

Service
Service
Service



Service Manual

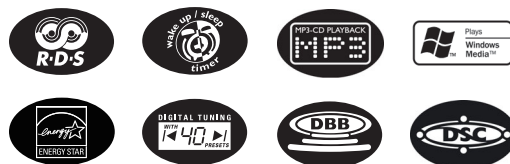


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PHILIPS

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

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.

ESD



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 .

**CLASS 1
LASER PRODUCT**

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:



- 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
 - * Lead free

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

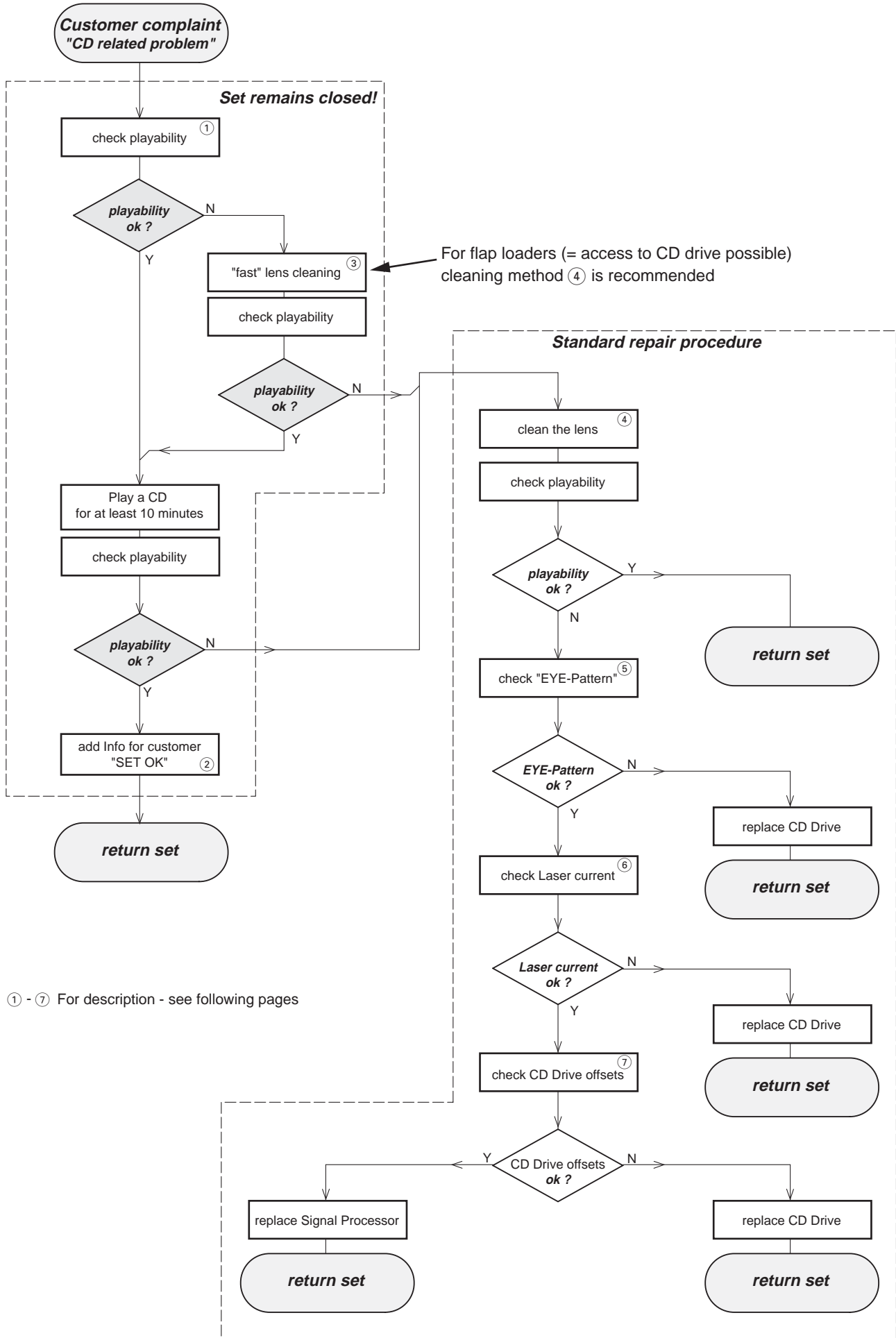
For additional questions please contact your local repair-helpdesk.

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.

CD PLAYABILITY CHECK



For flap loaders (= access to CD drive possible) cleaning method ④ is recommended

① - ⑦ For description - see following pages

CD PLAYABILITY CHECK

①

PLAYABILITY CHECK

For sets which are compatible with **CD-RW** discs
 use CD-RW Printed Audio Disc.....7104 099 96611
 TR 3 (Fingerprint)
 TR 8 (600µ Black dot) **maximum at 01:00**

- playback of these two tracks without audible disturbance
 playing time for: Fingerprint ≥10seconds
 Black dot from 00:50 to 01:10
- jump forward/backward (search) within a reasonable time

For all other sets
 use CD-DA SBC 444A.....4822 397 30245
 TR 14 (600µ Black dot) **maximum at 01:15**
 TR 19 (Fingerprint)
 TR 10 (1000µ wedge)

- playback of all these tracks without audible disturbance
 playing time for: 1000µ wedge ≥10seconds
 Fingerprint ≥10seconds
 Black dot from 01:05 to 01:25
- jump forward/backward (search) within a reasonable time

②

CUSTOMER INFORMATION

It is proposed to add an addendum sheet to the set which informs the customer that the set has been checked carefully - but no fault was found. The problem was obviously caused by a scratched, dirty or copy-protected CD. In case problems remain, the customer is requested to contact the workshop directly. The lens cleaning (method ③) should be mentioned in the addendum sheet.

The final wording in national language as well as the printing is under responsibility of the Regional Service Organizations.

③

FAST LENS CLEANING (dry brush)

Use lens cleaning CD
 SBC AC300.....9082 100 00043

Insert the lens cleaning CD, press PLAY and follow the voice guide's instructions on the CD.

④

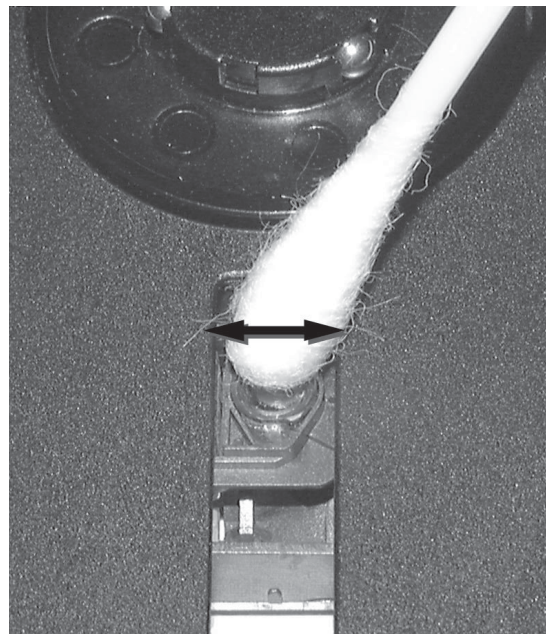
LIQUID LENS CLEANING

Before touching the lens it is advised to clean the surface of the lens by blowing clean air over it. This to avoid that little particles make scratches on the lens.

Because the material of the lens is synthetic and coated with a special anti-reflectivity layer, cleaning must be done with a non-aggressive cleaning fluid. It is advised to use "Cleaning Solvent B4-No2", available with codenumber 4822 389 10026.

The actuator is a very precise mechanical component and may not be damaged in order to guarantee its full function. Clean the lens gently (don't press too hard) with a soft and clean cotton bud moistened with the special lens cleaner.

The direction of cleaning must be in the way as indicated in the picture below.

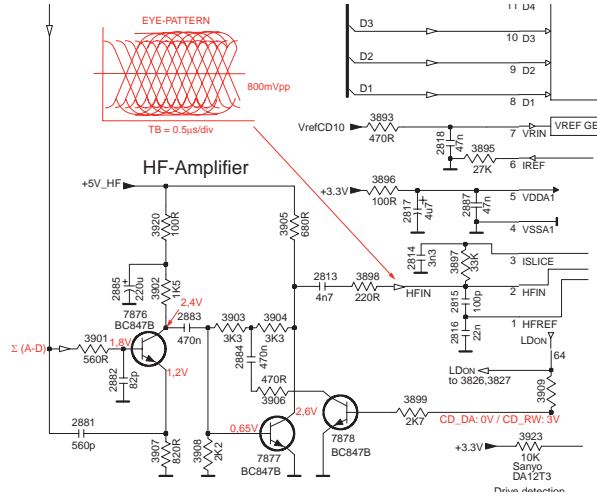


CD PLAYABILITY CHECK

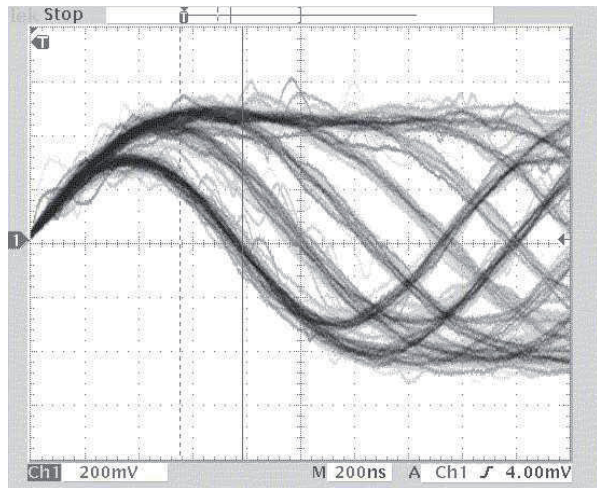
5

EYE-PATTERN SIGNAL – JITTER MEASUREMENT

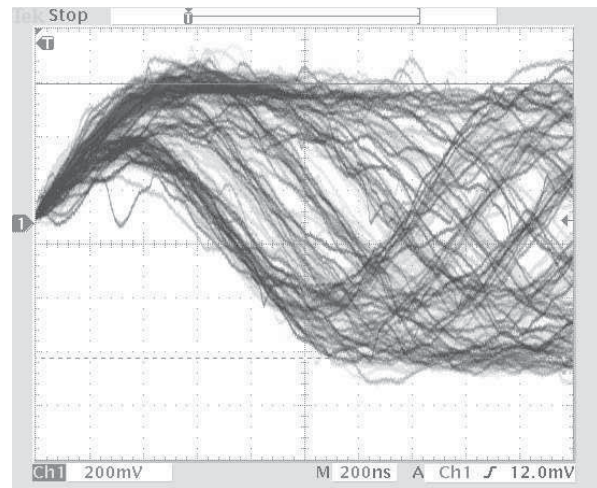
Measure the signal on the input of the Signal processor using an **analog** oscilloscope. Please find the exact measuring point in your Service Manual.



See below examples of the signal. Amplitude should read at least 700mVpp using SBC444A.



good



bad

If the oscilloscope shows a signal like the 'bad' one, and/or the amplitude decreases within 1 minute - the CD drive has to be replaced.

6

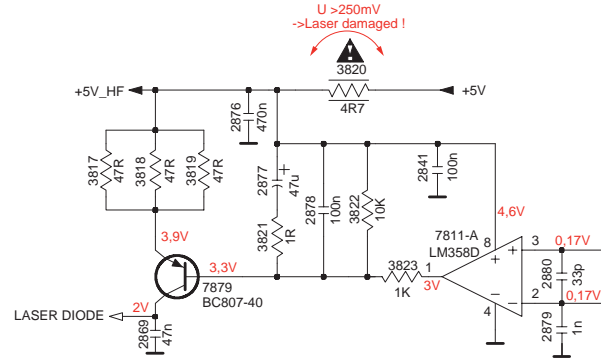
CD DRIVE – LASER CURRENT MEASUREMENT

The laser current can be measured as a voltage drop on a resistor. The resistor is marked in every Service Manual. The value depends on the type of CD drive.

	typical value	most probably defect
VAMxxxx	: 150-230mV	≥350mV
MCDxx	: 170-230mV	≥300mV
DA1x	: 210-250mV	≥350mV
DA2x	: 175-200mV	≥250mV

Use SBC444A (CD-DA) for measurement.

Laser power control



7

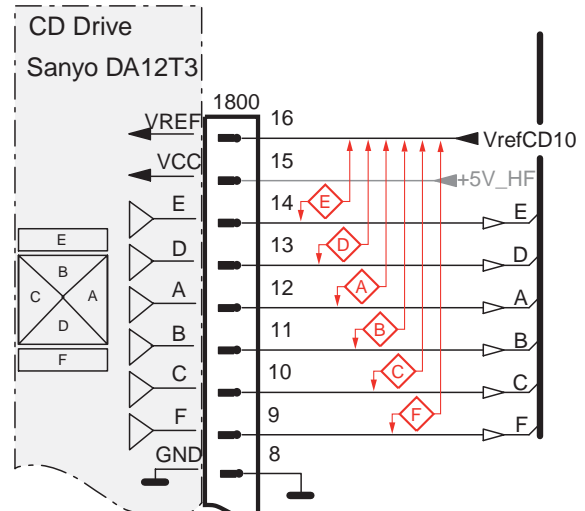
CD DRIVE – OFFSET MEASUREMENT

The photodiodes of the CD-drive may have an offset. These offsets have to be compensated by the signal processor. High offsets can lead to poor playability of some CDs (skipping tracks).

To measure the offset values, start the **Service Test Program** - section "Focus Test" without a CD.

The offsets can be measured with a DC Millivoltmeter directly on the connector (see drawing below). Pin numbering varies from drive to drive.

The values from diode A-D should read $0 \pm 10mV$. Diodes E and F are less critical.



If one of the offsets is higher than $\pm 10mV$ the CD drive has to be replaced. Otherwise replace the Signal Processor.

TECHNICAL SPECIFICATIONS (MCM238 & MCM239 & MCM239D)**AMPLIFIER**

Output power 2 x 5 W RMS
 Signal-to-noise ratio ≥ 65 dBA
 Frequency response 100 – 18kHz, ± 3 dB
 Input sensitivity AUX 0.5 V (max. 1 V)
 Impedance loudspeakers $\geq 4 \Omega$
 Impedance headphones 32Ω -1000 Ω
 <15mW

CD PLAYER

Frequency range 100 – 18kHz
 Signal-to-noise ratio 65 dBA

TUNER

FM wave range 87.5 – 108 MHz
 MW wave range 531 – 1602 kHz
 Number of presets 40
 Antenna
 FM 75 Ω wire
 MW Loop antenna

USB PLAYER (FOR MCM239/MCM239D only)

USB 12Mb/s, V1.1
 support MP3 and WMA files
 Number of albums/ folders maximum 99
 Number of tracks/titles maximum 999

SPEAKERS

Bass reflex system
 Dimensions (w x h x d) .. 158 x 250x 118 (mm)

GENERAL INFORMATION

AC Power 220 – 240 V / 50 Hz
 Dimensions (w x h x d, with/without the stand)
 211 x 250 x 160/211 x 250 x 126 (mm)
 Weight(with/without speakers) 2.9 / 1.23 kg
 Standby power consumption <2 W
 Eco power standby <1 W

Specifications and external appearance are subject to change without notice.

