

Service Service Service



Service Manual



TABLE OF CONTENTS

Handling Chip Components and Safety	1 - 1
Technical Specification & Service tools	2 - 1
Service Measurement.....	2 - 2
Connections and controls	3 - 1..3 - 2
Instruction for use	3 - 3..3 - 4
Disassembly Diagram.....	4 - 1
Block Diagram	5 - 1
Wiring Diagram	5 - 2
MCU Board	
Circuit diagram	6 - 1..6 - 2
Layout diagram	6 - 3
CD Board	
Circuit diagram	7 - 1
Layout diagram	7 - 2..7 - 3

Tuner Board

Circuit diagram	8 - 1
Layout diagram	8 - 2
Tuner adjustment table	8 - 2

MP3 Board

Circuit diagram	9 - 1
Layout diagram.....	9 - 2

USB Board

Circuit diagram	10 - 1
Layout diagram.....	9 - 2

(Only for AZ2538 all versions)

MAIN Board

Circuit diagram	11 - 1
Layout diagram	11 - 2..11 - 3

Exploded view diagram	12 - 1
Mechanical partslist	12 - 2
Electrical partslist.....	13 - 1..13-2

(Circuit and Layout diagram for reference only)

**CLASS 1
LASER PRODUCT**

© Copyright 2006 Philips Consumer Electronics B.V. Eindhoven, The Netherlands
All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise without the prior permission of Philips.

Published by LX 0631 Service Audio Printed in The Netherlands Subject to modification

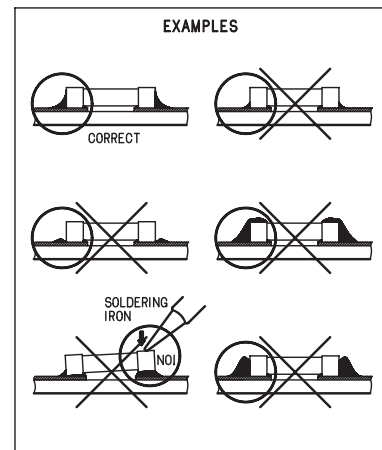
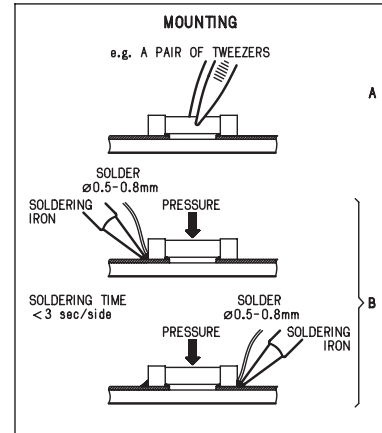
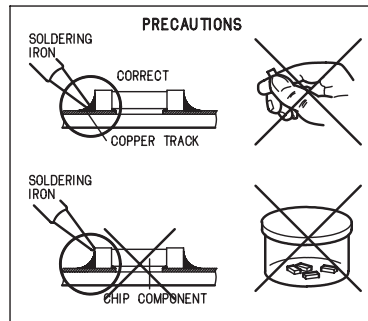
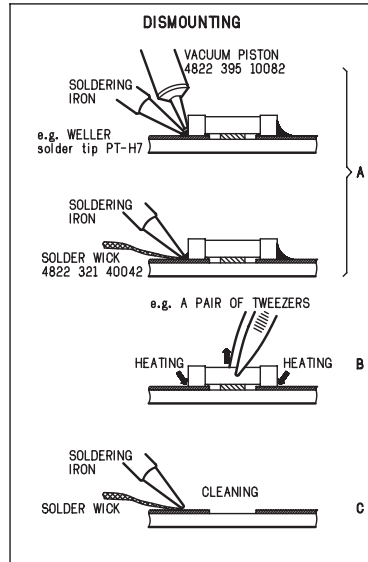
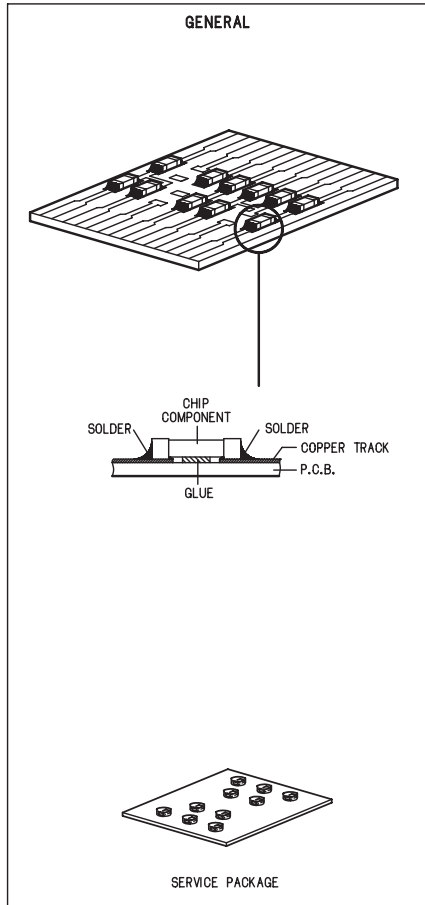
GB 3141 785 30031

version1.1



PHILIPS

HANDLING CHIP COMPONENTS

**(GB) WARNING**

All ICs and many other semiconductors 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 wristband with resistance. Keep components and tools at this potential.

ESD**(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.

(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 enfilez le bracelet seré 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 kann die Lebensdauer drastisch reduzieren.

Sorgen Sie dafür, daß Sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind.

Halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

(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 bracciale a resistenza.

Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

(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

(F)

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

Les composants de sécurité sont marqués

(D)

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Gerätes darf nicht verändert werden. Für Reparaturen sind Originalersatzteile zu verwenden.

Sicherheitsbauteile sind durch das Symbol

(NL)

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

De Veiligheidsonderdelen zijn aangeduid met het symbool

(I)

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

Componenti di sicurezza sono marcati con

(GB)

DANGER: Invisible laser radiation when open. AVOID DIRECT EXPOSURE TO BEAM.

(S) Varning !

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

(DK) Advarsel !

Usynlig laserstrålning ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

(FIN) Varoitus !

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

**(GB)**

After servicing and before returning the set to customer perform a leakage current measurement test from all exposed metal parts to earth ground, to assure no shock hazard exists.

The leakage current must not exceed 0.5mA.

(F)

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

TECHNICAL SPECIFICATIONS

GENERAL

Mains voltage	-/00C : 230 V
	-/01 : 230V/120 V
	-/05 : 240V
	-/17 : 120 V
Mains frequency	-/00C/05 : 50 Hz
	-/01 : 50 Hz/60Hz
	-/17 : 60Hz
Battery	mains : 12 V (R20 x 8)
Power consumption	: < 24 W
Dimension (W x H x D)	: 480 x 260 x 170 mm
Output power	mains : 2 x 4 W
	battery : 2 x 4 W

TUNER - FM SECTION

Tuning range	: 87.5 - 108 MHz
IF frequency	: 10.7 MHz $\pm$ 0.2MHz
S/N Ratio(A-Wtd)	: > 45dB
26dB quieting sensitivity	: < 14dBuV
Selectivity S300	: > 15 dB
IF rejection	: > 50 dB
Image rejection	: > 20 dB
Output power at 10%THD	: > 4000 mW
AM suppression	: > 22 dB

TUNER - MW SECTION

Tuning range	-/00C/01/05 : 531 - 1602 kHz
	-/17 : 530 - 1710 kHz
IF frequency	: 450 kHz $\pm$ 3 kHz
26dB quieting sensitivity	: < 74 dB/m
Selectivity	: > 16 dB at S9/300kHz
IF rejection ratio	: > 24 dB
Image rejection	: > 28 dB
Output power at 10%THD	: > 3800mW
Frequency response -6dB	: <100Hz

COMPACT DISC

S/N ratio	: > 50 dB
Channel difference	: < 3 dB
Crosstalk	1 kHz : > 26 dB
Crosstalk	10 kHz : > 16 dB
Frequency response (1kHz ref.)	: +0dB $\pm$ 3dB at 125Hz
THD (1KHz,0dB)	: <1.5%
Frequency accuracy	: +/-0.5%
Residual hum & noise	: < 2 mV
Current consumption	: < 2 mV
-Rated output	: < 500 mA
Rated power 10%THD/1KHz	: >4000mW

SERVICE TOOLS

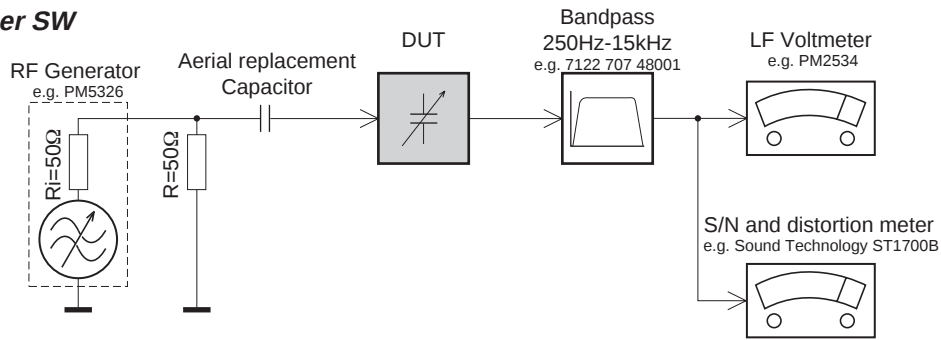
Audio signal disc SBC 429.....	4822 397 30184
Playability test disc SBC 444.....	4822 397 30245
Test disc 5 (disc without errors) +	
Test disc 5A (disc with dropout errors, black spots and fingerprints)	
SBC 426/426A.....	4822 397 30096
Burn in test disc (65 min. 1kHz signal at -30 dB level without "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

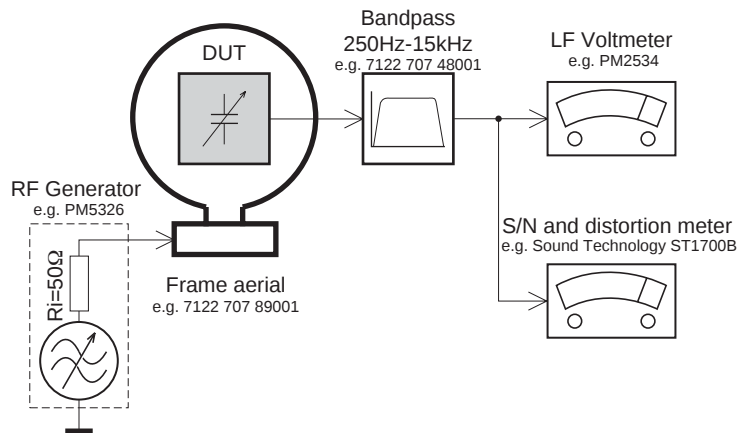
SERVICE MEASUREMENT

Tuner SW



To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday's cage. Use a bandpass filter (or at least a high pass filter with 250Hz) to eliminate hum (50Hz, 100Hz).

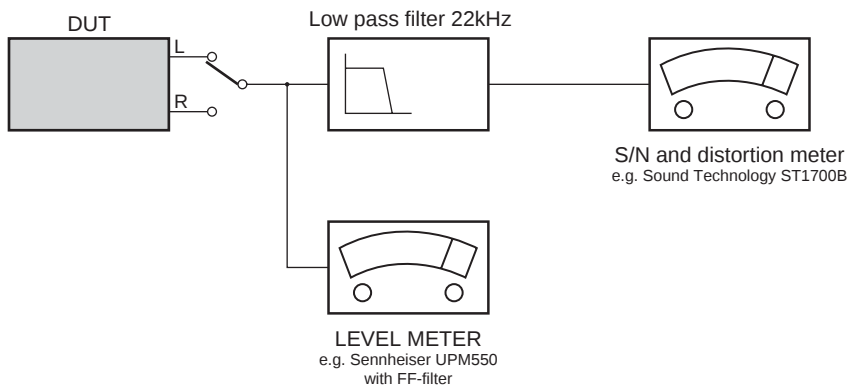
Tuner AM (MW,LW)



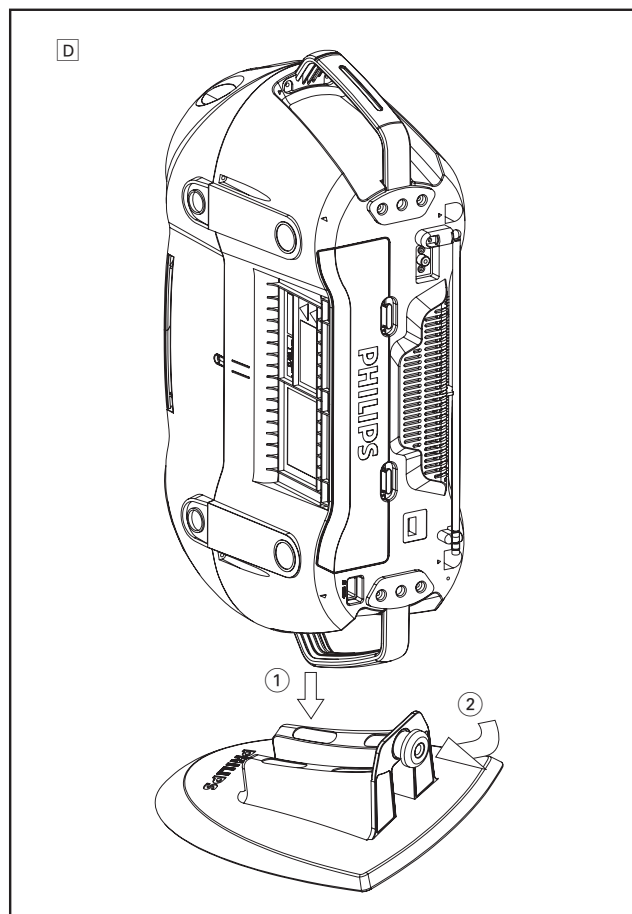
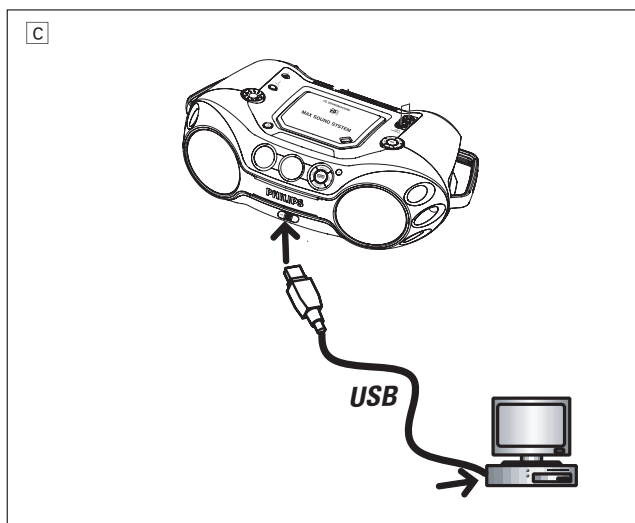
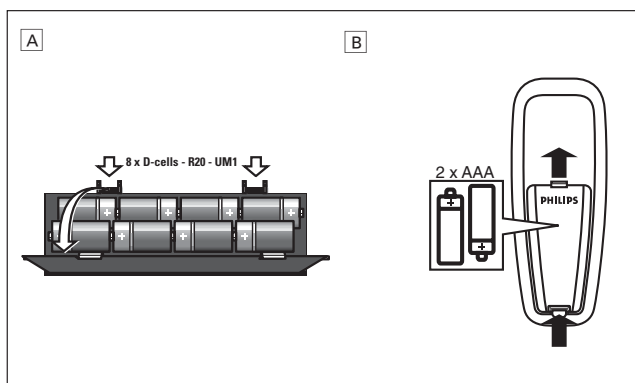
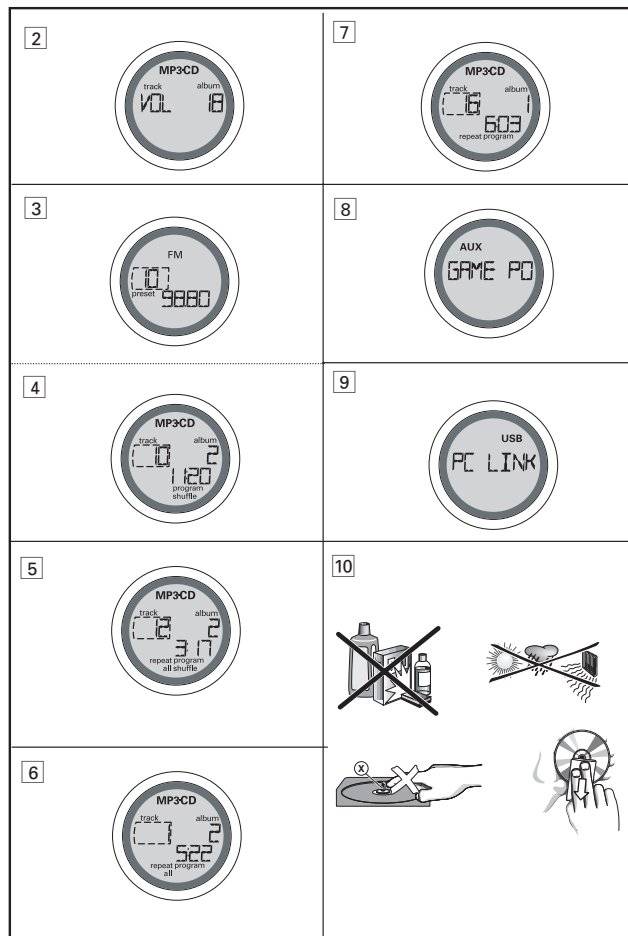
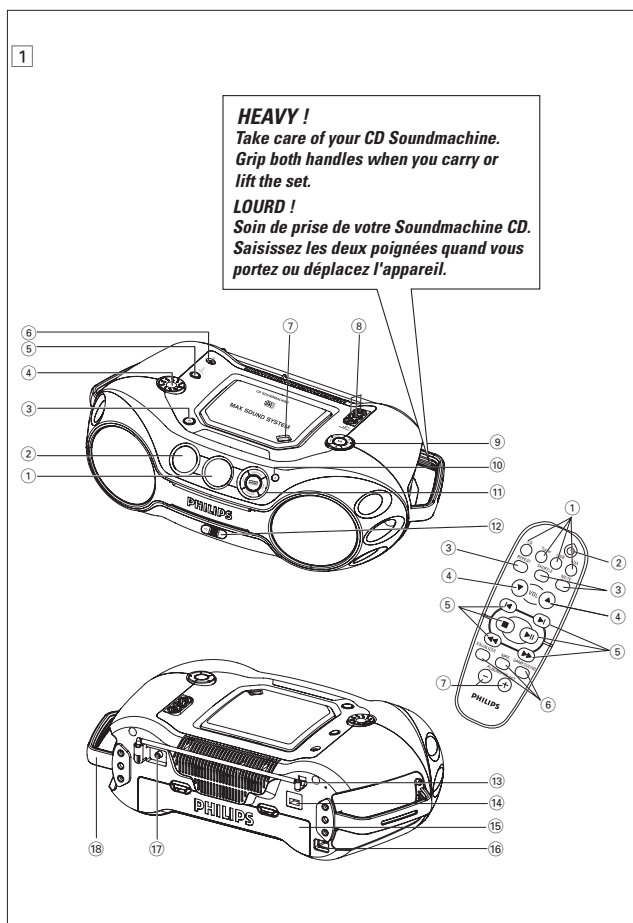
To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday's cage.

