Micro System

MCM119/05/12

Service
Service
Service

Service Manual

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CLASS 1
LASER PRODUCT

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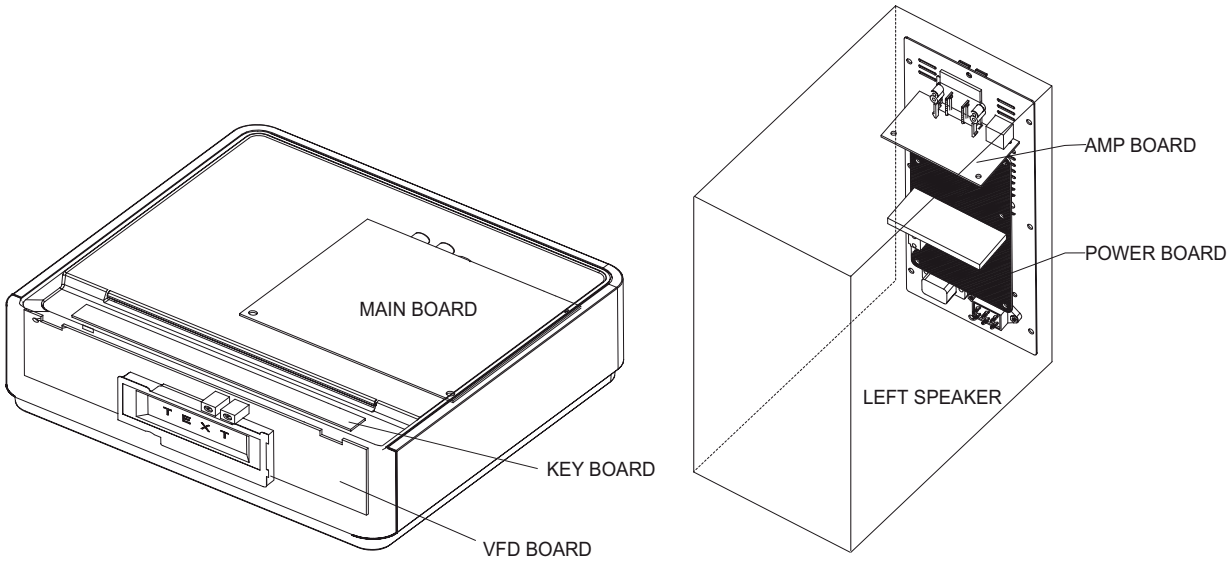
Version 1.1

PHILIPS

LOCATION OF PCBS



SPECIFICATIONS

AMPLIFIER

Output power ..... 2 x 20 W RMS
Signal-to-noise ratio ..... ≥ 62 dBA
Frequency response ..... 63 – 16000 Hz, ± 3 dB
Input sensitivity AUX ..... 0.5 V (max. 2 V)
Impedance loudspeakers ..... 4 Ω

CD PLAYER

Frequency range ..... 30 – 16000 Hz
Si"nal-to-noise ratio ..... 75 dBA

TUNER

FM wave range ..... 87.5 – 108 MHz
MW wave range ..... 531 – 1602 kHz
Sensitivity at 75 Ω
– mono, 26 dB signal-to-noise ratio ..... 2.8 µV
– stereo, 46 dB signal-to-noise ratio ..... 61.4 µV
Selectivity ..... ≥ 28 dB
Total harmonic distortion ..... ≤ 5%
Frequency response ..... 63 – 12500 Hz (± 3 dB)
Signal-to-noise-ratio ..... ≥ 50 dBA

USB PLAYER

USB 12Mb/s, V1.1
..... support MP3 and WMA files
Number of albums/folders ..... maximum 99
Number of tracks/titles ..... maximum 400

SPEAKERS

Bass reflex system
Dimensions (w x h x d) . 125 x 250 x 270 (mm)

GENERAL INFORMATION

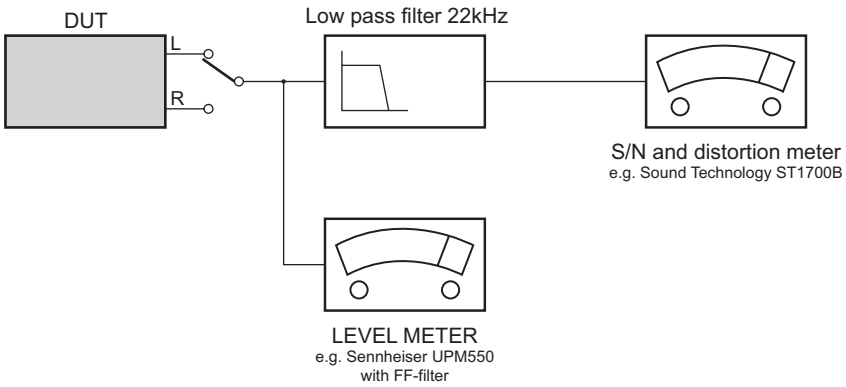
AC Power ..... 220 – 240 V / 50 Hz
Dimensions (w x h x d) .... 222 x 92 x 218 (mm)
Weight(with/without speakers) ..... 11 / 7.2 kg
Standby power consumption ..... <7 W
Eco power standby ..... <1 W

Specifications and external appearance are subject to change without notice.

MEASUREMENT SETUP

CD

Use Audio Signal Disc SBC429 4822 397 30184 (replaces test disc 3)
L.P.F. = 13 th order filter 4822 395 30204



SERVICE AIDS

Service Tools:

Universal Torx driver holder 4822 395 91019
Torx bit T10 150mm 4822 395 50456
Torx driver set T6-T20 .....4822 395 50145
Torx driver T10 extended 4822 395 50423

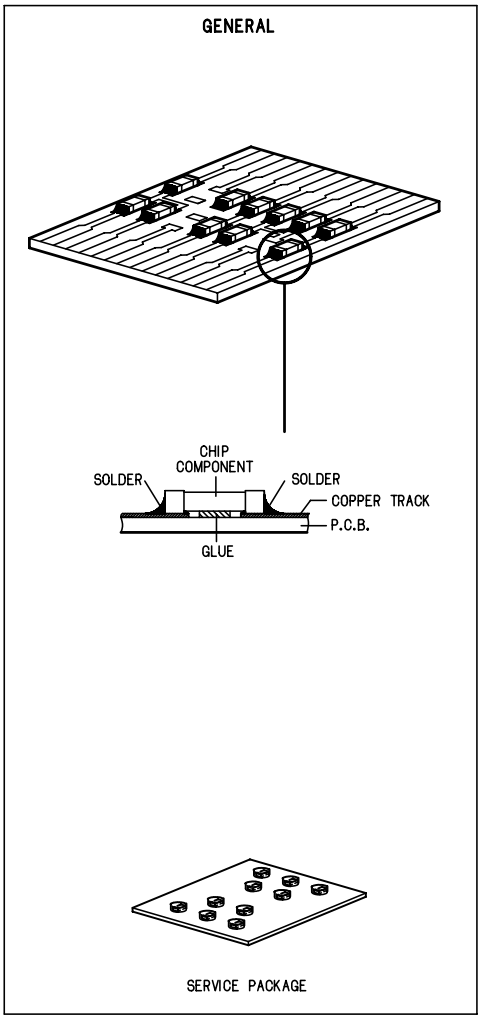
Compact Disc:

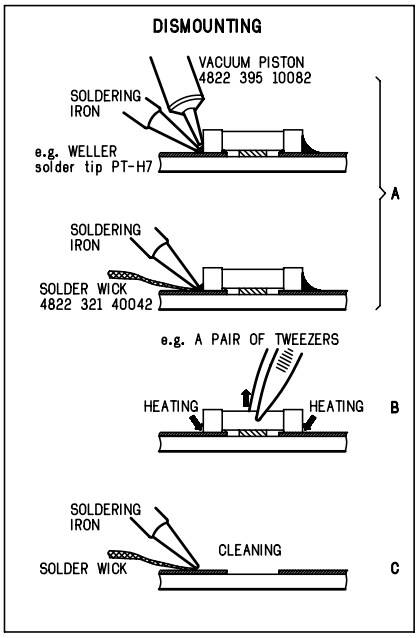
SBC426/426A Test disc 5 + 5A 4822 397 30096
SBC442 Audio Burn-in test disc 1kHz 4822 397 30155
SBC429 Audio Signals disc 4822 397 30184
Dolby Pro-logic Test Disc 4822 395 10216

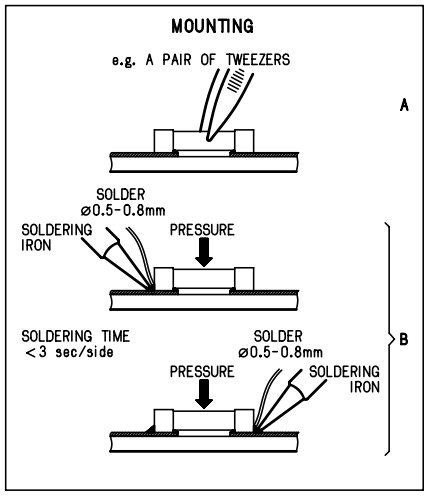
ESD Equipment:

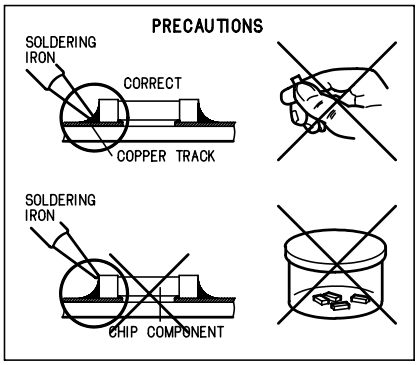
Anti-static table mat - large 1200x650x1.25mm ...4822 466 10953
anti-static table mat - small 600x650x1.25mm 4822 466 10958
Anti-static wristband 4822 395 10223
Connectorbox (1MΩ) 4822 395 11307
Extension cable
(to connect wristband to conn.box) 4822 320 11305
Connecting cable
(to connect table mat to conn.box) 4822 320 11306
Earth cable (to Connect product to mat or box) --4822 320 11308
Complete kit ESD3
(combining all above products) 4822 320 10671
Wristband tester 4822 344 13999

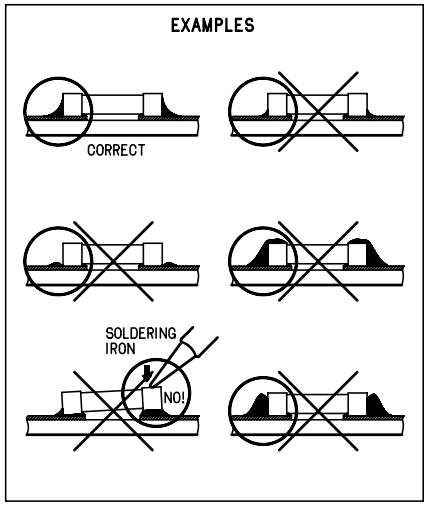
HANDLING CHIP COMPONENTS











ESD

(GB) WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

(F) ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).
Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

(D) WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kan die Lebensdauer drastisch reduzieren.
Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes.
Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

(NL) WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen.
Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(I) AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

(GB) ESD PROTECTION EQUIPMENT:

Complete Kit ESD3 (small tablemat, wristband, connection box, extention cable and earth cable) 4822 310 10671
Wristband tester 4822 344 13999

(GB)
Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used

Safety components are marked by the symbol ⚠.

(NL)
Veiligheidsbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

De Veiligheidsonderdelen zijn aangeduid met het symbool ⚠

(F)
Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utiliséés les piéces de rechange identiques à celles spécifiées.

Less composants de sécurité sont marqués ⚠

(D)
Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Original zustand des Geräts darf nicht verändert werden; für Reparaturen sind Original-Ersatzteile zu verwenden.

Sicherheitsbauteile sind durch das Symbol ⚠ markiert.

(I)
Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.

Componenty di sicurezza sono marcati con ⚠

(GB)
After servicing and before returning set to customer perform a leakage current measurement test from all exposed metal parts to earth ground to assure no shock hazard exist. The leakage current must not exceed 0.5mA.

CLASS 1
LASER PRODUCT

(GB) Warning !

Invisible laser radiation when open.
Avoid direct exposure to beam.

(S) Varning !

Osynlig laserstrålning när apparaten är öppnad och spärren är urkopplad. Betrakta ej strålen.

(SF) Varoitus !

Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

(DK) Advarse !

Usynlig laserstråling ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsaettelse for stråling.

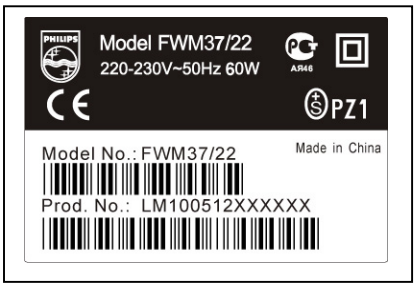
(F)
"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne".

