SERVICE MANUAL

X5D

MUSIC SYNTHESIZER

CONTENTS

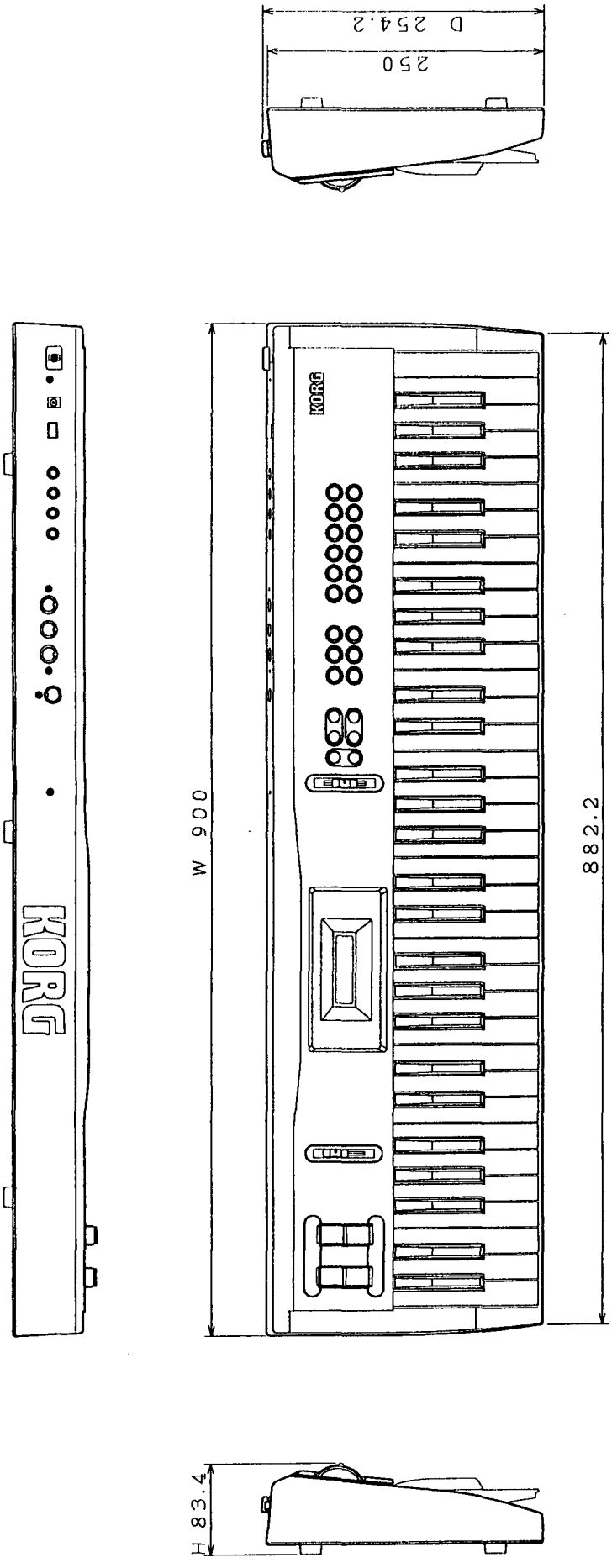
KORG

1. SPECIFICATIONS

Tone generation method	:	AI square synthesis system (full digital processing)
Tone generator	:	64 voices 64 oscillators (Single Mode) 32 voices 64 oscillators (Double Mode)
Keyboard	:	61 keys with aftertouch sensitive FATAR TP-7BA
Waveform memory	:	16M bit Mask ROM x 4 430 MULTI sounds & 215 Drum sounds
Quantization	:	12 bit & 8 bit
Sampling frequency	:	31.25KHz
Programs	:	RAM ... 100 programs ROM ... 136 programs (for General MIDI)
Combinations	:	RAM ... 100 combinations
Effects	:	47 multi digital effects
Demonstration songs	:	2 songs
Inputs	:	Assignable Pedal, Assignable Switch
Outputs	:	L/MONO & R (output impedance 1.1KΩ /residual noise less than -90dBm IHF-A) PHONES (output impedance 10Ω)
MIDI	:	IN, OUT & THRU
TO HOST	:	MINI DIN 8pin(31.25KBPS & 38.4KBPS)
Indicator	:	16 x 2 LCD indicator with LED backlight
Dimensions	:	900.0(W) x 254.2(D) x 83.4(H)mm
Weight	:	4.7kg
Power supply	:	DC12V 700mA

* Appearance and specifications are subject to change without notice for product improvement.

2. FULL VIEW



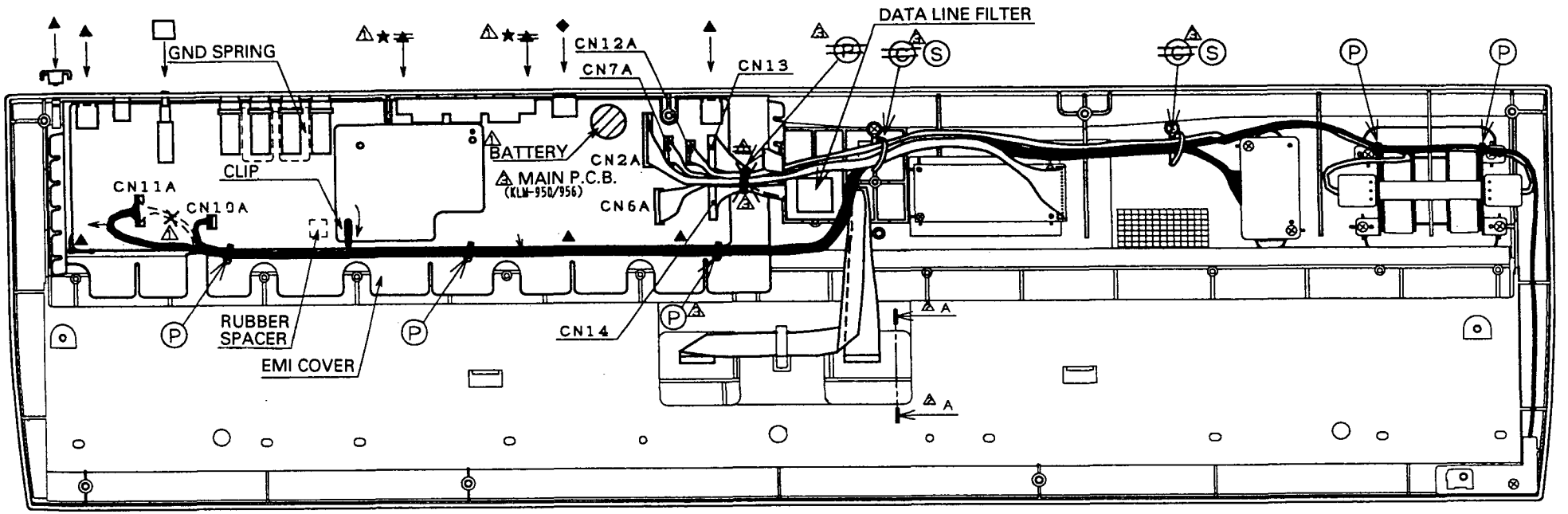
W=900 mm
D=254.2 mm
H= 83.4 mm
Weight=4.5 Kg

3. DISASSEMBLY

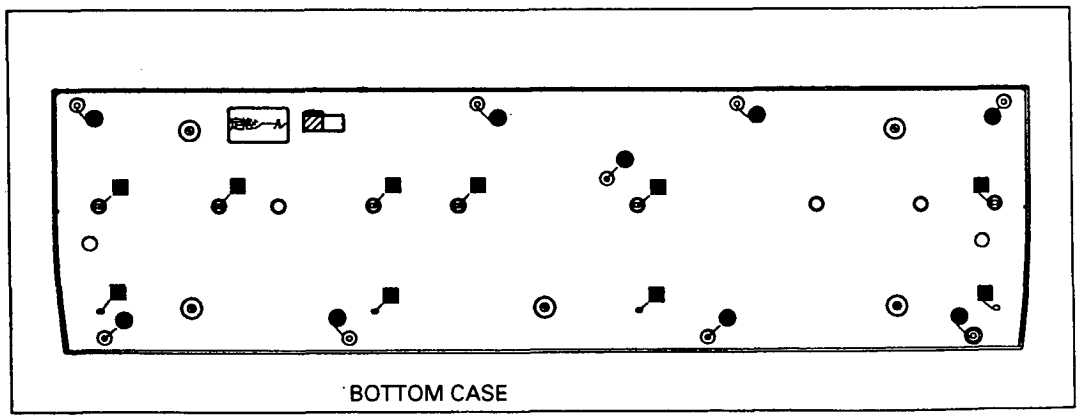
1. Remove the Lower Case
   1) Remove all the screws on the lower case and carefully lift the case.
      [BT B BZMC 4×10] ×9 (Mark:●)
      [TP1 B BZMC 3×14] ×10 (Mark:■)

2. Remove the Main Board(KLM-956)
   1) Unplug all the harnesses and 8pcs. of the screws on the main board.
      [BT B BZMC 3×8] ×5 (Mark:▲)
      [FE B BZMC 3×8] ×1 (Mark:◆)
      [BT B BZMC 3×12] ×2 (Mark: ★)
   2) Remove the main board and the EMI cover.

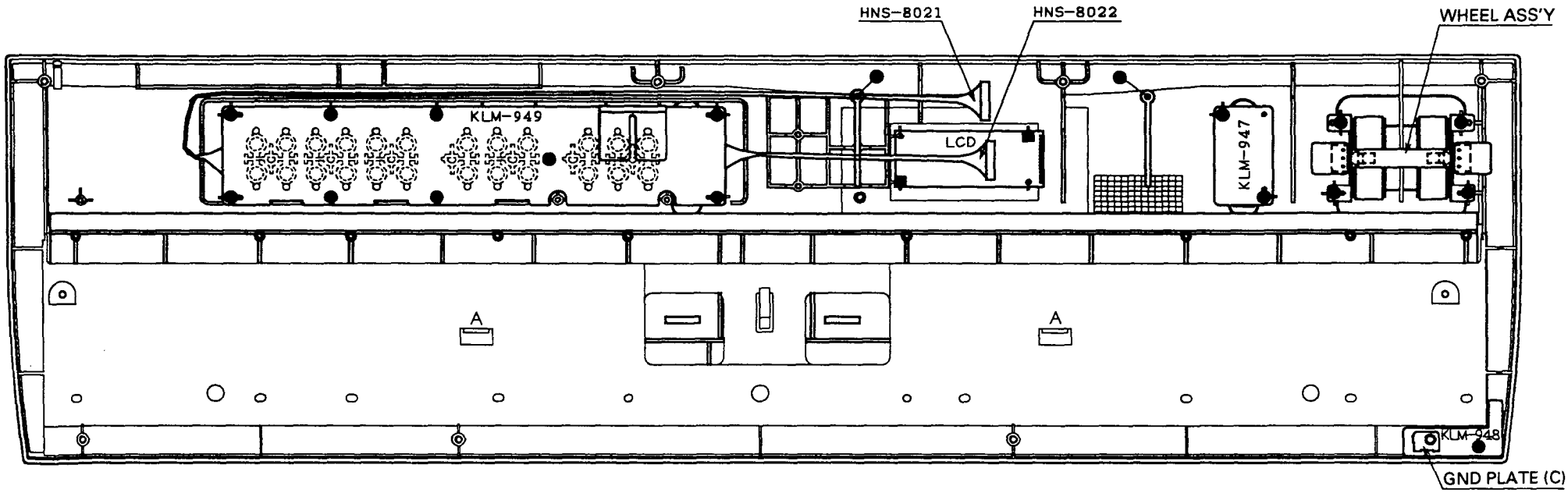
P : WIRE BAND PLT-1M (3 points)
S : SPIRAL CLIP S-8 (2 points)



