

Service  
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# Service Manual

## TABLE OF CONTENTS

	Page
Location of PCBs & Version variations .....	1-2
Technical Specifications .....	1-3
Measurement setup .....	1-4
Service Aids, Safety Instruction, etc. ....	1-5
Connections & Functional Overview .....	1-7 to 1-12
Disassembly Instructions & Service positions .....	2
Service Test Programs .....	3
Set Block diagram .....	4-1
Set Wiring diagram .....	4-2
Front Control Board .....	5
Front Display Board .....	6
ECO6 Tuner Board : Systems Non-Cenelec .....	7A
Systems Cenelec .....	7B
PWR303 Module UCD 200-250W .....	8
AF12 Board .....	9
5DTC Module (MP3 Version) .....	10
Set Mechanical Exploded view & parts list .....	11



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 3141 785 30000

**Version 1.0**



# PHILIPS



**SPECIFICATIONS**

Mains voltage : 110-127V/220-240V Switchable  
for /21  
: 230 ± 10% for /22  
: 120 ± 10% for /37

Mains frequency : 50/60Hz

Power consumption : < 1W at ECO Power Standby  
: < 25W at Standby (DEMO mode off)  
: 175W at Active

Clock accuracy : < 4 seconds per day

Dimension centre unit : 265 x 322 x 390mm

**TUNER:****FM**

Tuning range : 87.5-108MHz

Grid : 50kHz  
100kHz for /37

IF frequency : 10.7MHz ± 25kHz

Aerial input : 75 Ω coaxial  
300 Ω click fit for /37

Sensitivity at 26dB S/N : < 7µV

Selectivity at 600kHz bandwidth : > 25dB

Image rejection : > 25dB [> 75dB]

Distortion at RF=1mV, dev. 75kHz : < 3%

-3dB Limiting point : < 8µV

Crosstalk at RF=1mV, dev. 40kHz : > 18dB

**MW**

Tuning range : 531-1602kHz  
530-1700kHz for /21/37

Grid : 9kHz  
10kHz for /21/37

IF frequency : 450kHz ± 1kHz

Aerial input : Frame aerial 18.1µH

Sensitivity at 26dB S/N : < 4.4mV/M

Sensitivity at S9/300KHz : > 18dB

IF rejection : > 45dB

Image rejection : > 28dB

Distortion at RF=50mV, M=80% : < 5%

**AMPLIFIER:**

Output power (8 Ω, 1kHz, 10% THD)

L & R : 2 x 250W RMS /21/22/30  
: 2 x 200W FTC /37

Frequency response within -3dB : 63Hz-16kHz

Incredible Srround : On / Off

WOOX : Level1, 2, 3 & Off

Game Sound : Speed /Punch /Blast /Off

Digital Sound Control (DSC) : Jazz /Rock /Pop /Optimal

Virtual Ambience Control (VAC) : Cyber / Arcade / Hall /  
Cinema / Concert

**Input sensitivity**

Aux in (at 1kHz) : 640mV ± 2dB  
Game Port (at 1kHz) : 310mV ± 2dB  
USB (at 1kHz) : 830mV at 600 Ω

**Output sensitivity**

Headphone output at 32 Ω : 700mV ± 2dB (Max. vol.)

**5DTC:**

Measurement done directly at the connector on the board.

Output Resistance : < 100 Ω

Output Voltage (0dB, 1kHz) : 0.5Vrms ± 1dB (unloaded)

Channel Unbalance : < ±1dB

Channel Separation (1kHz) : > 60dB

Frequency Response (±3dB) : 20Hz-20kHz

Signal to Noise Ratio : > 75dBA

MP3-CD Bit Rate : 32-256 kbps

Sampling Frequencies : 32, 44.1, 48 kHz

**USB:**

Measurement done directly at the connector on the board.

Output Impedance (1 kHz) : < 1.5 kohm

Output Voltage (0dB, 1kHz) : 830mVrms ± 1.5dB

Channel Unbalance : < ±1dB

Distortion THD (0dB, 1kHz) : < 0.3%

Channel Separation (1kHz) : > 35dB

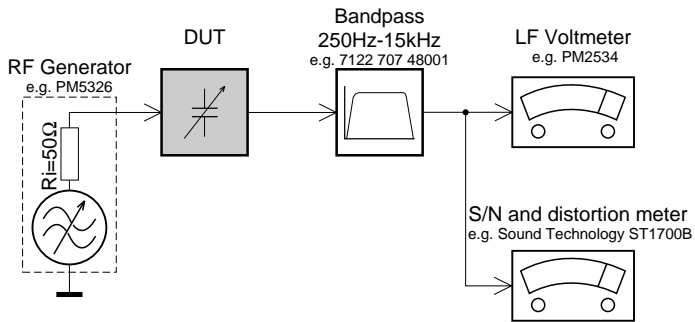
Frequency Response (±3dB) : 20Hz-20kHz

Signal to Noise Ratio : > 60dBA

[...] Values indicated are for "ECO6 Cenelec Board" only.

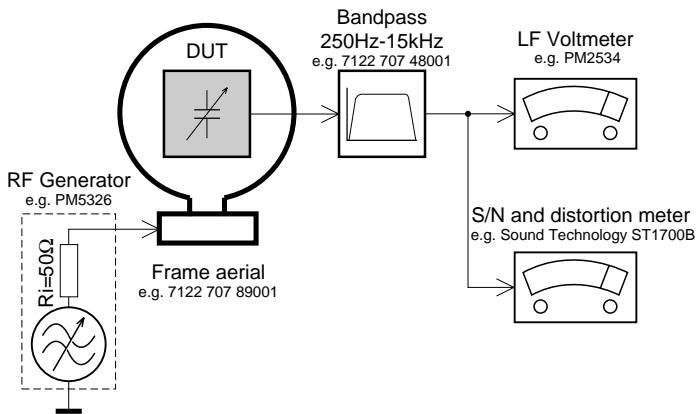
## MEASUREMENT SETUP

### Tuner FM



Use a bandpass filter to eliminate hum (50Hz, 100Hz) and disturbance from the pilotone (19kHz, 38kHz).

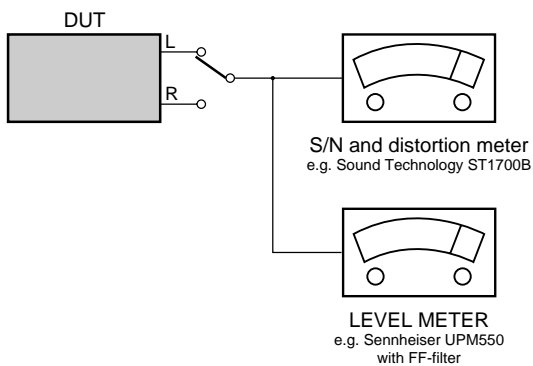
### Tuner AM (MW,LW)



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).

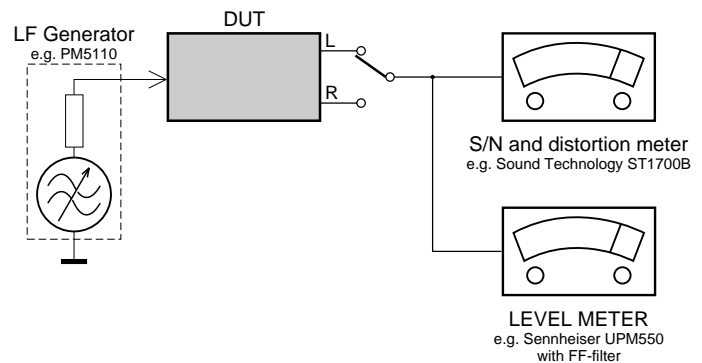
### CD

Use Audio Signal Disc SBC429 4822 397 30184  
(replaces test disc 3)



### Recorder

Use Universal Test Cassette **CrO2** SBC419 4822 397 30069  
or Universal Test Cassette **Fe** SBC420 4822 397 30071





## SERVICE AIDS

### Service Tools:

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

### Cassette:

SBC419 Test cassette CrO2 .....	4822 397 30069
SBC420 Test cassette Fe .....	4822 397 30071
MTT150 Dolby level 200nWb/M .....	4822 397 30271

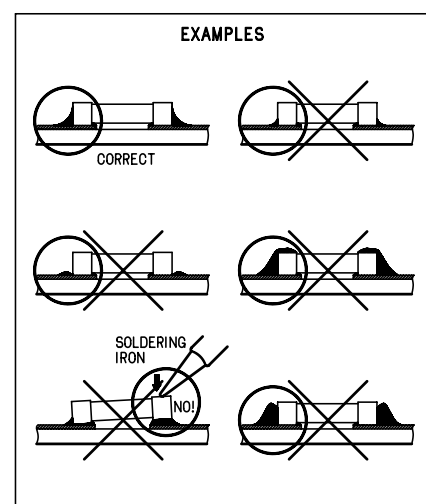
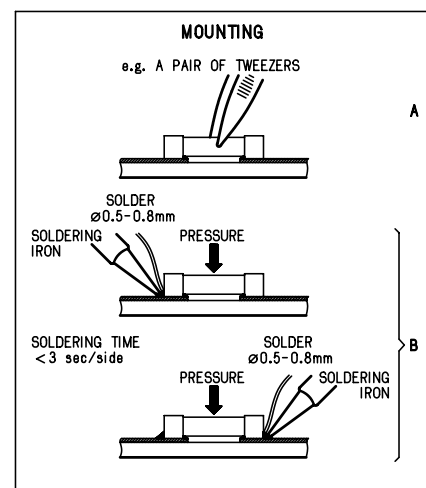
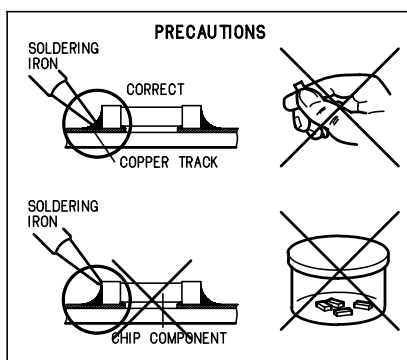
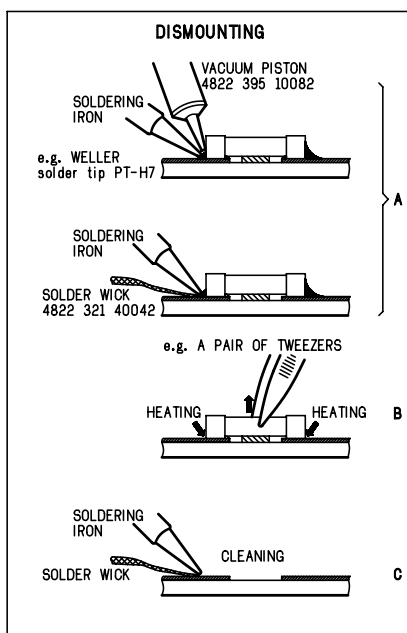
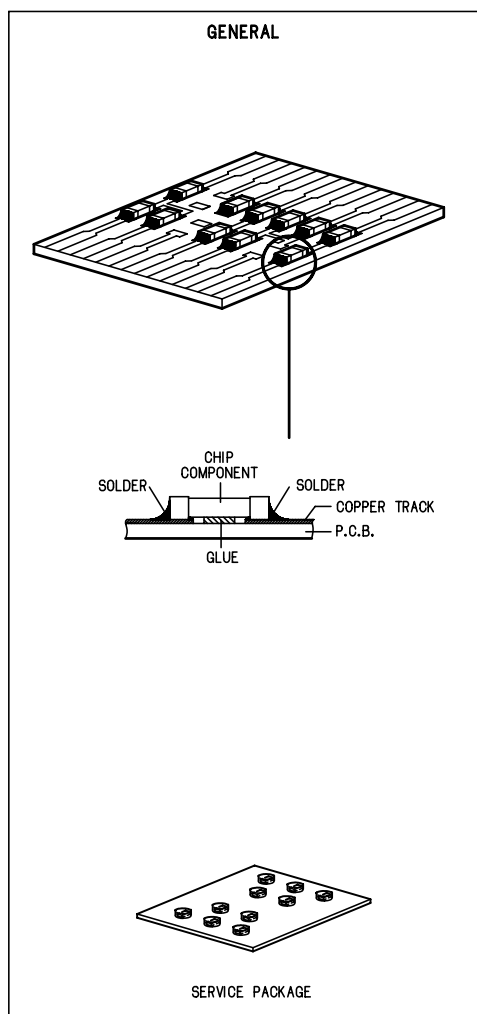
### Compact Disc:

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

### ESD Equipment:

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

## HANDLING CHIP COMPONENTS



**GB WARNING**

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.

When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance.

Keep components and tools also at this potential.

**ESD****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 enfiler le bracelet serti d'une résistance de sécurité.

Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

**D WARNUNG**

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).

Unvorsichtige Behandlung im Reparaturfall kann die Lebensdauer drastisch reduzieren.

Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes.

Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

**I AVVERTIMENTO**

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).

La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.

Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un bracciale a resistenza.

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

**GB**

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

Safety components are marked by the symbol  $\triangle$ .

**NL**

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

De Veiligheidsonderdelen zijn aangeduid met het symbool  $\triangle$

**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  $\triangle$

**D**

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

Sicherheitsbauteile sind durch das Symbol  $\triangle$  markiert.

**I**

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

Componenti di sicurezza sono marcati con  $\triangle$

**GB**

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

**GB Warning !**

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

**S Varning !**

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

**SF Varoitus !**

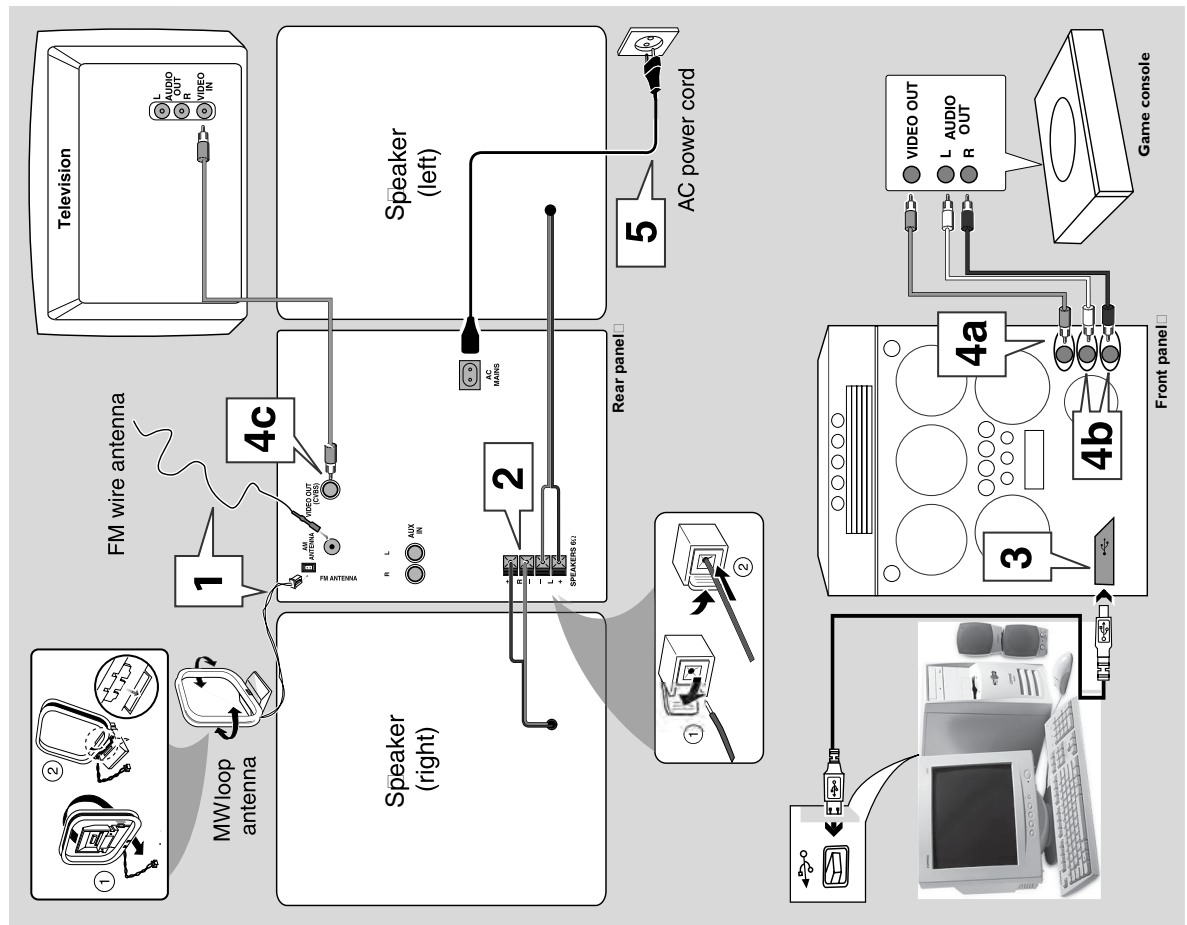
Avatussa laitteessa ja suojalukituksen ohitettaessa olet alltiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

**DK Advare !**

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

**F**

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



**Warning!**

- Use only the supplied speakers.
- The combination of the main unit and speakers provide the best sound.
- Using other speakers can damage the unit and sound quality will be negatively affected.
- Never make or change connections with the power switched on.
- Connect the AC power cord to the power outlet only after you have finished hooking up everything.

**Step 1: Connecting FM/MW antennas**

- Place the MW loop antenna on a shelf or attach it to a stand or wall.
- Extend the FM antenna and fix its ends to the wall.
- Adjust the position of the antennas for optimal reception.
- Position the antennas as far as possible from a TV, VCR or other radiation source to prevent unwanted noise.
- For better FM stereo reception, connect external FM antenna.

**Step 2: Connecting the speakers**

- Connect the speaker wires to the SPEAKERS terminals, right speaker to "R" and left speaker to "L"; coloured (marked) wire to "+" and black (unmarked) wire to "-". Fully insert the stripped portion of the speaker wire into the terminal as shown.
- Notes:**
- Ensure that the speaker cables are correctly connected. Improper connections may damage the system due to short-circuit.
  - Do not connect more than one speaker to any one pair of + / - speaker terminals.

**Step 3: Connecting to PC**

Use the supplied USB cable to connect the system to your personal computer's USB port. After installing the USB PC LINK application software onto your PC, you can play your music collection via the system (refer to "USB PC Link").

**Step 4: Connecting to game console**

**IMPORTANT!**  
Gameport inputs are solely for game console only.

- a. Use the game console's video cable (not supplied) to connect its video output to the GAMEPORT-VIDEO terminal.
- b. Use the game console's audio cables (not supplied) to connect its audio outputs to the GAMEPORT-AUDIO L./AUDIO R. terminals.
- c. VIDEO OUT terminal to the video input on the TV for viewing.

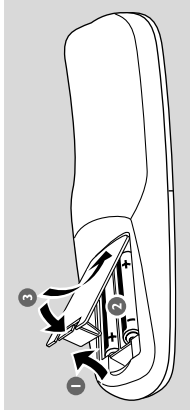
**Notes:**

- On the TV, the Video Input jack is usually yellow and might be labeled A/V In, CVBS, Composite or Baseband.
- To avoid magnetic interference, do not position the front speakers too close to your TV.
- For optimal enjoyment of your Gaming Experience, please do not connect the TV's AUDIO OUT to the audio system's AUX IN (R/L) terminals.
- If you want to listen to your favorite movies/TV programs through the Philips Mini System, please disconnect the Game Console connection on the front of the set to avoid any unwanted noise.

## Step 5: Connecting the AC power cord

"AUTO INSTALL - PRESS PLAY" may appear on the display panel when the AC power cord is plugged into the power outlet for the first time. Press ►|| on the main unit to store all available radio stations or press ■ to exit (refer to "Tuner Operations").

## Step 6: Inserting batteries into the remote control



- 1 Open the battery compartment cover.
- 2 Insert two batteries type R06 or AA, following the indications ( + - ) inside the compartment.
- 3 Close the cover.

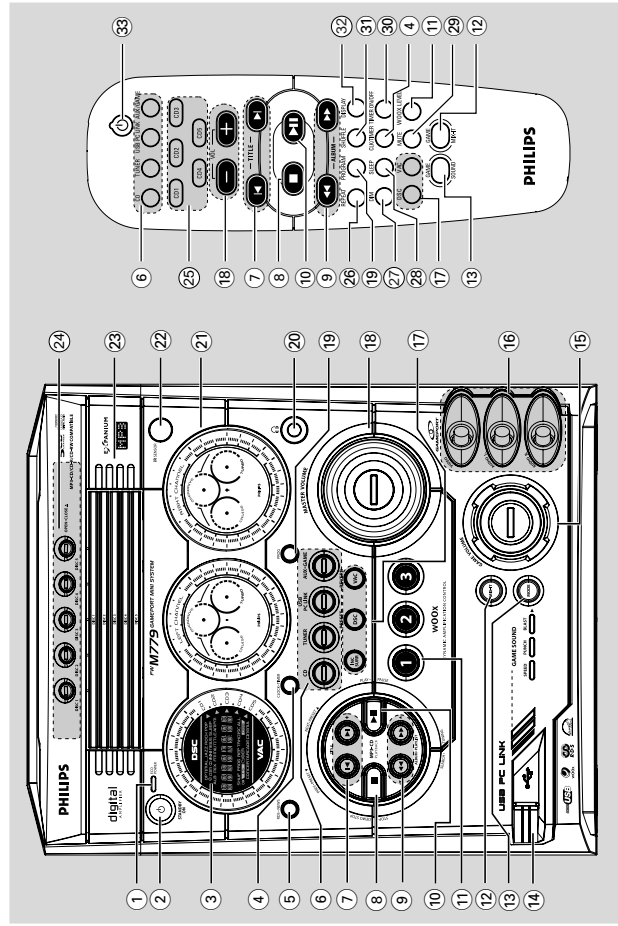
## Using the remote control to operate the system

- 1 Aim the remote control directly at the remote sensor (IR) on the main unit.
- 2 Select the source you wish to control by pressing one of the source select keys on the remote control (for example CD,TUNER).
- 3 Then select the desired function (for example ►||, ◀, ▶).

### CAUTION!

- Remove batteries if they are exhausted or will not be used for a long time.
- Do not use old and new or different types of batteries in combination.
- Batteries contain chemical substances, so they should be disposed of properly.

# Functional Overview



## Main unit and remote control

- 1 **ECO POWER indicator**  
Lights up when the system is in the Eco Power standby mode.
- 2 **STANDBY ON**   
Switches to the Eco Power standby mode or turns on the system.  
\*Switches to the standby mode.
- 3 **Display screen**
- 4 **CLOCK•TIMER (CLK/TIMER)**  
\*Enters clock or timer setting mode.
- 5 **RDS•NEWS**  
In tuner mode, selects RDS information.  
In other modes, turns on/off news.
- 6 **CD / TUNER / USB PC LINK / AUX•GAME**  
Selects the relevant active mode.  
CD: toggles between DISC 1~5.  
TUNER: toggles between FM and MW band.  
AUX•GAME: toggles between AUX and GAMEPORT mode.
- 7 **PREV•PRESET** (TITLE -) (TITLE +)   
CD: selects a track or selects a title from MP3 disc.  
TUNER: selects a preset radio station.  
CLOCK: sets the minutes.  
USB PC LINK: selects your desired playlist.
- 8 **STOP•DEMO STOP**   
Exits an operation.  
CD: stops playback or clears a programme.  
TUNER: \*erases a preset radio station.  
USB PC LINK: stops playback.  
(only on the main unit)  
\*Turns on/off the demonstration mode.
- 9 **SEARCH•TUNING (ALBUM/PLAYLIST)**   
CD: \*searches backward/forward or selects an album from MP3 disc.  
TUNER: tunes the radio frequency up/down.  
CLOCK: sets the hours.  
USB PC LINK: selects your desired playlist.

\* = Press and hold the button for more than two seconds.

