

SYSTEM SCHEMATICS

A2000

AUGUST, 1990

PN-314135-01



Commodore

Produced By:

Commodore International Spare Parts GmbH
Braunschweig, West Germany

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A2000

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INTERNATIONAL EDITION

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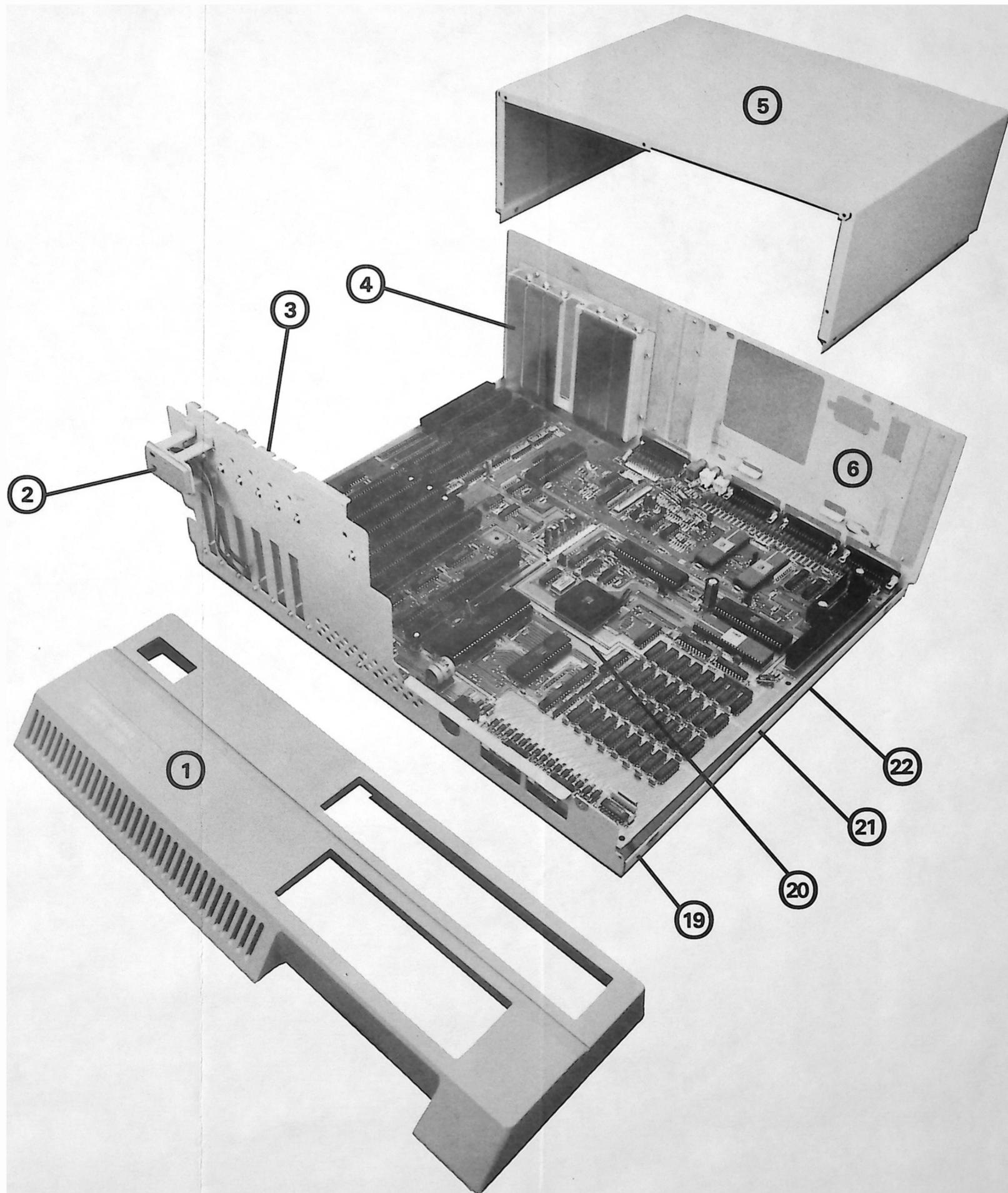
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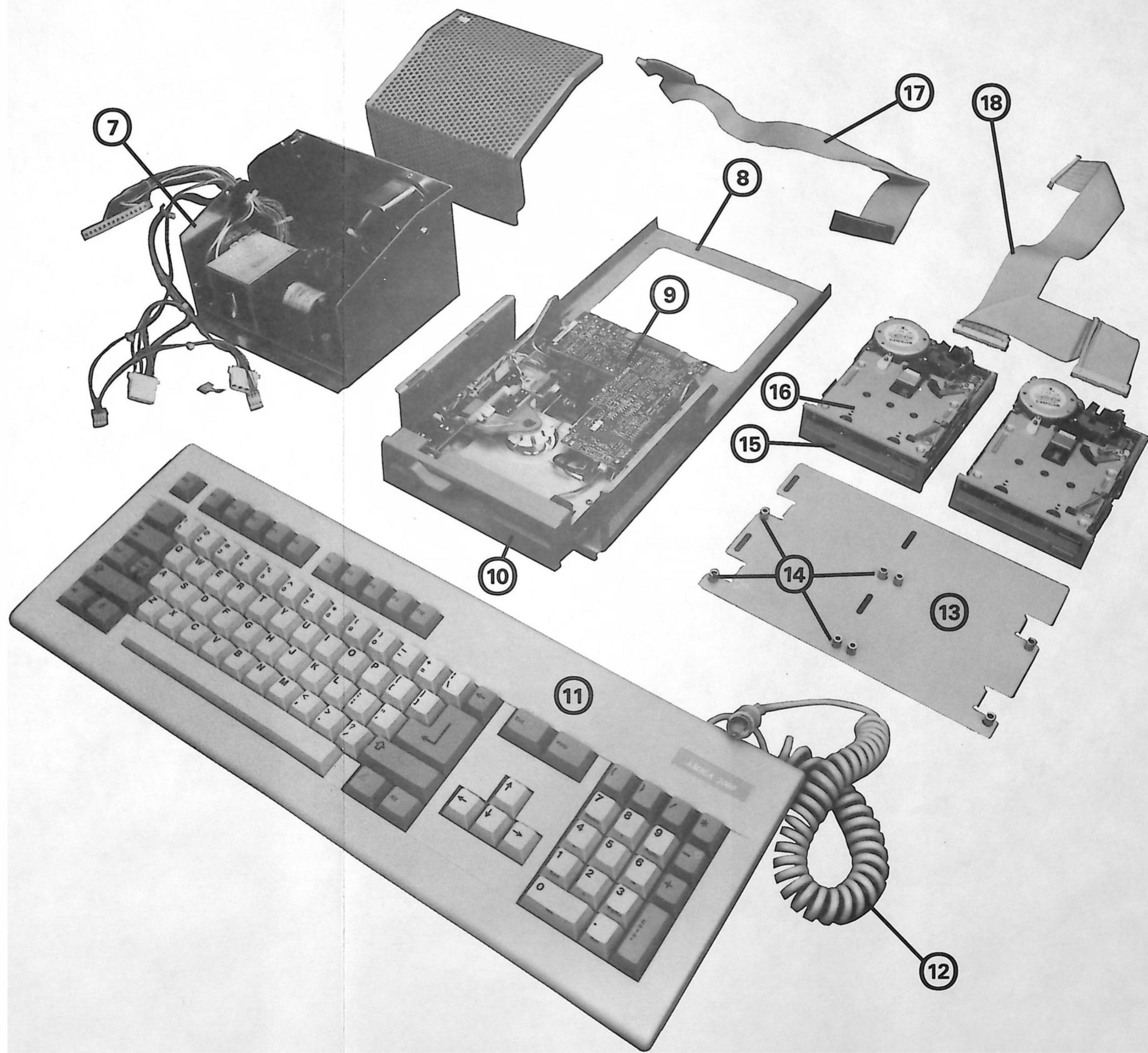
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A2000 MAJOR PARTS LIST

1)	Bezel, Front	380726-01
2)	LED Holding Assembly	380709-01
	LED Power On Assembly	380016-01
	LED Hard Drive	380020-01
3)	PCB Guide	251118-01
4)	Panel, Expansion Slots	380739-01
5)	Housing, Top	380727-01
6)	Housing, Bottom	380728-01
7)	Power Supply Assembly	380708-02
8)	Chassis	380729-01
9)	Drive Assembly — 5.25 ALPS	380111-06
	Drive Assembly — 5.25 CHINON	380111-07 Sub: 06
10)	Cover Floppy 5.25	380736-01
11)	Keyboard Assembly - HITEK	312716-02
12)	Keyboard Cable	380018-06
13)	Sub Chassis	380730-01
14)	Standoff L = 7MM	324271-06
15)	Cover Floppy 3.5	380737-01
16)	Drive Assembly — 3.5 PANA	380752-01
17)	Cable Assembly — 5.25 Drive	380012-07
18)	Cable Assembly — 3.5 Drive	380742-01
19)	Foot, Cork	380128-01
20)	PCB Assembly — A2000 NTSC	312720-01
21)	Insulation Sheet	312717-01
22)	Bottom Shield	312719-01
	Mouse Assembly	327124-03
	Software Assembly	315818-01
	PCB Assembly — 2088 PC XT Emul	380755-01
	PCB Assembly — 2052 2MB Ram Exp	312365-01
	PCB Assembly — 2090 Hard Drive Cntrl	311979-01



SERVICE PARTS REFERENCE DIAGRAM



PARTS LIST

PCB ASSEMBLY #312720-01

PLEASE NOTE: Commodore part numbers are provided for reference only and do not indicate the availability of parts from Commodore. Industry standard parts (Resistors, Capacitors, Connectors) should be secured locally. Approved cross-references for TTL chips, Transistors, etc. are available in manual form through the Service Department, order part #314000-01.

INTEGRATED CIRCUITS			RESISTORS — All are carbon 1/4 watt, 5% unless noted		
U100	MC68000 8 MHz	390084-03	RP502	22 OHM x 5 10 PIN	390227-03
U101	FAT AGNUS 8370 NTSC	318070-01	R102,RP201, 203,R902,907	47 OHM x 4 8 PIN	902422-05
U101	FAT AGNUS 8371 PAL	318071-01			
U200	PAULA 8364	252127-01	RP500,501	47 OHM x 5 10 PIN	390227-06
U201	DENISE 8362	252126-01	RP204	68 OHM x 4 8 PIN	902422-06
U102	GARY 5719	318072-01	RP205	120 OHM x 5 6 PIN	902441-10
U800	BUSTER	318075-01	RP503	470 OHM x 9 10 PIN	902410-11
U300,301	8520R4	318029-02	RP802	1K OHM x 5 10 PIN	390227-07
U500	ROM KICKSTART V1.2	315093-01	RP301,607	1K OHM x 5 6 PIN	902441-22
U801	REALTIME CLOCK OKI MSM6242B	318073-01	RP800	1K OHM x 7 8 PIN	902442-22
			RP601-605, 700-704	1K OHM x 9 10 PIN	902410-10
U501-532	DRAM 256K X 1 15 NS	390026-01	RP801	4.7K OHM x 7 8 PIN	902442-55
U304	1488	901882-01	RP100,101, 200,705	4.7K OHM x 9 10 PIN	902410-08
U305	1489	901883-01			
U107	74F04	390110-01	RP600	10K OHM x 7 8 PIN	902442-35
U303	74F08	390092-03	RP300,900	10K OHM x 9 10 PIN	902410-07
U607,803	74LS08	901521-03	901		
U302,606	74LS32	901521-31	RP903,908	10K OHM x 5 6 PIN	902441-36
U203	74LS38	901521-38	R914	1 OHM, 5%, 1/2W	901600-36
U108	74F74	390081-01	R200,215	1 OHM	901550-118
U802	74LS138	901521-16	R207,208	10 OHM	901550-64
U804	74LS148	901521-86	R209,210	1.2K OHM	901550-17
U202	74LS157	901521-11	R105,106, 212	22 OHM	901550-63
U540,541	74F244	318050-01	R310	47 OHM 5%, 1/2W	901600-15
U205,206	74HCT244	318828-01	R904,905	47 OHM	901550-56
U103,105	74F245	390089-01	R307	68 OHM	901550-94
U600,601, 602,603, 604,605	74LS245	901521-46	R902	200 OHM	901550-31
U104,106	74LS373	901521-29	R110,111, 114,115	330 OHM	901550-14
U204	LF347/TL084	390086-01	R230,240	360 OHM	901550-108
U805	LM339	318827-01	R234,244	390 OHM	901550-57
U805	LM2901	901523-01 sub:	R801,803	470 OHM	901550-58
U900	74F00	318066-01	R233,243, 301,302,311, 312,601-605, 900	1K OHM	901550-01
TRANSISTORS			R213	2.7K OHM	901550-23
Q301	2N3904 NPN	902658-01	R101,104	4.7K OHM	901550-19
Q202,302	2N3906 PNP	902707-01	109,201,300, 308,309,500, 806,807,916		
Q200,201	MPF102 JFET	390252-01	R202,203, 206,211,214, 216,231,232,		
Q200,201	PN4302 JFET	390254-01 sub:	241,242,305, 306,800,802, 804		
Q300	2SC945 NPN JAP	902671-01	R805	47K OHM	901550-22
DIODES			R204,205	470K OHM	901550-82
D400,401	1N4001	900750-01			
D300,800 801,802	1N4148	900850-01			

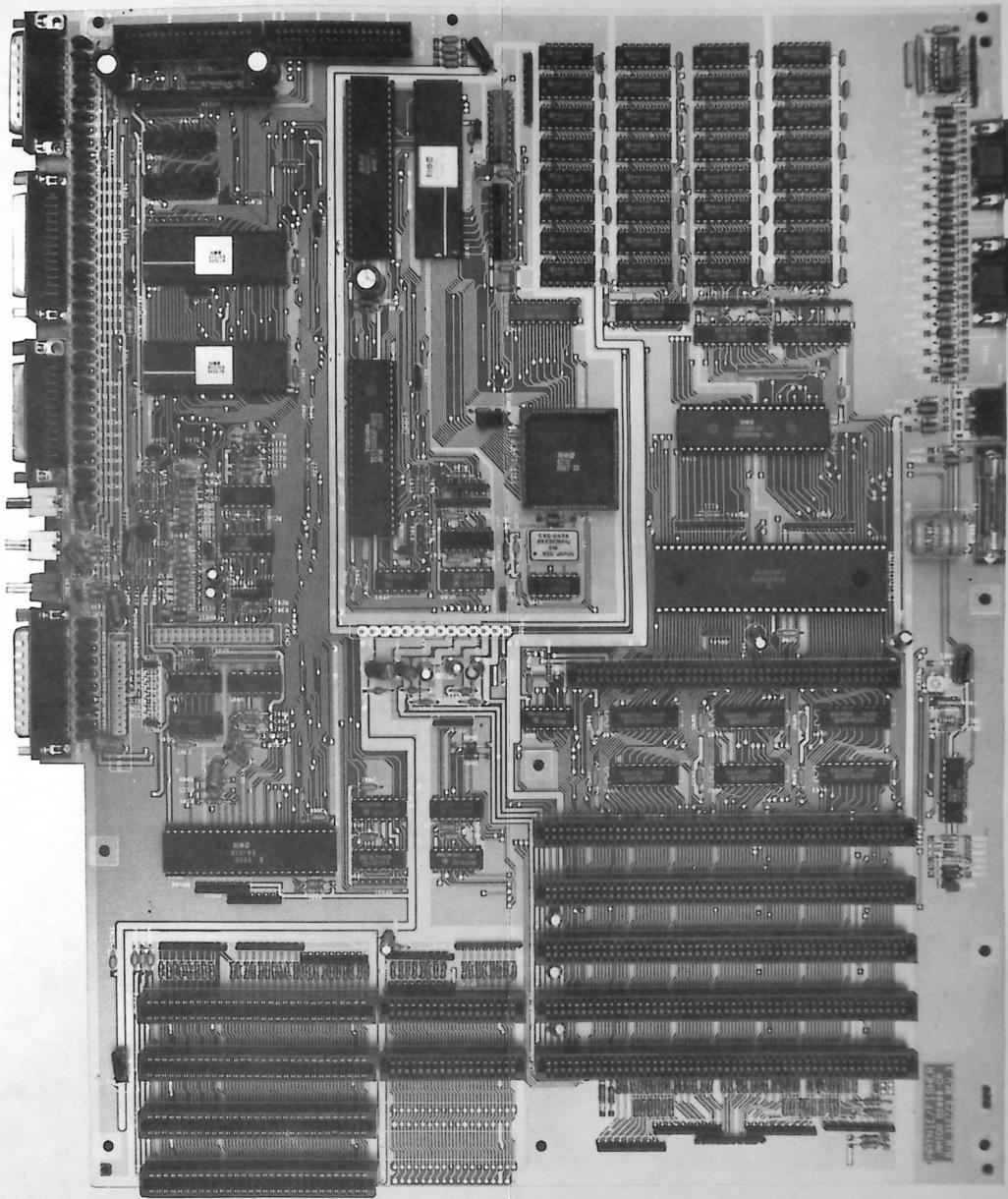
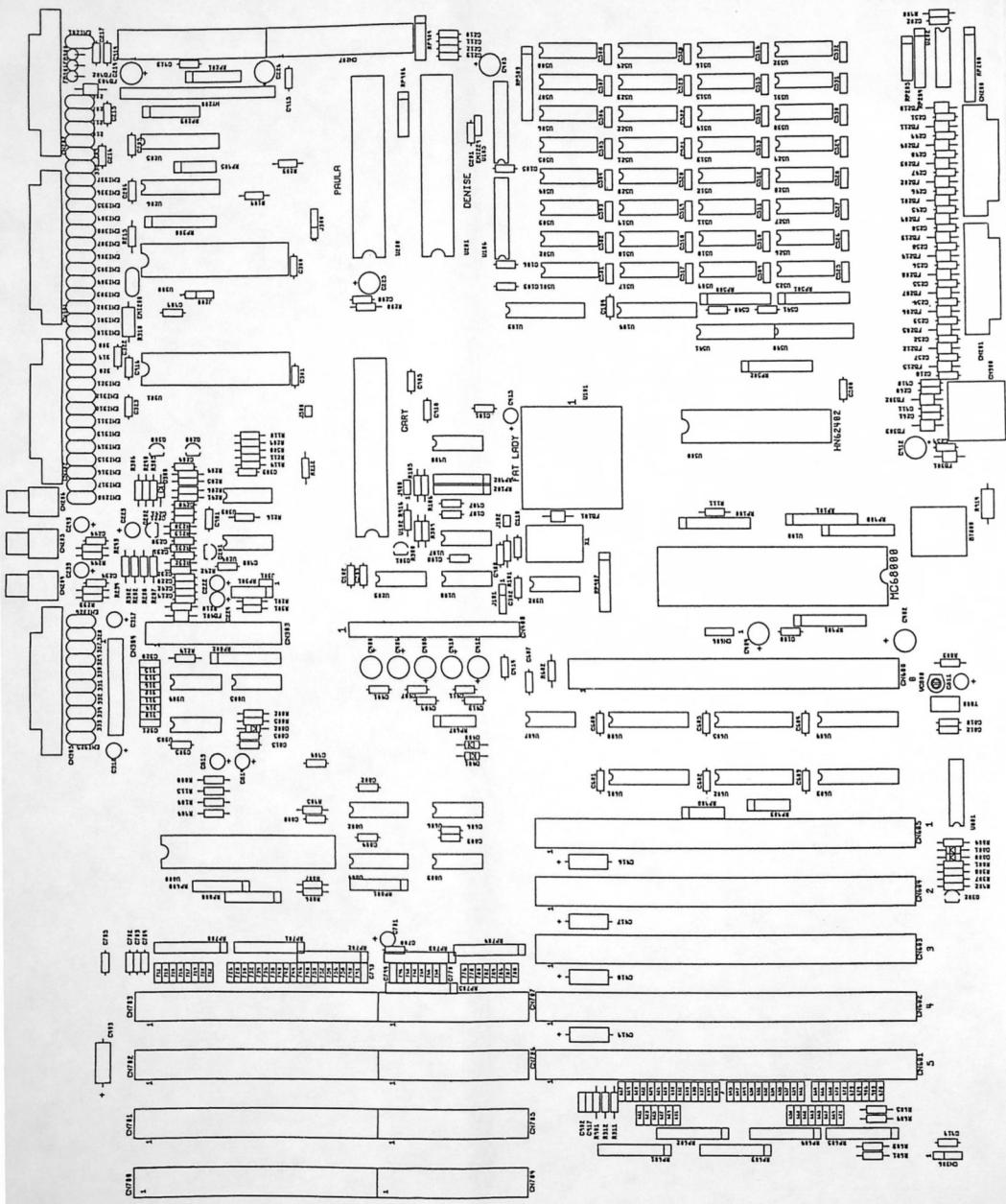
PARTS LIST
PCB ASSEMBLY #312720-01 (Continued)

