

# SERVICE MANUAL & PARTS LIST

**ELECTRONIC KEYBOARD**

**MT-100**



**NOTE: THIS SERVICE MANUAL EXPLAINS ONLY THE GRAPHIC  
EQUALIZER CIRCUIT.  
FOR THE OTHER CIRCUITS, REFER TO THE MT-65  
SERVICE MANUAL.**

**CASIO**

MT-100  
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Only information regarding the Waveforms and Graphic Equalizer are contained in this manual. Refer to MT-65 service manual for other Technical Descriptions.

TECHNICAL BULLETIN \*\*\*\*\*

The PCB MA1M has been changed in middle of production.  
The Ladder network EXK-S19Z2052R in the first version has been changed to EXK-F19Z2064 in the second version.

THESE PARTS ARE NOT INTERCHANGEABLE. The pin configurations are different. Refer to the schematic in this manual.



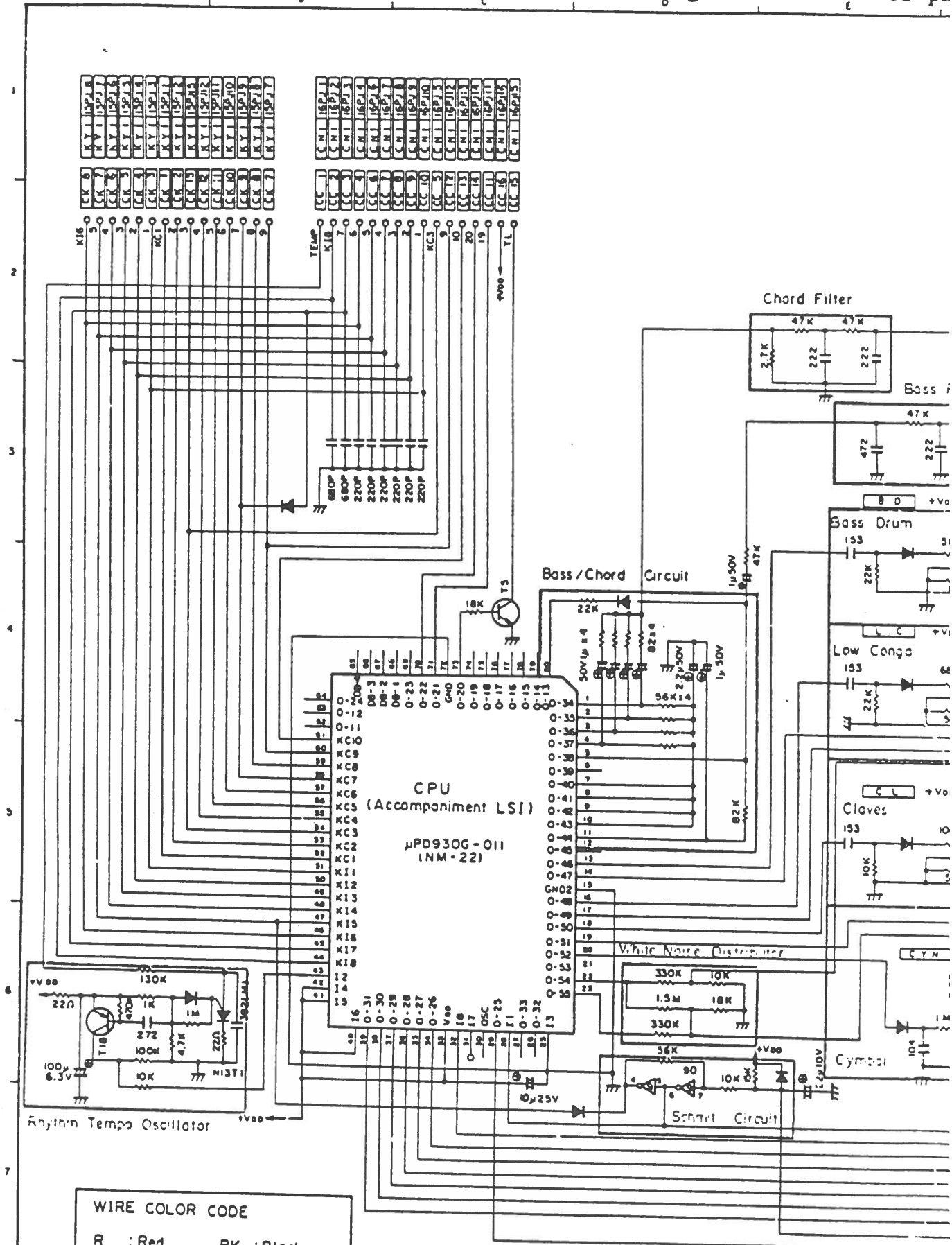
MT-100

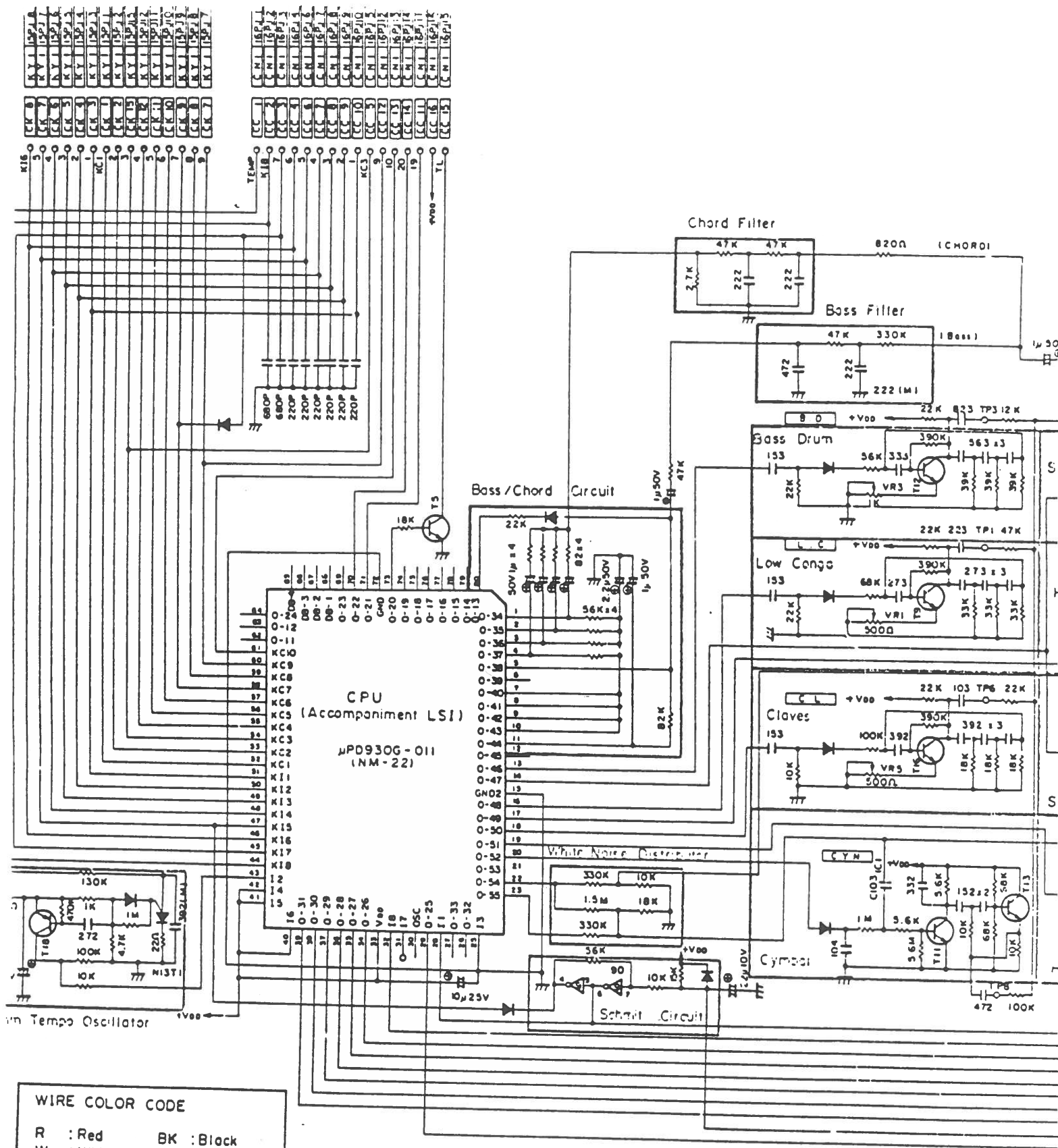
1. SCHEMATIC DIAGRAM

1-1. P.C.B. M486-MA1M

1st Version. Ladder Network = EXK-S19Z2052R

Ladder Networks are not interchangeable because of pi





**WIRE COLOR CODE**

R : Red	BK : Black
W : White	BR : Brown
BL : Blue	O : Orange
Y : Yellow	GY : Gray
GR : Green	PK : Pink
PP : Purple	E : Shielding wire

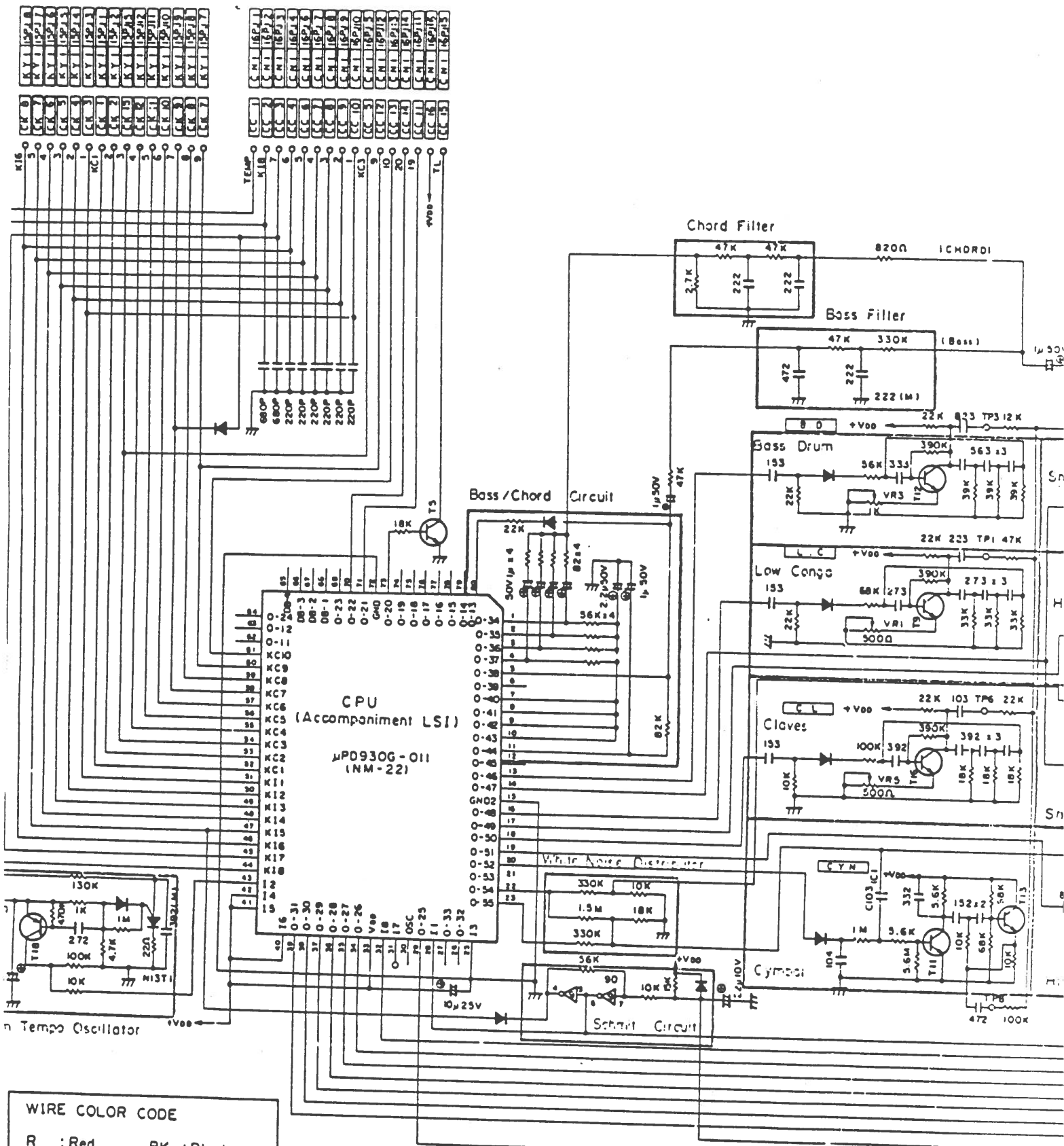
1. Transistor without notes  
 T18 ..... 2SA933SO  
 NPN ..... 2SC1740SO  
 T9, T12, T16 ..... 2SC1815Y
2. —○— Shows a checkpoint
3. F12 Bu4066B x 1/4

# IC DIAGRAM

86-MA1M

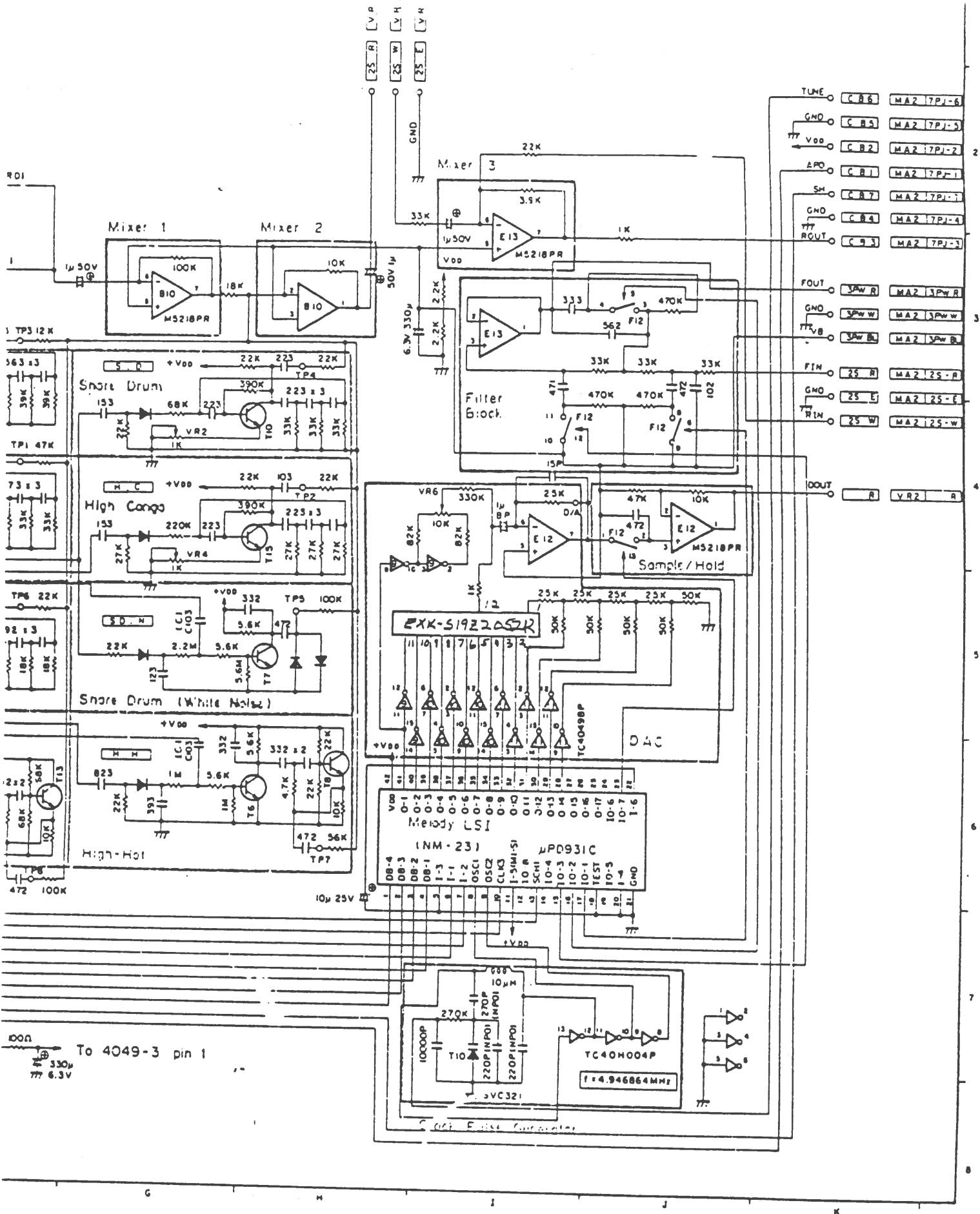
1st Version. Ladder Network = EXK-S19Z2052R

