

Service
Service
Service



Service Manual



TABLE OF CONTENTS

Handling Chip Components and Safety1 - 1

Technical Specification & Service tools2 - 1

Service Measurement.....2 - 2

Connections and controls3 - 1..3 - 2

Instructions for use3 - 3..3 - 5

Tuner adjustment.....3 - 6

Disassembly Diagram.....4 - 1

CD Service Test program4 - 2 .. 4 - 3

Block Diagram5 - 1

Wiring Diagram5 - 2

Key Board

 Circuit diagram6 - 1

Combi Board - Circuit Diagram

 Front part.....6 - 2

 Tuner part.....7 - 1

Combi Board - Circuit Diagram

 CD part 18 - 1

 CD part 28 - 2

 AF part.....9 - 1

Combi Board - Layout Diagram

 Layout diagram (copper side).....10 - 1

 Layout diagram (component side).....10 - 2

MP3-CD2002 BAORD

 Circuit diagram11 - 1

 Layout diagram.....11 - 2

Exploded view - cabinet.....12 - 1

Mechanical partslist12 - 1

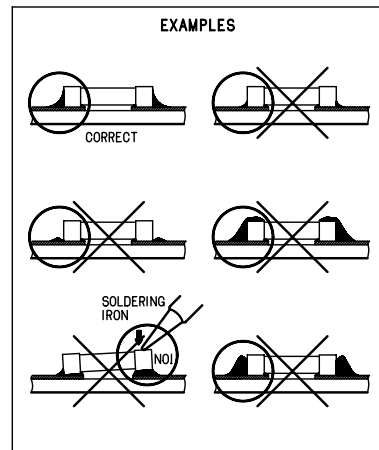
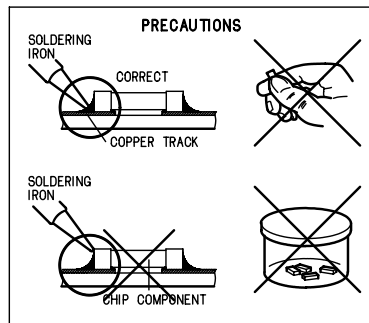
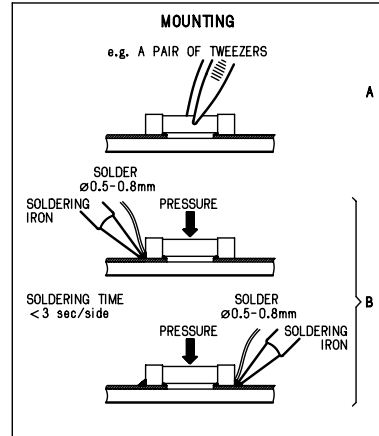
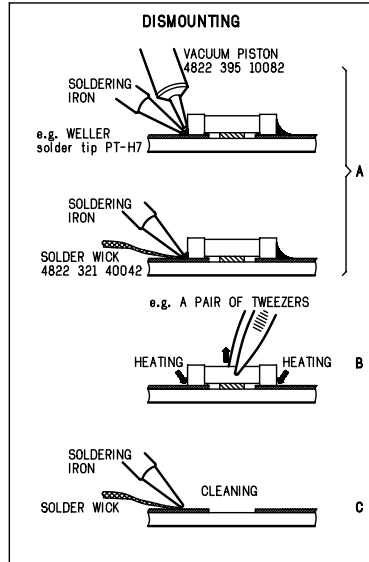
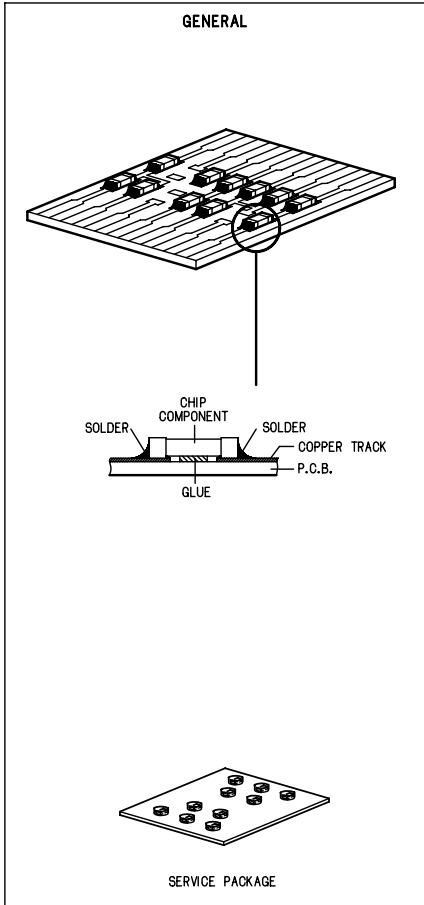
Electrical partslist13 - 1 .. 13 - 9



© Copyright 2001 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.



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 seriti 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). Unvorsichtige 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 ridotta in caso di non osservazione della più grande cauzione alla loro manipolazione. Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza. Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

(GB)

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

SAFETY



(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 symbol

(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:

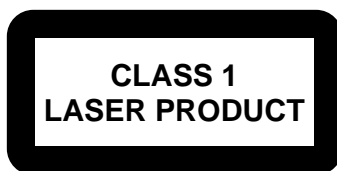
Invisible laser radiation when open. AVOID DIRECT EXPOSURE TO BEAM.

(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 suojauslaituksen 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	-/00 : 230 V
	-/01 : 120 / 230 V
Mains freq.	-/00 : 50 Hz
	-/01 : 50 / 60 Hz
Battery	main set : 9 V (R20, UM1 x 6)
	remote : 3V (R03, AAA x 2)
Power consumption	: < 35 W (max.)
Dimension (W x H x D)	: 471 x 153 x 251 mm
Weight	: 3.8 Kg

AMPLIFIER

Output power	mains : 2 x 1.6 W
	battery : 2 x 1.6 W
Speaker impedance	: 2 x 4 ohm
Frequency response	:
	BASS - 100 Hz : +6 / -14 dB
	MID - 1K Hz : +8 / -8 dB
	HIGH - 10K Hz : +10 / -10 dB
	DBB on : +8 dB

TUNER - FM SECTION

Tuning range	: 87.5 - 108 MHz
IF frequency	: 10.7 MHz – 0.2 MHz
Sensitivity	: 20 dBf at 26dB S/N
Selectivity	: 24 dB at 300kHz
IF rejection	: 85 dB
Image rejection	: 24 dB

TUNER - AM SECTION

Tuning range	MW : 531 - 1602 kHz
	LW : 153 - 279 kHz
IF frequency	: 450 kHz – 1 kHz
Sensitivity	MW : 3200 μ V/m at 26dB S/N
	LW : 5500 μ V/m at 26dB S/N
Selectivity	MW : 22 dB
	LW : 29 dB
IF rejection	MW : 64 dB
	LW : 60 dB
Image rejection	MW : 32 dB
	LW : 38 dB

COMPACT DISC

Frequency response	: 100 Hz - 10 kHz – 2dB
S/N ratio	: 60 dB
Channel difference	1 kHz : 2 dB
Channel crosstalk	1 kHz : 40 dB
Laser wavelength	: 780 – 20 nm
Laser light power	: < 0.5 mW

SERVICE TOOLS

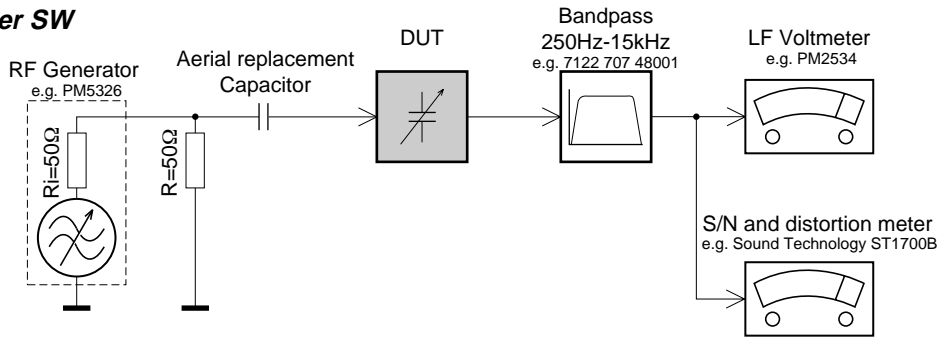
Audio signal disc SBC 429.....	4822 397 30184
Playability test disc SBC 444.....	4822 397 30245
Test disc 5 (disc without errors) +	
Test disc 5A (disc with dropout errors, black spots and fingerprints)	
SBC 426/426A.....	4822 397 30096
Burn in test disc (65 min. 1kHz signal at -30 dB level without "pause").....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

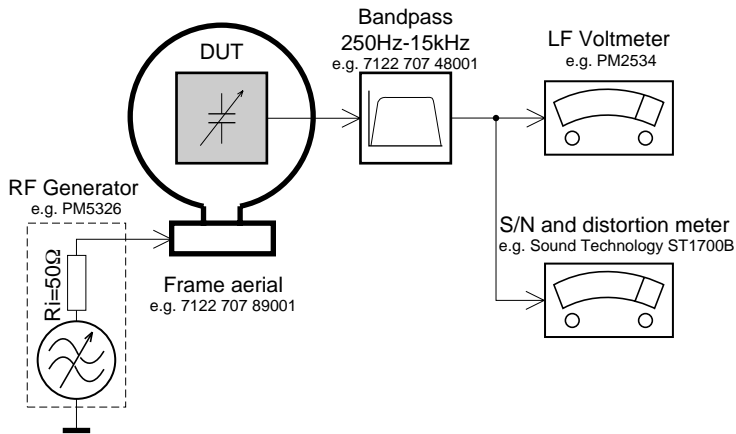
SERVICE MEASUREMENT

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).

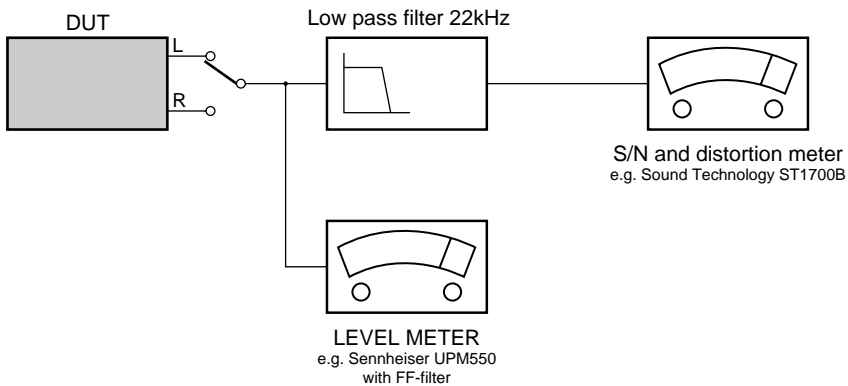
Tuner AM (MW,LW)



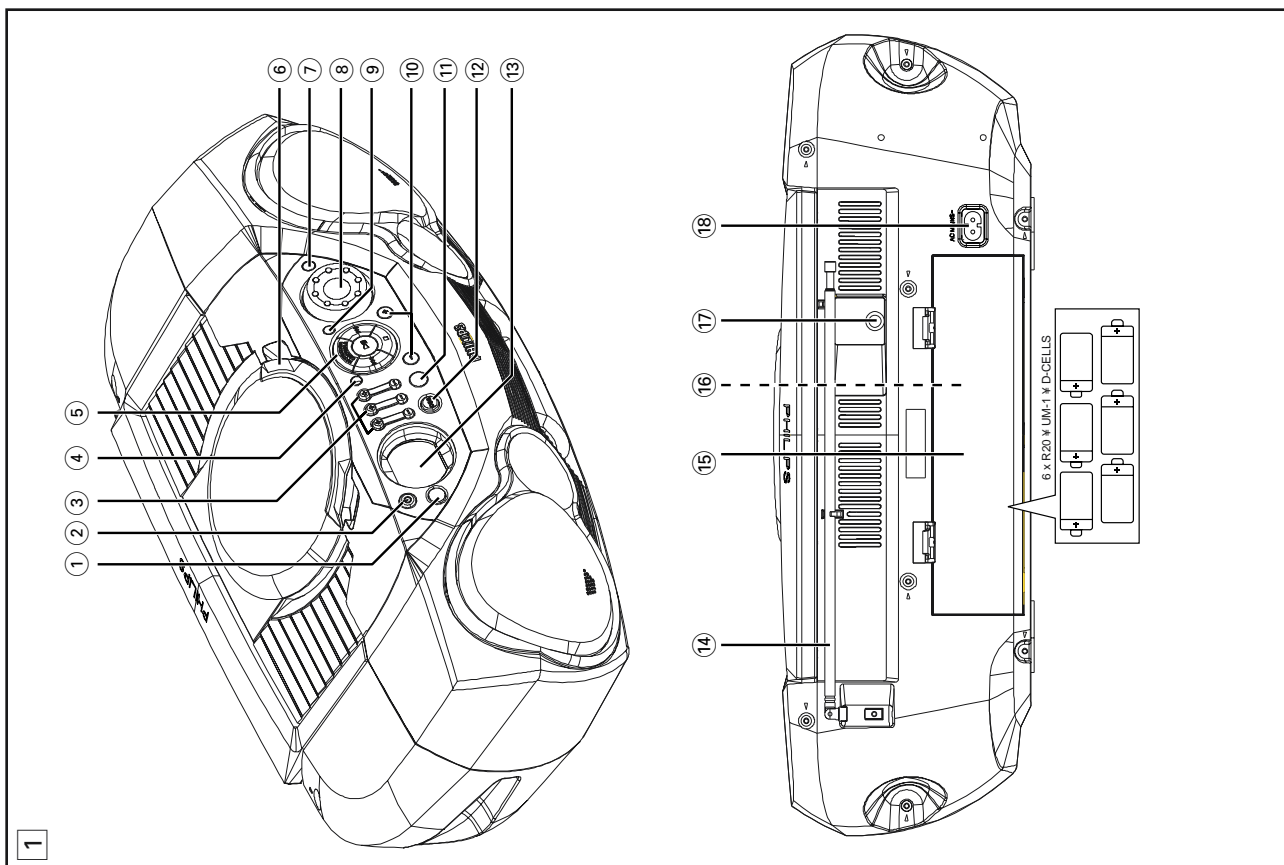
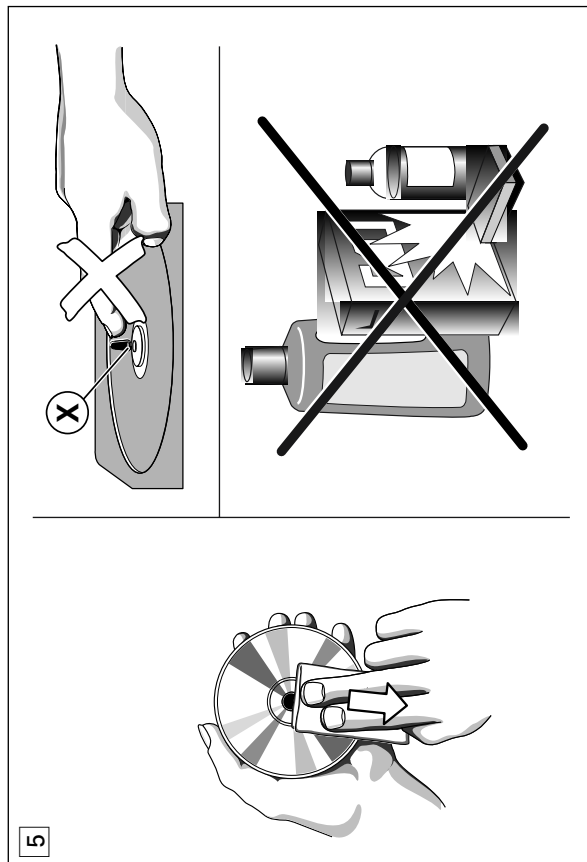
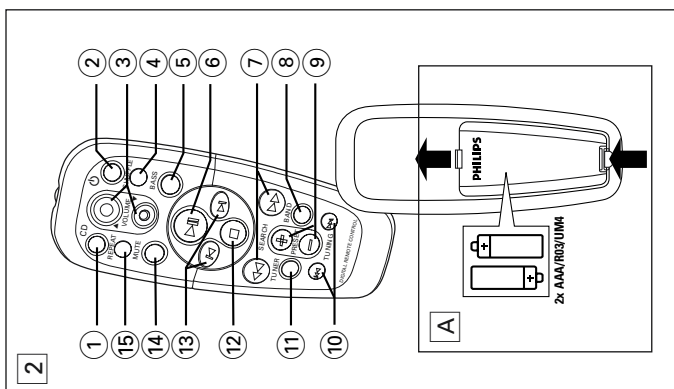
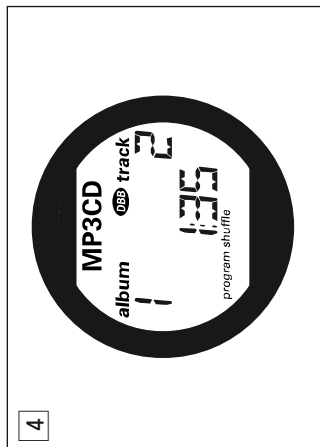
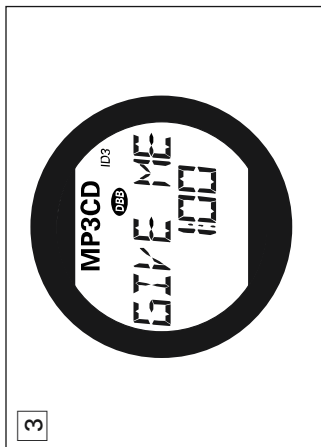
To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday«s cage.

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



TOP AND FRONT PANELS

(See 1)

- 1 **SOURCE** – selects CD/ TUNER function
- 2 **STANDBY** \odot – power on/ standby switch
(If the set is battery powered, this functions as power on/ off)
- 3 **BASS, MID, HIGH** – EQ keys to adjust the bass, mid & treble frequencies

4 **PROG**
CD: programmes tracks and reviews the programme;

Tuner: programmes preset radio stations

5 **Navigation controls**

◀◀, ▶▶

MP3-CD: – searches back and forward within a track;

– skips to the beginning of a current track/ previous/ later track

Tuner: – tunes to radio stations (down, up).

▶II – starts or pauses CD playback

■ – stops CD playback;

– erases a CD programme

6 **Door**

7 **REMOTE SENSOR** – infrared sensor for remote control

8 **VOLUME** – to adjust volume level

9 **MODE** – selects different play modes:
 e.g. REPEAT or SHUFFLE (random) order

10 **PRESET/ALBUM** (–, +) –

MP3-CD (only): – selects previous/ next album

Tuner: – selects the previous/ next preset station

11 **BAND/ DISPLAY** –

MP3-CD: – shows various text and time information during playback

Tuner: – selects waveband

12 **DBB** – (Dynamic Bass Boost) activates a more vivid bass response

13 **Display** – shows the status of the set

CONTROLS

BACK PANEL

- 14 **Telescopic aerial** – improves FM reception
- 15 **Battery compartment** – for 6 batteries, type R-20, UM1 or D-cells
- 16 **Voltage selector** (inside battery compartment, some versions only) – adjust to match the local voltage 110/220V before plugging in the set
- 17 \uparrow – 3.5 mm stereo headphone socket
 Note: The speakers will be muted when headphones are connected to the set.
- 18 **AC MAINS** – inlet for mains lead

REMOTE CONTROL

(See 2)

- 1 **CD** – selects CD sound source
- 2 \odot – switches the set to standby/ on if set operating on AC power. (Switches set off only if battery powered)
- 3 **VOLUME** \blacktriangle , \blacktriangledown – adjusts volume level (up, down)
- 4 **SHUFFLE** – plays MP3-CD/ CD tracks in random order
- 5 **BASS** – selects DBB on/off
- 6 \blacktriangleright II – starts/ pauses MP3-CD/ CD playback
- 7 **SEARCH** \blacktriangleleft , \blacktriangleright – searches backwards/ forwards within a MP3-CD/ CD track
- 8 **BAND** – selects FM/ MW (LW) waveband
- 9 **PRESET** +, – (up, down) –
MP3-CD (only): – selects previous/ next album
Tuner: – selects the previous/ next preset station
- 10 **TUNING** \blacktriangleleft , \blacktriangleright – tunes to tuner stations (down, up)
- 11 **TUNER** – selects tuner sound source
- 12 \blacksquare – stops MP3-CD/ CD playback;
 – erases a MP3-CD/ CD programme
- 13 \blacktriangleleft , \blacktriangleright – skips to the beginning of a current track previous/ subsequent track
- 14 **MUTE** – interrupts/ resumes sound
- 15 **REPEAT** – repeats a track /programme/ entire MP3-CD/ CD

POWER SUPPLY

CAUTION

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

IMPORTANT!

For users in the U.K.: please follow the instructions on the upper righthand-side.

MAINS SUPPLY

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

Batteries (not included)

- Insert 6 batteries, type **R-20, UM-1 or D-cells**, (preferably alkaline) with the correct polarity.

