

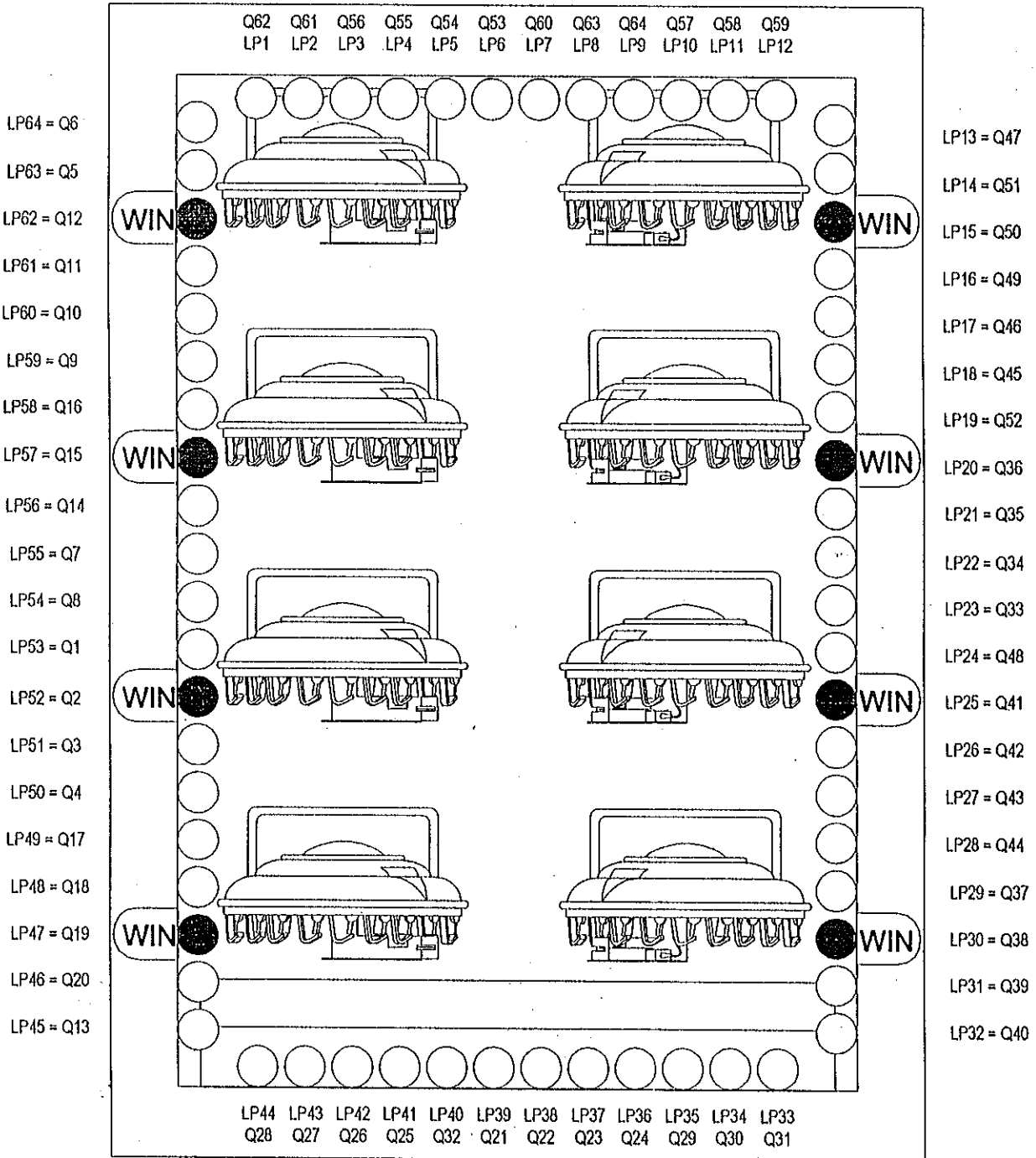
How to fix the Lamp Driver Board

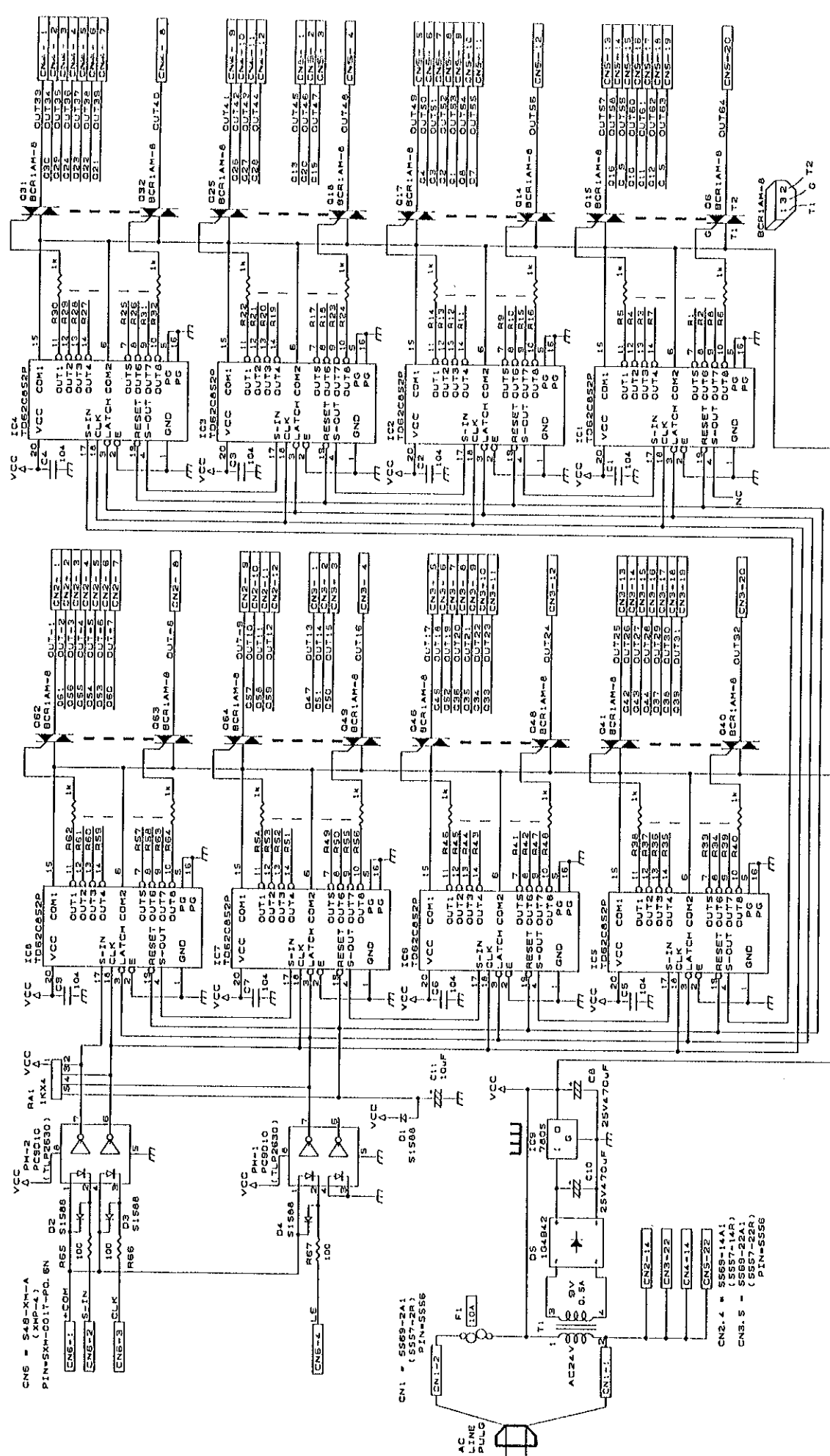
Example 1: Some lamp does not lit and other 2 lamps stay keep light up.

If you have problem on Lamp LP44 do not lit or stay keeps on , take a look "OUT 44" on Lamp Drive Board Schematic diagram and follow the line. You can find out "Q28" on schematic diagram. Q28 mean, Location number for one of the Chip (TRIAC, BCR1AM-3) on the Lamp Driver Board. Change this chip to solve the Problem.

Example 2: All Lamps keep on or off.

Problem of Photo Coupler Chip (PC9D10 = TLP2630) on the Lamp Driver Board. Location # is PH-1 and PH-2. Please exchange both at same time.





