SERVICE MANUAL
& PARTS LIST

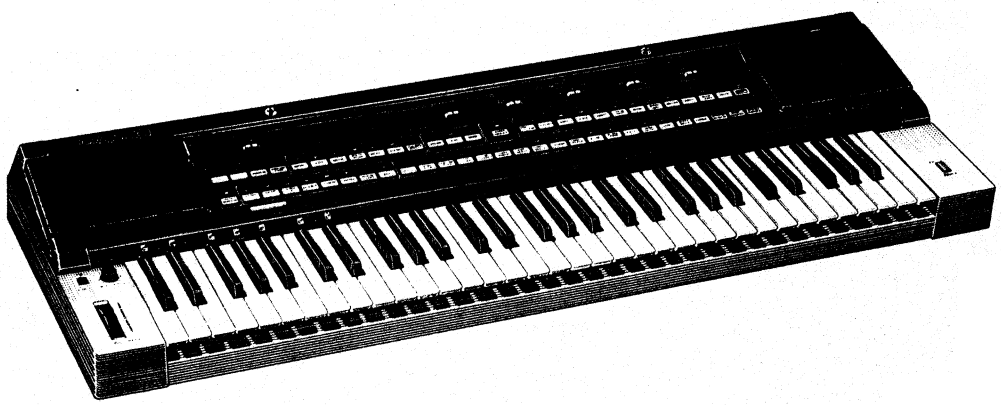
(without price)

ELECTRONIC KEYBOARD

Casiotone CT-6000

(MX-71)

SEPT. 1984



CT-6000

CASIO®

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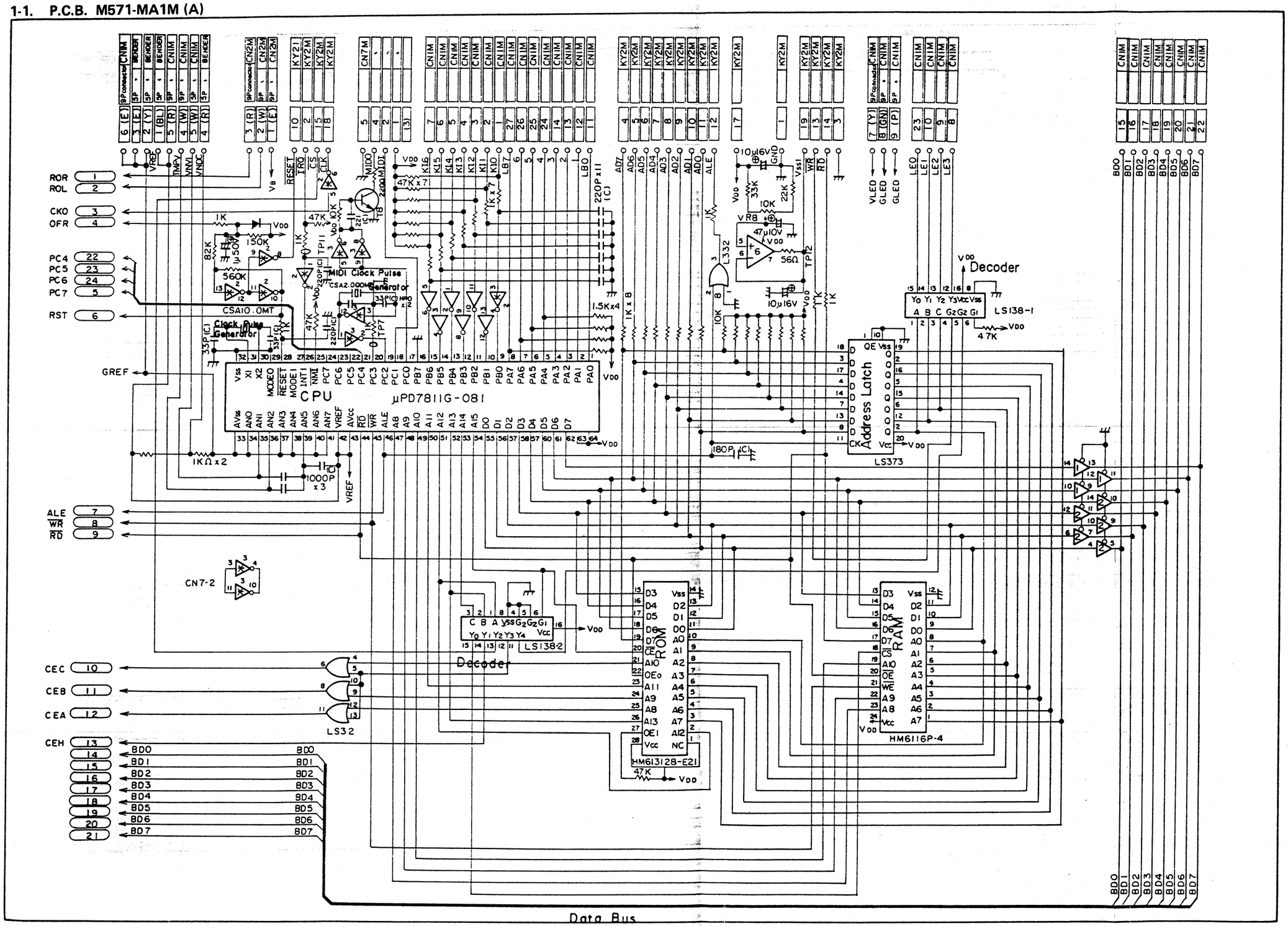
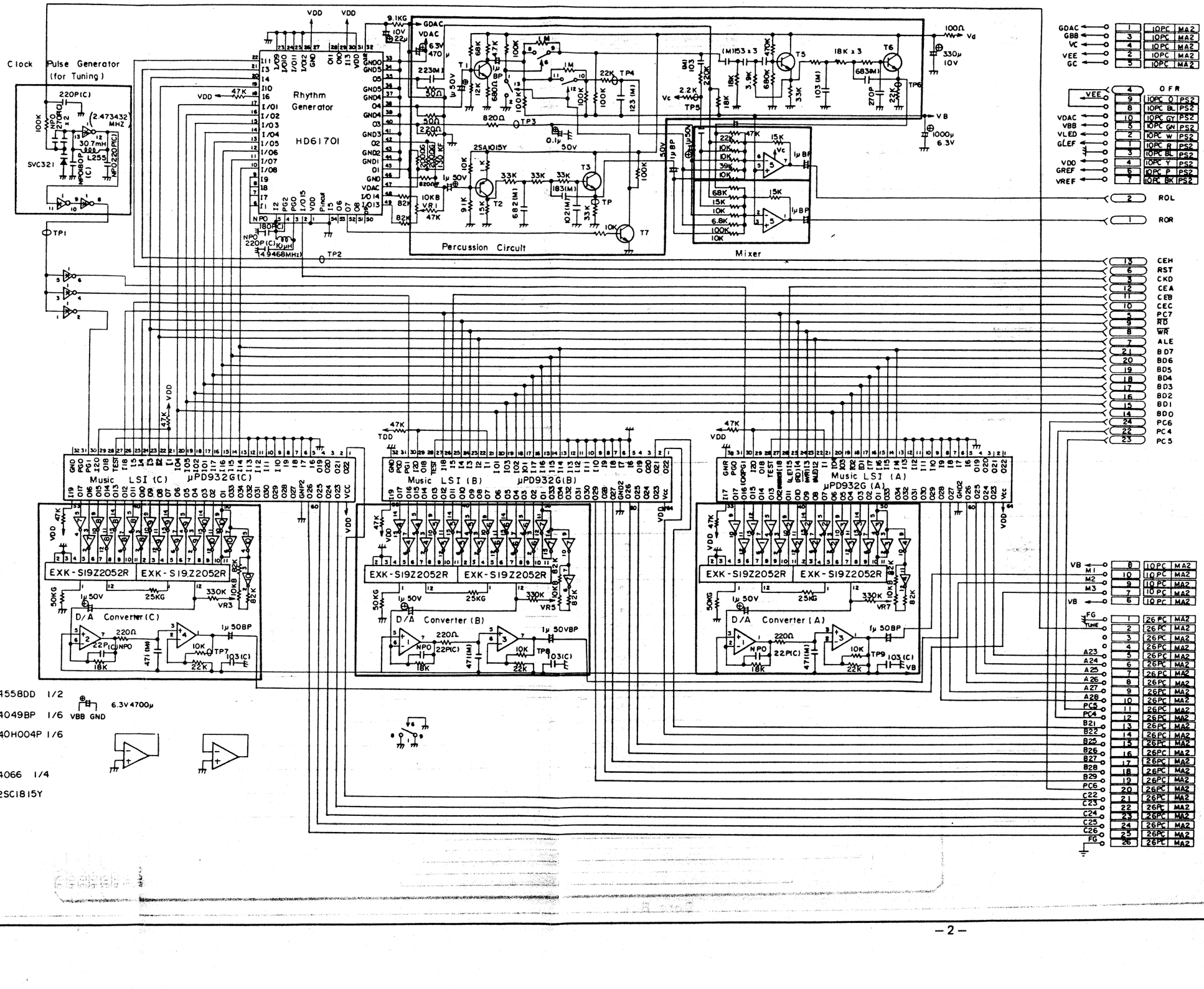
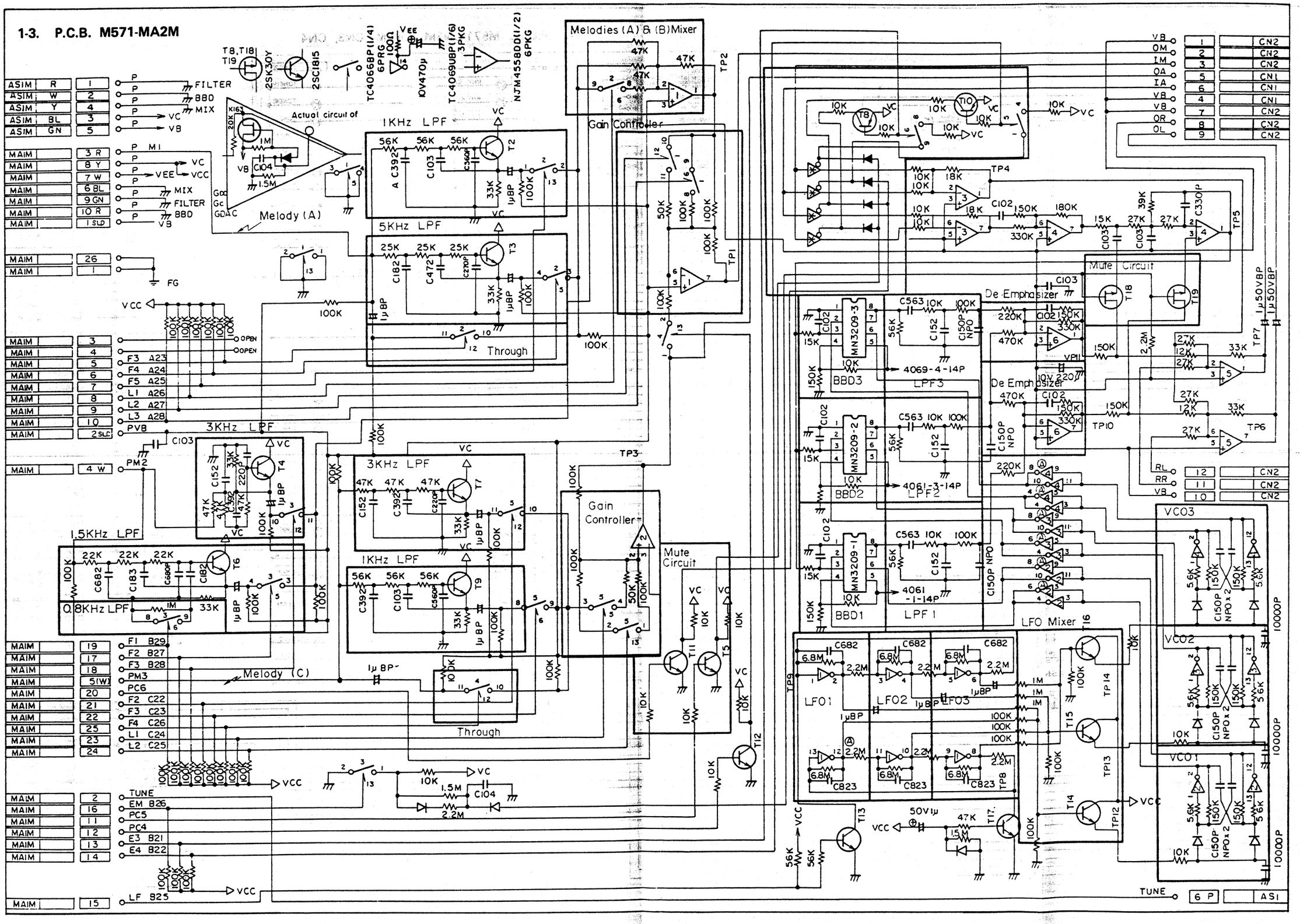


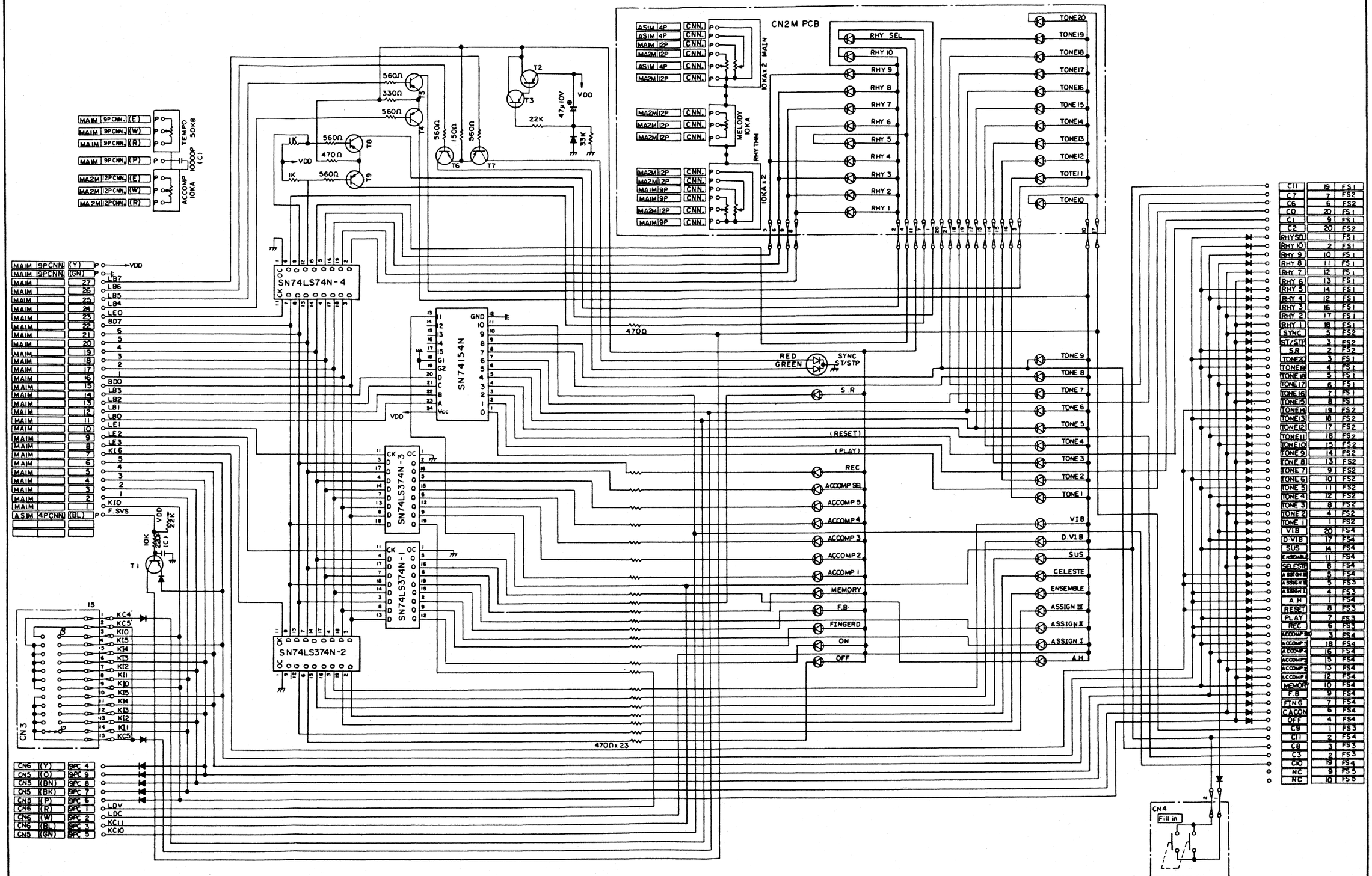
1-2. P.C.B. M571-MA1M (B)



