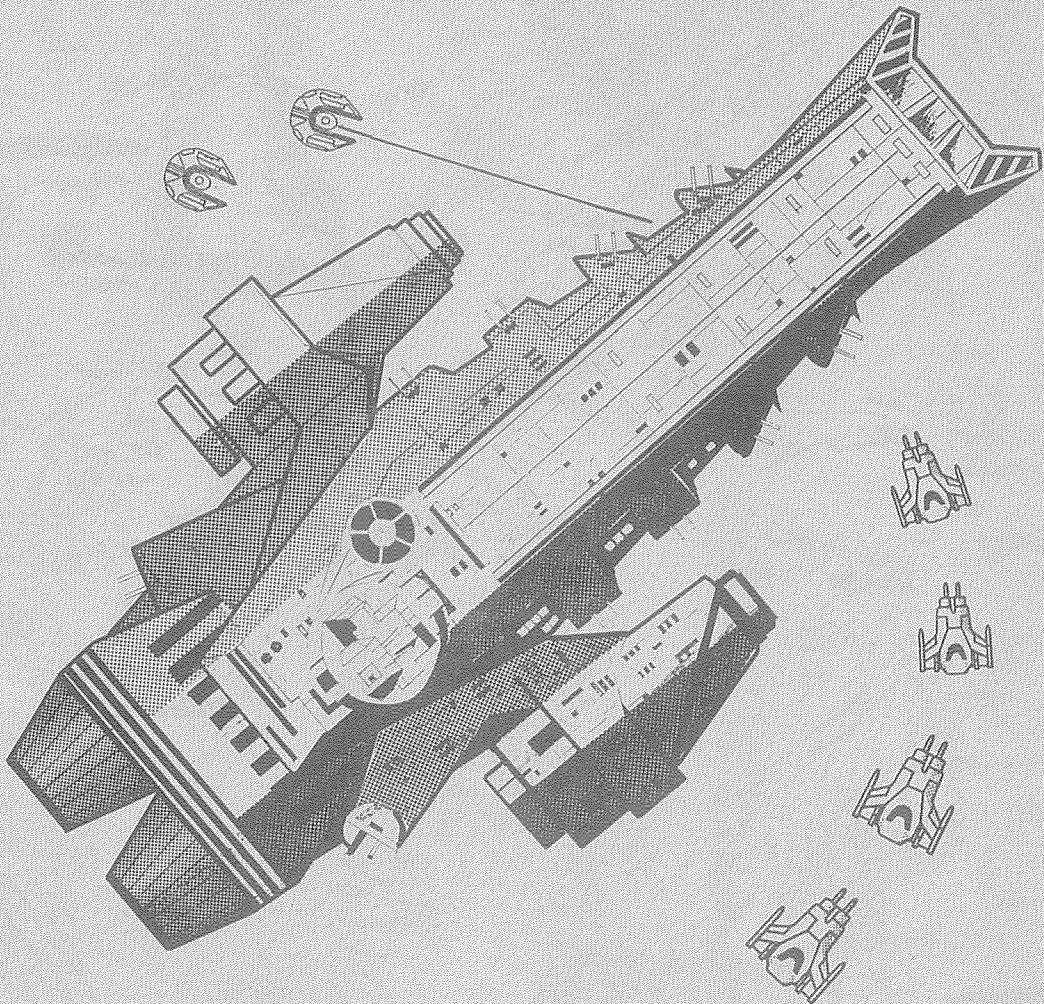


1ST PRINTING—MY

**SEGA®**

# **STAR JACKER**

**SERVICE MANUAL**



**SEGA ENTERPRISES, LTD.**

**MANUAL NO. 420-5110**

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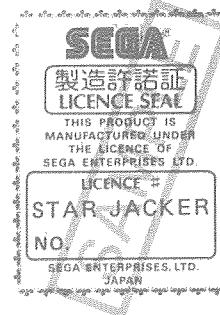
## On Prevention of Illegal Production・Conversion of Games

- 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.
- This is to prevent illegal acts to produce copies of machines and IC Boards without our consent or to produce, convert, or sell machines or IC Boards, and to operate such copies or similar machines or IC Boards.
- You are advised to confirm that SEGA products you operate have the "ORIGINAL SEAL" or "LICENCE SEAL" pasted on or attached to them.

ORIGINAL SEAL  
(SAMPLE)



LICENCE SEAL  
(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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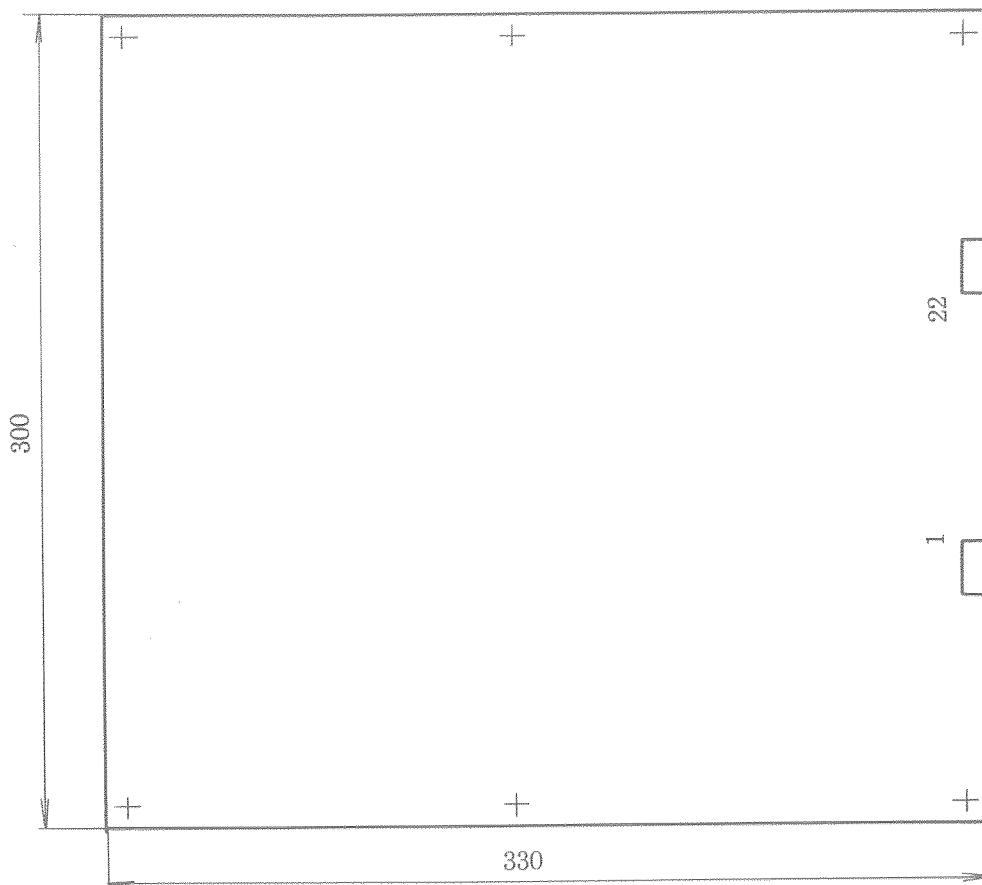
CONTENTS

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1.	I / O INSTRUCTION STAR JACKER	1
2.	DIP SWITCH SETTING	2
3.	EPROM / PROM LOCATION	3
4.	SELF - TEST	4~6
5.	ASSY IC BOARD STAR JACKER	7~9
6.	LOGIC DIAGRAM STAR JACKER	10~18

