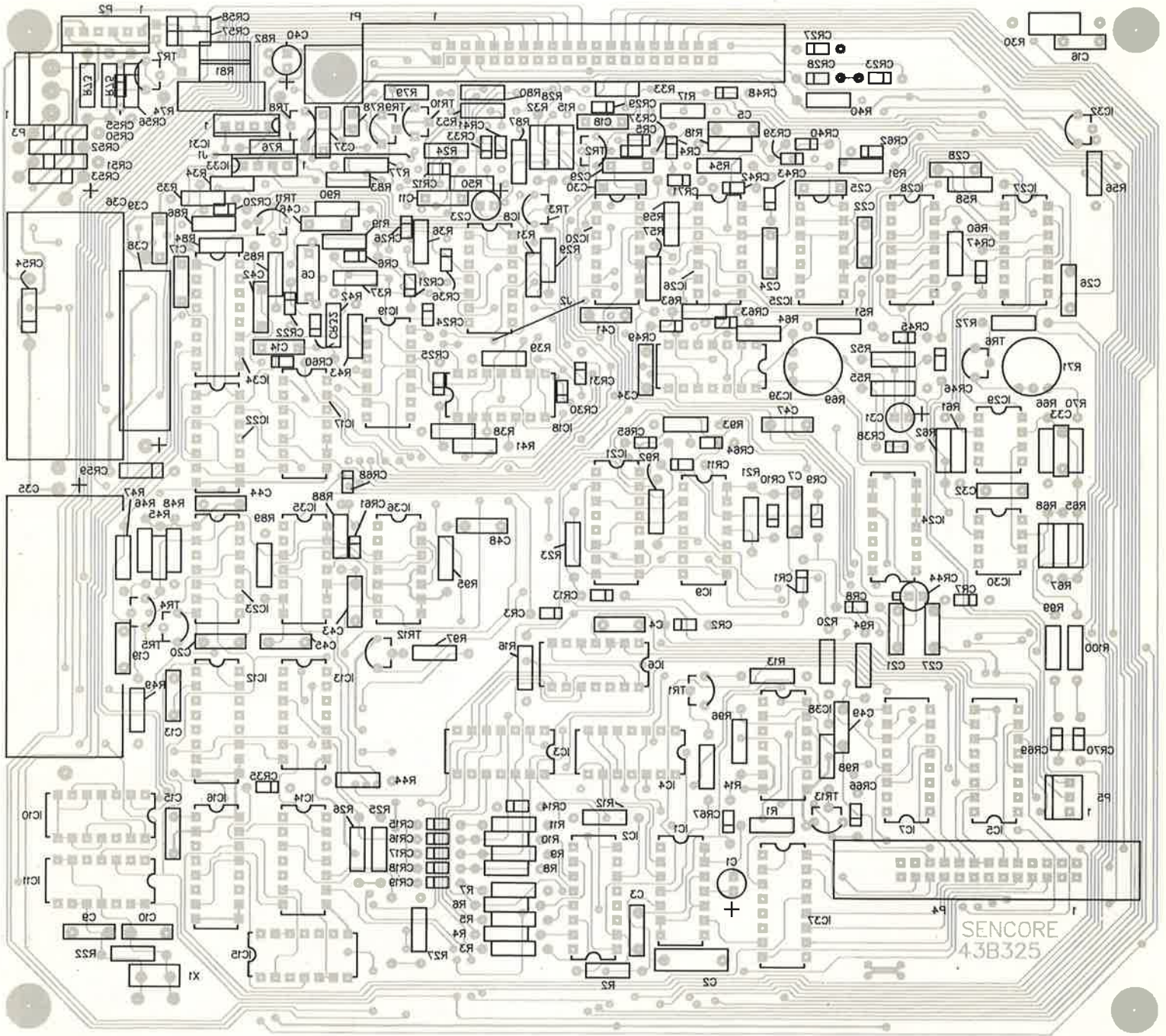
SHEET 1

This sheet contains Schematics, Digital and Display Board Layouts, and Display Board and Chassis Parts list.



SC43B325

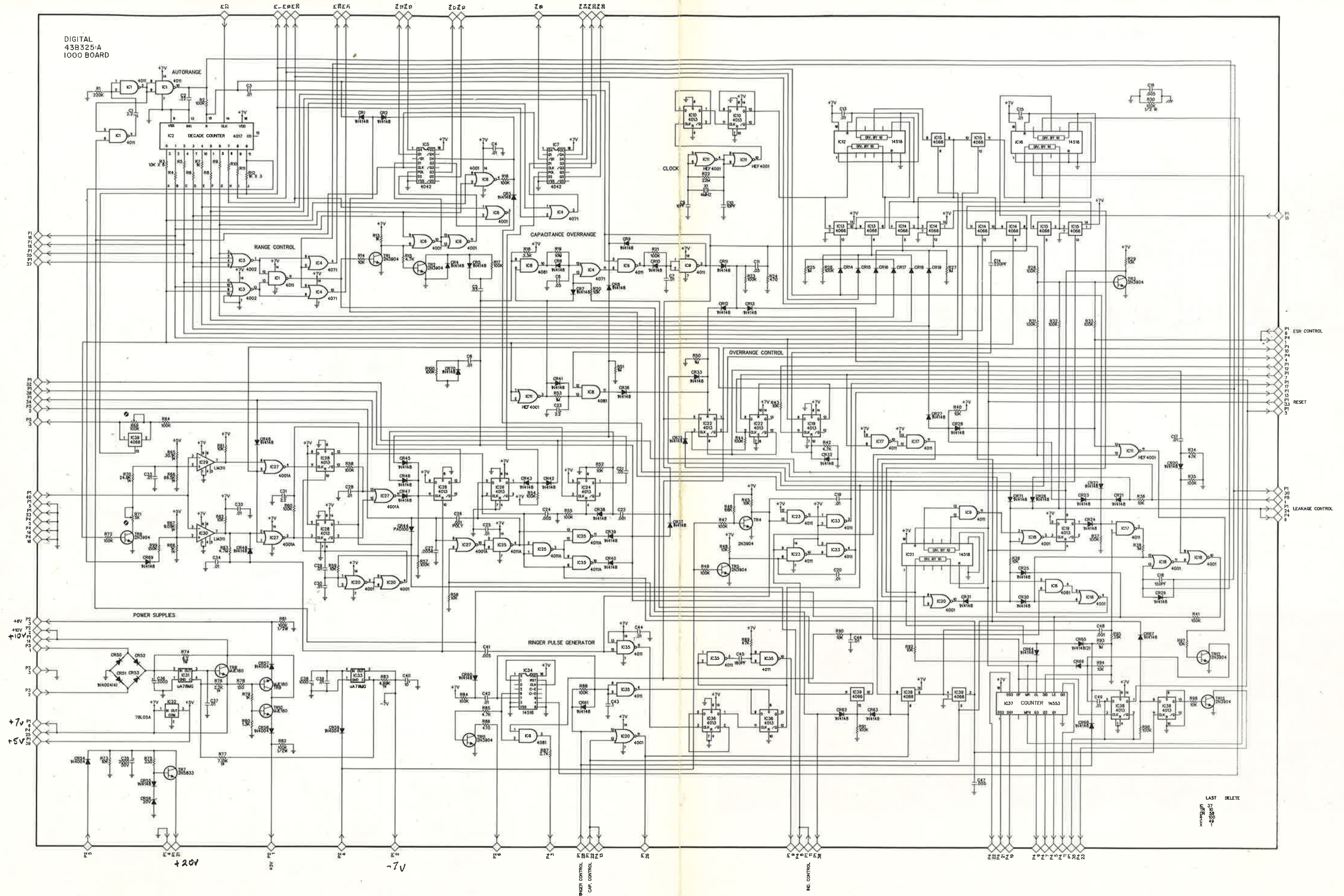
DIGITAL BOARD (COMPONENT VIEW)



