

Baldwin. *Discoverer*

B A L D W I N

DISCOVERER (DS-50)

SERVICE MANUAL

SPECIFICATIONS



Keyboard

49 keys (37 solo keys, 12 1-finger accompaniment keys)

Accompaniment

Program Record/Play, Auto Play, 1-Finger, Cancel, Volume,
Strum/Arpeggio

Program Record

Start,  ,  , End, Half/Full Measure

1-Finger

48 1-finger chords - major, minor, 7th, and minor 7th in all
12 keys

Automatic Rhythm

Country/March, Waltz, Swing, Ballad Rock, Disco/Rock, Bossa
Nova, Rhumba, Samba

Volume, Tempo, Downbeat Indicator, Start/Stop, Touch Control

Solo Voices

Tone Levers - Flute 8', Flut  4', Oboe, Violin, Vibrato

Preset Percussion - Harpsichord, Marimba, Vibes, Cancel

Other Controls

Sustain, Volume, Mic (volume)

Rear Panel

Headset, External Speaker, In/Out Terminal, Expression Pedal

Jack, Microphone Jack, 12 volt DC power, 110-120 volt AC Power

Dimensions

Height - 3 7/8 inches (9.8 cm) width - 30 inches (76.2 cm)

Depth - 11 1/2 inches (29.2 cm) Weight - 18 3/4 lbs. (8.5 kg)

RHYTHM BOARD BP-7186

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LOCATION	DESCRIPTION
Ⓐ	P.C. BOARD BP7186
D1 - D15	SILICON DIODE SID1S2076
CA1	CORD ASSEMBLY ONE FINGER
CA2	CORD ASSEMBLY R-SCAN
JW1 - JW4	JUMPER

ATR VOLUME BOARD BP-7190

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LOCATION	DESCRIPTION
CA2	CORD ASSEMBLY TEMPO
Ⓐ	P.C. BOARD BP7190
#A1	CMOS.IC. TC4069UBP
C2	CERAMIC CONDENSER 0.01 μ F
C1	ELECTROLYTIC CONDENSER 1 μ F 50V(NP)
R3	RESISTOR 1M Ω DR-A14YJ105R25
R1	" 47K Ω DR-A14YJ473R25
R2	" 4.7K Ω DR-A14YJ472R25
VR1	ADJ.RESISTOR 500K Ω DVR-1RLB504YS
VR2	ADJ.RESISTOR 10K Ω DVR-1RLB103YS
CA1	CORD ASSEMBLY - ACC.

TONE GENERATOR BOARD BP-7192
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LOCATION	DESCRIPTION
(A)	P.C. BOARD BP7192
#C6	MOS. IC. HMCS45C
#A1 - #A5	MOS. IC. TM3615
#C1 - #C4	BIP. IC. 7407
#B1	BIP. IC. AN6552
D1 - D14	SILICON DIODE SID1S2076
C63.C73	CERAMIC CONDENSER 0.01 μ F
C72	" 0.0022 μ F
C71	" 470pF
C62	ELECTROLYTIC CONDENSER 1000 μ F 16V
C68.C69.C76	" 47 μ F 16V
C70.C75	" 10 μ F 16V
C1 - C61.C64.C66	" 1 μ F 50V
R35	RESISTOR 1M Ω DR-A14YJ105R25
R34.R36.R37	" 100K Ω DR-A14YJ104R25
R2.R4	" 91K Ω DR-A14YJ913R25
R8.R9	" 4.7K Ω DR-A14YJ472R25
R1.R3.R10 ~ R33	" 1K Ω DR-A14YJ102R25
R5	" 560 Ω DR-A14YJ561R25
R6.R7	" 47 Ω DR-A14YJ470R25
JW1 - JW34.JE40.JW41	JUMPER
JW35	JUMP WIRE (IVORY)

LOCATION	DESCRIPTION
JW39.JW42	JUMP WIRE (YELLOW)
JW36.JW38	"
JW37	"
P6	CONNECTOR B3P-W
P5	" B4P-W
P8	" B8P-W
P7	" B13P-W
P1	" B2B-XH
P2.P3.P4.P9	" B13B-XH
C65.C67	CERAMIC CONDENSER 150pF
CA1.CA3	CORD ASSEMBLY 4P150
CA2	" MELODY
CA4	" CHORD
CA6	" R-TRIGGER
CA5	" P-TRIGGER
#C5	BIP. IC. 74154
CF1	CERAMIC FILTER CFC5B400P
Q1.Q2	SILICON TRANSISTOR 2SA608NPF
CA7	CORD ASSEMBLY 4P150 RED
ZD1	ZENER DIODE ZDHZ4C-1
R38	RESISTOR 10K Ω DR-A14YJ103R25
R39	" 470 Ω DR-A14YJ471R25

REAR TERMINAL BOARD BP-7193
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LOCATION	DESCRIPTION
C1	ELECTROLYTIC CONDENSER 10 μ F50V(NP)
P1	CONNECTOR B2B-XH
P2	" 3PL
(A)	P.C. BOARD BP7193
(B)	CORD ASSEMBLY TERMINAL
(C)	PHONE JACK HLJ4306-01-100
(D)	PHONE JACK HLJ4306-01-040
(E)	PIN JACK JPJ0355
(F)	PIN JACK (with switch) JPJ0449
(G)	DC POWER JACK HEC0470
R1.R2	RESISTOR 330 Ω DR-A12YJ331R50
R4	" 680 Ω DR-A14YJ681R25
R3	" 3.9K Ω DR-A14YJ392R25
R5	" 10K Ω DR-A14YJ103R25
R6	" 1K Ω DR-A14YJ102R25

AMP BOARD BP-7194

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LOCATION	DESCRIPTION
(A)	P.C. BOARD BP7194
(B)	HEAT SINK
(C)	SELF TAP SCREW 3x6
#A1	BIP. IC. LA4440
(D)	CROSS RECESSED HADE MACHINE SCREW M3x14
(E)	PLAIN WASHER $\phi 3$
#A2	BIP. IC. L78M05
Q1	SILICON TRANSISTOR 2SB514
(F)	CROSS RECESSED HADE MACHINE SCREW M3x10
(G)	PLAIN WASHER $\phi 3$
(H)	SPRING WASHER $\phi 3$
(I)	NUT
BR1	SILICON DIODE S2VB
#C3	MOS. IC. TMS3615
#A5	CMOS. IC. TC4066BP
#A3.#D1	CMOS. IC. TC4069UBP
#A4	CMOS. IC. TC4081BP
#B1.#B2.#C1.#C2	BIP. IC. AN6552
Q2.Q9.Q12.Q18.Q19.Q20. Q23.Q26 ~ Q29	SILICON TRANSISTOR 2SC536NPF
Q5.Q6.Q7.Q8	" 2SC1571F
Q21.Q22	" 2SC458C
Q3.Q4.Q10.Q11.Q13.Q14. Q24.Q25	" 2SA608NPF

LOCATION	DESCRIPTION
Q15.Q16.Q17	FIELD EFFECT TRANSISTOR 2SK30GR
D3.D4.D5.D6	SILICON DIODE SID1S2076
C9.C10	ELECTROLYTIC CONDENSER 1000 μ F 25V
C11.C12	" 1000 μ F 16V
C6.C26.C110	" 220 μ F 16V
C47.C58.C59.C65.C66	" 100 μ F 16V
C4.C5	" 100 μ F 10V
C7.C8.C85	" 47 μ F 16V
C3.C27.C29.C60.C61.C95. C96.C113.C48	" 10 μ F 16V
C15.C18.C20 - C25.C28 C30.C52.C56.C57.C126 C89.C90.C92.C97.C98 C114 - C125	" 1 μ F 50V
C101.C102.C103	" 2.2 μ F 50V
C99.C100	" 0.47 μ F 16V
C109	" 0.22 μ F 16V
C51	PLASTIC FILM CONDENSER 0.15 μ F 50V
C93.C94 C1.C13.C14.C74	" 0.1 μ F 50V
C112	" 0.082 μ F 50V
C73	" 0.056 μ F 50V
C16.C31 - C34 C75.C76.C77.C79	" 0.047 μ F 50V
C54.C80.C81.C82. C83	" 0.033 μ F 50V
C49	" 0.027 μ F 50V
C50.C55.C67.C111	" 0.022 μ F 50V

LOCATION	DESCRIPTION
C68.C69.C84	PLASTIC FILM CONDENSER 0.018 μ F 50V
C35.C36.C37.C38	" 0.012 μ F "
C71	" 0.0068 μ F "
C43	" 0.0056 μ F "
C45.C72.C78.C88	" 0.0047 μ F "
C40.C70	" 0.0022 μ F "
C39.C40.C41.C42.C105	" 0.0012 μ F "
C46.C53.C87 C104.C107.C108	" 0.001 μ F "
C62	STYLOR CONDENSER 120pF 125V
C63	CERAMIC CONDENSER 150pF 50V Violet
C64.C106	" 470pF 50V
C17.C19.C86.C91	" 1000pF 50V
ZD1.ZD3	ZENER DIODE ZDHZ5C-1
ZD2	" ZDHZ9C
D1.D2	SILICON DIODE SIB01
L2	OSCILLATOR COIL AMOSC COIL #81
VR13	ADJ.RESISTOR 200K DVR-1RLB204YS
VR5.VR14	ADJ.RESISTOR 100K DVR-1RLB104YS
VR1	ADJ.RESISTOR 20K DVR-1RLB203YS
VR9.VR10.VR11.VR12 VR15.VR16	ADJ.RESISTOR 10K DVR-1RLB103
VR6.VR7.VR8	ADJ.RESISTOR 5K DVR-1RLB502YS
VR2.VR3.VR4	ADJ.RESISTOR 5000 DVR-1RLB501YS