- 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

GND			GND	
BLUE			CMP SYNC	
RED			GREEN	
SPEAKER			SPEAKER	
SERVICE SW.			NOT USED	
TEST SW.			NOT USED	
COIN SW 2			2P START	
COIN SW 1			1P START	
1P LEFT			2P LEFT	
1P RIGHT			2P RIGHT	
1P UP			2P UP	
1P DOWN			2P DOWN	
NOT USED			NOT USED	
1P FIRE			2P FIRE	
1P BOMB			2P BOMB	
NOT USED			NOT USED	
+ 12V			NOT USED	
COIN METER 1			COIN METER 2	
+ 5V	{	{	+ 5V	}
GND	{	{	GND	}

SOLDER SIDE

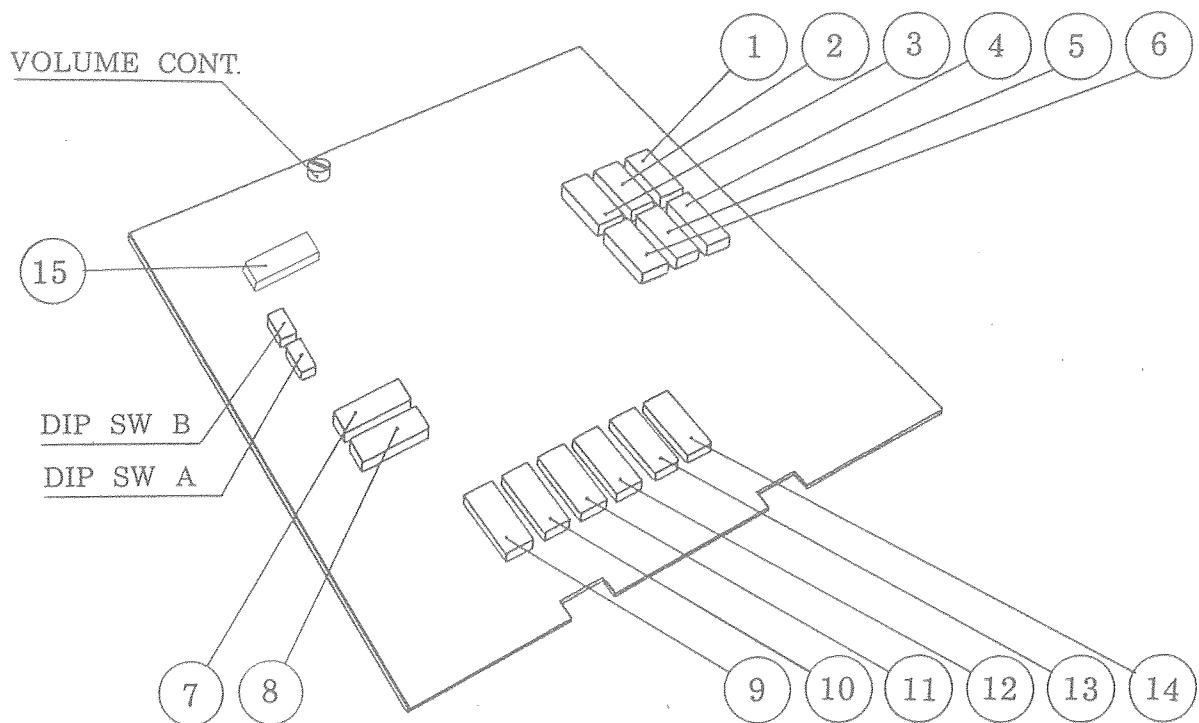
SUPPLY VOLTAGES & CURRENT	
VOLTAGE	CURRENT
DC5V	4.1A
DC12V	0.25A

## 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	OFF
1 COIN	2 CREDITS	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
1 COIN	3 CREDITS	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
1 COIN	4 CREDITS	ON	ON	OFF	OFF	ON	ON	OFF	OFF	OFF
1 COIN	5 CREDITS	OFF	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
1 COIN	6 CREDITS	ON	OFF	ON	OFF	ON	OFF	ON	OFF	OFF
2 COINS	1 CREDIT	OFF	ON	ON	OFF	OFF	ON	ON	ON	OFF
3 COINS	1 CREDIT	ON	ON	ON	OFF	ON	ON	ON	ON	OFF
4 COINS	1 CREDIT	OFF	OFF	OFF	ON	OFF	OFF	OFF	ON	ON
2 COINS	3 CREDITS	ON	OFF	OFF	ON	ON	OFF	OFF	OFF	ON
2 COINS	1 CREDIT									
4 COINS	3 CREDITS	ON	ON	OFF	ON	ON	ON	OFF	ON	ON
1 COIN	1 CREDIT									
2 COINS	2 CREDITS	OFF	OFF	ON	ON	OFF	OFF	ON	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	ON
3 COINS	3 CREDITS									
4 COINS	5 CREDITS									
1 COIN	1 CREDIT									
2 COINS	3 CREDITS	OFF	ON	ON	ON	OFF	ON	ON	ON	ON
1 COIN	2 CREDITS									
2 COINS	4 CREDITS	ON	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								
PLAYER SHIP		3 SHIPS	OFF	OFF						
		4 SHIPS	ON	OFF						
		5 SHIPS	OFF	ON						
FREE SHIP		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		
DIFFICULTY			EASY						OFF	OFF
			MEDIUM						ON	OFF
			HARD						OFF	ON
			HARDEST						ON	ON

### 3. EPROM / PROM LOCATION ( STAR JACKER )



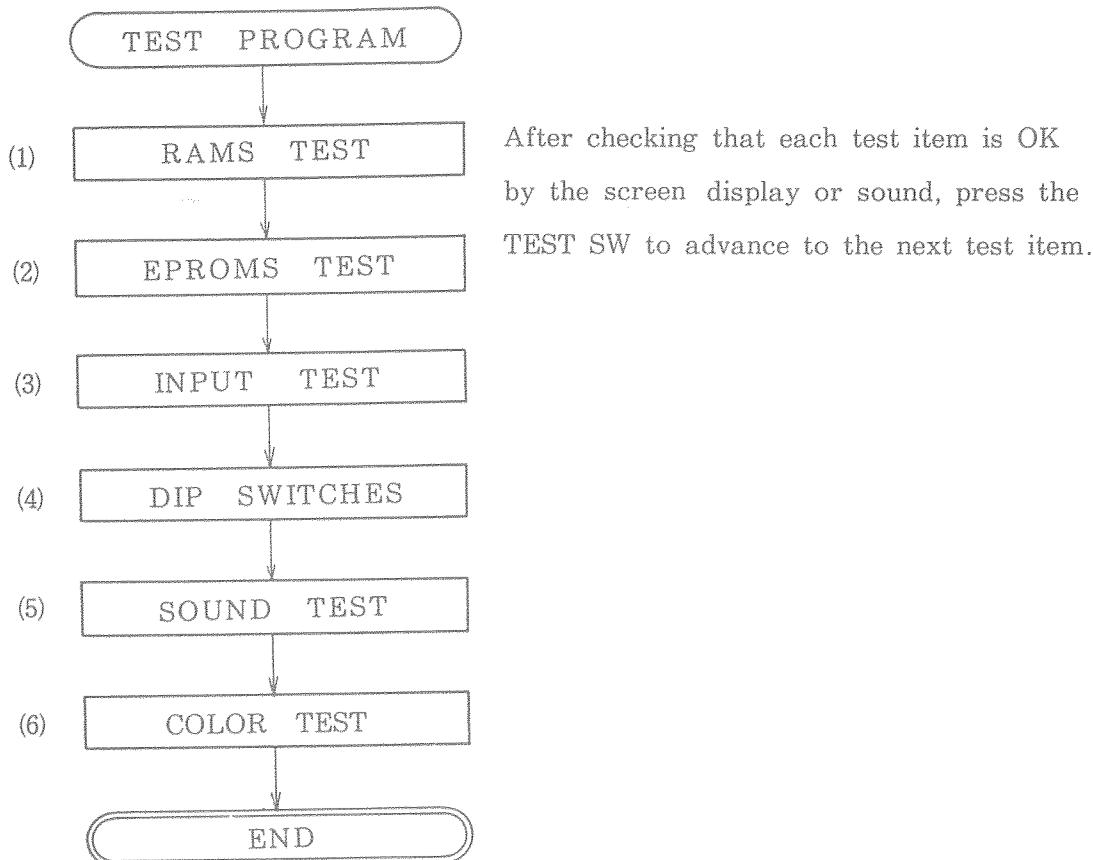
IC LOCATION	ASSY IC BOARD STAR JACKER		
	834-5191		
1 #65 FIX	316-5330		
2 #64 FIX	316-5328		
3 #63 FIX	316-5326		
4 #82 FIX	316-5331		
5 #81 FIX	316-5329		
6 #80 FIX	316-5327		
7 #86 OBJECT	316-5318		
8 #93 OBJECT	316-5319		
9 #129 PROGRAM	316-5320		
10 #130 PROGRAM	316-5321		
11 #131 PROGRAM	316-5322		
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