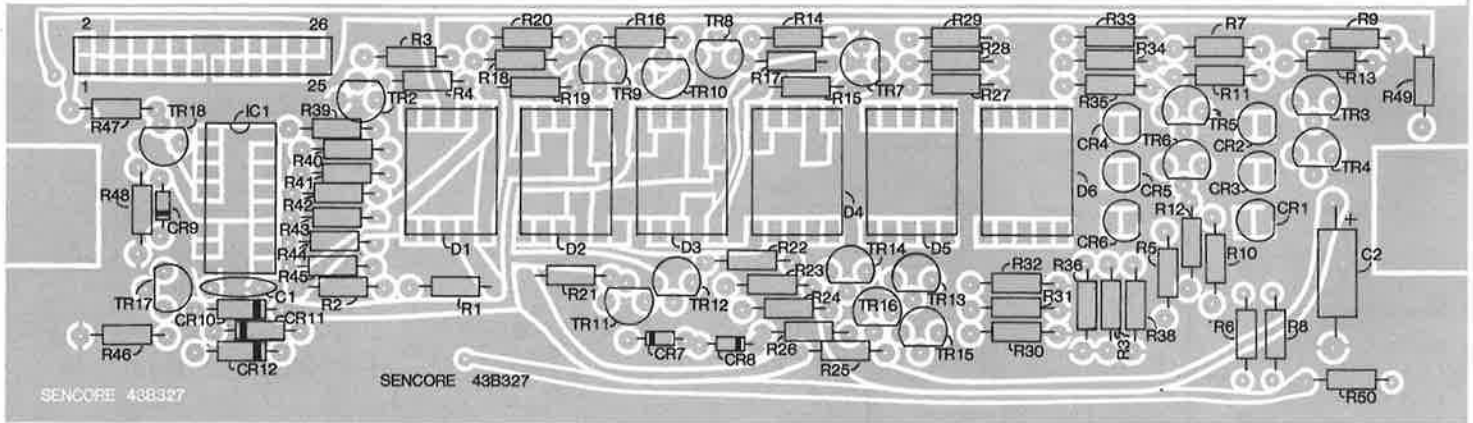
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DIGITAL BOARD (FOIL VIEW)

