

CASIO®

Service Manual

(without price)

CPS-130

CPS-130 is similar to CPS-100. Refer to the CPS-100 service manual for the circuit description that are not covered in this manual.



CPS-130

ELECTRONIC KEYBOARD

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SPECIFICATIONS

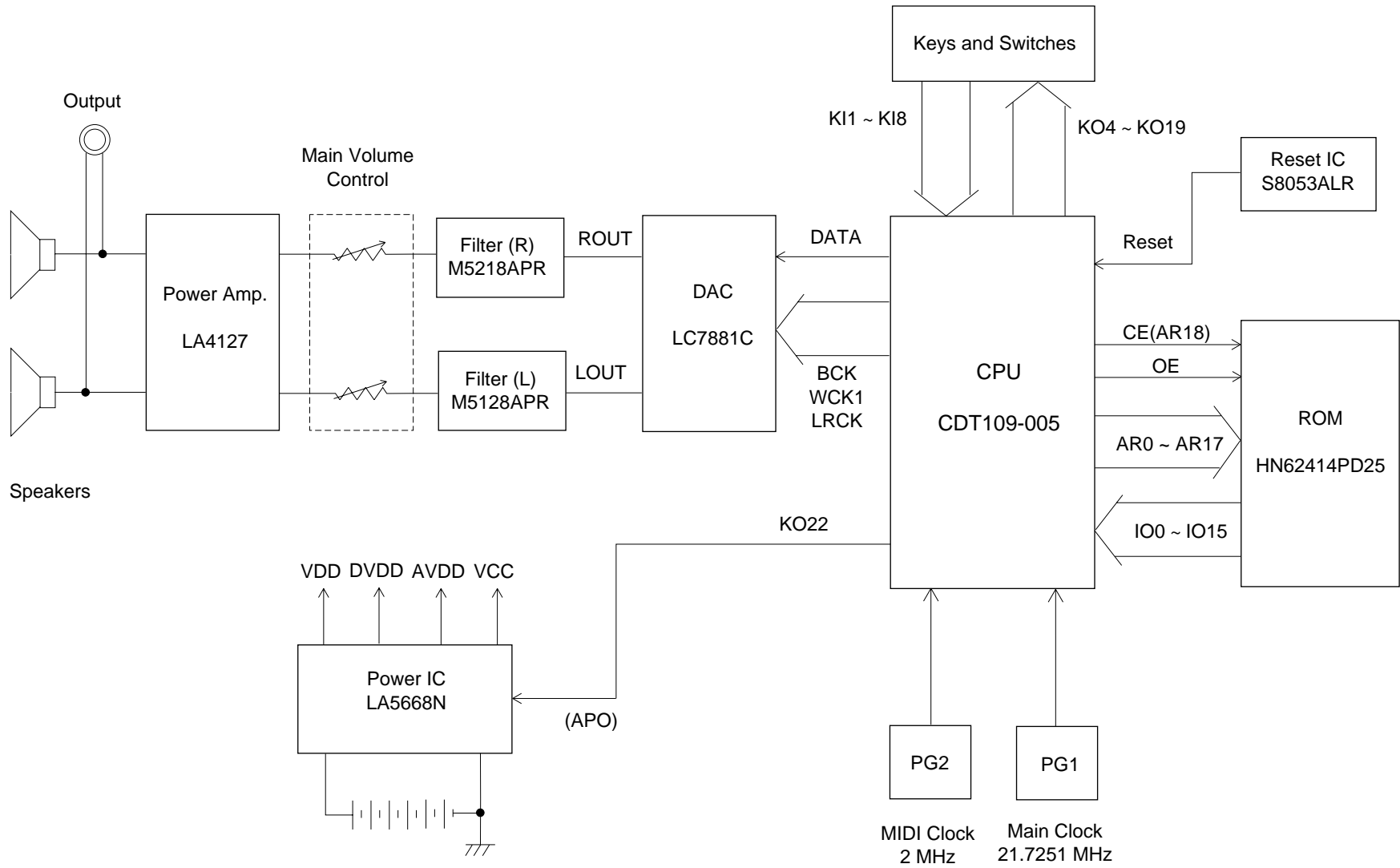
General

Number of keys:	61
Polyphonic:	10-note
Preset tones:	5, including: Piano, Harpsichord, Vibraphone, Jazz organ, Pipe organ
Demonstration tune:	Ballade Pour Adeline
Tuning control:	442 Hz \pm 30 cents
Built-in speakers:	12.0 cm dia. 1.1 W Input Rating: 2 pcs.
Terminals:	Output jack [Output impedance:30 Ω , Output voltage: 1.2 V (rms) MAX] Sustain jack, AC adapter Jack (DV 9 V)
Power source:	DC: 6 D size dry batteries Battery life: Approx. 10 hours (SUM-1/R20P) AC: AC Adapter AD-5
Power consumption:	4.2 W
Dimensions (HWD):	116 x 970 x 364 mm (4-5/8 x 38-1/4 x 14-3/8 inches)
Weight:	8.4 kg (18.5 lbs) including batteries

