Portable compact disc player

EXP521

all versions

Service
Service
Service

Service Manual

MP3-CD PLAYBACK MP3 | ReWritable CD COMPATIBLE | COMPACT DISC DIGITAL AUDIO

TABLE OF CONTENTS

CLASS 1
LASER PRODUCT

Published by LX 0330 Service Audio Printed in The Netherlands Subject to modification

GB 3140 785 32610

PHILIPS

TECHNICAL SPECIFICATION

General

Dimensions (Wx H x D) : 137.5 x 30x 137.5mm
Weight without batteries : 220g

Shock resistance

+X/-X direction : ≥2.5g
+Y/-Y direction : ≥2.5g
+Z/-Z direction : ≥2.0g

Power supply modes

SUPPLY MODE	Voltage range
	CD
DC-IN socket	3.9 - 6 V
Primary batteries	1.9 - 3.2V
Rechargable batteries	1.9 - 3.2V

Battery lifetime

BATTERY TYPE	CD ESP=off	CD ESP=on	MP3 ESP=off	MP3 ESP=on
Alkaline batteries (2x AA)	≥ 10 h (14h typ.)	≥ 6 h (8h typ.)	≥ 24 h (28h typ.)	≥ 7 h (10h typ.)
Alkaline batteries (2x AAA)	≥ 2 h (4h typ.)	≥ 1 h (2h typ.)	≥ 8 h (10h typ.)	≥ 2 h (3h typ.)
Rechargable batteries (AY3363)	≥ 2 h (3h typ.)	≥ 1 h (2h typ.)	≥ 5 h (6h typ.)	≥ 1 h (2h typ.)

Battery level detection

DETECTION LEVEL	Primary batteries
Battery empty	1.8V +100/-50mV
Difference btw.level 1 and battey empty	0.3V ± 100mV
Difference btw.level 2 and battey empty	0.6V ± 100mV
Difference btw.level 3 and battey empty	0.9V ± 100mV

Current consumption

OPERATION MODE	DC-IN SUPPLY (4.5V)				BATT. SUPPLY (2.25V)			
	CD ESP=on	CD ESP=off	MP3 ESP= on	MP3 ESP= off	CD ESP=on	CD ESP=off	MP3 ESP= on	MP3 ESP= off
Play	220mA	220mA	220mA	220mA	250mA	250mA	250mA	250mA
Charge	300mA	300mA	300mA	300mA	n/a	n/a	n/a	n/a
Jump	480mA	480mA	480mA	480mA	480mA	480mA	480mA	480mA
Stand-by	60mA	60mA	60mA	60mA	1mA	1mA	1mA	1mA

Headphone out

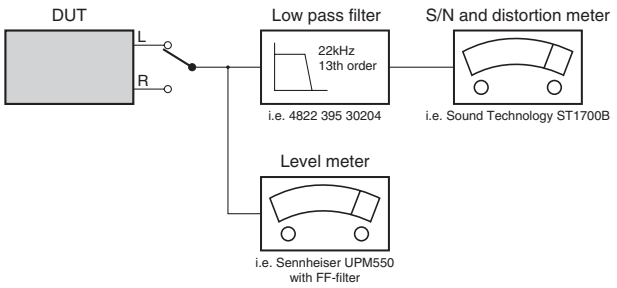
Output power (THD=10%)
/17 version only : 6mW (+1/-3dB)
all other versions : 3mW (+1/-3dB)
Frequency response (1mW) : 100Hz-20kHz within 6dB
S/N ratio CD (unwght) : ≥78dB (80dB typ.)
S/N ratio CD (unw.),incl.muting : 100dB
S/N ratio CD (A-wght) : ≥80dB (82dB typ.)
S/N ratio CD (A-wght),incl.muting : 100dB
THD+N (1kHz, 1mW) : ≤1.5% (1.0% typ.)
Crosstalk (1kHz) : ≤-24dB (-44dB typ.)
Channel unbalance (-40dB) : ≤5dB
Volume attenuation (1kHz) : >60dB

Dynamic Bass Boost DBB

DBB STAGE	Frequency response		
	63 Hz	1k Hz	10kHz
DBB 1	+5dB ± 2dB	0dB ± 2dB	+0dB ± 2dB
DBB 2	+8dB ± 2dB	0dB ± 2dB	+0dB ± 2dB

Measurement setup CD

Use Audio Signal disc SBC429 4822 397 30184



FEATURES

FEATURES OF CD-PORTABLE/MP3	EXP521 (all versions)
TUNER FM / MW	- / -
CD-REWRITABLE COMPATIBILITY	●
ELECTRONIC SKIP PROTECTION CDDA / MP3	168s / 420s
ESP DRAM SIZE	8Mbit
HOLD / RESUME FUNCTION	● / ●
DBB STAGES	2
ACOUSTIC FEEDBACK	-
PROGRAM MEMORY	50
RECHARGE FUNCTION NiCd / NiMH	- / ●
CORD REMOTE CONTROL PREPARED	●

ACCESSORIES

ACCESSORIES FOR CD PORTABLE -TARGET	EXP521					
	/00C	/01	/10	/05Z	/17	/07
AY3160/00 AC/DC Adaptor 3140 118 31051	X					
AY3160/02 AC/DC Adaptor 3140 118 31122		X				
AY3160/05 AC/DC Adaptor 3140 118 30761				X		
AY3160/10A AC/DC Adaptor 3140 118 31171			X			
SBC HE570/77s Stereo Headphone 9082 100 01724	X	X	X	X		
SBC HS383/77s Stereo Headphone 9082 100 01821					X	X
AY3778 Remote Control 3140 118 51491	X	X	X	X	X	X
AY3363 Rechargeable battery 3103 308 84721	X	X	X	X		

INSTRUCTION FOR USE

TROUBLESHOOTING

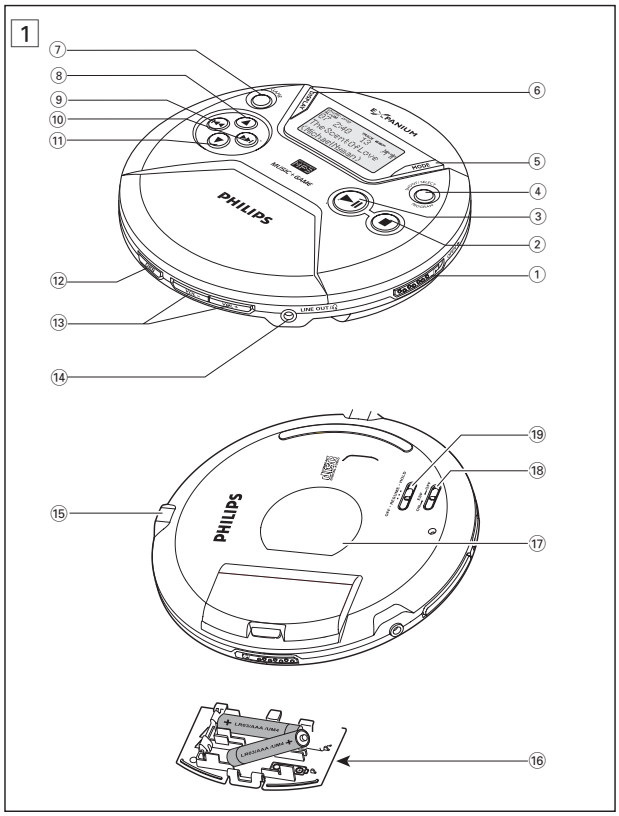
WARNING: *Under no circumstances should you try to repair the set yourself as this will invalidate the warranty.*
If a fault occurs, first check the points listed, before taking the set for repair. If you are unable to solve a problem by following these hints, consult your dealer or service center.

No power, playback does not start
- Insert the batteries correctly.
- Replace the batteries.
- Connect the power adapter securely.

`Hold` indication and/ or no reaction to controls
- Deactivate HOLD.
- Disconnect the set from the power supply or take out the batteries for a few seconds.

No sound or bad sound quality
- Press ▶II to resume playback.
- Adjust the volume.
- Check and clean the connections.
- Keep this set away from active mobile phones or strong magnetic fields.

`Pls insert CD` or `No audio file` indication
- Insert a disc, label upwards.
- Clean or replace the disc.
- Wait until the steamed up lens has cleared.
- Make sure you have inserted an audio disc or an MP3-CD.



Music file is not played
- Make sure that the file names of the MP3 files end with .mp3

Missing directories on MP3-CD
- Make sure the total number of files and albums on your MP3-CD does not exceed 350.
- Only albums with MP3 files are shown.

The disc skips tracks
- Clean or replace the disc.
- Make sure ***repeat***, ***repeat album***, ***shuffle*** or ***prog*** are not selected.

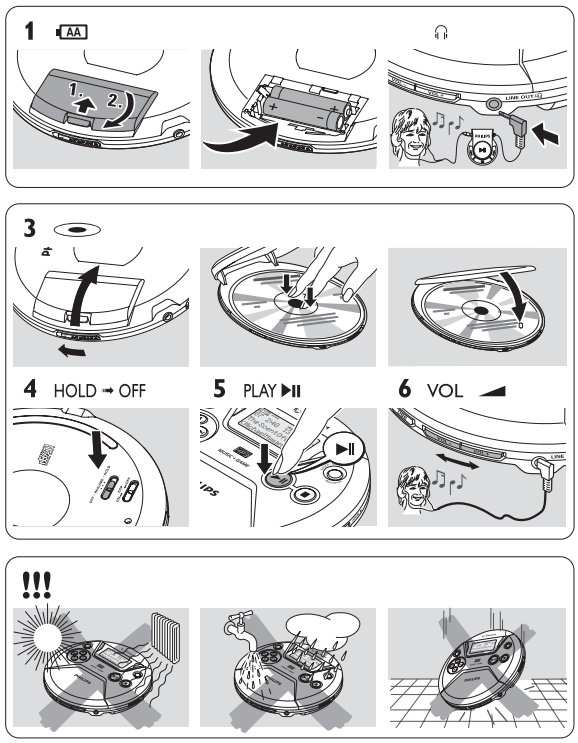
Music skips or popping sound when playing an MP3 file
- Play the music file on your computer. If the problem persists, encode the audio track again and make a new CD-ROM.

Music is interrupted and `OoPs` indication
- Switch ESP on.

In-car use: No power, playback does not start
- Clean the cigarette lighter jack.
- Switch on the ignition of your car.

In-car use: No sound or bad sound quality
- Insert the adapter cassette correctly.
- Change the autoreverse direction of your car cassette player.
- Let the set adjust to the temperature in the car.

QUICK START **MISE EN SERVICE RAPIDE** **INCIO RAPIDO**



INSTRUCTION FOR USE

English

CONTROLS

CONTROLS (see figure 1)

① **OPEN ▶** . . . . . opens the CD lid

② **■** . . . . . stops playback and switches the set off

③ **▶II** . . . . . switches the set on, starts playback and interrupts playback

④ **PROGRAM/ SHOOT/ SELECT** . . . MUSIC mode: programs tracks and lets you review the program
GAME mode: confirms selection of a game, setting, etc./ shoot to score

⑤ **MODE** . . . . . selects music playback options such as random order and repeat

⑥ **DISPLAY** . . . . . selects the track and album information for MP3-CDs

⑦ **GAME** . . . . . selects game mode on/ off

⑧ **▲** . . . . . MP3-CD only: selects the next album or fast skips tracks forward
GAME mode: move up

⑨ **⏮** . . . . . MUSIC mode: skips backward and searches backward
GAME mode: move left

⑩ **⏭** . . . . . MUSIC mode: skips forward and searches forward
GAME mode: move right

⑪ **▼** . . . . . MP3-CD only: selects the previous album or fast skips tracks backward
. . . . . GAME mode: move down

⑫ **DBB . . . . . .** selects the bass adjustment

⑬ **VOL + / -** . . . . . adjusts the volume

⑭ **LINE OUT/🎧** . . 3.5 mm line out to connect
– the headphones
– the remote control
– this set to the audio input of your stereo equipment

⑮ **4.5V DC** . . . . . to connect the external power supply

⑯ AAA battery door

⑰ type plate

⑱ **ESP** . . . . . **E**lectronic **S**kip **P**rotection prevents music interruptions caused by shocks

⑲ **OFF•** . . . . . OFF switches RESUME and HOLD off
RESUME• RESUME stores the last position played
HOLD HOLD locks all buttons

Supplied Accessories:
1 x headphones, HE570 or HS383
2 x rechargeable batteries, AY3363
1 x remote control, AY3778
1 x headphone jack adapter *(for some versions only)*
1 x AC/ DC adapter, AY3160 *(supplied or optionally available)*

CAUTION

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

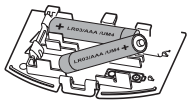
BATTERIES

(supplied or optionally available)

You can use the following batteries with this CD-player:

- alkaline batteries type **AAA (LR03, UM4)** or **AA (LR6, UM3)** preferably Philips).

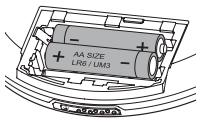
Notes:
– *Old and new or different types of batteries should not be combined.*
– *Remove batteries if they are empty or if the player is not going to be used for a long time.*



AAA (LR03, UM4)

Inserting AAA (LR03, UM4) or AY3363 batteries

1 Open the **AAA** battery door.
2 Insert **AAA** batteries as shown onto the back of the door.
3 Replace the battery-loaded **AAA** door back onto the set.



AA (LR6, UM3)

Inserting AA (LR6, UM3) batteries

To increase playback time, insert **AA** batteries into the battery compartment and use the **AA** marked battery door.

- Open the battery compartment and insert either 2 normal or alkaline batteries.

Indication of empty batteries

- Replace the batteries or connect the power adapter as soon as ▭ blinks and `Replace batteries`.

Remove batteries if they are empty or if the set will not be used for a long time.

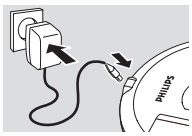
Batteries contain chemical substances,so they should be disposed of properly.

POWER ADAPTER

(supplied or optionally available)

Use only the AY3160 adapter (4.5V/ 400mA direct current, positive pole to the center pin). Any other product may damage the player.

1 Make sure the local voltage corresponds to the power adapter's voltage.
2 Connect the power adapter to the 4.5V DC jack of the player and to the wall outlet.



Note: Always disconnect the adapter when you are not using it.

ENVIRONMENTAL INFORMATION

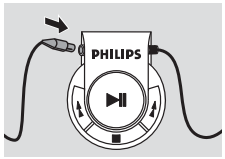
- All redundant packing material has been omitted. We have done our utmost to make the packaging easily separable into two materials: cardboard (box) and polyethylene (bags, protective foam sheet).
- Your set consists of materials which can be recycled if disassembled by a specialized company. Please observe the local regulations regarding the disposal of packing materials, dead batteries and old equipment.

This set complies with the radio interference requirements of the European Community.

INSTRUCTION FOR USE

REMOTE CONTROL AY3778

(supplied or optionally available)



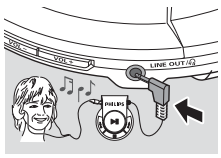
Use the AY3778 cord remote control. The buttons on the remote control have the same functions as the corresponding buttons on the set.

1 Press ■ twice to switch off the set.

2 Firmly connect the remote control to LINE OUT/ 🎧 on the set.

3 Adjust the volume on the CD player and remote control.

HEADPHONES



- Connect the supplied headphones to the LINEOUT/ 🎧 jack of the player.

Note:

– *LINE OUT/🎧 can also be used for connecting this set to your HiFi system.To adjust the sound and volume, use the controls on the connected audio equipment and on the CD player.*

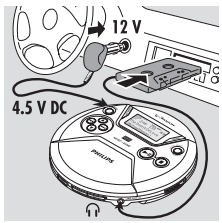
IMPORTANT!

Hearing safety: listen at a moderate volume. using headphones at high volume can impair your hearing.

Traffic safety: do not use headphones while driving or cycling as you may cause an accident.

IN-CAR USE ACCESSORIES

(connections supplied or optionally available)



Only use the AY3545 or AY3548 car voltage converter (4.5V DC, positive pole to the center pin) and the AY3501 car cassette adapter. Any other product may damage the set.

1 Put the set on a horizontal, vibration-free and stable surface. Make sure it is in a safe place, where the set is neither a danger nor an obstacle to the driver and the passengers.

2 Plug the voltage converter into the cigarette lighter jack ***(only for 12V car battery, negative grounding)***, then connect the wired end with 4.5V DC input jack on the set.

3 If necessary, clean the cigarette lighter jack to obtain a good electrical contact.

4 Turn down the volume and connect the cassette adapter plug to LINE OUT/ 🎧 on the set.

5 Carefully insert the cassette adapter into the car radio's cassette compartment.

6 Make sure the cord does not hinder your driving.

7 Decrease the volume on the set if necessary. Start playback on the set and adjust the sound with the car radio controls.

- ***Always remove the voltage converter from the cigarette lighter jack when the set is not in use.***

Note:

– *If your car radio has a LINE IN jack, it is better to use it for the car radio connection instead of the cassette adapter. Connect the signal lead to this LINE IN jack and to LINE OUT/🎧 on the set.*

MP3 MUSIC FILES

The music compression technology MP3 (MPEG Audio Layer 3) reduces the digital data of an audio CD significantly while maintaining CD-like sound quality. With MP3 you can record up to 10 hours of CD-like music on a single CD-ROM.

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 organize music files

In order to easily handle the large number of music files on a CD-ROM, you can organize them in folders ("albums").
The tracks of an album will be played in alphabetical order. If you want to arrange them in a certain order, let the file names start with numbers.
For example:
001-ONEWORLD.MP3
002-FIRESTARTER.MP3
003-DEEP.MP3
The albums will be arranged in alphabetical order. If albums are located in an album, they will be played after this album. Albums without MP3 files will be skipped.
If there are MP3 files which you did not put into an album, you will find them in the album number `01`. `Various` is the first album that will be played.

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. Use either ISO 9660 disc format or UDF. Some CD burner software like e.g. "DirectCD" support the UDF format. Make sure that the file names of the MP3 files end with .mp3.

Supported formats

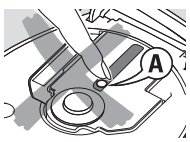
This set supports:

– Disc format: ISO 9660, Joliet, Multisession, UDF, Enhanced Music CD, Mixed Mode CD
– MP3 bit rate: 32–320 kbps and variable bit rate
– Total number of music files and albums: around 350 (with a typical file name length of 64 characters)

Notes:

– *All trademarks used are owned by their respective owners.*

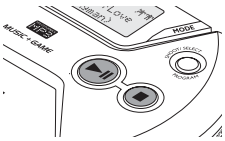
CD PLAYER AND CD HANDLING



- Do not touch the lens Ⓐ of the CD player.
- Do not expose the unit, batteries or CDs to humidity, rain, sand or excessive heat (caused by heating equipment or direct sunlight).
- You can clean the CD player with a soft, slightly dampened, lint-free cloth. Do not use any cleaning agents as they may have a corrosive effect.
- To clean the CD, wipe it in a straight line from the center toward the edge using a soft, lint-free cloth. A cleaning agent may damage the disc! Never write on a CD or attach a sticker to it.
- The lens may cloud over when the unit is moved suddenly from cold to warm surroundings. Playing a CD is not possible then. Leave the CD player in a warm environment until the moisture has evaporated.
- Active mobile phones in the vicinity of the CD player may cause malfunctions.
- Avoid dropping the unit as this may cause damage.

INSTRUCTION FOR USE

PLAYING A DISC

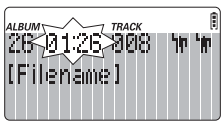


With this set you can play
– all pre-recorded audio CDs
– all finalized audio CDRs and CDRWs
– MP3-CDs (CD-ROMs with MP3 files)

1 Push the OPEN▶ slider to open the CD lid.

2 Insert a disc, printed side up, by pressing gently on the disc´s center so that it fits onto the hub. Close the lid by pressing it down.