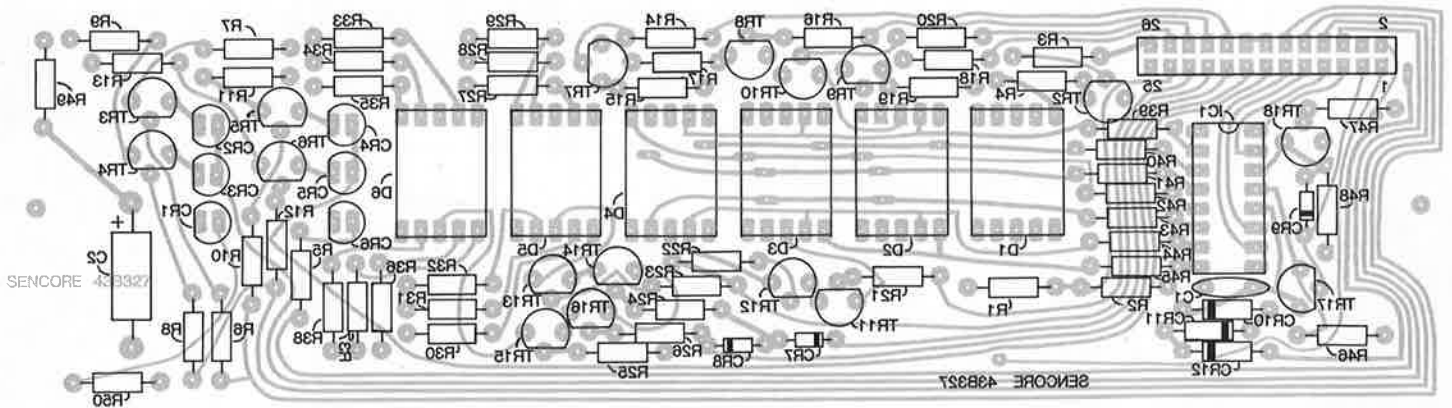
DIGITAL
43B325-A
1000 BOARD



TOP

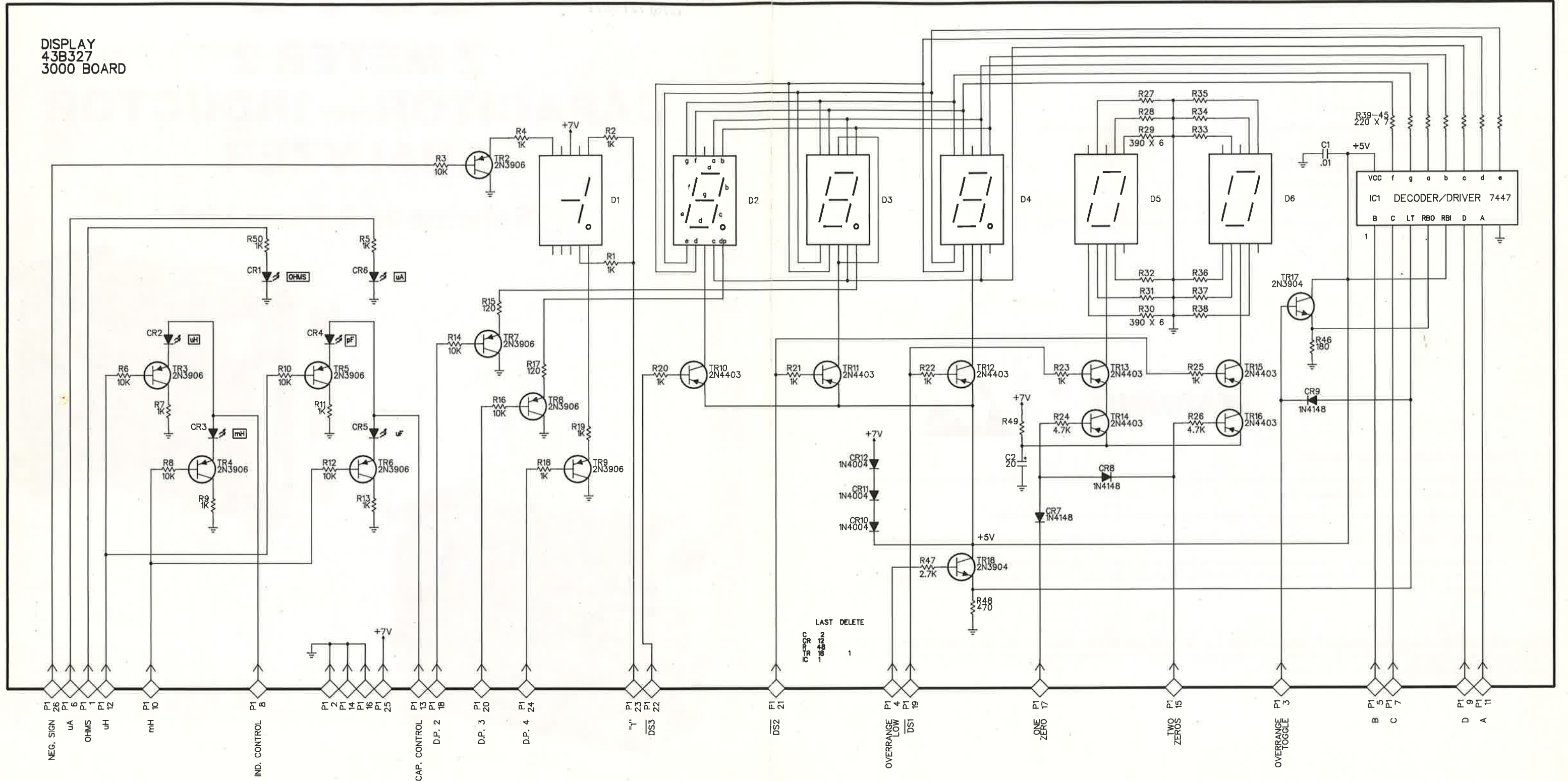


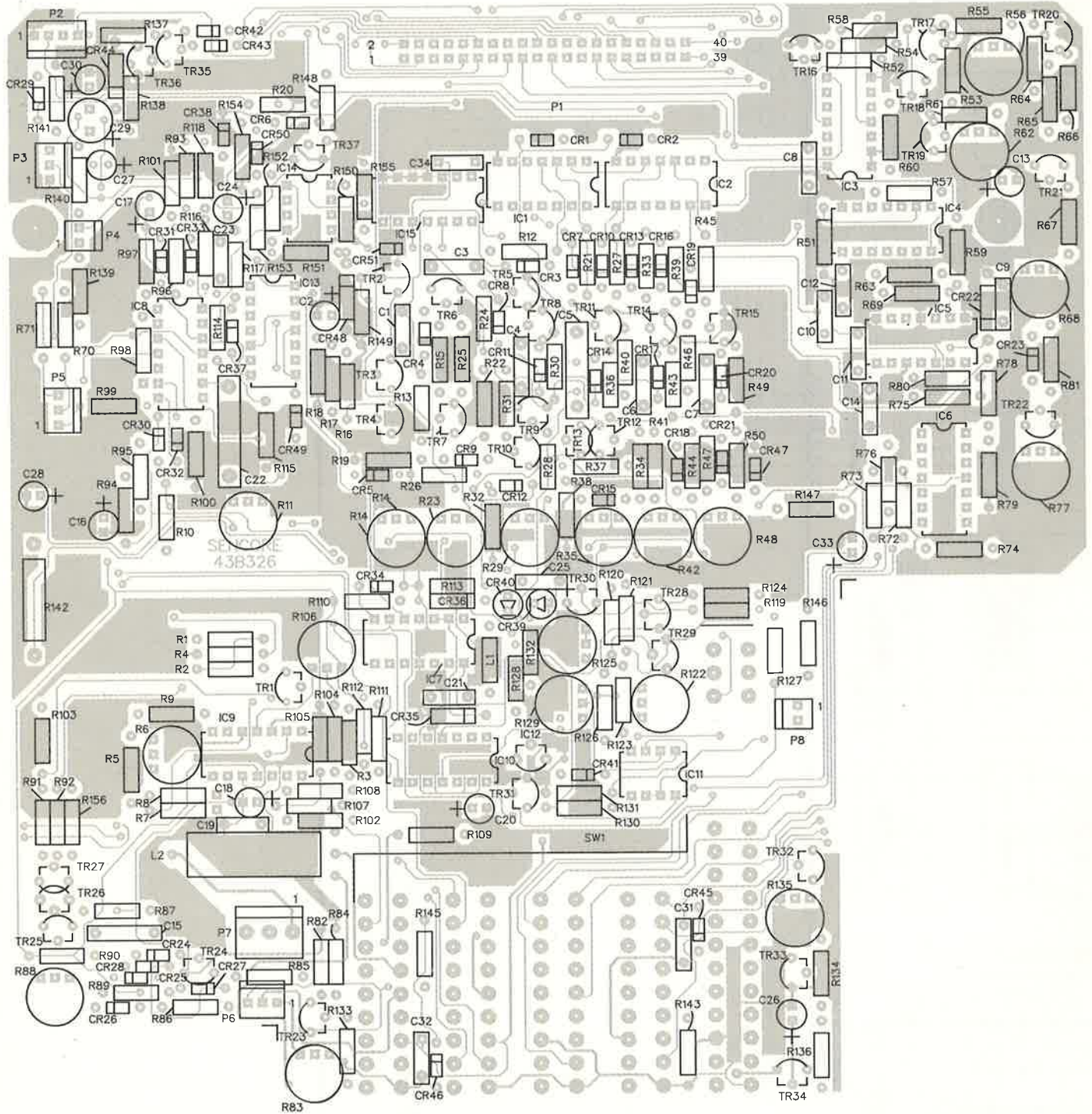
DISPLAY BOARD (COMPONENT SIDE)



