

SYSTEM SCHEMATICS

A500
REVISIONS 5, 6A, 7
INCLUDES A501 REV 6C

AUGUST, 1989

PN-314981-02

 **Commodore**

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INTERNATIONAL EDITION

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TABLE OF CONTENTS

TITLE	PAGE
Parts List PCB Assembly #312510, A500, Rev. 5	1
Board Layout PCB Assembly #312511-02, Rev. 5	3
Schematics #312511-02, Rev. 5.....	4
Parts List PCB Assembly #312510, Amiga 500, Rev. 6A/7	13
Schematics #312511-03, Rev. 6A/7.....	14
Parts List PCB Assembly #312604-04, A501, Rev. 6C	22
Schematics #312605-01, Rev. 6C.....	23

COMPONENT PARTS LIST

PCB ASSEMBLY #321510, A500, REV. 5

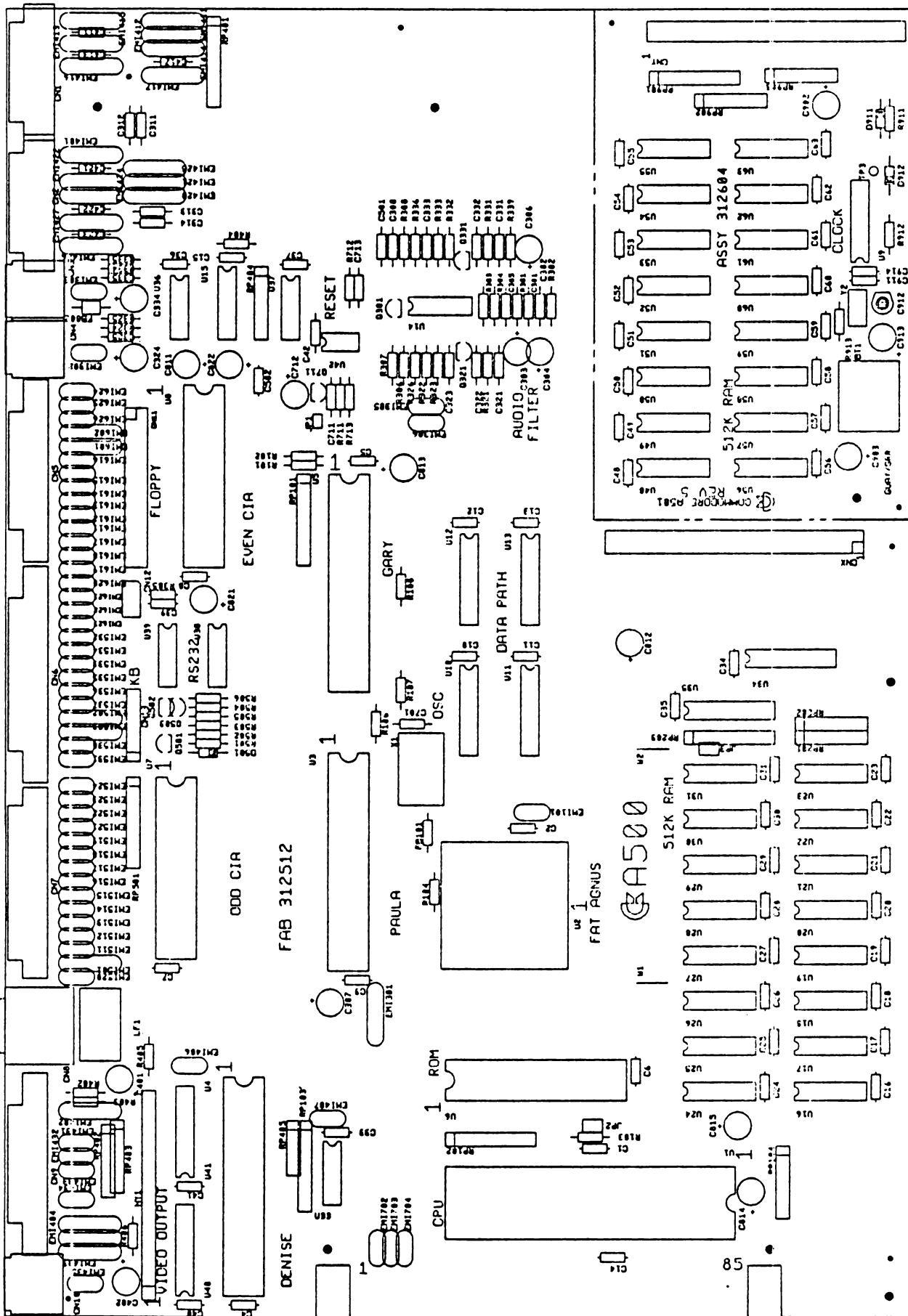
321510-05 PCB ASSY, A500 NTSC 321510-06 PCB ASSY, A500 PAL

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 #314000-01.

IC COMPONENTS			RESISTORS (Continued)		
390084-03	M68000, 8 MHz	U1	901550-22	47K OHM, 5% 1/4W	R712
318070-01	FAT AGNUS, 8370R3 NTSC	U2	901550-84	1M OHM, 5% 1/4W	R711
318071-01	FAT AGNUS, 8371R1, PAL	U2	901550-75	120 OHM, 5% 1/4W	R103-R108
252127-02	PAULA, 8364R7	U3	901550-20	10K OHM, 5% 1/4W	R306,R308
252126-02	DENISE, 8362R8	U4	901550-23	2.7K OHM, 5% 1/4W	R307
318072-01	GARY 5719	U5	901550-82	470K OHM, 5% 1/4W	R326,R336
318029-01	8520R4	U5	901550-89	150 OHM, 5% 1/4W	R409
315093-01	ROM, KICKSTART V1.3	U5			
390226-01	256K X 1 BIT DYNAMIC RAM	U16-U31			
380223-01	256K X 1 BIT DYNAMIC RAM	U16-U31			
901882-01	1488	U38			
901883-01	1489	U39			
390086-01	LF347/TL084	U14			
390110-01	74F04	U33			
901521-31	74LS32	U37			
901521-38	74LS38	U36			
390081-01	74F74	U32			
901521-11	74LS157	U15			
318050-01	74F244	U34,U35			
901521-13	74LS244	U10,U12			
310003-01	74HC245	U40,U41			
901521-29	74LK373	U11,U13			
901523-01	NE555	U42			
252126-01	DENISE, 8362R6	U4			
380223-05	DRAM, 256K X 1 BIT, 80ns	U16-U31			
CONNECTORS			BEADS/FILTERS		
252167-01	DIN, 5 PIN, SQUARE, FEMALE	CNB	252133-01	FERRITE BEAD	RB801,RB802
390242-01	D-SUB, 9 PIN, MALE, RA, SOLDER-IN	CN1,CN2	903025-01	FERRITE BEAD	FB802,FB801, EMI411-EMI417, EMI421-EMI427
390242-03	D-SUB, 23 PIN, MALE, RA, SOLDER-IN	CN9	903025-01	FERRITE BEAD	FB802,FB101 EMI411-EMI417, EMI421-EMI427, EMI402-EMI431- EMI435
390242-05	D-SUB/23PIN/FEMALE/RA/SOLDER-IN	CN5	251842-02	EMI FILTER, 100 pf	EMI301-EMI303, EMI401-EMI405, EMI411-EMI417, EMI421-EMI427, EMI431-EMI435, EMI511-EMI538, EMI601-EMI611- EMI626,EMI701- EMI704
390241-05	D-SUB/25PIN/MALE/RA/SOLDER-IN	CN6	251842-02	EMI FILTER, 100 pf	EMI101,EMI302, EMI303,EMI305, EMI306,EMI402- EMI404,EMI407, EMI431-EMI435, EMI511-EMI524, EMI531-EMI538, EMI601,EMI611- EMI626,EMI702- EMI704
390241-05	D-SUB/25PIN/FEMALE/RA/SOLDER-IN	CN7	251842-02	EMI FILTER, 100 pf	EMI101,EMI302, EMI303,EMI305, EMI306,EMI403- EMI407,EMI511- EMI524,EMI531- EMI538,EMI601- EMI602,EMI611- EMI626,EMI701, EMI702
252122-04	RCA JACK, BLACK	CN3			
252122-01	RCA JACK, WHITE	CN4			
252122-03	RCA JACK, YELLOW	CN10			
390248-01	RCA JACK, METAL	CN3,CN4,CN10			
325516-04	HEADER, 4PIN, POLARIZED, SIL	CN12			
903326-08	HEADER, 8PIN, SIL	CN13			
903345-17	HEADER, 34PIN, DIL	CN11			
390224-01	HEADER/DUAL/RA/LONG/56POS/MALE	CNX			
RESISTORS			CAPACITORS		
902410-18	NETWORK, 10K X 9 10PIN	RP501	900462-27	.39 pF, MLC, AXIAL, NPO	C703
390227-03	NETWORK, 22 OHM X 5, 10PIN	RP103	900462-37	100 pF, MLC, AXIAL, NOP	C704
902422-05	NETWORK, 47 OHM X 4, 8PIN	RP102,RP403	900463-16	1000 pF MLC AXIAL X7R	C705
902422-06	NETWORK, 68 OHM X 4, 8PIN	RP210,RP202	900463-16	1000 pF MLC AXIAL X7R	C411-C413,C421-C423
390227-05	NETWORK, 68 OHM X 5, 10PIN	RP203	900463-23	3900 pF MLC AXIAL X7R	C323,C333
902441-10	NETWORK, 120 OHM X 5, 6PIN	RP405	900463-26	6800 pF MLC AXIAL X7R	C322,C332
902442-17	NETWORK, 470 OHM X 7, 8PIN	RP104	390082-02	.01 uF MLC AXIAL Z5U	C410,C412,C801,C713
902410-08	NETWORK, 4.7K X 9, 10PIN	RP101,RP102,RP401,RP501	390082-02	.01 uF MLC AXIAL Z5U	C308,C713
902422-06	NETWORK, 68 OHM X 4, 8PIN	RP404	900463-36	.047 uF MLC AXIAL X7R	C311-C314
390186-01	ZERO OHM RESISTOR	W1,W2	390082-01	.1 uF MLC AXIAL Z5U	C7,C8,C10,C11-C13,C15,C33-C37,C39,C321,C331,C711,C701-01 & -02)
901550-118	1 OHM, 5% 1/4W	EM1301,EM1406	390082-05	.22 uF MLC AXIAL Z5U	C1-C6,C16-C32,C14,C40-C42,C301,C302,C305,C501,C502
901550-129	5.1 OHM, 5% 1/4W	EM1401,R405,R406	390082-05	.22 uF MLC AXIAL Z5U	C325,C335
901550-64	10 OHM, 5% 1/4W	R301,R302	390101-06	10 uF ELECT RADIAL	C306,C712
901550-90	27 OHM, 5% 1/4W	R101,R102	390101-04	22 uF ELECT RADIAL	C303,C304,C307,C334
901600-15	47 OHM, 5% 1/2W	EM1501,EM1503	390101-01	47 uF ELECT RADIAL	C812,C815,C821,C822
901550-108	360 OHM, 5% 1/4W	R331,R321	390101-02	100 uF ELECT RADIAL	C307,C811
901550-57	390 OHM, 5% 1/4W	R325,R335	900100-56	3300 uF 10 V ELECT RADIAL	C401,C402
901550-58	470 OHM, 5% 1/4W	R305	251029-06	VARIABLE CAP 4.5-45 pf	C702
901550-01	1K OHM, 5% 1/4W	R303,R304,R324,R334,R713,R305			
901550-17	1.2K OHM, 5% 1/4W	R704			
901550-23	2.7K OHM, 5% 1/4W	R701			
901550-39	3.9K OHM, 5% 1/4W	R702			
901550-19	4.7K OHM, 5% 1/4W	R402,R403,R502-R504			
901550-20	10K OHM, 5% 1/4W	R322,R323,R333,R339,R501,R505,R506			
901550-15	27K OHM, 5% 1/4W	R703			

COMPONENT PARTS LIST
PCB ASSEMBLY #321510, A500, REV. 5 (Continued)

TRANSISTORS/DIODES			MISCELLANEOUS (Continued)		
390239-01	TRANS 2N5770 NPN OSC.	Q701	904150-06	SOCKET, 40 PIN DIP	U6-U8
902658-01	TRANS 2N3904 NPN GP	Q501,Q711	251313-01	SOCKET, 48 PIN DIP	U3-U5
902707-01	TRANS 2N3906 PNP GP	Q502,Q503,Q301	251313-02	SOCKET, 48 PIN DIP	U3-U5
390254-01	TRANS JFET PN4302 MPF-102	Q321,Q331	390185-01	SOCKET, 84 PIN PLCC	U2
900850-01	DIODE, 1N4148	D501	904150-10	SOCKET, 64 PIN DIP	U1
CRYSTALS			312519-01	WIRE ASSEMBLY JUMPER	
900556-11	28.63636 MHz	Y1	900462-37	CAP 100 pF MLC AXIAL NOP	C101,R106,R107,R108, R103,EMI402
900556-12	28.37516 MHz	Y1	390082-02	CAP 0.01 uF MLC AXIAL Z5U	C801-C803
325566-14	OSCILLATOR, 28.63636 MHz	X1	380223-03	IC, 256K X 1 BIT DYNAMIC RAM	U16-U31
252344-01	OSCILLATOR, 28.37515 MHz	X1	390226-03	IC, 256K X 1 BIT DYNAMIC RAM	U16-U31
MISCELLANEOUS			390226-05	IC, 256K X 1 BIT DYNAMIC RAM	U16-U31
390229-02	VIDEO HYBRID	HY1	901550-94	RES 68 OHM 5% 1/4W	
390229-01	VIDEO HYBRID	HY1	900463-36	CAP .047 uF MLC AXIAL X7R	
251878-02	LINE FILTER, 8PIN	LF1	320481-01	SHRINK TUBING .50 IN. LG.	
901151-19	CHOKE, 3.3 uH	L701	312511-01	SCHEMATIC	



A500 Board Layout #312510, Rev. 5

Jumpers and Stuff

REF	TYPE	DESCRIPTION	PAGE
JP1	BL0B	Keyboard Reset	7
JP2	BL0B	Memory Addr. C0 vs 08	2
JP3	BL0B	Int. Memory Res0 vs 1	3
			4
TP1	POST	RTC Frequency Test	9
C912	TRIM	RTC Frequency Adjust	9
W1-2	0 Ohm	Ground Continuity FCC	8

Connectors

REF	TYPE	DESCRIPTION	PAGE
CN1	DB9P	Mouse/Joystick 1	2
CN2	DB9P	Mouse/Joystick 2	2
CN3	RCA-J	Right Audio Output	4
CN4	RCA-J	Left Audio Output	4
CN5	DB23S	External Floppy	7
CN6	DB25P	RS232 Serial Port	6
CN7	DB25S	Parallel Printer Port	6
CN8	SQ DIN	Power Supply Connector	8
CN9	DB23P	Video Output	5
CN10	RCA-J	Composite Video	5
CN11	DIL-34	Internal Floppy Signal	7
CN12	SIL-4	Internal Floppy Power	8
CN13	SIL-8	Keyboard Connector	6
P1	EDGE86	Expansion Connector	7
CNX	RA-56H	Mem. Exp. Main-Board	3
CNY	RA56-F	Mem. Exp. Sub-Board	9

