

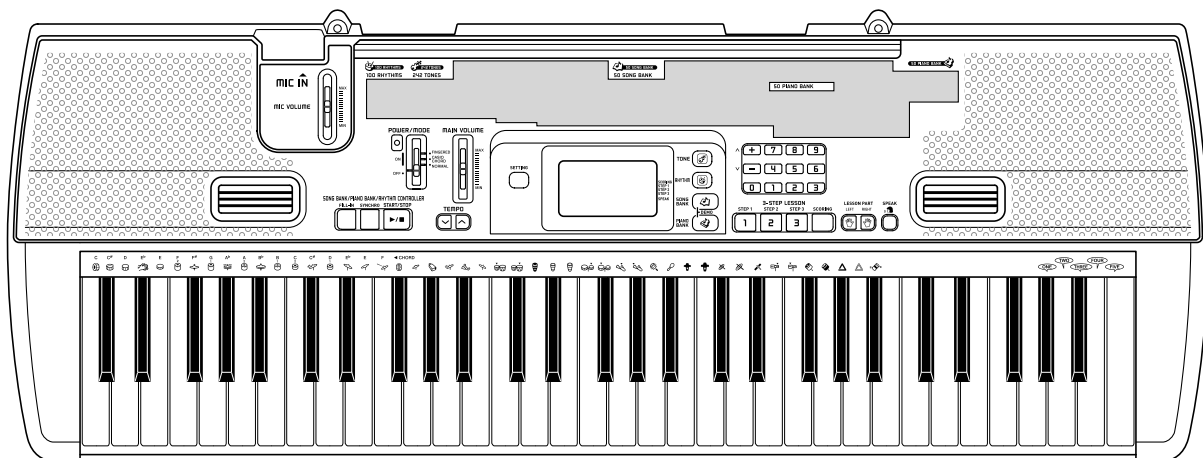
CASIO®

Service Manual

(without price)

CTK-710

APR. 2006



CTK-710

ELECTRONIC KEYBOARD

Ver.1 : Mar. 2007

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■ Disassembly

Disassembly Procedure: Please refer to the procedure in CTK-496 service manual since CTK-710 has the same frame as 496.

SPECIFICATIONS

GENERAL

| | |
|-------------------------------------|---|
| Keyboard: | 61 standard-size keys, 5 octaves |
| Tones: | 242 (113 panel tones + 128 General MIDI tones + 1 drum set) |
| Polyphony: | 32 notes maximum (16 for certain tones) |
| Main Volume: | Adjustable |
| Auto Accompaniment | |
| Rhythm Patterns: | 100 |
| Chords: | 2 fingering methods (CASIO CHORD, FINGERED) |
| Rhythm Controller: | START/STOP, SYNCHRO, FILL-IN |
| 3-step Lesson: | 3 lessons (Step 1, 2, 3) |
| Playback: | Repeat play of a single tune |
| Lesson Part: | Left hand, right hand |
| Evaluation Mode: | Scoring |
| Voice Fingering Guide: | On/Off |
| Song Bank, Piano Bank | |
| Number of Tunes: | Song Bank: 50, Piano Bank: 50 |
| Controllers: | START/STOP |
| Display | |
| Name display: | TONE, RHYTHM, SONG BANK, PIANO BANK name/number, keyboard settings name/value |
| Tempo: | Tempo value, metronome, synchro standby |
| Chord: | Chord name, Chord form |
| Fingering: | Fingering indicators, parts |
| Staff: | 5 octaves with sharp and flat indications, pedal symbol, octave symbol |
| Keyboard: | 5 octaves |
| Other Functions | |
| Tempo: | Variable (216 steps, ♩ = 40 to 255) |
| Transpose: | 25 steps (-12 semitones to +12 semitones) |
| Tuning: | Variable (A4 = approximately 440Hz ±50 cents) |
| Accompaniment/ Song Bank Volume: | Variable (100 steps, 0 to 99) |
| Terminals | |
| USB port: | TYPE B |
| Sustain Terminal: | Standard jack |
| Phones/Output Terminal: | Stereo standard jack |
| | Output Impedance: 100Ω |
| | Output Voltage: 4V (RMS) MAX |
| Power Supply Terminal: | 9V DC |
| Microphone In: | Standard jack (with microphone volume slider) |
| | Input impedance: 2kΩ |
| | Input sensitivity: 10mV |
| Power Supply: | Dual power supply system |
| Batteries: | 6 AA-size batteries |
| Battery Life: | Approximately 4 hours continuous operation on alkaline batteries Approximately 2 hours continuous operation on manganese batteries |
| AC Adaptor: | AD-5 |
| Auto Power Off: | Turns power off approximately 6 minutes after last key operation. Enabled under battery power only, can be disabled manually. |
| Speaker Output: | 2.0W + 2.0W |
| Power Consumption: | 9V --- 7.7W |
| Dimensions: | 95.6 x 35.6 x 13.3 cm (37 ¹¹ / ₁₆ x 14 ¹ / ₁₆ x 5 ¹ / ₄ inch) |
| Weight: | Approximately 4.0 kg (8.8 lbs)(without batteries) |

ELECTRICAL

Current drain with 9 V DC:

| | |
|--|-------------------|
| Consumption Current | 670 mA \pm 20 % |
| Consumption Current at idle | 125 mA \pm 20 % |
| with 12 keys from C1 to G2 pressed in 85 SINE LEAD | |
| Volume: maximum, Velocity: maximum | |

Speaker output level (Vrms with 4 Ω load each channel):

| | |
|------------------------------------|--------------------|
| with key D2 in 85 SINE LEAD | |
| Volume: maximum, Velocity: maximum | 2100 mV \pm 20 % |

