

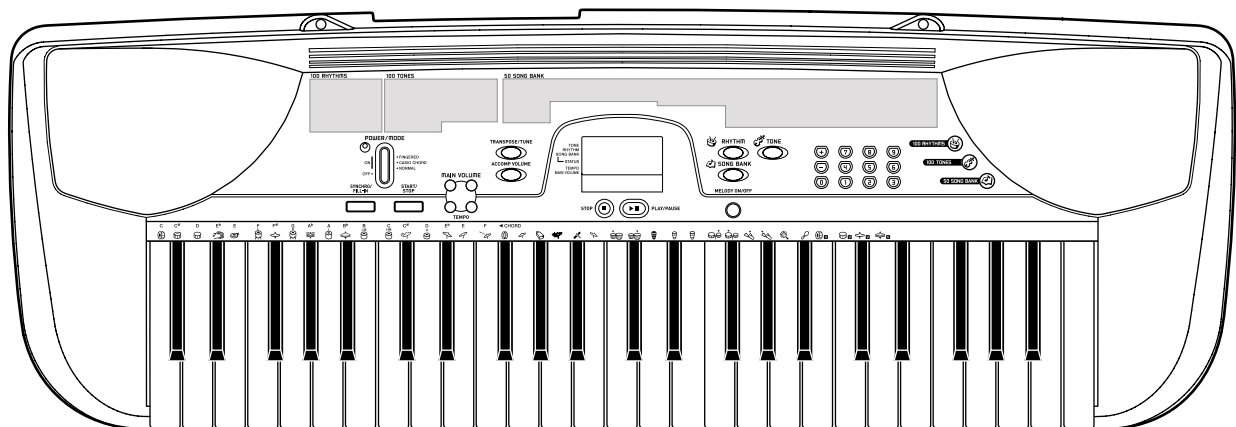
CASIO®

Service Manual

(without price)

CTK-230

SEP. 2003



CTK-230

HIGH-GRADE KEYBOARD

Ver.1 : Jan. 2004

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SPECIFICATIONS

GENERAL

Keyboard:	49 standard-size keys, 4 octaves
Tones:	100
Polyphony:	12 notes maximum (6 for certain tones)

Auto Accompaniment

Rhythm Patterns:	100
Tempo:	Variable (236 steps, ♩ = 20 to 255)
Chords:	2 fingering methods (CASIO CHORD, FINGERED)
Rhythm Controller:	START/STOP, SYNCHRO/FILL-IN
Accomp Volume:	0 to 9 (10 steps)

Song Bank

Tunes:	50
Controllers:	PLAY/PAUSE, STOP, MELODY ON/OFF

Display

Name display:	TONE, RHYTHM, SONG BANK name/number, keyboard setting names/values
Tempo:	Tempo value, metronome, synchro standby, beat indicator, volume setting
Chord:	Chord name
Song Bank Status:	PLAY, PAUSE, MELODY ON/OFF

Other Functions

Transpose:	12 steps (-6 semitones to +5 semitones)
Tuning:	Variable (A4 = approximately 440Hz ±50 cents)
Volume:	0 to 9 (10 steps)

Terminals

Phones/Output Terminal:	Stereo standard jack (Output is monaural.) Output Impedance: 78Ω Output Voltage: 3V (RMS) MAX
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Power Supply Terminal:	9V DC
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Power Supply:

Batteries:	Dual power supply system 6 AA-size batteries
Battery Life:	Approximately 6 hours continuous operation on alkaline batteries Approximately 3 hours continuous operation on manganese batteries
AC Adaptor:	AD-5
Auto Power Off:	Turns power off approximately 6 minutes after last operation. Enabled under battery power only, can be disabled manually.

Speaker Output:

Power Consumption:

Dimensions:

Weight:

ø 10cm × 2 (1.6W + 1.6W)
9V = 6.5W
87.5 × 30.0 × 10.0 cm (34 1/2 × 11 13/16 × 3 15/16 inch)
Approximately 3.2 kg (7.1 lbs) (without batteries)

ELECTRICAL

Current drain with 9 V DC:

No sound output	79 mA ± 20 %
Maximum volume	426 mA ± 20 %
with 12 keys C3 to G4 pressed in Synth-Lead 1	
Volume: 9 (Max.)	