Electrical

Current drain with 9 V DC:	
No Sound Output	80 mA \pm 20%
Maximum volume	350 mA \pm 20%
with any 10 keys pressed in Piano tone	
Volume: Maximum, Sustain: ON	
Phone output level (Vrms with 8 Ω load each channel)	87 mV \pm 20 %
with key C5 pressed in Piano tone, Volume: Maximum	
Line output level (Vrms with 47 k Ω load each channel)	470 mV \pm 20 %
with key C5 pressed in Piano tone, Volume: Maximum	
Minimum operating voltage:	6.5 V

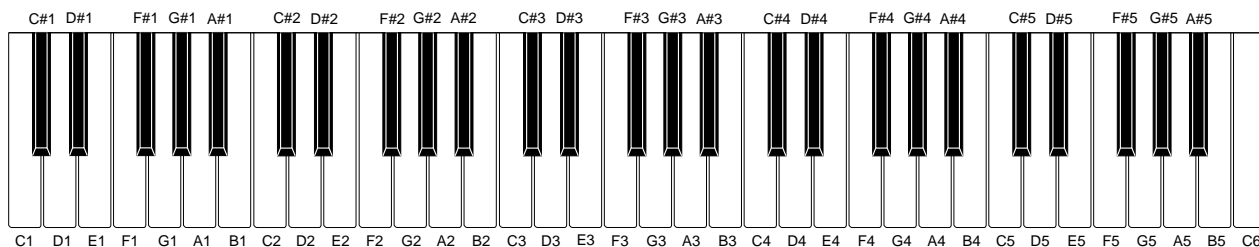
BLOCK DIAGRAM

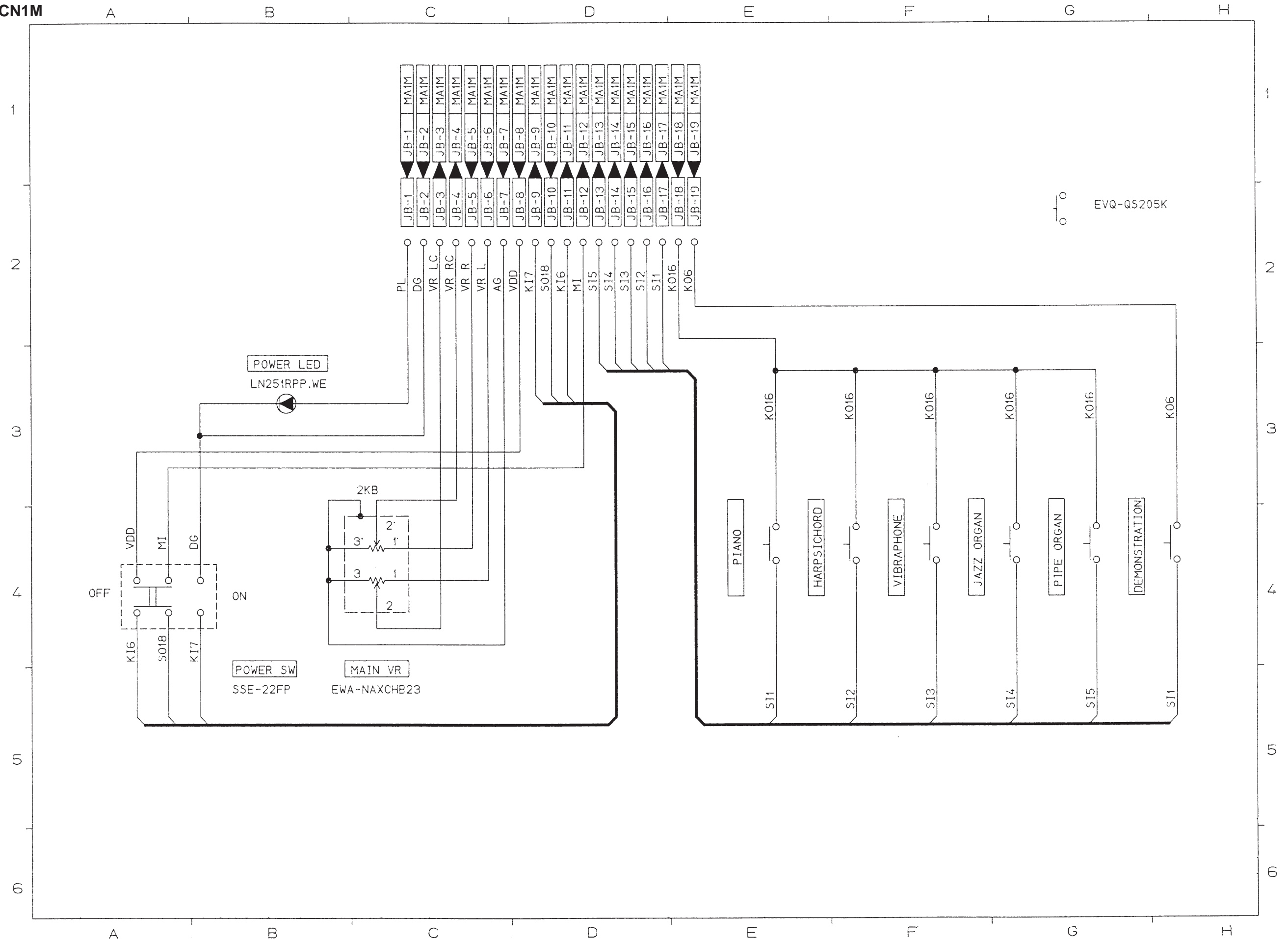