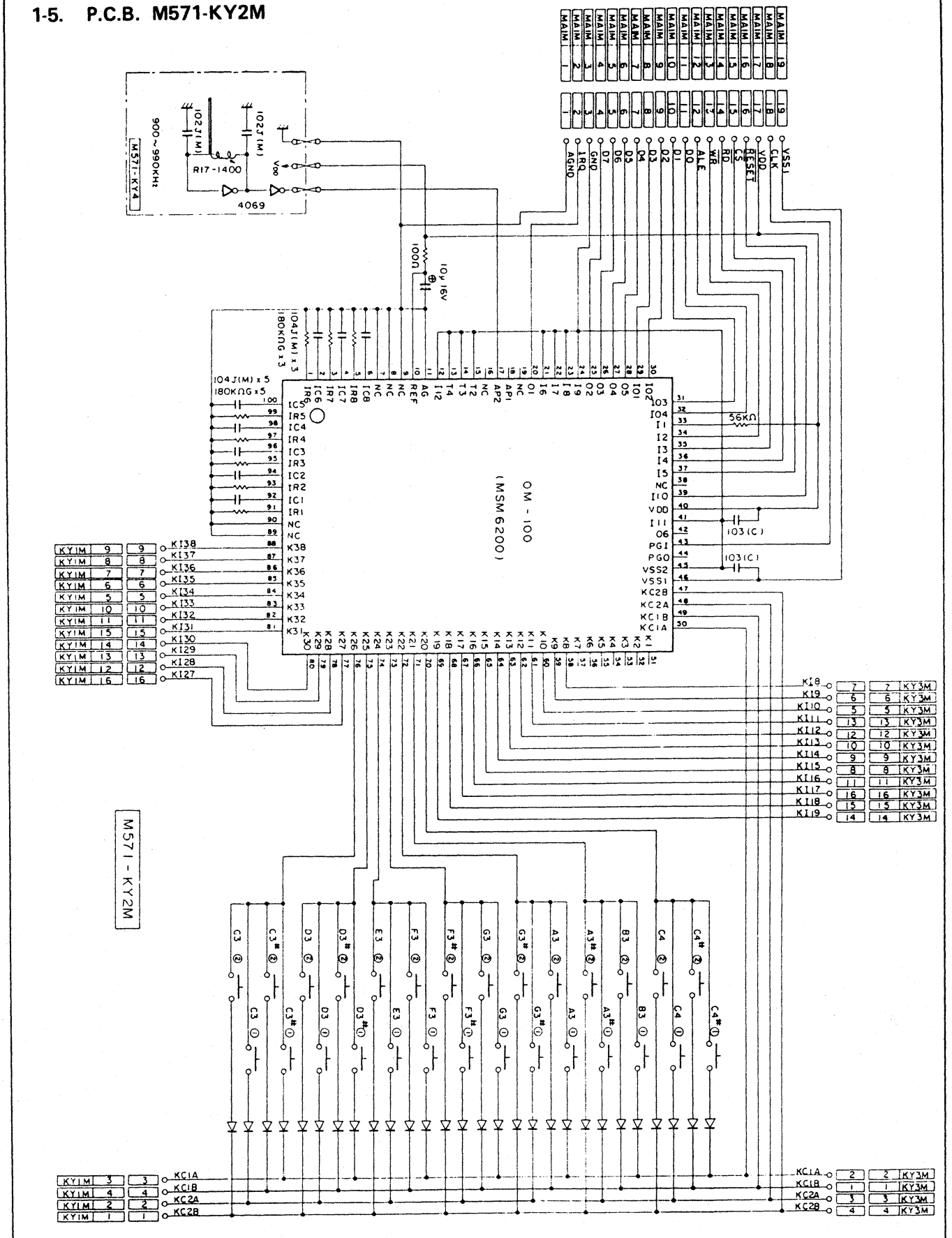
1-3. P.C.B. M571-MA2M



1-4. P.C.Bs. M571-CN1M, CN2M, CN3, CN4

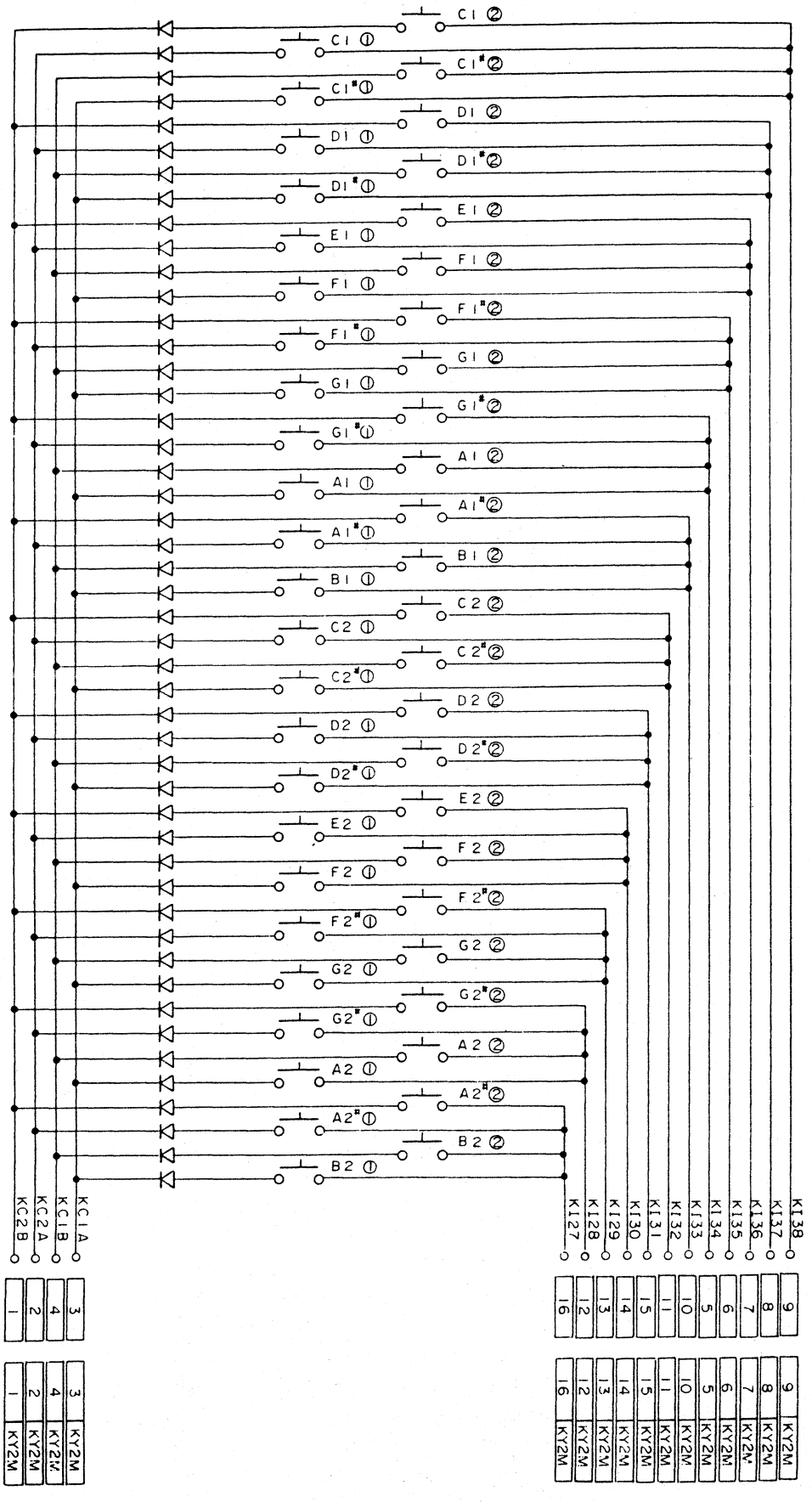


1-5. P.C.B. M571-KY2M

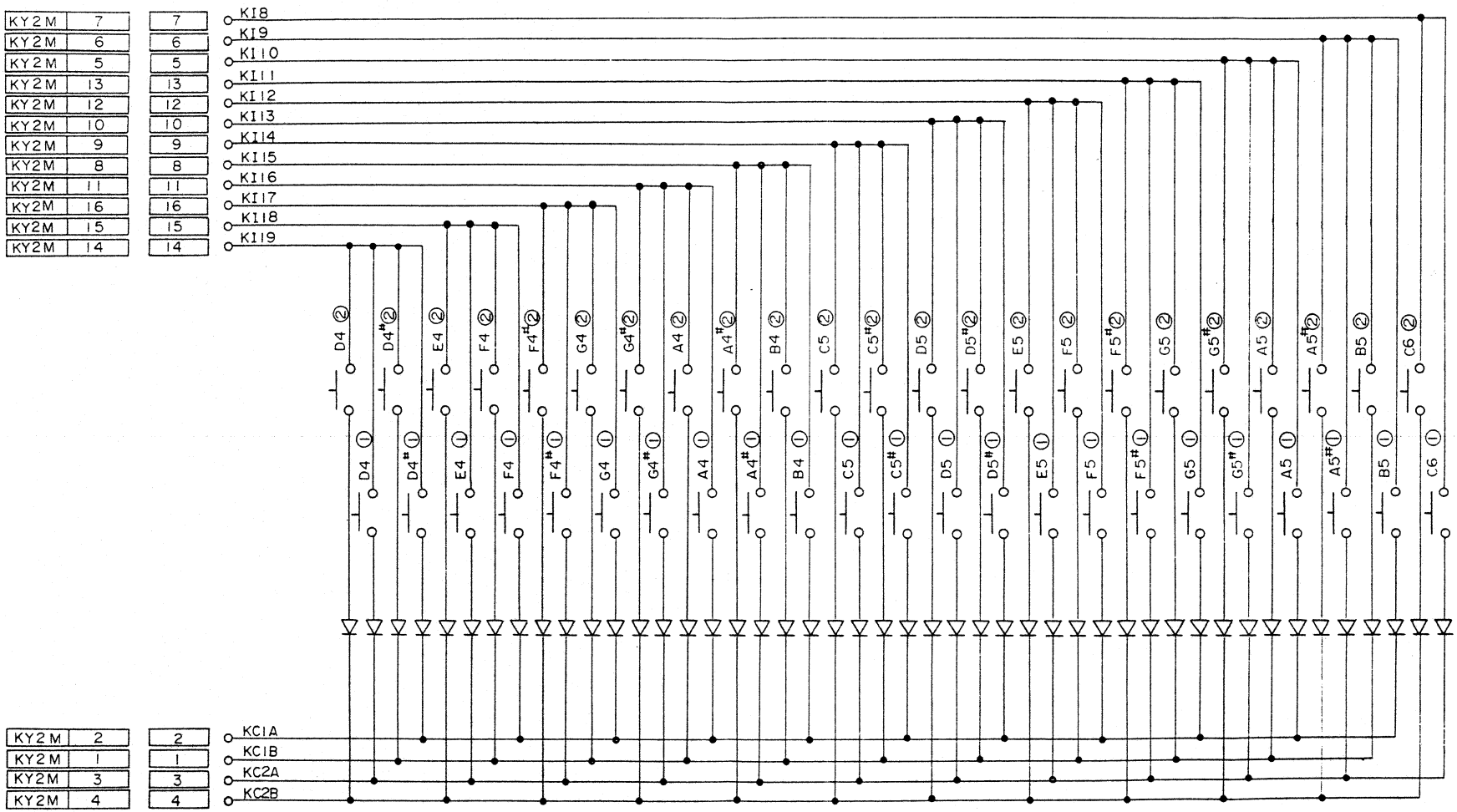


1-6. P.C.B. M571-KY1M

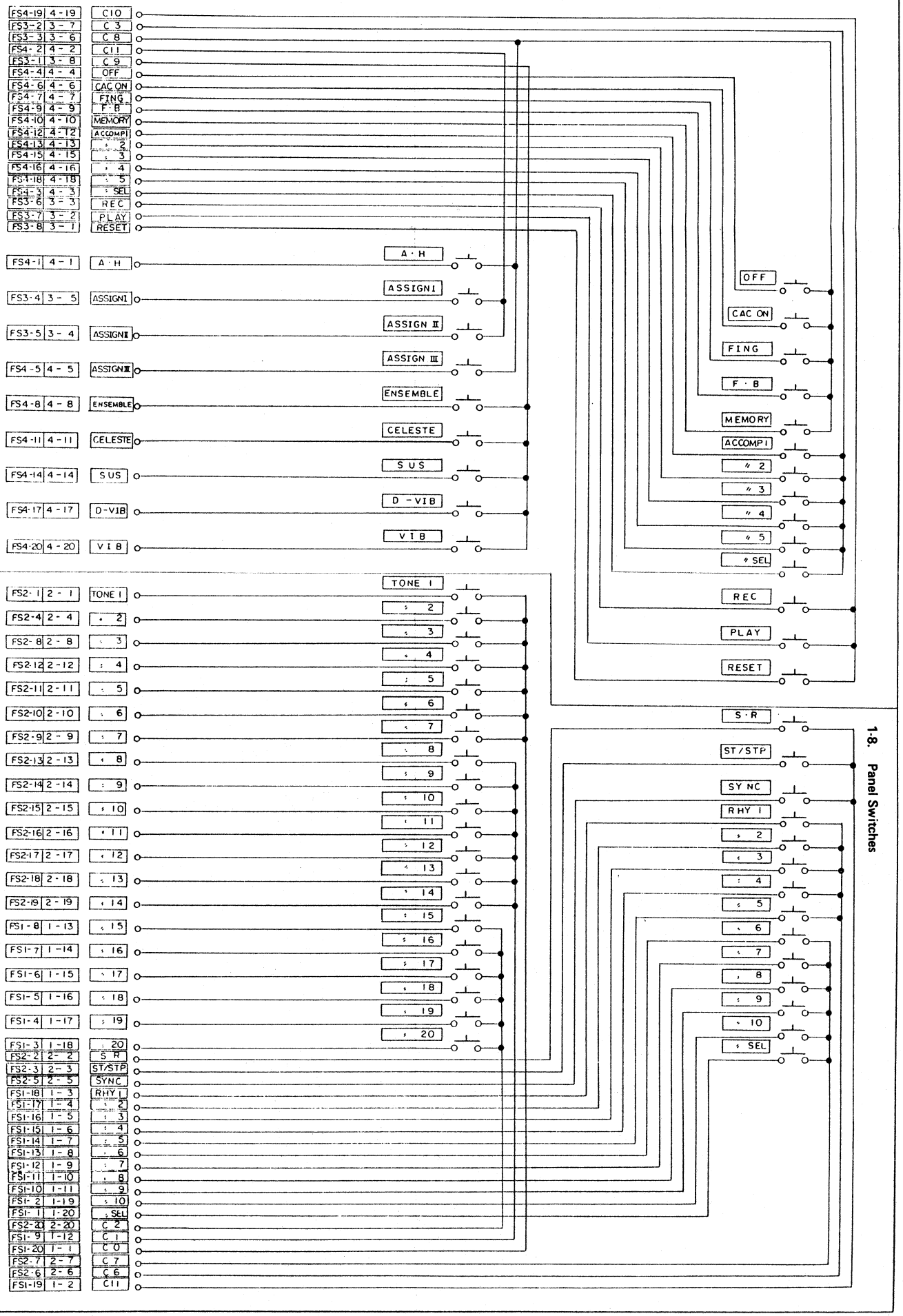
M571 - KY1M



1-7. P.C.B. M571-KY3M



M571 - KY3M


FS4-19 4-19 C10
FS3-2 3-7 C3
FS3-3 3-6 C8
FS4-2 4-2 C11
FS3-1 3-8 C9
FS4-4 4-4 OFF
FS4-6 4-6 CAC ON
FS4-7 4-7 FING
FS4-9 4-9 F·B
FS4-10 4-10 MEMORY
FS4-12 4-12 ACCOMPI
FS4-13 4-13 ♪ 2
FS4-15 4-15 ♪ 3
FS4-16 4-16 ♪ 4
FS4-18 4-18 ♪ 5
FS4-3 4-3 ♪ SEL
FS3-6 3-3 REC
FS3-7 3-2 PLAY
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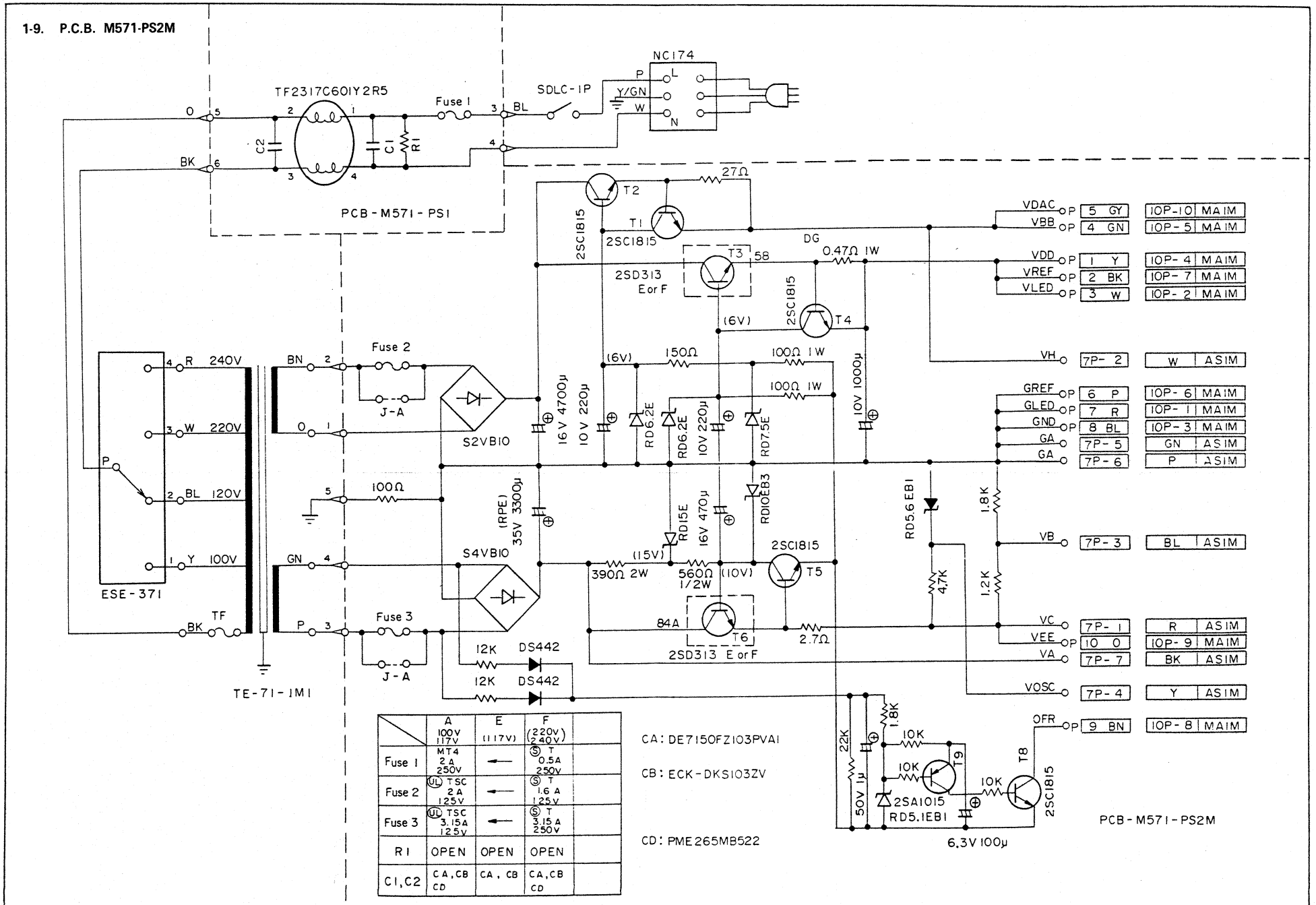
FS4-1 4-1 A·H
FS3-4 3-5 ASSIGNI
FS3-5 3-4 ASSIGNII
FS4-5 4-5 ASSIGNIII
FS4-8 4-8 ENSEMBLE
FS4-11 4-11 CELESTE
FS4-14 4-14 SUS
FS4-17 4-17 D-VIB
FS4-20 4-20 VIB
A·H
ASSIGNI
ASSIGN II
ASSIGN III
ENSEMBLE
CELESTE
SUS
D-VIB
VIB
OFF
CAC ON
FING
F·B
MEMORY
ACCOMPI
♪ 2
♪ 3
♪ 4
♪ 5
♪ SEL
REC
PLAY
RESET
FS2-1 2-1 TONE I
FS2-4 2-4 ♪ 2
FS2-8 2-8 ♪ 3
FS2-12 2-12 ♪ 4
FS2-11 2-11 ♪ 5
FS2-10 2-10 ♪ 6
FS2-9 2-9 ♪ 7
FS2-13 2-13 ♪ 8
FS2-14 2-14 ♪ 9
FS2-15 2-15 ♪ 10
FS2-16 2-16 ♪ 11
FS2-17 2-17 ♪ 12
FS2-18 2-18 ♪ 13
FS2-19 2-19 ♪ 14
FS1-8 1-13 ♪ 15
FS1-7 1-14 ♪ 16
FS1-6 1-15 ♪ 17
FS1-5 1-16 ♪ 18
FS1-4 1-17 ♪ 19
FS1-3 1-18 ♪ 20
FS2-2 2-2 S·R
FS2-3 2-3 ST/STP
FS2-5 2-5 SYNC
FS1-18 1-3 RHY I
FS1-17 1-4 ♪ 2
FS1-16 1-5 ♪ 3
FS1-15 1-6 ♪ 4
FS1-14 1-7 ♪ 5
FS1-13 1-8 ♪ 6
FS1-12 1-9 ♪ 7
FS1-11 1-10 ♪ 8
FS1-10 1-11 ♪ 9
FS1-2 1-19 ♪ 10
FS1-1 1-20 ♪ SEL
FS2-20 2-20 C2
FS1-9 1-12 C1
FS1-20 1-1 C0
FS2-7 2-7 C7
FS2-6 2-6 C6
FS1-19 1-2 C11
TONE I
♪ 2
♪ 3
♪ 4
♪ 5
♪ 6
♪ 7
♪ 8
♪ 9
♪ 10
♪ 11
♪ 12
♪ 13
♪ 14
♪ 15
♪ 16
♪ 17
♪ 18
♪ 19
♪ 20
S·R
ST/STP
SYNC
RHY I
♪ 2
♪ 3
♪ 4
♪ 5
♪ 6
♪ 7
♪ 8
♪ 9
♪ 10
♪ SEL

1-9. P.C.B. M571-PS2M



	A 100V 117V	E (117V)	F (220V) 240V
Fuse 1	MT4 2A 250V	←	Ⓢ T 0.5A 250V
Fuse 2	Ⓤ TSC 2A 125V	←	Ⓢ T 1.6A 125V
Fuse 3	Ⓤ TSC 3.15A 125V	←	Ⓢ T 3.15A 250V
R1	OPEN	OPEN	OPEN
C1,C2	CA,CB CD	CA, CB	CA,CB CD

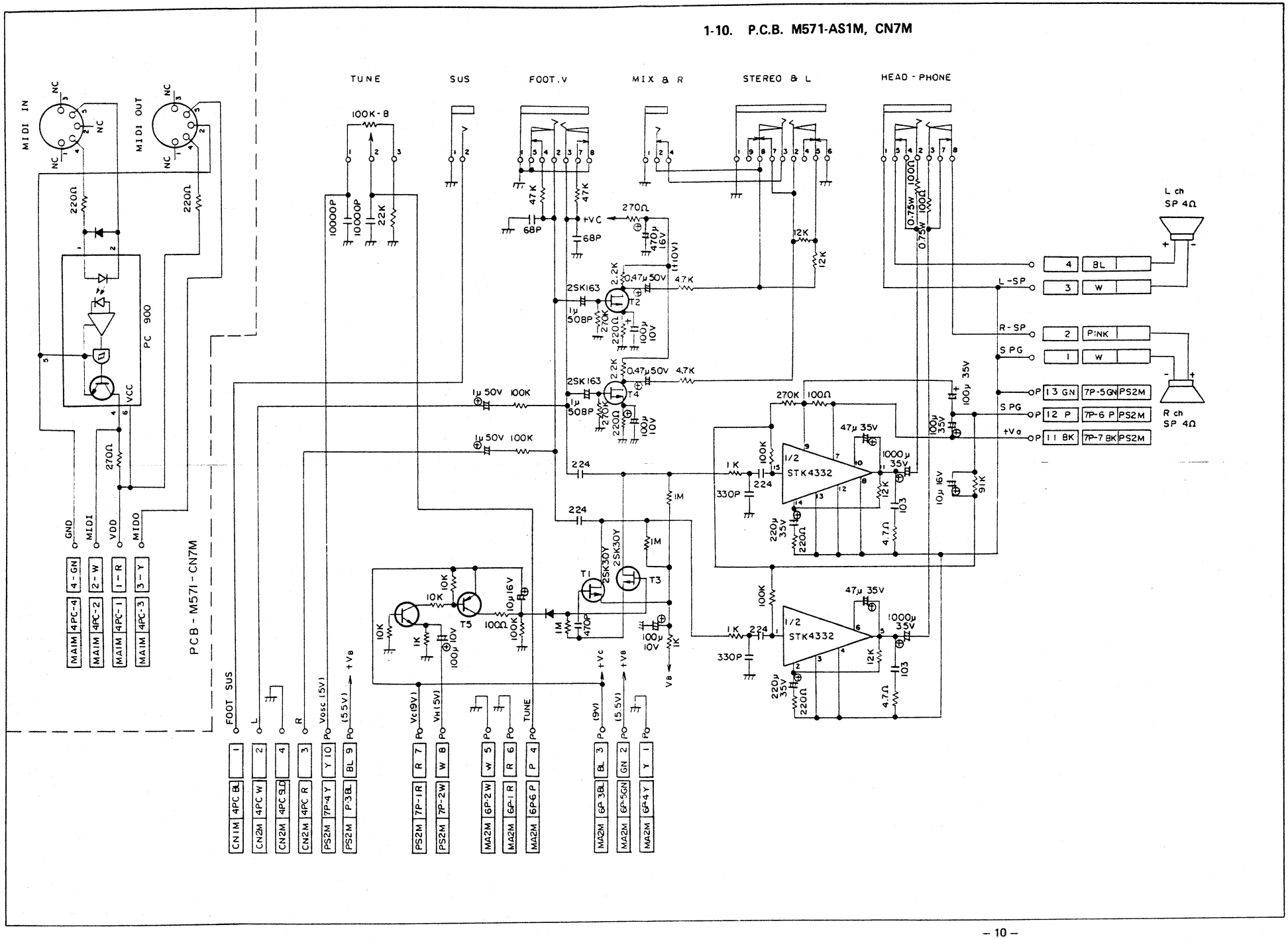
CA: DE7150FZ103PVA1

CB: ECK-DKS103ZV

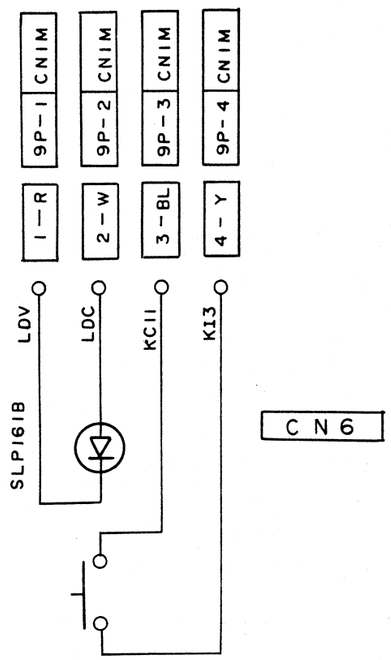
CD: PME265MB522

VDAC	P 5 GY	10P-10	MAIM
VBB	P 4 GN	10P-5	MAIM
VDD	P 1 Y	10P-4	MAIM
VREF	P 2 BK	10P-7	MAIM
VLED	P 3 W	10P-2	MAIM
VH	7P-2	W	ASIM
GREF	P 6 P	10P-6	MAIM
GLED	P 7 R	10P-1	MAIM
GND	P 8 BL	10P-3	MAIM
GA	7P-5	GN	ASIM
GA	7P-6	P	ASIM
VB	7P-3	BL	ASIM
VC	7P-1	R	ASIM
VEE	P 10 0	10P-9	MAIM
VA	7P-7	BK	ASIM
VOSC	7P-4	Y	ASIM
OFR	P 9 BN	10P-8	MAIM

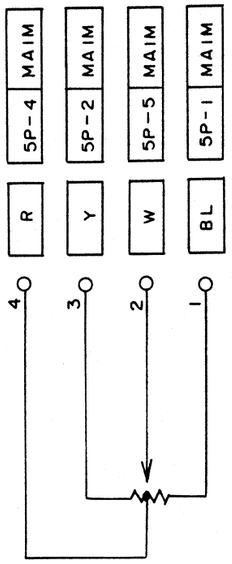
1-10. P.C.B. M571-AS1M, CN7M



1-11. BENDER VR

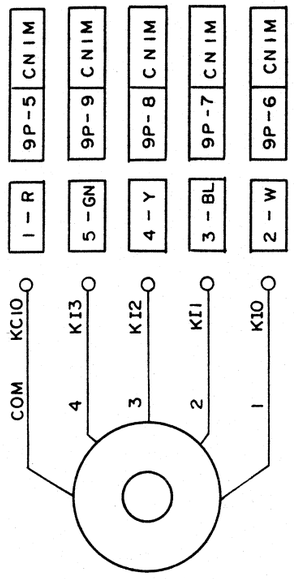


Glissando SW



BENDER VR

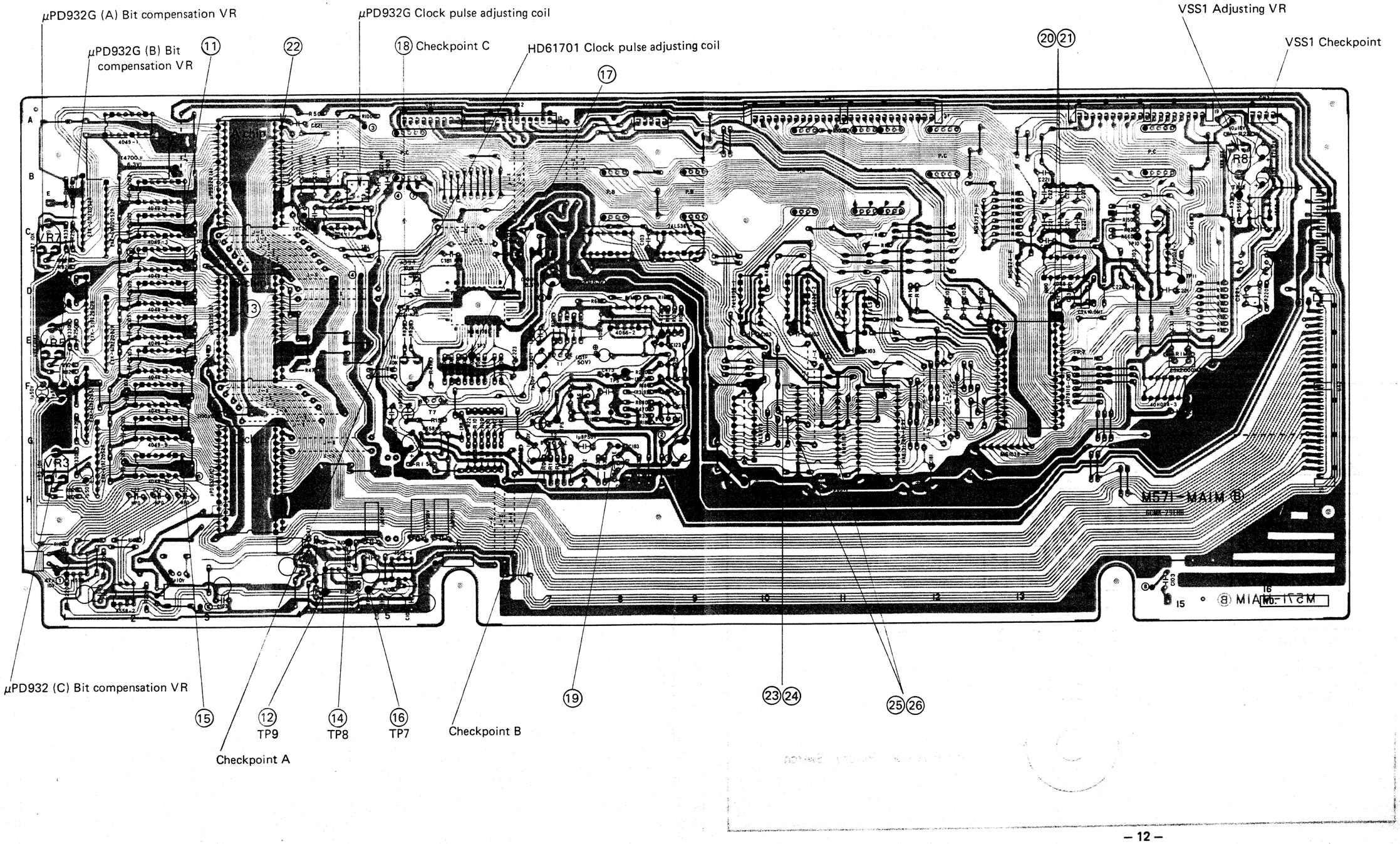
Position	1	2	3	4
1	OFF	OFF	OFF	OFF
2	ON	OFF	OFF	OFF
3	ON	ON	OFF	OFF
4	OFF	ON	OFF	OFF
5	OFF	ON	ON	OFF
6	ON	ON	ON	OFF
7	ON	OFF	ON	OFF
8	OFF	OFF	ON	OFF
9	OFF	OFF	ON	ON
10	ON	OFF	ON	ON
11	ON	ON	ON	ON
12	OFF	ON	ON	ON