Phone output level (Vrms with 32 Ω load each channel):

with key C5 pressed in Synth-Lead 1	200 mV ± 20 %
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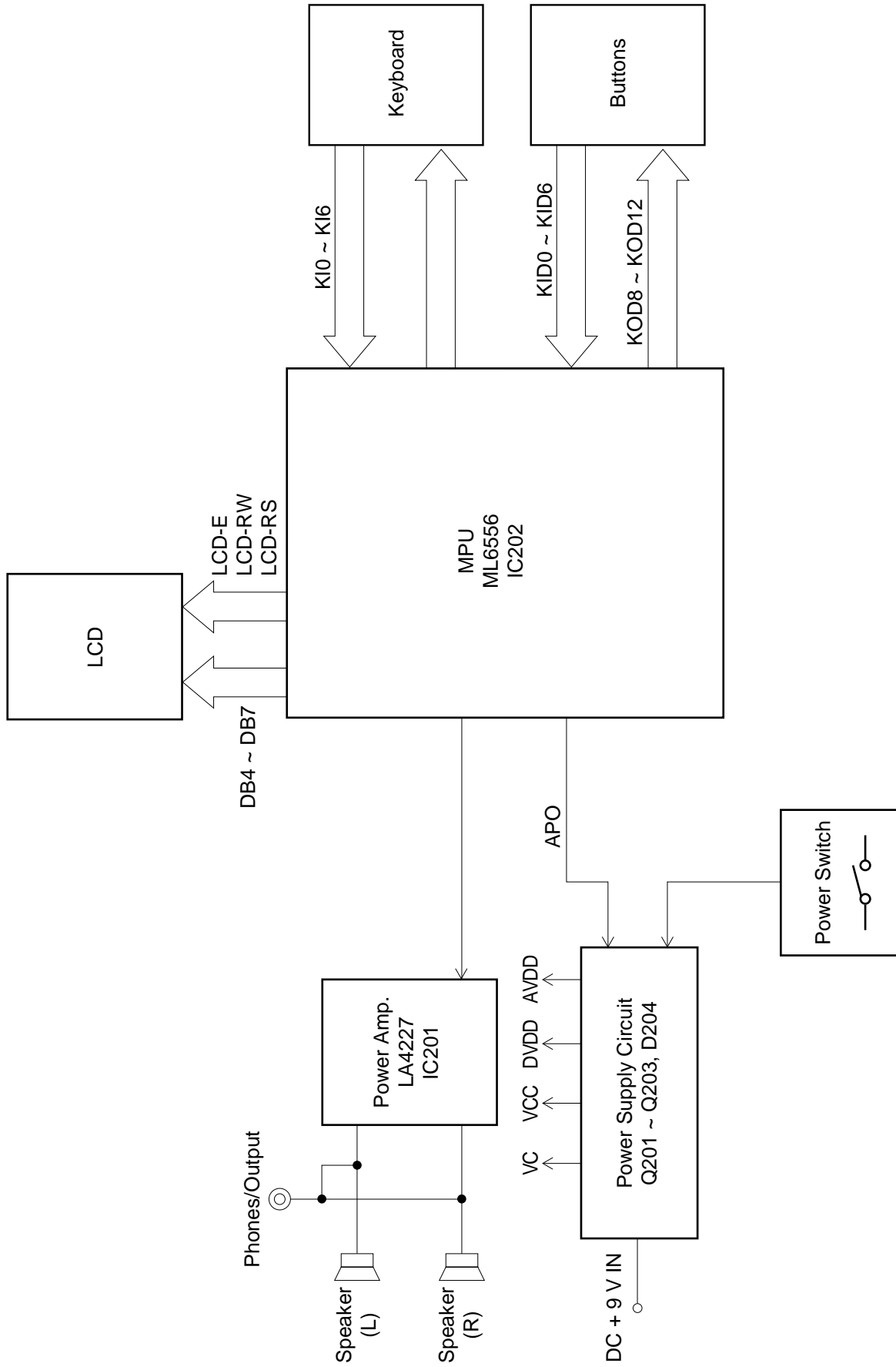
Speaker output level (Vrms with 4 Ω load each channel):

with key E2 pressed in Synth-Lead 1	640 mV ± 20 %
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Output level (Vrms with 47 KΩ load each channel):

with key C5 pressed in Synth-Lead 1	675 mV ± 20 %
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BLOCK DIAGRAM