CD

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



CONNECTIONS AND CONTROLS



CONNECTIONS AND CONTROLS

English

SUPPLIED ACCESSORIES

- remote control
- USB cable
- video cable
- CD-ROM (USB PC LINK installers)
- AC mains lead
- Stand

TOP AND FRONT PANEL (See [1])

- LCD Display** – shows the status of the set
- [dB]** – display to indicate bass power.
- STANDBY ON** – switches the set on/ off.
- VOLUME** – adjusts volume level or equalizer level
- Source selector** – selects sound source for functions: **CD/ FM / MW / USB PC LINK / GAME AUX**.

- 3.5 mm stereo headphone jack.

Helpful Hints:

The speakers will be muted when headphones are connected to the set.

- OPEN•CLOSE** – press to open/ close CD door
- AUDIO (In Left / Right)** – keeps audio plug in place.
- VIDEO (IN)** – keeps video plug in place

- ALBUM/PRESET** ,

MP3-CD only : – selects previous/next albums.;
FM/MW : selects previous/next preset stations.

SEARCH ,

MP3-CD/audio-CD : – skips and searches tracks backward/forward.

USB PC LINK -skips to the beginning of a previous/ later track.

FM/MW : – searches radio stations.

– starts or pauses CD playback

- – stop CD playback;
- erases a CD program

CONTROL

- IR SENSOR** – infrared sensor for remote control
- GAMESOUND** – select sound effects: **BLAST/ PUNCH/ SPEED/ NORMAL** in **GAME AUX** mode
EQUALIZER – selects bass, mid and treble frequencies.

PROG

MP3-CD/audio-CD : – programs tracks and reviews the programmed songs;

FM / MW : – programs preset radio stations.

MODE – selects different CD play modes: e.g. REPEAT or SHUFFLE order.

MAX SOUND – activates or deactivate the optimal mix of various sound features.

- USB** – connect the supplied USB cable here to the USB port of your computer.

BACK PANEL (See [1])

- Telescopic antenna** – improves FM reception

- Voltage selector** – adjust to match the local voltage 110/220V before plugging in the set

- Battery compartment** – for 8 batteries, type R-20, UM-1 or D-cells

- AC MAINS** – inlet for power cord

- VIDEO OUT** – connects to the **VIDEO IN** jack on a TV or VCR for viewing or recording.

- HANDLE**

Optional stand for vertical mounting (See [D])

With the optional stand, you are allowed to mount the set vertically. It helps you arrange your available space more flexibly.

- Put the stand on a horizontal, vibration-free and stable surface.

- Take the set by handle, with the AC MAINS at the lower side.

- Align the handle on the other side with the space in the middle of the stand.

- Mount the set upright and firmly onto the stand.

- Fasten the bolt on the stand by pressing it and by rotating it clockwise.

ABOUT MP3

- Press **PROG** for 2 seconds or more to activate auto store programming.
→ Display: **AUTOSTORE** is shown and available stations are programmed in order of waveband **FM**, followed by **MW**.
- The first preset station will then be played after all stations are stored automatically.

Manual programming

- Tune to your desired station (see **Tuning to stations**).

- Press **PROG** to activate programming.
→ Display: **Program** flashes.

- Press **ALBUM/PRESET** / once or more to allocate a number from 1 to 30 to this stations.

- Press **PROG** again to confirm.
→ Display: shows the preset number, waveband and the frequency of the preset station.

About MP3

The music compression technology MP3 (MPEG Audio Layer 3) reduces the digital data of an audio CD significantly while maintaining CD-like sound quality.

How to get music files

Either download legal music files from the internet to your computer hard disc or create them from your own audio CDs. For this, insert an audio CD into your computer's CD-ROM drive and convert the music using an appropriate encoder software. To achieve a good sound quality, a bit rate of 128 kbps or higher is recommended for MP3 music files.

How to make a CD-ROM with MP3 files

Use your computer's CD burner to record ("burn") the music files from your hard disc on a CD-ROM.

Helpful Hints:

- For details on using MP3 encoder and writing software, please refer to the operating instructions of the software.
- Make sure that the file names of the MP3 files end with .mp3.
- Total number of music files and albums: around 350 (with a typical file name length of 20 characters)
- The number of music files that can be played depends on the length of the file names. With short file names more files will be supported.

CONTROL

REMOTE CONTROL (See [1])

- CD** – selects CD sound source
TUNER – selects tuner source / wavebands
USB – selects **USB PC LINK**
AUX – selects **GAME AUX**
- switches the set to standby / on if set operating on AC power. (Switches set off only if battery powered)
- REPEAT** – repeat all tracks in USB PC LINK source or selects repeat modes in CD source;
SHUFFLE – selects shuffle modes in CD/USB PC LINK source;
MUTE – interrupts/ resumes sound.
- VOL** , – adjusts volume or equalizer level.
- , – selects previous/ next tracks in a MP3-CD/audio CD/USB PC LINK playlist;
■ – stops CD playback;
– erases a CD program.
 – starts or pauses CD playback
 / – searches backwards/ forwards within a MP3-CD/audio CD track.
– searches radio stations.
- EQUALIZER** – selects bass, mid and treble frequencies
MAX – selects special bass enhancement on/ off
GAMESOUND – selects sound effects: **BLAST/ PUNCH/ SPEED/ NORMAL** in game mode
- ALBUM/PRESET** , .
MP3-CD only : – selects previous/ next albums.
Tuner : – selects previous/next preset station.

POWER SUPPLY

Whenever convenient, use the power supply to conserve battery life. Make sure you remove the power cord from the set and wall jack before inserting batteries.

BATTERIES

Using batteries (not included)

Main set (See [A])

- Insert 8 batteries, type **R-20, UM-1 or D-cells**, (preferably alkaline) with the correct polarity.

POWER SUPPLY

Remote control (See [B])

- Insert 2 batteries, type **AAA, R03 or UM4** (preferably alkaline).

Helpful Hints:

- Incorrect use of batteries can cause electrolyte leakage and will corrode the compartment or cause the batteries to burst.
- Do not mix battery types: e.g. alkaline with carbon zinc. Only use batteries of the same type for the set.
- When inserting new batteries, do not try to mix old batteries with the new ones.
- Batteries contain chemical substances, so they should be disposed of properly.

USING AC POWER

- Check if the AC power supply, as shown on the **type plate located on the bottom of the set**, corresponds to your local power supply. If it does not, consult your dealer or service center.
- If your set is equipped with a voltage selector, adjust the selector so that it matches with the local power supply.
- Connect the mains lead to the wall jack and the set is now ready for use.

Helpful Hints:

– To disconnect the power supply, unplug the set from the wall jack.

– Disconnect the power supply to protect your set during heavy thunderstorms.

POWER-SAVING AUTOMATIC STANDBY

As a power-saving feature, the system automatically switches to standby 15 minutes after MP3-CD/CD has reached the end and no control is operated.

The type plate is located on the bottom of the set.

DIGITAL TUNER

Tuning to stations (See [3])

- Press **STANDBY ON** to on, then press **Source selector** once or more to select **FM/MW** (or press **TUNER** once or more on the remote control).
→ Display: shows **TUNER** briefly followed by waveband, frequency, and preset station number if already stored.

- Tuning to stations:** you can tune to your stations manually or by automatic search tuning: Press down on or (or on the remote control) and release button when the frequency in the display starts running.
→ The radio automatically tunes to a station of sufficient reception. Display shows **SEARCH** during automatic tuning.

- Repeat step 2 if necessary until you find the desired station.

- To tune to a weak station, press or briefly and repeatedly until you have found optimal reception.

Helpful Hints:

To improve radio reception:

– For **FM**, extend, incline and turn the telescopic antenna. Reduce its length if the signal is too strong.

– For **MW**, the set uses a built-in antenna. Direct this antenna by turning the whole set.

Programming tuner stations:

You can store up to a total of 30 radio stations in the memory, manually or automatically (Autostore).

Autostore

Automatic programming will start from preset 1 or a chosen preset number. The set will only program stations which are not in the memory already.

- Press **ALBUM/PRESET** / once or more to select the preset number where programming should start.

Helpful Hints:

– If no tuner preset number is selected, default is preset 1 and all your presets will be erased.

MP3-CD/CD PLAYER

IMPORTANT !

This set does not play/support the following file formats:

- Word documents **.doc** or MP3 files with extension **.dlf**.
- **Playlist files** (e.g. .m3u, .pls of WMA, AAC, Winamp, Sonic, RealJukebox, Ms MediaPlayer 7.0, MusicMatch)
- Recordings created on **PacketWriting** and **Package Writing**

Playing a CD

This CD player plays Audio Discs including CD-RW's and MP3-CD-ROMs. Do not try to play a CD-I, CDV, VCD, DVD or computer CD.

- Press **STANDBY ON** once or more to on,
- Select CD source.
- Press **OPEN•CLOSE** to open the CD door.
→ **OPEN** is displayed when the CD door is open.
- Insert a CD with the printed side facing up and press down on **OPEN•CLOSE** to close the CD door.
→ Display shows **REPEAT** and later, the total track/album number and total playback time.
- Press to start playback.
→ Display shows : current track/album number and elapsed playing time

Helpful Hints:

- Depending on the track type, CD or MP3 will appear on the display during playback.
- **Album number is only shown for MP3 files.**

To pause playback

- Press .
→ the elapsed playing time flashes.
- Press again to resume play.

To stop playback

- Press ■.
→ Display shows : the total track/album number and total playback time

Helpful Hints:

The MP3-CD/audio CD playback will also stop when:

- the CD door is opened
- the CD has reached the end
- you select an other sound source.

Selecting a different track

During playback

- Press **SEARCH** or (or on the remote control) once or repeatedly until the desired track number appears in the display.

During stop or pause

- Press to start playback after your desired track is selected.

Helpful Hints:

– To find a MP3 track you can first press **ALBUM/PRESET** / to select the desired album.

Searching for a passage within a track

- During playback, press and hold **SEARCH** or (or on the remote control).

- When you recognize the passage you want, release or (or on the remote control).

→ Normal playback continues from this position.

Different playing modes: SHUFFLE and REPEAT (See [4] - [7])

You can select and change the various play modes before or during playback. The play modes can also be combined with PROGRAM.

shuffle - tracks of the entire CD/ program are played in random order

repeat all shuffle - repeats the entire CD/ program continuously in random order

repeat all - repeats the entire CD/ program

repeat - plays the current track continuously

To select a playing mode

- Press **MODE** once or more. (SHUFFLE / REPEAT on the remote control).
- Press to start playback if in the stop position.

To return to normal playback

- press **MODE** repeatedly until the various modes are no longer displayed.

Helpful Hints:

- When you press ■, the selected playing mode is also cancelled.

INSTRUCTION FOR USE

BASIC FUNCTIONS

SWITCHING ON AND OFF

- Press **STANDBY ON**  on the set to switch on (or press  on the remote control).
- Press the **Source selector** once or more to select your desired function: **CD, FM, MW, USB PC LINK, GAME AUX**.
- Press **STANDBY ON**  on the set to switch off. (or press  on the remote control to switch the set to standby mode)

Helpful Hints:

- The tone, sound settings, tuner presets and the volume level (up to a maximum volume level of VOL 20) will be retained in the set's memory.

ADJUSTING VOLUME AND SOUND (See [2])

- Adjust the volume with the **VOLUME** control.
 - Display shows the volume level **VOL** and a number from 0-32.

MAX SOUND

To enhance the bass response, press **MAX SOUND** once or more to switch on / off.

- MAX SOUND**-key backlight lights up when **MAX SOUND** is turned on.

Helpful Hints:

- MAX SOUND** can be used when you play FM, MW, CD, USB PC LINK and GAME AUX source.
- Some discs might be recorded in high modulation, which causes a distortion at high volume. If this occurs, deactivate **MAX SOUND** or reduce the volume.

EQUALIZER

- To adjust the bass, mid and treble frequencies press **EQUALIZER** once or more;
- Rotate **VOLUME** within 3 seconds to adjust each level.
 - Display briefly shows **BASS**, **MID**, or **HIGH** level (-5 to +5) or **VOL**.

