



DRAGON'S LAIR<sup>\*</sup>  
PRELIMINARY MANUAL

VIDEO DISK PLAYER.

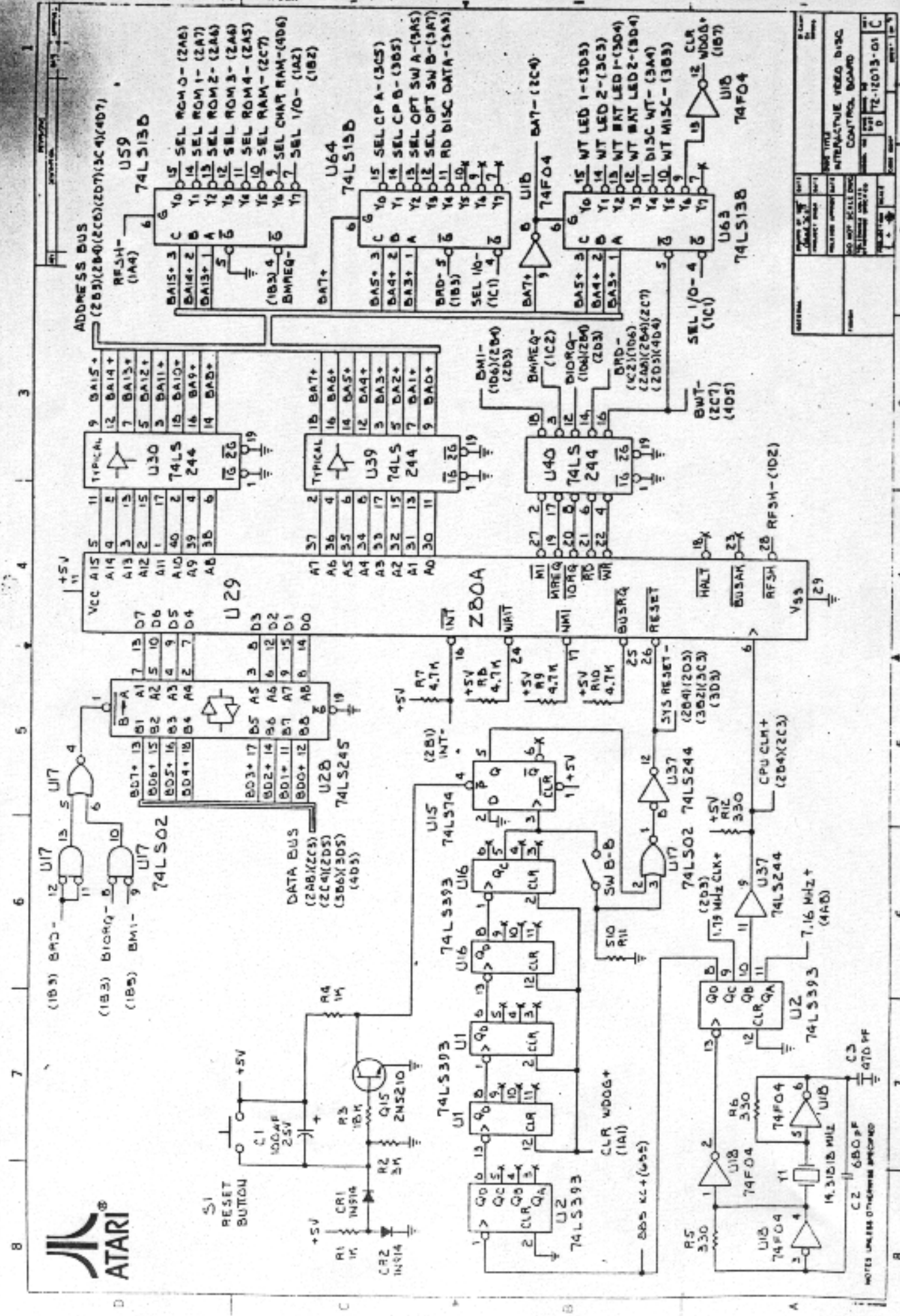
To ensure best quality and reliability the following simple maintenance should be performed at 2 weekly intervals.

BEFORE OPENING THE PLAYER, PLEASE NOTE THE FOLLOWING.

- (a) The disk should be handled only by its edges or between the centre hole and one edge. Avoid any contact with the playing surface of the disk.
- (b) DO NOT use any form of abrasive cleaner, alcohol or other solvent.