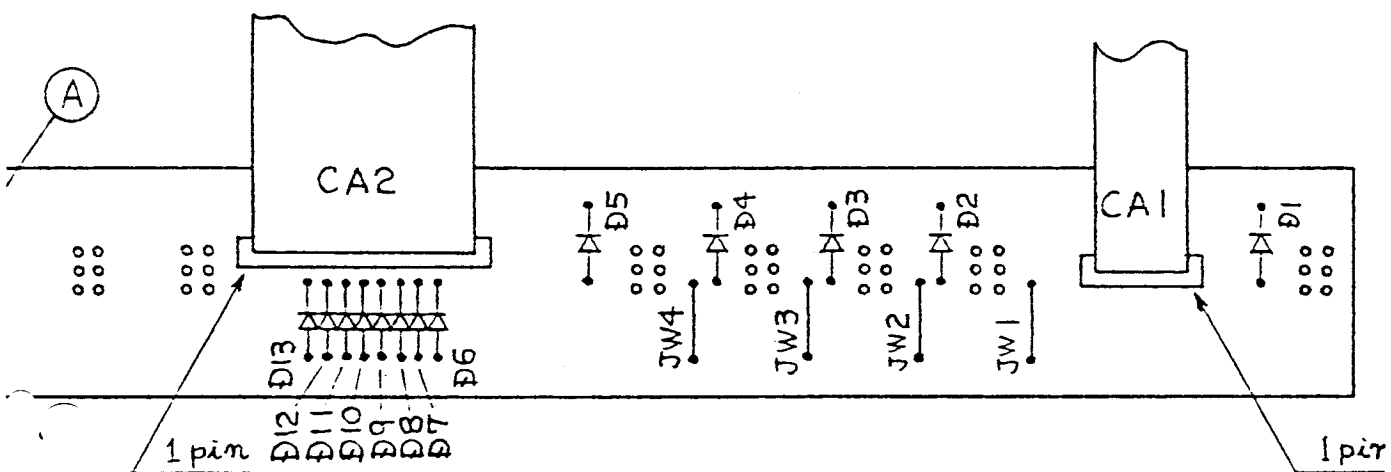
LOCATION	DESCRIPTION
JW1 - JW37.JW43	JUMPER
JW40.JW41 (YELLOW)	JUMP WIRE 45 (YELLOW)
JW38 (YELLOW)	" 70 "
JW42 (YELLOW)	" 120 "
P6	CONNECTOR B4P-W (BL)
P5	" B6P-W (RE)
P4	" B6P-W (GR)
P10	" BS4P
P9	" BS6P
P21	" BS12P
P7	" B2B-XH(BL)
P13	" B2B-XH(RE)
P15	" B2B-XH
P8	" B4B-XH(RE)
P12.P18.P20	" B4B-XH
P11	" B4B-XH(BL)
P17	" B6B-XH
P14.P16	" B8B-XH
P19	" B10B-XH
L1	RHYTHM COIL 393K#2 39mH
RA1	RESISTOR ARRAY BS1834 18K Ω
P1.P2.P3	CONNECTOR 3P PLUG

LOCATION	DESCRIPTION
JW1 - JW37.JW43	JUMPER
JW40.JW41 (YELLOW)	JUMP WIRE 45 (YELLOW)
JW38 (YELLOW)	" 70 "
JW42 (YELLOW)	" 120 "
P6	CONNECTOR B4P-W (BL)
P5	" B6P-W (RE)
P4	" B6P-W (GR)
P10	" BS4P
P9	" BS6P
P21	" BS12P
P7	" B2B-XH(BL)
P13	" B2B-XH(RE)
P15	" B2B-XH
P8	" B4B-XH(RE)
P12.P18.P20	" B4B-XH
P11	" B4B-XH(BL)
P17	" B6B-XH
P14.P16	" B8B-XH
P19	" B10B-XH
L1	RHYTHM COIL 393K#2 39mH
RA1	RESISTOR ARRAY BS1834 18K Ω
P1.P2.P3	CONNECTOR 3P PLUG

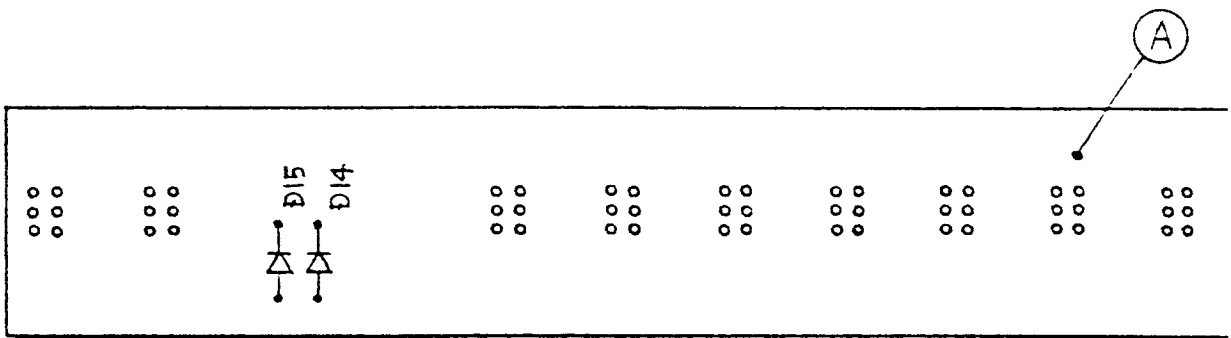
LOCATION	DESCRIPTION
M1	FUSE MARK 3A
C2	ELECTROLYTIC CONDENSER 220uF 25V
H1.H2	P.C. BD. FUSE HOLDER #2
F1	FUSE 3.15AMP
#C4.#D2	BIP. IC. 7407 (TTL)
TC1.TC2	GLASS MESH TUBE
ⓐ	HEAT SINK #2

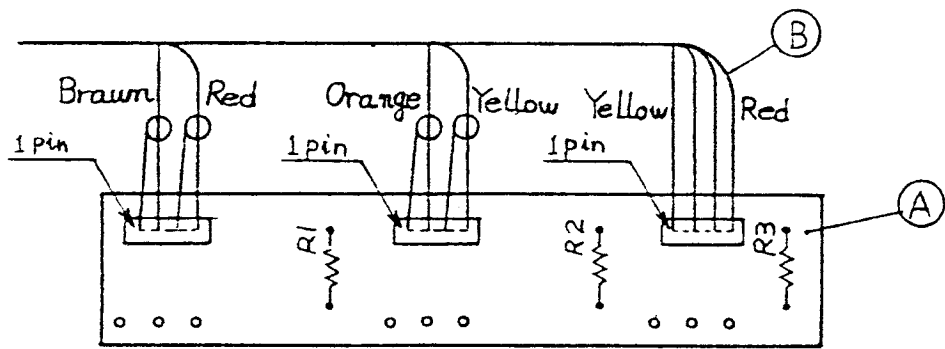
LOCATION	DESCRIPTION
R26.R106.R109.R206. R207	RESISTOR 150KΩ DR-A14YJ154R25
R84.R85.R97.R162.R172	" 100KΩ DR-A14YJ104R25
R165	" 68KΩ DR-A14YJ683R25
R20.R23.R72.R130.R140.R163	" 56KΩ DR-A14YJ563R25
R141	" 270Ω DR-A14YJ271R25
R8.R12.R48.R73.R96	" 47KΩ DR-A14YJ473R25
R56.R65.R82.R90.R91.R149.R150	" 39KΩ DR-A14YJ393R25
R166	" 33KΩ DR-A14YJ333R25
R81	" 27KΩ DR-A14YJ273R25
R11.R16.R17.R19.R25. R80.R83	" 22KΩ DR-A14YJ223R25
R66.R120.R125.R158.R170.) R180.R185.	" 18KΩ DR-A14YJ183R25
R29.R30.R33.R38.R43. R53.R62	
R21.R64.R174	" 15KΩ DR-A14YJ153R25
R95.R99	" 12KΩ DR-A14YJ123R25
R74.R75.R76.R77.R105.R108.R113 R6.R7.R10.R14.R50.R55.R69.R70	
R131.R133.R135.R138.R139.R143.) R115.R118.R123.R126.R127.R129	" 10KΩ DR-A14YJ103R25
R187.R188.R189.R190 R144.R146.R147.R169.R178.R186	
R112	" 6.8KΩ DR-A14YJ682R25
R51.R71.R78.R103.R104	" 5.6KΩ DR-A14YJ562R25
R117.R119.R121.R122.R124.R161 R9.R47.R49.R79.R92.R101.R116	" 4.7KΩ DR-A14YJ472R25

