



ATARI[®]
FALCON030[™]



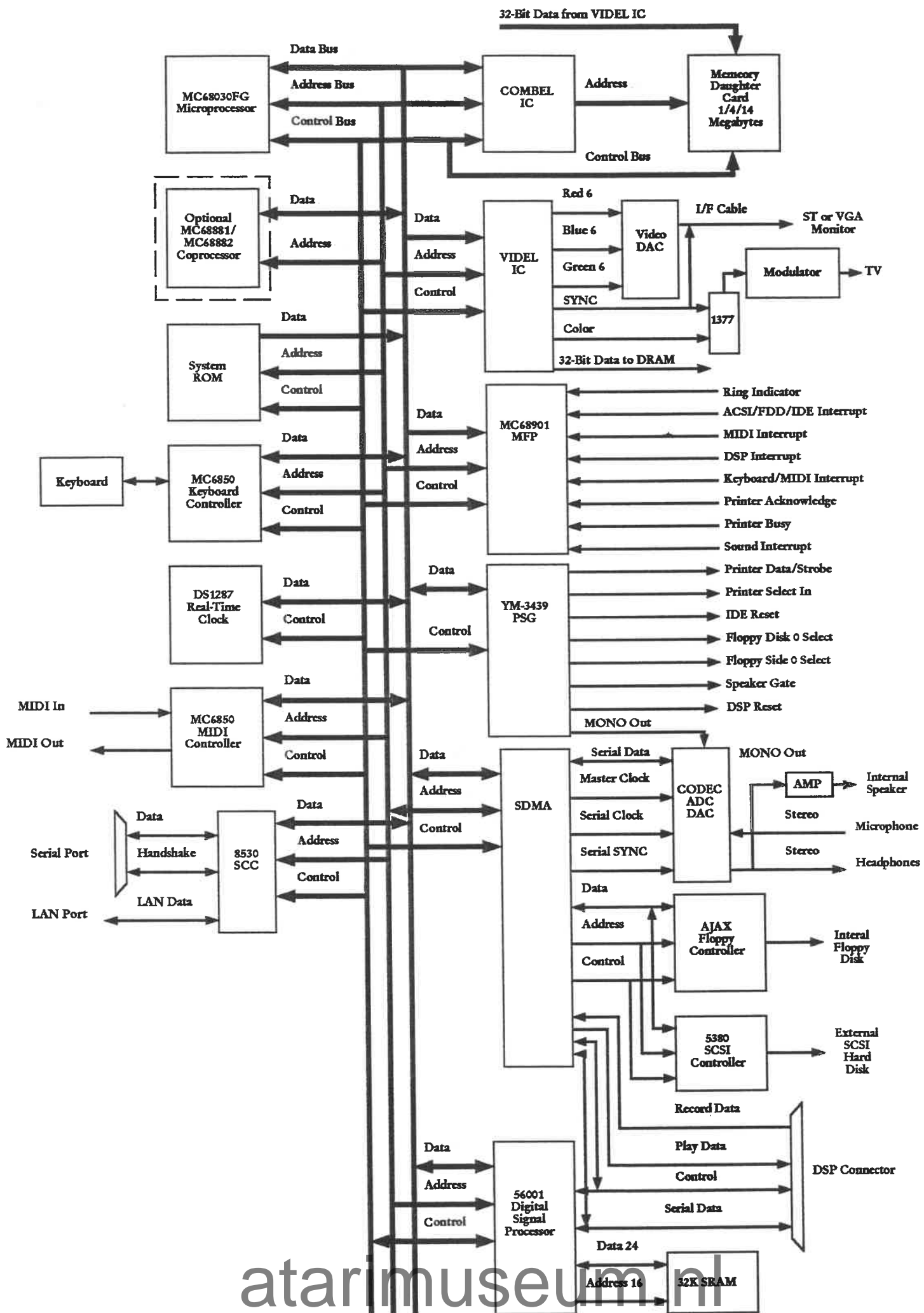
Developer Documentation
Version 1.1

ATARI[®]

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Overall Block Diagram



LAST MINUTE UPDATES

Category 2, Topic 1
 Message 7 Tue Feb 09, 1993
 G.LABREC [Greg @ Atari] at 01:14 EST