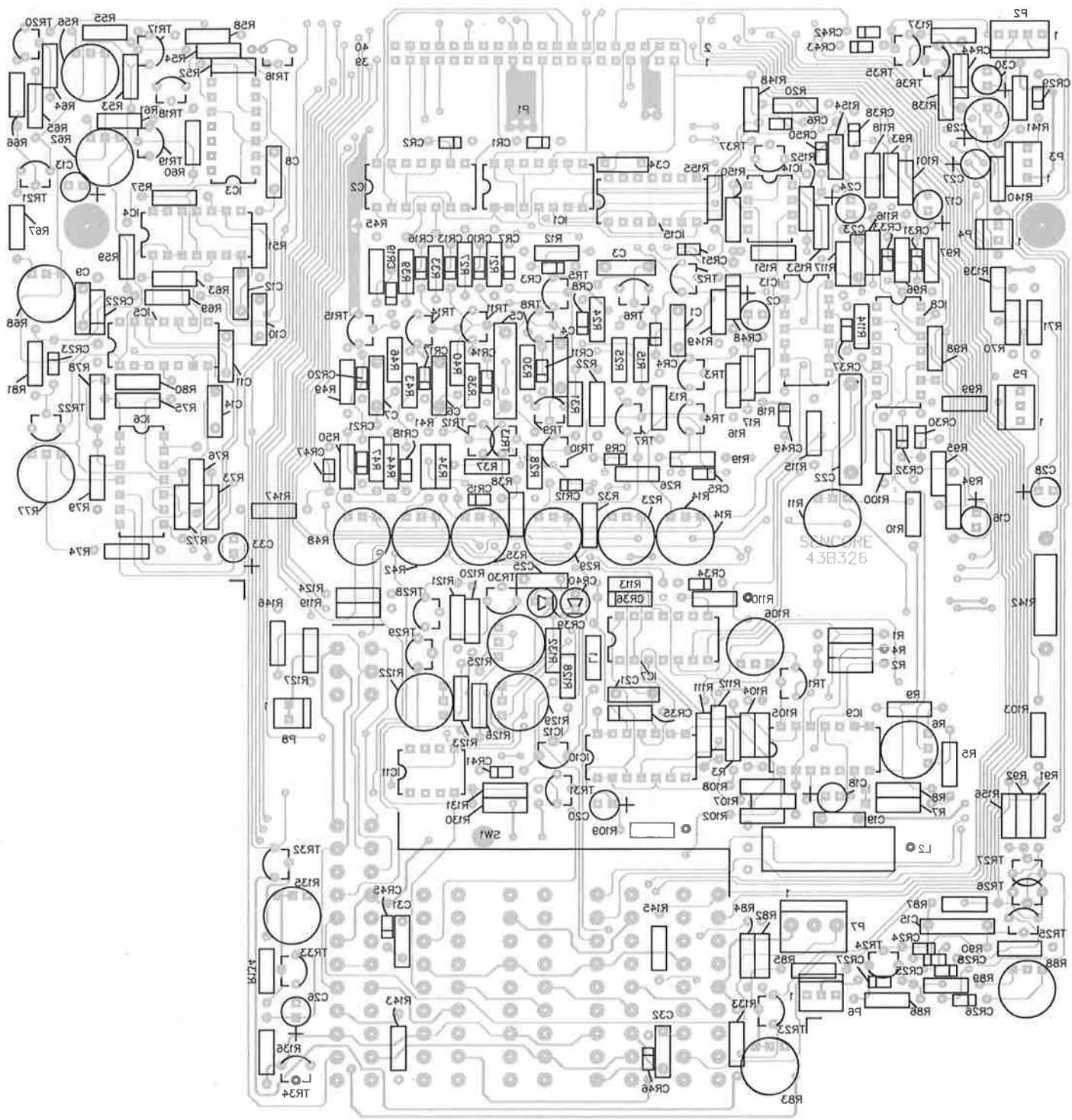
DISPLAY BOARD (FOIL SIDE)

