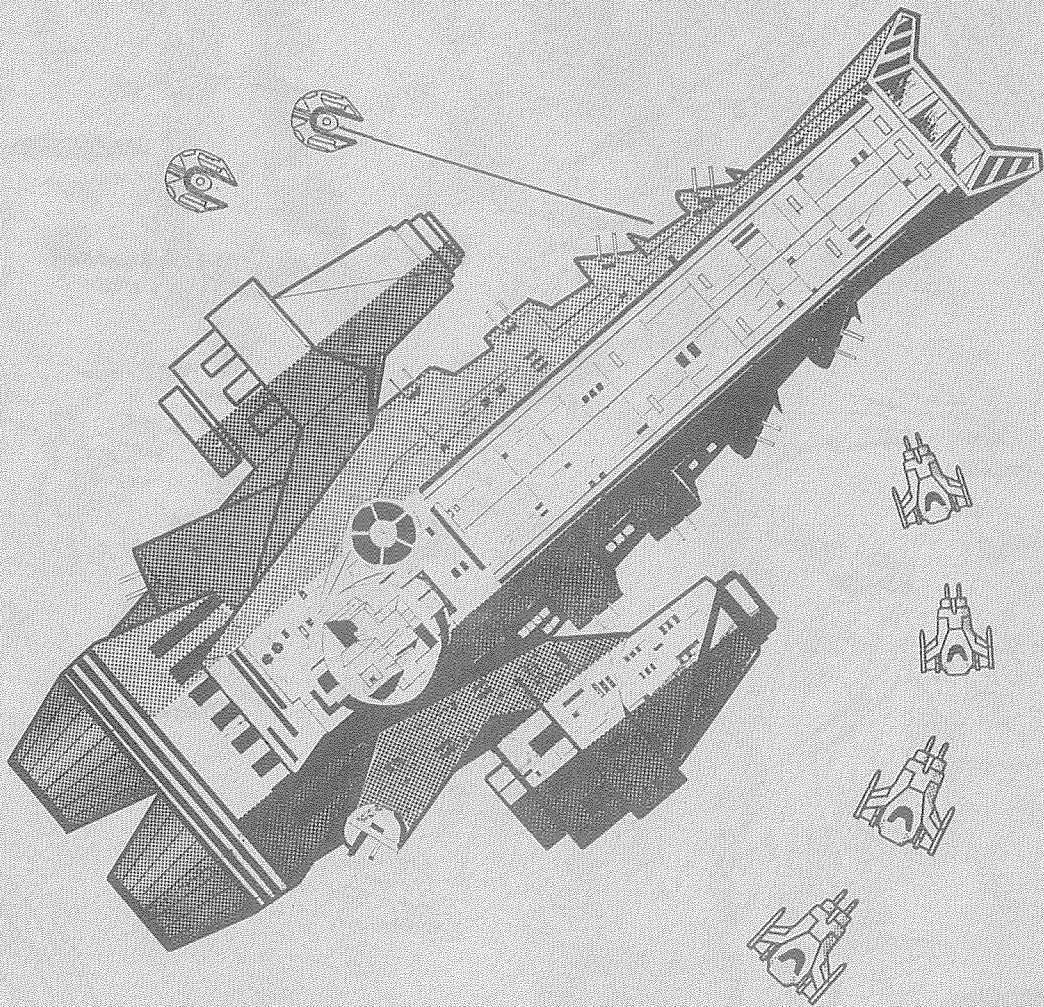


SEGA®

STAR JACKER

SERVICE MANUAL



SEGA ENTERPRISES, LTD.

MANUAL NO. 420-5110

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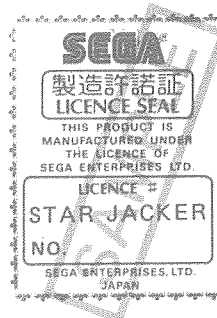
On Prevention of Illegal Production • Conversion of Games

- For prevention of illegal production and conversion of our machines, a seal showing "ORIGINAL SEAL" is pasted on each of the machines produced by SEGA or a "LICENCE SEAL" is attached to each IC Board and other kits to be issued by SEGA for production of SEGA machines.
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ORIGINAL SEAL
(SAMPLE)



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(SAMPLE)



Explanation of symbols of SEGA products

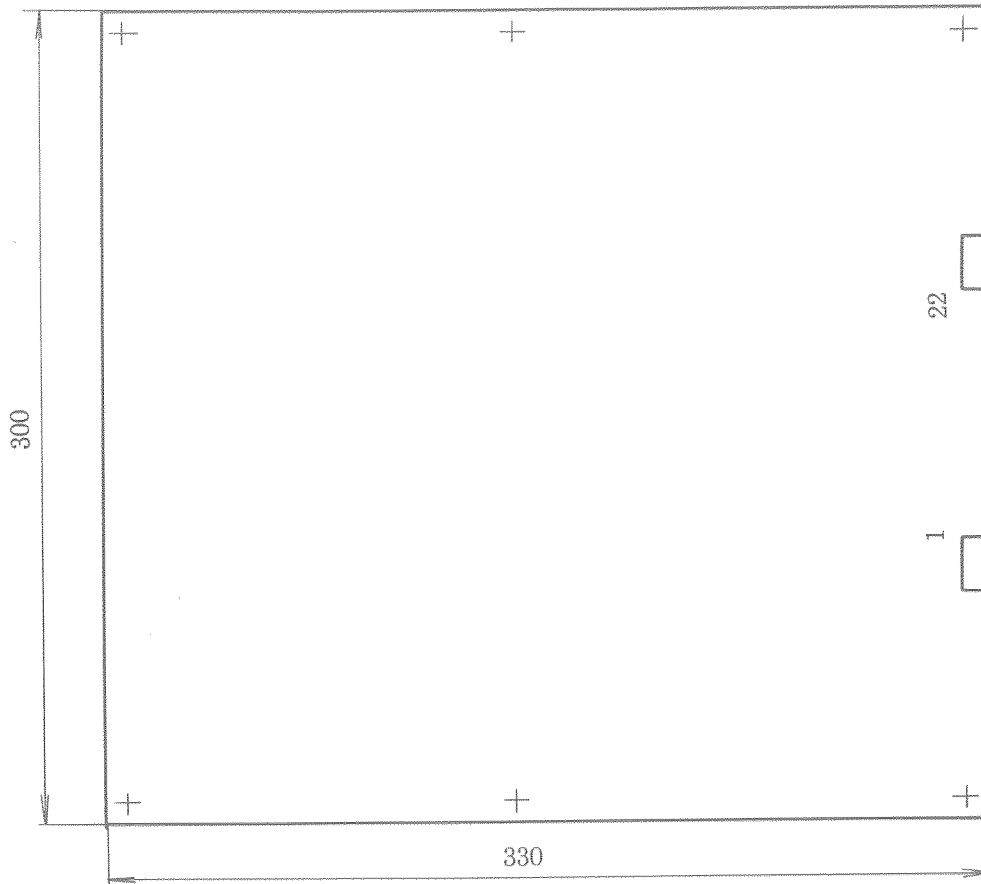
- The symbol "© SEGA 1983" means that the copyright of the machine is owned by SEGA and was issued in 1983.

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- Note :
1. Details contained herein may be changed without notice, to effect improvements.
 2. Supplies of spare parts will be maintained at SEGA Enterprises Ltd., for a period of five (5) years after the date of manufacture of the game concerned.
 3. To enable us to serve our customers more efficiently, we must ask that small orders for spare parts be combined. Minimum orders must be \$50.00 per order.