CN6 = 548-XM-A
(XMP-4)
PIN: 5M-CO11-PO. 6N

VCC PH-2
PCSD10
(TLR2630)

VCC PH-1
PCSD10
(TLR2630)

VCC PH-1
PCSD10
(TLR2630)

VCC PH-1
PCSD10
(TLR2630)

VCC PH-1
PCSD10
(TLR2630)

VCC PH-1
PCSD10
(TLR2630)

VCC PH-1
PCSD10
(TLR2630)

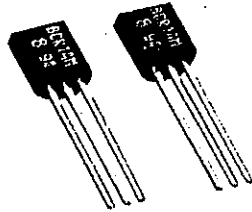
VCC PH-1
PCSD10
(TLR2630)

TRIAC

BCR1AM

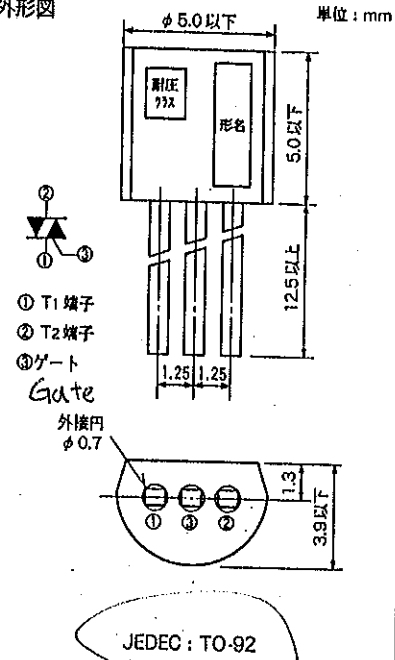
小電力交流制御用
リードマウント形、ガラスパッケージン形

BCR1AM



- $I_T(RMS)$ 1.0A
- V_{DRM} 400V/600V
- $I_{FGT I}, I_{RGT I}, I_{RGT III}$ 5mA
- $I_{FGT III}$ 10mA

外形図



用途

交流無接点スイッチ、暖房機、冷蔵庫、洗濯機、扇風機、自動販売機、中電力及び大電力制御用のトリアックのトリガ、SSリレー、その他一般制御器

最大定格

記号	項目	耐 圧 ク ラ ス		単 位
		8	12	
V_{DRM}	ピーク繰返しオフ電圧*1	400	600	V
V_{DSM}	ピーク非繰返しオフ電圧*1	500	720	V