DISPLAY
43B327
3000 BOARD



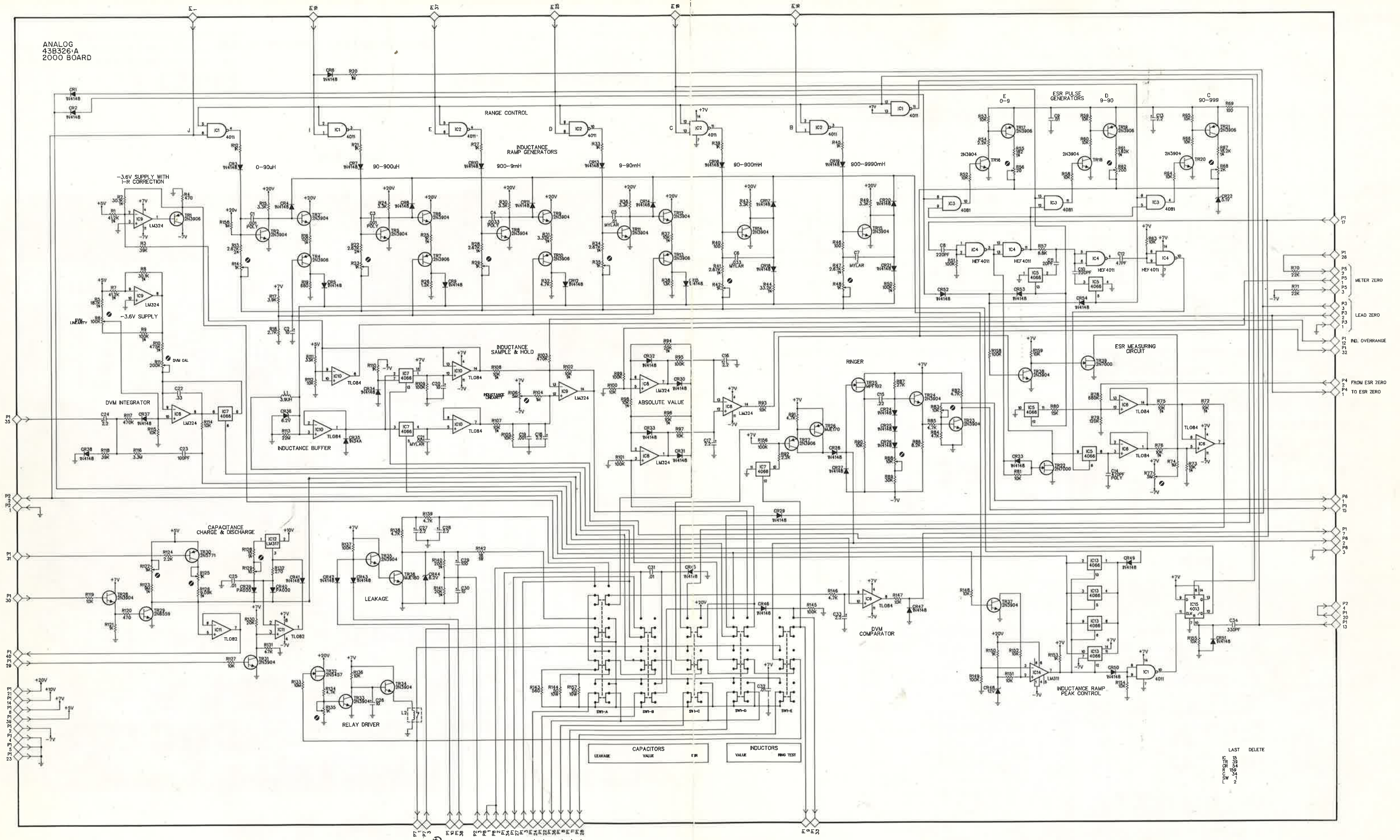


ANALOG BOARD (COMPONENT SIDE)



ANALOG BOARD (FOIL SIDE)

ANALOG
43B326-A
2000 BOARD



2000 BOARD — ANALOG

Lead 1/p

BOTTOM

LAST DELETE

**SCHEMATIC
REFERENCE**

PART NO.

DESCRIPTION

DISPLAY P.C BOARD (3000 Board)

IC1	69G35	IC, BCD-7 Seg. Decoder/Driver, 7447
TR2-9	19A34-1	Transistor, PNP, 2N3906
TR10-16	19A40	Transistor, PNP, 2N4403
TR17,18	19A33-1	Transistor, NPN, 2N3904
CR1-6	20G14	LED Indicator
CR7,8,9	50C5-2	Diode, 1N4148
CR10,11,12	16G10	Diode, 1A, 1N4004
C1	24G207	Capacitor, .01uF 100V, Disc
C2	24G121	Capacitor, 20uF, 15V, Lytic
D1-6	23G84	Display, 7 Segment

CHASSIS MOUNTED PARTS

CR1	20G14	LED Indicator, Voltage Warning
CR2,3	16G28	Diode, 1A
R1	14B49-22	Resistor, 5K, 5W, 10%
R2	14B49-23	Resistor, 3K, 5W, 10%
R3	14B49-10	Resistor, 1K, 5W, 10%
R4	14B49-36	Resistor, 82 ohm, 5W, 10%
R5	14C7-62	Resistor, 6.2 ohm, 1W, 5%
R6	14C4-22	Resistor, 2.2 ohm 1/2W, 5%
R7	14C10-270	Resistor, 27 ohm, 2W, 5%
R8	15C4-4	Control, 250K, L/C Zero
R9A,B	15B21-D	Control, 100K Dual Pot, Lead Zero
R10	15C3-15G	Control, 5K, Meter Zero
R11	15C3-29	Control, 1M, ESR Zero
R12,13	14C5-105	Resistor, 1M, 1/2W, 10%
C1	24G341	Capacitor, 2700pF, Film, 5%
C2,3	24G279	Capacitor, 470pF, Poly, 5%
C4	24G345	Capacitor, 2200pF, Poly, 10%
C5	24G403	Capacitor, .01uF, Poly, 10%
C6	24G404	Capacitor, .033uF, Poly, 10%
SW1	25G294	Switch, SPST Rocker, Power
SW2	25A369	Switch Rotary, Leakage Voltage
SW3	25G245	Switch, DPDT Rocker, Leakage Range
SW4	25A367	Switch, Rotary, Impedance Match
T1	128K76	Power Transformer Assembly
	8C239	Bezel, Molded
	21A81	Button
	21G95	Knob, Zero Adjust
	21G96	Knob, Leakage, Impedance Match
	39G143	Test Lead
	39G144	Test Lead Adapter
	39G154	Push Button Hold Down Rod
	63A34	Filter, Red Display

**SCHEMATIC
REFERENCE**

ANALOG P.C BOARD (2000 Board)

