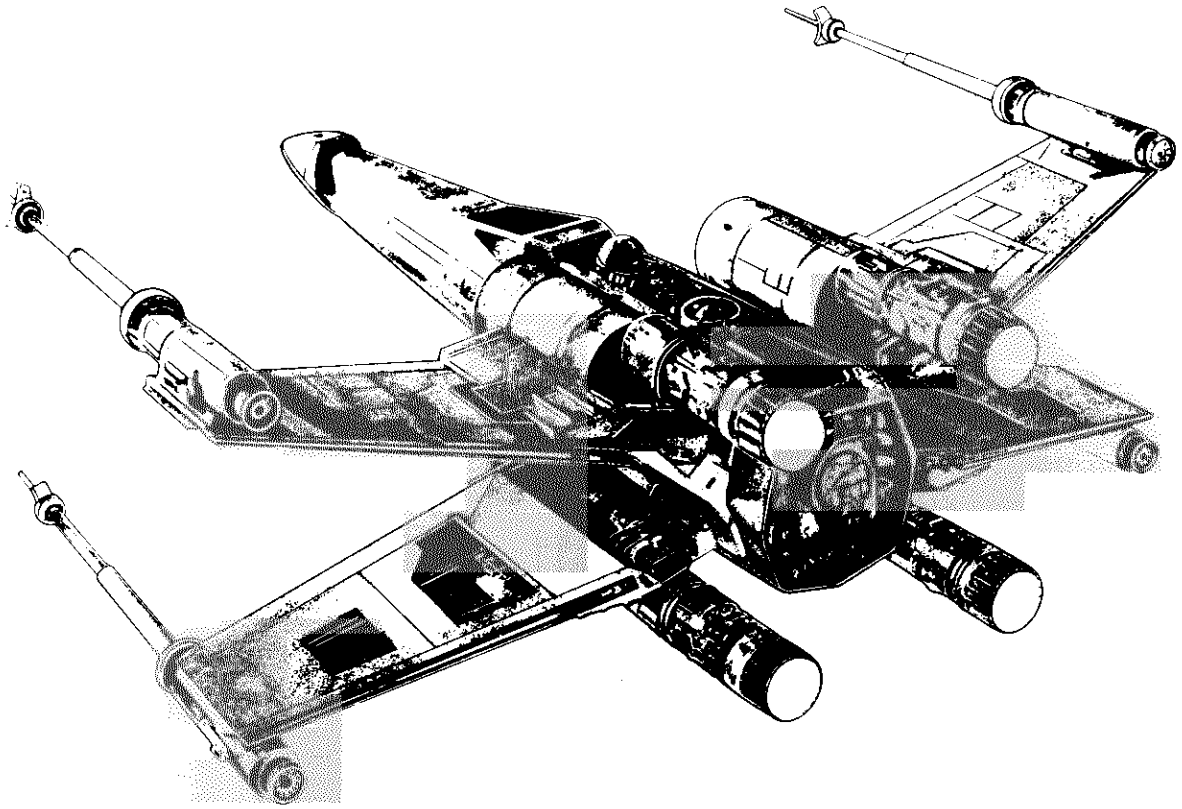

Schematic Package Supplement to

STAR WARS*

Operators Manual

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6M

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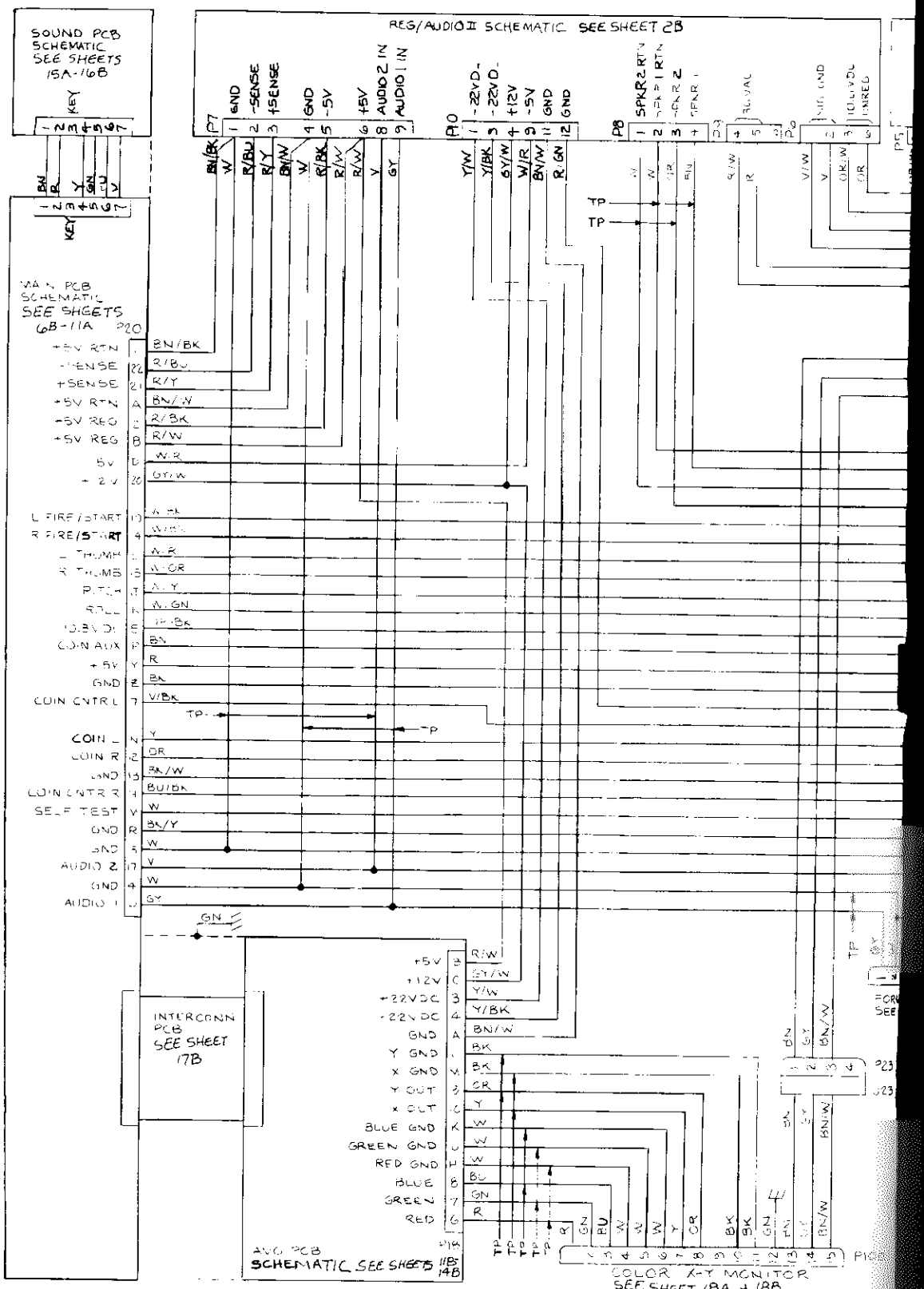
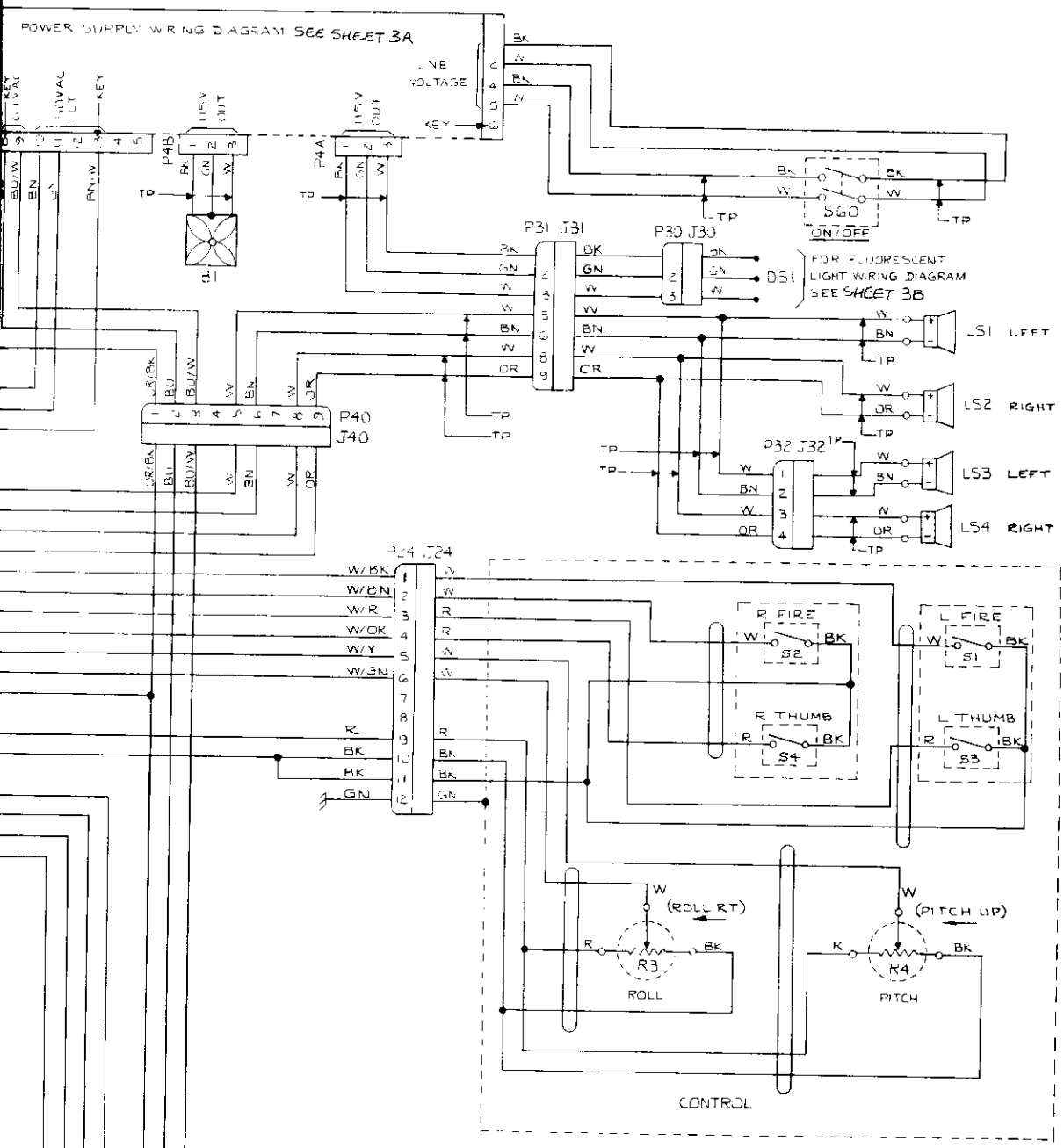
NOTE

This staple temporarily holds the schematic package together. Remove the staple before using these schematics.


SOUND PCB SCHEMATIC SEE SHEETS 15A-16B
KEY
MAIN PCB SCHEMATIC SEE SHEETS 6B-11A
REG/AUDIO II SCHEMATIC SEE SHEET 2B
P7
P10
P8
P20
+5V RTN
-SENSE
+SENSE
+5V REG
5V
+12V
L FIRE/START
R FIRE/START
L THUMB
R THUMB
PITCH
ROLL
COIN AUX
GND
COIN CNTRL
COIN L
COIN R
SELF TEST
AUDIO 2
AUDIO 1
TP
INTERCONN PCB SEE SHEET 17B
AVG PCB SCHEMATIC SEE SHEETS 11B 14B
COLOR X-Y MONITOR SEE SHEET 18A + 18B



STAR WARS Cockpit Main Wiring Diagram

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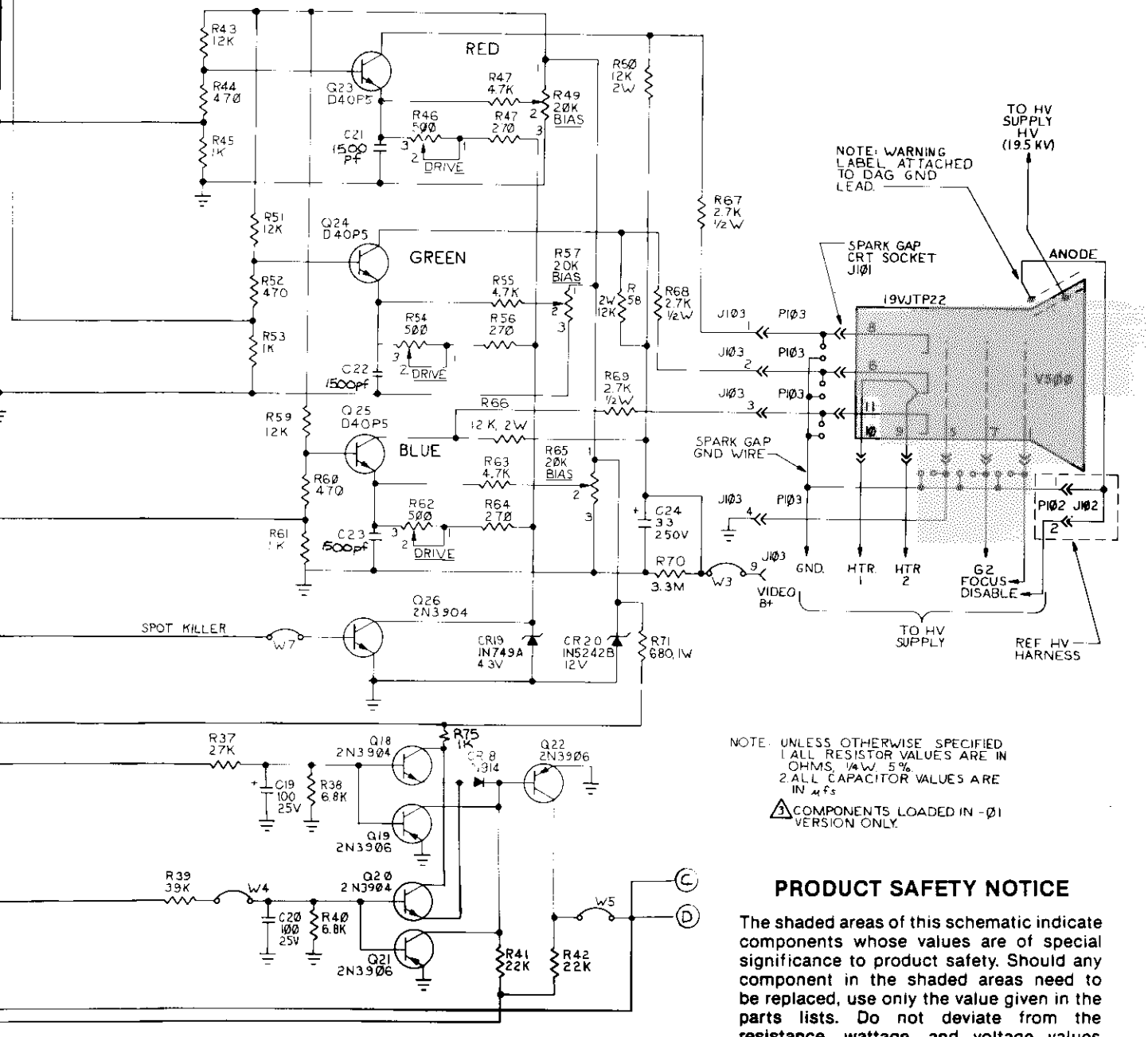

NOTE: UNLESS OTHERWISE SPECIFIED
1. ALL RESISTOR VALUES ARE IN OHMS, 1/4W, 5%
2. ALL CAPACITOR VALUES ARE IN μfs

⚠ COMPONENTS LOADED IN -01 VERSION ONLY.

PRODUCT SAFETY NOTICE

The shaded areas of this schematic indicate components whose values are of special significance to product safety. Should any component in the shaded areas need to be replaced, use only the value given in the parts lists. Do not deviate from the resistance, wattage, and voltage values shown.

STAR WARS Color X-Y Deflection PCB

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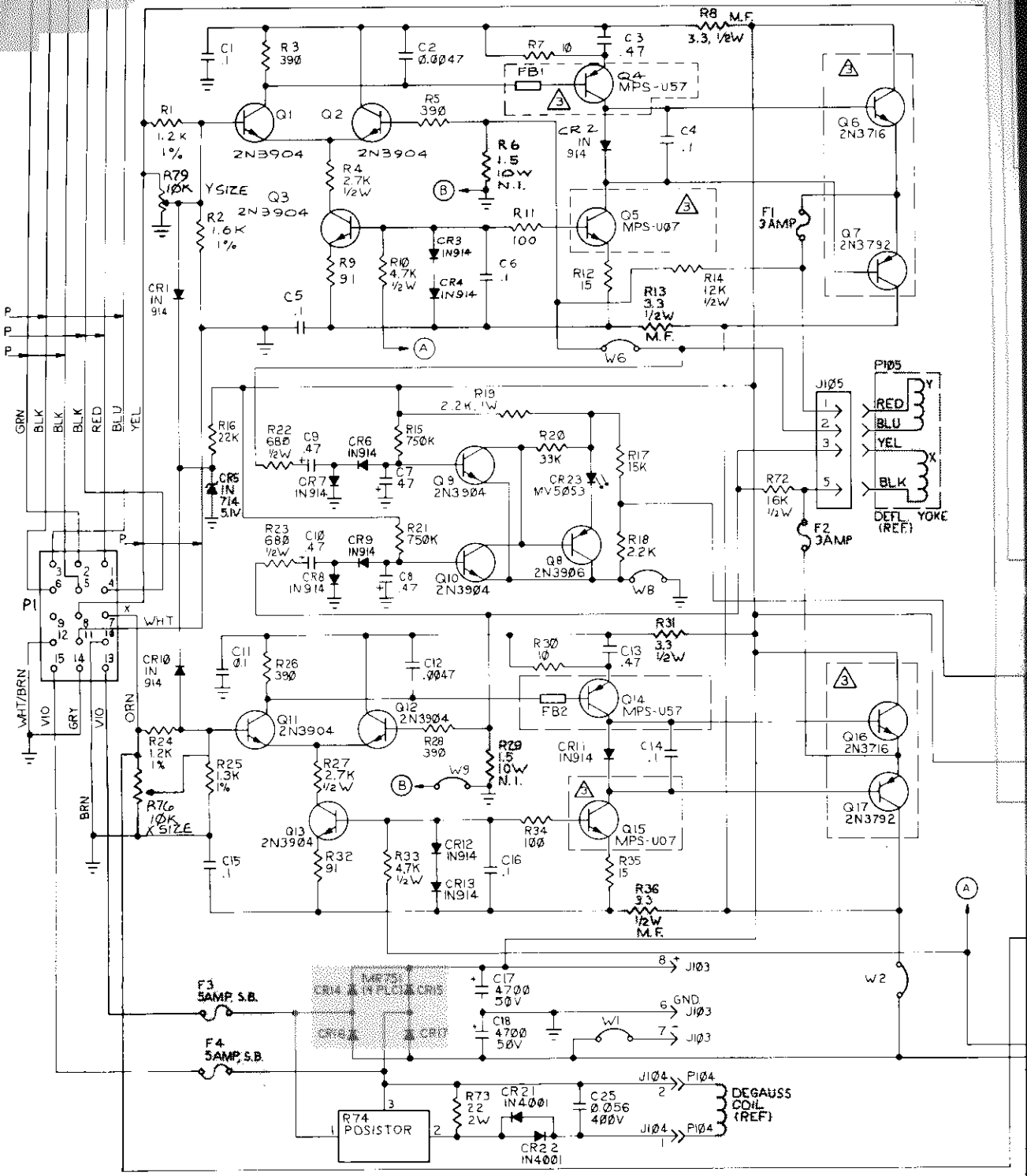
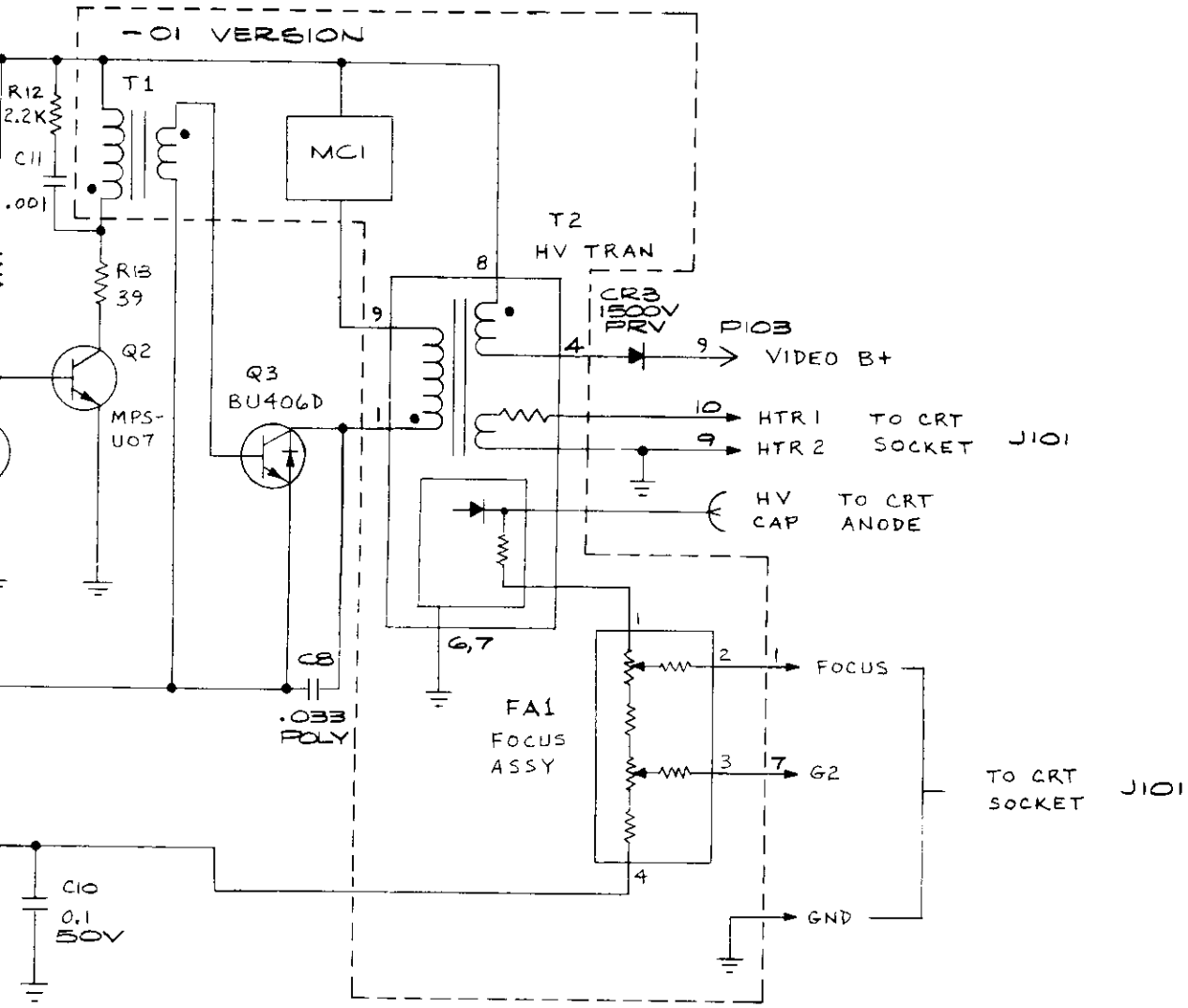

R8 M.F. 3.3, 1/2W
C1 .1
R3 390
C2 .0047
R7 10
C3 .47
FB1
Q4 MPS-U57
R1 1.2K 1%
Q1 2N3904
Q2 2N3904
R5 390
CR2 IN 914
C4 .1
Q6 2N3716
R79 10K YSIZE
Q3 2N3904
R4 2.7K 1/2W
R6 1.5 10W N.I.
R2 1.6K 1%
Q5 MPS-U07
R11 100
F1 3AMP
Q7 2N3792
CR3 IN914
R9 91
R10 4.7K 1/2W
CR4 IN914
C6 .1
R12 15
R14 12K 1/2W
CR1 IN 914
C5 .1
R13 3.3 1/2W M.F.
W6
P105
J105
RED
BLU
YEL
BLK
DEFL. YOKE (REF)
R19 2.2K, 1W
R16 22K
R22 680 1/2W
C9 .47
CR6 IN914
R15 750K
R20 33K
R17 15K
CR5 IN 714 5.1V
CR7 IN914
C7 47
Q9 2N3904
CR23 MV5053
R72 16K 1/2W
F2 3AMP
R23 680 1/2W
C10 47
CR9 IN914
R21 750K
Q8 2N3906
R18 2.2K
CR8 IN914
C8 47
Q10 2N3904
W8
P1
WHT
R31 3.3 1/2W
C11 .01
R26 390
C12 .0047
R30 10
C13 .47
CR10 IN 914
Q11 2N3904
Q12 2N3904
FB2
Q14 MPS-U57
R24 1.2K 1%
R28 390
R29 1.5 10W N.I.
CR11 IN914
C14 .1
Q16 2N3716
R25 1.3K 1%
R27 2.7K 1/2W
W9
R76 10K XSIZE
Q13 2N3904
R32 91
R33 4.7K 1/2W
CR12 IN914
CR13 IN914
C16 .1
R34 100
Q15 MPS-U07
R35 15
Q17 2N3792
C15 .1
R36 3.3 1/2W M.F.
C17 4700 50V
C18 4700 50V
W1
W2
F3 5AMP S.B.
F4 5AMP, S.B.
R74 POSISTOR
R73 22 2W
CR21 IN4001
CR22 IN4001
C25 .0056 400V
DEGAUSS COIL (REF)
GRN
BLK
BLK
BLK
RED
BLU
YEL
WHT/BRN
VIO
GRY
VIO
ORN
BRN



02
02
GND

NOTE: UNLESS OTHERWISE SPECIFIED -

1. ALL RESISTOR VALUES IN OHMS, 1/4W, 5%
2. ALL CAPACITORS ARE μf.

STAR WARS Color X-Y High-Voltage PCB

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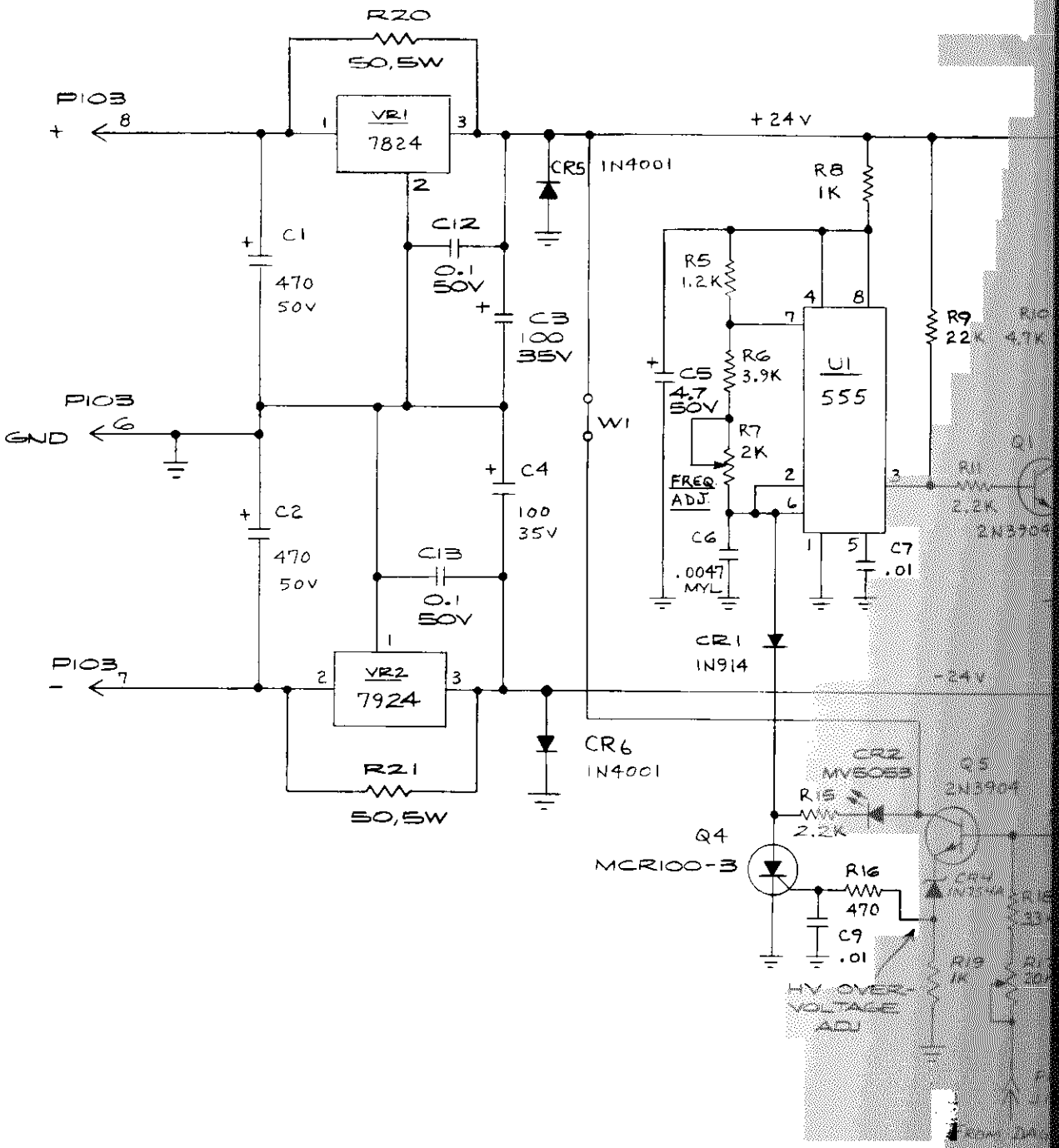
R20
50,5W
P103
+
8
VR1
7824
1
2
3
+24V
CR5 IN4001
R8
1K
C1
470
50V
C12
0.1
50V
C3
100
35V
R5
1.2K
4
8
7
R9
22K
R6
3.9K
U1
555
C5
4.7
50V
R7
2K
FREQ
ADJ.
2
6
1
5
C7
.01
C6
.0047
MYL
P103
GND
6
W1
C4
100
35V
C2
470
50V
C13
0.1
50V
CR1
IN914
P103
-
7
VR2
7924
-24V
CR6
IN4001
R21
50,5W
CR2
MV5053
Q5
2N3904
R15
2.2K
Q4
MCR100-3
R16
470
C9
.01
HV OVER-
VOLTAGE
ADJ

P3

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43

STAR WARS Interconnect PCB

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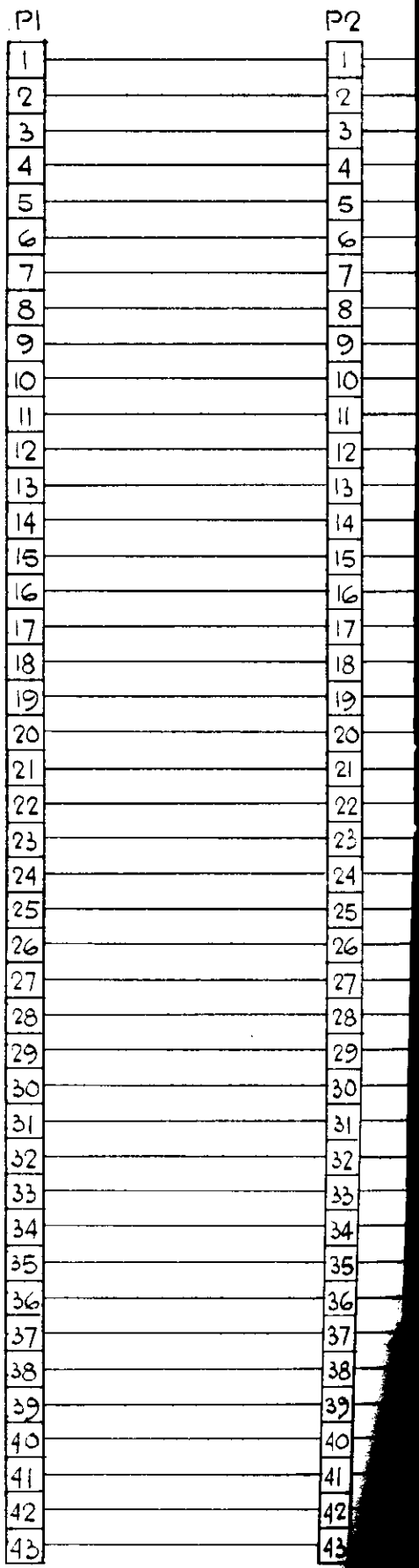
P1
P2
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
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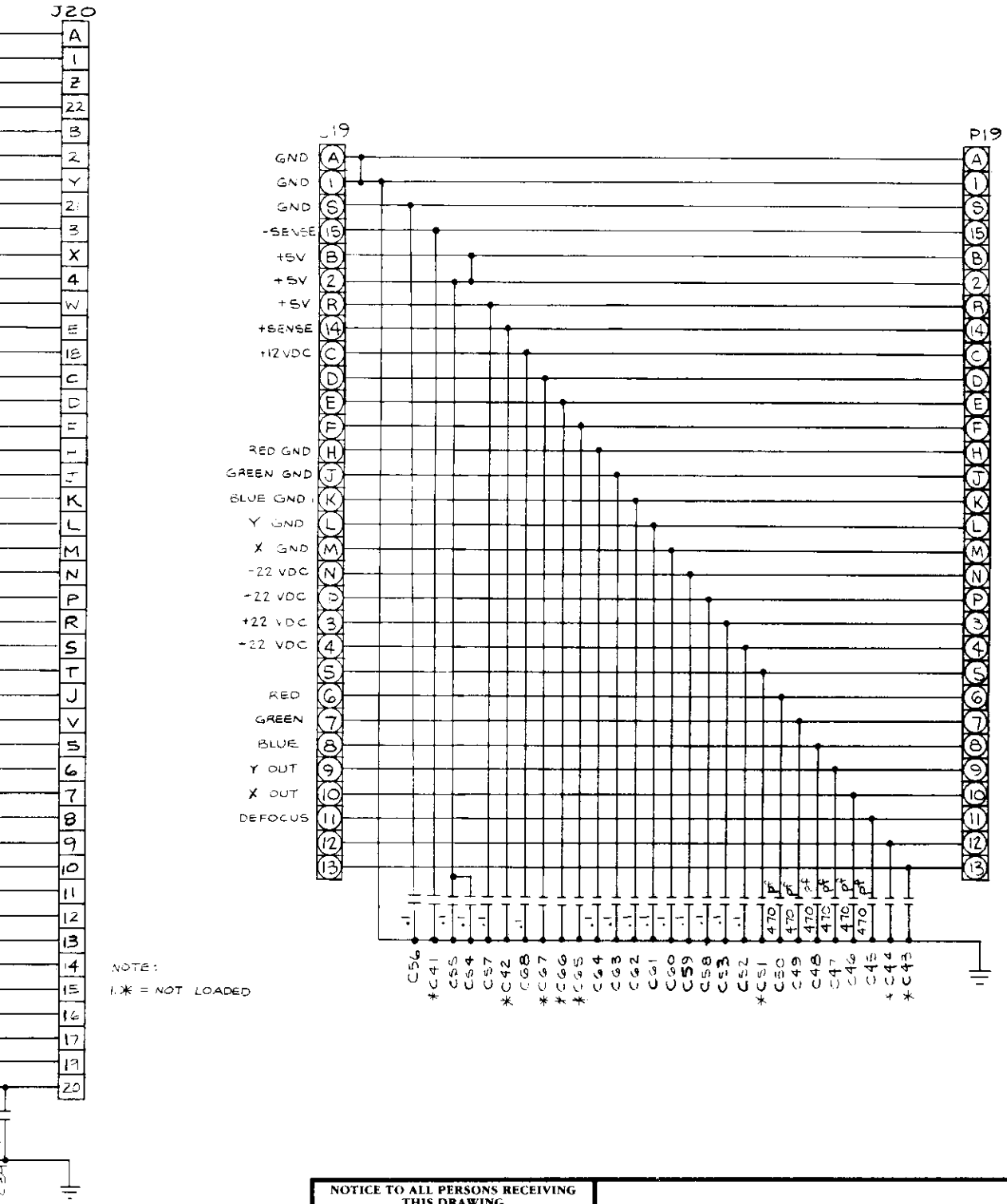
34
35
36
37
38
39
40
41
42
43