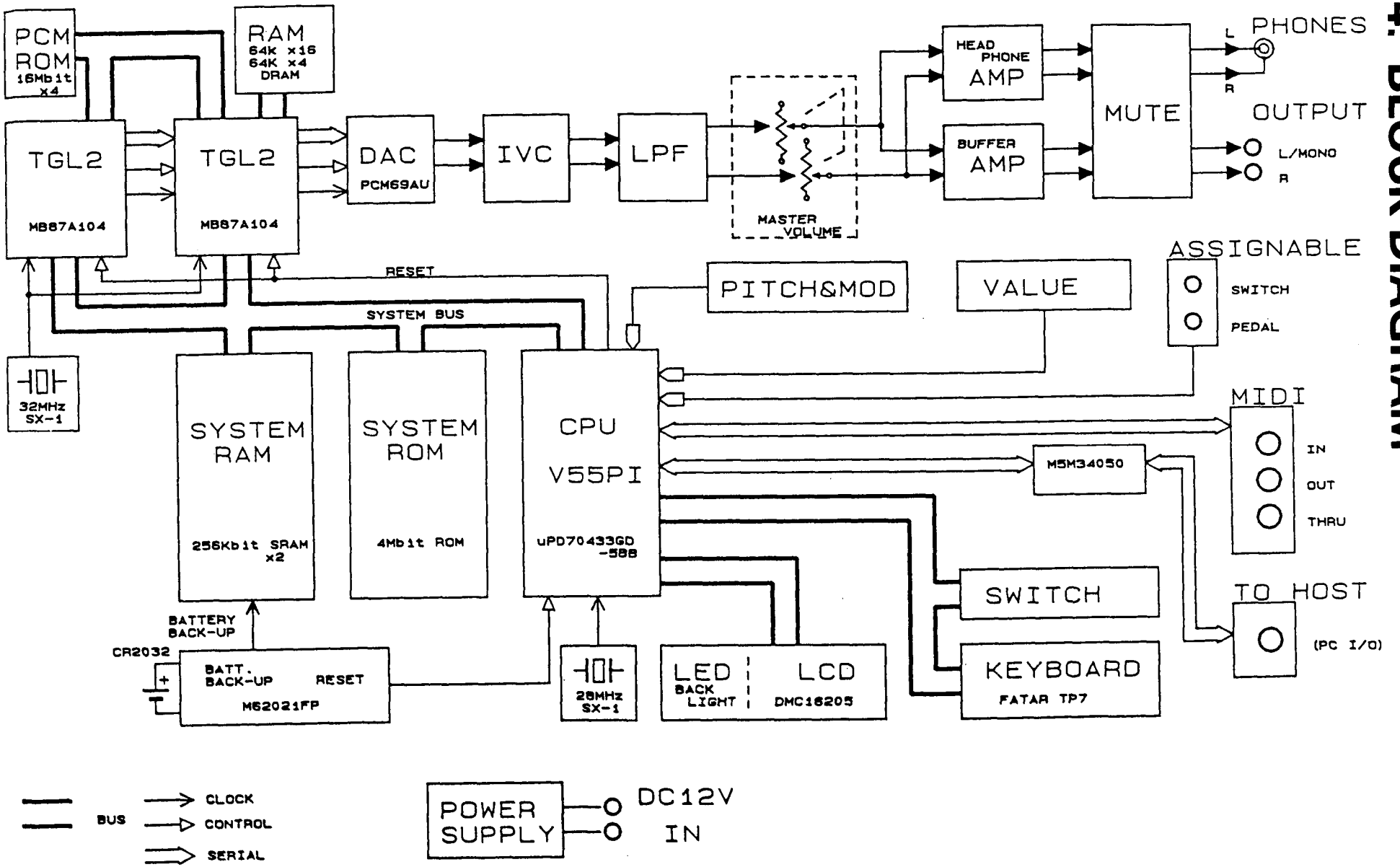
HARNESS NO.	CONNECTIONS
HNS-8021	PANEL SW(CN6B) - CN6A
HNS-8022	PANEL LED(CN7B) - CN7A
HNS-8023	PHONES(CN10B) - CN10A
HNS-8024	MASTER VR(CN11B) - CN11A
HNS-8025	PITCH/MOD(CN12B) - CN12A
HNS-8027	KEYBOARD LOW - CN13
HNS-8028	KEYBOARD HIGH - CN14
LCD HARNESS	LCD HARNESS - CN2A



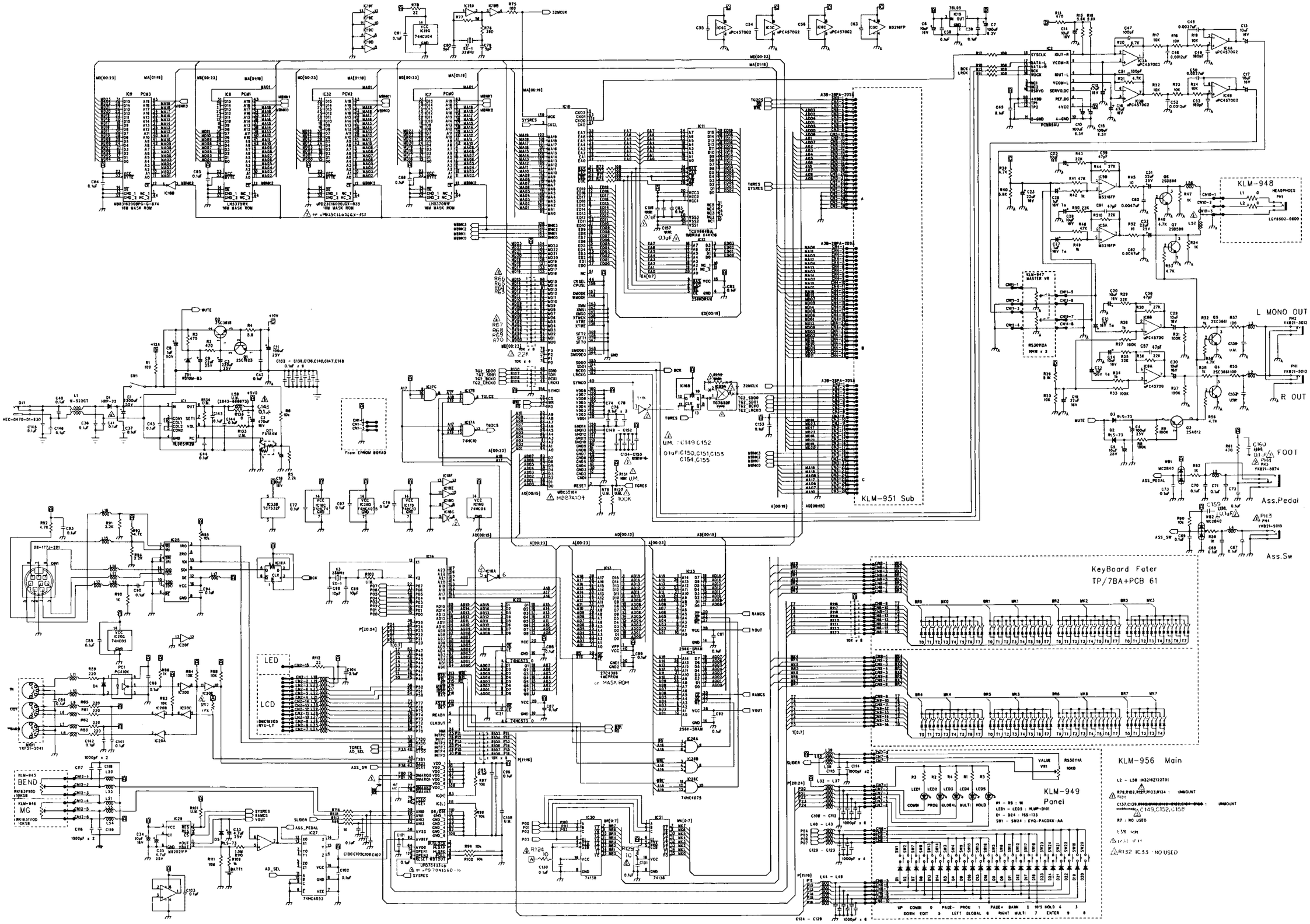
3. Remove the Panel Board(KLM-949)
   [BT B BZMC 3×8] ×9 (Mark:●)
4. Remove the LCD Assy
   [PLAX B ZMC 2×6] ×2 (Mark:■)
5. Remove the Wheel Assy
   [BT B BZMC 3×8] ×4 (Mark: ●)
6. Remove the Master VR Board(KLM-947)
   [BT B BZMC 3×8] ×2 (Mark: ●)
7. Remove the Headphone Board(KLM-948)
   [BT B BZMC 3×8] ×1 (Mark: ●)