Signal Glossary

SIGNAL	DESCRIPTION (AREA)	PAGES
28MHz	28.63636 MHz Master Clock	2
7MHz	7.15909 MHz Processor Clock	2.5
AI23:1	Processor Address Bus (68000)	2.3, 7, 9
ACK	Data Acknowledge (Parallel Port)	6
AS	Address Strobe (68000)	2.7
AUDIN	Audio Input (RS232 Port)	4.6
AUDOUT	Audio Output (RS232 Jack)	4.6
BFER	Bus Error (68000)	2.7
BG	Bus Grant (68000)	2.7
BGACK	Bus Grant Acknowledge (68000)	2.7
BLISS	Blitter Slowdown (Chips)	2
BLIT	Chip Memory Access (Chips)	2.7
BR	Bus Request (68000)	2.7
BUSY	Device Busy (Parallel Port)	6
CASL/U	Column Address Strobe (DRAM)	2.3, 9
CCK/CCKQ	Color Clock / Quadrature (Chips)	2.4, 7
CDAC	7.15909 MHz Quadrature Clock (Chips)	2.5, 7
CHNG	Media Change (Floppy)	6.7
CLKRD/WR	Read-Time Clock Read / Write (RTC)	2.9
COMP	Monochrome Composite Video (Video)	5
CSYNC	Composite Sync (Video)	2.5
CTS	Clear to Send (RS232 Port)	6
DI(15:0)	Processor Data Bus (68000)	2.3, 6, 7, 9
DIR	Step Direction (Floppy)	6.7
DKRD	Disk Read Data (Floppy)	4.7
DKWD	Disk Write Data (Floppy)	4.7
DKWE	Disk Write Enable (Floppy)	4.7
DMAL	Chip DMA Request Line (Chips)	2.4
DRA(8:0)	DRAM Address Bus (DRAM)	2.3, 9
DRD(15:0)	DRAM Data Bus (DRAM)	2.3, 4, 5, 9
DSR	Data Set Ready (RS232 Port)	6
DTACK	Data Transfer Acknowledge (68000)	2.3, 7
DTR	Data Terminal Ready (RS232 Port)	6
E	Peripheral Enable Clock (68000)	2.6, 7
EXRAM	Expansion Memory Present	2.3, 9
FCL2:0	Function Code (68000)	2.7
FIRE0/1	Fire Button 0/1 (Joysticks)	2.5, 6
HLT	Processor Hold (68000)	2.7
H SYNC	Horizontal Sync (Video)	2.5, 6
INDEX	Index Pulse (Floppy)	6.7
INT12,3,61	Interrupt Request (Chips)	2.4, 6, 7
IORESET	I/O Reset	6.7
IPL(2:0)	Interrupt Priority Level (68000)	2.4, 7
KBCLOCK	Keyboard Clock (Keyboard)	6
KBDATA	Keyboard Data (Keyboard)	6
KBRESET	Keyboard Reset (Keyboard)	6
LDS/UDS	Upper / Lower Data Strobes (68000)	2.7
LED	Power On LED / Audio Filter Disable	4.6

SIGNAL	DESCRIPTION (AREA)	PAGES
LEFT/RIGHT	Left Right Audio (Audio)	4
MTR	Motor On (Floppy)	4.6
MTRO	Motor On - Drive 0 (Floppy)	4.6, 7
MOV/MOH	Mouse 0 Quadrature V/H (Joysticks)	5
M1V/M1H	Mouse 1 Quadrature V/H (Joysticks)	5
OVL	Overlay ROM over RAM	2.6
OVR	Override System Decoding	2.7
PIXELSW	Genlock Pixel Switch (Video)	5
POT0X/DY	Pot Lines 0 X/Y (Joysticks)	4.5
POT1X/DY	Pot Lines 1 X/Y (Joysticks)	4.5
POUT	Paper Out (Parallel Port)	6
PPD(7:0)	Parallel Port Data (Parallel Port)	6
RAMEN	RAM Enable (Chips)	2
REGEN	Chip Register Enable (Chips)	2
RAS0/1	Row Address Strobe (DRAM)	2.3, 9
RDY	Drive Ready (Floppy)	6.7
RESET	General Reset	6.7
RCA(8:1)	Register Address Bus (Chips)	2.4, 5
R/G/B	Red / Green / Blue (Video)	5
RJ	Ring Indicate (RS232 Port)	6
ROMEN	ROM Enable (ROM)	2.3
RTS	Request to Send (RS232 Port)	6
RST	Processor Reset (68000)	2.4, 7
RXD	Receive Data (RS232 Port)	4.6
RW	Processor Read/Write (68000)	2.6, 7
SEL	Select (Parallel Port)	6
SEL(3:0)	Drive Select (Floppy)	4.6, 7
SIDE	Side Select (Floppy)	6.7
STEP	Step In/Out Command (Floppy)	6.7
TRK0	Track Zero Sense (Floppy)	6.7
TXD	Transmit Data (RS232 Port)	4.6
VMA	Valid Memory Address (68000)	2.6, 7
VPA	Valid Peripheral Address (68000)	2.7
VSYNC	Vertical Sync (Video)	2.5, 6
WE	Write Enable (DRAM)	2.3, 9
WPROT	Write Protect Sense (Floppy)	6.7
XCLK	External Genlock Clock (Video)	2.5
XCLKEN	External Clock Enable (Video)	2.5
XRDY	External Data Ready	2.5

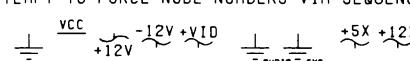
ECO Log

ECO NUMBER	DESCRIPTION	DATE
870152	Additional Parts for FCC	05/12/87
870222	The "Transistor Fix"	06/16/87
870302	Change RI resistor for FTZ	10/09/87
870307	More FCC Changes	09/04/87
880238	Add E Clock Termination	03/03/89

Key Components

REF	CHIP	DESCRIPTION	PAGE
U1	68000	68000 Processor	2
U2	8370	Fat Agnus - NTSC	2
	8371	Fat Agnus - PAL	olt
U3	8372	Agnus HR	olt
U4	8364	Paulo	4
	8362	Denise	5
U5	8373	Denise HR	olt
U6	5719	Guru	2, 4
	ass't	ROM 128Kx16, 200 nS	3
U7-8	8520	Amiga VIA, 1 MHz	6
U9	6242B	OKI Bus RTC	9
U14	LF347	BiMOS Op-Amp	4
	TL084	BiMOS Op-Amp	olt
U38	1488	EIA Line Driver	4
U39	1489	EIA Line Receiver	4
U42	NE555	Timer	7
U16-31	ass't	DRAM 256Kx1, 150 nS	3
U48-63	ass't	DRAM 256Kx1, 150 nS	9
X1	DSC	TTL 28.63636 MHz NTSC	2
	DSC	TTL 28.37512 MHz PAL	olt
Y2	XTAL	Watch Type 32768 Hz	9
HY1	ass't	Video Hybrid	5

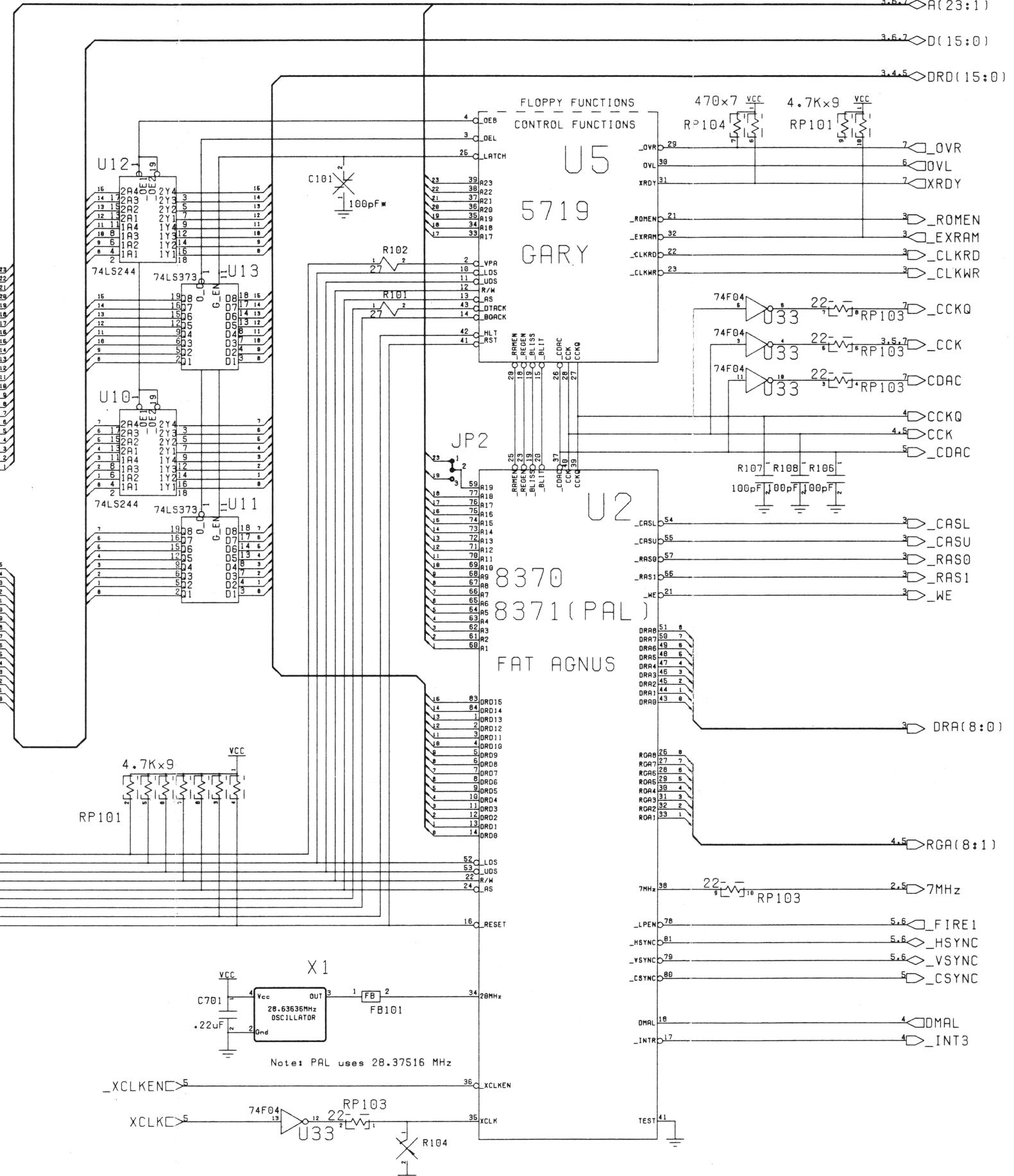
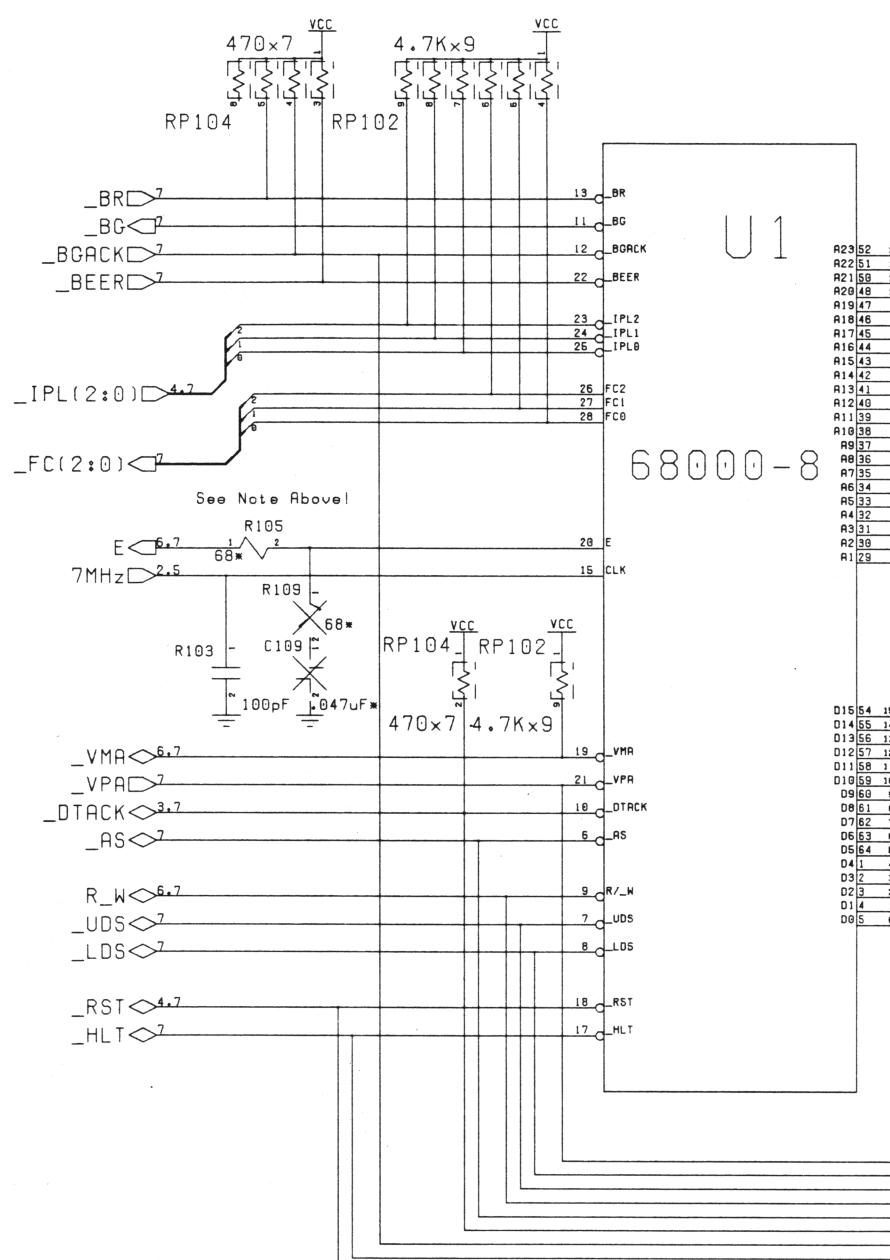
ATTEMPT TO FORCE NODE NUMBERS VIA SEQUENCE