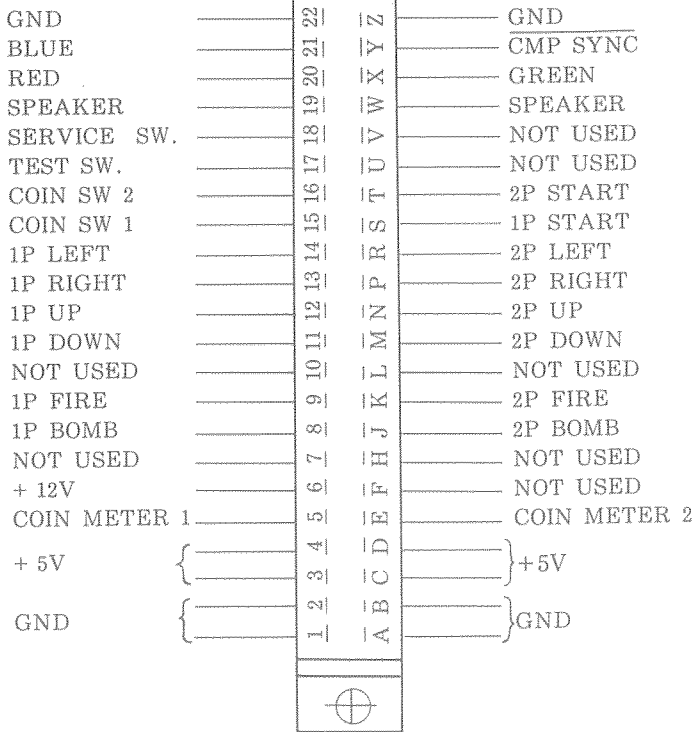
1. I/O INSTRUCTION STAR JACKER (834-5191)



44PIN P=3.96 mm

COMPONENT SIDE

SOLDER SIDE



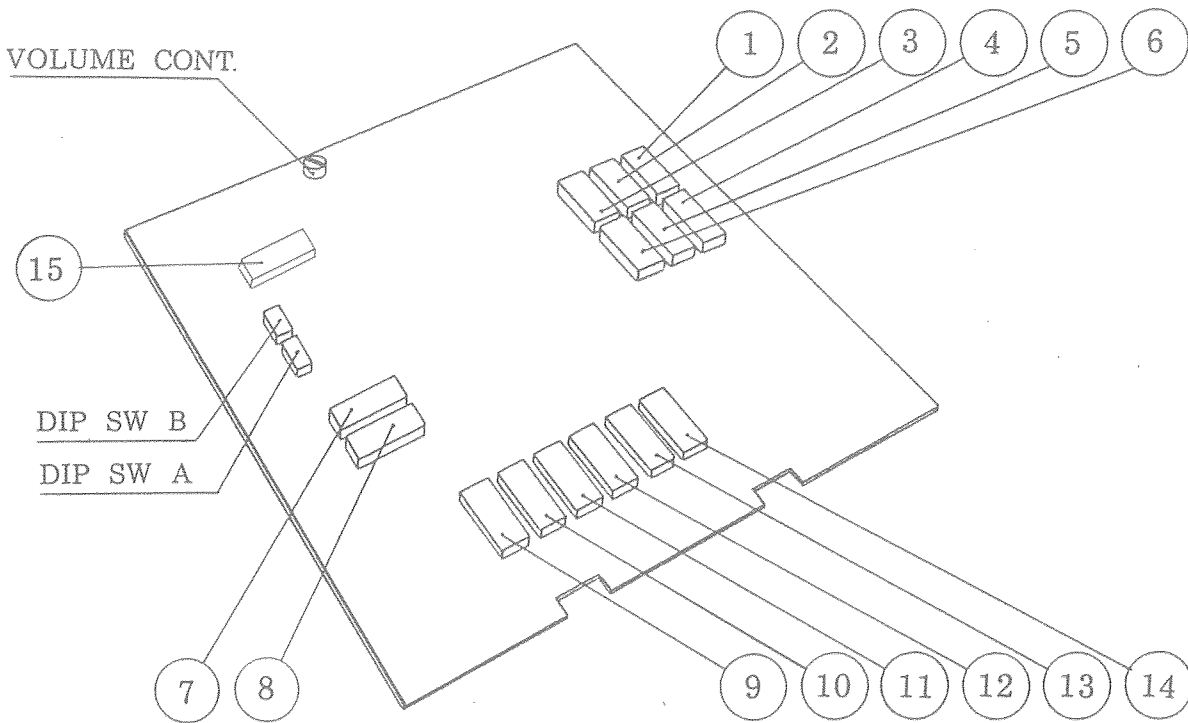
VOLTAGE	CURRENT
DC5V	4.1A
DC12V	0.25A

2. DIP SWITCH SETTING

COIN/CREDIT OPTION SWITCH		DIP SW #A							
OPTION		1	2	3	4	5	6	7	8
1 COIN	1 CREDIT	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
1 COIN	2 CREDITS	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
1 COIN	3 CREDITS	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
1 COIN	4 CREDITS	ON	ON	OFF	OFF	ON	ON	OFF	OFF
1 COIN	5 CREDITS	OFF	OFF	ON	OFF	OFF	OFF	ON	OFF
1 COIN	6 CREDITS	ON	OFF	ON	OFF	ON	OFF	ON	OFF
2 COINS	1 CREDIT	OFF	ON	ON	OFF	OFF	ON	ON	OFF
3 COINS	1 CREDIT	ON	ON	ON	OFF	ON	ON	ON	OFF
4 COINS	1 CREDIT	OFF	OFF	OFF	ON	OFF	OFF	OFF	ON
2 COINS	3 CREDITS	ON	OFF	OFF	ON	ON	OFF	OFF	ON
2 COINS	1 CREDIT								
4 COINS	2 CREDITS	OFF	ON	OFF	ON	OFF	ON	OFF	ON
5 COINS	3 CREDITS								
6 COINS	4 CREDITS								
2 COINS	1 CREDIT	ON	ON	OFF	ON	ON	ON	OFF	ON
4 COINS	3 CREDITS								
1 COIN	1 CREDIT								
2 COINS	2 CREDITS	OFF	OFF	ON	ON	OFF	OFF	ON	ON
3 COINS	3 CREDITS								
4 COINS	4 CREDITS								
5 COINS	6 CREDITS								
1 COIN	1 CREDIT								
2 COINS	2 CREDITS	ON	OFF	ON	ON	ON	OFF	ON	ON
3 COINS	3 CREDITS								
4 COINS	5 CREDITS								
1 COIN	1 CREDIT	OFF	ON	ON	ON	OFF	ON	ON	ON
2 COINS	3 CREDITS								
1 COIN	2 CREDITS								
2 COINS	4 CREDITS	ON	ON	ON	ON	ON	ON	ON	ON
3 COINS	6 CREDITS								
4 COINS	8 CREDITS								
5 COINS	11 CREDITS								
					COIN SW#1		COIN SW#2		

OPTION SWITCH SETTING		DIP SW #B							
OPTION		1	2	3	4	5	6	7	8
TABLE TYPE		OFF							
UPRIGHT TYPE		ON							
3 SHIPS			OFF	OFF					
4 SHIPS			ON	OFF					
5 SHIPS			OFF	ON					
FREE SHIP			ON	ON					
EXTRA SHIP	20000 40000 60000 -----POINTS				OFF	OFF	OFF		
	30000 60000 90000 -----POINTS				OFF	ON	OFF		
	40000 80000 120000 -----POINTS				OFF	OFF	ON		
	50000 100000 150000 -----POINTS				OFF	ON	ON		
	20000 50000 80000 -----POINTS				ON	OFF	OFF		
	30000 70000 110000 -----POINTS				ON	ON	OFF		
	40000 90000 140000 -----POINTS				ON	OFF	ON		
	50000 110000 170000 -----POINTS				ON	ON	ON		
EASY								OFF	OFF
MEDIUM								ON	OFF
HARD								OFF	ON
HARDEST								ON	ON