NOTE:
1. * = NOT LOADED

STAR WARS EMI Shield PCB

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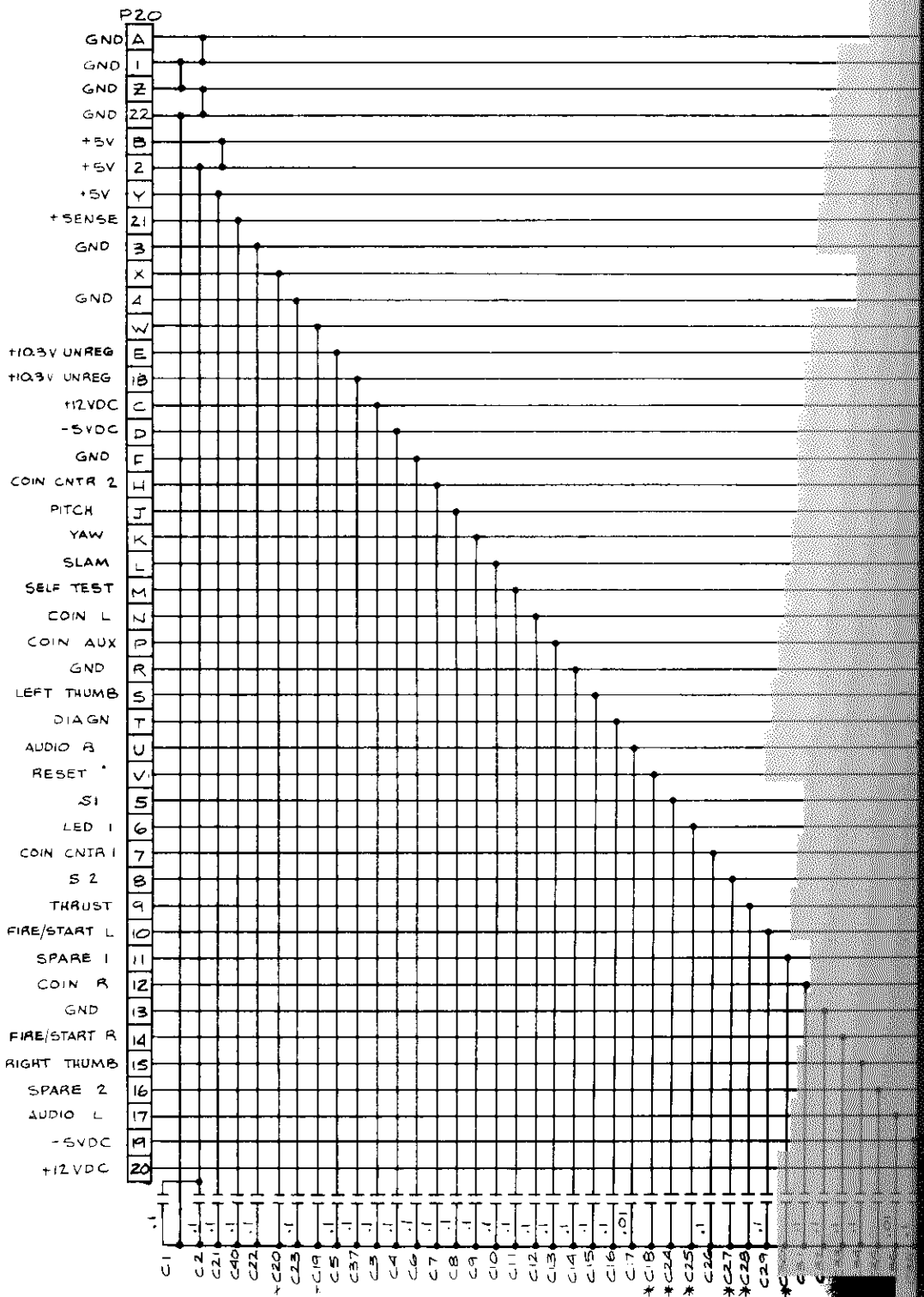
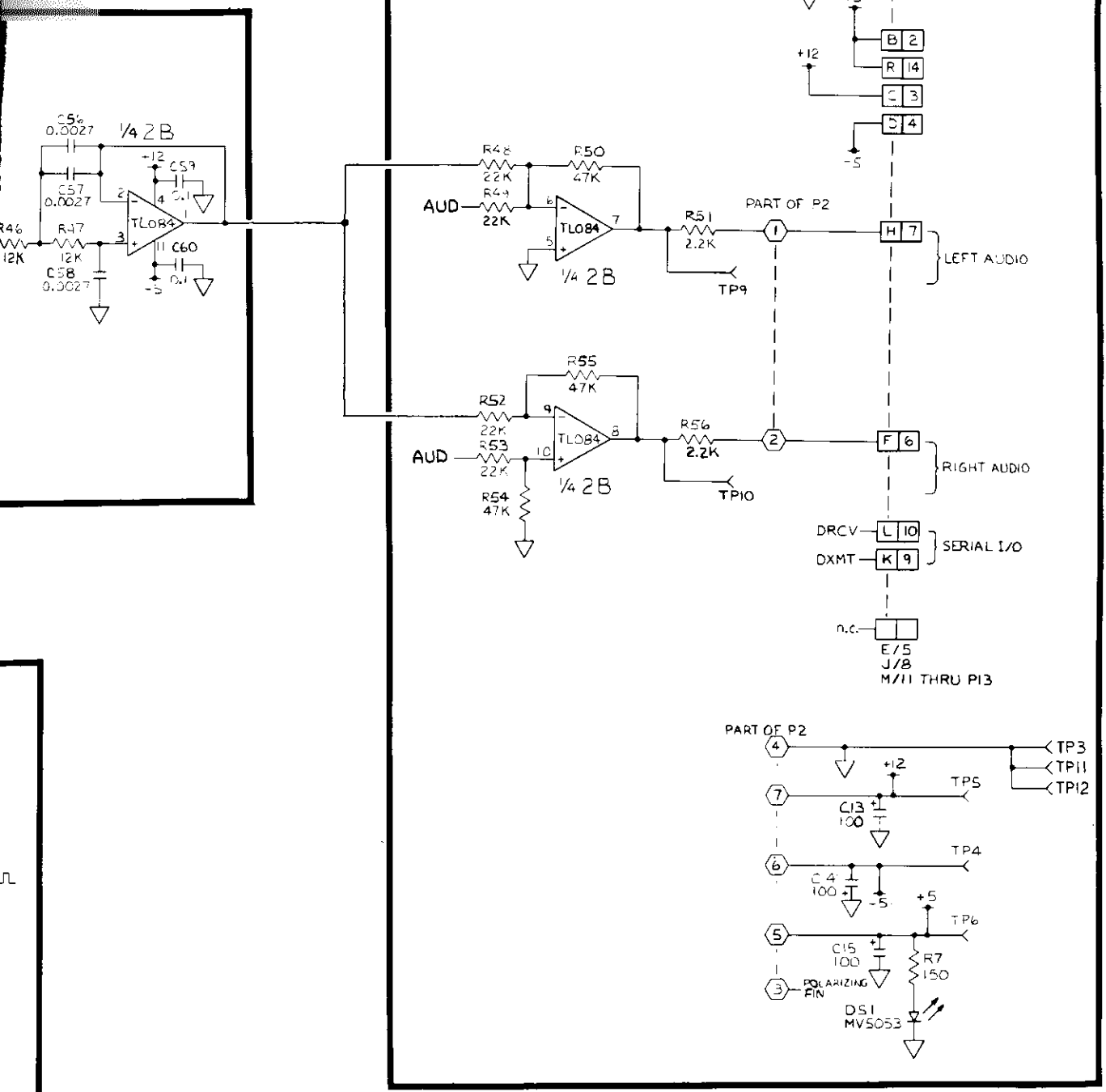

P20
GND A
GND 1
GND N
GND 22
+5V B
+5V 2
+5V Y
+SENSE 21
GND 3
X
GND 4
W
+10.3V UNREG E
+10.3V UNREG 18
+12VDC C
-5VDC D
GND F
COIN CNTR 2
PITCH
YAW K
SLAM
SELF TEST M
COIN L
COIN AUX P
GND R
LEFT THUMB S
DIAGN T
AUDIO R
RESET V
S1 5
LED 1 6
COIN CNTR 1 7
S 2 8
THRUST 9
FIRE/START L 10
SPARE 1 11
COIN R 12
GND 13
FIRE/START R 14
RIGHT THUMB 15
SPARE 2 16
AUDIO L 17
-5VDC 19
+12VDC 20
C1 .1
C2 .1
C21 .1
C40 .1
C22 .1
*C20 .1
C23 .1
*C19 .1
C5 .1
C37 .1
C3 .1
C4 .1
C6 .1
C7 .1
C8 .1
C9 .1
C10 .1
C11 .1
C12 .1
C13 .1
C14 .1
C15 .1
C16 .1
C17 .01
*C18 .1
*C24 .1
*C25 .1
C26 .1
*C27 .1
*C28 .1
C29 .1

Output and Summing Amplifiers



STAR WARS Sound PCB

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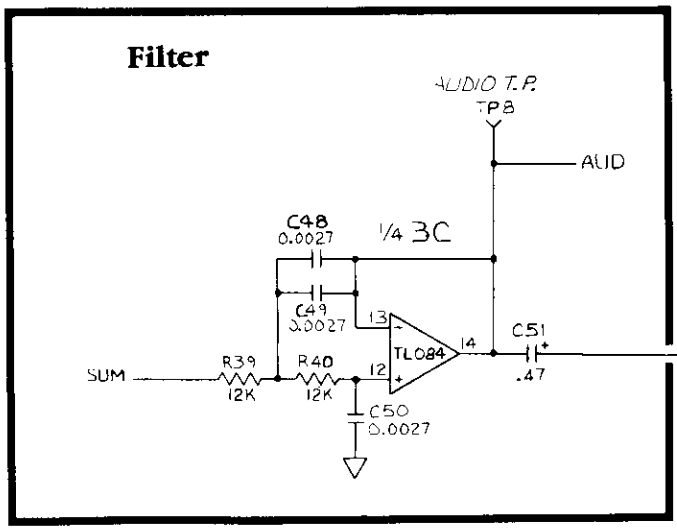
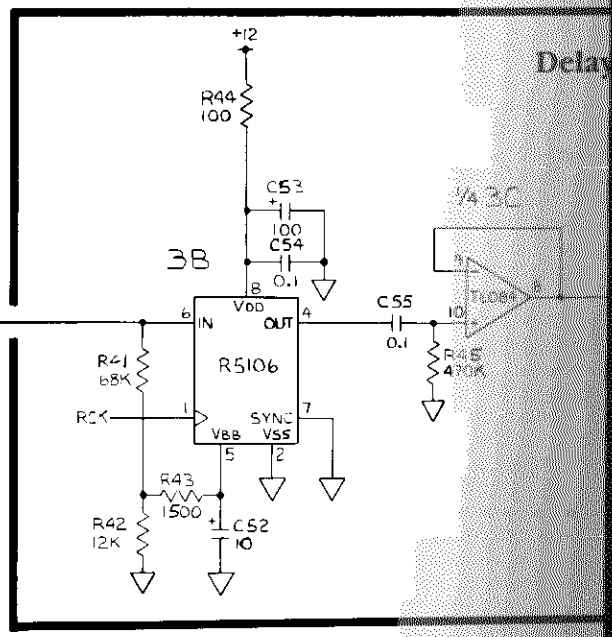
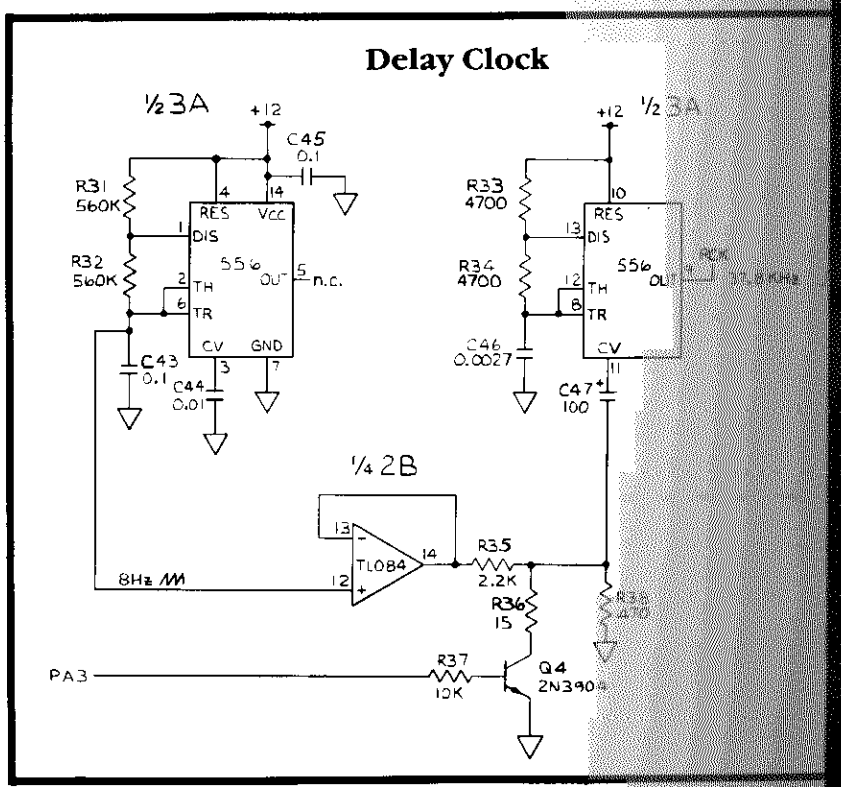
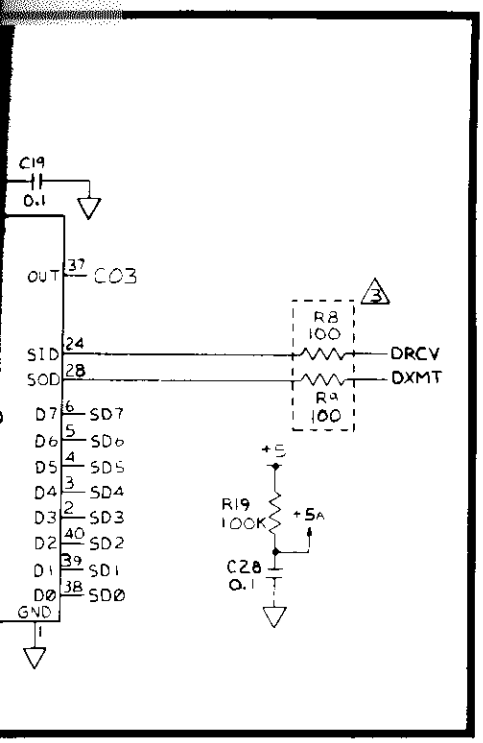
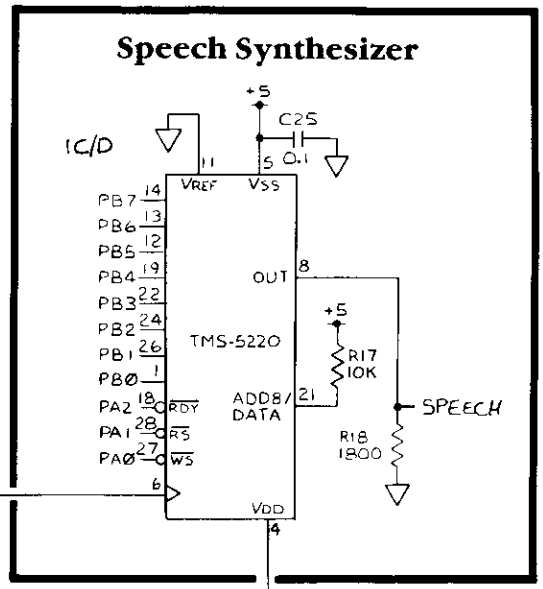
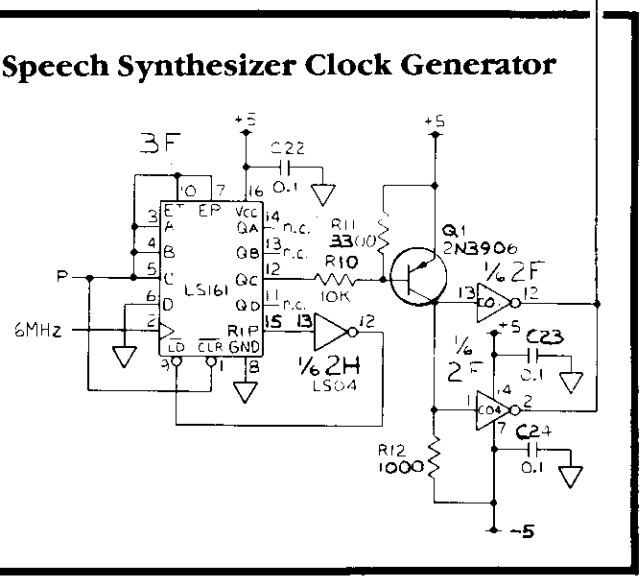

Filter
AUDIO T.P.
TP8
AUD
C48
0.0027
1/4 3C
C49
0.0027
13
TL084
14
C51
.47
SUM
R39
12K
R40
12K
12
C50
0.0027

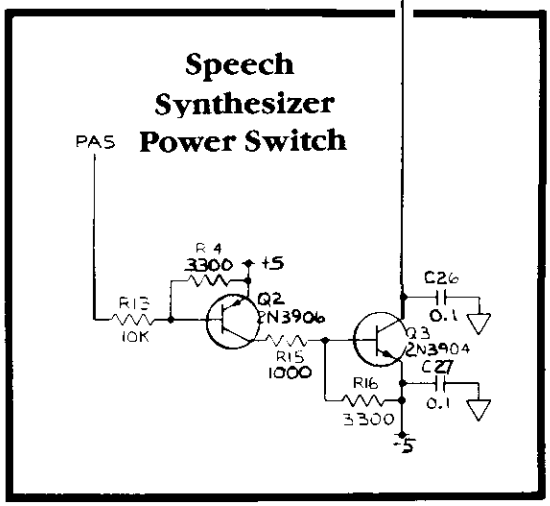

+12
R44
100
C53
100
C54
0.1
3B
1/4 3C
8
VDD
6
IN
OUT
4
C55
0.1
R41
68K
R5106
RCK
1
SYNC
7
VBB
VSS
5
2
R43
1500
R42
12K
C52
10


Delay Clock
1/2 3A
+12
C45
0.1
R31
560K
4
14
RES
VCC
1
DIS
R32
560K
2
TH
OUT
5
n.c.
6
TR
CV
GND
C43
0.1
3
7
C44
0.01
1/2 3A
+12
R33
4700
10
RES
13
DIS
R34
4700
12
TH
OUT
8
TR
CV
C46
0.0027
11
C47
100
1/4 2B
13
TL084
14
12
8Hz
R35
2.2K
R36
15
R37
10K
PA3
Q4
2N3904









STAR WARS Sound PCB

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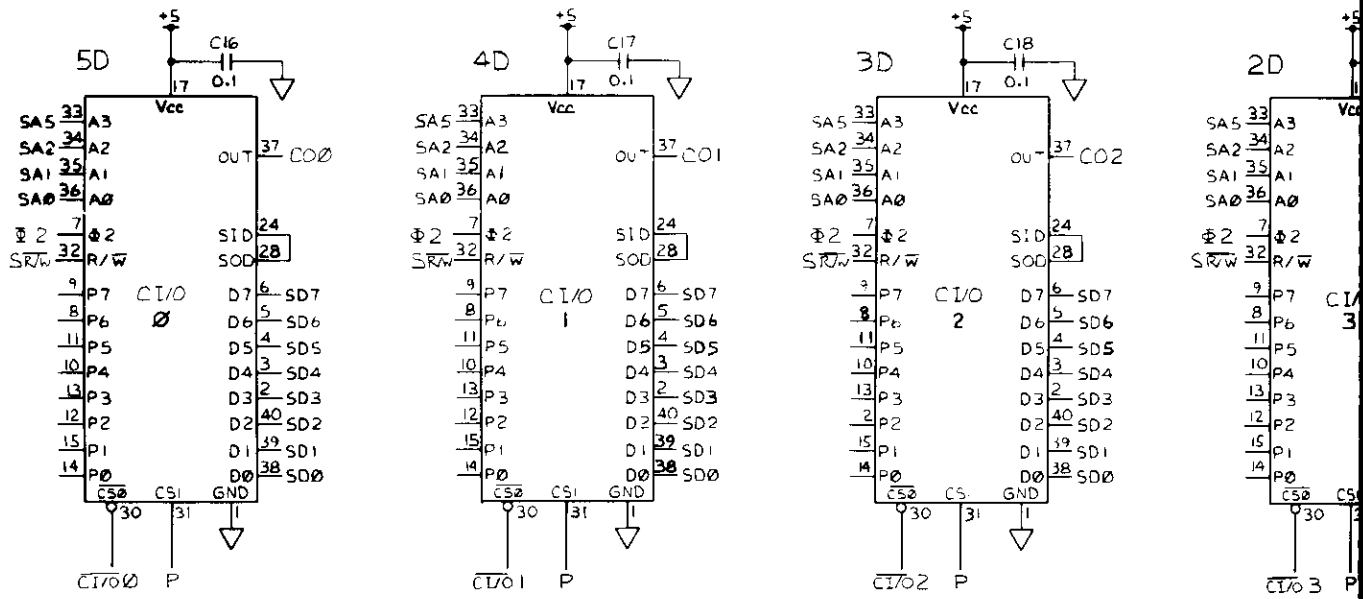
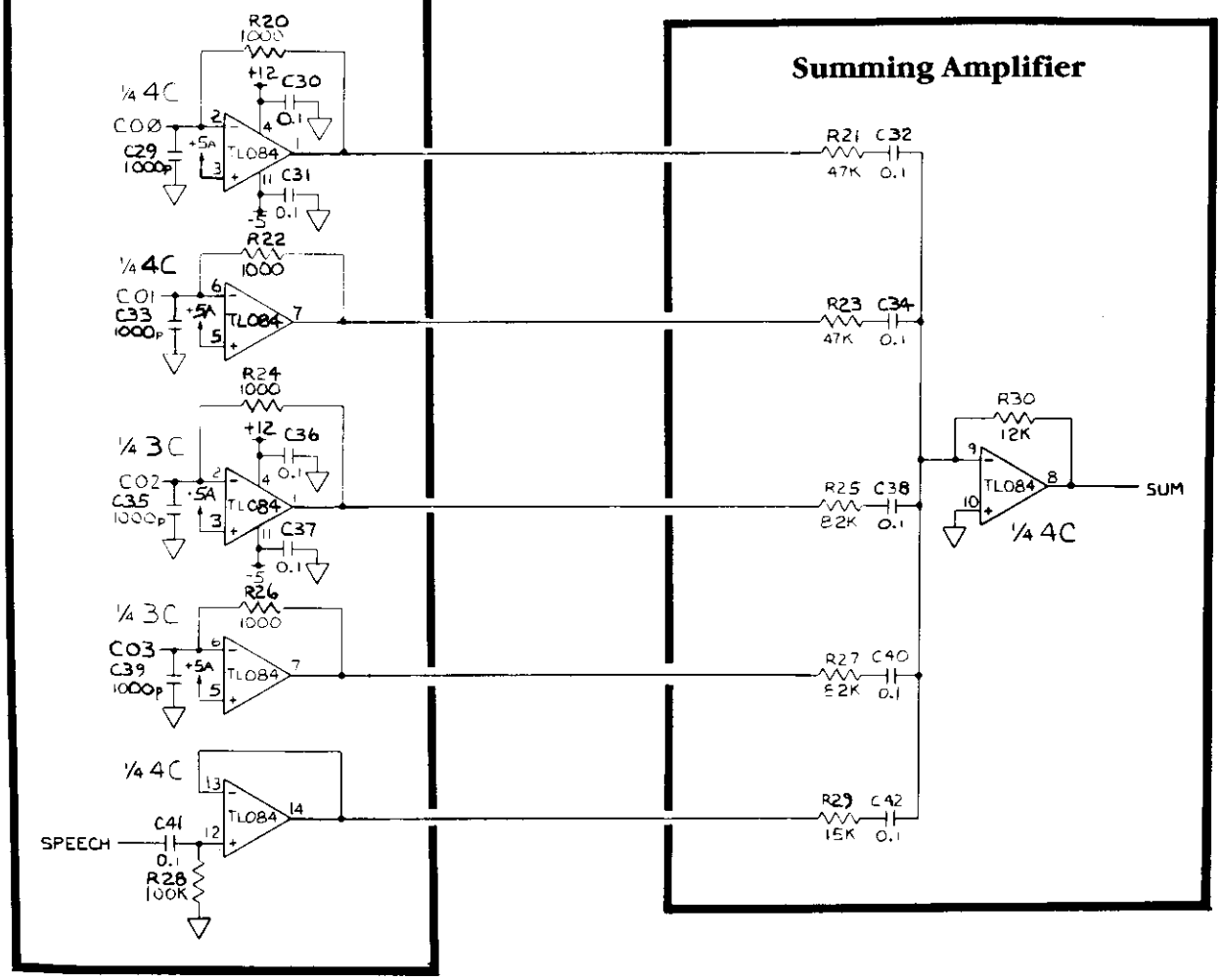
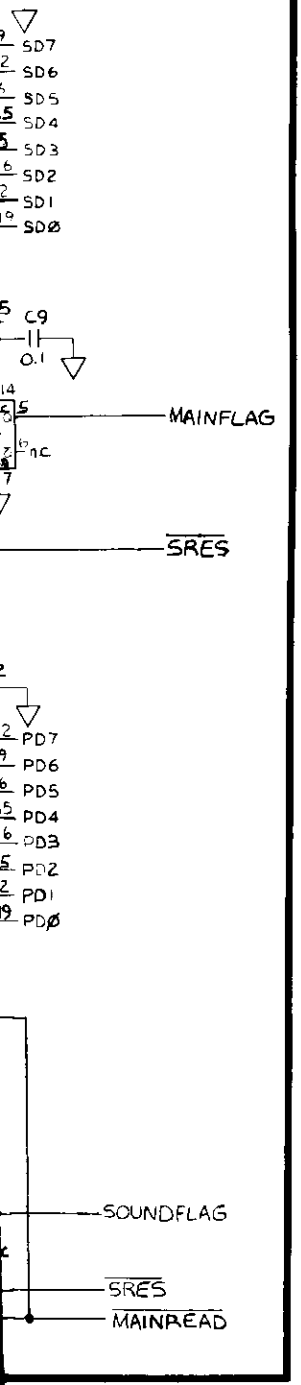
Music and Sound Effects Generators



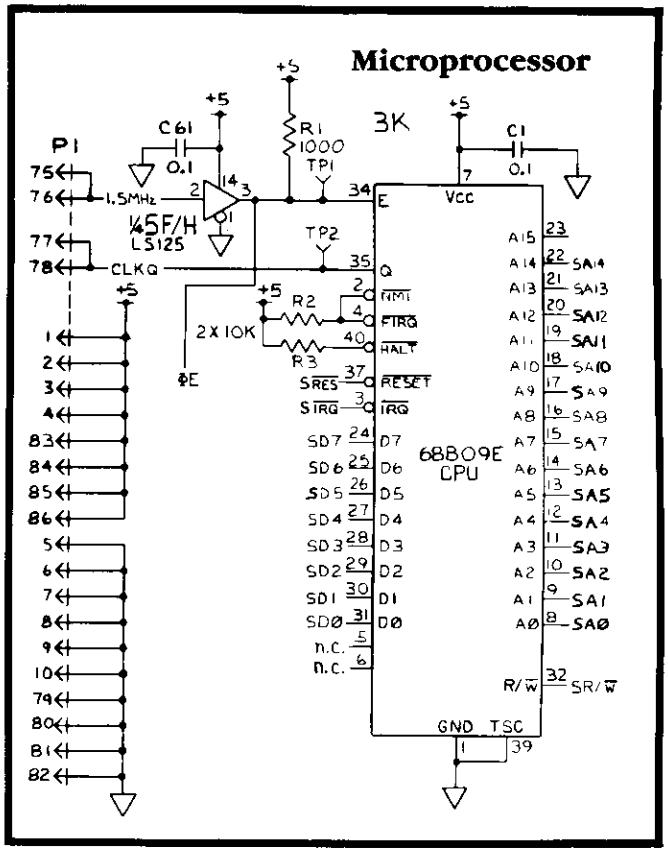
Buffers



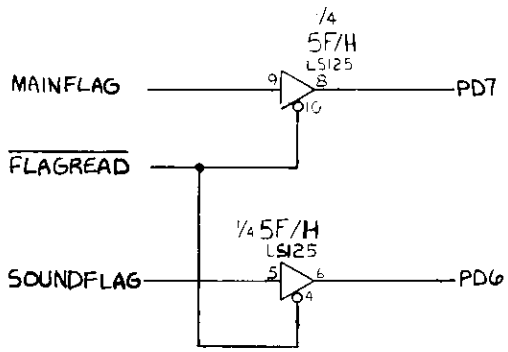
face
shaking



Microprocessor



Interface Flag Reader



STAR WARS Sound PCB

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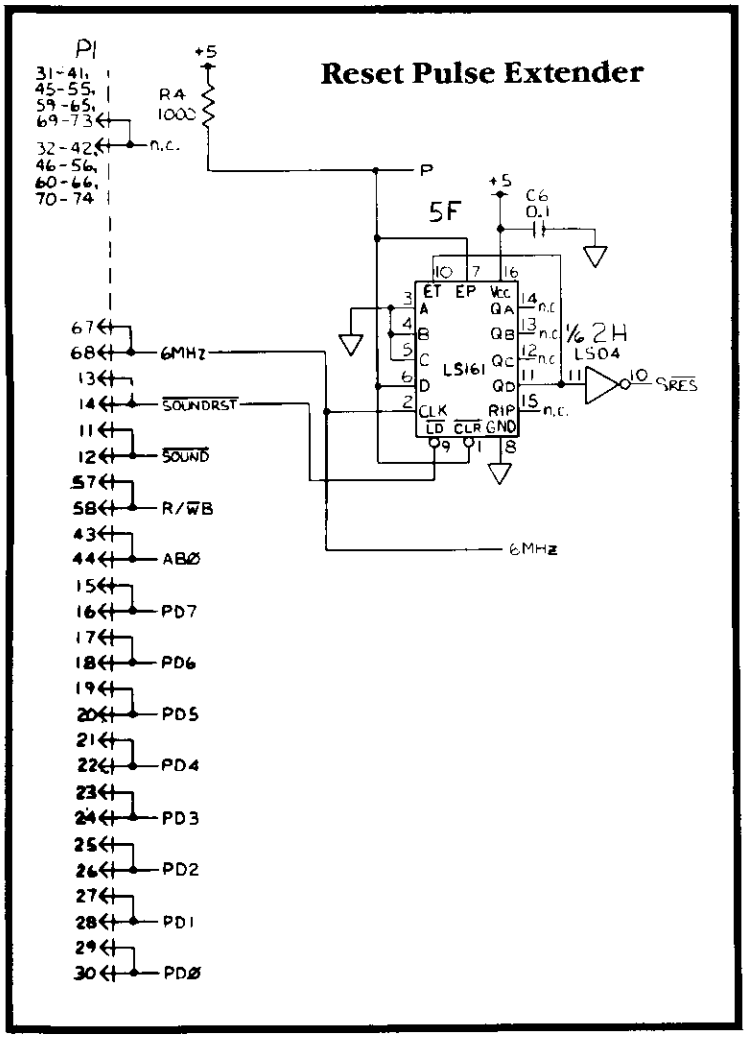
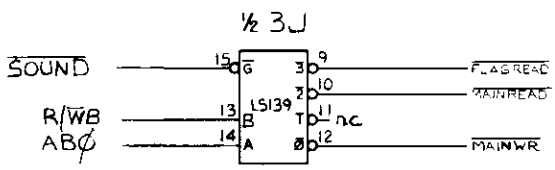
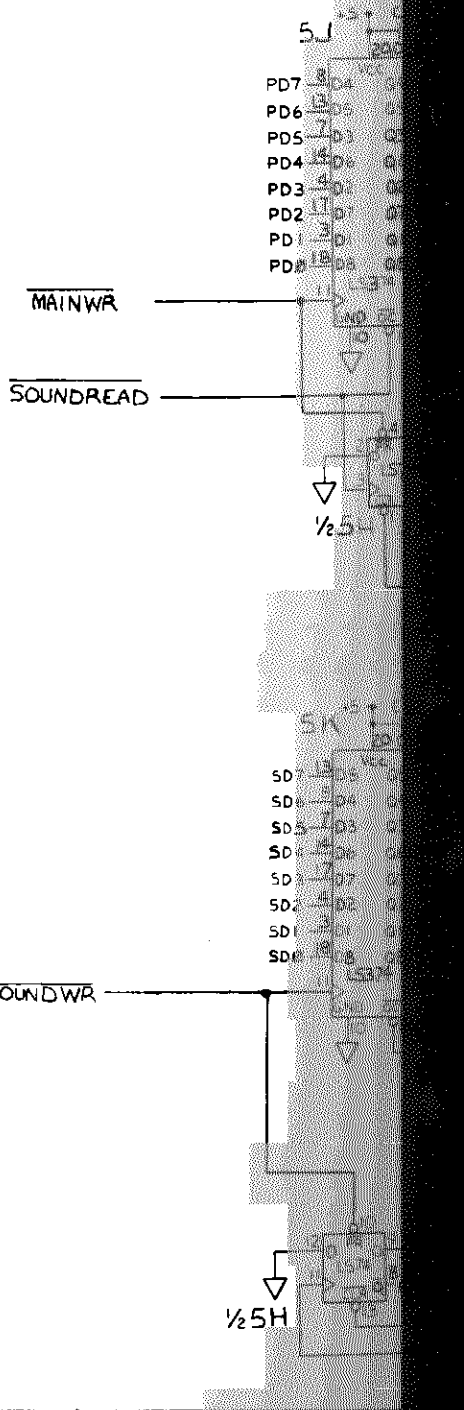
Reset Pulse Extender



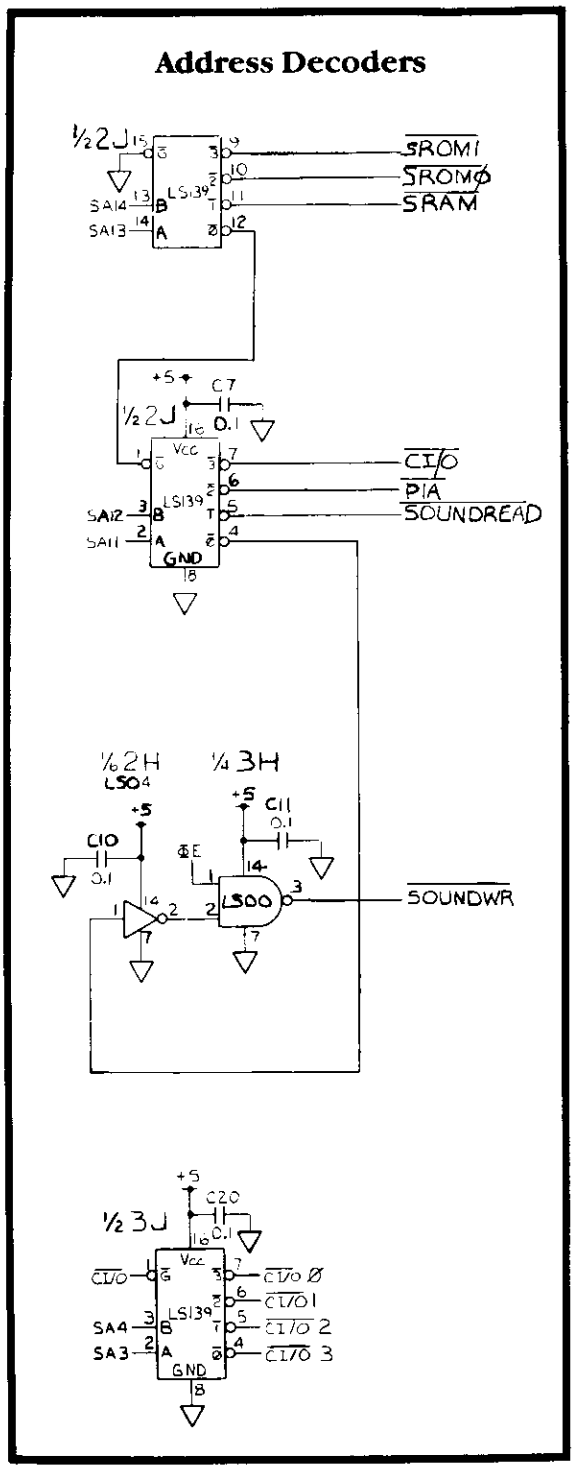
Interface Address Decoder



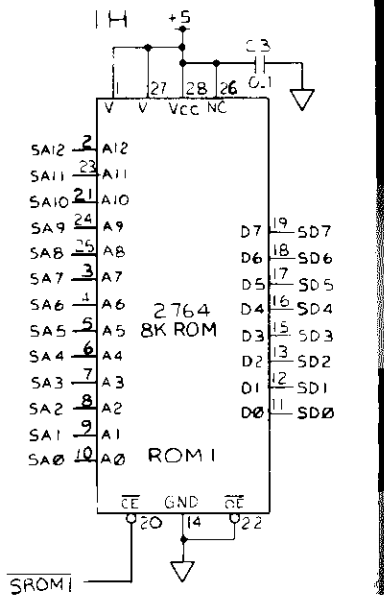
Parallel Inte
with Full Hand



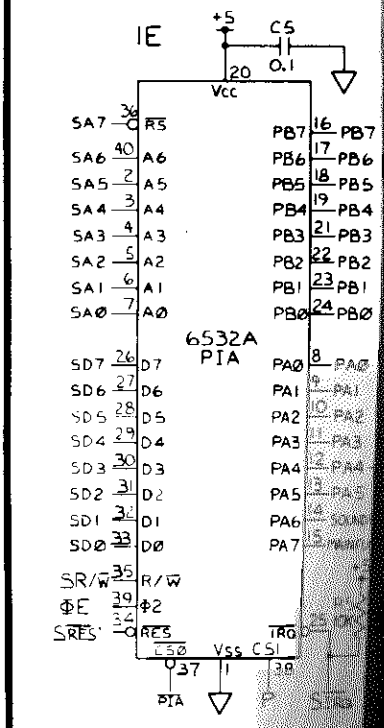
Address Decoders



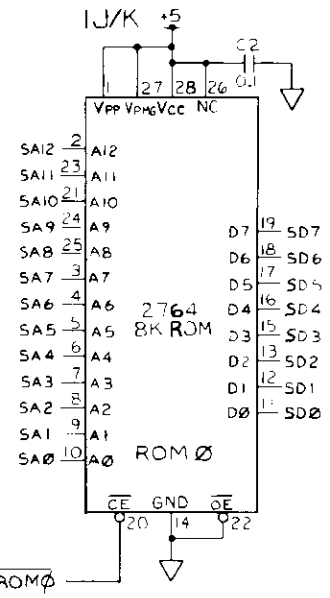
Sound



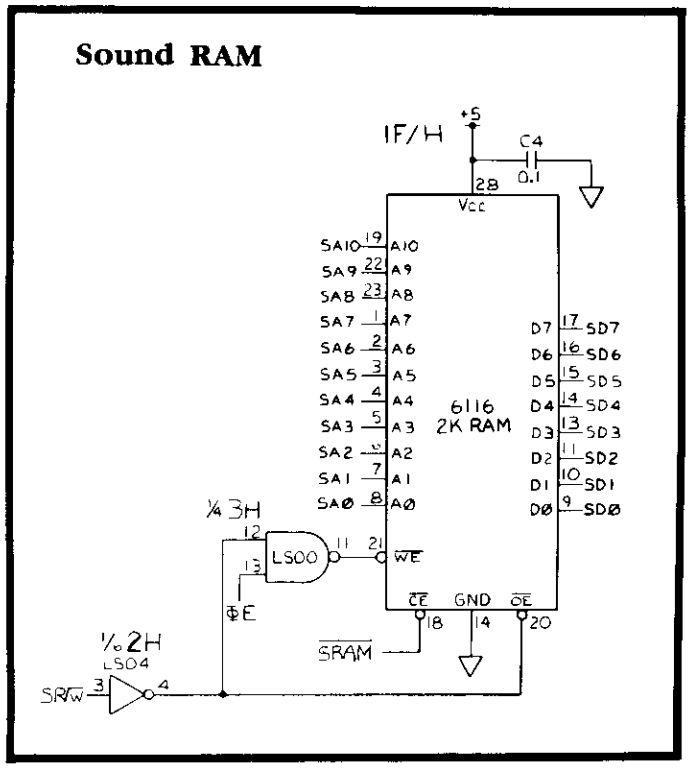
Peripheral Inter



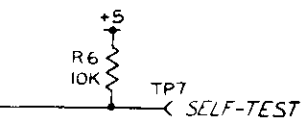
ROM



Sound RAM



ace Adapter



STAR WARS Sound PCB

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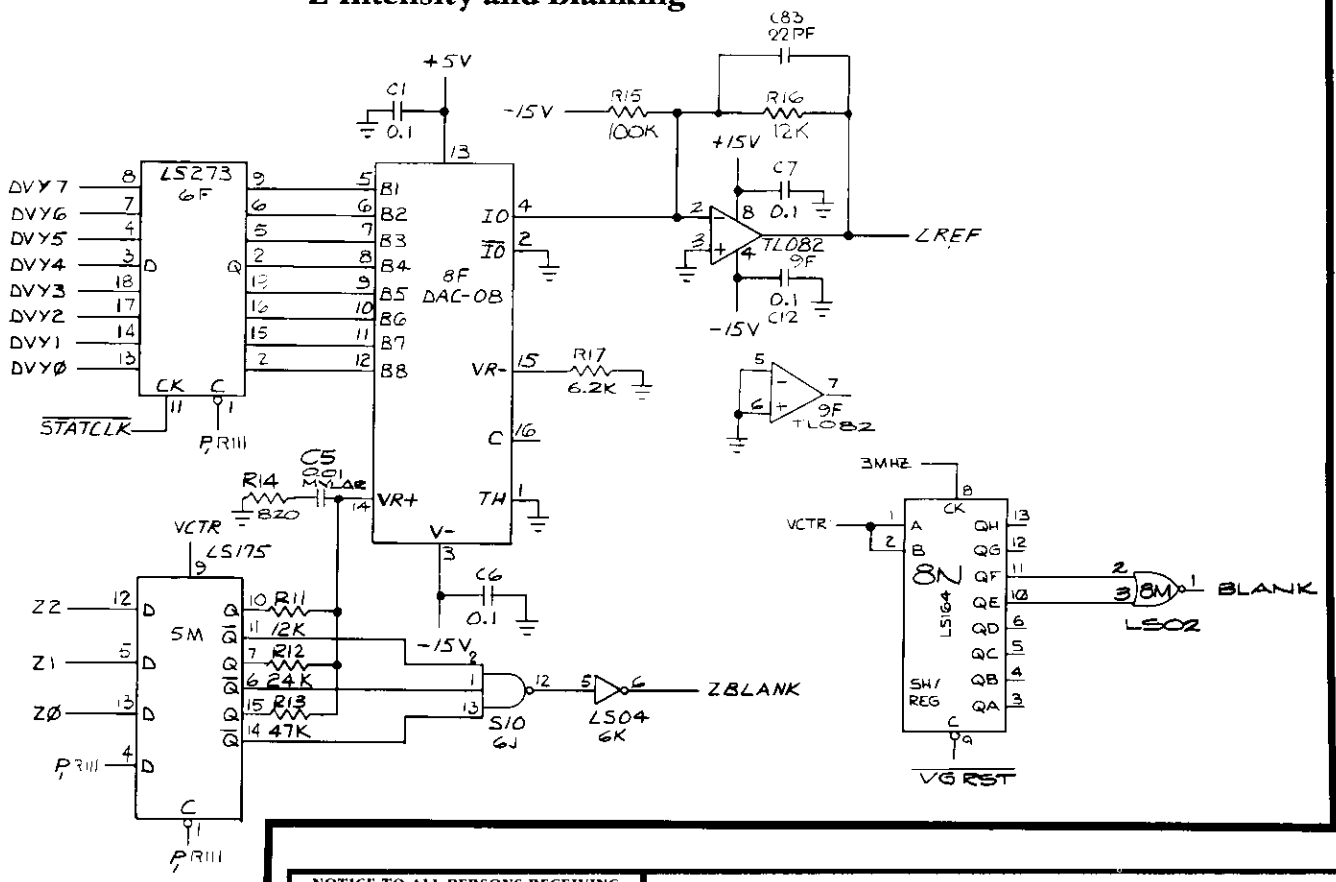
Bipolar Offset Adjustments

Perform the following procedure to adjust the bipolar offset current:

1. Set the game to the Self-Test Mode and select the Bipolar Offset Test Display as described in Chapter 2 of the game manual.
2. Adjust XBIP (R92) and YBIP (R88) so that the displayed-box line width is ⅛-inch or less.