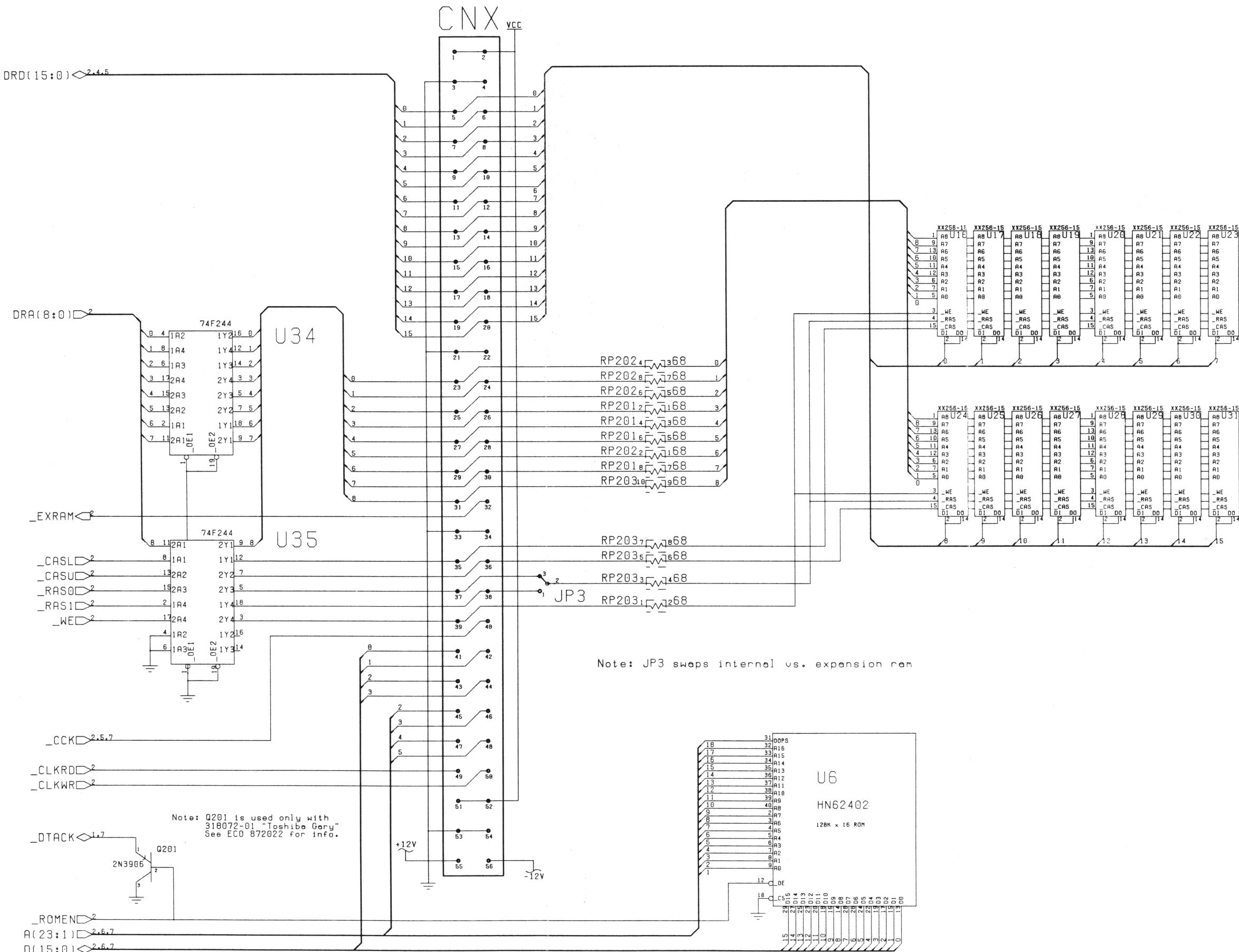


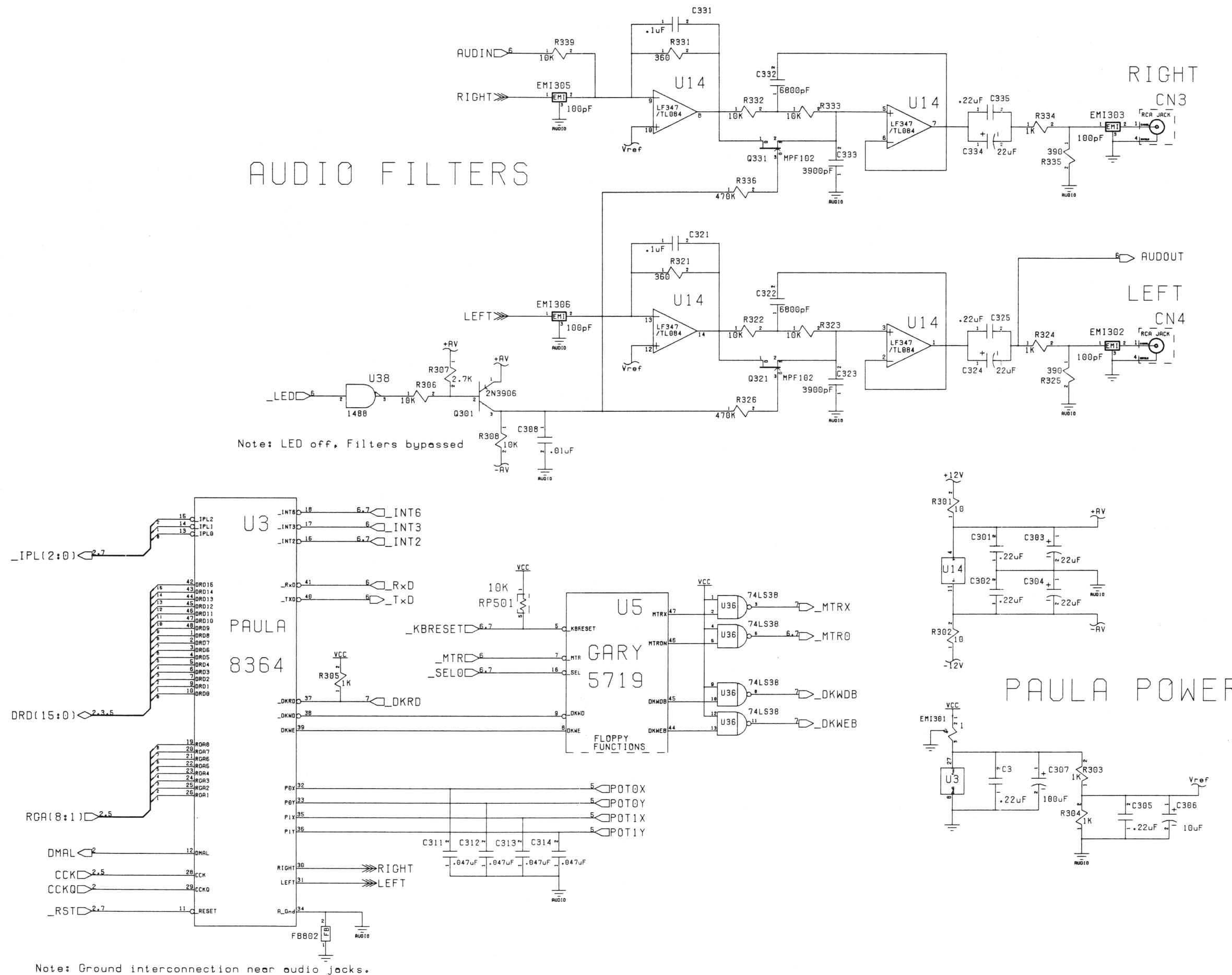
Note: R103-104, 106-108, C101 are for EMI Control and may be loaded with funny things...

JP2 controls where expansion ram maps to:
A23 -> C00000 (default), A19 -> 080000

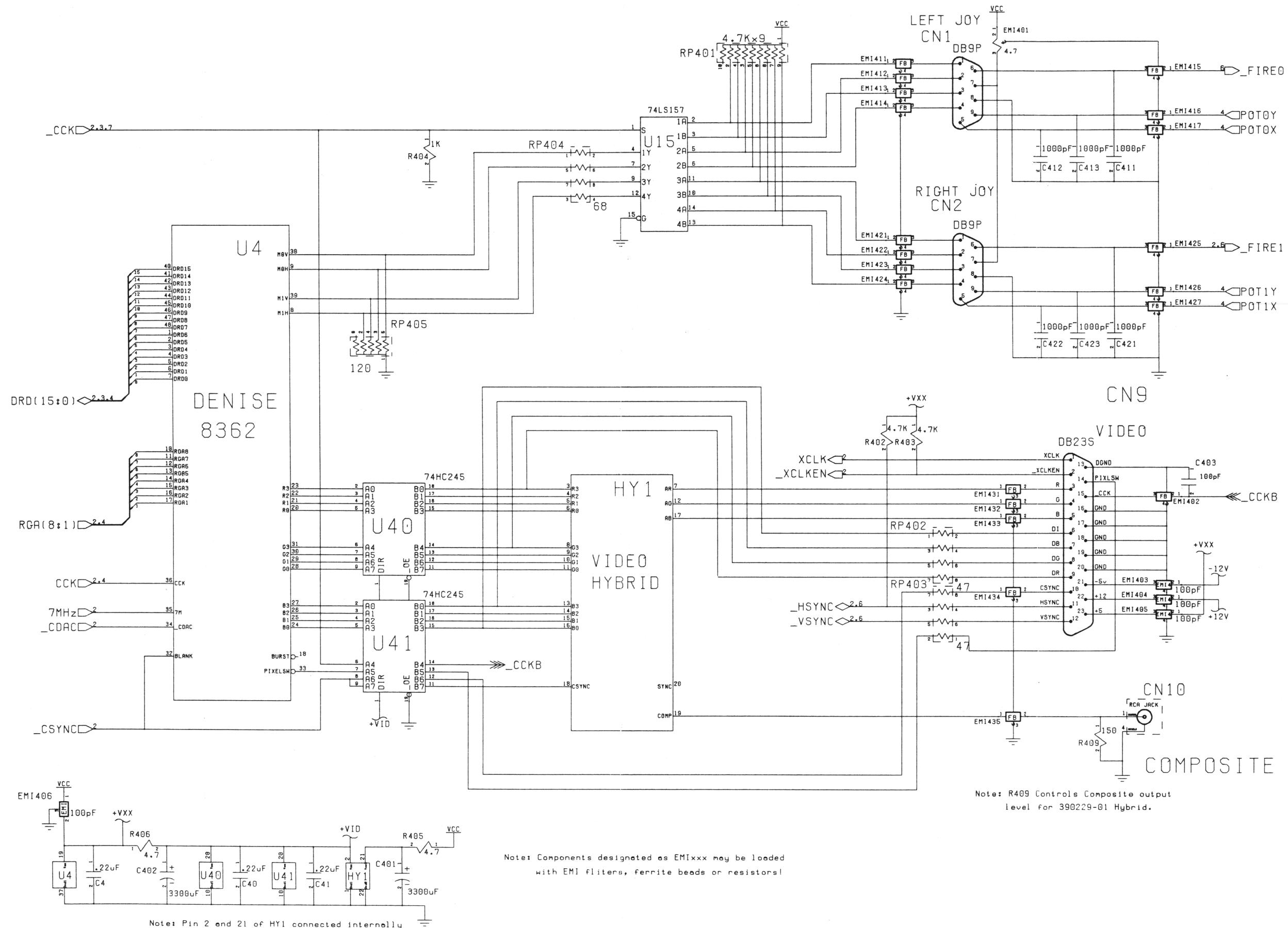
R109/C109, R105 Details, see ECO 880283
C101 FCC Filter Capacitor per ECO 870207

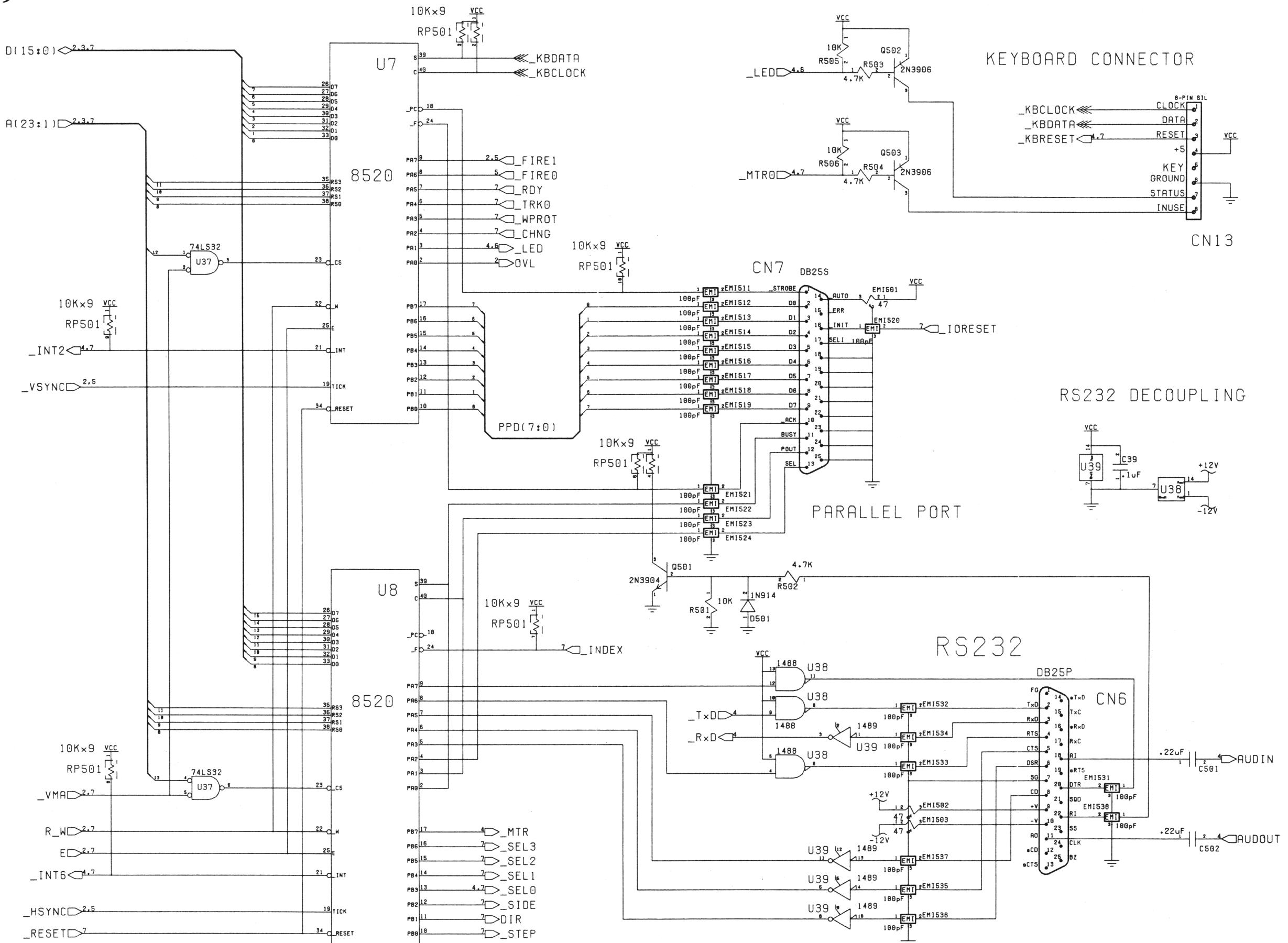


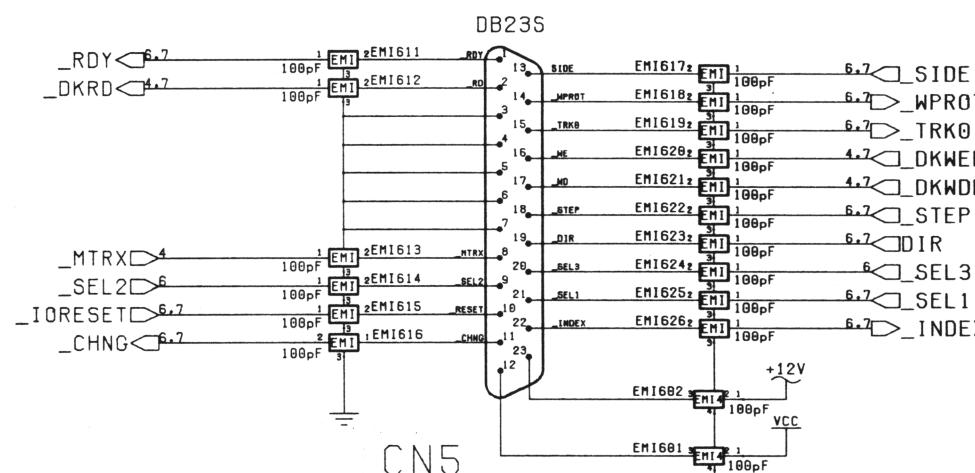




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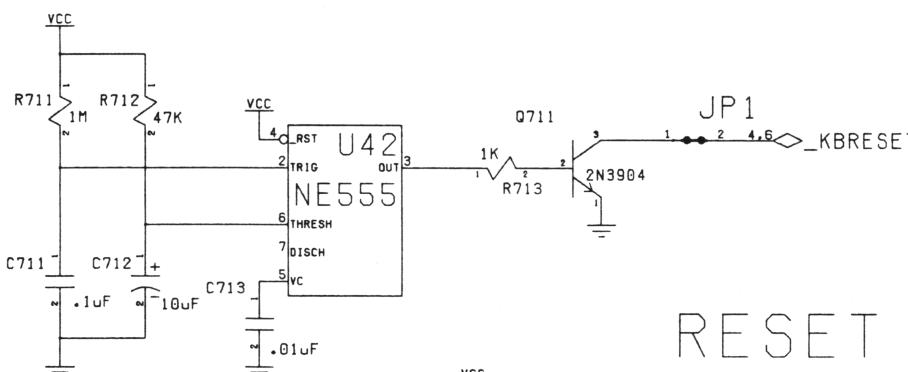
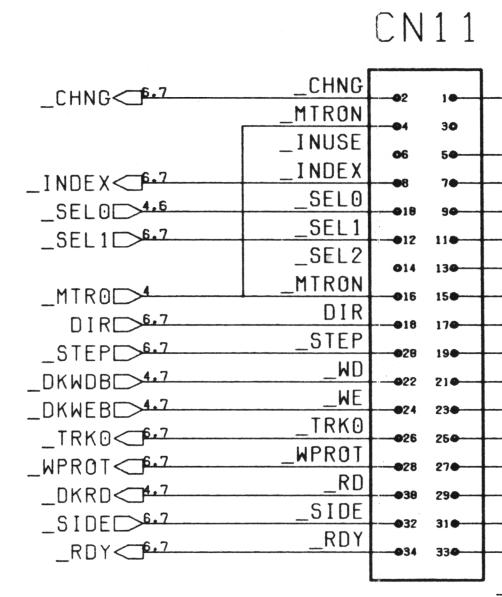