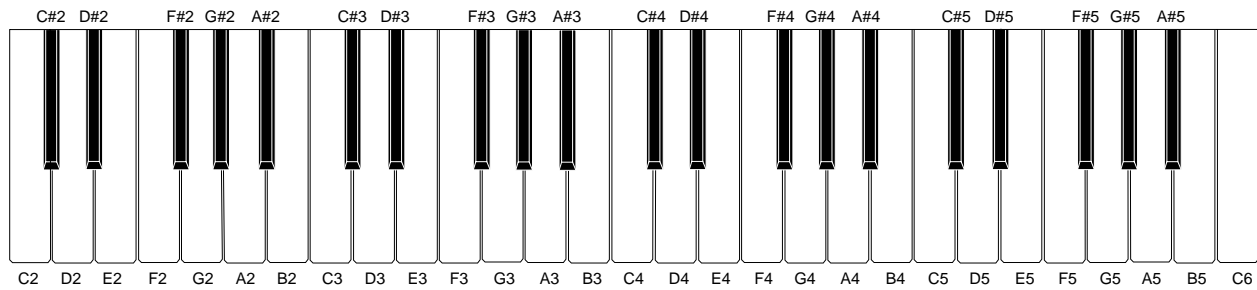


CIRCUIT DESCRIPTION

KEY MATRIX

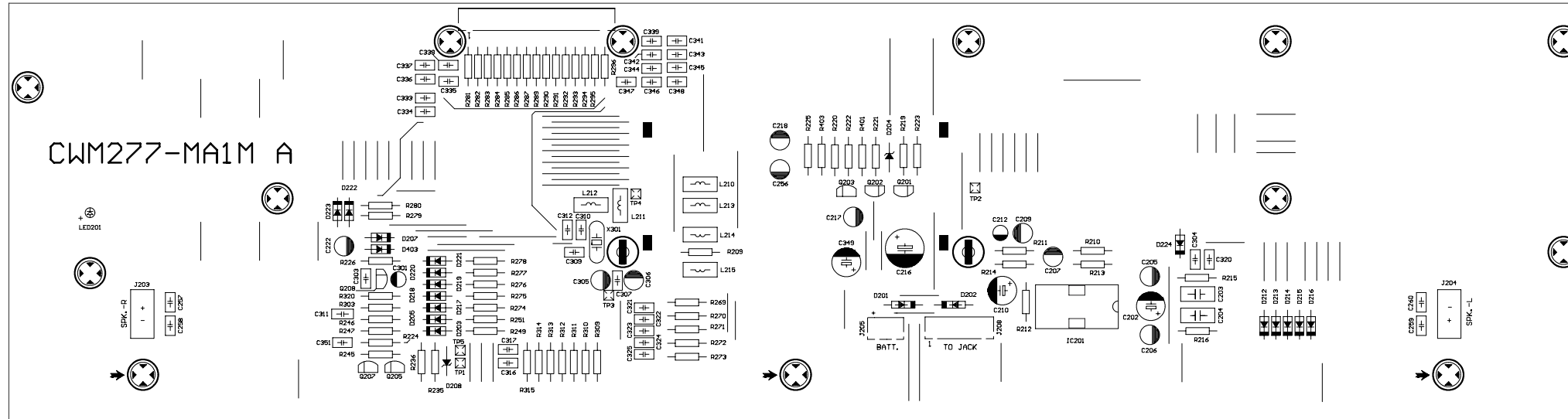
	KID0	KID1	KID2	KID3	KID4	KID5	KID6
KOD8	—	+	0	TEMPO ▼	TEMPO ▲	VOLUME ▼	VOLUME ▲
KOD9	3	2	1	START/ STOP	SYNCRO/ FILL IN	F5	ACCOMP VOLUME
KOD10	6	5	4	TRANPOSE/ TUNE	SONG BANK	RHYTHM	TONE
KOD11	9	8	7	FINGERED	CASIO CHORD	NORMAL	OFF
KOD12	E2	MELODY ON/OFF	PLAY/ PAUSE	STOP			