Remote control (see A)

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

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 Mains

- 1 Check if the mains supply, as shown on the **type plate located on the bottom of the set**, corresponds to your local mains supply. If it does not, consult your dealer or service centre.
- 2 If your set is equipped with a voltage selector, adjust the selector so that it matches with the local mains.
- 3 Connect the mains lead to the wall socket.
- 4 To disconnect the mains supply, unplug the set from the wall socket.

CONNECTIONS AND CONTROLS

BASIC FUNCTIONS

Auto-Standby mode

When the MP3-CD/CD player has reached the end of playback and remains in the stop position for more than 15 minutes, the set will switch off automatically to save energy.

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

BASIC FUNCTIONS

Switching on and off and selecting function

- 1 Press **STANDBY** \odot on the set to switch on.
- 2 Press **SOURCE** once or more to select: **CD** or **TUNER** function.
- 3 Press **STANDBY** \odot to switch off the set.

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

Adjusting volume and sound

- 1 Adjust the volume with the **VOLUME** control.
 → Display shows the volume level and a number from 0-32.
- 2 Press **DBB** once or more to select dynamic bass boost on or off.
 → Display: shows **DBB ON** or **DBB OFF** when activated/deactivated.
- 3 To adjust the bass, mid and treble tones, press and hold **+** or **-** on the **BASS, MID, HIGH** keys until you reach the desired level.
 → Display briefly shows **BASS, MID, or HIGH** and the level.

Note: To prevent sound interference the bass control options operate exclusively. You cannot combine the bass from **BASS** with **DBB**.

INSTRUCTIONS FOR USE

BASIC FUNCTIONS

Mute

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

DIGITAL TUNER

Tuning to radio stations

- 1 Press **STANDBY** to on, then press **SOURCE** to select **TUNER**.
– **TUNER** is displayed briefly and then the radio station frequency, waveband and, if programmed, a preset number are shown.
- 2 Press **BAND/ DISPLAY** once or more to select your waveband.
- 3 Press and hold **◀** or **▶** until the frequency in the display starts running.
→ The radio automatically tunes to a station of sufficient reception. Display shows **SEARCH** during automatic tuning.
→ If a FM station is received in stereo, **stereo** is shown.
- 4 Repeat steps 2-3 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.

To improve radio reception:

- For **FM**, extend, incline and turn the telescopic aerial. Reduce its length if the signal is too strong.
- For **MW (LW)**, the set uses a built-in aerial. Direct this aerial by turning the whole set.

MP3-CD/CD PLAYER

MP3-CD/CD player

Important Specifications

Supported formats:

- Disc format ISO9660, Joliet and multi-session CDs. Use ISO9660 disc format when burning CD-ROM.
- MP3 music formats.
- MP3 bit rate (data rate): 32-320 Kbps and variable bit rate.
- 650Mb and 700Mb CD-R and CD-RWs.
- Directory nesting up to a maximum of 8 levels (max. 64 characters).

General information

The music compression technology MP3 (MPEG Audio Layer 3) reduces the original digital audio data by a factor up to 10 without losing significant sound quality. This allows you to record up to 10 hours of CD-like quality music on a single CD-ROM.

How to get MP3 music

Either download legal MP3 music from the internet or convert your audio CD into MP3 format with any MP3 encoder software, and then record onto a CD-R(W).

- To achieve a good sound quality a bit rate of 128 kbps is recommended for MP3 files.
- Some encoder software offers an option to protect music files, i.e. the files can only be played on the computer which created them. If you burn such files on a CD-ROM, you cannot play them on this set. Make sure to deactivate the protection option in the encoder software before creating the music files. In this case you are responsible for the adherence to all local or international copyrights.

When burning the MP3-CD

- To avoid problems with playback or missing files, make sure the file names are typed in English text characters and that the MP3 files end with .mp3
- Use a writing software capable of recording MP3 track titles (files) in numerical and alphabetical order. For details on using the software, refer to the operating instructions of the software.
- When recording on a CD-RW, make sure that you close (finalize) all sessions in order for the set to read and play your tracks.

How to organize MP3 files

You can store up to a maximum number of 35 albums and 400 titles on one MP3-CD, depending on the song file sizes.

Albums and titles are alphabetically sorted.

- MP3-CD/ CD albums and titles are shown as numbers in the display.

IMPORTANT

This set does not play/support the following:

- Empty albums: an empty album is an album that does not contain MP3 files, and will not be shown in the display.
- Non-supported file formats are skipped. This means that e.g.: Word documents .doc or MP3 files with extension .dlf are ignored and will not be played.
- Playlist Files e.g. .m3u, .pls of WMA, AAC, Winamp, Sonic, RealJukebox.
- MS Mediaplayer 7.0, MusicMatch.
- Recordings created on e.g. PacketWriting and Package Writing.

DIGITAL

Programming radio stations

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

Manual programming

- 1 Tune to your desired station (see Tuning to radio stations).
- 2 Press **PROG** to activate programming.
- 3 Press **PRESET DOWN/ UP** once or more to select a preset number.
- 4 Press **PROG** to confirm.
- 5 Repeat steps 1-4 to store other stations.

Note: You can erase a preset station by storing another frequency in its place.

Autostore

Autostore automatically starts programming radio stations from preset 1. Available stations are programmed in order of waveband reception strength: FM, followed by MW (LW). Any previous presets e.g. manually programmed will be erased.

- Press **PROG** for 4 seconds or more to activate autostore programming.
→ The display shows **FLIGHTS:TYPE**.
After all stations are stored, the first autostore preset station will then automatically play.

To listen to a preset or autostore station










Press the **PRESET** (up or down) buttons once or more until the desired preset station is displayed.

MP3-CD/CD PLAYER

Playing MP3-CD & CD

This CD player plays Audio Discs including CD-R(W)s, and MP3 CD-ROMs.

- CD-I, CDV, VCD, DVD or computer CDs, are not possible.

- 1 Press **STANDBY**  to on, then **SOURCE** to select CD.
- 2 Open the CD door.
→ Display:  OPEN when the CD door is opened.
- 3 Insert a disc with the printed side facing up and close the CD door.
→ Display:  READING when reading disc contents;
→ Display:  INSERT  if no disc inserted/ disc incorrectly inserted.
→ Display:  CHECK  if disc damaged/ dirty;
→ CD throughout MP3-CD operation;
→ MP3CD throughout MP3-CD operation;
→ In CD stop mode: total track number and total playback time.
→   is shown if you have inserted a non-finalized CD-R(W)/ blank disc.

Note: MP3-CDs may take more than 10 seconds to read.

- 4 Press **▶II** to start playback
→ Display: Current track number and elapsed track time during CD playback.
→ If MP3-CD, the album number also is shown.
- 5 To pause playback press **▶II**. Press **▶II** again to resume play.
- 6 To stop CD playback, press **■**.
- 7 Press **STANDBY**  to switch of the set.

Note: CD play will also stop when:
– the CD door is opened;
– the CD has reached the end;
– you select tuner source.

MP3-CD/ CD text display

During playback, press the **DISPLAY** button briefly and repeatedly to view text information:

MP3-CD/CD PLAYER

Different play modes: SHUFFLE and REPEAT


(See [4](#).)

You can select and change the various play modes and combine the modes with **PROGRAM**.

- **shuffle** — tracks of the entire disc/ program are played in random order
 - **shuffle and repeat all** — to repeat the entire disc/ programme continuously in random order
 - **repeat all** — repeats the entire disc/ program
 - **repeat (and shuffle repeat)** — plays the current (random) track continuously
- 1 To select play mode, press **MODE** once or more.
 - 2 Press **▶II** to start playback if in the stop position.
 - 3 To select normal playback, press **MODE** repeatedly until the various modes are no longer displayed.
→ You can also press **■** to cancel your play mode.

Programming track numbers

In the stop position, select and store your tracks in the desired sequence. Up to 20 tracks can be stored in the memory.



- 1 Press **◀◀** or **▶▶** on the set to select your desired track number.
MP3-CD mode only:
First press **ALBUM, PRESET +** or — once or more to find your album, then press **SEARCH** **◀◀** or **▶▶**.
- 2 Press **PROG**.
→ Display: program and the selected track number.  appears briefly.
→ Display: **SELECT TRFCLY** if no track selected for programming.

- 3 Repeat steps 1-2 to select and store all desired tracks.
→ Display: **MEMORY FULL** if you try to programme more than 20 tracks.

MAINTENANCE & SAFETY

Reviewing the programme

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

- Display:   if no tracks programmed.

Erasing a programme

You can erase the programme by:

- pressing **■** twice;
→ **CLEAR** is displayed briefly and program disappears.
- selecting **TUNER** source.

Maintenance & Safety

CD player and disc handling (See [5](#).)

- 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.
- 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.

TROUBLE SHOOTING

If a fault occurs, first check the points listed below before taking the set for repair.

Do not open the set as there is a risk of electric shock.

If you are unable to remedy a problem by following these hints, consult your dealer or service centre.

WARNING: Under no circumstances should you try to repair the set yourself, as this will invalidate the guarantee.

- Problem
- Solution

Remote control does not function properly

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

No sound /power

- Volume not adjusted
- Adjust the VOLUME
- Mains lead not securely connected
- Connect the AC mains lead properly
- Batteries exhausted/ 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 \odot on the set for 10 seconds, then re-plug / replace battery supply, and try activating the set again

Severe radio hum or noise

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

Poor radio reception

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

INSERT CD /CHECK DISC indication

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

UNFINALIZED CD indication

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

The CD skips tracks

- CD damaged or dirty
- Replace or clean CD
- SHUFFLE or PROGRAM is active
- Switch off SHUFFLE / PROGRAM

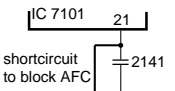
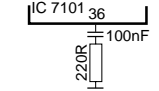
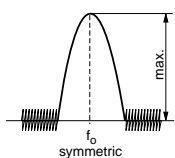
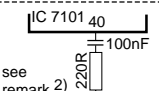
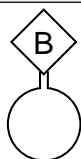
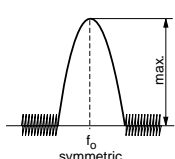
Sound skips during MP3 playback

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

Cannot play/ find desired MP3 titles

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

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

Waverange	Input frequency	Input	Tuned to	Adjust	Output	Scope/Voltmeter
VARICAP ALIGNMENT						
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 153 - 279kHz			279kHz	5122	8V -0.2V	
			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	
FM IF						
FM	10.7MHz, 45mV continuous wave	D		5119	2	0 - 3 mV DC
FM RF						
FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz)	108MHz	A	108MHz	2155	4	MAX
	87.5MHz (65.81MHz)	mod=1kHz $\Delta f = -22.5\text{kHz}$	87.5MHz (65.81MHz)	5131		
VCO						
FM	98MHz, 1mV continuous wave	A	98MHz	3142	3	152kHz -1kHz ¹⁾
AM IF						
MW	450kHz connect pin 6 of IC 7101 (AM Osc.) with 2.2k% to Vcc	C		5111	5	
				5112		
AM AFC MW		C		5114	2	0 - 2 mV DC
AM RF³⁾						
LW	198kHz	B 	198kHz	5105 LW ferrite coil	5	
MW FM/MW/LW- and FM/MW-version (9kHz grid) 531 - 1602kHz	1494kHz		2106			
	558kHz		5104 MW ferrite coil			
MW FM/AM-version, 10kHz grid 530 - 1700kHz	1500kHz		2106			
	560kHz	5104 MW ferrite coil				

ECO6, general with ferrite antenna, 070799

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.

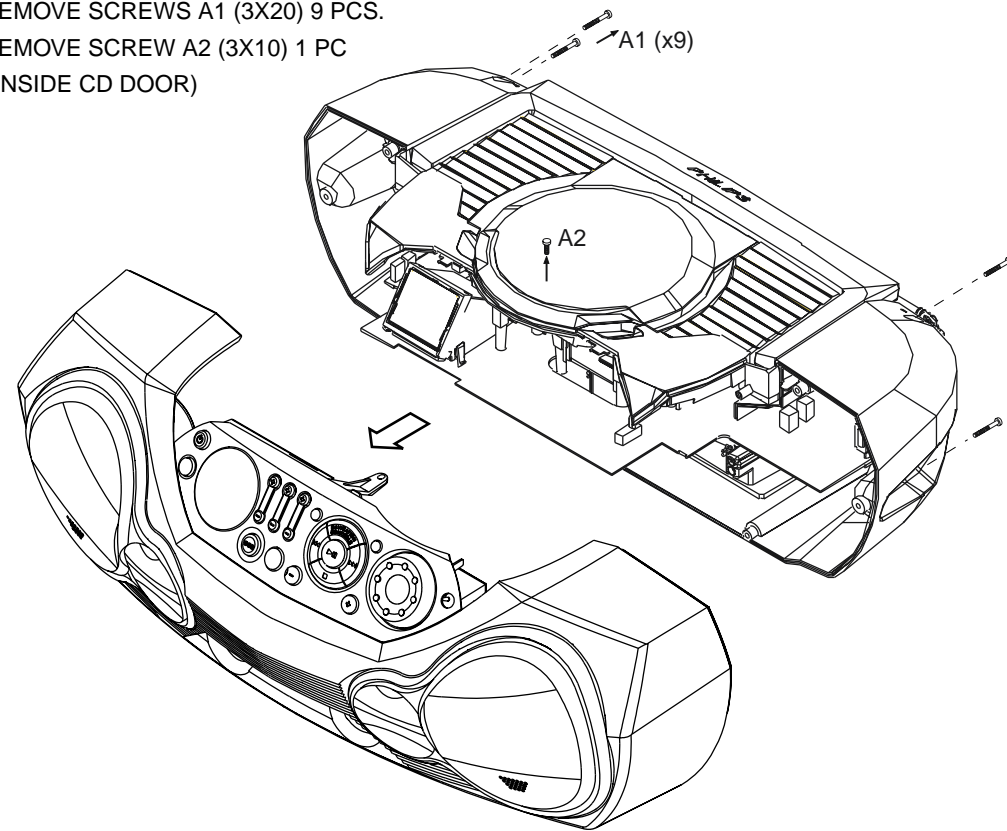
³⁾ LW has to be aligned before MW.

↑ Repeat

DISASSEMBLY DIAGRAM

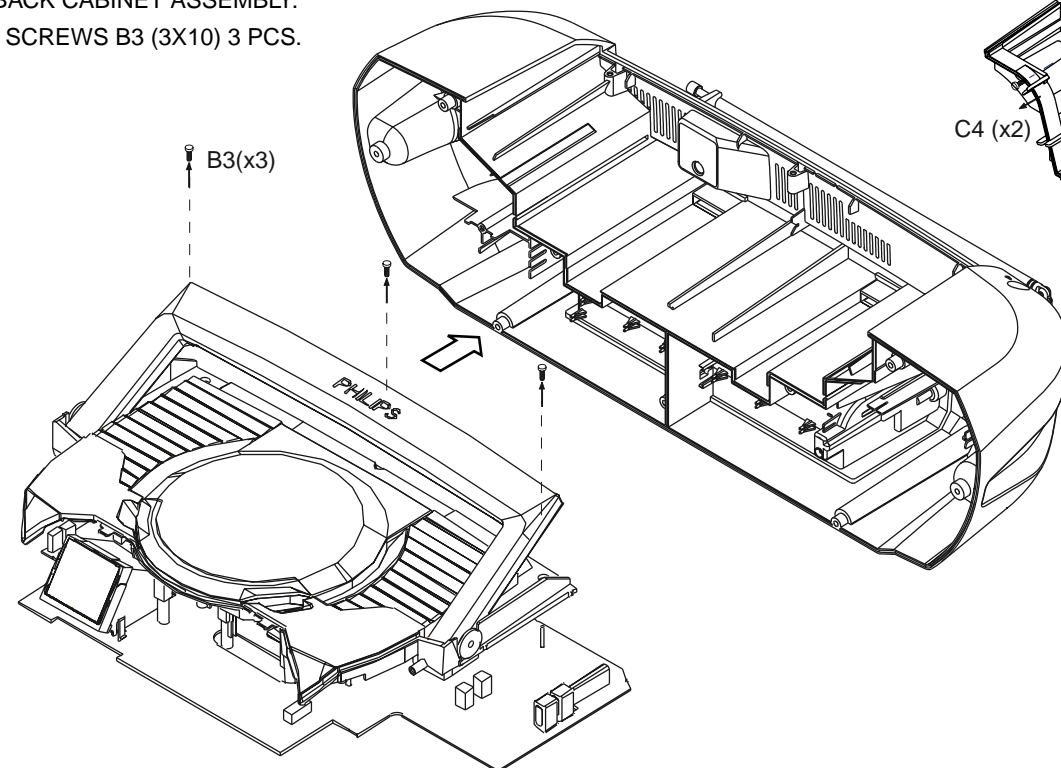
A. REMOVE FRONT CABINET ASSEMBLY

- REMOVE SCREWS A1 (3X20) 9 PCS.
- REMOVE SCREW A2 (3X10) 1 PC
(INSIDE CD DOOR)



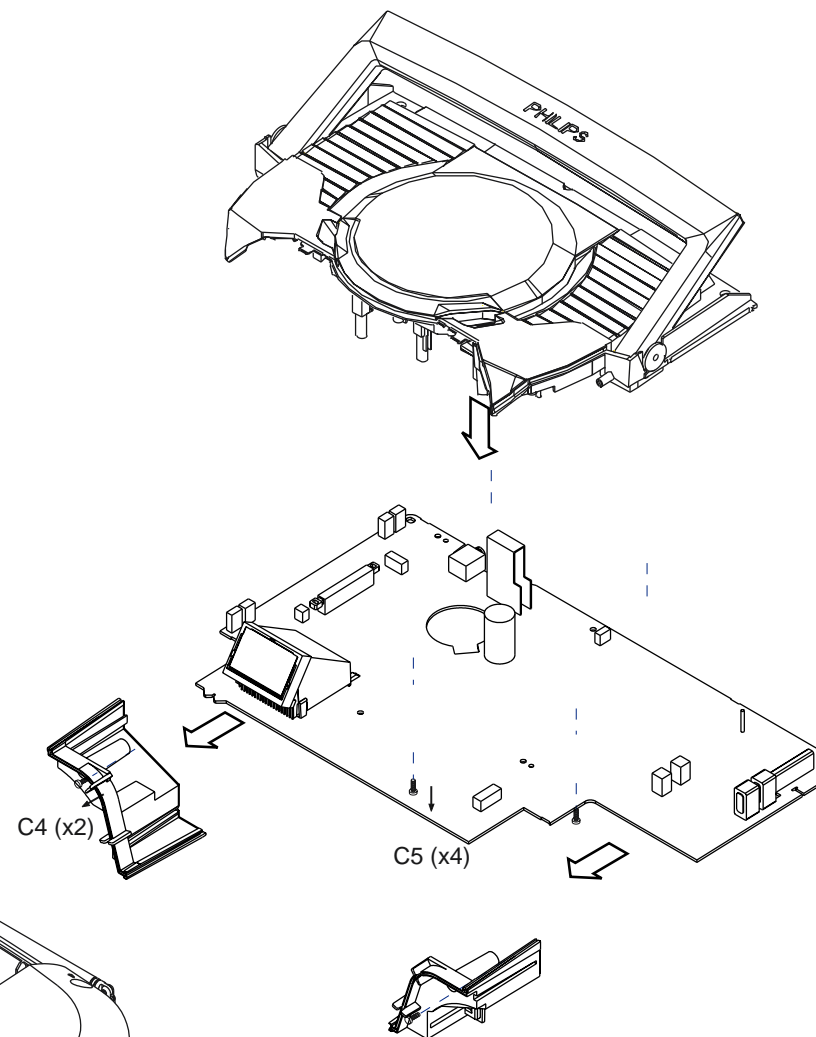
B. REMOVE BACK CABINET ASSEMBLY.

- REMOVE SCREWS B3 (3X10) 3 PCS.



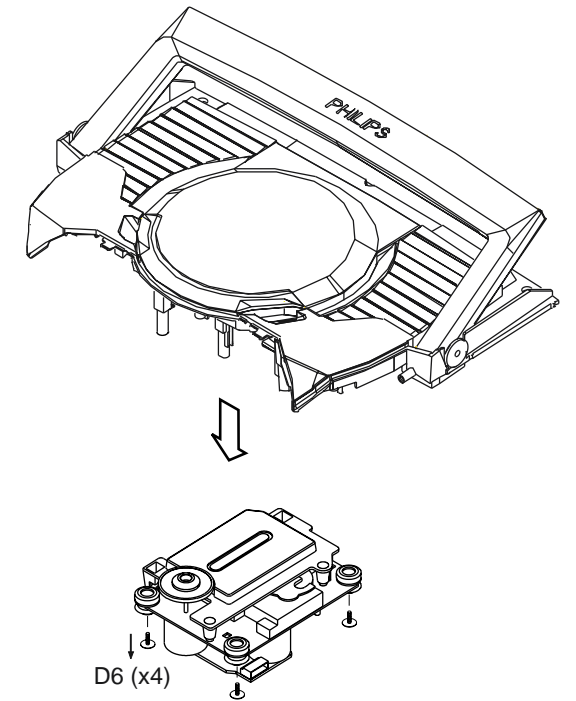
C. REMOVE COMBI BOARD ASSEMBLY

- REMOVE SCREWS C4 (3X10) 2 PCS.
- REMOVE FIXING BRACKETS
- REMOVE SCREWS C5 (3X10) 4 PCS.