記号	項目	条 件	定 格 値	単 位
$I_T(RMS)$	実効オン電流	商用周波数, 正弦全波360度連続通電, $T_c = 56^\circ C^{*4}$	1.0	A
I_{TSM}	サージオン電流	60Hz 正弦全波 1 サイクル波高値, 非繰返し	10	A
I^2t	電流二乗時間積	60Hz 半波 1 サイクルサージオン電流に対する値	0.41	$A^2 \cdot s$
P_{GM}	ピークゲート損失		1	W
$P_{G(AV)}$	平均ゲート損失		0.1	W
V_{GM}	ピークゲート電圧		6	V
I_{GM}	ピークゲート電流		1	A
T_j	接合温度		-40~+125	$^\circ C$
T_{sto}	保存温度		-40~+125	$^\circ C$
-	質量	標準値	0.23	g

*1: ゲート端子開放状態の値です。

OPTOISOLATORS

PHOTOTHYRISTOR OUTPUTS

NTE Type No.	Output Configuration	Diag. No.	Total Device Ratings		Maximum LED Ratings				Maximum Photthyristor Ratings				
			Isolation Voltage Surge (Volts)	Total Power (mW)	Forward Current (mA)	Forward Voltage (Volts)	Reverse Voltage (Volts)	Blocking Voltage (Volts)	Gate Trigger Voltage (Volts)	On Voltage @ I _T (Volts)	Gate Trigger Current (µA)	Turn-On Current (Threshold) (mA)	Holding Current (mA)
			V _{ISO}	P _T	I _F	V _F	V _R	V _{DRM}	V _{GT}	V _{ON}	I _{GT}	I _{FT}	I _{Hold}
3046	SCR	152b	3550	290	60	1.5	3	400	1	1.3 @ 100mA	100	14	0.5
3047	TRIAC	152e	7500	330	50	1.5	3	250	-	3 @ 100mA	-	15	100µA Typ
3048	TRIAC	152e	7500	330	50	1.5	3	400	-	3 @ 100mA	-	15	100µA Typ
3049	Zero Crossing TRIAC Driver	152d	7500	330	50	1.5	3	250	-	3 @ 100mA	-	15	100µA Typ
3091	SCR	152b	3535	400	60	1.5	6	400	-	1.3 @ 300mA	-	11	-
3097	Zero Crossing TRIAC Driver	152d	7500	330	50	1.5	6	400	-	3 @ 100mA	-	15	0.2

SCHMITT TRIGGER OUTPUTS

NTE Type No.	Output Configuration	Diag. No.	Total Device Ratings		Maximum LED Ratings			Output Ratings				
			Isolation Voltage Surge (Volts)	Total Power (mW)	Forward Current (mA)	Forward Voltage (Volts)	Reverse Voltage (Volts)	Voltage Range (Volts)	Output Voltage (Volts)	Output Current (mA)	Turn-On Time (µs)	Turn-Off Time (µs)
			V _{ISO}	P _T	I _F	V _F	V _R	V _{CC}	V _O	I _O	t _{ON}	t _{OFF}
3090	Schmitt Trigger	152h	7500	250	60	1.5	6	3V to 15V	16 Max	50 Max	1.2 Typ	1.2 Typ

DESCRIPTION:

The NTE3090 consists of a gallium arsenide IRED optically coupled to a high-speed integrated detector with Schmitt Trigger outputs. Designed for applications requiring electrical isolation, fast response time, noise immunity and digital logic compatibility such as interfacing computer terminals to peripheral equipment, digital control of power supplies, motors and other servo machine applications.

PHOTON COUPLED BILATERAL ANALOG FET OUTPUTS

NTE Type No.	Output Configuration	Diag. No.	Total Device Ratings		Maximum LED Ratings			Photo FET Ratings				
			Isolation Voltage Surge (Volts)	Total Power (mW)	Forward Current (mA)	Forward Voltage (Volts)	Reverse Voltage (Volts)	Drain to Source Breakdown Voltage (Volts)	Drain Current (mA)	On-State Resistance (Ω)	Turn-On Time (µs)	Turn-Off Time (µs)
			V _{ISO}	P _T	I _F	V _F	V _R	BV _{DSS}	I _D	R _{DSON}	t _{ON}	t _{OFF}
3085	Bilateral Analog FET	152g	2500	300	60	1.75	62	±30	±100	200	15	15

DESCRIPTION:

The NTE3085 consists of a gallium arsenide infrared emitting diode coupled to a symmetrical bilateral silicon photo detector. The detector is electrically isolated from the input and performs like an ideal isolated FET designed for distortion-free control of low level AC and DC analog signals.

TTL COMPATIBLE PHOTO COUPLED LOGIC GATE OUTPUTS

NTE Type No.	Output Configuration	Diag. No.	Total Device Ratings		Maximum LED Ratings			Maximum Output Ratings				
			Isolation Voltage Surge (Volts)	Total Power (mW)	Forward Current (mA)	Forward Voltage (Volts)	Reverse Voltage (Volts)	Supply Voltage (Volts)	Enable Voltage (Volts)	Output Current (mA)	Propagation Delay Time (ns)	
			V _{ISO}	P _T	I _F	V _F	V _R	V _{CC}	V _E	I _O	t _{PLH/PHL}	
3087	High Speed, Open Collector, NAND Gate	401b	3000	100	10	1.75	5	5	5.5	50	75	
3092	Open Collector, NPN Transistor	401e	3000	100	25	1.70	5	15	-	8	0.8µs	
3093	NPN Split Darlington	401d	3000	100	20	1.70	5	18	-	60	5µs	
3094	Dual High Speed, Open Collector, NAND Gate	401f	3000	60	15	1.75	5	5	-	16	75	
3095	Dual Open Collector, NPN Transistors	401c	3000	35	25	1.70	5	15	-	8	0.8µs	

See Diagrams, beginning on Page 1-133

DIMENSIONAL OUTLINE DRAWINGS

<p>Diagram 383</p>	<p>Diagram 399</p>	<p>Diagram 400</p>
<p>Diagram 401</p>	<p>Diagram 401a</p>	<p>Diagram 401b</p>
<p>Diagram 401c</p>	<p>Diagram 401d</p>	<p>Diagram 401e</p>
<p>Diagram 401f - TLP-2630 PC4D10</p>	<p>Diagram 401g</p>	<p>Diagram 407</p>

Main PCB repair solution

No reset: Bad parts as below.

