JUMPERS AND STUFF

REF	TYPE	DESCRIPTION	PAGE
R246	SMT	NTSC COLOR BURST	4
R202	SMT	PAL COLOR BURST	4
R625	SMT	KEYBOARD MPU CLOCK	9
R624	SMT	KEYBOARD/SYSTEM RESET	9

CONNECTORS

REF	TYPE	DESCRIPTION	PAGE
CN1	DB9P	MOUSE/JOYSTICK 1	5
CN2	DB9P	MOUSE/JOYSTICK 2	5
CN3	RCA-J	RIGHT AUDIO OUTPUT	5
CN4	RCA-J	LEFT AUDIO OUTPUT	5
CN5	DB23S	EXTERNAL FLOPPY	8
CN6	DB25P	RS232 SERIAL PORT	7
CN7	DB25S	PARALLEL PRINTER PORT	7
CN8	SQ DIN	POWER SUPPLY CONNECTOR	3
CN9	DB23P	VIDEO OUTPUT	6
CN10	RCA-J	COMPOSITE VIDEO	4
CN11	DIL-34	INTERNAL FLOPPY SIGNAL	8
CN12	SIL-4	INTERNAL FLOPPY POWER	8
CN13	MEM-30	KEYBOARD MEMBRANE	9
CN14	SIL-4	INTERNAL FLOPPY POWER	8
CN13	MEM-30	KEYBOARD MEMBRANE	9
CN14	SIL-4	KEYBOARD STATUS LED'S	9
CN15	PCMCIA	PC "MEMORY CARD"	11
P9	EDGE-60	MEMORY BUS EXPANSION	12

REVISION HISTORY

REV	DESCRIPTION	DATE	APPVL	MANAGER
0	ENGINEERING PROTOTYPE	03/13/92	GRR	
1	ADVANCE ENGINEERING RELEASE	06/29/92	GRR	
A	PILOT PRODUCTION RELEASE	09/09/92	GRR	
B	REVISED PER ECO #20655	11-13-92	DX	

SIGNAL GLOSSARY

SIGNAL	DESCRIPTION (AREA)	PAGES
28MHZ	28.63636 MHZ MASTER CLOCK	
7MHZ	7.15909 MHZ PROCESSOR CLOCK	
A[23:1]	PROCESSOR ADDRESS BUS (68000)	
ACK	DATA ACKNOWLEDGE (PARALLEL PORT)	
AS	ADDRESS STROBE (68000)	
AUDIN	AUDIO INPUT (RS232 PORT)	
AUDOUT	AUDIO OUTPUT (RS232 JACK)	
BERR	BUS ERROR (68000)	
BG	BUS GRANT (68000)	
BGACK	BUS GRANT ACKNOWLEDGE (68000)	
BLISS	BLITTER SLOWDOWN (CHIPS)	
BLIT	CHIP MEMORY ACCESS (CHIPS)	
BR	BUS REQUEST (68000)	
BUSY	DEVICE BUSY (PARALLEL PORT)	
CASL/U	COLUMN ADDRESS STROBE (DRAM)	
CCK/CCKQ	COLOR CLOCK / QUADRATURE (CHIPS)	
CDAC	7.15909 MHZ QUADRATURE CLOCK (CHIPS)	
CHNG	MEDIA CHANGE (FLOPPY)	
CLKRD/WR	READ-TIME CLOCK READ / WRITE (RTC)	
COMP	MONOCHROME COMPOSITE VIDEO (VIDEO)	
CSYNC	COMPOSITE SYNC (VIDEO)	
CTS	CLEAR TO SEND (RS232 PORT)	
D[15:0]	PROCESSOR DATA BUS (68000)	
DIR	STEP DIRECTION (FLOPPY)	
DKRD	DISK READ DATA (FLOPPY)	
DKWD	DISK WRITE DATA (FLOPPY)	
DKWE	DISK WRITE ENABLE (FLOPPY)	
DMAL	CHIP DMA REQUEST LINE (CHIPS)	
DRA[8:0]	DRAM ADDRESS BUS (DRAM)	
DRD[15:0]	DRAM DATA BUS (DRAM)	
DSR	DATA SET READY (RS232 PORT)	
DTACK	DATA TRANSFER ACKNOWLEDGE (68000)	
DTR	DATA TERMINAL READY (RS232 PORT)	
E	PERIPHERAL ENABLE CLOCK (68000)	
EXTICK	EXPANSION PRESENT / RTC TICK	
FC[2:0]	FUNCTION CODE (68000)	
FIRE0/1	FIRE BUTTON 0/1 (JOYSTICKS)	
HLT	PROCESSOR HALT (68000)	
HSYNC	HORIZONTAL SYNC (VIDEO)	
INDEX	INDEX PULSE (FLOPPY)	
INT[2,3,6]	INTERRUPT REQUEST (CHIPS)	
IORESET	I/O RESET	
IPL[2:0]	INTERRUPT PRIORITY LEVEL (68000)	
KBCLOCK	KEYBOARD CLOCK (KEYBOARD)	
KBDATA	KEYBOARD DATA (KEYBOARD)	
KBRESET	KEYBOARD RESET (KEYBOARD)	
LDS/UDS	UPPER / LOWER DATA STROBES (68000)	
LED	POWER ON LED / AUDIO FILTER DISABLE	
LEFT/RIGHT	LEFT RIGHT AUDIO (AUDIO)	

SIGNAL	DESCRIPTION (AREA)	PAGES
LPEN	LIGHT PEN TRIGGER (JOYSTICKS)	
MTR	MOTOR ON (FLOPPY)	
MTR0	MOTOR ON - DRIVE 0 (FLOPPY)	
MOV/MOH	MOUSE 0 QUADRATURE V/H (JOYSTICKS)	
M1V/M1H	MOUSE 1 QUADRATURE V/H (JOYSTICKS)	
OVL	OVERLAY ROM OVER RAM	
OVR	OVERRIDE SYSTEM DECODING	
PIXELSW	GENLOCK PIXEL SWITCH (VIDEO)	
POT0X/0Y	POT LINES 0 X/Y (JOYSTICKS)	
POT1X/1Y	POT LINES 1 X/Y (JOYSTICKS)	
POUT	PAPER OUT (PARALLEL PORT)	
PPD[7:0]	PARALLEL PORT DATA (PARALLEL PORT)	
RAMEN	RAM ENABLE (CHIPS)	
REGEN	CHIP REGISTER ENABLE (CHIPS)	
RAS0/1	ROW ADDRESS STROBE (DRAM)	
RDY	DRIVE READY (FLOPPY)	
RESET	GENERAL RESET	
RGA[8:1]	REGISTER ADDRESS BUS (CHIPS)	
R/G/B	RED / GREEN / BLUE (VIDEO)	
RI	RING INDICATE (RS232 PORT)	
ROMEN	ROM ENABLE (ROM)	
RTS	REQUEST TO SEND (RS232 PORT)	
RST	PROCESSOR RESET (68000)	
RXD	RECEIVE DATA (RS232 PORT)	
RW	PROCESSOR READ/WRITE (68000)	
SEL	SELECT (PARALLEL PORT)	
SEL[3:0]	DRIVE SELECT (FLOPPY)	
SIDE	SIDE SELECT (FLOPPY)	
STEP	STEP IN/OUT COMMAND (FLOPPY)	
TK0	TRACK ZERO SENSE (FLOPPY)	
TXD	TRANSMIT DATA (RS232 PORT)	
VMA	VALID MEMORY ADDRESS (68000)	
VPA	VALID PERIPHERAL ADDRESS (68000)	
VSYNC	VERTICAL SYNC (VIDEO)	
WE	WRITE ENABLE (DRAM)	
WPROT	WRITE PROTECT SENSE (FLOPPY)	
XCLK	EXTERNAL GENLOCK CLOCK (VIDEO)	
XCLKEN	EXTERNAL CLOCK ENABLE (VIDEO)	
XRDY	EXTERNAL DATA READY	
	** CREDIT CARD AND IDE STUFF? **	

KEY COMPONENTS

REF	CHIP	DESCRIPTION	PAGE
U1	68000	68000 PROCESSOR 16MHZ	2
U2	8374	ALICE (AP AGNUS)	2
U3	8364	PAULA	5
U4	4203	LISA (AA DENISE)	4
U5	F023A	AA GAYLE (CBM ASIC)	2,8,11
U6	ASST	ROM 512KX16, 150 NS	10
U7-8	8520	AMIGA VIA, 1 MHZ	7
U10-11	28F10	FLASH MEMORY 128KX8	10
U12	CXA1145	SONY VIDEO ENCODER	4
U13	68HC05	AMIGA KEYBOARD MPU	9
U49	PST518	LOW VOLTAGE SENSE IC	9
U15	LF347	BIMOS OP-AMP	5
	TL064	BIMOS OP-AMP	ALT
U16-17	ASST	DRAM 256KX16, 80NS	3
U18-19	ASST	DRAM 256KX16 OPTIONAL	3
U20	391???	BUDGIE (ASIC)	2
U28	1488	EIA LINE DRIVER	7
U29	1489	EIA LINE RECEIVER	7
U30	BT101	TRIPLE 8-BIT VIDEO DAC	4
X1	OSC	TTL 28.63636 MHZ NTSC	2
	OSC	TTL 28.37512 MHZ PAL	ALT
Y451	XTAL	4.43619MHZ PAL BURST	4
Y621	XTAL	3MHZ CERAMIC RESONATOR	9
X2	ASST	PAL VIDEO MODULATOR	4
	ASST	NTSC VIDEO MODULATOR	4

DIRECTORIES AND REVISION HISTORY

COMMODORE

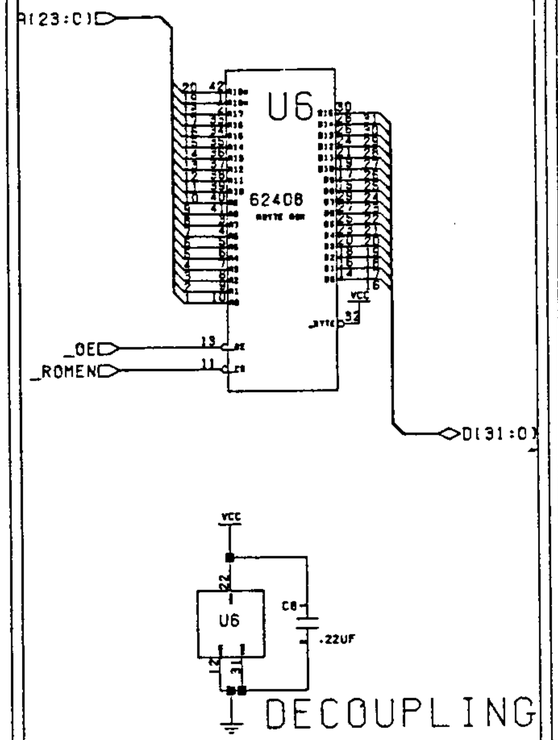
SCHEMATIC A1200 RIO
C/A1200 MAIN BOARD
CHANNEL 'F'