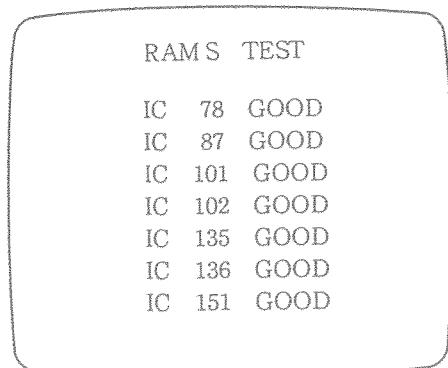
The main functions of the self-test are to check the correct operation of the game board, isolation of errors and monitor adjustment. The self-test is automatically started when you press the TEST switch.

#### 1. Test Programs



#### 2. Description of Each Test

##### (1) RAMS TEST



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						
DIP SW B	OFF	OFF	ON	OFF	OFF	OFF	OFF

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

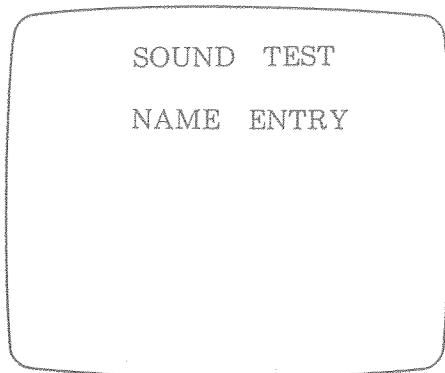
State of COIN switch

Game difficulty rate.

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

Push TEST SW to go into following test item.

## (5) SOUND TEST

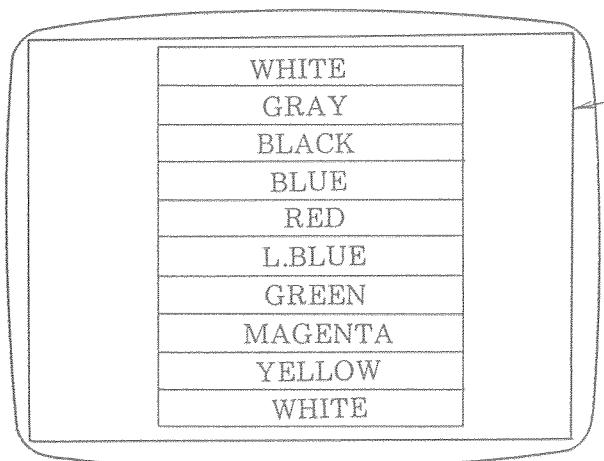


This is to test all sound effects. As 1P START button is pushed repeatedly, each sound is produced by speakers and the names of each are indicated individually.

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.

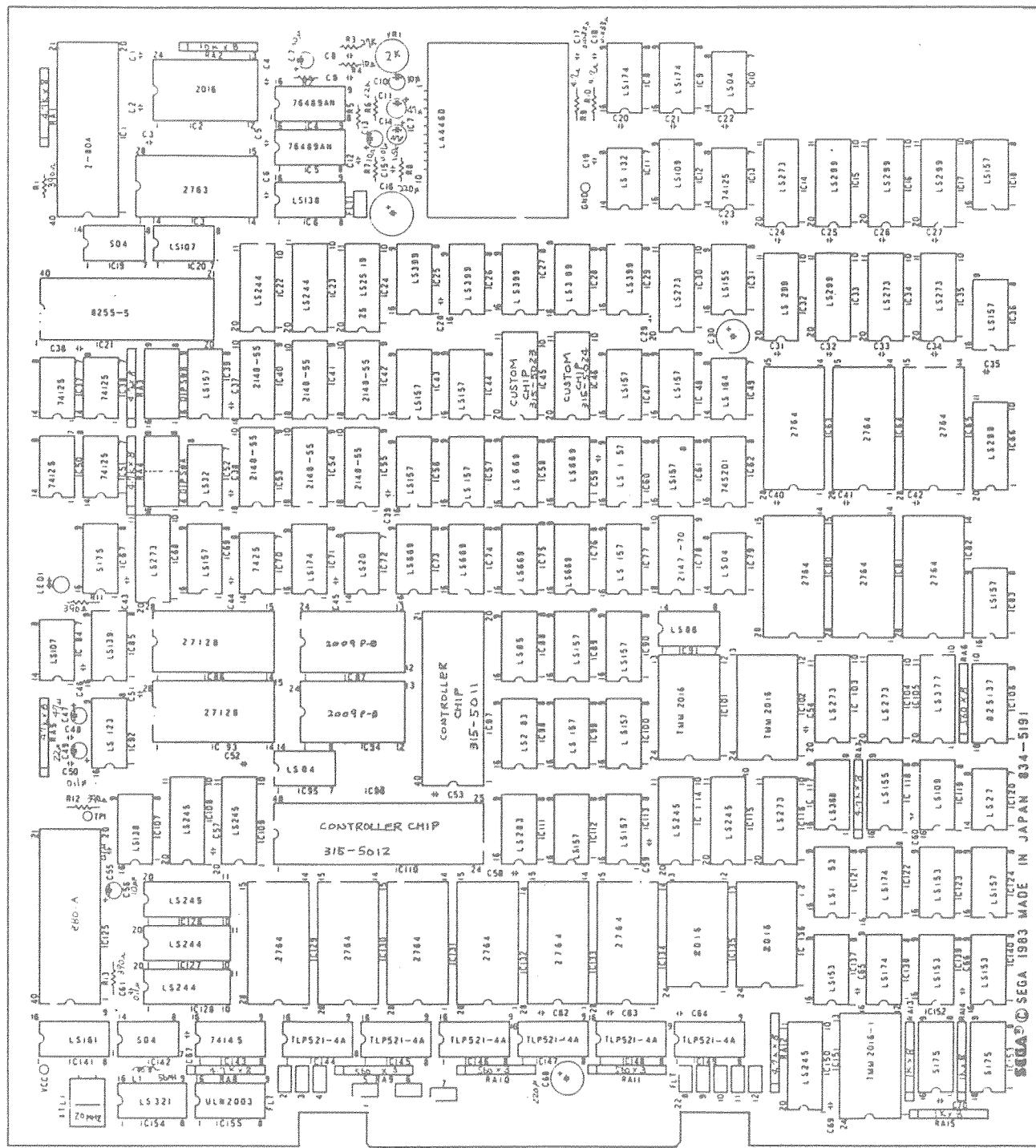
## (6) COLOR TEST



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 )