# Functional Overview

- 10 **PLAY•PAUSE** **II**  
CD: starts/pauses playback.  
USB PC LINK: starts/pauses playback.  
(only on the main unit)  
TUNER: \*enters Plug & Play mode and/or starts preset radio station installation.
- 11 **wOOx 1/2/3 (wOOx LEVEL)**  
Selects different type of enhanced wOOx sound settings (wOOx 1, wOOx 2 or wOOx 3).
- 12 **MIX IT (GAME MIX IT)**  
Mixes the game sound with your favourite music from one of these music source (CD, TUNER, USB PC LINK or AUX).
- 13 **MODE (GAME SOUND)**  
Selects different type of equaliser setting for Gameport (SPEED, PUNCH or BLAST).
- 14 Connect the USB cable between the system and PC's USB port.
- 15 **GAME VOLUME**  
Adjusts the game's output volume level.
- 16 **VIDEO**  
Use a video cable to connect to your game console's video output.
- AUDIO L. / AUDIO R.**  
Use a audio cable to connect to your game console's left/right audio output.
- 17 **INC SURR**  
Turns on/off the Incredible Surround effect.
- DSC / PRESET**  
Selects different type of preset sound equaliser settings (OPTIMAL, JAZZ, ROCK or POP).
- VAC / REVERB**  
Selects different type of environment ambience-based equaliser settings (HALL, CINEMA, CONCERT, CYBER or ARCADE).  
\*PRESET and REVERB environment sound modes are only available when the optional software, Philips Sound Agent 2 is activated during USB PC Link application.
- 18 **MASTER VOLUME (VOL + -)**  
Adjusts the volume level.
- 19 **PROG (PROGRAM)**  
CD: starts or confirms track programming.  
TUNER: starts \*automatic/manual preset programming.  
CLOCK: selects 12- or 24-hour clock display.
- 20   
Plug in the headphones jack. The speakers output will be cancelled.
- 21 **VU meters**  
Indicates signal strength of left/right channel.
- 22 **IR SENSOR**  
Point the remote control towards this sensor.
- 23 **Disc trays (1~5)**
- 24 **OPEN•CLOSE** **(DISC 1~5)**  
Opens/closes the individual disc tray.

## Control buttons available on the remote control only

- 25 **CD 1~5**  
Selects a disc tray to playback.
- 26 **REPEAT**  
Repeats a track/disc/all programmed tracks.
- 27 **DIM**  
Turns on/off the dim mode.
- 28 **SLEEP**  
Sets the sleep timer function.
- 29 **MUTE**  
Mutes or restores the volume.
- 30 **TIMER ON/OFF**  
Turns on/off the timer function.
- 31 **SHUFFLE**  
Turns on/off the random play mode.
- DISPLAY**  
Displays the album and title name for MP3 disc.
- 33   
Switches to the Eco Power standby mode.  
\*Switches to the standby mode.

\* = Press and hold the button for more than two seconds.

## IMPORTANT!

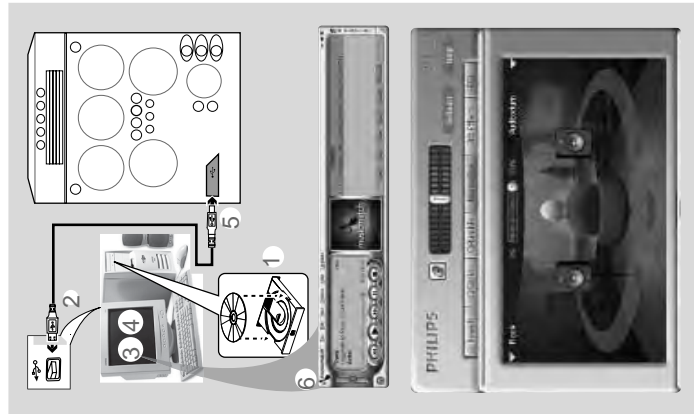
- Make sure the mute setting on your PC control panel is deactivated to ensure you get the sound from your audio system!

## Quick setup guide

### PC system requirement

- Windows 98SE/ME/2000/XP
- Intel Pentium MMX200 or higher
- CD-ROM drive
- USB port
- Free hard disk space: 80 MB for the software

### Software installation



- 1 Turn on your PC and insert the installer disc into your PC's CD-ROM drive.
- 2 The installation guide will appear automatically. If it does not, go to the CD-ROM drive in Windows Explorer and double click the **Setup.exe**.
- 3 Select your desired language from the list.
- 4 Select **install Software**.
- 5 Connect the USB cable to the PC and Audio System and press the USB PC Link button on the Audio set or the remote control.
- 6 Follow the instructions as prompted on the screen to correctly install the USB PC Link Driver: **Philips Sound Agent 2** and **MusicMatch** jukebox software.

### Notes:

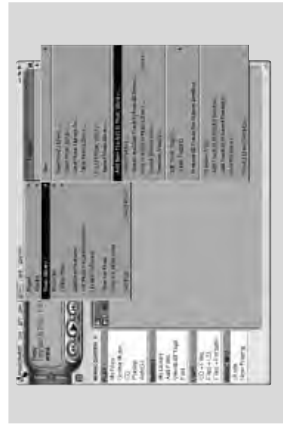
- **Minimum OS requirement for Philips Sound Agent 2: Windows 2000 or XP.**
- **During installation, your previous MusicMatch Jukebox software on your PC will be replaced.**

### Declarations

**Windows** and **Pentium** are trademarks of Microsoft Corporation and Intel Corporation. All other trademarks belong to their respective owners.  
USB PC Link sample track, music by Chemistry ([www.chemistryteam.com](http://www.chemistryteam.com))

## Using MusicMatch software

### To create a music library



Add music files to **My Music Library**

- 1 Add files to **My Library** by dragging and dropping audio tracks from anywhere in Windows, into the **My Library** window. You can also click **Add Files** in the **Music Center** to add tracks.
- 2 Click the **Add Files** button on the **Music Library** window. Browse your computer to the folder where audio files are stored. Check the box **Also Add Tracks** from Subfolders to add all tracks in the current folder, and all subfolders.
- 3 Click the **Select All** button to select all the files in the current, and all subfolders.
- 4 Click **Add**. Files will be added to **My Library**.

### To create a "Playlist"



- 1 Drag and drop files, or folders with music files, from anywhere on your computer or **My Library** into the **Playlist** window. Your files will begin to play. Or, you may click the **Open** button on the **Playlist** window to browse for and add music to the **Playlist**.
- 2 Click the **Save** button on the **Playlist**, or go to the menu **Options>Playlist>Save Playlist**.

- 3 You will be prompted to name the **Playlist**. In the Name field type the name you'd like to give this **Playlist**.

- 4 Click the **Save** button. Now you can play all the saved playlists with the audio system by pressing **◀▶** or **▶▶** buttons. Details operation, please refer to Connecting to **USB PC Link**.

### Note:

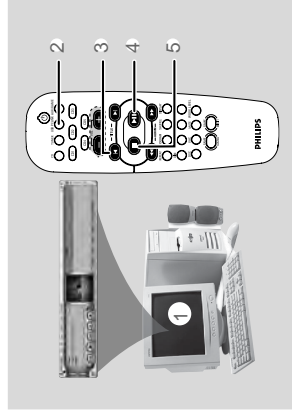
- **It is not possible to create a playlist from the system's 5 CD changer. If you encounter any problem using USB PC Link, please refer to the FAQ (Frequently Asked Questions) stored in your USB PC Link installer disc or visit "www.audio.philips.com" for the latest update on FAQ.**

## Connecting to USB PC Link

USB PC Link allows you to playback your music collection from the PC via the powerful amplifier and speakers of this system.

### IMPORTANT!

**Make sure the MUSICMATCH software has been installed. Refer to the CD-ROM sleeve for USB PC Link installation.**



- 1 Turn on your computer and launch the **"MUSICMATCH JUKEBOX"**.  
The volume level of PC should not be put into mute.
- 2 Press **USB PC LINK**.  
If the audio streaming is detected, **"CONNECTING"** is displayed and the USB indicator will be flashing.  
If **"HID CONNECTED"** is displayed, check the connection between your PC and micro system.



## USB PC Link

### Notes:

- When the USB PC Link feature is activated, Philips Sound Agent 2 will automatically be launched (if it has been successfully installed under OS Windows 2000/XP).

- The default setting for PRESET/REVERB is MP3/Study Room respectively. You may select from the list of different sound modes to suit your music and environment preference. Alternatively, you may select PRESET (Neutral mode) and REVERB (No Environment mode) for the minimum sound effect.

3 Press ◀◀ or ▶▶ to select your favorite playlist and then press ◀ or ▶ until the desired track in the playlist is highlighted.

4 Press ▶▶ to start playback.

The track information will appear on the display. The display only supports English characters.

During playback,

- Press **SHUFFLE** to play all available tracks in the playlist in random order.
- Press **REPEAT** to repeat playback of all the tracks in the playlist.

5 To exit, select another active mode or press ■.

### Philips Sound Agent 2

**Philips Sound Agent 2** is a BONUS software provided with Philips Audio system to enhance the quality of MP3 Music playback via USB PC Link.

1 **Philips Sound Agent 2** will be automatically launched if USB PC Link is selected.

2 Press **DSC/PRESET** or **VAC/REVERB** to select different Preset or Reverb sound effect.

3 For more details about using **Philips Sound Agent 2** features on your PC, please refer to the User Manual in the supplied CD-ROM or the Help menu.

### Notes:

- Philips Sound Agent 2 minimum OS requirement: Windows 2000 or XP.
- Please refer to the CD-ROM sleeve for detailed installation procedures, OR 'Software installation' in this manual.

### Enabling digital CD audio output

Before playing the CD through your PC's CD-ROM drive, it is necessary to configure your PC's hardware as follows:

#### For Windows ME/2000/XP

1 Enter the system control panel menu and select:

"System → Hardware → Device Manager → CD-ROM drives → Action-Properties → Properties".

OR

#### For Windows 98SE

Enter the system control panel menu and select: "MULTIMEDIA" and "CD MUSIC".

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

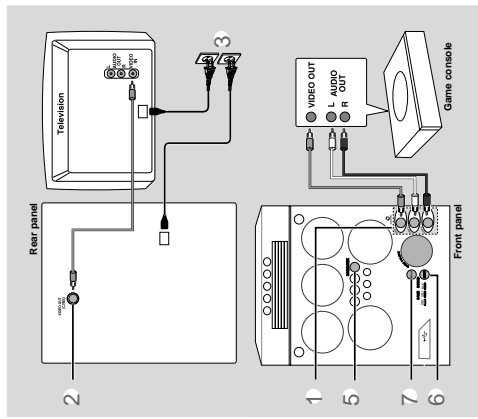
### Notes:

- You may need to refer to your PC's manual for correct configuration.
- For the optimal playback effect of the CD/MP3-CD, please use your Philips audio system.

## About Gameport

Gameport allows you to connect your game console to this mini system which enables you to enjoy a total game immersion experience through powerful sound output.

## Preparation before use



1 Connect your game console's video and audio output to the GAMEPORT video and audio inputs respectively (refer to "Connections – Connecting to game console").

2 Connect your TV's video input to the **VIDEO OUT (CVBS)** on the rear panel.

3 Connect all the AC power cords to the power outlet.

## Starting operation

4 Turn on the TV and set to the correct video-in channel.

The TV's video input channel may be called AUX(iliary) IN, AUDIO/VIDEO (AV) IN, EXT 1, etc. These channels are often near channel 00 on your TV. Or, your TV remote control may have a button or switch that chooses different video modes. See your TV manual for details.

## Gameport Operations

5 Press **AUX•GAME** until "GAMEPORT" is displayed.

6 Press **MODE** (or **GAME SOUND**) on the remote control to select the type of sound setting that best suits the game: **SPEED**, **PUNCH**, **BLAST** or **OFF**.

7 If you like to mix your game sound with your favourite music, press **MIX-IT** to select the desired music source: **CD**, **TUNER**, **USB PC LINK**, **AUX** or **OFF**.  
**CD** → "MIX-CD"  
**TUNER** → "MIX-TU"  
**USB PC LINK** → "MIX-USB"  
**AUX** → "MIX-AUX"  
**OFF** → "MIX-OFF"

8 If necessary, start to play your chosen mixer source.

9 Play your favourite game.

**To adjust the game console's volume level**  
 Adjust **GAME VOLUME**.

**To change the mixer source**  
 Press **MIX-IT**.

**To control the current active mixer source**

Press the respective source button (for example, **CD**, **TUNER**) on the remote control, then select the desired function (for example ▶, ◀, ◀▶). For example, if **CD** is the mixer source and you want to change the disc tray, you have to press **CD**, then press **CD 1-5** to select the desired disc tray.

### Notes:

- You can only activate **GAME VOLUME** and **MIX-IT** while in the game source mode.
- If your game console is switched on, the video image will always appear on the TV even though you are not in the gameport mode.

# Troubleshooting

## WARNING

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

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

Problem	Solution
<b>Auto Installation of the Installer CD-ROM did not install the Philips Sound Agent 2 onto my PC.</b>	Check that your PC's Operating System is running on Windows 2000/XP.
<b>When in USB PC LINK mode, "NO CONNECTION" is displayed.</b>	Check the connection between your PC and the system and the initial setup required, see "Connections" and "USB PC Link". Make sure the connected PC is turned on. Select the PRESET - Neutral mode. Select the REVERB - No environment mode.
<b>I want the minimum effect from the Philips Sound Agent 2 sound mode when listening to MP3 music streaming via USB PC Link.</b>	If the signal is too weak, adjust the antenna or connect an external antenna for better reception. Increase the distance between the system and your TV or VCR.
<b>Radio reception is poor.</b>	Insert a disc. Load in the disc with label facing right. Replace or clean the disc, see "Care and safety information". Use a finalised CD-R(W) or a correct format disc.
<b>"NO DISC" is displayed or the disc cannot be played.</b>	Remove and reconnect the AC power cord and switch on the system again.
<b>The system does not react when buttons are pressed.</b>	Adjust the volume. Disconnect the headphones. Check that the speakers are connected correctly. Check that the AC power cord is connected properly.
<b>Sound cannot be heard or is of poor quality.</b>	When in USB PC LINK mode, check that the PC's volume is not put into mute. When playing CD from PC's CD drive, refer to "USB PC Link - Enable digital CD audio output".

Refer to the FAQ (Frequently Asked Questions) on the supplied CD-ROM or visit our website [www.audio.philips.com](http://www.audio.philips.com) for latest update on FAQ.

# Troubleshooting

Problem	Solution
<b>The remote control does not function properly.</b>	Select the source (CD or TUNER, for example) before pressing the function button (▶▶  ◀◀, ▶▶▶▶). Reduce the distance between the remote control and the system. Replace the battery. Point the remote control directly toward the IR sensor.
<b>The timer is not working.</b>	Set the clock correctly. Press TIMER ON/OFF to switch on the timer.
<b>The system displays features automatically and buttons start flashing.</b>	Press and hold DEMO STOP on the main unit to switch off the demonstration mode. Reboot the computer.
<b>"UACB error" and "Audio Set is not connected/nor filter driver is not loaded" message prompts up on Computer screen in Windows XP.</b>	

Refer to the FAQ (Frequently Asked Questions) on the supplied CD-ROM or visit our website [www.audio.philips.com](http://www.audio.philips.com) for latest update on FAQ.



## DISMANTLING INSTRUCTIONS

*Dismantling of the 5DTC Module*

- 1) Loosen 4 screws to remove the Cover Top (pos 255) by sliding it out towards the rear before lifting up.
  - 2 screws on the rear
  - 1 screw each on the left & right side
- 2) Loosen 3 screws each to remove the Panel Left (pos 253) and Panel Right (pos 254). The Panels are removed by sliding it towards the rear and outwards.
  - 2 screws on the rear
  - 1 screw on the side
- 3) To loosen the Panel Front Display (pos 120), you have to press in the correct direction and position as shown in Figure 1 and Figure 2. Once the Panel Front Display is loosened, remove it out in the direction as shown in Figure 3.
- 4) Loosen 4 screws A (see Figure 4 and Figure 16) to remove the 5DTC Module (pos 1105).
  - 2 screws on the front
  - 2 screws on the rear

*Note : For information on the 'Emergency opening of the trays' of the 5DTC Module, refer to Chapter 10 (Page 10-7).*



Figure 1



Figure 2



Figure 3

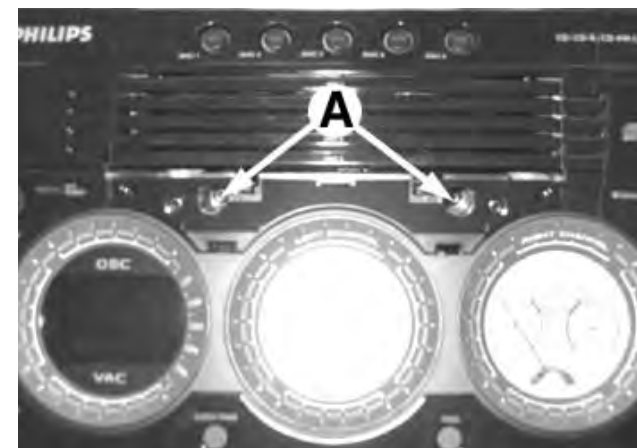


Figure 4

*Detaching the Front Panel assembly from the Bottom/Rear assembly*

- 1) Remove 2 screws B (pos 226) as shown in Figure 5 from the bottom of the Cabinet Front (pos 101).
- 2) Release the fixation of the AF Board (pos1102-A) to Bracket CDC Right (pos 186) by releasing the 2 catches C1 (see Figure 7) and pulling the AF Board outwards as shown in Figure 6.
- 3) Uncatch 2 catches C2 (see Figure 7) on the left & right sides of the Cabinet Front (pos 101) and slides the Front Panel assembly out towards the front.

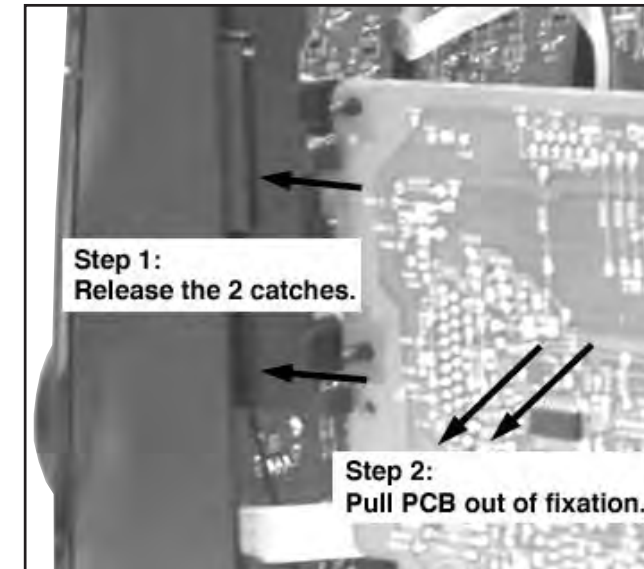


Figure 6

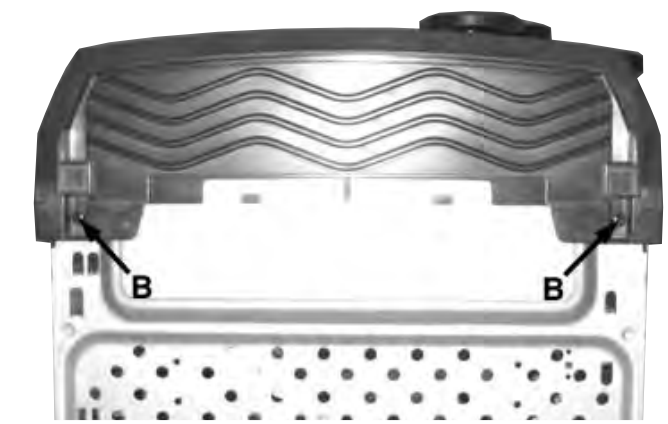


Figure 5

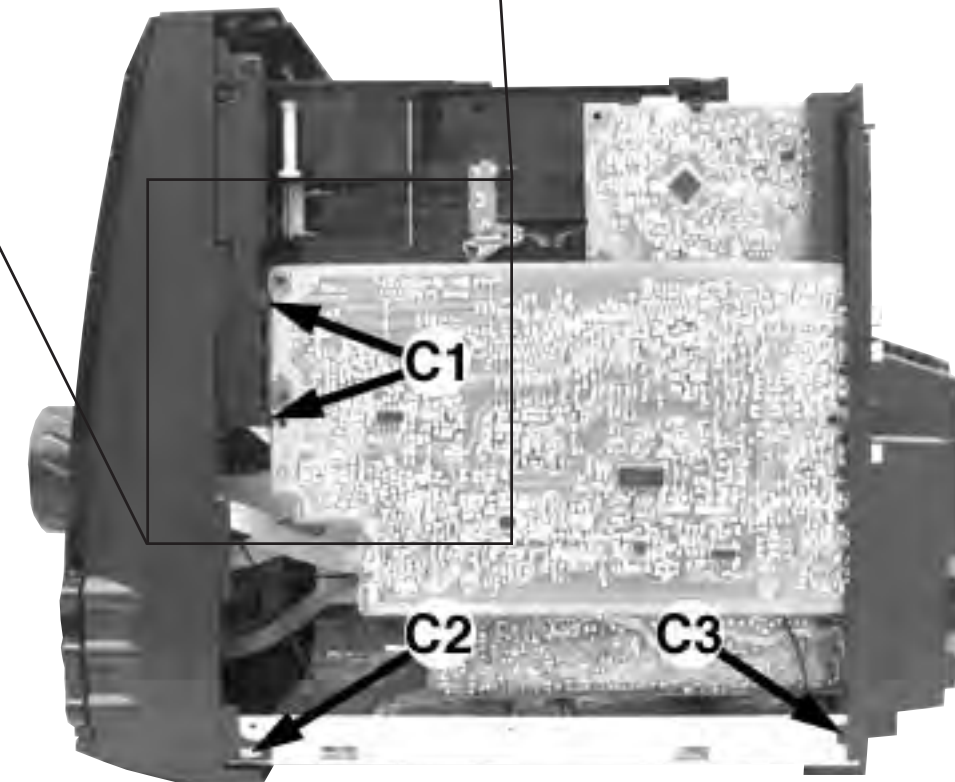


Figure 7

## DISMANTLING INSTRUCTIONS

*Dismantling of the Front Control Board and Front Display Board*

- 1) The Knob Volume Rotary (pos 164) can be removed by pulling it out in the direction as shown in Figure 8.
- 2) The Knob Game Sound Control (pos 176) can be removed by pulling it out in the direction as shown in Figure 9.

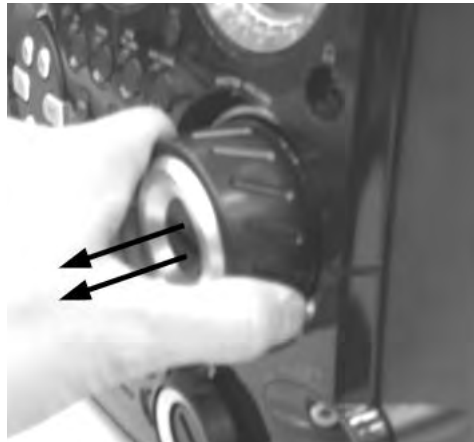


Figure 8



Figure 9

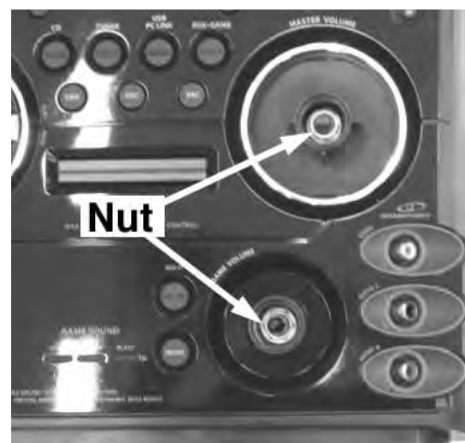


Figure 10

- 3) Loosen 4 screws D (see Figure 11) to remove the Bracket PCB Front Display (pos 183) and Front Display Board (pos 1101-A).
- 4) Loosen 1 screw E (see Figure 12) to remove the IR Eye Board (pos 1107-H).
- 5) Loosen 2 screws F (see Figure 12) to remove the ECO Power Board (pos 1107-E).
- 6) Loosen 3 screws G (see Figure 12) to remove the Bracket VU Meter 2 (pos 136) and loosen 2 screws H to remove the VU Meter Right Board (pos 1107-D) from the Bracket VU Meter 2.
- 7) Loosen 3 screws J (see Figure 12) to remove the Bracket VU Meter 1 (pos 129) and loosen 2 screws K to remove the VU Meter Left Board (pos 1107-C) from the Bracket VU Meter 1.
- 8) Loosen 9 screws M (see Figure 13) and loosen the 2 nuts (see Figure 10) to remove the Front Control Board (pos 1107-A).
- 9) Loosen 1 screw N (see Figure 13) to remove the Headphone Board (pos 1107-B).
- 10) Loosen 3 screws P (see Figure 14) to remove the Game Port Board (pos 1107-G).