SERVICE TOOLS

Audio signal disc SBC 429.....4822 397 30184
Playability test disc SBC 444.....4822 397 30245
Test disc 5 (disc without errors) +
Test disc 5A (disc with dropout errors, black spots and fingerprints)
 SBC 426/426A4822 397 30096
Burn in test disc (65 min. 1kHz signal at -30 dB level without “pause”)4822 397 30155

AVAILABLE ESD PROTECTION EQUIPMENT

anti-static table mat large 1200x650x1.25mm	4822 466 10953
small 600x650x1.25m	4822 466 10958
anti-static wristband	4822 395 10223
connection box (3 press stud connections, 1M Ω)	4822 320 11307
extendible cable (2m, 2M Ω , to connect wristband to connection box)	4822 320 11305
connecting cable (3m, 2M Ω , to connect table mat to connection box)	4822 320 11306
earth cable (1M Ω , to connect any product to mat or to connection box)	4822 320 11308
KIT ESD3 (combining all 6 prior products - small table mat)	4822 310 10671
wristband tester	4822 344 13999

CONNECTION AND CONTROLS

Connection

Connecting an additional appliance

It is possible to use an additional appliance, e.g. TV/VCR or CD recorder with the set. On MCM238, you can playback music from an external source.

- 1 Insert one plug of the audio cable (not supplied) to the socket **AUX IN** at the rear panel of the main set.
- 2 Connect the other end of the audio cable to the **AUDIO OUT** terminal of the additional appliance.
- 3 Select **AUX** mode on the set.

Helpful hints:

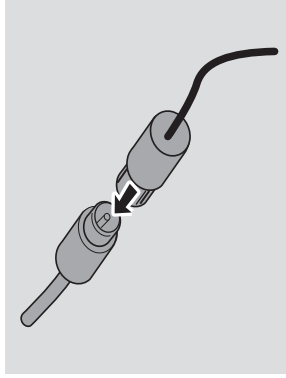
— Always refer to the owner's manual of other equipment for complete connection.

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

FM antenna

The wire antenna supplied can only be used to receive nearby stations. For better reception we recommend using a cable antenna system or an outdoor antenna.

- 1 Extend the wire antenna and fit it to FM ANTENNA as shown below.



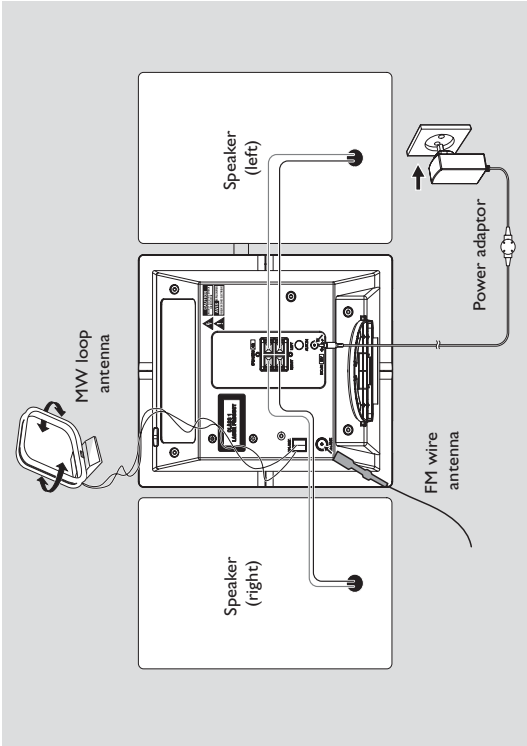
Note: If you are using a cable antenna system or an outdoor antenna, fit the antenna plug, instead of the wire antenna, to FM ANTENNA.

- 2 Move the antenna in different positions for optimal reception (as far away as possible from the TV/VCR or other radiation sources)
- 3 Fix the antenna's end to the wall.

Helpful hints:

— To receive optimal radio reception, put the main unit and the antennas as far away as possible from the power adaptor.

Connection



Rear connections

Warning:

- Never make or change connections with the mains supply switched on.
- Install your set near the AC outlet and where the AC power plug can be reached easily.

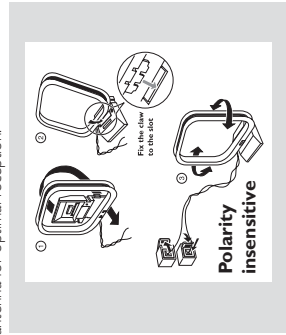
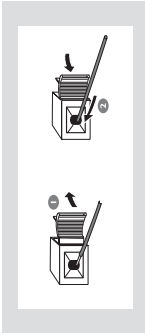
A Speaker connections

Use the supplied speakers only. Using other speakers can damage the set or the sound quality will be negatively affected.

- Connect the cable of the left speaker to **LEFT** (red and black) and the cable of the right speaker to **RIGHT** (red and black) as follows:
 - a. Press the clip of the red terminal and fully insert the stripped portion of the colored (or marked) speaker cable into the socket, then release the clip
 - b. Press the clip of the black terminal and fully insert the stripped portion of the black (or unmarked) speaker cable into the socket, then release the clip

B Antenna connections

MW antenna
Connect the supplied MW loop antenna to the "AM aerial" terminal. Adjust the position of the antenna for optimal reception.



Polarity insensitive

CONNECTION AND CONTROLS

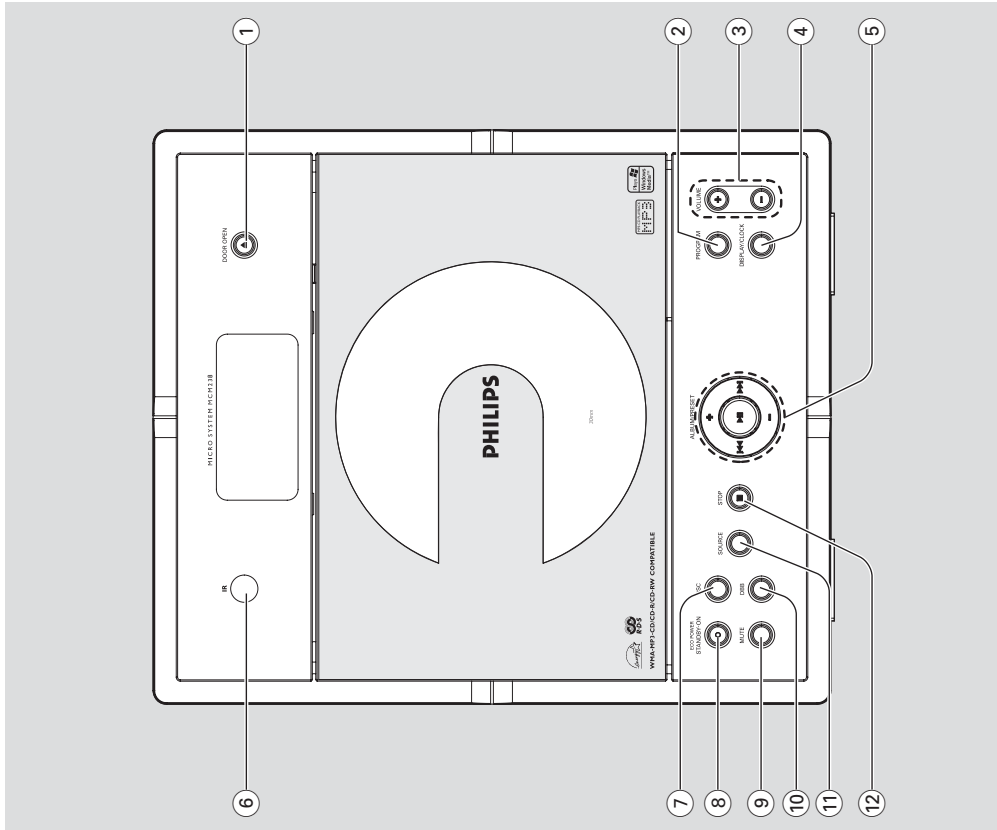
Controls

Controls on the set

- ⑨ **MUTE**
 - switches the sound off temporarily
- ⑩ **DBB (Dynamic Bass Boost)**
 - turns the bass enhancement on/off
- ⑪ **SOURCE**
 - selects sound source **CD, TUNER, or AUX**
 - **In standby or Eco Power mode:** switches the set on and selects sound source **CD, TUNER or AUX**
- ⑫ **STOP**
 - **CD:** stops playback; erase a program

- ① **DOOR OPEN**
 - press to open the CD door.
- ② **PROGRAM**
 - **CD:** programs tracks
 - **Tuner:** programs preset radio stations
- ③ **VOLUME**
 - adjusts the volume level
- ④ **DISPLAY/CLOCK**
 - **Clock:**
 - displays the set time
 - **In standby mode:** enters the clock setting mode (press and hold for more than 2 seconds)
 - **TUNER/Audio CD/AUX:** switches between clock display and playback display
 - **MP3/WMA files:** displays disc information during playback
- ⑤ **ALBUM/ PRESET + / -**
 - **CD:** selects albums (for MP3/WMA only)
 - **TUNER:** selects a preset radio station
- ⏪ / ⏩
 - **CD:** skips or searches CD tracks/titles backwards/forwards
 - **Tuner:** tunes to radio stations
- ⏸
 - **CD:** starts or pauses playback
- ⑥ **IR**
 - sensor for the infrared remote control
- Helpful hints: Always point the remote control towards this sensor.**
- ⑦ **DSC (Digital Sound Control)**
 - selects predefined sound settings: **ROCK, JAZZ, POP, CLASSIC, OPTIMAL**
- ⑧ **STANDBY-ON/ ECO POWER**
 - press briefly to switch the set on or off (standby/ECO POWER);
 - **In standby or Eco Power mode:** press and hold to toggle between Standby and ECO POWER mode (power-saving mode)
- Red indicator:** lights up red when the set is switched to ECO POWER mode

Controls



CONNECTION AND CONTROLS

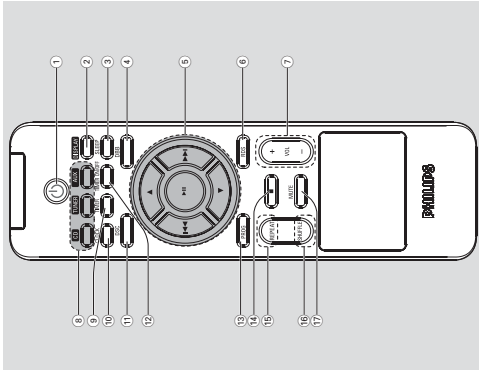
Controls

- ⑬ **PROG**
- **CD:** programs tracks
- **Tuner:** programs preset radio stations
- ⑭ **■**
- **CD:** stops playback; erase a program
- ⑮ **REPEAT**
- selects continuous playback
- ⑯ **SHUFFLE**
- selects random playback
- ⑰ **MUTE**
- switches the sound off temporarily

Controls

- ⑤ **◀◀ / ▶▶**
- **CD:** skips or searches CD tracks backwards/forwards
- **Tuner:** tunes to radio stations
- ⑥ **▲ / ▼**
- **CD:** selects the next/previous album (for MP3/WMA only)
- **TUNER:** selects a preset radio station
- ⑦ **▶ II**
- **CD:** starts or pauses playback
- ⑧ **RDS**
- **Tuner:** selects RDS (Radio Data System) information
- sets RDS clock
- ⑨ **VOL +/-**
- adjusts the volume level
- **Clock/Timer:** adjusts the hours and minutes
- ⑩ **Source buttons**
- selects **CD** source
- **In standby/Eco-power mode:** switches the set on and selects **CD** source.
- TUNER**
- selects **TUNER** source and toggles between the wavebands: FM and MW
- **In standby/Eco-power mode:** switches the set on and selects **TUNER** source
- AUX**
- selects the audio input from an additional connected appliance
- **In standby/Eco-power mode:** switches the set on and selects the audio input from an additional connected appliance
- ⑪ **TIMER**
- enters the timer setting mode (press and hold for more than 2 seconds)
- ⑫ **CLOCK**
- **Clock:** - displays the set time
- **In standby mode:** enters the clock setting mode (press and hold for more than 2 seconds)
- ⑬ **DSC (Digital Sound Control)**
- selects predefined sound settings: **ROCK, JAZZ, POP, CLASSIC, OPTIMAL**
- ⑭ **TIMER ON/OFF**
- switches the timer on/off

Remote control



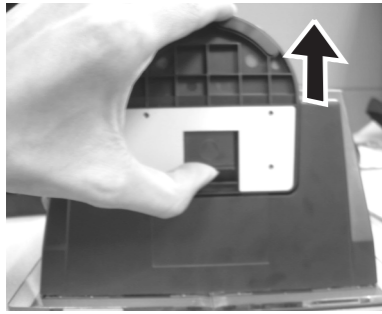
Notes for remote control:

- **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, ◀ ▶).**
- ① **⏻**
- press briefly to switch the set on or off (standby/ECO POWER);
- **In standby or Eco Power mode:** press and hold to toggle between Standby and ECO POWER mode (power-saving mode)
- ② **DISPLAY**
- **Clock:** - displays the set time
- **TUNER/Audio CD/AUX:** switches between clock display and playback display
- **MP3/WMA files:** displays disc information during playback
- ③ **SLEEP**
- set the sleep timer
- ④ **DBB (Dynamic Bass Boost)**
- turns the bass enhancement on/off

DISASSEMBLY DIADRAMS

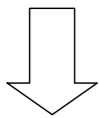
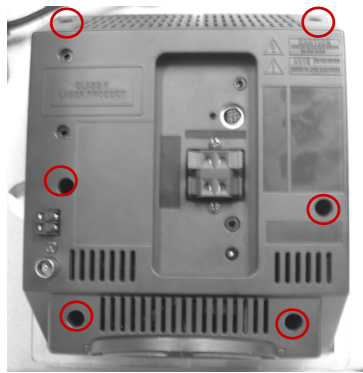
A. Remove stand

Release click and pull it out.



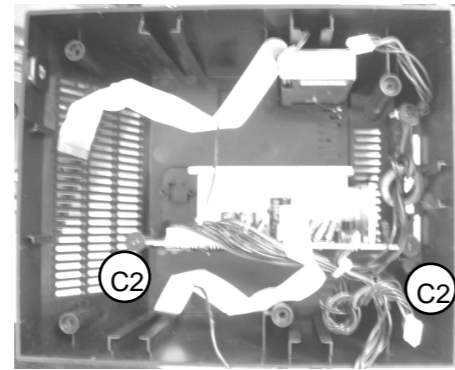
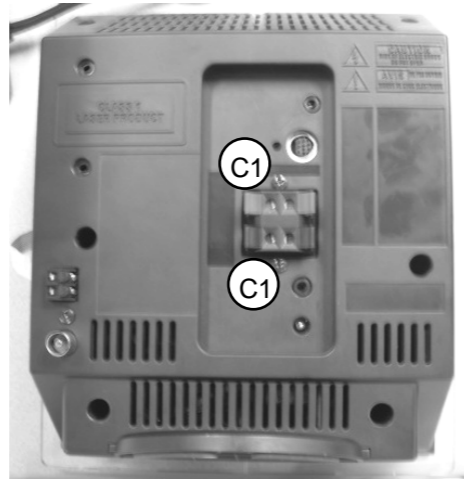
B. Remove Top Cabinet

Remove screws MP 3x10 - 6 pcs.