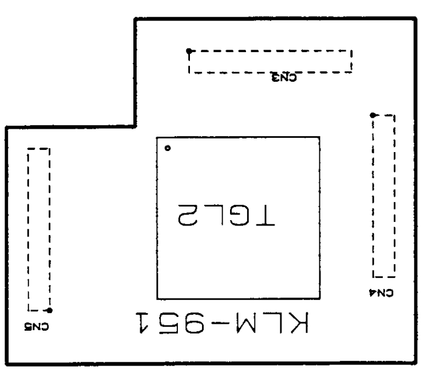


4. BLOCK DIAGRAM

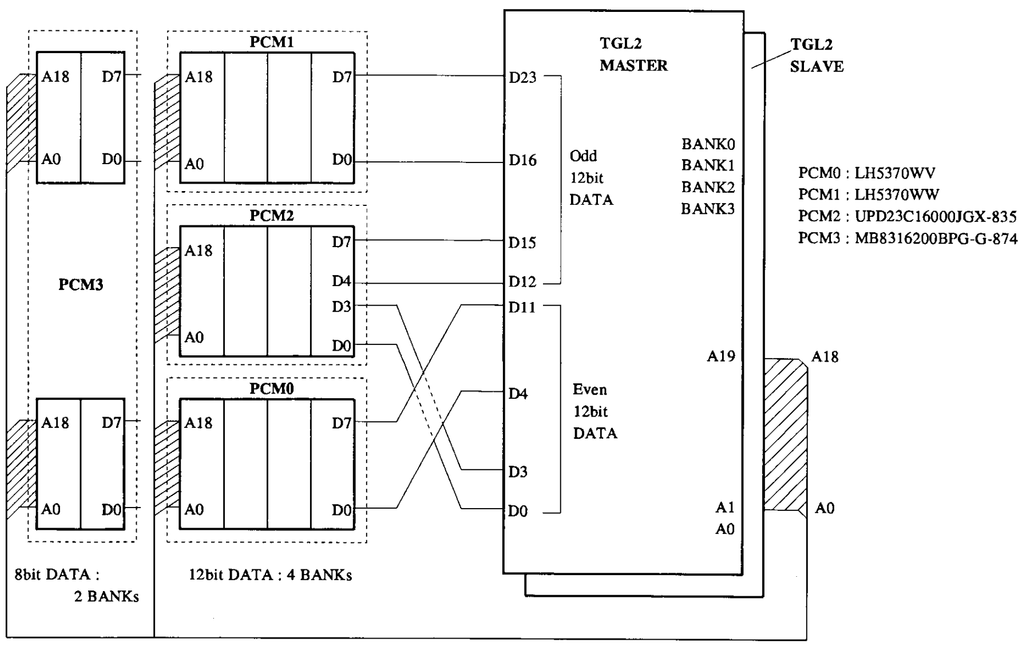


5. CIRCUIT DIAGRAM



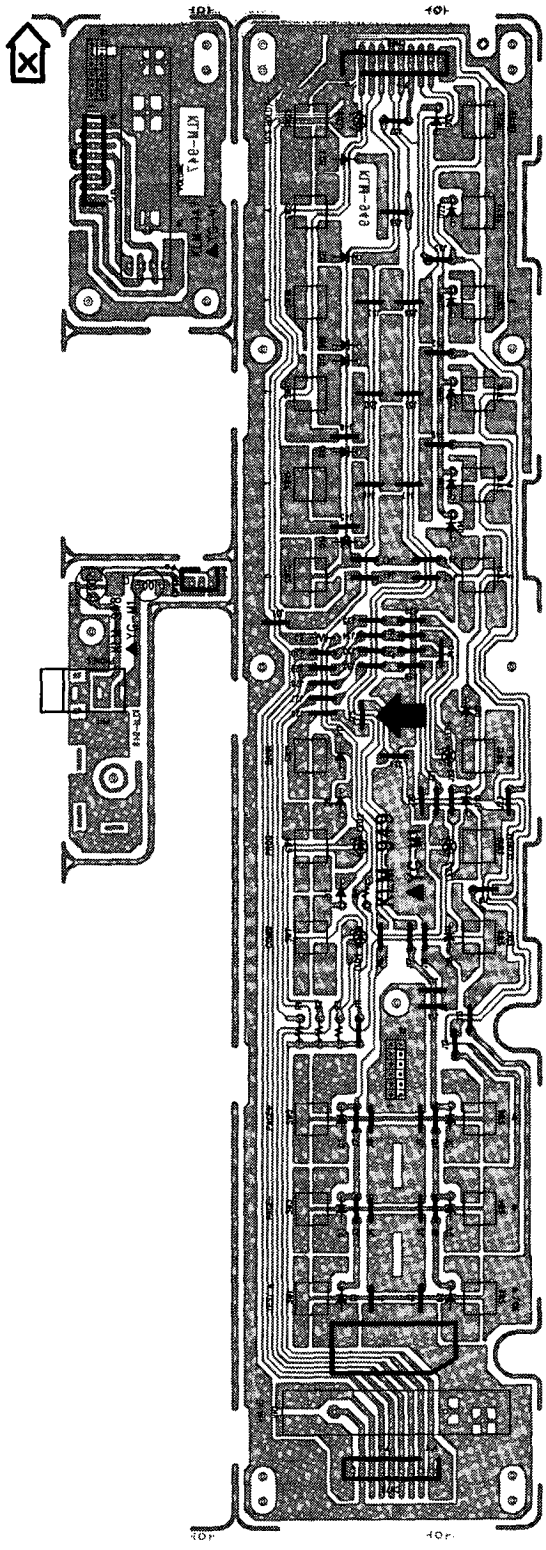


TONE GENERATOR HARDWARE SPECIFICATION

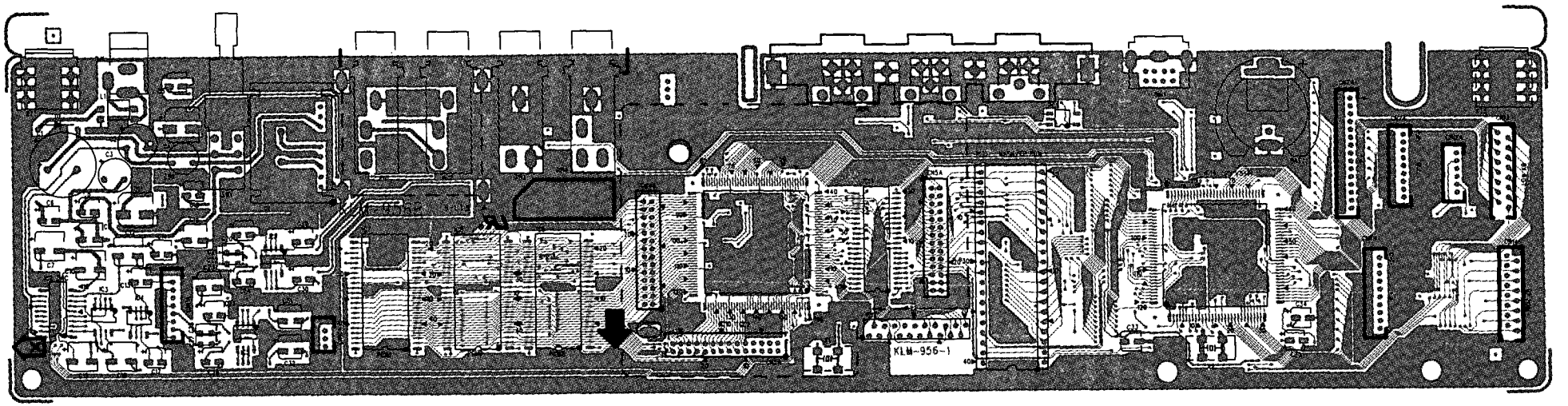


6. P.C. BOARDS

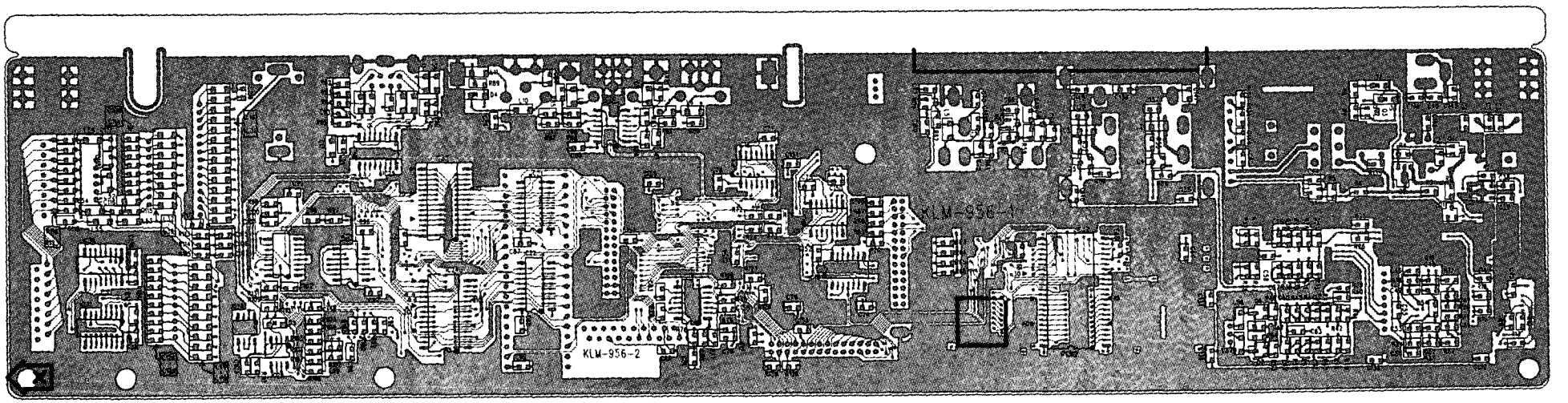
KLM - 947/948/949



KLM - 956

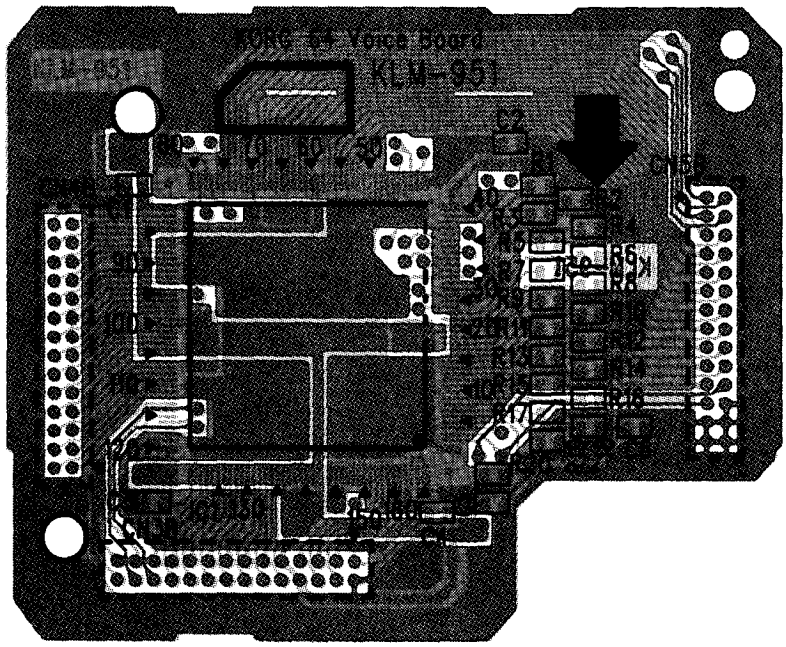


COMPONENT SIDE



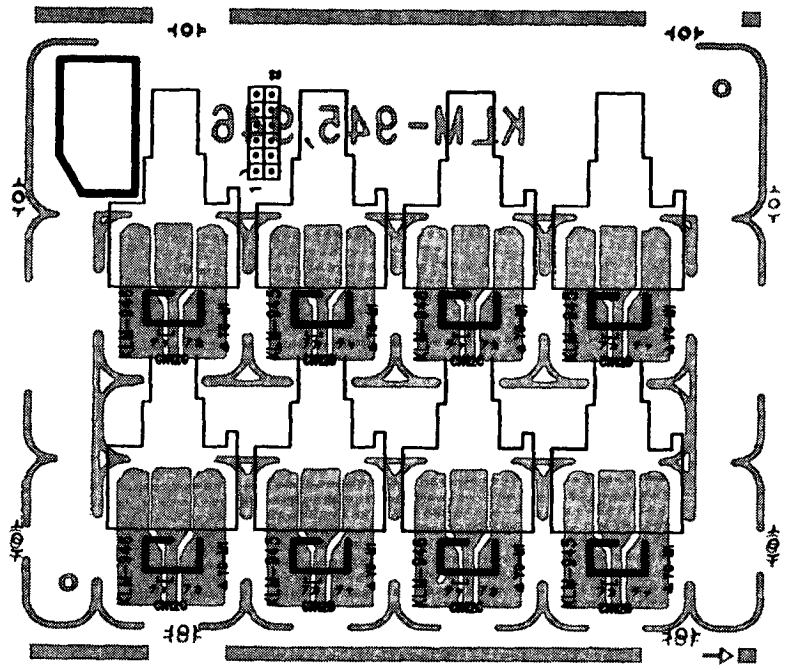
NO COMPONENT SIDE

KLM - 951



KLM-951

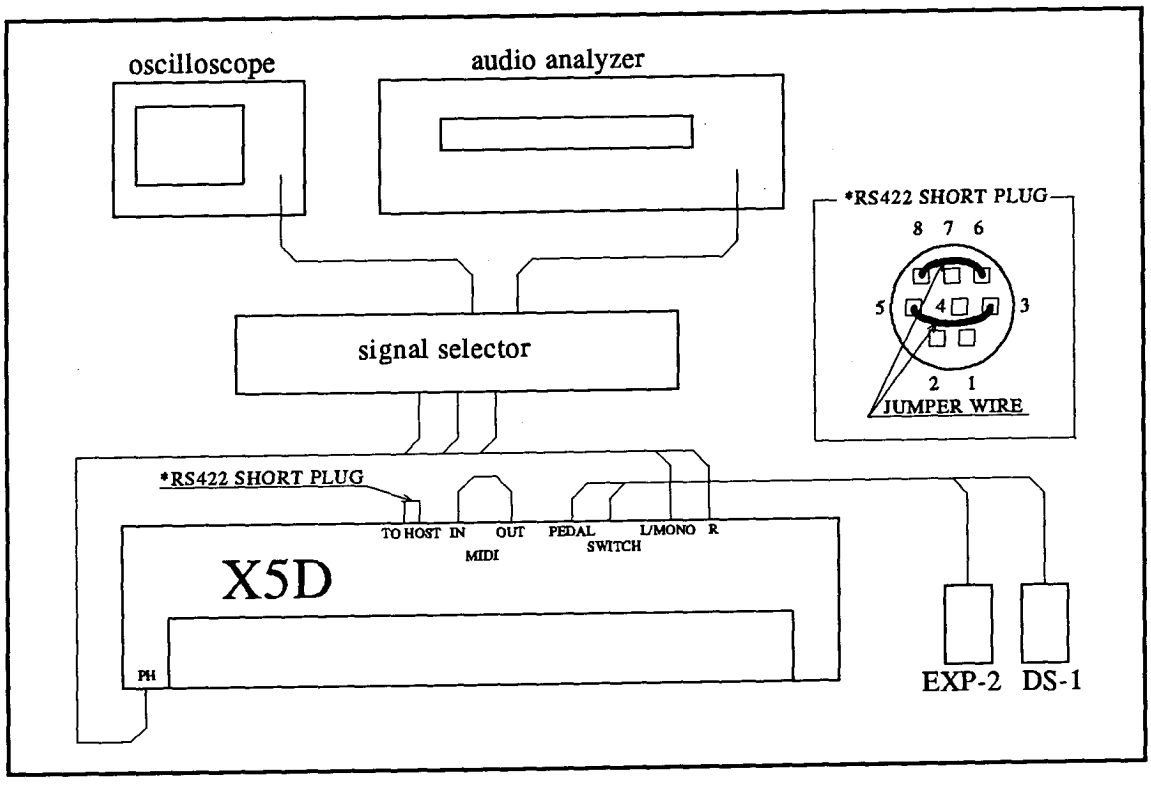
KLM - 946



7. TEST MODE

The X5D has a test mode for checking numerous functions. When the test mode is activated, the X5D internal data is initialized. Hence, if it contains any necessary data, save this data beforehand in a MIDI data filer or other memory device.
The figure below shows the equipment and settings required for carrying out tests.

Standard Setting



Activating the Test Mode

Turn the power switch ON while pressing "PAGE+" and "PAGE-".

When the test mode is activated, the internal tests shown below are automatically initialized. If the test results for all of the tests are normal, the next test item <PANEL SW TEST> is moved to.

The initialized internal tests are as follows:

- System ROM Check Sum (Internal Test#01)
- Internal RAM Test (Internal Test#02)
- LCD RAM Test (Internal Test#03)
- TGL I/F Test (Internal Test#04)
- Internal Battery Test (Internal Test#05)
- MIDI Loop Test (Internal Test#06)
- PC I/O Loop Test (Internal Test#07)
- PCM ROM TG I/F Test (Internal Test#08)

If any abnormalities are found in the internal test results, all the LEDs flash and the LCD screen displays an error message. Refer to "Internal Test Error Message Chart" about the contents of the message.

Supplement

When an internal test is NG, the next test can be moved to by pressing "YES" and "NO" switches at the same time.

[YES] & [ENTER] SW	:	Test STEP UP
[NO] SW	:	Test STEP DOWN
[PAGE+] SW	:	Test item UP
[PAGE-] SW	:	Test item DOWN

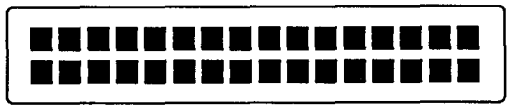
External Testing

TEST ITEM 1
<Panel SW&LED Test>

Confirm that the LEDs for COMBI, PROG, GLOBAL, MULTI, and 10'S HOLD/-1 are all lit.
Confirm that the functions of the switches pressed in the order shown on the LCD screen are normal.
Confirm that the LEDs are lit when the switches for COMBI, PROG, GLOBAL, MULTI, and 10'S HOLD/-1 are pressed.
When the test is completed, press the "ENTER" switch to move to the next test item.

TEST ITEM 2
<LCD Pixel Test>

Step 1 Press the "ENTER" switch and confirm that the whole dots of LCD are lit.



Step 2 Press the "ENTER" switch and confirm that the whole dots of LCD are not lit.

After confirming it, press the "ENTER" switch to go to the next test item.

TEST ITEM 3

<MDE Test>

Press the "ENTER" switch and confirm the output signal from OUTPUT-L with an oscilloscope. Match MASTER Volume on the panel to the highest level so that the wave form does not clip. Confirm that the MDE test waveform is normal. (At least 2 seconds)

Confirm that the P-P value of the waveform is within the stipulated range.

Table 1 Stipulated Range for MDE Test Waveform P-P values

5.5~7.8 VP-P

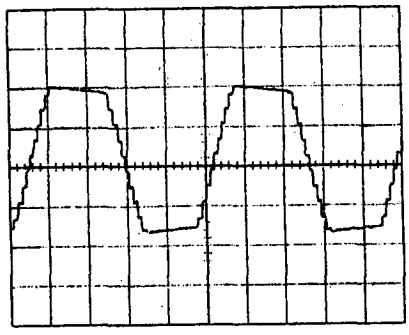


Fig.1 : MDE Waveform (at VOL MAX)

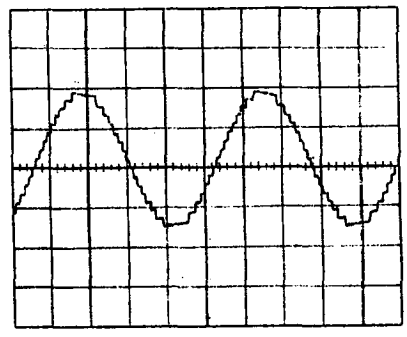


Fig.2 : MDE Waveform (at VOL adjust)

If the waveform is not normality, check TGL2(IC10), DRAMs(IC11, IC12) and DAC(IC2).

After confirming it, press the "ENTER" switch to go to the next test item.

TEST ITEM 4

<Noise Test>

Turn the MASTER VOLUME on the front panel to MAX.