Z-Intensity and Blanking



STAR WARS Analog Vector-Generator PCB

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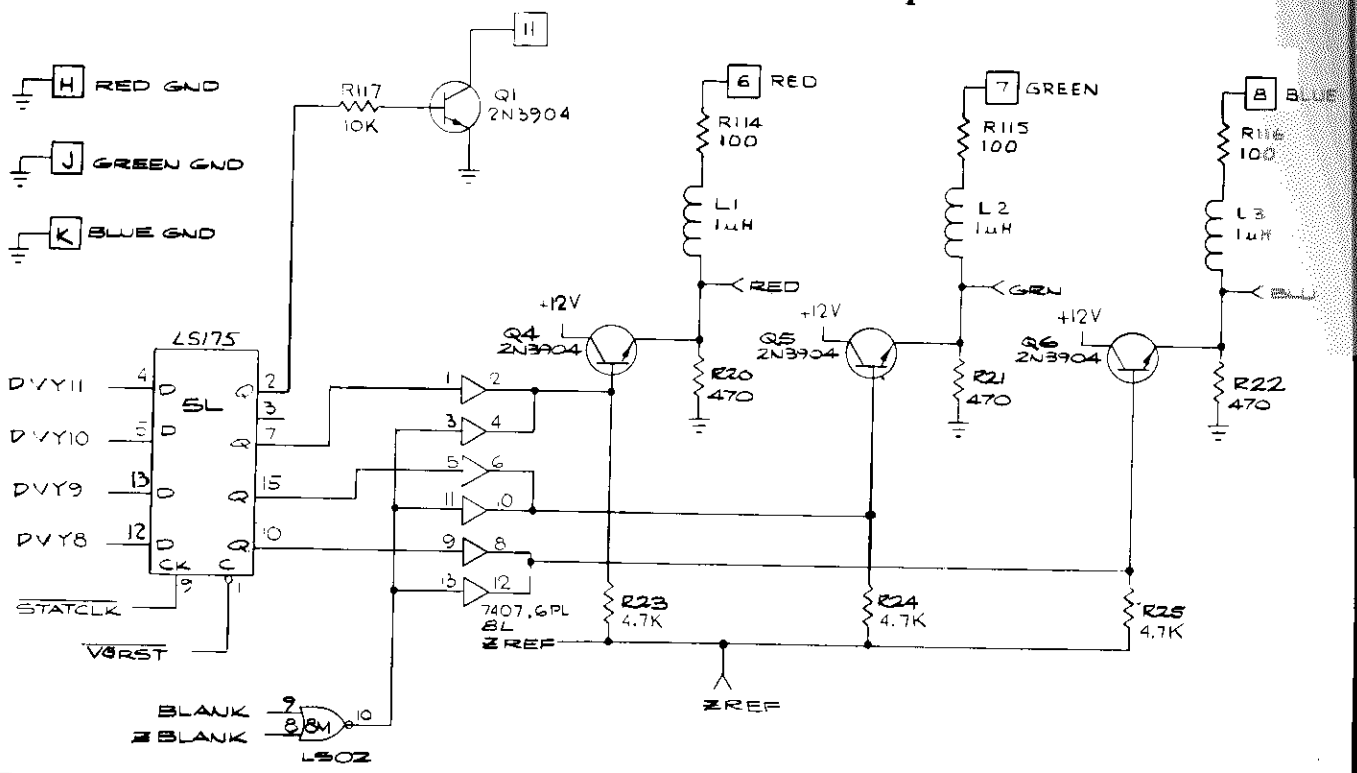
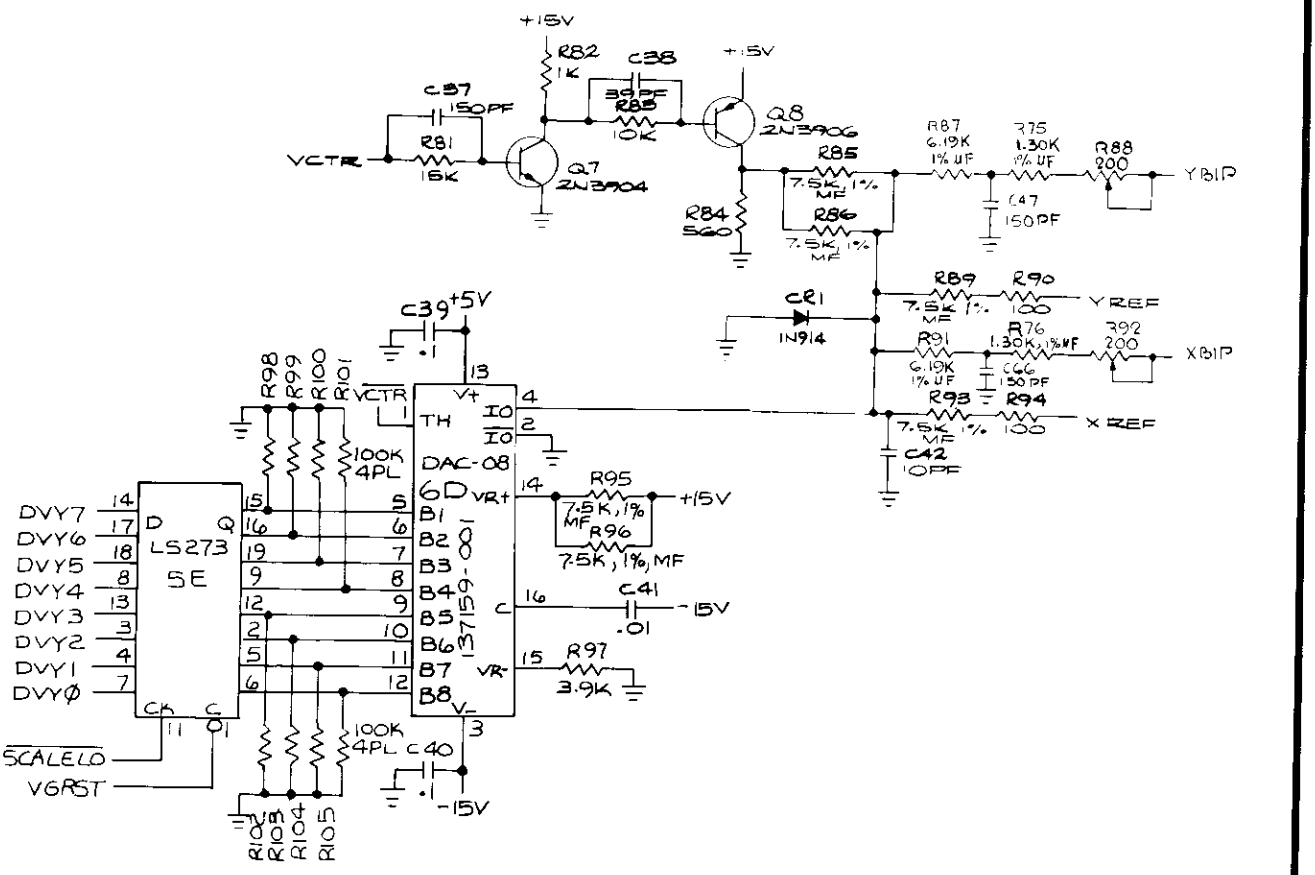
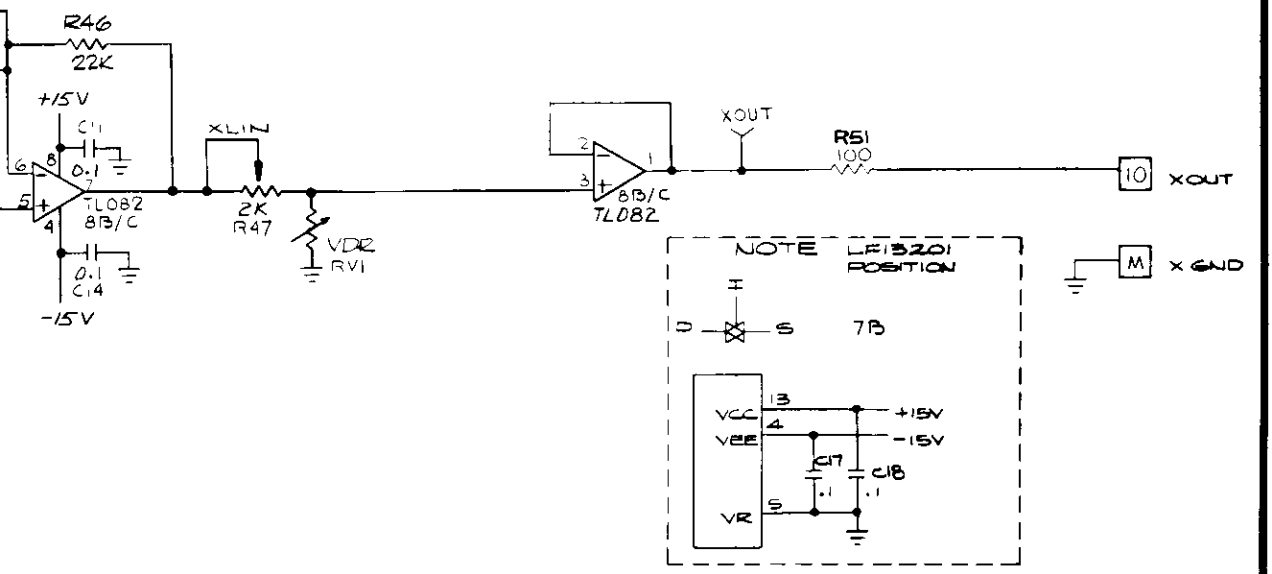
R-G-B Output



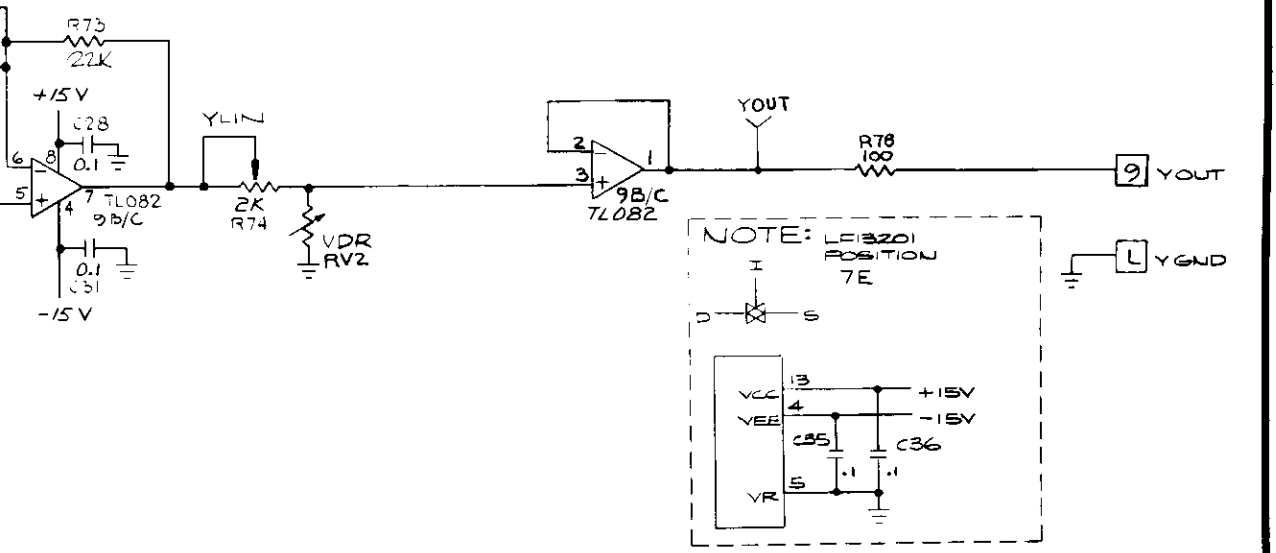
DAC Reference and Bipolar Current Sources



X-Axis Output



Y-Axis Output



that the cross-
screen area.

at the diagonal
ped squares are
otentiometers
e necessary to
play.

STAR WARS Analog Vector-Generator PCB

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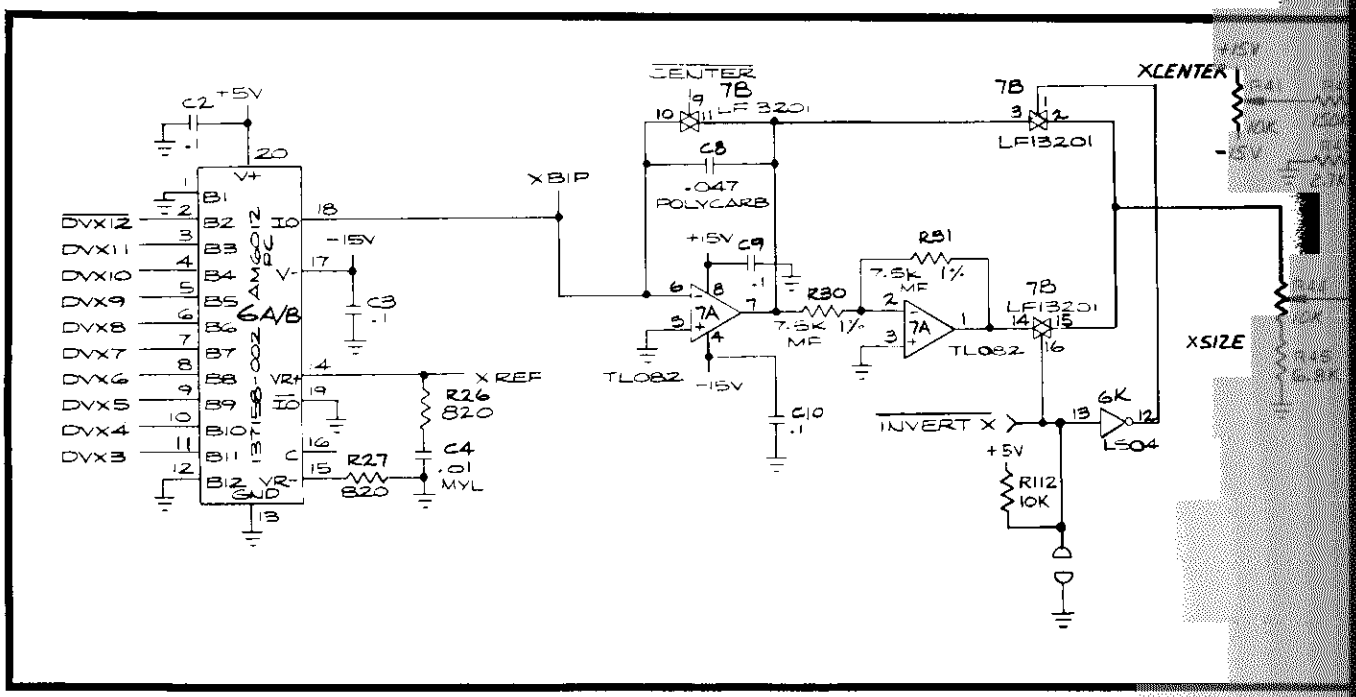
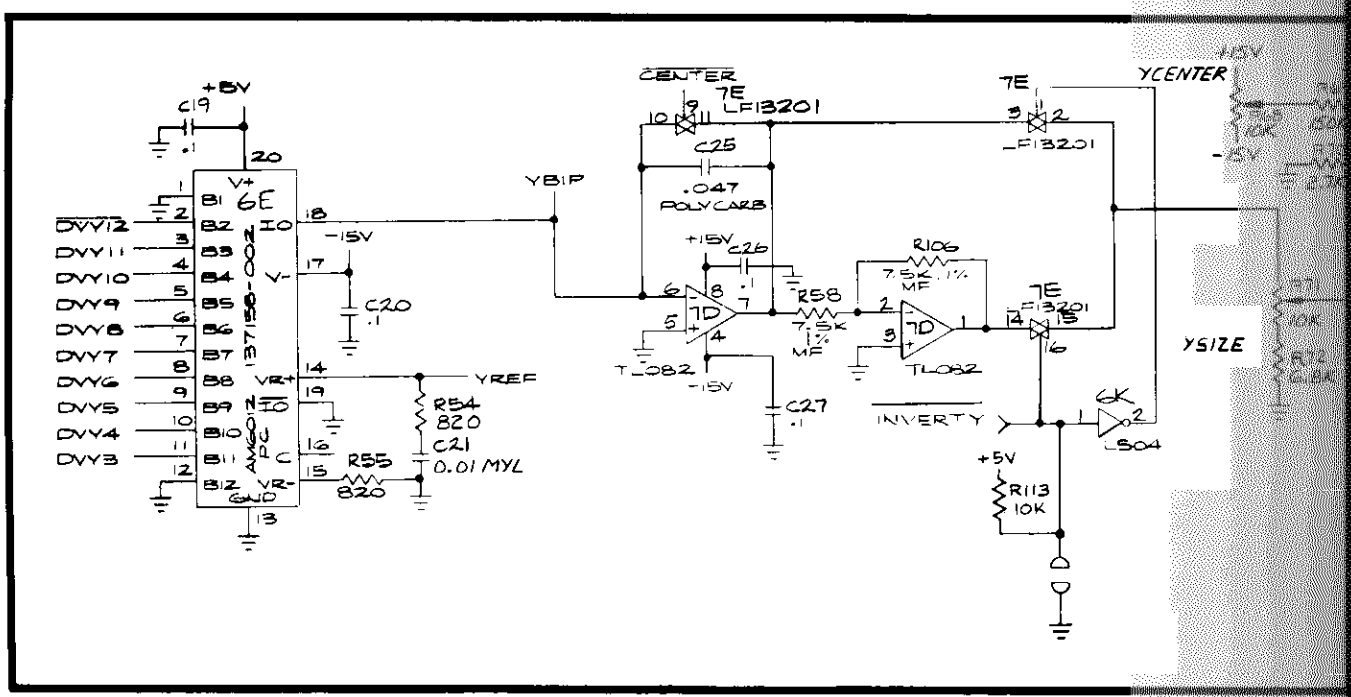


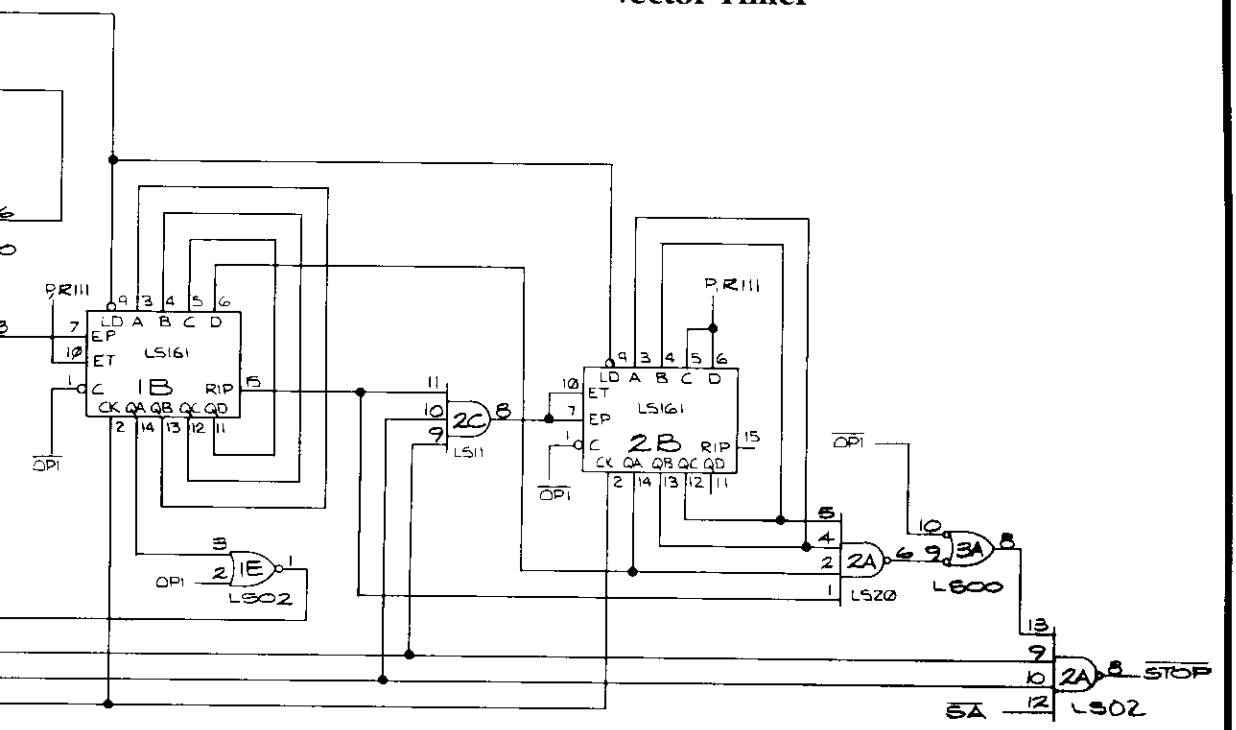


X and Y Video Adjustments

Perform the following procedure to adjust the display size, centering, and linearity:

1. Set the game to the Self-Test Mode and select the Crosshatch Pattern Display as described in Chapter 2 of the game manual.
2. Adjust XCENTER (R41) and YCENTER (R68) so that the crosshatch pattern is centered on the screen.
3. Adjust XSIZE (R44) and YSIZE (R71) so the hatch pattern covers the entire visible
4. Adjust XLIN (R47) and YLIN (R74) so lines are straight and the diamond sh symmetrical. Since the linearity change the size of the display, it may repeat step 3 to obtain the correct

Vector Timer



STAR WARS Analog Vector-Generator PCB

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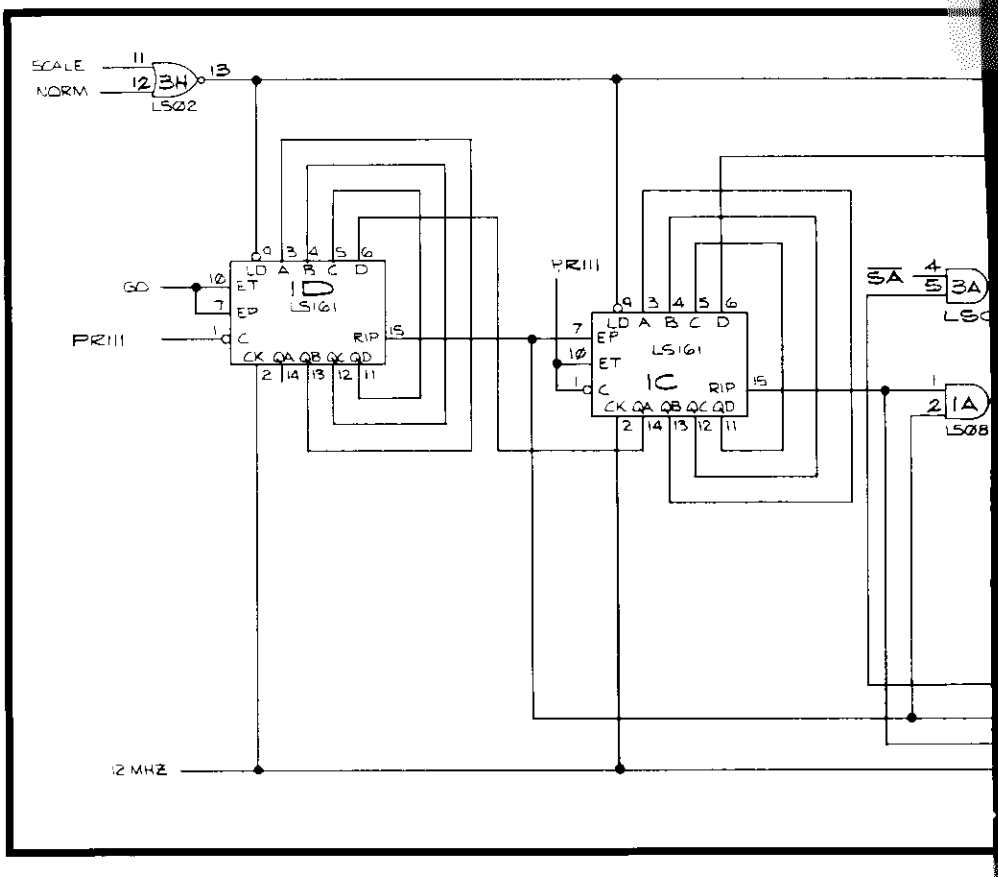
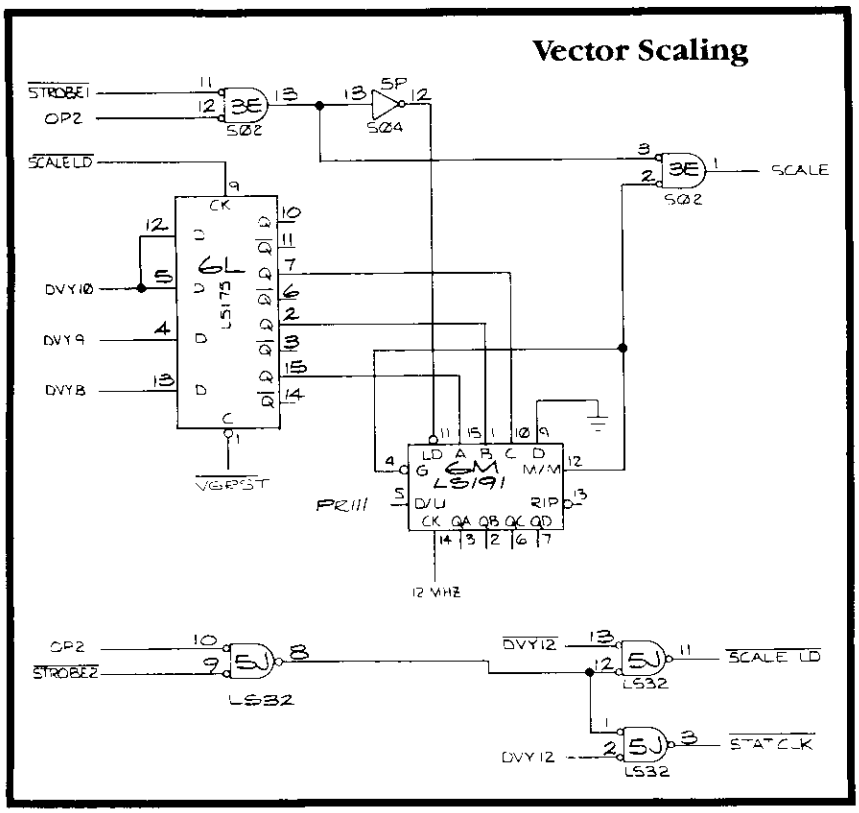
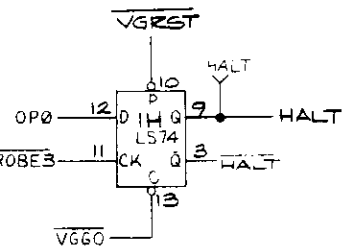
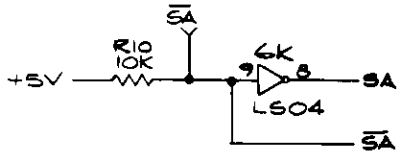

SCALE
NORM
3H
LS02
GO
PRIII
1D
LS161
1C
12 MHZ
5A
3A
1A
LS08


Vector Scaling
STROBE1
OP2
3E
SQ2
5P
SQ4
SCALE LD
SCALE
6L
LS175
DVY10
DVY9
DVY8
VGRPST
LS191
PRIII
12 MHZ
STROBE2
5J
LS32
DVY12
SCALE LD
STAT CLK

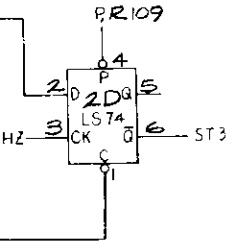
Halt Flag



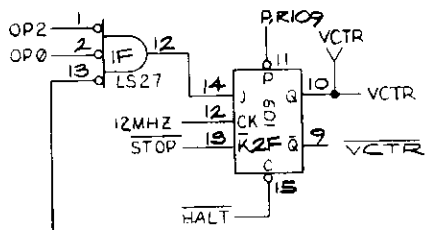
Signature Analysis



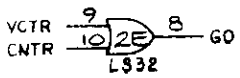
der Disable



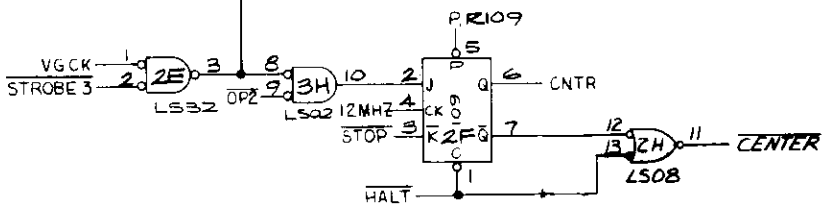
Vector Flag



Go Flag



Center Flag



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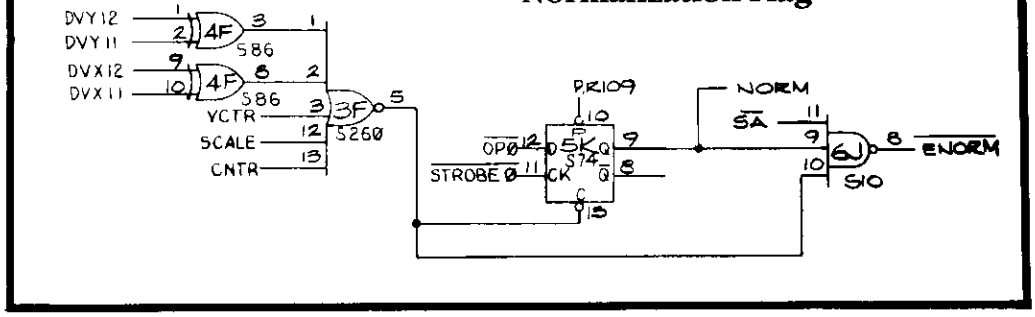
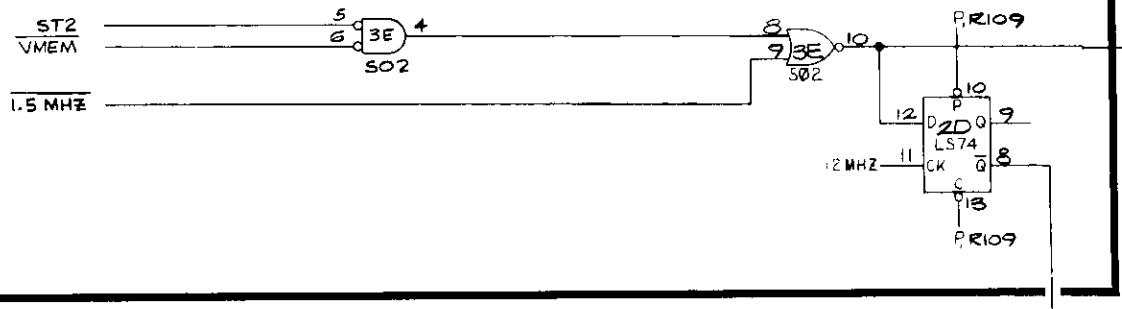
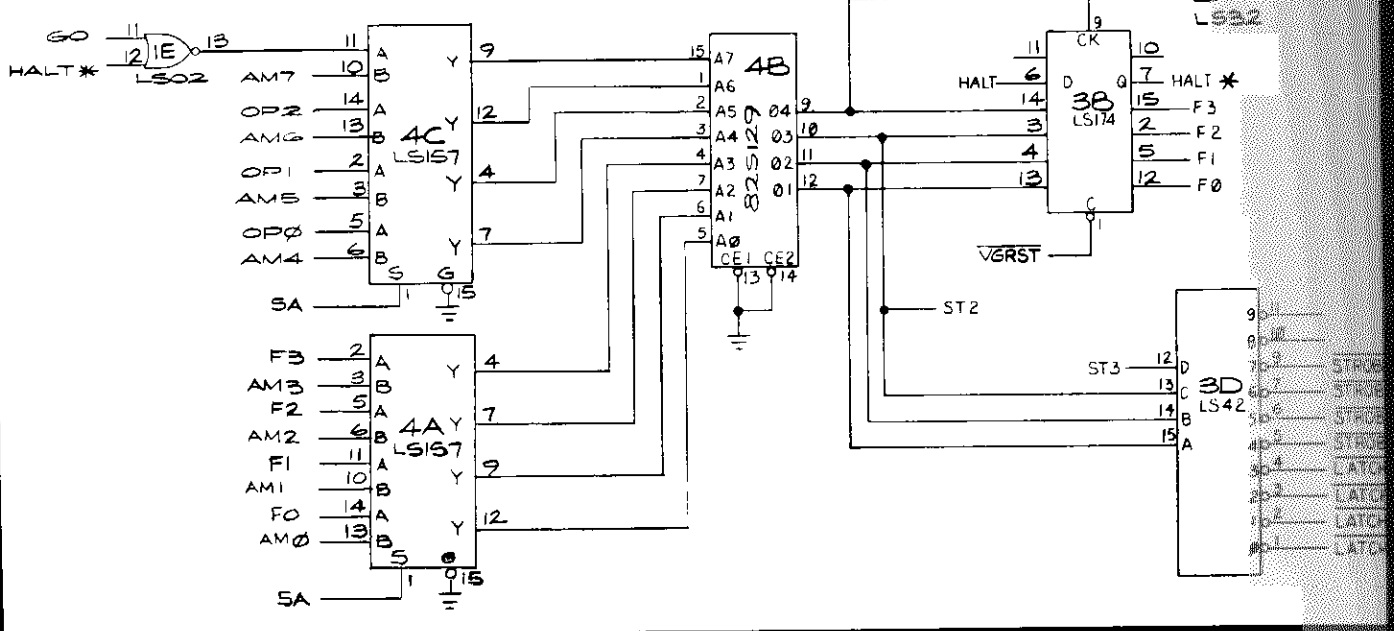
Normalization Flag