3. EPROM / PROM LOCATION (STAR JACKER)



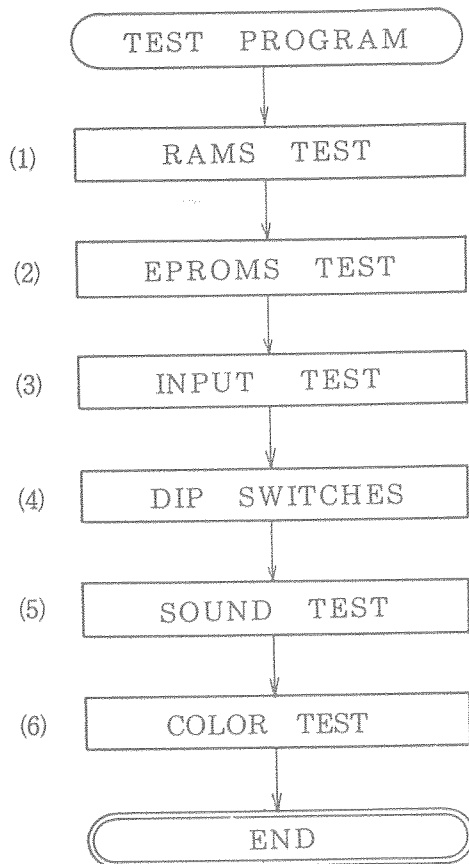
IC LOCATION	ASSY IC BOARD STAR JACKER		
			834-5191
1 #65	FIX		316-5330
2 #64	FIX		316-5328
3 #63	FIX		316-5326
4 #82	FIX		316-5331
5 #81	FIX		316-5329
6 #80	FIX		316-5327
7 #86	OBJECT		316-5318
8 #93	OBJECT		316-5319
9 #129	PROGRAM		316-5320
10 #130	PROGRAM		316-5321
11 #131	PROGRAM		316-5322
12 #132	PROGRAM		316-5323
13 #133	PROGRAM		316-5324
14 #134	PROGRAM		316-5325
15 #3	SOUND		316-5332

4. SELF-TEST

1. Overall Function

The main functions of the self-test are to check the correct operation of the game board, isolation of errors and monitor adjustment. The self-test is automatically started when you press the TEST switch.

1. Test Programs



After checking that each test item is OK by the screen display or sound, press the TEST SW to advance to the next test item.

2. Description of Each Test

(1) RAMS TEST

RAMS TEST		
IC	78	GOOD
IC	87	GOOD
IC	101	GOOD
IC	102	GOOD
IC	135	GOOD
IC	136	GOOD
IC	151	GOOD

Indication of "GOOD" following the IC NO. means the IC is all right.

Push TEST SW to go into following test item.

(2) EPROMS TEST

```

EPROMS TEST

IC 129 GOOD
IC 130 GOOD
IC 131 GOOD
IC 132 GOOD
IC 133 GOOD
IC 134 GOOD
    
```

Indication of "GOOD" following the IC NO. means the IC is all right.

Push TEST SW to go into following test item.

(3) INPUT TEST

```

INPUT TEST
COIN SW 1 ON
COIN SW 2 OFF
SERVICE SW OFF
1P START OFF
2P START OFF
1P UP OFF
1P DOWN OFF
1P RIGHT OFF
1P LEFT OFF
1P FIRE OFF
1P BOMB OFF
1P UP OFF
2P DOWN OFF
2P RIGHT OFF
2P LEFT OFF
2P FIRE OFF
2P BOMB OFF
    
```

Operate control lever and switches as indicated on the screen.

When "ON" is indicated at the right side of a certain tested item the item is OK.

Push TEST SW to go into following test item.

(4) DIP SWITCHES

```

DIP SWITCHES
  1  2  3  4  5  6  7  8
DIP SW A OFF OFF OFF OFF OFF OFF OFF OFF
DIP SW B OFF OFF ON  OFF OFF OFF OFF OFF

TYPE      TABLE
COIN SW #1 1 COIN 1 CREDIT
COIN SW #2 1 COIN 1 CREDIT
SHIPS      5
EXTRA      20000 POINTS
DIFFICULTY EASY
    
```

Operate dip switches.

If the indication of "ON" or "OFF" alternates at this time the switch is working OK.

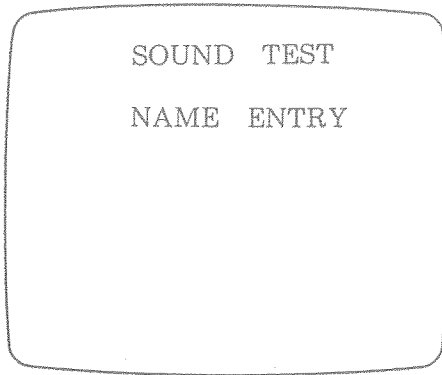
On-off states of Dip switch A

State of COIN switch

Game difficulty rate.

Push TEST SW to go into following test item.

(5) SOUND TEST

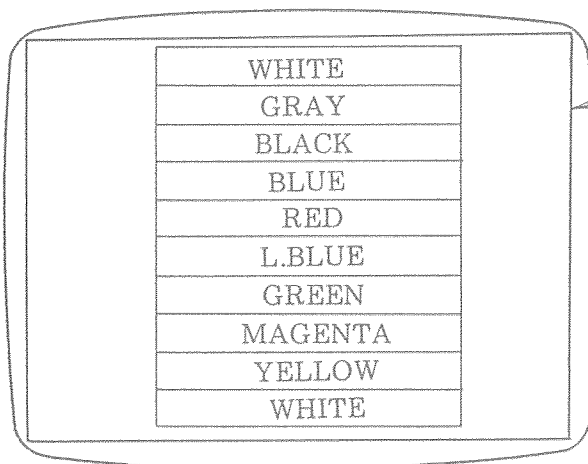


This is to test all sound effects.
As 1P START button is pushed repeatedly, each sound is produced by speakers and the names of each are indicated individually.

SOUND	
(1) NAME ENTRY	(8) BOMB
(2) SPACE BGM	(9) EXPLOSION 1
(3) SUPPLY SHIPS	(10) EXPLOSION 2
(4) COLONY BGM	(11) BONUS
(5) COLONY IN	(12) START
(6) COLONY OUT	(13) ROUND UP
(7) FIRE	(14) WARP

Push TEST SW to go into following test item.