Helpful Hints:

- EQUALIZER** can be used during FM, MW, CD, USB PC LINK and GAME AUX source.
- To prevent sound interference the bass control options operate exclusively. You cannot combine the bass from **EQUALIZER** with **MAX SOUND**.

GAMESOUND

To adjust the game sound, press **GAMESOUND** once or more to select your option.

- Display briefly shows **BLAST**, **PUNCH**, **SPEED** or **NORMAL**.

Helpful Hints:

- GAMESOUND** is only available when you play in **GAME AUX** source.

How to MUTE the sound

- Press **MUTE** on the remote control to interrupt sound reproduction instantly.
 - Playback continues without sound and the display flashes **MUTE**.
- To reactivate sound reproduction you can:
 - press **MUTE** again;
 - adjust the volume controls;
 - change to another source.

CHANGING TUNING GRID (some versions only)

In North and South America the frequency step between adjacent channels in the MW and FM band are 10 KHz and 100 KHz respectively. In the rest of the world this step is 9 KHz and 50 KHz. Usually the frequency step has been preset in the factory for your area if not:

- Make sure your set is switched off.
 - To change your tuning grid:
 - For **9KHZ** on the set, press **PROG, SEARCH**  and **STANDBY ON**  simultaneously when you next switch on.
 - For **10KHZ** on the set, press **PROG, SEARCH** and **STANDBY ON**  simultaneously when you next switch on.
- The display briefly shows **TU 9K** or **TU 10K**, respectively.

Helpful Hints:

- Repeat steps **1-2** above each time you need to change tuning grid.
- All preset stations will be lost and need to be reprogrammed.

MP3-CD/CD PLAYER

Programming track numbers

You can store up to 20 tracks to play in a program. A single track may be stored more than once in the program.

- Press  to stop playback
- Press **SEARCH**  or  on the set to select your desired track number (,  on the remote control)

Helpful Hints:

- To find a MP3 track, you can press **ALBUM/PRESET**  to select the desired album.
- Press **PROG**
 - Display shows: **Program** and the selected track number. **PROG** and the number of tracks stored appear briefly.
- Repeat steps **2-3** to select and store all desired tracks.
- To start playback of your disc program, press **▶▶**.

Helpful Hints:

- During normal playback, you can press **PROG** to add a current track to your program list.
- SELECT TRACK** appears if you press **PROG** and there is no track selected.
- FULL** appears if you try to store more than 20 tracks.

Reviewing the program

- In the stop position, press and hold down **PROG** for a while until the display shows all your stored track numbers in sequence.

Helpful Hints:

- Display shows: **NO PROG** if there is no track programmed.

GAMESOUND

Clearing a program

You can erase the contents of the memory by:

- Press :
 - Once, if in the stop position;
 - Twice, during playback.
- Press **STANDBY ON** .
- Select another sound source;
- open the CD door
 - **CLEAR** displayed briefly, and **Program** disappears.

PLAYING WITH GAMESOUND (See [8]):

- Press **Source selector** once or more on the set to select the **GAME AUX** function (**AUX** on the remote control)
 - Display scrolls: **GAME PORT**
- Connect your console to the cinches on the front of the set **AUDIO (IN Left / Right)** and **VIDEO (IN)**.
- Press **GAMESOUND** once or more to select your game sound option.
 - Display briefly shows **BLAST**, **PUNCH**, **SPEED** or **NORMAL**.

Connecting other equipment to your system

Use the supplied video cable to connect the **VIDEO OUT** terminal on the back of the set to **VIDEO IN** on a TV or VCR for viewing or recording.

USB PC LINK

USB PC LINK

Quick Setup Guide

PC system requirements

- USB port with Windows 98 SE / ME/ 2000/ XP
- Intel Pentium MMX200 or higher
- CD-ROM drive

Installing MusicMatch software

USB PC LINK installer disc 7.1 (for Windows 98SE/ME/2000/XP):

- Use the supplied USB cable to connect the set to the USB port on your computer. (See [C])
- Press **Source selector** (**USB** on the remote control) once or more to select **USB PC LINK**.
- Turn on your PC then insert the supplied USB PC LINK installer disc in the PC's CD-ROM drive. This application software can also be downloaded from <http://www.audio.philips.com>.

IMPORTANT!

Please use this customized **MusicMatch** software for your **USB PC Link** application. Remember to un-install all other **MusicMatch** jukebox software first from your PC system (if available).

- The installation guide will appear automatically. If it does not, go to the CD-ROM drive in **Windows Explorer** and double click on the **USB PC LINK.exe**. Then perform the following steps:
 - Select your desired language from the list.
 - Select & install **installer driver**.
 - Select & install **installer MusicMatch jukebox**.

For Windows 98 SE only

- While installing the **installer driver**, insert **Windows 98 SE** setup disc as prompted by your PC.
- After the **installer driver** is successfully installed, eject the **Windows SE** setup disc and restart your computer as prompted.
- Insert the supplied **USB PC LINK** installer disc again.
- Proceed to the installation of **installer MusicMatch jukebox** and others.

- Launch **MUSICMATCH JUKEBOX** and create your own playlist of favorite songs by dragging and dropping the music track from anywhere on your PC into the playlist window.

Helpful Hints:

- If you encounter any problem using the **USB PC LINK**, please refer to the **FAQ (Frequently Asked Questions)** stored in your **USB PC LINK** installer disc or visit www.audio.philips.com for the latest **FAQ** updates.

After setup, refer to "Connecting to USB PC Link" for details on the USB PC LINK operations.

Enable digital CD audio output

Before playing CDs on your PC's CD-ROM drive, it is necessary to configure your PC's hardware as follows

- For **Windows ME/2000/XP**
 - Enter the system control panel menu and select: **'Sounds and Multimedia'**, **'Hardware'** tab, **CD-ROM drive**, **'Properties'** button, **'Properties'** tab.
- For **Windows 98SE**
 - Enter the system control menu and select: **'Multimedia'**, **'CD Music'** tab.

- Check the **Enable digital CD audio for this CD-ROM device** setting option is selected (enabled).

Connecting to USB PC Link (See [9])

The USB PC LINK allows you to playback your music collection from the PC via the powerful amplifier and speakers of this set.

IMPORTANT!

Make sure the **MusicMatch** software has been installed.

- Turn on your set and computer.
 - Check your PC volume is suitably adjusted and not set to minimum / mute.

USB PC LINK

- Press **Source selector** (**USB** on the remote control) once or more to select **USB PC LINK**.

- If correctly connected your PC will automatically launch **MUSICMATCH JUKEBOX**.
 - If the audio streaming is detected, the current track name scrolls.
 - If **NO CONNECTION** scrolls for a while, check the connection between your PC and set.

- If necessary, press  or  until the desired track name scrolls (or press  or  on the remote control to select/highlight your desired track in the playlist window of PC).
 - It takes a few seconds to skip to your desired track.
 - The track time appears and the track name scrolls once.
 - Playback starts from the current track automatically. The elapsed playing time appears and the track name scrolls once.

Helpful Hints:

- The display only supports English characters in uppercase.
- During playback,
 - Press **SHUFFLE** on the remote control to play all available tracks in the playlist in random order.
 - Press **REPEAT** on the remote control to repeat playback all the tracks in the playlist.
- To cancel play modes/ stop playback, press  or select another sound sources.

MAINTENANCE & SAFETY

MAINTENANCE & SAFETY (See [10])

CD player and disc handling

- If the CD player cannot read CDs correctly, use a cleaning CD to clean the lens before taking the set to repair.
- The lens of the CD player should never be touched!
- Sudden changes in the surrounding temperature can cause condensation on the lens of your CD player. Playing a CD is then not possible. Do not attempt to clean the lens but leave the set in a warm environment until the moisture evaporates.
- Always close the CD door to avoid dust on the lens.
- To clean the CD, wipe in a straight line from the centre towards the edge using a soft, lint-free cloth. Do not use cleaning agents as they may damage the disc.
- Never write on a CD or attach any stickers to it.

Safety Information

- Don't expose the set, batteries, or CDs to humidity, rain, sand or excessive heat.
- To clean the set with a dry cloth. Don't use any cleaning agents containing alcohol, ammonia, benzene or abrasives as these may harm the set.
- Place the set on a hard and flat surface so that the system does not tilt. Make sure there is good ventilation to prevent the set overheating.
- The mechanical parts of the set contain self-lubricating bearings and must not be oiled or lubricated.
- Apparatus shall not be exposed to dripping or splashing.
- Do not place any sources of danger on the apparatus (e.g. liquid filled objects, lighted candles)

CAUTION

Use of controls or adjustments or performance of procedures other than herein may result in hazardous radiation exposure or other unsafe operation.

Environmental information

We have done our best to reduce the packaging and make it easy to separate into 3 materials: cardboard, expandable polystyrene, polyethylene.

Your set consists of materials which can be recycled if disassembled by a specialized company. Please observe the local regulations regarding the disposal of packaging, exhausted batteries and old equipment.

INSTRUCTION FOR USE

TROUBLESHOOTING

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

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

No sound /power

- Volume not adjusted
- Adjust the VOLUME
- Power Cord not securely connected
- Connect the AC power cord properly
- Batteries flat / incorrectly inserted
- Insert (fresh) batteries correctly
- Headphones connected to the set
- Disconnect headphones
- Electrostatic discharge/interference
- Unplug the set. If batteries inserted, remove batteries from the battery compartment. Press and hold **STANDBY ON**  for 10 seconds, then re-plug / replace battery supply, and try activating the set again.
- CD contains non-audio files
- Press **SEARCH**  or  once or more to skip to a CD audio track, instead of the data file

Poor sound quality in GAME AUX mode

- Adjust the volume on the set or on your game console

Severe radio hum or noise

- Electrical interference: set too close to TV, VCR or computer
- Move the set to increase the distance

Remote control does not function properly

- Batteries flat/ incorrectly inserted
- Insert (fresh) batteries correctly
- Distance/ angle between the set too large
- Reduce the distance/ angle

Poor radio reception

- Weak radio signal
- FM / MW: Adjust the FM / MW telescopic aerial

NF DISC indication

- CD-R(W) is blank/ not finalized
- Use a finalized CD-R(W)

INSERT DISC/CHECK DISC/DISC ERROR indication

- No CD inserted
- Inserted a suitable disc
- CD badly scratched or dirty
- Replace/ clean CD, see Maintenance
- Laser lens steamed up
- Wait until lens has cleared

The CD skips tracks

- CD damaged or dirty
- Replace or clean CD
- shuffle or program is active
- Switch off shuffle / program

Sound skips during MP3 playback

- MP3 file made at compression level exceeding 320kbps
- Use a lower compression level to record CD tracks into MP3 format
- Disc damaged or dirty
- Replace or clean disc

Cannot find desired MP3 title

- Wrong file extension used and/ or file name with unsuitable text characters used
- Make sure the file names are typed in English text characters and that the MP3 files end with .mp3

NO CONNECTION is displayed in USB PC LINK mode for more than 10 seconds

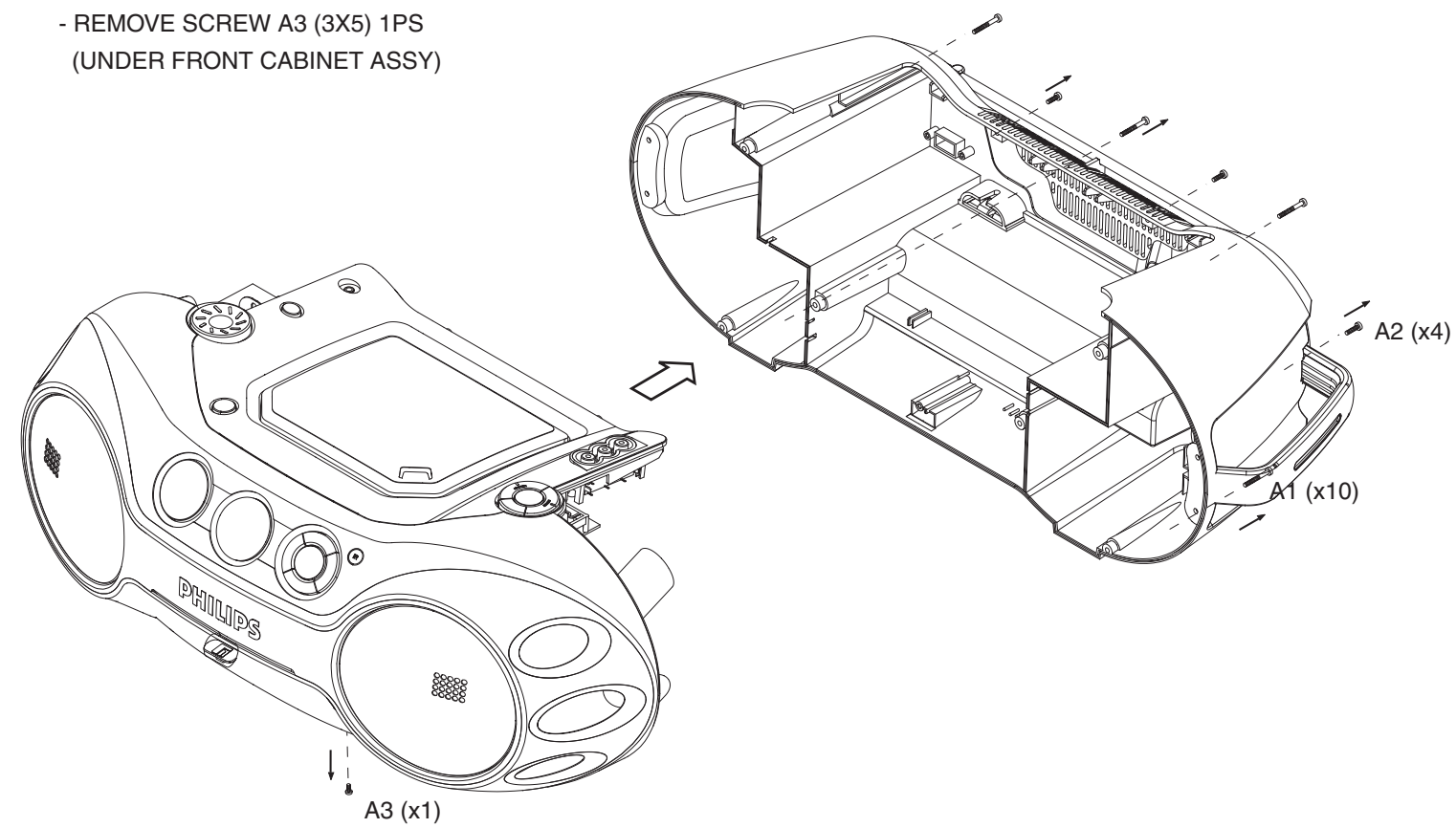
- Check the connection between your PC and the set. If necessary, please refer to the chapter **Connecting to USB PC Link** for the initial setup required.
- Make sure the connected PC is turned on and the MusicMatch software is working.