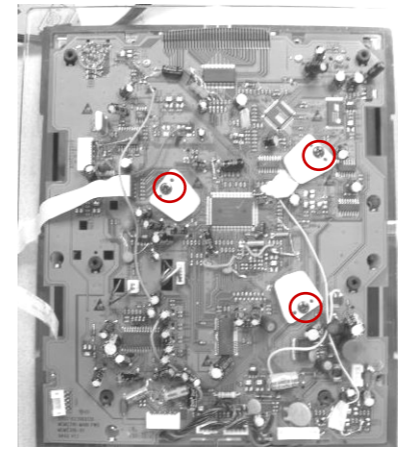
C. Remove Amplifier board

C1: Remove screws 2 pcs.
C2: Remove screws 2 pcs.



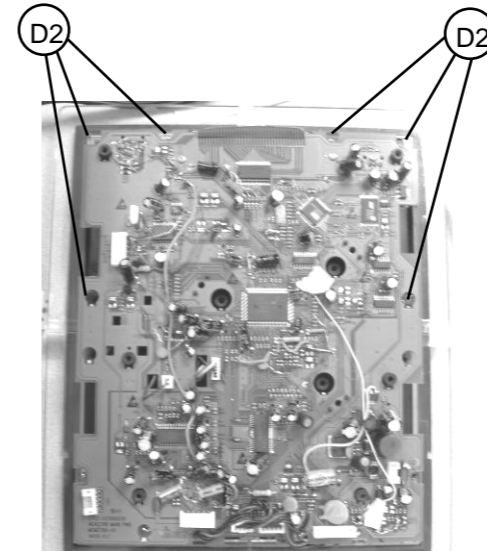
D. Remove Main board

D1: Remove screws MP 3x10 - 3 pcs.



D2: Remove screws MP 2x8 - 6 pcs.

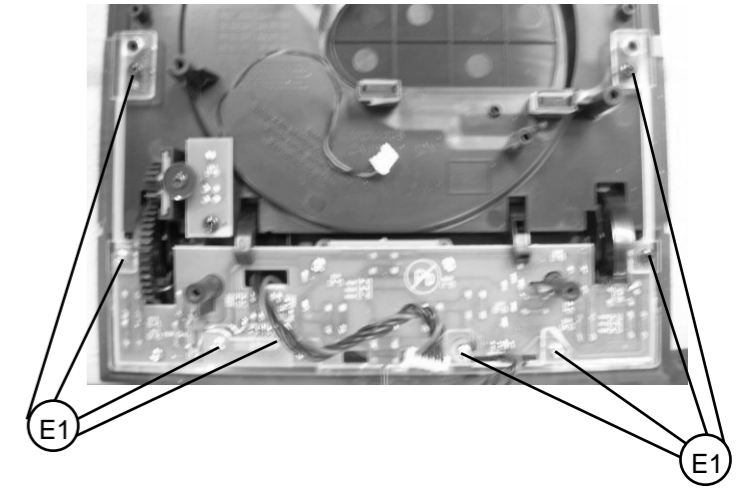
Then remove lens frame cosmetic top_right&left



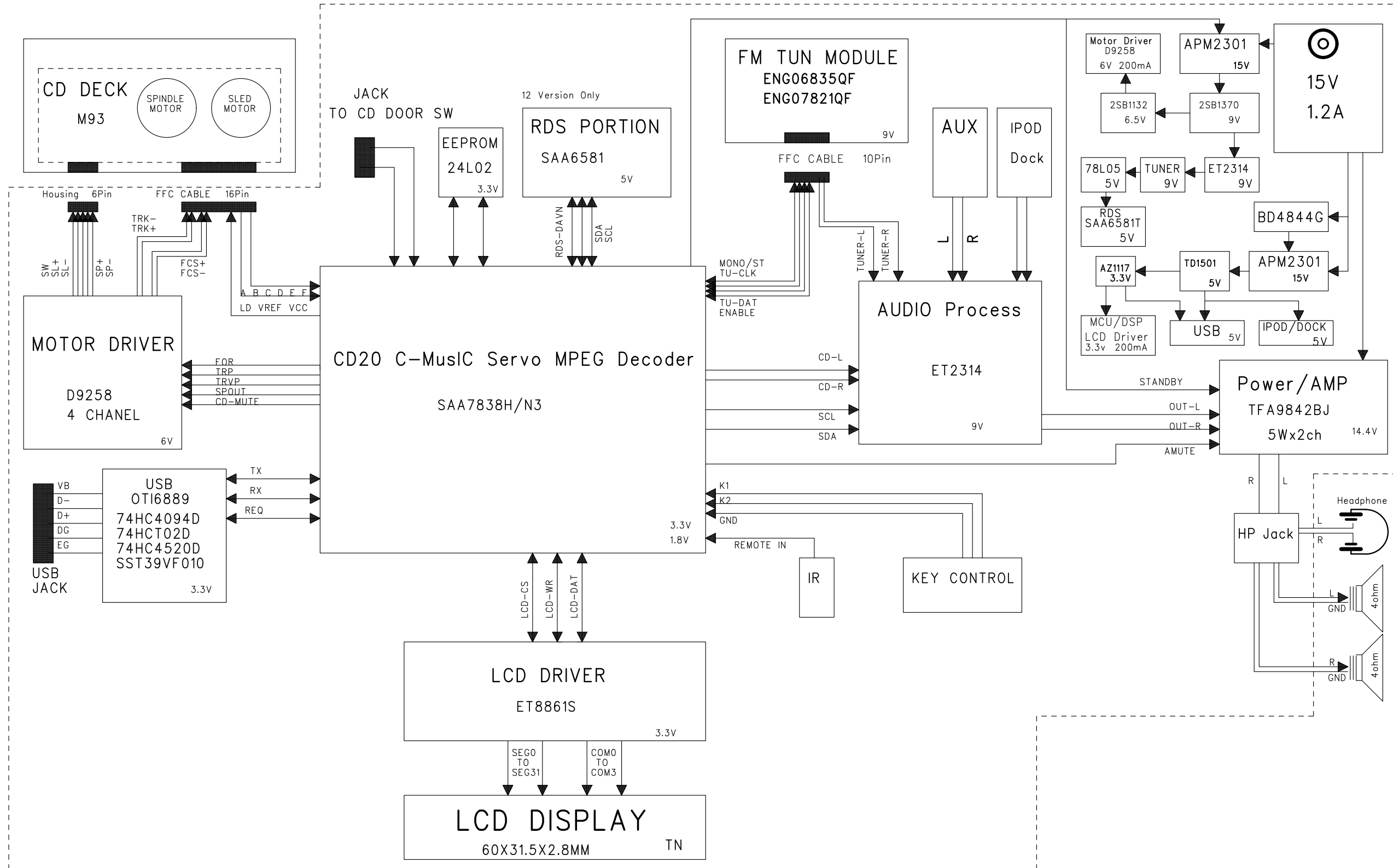
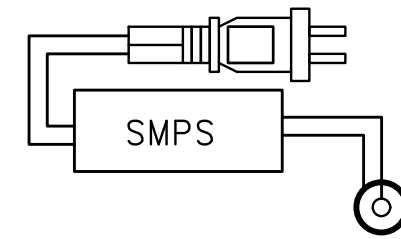
E. Remove Key board

E1: Remove screws MP 2x8 - 8 pcs.

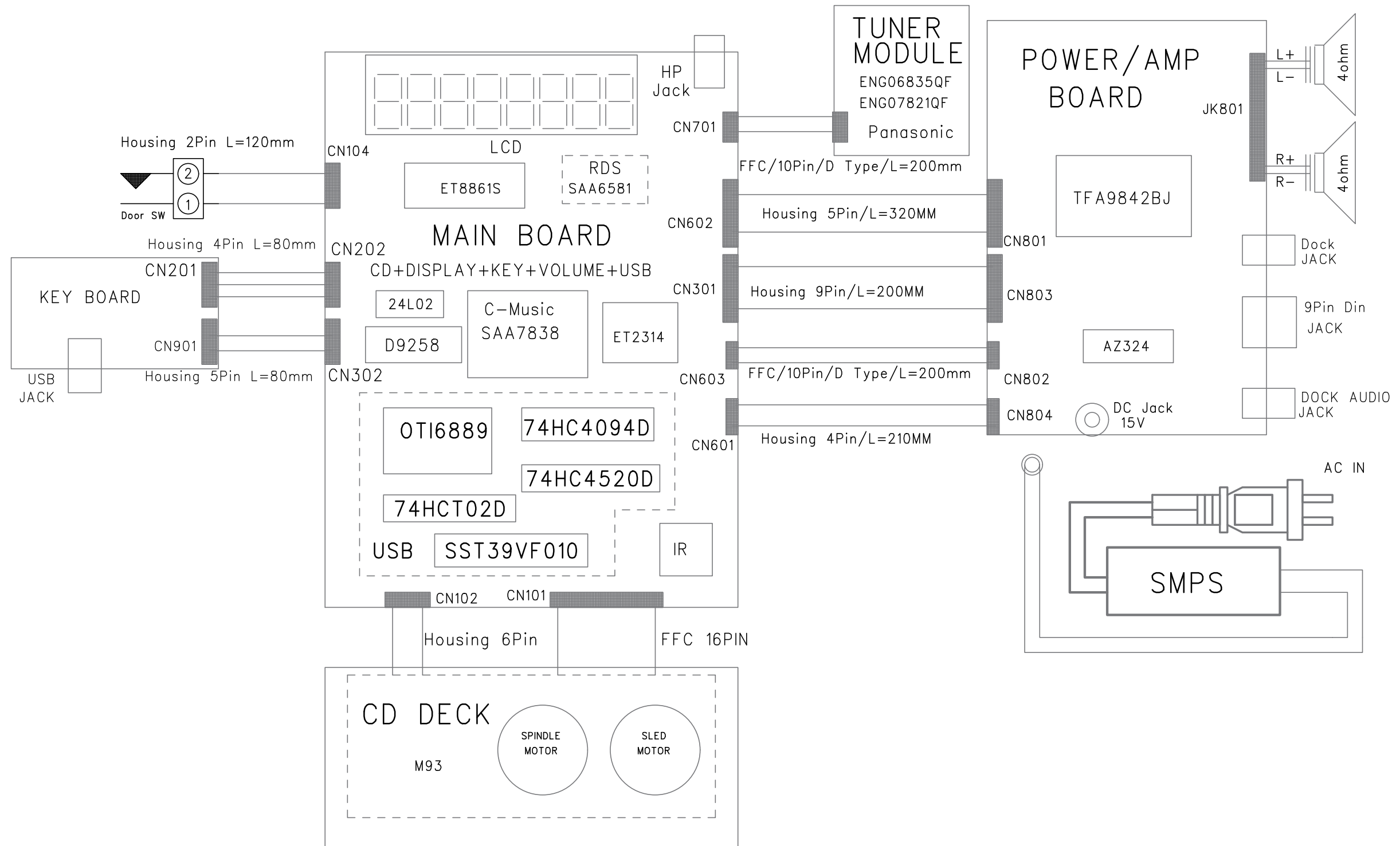
Then remove lens frame cosmetic botom_right&left