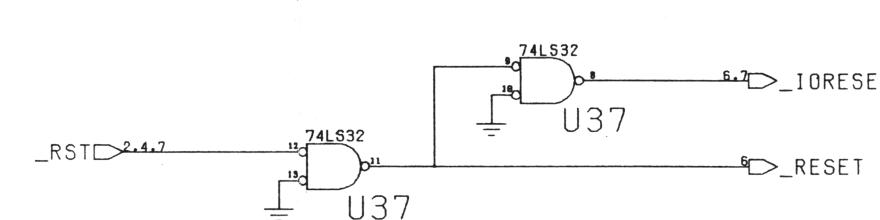


INTERNAL FLOPPY
EXTERNAL FLOPPY

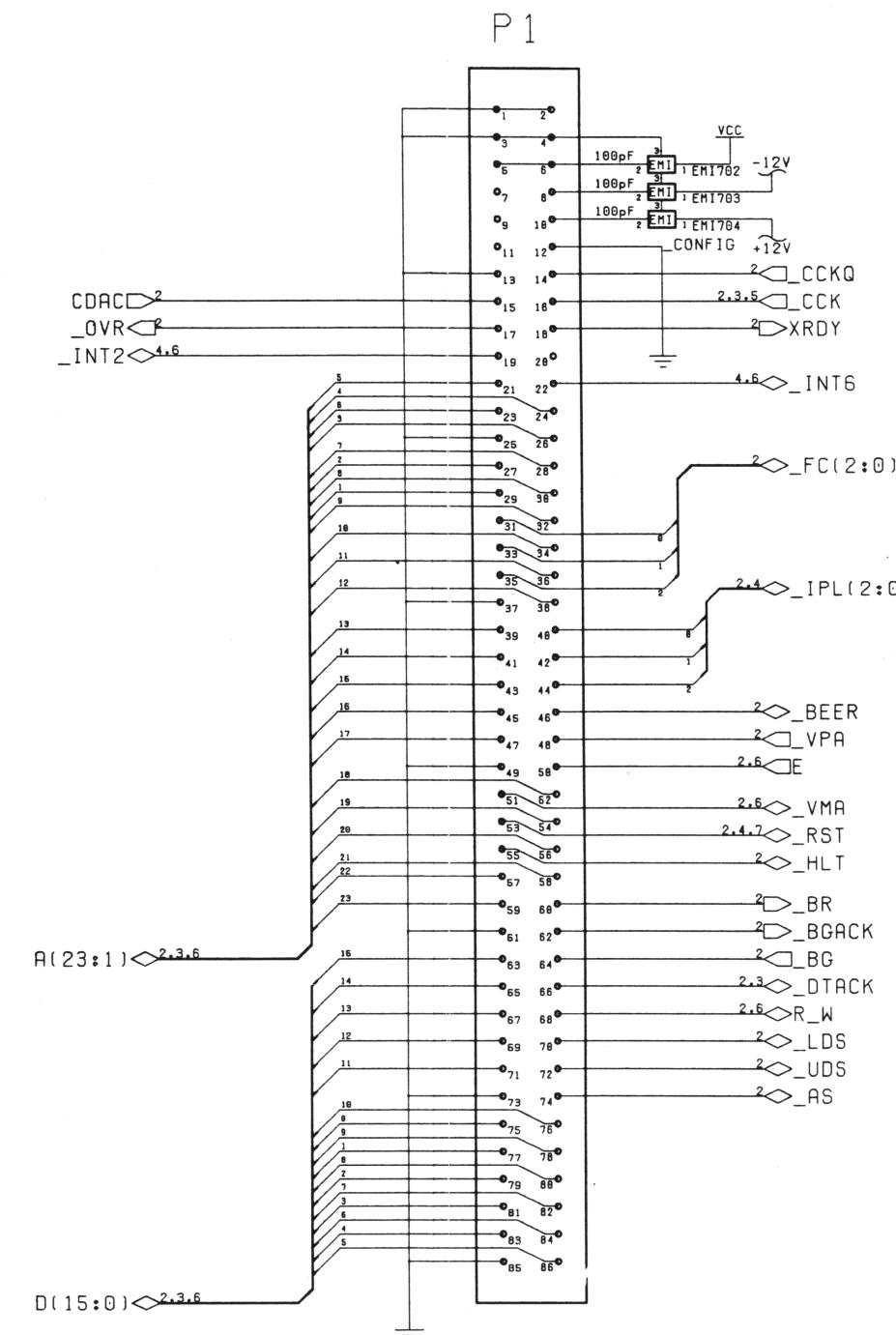
INTERNAL FLOPPY



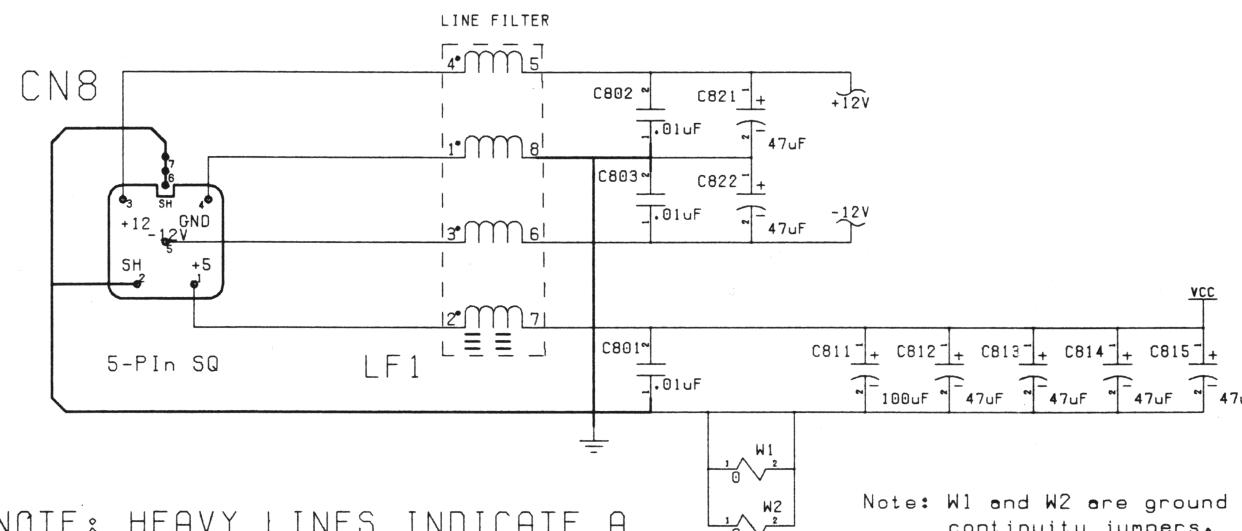
RESET ACTION



EXPANSION

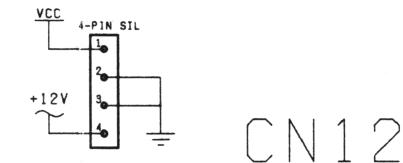


POWER INPUT

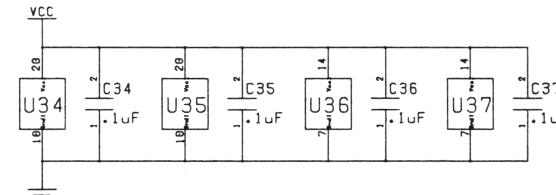
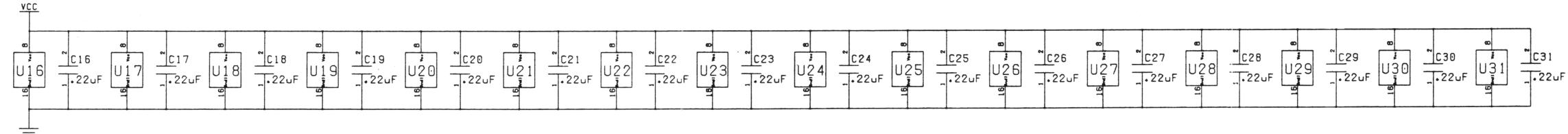
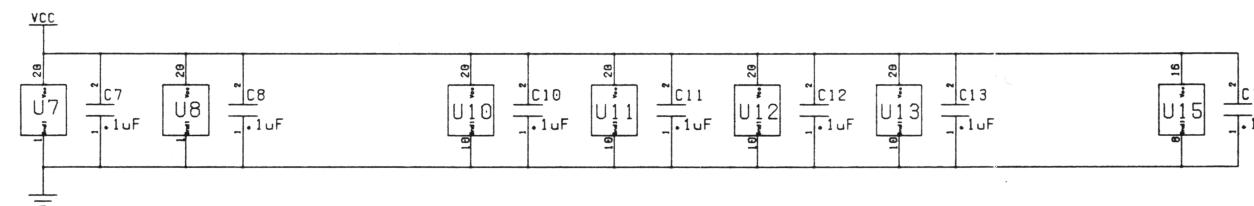
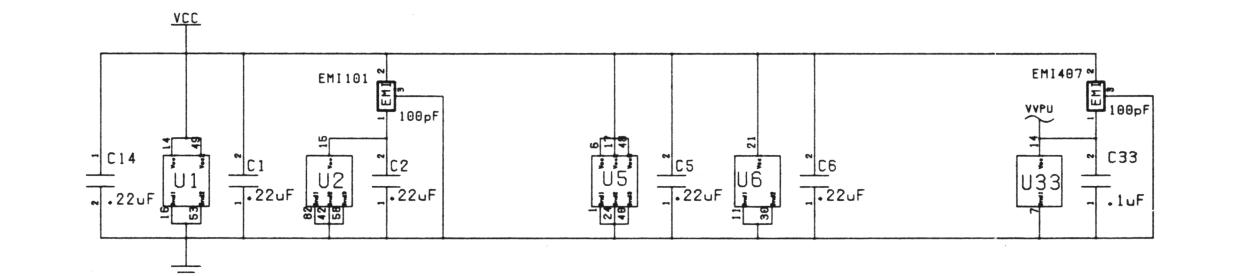


NOTE: HEAVY LINES INDICATE A SINGLE POINT CONNECTION

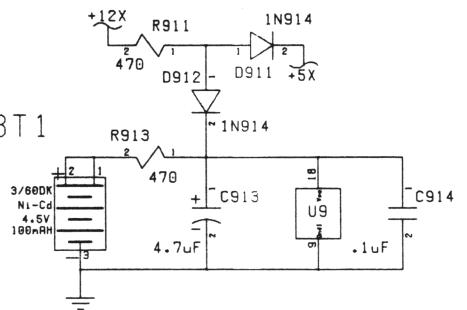
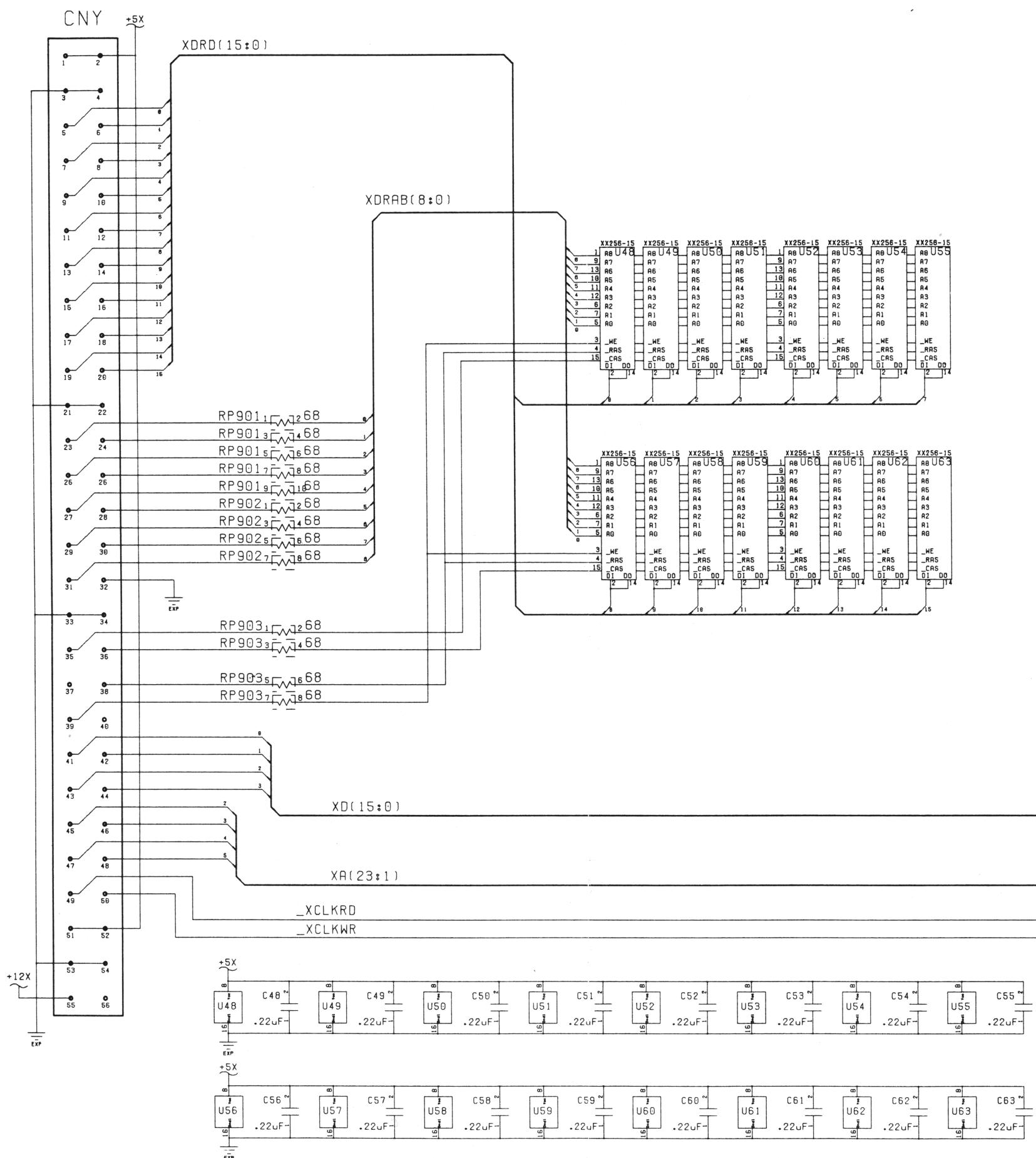
FLOPPY POWER



SPARES

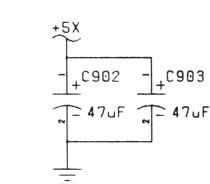
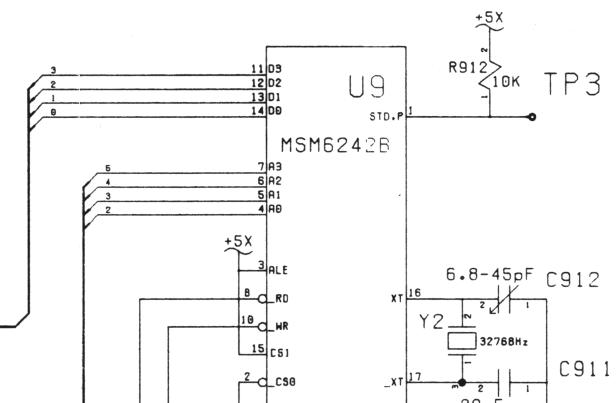


DECOUPLING



Real Time Power

Real Time Clock



COMPONENT PARTS LIST

PCB ASSEMBLY #312510, AMIGA A500, REV6A/7

312510-07 PCB ASSEMBLY, A500 NTSC

312510-08 PCB ASSEMBLY, A500 PAL

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 #314000-01.