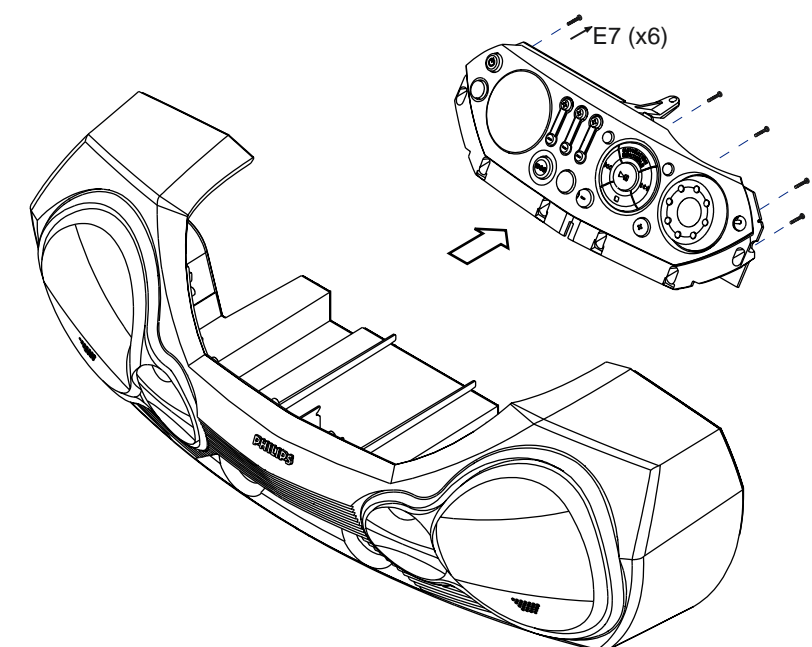
D. REMOVE DECK MECHANISM

- REMOVE SCREWS D6 (2.5X10) 4 PCS.
- REMOVE CD DECK



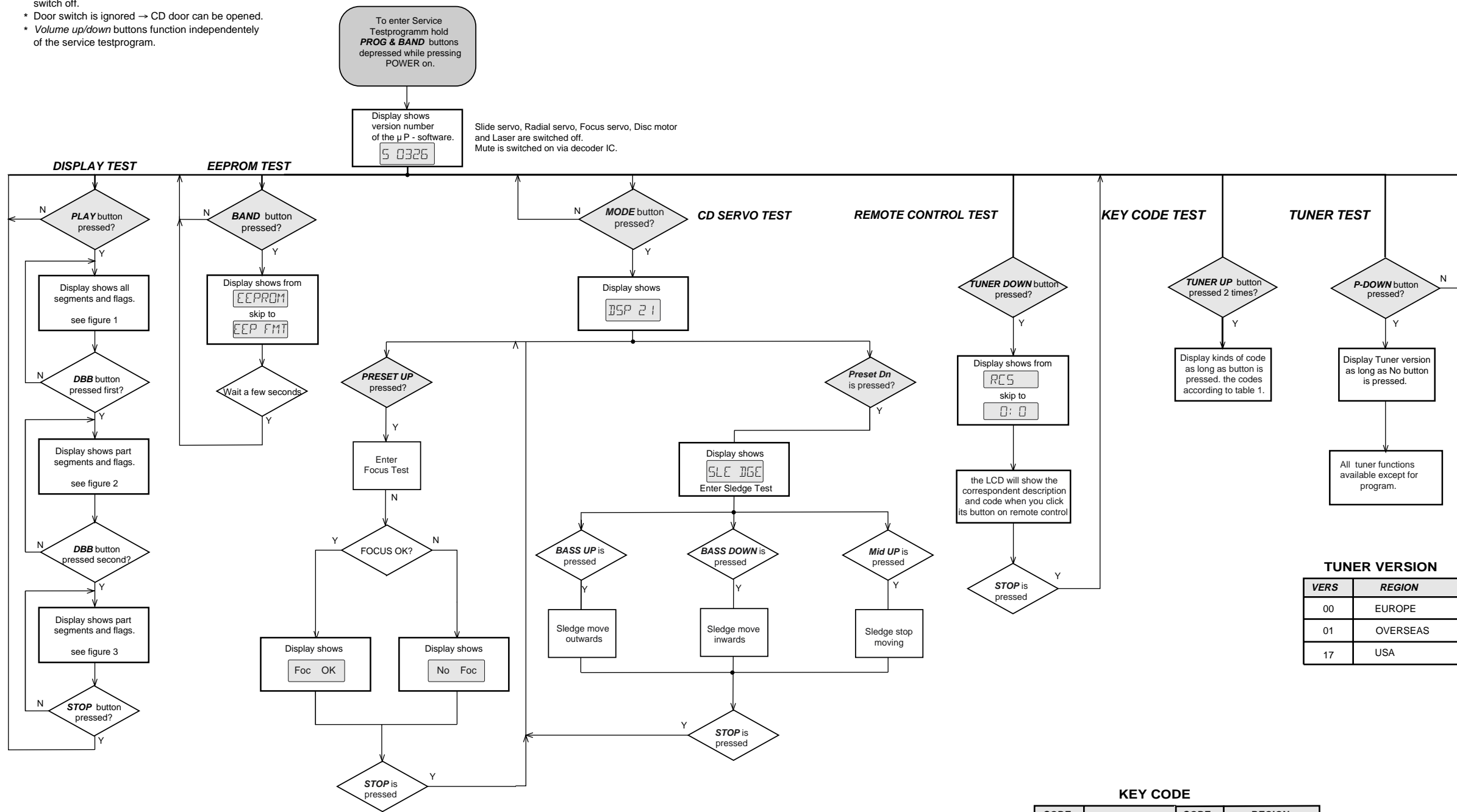
E. REMOVE CD PANEL-FRONT ASSEMBLY

- REMOVE SCREWS E7 (2.5X10) 6 PCS.



SERVICE TEST PROGRAM

- * STOP button pressed in any step returns to begin of Service Testprogram.
- * To leave Service Testprogram press POWER to switch off.
- * Door switch is ignored → CD door can be opened.
- * Volume up/down buttons function independently of the service testprogram.



TUNER VERSION

VERS	REGION
00	EUROPE
01	OVERSEAS
17	USA

KEY CODE

CODE		CODE	REGION
0F	MODE	0B	PLAY
0B	TUNER UP	10	PROG
0E	PREV	0A	PRESET UP
03	BASS UP	08	PRESET DN
06	BASS DN	07	SOURCE
05	MID UP	15	BAND
02	MID DN	19	VOL(-)
01	HIGH UP	1E	DBB
04	HIGH DN	18	VOL(+)

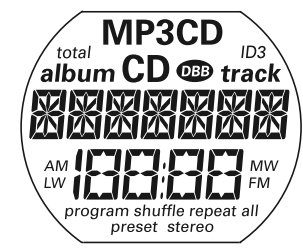


figure 1

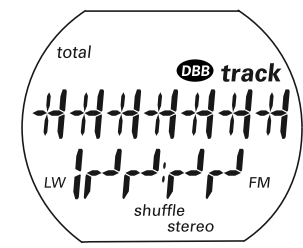


figure 2

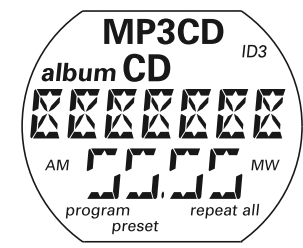


figure 3

table 1

Abbreviations and Pin-description of CD ICs

SERVO PROCESSOR SAA7 325H

SYMBOL	PIN	DESCRIPTION
HFREF	1	comparator common mode input
HFIN	2	comparator signal input
ISLICE	3	current feedback output from data slicer
V _{SSA1}	4 ⁽¹⁾	analog ground 1
V _{DDA1}	5 ⁽¹⁾	analog supply voltage 1
I _{ref}	6	reference current output pin
V _{RIN}	7	reference voltage for servo ADC' s
D1	8	unipolar current input (central diode signal input)
D2	9	unipolar current input (central diode signal input)
D3	10	unipolar current input (central diode signal input)
D4	11	unipolar current input (central diode signal input)
R1	12	unipolar current input (satellite diode signal input)
R2	13	unipolar current input (satellite diode signal input)
V _{SSA2}	14 ⁽¹⁾	analog ground 2
CROUT	15	crystal/resonator output
CRIN	16	crystal/resonator input
V _{DDA2}	17 ⁽¹⁾	analog supply voltage 2
LN	18	DAC left channel differential output - negative
LP	19	DAC left channel differential output - positive
V _{neg}	20	DAC negative reference input
V _{pos}	21	DAC positive reference input
RN	22	DAC right channel differential output - negative
RP	23	DAC right channel differential output - positive
SELPLL	24	selects whether internal clock multiplier PLL is used
TEST1	25	test control input 1; this pin should be tied LOW
CL16	26	16.9344 MHz system clock output
DATA	27	serial d4(1)ata output (3-state)
WCLK	28	word clock output (3-state)
SCLK	29	serial bit clock output (3-state)
EF	30	C2 error flag output (3-state)
TEST2	31	test control input 2; this pin should be tied LOW
KILL	32	kill output (programmable; open-drain)
V _{SSD1}	33 ⁽¹⁾	digital ground 2
V2/V3	34	versatile I/O: input versatile pin 2 or output versatile pin 3 (open-drain)
WCLI	35	word clock iutput (for data loopback to DAC)
SDI	36	serial data input (for data loopback to DAC)
SCLI	37	serial bit clock input (for data loopback to DAC)
RESET	38	power-on reset input (active LOW)
SDA	39	microcontroller interface data I/O line (open-drain output)
SCL	40	microcontroller interface clock line input

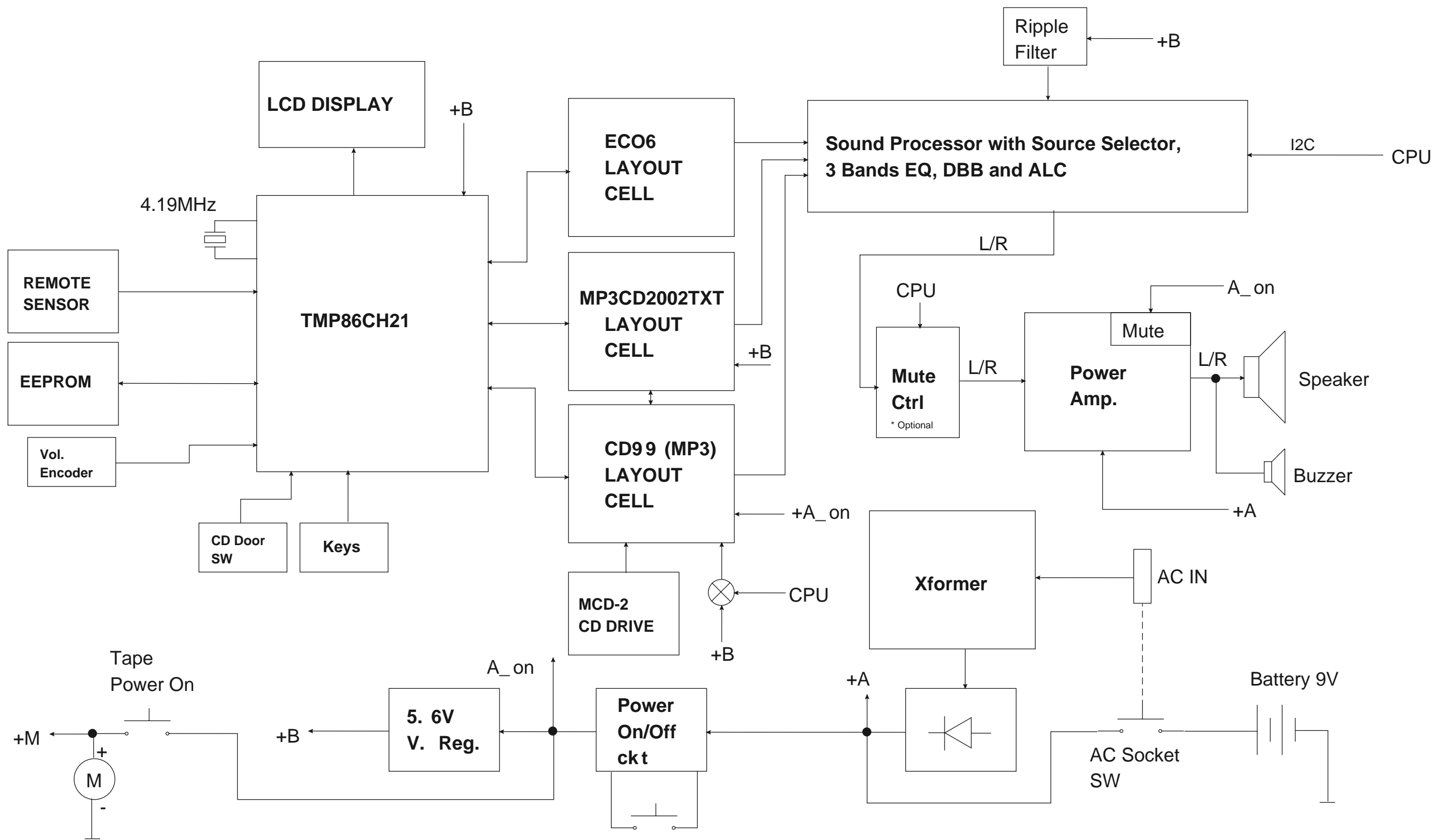
Abbreviations and Pin-description of CD ICs

SERVO PROCESSOR SAA7 325H

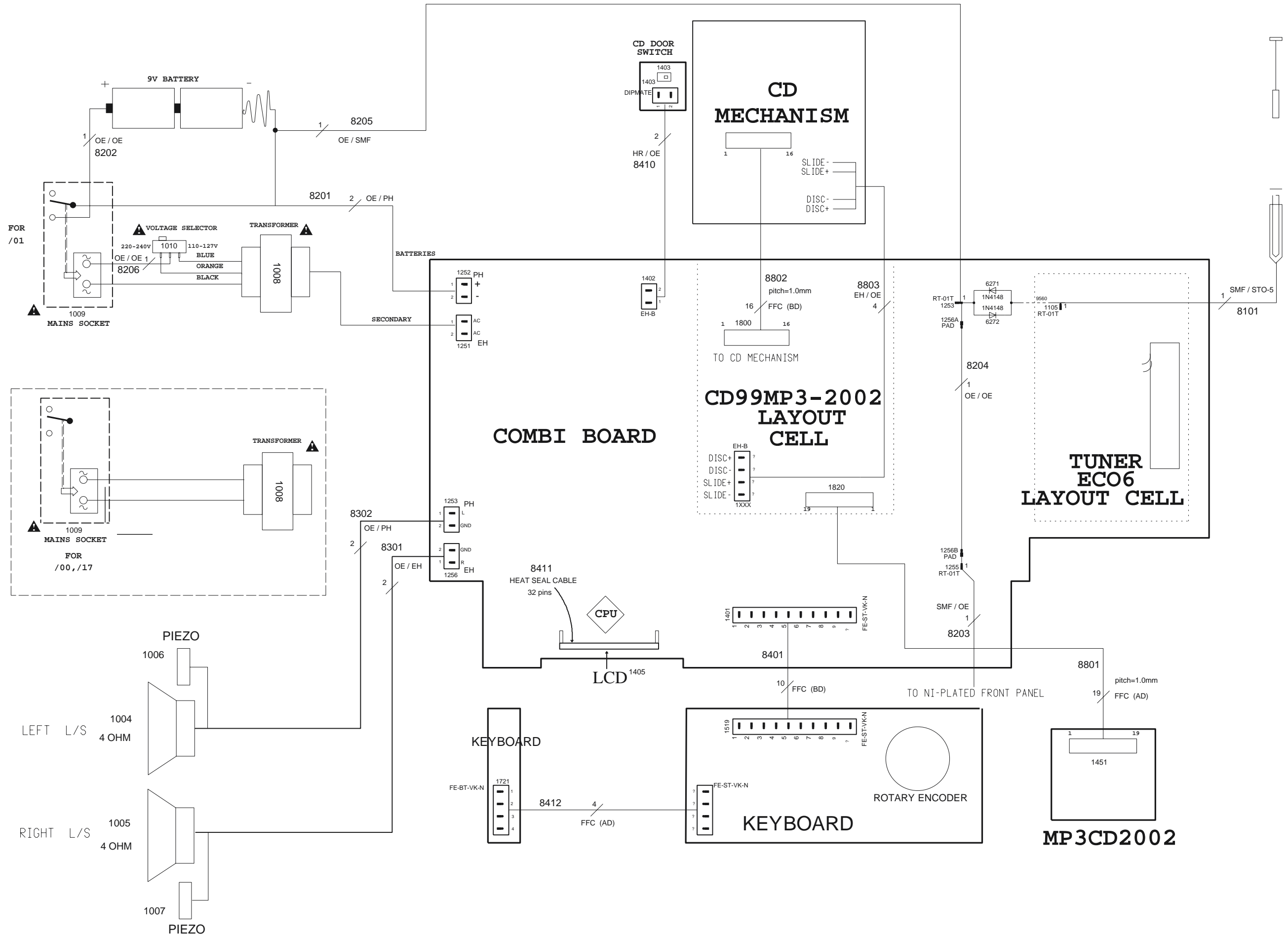
SYMBOL	PIN	DESCRIPTION
RAB	41	microcontroller interface R/W and load control line input (4-wire bus mode)
SILD	42	microcontroller interface R/W and load control line input (4-wire bus mode)
STATUS	43	servo interrupt request line/decoder status register output (open-drain)
TEST3	44	test control input 3; this pin should be tied LOW
RCK	45	subcode clock input
SUB	46	P-to-W subcode bits output (3-state)
SFSY	47	subcode frame sync output (3-state)
SBSY	48	subcode block sync output (3-state)
CL11/4	49	11.2896 MHz or 4.2336 MHz (for microcontroller) clock output
V _{SSD2}	50 ⁽¹⁾	digital ground 3
DOBM	51	bi-phase mark output (externally buffered; 3-state)
V _{DD1(P)}	52 ⁽¹⁾	digital supply voltage 2 for periphery
CFLG	53	correction flag output (open-drain)
RA	54	radial actuator output
FO	55	focus actuator output
SL	56	sledge control output
V _{DD2(C)}	57 ⁽¹⁾	digital supply voltage 3 for core
V _{SSD3}	58 ⁽¹⁾	digital ground 4
MOTO1	59	motor output 1; versatile (3-state)
MOTO2	60	motor output 2; versatile (3-state)
V4	61	versatile output pin 4
V5	62	versatile output pin 5
V1	63	versatile input pin 1
LDON	64	laser drive on output (open-drain)

Note : All supply pins must be connected to the same external power supply voltage.