Falcon030 Memory Connector

J6. 30 pin, dual row, upright male header

Pin#	Signal	Pin#	Signal
1	GND	2	GND
3	VCC	4	MADDR 8
5	MADDR 7	6	MADDR 6
7	MADDR 5	8	MADDR 4
9	MADDR 3	10	MADDR 2
11	MADDR 1	12	MADDR 0
13	GND	14	VCC
15	VCC	16	GND
17	GND	18	VCC
19	MADDR 10	20	MADDR 9
21	WE	22	RAS 0
23	RAS 1	24	CAS0 H
25	CAS0 L	26	CAS1 H
27	CAS1 L	28	GND
29	VCC	30	VCC

J17. 50 pin, dual row, upright male header

Pin#	Signal	Pin#	Signal
1	GND	2	VCC
3	MDATA 15	4	MDATA 14
5	MDATA 13	6	MDATA 12
7	MDATA 11	8	MDATA 10
9	GND	10	VCC
11	MDATA 9	12	MDATA 8
13	MDATA 7	14	MDATA 6
15	MDATA 5	16	GND
17	VCC	18	MDATA 4
19	MDATA 3	20	MDATA 2
21	MDATA 1	22	MDATA 0
23	DRAM 0	24	GND
25	VCC	26	GND
27	VCC	28	MDATA 16
29	MDATA 17	30	MDATA 18
31	MDATA 19	32	MDATA 20
33	MDATA 21	34	GND
35	VCC	36	MDATA 22
37	MDATA 23	38	MDATA 24
39	MDATA 25	40	MDATA 26
41	GND	42	VCC
43	MDATA 27	44	MDATA 28
45	MDATA 29	46	MDATA 30
47	MDATA 31	48	DRAM 1
49	GND	50	VCC

DRAM 0 DRAM 1

0	0	1MB (256k x 4)
1	0	4MB (1M x 4)
0	1	14MB (4M x 1)
1	1	Reserved

Category 2, Topic 1
Message 10 Tue Mar 02, 1993
MIKE-FULTON at 14:40 EST

On page VIDEO.6 of the Falcon030 developer's documentation, the description of the VsetMask() call should be changed as follows:

```
OPCODE 150
VsetMask( ormask, andmask, overlay )
LONG ormask, andmask;
WORD overlay;
```

The VsetMask() function is used to set the mask values used by VDI to modify the color values computed for vs_color(). The vs_color() function converts its input to a 16-bit RGB value which is bitwise OR'ed with 'ormask' and then bitwise AND'ed with 'andmask'. This allows the application to set any color to be transparent (or not) in the 15-bit per pixel true color modes with genlock and overlay.

The default mask values are: 'ormask' = 0x0000, 'andmask' = 0xFFFF. This combination of mask values has no effect.

To set the overlay bit, use: 'ormask' = 0x0020, 'andmask' = 0xFFFF. Now any color set with vs_color() will have the overlay bit set.

To clear the overlay bit, use 'ormask' = 0x0000, 'andmask' = 0xFFDF. Now any color set with vs_color() will have the overlay bit cleared.

If the 'overlay' parameter is non-zero, then the system will be put into overlay mode. If the 'overlay' parameter is zero, then the system will be taken out of overlay mode.

Category 2, Topic 1
Message 11 Mon Mar 08, 1993
J.COLE18 [John] at 20:14 EST

Mike,

Shouldnt you use and and mask of 0xffffffff? I know that 0xffff should work fine in 16 bits, but shouldnt people go ahead and start planning for 32bit graphics, so we will have less stuff to fix ;-)

John @ Lexicor

Category 2, Topic 1
Message 12 Mon Mar 15, 1993
G.LABREC [Greg @ Atari] at 01:00 EST

On page VIDEO.1 of the Falcon030 Developer Documentation, the last paragraph incorrectly describes the video (_VDO) cookie.

The video cookie is 0x00030000

Category 2, Topic 1
Message 13 Mon Mar 15, 1993
W.PARKS3 at 16:02 EST

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Greg,

I scanned these message but in the flurry of activity I'm having I don't remember if this was mentioned (it probably wasn't since it isn't in the 'Developer' docs)

On page E-4 of the "Falcon Owner's Manual" (C302952-001 1992.8.C.C.) the pinout diagram is numbered incorrectly. It shows the pin numbers wrapping around as a chip's pin numbers do. It should start with pin 1 being on the top left and pin 10 designated on the top right (the opposite of what it shows now) The bottom row is correct.