IC COMPONENTS			DIODES		
901882-01	INTERFACE MC1488	U38	900850-01	IN4148	D501
901883-03	INTERFACE MC1489	U39	390017-01	IN914	D501
390086-01	LINEAR LF347/TL084	U14			
901523-01	LINEAR NE555	U42			
390084-03	MC68000 OMHz	U1			
318072-01	MOS 5719 R2 GARY	U5			
252126-02	MOS 8362 R8 DENISE	U4			
252127-02	MOS 8364 R7 PAULA	U3			
318069-02	MOS 8372 R3 AGNUS HR	U2			
318029-02	MOS 8520 R4 AMIGA CIA	U7,U8			
390110-01	TTL 74F04	U33			
318050-01	TTL 74F244	U34,U35			
310003-01	TTL 74HC245	U40,U41			
901521-11	TTL 74LS157	U15			
901521-13	TTL 74LS244	U10,U12			
901521-31	TTL 74LS32	U37			
901521-29	TTL 74LS373	U11,U13			
901521-38	TTL 74LS38	U36			
390229-01	VIDEO HYBRID	HY1			
318070-01	MOS 8370 R3 FAT AGNUS (NTSC)	U2			
318071-01	MOS 8371 R1 FAT AGNUS (PAL)	U2			
390433-01	MOS 8373 R2 DENISE HR	U4			
381099-04	DRAM 256K X 4 120 nS	U16-U19			
381099-02	DRAM 256K X 4 100 nS	U16-U19			
	NOT LOADED				
395093-02	ROM 256K X 16 KICKSTART 1.3	U20-U23			
	U6				
CAPACITORS			TRANSISTORS		
900462-29	MLC AXIAL NOP 47pF	C403	390254-01	JFET MPF102/PN4302	Q321,Q331
900462-29	MLC AXIAL NOP 47pF	E102,E103,E106-3109	902658-01	NPN 2N3904	Q501,Q711
900462-29	MLC AXIAL NOP 47pF	XC1-XC3	902707-01	PNP 2N3906	Q301,Q502,Q503
900463-16	MLC AXIAL X7R 1000pF	C411-C413,C421-C423			
900463-23	MLC AXIAL X7R 3900pF	C323,C333			
900463-26	MLC AXIAL X7R 6800pF	C322,C332			
900463-36	MLC AXIAL X7R .047pF	C311-C314			
900463-37	MLC AXIAL X7R .1uF	C321,C331			
390082-01	MLC AXIAL ZSU .01uF	C308,C713,C800-C803			
390082-02	MLC AXIAL ZSU .1uF	C711			
390082-04	MLC AXIAL ZSU .33uF	C1-C8,C10-C19,C33-C37,C39-C42,C301,C302,C305,C325,C335,C501,C502,C701,C804			
	NOT LOADED				
390101-06	ELECT ALUM RADIAL, 10uF 16V	C20-C23			
390101-04	ELECT ALUM RADIAL, 22uF 35V	C306,C712			
390101-01	ELECT ALUM RADIAL, 47uF 35V	C303,C304,C324,C334			
390101-02	ELECT ALUM RADIAL, 100uF 16V	C821,C822			
390101-03	ELECT ALUM RADIAL 470uF 16V	C811-C816			
900100-56	ELECT ALUM RADIAL 3300uF 10V	C307			
	C401,C402				
CONNECTORS			RESISTORS		
325516-04	4PIN FLOPPY POWER	CN12	901600-36	1/2W CF, 1	R309
252167-01	5PIN SQ DIN	CN8	901600-50	1/2W CF, 4.7	R401,R405,R406,R408
903335-08	8PIN SIL W/KEY	CN13	901600-15	1/2W CF, 47	E501,E503
390241-03	D-SUB/23PIN/FEMALE/DB23S	CN5	901550-64	1/4W CF, 10	R301,R302
390242-03	D-SUB/23PIN/MALE/DB23P	CN9	901550-90	1/4W CF, 27	R101,R102
290241-05	D-SUB/25PIN/FEMALE/DE25S	CN7	901550-56	1/4W CF, 47	R103-R107,R113
290242-05	D-SUB/25PIN/MALE/DB25P	CN6	901550-94	1/4W CF, 68	E104,E105
390242-01	D-SUB/9PIN/MALE/DB9P	CN1,CN2	901550-94	1/4W CF, 68	R111,R112,R114
350903-01	HEADER 34PIN W/KEY	CN11	901550-94	1/4W CF, 68	XR1
390224-07	HEADER 56PIN MALE RA	CNX	901550-49	1/4W CF, 100	R507
252122-03	RCA JACK, YELLOW	CN10	901550-89	1/4W CF, 150	FB101
252122-01	RCA JACK, WHITE	CN4	901550-108	1/4W CF, 360	R409
252122-04	RCA JACK, BLACK	CN3	901550-57	1/4W CF, 390	R321,R331
903326-08	8PIN SIL W/KEY	CN13	901550-01	1/4W CF, 1K	R325,R335
903345-17	HEADER 34PIN W/KEY	CN11	901550-23	1/4W CF, 2.7K	R303-R305,R324,R334,R713
390248-01	RCA JACK, METAL	CN10	901550-19	1/4W CF, 4.7K	R307,R502
390248-01	RCA JACK, METAL	CN3,CN4	901550-20	1/4W CF, 10K	R201,R202,R402,R403,R503,R504
	NOT LOADED				
	C401,C402				
MISCELLANEOUS			901550-22	1/4W CF, 47K	R712
	NOT LOADED		901550-82	1/4W CF, 470K	R326,R336
	C401,C402		901550-84	1/4W CF, 1M	R711
	NOT LOADED		902410-11	RES PACK SIP PULLUP, 470 X 9	RP104
	C401,C402		902410-08	RES PACK SIP PULLUP, 4.7K X 9	RP101,RP102,RP401
	NOT LOADED		902410-07	RES PACK SIP PULLUP, 10K X 9	RP501
	C401,C402		390227-03	RES PACK SIP SERIES, 22 X 5	RP103
	NOT LOADED		390227-05	RES PACK SIP SERIES, 68 X 5	RP201,RP203
	C401,C402		390227-06	RES PACK SIP SERIES, 47 X 5	RP402,RP403
	NOT LOADED		901600-129	RES 1/2W CF, 5.1	R401,R405,R406,R408
	C401,C402		390227-08	RES PACK SIP SERIES, 39 X 5	RP103
	NOT LOADED				RP105-RP111,RP405
SCHEMATIC			904150-06	SOCKET, 40PIN DIP	U6-U8
	NOT LOADED		251313-01	SOCKET, 48PIN DIP	U3-U5
	C401,C402		904150-10	SOCKET, 64PIN DIP	U1
	NOT LOADED		390185-01	SOCKET, 84PIN PLCC	U2
	C401,C402		251313-02	SOCKET, 48PIN DIP	U3-U5
	NOT LOADED		252344-01	OSCILLATOR, 28.37516MHz (PAL)	X1
	C401,C402		325566-14	OSCILLATOR, 28.63636MHz (NTSC)	X1
	NOT LOADED		312511-03	SCHEMATIC	

Jumpers and Stuff

REF	TYPE	DESCRIPTION	PAGE
JP1	BLOB	Keyboard Reset	7
JP2	BLOB	Memory Addr. C0 vs 08	2
JP3	BLOB	Expansion RAS Select	3
JP4	BLOB	NTSC/PAL Selection	2
JP5	BLOB	Genlock Clock Select	2
JP6	BLOB	7MHz Clock Option	7
JP7	BLOB	Expansion/Tick Option	3/6
JP8	BLOB	Light Pen Port Select	6
JP10	BLOB	RS232 Audio I/O Cutout	4
JP11	BLOB	TTL vs RS170 Comp Sync	5

Connectors

REF	TYPE	DESCRIPTION	PAGE
CN1	DB9P	Mouse/Joystick 1	2
CN2	DB9P	Mouse/Joystick 2	2
CN3	RCA-J	Right Audio Output	4
CN4	RCA-J	Left Audio Output	4
CN5	DB23S	External Floppy	7
CN6	DB25P	RS232 Serial Port	6
CN7	DB25S	Parallel Printer Port	6
CN8	SQ DIN	Power Supply Connector	8
CN9	DB23P	Video Output	5
CN10	RCA-J	Composite Video	5
CN11	DIL-34	Internal Floppy Signal	7
CN12	SIL-4	Internal Floppy Power	8
CN13	SIL-8	Keyboard Connector	6
P1	EDGE86	Expansion Connector	7
CNX	RA-56H	Mem. Exp. Main-Board	3

ECO Log

ECO NUMBER	DESCRIPTION	DATE
880283	Add E Clock Termination	03/03/89

Signal Glossary

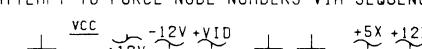
SIGNAL	DESCRIPTION (AREA)	PAGES
28MHZ	28.63636 MHz Master Clock	2
7MHz	7.15909 MHz Processor Clock	2, 5
A[23:1]	Processor Address Bus (68000)	2, 3, 7
ACK	Data Acknowledge (Parallel Port)	6
AS	Address Strobe (68000)	2, 7
AUDIN	Audio Input (RS232 Port)	4, 6
AUDOUT	Audio Output (RS232 Jack)	4, 6
BEER	Bus Error (68000)	2, 7
BG	Bus Grant (68000)	2, 7
BGACK	Bus Grant Acknowledge (68000)	2, 7
BLISS	Blitter Slowdown (Chips)	2
BLIT	Chip Memory Access (Chips)	2, 7
BR	Bus Request (68000)	2, 7
BUSY	Device Busy (Parallel Port)	6
CASL/U	Column Address Strobe (DRAM)	2, 3
CCK/CCKQ	Color Clock / Quadrature (Chips)	2, 4, 7
CDAC	7.15909 MHz Quadrature Clock (Chips)	2, 5, 7
CHNG	Media Change (Floppy)	6, 7
CLKRD/WR	Read-Time Clock Read / Write (RTC)	2, 9
COMP	Monochrome Composite Video (Video)	5
CSYNC	Composite Sync (Video)	2, 5
CTS	Clear to Send (RS232 Port)	6
D[15:0]	Processor Data Bus (68000)	2, 3, 6, 7
DIR	Step Direction (Floppy)	6, 7
DKRD	Disk Read Data (Floppy)	4, 7
DKWD	Disk Write Data (Floppy)	4, 7
DKWE	Disk Write Enable (Floppy)	4, 7
DMAL	Chip DMA Request Line (Chips)	2, 4
DRA[8:0]	DRAM Address Bus (DRAM)	2, 3
DRD[15:0]	DRAM Data Bus (DRAM)	2, 3, 4, 5
DSR	Data Set Ready (RS232 Port)	6
DTACK	Data Transfer Acknowledge (68000)	2, 3, 7
DTR	Data Terminal Ready (RS232 Port)	6
E	Peripheral Enable Clock (68000)	2, 6, 7
EXTICK	Expansion Present / RTC Tick	2, 3
FC[2:0]	Function Code (68000)	2, 7
FIRE0/1	Fire Button 0/1 (Joysticks)	2, 5, 6
HLT	Processor Halt (68000)	2, 7
H SYNC	Horizontal Sync (Video)	2, 5, 6
INDEX	Index Pulse (Floppy)	6, 7
INT[2,3,6]	Interrupt Request (Chips)	2, 4, 6, 7
IORESET	I/O Reset	6, 7
IPL[2:0]	Interrupt Priority Level (68000)	2, 4, 7
KBCLOCK	Keyboard Clock (Keyboard)	6
KBDATA	Keyboard Data (Keyboard)	6
KBRESET	Keyboard Reset (Keyboard)	6
LDS/UDS	Upper / Lower Data Strobes (68000)	2, 7
LED	Power On LED / Audio Filter Disable	4, 6
LEFT/RIGHT	Left Right Audio (Audio)	4

SIGNAL	DESCRIPTION (AREA)	PAGES
LPEN	Light Pen Trigger (Joysticks)	2, 6
MTR	Motor On (Floppy)	4, 6
MTR0	Motor On - Drive 0 (Floppy)	4, 6, 7
MOV/MOH	Mouse 0 Quadrature V/H (Joysticks)	5
M1V/M1H	Mouse 1 Quadrature V/H (Joysticks)	5
OVL	Overlay ROM over RAM	2, 6
OVR	Override System Decoding	2, 7
PIXELSW	Genlock Pixel Switch (Video)	5
POTQX/QY	Pot Lines 0 X/Y (Joysticks)	4, 5
POT1X/1Y	Pot Lines 1 X/Y (Joysticks)	4, 5
POUT	Paper Out (Parallel Port)	6
PPD[7:0]	Parallel Port Data (Parallel Port)	6
RAMEN	RAM Enable (Chips)	2
REGEN	Chip Register Enable (Chips)	2
RAS0/1	Row Address Strobe (DRAM)	2, 3
RDY	Drive Ready (Floppy)	6, 7
RESET	General Reset	6, 7
RGA[8:1]	Register Address Bus (Chips)	2, 4, 5
R/G/B	Red / Green / Blue (Video)	5
RI	Ring Indicate (RS232 Port)	6
ROMEN	ROM Enable (ROM)	2, 3
RTS	Request to Send (RS232 Port)	6
RST	Processor Reset (68000)	2, 4, 7
RXD	Receive Data (RS232 Port)	4, 6
RW	Processor Read/Write (68000)	2, 6, 7
SEL[3:0]	Select (Parallel Port)	6
SELF	Drive Select (Floppy)	4, 6, 7
SIDE	Side Select (Floppy)	6, 7
STEP	Step In/Out Command (Floppy)	6, 7
TRK0	Track Zero Sense (Floppy)	6, 7
TXD	Transmit Data (RS232 Port)	4, 6
VMA	Valid Memory Address (68000)	2, 6, 7
VPA	Valid Peripheral Address (68000)	2, 7
VSYNC	Vertical Sync (Video)	2, 5, 6
WF	Write Enable (DRAM)	2, 3
WPROT	Write Protect Sense (Floppy)	6, 7
XCLK	External Genlock Clock (Video)	2, 5
XCLKEN	External Clock Enable (Video)	2, 5
XRDY	External Data Ready	2, 5