NOMENCLATURE OF KEYS

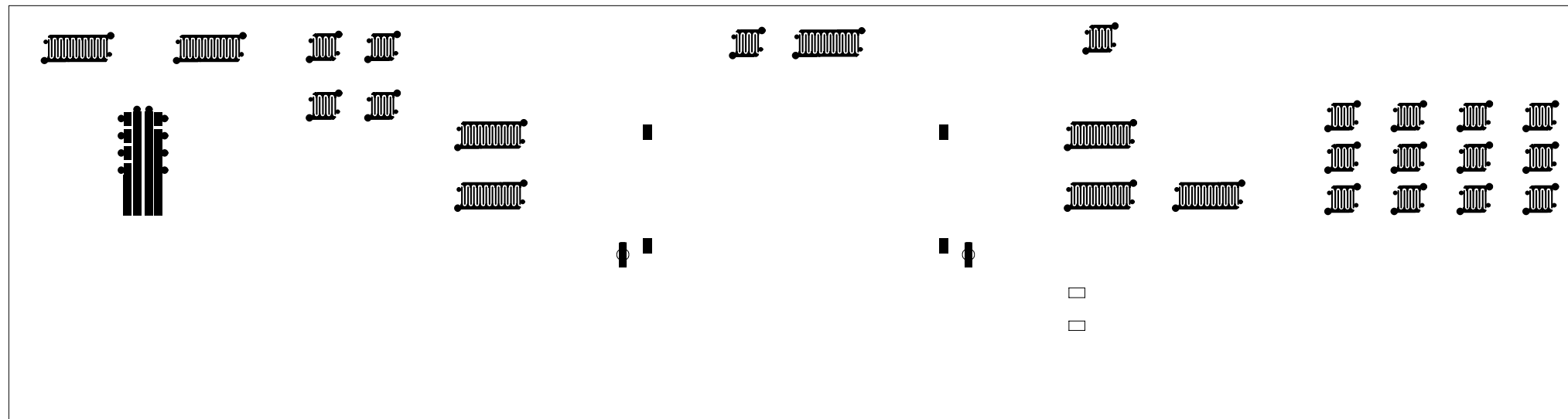


PRINTED CIRCUIT BOARDS

Main PCB CMW277-MAIN

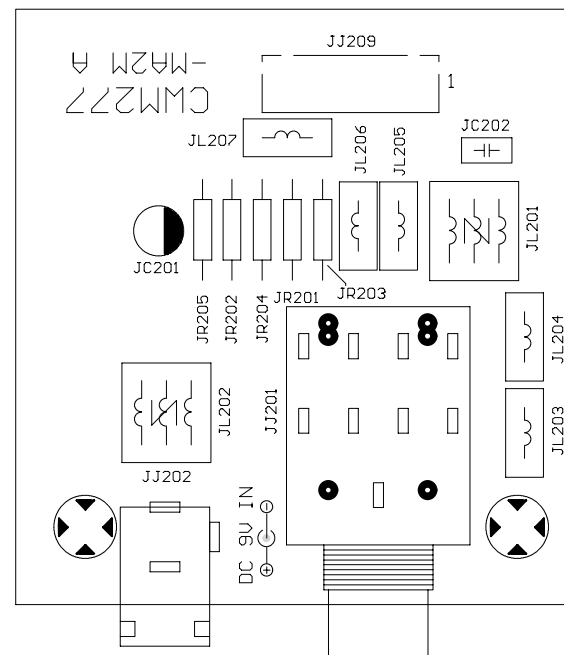


Top View



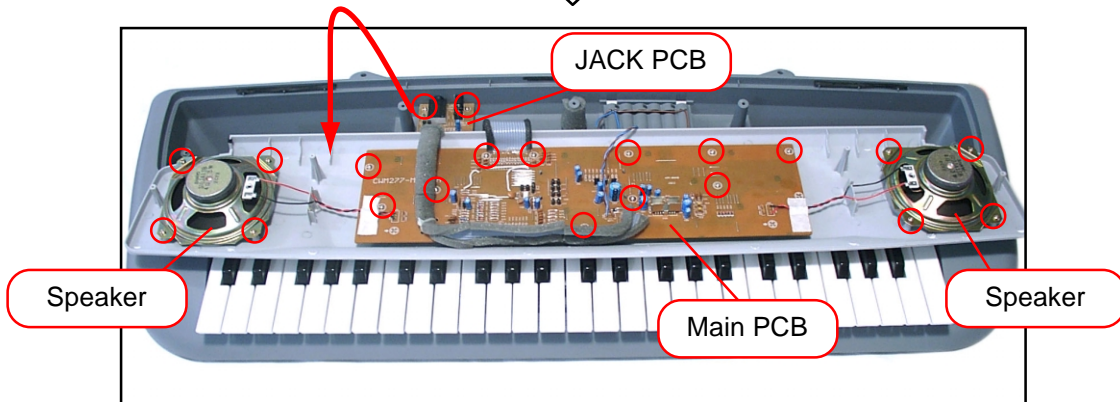
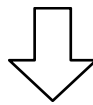
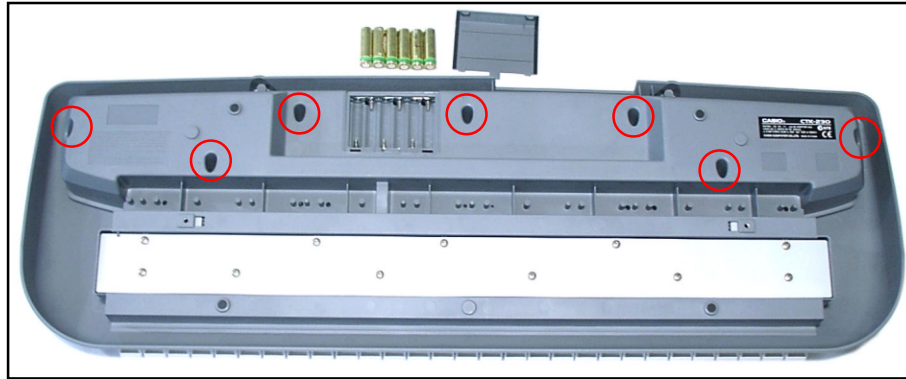
Bottom View

JACK PCB CMW277-MA2M



DISASSEMBLY

1. Remove the battery cover and then take out the battery.
2. Remove 7 screws and then the console panel.



3. Remove 12 screws and then the Main PCB.
4. Remove 2 screws and then the JACK PCB.
5. Remove 8 screws and then the Speaker.