KEY AND SWITCH MATRIX

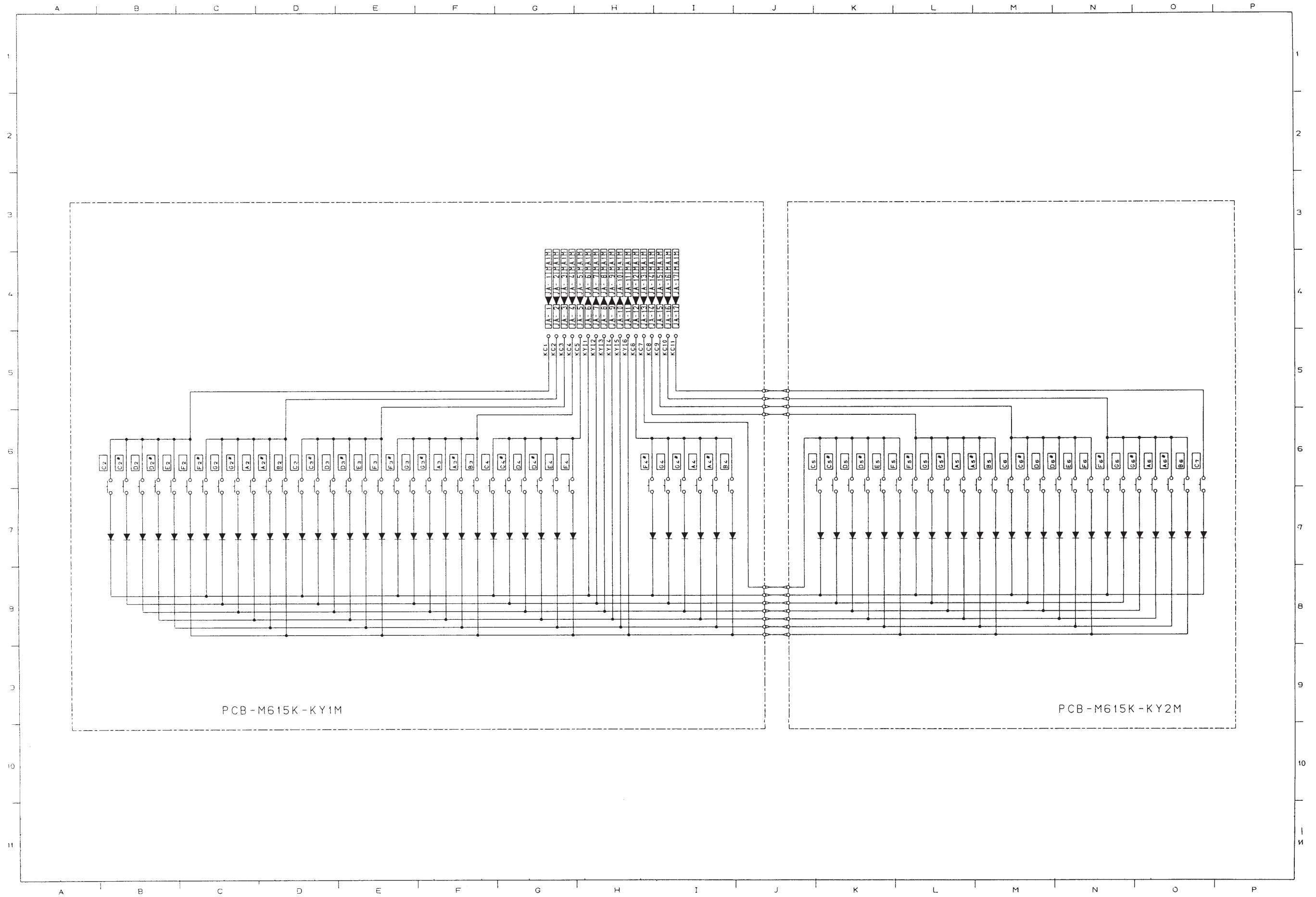
	KI1	KI2	KI3	KI4	KI5	KI6	KI7	KI8
KO4			C1	C#1	D1	D#1	E1	F1
KO5			F#1	G1	G#1	A1	A#1	B1
KO6	Demonstration		C2	C#2	D2	D#2	E2	F2
KO7			F#2	G2	G#2	A2	A#2	B2
KO8			C3	C#3	D3	D#3	E3	F3
KO9			F#3	G3	G#3	A3	A#3	B3
KO10			C4	C#4	D4	D#4	E4	F4
KO11			F#4	G4	G#4	A4	A#4	B4
KO12			C5	C#5	D5	D#5	E5	F5
KO13			F#5	G5	G#5	A5	A#5	B5
KO14			C6					
KO16	Piano	Harpsichord	Vibraphone	Jazzorgan	Pipeorgan			
KO18						Power OFF	Power ON	
KO19							(Sustain)	