Key Components

REF	CHIP	DESCRIPTION	PAGE
U1	68000	68000 Processor	2
U2	8370	Fat Agnus - NTSC	2
U3	8371	Fat Agnus - PAL	olt
U3	8372	Agnus HR	olt
U3	8364	Paulo	4
U4	8362	Denise	5
U3	8373	Denise HR	olt
U5	5719	Guru	2, 4
U6	asst	ROM 128Kx16, 200 nS	3
U7-8	8520	Amiga VIA, 1 MHz	6
U14	LF347	BiMOS Op-Amp	4
TL084	BiMOS Op-Amp	olt	
U38	1488	EIA Line Driver	4
U39	1489	EIA Line Receiver	4
U42	NE555	Timer	7
U16-19	asst	DRAM 1Mx1, 150 nS	3
U20-23	asst	DRAM 1Mx1, 150 nS	9
X1	OSC	TTL 28.63636 MHz NTSC	2
OSC		TTL 28.37512 MHz PAL	olt
HY1	asst	Video Hybrid	5

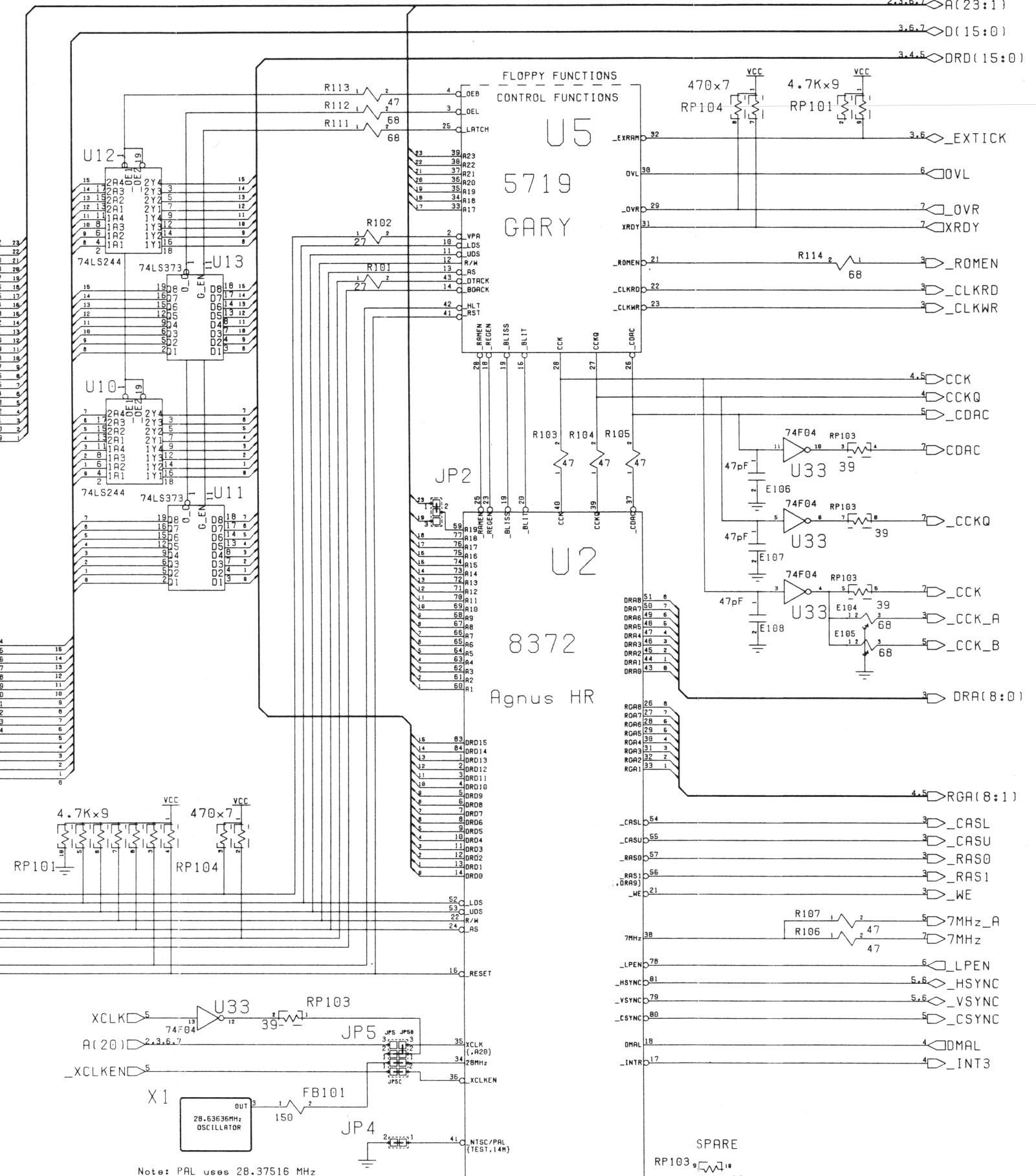
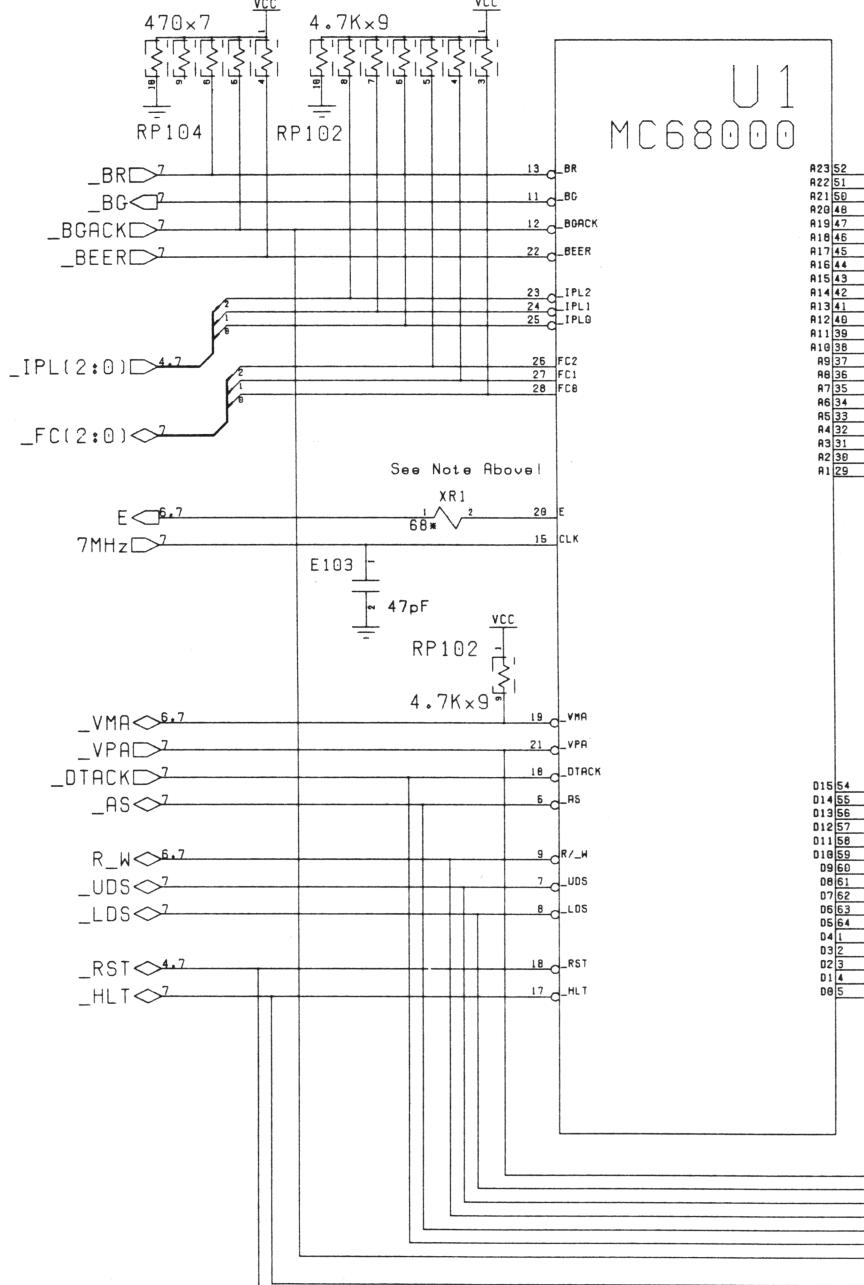
ATTEMPT TO FORCE NODE NUMBERS VIA SEQUENCE

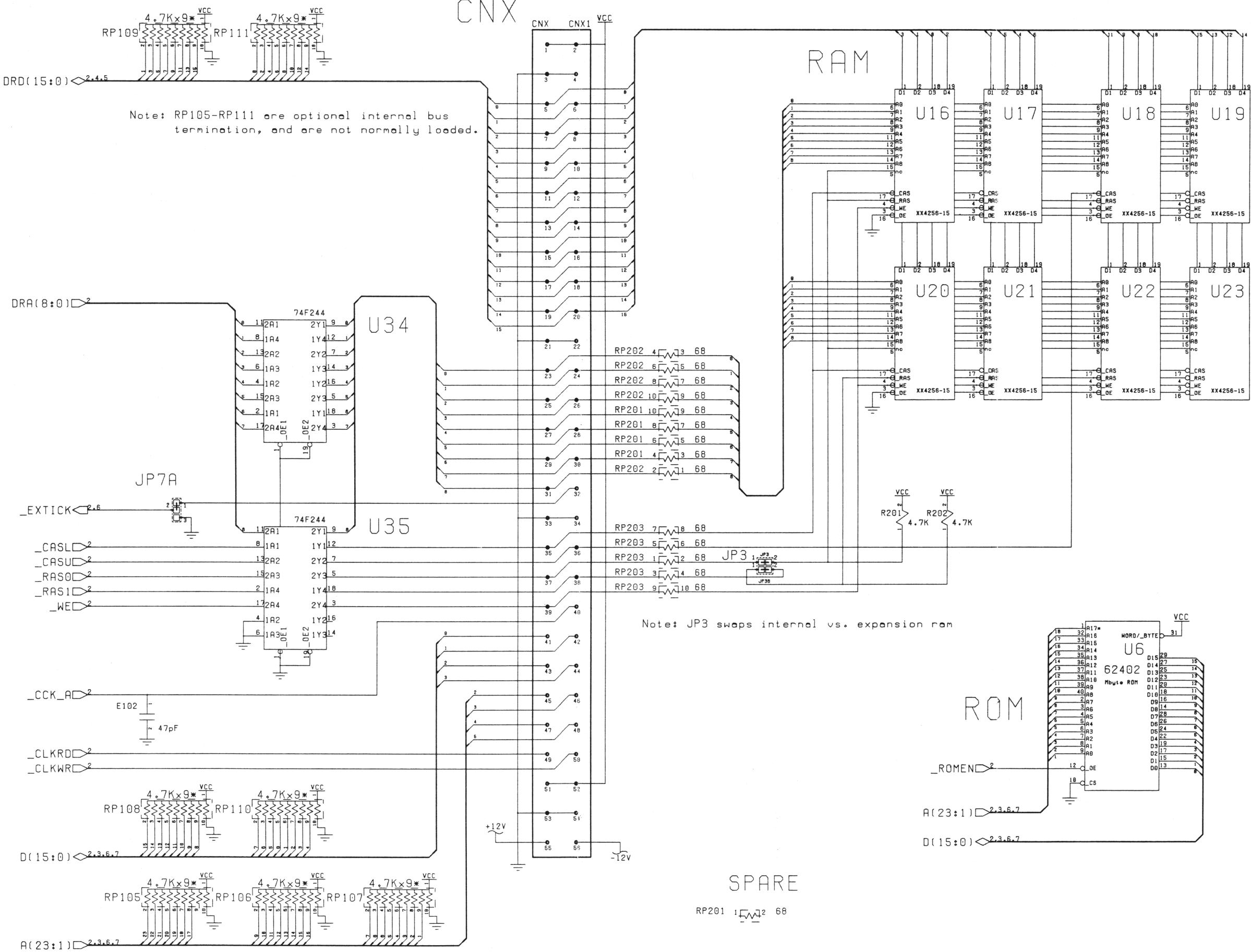


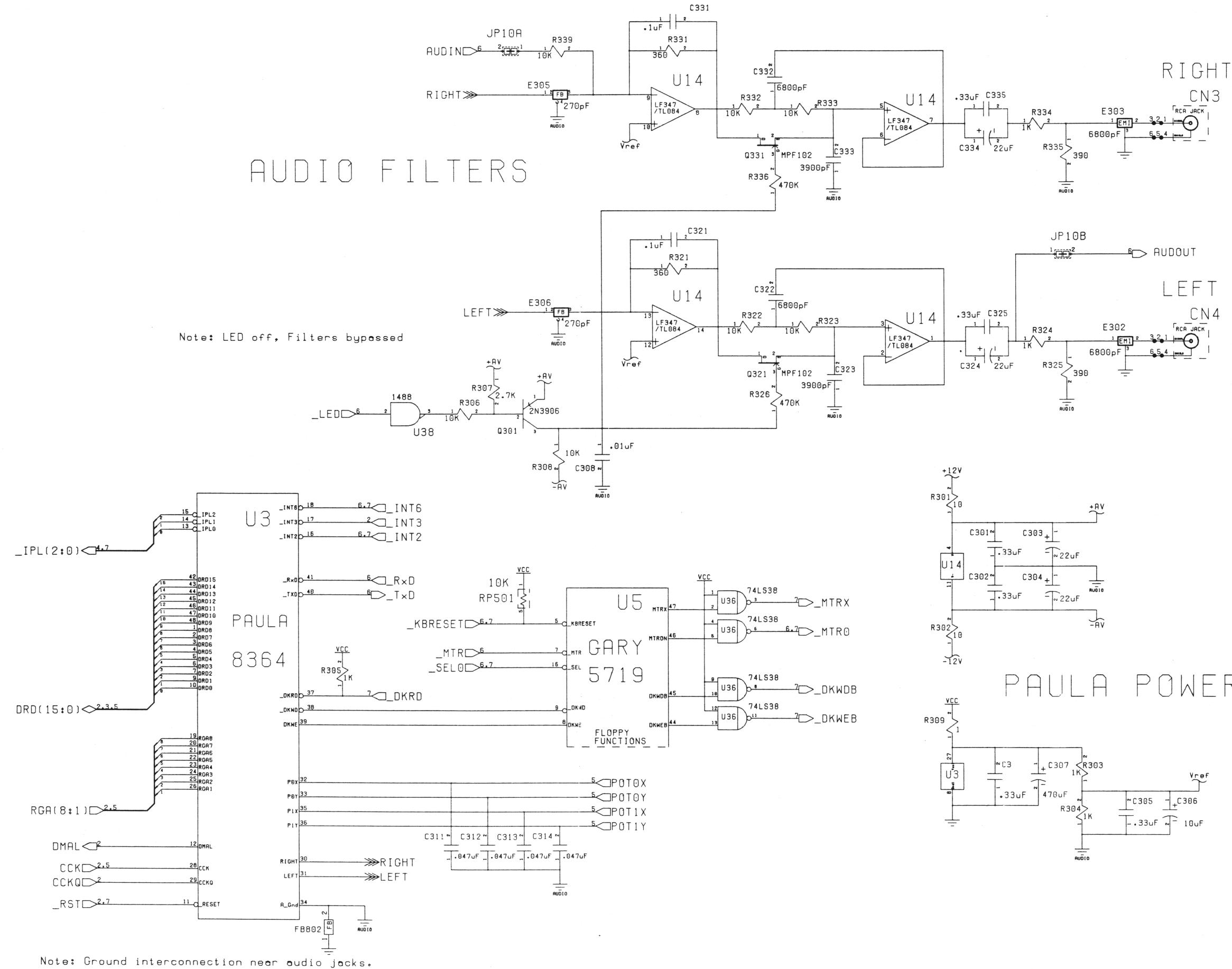
Note: Various components are for EMI Control
and may be loaded with funny things...