INFORMATION ABOUT LEAD-FREE SOLDERING

Philips CE is producing lead-free sets from 1.1.2005 onwards.
IDENTIFICATION:

Regardless of special logo (not always indicated) one must treat all sets from 1 Jan 2005 onwards, according next rules:

Example S/N:



Bottom line of typeplate gives a 14-digit S/N. Digit 5&6 is the year, digit 7&8 is the week number, so in this case 2005 wk12

So from 0501 onwards = from 1 Jan 2005 onwards

***Important note*: In fact also products of year 2004 must be treated in this way as long as you avoid mixing solder-alloys (leaded/ lead-free). So best to always use SAC305 and the higher temperatures belong to this.**

Due to lead-free technology some rules have to be respected by the workshop during a repair:

- Use only lead-free solder alloy Philips SAC305 with order code 0622 149 00106. If lead-free solder-paste is required, please contact the manufacturer of your solder-equipment. In general use of solder-paste within workshops should be avoided because paste is not easy to store and to handle.

- Use only adequate solder tools applicable for lead-free solder alloy. The solder tool must be able
  - To reach at least a solder-temperature of 400°C,
  - To stabilize the adjusted temperature at the solder-tip
  - To exchange solder-tips for different applications.
- Adjust your solder tool so that a temperature around 360°C – 380°C is reached and stabilized at the solder joint. Heating-time of the solder-joint should not exceed ~ 4 sec. Avoid temperatures above 400°C otherwise wear-out of tips will rise drastically and flux-fluid will be destroyed. To avoid wear-out of tips switch off un-used equipment, or reduce heat.
- Mix of lead-free solder alloy / parts with leaded solder alloy / parts is possible but PHILIPS recommends strongly to avoid mixed solder alloy types (leaded and lead-free).
  If one cannot avoid or does not know whether product is lead-free, clean carefully the solder-joint from old solder alloy and re-solder with new solder alloy (SAC305).
- Use only original spare-parts listed in the Service-Manuals. Not listed standard-material (commodities) has to be purchased at external companies.
- Special information for BGA-ICs:
  - always use the 12nc-recognizable soldering temperature profile of the specific BGA (for de-soldering always use the lead-free temperature profile, in case of doubt)
  - lead free BGA-ICs will be delivered in so-called 'dry-packaging' (sealed pack including a silica gel pack) to protect the IC against moisture. After opening, dependent of MSL-level seen on indicator-label in the bag, the BGA-IC possibly still has to be baked dry. (MSL=Moisture Sensitivity Level). This will be communicated via AYS-website.
  Do not re-use BGAs at all.

- For sets produced before 1.1.2005 (except products of 2004), containing leaded solder-alloy and components, all needed spare-parts will be available till the end of the service-period. For repair of such sets nothing changes.

- On our website **www.atyourservice.ce.Philips.com** you find more information to:

  - BGA-de-/soldering (+ baking instructions)
  - Heating-profiles of BGAs and other ICs used in Philips-sets

  You will find this and more technical information within the "magazine", chapter "workshop news".

For additional questions please contact your local repair-helpdesk.

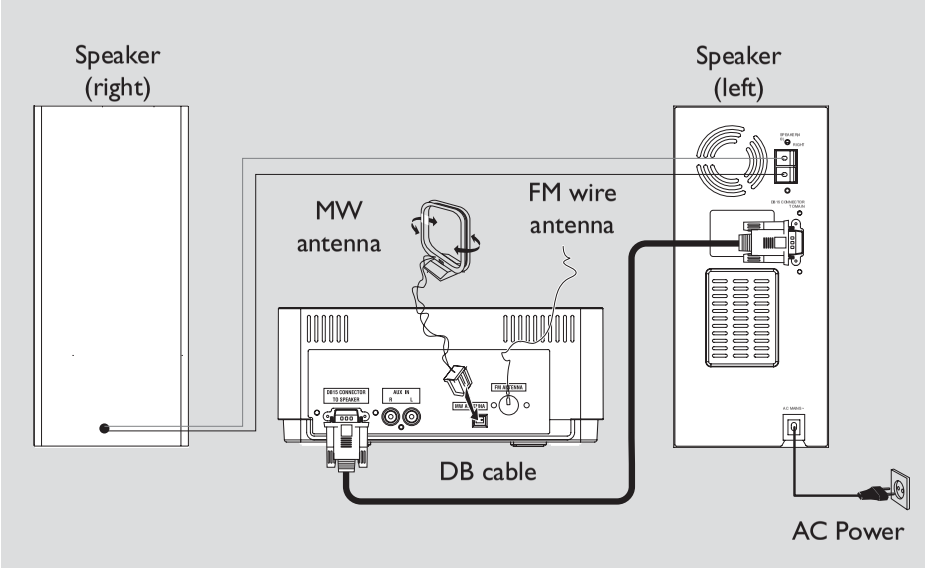
SERVICE INSTRUCTION

Safety regulations require that after a repair, the set must be returned in its original condition. Pay in particular attention to the following points:

- Route the wire trees correctly and fix them with the mounted cable clamps.
- Check the insulation of the AC Power lead for external damage.
- Check the strain relief of the AC Power cord for proper function.
- Check the electrical DC resistance between the AC Power Plug and the secondary side (only for sets which have a AC Power isolated power supply):

1. Unplug the AC Power cord and connect a wire between the two pins of the AC Power plug.
2. Set the AC Power switch to the "on" position (keep the AC Power cord unplugged!).
3. Measure the resistance value between the pins of the AC Power plug and the metal shielding of the tuner or the aerial connection on the set. The reading should be larger than 4.5 Mohm (For U.S. it should be between 4.2 Mohm and 12 Mohm).
4. Switch "off" the set, and remove the wire between the two pins of the AC Power plug.

- Check the cabinet for defects, to avoid touching of any inner parts by the customer.



Rea connections

The type plate is located at the rear of the system.
For users in the U.K.: please follow the instructions .

Ⓐ Powe

Before connectin" the AC power cord on the left speaker to the wall outlet, ensure that all other connections have been made.

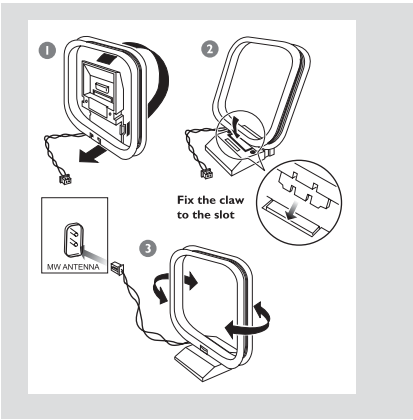
Warning!
– For optimal performance, use only the original power cable.
– Never make or change any connections with the power switched on.

To avoid overheating of the system, a safety circuit has been built in. Therefore, your system may switch to Standby mode automatically under extreme conditions. If this happens, let the system cool down before reusing it *(not available for all versions).*

Ⓑ Antennas Connection

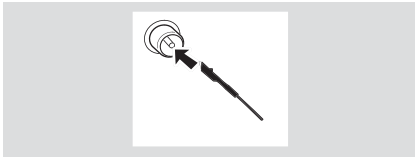
Connect the supplied MW loop antenna and FM antenna to the respective terminals. Adjust the position of the antenna for optimal reception.

MW Antenna



- Position the antenna as far as possible from a TV, VCR or other radiation source.

FM Antenna

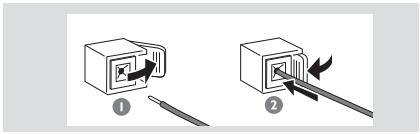


- For better FM stereo reception, connect an outdoor FM antenna to the FM ANTENNA terminal.

Ⓒ Speake s Connection

1 Connect one end of the supplied DB cable to the DB15 CONNECTOR TO MAIN" terminal on the back of the left speaker and the other end to the DB15 CONNECTOR TO SPEAKER" terminal on the back of the main set by matchin" the pins.
- Fix the two screws on each connector to ensure firm connection.

2 Connect the ri"ht speaker wires to the terminals marked SPEAKER (4 Ω) RIGHT", colored (marked) wire to "**+**" and black (unmarked) wire to "**-**".



- Fully insert the stripped portion of the speaker wire into the terminal as shown.

Notes:

For optimal sound performance, use the supplied speakers.

Do not connect more than one speaker to any one pair of +/- speaker terminals.

Do not connect speakers with an impedance lower than the speakers supplied. Please refer to the SPECIFICATIONS section of this manual.

Optional connection

The optional equipment and connectin" cords are not supplied. Refer to the operatin" instructions of the connected equipment for details.

Connecting a USB device o memo ca d

By connectin" a USB mass stora"e device (includin" USB flash memory, USB flash players or memory cards) to the Hi-Fi system, you can enjoy the device's stored music throu"h the powerful speakers of Hi-Fi system.

- Insert the USB device's USB plu" into the socket on the set.

OR

for the devices with USB cables:

1 Insert one plu" of the USB cable to the socket on the set.

2 Insert the other plu" of the USB cable to the USB output terminal of the USB device.

OR

for the memory card:

1 Insert the memory card into a card reader (not supplied).

2 Use a USB cable to connect the card reader into the socket on the set.

Connecting a non-USB device

Use a cinch cable to connect **AUX IN (R/L)** to the analo"ue audio out terminals of an external equipment (TV, VCR, Laser Disc player, DVD player or CD Recorder).

Note:

If you are connecting equipment with a mono output (a single audio out terminal), connect it to the AUX IN left terminal. Alternatively, you can use a "single to double" cinch cable (the output sound still remain mono).

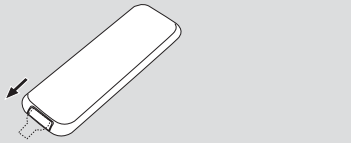
Preparations

Before using the remote control

1 Pull out the plastic protective sheet.

2 Select the source you wish to control by pressing one of the source select keys on the remote control (for example CD, TUNER).

3 Then select the desired function (for example ▶II, ◀◀, ▶▶).



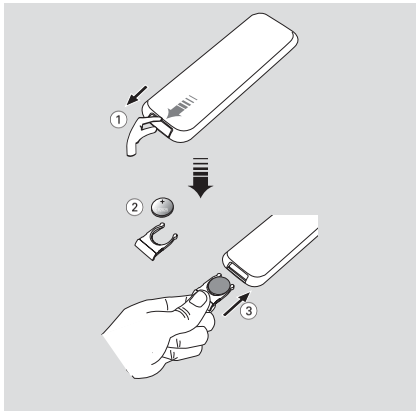
Remove the plastic protective sheet

Replacing battery (lithium CR2025) into the remote control

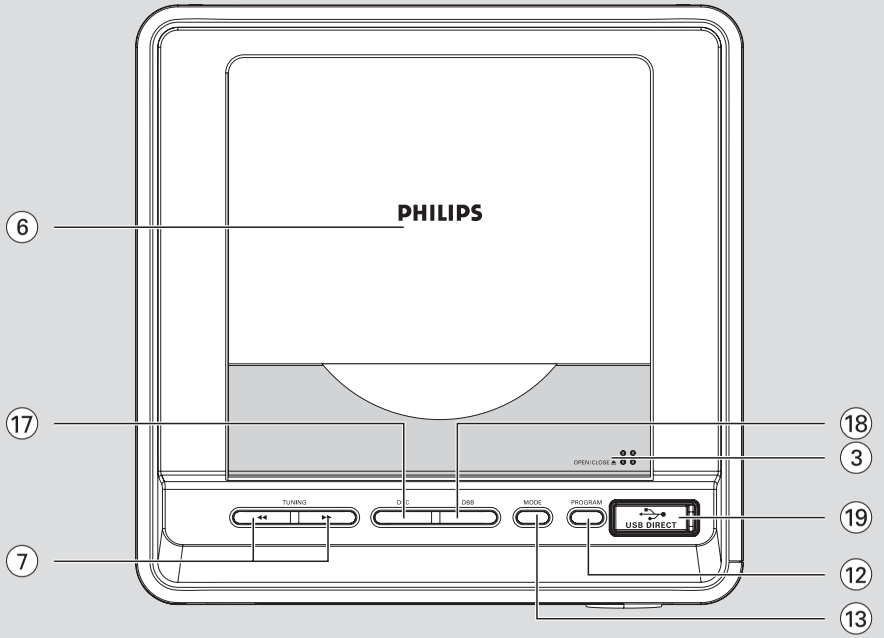
1 Press the slot on the battery compartment.

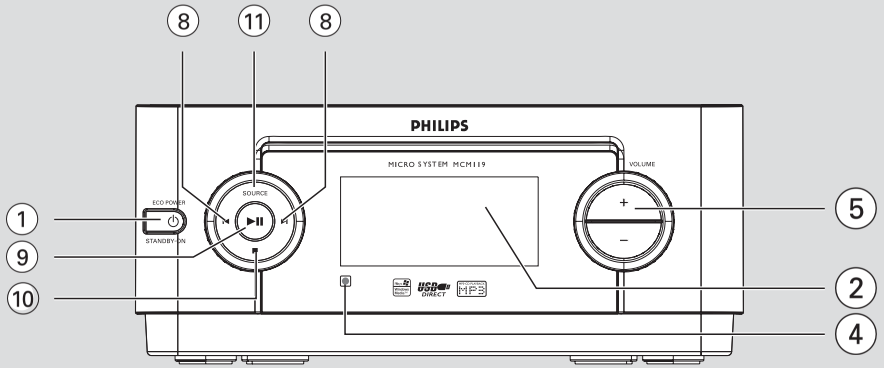
2 Pull out the battery compartment.