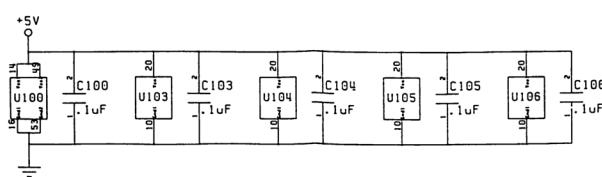
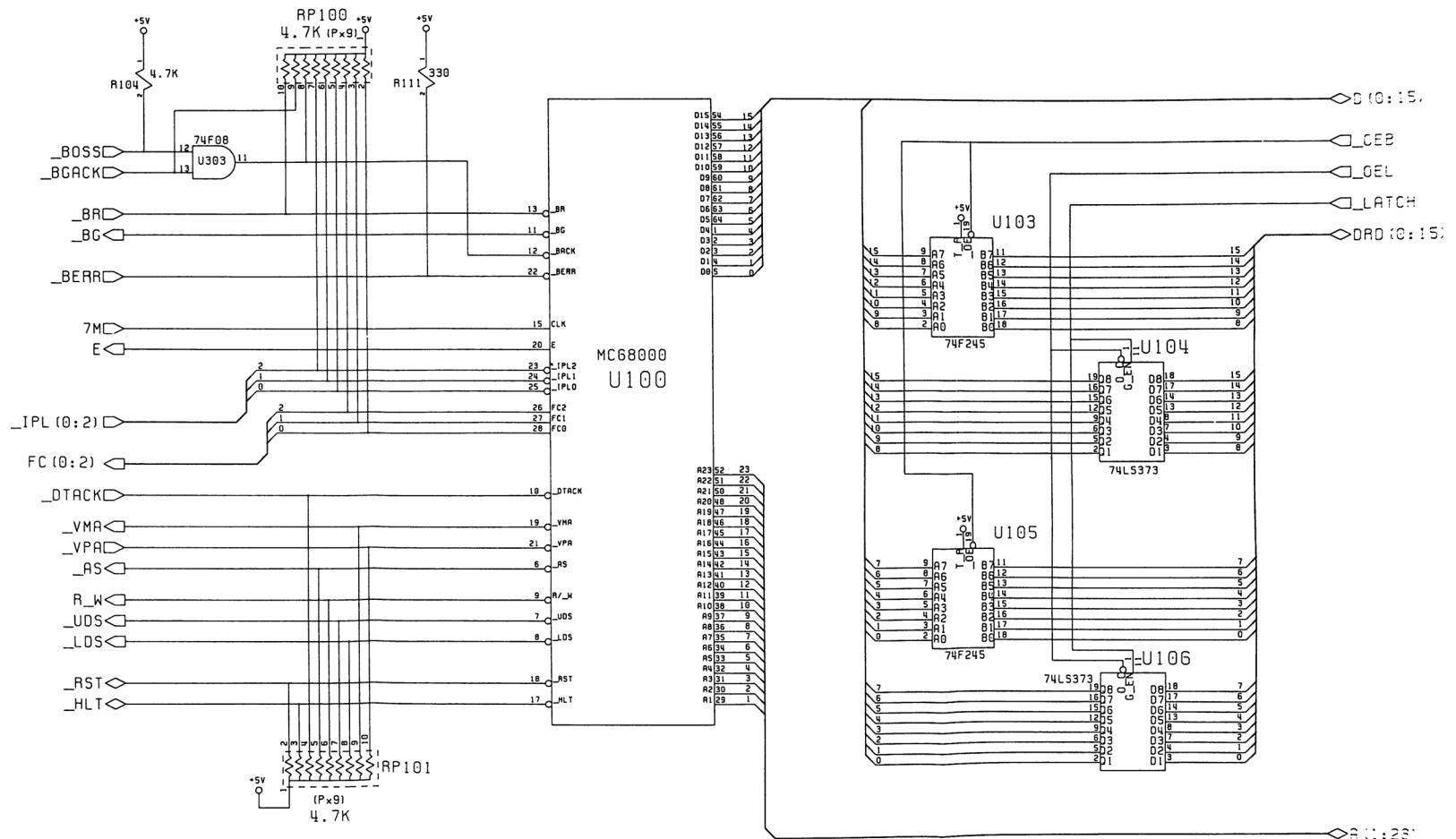
CAPACITORS			MISCELLANEOUS		
C810	20pF MLC AXIAL	900462-21	EMI200,201, 206-208,210, 211,229,300- 321,325-338	EMI FILTER 100pF	251842-02
C913	47 pF MLC AXIAL	900462-29	FB101,201- 215,301-303, 401,903	FERRITE BEAD	903025-01
C245-261, 903-906,907, 908,914	100pF MLC AXIAL	900462-37	FB900,901 902	FERRITE BEAD, 1.5 TURN	390253-01
C320,321	470pF MLC RADIAL	900014-05	EMI209 J101,200 300,301,900	EMI FILTER SHUNT FEMALE 2 POS 0.100	390257-01
C310-316, 617,619-633, 635,637,639, 641,645,647, 649,650-652	1000pF MLC RADIAL	900014-02	HY200 X1 X1 Y800 U300,301, 500	VIDEO HYBRID OSCILLATOR 28.63636 MHz OSCILLATOR 28.37516 MHz CRYSTAL 32.768 kHz 40 PIN DIP SOCKET	325566-14 252344-01 900560-01 904150-06
654,655,657- 674,678,711, 713,714,716, 717,719,720, 722,726,728, 730,732,734, 736,738,740; 742,744,746, 748,750,752, 754,756,758, 760,762,764, 766,768,770, 776,778,780, 782,784,786- 788,790,791, 793,794,796, 910,911			U102,200 201,800 U102,200, 201,800 U100 U101 BT800	48 PIN DIP SOCKET 48 PIN DIP SOCKET 64 PIN DIP SOCKET 84 PIN PLC SOCKET BATTERY NICAD 3.6V 60MAH POWER SWITCH	251313-01 251313-02 sub: 904150-01 390185-01 380393-01 C390265-01
C232,242	3900pF MLC AXIAL	900463-23	CONNECTORS		
C231,241	6800pF MLC AXIAL	900463-26	CN203,207, 704,705	36 PIN	903446-04
C204,322, 323,401,407, 409,411,413, 414	.01 μ F MLC AXIAL	390082-02	CN706,707 CN700,701, 702,703	36 PIN (OPTIONAL) 62 PIN	903446-04 903446-02
C210-213	.047 μ F MLC AXIAL	900463-36	CN600 CN601,602 603,604,605	86 PIN 100 PIN	903446-05 903446-06
C110,234, 244,259,812, 815,900,901, 909,915,916, 918,919,100- 108,200,202, 203,205,206, 218,300-303, 305,540,541, 600-607,800, 802-805	.1 μ F MLC AXIAL	390082-01	CN300	DIN 5 PIN SHIELDED FEMALE	903362-01
C201,215- 217,219-221, 500,700,702- 705	.22 μ F MLC AXIAL	390082-05	CN200 CN200 CN201 CN201 CN202 CN202 CN202 CN302 CN302 CN305 CN305 CN305 CN301 CN301 CN205 CN204 CN206 CN201,302 CN201,302 CN400	D-SUB 9 PIN MALE PCB D-SUB 9 PIN MALE PCB D-SUB 9 PIN MALE PCB D-SUB 9 PIN MALE PCB D-SUB 23 PIN MALE PCB D-SUB 23 PIN MALE PCB D-SUB 23 PIN MALE PCB D-SUB 23 PIN FEMALE PCB D-SUB 23 PIN FEMALE PCB D-SUB 25 PIN MALE PCB D-SUB 25 PIN MALE PCB D-SUB 25 PIN MALE PCB D-SUB 25 PIN FEMALE PCB D-SUB 25 PIN FEMALE PCB RCA JACK, WHITE RCA JACK, RED RCA JACK, YELLOW SCREW M3 x 0.5 x 10 NUT M3 x 0.5 14 PIN SIL .156 KEY 10 LOCK	390242-01 390242-02 327032-07 327032-01 390242-03 390242-04 327033-04 327033-03 390242-05 390242-06 390241-05 390241-06 252122-01 252122-02 252122-03 906800-02 905960-03 903328-14
C501-532	.33 μ F MLC RADIAL	900022-05	J301,900	2 PIN SIL .100	903326-02
C224,415, 811	4.7 μ F 35V ELEC RADIAL	390101-05	J101,200,300	3 PIN SIL .100	903326-03
C233,243, 317,318,701, 813,814	22 μ F 35V ELEC RADIAL	390101-04	CN306	3 PIN SIL .100 RA	903374-03
C222,223 402,404-406, 408,410,412	47 μ F 16V ELEC RADIAL	390101-01	CN606	4 PIN SIL .100	903326-04
C402	47 μ F 16V ELEC AXIAL	390188-05	CN304	26 PIN DIL .100	903345-13
C400	100 μ F 16V ELEC RADIAL	390101-02	CN303	34 PIN DIL .100	903345-17
C214,225 226,912	470 μ F 16V ELEC RADIAL	390101-03			
C416-419	470 μ F 16V ELEC AXIAL	390188-09			
VC800	VARIABLE 4.5-45pF	251029-06			

A2000 PCB ASSEMBLY

PCB ASSEMBLY #312720-01

Sheet 1 of 13

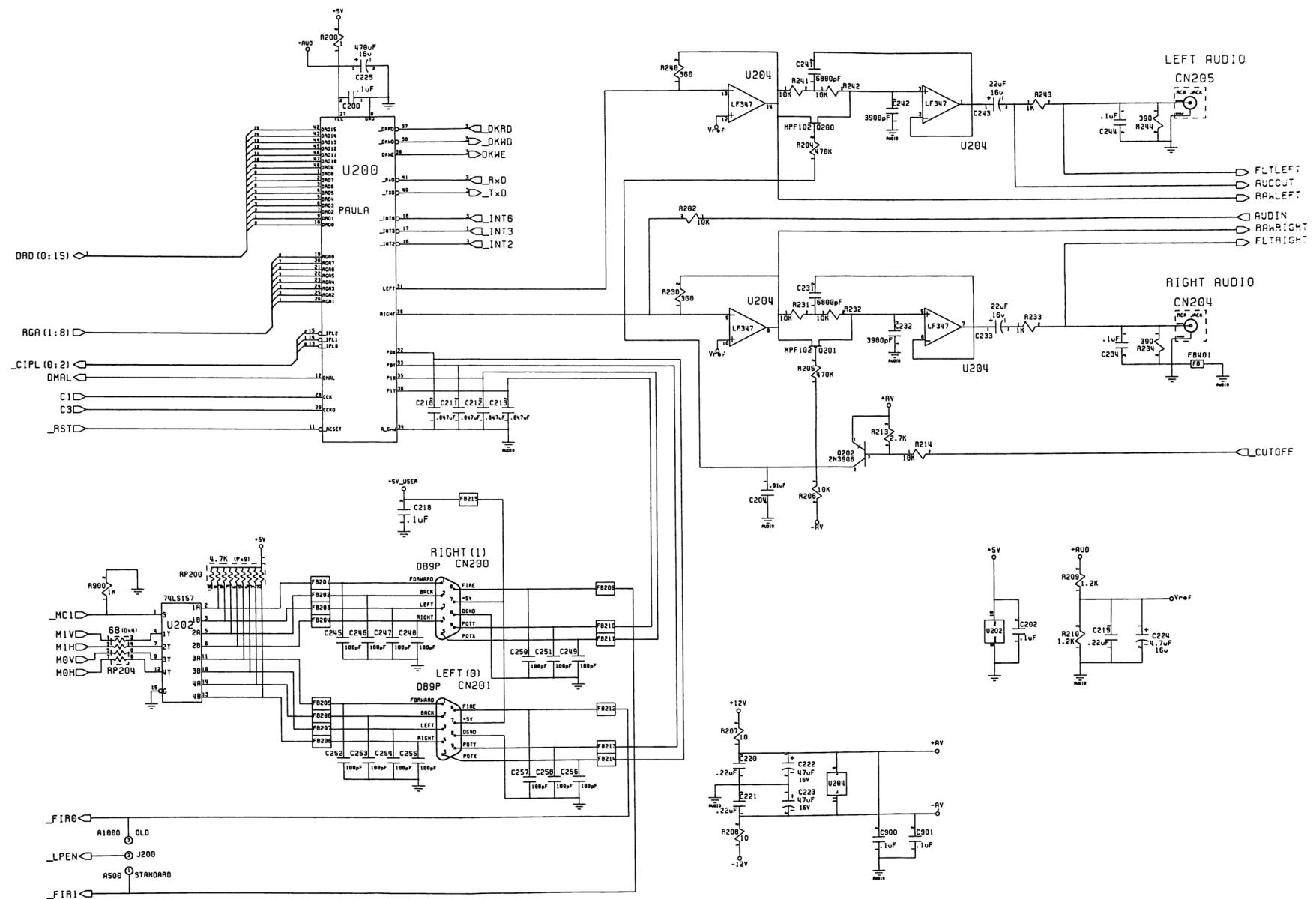


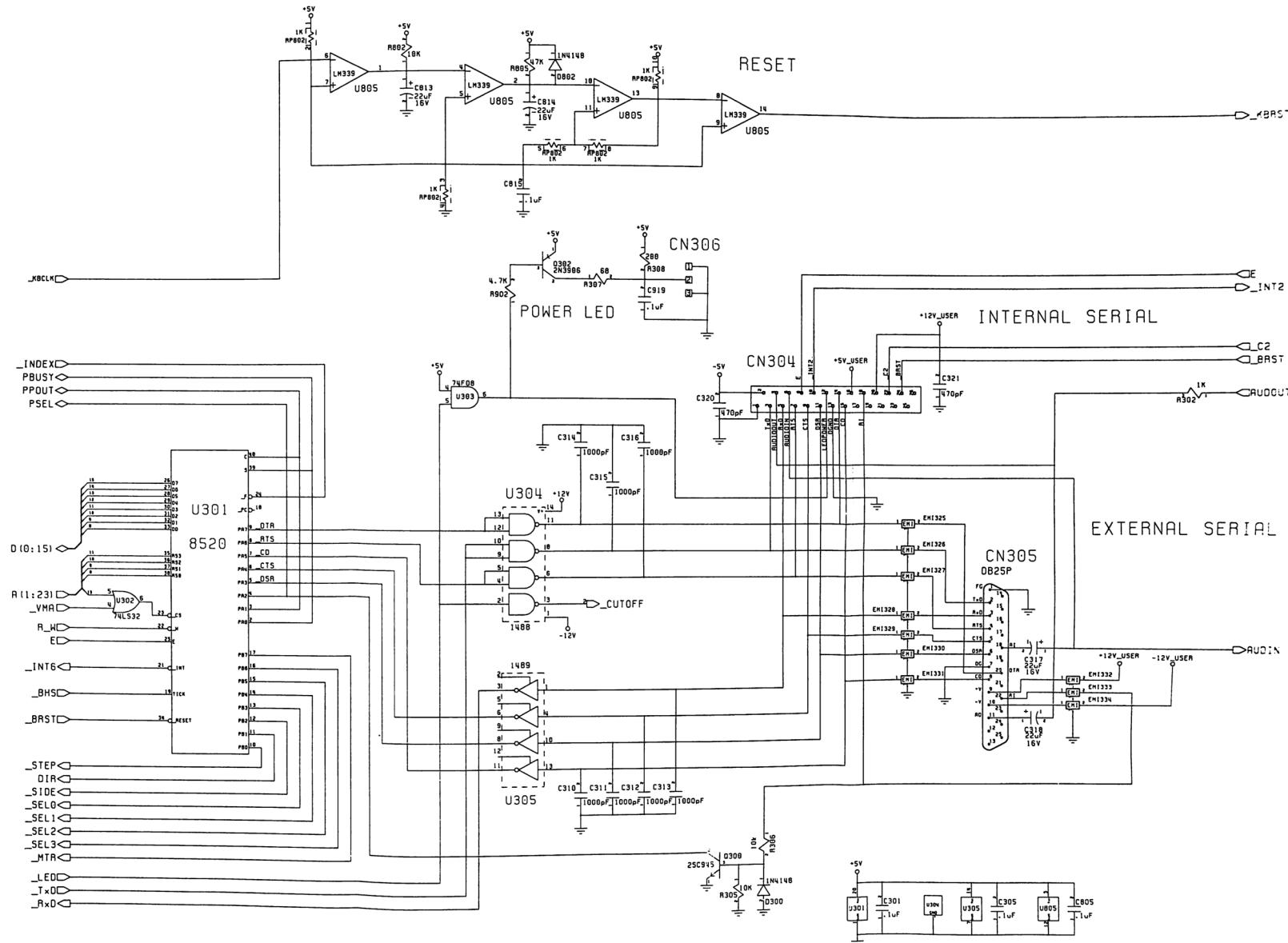


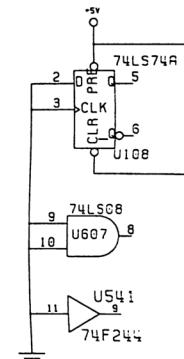
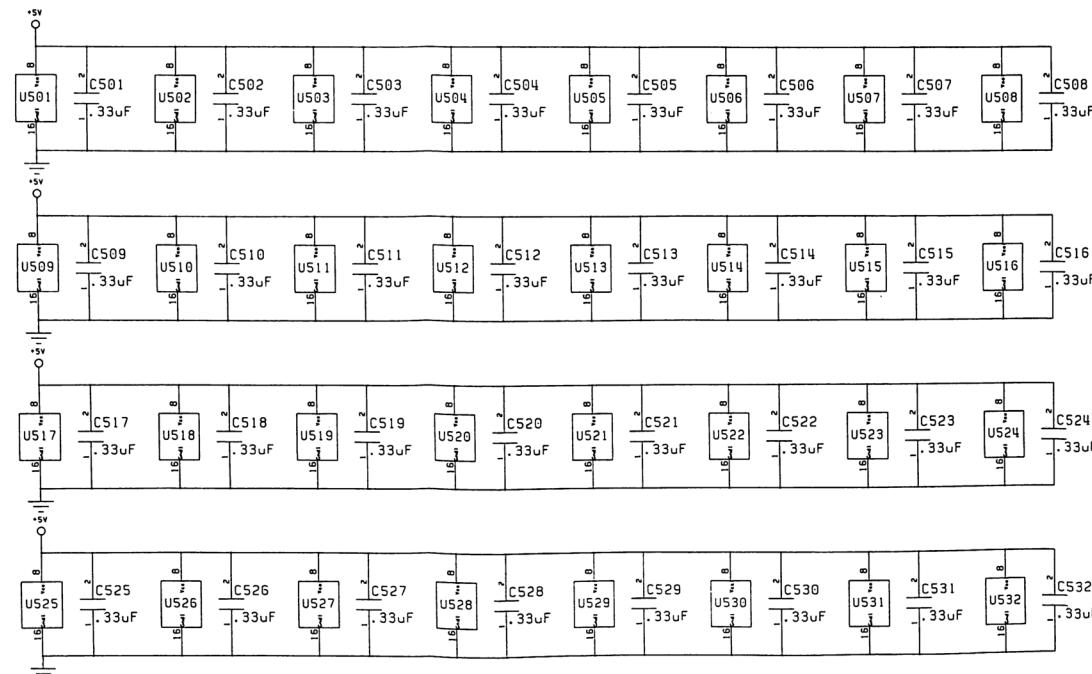
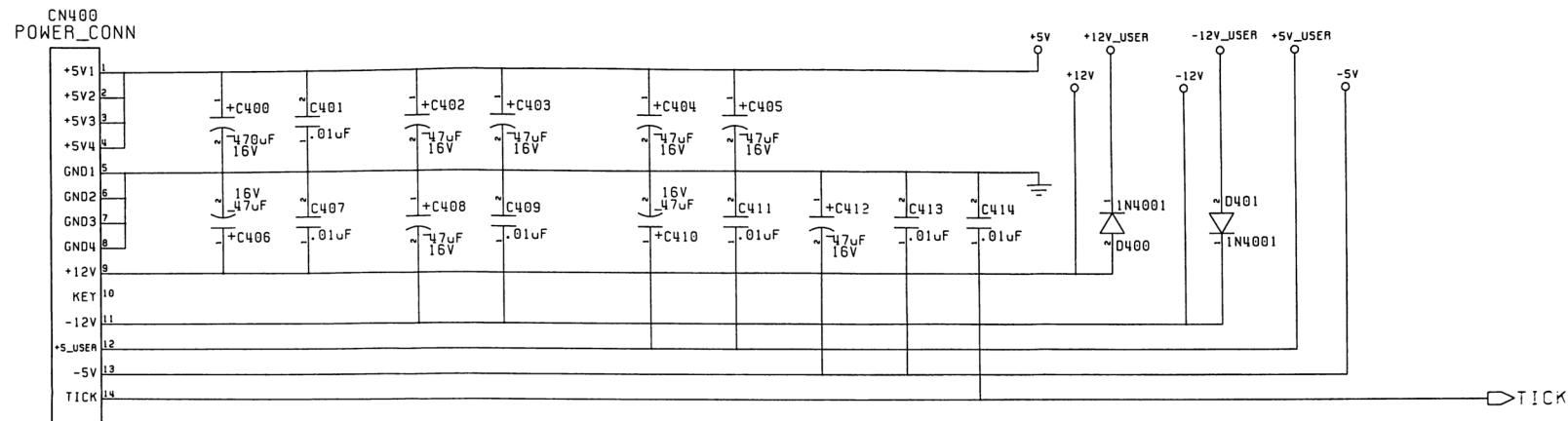
A2000 PCB ASSEMBLY

SCHEMATIC #312721

Sheet 3 of 13



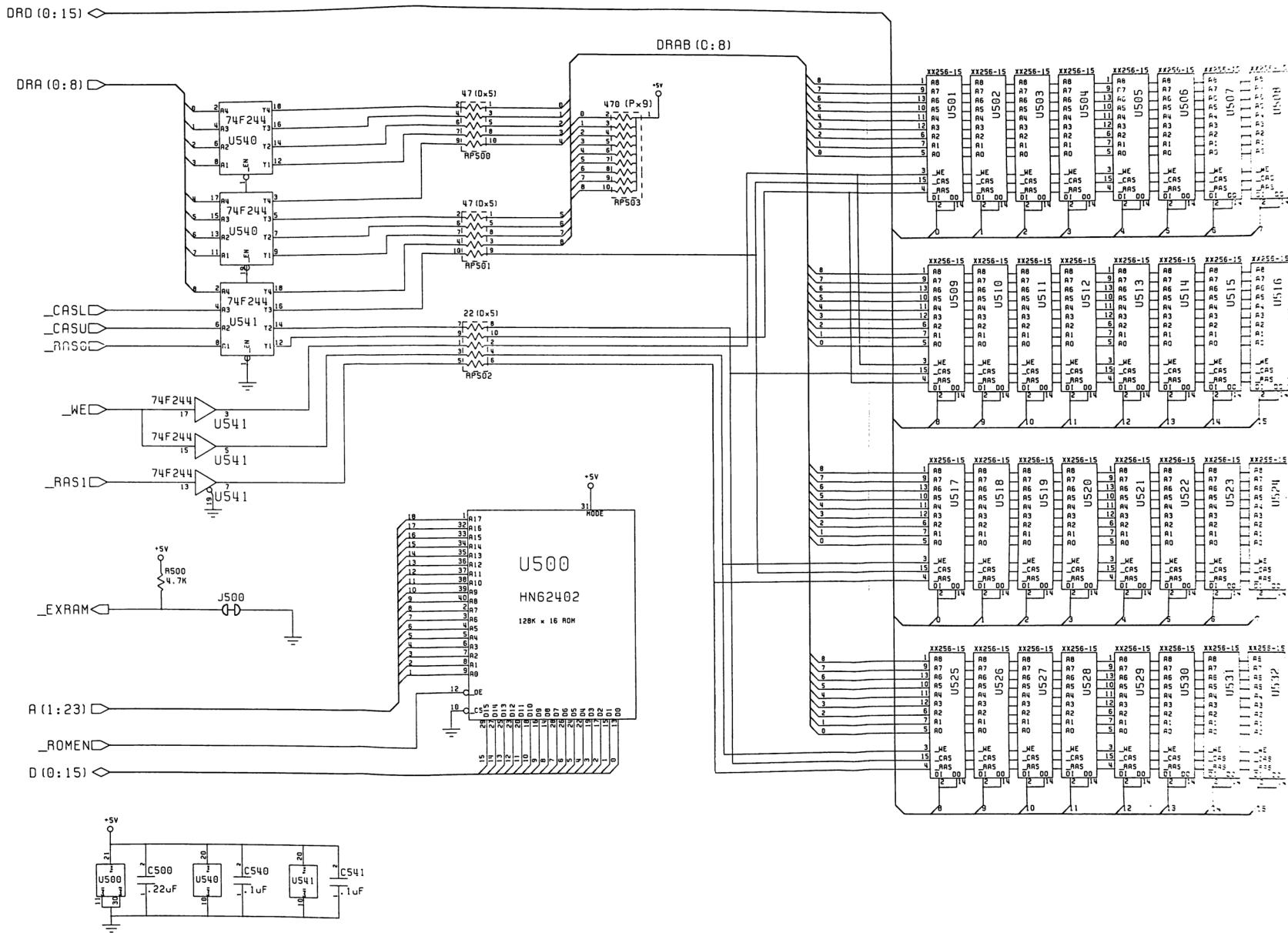




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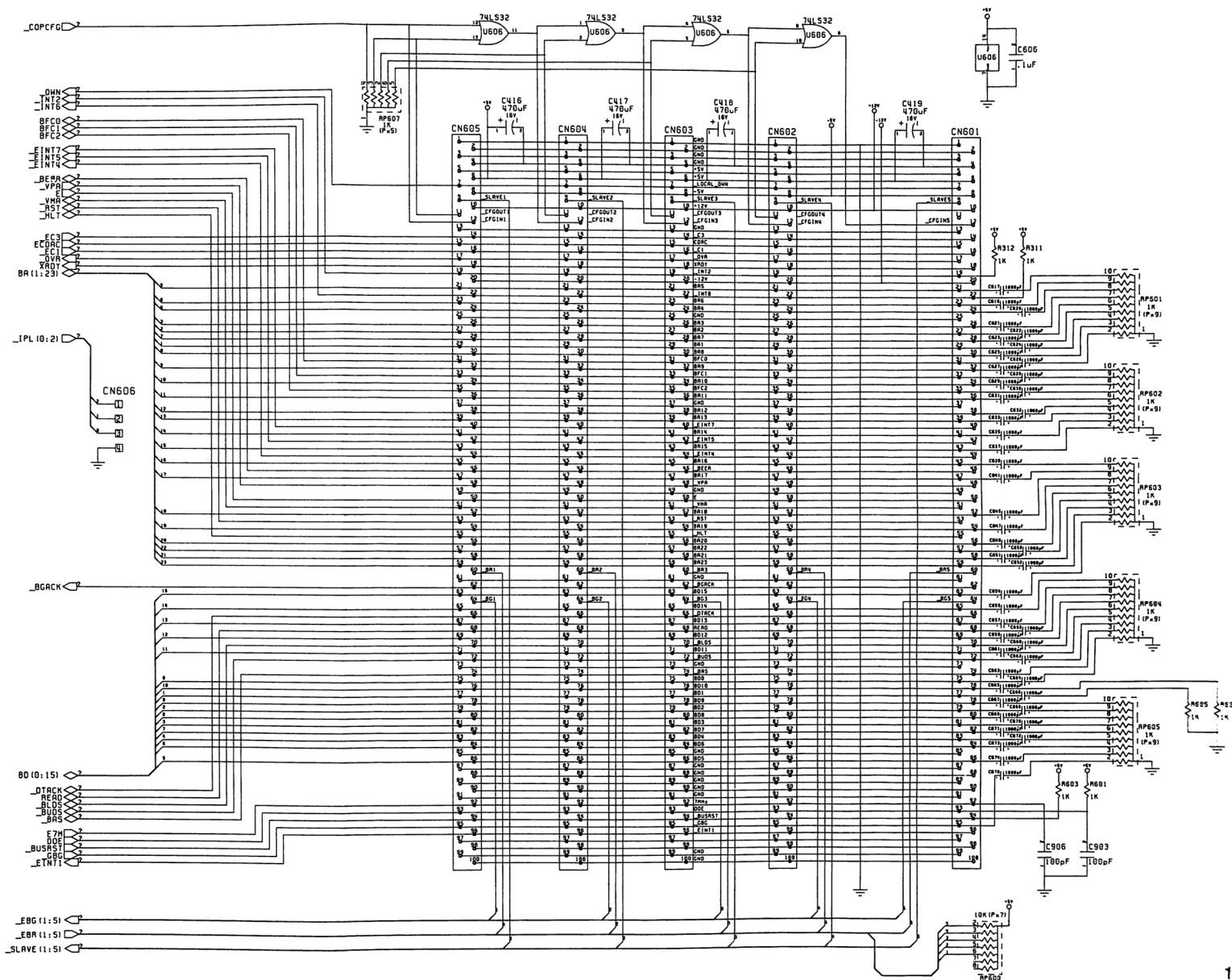
Sheet 6 of 13