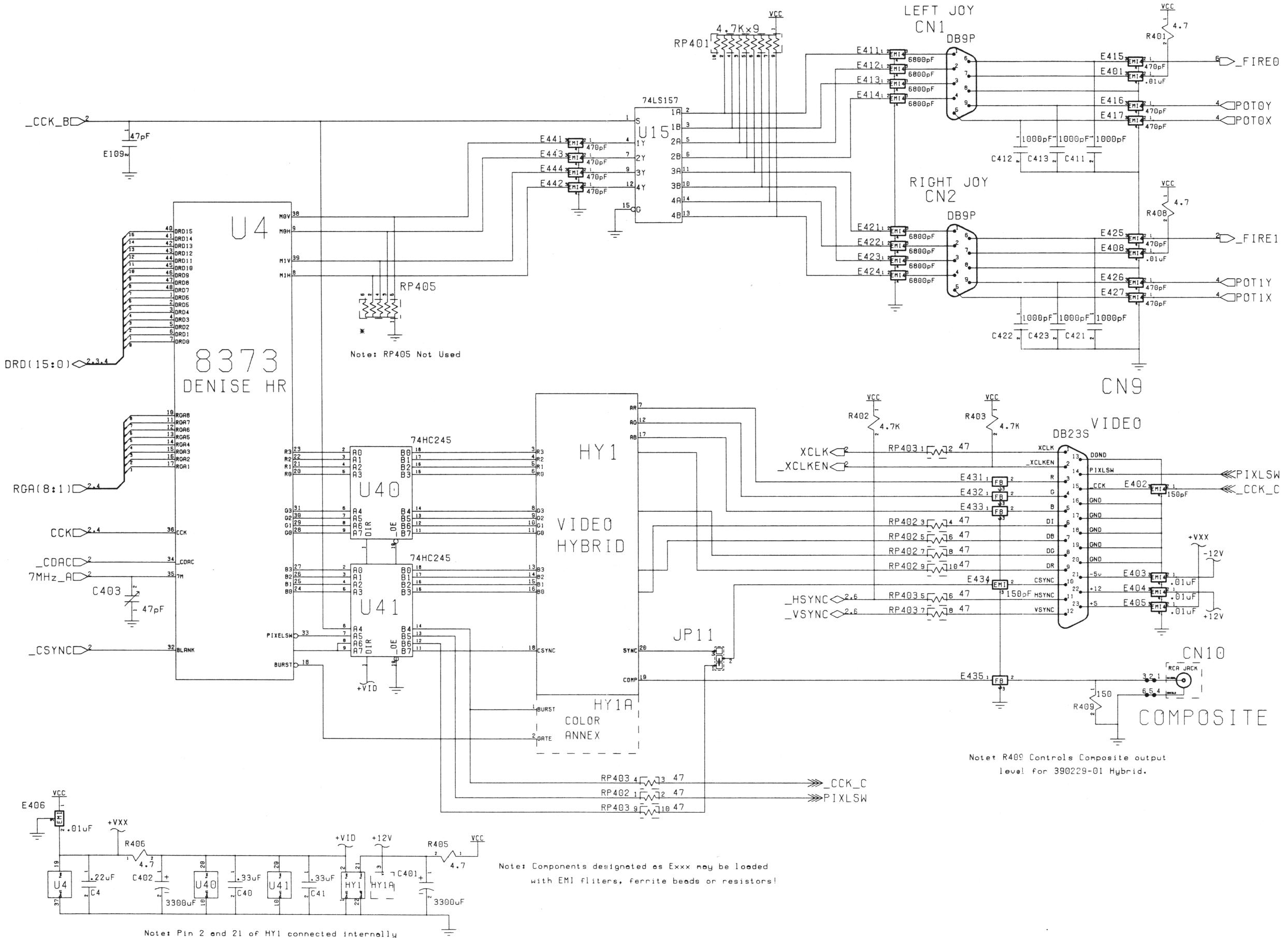
JP2 controls where expansion ram maps to:
A23 -> C00000 (default), A19 -> 080000

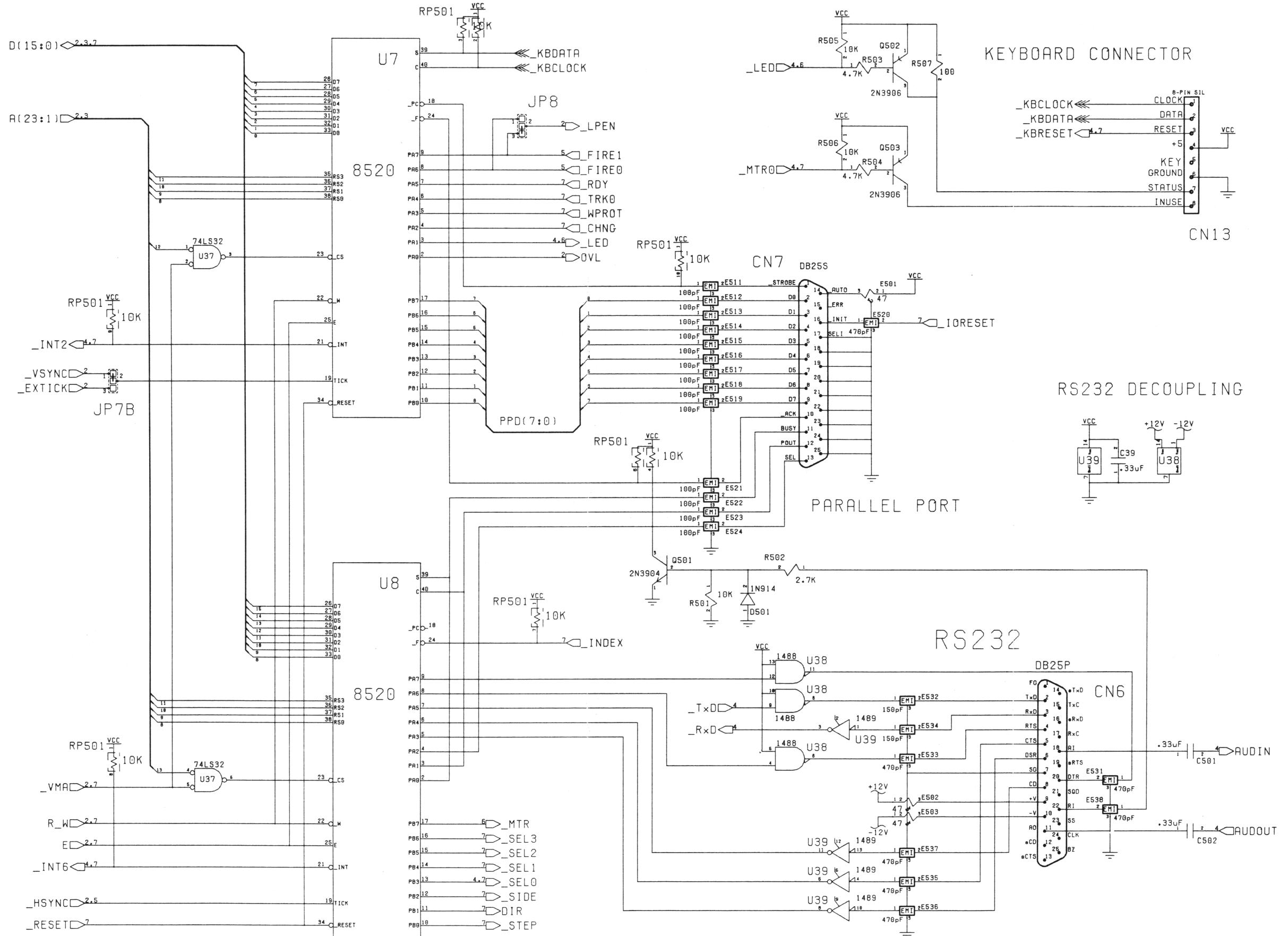
XR1 is added to some boards per ECO 880283

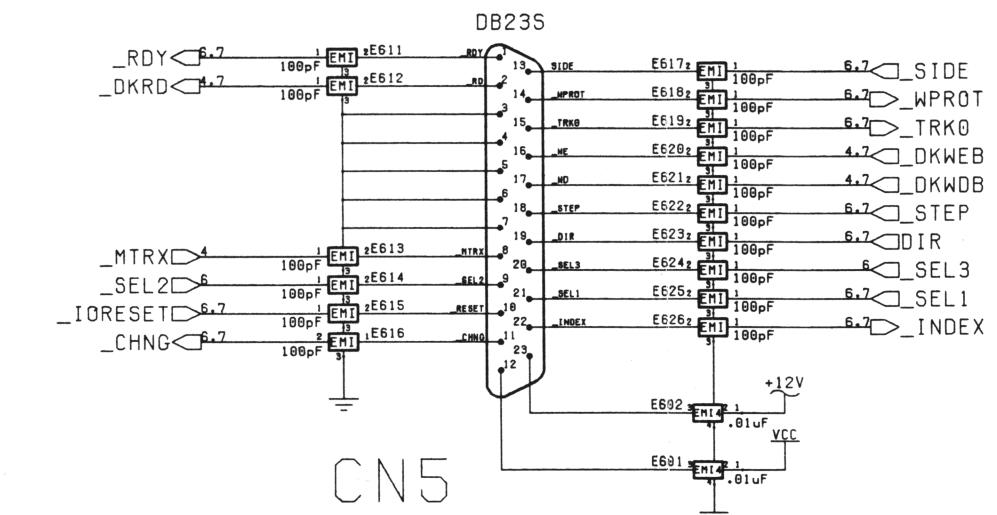
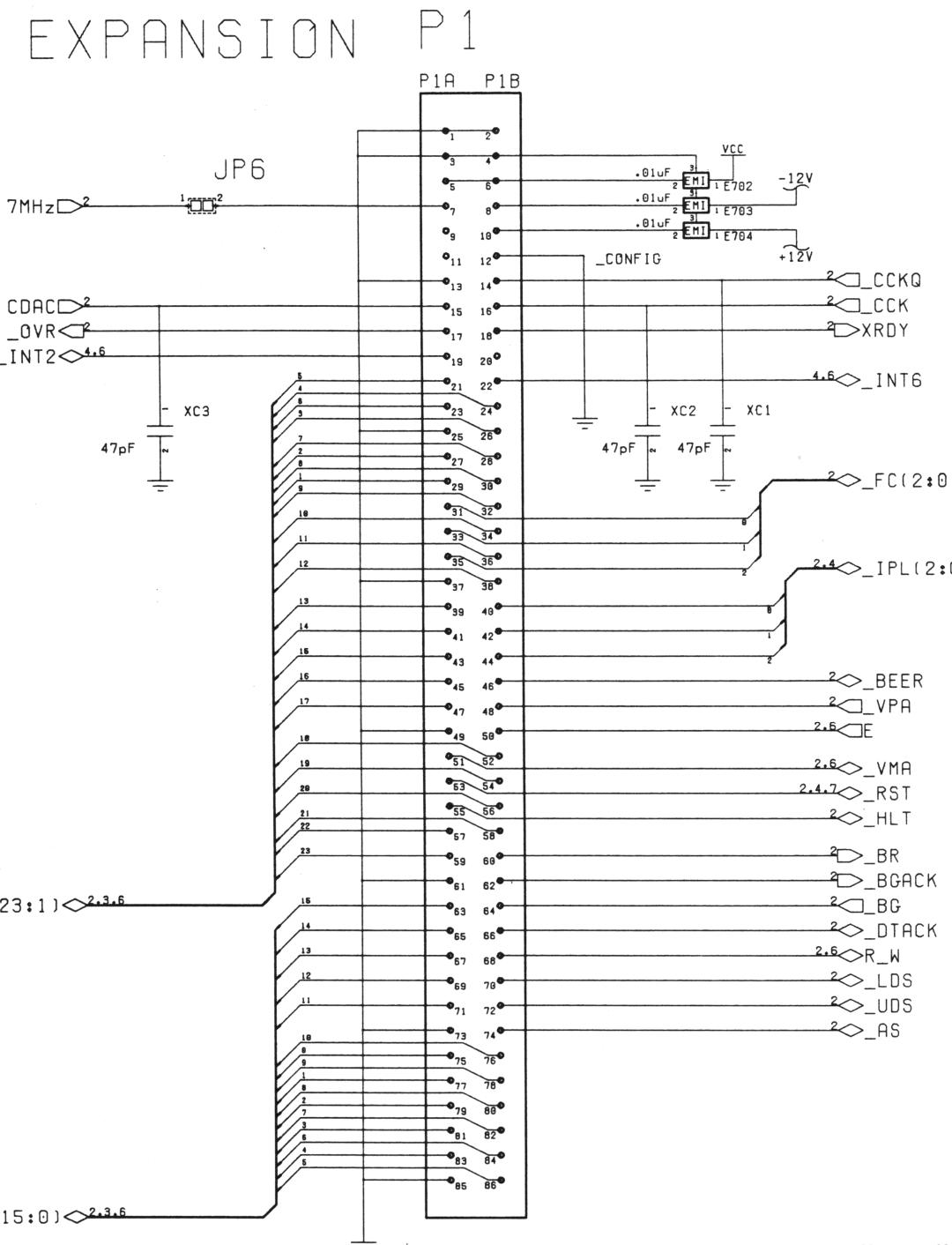






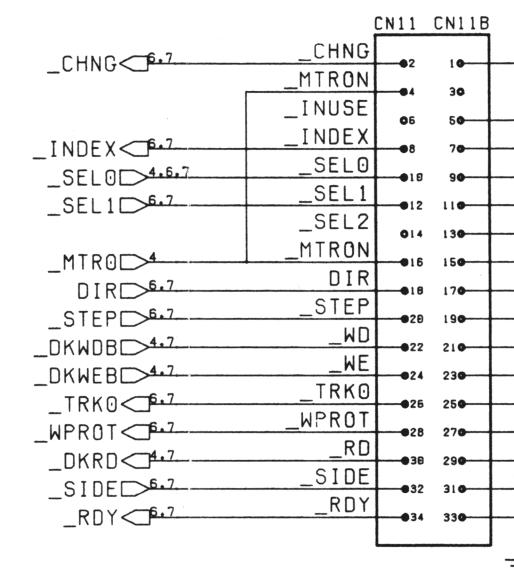




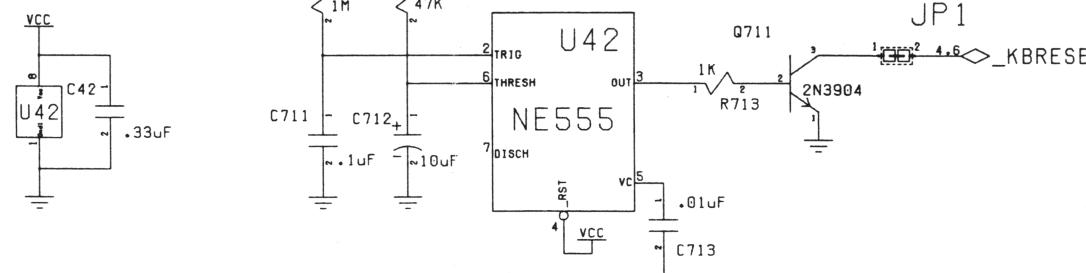
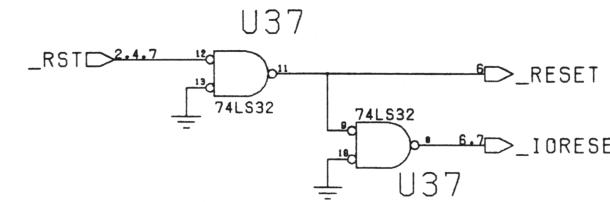