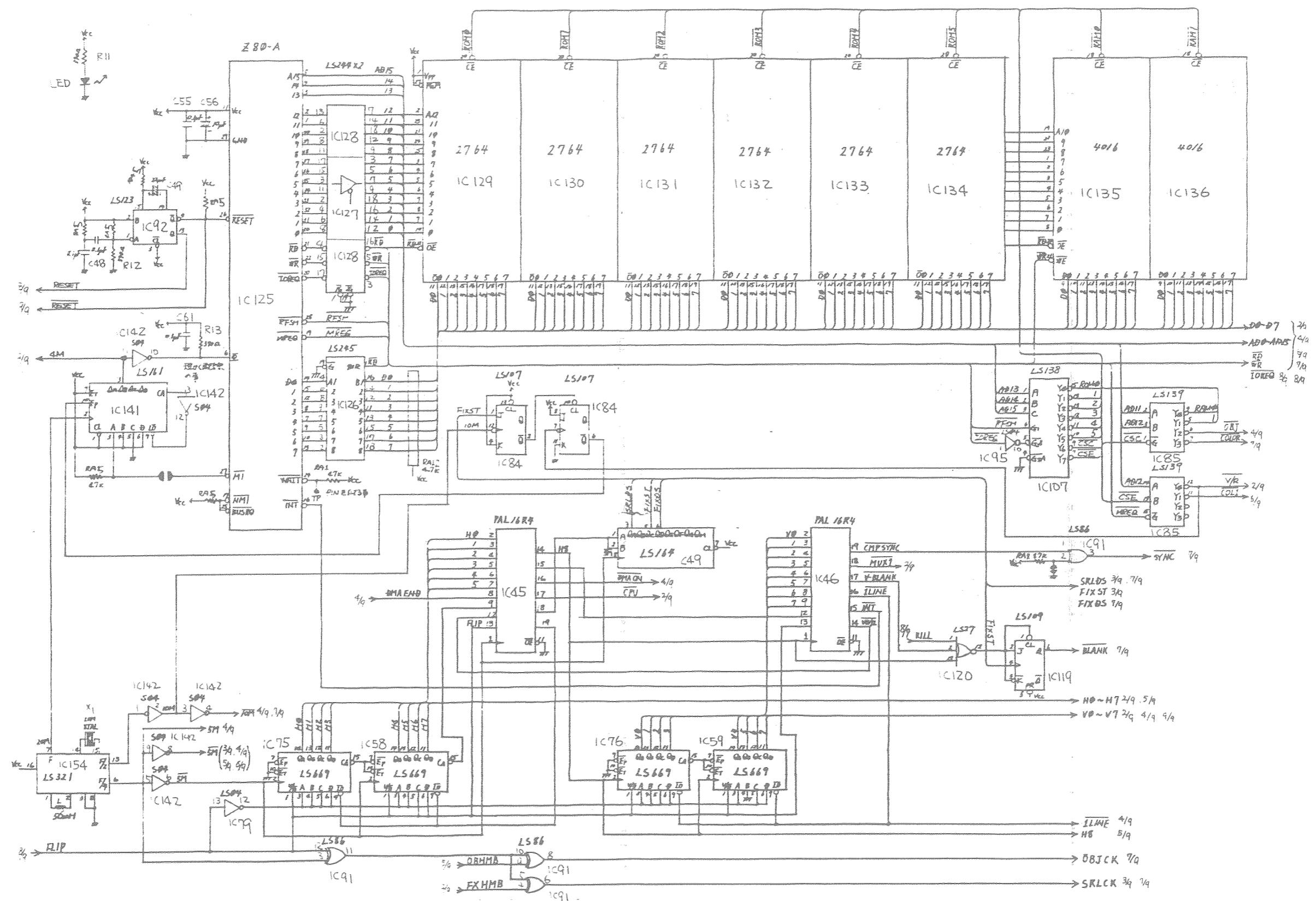


ASSY IC BOARD STAR JACKER (834-5191) (D-2/3)

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)

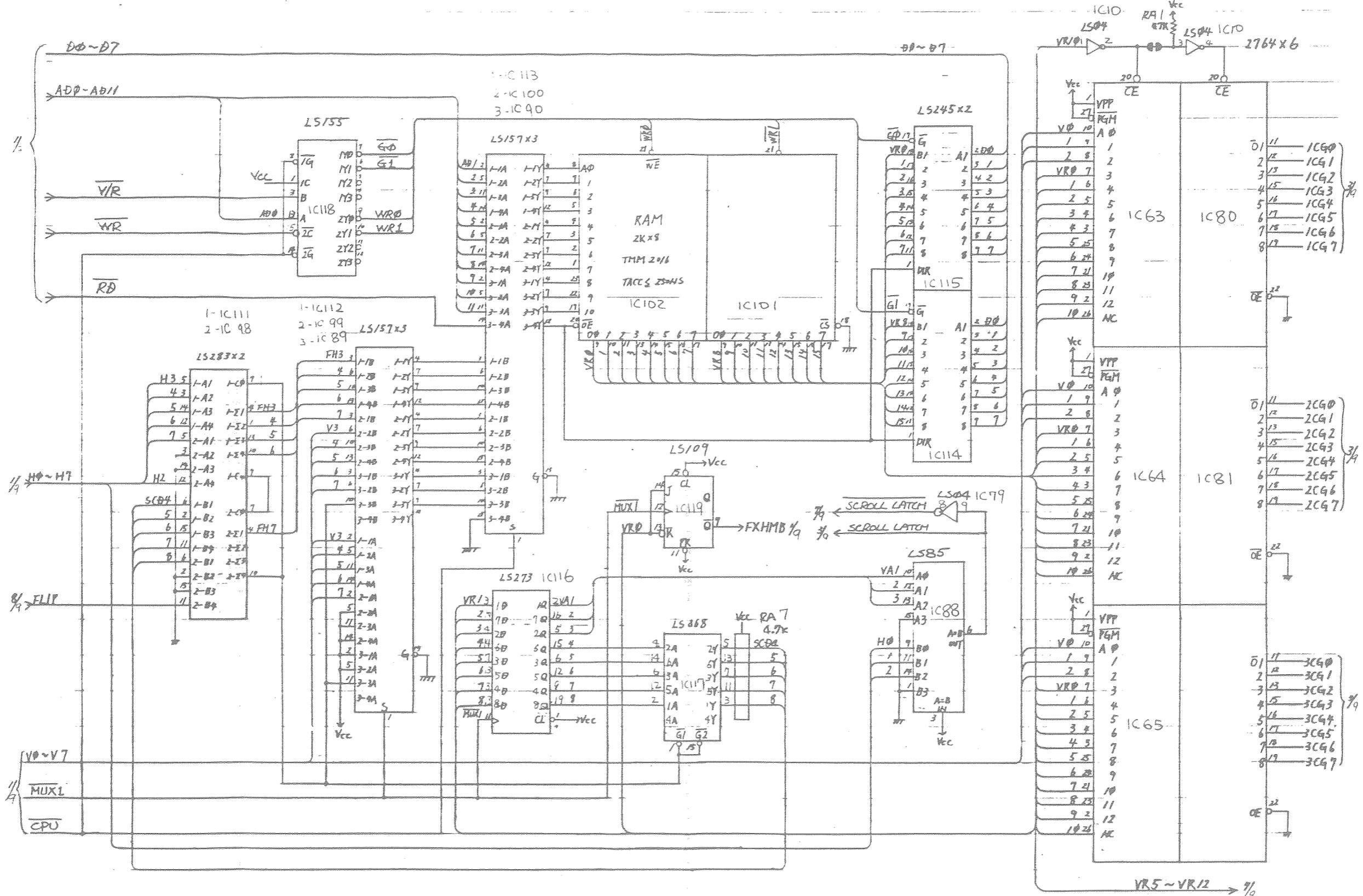
ITEM NO.	PART NO.	DESCRIPTION
316-5329	IC 2764 EPR-5329	IC81
316-5330	IC 2764 EPR-5330	IC65
316-5331	IC 2764 EPR-5331	IC82
316-5332	IC 2764 EPR-5332	IC3
180-0040	PEAKING COIL 56MH	
601-0731	PHOTO COUPLER TLP 521-4	
230-0044	XTAL 20.000 MHZ	
390-0100	LED TIL220 RED	
510-0049	SWITCH 8 POS. DIP SPST	
211-0168	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	