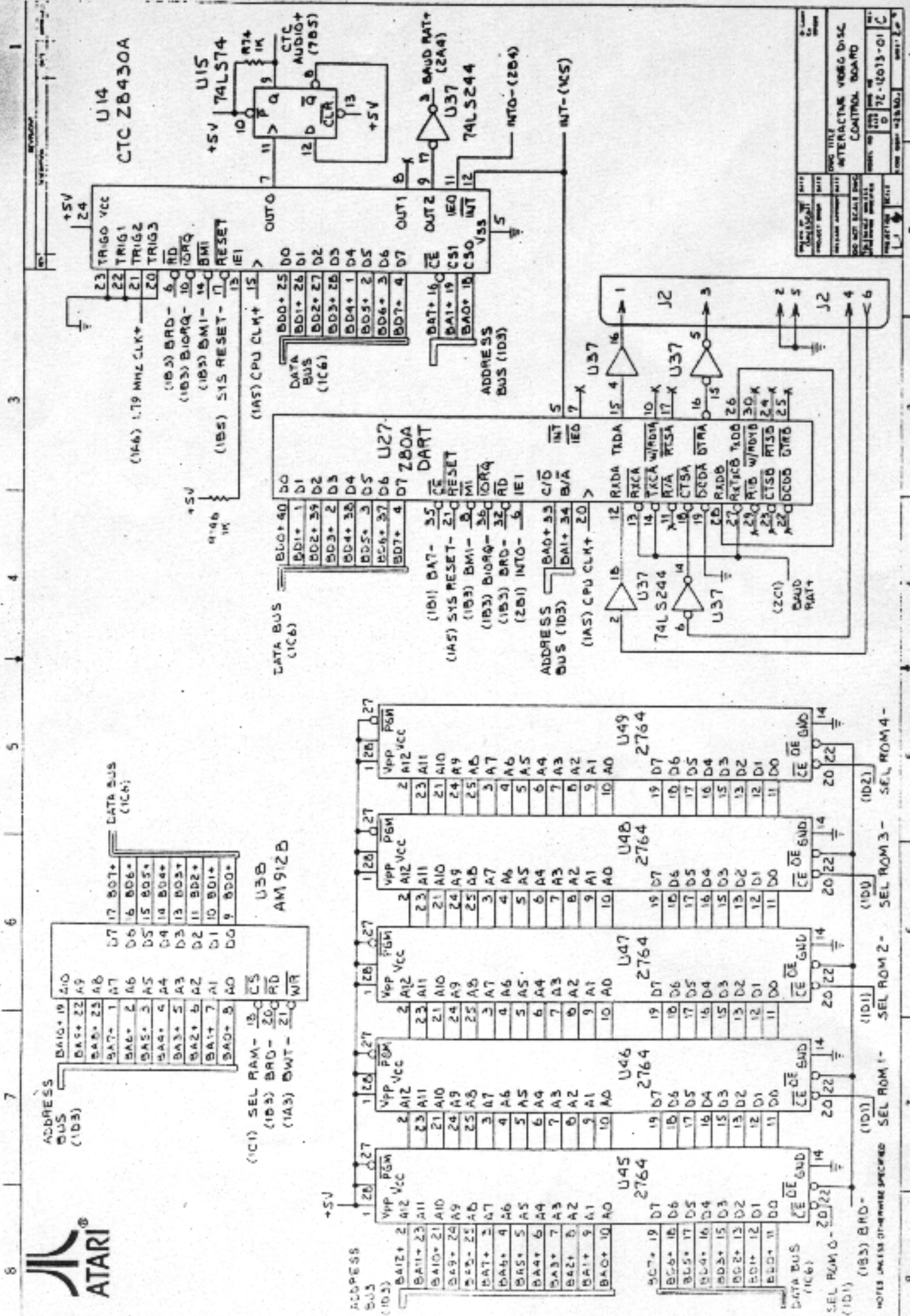
PREVENTIVE MAINTENANCE:-

- 1/. Open disk player drawer.
- 2/. Remove filter at rear of drawer. Shake filter till free of dust. Replace filter.
- 3/. Release draw latch on player securing bracket. Remove securing bracket. (Easiest if drawer is partially in).
- 4/. With game powered up, press "OPEN" button on front of Player. Within 10 seconds the lid will open automatically allowing access to the video disk.
- 5/. When player door is open turn power OFF at switch on rear panel of game cabinet.
- 6/. Carefully remove the disk and dust it with a clean, lint-free, 100% cotton cloth. If necessary, the cloth may be dampened slightly with water. DO NOT use any form of abrasive cleaner, alcohol or other solvent.
- 7/. With playing surface facing downwards, replace disk and press it gently onto centre spindle.
- 8/. Close lid of player.
- 9/. Replace securing bracket.
- 10/. Gently close and secure drawer.
- 11/. Turn power ON.