Press the "ENTER" switch and measure the noise level of the item to be measured which is displayed on the LCD. Confirm that each noise level is below the stipulated value.

Test OUT-L, OUT-R, PHONE-L, and PHONE-R respectively.

After confirming it, press the "ENTER" switch to go to the next test item.

TEST ITEM 5

<Output Test>

Press the "ENTER" switch and measure the output signal level of the item to be measured which is displayed on the LCD. Confirm that each output signal level is a sine wave within the stipulated range. Also, for OUT-L, OUT-R, PHONE-L, and PHONE-R respectively, confirm that the waveform level changes smoothly when the MASTER VOLUME is controlled and the wave level becomes "0" when the MASTER VOLUME is turned to MIN.

Table 2 Stipulated Range for Residual Noise and Output Signl Level

	Residual Noise	Output Signal Level	Freq.
Out-L	-90.0[dBu] or less	2.00~3.50[dBu]	488 Hz
Out-R	-90.0[dBu] or less	2.00~3.50[dBu]	412 Hz
Ph-L	-90.0[dBu] or less	-2.00~0.50[dBu]33Ω load	548 Hz
Ph-R	-90.0[dBu] or less	-2.00~0.50[dBu]33Ω load	610 Hz

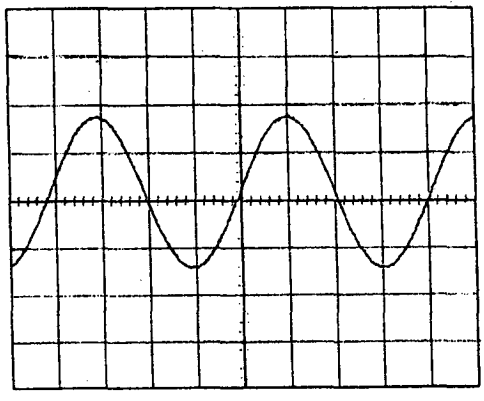


Fig.3 : SIN Waveform

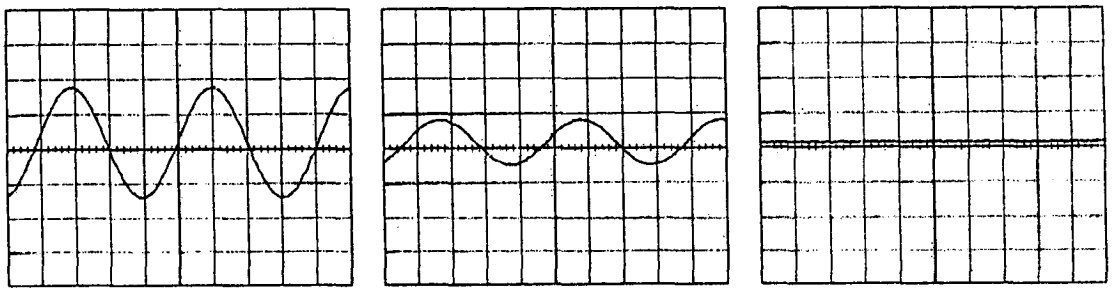


Fig.4 : VOL Action Confirmation

In case that the waveforms from OUTPUT-L and OUTPUT-R are not normality, check TGL2(IC10) and PCM ROMs(IC7, IC8, IC9, IC32).
In case that the waveforms frpm PHONE-L and PHONE-R are not normality, check TGL2 on KLM-951 pcb.
After confirming the signal level of PHONE-R, press the "ENTER" switch to go to the next test item.

TEST ITEM 6

<Keyboard Test>

Following the display on the LCD screen, play the keyboard from the highest key to the lowest key and confirm that the touch of the keyboard is normal.

TEST ITEM 7

<Ass SW Test>

Step 1 Confirm ASSIGNABLE SWITCH

After pressing the "ENTER" switch, confirm that the LCD screen displays "ON" when the pedal connected to ASS SW is stepped on.
Confirm that it displays "OFF" when the pedal is released.

After confirming it, press the "ENTER" switch to go to the next test item.

TEST ITEM 8

<A/D Test>

Step 1 Confirm PITCH BEND Wheel

Confirm that the value displayed on the LCD changes smoothly when BEND is controlled.
Confirm that "PASS" is displayed with MAX and MIN.
After confirming it, press the "ENTER" switch to go to the next step.

Step 2 Confirm MODULATION Wheel

Confirm that the value displayed on the LCD changes smoothly when MODULATION is controlled.
Confirm that "PASS" is displayed with MAX and MIN.
After confirming it, press the "ENTER" switch to go to the next step.

Step 3 Confirm VALUE Slider

Confirm that the value displayed on the LCD changes smoothly when VALUE is controlled.
Confirm that "PASS" is displayed with MAX and MIN.
After confirming it, press the "ENTER" switch to go to the next step.

Step 4 Confirm ASSIGNABLE Pedal

Confirm that the value displayed on the LCD changes smoothly when the ASSIGNABLE pedal is controlled.
Confirm that "PASS" is displayed with MAX and MIN.
After confirming it, press the "ENTER" switch so that PRELOAD will automatically be executed and the Test Mode will be finished.

Internal Test Error Message Chart

SystemROMChkSum Error: Verify	Checksum of system ROM is NG
SRAM Write/Read Error: Verify	Read/Write of SRAM is NG
LCD RAM W/R Error: Verify	Read/Write for LCD controller is NG
TG CPU I/F Error: [①~④]	①VoiceFlag Trigger on/off for TGL is NG ②TGL1 NG Trigger on/off for TGL1 is NG ③TGL2 NG Trigger on/off for TGL2 is NG ④short/sel TGL1 and TGL2 can not be started separately
VDFA CPU I/F Error: Verify	Read/Write of TGL internal VDF and VDA resistor is NG
InternalBattry Error:[①,②]*.**v	①High Measured voltage is high ②Low Measured voltage is low *.**:measured voltage value
MIDI Warning:[①,②]	①OUT-->IN Output data and input data are different ②OUT × IN Input data is not received or MIDI cable is not connected
PCIO Warning:[①,②]	①OUT-->IN Output data and input data are different ②OUT × IN Input data is not received or RS422 short plug is not connected
PCMInt@ A:xxxxxC P:**** R:++++	The read PCM data is NG @ : 0~F xxxx:PCM address ****:correct value ++++:read value

8. REFERENCE DATA

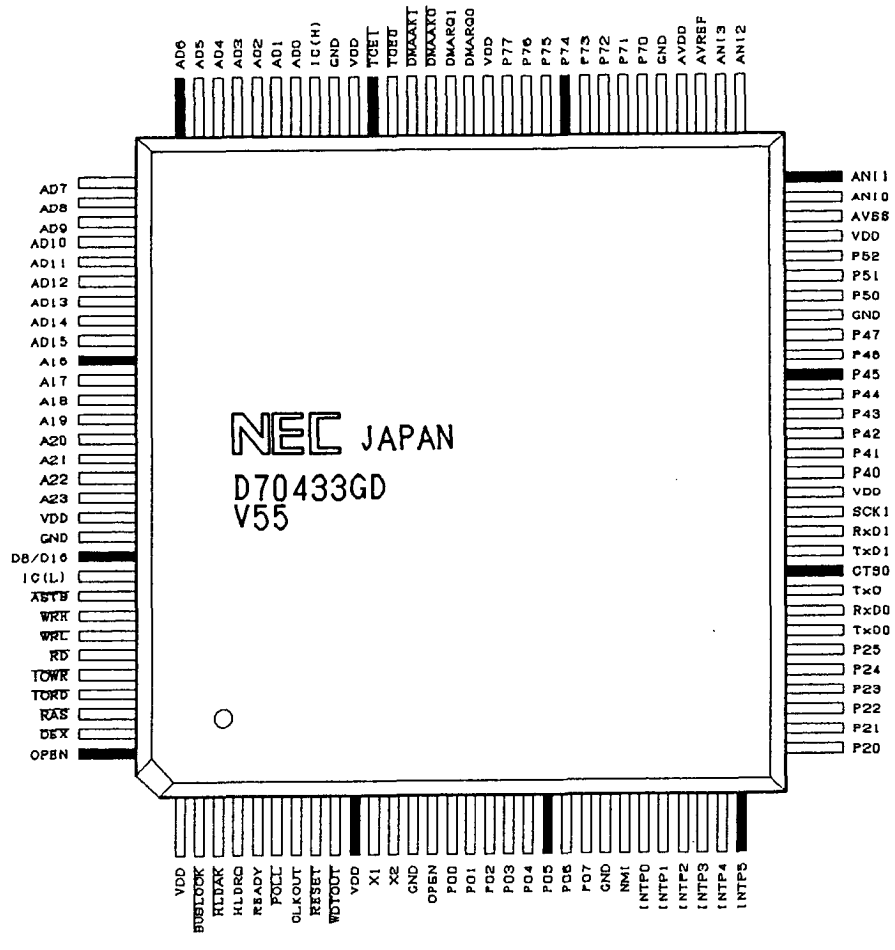
P.C.BOARDs

KLM-945/946	:	PITCH/MOD P.C.BOARD
KLM-947	:	MASTER VR P.C.BOARD
KLM-948	:	HEADPHONE P.C.BOARD
KLM-949	:	PANEL SW P.C.BOARD
KLM-951	:	64 VOICE P.C.BOARD
KLM-956	:	MAIN P.C.BOARD

MAIN ICs

CPU :	UPD70433GD-5BB	IC14
TONE GENERATOR :	MB87A104(TGL2)	IC10, IC1(KLM-951)
SYSTEM ROM :	MBM27C4096-12Z(EP ROM) or MASK ROM	IC13
SYSTEM RAM :	UPD43256BGU-85L-E2 or MB84256A-10LPF-G-BND-EF	IC23, IC24
DRAMs :	M51C464A-80Z(64K x 4)	IC12
	M511664AL-80J(64K x 16)	IC11
WAVE ROMs :	LH5370WW(PCM0)	IC7
	LH5370WX(PCM1)	IC8
	UPD23C16000JGX-835(PCM2)	IC32
	MB8316200B-874(PCM3)	IC9
D/A CONVERTOR :	PCM69AU	IC2

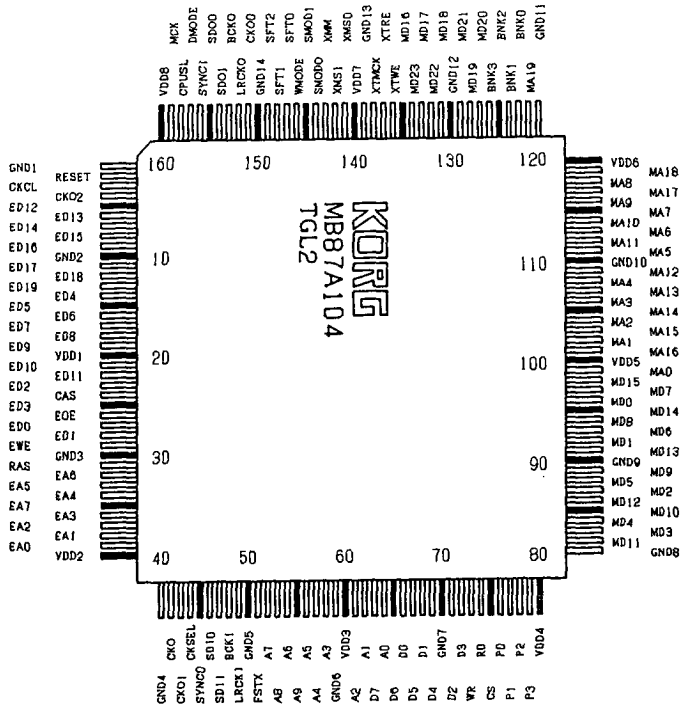
UPD70433GD-5BB(CPU) PIN ASSIGNMENT



UPD70433GD-5BB(CPU) PIN FUNCTIONS

PIN NAME	I/O	FUNCTION
P00-P07	I/O	PORT 0
NMI	I	NON MASKABLE INTERRUPT
INTP0-INTP5	I	EXTERNAL INTERRUPT REQUEST
P20-P21	I/O	PORT 2
TXD0-TXD1	O	TRANSMIT DATA OUTPUT
RXD0-RXD1	I	RECEIVE DATA INPUT
TXC	O	TRANSMIT CLOCK OUTPUT
CTS0	I	ENABLING SIGNAL INPUT
SCK1	O	SERIAL CLOCK OUTPUT
P40-P47	I/O	PORT 4
P50-P52	I/O	PORT 5
ANI0-ANI3	I	ANALOG SIGNAL INPUT
P70-P77	I/O	PORT 7
DMARQ0-1	I	DMA REQUEST SIGNAL INPUT
GND	---	GROUND
VDD	---	+5V POTENTIAL
AVSS	---	ANALOG GROUND
AVDD	---	ANALOG +5V POTENTIAL
AVREF	I	REFERENCE POTENTIAL INPUT FOR A/D CONVERTER
RESET	I	SYSTEM RESET SIGNAL INPUT
X1, X2	I	SYSTEM CLOCK INPUT
CLKOUT	O	SYSTEM CLOCK OUTPUT
ASTB	O	ADDRESS STROBE SIGNAL OUTPUT
RD	O	DATA READ STROBE SIGNAL OUTPUT
WRL	O	LOW BIT DATA WRITE STROBE SIGNAL OUTPUT
WRH	O	HIGH BIT DATA WRITE STROBE SIGNAL OUTPUT
READY	I	READY SIGNAL INPUT
DEX	O	DATA BUS ENABLE SIGNAL OUTPUT
RAS	O	DRAM ROW ADDRESS LATCH TIMING SIGNAL OUTPUT
D8/D16	I	BUS SIZE SELECT INPUT
BUSLOCK	O	BUS LOCK SIGNAL OUTPUT
POLL	I	POLL SIGNAL INPUT
HLDRQ	I	BUS HOLD REQUEST SIGNAL INPUT
HLDAK	O	BUS HOLD ACKNOWLEDGE SIGNAL OUTPUT
AD0-AD15	I/O	ADDRESS/DATA SIGNAL
A16-A23	O	ADDRESS SIGNAL OUTPUT
IORD	O	I/O READ STROBE SIGNAL OUTPUT
IOWR	O	I/O WRITE STROBE SIGNAL OUTPUT
DMAAK0-1	O	DMA ACKNOWLEDGE SIGNAL OUTPUT
TCE0-TCE1	O	DMA FINISH SIGNAL OUTPUT