3 Replace a new battery and fully insert the battery compartment back to the original position.

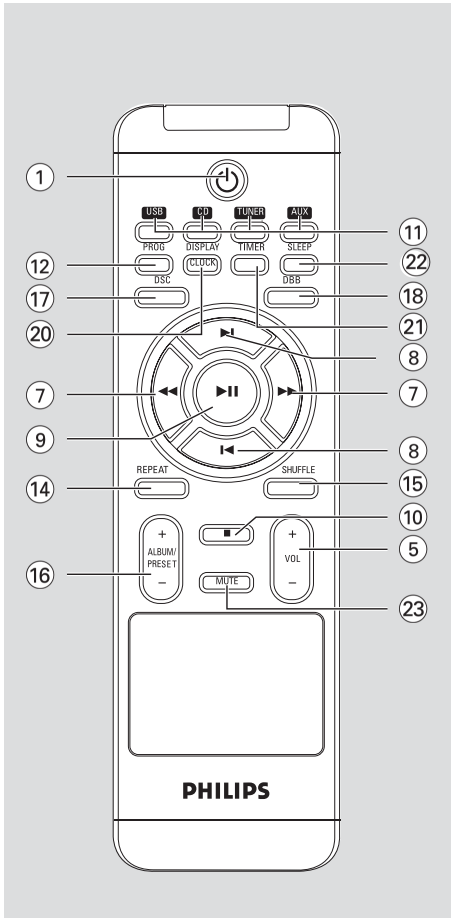


CAUTION!
Batteries contain chemical substances, so they should be disposed of properly.





Controls



Cont ols on the s stem and emote cont ol

① **STANDBY-ON/ ECO POWER (⏻)**
– switches the system on or to Eco Power standby/normal standby with clock display.

② **Displa sc een**
– shows the status of the system.

③ **OPEN • CLOSE ⏏**
– opens/closes the CD door.

④ **IR**
– remote sensor

⑤ **VOLUME +/– (VOL +/–)**
– adjusts the volume level.
– adjusts the hours and minutes for the clock/ timer function.
– selects a source and 12 or 24 hour mode for the timer function.

⑥ **CD Doo**

⑦ **TUNING ◀◀ /▶▶**
for TUNER ..... tunes to a station
for CD/MP3-CD/USB
..... fast searches back and forward within a track/disc (press and hold).

⑧ **⏮ / ⏭**
for CD/MP3 -CD/USB
..... skips to the be“innin“ of a current/previous/subsequent track
for TUNER ..... selects a preset radio station.

⑨ **▶ II**
– starts or interrupts playback.

⑩ **■**
– stops disc playback or erases a disc pro“ramme.

⑪ **SOURCE**
– selects the respective sound source for USB/ CD/ TUNER/ AUX.

⑫ **PROGRAM (PROG)**
for CD/MP3-CD/USB
..... pro“rammes tracks.
for TUNER ..... pro“rammes tuner stations.

⑬ **MODE**
– to select various repeat modes or the shuffle play mode for a disc.

⑭ **REPEAT**
– to repeat a track/disc.

⑮ **SHUFFLE**
– plays disc tracks in random order.

⑯ **ALBUM/PRESET +/–**
for MP3-CD/USB
..... skips to the be“innin“ of a current/previous/subsequent album.

⑰ **DSC (Digital Sound Cont ol)**
– selects sound characteristics: ROCK/ JAZZ/ POP/ CLASSIC.

⑱ **DBB (Dynamic Bass Boost)**
– enhances the bass.

⑲ **USB DIRECT**
– jack for the external USB mass stora“e device.

⑳ **DISPLAY/CLOCK**
– sets the clock function.
– displays system time and disc information durin“ playback.

㉑ **TIMER**
– activates/ deactivates or sets the timer function.

㉒ **SLEEP**
– activates/deactivates or selects the sleeper time.

㉓ **MUTE**
– interrupts and resumes sound reproduction.

Notes for remote control:
– First select the source you wish to control by pressing one of the source select keys on the remote control (for example CD,TUNER).
– Then select the desired function (for example ▶ II, ⏮ ⏭).

Troubleshooting

WARNING

Under no circumstances should you try to repair the system yourself, as this will invalidate the warranty. Do not open the system as there is a risk of electric shock.

If a fault occurs, first check the points listed below before taking the system for repair. If you are unable to remedy a problem by following these hints, consult your dealer or Philips for help.

P oblem	Solution
NO DISC" is displayed.	✔ Insert a disc. ✔ Check if the disc is inserted upside down. ✔ Wait until the moisture condensation at the lens has cleared. ✔ Replace or clean the disc, see Maintenance". ✔ Use a finalised CD-RW or a correct MP3-CD format disc.
Radio eception is poo .	✔ If the si"nal is too weak, adjust the antenna or connect an external antenna for better reception. ✔ Increase the distance between the Micro HiFi System and your TV or VCR.
The system does not eact when buttons a e p essed.	✔ Remove and reconnect the AC power plu" and switch on the system a"ain.
Sound cannot be hea d o is of poo quality.	✔ Adjust the volume. ✔ Check that the speakers are connected correctly. ✔ Check if the stripped speaker wire is clamped. ✔ Make sure the MP3-CD was recorded within 32~256 kbps bit rate with samplin" frequencies at 48 kHz, 44.1 kHz or 32 kHz.
The left and ight sound outputs a e eve sed.	✔ Check the speaker connections and location.
The emote cont ol does not function p ope ly.	✔ Select the source (CD or TUNER, for example) before pressin" the function button (▶ ❚❚, ⏮, ⏭). ✔ Reduce the distance between the remote control and the system. ✔ Insert the battery with its polarities (+/– si"ns) ali"ned as indicated. ✔ Replace the battery. ✔ Point the remote control directly toward IR sensor on the front of the system.

Troubleshooting

The time is not wo king.	✔ Set the clock correctly. ✔ Press TIMER to switch on the timer.
The Clock/Time setting is e ased.	✔ Power has been interrupted or the power cord has been disconnected. Reset the clock/timer.
Some files on the USB device a e not displayed.	✔ Check if the number of folders exceeds 99 or the number of titles exceeds 400.
"DE ICE NOT SUPPOVTED" sc olls on the display.	✔ Remove the USB mass stora"e device or select another source.

DISASSEMBLY INSTRUCTIONS(FOR REFERENCE)

Dismantling of the Main Board

1) Loosen 6 screws "A" on the bottom cover as shown in figure 1.
2) Loosen 5 screws "B " on the rear plate as shown in figure 2.
2) Loosen 1 screw " C " at the main board as shown in figure 3.

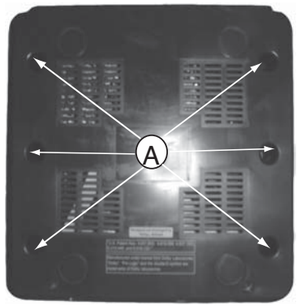


Figure 1

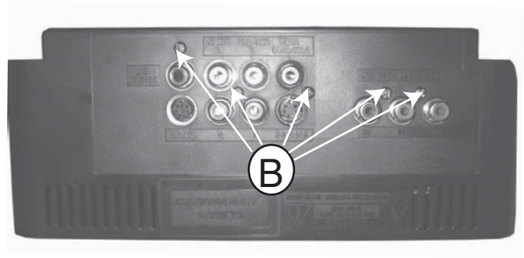


Figure 2

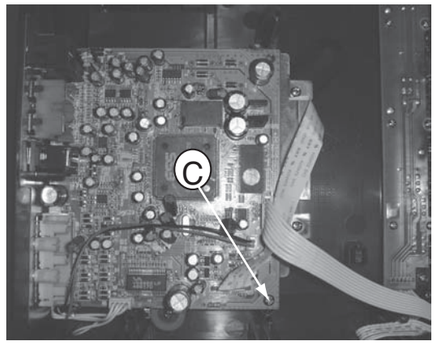


Figure 3

Dismantling of the Key & VFD Board

1) Loosen 6 screws " D " on the bottom of Key board as shown in figure 4.
2) Loosen 7 screws "E" at the bottom of VFD board as shown in figure 5.

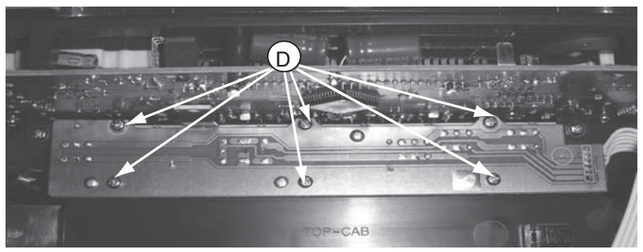


Figure 4

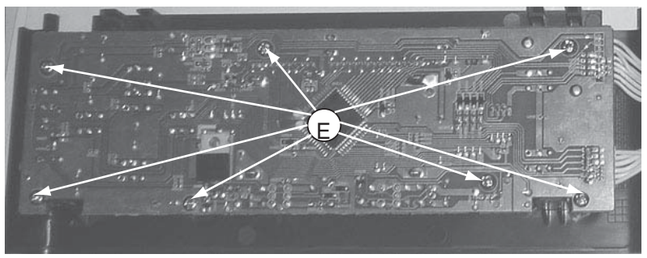


Figure 5

Dismantling of the Power & Amplifier Board

1) Loosen 8 screws " F " on the rear plate of speaker set as shown in figure 6.
2) Loosen 3 screws " G " on the rear plate to dismantling the Amplifier board as shown in figure 7.
3) Loosen 4 screws " H " on the top of power board to dismantling the power board as shown in figure 8.

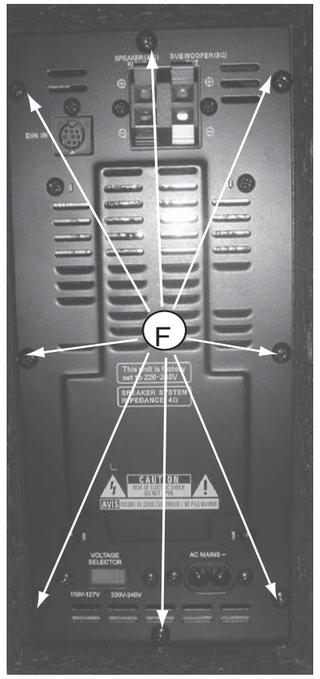


Figure 6

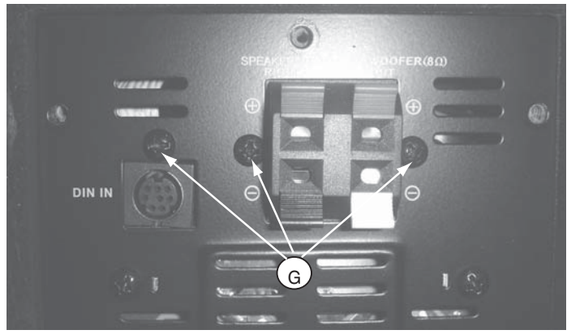


Figure 7

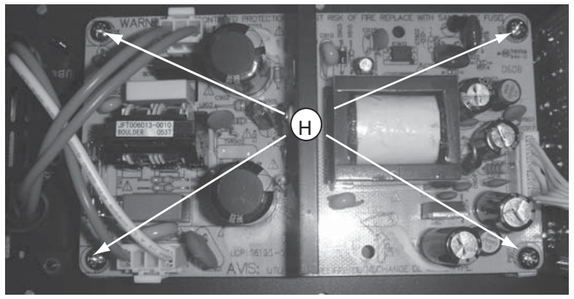


Figure 8

Dismantling of DVD Loader

1) Loosen 2 screws " I " on the metal plate as shown in figure 9.
2) Loosen 4 screws " J " on the top of DVD loader as shown in figure 10.