For more information on operation instruction please visit Philips Audio internet site :
<http://www.audio.philips.com>

DISASSEMBLY DIAGRAM

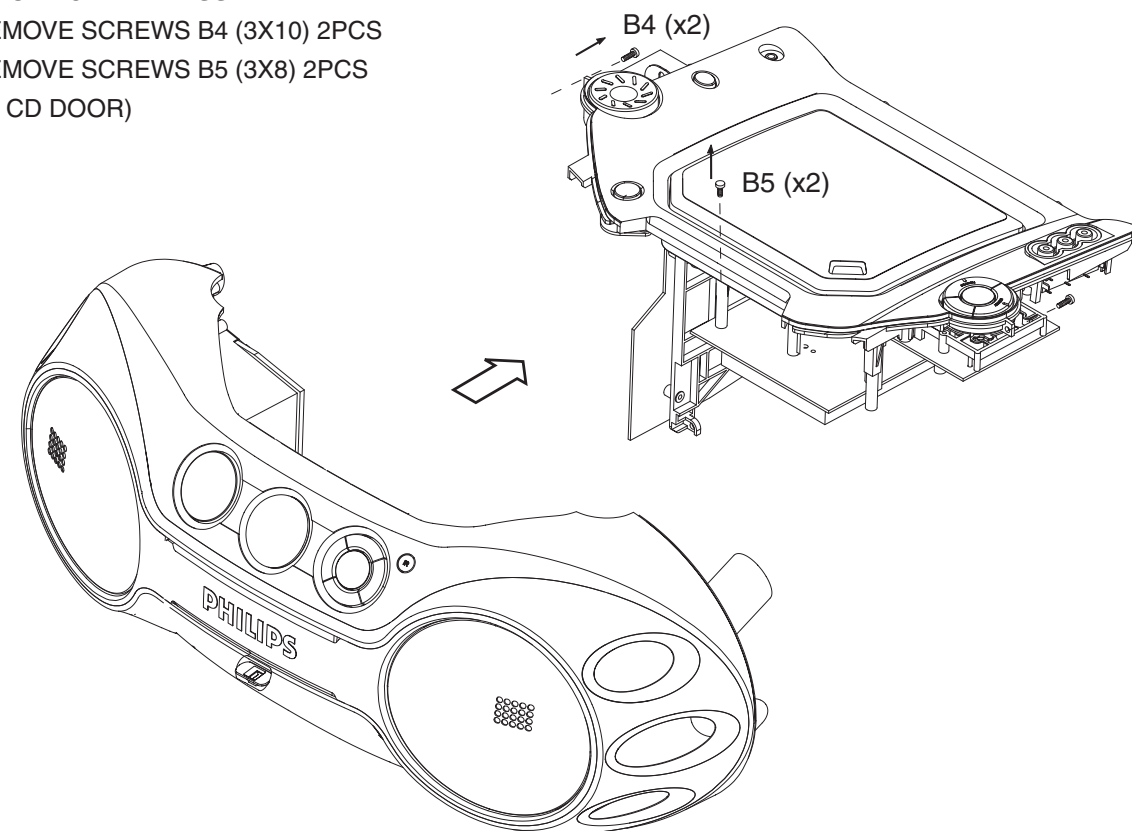
A. REMOVE REAR CABINET ASSEMBLY

- REMOVE SCREWS A1 (3X20) 10 PCS
- REMOVE SCREWS A2 (3X12) 4 PCS
- REMOVE SCREW A3 (3X5) 1PS
(UNDER FRONT CABINET ASSY)



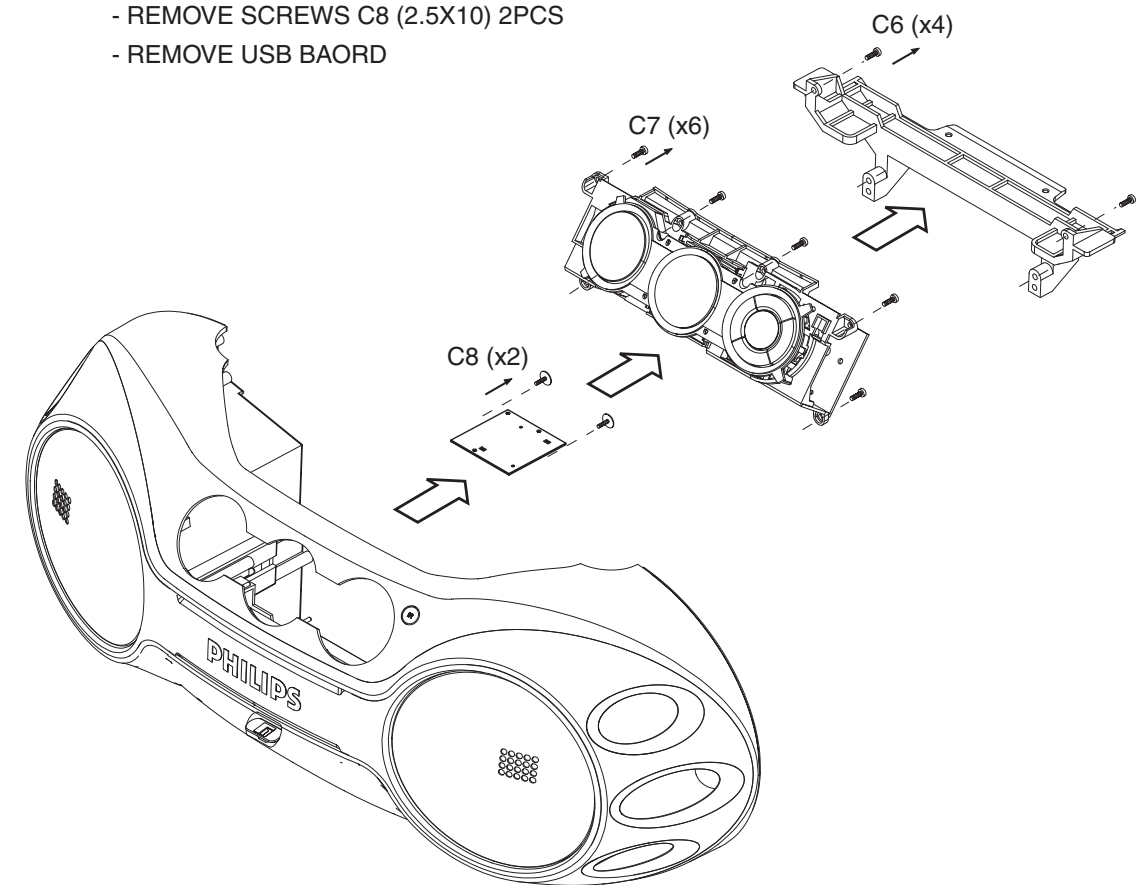
B. REMOVE CD TRAY ASSEMBLY

- REMOVE SCREWS B4 (3X10) 2PCS
- REMOVE SCREWS B5 (3X8) 2PCS
(IN CD DOOR)

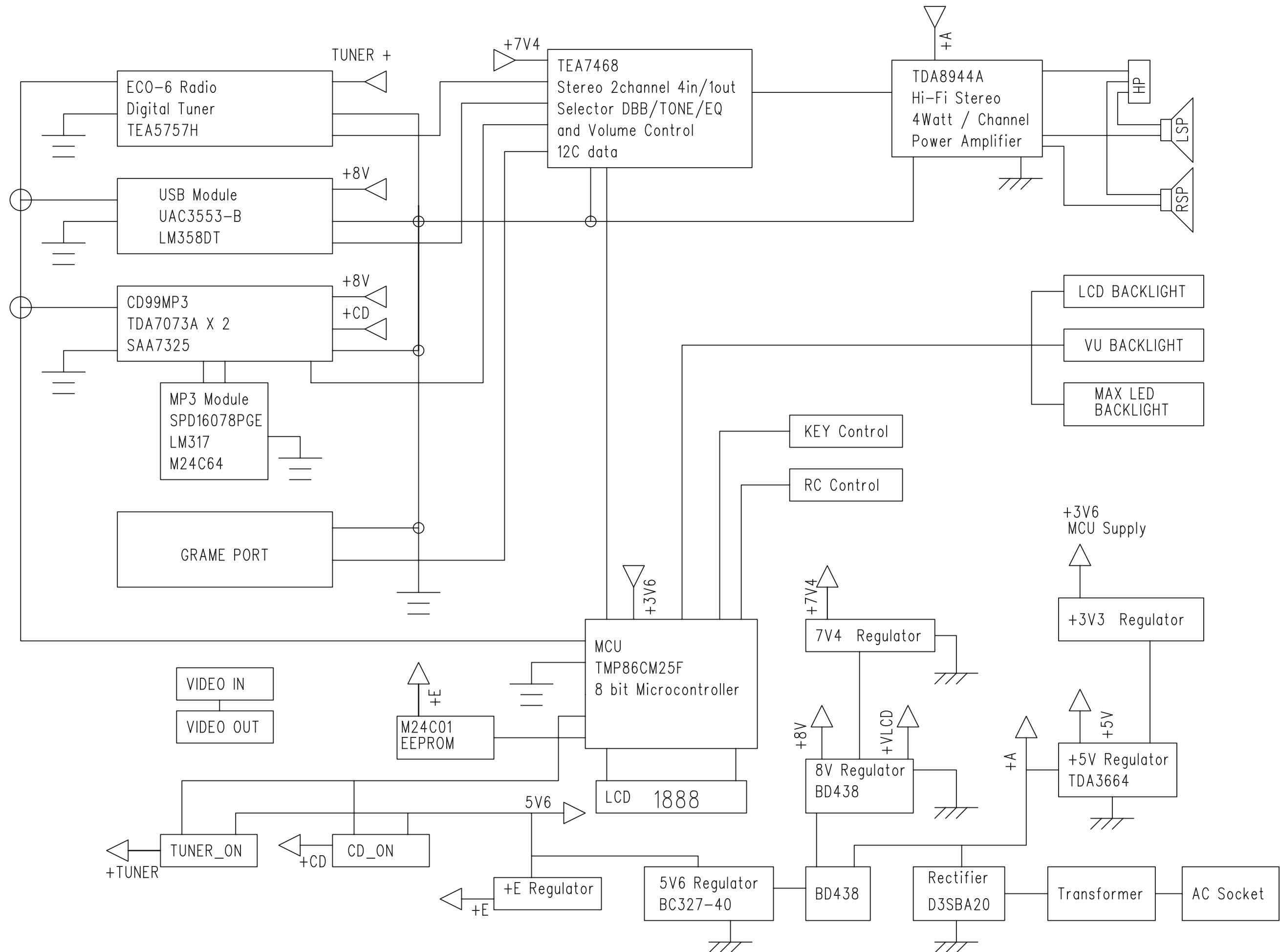


C. REMOVE USB BOARD

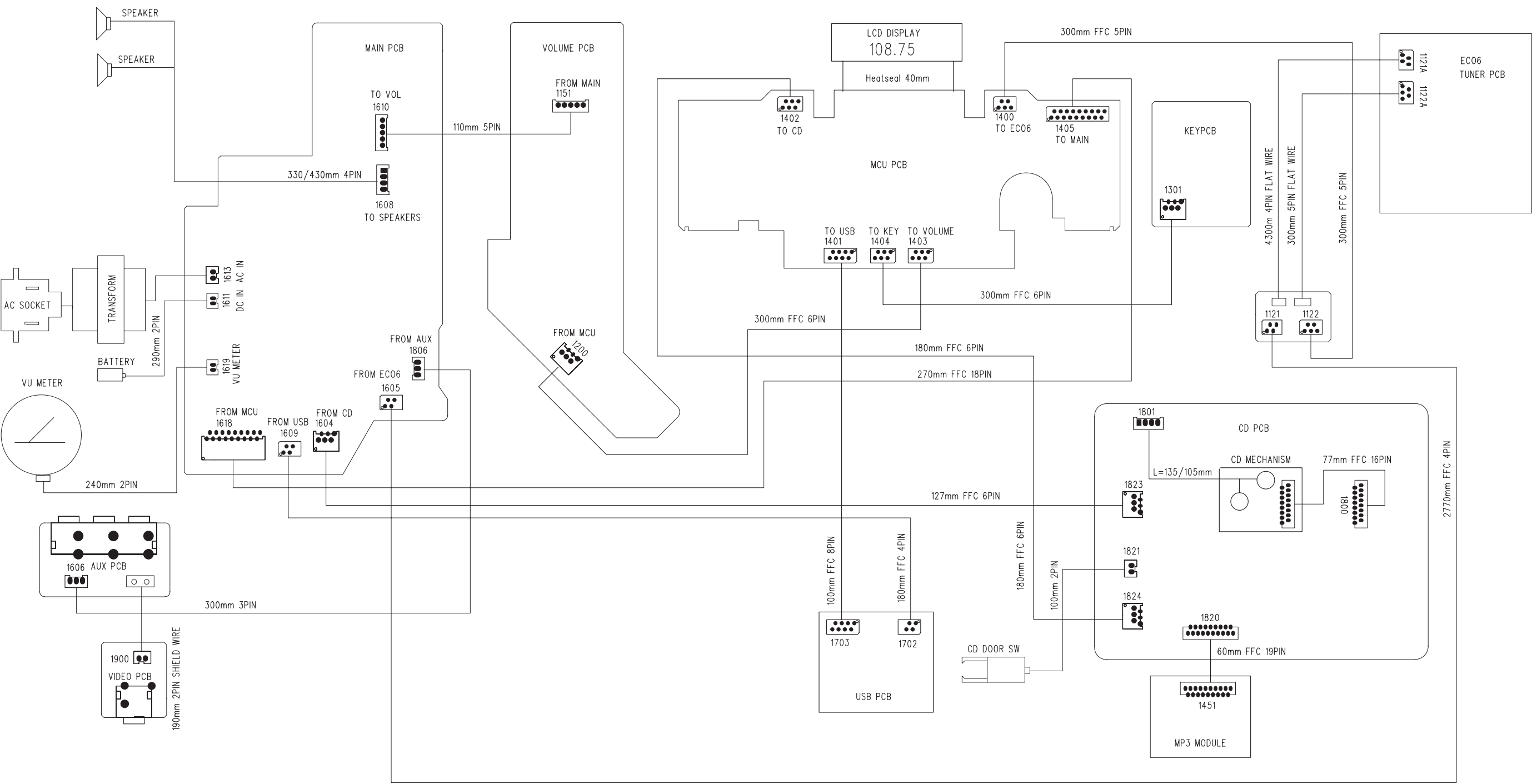
- REMOVE SCREWS C6 (3X10) 4 PCS
- REMOVE CASSETTE BRACKET
- REMOVE SCREWS C7 (3X10) 6 PCS
- REMOVE MCU BOARD
- REMOVE SCREWS C8 (2.5X10) 2PCS
- REMOVE USB BOARD