SCHEMATIC REFERENCE	PART NO.	DESCRIPTION
IC1,2	69G3-B	IC, 4x2 NAND, 4011B
IC3	69G208-B	IC, 4x2 AND, 4081
IC4	69G169-B	IC, Quad NAND, 4011
IC5,7,13	69G123-B	IC, Quad Switch, 4066B
IC6,10	69G274	IC, Quad BiFET OP Amp, TL084
IC8,9	69G13	IC, Quad OP Amp, LM324
IC11	69G189	IC, Dual BiFET OP Amp, TL082
IC12	69G212	IC, Voltage Reg. Var., LM317
IC14	69G58	IC, Voltage Comparator, LM311
IC15	69G8-B	IC, Dual D Flip Flop, 4013
TR2,3,5,6,8,9,11,12 14-16,18,20,22-24 28,31,33-35,37	19A33-1	Transistor, NPN, 2N3904
TR1,4,7,10,13 17,19,21,27	19A34-1	Transistor, PNP, 2N3906
TR22	19G70	Transistor, MOS/PWR FET, 2N7000
TR25	19A19	Transistor, N-chan. FET, MPF102
TR26	19A30-1	Transistor, Power, PNP, MJE170
TR29	19A58	Transistor, NPN, 2N6559
TR30	19A45	Transistor, PNP, 2N5771
TR32	19A36	Transistor, P-Chan. FET, E201
TR36	19A29-1	Transistor, Power, NPN, MJE180
CR1-21,23-34,37,38 41-43,45-47,49-51	50C5-2A	Diode, 1N4148
CR22	50C4-13	Diode, 5.1V Zener, 1N4733
CR35	50C3-1	Diode, 1N34A
CR36,44	50C4-6A	Diode, 6.2V Zener, 1N4735A
CR39,40	50G24	Diode, PAD20
CR48	50C4-17	Diode, 12V Zener, 1N4742A
R1,7	14A38-4124A	Resistor, 41.2K, 1/4W, 1%, 100PPM
R2,8	14A38-3014A	Resistor, 30.1K, 1/4W, 1%, 100PPM
R5	14A38-1875A	Resistor, 187K, 1/4W, 1%, 100PPM
R6	15C26-14	Control, 100K, Linear Taper
R9,50	14A38-1005A	Resistor, 100K, 1/4W, 1%, 100PPM
R10	14A38-4755A	Resistor, 475K, 1/4W, 1%
R11	15C26-11	Control, 200K Miniature
R13,22,28 34,41,47	14A38-2673A	Resistor, 2.67K, 1/4W, 1%, 100PPM
R14,23,29,35 42,48,125,135	15C26-15	Control, 1K, Linear Taper
R16	14A38-1002	Resistor, 100 ohm, 1/4W, 1%
R25	14A38-1003	Resistor, 1K, 1/4W, 1%, 100PPM
R31	14A38-3323A	Resistor, 3.32K, 1/4W, 1%, 100PPM
R37,72,73,75,76,96 98,102,107,108	14A38-1004	Resistor, 10K, 1/4W, 1%, 100PPM
R44	14A38-3324A	Resistor, 33.2K, 1/4W, 1%, 100PPM
R55	14A38-1822A	Resistor, 182 ohm, 1/4W, 1%
R56	15C26-12	Control, 20 ohm miniature
R61	14A38-1823A	Resistor, 1.82K, 1/4W, 1%, 100PPM
R62	15C26-13	Control, 200 ohm Linear Taper
R67	14A38-1824A	Resistor, 18.2K, 1/4W, 1%, 100PPM
R68	15C26-18	Control, 2K, Linear Taper
R77,106	15C26-21	Control, 5M, Linear Taper
R83,88	15C26-24	Control, 10K Trimmer
R94,141	14A38-2004	Resistor, 20K, 1/4W, 1%, 100PPM
R122	15C26-23	Control, 1M Trimmer
R123	14A38-9006	Resistor, 9M, 1/4W, 1%
R126	14A38-9093A	Resistor, 9.09K, 1/4W, 1%, 100PPM
R128	14A38-1501A	Resistor, 15 ohm, 1/4W, 1%
R129	15C26-16	Control, 10 ohm, Linear Taper
R140	14A38-2002A	Resistor, 200 ohm, 1/4W, 1%
R142	14C8-180	Resistor, 18 ohm, 1W, 10%
R144,157	14A52-14	Resistor, 50 ohm, 10W, 10%
C1,3	24G188	Capacitor, .001uF 5%, Poly
C2,20,26,30	24G382	Capacitor, 10uF 20%, Lytic
C4	24G182	Capacitor, .0033uF, Poly
C5	24G346	Capacitor, .01uF 10%, Mylar
C6	24G338	Capacitor, .033uF 10%, Mylar
C7	24G216	Capacitor, .1uF 10%, Mylar
C23	24G70	Capacitor, 100pF 5%, NPO, Disc
C9,25,31,32	24G207	Capacitor, .01uF, Disc
C8, 10	24G25	Capacitor, 220pF 20%, Y5F, Disc
C11	24G77	Capacitor, 20pF, 5%, Disc
C12	24G192	Capacitor, 47pF, 10%, Disc
C13,16-18,24 27,28,33	24G384	Capacitor, 2.2uF 20%, Lytic
C14	24G279	Capacitor, 470pF 5%, Poly
C15	24G168	Capacitor, .22uF 10%, Mylar
C19	24G17	Capacitor, .001uF, Disc
C21	24G286	Capacitor, .001uF 20%, Mylar
C22	24G374	Capacitor, .33uF 10%, Film
C29	24G442	Capacitor, 100uF, Lytic
C34	24G22	Capacitor, 330pF 10%, Disc
SW1	25A375A	Switch, 5 Module, Pushbutton
L1	46G76	Coil, 3.9uH, 10%
L2	41A7	Reed Relay, 6V

**SCHEMATIC
REFERENCE**

PART NO.

DESCRIPTION

DIGITAL P.C. BOARD (1000 Board)