LOCATION	DESCRIPTION
R164.R204.R205	RESISTOR 4.7KΩ DR-A14YJ472R25
R18.R134.R136.R153.R168.R182	" 2.2KΩ DR-A14YJ222R25
R114	" 1.8KΩ DR-A14YJ182R25
R22.R111.R203	" 1.5KΩ DR-A14YJ152R25
R94.R98.R107.R110.R132.R137.R157 R13.R15.R60.R61.R68.R86.R88	" 1KΩ DR-A14YJ102R25
R159.R160.R179.R181.R191.R202	" "
R27.R93.R128.	" 560Ω DR-A14YJ561R25
R24.R35.R87.R89.R183.R184	" 390Ω DR-A14YJ391R25
R102	" 220Ω DR-A14YJ221R25
R36.R45.R148	" 180Ω DR-A14YJ181R25
R32.R54.R100	" 100Ω DR-A14YJ101R25
R4.R5	" 430Ω DR-A14YJ431R25
R2.R3	" 4.7Ω DR-A14YJ47-1R50
R1	" 1.2KΩ DR-A14YJ122R25
R58.R59.R173.R175	" 1.5MΩ DR-A14YJ155R25
R151.R154 R31.R39.R42.R44.R63.R142.R145	" 1MΩ DR-A14YJ105R25
R40	" 560KΩ DR-A14YJ564R25
R46.R67	" 390KΩ DR-A14YJ394R25
R41.R52.R57.R152	" 330KΩ DR-A14YJ334R25
R28.R37	" 220KΩ DR-A14YJ224R25
R34.R167	" 180KΩ DR-A14YJ184R25
R156	" 33Ω DR-A14YJ330R25