DIAGNOSTIC PROGRAM

Message on LCD

Initial Setting

1. Connect an AC adaptor.

AD-5

How to start diagnostic program

1. Press the "POWER" button while pressing the "0 Up" and "START/STOP" buttons.

SONG BANK ◀ TEST

Diagnostic program

1. MODE Switch check

- ① Press "CASIO CHORD" button.
- ② Press "FINGERED" button.
- ③ Press "NORMAL" button.

RHYTHM ◀ TEST

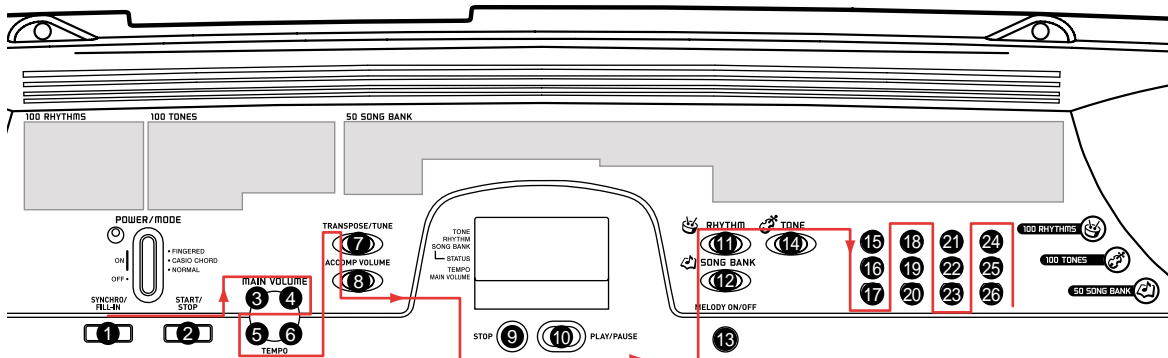
TONE ◀ TEST

SONG BANK ◀ TEST

2. SWITCH check

- ① Press "0" button.
- ② Press the buttons in the following order.

◀ SWITCH



- ③ OK sound must be audible with the display as Message on LCD

SWIT OK

3. ROM check

- ① Press "2" button.

ROM TEST

↓
ROM 0000

↓
ROM OK

OK sound must ne audible.

4. ROM Ver. check

- ① Press "1" button.
Pip sound must be audible.

277Vr170

5. D/A check

- ① Press "4" button.
Minimum sine wave sound must be audible at center position.
- ② Press "5" button.
Middle sine wave sound must be audible at center position.
- ③ Press "6" button.
Maximum sine wave sound must be audible at center position.

MIN

MID

MAX

6. LCD check

- ① Press "TONE" button.
- ② Press "TONE" button.
*Pip sound must be audible.
The display must be changed to turn on all dots.
- ③ Press "TONE" button.
The display must be changed to no display.
- ④ Press "TONE" button.
The display must be changed to pattern 1 dot matrix.
- ⑤ Press "TONE" button.
The display must be changed to pattern 2 dot matrix.
- ⑥ Press "TONE" button.
The display must be changed to pattern 1 characters.
- ⑦ Press "TONE" button.
The display must be changed to pattern 2 characters.
- ⑧ Press "TONE" button.
The display must be changed to as remark.

LCD

TEST

7. AC Adaptor check

- ① Press "SONG BANK" button.
OK sound must be audible.