IC1,9,17,23,35	69G3-B	IC, 4x2 NAND, 4011B
IC2	69G45-B	IC, Decade Counter, 4017B
IC3	69G56-B	IC, 2x4 NOR, 4002B
IC4	69G210-B	IC, 2x4 OR, 4071B
IC5,7	69G57-B	IC, Quad D Latch, 4042B
IC6,18,20	69G7-B	IC, 4x2 NOR, 4001B
IC8	69G208-B	IC, 4x2 AND, 4081
IC10,19,22,24 26,28,36,38	69G8-B	IC, Dual D Flip-Flop, 4013B
IC11	69G209	IC, 4x2 NOR, 4001
IC12,16,21,34	69G36-B	IC, Dual Decade Counter, 14518B
IC13-15,39	69G123-B	IC, Quad Switch, 4066B
IC25	69G3-A	IC, 4x2 NAND, 4011A
IC27	69G7-A	IC, 4x2 NOR, 4001A
IC29,30	69G58	IC, Voltage Comparator, LM311
IC31	69G73	IC, Voltage Reg. Var. Pos., UA78MGU
IC32	69G29	IC, Voltage Regulator, + 5V, 78L05
IC33	69G74	IC, Voltage Reg. Var. Neg., UA79MGU
IC37	69G23-B	IC, 3x10 Counter, 14553B
TR1-6,11-13	19A33-1	Transistor, NPN, 2N3904
TR7	19A53	Transistor, NPN, 2N5833
TR8,9,10	19A29	Transistor, Power, NPN, MJE180
CR1-33, 35-43 45-49, 55, 60-69, 71	50C5-2A	Diode, 1N4148
CR44	50G19	Diode, PAD100
CR50-54,57-59	16G10	Diode, 1A, 1N4004
CR56	50C4-8	Diode, Zener, 20V, 1N4747A
R65	14A38-3014A	Resistor, 30.1K, 1/4W, 1%, 100PPM
R66	14A38-6654A	Resistor, 66.5K, 1/4W, 1%, 100PPM
R67	14A38-9093A	Resistor, 9.09K, 1/4W, 1%, 100PPM
R68	14A38-1003	Resistor, 1K, 1/4W, 1%, 100PPM
R69	15C26-14	Control, 100K, 20%, Linear Taper
R70	14A38-2494A	Resistor, 24.9K, 1/4W, 1%
R71	15C26-20	Control, 5K, 20%, Linear Taper
R74	14C7-62	Resistor, 6.2 ohm, 1W, 5%
R76	14A38-2213A	Resistor, 2.21K, 1/4W, 1%, 100PPM
R77	14A38-7153A	Resistor, 7.15K, 1/4W, 1%, 100PPM
R83	14A38-4493A	Resistor, 4.99K, 1/4W, 1%, 100PPM
C1,23,31	24G384	Capacitor, 2.2uF 20%, Lytic
C2	24G168	Capacitor, .22uF 10%, Mylar
C3,4,7,13,15,17,19 20,25,28-30,32-34 37,39,42,44,46,49	24G207	Capacitor, .01uF, Disc
C5	24G31	Capacitor, .03uF, Disc
C6,11,21	24G59	Capacitor, .05uF, Disc
C9,10	24G86	Capacitor, 10pF NPO, Disc
C14	24G25	Capacitor, 220pF Y5F, Disc
C16	24G9	Capacitor, .005uF, Disc
C18	24G208	Capacitor, 150pF Z5F, Disc
C22,48	24G17	Capacitor, .001uF, Disc
C24,41,47	24G125	Capacitor, .005uF Z5U, Disc
C26	24G188	Capacitor, .001uF 5%, Poly
C27	24G319	Capacitor, .0056uF 10%, Mylar
C35	24G307	Capacitor, 2000uF 20%, Lytic
C36	24G240	Capacitor, 2000uF, Lytic
C38	24G272	Capacitor, 1000uF 10%, Lytic
C40	24G382	Capacitor, 10uF 20%, Lytic
C43	24G216	Capacitor, .1uF 10%, Mylar
C45	24G190	Capacitor, 180 pF 10%, Disc
X1	47A28	Crystal, 4MHz