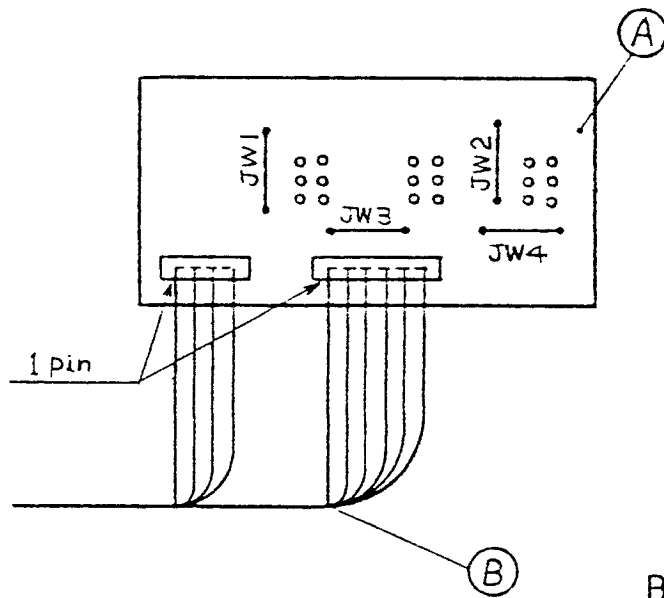


BP7186

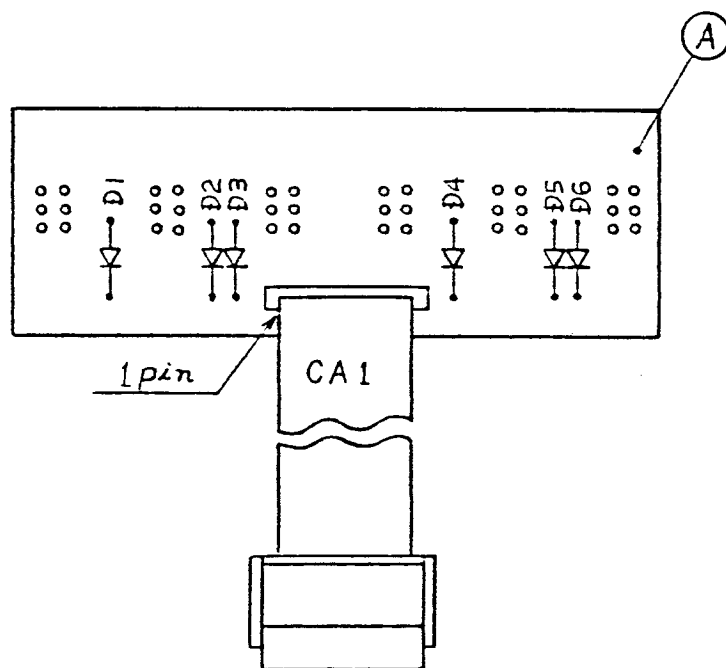




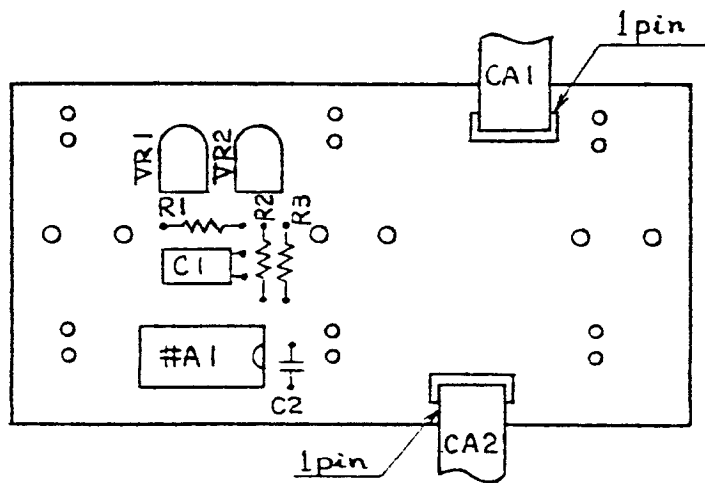
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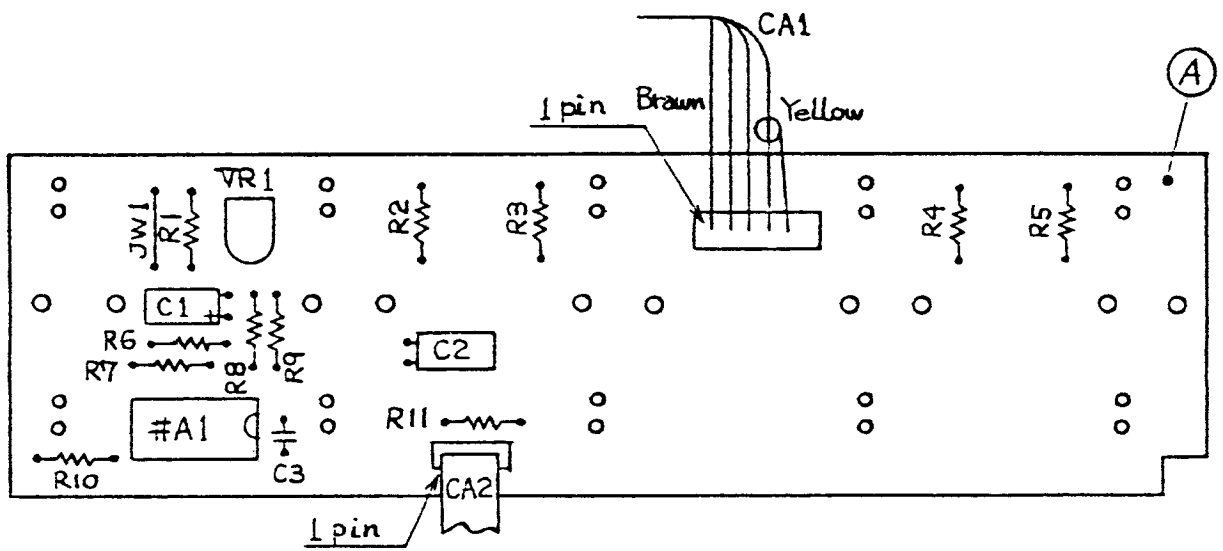
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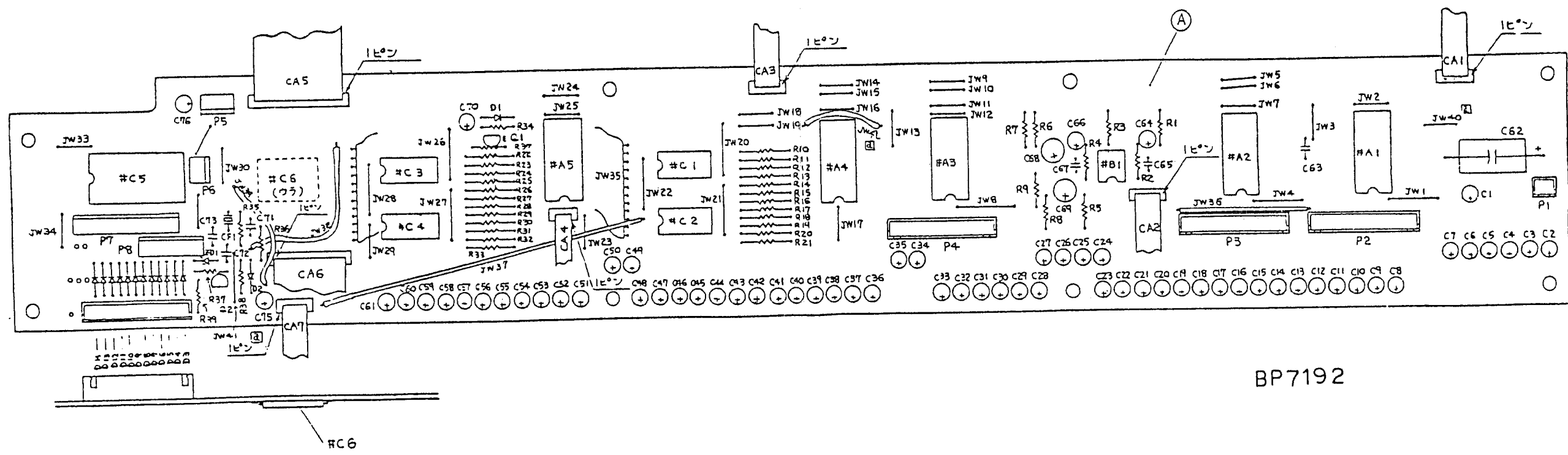
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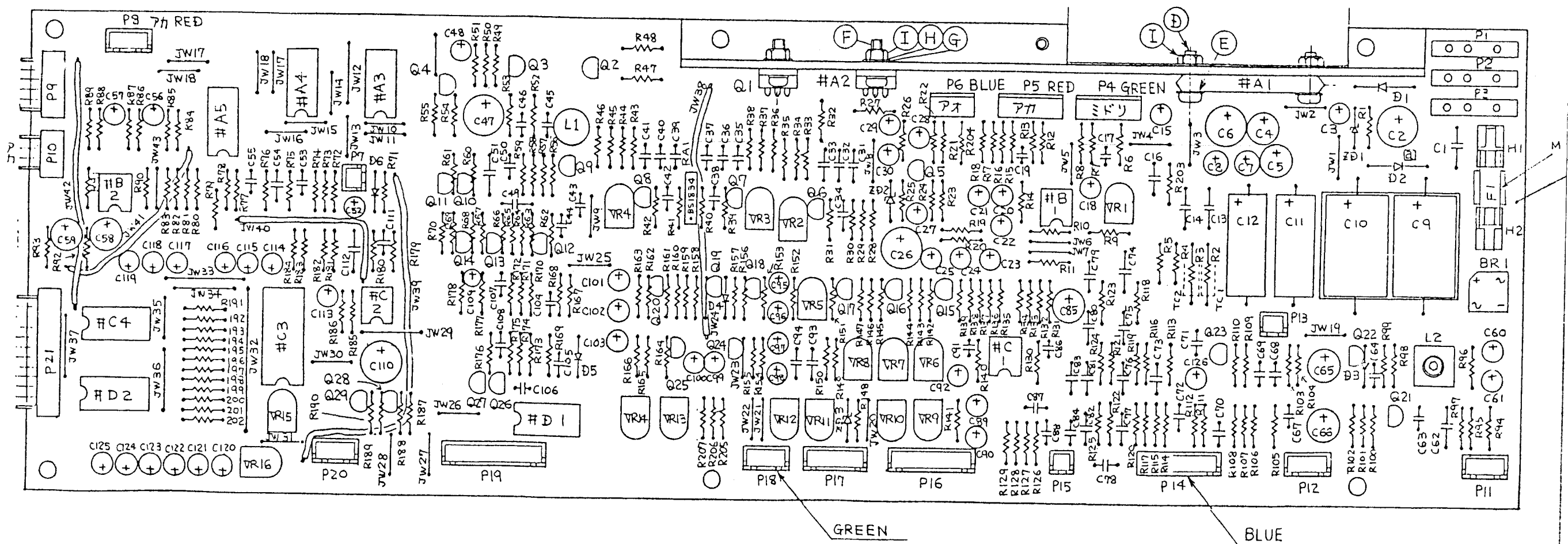
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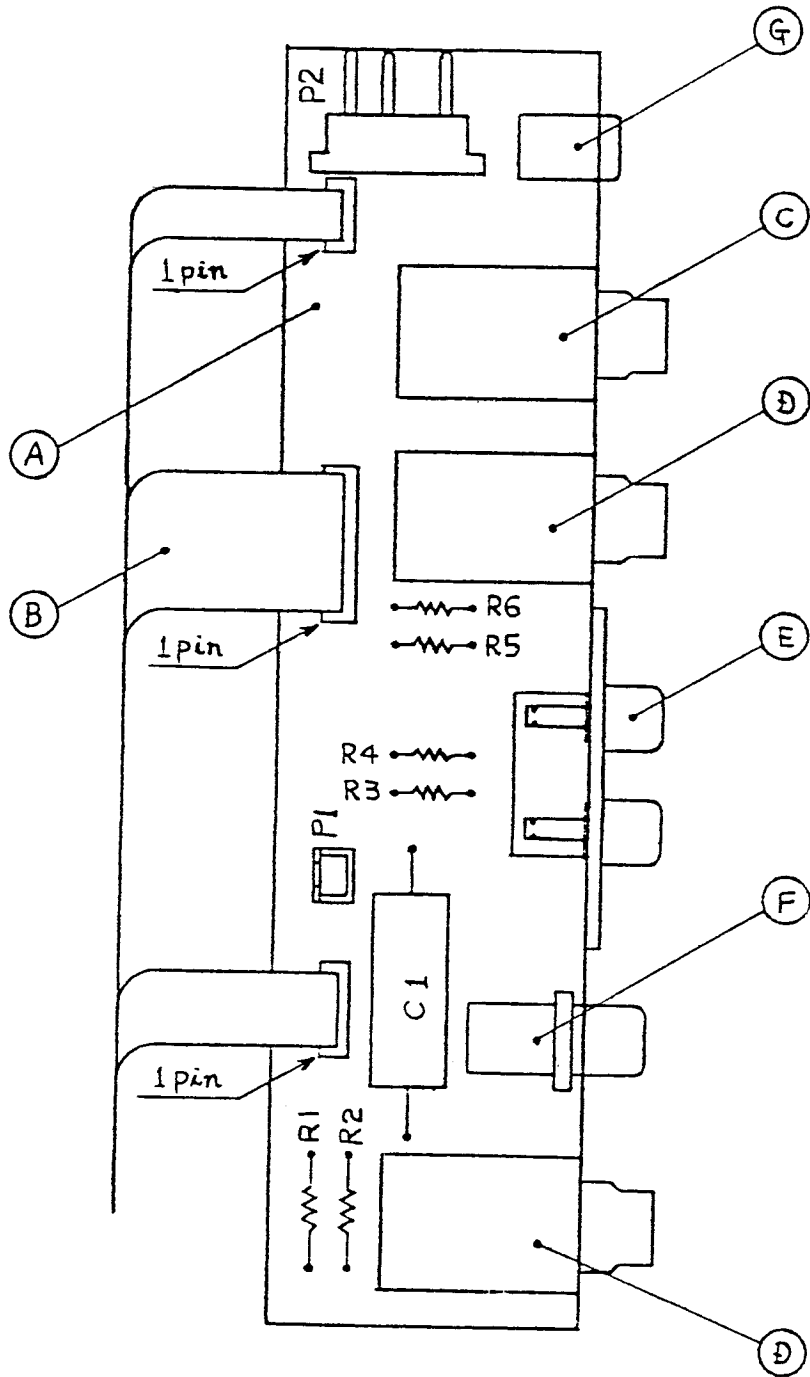
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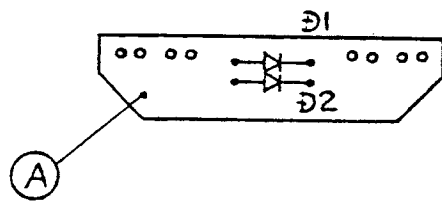
BP7192