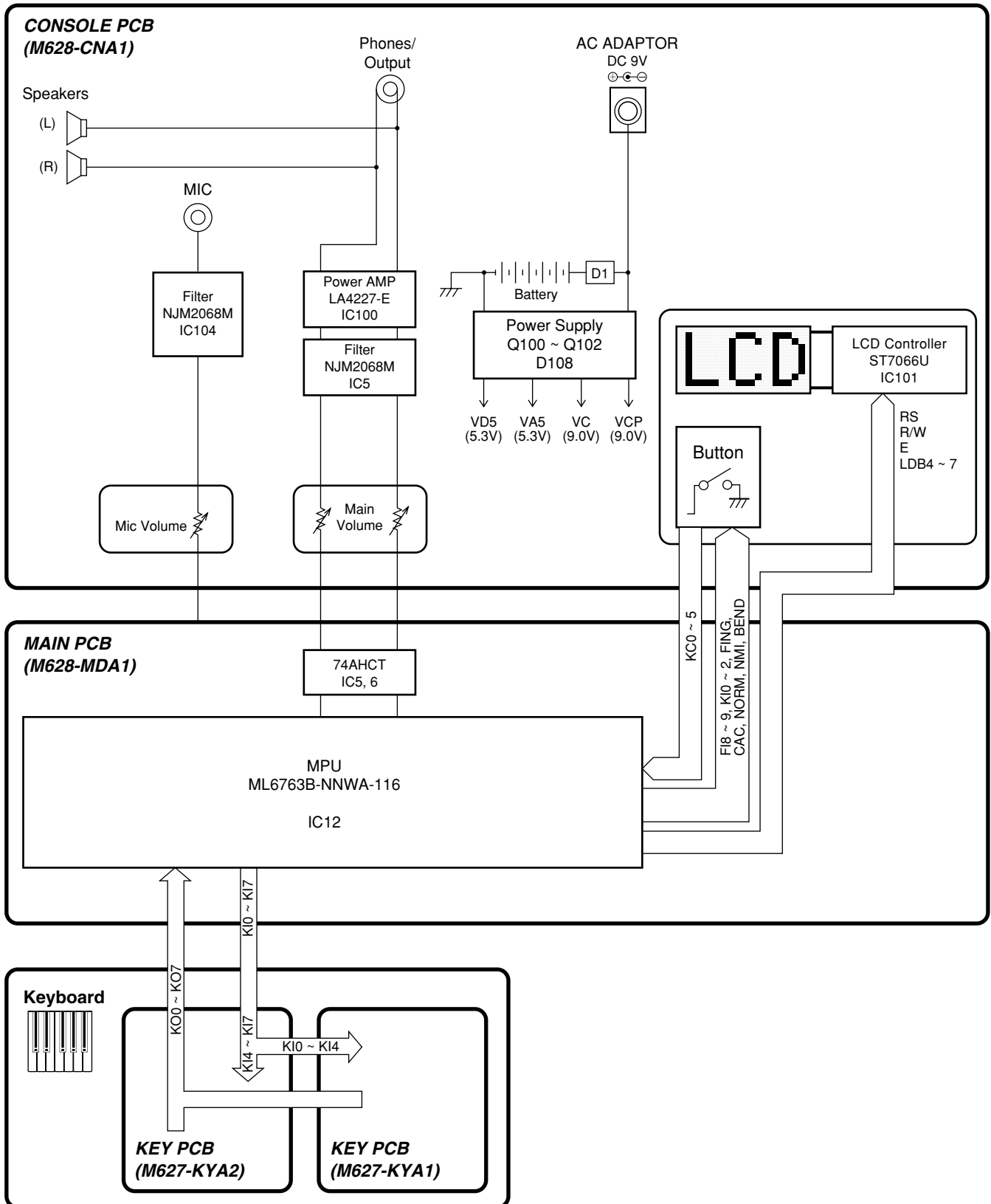
Phone output level (Vrms with 32 Ω load each channel):

| | |
|------------------------------------|-------------------|
| with key G1 in 85 SINE LEAD | |
| Volume: maximum, Velocity: maximum | 580 mV \pm 20 % |

Output level (Vrms with 47K Ω load each channel):

| | |
|------------------------------------|--------------------|
| with key E1 in 85 SINE LEAD | |
| Volume: maximum, Velocity: maximum | 2600 mV \pm 20 % |

BLOCK DIAGRAM

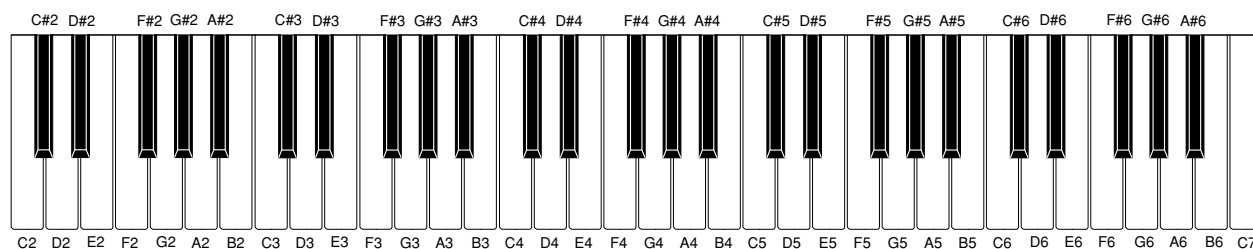


CIRCUIT DESCRIPTION

KEY MATRIX

| | KC0 | KC1 | KC2 | KC3 | KC4 | KC5 | KC6 | KC7 |
|------------|------|------|------|------|------|------|------|------|
| F10 | C2① | C#2① | D2① | D#2① | E2① | F2① | F#2① | G2① |
| SI0 | C2② | C#2② | D2② | D#2② | E2② | F2② | F#2② | G2② |
| F11 | G#2① | A2① | A#2① | B2① | C3① | C#3① | D3① | D#3① |
| SI1 | G#2② | A2② | A#2② | B2② | C3② | C#3② | D3② | D#3② |
| F12 | E3① | F3① | F#3① | G3① | G#3① | A3① | A#3① | B3① |
| SI2 | E3② | F3② | F#3② | G3② | G#3② | A3② | A#3② | B3② |
| F13 | C4① | C#4① | D4① | D#4① | E4① | F4① | F#4① | G4① |
| SI3 | C4② | C#4② | D4② | D#4② | E4② | F4② | F#4② | G4② |
| F14 | G#4① | A4① | A#4① | B4① | C5① | C#5① | D5① | D#5① |
| SI4 | G#4② | A4② | A#4② | B4② | C5② | C#5② | D5② | D#5② |
| F15 | E5① | F5① | F#5① | G5① | G#5① | A5① | A#5① | B5① |
| SI5 | E5② | F5② | F#5② | G5② | G#5② | A5② | A#5② | B5② |
| F16 | C6① | C#6① | D6① | D#6① | E6① | F6① | F#6① | G6① |
| SI6 | C6② | C#6② | D6② | D#6② | E6② | F6② | F#6② | G6② |
| F17 | G#6① | A6① | A#6① | B6① | C7① | | | |
| SI7 | G#6② | A6② | A#6② | B6② | C7② | | | |