P=AC ADP

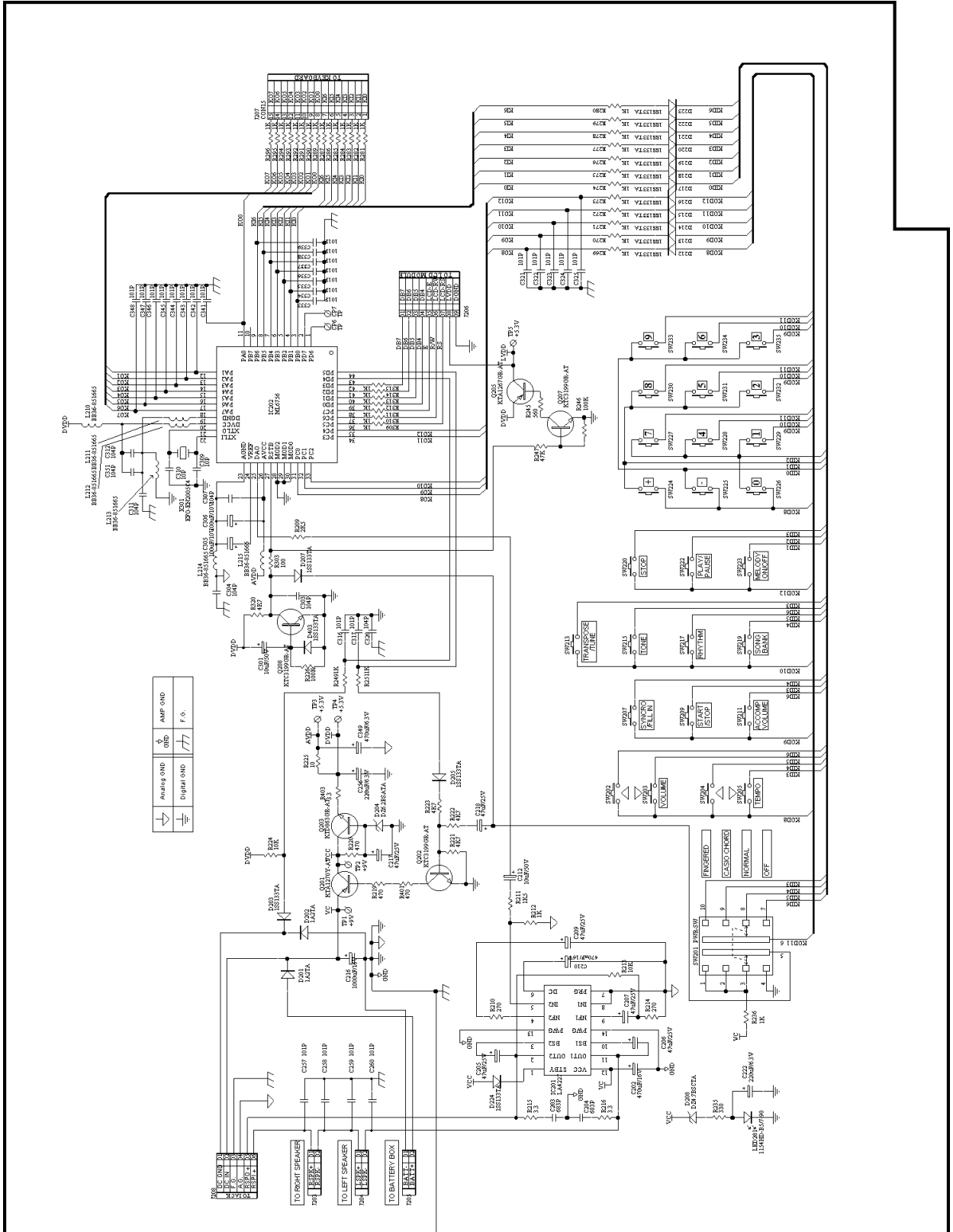
8. APO check

- ① Press "STOP" button.
* Go out from TEST mode (Power off).
* The LCD turns off.