BP7194

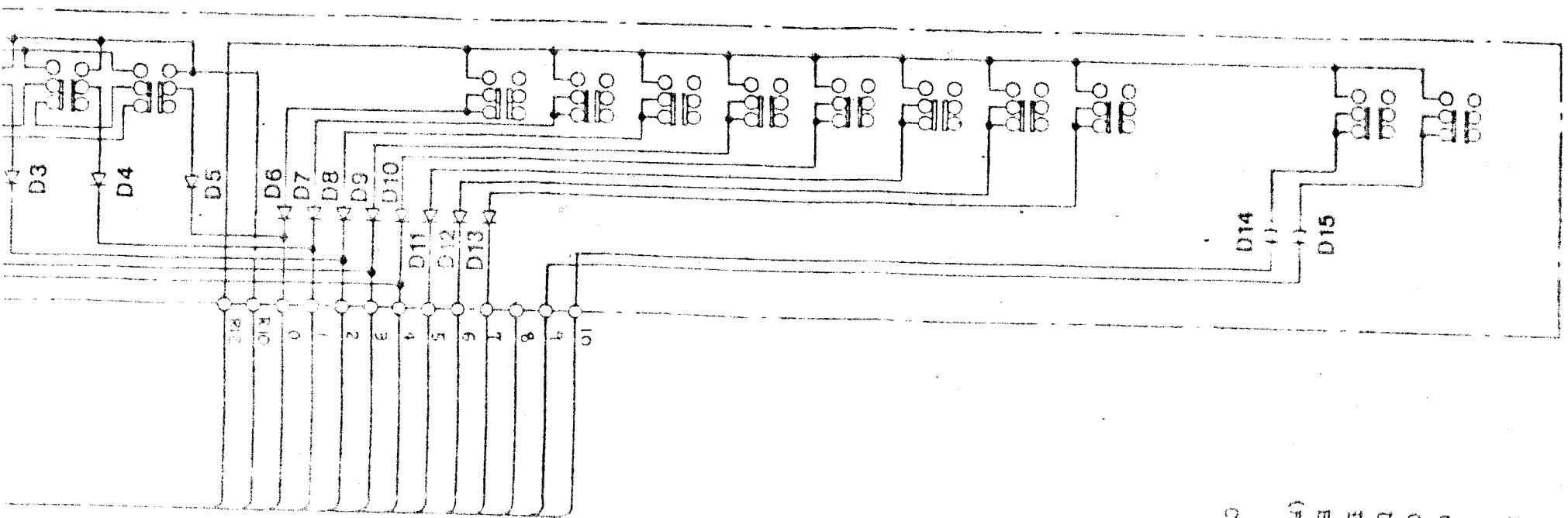


BP7193



BP7195

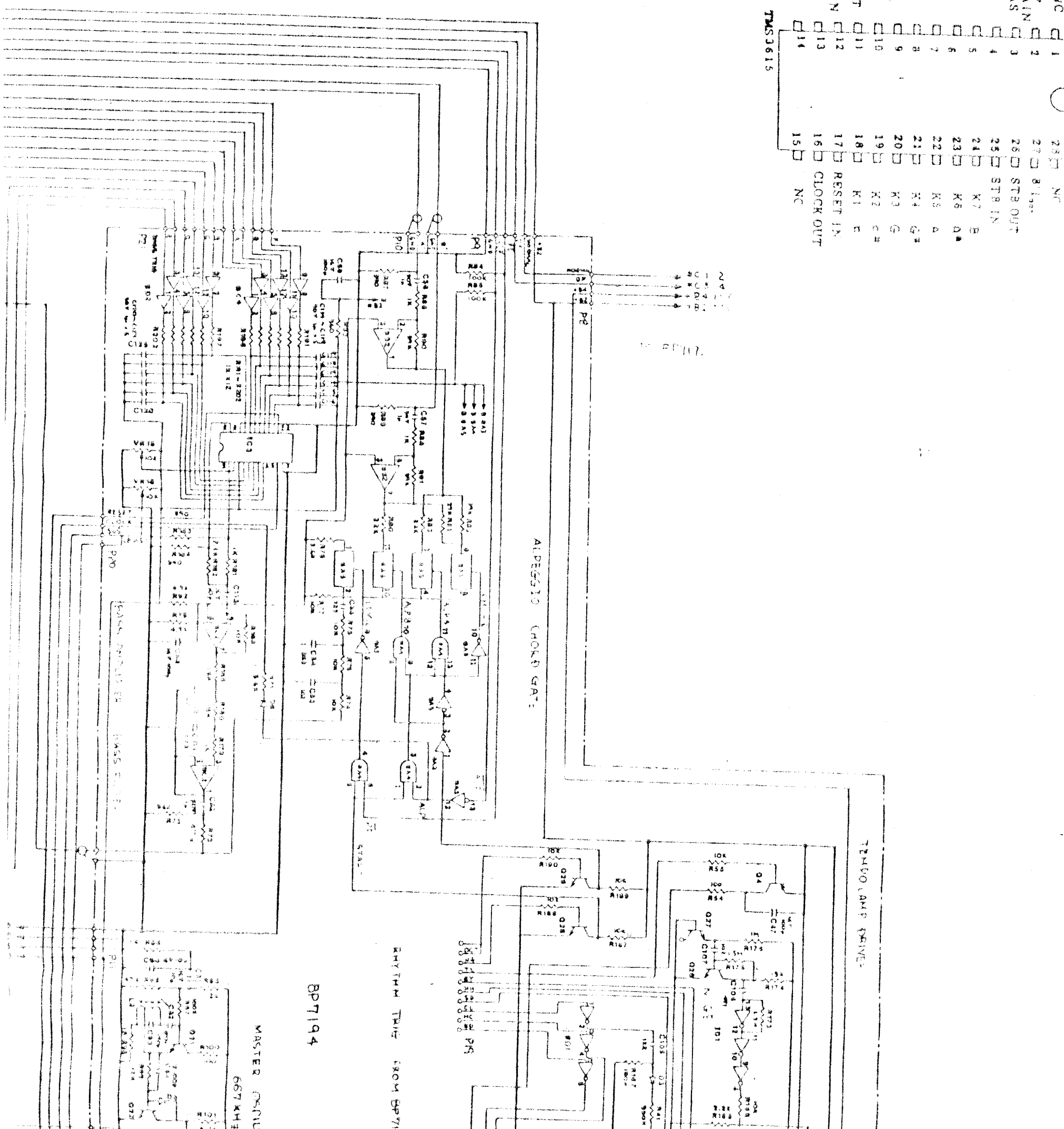
AM AUTO GNE CANCEL COUNTRY DISCO
 PLAY FINGER MARCH WALTZ SWING BALLAD ROCK BOSSANGYA RHUMBA SAMBA
 START/STOP TOUCH CONTROL