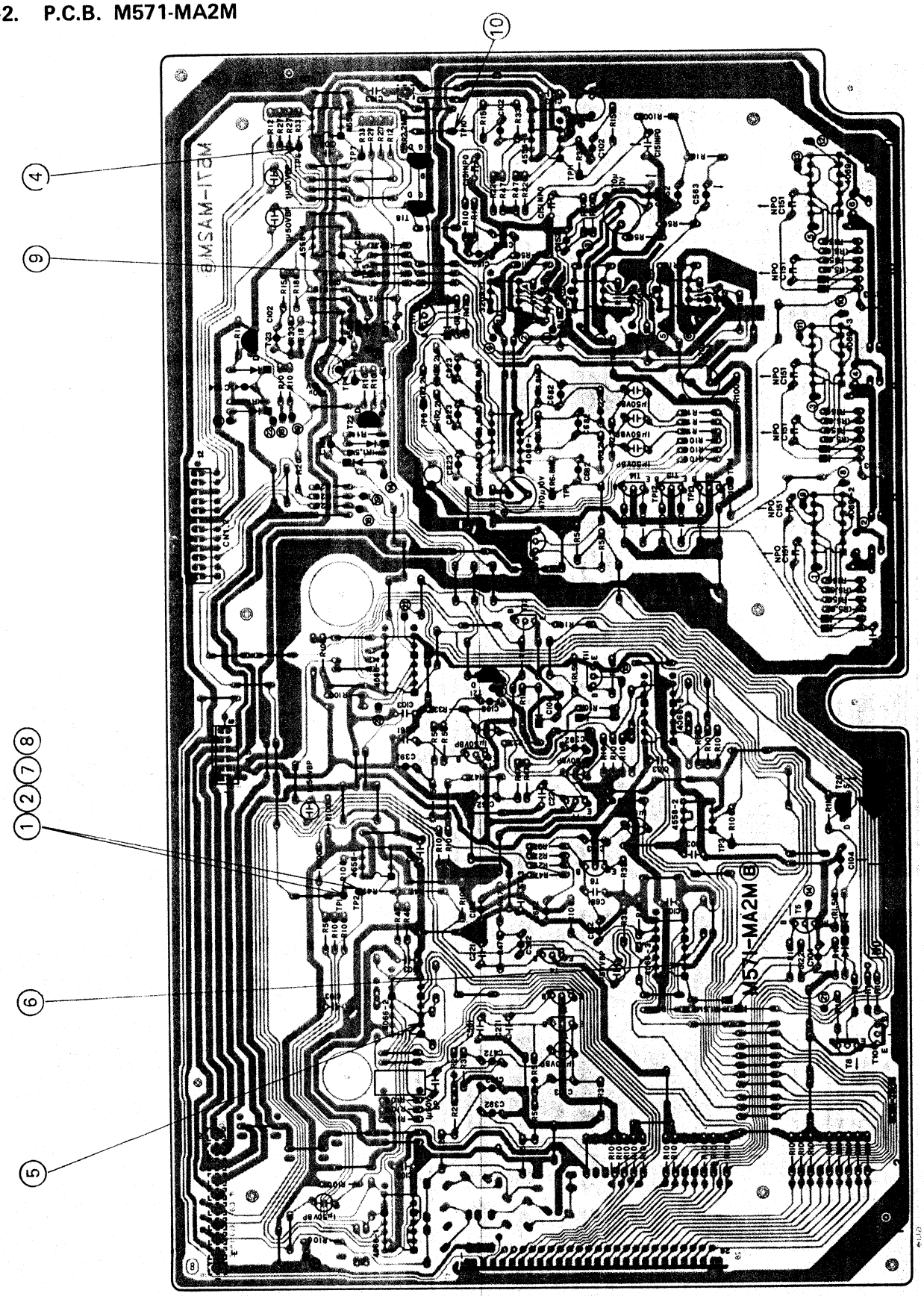
12 - Position Rotary Switch

2. P.C.B. LAYOUT & MAJOR CHECKPOINTS

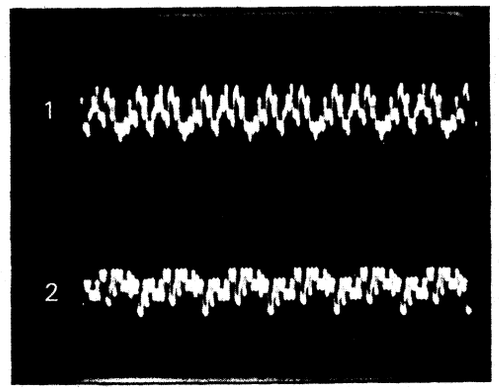
2-1. P.C.B. M571-MA1M



2-2. P.C.B. M571-MA2M

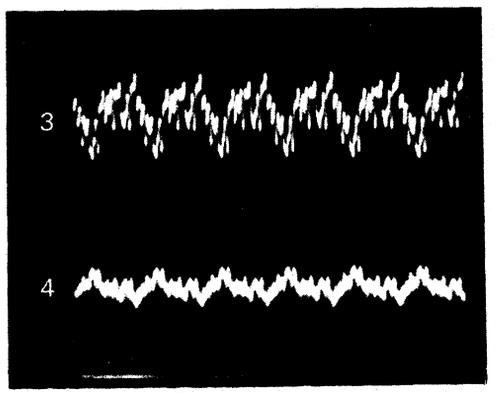


3. MAJOR WAVEFORMS



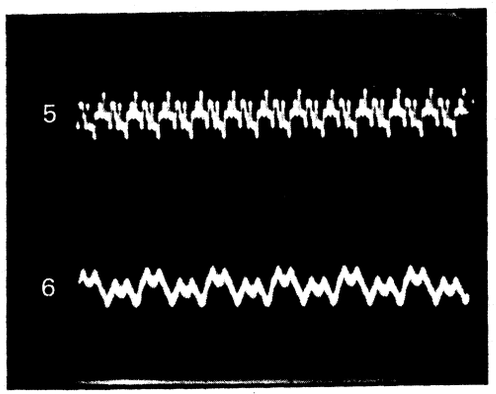
Tone: Pipe Organ
Key: C3
Key pressure: Maximum
5ms/Div.
① P.C.B. M571-MA2 TP1 10mV/div.

② P.C.B. M571-MA2 TP2 10mV/div.



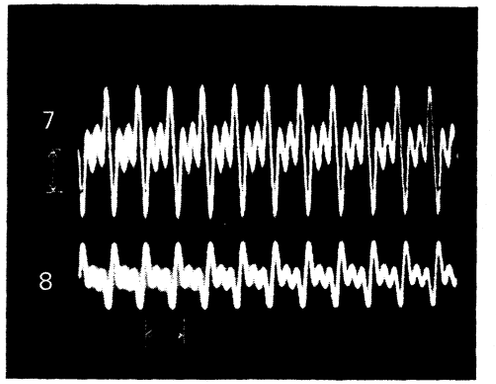
Tone: Pipe Organ
Key: C3
Melody VR: Middle
Main VR: Max. 5ms/div.
③ Line-out (L) 5mV/div.

④ P.C.B. M571-MA2M TP6 5mV/div.



Tone: Pipe Organ
Key: C3
5ms/div.
⑤ P.C.B. M571-MA2M
pin 2 of TC4066-2 10mV/div.

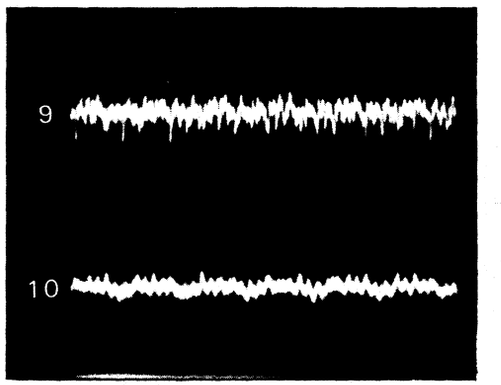
⑥ P.C.B. M571-MA2M
pin 3 of TC4066-3 10mV/div.



Tone: Chorus
Key: C3
Key Pressure: Max. 5ms/div.

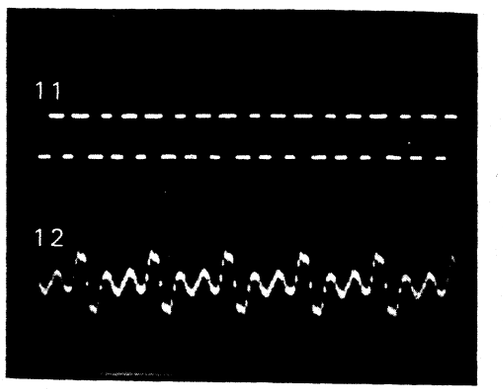
⑦ P.C.B. MA2 TP1 10mV/div.

⑧ P.C.B. MA2 TP2 20mV/div.



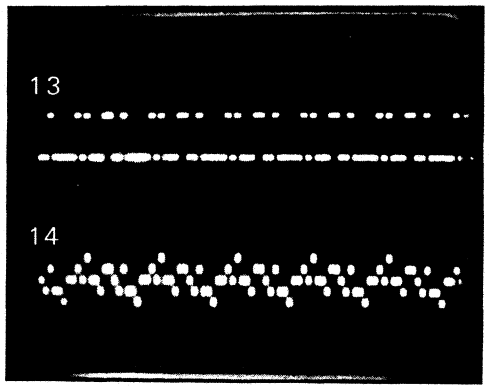
Tone: Pipe Organ
Key: C3
ENSEMBLE ON
Melody VR: Middle 5ms/div.
⑨ P.C.B. MA2 TP5 5mV6div.

⑩ P.C.B. MA2 TP10 5mV/div.



μPD932G (B) output
Tone: Chorus
Key: C3
2ms/div.
⑪ P.C.B. MA1 TC4049-7
pin 9 0.5V/div.

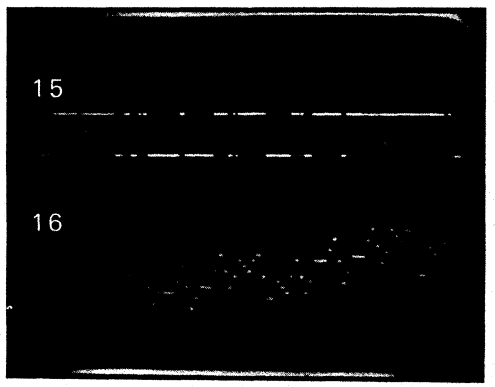
⑫ P.C.B. MA1 TP8 5mV/div.



μPD932G (A) Output
Tone: Organ
Key: C3

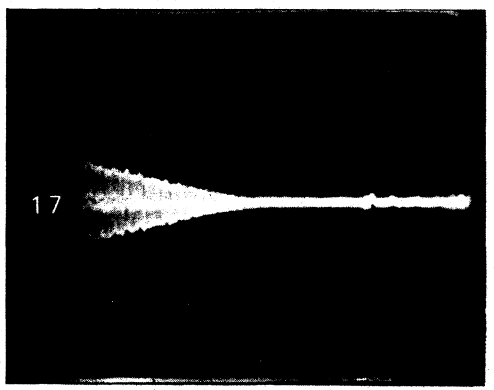
(13) P.C.B. MA1 TC4049-4
pin 9 0.5V/div.

(14) P.C.B. MA1 TP9 10mV/div.

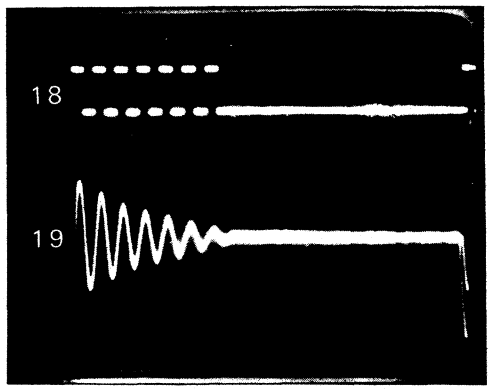


μPD932G (C) Output
Accomp. Tone: Organ 1
CAC: Fingered
1ms/div.
(15) P.C.B. MA1 TC4049-10
pin 9 0.5V/div.

(16) P.C.B. MA1 TP7 10mV/div.

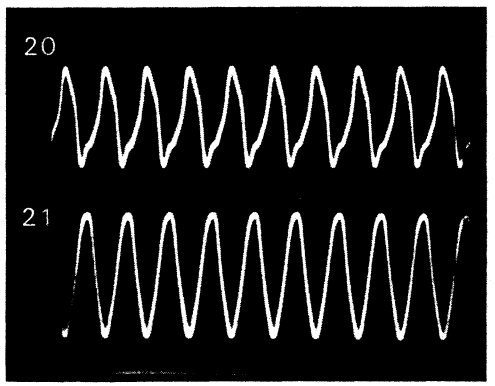


Rhythm: 16 Beat 1
(17) P.C.B. MA1 TP3
20ms/div. 10mV/div.



Rhythm: Rock 1
20ms/div.
(18) P.C.B. MA1 HD61701
pin 48 0.5V/div.

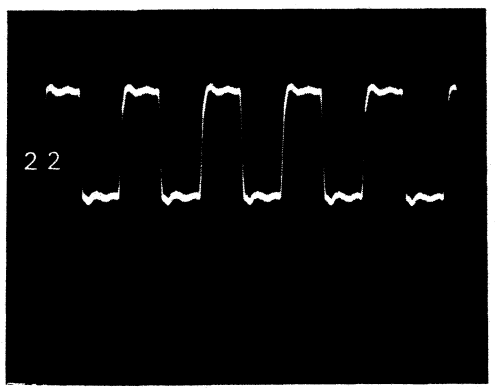
(19) P.C.B. MA1 TP3 20mV/div.



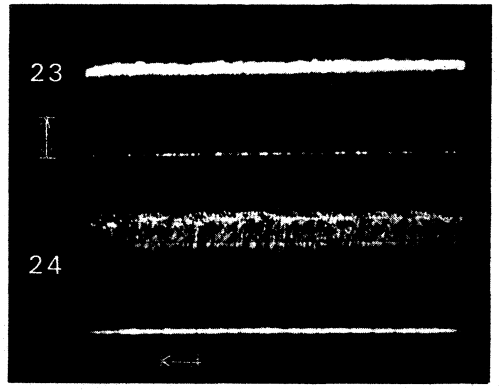
μPD7811 Clock pulse

(20) P.C.B. MA1 μPD7811 pin 30

(21) P.C.B. MA1 μPD7811 pin 31
0.1μs/div., 0.2V/div.

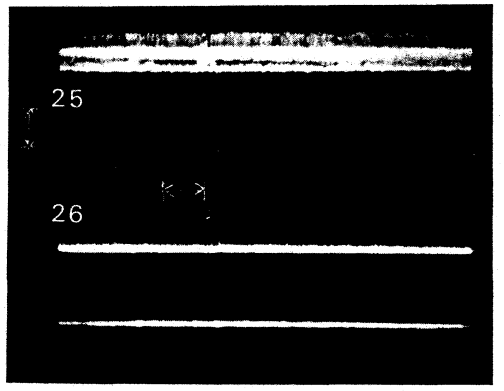


μPD932G Clock pulse
(22) P.C.B. MA1 μPD932G pin 30
0.2μs/div. 0.2V/div.



㉓ RAM CS
P.C.B. MA1 HM6116P pin 18

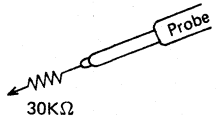
㉔ RAM Data Bus
P.C.B. MA1 HM6116P pin 13
10μs/div. 0.2V/div.



㉕ RAM $\overline{WE}$
P.C.B. MA1 HM6116P pin 21

㉖ RAM Address Bus
P.C.B. MA1 HM6116P pin 1
10μs/div. 0.2V/div.

Note: Waveform voltage ranges less than 200mV are measured via 30kΩ resistor.



4. BLOCK DIAGRAM OF DIGITAL BLOCK

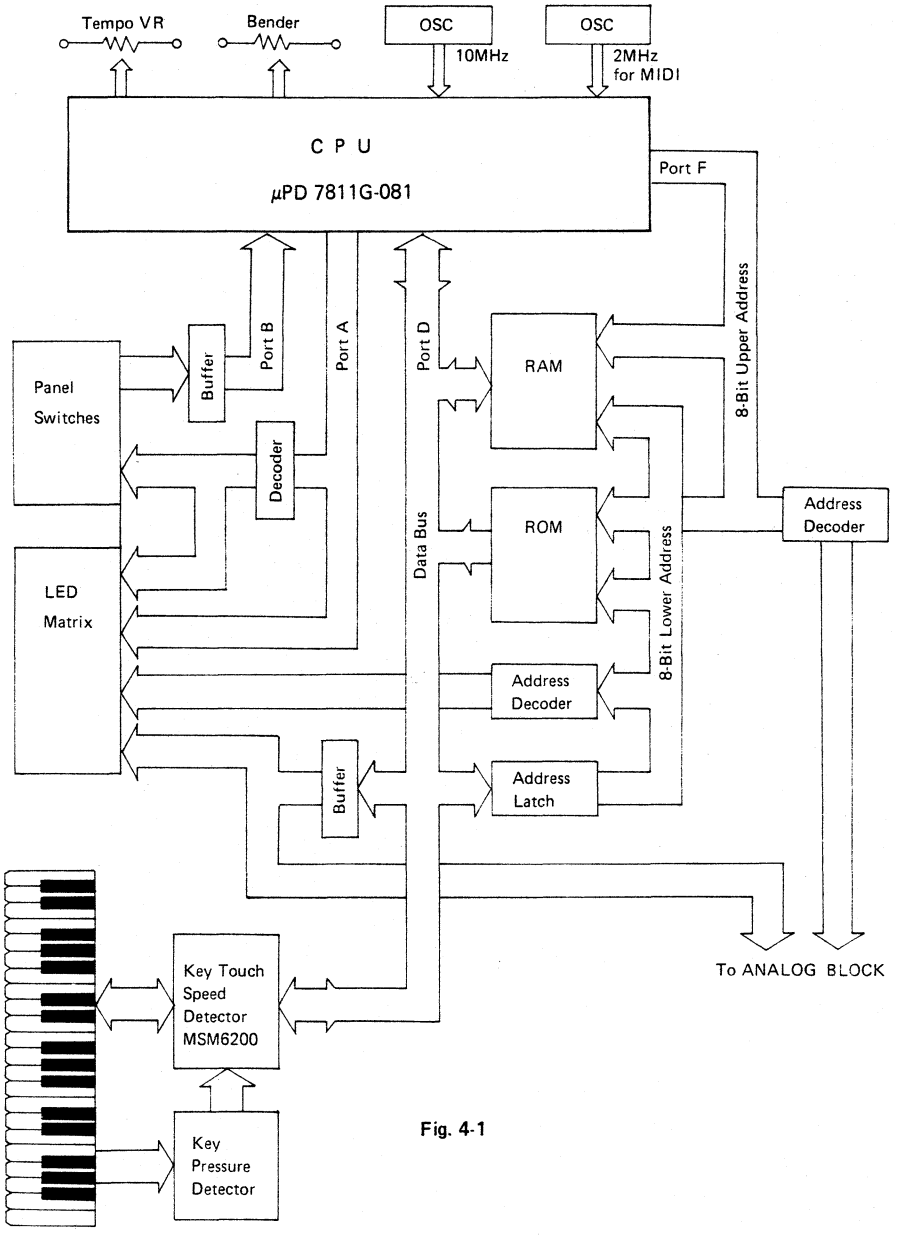


Fig. 4-1

5. KEYBOARD

CT-6000 varies the sound volume in accordance with the key touch speed and depression strength.

5-1. Key Touch Speed Detection

Each key has two key contact switches S1 and S2.

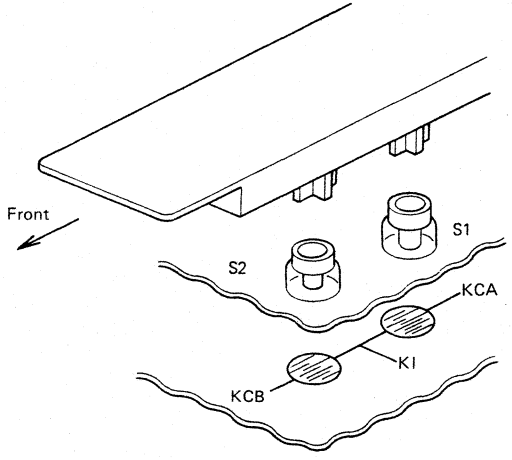


Fig. 5-1

When a key is hit, S1 turns on first, then S2.

The interval time between turning on of S1 and S2 varies according to the touch speed of the key.

LSI MSM 6200 detects the time interval and determines the key touch speed.

Some RC (resistor and capacitor) integrating circuits are connected to the MSM6200 and when switch S1 turns on, the RC circuit starts to discharge. The discharging stops when S2 turns on.

The MSM 6200 also contains an A/D (Analog to Digital) converter and changes the voltage Vc of the RC circuits into a 5-bit digital signal which is sent to the CPU as key entry and hitting speed data.

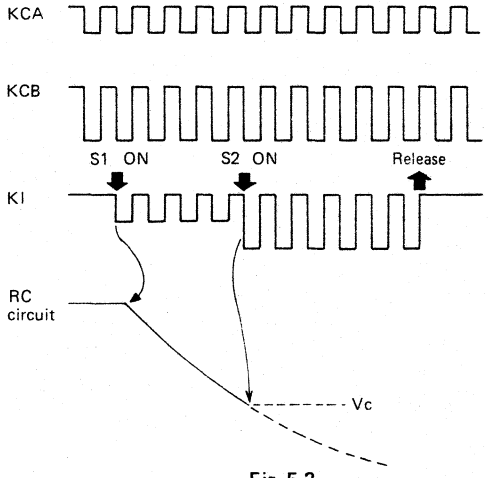


Fig. 5-2

5-2. Key Pressure Detection

The sound volume varies according to the pressure on the keys.

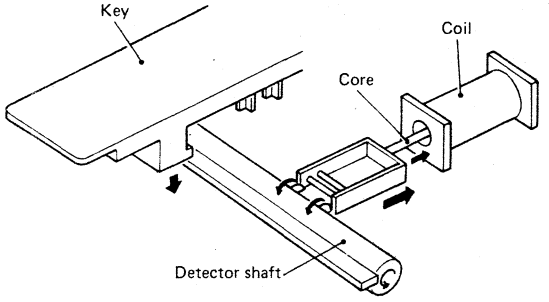


Fig. 5-3

The left figure explains the mechanism of the Key Pressure Detector.