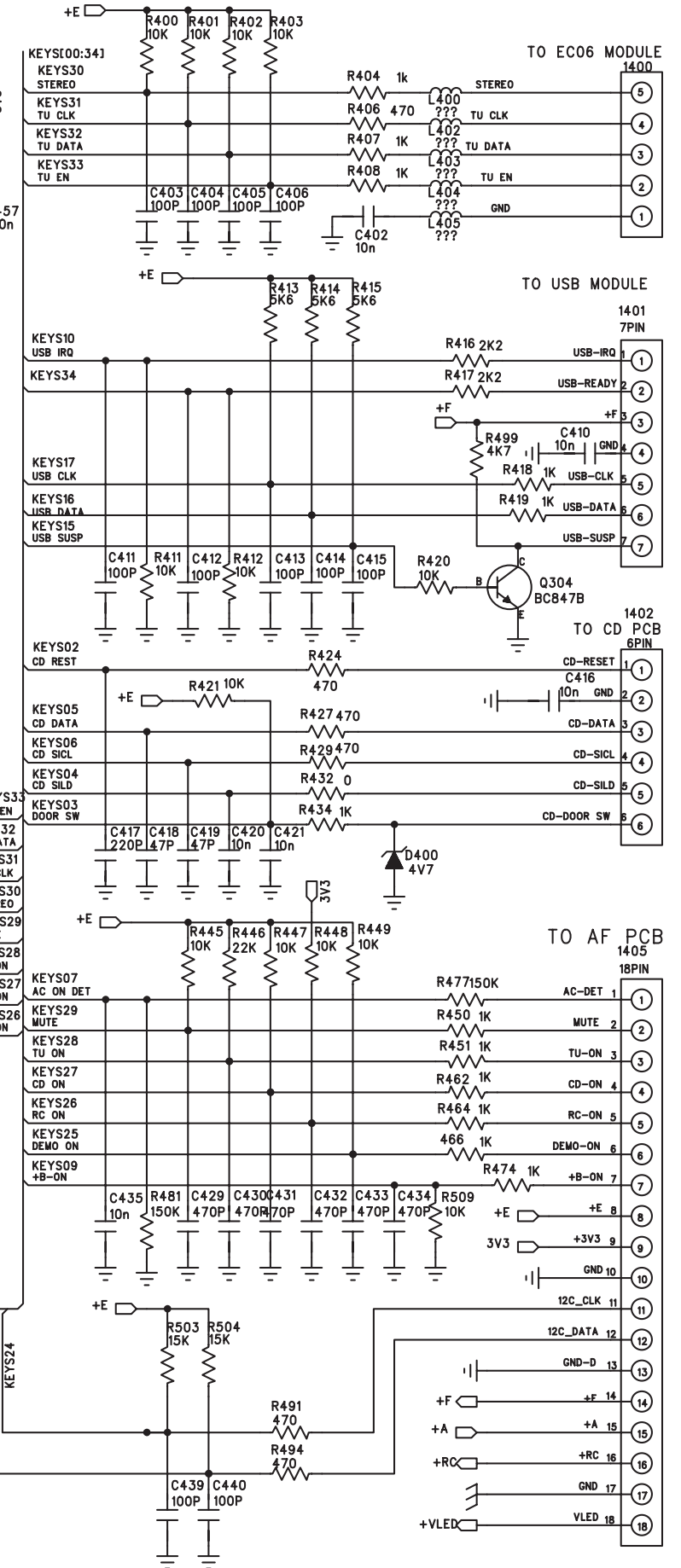
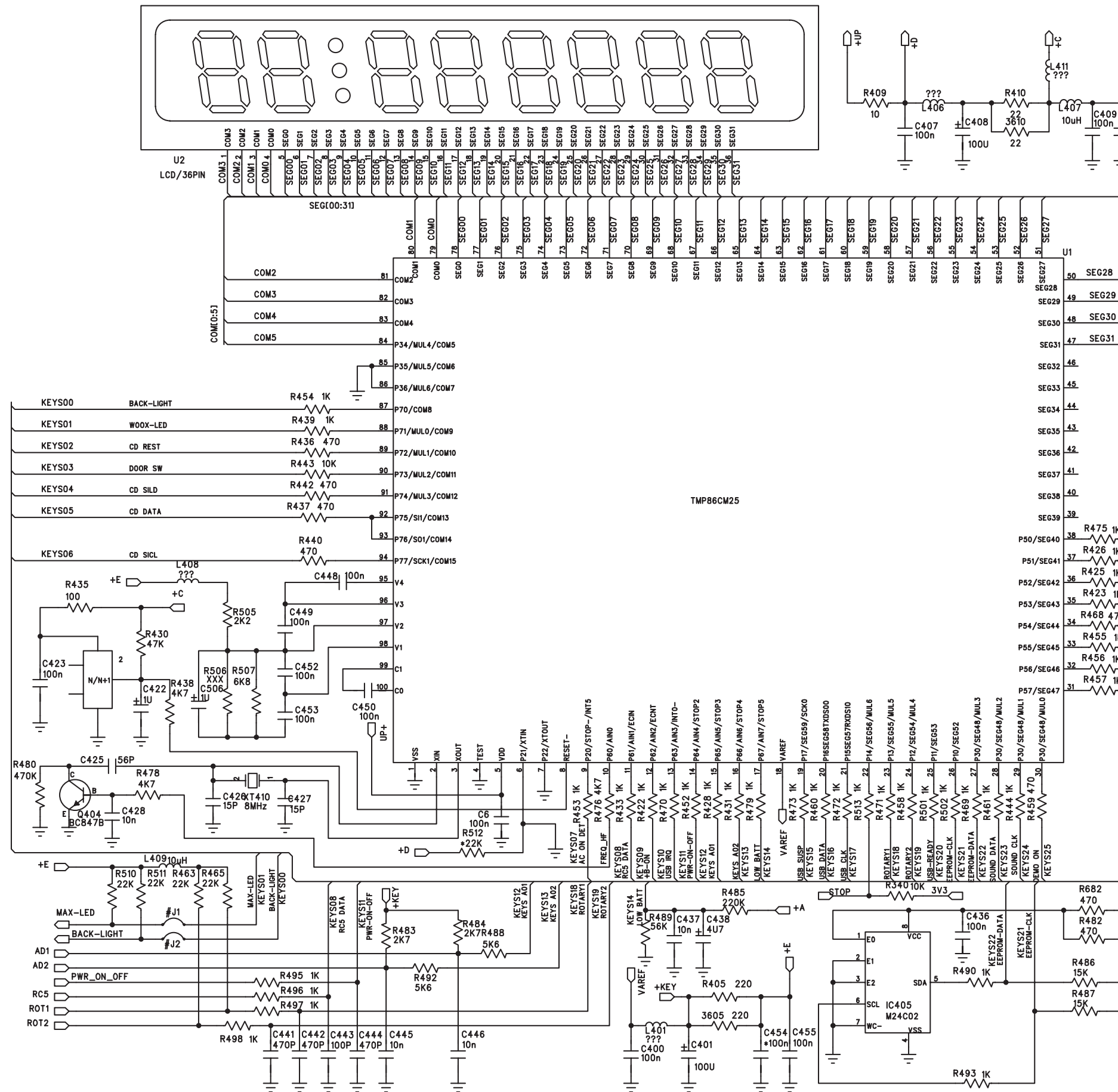
BLOCK DIAGRAM



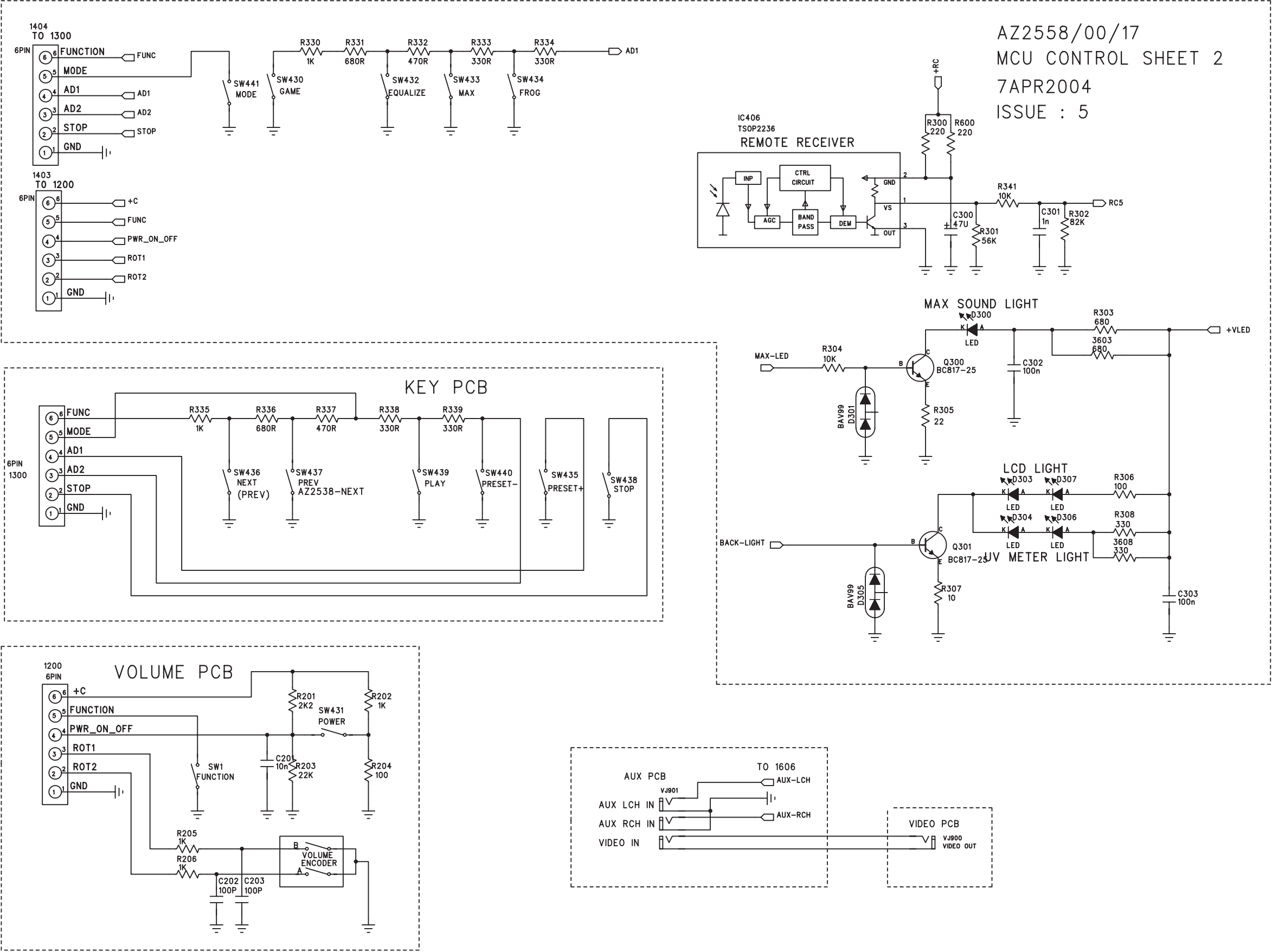
WIRING DIAGRAM

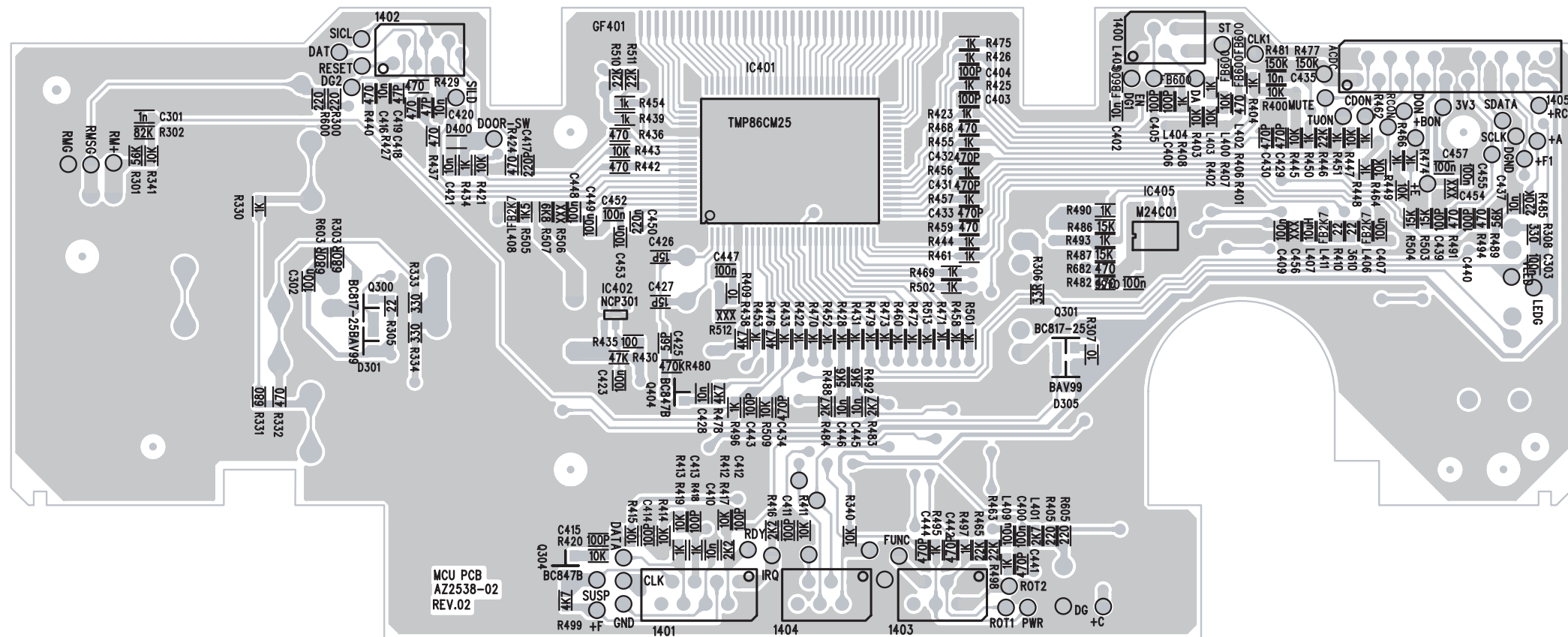
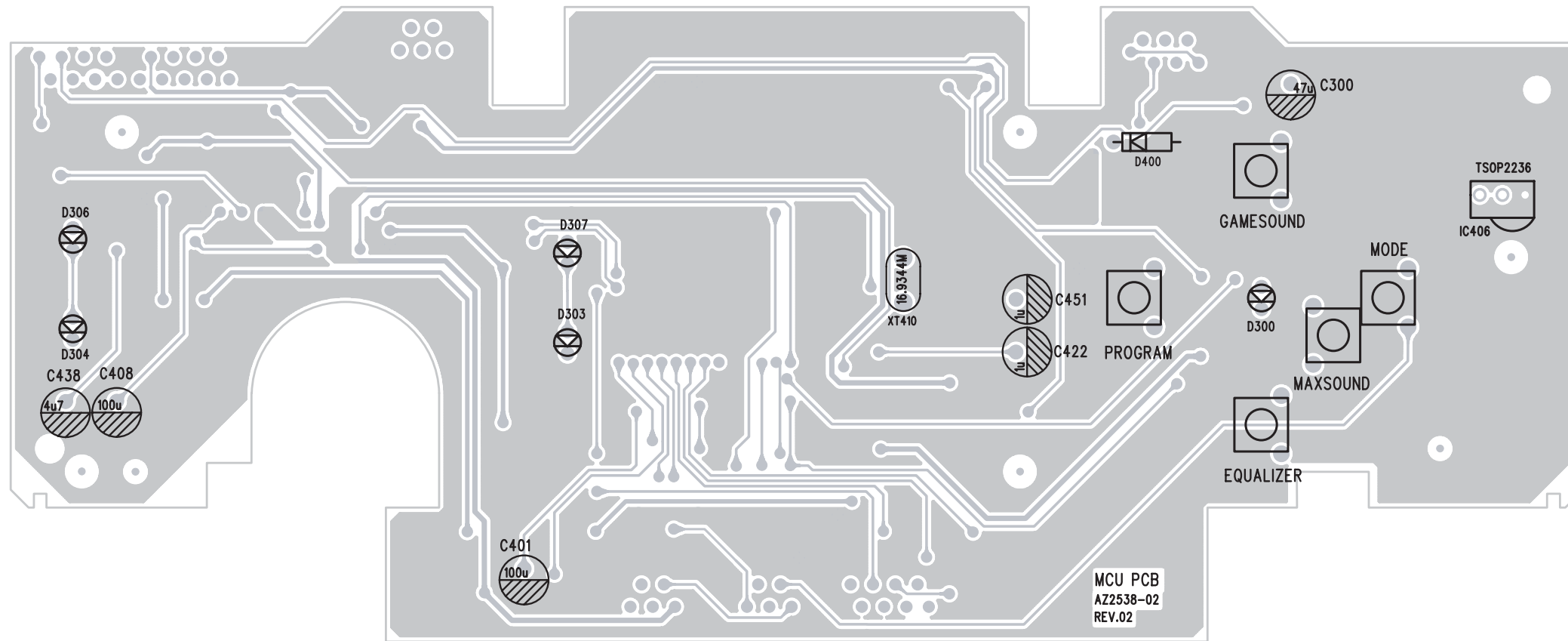