MB87A104APF-G-BND (TGL2) PIN ASSIGNMENT



MB87A104APF-G-BND (TGL2) PIN FUNCTIONS

PIN NAME	I/O	FUNCTION
VDD	---	+5V
VSS	---	Ground
Rest	I	System Rest
MCK	I	Master Clock
CKO	O	32MHz
CKO0-1	O	CLK/2 duty 50% output
CKO2	O	CLK/4 duty 50% output
CKSEL	I	Phase Analog Select for CKO0
CKCL	I	CKO0 Reset input
SFTX	I	MIXER Gain Select H: 4 times
XMM	I	for Test mode
XMS2-0	I	for Test mode
XTMCK	I	for Test mode
XTRE	I	for Test mode
XTWE	I	for Test mode
for CPU	----------	----------
CPUSL	I	CPU select V25/H8
CS	I	Chip select
WR	I	CPU WRITE pulse
RD	I	CPU READ pulse
A0-9	I	CPU Address Bus
D0-9	I/O	CPU Data Bus
P0-3	O	Output Port

for PCM ROM ----------		
MD0-15	I/O	PCM Memory Data Bus 0-15
MD16-23	I	PCM Memory Data Bus 16-23 (for 2TGs mode)
MA0-19	O	PCM Memory Address Bus
BNK0-3	O	PCM Memory Bank Select
DMODE	I	DECODE Mode Select H: Decode BNK# L: Thru BNK#
WMODE	I	PCM Memory -word Select H: 64 osc. , 2TGs Mode L: 32 osc. , 1TG Mode
SYNCO	O	Counter Synchro Output (only 2TGs Mode)
SYNCI	I	Counter Synchro Input (only 2TGs Mode)
for Serial Interface ----------		
SDO0-1	O	Serial Data Outout 0,1 SDO0: C ch & D ch SDO1: A ch & B ch
BCKO	O	Bit Clock Output (2MHz, 500nsec.)
LRCKO	O	LR Clock Output L: R ch H: L ch
SDI0-1	I	Serial Data Input 0,1 SDI0: C ch & D ch SDI1: A ch & B ch
BCKI	I	Bit Clock Input (2MHz, 500nsce.)
LRCKI	I	LR Clock Input L: R ch H: L ch
SMOD0-3	I	Serial I/F Format Select
for DRAM ----------		
EA0-7	O	DRAM Address
ED0-19	I/O	DRAM Data
EWE	O	DRAM WE
EOE	O	DRAM OE
RAS	O	DRAM RAS
CAS	O	DRAM CAS

TGL2 CHECK POINTS

1. Voltage check of power supply

   Check that a voltage of +5V (±5%) is input at the VDD pin.

   $$4.75V \leqq VDD \leqq 5.25V$$

2. Check of input/output pins, regardless of the CPU interface setting

PIN NAME	FUNCTION
BCKO	2.0 MHz bit clock signal outputs to the D/A converter.
LRCKO	31.25 KHz L/R clock signal output to the D/A converter.

   If the voltage level of these pins is +3V or less, check the soldering of peripheral pins and the voltage of the connected device.
   Also, if any of these pins is 0V or +5V, check to see whether RESET(TGRES) or the master clock(32.0MHz) has been input. If RESET and MCK are normal, and the test mode setting pins have been set as below,
   check the soldering and the pattern on the circuit board.

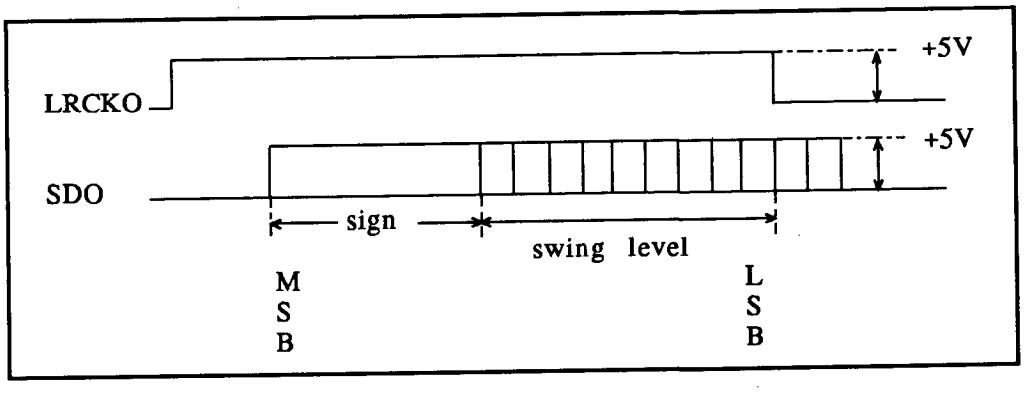
3. Check of input/output pins, when any key is on

PIN NAME	FUNCTION
XCS, XWE	Control signal from the CPU

   During KEY ON or PROG. CHANGE, check that a low level pulse signal is input from the CPU to the above pins(XSC, XWE). If these signals cannot be observed with the oscilloscope, check the CPU and its peripheral circuits.

PIN NAME	FUNCTION
SDO0, SDO1	serial data output to the D/A converter

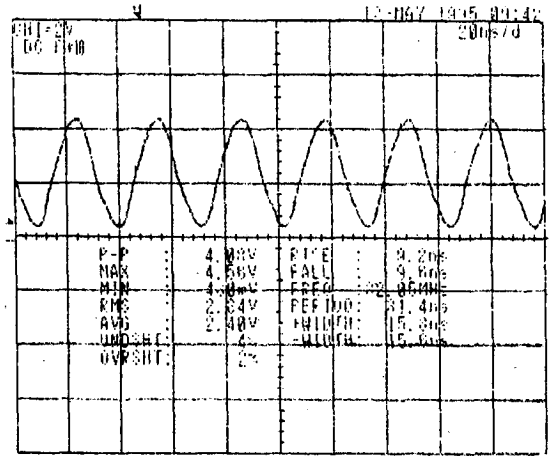
   In case of observing the waveform with the oscilloscope, it is best to input the LRCK0 clock signal to the external trigger input of the oscilloscope. If the serial data cannot be output, check the PCM address bus. To find whether normal serial data is output or not, check whether there is a different bit from the code bit at the left side of the leading and the trailing edge of LRCK0 on the oscilloscope screen.



CHECK POINTS

1. CLOCK CIRCUIT - TGL2

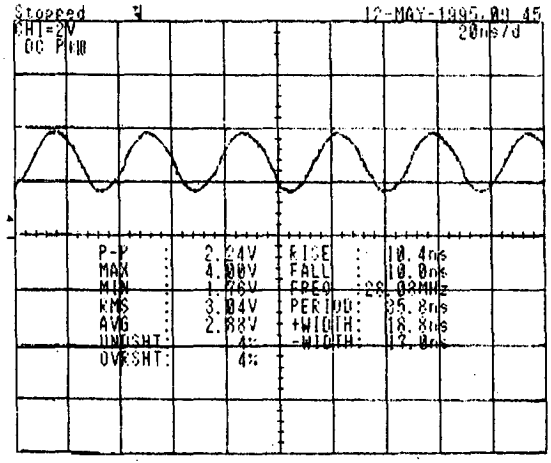
From 4pin of IC19
To 159pin(MCK) of IC10
and IC1 on KLM-951
f= 32.00MHz



2. CLOCK CIRCUIT - CPU

From X3(28MHz)
To 11pin(X1) and 12pin(X2) of IC14

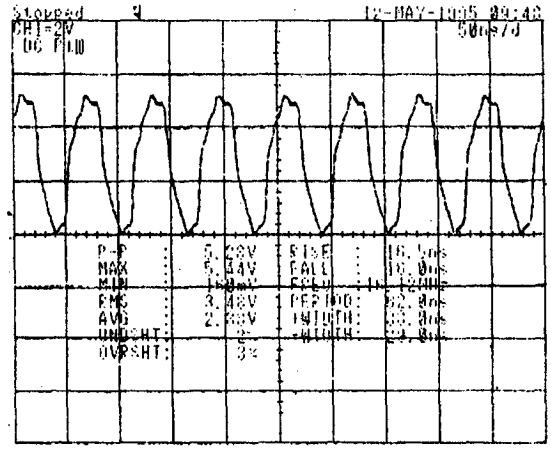
f= 28.00MHz



3. TGL2 - DAC

From 151pin(CKO0) of IC10
To 15pin(SYSCLK) of IC2

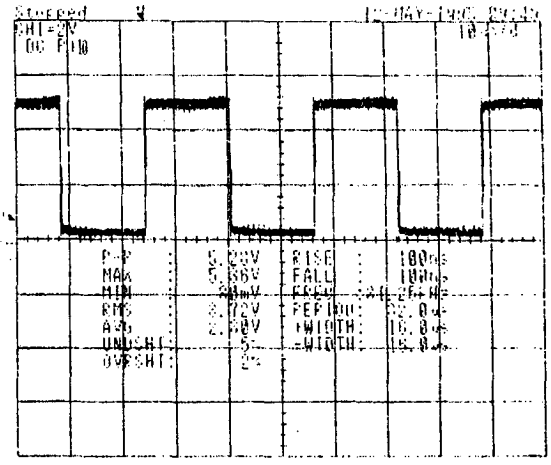
f= 16.00MHz



4. TGL2 - DAC

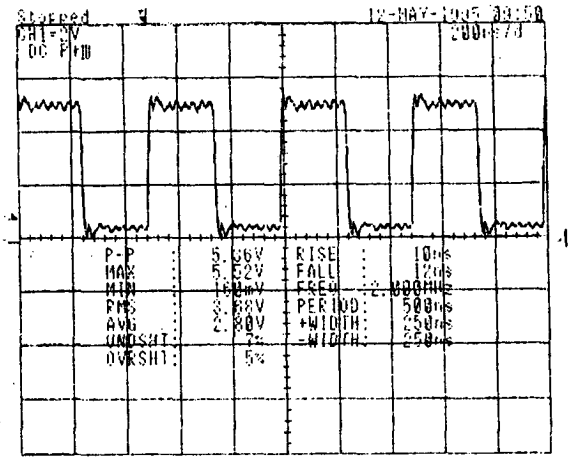
From 152pin(LRCKO) of IC10
To 16pin(WDCK) of IC2

f= 31.25KHz



5. TGL - DAC/PCIO

From 153pin(BCKO) of IC10
To 14pin(BCK) of IC2
3pin(CLK) of IC16
f= 2.00MHz

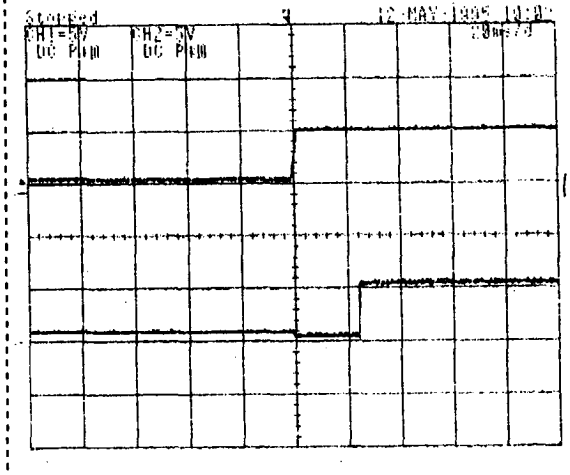


6. RESET - CPU

From 7pin(RES) of IC29
To 8pin(RESET) of IC14

※ when the power is turned on

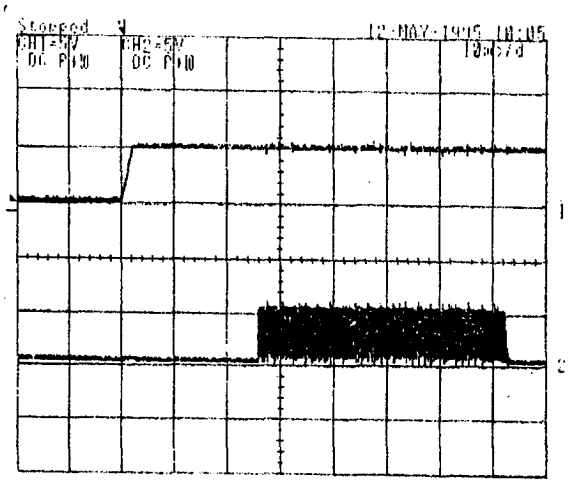
1ch : VCC
2ch : SYSRES



7. CPU - TGL2s

From 39pin(TXC) of IC14
To 2pin(RESET) of IC10
and IC1 on KLM-951
※ when the power is turned on