Nomenclature of Keys

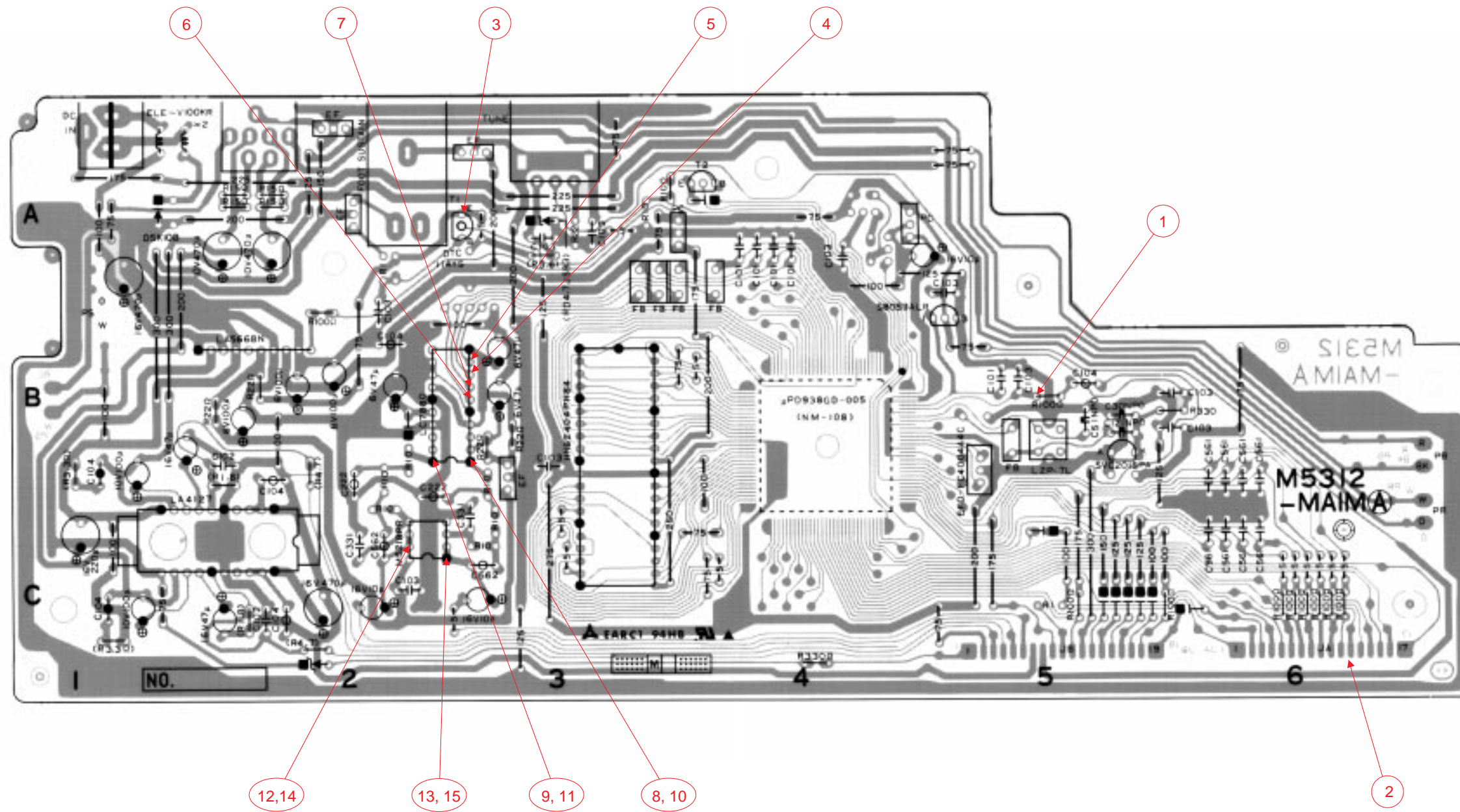




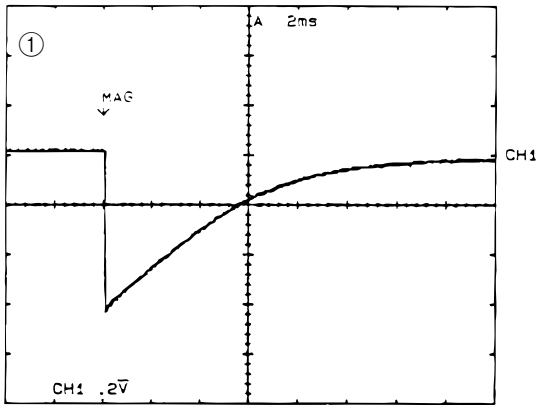
PCBs M615K-KY1M, KY2M



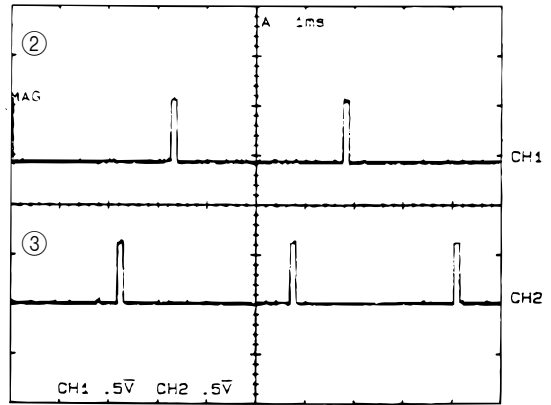
PCB VIEW



MAJOR WAVEFORMS

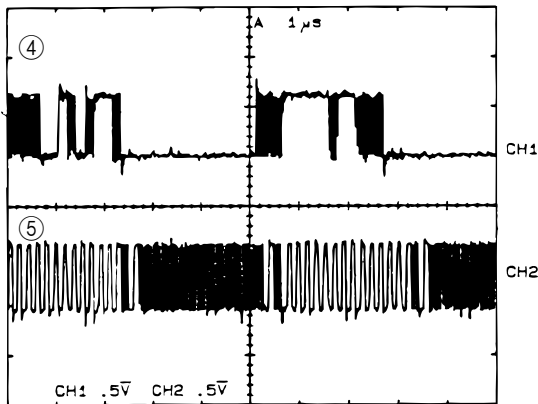


① Signal MI
CDT109-005 pin 6
Power ON



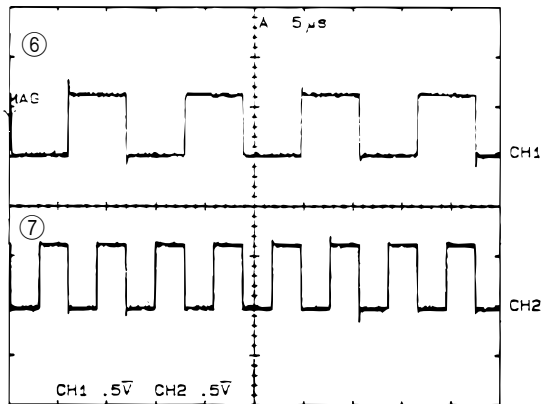
② Key scan signal KO9
CDT109-005 pin 44

③ Key scan signal KO19
CDT109-005 pin 34



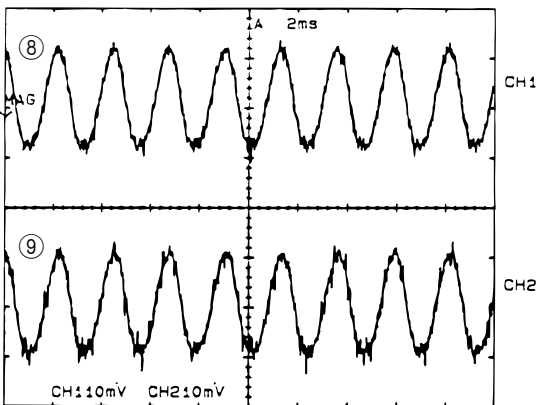
④ DATA
LC7881C pin 8

⑤ BCK
LC7881C pin 9



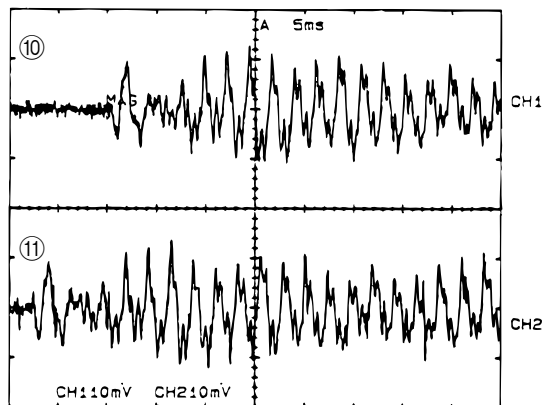
⑥ LRCK
LC7881C pin 6

⑦ WCK1
LC7881C pin 7



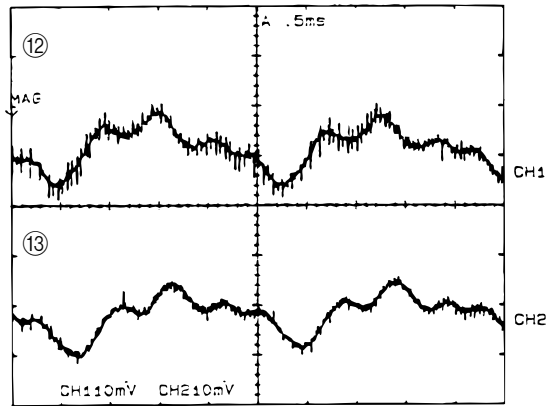
⑧ DAC output: LC7881C pin 1

⑨ DAC output: LC7881C pin 20
Tone: Flute
Key: A3



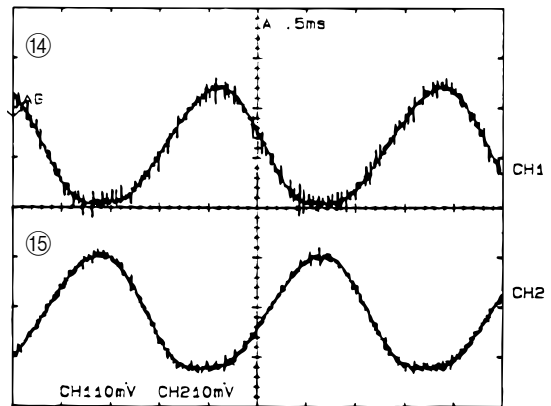
⑩ DAC output: LC7881C pin 1