3 Press ▶II to start playback.
eXPanium and LOADING are displayed briefly. Playback starts. The track type (CD or MP3), the current track number and the elapsed playing time are displayed. For an MP3 track, the album number is also displayed and the filename is scrolled one time.



• Press ▶II to interrupt playback.
Elapsed playback time flashes and the dancing animation freezes.

• To resume playback press ▶II again.

4 Press ■ to stop playback.
The total number of tracks, the track types (CD, MP3), the number of albums on an MP3-CD and the total playing time (of an audio disc only) are displayed.

5 To remove the disc, hold it by its edge and press the hub gently while lifting the disc.

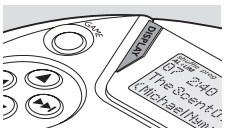
6 Press ■ again to switch off the played.

Notes:
– *After pressing ▶II it may take some time until the first MP3 track is played.*
– *The display clears automatically after 20 seconds if no controls are operated in the stop mode.*

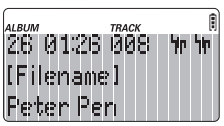
DISPLAY INFORMATION

(for MP3 tracks only)

1 Press DISPLAY repeatedly during playback to select the information to be displayed:
– Filename: the track´s file name,
– Album: the album´s folder name,
– Artist: the artist´s name (if this ID3 tag information is available),
– Title: the track´s title (if this ID3 tag information is available),
– the track type.



2 The selected information is scrolled once. The album number and track number are displayed.

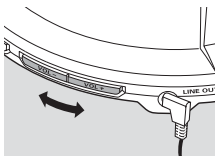


Note:
– *The ID3 tag is part of an MP3 file and contains various track information such as the track´s title or the artist´s name. Complete the ID3 tag information with your MP3 encoder software before burning the MP3-CD.*

VOLUME AND SOUND

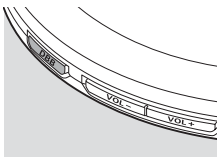
Volume adjustment

• Adjust the volume by using VOL +/–.



DBB
Bass adjustment

1 Press DBB once or more to select the bass enhancement options:
DBB❶ moderate bass enhancement is activated.
DBB ❷ strong bass enhancement is activated.



2 Press DBB again to switch off the bass enhancement options.
DBB❶ or DBB ❷ disappears.

SELECTING AND SEARCHING ON CDs

Selecting a track during playback

• Briefly press ⏮ or ⏭ once or several times to skip to the current, previous or next track.
Playback continues with the selected track, and the track's number is displayed.

Searching for a passage during playback

1 Keep ⏮ or ⏭ pressed to find a particular passage in a backward or forward direction.
Searching starts while playback continues at low volume. After 2 seconds the search speeds up.

2 Release the button when you reach the desired passage.
Playback continues from this position.

Note:
– *In **shuffle**, or **repeat** modes searching is only possible within the particular track.*

Selecting on MP3-CDs
Selecting an album during playback

• Briefly press ▼ or ▲ once or several times to skip to the first track of the current, previous or subsequent album.
The first track of the selected album is played.

Selecting a track during playback

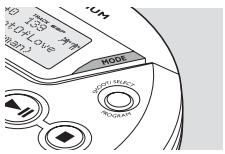
1 Keep ▼ or ▲ pressed to skip quickly to previous or subsequent MP3 tracks.
Skipping starts and speeds up after 5 seconds.

2 Release the button at the desired track.
Playback continues with the selected track.

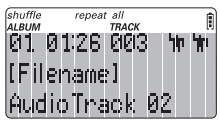
Note:
– *To skip from track to track at low speed, use ⏮ or ⏭.*

SELECTING DIFFERENT PLAYING POSSIBILITIES-MODE

1 Press MODE during playback as often as required in order to activate one of the following.



– ***shuffle all:*** All tracks of the disc are played in random order once.
– ***shuffle repeat all:*** All tracks of the disc are played repeatedly in random order.
– ***repeat:*** The current track is played repeatedly.
– ***repeat all:*** The entire disc is played repeatedly.



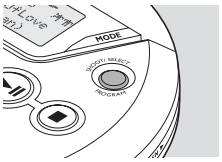
– ***shuffle album*** (with MP3-CDs only):
All tracks of the current album are played in random order once.
– ***shuffle repeat album*** (with MP3-CDs only):
All tracks of the current album are played repeatedly in random order.
– ***repeat album*** (with MP3-CDs only):
All tracks of the current album are played repeatedly.

2 Playback starts in the chosen mode after 2 seconds.

• To return to normal playback, press MODE repeatedly until the display shows no active modes.

INSTRUTION FOR USE

PROGRAMMING TRACK NUMBERS



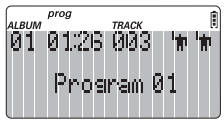
You can store up to 50 tracks to play in a program. A single track may be stored more than once in the program.

1 While playback is stopped, select a track with ⏮ or ⏭.

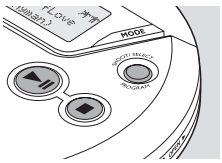
2 Press PROGRAM/SHOOT/SELECT to store the track.
prog and the number of stored tracks are displayed.

3 Select and store all desired tracks in this way.

4 Press ▶II to start playback of your selected tracks.
prog is shown and playback starts.



- You can review the program by pressing PROGRAM/SHOOT/SELECT for more than 3 seconds.
The display shows all the stored tracks in sequence.



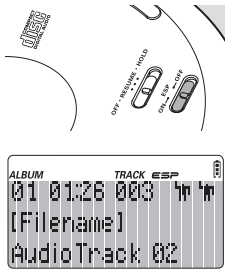
Note:
– *If you try to store more than 50 tracks,* FULL *is displayed.*

Clearing the program

- While playback is stopped, press ■ to clear program.
Program Clear is displayed once, ***prog*** goes off, and the program is cleared.

Note:
– *The program will also be cleared if the power supply is interrupted, or if the CD-player lid is opened, or if the set switches off automatically.*

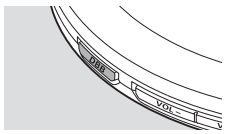
ESP/ POWER SAVE MODE



With a conventional portable CD-player you might have experienced that the music stopped e.g. when you were jogging. The **E**LECTRONIC **S**KIP **P**ROTECTION prevents loss of sound caused by light vibrations and shocks. Continuous playback is ensured. However ESP does not prevent playback interruptions during vigorous running. It also **does not protect the unit against any damage caused by dropping!**

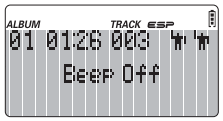
- Adjust the ESP slider to ON/OFF position to select the following:
– ***ESP*** is shown and ESP is switched on.
– ***ESP*** disappears. Powersaving are switched on for CD Audio tracks to achieve the highest sound quality.

BEEP



A beep confirms that you have pressed a button or that the batteries are empty.

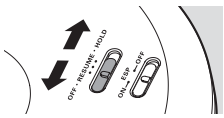
- During music mode only keep DBB pressed for 2 seconds to switch beep either on or off:
Beep On is displayed: Beep is switched on.
Beep Off is displayed: Beep is switched off.



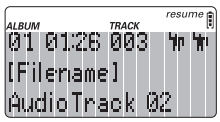
RESUME AND HOLD

Storing the last position played – RESUME

You can store the last position played. When restarting, playback will continue from where you have stopped.



1 Switch the slider to RESUME during playback to activate RESUME.
resume is shown.



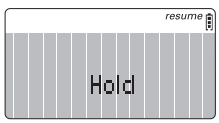
2 Press ■ whenever you want to stop playback.

3 Press ▶II whenever you want to resume playback.
resume shown and playback continues from where you have stopped.

- To deactivate RESUME, switch the slider to OFF.
resume goes off.

HOLD – locking all buttons

You can lock all buttons of the set. When you press any key, no action will be executed then.



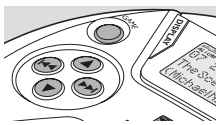
1 Switch the slider to HOLD to activate HOLD.
resume is shown and Hold is displayed. All buttons are locked.
When pressing any key, Hold is displayed.

2 To deactivate HOLD, switch the slider to OFF.
resume resume disappears.

MUSIC AND GAMES

You can listen to music and play games at the same time. Select from 5 games: SNATCHER, MATCHER, COPTER, BREAKER and MUNCHER.

To start a game



1 If necessary, press ▶II to switch on the set.

2 Press GAME.
Display shows the games main menu. The current game is highlighted.

3 Press ▲ or ▼ to scroll through the list of games.

4 To confirm your game selection, press PROGRAM/ SHOOT/ SELECT.

5 Press ▲ or ▼ to scroll through the game submenu.
Display shows **Start, Level, Speed, Top Score.**

6 Press PROGRAM/ SHOOT/ SELECT to confirm and start play.

How to control your game

Use the buttons on the set to navigate:

Up ▲ ***Left*** ⏮ ***Down*** ▼ ***Right*** ⏭

- Press PROGRAM/ SHOOT/ SELECT to SHOOT/ confirm an action.

End game

To quit the game function you can:

- Press GAME once or more until the display returns to the music mode display.
- Press ■.

Note:
– *This unit automatically switches off the beep signal when you select the game mode during music playback. The beep signal automatically returns when you quit GAME. For more details on the beep signal, please read the* ***BEEP*** *chapter.*

SAFETY & WARNINGS

ESD

(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.

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

(D) WARNUNG
Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall 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.

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

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

(GB) AVAILABLE ESD PROTECTION EQUIPMENT :

anti-static table mat	large	1200x650x1.25mm	4822 466 10953
	small	600x650x1.25mm	4822 466 10958
anti-static wristband			4822 395 10223
connection box (3 press stud connections, 1MΩ)			4822 320 11307
extendible cable (2m, 2MΩ, to connect wristband to connection box)			4822 320 11305
connecting cable (3m, 2MΩ, to connect table mat to connection box)			4822 320 11306
earth cable (1MΩ, 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

SAFETY

(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 ⚠ markiert.

(NL)
Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkeliijke 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 ricambiago identici a quelli specificati.
Componenty di sicurezza sono marcati con ⚠

(GB) **DANGER**: Invisible laser radiation when open.
AVOID DIRECT EXPOSURE TO BEAM.

CLASS 1
LASER PRODUCT

(S) Varning !
Osynlig laserstrålning när apparaten är öppnad och spärren är urkopplad. Betrakta ej strålen.

(DK) Advarsel !
Usynlig laserstråling ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsaettelse for stråling.

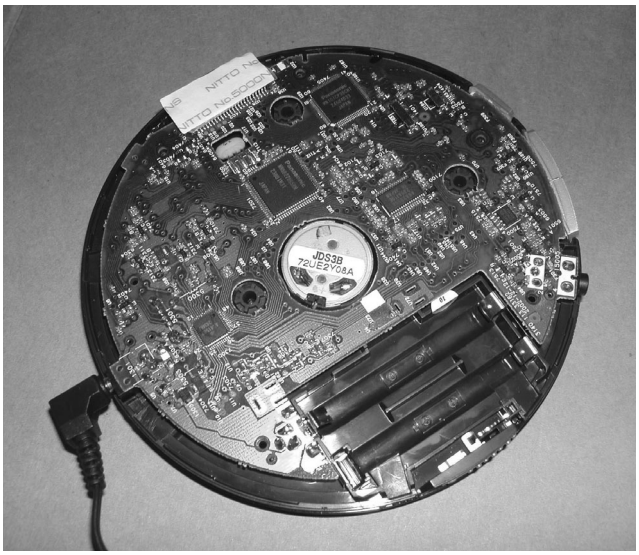
(FIN) Varoitus !
Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen !

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

SERVICE HINTS

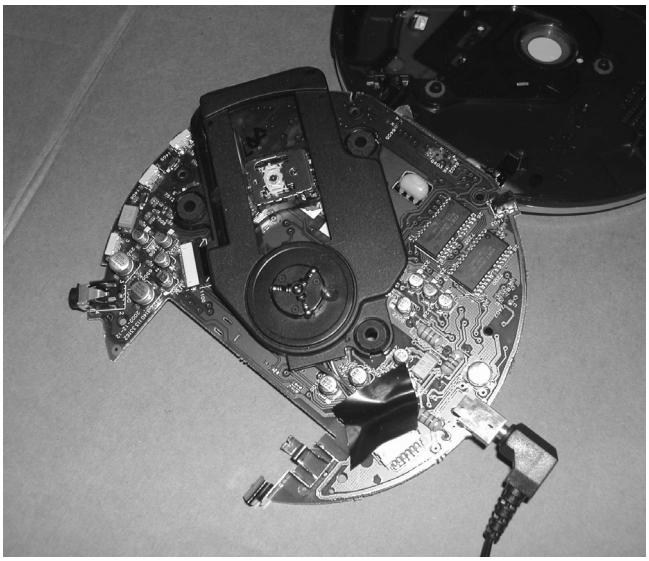
REPAIR POSITION COPPERSIDE



To get access to the copperside of the printed board assembly proceed as follows:

1.Remove the bottom (3x) screws (2x of them under the rubber-foot) and the up (2x) screws (in the CD-door)
2.Lift the bottom -cabinet
3.Supply the unit via external DC-socket
4.Take care that the door switch is closed during measurements

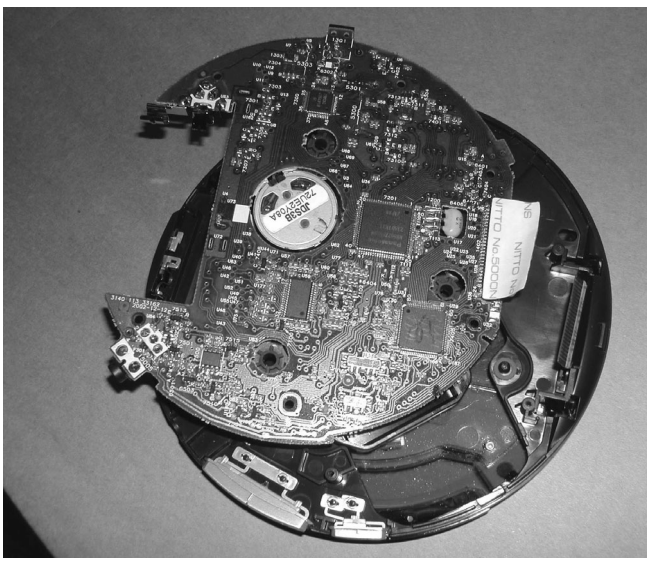
REPAIR POSITION COMPONENTSIDE

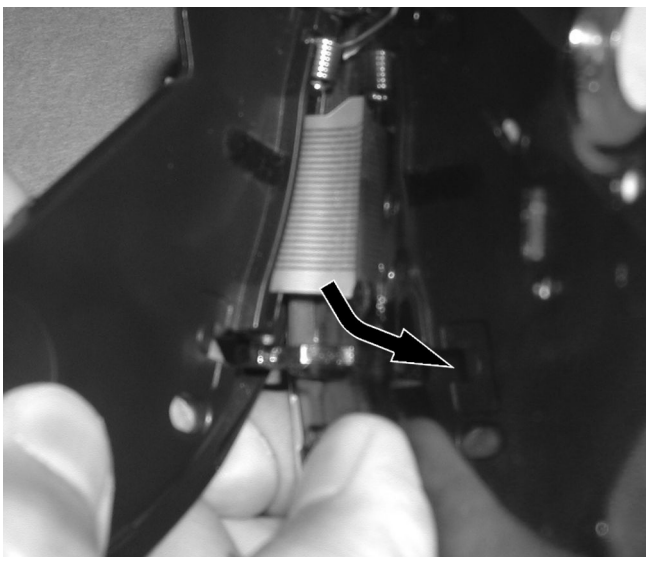


To get access to the componentside of the printed board assembly proceed as followed:

1.Remove the bottom (3x) screws (2x of them under the rubber-foot) and the up (2x) screws (in the CD-door)
2.Open the CD-door
3.Lift the top-cabinet and put it backwards on the table
4.Supply the unit via the external DC-socket
5.Take care that the door switch is closed during measurements

DISMANTLING THE CD-DOOR





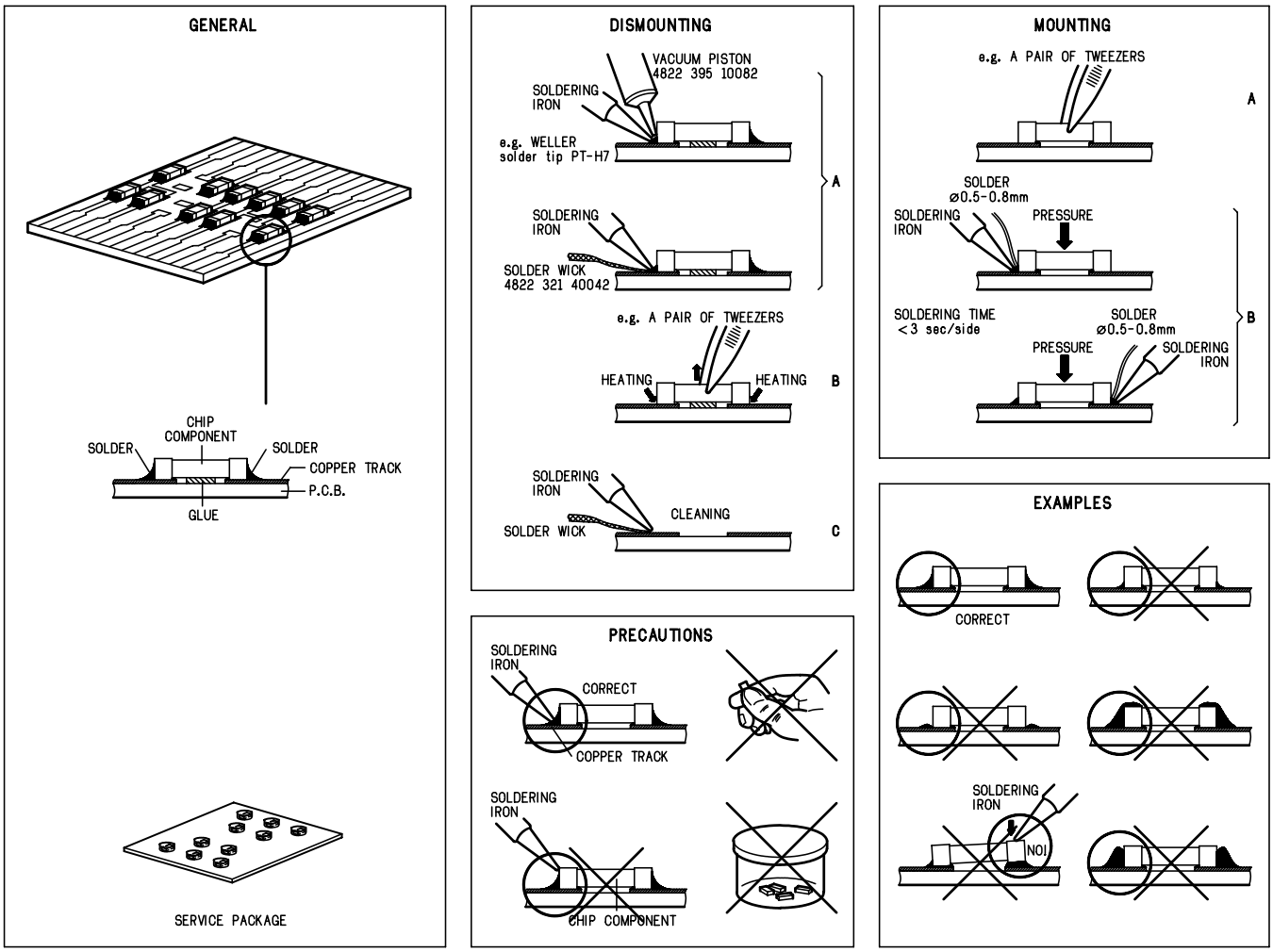
To dismantle the CD-door proceed as follows:

1.Dismantle bottom and printed board/drive assembly
2.Disconnect the sticker
(flex-foil connector on the membrance keyboard)
3.Disconnect membrance keyboard
(flex-foil connector on copperside of printed board)

4.Bend the cabinet rightwards downwards as indicated in the picture above

Remark:Do not use screwdrivers or tools .
Sharp edges could damage hinge or cabinet part.