PN 364717 6

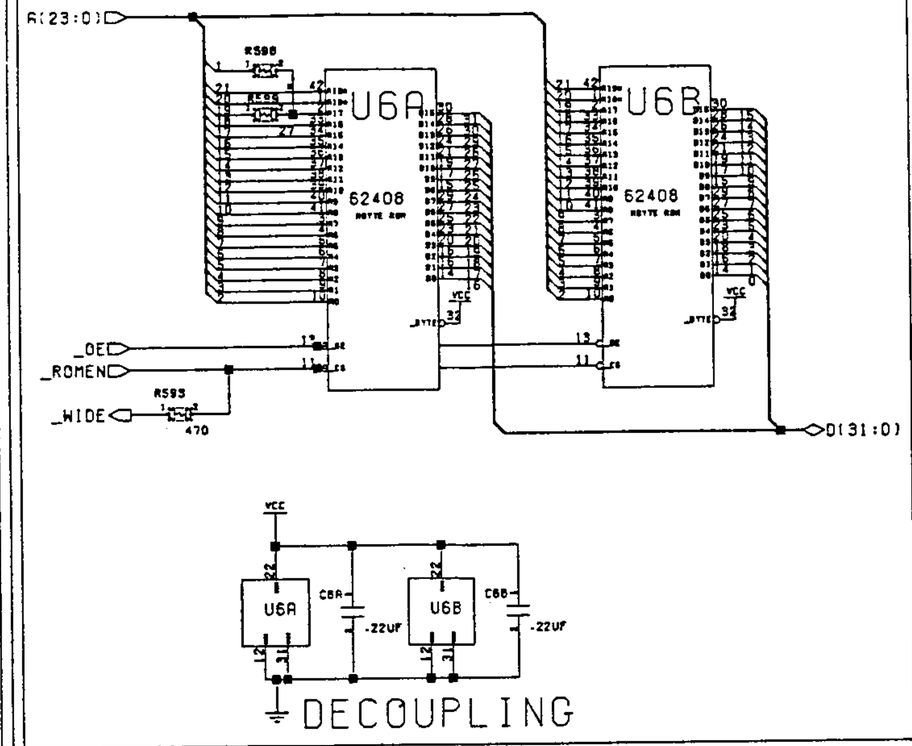
SCALE | SHEET 1 OF 12

A1200 REV 1->1D PCB

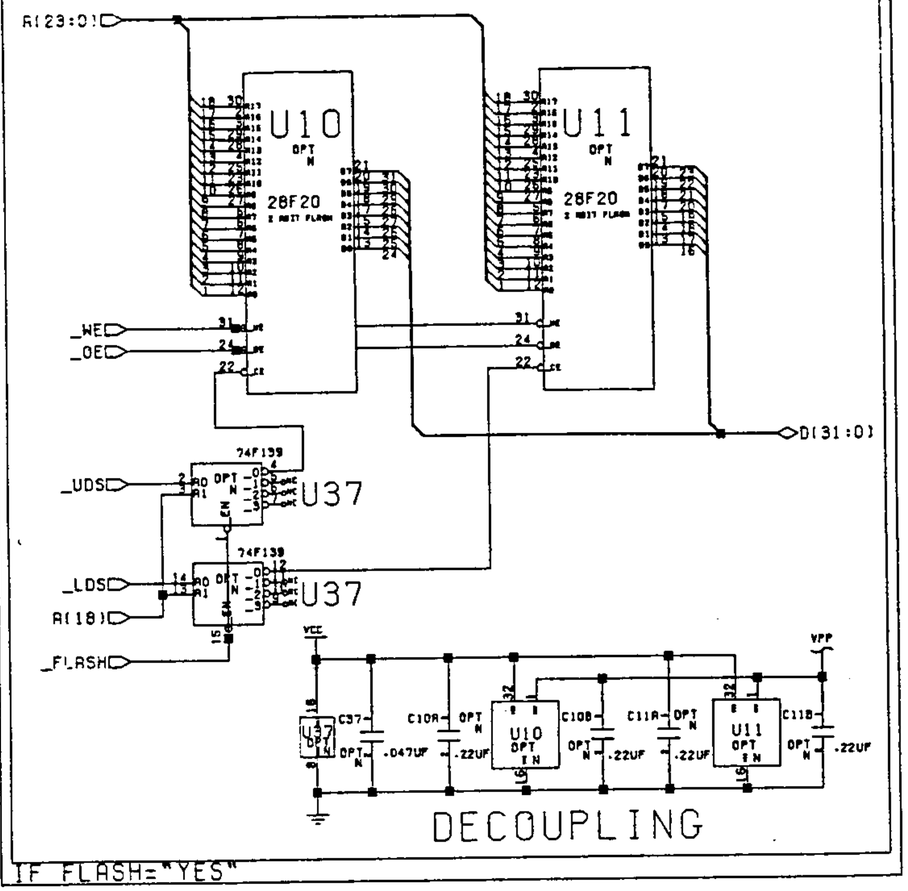
16-BIT ROM



32-BIT ROM



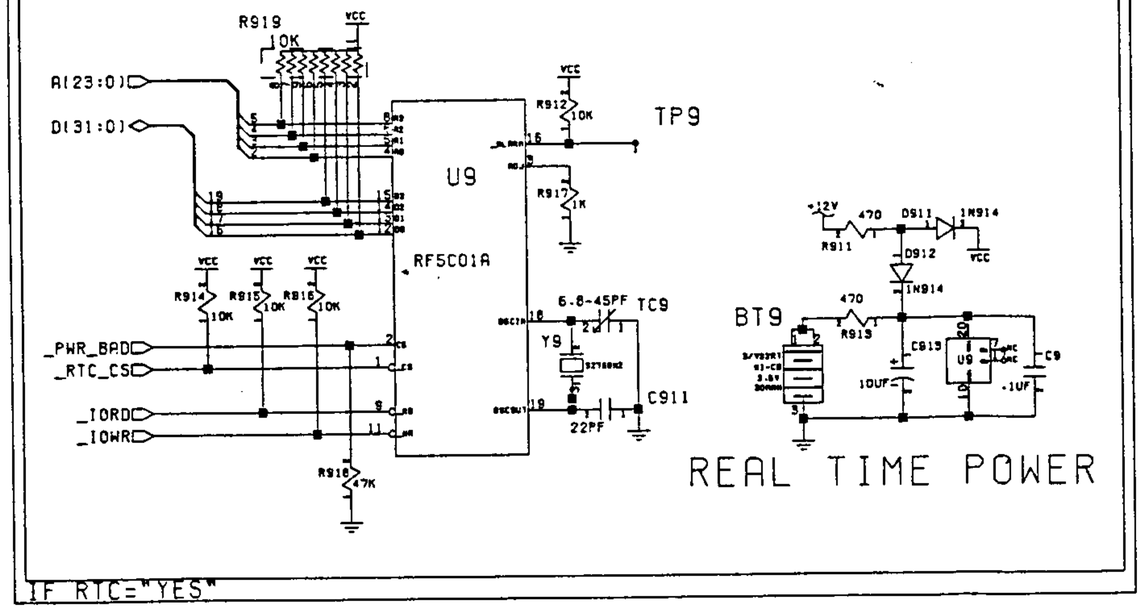
FLASH MEMORY



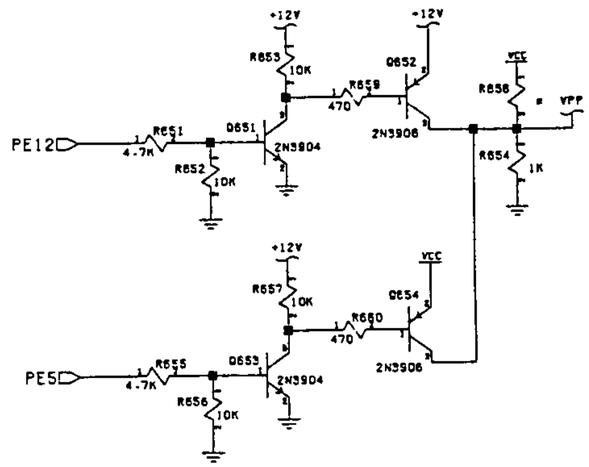
16 AND 32-BIT SOCKETS MAY OVERLAP!

OPTIONAL FLASH MEMORY

REAL TIME CLOCK



PROGRAMMING VOLTAGE



OPTIONAL REAL-TIME CLOCK/CALENDAR

A1200 REV 1->1D PCB

ROM - PLAIN AND FANCY - DODADS TOO!