NOMENCLATURE OF KEYS

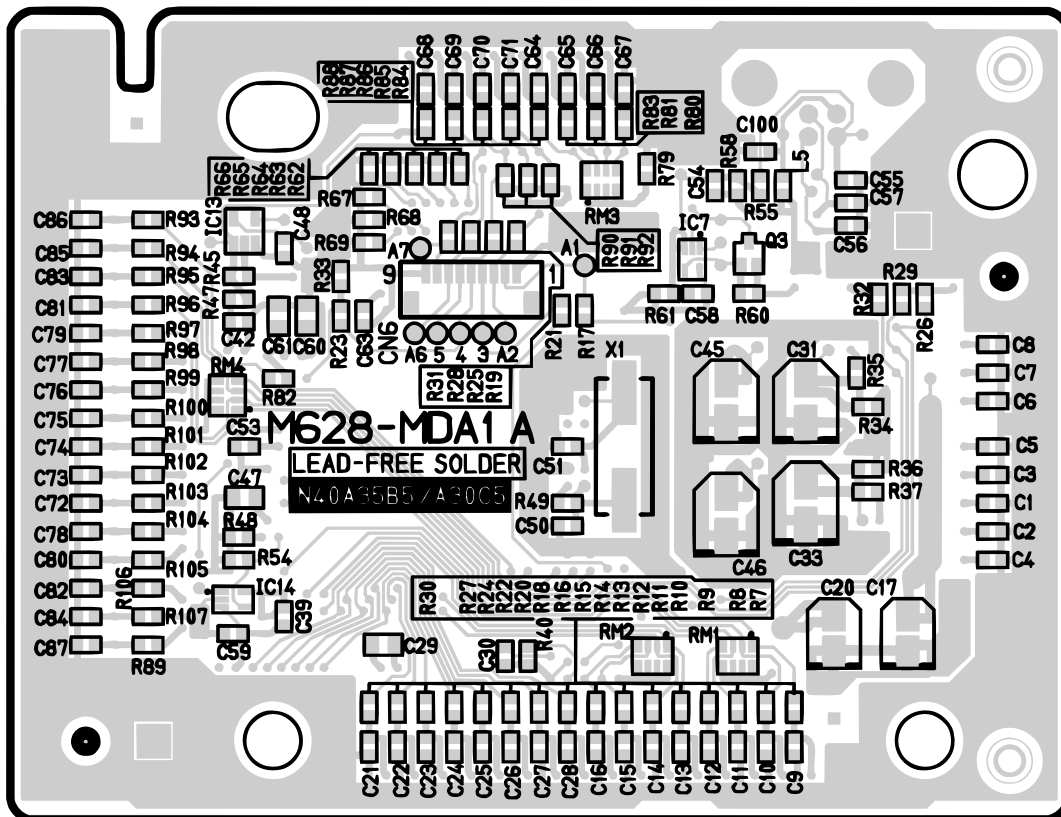
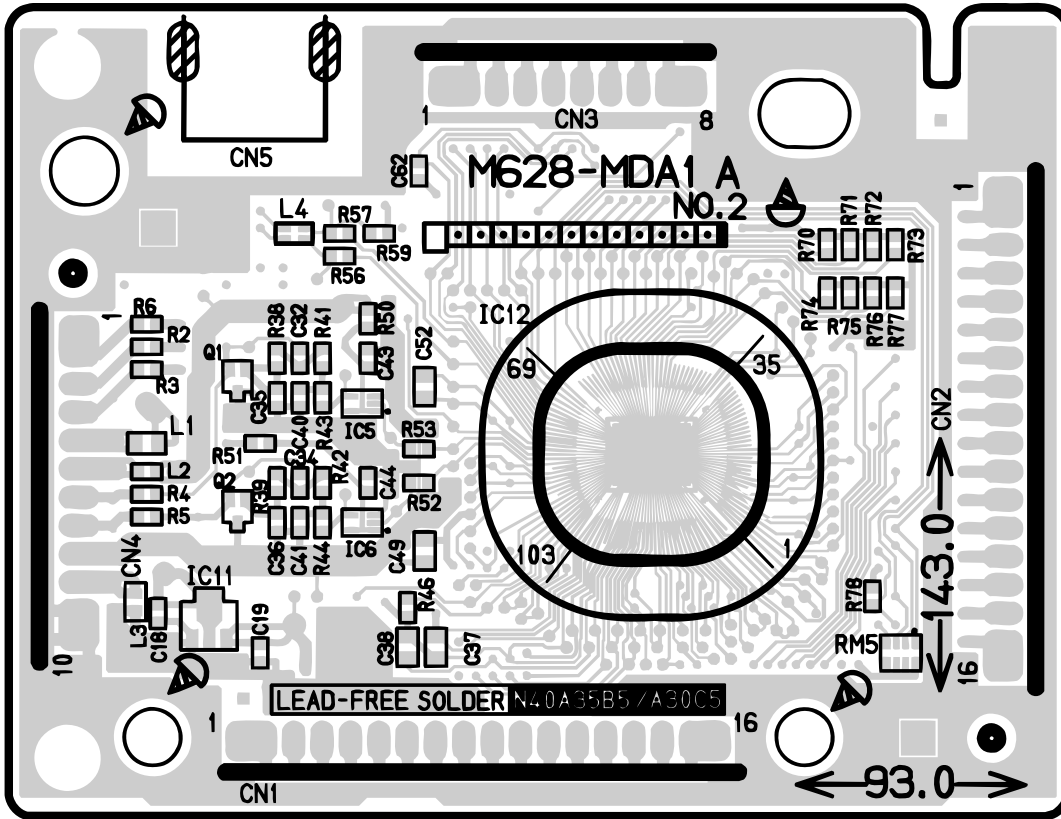