BLOCK DIAGRAM

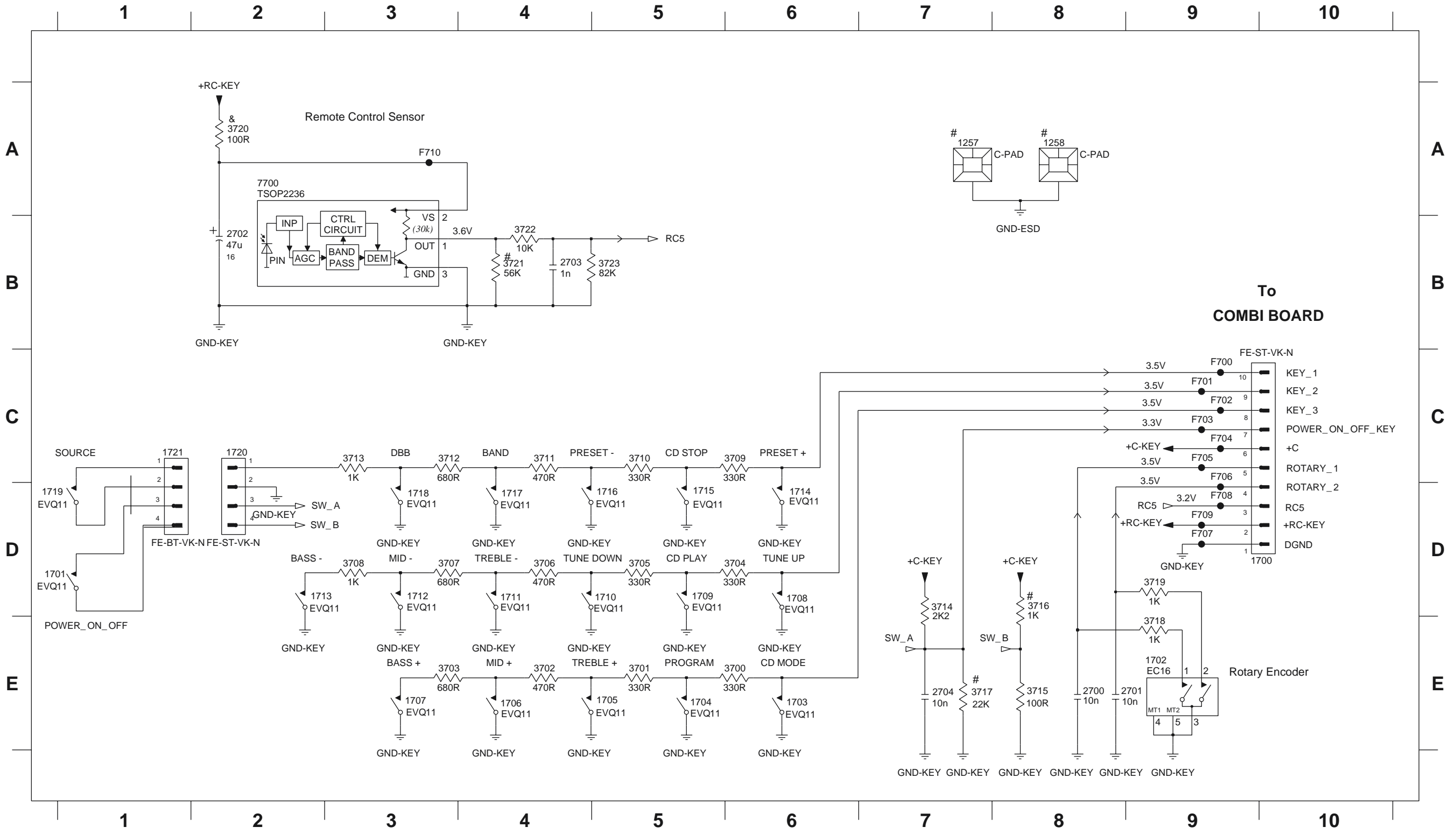


WIRING DIAGRAM



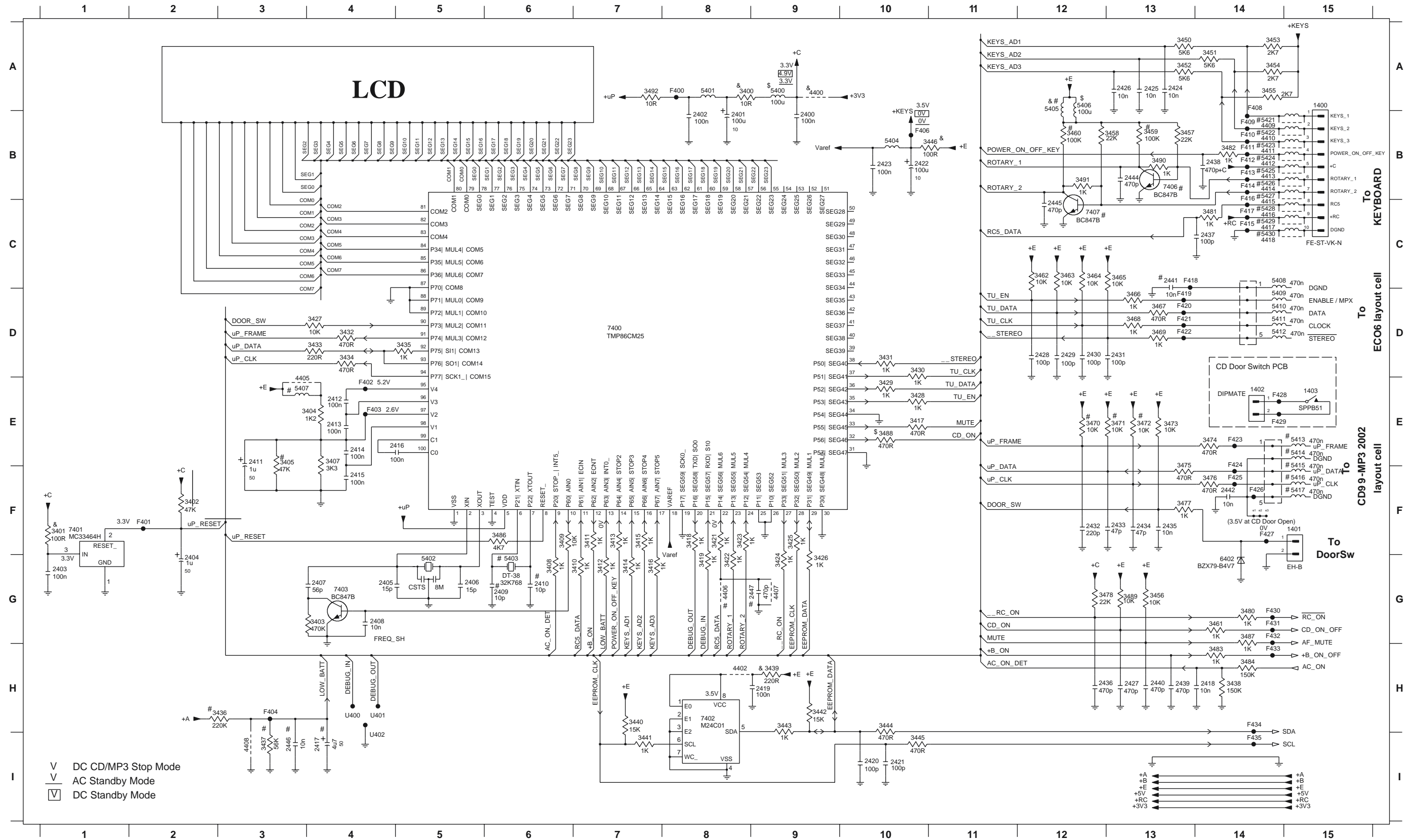
KEY BOARD - CIRCUIT DIAGRAM

1257 A7	1702 E9	1706 E4	1710 D4	1714 D6	1718 D3	2700 E8	2704 E7	3703 E3	3707 D3	3711 C4	3715 E8	3719 D9	3723 B4	F702 C9	F706 C9	F710 A3
1258 A8	1703 E6	1707 E3	1711 D4	1715 D5	1719 D1	2701 E8	3700 E6	3704 D6	3708 D3	3712 C3	3716 D8	3720 A2	7700 A2	F703 C9	F707 D9	
1700 D9	1704 E5	1708 D6	1712 D3	1716 D4	1720 C2	2702 B2	3701 E5	3705 D5	3709 C6	3713 C3	3717 E7	3721 B4	F700 C9	F704 C9	F708 D9	
1701 D1	1705 E4	1709 D5	1713 D2	1717 D4	1721 C1	2703 B4	3702 E4	3706 D4	3710 C5	3714 D7	3718 E9	3722 B4	F701 C9	F705 C9	F709 D9	

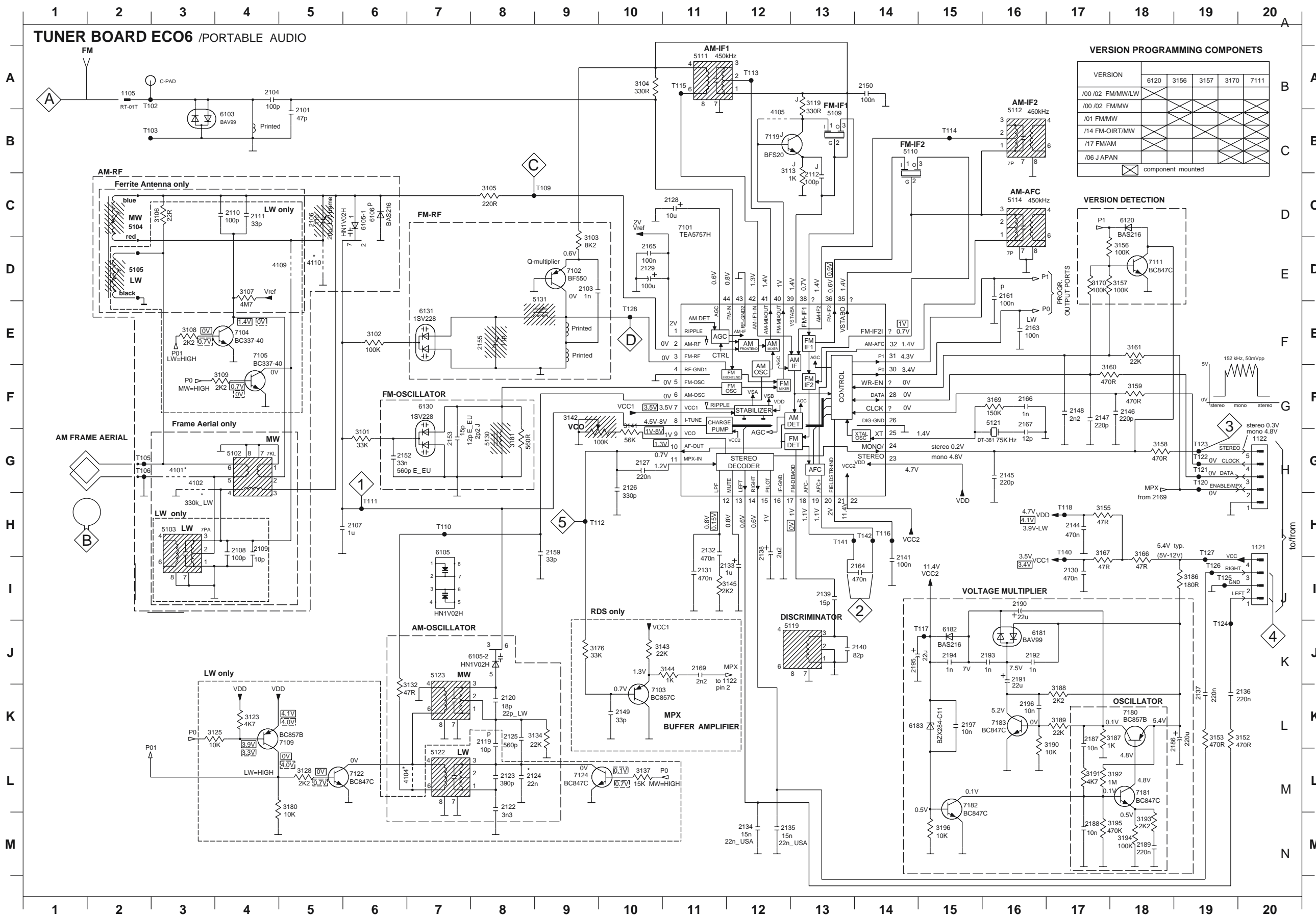


COMBI BOARD - CIRCUIT DIAGRAM (FRONT PART)

e1 F14	2400 B9	2407 G4	2414 E4	2421 H0	2428 D12	2435 F13	2442 F14	3402 F2	3410 G7	3417 E10	3425 F9	3432 D4	3439 H9	3446 B11	3456 G13	3463 C12	3470 E12	3477 F13	3486 F6	4400 A9	4410 B15	4417 C15	5405 A12	5412 D14	5422 B15	5429 C15	7406 B13	F406 B10	F414 B14	F421 D13	F428 E14	F435 H14	
e2 F14	2401 B8	2408 G4	2415 F4	2422 B10	2429 D12	2436 H12	2444 B13	3403 G4	3411 F7	3418 F8	3426 G9	3433 D4	3440 H7	3447 H7	3454 A13	3457 B13	3464 C12	3471 E13	3478 G12	3487 G14	4402 H8	4411 B15	4418 C15	5406 A12	5413 B15	5423 B15	5430 C15	7407 C12	F408 B14	F415 C14	F422 D13	F429 E14	U400 H4
e3 F14	2402 B8	2409 G6	2416 E5	2423 B10	2430 D12	2437 C14	2445 C12	3404 E4	3412 G7	3419 G8	3427 D4	3434 D4	3441 H7	3448 H7	3451 A14	3458 B12	3465 C13	3472 E13	3480 G14	4405 E3	4412 B15	4400 A9	5407 E3	5414 E15	5424 B15	5430 C15	6402 G14	F400 A8	F409 B14	F416 C14	F423 E14	F430 G14	U401 H4
1400 B15	2403 G1	2410 G6	2417 I4	2424 A13	2431 D13	2438 B14	2446 I3	3405 E3	3413 F7	3421 F8	3428 E10	3435 D5	3442 H9	3449 H9	3452 A13	3459 B13	3466 D13	3473 E13	3481 C14	3489 G13	4406 G8	4413 B15	5401 A8	5408 C14	5415 F15	5425 B15	7400 D7	F401 F2	F410 B14	F417 C14	F424 F14	F431 G14	U402 H4
1401 F15	2404 G2	2411 E3	2418 H14	2425 A13	2432 F12	2439 H13	2447 G9	3407 E4	3414 G7	3422 G8	3429 E10	3436 H3	3443 H9	3450 A14	3453 A14	3460 B12	3467 D13	3474 E14	3482 B14	3490 B13	4407 G9	4414 B15	5402 G5	5409 D14	5416 F15	5426 B15	7401 F1	F402 E4	F411 B14	F418 C13	F425 F14	F432 G14	
1402 E14	2405 G5	2412 E4	2419 H9	2426 A13	2433 F13	2440 H13	2448 A8	3408 E6	3415 F7	3423 F8	3430 D10	3437 I3	3444 H10	3451 A14	3454 A14	3461 G14	3468 D13	3475 F14	3483 H14	3491 B12	4408 I3	4415 B15	5403 G6	5410 D14	5417 F15	5427 B15	7402 H8	F403 E4	F412 B14	F419 D13	F426 F14	F433 H14	
1403 E15	2406 G5	2413 E4	2420 H0	2427 H13	2434 F13	2441 C13	3401 F1	3409 F6	3416 G7	3424 G9	3431 D10	3438 H14	3445 H0	3452 A14	3455 A14	3462 C12	3469 D13	3476 F14	3484 H14	3492 A7	4409 B15	4416 C15	5404 B10	5411 D14	5421 B15	5428 C15	7403 G4	F404 H3	F413 B14	F420 D13	F427 F14	F434 H14	



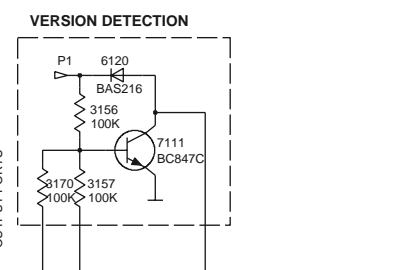
COMBI BOARD - CIRCUIT DIAGRAM (TUNER PART)



VERSION PROGRAMMING COMPONENTS

VERSION	6120	3156	3157	3170	7111
/00 /02 FM/MW/LW					
/00 /02 FM/MW					
/01 FM/MW					
/14 FM-OIRT/MW					
/17 FM/AM					
/06 J APAN					

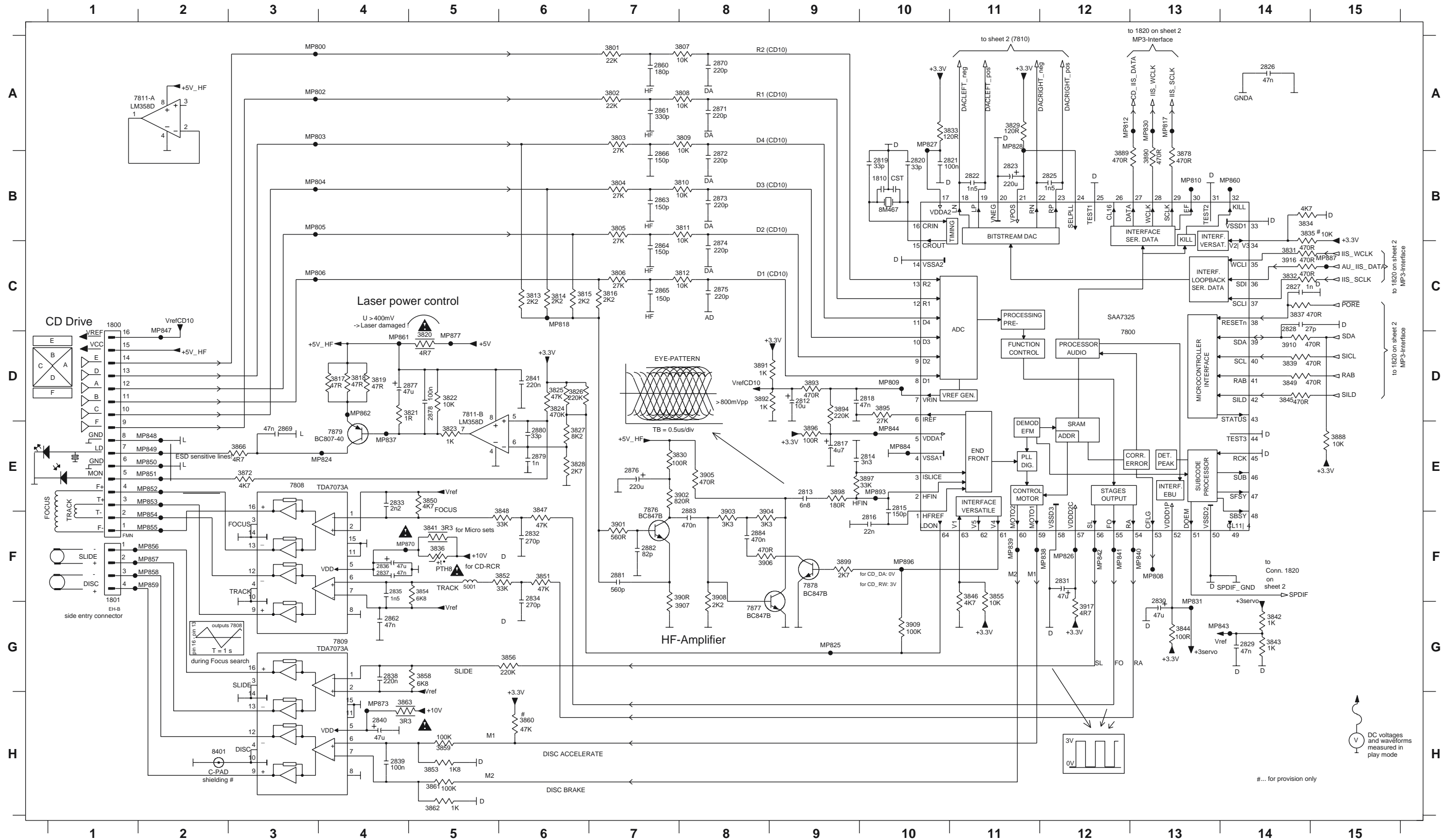
component mounted



- 1105 A2
- 1121 H20
- 1122 G20
- 2101 B5
- 2103 D9
- 2104 A4
- 2106 C5
- 2107 H6
- 2108 H4
- 2109 H4
- 2110 C4
- 2111 C4
- 2112 C3
- 2119 K8
- 2120 K8
- 2122 L8
- 2123 L8
- 2124 L8
- 2125 K8
- 2126 G10
- 2127 G10
- 2128 C11
- 2129 D10
- 2130 H7
- 2131 I11
- 2132 H11
- 2133 I12
- 2134 M12
- 2135 M12
- 2136 K20
- 2137 K19
- 2138 H12
- 2139 I13
- 2140 J14
- 2141 I14
- 2144 H17
- 2145 G16
- 2146 F18
- 2147 F17
- 2148 F17
- 2149 K10
- 2150 A14
- 2152 G6
- 2153 G7
- 2155 E8
- 2159 H9
- 2161 D16
- 2163 E16
- 2164 I14
- 2165 D10
- 2166 F16
- 2167 F16
- 2169 J11
- 2186 K19
- 2187 K17
- 2188 M17
- 2189 M18
- 2190 I16
- 2191 J16
- 2192 J16
- 2193 J16
- 2194 J15
- 2195 J14
- 2198 K16
- 2197 K15
- 3101 G6
- 3102 E6
- 3103 D9
- 3104 A10
- 3105 C8
- 3106 C3
- 3107 D4
- 3108 E3
- 3109 F4
- 3113 B12
- 3119 A13
- 3123 K4
- 3125 K3
- 3128 L5
- 3132 K7
- 3134 K9
- 3137 L10
- 3141 F10
- 3142 F9
- 3143 J10
- 3144 J11
- 3145 I12
- 3152 K20
- 3153 K19
- 3155 H17
- 3156 D18
- 3158 G18
- 3159 F18
- 3160 F17
- 3161 E18
- 3166 H18
- 3167 H17
- 3169 F16
- 3170 D17
- 3176 J9
- 3180 L5
- 3181 G8
- 3186 I19
- 3187 K18
- 3188 K17
- 3189 K17
- 3190 K17
- 3191 L17
- 3192 L18
- 3193 M18
- 3194 M18
- 3195 M18
- 3196 M15
- 4101 G3
- 4102 G3
- 4104 L7
- 4105 B12
- 4109 D5
- 4110 D5
- 5102 G4
- 5103 H3
- 5109 B3
- 5110 B14
- 5111 A11
- 5112 B16
- 5114 C16
- 5119 J13
- 5121 F16
- 5122 L7
- 5123 J7
- 5130 G8
- 5131 E9
- 5139 B4
- 6105-1 C6
- 6105-2 J8
- 6106 C6
- 6120 C18
- 6130 F7
- 6131 E7
- 6181 J16
- 6182 J15
- 6183 K14
- 7101 C11
- 7102 D9
- 7103 K10
- 7104 E4
- 7105 E4
- 7109 K5
- 7111 D18
- 7119 B12
- 7122 L6
- 7124 L9
- 7180 K18
- 7181 L18
- 7182 L15
- 7183 K16
- T102 A2
- T103 B2
- T109 C
- T110 J
- T111 G
- T112 H
- T113 A
- T114 B
- T116 K
- T117 L
- T118 M
- T120 N
- T121 N
- T122 N
- T123 N
- T124 N
- T125 N
- T126 N
- T127 N
- T128 N