Part No.	72-12013-01
Rev.	0
Quantity	1
Unit Price	
Total Price	
Notes	

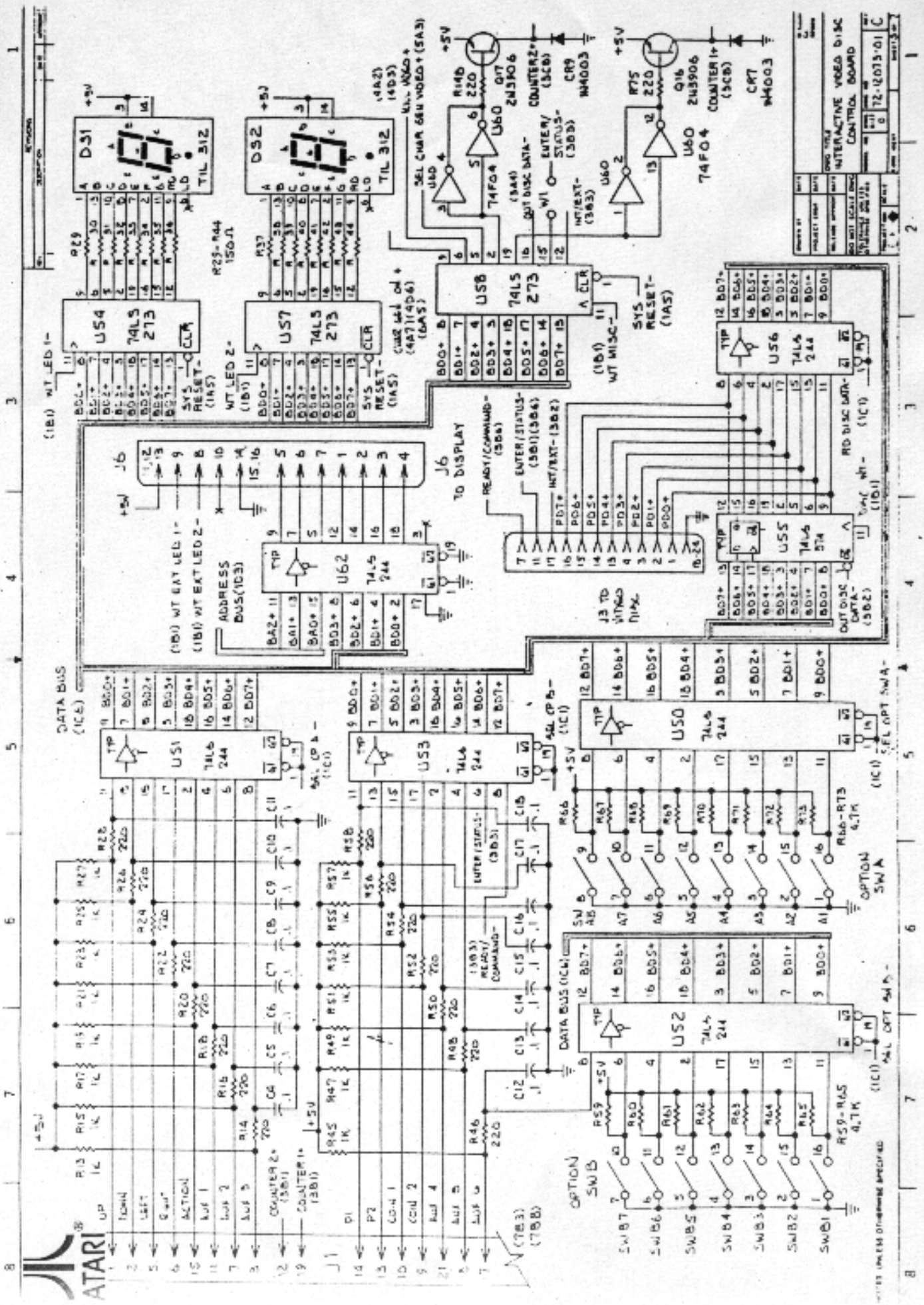
NOTES: UNLESS OTHERWISE SPECIFIED



Part	Quantity	Notes
U14	1	CTC ZB430A
U27	1	DART
U30	1	74LS174
U31	1	74LS162
U32	1	74LS162
U33	1	74LS162
U34	1	74LS162
U35	1	74LS162
U36	1	74LS162
U37	1	74LS162
U38	1	74LS162
U39	1	74LS162
U40	1	74LS162
U41	1	74LS162
U42	1	74LS162
U43	1	74LS162
U44	1	74LS162
U45	1	74LS162
U46	1	74LS162
U47	1	74LS162
U48	1	74LS162
U49	1	74LS162
U45	1	16K1 RAM
U46	1	16K1 RAM
U47	1	16K1 RAM
U48	1	16K1 RAM
U49	1	16K1 RAM
U45	1	8K1 ROM
U46	1	8K1 ROM
U47	1	8K1 ROM
U48	1	8K1 ROM
U49	1	8K1 ROM



NOTES: (103) ADDRESS BUS (10B3)  
 (104) 1.79 MHz CLK+  
 (105) SYS RESET- (17) IE1  
 (106) CPU CLK+ (15)  
 (107) DATA BUS (10C6)  
 (108) ADDRESS BUS (10B3)  
 (109) INT- (NCS)  
 (110) SEL ROM 0- (10)  
 (111) SEL ROM 1- (101)  
 (112) SEL ROM 2- (101)  
 (113) SEL ROM 3- (101)  
 (114) SEL ROM 4- (101)  
 (115) INT (NCS)