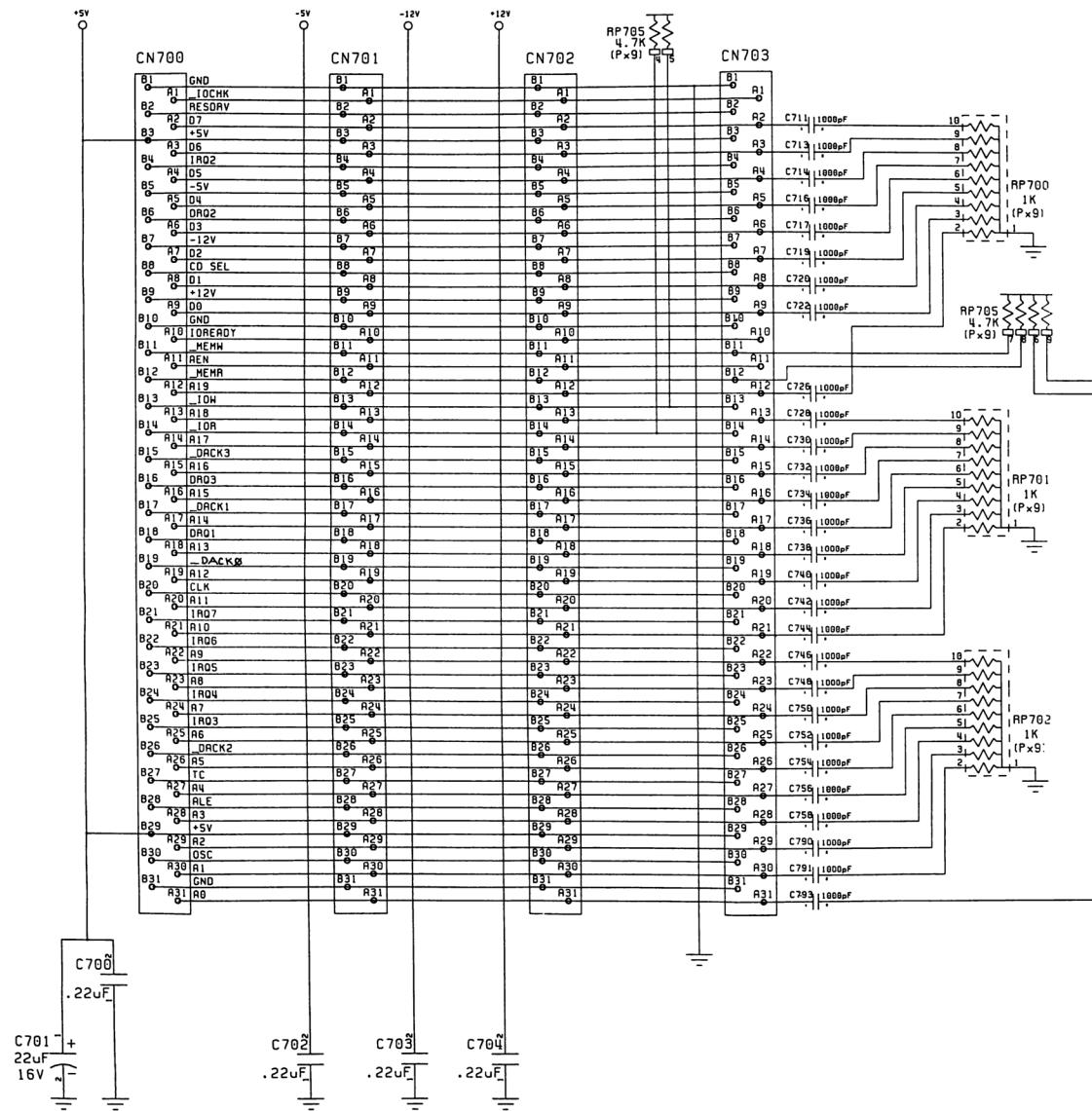
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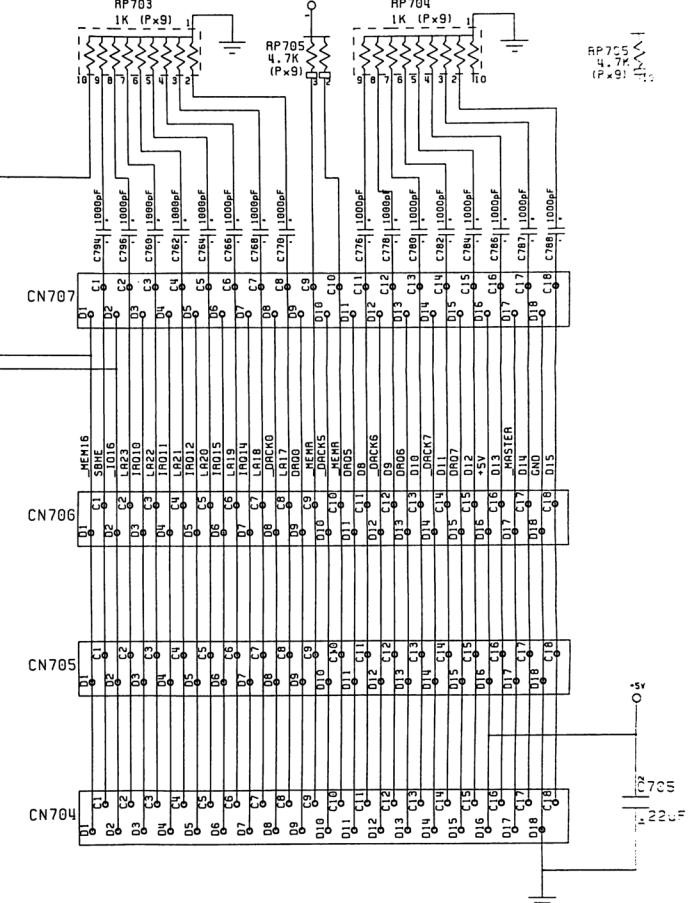
Sheet 7 of 13



IBM 8 BIT EXPANSION BUS



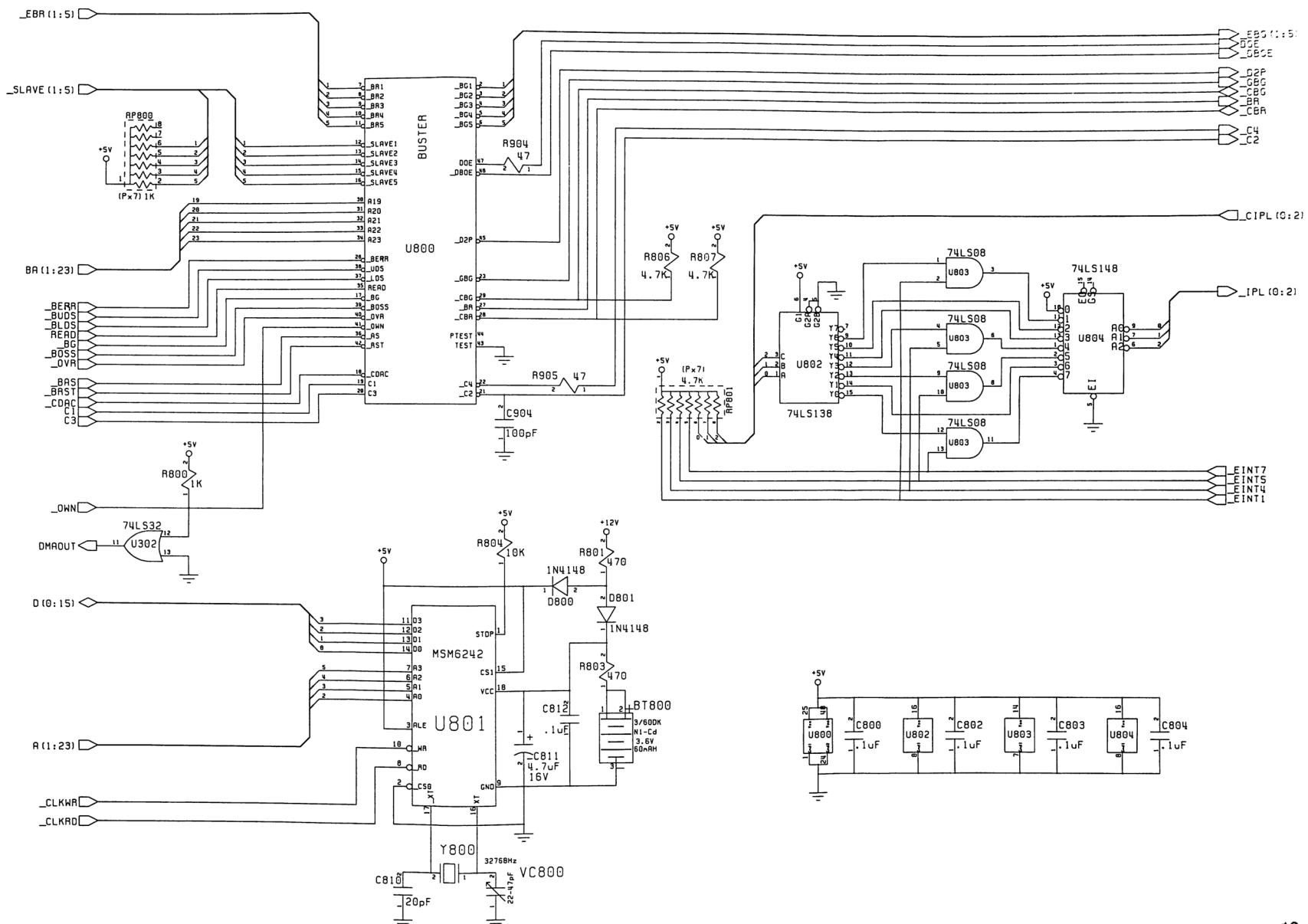
IBM 16 BIT EXTENDED BUS



A2000 PCB ASSEMBLY

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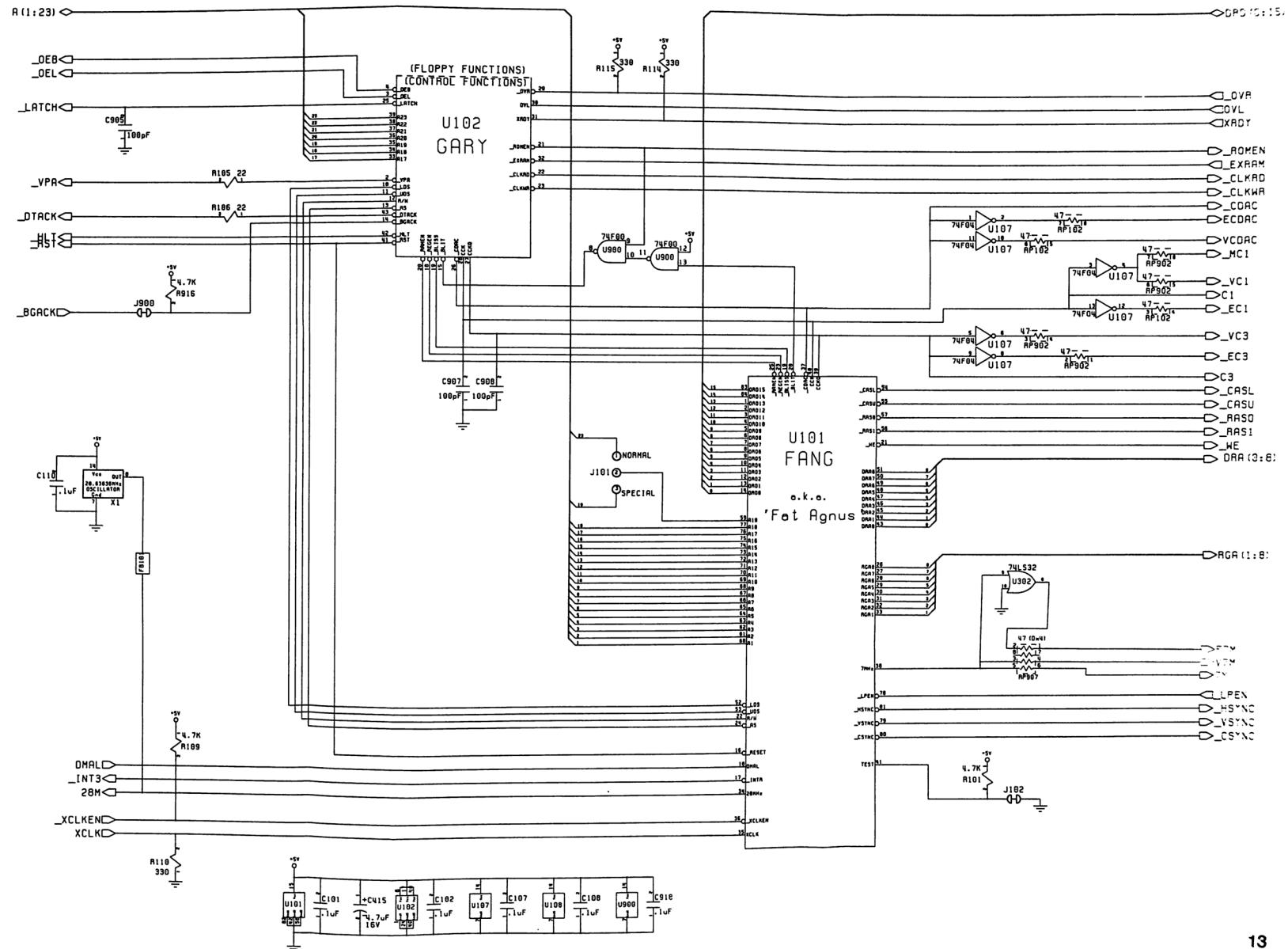
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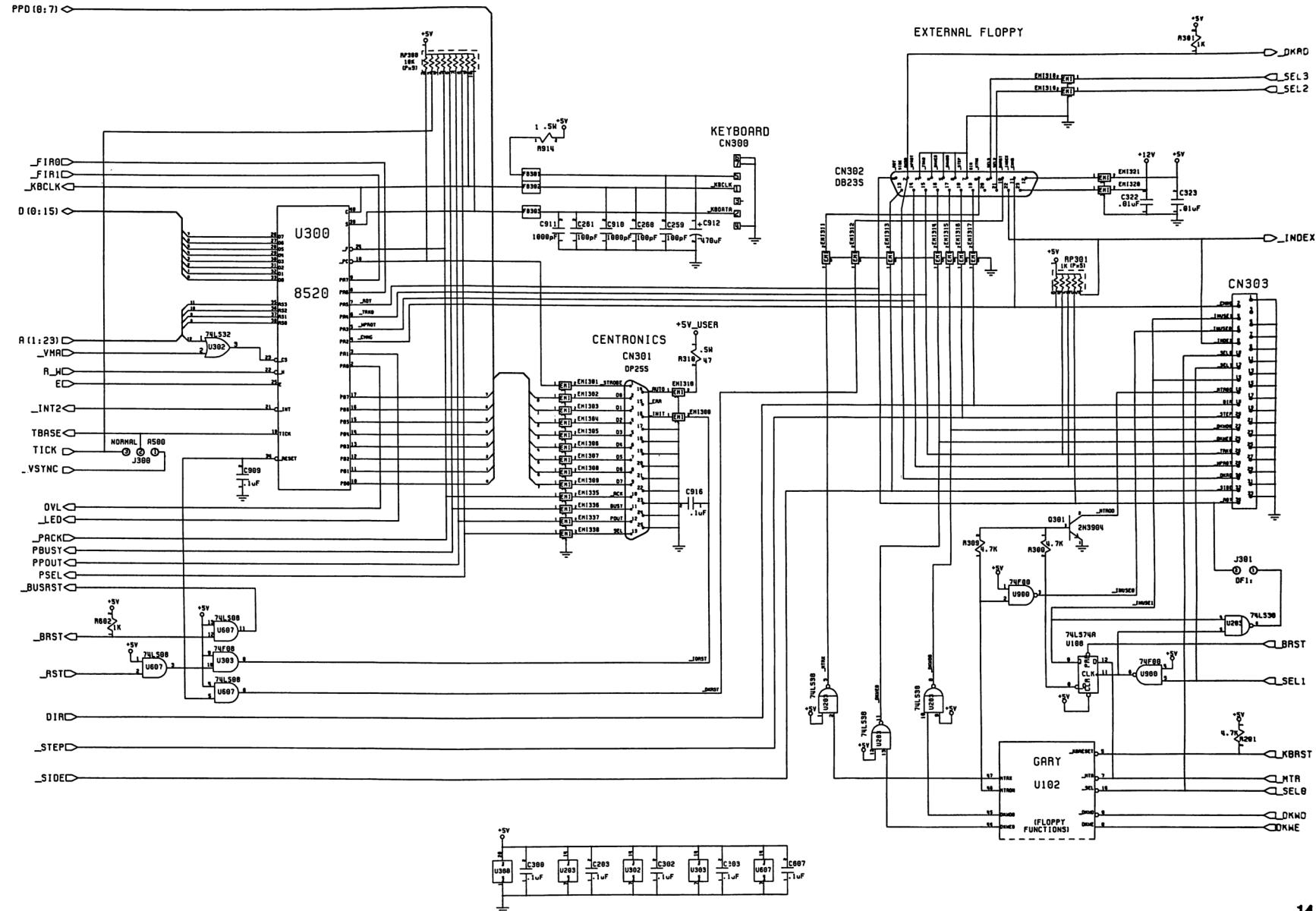