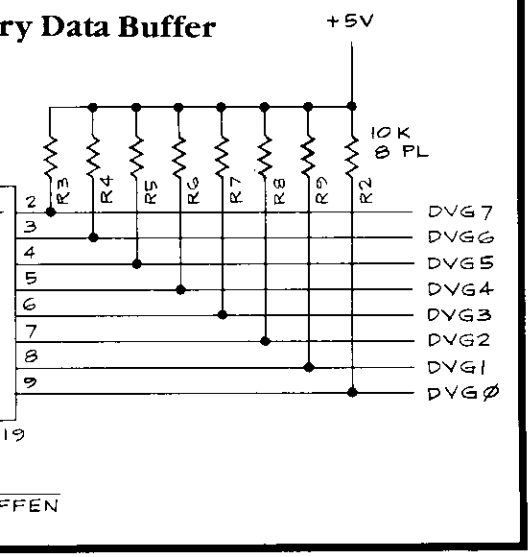
State Machine Clock



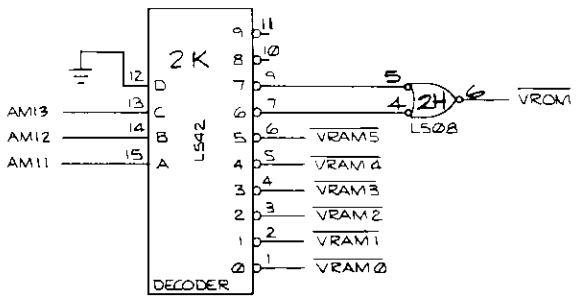
State Machine



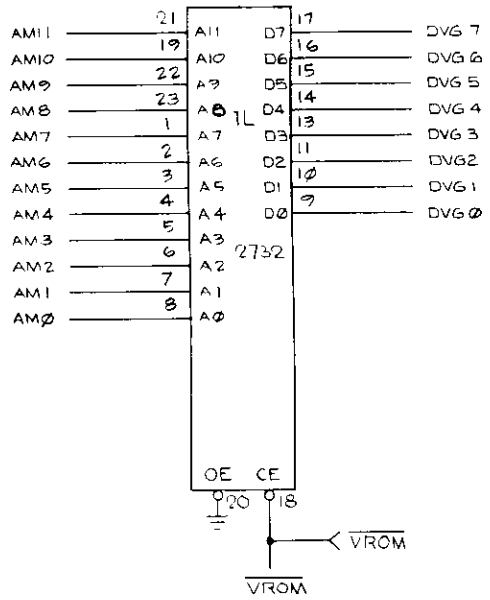
ry Data Buffer



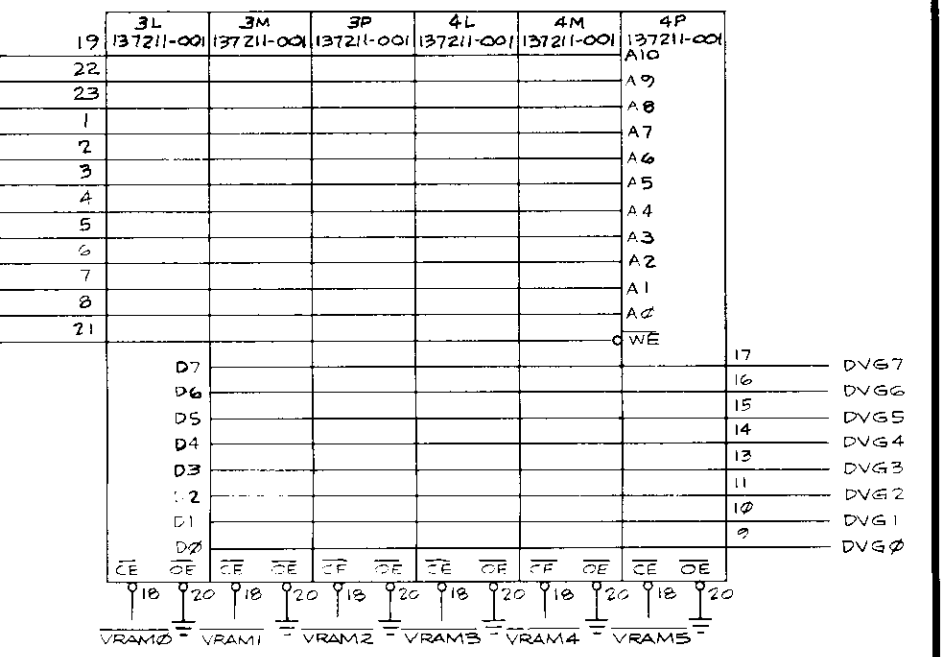
Vector Address Decoder



Vector ROM



Vector RAM



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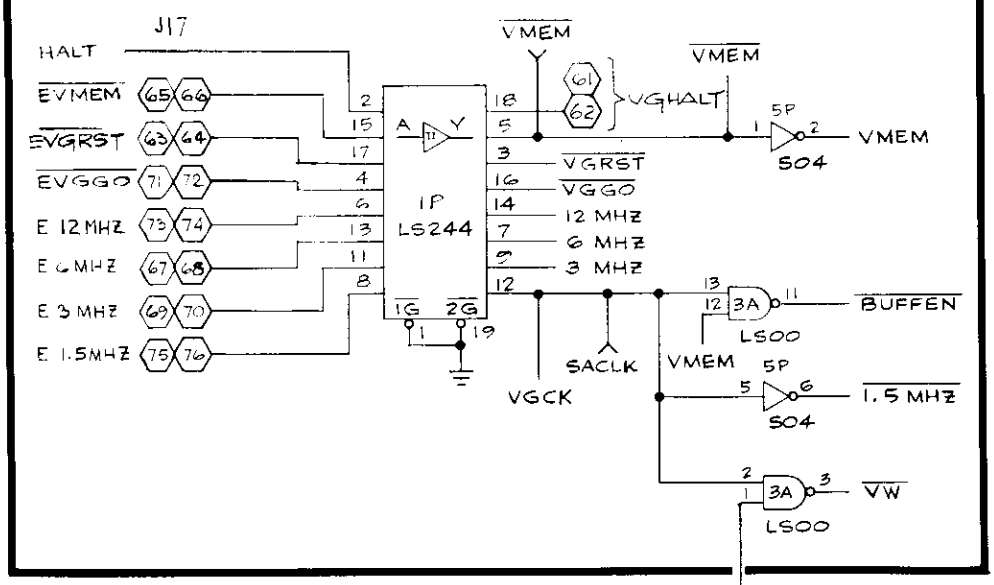
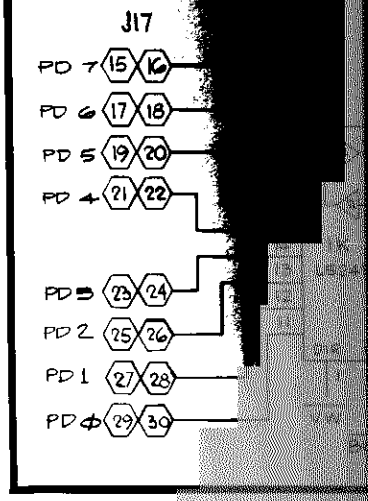
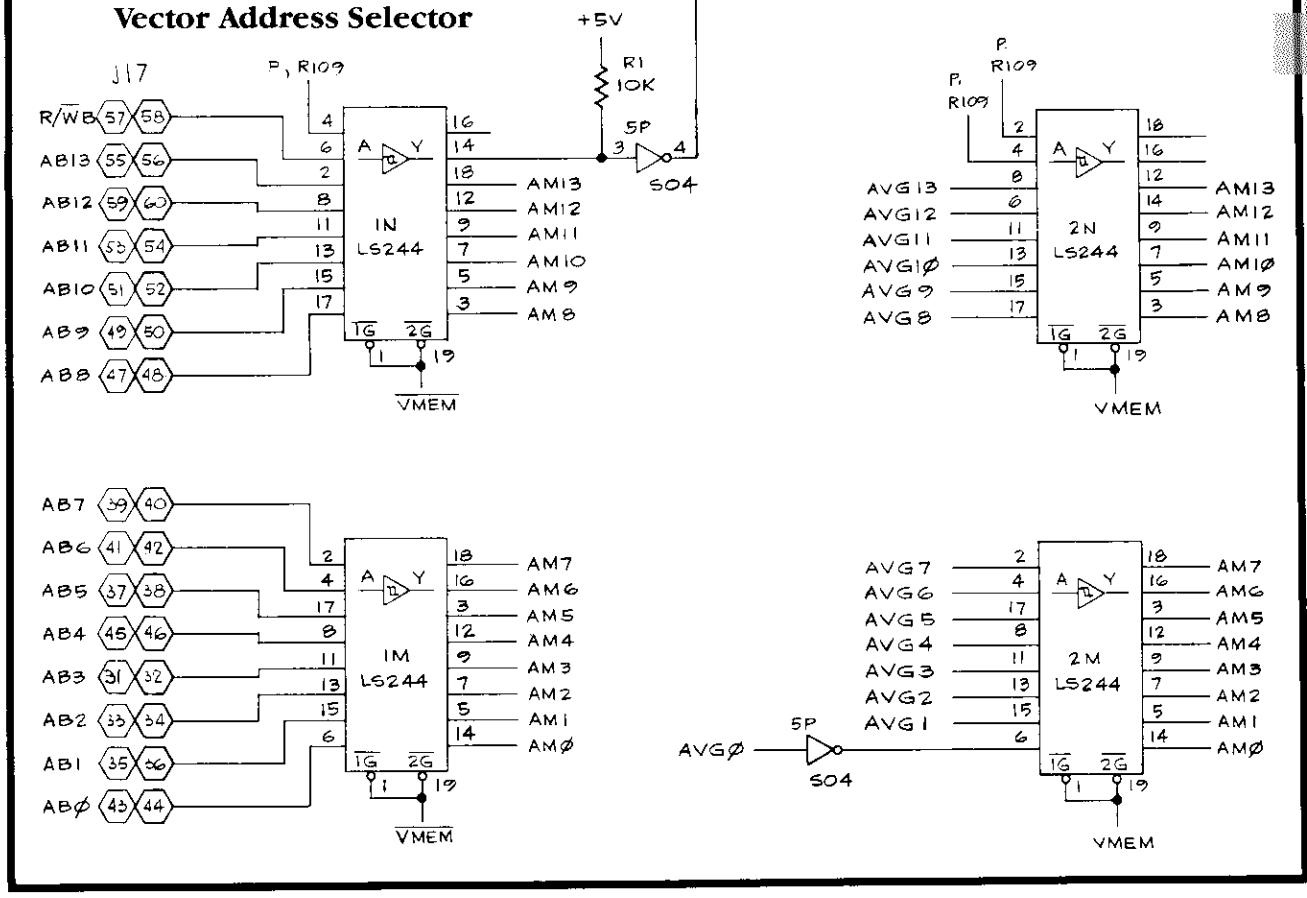
Vector Interface Buffer

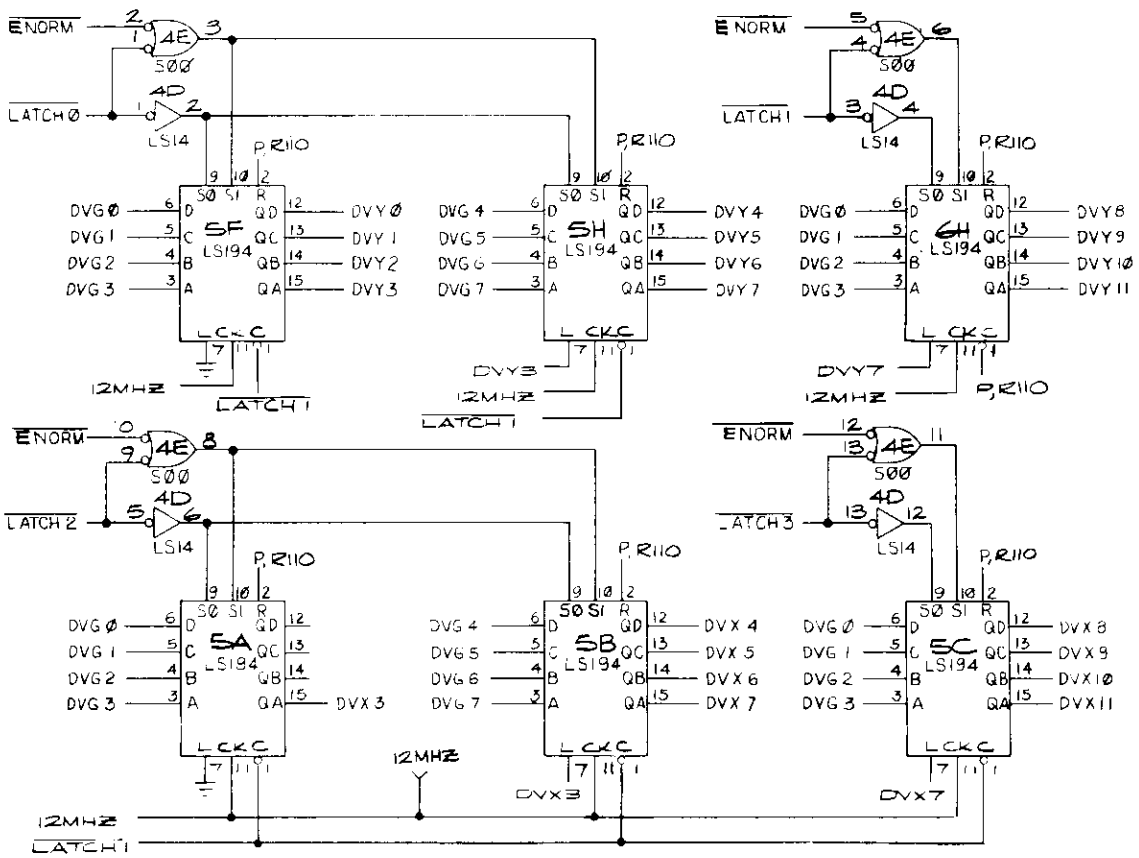




Vector Address Selector



Vector Data Shifters



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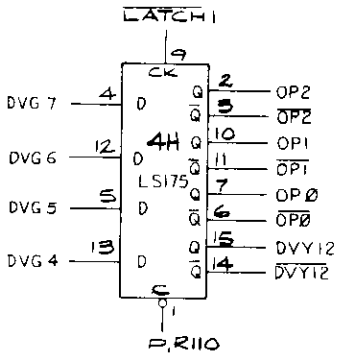
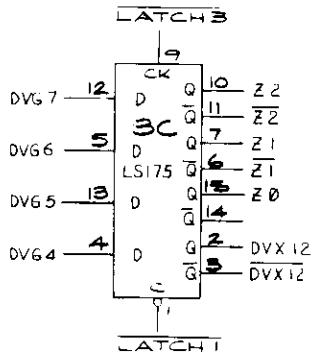
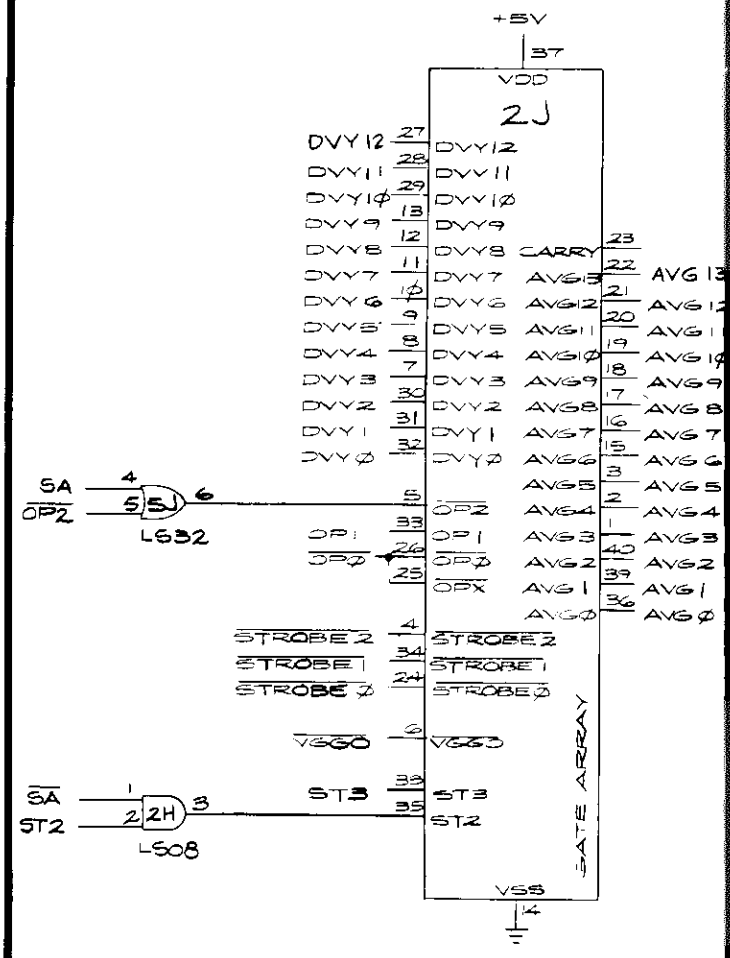
Op Code and Intensity Latches

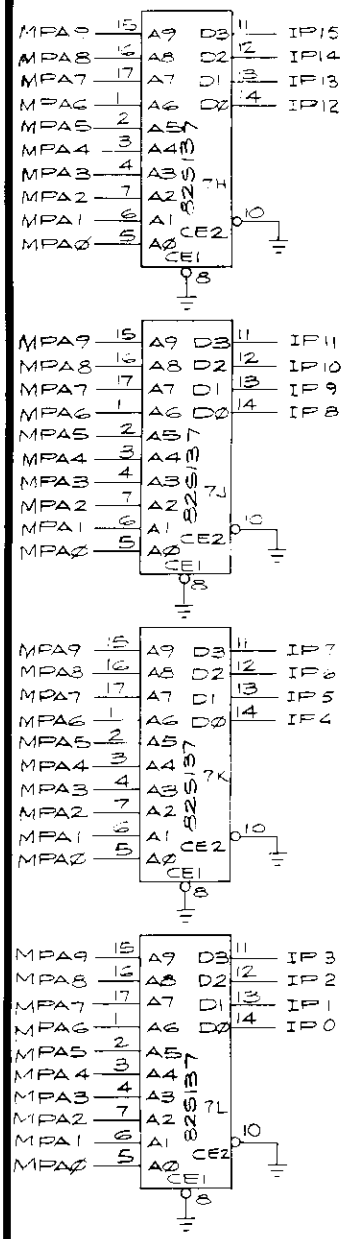




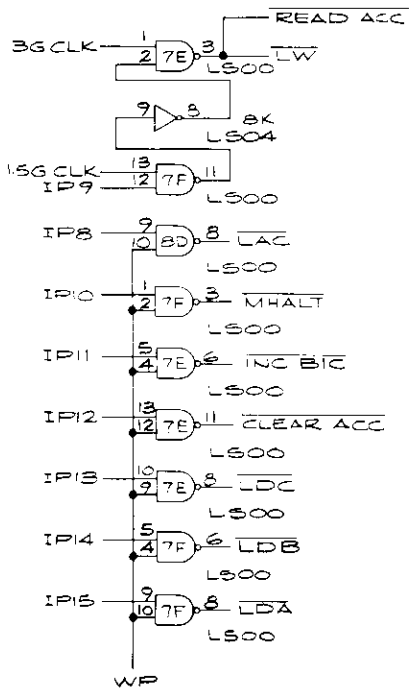
Address Controller



Instruction PROM



Instruction Strobe Gates



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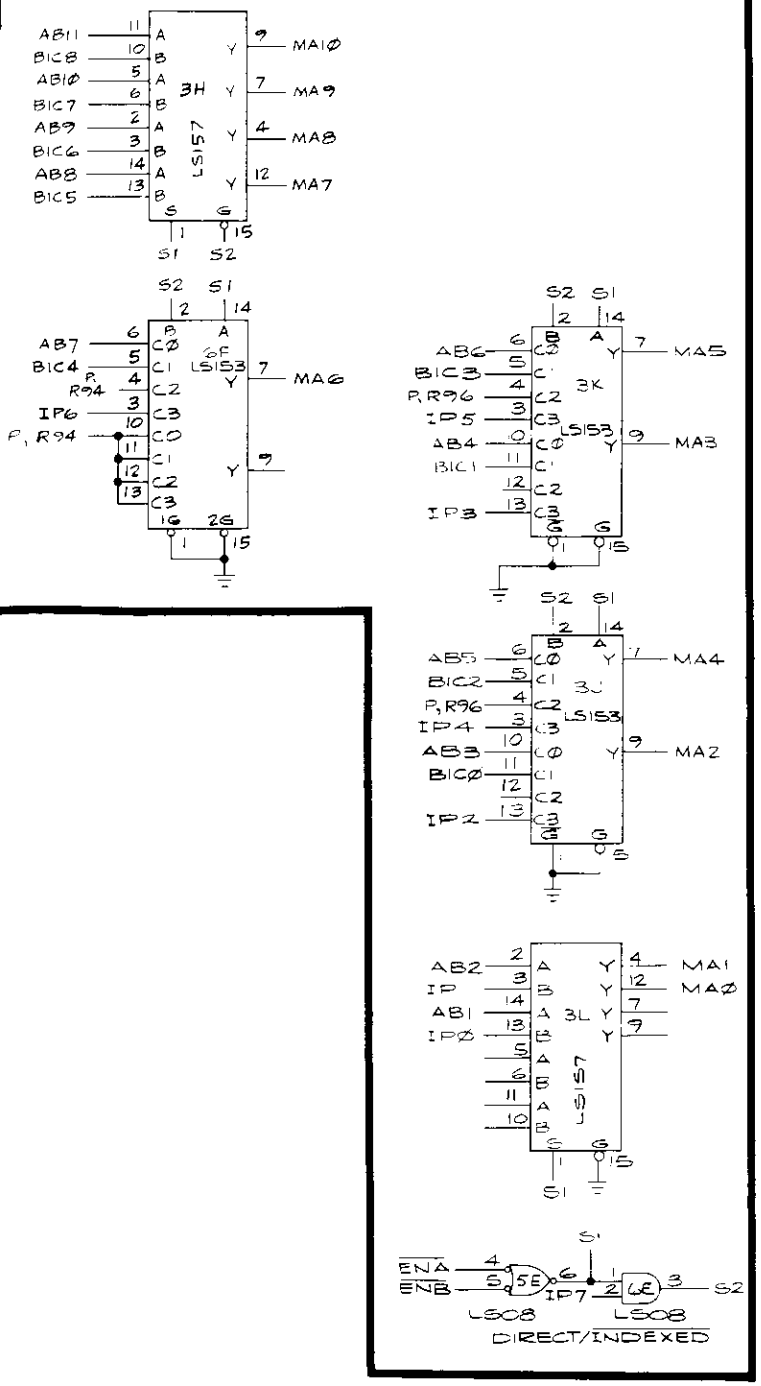
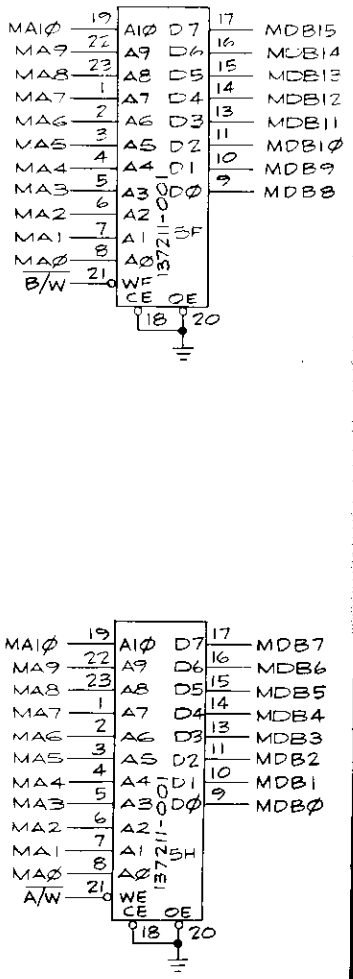
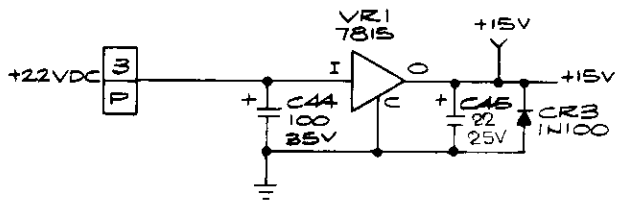
Matrix Processor Address Selector

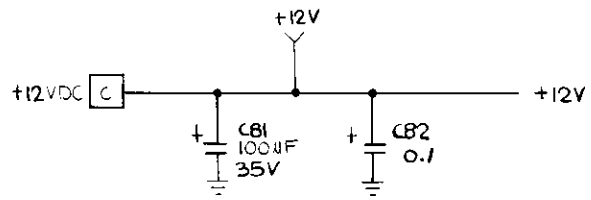


Matrix Processor RAM



Power Input





STAR WARS Analog Vector-Generator PCB

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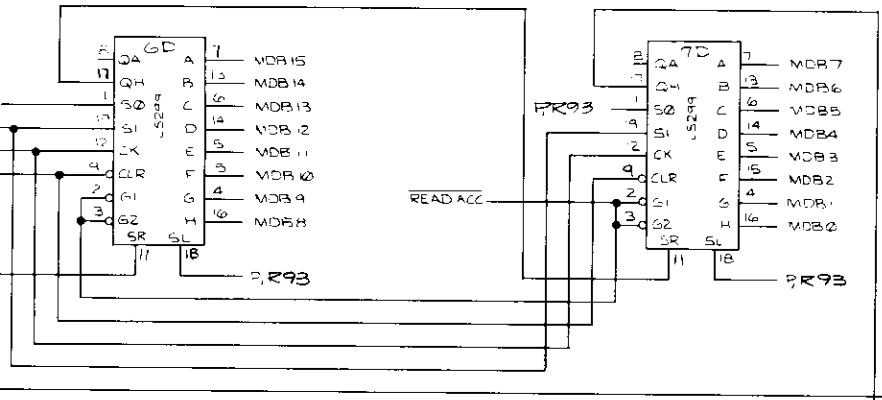
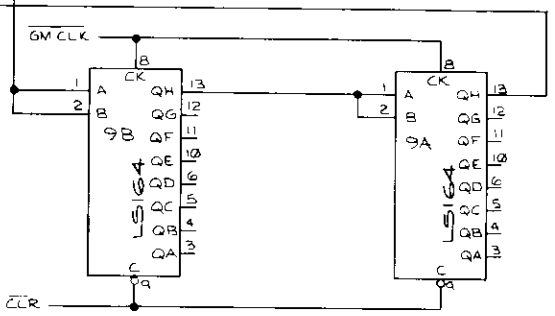
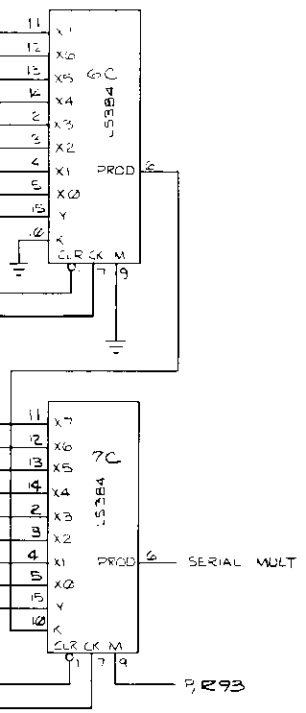
Accumulator

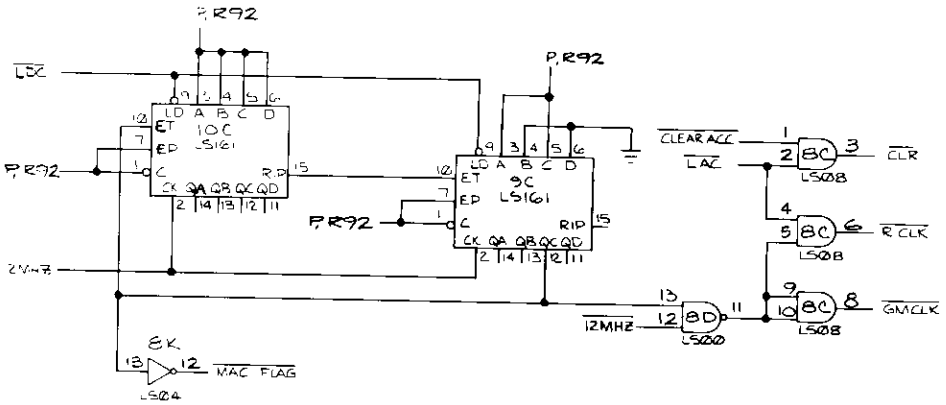




al Multiplier



Multiplier/Accumulator Clock



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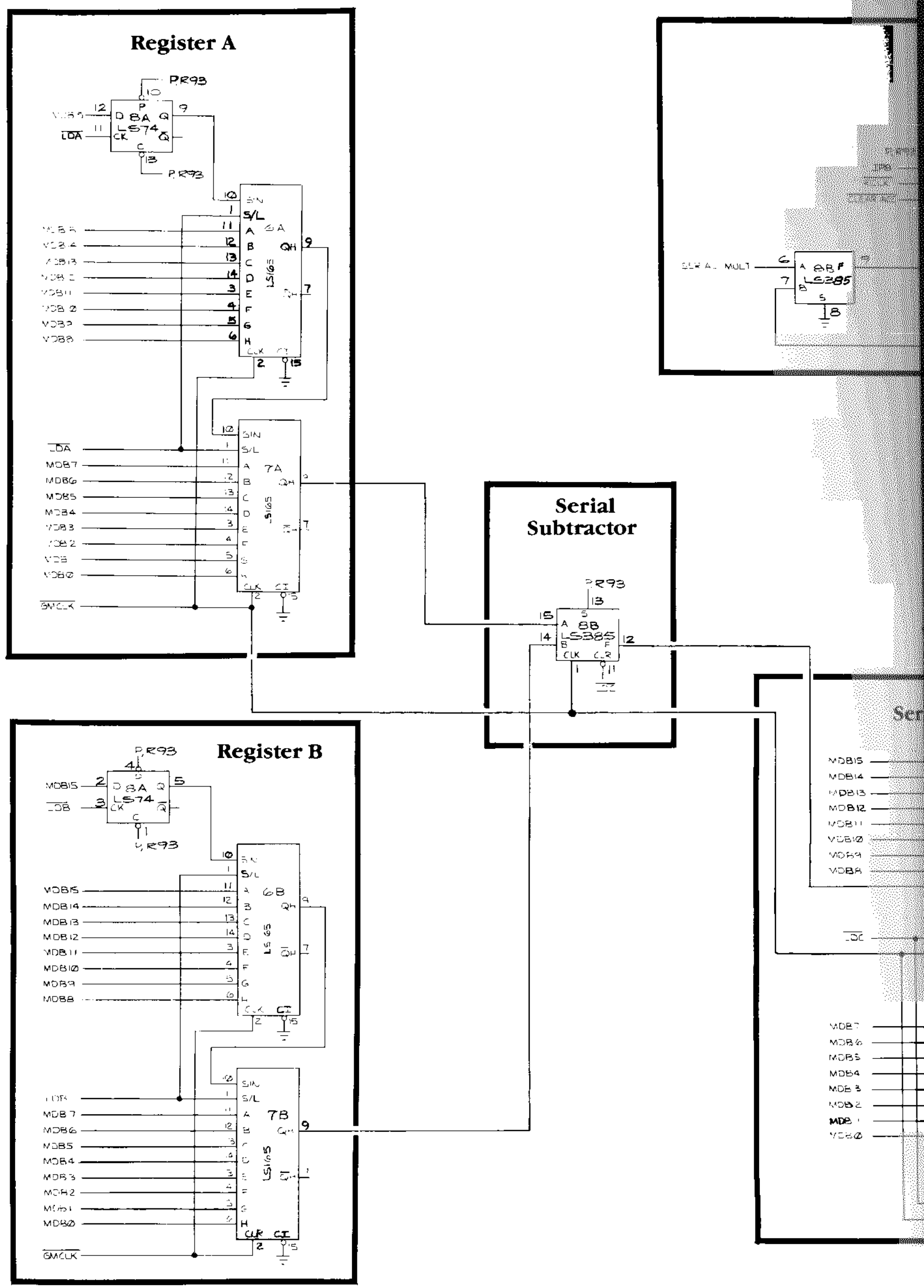
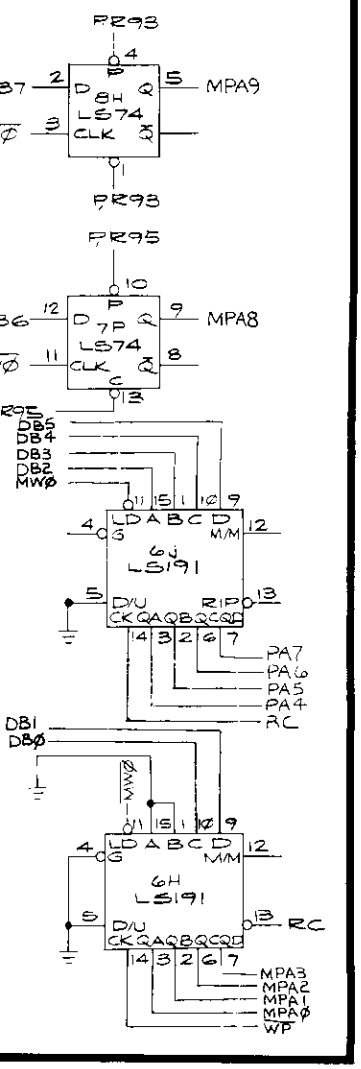
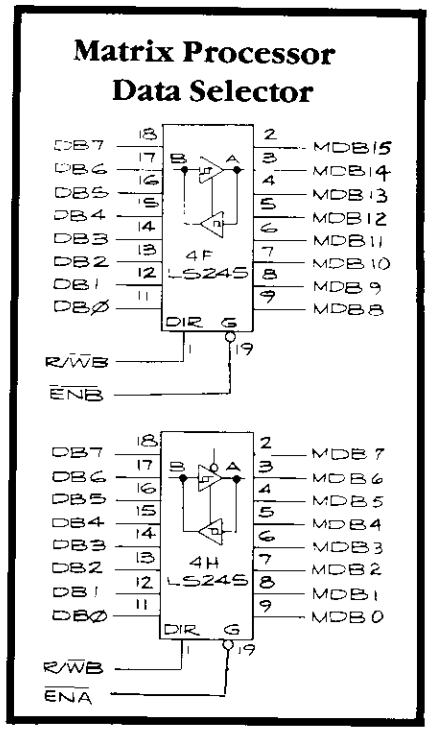

Register A
PR93
8A
LS74
LDA
6A
LS165
7A
GMCLK
Serial Subtractor
8B
LS385
Register B
6B
7B
SERIAL MULT
LS385