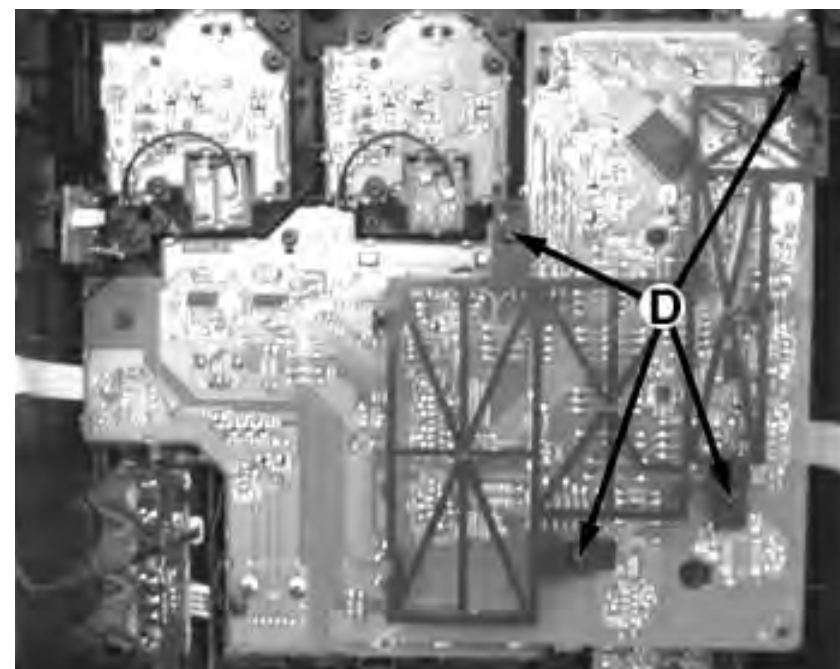


Figure 11

*Dismantling of the Front Control Board and Front Display Board*

Figure 12

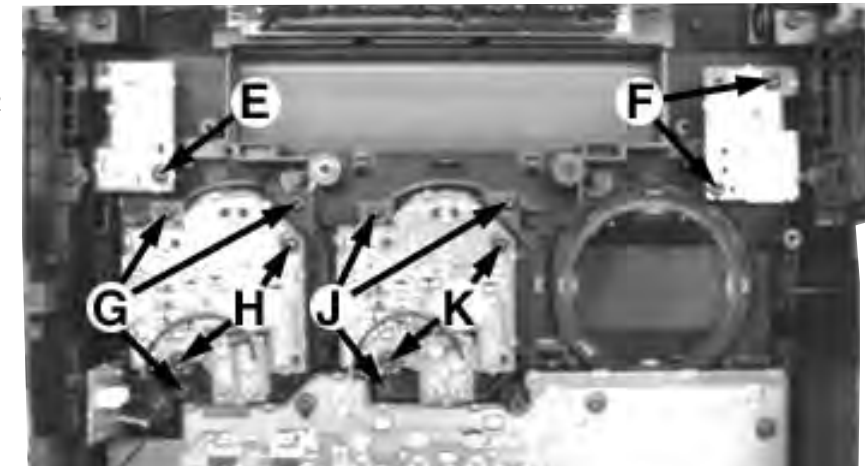


Figure 13

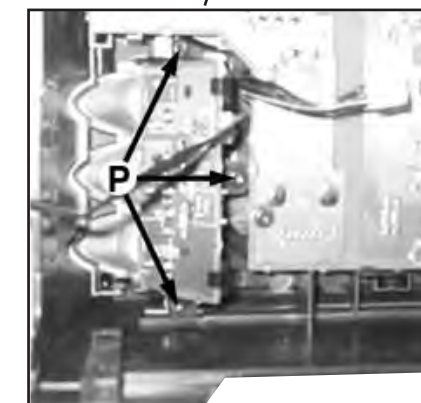
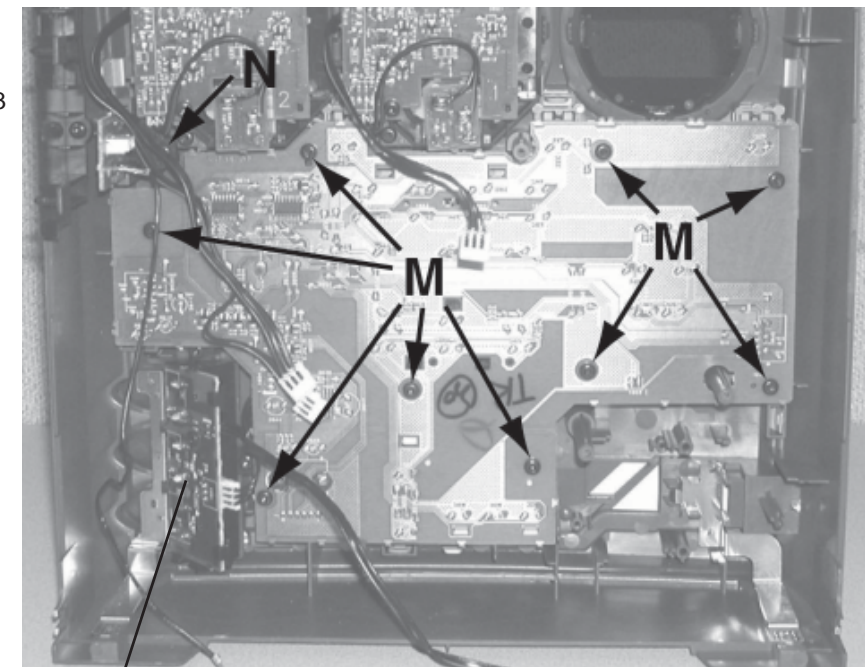


Figure 14



## DISMANTLING INSTRUCTIONS

*Dismantling of the Rear Panel assembly*

- 1) Loosen 3 screws S and 2 catches C4 (see Figure 16) to remove the Tuner Board assembly.
- 2) Loosen 2 screw T (see Figure 16) to free the AF Board (pos 1102-A).
- 3) Loosen 1 screw U (see Figure 16) to remove the Video Cinch Out Board (pos 1102-B).
- 4) Loosen 1 screw V (see Figure 16) to free the Mains Socket Board (pos 1106-1001-B).
- 5) Loosen 4 screws W (see Figure 16) and 2 catches C3 (see Figure 7) to remove the Panel Rear (pos 256) by sliding it out towards the rear (see Figure 19).  
*Note : Tuner Board assembly and Mains Socket Board can also be remove together with the Panel Rear.*
- 6) Loosen 4 screws Z (see Figure 16) and 4 catches C5 (see Figure 17) to remove the Fan (pos 1008).

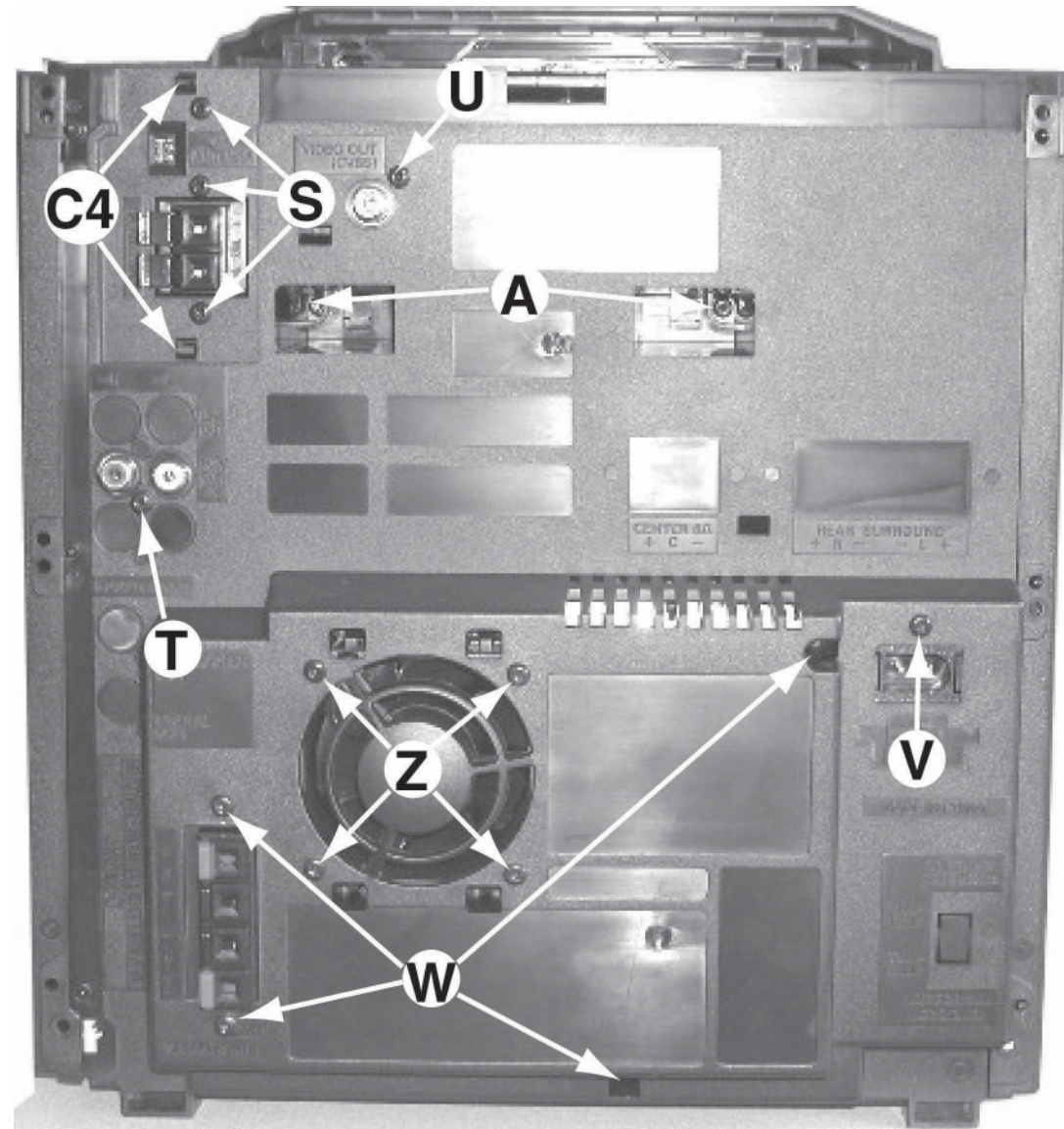


Figure 16

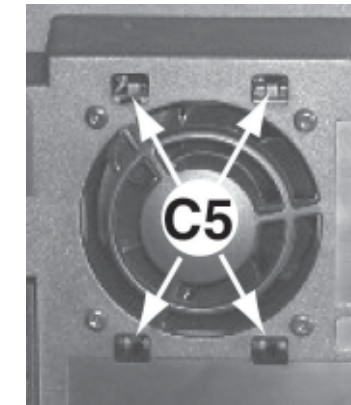
*Dismantling of the Rear Panel assembly*

Figure 17

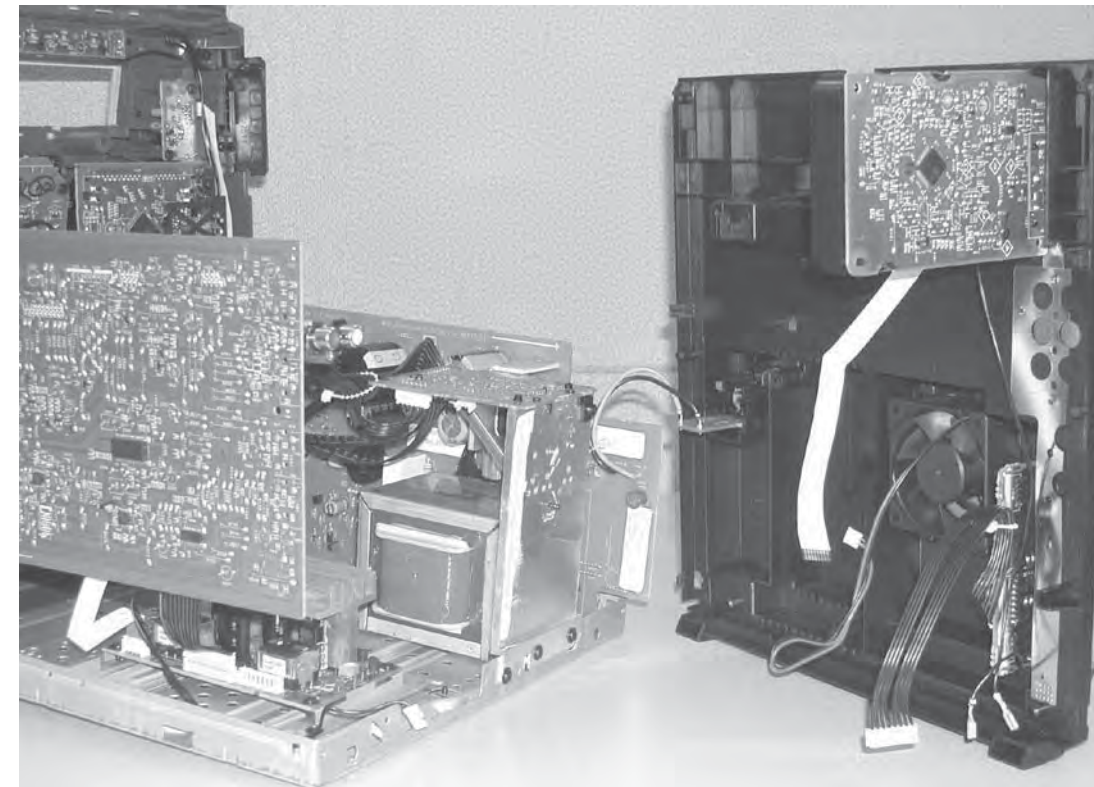


Figure 18

*Repair Hints*

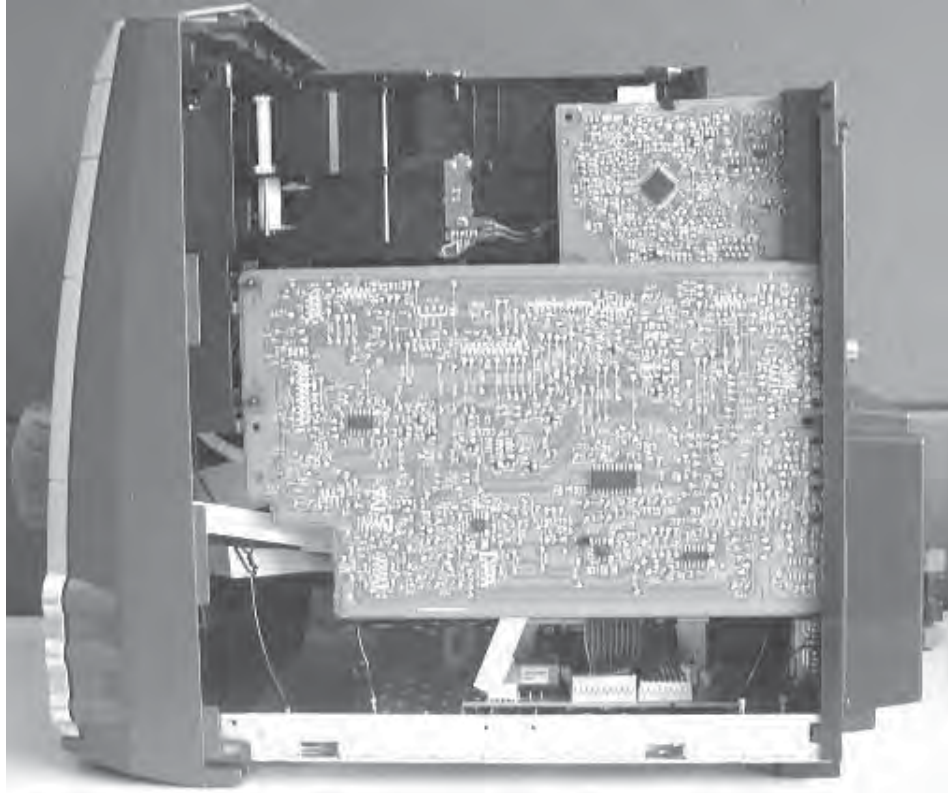
- 1) During repair it is possible to disconnect the ECO6 Tuner board and/or 5DTC Module completely unless the fault is suspected to be in that area. This will not affect the performance of the rest of the set.

**Note:** The flex cables are very fragile, care should be taken not to damage them during repair. After repair, be very sure that the flex cables are inserted properly into the flex sockets before encasing, otherwise faults may occur.

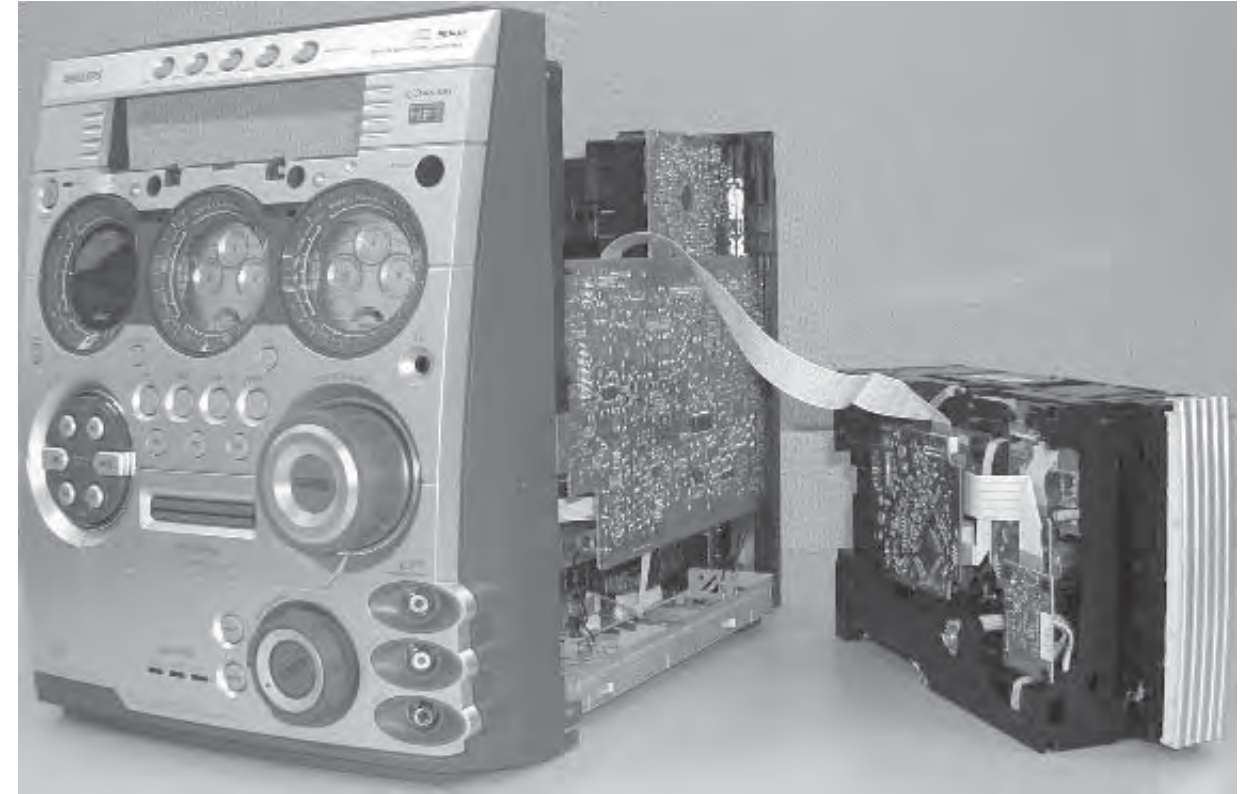


# DISMANTLING INSTRUCTIONS

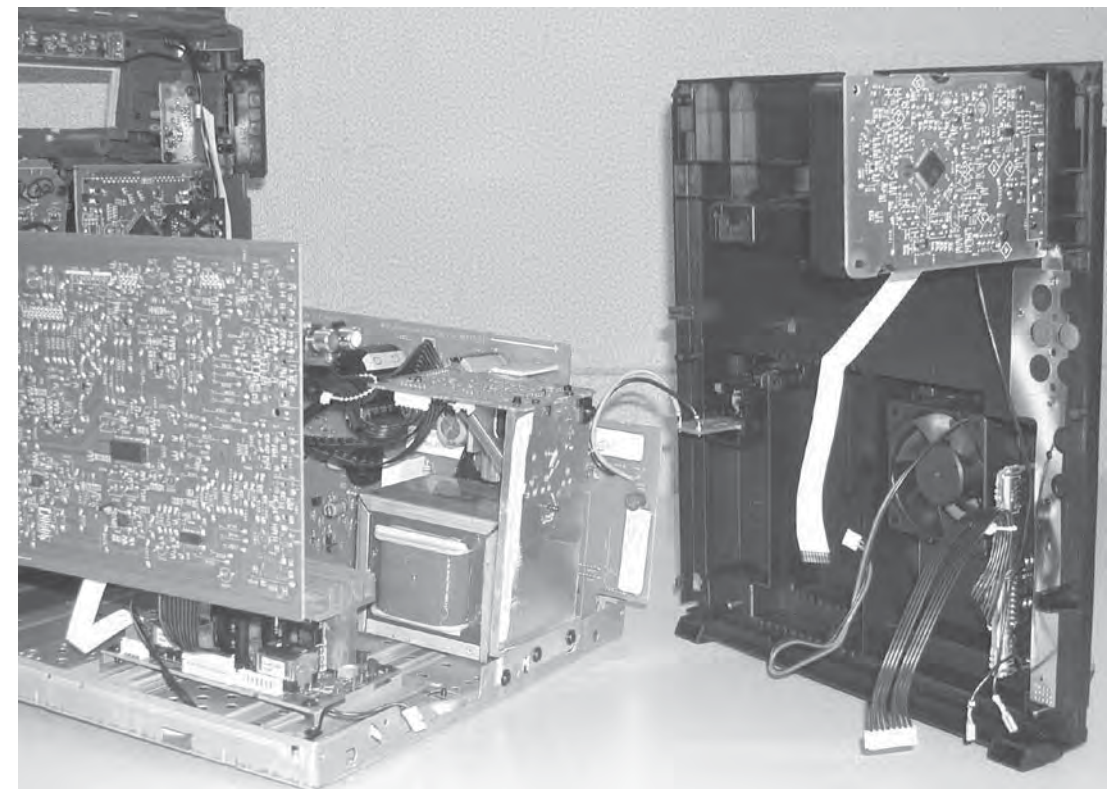
Service position A



Service position B



Service position C



# SERVICE TEST PROGRAM

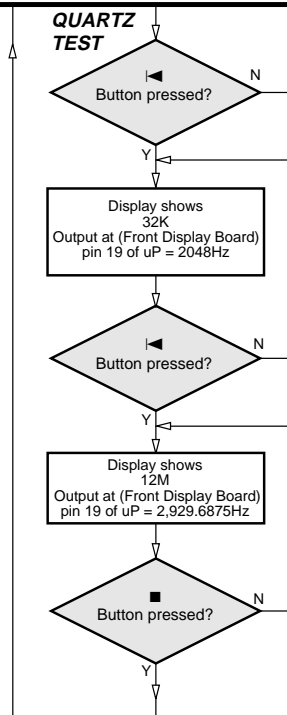
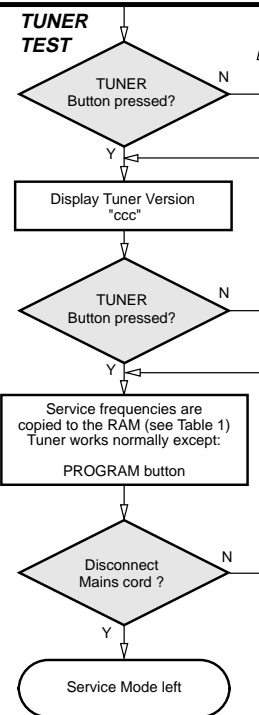
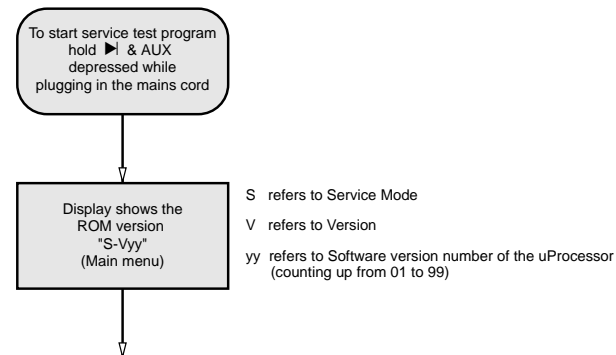


Figure 1

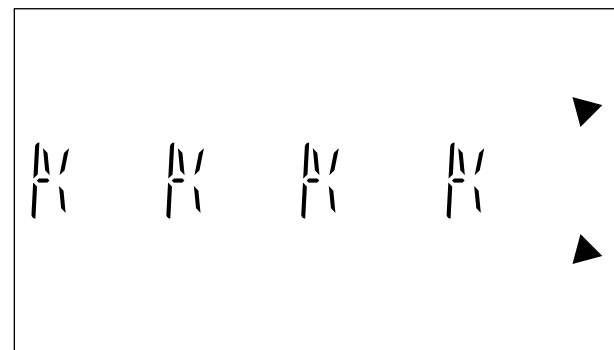
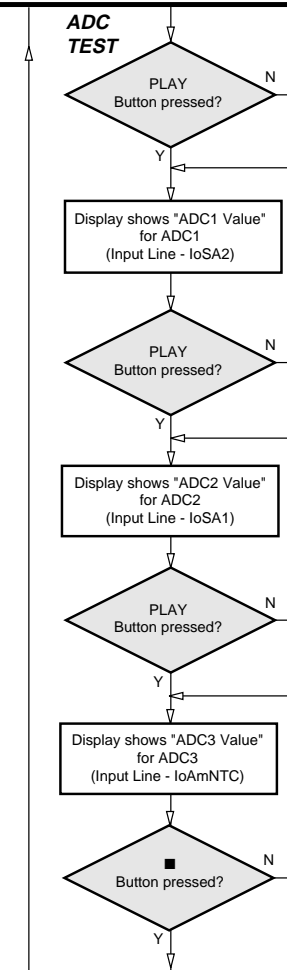
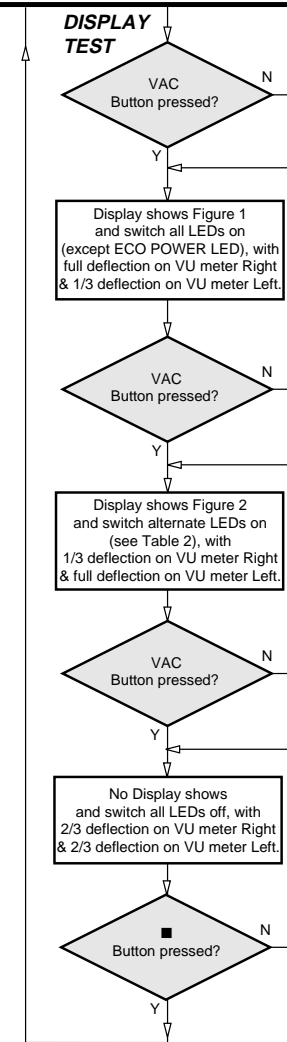


Figure 2



ADC Test is used for checking the ADC inputs to the microprocessor.