1ch : VCC
2ch : TGRST

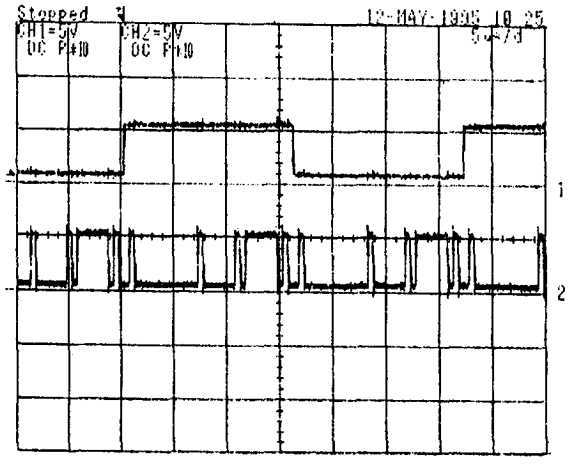


8. TGL2(IC16) - DAC

From 155pin(SDO0) of IC10
To 17pin(DATA-L) of IC2

※ when the MDE test waveform
is transmitted

Ch1: DATA
Ch2: LRCK

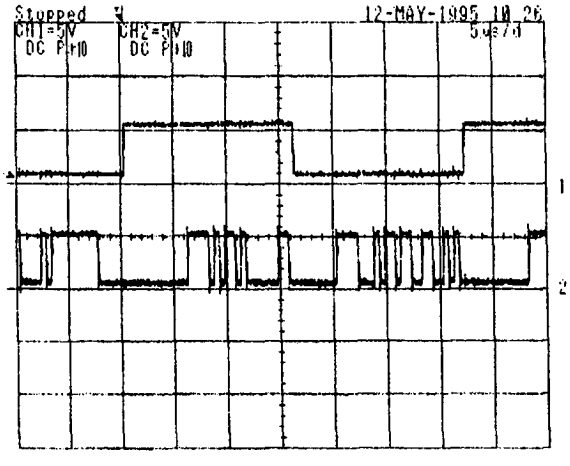


9. TGL2(IC1) - TGL2(IC10)

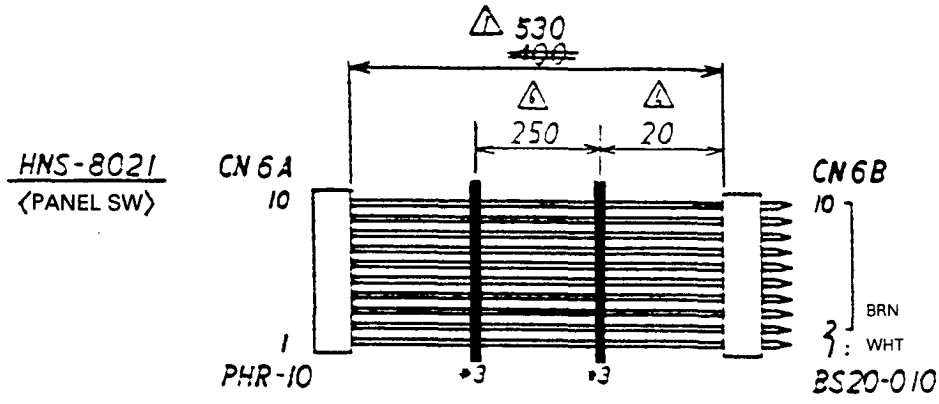
From 154pin(SDO1) of IC1 on KLM-951
To 47pin(SDI1) of IC10

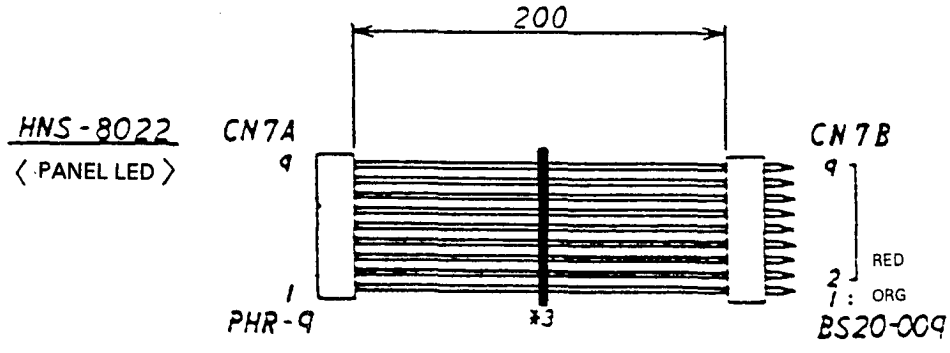
※ when the LEVEL test waveform
(PH-L/R) is transmitted

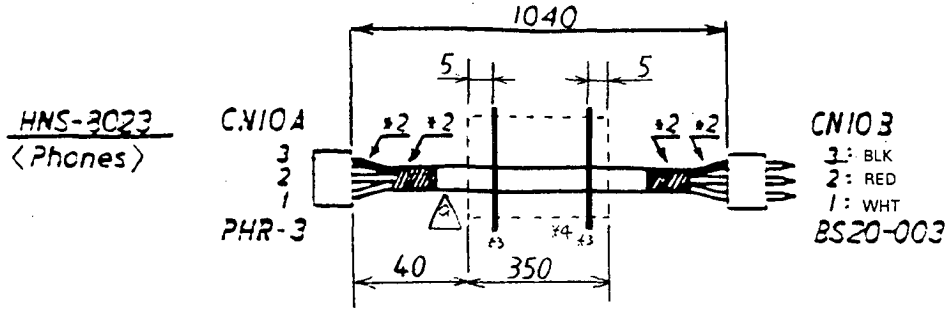
Ch1: DATA
Ch2: LRCK

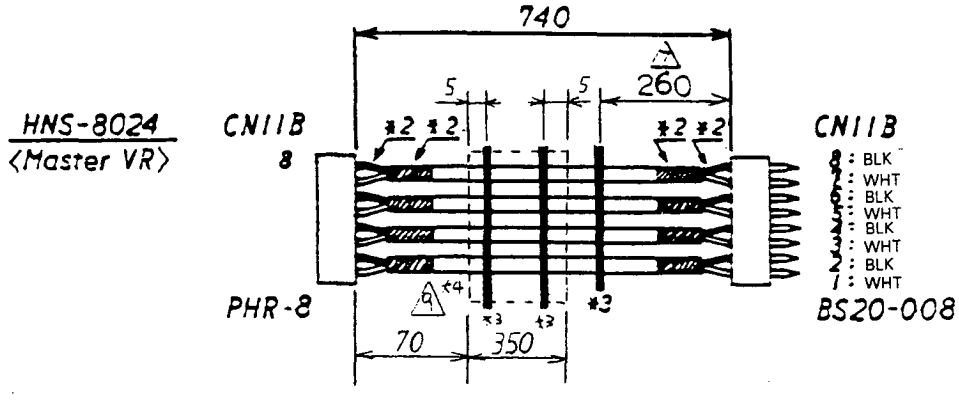


FOR HARNESSES

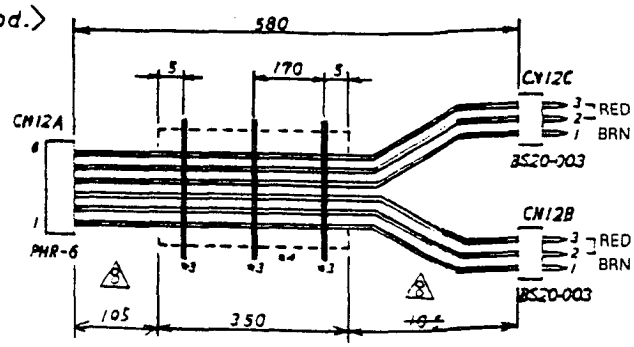




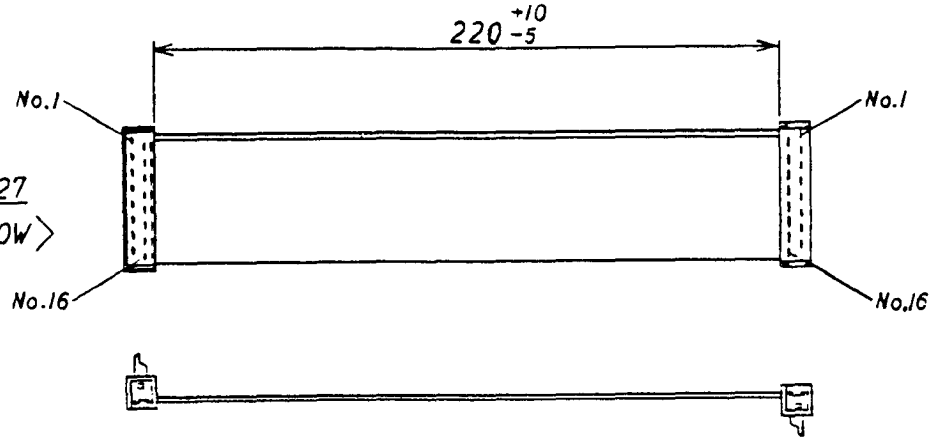




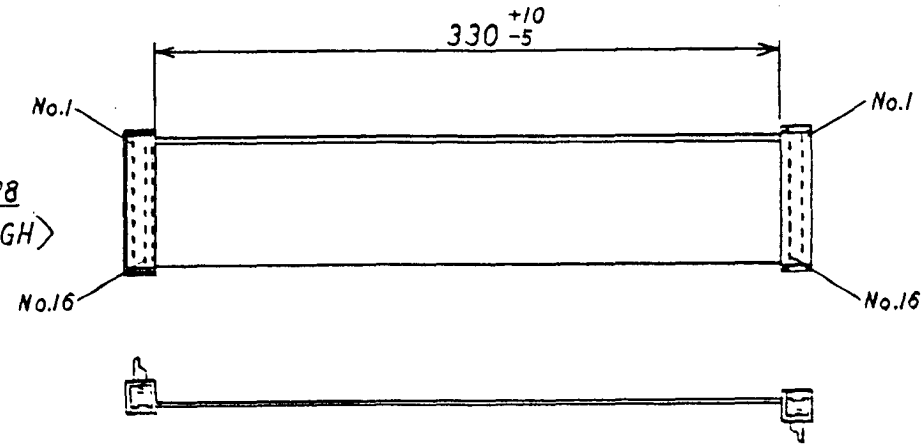
⑤ HNS-8025
〈Pitch.Mod.〉



HNS-8027
〈KEYBOARD LOW〉



HNS-8028
〈KEYBOARD HIGH〉



MULTI SOUND LIST

No.	MultiSound	PCM0/1/2	PCM3
0	[A.Piano 1]	11	.
1	[A.Piano1LP]	11	.
2	[A.Piano 2]	10	.
3	[E.Piano 1]	.	6
4	[E.Piano1LP]	.	6
5	[E.Piano 2]	4	1
6	[E.Piano2LP]	4	1
7	[Soft EP]	9	.
8	[Soft EP LP]	9	.
9	[Hard EP]	9	.
10	[Hard EP LP]	9	.
11	[PianoPad 1]	2	.
12	[PianoPad 2]	2	.
13	[Clav]	2	5
14	[Clav LP]	2	5
15	[Harpsicord]	.	8
16	[HarpsicdLP]	.	8
17	[PercOrgan1]	7	.
18	[PercOrg1LP]	7	.
19	[PercOrgan2]	4	2
20	[PercOrg2LP]	4	2
21	[Organ 1]	6	.
22	[Organ 1 LP]	6	.
23	[Organ 2]	6	.
24	[Organ 2 LP]	6	.
25	[Organ 3]	12	.
26	[Organ 4]	12	.
27	[Organ 5]	9	.
28	[RotaryOrg1]	.	4
29	[RotaryOrg2]	11	.
30	[PipeOrgan1]	.	6
31	[PipeOrg1LP]	.	6
32	[PipeOrgan2]	7	.
33	[PipeOrg2LP]	7	.
34	[PipeOrgan3]	.	9
35	[PipeOrg3LP]	.	9
36	[Musette]	.	6
37	[Musette V]	.	6
38	[Bandneon]	12	.
39	[BandneonLP]	12	.
40	[Accordion]	.	9
41	[AcordionLP]	.	9
42	[Harmonica]	.	11
43	[G.Guitar]	8	2
44	[G.GuitarLP]	8	2
45	[F.Guitar]	6	2
46	[F.GuitarLP]	6	2
47	[F.Guitar V]	4	2
48	[A.Gtr Harm]	2	.
49	[E.Guitar 1]	7	1
50	[E.Guitr1 V]	7	1
51	[E.Guitar 2]	9	.
52	[E.Guitar 3]	5	.
53	[MuteGuitar]	6	2
54	[Funky Gtr]	6	.
55	[FunkyGtr V]	5	.
56	[E.Gtr Harm]	5	.
57	[DistGuitar]	.	19
58	[Dist GtrLP]	.	19
59	[DistGuitrV]	.	19
60	[Over Drive]	.	16
61	[OverDrv LP]	.	16
62	[OverDrv F4]	.	8
63	[MuteDstGtr]	21	.
64	[MtDstGtr V]	21	.
65	[PowerChord]	47	.
66	[PowerChd V]	8	.
67	[OverDvChrd]	43	8
68	[Gtr Slide]	2	.
69	[GtrSlide V]	2	.
70	[Sitar 1]	.	2
71	[Sitar 2]	6	.
72	[Sitar 2 LP]	6	.
73	[Santur]	.	3
74	[Bouzouki]	5	.
75	[BouzoukiLP]	5	.
76	[Banjo]	.	5
77	[Shamisen]	2	4
78	[Koto]	.	6
79	[Uood]	3	.
80	[Harp]	10	.
81	[MandlinTrm]	7	.
82	[A.Bass 1]	6	.
83	[A.Bass1 LP]	6	.
84	[A.Bass 2]	6	.
85	[A.Bass2 LP]	6	.
86	[E.Bass 1]	4	2
87	[E.Bass1 LP]	4	2
88	[E.Bass 2]	8	.
89	[E.Bass2 LP]	8	.
90	[Pick Bass1]	2	4
91	[PicBass1LP]	2	4
92	[Pick Bass2]	8	.
93	[Fretless]	4	1
94	[FretlessLP]	4	1
95	[Slap Bass1]	1	6
96	[Slap Bass2]	2	3
97	[SlpBass2LP]	2	3
98	[Slap Bass3]	10	.
99	[SynthBass1]	2	3
100	[SynBass1LP]	2	3
101	[SynthBass2]	2	3
102	[SynBass2LP]	3	2
103	[House Bass]	6	.
104	[FM Bass]	4	.
105	[FM Bass LP]	4	.
106	[Kalimba]	2	.
107	[Music Box]	1	1
108	[MusicBoxLP]	1	1
109	[Log Drum]	5	.
110	[Marimba]	5	.
111	[Xylophone]	7	.
112	[Vibe]	5	.
113	[Celesta]	2	.
114	[Glocken]	5	.
115	[BrightBell]	3	.
116	[B.Bell LP]	3	.
117	[Metal Bell]	2	.
118	[M.Bell LP]	2	.
119	[Gamelan]	4	.