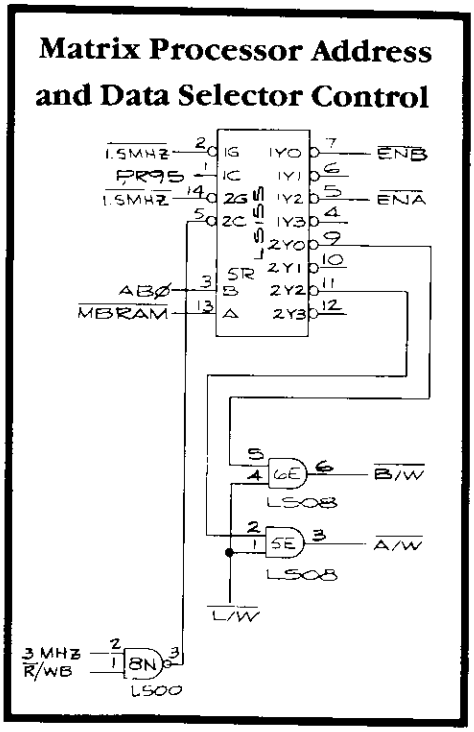
Matrix Processor Address Counter



Matrix Processor Data Selector



Matrix Processor Address and Data Selector Control



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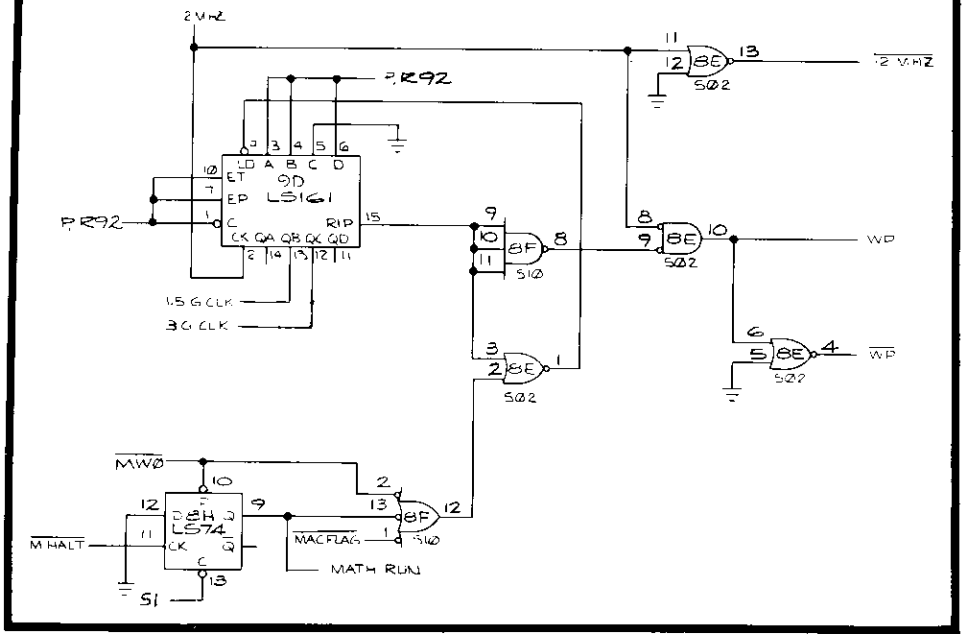
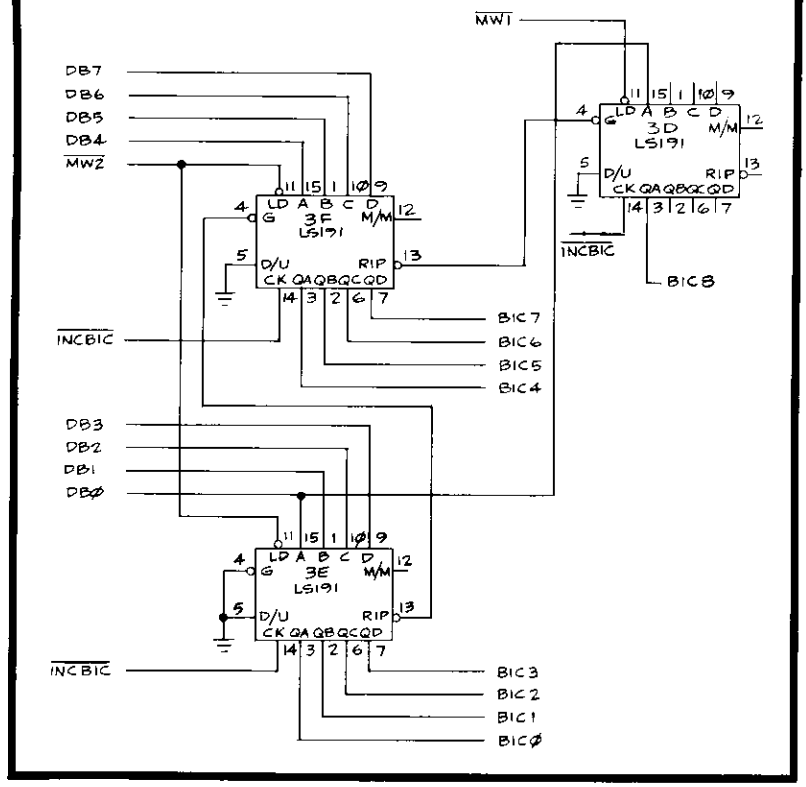
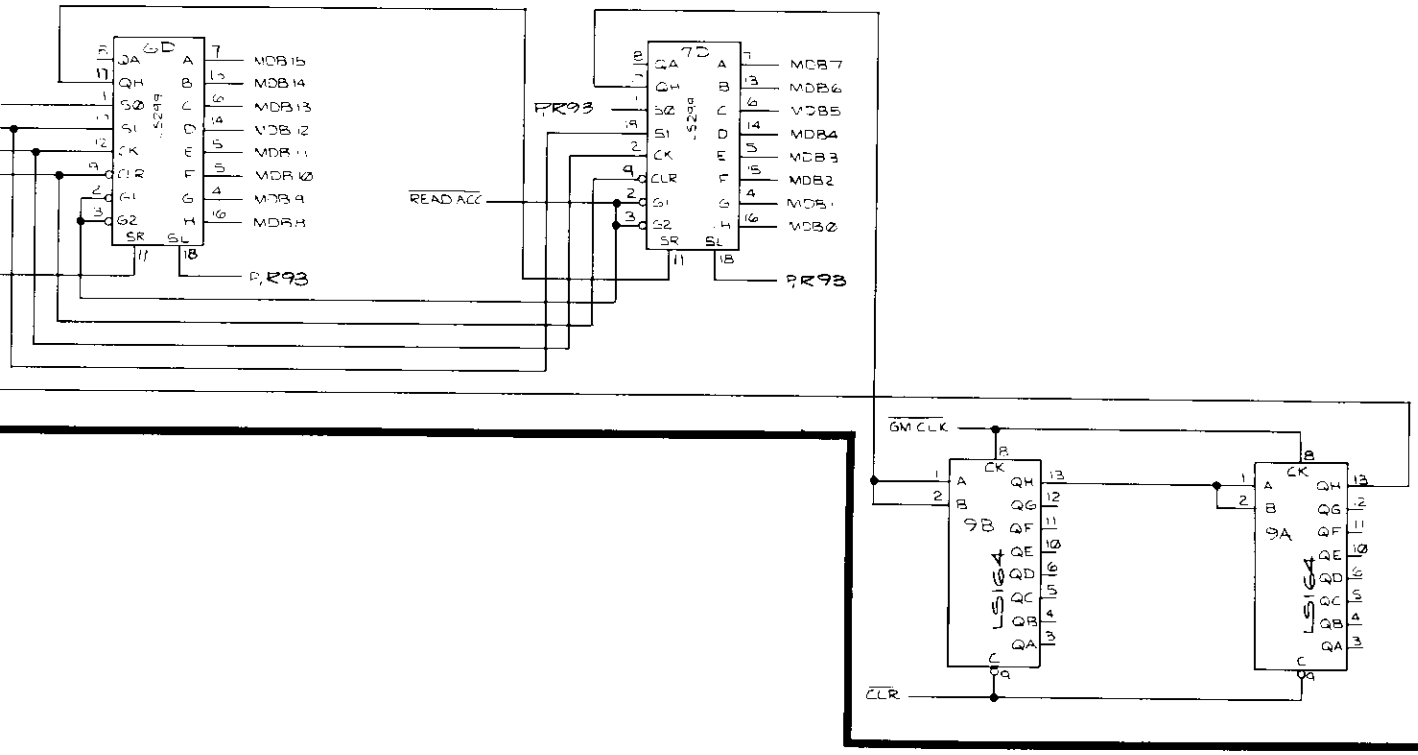
Matrix Processor Clock



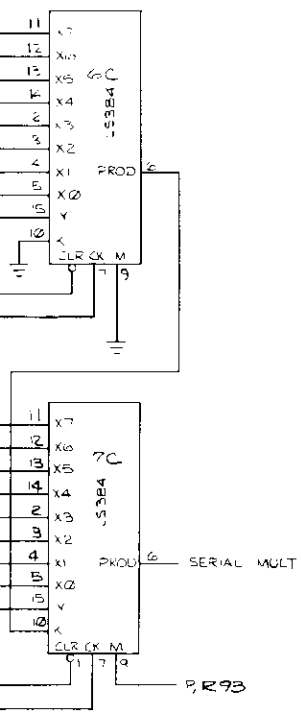
Block Index Counter



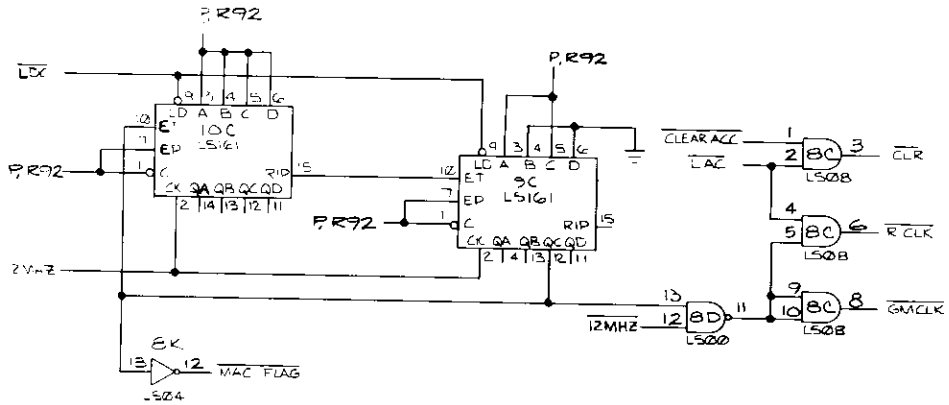
Accumulator



al Multiplier



Multiplier/Accumulator Clock



NOTICE TO ALL PERSONS RECEIVING THIS DRAWING

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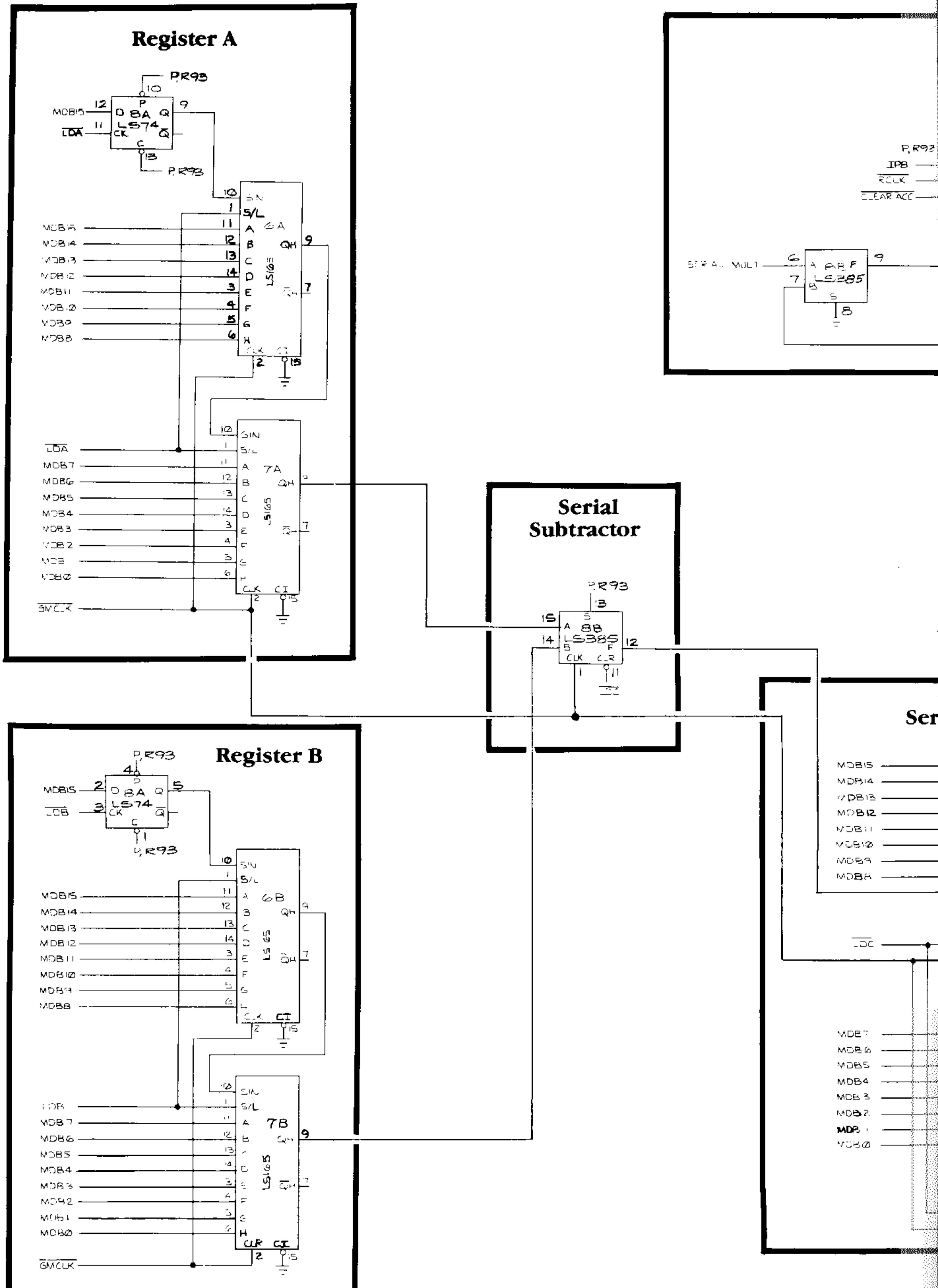
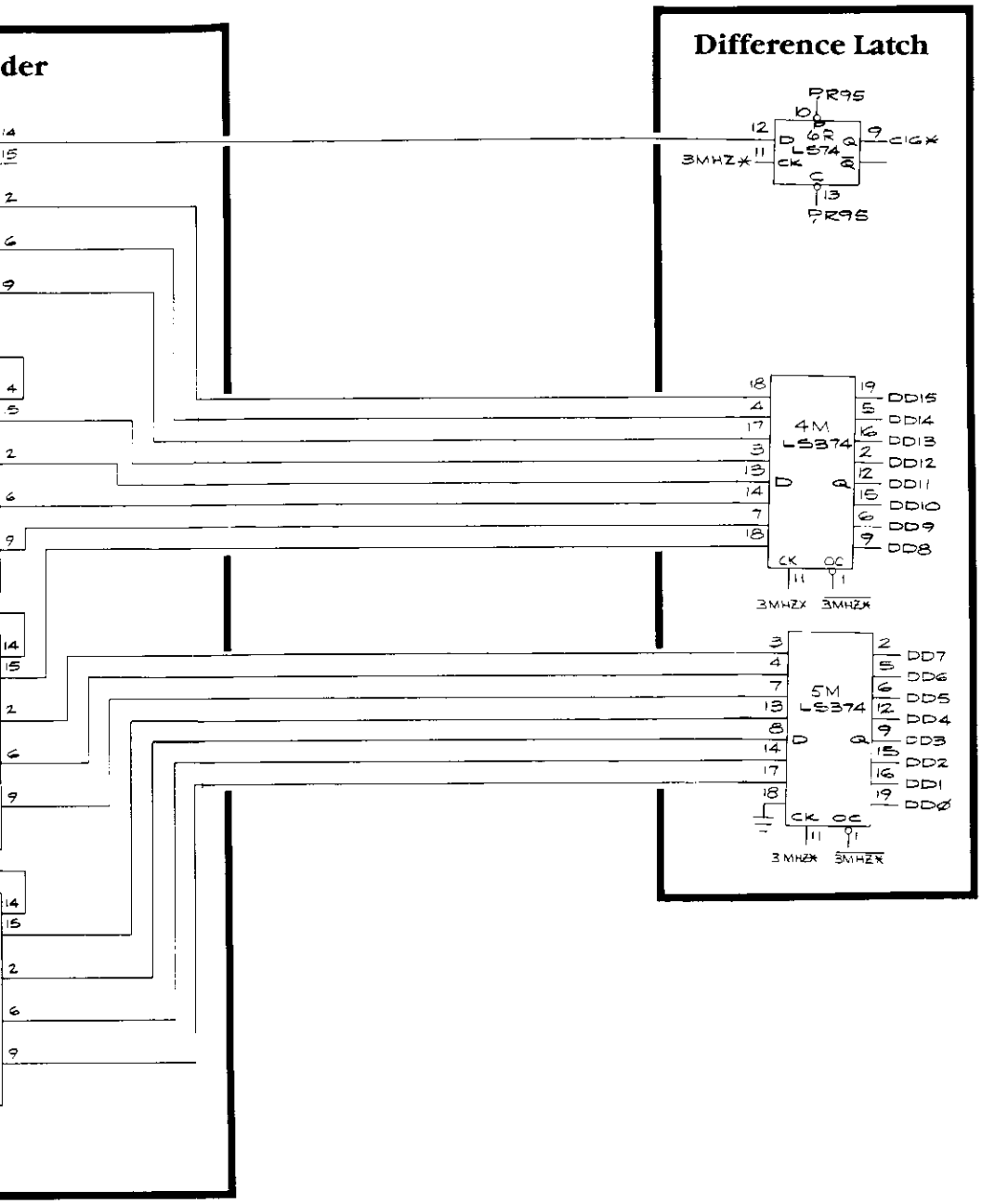


Register A
PR93
MDB15
LDA
8A
LS74
6A
LS165
MDB14
MDB13
MDB12
MDB11
MDB10
MDB9
MDB8
7A
MDB7
MDB6
MDB5
MDB4
MDB3
MDB2
MDB0
SMCLK
Serial
Subtractor
8B
LS385
Register B
LDB
6B
7B
GMCLK
IPB
CLEAR ACC
LS385
LDC



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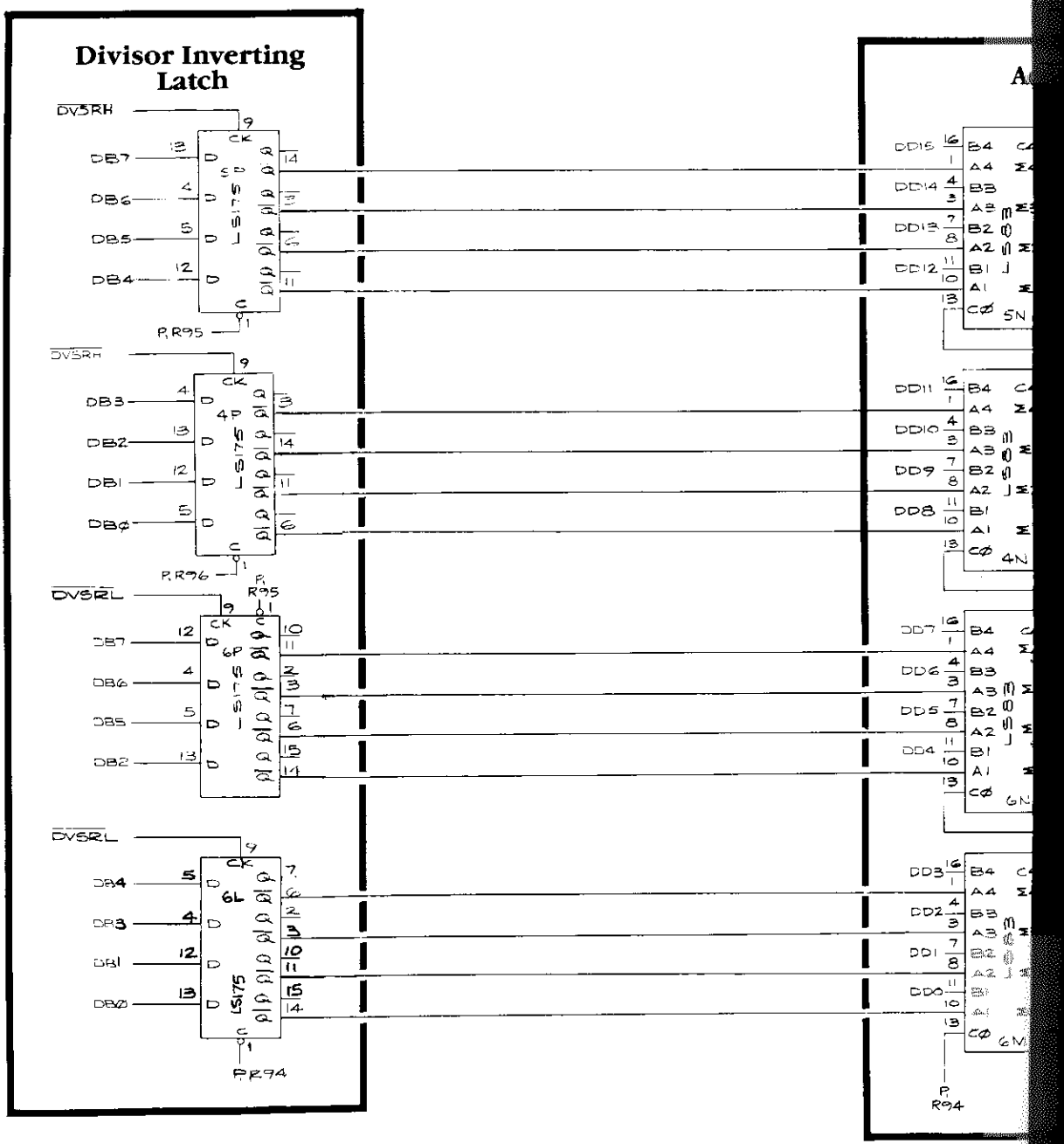
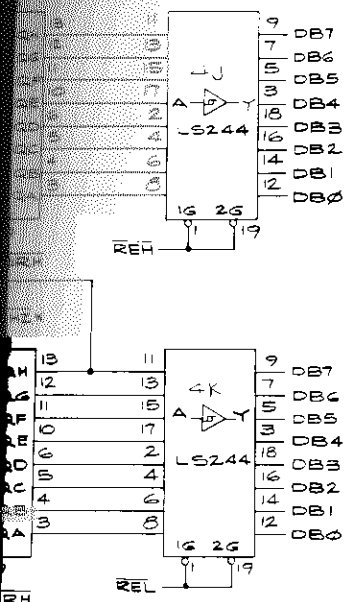
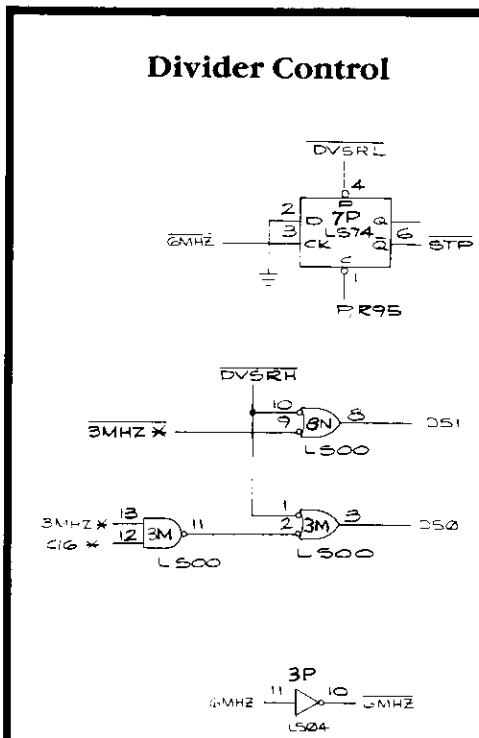

Divisor Inverting Latch
DVSRH
DB7
DB6
DB5
DB4
LS175
P, R95
DVSRH
DB3
DB2
DB1
DB0
4P
LS175
P, R96
DVSRL
DB7
DB6
DB5
DB2
6P
LS175
P, R95
DVSRL
DB4
DB3
DB1
DB0
6L
LS175
P, R94
DD15
DD14
DD13
DD12
DD11
DD10
DD9
DD8
DD7
DD6
DD5
DD4
DD3
DD2
DD1
DD0
LS688
P, R94

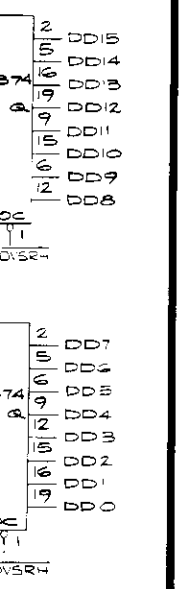
ient Shift Register



Divider Control



d Latch



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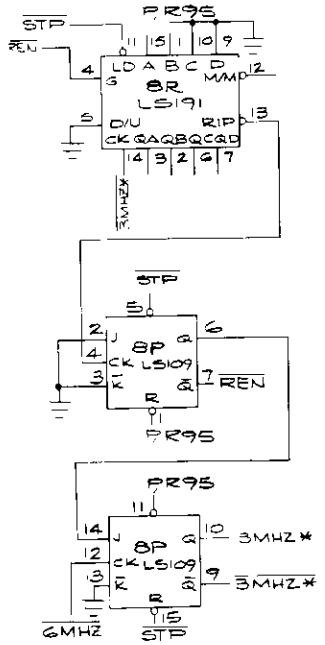
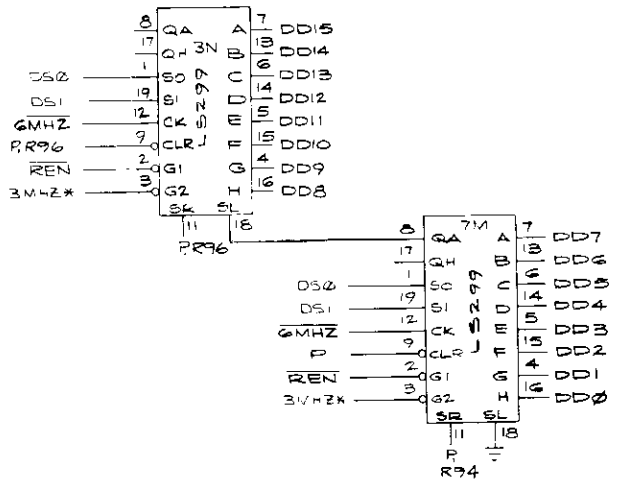
1st p

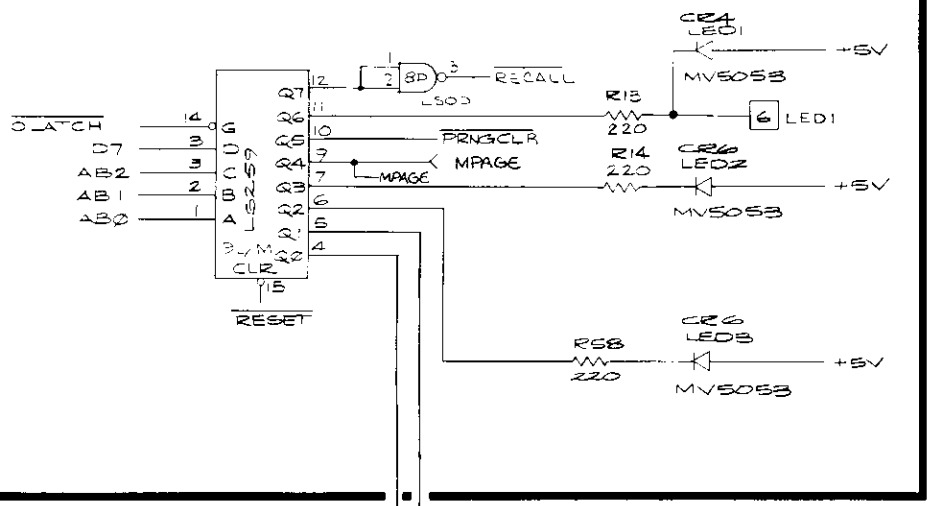
Divider Clock Generator



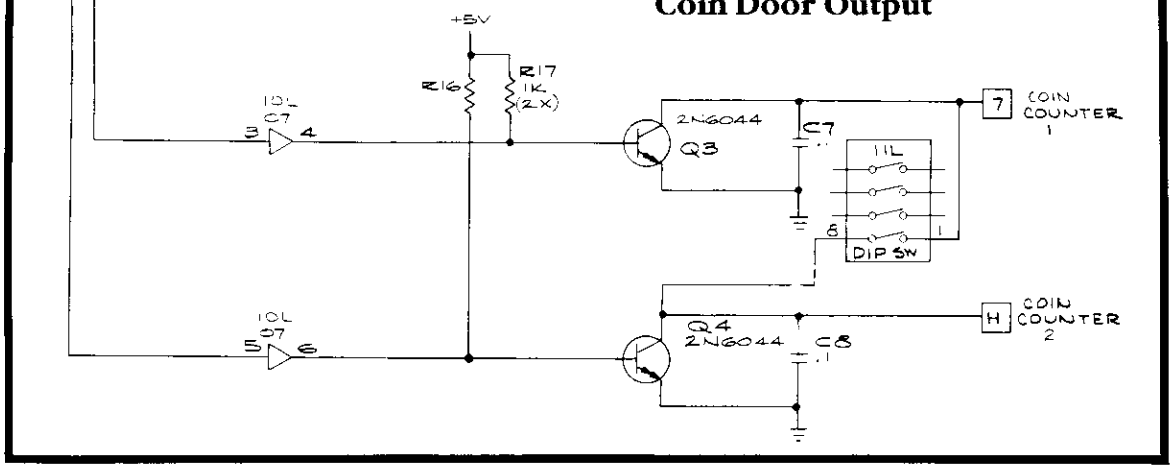
Dividend Shift Register



Test and Control Signals



Coin Door Output



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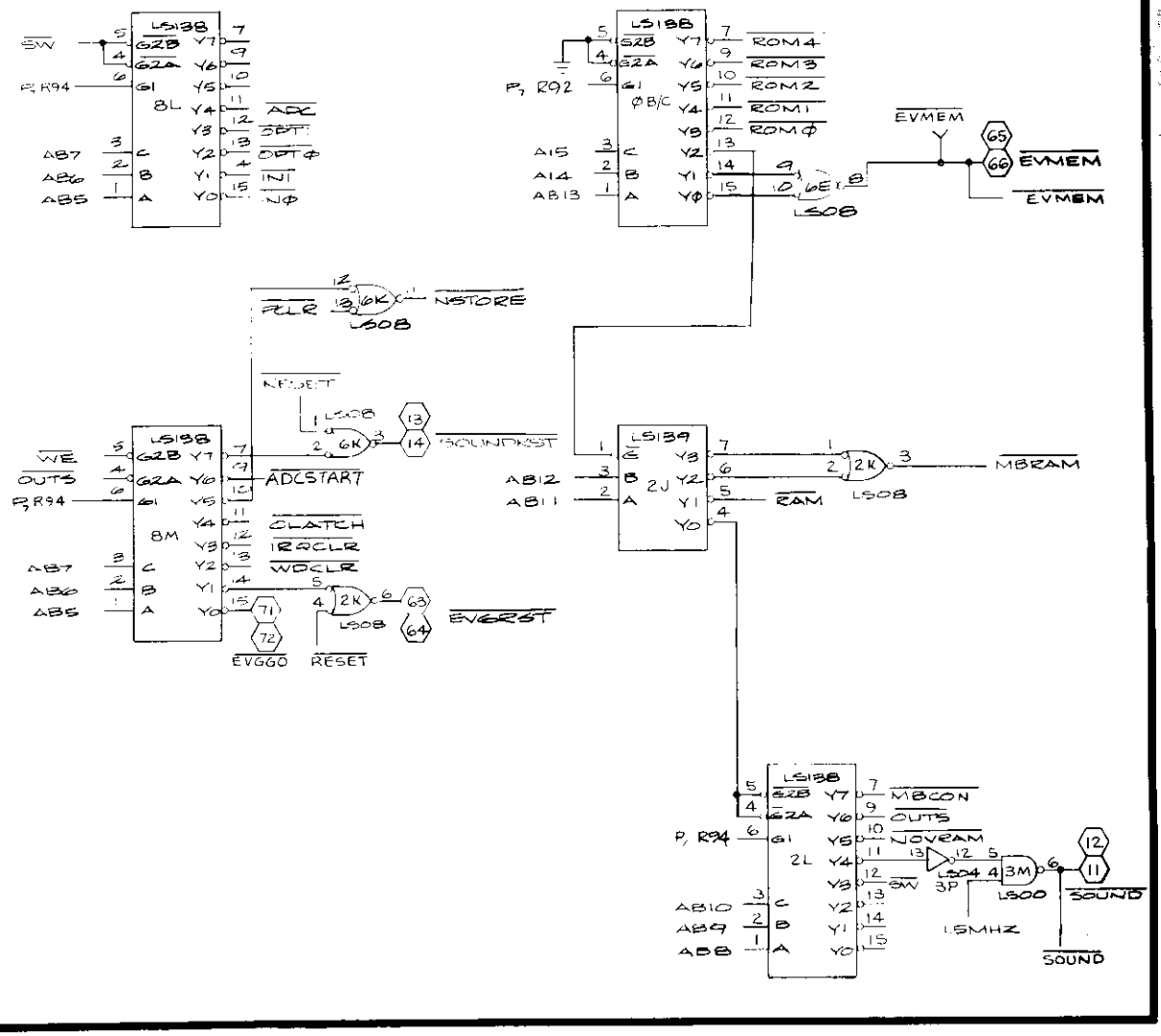
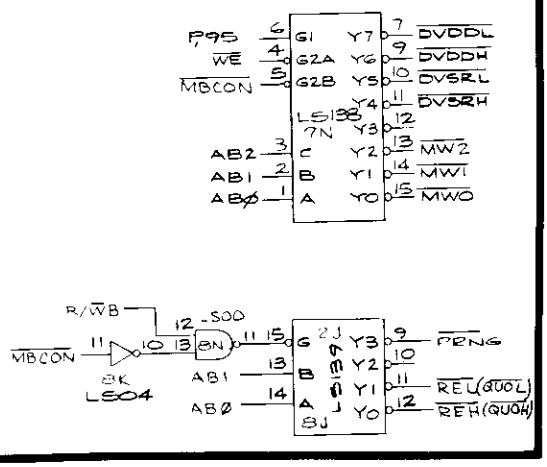
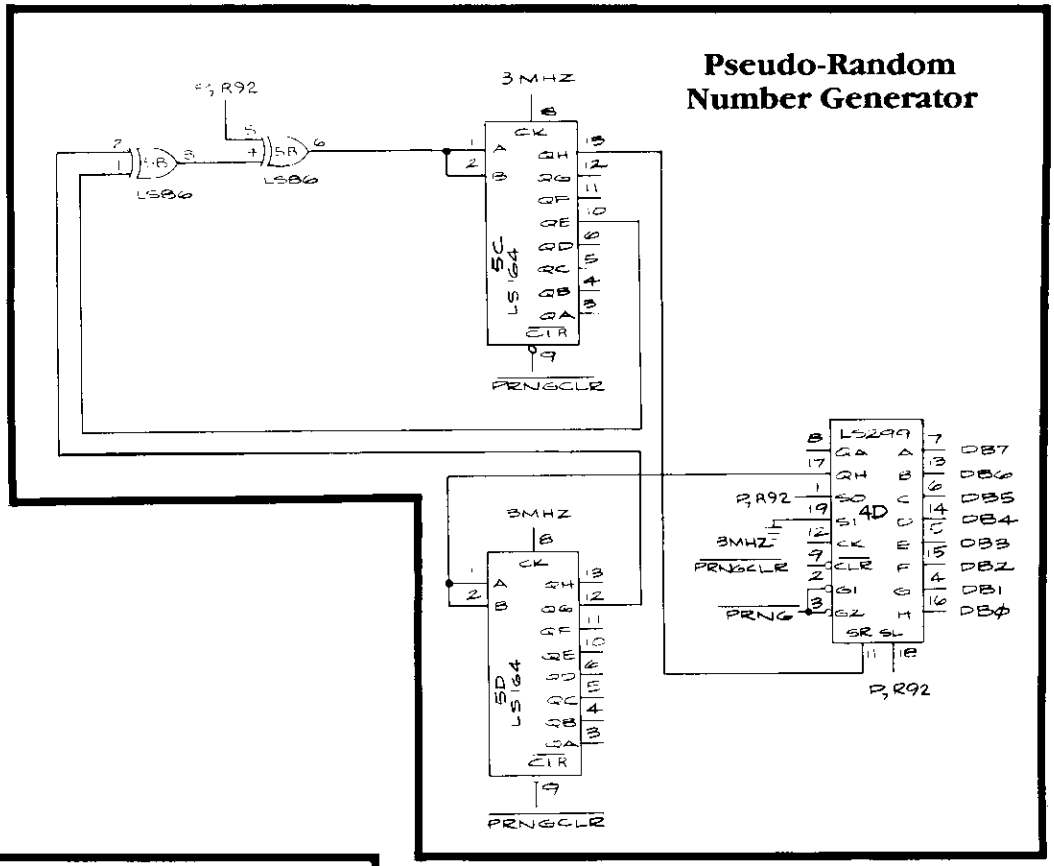
Address Decoders