(6) COLOR TEST



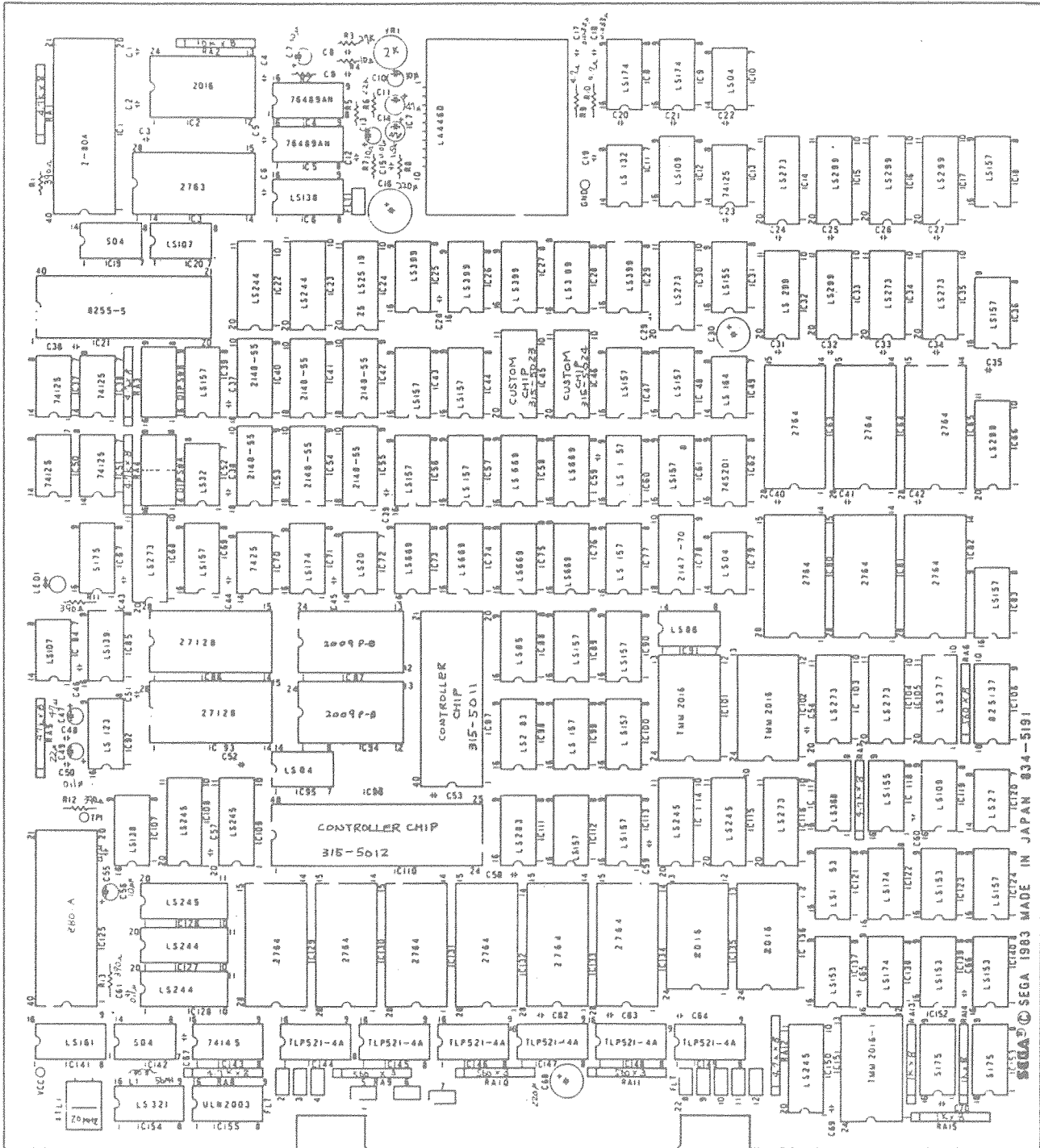
Adjust VR on TV-PCB so that the four sides of raster are placed in of the screen as shown.

The self test ends here. To return to the ADVERTISEMENT mode, press the TEST SW.

5. ASSY IC BOARD STAR JACKER (834-5191)

(D-1/3)

(PARTS LOCATION)

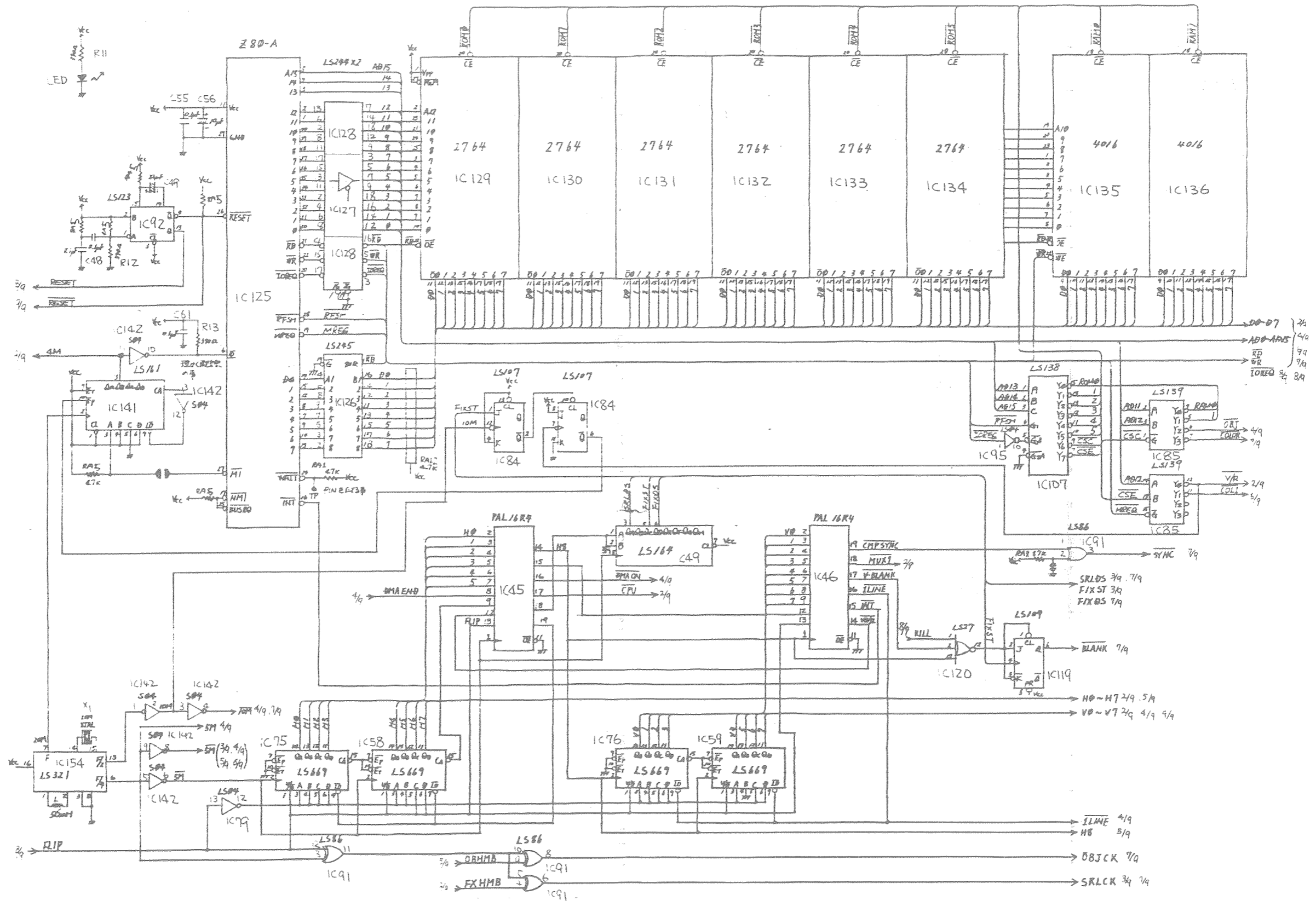


ASSY IC BOARD STAR JACKER (834-5191) (D-2/3)