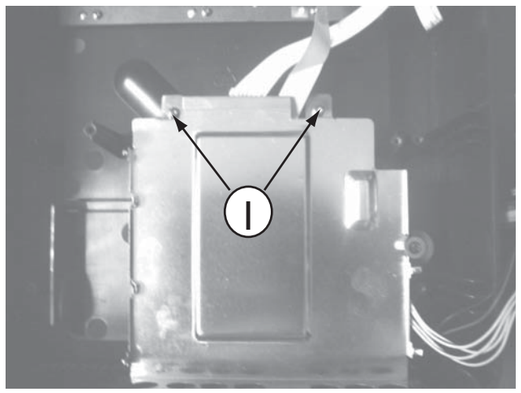


Figure 9

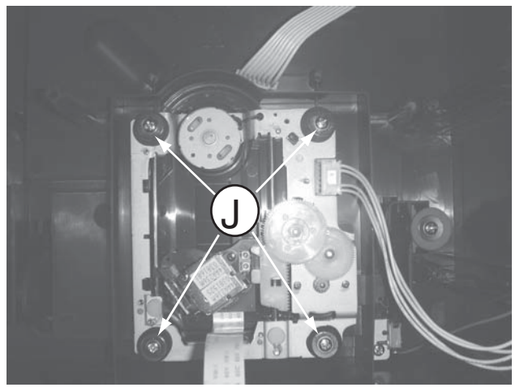
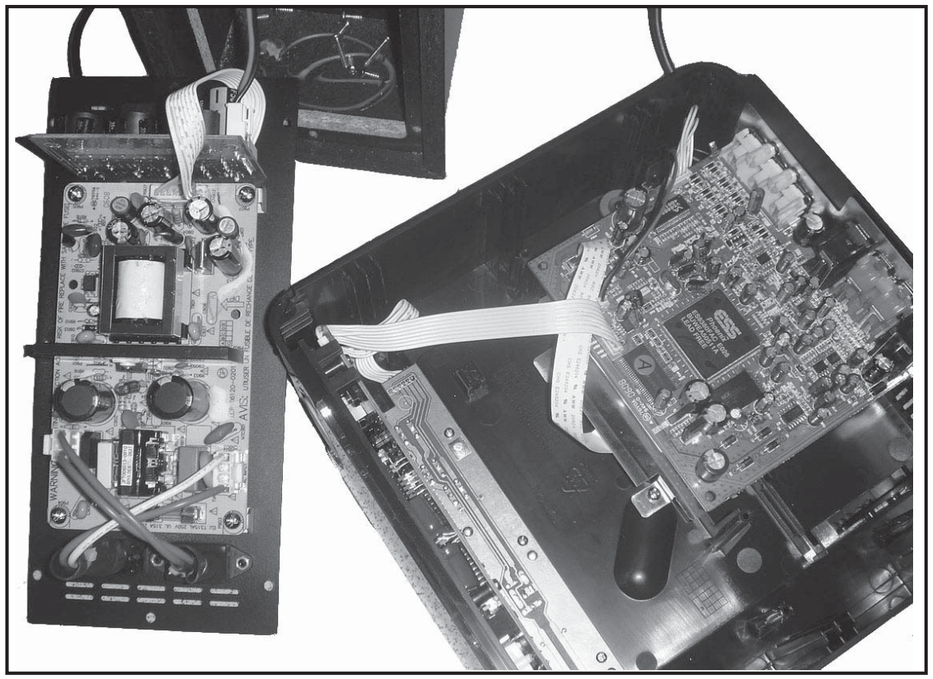