When a key is depressed hard, the key rotates the detector shaft.

The rotation of the shaft moves the core of the coil in and out.

Figure 5-4 is the key pressure detection circuit which is a LC oscillator.

According to the pressure strength on the keys, the inductance of the coil varies causing the oscillation frequency to change.

LSI MSM6200 counts the oscillated pulses and outputs 5-bit data.

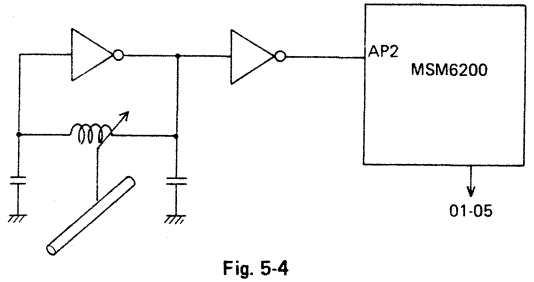
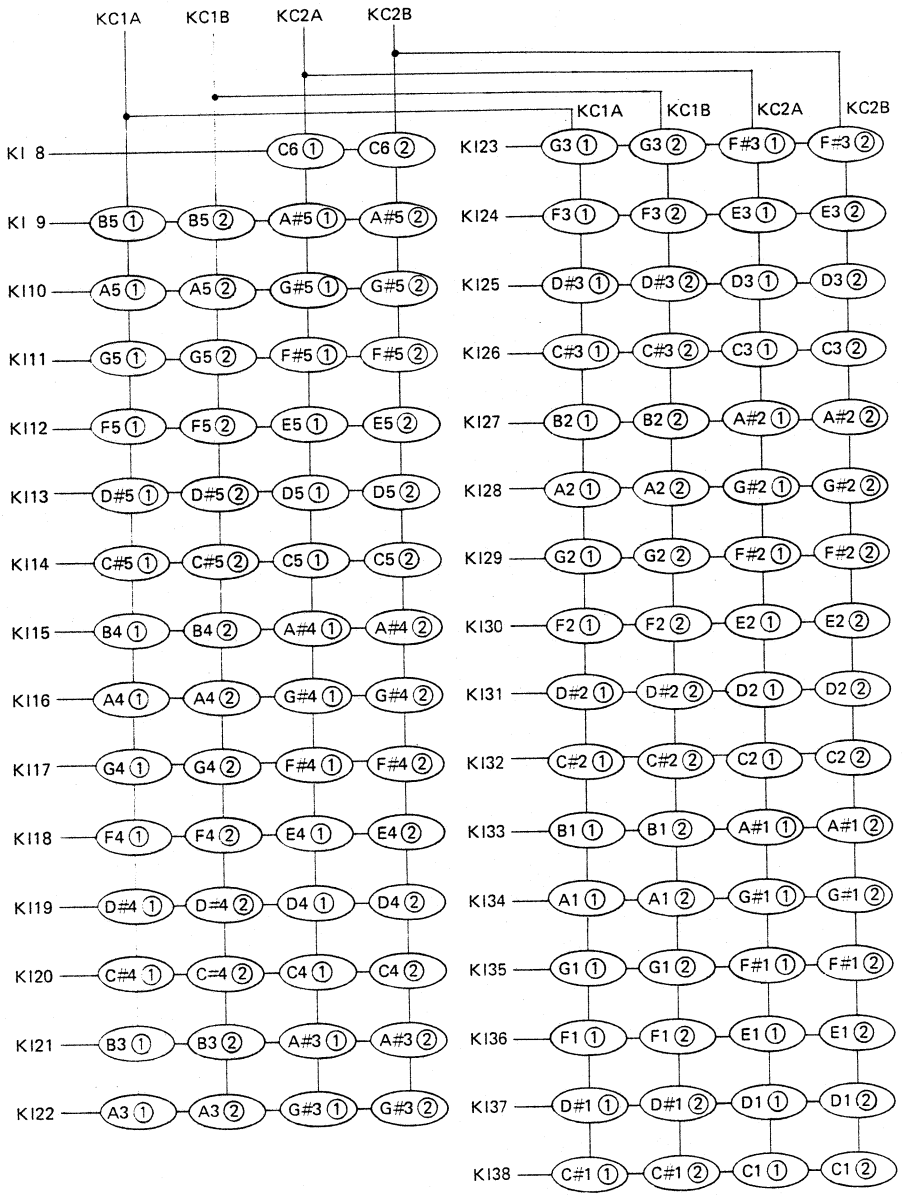


Fig. 5-4

5-3. Key Matrix



5-4. Pin Functions of MSM6200

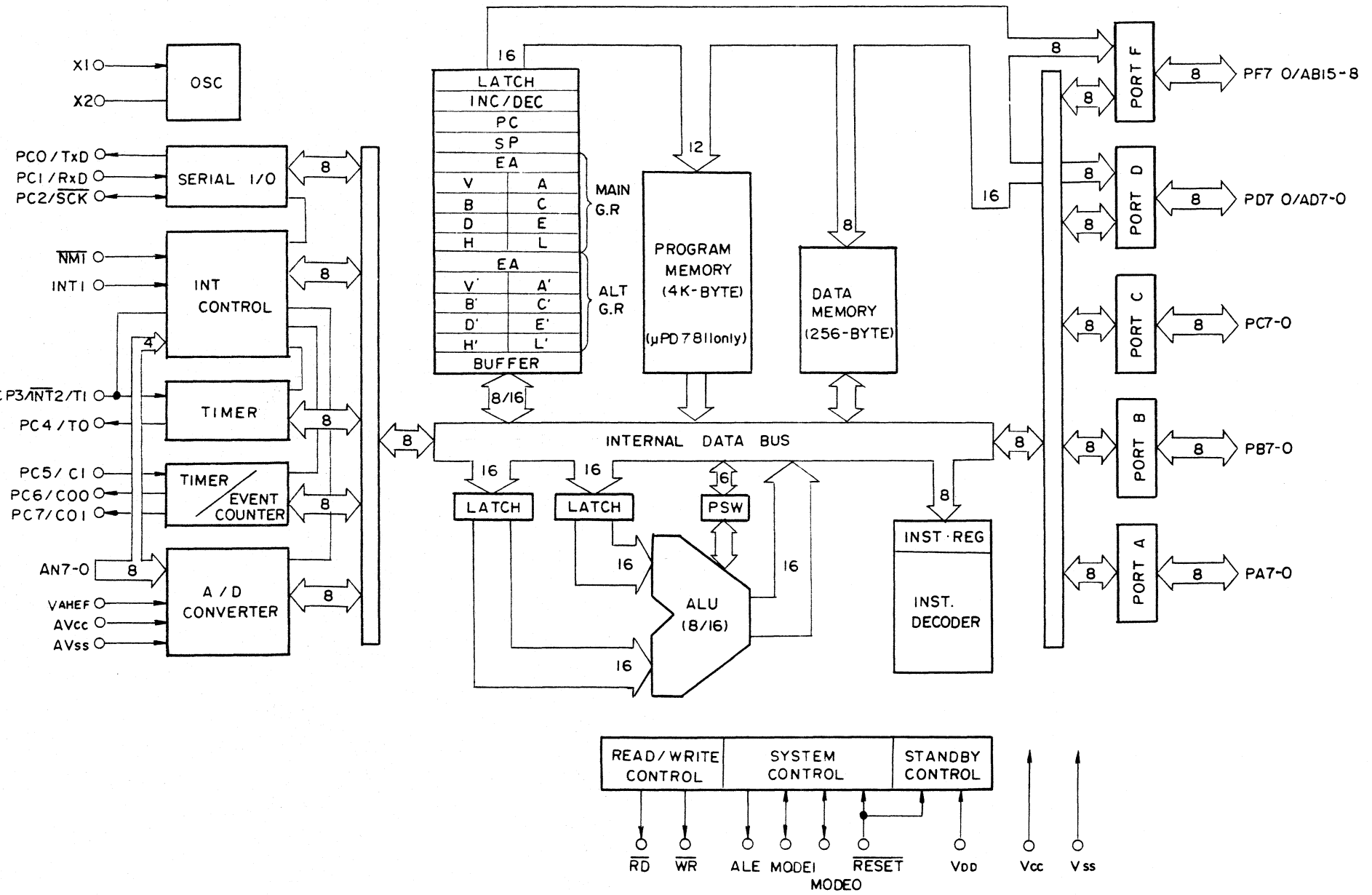
Pin No.	Terminal Name	In/Out	Function
1 ~ 6	IR6 ~ IC8	In/Out	External RC discharging circuit inputs and outputs.
11	AG	In	Analog ground input.
17	AP2	In	Key pressure detecting frequency input.
20	01	Out	Interrupt request signal output. When "L", MSM6200 interrupts the CPU.
25~28 29~32	O2 ~ O5 IO1 ~ IO4	Out In/Out	Upper 4-bit data bus. Lower 4-bit data bus. $\overline{O2}$ O3 O4 O5 IO1 IO2 IO3 $\overline{IO4}$ MSB LSB
33	I1	In	Discriminates whether CPU is μPD7801 or μPD7811. "H" . . . μPD7811 "L" . . . μPD7801 In the CT-6000, the terminal is connected to VDD (H).
34	I2	In	ALE (Address Latch Enable)signal input. When "H", address in MSM6200 is assigned.
35	I3	In	$\overline{WR}$ signal input. When "L", data or address can be written in MSM6200.
36	I4	In	$\overline{RD}$ signal input. When "L", CPU reads data from MSM6200.
37	I5	In	$\overline{CS}$ (chip select) signal input. When "L", communications between the CPU and MSM6200 is possible.
39	I10	In	Reset signal input. At power on, receives a reset signal to initialize MSM6200's internal circuits.
40	VDD	In	+5.5 volt source.
43	PGI	In	Clock pulse input.
45	VSS2	In	Ground (0 volt) source.
46	VSS1	In	+2.25 volt source.
47~50	KC2B~KC1A	Out	Key common signal outputs.
58~88	K8~K38	In	Key input terminals.
91~100	IR1~IC5	In/Out	External CR circuits inputs and outputs.

5-5. Tone List

Tone	Key Speed Detection	Key Pressure Detection
PIANO	Yes	No
ELEC. PIANO	Yes	No
HONKY-TONK PIANO	Yes	No
HARPSICHORD	Yes	No
FUNKY CLAVI.	Yes	No
VIBRAPHONE	Yes	No
PIPE ORGAN	No	No
JAZZ ORGAN	Yes	Yes
TRUMPET	Yes	Yes
SAXOPHONE	Yes	Yes
FLUTE	Yes	Yes
SYNTH. REED	Yes	Yes
VIOLIN	Yes	Yes
ELEC. GUITAR	Yes	No
KOTO	Yes	No
SYNTH. BELLS	Yes	Yes
CHORUS	Yes	Yes
SYMPHONIC ENSEMBLE	Yes	Yes
BRASS ENSEMBLE	Yes	Yes
STRING ENSEMBLE	Yes	Yes

6. CPU (μPD7811G-081)

6-1. Block Diagram



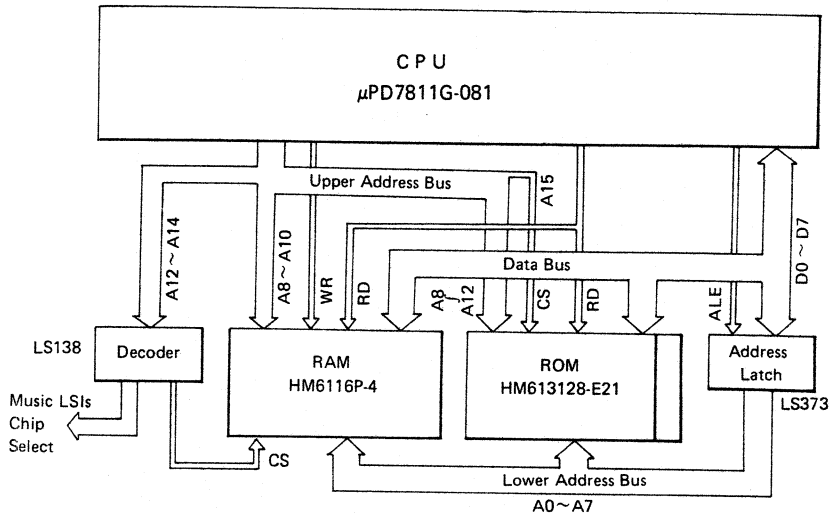
6-2. Pin Functions of the CPU

Pin No.	Terminal Name	In/Out	Functions
1~8	PA0~PA7	Out	LED drive signals, panel switch common signals and common signals for the transpose switch.
9~15	PB0~PB6	In	Input terminals from bender, bending range, and grissando switches.
17	PC0	Out	MIDI data output.
18	PC1	In	MIDI data input.
19, 20	PC2, PC3	In/Out	MIDI clock pulse input and output.
21	PC4	Out	Music LSI (C) split signal. When PC4 is "H", sounds generated in the Music LSI (C) become chord, while they become melody when PC4 is "L".
22	PC5	Out	Melody muting signal. When "L", the melody is muted.
23	PC6	Out	Chord muting signal. When "L", the chord is muted.
24	PC7	Out	Reset signal which initializes the Music LSIs at power on.
26	INT 1	In	Interrupt request signal input rises to "H" when key touch control LSI MSM6200 requests the CPU to interrupt.
28	$\overline{\text{RESET}}$	In	At power on, this terminal drops to "L" for approximately 5 micro-seconds so that the CPU is initialized.
30, 31	X2, X1	In/Out	Clock pulse input and output.
35	AN1	In	Input from the bender VR (Variable Resistor). A built-in A/D (Analog to Digital) converter changes the voltage level from the bender VR to digital data internally to vary the pitch of the sound.
36	AN2	In	Input from the tempo VR. Voltage from the tempo VR is changed to digital data internally by a built-in A/D converter to control the tempo speed.
44	$\overline{\text{RD}}$	Out	Read signal output. The CPU drops this terminal to "L" when it reads data from the ROM, the RAM, the key touch control LSI or the MUSIC LSIs.
45	$\overline{\text{WR}}$	Out	Write signal output. When "L", the CPU writes data into the RAM, Music LSIs or the key touch control LSI.
46	ALE	Out	Address latch enable signal. At the rising edge, the addresses of the ROM, the RAM, the Music LSIs or the key touch control LSI are assigned.
47~54	A8~A15	Out	Address signals for the ROM and the RAM. Also chip select signals for the peripheral devices.
55~62	D0~D7	In/Out	8-bit data bus. Also address bus at the rising edge of signal ALE.

6-3. Peripheral Device Accesses

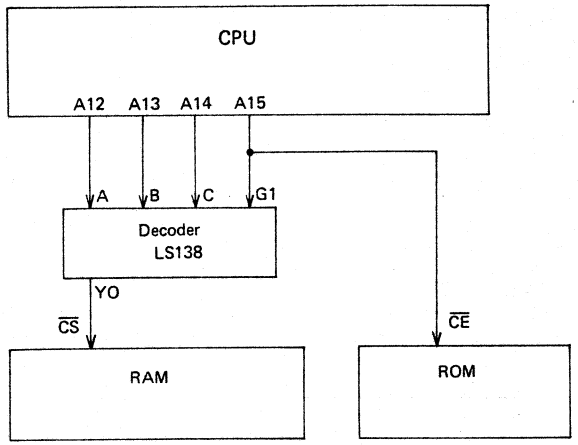
(1) ROM & RAM Access

The CT-6000 employs a 2K byte RAM and a 16K byte ROM.
The ROM contains the system's program while the RAM stores auto chord data and program data. The following shows a block diagram of ROM and RAM access circuits.

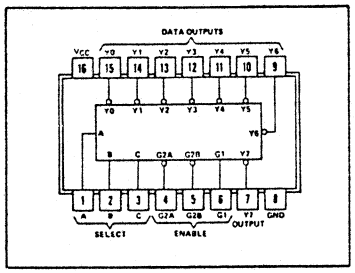


Chip selection . . . The RAM or the ROM chip selection is made when the $\overline{CS}$ or the $\overline{CE}$ terminals of the RAM or the ROM drop to "L".

The ROM is selected when signal A15 is "L" while the RAM is assigned when A12, A13, 14 and A15 are "L", "L", "L" and "H" respectively.



(Top View)

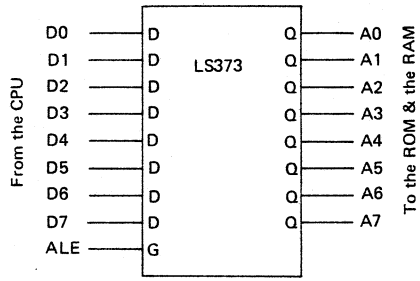


'LS138, 'S138
FUNCTION TABLE

INPUTS					OUTPUTS							
ENABLE		SELECT										
G1	G2*	C	B	A	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7
X	H	X	X	X	H	H	H	H	H	H	H	H
L	X	X	X	X	H	H	H	H	H	H	H	H
H	L	L	L	L	L	H	H	H	H	H	H	H
H	L	L	L	H	H	L	H	H	H	H	H	H
H	L	L	H	L	H	H	L	H	H	H	H	H
H	L	L	H	H	H	H	H	L	H	H	H	H
H	L	H	L	L	H	H	H	H	L	H	H	H
H	L	H	L	H	H	H	H	H	H	L	H	H
H	L	H	H	L	H	H	H	H	H	H	L	H
H	L	H	H	H	H	H	H	H	H	H	H	L

*G2 = G2A + G2B
H = high level, L = low level, X = irrelevant

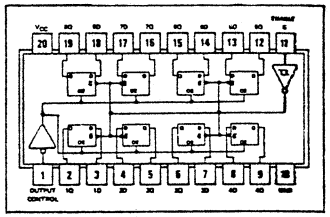
Addressing . . . ROM and RAM have address terminals A0 ~ A13 and A0 ~ A10 respectively.
The lower address signals A0 ~ A7 are provided from the data bus D0 ~ D7.
When signal ALE is "H" data signals D0 ~ D7 are set in the Address Latch LS373 and become the lower address bus.
The upper address signals A8 ~ A12 are provided from the CPU.



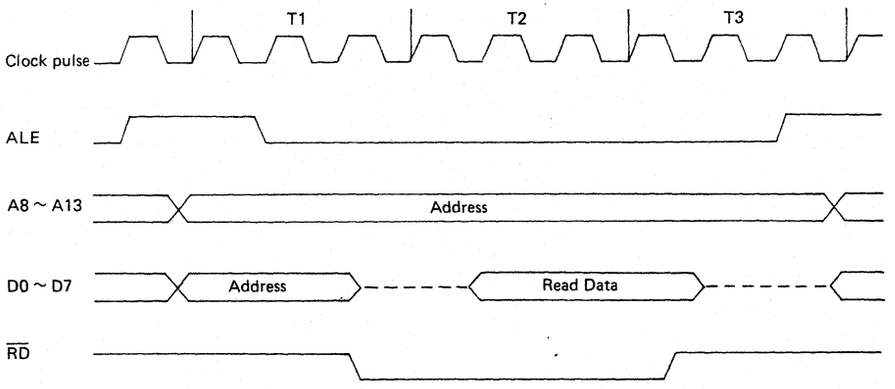
'LS373, 'S373
FUNCTION TABLE

OUTPUT CONTROL	ENABLE G	D	OUTPUT
L	H	H	H
L	H	L	L
L	L	X	Q_0
H	X	X	Z

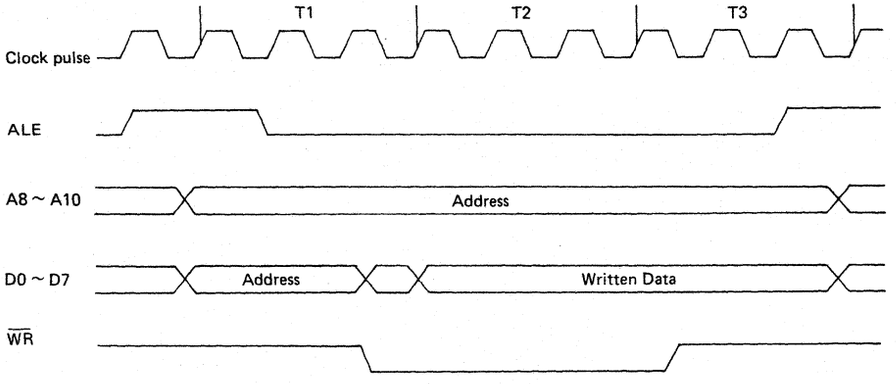
LS373 Top View



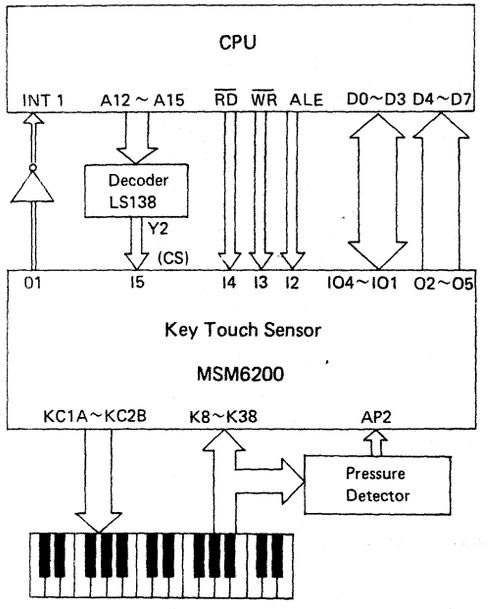
Memory Reading



Writing Data



(2) Key Touch Sensor Access



The CPU and Key Touch Sensor LSI MSM6200 communicates when a key is hit to transfer the touch and the pressure data.

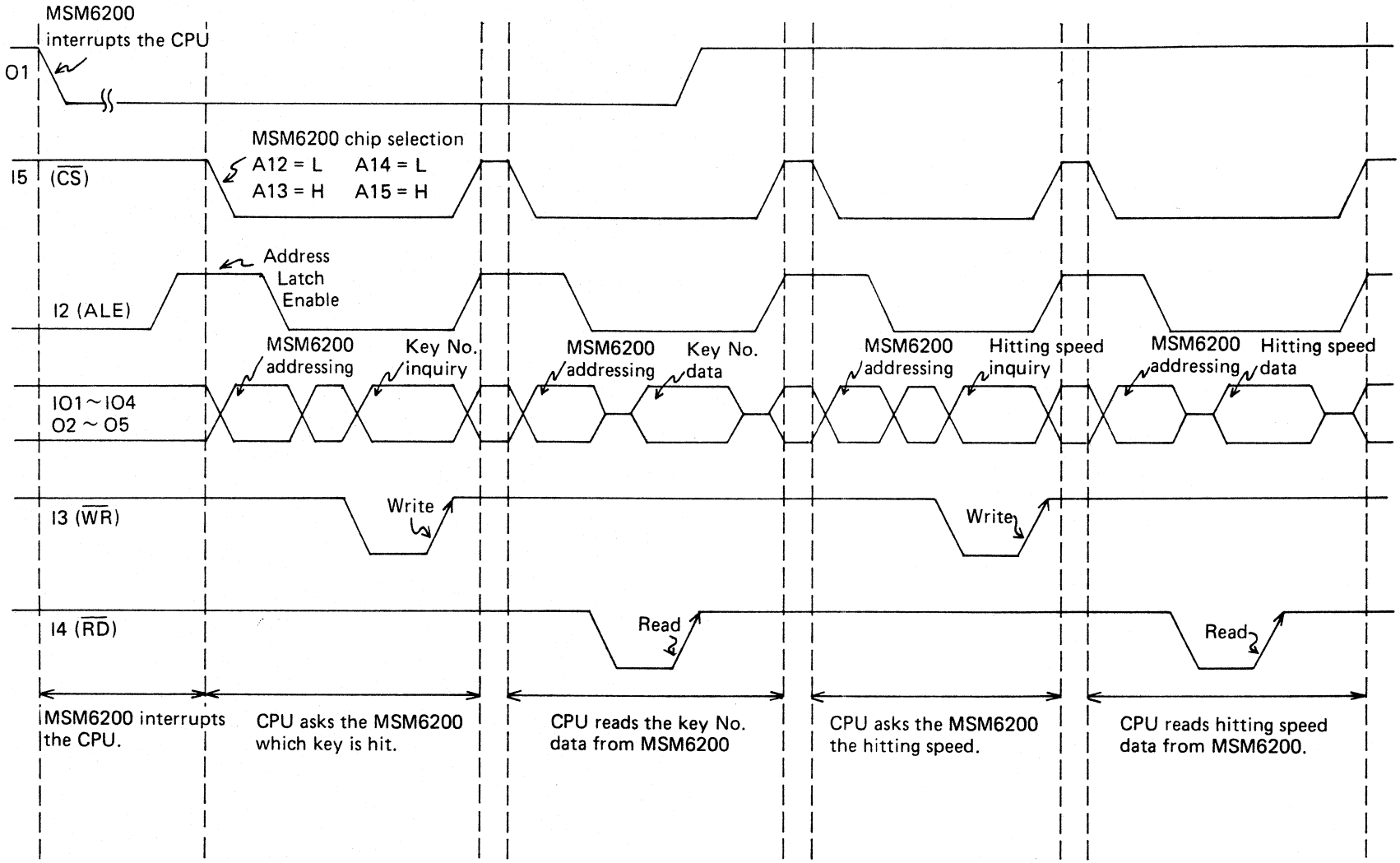
A. Hitting Speed Data Transfer.