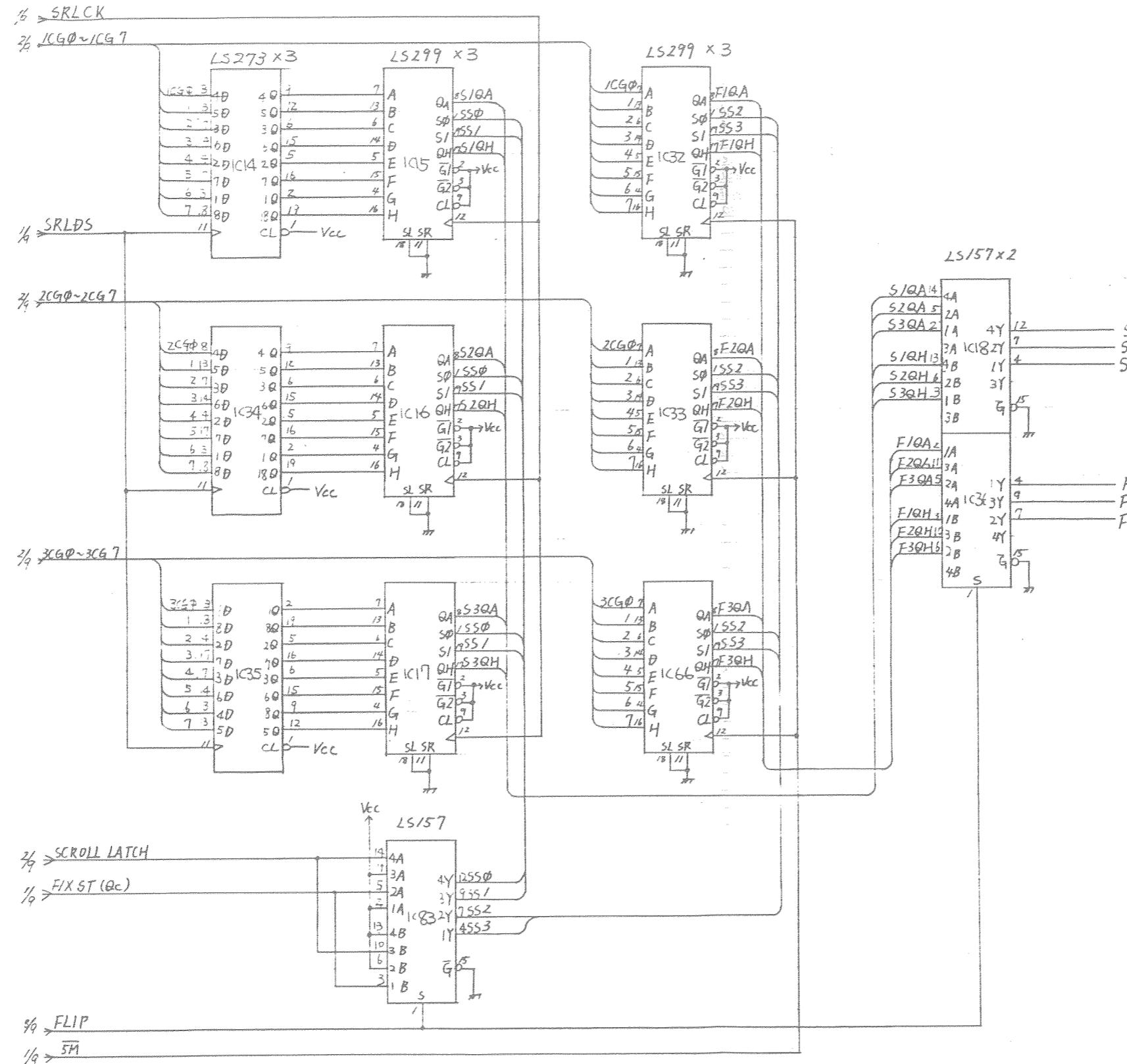


## LOGIC DIAGRAM STAR JACKER

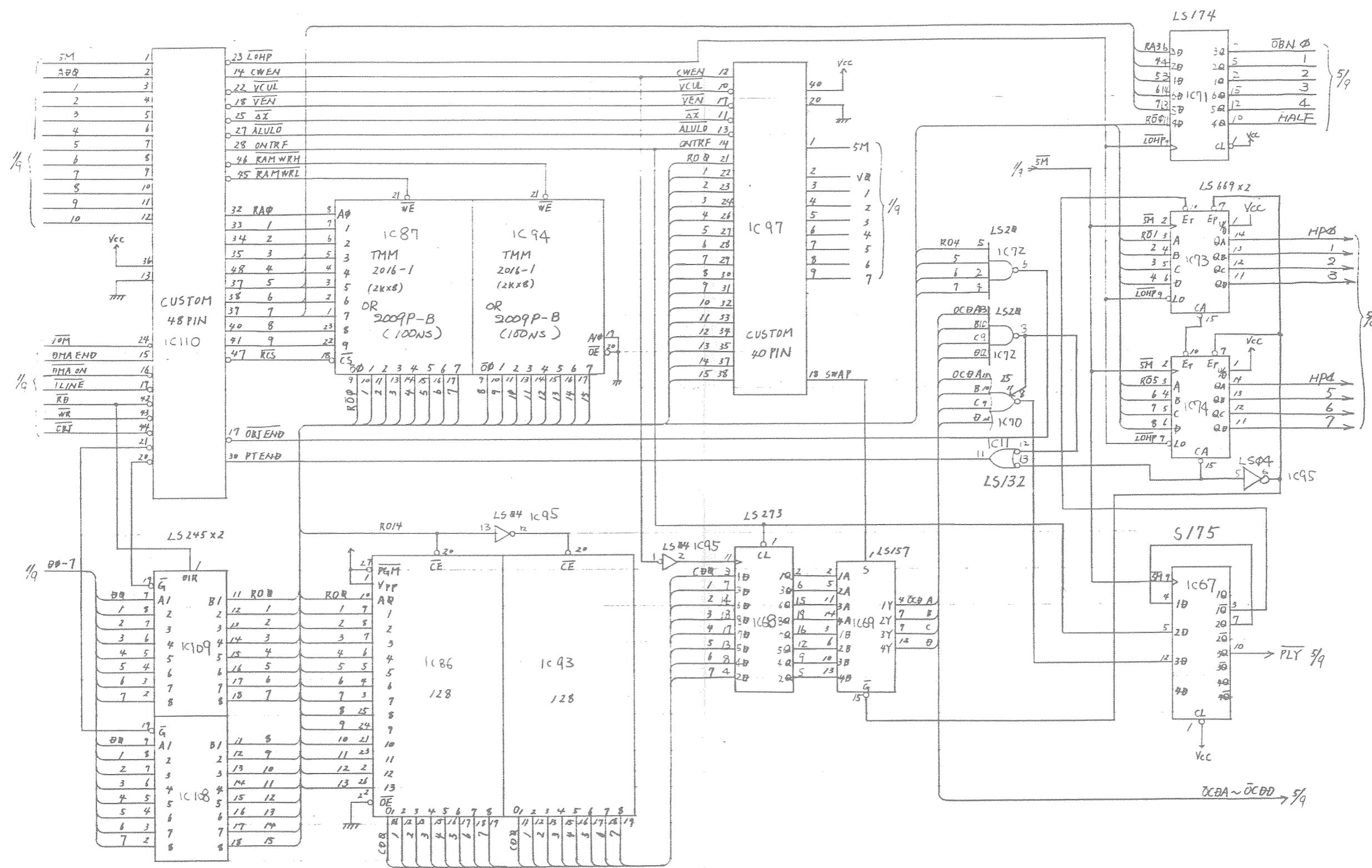
( 834-5191 )