COMBI BOARD - CIRCUIT DIAGRAM (CD PART 1)

1800 C1	2816 F10	2823 B11	2831 F12	2838 G4	2863 B7	2872 B8	2879 E6	3802 A7	3809 A8	3816 C7	3823 E5	3830 E7	3837 C14	3846 F11	3853 H5	3861 H5	3889 B12	3896 E9	3904 F8	3916 C14	7811-B D5	MP802 A3	MP810 B13	MP827 A10	MP840 F13	MP849 E2	MP856 F2	MP870 F4
1801 G1	2817 E9	2825 B12	2832 F6	2839 H4	2864 C7	2873 B8	2880 E6	3803 A7	3810 B8	3817 D3	3824 D6	3831 C14	3839 D14	3847 E6	3854 F5	3862 H5	3890 B13	3897 E10	3905 E8	3917 G12	7876 F7	MP803 A3	MP812 A12	MP828 A11	MP841 F12	MP850 E2	MP857 F2	MP873 H4
1810 B10	2818 D9	2826 A14	2833 E4	2840 H4	2865 C7	2874 C8	2881 F7	3804 B7	3811 B8	3818 D4	3825 D6	3832 C14	3841 F5	3848 F6	3855 F11	3863 H4	3891 D8	3898 E9	3906 F8	5001 F5	7800 C12	MP804 B3	MP817 A13	MP830 A13	MP842 F12	MP851 E2	MP858 F2	MP877 D5
2812 D9	2819 B10	2827 C14	2834 G6	2841 D6	2866 B7	2875 C8	2882 F7	3805 B7	3812 C8	3819 D4	3826 D6	3833 A10	3842 G14	3849 D14	3856 G6	3866 E3	3892 D8	3899 F9	3907 F7	7808 C12	7878 F9	MP805 B3	MP818 C6	MP831 G13	MP843 G13	MP852 E2	MP859 F2	MP884 E10
2813 E9	2820 B10	2828 C14	2835 F4	2860 A7	2869 E3	2876 E7	2883 F8	3806 C7	3813 C6	3820 D5	3827 E6	3834 B14	3843 G14	3850 E5	3858 G5	3872 E3	3893 D9	3901 F7	3908 F8	7808 E3	7879 E4	MP806 C3	MP824 E4	MP837 E4	MP844 E10	MP853 E2	MP860 B14	MP887 C15
2814 E9	2821 B10	2829 G14	2836 F4	2861 A7	2870 A8	2877 D4	2884 F8	3807 A8	3814 C6	3821 D4	3828 E6	3835 B14	3844 G14	3851 F6	3859 H5	3878 B13	3894 D9	3902 E7	3909 G10	7809 G4	8401 H2	MP807 F13	MP825 G9	MP838 F12	MP847 D2	MP854 F2	MP861 D4	MP889 E10
2815 E10	2822 B11	2830 G13	2837 F4	2862 G4	2871 A8	2878 D5	3801 A7	3808 A8	3815 C6	3822 D5	3829 A11	3836 F5	3845 D14	3852 F6	3860 H6	3888 E15	3895 D10	3903 F8	3910 D14	7811-A A2	MP800 A3	MP809 D10	MP826 F12	MP839 F11	MP848 E2	MP855 F2	MP862 D4	MP896 F10

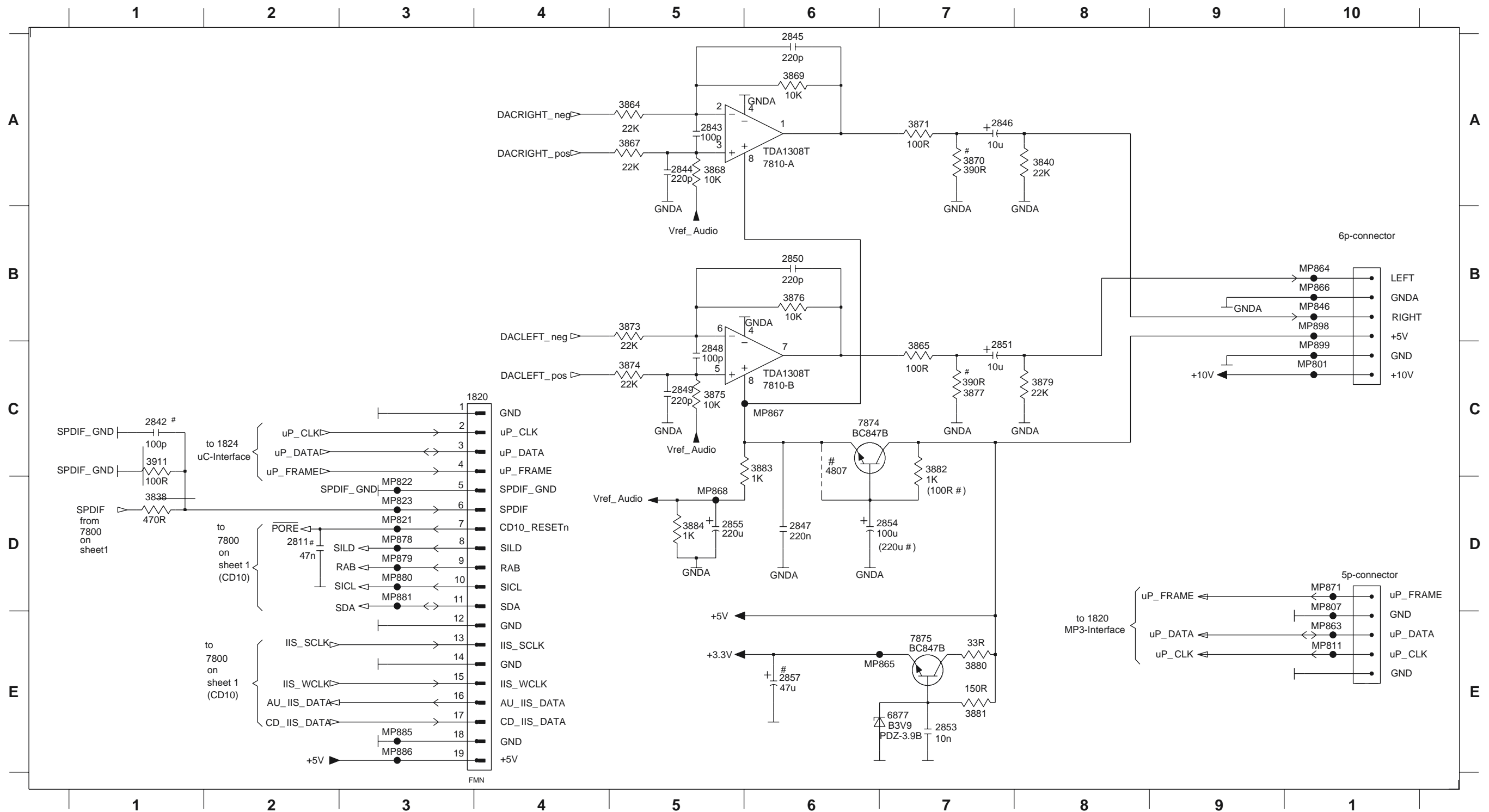


DC voltages and waveforms measured in play mode

#... for provision only

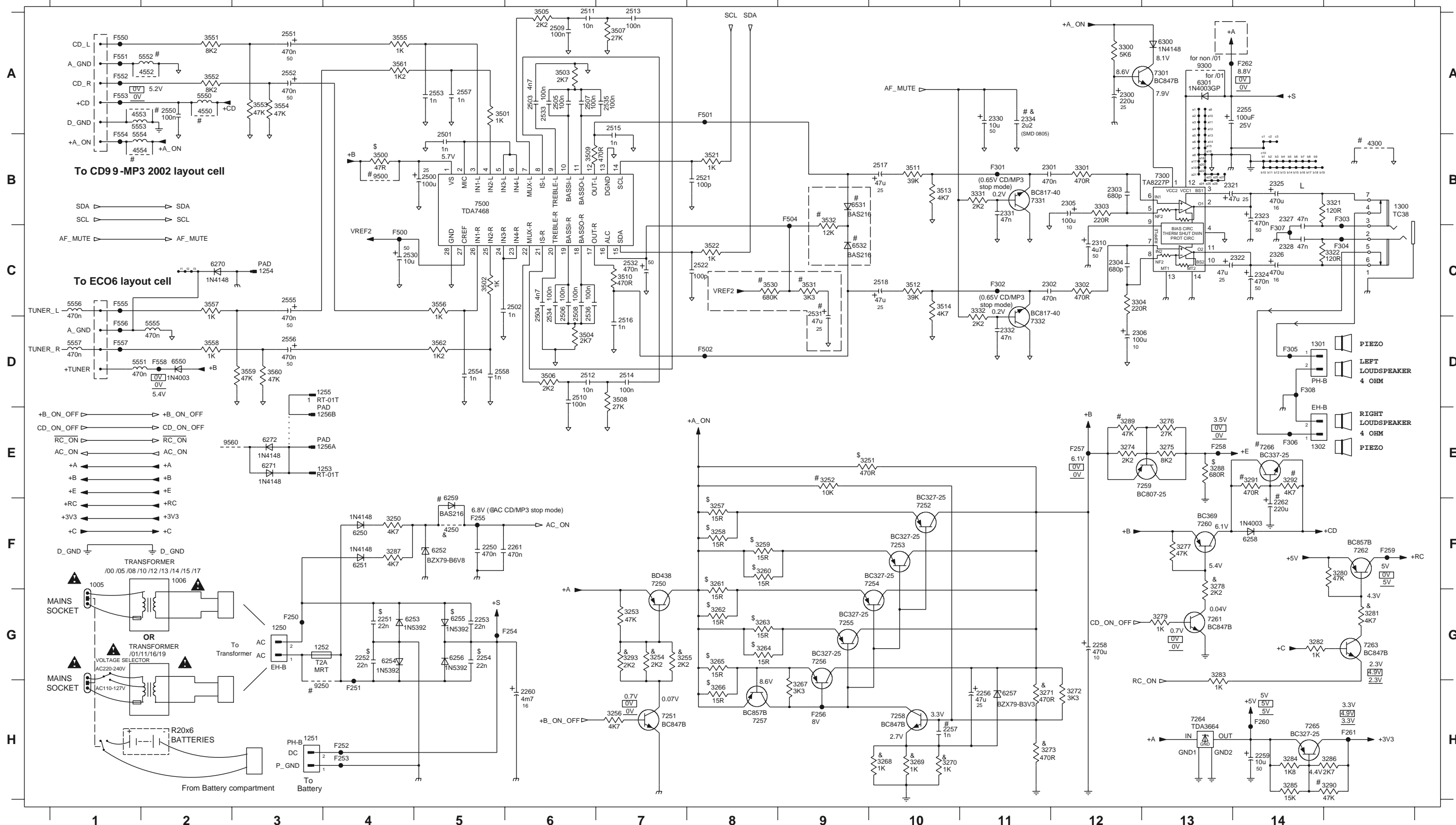
COMBI BOARD - CIRCUIT DIAGRAM (CD PART 2)

1820 C3	2844 A5	2848 C5	2853 E7	3838 D1	3867 A5	3871 A7	3876 B6	3881 E7	3911 C1	7810-B C6	MP807 D10	MP823 D3	MP865 E7	MP871 D10	MP881 D3	MP899 C10
2811 D2	2845 A6	2849 C5	2854 D6	3840 A7	3868 A5	3873 B5	3877 C7	3882 C7	4807 C6	7874 C7	MP811 E10	MP846 B10	MP866 B10	MP878 D3	MP885 E3	
2842 C1	2846 A7	2850 B6	2855 D5	3864 A5	3869 A6	3874 C5	3879 C7	3883 C5	6877 E7	7875 E7	MP821 D3	MP863 E10	MP867 C6	MP879 D3	MP886 E3	
2843 A5	2847 D6	2851 C7	2857 E6	3865 C7	3870 A7	3875 C5	3880 E7	3884 D5	7810-A A6	MP801 C10	MP822 D3	MP864 B10	MP868 D5	MP880 D3	MP898 B10	



COMBI BOARD - CIRCUIT DIAGRAM (AF PART)

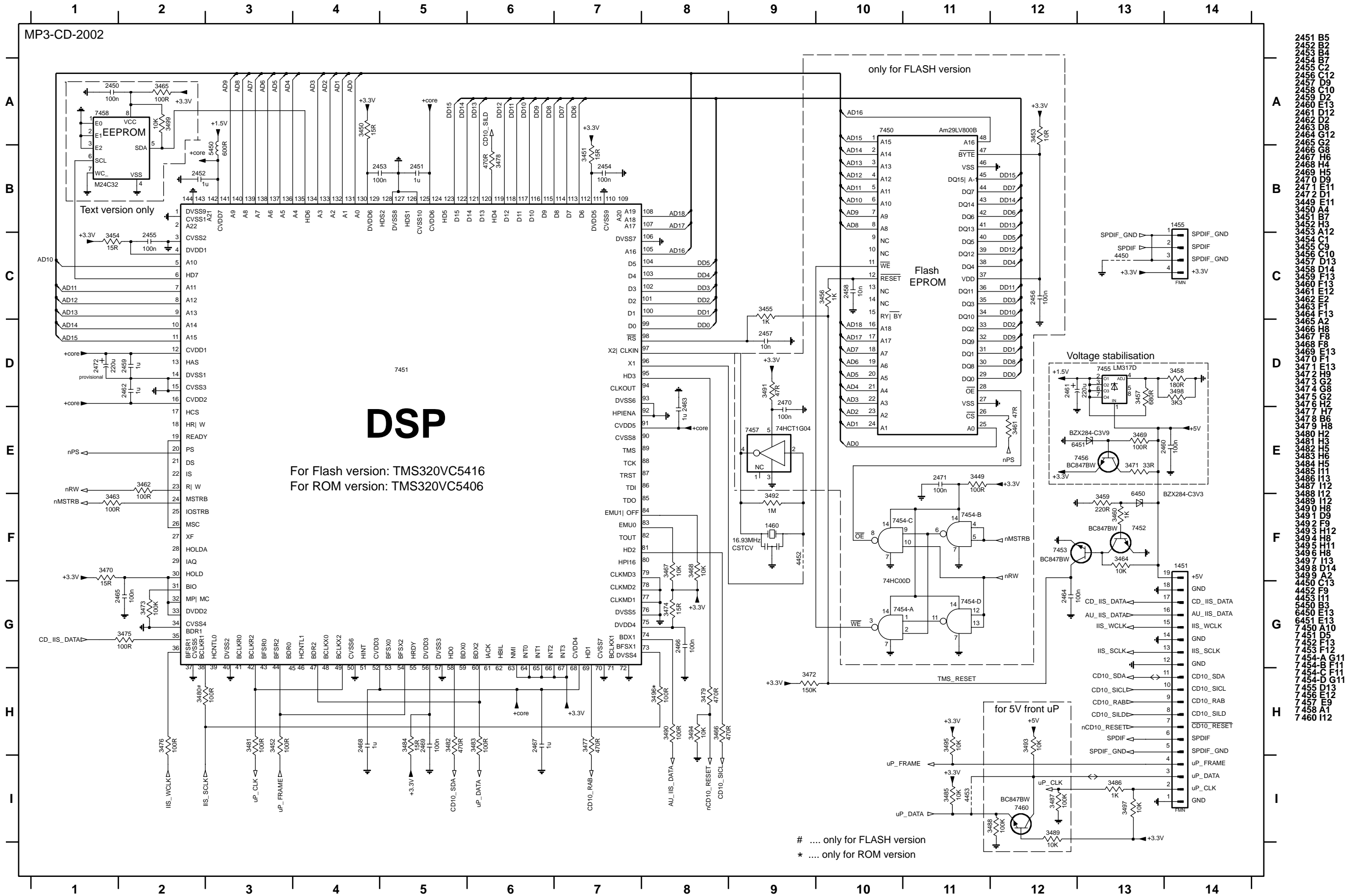
a1 A13	b3 B14	f2 C2	a19 B13	b11 B14	1251 H3	2251 G4	2262 F14	2323 B14	2501 B5	2512 D6	2532 C7	2556 D3	3258 F8	3269 H10	3280 F15	3291 E14	3332 D11	3510 C7	3552 A2	4250 F5	5555 D2	6258 F14	7251 H7	7262 F15	9300 A13	F258 E13	F307 C14	F555 C1
a2 A13	b4 B14	f3 C2	a20 B13	b12 B14	1252 G3	2252 G4	2300 A12	2324 C14	2502 C5	2513 A7	2533 A6	2557 A5	3259 F8	3270 H10	3281 G15	3292 E14	3500 B4	3511 B10	3553 A3	4300 B15	5556 C1	6259 F5	7252 F10	7263 G15	9500 B4	F259 F15	F308 D14	F556 D1
a3 A13	b5 B14	f4 C2	a21 B13	b13 B14	1253 E3	2253 G5	2301 B11	2325 B14	2503 A6	2514 D7	2534 C6	2558 D5	3260 F8	3271 H11	3282 G14	3293 G7	3501 A5	3512 C10	3554 A3	4550 A2	5557 D1	6270 C2	7253 F10	7264 H13	9560 E2	F260 H14	F309 C4	F557 D1
a4 A13	b6 B14	f5 C2	a22 B13	b14 B14	1254 C3	2254 G5	2302 C11	2326 C14	2504 C6	2515 B7	2535 A7	2559 F4	3261 G8	3272 H12	3283 H13	3300 A12	3502 C5	3513 B10	3555 A4	4552 A2	6250 F4	6271 E3	7254 G10	7265 H14	F250 G3	F261 A13	F501 A8	F558 D2
a5 B13	b7 B14	f6 C2	a23 B13	b15 B14	1255 D3	2255 A13	2303 B12	2327 C14	2505 A6	2516 D7	2536 C7	2561 E9	3262 G8	3273 H11	3284 H14	3301 B12	3503 A6	3514 C10	3556 C5	4553 A1	6251 F4	6272 E3	7255 G9	7266 E14	F251 H4	F262 A13	F502 D8	F559 D2
a6 B13	b8 B14	f7 C2	a24 B13	b16 B14	1256 A3	2256 H11	2304 C12	2328 C14	2506 C6	2517 B10	2537 A8	2562 E9	3263 G8	3274 E12	3285 H14	3302 C12	3504 D6	3521 B8	3557 C2	4554 B1	6252 F5	6300 A13	7256 H9	7300 C13	F252 H4	F301 B11	F504 C9	F560 A1
a7 B13	b9 B14	f8 C2	a25 B13	b17 B14	1256 B3	2257 H10	2305 B12	2330 A11	2507 A6	2518 C10	2538 A9	2563 G7	3264 G8	3275 E13	3286 H15	3303 B12	3505 A6	3522 C8	3558 D2	5550 A2	6253 G4	6301 A13	7257 H8	7301 A12	F253 H4	F302 C11	F505 A1	F561 A1
a8 B13	c1 B14	f9 C2	a26 B13	b18 B14	1300 C15	2258 G12	2306 D12	2331 B11	2508 C6	2521 B8	2539 A3	2564 G7	3265 G8	3276 E13	3287 F4	3304 C12	3506 D6	3530 C8	3559 D3	5551 D1	6254 G4	6331 B9	7258 H10	7331 B11	F254 G5	F303 C15	F551 A1	F562 A1
a9 A13	c2 B14	f10 C2	a27 B13	b19 B14	1301 D14	2259 H14	2310 C12	2332 D11	2509 A6	2522 C8	2553 A5	2565 G7	3266 H8	3277 F13	3288 E13	3321 B14	3507 A7	3531 C9	3560 D3	5552 A2	6255 G5	6332 C9	7259 E13	7332 D11	F255 F5	F304 C15	F552 A1	F563 A1
b1 B14	c3 B14	f11 C2	a28 B13	c10 B14	1302 E14	2260 H6	2312 B13	2334 A11	2510 D6	2530 C4	2554 D5	2566 H7	3267 H9	3278 G13	3289 E12	3322 C14	3508 D7	3532 C9	3561 A4	5553 A1	6256 G5	6550 D2	7260 F13	7500 B6	F256 H9	F305 D14	F553 A1	F564 B1
b2 B14	f1 C2	a18 B13	b10 B14	1250 G3	2250 F5	2261 F5	2322 C13	2500 B5	2511 A6	2531 D9	2555 C3	3257 F8	3268 H10	3279 G13	3290 H15	3331 B11	3509 B6	3551 A2	3562 D5	5554 B1	6257 H11	7250 G7	7261 G13	9250 H3	F257 E12	F306 E14	F554 B1	F565 B1