A2000 PCB ASSEMBLY

SCHEMATIC #312721

Sheet 10 of 13

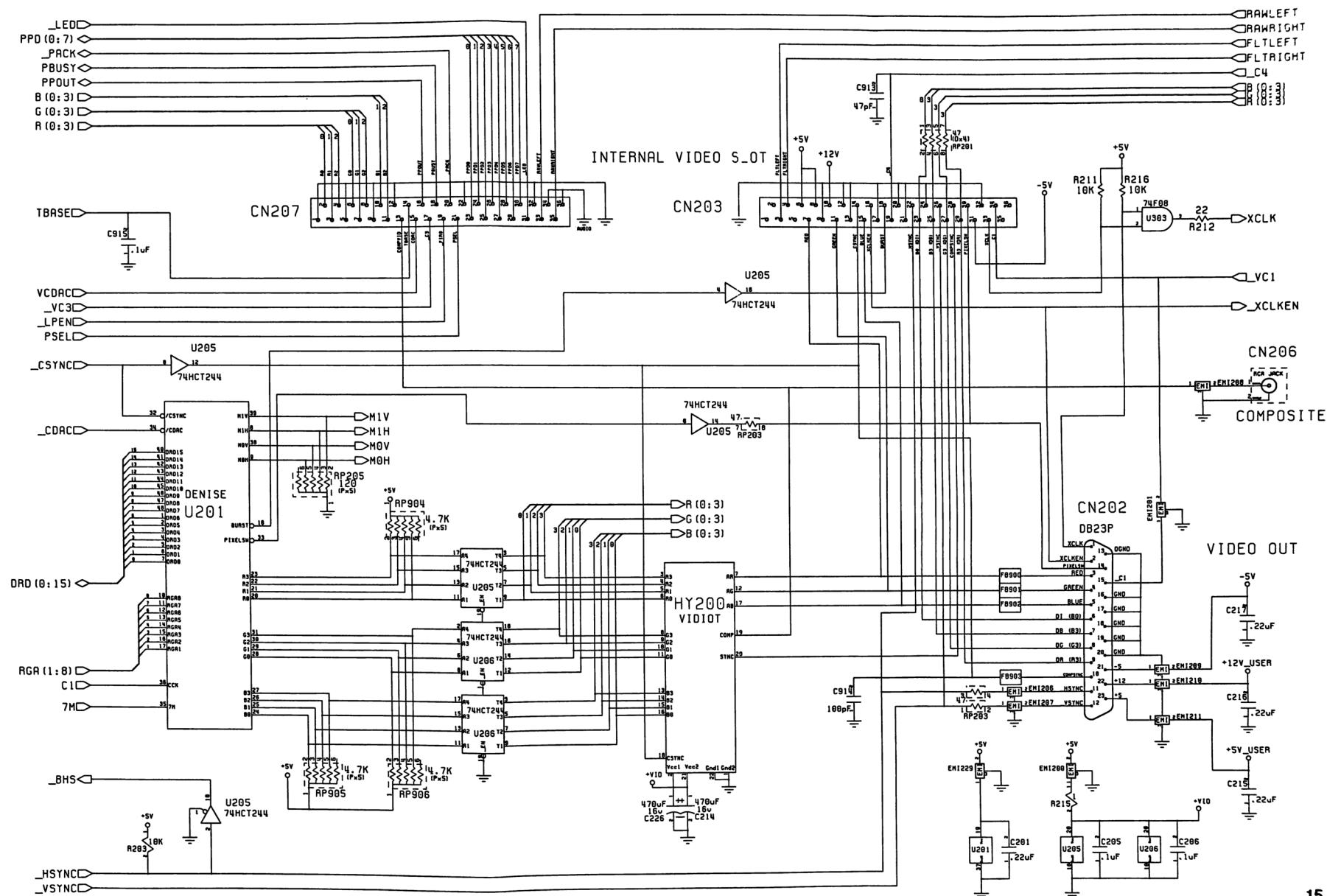


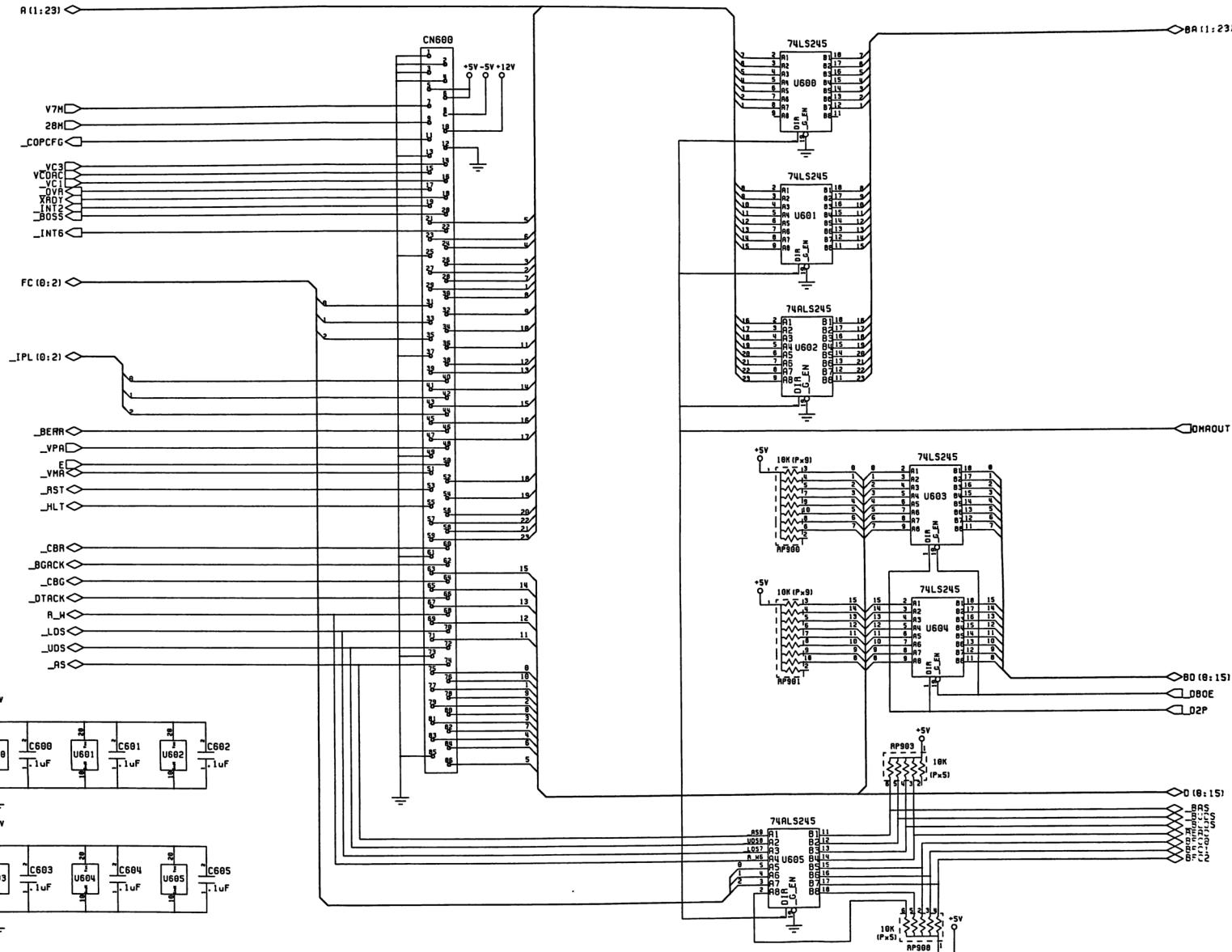


A2000 PCB ASSEMBLY

SCHEMATIC #312721

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COMPONENT PARTS LIST

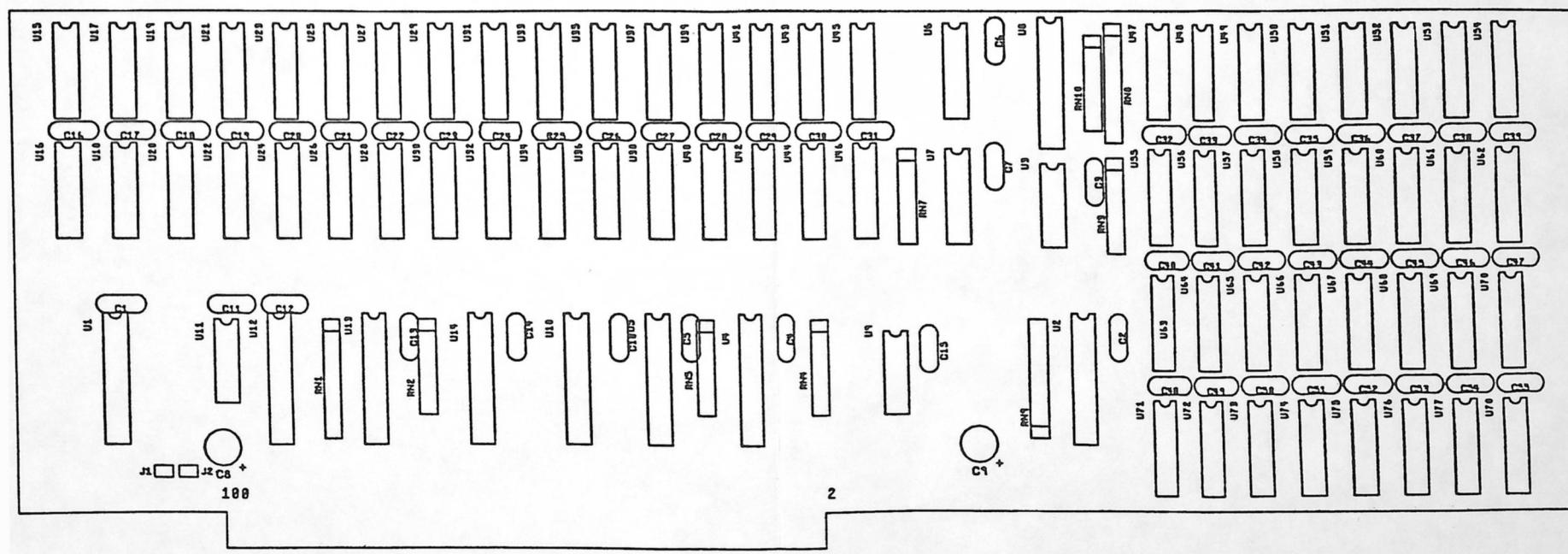
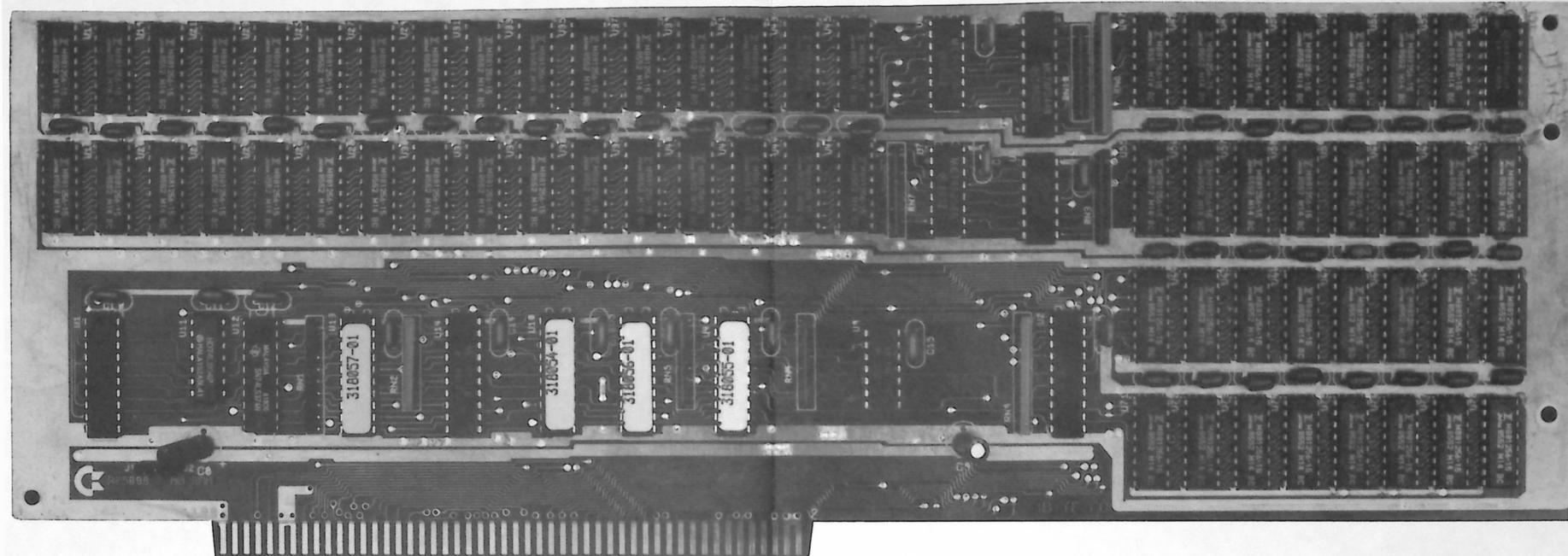
A2052 2MB RAM BOARD ASSEMBLY

U1, U2	IC 74F245	390089-01
U3, U9	IC 74F32	390077-01
U4	IC PAL 16L8A	318055-01
U5	IC PAL 16L8A	318056-01
U13	IC PAL 16L8A	318057-01
U10	IC PAL 16L8	318054-01
U6, U7	IC 74F258	318052-01
U11	IC 74LS04	901521-02
U12	IC 74LS374	901521-43
U14	IC 74F521	318041-01
U8	IC 74F244	318050-01
U15-U78	DRAM 256K X 1	390226-01
RN2	1K X 7 SIP, 8 PIN PULL-UP	902442-22
RN1	1K X 9 SIP, 10 PIN PULL-UP	902410-10
RN3-RN5, RN7, RN10	22 X 4 SIP, 8 PIN	902422-04
RN8, RN9	22 X 5 SIP, 10 PIN	390227-01
RN11, RN12	4.7K X 9 SIP, 10 PIN	902410-08
C1-C7, C10-C15	.22 μ F .2" CERAMIC BYPASS	315034-01
C16-C55	.33 μ F .2" CERAMIC BYPASS	315034-02
C8, C9	22 μ F 35V RADIAL ELECTROLYTIC	390101-04
J1, J2	2 PIN HEADER .1"	903345-01
J1, J2 sub:	2 PIN HEADER .1"	903326-02
	EXTENSION CARD PANEL	380120-08
	M-3 SCREW X 4.0 LG	906800-01

A2052 RAM BOARD ASSEMBLY

PCB ASSEMBLY #312365-01

Sheet 1 of 5

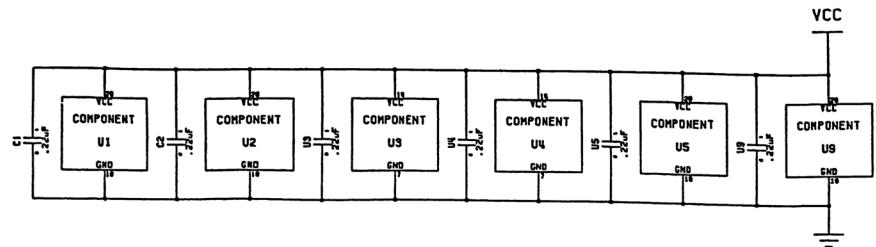
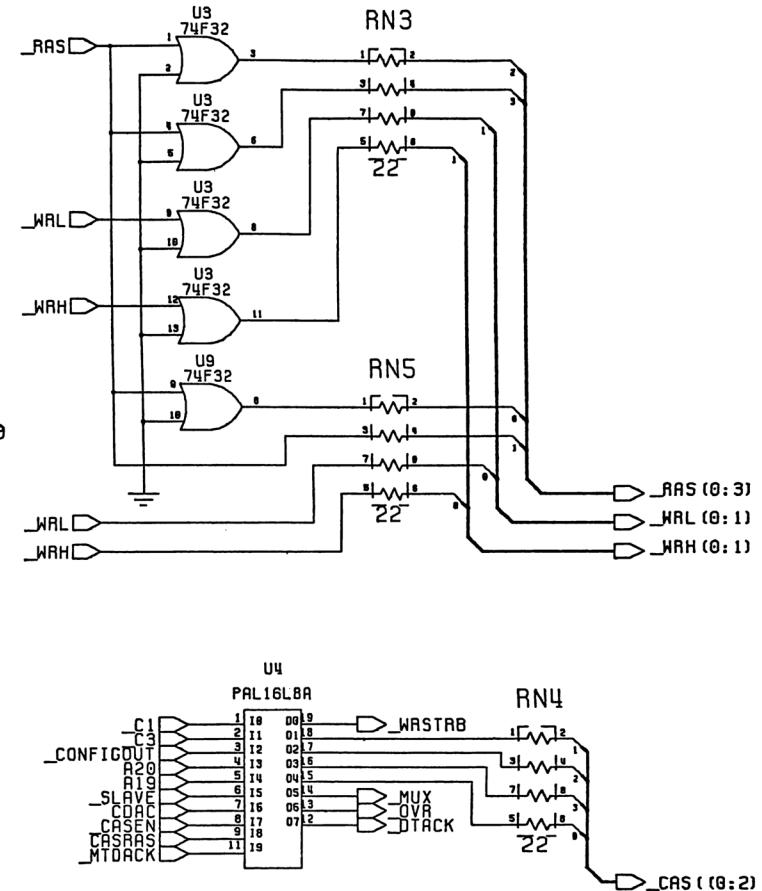
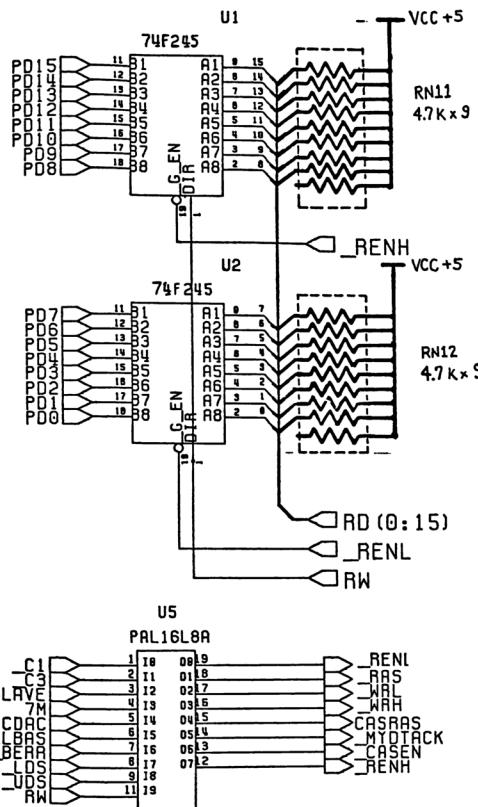
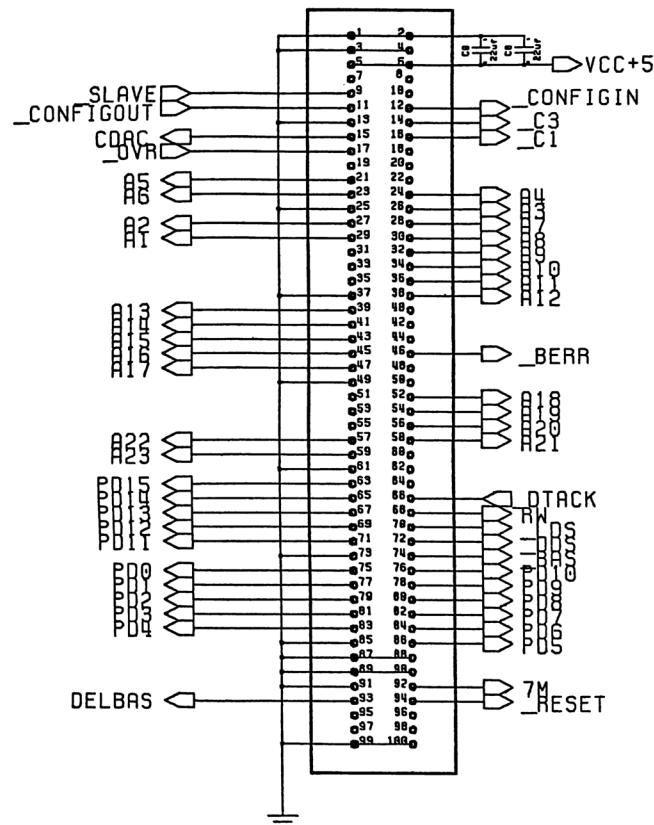


A2052 RAM BOARD ASSEMBLY

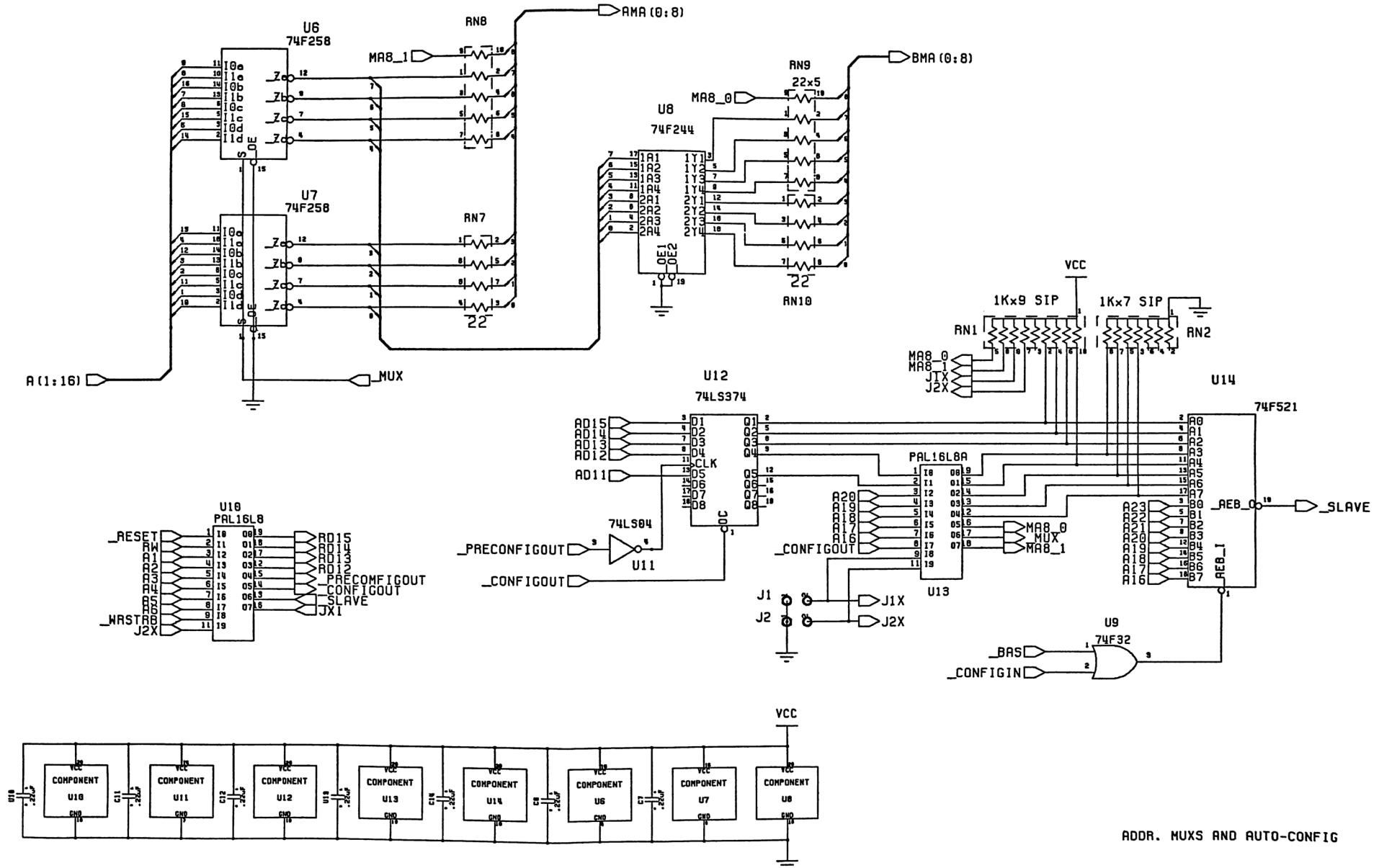
SCHEMATIC #312366

Sheet 2 of 5

AMIGA EXPANSION BUS
100 PIN EDGE CONN.