Ladder Networks are not interchangeable because of pin configuration



WIRE COLOR CODE

R	: Red	BK	: Black
W	: White	BR	: Brown
PL	: Blue		



TUNE	C B 6	MA2 7PJ-6
GND	C B 5	MA2 7PJ-5
V00	C B 2	MA2 7PJ-2
APO	C B 1	MA2 7PJ-1
SM	C B 7	MA2 7PJ-7
GND	C B 4	MA2 7PJ-4
ROUT	C 9 3	MA2 7PJ-3
FOUT	3A W R	MA2 3Pw R
GND	3P W W	MA2 3Pw W
V B	3A W B	MA2 3Pw B
FIN	25 R	MA2 25-R
GND	25 E	MA2 25-E
RIN	25 W	MA2 25-W

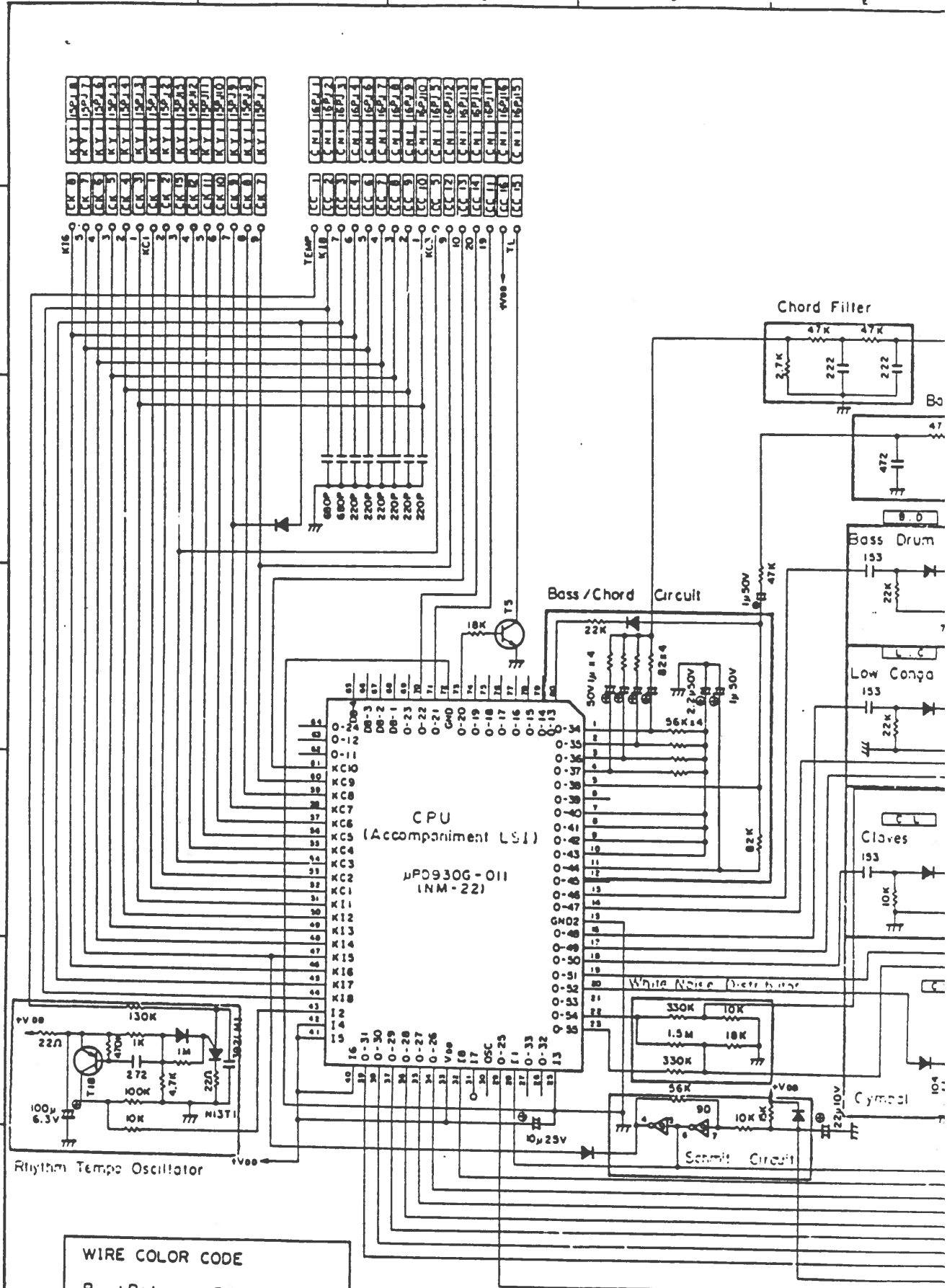


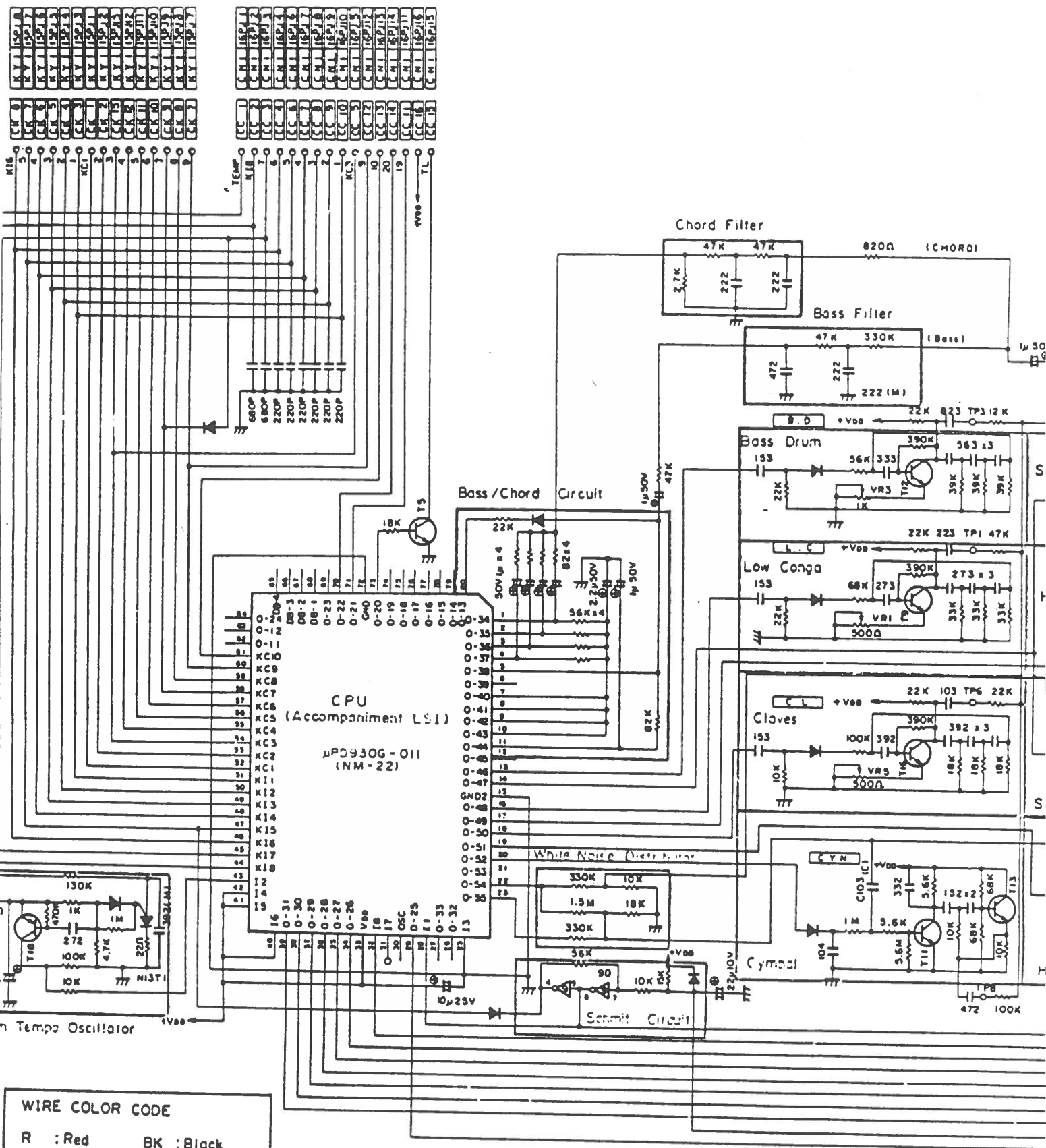




1. SCHEMATIC DIAGRAM

1-1. P.C.B. M486-MA1M 2nd Version. Ladder Network = EXK-19Z2064  
Ladder Networks are not interchangeable because of pi





**WIRE COLOR CODE**

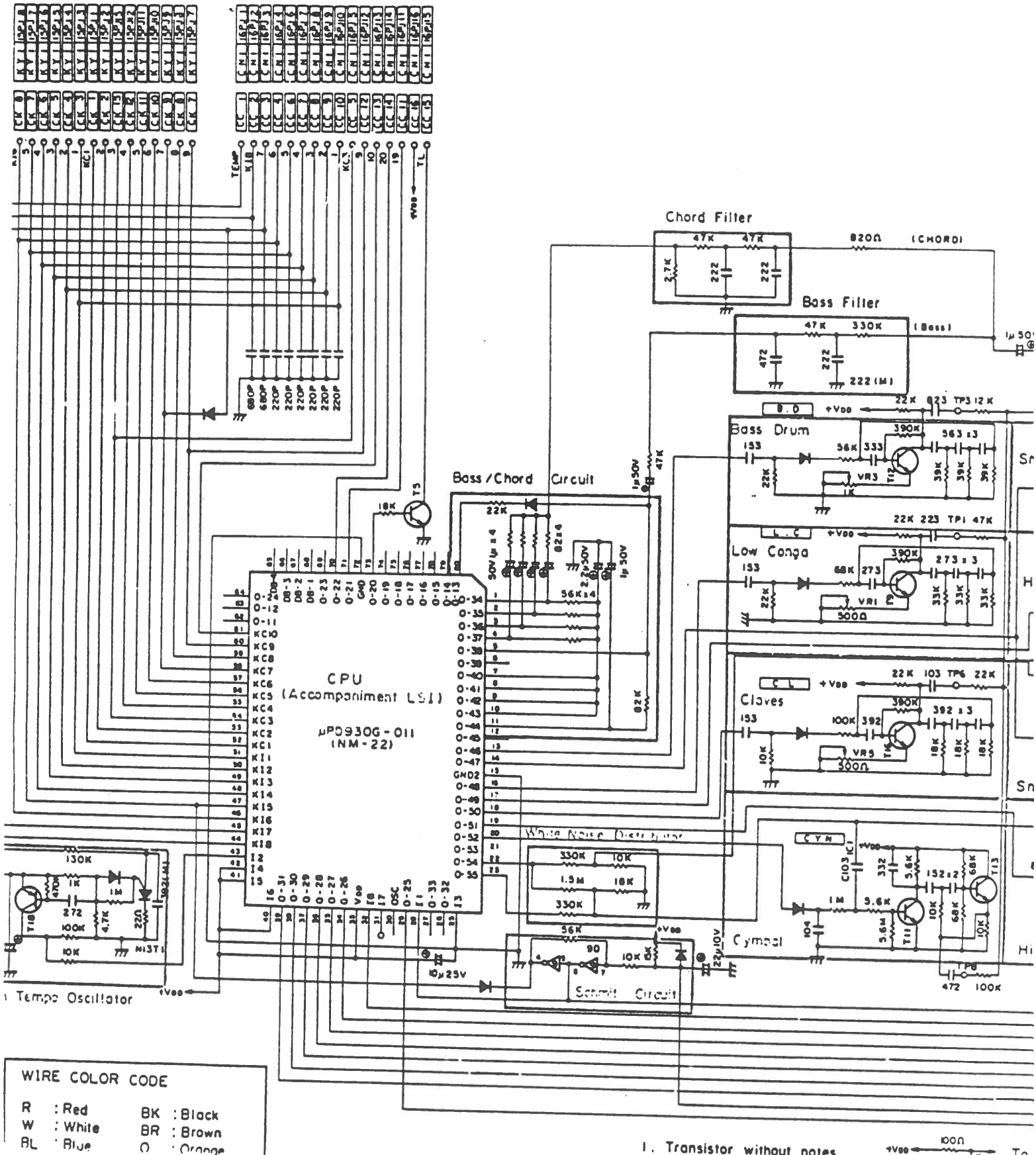
R : Red	BK : Black
W : White	BR : Brown
BL : Blue	O : Orange
Y : Yellow	GY : Gray
GR : Green	PK : Pink
PP : Purple	E : Shielding wire

1. Transistor without notes  
 T18 ..... 2SA933SO  
 NPN ..... 2SC1740SO  
 T9, T12, T16 ..... 2SC1815Y
2. —○— Shows a checkpoint
3. F12 Bu4066B x 1/4

# IC DIAGRAM

36-MA1M 2nd Version. Ladder Network = EXK-19Z2064

Ladder Networks are not interchangeable because of pin configuration.