V DC CD/MP3 Stop Mode
 V AC Standby Mode
 V DC Standby Mode

- forseen only & - 0805 \$ - Axial or Radial type (RESISTOR & CAPACITOR)

CIRCUIT DIAGRAM - MP3CD2002 BOARD

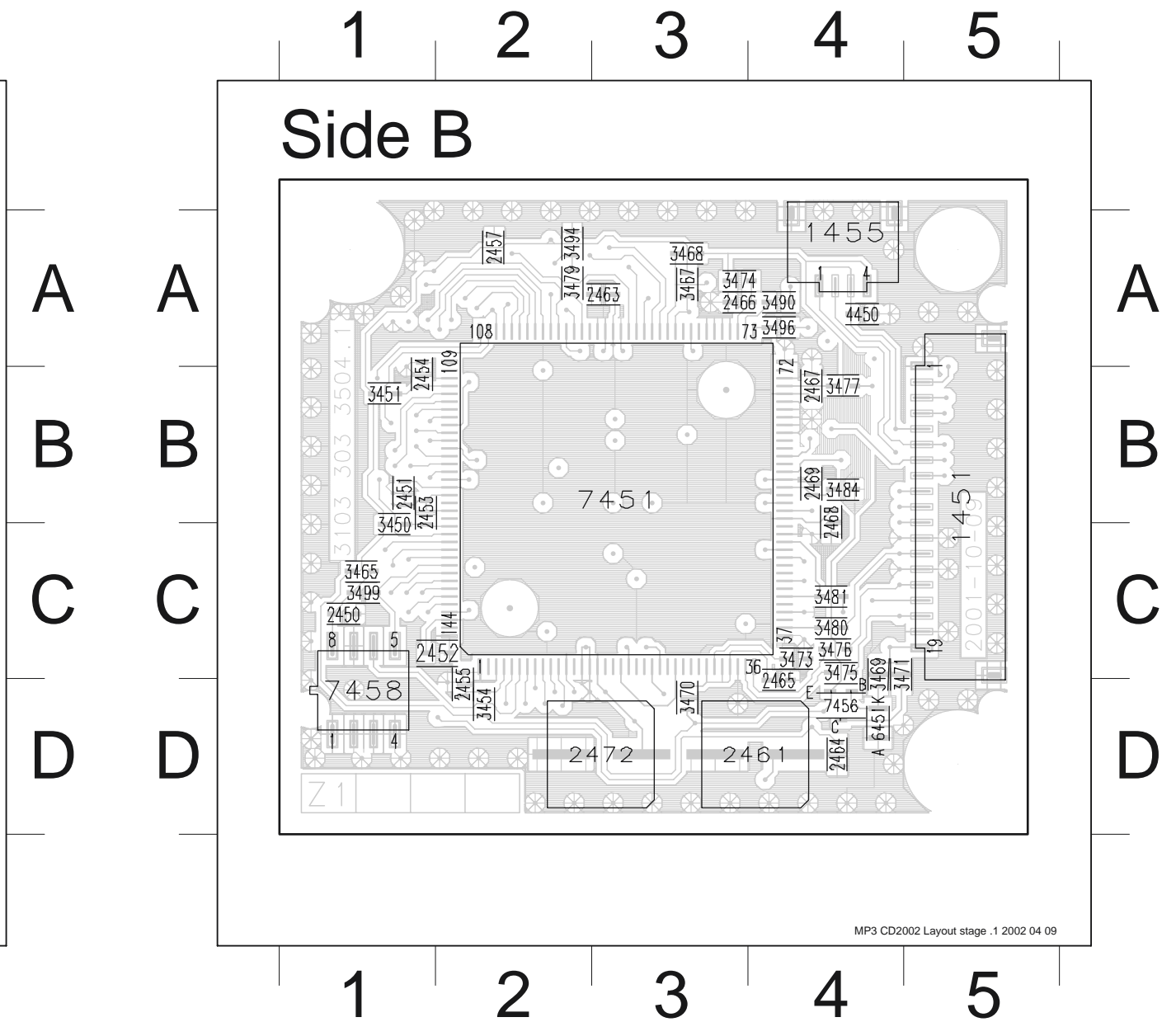
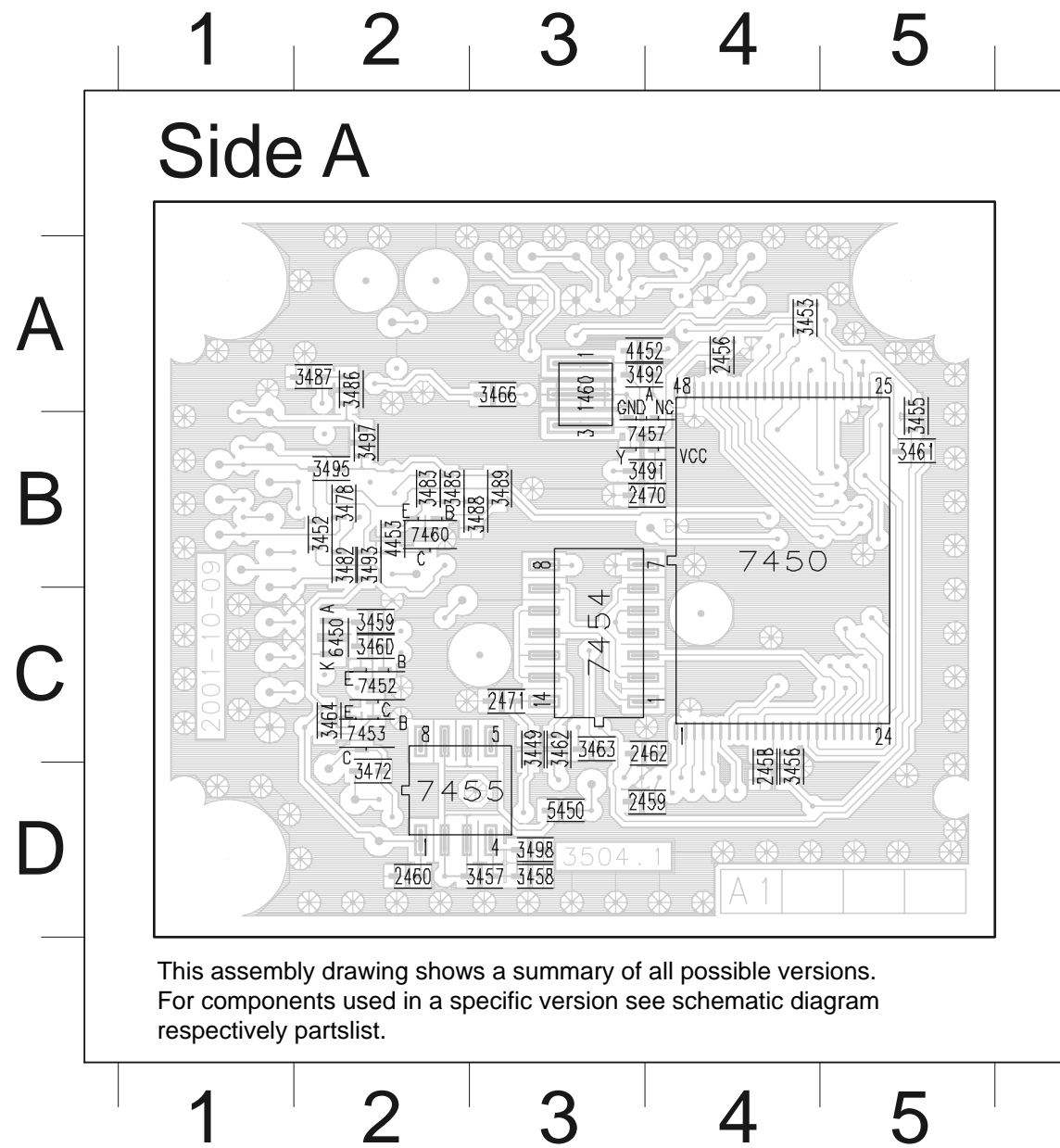


- 2451 B5
- 2452 B2
- 2453 B4
- 2454 E7
- 2455 C2
- 2456 C12
- 2457 D9
- 2458 C10
- 2459 D2
- 2460 E13
- 2461 D12
- 2462 D2
- 2463 D8
- 2464 G12
- 2465 C2
- 2466 G8
- 2467 H6
- 2468 H4
- 2469 H5
- 2470 D9
- 2471 E11
- 2472 D1
- 3449 E11
- 3450 A4
- 3451 B7
- 3452 A12
- 3453 A11
- 3454 C1
- 3455 C9
- 3456 C10
- 3457 D13
- 3458 D14
- 3459 F13
- 3460 F13
- 3461 E12
- 3462 E2
- 3463 F13
- 3464 F13
- 3465 A2
- 3466 H8
- 3467 F8
- 3468 F8
- 3469 F13
- 3470 F13
- 3471 E13
- 3472 H9
- 3473 G2
- 3474 G8
- 3475 G2
- 3476 G2
- 3477 H7
- 3478 B6
- 3479 H8
- 3480 H2
- 3481 H3
- 3482 H5
- 3483 H6
- 3484 H5
- 3485 I11
- 3486 I13
- 3487 I12
- 3488 I12
- 3489 I12
- 3490 H8
- 3491 D9
- 3492 F9
- 3493 H12
- 3494 H8
- 3495 H11
- 3496 H8
- 3497 I13
- 3498 D14
- 3499 A2
- 4450 C13
- 4452 F9
- 4453 I11
- 5450 B3
- 6450 E13
- 6451 E13
- 7450 A10
- 7451 D5
- 7452 F13
- 7453 F12
- 7454-A G11
- 7454-B F11
- 7454-C G11
- 7455 D13
- 7456 E12
- 7457 E9
- 7458 A1
- 7460 I12

LAYOUT DIAGRAM - MP3CD2002 BOARD

1460 A3	3449 C3	3460 C2	3482 B2	3492 A3	6450 C2
2456 A4	3452 B2	3461 B5	3483 B2	3493 B2	7450 B4
2458 D4	3453 A4	3462 C3	3485 B2	3495 B2	7452 C2
2459 D4	3455 B5	3463 C3	3486 A2	3497 B2	7453 C2
2460 D2	3456 D4	3464 C2	3487 A2	3498 D3	7454 C3
2462 C4	3457 D3	3466 A3	3488 B3	4452 A3	7455 D2
2470 B4	3458 D3	3472 D2	3489 B3	4453 B2	7457 B4
2471 C3	3459 C2	3478 B2	3491 B4	5450 D3	7460 B2

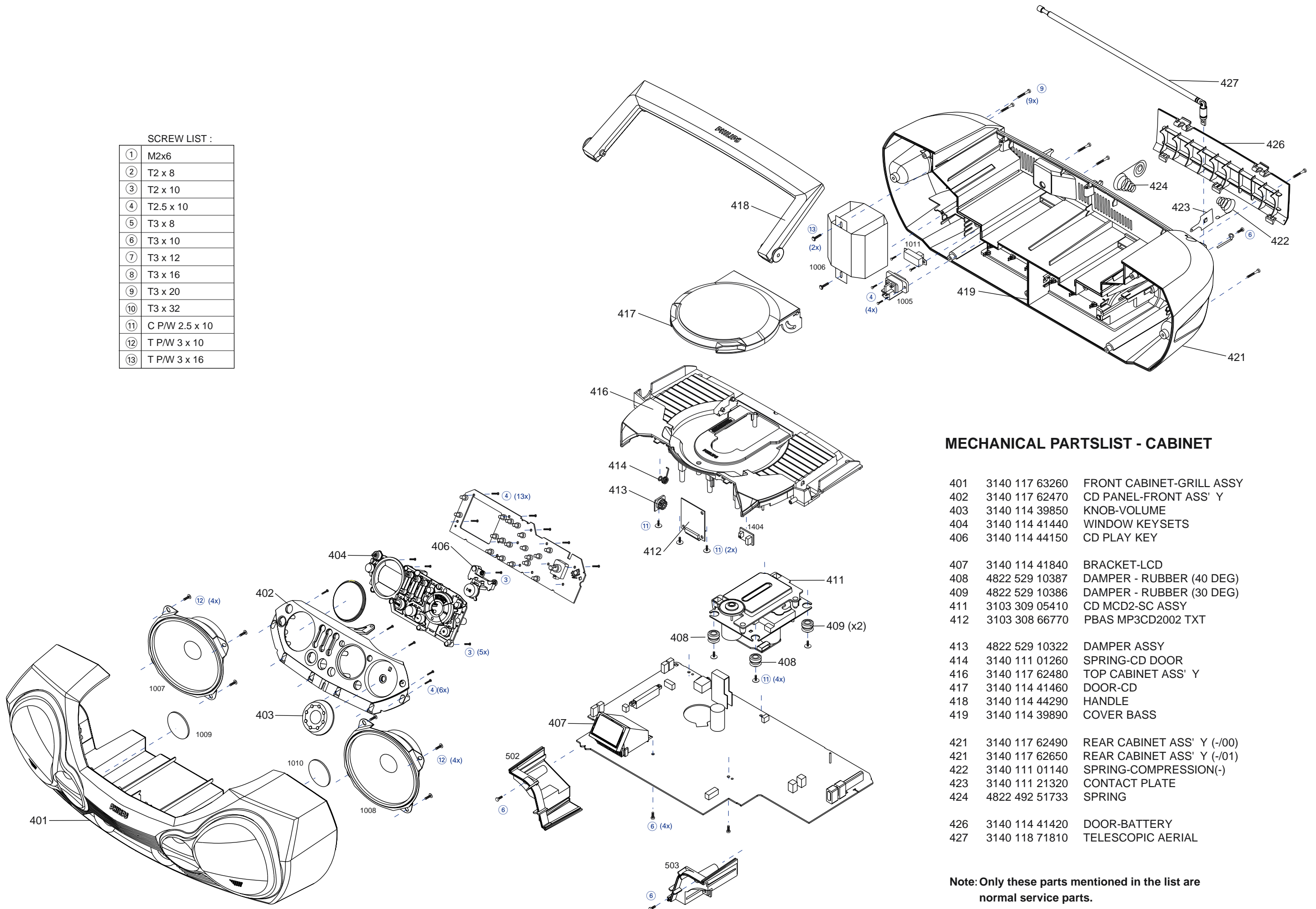
1451 B5	2457 A2	2469 B4	3469 C4	3479 A2	4450 A4
1455 A4	2461 D4	2472 D3	3470 D3	3480 C4	6451 D4
2450 C1	2463 A3	3450 C1	3471 C4	3481 C4	7451 B3
2451 B1	2464 D4	3451 B1	3473 C4	3484 B4	7456 D4
2452 C2	2465 D4	3454 D2	3474 A3	3490 A4	7458 D1
2453 B1	2466 A3	3465 C1	3475 C4	3494 A2	
2454 B1	2467 B4	3467 A3	3476 C4	3496 A4	
2455 D2	2468 B4	3468 A3	3477 B4	3499 C1	



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 - CABINET

401	3140 117 63260	FRONT CABINET-GRILL ASSY
402	3140 117 62470	CD PANEL-FRONT ASS' Y
403	3140 114 39850	KNOB-VOLUME
404	3140 114 41440	WINDOW KEYSSETS
406	3140 114 44150	CD PLAY KEY
407	3140 114 41840	BRACKET-LCD
408	4822 529 10387	DAMPER - RUBBER (40 DEG)
409	4822 529 10386	DAMPER - RUBBER (30 DEG)
411	3103 309 05410	CD MCD2-SC ASSY
412	3103 308 66770	PBAS MP3CD2002 TXT
413	4822 529 10322	DAMPER ASSY
414	3140 111 01260	SPRING-CD DOOR
416	3140 117 62480	TOP CABINET ASS' Y
417	3140 114 41460	DOOR-CD
418	3140 114 44290	HANDLE
419	3140 114 39890	COVER BASS
421	3140 117 62490	REAR CABINET ASS' Y (-/00)
421	3140 117 62650	REAR CABINET ASS' Y (-/01)
422	3140 111 01140	SPRING-COMPRESSION(-)
423	3140 111 21320	CONTACT PLATE
424	4822 492 51733	SPRING
426	3140 114 41420	DOOR-BATTERY
427	3140 118 71810	TELESCOPIC AERIAL

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

ELECTRICAL PARTSLIST - MP3CD2002 BOARD**- MISCELLANEOUS -**

1451	2422 025 17303	FFC Connector 19P
1460	4822 242 10989	CSTCV16,93MXJ 0C3

- CAPACITORS -

2450	2238 586 59812	100nF +80-20% Y5V 50V
2451	3198 017 41050	1µF Y5V 10V
2452	3198 017 41050	1µF Y5V 10V
2453	2238 586 59812	100nF +80-20% Y5V 50V
2454	2238 586 59812	100nF +80-20% Y5V 50V

2455	2238 586 59812	100nF +80-20% Y5V 50V
2456	2238 586 59812	100nF +80-20% Y5V 50V
2457	5322 126 11583	10nF 10% X7R 50V
2458	5322 126 11583	10nF 10% X7R 50V
2459	3198 017 41050	1µF Y5V 10V

2460	2238 586 59812	100nF +80-20% Y5V 50V
2461	4822 124 81059	220µF 20% 4V
2462	3198 017 41050	1µF Y5V 10V
2463	3198 017 41050	1µF Y5V 10V
2464	2238 586 59812	100nF +80-20% Y5V 50V

2465	2238 586 59812	100nF +80-20% Y5V 50V
2466	2238 586 59812	100nF +80-20% Y5V 50V
2467	3198 017 41050	1µF Y5V 10V
2468	3198 017 41050	1µF Y5V 10V
2469	2238 586 59812	100nF +80-20% Y5V 50V

2470	2238 586 59812	100nF +80-20% Y5V 50V
2471	2238 586 59812	100nF +80-20% Y5V 50V

- RESISTORS -

3449	4822 051 30101	100R 5% 0,062W
3450	4822 117 12971	15R 5% 0,62W
3451	4822 117 12971	15R 5% 0,62W
3452	4822 051 30101	100R 5% 0,062W
3453	4822 051 30109	10R 5% 0,062W

3454	4822 117 12971	15R 5% 0,62W
3455	4822 051 30102	1K 5% 0,062W
3456	4822 051 30102	1K 5% 0,062W
3457	5322 117 13051	680R 1% 0,063W
3458	5322 117 13061	180R 1% 0,063W

3459	4822 051 30221	220R 5% 0,062W
3460	4822 051 30102	1K 5% 0,062W
3461	4822 051 30479	47R 5% 0,062W
3462	4822 051 30101	100R 5% 0,062W
3463	4822 051 30101	100R 5% 0,062W

3464	4822 051 30103	10K 5% 0,062W
3465	4822 051 30101	100R 5% 0,062W
3466	4822 051 30471	470R 5% 0,062W
3467	4822 051 30103	10K 5% 0,062W
3468	4822 051 30103	10K 5% 0,062W

- RESISTORS -

3469	4822 051 30101	100R 5% 0,062W
3470	4822 117 12971	15R 5%
3471	4822 051 30339	33R 5% 0,062W
3472	4822 051 30154	150K 5% 0,062W
3473	4822 117 13632	100K 1% 0,62W

3474	4822 117 12971	15R 5% 0,62W
3475	4822 051 30101	100R 5% 0,062W
3476	4822 051 30101	100R 5% 0,062W
3477	4822 051 30471	470R 5% 0,062W
3478	4822 051 30471	470R 5% 0,062W

3479	4822 051 30471	470R 5% 0,062W
3480	4822 051 30101	100R 5% 0,062W
3481	4822 051 30101	100R 5% 0,062W
3482	4822 051 30471	470R 5% 0,062W
3483	4822 051 30101	100R 5% 0,062W

3484	4822 117 12971	15R 5% 0,62W
3485	4822 051 30103	10K 5% 0,062W
3486	4822 051 30101	100R 5% 0,062W
3490	4822 051 30101	100R 5% 0,062W
3491	4822 051 30479	47R 5% 0,062W

3492	4822 051 30105	1M 5% 0,062W
3494	4822 051 30103	10K 5% 0,062W
3495	4822 051 30103	10K 5% 0,062W
3497	4822 051 30103	10K 5% 0,062W
3498	4822 051 30332	3,3K 5% 0,062W

3499	4822 051 30103	10K 5% 0,062W
4450	4822 051 30008	0R J UMPER
4453	4822 051 30008	0R J UMPER

- COILS & FILTERS -

5450	4822 157 11074	100µH
------	----------------	-------

- DIODES -

6450	4822 130 11411	BZX284-C3V3
6451	4822 130 11366	BZX284-C3V9

- IC & TRANSISTORS -

7451	9322 170 91671	TMS320DA150PGE160
7452	9340 217 70115	BC847BW
7453	9340 217 70115	BC847BW
7454	4822 130 34174	BZX79-B4V7
7455	4822 209 17108	LM317LD
7456	9340 217 70115	BC847BW
7457	9352 456 50115	HC1G04
7458	9322 130 41668	M24C64-WMN6