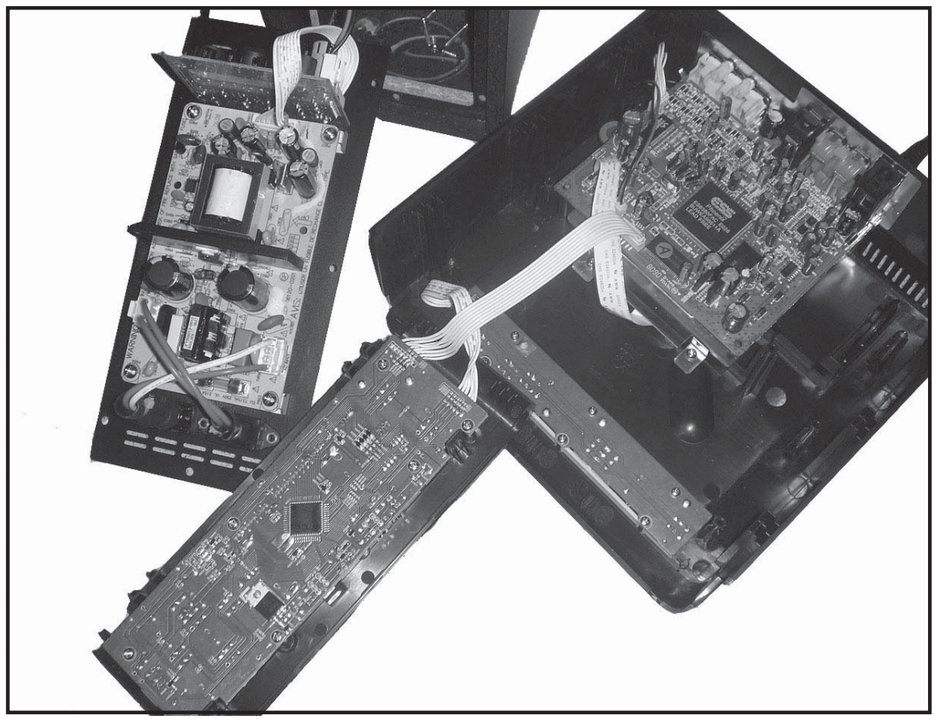
Figure 10

SERVICE POSITIONS

Service position A



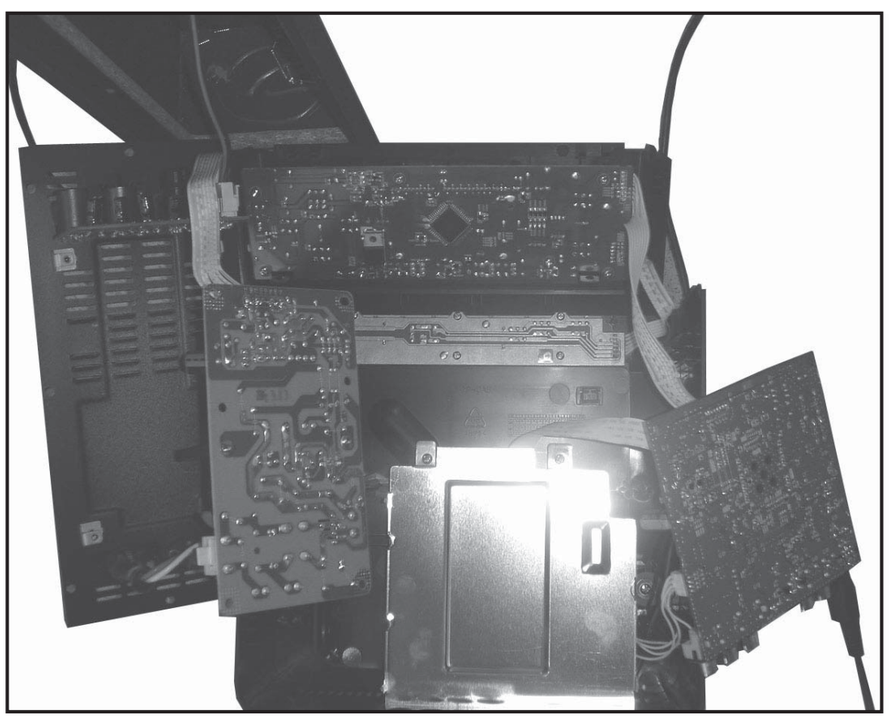
Service position B



2-2

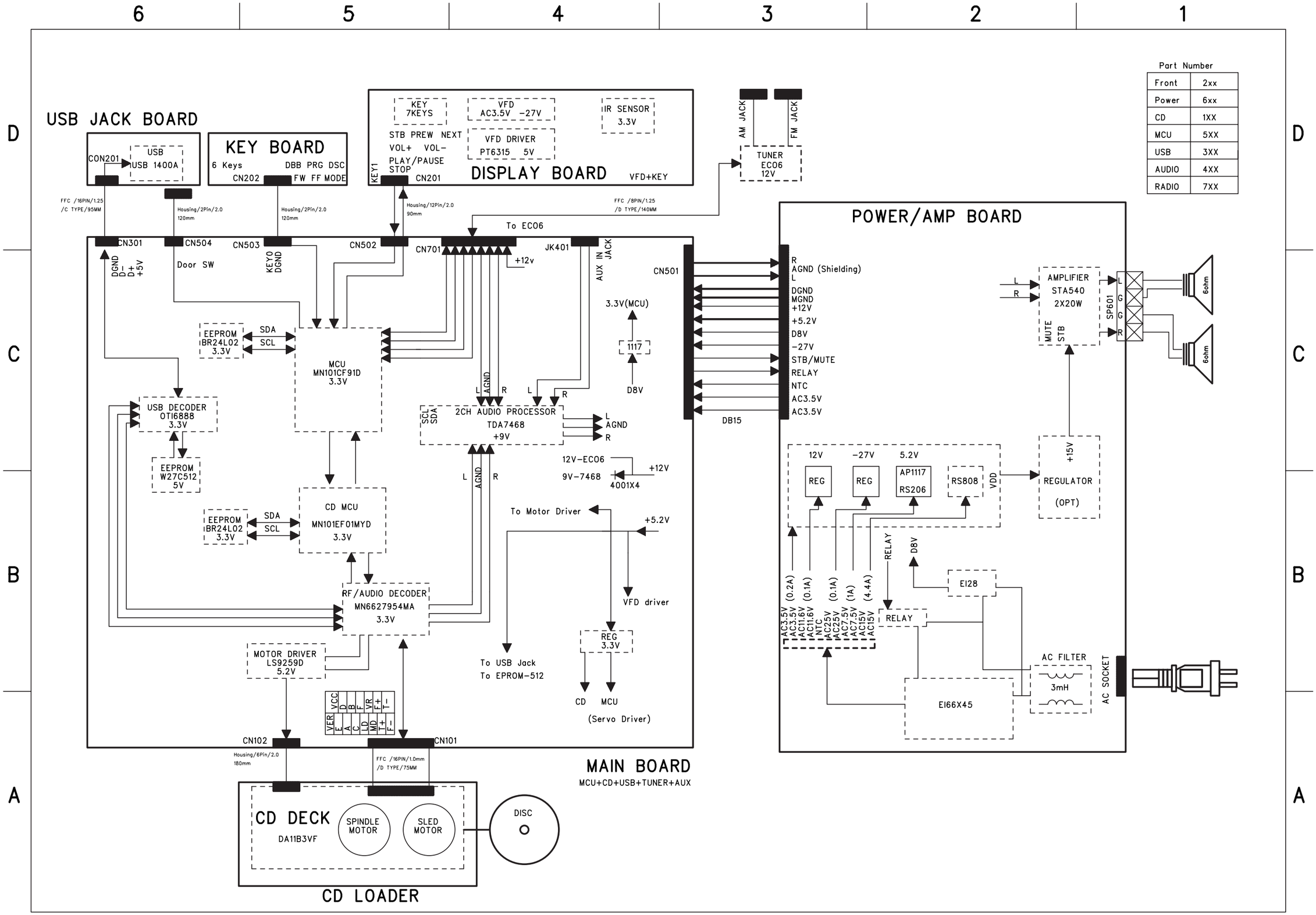
Service position C

Service position D



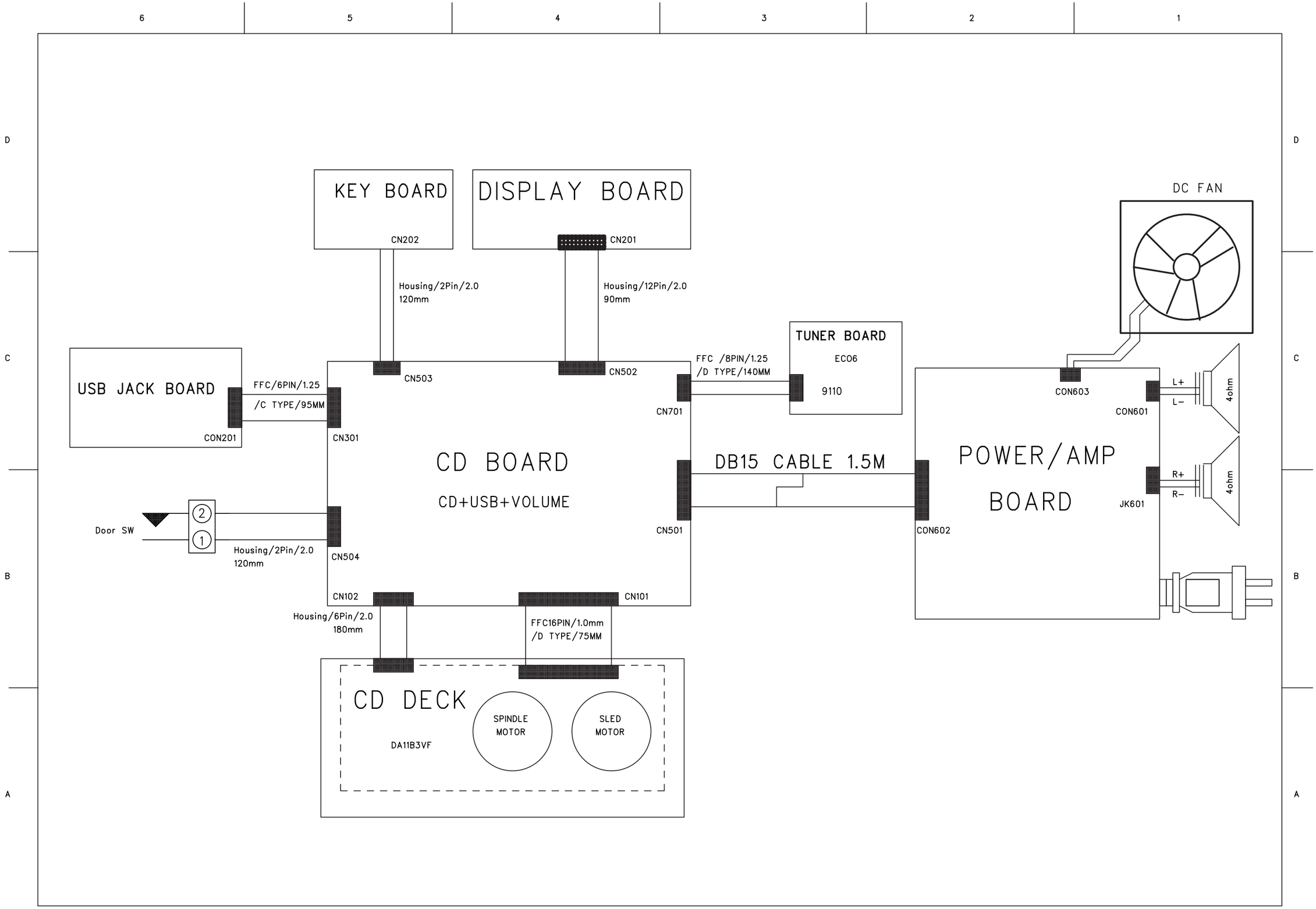
3-1

SET BLOCK DIAGRAM



4-1

SET WIRING DIAGRAM



5-1

DISPLAY & KEY BOARD

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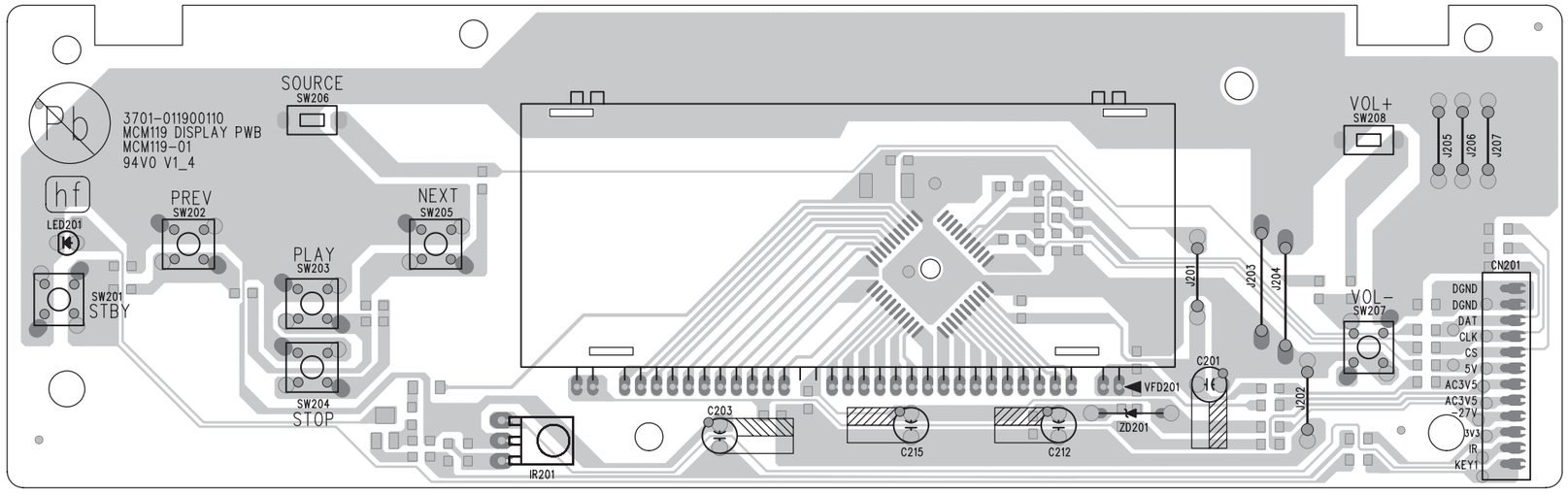
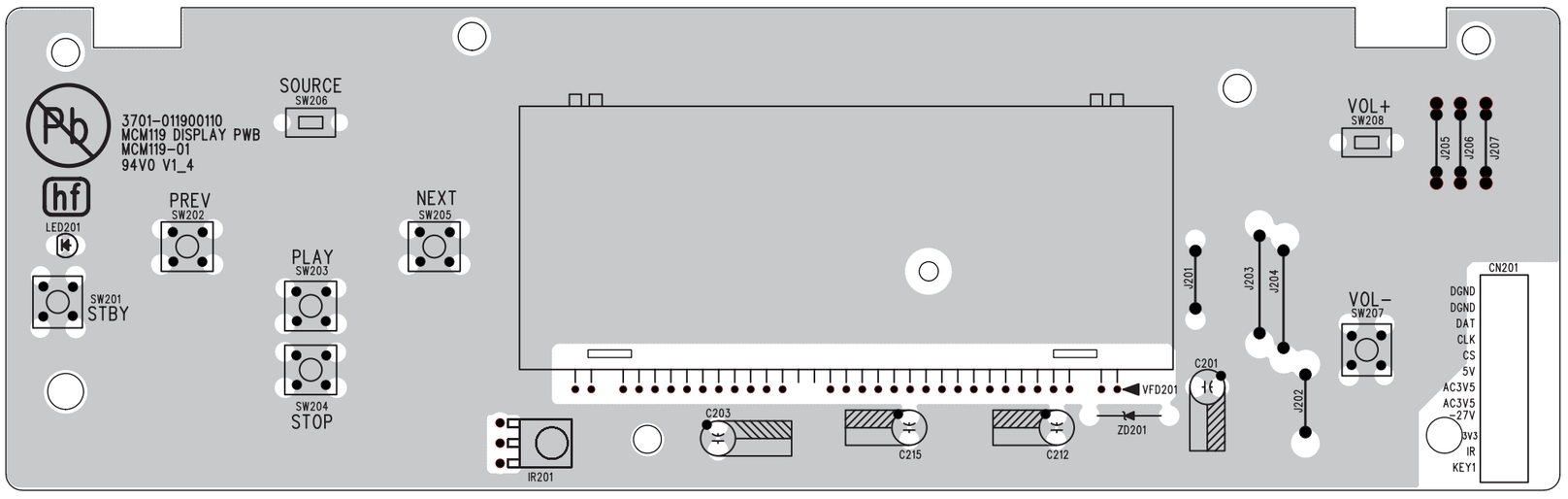
PCB LAYOUT - DISPLAY BOARD
TOP VIEW