( D-1/9 )



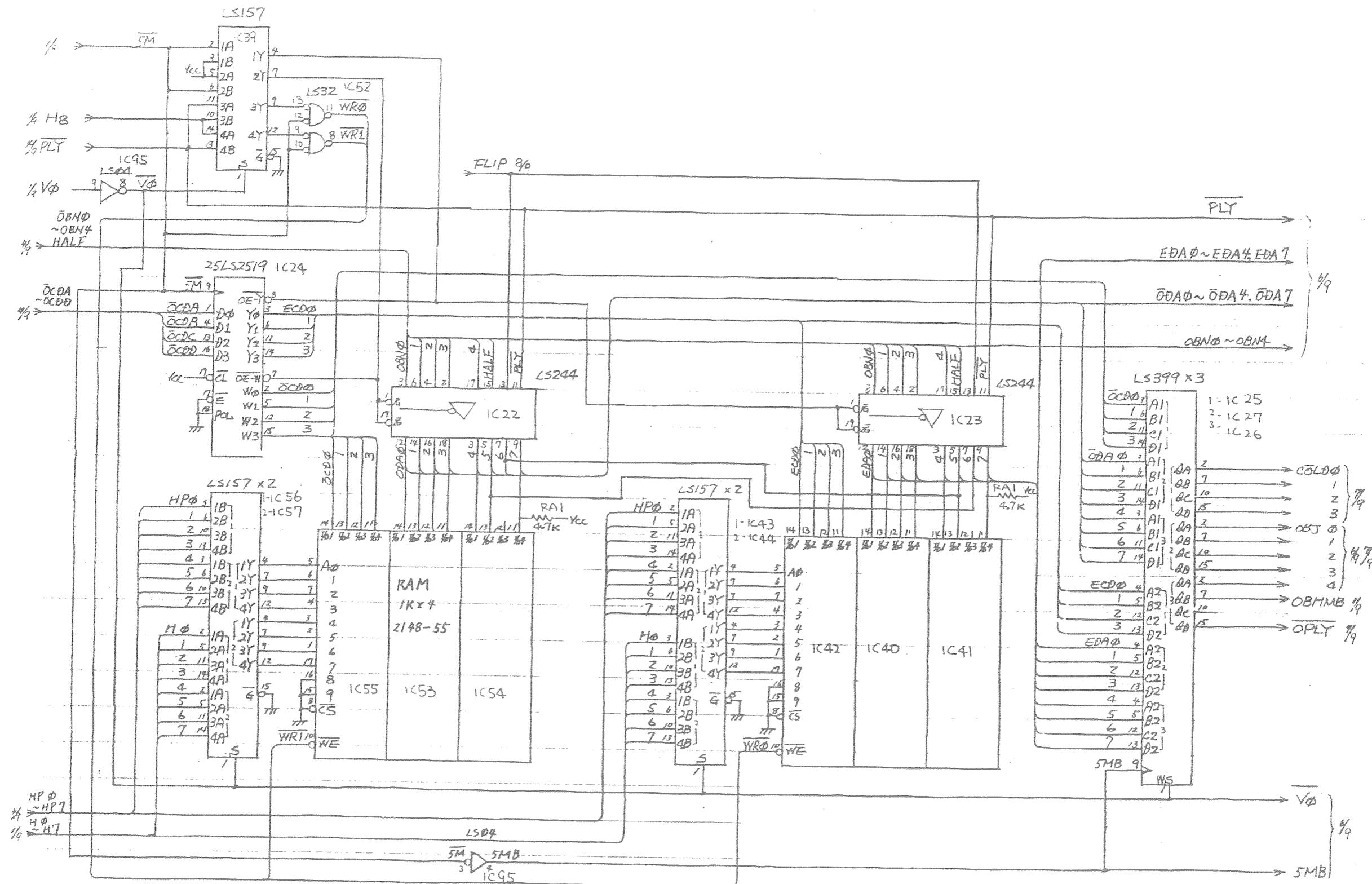


LOGIC DIAGRAM STAR JACKER  
 ( 834-5191 ) ( D-3/9 )