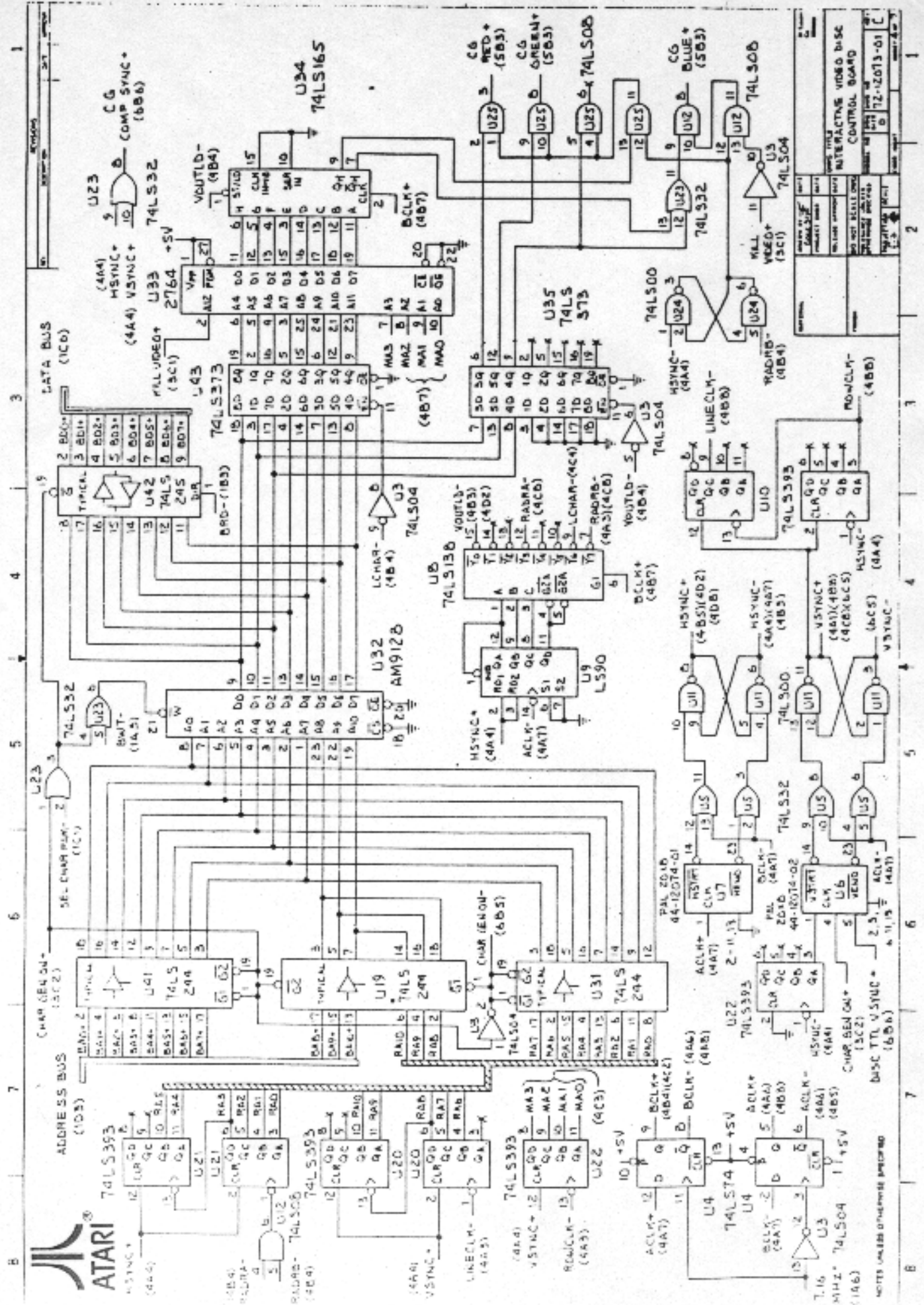


PROJECT NO.	DATE	DESIGNED BY	DATE

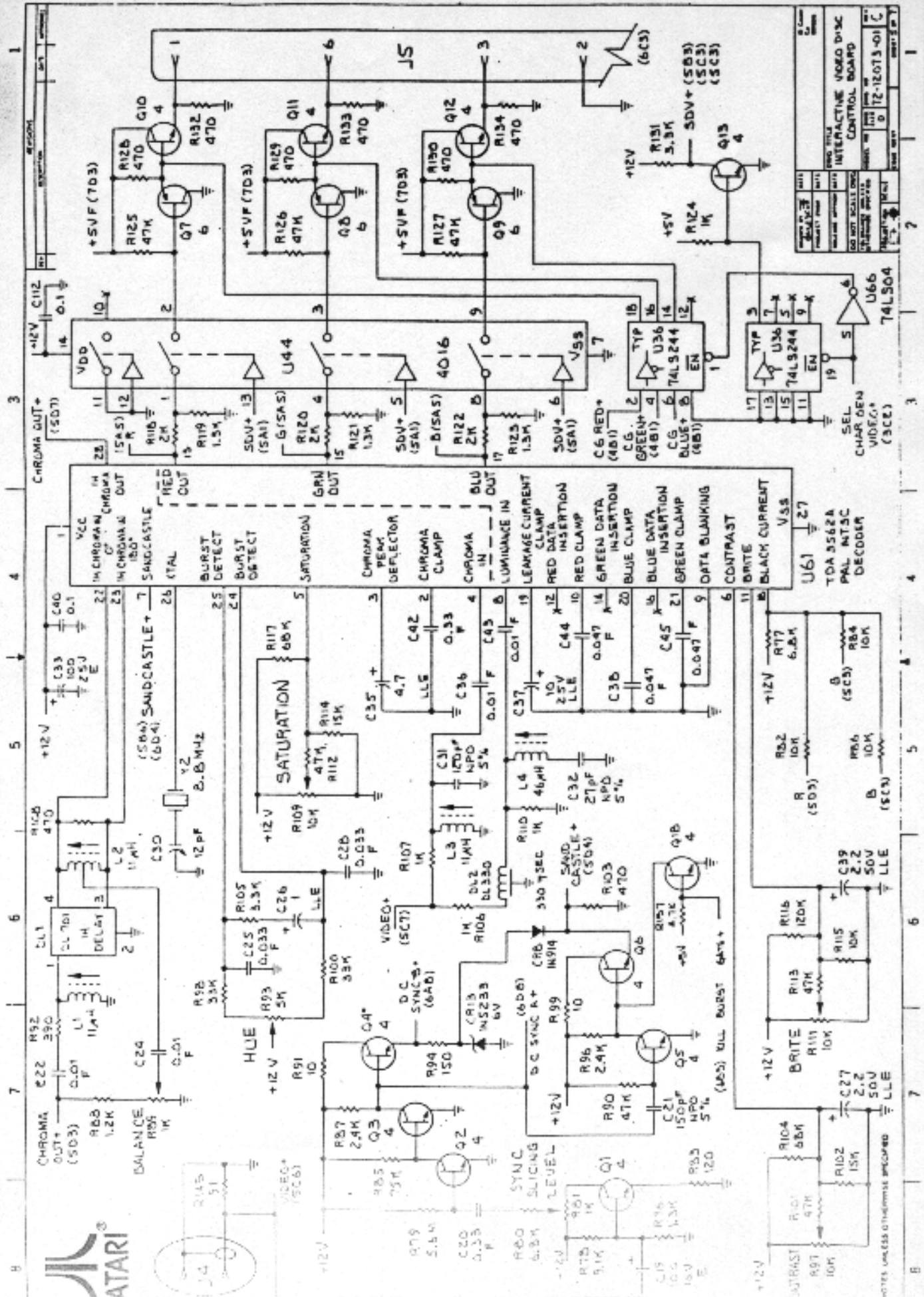
INTERACTIVE VIDEO DISC CONTROL BOARD

PROJECT NO. 072-1073-01 C

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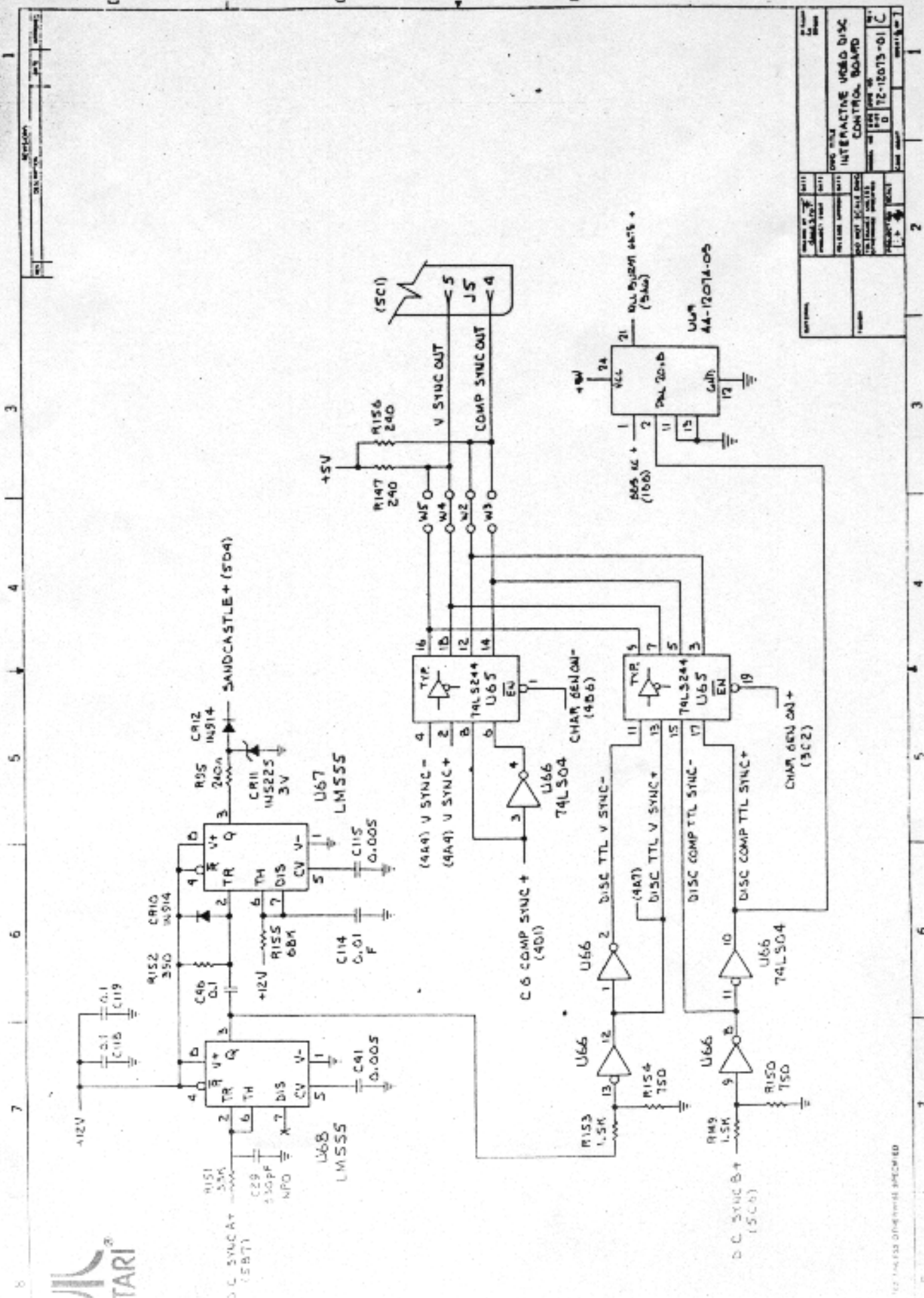