HANDLING CHIP COMPONENTS



SERVICE TOOLS

Audio signal disc SBC429	4822 397 30184
Playability test disc SBC444	4822 397 30245
Test disc 5 (disc without errors) + **Test disc 5A**(disc with dropout errors black spots and fingerprints) **SBC426/ SBC426A**	4822 397 30096

ESD PROTECTION EQUIPMENT

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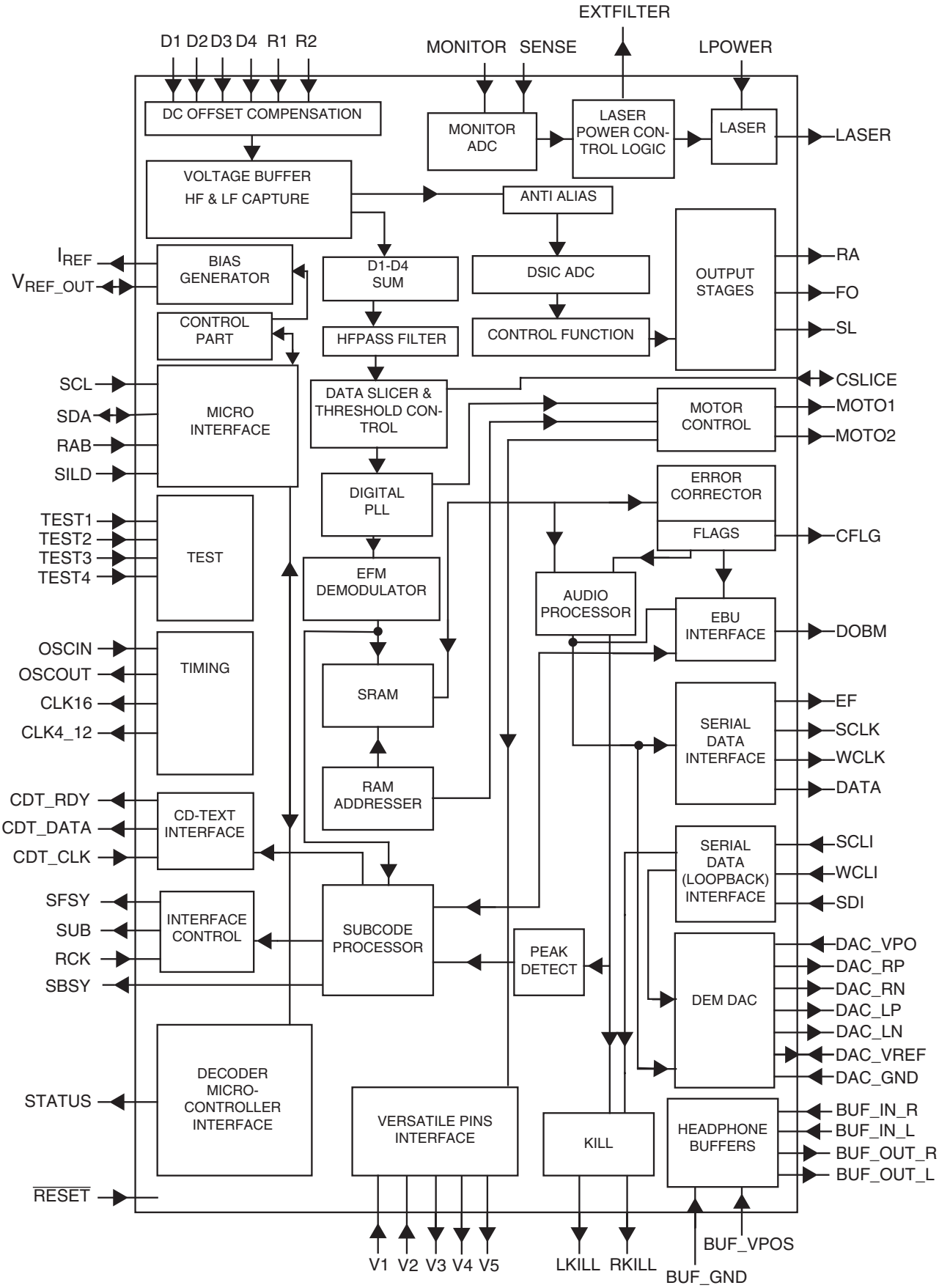
Earth cable (1MΩ , to connect any product to mat or to connection box)	4822 320 11308
KIT ESD3(combining all 6 prior products - small table mat)	4822 310 10671
Wristband tester	4822 344 13999

BLOCK DIAGRAM OF IC SAA7824HL



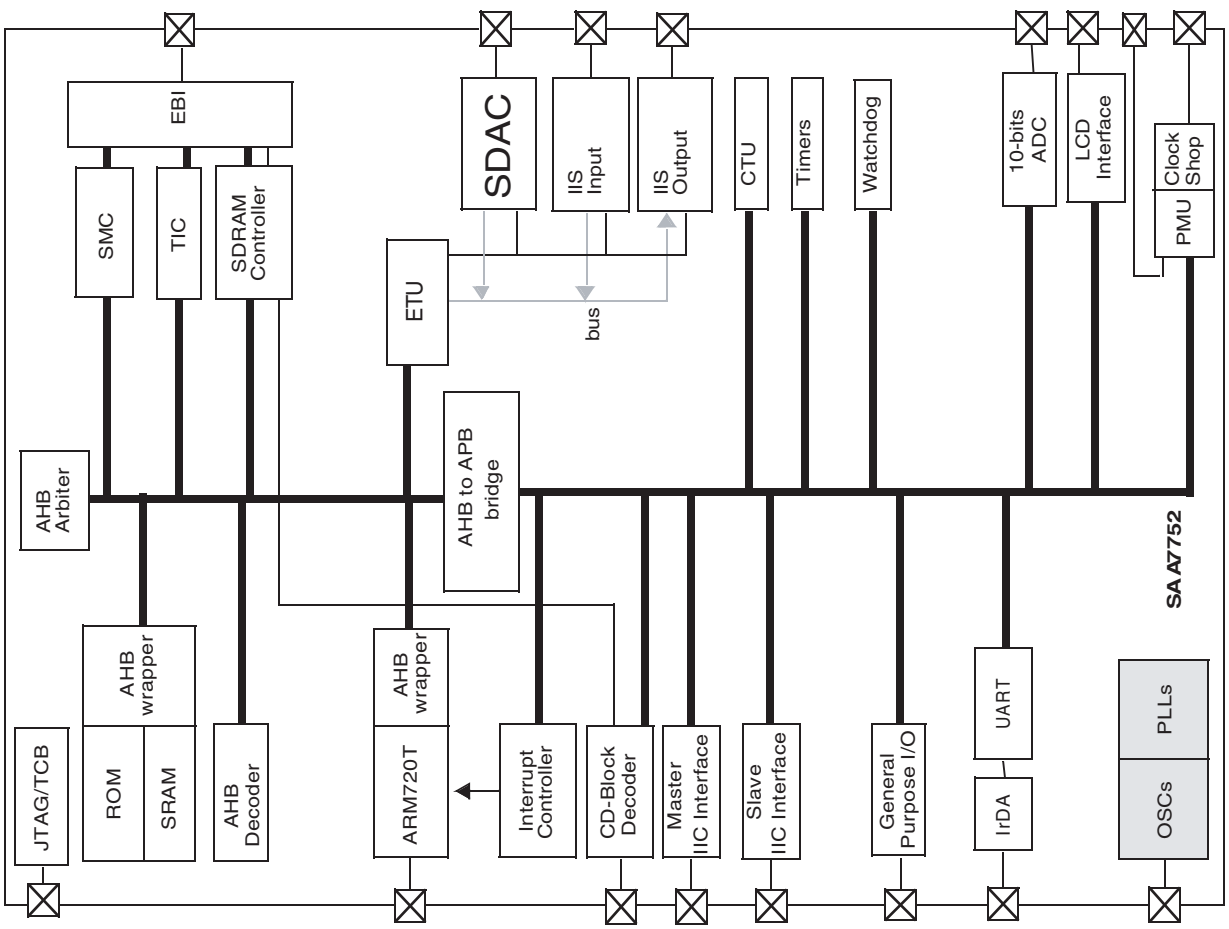
SYMBOL	PIN	DESCRIPTION
LPOWER	1	Laser power supply
EXTFILTER	2	10 nF capacitor for Laser start-up control
MONITOR	3	Laser monitor diode
SENSE	4	OPU ground reference point for MONITOR measurement
V_{SSA1}	5	Analogue ground 1
IREF	6	Reference current pin (24KΩ resister to analogue ground)
V_{DDA1}	7	Analogue supply voltage 1
VREF_OUT	8	Servo reference voltage
D1	9	Diode voltage/current input (central diode signal input)
D2	10	Diode voltage/current input (central diode signal input)
D3	11	Diode voltage/current input (central diode signal input)
D4	12	Diode voltage/current input (central diode signal input)
R1	13	Diode voltage/current input (satellite diode signal input)
R2	14	Diode voltage/current input (satellite diode signal input)
CSLICE	15	10nF capacitor for adaptive HF dataslicer
V_{DDA2}	16	Analogue supply voltage 2
V_{SSA2}	17	Analogue ground 2
OSCOUT	18	Crystal/resonator output
OSCIN	19	Crystal/resonator input
V_{SSA3}	20	Analogue ground 3
DAC_GND	21	Audio DAC ground
DAC_RP	22	Audio DAC right channel differential output (positive)
DAC_RN	23	Audio DAC right channel differential output (negative)
DAC_VREF	24	Audio DAC decoupling point (10uF//100nF to ground)
DAC_LN	25	Audio DAC left channel differential output (negative)
DAC_LP	26	Audio DAC left channel differential output (positive)
DAC_VPOS	27	Audio DAC positive supply
BUF_VPOS	28	Audio buffer positive supply
BUF_IN_R	29	Audio buffer right input
BUF_OUT_R	30	Audio buffer right output
BUF_OUT_L	31	Audio buffer left output
BUF_IN_L	32	Audio buffer left input
BUF_GND	33	Audio buffer ground
LKILL	34	Kill output for left channel (configurable as open drain)
RKILL	35	Kill output for right channel (configurable as open drain)
CDT_RDY	36	CD-Text to micro ready flag
CDT_DATA	37	CD-Text data to micro
CDT_CLK	38	CD-Text micro clock
CFLAG	39	Correction flag output (open drain)
V_{SSD1}	40	Digital ground 1
V_{DDD1}	41	Digital supply voltage 1
SDI	42	Serial data input (loopback)
WCLI	43	Word clock input (loopback)

SYMBOL	PIN	DESCRIPTION
SCLI	44	Serial bit clock (loopback)
EF	45	C2 error flag
DATA	46	Serial data output
WCLK	47	Word clock output
SCLK	48	Serial clock output
CLK16	49	16MHz clock
CLK4_12	50	Configurable 4MHz or 12MHz clock
$\overline{RESET}$	51	Power on reset (active low)
SDA	52	Micro interface data I/O line (open drain output)
SCL	53	Micro interface clock line
RAB	54	Micro interface R/W & load control line (4-wire)
SILD	55	Micro interface R/W & load control line (4-wire)
STATUS	56	Servo interrupt request line/decoder status register/DC offset value readback
RCK	57	Subcode clock
SUB	58	P to W subcode
SFSY	59	Subcode frame sync
SBSY	60	Subcode block sync
V_{SSD2}	61	Digital ground 2
DOBM	62	Bi-phase mark output (externally buffered)
V_{DDD2}	63	Digital supply voltage 2
RA	64	Radial actuator
FO	65	Focus actuator
SL	66	Sledge actuator
MOTO1	67	Motor output 1
MOTO2	68	Motor output 2
V_{SSD3}	69	Digital ground 3
V_{DDD3}	70	Digital supply voltage 3
V1	71	Versatile pin 1
V2	72	Versatile pin 2
V3	73	Versatile pin 3
V4	74	Versatile pin 4
V5	75	Versatile pin 5
TEST1	76	Test pin
TEST2	77	Test pin
TEST3	78	Test pin
TEST4	79	Test pin
LASER	80	Laser drive

PIN DESCRIPTIONS OF IC SAA7752

Table 1 Pin list SAA7752EL

SYMBOL[1]	LFBGA208 PIN	DIGITAL I/O LEVEL	APPL FUNC	PIN STATE AFTER RESET	DESCRIPTION
General Purpose Pins (fixed: 25 pins)					
GPIO<24>	A11	0- 3.3VDC tolerant	I/O	0	General Purpose IO pin
GPIO<23>	B11	0- 3.3VDC tolerant	I/O	0	General Purpose IO pin
GPIO<22>	A10	0- 3.3VDC tolerant	I/O	0	General Purpose IO pin
GPIO<21>	B10	0- 3.3VDC tolerant	I/O	0	General Purpose IO pin
GPIO<20>	A9	0- 3.3VDC tolerant	I/O	0	General Purpose IO pin
GPIO<19>	B9	0- 3.3VDC tolerant	I/O	0	General Purpose IO pin
GPIO<18>	A8	0- 3.3VDC tolerant	I/O	0	General Purpose IO pin
GPIO<17>	B8	0- 3.3VDC tolerant	I/O	0	General Purpose IO pin
GPIO<16>	A7	0- 3.3VDC tolerant	I/O	0	General Purpose IO pin
GPIO<15>	F4	0- 3.3VDC tolerant	I/O	0	General Purpose IO pin
GPIO<14>	G2	0- 3.3VDC tolerant	I/O	0	General Purpose IO pin
GPIO<13>	F3	0- 3.3VDC tolerant	I/O	0	General Purpose IO pin
GPIO<12>	G1	0- 3.3VDC tolerant	I/O	0	General Purpose IO pin
GPIO<11>	F2	0- 3.3VDC tolerant	I/O	0	General Purpose IO pin
GPIO<10>	F1	0- 3.3VDC tolerant	I/O	0	General Purpose IO pin
GPIO<9>	D3	0- 3.3VDC tolerant	I/O	0	General Purpose IO pin
GPIO<8>	E2	0- 3.3VDC tolerant	I/O	0	General Purpose IO pin
GPIO<7>	D4	0- 3.3VDC tolerant	I/O	0	General Purpose IO pin
GPIO<6>	E1	0- 3.3VDC tolerant	I/O	0	General Purpose IO pin
GPIO<5>	D2	0- 3.3VDC tolerant	I/O	0	General Purpose IO pin
GPIO<4>	D1	0- 3.3VDC tolerant	I/O	0	General Purpose IO pin
GPIO<3>	C2	0- 3.3VDC tolerant	I/O	0	General Purpose IO pin
GPIO<2>	C1	0- 3.3VDC tolerant	I/O	0	General Purpose IO pin
GPIO<1>	B1	0- 3.3VDC tolerant	I/O	0	General Purpose IO pin
GPIO<0>	A1	0- 3.3VDC tolerant	I/O	0	General Purpose IO pin
8.4672MHz oscillator (fixed: 5 pins)					
XTAL1I	P4		A		6MHz clock input
XTAL1O	R3		A		6MHz clock output
CD_CLOCK	K1	0- 3.3VDC tolerant	O		CD clock output (gated)
VDDA1	R2				Analog supply Oscillator1
VSSA1	R1				Analog ground Oscillator 1
Voltage Supply PLLs(fixed: 2 pins)					
VDDA3	N2				Analog supply PLLs
VSSA3	N1				Analog ground PLLs
PLL (fixed 1pin)					
CLKO1	F15	0- 3.3VDC tolerant	O		256fs audio output clock
LCD Interface (fixed: 13 pins)					
LCD_WE	K3		O		Write Enable
LCD_RW_WR	A16		O		6800 read/write select 8080 active 'high' write enable