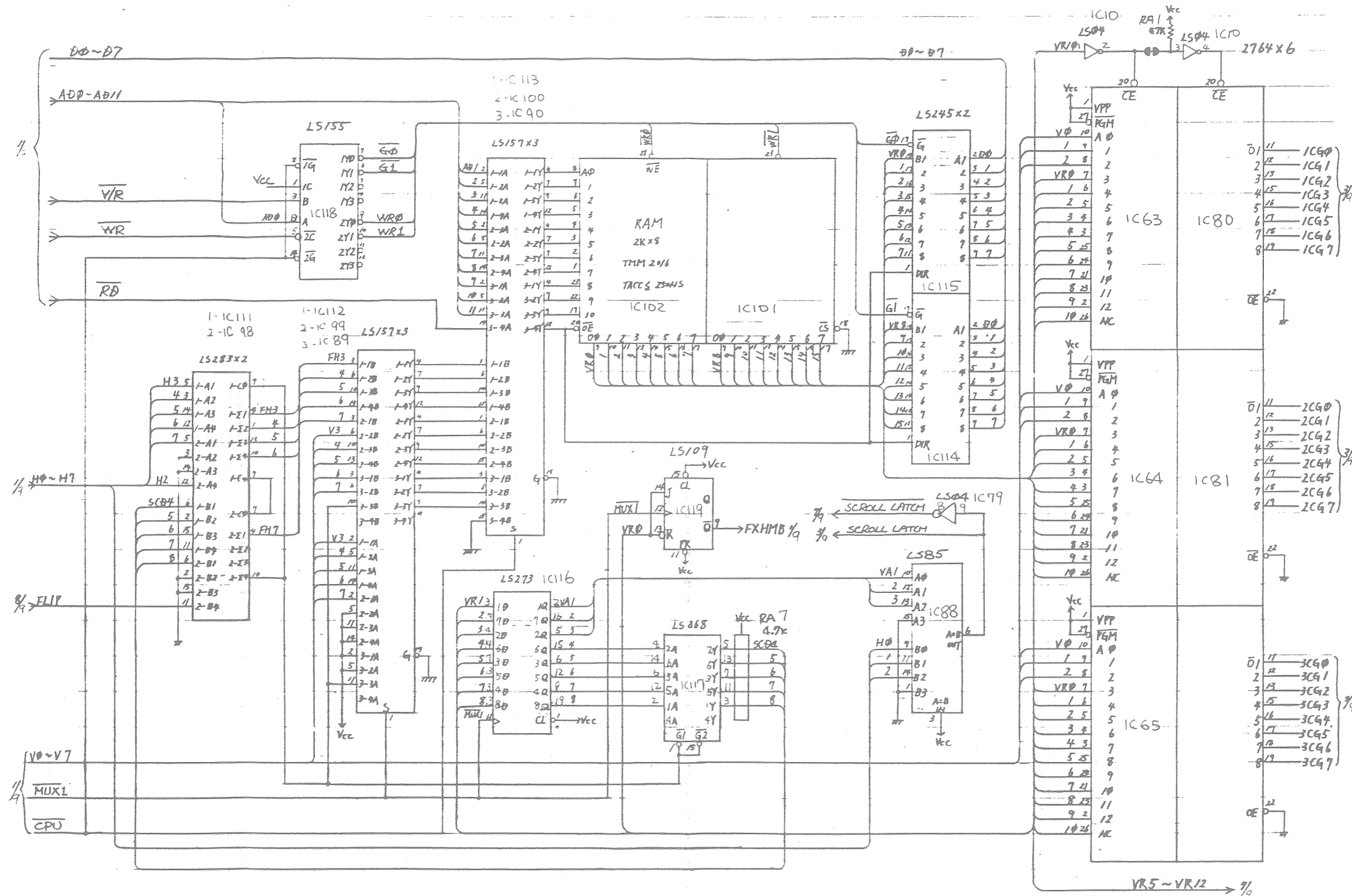
ITEM NO.	PART NO.	DESCRIPTION
	171-5034	PC BOARD
	530-5003	HEAT SINK 6.9°C/W
	421-5054-91	ORIGINAL BOARD SEAL
	315-0041	IC Z80A
	314-0056	IC 74LS132
	314-0019	IC 74LS04
	314-0046	IC 74S04
	314-0060	IC 74LS20
	314-0234	IC 7425
	314-0066	IC 74LS27
	314-0068	IC 74LS32
	314-0145	IC 74LS85
	314-0070	IC 74LS86
	314-0108	IC 74LS107
	314-0237	IC 74LS109
	314-0080	IC 74LS123
	314-0017	IC 74125
	314-0104	IC 74LS138
	314-0087	IC 74LS139
	314-0232	IC 74145
	314-0064	IC 74LS153
	314-0252	IC 74LS155
	314-0076	IC 74LS157
	314-0097	IC 74LS161
	314-0127	IC 74LS164
	314-0072	IC 74LS174
	314-0053	IC 74S175
	314-0216	IC 74S201
	314-0055	IC 74LS244
	314-0099	IC 74LS245
	314-0100	IC 74LS273
	314-0101	IC 74LS283
	314-0122	IC 74LS299
	314-0297	IC 74LS321
	314-0103	IC 74LS368
	314-0119	IC 74LS377
	314-0110	IC 74LS399
	314-0111	IC 74LS669
	313-0097	IC LA4460
	313-0086	IC TD62003P
	315-0152	IC 8255A-5
	315-0194	IC TMM2016
	315-0220	IC MB8128-10
	315-0222	IC TMM20098-1
	315-0126	IC MB8148-55
	314-0133	IC 2147/8147
	315-0205	IC 76489A
	315-0127	IC AM25LS2519
	315-5011	IC CONTROLLER CHIP
	315-5012	IC CONTROLLER CHIP
	315-5023	IC CUSTOM CHIP
	315-5024	IC CUSTOM CHIP
	316-5317	IC 82S129 PR-5317 IC106
	316-5318	IC 27128 EPR-5318 IC86
	316-5319	IC 27128 EPR-5319 IC93
	316-5320	IC 2764 EPR-5320 IC129
	316-5321	IC 2764 EPR-5321 IC130
	316-5322	IC 2764 EPR-5322 IC131
	316-5323	IC 2764 EPR-5323 IC132
	316-5324	IC 2764 EPR-5324 IC133
	316-5325	IC 2764 EPR-5325 IC134
	316-5326	IC 2764 EPR-5326 IC63
	316-5327	IC 2764 EPR-5327 IC80
	316-5328	IC 2764 EPR-5328 IC64

ASSY IC BOARD STAR JACKER (834-5191) (D-3/3)