EXTERNAL FLOPPY

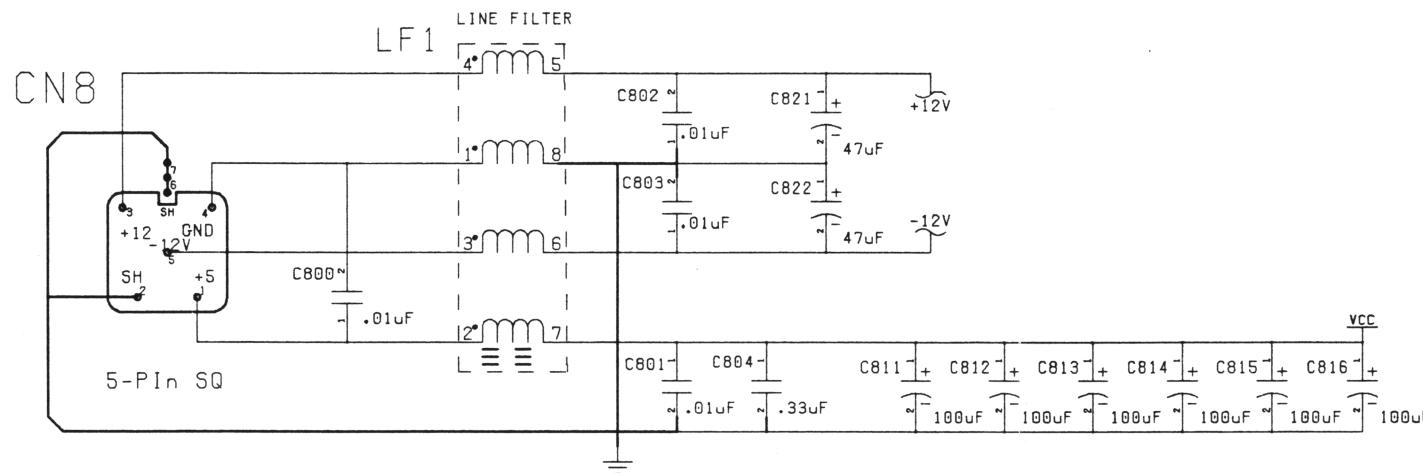
CN11



INTERNAL FLOPPY

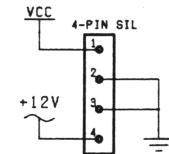


POWER INPUT



NOTE: HEAVY LINES INDICATE A SINGLE POINT CONNECTION

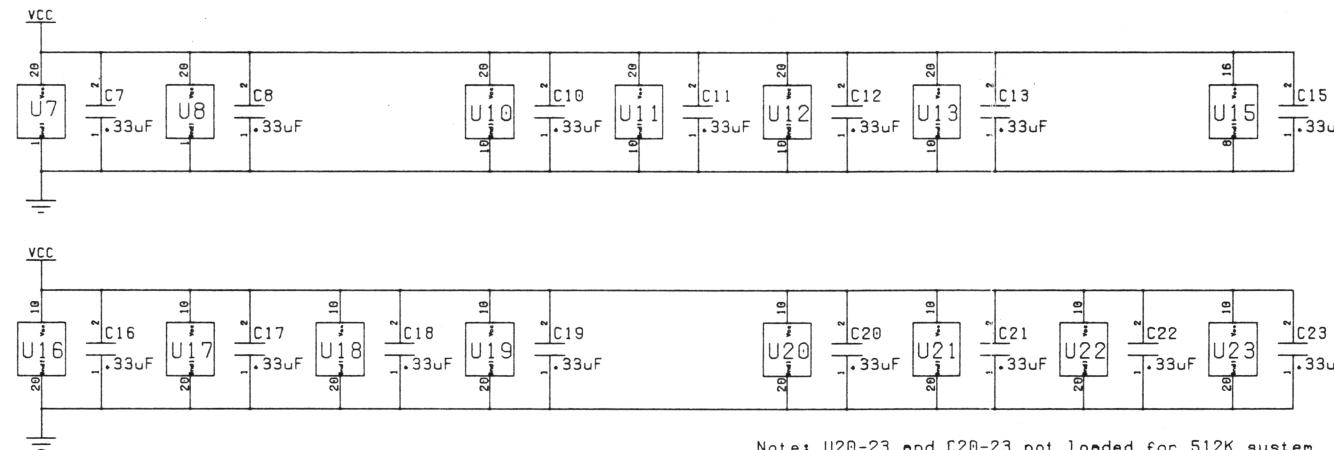
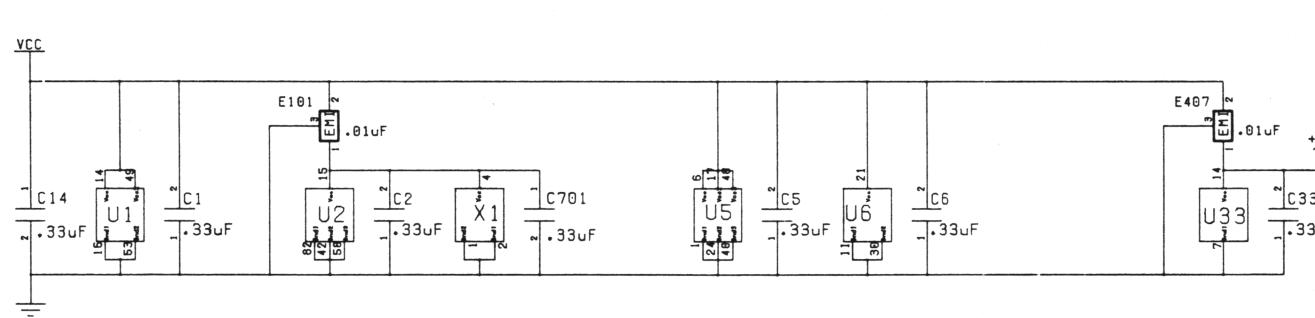
FLOPPY POWER



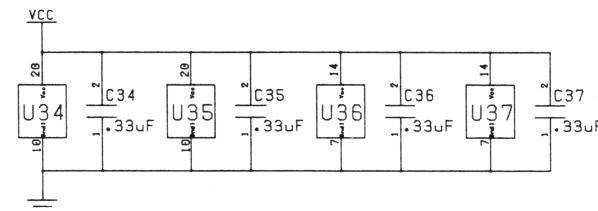
CN12

Note: Some drives are +5 only...

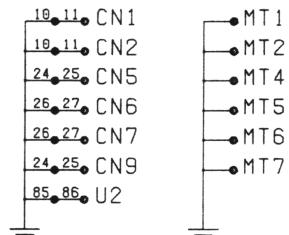
SPARES



Note: U20-23 and C20-23 not loaded for 512K system



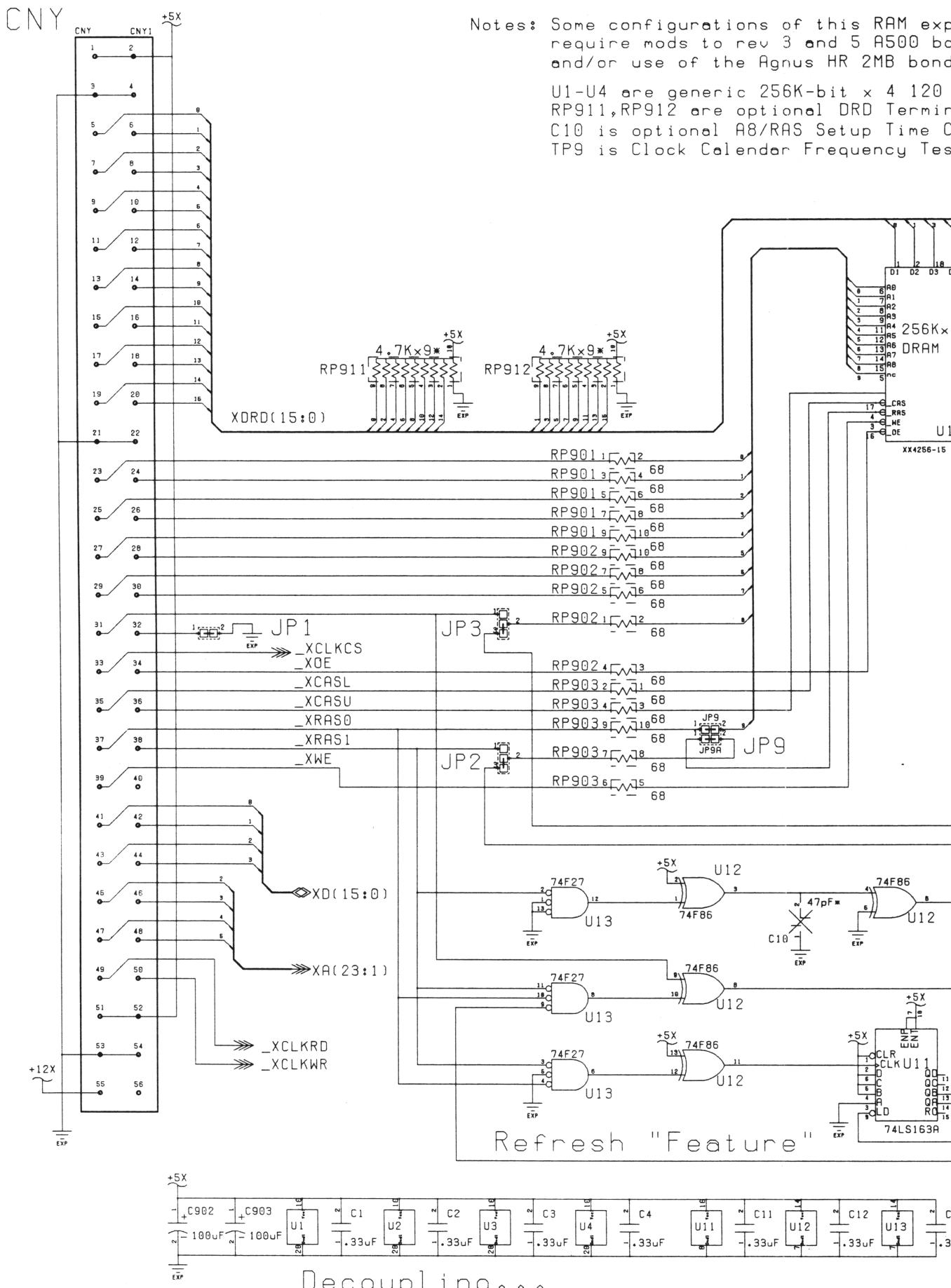
DECOUPLING



COMPONENT PARTS LIST
PCB ASSEMBLY RAM EXPANSION/CLOCK
PCB ASSEMBLY #312604-04, A501, REV. 6C

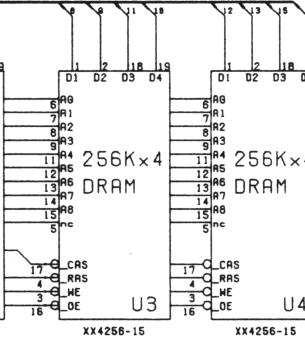
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IC COMPONENTS			CONNECTORS		
318099-04	DRAM 256K X 4 120nS	U1-U4	380311-05	HEADER 56PIN FEMALE RA	CNY
318099-02	DRAM 256K X 4 100nS	U1-U4			
318073-01	OKI MSM6242B REAL TIME CLOCK	U9			
390392-01	TTL 74F27 TRIPLE 3-IN NOR	U13			
390198-01	TTL 74F86 QUAD 2-IN XOR	U12			
901521-33	TTL 74LS163 BINARY COUNTER	U11			
RESISTORS			DIODES		
901550-58	1/4W CF, 470	R911,R913	900850-01	SWITCHING 1N4148	D912
901550-20	1/4W CF, 10K	R912,R914,R915	390017-01	SWITCHING 1N914	D911
390227-05	RES PACK SIP SERIES, 68 X 5 NOT LOADED	RP901-RP903,RP911 RP912			
CAPACITORS			MISCELLANEOUS		
900462-21	MLC AXIAL NPO 22pF	C911	380393-01	BATTERY NICD VARTA 3/60DK, 3.6V 60MAH	BT9
390082-01	MLC AXIAL ZSU .1uF	C9	900560-01	CRYSTAL WATCH STYLE, 32768Hz	Y9
390082-04	MLC AXIAL ZSU .33uF	C1-C4,C11-C13	312606-03	FABRICATION DRAWING	
251029-06	TRIMMER (YELLOW) 6.8-45pF NOT LOADED	TC9	312578-03	PCB ARTWORK	
390101-02	ELECT ALUM RADIAL 100uF 16V	C10	312605-03	SCHEMATIC	
900410-13	ELECT TANTALUM RADIAL 4.7uF 16V	C902,C903			
390101-05	ELECT ALUM RADIAL 4.7uF 16V	C913			
		C913			

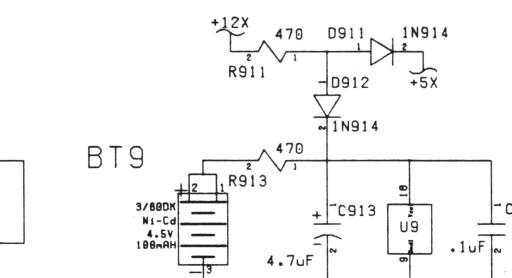
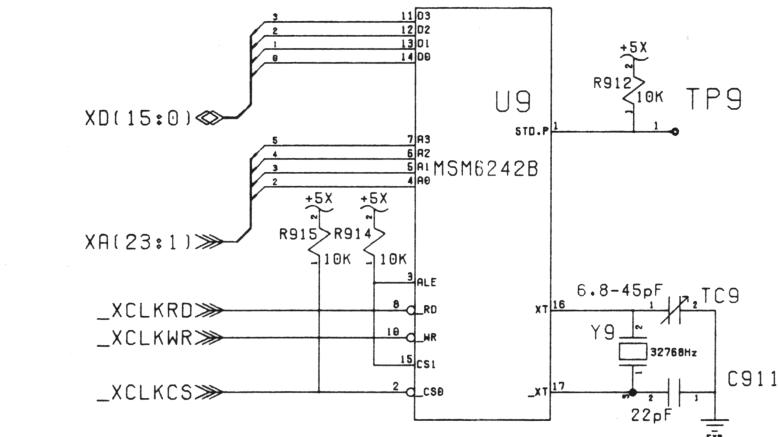


ECO History

ECO NUMBER	DESCRIPTION	DATE



Real Time Clock



Real Time Power



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