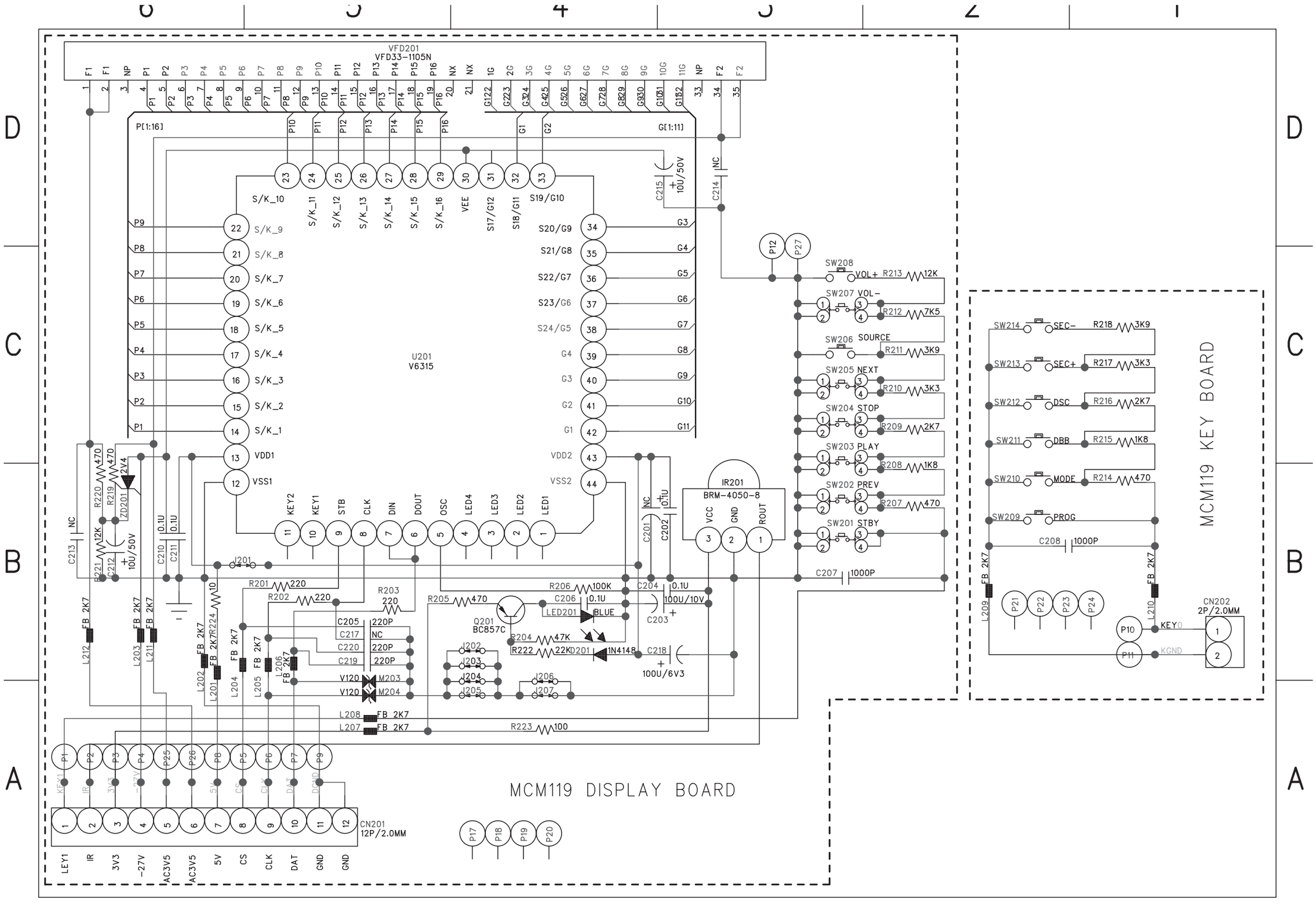


PCB LAYOUT - DISPLAY BOARD
BOTTOM VIEW



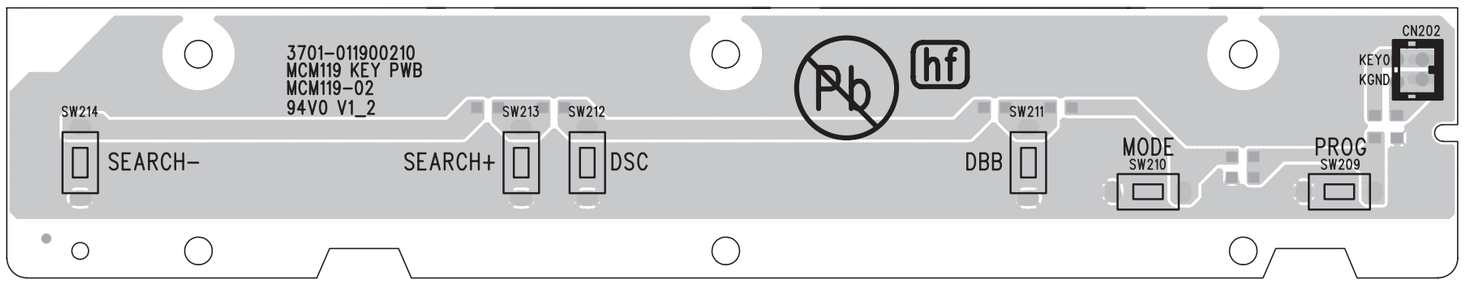
5-3

CIRCUIT DIAGRAM - DISPLAY & KEY BOARD



5-4

PCB LAYOUT - KEY BOARD



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MAIN BOARD

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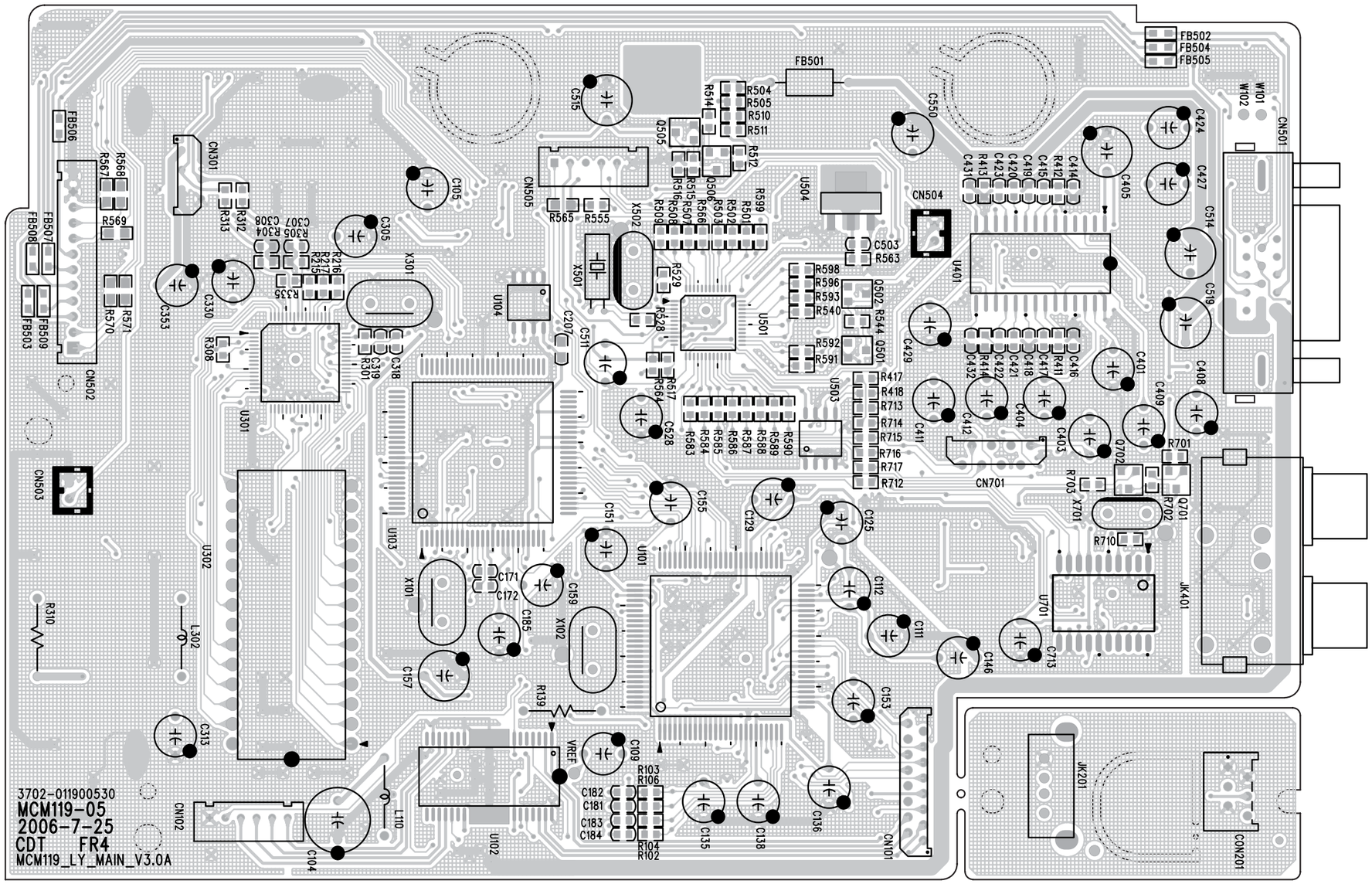
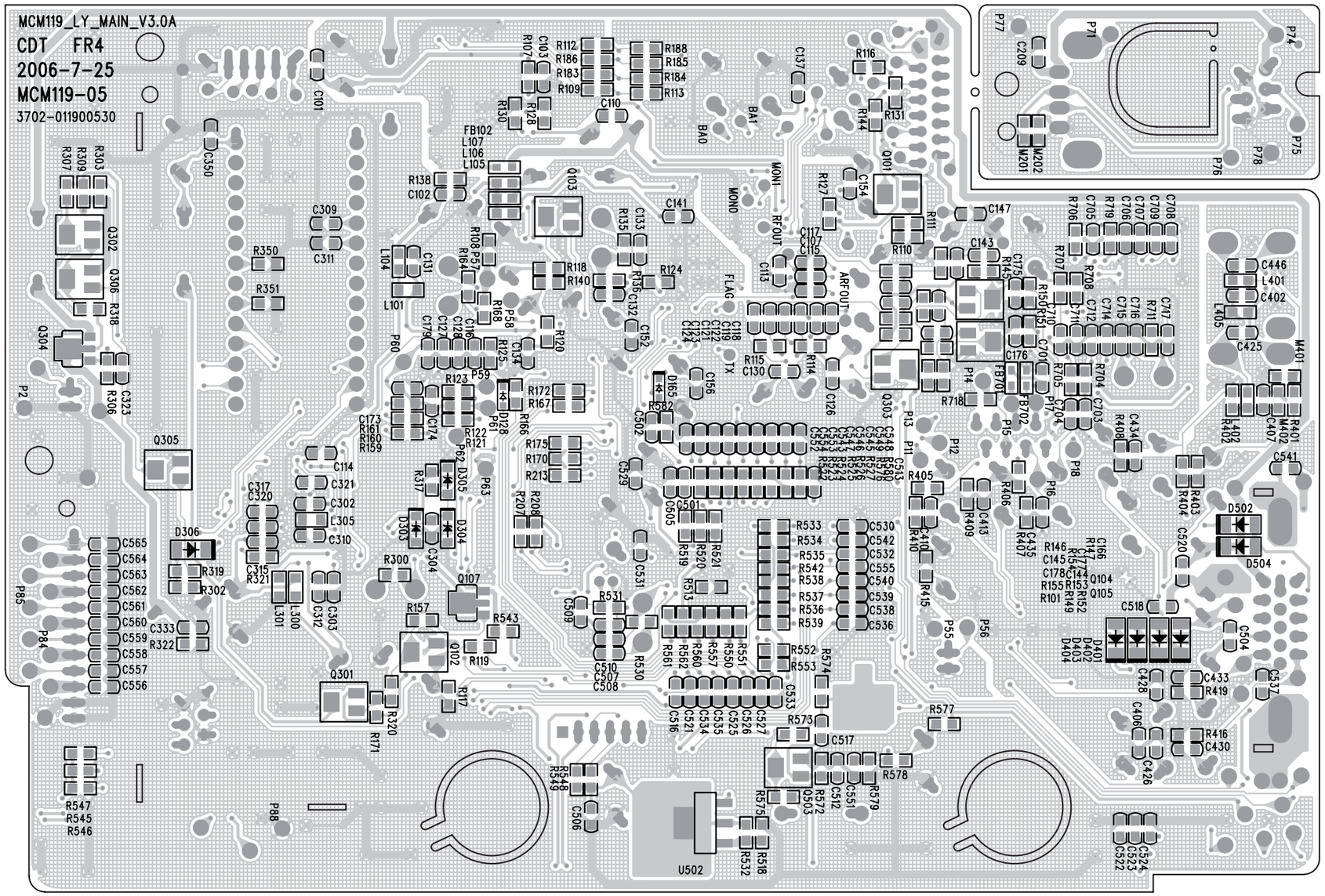
PCB LAYOUT - MAIN & USB BOARD
TOP VIEW