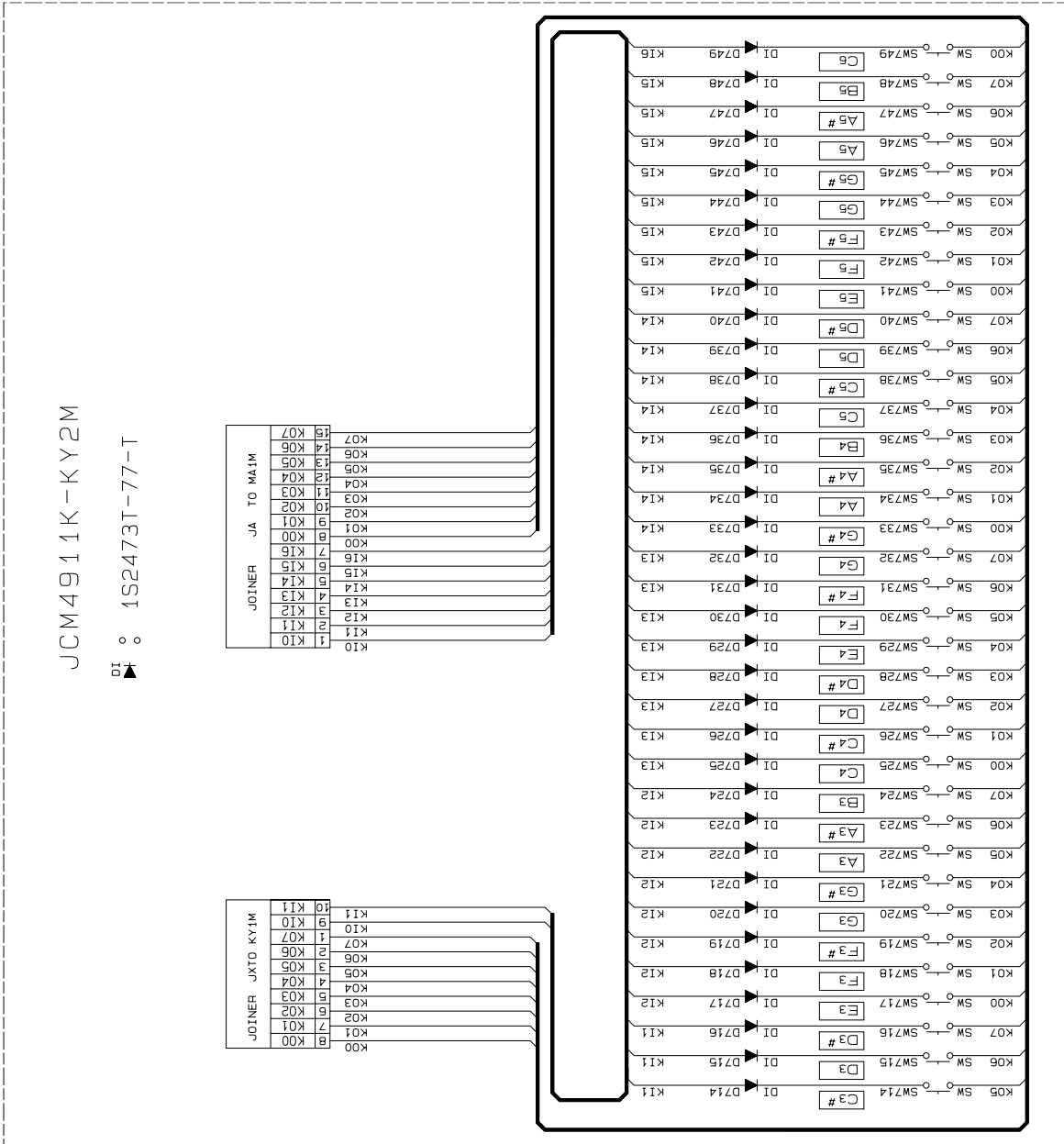
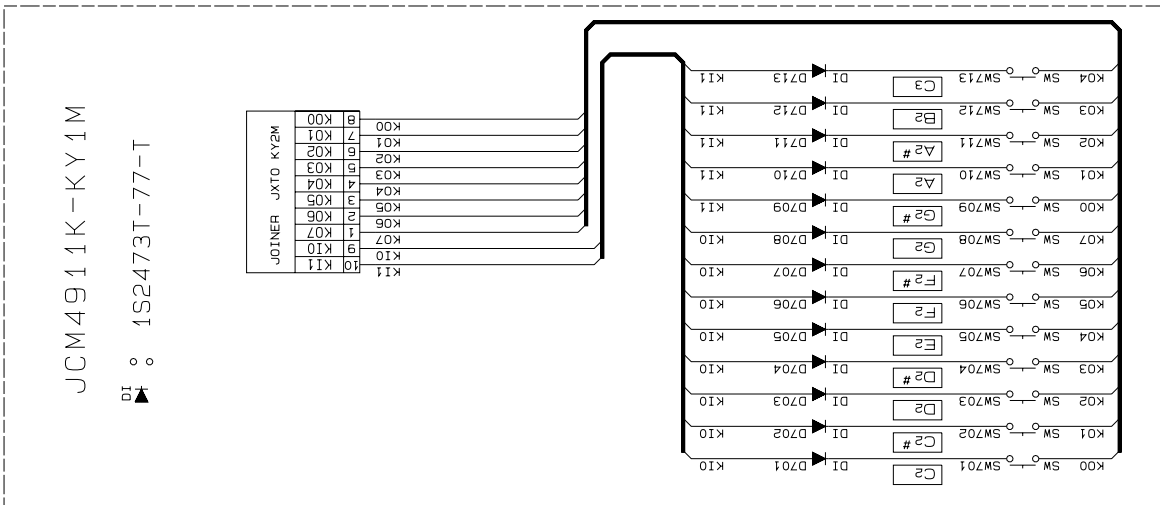
DIAGNOSTIC PROGRAM IS FINISHED.