BUTTON MATRIX

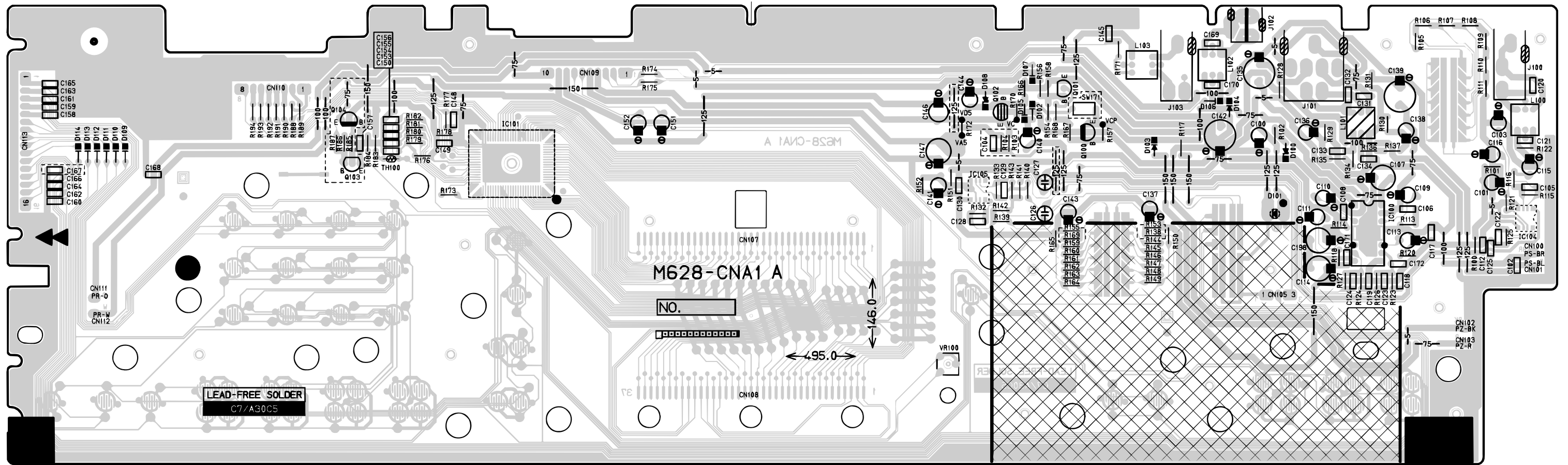
| | KC0 | KC1 | KC2 | KC3 | KC4 | KC5 |
|------------|-------------|------------|--------|-------|-------|-----|
| KI0 | SETTING | TEMPO DOWN | STEP 3 | 2 | 5 | 8 |
| KI1 | TONE | RHYTHM | LEFT | 3 | 6 | 9 |
| KI2 | SONG BANK | PIANO BANK | SYSTEM | RIGHT | SPEAK | |
| FI8 | FILL-IN/REW | SYNCHRO/FF | STEP 1 | 0 | — | + |
| FI9 | START/STOP | TEMPO UP | STEP 2 | 1 | 4 | 7 |

PRINTED CIRCUIT BOARD

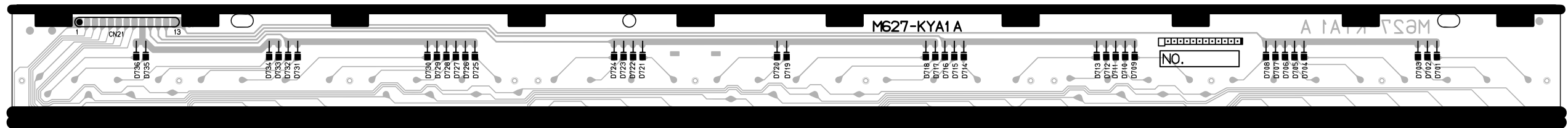
MAIN PCB M628-MDA1



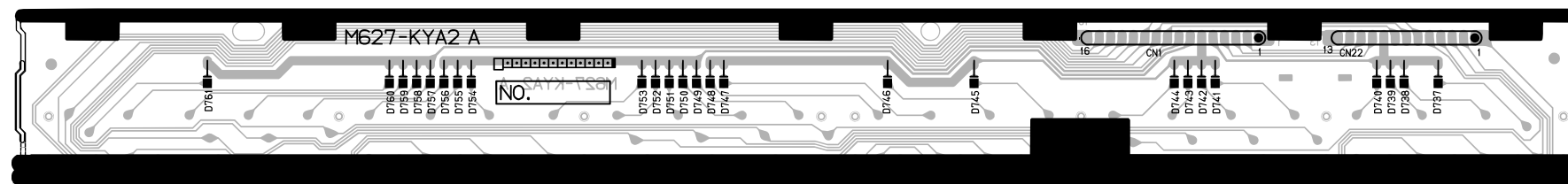
CONSOLE PCB M628-CNA1



KEY PCB M627-KYA1



KEY PCB M627-KYA2



DIAGNOSTIC PROGRAM

■ Initial Setting

1. Connect the AC adaptor.
2. "Main" volume: MAX
3. "MIC" volume: MIN

■ How to start diagnostic program

1. Set the "POWER" switch to "ON (NORMAL)" while pressing the "0" button.
2. The message "628 TEST" is displayed on LCD.
3. Release the "0" button.

■ Diagnostic program

Message on LCD

1. MODE Switch check

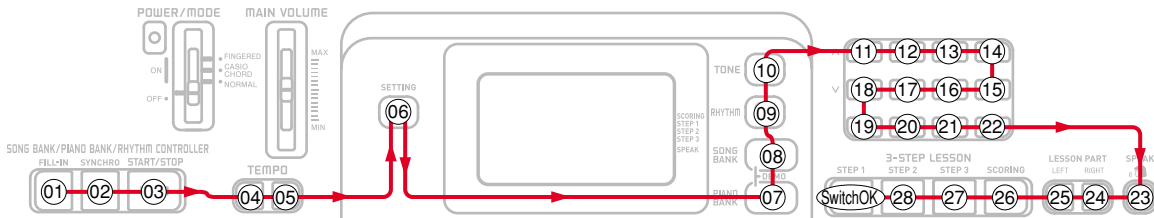
- ① Set to "CASIO CHORD" position.
- ② Set to "FINGERED" position.
- ③ Set to "NORMAL" position.