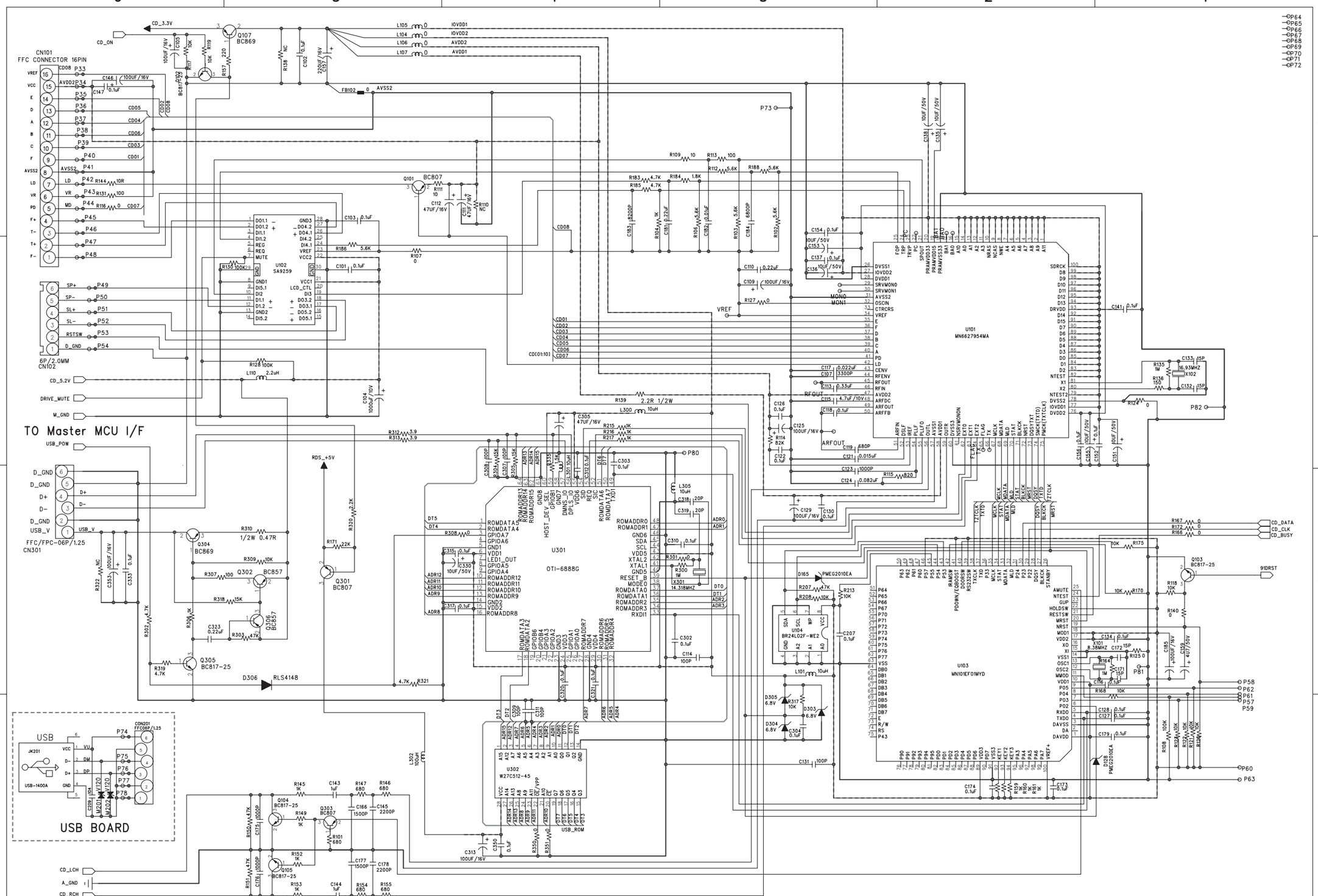
6-3

PCB LAYOUT - MAIN & USB BOARD
BOTTOM VIEW



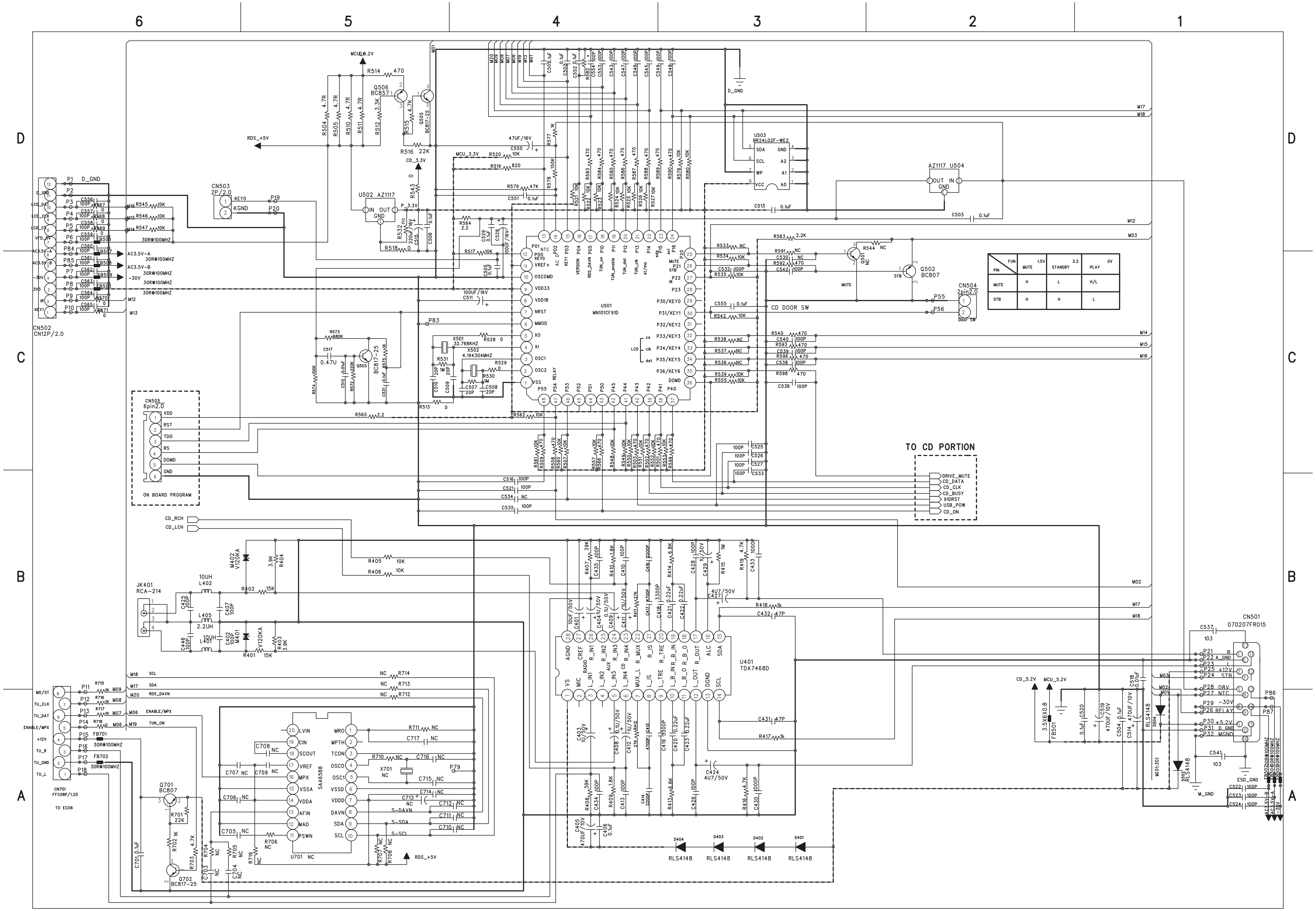
6-4

CIRCUIT DIAGRAM - MAIN BOARD
CD & USB PART



6-5

CIRCUIT DIAGRAM - MAIN BOARD
MCU PART



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POWER BOARD

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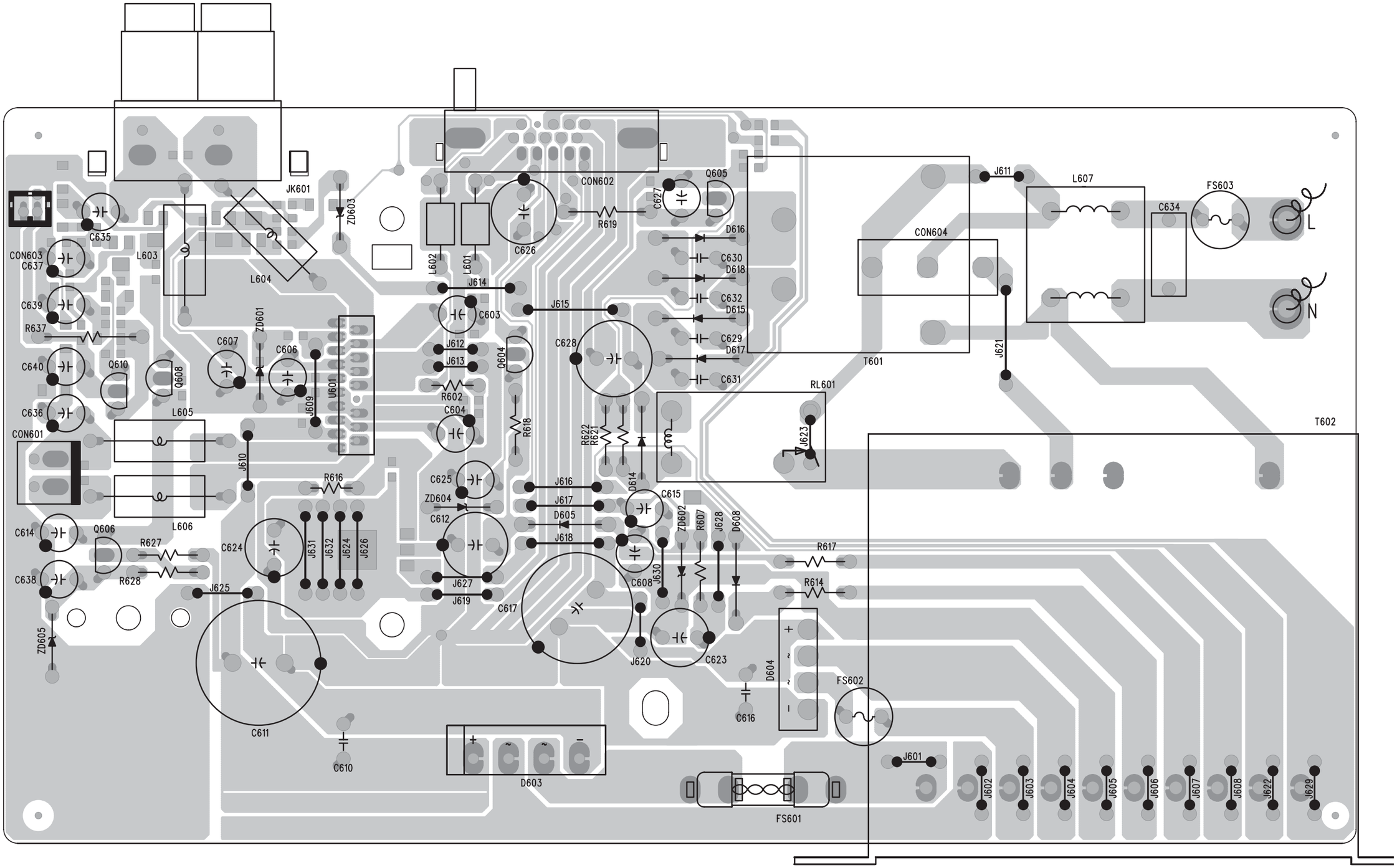
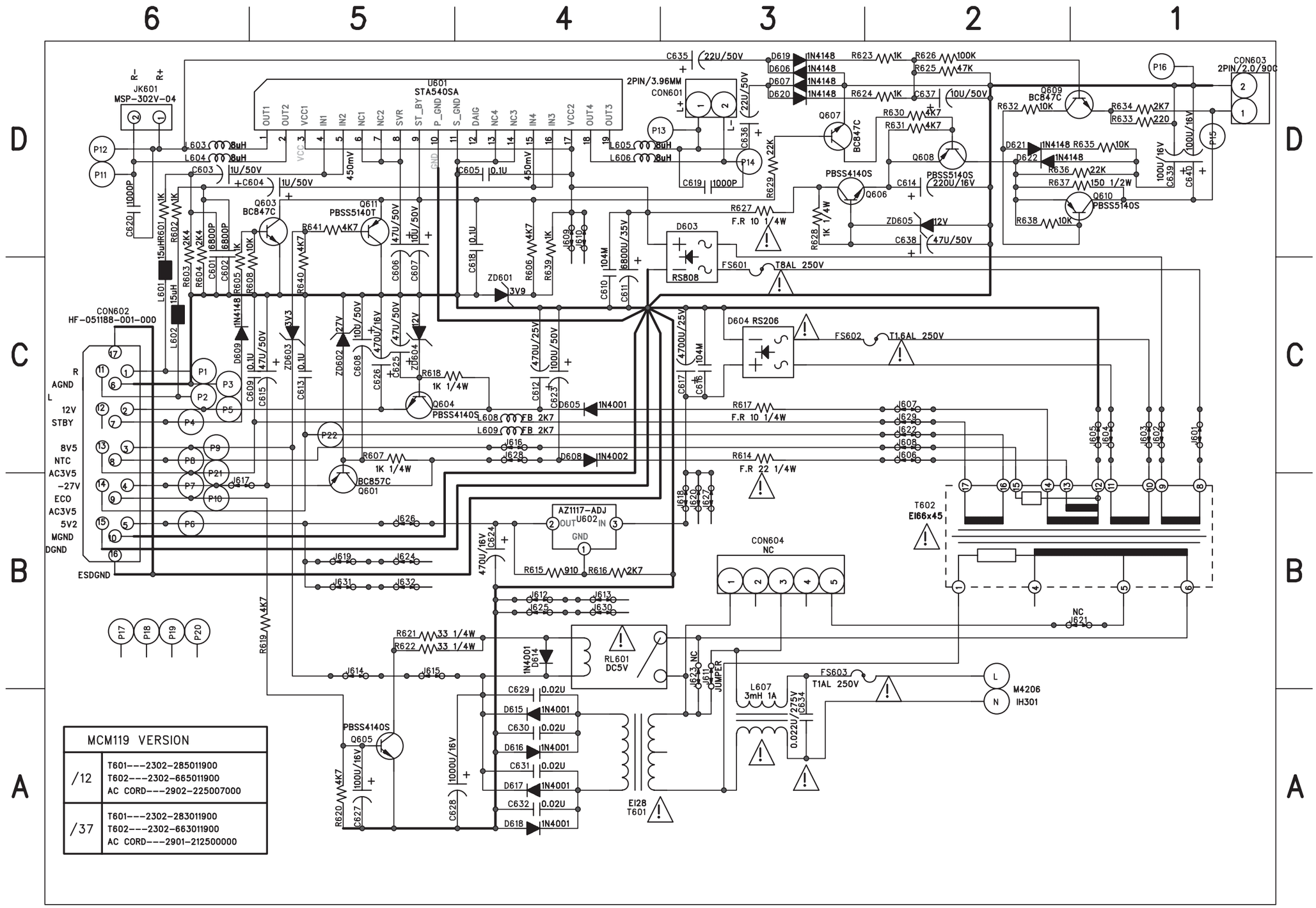
7-2