CPU (IC11, KL5C80ACFP)

Power IC (IC32, HLE12003M or HLDT2003M)

All Lamps are lit: Bad parts as below.

IC20 (TR Allay, TD62783A)

C25 (Electrical Capacitor, 50V 33 μ F)

IC8 (IC, 74HC540)

Keep pulling the Coin Counter meter.

Bad CPU (IC11, KL5C80ACFP)

7 seg. Display Problem: Bad parts as below.

IC4 and IC20 (TR Allay, TD62783A)

IC3 (74HC237)

Sound Problem. (Crappy noise, no sound...etc.)

C52 (Resister, 1/6W 100 Ω)

IC13 (Sound Chip, MSM6650GS)

Not go to Setting mode.

Power IC (IC32, HLE12003M or HLDT2003M)

IC20 (TR Allay, TD62783A)

Coin Lock out coil line (Not use for USA version.) bad.

IC17 (4AC18) bad.

12V line malfunction.

Power IC (IC32, HLE12003M or HLDT2003M)

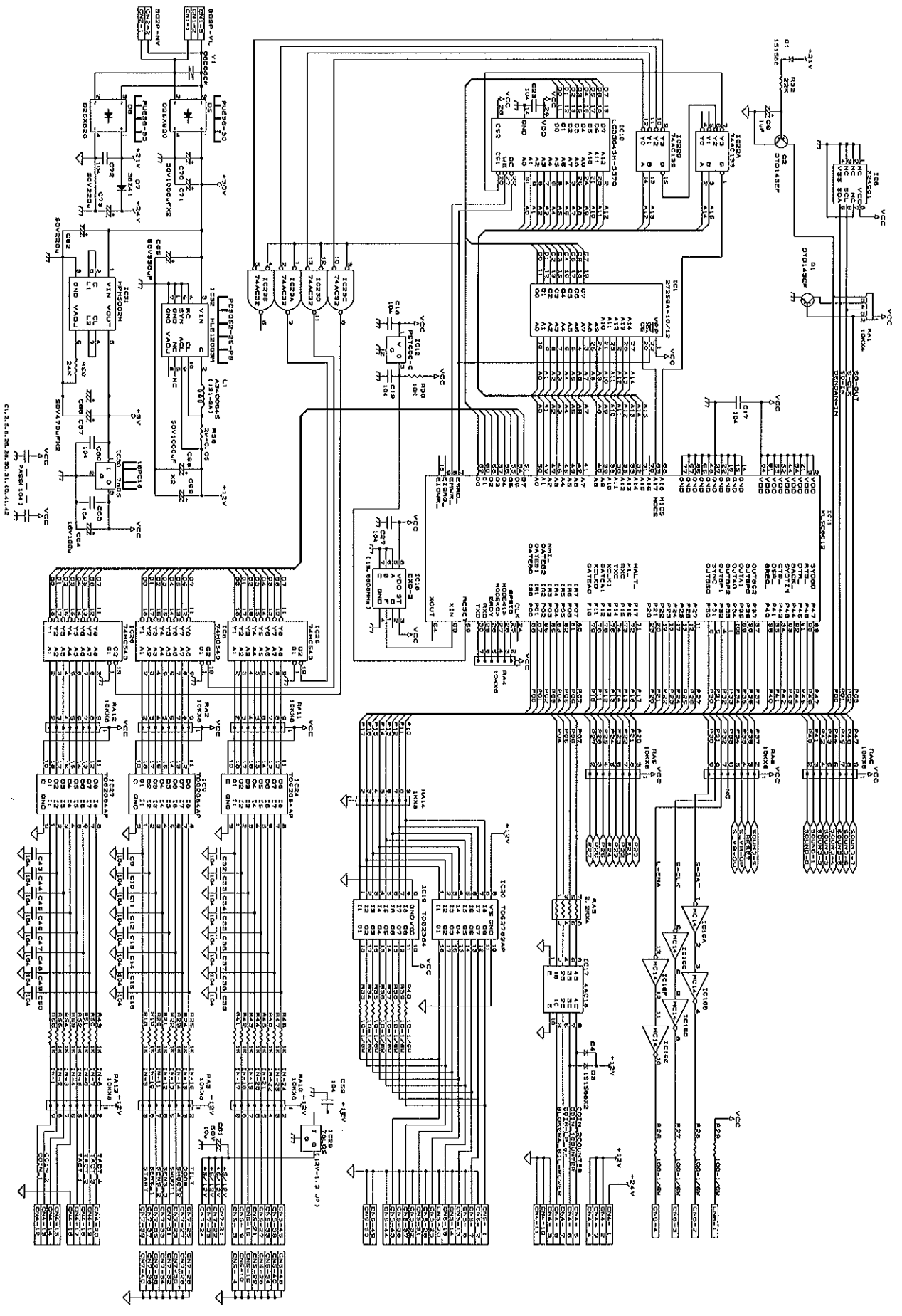
C52 (Resister, 1/6W 100 Ω)

Motor of Prize vending Unit malfunction.