Casio
Frigerd
Normal

2. SWITCH check

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

Switch



* Wait for confirmation sound.

* The Button number appears on the LCD.

* A buzzer sounds if buttons are pressed in a wrong order, and "CER" appears on LCD.

NOTE: This check cannot be aborted in mid-course.

3. AC adaptor check

- ① Press "SONG BANK" button.

AC JACK

4. ROM check

- ① Press "2" button.

ROM OK

5. MODEL check

- ① Press "1" button.

628vr050

6. ROM version check

- ① Press "3" button.

01181626

Message on LCD

7. Sound check

- ① Press the "4" button.
 - * When standing in the center, the tester hears the minimum test sound in an equal volume from both right and left speakers.
- ② Press the "5" button.
 - * When standing in the center, the tester hears the medium test sound in an equal volume from both right and left speakers.
- ③ Press the "6" button.
 - * When standing in the center, the tester hears the maximum test sound in an equal volume from both right and left speakers.
- ④ Press the "+" button.
 - * When standing in the center, the tester hears the maximum test sound from the left speaker.
- ⑤ Press the "-" button.
 - * When standing in the center, the tester hears the maximum test sound from the right speaker.

Min

Mid

Max

Left

Right

8. LCD check

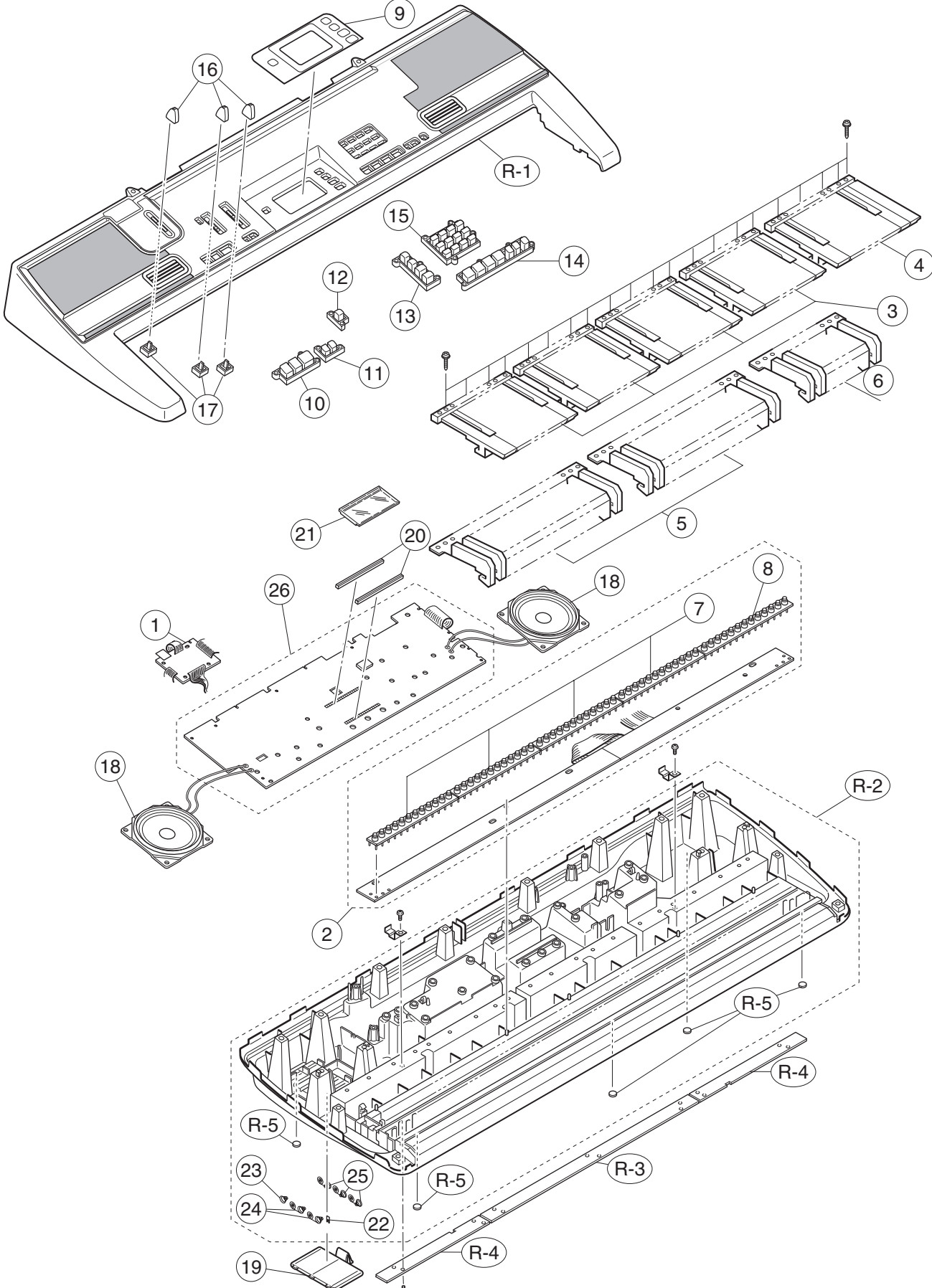
- ① Press the "STEP1" button.
 - * All character of LCD turns on.
 - * There is no lack of the dot and the character.

9. APO check

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

DIAGNOSTIC PROGRAM IS FINISHED.