MEMORY CONTROL AND DATA BUFFERS

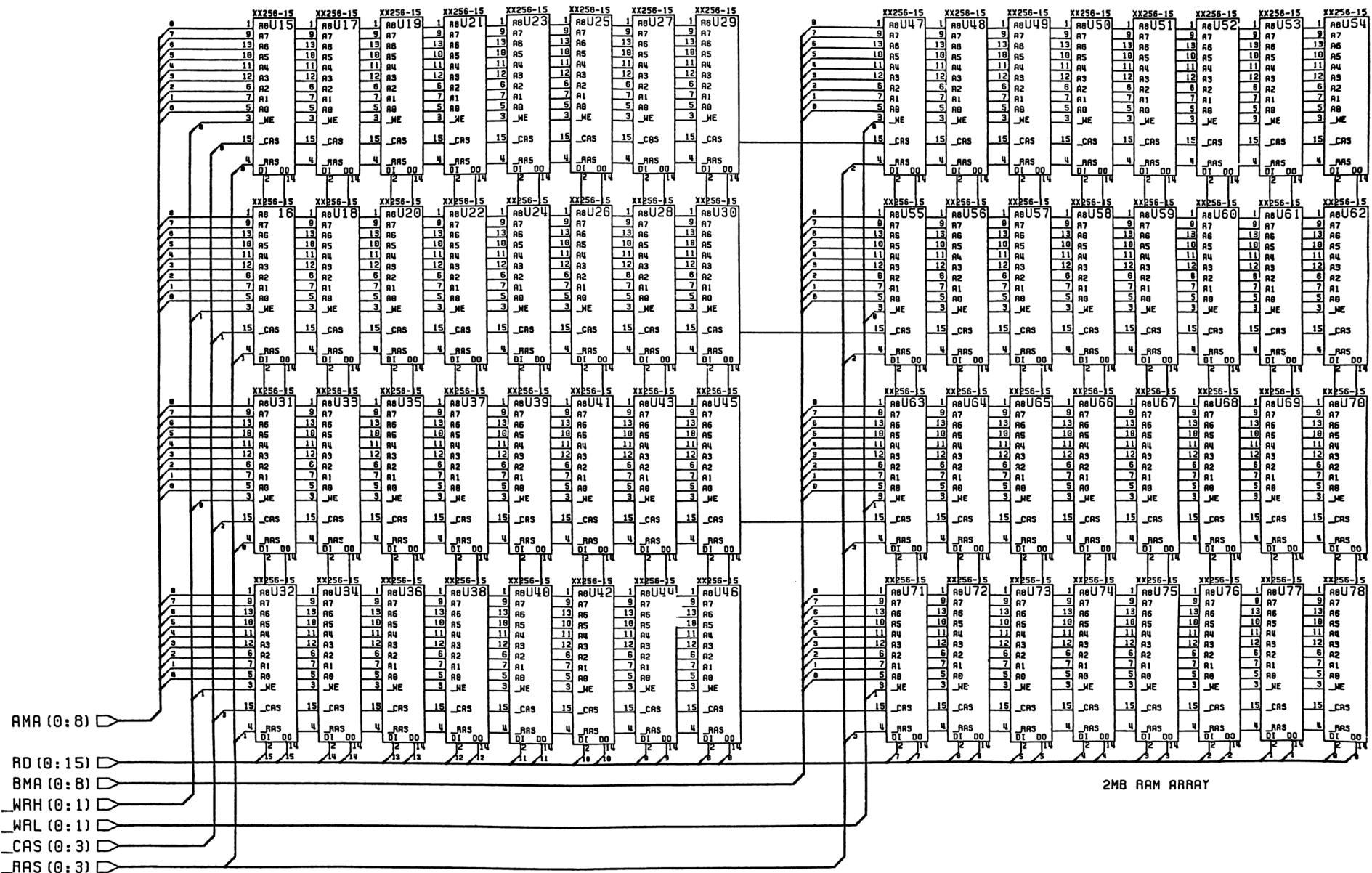


ADDR. MUXS AND AUTO-CONFIG

A2052 RAM BOARD ASSEMBLY

SCHEMATIC #312366

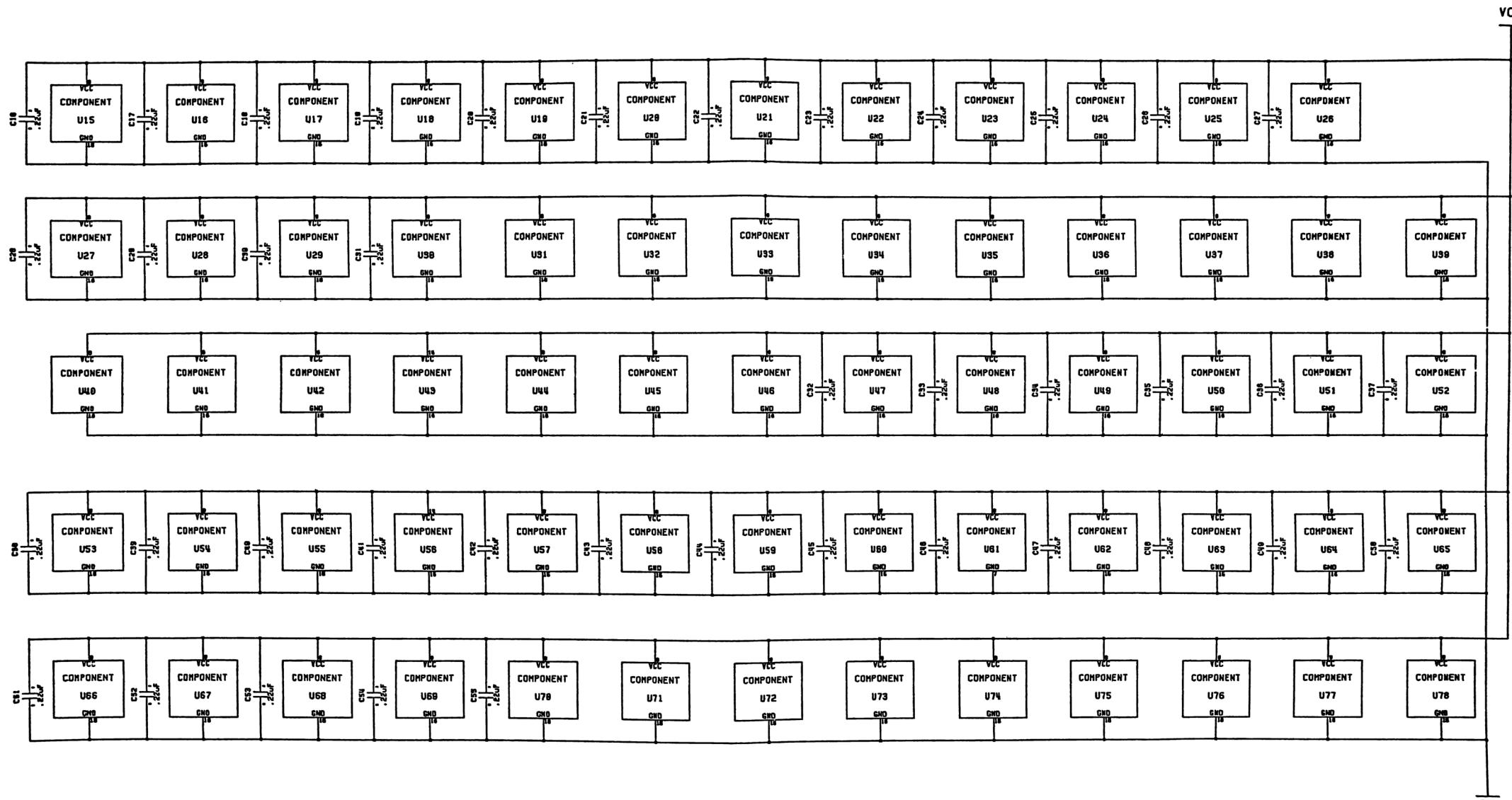
Sheet 4 of 5



A2052 RAM BOARD ASSEMBLY

SCHEMATIC #312366

Sheet 5 of 5



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PARTS LIST

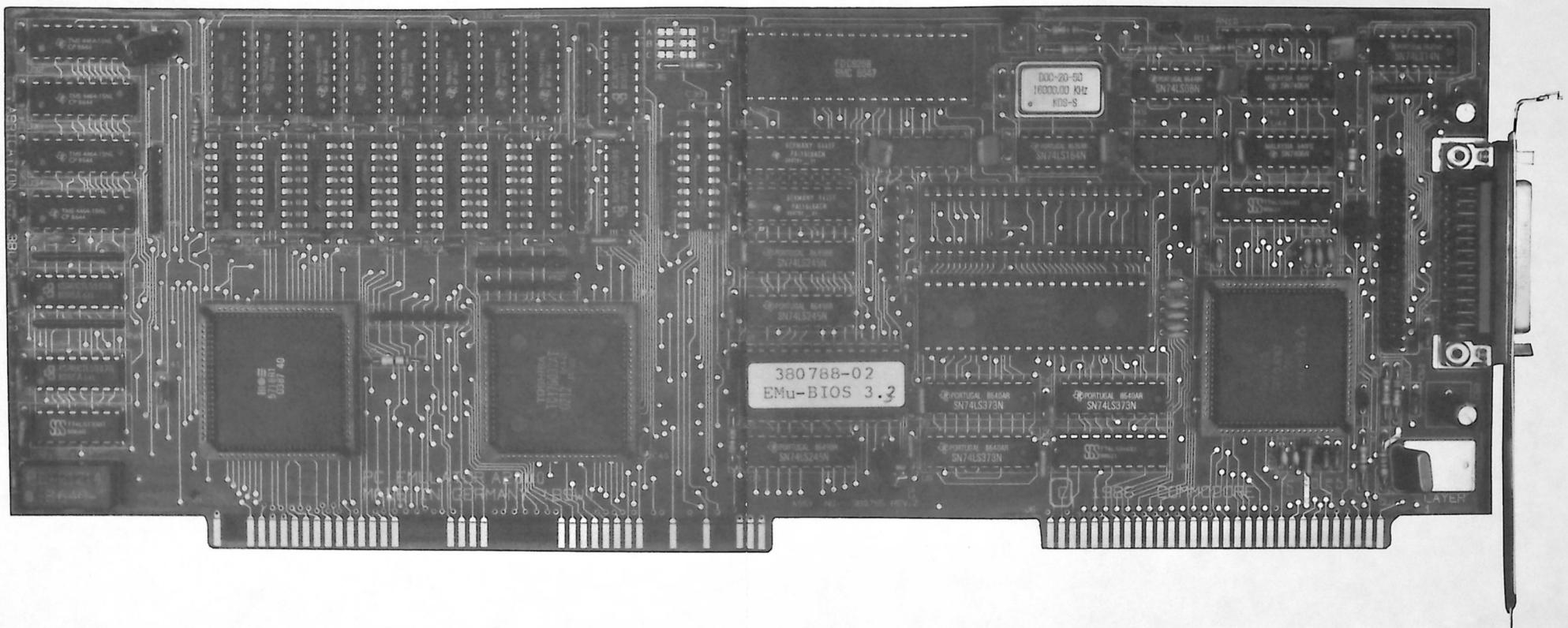
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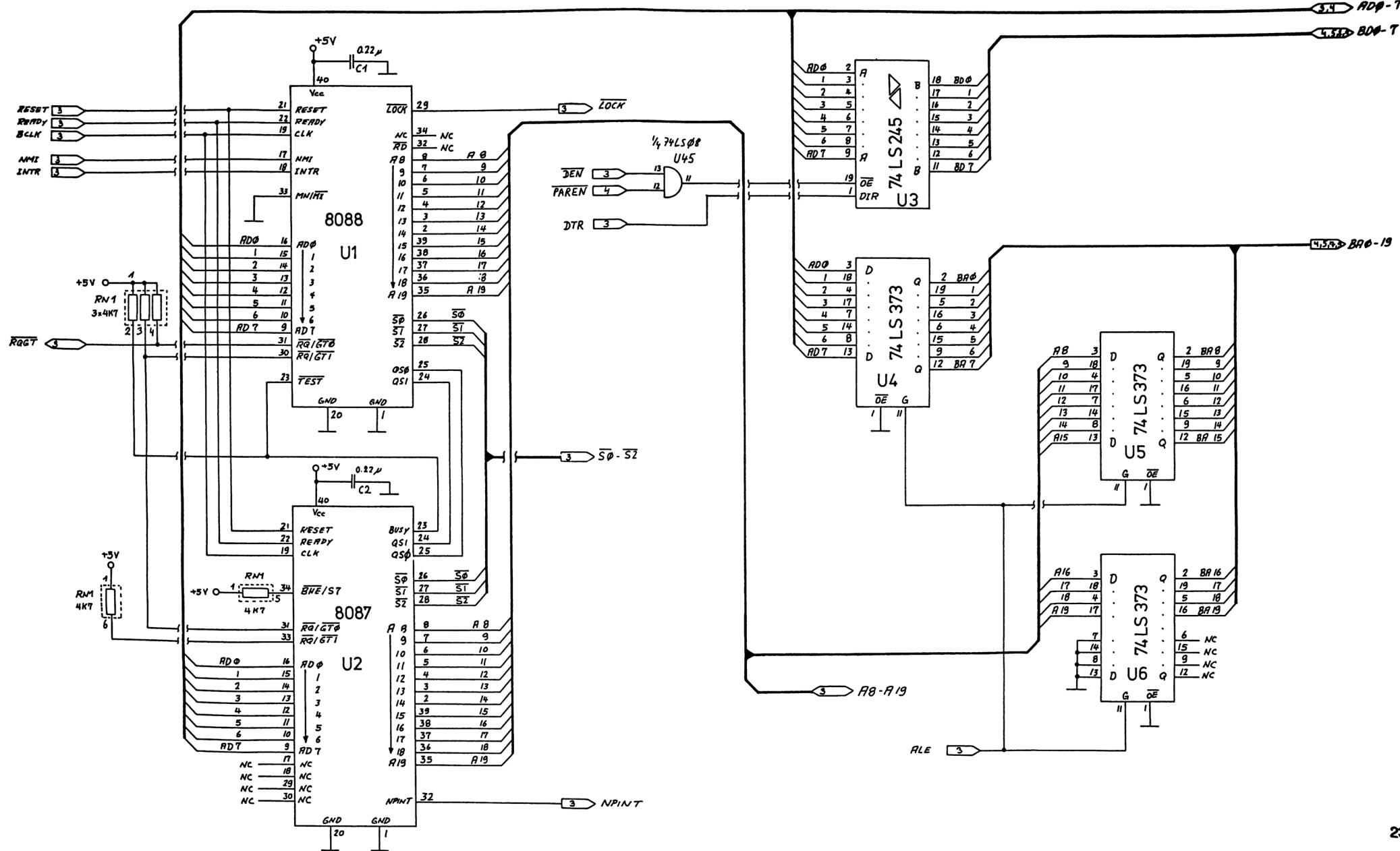
INTEGRATED CIRCUITS		CAPACITORS		
U40	ADDRESS BUS TRANSL.	380658-01	C52	CER RADIAL 47pF 251070-18
U41	DATA BUS TRANSL.	380659-01	C55,61,62	CER RADIAL 100 pF 251070-22
	5718		C71,72	CER RADIAL 470 pF/50V 251071-30
U1	8088	380200-01	C3-6,8-11	CER RADIAL 0.1 μ F 900020-01
U2	8087	380201-01	C1,2,7	CER RADIAL 0.22 μ F/50V 900022-01
U29	PAL RAM DECODER EMULATOR	380783-01	53,54,60,70	
U50	PAL I/O DECODER	380784-01	C56-59	ELECTR. AXIAL 47 μ F/25V 900100-27
U39	PAL CONFIGURATION	380785-01		
U7	FE 2010	380786-01		
U12-27	DRAM 256K X 1, 150 nS	380223-01		
U32-35	DRAM 64K X 4, 150nS	380256-01		
U42	FDC 9268	380787-01		
U28	BIOS PC-EMULATOR	380788-01		
U10,11	74 HCT 158	380227-04		
U36,37	74 HCT 257	380227-58		
U43,44	7406	901522-06		
U45	74 LS 08	901521-03		
U46	74 LS 14	901521-30		
U47	74 LS 125	901521-20		
U38	74 LS 133	901521-15		
U48	74 LS 164	901521-28		
U49	74 LS 175	901521-34		
U8,9	74 LS 244	901521-13		
U3,30,51	74 LS 245	901521-46		
U4-6	74 LS 373	901521-29		
U31	DIGITAL DELAY LINE	324667-01		
TRANSISTORS		MISCELLANEOUS		
T1	BC-327 B	324219-01	OSC1	OSCILLATOR 16 MHz, 325566-10 HYBRID
RESISTORS — All are carbon 1/4 watt, 5% unless noted				
RN9	4 X 1K	902417-03	QU1	QUARZ 14.31818 MHz 900558-01
RN10	9 X 4K7	902410-08	U28	SOCKET 28 PIN 904150-05
RN1,2,11	8 X 4K7	902412-05	U20-27	SOCKET 16 PIN 904150-02
RN3-8	4 X 68 OHM	902422-07	U29,50	SOCKET 20 PIN 904150-08
R7,8	33 OHM	901550-105	U1,2,42	SOCKET 40 PIN 904150-06
R3,5	100 OHM	901550-49	U7,40,41	SOCKET 84 PIN 380789-01
R1,10,11	1K	901550-01	U39	SOCKET 20 PIN 904150-08 SCREW, PAN HEAD M 3 X 8 LOCKWASHER EXT. TOOTH. O 3.2 MM NUT HEX M 3 905960-03
R6	2K2	901550-18		RIVET DOME — Sub. for above three items
R2,9	4K7	901550-19		EXTENSION CARD PANEL 380120-08
R4	1M	901550-84		
CONNECTORS				
JA1,2	JUMPER RM: 2.54 MM			380333-01
	WIRE JUMPER			903781-01
J1	HEADER ASSY DUAL ROW .100CTR.			903345-03
J3	HEADER ASSY DUAL ROW .100CTR.			903345-17
J4	23 PIN SUB MINI "D" FEMALE			327033-01
J4	23 PIN SUB MINI "D" FEMALE			310975-01 sub:
J2	HEADER ASSY SINGLE ROW .100CTR.			903326-02
J7	HEADER ASSY SINGLE ROW .100CTR.			903326-08