⑪ DAC output: LC7881C pin 20
Tone: Piano
Key: A3



⑫ Filter output: M5218APR-1 pin 1

⑬ Filter output: M5218APR-1 pin 7
Tone: Piano
Key: A3



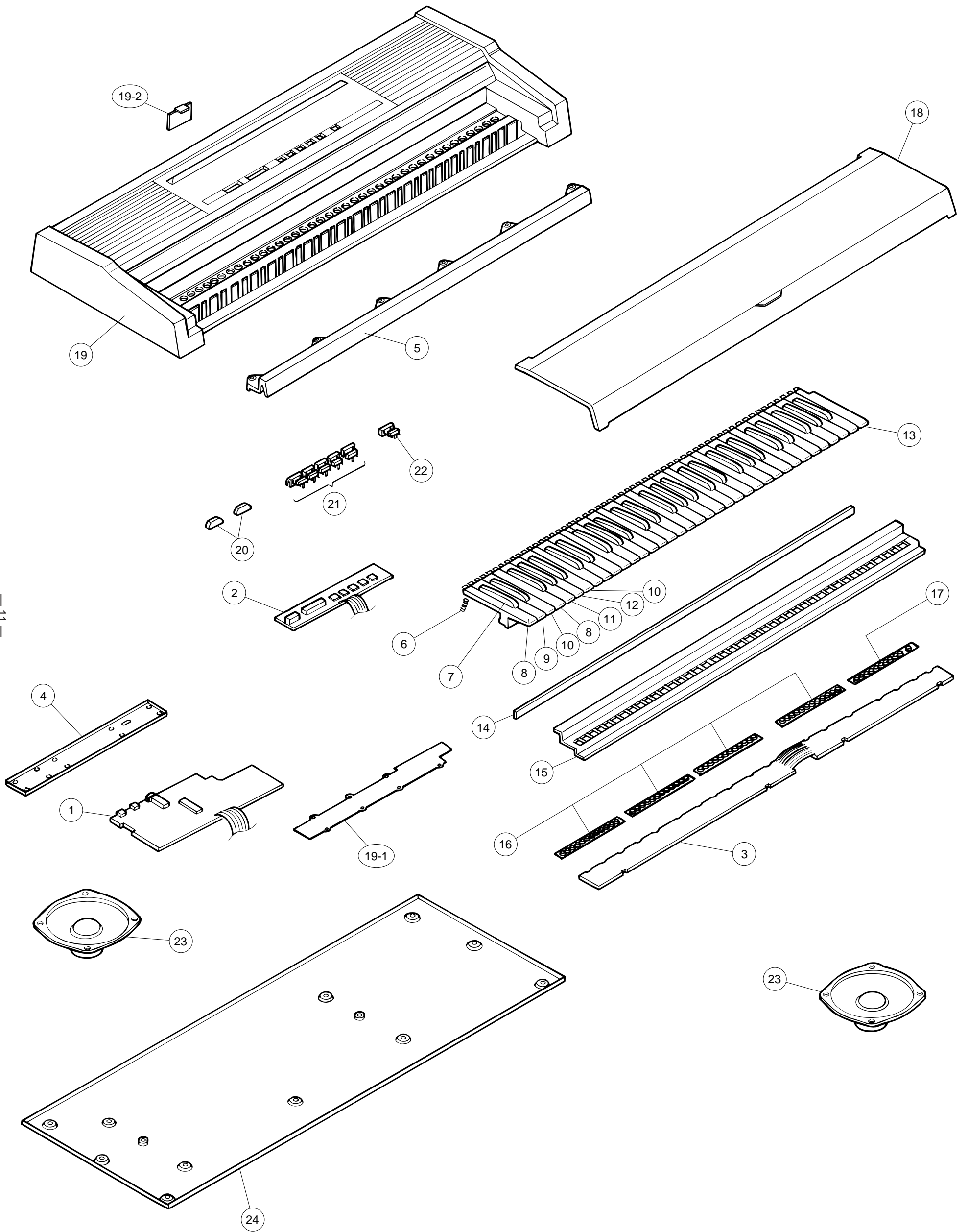
⑭ Filter output: M5218APR-1 pin 1

⑮ Filter output: M5218APR-1 pin 7
Tone: Flute
Key: A3

TROUBLESHOOTING

Nature of Trouble	Faulty Block	Checkpoint
No power	Power IC (LA5668N)	Pin 2 should have +9 V.
	Power jack	Jack contact.
No sound at all	Power IC (LA5668N)	Pin 6 should have +5 V.
	Power amp (LA4127)	Check output signals of pins 1 and 20.
	Main clock generator	Check oscillation at pin 105 of CPU.
	CPU (CDT109-005)	Pin 6 should receive a trigger pulse when turning on the power switch.
		Check signals DATA, BCLK, WCK1 and LRCK of pins 107, 109, 111, and 112.
	ROM (HN62414PD25)	Check address/data bus.
Reset IC (S8053ALR)	Pin 1 should provide a low level pulse when the AC adapter is connected.	
Certain keys or switches do not function	Key and switch matrix	Open circuit on KO or KI line.
A certain key or switch does not function	Key and switch matrix	Dust on the contact.
Distorted sound	Power IC (LA5668N)	Check voltages of pins 2 (+9 V) and 6 (+5 V).
	ROM (HN62414PD25)	Check address/data bus.
	CPU (CDT109-005)	

EXPLODED VIEW



PARTS LIST

CPS-130

- Notes:
1. Prices and specifications are subject to change without prior notice.
 2. As for spare parts order and supply, refer to the "GUIDEBOOK for Spare parts Supply", published separately.
 3. The numbers in item column correspond to the same numbers in drawing.