EXPLODED VIEW



PARTS LIST

CTK-710

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 seperately.
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 |
|----------------------|----------|------------|----------------------|--------------------|----|------------|---|---------|
| Main PCB | | | | | | | | |
| N | 1 | 10238296 | PCB ASSY/MAIN | TK-RJM506723*001 | 1 | | A | |
| | IC11 | 10158805 | IC | RH5RL33AA-T1-FA | 1 | | C | |
| | IC13 | 10159723 | IC | RN5VD28AA-TR-FA | 1 | | C | |
| | IC5,IC6 | 10116986 | IC | SN74AHCT1G08DCKR | 2 | | C | |
| | IC7 | 10197555 | IC | TC7SZ14FU(TE85L.F) | 1 | | C | |
| | L4 | 10158809 | COIL | DLP31SN221SL2L | 1 | | X | |
| | L2,L3,L5 | 10095204 | FERRITE BEAD | BLM18AG102SN1D | 3 | | X | |
| | L1 | 10122963 | FERRITE BEAD | BLM21AG102SN1D | 1 | | X | |
| | Q3 | 10153685 | FET | 2SJ346(TE85L.F) | 1 | | X | |
| | Q1,Q2 | 10202670 | TRANSISTOR | KTA2014-GR-RTK/P | 2 | | X | |
| | X1 | 10211946 | RESONATOR | SSM1200000F17F5FZ8 | 1 | | X | |
| Keyboard PCB | | | | | | | | |
| N | 2 | 10238298 | PCB ASSY/KYA | TK-RJM503929*003 | 1 | | C | |
| | D701-761 | 10108141 | DIODE | 1SS133TP | 61 | AA | X | |
| Keyboard unit | | | | | | | | |
| | 3 | 69254940 | KEY SET/WHITE/CB | M340503*1 | 4 | | C | |
| | 4 | 69254950 | KEY SET/WHITE/CS | M340503*2 | 1 | | C | |
| | 5 | 69222740 | KEY SET/BLACK 10P | M111726-1 | 2 | AQ | C | |
| | 6 | 69222750 | KEY SET/BLACK 5P | M111726-2 | 1 | AH | C | |
| | 7 | 10163902 | RUBBER/CONTACT | RJM503854-001V01 | 4 | | B | |
| | 8 | 10163903 | RUBBER/CONTACT | RJM503855-001V01 | 1 | | B | |
| Panel unit | | | | | | | | |
| N | 9 | 10236593 | PLATE/DISPLAY | RJM506511-001V01 | 1 | | C | |
| N | 10 | 10236594 | RUBBER/KEY/A | RJM506512-001V01 | 1 | | C | |
| N | 11 | 10236595 | RUBBER/KEY/B | RJM506513-001V01 | 1 | | C | |
| N | 12 | 10236596 | RUBBER/KEY/C | RJM506514-001V01 | 1 | | C | |
| N | 13 | 10236597 | RUBBER/KEY/D | RJM506515-001V01 | 1 | | C | |
| N | 14 | 10236598 | RUBBER/KEY/E | RJM506516-001V01 | 1 | | C | |
| N | 15 | 10236599 | RUBBER/KEY/F | RJM506517-001V01 | 1 | | C | |
| | 16 | 10199714 | KNOB/SLIDE | RJM503803-002V01 | 3 | AB | C | |
| | 17 | 69270510 | CONTACT/SLIDE | CSB-08D | 3 | AD | B | |
| N | 18 | 10228219 | SPEAKER | C10JB25 | 2 | | C | |
| N | 19 | 10243428 | COVER ASSY/BATTERY | TK-M340884*020 | 1 | | B | |
| | 20 | 10078118 | CONNECTOR | M440863-003V01 | 2 | AB | C | |
| N | 21 | 10238082 | LCD | TR6040N | 1 | | C | |
| | 22 | 69271080 | TERMINAL/BATTERY (+) | M440112-1 | 1 | AB | X | |
| | 23 | 10008078 | TERMINAL/BATTERY (-) | M440002A-1 | 1 | AA | X | |
| | 24 | 69271060 | TERMINAL/BATTERY | M440676-1 | 2 | AA | X | |
| | 25 | 69271070 | TERMINAL/BATTERY | M440677-1 | 3 | AA | X | |
| N | 26 | 10238295 | PCB ASSY/CNA1 | TK-RJM506721*001 | 1 | | B | |
| N | D101 | 10236646 | LED | 1154HD-B5/12.5-90 | 1 | | C | |