The display shows an ADC value between 0 and 255 for an input signal between 0 and 5V.

Various other Tests

PRESET	Europe "EUR"	USA "USA"	Oversea "OSE"
1	87.5MHz	87.5MHz	87.5MHz
2	108MHz	108MHz	108MHz
3	531kHz	530kHz	531/530kHz*
4	1602kHz	1700kHz	1602/1700kHz*
5	558kHz	560kHz	558/560kHz*
6	1494kHz	1500kHz	1494/1500kHz*
7	153kHz	98MHz	87.5/98MHz*
8	279kHz	87.5MHz	87.5MHz
9	198kHz	87.5MHz	87.5MHz
10	98MHz	87.5MHz	87.5MHz
11	87.5MHz	87.5MHz	98/87.5MHz*

Table 1

Note:  
\* Depending on the selected grid frequency (9 or 10kHz).  
By holding the TUNER and **▶▶** buttons depressed while switching on the Mains supply, the tuning grid frequency is toggled between 9kHz and 10kHz for the Oversea (/21) version.

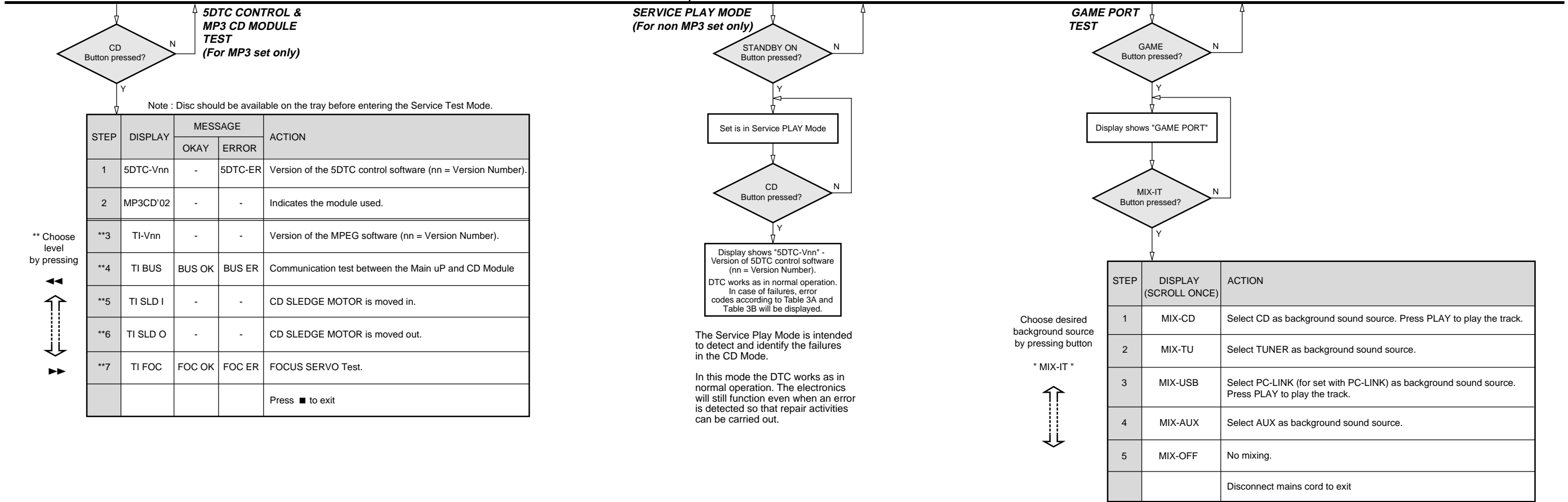
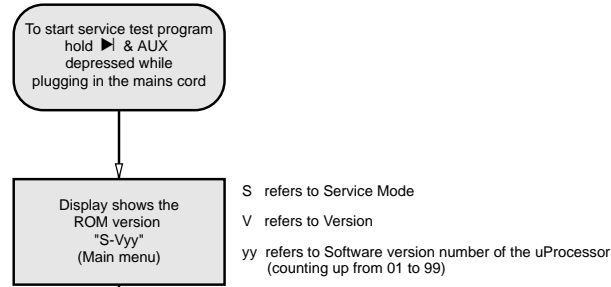
LEDs	FW-C557	FW-C577	FW-C579 FW-M589	FW-C777 FW-M777
CD	-	-	-	OFF
TUNER	-	-	-	ON
AUX / GAME	-	-	-	OFF
USB PC LINK	-	-	-	OFF
DISC 1	-	ON	ON	ON
DISC 2	-	OFF	OFF	OFF
DISC 3	-	ON	ON	ON
DISC 4	-	OFF	OFF	OFF
DISC 5	-	ON	ON	ON
^^ MAX 1 (WOOX 1)	OFF	OFF	OFF	OFF
^^ MAX 2 (WOOX 2)	ON	ON	ON	ON
^^ MAX 3 (WOOX 3)	OFF	OFF	OFF	OFF
SPEED	ON	ON	ON	ON
PUNCH	OFF	OFF	OFF	OFF
BLAST	OFF	OFF	OFF	OFF
USB Indicator	-	OFF	OFF	OFF

Table 2

^^ MAX - FW-C557, FW-C577, FW-C579, FW-M567, FW-M589  
WOOX - FW-C777, FW-M777

TEST	Activated with	ACTION
EEPROM TEST	<b>▶▶</b> ■ to Exit	A test pattern will be sent to the EEPROM. "PASS" is displayed if the uProcessor read back the test pattern correctly, otherwise "FAIL" will be displayed.
EEPROM FORMAT TEST	<b>◀◀</b>	Load default data. Display shows "NEW" for 1 second. <b>Caution! All presets from the customer will be lost!!</b>
DEMO TOGGLE	^^ MAX (WOOX 2)	Pressing this button will toggle between DEMO ON and DEMO OFF. The DEMO status will scroll once across the Display.
ROTARY ENCODER TEST	Rotary Volume Knob	Display shows value for 2 seconds. Values increases or decreases until Volume Maximum (VOL MAX) or Volume Minimum (VOL MIN) is reached.
MICRONAS FIRMWARE VERSION	USB PC LINK ■ to Exit	To read out the Firmware Version of IC UAC3553 on the USB PC LINK Board. Display shows "Vxxxx" (xxxx = Firmware Version number).
LEAVE SERVICE TEST PROGRAM	Disconnect mains cord	

**SERVICE TEST PROGRAM**



Error code	Error Description
E1000	Focus Error Triggered when the focus cannot be found within a certain time when starting up the CD, or if the focus is lost for more than a certain time during playing of CD.
E1001	Radial Error Triggered when the radial servo is off-track for a certain time during playing of CD.
E1002	Sledge In Error The sledge did not reach its inner position (inner-switch is still close) before approximately 6 seconds have passed by. Inner-switch or sledge motor problem.
E1003	Sledge Out Error The sledge did not come out of its inner position (inner-switch is still open) before approximately 250ms have passed by. Inner-switch or sledge motor problem.
E1005	Jump Error Triggered in normal play when the jump destination could not be found within a certain time.

Table 3A

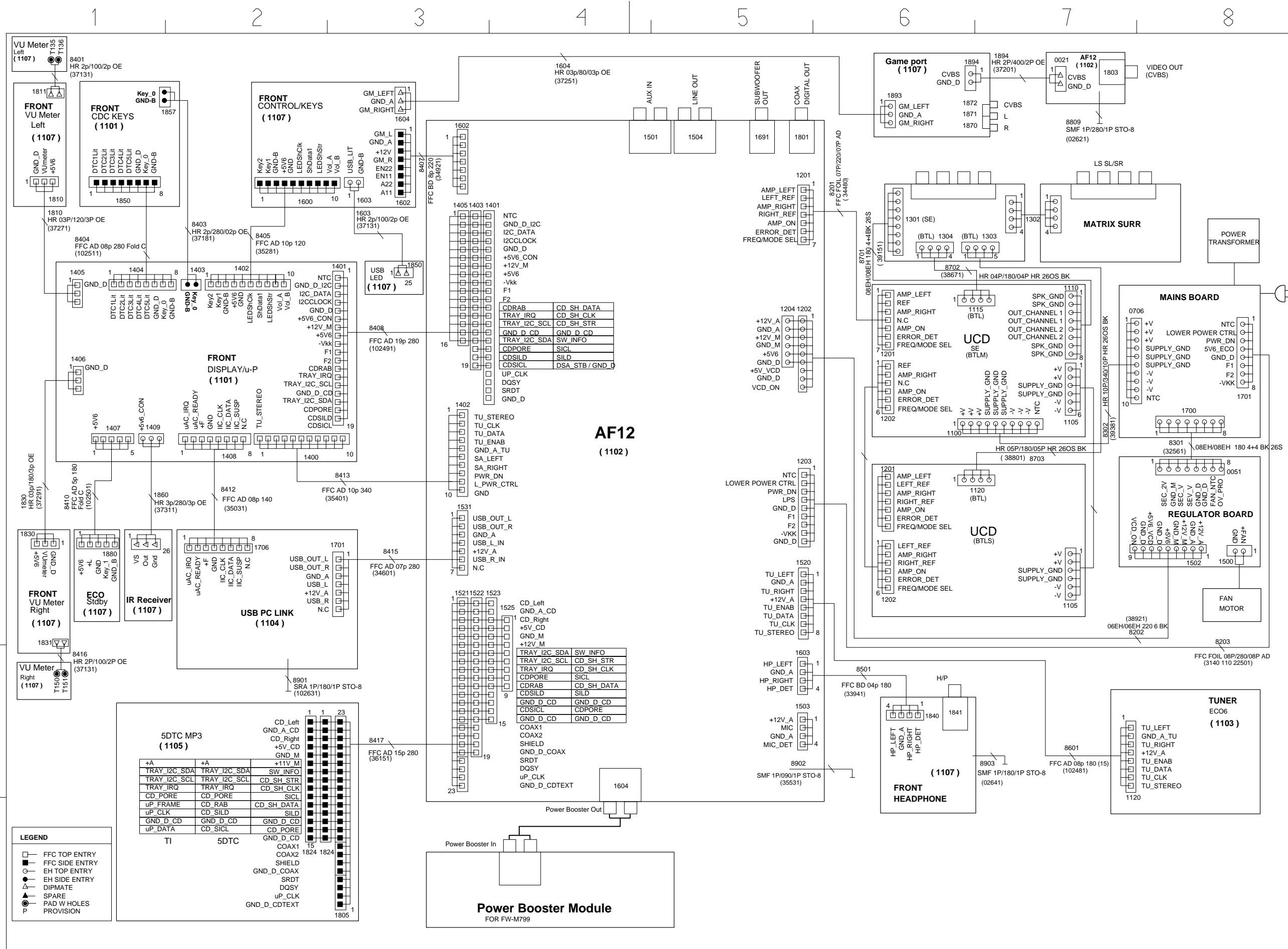
Error code	Error Description
E1006	Subcode Error Triggered when a new subcode was missing for a certain time during playing of CD.
E1007	PLL Error The Phase Lock Loop could not lock within a certain time.
E1008	Turntable Motor Error Generated when the CD could not reached 75% of speed during start-up within a certain time. Disc motor problem.
E1020	Focus Search Error The focus point has not been found within a certain time.
E1061	The tray could not enter the inside position and is opening again. This can happen if the tray is blocked such that it cannot go fully inside, or if the 5DTC control module is defective and never closes.
E1079	The tray could not reach the outside position and is stopped at its blocked position. This can happen if the tray is blocked such that it cannot go fully outside, or if the 5DTC control module is defective and never opens.

Table 3B





# SET WIRING DIAGRAM



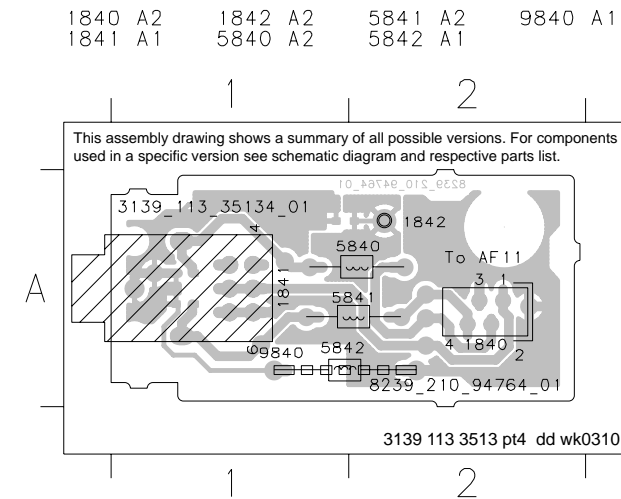


# FRONT CONTROL BOARD

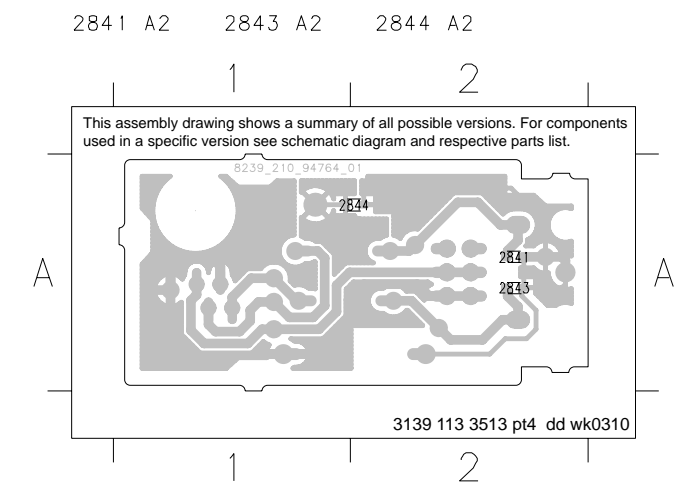
## TABLE OF CONTENTS

Headphone part - Layout & Circuit diagram .....	5-1
Control part - Component Layout .....	5-2
Control part - Chip Layout .....	5-3
Control part - Circuit diagram .....	5-4
ECO Power part - Layout & Circuit diagram .....	5-5
Game Port part - Layout & Circuit diagram .....	5-5
VU Meter (Left) part - Layout & Circuit diagram .....	5-6
VU Meter Housing (Left) part - Layout & Circuit .....	5-6
VU Meter (Right) part - Layout & Circuit diagram .....	5-7
VU Meter Housing (Right) part - Layout & Circuit .....	5-7
IR Eye part - Layout & Circuit diagram .....	5-8
USB LED part - Layout & Circuit diagram .....	5-8
Electrical parts list .....	5-9

## HEADPHONE BOARD - COMPONENT LAYOUT

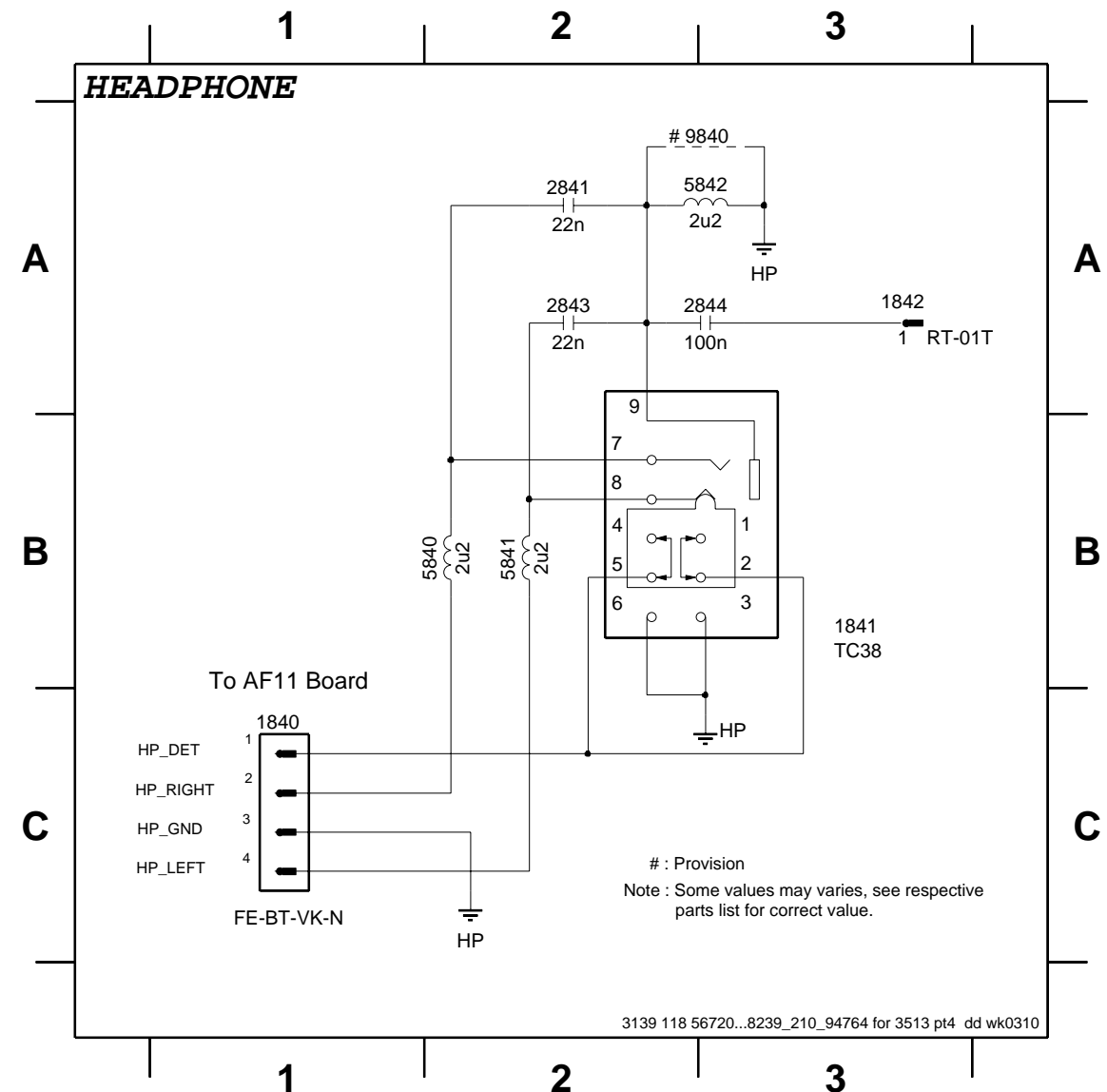


## HEADPHONE BOARD - CHIP LAYOUT



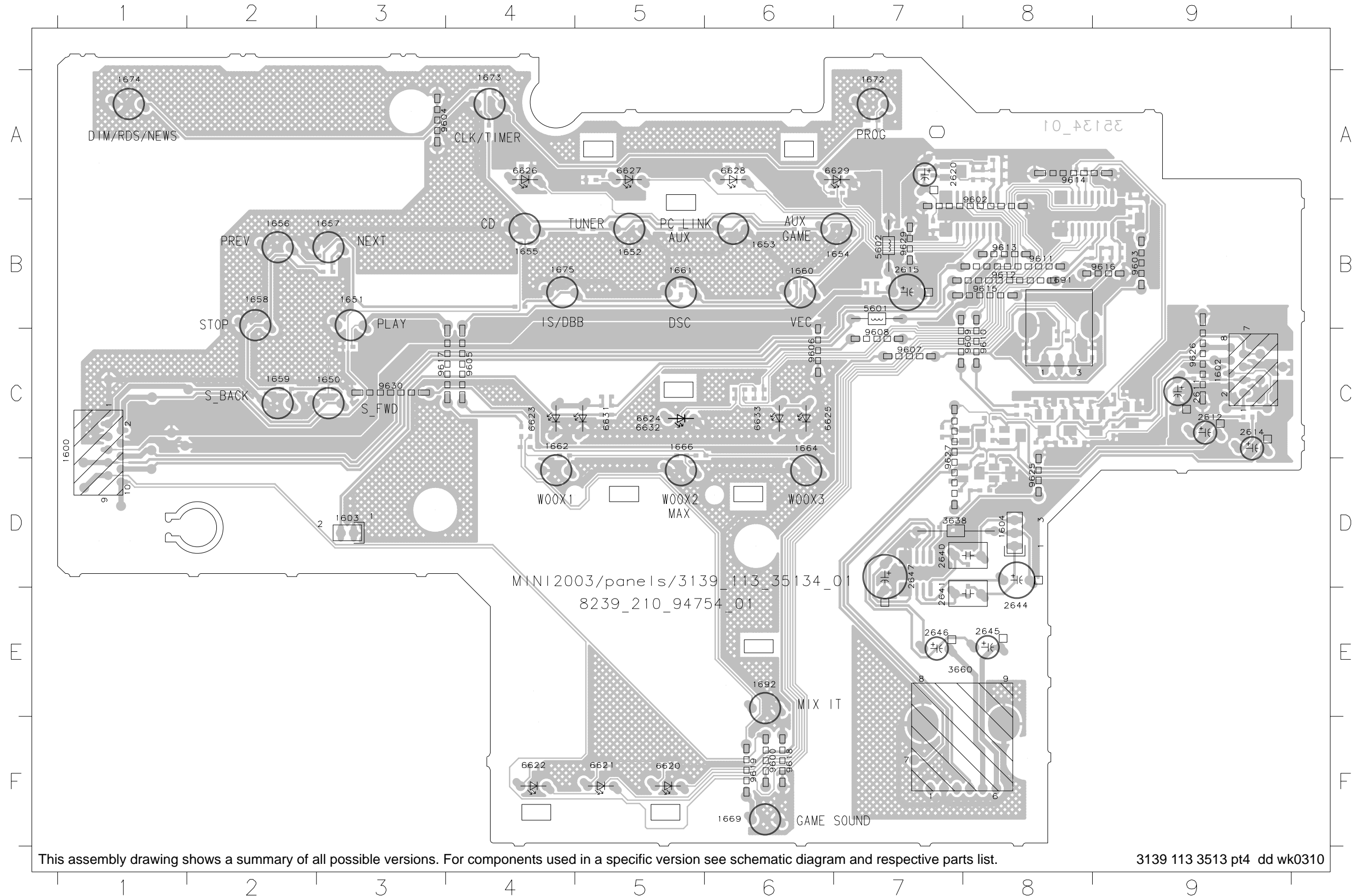
## HEADPHONE BOARD - CIRCUIT DIAGRAM

1840 C1    1841 B3    1842 A3    2841 A2    2843 A2    2844 A3    5840 B2    5841 B2    5842 A3    9840 A3



### CONTROL BOARD - COMPONENT LAYOUT

1600 C1	1651 B3	1656 B2	1661 B5	1672 A7	1692 E6	2620 A7	2646 E7	5602 B7	6624 C5	6629 A7	9602 B8	9607 C7	9612 B8	9617 C3	9627 C7
1602 C9	1652 B5	1657 B3	1662 C4	1673 A4	2611 C9	2640 D7	2647 D7	6620 F5	6625 C6	6631 C5	9603 B9	9608 C7	9613 B8	9618 F6	9629 B7
1603 D3	1653 B6	1658 B2	1664 C6	1674 A1	2612 C9	2641 E7	3638 D7	6621 F5	6626 A4	6632 C5	9604 A3	9609 C8	9614 A8	9619 F6	9630 C3
1604 D8	1654 B7	1659 C2	1666 C5	1675 B4	2614 C9	2644 E8	3660 E7	6622 F4	6627 A5	6633 C6	9605 C4	9610 C8	9615 B8	9625 D8	
1650 C3	1655 B4	1660 B6	1669 F6	1691 B8	2615 B7	2645 E8	5601 B7	6623 C4	6628 A6	9600 F6	9606 C6	9611 B8	9616 B9	9626 C9	