C.A.D. GENERATED

COMMODORE
SCHEMATIC A1200 R1D
C/A1200 MAIN BOARD
CHANNEL 2"
364717.5

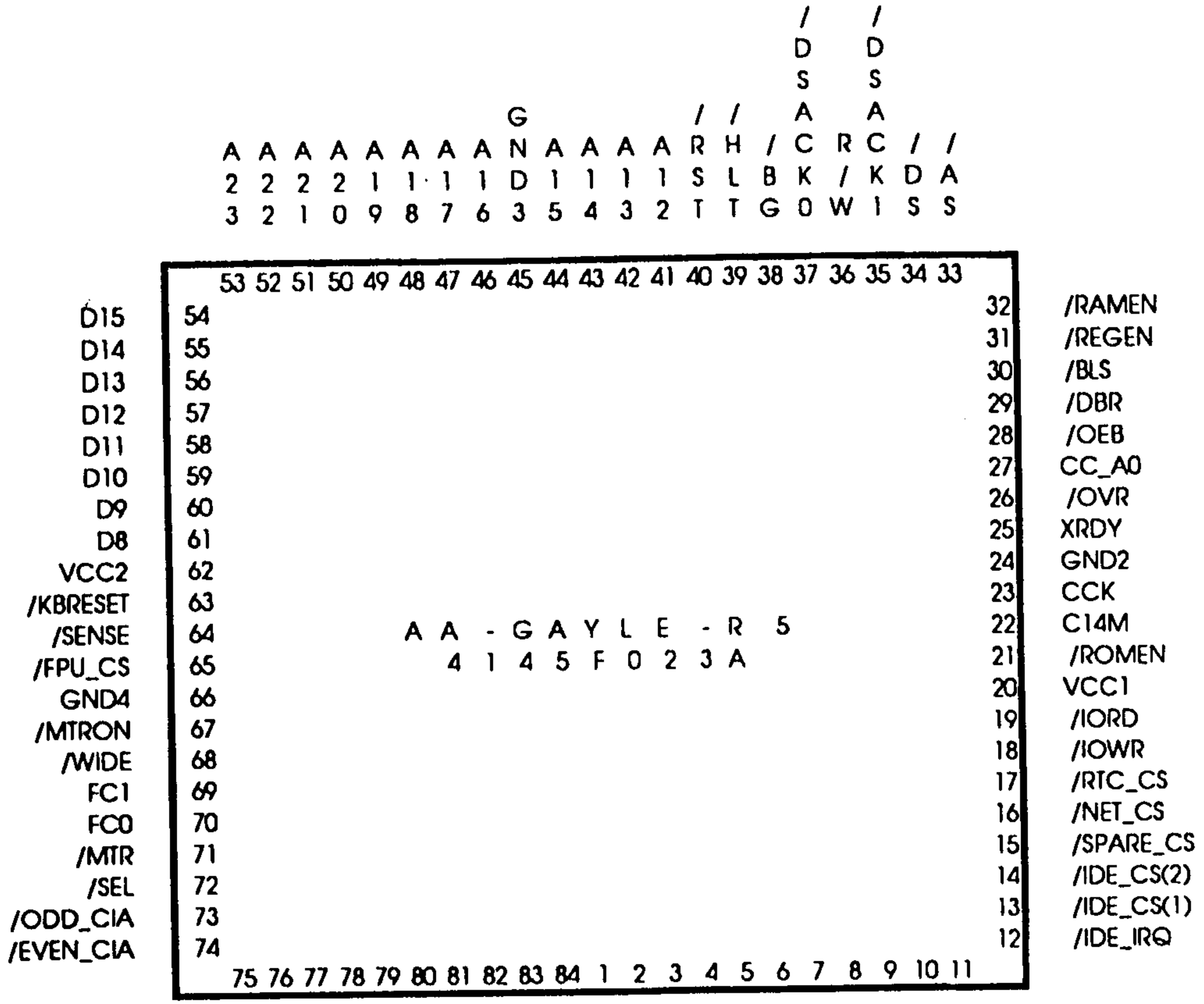


Figure 5-5. AA-GAYLE

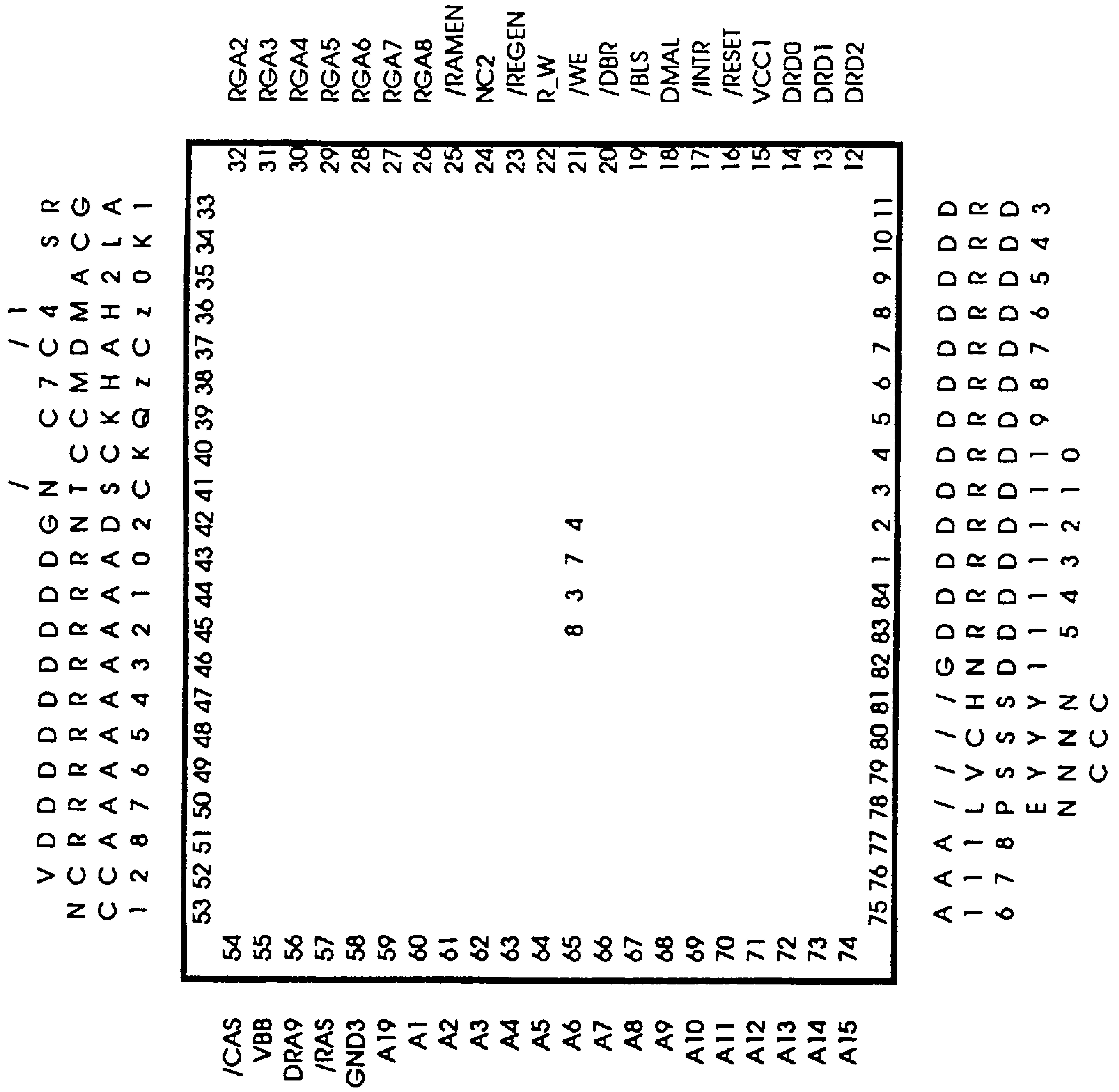


Figure 5-3. ALICE

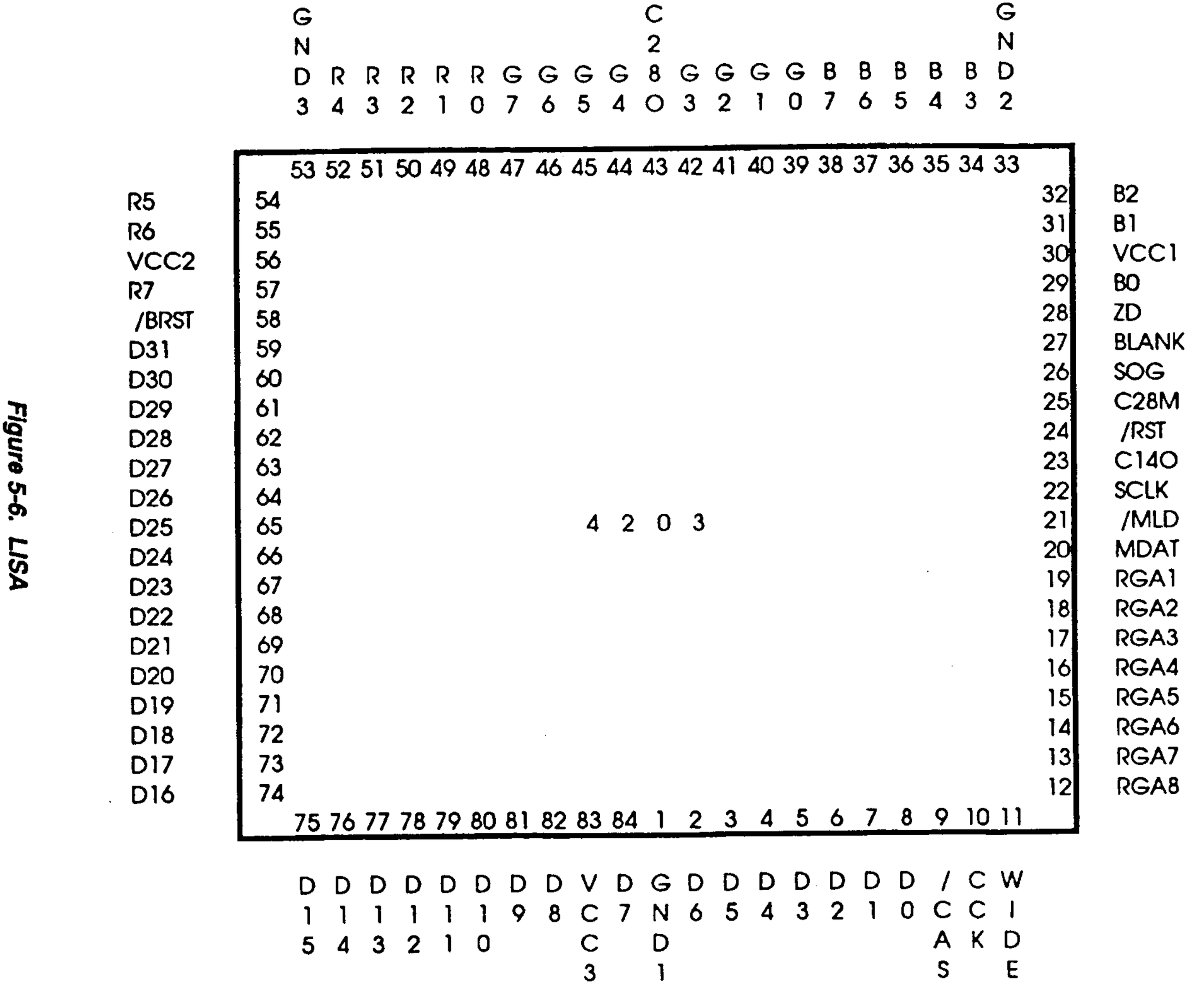
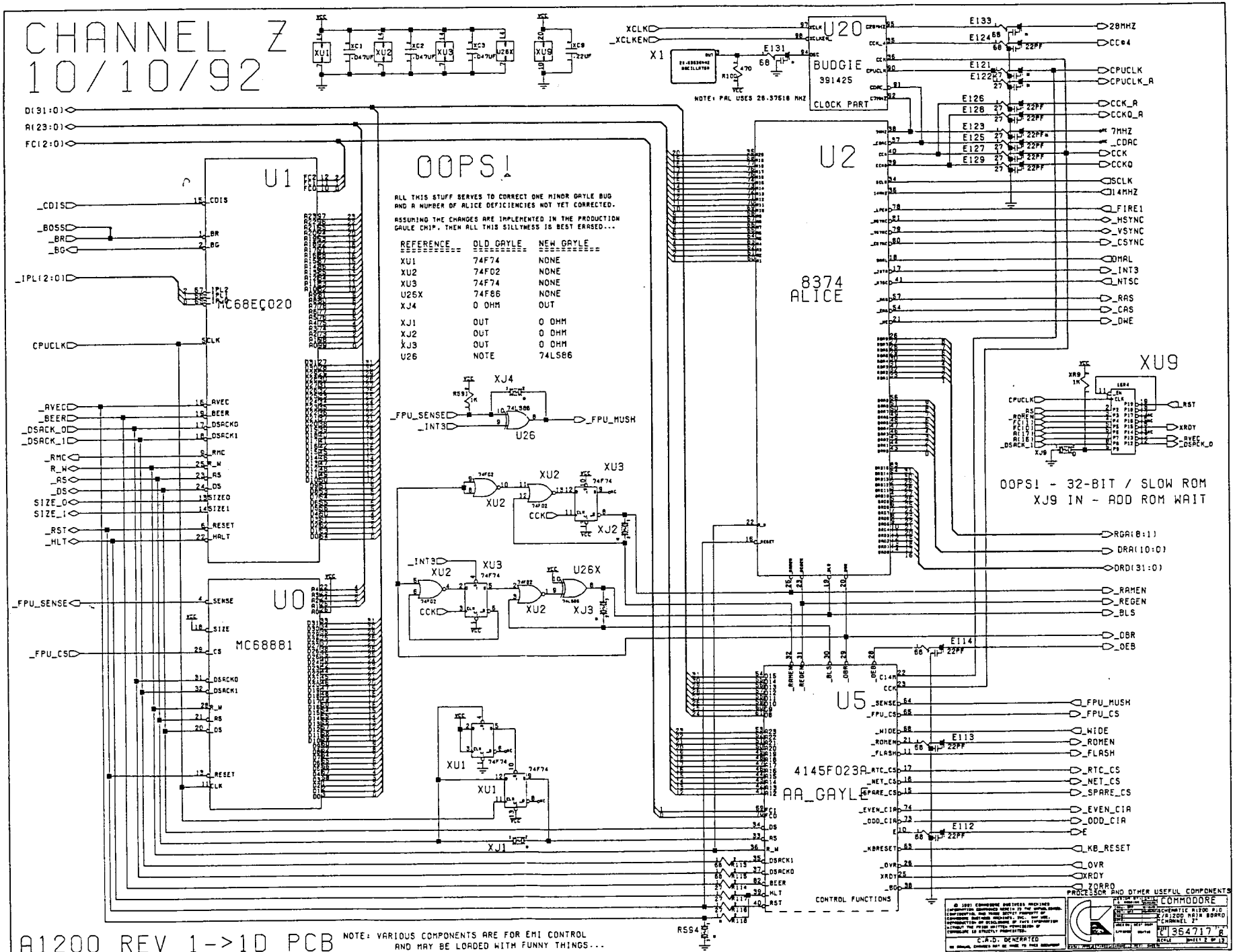
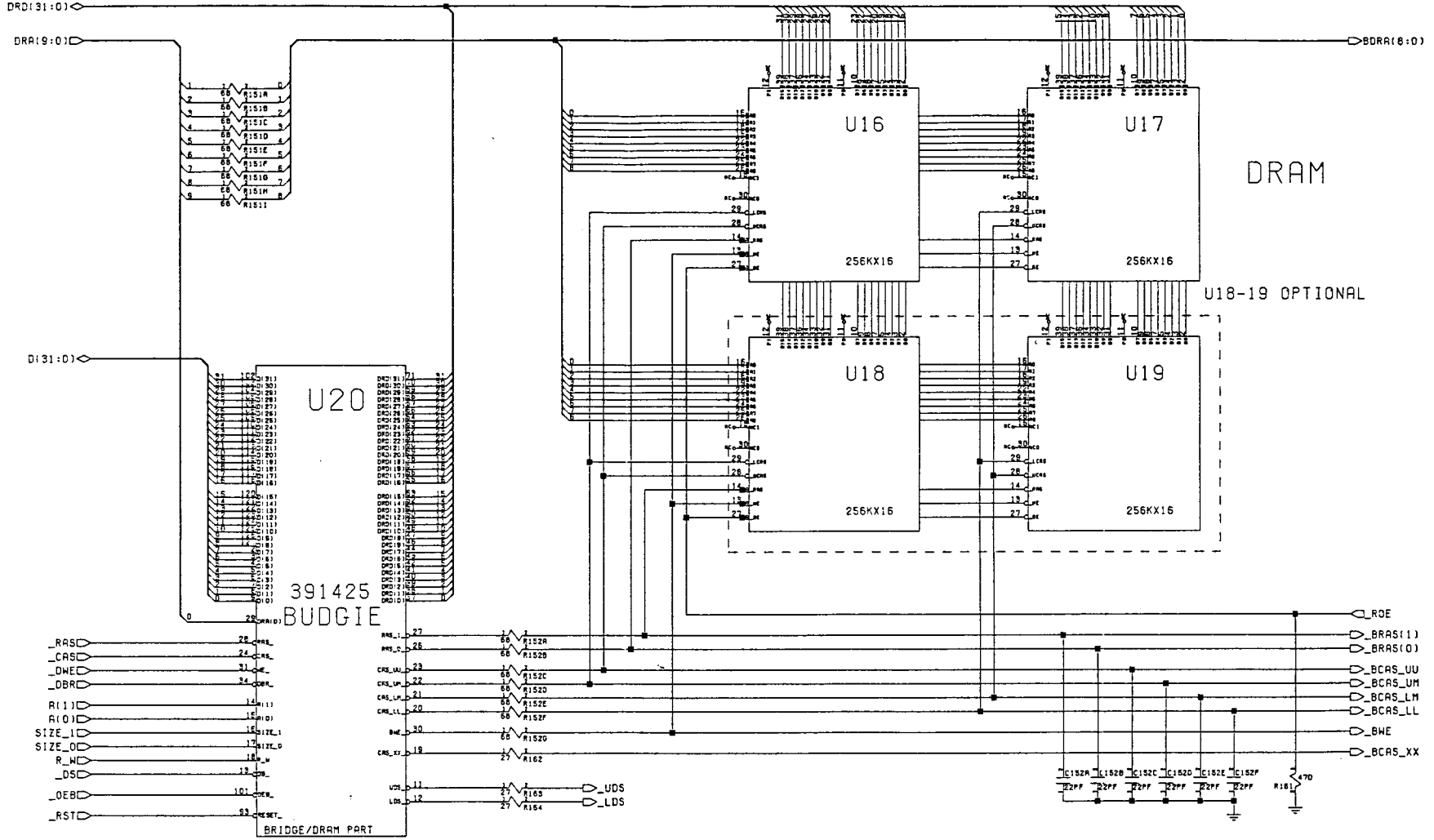


Figure 5-6. LISA


CHANNEL Z
10/10/92
U1
MC68EC020
U0
MC68881
U2
8374
ALICE
U5
4145F023A
AA_GAYLE
U20
BUDGIE
391425
CLOCK PART
X1
NOTE: PAL USES 28.37518 MHZ
U26
U26X
XU1
XU2
XU3
XJ1
XJ2
XJ3
XJ4
XU9
OOPS!
ALL THIS STUFF SERVES TO CORRECT ONE MINOR GAYLE BUG AND A NUMBER OF ALICE DEFICIENCIES NOT YET CORRECTED.
ASSUMING THE CHANGES ARE IMPLEMENTED IN THE PRODUCTION GAYLE CHIP, THEN ALL THIS SILLYNESS IS BEST ERASED...
REFERENCE | OLD GAYLE | NEW GAYLE
XU1 | 74F74 | NONE
XU2 | 74F02 | NONE
XU3 | 74F74 | NONE
U26X | 74F86 | NONE
XJ4 | 0 OHM | OUT
XJ1 | OUT | 0 OHM
XJ2 | OUT | 0 OHM
XJ3 | OUT | 0 OHM
U26 | NOTE | 74LS86
OOPS! - 32-BIT / SLOW ROM
XJ9 IN - ADD ROM WAIT
PROCESSOR AND OTHER USEFUL COMPONENTS
CONTROL FUNCTIONS
A1200 REV 1->1D PCB
NOTE: VARIOUS COMPONENTS ARE FOR EMI CONTROL AND MAY BE LOADED WITH FUNNY THINGS...
C.A.D. GENERATED
COMMODORE
A1200 REV1D.1
364717 R



A1200 REV 1->1D PCB

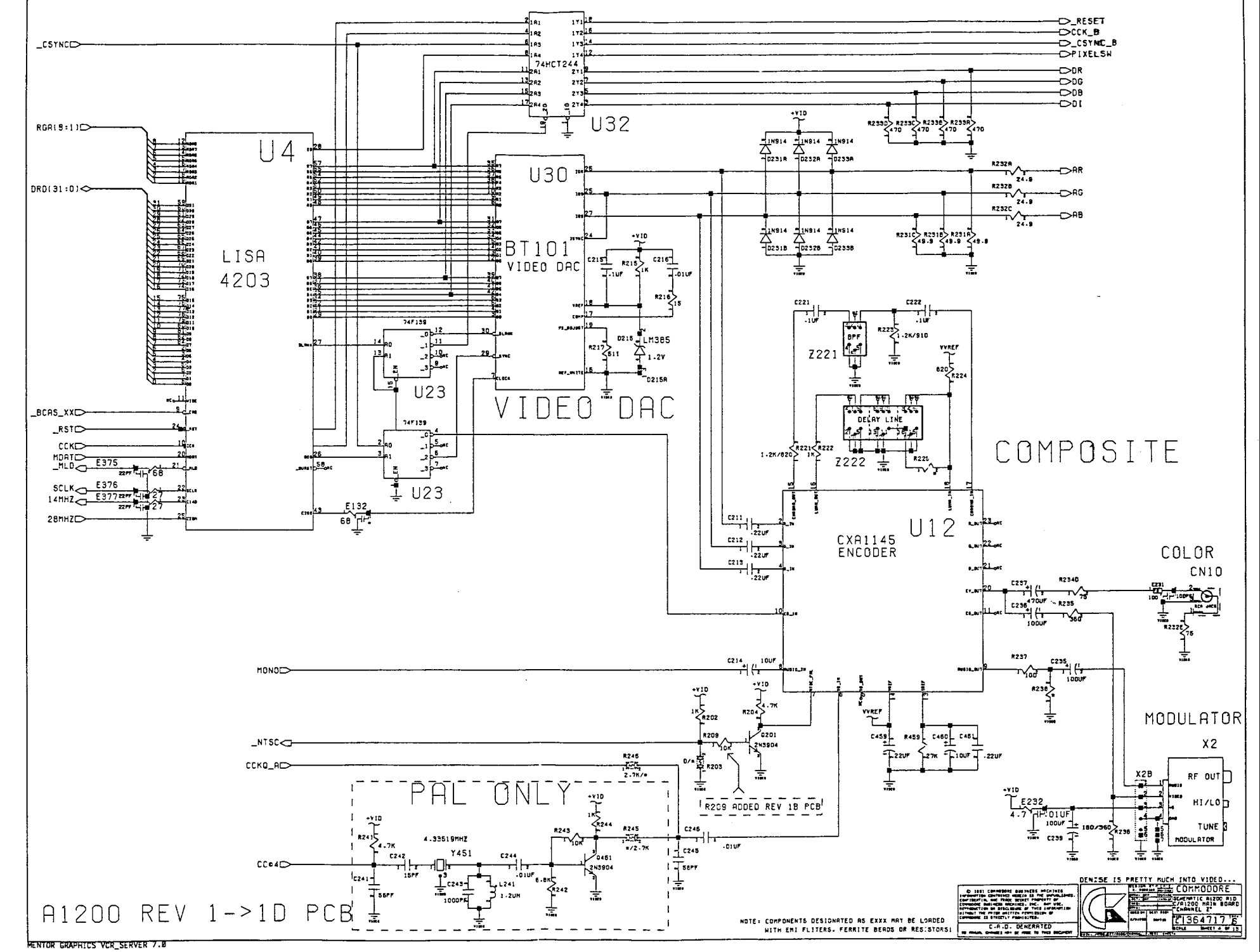
MEMORY AND...WELL, I USED TO REMEMBER

COMMODORE

SCHEMATIC A1200 A1D
C/A1200 MAIN BOARD
CHANNEL 2

PART 364717 E

SHEET 3 OF 18


_CSYNC
RGA[9:1]
DRD[31:0]
_BCAS_XX
_RST
CCK
MDAT
_MLD
SCLK
14MHZ
28MHZ
U4
LISA
4203
74HCT244
U32
U30
BT101
VIDEO DAC
VIDEO DAC
74F139
U23
74F139
U23
_RESET
CCK_B
_CSYNC_B
PIXELSW
DR
DG
DB
DI
AR
AG
AB
+VID
1N914
D231A
D232A
D233A
D231B
D232B
D233B
R232A
R232B
R232C
24.9
R231C
R231B
R231A
49.9
C215
.1UF
R215
1K
C216
.01UF
R216
15
D216
LM385
1.2V
D215A
R217
511
C221
.1UF
C222
.1UF
Z221
BPF
R225
1.2K/910
VVREF
620
R224
DELAY LINE
Z222
R221
1.2K/620
R222
1K
R225
COMPOSITE
U12
CXA1145
ENCODER
C211
.22UF
C212
.22UF
C213
.22UF
COLOR
CN10
C237
470UF
R234D
75
C236
100UF
R235
360
C231
100
10PF
R232E
75
C214
10UF
MONO
R237
100
C235
100UF
R236
MODULATOR
X2
RF OUT
HI/LO
TUNE
MODULATOR
X2B
_NTSC
CCKQ_A
R202
1K
R204
4.7K
R209
10K
R203
D/A
Q201
2N3904
R209 ADDED REV 1B PCB
C459
.22UF
R459
27K
C460
10UF
C461
.22UF
R246
2.7K/*
PAL ONLY
R241
4.7K
C242
15PF
4.43619MHZ
Y451
C244
.01UF
R243
10K
R244
1K
R245
*/2.7K
C246
.01UF
C245
56PF
C241
56PF
C243
1000PF
L241
1.2UH
6.8K
R242
Q451
2N3904
CCK4
E232
4.7
.01UF
100UF
180/360
R238
C239
E132
68
E375
68
E376
27
E377
27
22PF
DENISE IS PRETTY MUCH INTO VIDEO...
COMMODORE
A1200 REV 1->1D PCB
NOTE: COMPONENTS DESIGNATED AS EXXX MAY BE LOADED
WITH EMI FLITERS. FERRITE BEADS OR RESISTORS!
C.A.D. GENERATED
MENTOR GRAPHICS VCR_SERVER 7.0

MOUSE/JOYSTICK PORTS

LEFT JOY
CN1
DB9P CN1A

RIGHT JOY
CN2
DB9P

U34
74LS166

U3
PAULA
8364

U15
LF347
/TL084

U28
1488

_FIRE0
_FIRE1
POT0Y
POT0X
POT1Y
POT1X
_IPL[2:0]
IPL2
IPL1
IPL0
DRD[31:0]
RGA[8:1]
_INT6
_INT3
_INT2
_RXD
_TXD
_DKRD
_DKWD
DKWE
DMAL
CCK
CCKQ
_RST
RESET
RIGHT
LEFT
NOISE
AUDIN
IRIGHT
ILEFT
AVREF
_LED
MDAT
MLD
CCK_A
MONO
AUDOUT