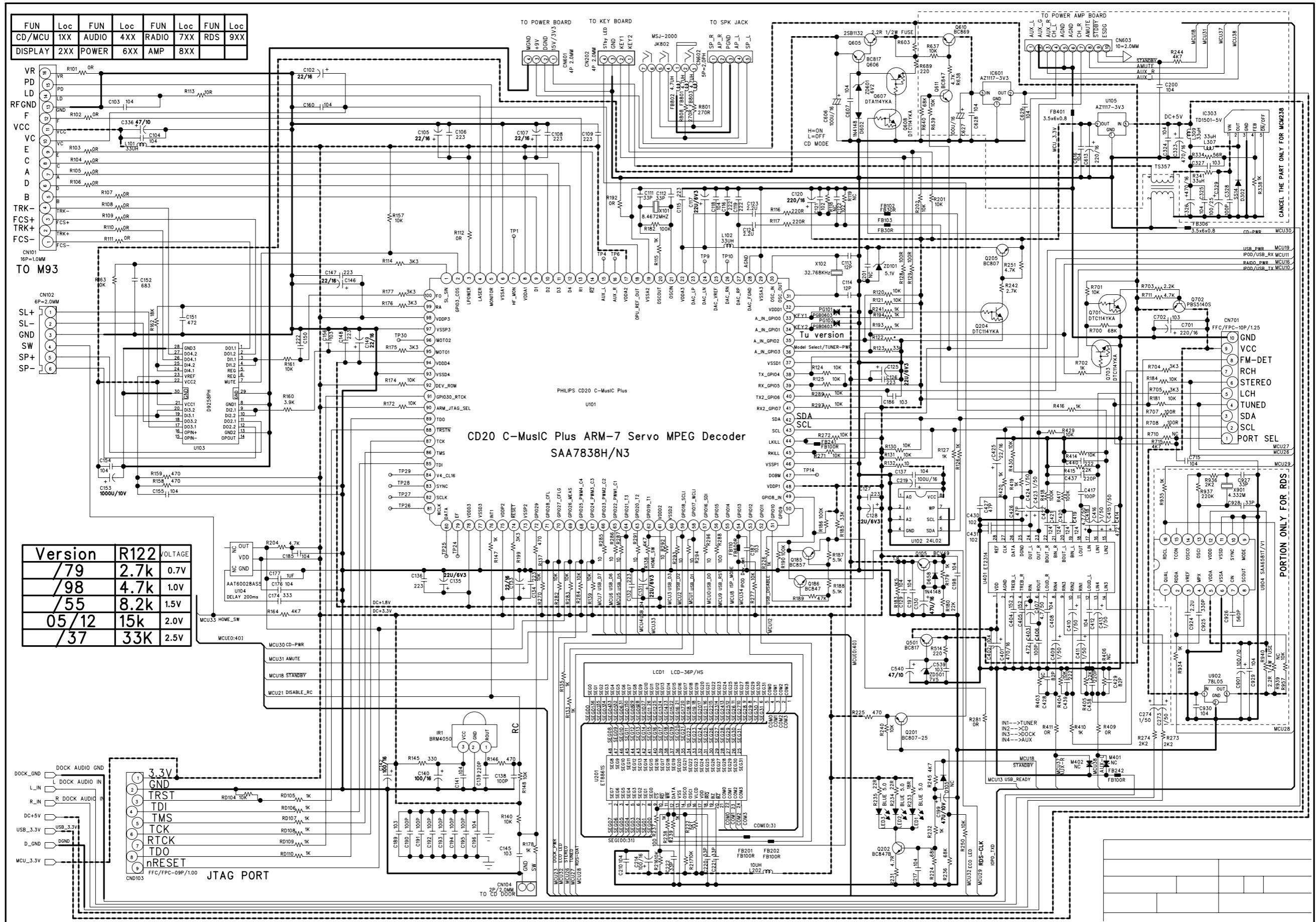
SET BLOCK DIAGRAM



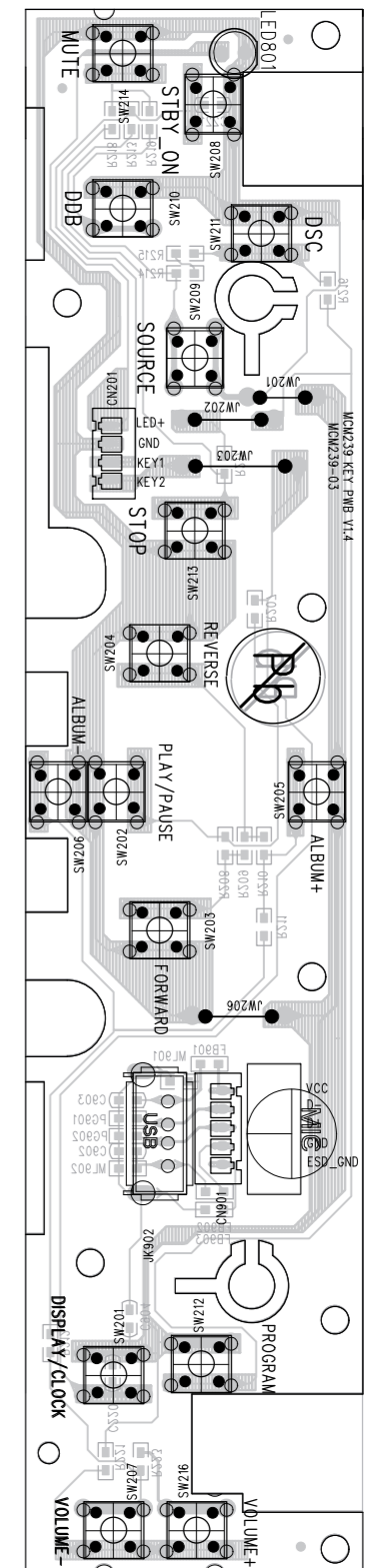
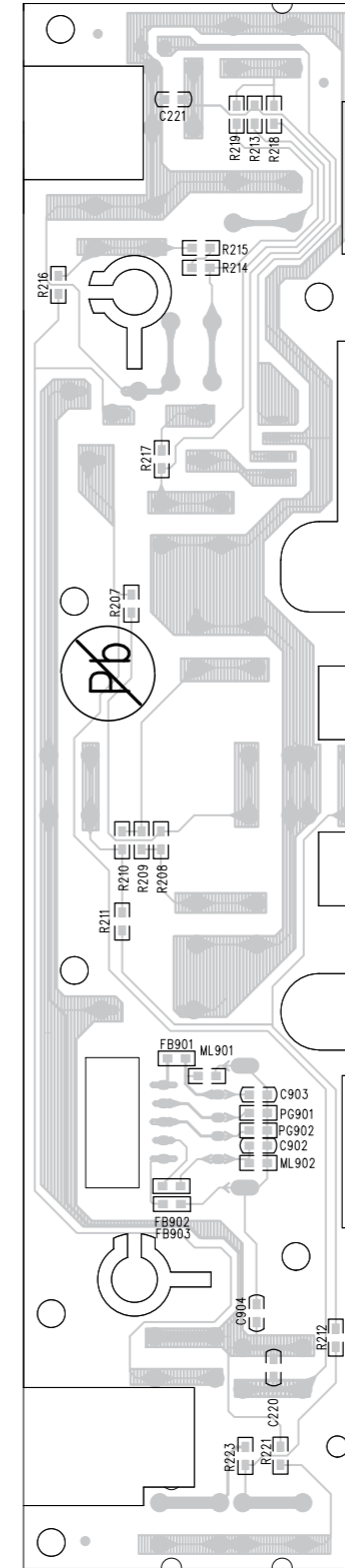
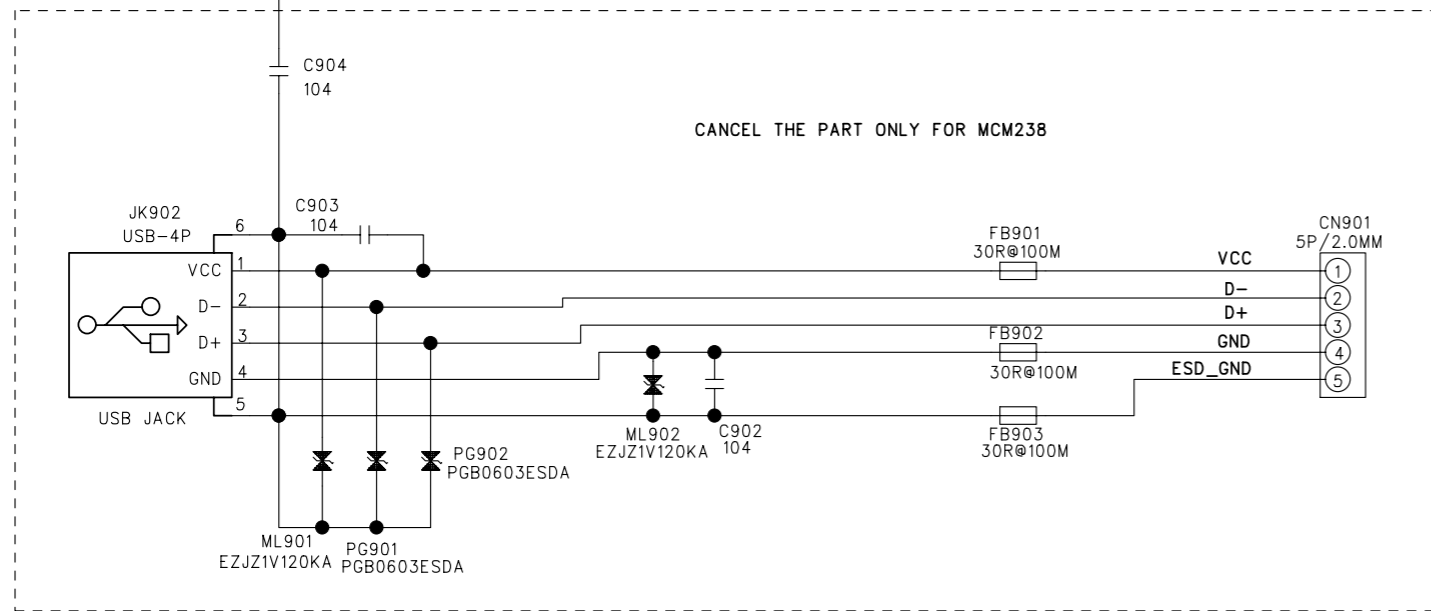
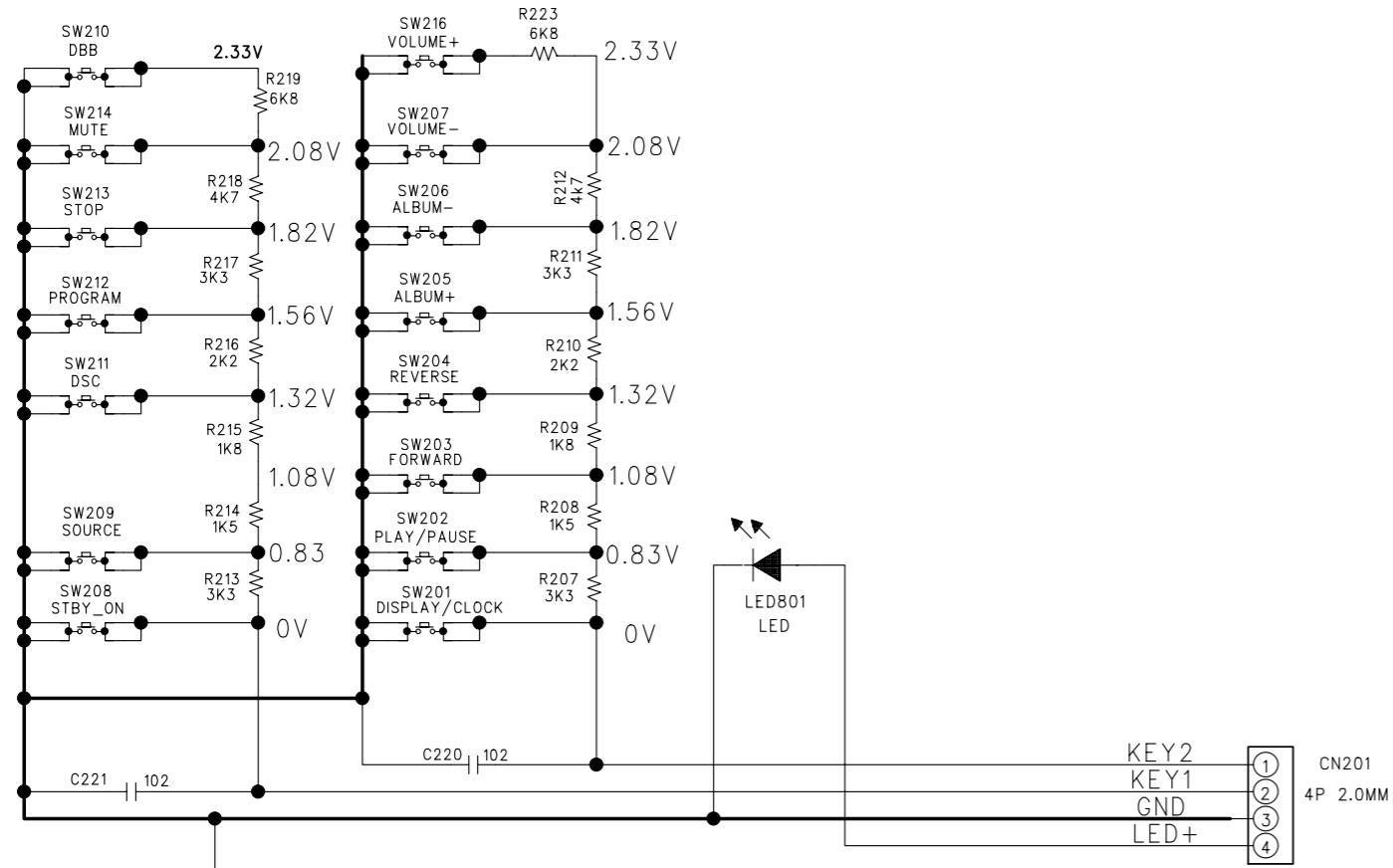
SET WRING DIAGRAM



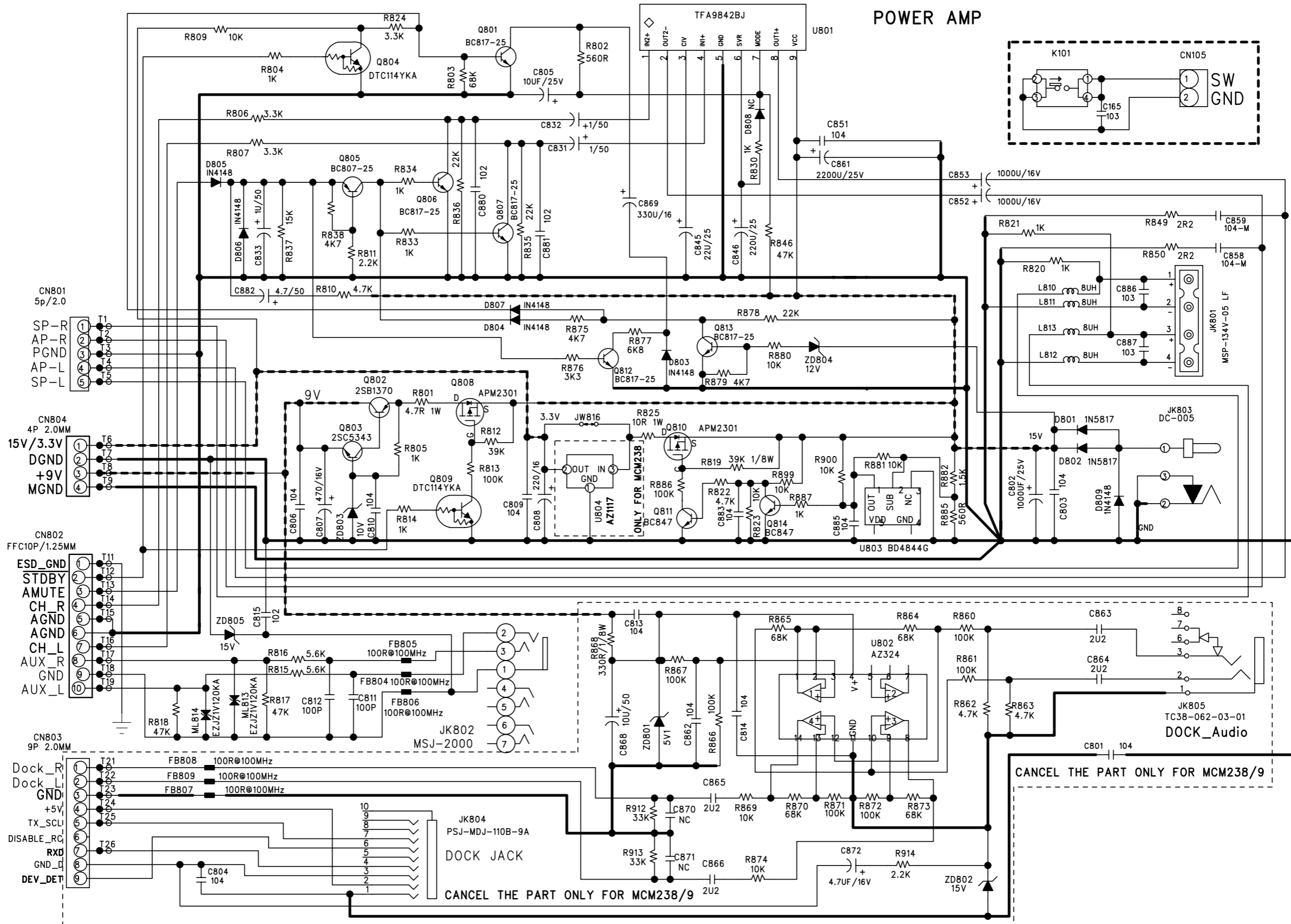
CIRCUIT DIAGRAM - C-music & USB BOARD - part1