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

ELECTRICAL PARTSLIST - COMBI BOARD

- MISCELLANEOUS -

1002	3103 308 66770	PBAS 8 MP3CD2002
1004	2422 264 00448	LOUDSPEAKER 4R 6W
1005	2422 264 00448	LOUDSPEAKER 4R 6W
1006	2422 264 00456	TWEETER D25
1007	2422 264 00456	TWEETER D25
1008	△ 3140 118 33440	TRANSFORMER 230V (-/00)
1008	△ 3140 118 33451	TANSFORMER 110V (-/01)
1009	△ 2422 030 00333	AC SOCKET 2P
1010	△ 2422 127 00453	VOLTAGE SELECTOR (-/01)
1106	3140 114 50050	ANTENNA BAR 80MM (-/00)
1106	2422 549 44211	FERRITE 5X13X55 (-/01)
1252	△ 2422 086 10783	FUSE RAD LT2A250V
1300	2422 026 05076	CON BM PHONE H1P F3,5
1400	4822 265 11208	FCC CONNECTOR H 10P
1403	4822 276 12889	MICRO SWITCH (CD DOOR)
1405	3140 110 51460	LCD PANEL
1700	4822 265 11208	FCC CONNECTOR H 10P
1701	2422 128 02922	SWITCH TACT 1P
1702	2422 129 16349	ROT ENCODER 24P
1703	2422 128 02922	SWITCH TACT 1P
1704	2422 128 02922	SWITCH TACT 1P
1705	2422 128 02922	SWITCH TACT 1P
1706	2422 128 02922	SWITCH TACT 1P
1707	2422 128 02922	SWITCH TACT 1P
1708	2422 128 02922	SWITCH TACT 1P
1709	2422 128 02922	SWITCH TACT 1P
1710	2422 128 02922	SWITCH TACT 1P
1711	2422 128 02922	SWITCH TACT 1P
1712	2422 128 02922	SWITCH TACT 1P
1713	2422 128 02922	SWITCH TACT 1P
1714	2422 128 02922	SWITCH TACT 1P
1715	2422 128 02922	SWITCH TACT 1P
1716	2422 128 02922	SWITCH TACT 1P
1717	2422 128 02922	SWITCH TACT 1P
1718	2422 128 02922	SWITCH TACT 1P
1719	2422 128 02922	SWITCH TACT 1P
1720	4822 265 11183	FCC CONNECTOR H 4P
1721	4822 267 10733	FCC CONNECTOR V 4P
1800	4822 267 11028	FCC CONNECTOR H 16P
1810	2422 540 98519	RES CER 8MHZ467
8401	3139 111 01650	FFC FOIL 10P/120/10P
8411	3140 110 22200	HEAT SEAL 32P40MM
8412	3139 110 35250	FFC FOIL 04P/120/04P
8801	3140 110 22270	FFC FOIL 19P/50/19P
8802	3103 308 93040	FFC FOIL 6P

- CAPACITORS -

2101	4822 126 11785	47pF 5% NP0 50V
2103	5322 126 11578	1nF 10% X7R 50V
2104	2020 552 94427	100pF 5% NP0 50V
2106	2020 800 00191	CTRM 3-11pF N450
2107	4822 121 51319	1µF 10% 63V
2110	2020 552 94427	100pF 5% NP0 50V
2111	2222 867 15339	33 pF 5% NP0 50V
2120	4822 122 33761	22pF 5% NP0 50V (-/00)
2120	3198 016 31890	18pF NP0 50V (-/01)
2122	5322 126 11579	3,3nF 10% X7R 63V
2123	2238 861 18391	390pF 1% NP0 50V
2124	3198 017 32230	22nF X7R 25V (-/01)
2125	2238 861 18561	560pF 1% NP0 50V
2126	4822 126 14241	330pF NP0 50V
2127	4822 126 13879	220nF +80-20% 16V
2128	4822 124 40248	10µF 20% 63V
2129	4822 124 41584	100µF 20% 10V
2130	3198 017 44740	470nF Y5V 10V
2131	3198 017 44740	470nF Y5V 10V
2132	3198 017 44740	470nF Y5V 10V
2133	4822 124 21913	1µF 20% 63V
2134	3198 017 31530	15nF X7R 50V
2135	3198 017 31530	15nF X7R 50V
2136	4822 126 13879	220nF +80-20% 16V
2137	4822 126 13879	220nF +80-20% 16V
2138	4822 124 22652	2,2µF 20% 50V
2139	4822 122 33752	15pF 5% NP0 50V
2140	4822 126 14226	82pF 5% NP0 50V
2141	2238 586 59812	100nF +80-20% Y5V 50V
2144	3198 017 44740	470nF Y5V 10V
2145	4822 126 13883	220pF 5% 50V
2146	4822 122 33575	220pF 5% NP0 63V
2147	4822 126 13883	220pF 5% 50V
2148	4822 126 14238	2,2nF X7R 50V
2150	4822 126 14585	100nF 10% X7R 50V
2152	4822 126 14549	33nF 16V X7R
2153	4822 122 33752	15pF 5% NP0 50V
2155	2020 800 00191	CTRM 3-11pF N450
2159	2222 867 15339	33pF 5% NP0 50V
2163	2238 586 59812	100nF +80-20% Y5V 50V
2164	3198 017 44740	470nF Y5V 10V
2165	2238 586 59812	100nF +80-20% Y5V 50V
2166	5322 126 11578	1nF 10% X7R 50V
2167	4822 126 11663	12pF 1%
2186	4822 124 40196	220µF 20% 16V
2187	5322 126 11583	10nF 10% X7R 50V
2188	5322 126 11583	10nF 10% X7R 50V
2189	4822 126 13879	220nF +80-20% 16V
2190	4822 124 81151	22µF 50V
2191	4822 124 81151	22µF 50V

ELECTRICAL PARTSLIST - COMBI BOARD**- CAPACITORS -**

2192	5322 126 11578	1nF 10% X7R 50V
2193	5322 126 11578	1nF 10% X7R 50V
2194	5322 126 11578	1nF 10% X7R 50V
2195	4822 124 81151	22µF 50V
2196	5322 126 11583	10nF 10% X7R 50V
2197	5322 126 11583	10nF 10% X7R 50V
2250	3198 017 44740	470nF Y4V 10V
2251	4822 126 11585	22nF +80-20% Y5V 25V
2252	4822 126 11585	22nF +80-20% Y5V 25V
2253	4822 126 11585	22nF +80-20% Y5V 25V
2254	4822 126 11585	22nF +80-20% Y5V 25V
2255	4822 124 40207	100µF 20% 25V
2256	4822 124 40433	47µF 20% 25V
2258	4822 124 80195	470µF 20% 10V
2259	4822 124 40248	10µF 20% 63V
2260	4822 124 11878	4700µF 16V
2261	3198 017 44740	470nF Y5V 10V
2300	4822 124 80875	220µF 20% 25V
2301	3198 017 44740	470nF Y5V 10V
2302	3198 017 44740	470nF Y5V 10V
2303	4822 126 13909	680pF 10% X7R 50V
2304	4822 126 13909	680pF 10% X7R 50V
2305	4822 124 41584	100µF 20% 10V
2306	4822 124 41584	100µF 20% 10V
2310	4822 124 40769	4,7µF 20% 100V
2321	4822 124 40433	47µF 20% 25V
2322	4822 124 40433	47µF 20% 25V
2323	4822 124 41407	0,47µF 20% 63V
2324	4822 124 41407	0,47µF 20% 63V
2325	4822 124 80791	470µF 16V 20%
2326	4822 124 80791	470µF 16V 20%
2327	3198 017 34730	47nF X7R 16V
2328	3198 017 34730	47nF X7R 16V
2330	4822 124 40248	10µF 20% 63V
2331	3198 024 44730	47nF Y5V 50V
2332	3198 024 44730	47nF Y5V 50V
2400	2238 586 59812	100nF +80-20% Y5V 50V
2401	4822 124 41584	100µF 20% 10V
2402	2238 586 59812	100nF +80-20% Y5V 50V
2403	2238 586 59812	100nF +80-20% Y5V 50V
2404	4822 124 21913	1µF 20% 63V
2405	4822 122 33752	15pF 5% NP0 50V
2406	4822 122 33752	15pF 5% NP0 50V
2407	4822 126 14225	56pF 5% NP0 50V
2408	5322 126 11583	10nF 10% X7R 50V
2411	4822 124 21913	1µF 20% 63V
2412	2238 586 59812	100nF +80-20% Y5V 50V
2413	2238 586 59812	100nF +80-20% Y5V 50V
2414	2238 586 59812	100nF +80-20% Y5V 50V
2415	2238 586 59812	100nF +80-20% Y5V 50V

- CAPACITORS -

2416	2238 586 59812	100nF +80-20% Y5V 50V
2418	5322 12611583	10nF 10% X7R 50V
2419	2238 586 59812	100nF +80-20% Y5V 50V
2420	2020 552 94427	100pF 5% NP0 50V
2421	2020 552 94427	100pF 5% NP0 50V
2422	4822 124 41584	100µF 20% 10V
2423	2238 586 59812	100nF +80-20% Y5V 50V
2424	5322 126 11583	10nF 10% X7R 50V
2425	5322 126 11583	10nF 10% X7R 50V
2426	5322 126 11583	10nF 10% X7R 50V
2427	4822 126 13881	470pF 5% 50V
2428	2020 552 94427	100pF 5% NP0 50V
2429	2020 552 94427	100pF 5% NP0 50V
2430	2020 552 94427	47pF 5% NP0 50V
2431	2020 552 94427	100pF 5% NP0 50V
2432	4822 126 13883	220pF 5% 50V
2433	4822 126 11785	47pF 5% NP0 50V
2434	4822 126 11785	47pF 5% NP0 50V
2435	5322 126 11583	10nF 10% X7R 50V
2436	4822 126 13881	470pF 5% 50V
2437	2020 552 94427	47pF 5% NP0 50V
2438	4822 126 13881	470pF 5% 50V
2439	4822 126 13881	470pF 5% 50V
2440	4822 126 13881	470pF 5% 50V
2442	5322 126 11583	10nF 10% X7R 50V
2444	4822 126 13881	470pF 5% 50V
2445	4822 126 13881	470pF 5% 50V
2500	4822 124 40207	100µF 20% 25V
2501	3198 016 31020	1nF NP0 25V
2502	3198 016 31020	1nF NP0 25V
2503	4822 126 13193	4,7nF 10% X7R 63V
2504	4822 126 13193	4,7nF 10% X7R 63V
2505	2238 586 59812	100nF +80-20% Y5V 50V
2506	2238 586 59812	100nF +80-20% Y5V 50V
2507	2238 586 59812	100nF +80-20% Y5V 50V
2508	2238 586 59812	100nF +80-20% Y5V 50V
2509	2238 586 59812	100nF +80-20% Y5V 50V
2510	2238 586 59812	100nF +80-20% Y5V 50V
2511	5322 12611583	10nF 10% X7R 50V
2512	5322 12611583	10nF 10% X7R 50V
2513	2238 586 59812	100nF +80-20% Y5V 50V
2514	2238 586 59812	100nF +80-20% Y5V 50V
2515	3198 016 31020	1nF NP0 25V
2516	3198 016 31020	1nF NP0 25V
2517	4822 124 40433	47µF 20% 25V
2518	4822 124 40433	47µF 20% 25V
2521	2020 552 94427	100pF 5% NP0 50V
2522	2020 552 94427	100pF 5% NP0 50V
2530	4822 124 40248	10µF 20% 63V
2532	4822 124 41407	0,47µF 20% 63V

ELECTRICAL PARTSLIST - COMBI BOARD**- CAPACITORS -**

2533	2238 586 59812	100nF +80-20% Y5V 50V
2534	2238 586 59812	100nF +80-20% Y5V 50V
2535	2238 586 59812	100nF +80-20% Y5V 50V
2536	2238 586 59812	100nF +80-20% Y5V 50V
2550	2238 586 59812	100nF +80-20% Y5V 50V

2551	4822 124 41407	0,47µF 20% 63V
2552	4822 124 41407	0,47µF 20% 63V
2553	3198 016 31020	1nF NP0 25V
2554	3198 016 31020	1nF NP0 25V
2555	4822 124 41407	0,47µF 20% 63V

2556	4822 124 41407	0,47µF 20% 63V
2557	3198 016 31020	1nF NP0 25V
2558	3198 016 31020	1nF NP0 25V
2700	5322 126 11583	10nF 10% X7R 50V
2701	5322 126 11583	10nF 10% X7R 50V

2702	4822 124 80231	47µF 20% 16V
2703	3198 016 31020	1nF NP0 25V
2704	5322 126 11583	10nF 10% X7R 50V
2812	4822 124 40248	10µF 20% 63V
2813	5322 126 11582	6,8nF 10% X7R 63V

2814	5322 126 11579	3,3nF 10% X7R 63V
2815	4822 122 33753	150pF 5% NP0 50V
2816	4822 126 14494	22nF 10% X7R 25V
2817	4822 124 40769	4,7µF 20% 100V
2818	3198 017 34730	47nF X7R 16V

2821	2238 586 59812	100nF +80-20% Y5V 50V
2822	4822 126 13344	1,5nF 5% 63V
2823	4822 124 42383	220µF 20% 4V
2825	4822 126 13344	1,5nF 5% 63V
2826	3198 017 34730	47nF X7R 16V

2827	5322 126 11578	1nF 10% X7R 50V
2828	4822 126 11669	27pF 1%
2829	3198 017 34730	47nF X7R 16V
2830	4822 124 81286	47µF 20% 16V
2831	4822 124 81286	47µF 20% 16V

2832	4822 126 14506	270pF 5% 50V NP0
2833	4822 126 14238	2,2nF X7R 50V
2834	4822 126 14506	270pF 5% 50V NP0
2835	4822 126 14247	1,5nF X7R 50V
2836	4822 124 40433	47µF 20% 25V

2837	3198 017 34730	47nF X7R 16V
2838	4822 126 13879	220nF +80-20% 16V
2839	2238 586 59812	100nF +80-20% Y5V 50V
2840	4822 124 81286	47µF 20% 16V
2841	4822 126 13879	220nF +80-20% 16V

2843	2020 552 94427	100pF 5% NP0 50V
2844	4822 126 13883	220pF 5% 50V
2845	4822 126 13883	220pF 5% 50V
2846	4822 124 21732	10µF 20% 25V
2847	4822 126 13879	220nF +80-20% 16V

- CAPACITORS -

2848	2020 552 94427	100pF 5% NP0 50V
2849	4822 126 13883	220pF 5% 50V
2850	4822 126 13883	220pF 5% 50V
2851	4822 124 11947	10µF 20% 16V
2853	5322 126 11583	10nF 10% X7R 50V

2854	4822 124 23052	100µF 20% 16V
2855	4822 124 11912	220µF 20% 6,3V
2860	4822 126 14508	180pF 5% 50V NP0
2861	4822 126 14241	330pF NP0 50V
2862	3198 017 34730	47nF X7R 16V

2863	4822 122 33753	150pF 5% NP0 50V
2864	4822 122 33753	150pF 5% NP0 50V
2865	4822 122 33753	150pF 5% NP0 50V
2866	4822 122 33753	150pF 5% NP0 50V
2869	3198 017 34730	47nF X7R 16V

2870	4822 126 13883	220pF 5% 50V
2871	4822 126 13883	220pF 5% 50V
2872	4822 126 13883	220pF 5% 50V
2873	4822 126 13883	220pF 5% 50V
2874	4822 126 13883	220pF 5% 50V

2875	4822 126 13883	220pF 5% 50V
2876	4822 124 40196	220µF 20% 16V
2877	4822 124 40433	47µF 20% 25V
2878	2238 586 59812	100nF +80-20% Y5V 50V
2879	5322 126 11578	1nF 10% X7R 50V

2880	2222 867 15339	33pF 5% NP0 50V
2881	4822 126 14249	560pF 10% X7R 50V
2882	4822 126 14226	82pF 5% NP0 50V
2883	3198 017 44740	470nF Y5V 10V
2884	3198 017 44740	470nF Y5V 10V

- RESISTORS -

3101	4822 051 30333	33K 5% 0,062W
3102	4822 117 13632	100K 1% 0,62W
3103	4822 117 12902	8,2K 1% 0,063W
3104	4822 117 13577	330R1% 1,25W
3105	4822 051 30221	220R 5% 0,062W

3101	4822 051 30333	33K 5% 0,062W
3102	4822 117 13632	100K 1% 0,62W
3103	4822 117 12902	100K 1% 0,63W
3104	4822 117 13577	100K 1% 0,64W
3105	4822 051 30221	100K 1% 0,65W

3106	4822 117 12139	22R 5% 0,062W
3107	4822 051 30475	4,7M 5% 0,062W
3108	4822 051 30222	2,2K 5% 0,062W
3109	4822 051 30222	2,2K 5% 0,062W
3123	4822 051 30472	4,7K 5% 0,062W

ELECTRICAL PARTSLIST - COMBI BOARD**- RESISTORS -**

3125	4822 051 30103	10K 5% 0,062W
3128	4822 051 30222	2,2K 5% 0,062W
3132	4822 051 30479	47R 5% 0,062W
3134	4822 051 30223	22K 5% 0,062W
3137	4822 051 30153	15K 5% 0,062W
3141	4822 051 30563	56K 5% 0,062W
3142	4822 100 12159	100K 30%
3145	4822 051 30222	2,2K 5% 0,062W
3152	4822 051 30471	470R 5% 0,062W
3153	4822 051 30471	470R 5% 0,062W
3155	4822 051 30479	47R 5% 0,062W
3156	3198 021 31040	100K 5% (-/01)
3158	4822 051 30471	470R 5% 0,062W
3159	4822 051 30471	470R 5% 0,062W
3160	4822 051 30471	470R 5% 0,062W
3161	4822 051 20223	22K 5% 0,1W
3166	4822 051 20479	47R 5% 0,1W
3167	4822 051 20479	47R 5% 0,1W
3169	4822 051 20154	150K 5% 0,1W
3170	3198 021 31040	100K 5% (-/01)
3180	4822 051 30103	10K 5% 0,062W
3186	4822 117 11448	180R 1% 0,1W
3187	4822 051 30102	1K 5% 0,062W
3188	4822 051 30222	2,2K 5% 0,062W
3189	4822 051 30223	22K 5% 0,062W
3190	4822 051 30103	10K 5% 0,062W
3191	4822 051 30472	4,7K 5% 0,062W
3192	4822 051 30105	1M 5% 0,062W
3193	4822 051 30222	2,2K 5% 0,062W
3194	4822 117 13632	100K 1% 0,62W
3195	4822 051 30474	470K 5% 0,062W
3196	4822 051 30103	10K 5% 0,062W
3250	4822 051 30472	4,7K 5% 0,062W
3251	4822 116 83883	470R 5% 0,5W
3253	4822 117 12925	47K 1% 0,063W
3254	4822 117 11449	2,2K 5% 0,1W
3255	4822 117 11449	2,2K 5% 0,1W
3256	4822 051 30472	4,7K 5% 0,062W
3257	4822 116 52182	15R 5% 0,5W
3258	4822 116 52182	15R 5% 0,5W
3259	4822 116 52182	15R 5% 0,5W
3260	4822 116 52182	15R 5% 0,5W
3261	4822 116 52182	15R 5% 0,5W
3262	4822 116 52182	15R 5% 0,5W
3263	4822 116 52182	15R 5% 0,5W
3264	4822 116 52182	15R 5% 0,5W
3265	4822 116 52182	15R 5% 0,5W
3266	4822 116 52182	15R 5% 0,5W
3267	4822 051 30332	3,3K 5% 0,062W
3268	4822 051 10102	1K 2% 0,25W

- RESISTORS -

3269	4822 051 10102	1K 2% 0,25W
3270	4822 051 10102	1K 2% 0,25W
3271	4822 051 20471	470R 5% 0,1W
3272	4822 051 30332	3,3K 5% 0,062W
3273	4822 051 20471	470R 5% 0,1W
3274	4822 051 30222	2,2K 5% 0,062W
3275	4822 117 12902	8,2K 1% 0,063W
3276	4822 051 30273	27K 5% 0,062W
3277	4822 117 12925	47K 1% 0,063W
3278	4822 117 11449	2,2K 5% 0,1W
3279	4822 051 30102	1K 5% 0,062W
3280	4822 117 12925	47K 1% 0,063W
3281	4822 051 20472	4,7K 5% 0,1W
3282	4822 051 30102	1K 5% 0,062W
3283	4822 051 30102	1K 5% 0,062W
3284	4822 117 12903	1,8K 1% 0,063W
3285	4822 051 30153	15K 5% 0,062W
3286	4822 051 30272	2,7K 5% 0,062W
3287	4822 051 30472	4,7K 5% 0,062W
3288	4822 116 52228	680R 5% 0,5W
3293	4822 117 11449	2,2K 5% 0,1W
3300	4822 051 30562	5,6K 5% 0,063W
3301	4822 051 30471	470R 5% 0,062W
3302	4822 051 30471	470R 5% 0,062W
3303	4822 051 30221	220R 5% 0,062W
3304	4822 051 30221	220R 5% 0,062W
3321	4822 051 30121	120R 5% 0,062W
3322	4822 051 30121	120R 5% 0,062W
3331	4822 051 30222	2,2K 5% 0,062W
3332	4822 051 30222	2,2K 5% 0,062W
3400	4822 051 20109	10R 5% 0,1W
3401	4822 117 11373	100R 1%
3402	4822 117 12925	47K 1% 0,063W
3403	4822 051 30474	470K 5% 0,062W
3404	4822 117 11817	1,2K 1% 1/16W
3407	4822 051 30332	3,3K 5% 0,062W
3408	4822 051 30102	1K 5% 0,062W
3409	4822 051 30103	10K 5% 0,062W
3410	4822 051 30102	1K 5% 0,062W
3411	4822 051 30102	1K 5% 0,062W
3412	4822 051 30102	1K 5% 0,062W
3413	4822 051 30102	1K 5% 0,062W
3414	4822 051 30102	1K 5% 0,062W
3415	4822 051 30102	1K 5% 0,062W
3416	4822 051 30102	1K 5% 0,062W
3417	4822 051 30471	470R 5% 0,062W
3418	4822 051 30102	1K 5% 0,062W
3419	4822 051 30102	1K 5% 0,062W
3421	4822 051 30102	1K 5% 0,062W
3422	4822 051 30102	1K 5% 0,062W