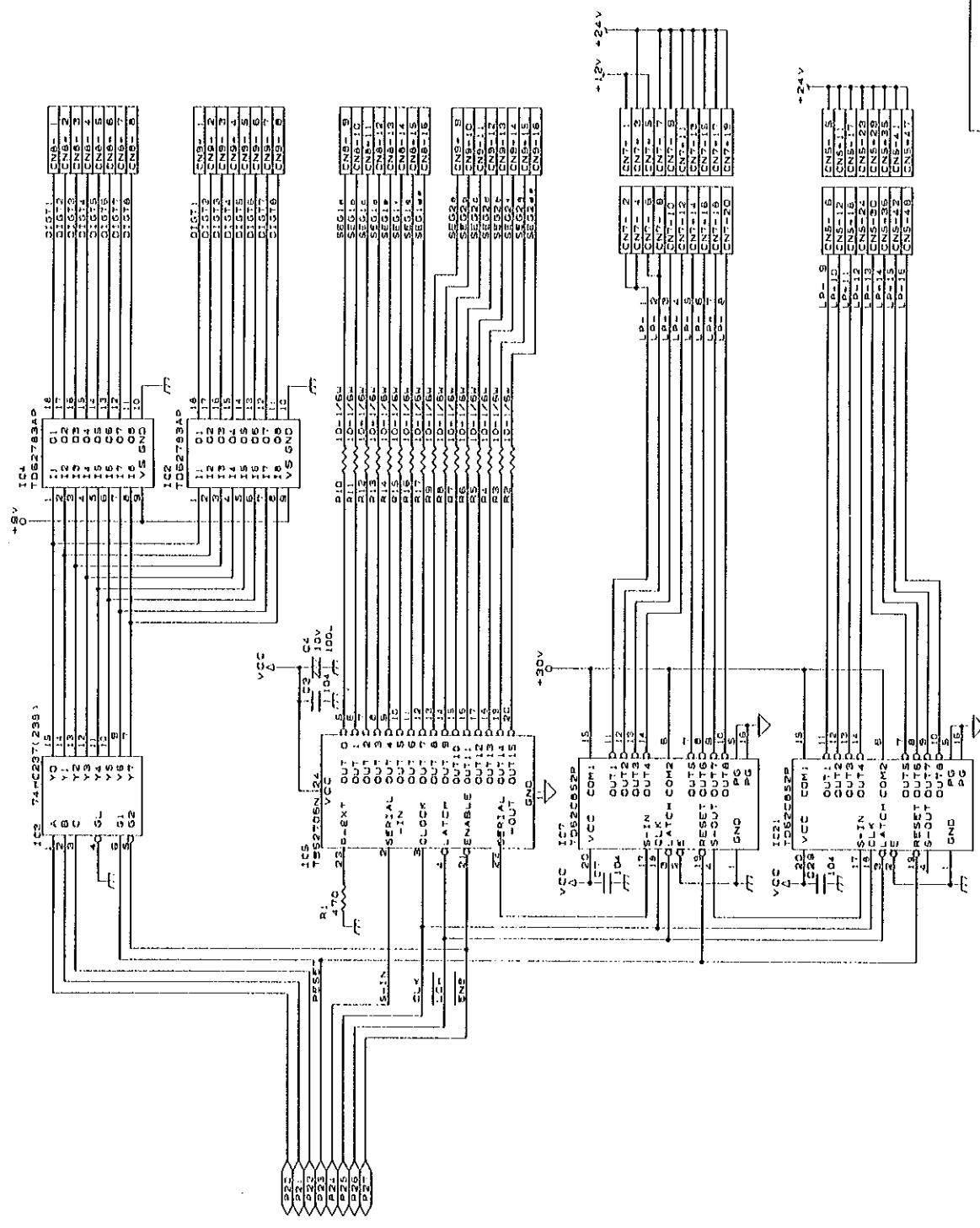
IC20 (TR Allay, TD62783A)

5v Line malfunction.