MCU BOARD - CIRCUIT DIAGRAM PART 1

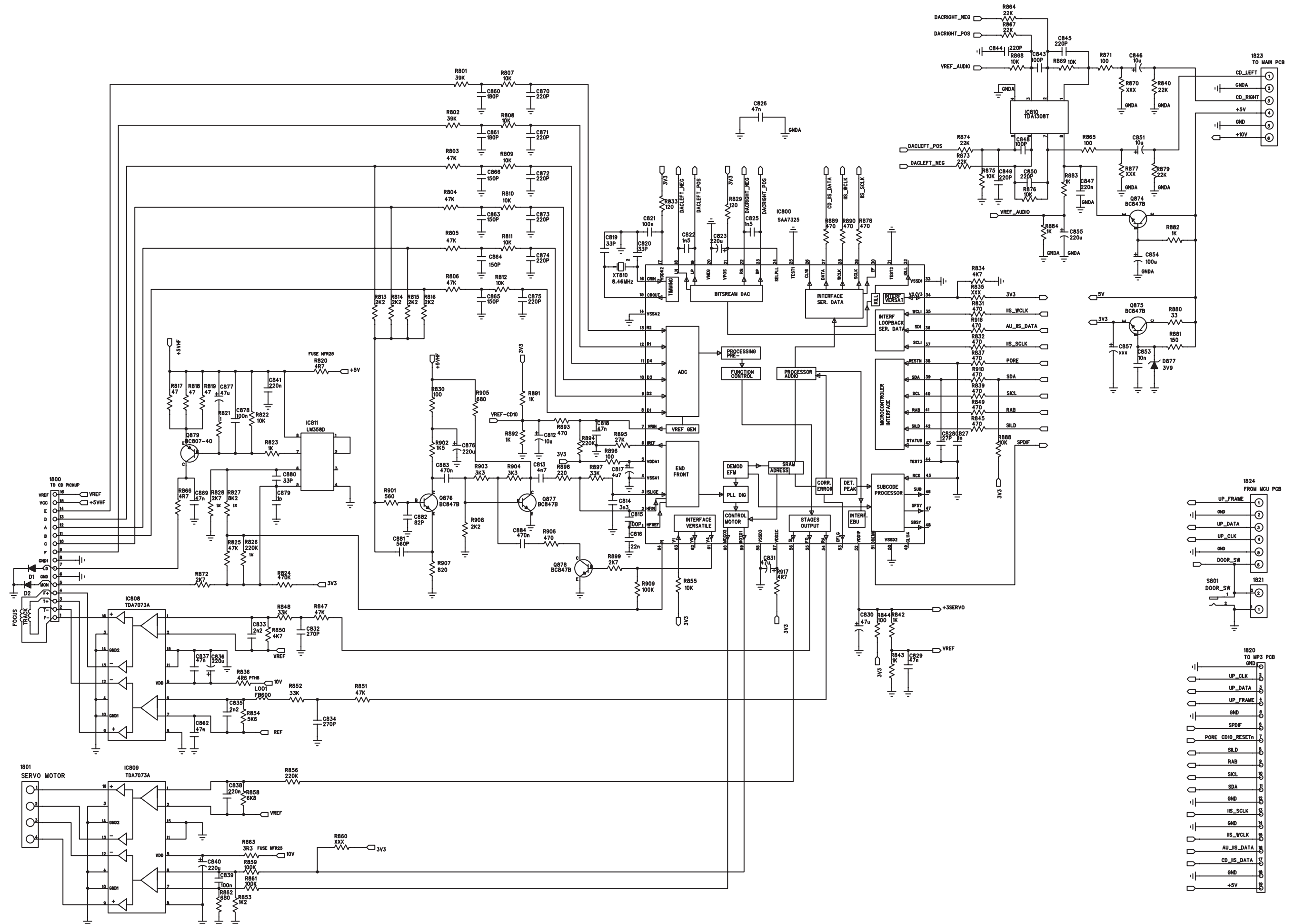


MCU BOARD - CIRCUIT DIAGRAM
(PART 2)

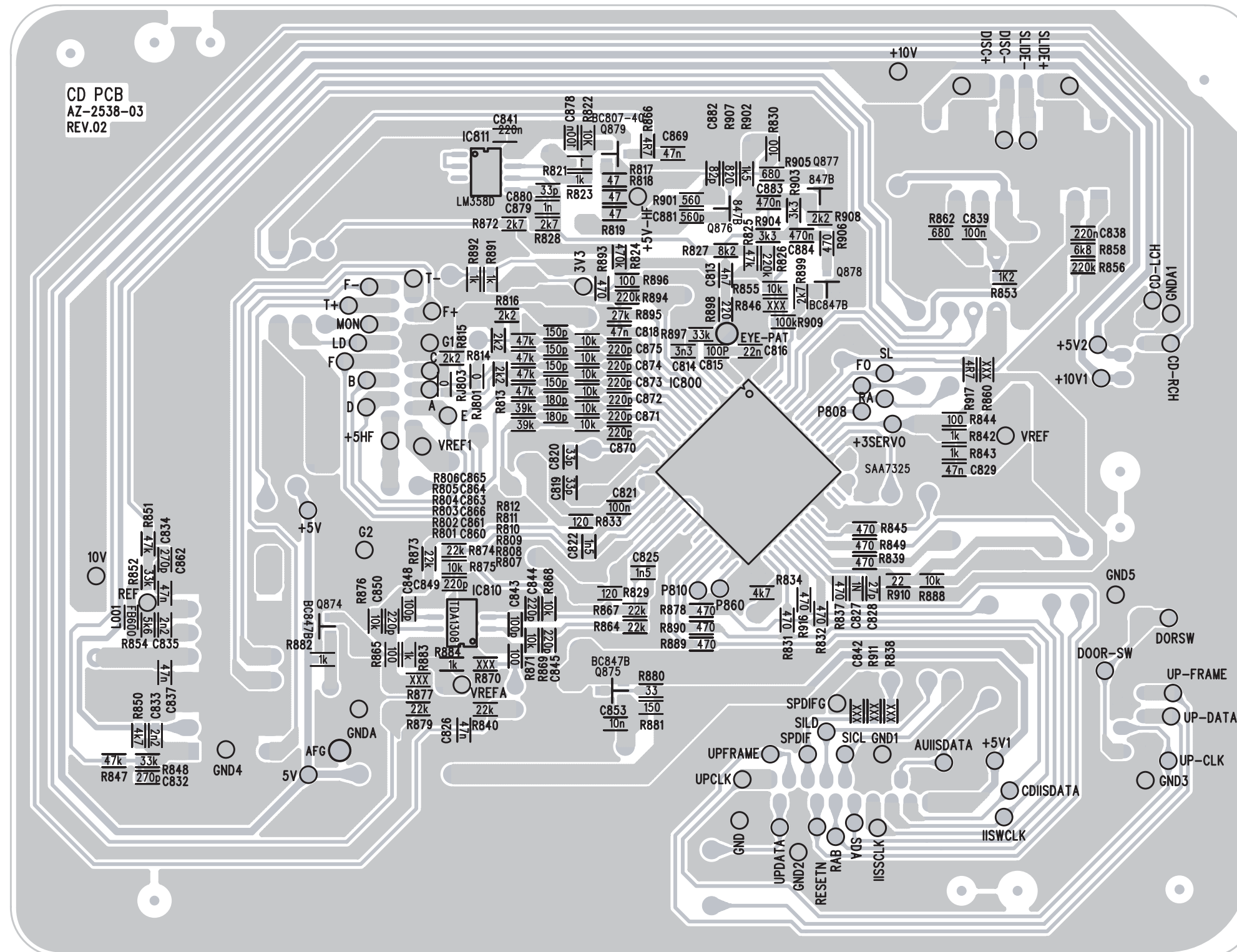




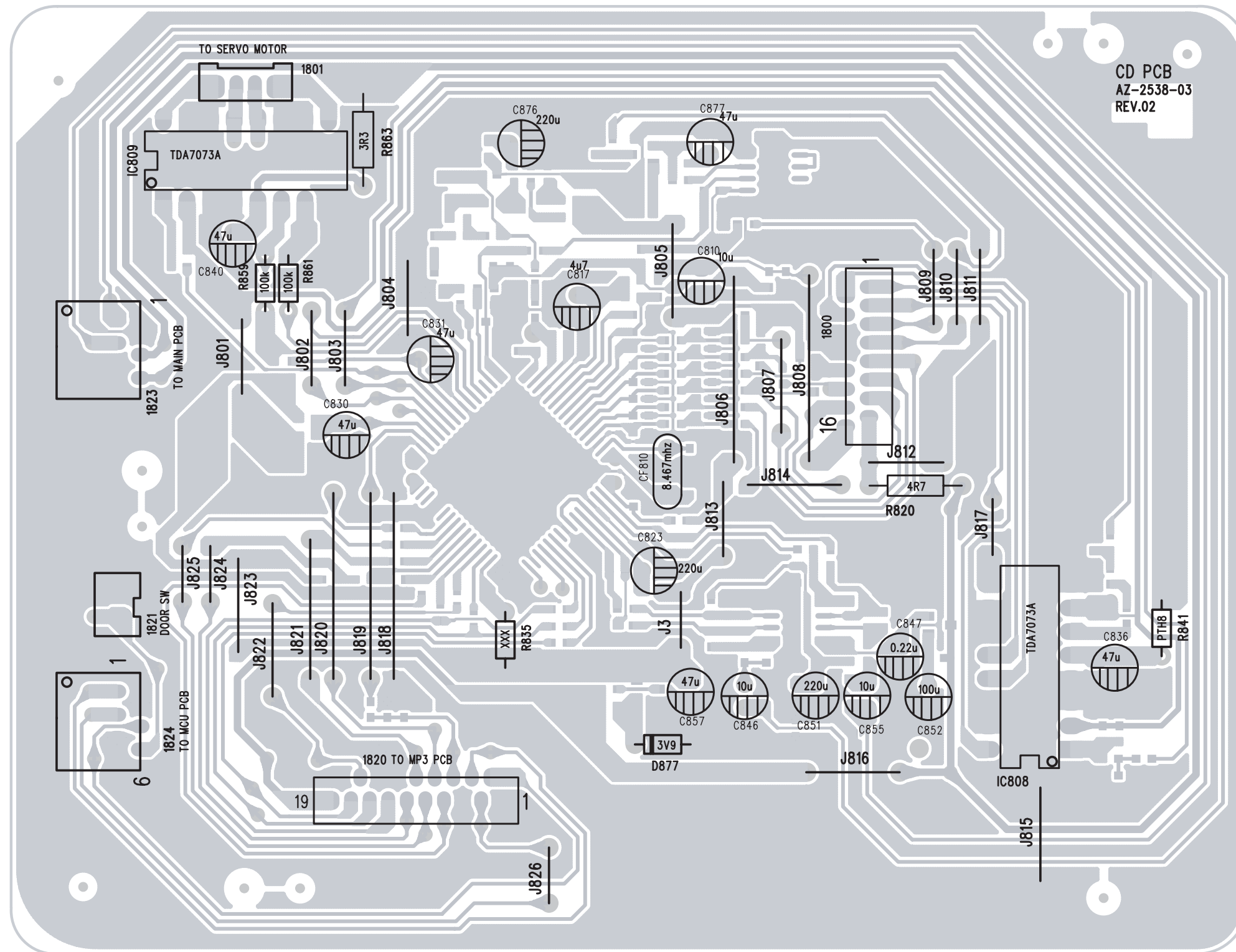
CD BOARD - CIRCUIT DIAGRAM

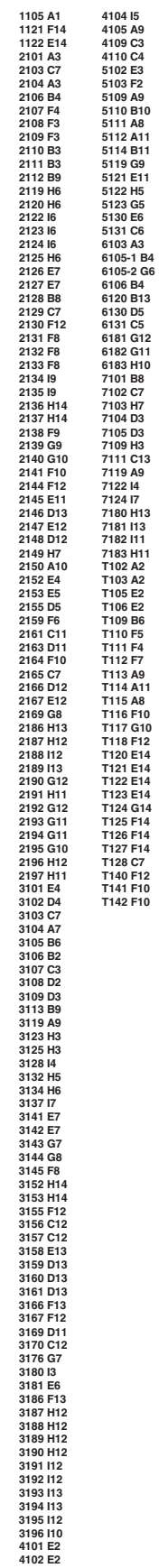


CD BOARD - LAYOUT DIAGRAM

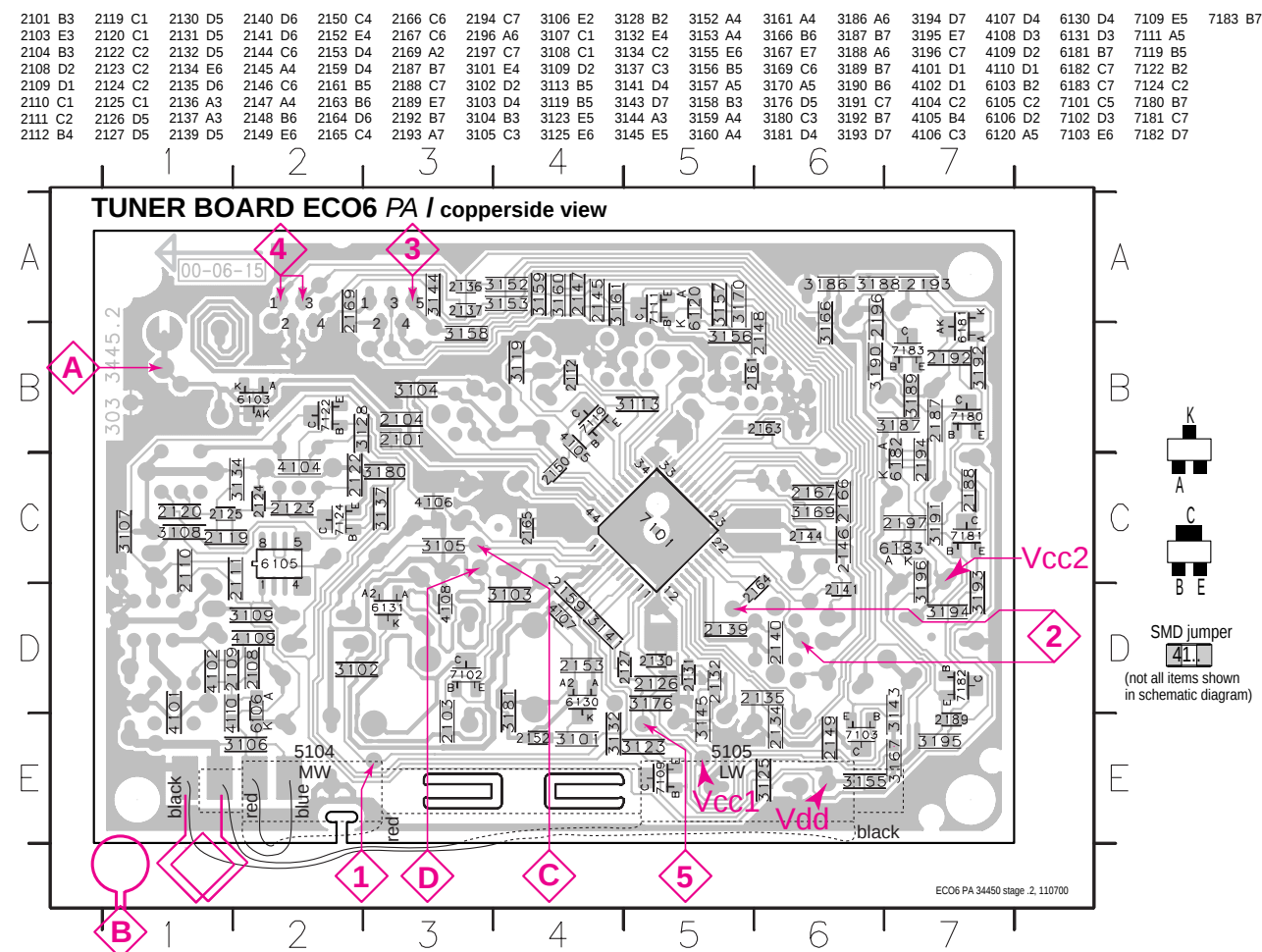


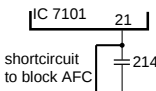
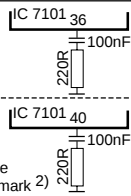
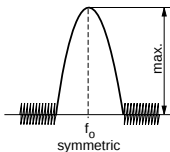
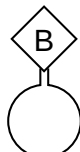
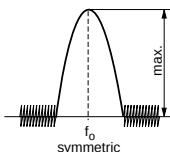
CD BOARD - LAYOUT DIAGRAM