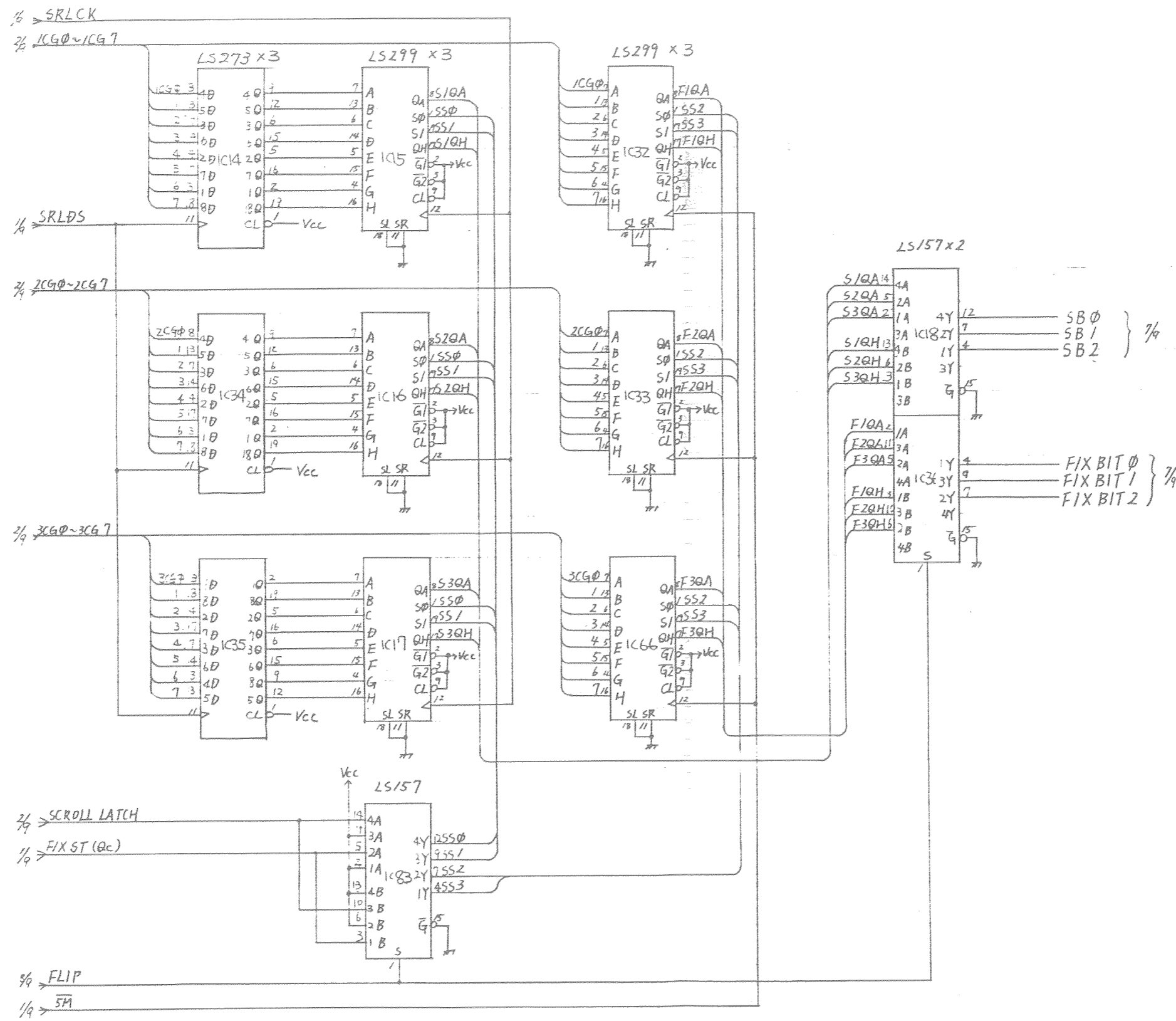
ITEM NO.	PART NO.	DESCRIPTION
	316-5329	IC 2764 EPR-5329 IC81
	316-5330	IC 2764 EPR-5330 IC65
	316-5331	IC 2764 EPR-5331 IC82
	316-5332	IC 2764 EPR-5332 IC3
	180-0040	PEAKING COIL 56MH
	601-0731	PHOTO COUPLER TLP 521-4
	230-0044	XTAL 20.000 MHZ
	390-0100	LED TIL220 RED
	510-0049	SWITCH 8 POS. DIP SPST
	211-0168	CONN PIN TEST PT
	601-5001	EMI FILTER
	601-5002	EMI FILTER
	601-0076	THERMAL JOINT COMPOUND 200g/TUBE
	220-0186	VOL CONT 2K OHM SM-FxD
	213-0004	SKT 16 PIN DUAL INLN
	213-0008	SKT 20 PIN DUAL INLN
	213-0012	SKT 28 PIN DUAL INLN
	213-0005	SKT 40 PIN DUAL INLN
	111-891	M SCREW PH PHILL ISO W/F & S WASHER M3x10
	111-950	M SCREW PH PHILL ISO W/S WASHER M3x10
	470-0100	RES 10 OHM 1/4W 5%
	470-0391	RES 390 OHM 1/4W 5%
	470-0152	RES 1.5K OHM 1/4W 5%
	470-0223	RES 22K OHM 1/4W 5%
	470-0273	RES 27K OHM 1/4W 5%
	472-04R7	RES 4.7 OHM 1W
	477-0008	RES PACK 8x560 OHM 1/8W W/COMMON
	477-0039	RES PACK 8x1K OHM 1/8W W/COMMON
	477-0005	RES PACK 8x4.7K OHM 1/8W W/COMMON
	477-0037	RES PACK 8x10K OHM 1/8W W/COMMON
	477-0024	RES PACK 8x47K OHM 1/8W W/COMMON
	150-0126	CAP E 220MF 10V U-TYP C30.68
	150-0023	CAP E 10MF 16V U-TYP C10
	150-0065	CAP E 47MF 16V U-TYP C11 14
	150-0159	CAP E 220MF 16V U-TYP C16
	151-0042	CAP CER 470PF 50V C19
	151-0041	CAP CER 0.1MF 25V C38. 52. 53. 70 C4. 5. 28. 31. 33. 37
	152-0033	CAP FILM 0.01MF 50V C15
	152-0035	CAP FILM 0.033MF 50V C17. 18
	152-0031	CAP FILM 0.1MF 50V C8. 12
	153-0066	CAP TANT 10MF 16V C7. 13. 56
	153-0026	CAP TANT 22MF 16V C49
	153-0049	CAP TANT 47MF 16V C47



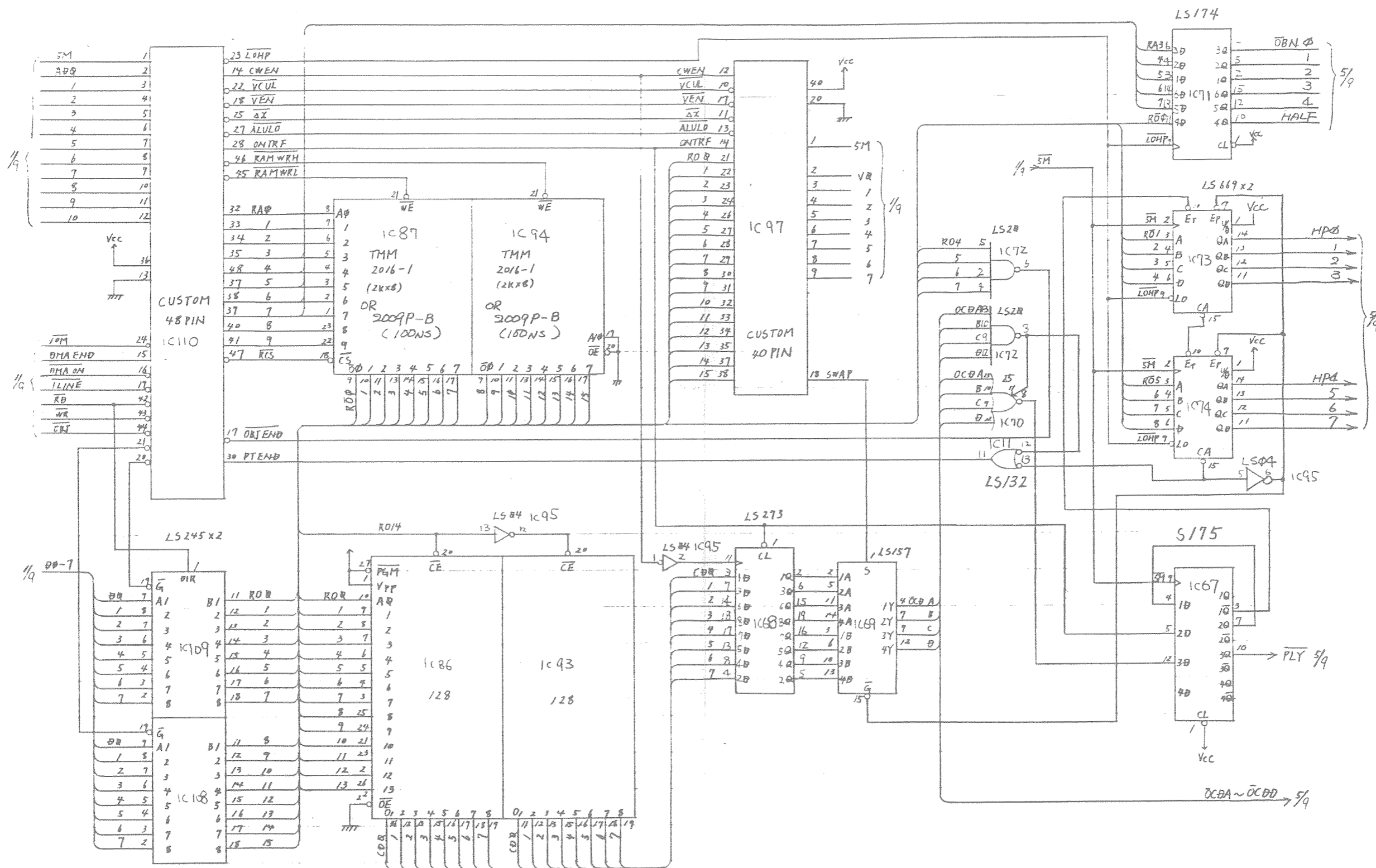
LOGIC DIAGRAM STAR JACKER
 (834-5191) (D-1/9)