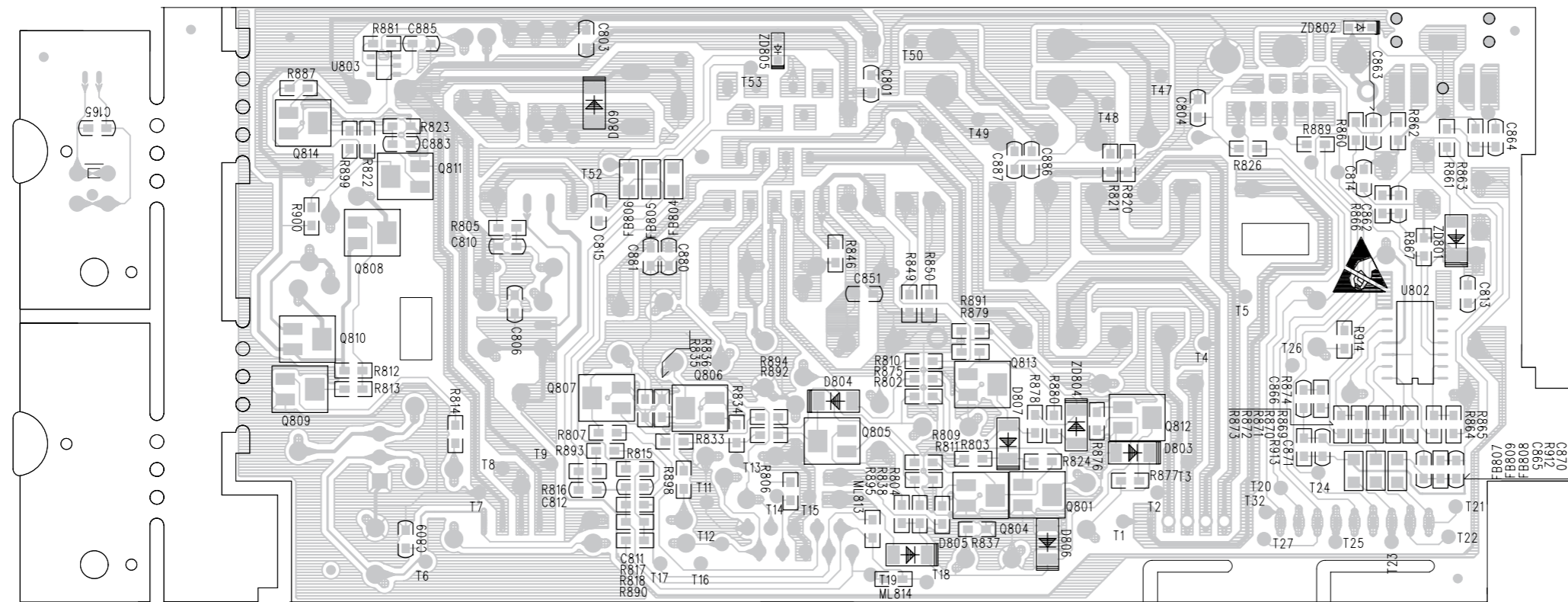
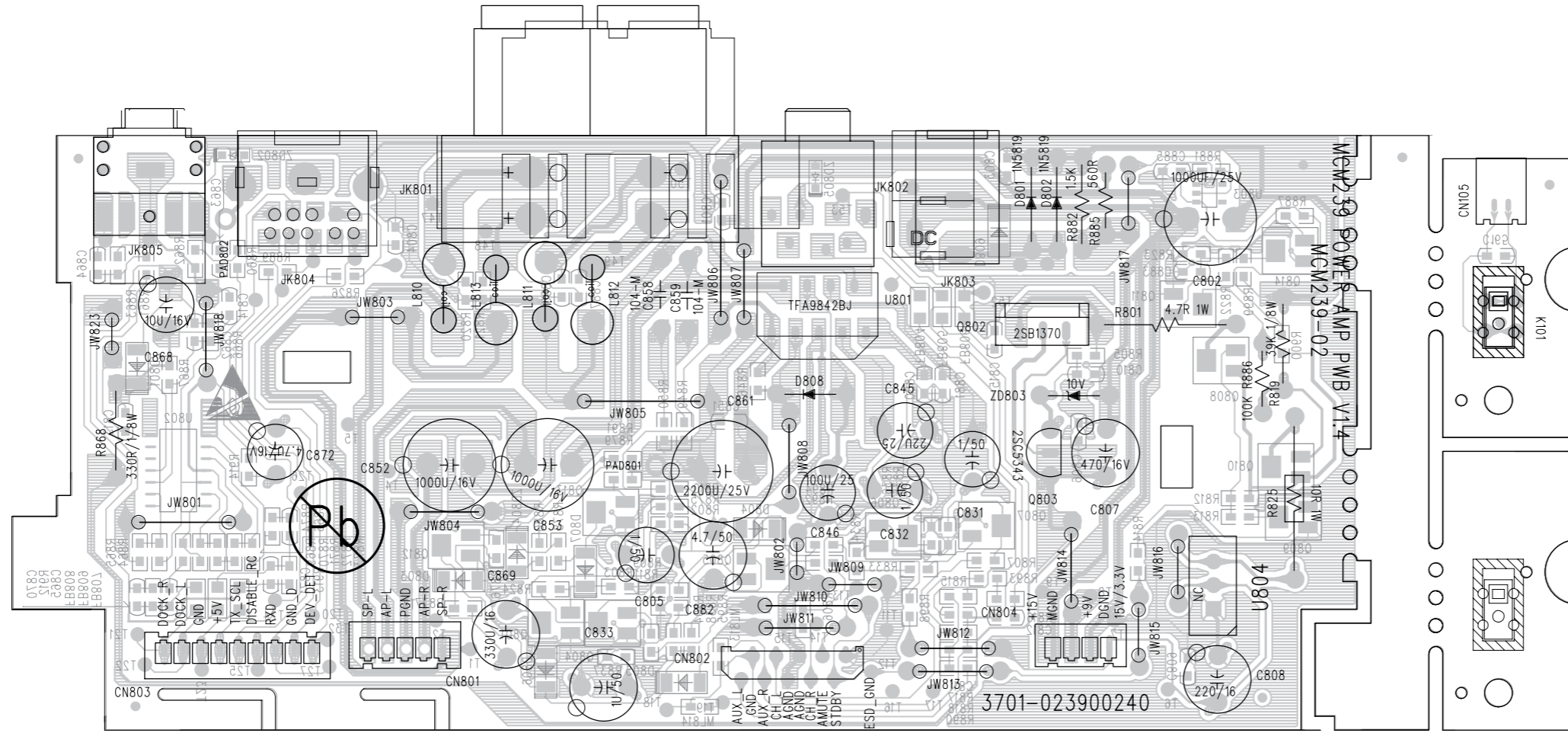
KEY & USB JACK BOARD

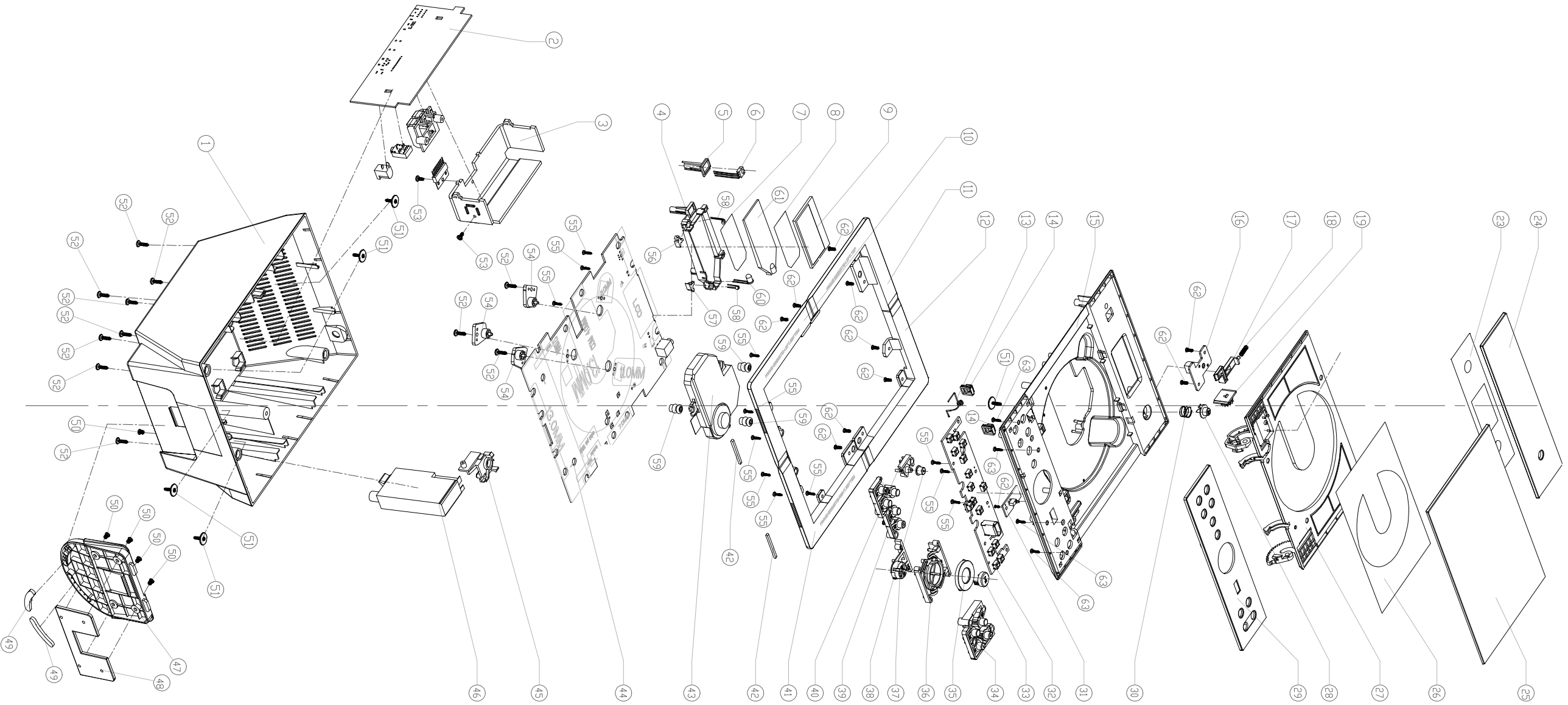


CIRCUIT DIAGRAM - POWER & AMP JACK BOARD



LAYOUT DIAGRAM - POWER & AMP BOARD





EXPLODE DIAGRAM

ITEM	PART NUMBER	DESCRIPTION	UNIT
1	5002-061100100	CABINET-REAR	1
2	5002-061100100	JACK PCB ASSEMBLY	1
3	6600-061100200	HEAT SINK	1
4	5603-061100100	BRACKET LCD/IR	1
5	5603-061100200	BRACKET IR	1
6	5603-061100200	BRACKET IR	1
7	6214-061100200	IR SENSOR	1
8	6214-061100100	LCD DIFFUSION SHEET	1
9	6214-061100100	LCD REFLECT SHEET	1
10	5506-061100100	LENS FRAME COSMETIC LEFT	1
11	5506-061100100	LENS FRAME COSMETIC TOP	1
12	5506-061100200	LENS FRAME COSMETIC BOTTOM	1
13	6105-061100100	SPRING FOR DOOR CD	1
14	6406-050700101	CUSHION FOR DOOR CD	2
15	5001-061100200	CABINET FRONT FOR MCM238/12	1
16	5935-061100100	OPEN BUTTON FIX	1
17	5935-061100200	OPEN BUTTON SOLID	1
18	6102-061100100	SPRING FOR OPEN BUTTON 1	1
19	5703-030600200	DAMPER GEAR ASSEMBLY	1
20			
21			
22			
23	7902-061100200	NITTO 500 DOUBLE SIDE TAPE 191X147	1
24	5501-070800100	LENS DISPLAY FOR 12V	1
25	5503-070800100	LENS CD DOOR FOR 12V	1
26	7902-061100300	NITTO 500 DOUBLE SIDE TAPE 191X125	1
27	5201-061100100	DOOR CD	1
28	5304-061100100	CONTROL PANNEL FOR MCM238/12V	1
29	5105-061100200	SPRING FOR OPEN BUTTON 2	1
30	6102-061100200	DOOR SWITCH PCB ASSEMBLY	1
31		KEY PCB ASSEMBLY	1
32		COVER PLAY BUTTON	1
33	5902-061100500	COVER NAVIGATION BUTTON	1
34	5404-061100200	COVER NAVIGATION BUTTON	1
35	5902-061100600	COVER NAVIGATION BUTTON	1
36	5417-061100100	COVER NAVIGATION BUTTON	1
37	5618-061100300	COVER NAVIGATION BUTTON	1
38	5902-061100400	COVER NAVIGATION BUTTON	1
39	5403-061100200	COVER NAVIGATION BUTTON	1
40	5408-061100200	COVER NAVIGATION BUTTON	1
41	5506-061100400	COVER NAVIGATION BUTTON	1
42	6404-061100400	COVER NAVIGATION BUTTON	1
43			
44	5629-061100100	BRACKET FM TUNER MODULE	1
45		RADIO MODULE	1
46		MAIN PCB ASSEMBLY	1
47		ODM	1
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ACCESSORY PARTS

39	9965 100 06998	REMOTE CONTROL "PHILIPS"
40	9965 100 06999	SPK BOX 8OHM 75W FOR MCM238
41	9965 100 00131	AM LOOP ANT 18.1uH 8T
42	9965 100 00308	FM ANT WIRE 75R L1.0M
43	△ 9965 100 07000	SMPS ADAPTOR 15V 1.2A FOR EU
44	9965 100 07001	STAND PORTION OF MCM238/12

MECHNICAL&MISCELLANEOUS PARTS

10	9965 100 06972	CABINET - FRONT FOR MCM238/12
15	9965 100 06977	LENS - CD DOOR FOR 12V
16	9965 100 06978	CABINET - REAR
17	9965 100 06979	LENS - DISPLAY FOR 12V
18	9965 100 06980	BRACKET PLAY BUTTON
19	9965 100 06981	COVER POWER BUTTON
20	9965 100 06982	BUTTON SET FUNCTION-A
21	9965 100 06983	BUTTON SET FUNCTION-B
22	9965 100 06984	BUTTON SET NAVIGATION
23	9965 100 06985	BUTTON POWER
24	9965 100 06986	BUTTON OPEN
25	9965 100 06987	OPEN-BUTTON-FIX
26	9965 100 06988	OPEN-BUTTON-SOLID
28	9965 100 07029	DOOR - CD
29	9965 100 06990	CONTROL PANNEL FOR MCM238/12V
30	9965 100 06991	COVER PLAY BUTTON
31	9965 100 06992	COVER NAVIGATION BUTTON
32	9940 000 01664	DAMPER GEAR ASSEMBLY
33	9965 100 06993	LENS - CD AMBI LIGHT GUIDE L
34	9965 100 06994	LENS - CD AMBI LIGHT GUIDE R
35	9965 100 06995	SPRING FOR OPEN-BUTTON-1
36	9965 100 06996	SPRING FOR OPEN-BUTTON-2
37	9965 100 06997	SPRING FOR DOOR CD
CDMECHA	9965 100 06482	CD MECHANISM CMS-M93BGPJ
FFC	9965 100 01359	FFC CABLE 10P L=200MM C TYPE
TUNER	9965 100 00946	TUNER MODULE AM/FM ENG07821QF