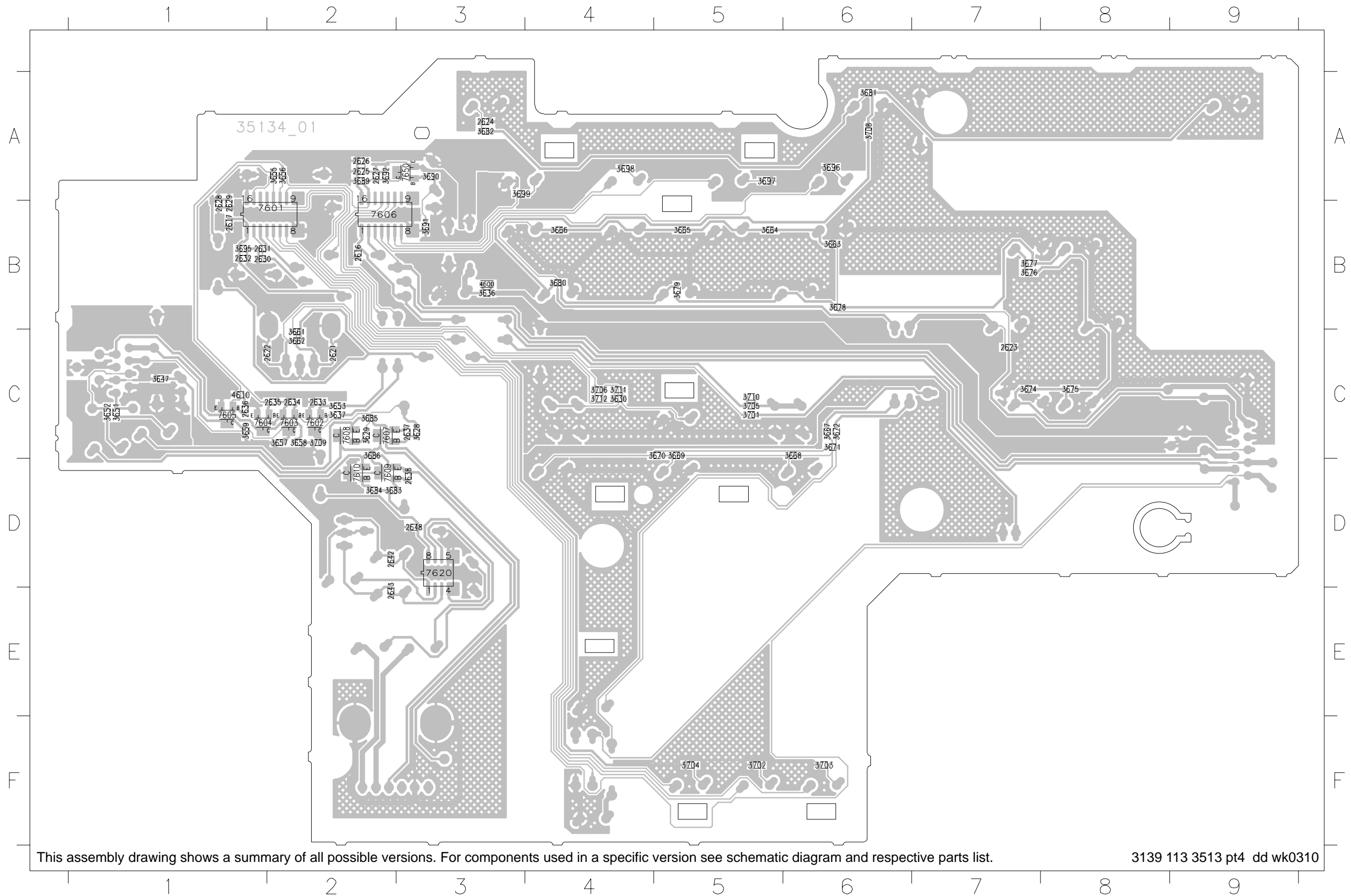


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3513 pt4 dd wk0310

### CONTROL BOARD - CHIP LAYOUT

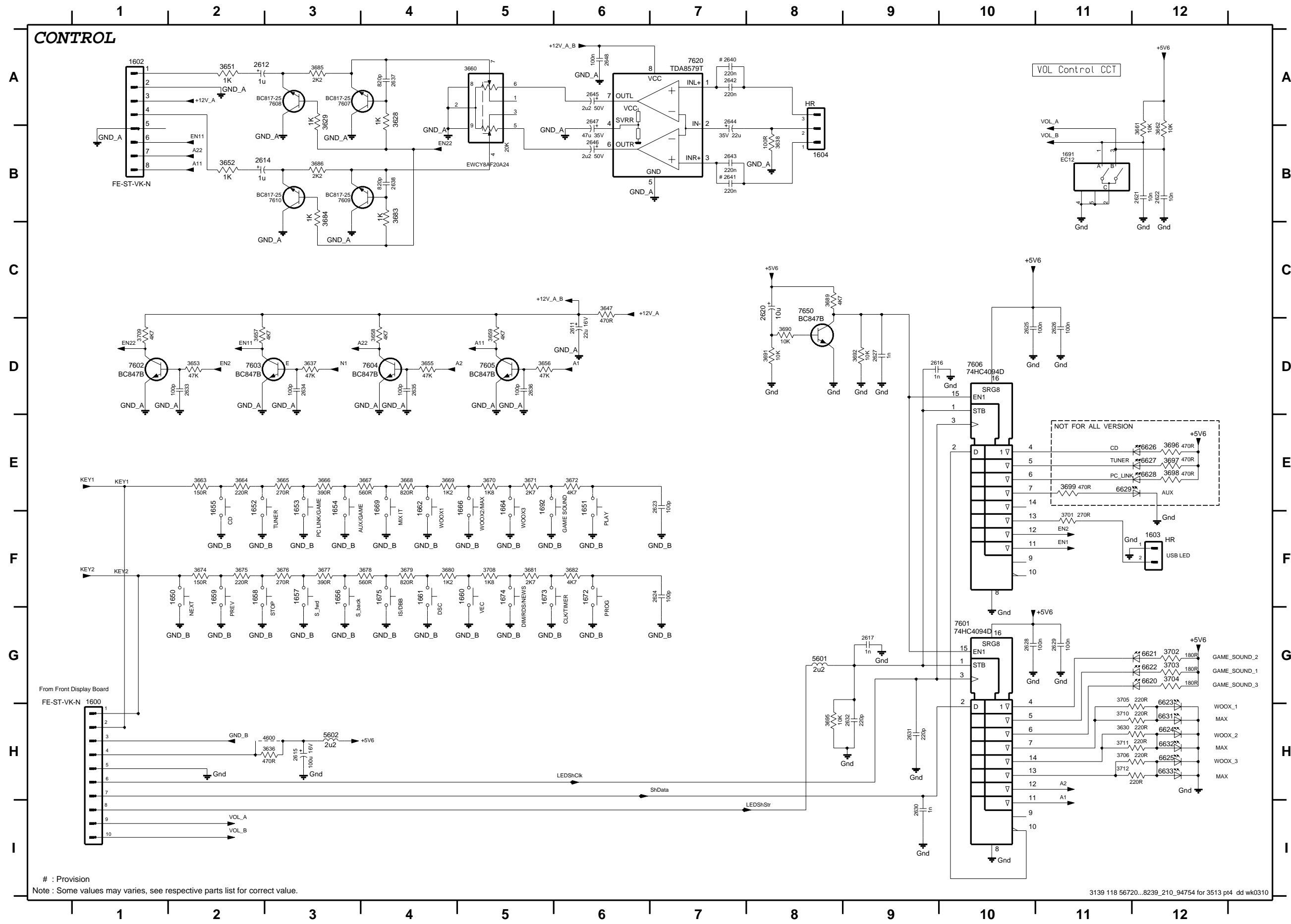
2616 B2	2625 A2	2631 B1	2637 C3	3629 C2	3652 C1	3659 C1	3666 B4	3672 C6	3679 B5	3685 C2	3695 B1	3702 F5	3709 C2	7601 B2	7607 C2
2617 B1	2626 A2	2632 B1	2638 D3	3630 C4	3653 C2	3661 C2	3667 C6	3674 C7	3680 B4	3686 C2	3696 A6	3703 F6	3710 C5	7602 C2	7608 C2
2621 C2	2627 A2	2633 C2	2642 D2	3636 B3	3655 A2	3662 C2	3668 C6	3675 C8	3681 A6	3689 A2	3697 A5	3704 F5	3711 C4	7603 C2	7609 D2
2622 C1	2628 B1	2634 C2	2643 E2	3637 C2	3656 A2	3663 B6	3669 C5	3676 B7	3682 A3	3690 A3	3698 A4	3705 C5	3712 C4	7604 C1	7610 D2
2623 C7	2629 B1	2635 C2	2648 D3	3647 C1	3657 C2	3664 B5	3670 C5	3677 B7	3683 D2	3691 B3	3699 A3	3706 C4	4600 B3	7605 C1	7620 D3
2624 A3	2630 B1	2636 C1	3628 C3	3651 C1	3658 C2	3665 B5	3671 C6	3678 B6	3684 D2	3692 A2	3701 C5	3708 A6	4610 C1	7606 B2	7650 A3



This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3513 pt4 dd wk0310

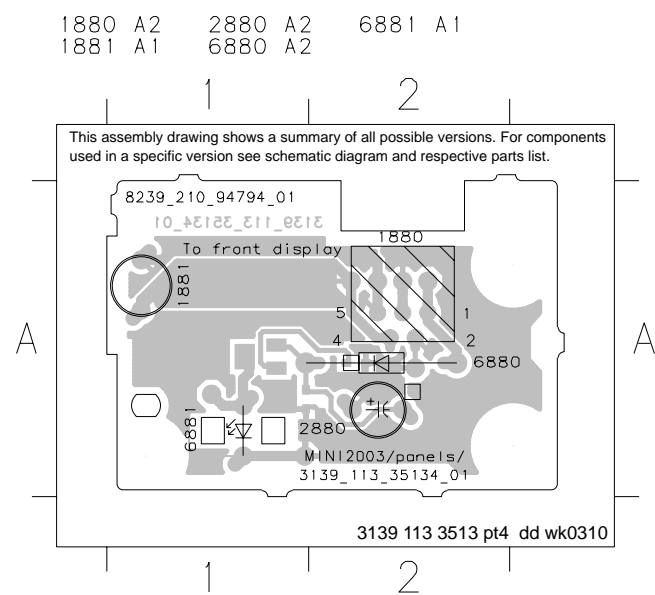
# CONTROL BOARD - CIRCUIT DIAGRAM



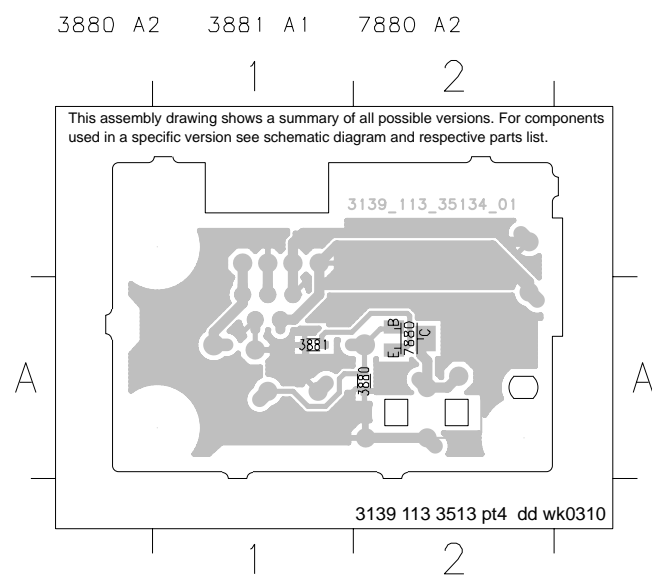
- 1600 H1
- 1602 A1
- 1603 F12
- 1604 B8
- 1650 F2
- 1651 E6
- 1652 E2
- 1653 E3
- 1654 F3
- 1655 F2
- 1656 F3
- 1657 F3
- 1658 F2
- 1659 F2
- 1660 F5
- 1661 F4
- 1662 E4
- 1664 F5
- 1666 F5
- 1669 E4
- 1672 F6
- 1673 F5
- 1674 F5
- 1675 F4
- 1691 B11
- 1692 E5
- 2111 D6
- 2112 A2
- 2114 B2
- 2115 H3
- 2116 D9
- 2117 G9
- 2120 C8
- 2121 B12
- 2122 B12
- 2123 E7
- 2124 F7
- 2125 D10
- 2126 D11
- 2127 D9
- 2128 G10
- 2129 G11
- 2130 I9
- 2131 H9
- 2132 H9
- 2133 D2
- 2134 D3
- 2135 D4
- 2136 D5
- 2137 A4
- 2138 B4
- 2140 A7
- 2141 B7
- 2142 A7
- 2143 B7
- 2144 A7
- 2145 A6
- 2146 B6
- 2147 A6
- 2148 A6
- 2149 A4
- 2149 A3
- 2149 H11
- 2149 H3
- 2149 D3
- 2149 B8
- 2149 C6
- 2149 A2
- 2149 B2
- 2149 D2
- 2149 D5
- 2149 D5
- 2149 A5
- 2149 B12
- 2149 B12
- 2149 E2
- 2149 E2
- 2149 E3
- 2149 E3
- 2149 E4
- 2149 E4
- 2149 E5
- 2149 F2
- 2149 F2
- 2149 F3
- 2149 F3
- 2149 F4
- 2149 F4
- 2149 F5
- 2149 F6
- 2149 B3
- 2149 B3
- 2149 B3
- 2149 B3
- 2149 D8
- 2149 D8
- 2149 D9
- 2149 H8
- 2149 E12
- 2149 E12