NOTES: UNLESS OTHERWISE SPECIFIED  
 7.16 MHz ± 74LS04 (1A6)  
 1.45V ± 74LS04 (4B5)  
 5V ± 74LS04 (4B6)  
 5V ± 74LS04 (4B7)  
 5V ± 74LS04 (4B8)  
 5V ± 74LS04 (4B9)  
 5V ± 74LS04 (4BA)  
 5V ± 74LS04 (4BB)  
 5V ± 74LS04 (4BC)  
 5V ± 74LS04 (4BD)  
 5V ± 74LS04 (4BE)  
 5V ± 74LS04 (4BF)  
 5V ± 74LS04 (4BG)  
 5V ± 74LS04 (4BH)  
 5V ± 74LS04 (4BI)  
 5V ± 74LS04 (4BJ)  
 5V ± 74LS04 (4BK)  
 5V ± 74LS04 (4BL)  
 5V ± 74LS04 (4BM)  
 5V ± 74LS04 (4BN)  
 5V ± 74LS04 (4BO)  
 5V ± 74LS04 (4BP)  
 5V ± 74LS04 (4BQ)  
 5V ± 74LS04 (4BR)  
 5V ± 74LS04 (4BS)  
 5V ± 74LS04 (4BT)  
 5V ± 74LS04 (4BU)  
 5V ± 74LS04 (4BV)  
 5V ± 74LS04 (4BW)  
 5V ± 74LS04 (4BX)  
 5V ± 74LS04 (4BY)  
 5V ± 74LS04 (4BZ)



ATARI  
 INTERACTIVE VIDEO DISC  
 CONTROL BOARD  
 BOARD NO. 177 (REV. 10/78)  
 PART NO. 177-12073-01 C

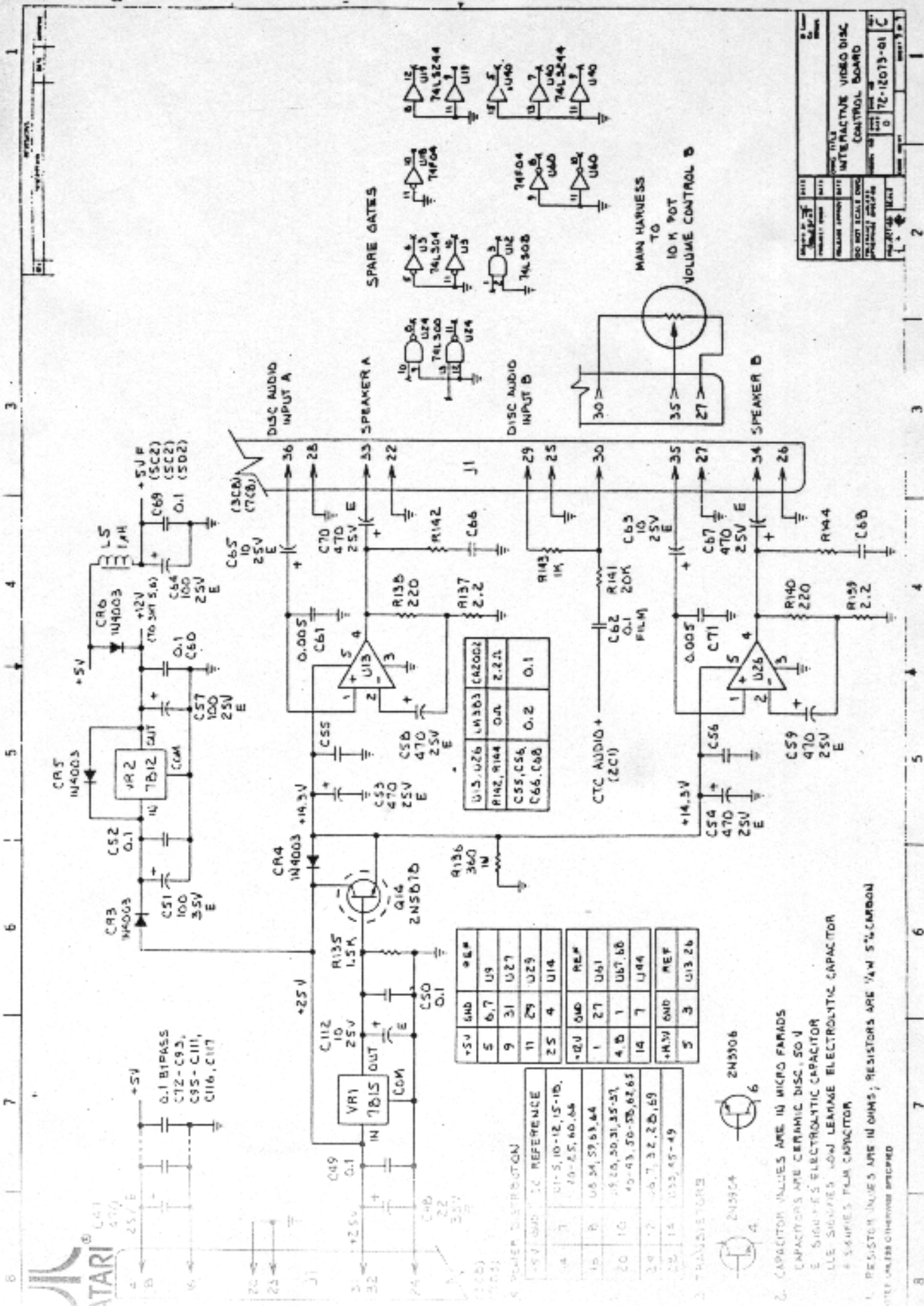
NOTES: UNLESS OTHERWISE SPECIFIED  
 RESISTORS IN OHMS, KILOHMS, MEGOHMS  
 CAPACITORS IN PICO FARADS, MICRO FARADS