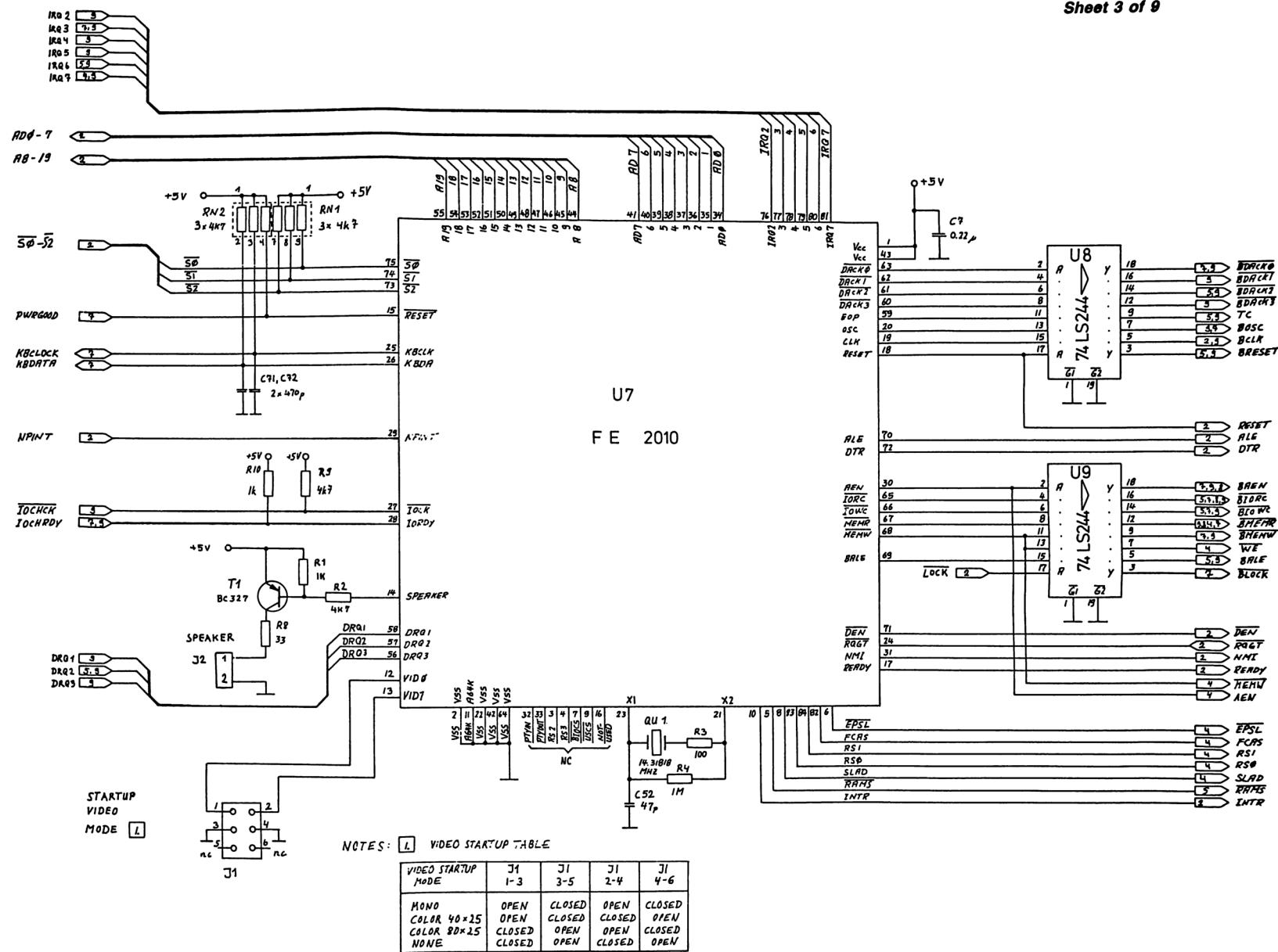
A2088 XT BRIDGE BOARD

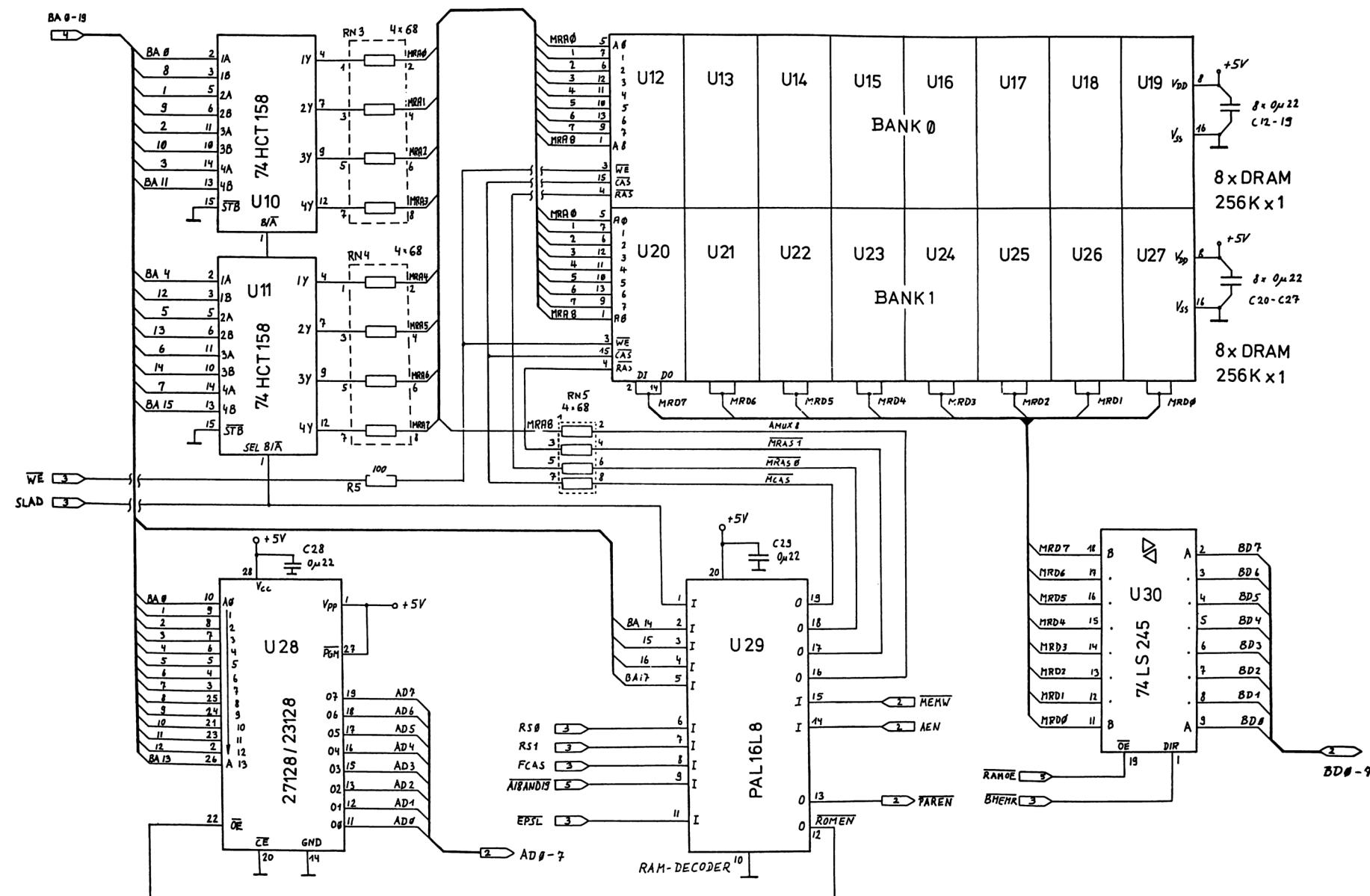
PCB ASSEMBLY #380755-01

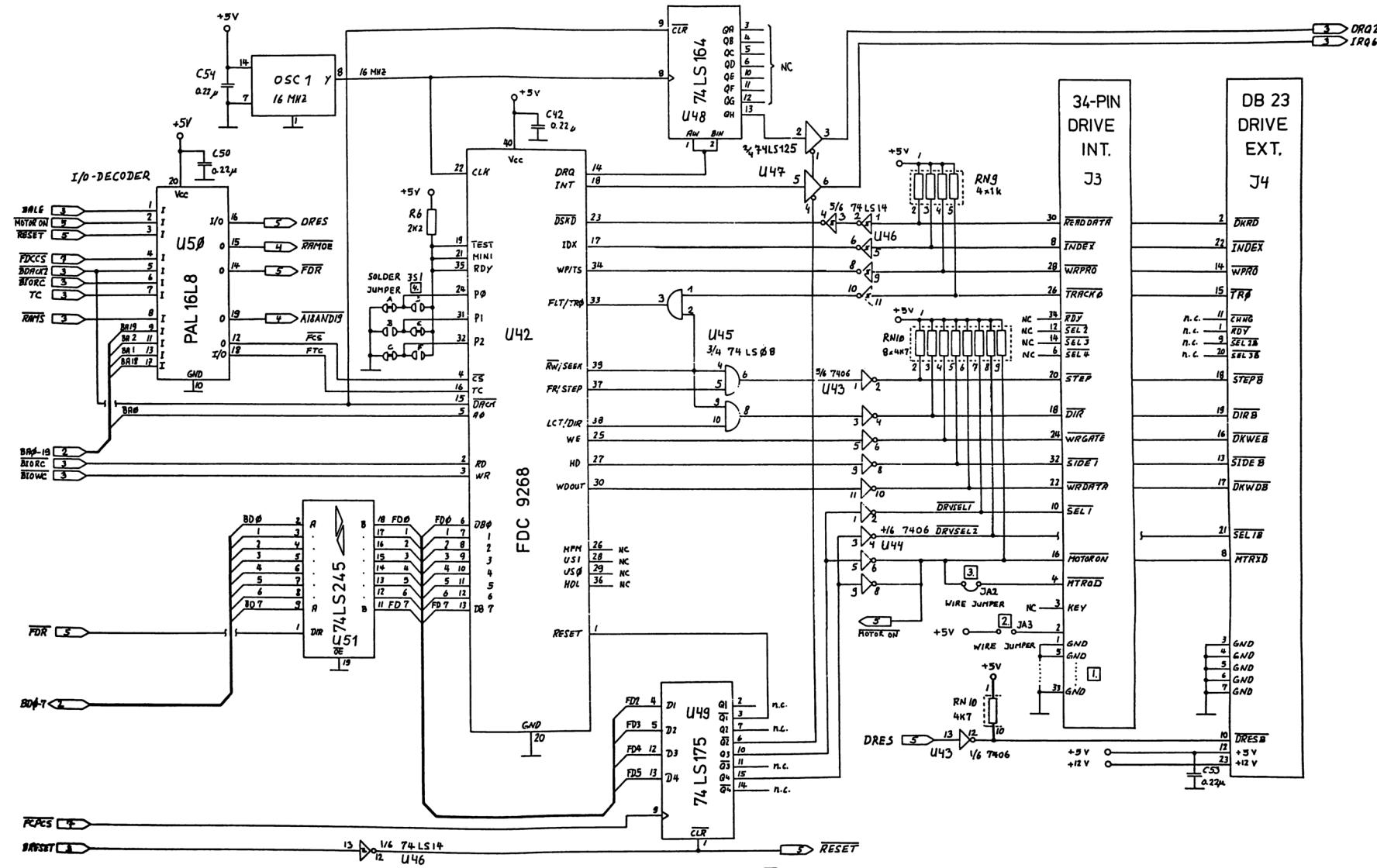
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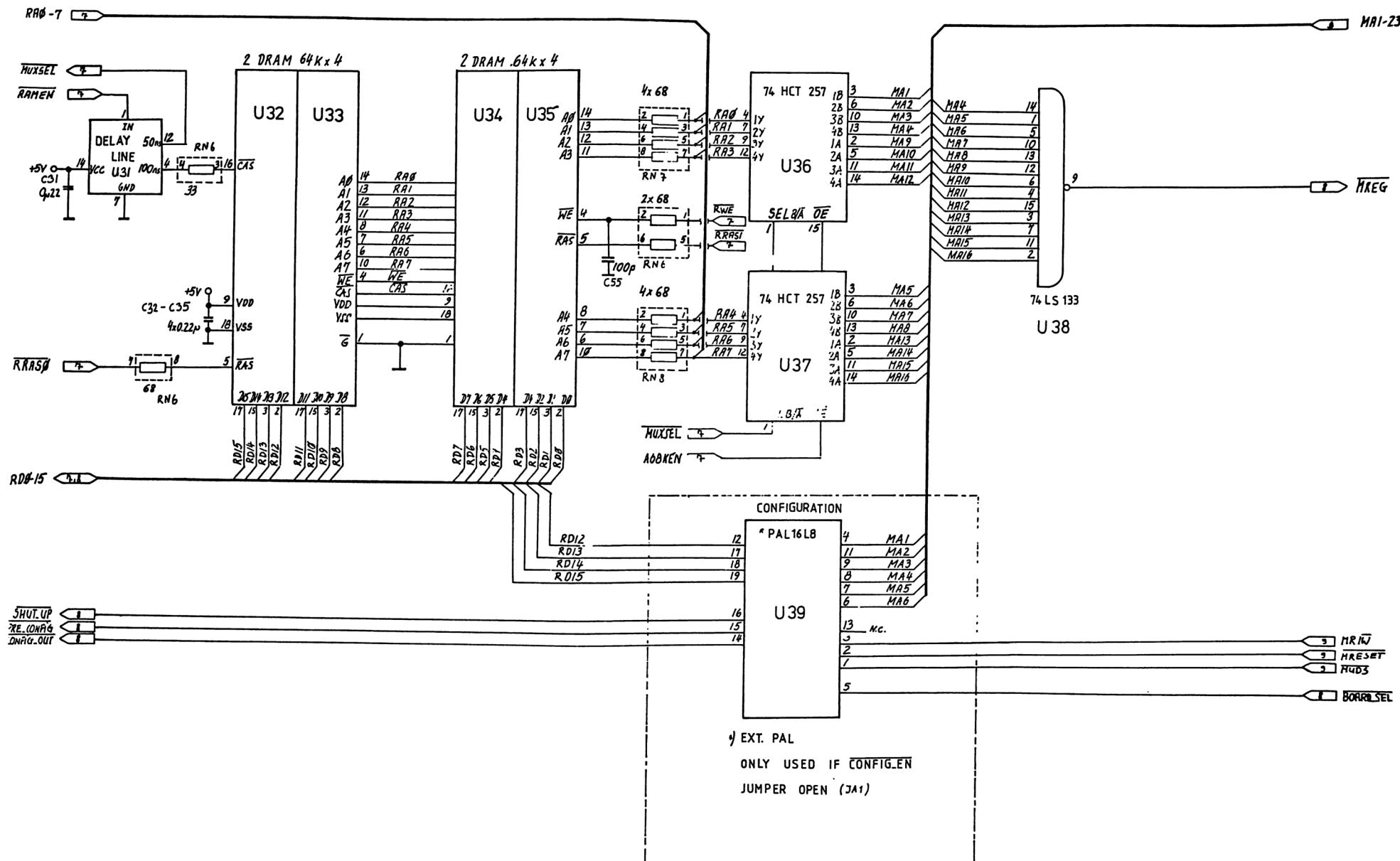
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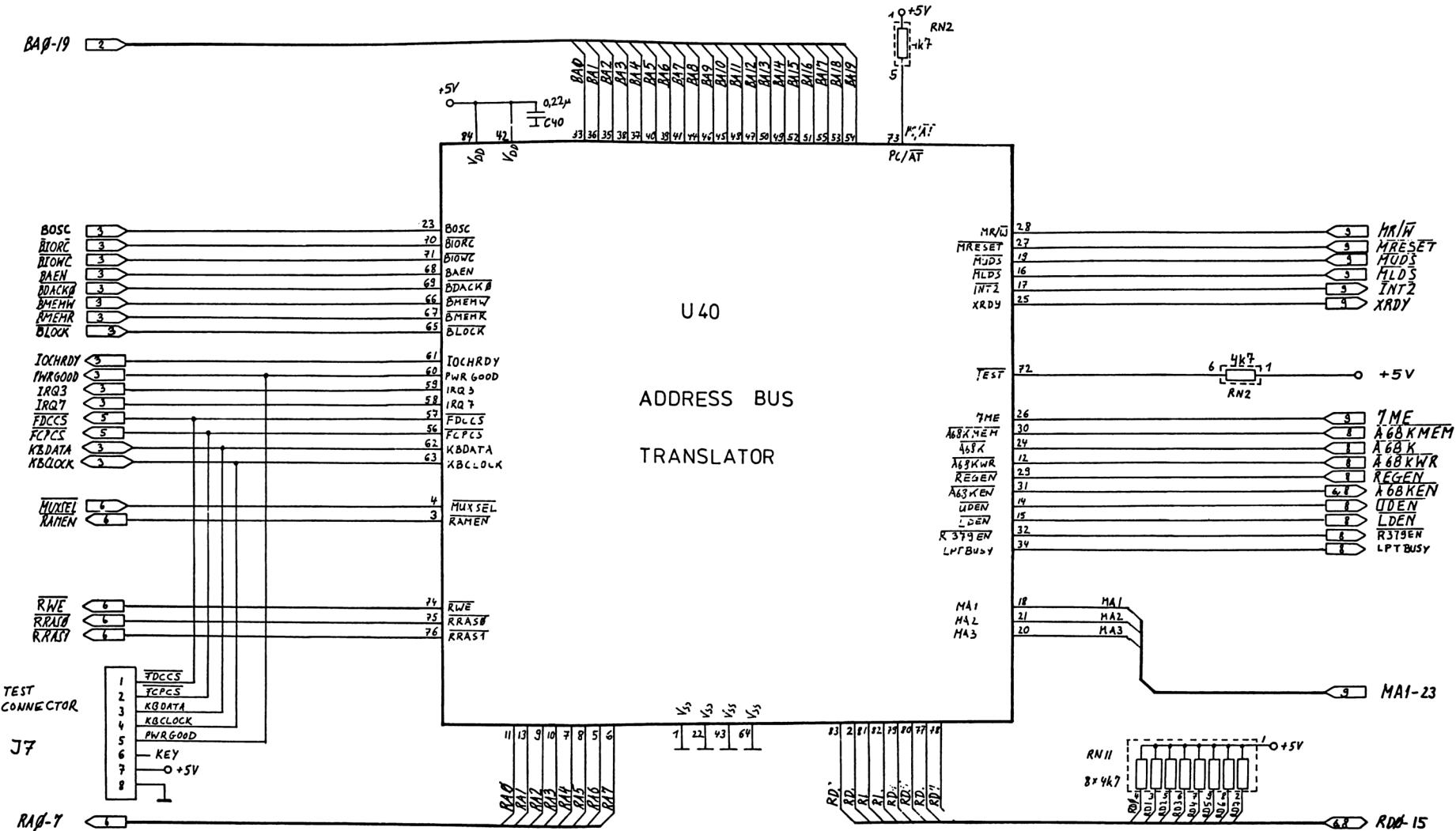
- [1] ALL ODD PINS OF J3 CONNECTED TO GND
- [2] WIRE JUMPER NORMALLY OPEN
- [3] WIRE JUMPER NORMALLY CLOSED
- [4] FDC WRITE PRECOMP. SELECTION. DEFAULT IS 250ns

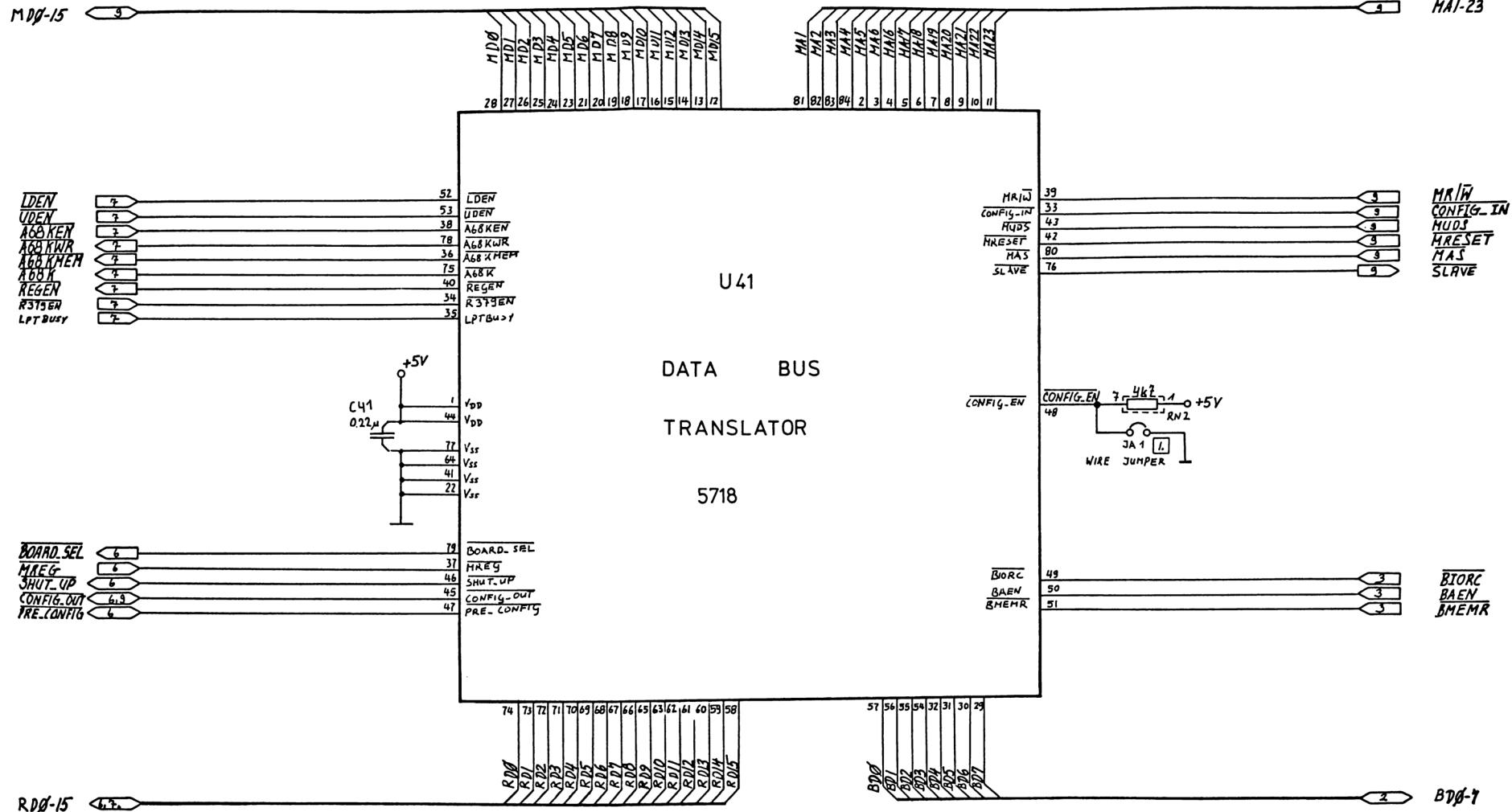
A2088 XT BRIDGE BOARD

SCHEMATIC #380756

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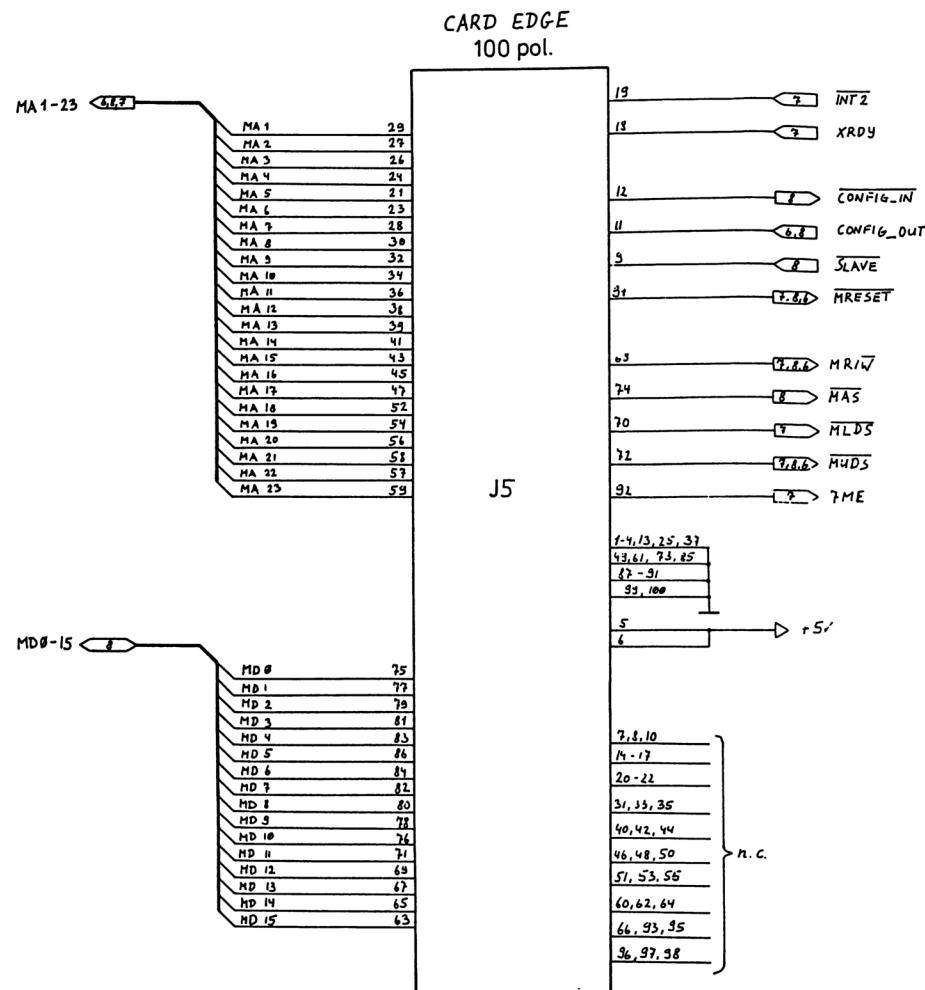


NOTES: 1. WIRE JUMPER NORMALLY CLOSED.
 IF CLOSED, CONFIG PAL INTERNALLY OF
 U41 IS USED. U39 MUST NOT BE INSERTED
 IN THIS CASE.

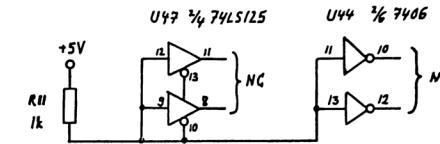
A2088 XT BRIDGE BOARD

SCHEMATIC #380756

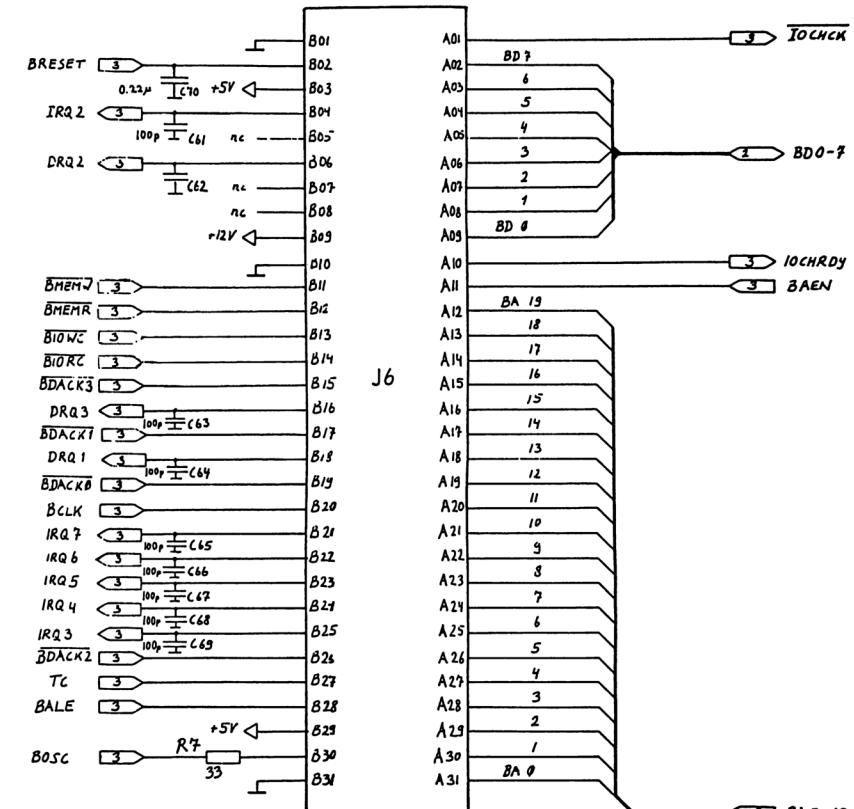
Sheet 9 of 9



SPARE:



CARD EDGE
2 x 31 pol.



**A
2
0
9
0**

COMPONENT PARTS LIST

A2090 HARD DISK CONTROLLER PCB ASSEMBLY

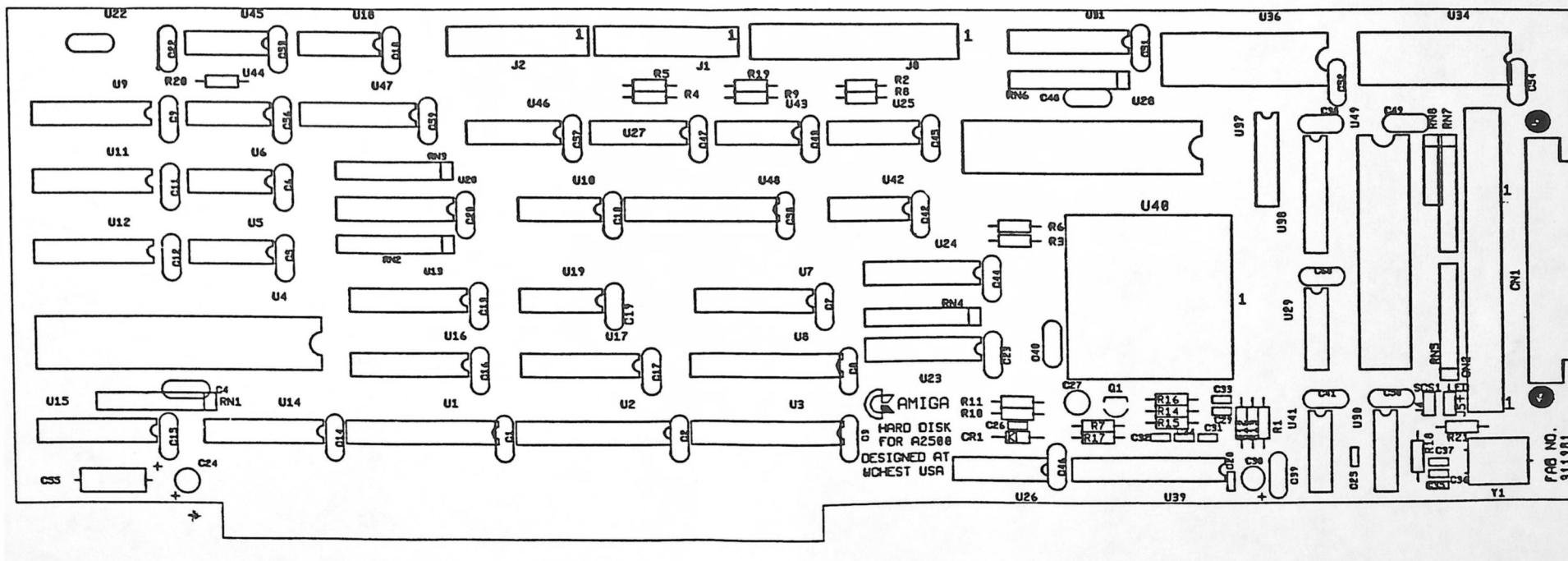
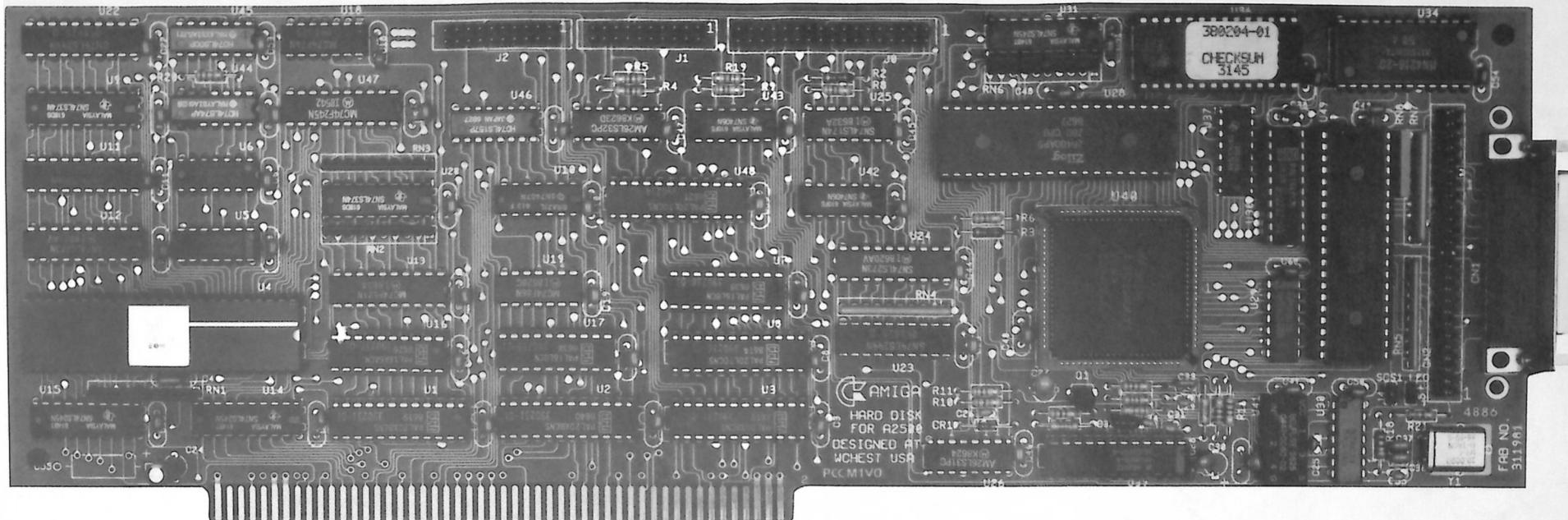
PLEASE NOTE: Commodore part numbers are provided for reference only and do not indicate the availability of parts from Commodore. Industry standard parts (Resistors, Capacitors, Connectors) should be secured locally. Approved cross-references for TTL chips, Transistors, etc. are available in manual form through the Service Department, order part #314000-01.