ELECTRICAL PARTS - MAIN BOARD

IC601	9965 000 41892	IC AZ1117H-3.3 REGULATOR
IC601	9965 000 40080	IC AP1117E33LA REGULATOR
IR1	9965 000 41893	IR RECEIVER BRM-4050-8-FB2.2
JK802	9940 000 03318	HP JACK D3.6MM
LCD1	9965 100 06960	LCDVD70256AHTH(VBEST)60x31.5x2
Q105	9965 100 06952	CH-TRANSISTOR NPN BCV49 SOT89
Q185	9965 100 06951	CH-TRANSISTOR, BC857C
Q186	9965 100 06953	CH-TRANSISTOR, BC847C SOT-23
Q201	9965 100 00939	TRANSISTOR BC807-25 PNP
Q202	9965 100 06953	CH-TRANSISTOR, BC847C SOT-23
Q204	9965 000 41700	CH-TRANS. DTC114YKA NPN
Q205	9965 100 00939	TRANSISTOR BC807-25 PNP
Q501	9965 100 06954	CH-TRANSISTOR,BC817-25

ELECTRICAL PARTS - MAIN BOARD

Q605	9965 100 00285	TRANSISTOR 2SB1132R
Q606	9965 100 06954	CH-TRANSISTOR,BC817-25
Q607	9965 000 41699	CH-TRANS. DTA114YKA SMT3
Q608	9965 000 41700	CH-TRANS. DTC114YKA NPN
Q610	9940 000 05691	TRANSISTOR PNP BC869SOT-89
Q611	9965 100 06953	CH-TRANSISTOR, BC847C SOT-23
Q701	9965 000 41700	CH-TRANS. DTC114YKA NPN
Q702	9940 000 05652	TRANSISTOR PBSS5140S
Q703	9965 000 41700	CH-TRANS. DTC114YKA NPN
TS357	9965 100 06959	28UH CORE:T9X5X3 6TURNS 715OHM
U101	9965 100 06957	IC SAA7838H/N3 MCU+MP3/WMA
U102	9940 000 05674	IC BR24L02F-WE2
U103	9965 100 06955	IC, D9258 MOTOR DRIVERCD
U104	9965 100 06956	IC RESET AAT60028AS5 SOT23-5
U201	9965 100 06958	IC, ET8861S(SSOP48) LCD DRIVER
U401	9965 100 01347	IC ET2314 SOUND SO28
X101	9965 100 06950	CRYSTAL 8.4672MHZ+/-20PPM 30PF
X102	9940 000 05671	XTAL 32.768KHZ +/-20PPM 12PF

ELECTRICAL PARTS - TUNER PORTION

R940	9940 000 04221	FUSE RES 2.2R 1/4W +/-5%
U902	9965 100 01350	IC LM78L05 3-TERMINAL TO-92
U904	9965 100 06962	IC SAA6581T RDS (PHILIPS)SO16
X901	9965 100 06961	CRYSTALHC-49/U4.332MHZ+/-20PPM

ELECTRICAL PARTS - POWER BOARD

D801	9965 100 06964	DIODE 1N5819 DO-41
D802	9965 100 06964	DIODE 1N5819 DO-41
JK801	9940 000 01619	SP TERMINAL MSP-134V-05
JK802	9940 000 03318	HP JACK D3.6MM
JK803	9965 100 06969	DC JACK 3PIN DC-005 DIA6.3MM
K101	9965 100 06970	SWITCH OPEN/CLOSEDTS-031P1T2.4
L810	9965 100 06968	INDUCTOR 3A1868N8UH+/-20%0.06R
L811	9965 100 06968	INDUCTOR 3A1868N8UH+/-20%0.06R
L812	9965 100 06968	INDUCTOR 3A1868N8UH+/-20%0.06R
L813	9965 100 06968	INDUCTOR 3A1868N8UH+/-20%0.06R
ML813	9940 000 04264	MULT. VAR. 10.6-15.4V
ML814	9940 000 04264	MULT. VAR. 10.6-15.4V
Q801	9965 100 06954	CH-TRANSISTOR,BC817-25
Q802	9965 000 41725	TRANS. 2SB1370PNP TO-220FP
Q803	9965 000 41726	TRANS. 2SC5343 NPN TO-92
Q804	9965 000 41700	CH-TRANS. DTC114YKA NPN
Q805	9965 100 00939	TRANSISTOR BC807-25 PNP
Q806	9965 100 06954	CH-TRANSISTOR,BC817-25
Q807	9965 100 06954	CH-TRANSISTOR,BC817-25
Q808	9965 100 06966	MOSFET P-CH APM2301 SOT-23
Q809	9965 000 41700	CH-TRANS. DTC114YKA NPN
Q810	9965 100 06966	MOSFET P-CH APM2301 SOT-23
Q811	9965 100 06953	CH-TRANSISTOR, BC847C SOT-23
Q812	9965 100 06954	CH-TRANSISTOR,BC817-25

ELECTRICAL PARTS - POWER BOARD

Q813	9965 100 06954	CH-TRANSISTOR,BC817-25
Q814	9965 100 06953	CH-TRANSISTOR, BC847C SOT-23
R825	9965 100 06963	FUSE RES, 10R 1W +/-5%
U801	9965 100 01348	IC POWER AMPLIFIER TFA9842BJ.
U803	9965 000 41716	IC, CMOS RESET BD4844G SSOP5
U804	9965 100 06967	IC AZ1117-3.3E1 VOLTAGE REG
ZD803	9965 000 41721	ZENER DIODE BZX79-C10
ZD804	9965 100 06965	CH-ZENER DIODE RLZ12B LL-34

ELECTRICAL PARTS - KEY BOARD

LED801	9965 100 06971	LED 3MM XY-030RDL10
TACTSW	9940 000 04259	SWITCH TACT TSA-06430-150

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

FACTORY BOM

Level	Item	Component	Desc	Unit	Qty	Location
0	0010	9008-023800012	PHILIPS MCM238//12	SET	1.000	
.1	0010	8900-061100500	ELECTRICAL SECTION OF MCM238/12	SET	1.000	
.2	0010	8901-061100300	MAIN/TUNER PWB ASSEMBLY OF MCM238/12	SET	1.000	
.3	0010	3702-023900130	MAIN PWB 204.2X196X1.2MM FR4 MCM239D-01V1.2	PC	1.000	
.3	0020	8901-061100400	MAIN BOARD ASSEMBLY OF MCM238/12	SET	1.000	
.4	0010	1001-000327200	CRYSTAL, 32.768KHZ +/-20PPM 12PF	PC	1.000	X102
.4	0020	1001-084672220	CRYSTAL, 8.4672MHZ +/-20PPM 30PF 3x8	PC	1.000	X101
.4	0030	1112-226033020	CAP, ELECT, 22UF6.3V+/-20%4X5MM	PC	5.000	C117, C125, C128, C131, C135
.4	0040	1112-477053220	CAP, ELECT, 470UF16V+/-20%8X12	PC	2.000	C323, C401
.4	0050	1112-107053100	CAP, ELECT, 100UF16V+/-20%6.3X11	PC	6.000	C140, C142, C214, C219, C606, C627
.4	0060	1112-108043290	CAP, ELECT, 1000UF10V+/-20%8X14	PC	1.000	C153
.4	0070	1121-220081020	CH-CAP, CER22PF50V+/-5%0603 NPO	PC	2.000	C113, C114
.4	0080	1121-330081020	CH-CAP, CER33PF50V+/-5%0603	PC	2.000	C111, C112
.4	0090	1121-470081020	CH-CAP, CER47PF50V+/-5%0603	PC	2.000	C426, C427
.4	0100	1121-101081020	CH-CAP, CER100PF50V+/-5%0603	PC	3.000	C138, C406, C417
.4	0110	1121-221081020	CH-CAP, CER220PF50V+/-5%0603	PC	1.000	C139
.4	0120	1121-820081020	CH-CAP, CER82PF50V+/-5%0603 NPO	PC	2.000	C428, C429
.4	0130	1121-102081020	CH-CAP, CER 1000PF50V+/-5%0603	PC	5.000	C121, C122, C190, C437, C438
.4	0140	1121-222082020	CH-CAP, CER 2200PF50V+/-10%0603	PC	5.000	C116, C119, C150, C439, C440
.4	0150	1121-152081020	CH-CAP, CER1500PF50V+/-5%0603	PC	2.000	C404, C405
.4	0160	1121-472082020	CH-CAP, CER4700PF50V+/-10%0603	PC	3.000	C151, C403, C414
.4	0170	1121-223082020	CH-CAP, CER 0.022UF 50V +/-10% 0603	PC	11.000	C106, C108, C109, C115, C126, C127, C132, C134, C136, C147, C148
.4	0180	1121-103082020	CH-CAP, CER0.01UF50V+/-10%0603	PC	7.000	C145, C156, C186, C187, C189, C539, C702
.4	0190	1121-683082020	CH-CAP, 0.068UF50V+/-10%0603	PC	1.000	C152
.4	0195	1121-333082020	CH-CAP, CER0.033UF50V+/-10%0603	PC	1.000	C174
.4	0200	1121-104084020	CH-CAP, CER0.1UF50V+80%-20%0603	PC	22.000	C103, C104, C118, C129, C137, C141, C154, C155, C160, C176, C200, C210, C217, C324, C328, C402, C408, C412, C607, C616, C628, C629
.4	0205	1121-124084020	CH-CAP, CER 0.12UF 50V +80%/-20%0603	PC	4.000	C419, C420, C421, C422
.4	0210	1121-105041020	CH-CAP, CER 1UF 10V +/-5% 0603	PC	1.000	C177
.4	0215	1121-225041020	CH-CAP, CER 2.2UF 10V +/-5% 0603	PC	2.000	C123, C124
.4	0220	1132-105083060	CAP, ELECT 1UF 50V +/-20% 5X11 TAPING	PC	8.000	C409, C410, C411, C413, C415, C416, C423, C424
.4	0230	1132-475083060	CAP ELECT, 4.7UF 50V +/-20% 5X11 TAPING	PC	2.000	C407, C418
.4	0240	1132-226063060	CAP ELECT, 22UF 25V +/-20% 5X11 TAPING	PC	7.000	C102, C105, C107, C149, C146, C133, C425
.4	0250	1132-476043060	CAP, ELECT, 47UF10V+/-20%5X11 TAPING	PC	3.000	C199, C336, C540
.4	0260	1132-476063060	CAP ELECT, 47UF 25V +/-20% 5X11 TAPING	PC	1.000	C130
.4	0270	1132-227053060	CAP ELECT, 220UF 16V +/-20% 5X11 TAPING	PC	3.000	C120, C613, C701
.4	0290	1213-022012000	FUSE RES, 2.2R 1/2W +/-5%	PC	1.000	R603
.4	0300	1221-000062020	CH-RES, 0 OHM1/16W+/-5%0603	PC	17.000	R101, R102, R103, R104, R105, R106, R107, R108, R109, R110, R111, R112, R192, R195, R281, R409, R411
.4	0310	1221-047062020	CH-RES, 4.7R1/16W+/-5%0603	PC	1.000	R231
.4	0320	1221-100062020	CH-RES, 10R1/16W+/-5%0603	PC	10.000	R113, R132, R285, R286, R287, R291, R292, R293, R294, R296
.4	0330	1221-180062020	CH-RES, 18R1/16W+/-5%0603	PC	1.000	R233
.4	0340	1221-220062020	CH-RES, 22R1/16W+/-5%0603	PC	2.000	R234, R235
.4	0350	1221-101062020	CH-RES, 100R1/16W+/-5%0603	PC	4.000	R237, R288, R707, R708
.4	0360	1221-221062020	CH-RES, 220R1/16W+/-5%0603	PC	4.000	R116, R117, R514, R689
.4	0365	1221-271062020	CH-RES, 270R1/16W+/-5%0603	PC	2.000	R801, R808
.4	0370	1221-331062020	CH-RES, 330R1/16W+/-5%0603	PC	1.000	R145
.4	0380	1221-471062020	CH-RES, 470R1/16W+/-5%0603	PC	5.000	R137, R146, R158, R159, R225
.4	0400	1221-102062020	CH-RES, 1K1/16W+/-5%0603	PC	26.000	R115, R126, R127, R128, R129, R133, R135, R147, R178, R179, R226, R232, R238, R239, R241, R410, R416, R419, R420, R702, RD105, RD106, RD107, RD108, RD109, RD110
.4	0410	1221-152062020	CH-RES, 1.5K1/16W+/-5%0603	PC	1.000	R183
.4	0420	1221-222062020	CH-RES, 2.2K1/16W+/-5%0603	PC	1.000	R703
.4	0430	1221-272062020	CH-RES, 2.7K1/16W+/-5%0603	PC	1.000	R242
.4	0440	1221-332062020	CH-RES, 3.3K1/16W+/-5%0603	PC	9.000	R114, R130, R131, R175, R176, R177, R199, R704, R705
.4	0450	1221-392062020	CH-RES, 3.9K1/16W+/-5%0603	PC	1.000	R160
.4	0460	1221-472062020	CH-RES, 4.7K1/16W+/-5%0603	PC	8.000	R138, R164, R204, R244, R245, R251, R638, R711
.4	0470	1221-512062020	CH-RES, 5.1K 1/16W+/-5%0603	PC	3.000	R187, R188, R222
.4	0480	1221-562062020	CH-RES, 5.6K1/16W+/-5%0603	PC	2.000	R417, R418