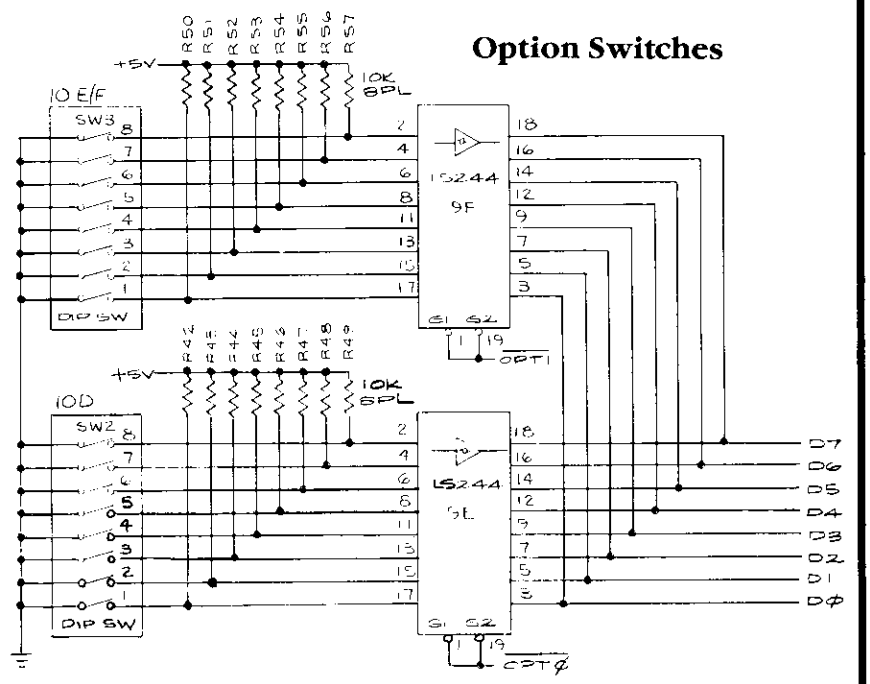
Math Address Decoders



Pseudo-Random Number Generator



Option Switches



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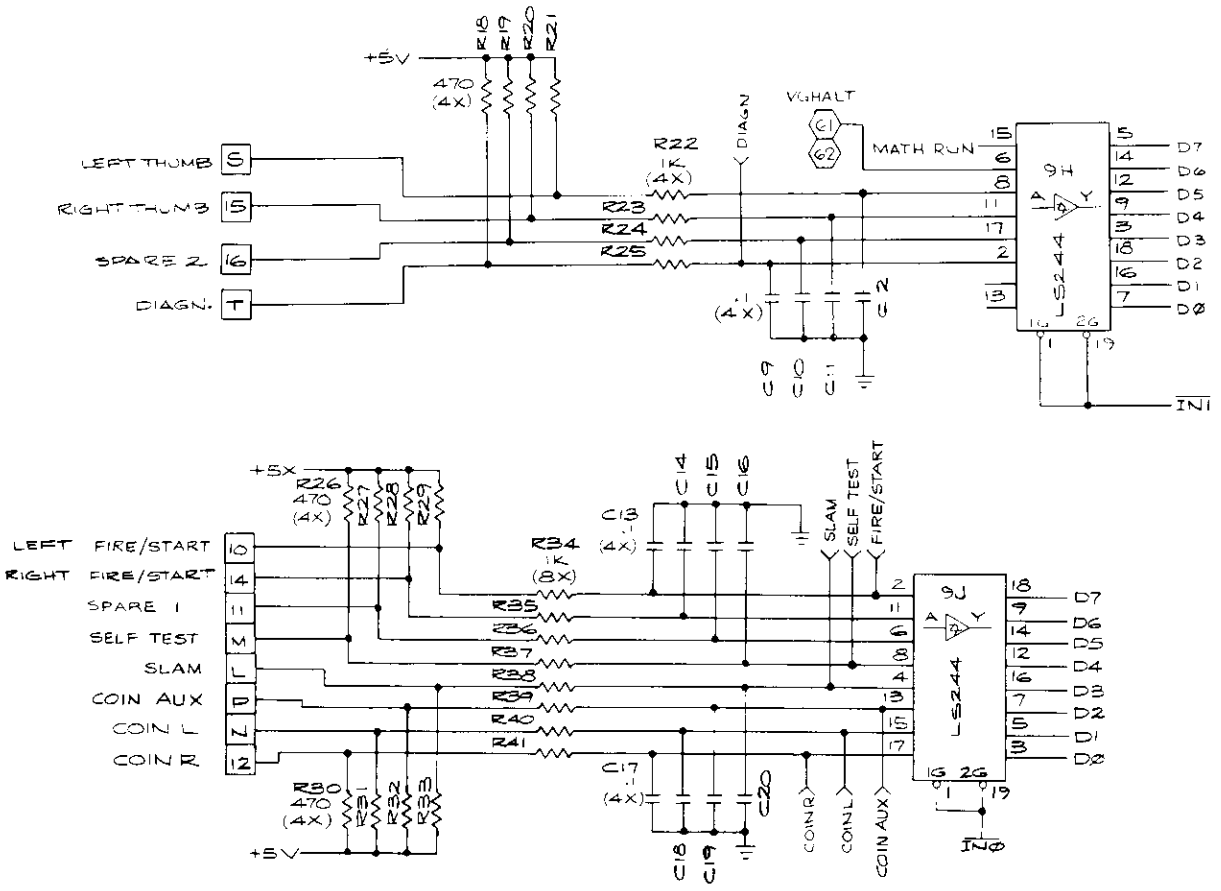
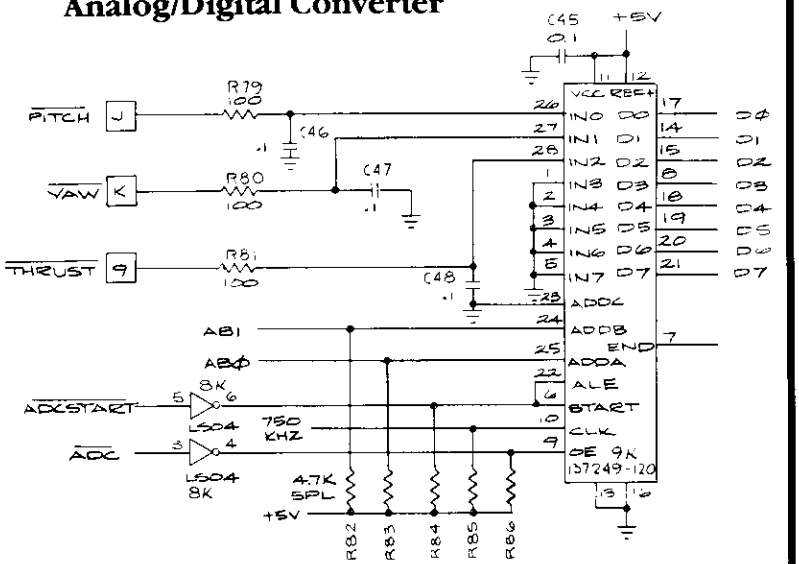
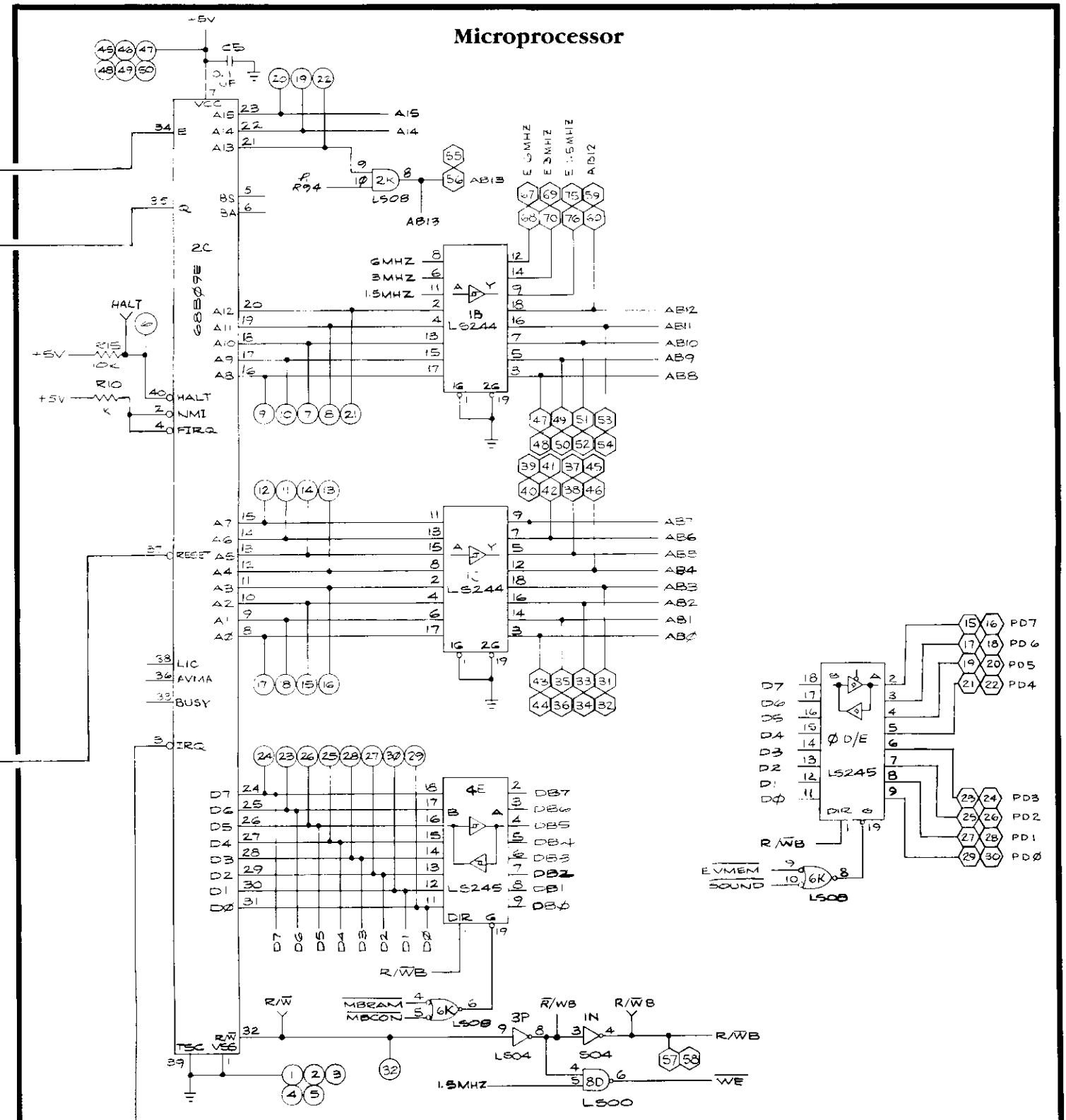
Coin Door and Control Panel Input



Analog/Digital Converter



Microprocessor



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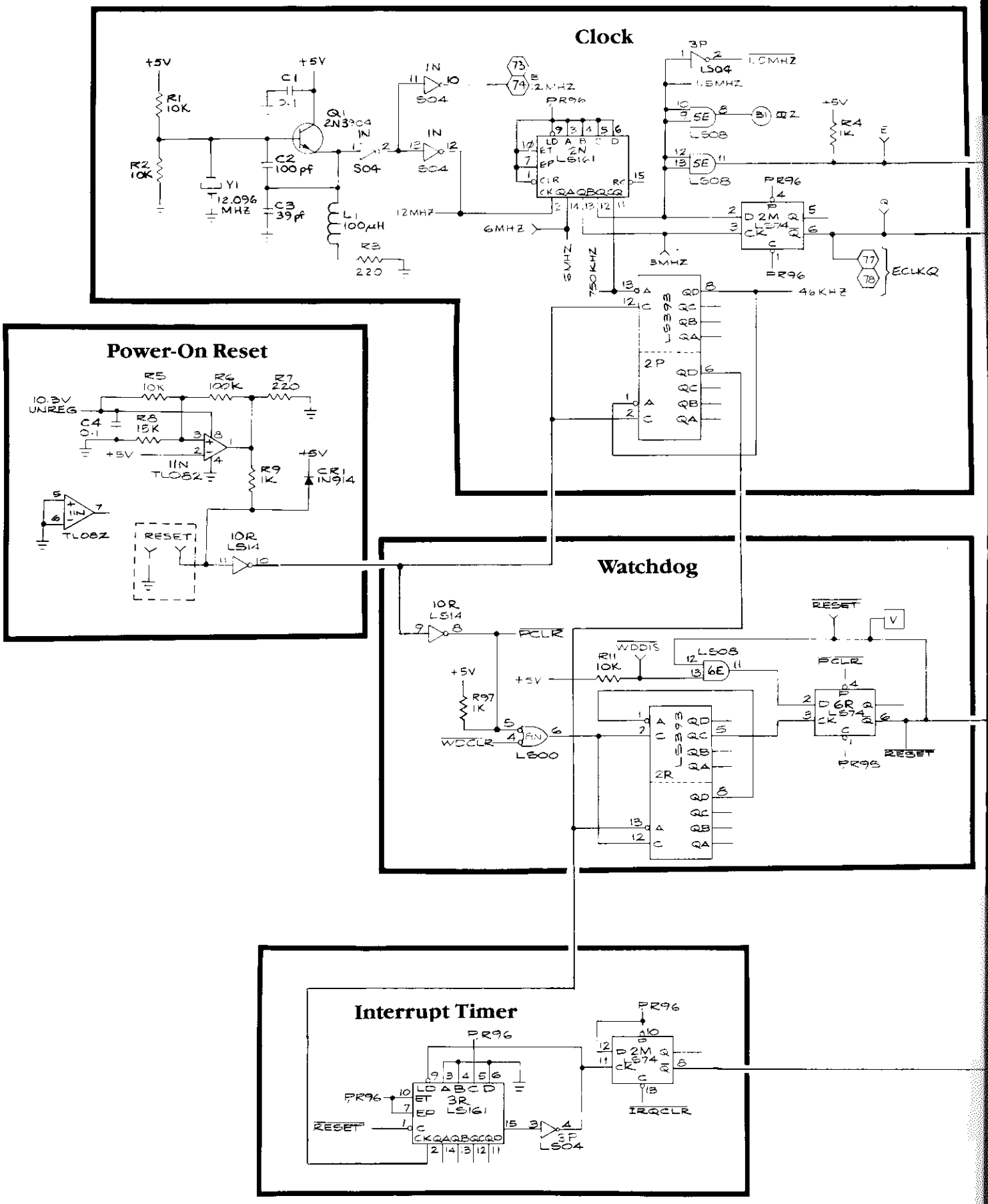
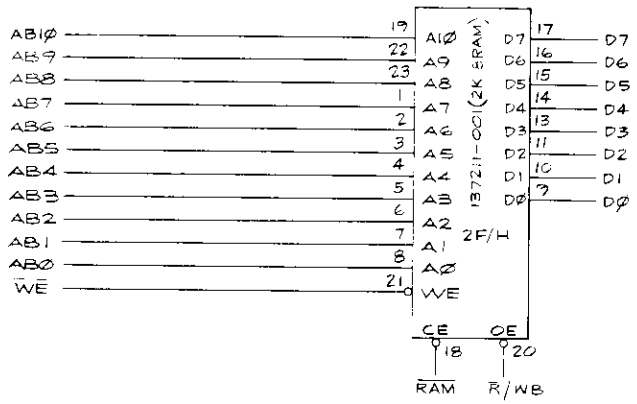
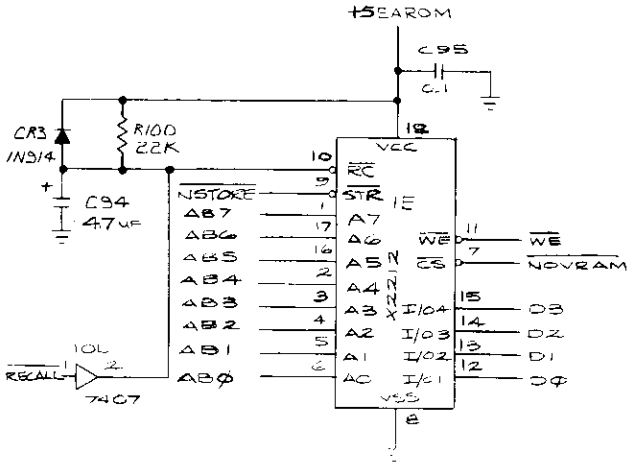

Clock
+5V
R1 10K
R2 10K
C1 .1
Q1 2N3904
C2 100 pf
C3 39 pf
Y1 12.096 MHz
L1 100µH
R3 220
S04
12MHZ
6MHZ
3MHZ
1.5MHZ
1.0MHZ
750KHZ
46KHZ
LS161
LS393
LS74
LS08
LS04
ECLKQ
Power-On Reset
10.3V UNREG
C4 0.1
R5 10K
R6 100K
R7 220
R8 15K
R9 1K
CR1 IN914
TL082
RESET
10R LS14
Watchdog
R11 10K
R97 1K
WDDIS
WCCLR
PCLR
LS00
Interrupt Timer
3R LS161
IRQCLR
PR96
PR95

RAM



High-Score and Bookkeeping Non-Volatile RAM



STAR WARS Main PCB

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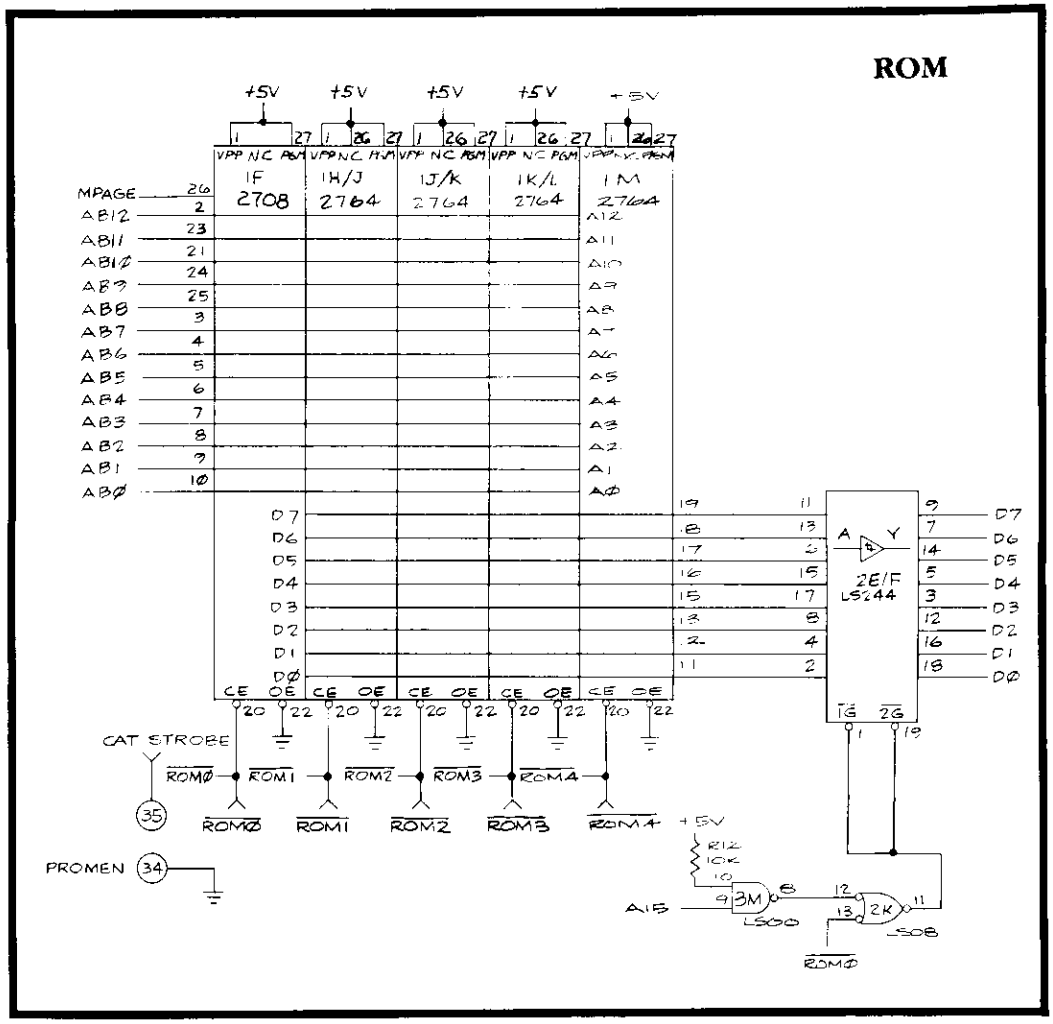
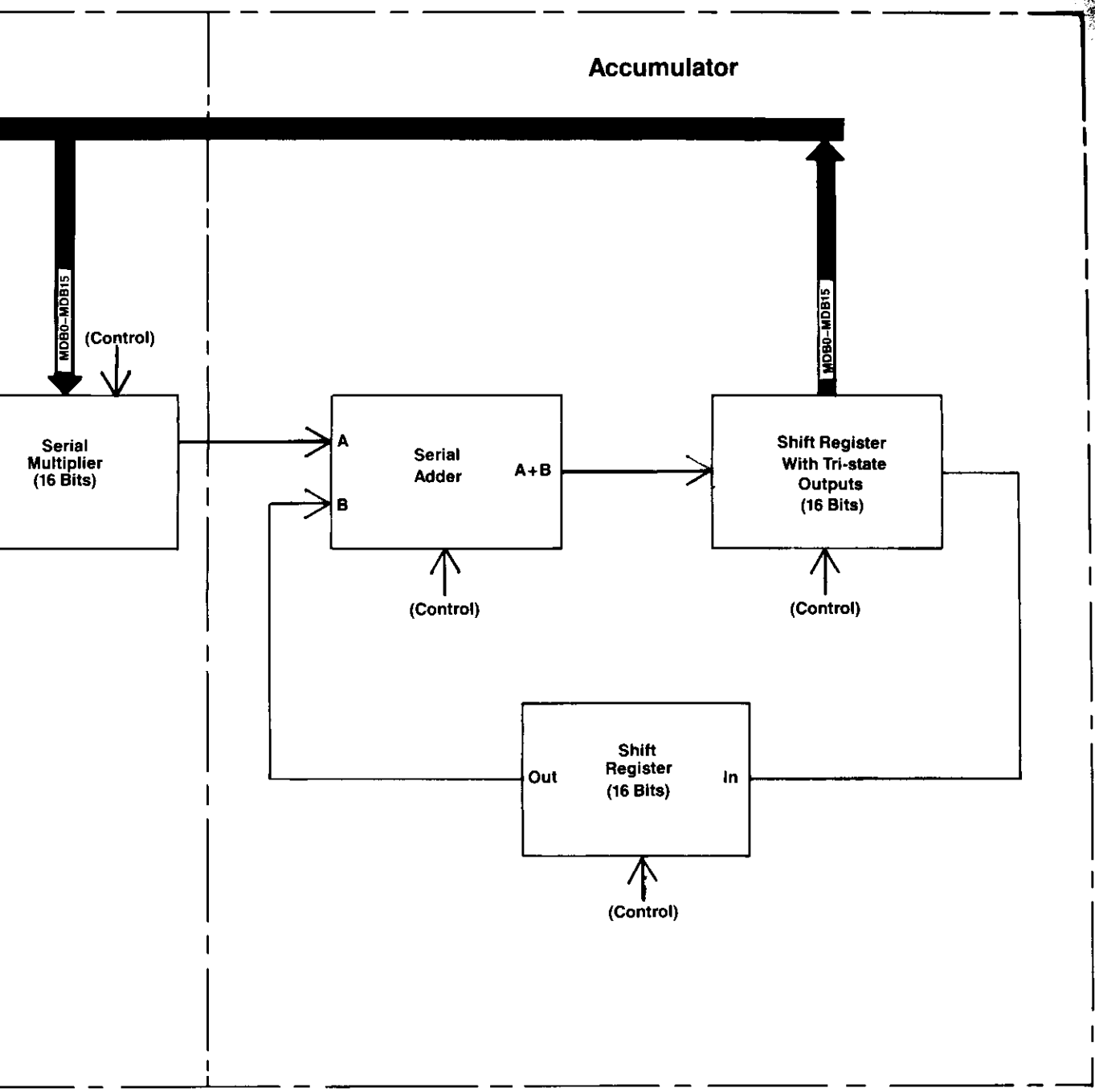
ROM


+5V
+5V
+5V
+5V
+5V
VPP N.C. PGM
1F
2708
1H/J
2764
1J/K
2764
1K/L
2764
1M
2764
MPAGE
ABI2
ABII
ABIØ
AB9
AB8
AB7
AB6
AB5
AB4
AB3
AB2
AB1
ABØ
A12
A11
A10
A9
A8
A7
A6
A5
A4
A3
A2
A1
AØ
D7
D6
D5
D4
D3
D2
D1
DØ
CE OE
2E/F
LS244
1G 2G
A Y
CAT STROBE
ROMØ
ROM1
ROM2
ROM3
ROM4
PROMEN
A15
+5V
R12
1CK
3M
2K
LS00
LS08
ROMØ

ccumulator
+ (A−B) × C



STAR WARS Multiplier/Accumulator
Detailed Block Diagram

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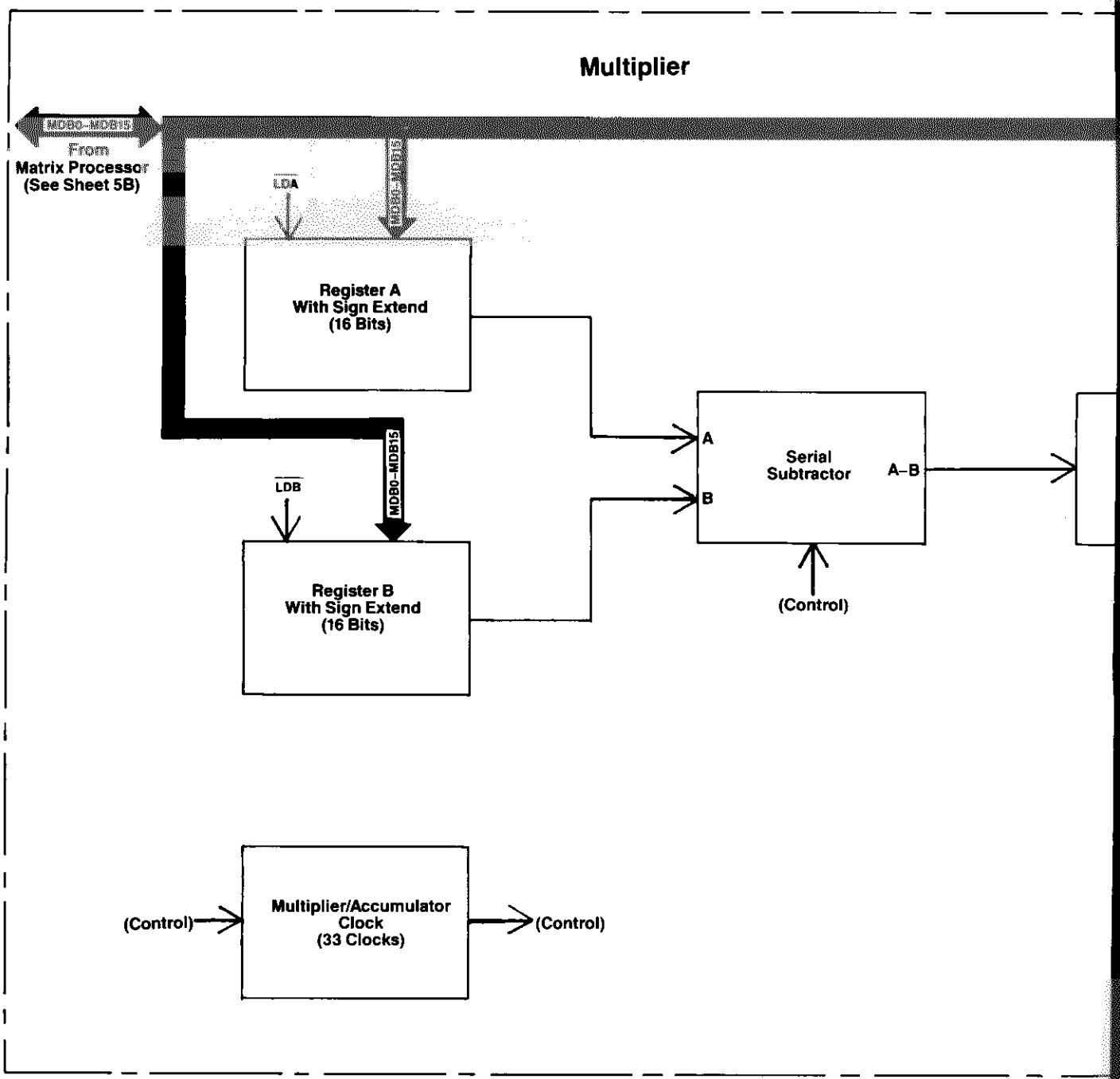
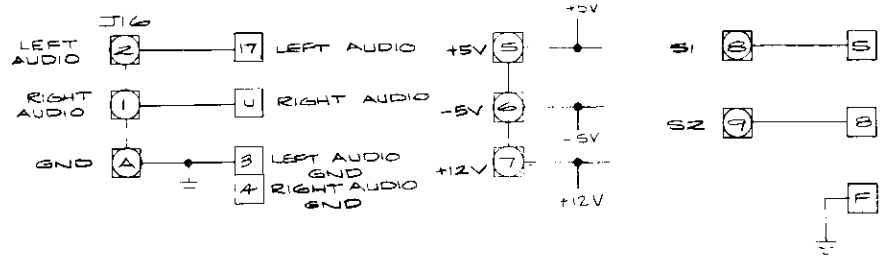

Multiplier
MDB0-MDB15
From
Matrix Processor
(See Sheet 5B)
LDA
MDB0-MDB15
Register A
With Sign Extend
(16 Bits)
MDB0-MDB15
LDB
Register B
With Sign Extend
(16 Bits)
A
B
Serial
Subtractor
A–B
(Control)
(Control)
Multiplier/Accumulator
Clock
(33 Clocks)
(Control)

Main/Sound Interconnect Cable



NOTE

□ = J20 CONNECTOR

○ = TEST CONNECTOR

⬯ = J17 CONNECTOR

⧄ = J16 CONNECTOR

STAR WARS Main PCB

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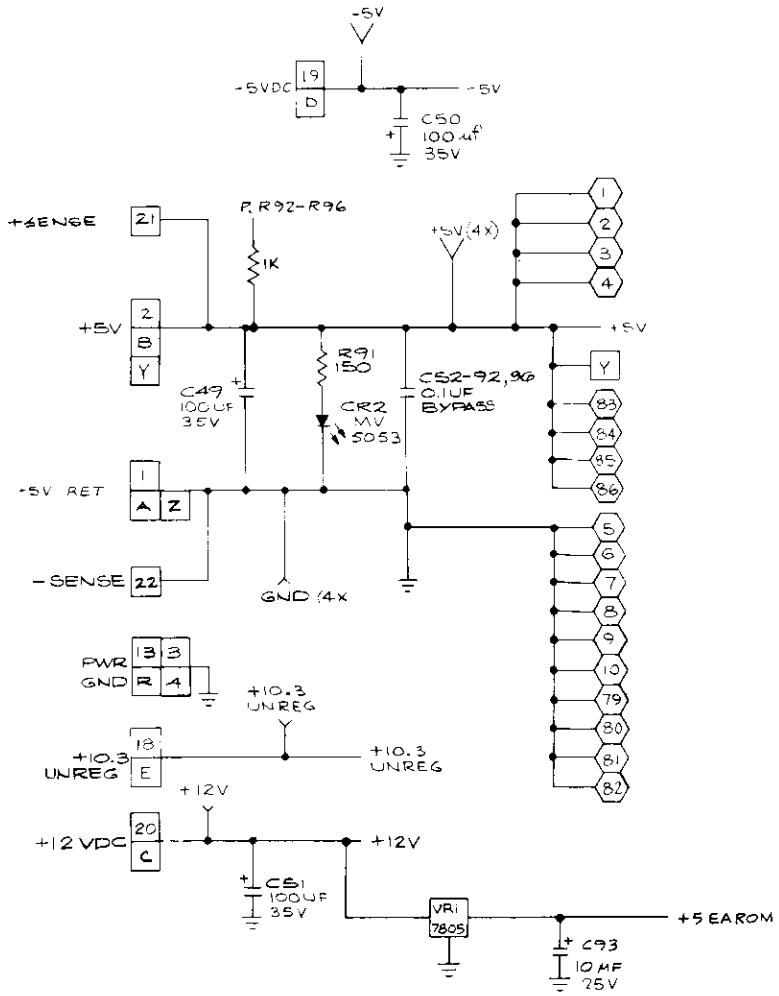
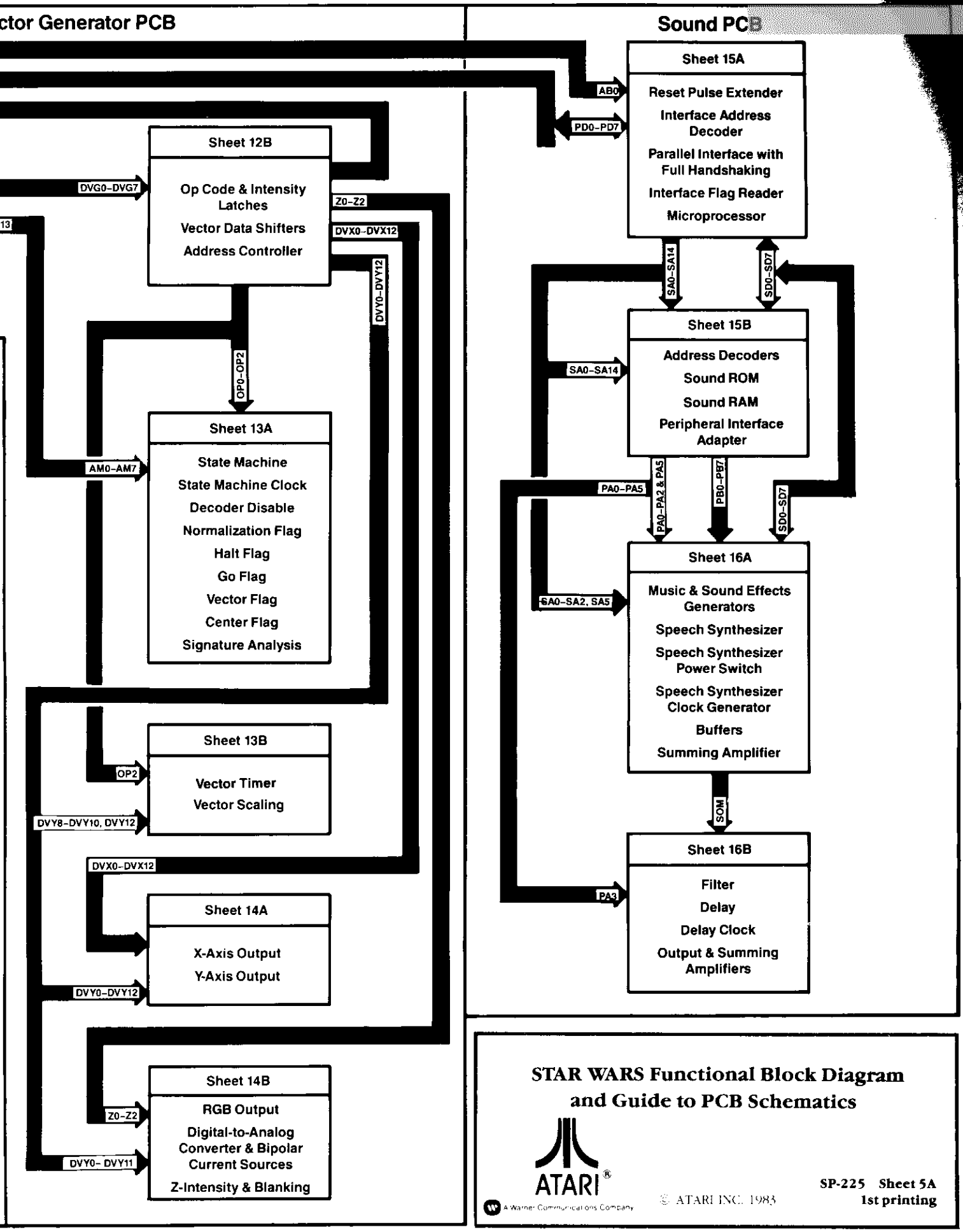
Power Input


-5V
-5VDC
19
D
-5V
C50
100 uf
35V
+SENSE
21
P.R92-R96
1K
+5V (4X)
+5V
2
B
Y
C49
100 UF
35V
R91
150
CR2
MV
5053
C52-92,96
0.1UF
BYPASS
+5V
-5V RET
1
A
Z
-SENSE
22
GND (4X)
PWR
GND
13
3
R
4
+10.3
UNREG
+10.3
UNREG
18
E
+10.3
UNREG
+12V
+12 VDC
20
C
+12V
C51
100UF
35V
VR1
7805
+5 EAROM
C93
10 MF
25V



STAR WARS Functional Block Diagram and Guide to PCB Schematics

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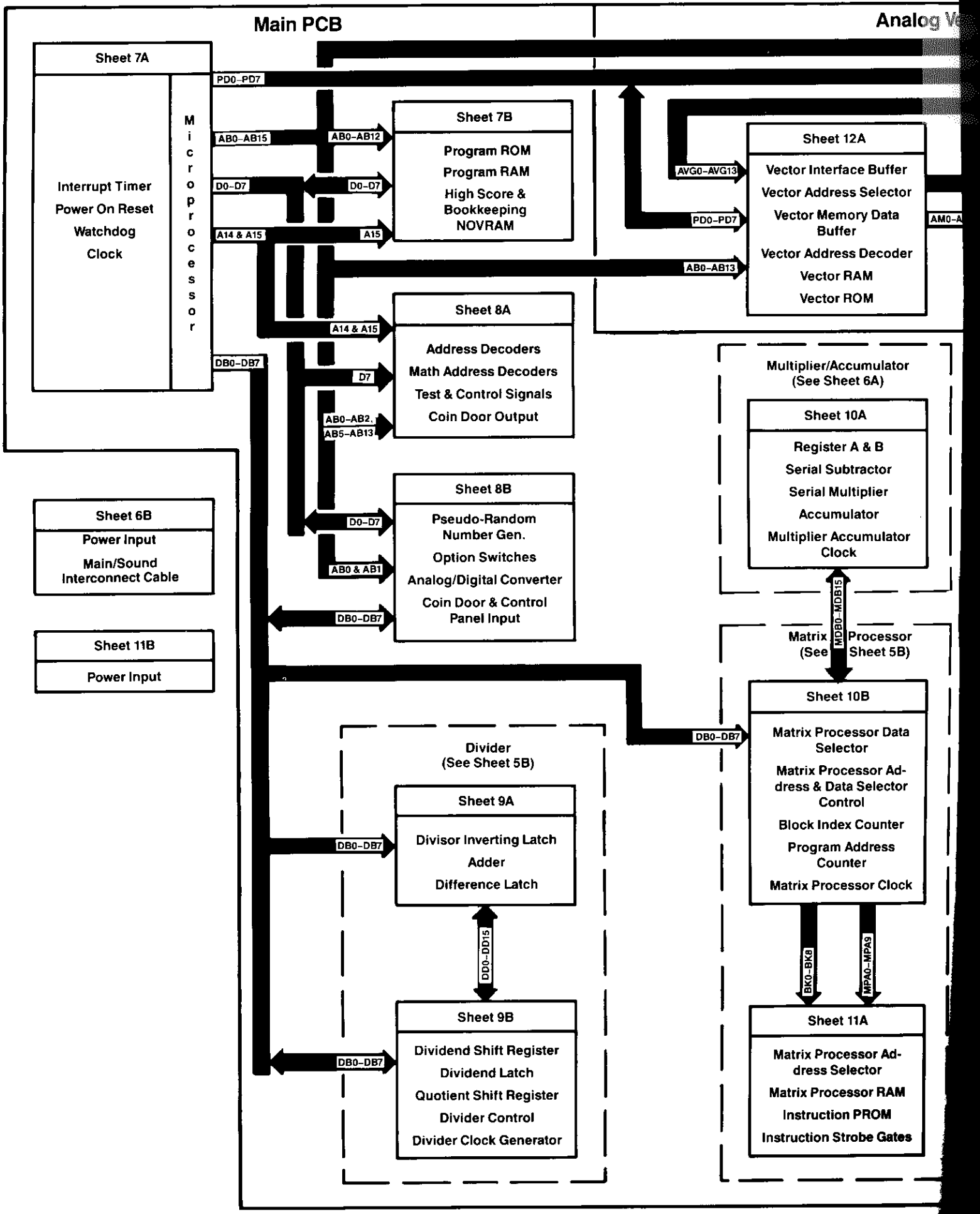
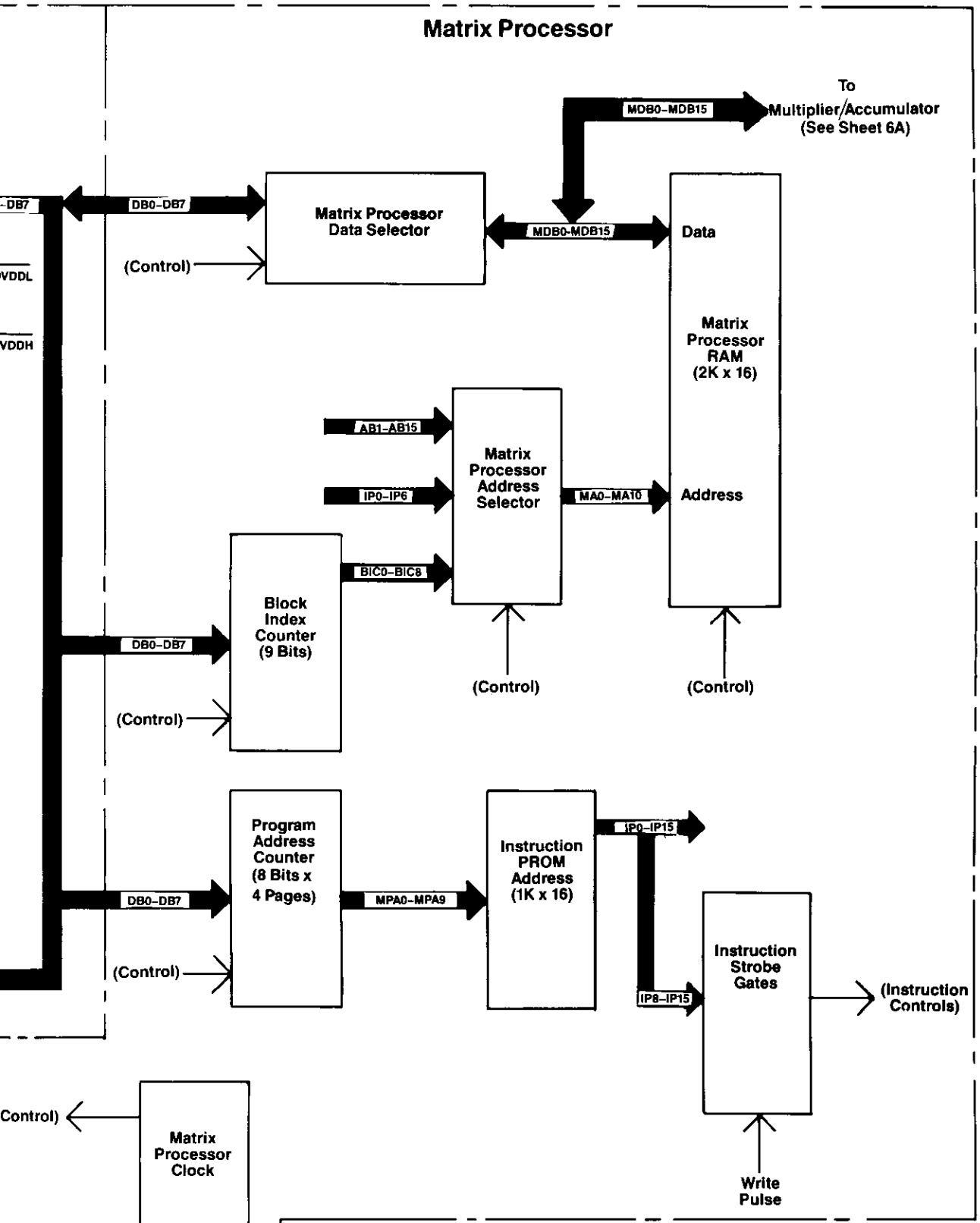