No.	MultiSound	PCM0/1/2	PCM3	No.	MultiSound	PCM0/1/2	PCM3	No.	MultiSound	PCM0/1/2	PCM3
120	[Pole]	1	.	160	[Brass 2]	.	4	200	[Clicker]	.	3
121	[Pole LP]	1	.	161	[Brass 2 LP]	.	4	201	[Clicker NT]	.	1
122	[Tubular]	.	5	162	[StringEns.]	9	9	202	[Crickets 1]	.	1
123	[Split Drum]	12	.	163	[StrEns. V1]	9	9	203	[Crickts1NT]	.	1
124	[Split Bell]	24	.	164	[StrEns. V2]	9	9	204	[Crickets 2]	1	.
125	[Flute]	7	.	165	[StrEns. V3]	8	9	205	[Crickts2NT]	1	.
126	[Pan Flute]	.	3	166	[AnaStrings]	.	5	206	[Magic Bell]	1	.
127	[PanFluteLP]	.	3	167	[PWM]	.	5	207	[Sporing]	1	.
128	[Shakuhachi]	.	6	168	[Violin]	.	10	208	[Rattle]	2	.
129	[ShakhachLP]	.	6	169	[Cello]	.	6	209	[Kava 1]	1	.
130	[Bottle]	.	3	170	[Cello LP]	.	6	210	[Kava 2]	1	.
131	[Recorder]	.	5	171	[Pizzicato]	7	.	211	[Fever 1]	.	1
132	[Ocarina]	.	2	172	[Voice]	.	2	212	[Fever 2]	.	1
133	[Oboe]	.	7	173	[Choir]	.	6	213	[Zappers 1]	1	.
134	[EnglishHrn]	.	15	174	[Soft Choir]	.	1	214	[Zappers 2]	1	.
135	[Eng.HornLP]	.	15	175	[Air Vox]	.	4	215	[Bugs]	14	.
136	[BasoonOboe]	8	4	176	[Doo Voice]	.	7	216	[Surfy]	.	1
137	[BsonOboeLP]	8	4	177	[DooVoiceLP]	.	7	217	[SleighBell]	.	2
138	[Clarinet]	.	11	178	[Syn Vox]	.	2	218	[Elec Beat]	2	.
139	[ClarinetLP]	.	11	179	[Syn Vox LP]	.	2	219	[Idling]	3	.
140	[Bari Sax]	.	11	180	[White Pad]	.	2	220	[EthnicBeat]	13	.
141	[Bari.SaxLP]	.	11	181	[Ether Bell]	.	4	221	[Taps]	5	1
142	[Tenor Sax]	.	13	182	[E.Bell LP]	.	4	222	[Tap 1]	2	1
143	[T.Sax LP]	.	13	183	[Mega Pad]	.	2	223	[Tap 2]	2	1
144	[Alto Sax]	.	9	184	[Spectrum 1]	3	.	224	[Tap 3]	2	1
145	[A.Sax LP]	.	9	185	[Spectrum 2]	2	.	225	[Tap 4]	2	1
146	[SopranoSax]	.	12	186	[Stadium]	.	2	226	[Tap 5]	1	1
147	[S.Sax LP]	.	12	187	[Stadium NT]	.	2	227	[Orch Hit]	.	1
148	[Tuba]	6	1	188	[BrushNoise]	.	13	228	[SnareRl/Ht]	2	.
149	[Tuba LP]	6	1	189	[BruNoiseNT]	.	1	229	[Syn Snare]	.	1
150	[Horn]	12	1	190	[Steel Drum]	.	4	230	[Rev Snare]	13	.
151	[FlugelHorn]	7	.	191	[SteelDrmLP]	.	4	231	[PowerSnare]	1	.
152	[Trombone 1]	5	3	192	[BrushSwirl]	.	13	232	[Orch Perc]	3	2
153	[Trombone 2]	8	1	193	[Belltree]	.	1	233	[Crash Cym]	.	13
154	[Trumpet]	3	6	194	[BelltreeNT]	.	1	234	[CrashCymLP]	.	13
155	[Trumpet LP]	3	6	195	[BeltreV NT]	.	1	235	[CrashLP NT]	.	1
156	[Mute TP]	.	9	196	[Tri Roll]	.	4	236	[China Cym]	.	2
157	[Mute TP LP]	.	9	197	[TriRoll NT]	.	1	237	[Splash Cym]	.	2
158	[Brass 1]	9	.	198	[Telephon]	.	2	238	[Orch Crash]	13	.
159	[Brass 1 LP]	9	.	199	[TelephonNT]	.	1	239	[Tite HH]	.	1

No. MultiSound	PCM0/1/2	PCM3	No. MultiSound	PCM0/1/2	PCM3	No. MultiSound	PCM0/1/2	PCM3
240 [Tite HH NT]	.	1	280 [Gt Scratch]	.	1	320 [VS 52]	10	.
241 [Bell Ride]	2	.	281 [Side Stick]	1	.	321 [VS 58]	1	9
242 [Ping Ride]	2	.	282 [SideStikNT]	1	.	322 [VS 71]	10	.
243 [Timpani]	1	.	283 [TimbleSide]	1	.	323 [VS 72]	10	.
244 [Timpani LP]	1	.	284 [TimblSidNT]	1	.	324 [VS 88]	10	.
245 [Cabasa]	.	13	285 [Syn Rim]	1	.	325 [VS 89]	10	.
246 [Cabasa NT]	.	1	286 [Syn Rim NT]	1	.	326 [13-35]	10	.
247 [Agogo]	1	.	287 [Open HH]	1	.	327 [DWGSOrgan1]	10	.
248 [Cow Bell]	1	.	288 [OpenSyn HH]	.	1	328 [DWGSOrgan2]	10	.
249 [Low Bongo]	1	.	289 [CloseSynHH]	1	.	329 [DWGS E.P.]	10	.
250 [Claves]	1	.	290 [Sagat]	1	.	330 [Saw]	1	9
251 [Timbale]	1	.	291 [Sagat NT]	1	.	331 [Square]	1	9
252 [WoodBlock1]	1	.	292 [Sagatty]	1	.	332 [Ramp]	10	.
253 [WoodBlock2]	1	.	293 [Sagatty NT]	1	.	333 [Pulse 25%]	10	.
254 [WoodBlock3]	1	.	294 [JingleBell]	.	2	334 [Pulse 8%]	10	.
255 [Taiko Hit]	1	.	295 [Taiko]	2	.	335 [Pulse 4%]	10	.
256 [Syn Claves]	1	.	296 [Slap Bongo]	1	.	336 [Syn Sine]	10	.
257 [Melo Tom]	1	.	297 [Open Conga]	1	.	337 [Sine]	9	1
258 [ProccesTom]	.	1	298 [Slap Conga]	1	.	338 [DJ Kit 1]	10	9
259 [Syn Tom 1]	1	.	299 [Palm Conga]	1	.	339 [DJ Kit 2]	26	10
260 [Syn Tom 2]	2	.	300 [Mute Conga]	1	.	340 [M1 Piano]	8	.
261 [VocalSnare]	2	.	301 [Tabla 1]	1	.	341 [Organ 6]	4	.
262 [Zap 1]	1	.	302 [Tabla 2]	1	.	342 [Organ 6 LP]	4	.
263 [Zap 2]	1	.	303 [Maracas]	1	.	343 [Super BX-3]	10	.
264 [Fret Zap 1]	.	1	304 [SynMaracas]	1	.	344 [SuperBX3LP]	10	.
265 [Fret Zap 2]	.	1	305 [SynMarcsNT]	1	.	345 [Stick]	10	.
266 [Vibla Slap]	.	13	306 [MuteTriang]	.	1	346 [Tambura]	6	.
267 [Indust]	1	.	307 [OpenTriang]	1	.	347 [Tambura LP]	6	.
268 [Thing]	2	.	308 [Guiro]	2	.	348 [SynthBass3]	6	.
269 [Thing NT]	1	.	309 [Guiro LP]	2	.	349 [RezBass 1]	5	.
270 [FingerSnap]	1	.	310 [Scratch Hi]	.	1	350 [RezBass 2]	7	1
271 [FingSnapNT]	1	.	311 [ScratcHiNT]	.	1	351 [MiniBass]	4	2
272 [Tambourine]	1	.	312 [Scratch Lo]	.	1	352 [SynMallet]	5	.
273 [Hand Clap]	1	.	313 [ScratcLoNT]	.	1	353 [Glocken 2]	3	.
274 [HandClapNT]	1	.	314 [ScratchDbl]	1	.	354 [FingCymbal]	4	.
275 [Gun Shot]	.	1	315 [ScratDblNT]	1	.	355 [FingCymbNT]	1	.
276 [Castanet]	1	.	316 [Mini 1a]	10	.	356 [Gong]	1	.
277 [CastanetNT]	1	.	317 [Digital 1]	10	.	357 [Gong LP]	1	.
278 [Snap]	1	.	318 [VS 102]	10	.	358 [HardFlute1]	4	.
279 [Snap NT]	1	.	319 [VS 48]	10	.	359 [HardFlute2]	4	.

No.	MultiSound	PCM0/1/2	PCM3	No.	MultiSound	PCM0/1/2	PCM3
360	[Tin Flute]	4	.	400	[MouthHrp2A]	9	.
361	[TinFluteLP]	4	.	401	[ChromRes]	2	.
362	[BrightHorn]	10	1	402	[WahFuzz]	8	1
363	[Glass Vox]	1	.	403	[OilDrum]	3	.
364	[Synth Pad]	3	.	404	[Fist]	1	.
365	[Synth PadA]	3	.	405	[Stick Hit]	1	.
366	[Ghostly]	3	.	406	[Metal Hit]	3	.
367	[WhiteNoise]	1	.	407	[GlassBreak]	1	.
368	[WhiteNoiNT]	1	.	408	[Baya]	2	.
369	[Jetstar]	1	.	409	[Drop]	4	.
370	[Jetstar LP]	1	.	410	[CorkPop]	1	.
371	[JetstrLPNT]	1	.	411	[Pull 1]	1	.
372	[Windbell]	13	.	412	[Pull 1 NT]	1	.
373	[WindbellLP]	13	.	413	[Pull 2]	1	.
374	[WindbellNT]	1	.	414	[Pull 2 NT]	1	.
375	[Waterphone]	2	.	415	[SolidHit]	3	.
376	[WaveSweep]	3	.	416	[HandDrill]	13	.
377	[WaveSweepA]	3	.	417	[HandDrlNT]	1	.
378	[WaveSweepB]	3	.	418	[Scratch a]	1	.
379	[Lore]	3	.	419	[Samurai!]	1	.
380	[Lore NT]	3	.	420	[Growl!]	1	.
381	[Tron Up]	1	.	421	[Growl! NT]	1	.
382	[Tron Up LP]	3	.	422	[Monkey 1]	1	.
383	[Tron Up NT]	1	.	423	[Monkey 2]	1	.
384	[Flute FX]	1	.	424	[MouthHarps]	5	.
385	[FluteFX LP]	4	.	425	[Loopey]	6	4
386	[Flutter]	1	.	426	[ClockWorks]	13	2
387	[Flutter LP]	4	.	427	[MusicaLoop]	6	.
388	[Cast Roll]	1	.	428	[Manimals]	14	1
389	[CastRollNT]	1	.	429	[Down Lo]	50	11
390	[Harp Up]	4	.				
391	[Harp Up LP]	4	.				
392	[Jung Gliss]	3	.				
393	[JungGlisLP]	3	.				
394	[MalletLoop]	2	.				
395	[MalletLpNT]	1	.				
396	[Boogeta]	1	.				
397	[MouthHarp1]	7	.				
398	[MouthHrp1A]	7	.				
399	[MouthHarp2]	4	.				