INTEGRATED CIRCUITS		RESISTORS (continued)		
U8	20L10 PAL	390235-01	R14	1.5K
U48	20L10 PAL	390234-02	R4,5,16	100
U1,2,3	20X8 PAL	390231-01	R13	150
U17	16L8 PAL	390233-01	R2,3	620
U7	16L8 PAL	390236-01	R8,19,9,1,11	1K
U38	16L8 PAL	390232-02	R17	1K 1/8W 1% METAL FILM
U16	16R6A PAL	390237-01	R7	2K
U14,15,31	74LS245	390001-01	R12	4.75K 1/8W 1% METAL FILM
U47	74F245	390089-01	R6,10	10K
U44	74LS74A	390097-01	R18	10M
U18	74F74	390081-01	R20	1.2K
U19	74F86	390198-01	R21	330
U10	7407	390002-01		
U6	74LS04	901521-02		
U5,29	74LS08	901521-03		
U4	8727 CBM DMA	315046-01		
U13	74F521 8 BIT COMPARATOR	318041-01	C1,2,3,5,6-	.1MF 50V 20% CERAMIC
U9,20	74LS374	901521-43	23,28,38-54,	
U11,22,23	74LS244	901521-13	56-60	
U24,12	74LS273	390158-01	C4	.33MF .2" 50V 20% CER
U34	2016 2K X 8 SRAM 200nS	251637-05	C26	.001MF 50V 10% CER
U26	26LS31 DIF TRANS	318040-01	C31,29	.01MF 50V 10% CER .1"
U27	26LS32 DIF RECR	318043-01	C33	.022MF 100V 10%
U39	DP8465N-4 DATA SEP	390207-01		MONO/CER .1"
U28	Z80A MPU	906150-01	C30	1MF 35V 10% TANTALUM .1"
U36	2764 EPROM 300nS	390230-02	C27	10MF 20V 10% TANTALUM .1"
U40	DJC KONON HDC (84 PIN LCC)	390210-01	C35	22pF 50V 10% MONO/CER .1"
U42,43	7406	390004-01	C37,36	39pF 50V 10% MONO/CER .1"
U30	74HCU04	318042-01	C32	95pF 300V 1% MICA .1"
U37	74LS76	901521-61	C34	390pF 50V 5% CER .1"
U25	74LS174	390156-01	C25	100pF 50V 10% DIP CER .1"
U41	DDU-6-60 DELAY LINE	324667-02	C24	22 μ F 25V ELECTROLYTIC RADIAL
U45	74LS00	901521-01		
U46	74LS157	901521-11		
U49	WD33C93 SCSI	390206-01		
TRANSISTORS		MISCELLANEOUS		
Q1	2N3906	902707-01	U38,17,16,7	SOCKET 20 PIN
			U36	SOCKET 24 PIN .6 CENTER
			U39,1,2	SOCKET 24 PIN .3 CENTER
			3,8,48	
			U28,49	SOCKET 40 PIN
			U4	SOCKET 48 PIN
			U40	SOCKET 84 PIN LCC
			Y1	CRYSTAL 20 MHz PARALLEL MODE
RESISTORS — All are carbon 1/4 watt, 5% unless noted		CONNECTORS		
RN1,2,3	1K SIP 10 PIN, PIN 1 COMMON	902410-06	J1,2	20 PIN DUAL IN-LINE HEADER
RN6	3.3K SIP 10 PIN, PIN 1 COMMON	902410-06	J0	34 PIN DUAL IN-LINE HEADER
RN4,7,5	220/330 10 PIN SIP	380388-04	CN1	25 PIN D TYPE CONNECTOR
RN8	220/330 6 PIN SIP	380388-01	CN2	50 PIN DUAL IN-LINE HEADER
R15	1.3K	901550-32	J4,5	2 PIN DUAL IN-LINE HEADER EXTENSION CARD PANEL

A2090 HARD DISK CONTROLLER

PCB ASSEMBLY #311979-01

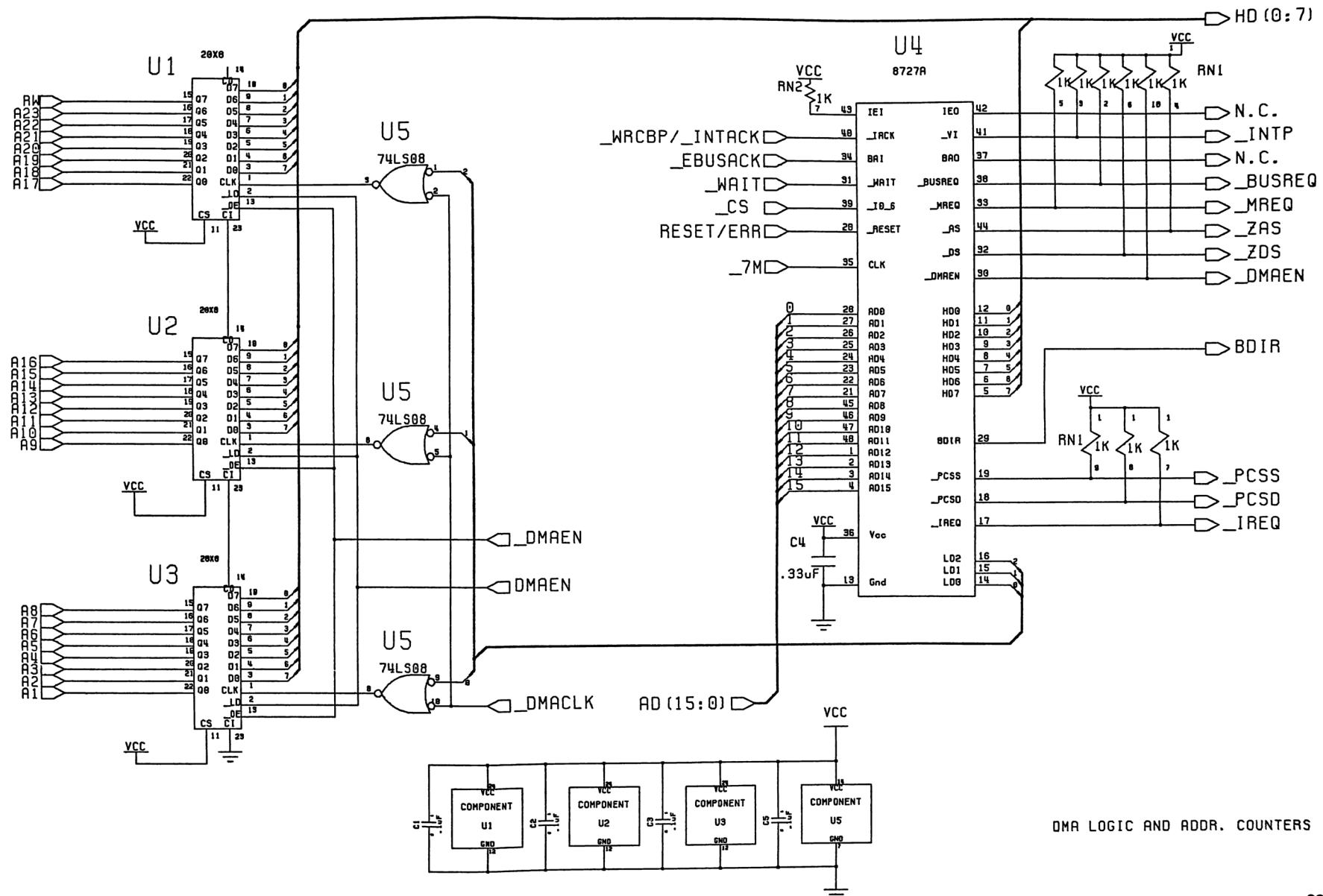
Sheet 1 of 11



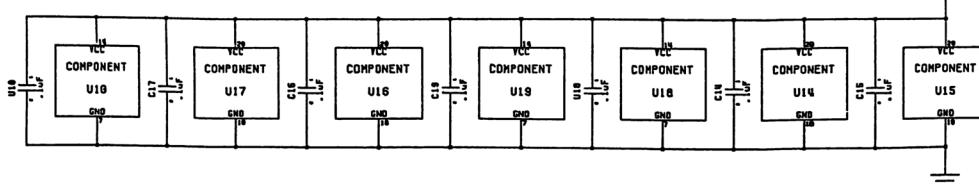
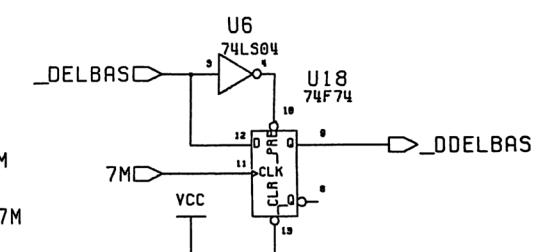
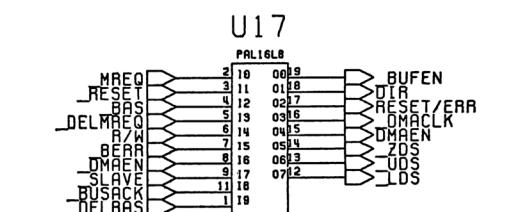
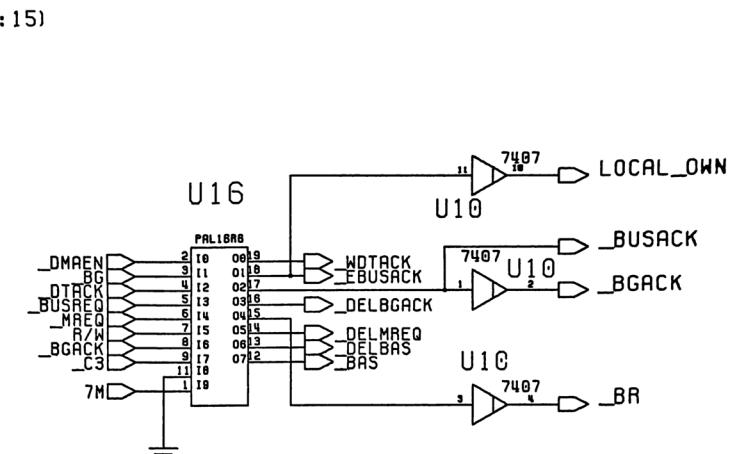
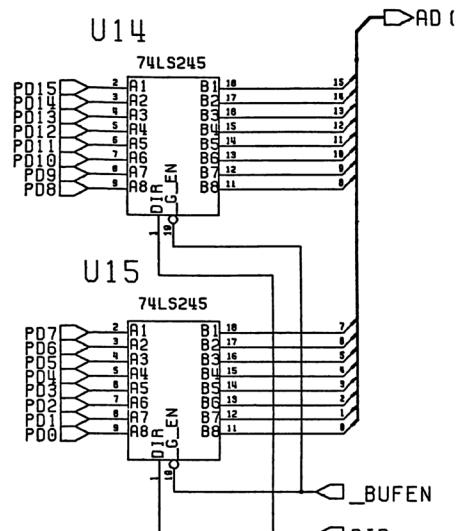
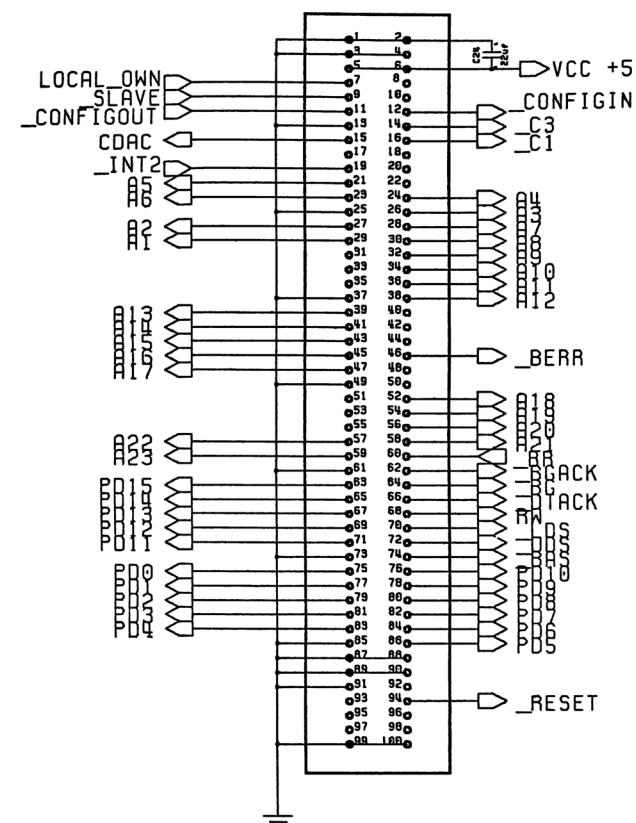
A2090 HARD DISK CONTROLLER

SCHEMATIC #311980

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**68000 EXPANSION
 BUSS INTERFACE
 100 PIN EDGE CONN.**

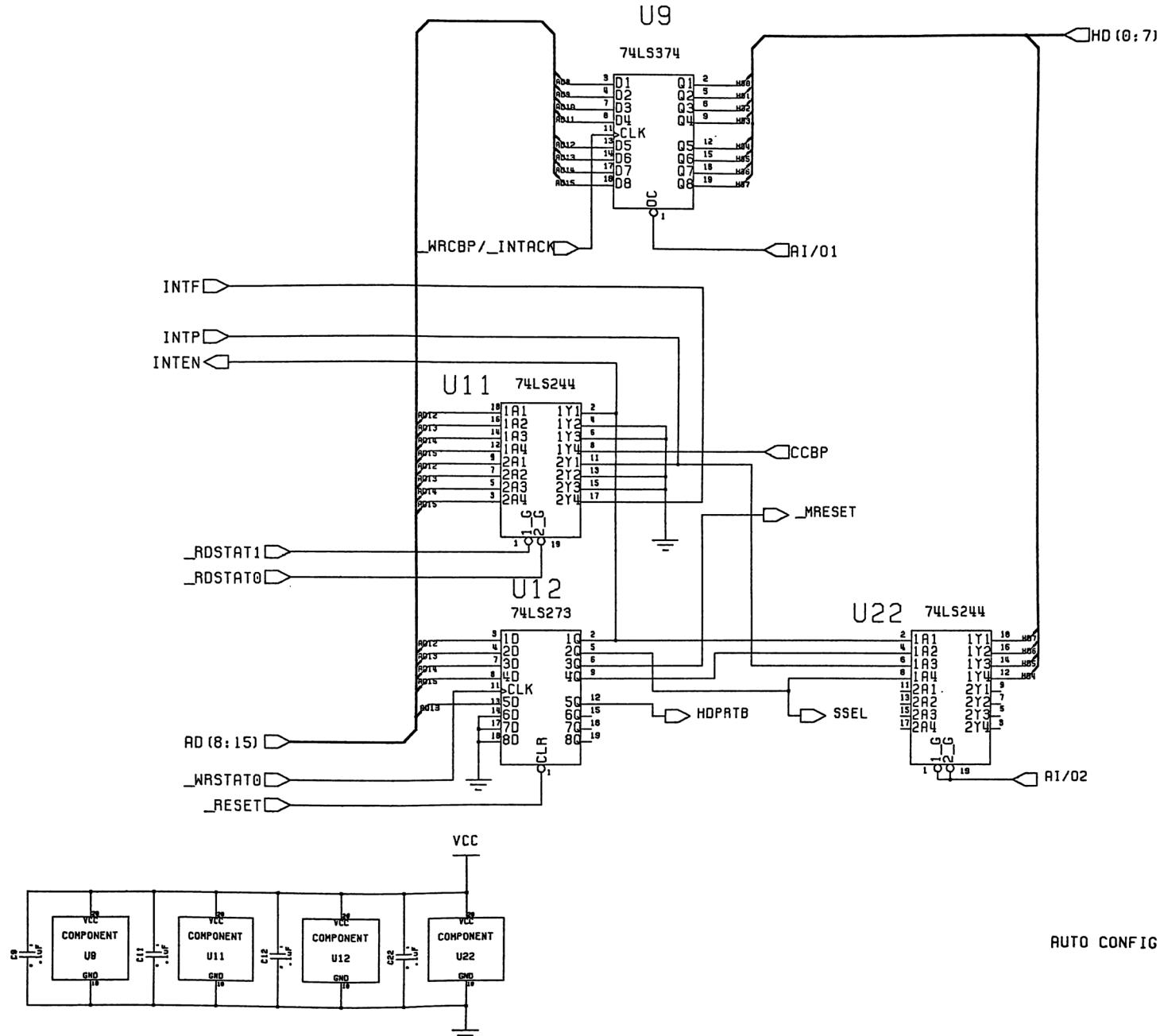


68000 EXPANSION BUSS INTERFACE

A2090 HARD DISK CONTROLLER

SCHEMATIC #311980

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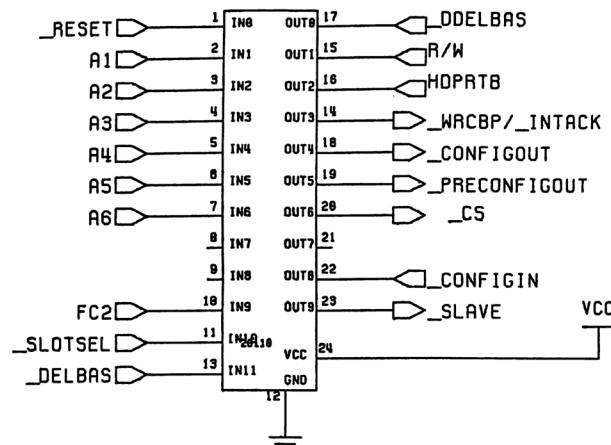


A2090 HARD DISK CONTROLLER

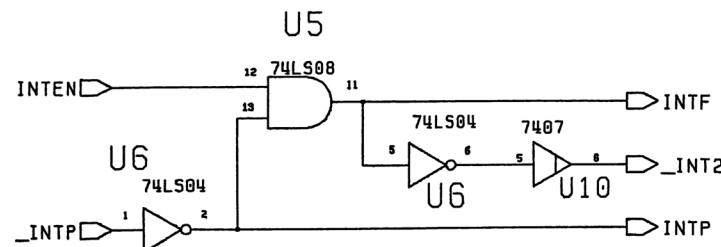
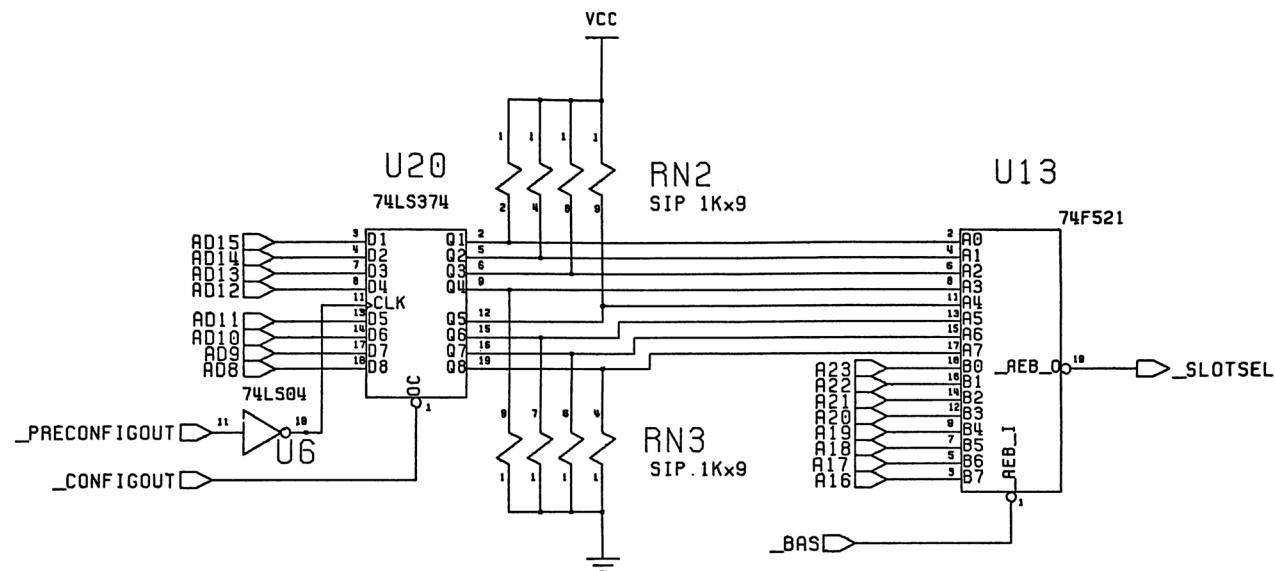
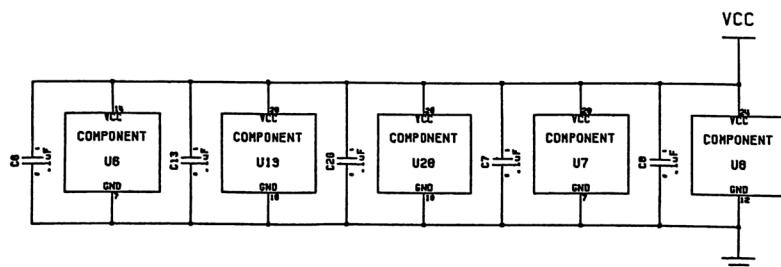
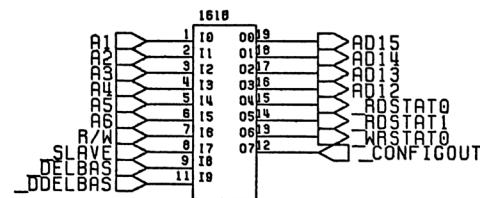
SCHEMATIC #311980