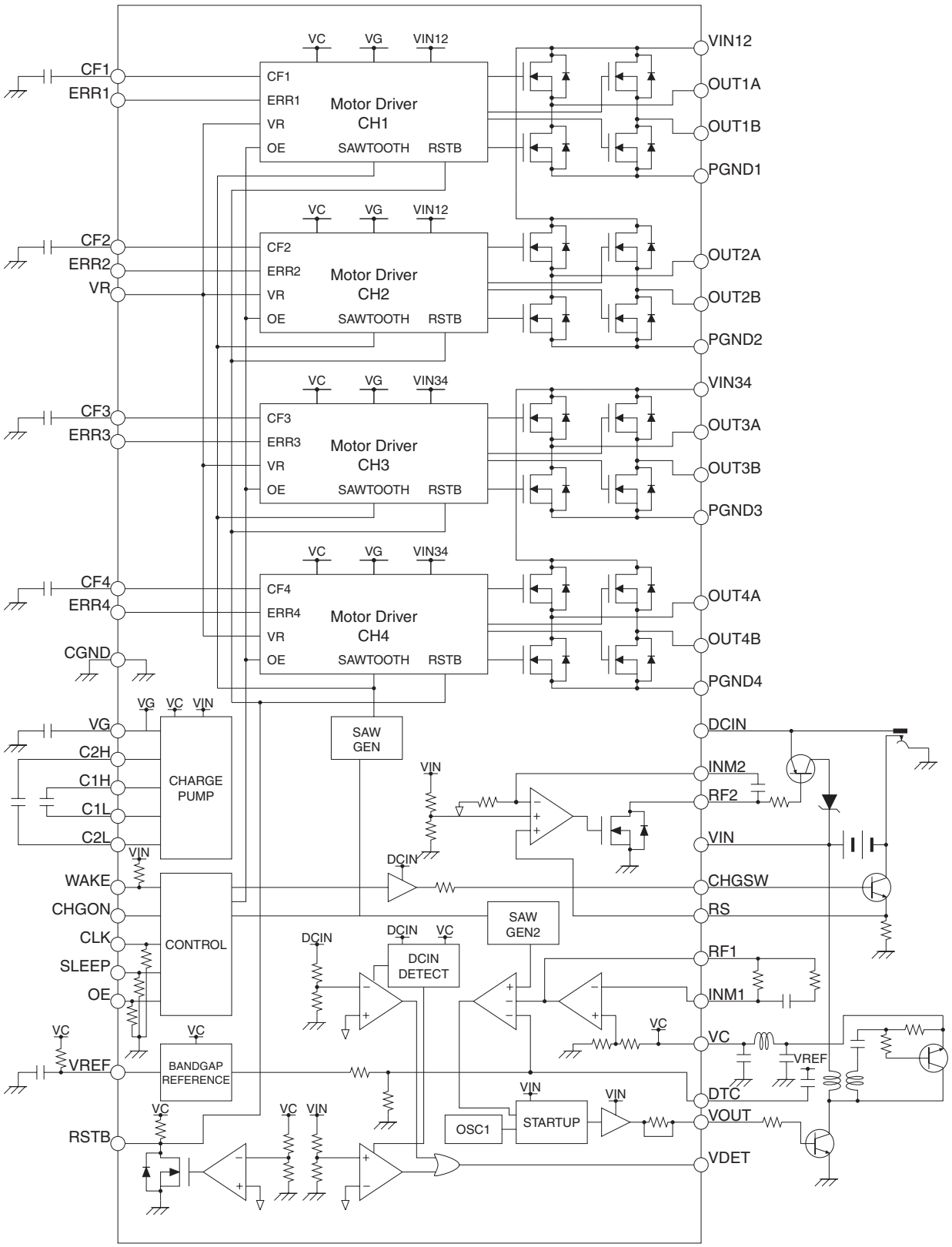
SYMBOL[1]	LFBGA 208 PIN	DIGITAL I/O LEVEL	APPL FUNC	PIN STATE AFTER RESET	DESCRIPTION
LCD_E_RD	B15		O		6800 active 'low' enable 8080 active 'high' write enable
LCD_DB<0>	D14	0- 3.3VDC tolerant	I/O		Data input 0/Data output 0
LCD_DB<1>	B17	0- 3.3VDC tolerant	I/O		Data input 1/Data output 1
LCD_DB<2>	C14	0- 3.3VDC tolerant	I/O		Data input 2/Data output 2
LCD_DB<3>	C16	0- 3.3VDC tolerant	I/O		Data input 3/Data output 3
LCD_DB<4>	D13	0- 3.3VDC tolerant	I/O		Data input 4/Data output 4
LCD_DB<5>	A17	0- 3.3VDC tolerant	I/O		Data input 5/Data output 5/serial clock
LCD_DB<6>	C13	0- 3.3VDC tolerant	I/O		Data input 6/Data output 6/Serial data input
LCD_DB<7>	B16	0- 3.3VDC tolerant	I/O		Data input 7/Data output 7/Serial data output
LCD_CSB	C12		O		Chip Select (active low)
LCD_RS	D12		O		'high' Data register select 'low' Instruction register select
10-bit ADC (fixed: 9 pins)					
GPA<4>	A5		A		Analog General Purpose pin 4
GPA<3>	B5		A		Analog General Purpose pin3
GPA<2>	J3		A		Analog General Purpose pin2
GPA<1>	M4	A			Analog General Purpose pin 1
GPA<0>	N3		A		Analog General Purpose pin 0
VREFP<1>	M3		A		10-bit ADC Reference voltage 1
VREFP<0>	L2		A		10-bit ADC Reference voltage 0
VDDA4	M2	A			nalog supply 10-bit ADC
VSSA4	M1				Analog ground 10-bit ADC
IIS input (fixed: 3 pins)					
BCKI1	J15	0- 3.3VDC tolerant	I		Bitclock input (external)
WSI1	H15	0- 3.3VDC tolerant	I		Wordselect input(external)
DATAI1	G15	0- 3.3VDC tolerant	I		Serial data input(external)
IIS output (fixed: 3 pins)					
BCKO1	M14		I/O	Tri-state	Bitclock output (external)
WSO1	F16		O	Tri-state	Wordselect output(external)
DATAO1	E16		O	Output/Low	Serial data output(external)
JTAG (fixed: 5 pins)					
JTAG_NTRST	K15	0- 3.3VDC tolerant	I		JTAG Reset Input
JTAG_TCK	U12	0- 3.3VDC tolerant	I		JTAG Clock Input
JTAG_TMS	K16	0- 3.3VDC tolerant	I		JTAG Mode Select Input
JTAG_TDI	T13	0- 3.3VDC tolerant	I		JTAG Data Input
JTAG_TDO	U13		O		JTAG Data Output
IIC slave Interface (fixed: 3 pins)					
SCL_SLAVE	P12	0- 3.3VDC tolerant	I/O		Serial clock IIC Slave
SDA_SLAVE	R12	0- 3.3VDC tolerant	I/O		Serial data IIC Slave
A0_SLAVE	T12	0- 3.3VDC tolerant	I		Address selection Slave
IIC master interface (fixed: 2 pins)					
SDA_MASTER	R13	0- 3.3VDC tolerant	I/O		IIC data I/O line (open drain output)/ UART Serial Data Input
SCL_MASTER	P13	0- 3.3VDC tolerant	I/O		IIC clock line output/ UART Serial Data Output
CDB lock Decoder (fixed: 10 pins)					
CDB_CRQ_NERDY	C5	0- 3.3VDC tolerant	I		Communication request line/CD engine is ready to receive the next frame
CDB_NCRST_NHRDY	D5		O		CD engine reset line/Host is ready to receive the next frame
CDB_CLAB	C9	0- 3.3VDC tolerant	I		IIS/EIAJ input bit clock
CDB_DAAB	C7	0- 3.3VDC tolerant	I		IIS/EIAJ serial data
CDB_WSAB	C8	0- 3.3VDC tolerant	I		IIS/EIAJ word clock
CDB_EFAB	D9	0- 3.3VDC tolerant	I		IIS/EIAJ error flags
CDB_V4_SUB	D8	0- 3.3VDC tolerant	I		Versatile pin 4:single wire subcode/EIAJ subcode data bits
CDB_CFLAG_SBSY	D6	0- 3.3VDC tolerant	I		Absolute time sync/EIAJ subcode block sync
CDB_SFSY	D7	0- 3.3VDC tolerant	I		EIAJ subcode frame sync
CDB_RCK	C6		O		EIAJ subcode clock output
Audio DAC (SDAC, fixed 5 pins)					
DAC_VREFP	R17				analog positive reference for SDAC
DAC_REFN	P16				analog negative reference for SDAC
VOUTL	P15		A		Analog left LINE output
VOUTR	R16		A		Analog right LINE output
DAC_VDD	N14		I		Supply digital part of the SDAC
EBI (fixed: 49 pins)					
EBI_NCS<2>	G16		O		Chip Selected 2
EBI_NCS<1>	T10		O		Chip Selected 1
EBI_NCS<0>	U10		O		Chip Selected 0
EBI_SDNCS<0>	H3		O		External SDRAM selection1 and SDRAM selection0
EBI_WEN	J2		O		Write enable not (for SDRAM only)
EBI_A<20>	J16		I/O		EBI address
EBI_A<19>	H16		I/O		EBI address
EBI_A<18>	F14		O		EBI address
EBI_A<17>	G14		O		EBI address
EBI_A<16>	H14		O		EBI address
EBI_A<15>	J14		O		EBI address
EBI_A<14>	R9	O			EBI address
EBI_A<13>	T9	O			EBI address
EBI_A<12>	U9	O			EBI address
EBI_A<11>	R8	O			EBI address
EBI_A<10>	T8	O			EBI address
EBI_A<9>	U8		O		EBI address
EBI_A<8>	P11		O		EBI address
EBI_A<7>	R7		O		EBI address
EBI_A<6>	P10		O		EBI address
EBI_A<5>	U7		O		EBI address
EBI_A<4>	P9		O		EBI address
EBI_A<3>	T7		O		EBI address
EBI_A<2>	P8		O		EBI address
EBI_A<1>	R6		O		EBI address
EBI_A<0>	U6		O		EBI address
EBI_D<15>	T6	0- 3.3VDC tolerant	I/O		EBI data
EBI_D<14>	U5	0- 3.3VDC tolerant	I/O		EBI data
EBI_D<13>	T5	0- 3.3VDC tolerant	I/O		EBI data
EBI_D<12>	U4	0- 3.3VDC tolerant	I/O		EBI data

SYMBOL[1]	LFBGA 208 PIN	DIGITAL I/O LEVEL	APPL FUNC	PIN STATE AFTER RESET	DESCRIPTION
EBI_D<11>	T4	0- 3.3VDC tolerant	I/O		EBI data
EBI_D<10>	U3	0- 3.3VDC tolerant	I/O		EBI data
EBI_D<9>	T3	0- 3.3VDC tolerant	I/O		EBI data
EBI_D<8>	P7	0- 3.3VDC tolerant	I/O		EBI data
EBI_D<7>	U2	0- 3.3VDC tolerant	I/O		EBI data
EBI_D<6>	P6	0- 3.3VDC tolerant	I/O		EBI data
EBI_D<5>	U1	0- 3.3VDC tolerant	I/O		EBI data
EBI_D<4>	R5	0- 3.3VDC tolerant	I/O		EBI data
EBI_D<3>	T2	0- 3.3VDC tolerant	I/O		EBI data
EBI_D<2>	P5	0- 3.3VDC tolerant	I/O		EBI data
EBI_D<1>	T1	0- 3.3VDC tolerant	I/O		EBI data
EBI_D<0>	R4	0- 3.3VDC tolerant	I/O		EBI data
EBI_SDCLKOUT	J1		O		SDRAM clock
EBI_CKE<0>	H4		O		SDRAM clock enable
EBI_DQM<1>	T11		O		SDRAM data mask 1
EBI_DQM<0>	U11		O		SDRAM data mask 0
EBI_NRAS	R10		O		SDRAM: row address strobe SMC: byteWr0 (byte write enable for byte 0... active LOW)
EBI_NCAS	R11		O		SDRAM column address strobe SMC: byteWr1 (byte write enable for byte 1... active LOW)
EBI_NOE	H2		O		EBI output enable
UART (fixed: 3 pins)					
UART_DIR_TX	D10		O		
UART_REQ_RX	C10	0- 3.3VDC tolerant	I		
UART_CLK	D11	0- 3.3VDC tolerant	I/O		
Mode Selection pins SAA7752 (fixed: 3 pins)					
MODE<2>	L16	0- 3.3VDC tolerant	I		
MODE<1>	M15	0- 3.3VDC tolerant	I		
MODE<0>	M16	0- 3.3VDC tolerant	I		
Wake-up input pin SAA7752 (fixed: 1 pin)					
WAKE_UP	L1	0- 3.3VDC tolerant	I		Wake up input pin
Reset input pin SAA7752 (fixed: 1 pin)					
NRESET_IN	L15	0- 3.3VDC tolerant	I		System Reset Input
Reset output pin SAA7752 (fixed: 1 pin)					
RESET_OUT	N16		O		Reset output
Digital supplies SAA7752 (fixed: 6 pins)					
VDDI1	L4				Core supply SAA7752
VSSIS1	L3				Core ground and substrate SAA7752
VDDI2	G4				Core supply SAA7752
VSSI2	G3				Core ground SAA7752
VDDI3	E4				Core supply SAA7752
VSSI3	E3				Core ground SAA7752
Peripheral supplies SAA7752 (fixed: 4 pins)					
VDDE3V3	J4				Peripheral (I/O) supply SAA7752 (3.3V)
VSSE3V3	K4				Peripheral (I/O) ground SAA7752
VDDE_EBI	E17				Peripheral (I/O) supply SAA7752 for EBI pads
VDDE_EBI	K14				Peripheral (I/O) supply SAA7752 for EBI pads
VSSE_EBI	F17				Peripheral (I/O) ground SAA7752 for EBI pads
VSSE_EBI	L14				Peripheral (I/O) ground SAA7752 for EBI pads
Not connected pins (fixed: 2 pins)					
NC	D15				Not connected
NC	A4				Not connected
NC	B2				Not connected
NC	A2				Not connected
NC	D17				Not connected
NC	D16				Not connected
NC	C15				Not connected
NC	C17				Not connected
NC	N4				Not connected
NC	P3				Not connected
NC	P2				Not connected
NC	P1				Not connected
NC	A6				Not connected
NC	B6				Not connected
NC	K2				Not connected
NC	E15				Not connected
NC	B3				Not connected
NC	A3				Not connected
NC	B4				Not connected
NC	B14				Not connected
NC	A15				Not connected
NC	B13				Not connected
NC	A14				Not connected
NC	E14				Not connected
NC	T17				Not connected
NC	U17				Not connected
NC	T16				Not connected
NC	R15				Not connected
NC	U16				Not connected
NC	M17				Not connected
NC	K17				Not connected
NC	H17				Not connected
NC	G17				Not connected
NC	J17				Not connected
NC	L17				Not connected
NC	N17				Not connected
NC	P14				Not connected
NC	R14				Not connected
NC	U15				Not connected
NC	T15				Not connected
NC	T14				Not connected
NC	N15				Not connected
NC	U14				Not connected
NC	C4				Not connected

PIN DESCRIPTIONS OF IC SAA7752

SYMBOL[1]	LFBGA 208 PIN	DIGITAL I/O LEVEL	APPL FUNC	PIN STATE AFTER RESET	DESCRIPTION
NC	C3				Not connected
NC	H1				Not connected
NC	A13				Not connected
NC	A12				Not connected
NC	B12				Not connected

BLOCK DIAGRAM OF IC SC111259A



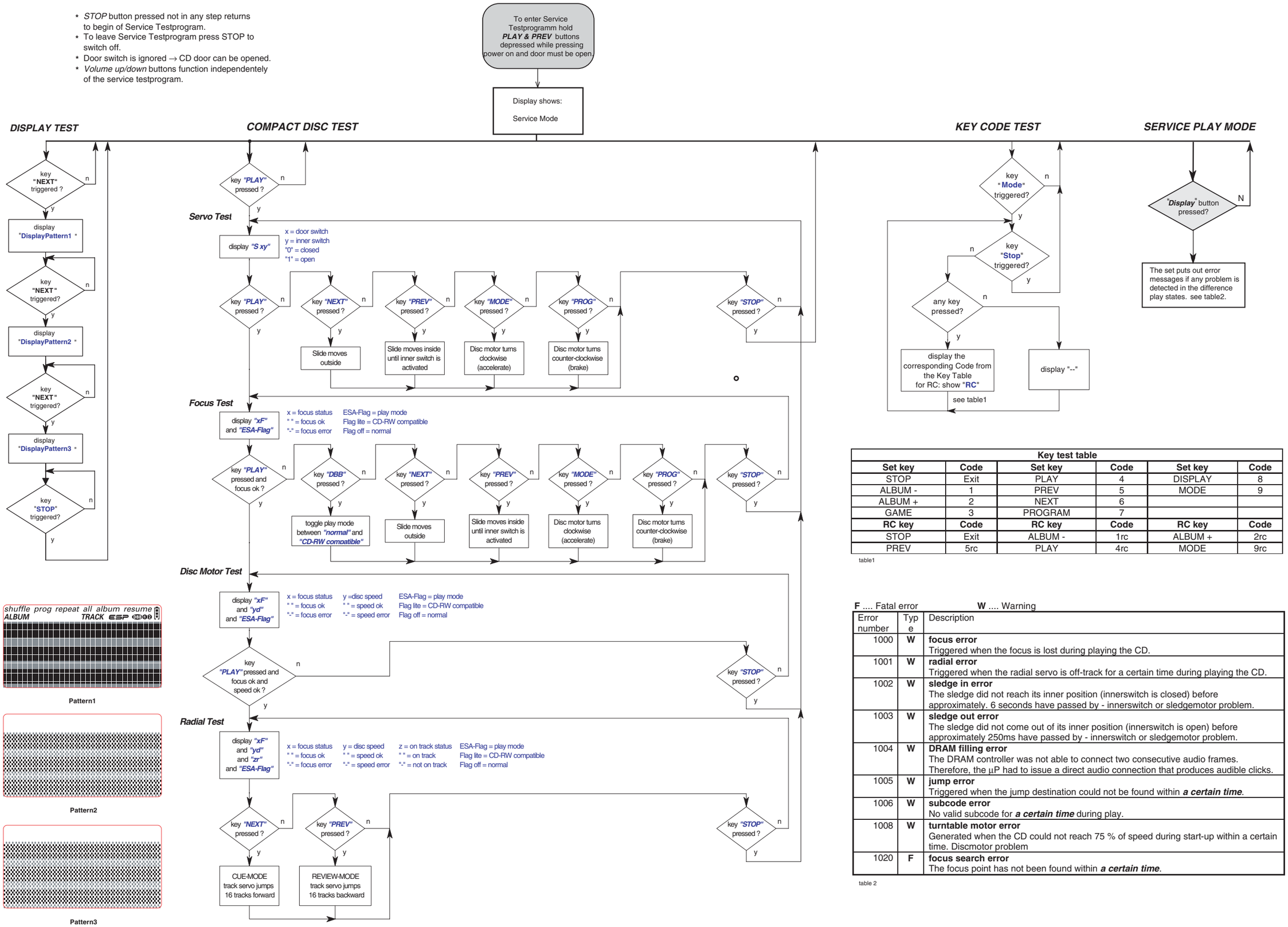
PIN DESCRIPTIONS OF IC SC111259A

Pin#	Symbol	Pin Description
1	SLEEP	Sleep input
2	WAKE	Wake input
3	VR	Reference Voltage Input(Motor driver)
4	ERR4	Control signal input(CH4)
5	CF4	Phase correction capacitor connect (CH4)
6	CF3	Phase correction capacitor connect (CH3)
7	ERR3	Control signal input(CH3)
8	ERR2	Control signal input(CH2)
9	CF2	Phase correction capacitor connect (CH2)
10	CF1	Phase correction capacitor connect (CH1)
11	ERR1	Control signal input(CH1)
12	OUT1A	Positive drive output(CH1)
13	GND	H-bridge driver ground
14	OUT1B	Negative drive output(CH2)
15	VIN12	H-bridge driver voltage supply(CH1,CH2)
16	OUT2B	Negative drive output(CH2)
17	GND	H-bridge driver ground
18	OUT2A	Positive drive output(CH2)
19	OUT3A	Positive drive output(CH3)
20	GND	H-bridge driver ground
21	OUT3B	Negative drive output(CH3)
22	VIN34	H-bridge driver voltage supply(CH3,CH4)
23	OUT4B	Negative drive output(CH4)
24	GND	H-bridge driver ground
25	OUT4A	Positive drive output(CH4)
26	VG	Charge pump output
27	C2H	Charge pump capactitor connect
28	C1H	Charge pump capactitor connect
29	C1L	Charge pump capactitor connect
30	C2L	Charge pump capactitor connect
31	VIN	Battery voltage supply
32	RSTB	Reset block output
33	CHGSW	Transistor drive output for battery charger
34	RS	OP-Amp non-inverting input for battery charger
35	INM2	Error amplifier inverting input for battery charger
36	RF2	Error amplifier output for battery charger
37	DCIN	DC power supply from AC adaptor
38	VDET	DCIN over voltage and VIN low voltage detect putput
39	VREF	Voltage reference circuit output
40	DTC	Max duty control voltage input for power management
41	VOUT	PWM output for power managenent
42	VC	Power management power supply
43	CGND	Internal ground
44	RF1	OP-Amp output for power management
45	INM1	OP-Amp inverting input for power management
46	CLK	Clock input
47	OE	Output enable for motor driver
48	CHGON	Charge enable for battery charger

3 - 8

SERVICE TEST PROGRAM - FLOW CHART

* *STOP* button pressed not in any step returns to begin of Service Testprogram.
* To leave Service Testprogram press STOP to switch off.
* Door switch is ignored → CD door can be opened.
* *Volume up/down* buttons function independentely of the service testprogram.