TUNER ADJUSTMENT TABLE (ECO6 FM/MW- and FM/MW/LW - versions with ferrite antenna)



Waverrange	Input frequency	Input	Tuned to	Adjust	Output	Scope/Voltmeter
<i>VARICAP ALIGNMENT</i>						
FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz)			108MHz	5130	1	8V –0.2V
			87.5MHz (65.81MHz)	check		4.3V –0.5V (1.2V –0.5V)
MW FM/AM-version, 10kHz grid 530 - 1700kHz			1700kHz	5123		8V –0.2V
			530kHz	check		1.1V –0.4V
FM/MW-version, 9kHz grid 531 - 1602kHz			1602kHz	5123		6.9V –0.2V
			531kHz	check		1.1V –0.4V
LW			279kHz	5122		8V –0.2V
153 - 279kHz			153kHz	check		1.1V –0.4V
MW FM/MW/LW- version, 9kHz grid 531 - 1602kHz			1602kHz	5123		8V –0.2V
			531kHz	check		1.1V –0.4V
<i>FM IF</i>						
FM	10.7MHz, 45mV continuous wave	D		5119	2	0 – 3 mV DC
<i>FM RF</i>						
FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz)	108MHz	A mod=1kHz Δf=–22.5kHz	108MHz	2155	4	MAX
	87.5MHz (65.81MHz)		87.5MHz (65.81MHz)	5131		
<i>VCO</i>						
FM	98MHz, 1mV continuous wave	A	98MHz	3142	3	152kHz –1kHz ¹⁾
<i>AM IF</i>						
MW	450kHz	C Δf=–10kHz V _{RF} = 0.5mV (as low as possible)		5111	5	
	connect pin 6 of IC 7101 (AM Osc.) with 2.2k% _o to Vcc		see remark 2)	5112		
AM AFC MW		C continuous wave V _{RF} = 2mV		5114	2	0 – 2 mV DC
<i>AM RF ³⁾</i>						
LW	198kHz	B 	198kHz	5105 LW ferrite coil	5	
MW FM/MW/LW- and FM/MW-version (9kHz grid)	1494kHz		1494kHz	2106		
531 - 1602kHz	558kHz		558kHz	5104 MW ferrite coil		
MW FM/AM-version, 10kHz grid 530 - 1700kHz	1500kHz		1500kHz	2106		
	560kHz	Δf = –30kHz V _{RF} as low as possible	560kHz	5104 MW ferrite coil		

Use Service Testprogram. By selecting the TUNER TEST test frequencies will be stored as preset frequencies automatically.

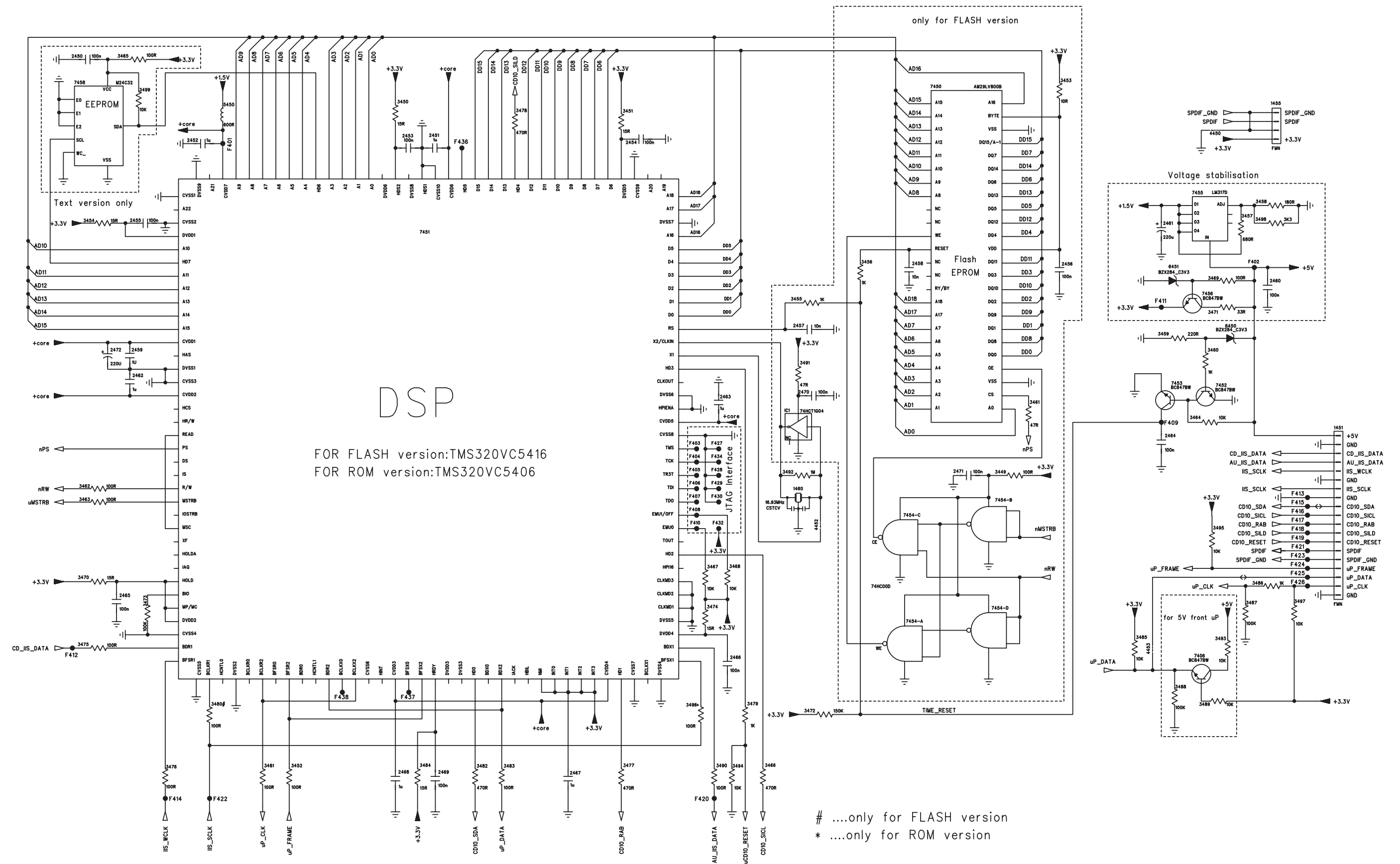
1) If sensitivity of frequency counter is too low adjust to max. channel separation (input signal: stereo left 90% + 9%, adjust output on right channel to minimum)

2) RC network serves for damping the IF-filter while adjusting the other one.

3) LW has to be aligned before MW.