ELECTRICAL PARTSLIST - COMBI BOARD**- RESISTORS -**

3713	4822 051 30102	1K 5% 0,062W
3714	4822 051 30222	2,2K 5% 0,062W
3715	4822 051 30101	100R 5% 0,062W
3718	4822 051 30102	1K 5% 0,062W
3719	4822 051 30102	1K 5% 0,062W
3720	4822 117 11373	100R 1%
3722	4822 051 30103	10K 5% 0,062W
3723	4822 117 12864	82K 5% 0,6W
3801	4822 051 30223	22K 5% 0,062W
3802	4822 051 30223	22K 5% 0,062W
3803	4822 051 30273	27K 5% 0,062W
3804	4822 051 30273	27K 5% 0,062W
3805	4822 051 30273	27K 5% 0,062W
3806	4822 051 30273	27K 5% 0,062W
3807	4822 051 30103	10K 5% 0,062W
3808	4822 051 30103	10K 5% 0,062W
3809	4822 051 30103	10K 5% 0,062W
3810	4822 051 30103	10K 5% 0,062W
3811	4822 051 30103	10K 5% 0,062W
3812	4822 051 30103	10K 5% 0,062W
3813	4822 051 30222	2,2K 5% 0,062W
3814	4822 051 30222	2,2K 5% 0,062W
3815	4822 051 30222	2,2K 5% 0,062W
3816	4822 051 30222	2,2K 5% 0,062W
3817	4822 051 30479	47R 5% 0,062W
3818	4822 051 30479	47R 5% 0,062W
3819	4822 051 30479	47R 5% 0,062W
3820	4822 052 10478	4,7R 5% 0,33W
3821	4822 117 12917	1R 5% 0,062W
3822	4822 051 30103	10K 5% 0,062W
3823	4822 051 30102	1K 5% 0,062W
3824	4822 051 20474	470K 5% 0,1W
3825	5322 117 13029	47K 1% 0,063W
3826	4822 117 12891	220K 1%
3827	5322 117 13056	8,2K 1% 0,063W
3828	5322 117 13052	2,7K 1% 0,063W
3829	4822 051 30121	120R 5% 0,062W
3830	4822 117 11373	100R 1%
3831	4822 051 30471	470R 5% 0,062W
3832	4822 051 30471	470R 5% 0,062W
3833	4822 051 30121	120R 5% 0,062W
3834	4822 051 30472	4,7K 5% 0,062W
3836	4822 116 40227	4,6R 25% 12V
3837	4822 051 30471	470R 5% 0,062W
3839	4822 051 30471	470R 5% 0,062W
3840	4822 051 30223	22K 5% 0,062W
3842	4822 051 30102	1K 5% 0,062W
3843	4822 051 30102	1K 5% 0,062W
3844	4822 051 30101	100R 5% 0,062W
3845	4822 051 30471	470R 5% 0,062W

- RESISTORS -

3846	4822 051 30472	4,7K 5% 0,062W
3847	4822 117 10834	47K 1% 0,1W
3848	4822 051 30333	33K 5% 0,062W
3849	4822 051 30471	470R 5% 0,062W
3850	4822 051 30472	4,7K 5% 0,062W
3851	4822 117 10834	47K 1% 0,1W
3852	4822 051 30333	33K 5% 0,062W
3853	4822 117 12903	1,8K 1% 0,063W
3854	4822 051 30682	6,8K 5% 0,062W
3856	4822 117 12891	220K 1% ERJ 3E
3858	4822 051 30682	6,8K 5% 0,062W
3859	4822 117 13632	100K 1% 0,62W
3861	4822 117 13632	100K 1% 0,62W
3862	4822 051 30102	1K 5% 0,062W
3863	4822 052 10338	3,3R 5% 0,33W
3864	4822 051 30223	22K 5% 0,062W
3865	4822 051 30101	100R 5% 0,062W
3866	4822 117 13608	4,7R 5% 0,0016W
3867	4822 051 30223	22K 5% 0,062W
3868	4822 051 30103	10K 5% 0,062W
3869	4822 051 30103	10K 5% 0,062W
3871	4822 051 30101	100R 5% 0,062W
3872	4822 051 30101	100R 5% 0,062W
3873	4822 051 30223	22K 5% 0,062W
3874	4822 051 30223	22K 5% 0,062W
3875	4822 051 30103	10K 5% 0,062W
3876	4822 051 30103	10K 5% 0,062W
3878	4822 051 30471	470R 5% 0,062W
3879	4822 051 30223	22K 5% 0,062W
3880	4822 051 30339	33R 5% 0,062W
3881	4822 051 30151	150R 5% 0,062W
3882	4822 051 10102	1K 2% 0,25W
3883	4822 051 30102	1K 5% 0,062W
3884	4822 051 30102	1K 5% 0,062W
3888	4822 051 30103	10K 5% 0,062W
3889	4822 051 30471	470R 5% 0,062W
3890	4822 051 30471	470R 5% 0,062W
3891	4822 051 30102	1K 5% 0,062W
3892	4822 051 30102	1K 5% 0,062W
3893	4822 051 30471	470R 5% 0,062W
3894	4822 117 12891	220K 1% ERJ 3E
3895	4822 051 30273	27K 5% 0,062W
3896	4822 051 30101	100R 5% 0,062W
3897	4822 051 30333	33K 5% 0,062W
3898	4822 051 30181	180R 5% 0,062W
3899	4822 051 30272	2,7K 5% 0,062W
3901	4822 051 30561	560R 5% 0,062W
3902	4822 117 12968	820R 5% 0,62W
3903	4822 051 30332	3,3K 5% 0,062W
3904	4822 051 30332	3,3K 5% 0,062W

ELECTRICAL PARTSLIST - COMBI BOARD**- RESISTORS -**

3713	4822 051 30102	1K 5% 0,062W
3714	4822 051 30222	2,2K 5% 0,062W
3715	4822 051 30101	100R 5% 0,062W
3718	4822 051 30102	1K 5% 0,062W
3719	4822 051 30102	1K 5% 0,062W
3720	4822 117 11373	100R 1%
3722	4822 051 30103	10K 5% 0,062W
3723	4822 117 12864	82K 5% 0,6W
3801	4822 051 30223	22K 5% 0,062W
3802	4822 051 30223	22K 5% 0,062W
3803	4822 051 30273	27K 5% 0,062W
3804	4822 051 30273	27K 5% 0,062W
3805	4822 051 30273	27K 5% 0,062W
3806	4822 051 30273	27K 5% 0,062W
3807	4822 051 30103	10K 5% 0,062W
3808	4822 051 30103	10K 5% 0,062W
3809	4822 051 30103	10K 5% 0,062W
3810	4822 051 30103	10K 5% 0,062W
3811	4822 051 30103	10K 5% 0,062W
3812	4822 051 30103	10K 5% 0,062W
3813	4822 051 30222	2,2K 5% 0,062W
3814	4822 051 30222	2,2K 5% 0,062W
3815	4822 051 30222	2,2K 5% 0,062W
3816	4822 051 30222	2,2K 5% 0,062W
3817	4822 051 30479	47R 5% 0,062W
3818	4822 051 30479	47R 5% 0,062W
3819	4822 051 30479	47R 5% 0,062W
3820	4822 052 10478	4,7R 5% 0,33W
3821	4822 117 12917	1R 5% 0,062W
3822	4822 051 30103	10K 5% 0,062W
3823	4822 051 30102	1K 5% 0,062W
3824	4822 051 20474	470K 5% 0,1W
3825	5322 117 13029	47K 1% 0,063W
3826	4822 117 12891	220K 1%
3827	5322 117 13056	8,2K 1% 0,063W
3828	5322 117 13052	2,7K 1% 0,063W
3829	4822 051 30121	120R 5% 0,062W
3830	4822 117 11373	100R 1%
3831	4822 051 30471	470R 5% 0,062W
3832	4822 051 30471	470R 5% 0,062W
3833	4822 051 30121	120R 5% 0,062W
3834	4822 051 30472	4,7K 5% 0,062W
3836	4822 116 40227	4,6R 25% 12V
3837	4822 051 30471	470R 5% 0,062W
3839	4822 051 30471	470R 5% 0,062W
3840	4822 051 30223	22K 5% 0,062W
3842	4822 051 30102	1K 5% 0,062W
3843	4822 051 30102	1K 5% 0,062W
3844	4822 051 30101	100R 5% 0,062W
3845	4822 051 30471	470R 5% 0,062W

- RESISTORS -

3846	4822 051 30472	4,7K 5% 0,062W
3847	4822 117 10834	47K 1% 0,1W
3848	4822 051 30333	33K 5% 0,062W
3849	4822 051 30471	470R 5% 0,062W
3850	4822 051 30472	4,7K 5% 0,062W
3851	4822 117 10834	47K 1% 0,1W
3852	4822 051 30333	33K 5% 0,062W
3853	4822 117 12903	1,8K 1% 0,063W
3854	4822 051 30682	6,8K 5% 0,062W
3856	4822 117 12891	220K 1% ERJ 3E
3858	4822 051 30682	6,8K 5% 0,062W
3859	4822 117 13632	100K 1% 0,62W
3861	4822 117 13632	100K 1% 0,62W
3862	4822 051 30102	1K 5% 0,062W
3863	4822 052 10338	3,3R 5% 0,33W
3864	4822 051 30223	22K 5% 0,062W
3865	4822 051 30101	100R 5% 0,062W
3866	4822 117 13608	4,7R 5% 0,0016W
3867	4822 051 30223	22K 5% 0,062W
3868	4822 051 30103	10K 5% 0,062W
3869	4822 051 30103	10K 5% 0,062W
3871	4822 051 30101	100R 5% 0,062W
3872	4822 051 30101	100R 5% 0,062W
3873	4822 051 30223	22K 5% 0,062W
3874	4822 051 30223	22K 5% 0,062W
3875	4822 051 30103	10K 5% 0,062W
3876	4822 051 30103	10K 5% 0,062W
3878	4822 051 30471	470R 5% 0,062W
3879	4822 051 30223	22K 5% 0,062W
3880	4822 051 30339	33R 5% 0,062W
3881	4822 051 30151	150R 5% 0,062W
3882	4822 051 10102	1K 2% 0,25W
3883	4822 051 30102	1K 5% 0,062W
3884	4822 051 30102	1K 5% 0,062W
3888	4822 051 30103	10K 5% 0,062W
3889	4822 051 30471	470R 5% 0,062W
3890	4822 051 30471	470R 5% 0,062W
3891	4822 051 30102	1K 5% 0,062W
3892	4822 051 30102	1K 5% 0,062W
3893	4822 051 30471	470R 5% 0,062W
3894	4822 117 12891	220K 1% ERJ 3E
3895	4822 051 30273	27K 5% 0,062W
3896	4822 051 30101	100R 5% 0,062W
3897	4822 051 30333	33K 5% 0,062W
3898	4822 051 30181	180R 5% 0,062W
3899	4822 051 30272	2,7K 5% 0,062W
3901	4822 051 30561	560R 5% 0,062W
3902	4822 117 12968	820R 5% 0,62W
3903	4822 051 30332	3,3K 5% 0,062W
3904	4822 051 30332	3,3K 5% 0,062W

ELECTRICAL PARTSLIST - COMBI BOARD**- RESISTORS -**

3905	4822 051 30471	470R 5% 0,062W
3906	4822 051 30471	470R 5% 0,062W
3907	4822 051 30391	390R 5% 0,062W
3908	4822 051 30222	2,2K 5% 0,062W
3909	4822 117 13632	100K 1% 0,62W
3910	4822 051 30471	470R 5% 0,062W
3916	4822 051 30471	470R 5% 0,062W
3917	4822 117 13608	4,7R 5% 0,0016W
4104	3198 021 90030	J UMPER 0R05 (-/01)
4105	4822 051 30008	OR J UMPER
4106	4822 051 30008	OR J UMPER
4107	4822 051 30008	OR J UMPER
4108	4822 051 30008	OR J UMPER
4109	4822 051 30008	OR J UMPER
4110	3198 021 90030	J UMPER 0R05 (-/01)
4250	4822 051 20008	OR J UMPER 0805
4260	4822 051 30008	OR J UMPER
4400	4822 051 20008	OR J UMPER 0805
4402	4822 051 30008	OR J UMPER
4405	4822 051 30008	OR J UMPER
4407	4822 051 30008	OR J UMPER
4408	4822 051 30008	OR J UMPER
4409	4822 051 30008	OR J UMPER
4410	4822 051 30008	OR J UMPER
4411	4822 051 30008	OR J UMPER
4412	4822 051 30008	OR J UMPER
4413	4822 051 30008	OR J UMPER
4414	4822 051 30008	OR J UMPER
4415	4822 051 30008	OR J UMPER
4416	4822 051 30008	OR J UMPER
4417	4822 051 30008	OR J UMPER
4418	4822 051 30008	OR J UMPER
4420	4822 051 30008	OR J UMPER
4422	4822 051 30008	OR J UMPER
4430	4822 051 30008	OR J UMPER
4431	4822 051 30008	OR J UMPER
4432	4822 051 30008	OR J UMPER
4433	4822 051 30008	OR J UMPER
4434	4822 051 30008	OR J UMPER
4435	4822 051 20008	OR J UMPER0805
4436	4822 051 30008	OR J UMPER
4437	4822 051 30008	OR J UMPER
4438	4822 051 30008	OR J UMPER
4439	4822 051 30008	OR J UMPER
4440	4822 051 30008	OR J UMPER
4441	4822 051 30008	OR J UMPER
4442	4822 051 30008	OR J UMPER
4520	4822 051 30008	OR J UMPER
4521	4822 051 30008	OR J UMPER
4522	4822 051 30008	OR J UMPER

- RESISTORS -

4523	4822 051 30008	OR J UMPER
4552	4822 051 20008	OR J UMPER 0805
4801	4822 051 20008	OR J UMPER 0805
4802	4822 051 20008	OR J UMPER 0805
4803	4822 051 20008	OR J UMPER 0805
4805	4822 051 20008	OR J UMPER 0805
4808	4822 051 20008	OR J UMPER 0805
4809	4822 051 20008	OR J UMPER 0805
4811	4822 051 20008	OR J UMPER 0805
4817	4822 051 30008	OR J UMPER
4818	4822 051 20008	OR J UMPER 0805
4824	4822 051 20008	OR J UMPER 0805
4827	4822 051 20008	OR J UMPER 0805
4830	4822 051 20008	OR J UMPER 0805
4832	4822 051 20008	OR J UMPER 0805
4834	4822 051 20008	OR J UMPER 0805
4836	4822 051 20008	OR J UMPER 0805
4840	4822 051 20008	OR J UMPER 0805
4841	4822 051 20008	OR J UMPER 0805
4842	4822 051 20008	OR J UMPER 0805
4845	4822 051 30008	OR J UMPER

- COILS & FILTERS -

5001	2422 549 44607	IND FXD 100MHZ 2,7K
5104	4822 157 11269	COIL MW ANT,(-/00)
5104	2422 536 00364	IND FXD 190µH 5% (-/01)
5105	4822 157 11271	COIL LW ANT,
5109	4822242 70665	SFE10,7MS3-A
5110	4822242 70665	SFE10,7MS3-A
5111	2422 549 44023	IND VAR 450KHZ
5112	4822157 70302	F7MCS-12216N
5114	4822157 70302	F7MCS-12216N
5119	4822157 11443	2,4µH 10,7M
5121	4822242 10261	T6252F00 75KHZ
5122	2422 549 44108	IND VAR 796KHZ
5123	2422 549 44108	IND VAR 796KHZ
5130	4822 157 11843	MD7B-01F
5131	4822 157 11843	MD7B-01F
5400	4822157 11228	COIL 100µH LAN02 5%
5401	2422 549 44393	IND FXD 100MHZ 2,7K
5402	2422 540 98518	RES CER 8MHZ
5404	2422 549 44393	IND FXD 100MHZ 2,7K
5406	4822157 11228	COIL 100µH LAN02 5%
5408	4822 157 10686	CHOKE COIL 0,47µF
5409	4822 157 10686	CHOKE COIL 0,47µF
5410	4822 157 10686	CHOKE COIL 0,47µF
5411	4822 157 10686	CHOKE COIL 0,47µF
5412	4822 157 10686	CHOKE COIL 0,47µF

ELECTRICAL PARTSLIST - COMBI BOARD**- COILS & FILTERS -**

5550	2422 549 44393	IND FXD 100MHZ 2,7K
5551	4822 157 10686	CHOKE COIL 0,47µF
5553	2422 549 44919	IND FXD 100MHZ 600R
5554	2422 549 44919	IND FXD 100MHZ 600R
5555	4822 157 10686	CHOKE COIL 0,47µF
5556	4822 157 10686	CHOKE COIL 0,47µF
5557	4822 157 10686	CHOKE COIL 0,47µF

- DIODES -

6103	5322 130 34337	BAV99
6105	4822 130 83075	HN1V02H-B
6120	4822 130 11397	BAS316
6130	4822 130 82833	1SV228
6131	4822 130 82833	1SV228
6181	5322 130 34337	BAV99
6182	4822 130 11397	BAS316
6183	9340 386 90115	BZX284-C11
6250	4822 130 30621	1N4148
6251	4822 130 30621	1N4148
6252	4822 130 34278	BZX79-B6V8
6253	4822 130 31878	1N4003G
6254	4822 130 31878	1N4003G
6255	4822 130 31878	1N4003G
6256	4822 130 31878	1N4003G
6257	3198 010 53380	BZX79-B3V3
6258	4822 130 31878	1N4003G
6270	4822 130 30621	1N4148
6271	4822 130 30621	1N4148
6272	4822 130 30621	1N4148
6300	4822 130 30621	1N4148
6301	9334 515 80673	1N4003 (-/01)
6402	4822 130 34174	BZX79-B4V7
6550	4822 130 31878	1N4003G
6877	9322 129 34685	BZM55-C3V9

- IC & TRANSISTORS -

7101	9351 740 80557	TEA5757H/V1
7102	4822 130 42131	BF550
7104	4822 130 40855	BC337
7105	4822 130 40855	BC337
7109	4822 130 60373	BC856B
7111	9335 896 00215	BC847C (-/01)
7122	5322 130 42755	BC847C
7124	5322 130 42755	BC847C
7180	4822 130 60373	BC856B
7181	5322 130 42755	BC847C

- IC & TRANSISTORS -

7182	5322 130 42755	BC847C
7183	5322 130 42755	BC847C
7250	4822 130 40995	BD438
7251	5322 130 60159	BC846B
7252	4822 130 41246	BC327-25
7253	4822 130 41246	BC327-25
7254	4822 130 41246	BC327-25
7255	4822 130 41246	BC327-25
7256	4822 130 41246	BC327-25
7257	4822 130 60373	BC856B
7258	5322 130 60159	BC846B
7259	5322 130 60845	BC807-25
7260	5322 130 44593	BC369
7261	5322 130 60159	BC846B
7262	4822 130 60373	BC856B
7263	5322 130 60159	BC846B
7264	9352 621 95135	TDA3664/N1
7265	4822 130 41246	BC327-25
7300	4822 209 31544	TA8227P
7301	5322 130 60159	BC846B
7331	4822 130 42615	BC817-40
7332	4822 130 42615	BC817-40
7400	3140 110 51630	TMP86CS25F
7401	9322 178 12685	MC33464H-27A
7402	9965 000 04931	M24C01-WMN6
7403	5322 130 60159	BC846B
7500	9322 150 74668	TDA7468D
7700	9322 155 82667	TSOP2236
7800	9352 684 20557	SAA7325H/T/M2B
7808	4822 209 32852	TDA7073A/N2
7809	4822 209 32852	TDA7073A/N2
7810	4822 209 33165	TDA1308T/N1
7811	5322 209 82941	LM358D
7874	5322 130 60159	BC846B
7875	5322 130 60159	BC846B
7876	5322 130 60159	BC846B
7877	5322 130 60159	BC846B
7878	5322 130 60159	BC846B
7879	5322 130 60123	BC807-40

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