NOTE: LED OFF. FILTERS BYPASSED

AUDIO FILTERS

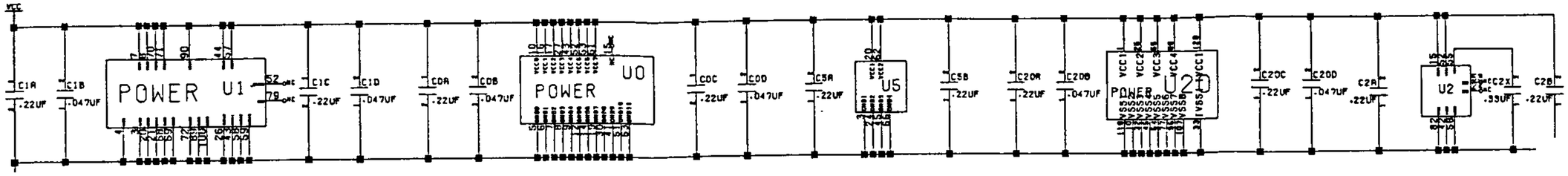
PAULA PREFERS THE TRADITIONAL MODES

C.A.D. GENERATED

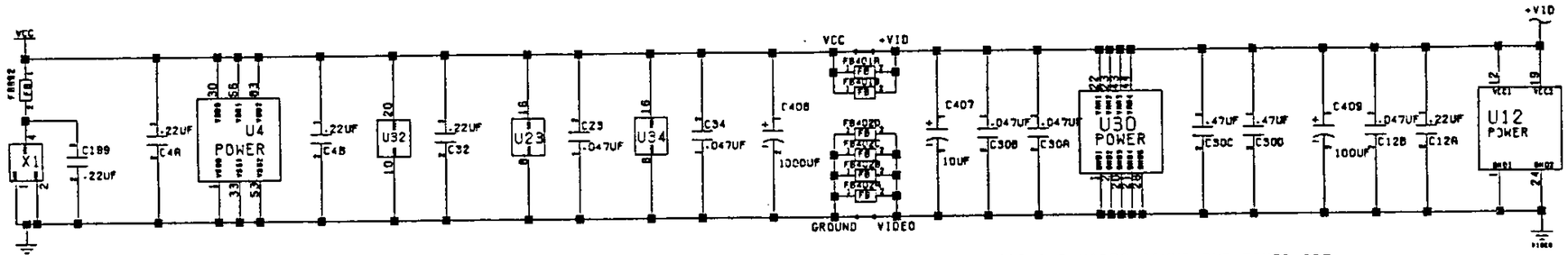
COMMODORE
SCHEMATIC A1200 RID
A1200 MAIN BOARD
CHANNEL 2
364717 B
SHEET 5 OF 13

A1200 REV 1->1D PCB

GENERAL DECOUPLING



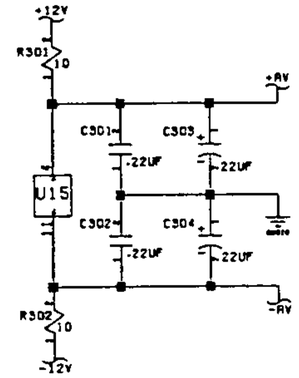
VIDEO DECOUPLING



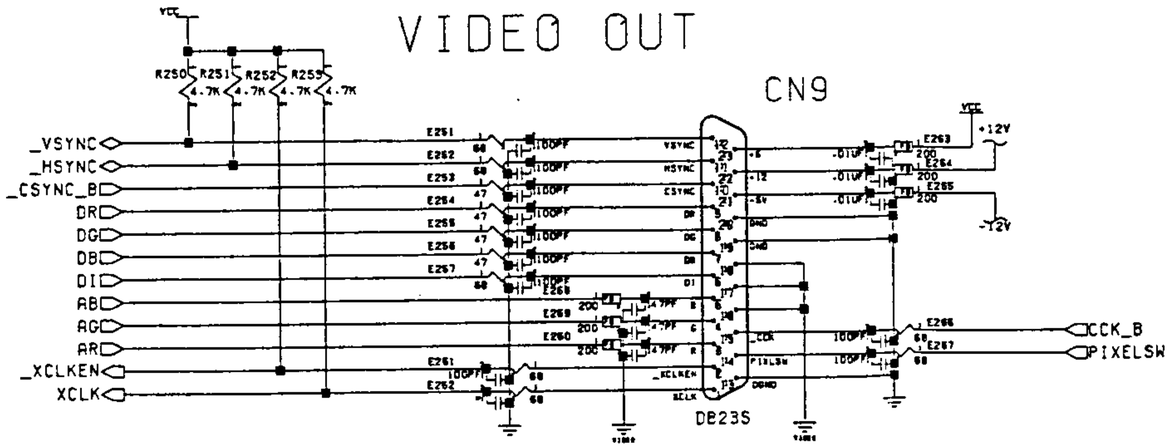
NOTE: AS OF REV 1C, LOGIC AND VIDEO GOUND AND POWER ARE THE SAME NET, BUT REOUTED DISCRETELY EXCEPT AT DAC1

ALSO ADDED C30C AND C30D FOR OVERKILL DAC DECOUPLING.

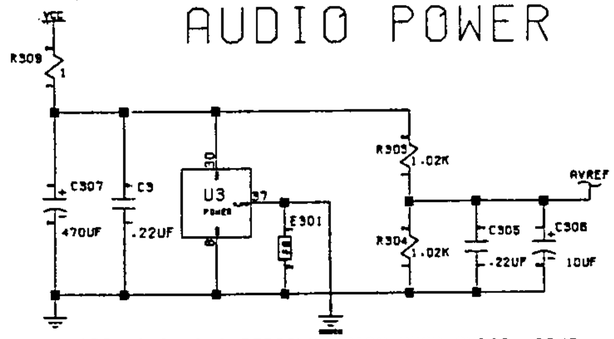
AUDIO DECOUPLING



VIDEO OUT



AUDIO POWER



NOTE: GROUND INTERCONNECTION NEAR AUDIO JACKS.

A1200 REV 1->1D PCB

PARTY OUT OF BOUNDS, WHAT A MESS...

C.A.D. GENERATED

NO MANUAL CHANGES MAY BE MADE TO THIS DRAWING

COMMODORE

SCHEMATIC A1200 R1D
C/A1200 MAIN BOARD
"CHANNEL Z"

C 364717 B

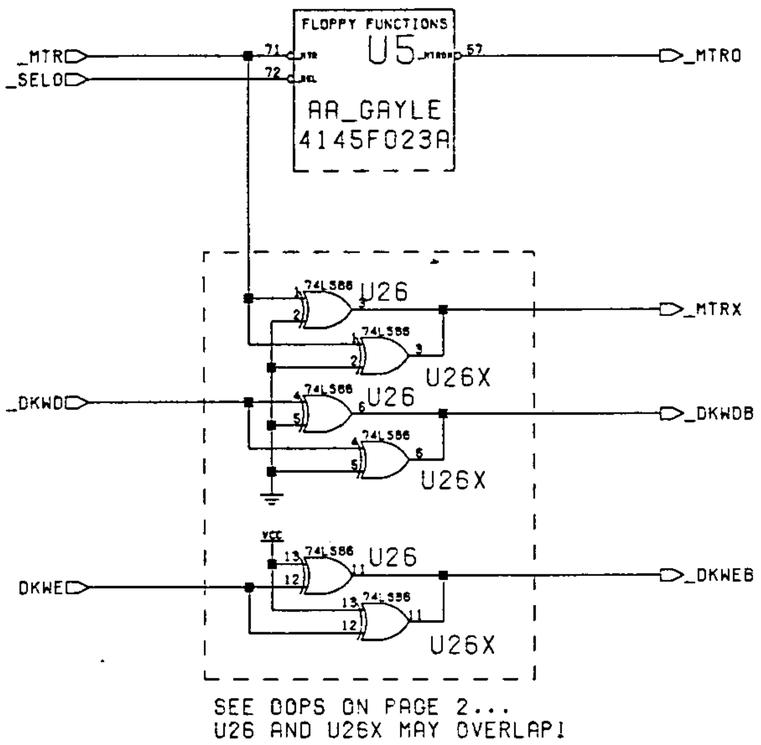
SCALE

SHEET 6 OF 12

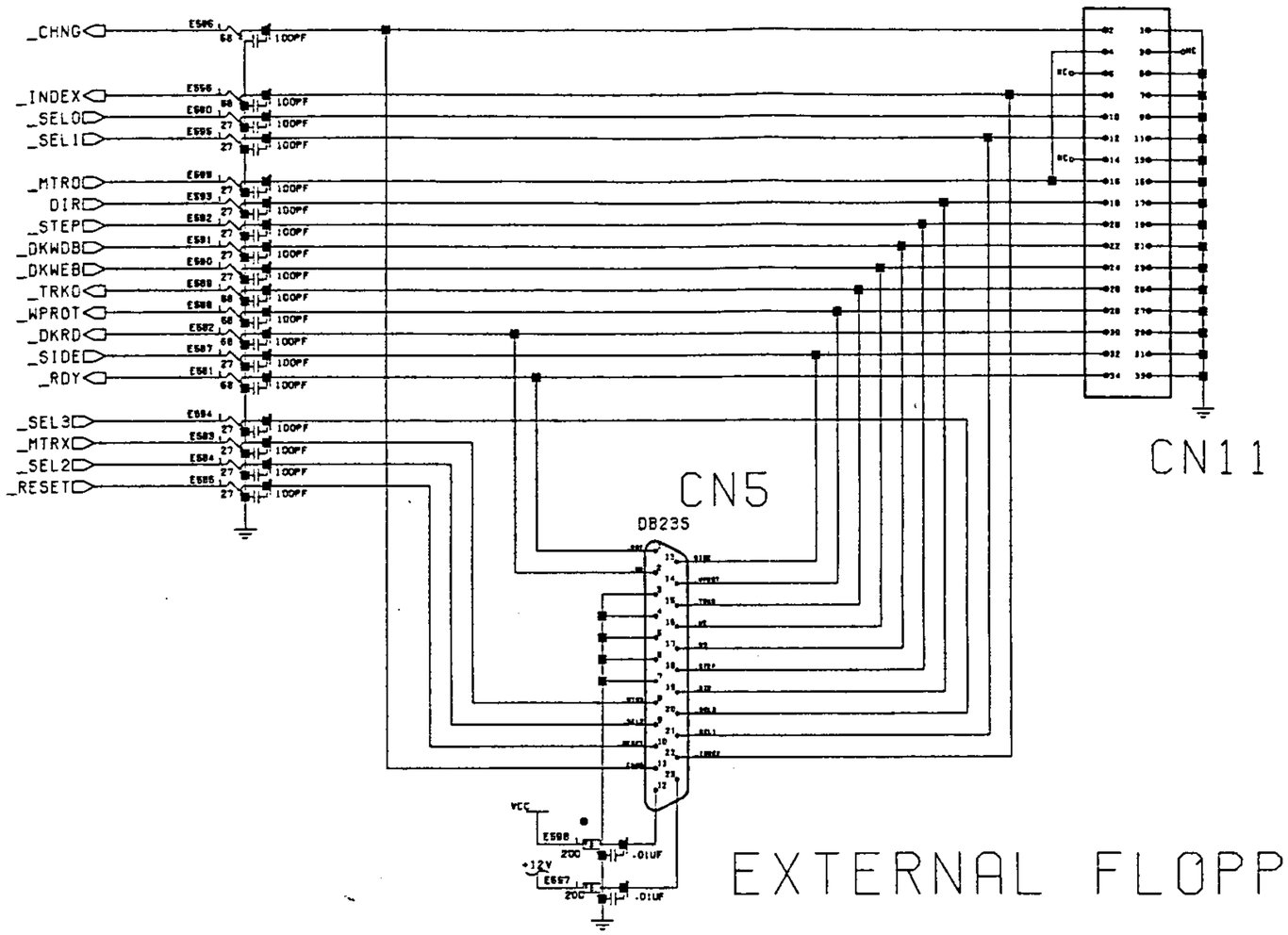
MENTOR GRAPHICS VAX SERVER 7.0

D(31:0)
A(23:0)
_ODD_CIA
_INT2
_VSYNC
U7
8520
VIA
10K
R511B
10K
R511A
VCC
_KB_DATA
_KB_CLOCK
_FIRE1
_FIRE0
_RDY
_TRK0
_WPROT
_CHNG
_LED
PPD(7:0)
10K
R511D
10K
R511F
10K
R511C
CN7 DB25
_RESET
PARALLEL PORT
D573
D572
IN4001
IN4001
OPTIONAL
Q571
2N3904
R571
2.7K
10K
R572
1N914
D571
U8
8520
VIA
_EVEN_CIA
R_W
E
_INT6
_HSYNC
_RST
_MTR
_SEL3
_SEL2
_SEL1
_SEL0
_SIDE
DIR
_STEP
1K
R512
_INDEX
D574
IN4001
10K
R511E
U28
1488
U29
1489
_XTXD
_TXD
_RXD
_XRXD
RS232 DB25P
CN6
+12V
-12V
.22UF
C551
_AUDIN
.22UF
C552
_AUDOUT
A1200 REV 1->1D PCB
SERIAL AND PARALLEL PORTS
COMMODORE
SCHEMATIC A1200 RIO
C/A1200 MAIN BOARD
CHANNEL 2
364717
C.A.D. GENERATED
MENTOR GRAPHICS VCR_SERVER 7.8

FLOPPY LOGIC

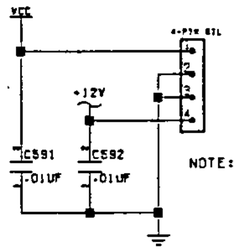


INTERNAL FLOPPY



EXTERNAL FLOPPY

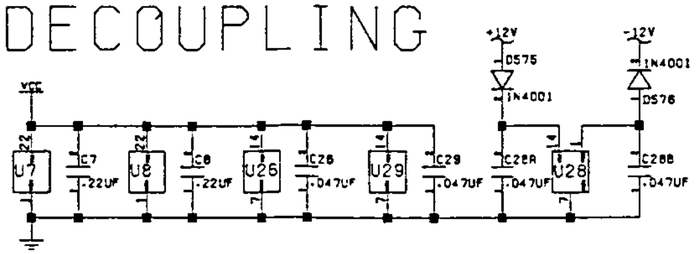
FLOPPY POWER



CN12

NOTE: SOME DRIVES ARE +5 ONLY...

DECOUPLING



THE REST OF THE FLOPPY STUFF

C.A.D. GENERATED

NO MANUAL CHANGES MAY BE MADE TO THIS DOCUMENT

COMMODORE

"SCHEMATIC A1200 R1D
C/A1200 MAIN BOARD
"CHANNEL Z"

SIZE C | 364717 | REV 1D

SCALE | SHEET 8 OF 13

A1200 REV 1->1D PCB

KEYBOARD TAIL

CN13

KEYBOARD MPU

U13

68HC05C

KEYBOARD

MICRO

R621 4.7KX9

R624 4.7KX9

R622 100

R625

R626

R623 10K

R628 1M

Y621 3MHZ

C621 22PF

C622 22PF

R629 10K

C629 .33UF

U49 RH5VA43A

IRQ

RESET

KB_CLOCK

KB_DATA

KB_RESET

PWR_BAD

POWER OK

KB LEDS

R631 10K

R632 4.7K

Q631 2N3906

R637

R638

Q634 2N3906

OPTIONAL

R633 10K

R634 4.7K

Q632 2N3906

R635 10K

R636 4.7K

Q633 2N3906

R639 100

_IDE_LED

_CC_ENA

_MTRO

_LED

6-PIN SIL

CN14

U13 POWER

C13 .22UF

THE NEW HOME OF THE KEYBOARD VIRUS

C.A.D. GENERATED

COMMODORE

SCHEMATIC A1200 RIO
A/R1200 MAIN BOARD
CHANNEL I"

C364717

SCALE

SHEET 9 OF 13

A1200 REV 1->1D PCB

MEMORY CARD

CN15

A[23:1]

CC_A0

WARNING:
BYTE SWAPPED

U45 74LS245

U46 74LS245

U47 74LS245

R714R 120

R714B 120

BUS PART
U20
BUDGIE
391425

R701 10K

CC_D[15:0]

CC_A[25:0]

_CC_CD(1)

_CC_CEU

_CC_CEL

_CC_OE

_CC_IORD

_CC_IOWR

_CC_WE_PGM

_CC_BUSY_IREQ

R717 10K

R718 10K

C701 .22UF

C702 .22UF

_CC_RESET

_CC_WAIT

_CC_REG

_CC_BVD(2)

_CC_BVD(1)

_CC_WP

_CC_CD(2)

R716 10K

74LS245

_OE

_WE

_IORD

_IOWR

_UDS

_LDS

_REG

_CC_WAIT

_CC_OE

_CC_WE_PGM

_CC_IORD

_CC_IOWR

_CC_CEU

_CC_CEL

_CC_REG

_WAIT

U43

_CC_ENA

R715 10K

CARD FUNCTIONS

U5

4145F023A

AA_GAYLE

_CC_CD(1)

_CC_CD(2)

_CC_BVD(1)

_CC_BVD(2)