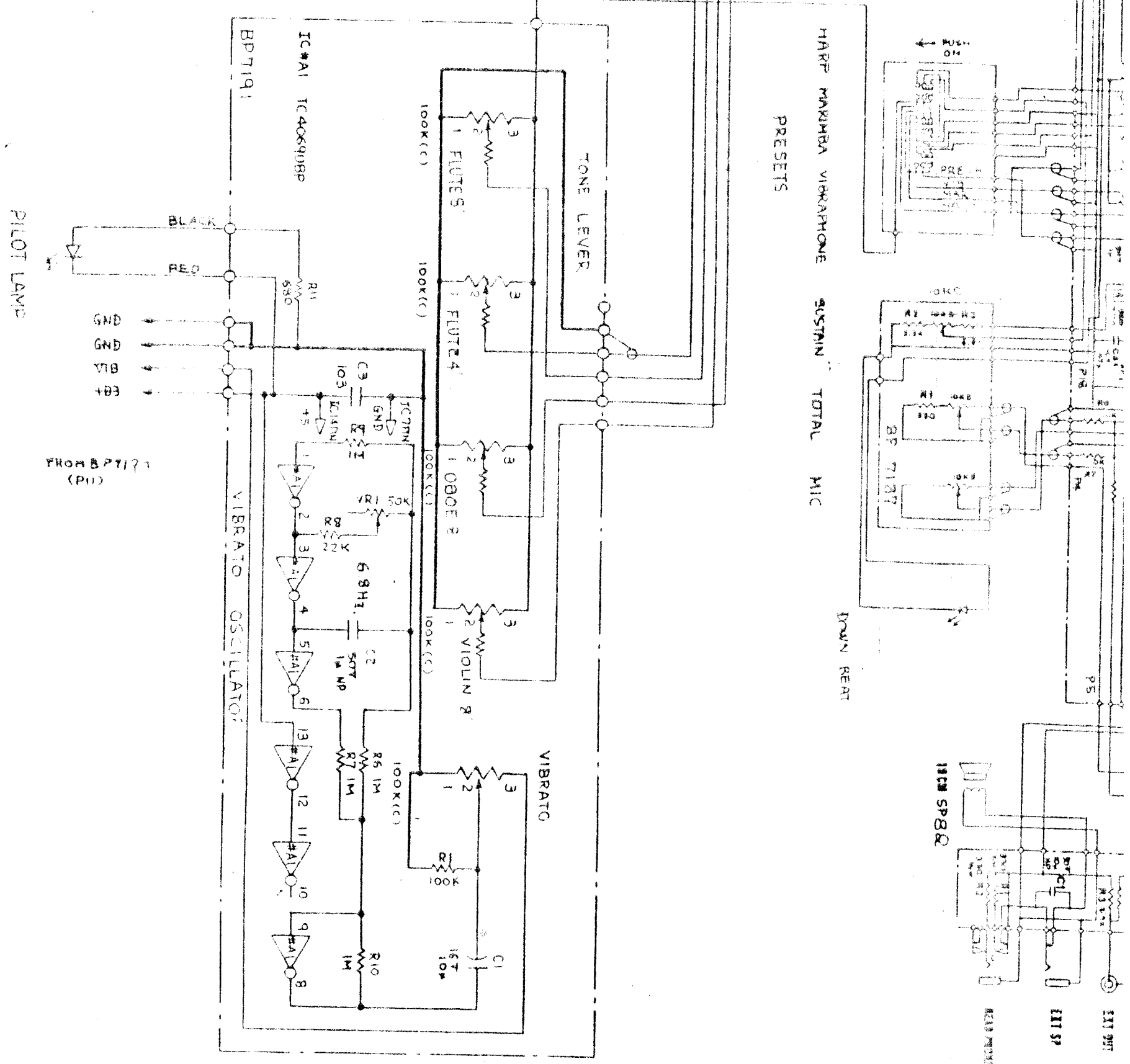
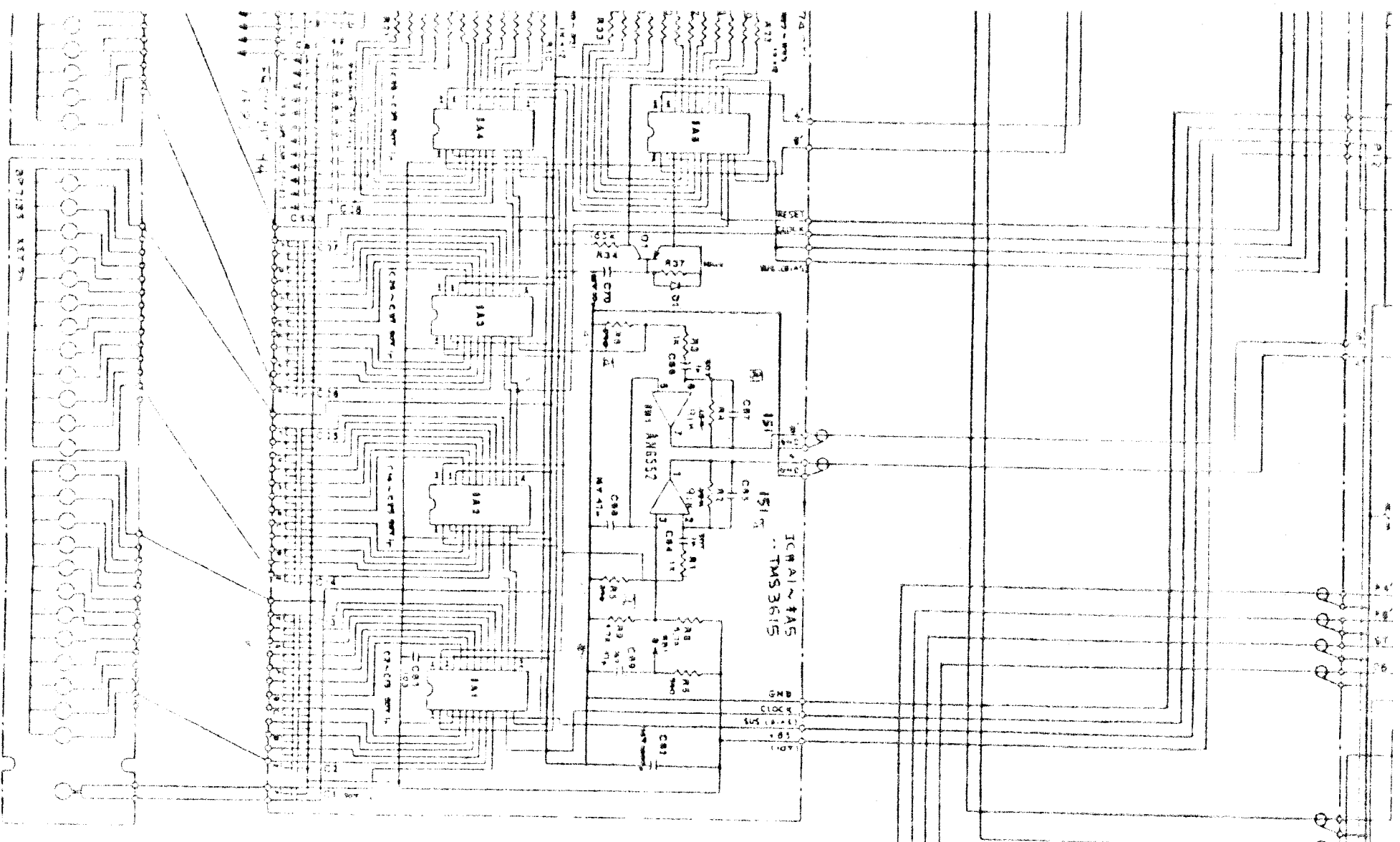


TOP VIEW

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
NC	18 L ₁ SUSTAIN	BIAS	V _{cc}	C K 8	C ² K 9	D K 10	D ² K 11	E K 12	(F) K 13	RESET OUT	CLOCK IN	V _{cc}	N	NC
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
NC	27 B L ₁ SUSTAIN	26 STR OUT	25 STR IN	K 7 B	K 6 A	K 5 A	K 4 G	K 3 G	K 2 C	K 1 C	RESET IN	CLOCK OUT	NC	NC

TMS3615





EXT 9011

EXT SP

REAR PHONE

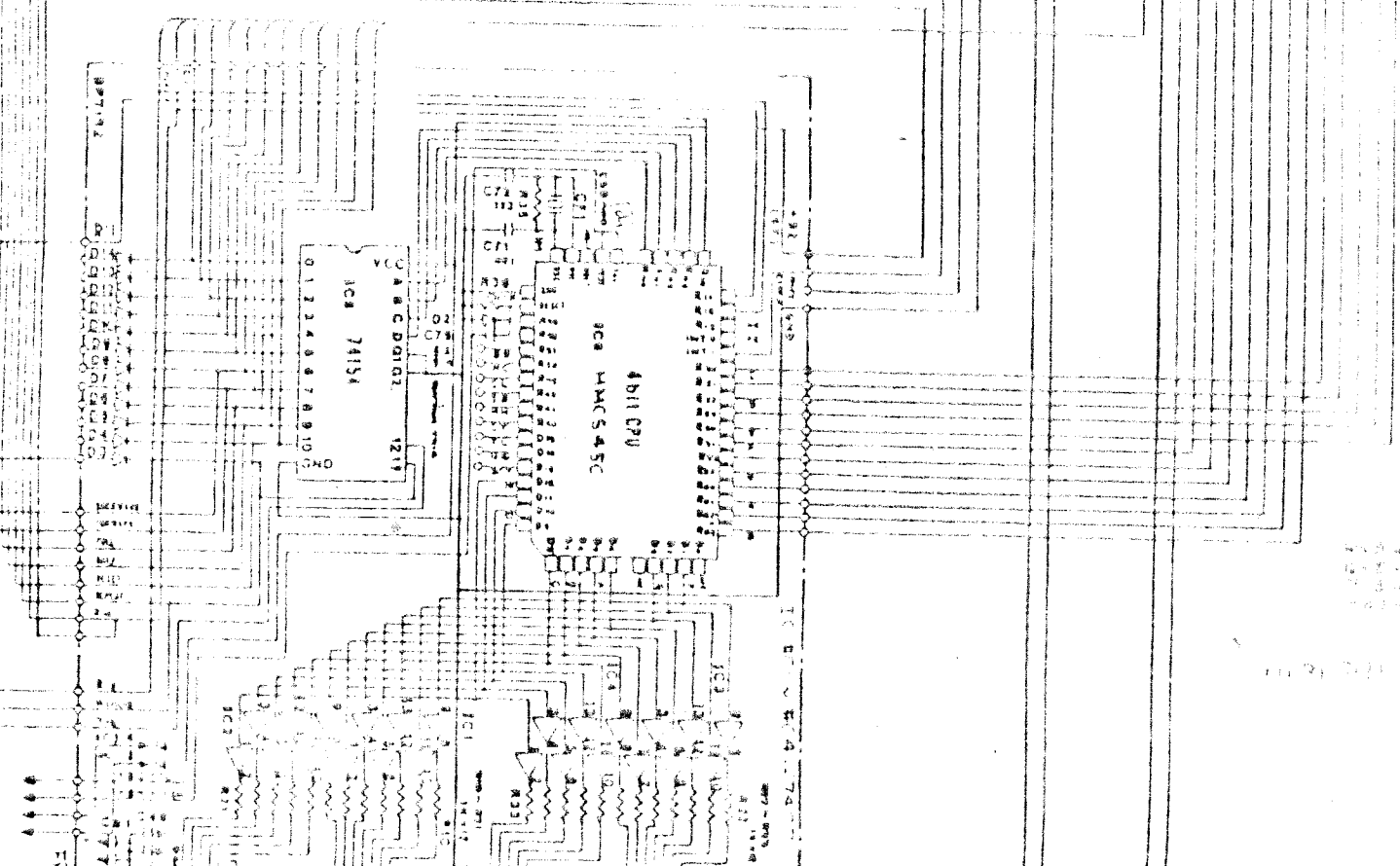
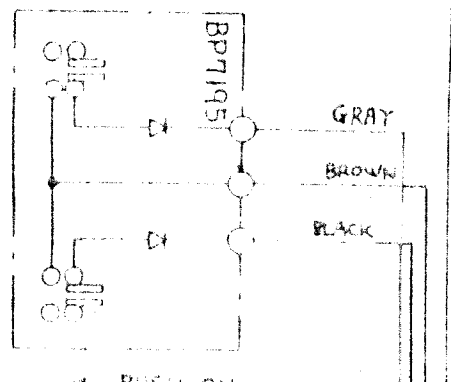
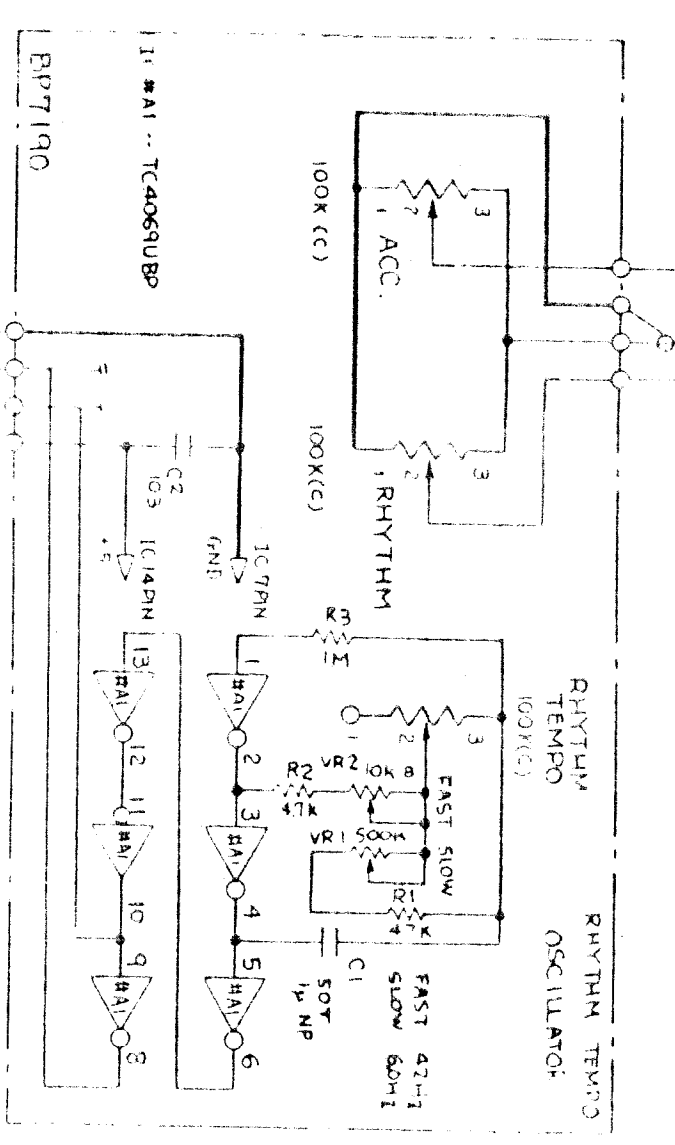
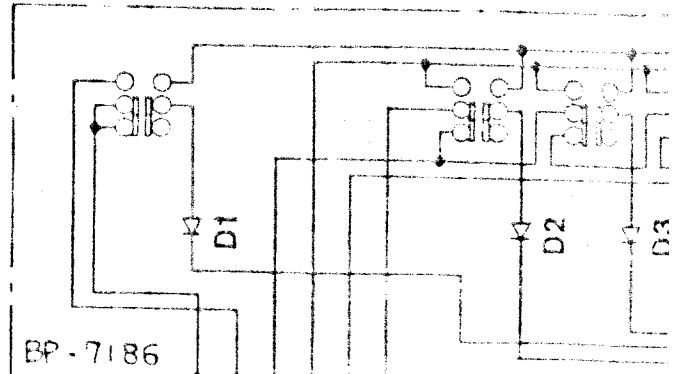
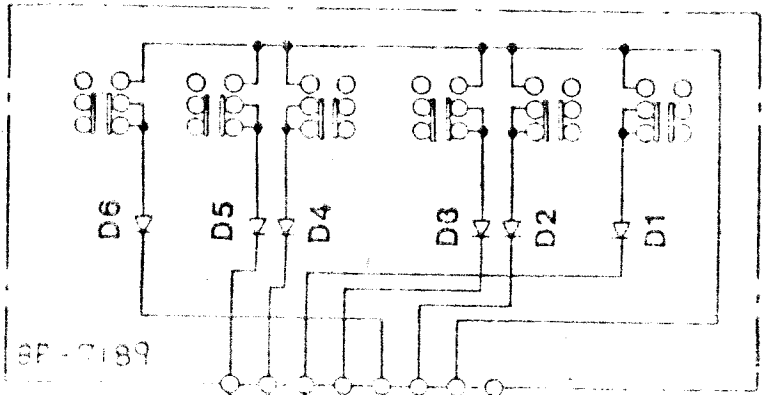
10CM SP8