Pattern1

Pattern2

Pattern3

Key test table					
Set key	**Code**	**Set key**	**Code**	**Set key**	**Code**
STOP	Exit	PLAY	4	DISPLAY	8
ALBUM -	1	PREV	5	MODE	9
ALBUM +	2	NEXT	6		
GAME	3	PROGRAM	7		
RC key	**Code**	**RC key**	**Code**	**RC key**	**Code**
STOP	Exit	ALBUM -	1rc	ALBUM +	2rc
PREV	5rc	PLAY	4rc	MODE	9rc

table1

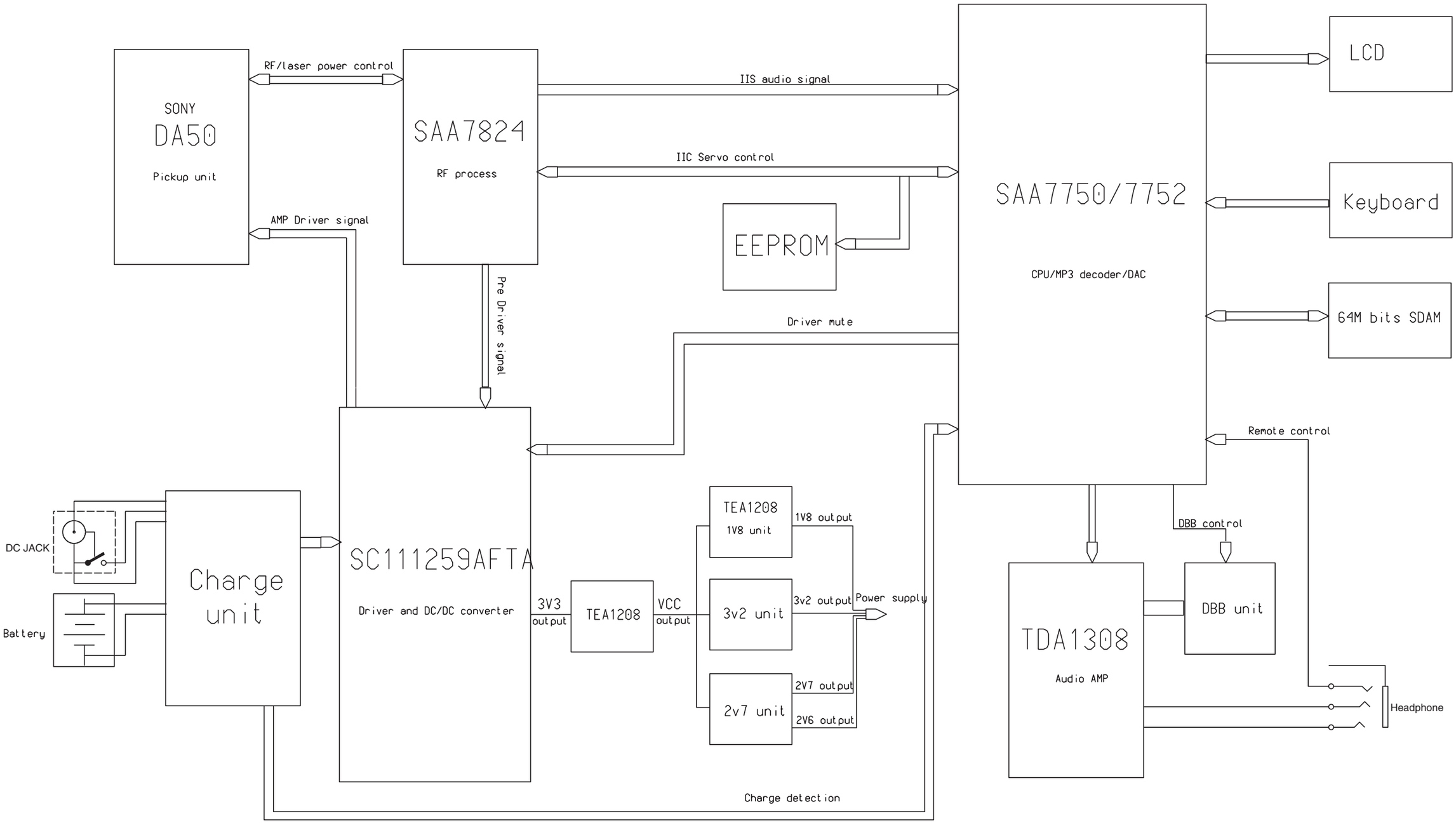
F .... Fatal error **W** .... Warning

Error number	Type	Description
1000	**W**	**focus error** Triggered when the focus is lost during playing the CD.
1001	**W**	**radial error** Triggered when the radial servo is off-track for a certain time during playing the CD.
1002	**W**	**sledge in error** The sledge did not reach its inner position (innerswitch is closed) before approximately. 6 seconds have passed by - innerswitch or sledgemotor problem.
1003	**W**	**sledge out error** The sledge did not come out of its inner position (innerswitch is open) before approximately 250ms have passed by - innerswitch or sledgemotor problem.
1004	**W**	**DRAM filling error** The DRAM controller was not able to connect two consecutive audio frames. Therefore, the µP had to issue a direct audio connection that produces audible clicks.
1005	**W**	**jump error** Triggered when the jump destination could not be found within ***a certain time***.
1006	**W**	**subcode error** No valid subcode for ***a certain time*** during play.
1008	**W**	**turntable motor error** Generated when the CD could not reach 75 % of speed during start-up within a certain time. Discmotor problem
1020	**F**	**focus search error** The focus point has not been found within ***a certain time***.

table 2

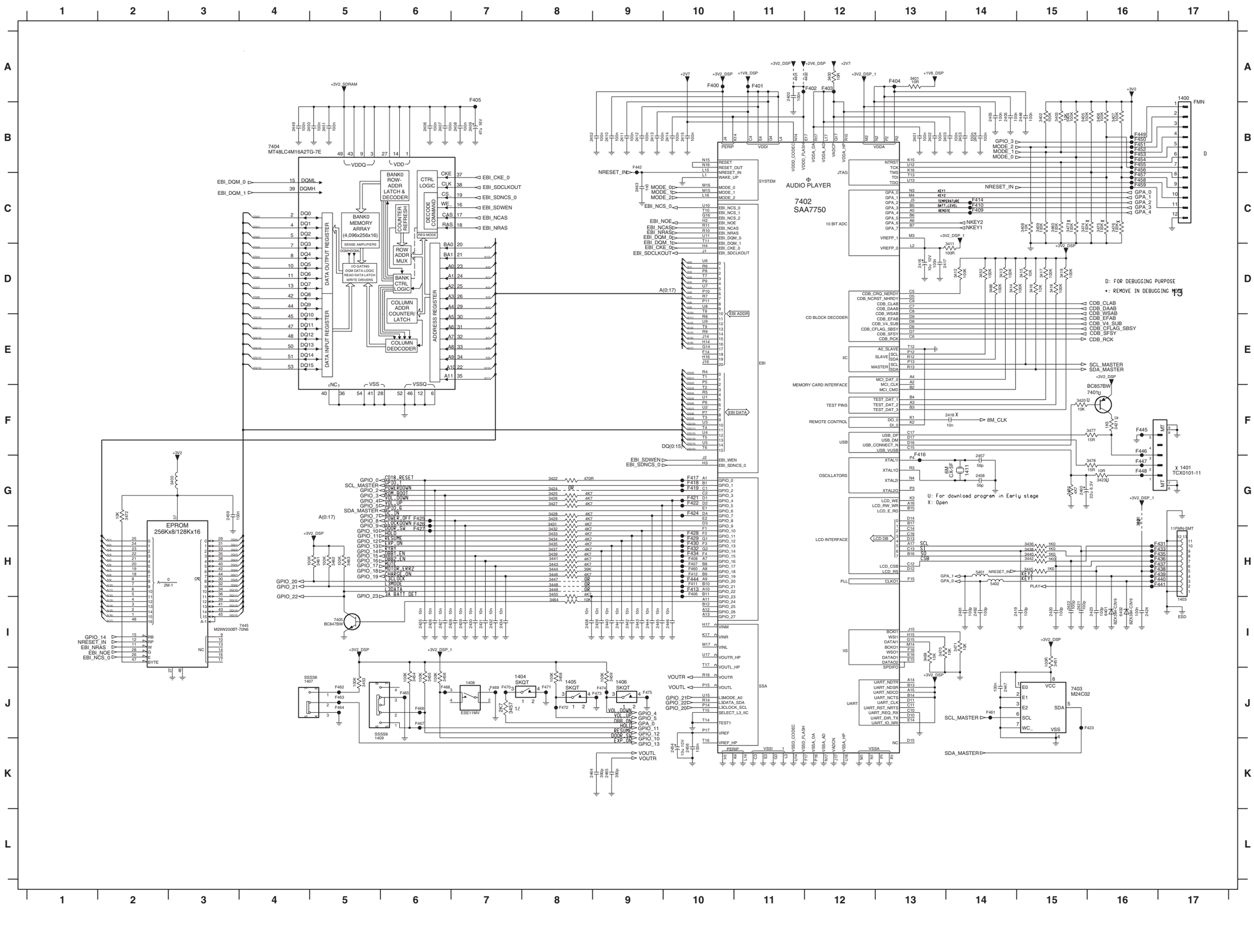
3 - 9

BLOCKDIAGRAM



4 -1

COMBI BOARD - CIRCUIT DIAGRAM
CONTROL/ESP PART

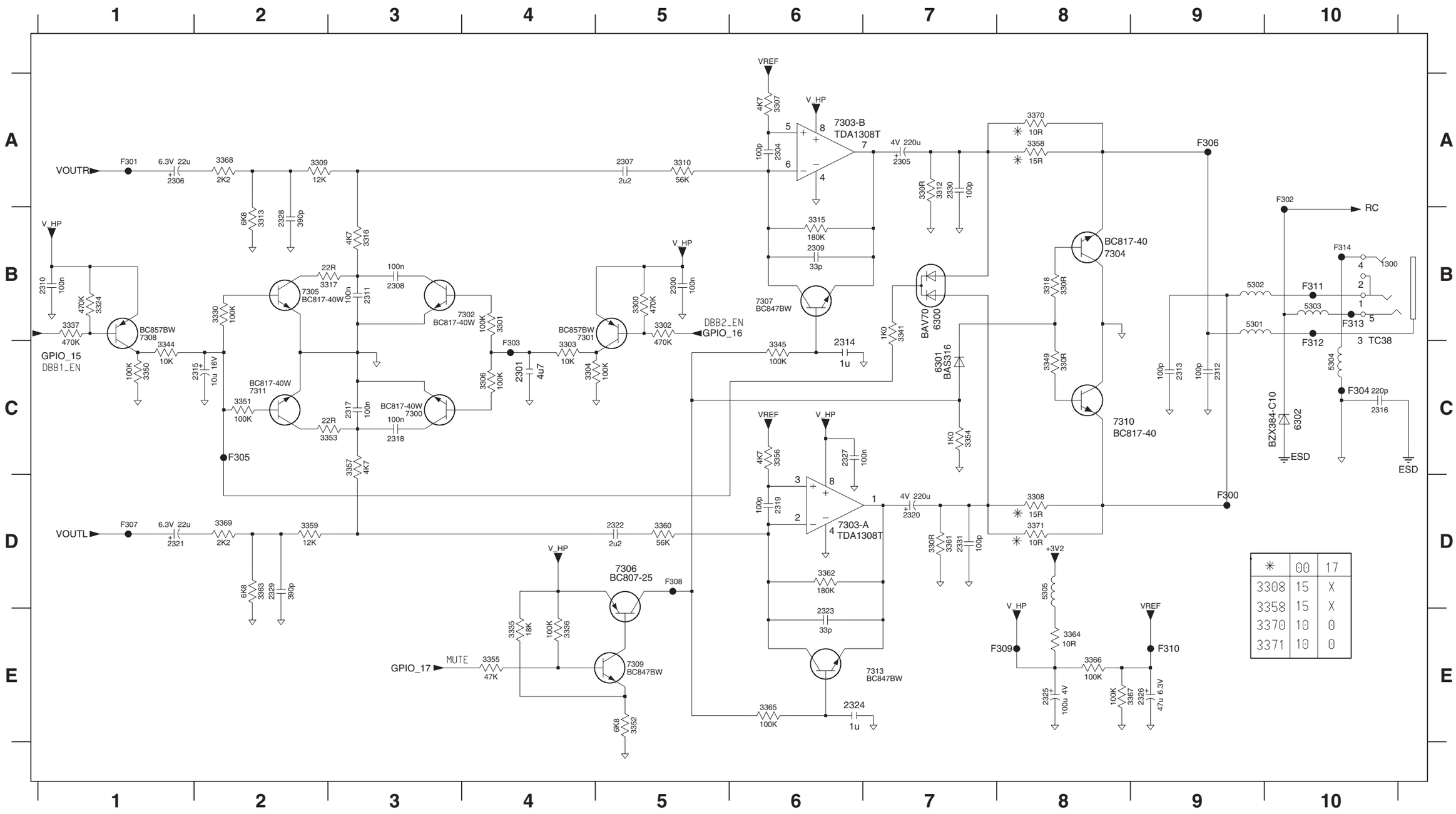


1400	A17	3481	G15
1401	G17	4401	A11
1403	I17	4402	A11
1404	J7	5400	G3
1405	J8	5401	H14
1406	J9	5402	H14
1407	J4	6401	I16
1408	J7	6402	I16
1409	J5	7401	F15
1411	G14	7402	C11
2400	A11	7403	J15
2401	B13	7404	B4
2402	B13	7405	I5
2403	B14	7445	I4
2404	B14	F400	A10
2405	B14	F401	A11
2406	B6	F402	A12
2407	B6	F403	A12
2408	B7	F404	A13
2409	B7	F405	A7
2410	B9	F406	H10
2411	B9	F407	H10
2412	B9	F408	H10
2413	B9	F409	C14
2414	B10	F410	C14
2415	B10	F411	H10
2416	D13	F412	H10
2417	D13	F413	H10
2418	F14	F414	C14
2419	I15	F416	G13
2420	I15	F417	G10
2421	I15	F418	G10
2422	I15	F419	G10
2423	I16	F421	G10
2424	I16	F422	G10
2425	I6	F423	J16
2426	I6	F424	G10
2427	I6	F425	G6
2428	I6	F426	G6
2429	I7	F427	H6
2430	I7	F428	H10
2431	I7	F429	H10
2432	I7	F430	H10
2434	I7	F431	H17
2438	I8	F432	H10
2439	I9	F433	H17
2440	I9	F434	H10
2441	I9	F435	H17
2442	I9	F436	H17
2443	I9	F437	H17
2444	I9	F438	H17
2445	I9	F439	H17
2446	I10	F440	H17
2447	J14	F441	H17
2448	B15	F442	B9
2449	B4	F444	H10
2450	B5	F445	F16
2451	B5	F446	F16
2452	B9	F447	G16
2453	B14	F448	G16
2454	K10	F449	B16
2455	B14	F450	B16
2456	K10	F451	B16
2457	G14	F452	B16
2458	G14	F453	B16
2459	G3	F454	B16
2460	G15	F455	B16
2461	I14	F456	B16
2462	I14	F457	C16
2463	C9	F458	C16
3400	A12	F459	C16
3401	A13	F460	H10
3402	B15	F461	J14
3403	B15	F462	J5
3404	B15	F463	J5
3405	B15	F464	J5
3406	B16	F465	J6
3407	B16	F466	J6
3408	C15	F467	J6
3409	C15	F468	J6
3411	D14	F469	J7
3412	D14	F470	J7
3413	D14	F471	J8
3414	D14	F472	J8
3415	D15	F473	J9
3416	D15	F474	J9
3417	D15	F475	J9
3418	D15		
3419	D15		
3420	F15		
3421	F16		
3422	G8		
3423	G16		
3424	G8		
3425	G8		
3426	G8		
3427	G8		
3428	G8		
3429	G8		
3430	G16		
3431	G8		
3432	H8		
3433	H8		
3434	H8		
3435	H8		
3436	H15		
3437	H8		
3438	H15		
3439	H8		
3440	H15		
3441	H8		
3442	H15		
3443	H8		
3444	H8		
3445	H15		
3446	H8		
3447	H8		
3448	H8		
3449	H8		
3450	H8		
3451	I15		
3452	D14		
3453	J5		
3454	J6		
3455	J6		
3456	J6		
3457	J7		
3458	J8		
3459	J9		
3460	C15		
3461	H5		
3462	H5		
3463	H5		
3464	I8		
3468	D14		
3469	I13		
3470	I13		
3471	I14		
3472	G2		
3473	C15		
3474	C15		
3475	C16		
3476	C16		
3477	F16		
3478	G16		

4 - 2

COMBI BOARD - CIRCUIT DIAGRAM
AUDIO PART

1300 B10	2307 A5	2313 C9	2319 D6	2325 E8	2331 D7	3306 C4	3313 B2	3330 B2	3345 C6	3354 C8	3360 D5	3366 E8	5301 B9	6301 C7	7303-B A6	7309 E5	F302 A10	F308 D5	F314 B10
2300 B5	2308 B3	2314 C6	2320 D7	2326 E9	3300 B5	3307 A6	3315 B6	3335 E4	3349 C8	3355 E4	3361 D7	3367 E8	5302 B9	6302 C10	7304 B8	7310 C8	F303 C4	F309 E8	
2301 C4	2309 B6	2315 C2	2321 D1	2327 C6	3301 B4	3308 D8	3316 B3	3336 E4	3350 C1	3356 C6	3362 D6	3368 A2	5303 B10	7300 C3	7305 B2	7311 C2	F304 C10	F310 E9	
2304 A6	2310 B1	2316 C10	2322 D5	2328 B2	3302 B5	3309 A2	3317 B3	3337 B1	3351 C2	3357 C3	3363 D2	3369 D2	5304 C10	7301 B4	7306 D5	7313 E7	F305 C2	F311 B10	
2305 A7	2311 B3	2317 C3	2323 E6	2329 D2	3303 C4	3310 A5	3318 B8	3341 B7	3352 E5	3358 A8	3364 E8	3370 A8	5305 D8	7302 B4	7307 B6	F300 D9	F306 A9	F312 C10	
2306 A1	2312 C9	2318 C3	2324 E6	2330 A7	3304 C4	3312 A7	3324 B1	3344 C1	3353 C3	3359 D2	3365 E6	3371 D8	6300 B7	7303-A D6	7308 B1	F301 A1	F307 D1	F313 B10	