_CC_WP

_CC_BUSY_IREQ

_REG

_WAIT

_IORD

_IOWR

_OE

_WE

_CC_ENA

CC_A0

CC_RESET

PE5

PE12

NOISE

.22UF C711

_IDE_IRQ

_IDE_CS(1)

_IDE_CS(2)

_INT2

_INT6

R715Y 10K

R715X 4.7K

U43 C43 .22UF

U45 C45 .22UF

U46 C46 .22UF

U47 C47 .22UF

A1200 REV 1->1D PCB

THE KISSY FACE CREDIT CARD MONSTER

C.A.D. GENERATED

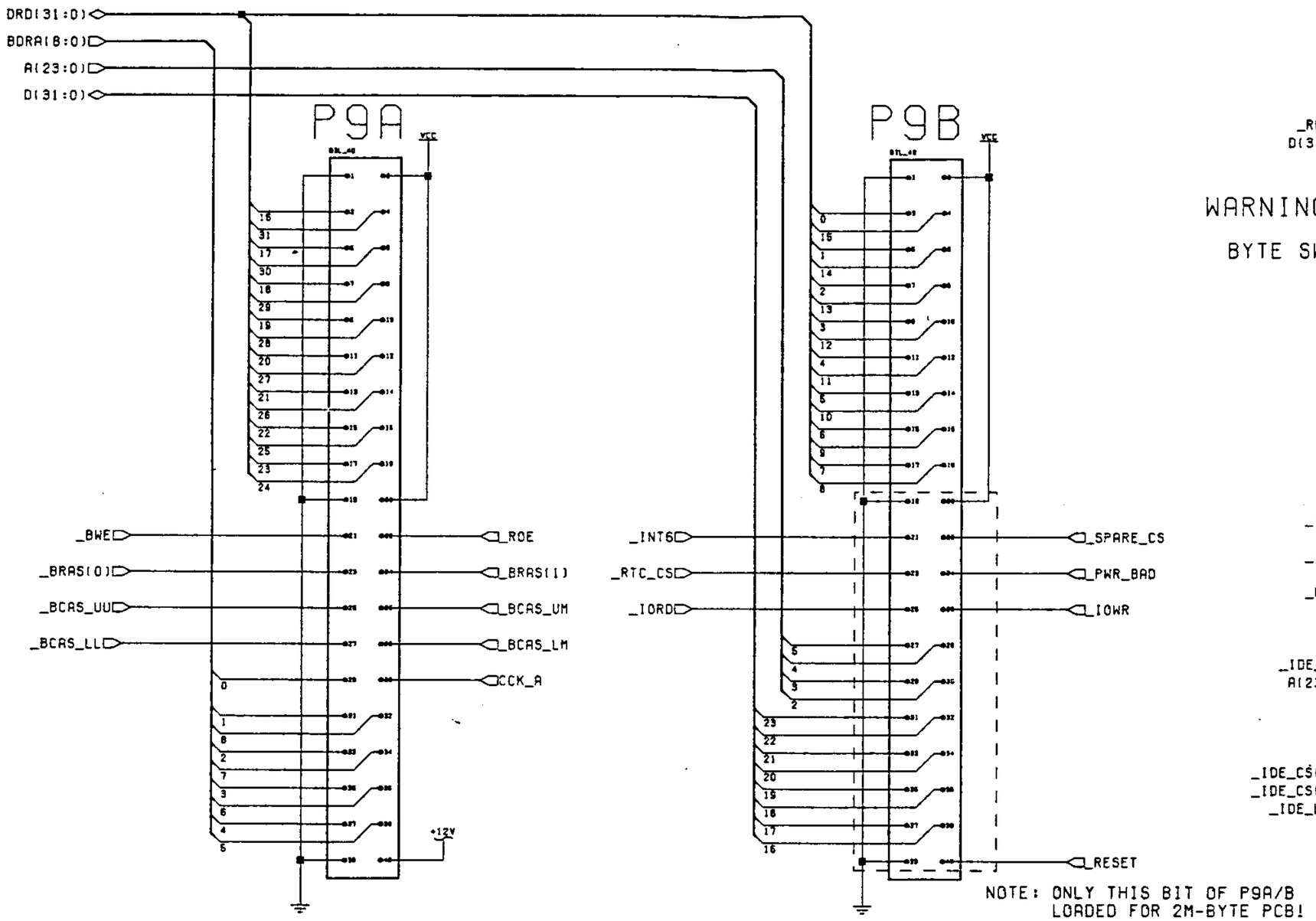
COMMODORE

SCHEMATIC A1200 RID
C/A1200 MAIN BOARD
CHANNEL 2"

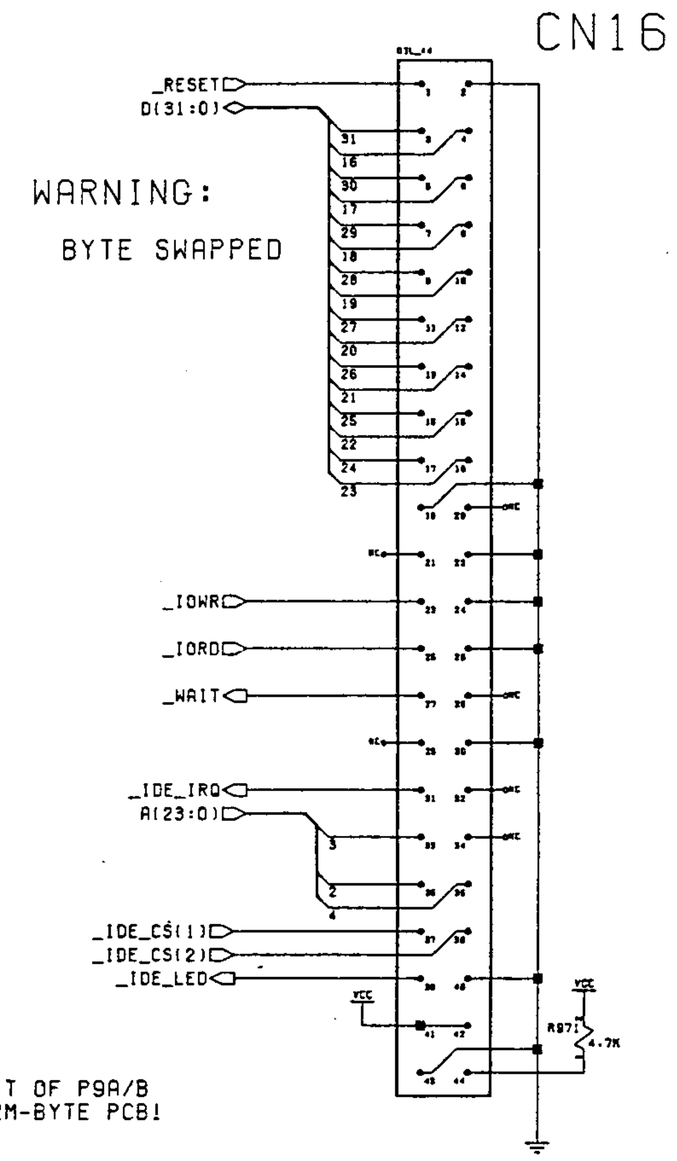
SIZE C 364717 B

SHEET 11 OF 13

MEMORY EXPANSION



IDE DRIVE



A1200 REV 1->1D PCB

MEMORY EXPANSION AND THE IDE DRIVE

C.A.D. GENERATED

COMMODORE

SCHEMATIC A1200 REV
C/A1200 MAIN BOARD
"CHANNEL 2"

SIZE C 364717

SCALE

SHEET 12 OF

EXPANSION CONNECTOR

P1

A(31:0)
D(31:0)
VCC
_IPL(2:0)
FC(2:0)
_RST
_ECS
SIZE_1
_AS
R_W
_STERM
_DSACK_1
CPUCLK_A
_CDIS
DELETED R1B PCB
_CIIN
_CBREQ
_BR
_BGACK
_FPU_CS
CCK_A
_IPEND
_HLT
_OCS
SIZE_0
_DS
_BEER
_AVEC
_DSACK_0
E
_RMC
_CIOUT
_CBACK
_BG
_BOSS
_FPU_SENSE
_RESET

POWER INPUT

CN8

5-PIN SQ
+12
GND
-12V
SH
+5

LF1 LINE FILTER
LF1A
LF1B
LF1C
LF1D

C800 .01UF
C801 .01UF
C802 .01UF
C803 .01UF
C804 .22UF
C821 47UF
C822 47UF
C811 1000UF
+12V
-12V
VCC

NOTE: HEAVY LINES INDICATE A SINGLE POINT CONNECTION

HOLES &C.

CN1
CN2
CN5
CN6
CN7
CN9
CN15

MT1
MT2
MT3
MT4
MT5
MT6
MT7
MT8

V1
V2
V3
V4
V5
V6
V7
V8

V9
V10
V11
V12
V13
V14
V15

TEST ACCESS

TP1
CPUCLK
_AS
_DS
R_W
_DSACK_0
_DSACK_1
_ROMEN
_CDIS
_KB_RESET

TP2
CCK
CCKQ
_RAMEN
_REGEN
_BLS
_OEB
_RAS
_CAS
_DWE

RGA(8:1)
_DBR

TERMINATION

VCC
_HLT
_RST
SIZE_0
SIZE_1
R_W
_AS
_DS
_DSACK_0
_DSACK_1
_BEER
_AVEC
_CDIS
_BR
_IPL(2:0)
FC(2:0)
4.7K
470
1K
R951A
R951B
R951C
R951D
R951E
R951F
R961D
R952A
R952B
R101
R103
R102
R104
R953A
R953B
R953C
R953D

JUMPERS AND STUFF

REF	TYPE	DESCRIPTION	PAGE
R246	SMT	NTSC COLOR BURST	4
R202	SMT	PAL COLOR BURST	4
R625	SMT	KEYBOARD MPU CLOCK	9
R624	SMT	KEYBOARD/SYSTEM RESET	9

CONNECTORS

REF	TYPE	DESCRIPTION	PAGE
CN1	DB9P	MOUSE/JOYSTICK 1	5
CN2	DB9P	MOUSE/JOYSTICK 2	5
CN3	RCA-J	RIGHT AUDIO OUTPUT	5
CN4	RCA-J	LEFT AUDIO OUTPUT	5
CN5	DB23S	EXTERNAL FLOPPY	8
CN6	DB25P	RS232 SERIAL PORT	7
CN7	DB25S	PARALLEL PRINTER PORT	7
CN8	SQ DIN	POWER SUPPLY CONNECTOR	3
CN9	DB23P	VIDEO OUTPUT	6
CN10	RCA-J	COMPOSITE VIDEO	4
CN11	DIL-34	INTERNAL FLOPPY SIGNAL	8
CN12	SIL-4	INTERNAL FLOPPY POWER	8
CN13	MEM-30	KEYBOARD MEMBRANE	9
CN14	SIL-4	INTERNAL FLOPPY POWER	8
CN13	MEM-30	KEYBOARD MEMBRANE	9
CN14	SIL-4	KEYBOARD STATUS LED'S	9
CN15	PCMCIA	PC "MEMORY CARD"	11
P9	EDGE-60	MEMORY BUS EXPANSION	12

REVISION HISTORY

REV	DESCRIPTION	DATE	APPVL	MANAGER
0	ENGINEERING PROTOTYPE	03/13/92	GRR	
1	ADVANCE ENGINEERING RELEASE	06/29/92	GRR	
A	PILOT PRODUCTION RELEASE	09/09/92	GRR	
B	REVISED PER ECO #20655	11-13-92	DX	

SIGNAL GLOSSARY

SIGNAL	DESCRIPTION (AREA)	PAGES
28MHZ	28.63636 MHZ MASTER CLOCK	
7MHZ	7.15909 MHZ PROCESSOR CLOCK	
A[23:1]	PROCESSOR ADDRESS BUS (68000)	
ACK	DATA ACKNOWLEDGE (PARALLEL PORT)	
AS	ADDRESS STROBE (68000)	
AUDIN	AUDIO INPUT (RS232 PORT)	
AUDOUT	AUDIO OUTPUT (RS232 JACK)	
BERR	BUS ERROR (68000)	
BG	BUS GRANT (68000)	
BGACK	BUS GRANT ACKNOWLEDGE (68000)	
BLISS	BLITTER SLOWDOWN (CHIPS)	
BLIT	CHIP MEMORY ACCESS (CHIPS)	
BR	BUS REQUEST (68000)	
BUSY	DEVICE BUSY (PARALLEL PORT)	
CASL/U	COLUMN ADDRESS STROBE (DRAM)	
CCK/CCKQ	COLOR CLOCK / QUADRATURE (CHIPS)	
CDAC	7.15909 MHZ QUADRATURE CLOCK (CHIPS)	
CHNG	MEDIA CHANGE (FLOPPY)	
CLKRD/WR	READ-TIME CLOCK READ / WRITE (RTC)	
COMP	MONOCHROME COMPOSITE VIDEO (VIDEO)	
CSYNC	COMPOSITE SYNC (VIDEO)	
CTS	CLEAR TO SEND (RS232 PORT)	
D[15:0]	PROCESSOR DATA BUS (68000)	
DIR	STEP DIRECTION (FLOPPY)	
DKRD	DISK READ DATA (FLOPPY)	
DKWD	DISK WRITE DATA (FLOPPY)	
DKWE	DISK WRITE ENABLE (FLOPPY)	
DMAL	CHIP DMA REQUEST LINE (CHIPS)	
DRA[8:0]	DRAM ADDRESS BUS (DRAM)	
DRD[15:0]	DRAM DATA BUS (DRAM)	
DSR	DATA SET READY (RS232 PORT)	
DTACK	DATA TRANSFER ACKNOWLEDGE (68000)	
DTR	DATA TERMINAL READY (RS232 PORT)	
E	PERIPHERAL ENABLE CLOCK (68000)	
EXTICK	EXPANSION PRESENT / RTC TICK	
FC[2:0]	FUNCTION CODE (68000)	
FIRE0/1	FIRE BUTTON 0/1 (JOYSTICKS)	
HLT	PROCESSOR HALT (68000)	
HSYNC	HORIZONTAL SYNC (VIDEO)	
INDEX	INDEX PULSE (FLOPPY)	
INT[2,3,6]	INTERRUPT REQUEST (CHIPS)	
IORESET	I/O RESET	
IPL[2:0]	INTERRUPT PRIORITY LEVEL (68000)	
KBCLOCK	KEYBOARD CLOCK (KEYBOARD)	
KBDATA	KEYBOARD DATA (KEYBOARD)	
KBRESET	KEYBOARD RESET (KEYBOARD)	
LDS/UDS	UPPER / LOWER DATA STROBES (68000)	
LED	POWER ON LED / AUDIO FILTER DISABLE	
LEFT/RIGHT	LEFT RIGHT AUDIO (AUDIO)	

SIGNAL	DESCRIPTION (AREA)	PAGES
LPEN	LIGHT PEN TRIGGER (JOYSTICKS)	
MTR	MOTOR ON (FLOPPY)	
MTR0	MOTOR ON - DRIVE 0 (FLOPPY)	
MOV/MOH	MOUSE 0 QUADRATURE V/H (JOYSTICKS)	
M1V/M1H	MOUSE 1 QUADRATURE V/H (JOYSTICKS)	
OVL	OVERLAY ROM OVER RAM	
OVR	OVERRIDE SYSTEM DECODING	
PIXELSW	GENLOCK PIXEL SWITCH (VIDEO)	
POT0X/0Y	POT LINES 0 X/Y (JOYSTICKS)	
POT1X/1Y	POT LINES 1 X/Y (JOYSTICKS)	
POUT	PAPER OUT (PARALLEL PORT)	
PPD[7:0]	PARALLEL PORT DATA (PARALLEL PORT)	
RAMEN	RAM ENABLE (CHIPS)	
REGEN	CHIP REGISTER ENABLE (CHIPS)	
RAS0/1	ROW ADDRESS STROBE (DRAM)	
RDY	DRIVE READY (FLOPPY)	
RESET	GENERAL RESET	
RGA[8:1]	REGISTER ADDRESS BUS (CHIPS)	
R/G/B	RED / GREEN / BLUE (VIDEO)	
RI	RING INDICATE (RS232 PORT)	
ROMEN	ROM ENABLE (ROM)	
RTS	REQUEST TO SEND (RS232 PORT)	
RST	PROCESSOR RESET (68000)	
RXD	RECEIVE DATA (RS232 PORT)	
RW	PROCESSOR READ/WRITE (68000)	
SEL	SELECT (PARALLEL PORT)	
SEL[3:0]	DRIVE SELECT (FLOPPY)	
SIDE	SIDE SELECT (FLOPPY)	
STEP	STEP IN/OUT COMMAND (FLOPPY)	
TK0	TRACK ZERO SENSE (FLOPPY)	
TXD	TRANSMIT DATA (RS232 PORT)	
VMA	VALID MEMORY ADDRESS (68000)	
VPA	VALID PERIPHERAL ADDRESS (68000)	
VSYNC	VERTICAL SYNC (VIDEO)	
WE	WRITE ENABLE (DRAM)	
WPROT	WRITE PROTECT SENSE (FLOPPY)	
XCLK	EXTERNAL GENLOCK CLOCK (VIDEO)	
XCLKEN	EXTERNAL CLOCK ENABLE (VIDEO)	
XRDY	EXTERNAL DATA READY	
	** CREDIT CARD AND IDE STUFF? **	