DOWN REAR

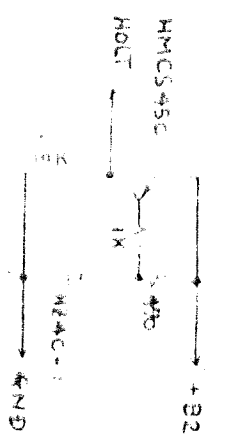
START → → END MEASURE
HALF FULL

☐ STRUM
☐ ARPEGGIO

PROGRAM PROGRAM
REC. PLAY

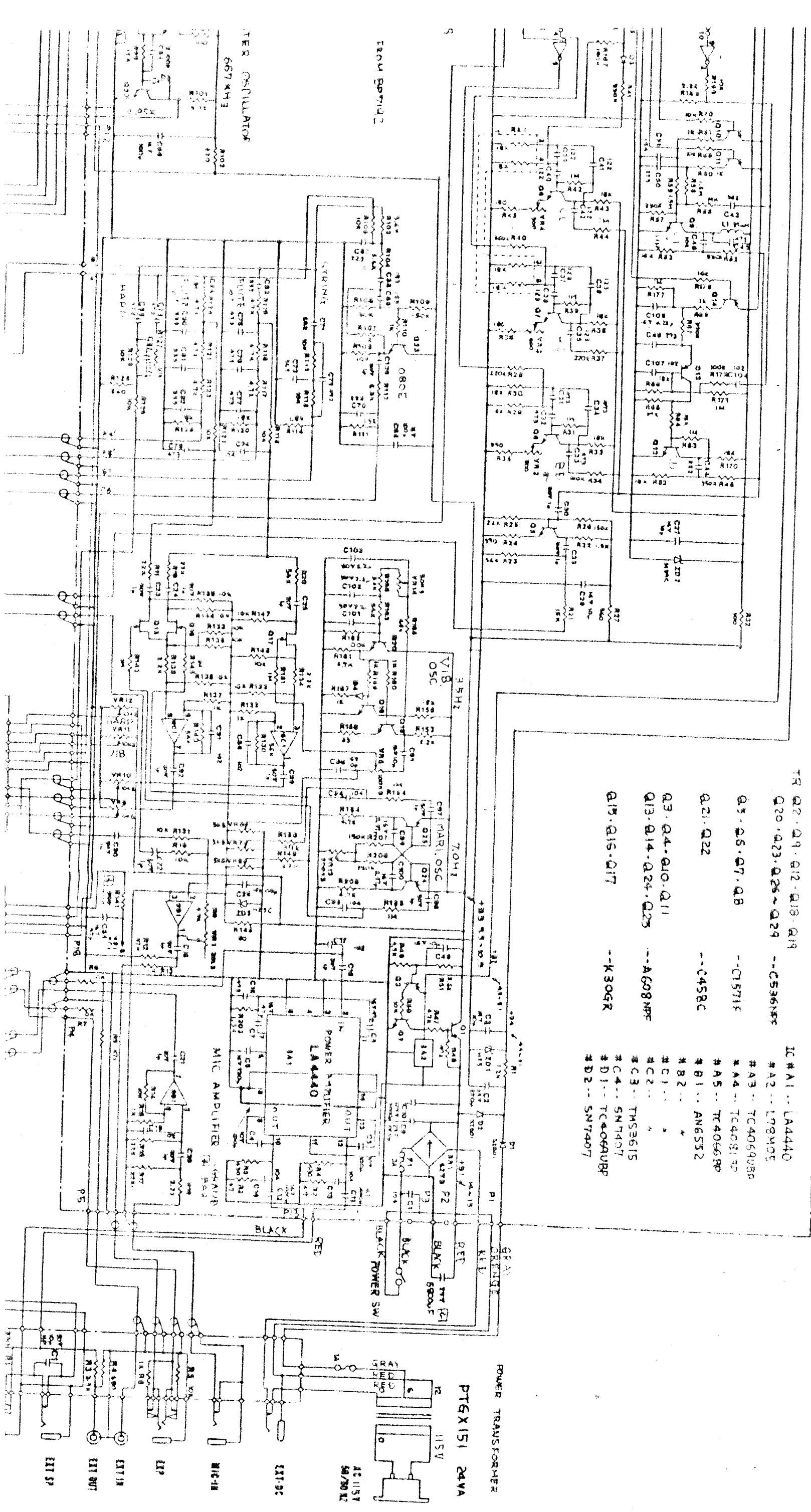


MINOR 74M SW.