Notes: N- New parts

Q-Quantity used per unit

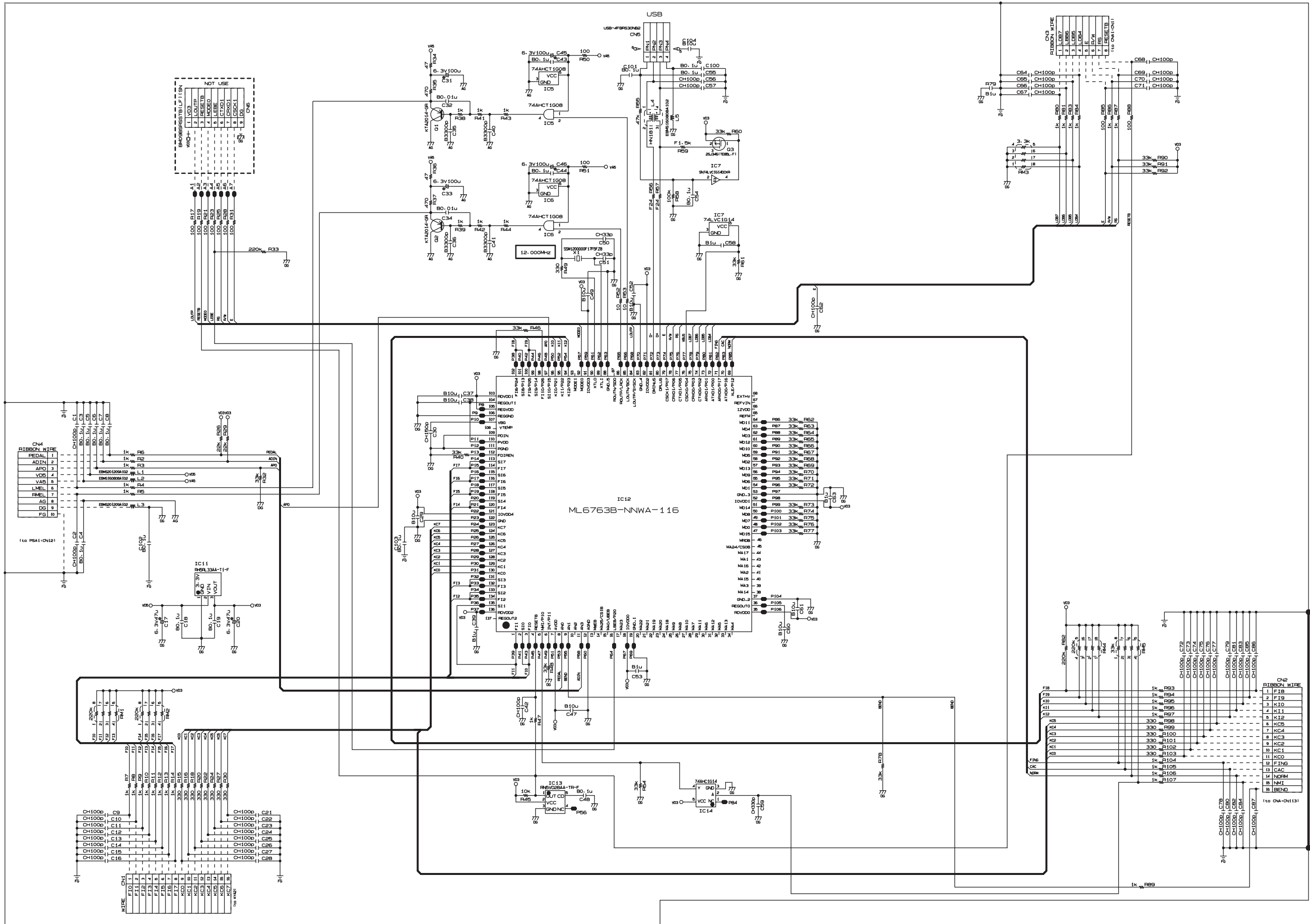
| N | Item | Parts code | Parts name | Specification | Q | Price Code | R | Remarks |
|--------------------|----------------|------------|------------------|--------------------|---|------------|---|--------------|
| | IC100 | 10189501 | IC | LA4227-E | 1 | | C | |
| | IC104,IC105 | 10211950 | IC | NJM2068M-D(TE1) | 2 | | C | |
| | J100 | 10206816 | JACK | JY-6314*01-130 | 1 | | C | MIC JACK |
| | J101 | 10213695 | JACK | JY-6316*01-070 | 1 | | C | PHONE JACK |
| | J102 | 10088189 | JACK | DS-240A2-383V4H | 1 | | C | DC JACK |
| | J103 | 10206815 | JACK | JY-6314*01-030 | 1 | | C | SUSTAIN JACK |
| | L101 | 10206672 | COIL | R2318-RB53856396NP | 1 | | X | |
| | L100,L102,L103 | 10206680 | COIL | R2318-RB53856397NP | 3 | | X | |
| | TH100 | 10080368 | THERMISTOR | MF11-103K | 1 | | X | |
| | VR100 | 69304870 | VARIABLE R | EVND8AA03B53 | 1 | | C | |
| Refurbish | | | | | | | | |
| N | R-1 | 10236647 | CASE/UPPER | RJM506510-001V01 | 1 | BZ | C | |
| N | R-2 | 10238297 | CASE ASSY/MIDDLE | TK-RJM503916*005 | 1 | | C | |
| | R-3 | 10163935 | PLATE/LOWER/A | RJM503801-001V01 | 1 | AE | C | |
| | R-4 | 10163936 | PLATE/LOWER/B | RJM503802-001V01 | 2 | AB | C | |
| | R-5 | 69226920 | RUBBER/FOOT | M41361-6 | 5 | AA | C | |
| Accessories | | | | | | | | |
| | - | 69208690 | STAND/MUSIC | M311760-1 | 1 | AL | C | |
| | - | 10083548 | BATTERY | R6UW/2STA | 3 | AC | C | |
| | - | 10196868 | CD ROM | USB12CDROMWL1A | 1 | | C | |
| N | | 10236646 | LABEL/RATING | RJM504373-005V01 | 1 | | X | |