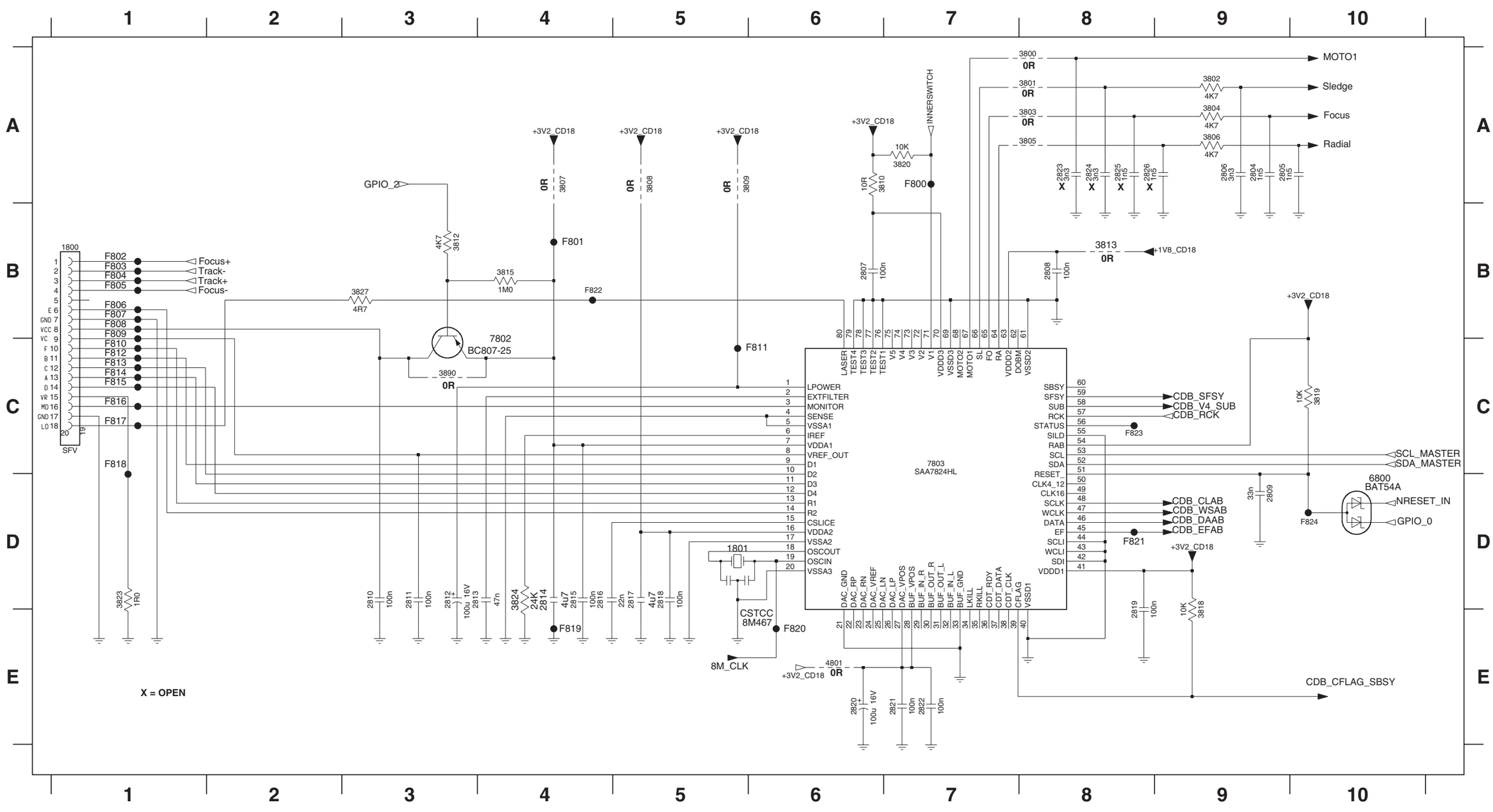


✳	00	17
3308	15	X
3358	15	X
3370	10	0
3371	10	0

4 - 3

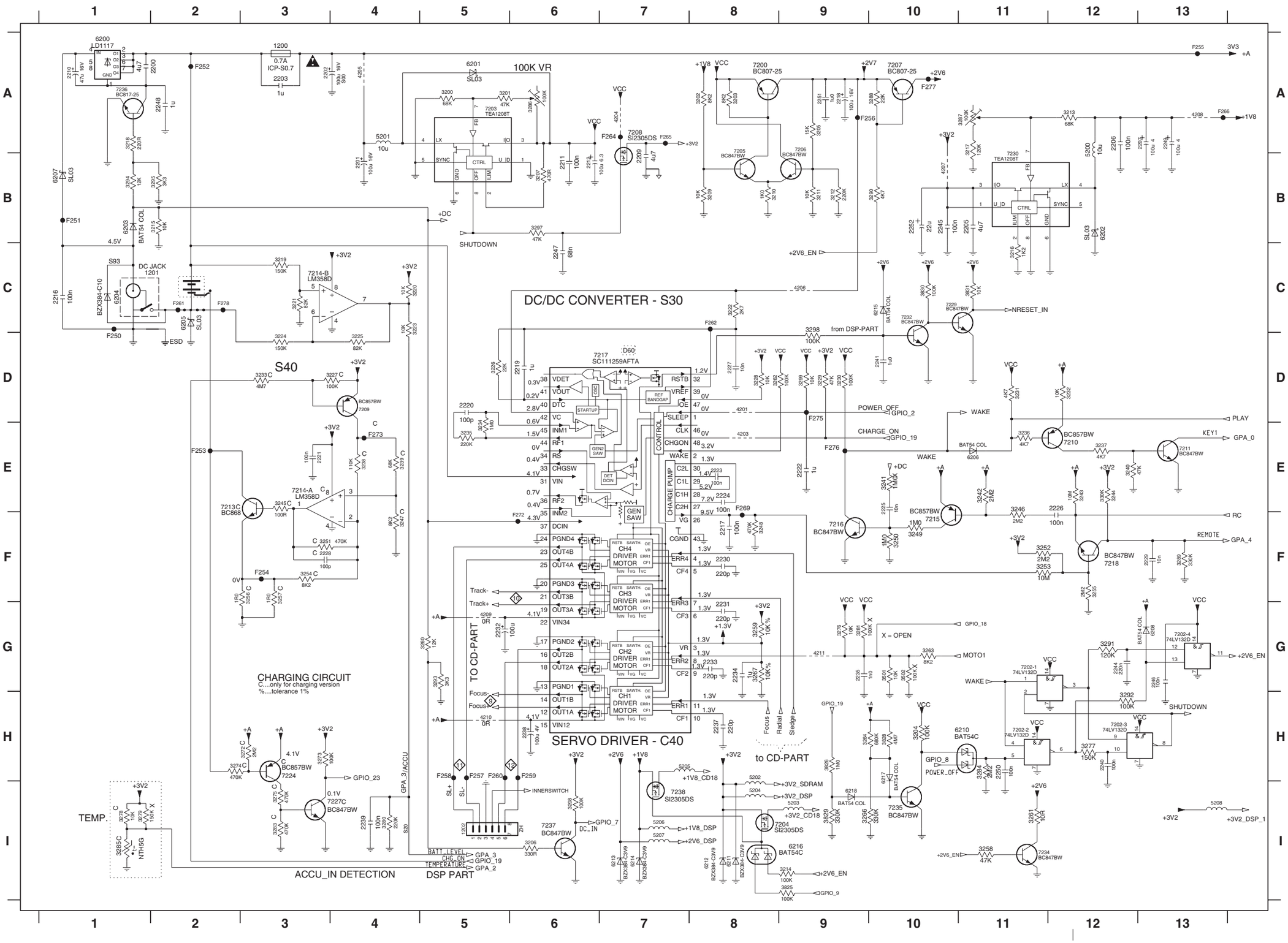
COMBI BOARD - CIRCUIT DIAGRAM
CD DRIVE PART

1800 B1	2805 A9	2808 B8	2811 D3	2814 D4	2817 D5	2820 E6	2823 A8	2826 A8	3802 A9	3805 A8	3808 A5	3812 B3	3818 E9	3823 D1	3890 C3	7802 C4	F801 B4	F804 B1	F807 B1	F810 C1	F813 C1	F816 C1	F819 E4	F822 B4
1801 D5	2806 A9	2809 D9	2812 D3	2815 D4	2818 D5	2821 E7	2824 A8	3800 A8	3803 A8	3806 A9	3809 A5	3813 B8	3819 C10	3824 D4	4801 E6	7803 C7	F802 B1	F805 B1	F808 B1	F811 C6	F814 C1	F817 C1	F820 E6	F823 C8
2804 A9	2807 B6	2810 D3	2813 D3	2816 D4	2819 E8	2822 E7	2825 A8	3801 A8	3804 A9	3807 A4	3810 A6	3815 B4	3820 A7	3827 B3	6800 D10	F800 A7	F803 B1	F806 B1	F809 B1	F812 C1	F815 C1	F818 C1	F821 D8	F824 D10



4 - 4

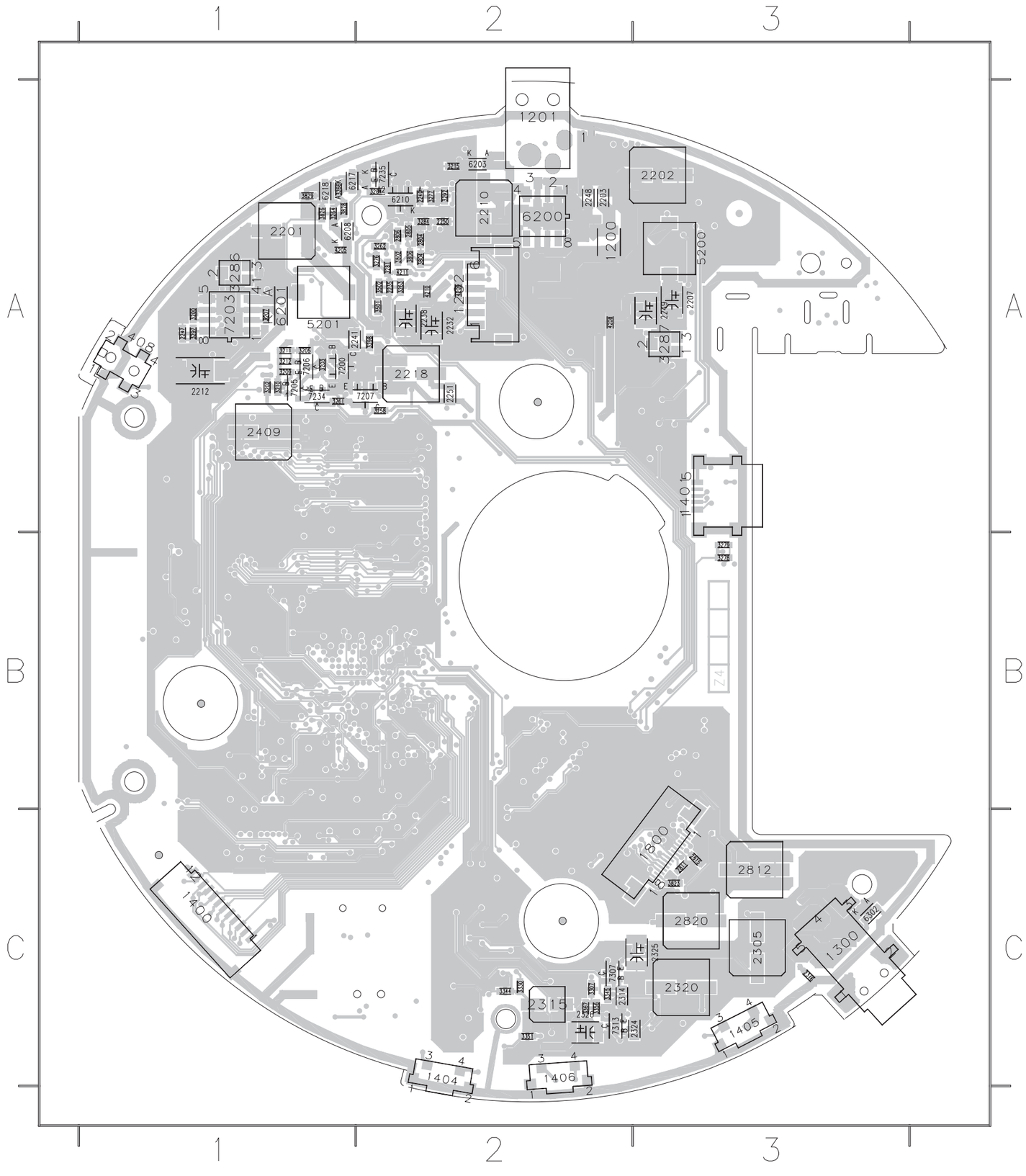
COMBI BOARD - CIRCUIT DIAGRAM
POWER SUPPLY PART



1200 A3	3274 H2	F272 F6
1201 C2	3275 I3	F273 E4
1202 I5	3276 G9	F275 D9
2200 A2	3277 H12	F276 E9
2201 B4	3278 I1	F277 A10
2202 A3	3279 I1	F278 C2
2203 A3	3280 I4	
2205 B11	3281 G9	
2206 A12	3283 I3	
2207 A13	3284 H11	
2209 B7	3285 I1	
2210 A1	3286 A6	
2211 B6	3287 A10	
2212 B6	3288 A10	
2216 C1	3289 F13	
2217 F8	3290 B10	
2218 A9	3291 G12	
2219 D6	3292 H12	
2220 D5	3293 G5	
2221 E3	3294 B1	
2222 E9	3295 B2	
2223 E8	3297 B6	
2224 E8	3298 C9	
2225 E10	3299 D9	
2226 E12	3501 G10	
2227 D8	3502 G10	
2228 F3	3825 I9	
2229 F13	3826 H9	
2230 F8	3828 H10	
2231 G8	3829 I9	
2232 G5	3830 C10	
2233 G8	3831 C11	
2234 G8	4201 D8	
2235 G9	4203 E8	
2237 H8	4204 A7	
2238 H6	4205 A4	
2239 I4	4206 C9	
2240 H12	4207 B10	
2241 D10	4208 A13	
2244 G12	4209 G5	
2245 B10	4210 H5	
2246 G13	4211 G9	
2247 C6	5200 A12	
2248 A2	5201 A4	
2249 A13	5202 H8	
2250 H11	5203 I9	
2251 A9	5204 I8	
2252 B10	5205 H7	
3200 A5	5206 I7	
3201 A5	5207 I7	
3202 A8	5208 I13	
3203 A8	6200 A1	
3204 H10	6201 A5	
3205 A9	6202 B12	
3206 I6	6203 B1	
3207 B6	6204 C1	
3208 I6	6205 C2	
3209 B8	6206 E11	
3210 B8	6207 B1	
3211 B9	6208 G13	
3212 B9	6210 H11	
3213 A12	6211 I8	
3214 I9	6212 I8	
3215 B2	6213 I7	
3216 C11	6214 I7	
3217 A11	6215 C10	
3218 A1	6216 I9	
3219 C3	6217 H10	
3220 C4	6218 I9	
3221 C3	7200 A8	
3222 C8	7202-1 G11	
3223 C4	7202-2 H11	
3224 D3	7202-3 H12	
3225 D4	7202-4 G13	
3226 D5	7203 A5	
3227 D4	7204 I9	
3228 D8	7205 A8	
3229 D9	7206 A9	
3230 D9	7207 A10	
3231 D11	7208 A7	
3232 D12	7209 D4	
3233 D3	7210 E12	
3234 E5	7211 E13	
3235 E5	7213 E2	
3236 E11	7214-A E3	
3237 E12	7214-B C3	
3238 E4	7215 F10	
3239 E4	7216 F9	
3240 E12	7217 D7	
3241 E10	7218 F12	
3242 E11	7224 H3	
3243 E12	7227 I3	
3244 E12	7229 C10	
3245 E3	7230 B11	
3246 E11	7232 C10	
3247 F4	7234 I11	
3248 F8	7235 I10	
3249 F10	7236 A1	
3250 F10	7237 I6	
3251 F3	7238 I7	
3252 F11	F250 D1	
3253 F11	F251 B1	
3254 F3	F252 A2	
3255 F12	F253 E2	
3256 F3	F254 F3	
3257 F3	F255 A13	
3258 I11	F256 A9	
3259 G8	F257 H5	
3260 G5	F258 H5	
3261 I11	F259 H6	
3262 D8	F260 H5	
3263 G10	F261 C2	
3264 H9	F262 C8	
3266 I9	F264 A7	
3267 G8	F265 A7	
3272 H3	F266 A13	
3273 H3	F269 E8	

4 - 5

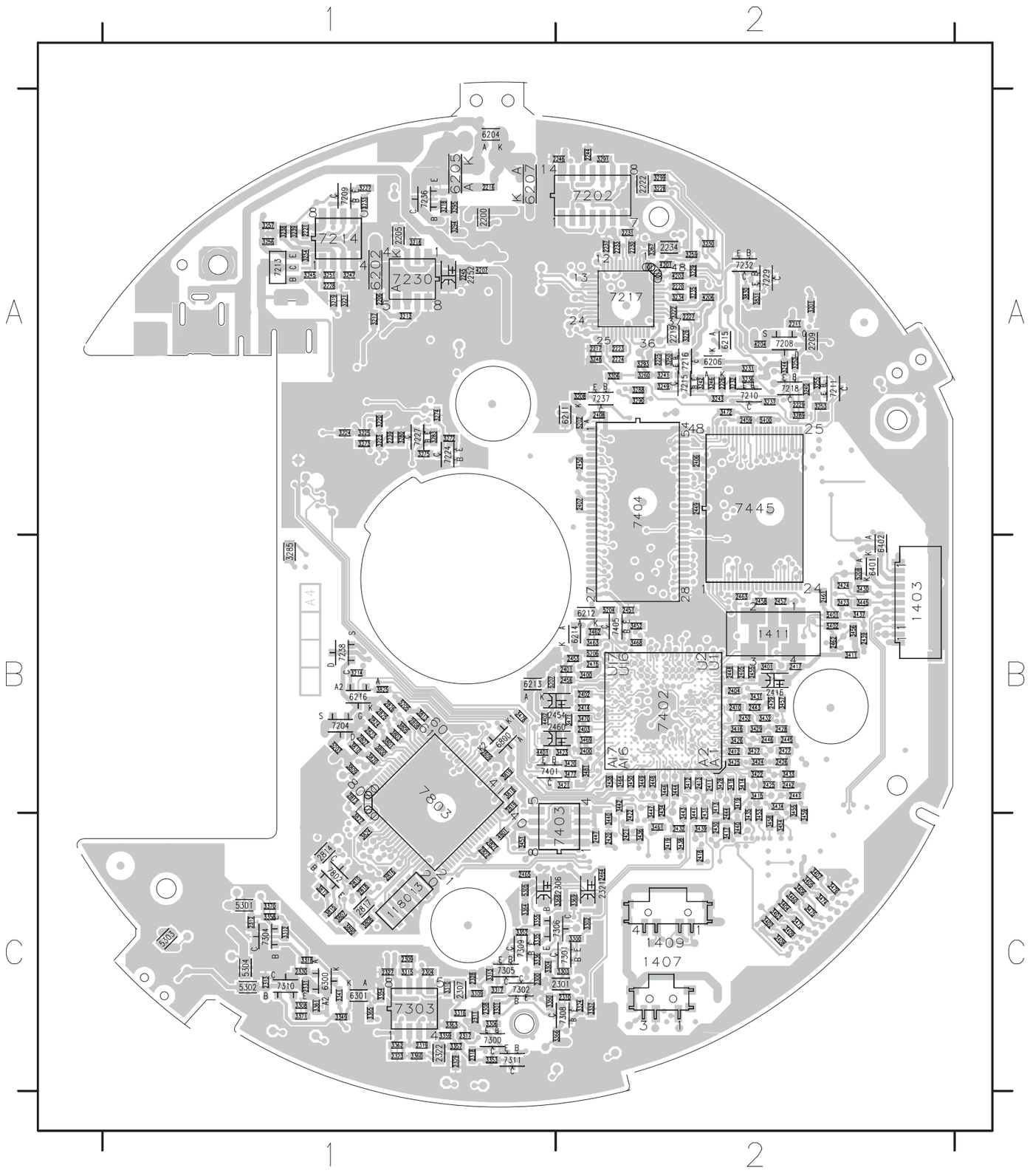
COMBI BOARD - LAYOUT DIAGRAM
COMPONENT SIDE VIEW



1200	A2	3367	C2
1201	A2	3501	A2
1202	A2	3502	A2
1300	C3	3802	A2
1400	C1	3804	A2
1401	A3	3806	A2
1404	C2	3823	C3
1405	C3	3826	A1
1406	C2	3828	A1
1408	A1	3829	A1
1800	C3	4205	A1
2201	A1	4208	A2
2202	A3	4209	A2
2203	A2	4210	A2
2207	A3	4211	A2
2210	A2	5200	A3
2212	A1	5201	A1
2218	A2	6200	A2
2232	A2	6201	A1
2235	A2	6203	A2
2238	A2	6208	A1
2240	A2	6210	A2
2241	A1	6217	A1
2247	A1	6218	A1
2248	A2	6302	C3
2249	A3	7200	A1
2250	A2	7203	A1
2251	A2	7205	A1
2305	C3	7206	A1
2314	C2	7207	A2
2315	C2	7234	A1
2316	C3	7235	A2
2320	C3	7307	C2
2324	C3	7313	C2
2325	C3		
2326	C2		
2409	A1		
2804	A2		
2805	A2		
2806	A2		
2811	C3		
2812	C3		
2815	C3		
2820	C3		
3200	A1		
3202	A1		
3203	A1		
3204	A2		
3205	A1		
3207	A1		
3209	A1		
3210	A1		
3211	A1		
3212	A1		
3215	A2		
3258	A2		
3261	A1		
3262	A2		
3263	A2		
3264	A1		
3266	A1		
3276	A2		
3277	A2		
3278	B3		
3279	B3		
3281	A2		
3284	A2		
3286	A1		
3287	A3		
3292	A2		
3297	A1		
3298	A2		
3307	C2		
3330	C2		
3344	C2		
3345	C2		
3351	C2		
3356	C2		