# : Provision  
 Note : Some values may varies, see respective parts list for correct value.

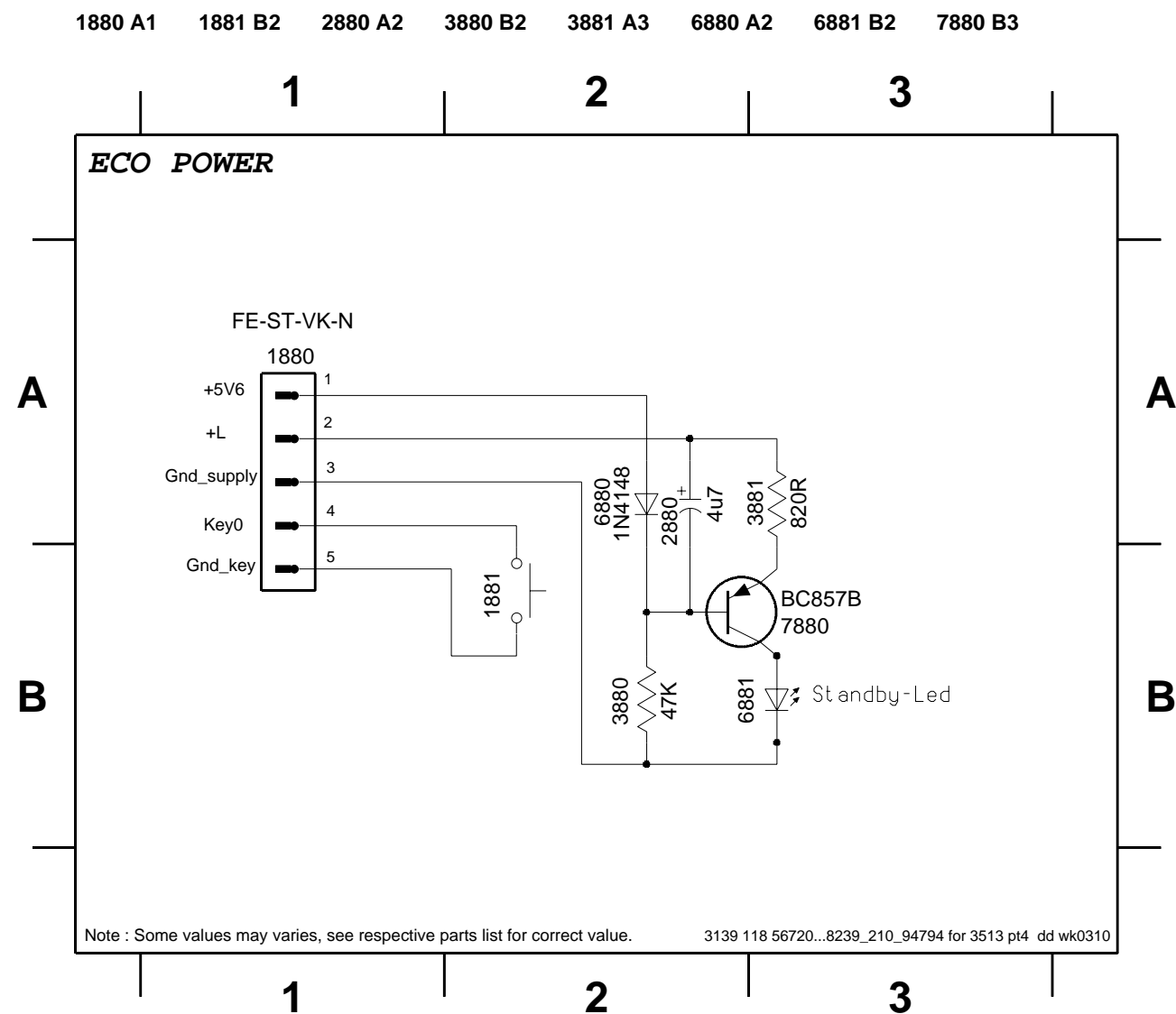
**ECO POWER BOARD - COMPONENT LAYOUT**



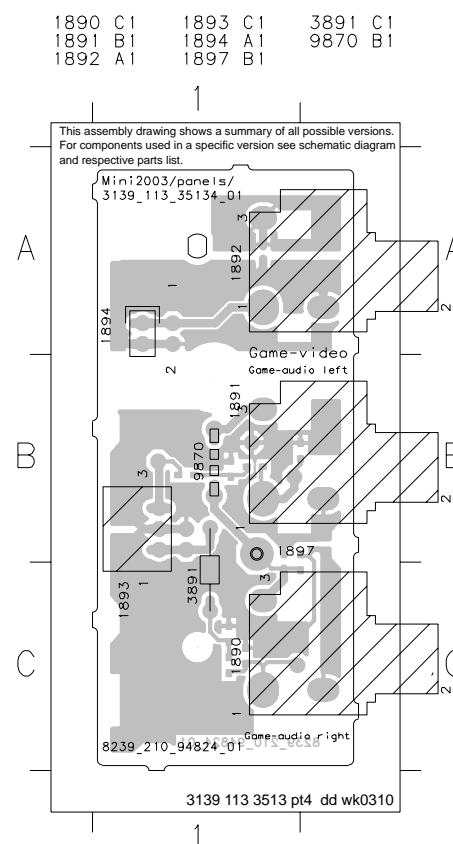
**ECO POWER BOARD - CHIP LAYOUT**



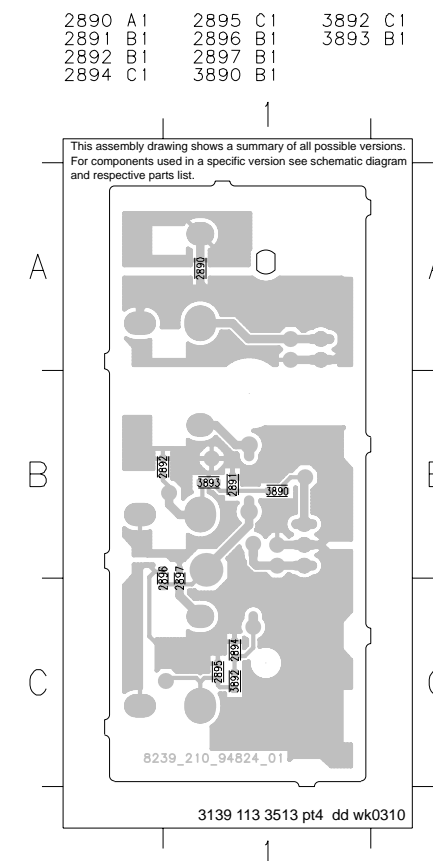
**ECO POWER BOARD - CIRCUIT DIAGRAM**



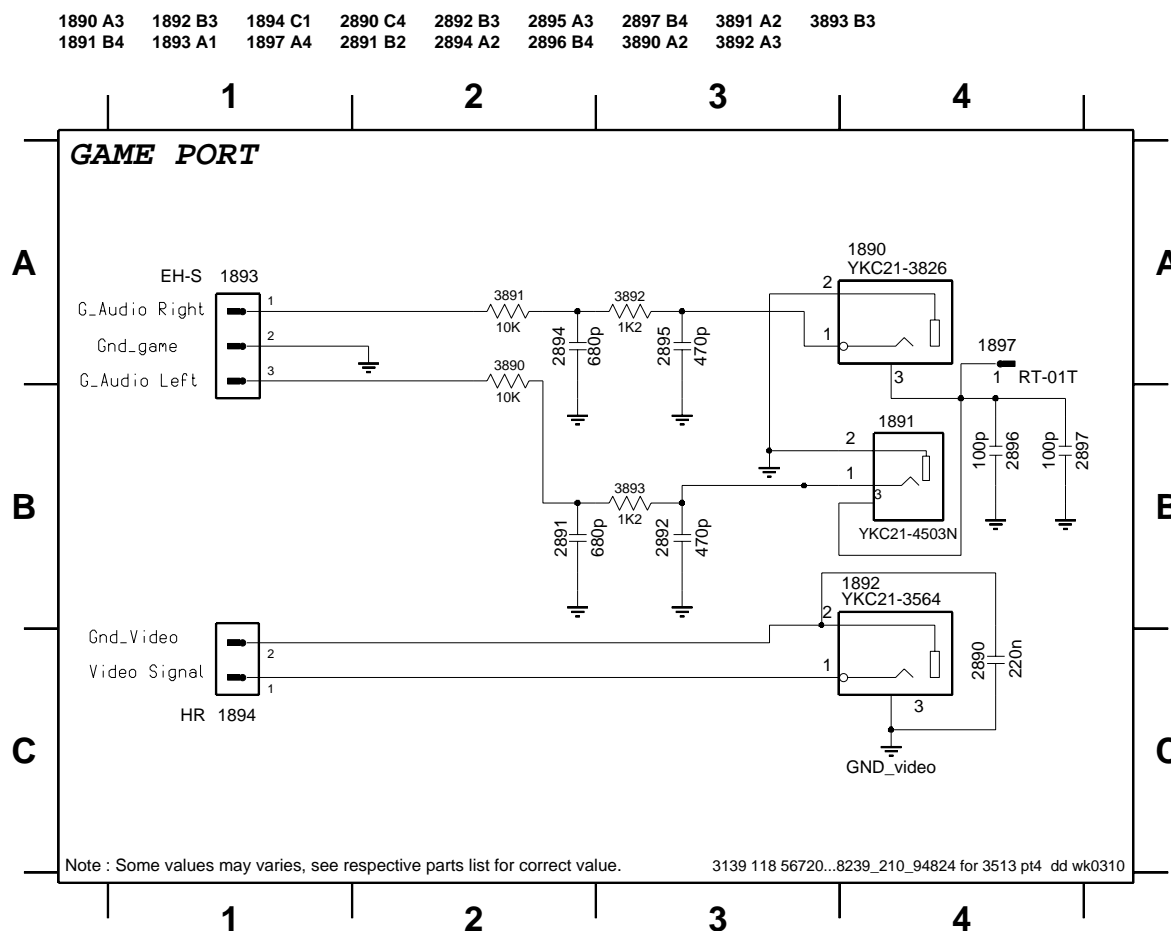
**GAME PORT BOARD - COMPONENT LAYOUT**



**GAME PORT BOARD - CHIP LAYOUT**

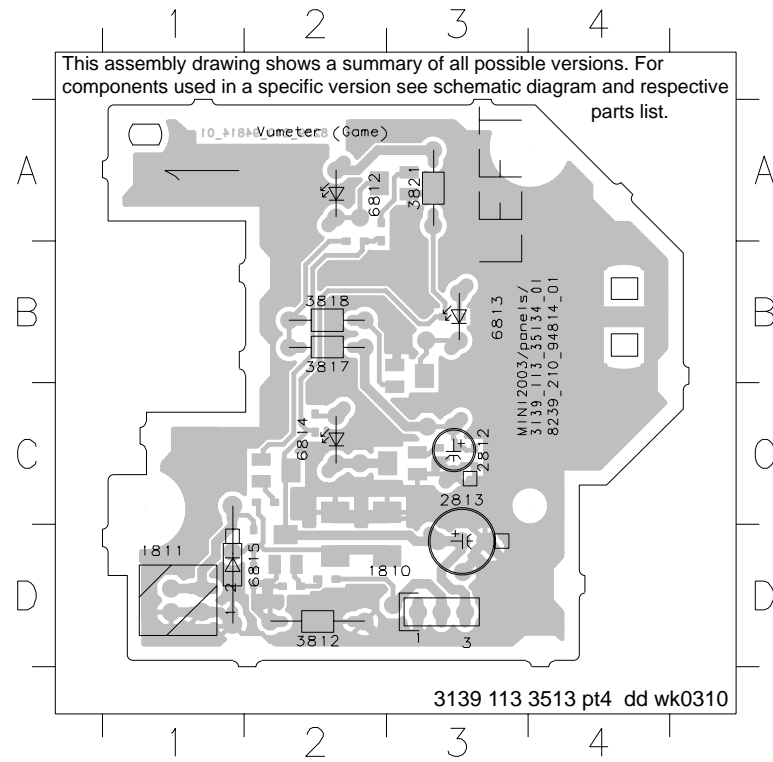


**GAME PORT BOARD - CIRCUIT DIAGRAM**



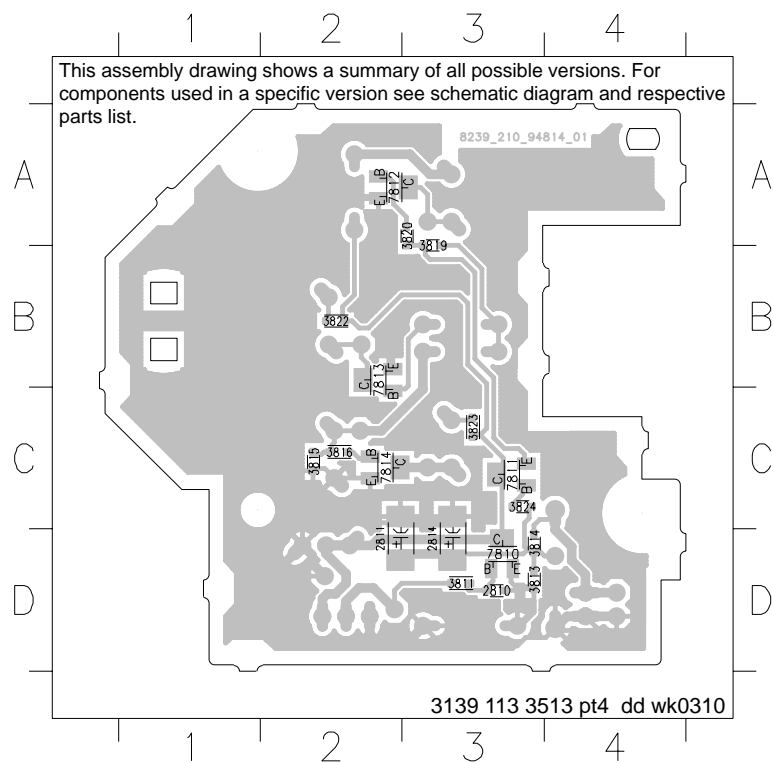
VU METER (LEFT) BOARD - COMPONENT LAYOUT

1810 D3	2813 C3	3818 B2	6813 B3
1811 D1	3812 D2	3821 A3	6814 C2
2812 C3	3817 B2	6812 A2	6815 D2



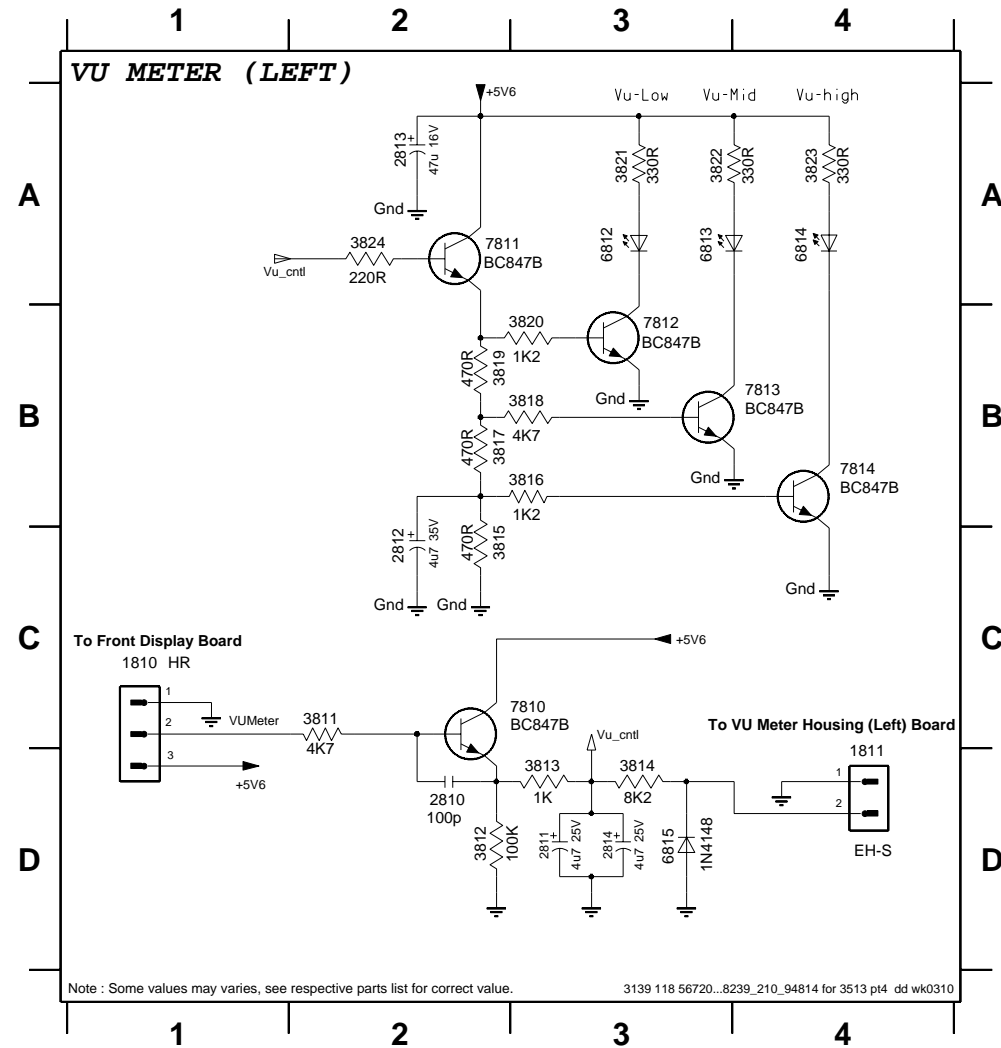
VU METER (LEFT) BOARD - CHIP LAYOUT

2810 D3	3813 D3	3819 A3	3824 C3	7813 B2
2811 D2	3814 D3	3820 A3	7810 D3	7814 C2
2814 D3	3815 C2	3822 B2	7811 C3	
3811 D3	3816 C2	3823 C3	7812 A2	

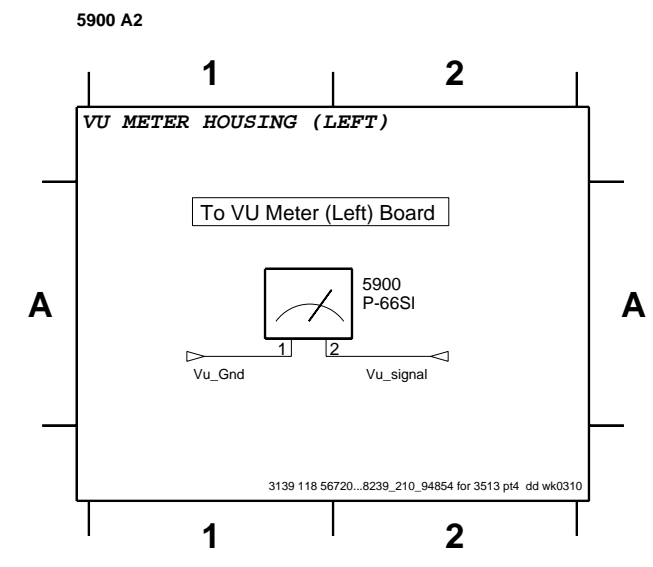
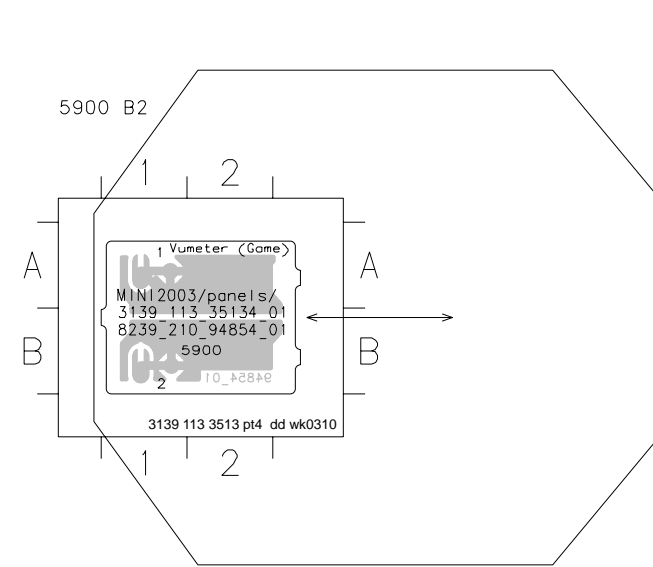


VU METER (LEFT) BOARD - CIRCUIT DIAGRAM

1810 C1	2811 D3	2814 D3	3813 D3	3816 B3	3819 B2	3822 A3	6812 A3	6815 D3	7812 B3
1811 D4	2812 C2	3811 C2	3814 D3	3817 B2	3820 B3	3823 A4	6813 A3	7810 C2	7813 B4
2810 D2	2813 A2	3812 D2	3815 C2	3818 B3	3821 A3	3824 A2	6814 A4	7811 A2	7814 B4

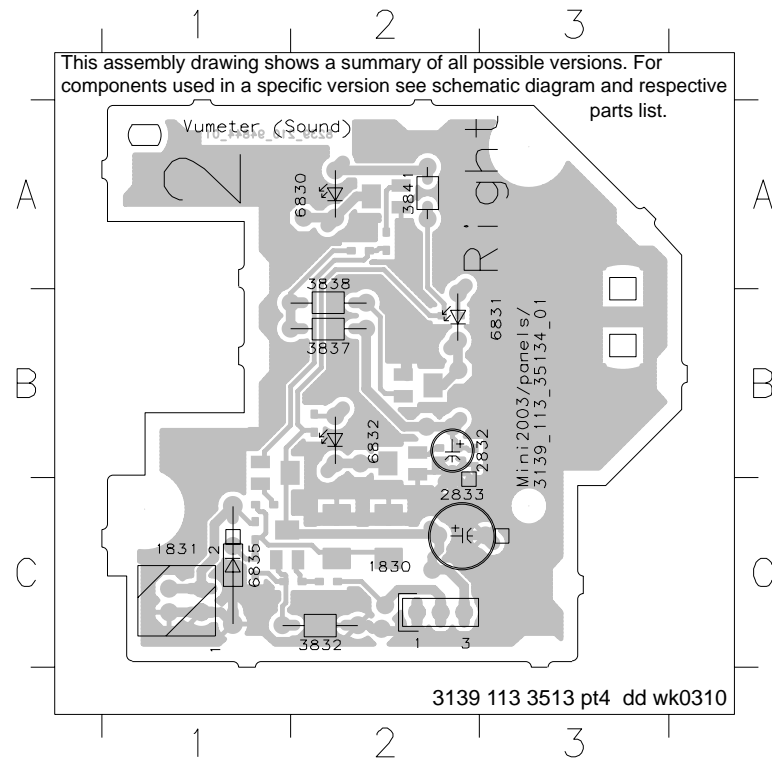


VU METER HOUSING (LEFT) BOARD - COMPONENT LAYOUT & CIRCUIT DIAGRAM



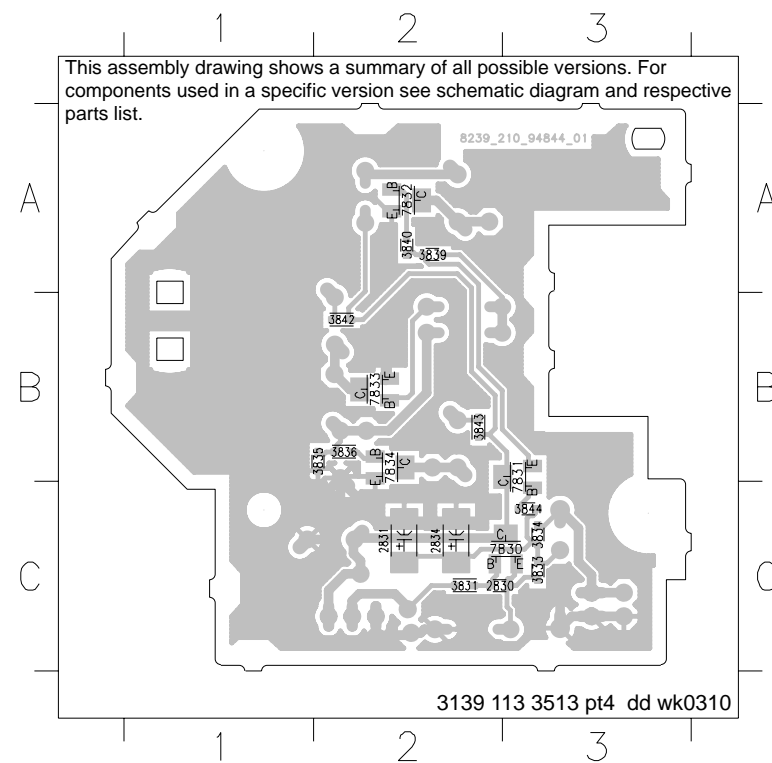
VU METER (RIGHT) BOARD - COMPONENT LAYOUT

1830 C2	2833 C2	3838 A2	6831 B3
1831 C1	3832 C2	3841 A2	6832 B2
2832 B3	3837 B2	6830 A2	6835 C1



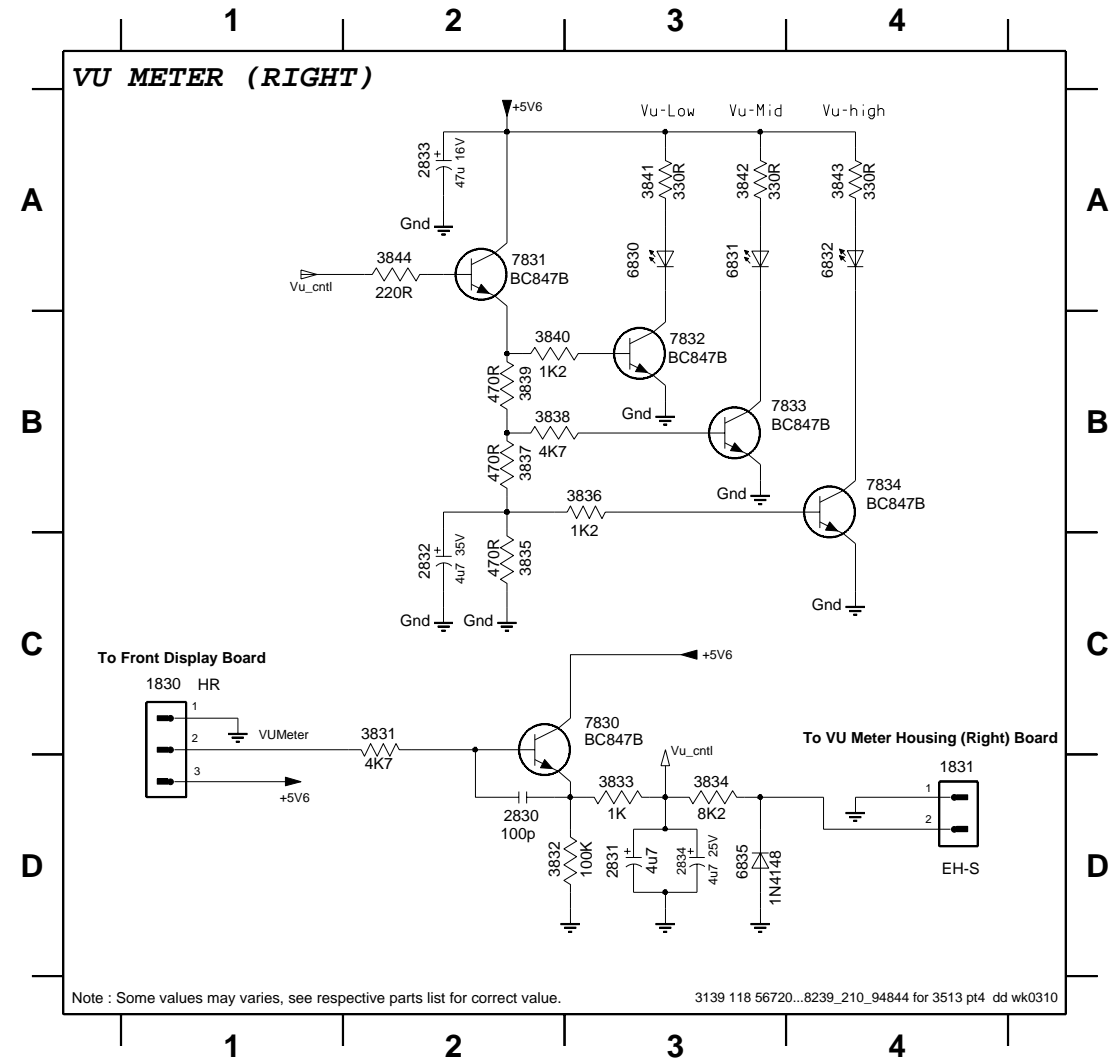
VU METER (RIGHT) BOARD - CHIP LAYOUT

2830 C2	3833 C3	3839 A2	3844 C3	7833 B2
2831 C2	3834 C3	3840 A2	7830 C3	7834 B2
2834 C2	3835 B2	3842 B2	7831 B3	
3831 C2	3836 B2	3843 B2	7832 A2	

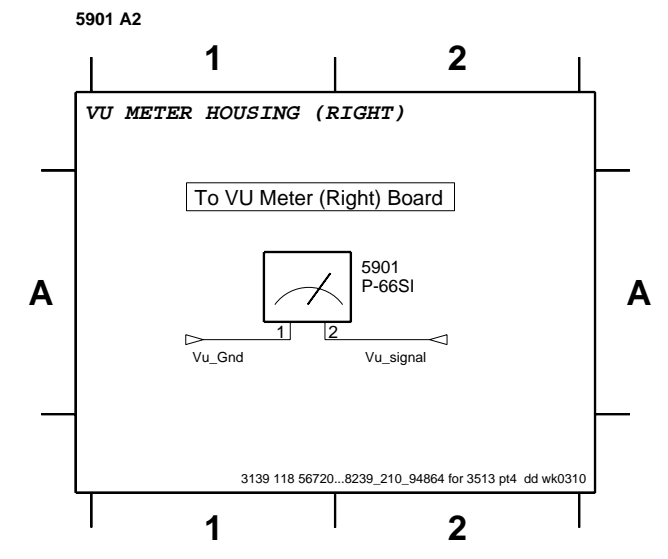
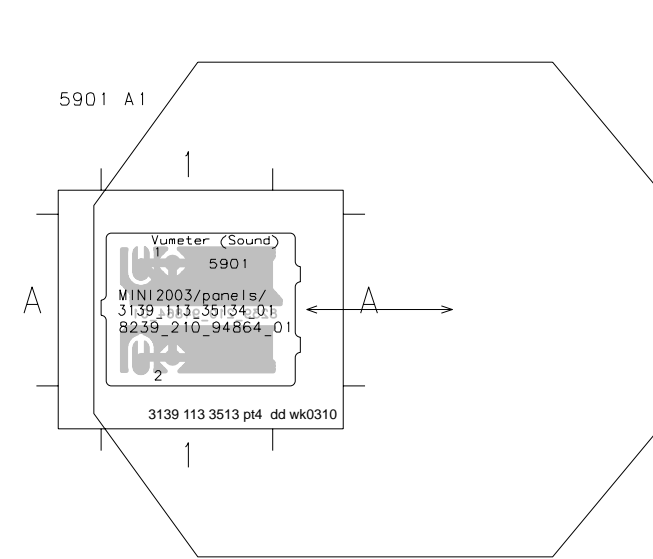


VU METER (RIGHT) BOARD - CIRCUIT DIAGRAM

1830 C1	2831 D3	2834 D3	3833 D3	3836 B3	3839 B2	3842 A3	6830 A3	6835 D3	7832 B3
1831 D4	2832 C2	3831 C2	3834 D3	3837 B2	3840 B2	3843 A4	6831 A3	7830 C3	7833 B3
2830 D2	2833 A2	3832 D2	3835 C2	3838 B2	3841 A3	3844 A2	6832 A4	7831 A2	7834 B4