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U8



U7

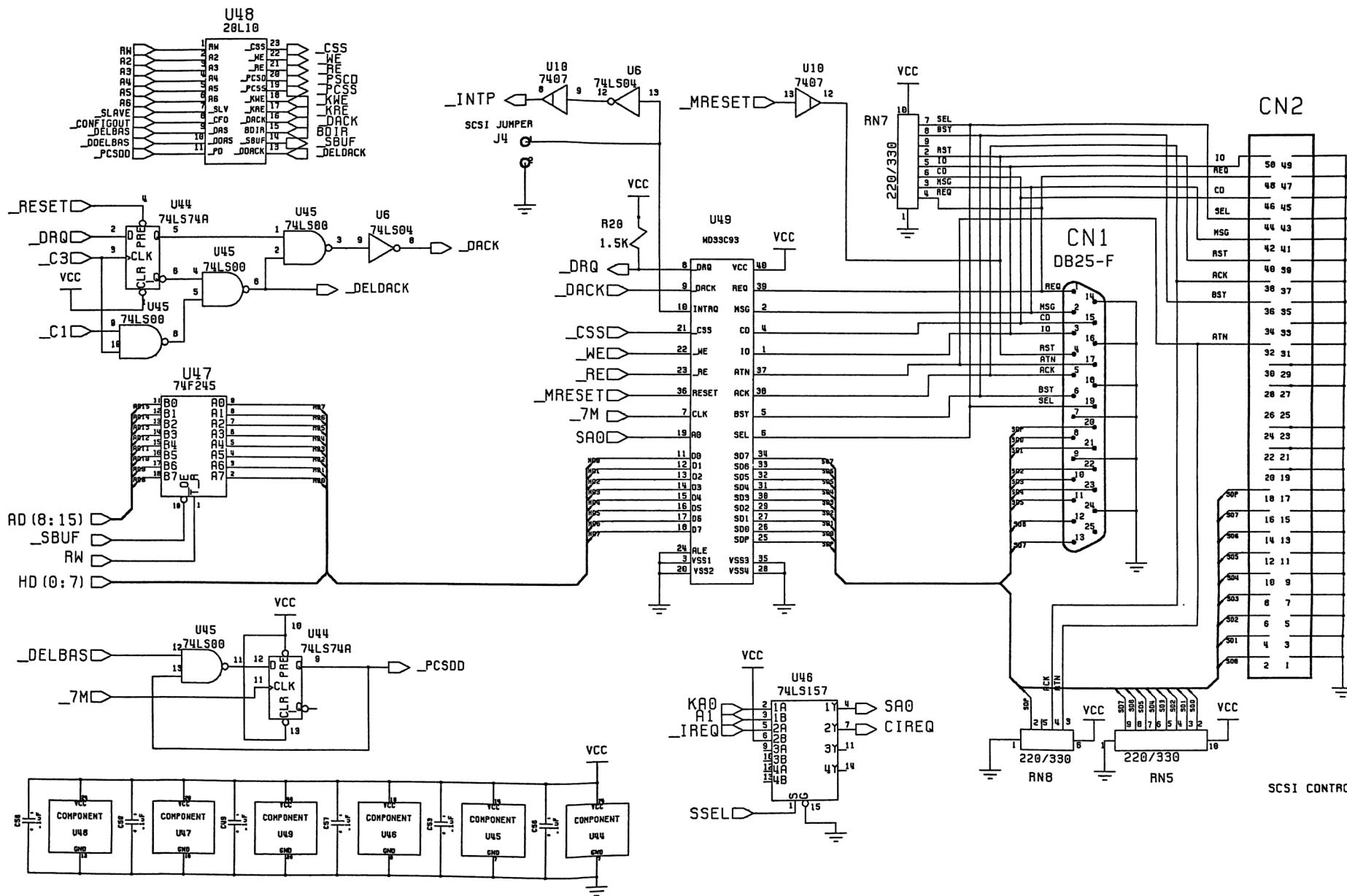


68000 AUTO-CONFIG HARDWARE

A2090 HARD DISK CONTROLLER

SCHEMATIC #311980

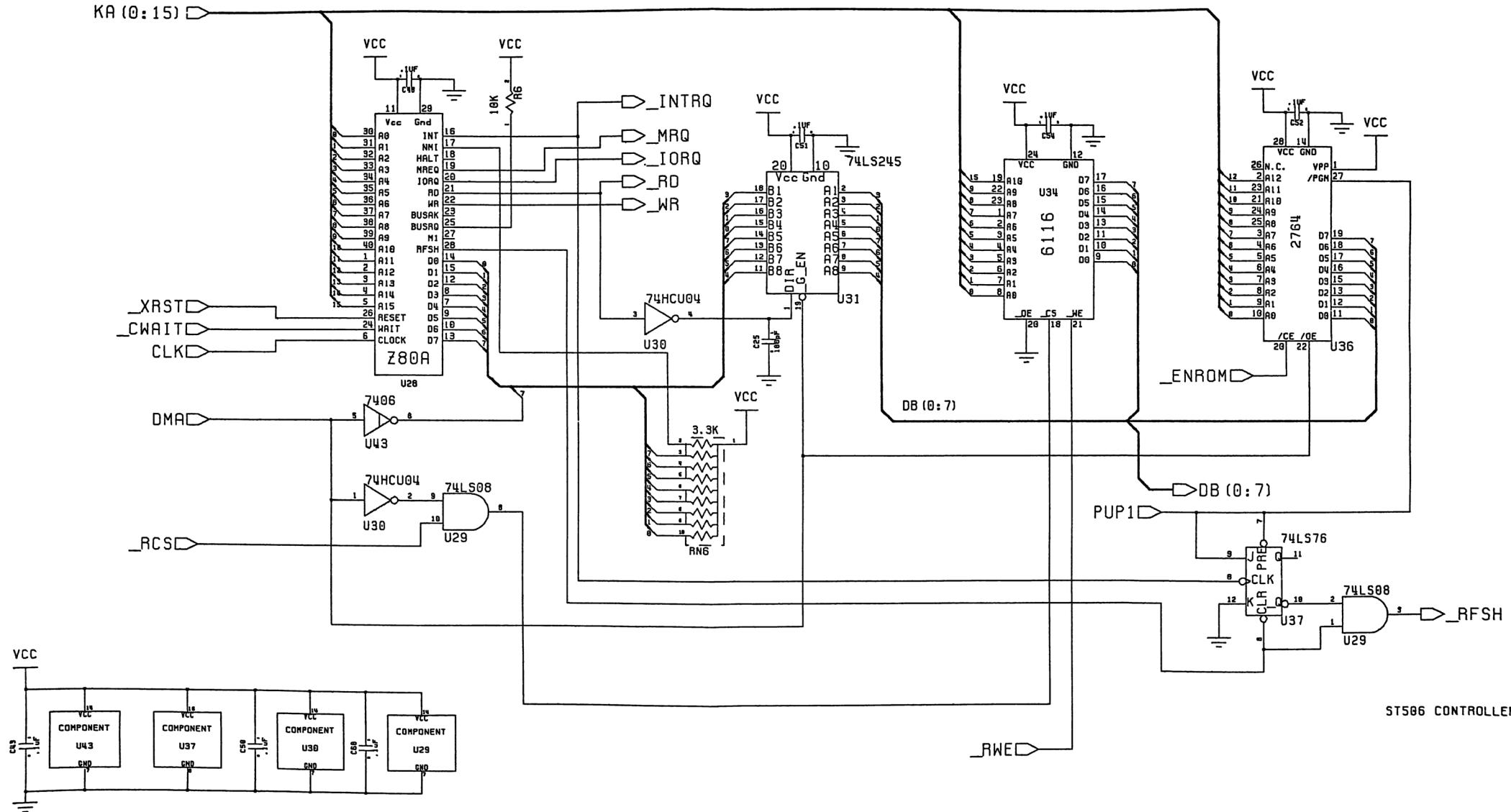
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A2090 HARD DISK CONTROLLER

SCHEMATIC #311980

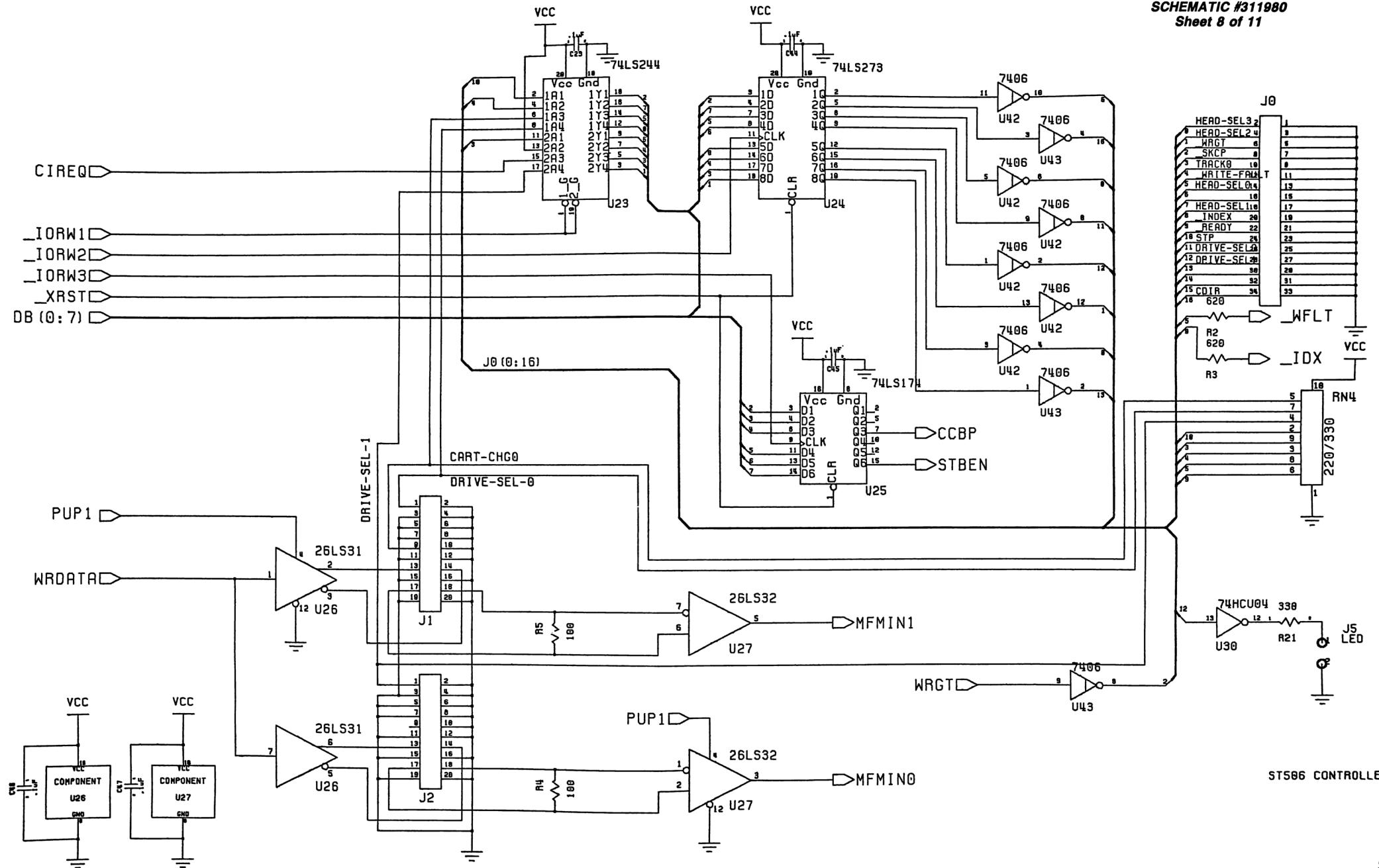
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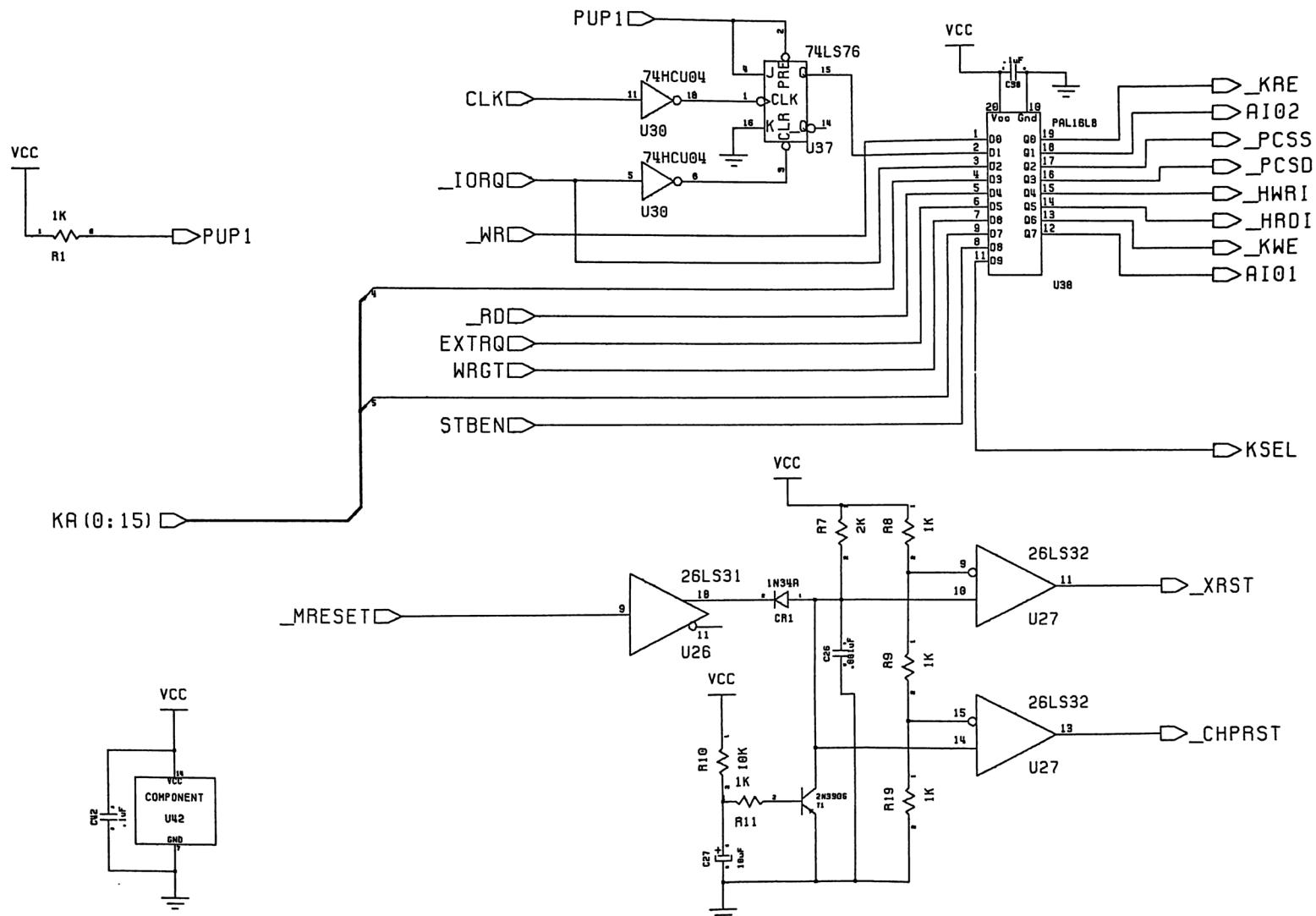


A2090 HARD DISK CONTROLLER

SCHEMATIC #311980

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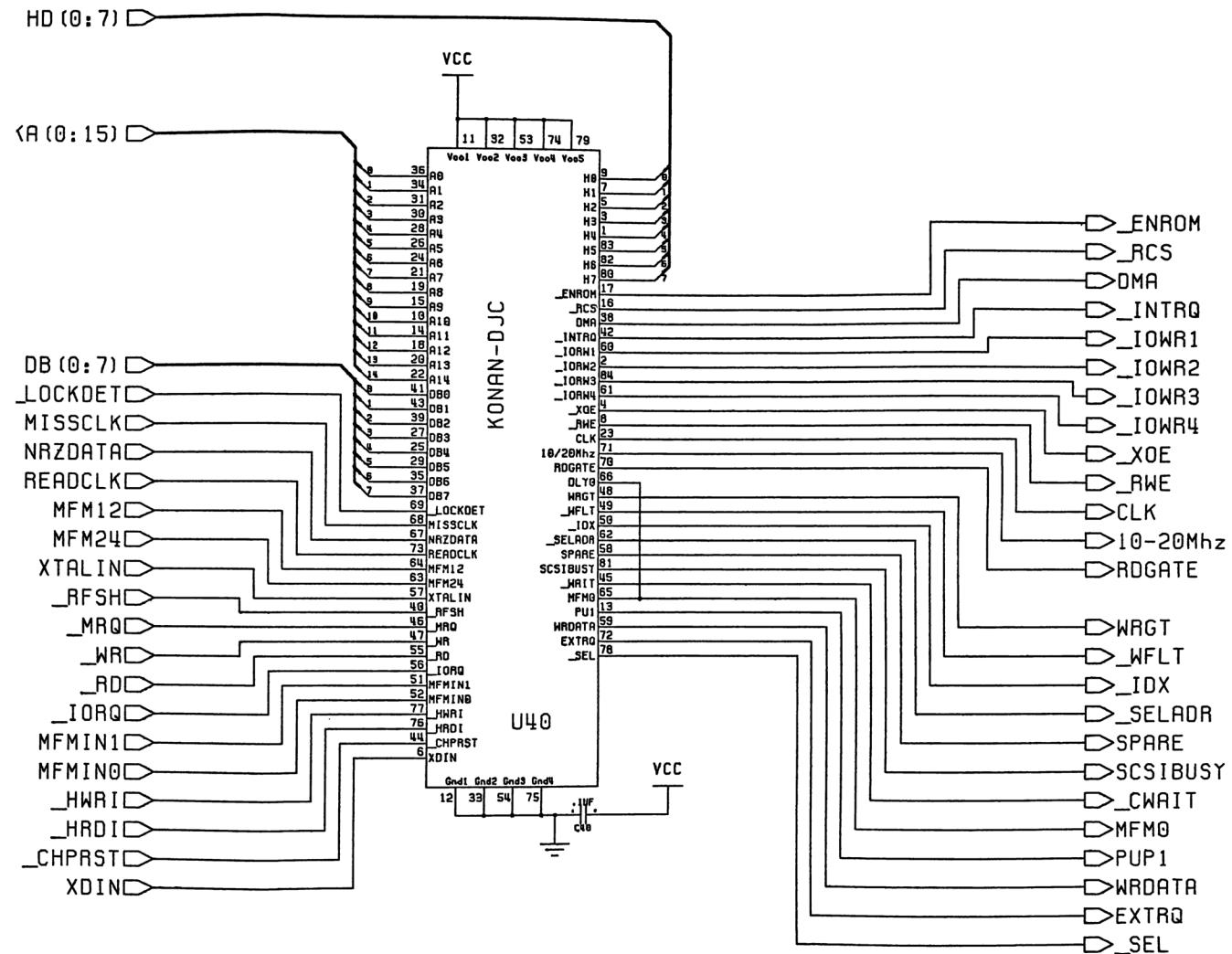


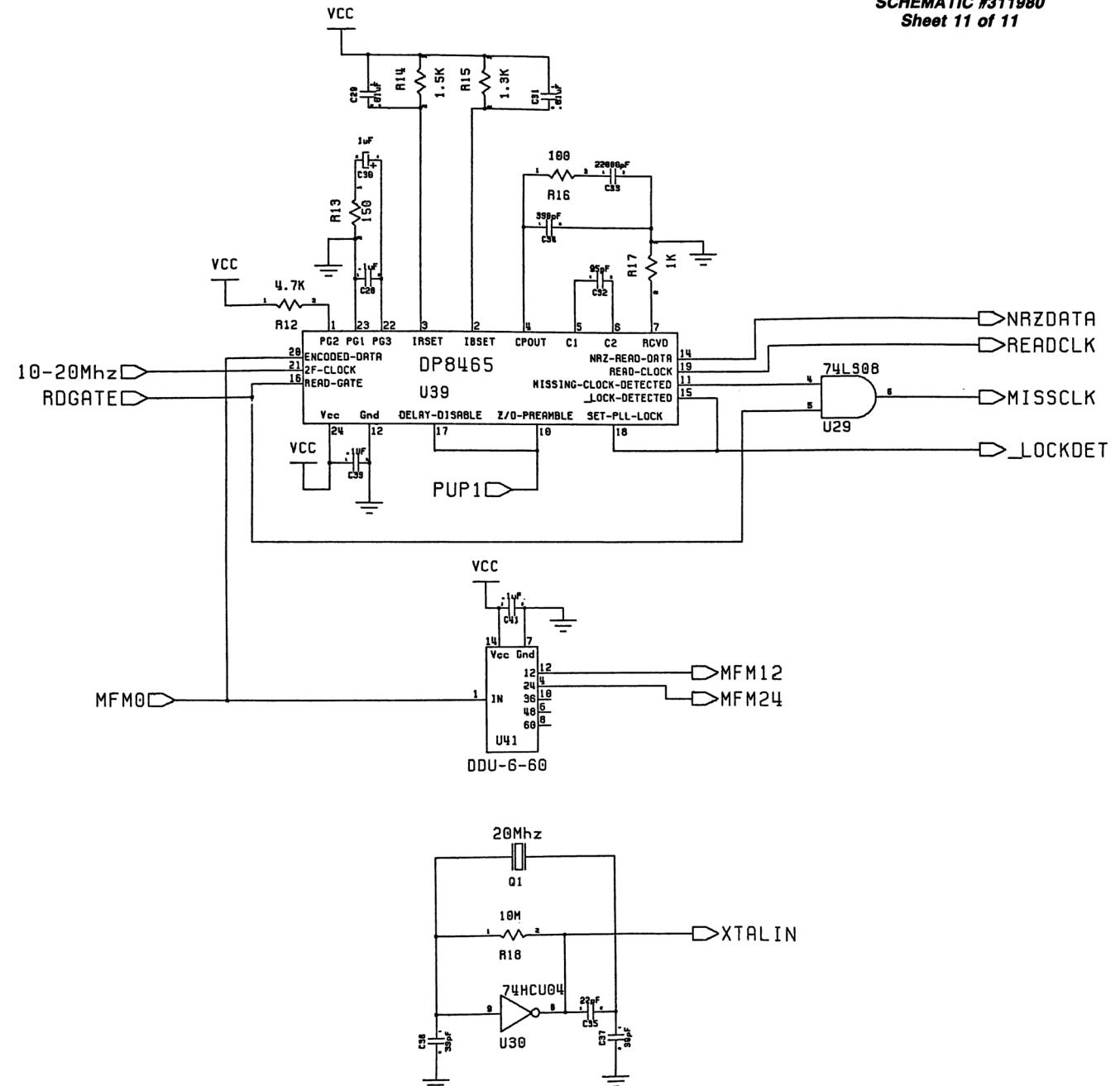


A2090 HARD DISK CONTROLLER

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