Thought it might be useful to know.

W. David Parks

Category 2, Topic 1
Message 15 Thu Mar 18, 1993
MIKE-FULTON at 23:17 EST

John,

Since it's still unknown whatever overlay capabilities would go along with 32-bit per pixel graphics, it's sort of hard to say for sure. But I don't foresee any problems if you zeroed out the higher 16 bits of the OR mask and filled out the higher 16 bits of the AND mask, as you suggest.

Sounds good to me, and I'll get the change into the printed docs.

Mike

Hints and Tips for Cubase Audio and FDI (Falcon Digital Interface)

1. Use the modification with 74F04 (described below)
2. Use TOS 4.02 or higher
3. CuBase Audio won't give you any warning if your external SCSI drive is full. So check if there is enough room on your drive for sampling, you will get errors like SCSI connection lost etc.
4. The maximum partition size for your harddisk is 255MB (with the HDX-program)
5. FDI (also known as SP-DIF Interface) will work on ALL FALCON030's with TOS 4.02 or higher, in case of bad sound using the FDI please exchange the FDI.

In this test we used several Falcon030's from different production dates. For CuBase Audio we used version 1.01. The FDI_INIT.PRG used in the AUTO-Directory was 1462 bytes and dated 30/9/1993.

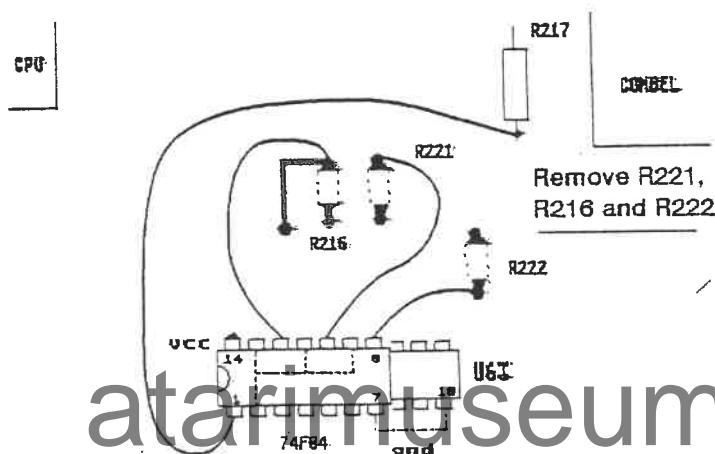
We like to thank Martijn van Duin, TSI (Benelux) and Soundpool (developer FDI) for their support and providing soft-and hardware for this test.

Modification CPU-clock signal.

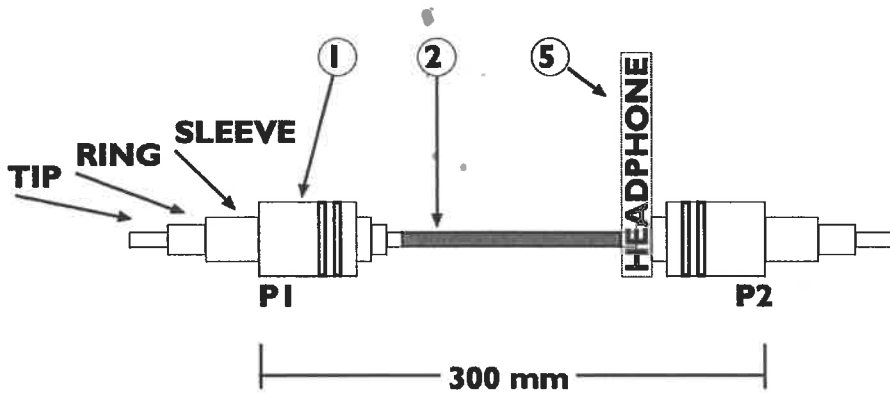
The SDMA is clocked by the 16MHz CPU-clock. With some software it's possible to get a disturbance on this clock-signal. This can express itself with cracking noise on the audio or problems with recording large soundfiles on the harddisk. If the Falcon030 has these problems, the following modifications have to be done:

1. Remove SMD resistor R221, R216 and R222 (between the CPU and COMBEL)
2. Bent the pins of the 74F04 to the outside except no. 14.
3. Connect pin 2 to 9, 11 and 13 of the 74F04.
4. Place 74F04 on PAL U63
5. Solder pin 14 of the 74F04 on pin 20 of U63
6. Solder the wires as shown in the diagram below.