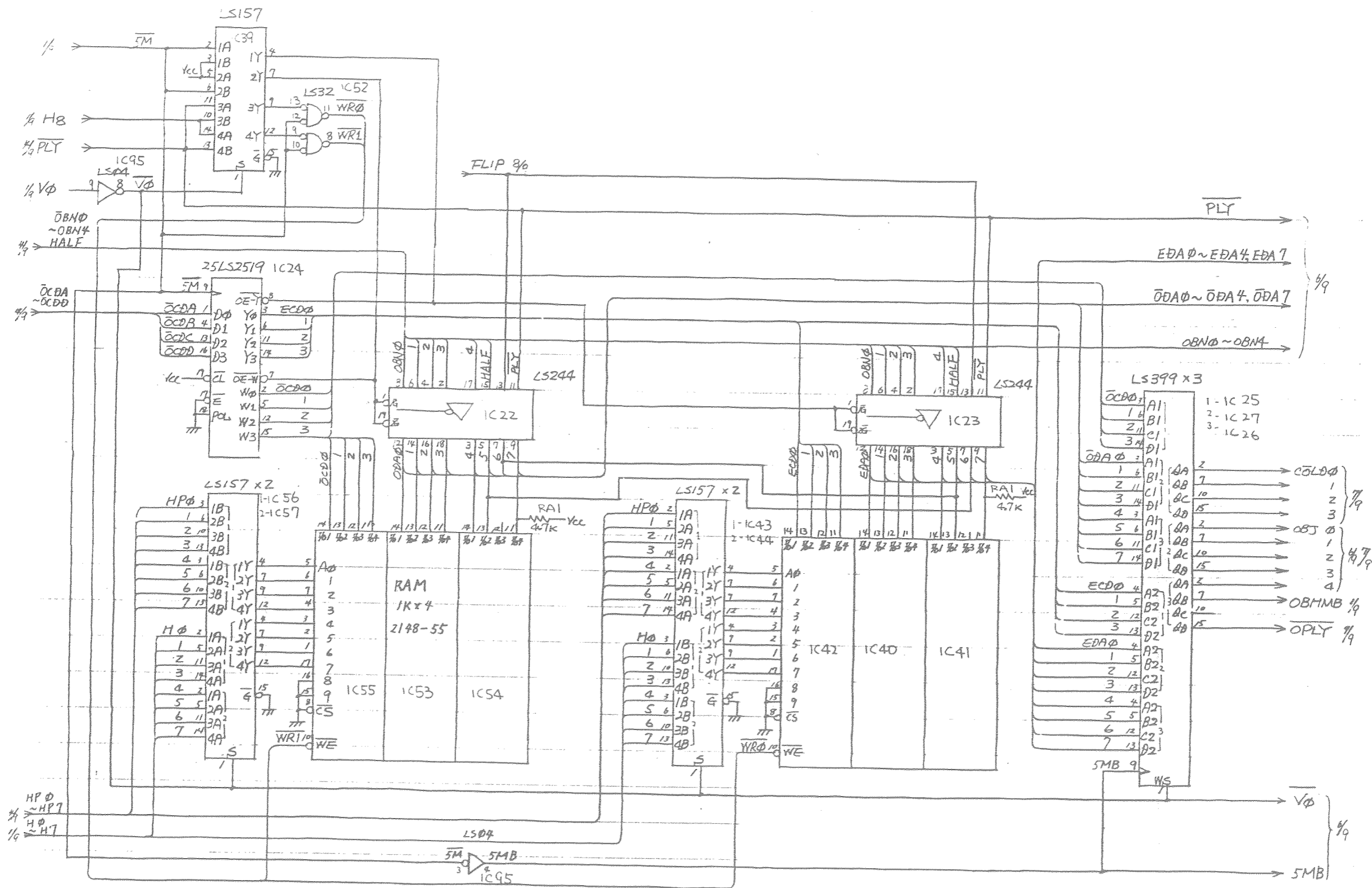
LOGIC DIAGRAM STAR JACKER
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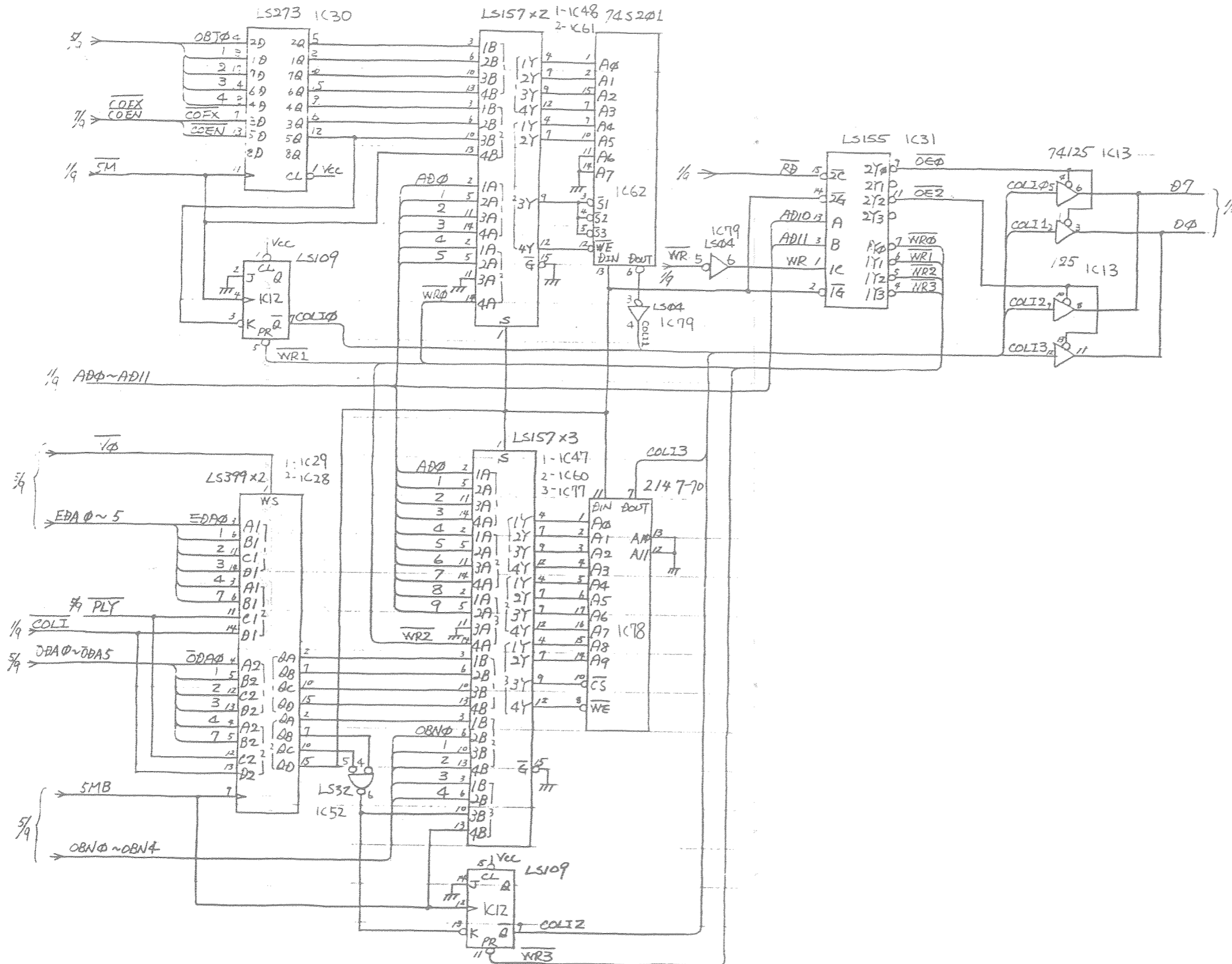
LOGIC DIAGRAM STAR JACKER
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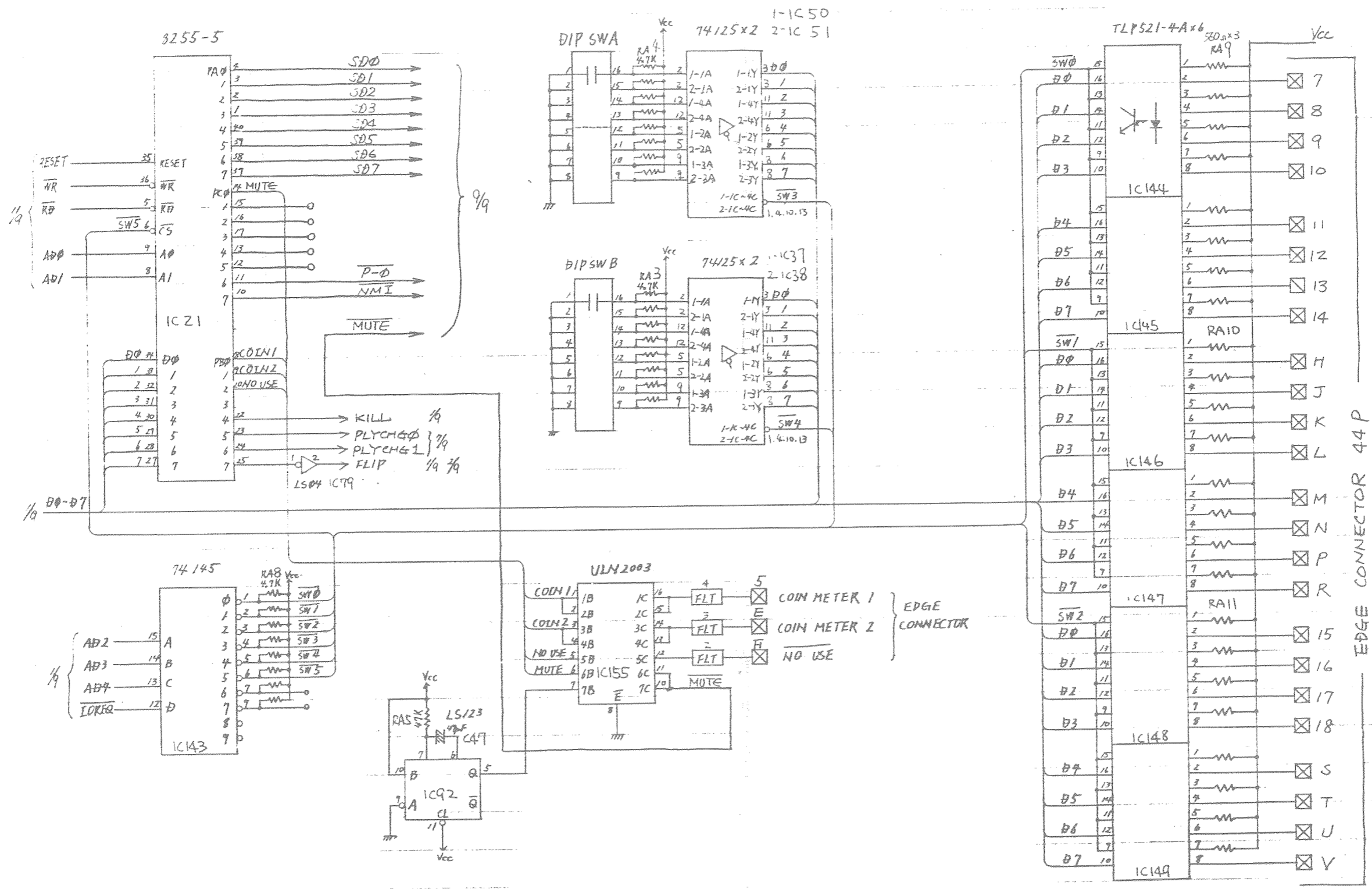
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(834-5191) (D-4/9)