DRUM SOUND LIST

No.	DrumSound	PCM0/1/2	PCM3	No.	DrumSound	PCM0/1/2	PCM3	No.	DrumSound	PCM0/1/2	PCM3
0	[Fat Kick]	1	.	40	[Crash Cym]	.	1	80	[Maracas]	1	.
1	[Rock Kick]	1	.	41	[Crash LP]	.	1	81	[Cabasa]	.	1
2	[Ambi.Kick]	1	.	42	[China Cym]	.	1	82	[SynMaracas]	1	.
3	[Crisp Kick]	1	.	43	[China LP]	.	1	83	[MuteTriang]	.	1
4	[Punch Kick]	1	.	44	[Splash Cym]	.	1	84	[OpenTriang]	1	.
5	[Real Kick]	1	.	45	[Splash LP]	.	1	85	[Tambourine]	1	.
6	[Dance Kick]	1	.	46	[Orch Crash]	1	.	86	[Cowbell]	1	.
7	[Gated Kick]	1	.	47	[OrchCym LP]	1	.	87	[SynCowbell]	.	1
8	[ProcesKick]	1	.	48	[Tite HH]	.	1	88	[R-Timbal]	1	.
9	[Metal Kick]	1	.	49	[Open HH]	1	.	89	[Hi Timbal]	1	.
10	[Syn Kick 1]	1	.	50	[Pedal HH]	.	1	90	[Lo Timbal]	1	.
11	[Syn Kick 2]	1	.	51	[CloseSynHH]	1	.	91	[WoodBlock1]	1	.
12	[Syn Kick 3]	1	.	52	[Open SynHH]	.	1	92	[WoodBlock2]	1	.
13	[Orch B.Drm]	1	.	53	[Sagat]	1	.	93	[WoodBlock3]	1	.
14	[Snare 1]	1	.	54	[Ride Edge]	1	.	94	[Hand Claps]	1	.
15	[Snare 2]	1	.	55	[Ride Cup]	1	.	95	[Syn Claps]	1	.
16	[Snare 3]	1	.	56	[Ride Cym 1]	1	.	96	[Zap 1]	1	.
17	[Snare 4]	1	.	57	[Ride Cym 2]	1	.	97	[Zap 2]	1	.
18	[PicloSnare]	1	.	58	[Tom Hi]	1	.	98	[Scratch Hi]	.	1
19	[Soft Snare]	1	.	59	[Tom Lo]	1	.	99	[Scratch Lo]	.	1
20	[LightSnare]	1	.	60	[ProcessTom]	.	1	100	[ScratchDbl]	1	.
21	[TightSnare]	1	.	61	[SynTom1 Hi]	1	.	101	[Thing]	1	.
22	[Ambi.Snare]	1	.	62	[SynTom1 Lo]	1	.	102	[Mute Cuica]	1	.
23	[Rev Snare]	1	.	63	[Syn Tom 2]	1	.	103	[Open Cuica]	1	.
24	[RollSnare1]	1	.	64	[Brush Tom]	1	.	104	[Vibraslap]	.	1
25	[RollSnare2]	1	.	65	[Agogo]	1	.	105	[Guiro S]	1	.
26	[Rock Snare]	1	.	66	[Lo Bongo]	1	.	106	[Guiro L]	1	.
27	[GatedSnare]	1	.	67	[Hi Bongo]	1	.	107	[Castanet]	1	.
28	[PowerSnare]	1	.	68	[Slap Bongo]	1	.	108	[FingerSnap]	1	.
29	[Syn Snare1]	1	.	69	[Claves]	1	.	109	[Timbales]	1	.
30	[Syn Snare2]	.	1	70	[Syn Claves]	1	.	110	[Kalimba 1]	1	.
31	[Gun Shot]	.	1	71	[Open Conga]	1	.	111	[Kalimba 2]	1	.
32	[Brush Slap]	1	.	72	[Slap Conga]	1	.	112	[Marimba 1]	1	.
33	[BrushSwish]	.	1	73	[Palm Conga]	1	.	113	[Marimba 2]	1	.
34	[BrushSwirl]	.	1	74	[Mute Conga]	1	.	114	[Marimba 3]	1	.
35	[Brush Tap]	1	.	75	[Baya 1]	1	.	115	[Marimba 4]	1	.
36	[Side Stick]	1	.	76	[Baya 2]	1	.	116	[Xylofon 1]	1	.
37	[Syn Rim]	1	.	77	[Tabla 1]	1	.	117	[Xylofon 2]	1	.
38	[VocalSnr 1]	1	.	78	[Tabla 2]	1	.	118	[Xylofon 3]	1	.
39	[VocalSnr 2]	1	.	79	[Tabla 3]	1	.	119	[Log Drum 1]	1	.

No.	DrumSound	PCM0/1/2	PCM3	No.	DrumSound	PCM0/1/2	PCM3	No.	DrumSound	PCM0/1/2	PCM3
120	[Log Drum 2]	1	.	160	[Crickets]	.	1	200	[Jetstar]	1	.
121	[Log Drum 3]	1	.	161	[Orch Hit]	.	1	201	[Windbell]	1	.
122	[Log Drum 4]	1	.	162	[Metronome1]	1	.	202	[Waterphone]	1	.
123	[Log Drum 5]	1	.	163	[Metronome2]	1	.	203	[Lore]	1	.
124	[Snap]	1	.	164	[OilDrum]	1	.	204	[Tron Up]	1	.
125	[BrightBell]	1	.	165	[Fist]	1	.	205	[Flute FX]	1	.
126	[Metal Bell]	1	.	166	[Close HH]	1	.	206	[Flutter]	1	.
127	[Gamelan 1]	1	.	167	[Stick Hit]	1	.	207	[Cast Roll]	1	.
128	[Gamelan 2]	1	.	168	[MetalHitHi]	1	.	208	[Harp Up]	1	.
129	[Celeste]	1	.	169	[MetalHitLo]	1	.	209	[Jung Gliss]	1	.
130	[Glocken]	1	.	170	[GlassBreak]	1	.	210	[MalletLoop]	1	.
131	[Vibe 1]	1	.	171	[Drop]	1	.	211	[MouthHarp1]	1	.
132	[Vibe 2]	1	.	172	[CorkPop]	1	.	212	[MouthHrp1A]	1	.
133	[Vibe 3]	1	.	173	[Pull 1]	1	.	213	[MouthHarp2]	1	.
134	[Vibe 4]	1	.	174	[Pull 2]	1	.	214	[MouthHrp2A]	1	.
135	[Pole]	1	.	175	[SolidHit]	1	.				
136	[TubulBell1]	.	1	176	[HandDrill]	1	.				
137	[TubulBell2]	.	1	177	[Scratch a]	1	.				
138	[TubulBell3]	.	1	178	[Scratch b]	1	.				
139	[Gt Scratch]	.	1	179	[Scratch c]	1	.				
140	[Chic 1]	1	.	180	[Sword]	1	.				
141	[Chic 2]	1	.	181	[BISS]	1	.				
142	[Spectrum 1]	1	.	182	[BOOFN]	1	.				
143	[Spectrum 2]	1	.	183	[BOOGETA]	1	.				
144	[Stadium]	.	1	184	[CHLACK]	1	.				
145	[BrushNoise]	.	1	185	[COOSH]	1	.				
146	[Gt Slide]	1	.	186	[COUGH]	1	.				
147	[Bell Tree]	.	1	187	[ISSH]	1	.				
148	[Tri Roll]	.	1	188	[POOM]	1	.				
149	[JingleBell]	.	1	189	[Uhhh!]	1	.				
150	[Whistle S]	.	1	190	[Samurai!]	1	.				
151	[Whistle L]	.	1	191	[Growl!]	1	.				
152	[Timpani]	1	.	192	[Monkey 1]	1	.				
153	[Taiko Hi]	1	.	193	[Monkey 2]	1	.				
154	[Taiko Lo]	1	.	194	[Glocken 2]	1	.				
155	[Music Box1]	1	.	195	[Glocken 3]	1	.				
156	[Music Box2]	.	1	196	[FingCymbal]	1	.				
157	[Clicker 1]	.	1	197	[Gong Hi]	1	.				
158	[Clicker 2]	.	1	198	[Gong Lo]	1	.				
159	[Clicker 3]	.	1	199	[WhiteNoise]	1	.				

10. PARTS LIST

PART CODE	PART NAME/SPECIFICATION	P.C.BOARD	NOTE	Q'TY	MARK
001094500	P.C.BOARD ASSY KLM-945/946	M.PART	PITCH/MOD	1	
001094700	P.C.BOARD ASSY KLM-947/8/9	M.PART	VR/PH/PANEL	1	
001095100	P.C.BOARD ASSY KLM-951	M.PART	TGL	1	NEW
001095600	P.C.BOARD ASSY KLM-956	M.PART	MAIN	1	NEW
312009500	LED HLMP-D101 (YHP)	949		5	
313003100	LCD DMC16205NY-LY W/HARNESS	M.PART		1	
320001328	IC UPD70433GD-5BB	956	CPU	1	
320001522	IC UPD23C16000JGX-835 (PCM2)	956	WAVE_ROM	1	
320006025	IC MSM51C464A-7/8ZS	956	D_RAM	1	
	or 320012066 MB81464-10PSZ				
320012181	IC MB87A104APF-G-BND	951	TGL2	1	
		956		1	
320012193	IC MB8316200BPF-G-874 (PCM3)	956	WAVE_ROM	1	
320013055	IC LH5370WW (PCM1)	956	WAVE_ROM	1	
320013056	IC LH5370WV (PCM0)	956	WAVE_ROM	1	
320013060	IC LH534Y03 (MASK)	956	SYSTEM_ROM	1	
	or 320012141 MBM27C4096-12ZG				
	or 320004536 HN27C4096G-120/150				
324001006	IC UPD74HCU04GS-E2 (SOP)	956	HC_MOS	1	
324001015	IC UPC4570G2-E2 (SOP)	956	OP_AMP	3	
324001069	IC UPD74HC4075GS-E2	956	HC_MOS	1	
324003008	IC TC74AC74AF	956	AC_MOS	1	
324004007	IC HD74HC573FPER	956	HC_MOS	2	
324004011	IC HD74HC04FPER	956	HC_MOS	1	
324004014	IC HD74HC10FPER	956	HC_MOS	1	
324004050	IC HD74HC138FPER	956	HC_MOS	2	
324004168	IC HD74HC4053FPER	956	HC_MOS	1	
324004176	IC HD74HC05FPER	956	HC_MOS	1	
324005003	IC LC321664AJ-80-TRM	956	D_RAM	1	
	or 324003006 TC511664BJL-80 EL				
324009004	IC NJM78L05UA-TE2	956	REGULATER	1	
324011002	IC M5223FP-600C (8P SOP)	956	OP_AMP	1	
324011004	IC M5216FP-600C-TP3	956	OP_AMP	1	
324011013	IC M62021FP-600C	956	RESET	1	
324011021	IC M5M34050FP-42A	956	TRANSCEIVE	1	
324012006	IC MB84256A-10LPF-G-BND-EF	956	S_RAM	2	
	or 324001007 UPD43256BGU-85L-E2				
324036001	IC PCM69AU-T1	956	DAC	1	
333000500	DC-DC CONVERTOR HLD051R2M	956		1	
334000600	PHOTO COUPLER PC-410K-TP	956		1	
335400080	CRYSTAL OSC SX-1 32.000MHZ	956		1	
335400115	CRYSTAL OSC SX-1 28.000MHZ	956		1	
360024100	VR RK1631110TDAA	945		1	
		946		1	
365007800	SLIDE VR RS30111AC00NB 10KB	949		1	
365008000	SLIDE VR RS30112AC00JB 10KBX2	947		1	
375010500	TOUCH SW EVQ-PAC09K-A	949		24	
375010800	PUSH SW SPUL19303A	956		1	

PART CODE	PART NAME/SPECIFICATION	P.C.BOARD	NOTE	Q'TY	MARK
405009800	AC ADAPTOR KA111 100JP	M.PART	100JP	1	
405009900	AC ADAPTOR KA113 117US/CN	M.PART	117US	1	
		M.PART	117CN	1	
405010100	AC ADAPTOR KA119 220-240V	M.PART	220GE	1	
		M.PART	240GE	1	
		M.PART	240AF	1	
		M.PART	230GE	1	
		M.PART	230FR	1	
		M.PART	230WG	1	
		M.PART	230SC	1	
405010200	AC ADAPTOR KA115 240AU	M.PART	240AU	1	
405010300	AC ADAPTOR KA116 240UK	M.PART	230UK	1	
405010400	AC ADAPTOR KA112 117EX	M.PART	117EX	1	
420005100	KEYBOARD ASSY TP/7BA+PCB 61	M.PART		1	
450003000	MINI PHONE JACK LGY-6502-0600	948		1	
454004300	PHONE JACK YKB21-5012	956		2	
454004400	PHONE JACK YKB21-5010	956		1	
454006200	JACK HEC-0470-01-630	956		1	
454009300	MINI DIN CONNECTOR D8-177J-201	956		1	
454009900	PHONE JACK YKB21-5074G	956		1	
480001403	IC SOCKET 40P DICF-40CS-E	956		1	
480010380	DIN JACK YKF51-5041 (3P)	956		1	
520001900	LITHIUM BATTERY CR2032-HE2	956		1	
525001100	EMI FERRITE 0443-164151	M.PART		1	
620018200	POWER SW KNOB KOC-E40224	M.PART		1	
620018901	ROUND KNOB NO.1 GS H40044	M.PART		5	
620019001	ROUND KNOB NO.2 GS H40044	M.PART		2	
620026800	X-410 SVR KNOB (GRAY) E40239-3	M.PART		2	
630020600	X-410 LCD WINDOW KOC-E30192	M.PART		1	
641037300	X-145/146 METAL FITTING OF PCB	956		2	
641040900	X-181 GND PLATE(C) KOC-C40920	M.PART		1	
641041165	X-410 WHEEL METAL FITTING	M.PART		1	
641041166	X-410 EMI COVER ASSY H40100	M.PART		1	
641041167	X-410 LOWER CASE KOC-C20286	M.PART		1	
644003000	X-507 GND SPRING	M.PART		1	
644007300	X-410 WHEEL SPRING C40689-2	M.PART		1	
646043000	X-150 CORD HOOK	M.PART		1	
646050700	X-410 WHEEL KOC-E30094-5	M.PART		2	
646050900	X-412 UPPER CASE ASSY H30072-2	M.PART		1	NEW

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