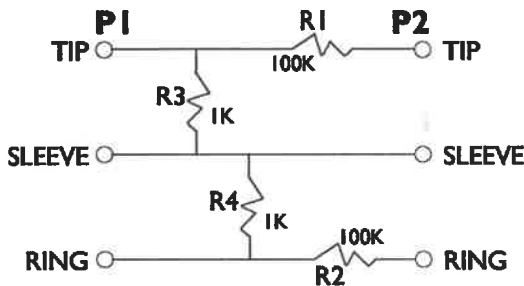
Atari Corporation takes no responsibility for any damage or loss.



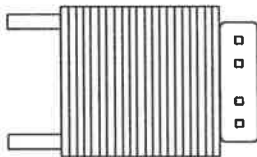
TESTKIT LOOPBACKS



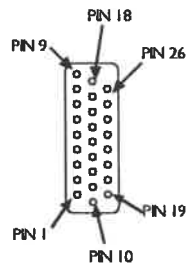
BILL OF MATERIALS	
1	CONNECTOR MINITURE PLUG 3.5mm SLEEVE PLUG
2	CABLE, 2 CONDUCTOR SHIELDED MICROPHONE CABLE 60"
3	RES 100K 5% 1/4W (R1, R2)
4	RES 1K 5% 1/4W (R3, R4)
5	LABEL, HEADPHONE



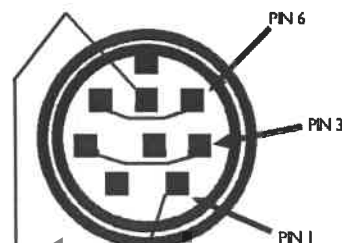
CONNECTIONS		
P1		P2
PIN NO.		PIN NO.
TIP	R1	TIP
RING	R2	RING
SLEEVE	SHIELD	SLEEVE
SLEEVE	R3	TIP
SLEEVE	R4	RING



BILL OF MATERIALS	
1	CONNECTOR 26 PIN HIGH DENSITY MALE D-SUB
2	RES AXIAL 1K 5% 1/4W (R1, R2)



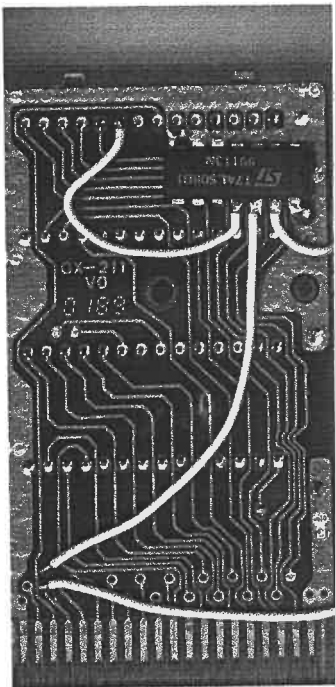
CONNECTIONS		
PIN NO.		PIN NO.
1		26
3		22
4		19
11		24
12		13
15		23
2	R1	21
6	R2	21



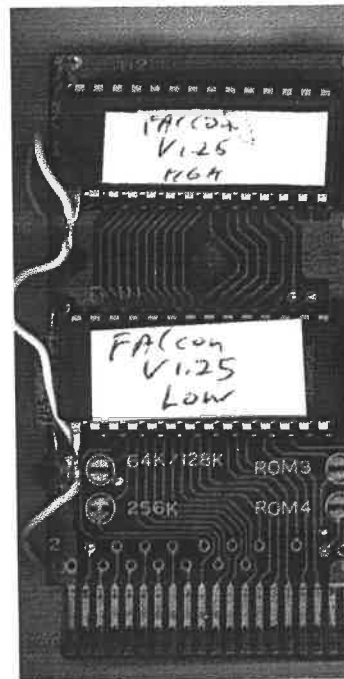
CONNECTIONS		
PIN NO.		PIN NO.
1		7
3		5
4		19
6		8

The pictures below show the modification of the Testkit, for the Falcon030.