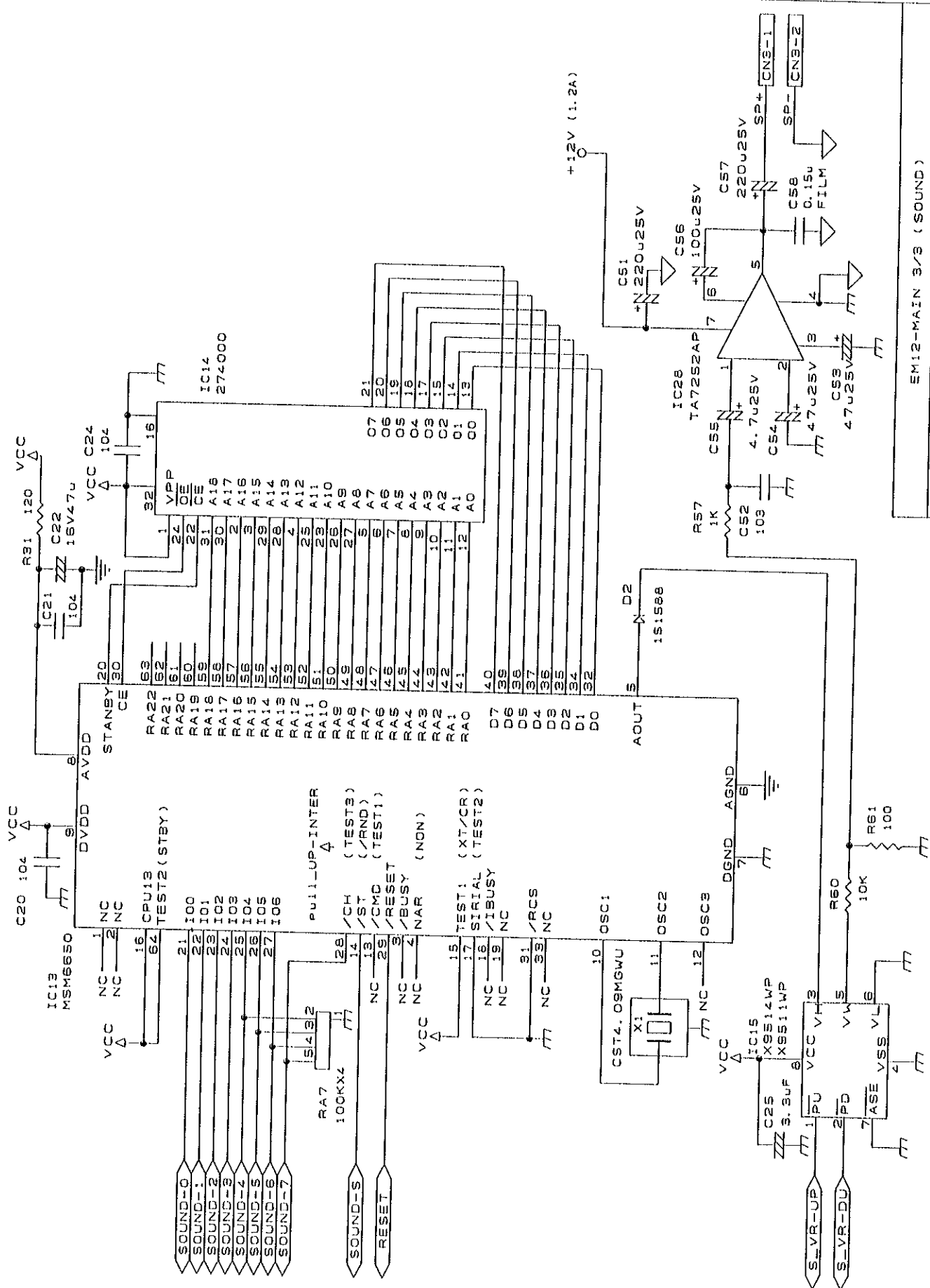
IC31 (HPH25002M) bad.



Channel	Component	Value
1	R1A1	10k
1	R1A2	10k
1	R1A3	10k
1	R1A4	10k
1	R1A5	10k
1	R1A6	10k
1	R1A7	10k
1	R1A8	10k
1	R1A9	10k
1	R1A10	10k
1	R1A11	10k
1	R1A12	10k
1	R1A13	10k
1	R1A14	10k
1	R1A15	10k
1	R1A16	10k
1	R1A17	10k
1	R1A18	10k
1	R1A19	10k
1	R1A20	10k
1	R1A21	10k
1	R1A22	10k
1	R1A23	10k
1	R1A24	10k
1	R1A25	10k
1	R1A26	10k
1	R1A27	10k
1	R1A28	10k
1	R1A29	10k
1	R1A30	10k
1	R1A31	10k
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1	R1A37	10k
1	R1A38	10k
1	R1A39	10k
1	R1A40	10k
1	R1A41	10k
1	R1A42	10k
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1	R1A86	10k
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1	R1A91	10k
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1	R1A93	10k
1	R1A94	10k
1	R1A95	10k
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1	R1A99	10k
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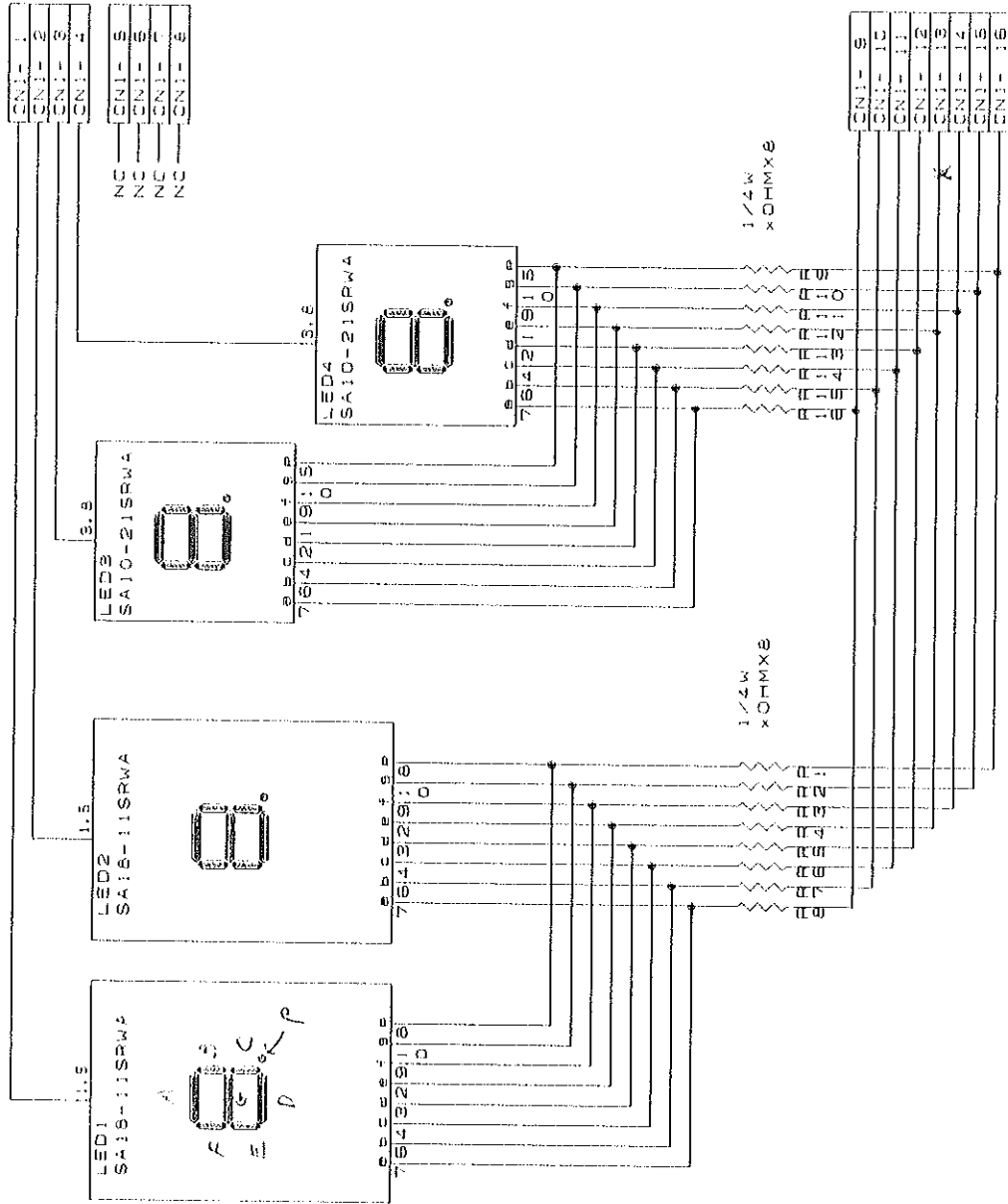