1. When a key is hit, the MSM6200 sends an interrupt request signal to the CPU from terminal 01.
2. Upon receipt of the interrupt signal, the CPU provides a command that inquires which key has been hit.
3. The MSM6200 informs the CPU of the key number data via terminals IO1 ~ IO4 and O2 ~ O5.
4. The CPU sends "Hitting speed inquiry" command.
5. The MSM6200 provides the hitting speed data to the CPU.

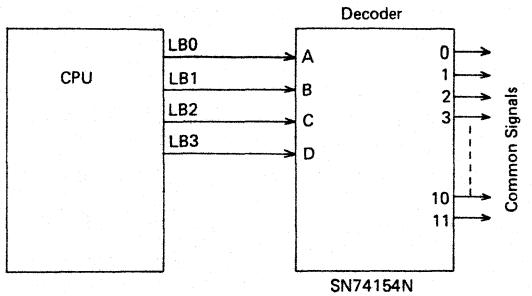
B. Key Pressure Strength Data Transfer

1. While a key is pressed, the CPU periodically interrogates the MSM6200 for the key pressure data.
2. The MSM6200 then provides the pressure data which was detected by the pressure detector.

Timing Chart After Hitting a Key



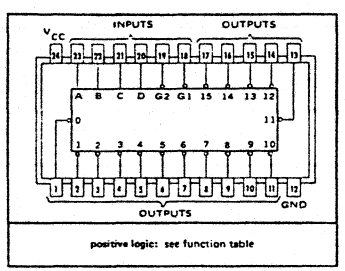
7. PANEL SWITCH & LED CONTROL



The common signals for the panel switches and the LEDs are generated from signals LB0 ~ LB3 via decoder SN74154N.

The followings show the top view and the function table of SN74154N.

(TOP VIEW)

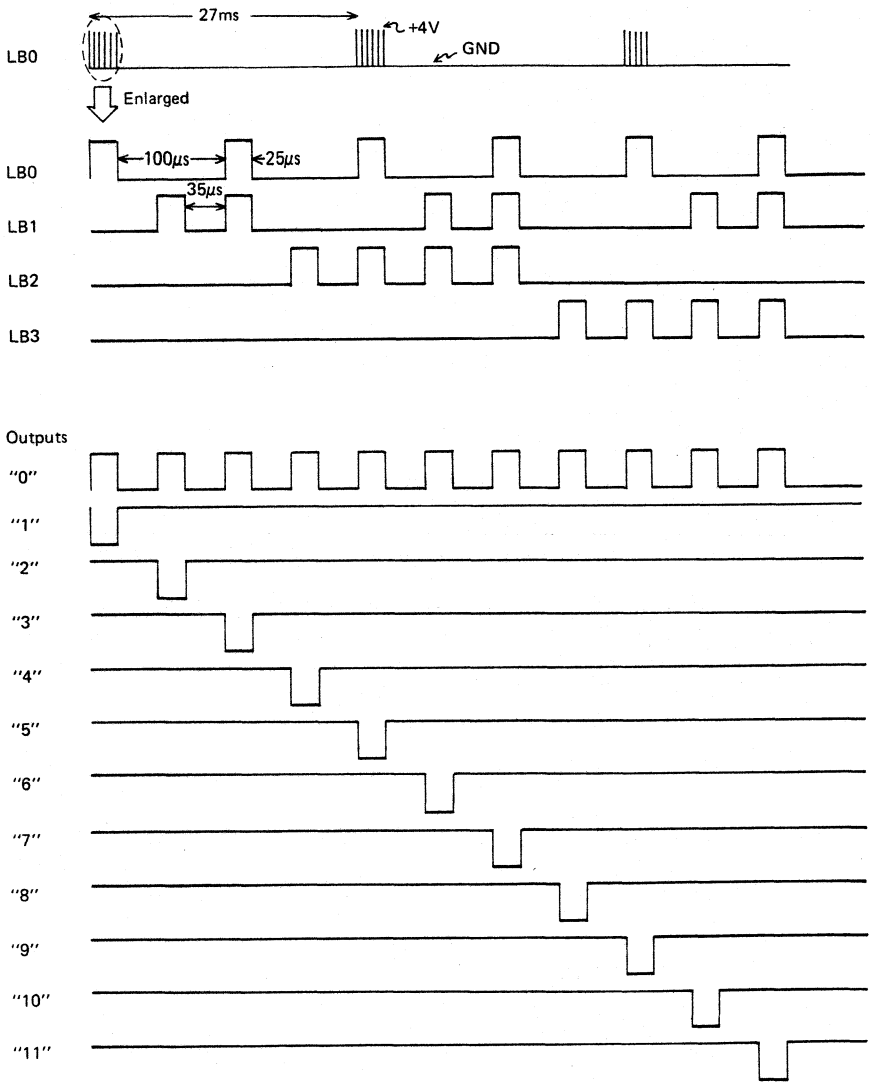


FUNCTION TABLE

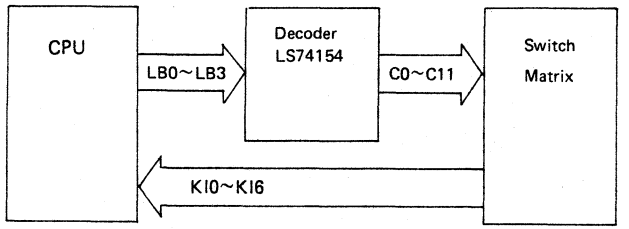
INPUTS						OUTPUTS														
G1	G2	D	C	B	A	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
L	L	L	L	L	L	L	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
L	L	L	L	L	H	H	L	H	H	H	H	H	H	H	H	H	H	H	H	H	H
L	L	L	L	H	L	H	H	L	H	H	H	H	H	H	H	H	H	H	H	H	H
L	L	L	L	H	H	H	H	H	L	H	H	H	H	H	H	H	H	H	H	H	H
L	L	L	H	L	L	H	H	H	H	L	H	H	H	H	H	H	H	H	H	H	H
L	L	L	H	L	H	H	H	H	H	H	L	H	H	H	H	H	H	H	H	H	H
L	L	L	H	H	L	H	H	H	H	H	H	L	H	H	H	H	H	H	H	H	H
L	L	L	H	H	H	H	H	H	H	H	H	H	L	H	H	H	H	H	H	H	H
L	L	H	L	L	L	H	H	H	H	H	H	H	H	L	H	H	H	H	H	H	H
L	L	H	L	L	H	H	H	H	H	H	H	H	H	H	L	H	H	H	H	H	H
L	L	H	L	H	L	H	H	H	H	H	H	H	H	H	H	L	H	H	H	H	H
L	L	H	L	H	H	H	H	H	H	H	H	H	H	H	H	H	L	H	H	H	H
L	L	H	H	L	L	H	H	H	H	H	H	H	H	H	H	H	H	L	H	H	H
L	L	H	H	L	H	H	H	H	H	H	H	H	H	H	H	H	H	H	L	H	H
L	L	H	H	H	L	H	H	H	H	H	H	H	H	H	H	H	H	H	H	L	H
L	L	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	L
L	H	X	X	X	X	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
H	L	X	X	X	X	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
H	H	X	X	X	X	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H

H = high level, L = low level, X = irrelevant

Time Chart of the Common Signals



7-1. Panel Switch Matrix

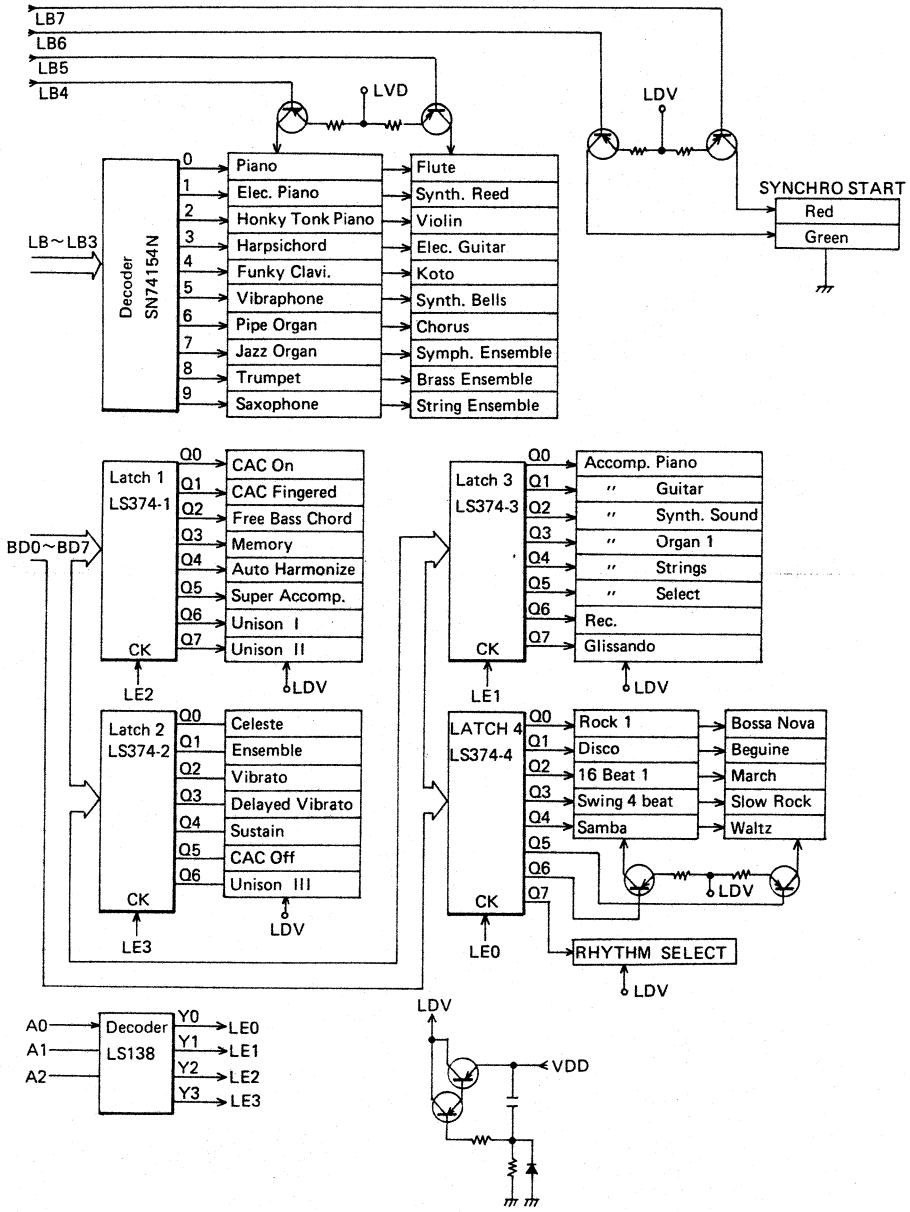


Switch common signals C0 ~ C11 are always provided to the panel switches.
When a switch is touched, a common signal enters CPU via PB0 ~ PB6 terminals.
The following is the switch matrix table.

	KI0 (PB0)	KI1 (PB1)	KI2 (PB2)	KI3 (PB3)	KI4 (PB4)	KI5 (PB5)	KI6 (PB6)
C0	PIANO	ELEC. PIANO	HONKY-TONK PIANO	HARPSI-CHORD	FUNKY CLAVI.	VIBRA-PHONE	PIPE ORGAN
C1	JAZZ ORGAN	TRUMPET	SAXOPHONE	FLUTE	SYNTH. REED	VIOLIN	ELEC. GUITAR
C2	KOTO	SYNTH. BELLS	CHORUS	SYMPHONIC ENSEMBLE	BRASS ENSEMBLE	STRINGS ENSEMBLE	
C3	(PIANO)	(GUITAR)	(SYNTH. SOUND)	(ORGAN 1)	(STRINGS)	ACC. TONE SELECT	
C4	TRANS. C	TRANS. C#	TRANS. D	TRANS. D#	TRANS. E	TRANS. F	
C5	TRANS. F#	TRANS. G	TRANS. G#	TRANS. A	TRANS. A#	TRANS. B	
C6	ROCK 1	DISCO	16 BEAT 1	SWING 4 BEAT	SAMBA		
C7	BOSSA NOVA	REGUINE	MARCH	SLOW ROCK	WALTZ	RHYTHM SELECT	
C8	AUTO CHORD OFF	AUTO CHORD ON	FINGERED	FREE BASS	MEMORY	AUTO HARMONIZE	UNISON III
C9	CELESTE	ENSEMBLE	VIBRATO	DELAYED VIBRATO	SUSTAIN	FOOT SUSTAIN	
C10	BENDER RANGE 1	BENDER RANGE 2	BENDER RANGE 3	BENDER RANGE 4	PLAY	RECORD	RESET
C11	START/ STOP	SYNCHRO START	INTRO./ FILL-IN	GLISSAND	SUPER ACCOMP.	UNISON I	UNISON II

NOTE: Tones in parentheses are for the accompaniment.

7-2. LED Drive Circuit



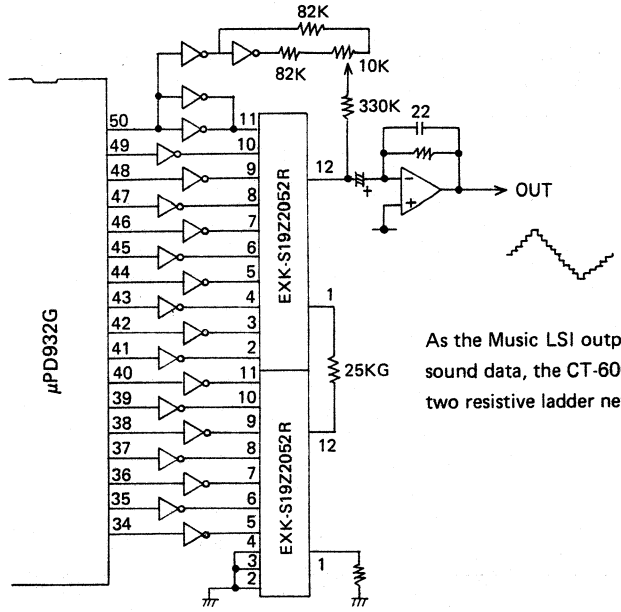
8. MUSIC LSI (μPD932G)

Upon receipt of 8-bit data from the CPU, the music LSI generates a 17-bit digital sound signal. The CT-6000 employs three Music LSIs to provide high quality sound.
The following shows the pin functions of the LSI.

Pin No.	Terminal	In/Out	Function
13~20	I14~I17 IO1~IO4	In In/Out	8-bit data input from the CPU. IO1 ~ IO4 are also 4-bit data outputs to the CPU.
22	I2	In	Address Latch Enable signal input. When the terminal is "H", the CPU designates the Music LSIs' internal address through the data bus.
23	I3	In	Write enable signal from the CPU input. When "L", the Music LSI receives 8-bit data from the CPU.
24	I4	In	Read enable signal from the CPU input. At "L", the Music LSI sends the CPU 4-bit data via terminals IO1, IO4.
25	I5	In	Chip select signal input. When "L", the CPU accesses the Music LSI.
26	I18	In	Reset signal input. At "L", the LSI is initiallized.
30	PG1	In	Clock pulse input.
34~50	O17~O1	Out	17-bit digital sound data outputs.
53 ~ 4	O32~O19	Out	Control signal outputs. The following table shows functions of the three Music LSI (A), (B) and (C) control signals.

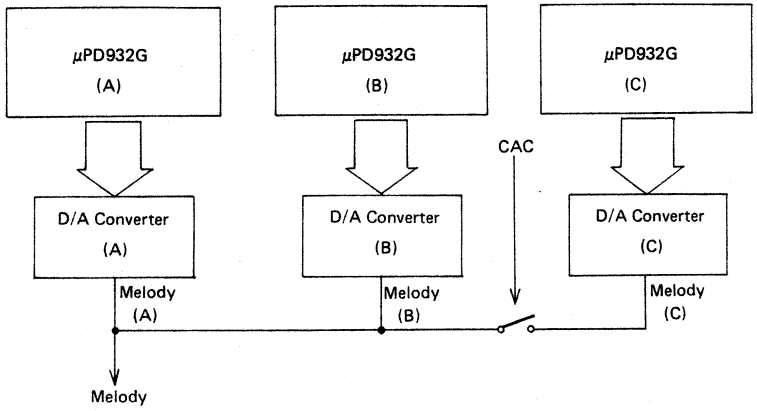
LSI	Terminal	Function
A	O23~O25	Filter control for melody (A).
A	O26	Melody (A) and (B) mixing ratio control.
A	O27, O28	Melody (A) and (B) gain control.
B	O21, O22	Stereo chorus change-over control.
B	O26	Mute control.
C	O22, O23, O26	Filter control for melody (C).
C	O24, O25	Melody (C) gain control.

9. D/A CONVERTER BLOCK



As the Music LSI outputs 17-bit sound data, the CT-6000 employs two resistive ladder networks.

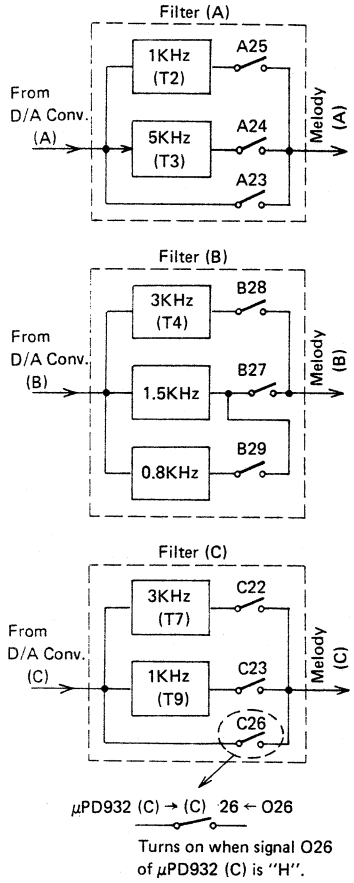
The CT-6000 has three D/A converter blocks.



When CAC (Casio Auto Chord) is OFF, melodies are generated by mixing the melody (A), melody (B) and melody (C) signals.
While CAC is ON or FINGERED, melody (A) and melody (B) signals provide the melody sounds while melody (C) becomes the chords.

10. FILTER BLOCK

In accordance with the tones, the Music LSIs select appropriate cutoff frequencies.



Tone	μPD932 (A)			μPD932 (B)			μPD932 (C)			Cutoff Freq.		
	O25	O24	O23	O28	O27	O29	O22	O23	O26	(A)	(B)	(C)
Piano	H	L	L	L	H	H	L	H	L	1K	800	1K
E. Piano	H	L	L	L	H	H	L	H	L	1K	800	1K
H. T. Piano	H	L	L	L	H	L	L	H	L	1K	1.5K	1K
Harpsichord	L	L	H	L	H	H	L	H	L	PASS	800	1K
Funky Clavi.	L	L	L	H	L	L	L	L	L	OFF	3K	OFF
Vibraphone	L	L	H	L	H	L	L	H	L	PASS	1.5K	1K
Pipe Organ	L	H	L	L	H	L	L	H	L	5K	1.5K	1K
Jazz Organ	H	L	L	L	H	L	L	H	L	1K	1.5K	1K
Trumpet	L	H	L	L	L	L	L	L	L	5K	OFF	OFF
Saxophone	L	H	L	L	L	L	L	L	L	5K	OFF	OFF
Flute	H	L	L	L	H	H	L	L	L	1K	800	OFF
Synth. Reed	L	L	H	H	L	L	L	L	L	PASS	3K	OFF
Violin	H	L	L	H	L	L	L	L	L	1K	3K	OFF
E. Guitar	H	L	L	L	H	L	L	L	L	1K	1.5K	OFF
Koto	L	H	L	L	H	H	L	H	L	5K	800	1K
Synth. Bells	H	L	L	L	H	L	L	H	L	1K	1.5K	1K
Chorus	H	L	L	L	H	H	L	L	L	1K	800	OFF
Symph. Ens.	L	H	L	L	H	L	H	L	L	5K	1.5K	3K
Brass Ens.	L	H	L	L	H	H	H	L	L	5K	800	3K
Strings Ens.	L	L	H	H	L	L	L	L	H	PASS	3K	PASS

Accompaniment filter control when CAC is ON or FING'D

Tone	μPD932 (C)			Cutoff Freq.
	O22	O23	O26	(C)
Piano	L	H	L	1K
Guitar	L	H	L	1K
Synth. Sound	L	L	H	PASS
Organ 1	L	H	L	1K
Strings	H	L	L	3K
E. Piano	L	H	L	1K
Harp	L	H	L	1K
Synth. Waw	L	H	L	1K
Organ 2	L	H	L	1K
Chorus	L	H	L	1K

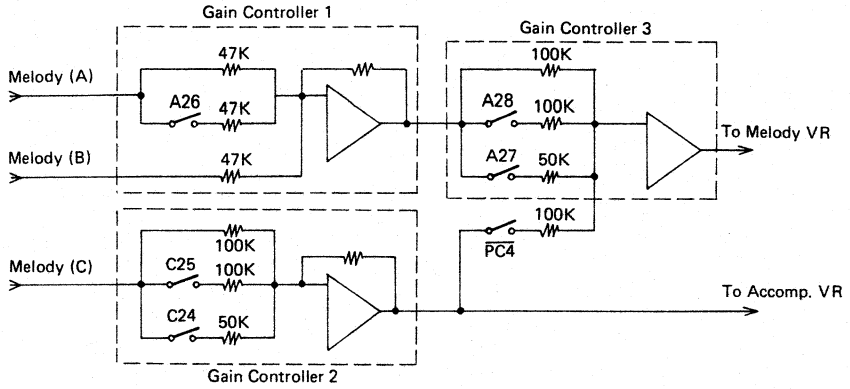
On the above table, when Harpsichord is set . . .

Meldoy (A) . . . Signals O25, O24 and O23 from μPD932G (A) stay "L", "L" and "H" respectively causing the switch A23 to turn on.
Melody (A) is by-passed (not filtered).

Meldoy (B). . . μPD932G (B) provides O28 "L", O27 "H" and O29 "H".
Switches B27 and B29 turn on causing the melody (B) to pass the 800Hz filter.

Melody (C). . . Signals O22, O23 and O26 from μPD932G (C) are "L", "H" and "L" respectively causing the melody (C) to be 1KHz filtered.

11. GAIN CONTROLLER



Gain Controller 1 varies the mixing ratio of the melodies (A) and (B). When switch A26 is off, both melody signals pass through 47Kohm resistors and the mixing ratio of the melodies (A) and (B) becomes 1:1.

When switch A26 turns on, melody (A) signal pass through parallel connected 47Kohm resistors causing its sound volume to double so that the mixing ratio of the melodies becomes 2:1.

Switch A26 turns on when signal O26 from μPD932G (A) is "H".

Gain Controller 2 varies the sound volume of the melody (C).

Switches		Resistance	Gain
C25	C24		
OFF	OFF	100Kohms	1
ON	OFF	50Kohms	2
OFF	ON	33Kohms	3
ON	ON	25Kohms	4

Switches C25 and C24 turn on or off by the signals O25 and O24 from μPD932G (C) respectively.