N	Item	Code No.	Parts Name	Specification	Q	M	FOB Japan N.R.Yen Unit Price	R	*
Main PCB Ass'y									
		2010 7294	LSI	LC7881C	1	1		A	D
		2010 9968	LSI	CDT109-005	1	1		A	N
		2011 0378	LSI	HN62414PD25	1	1		A	M
		2114 0070	Monolithic IC	LA4127	1	1		A	C
		2114 1302	Monolithic IC	LA5668N	1	1		A	B
		2114 1799	Monolithic IC	M5218APR	1	1		A	A
		3850 1216	MOS IC	S8053ALR	1	1		A	B
		2220 1409	Transistor	2SC1740SR-TP-T	1	10		A	A
		2259 0056	Digital transistor	DTA114YS-TP-T	1	10		A	A
		2301 0275	Diode	1SS176-TPA7-T	9	20		B	A
		2310 7848	Zener diode	RD4.3ESB2-T1-T	1	10		B	A
		2360 0903	Zener diode	RD4.7JSB3-T1-T	1	10		B	A
		2390 0112	Variable capacitor	SVC201SPA	1	5		C	B
		2390 0378	Diode	1SR139-100T-32-T	1	10		C	A
		2590 0595	Ceramic oscillator	EFO-GC4004A4C	1	1		B	B
		2606 0014	Carbon film resistor	R-20-15-J-T24-T	4	20		C	A
		2606 0315	Carbon film resistor	R-20-3.3-J-T24-T	2	20		C	A
		2609 0182	Carbon film resistor	R-20-100-J-T24-T	10	20		C	A
		2617 0052	Carbon film resistor	R-20-1K-J-T24-T	2	20		C	A
		2617 0087	Carbon film resistor	R-20-4.7K-J-T24-T	2	20		C	A
		2617 0095	Carbon film resistor	R-20-10K-J-T24-T	7	20		C	A
		2617 0141	Carbon film resistor	R-20-100K-J-T24-T	1	20		C	A
		2617 0192	Carbon film resistor	R-20-1.8K-J-T24-T	2	20		C	A
		2617 0271	Carbon film resistor	R-20-5.6K-J-T24-T	1	20		C	A
		2617 0273	Carbon film resistor	R-20-22-J-T24-T	4	20		C	A
		2617 0297	Carbon film resistor	R-20-22K-J-T24-T	1	20		C	A
		2617 0386	Carbon film resistor	R-20-330-J-T24-T	1	20		C	A
		2617 0491	Carbon film resistor	R-20-330K-J-T24-T	1	20		C	A
		2770 6860	Volume	K121K0Z1B-100KB	1	5		B	B
		2801 7910	Electrolytic capacitor	16RE3-470-T2-T	2	10		C	A
		2805 3142	Electrolytic capacitor	16RE2-10-T2-T	3	10		C	A
		2805 3169	Electrolytic capacitor	6.3RE2-47-T2-T	3	10		C	A
		2807 0926	Electrolytic capacitor	10RE2-470-T2-T	2	10		C	A
		2807 0985	Electrolytic capacitor	16RE2-220-T2-T	1	10		C	A
		2807 1015	Electrolytic capacitor	16RE2-47-T2-T	2	10		C	A
		2807 1091	Electrolytic capacitor	6.3RE2-100-T2-T	3	10		C	A
		2807 1112	Electrolytic capacitor	10RE2-100-T2-T	2	10		C	A
		2813 1302	Semiconductive capacitor	RT-B90TKYR104K-T	4	10		C	A
		2813 1309	Ceramic capacitor	RT-HE60TKCH510J-T	1	20		C	A
		2813 1393	Semiconductive capacitor	RT-C40TKYR222K-T	2	10		C	A
		2813 1400	Semiconductive capacitor	RT-C50TKYR562K-T	2	20		C	A
		2818 0365	Ceramic capacitor	RT-HE50TKYB102K-T	2	20		C	A
		2818 0446	Ceramic capacitor	RT-HE40TKYB101K-T	5	20		C	A
		2818 0486	Ceramic capacitor	RT-HE80TKCH121J-T	1	20		C	A
		2818 0494	Ceramic capacitor	RT-HE80TKSL331J-T	2	20		C	A
		2818 0543	Ceramic capacitor	RT-HE40TKYB561K-T	8	20		C	A
		2818 2082	Ceramic capacitor	RT-HE70TKYF103Z-T	10	20		C	A
		2818 3283	Ceramic capacitor	RT-HE50TKCH300J-T	1	20		C	A
		2830 6229	Mylar capacitor	AMZV-104K50-T	2	10		C	A
		2845 0280	Ferrite beads	EXC-ELDR35C	5	10		C	A
		2845 1372	Three polarity capacitor	EXC-ECT103MBC	2	10		C	A
		3025 0203	EMI filter	EXC-EMT222DC	4	10		C	A
		3501 7049	DC jack	HEC2305-01-330	1	5		B	A