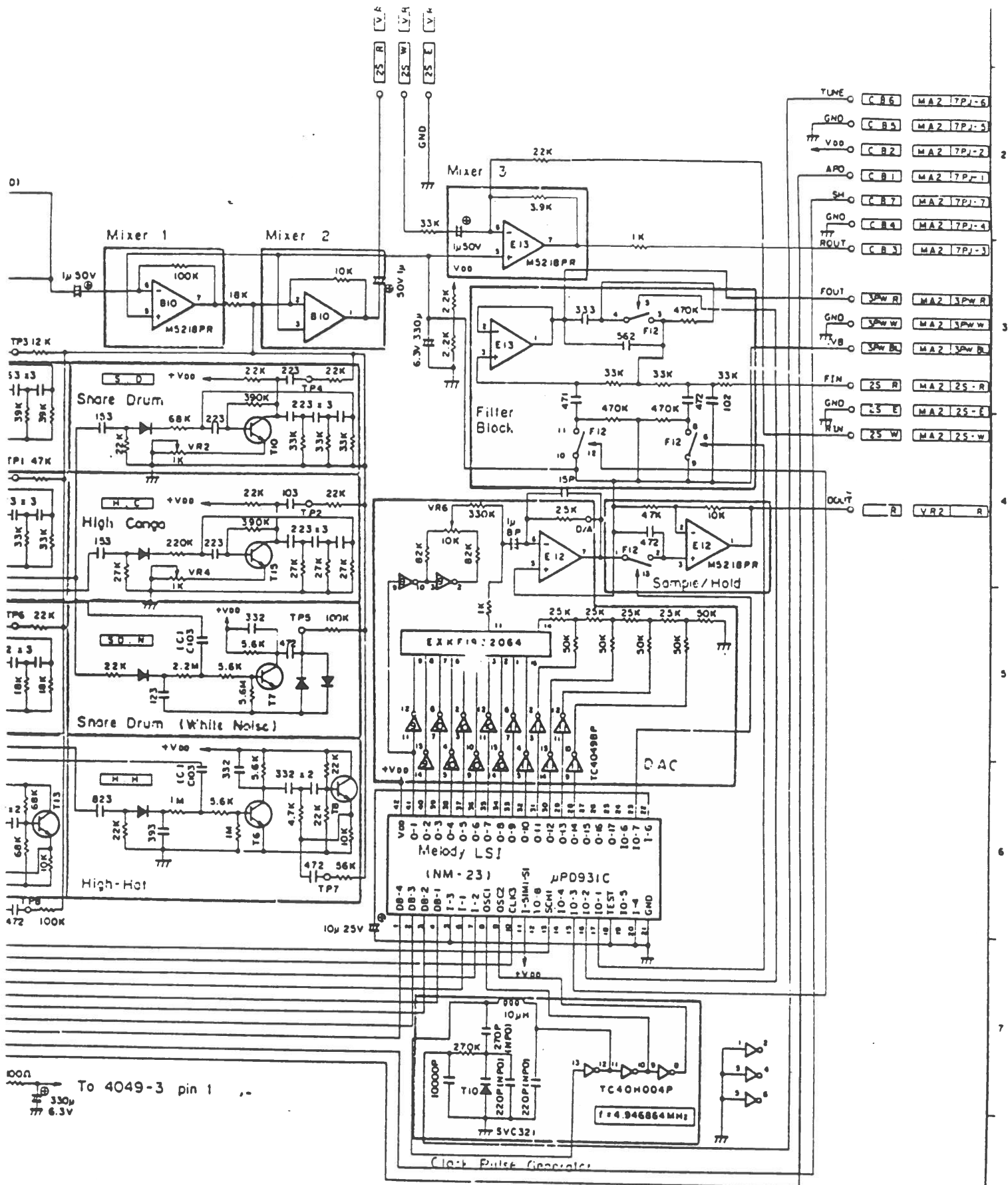


### WIRE COLOR CODE

- |           |            |
|-----------|------------|
| R : Red   | BK : Black |
| W : White | BR : Brown |
| BL : Blue | O : Orange |

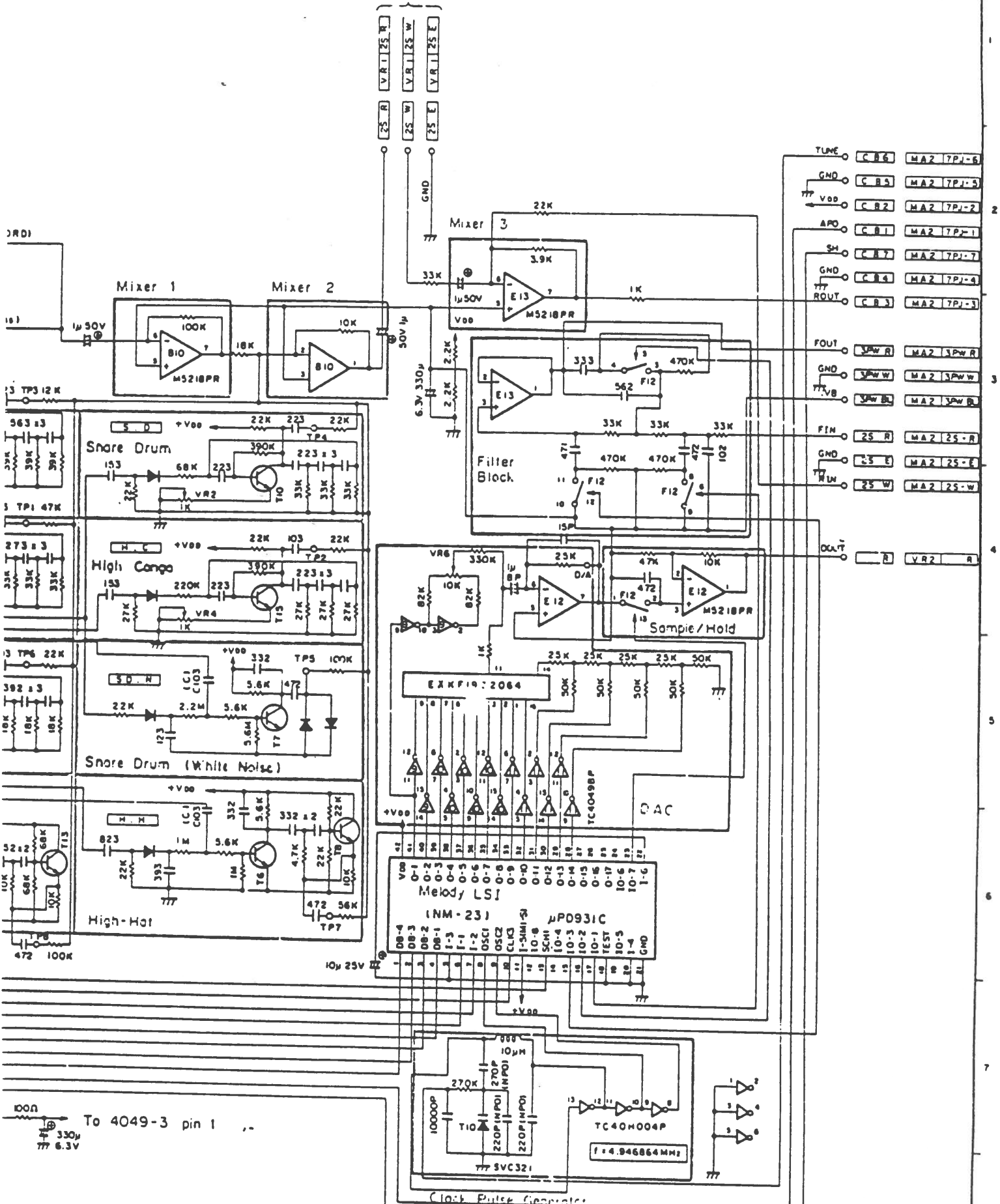
1. Transistor without notes

+V<sub>00</sub> 100n T<sub>0</sub>



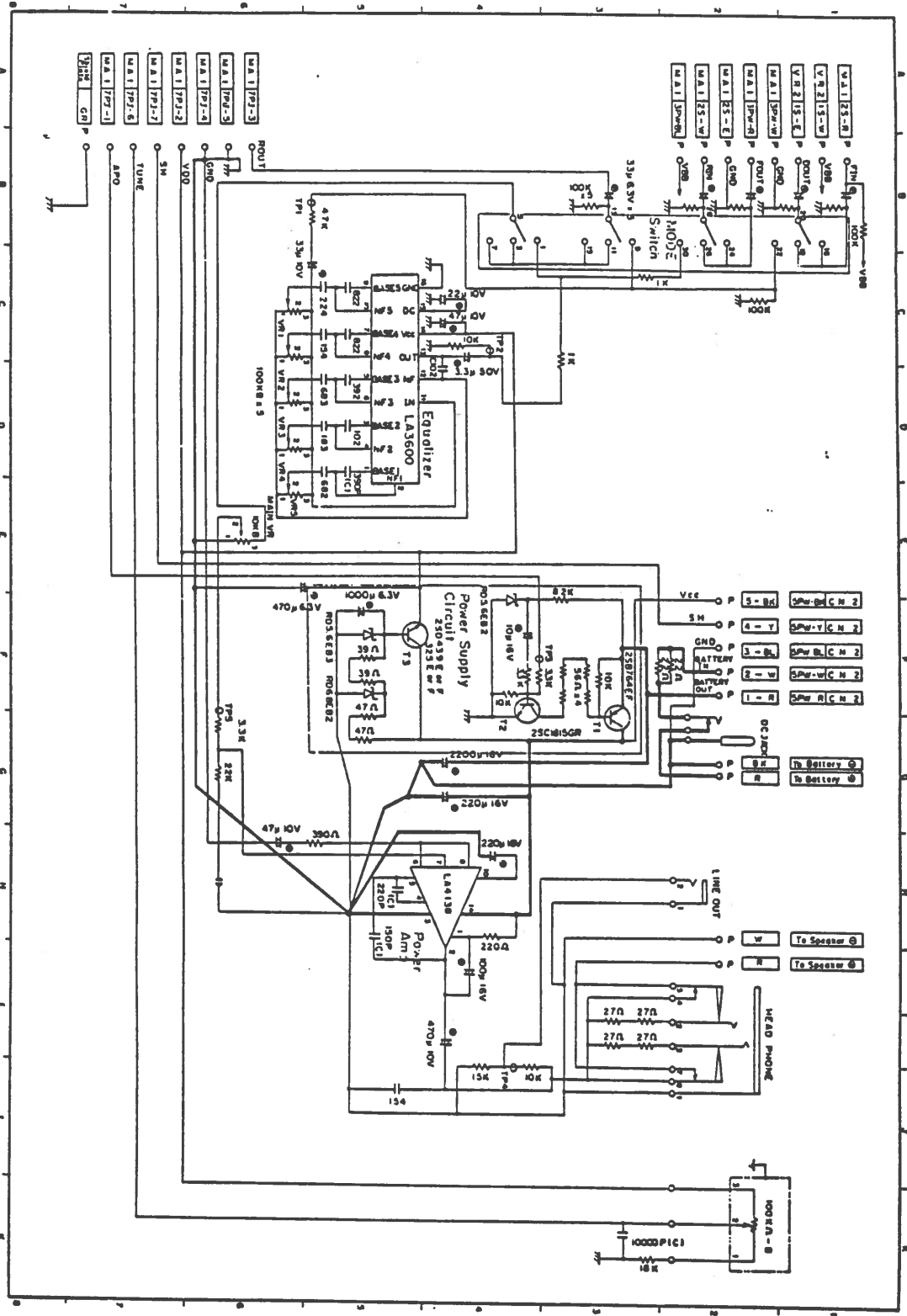
ration.