REV	DATE	BY	CHKD BY
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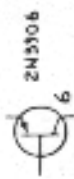




DATE	REV	BY	CHKD
10/1/80	1	JL	ML
ATARI INTERACTIVE VIDEO DISC CONTROL BOARD			
DO NOT SCALE DIMENSIONS			
PARTS LIST REFERENCE			
REF	QTY	DESCRIPTION	REF
1	1	74181	U1
2	1	74180	U2
3	1	74182	U3
4	1	74130	U4
5	1	74130	U5
6	1	74130	U6
7	1	74130	U7
8	1	74130	U8
9	1	74130	U9
10	1	74130	U10
11	1	74130	U11
12	1	74130	U12
13	1	74132	U13
14	1	74134	U14
15	1	74135	U15
16	1	74136	U16
17	1	74137	U17
18	1	74138	U18
19	1	74139	U19
20	1	74140	U20
21	1	74141	U21
22	1	74142	U22
23	1	74143	U23
24	1	74144	U24
25	1	74145	U25
26	1	74146	U26
27	1	74147	U27
28	1	74148	U28
29	1	74149	U29
30	1	74150	U30
31	1	74151	U31
32	1	74152	U32
33	1	74153	U33
34	1	74154	U34
35	1	74155	U35
36	1	74156	U36
37	1	74157	U37
38	1	74158	U38
39	1	74159	U39
40	1	74160	U40
41	1	74161	U41
42	1	74162	U42
43	1	74163	U43
44	1	74164	U44
45	1	74165	U45
46	1	74166	U46
47	1	74167	U47
48	1	74168	U48
49	1	74169	U49
50	1	74170	U50
51	1	74171	U51
52	1	74172	U52
53	1	74173	U53
54	1	74174	U54
55	1	74175	U55
56	1	74176	U56
57	1	74177	U57
58	1	74178	U58
59	1	74179	U59
60	1	74180	U60

1. CAPACITOR VALUES ARE IN MICRO FARADS
2. CAPACITORS ARE CERAMIC DISC .50 V
3. SIGNALS ELECTROLYTIC CAPACITOR
4. ALL SIGNALS NON LEAKAGE ELECTROLYTIC CAPACITOR
5. SIGNALS FILM CAPACITOR
6. RESISTOR VALUES ARE IN OHMS; RESISTORS ARE 1/4W 5% CARBON

REF	QTY	DESCRIPTION	REF
1	1	74181	U1
2	1	74180	U2
3	1	74182	U3
4	1	74130	U4
5	1	74130	U5
6	1	74130	U6
7	1	74130	U7
8	1	74130	U8
9	1	74130	U9
10	1	74130	U10
11	1	74130	U11
12	1	74130	U12
13	1	74132	U13
14	1	74134	U14
15	1	74135	U15
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18	1	74138	U18
19	1	74139	U19
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25	1	74145	U25
26	1	74146	U26
27	1	74147	U27
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29	1	74149	U29
30	1	74150	U30
31	1	74151	U31
32	1	74152	U32
33	1	74153	U33
34	1	74154	U34
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36	1	74156	U36
37	1	74157	U37
38	1	74158	U38
39	1	74159	U39
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41	1	74161	U41
42	1	74162	U42
43	1	74163	U43
44	1	74164	U44
45	1	74165	U45
46	1	74166	U46
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49	1	74169	U49
50	1	74170	U50
51	1	74171	U51
52	1	74172	U52
53	1	74173	U53
54	1	74174	U54
55	1	74175	U55
56	1	74176	U56
57	1	74177	U57
58	1	74178	U58
59	1	74179	U59
60	1	74180	U60



POWER DISTRIBUTION

REF	QTY	DESCRIPTION	REF
1	1	74181	U1
2	1	74180	U2
3	1	74182	U3
4	1	74130	U4
5	1	74130	U5
6	1	74130	U6
7	1	74130	U7
8	1	74130	U8
9	1	74130	U9
10	1	74130	U10
11	1	74130	U11
12	1	74130	U12
13	1	74132	U13
14	1	74134	U14
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48	1	74168	U48
49	1	74169	U49
50	1	74170	U50
51	1	74171	U51
52	1	74172	U52
53	1	74173	U53
54	1	74174	U54
55	1	74175	U55
56	1	74176	U56
57	1	74177	U57
58	1	74178	U58
59	1	74179	U59
60	1	74180	U60



2.0 INTERFACE

2.1 INTRODUCTION

The IVDBC is intended for use in a variety of configurations. Therefore, not all of the interfaces described here would be used in a specific application.