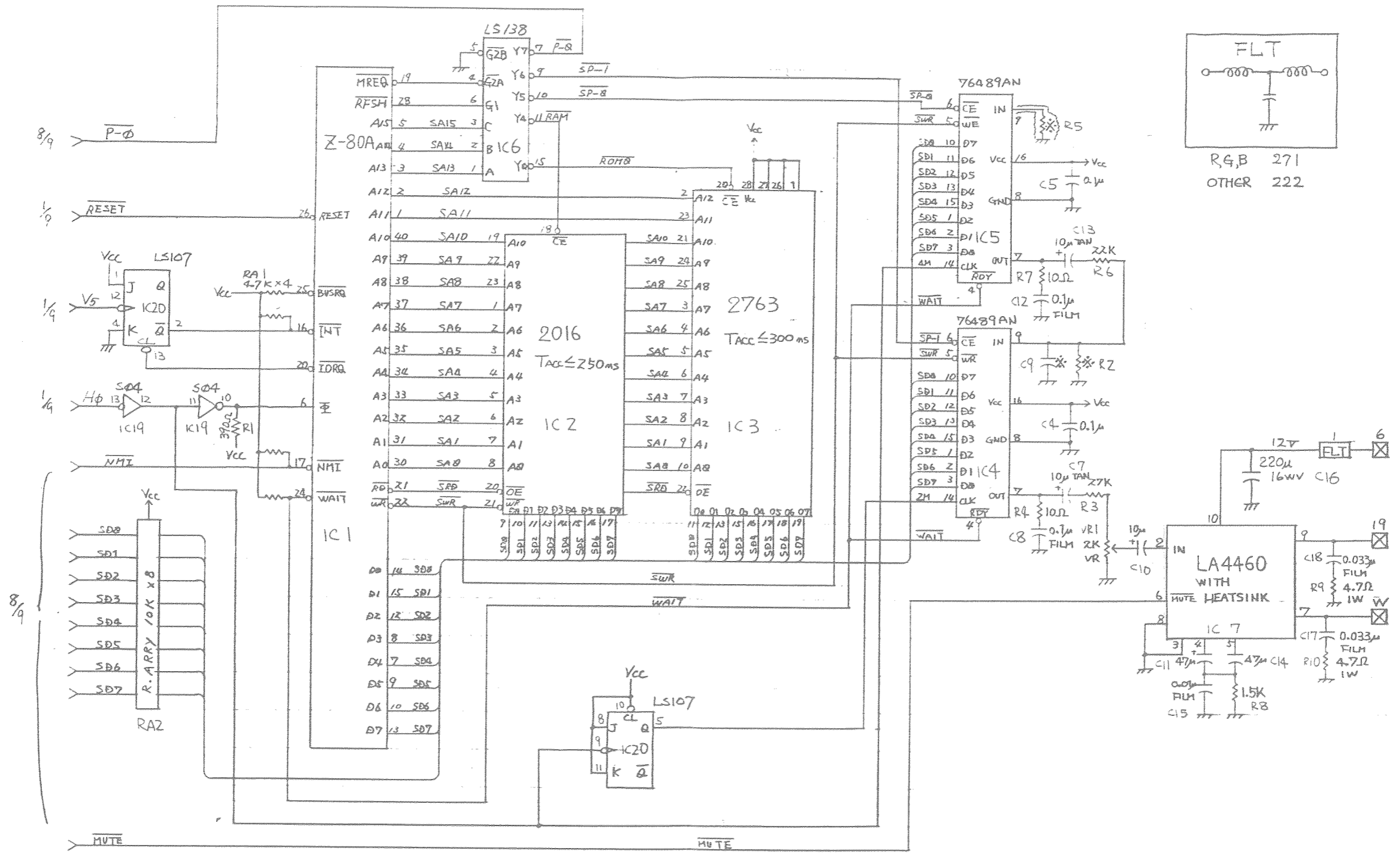
LOGIC DIAGRAM STAR JACKER
(834-5191) (D-5/9)



LOGIC DIAGRAM STAR JACKER
(834-5191) (D-6/9)



LOGIC DIAGRAM STAR JACKER
(834-5191) (D-8/9)



LOGIC DIAGRAM STAR JACKER
(834-5191) (D-9/9)

MEMO

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