TO ACCOMP VR



To 4049-3 pin 1

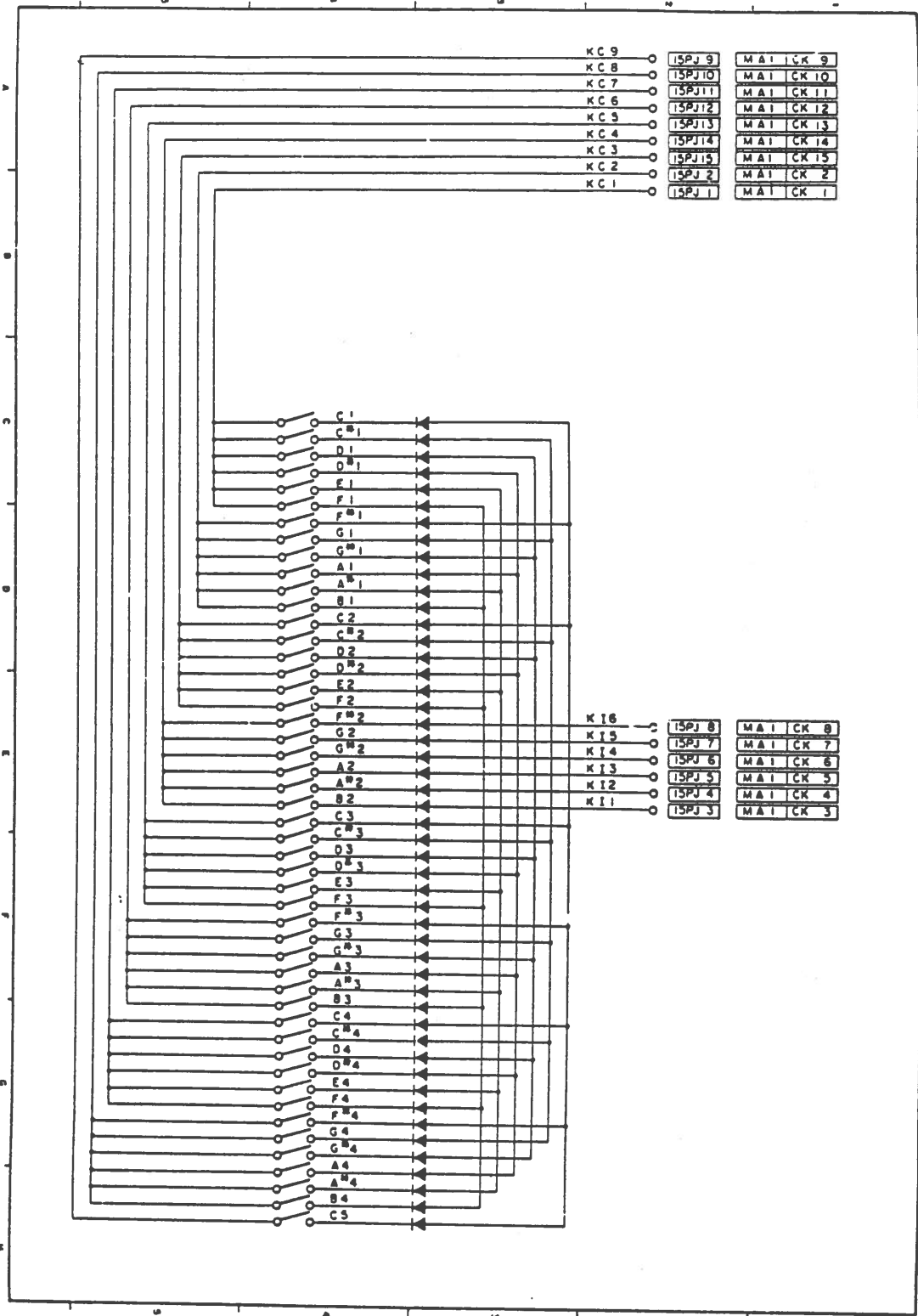
Clock Pulse Generator



HT-100  
1-2 P.C.B. MA98-MA2M





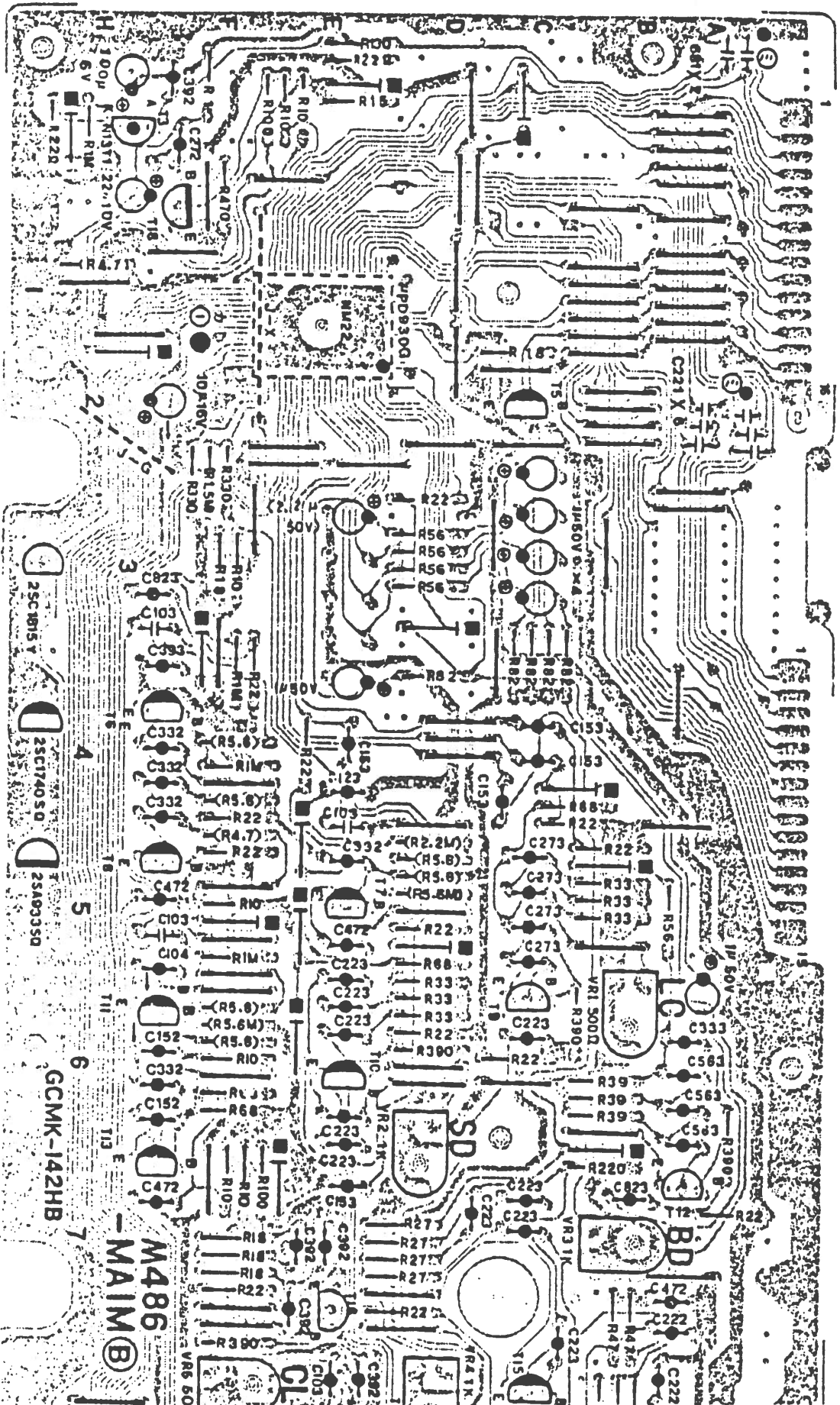


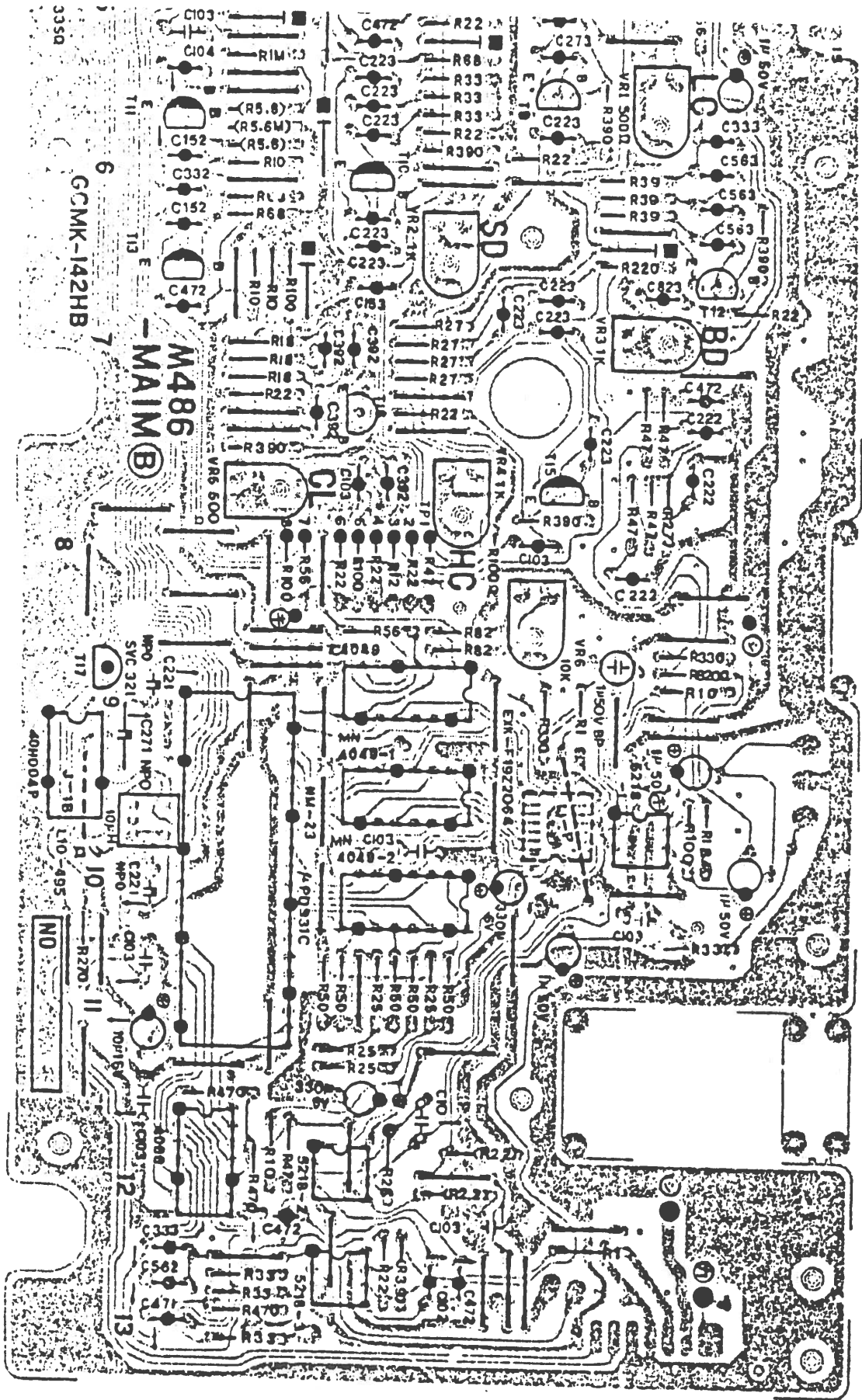
KC 9	15PJ 9	MA1 CK 9
KC 8	15PJ 10	MA1 CK 10
KC 7	15PJ 11	MA1 CK 11
KC 6	15PJ 12	MA1 CK 12
KC 5	15PJ 13	MA1 CK 13
KC 4	15PJ 14	MA1 CK 14
KC 3	15PJ 15	MA1 CK 15
KC 2	15PJ 2	MA1 CK 2
KC 1	15PJ 1	MA1 CK 1

KI 6	15PJ 8	MA1 CK 8
KI 5	15PJ 7	MA1 CK 7
KI 4	15PJ 6	MA1 CK 6
KI 3	15PJ 5	MA1 CK 5
KI 2	15PJ 4	MA1 CK 4
KI 1	15PJ 3	MA1 CK 3

2. P.C.B. VIEW

2.1. P.C.B. M486-MA1M





3350

6 GCMK-142HB

M486 - MAIN (B)

8

9

10

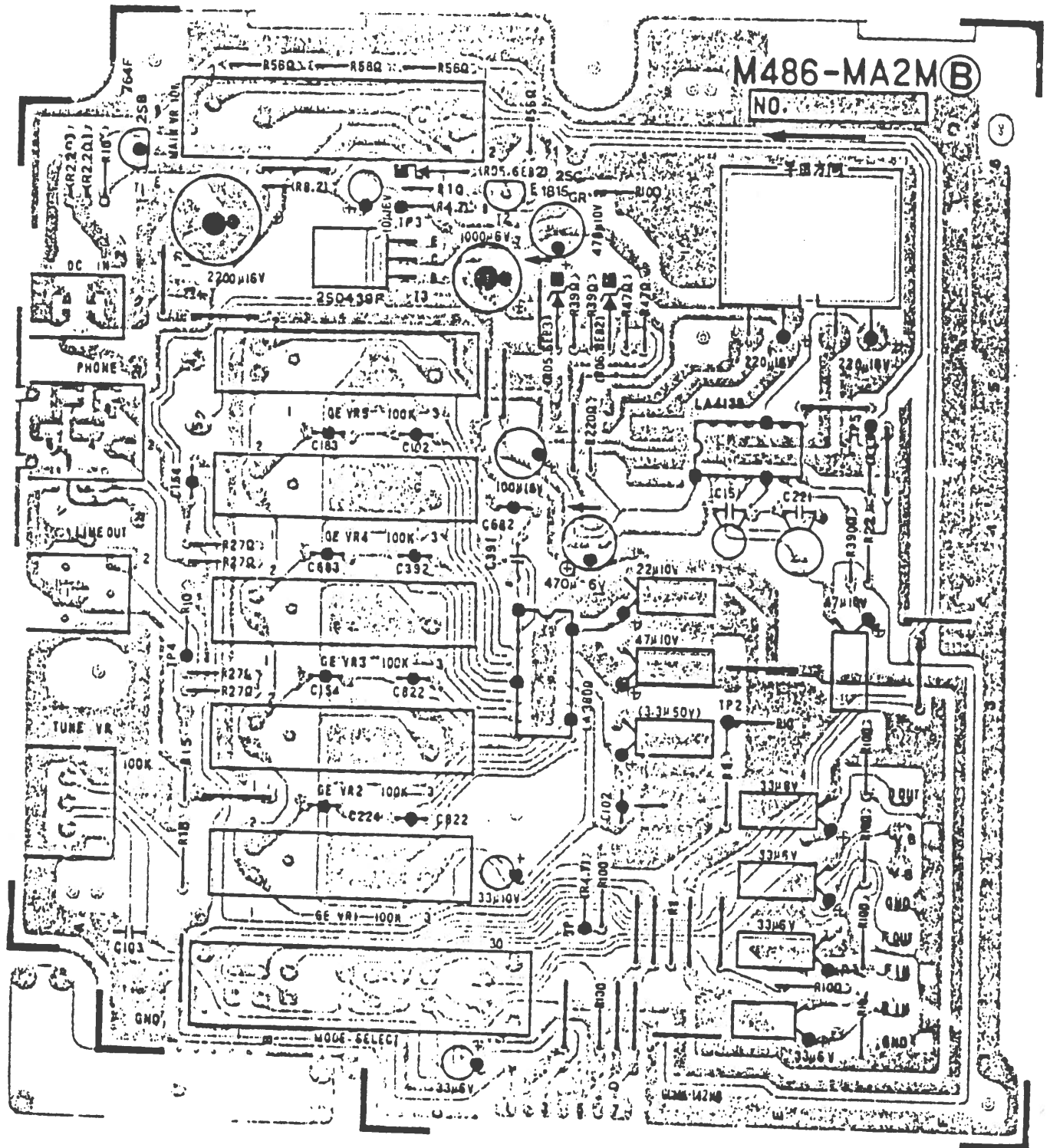
11

NO

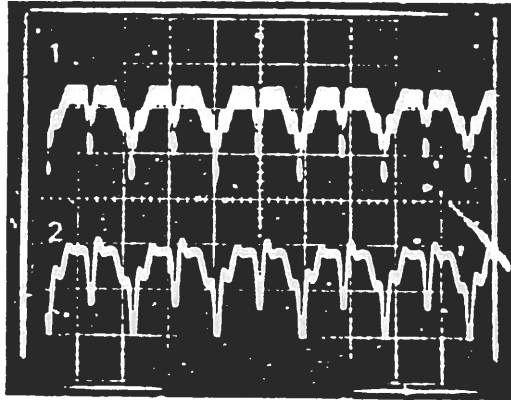
12

13

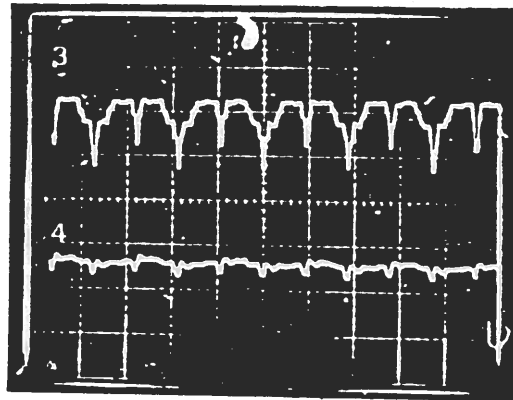
2-2. P.C.B. M486-MA2M



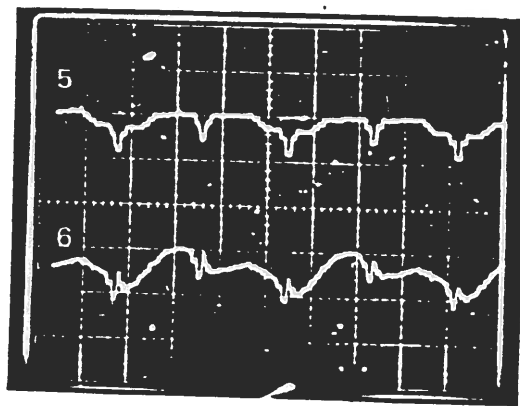
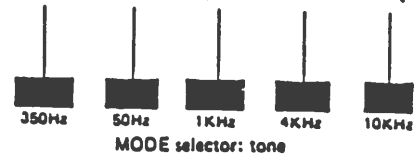
**MAJOR WAVEFORMS**



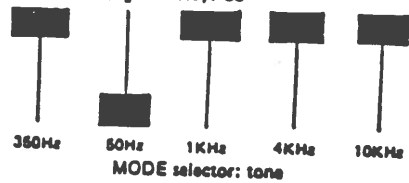
- 1 DAC output (F12 pin 2)  
2ms/Div., 0.1V/Div.  
Tone: Organ Key: C3
- 2 Filter output (F12 pin 4)  
2ms/Div., 50mV/Div.  
Tone: Organ Key: C3



- 3 Graphic equalizer input  
(PCB M486-MA2M checkpoint TP1)  
2ms/Div., 50nV/Div.  
Tone: Organ Key: C3
- 4 Graphic equalizer output  
(PCB M486-MA2M LA3600 pin 13)  
2ms/Div., 50mV/Div.  
Tone: Organ Key: C3

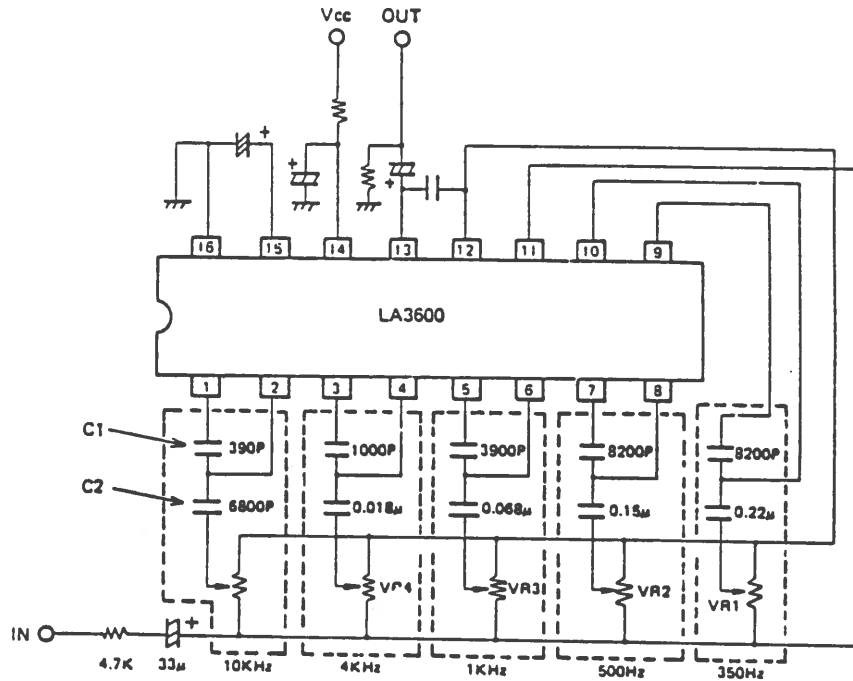


- 5 Graphic equalizer input  
(PCB M486-MA2M checkpoint TP1)  
1ms/Div., 0.1V/Div.  
Tone: Organ Key: C3
- 6 Graphic equalizer output  
(PCB M486-MA2M LA3600 pin 13)  
1ms/Div., 0.2V/Div.  
Tone: Organ Key: C3



## GRAPHIC EQUALIZER

MT-100 employs a 5-band graphic equalizer IC LA3600.