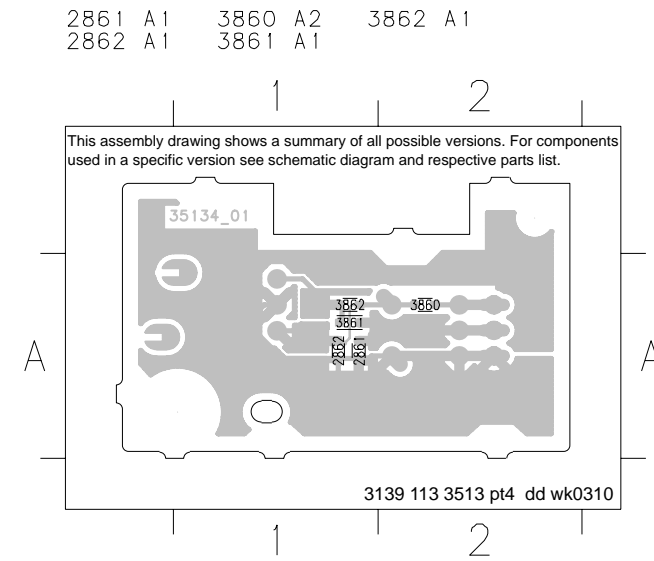
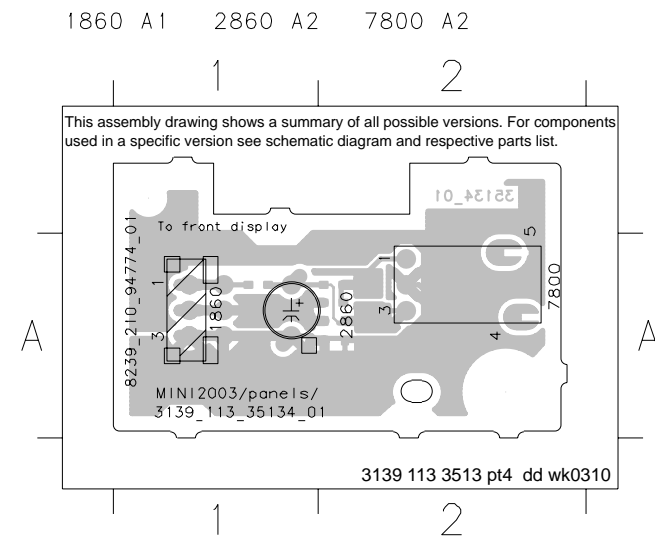


VU METER HOUSING (RIGHT) BOARD - COMPONENT LAYOUT & CIRCUIT DIAGRAM

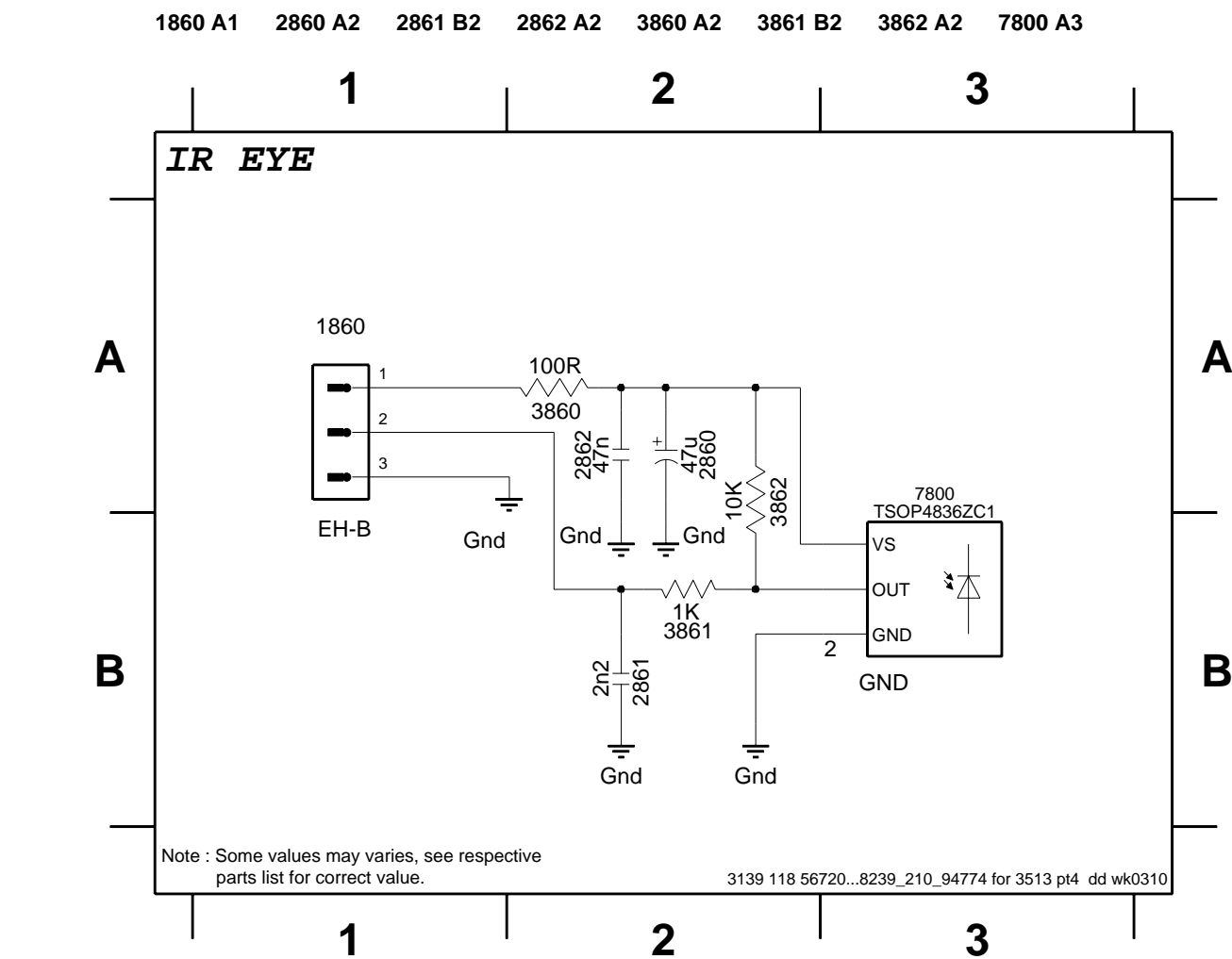


**IR EYE BOARD - COMPONENT LAYOUT**

**IR EYE BOARD - CHIP LAYOUT**

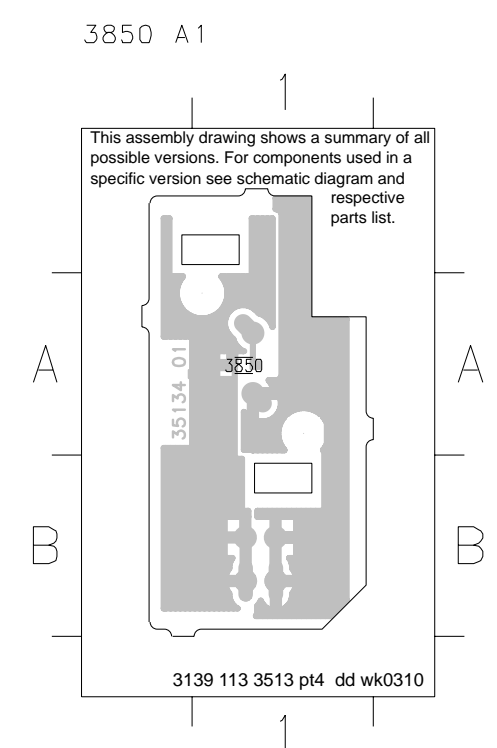
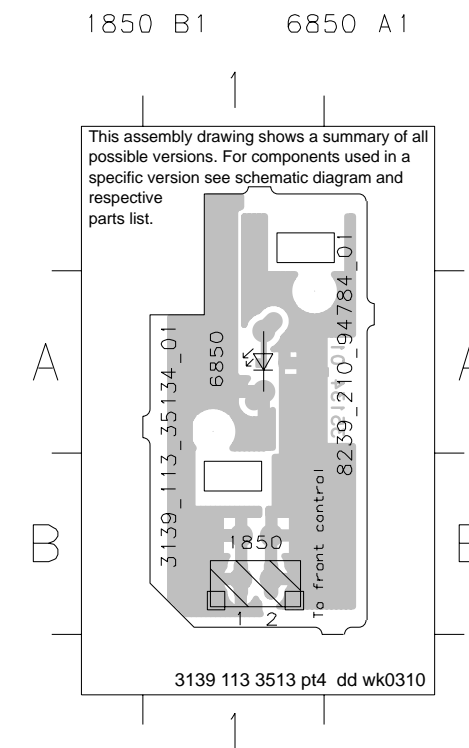


**IR EYE BOARD - CIRCUIT DIAGRAM**

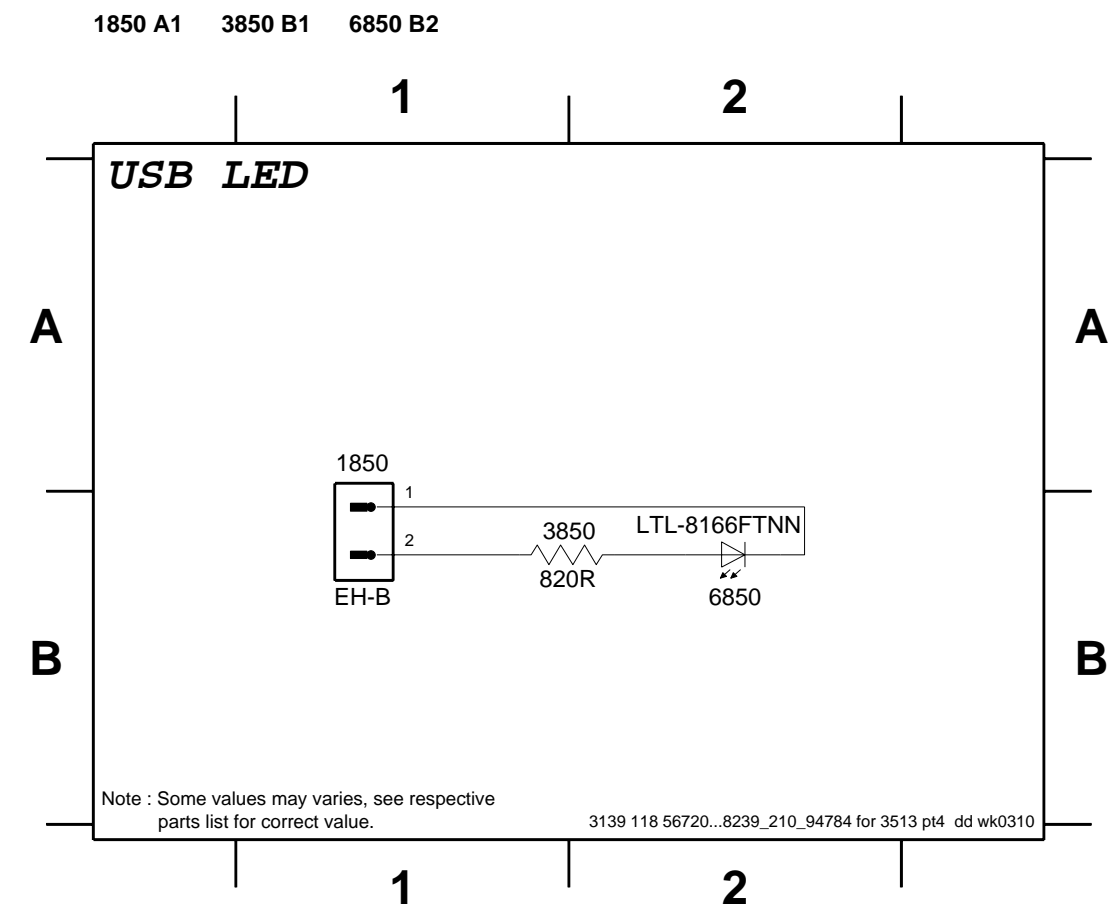


**USB LED BOARD - COMPONENT LAYOUT**

**USB LED BOARD - CHIP LAYOUT**



**USB LED BOARD - CIRCUIT DIAGRAM**





**ELECTRICAL PARTS LIST - FRONT CONTROL BOARD****MISCELLANEOUS**

1600	4822 265 11208	Flex Connector 10P
1602	4822 265 11535	Flex Connector 8P
1650	4822 276 13775	Tact Switch
1651	4822 276 13775	Tact Switch
1652	4822 276 13775	Tact Switch
1653	4822 276 13775	Tact Switch
1654	4822 276 13775	Tact Switch
1655	4822 276 13775	Tact Switch
1656	4822 276 13775	Tact Switch
1657	4822 276 13775	Tact Switch
1658	4822 276 13775	Tact Switch
1659	4822 276 13775	Tact Switch
1660	4822 276 13775	Tact Switch
1661	4822 276 13775	Tact Switch
1662	4822 276 13775	Tact Switch
1664	4822 276 13775	Tact Switch
1666	4822 276 13775	Tact Switch
1669	4822 276 13775	Tact Switch
1672	4822 276 13775	Tact Switch
1673	4822 276 13775	Tact Switch
1674	4822 276 13775	Tact Switch
1675	4822 276 13775	Tact Switch
1691	2422 129 16708	Rotary Encoder 24P
1692	4822 276 13775	Tact Switch
1840	4822 267 10733	Flex Connector 4P
1841	4822 265 11529	Headphone Socket
1880	4822 267 10958	Flex Connector 5P
1881	4822 276 13775	Tact Switch
1890	4822 265 10913	Cinch Socket - G/Port Audio R
1891	2422 026 05434	Cinch Socket - G/Port Audio L
1892	4822 267 31996	Cinch Socket - G/Port Video

**CAPACITORS**

2611	4822 124 41796	22uF 20% 16V
2612	4822 124 22651	1uF 20% 50V
2614	4822 124 22651	1uF 20% 50V
2616	3198 016 31020	1nF 25V
2617	3198 016 31020	1nF 25V
2620	4822 124 11947	10uF 20% 16V
2621	5322 126 11583	10nF 10% 50V
2622	5322 126 11583	10nF 10% 50V
2623	2020 552 94427	100pF 5% 50V
2624	2020 552 94427	100pF 5% 50V
2625	2238 586 59812	100nF +80/-20% 50V
2626	2238 586 59812	100nF +80/-20% 50V
2627	3198 016 31020	1nF 25V
2628	2238 586 59812	100nF +80/-20% 50V
2629	2238 586 59812	100nF +80/-20% 50V
2630	3198 016 31020	1nF 25V
2631	4822 126 13883	220pF 5% 50V
2632	4822 126 13883	220pF 5% 50V

2633	2020 552 94427	100pF 5% 50V
2634	2020 552 94427	100pF 5% 50V
2635	2020 552 94427	100pF 5% 50V
2636	2020 552 94427	100pF 5% 50V
2637	3198 016 38210	820pF 25V
2638	3198 016 38210	820pF 25V
2642	4822 126 13879	220nF +80/-20% 16V
2643	4822 126 13879	220nF +80/-20% 16V
2644	3198 028 42290	22uF 20% 35V
2645	4822 124 22652	2,2uF 20% 50V
2646	4822 124 22652	2,2uF 20% 50V
2647	3198 028 44790	47uF 20% 35V
2648	2238 586 59812	100nF +80/-20% 50V
2810	2020 552 94427	100pF 5% 50V
2811	4822 124 12312	4,7uF 20% 16V
2812	4822 124 22726	4,7uF 35V
2813	4822 124 81286	47uF 20% 16V
2814	4822 124 12312	4,7uF 20% 16V
2830	2020 552 94427	100pF 5% 50V
2831	4822 124 12312	4,7uF 20% 16V
2832	4822 124 22726	4,7uF 35V
2833	4822 124 81286	47uF 20% 16V
2834	4822 124 12312	4,7uF 20% 16V
2841	2238 916 15641	22nF 10% 25V
2843	2238 916 15641	22nF 10% 25V
2844	2238 586 59812	100nF +80/-20% 50V
2860	4822 124 40433	47uF 20% 25V
2861	4822 126 14238	2,2nF 50V
2862	3198 017 34730	47nF 16V
2880	4822 124 40769	4,7uF 20% 100V
2890	4822 126 13879	220nF +80/-20% 16V
2891	3198 016 36810	680pF 25V
2892	4822 126 13881	470pF 5% 50V
2894	3198 016 36810	680pF 25V
2895	4822 126 13881	470pF 5% 50V
2896	2020 552 94427	100pF 5% 50V
2897	2020 552 94427	100pF 5% 50V

**RESISTORS**

3628	4822 051 30102	1k 5% 0,062W
3629	4822 051 30102	1k 5% 0,062W
3630	4822 051 30221	220R 5% 0,062W
3637	4822 117 12925	47k 1% 0,063W
3638	4822 116 52175	100R 5% 0,5W
3647	4822 051 30471	470R 5% 0,062W
3651	4822 051 30102	1k 5% 0,062W
3652	4822 051 30102	1k 5% 0,062W
3653	4822 117 12925	47k 1% 0,063W
3655	4822 117 12925	47k 1% 0,063W
3656	4822 117 12925	47k 1% 0,063W
3657	4822 051 30472	4k7 5% 0,062W

**ELECTRICAL PARTS LIST - FRONT CONTROL BOARD**

3658	4822 051 30472	4k7 5% 0,062W
3659	4822 051 30472	4k7 5% 0,062W
3660	4822 101 11904	POTM 20KX2 20% 0,025W
3661	4822 051 30103	10k 5% 0,062W
3662	4822 051 30103	10k 5% 0,062W
3663	4822 051 30151	150R 5% 0,062W
3664	4822 051 30221	220R 5% 0,062W
3665	4822 051 30271	270R 5% 0,062W
3666	4822 051 30391	390R 5% 0,062W
3667	4822 051 30561	560R 5% 0,062W
3668	4822 117 12968	820R 5% 0,62W
3669	4822 117 11817	1k2 1% 1/16W
3670	4822 117 12903	1k8 1% 0,063W
3671	4822 051 30272	2k7 5% 0,062W
3672	4822 051 30472	4k7 5% 0,062W
3674	4822 051 30151	150R 5% 0,062W
3675	4822 051 30221	220R 5% 0,062W
3676	4822 051 30271	270R 5% 0,062W
3677	4822 051 30391	390R 5% 0,062W
3678	4822 051 30561	560R 5% 0,062W
3679	4822 117 12968	820R 5% 0,62W
3680	4822 117 11817	1k2 1% 1/16W
3681	4822 051 30272	2k7 5% 0,062W
3682	4822 051 30472	4k7 5% 0,062W
3683	4822 051 30102	1k 5% 0,062W
3684	4822 051 30102	1k 5% 0,062W
3685	4822 051 30222	2k2 5% 0,062W
3686	4822 051 30222	2k2 5% 0,062W
3689	4822 051 30472	4k7 5% 0,062W
3690	4822 051 30103	10k 5% 0,062W
3691	4822 051 30103	10k 5% 0,062W
3692	4822 051 30103	10k 5% 0,062W
3695	4822 051 30103	10k 5% 0,062W
3696	4822 051 30471	470R 5% 0,062W
3697	4822 051 30471	470R 5% 0,062W
3698	4822 051 30471	470R 5% 0,062W
3699	4822 051 30471	470R 5% 0,062W
3701	4822 051 30271	270R 5% 0,062W
3702	4822 051 30181	180R 5% 0,062W
3703	4822 051 30181	180R 5% 0,062W
3704	4822 051 30181	180R 5% 0,062W
3705	4822 051 30221	220R 5% 0,062W
3706	4822 051 30221	220R 5% 0,062W
3708	4822 117 12903	1k8 1% 0,063W
3709	4822 051 30472	4k7 5% 0,062W
3811	4822 051 30472	4k7 5% 0,062W
3812	4822 116 52234	100k 5% 0,5W
3813	4822 051 30102	1k 5% 0,062W
3814	4822 117 12902	8k2 1% 0,063W
3815	4822 051 30471	470R 5% 0,062W
3816	4822 117 11817	1k2 1% 1/16W

3817	4822 116 83883	470R 5% 0,5W
3818	4822 116 52283	4k7 5% 0,5W
3819	4822 051 30471	470R 5% 0,062W
3820	4822 117 11817	1k2 1% 1/16W
3821	4822 116 52219	330R 5% 0,5W
3822	4822 051 30331	330R 5% 0,062W
3823	4822 051 30331	330R 5% 0,062W
3824	4822 051 30221	220R 5% 0,062W
3831	4822 051 30472	4k7 5% 0,062W
3832	4822 116 52234	100k 5% 0,5W
3833	4822 051 30102	1k 5% 0,062W
3834	4822 117 12902	8k2 1% 0,063W
3835	4822 051 30471	470R 5% 0,062W
3836	4822 117 11817	1k2 1% 1/16W
3837	4822 116 83883	470R 5% 0,5W
3838	4822 116 52283	4k7 5% 0,5W
3839	4822 051 30471	470R 5% 0,062W
3840	4822 117 11817	1k2 1% 1/16W
3841	4822 116 52219	330R 5% 0,5W
3842	4822 051 30331	330R 5% 0,062W
3843	4822 051 30331	330R 5% 0,062W
3844	4822 051 30221	220R 5% 0,062W
3850	4822 117 12968	820R 5% 0,62W
3860	4822 051 30101	100R 5% 0,062W
3861	4822 051 30102	1k 5% 0,062W
3862	4822 051 30103	10k 5% 0,062W
3880	4822 117 12925	47k 1% 0,063W
3881	4822 117 12968	820R 5% 0,62W
3890	4822 051 30103	10k 5% 0,062W
3891	4822 050 21003	10k 1% 0,06W
3892	4822 117 11817	1k2 1% 1/16W
3893	4822 117 11817	1k2 1% 1/16W
4600	4822 051 30008	OR Jumper 0603
4610	4822 051 30008	OR Jumper 0603
4890	4822 051 30008	OR Jumper 0603
4891	4822 051 30008	OR Jumper 0603

**COILS & FILTERS**

5601	4822 157 62552	Coil 2,2uH 5%
5602	4822 157 62552	Coil 2,2uH 5%
5840	4822 157 62552	Coil 2,2uH 5%
5841	4822 157 62552	Coil 2,2uH 5%
5842	4822 157 62552	Coil 2,2uH 5%

**DIODES**

6620	4822 130 82978	LED VS LTL-1CHPE
6621	4822 130 82978	LED VS LTL-1CHPE
6622	4822 130 82978	LED VS LTL-1CHPE
6623	9322 178 87676	LED VS LTL-1CHTBK4-KA
6624	9322 178 87676	LED VS LTL-1CHTBK4-KA
6625	9322 178 87676	LED VS LTL-1CHTBK4-KA

**ELECTRICAL PARTS LIST - FRONT CONTROL BOARD**

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**DIODES**

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6626	9322 191 85676	LED VS LTL816kETNN
6627	9322 191 85676	LED VS LTL816kETNN
6628	9322 191 85676	LED VS LTL816kETNN
6629	9322 191 85676	LED VS LTL816kETNN
6812	9322 178 15676	LED VS LTL-8166FTNN
6813	9322 178 15676	LED VS LTL-8166FTNN
6814	9322 191 85676	LED VS LTL816kETNN
6815	4822 130 30621	1N4148
6830	9322 178 15676	LED VS LTL-8166FTNN
6831	9322 178 15676	LED VS LTL-8166FTNN
6832	9322 191 85676	LED VS LTL816kETNN
6835	4822 130 30621	1N4148
6850	9322 191 85676	LED VS LTL816kETNN
6880	4822 130 30621	1N4148
6881	9322 167 73676	LED VS LTL-4221NLC-KA