Notes: N - New parts
M - Minimum order/supply quantity
R - Rank

N	Item	Code No.	Parts Name	Specification	Q	M	FOB Japan N.R.Yen Unit Price	R	*
		3612 0711	Miniature jack	YKB21-5101	1	1		B	B
		3612 0789	Jack	YKB21-5010	1	1		B	B
		3841 0476	Coil	L2P-7L	1	1		C	A
		3841 0539	Inductor	ELE-V100KR-T	2	5		C	A
N		4317 0681	Blank PCB M5312-MA1M	M110524A-1	1	1		C	C
N	1	6916 7270	PCB ass'y M5312-MA1M	M110510*1	1	1		B	Z
Console PCB Ass'y									
		2320 9764	LED	LN251RPP.WE	1	10		C	A
		2765 0952	Slide volume	EWA-NAXCH1B23	1	1		B	B
		3410 1728	Tact switch	EVQ-QS205K	6	10		B	A
		3420 0050	Slide switch	SSE-22FP	1	1		B	B
		3725 1911	PC joiner M312B	JSF00-19-100M	1	1		C	A
		4317 0710	Blank PCB M5312-CN1	M210607-1	1	1		C	B
		6910 1161	Sponge	M4630A-4	1	10		C	A
N	2	6916 7290	PCB ass'y M5312-CN1	M310801*1	1	1		C	D
Keyboard PCB Ass'y									
		2301 0101	Diode	1S2473-T-77-T	61	20		C	A
N		3725 1925	PC joiner M615KB	JPSS00-4-40	1	1		C	A
N		3725 1932	PC joiner M312A	JSF00-17-250M	1	1		C	B
N		3725 1981	PC joiner M615KA	JPSS00-7-40	1	1		C	A
		4317 0690	PCB-M615K-KY1M	M110525-1	1	1		C	C
		4317 0700	PCB-M615K-KY2M	M210608-1	1	1		C	B
		6907 7410	Sponge	M42696-2	1	5		C	A
N	3	6906 7462	Keyboard PCB ass'y	M110509*1	1	1		C	F
Keyboard Unit									
N	4	6916 9942	Reinforcement plate 312	M210671B-1	1	1		C	C
N	5	6906 6871	Front panel sub ass'y	M310809*3	1	1		C	I
	6	6912 4400	Key spring 144	M42306-2	61	20		C	A
	7	6915 3923	Black key	M310538C-1	25	1		B	A
	8	6915 3931	White key CF	M310418A-1	10	1		B	B
	9	6915 3941	White key D	M310419A-1	5	1		B	B
	10	6915 3951	White key BE	M310420A-1	10	1		B	B
	11	6915 3961	White key G	M310421A-1	5	1		B	B
	12	6915 3971	White key A	M310422A-1	5	1		B	B
	13	6915 3981	White key SE	M310423A-1	1	1		C	B
	14	6915 7171	Key stopper TR61	M410720A-1	1	1		C	B
		6904 0600	Black key seal	M31462-1	5	10		C	A
		6913 8051	Lug terminal	M32711A-8	1	10		C	A
		6915 5320	Sponge KB	M410665-1	4	5		C	A
N		6916 9080	Sponge KB S2	M410964-1	1	5		C	A
	15	6916 7381	Frame 312	M110350A-1	1	1		C	C
N	16	6916 7391	Contact rubber KY312A	M310793A-1	4	1		B	B
N	17	6916 7401	Contact rubber KY312B	M310794A-1	1	1		B	B
Case Unit									
N	18	6922 3420	Keyboard cover sub ass'y	M310891*3	1	1		B	J
N	19	6922 6110	Upper case sub ass'y	M210593*3	1	1		C	T
	19-1	6916 7430	Metal plate	M210565-1	1	1		C	B
	19-2	6916 7450	Battery cover 235	M210564-1	1	1		B	B
		6921 5150	Lower key stopper 312	M412120-1	1	1		C	B
		6902 6140	Battery spring (-) 90	M41226-1	1	10		C	A
		6903 0461	Battery spring (+)	M41328A-1	1	10		C	A
N		6916 9101	Upper key stopper 312	M410963A-1	1	1		C	B
	20	6908 9580	Slide knob	M31359-14	2	5		B	A
	21	6912 6324	Key top 149	M32440D-27	1	10		C	A

Notes: N - New parts
M - Minimum order/supply quantity
R - Rank

N	Item	Code No.	Parts Name	Specification	Q	M	FOB Japan N.R.Yen Unit Price	R	*
	22	6912 6464	Key top 149	M32440D-45	1	10		C	A
	23	3831 0140	Speaker	1211AF4	2	1		B	J
N	24	6916 7343	Lower case sub ass'y	M210601C*1	1	1		C	K
N		6911 5530	Sponge 50X30	M42106-1	1	5		C	A
		3719 2030	Ribbon cable M312S	DF0H02090-35353535	1	1		C	B
N		3719 2163	Ribbon cable M312R-1	DF5H02380-35353535	1	1		C	A
Screws									
		0009 2680	Screw	4X8	7	50		C	A
		0009 2681	Screw with washer	4X8	10	50		C	A
		0009 2682	Screw	2.6X8	28	50		C	A
		0009 2683	Screw	3X6	8	50		C	A
		0009 4090	Screw	6X12	13	50		C	A
		5111 1362	Screw	3X8	36	50		C	A
		5111 5121	Screw	4X8	13	50		C	A

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