Main PCB
Analog V
Sheet 7A
Interrupt Timer
Power On Reset
Watchdog
Clock
Microprocessor
PD0–PD7
AB0–AB15
AB0–AB12
D0–D7
D0–D7
A14 & A15
A15
Sheet 7B
Program ROM
Program RAM
High Score & Bookkeeping NOVRAM
Sheet 12A
Vector Interface Buffer
Vector Address Selector
Vector Memory Data Buffer
Vector Address Decoder
Vector RAM
Vector ROM
AVG0–AVG13
PD0–PD7
AB0–AB13
AM0–A
A14 & A15
D7
AB0–AB2,
AB5–AB13
Sheet 8A
Address Decoders
Math Address Decoders
Test & Control Signals
Coin Door Output
DB0–DB7
Multiplier/Accumulator
(See Sheet 6A)
Sheet 10A
Register A & B
Serial Subtractor
Serial Multiplier
Accumulator
Multiplier Accumulator Clock
Sheet 8B
Pseudo-Random Number Gen.
Option Switches
Analog/Digital Converter
Coin Door & Control Panel Input
D0–D7
AB0 & AB1
DB0–DB7
MDB0–MDB15
Sheet 6B
Power Input
Main/Sound Interconnect Cable
Sheet 11B
Power Input
Matrix Processor
(See Sheet 5B)
Sheet 10B
Matrix Processor Data Selector
Matrix Processor Address & Data Selector Control
Block Index Counter
Program Address Counter
Matrix Processor Clock
DB0–DB7
Divider
(See Sheet 5B)
Sheet 9A
Divisor Inverting Latch
Adder
Difference Latch
DB0–DB7
DD0–DD15
BK0–BK8
MPA0–MPA9
Sheet 9B
Dividend Shift Register
Dividend Latch
Quotient Shift Register
Divider Control
Divider Clock Generator
DB0–DB7
Sheet 11A
Matrix Processor Address Selector
Matrix Processor RAM
Instruction PROM
Instruction Strobe Gates



STAR WARS Divider and Matrix Processor Detailed Block Diagrams

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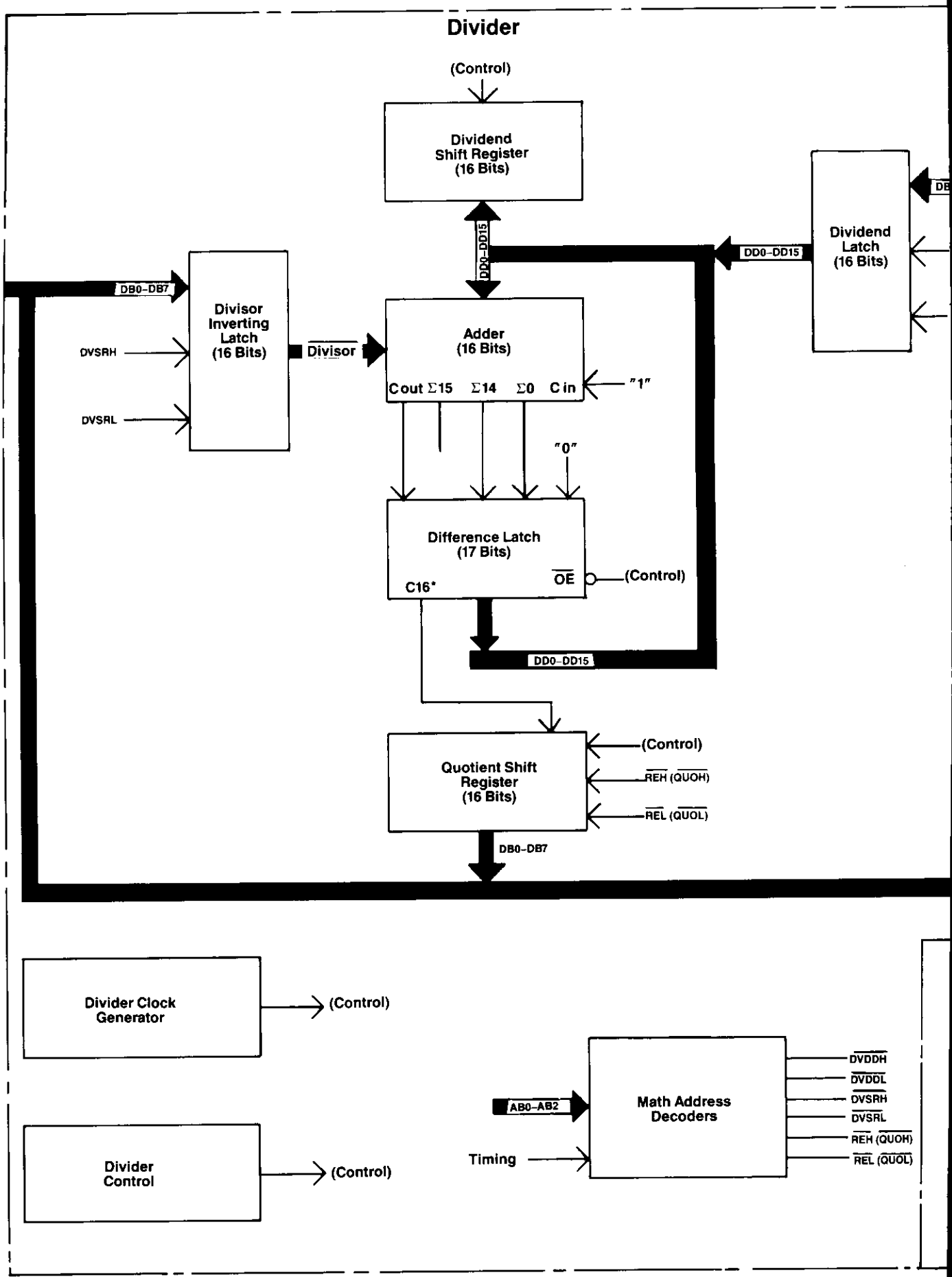
Divider
(Control)
Dividend Shift Register (16 Bits)
DD0–DD15
Dividend Latch (16 Bits)
DD0–DD15
DB0–DB7
Divisor Inverting Latch (16 Bits)
DVSRH
DVSRL
Divisor
Adder (16 Bits)
Cout Σ15 Σ14 Σ0 C in
"1"
"0"
Difference Latch (17 Bits)
C16*
OE
(Control)
DD0–DD15
Quotient Shift Register (16 Bits)
(Control)
REH (QUOH)
REL (QUOL)
DB0–DB7
Divider Clock Generator
(Control)
Divider Control
(Control)
AB0–AB2
Timing
Math Address Decoders
DVDDH
DVDDL
DVSRH
DVSRL
REH (QUOH)
REL (QUOL)

READ/ WRITE	DATA BUS SIGNAL LINES D7	D6	D5	D4	D3	D2	D1	D0	FUNCTION
R/W	D	D	D	D	D	D	D	D	VRAM0
R/W	D	D	D	D	D	D	D	D	$\overline{\text{VRAM1}}$
R/W	D	D	D	D	D	D	D	D	VRAM2
R/W	D	D	D	D	D	D	D	D	$\overline{\text{VRAM3}}$
R/W	D	D	D	D	D	D	D	D	$\overline{\text{VRAM4}}$
R/W	D	D	D	D	D	D	D	D	$\overline{\text{VRAM5}}$
R	D	D	D	D	D	D	D	D	VROM
R	D								$\overline{\text{LEFT F/ S}}$
R		D							$\overline{\text{RIGHT F/ S}}$
R			D						SPARE 1
R				D					$\overline{\text{SELF-TEST}}$
R					D				$\overline{\text{SLAM}}$
R						D			$\overline{\text{COIN AUX}}$
R							D		$\overline{\text{COIN L}}$
R								D	$\overline{\text{COIN R}}$
R	D								MATH RUN
R		D							VGHALT
R			D						$\overline{\text{LEFT THUMB}}$
R				D					$\overline{\text{RIGHT THUMB}}$
R					D				SPARE 2
R						D			$\overline{\text{DIAGN}}$
R							D		Unused
R								D	Unused
R	D	D	D	D	D	D	D	D	$\overline{\text{OPT 0}}$
R	D	D	D	D	D	D	D	D	$\overline{\text{OPT 1}}$
R	D	D	D	D	D	D	D	D	$\overline{\text{ADC}}$
R	D	D	D	D	D	D	D	D	$\overline{\text{MAINREAD}}$
W	D	D	D	D	D	D	D	D	$\overline{\text{MAINWR}}$
R	D								MAIN READY FLAG
R		D							SOUND READY FLAG
R/W					D	D	D	D	$\overline{\text{NOVRAM}}$

STAR WARS Memory Map -part 1

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HEXA-DECIMAL ADDRESS	ADDRESS BUS SIGNAL LINES A15	A14	A13	A12	A11	A10	A9	A8	A7	A6	A5	A4	A3	A2	A1	A0
0000–07FF	0	0	0	0	0	A	A	A	A	A	A	A	A	A	A	A
0800–0FFF	0	0	0	0	1	A	A	A	A	A	A	A	A	A	A	A
1000–17FF	0	0	0	1	0	A	A	A	A	A	A	A	A	A	A	A
1800–1FFF	0	0	0	1	1	A	A	A	A	A	A	A	A	A	A	A
2000–27FF	0	0	1	0	0	A	A	A	A	A	A	A	A	A	A	A
2800–2FFF	0	0	1	0	1	A	A	A	A	A	A	A	A	A	A	A
3000–3FFF	0	0	1	1	A	A	A	A	A	A	A	A	A	A	A	A
4300	0	1	0	0	0	0	1	1	0	0	0					
	0	1	0	0	0	0	1	1	0	0	0					
	0	1	0	0	0	0	1	1	0	0	0					
	0	1	0	0	0	0	1	1	0	0	0					
	0	1	0	0	0	0	1	1	0	0	0					
	0	1	0	0	0	0	1	1	0	0	0					
	0	1	0	0	0	0	1	1	0	0	0					
	0	1	0	0	0	0	1	1	0	0	0					
4320	0	1	0	0	0	0	1	1	0	0	1					
	0	1	0	0	0	0	1	1	0	0	1					
	0	1	0	0	0	0	1	1	0	0	1					
	0	1	0	0	0	0	1	1	0	0	1					
	0	1	0	0	0	0	1	1	0	0	1					
	0	1	0	0	0	0	1	1	0	0	1					
	0	1	0	0	0	0	1	1	0	0	1					
	0	1	0	0	0	0	1	1	0	0	1					
4340	0	1	0	0	0	0	1	1	0	1	0					
4360	0	1	0	0	0	0	1	1	0	1	1					
4380	0	1	0	0	0	0	1	1	1	0	0					
4400	0	1	0	0	0	1	0	0								0
	0	1	0	0	0	1	0	0								0
4401	0	1	0	0	0	1	0	0								1
	0	1	0	0	0	1	0	0								1
4500–45FF	0	1	0	0	0	1	0	1	A	A	A	A	A	A	A	A

READ/ WRITE	DATA BUS SIGNAL LINES D7	D6	D5	D4	D3	D2	D1	D0	FUNCTION
W									$\overline{\text{EVGGO}}$
W									$\overline{\text{EVGRES}}$
W									$\overline{\text{WDCLR}}$
W									$\overline{\text{IRQCLR}}$
W	D								$\overline{\text{COIN CNTR 2}}$
W	D								$\overline{\text{COIN CNTR 1}}$
W	D								$\overline{\text{LED 3}}$
W	D								$\overline{\text{LED2}}$
W	D								SASS
W	D								$\overline{\text{PRNGCLR}}$
W	D								$\overline{\text{LED 1}}$
W	D								$\overline{\text{RECALL}}$
W									$\overline{\text{NSTORE}}$
W									$\overline{\text{ADCSTART 0}}$
W									$\overline{\text{ADCSTART 1}}$
W									$\overline{\text{ADCSTART 2}}$
W									$\overline{\text{SOUNDRST}}$
R	D	D	D	D	D	D	D	D	$\overline{\text{REH}}$
W	D	D	D	D	D	D	D	D	$\overline{\text{MWO}}$
R	D	D	D	D	D	D	D	D	$\overline{\text{REL}}$
W								D	$\overline{\text{MW1}}$
W	D	D	D	D	D	D	D	D	$\overline{\text{MW2}}$
R	D	D	D	D	D	D	D	D	$\overline{\text{PRNG}}$
W	D	D	D	D	D	D	D	D	$\overline{\text{DVSRH}}$
W	D	D	D	D	D	D	D	D	$\overline{\text{DVSRL}}$
W	D	D	D	D	D	D	D	D	$\overline{\text{DVDDH}}$
W	D	D	D	D	D	D	D	D	$\overline{\text{DVDDL}}$
R/W	D	D	D	D	D	D	D	D	$\overline{\text{RAM}}$
R/W	D	D	D	D	D	D	D	D	$\overline{\text{MBRAM}}$
R	D	D	D	D	D	D	D	D	$\overline{\text{ROM 0}}$
R	D	D	D	D	D	D	D	D	$\overline{\text{ROM 1}}$
R	D	D	D	D	D	D	D	D	$\overline{\text{ROM 2}}$
R	D	D	D	D	D	D	D	D	$\overline{\text{ROM 3}}$
R	D	D	D	D	D	D	D	D	$\overline{\text{ROM 4}}$

STAR WARS Memory Map -part 2

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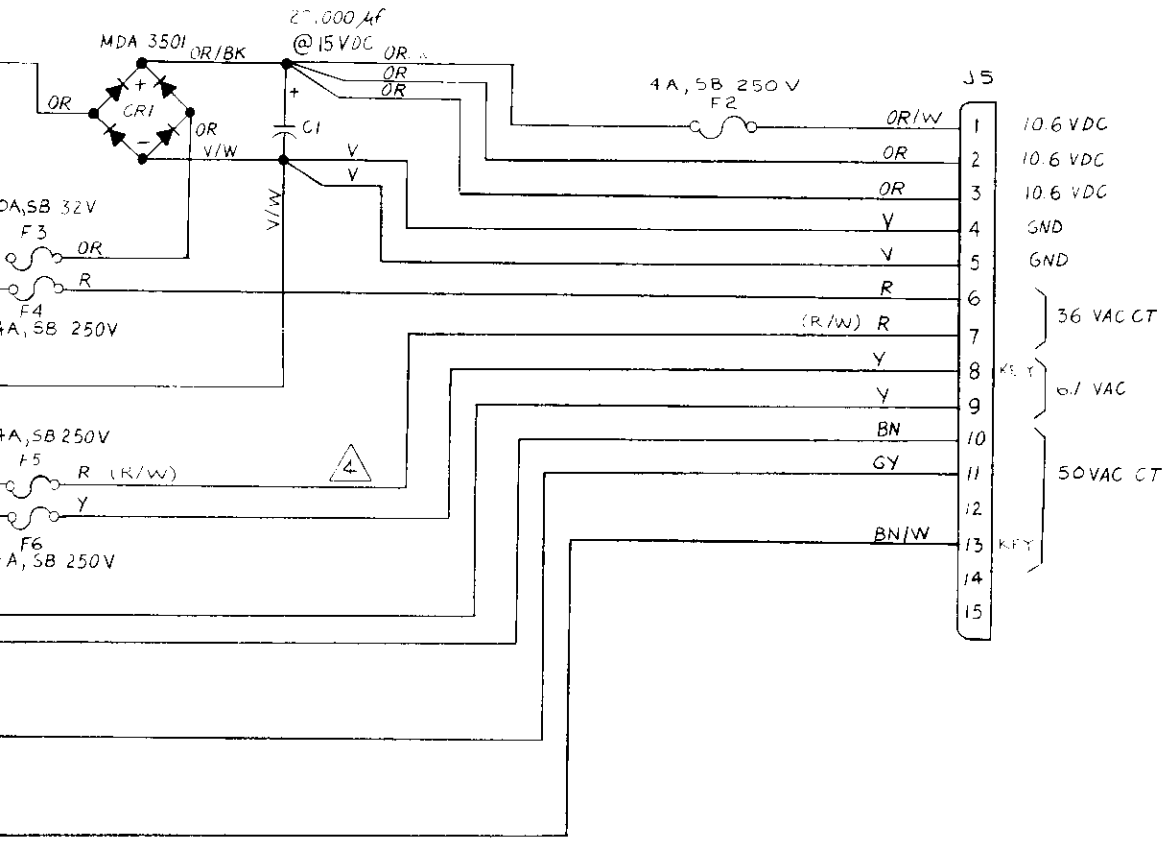
HEXA-DECIMAL ADDRESS	ADDRESS BUS SIGNAL LINES A15	A14	A13	A12	A11	A10	A9	A8	A7	A6	A5	A4	A3	A2	A1	A0
4600	0	1	0	0	0	1	1	0	0	0	0					
4620	0	1	0	0	0	1	1	0	0	0	1					
4640	0	1	0	0	0	1	1	0	0	1	0					
4660	0	1	0	0	0	1	1	0	0	1	1					
4680	0	1	0	0	0	1	1	0	1	0	0			0	0	0
4681	0	1	0	0	0	1	1	0	1	0	0			0	0	1
4682	0	1	0	0	0	1	1	0	1	0	0			0	1	0
4683	0	1	0	0	0	1	1	0	1	0	0			0	1	1
4684	0	1	0	0	0	1	1	0	1	0	0			1	0	0
4685	0	1	0	0	0	1	1	0	1	0	0			1	0	1
4686	0	1	0	0	0	1	1	0	1	0	0			1	1	0
4687	0	1	0	0	0	1	1	0	1	0	0			1	1	1
46A0	0	1	0	0	0	1	1	0	1	0	1					
46C0	0	1	0	0	0	1	1	0	1	1	0				0	0
46C1	0	1	0	0	0	1	1	0	1	1	0				0	1
46C2	0	1	0	0	0	1	1	0	1	1	0				1	0
46E0	0	1	0	0	0	1	1	0	1	1	1					
4700	0	1	0	0	0	1	1	1						0	0	0
	0	1	0	0	0	1	1	1						0	0	0
4701	0	1	0	0	0	1	1	1						0	0	1
	0	1	0	0	0	1	1	1						0	0	1
4702	0	1	0	0	0	1	1	1						0	1	0
4703	0	1	0	0	0	1	1	1						0	1	1
4704	0	1	0	0	0	1	1	1						1	0	0
4705	0	1	0	0	0	1	1	1						1	0	1
4706	0	1	0	0	0	1	1	1						1	1	0
4707	0	1	0	0	0	1	1	1						1	1	1
4800–4FFF	0	1	0	0	1	A	A	A	A	A	A	A	A	A	A	A
5000–5FFF	0	1	0	1	A	A	A	A	A	A	A	A	A	A	A	A
6000–7FFF	0	1	1	A	A	A	A	A	A	A	A	A	A	A	A	A
8000–9FFF	1	0	0	A	A	A	A	A	A	A	A	A	A	A	A	A
A000–BFFF	1	0	1	A	A	A	A	A	A	A	A	A	A	A	A	A
C000–DFFF	1	1	0	A	A	A	A	A	A	A	A	A	A	A	A	A
E000–FFFF	1	1	1	A	A	A	A	A	A	A	A	A	A	A	A	A

Color X-Y Power Supply Wiring Diagram



NOTES:

1. POWER CORD ASSY MAY HAVE WIRE COLORS AS SHOWN OR WIRE COLORS AS FOLLOWS: ONE BLACK WIRE (AC), ONE GREEN WIRE (GND), & ONE WHITE WIRE (NEUTRAL).
2. USE 4 AMP SB 250 V FUSE AT F1 WITH 220 V & 240 V (EUROPEAN ONLY).
3. CONNECTOR J4B USED IN -04 THRU -06 VERSIONS OF A037396-XX ONLY.
4. ALTERNATE WIRE COLOR IS IN PARENTHESES.

STAR WARS Color X-Y
Power Supply Wiring Diagram

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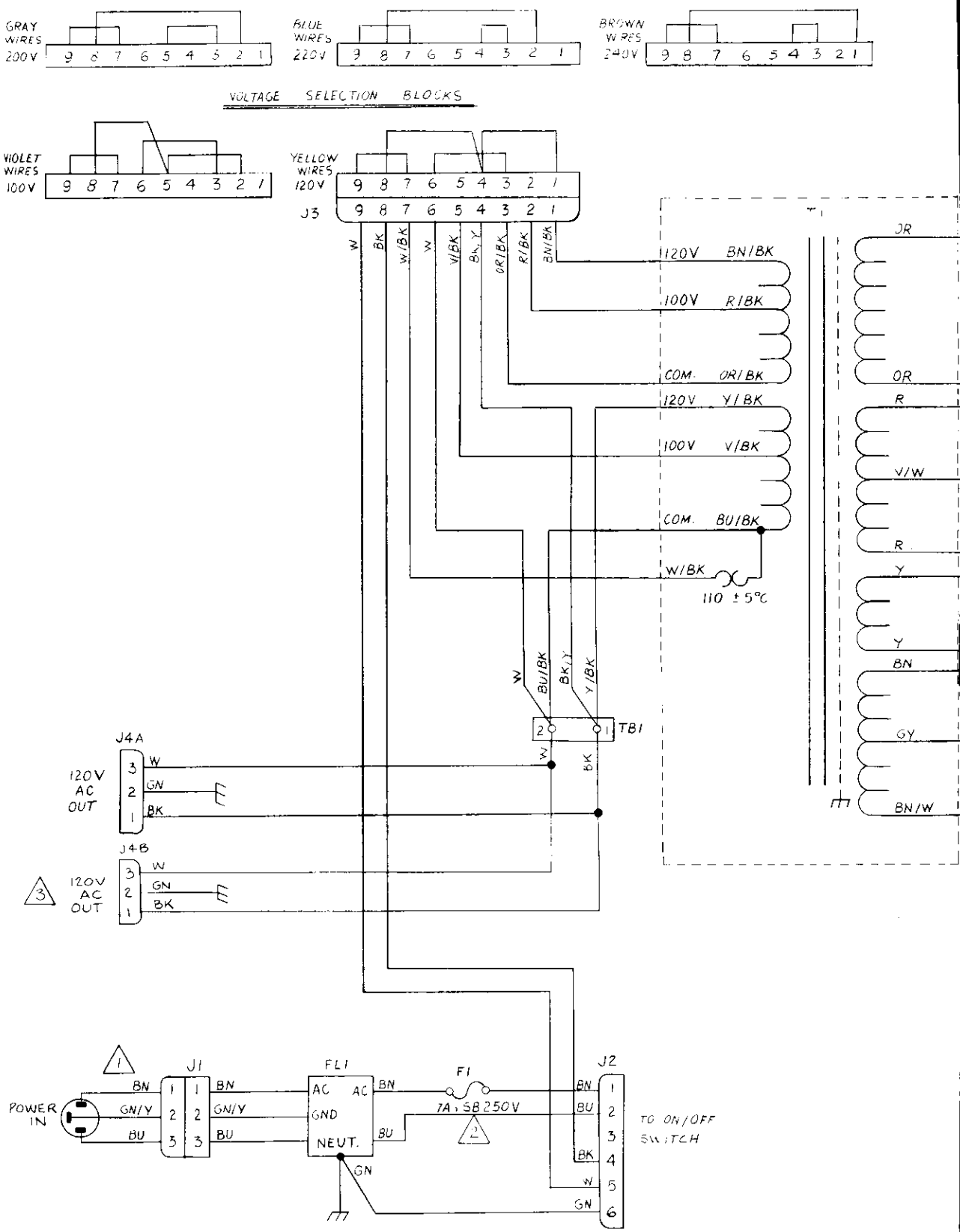
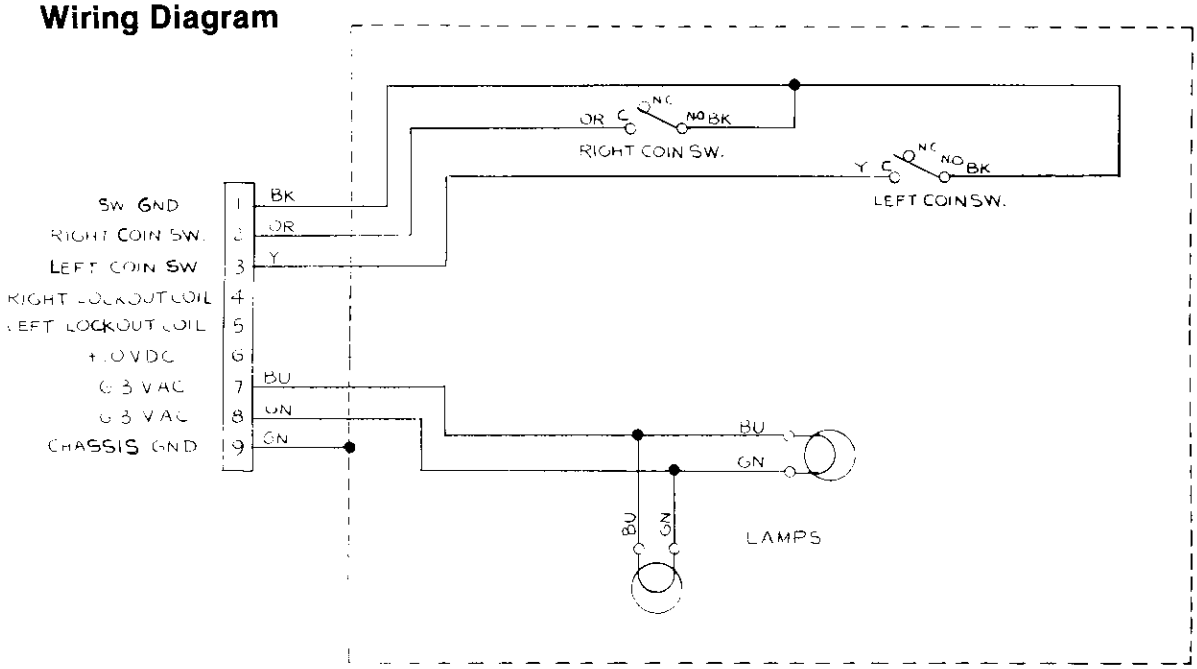
SP-225 Sheet 3A
1st printing


GRAY WIRES 200V
9 8 7 6 5 4 3 2 1
BLUE WIRES 220V
9 8 7 6 5 4 3 2 1
BROWN WIRES 240V
9 8 7 6 5 4 3 2 1
VOLTAGE SELECTION BLOCKS
VIOLET WIRES 100V
9 8 7 6 5 4 3 2 1
YELLOW WIRES 120V
9 8 7 6 5 4 3 2 1
J3
9 8 7 6 5 4 3 2 1
W
BK
W/BK
W
V/BK
BK, Y
OR/BK
R/BK
BN/BK
120V BN/BK
100V R/BK
COM. OR/BK
120V Y/BK
100V V/BK
COM. BU/BK
W/BK
110 ±5°C
OR
OR
R
V/W
R
Y
Y
BN
GY
BN/W
W
BU/BK
BK, Y
Y/BK
2
1
TB1
J4A
120V AC OUT
3
2
1
W
GN
BK
J4B
3
120V AC OUT
3
2
1
W
GN
BK
1
POWER IN
BN
GN/Y
BU
1
2
3
J1
1
2
3
BN
GN/Y
BU
FL1
AC
GND
NEUT.
AC
BN
BU
F1
7A, SB 250V
2
J2
BN
BU
BK
W
GN
1
2
3
4
5
6
TO ON/OFF SWITCH

Coin Door Wiring Diagram



STAR WARS Game Interfaces

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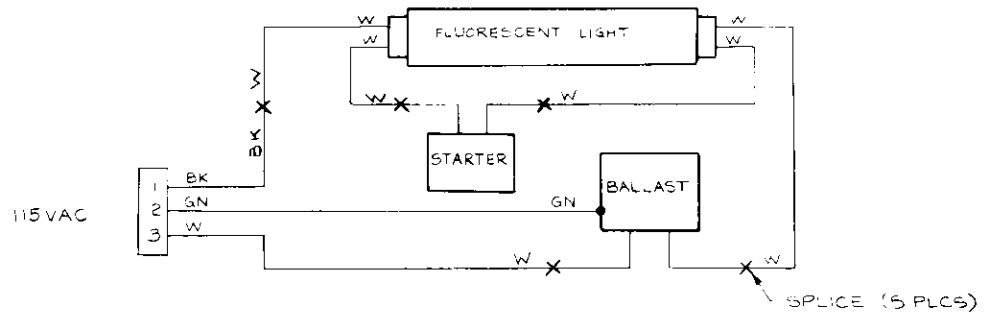
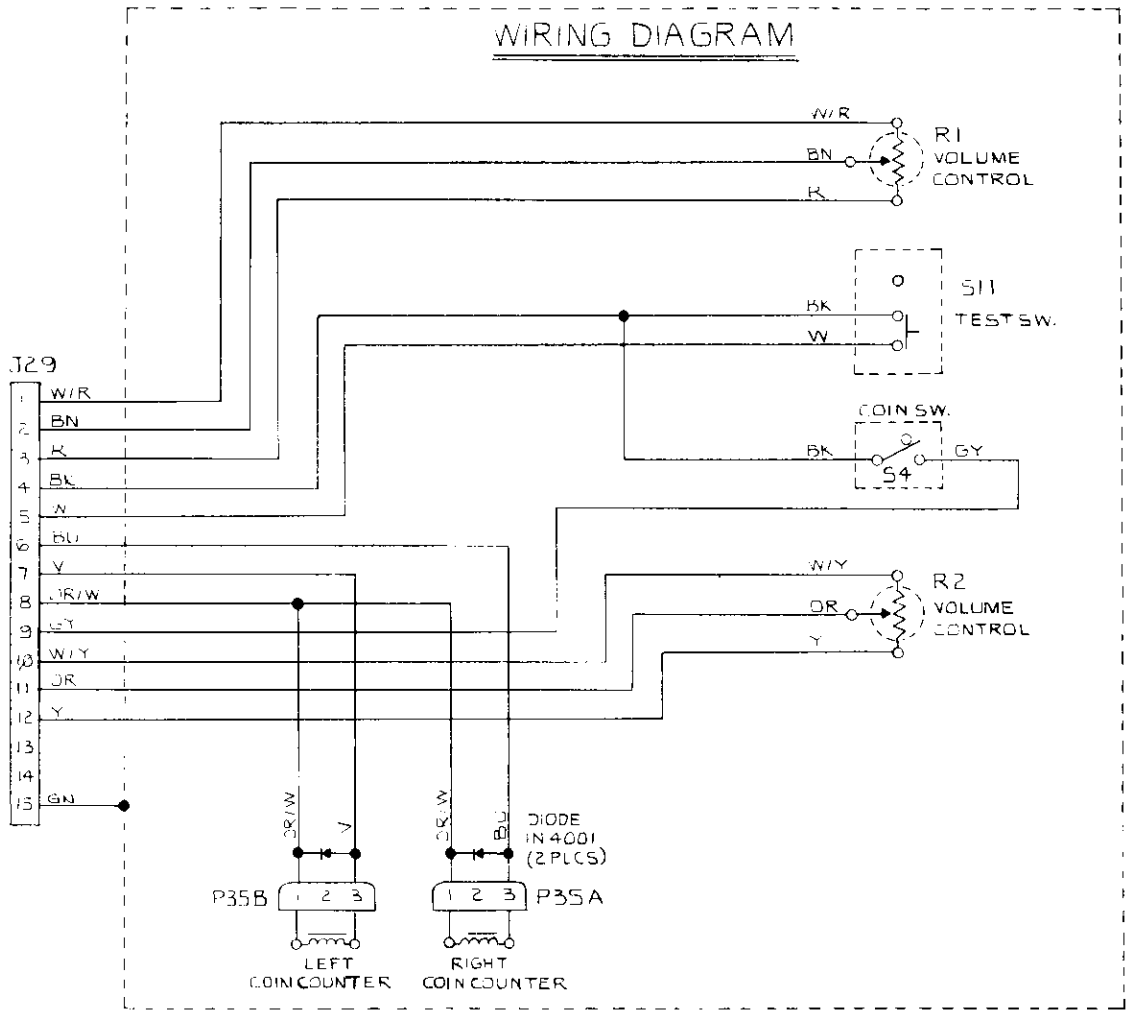
1st printing

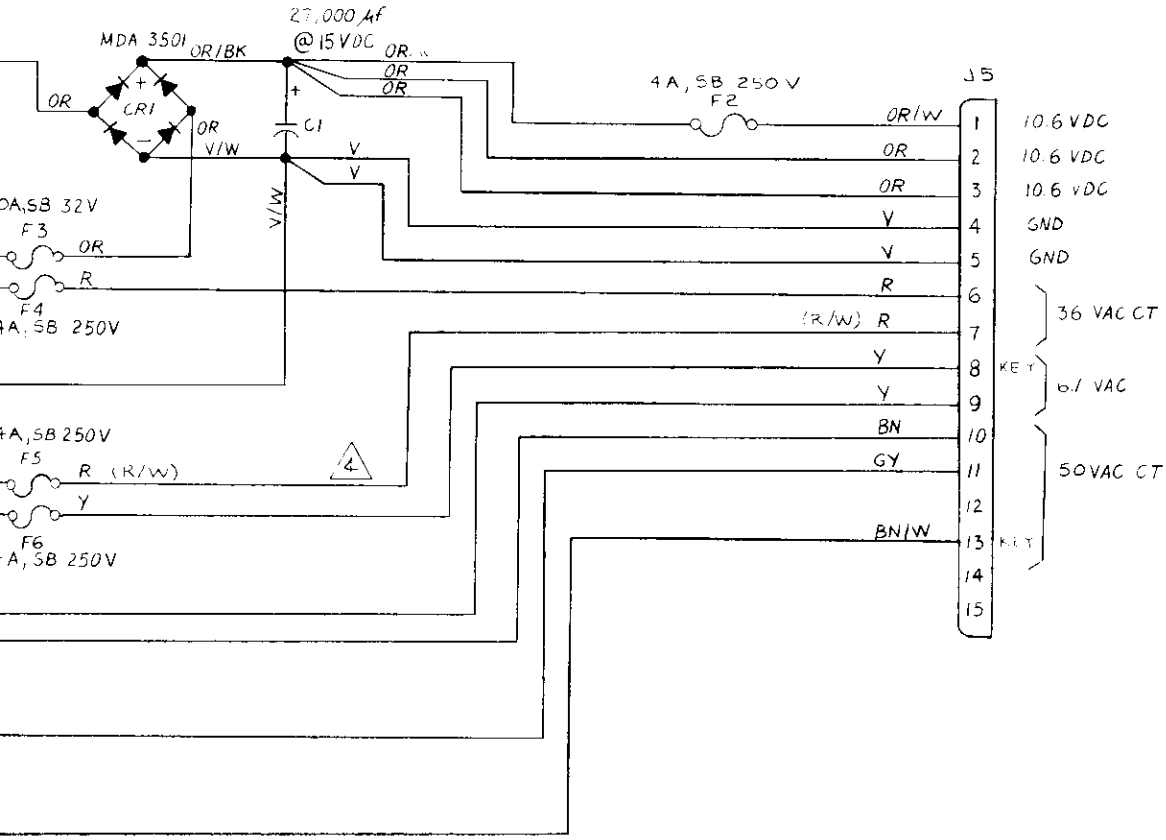
Fluorescent Light Wiring Diagram



Utility Panel Wiring Diagram



Color X-Y Power Supply Wiring Diagram



NOTES:

1. POWER CORD ASSY MAY HAVE WIRE COLORS AS SHOWN OR WIRE COLORS AS FOLLOWS: ONE BLACK WIRE (AC), ONE GREEN WIRE (GND), & ONE WHITE WIRE (NEUTRAL).
2. USE 4 AMP SB 250 V FUSE AT F1 WITH 220 V & 240 V (EUROPEAN ONLY).
3. CONNECTOR J48 USED IN -04 THRU -06 VERSIONS OF A037396-XX ONLY.
4. ALTERNATE WIRE COLOR IS IN PARENTHESES.