2.2 CIRCUIT BOARD CONNECTORS

<u>Reference Designator</u>	<u>Description</u>	<u>Mating Connector</u>
J1	36-Pin Control Panel inputs, coin acceptor switch inputs, coin counter outputs, DC power input, audio input, volume control and audio output	Molex Shell Order #03-06-1362 Molex Pin Model #4529 or #4559 (female)
J2	6-Pin serial, video disc player interface - serial send, receive and handshaking	Molex Shell Order #03-09-2062 Molex Pin Model #1190, 1380, 2870 or 1434 (male)
J3	24-Pin Parallel video disc player interface, - 8-bit data and handshaking.	Amphenol Type 24
J4	Composite video input from video disc player	BNC
J5	6-Pin RGB output to monitor	Molex Shell Order #03-09-1063 Molex Pin Model #1189, 1381, 2871 or 1433

2.2 CIRCUIT BOARD CONNECTORS (cont'd)

Reference Designator	Description	Mating Connector
J5 (cont'd)		(Female Pin 1-5) Molex Pin Model #1190, 1380, 2870 or 1434 (Male - Pin 6 only)
J6	16-Pin General Output	16-Pin ribbon cable

2.3 CONNECTOR PINNING

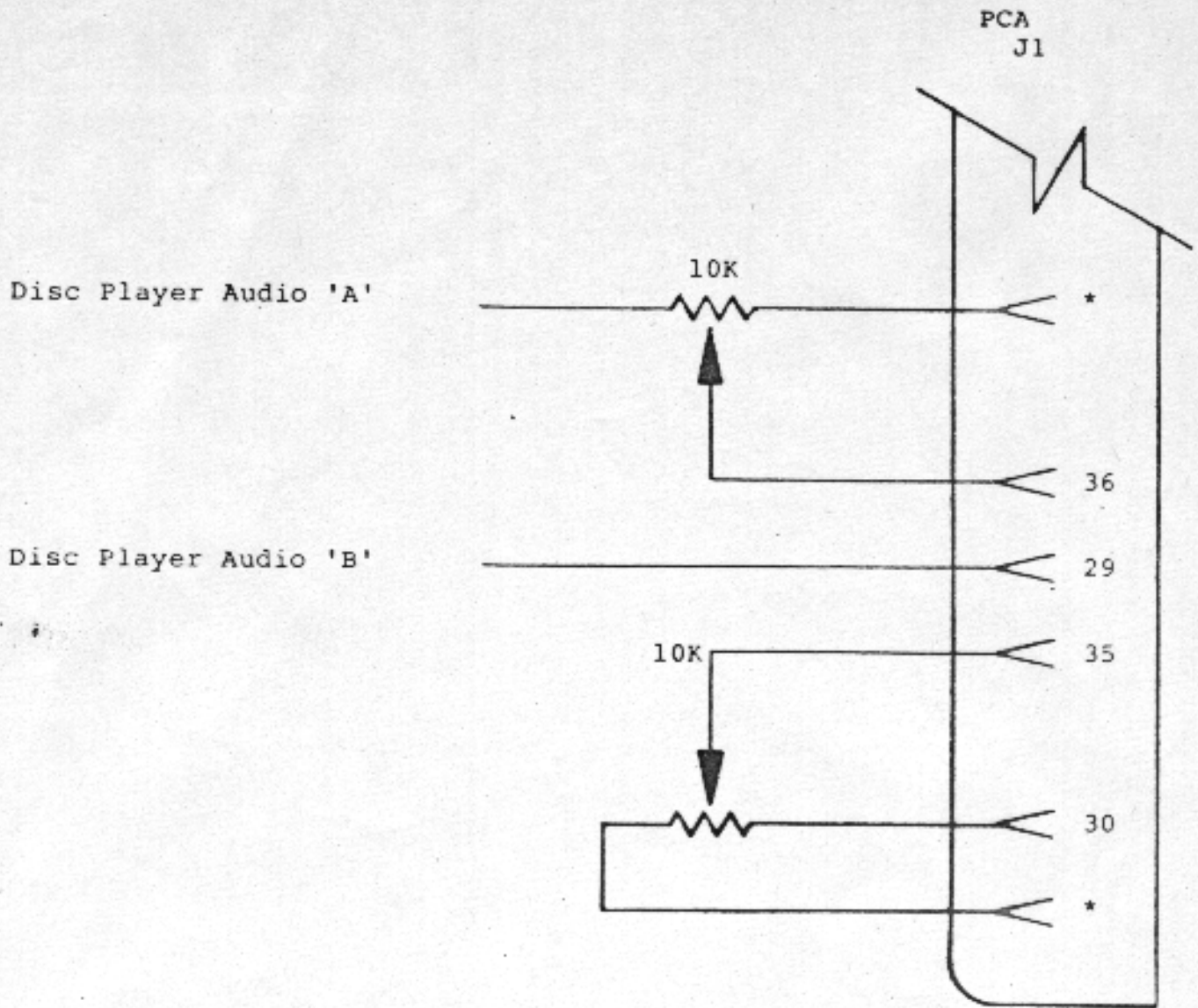
Connector	Pin #	Function
J1	1	Joystick - up
	2	Joystick - down
	3	Not used
	4	+5V @ 2A supply
	5	Joystick - left
	6	Joystick - right
	7	Not used
	8	+5V @ 2A supply
	9	Right coin acceptor switch
	10	Left coin acceptor switch
	11	Not used
	12	Coin counter - right
	13	Two player start switch
	14	One player start switch
	15	Action Switch
	16	5V supply return
	17	Not used
	18	Not used
	19	Coin counter - left
	20	Ground (common)
	21	Not used
	22	Ground (common)
	23	Ground (common)
	24	Ground (common)
	25	Ground (common)
	26	Ground (common)
	27	Ground (common)
	28	Ground (common)
	29	Video disc audio input - 1
	30	Volume control output - 1
	31	+25V @ 2A supply
	32	+25V @ 2A supply
	33	Speaker A-output
	34	Speaker B-output
	35	Volume control wiper - B
	36	Video disc audio input - 2

\* See Audio/Volume Control Diagram

2.3 CONNECTOR PINNING (cont'd)

Connector	Pin #	Function
J2	1	Serial data to player
	2	Signal ground
	3	DTR to disc player
	4	CTS from disc player
	5	Signal ground
	6	Serial data from player
J3	1	Data Bit 0
	2	Data Bit 1
	3	Data Bit 2
	4	Data Bit 3
	5	Not used
	6	Not used
	7	Ready
	8	Not used
	9	Not used
	10	Not used
	11	Enter
	12	Not used
	13	Data Bit 4
	14	Data Bit 5
	15	Data Bit 6
	16	Data Bit 7
	17	Int/Ext
	18	Ground
	19	Ground
	20	Ground
	21	Ground
	22	Ground
	23	Ground
	24	Ground
J4	1	Signal - composite video
	2	Ground
J5	1	Red output
	2	Ground
	3	Blue output
	4	Comp Sync output
	5	V Sync output
	6	Green output
J6	1	Data Bit 3
	2	Data Bit 2
	3	Data Bit 1
	4	Data Bit 0
	5	Address Bit 2
	6	Address Bit 1
	7	Address Bit 0
	8	Decoding Bit 2
	9	Decoding Bit 1
	10	Not used
	11	+5V output
	12	+5V output
	13	+5V output
	14	Ground
	15	Ground
	16	Ground

2.4 VOLUME CONTROL SCHEME



\* Any ground (common)

SIZE <b>A</b>	DRAWING NUMBER	
SCALE		SHEET

2.5 Power Supply Requirements

Two voltages are required:

+5VDC @ 2 amps regulated ±5%

+25VDC @ 1.3 amps unregulated

3.0 SYSTEM OPERATION

3.1 Initialization

The system is initialized whenever power is cycled or the reset switch (S1) is depressed.