Gain Controller 3 controls the sound volume of melodies (A) + (B) and varies the mixing ratio of melodies (A) + (B) and melody (C).

Switches		Resistance	Mixing Ratio
A28	A27		Melodies (A)+(B) : Melody C
OFF	OFF	100Kohms	1 : 1
ON	OFF	50Kohms	2 : 1
OFF	ON	33Kohms	3 : 1
ON	ON	25Kohms	4 : 1

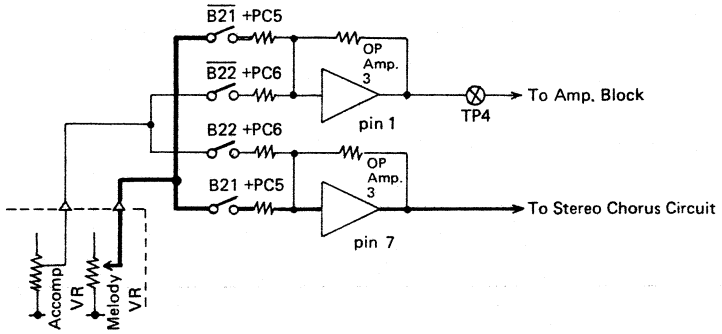
Switch $\overline{PC4}$ is controlled by signal PC4 from the CPU and turns on when CAC is OFF and turns on while CAC is ON or FINGERED.

Refer to page 42 for the voltage levels of the control signals on each tone.

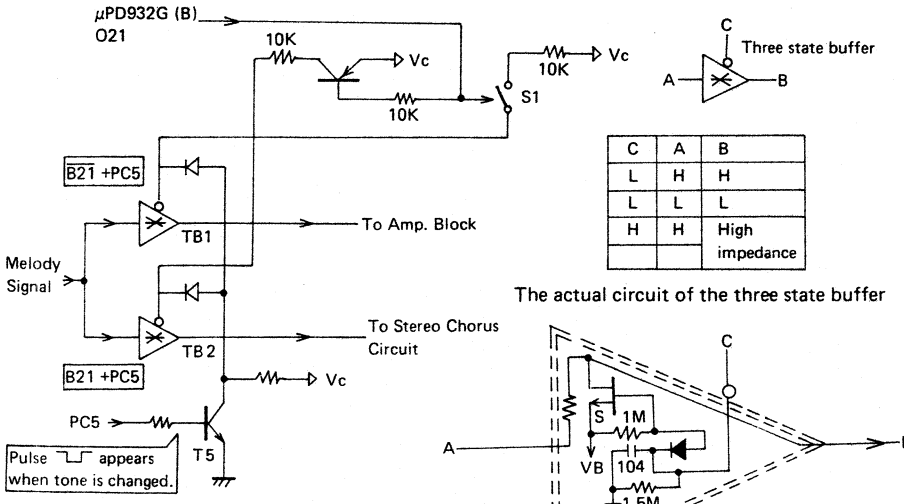
12. STEREO CHORUS CHANGE-OVER CIRCUIT

The stereo chorus effect is preset in certain tones. The circuit sends the melody signal to the Stereo Chorus Circuit when a stereo preset tone is selected.

The following is the block diagram of the circuit.



The following shows the actual circuit of the thick line of the above block diagram.



C	A	B
L	H	H
L	L	L
H	H	High impedance

The actual circuit of the three state buffer

1. When a tone is switched to another, the CPU provides ⊓⊔ pulse from terminal PC5.
2. The pulse is inverted by transistor T5. While the signal PC5 is "H", the melody signal does not pass through the three state buffers preventing a shock noise which may be generated when the cutoff frequency of the filter block is switched to another.
3. When a stereo effect preset tone is selected, μPD932G (B) signal O21 rises to "H" level causing three state buffer TB1 and TB2 to close and open respectively.
   The melody signal does not enter Amp. block but is provided to the Stereo Chorus Circuit.

The following shows the status of all control signals for each tone.

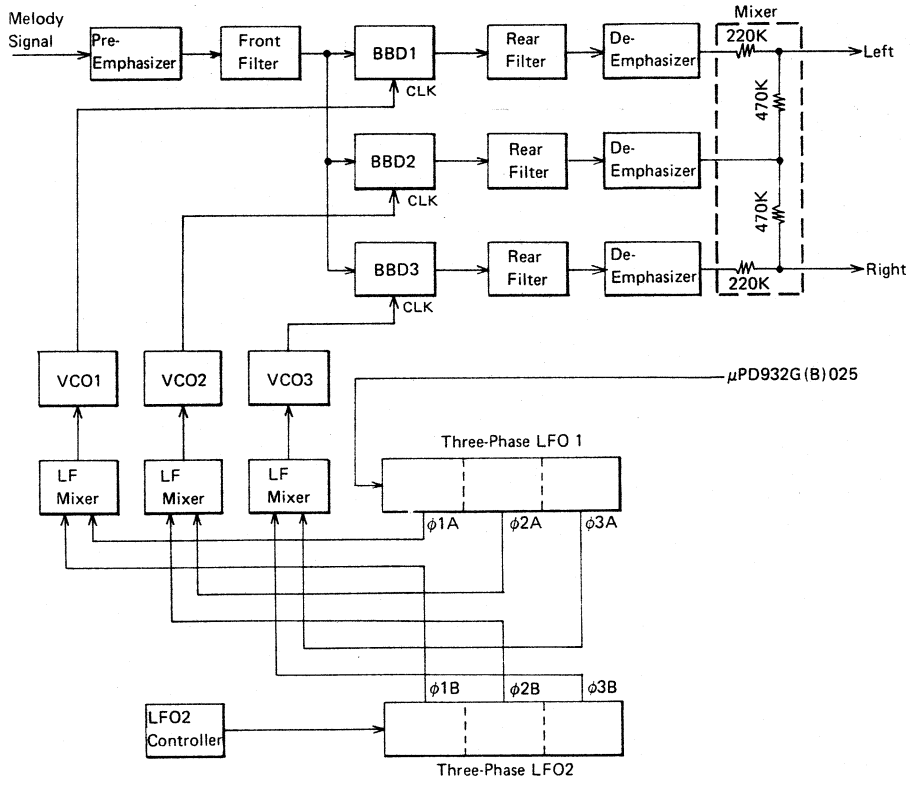
TONE	μPD932G (A)			μPD932G (B)			μPD932G (C)		PRESET EFFECTS			
	O26	O28	O27	O21	O26	O25	O25	O24	ENS.	CEL.	SUST	D. VIB
PIANO	L	H	H	L	L	H	H	H	OFF	OFF	OFF	OFF
ELECTRIC PIANO	H	H	L	H	H	H	H	L	OFF	ON	OFF	OFF
HONKY TONK PIANO	L	H	L	L	L	H	H	L	OFF	OFF	OFF	OFF
HARPSICHORD	H	H	L	L	L	H	H	L	OFF	OFF	OFF	OFF
FUNKY CLAVI.	L	H	L	L	L	H	L	L	OFF	OFF	OFF	OFF
VIBRAPHONE	L	L	L	L	L	H	L	L	OFF	OFF	ON	OFF
PIPE ORGAN	L	L	L	L	L	H	L	L	OFF	OFF	OFF	OFF
JAZZ ORGAN	H	L	L	H	H	L	H	L	ON	OFF	OFF	OFF
TRUMPET	L	H	L	L	L	H	L	L	OFF	OFF	OFF	ON
SAXOPHONE	L	H	L	L	L	H	L	L	OFF	OFF	OFF	ON
FLUTE	L	H	L	L	L	H	L	L	OFF	OFF	OFF	ON
SYNTH. REED	L	H	L	L	L	H	L	L	OFF	OFF	OFF	ON
VIOLIN	L	H	L	L	L	H	L	L	OFF	OFF	OFF	ON
ELECTRIC GUITAR	L	H	H	L	L	H	L	L	OFF	OFF	OFF	ON
KOTO	H	H	L	L	L	H	H	H	OFF	OFF	ON	OFF
SYNTH. BELLS	L	H	L	L	L	H	H	L	OFF	OFF	ON	OFF
CHORUS	L	L	L	H	H	L	L	L	ON	OFF	OFF	OFF
SYMPHONIC ENSEMBLE	L	L	L	H	H	L	L	L	ON	OFF	OFF	ON
BRASS ENSEMBLE	H	L	L	H	H	H	L	L	OFF	ON	OFF	ON
STRING ENSEMBLE	L	L	L	H	H	L	L	L	ON	OFF	OFF	OFF

Accompaniments

TONE	μPD932G (B)		μPD932G (C)		PRESET EFFECT	
	O22	O26	O25	O24	ENS or CEL.	D. VIB.
PIANO	L	L	H	L	OFF	OFF
GUITAR	L	L	H	H	OFF	ON
SYNTH. SOUND	H	H	L	L	OFF	OFF
ORGAN 1	L	L	L	L	OFF	OFF
STRINGS	H	H	L	L	ON	ON
ELECTRIC PIANO	H	H	H	L	ON	OFF
HARP	L	L	L	L	OFF	OFF
SYNTH. WAW	L	L	L	H	OFF	ON
ORGAN 2	H	H	L	L	ON	ON
CHORUS	H	H	L	L	ON	ON

13. STEREO CHORUS CIRCUIT

13-1. Block Diagram



Functions of Each Block

Pre-Emphasizer . . . Since the BBD has poor characteristics in the high frequency range, this block amplifies high-frequency signals.

Front Filter . . . . . As the BBD does not pass signals over 20KHz, this block is a low-pass filter whose cutoff frequency is 20KHz.

BBD (Bucket Brigade Device) . . . Stereo effects are given by delaying the right or the left sounds. This block delays the signal.

Rear Filter . . . . . Since the output signal of the BBD includes the clock pulse, the filter removes the clock pulse ingredients.

De-Emphasizer . . . As the sound signal is stressed on the high-frequency signals, this block normalizes the signals.

Mixer . . . . . Mixes the three BBD outputs and distributes to the right and the left channels.

Mixing ratio; Left channel BBD1 : BBD2 = 2 : 1
Right channel BBD3 : BBD2 = 2 : 1

Three-Phase LFO (Low Frequency Oscillator) 1 . . . Generates 120 millisecond triangle waveform while ENSEMBLE switch is turned on. The three output phases differ 120 degrees.

Three-Phase LFO2 . . . Generates 1.5 second triangle waveform while power is on.

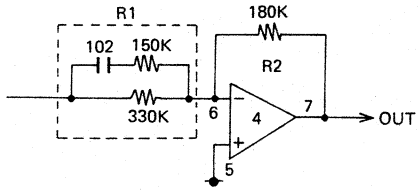
LF Mixer . . . . . Mixes the 1.5 seconds nd 120 milliseconds triangle waveforms when ENSEMBLE switch is turned on.

VCO (Voltage Controlled Oscillator) . . . Generates the clock pulses for the BBD. The oscillation frequency varies according to the input voltage level.

LFO2 Controller . . . At the time of power on or off, the Three-Phase LFO2 does not oscillate properly as appropriate voltage is not applied. This block stops the oscillation of the 1.5 second triangle waveofrm at power on or off.

13-2. Pre-Emphasizer

This block emphasizes the high-frequency signals.



The circuit is an inverting amplifier.
On the left figure, if the resistance in the dotted line is R1, the amplitude of the circuit is;

$$A = -\frac{R2}{R1}$$

When a low-frequency signal enters the circuit, the signal does not pass through capacitor 102.
The amplitude A (L) will be;

$$A\ (L) = -\ 180K/330K = -\ 0.54$$

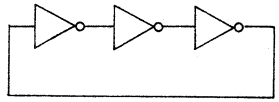
If a high-frequency signal is provided, the signal passes the capacitor.

The combined resistance R1 becomes 100Kohms.
The amplitude A (H) rises;

$$A\ (H) = -\ 180K/100K = -1.8$$

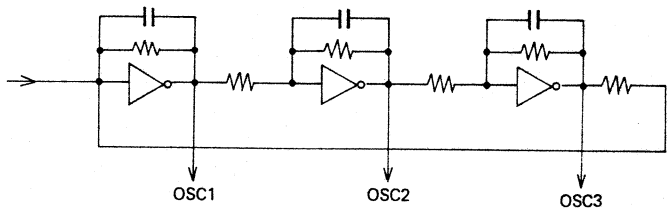
Thus, high-frequency sound is emphasized.

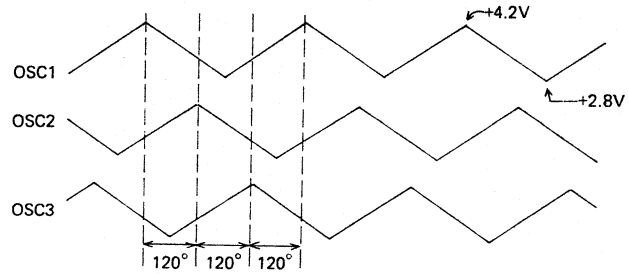
13-3. Three-Phase LFO



On the left figure, if "L" level input enters the circuit, the output becomes "H" level.
Because of the transfer characteristic of the inverter, the inverted input voltage level appears on the output with a time lag.
Hence, the circuit oscillates and the oscillation frequency is determined by the lag time.

The following is the actual circuit of the Three-Phase LFO. The lag time is controlled by the parallel connected capacitor and the resistors.
The CT-6000 employs two LFOs whose oscillation frequencies are 1.5 seconds and 120 milliseconds. The output phases differ 120 degrees.

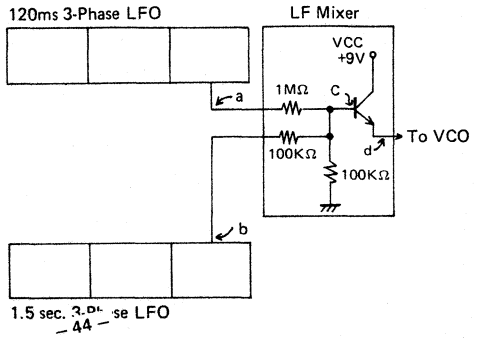


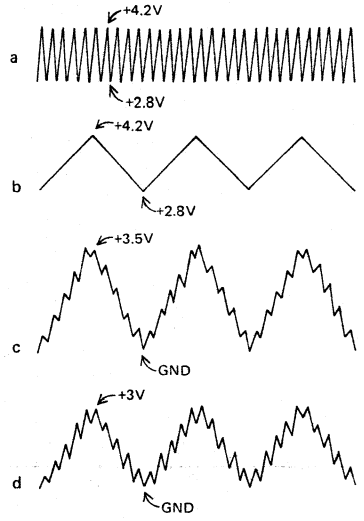


13-4. LF Mixer

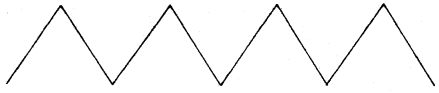
The 120 millisecond Three-Phase LFO oscillates only when the ENSEMBLE switch is turned on.

The circuit mixes the 1.5 second triangle waveform and 120 millisecond waveform in the ratio of 1 : 10.

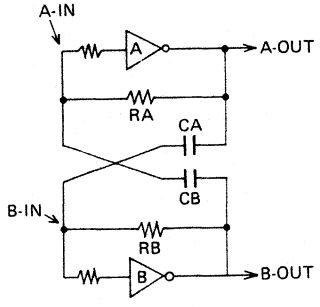




Since the 120ms Three-Phase LFO does not oscillate when the ENSEMBLE switch is off, the output of the LF Mixer is as follows.



13-5. VCO (Voltage Controlled Oscillator)

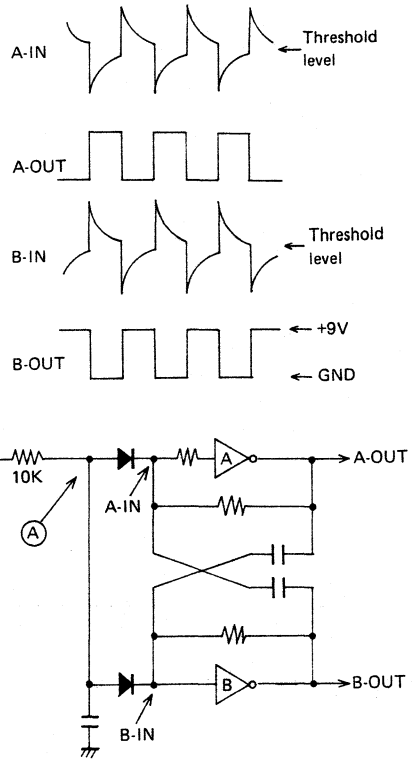


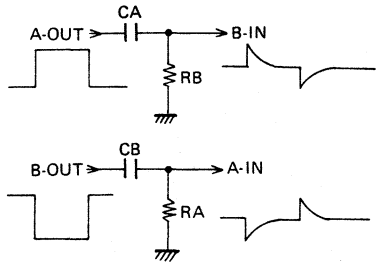
The VCO is an oscillator whose oscillation frequency varies in accordance with the input voltage level.

On the left figure, the voltage levels of the A-OUT and the B-OUT are opposite.

(1) When A-OUT is "H", B-OUT drops to "L".

(2) From A-OUT, electric current flows in to B-IN via a differentiating circuit. As a result, the voltage of B-IN drops gradually. On the other hand, the A-IN voltage gradually rises.

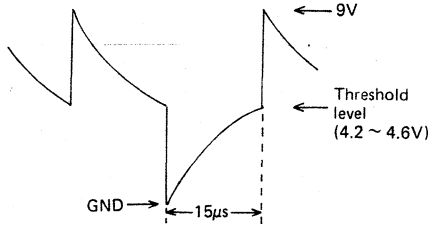




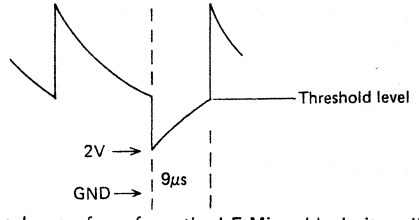
(3) When B-IN becomes lower than the threshold level, B-OUT rises to "H". Also, as A-IN becomes higher than the threshold level, A-OUT drops to "L".

(4) Repeating the above operations, the circuit oscillates.

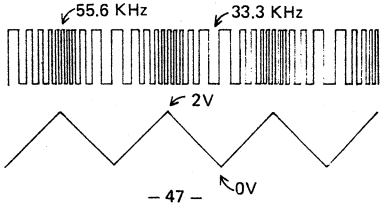
When control terminal Ⓐ is GND (0V), it takes approximately 15 microseconds for the differentiation circuit to reach the threshold voltage.



When the voltage of Ⓐ is 2V, it takes only 9 microseconds to reach the threshold level.

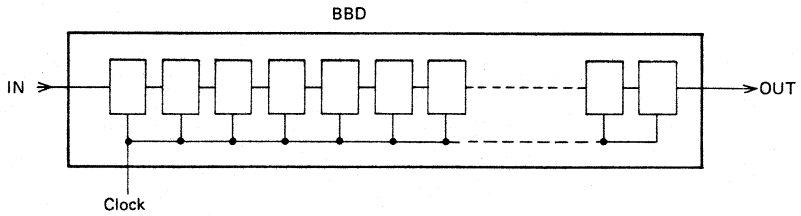


As VCO receives a triangle waveform from the LF Mixer block, it oscillates from 55.6 KHz to 33.3 KHz in accordance with the triangle waveform.

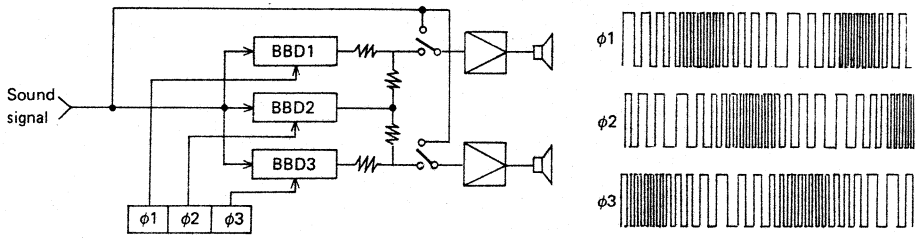


13-6. BBD (Bucket Brigade Device)

The BBD delays a signal.



The BBD contains a serial-connected delay element. The input signal is shifted one step per clock pulse.
The clock pulse is generated in the VCO and as it varies from 33.3 KHz to 55.6 KHz, the delay time varies.



The CT-6000 employs three BBDs in order to give a better stereo effect.

14. PERCUSSIONS

14-1. Percussion Generator (HD61701)

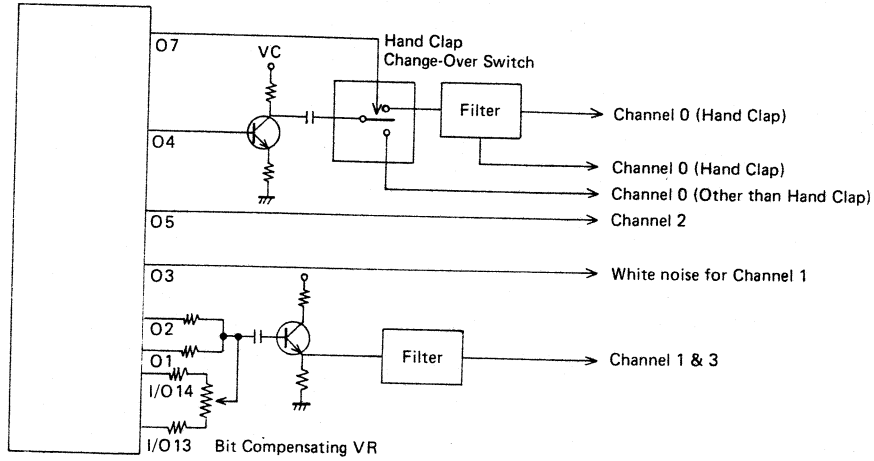
Upon receipt of data from the CPU, HD61701 generates the following 24 percussion sounds from four channel outputs.

Channel 0	Rim Shot 1, Rim Shot 2, Claves 1, Claves 2, a Gogo Bell 1, a Gogo Bell 2, Hand Clap, Percussive Sound
Channel 1	Snare Drum 1, Snare Drum 2, High Tom, High Conga
Channel 2	Closed High Hat 1, Closed High Hat 2, Open High Hat, Bell 1, Cymbal 1, Metronome, Cymbal 2, Bell 2
Channel 3	Bass Drum 1, Bass Drum 2, Low Tom, Low Conga

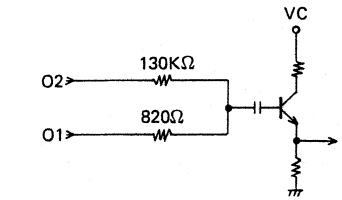
The following explains the pin functions of the LSI.

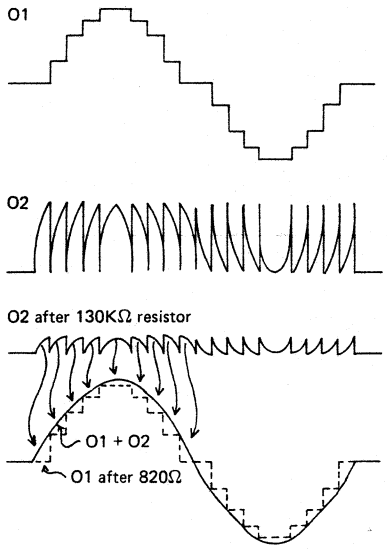
Pin No.	Terminal Name	In/Out	Function
2	I/O 15	Out	2.5MHz clock pulse for MSM6200 output.
3, 4	PG0, PG2	In/Out	4.9468MHz clock pulse inputs.
10~17	I/O1 ~ I/O8	In	8-bit data from the CPU inputs.
19	I 10	In	Address latch enable signal input.
20	I 4	In	Write signal input. When "L", data can be written in the LSI.
21	I 3	In	Chip select signal input. CPU selects the HD61701 thereby dropping this terminal "L".
22	I 11	In	Reset signal input. At power ON, the terminal drops to "L" so that the LSI is initiallized.
35	O 5	Out	Channel 2 output.
38	O 4	Out	Channel 0 output.
40	O 3	Out	Channel 1 white noise output.
42, 45	O 2, O 1	Out	Channel 1 and 3 outputs.
47	VDAC	In	Power source for the internal D/A converter.
48, 49	I/O 14, I/O 13	Out	Bit compensation outputs.
52	O 7	Out	Hand Clap change-over signal.