The resonance frequency  $f_0$  is determined by the external capacitors C1 and C2.

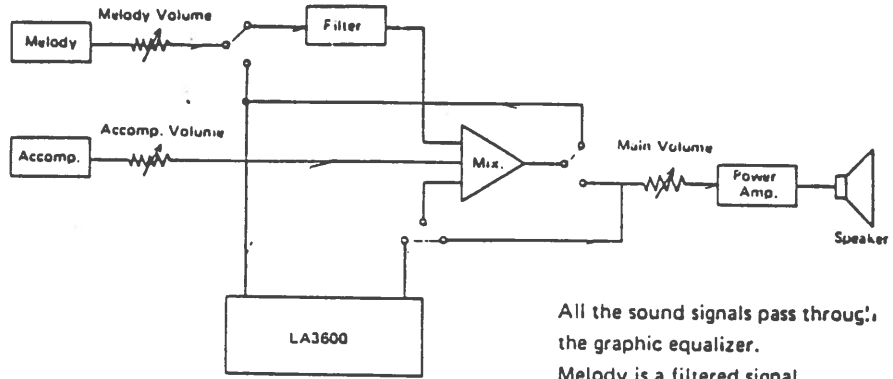
$$f_0 = \frac{1}{2\pi \sqrt{C1 \cdot C2 \cdot R1 \cdot R2}} \text{ [Hz]}$$

where R1 and R2 are the IC's built-in resistors,

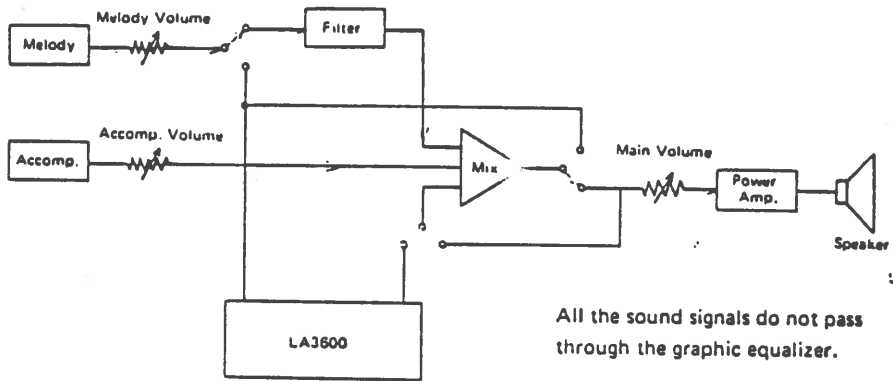
$$R1 = 1.2K\Omega \text{ and } R2 = 68K\Omega$$

Signal Route at Each Position of the Mode Selector Switch

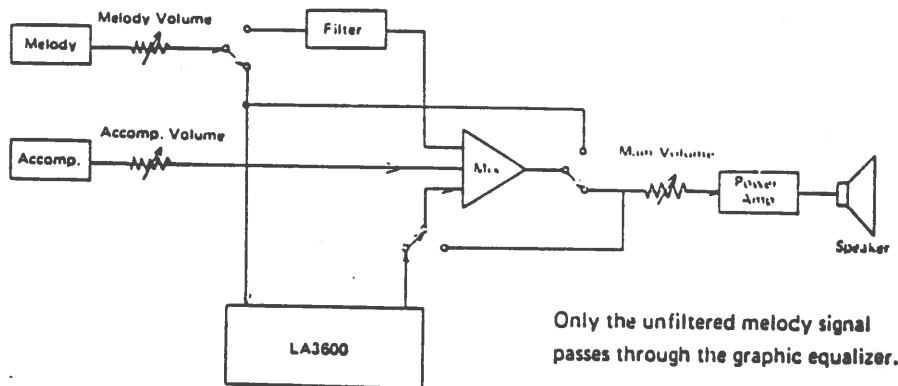
(1) Tone, Rhythm, Accomp.



(2) Off



(3) Tone



PARTS LIST MODEL MT-100 (MX-86)

Item	Code No.	Part Name	Specification	Q'ty	Price Code	RANK
		1) P.C. Board (M486-MA1M/M1630*1)				
	2001 2001	LSI	μPD930G-011	1	BK	B
	2001 2043	"	μPD931C	1	AD	B
	2100 3255	MOS IC	TC40498P	1	AE	A
	2100 3786	CMOS-IC	TC40H004P	1	AE	A
	2100 3255	"	HN4049B (TC40498P)	2	AE	A
	2100 3549	"	BU4066B (TC40668P)	1	AF	A
☆	2120 1146	IC	M5218PR	3	AE	A
	2240 8019	PUT	N13T1	1	AD	C
	2340 0022	Variable capacitor	SVC321	1	AE	C
	2760 2177	Semi fixed resistor	V8K4-11810K	1	AB	C
	2760 2185	"	V8K4-118500	1	AB	C
☆	2760 2240	"	V8K4-1181K	4	AB	C
☆	2804 5808	Electrolytic capacitor	6.3RE2-330	1	N/A	X
	2818 0055	Ceramic capacitor	HE40SJY8221K	6		
	2818 0101	"	HE40SJY8681K	2		
	2819 0221	"	HE12SJCH271J	1		
	3060 6035	Ladder Network **	EXK-S19Z2052R	1	AD	B
	3060 6043	Ladder Network **	EXK-F19Z206A	1	AE	B
	2830 8481	Mylar Capacitor	APZ-471K50	1	N/A	X
	2830 9252	Mylar Capacitor	NNM472K50	1	N/A	X
☆	3841 0695	Coil	L10-495	1	AC	C
	2200 9010	Transistor	2SA933	1	AD	A
	2220 9035	"	2SC1740	8	AD	A
	2220 3401	"	2SC1815	3	AD	A
	2301 3002	Diode	DS-442	15	AA	C
	2600 7313	Carbon film resistor	R-25-10K-J	9	N/A	X
	2600 9715	"	R-25-100K-J	5		
	2600 7712	"	R-25-15K-J	1		
	2600 7917	"	R-25-18K-J	6		
	2600 8514	"	R-25-33K-J	10		
	2601 0918	"	R-25-330K-J	4		
	2600 8719	"	R-25-39K-J	3		
	2600 6716	"	R-25-5.6K-J	6		
	2600 9111	"	R-25-56K-J	7		
	2600 2516	"	R-25-100-J	1		
	2600 4918	"	R-25-1K-J	3		

\*\* Ladder Network was changed in production and is NOT interchangeable. Pinout is different.  
Order correct ladder according to production model you have.

Note: ☆ - New part

Q'ty - Quantity used per unit

Rank: A Essential  
B Stock recommended  
C Others  
X No stock recommended



MT-100 Parts List

Item	Code No.	Part Name	Specification	Q'ty	Price Code	RANK
	2601 2112	Carbon film resistor	R-25-1M-J	4	N/A	X
	2600 5710	"	R-25-2.2K-J	2		
	2600 8115	"	R-25-22K-J	17		
	2601 0519	"	R-25-220K-J	1		
	2600 8310	"	R-25-27K-J	4		
	2601 1116	"	R-25-390K-J	5		
	2600 8913	"	R-25-47K-J	6		
	2600 9316	"	R-25-68K-J	4		
	2600 4713	"	R-25-820-J	1		
	2600 7518	"	R-25-12K-J	1		
	2601 0713	"	R-25-270K-J	1		
	2600 6511	"	R-25-4.7K-J	2		
	2600 5914	"	R-25-2.7K-J	1		
	2600 6317	"	R-25-3.9K-J	1		
	2601 8111	"	R-25-2.2M-J	1		
	2601 1311	"	R-25-470K-J	4		
	2600 9511	"	R-25-82K-J	7		
	2600 0912	"	R-25-22-J	2		
	2601 6231	"	R-25-25K-J	5		
	2601 5111	"	R-25-50K-J	5		
	2601 5511	"	R-25-1.5M-J	1		
	2601 6550	"	R-25-5.6M-J	2		
☆	2601 6576	"	R-25-130K-J	1		
	2804 4925	Electrolytic capacitor	50RE1	9		
	2804 5051	"	16RE10	2		
	2804 5077	"	10RE22	1		
	2804 9374	"	6.3RE100	1		
	2804 9013	"	50RN88P1	1		
	2804 5336	"	50RE2R2	2		
☆	2804 5808	"	6.3RE2-330	1		
	2818 2040	Ceramic capacitor	HE70SJYF103Z	8		
	2819 0492	"	RT-HE40TKSL150K	1		
	2818 3259	"	HE11SJCH221J	2		
	2830 6024	Mylar capacitor	AMZ-102K50	1		
	0002 8165	"	AMZF-392K50	5		
	2830 6032	"	AMZ-103K50	2		
	2830 6321	"	AMZ-152K50	2		
	2830 6075	"	AMZ-222K50	3		

Note: ☆ - New part  
Q'ty - Quantity used per unit

Rank: A Essential  
B Stock recommended  
C Others  
X No stock recommended

MT-100 Parts List

Item	Code No.	Part Name	Specification	Q'ty	Price Code	RANK
	2830 8105	Mylar capacitor	AMZ-332K50	5	N/A	X
	2830 8121	"	AMZ-472K50	5		
	2830 8148	"	AMZ-562K50	1		
	2830 8681	"	AMZ-123K50	1		
	2830 8059	"	AMZ-153K50	5		
	2830 8083	"	AMZ-223K50	10		
	0002 8164	"	AMZ-273K50	4		
	2830 8113	"	AMZ-333K50	2		
	2830 8690	"	AMZ-393K50	1		
	2830 8156	"	AMZ-563K50	3		
	2830 8164	"	AMZ-823K50	2		
	2830 8041	"	AMZ-104K50	1		
	2830 8091	"	AMZ-272K50	1		
	2) P.C. Board (M486-MA2M/M2949*1)					
☆	2120 6504	IC	LA3600	1	AF	A
	2120 8329	"	LA4138	1	AG	A
☆	2210 2164	Transistor	2S8764	1	AD	A
	2230 3287	"	2SD439	1	AD	A
	2770 6673	Slide volume Main	S3018P603M-10K8	1	AD	B
☆	2770 6878	Volume Graphic Equalizer	S2018P608M-100K8	5	AE	B
☆	2770 9770	" Pitch Control	EVJ-EHAE20815	1	AD	B
	2804 5662	Electrolytic capacitor	6,3RE1000	1	N/A	X
☆	2804 9731	"	16RE2-2200	1	N/A	X
	3420 2257	Slide switch Mode Select	SS8443-K310107	1	AF	B
	3512 3237	Power jack Adapter	HEC0470-01-230	1	AC	B
	3512 4365	Pin jack Line out	YKB11-0098	1	AB	B
	3612 0525	Jack Headphone	YKB21-5055	1	AE	B
☆58	3721 0281	PC joiner-M86A	PCJ-JPSS-7-52	1	AC	C
☆	6911 6630	Shield wire M86 sub ass'y	M42045*3	1	-	C
☆	6911 8720	Paralell wire M86C	M42046-3	1	-	C
	2220 9035	Transistor	2SC1740	1	AD	A
	2310 2471	Zener diode	RD5,6E	2	AA	A
	2310 3273	"	RD6,8E	1	AA	A
	2600 7313	Carbon film resistor	R-25-10K-J	4	N/A	X
	2600 9715	"	R-25-100K-J	8	N/A	X

Note: ☆ - New part  
Q'ty - Quantity used per unit

Rank: A Essential  
B Stock recommended  
C Others  
X No stock recommended

MT-100 Parts List

Item	Code No.	Part Name	Specification	Q'ty	Price Code	RANK
	2600 7712	Carbon film resistor	R-25-15K-J	1	N/A	X
	2600 7917	"	R-25-18K-J	1		
	2600 3911	"	R-25-390-J	1		
	2600 4918	"	R-25-1K-J	2		
	2600 8115	"	R-25-22K-J	1		
	2600 3318	"	R-25-220-J	1		
	2600 6112	"	R-25-3.3K-J	1		
	2600 1510	"	R-25-39-J	2		
	2600 7119	"	R-25-8.2K-J	1		
	2600 1714	"	R-25-47-J	2		
	2600 6511	"	R-25-4.7K-J	2		
	2600 1919	"	R-25-56-J	4		
	2600 1111	"	R-25-27-J	4		
	2601 4417	"	R-25-2.2-J	2		
	2804 5051	Electrolytic capacitor	16RE10	1		
	2804 4933	"	16RE100	1		
	2804 5123	"	10RE33	1		
	2804 5069	"	10RE47	2		
	2804 5026	"	50RE3R3	1		
	2804 5689	"	6,3REA470	1		
	2804 9366	"	6,3RE33	5		
	2804 5077	"	10RE22	1		
☆	2807 0926	"	10RE2-470-T2-T	1		
☆	28070934	"	16RE2-220-T14-T	2		
	2818 0055	Ceramic capacitor	HE40SJY8221K	1		
	2818 2040	"	HE70SJYF103Z	1		
	2819 0310	"	HE80SJSJL391K	1		
	2818 0039	"	HE40SJY8151K	1		
	2830 6024	Mylar capacitor	AMZ-102K50	2		
	0002 8165	"	AMZF-392K50	1		
	0002 8179	"	AMZF-682K50	1		
	2830 6181	"	AMZ-822K50	2		
	2830 6172	"	AMZ-183K50	1		
	2830 6479	"	AMZ-683K50	1		
	2830 6067	"	AMZ-154K50	2		
	2830 6495	"	AMZ-224K50	1		