EM-12-MAIN 2/3
 Size Document Number
 EM-12-001
 AUGUST 28, 1988
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Date:	October 8, 1997
Sheet	1 of 1

EM12-MAIN 3/3 (SOUND)

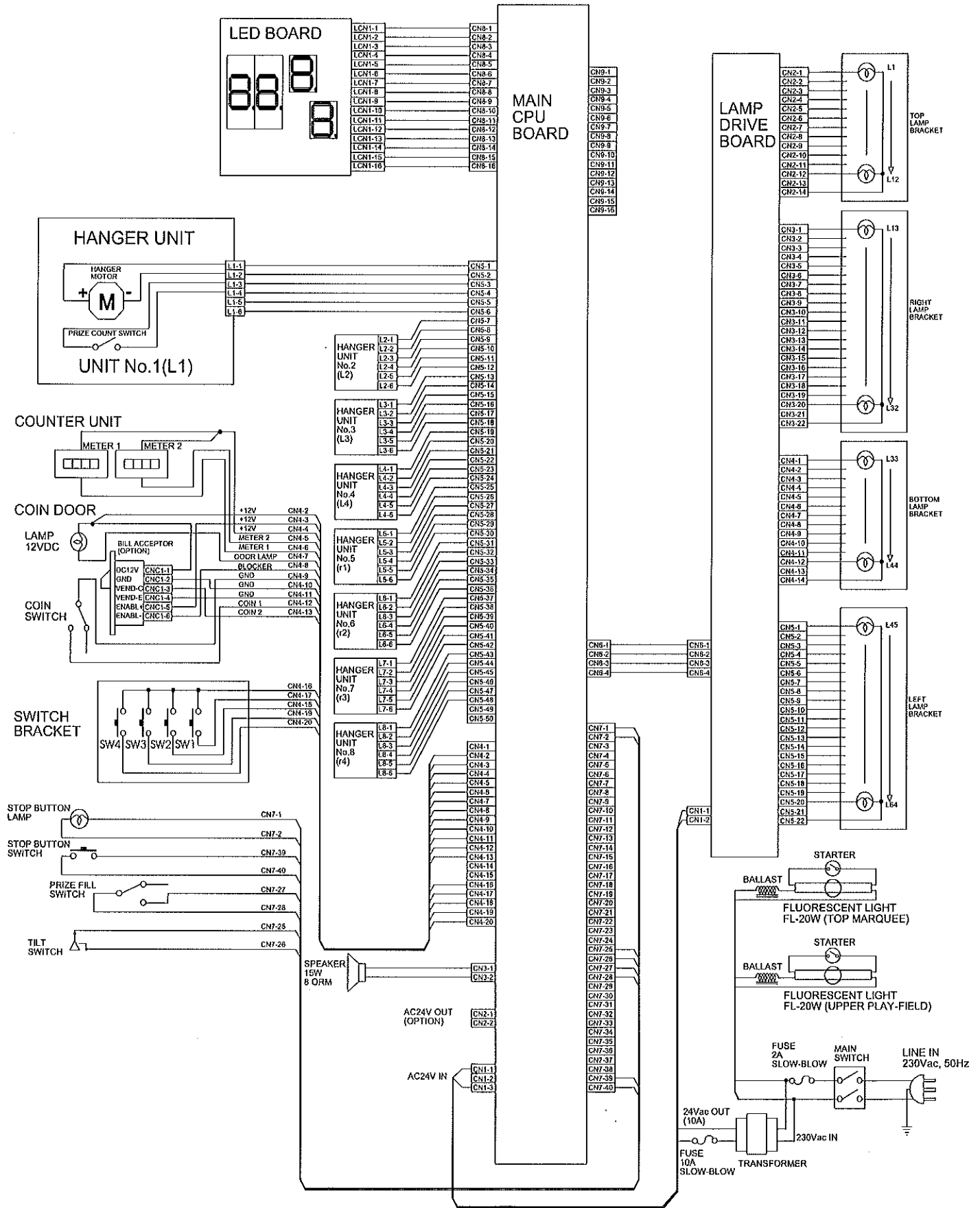


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(CSS-1614D-21)