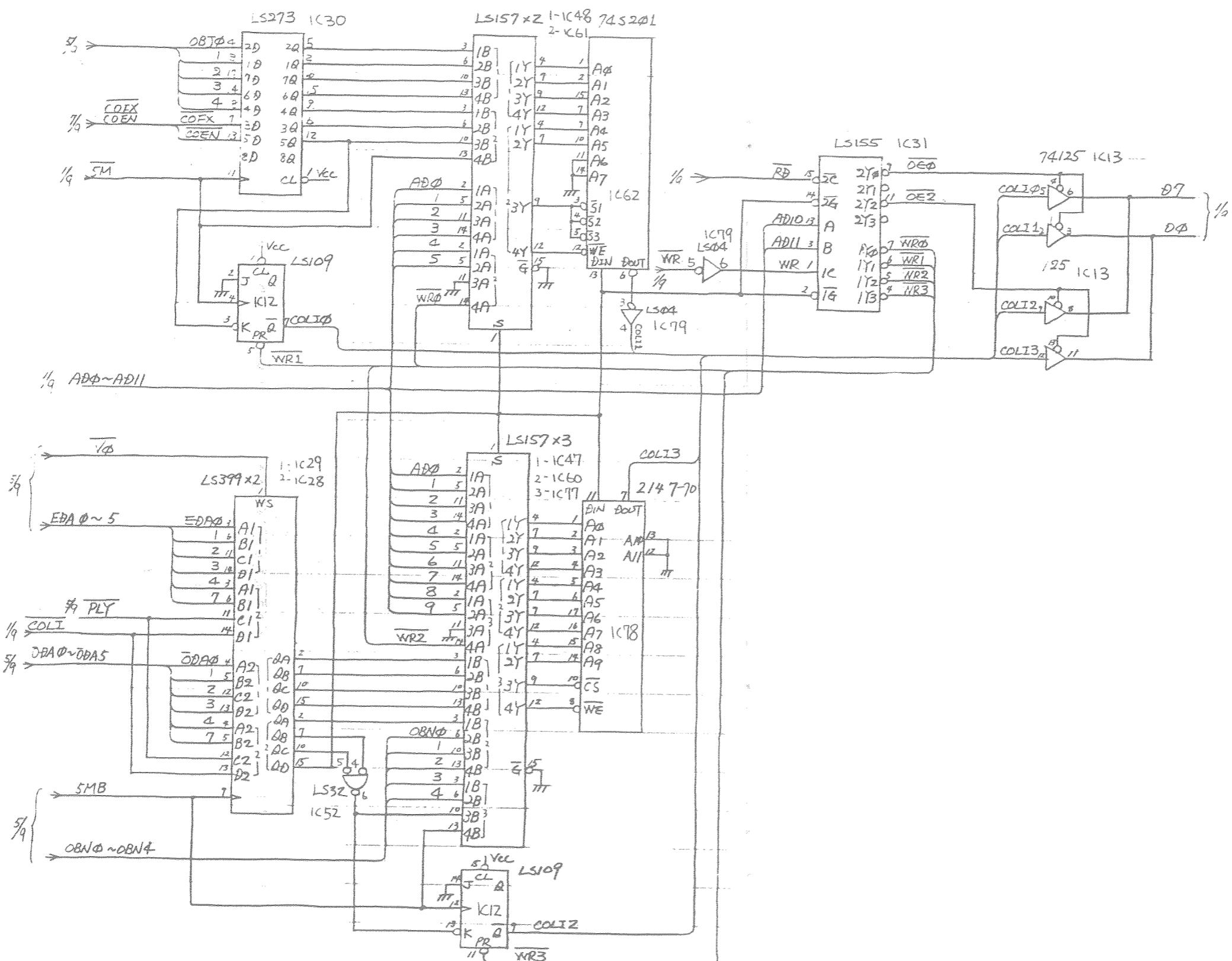


## LOGIC DIAGRAM STAR JACKER

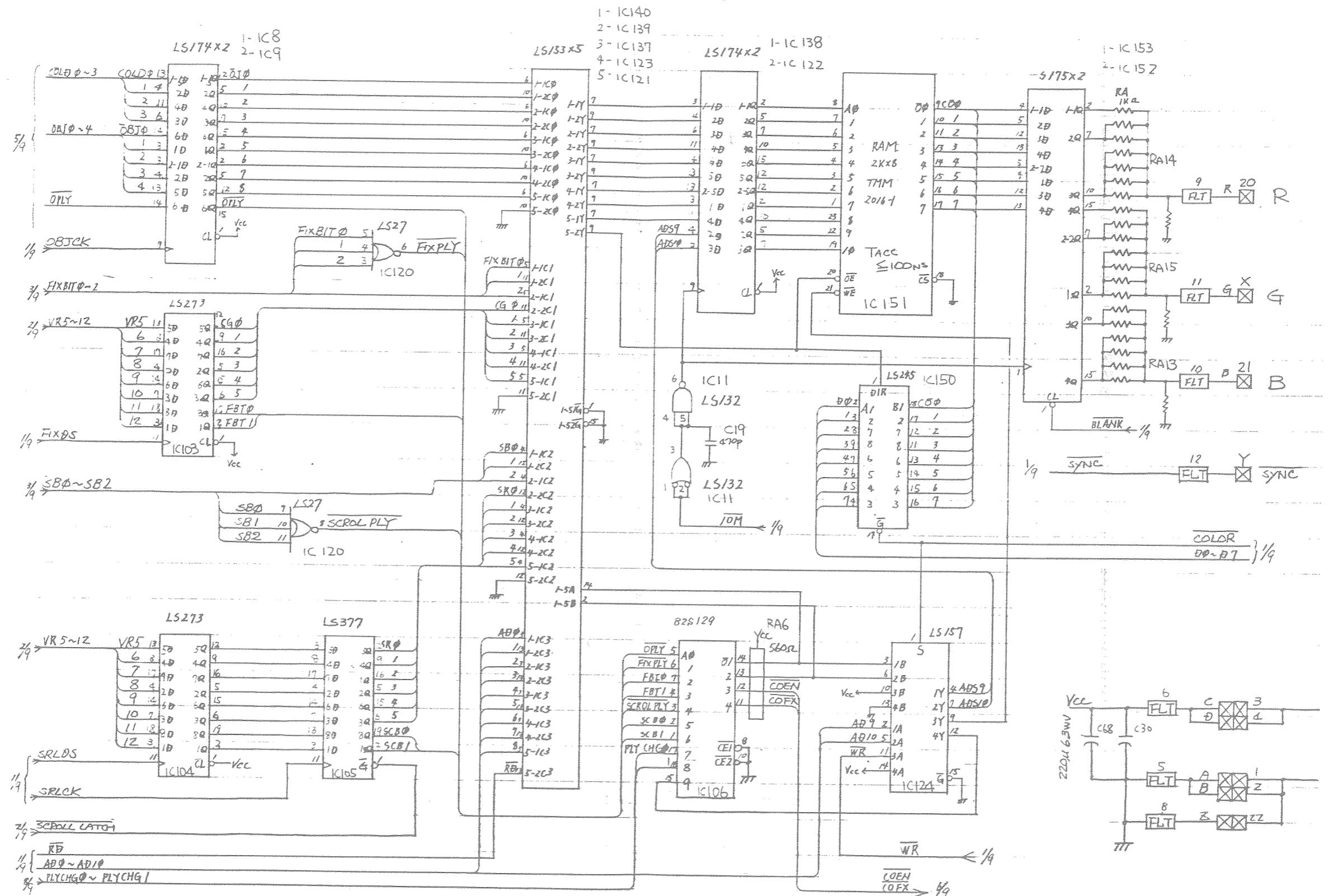
( 834-5191 ) ( D-4/9 )