KEY COMPONENTS

REF	CHIP	DESCRIPTION	PAGE
U1	68000	68000 PROCESSOR 16MHZ	2
U2	8374	ALICE (AP AGNUS)	2
U3	8364	PAULA	5
U4	4203	LISA (AA DENISE)	4
U5	F023A	AA GAYLE (CBM ASIC)	2,8,11
U6	ASST	ROM 512KX16, 150 NS	10
U7-8	8520	AMIGA VIA, 1 MHZ	7
U10-11	28F10	FLASH MEMORY 128KX8	10
U12	CXA1145	SONY VIDEO ENCODER	4
U13	68HC05	AMIGA KEYBOARD MPU	9
U49	PST518	LOW VOLTAGE SENSE IC	9
U15	LF347	BIMOS OP-AMP	5
	TL064	BIMOS OP-AMP	ALT
U16-17	ASST	DRAM 256KX16, 80NS	3
U18-19	ASST	DRAM 256KX16 OPTIONAL	3
U20	391???	BUDGIE (ASIC)	2
U28	1488	EIA LINE DRIVER	7
U29	1489	EIA LINE RECEIVER	7
U30	BT101	TRIPLE 8-BIT VIDEO DAC	4
X1	OSC	TTL 28.63636 MHZ NTSC	2
	OSC	TTL 28.37512 MHZ PAL	ALT
Y451	XTAL	4.43619MHZ PAL BURST	4
Y621	XTAL	3MHZ CERAMIC RESONATOR	9
X2	ASST	PAL VIDEO MODULATOR	4
	ASST	NTSC VIDEO MODULATOR	4

DIRECTORIES AND REVISION HISTORY

COMMODORE

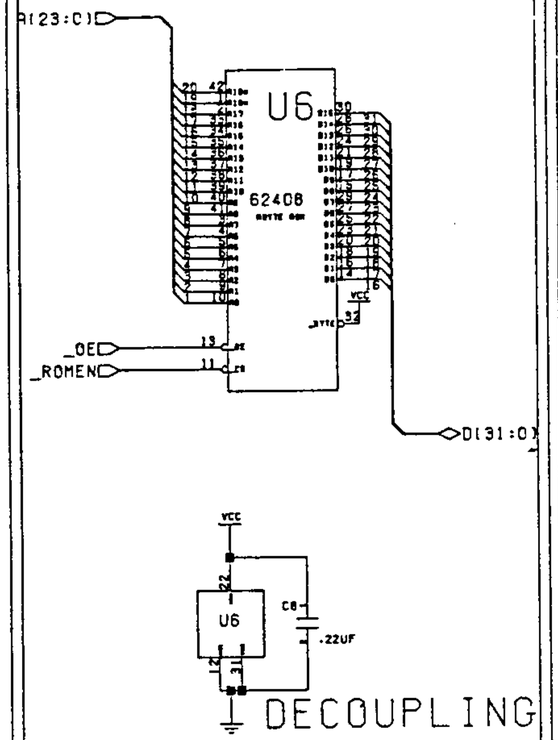
SCHEMATIC A1200 RIO
C/A1200 MAIN BOARD
CHANNEL 'F'

PN 364717 6

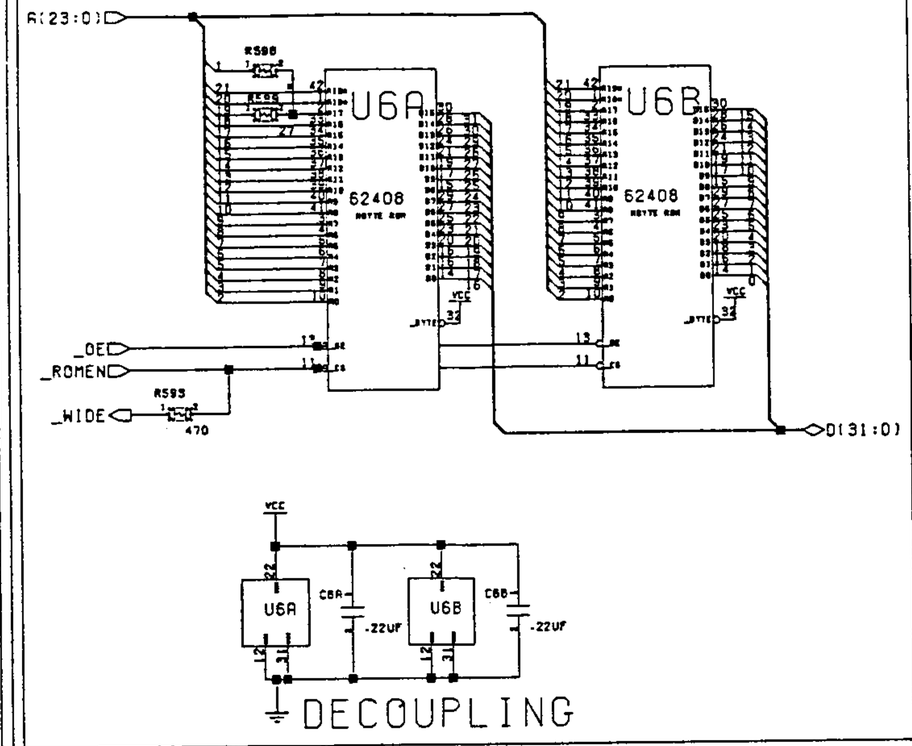
SCALE | SHEET 1 OF 12

A1200 REV 1->1D PCB

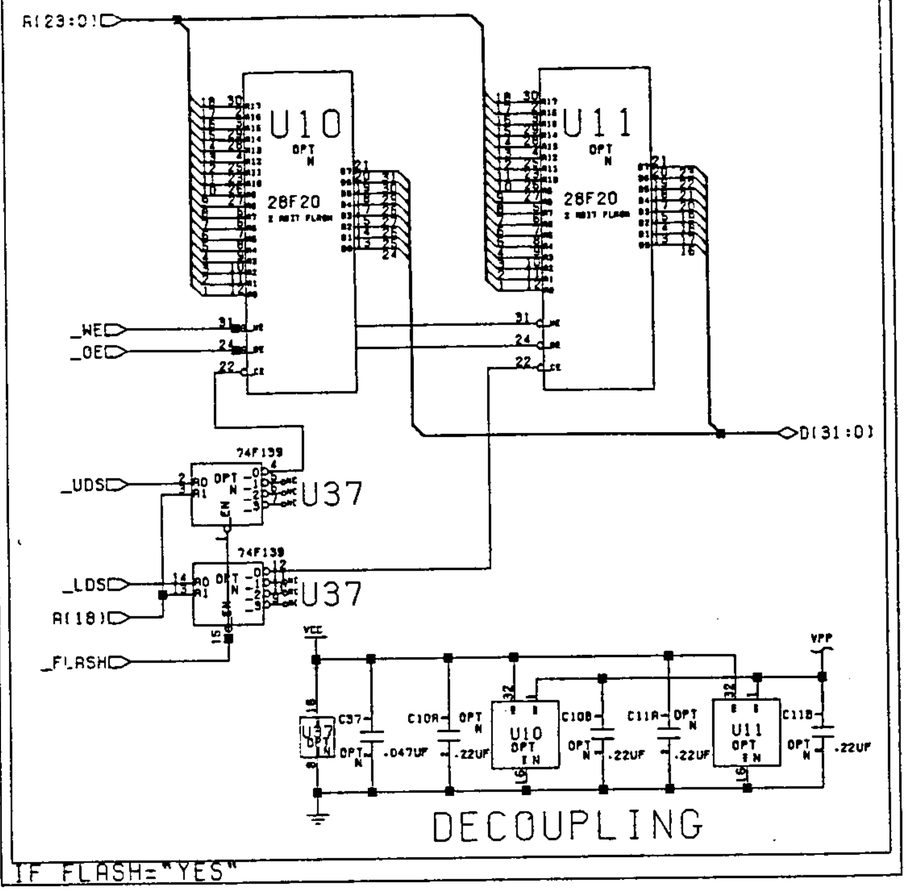
16-BIT ROM



32-BIT ROM



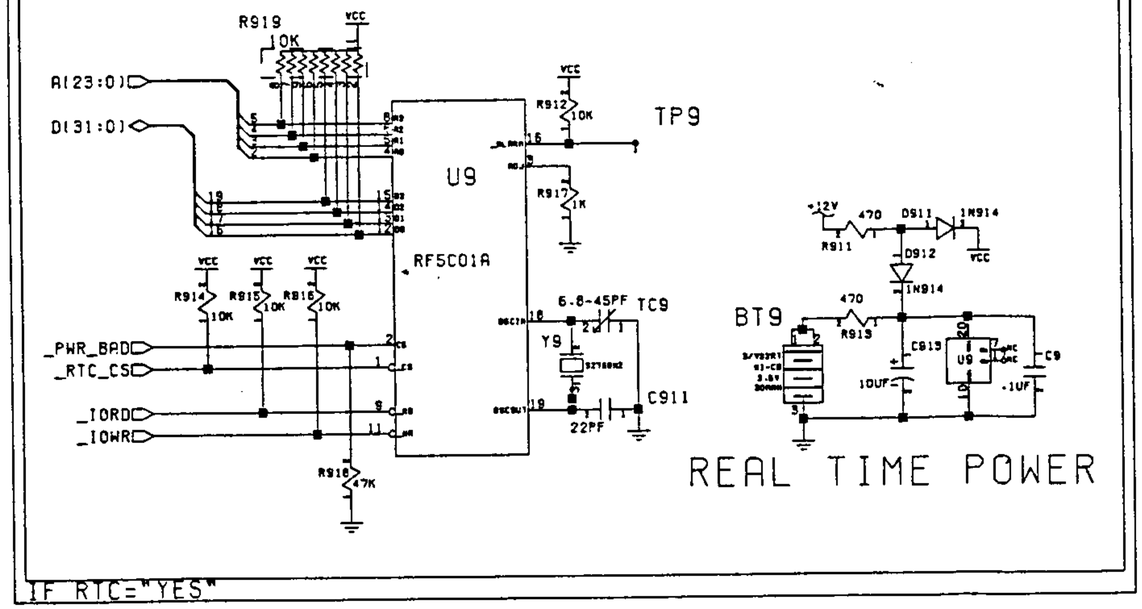
FLASH MEMORY



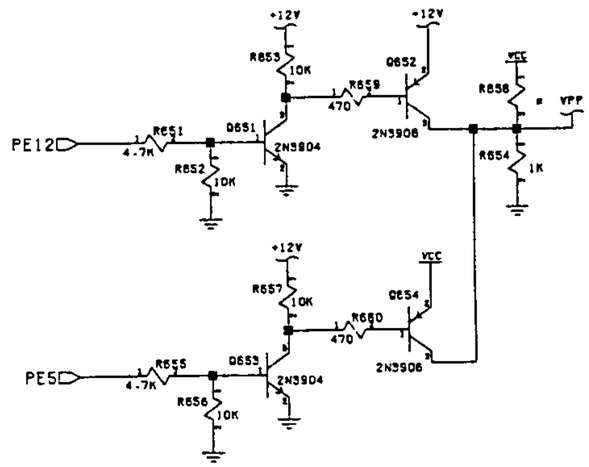
16 AND 32-BIT SOCKETS MAY OVERLAP!

OPTIONAL FLASH MEMORY

REAL TIME CLOCK



PROGRAMMING VOLTAGE



OPTIONAL REAL-TIME CLOCK/CALENDAR

A1200 REV 1->1D PCB

ROM - PLAIN AND FANCY - DODADS TOO!