3.2 Options

Two banks of eight switches each, SWA and SWB are used to select various coinage and game play options. These switches are read only immediately after system reset. Modifying the switch settings has no effect until system reset occurs.

3.2.1 Coinage/Credit Options

Two independent coin acceptor switch/coin counter combinations have been provided for coin/credit ratios which are determined for the left and right coin acceptors by SWA and SWB respectively. Program logic requires that the number of coins for a slot be detected before credits are incremented. Credits are incremented by the amount selected.

3.2.1.1 Left Slot

Coins:

<u>SWA-1</u>	<u>SWA-2</u>	<u>SWA-3</u>	
Off	Off	Off	= Freeplay
On	Off	Off	= 1 coin
Off	On	Off	= 2 coins
On	On	Off	= 3 coins
Off	Off	On	= 4 coins
On	Off	On	= 5 coins
Off	On	On	= 6 coins
On	On	On	= 7 coins

3.2.1.1 Left Slot (cont'd)

Credits:

<u>SWA-4</u>	<u>SWA-5</u>	<u>SWA-6</u>	
Off	Off	Off	= slot disabled
On	Off	Off	= 1 credit
Off	On	0	= 2 credits
On	On	Off	= 3 credits
Off	Off	On	= 4 credits
On	Off	On	= 5 credits
Off	On	On	= 6 credits
On	On	On	= 7 credits

3.2.1.2 Right Slot

Coins:

<u>SWB-1</u>	<u>SWB-2</u>	<u>SWB-3</u>	
Off	Off	Off	= Freeplay
On	Off	Off	= 1 coin
Off	On	Off	= 2 coins
On	On	Off	= 3 coins
Off	Off	On	= 4 coins
On	Off	On	= 5 coins
Off	On	On	= 6 coins
On	On	On	= 7 coins

Credits:

<u>SWB-4</u>	<u>SWB-5</u>	
Off	Off	= slot disabled
On	Off	= 1 credit
Off	On	= 2 credits
On	On	= 3 credits

3.2.2 Lives per Game

SWB-6

Off	3 lives per game
On	5 lives per game

3.2.3 Power-up Diagnostics

SWB-7

Off	Disabled **
On	Enabled

3.2.3 Difficulty

SWA-7

SWA-8

Off	Off	Easy **
On	Off	Intermediate
Off	On	Hard
On	On	Very hard

NOTE:-

Set option switch SWB-8 to OFF before entering diagnostic mode. This disables the watchdog timer.

\*\* Atari recommended setting.

4.3 POWER-UP DIAGNOSTICS

LED display DS1 is used as an indicator for the power-up diagnostics. As each portion of the diagnostic is run, an identifying number is displayed as follows:

- 1 - CPU test
- 2 - ROM test
- 3 - RAM test
- 4 - Display memory test
- 5 - CTC test
- 6 - DART test

Where there is a diagnostic failure, the display will freeze with the number of the test which failed.

During normal game play, DS1 and DS2 are driven by the 10 msec and 5 msec system interrupts and will flicker accordingly.



# 'Eurolair' Option Switch Diagram

Left Slot Coins:

SWA-1	SWA-2	SWA-3
Off	Off	Off = freeplay
On	Off	Off = 1 coin
Off	On	Off = 2 coins
On	On	Off = 3 coins
Off	Off	On = 4 coins
On	Off	On = 5 coins
Off	On	On = 6 coins
On	On	On = 7 coins

Right Slot Coins:

SWB-1	SWB-2	SWB-3
Off	Off	Off = freeplay
On	Off	Off = 1 coin
Off	On	Off = 2 coins
On	On	Off = 3 coins
Off	Off	On = 4 coins
On	Off	On = 5 coins
Off	On	On = 6 coins
On	On	On = 7 coins

Left Slot Credits:

SWA-4	SWA-5	SWA-6
Off	Off	Off = slot disabled
On	Off	Off = 1 credit
Off	On	Off = 2 credits
On	On	Off = 3 credits
Off	Off	On = 4 credits
On	Off	On = 5 credits
Off	On	On = 6 credits
On	On	On = 7 credits

Right Slot Credits:

SWB-4	SWB-5
Off	Off = slot disabled
On	Off = 1 credit
Off	On = 2 credits
On	On = 3 credits

Lives Per Game:

SWB-6
Off = 3 lives per game
On = 5 lives per game

Game Difficulty Level:\*

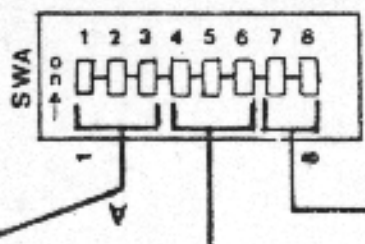
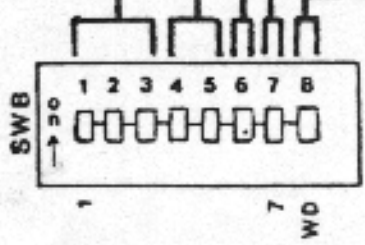
SWA-7	SWA-8
Off	Off = Easy
On	Off = Intermediate
Off	On = Hard
On	On = Very Hard

Enable Power-up Diagnostics:

SWB-7
On = Enable Diagnostics at Power-up
Off = Disable Diagnostics

Watchdog Timer Enable:

SWB-8
On = Enable Watchdog Timer
Off = Disable Watchdog Timer



\* Difficulty shifts to the next higher level after surviving 5 consecutive rooms (1 shift per game)