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

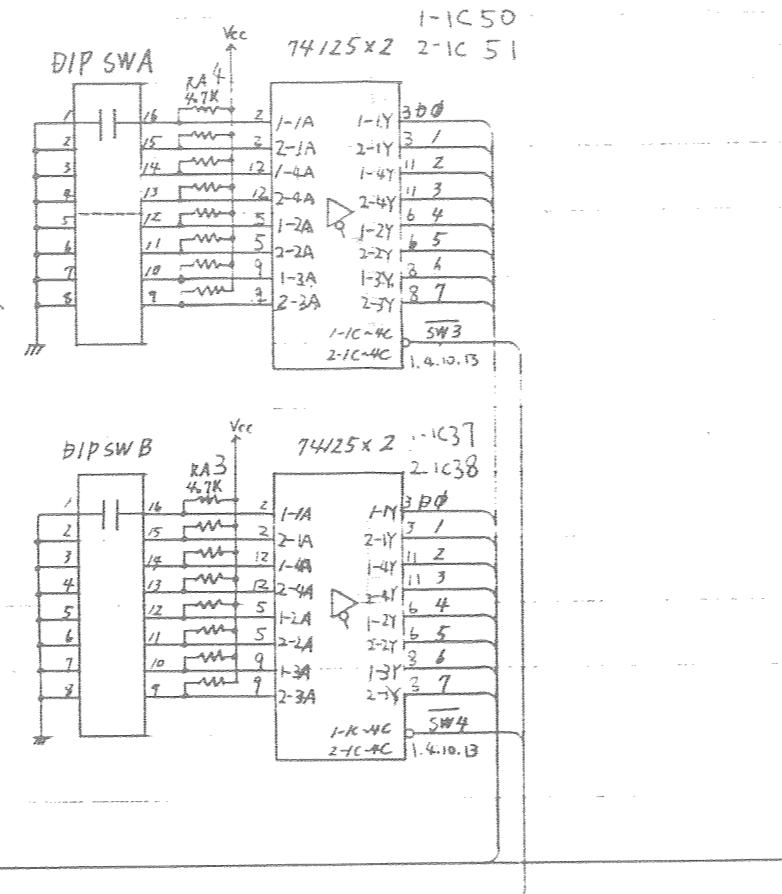
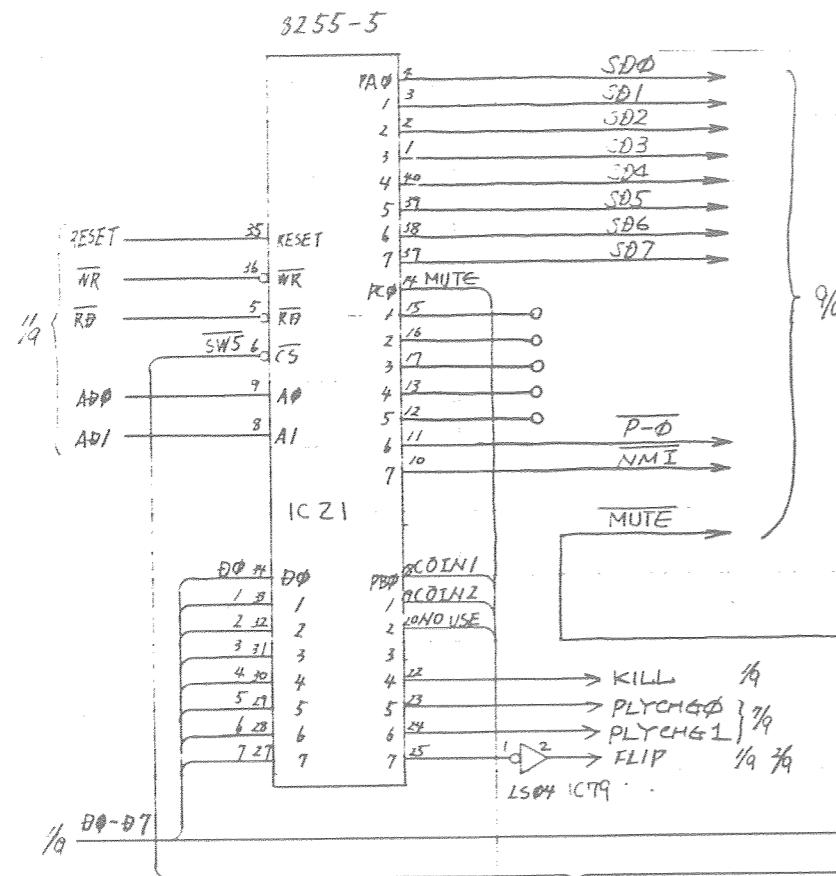


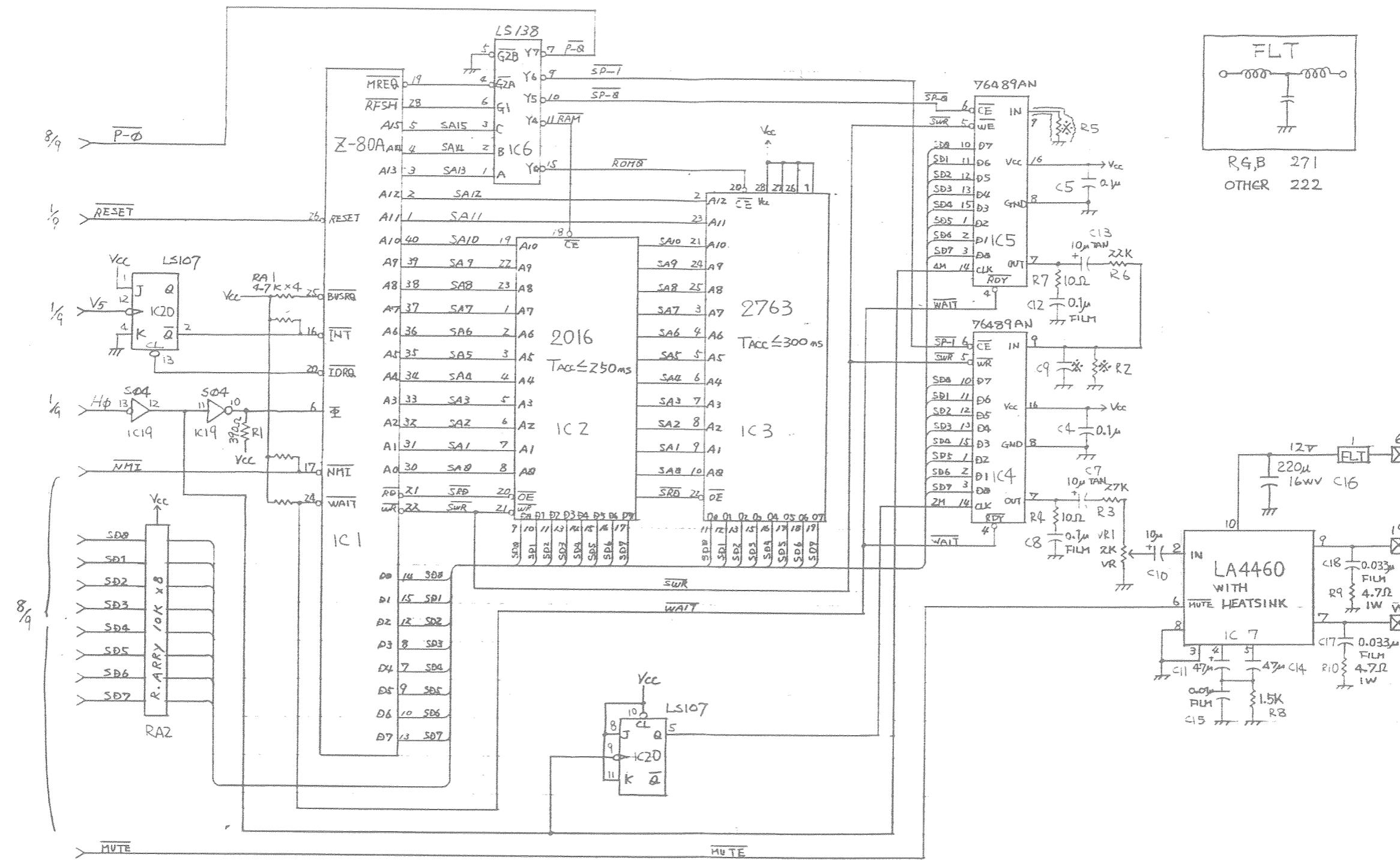
LOGIC DIAGRAM STAR JACKER  
( 834-5191 ) ( D-6/9 )



## LOGIC DIAGRAM STAR JACKER

( 834-5191 ) ( D-7/9 )





LOGIC DIAGRAM STAR JACKER

( 834-5191 ) ( D-9/9 )

**MEMO**

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**SEGA®**

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