* (SA10-21SRW4
(CSS-1014D-21)

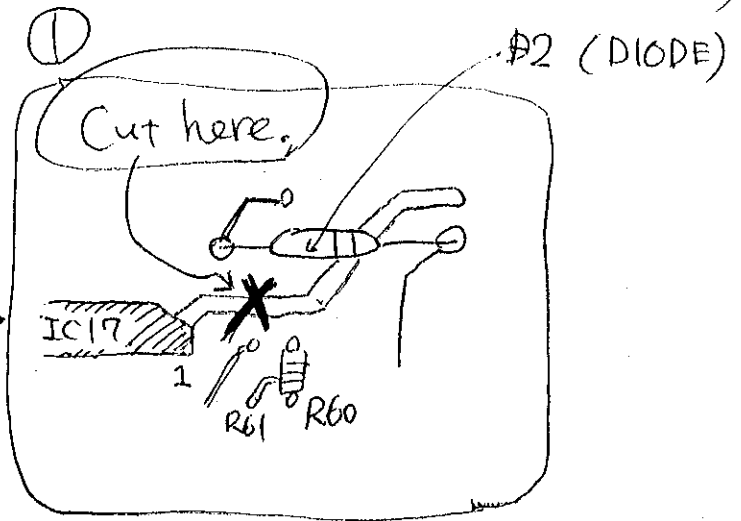
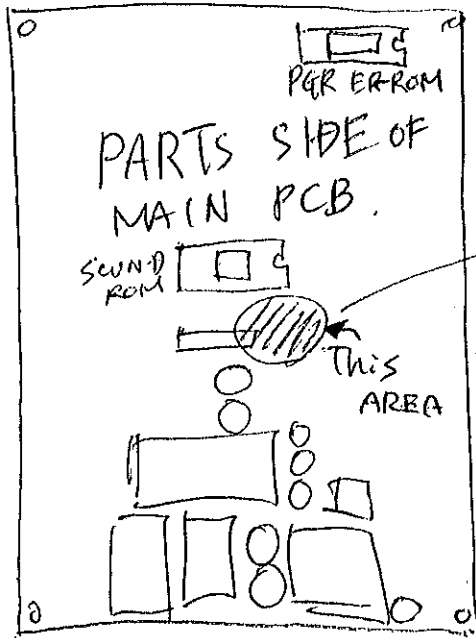
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ELECTRICAL WIRING DIAGRAM (EUROPE)

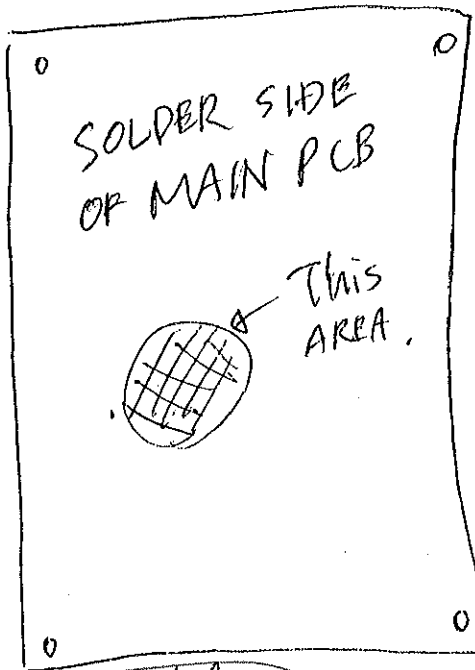


FAX MESSAGE

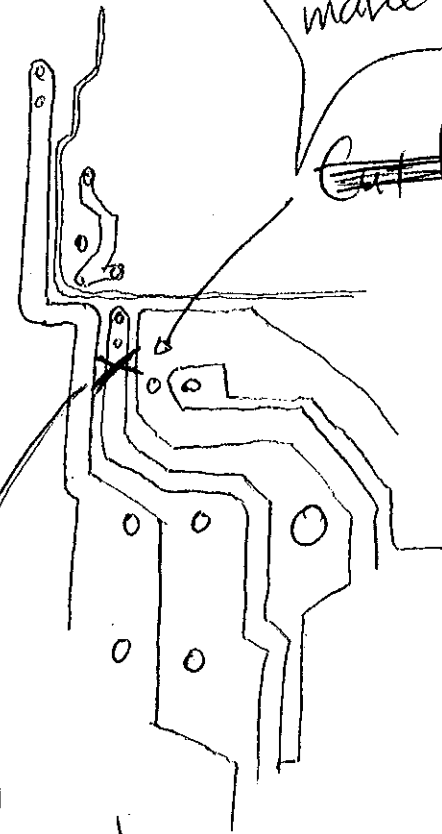
from: KIYO (SAMMY USA)



RE: HUM NOISE SOLUTION



2 Use drill to make Hole.



RE: How to modify the PCB for Noise problem.