SCHEMATIC DIAGRAMS

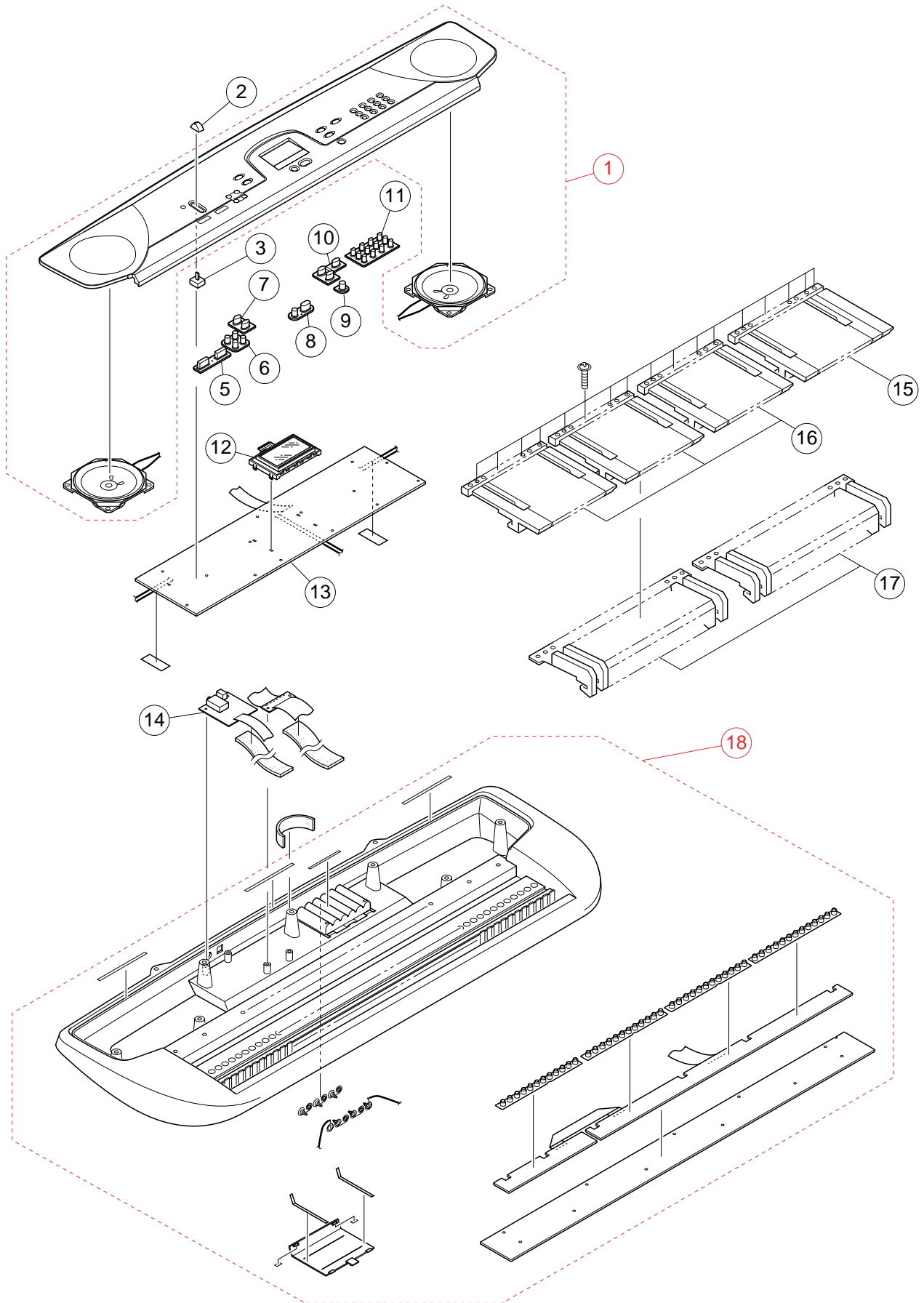
Main PCB CMW277-MAIM



Keyboard PCBs JCM4911K-KY1M/KY2M



EXPLODED VIEW



PARTS LIST

CTK-230

Notes: This parts list does not include the cosmetic parts, which parts are marked with item No. "R-X" in the exploded view.

Contact our spare parts department if you need these parts for refurbish.

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	Parts code	Parts name	Specification	Q	Price Code	R	Remarks
N	1	9481 2403	ASSY/PANEL/SPEAKER	CTK-230-1	1	BG	C	
N	2	1014 9232	KNOB	##073-49104000	1	AA	C	
N	3	1014 9231	SWITCH/SLIDE KNOB	##051-40000080	1	AD	C	
-	4	3831 1043	SPEAKER	S10JA13B	2	BE	B	
N	5	1014 9219	RUBBER/BUTTON	##072-49105000	1	AA	C	
N	6	1014 9229	RUBBER/BUTTON	##072-49109000	1	AB	C	
N	7	1014 9226	RUBBER/BUTTON	##072-49108000	1	AB	C	
N	8	1014 9224	RUBBER/BUTTON	##072-49107000	1	AA	C	
N	9	1014 9218	RUBBER/BUTTON	##072-49104000	1	AA	C	
N	10	1014 9222	RUBBER/BUTTON	##072-49106000	1	AC	C	
N	11	1014 9216	RUBBER/BUTTON	##072-49103000	1	AD	C	
N	12	1014 9178	LCD ASSY	8CA-120-49102000	1	BG	C	
N	13	1014 9174	PCB ASSY/MAIN	8CA-120-49101000	1	CF	A	
N	14	1014 9188	PCB ASSY/JACK	8CA-120-49103000	1	AO	C	
N	15	1014 9258	SET KEY/WHITE	##150-49102000	1	AO	C	
N	16	1014 9234	SET KEY/WHITE	##150-49101000	3	AN	C	
N	17	1014 9259	SET KEY/BLACK	##150-49103000	2	AK	C	
N	18	9481 2404	ASSY/CASE/PCB	CTK-230-2	1	BR	C	
ACCESSORY								
N	-	1014 9205	STAND/NOTE	##040-49104000	1	AI	C	

Notes : Q- Quantity per unit

R- Rank

Ver.1 : Jan. 2004

Replacement of the EXPLODED VIEW and PARTS LIST

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