Notes: N- New parts

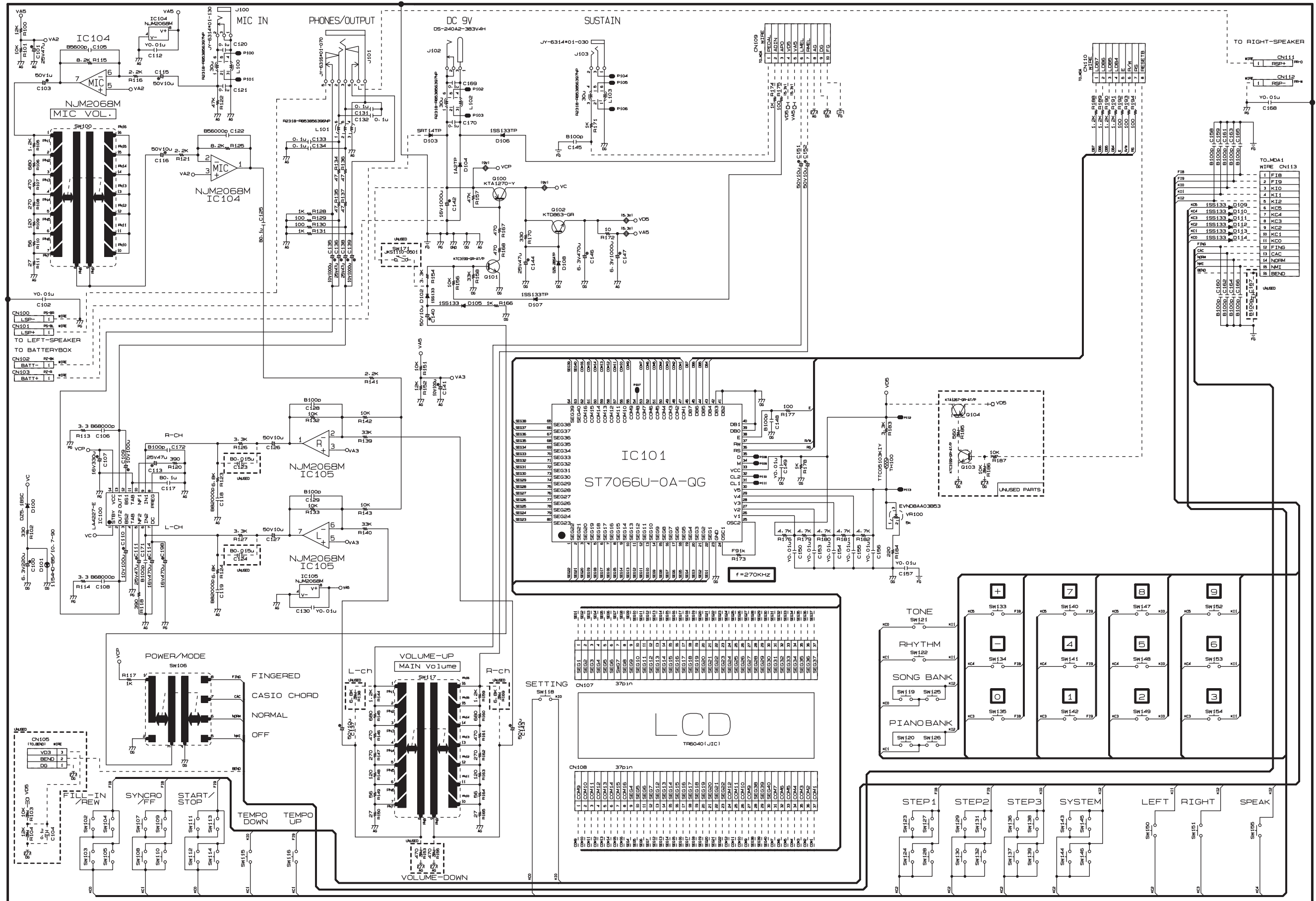
Q-Quantity used per unit

SCHEMATIC DIAGRAMS

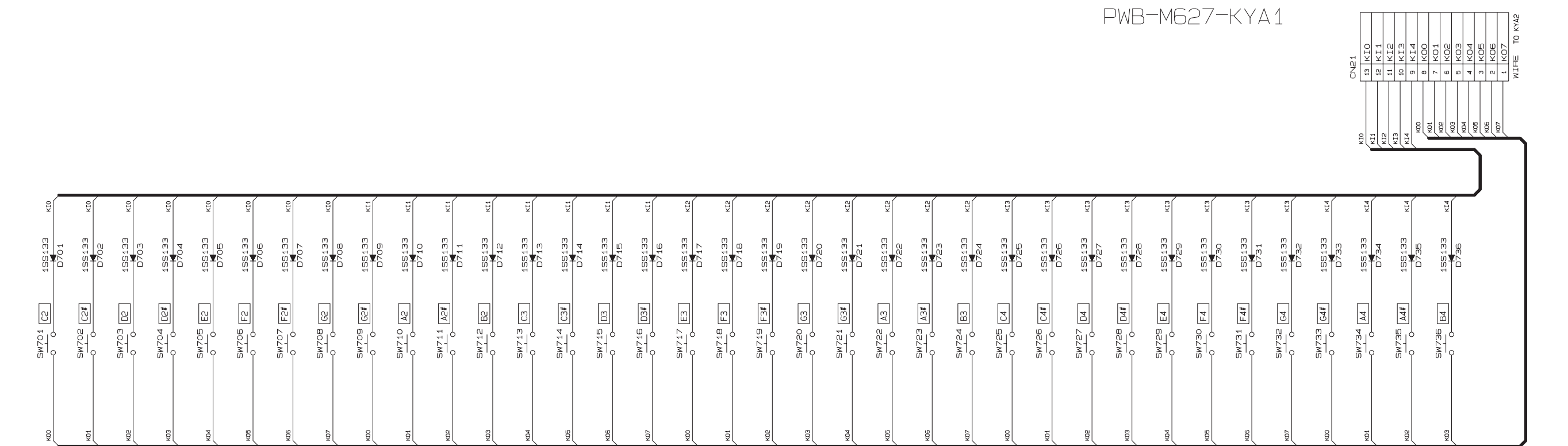
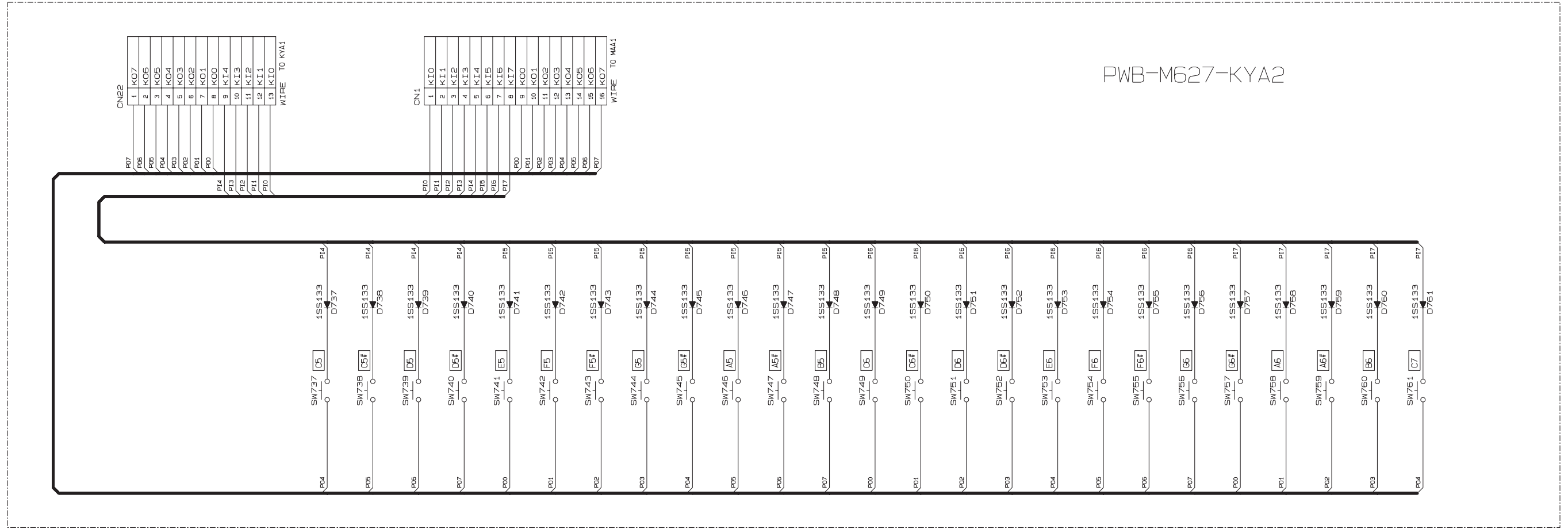
MAIN PCB M628-MDA1



CONSOLE PCB M628-CNA1



KEY PCB M627-KYA1/KYA2



Ver.1 : Mar. 2007

Correction of the DIAGNOSTIC PROGRAM (P7, P8)

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