FACTORY BOM

Level	Item	Component	Desc	Unit	Qty	Location	
...	4	0490	1221-103062020	CH-RES, 10K1/16W+/-5%0603	PC	37.000	R120, R121, R123, R124, R125, R139, R140, R148, R157, R161, R163, R172, R174, R201, R202, R216, R217, R240, R250, R270, R271, R272, R277, R282, R283, R284, R289, R297, R404, R414, R429, R430, R637, R639, R701, RD103, RD104
...	4	0510	1221-153062020	CH-RES, 15K1/16W+/-5%0603	PC	1.000	R122
...	4	0520	1221-183062020	CH-RES, 18K1/16W+/-5%0603	PC	1.000	R162
...	4	0530	1221-223062020	CH-RES, 22K1/16W+/-5%0603	PC	3.000	R180, R405, R415
...	4	0540	1221-333062020	CH-RES, 33K1/16W+/-5%0603	PC	1.000	R185
...	4	0550	1221-473062020	CH-RES, 47K1/16W+/-5%0603	PC	1.000	R189
...	4	0560	1221-683062020	CH-RES, 68K1/16W+/-5%0603	PC	4.000	R224, R236, R640, R700
...	4	0570	1221-104062020	CH-RES, 100K1/16W+/-5%0603	PC	3.000	R182, R186, R190
...	4	0580	1313-000620010	ZENER DIODE 6.2V 1/2W TAPING	PC	1.000	ZD601
...	4	0590	1313-000750010	ZENER DIODE 7V5 1/2W TAPING	PC	1.000	ZD501
...	4	0600	1316-030300000	LED 3x3.6MM BLUE XY-030BL40	PC	2.000	LED2, LED3
...	4	0610	1316-048300000	LED 4.8X4.4MM ROUND BLUE XY-048BLL30	PC	1.000	LED1
...	4	0620	1321-041480020	CH-DIODE RLS4148 LL-34	PC	2.000	D602, D658
...	4	0630	1411-051400020	TRANSISTOR, PBSSA140S (BLUE ROCKET)	PC	1.000	Q702
...	4	0640	1421-001140000	CH-TRANSISTOR DTA114YKA SMT3	PC	1.000	Q607
...	4	0650	1421-008570020	CH-TRANSISTOR, BC857C	PC	1.000	Q185
...	4	0660	1421-008690000	CH-TRANSISTOR PNP BC869 SOT-89	PC	1.000	Q610
...	4	0670	1421-211320010	CH-TRANSISTOR, 2SB1132RSOT-89	PC	1.000	Q605
...	4	0680	1421-807250010	CH-TRANSISTOR, BC807-25 PNP SOT23	PC	2.000	Q201, Q205
...	4	0690	1422-000490000	CH-TRANSISTOR NPN BCV49 SOT89	PC	1.000	Q105
...	4	0700	1422-001140000	CH-TRANSISTOR, DTC114YKA NPN SMT3	PC	4.000	Q204, Q608, Q701, Q703
...	4	0710	1422-008470010	CH-TRANSISTOR, BC847C SOT-23.	PC	3.000	Q186, Q202, Q611
...	4	0720	1422-817250000	CH-TRANSISTOR, BC817-25	PC	2.000	Q501, Q606
...	4	0730	1502-002314010	IC ET2314 SOUND S028	PC	1.000	U401
...	4	0740	1503-009258000	IC, D9258 MOTOR DRIVERCD	PC	1.000	U103
...	4	0750	1508-060028000	IC RESET AAT60028A55 SOT23-5	PC	1.000	U104
...	4	0760	1509-007838000	IC SAA7838H/N3 MCU+MP3/WMA DECODER QFP100	PC	1.000	U101
...	4	0770	1511-002402030	IC, BR24L02F-WE2	PC	1.000	U102
...	4	0780	1512-001117100	IC AP1117E33LA REGULATOR SOT223	PC	1.000	IC601
...	4	0790	1512-001117130	IC, AZ1117H-3.3TRE1 REGULATOR SOT-223	PC	1.000	IC601
...	4	0800	1513-008861000	IC, ET8861S (SSOP48) LCD DRIVER	PC	1.000	U201
...	4	0810	1606-047090000	CH-INDUCTOR4.7UH+/-10% DCR=0.9R Q=45 CMI3216-4R7K	PC	3.000	FB801, FB802, FB803
...	4	0820	1606-100185000	CHOCK COIL 10UH Q=30 DCR=1.850HM 0603	PC	1.000	L202
...	4	0850	1614-330094000	INDUCTOR 33UH+/-10% 0.940HM	PC	3.000	L101, L309, R341
...	4	0855	1606-330125000	CH-INDUCTOR SDFL2012T330KT 33UH Q=30 DCR=1.250HM 0805	PC	1.000	L102
...	4	0860	1703-000000090	28UH CORE:T9X5X3 6TURNS 7150HM 1.2A (TX2409033628LF)	PC	1.000	TS357
...	4	0870	1801-000000150	IR RECEIVER BRM-4050-8-FB2.2	PC	1.000	IR1
...	4	0880	2105-000000030	FILTER BEAD RH3.5X6X0.8 TAPING	PC	2.000	FB306, FB401
...	4	0890	2403-000000710	LCD VD70256AHTH (VBEST) 60x31,5x2.8MM PH1.8	PC	1.000	LCD1
...	4	0900	2721-101020000	FERRITE BEAD SMD 1000HM +/-25%/100MHZ 0603 GZ1608D101	PC	4.000	FB201, FB202, FB241, FB242
...	4	0910	2721-300020010	FERRITE BEAD SMD 300HM +/-25%/100MHZ 0603 PZ1608D300-3ROT	PC	3.000	FB102, FB103, FB210
...	4	0920	3106-101621040	FFC CONNECTOR PH=1.0MM 16P HORIZONTALWHITE 1.0S-12X-16PW	PC	1.000	CN101
...	4	0930	3101-150621010	HEADER 6PIN 1.5MM STRAIGHT	PC	1.000	CN102
...	4	0940	3101-200221010	HEADER 2PIN 2.0MM STRAIGHT	PC	1.000	CN104
...	4	0945	2721-601020020	FERRITE BEAD 100MHz/600 OHM 0603.	PC	1.000	FB110
...	4	0950	3101-200421010	HEADER 4PIN 2.0MM STRAIGHT	PC	2.000	CN202, CN601
...	4	0960	3101-200511010	HEADER 5PIN 2.0MM 90ANGLE WHITE	PC	1.000	CN602
...	4	0970	3106-100921010	FFC CONNECTOR 9PIN P=1.0MM STRAIGHT	PC	1.000	CND103
...	4	0980	3106-121021000	CONNECTOR FFC 10PIN P=1.25MM 180DEGREE	PC	2.000	CN603, CN701
...	4	0990	3202-070236000	HP JACK MSJ2000 (ST) 7P DIA.3.6MM 1800	PC	1.000	JK802
...	4	1000	8016-0000000100	FM ANT CONTACT PIN	PC	2.000	PAD601, PAD701
...	4	1005	3005-0000000000	JUMPER WIRE	PC	2.000	J1, J2
...	4	1010	5603-061100100	BRACKET - LCD /IR	PC	1.000	
...	4	1020	5603-061100200	BRACKET IR	PC	1.000	
...	4	1030	5502-061100100	LENS - DISPLAY LIGHT GUIDE	PC	1.000	
...	4	1040	6214-061100100	LCD DIFFUSION SHEET	PC	1.000	
...	4	1050	6214-061100200	LCD REFLECT SHEET	PC	1.000	
...	4	1060	6011-220080300	SCREW, ST P B 2X8 S A222008003	PC	3.000	2-BRACKETLCD-IR, 1-BRACKETIR
...	3	0030	8902-071100100	TUNER PORTION OF MCM239/12 W/RDS	SET	1.000	
...	4	0010	1003-043320200	CRYSTAL HC-49/U 4.332MHZ +/-20PPM TAPING	PC	1.000	X901

FACTORY BOM

Level	Item	Component	Desc	Unit	Qty	Location	
...	4	0020	1121-330081020	CH-CAP, CER33PF50V+/-5%0603	PC	2.000	C927, C928
...	4	0030	1121-331081020	CH-CAP, CER330PF50V+/-5%0603	PC	1.000	C925
...	4	0040	1121-561081020	CH-CAP, CER560PF50V+/-5%0603	PC	1.000	C926
...	4	0050	1121-104084020	CH-CAP, CER0.1UF50V+80%-20%0603	PC	2.000	C929, C930
...	4	0060	1121-225044020	CH-CAP, CER2.2UF10V+80%-20%0603	PC	1.000	C924
...	4	0070	1132-107044040	CAP ELECT 100UF10V+80%-20% 5X5(TAPING PH=2.5MM)	PC	1.000	C901
...	4	0080	1221-102062020	CH-RES, 1K1/16W+/-5%0603	PC	2.000	R934, R935
...	4	0090	1221-222062020	CH-RES, 2.2K1/16W+/-5%0603	PC	1.000	R936
...	4	0100	1221-103062020	CH-RES, 10K1/16W+/-5%0603	PC	3.000	R181, R184, R957
...	4	0110	1221-224062020	CH-RES, 220K1/16W+/-5%0603	PC	1.000	R937
...	4	0120	1233-022022000	FUSE RES, 2.2 1/4W +/-5% TAPING	PC	1.000	R940
...	4	0130	1501-006581000	IC SAA6581T RDS (PHILIPS) (935268605118) S016	PC	1.000	U904
...	4	0140	1512-007805030	IC LM78L05 3-TERMINAL POSITIVE REGULATORS TO-92	PC	1.000	U902
..	2	0020	8905-061100500	KEY/POWER PWB ASSEMBLY OF MCM238/12	SET	1.000	
...	3	0010	3701-023900210	PWB 214X185.6X1.6MM/2(POWER/KEY) 94V0 MCM239D-02	PC	1.000	
...	3	0020	8905-061100600	POWER PWB ASSEMBLY OF MCM238/12	SET	1.000	
...	4	0010	1112-106063100	CAP, ELECT, 10UF25V+/-20%6.3X11	PC	1.000	C805
...	4	0020	1112-226063060	CAP, ELECT, 22UF25V+/-20%5X11	PC	1.000	C845
...	4	0030	1112-337053060	CAP ELECT, 330UF16V+/-20%5X11	PC	1.000	C869
...	4	0040	1112-108053140	CAP, ELECT, 1000UF16V+/-20%10X16	PC	2.000	C852, C853
...	4	0050	1112-108063141	CAP ELECT 1000UF25V+/-20%10X16 105DEGREE	PC	1.000	C802
...	4	0060	1112-228063180	CAP, ELECT, 2200UF25V+/-20%12X25	PC	1.000	C861
...	4	0070	1121-101081020	CH-CAP, CER100PF50V+/-5%0603	PC	2.000	C811, C812
...	4	0080	1121-102081020	CH-CAP, CER 1000PF50V+/-5%0603	PC	3.000	C815, C880, C881
...	4	0090	1121-103082020	CH-CAP, CER0.01UF50V+/-10%0603	PC	3.000	C165, C886, C887
...	4	0100	1121-104084020	CH-CAP, CER0.1UF50V+80%-20%0603	PC	11.000	C801, C803, C804, C806, C809, C810, C813, C814, C851, C883, C885
...	4	0110	1132-105083061	CAP, ELECT 1UF 50V +/-20% 5X11 105DEGREE TAPING	PC	3.000	C831, C832, C833
...	4	0120	1132-475083060	CAP ELECT, 4.7UF 50V +/-20% 5X11 TAPING	PC	1.000	C882
...	4	0130	1132-227063220	CAP ELECT, 220UF 25V +/-20% 8X12 TAPING	PC	1.000	C846
...	4	0140	1132-227053061	CAP ELECT, 220UF 16V +/-20% 5X11 105DEGREE TAPING	PC	1.000	C808
...	4	0150	1132-477053220	CAP ELECT, 470UF 16V +/-20% 8X12 TAPING	PC	1.000	C807
...	4	0160	1138-104082110	CAP MMF HMFS 0.1UF 50V +/-10% 6.8x5.0 TAPING	PC	2.000	C858, C859
...	4	0170	1211-047072000	RES, 4.7R1W+/-5%	PC	1.000	R801
...	4	0180	1211-561052000	RES, 560R1/10W+/-5%	PC	1.000	R885
...	4	0190	1231-393042000	RES, 39K 1/8W +/-5% TAPING	PC	1.000	R819
...	4	0200	1211-152042000	RES, AI1.5K OHM+/-5% 1/8W	PC	1.000	R882
...	4	0210	1211-104042000	RES, AI100K OHM+/-5% 1/8W	PC	1.000	R886
...	4	0220	1221-000062020	CH-RES, 0 OHM1/16W+/-5%0603	PC	7.000	R890, R891, R892, R893, R894, R895, R898
...	4	0230	1221-022062020	CH-RES, 2.2R1/16W+/-5%0603	PC	2.000	R849, R850
...	4	0240	1213-100072000	FUSE RES, 10R 1W +/-5%	PC	1.000	R825
...	4	0250	1221-102062020	CH-RES, 1K1/16W+/-5%0603	PC	8.000	R804, R805, R814, R820, R821, R833, R834, R887
...	4	0260	1221-222062020	CH-RES, 2.2K1/16W+/-5%0603	PC	1.000	R811
...	4	0270	1221-332062020	CH-RES, 3.3K1/16W+/-5%0603	PC	4.000	R806, R807, R824, R876
...	4	0280	1221-472062020	CH-RES, 4.7K1/16W+/-5%0603	PC	5.000	R810, R822, R838, R875, R879
...	4	0290	1221-682062020	CH-RES, 6.8K1/16W+/-5%0603	PC	1.000	R877
...	4	0300	1221-103062020	CH-RES, 10K1/16W+/-5%0603	PC	8.000	R809, R815, R816, R823, R880, R881, R899, R900
...	4	0310	1221-561062020	CH-RES, 560R1/16W+/-5%0603	PC	1.000	R802
...	4	0320	1221-153062020	CH-RES, 15K1/16W+/-5%0603	PC	1.000	R837
...	4	0330	1221-223062020	CH-RES, 22K1/16W+/-5%0603	PC	3.000	R835, R836, R878
...	4	0340	1221-393062020	CH-RES, 39K1/16W+/-5%0603	PC	1.000	R812
...	4	0350	1221-473062020	CH-RES, 47K1/16W+/-5%0603	PC	3.000	R817, R818, R846
...	4	0360	1221-683062020	CH-RES, 68K1/16W+/-5%0603	PC	1.000	R803
...	4	0370	1221-104062020	CH-RES, 100K1/16W+/-5%0603	PC	1.000	R813
...	4	0380	1312-158190000	DIODE 1N5819 DO-41	PC	2.000	D801, D802
...	4	0390	1313-079100000	ZENER DIODE BZX79-C10 TAPING	PC	1.000	ZD803
...	4	0400	1321-041480020	CH-DIODE RLS4148 LL-34	PC	6.000	D803, D804, D805, D806, D807, D809
...	4	0410	1323-001200020	CH-ZENER DIODE RLZ12B LL-34.	PC	1.000	ZD804
...	4	0420	1424-023010010	MOSFET P-CHANNEL APM2301 SOT-23	PC	2.000	Q808, Q810
...	4	0430	1411-213700000	TRANSISTOR, 2SB1370PNP TO-220FP	PC	1.000	Q802
...	4	0440	1412-253430000	TRANSISTOR, 2SC5343 NPN TO-92	PC	1.000	Q803
...	4	0450	1421-807250010	CH-TRANSISTOR, BC807-25 PNP SOT23	PC	1.000	Q805
...	4	0460	1422-001140000	CH-TRANSISTOR, DTC114YKA NPN SMT3	PC	2.000	Q804, Q809