C.A.D. GENERATED

COMMODORE
SCHEMATIC A1200 R1D
C/A1200 MAIN BOARD
CHANNEL 2"
364717.5

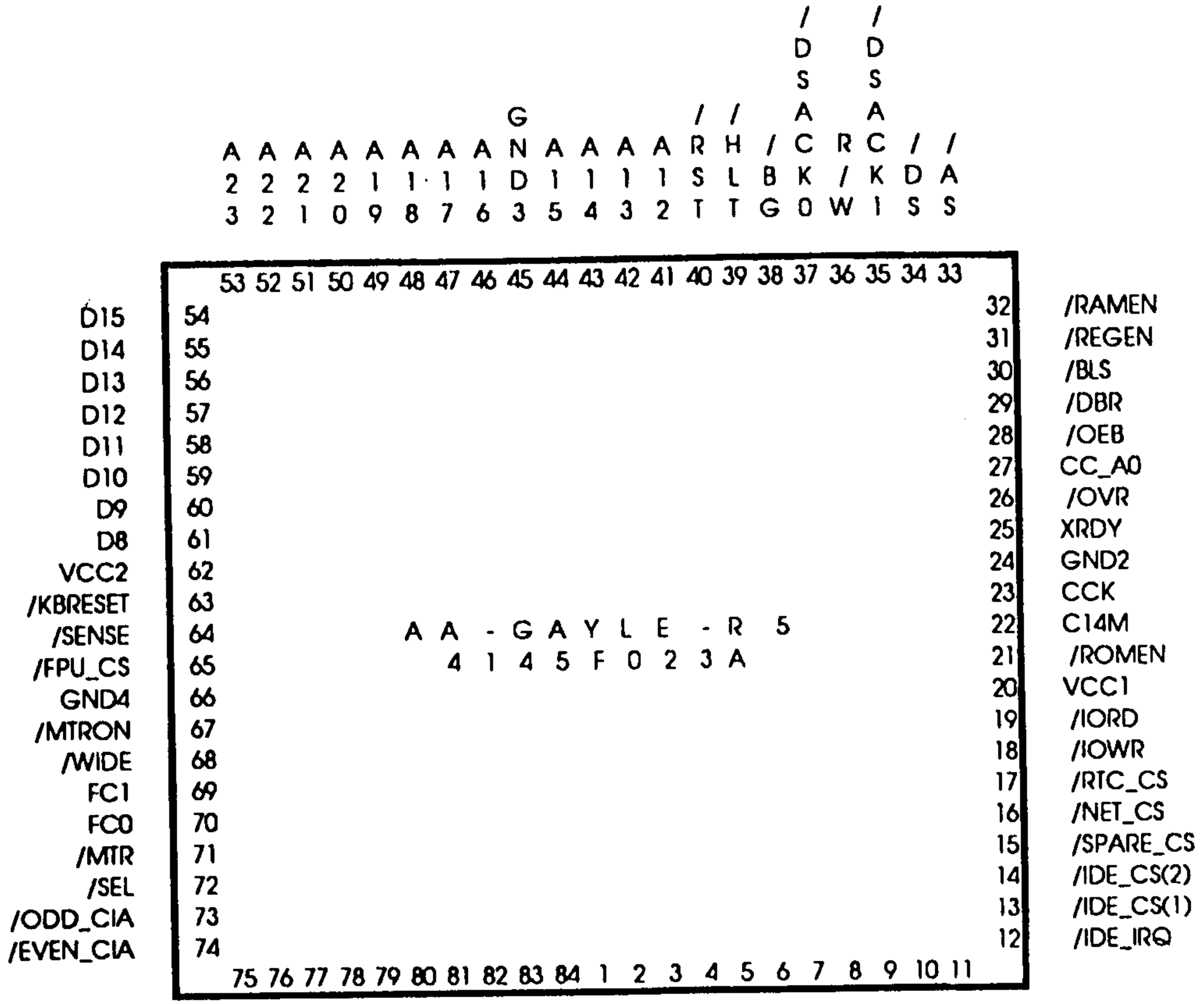


Figure 5-5. AA-GAYLE

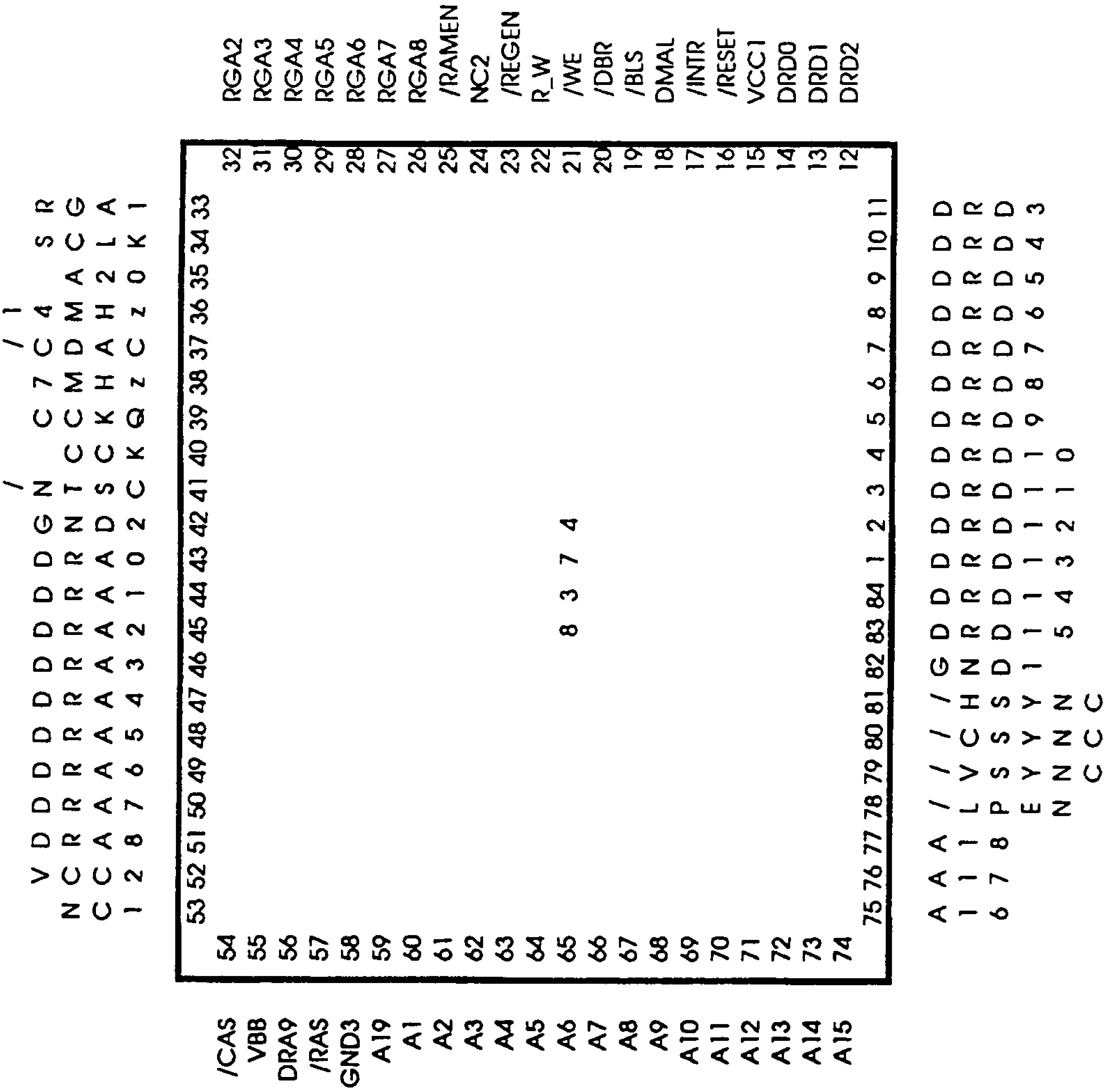


Figure 5-3. ALICE

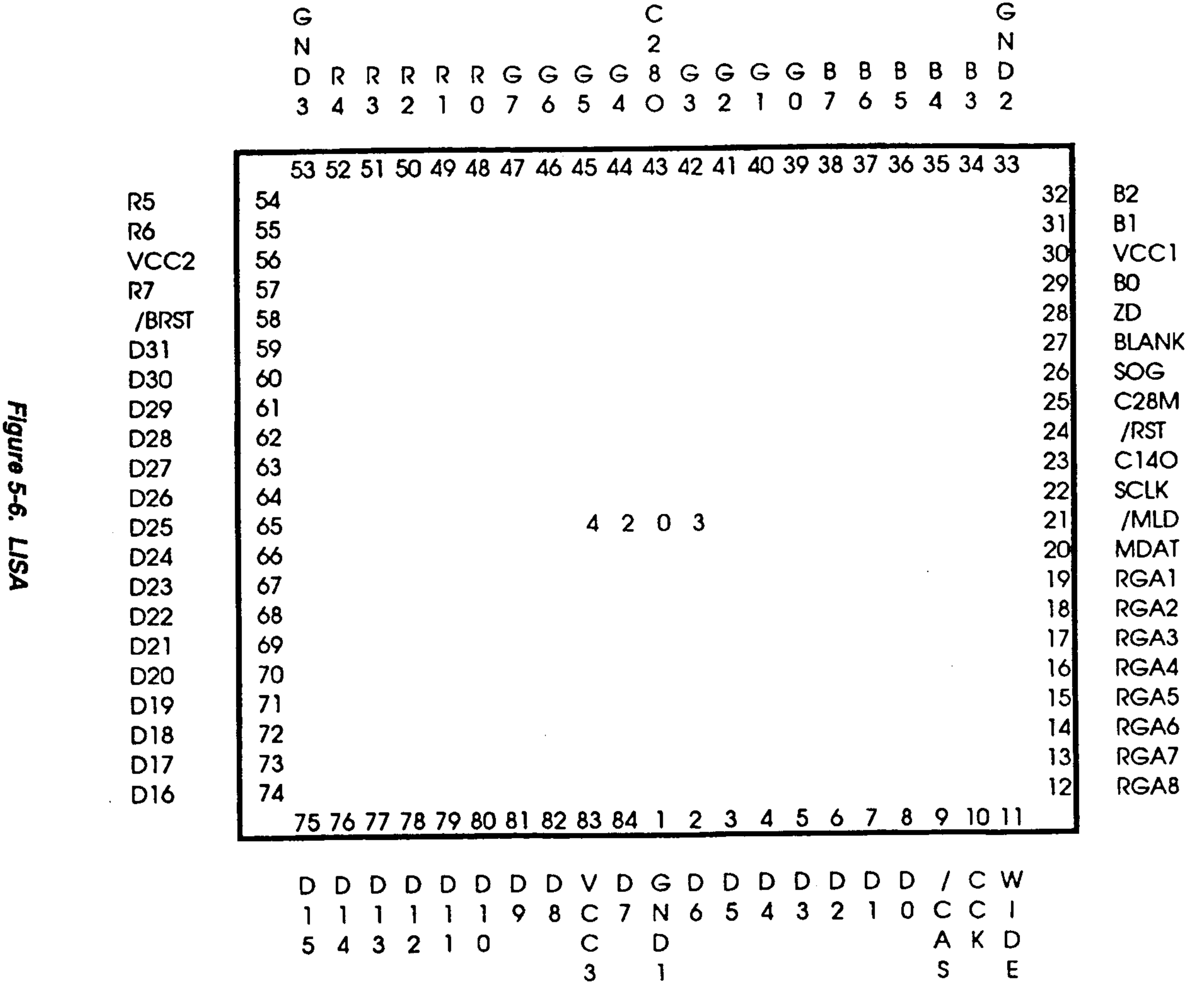
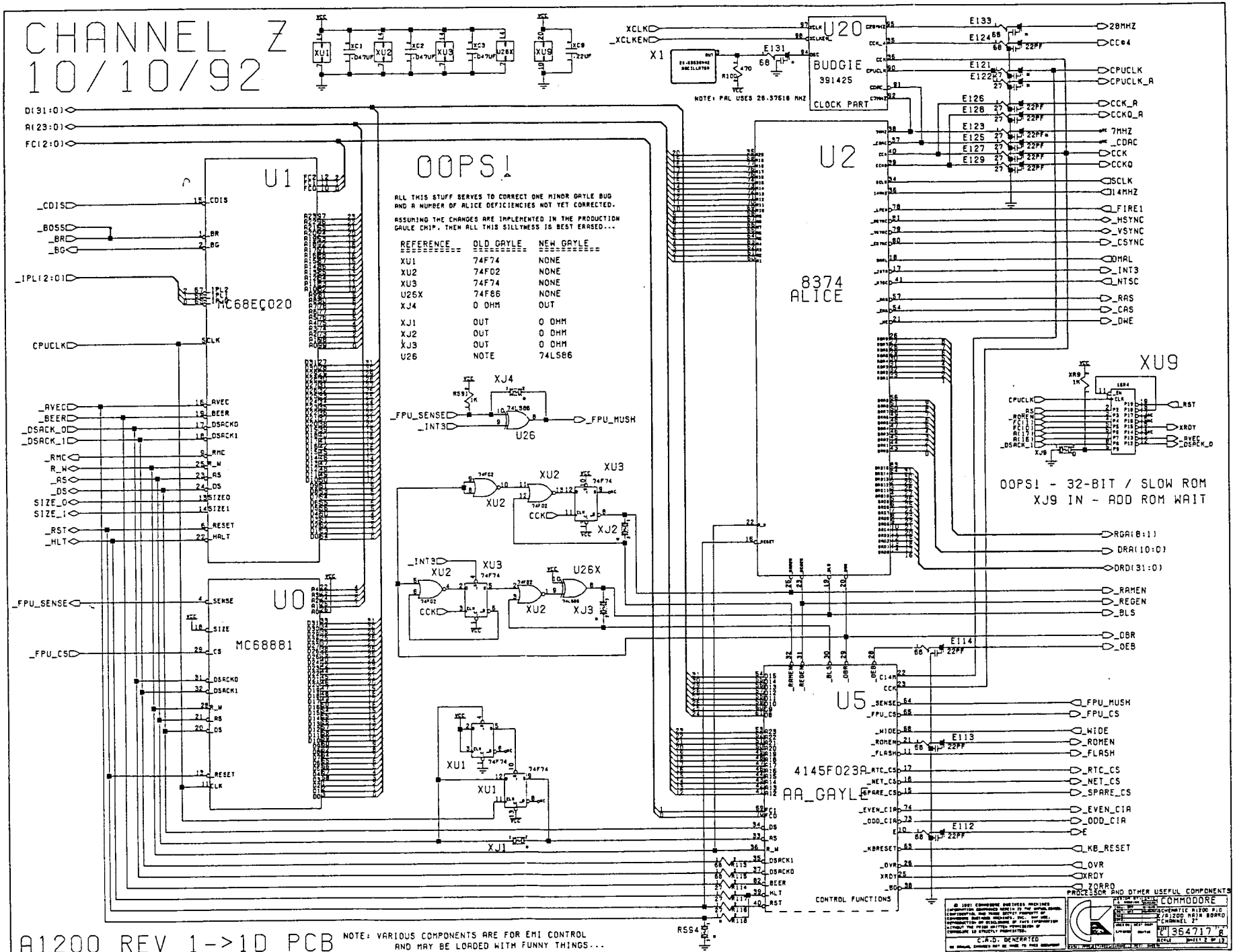
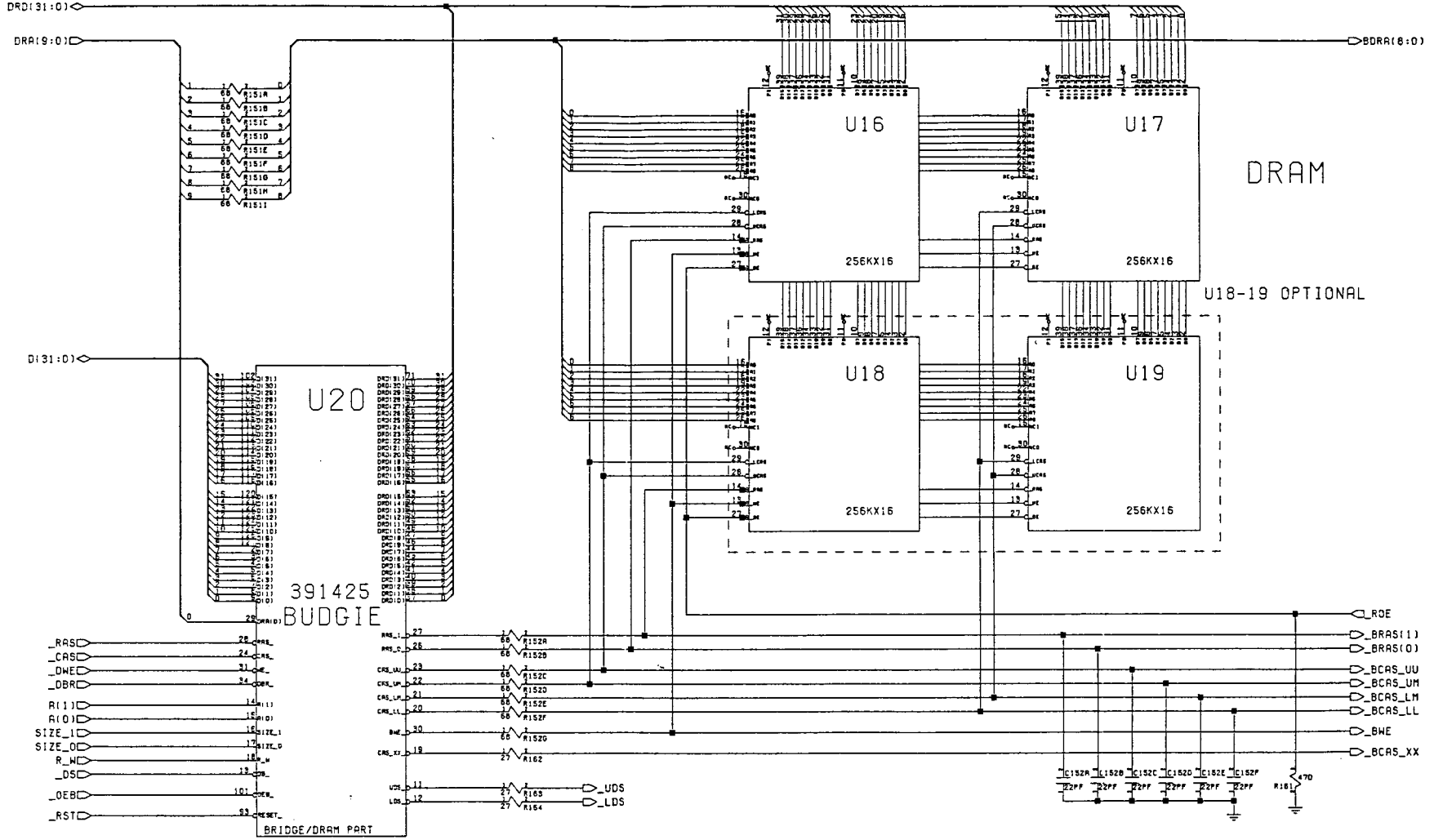