470
HOLT
+B2
MINOR 74M SW.

470
HOLT
+B2
MINOR 74M SW.



- | | |
|----------------------|---------------|
| TR Q2-Q9-Q12-Q18-Q19 | IC #A1-LA4440 |
| Q20-Q23-Q26-Q29 | #A2-L79M05 |
| Q5-Q6-Q7-Q8 | #A3-TC4080BP |
| Q21-Q22 | #A4-TC4081BP |
| | #A5-TC4066BP |
| Q3-Q4-Q10-Q11 | #B1-AN6552 |
| Q13-Q14-Q24-Q25 | #B2 |
| Q15-Q16-Q17 | #C1 |
| | #C2 |
| | #C3-TMS3615 |
| | #C4-SM7407 |
| | #D1-TC4069BP |
| | #D2-SM7407 |
| | --K30GR |
| | --A608MPF |
| | --C56NE5 |
| | --C1571F |
| | --C458C |

PT6X151 24VA
115V
AC 115V 50/60HZ

POWER TRANSFORMER

RET
BLACK POWER SW
BLACK 5000UF

RET
BLACK 5000UF

RET
BLACK 5000UF

RET
BLACK 5000UF

TROUBLE SHOOTING
=====

PROBLEM	CHECK	CAUSE ON BOARDS	CAUSE ON PARTS
Keyboard, rhythm and MIC do not make sound.	<ul style="list-style-type: none"> * Turn on power switch. * Max. total volume and MIC volume. * Max. rhythm volume and auto accompaniment volume. * Exp. jack should not be used. 	BP-7194	<ul style="list-style-type: none"> * Disconnection of fuse 3A on BP-7194 * Check the Exp. jack * Check the headphone jack * Replace the speaker box
Accompaniment voice, solo voice and preset voice do not work.	<ul style="list-style-type: none"> * Push one of 8 rhythm buttons * Start the rhythm * Max. rhythm volume and auto accompaniment volume * Turn on power switch * Max. total volume 	BP-7192 BP-7194	
Only some keys do not work.	<ul style="list-style-type: none"> * Turn on power switch * Max. total volume * Check whether the key, which does not make sound, works properly when that key is depressed. 	BP-7192 BP-7185	<ul style="list-style-type: none"> * Replace defective keys
When depressing any key on auto chord keys (lowest one octave),....		BP-7192 BP-7194 BP-7185	<ul style="list-style-type: none"> * Auto accompaniment selection button * Auto arpeggio button (on BP-7186)
1) Chord does not work.			
2) Auto base voice does not work.	<ul style="list-style-type: none"> (To check auto base voice, start auto accompaniment.) 		
3) Arpeggio does not work			
4) Chord, auto base voice and arpeggio do not work.			

PROBLEM	CHECK	CAUSE ON BOARDS	CAUSE ON PARTS
Vibrato does not work	<ul style="list-style-type: none"> * Turn on power switch * Set one of 4 tone levers maximum * Depress a key * Max. total volume * Set the vibrato maximum 	BP-7194 BP-7191	<ul style="list-style-type: none"> * Vibrato volume (on BP-7191)
A tone lever out of 4 does not work	<ul style="list-style-type: none"> * Set the tone lever maximum * Push preset cancellation button 	BP-7194	<ul style="list-style-type: none"> * Tone lever volume (on BP-7191)
MIC does not work	<ul style="list-style-type: none"> * Turn on the switch on MIC * Turn the MIC volume maximum 	BP-7194	<ul style="list-style-type: none"> * MIC jack * Microphone
MIC volume does not work	<ul style="list-style-type: none"> * Turn the volume knob from min. to max. gradually and check the volume. 	BP-7194	<ul style="list-style-type: none"> * MIC volume (on BP-7187)
Incorrect rhythm or no rhythm voice	<ul style="list-style-type: none"> * When pushing the rhythm button, check correct operation of rhythm buttons 	BP-7192 BP-7194	<ul style="list-style-type: none"> * Rhythm tempo volume (on BP-7190) * Rhythm selection button switch (on BP-7186)
Rhythm tempo does not work	<ul style="list-style-type: none"> * Push one of 8 rhythm buttons * Start rhythm * Change tempo and check it. 	BP-7192 BP-7190	<ul style="list-style-type: none"> * Rhythm tempo volume (on BP-7190)
Minor/7th buttons do not work	<ul style="list-style-type: none"> * Push the one finger button 	BP-7192	<ul style="list-style-type: none"> * Minor/7th button switch (on BP-7195)
Rhythm volume lever does not work	<ul style="list-style-type: none"> * Push one of 8 rhythm buttons * Start the rhythm * Moving the volume from min. to max., check the volume fluctuation. 	BP-7194	<ul style="list-style-type: none"> * Rhythm volume (on BP-7190)

PROBLEM	CHECK	CAUSE ON BOARD	CAUSE ON PARTS
Rhythm does not stop	* Restore rhythm start button * Restore touch start button	BP-7192	* Rhythm start button switch * Touch start button switch (on BP-7186)
Downbeat lamp does not turn on	* Push one of 8 rhythm buttons	BP-7192 BP-7194	* Replace tempo indicator lamp
Rhythm does not work	* Push one of 8 rhythm buttons * Start rhythm * Max. rhythm volume * Max. total volume	BP-7192 BP-7194 BP-7190	* Rhythm selection button switch (on BP-7186) * Rhythm tempo volume (on BP-7190)
Chord accompaniment does not work	* Push one of 8 rhythm buttons * Start rhythm In case of 1) * Push auto play button In case of 2) * Push program play button In case of 3) * Push one finger button * Max. auto accompaniment volume	BP-7192 BP-7194	* Auto play button switch * Program play button switch * One finger button switch (on BP-7186)
Total volume does not work	* Turning the total volume knob from min. to max., check the volume fluctuation.	BP-7192 BP-7194	* Total volume (on BP-7187)
The organ hums when MIC is used.	* Check whether MIC plug is firmly set to the body. * Check whether there is no damage on microphone, MIC cord and plug.	BP-7194	* MIC Volume (on BP-7187) * MIC Jack * Microphone

PROBLEM

CHECK

CAUSE ON BOARD

CAUSE ON PARTS

Pilot Lamp does not go on though power turns on.

* Set one of 4 tone levers maximum and push any keys to check whether the organ makes voice.

1. In case of making no sound when depressing a key...BP-7194
2. In case of making sound when depressing a key...BP-7191

2. In case of 2,
* Pilot lamp
* Circuit from MTL volume board to pilot lamp.

A preset voice out of 3 does not work.

* Push one of 3 presets
* Max. total volume

BP-7194

* Preset button switch (on BP-7188)

Sustain does not work on the tone lever voices

* Max. sustain volume
* Push one of preset buttons and depress keys to check whether sustain works properly.

1. In case sustain works on preset voice...BP-7194
2. In case sustain does not work on preset voice ...BP-7192

* Preset button switch (on BP-7188)
* Sustain volume (on BP-7187)

Sustain volume does not work

* Turning the sustain volume from min. to max., check the volume fluctuation.

BP-7194

* Sustain volume (on BP-7187)

Vibes or marimba voice is incorrect

* Push vibes button or marimba button.

BP-7194

Program record can not be done.

* Input chords according to the owner's manual. Push program play button and start the rhythm.
Push one of auto chord keys.

BP-7192

* Program record button switch. (on BP-7186)

PROBLEM	CHECK	CAUSE ON BOARD	CAUSE ON PARTS
Arpeggio voice does not work partially	<ul style="list-style-type: none"> * Push one of 8 rhythm buttons * Start the rhythm * Push auto arpeggio button 	BP-7194	
Change of auto chord/auto arpeggio can not be done,	<ul style="list-style-type: none"> * Push one of 8 rhythm buttons * Start rhythm * Try to turn on and off the auto arpeggio button. 	BP-7194	<ul style="list-style-type: none"> * Auto arpeggio button switch (on BP-7186)
Headphone does not work	<ul style="list-style-type: none"> * Turn on power switch * Max. total volume * Pull out the headphone jack and check whether the organ makes sound. 	BP-7193	<ul style="list-style-type: none"> * Headphone jack and/or circuit of headphone jack.
Though headphone is set to the organ, the organ speaker sounds.	<ul style="list-style-type: none"> * Try some times to put in/pull out the headphone plug. 	BP-7193	<ul style="list-style-type: none"> * Headphone jack and/or circuit of headphone jack.
Though an external speaker is set, it does not make sound.	<ul style="list-style-type: none"> * Try some times to put in/pull out the speaker plug. 	BP-7193	<ul style="list-style-type: none"> * Speaker terminal jack * The external speaker is damaged.
Though a tape recorder is connected with IN/OUT terminal, recording/replaying can not be done.	<ul style="list-style-type: none"> * Check whether all wirings are correct. * Check whether IN terminal or OUT terminal is used alone. 	BP-7193	<ul style="list-style-type: none"> * IN/OUT terminal * External tape recorder and/or connecting wire
Though the expression pedal is set, volume by pedal does not work.	<ul style="list-style-type: none"> * Check whether the connection is correct. 	BP-7193	<ul style="list-style-type: none"> * Expression pedal terminal * Expression pedal
Though external battery is set, power is not turned on.	<ul style="list-style-type: none"> * Check whether the connection is correct. 	BP-7193 BP-7194	<ul style="list-style-type: none"> * DC 12V Socket * External battery is defective.