PCB LAYOUT - POWER BOARD



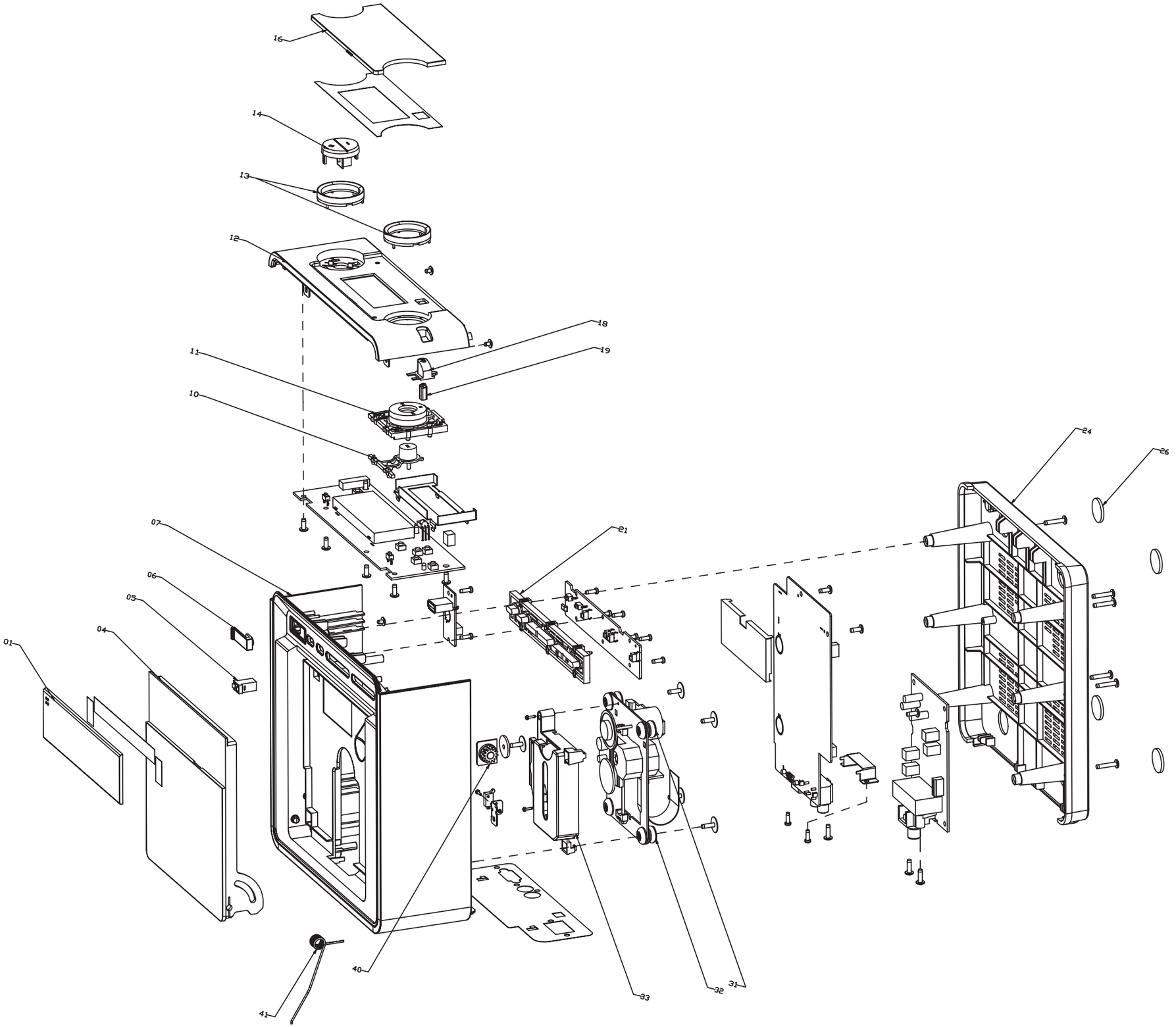
7-3

CIRCUIT DIAGRAM - POWER BOARD



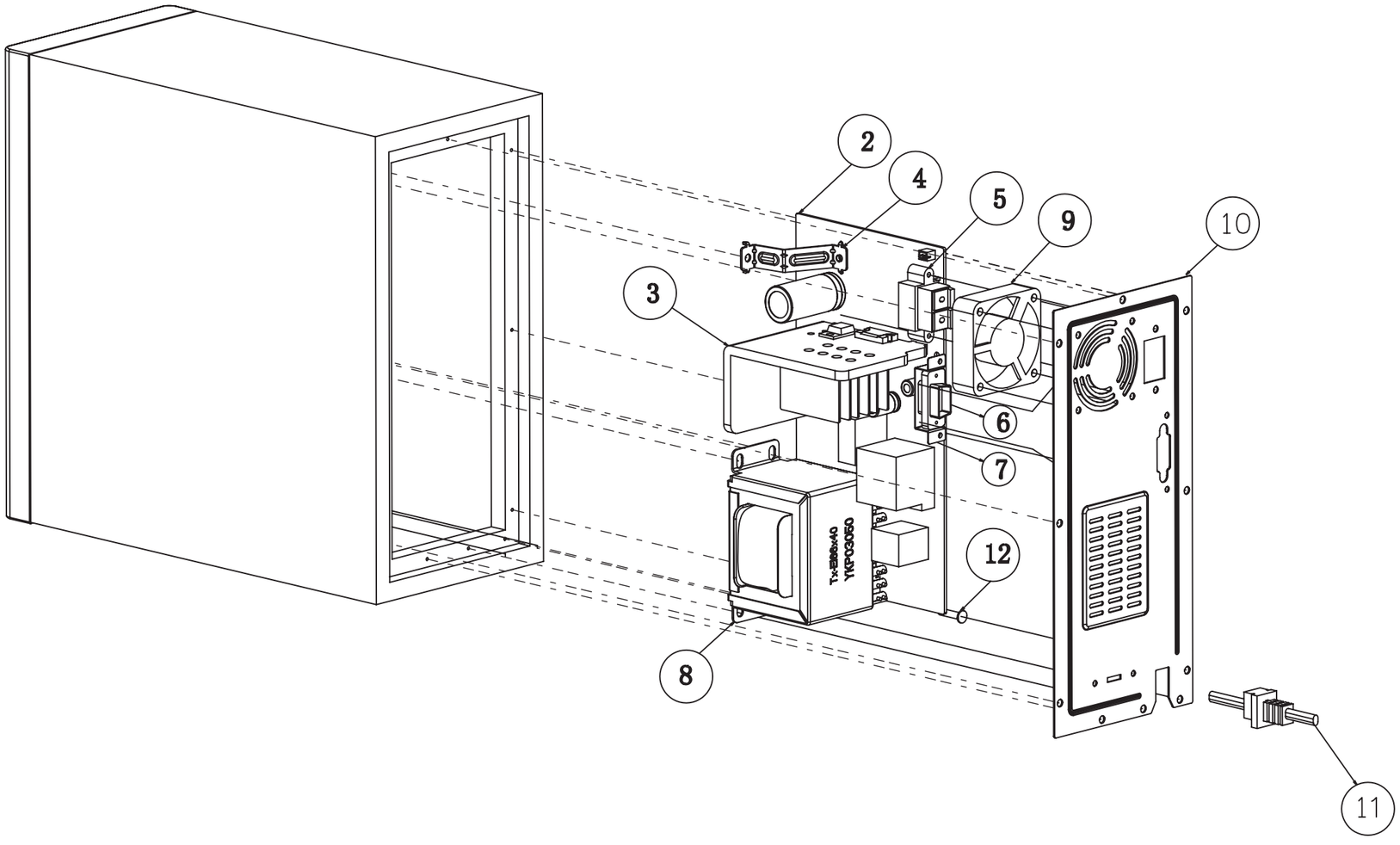
8-1

SET MECHANICAL EXPLODED VIEW



8-2

LEFT SPEAKER BOX EXPLODED VIEW



8-3

MECHANICAL & ACCESSORIES PARTS LIST

01	9965 000 41877	LENS DOOR CD
04	9965 000 41869	DOOR CD
05	9965 000 41882	DOOR LOCK
06	9965 000 41881	RUBBER COVER
07	9965 000 41866	TOP CABINET
10	9965 000 41870	BUTTON PLAY
11	9965 000 41872	BUTTON STOP
12	9965 000 41867	FRONT CABINET
13	9965 000 41871	RING BUTTON
14	9965 000 41874	BUTTON VOLUME
16	9965 000 41876	LENS DISPLAY
18	9965 000 41875	BUTTON POWER
19	9965 000 41878	LENS BUTTON POWER
21	9965 000 41873	BUTTON FUNCTION
24	9965 000 41868	BOTTOM CABINET
31	9940 000 01672	CD DAMPER 658TB 40DEGREE
32	9940 000 01671	CD DAMPER 658TA 30DEGREE
33	9965 000 41879	DUST COVER(SANYO DA11)
40	9940 000 01664	DAMPER GEAR ASSEMBLY
41	9965 000 41880	SPRING DOOR CD
	9940 000 02595	AM LOOP ANT
	9940 000 03388	FM ANT WIRE 75OHM 1.0M
⑨	9940 000 05607	FAN 12VDC 0.1A
	9965 000 41862	REMOTE CONTROL
⚠	9965 000 41863	AC CORD L1.5M (2.5A 250V)
	9965 000 41864	CABLE HDB 15P/M L1500MM
	9965 000 41865	CABLE A/M TO A/F L250
	9965 000 41883	RIGHT SPEAKER BOX
	9965 000 41884	SPK BOX ASSY (L/R) 4R 50W
	9965 000 41885	LEFT SPEAKER BOX W/AMP

ELECTRICAL PARTS LIST - MISCELLANEOUS

9940 000 04237	FM FRONT END MODULE FE450-G11
9940 000 05601	FFC 8P P=1.25MM L=140MM
9965 000 41908	FFC CABLE 6P P1.25MM L95MM
9965 000 41909	FFC CABLE 16P P1.0MM L75MM
9965 000 41910	DETECTOR SW. DTS-10 1P1T
9965 000 41911	CD MECHANISM DA11B3VF.
9965 000 41912	TUNER PWB ASSEMBLY /12
9965 000 41913	KEY BOARD ASSEMBLY /12
9965 000 41914	USB BOARD ASSEMBLY /12

Note: Only these parts mentioned in the list are normal service parts.

ELECTRICAL PARTS - DISPLAY BOARD

D201	9940 000 04217	CH-DIODE RLS4148 LL-34
IR201	9965 000 41893	IR RECEIVER BRM-4050-8-FB2.2
LED201	9965 000 41894	LED 3MM SUPER BLUE
M203	9940 000 04264	MULT. VAR. 10.6-15.4V
M204	9940 000 04264	MULT. VAR. 10.6-15.4V
M205	9940 000 04264	MULT. VAR. 10.6-15.4V
SW201	9940 000 01627	TACT SWITCH AI KFC-A06-5
SW202	9940 000 01627	TACT SWITCH AI KFC-A06-5
SW203	9940 000 01627	TACT SWITCH AI KFC-A06-5
SW204	9940 000 01627	TACT SWITCH AI KFC-A06-5
SW205	9940 000 01627	TACT SWITCH AI KFC-A06-5
SW206	9965 000 41895	SWITCH TACT
SW207	9940 000 01627	TACT SWITCH AI KFC-A06-5
SW208	9965 000 41895	SWITCH TACT
U201	9965 000 41715	IC, VFD DRIVER V6315 LSFP44
VFD201	9965 000 41896	FTD VFD33-1105N

ELECTRICAL PARTS - MAIN BOARD

CN501	9965 000 41886	D-SUB CONNECTOR 15P
D128	9940 000 04422	SCHOTTKY PMEG2010
D165	9940 000 04422	SCHOTTKY PMEG2010
D303	9940 000 04285	ZENER DIODE UDZS6.8B UMD2
D304	9940 000 04285	ZENER DIODE UDZS6.8B UMD2
D305	9940 000 04285	ZENER DIODE UDZS6.8B UMD2
D306	9940 000 04217	CH-DIODE RLS4148 LL-34
D401	9940 000 04217	CH-DIODE RLS4148 LL-34
D402	9940 000 04217	CH-DIODE RLS4148 LL-34
D403	9940 000 04217	CH-DIODE RLS4148 LL-34
D404	9940 000 04217	CH-DIODE RLS4148 LL-34
D502	9940 000 04217	CH-DIODE RLS4148 LL-34
D504	9940 000 04217	CH-DIODE RLS4148 LL-34
JK401	9965 000 41887	JACK RCA-214/ES 5P D=8.4MM
L110	9940 000 04279	RADIAL IND. 1.2R 2.2UH /-5%
L302	9940 000 04226	RAD AXIAL IND. 100UH 3.5R
M401	9940 000 04264	MULT. VAR. 10.6-15.4V
M402	9940 000 04264	MULT. VAR. 10.6-15.4V
R310	9940 000 05689	RES 0.47R 1/2W /-5% TAPING
U101	9965 000 41888	IC MN6627954MA DSP
U102	9965 000 41889	IC SA9259 5-CH MOTOR DRIVER
U103	9965 000 41890	IC MN101E01J TA MASKING
U301	9940 000 04287	IC OTI-6888G USB DECODER
U302	9940 000 04288	IC W27C512-45Z EPROM
U401	9965 000 41701	IC TDA7468D SOUND SO28
U501	9965 000 41891	IC MN101CF91D MCU TQFP048
U502	9965 000 41892	IC AZ1117H-3.3 REGULATOR
U504	9965 000 41892	IC AZ1117H-3.3 REGULATOR
X102	9940 000 04273	CER RESONATOR 16.93MHZ /-0.5

ELECTRICAL PARTS - MAIN BOARD

X301	9940 000 04284	X'TAL 14.318MHZ /-20PPM 20PF
X501	9940 000 05671	XTAL 32.768KHZ /-20PPM
X502	9940 000 04266	X'TAL 4.194304MHZ 30PF /-20P

ELECTRICAL PARTS LIST - POWER BOARD

C611	9940 000 02644	CAP ELECT 6800UF 35V /-20%
C617	9940 000 03286	CAP ELECT 4700UF 25V /-20%
CON602	9965 000 41886	D-SUB CONNECTOR 15P
D601	9940 000 04217	CH-DIODE RLS4148 LL-34
D603	9940 000 05313	RECT. BRIDGE DIODE RS808
D604	9965 000 41897	RECT. BRIDGE DIODE RS808
D606	9940 000 04217	CH-DIODE RLS4148 LL-34
D607	9940 000 04217	CH-DIODE RLS4148 LL-34
D609	9940 000 04217	CH-DIODE RLS4148 LL-34
D619	9940 000 04217	CH-DIODE RLS4148 LL-34
D620	9940 000 04217	CH-DIODE RLS4148 LL-34
D621	9940 000 04217	CH-DIODE RLS4148 LL-34
D622	9940 000 04217	CH-DIODE RLS4148 LL-34
FS601	⚠ 9965 000 40074	FUSE T8AL 250V 5X20MM
FS602	⚠ 9965 000 41898	FUSE RAD 372 LT1.6A 250V
FS603	⚠ 9965 000 41899	FUSE RAD 372 LT1A 250V
JK601	9940 000 02095	SPK TERMINAL TC08-412-0
L603	9965 000 41900	IND. 8UH (3.5A) /-20
L604	9965 000 41900	IND. 8UH (3.5A) /-20
L605	9965 000 41900	IND. 8UH (3.5A) /-20
L606	9965 000 41900	IND. 8UH (3.5A) /-20
L607	9940 000 02657	AC LINE FILTER 3MH 1A
Q604	9940 000 05651	TRANSISTOR PBSS4140S NPN
Q605	9940 000 05651	TRANSISTOR PBSS4140S NPN
Q606	9940 000 05651	TRANSISTOR PBSS4140S NPN
Q608	9940 000 05652	TRANSISTOR PBSS5140S
Q610	9940 000 05652	TRANSISTOR PBSS5140S
R614	⚠ 9940 000 05648	FUSE RES 22R 1/4W /-5%
R617	⚠ 9965 000 41901	FUSE RES 10R 1/4W /-5%

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ELECTRICAL PARTS LIST - POWER BOARD

R627	⚠ 9965 000 41901	FUSE RES 10R 1/4W /-5%
RL601	⚠ 9940 000 05597	RELAY DC5V AC10A
T601	⚠ 9965 000 41902	TRASFO EI-28 AC230V
T602	⚠ 9965 000 41903	TRASFO EI-66X45 AC230V
U601	9965 000 41904	IC STA540SA AMPLIFIER 4X10W
U602	9965 000 41905	IC AZ1117D-ADJTRE1 1A
ZD602	9965 000 41906	ZENER DIODE 1/2W
ZD604	9965 000 41907	ZENER DIODE 12V 1/2W
ZD605	9965 000 41907	ZENER DIODE 12V 1/2W

Note: **Only these parts mentioned in the list are normal service parts.**