Figure 5-6. LISA


CHANNEL Z
10/10/92
U1
MC68EC020
U0
MC68881
U2
8374
ALICE
U5
4145F023A
AA_GAYLE
U20
BUDGIE
391425
CLOCK PART
X1
NOTE: PAL USES 28.37518 MHZ
U26
U26X
XU1
XU2
XU3
XJ1
XJ2
XJ3
XJ4
XU9
OOPS!
ALL THIS STUFF SERVES TO CORRECT ONE MINOR GAYLE BUG AND A NUMBER OF ALICE DEFICIENCIES NOT YET CORRECTED.
ASSUMING THE CHANGES ARE IMPLEMENTED IN THE PRODUCTION GAYLE CHIP, THEN ALL THIS SILLYNESS IS BEST ERASED...
REFERENCE | OLD GAYLE | NEW GAYLE
XU1 | 74F74 | NONE
XU2 | 74F02 | NONE
XU3 | 74F74 | NONE
U26X | 74F86 | NONE
XJ4 | 0 OHM | OUT
XJ1 | OUT | 0 OHM
XJ2 | OUT | 0 OHM
XJ3 | OUT | 0 OHM
U26 | NOTE | 74LS86
OOPS! - 32-BIT / SLOW ROM
XJ9 IN - ADD ROM WAIT
PROCESSOR AND OTHER USEFUL COMPONENTS
CONTROL FUNCTIONS
A1200 REV 1->1D PCB
NOTE: VARIOUS COMPONENTS ARE FOR EMI CONTROL AND MAY BE LOADED WITH FUNNY THINGS...
C.A.D. GENERATED
COMMODORE
A1200 REV1D.1
364717 R



A1200 REV 1->1D PCB

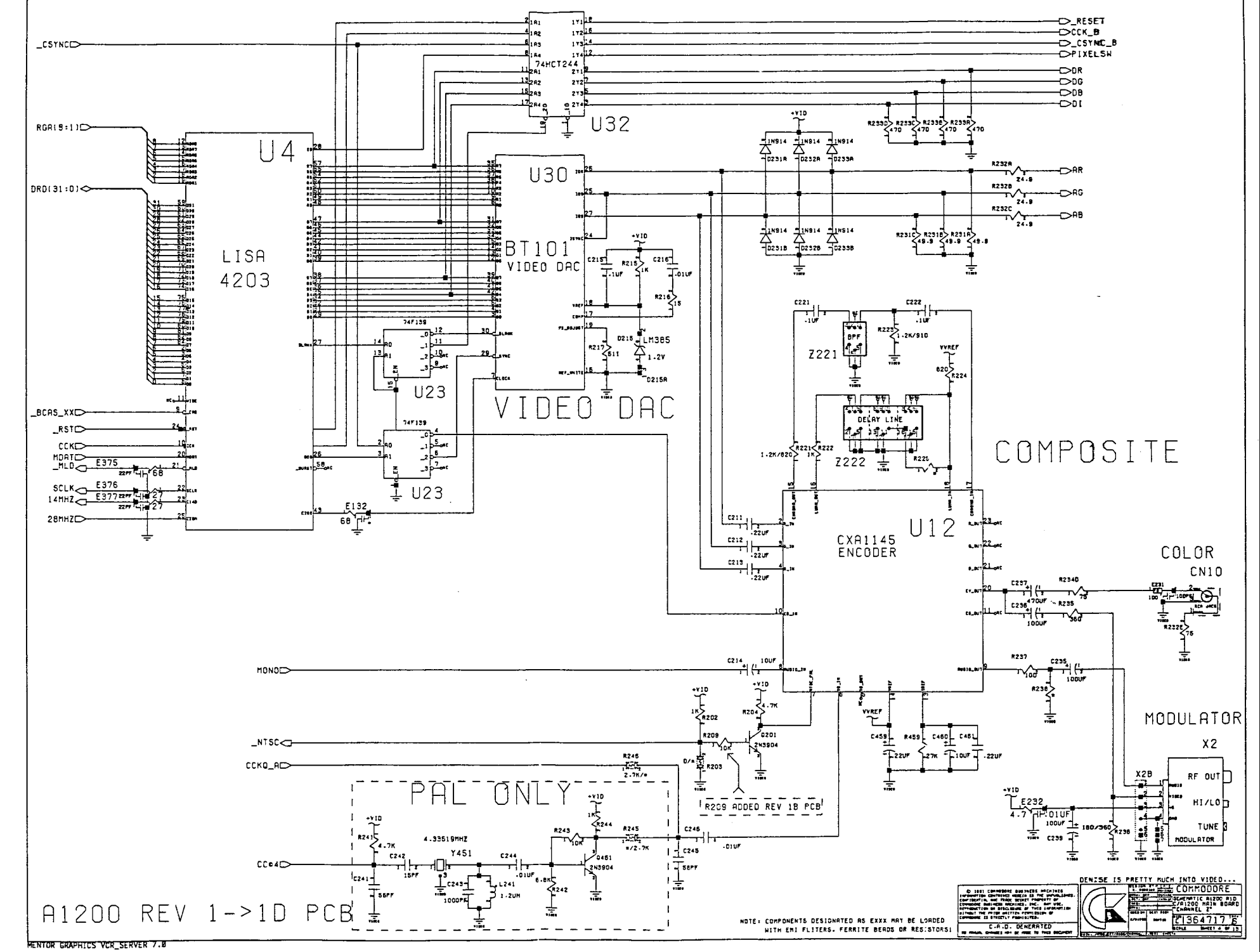
MEMORY AND...WELL, I USED TO REMEMBER

COMMODORE

SCHEMATIC A1200 A1D
C/A1200 MAIN BOARD
CHANNEL 2

PART 364717 E

SHEET 3 OF 18


_CSYNC
RGA[9:1]
DRD[31:0]
_BCAS_XX
_RST
CCK
MDAT
_MLD
SCLK
14MHZ
28MHZ
U4
LISA
4203
74HCT244
U32
U30
BT101
VIDEO DAC
VIDEO DAC
74F139
U23
74F139
U23
_RESET
CCK_B
_CSYNC_B
PIXELSW
DR
DG
DB
DI
AR
AG
AB
+VID
1N914
D231A
D232A
D233A
D231B
D232B
D233B
R232A
R232B
R232C
24.9
R231C
R231B
R231A
49.9
C215
.1UF
R215
1K
C216
.01UF
R216
15
D216
LM385
1.2V
D215A
R217
511
C221
.1UF
C222
.1UF
Z221
BPF
R225
1.2K/910
VVREF
620
R224
DELAY LINE
Z222
R221
1.2K/620
R222
1K
R225
COMPOSITE
U12
CXA1145
ENCODER
C211
.22UF
C212
.22UF
C213
.22UF
COLOR
CN10
C237
470UF
R234D
75
C236
100UF
R235
360
C231
100
10PF
R232E
75
C214
10UF
MONO
R237
100
C235
100UF
R236
MODULATOR
X2
RF OUT
HI/LO
TUNE
MODULATOR
X2B
_NTSC
CCKQ_A
R202
1K
R204
4.7K
R209
10K
R203
D/A
Q201
2N3904
R209 ADDED REV 1B PCB
C459
.22UF
R459
27K
C460
10UF
C461
.22UF
R246
2.7K/*
PAL ONLY
R241
4.7K
C242
15PF
4.43619MHZ
Y451
C244
.01UF
R243
10K
R244
1K
R245
*/2.7K
C246
.01UF
C245
56PF
C241
56PF
C243
1000PF
L241
1.2UH
6.8K
R242
Q451
2N3904
CCK4
E232
4.7
.01UF
100UF
180/360
R238
C239
E132
68
E375
68
E376
27
E377
27
22PF
DENISE IS PRETTY MUCH INTO VIDEO...
COMMODORE
A1200 REV 1->1D PCB
NOTE: COMPONENTS DESIGNATED AS EXXX MAY BE LOADED
WITH EMI FLITERS. FERRITE BEADS OR RESISTORS!
C.A.D. GENERATED
MENTOR GRAPHICS VCR_SERVER 7.0

MOUSE/JOYSTICK PORTS

LEFT JOY
CN1
DB9P CN1A

RIGHT JOY
CN2
DB9P

U34
74LS166

U3
PAULA
8364

U15
LF347
/TL084

U28
1488

_FIRE0
_FIRE1
POT0Y
POT0X
POT1Y
POT1X
_IPL[2:0]
IPL2
IPL1
IPL0
DRD[31:0]
RGA[8:1]
_INT6
_INT3
_INT2
_RXD
_TXD
_DKRD
_DKWD
DKWE
DMAL
CCK
CCKQ
_RST
RESET
RIGHT
LEFT
NOISE
AUDIN
IRIGHT
ILEFT
AVREF
_LED
MDAT
MLD
CCK_A
MONO
AUDOUT

NOTE: LED OFF. FILTERS BYPASSED

AUDIO FILTERS

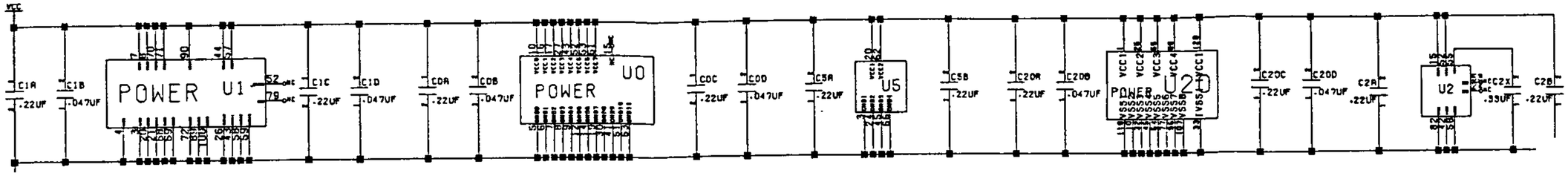
PAULA PREFERS THE TRADITIONAL MODES

C.A.D. GENERATED

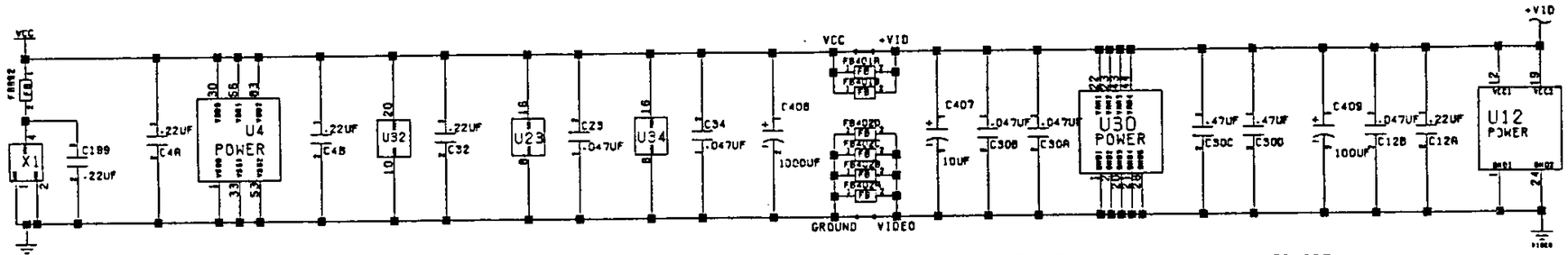
COMMODORE
SCHEMATIC A1200 RID
A1200 MAIN BOARD
CHANNEL 2
364717 B
SHEET 5 OF 13

A1200 REV 1->1D PCB

GENERAL DECOUPLING



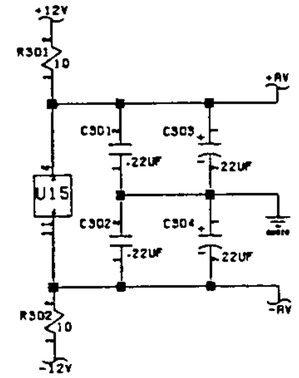
VIDEO DECOUPLING



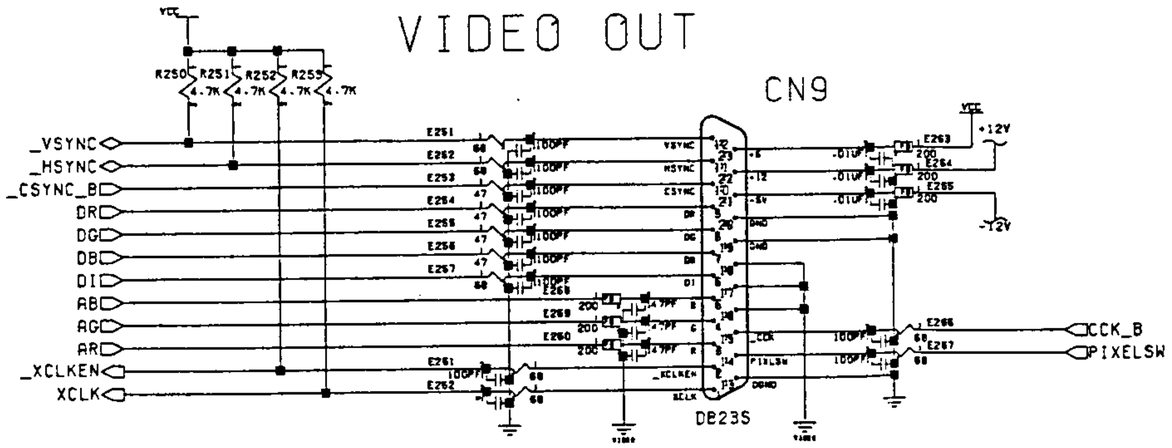
NOTE: AS OF REV 1C, LOGIC AND VIDEO GOUND AND POWER ARE THE SAME NET, BUT REOUTED DISCRETELY EXCEPT AT DAC1

ALSO ADDED C30C AND C30D FOR OVERKILL DAC DECOUPLING.

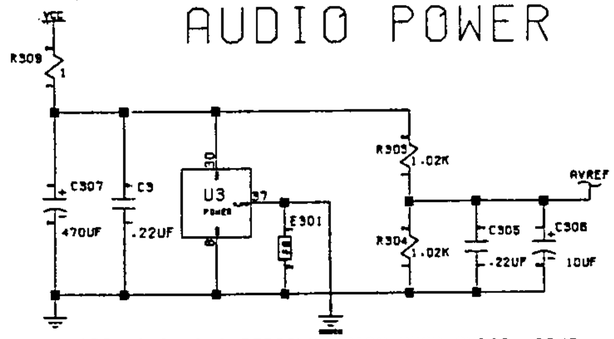
AUDIO DECOUPLING



VIDEO OUT



AUDIO POWER



NOTE: GROUND INTERCONNECTION NEAR AUDIO JACKS.

A1200 REV 1->1D PCB

PARTY OUT OF BOUNDS, WHAT A MESS...

C.A.D. GENERATED

NO MANUAL CHANGES MAY BE MADE TO THIS DRAWING

COMMODORE

SCHEMATIC A1200 R1D
C/A1200 MAIN BOARD
"CHANNEL Z"

C 364717 B

SCALE

SHEET 6 OF 12

MENTOR GRAPHICS VAX SERVER 7.0

D(31:0)
A(23:0)
_ODD_CIA
_INT2
_VSYNC
U7
8520
VIA
10K
R511B
10K
R511A
VCC
_KB_DATA
_KB_CLOCK
_FIRE1
_FIRE0
_RDY
_TRK0
_WPROT
_CHNG
_LED
PPD(7:0)
10K
R511D
10K
R511F
10K
R511C
CN7 DB25
_RESET
PARALLEL PORT
D573
D572
IN4001
IN4001
OPTIONAL
Q571
2N3904
R571
2.7K
10K
R572
1N914
D571
U8
8520
VIA
_EVEN_CIA
R_W
E
_INT6
_HSYNC
_RST
_MTR
_SEL3
_SEL2
_SEL1
_SEL0
_SIDE
DIR
_STEP
1K
R512
_INDEX
D574
IN4001
10K
R511E
U28
1488
U29
1489
_XTXD
_TXD
_RXD
_XRXD
RS232 DB25P
CN6
+12V
-12V
.22UF
C551
_AUDIN
.22UF
C552
_AUDOUT
A1200 REV 1->1D PCB
SERIAL AND PARALLEL PORTS
COMMODORE
SCHEMATIC A1200 RIO
C/A1200 MAIN BOARD
CHANNEL 2
364717
C.A.D. GENERATED
MENTOR GRAPHICS VCR_SERVER 7.8