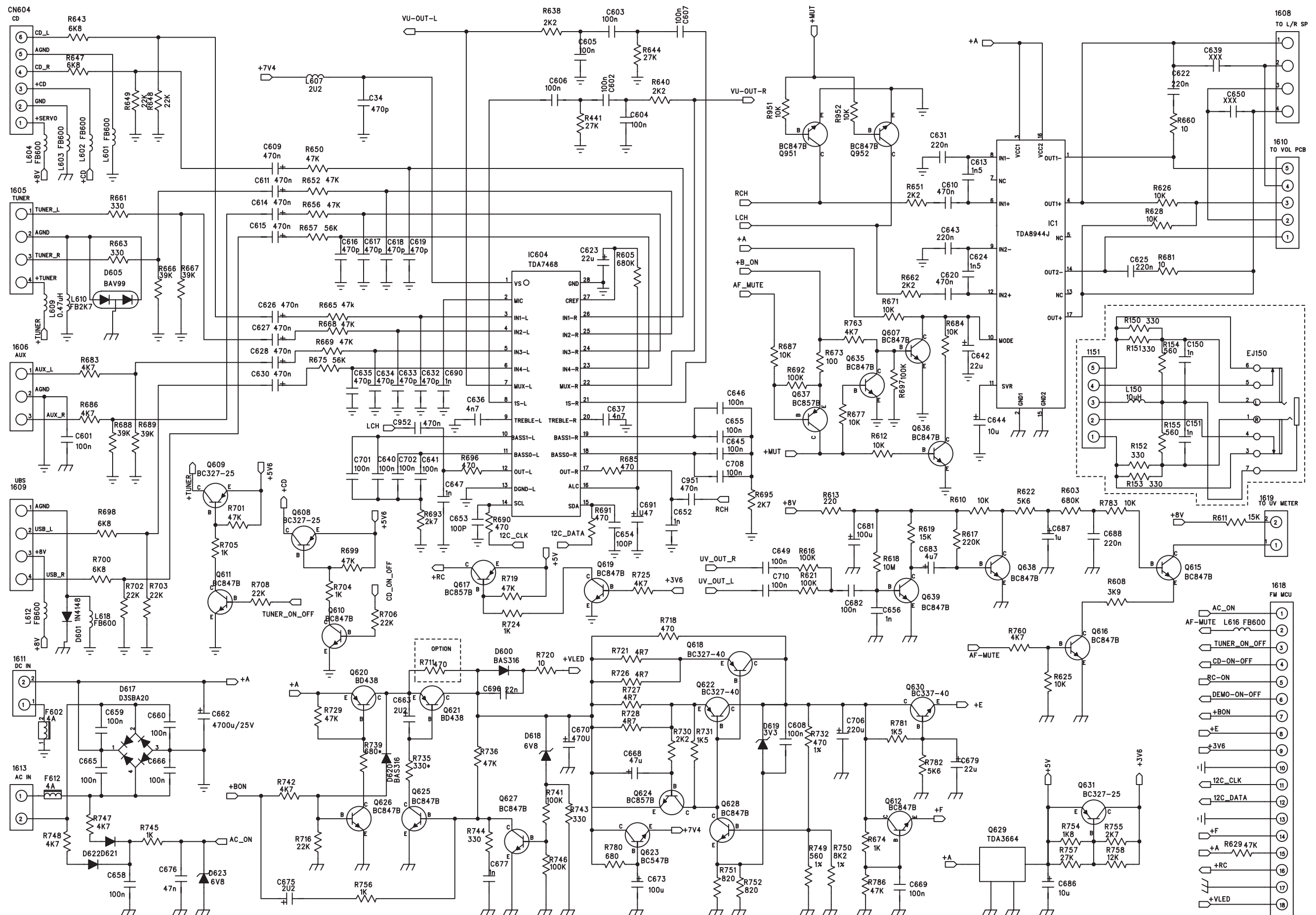
↑ Repeat

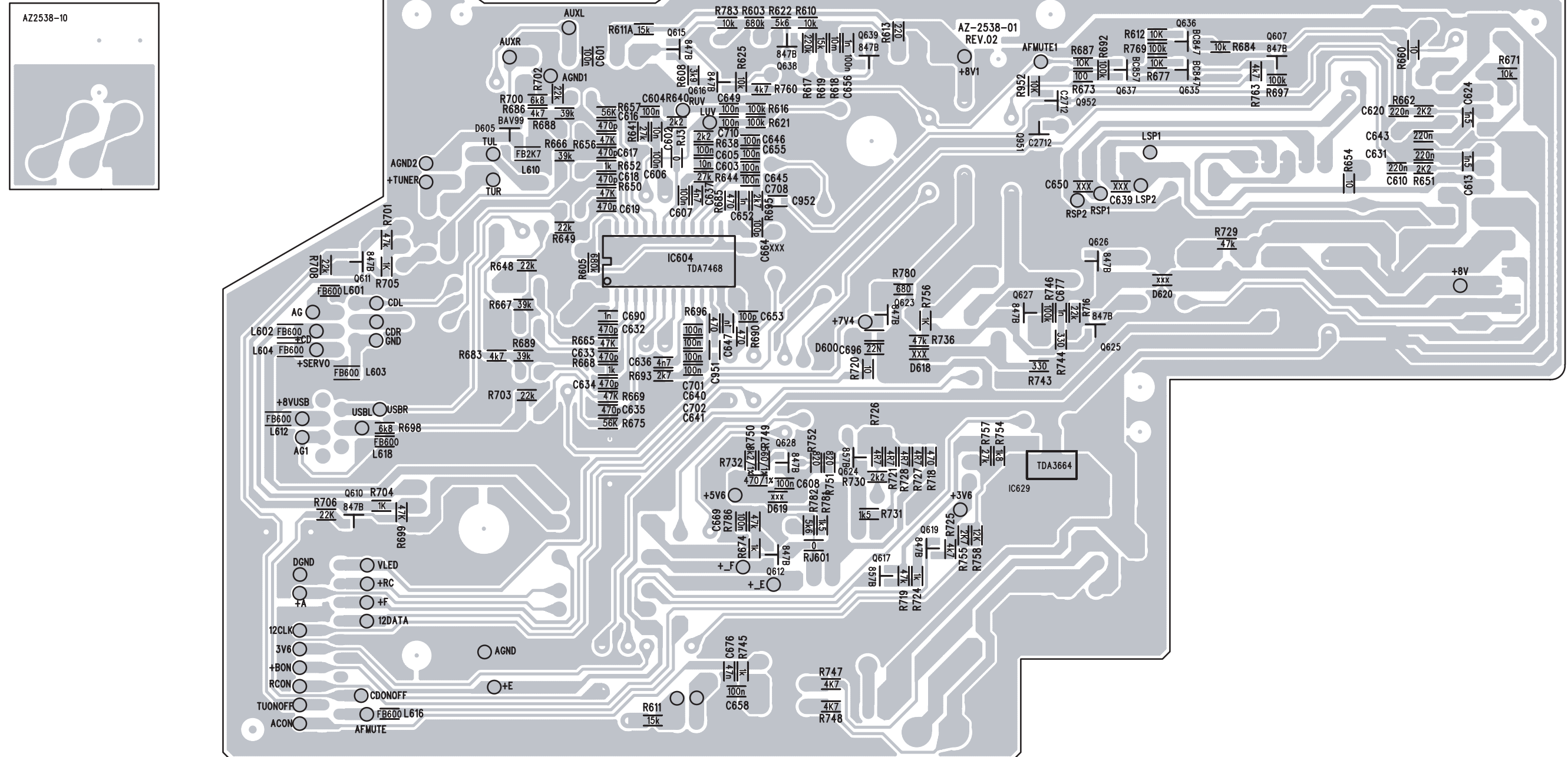
MP3 BOARD - CIRCUIT DIAGRAM



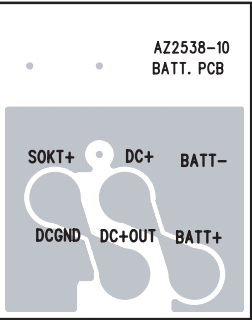
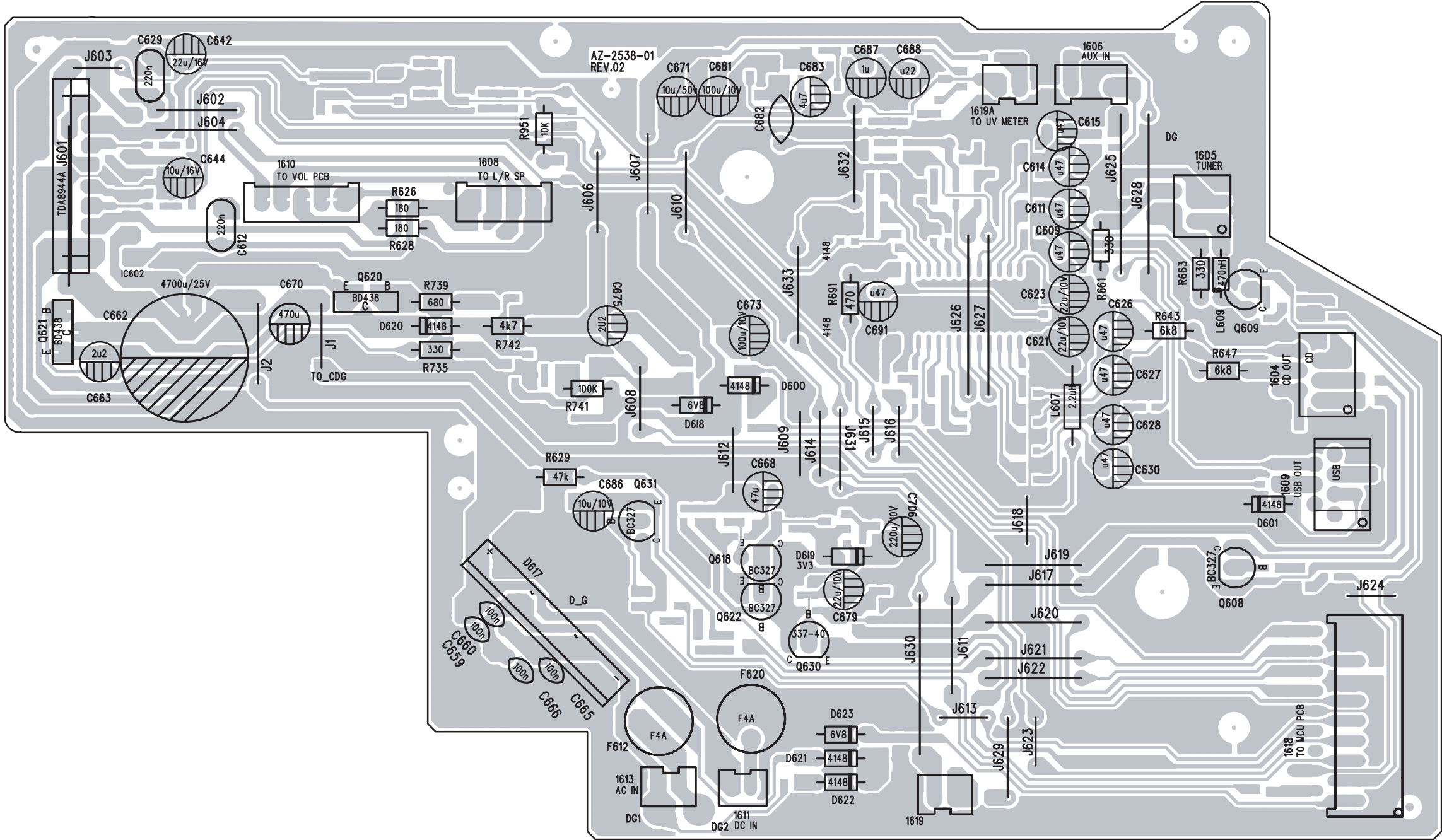
1701 D1	7722 D12
1702 D13	F701 D1
1703 F13	F702 D1
1704 C13	F703 D1
1705 D2	F704 D1
2701 B8	F705 D12
2702 C8	F706 D12
2703 C3	F707 D12
2704 C4	F708 D12
2705 D8	F709 F12
2706 C4	F710 F12
2707 C8	F711 F12
2708 D8	F712 F12
2709 D2	F713 G12
2710 C4	F714 G12
2711 B4	F715 G12
2712 B6	F716 E8
2713 B5	F717 B10
2714 B6	F718 D10
2715 E4	
2720 C11	
2721 B9	
2722 D9	
2723 C10	
2724 E10	
2725 B11	
2726 D11	
2727 B10	
2728 D10	
2730 E11	
2731 B7	
2732 B6	
2733 E8	
2701 D3	
3702 D4	
3703 C4	
3704 C4	
3705 E3	
3706 E10	
3708 F7	
3709 F6	
3710 G5	
3711 B5	
3712 B5	
3713 A5	
3714 A6	
3715 B5	
3716 B6	
3717 G11	
3718 G11	
3719 G11	
3720 C11	
3721 B9	
3722 D9	
3723 B9	
3724 D9	
3725 C10	
3726 D10	
3727 C10	
3728 D10	
3729 C11	
3730 D11	
3731 B11	
3732 D11	
3733 B12	
3734 E12	
3735 F10	
3736 C4	
3737 C11	
3738 E11	
3739 D11	
3740 E3	
3741 E9	
3742 F9	
3743 F10	
3744 E10	
3745 F8	
3750 F5	
3751 F6	
4701 B8	
4702 D9	
4703 E8	
4704 E8	
4706 E9	
4707 D2	
5701 C7	
5702 D8	
5703 C3	
6701 C2	
6702 D3	
6703 C4	
7701 D5	
7702-1 B10	
7702-2 D10	
7703 E3	
7704 E10	
7705 F10	
7706 F9	
7721 C12	

MAIN BOARD - CIRCUIT DIAGRAM





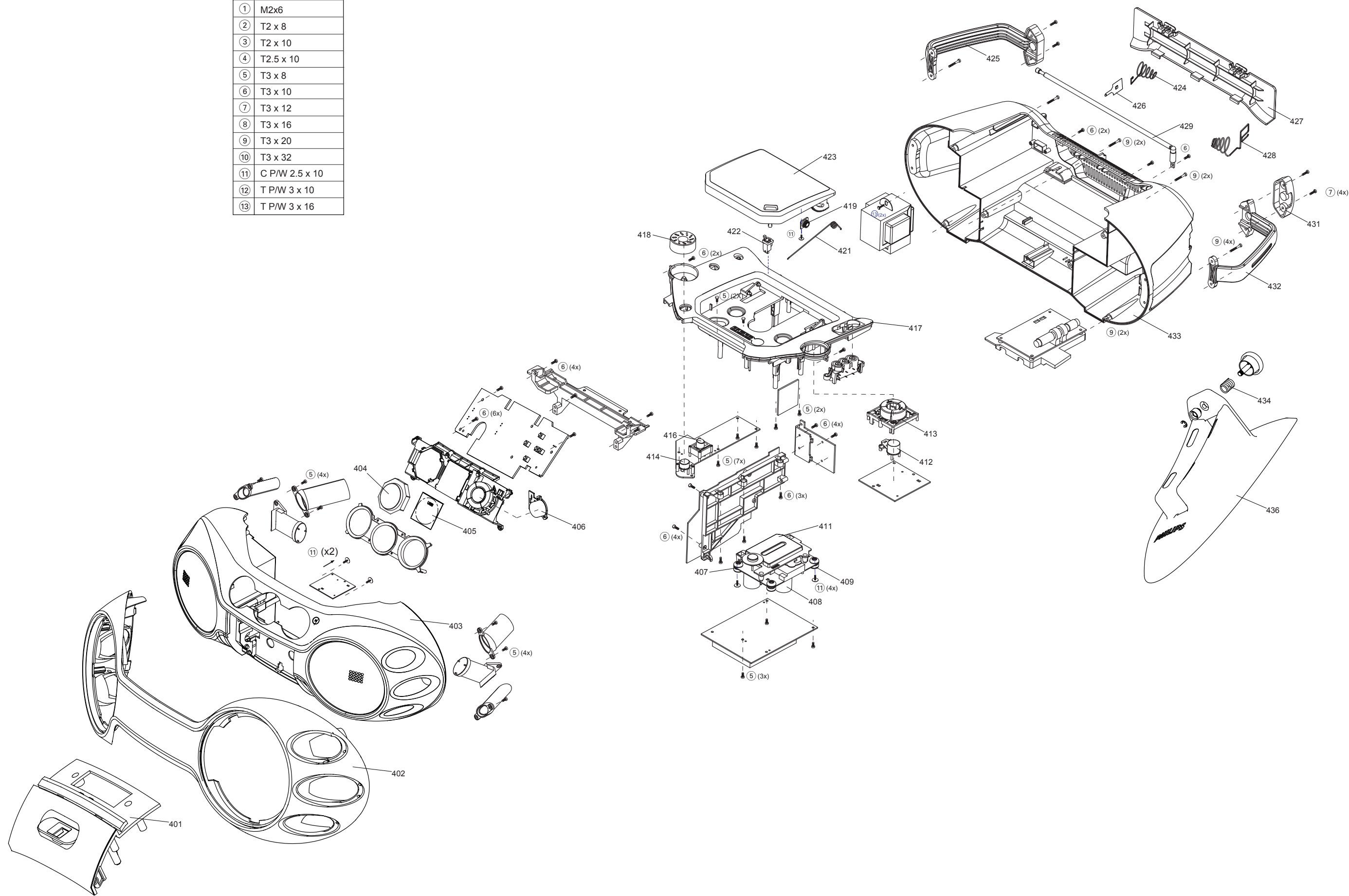
MAIN BOARD - CIRCUIT DIAGRAM



EXPLODED VIEW DIAGRAM - CABINET

SCREW LIST :

①	M2x6
②	T2 x 8
③	T2 x 10
④	T2.5 x 10
⑤	T3 x 8
⑥	T3 x 10
⑦	T3 x 12
⑧	T3 x 16
⑨	T3 x 20
⑩	T3 x 32
⑪	C P/W 2.5 x 10
⑫	T P/W 3 x 10
⑬	T P/W 3 x 16



MECHANICAL PARTSLIST(not for AZ2537/55)

401	994000000534	CASS. DOOR (USB)
402	994000000531	FRONT PANEL
403	994000000529	FRONT CABINET
404	314011051882	VU METER
405	994000000514	LCD DISPLAY
406	994000000537	MAX KNOB
407	994000000518	CUSHION : 658B (40)(GREEN)
408	994000000515	CD DECK : DA12B3PH (SANYO)
409	994000000517	CUSHION : 658A (30)(RED)
411	994000000516	DUST COVER : SK-09
412	994000000542	PLAY KNOB
413	994000000538	KEYSET PRESET
414	994000000539	STANDBY KEY
416	994000000541	SOURCE KEY
417	994000000536	CD TRAY
418	994000000543	VOLUME KNOB
419	313911873620	DAMPER ASS'Y MODULE 0.8
421	994000000548	CD DOOR SPRING
422	9940 000 02354	CD DOOR SWITCH
423	994000000535	CD DOOR
424	994000000551	BATTERY SPRING (-)
425	994000000546	HANDLE COVER (R)
426	994000000552	BATTERY CONTACT PLATE
427	994000000533	BATTERY DOOR
428	994000000549	BATTERY SPRING (+-)
429	994000000519	ROD ANTENNA : YH1959
431	994000000544	HANDLE
432	994000000545	HANDLE COVER (L)
433	994000000532	REAR CABINET : AZ-2538
434	994000000547	STAND KNOB SPRING
436	9940 000 03273	STAND
	3139 238 06811	REMOTE CONTROL:RC19621011

MECHANICAL PARTSLIST(only for AZ2537/55)

401	9965 000 39496	DUMMY CASS DOOR
402	9965 000 39497	FRONT PANEL
403	9965 000 39498	FRONT CABINET
404	9965 000 39499	VU METER
405	9965 000 39500	LCD DISPLAY
406	9965 000 39501	MAX KNOB
407	9965 000 39502	CUSHION 658B (40C) (GREEN)
408	9965 000 39503	CD MECHANISM DA12B3F
409	9965 000 39504	CUSHION 658A (30C) (RED)
411	9965 000 39505	LASER COVER
412	9965 000 39506	PLAY KNOB
413	9965 000 39507	PRESET KEY
414	9965 000 39508	STANDBY KEY
416	9965 000 39509	SOURCE KEY
417	9965 000 39510	CD TRAY
418	9965 000 39511	VOL KNOB
419	9940 000 01295	DAMPER GEAR ASS'Y
421	9965 000 39512	CD SPRING DIA.1.2MM
422	9940 000 02354	CD DOOR SWITCH
423	9965 000 39513	CD DOOR
424	9965 000 39514	BATTERY SPRING (-)
425	9965 000 40085	HANDLE COVER-R
426	9965 000 39515	BATTERY CONTACT PLATE
427	9940 000 01317	BATTERY DOOR
428	9965 000 39516	BATTERY SPRING (+/-)
429	9940 000 01316	ROD ANTENNA YH1959
431	9940 000 01318	HANDLE
432	9965 000 40086	HANDLE COVER-L
433	9965 000 39517	REAR CABINET
434	9965 000 39518	STAND KNOB SPRING
436	9940 000 03273	STAND
	9940 000 01313	REMOTE CONTROL AZ2537/55

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

ELETRICAL PARTSLIST(not for AZ2537/55)**- MISCELLANEOUS -**

	994000000522	MAIN BOARD ASSY
	994000000523	MCU BOARD ASSY
	994000000524	CD BOARD ASSY
	994000000525	EC06 BOARD ASSY
	310330866791	MP3 BOARD ASSY
	994000000526	TACT SWITCH
	994000000527	PUSH LATCH SWITCH
	994000000528	STEREO JACK:TC-38-103-01
△	994000000513	FUSE:19374-4A
	314011051882	VU-METER
	994000000555	RCA JACK
	994000000556	RCA SOCKET
	994000000563	AC SOCKET(-/17)
	994000000558	AC SOCKET(-/00C/01/05)
	994000000557	USB TYPE 4P4C JACK (only for AZ2538)
△	994000000521	TRANSFORMER (-/00C/05)
△	994000000561	TRANSFORMER(-/01)
△	994000000562	TRANSFORMER(-/17)
	994000000554	SPEAKER:4" 16 OHM 8 W MAX
△	994000000553	VDE POWER CORD SET(-/00C/01)
△	996500007586	VDE POWER CORD SET(-/05)
△	242207098246	VDE POWER CORD SET(-/17)

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

ELECTRICAL PARTSLIST(only for AZ2537/55)**- MISCELLANEOUS -**

		9965 000 39519	16P FFC CABLE 1MM L=77MM
		9965 000 39520	18P FFC CABLE 1.25MM L=270MM
		9965 000 39521	19P FFC CABLE 1MM L=60MM
		9965 000 39522	4P FFC CABLE 1.25MM L=270MM
		9965 000 39523	5P FFC CABLE 1.25MM L=300MM
		9965 000 39524	6P FFC CABLE 1.25MM
		9965 000 39525	6P FFC CABLE 1.25MM L=180MM
		9965 000 39523	5P FFC CABLE 1.25MM L=300MM
F612	△	9965 000 39530	FUSE RADIAL T4A 250V UL/CSA
F620	△	9965 000 39530	FUSE RADIAL T4A 250V UL/CSA
R863	△	9965 000 39531	FUSE RESISTORS 3.3R 1/4W -5%
R820	△	9965 000 39532	FUSE RESISTORS 4.7R 1/4W -5%
		9940 000 03673	AC SOCKET TC08-115-02
VJ190		9965 000 40087	RCA JACK 1P(YELLOW)
		9965 000 39533	RCA JACK 3P (YW/RD/WH)
		9940 000 01315	RCA PLUG CORD (YELLOW)
		9965 000 39534	TACT SWITCH
EJ150		9940 000 01244	V/PHONE JACK 3.5MM
		3140 110 51881	METER VU
		9965 000 39535	SPEAKER 4" 16R 8W MAX
	△	9940 000 03633	AC CORD SET VDE APP 6FT
	△	9965 000 39536	TRANSFORMER EI57 120/230V
		9965 000 39537	MAIN/POWER BOARD ASS'Y
		9965 000 39538	TUNER/CONNECT BOARD ASS'Y
		9965 000 39539	CD SERVO BOARD ASS'Y
		9965 000 39540	FRONT/DISPLAY BD ASS'Y
		9965 000 39541	MP3 BOARD ASS'Y

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

REVISION LIST

Version 1.0 (3141 785 30030)

- Initial Release

Version 1.1 (3141 785 30031)

- New version AZ2537/55 is introduced.
- Pages 12-2 : Mechanical parts list adapted.
- Pages 13-1 and 13-2 : Electrical parts list adapted.