STAR WARS Color X-Y
Power Supply Wiring Diagram

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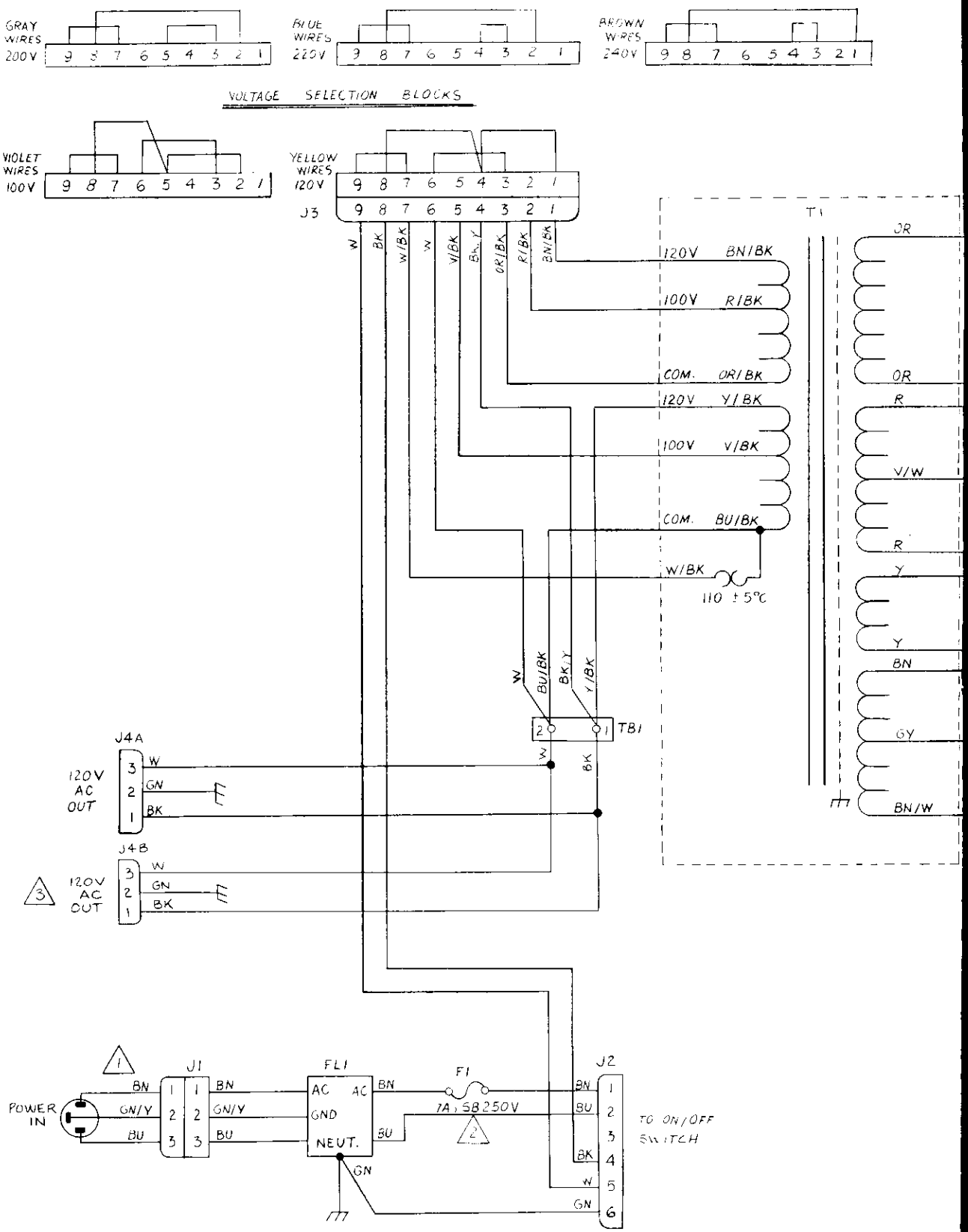
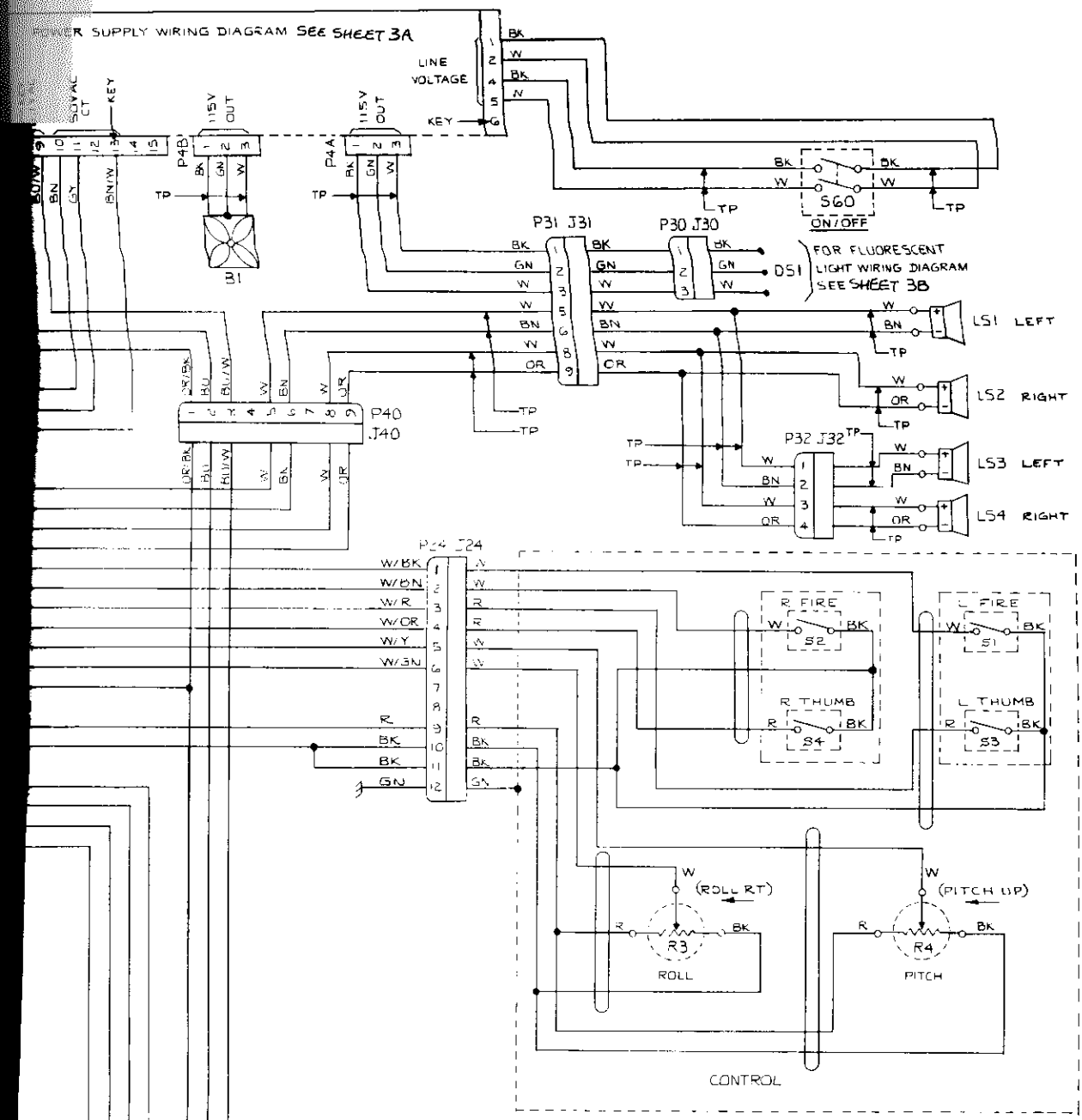
SP-225 Sheet 3A
1st printing


GRAY WIRES 200V
9 8 7 6 5 4 3 2 1
BLUE WIRES 220V
9 8 7 6 5 4 3 2 1
BROWN WIRES 240V
9 8 7 6 5 4 3 2 1
VOLTAGE SELECTION BLOCKS
VIOLET WIRES 100V
9 8 7 6 5 4 3 2 1
YELLOW WIRES 120V
9 8 7 6 5 4 3 2 1
J3
9 8 7 6 5 4 3 2 1
W
BK
W/BK
W
V/BK
BK, Y
OR/BK
R/BK
BN/BK
T1
120V BN/BK
100V R/BK
COM. OR/BK
120V Y/BK
100V V/BK
COM. BU/BK
W/BK
110 ± 5°C
OR
OR
R
V/W
R
Y
Y
BN
GY
BN/W
W
BU/BK
BK, Y
Y/BK
TB1
2
1
J4A
120V AC OUT
3 W
2 GN
1 BK
J4B
3
120V AC OUT
3 W
2 GN
1 BK
W
BK
POWER IN
GN/Y
BU
J1
BN
GN/Y
BU
FL1
AC
GND
NEUT.
AC
BN
BU
GN
F1
7A, SB 250V
J2
BN 1
BU 2
3
BK 4
W 5
GN 6
TO ON/OFF SWITCH



STAR WARS Cockpit Main Wiring Diagram

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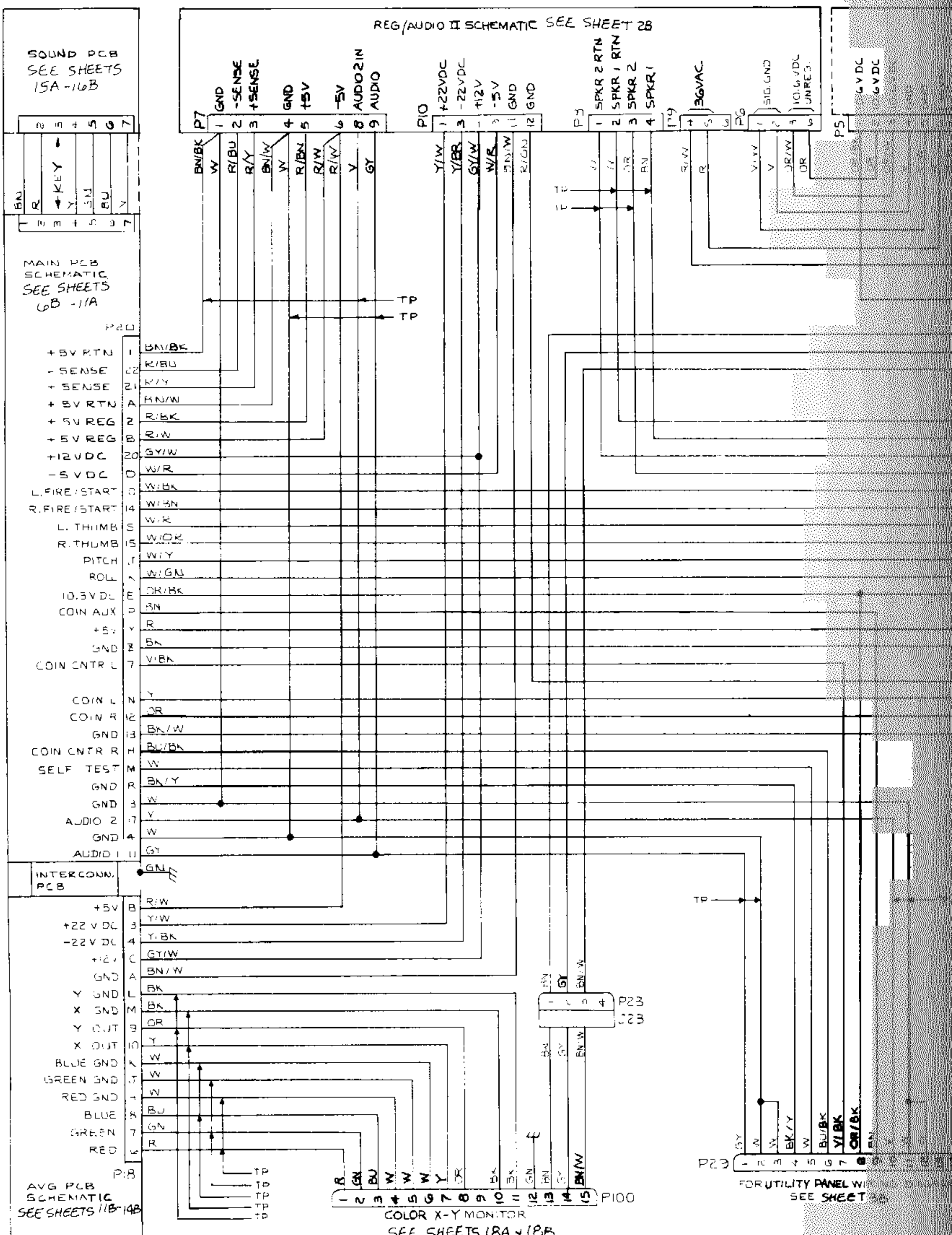
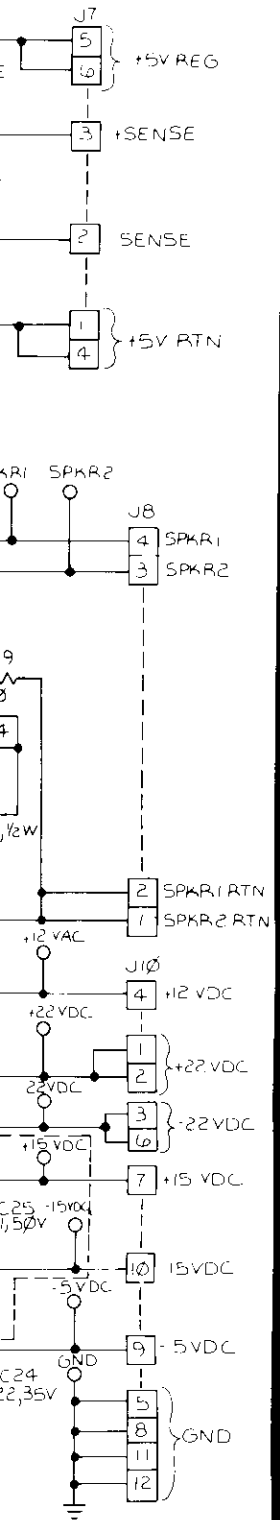
1st printing


SOUND PCB
SEE SHEETS 15A-16B
REG/AUDIO II SCHEMATIC SEE SHEET 28
P7
GND
-SENSE
+SENSE
GND
+5V
-5V
AUDIO 2 IN
AUDIO
P10
+22VDC
-22VDC
+12V
-5V
GND
GND
P3
SPKR 2 RTN
SPKR 1 RTN
SPKR 2
SPKR 1
36VAC
SIG GND
10.6 VDC UNREG
P5
MAIN PCB SCHEMATIC SEE SHEETS 6B-11A
P20
+5V RTN
- SENSE
+ SENSE
+ 5V RTN
+ 5V REG
+ 5V REG
+12VDC
-5VDC
L. FIRE/START
R. FIRE/START
L. THUMB
R. THUMB
PITCH
ROLL
10.5 VDC
COIN AUX
+5V
GND
COIN CNTR L
COIN L
COIN R
GND
COIN CNTR R
SELF TEST
GND
GND
AUDIO 2
GND
AUDIO 1
INTERCONN. PCB
+5V
+22 V DC
-22 V DC
+12V
GND
Y GND
X GND
Y OUT
X OUT
BLUE GND
GREEN GND
RED GND
BLUE
GREEN
RED
P18
AVG PCB SCHEMATIC SEE SHEETS 11B-14B
TP
P23
J23
P100
COLOR X-Y MONITOR
SEE SHEETS 18A & 18B
FOR UTILITY PANEL WIRING DIAGRAM SEE SHEET 3B

ator/Audio II PCB
matic Diagram

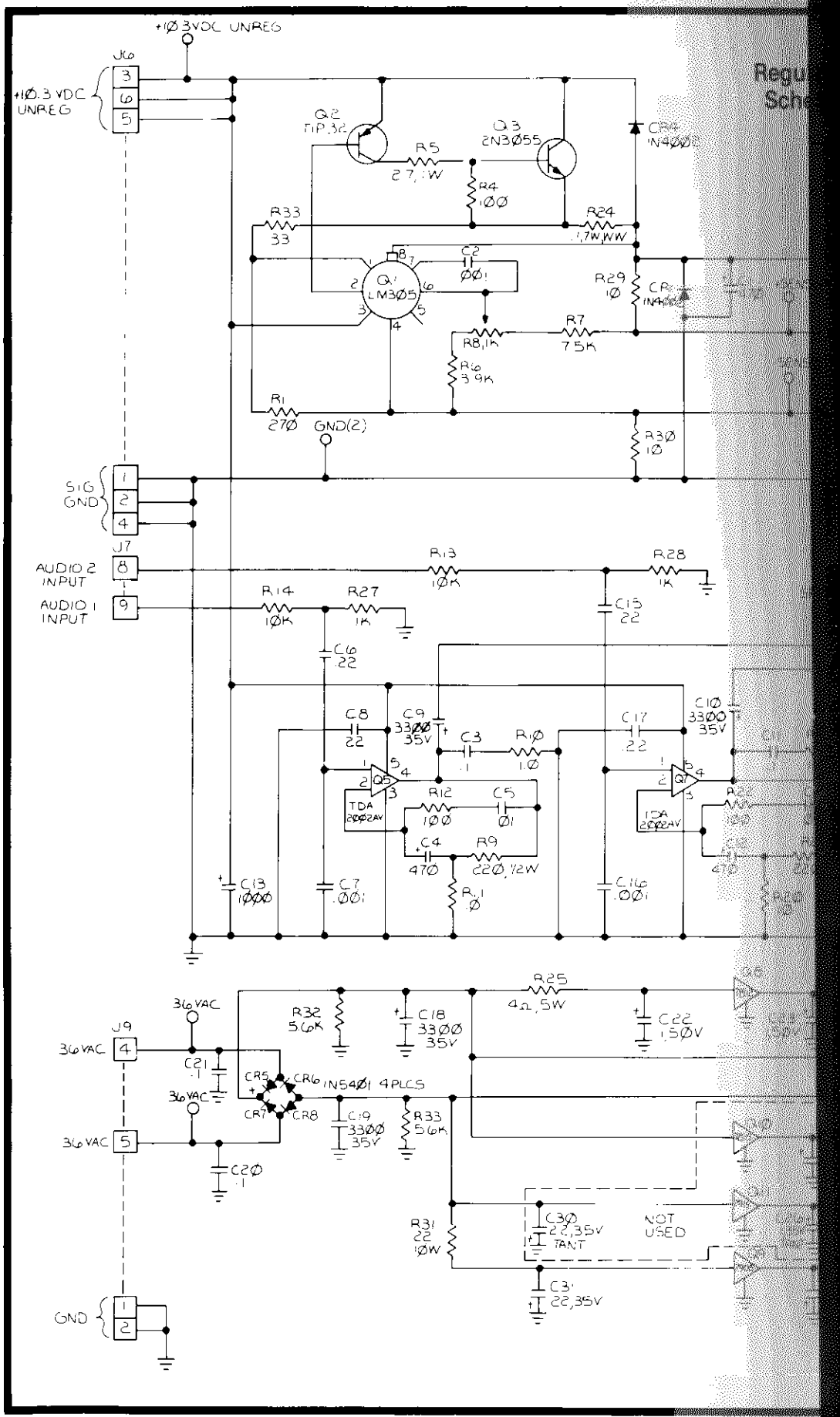


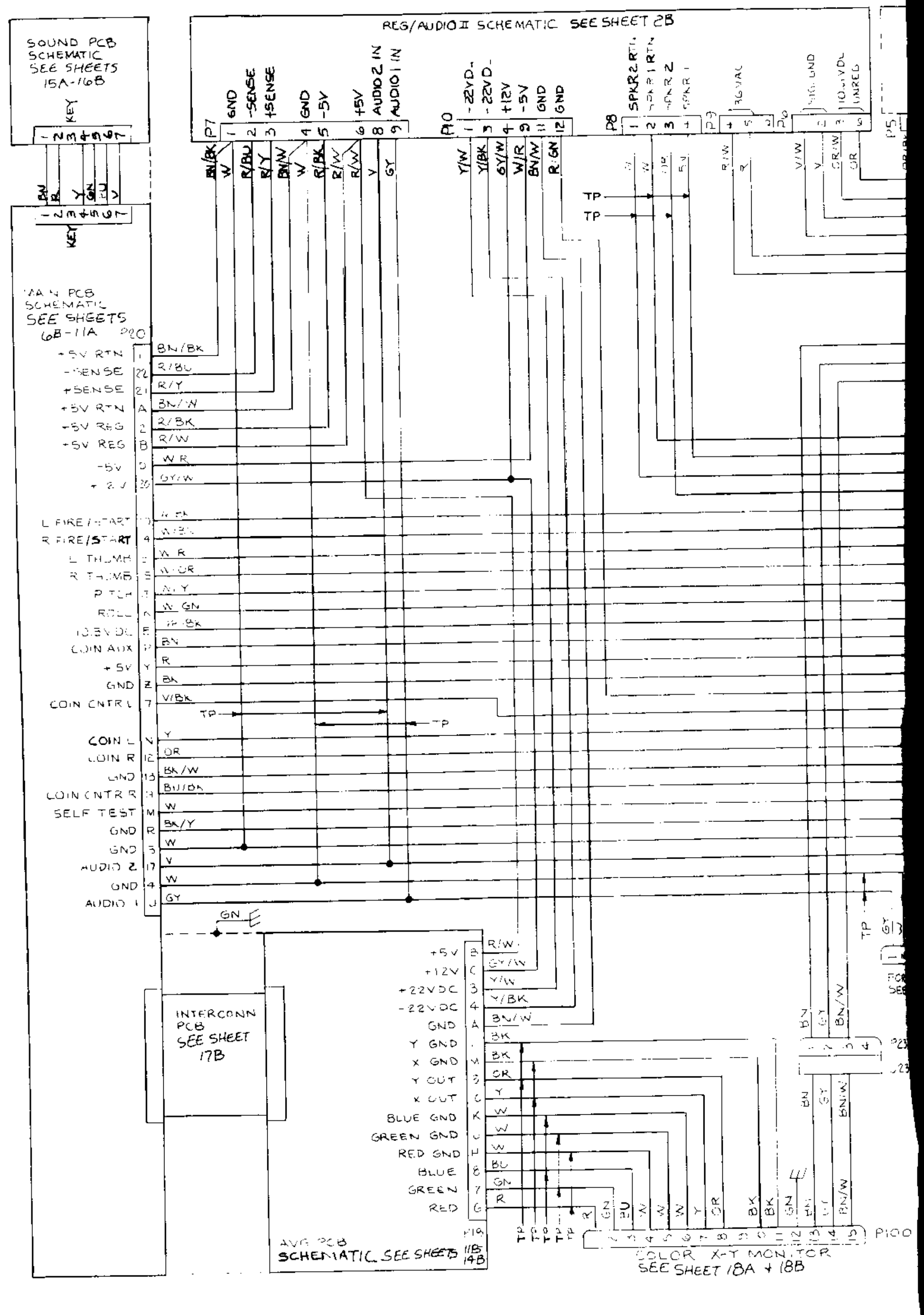
STAR WARS Regulator/Audio II PCB

ATARI®

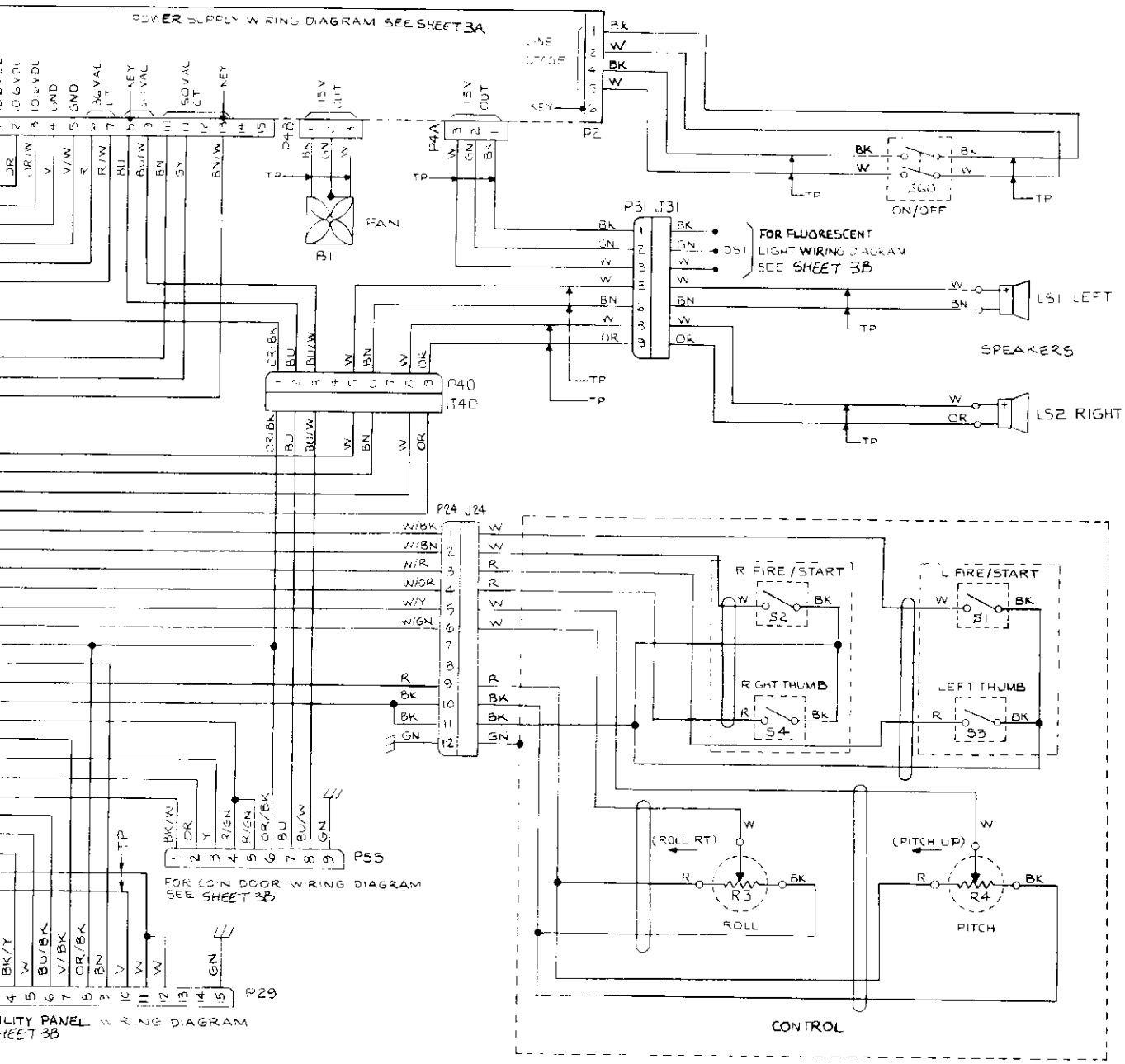
A Warner Communications Company

SP-225 Sheet 2B
1st printing


+10.3VDC UNREG
J6
+10.3 VDC UNREG
3
6
5
Q2 TIP32
Q3 2N3055
CR4 1N4001
R5 2.7, 1W
R4 100
R33 33
R24 .47, 1W, WW
C2 .001
Q1 LM305
R29 10
CR3 1N4001
R8 1K
R7 7.5K
R6 3.9K
R1 270
GND(2)
R30 10
SIG GND
1
2
4
J7
AUDIO 2 INPUT
8
AUDIO 1 INPUT
9
R13 10K
R28 1K
R14 10K
R27 1K
C15 22
C6 22
C8 22
C9 3300 35V
C3 .1
R10 1.0
C17 .22
C10 3300 35V
Q5 TDA 2002AV
Q7 TDA 2002AV
R12 100
C5 .01
C4 470
R9 220, 1/2W
R11 .0
C13 1000
C7 .001
C16 .001
R25 4Ω, 5W
C22 1,50V
36 VAC
J9
36 VAC
4
C21 .1
R32 56K
C18 3300 35V
CR5 CR6 CR7 CR8 1N5401 4 PLCS
C19 3300 35V
R33 56K
36 VAC
5
C20 .1
R31 22 10W
C30 22, 35V TANT
NOT USED
C31 22, 35V
GND
1
2



SOUND PCB SCHEMATIC SEE SHEETS 15A-16B
KEY
REG/AUDIO II SCHEMATIC SEE SHEET 2B
P7
GND
-SENSE
+SENSE
GND
-5V
+5V
AUDIO 2 IN
AUDIO 1 IN
P10
-22VD.
-22VD.
+12V
-5V
GND
GND
P8
SPKR2 RTN
SPKR1 RTN
SPKR2
SPKR1
TP
TP
MAIN PCB SCHEMATIC SEE SHEETS 6B-11A
P20
+5V RTN
-SENSE
+SENSE
+5V RTN
+5V REG
+5V REG
-5V
L FIRE/START
R FIRE/START
L THUMB
R THUMB
PITCH
ROLL
COIN AUX
+5V
GND
COIN CNTR L
COIN L
COIN R
GND
COIN CNTR R
SELF TEST
GND
GND
AUDIO 2
GND
AUDIO 1
INTERCONN PCB SEE SHEET 17B
+5V
+12V
+22VDC
-22VDC
GND
Y GND
X GND
Y OUT
X OUT
BLUE GND
GREEN GND
RED GND
BLUE
GREEN
RED
P19
AVG PCB SCHEMATIC SEE SHEETS 11B 14B
P100
COLOR X-Y MONITOR SEE SHEET 18A + 18B



STAR WARS Upright Main Wiring Diagram

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SP-225 Sheet 1B
1st printing

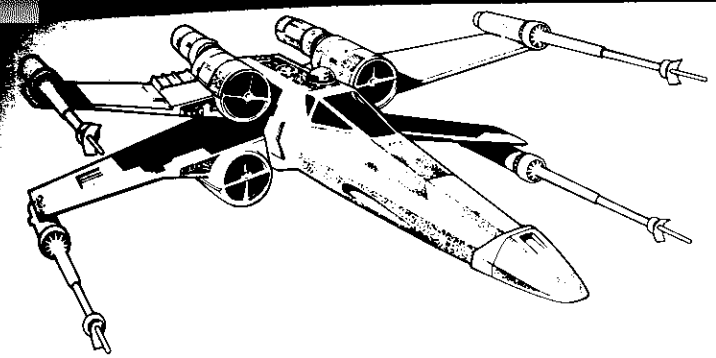
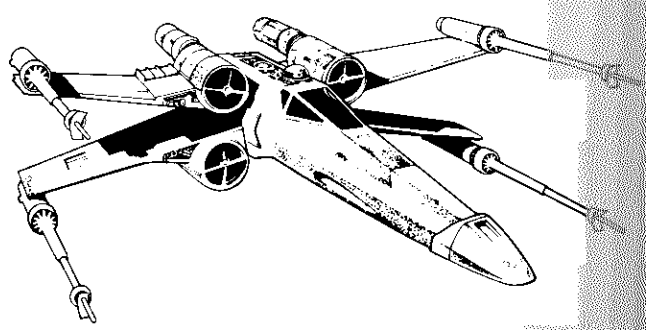


Table of Contents

Game PCB Schematics, Sheets 6B–17B

Display Schematics, Sheets 18A–18B

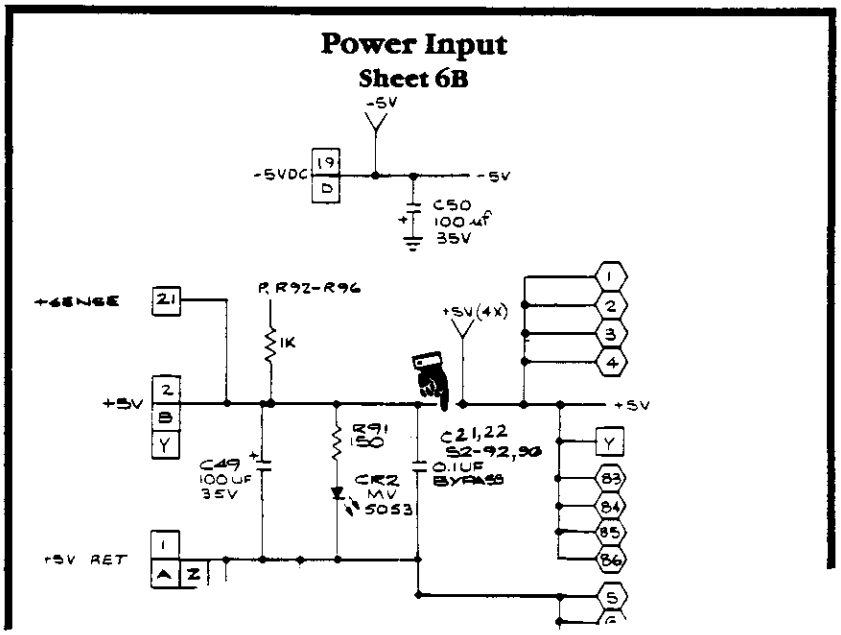


Supplement to

STAR WARS*

STAR WARS Schematic Package (SP-225, 1st printing)
STAR WARS Operators Manual (TM-225, 1st printing)
STAR WARS Operators Manual (TM-245, 1st printing)

Please add the following correction to SP-225



Please make the following changes to the Main PCB parts list of TM-225 and/or TM-245:

STAR WARS Main PCB Parts List

Designator	Description	Part No.
	Capacitors	
	Add:	
C21, C22	0.1 μF, ±5%, 50 V Ceramic Capacitor	122002-104
	Integrated Circuits	
1F	300 ns Tri-State EROM Integrated Circuit	136021-101
	should be:	
1F	300 ns EPROM Integrated Circuit	136021-114

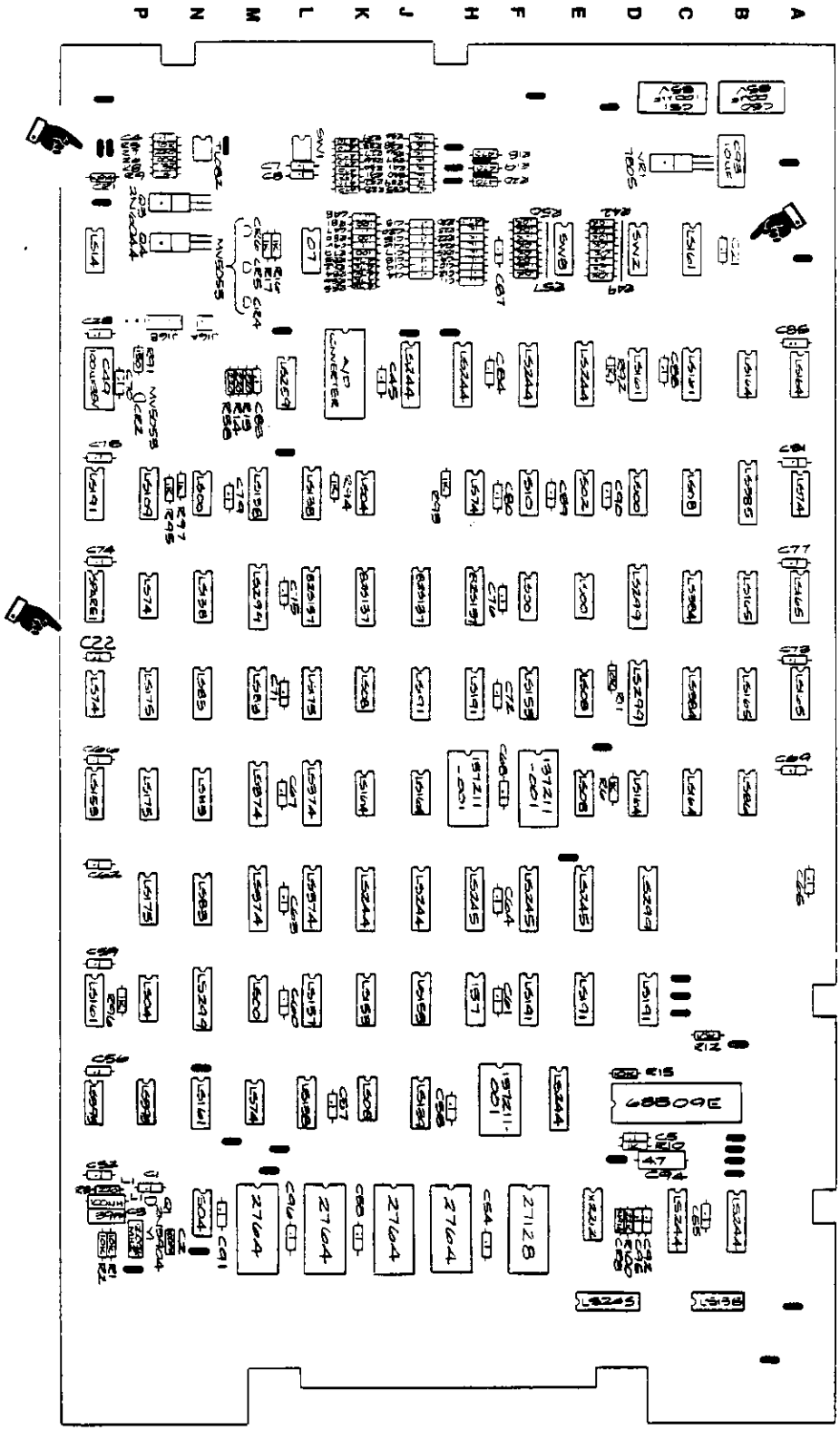


Figure 5-12 Main Printed-Circuit Board Assembly A038461-21 B