14-2. Percussion Circuit



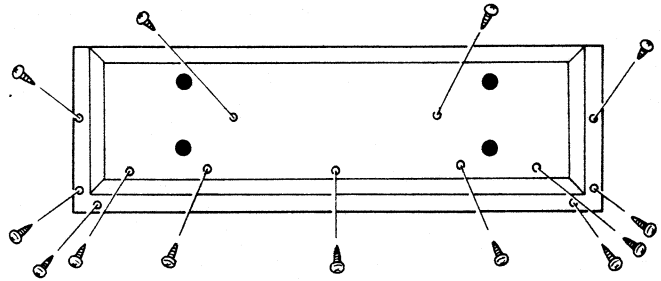
Drum sound sinewaves are generated by mixing signals O1 and O2.



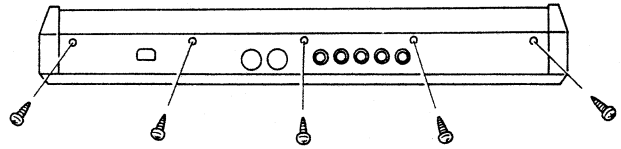


15. DISASSEMBLY

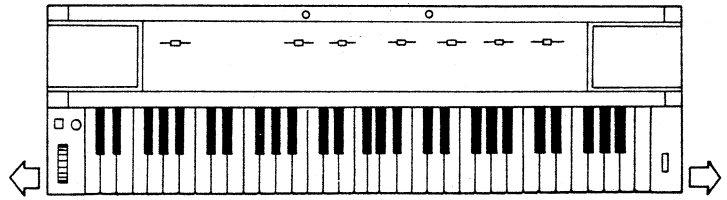
1. Remove 13 screws from the bottom.



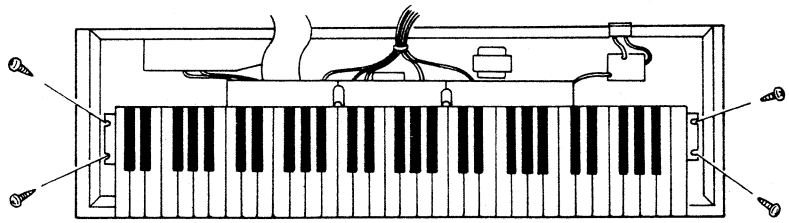
2. Remove five screws from the rear side of the case.



3. In order to prevent scratches on the inside of the side panels, spread the side panels then lift the upper case.

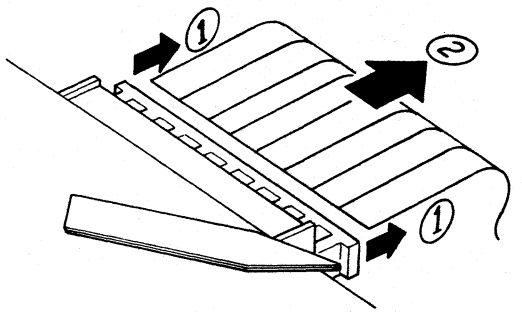


4. Remove four screws from the keyboard chassis; then remove the keyboard unit.



Disconnection of the film FPC

1. Push the lower half of the film FPC connector forward.
2. Pull the film FPC.



16. ADJUSTMENT

16-1. μPD932G Clock Pulse Adjustment

(1) Set the tuning volume which is located on the rear panel of the CT-6000 at the center.

(2) With a tuning meter, adjust coil L255 so that the frequency of key A3 is 442Hz.

Note: Make sure that the Transpose switch is set at C.

16-2. HD61701 Clock Pulse Adjustment

(1) Set a frequency counter to checkpoint A (refer to page 13).

(2) Adjust coil 10μH so that the oscillation frequency is 4.9468MHz.

16-3. VSS1 (Power source for MSM6200) Adjustment

(1) Measure VDD (+5.5V) accurately.

(2) Connect a voltmeter to checkpoint TP12.

(3) Adjust VR8 so that VSS is (VDD x 2.55 ÷ 5) volts.

16-4. μPD932Gs Bit Compensation

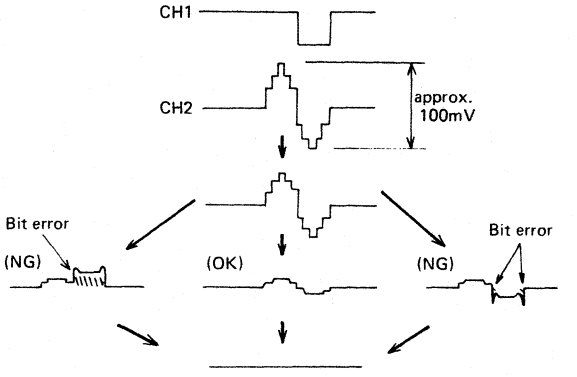
(1) Connect a two-beam oscilloscope's probes to the undermentioned checkpoints.

(2) Set the designated tone and turn the CAC (Casio Auto Chord) off.

(3) Hitting a key, adjust the VR so that the waveform of channel 2 reduces symmetrically.

Note: (A) If the waveforms are not shown clearly, connect a 30K ohm resistor between the probe and the checkpoint.

(B) Perform this adjustment after a resistive ladder network is replaced.



Music LSI	Checkpoints		VR to be Adjusted	Tone to be Set
	Channel 1	Channel 2		
μPD932G (A)	Pin 9 of TC4049-4	TP9	VR7	Piano
μPD932G (B)	Pin 9 of TC4049-7	TP8	VR5	Vibraphone
μPD932G (C)	Pin 9 of TC4049-10	TP7	VR3	Vibraphone

16-5. Bit Compensation for Drums Sounds.

Note: Use an oscilloscope, such as the one illustrated below, which has a delay function.

(1) Connect channel 1 probe to checkpoint C and channel 2 probe to checkpoint B.

(2) Set rhythm ROCK 1, then press the START/STOP switch.

(3) Press the SYNCHRO START switch so that the rhythm pattern becomes "Break Mode".

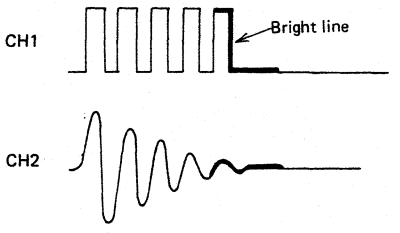
(4) Set the VOLTS/DIV and TIME/DIV dials as follows.

Channel 1	0.2V/Div.
Channel 2	20mV/Div.
A TIME	10ms/Div.
B TIME	2ms/Div.

(5) Set the DISPLAY switch (21) to "A" and synchronize the signals with the LEVEL dial (31).

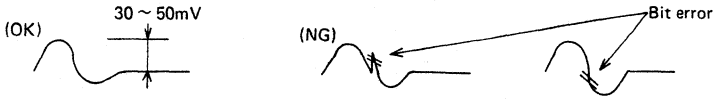
(6) Set the DISPLAY switch to "INTEN".

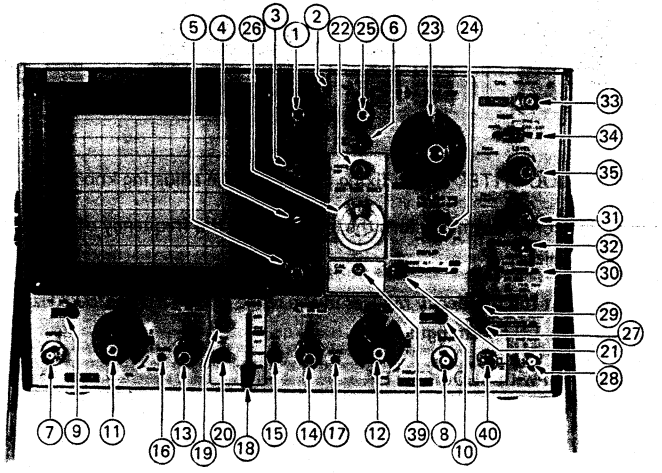
(7) Turn the DLY TIME MULT dial (26) and move the bright line to the following position.



(8) Set the DISPLAY switch to "B" and channel 2's VOLTS/DIV dial to 5mV/Div.

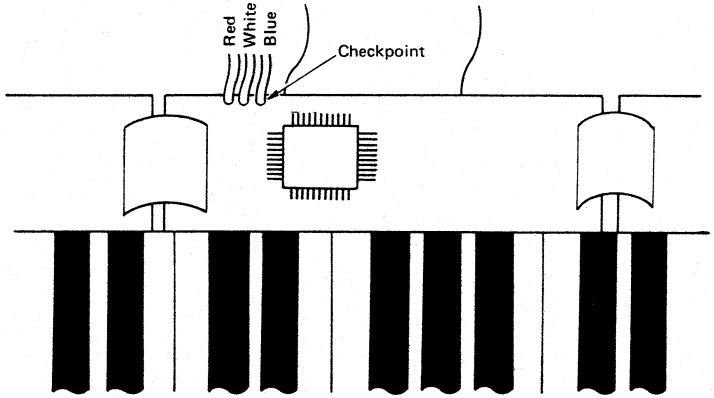
(9) Adjust VR1 on P.C.B. M471-MA1M so that the end of the channel 2 waveform is (a) smooth sinewave





16-6. Key Pressure Detector Adjustment.

(1) Connect a frequency counter to the following checkpoint.

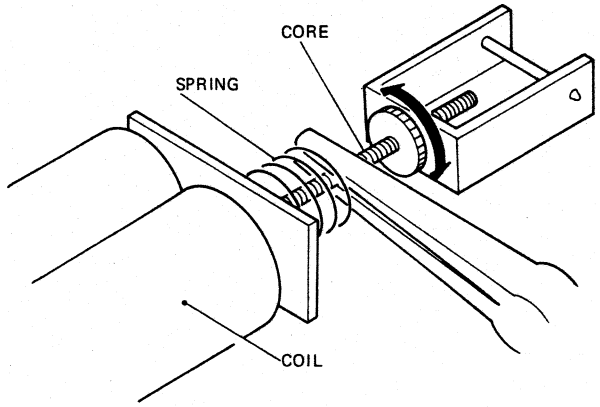


(2) Remove "LOCKTITE" (screw fixing glue) from the adjusting knob.

(3) Fixing the core with pliers, turn the knob so that the frequency of the checkpoint is 990 ± 30 KHz.

(4) Confirm that the frequency reduces in the range of 85 KHz to 250 KHz when a key is pressed with 1.2 Kg strength.

(5) Fix the knob with "LOCKTITE".



PARTS LIST

MPL-030

CT-6000 (MX-71)

Note: 1. Prices and specifications are subject to change without notice.

2. For spare parts order/supply procedures, see the "GUIDEBOOK for Spare Parts Supply," a separate publication.

Item	Code No.	Part Name	Specification	Q'ty	*	Unit Price J.F. Yen (¥) (FOB: JAPAN)	RANK
	1) MAIN-P.C.B. ASS'Y						
☆	2001 1068	LSI	HM6116P-4	1			A
☆	2001 6744	"	HD61701	1			A
☆	2001 6884	"	HN613128P-E21	1			A
☆	2002 0814	"	μPD7811G-081	1			A
☆	2002 0822	"	μPD932G	3			A
	2100 3255	MOS IC	TC4049BP	10			A
	2100 3549	"	TC4066BP	1			A
	2100 3662	"	TC4069UBP	1			A
	2100 3786	CMOS IC	TC40H004P	3			A
	2111 2160	Bipolar IC	SN74LS32N	1			A
	2111 2194	"	SN74LS138N	2			A
	2111 5215	"	SN74LS367AN	2			A
☆	2111 5428	"	SN74LS373N	1			A
	2121 0013	OP amp	NJM4558DD	6			A
	2200 3534	Transistor	2SA1015Y	1	10		A
	2280 0016	"	2SC1815Y	6	10		A
	2301 3002	Diode	DS-442	1	10		C
	2340 0022	Vari-cap	SVC321	1			B
☆	2520 1442	Ceramic oscillator	CAS10.0MT	1			C
☆	2520 1469	"	CAS2.000MK	1			C
	2600 7313	Carbon film resistor	R-25-10K-J	11	10		C
	2600 9715	"	R-25-100K-J	6	10		C
	2600 7712	"	R-25-15K-J	4	10		C
	2600 7917	"	R-25-18K-J	7	10		C
	2600 8514	"	R-25-33K-J	6	10		C
	2601 0918	"	R-25-330K-J	3	10		C
	2600 8719	"	R-25-39K-J	1	10		C
	2600 6911	"	R-25-6.8K-J	1	10		C
	2600 2516	"	R-25-100-J	2	10		C
	2600 4918	"	R-25-1K-J	25	10		C
	2601 2112	"	R-25-1M-J	2	10		C
	2600 5710	"	R-25-2.2K-J	1	10		C
	2600 8115	"	R-25-22K-J	7	10		C
	2601 0519	"	R-25-220K-J	1	10		C
	2600 3318	"	R-25-220-J	5	10		C

Note: ☆ – New parts
Q'ty – Quantity used per unit
* – Minimum order or supply quantity

Rank A: Essential
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X: No stock recommended

Item	Code No.	Part Name	Specification	Q'ty	*	Unit Price J.F. Yen (¥) (FOB: JAPAN)	RANK
	2600 8913	Carbon film resistor	R-25-47K-J	10	10		C
	2600 9316	"	R-25-68K-J	3	10		C
	2600 7119	"	R-25-8.2K-J	1	10		C
	2600 4713	"	R-25-820-J	1	10		C
	2600 7518	"	R-25-12K-J	1	10		C
	2601 0110	"	R-25-150K-J	1	10		C
	2601 1515	"	R-25-560K-J	1	10		C
	2600 6511	"	R-25-4.7K-J	1	10		C
	2601 1710	"	R-25-680K-J	1	10		C
	2600 4519	"	R-25-680-J	1	10		C
	2600 6317	"	R-25-3.9K-J	1	10		C
	2601 1311	"	R-25-470K-J	1	10		C
	2600 1919	"	R-25-56-J	1	10		C
	2600 9511	"	R-25-82K-J	9	10		C
☆	2601 6533	"	R-25-50-J	2	10		C
☆	2601 6622	"	R-25-91K-J	1	10		C
☆	2614 1290	"	R-25-25K-G-T24-T	3	10		C
	2601 6240	"	R-25-50K-G	3	10		C
☆	2614 1766	"	R-25-9.1K-G-T24-T	1	10		C
☆	2614 1774	"	R-25-200-G-T24-T	2	10		C
☆	2700 7317	Metal film resistor	CRB25FX820-T24-T	1	10		C
☆	2700 7325	"	CRB25FX130K-T24-T	1	10		C
☆	2720 3493	Module resistor	MS4737-F	1	10		C
☆	2720 3507	"	MS1524-F	1	10		C
☆	2730 0021	"	MS1038F	1	10		C
☆	2760 2177	Trimmer VR	V8K4-11B10K	5	10		B
	2804 5590	Electrolytic capacitor	6.3RE4700	1	10		C
	2804 5662	"	6.3RE1000	1	10		C
	2804 5620	"	6.3RE470	1	10		
	2804 9374	"	6.3RE100	3	10		C
	2804 5638	"	6.3RE220	1	10		C
☆	2805 5064	"	SMC50VB-R1 (M)-T	1	10		C
	2804 5069	"	10RE47	2	10		C
	2804 5689	"	6.3REA470	2	10		C
	2804 5751	"	10REA330	1	10		C
	2804 9013	"	50RNBBP1	8	10		C
	2808 0310	"	SMC50VB-1 (M)	7	10		C
	2804 4038	"	SMC16VB-10 (M)	2	10		C
	2804 4071	"	SMC10VB-22 (M)	1	10		C

Note: ☆ – New parts
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Item		Code No.	Part Name	Specification	Q'ty	*	Unit Price J.F. Yen (¥) (FOB: JAPAN)	RANK
		2805 6079	Electrolytic capacitor	SMC10VB-47 (M)	1	10		C
		2818 2040	Ceramic capacitor	HE70SJYF103Z	27	10		C
		2818 2172	"	RT-HE95TKCH181J-T	2	10		C
	☆	2819 0247	"	HE70SJSL271K	1	10		C
		2818 3062	"	HE50SJCH330J	4	10		C
		2819 0221	"	HE12SJCH271J	2	10		C
		2819 0158	"	HE40SJCH220K	3	10		C
	☆	2818 3526	"	RT-HE60TKSL181K-T	1	10		C
		2819 0212	"	HE12SJSL102K	3	10		C
		2819 0107	"	HE70SJSL221K	11	10		C
		2818 3259	"	HE11SJCH221J	2	10		C
		2830 6024	Mylar capacitor	AMZ-102K50	1	10		C
		2830 6032	"	AMZ-103K50	2	10		C
		2830 6083	"	AMZ-223K50	1	10		C
		2830 6172	"	AMZ-183K50	1	10		C
		2830 6461	"	AMZ-471K50	3	10		C
		2830 6371	"	AMZV-123K50-T	1	10		C
		2830 6059	"	AMZ-153K50	3	10		C
		2830 6130	"	AMZ-473K50	1	10		C
	☆	0002 8179	"	AMZ-682K50	1	10		C
		2830 6479	"	AMZ-683K50	1	10		C
		2890 4444	Tantalum capacitor	CS15E1V0R1M4S	2	10		C
		3060 6035	Ladder network	EXK-S19Z2052R	6			A
1		3500 3215	P.C.B. connector	IL-4P-S3EN2	1			X
2		3500 3282	"	IL-10P-S3EN2	2			X
3		3500 3312	"	IL-5P-S3EN2	1			X
4	☆	3500 3762	"	IL-9P-S3EN2	1			X
5	☆	3500 7075	"	5229-19CPB	1			X
6		3511 0801	"	5229-27CPB	1			X
7		3511 0828	"	5229-26-CPB	1			X
	☆	3730 7220	Parallel wire M71A	2468-4-40	3			X
	☆	3730 7238	" M71B	2468-4-30	2			X
	☆	3730 7246	" M71C	2468-5-30	3			X
8		3841 0105	Coil	R12-3034X	1			B
9	☆	3841 0512	"	L255	1			B
10	☆	4307 2450	Blank P.C.B. (M571-MA1M)	M1522-1	1			X

Note: ☆ – New parts
Q'ty – Q'ty used per unit
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X: No stock recommended

Item		Code No.	Part Name	Specification	Q'ty	*	Unit Price J.F. Yen (¥) (FOB: JAPAN)	RANK
		2) MA2M-P.C.B. ASS'Y						
		2100 1619	CMOS IC	HD14066BP	1			A
		2100 3549	MOS IC	TC4066BP	5			A
		2100 3662	"	TC4069UBP	4			A
		2100 7692	CMOS IC	MN3209	3			A
		2121 0013	OP amp	NJM4558DD	6			A
		2280 0016	Transistor	2SC1815Y	14	10		A
	☆	2240 1211	FET	2SK163N	1	10		A
		2240 5136	"	2SK30ATMY	3	10		A
		2301 3002	Diode	DS-442	13	10		C
		2600 7313	Carbon film resistor	R-25-10K-J	22	10		C
		2600 9715	"	R-25-100K-J	49	10		C
		2600 7712	"	R-25-15K-J	6	10		C
		2600 7917	"	R-25-18K-J	2	10		C
		2600 8514	"	R-25-33K-J	8	10		C
		2601 0918	"	R-25-330K-J	3	10		C
		2600 8719	"	R-25-39K-J	1	10		C
		2600 6716	"	R-25-5.6K-J	6	10		C
		2600 9111	"	R-25-56K-J	11	10		C
		2600 2516	"	R-25-100	2	10		C
		2601 2112	"	R-25-1M-J	10	10		C
		2601 0314	"	R-25-180K-J	1	10		C
		2600 8115	"	R-25-22K-J	3	10		C
		2601 0519	"	R-25-220K-J	2	10		C
		2600 8310	"	R-25-27K-J	5	10		C
		2600 8913	"	R-25-47K-J	11	10		C
		2600 7518	"	R-25-12K-J	2	10		C
		2601 0110	"	R-25-150K-J	12	10		C
		2600 5914	"	R-25-2.7K-J	1	10		C
		2601 8111	"	R-25-2.2M-J	2	10		C
		2601 1311	"	R-25-470K-J	2	10		C
		2601 6231	"	R-25-25K-J	3	10		C
		2601 5111	"	R-25-50K-J	2	10		C
		2601 6398	"	R-25-6.8M-J	6	10		C
		2601 5511	"	R-25-1.5M-J	10	10		C
		2600 0912	"	R-25-22-J	1	10		
		2804 9013	Electrolytic capacitor	50RNBBP1	1	10		C
		2804 5760	"	10REA470	3	10		C
		2808 1014	"	SMC50VB-1MBP-T	12	10		C

Note: ☆ – New parts
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* – Minimum order or supply quantity

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Item		Code No.	Part Name	Specification	Q'ty	*	Unit Price J.F. Yen (¥) (FOB: JAPAN)	RANK
		2808 0310	Electrolytic capacitor	SMC50VB-1 (M)	1	10		C
		2808 0271	"	SMC10VB-220 (M)	2	10		C
		2818 2040	Ceramic capacitor	HE70SJYF103Z	16	10		C
		2819 0654	"	HE90SJCH151J	9	10		C
	☆	2819 0247	"	HE70SJSL271K	1	10		C
	☆	2818 3496	"	RT-HE90TKSL561K-T	2	10		C
	☆	2818 3500	"	RT-HE11TKSL681K-T	1	10		C
		2819 0107	"	HE70SJSL221K	2	10		C
		2819 0239	"	HE80SJSL331K	1	10		C
		2830 6041	Mylar capacitor	AMZ-104K50	3	10		C
		2830 6024	"	AMZ-102K50	6	10		C
		2830 6156	"	AMZ-563K50	3	10		C
		2830 6032	"	AMZ-103K50	4	10		C
		2830 6172	"	AMZ-183K50	1	10		C
		2830 6321	"	AMZV-152K50-T	5	10		C
		0002 8165	"	AMZF-392K50	4	10		C
		2830 6121	"	AMZ-472K50	1	10		C
		2830 6181	"	AMZ-822K50	3	10		C
		2830 6164	"	AMZ-823K50	3	10		C
		2830 6452	"	AMZV-682K50-T	1	10		C
	☆	0002 8163	"	AMZF-182K50	2	10		C
11		3500 3291	P.C.B. connector	IL-12P-S3EN2	1	10		X
12	☆	3500 7287	P.C. joiner M71E	PCJ-UV26-50	1			B
13	☆	3500 7792	10P connector M71-A	IL-10P25-M71	1			X
14		3510 6324	P.C.B. connector	IL-6P-S3EN2	1	10		X
15		6001 1915	P.C. joiner holder G502	P427-1	1	10		X
16	☆	4307 2460	Blank P.C.B. (M571-MA2M)	M1523-1	1			X
			3) AS1M-P.C.B. ASS'Y					
		2120 8485	Hybrid IC	STK4332	1			A
		2200 3534	Transistor	2SA1015Y	1	10		A
		2280 0016	"	2SC1815Y	1	10		A
		2240 1238	FET	2SK163M	2	10		A
		2240 5136	"	2SK30ATM-Y	2	10		A
		2301 3002	Diode	DS-442	1	10		C
		2600 7313	Carbon film resistor	R-25-10K-J	3	10		C
		2600 9715	"	R-25-100K-J	5	10		C
		2600 2516	"	R-25-100-J	2	10		C