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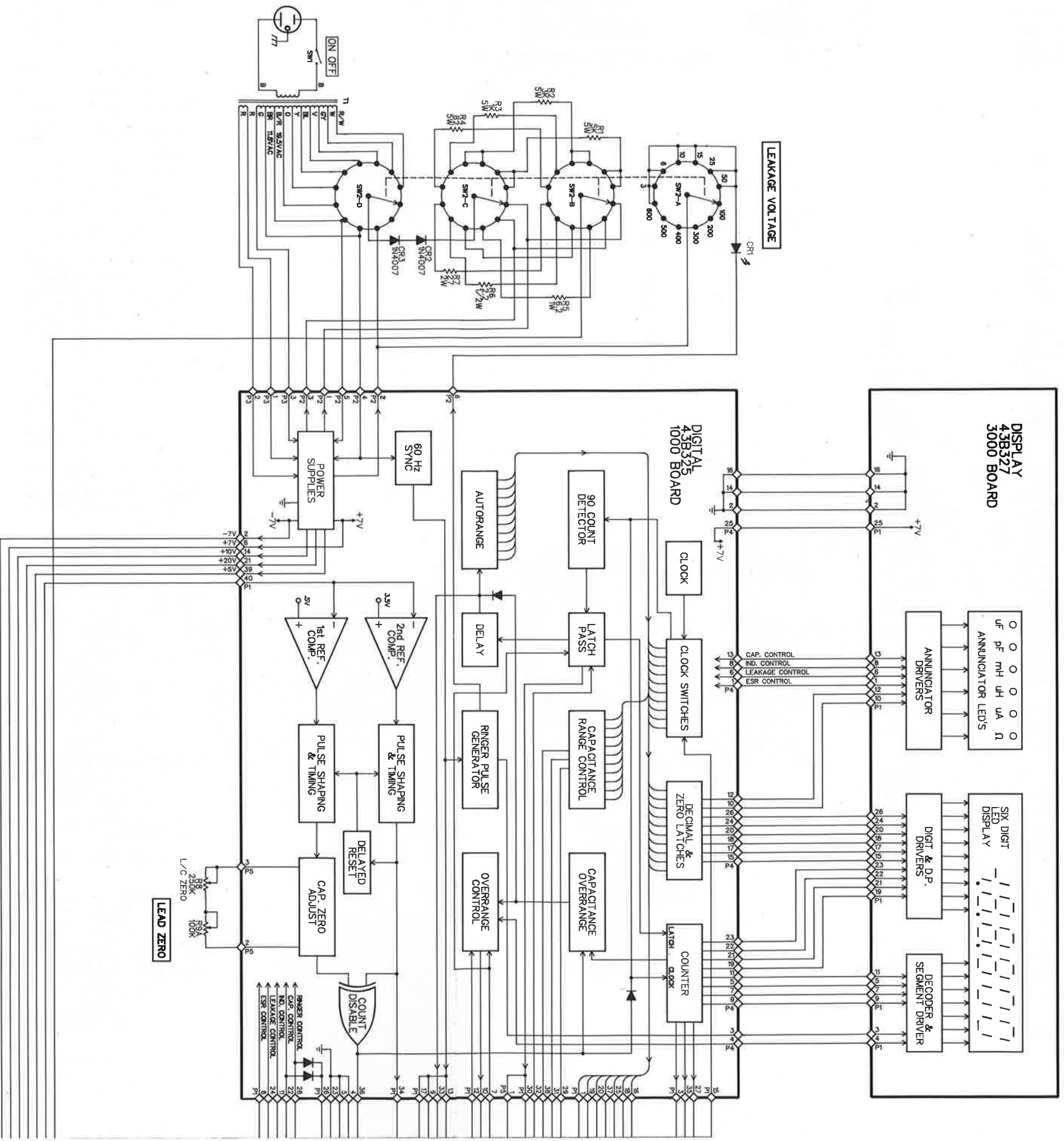
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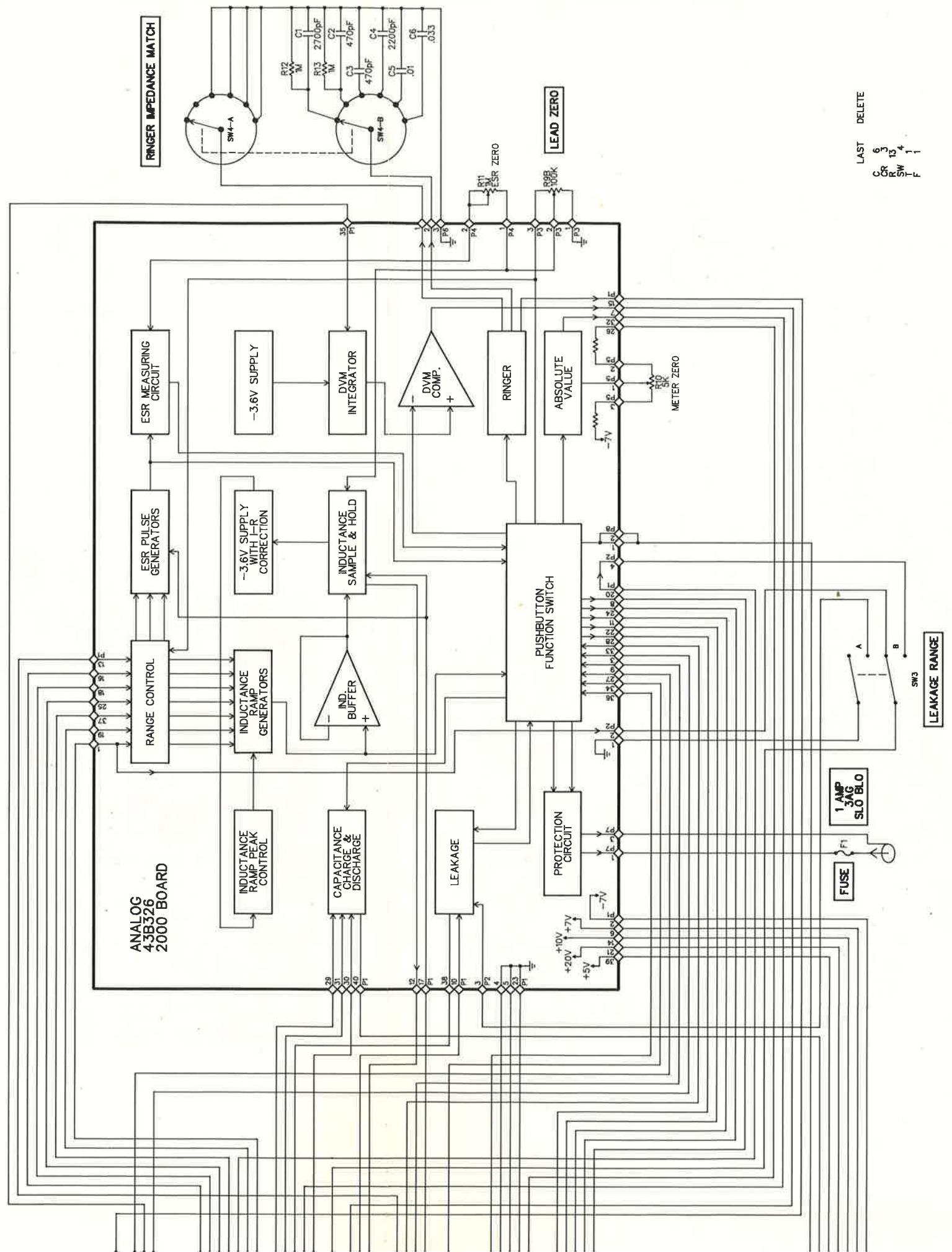


SHEET 2

This sheet contains Block Diagram, Analog Board layouts, and Digital and Analog Board parts lists.



SENCORE LC75 : BLOCK DIAGRAM



CAMTEK ELECTRONICS
6027 Tupelo Drive
Citrus Heights, CA 95621
(916) 721-5071

NOTES:

1. All resistances in ohms.
2. All capacitances greater than one are in pF, less than one in uF, unless otherwise indicated.
3. Board interconnection notes:
 - denotes a single push-on type connector.
 - denotes wire soldered to PC board.
 - denotes molex connection. Numbers inside or along side indicate the pin number of the plug-in connector.
4. All controls jacks, and displays on exterior of unit are shown with box around the name.

WARNING



Avoid damage to parts caused by static electricity!

Most solid-state devices and film resistors are susceptible to damage due to discharge of static electricity. Observe the following precautions when a PC board is removed from the unit, or when handling components:

1. The person handling the part must be grounded through a 1 megohm resistor via a wrist strap or similar ground connection.
2. A PC board or component should never be placed on an insulated surface. The surface must be grounded (through a 1 megohm resistor) and conductive.
3. All replacement parts must be left in a completely enclosed, conductive container or package until ready for use. The person removing the part from the container must be properly grounded. All parts susceptible to static damage are shipped in conductive containers when ordered from the Sencore Service Department.

Components not listed are standard replacement parts and may be purchased locally. When ordering parts, please specify instrument model number, schematic reference, part number, and description. Please include remittance (check or money order) with your order, otherwise invoice will be shipped C.O.D. Minimum billing is \$5.00



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