Note: ☆ - New part  
Q'ty - Quantity used per unit

Rank: A Essential  
B Stock recommended  
C Others  
X No stock recommended

MT-100 Parts List

Item	Code No.	Part Name	Specification	Q'ty	Price Code	RANK
<b>3) P.C. BOARD (M486-CN-1M/M2950*1)</b>						
	2320 9748	LED	LN28RPH	1	AB	A
☆52	3721 0279	PC joiner M86B	PCJ-JPSS-16-62	1	AC	C
☆53	3721 0287	" M86C	PCJ-JPSS-2-22	1	AC	C
☆	6911 6710	Paralell wire M86B	M42046-2	1	-	C
	2301 3002	Diode	DS-442	35	AA	C
	2600 3512	Carbon film resistor	R-25-270-J	1	N/A	X
<b>4) P.C. BOARD (M486-CN2M/M42042*1)</b>						
	2320 9748	LED Power Indicator	LN28RPM	1	AB	A
	3480 5431	Push switch Power Switch	SUZ12-M415201	1	AE	A
☆	6911 6710	Paralell wire M86A	M42046-1	1	-	C
	2310 2862	Zener diode	RD3.6E	1	AA	A
	2600 3113	Carbon film resistor	R-25-180-J	1	N/A	X
	2601 2911	"	R-25-10-J	2	N/A	X
☆57	4307 3020	Blank P.C.B. (M486-CN2M)	M1633-2	1	AC	X
<b>5) P.C. BOARD (M486-KY1M/M1631*1)</b>						
☆47	3721 0295	PC Joiner M86D	PCJ-JPSS-15-62	1	AC	C
	2301 3002	Diode	DS-442	49	AA	C
☆48	4307 3050	Blank P.C.B. M486-KY1M	M1634-1	1	AK	X
<b>6) P.C. BOARD (M486-VR1/M42043*1)</b>						
	2770 9605	Volume Accomp.	EWA-NF0X05B14	1	AE	B
	2770 9613	" Tempo	EWA-NF0X05C16	1	AE	B
☆	6911 6610	Shield wire M86 sub ass'y	M42045*1	1	-	C
<b>7) P.C. BOARD (M486-VR-2/M42044*1)</b>						
	2770 9605	Volume Melody	EWA-NF0*05B14	1	AE	B
☆	6911 6620	Shield wire M86 sub ass'y	M42044*2	1	-	C

Note: ☆ - New part  
Q'ty - Quantity used per unit

Rank: A Essential  
B Stock recommended  
C Others  
X No stock recommended

MI-100 Parts List

Item	Code No.	Part Name	Specification	Q'ty	Price Code	RANK
<b>8) SLIDE BOARD ASS'Y</b>						
59	6901 4972	Slide contact B	M47978-1	5	AA	B
59	6902 6360	Slide board 90	M41207-1	5	AC	C
59	6910 0480	Slide spring	M4491-1	5	AA	C
	5580 1274	Ball Bearing	SUS304-2PI	5	AA	X
<b>9) KEYBOARD ASS'Y</b>						
3	6902 6150	Key 90A	M31055-1	4	AF	C
4	6902 6160	Key 90B	M31056-1	4	AF	C
5	6902 6170	Key 90C	M31057-1	4	AF	C
6	6902 6180	Key 90D	M31058-1	4	AF	C
7	6902 6190	Key 90E	M31059-1	4	AF	C
8	6902 6200	Key 90F	M31060-1	4	AF	C
9	6902 6210	Key 90G	M31061-1	4	AF	C
10	6902 6220	Key 90S	M31062-1	1	AF	C
2	6910 0290	Black key	M3416-1	20	AF	C
45	6902 6640	Key contact rubber 90A	M31038A-1	3	AD	B
44	6902 6650	" 90B	M31039A-1	1	AD	B
*	6911 6650	Shield plate 86B	M21008-1	1	-	C
51	6902 6352	Key fixing rubber 32A	M41254B-1	1	-	X
48	6911 0200	Key fixing plate 32C	M2811-1	1	-	X
50	6902 6332	Key fixing rubber 32B	M41255B-1	1	-	X
49	6911 0210	Key fixing plate 32D	M31300-1	1	-	X
<b>10) UPPER CASE ASS'Y</b>						
11	3830 1098	Speaker	EAS-8P109SF	1	AL	B
12	6901 7080	Blind plate 3	M4671-3	3	-	C
13	6901 7300	" 4	M4687-2	2	-	C
14*	6904 1201	Slide knob	M41350A-2	6	AC	C
15	6910 1860	Fill in contact rubber 31	M4675-1	3	AB	B
16	6910 4820	Key contact rubber M10S	M3691-1	1	AD	B
17	6910 4830	" M65	M3692-1	1	AC	B
18	6910 5220	Blind plate	M4686-2	2	-	C
19	6910 5300	"	M4670-3	3	-	C

Note: \* - New part  
Q'ty - Quantity used per unit

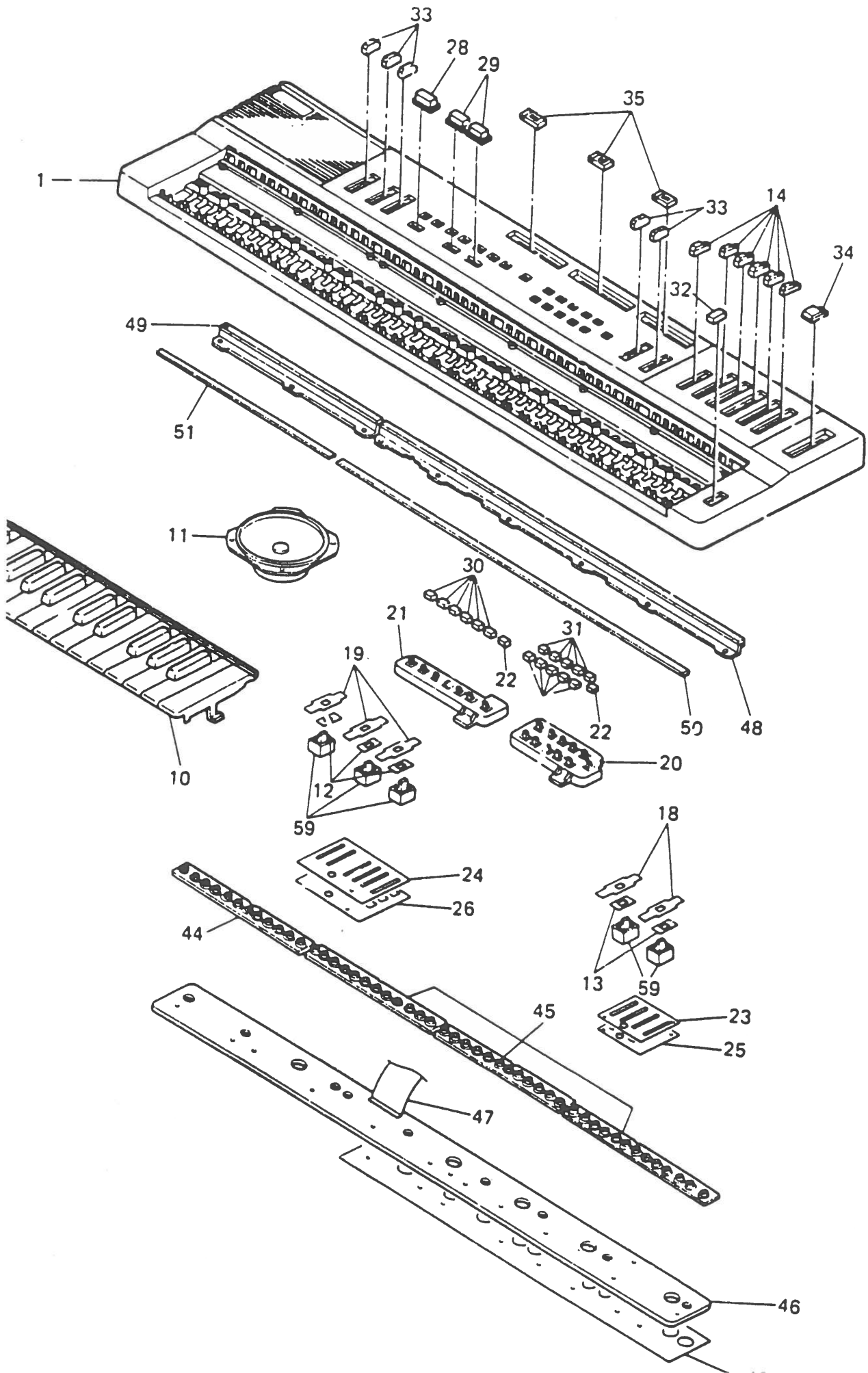
Rank: A Essential  
B Stock recommended  
C Others  
X No stock recommended

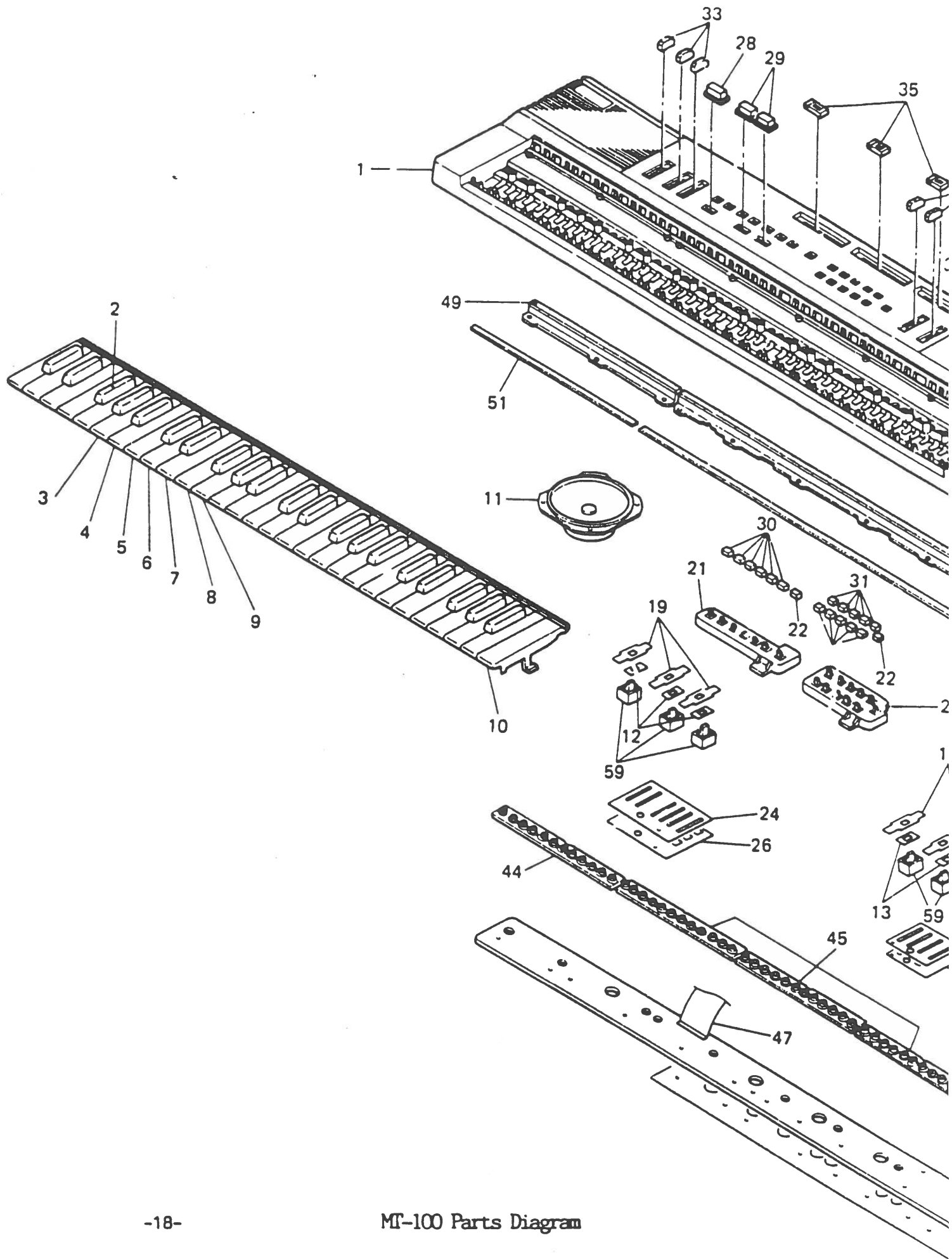
MT-100 Parts List

Item	Code No.	Part Name	Specification	Q'ty	Price Code	RANK
20*	6911 5670	M10S2 sub ass'y	M31612*1	1	AK	C
21*	6911 5680	M652 sub ass'y	M31611*1	1	AH	C
43	6910 5280	Shield plate 40C	M41015-1	1	-	X
22*	6911 5850	Lock button 86	M31562-1	2	AC	C
23*	6911 5860	CN contact 861	M42057-1	1	AB	C
24*	6911 5670	" 862	M42058-1	1	AB	C
25*	6911 5880	CN spacer 861	M42059-1	1	-	X
26*	6911 5890	" 862	M42060-1	1	-	X
27*	6911 6660	Shield plate 86A	M42138-1	1	-	X
28*	6911 6730	Rhythm button 86	M42062-1	1	AC	C
29*	6911 6740	"	M42062-2	2	AC	C
30*	6911 6750	Lock button 86	M31562-2	6	AC	C
31*	6911 6760	"	M31562-3	10	AC	C
32*	6911 6820	Power knob	M41093-7	1	AL	C
33*	6911 6830	Slide knob	M31359-4	5	AC	C
34*	6911 6841	Slide VR knob 87	M31443A-4	1	AC	C
35*	6911 6850	" 90-B	M31355-2	3	AC	C
1*	6911 5750	Upper case sub ass'y	M31609*1	1	AW	C
11) LOWER CASE SUB ASS'Y BATTERY COVER SUB ASS'Y						
36	6900 0631	Battery terminal (+)	M4222A-1	1	AB	X
37*	6900 4712	Battery contact spring (-)	M43098-1	1	AB	X
38	6900 5770	Felting seal	M4382-1	1	-	X
39	6900 5860	"	M4387-1	1	-	X
40	6900 6080	"	M4405-1	1	-	X
41*	6911 5620	Lower case sub ass'y	M2987*1	1	AV	C
42*	6911 6004	Battery cover sub ass'y	M3663D*12	1	AE	C

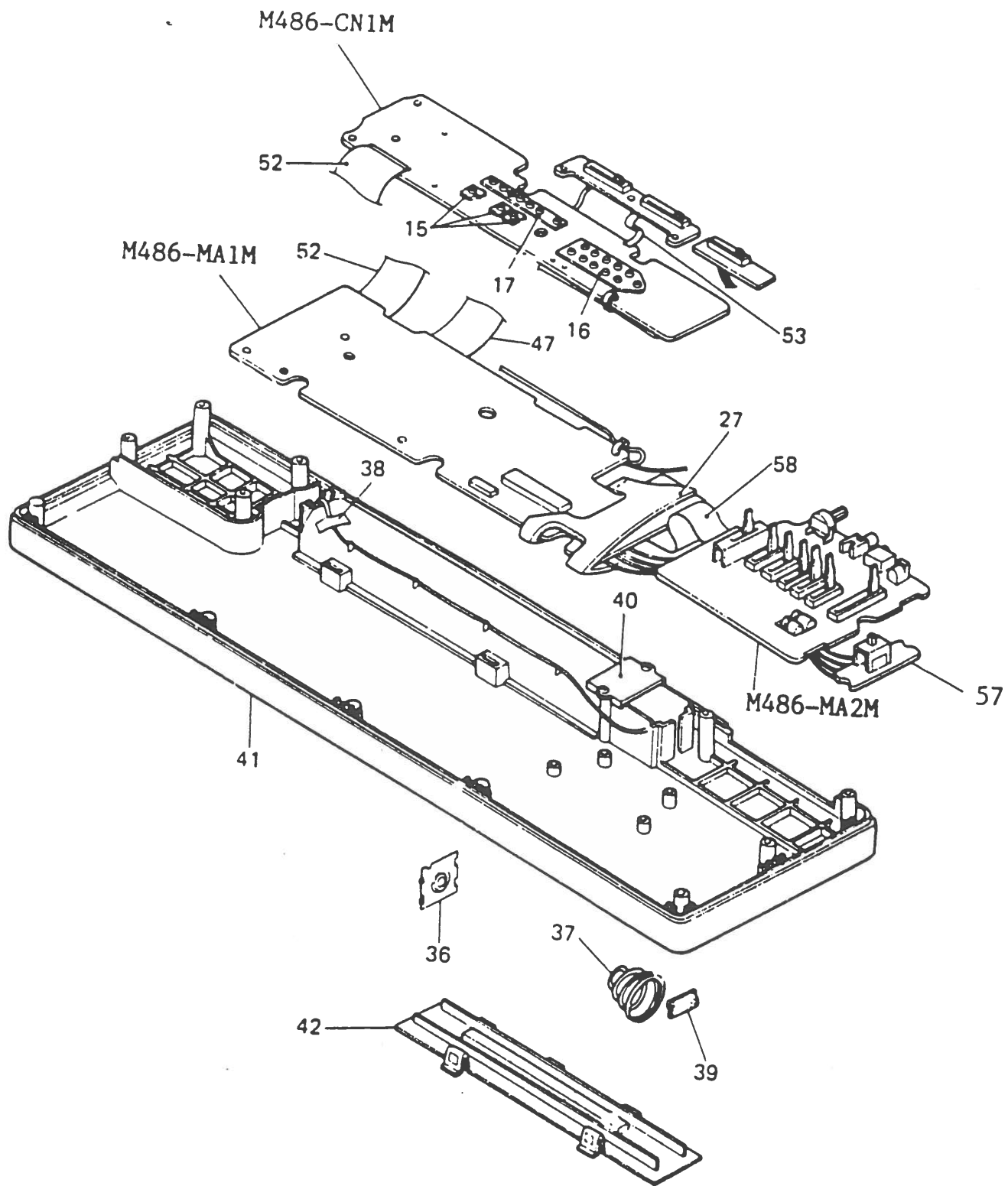
Note: \* - New part  
Q'ty - Quantity used per unit