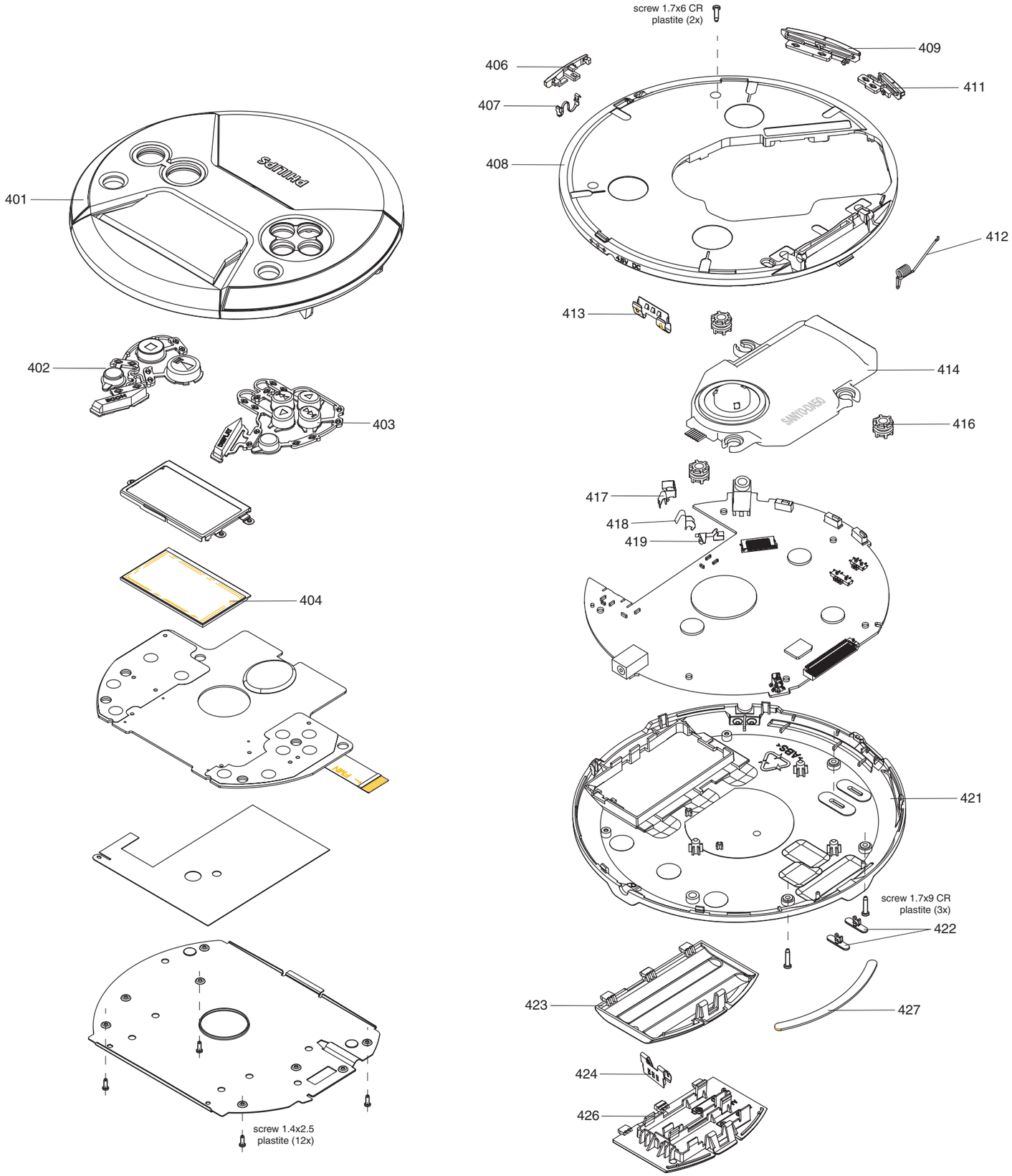
4 - 6

COMBI BOARD - LAYOUT DIAGRAM
COPPER SIDE VIEW



1403	B2	2424	B2	3235	A2	3369	C2	3481	B2	7237	A2
1407	C2	2425	B2	3236	A2	3370	C1	3800	B1	7238	B1
1409	C2	2426	B2	3237	A2	3371	C1	3801	B1	7300	C1
1411	B2	2427	B2	3238	A1	3400	B2	3803	B1	7301	C2
1801	C1	2428	B2	3239	A1	3401	B2	3805	B1	7302	C1
2200	A1	2429	B2	3240	A2	3402	C2	3807	C1	7303	C1
2205	A1	2430	C2	3241	A2	3403	C2	3808	C1	7304	C1
2206	A1	2431	C2	3242	A2	3404	C2	3809	B1	7305	C1
2209	A2	2432	C2	3243	A2	3405	C2	3810	B1	7306	C2
2211	A2	2434	B2	3244	A2	3406	C2	3812	C1	7308	C2
2216	A1	2438	B2	3245	A1	3407	C2	3813	B1	7309	C1
2217	A2	2439	B2	3246	A2	3408	C2	3815	C1	7310	C1
2219	A2	2440	C2	3247	A1	3409	C2	3818	B1	7311	C1
2220	A2	2441	B2	3248	A2	3411	B2	3819	B1	7401	B1
2221	A1	2442	B2	3249	A2	3412	B2	3820	B1	7402	B2
2222	A2	2443	B2	3250	A2	3413	B2	3824	C1	7403	C2
2223	A2	2444	C2	3251	A1	3414	B2	3825	B1	7404	A2
2224	A2	2445	B2	3252	A2	3415	B2	3827	C1	7405	B2
2225	A2	2446	B2	3253	A2	3416	B2	3830	A2	7445	A2
2226	A2	2447	C2	3254	A1	3417	C2	3831	A2	7802	C1
2227	A2	2448	B2	3255	A2	3418	B2	3890	C1	7803	B1
2228	A1	2449	A2	3256	A1	3419	B2	4201	A2		
2229	A2	2450	A2	3257	A1	3420	B2	4203	A2		
2230	A2	2451	B2	3259	A2	3421	B2	4204	A2		
2231	A2	2452	B2	3260	A2	3422	B2	4206	A2		
2233	A2	2453	B2	3267	A2	3423	B2	4207	A1		
2234	A2	2454	B2	3272	A1	3424	B2	4401	B1		
2237	A2	2455	B2	3273	A1	3425	B2	4402	B1		
2239	A1	2456	B2	3274	A1	3426	B2	4801	C1		
2244	A2	2457	B2	3275	A1	3427	B2	5202	A2		
2245	A1	2458	B2	3280	A1	3428	B2	5203	B1		
2246	A2	2459	A2	3283	A1	3429	B2	5204	B2		
2252	A1	2460	B2	3285	B1	3430	B2	5205	B1		
2300	C1	2461	B2	3288	A2	3431	B2	5206	B2		
2301	C2	2462	B2	3289	A2	3432	B2	5207	B1		
2304	C1	2463	B2	3290	A2	3433	B2	5208	B2		
2306	C2	2464	C2	3291	A2	3434	B2	5301	C1		
2307	C1	2465	C1	3293	A2	3435	C2	5302	C1		
2308	C1	2807	B1	3294	A1	3436	C2	5303	C1		
2309	C1	2808	B1	3295	A1	3437	B2	5304	C1		
2310	C2	2809	B1	3299	A2	3438	C2	5305	C1		
2311	C1	2810	C1	3300	C2	3439	C2	5400	A2		
2312	C1	2813	B1	3301	C1	3440	C2	5401	B2		
2313	C1	2814	C1	3302	C2	3441	C2	5402	B2		
2317	C1	2816	C1	3303	C2	3442	B2	6202	A1		
2318	C1	2817	C1	3304	C1	3443	C2	6204	A1		
2319	C1	2818	C1	3306	C1	3444	B2	6205	A1		
2321	C2	2819	B1	3308	C1	3445	B2	6206	A2		
2322	C1	2821	C1	3309	C1	3446	B2	6207	A1		
2323	C1	2822	C1	3310	C1	3447	B2	6211	A2		
2327	C1	2823	B1	3312	C1	3448	B2	6212	B2		
2328	C1	2824	B1	3313	C1	3449	B2	6213	B1		
2329	C1	2825	B1	3315	C1	3450	B2	6214	B2		
2330	C1	2826	B1	3316	C1	3451	C1	6215	A2		
2331	C1	3201	A2	3317	C1	3452	B2	6216	B1		
2400	B2	3206	A2	3318	C1	3453	C2	6300	C1		
2401	B2	3208	A2	3324	C2	3454	C2	6301	C1		
2402	B2	3213	A1	3335	C1	3455	B2	6401	B2		
2403	B2	3214	B1	3336	C1	3456	B2	6402	B2		
2404	B2	3216	A1	3337	C2	3457	B2	6800	B1		
2405	B2	3217	A1	3341	C1	3458	C2	7202	A2		
2406	A2	3218	A1	3349	C1	3459	C2	7204	B1		
2407	A2	3219	A1	3350	C1	3460	C2	7208	A2		
2408	A2	3220	A1	3352	C1	3461	C2	7209	A1		
2410	B2	3221	A1	3353	C1	3462	B2	7210	A2		
2411	B2	3222	A2	3354	C1	3463	B2	7211	A2		
2412	B2	3223	A1	3355	C1	3464	B2	7213	A1		
2413	B2	3224	A1	3357	C1	3468	B2	7214	A1		
2414	B2	3225	A1	3358	C1	3469	B2	7215	A2		
2415	B2	3226	A2	3359	C1	3470	B2	7216	A2		
2416	B2	3227	A1	3360	C1	3471	B2	7217	A2		
2417	B2	3228	A2	3361	C1	3472	A2	7218	A2		
2418	C2	3229	A2	3362	C1	3473	C2	7224	A1		
2419	C2	3230	A2	3363	C1	3474	C2	7227	A1		
2420	C2	3231	A2	3364	C1	3475	C2	7229	A2		
2421	C2	3232	A2	3365	C1	3476	C2	7230	A1		
2422	C2	3233	A1	3366	C2	3477	B2	7232	A2		
2423	B2	3234	A2	3368	C2	3478	B1	7236	A1		

EXPLODED VIEW DIAGRAM



5 - 1

MECHANICAL PARTSLIST

401	3140 117 66021	CD-DOOR-ASSY-EXP521
402	3140 117 67451	KEY-GAMES-ASSY-EXP521
403	3140 117 67461	KEY-SHOOT-ASSY-EXP521
404	3140 110 51821	LCD MODULE - EXP521
406	3140 117 66991	SLIDER-DOOR-OPEN-AX5215
407	3140 111 22611	SPRING-SLIDER-OPEN-AX5203
408	3140 117 66941	CABINET-AX5215-ASSY-1
409	3140 117 67001	KNOB-VOLUME-AX5215
411	3140 117 67011	KNOB-DBB-AX5215
412	3140 111 01501	SPRING-CD DOOR EXP521
413	3140 111 22621	SPRING-BATTERY-SET, +/- AX5203
414	2422 549 45374	CD DRIVE DA50
416	3140 114 47581	DAMPER-AX5203
417	3140 111 22571	SPRING BATTERY, +VE AX5203
418	3140 111 22581	SPRING BATTERY, -VE AX5203
419	3140 111 22601	SPRING BATTERY CHARGE-AX5203
421	3140 117 67351	BOTTOM-AX5202-ASSY-1
422	3140 117 67161	SLIDER-HOLD-AX5203
423	3140 117 66471	DOOR-BATTERY-2A-AX5203
424	3140 111 22631	SPRING BATTERY-DOOR +/- AX5203
426	3140 117 67031	DOOR-BATTERY-3A-AX5215-ASSY
427	3140 114 49361	RUBBER-FOOT

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

ELECTRICAL PARTSLIST - COMBI BOARD

- MISCELLANEOUS -

1200	2422 086 11012	FUSE 0,7A 50V
1201	2422 026 05086	CONNECTOR SUPP H 1P
1202	2422 025 12918	CONNECTOR H 6P
1300	2422 026 05317	SOCKET PHONE H 1P
1403	2422 025 17034	SOCKET FFC H 11P
1404	2422 128 02863	SWITCH-TACT
1405	2422 128 02863	SWITCH-TACT
1406	2422 128 02863	SWITCH-TACT
1407	2422 127 00543	SWITCH-SLID
1408	2422 129 16818	SWITCH-DET
1409	2422 127 00547	SWITCH-SLID
1411	2422 543 01106	CRYSTAL
1800	2422 025 17917	SOCKET FFC H 18P

- CAPACITORS -

2200	2020 552 96305	4,7µF +80-20% Y5V 10V
2201	4822 124 12095	100µF 20% 16V
2202	4822 124 12095	100µF 20% 16V
2203	4822 126 14472	1µF 10% X7 10V
2205	2020 552 96305	4,7µF +80-20% Y5V 10V
2206	2238 586 59812	100nF +80-20% Y5V 50V
2207	3198 032 15190	100µF 20% 4V
2209	2020 552 96305	4,7µF +80-20% Y5V 10V
2210	4822 124 80151	47µF 16V
2211	2238 586 59812	100nF +80-20% Y5V 50V
2212	3198 032 27190	100µF 20% 4V
2216	2238 586 59812	100nF +80-20% Y5V 50V
2217	2238 586 59812	100nF +80-20% Y5V 50V
2218	4822 124 12095	100µF 20% 16V
2219	4822 126 14472	1µF 10% X7 10V
2220	2020 552 94427	100pF 5% NP0 50V
2221	2238 586 59812	100nF +80-20% Y5V 50V
2222	4822 126 14472	1µF 10% X7 10V
2223	2238 586 59812	100nF +80-20% Y5V 50V
2224	2238 586 59812	100nF +80-20% Y5V 50V
2225	5322 126 11583	10nF 10% X7 50V
2226	2238 586 59812	100nF +80-20% Y5V 50V
2227	5322 126 11583	10nF 10% X7 50V
2228	2020 552 94427	100pF 5% NP0 50V
2229	5322 126 11583	10nF 10% X7 50V
2230	4822 126 13883	220pF 5% 50V
2231	4822 126 13883	220pF 5% 50V
2232	3198 032 15190	100µF 20% 4V
2233	4822 126 13883	220pF 5% 50V
2234	4822 126 14472	1µF 10% X7 10V
2235	5322 126 11578	1nF 10% X7 50V
2237	4822 126 13883	220pF 5% 50V
2238	3198 032 15190	100µF 20% 4V
2239	2238 586 59812	100nF +80-20% Y5V 50V
2240	2238 586 59812	100nF +80-20% Y5V 50V

- CAPACITORS -

2241	4822 126 14043	1µF +80-20% Y5V 16V
2244	4822 126 13879	220nF +80-20% 16V
2245	2238 586 59812	100nF +80-20% Y5V 50V
2246	2238 586 59812	100nF +80-20% Y5V 50V
2247	3198 017 36830	68nF X7 16V
2248	4822 126 14472	1µF 10% X7 10V
2249	3198 032 15190	100µF 20% 4V
2250	2238 586 59812	100nF +80-20% Y5V 50V
2251	4822 126 14043	1µF +80-20% Y5V 16V
2252	4822 124 11946	22µF 20% 16V
2300	2238 586 59812	100nF +80-20% Y5V 50V
2301	2020 552 96305	4,7µF +80-20% Y5V 10V
2304	2020 552 94427	100pF 5% NP0 50V
2305	4822 124 81059	220µF 20% 4V
2306	4822 124 11946	22µF 20% 16V
2307	4822 126 14491	2,2µF 10V
2308	2238 586 59812	100nF +80-20% Y5V 50V
2309	2222 867 15339	33pF 5% NP0 50V
2310	2238 586 59812	100nF +80-20% Y5V 50V
2311	2238 586 59812	100nF +80-20% Y5V 50V
2312	2020 552 94427	100pF 5% NP0 50V
2313	2020 552 94427	100pF 5% NP0 50V
2314	4822 126 14472	1µF 10% X7 10V
2315	4822 124 23002	10µF 16V
2316	4822 126 13883	220pF 5% 50V
2317	2238 586 59812	100nF +80-20% Y5V 50V
2318	2238 586 59812	100nF +80-20% Y5V 50V
2319	2020 552 94427	100pF 5% NP0 50V
2320	4822 124 81059	220µF 20% 4V
2321	4822 124 11946	22µF 20% 16V
2322	4822 126 14491	2,2µF 10V
2323	2222 867 15339	33pF 5% NP0 50V
2324	4822 126 14472	1µF 10% X7 10V
2325	3198 032 15190	100µF 20% 4V
2326	2022 009 00656	47µF 20% 6,3V
2327	2238 586 59812	100nF +80-20% Y5V 50V
2328	4822 126 14315	390pF 5% NP0 50V
2329	4822 126 14315	390pF 5% NP0 50V
2330	2020 552 94427	100pF 5% NP0 50V
2331	2020 552 94427	100pF 5% NP0 50V
2400	2238 586 59812	100nF +80-20% Y5V 50V
2401	2238 586 59812	100nF +80-20% Y5V 50V
2402	2238 586 59812	100nF +80-20% Y5V 50V
2403	2238 586 59812	100nF +80-20% Y5V 50V
2404	2238 586 59812	100nF +80-20% Y5V 50V
2405	2238 586 59812	100nF +80-20% Y5V 50V
2406	2238 586 59812	100nF +80-20% Y5V 50V
2407	2238 586 59812	100nF +80-20% Y5V 50V
2408	2238 586 59812	100nF +80-20% Y5V 50V
2409	4822 124 80151	47µF 16V

6 - 1

ELECTRICAL PARTSLIST - COMBI BOARD

- CAPACITORS -

2410	2238 586 59812	100nF +80-20% Y5V 50V
2411	2238 586 59812	100nF +80-20% Y5V 50V
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
2416	2020 004 90283	10µF 20%10V
2417	2238 586 59812	100nF +80-20% Y5V 50V
2421	2020 552 94427	100pF 5% NP0 50V
2422	2020 552 94427	100pF 5% NP0 50V
2423	2020 552 94427	100pF 5% NP0 50V
2424	2238 586 59812	100nF +80-20% Y5V 50V
2425	5322 126 11583	10nF 10% X7 50V
2426	5322 126 11583	10nF 10% X7 50V
2427	5322 126 11583	10nF 10% X7 50V
2428	5322 126 11583	10nF 10% X7 50V
2429	5322 126 11583	10nF 10% X7 50V
2430	5322 126 11583	10nF 10% X7 50V
2431	5322 126 11583	10nF 10% X7 50V
2432	5322 126 11583	10nF 10% X7 50V
2434	5322 126 11583	10nF 10% X7 50V
2438	5322 126 11583	10nF 10% X7 50V
2439	5322 126 11583	10nF 10% X7 50V
2440	5322 126 11583	10nF 10% X7 50V
2441	5322 126 11583	10nF 10% X7 50V
2442	5322 126 11583	10nF 10% X7 50V
2443	5322 126 11583	10nF 10% X7 50V
2444	5322 126 11583	10nF 10% X7 50V
2445	5322 126 11583	10nF 10% X7 50V
2446	5322 126 11583	10nF 10% X7 50V
2447	2238 586 59812	100nF +80-20% Y5V 50V
2448	2238 586 59812	100nF +80-20% Y5V 50V
2449	2238 586 59812	100nF +80-20% Y5V 50V
2450	2238 586 59812	100nF +80-20% Y5V 50V
2451	2238 586 59812	100nF +80-20% Y5V 50V
2452	2238 586 59812	100nF +80-20% Y5V 50V
2453	2238 586 59812	100nF +80-20% Y5V 50V
2454	2020 004 90283	10µF 20% F93 10V
2455	2238 586 59812	100nF +80-20% Y5V 50V
2456	2238 586 59812	100nF +80-20% Y5V 50V
2457	4822 126 14225	56pF 5% NP0 50V
2458	4822 126 14225	56pF 5% NP0 50V
2459	2238 586 59812	100nF +80-20% Y5V 50V
2460	4822 124 11946	22µF 20% 16V
2461	2020 552 94427	100pF 5% NP0 50V
2462	2020 552 94427	100pF 5% NP0 50V
2463	5322 126 11578	1nF 10% X7 50V
2804	4822 126 14247	1,5nF X7 50V
2805	4822 126 14247	1,5nF X7 50V
2806	5322 126 11579	3,3nF 10% X7 63V