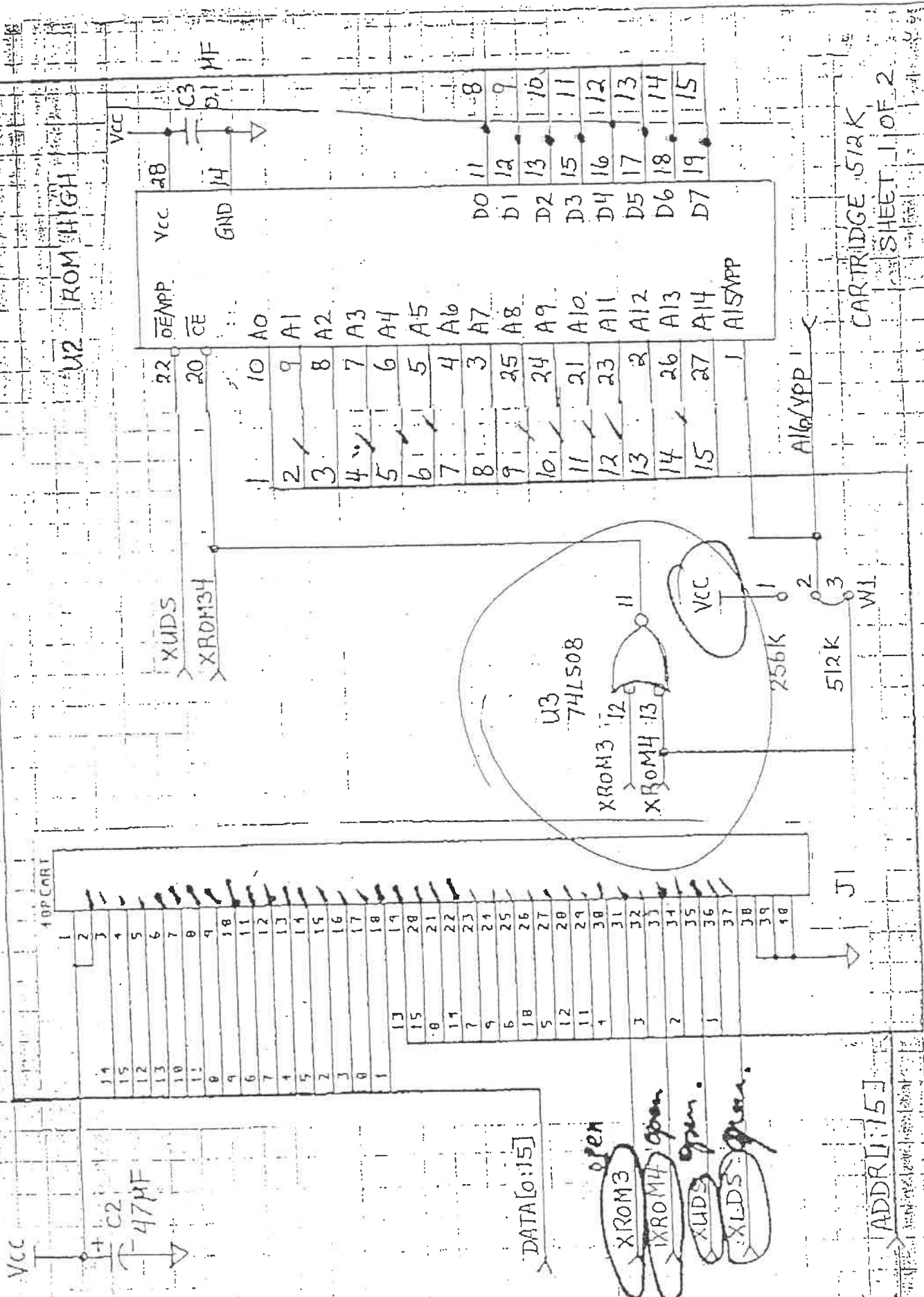
The pins used on the 74LS08 are: 14; 7; 11; 12; and 13



BACK



FRONT



CARTRIDGE 512K
SHEET 11 OF 2

ATARI CORPORATION ENGINEERING CHANGE ORDER

ECO NO. 1641

SHEET 5 OF 7

CHANGE PAGE 11 PER THE FOLLOWING MARK-UP