Rank: A Essential  
B Stock recommended  
C Others  
X No stock recommended



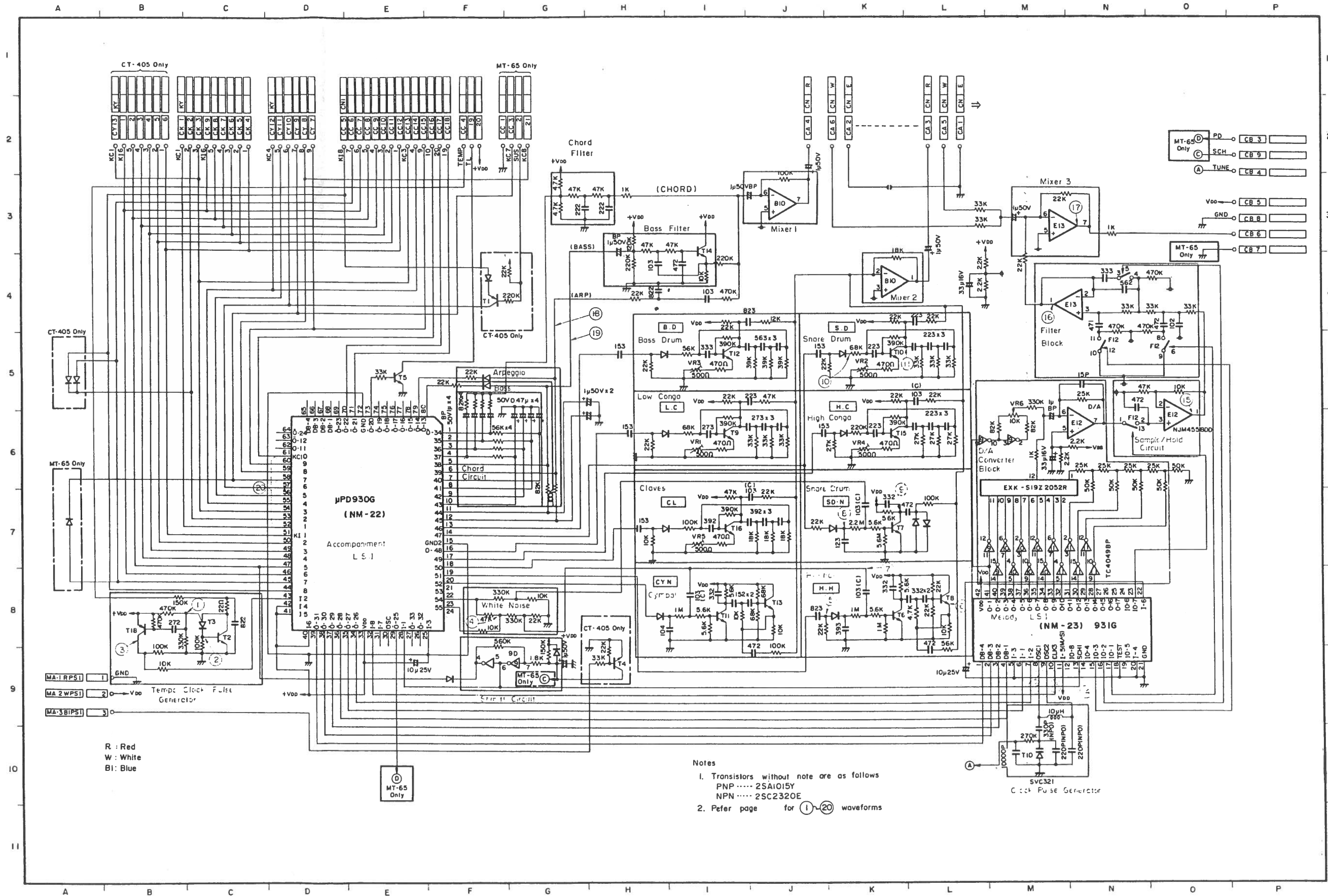


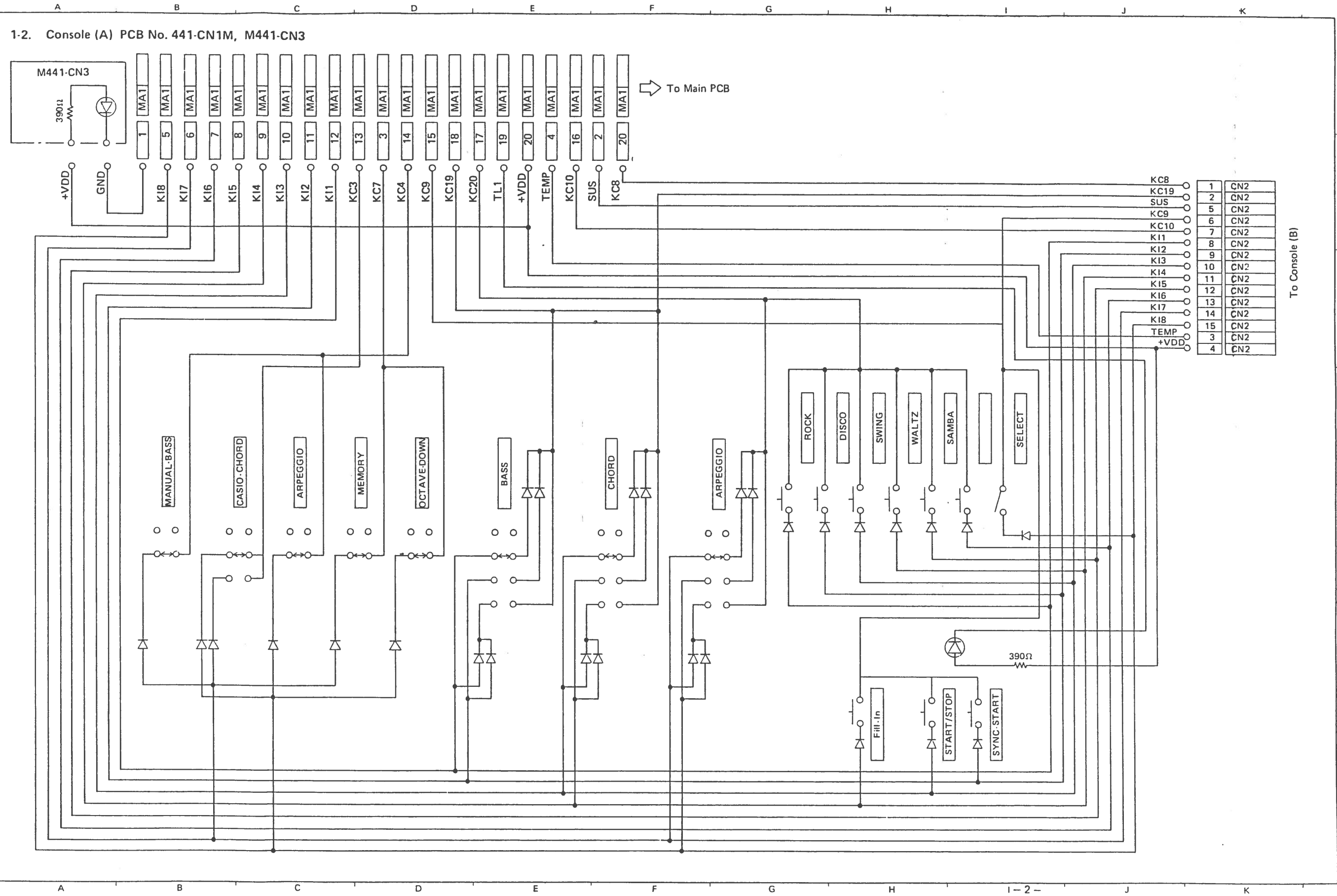




# 1. CIRCUIT DIAGRAM

## 1-1. Main PCB M440-MA1M (M-65), M441-MA1M (CT-405)





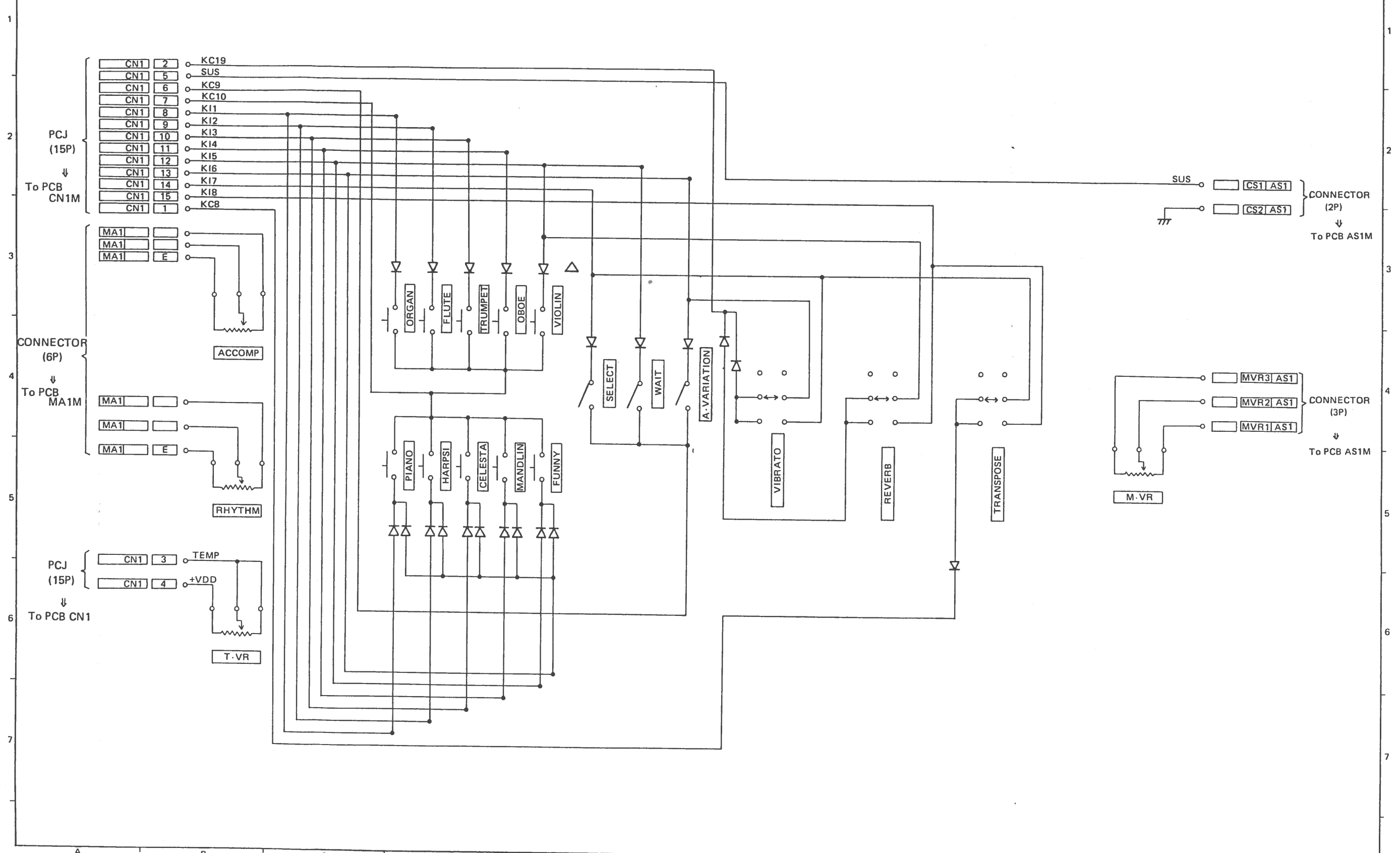
1-2. Console (A) PCB No. 441-CN1M, M441-CN3

To Main PCB

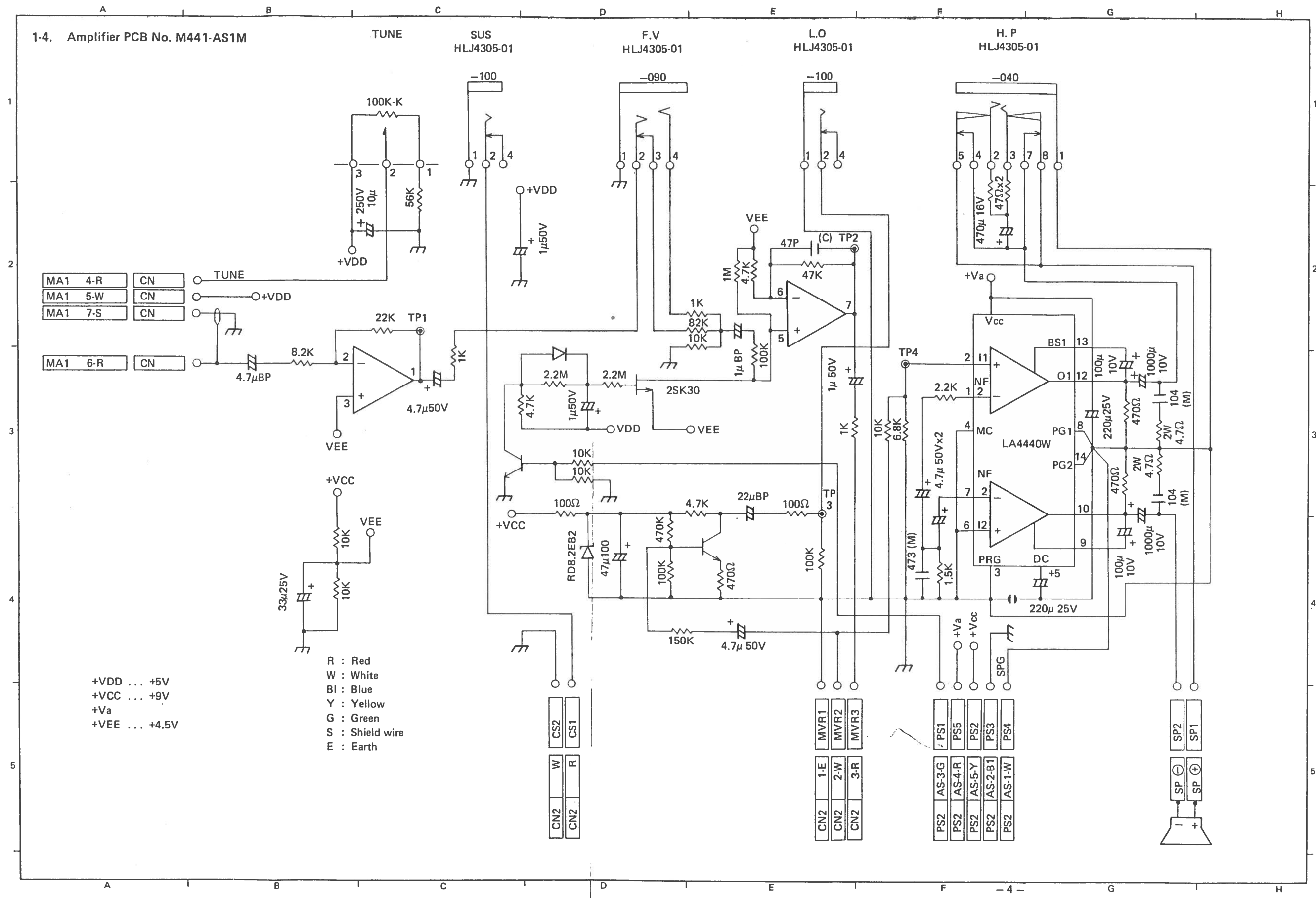
To Console (B)