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Item		Code No.	Part Name	Specification	Q'ty	*	Unit Price J.F. Yen (¥) (FOB: JAPAN)	RANK
		2600 6511	Carbon film resistor	R-25-4.7-J	2	10		C
		2600 4918	"	R-25-1K-J	4	10		C
		2601 2112	"	R-25-1M-J	3	10		C
		2600 5710	"	R-25-2.2K-J	2	10		C
		2600 8115	"	R-25-22K-J	1	10		C
		2600 3318	"	R-25-220-J	4	10		C
		2600 8913	"	R-25-47K-J	2	10		C
		2600 7518	"	R-25-12K-J	4	10		C
		2601 0713	"	R-25-270K-J	3	10		C
		2600 3512	"	R-25-270-J	1	10		C
		2600 6511	"	R-25-4.7K-J	2	10		C
	☆	2601 6622	"	R-25-91K-J	1	10		C
	☆	2622 1129	"	R-75X-100-J	2	10		C
		2770 6622	Variable resistor VR	K161A0054-100KB	1	10		B
	☆	2805 5056	Electrolytic capacitor	SMC35VB-47(M)-T	2	10		C
	☆	2807 0420	"	35REA100-T2-T	2	10		C
		2804 4925	"	50RE1	2	10		C
		2804 5760	"	10REA470	1	10		C
		2808 1014	"	SMC50VB-1MBP-T	2	10		C
	☆	2805 6389	"	SMC16VB-10 (M)	2	10		C
		2805 6087	"	SMC10VB-100 (M)	4	10		C
		2808 1120	"	SMC50VB-R47 (M)-T	2	10		C
	☆	2805 6362	"	SMC35VB-220 (M)	2	10		C
	☆	2805 6371	"	SMC35VB-1000 (M)	2	10		C
		2818 2040	Ceramic capacitor	HE70SJYF103Z	2	10		C
		2819 0239	"	HE80SJSL331K	2	10		C
		2818 6045	"	HE40SJSL680K	2	10		C
		2819 0328	"	HE90SJSL471K	1	10		C
		2830 6032	Mylar capacitor	AMZ-103K50	2	10		C
		2830 6495	"	AMZ-224K50	4	10		C
17		3500 3207	P.C.B. connector	IL-4P-S3FP2	2	10		X
18	☆	3500 7776	7P connector M71	IL-7P35-M71	1			X
19	☆	3500 7806	6P connector M71	IL-6P50-M71	1			X
20	☆	3612 0495	Jack	YKB21-5011	1			B
21	☆	3612 0509	"	YKB21-5013	1			B
22	☆	3612 0517	"	YKB21-5005	2			B
23	☆	3612 0533	"	YKB21-5007	1			B
24	☆	5430 0107	Nut	YKV11-0095	5	10		X

Note: ☆ – New parts
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Item	Code No.	Part Name	Specification	Q'ty	*	Unit Price J.F. Yen (¥) (FOB: JAPAN)	RANK
25	6902 0910	Heat sink PA-58	M41119-1	1			X
26 ☆	6904 0450	Jack holder	M31362-1	1			X
27 ☆	6904 0570	Shield palte AS-71	M31446-1	1			X
28 ☆	4307 2470	Blank P.C.B. (M571-AS1M)	M2821-1	1			X
		4) CN7M-P.C.B. ASS'Y					
	2301 3002	Diode	DS-442	1	10		C
☆	2400 5062	Photo coupler	PC900	1	10		B
	2600 3318	Carbon film resistor	R-25-220-J	2	10		C
	2600 3512	"	R-25-270-J	1	10		C
	2818 2040	Ceramic capacitor	HE70SJYF103Z	1	10		C
29 ☆	3500 7784	4P connector M71-A	IL-4P20-M71	1			X
30 ☆	3612 0541	Din jack	TCS4650-01-1211	2			C
31 ☆	4307 2480	Blank P.C.B. (M571-CN7M)	M1525-2	1			X
		5) POWER SUPPLY ASS'Y					
		A) PS1-P.C.B. ASS'Y					
	2818 2601	Ceramic capacitor	DE7150FZ103PVA1	2	10		C
	3020 2104	Noise filter	TF2317C-601Y2R5	1			C
	3631 2025	UL time lag fuse	MT4-2A	1			B
	3640 2357	Fuse clip	UF-0033#01	2	10		X
32 ☆	4307 2530	Blank P.C.B. (M571-PS1M)	M31331-1	1			X
		B) PS2M-P.C.B. ASS'Y					
	2200 3534	Transistor	2SA1015Y	1	10		A
	2230 3554	"	2SD313 (E, F)	2	10		A
	2280 0016	"	2SC1815Y	5	10		A
	2300 9102	Diode	S2VB10	1	10		C
	2318 0004	Zener diode	RD5.1E (B1)	1	10		B
	2310 3249	"	RD6.2E (B1)	2	10		B
	2310 3401	"	RD15EB3	1	10		B
	2310 3273	"	RD5.6E (B1)	1	10		B
	2301 3002	Diode	DS-442	2	10		C
	2310 4989	Zener diode	RD7.5EB1	1	10		B
	2310 3389	"	RD10EB3	1	10		B
	2330 1075	Diode	S4VB10	1	10		C
	2600 7313	Carbon film resistor	R-25-10K-J	3	10		C
	2600 5515	"	R-25-1.8K-J	2	10		C

Note: ☆ – New parts
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C: Others
X: No stock recommended

Item	Code No.	Part Name	Specification	Q'ty	*	Unit Price J.F. Yen (¥) (FOB: JAPAN)	RANK
	2600 2516	Carbon film resistor	R-25-100-J	1	10		C
	2600 8115	"	R-25-22K-J	1	10		C
	2600 7518	"	R-25-12K-J	2	10		C
	2600 6511	"	R-25-4.7K-J	1	10		C
	2600 2915	"	R-25-150-J	1	10		C
	2600 5116	"	R-25-1.2K-J	1	10		C
	2600 1111	"	R-25-27-J	1	10		C
☆	2601 6479	"	R-25-2.7-J	1	10		C
	2620 4313	"	R-50X-560-J	1	10		C
	2630 2510	"	R-1W-100-J	2	10		C
☆	2631 3210	"	R-1W-0.47-J	1	10		C
☆	2641 3025	"	R-2W-390-J	1	10		C
☆	2805 2031	Electrolytic capacitor	6.3RE100-F	1	10		C
	2805 2014	"	50RE1-F	1	10		C
☆	2805 2171	"	10RE220-F	2	10		C
	2804 3023	"	35RPE3300	1	10		C
☆	2805 6354	"	SMC16VB-4700(M)	1	10		C
	2808 0247	"	SMC10VB-1000(M)	1	10		C
	2808 0298	"	SMC16VB-470(M)	1	10		C
33	3500 3142	P.C.B. connector	IL-7P-S3EN2	1	10		X
34 ☆	3500 7768	10P connector M71-B	IL-10P35-M71	1	10		X
35 ☆	3630 3131	UL time lug fuse	UL-TSC-3.15A	1			B
36	3631 0014	"	UL-TSC-2A	1			B
37	3640 2357	Fuse clip	UF-0033#01	4	10		X
38 ☆	6902 0921	Heat sink DG-58	M41140A-1	1			X
39	6910 9160	" 84A	M41652-1	1			X
40 ☆	4307 2490	Blank P.C.B. (M571-PS2M)	M2820-1	1			X
		C) TRANSFORMER/VOLTAGE SELECTOR					
41 ☆	3000 5309	Transformer	TE-71-1M1	1			C
42	3600 1186	Voltage selector	ESE-371	1			C
43 ☆	6903 9981	Wire sub ass'y	M41169A*2	1			X
		6) KEYBOARD UNIT					
		A) KY1M/KY2M/KY3M-P.C.B. ASS'Y					
☆	2004 0379	LSI	MSM6200GS-L	1			A
	2301 3002	Diode	DS-442	122	10		C
	2600 9111	Carbon film resistor	R-25-56K-J	1	10		C

Note: ☆ – New parts
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Rank: A Essential
B Stock recommended
C Others
X No stock recommended

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	2600 2516	Carbon film resistor	R-25-100-J	1	10		C
☆	2614 1758	"	R-25-180K-G-T24-T	8	10		C
	2804 5051	Electrolytic capacitor	16RE10	1	10		C
	2818 2040	Ceramic capacitor	HE70SJYF103Z	2	10		C
☆	2830 6703	Mylar capacitor	AMZF-104J50	8	10		C
44 ☆	3721 0032	PC joiner M71A	PCJ-UV-19-90	1			B
45 ☆	3721 0041	" M71B	PCJ-JVU-16-22	2			B
46	6215 1340	Joiner holder E92	E41909-2	1	10		C
47 ☆	4307 2421	Blank P.C.B. (M571-KY1M)	M2822A-1	1			X
48 ☆	4307 2430	" (M571-KY2M)	M1524-1	1			X
49 ☆	4307 2441	" (M571-KY3M)	M2823A-1	1			X
	B) KY4-P.C.B. ASS'Y						
	2100 3662	MOS IC	TC4069UBP	1			A
☆	2830 6673	Mylar capacitor	AMZF-102J50	2	10		C
☆	3841 0351	Coil	R17-1400	1			B
50 ☆	6903 7900	Parallel wire M71A	M41756-1	1			X
51 ☆	4307 2410	Blank P.C.B.	M31332-1	1			X
	C) KEYBOARD ASS'Y						
52 ☆	0002 8190	Censor frame ass'y	M31394*1	1			C
53 ☆	0002 8191	Common bar ass'y	M31395*1	1			C
54 ☆	0002 8192	KB chassis ass'y	MX-71KB	1			X
55 ☆	0002 8203	Key CF		10			C
56 ☆	0002 8204	" BE		10			C
57 ☆	0002 8205	" D		5			C
58 ☆	0002 8206	" G		5			C
59 ☆	0002 8207	" A		5			C
60 ☆	0002 8208	" S		1			C
61 ☆	0002 8209	Black key		25			C
62 ☆	0002 8193	KB spring TR	M41630-1	25	10		B
63 ☆	0002 8195	Bar holder R	M31406-1	1	10		C
64 ☆	0002 8196	" L	M31407-1	1	10		C
65 ☆	0002 8197	Side cap R	M31408-1	1	10		C
66 ☆	0002 8198	" L	M31409-1	1	10		C
67 ☆	0002 8199	Bar spring R	M41816-1	1	10		C
68 ☆	0002 8200	" L	M41817-1	1	10		C
69	0002 8201	Key stopper	M31279-1	1			C

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70 ☆	0002 8194	KB spring TR	M41630-2	36	10		C
71 ☆	0002 8202	Upper case stopper	M31414-1	1	10		C
72 ☆	6904 0060	Upper case stopper rubber	M41823-1	1	10		C
	7) UPPER CASE UNIT						
	A) CN1M, CN3, CN4-P.C.B. ASS'Y						
	2111 5509	Bipolar IC	SN74LS374N	4			A
	2184 1014	"	HD74LS154P	1			A
	2200 3534	Transistor	2SA1015Y	9	10		A
	2301 3002	Diode	DS-442	67	10		C
	2320 7095	LED	SLP161B (=LN266RP-(LS))	31	10		B
	2600 7313	Carbon film resistor	R-25-10K-J	1	10		C
	2600 8514	"	R-25-33K-J	1	10		C
	2600 3717	"	R-25-330-J	1	10		C
	2600 4314	"	R-25-560-J	6	10		C
	2600 4918	"	R-25-1K-J	2	10		C
	2600 8115	"	R-25-22K-J	2	10		C
	2600 2915	"	R-25-150-J	1	10		C
	2600 4110	"	R-25-470-J	25	10		C
☆	2770 9672	Variable resistor	EWA-NFO-C10-B14	1			B
☆	2770 9681	"	EWA-NFO-C10-B54	1			B
	2805 6079	Electrolytic capacitor	SMC10VB-47(M)	1	10		C
	2818 2040	Ceramic capacitor	HE70SJYF103Z	6	10		C
	2828 0020	"	HE70SJSL221J	1	10		C
	3330 1120	LED	SLP-531D	1	10		B
73 ☆	3500 7198	PC joiner M71D	PCJ-UV27-290	1			B
74 ☆	3500 7295	" M71F	PCJ-JVU-15-22	1	10		B
75 ☆	3500 7309	" M71G	PCJ-JVU-2-32	1	10		B
76 ☆	3500 7733	P.C.B. connector	IL-9P-S3UX2	1			X
77 ☆	3500 8039	"	20FR-ST	3			X
78 ☆	3500 8047	P.C.B. connector	08FR-ST	1			X
79	6001 5198	Joiner holder G86KA	P489-1	1	10		C
80	6215 1340	" E92	E41909-2	1	10		C
81 ☆	4307 2500	Blank P.C.B. (M571-CN1M)	M1525-1	1			X
82 ☆	4307 2540	" (M571-CN3)	M31333-1	1			X
83 ☆	4307 2550	" (M571-CN4)	M31333-2	1			X

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		B) CN2M-P.C.B. ASS'Y					
	2320 7095	LED	SLP161B (=LN266RP-(LS))	22	10		B
84 ☆	2770 9672	Variable resistor	EWA-NFO-C10-B14	1			B
85 ☆	2770 9699	"	EWA-NA1-C10-B14	2			B
86 ☆	3500 7201	P.C. joiner M71H	PCJ-JVU-21-42	1			B
87 ☆	4307 2510	Blank P.C.B. (M571-CN2M)	M2824-1	1			X
		C) MEMBRANE PANEL ASS'Y					
88 ☆	3500 7709	12P connector M71	IL-12P70-M71	1			X
89 ☆	3500 7814	9P connector M71A	IL-9P65-M71	1			X
90 ☆	3500 7849	4P connector M71A	IL-4P75-M71A	1			X
91 ☆	0002 8189	Panel switch sub ass'y	MX-510	1			X
93 ☆	6904 0320	Fill in button 71	M31360-1	1			X
94 ☆	6904 0330	CN spacer 71	M41735-1	1	10		X
95 ☆	6904 0340	CN contact 71	M41739-1	1	10		X
96	6910 0710	Key contact rubber	M4495-1	1			X
97 ☆	6904 1560	Sponge 83	M41593-2	3	10		X
98 ☆	6901 5080	" N	M4767-3	1	10		X
☆	6900 5900	Felting seal J	M4400-1	1	10		X
☆	6900 5860	" G	M4387-1	3	10		X
		D) UPPER CASE ASS'Y					
100A	6900 7171	Stand bushing	M4350A-1	1			C
101 ☆	6903 8091	Speaker net sub ass'y 71L	M31388A*1	1			C
102 ☆	6904 0071	" 71R	M31389A*1	1			C
103 ☆	6904 0090	Slide VR knob 71	M31358-1	5			C
104 ☆	6904 0100	Slide knob 71	M31359-1	1			C
105 ☆	6903 8080	Upper case sub ass'y	M2865*1	1			C
		E) SLIDE BOARD ASS'Y					
	5580 1274	Ball bearing	SUS304 2pi	1	10		C
	6901 4972	Slide contact B	M4797B-1	1	10		B
	6910 0480	Slide spring	M4491-1	1	10		C
	6910 4860	Slide board 40	M3704-1	1	10		X

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		F) SPEAKER ASS'Y					
106	3830 2141	Speaker	EAS-12P213SC	2			B
107 ☆	3500 7741	4P connector M71B	IL-4P85-M71	1			X
108	6902 1680	SP cover sponge	M41219-1	2	10		X
109 ☆	6904 0040	Baffle plate 71	M41738-1	2			X
		8) SIDE BOARD 71R SUB ASS'Y					
110 ☆	6903 7970	Side board 71R sub ass'y	M31390*1	1			C
111	3440 5298	Power switch	SDLC-1P	1			B
112 ☆	6904 0050	PW knob	M41093-3	1	10		C
		9) SIDE BOARD 71L UNIT					
		A) CN5, 6-P.C.B. ASS'Y					
	2320 7095	LED	SLP161B	1	10		B
113 ☆	3410 4069	Rotary switch	SRS-101C	1			B
114 ☆	3500 7750	9P connector M71-B	IL-9P60-M71	1			X
115 ☆	6902 8430	VR holder	M41068-1	1	10		C
116 ☆	4307 2520	Blank P.C.B. (M571-CN6)	M31333-4	1			X
117 ☆	4307 2570	" (M571-CN5)	M31333-3	1			X
		B) SLIDE BOARD 71L ASS'Y					
118 ☆	6904 0250	Slide board 71L sub ass'y	M31391*1	1			C
119 ☆	6904 0260	Rhythm button	M4498-11	1	10		C
120 ☆	6904 0270	VR knob	M41066-2	1	10		C
121	6910 1860	Key contact rubber 31	M4675-1	1			B
		C) BENDER ASS'Y					
122	6903 9910	Bender ass'y	M31392*1	1			B
		10) LOWER CASE ASS'Y					
123 ☆	6903 7960	Lower case sub ass'y	M2866*1	1			C
124	3670 1161	Receptacle	NC-174	1			C
125	6901 5580	Receptacle fixing plate	M4850-1	1	10		X
126 ☆	6904 0190	Din jack fixing plate	M41733-1	1			X
		11) DUST COVER/POWER CORD/NOTE STAND					
☆	6904 0490	Dust cover	M31465-1	1			C
	3700 2992	Power cord (Japan, Philippines)	DC-489-J01	1			C

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	3700 3051	Power cord (U.S.A.)	UC-907-J01	1			C
	3700 3077	" (Australia)	SC-410-J01	1			C
☆	3700 3573	" (U.K.)	GH-213-Y01	1			C
	3700 9334	" (Canada)	UC-908-J01	1			C
	3700 9369	" (Europe)	EC-410-J03	1			C
☆	6903 9860	Note stand	M31467-1	1			

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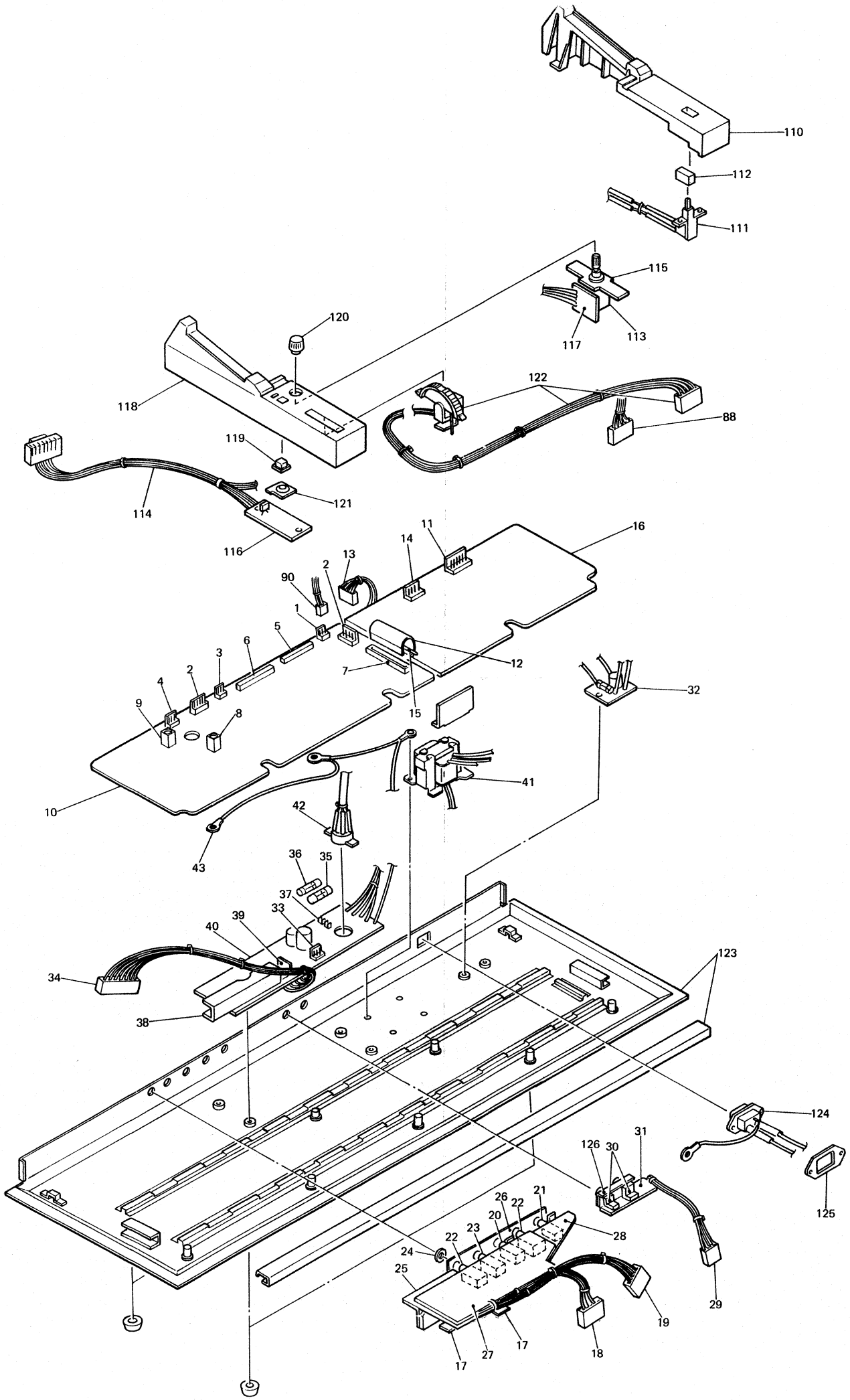
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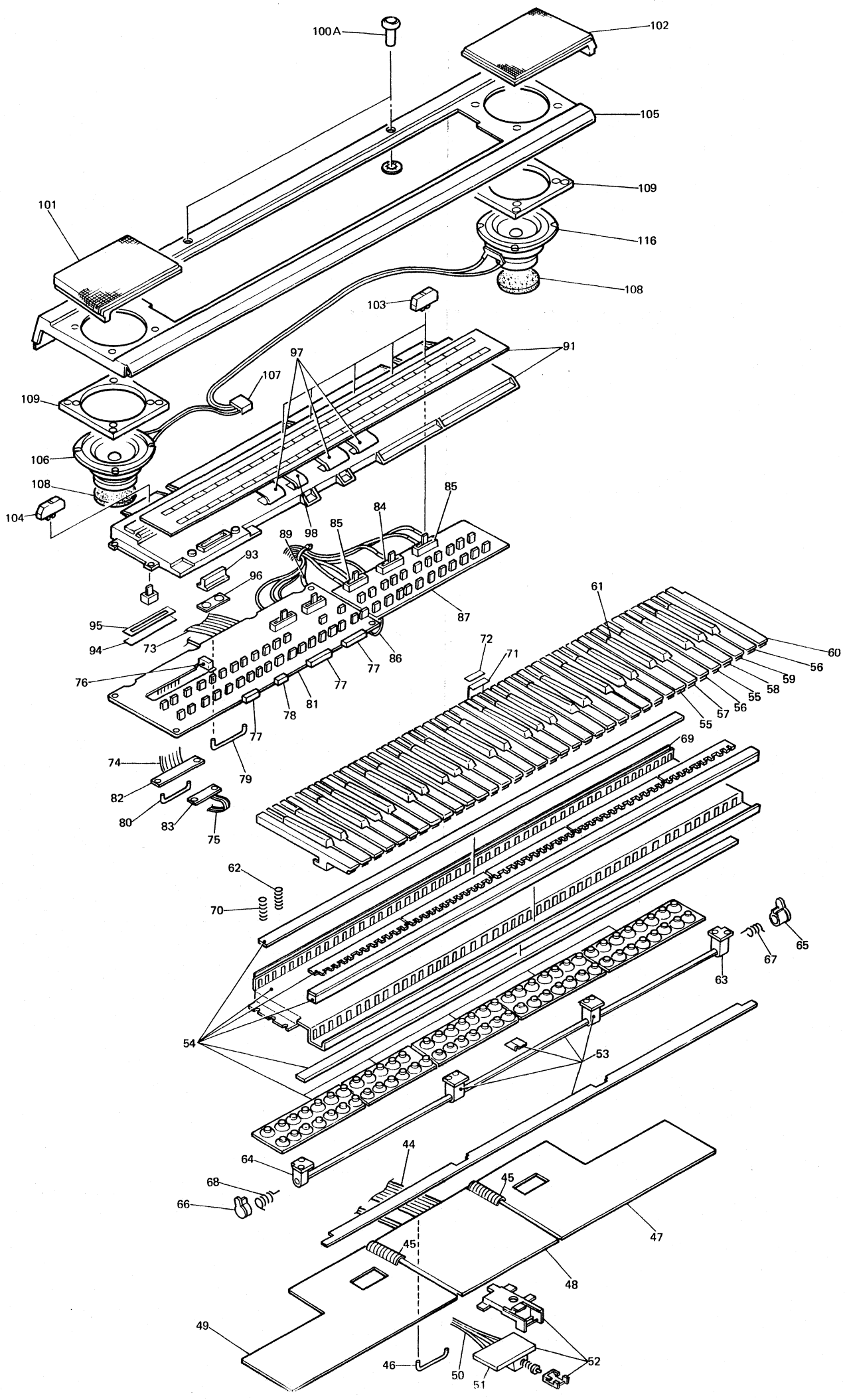
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