FACTORY BOM

Level	Item	Component	Desc	Unit	Qty	Location	
...	4	0470	1422-008470010	CH-TRANSISTOR, BC847C SOT-23.	PC	2.000	Q811, Q814
...	4	0480	1422-817250000	CH-TRANSISTOR, BC817-25	PC	5.000	Q801, Q806, Q807, Q812, Q813
...	4	0490	1502-009842010	IC POWER AMPLIFIER TFA9842BJ.	PC	1.000	U801
...	4	0500	1508-004844000	IC, CMOS RESET BD4844G SSOP5	PC	1.000	U803
...	4	0510	1512-001117160	IC AZ1117-3.3E1 VOLTAGE REGULATOR TO-220.	PC	1.000	U804
...	4	0520	1614-080006010	INDUCTOR 3A1868N 8UH +/-20% 0.06R (ONE SHORT PIN)	PC	4.000	L810, L811, L812, L813
...	4	0530	2721-101020000	FERRITE BEAD SMD 1000HM +/-25%/100MHZ 0603 GZ1608D101	PC	6.000	FB804, FB805, FB806, FB807, FB808, FB809
...	4	0535	3001-000180130	WIRE 1P UL1007 AWG#22 L=180MM BALCK.	PC	1.000	PAD801
...	4	0540	3005-000000000	JUMPER WIRE	PC	18.000	JW801, JW802, JW803, JW804, JW805, JW806, JW807, JW808, JW809, JW810, JW811, JW812, JW813, JW814, JW815, JW817, JW823, R825
...	4	0550	3503-050322000	HOUSING 5PIN P=2.0MM AWG#22 L=320MM PLUG TO BOARD IN	PC	1.000	CN801
...	4	0560	3503-040152000	HOUSING 4P UL1007 AWG#26 P=2.0MM L=150MMPLUG TO BOARD IN (180 DEGREE)	PC	1.000	CN804
...	4	0570	3106-121021000	CONNECTOR FFC 10PIN P=1.25MM 180DEGREE	PC	1.000	CN802
...	4	0580	3501-020122010	HOUSING 2PIN P=2.0MM L=120MM AWG#30 UL1571 SINGLE PLUG (RED/BLACK)	PC	1.000	CN105
...	4	0590	3201-030163000	DC JACK 3PIN DC-005 DIA6.3MM 90DEGREE.	PC	1.000	JK803
...	4	0600	3202-070236000	HP JACK MSJ2000 (ST) 7P DIA.3.6MM 1800	PC	1.000	JK802
...	4	0610	3312-010124030	SWITCH, OPEN/CLOSE DTS-03 1P1T 2.4MM	PC	1.000	K101
...	4	0620	3401-000000010	SP TERMINAL MSP-134V-05 LF	PC	1.000	JK801
...	4	0630	3601-106000010	CH-MULT. VAR. EZJZ1V120KA 10.6-15.4V 0603	PC	2.000	ML813, ML814
...	4	0640	6600-061100200	HEATSINK	PC	1.000	
...	4	0650	6211-050700100	PLATE FOR IC	PC	1.000	
...	4	0660	6013-230080400	SCREW, PTTB M 3X8 A223008000	PC	1.000	
...	4	0670	8035-000000500	MICACEOUS PLATE	PC	1.000	
...	4	0680	6011-230060400	SCREW, STTP M 3X6 A013006000	PC	2.000	2-IC&HEATSINK
...	4	0690	8016-000000100	FM ANT CONTACT PIN	PC	1.000	PAD802
...	3	0030	8910-061100200	KEY PWB ASSEMBLY OF MCM238/12	SET	1.000	
...	4	0010	1121-102081020	CH-CAP, CER 1000PF50V+/-5%0603	PC	2.000	C220, C221
...	4	0020	1221-000062020	CH-RES, 0 OHM1/16W+/-5%0603	PC	1.000	R221
...	4	0030	1221-152062020	CH-RES, 1.5K1/16W+/-5%0603	PC	2.000	R208, R214
...	4	0040	1221-182062020	CH-RES, 1.8K1/16W+/-5%0603	PC	2.000	R209, R215
...	4	0050	1221-222062020	CH-RES, 2.2K1/16W+/-5%0603	PC	2.000	R210, R216
...	4	0060	1221-332062020	CH-RES, 3.3K1/16W+/-5%0603	PC	4.000	R207, R211, R213, R217
...	4	0070	1221-472062020	CH-RES, 4.7K1/16W+/-5%0603	PC	2.000	R212, R218
...	4	0080	1221-682062020	CH-RES, 6.8K1/16W+/-5%0603	PC	2.000	R219, R223
...	4	0090	1316-033470000	LED 3MM 3R4HD-7 (RED) TAPING	PC	1.000	LED801
...	4	0100	3005-000000000	JUMPER WIRE	PC	5.000	JW201, JW202, JW203, JW205, JW206
...	4	0110	3505-040082010	HOUSING 4PIN P=2.0MM AWG#28 L=80MM PLUG TO BOARD IN	PC	1.000	CN201
...	4	0120	3302-010143020	SWITCH TACT TSA-06430-150 LUP FUNG	PC	15.000	SW201, SW202, SW203, SW204, SW205, SW206, SW207, SW208, SW209, SW210, SW211, SW212, SW213, SW214, SW216
.1	0020	8900-071100600	ELECTRICAL ENCASING ASSY. OF MCM239/12.	SET	1.000		
..2	0005	2712-000020000	FERRITE CORE T16X12X8	PC	1.000		
..2	0015	3001-000100160	WIRE 1P UL1007 AWG#24 L=100MM BLACK	PC	1.000	TUNERTOPAD701	
..2	0015	3002-100200900	FFC CABLE 10P P=1.25MM L=200MM C TYPE WHITE	PC	2.000	CN802TOCN603, CN701TOTUNER	
..2	0020	3001-000150120	WIRE 1P UL1007 AWG#24 L=150MM BLACK.	PC	1.000		
..2	0030	3801-000000090	TUNER MODULE AM/FM ENG07821QF (EUROPE).	PC	1.000		
..2	0040	4401-120009320	CD MECHANISM CMS-M93BGPJ (SAMSUNG, FORROHM SOLUTION)	PC	1.000	CDMECHA	
.1	0030	8940-061100200	MECHANICAL PART OF MCM238/12	SET	1.000		
..2	0010	8941-061100200	PLASTIC PART OF MCM238/12	SET	1.000		
...3	0010	5001-061100200	CABINET - FRONT FOR MCM238/12	PC	1.000		
...3	0020	5506-061100100	LENS FRAME COSMETIC TOP_LEFT	PC	1.000		
...3	0030	5506-061100200	LENS FRAME COSMETIC TOP_RIGHT	PC	1.000		
...3	0040	5506-061100300	LENS FRAME COSMETIC BOTTOM_LEFT	PC	1.000		
...3	0050	5506-061100400	LENS FRAME COSMETIC BOTTOM_RIGHT	PC	1.000		
...3	0060	5503-061100200	LENS - CD DOOR FOR 12V	PC	1.000		
...3	0070	5002-061100100	CABINET - REAR	PC	1.000		
...3	0080	5501-061100200	LENS - DISPLAY FOR 12V	PC	1.000		
...3	0090	5618-061100300	BRACKET PLAY BUTTON	PC	1.000		
...3	0100	5902-061100400	COVER POWER BUTTON	PC	1.000		
...3	0110	5403-061100200	BUTTON SET FUNCTION-A	PC	1.000		
...3	0120	5404-061100200	BUTTON SET FUNCTION-B	PC	1.000		
...3	0130	5417-061100100	BUTTON SET NAVIGATION	PC	1.000		

FACTORY BOM

Level	Item	Component	Desc	Unit	Qty	Location	
...	3	0140	5408-061100200	BUTTON POWER	PC	1.000	
...	3	0160	5304-061100100	BUTTON OPEN	PC	1.000	
...	3	0170	5935-061100100	OPEN-BUTTON-FIX	PC	1.000	
...	3	0180	5935-061100200	OPEN-BUTTON-SOLID	PC	1.000	
...	3	0210	5608-061100100	BRACKET CDM	PC	3.000	
...	3	0220	5201-061100100	DOOR - CD	PC	1.000	
...	3	0250	5105-061100200	CONTROL PANNEL FOR MCM238/12V	PC	1.000	
...	3	0260	5902-061100500	COVER PLAY BUTTON	PC	1.000	
...	3	0270	5902-061100600	COVER NAVIGATION BUTTON	PC	1.000	
...	3	0280	5703-030600200	DAMPER GEAR ASSEMBLY	SET	1.000	
...	3	0290	5502-071100100	LENS - CD AMBI LIGHT GUIDE L	PC	1.000	
...	3	0300	5502-071100200	LENS - CD AMBI LIGHT GUIDE R	PC	1.000	
..2	0020	8942-061100200	METAL PART OF MCM238/12	SET	1.000		
...	3	0010	6102-061100100	SPRING FOR OPEN-BUTTON-1	PC	1.000	
...	3	0020	6102-061100200	SPRING FOR OPEN-BUTTON-2	PC	1.000	
...	3	0030	6105-061100100	SPRING FOR DOOR CD	PC	1.000	
...	3	0040	6406-050700101	CUSHION CD MECHANISM A	PC	2.000	
...	3	0050	6405-050700100	CD DAMPER (BLACK) 20DEGREE	PC	2.000	
...	3	0055	6405-071100100	CD DAMPER (BLACK) 30DEGREE	PC	1.000	
...	3	0060	6404-061100100	RUBBER FOOT FOR FRAME-COSMETIC	PC	2.000	
...	3	0070	8036-000000200	CABLE TIE	PC	2.000	
...	3	0080	7902-061100200	NITTO 500 DOUBLE SIDE TAPE 191X47MM	PC	1.000	
...	3	0090	7902-061100300	NITTO 500 DOUBLE SIDE TAPE 191X125MM	PC	1.000	
...	3	0100	6700-071100100	FELT SHEET 188x9.0x0.30	PC	4.000	
..2	0030	8946-061100100	SCREW PART OF MCM238/12	SET	1.000		
...	3	0010	6011-230100100	SCREW, ST 3.0X10 PB	PC	11.000	6-CABINETREAR, 3-BRACKETCDM, 2-SPEAKERJACK
...	3	0030	6011-226060100	SCREW, ST 2.6X6 PB (BLACK)	PC	11.000	1-FORSWITCHPCBFRONTCABINET, 8-FORLENSFRAMECOSMETIC, 2-FOROPENFIXFRONT
...	3	0040	6021-230060100	SCREW, M3.0X6 PB	PC	1.000	1-FORRADIOMODULE
...	3	0050	6011-220080300	SCREW, ST P B 2X8 S A222008003	PC	10.000	6-FOR LENS FRAME COSMETIC, 4-FOR KEY PCBFRONT CABINET
...	3	0060	6013-220060100	SCREW, ST B B 2X6B	PC	4.000	4-FORFRONTCABINETCONTROLPANEL
...	3	0070	6012-226100110	SCREW, PTTN M 2.6X10 PB(DIA.:12.0)	PC	4.000	1-FORDAMPERGEAR, 2-FORPOWERPCBREARCABINET, 1-FORREARCABINET
..2	0040	8943-061100200	PACKING PART OF MCM238/12	SET	1.000		
...	3	0010	7103-030300100	LABEL DON'T TOUCH THE LENS	PC	1.000	
...	3	0020	7107-030600100	LABEL (QC)	PC	1.000	
...	3	0030	7111-061100200	LABEL TYPE PLATE 52X35MM (MCM238/12)	PC	1.000	
...	3	0040	7101-061100200	LABEL CARTON BOX 83x103MM (MCM238/12)	PC	1.000	
...	3	0050	7112-050700100	LABEL "UWAGA!	PC	1.000	
...	3	0060	7112-050700200	LABEL "VIGYAZAT!	PC	1.000	
...	3	0070	7112-050700300	LABEL "CHRANTE SE	PC	1.000	
...	3	0080	7202-042600200	INSTRUCTION BOOK-5 LANGUAGE	PC	1.000	
...	3	0090	7202-042600300	INSTRUCTION BOOK-2 LANGUAGE	PC	1.000	
...	3	0100	7203-061100400	QUICK START GUIDE ENG+FRE LANGUAGE.	PC	1.000	
...	3	0110	7203-061100500	QUICK START GUIDE SPA+GER LANGUAGES.	PC	1.000	
...	3	0120	7203-061100600	QUICK START GUIDE DUT+ITA LANGUAGES.	PC	1.000	
...	3	0130	7201-041900200	GUARANTEE LEAFLET 10/07/2006 (9965 000 38986)	PC	1.000	
...	3	0140	7603-061100200	DISPLAY BOX W=A.	PC	1.000	
...	3	0150	7401-061100100	POLYFOAM TOP (MCM238)	PC	1.000	
...	3	0160	7402-061100200	POLYFOAM BOTTOM (MCM238)	PC	1.000	
...	3	0170	7801-061100100	INSERT CARDBOARD	PC	2.000	
...	3	0180	7903-061100100	EPE BAG L370xW330MM W/PE-LD04 MARK	PC	1.000	
...	3	0190	7502-050700100	POLYBAG FOR I/B 203x305x0.04MM W/PE-LD04.	PC	3.000	1-IFU, 1-ACCESSORIES
...	3	0200	7502-042200100	POLYBAG 9 x 14" W/WARNING & RECYCLE MARK	PC	1.000	1-QSG
...	3	0210	7905-030600200	POLYBAG FOR AM RING 155X203MM	PC	2.000	1-AMANDFMANTENNA, 1-STAND
...	3	0220	7905-061100100	POLYBAG 110x130x0.04MM W/PE-LD04	PC	1.000	1-STAND
...	3	0230	7907-042500100	ACETATE CLOTH ADHESIVE TAPE L95xW9MM	PC	1.000	STICKONCDDOOR
...	3	0240	7206-030800100	SLIP SHEET 1400X1250MM	PC	0.016	
...	3	0250	7206-042500100	FITTING PALLET 46.125"X38.75" (3140 10638732)	PC	0.016	
...	3	0260	7206-030500200	WRAP FILM	M	0.329	
..1	0040	8944-071100100	ACCESSORIES OF MCM239/12	SET	1.000		
..2	0010	1901-000004400	REMOTE CONTROL "PHILIPS" (MCM239)	PC	1.000		
..2	0020	8919-071100100	SPEAKER BOX 40HM 5W FOR MCM239/12 W/POS.	PAA	1.000		

FACTORY BOM

Level	Item	Component	Desc	Unit	Qty	Location
..2	0030	5926-060300100	AM LOOP ANT 18.1uH 8T	PC	1.000	
..2	0040	3009-001000100	FM ANT WIRE 75OHM L=1.0M BLACK W/STV8-1H	PC	1.000	
..2	0045	4011-060600010	SMPS ADAPTOR 15V 1.2A FOR EUROPE (IMPORT230~240V)VDE	PC	1.000	
..2	0060	8951-061100100	STAND PORTION OF MCM238/12	SET	1.000	
...3	0010	5912-061100100	AND BASE	PC	1.000	
...3	0020	6802-061100200	STEEL FOR STAND BASE.	PC	1.000	
...3	0030	6404-061100200	RUBBER FOOT FOR STAND BASE	PC	2.000	
...3	0040	6023-230040100	SCREW, M B B3X4B(TOYO:A023004002)	PC	4.000	4-STEELSTANDBASE