1	CN2
2	CN2
5	CN2
6	CN2
7	CN2
8	CN2
9	CN2
10	CN2
11	CN2
12	CN2
13	CN2
14	CN2
15	CN2
3	CN2
4	CN2

1-3. Console (B) PCB No. M441-CN2M



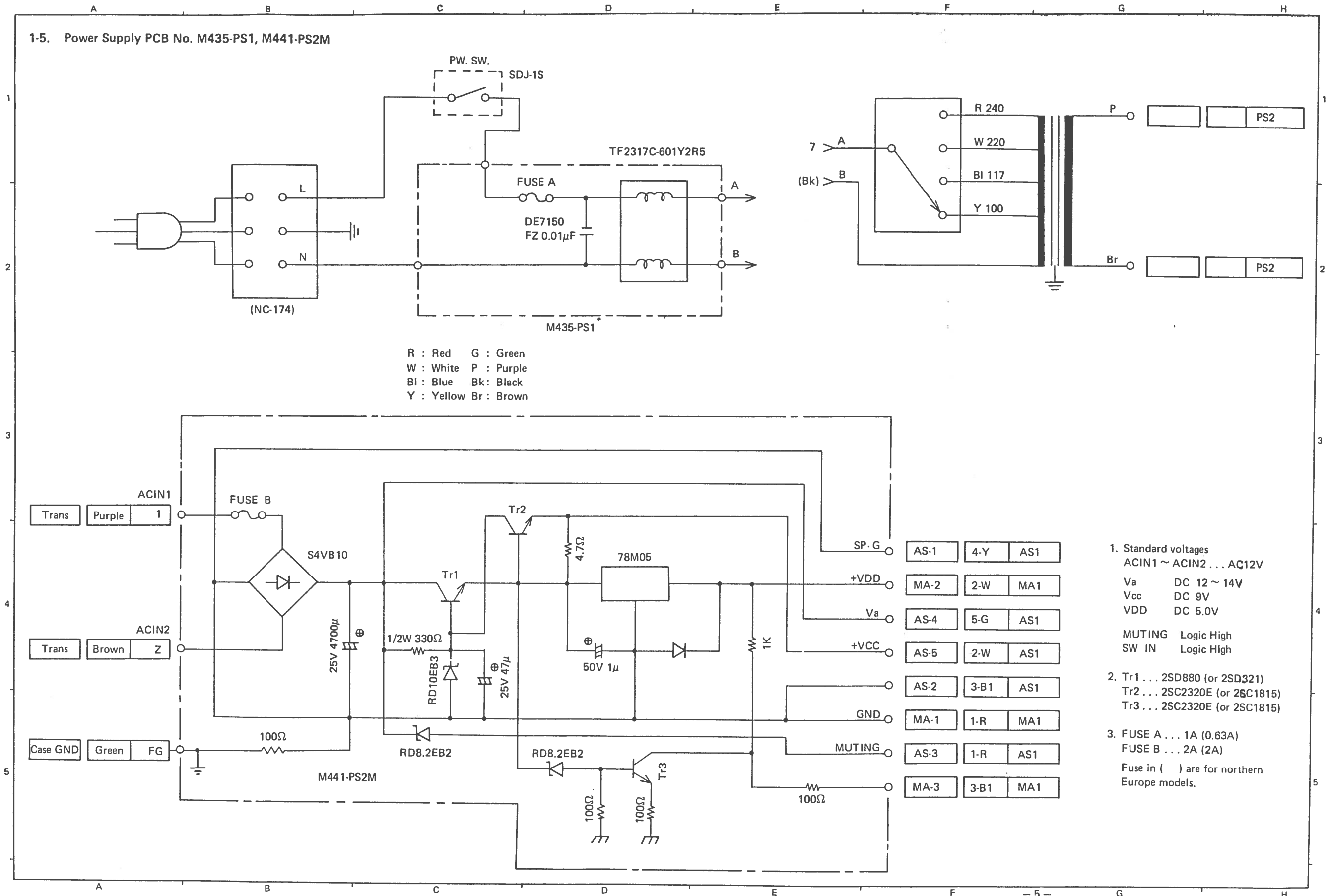
1-4. Amplifier PCB No. M441-AS1M



+VDD ... +5V  
 +VCC ... +9V  
 +Va  
 +VEE ... +4.5V

R : Red  
 W : White  
 Bl : Blue  
 Y : Yellow  
 G : Green  
 S : Shield wire  
 E : Earth

1-5. Power Supply PCB No. M435-PS1, M441-PS2M

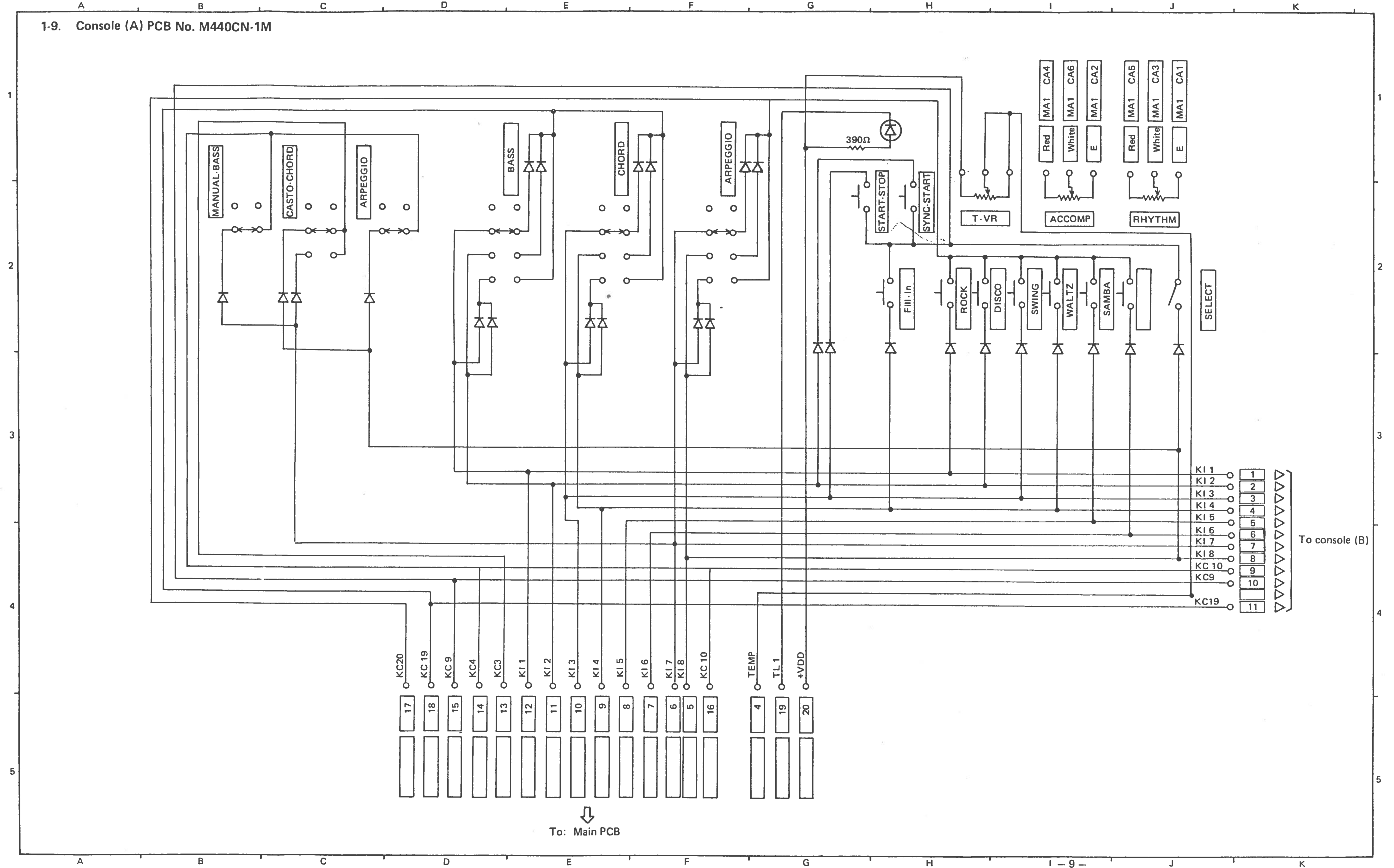


R : Red G : Green  
 W : White P : Purple  
 BI : Blue Bk : Black  
 Y : Yellow Br : Brown

AS-1	4-Y	AS1
MA-2	2-W	MA1
AS-4	5-G	AS1
AS-5	2-W	AS1
AS-2	3-B1	AS1
MA-1	1-R	MA1
AS-3	1-R	AS1
MA-3	3-B1	MA1

- Standard voltages  
 ACIN1 ~ ACIN2 ... AC12V  
 Va DC 12 ~ 14V  
 Vcc DC 9V  
 VDD DC 5.0V  
 MUTING Logic High  
 SW IN Logic High
- Tr1 ... 2SD880 (or 2SD321)  
 Tr2 ... 2SC2320E (or 26C1815)  
 Tr3 ... 2SC2320E (or 25C1815)
- FUSE A ... 1A (0.63A)  
 FUSE B ... 2A (2A)  
 Fuse in ( ) are for northern Europe models.

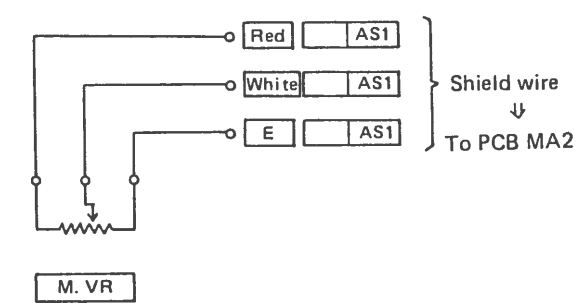
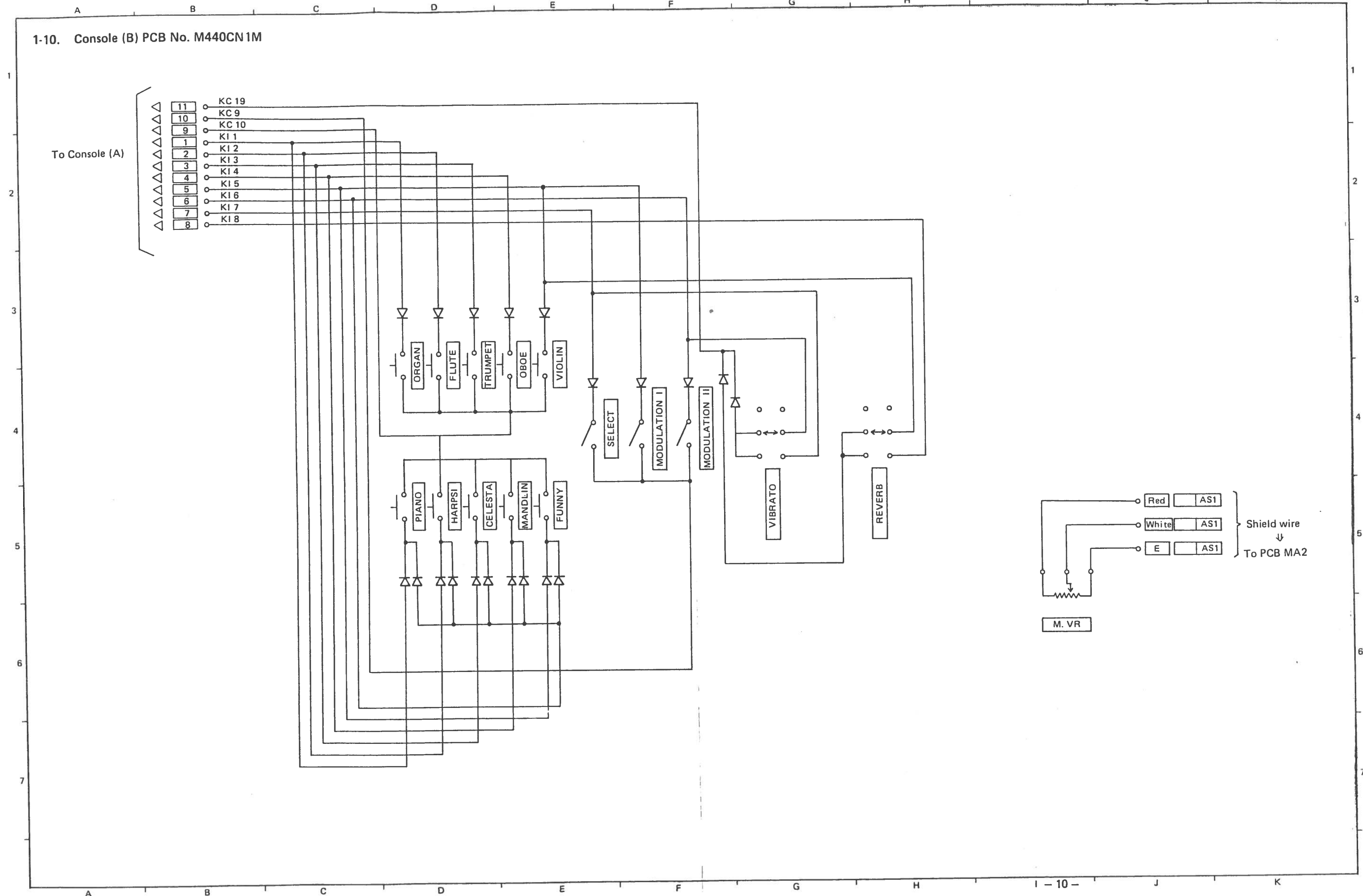
1-9. Console (A) PCB No. M440CN-1M



To: Main PCB

To console (B)

1-10. Console (B) PCB No. M440CN 1M





1-11. Amplifier PCB No. M443-MA2M

T-VR