- CAPACITORS -

2807	2238 586 59812	100nF +80-20% Y5V 50V
2808	2238 586 59812	100nF +80-20% Y5V 50V
2809	4822 126 14549	33nF 16V X7
2810	2238 586 59812	100nF +80-20% Y5V 50V
2811	2238 586 59812	100nF +80-20% Y5V 50V
2812	4822 124 12095	100µF 20% 16V
2813	3198 024 44730	47nF Y5V 50V
2814	2020 552 96305	4,7µF +80-20% Y5V 10V
2815	2238 586 59812	100nF +80-20% Y5V 50V
2816	3198 017 42230	22nF Y5V 50V
2817	2020 552 96305	4,7µF +80-20% Y5V 10V
2818	2238 586 59812	100nF +80-20% Y5V 50V
2819	2238 586 59812	100nF +80-20% Y5V 50V
2820	4822 124 12095	100µF 20% 16V
2821	2238 586 59812	100nF +80-20% Y5V 50V
2822	2238 586 59812	100nF +80-20% Y5V 50V

- RESISTORS -

3200	4822 051 30683	68K 5% 0,062W
3201	4822 117 12925	47K 1% 0,063W
3202	4822 117 12902	8,2K 1% 0,063W
3203	4822 117 12902	8,2K 1% 0,063W
3204	4822 117 13632	100K 1% 0,62W
3205	4822 051 30153	15K 5% 0,062W
3206	4822 051 30331	330 5% 0,062W
3207	4822 051 30471	470 5% 0,062W
3208	4822 117 13632	100K 1% 0,62W
3209	4822 051 30103	10K 5% 0,062W
3210	4822 051 30102	1K 5% 0,062W
3211	4822 051 30103	10K 5% 0,062W
3212	4822 117 12891	220K 1%
3213	4822 051 30683	68K 5% 0,062W
3214	4822 117 13632	100K 1% 0,62W
3215	4822 051 30103	10K 5% 0,062W
3216	4822 117 11817	1,2K 1% 1/16W
3217	4822 051 30124	120K 5% 0,062W
3218	4822 051 30221	220 5% 0,062W
3219	2322 704 61504	150K 1%
3220	4822 051 30103	10K 5% 0,062W
3221	2322 704 68203	82K 1%
3222	4822 051 30272	2,7K 5% 0,062W
3223	4822 051 30103	10K 5% 0,062W
3224	2322 704 61504	150K 1%
3225	2322 704 68203	82K 1%
3226	4822 051 30223	22K 5% 0,062W
3227	4822 117 13632	100K 1% 0,62W
3228	4822 051 30103	10K 5% 0,062W
3229	4822 117 12925	47K 1% 0,063W

ELECTRICAL PARTSLIST - COMBI BOARD

- RESISTORS -

3230	4822 117 13632	100K 1% 0,62W
3231	4822 051 30472	4,7K 5% 0,062W
3232	4822 051 30103	10K 5% 0,062W
3233	4822 117 12891	220K 1%
3234	4822 051 30105	1M 5% 0,062W
3235	4822 117 12891	220K 1%
3236	4822 051 30472	4,7K 5% 0,062W
3237	4822 051 30472	4,7K 5% 0,062W
3238	2322 704 81104	110K 1%
3239	4822 051 30683	68K 5% 0,062W
3240	4822 117 12925	47K 1% 0,063W
3241	4822 051 30105	1M 5% 0,062W
3242	3198 021 32250	2,2M 5%
3243	3198 021 31060	10M 5%
3244	4822 051 30334	330K 5% 0,062W
3245	4822 051 30101	100R 5% 0,062W
3246	3198 021 32250	2,2M 5%
3247	4822 117 12902	8,2K 1% 0,063W
3248	4822 051 30474	470K 5% 0,062W
3249	4822 051 30105	1M 5% 0,062W
3250	4822 051 30105	1M 5% 0,062W
3251	4822 051 30474	470K 5% 0,062W
3252	3198 021 32250	2,2M 5%
3253	3198 021 31060	10M 5%
3254	4822 117 12902	8,2K 1% 0,063W
3255	3198 021 32250	2,2M 5%
3256	4822 117 12917	1R 5% 0,062W
3257	4822 117 12917	1R 5% 0,062W
3258	4822 117 12925	47K 1% 0,063W
3259	4822 117 12706	10K 1% 0,063W
3260	4822 051 30123	12K 5% 0,062W
3261	4822 051 30109	10R 5% 0,062W
3262	4822 117 13632	100K 1% 0,62W
3263	4822 117 12902	8,2K 1% 0,063W
3264	4822 051 30684	680K 5% 0,062W
3265	4822 051 30223	22K 5% 0,062W
3266	4822 051 30334	330K 5% 0,062W
3267	4822 117 12706	10K 1% 0,063W
3268	4822 051 30153	15K 5% 0,062W
3269	4822 051 30221	220R 5% 0,062W
3270	4822 051 30272	2,7K 5% 0,062W
3271	4822 117 12889	270K 1% 0,063W
3272	3198 021 32250	2,2M 5%
3273	4822 117 13632	100K 1% 0,62W
3274	4822 051 30474	470K 5% 0,062W
3275	4822 051 30474	470K 5% 0,062W
3276	4822 117 12902	8,2K 1% 0,063W
3277	4822 051 30154	150K 5% 0,062W
3278	4822 051 30103	10K 5% 0,062W
3279	4822 051 30154	150K 5% 0,062W

- RESISTORS -

3280	4822 117 12891	220K 1%
3282	4822 051 30103	10K 5% 0,062W
3283	4822 051 30474	470K 5% 0,062W
3284	3198 021 32250	2,2M 5%
3285	4822 116 30467	10K 5%
3286	2120 358 90509	100K H H03ADC
3287	2120 358 90509	100K H H03ADC
3288	4822 051 30223	22K 5% 0,062W
3289	4822 051 30334	330K 5% 0,062W
3290	4822 051 30472	4,7K 5% 0,062W
3291	4822 051 30124	120K 5% 0,062W
3292	4822 117 13632	100K 1% 0,62W
3293	4822 051 30332	3,3K 5% 0,062W
3294	4822 051 30123	12K 5% 0,062W
3295	4822 051 30332	3,3K 5% 0,062W
3297	4822 117 12925	47K 1% 0,063W
3298	4822 117 13632	100K 1% 0,62W
3299	4822 051 30103	10K 5% 0,062W
3300	4822 051 30474	470K 5% 0,062W
3301	4822 117 13632	100K 1% 0,62W
3302	4822 051 30474	470K 5% 0,062W
3303	4822 051 30103	10K 5% 0,062W
3304	4822 117 13632	100K 1% 0,62W
3306	4822 117 13632	100K 1% 0,62W
3307	4822 051 30472	4,7K 5% 0,062W
3308	4822 117 12971	15R 5%
3309	4822 051 30123	12K 5% 0,062W
3310	4822 051 30563	56K 5% 0,062W
3312	4822 051 30331	330R 5% 0,062W
3313	4822 051 30682	6,8K 5% 0,062W
3315	2322 702 60184	180K 5%
3316	4822 051 30472	4,7K 5% 0,062W
3317	4822 117 12139	22R 5% 0,062W
3318	4822 051 30331	330R 5% 0,062W
3324	4822 051 30474	470K 5% 0,062W
3330	4822 117 13632	100K 1% 0,62W
3335	4822 051 30183	18K 5% 0,062W
3336	4822 117 13632	100K 1% 0,62W
3337	4822 051 30474	470K 5% 0,062W
3341	4822 051 30102	1K 5% 0,062W
3344	4822 051 30103	10K 5% 0,062W
3345	4822 117 13632	100K 1% 0,62W
3349	4822 051 30331	330R 5% 0,062W
3350	4822 117 13632	100K 1% 0,62W
3351	4822 117 13632	100K 1% 0,62W
3352	4822 051 30682	6,8K 5% 0,062W
3353	4822 117 12139	22R 5% 0,062W
3354	4822 051 30102	1K 5% 0,062W
3355	4822 117 12925	47K 1% 0,063W
3356	4822 051 30472	4,7K 5% 0,062W

6 - 2

ELECTRICAL PARTSLIST - COMBI BOARD

- RESISTORS -

3357	4822 051 30472	4,7K 5% 0,062W
3358	4822 117 12971	15R 5%
3359	4822 051 30123	12K 5% 0,062W
3360	4822 051 30563	56K 5% 0,062W
3361	4822 051 30331	330R 5% 0,062W
3362	2322 702 60184	180K 5%
3363	4822 051 30682	6,8K 5% 0,062W
3364	4822 051 30109	10R 5% 0,062W
3365	4822 117 13632	100K 1% 0,62W
3366	4822 117 13632	100K 1% 0,62W
3367	4822 117 13632	100K 1% 0,62W
3368	4822 051 30332	3,3K 5% 0,062W
3369	4822 051 30332	3,3K 5% 0,062W
3370	4822 051 30109	10R 5% 0,062W
3371	4822 051 30109	10R 5% 0,062W
3400	4822 051 30109	10R 5% 0,062W
3401	4822 051 30109	10R 5% 0,062W
3402	4822 117 13632	100K 1% 0,62W
3403	4822 051 30103	10K 5% 0,062W
3404	4822 117 13632	100K 1% 0,62W
3405	4822 117 13632	100K 1% 0,62W
3406	4822 117 13632	100K 1% 0,62W
3407	4822 117 13632	100K 1% 0,62W
3408	4822 051 30103	10K 5% 0,062W
3409	4822 117 13632	100K 1% 0,62W
3411	4822 051 30101	100R 5% 0,062W
3412	4822 117 13632	100K 1% 0,62W
3413	4822 117 13632	100K 1% 0,62W
3414	4822 117 13632	100K 1% 0,62W
3415	4822 051 30103	10K 5% 0,062W
3416	4822 051 30103	10K 5% 0,062W
3417	4822 117 13632	100K 1% 0,62W
3418	4822 117 13632	100K 1% 0,62W
3419	4822 117 13632	100K 1% 0,62W
3420	4822 051 30103	10K 5% 0,062W
3421	4822 051 30152	1,5K 5% 0,062W
3422	4822 051 30471	470R 5% 0,062W
3423	4822 051 30109	10R 5% 0,062W
3424	4822 051 30008	0R JUMPER
3425	4822 051 30472	4,7K 5% 0,062W
3426	4822 051 30472	4,7K 5% 0,062W
3427	4822 051 30472	4,7K 5% 0,062W
3428	4822 051 30472	4,7K 5% 0,062W
3429	4822 051 30472	4,7K 5% 0,062W
3430	4822 051 30008	0R JUMPER
3431	4822 051 30472	4,7K 5% 0,062W
3432	4822 051 30472	4,7K 5% 0,062W
3433	4822 051 30472	4,7K 5% 0,062W
3434	4822 051 30472	4,7K 5% 0,062W
3435	4822 051 30472	4,7K 5% 0,062W

- RESISTORS -

3436	4822 051 30102	1K 5% 0,062W
3437	4822 051 30472	4,7K 5% 0,062W
3438	4822 051 30102	1K 5% 0,062W
3439	4822 051 30472	4,7K 5% 0,062W
3440	4822 051 30102	1K 5% 0,062W
3441	4822 051 30472	4,7K 5% 0,062W
3442	4822 051 30102	1K 5% 0,062W
3443	4822 051 30472	4,7K 5% 0,062W
3444	4822 051 30472	4,7K 5% 0,062W
3445	4822 051 30102	1K 5% 0,062W
3446	4822 051 30472	4,7K 5% 0,062W
3447	4822 051 30008	0R JUMPER
3448	4822 051 30008	0R JUMPER
3449	4822 051 30008	0R JUMPER
3450	4822 051 30472	4,7K 5% 0,062W
3451	4822 051 30101	100R 5% 0,062W
3452	4822 117 13632	100K 1% 0,62W
3453	4822 117 13632	100K 1% 0,62W
3454	4822 117 13632	100K 1% 0,62W
3455	4822 117 13632	100K 1% 0,62W
3456	4822 117 13632	100K 1% 0,62W
3457	5322 117 13052	2,7K 1% 0,063W
3458	4822 117 13632	100K 1% 0,62W
3459	4822 117 13632	100K 1% 0,62W
3460	4822 117 13632	100K 1% 0,62W
3461	4822 117 13632	100K 1% 0,62W
3462	4822 117 13632	100K 1% 0,62W
3463	4822 117 13632	100K 1% 0,62W
3464	4822 051 30103	10K 5% 0,062W
3468	4822 117 13632	100K 1% 0,62W
3469	4822 051 30103	10K 5% 0,062W
3470	4822 051 30103	10K 5% 0,062W
3471	4822 051 30103	10K 5% 0,062W
3472	4822 051 30103	10K 5% 0,062W
3477	4822 117 12971	15R 5%
3478	4822 117 12971	15R 5%
3481	4822 051 30472	4,7K 5% 0,062W
3501	4822 051 30103	10K 5% 0,062W
3800	4822 051 30008	0R JUMPER
3801	4822 051 30008	0R JUMPER
3802	4822 051 30472	4,7K 5% 0,062W
3803	4822 051 30008	0R JUMPER
3804	4822 051 30472	4,7K 5% 0,062W
3805	4822 051 30008	0R JUMPER
3806	4822 051 30472	4,7K 5% 0,062W
3807	4822 051 30008	0R JUMPER
3808	4822 051 30008	0R JUMPER
3809	4822 051 30008	0R JUMPER
3810	4822 051 30109	10R 5% 0,062W
3812	4822 051 30472	4,7K 5% 0,062W

ELECTRICAL PARTSLIST - COMBI BOARD

- RESISTORS -

3813	4822 051 30008	0R JUMPER
3813	4822 051 30109	10R 5% 0,062W
3815	4822 051 30105	1M 5% 0,062W
3818	4822 051 30103	10K 5% 0,062W
3819	4822 051 30103	10K 5% 0,062W
3820	4822 051 30103	10K 5% 0,062W
3823	4822 117 12917	1R 5% 0,062W
3824	4822 117 13525	24K 1% 0,62W
3825	4822 117 13632	100K 1% 0,62W
3826	4822 051 30105	1M 5% 0,062W
3827	4822 117 13608	4,7R 5% 0,0016W
3828	4822 051 30475	4,7M 5% 0,062W
3829	4822 051 30334	330K 5% 0,062W
3830	4822 117 13632	100K 1% 0,62W
3831	4822 117 13632	100K 1% 0,62W
3890	4822 051 30008	0R JUMPER
4201	4822 051 30008	0R JUMPER
4203	4822 051 30008	0R JUMPER
4204	4822 051 30008	0R JUMPER
4205	4822 051 30008	0R JUMPER
4206	4822 051 30008	0R JUMPER
4207	4822 051 30008	0R JUMPER
4208	4822 051 30008	0R JUMPER
4209	4822 051 30008	0R JUMPER
4210	4822 051 30008	0R JUMPER
4211	4822 051 30008	0R JUMPER
4402	4822 051 30008	0R JUMPER
4801	4822 051 30008	0R JUMPER

- COILS & FILTERS -

1801	2422 540 98428	FILTER CERAMIC
5200	2422 535 94134	IND FXD SM 10µH 20%
5201	2422 535 94134	IND FXD SM 10µH 20%
5202	2422 549 43062	IND FXD SM EMI 100MHZ
5203	2422 549 43062	IND FXD SM EMI 100MHZ
5204	2422 549 43062	IND FXD SM EMI 100MHZ
5205	2422 549 43062	IND FXD SM EMI 100MHZ
5206	2422 549 43062	IND FXD SM EMI 100MHZ
5207	2422 549 43062	IND FXD SM EMI 100MHZ
5208	2422 549 43062	IND FXD SM EMI 100MHZ
5301	3198 018 35670	FXDIND SM 0,56µH 10%
5302	3198 018 35670	FXDIND SM 0,56µH 10%
5303	3198 018 35670	FXDIND SM 0,56µH 10%
5304	3198 018 35670	FXDIND SM 0,56µH 10%
5305	2422 549 43062	IND FXD SM EMI 100MHZ
5400	2422 549 43062	IND FXD SM EMI 100MHZ
5401	2422 549 43062	IND FXD SM EMI 100MHZ
5402	2422 549 43062	IND FXD SM EMI 100MHZ

- DIODES -

6201	9322 185 88685	DIO EC SM SL03
6202	9322 185 88685	DIO EC SM SL03
6203	4822 130 80622	BAT54
6204	4822 130 11551	UDZS10B
6205	9322 185 88685	DIO EC SM SL03
6206	4822 130 80622	BAT54
6207	9322 185 88685	DIO EC SM SL03
6208	4822 130 80622	BAT54
6209	4822 130 11564	UDZ3,9B
6210	4822 130 82594	BAT54C
6211	4822 130 11564	UDZ3,9B
6212	4822 130 11564	UDZ3,9B
6213	4822 130 11564	UDZ3,9B
6214	4822 130 11564	UDZ3,9B
6215	4822 130 80622	BAT54
6216	4822 130 82594	BAT54C
6217	4822 130 80622	BAT54
6218	4822 130 80622	BAT54
6219	4822 130 80622	BAT54
6300	5322 130 34331	BAV70
6301	4822 130 11397	BAS316
6302	4822 130 11551	UDZS10B
6401	4822 130 11564	UDZ3,9B
6402	4822 130 11564	UDZ3,9B
6800	5322 130 10734	BAT54A

- IC & TRANSISTORS -

6200	9322 116 74668	LD1117D33
7200	5322 130 60845	BC807-25
7202	9351 624 90118	74LV132D
7203	9352 701 07118	TEA1208T/N1
7204	9322 179 08685	SI2305DS
7205	3198 010 42310	BC847BW
7206	3198 010 42310	BC847BW
7207	5322 130 60845	BC807-25
7208	9322 179 08685	SI2305DS
7209	3198 010 42320	BC857BW
7210	3198 010 42320	BC857BW
7211	3198 010 42310	BC847BW
7213	5322 130 61569	BC868
7214	5322 209 82941	LM358D
7215	3198 010 42320	BC857BW
7216	3198 010 42310	BC847BW
7217	9322 171 12671	SC111259AFTA
7218	3198 010 42310	BC847BW
7222	3198 010 42310	BC847BW

6 - 3

ELECTRICAL PARTSLIST - COMBI BOARD

- IC & TRANSISTORS -

7227	3198 010 42310	BC847BW
7229	3198 010 42310	BC847BW
7230	9352 701 07118	TEA1208T/N1
7232	3198 010 42310	BC847BW
7234	3198 010 42310	BC847BW
7235	3198 010 42310	BC847BW
7236	4822 130 42804	BC817-25
7237	3198 010 42310	BC847BW
7238	3198 010 42320	BC857BW
7238	9322 179 08685	SI2305DS
7300	9340 219 40135	BC817-40W
7301	3198 010 42320	BC857BW
7302	9340 219 40135	BC817-40W
7303	4822 209 33165	TDA1308T/N1
7304	4822 130 42615	BC817-40
7305	9340 219 40135	BC817-40W
7306	5322 130 60845	BC807-25
7307	3198 010 42310	BC847BW
7308	3198 010 42320	BC857BW
7309	3198 010 42310	BC847BW
7310	4822 130 42615	BC817-40
7311	9340 219 40135	BC817-40W
7313	3198 010 42310	BC847BW
7401	3198 010 42320	BC857BW
7402	9352 731 32557	SAA7752EL/N102
7403	9322 145 26668	M24C02-WMN6
7404	9322 166 67668	MT48LC4M16A2TG-7E
7405	3198 010 42310	BC847BW
7802	5322 130 60845	BC807-25
7803	9965 000 16922	SAA7824HL

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