**TRANSISTORS & INTEGRATED CIRCUITS**

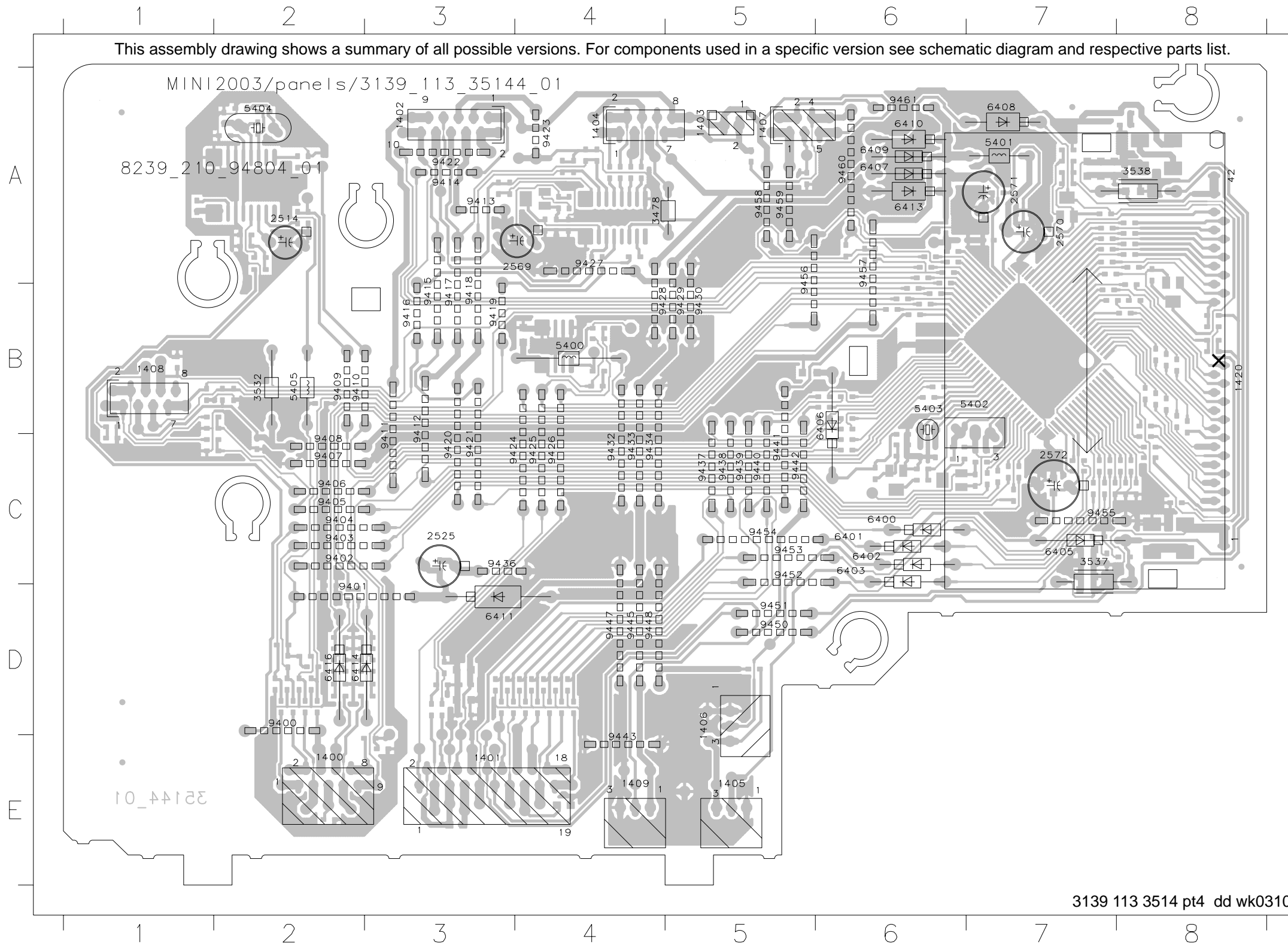
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7601	4822 209 15449	74HC4094D
7602	5322 130 60159	BC847B
7603	5322 130 60159	BC847B
7604	5322 130 60159	BC847B
7605	5322 130 60159	BC847B
7606	4822 209 15449	74HC4094D
7607	4822 130 42804	BC817-25
7608	4822 130 42804	BC817-25
7609	4822 130 42804	BC817-25
7610	4822 130 42804	BC817-25
7620	4822 209 33985	TDA8579T/N1
7650	5322 130 60159	BC847B
7800	9322 185 97667	IR Receiver TSOP4836ZC1
7810	5322 130 60159	BC847B
7811	5322 130 60159	BC847B
7812	5322 130 60159	BC847B
7813	5322 130 60159	BC847B
7814	5322 130 60159	BC847B
7830	5322 130 60159	BC847B
7831	5322 130 60159	BC847B
7832	5322 130 60159	BC847B
7833	5322 130 60159	BC847B
7834	5322 130 60159	BC847B
7880	4822 130 60373	BC857B

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

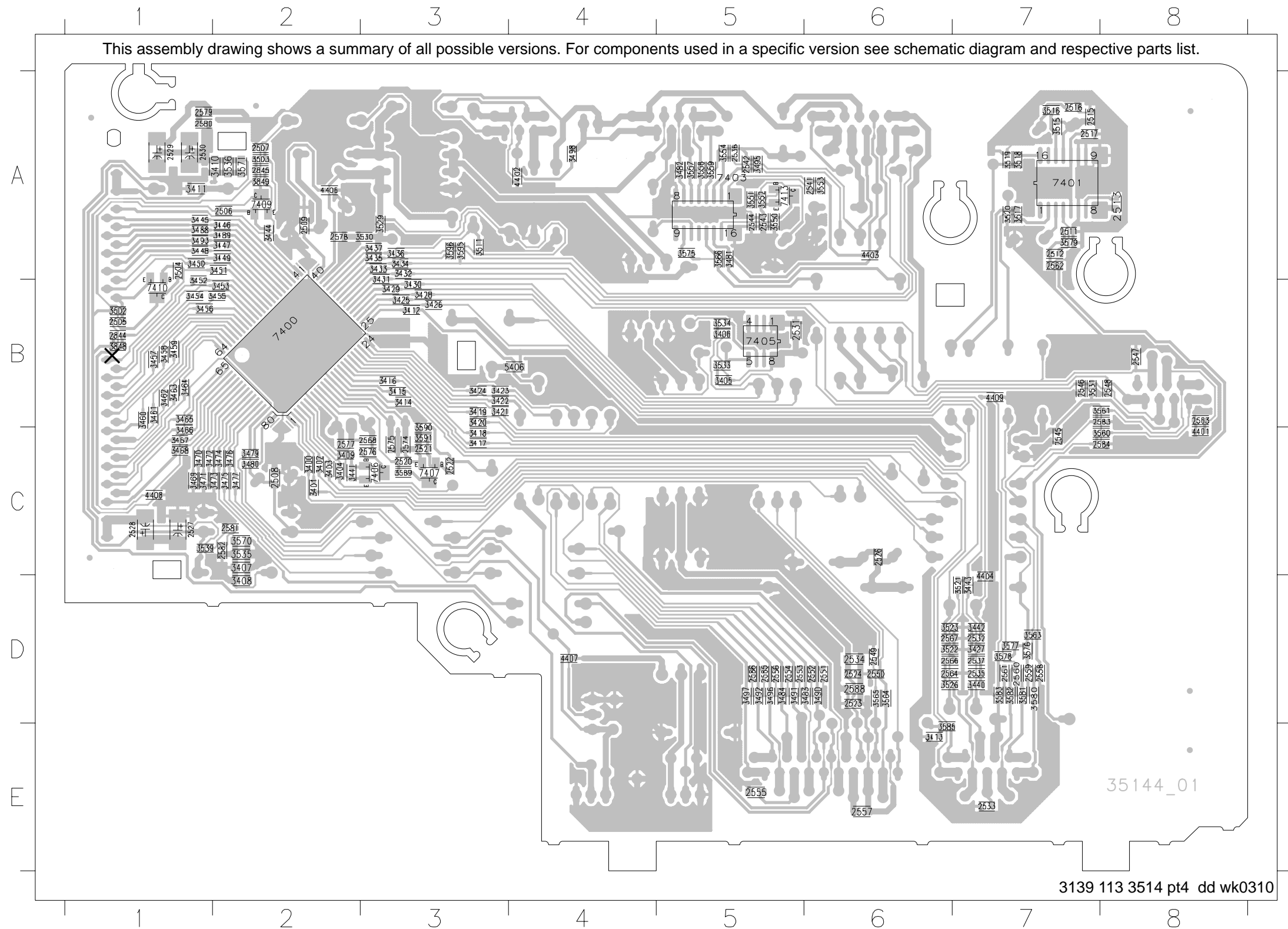


# DISPLAY BOARD - COMPONENT LAYOUT



1400	E2	9428	B4
1401	E3	9429	B5
1402	A3	9430	B5
1403	A5	9432	C4
1404	A4	9433	C4
1405	E5	9434	C4
1406	D5	9436	C3
1407	A5	9437	C5
1408	B1	9438	C5
1409	E4	9439	C5
1420	B8	9440	C5
2514	A2	9441	C5
2525	C3	9442	C5
2569	A4	9443	E4
2570	A7	9445	D4
2571	A7	9447	D4
2572	C7	9448	D4
3478	A4	9450	D5
3532	B2	9451	D5
3537	C7	9452	C5
3538	A8	9453	C5
5400	B4	9454	C5
5401	A7	9455	C7
5402	B7	9456	A5
5403	B6	9457	A6
5404	A2	9458	A5
5405	B2	9459	A5
6400	C6	9460	A6
6401	C6	9461	A6
6402	C6		
6403	C6		
6405	C7		
6406	B6		
6407	A6		
6408	A7		
6409	A6		
6410	A6		
6411	D3		
6413	A6		
6414	D2		
6416	D2		
9400	D2		
9401	D2		
9402	C2		
9403	C2		
9404	C2		
9405	C2		
9406	C2		
9407	C2		
9408	C2		
9409	B2		
9410	B2		
9411	C3		
9412	B3		
9413	A3		
9414	A3		
9415	B3		
9416	B3		
9417	B3		
9418	B3		
9419	B3		
9420	C3		
9421	C3		
9422	A3		
9423	A4		
9424	C3		
9425	C4		
9426	C4		
9427	A4		

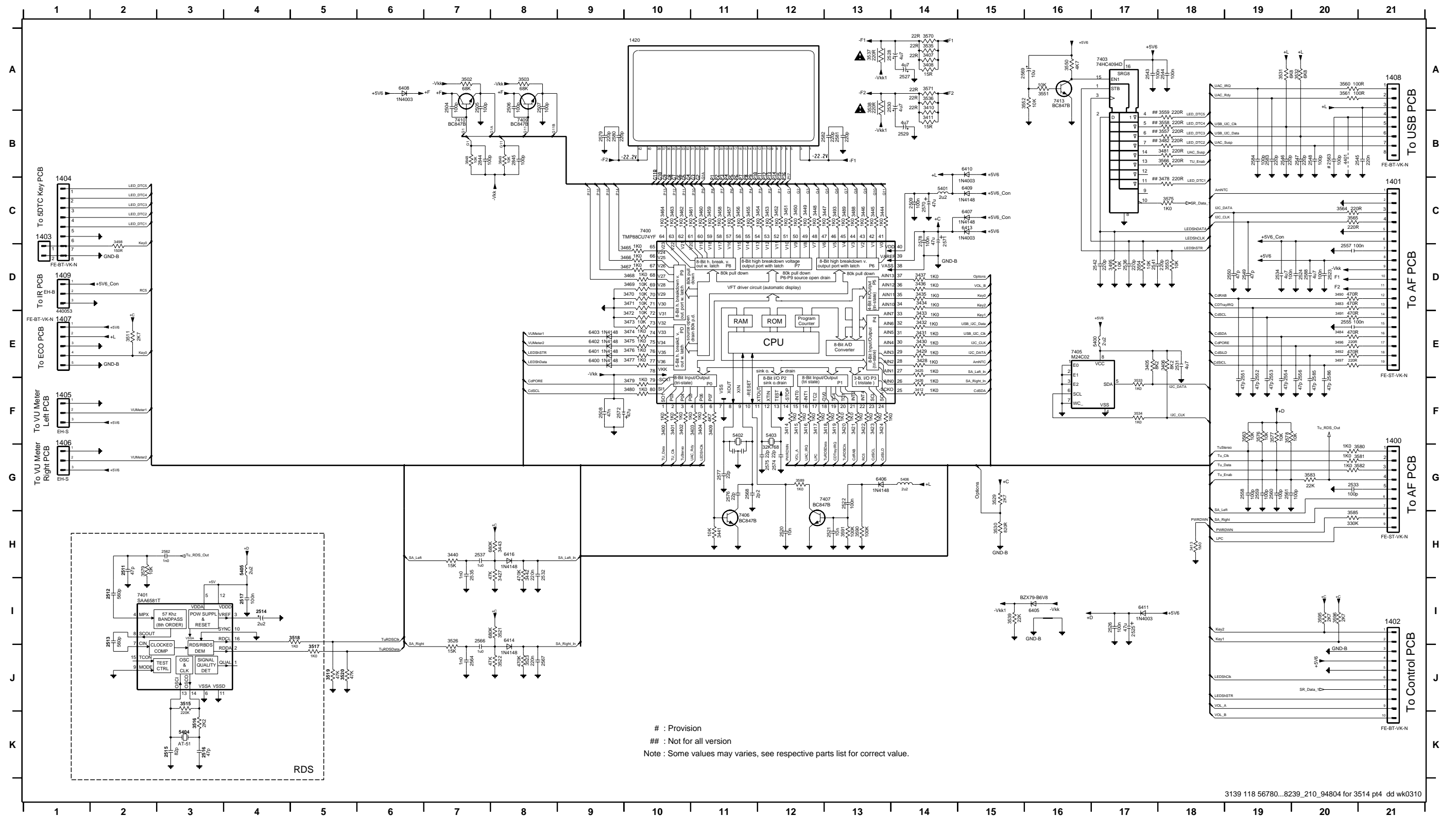
# DISPLAY BOARD - CHIP LAYOUT



2504	A1	2588	D6	3468	C1	3581	D7
2505	B1	2844	B1	3469	C1	3582	D7
2506	A2	2845	A2	3470	C1	3583	D7
2507	A2	3400	C2	3471	C1	3585	E6
2508	C2	3401	C2	3472	C1	3589	C3
2509	A2	3402	C2	3473	C2	3590	C3
2511	A7	3403	C2	3474	C2	3591	C3
2512	A7	3404	C2	3475	C2	3595	A3
2513	A8	3405	B5	3476	C2	3596	A3
2515	A7	3406	B5	3477	C2	3848	B1
2516	A7	3407	C2	3479	C2	3849	A2
2517	A7	3408	D2	3480	C2	4401	C8
2520	C3	3409	C2	3481	A5	4402	A4
2521	C3	3410	A2	3482	A5	4403	A6
2522	C3	3411	A1	3483	D6	4404	D7
2523	D6	3412	B3	3484	D5	4406	A2
2524	D6	3413	E6	3488	A1	4407	D4
2526	C6	3414	B3	3489	A2	4408	C1
2527	C1	3415	B3	3490	D6	4409	B7
2528	C1	3416	B3	3491	D5	5406	B4
2529	A1	3417	C3	3492	D5	7400	B2
2530	A1	3418	C3	3493	A1	7401	A7
2531	B5	3419	B3	3495	A5	7403	A5
2532	D7	3420	B3	3496	D5	7405	B5
2533	E7	3421	B3	3497	D5	7406	C3
2534	D6	3422	B3	3498	A4	7407	C3
2535	D7	3423	B3	3502	B1	7409	A2
2536	A5	3424	B3	3503	A2	7410	B1
2537	D7	3425	B3	3511	A3	7413	A5
2541	A6	3426	B3	3515	A7		
2542	A5	3427	D7	3516	A7		
2543	A5	3428	B3	3517	A7		
2544	A5	3429	B3	3518	A7		
2545	C7	3430	B3	3519	A7		
2546	B7	3431	A3	3520	A7		
2547	B8	3432	A3	3521	D7		
2548	B8	3433	A3	3522	D6		
2549	D6	3434	A3	3523	D6		
2550	D6	3435	A3	3526	D6		
2551	D6	3436	A3	3529	A3		
2552	D6	3437	A3	3530	A3		
2553	D5	3440	D7	3531	B7		
2554	D5	3441	C2	3533	B5		
2555	E5	3442	D7	3534	B5		
2556	D5	3443	D7	3535	C2		
2557	E6	3444	A2	3536	A2		
2558	D7	3445	A1	3539	C1		
2559	D7	3446	A2	3550	A5		
2560	D7	3447	A2	3551	A5		
2561	D7	3448	A1	3552	A5		
2562	A7	3449	A2	3553	A6		
2563	B8	3450	A1	3554	A5		
2564	D6	3451	A2	3557	A5		
2566	D6	3452	B1	3558	A5		
2567	D6	3453	B2	3559	A5		
2568	C3	3454	B1	3560	C8		
2574	C3	3455	B2	3561	B8		
2575	C3	3456	B1	3563	D7		
2576	C3	3457	B1	3564	D6		
2577	C2	3458	B1	3565	D6		
2578	A2	3459	B1	3566	A5		
2579	A1	3460	B1	3570	C2		
2580	A1	3461	B1	3571	A2		
2581	C2	3462	B1	3575	A5		
2582	C2	3463	B1	3576	D7		
2583	B8	3464	B1	3577	D7		
2584	C8	3465	B1	3578	D7		
2585	D5	3466	C1	3579	A7		
2586	D5	3467	C1	3580	D7		

# DISPLAY BOARD - CIRCUIT DIAGRAM

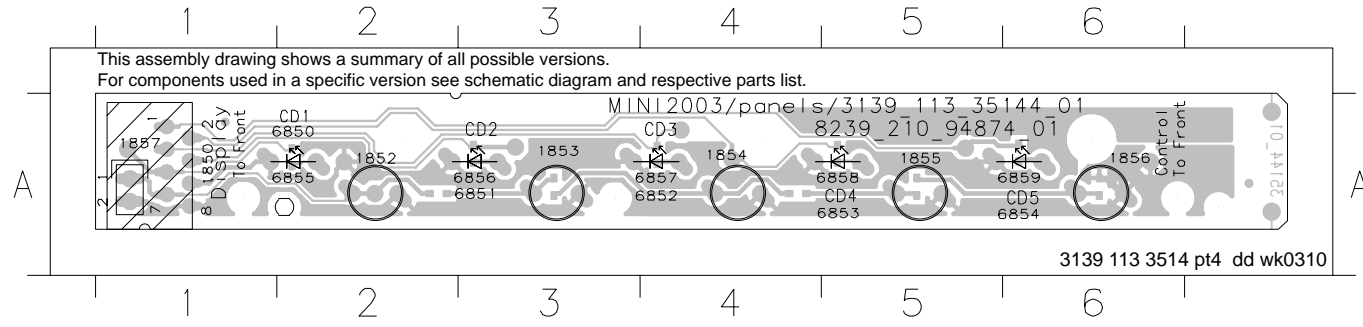
1400 G21	1406 G1	2505 A7	2512 I2	2520 H12	2526 I17	2532 H8	2541 D17	2547 B20	2553 E19	2559 G19	2566 I7	2572 F9	2579 B9	2585 E20	3401 F10	3407 A14	3413 H18	3419 F13	3425 E14	3431 E14	3437 D14	3443 C13	3451 C12	3457 C11	3463 C10	3469 D10	3475 E10	3481 B18	3490 D20	3497 E20	3516 K3	3522 J8	3532 A20	3538 A13	3544 D17	3553 F19	3575 C18	3581 G21	3591 H13	5400 E17	5406 G14	6406 G13	6413 C15	7405 E16	
1401 C21	1407 E1	2506 A8	2513 I2	2521 H13	2527 A14	2533 G20	2542 D17	2548 B20	2554 E19	2560 G19	2567 J8	2574 G12	2580 B9	2586 E20	3402 F10	3408 A14	3414 F12	3420 F13	3426 F14	3432 E14	3438 H7	3444 C13	3452 C12	3458 C11	3464 C10	3470 D10	3476 E10	3482 B18	3491 E20	3498 C2	3517 J5	3523 J8	3533 F17	3539 I15	3547 B18	3557 B18	3564 C20	3576 F19	3582 G21	3592 I20	5401 C14	5407 E9	6407 C15	6414 H8	7406 H11
1402 E1	1408 A21	2507 A8	2514 I4	2522 G13	2528 A13	2534 D19	2543 A17	2549 D19	2555 E20	2561 G19	2568 G11	2575 G12	2581 B13	2588 D20	3403 F11	3409 F11	3415 F12	3421 F13	3427 H8	3433 E14	3441 H11	3447 C13	3455 C12	3461 C11	3467 D10	3473 E10	3479 E10	3485 D20	3492 E20	3499 C13	3503 A8	3519 J5	3529 I15	3534 F17	3550 A16	3558 B18	3565 C20	3577 F19	3583 G20	3594 I20	5402 F11	6408 A6	6416 H8	7407 G13	
1403 C1	1409 D1	2508 F9	2515 K3	2523 D20	2529 B14	2535 H7	2544 A18	2550 D19	2556 E20	2562 H3	2569 A15	2576 G11	2582 B12	2844 B7	3404 F11	3410 A14	3416 F12	3422 F13	3428 E14	3434 D14	3442 H8	3448 C12	3454 C12	3460 C11	3466 D10	3472 E10	3478 C18	3484 E20	3493 C13	3503 A8	3519 J5	3529 I15	3535 A14	3551 A16	3559 B18	3566 B18	3578 F19	3585 H20	3848 B7	5403 F12	6402 E9	6409 C15	7400 C10	7409 B8	
1404 C1	1420 A10	2509 C14	2516 K3	2524 D20	2530 A13	2536 D17	2545 B21	2551 E19	2557 D20	2563 B20	2570 C14	2577 G11	2583 B19	2845 B8	3405 E17	3411 B14	3417 F12	3423 F13	3429 E14	3435 D14	3443 H8	3449 C12	3455 C11	3461 C11	3467 D10	3473 E10	3479 F10	3485 C13	3492 D17	3511 E2	3520 J5	3530 H15	3536 A14	3552 A16	3560 A20	3570 A14	3579 H2	3589 G12	3849 B8	5404 K3	6403 E9	6410 B15	7401 I2	7410 B7	
1405 F1	2504 A7	2511 H2	2517 I4	2525 I17	2531 E18	2537 H7	2546 B19	2552 E19	2558 G19	2564 J7	2571 C14	2578 C14	2584 B19	3400 F10	3406 E18	3412 F14	3418 F13	3424 F13	3430 E14	3436 D14	3444 C13	3450 C12	3456 C11	3462 C11	3468 D10	3474 E10	3480 F10	3486 E20	3515 I3	3521 B	3531 A19	3537 A13	3553 D18	3561 A20	3571 A14	3580 G21	3590 H13	4401 B20	5405 H4	6411 H7	7413 A16				



# : Provision  
 ## : Not for all version  
 Note : Some values may varies, see respective parts list for correct value.

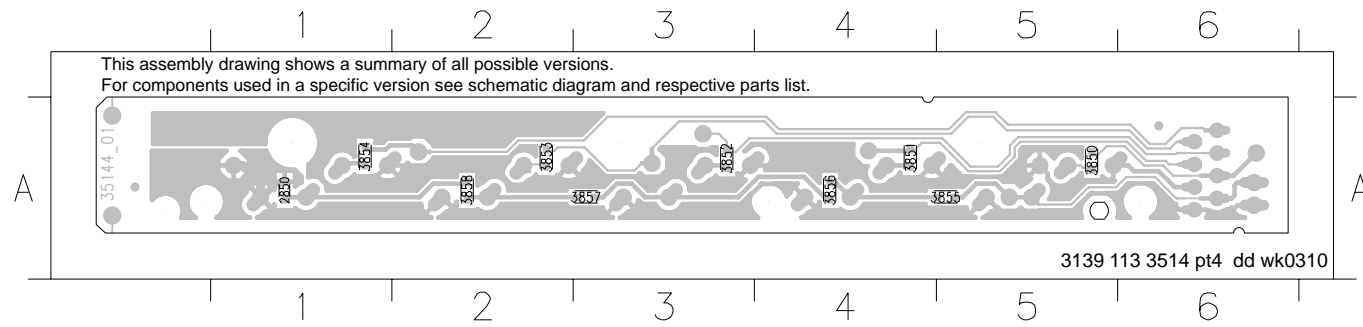
**5DTC KEY BOARD - COMPONENT LAYOUT**

1850 A1 1853 A3 1855 A5 1857 A1 6851 A3 6853 A5 6855 A2 6857 A4 6859 A6  
 1852 A2 1854 A4 1856 A6 6850 A2 6852 A4 6854 A6 6856 A3 6858 A5



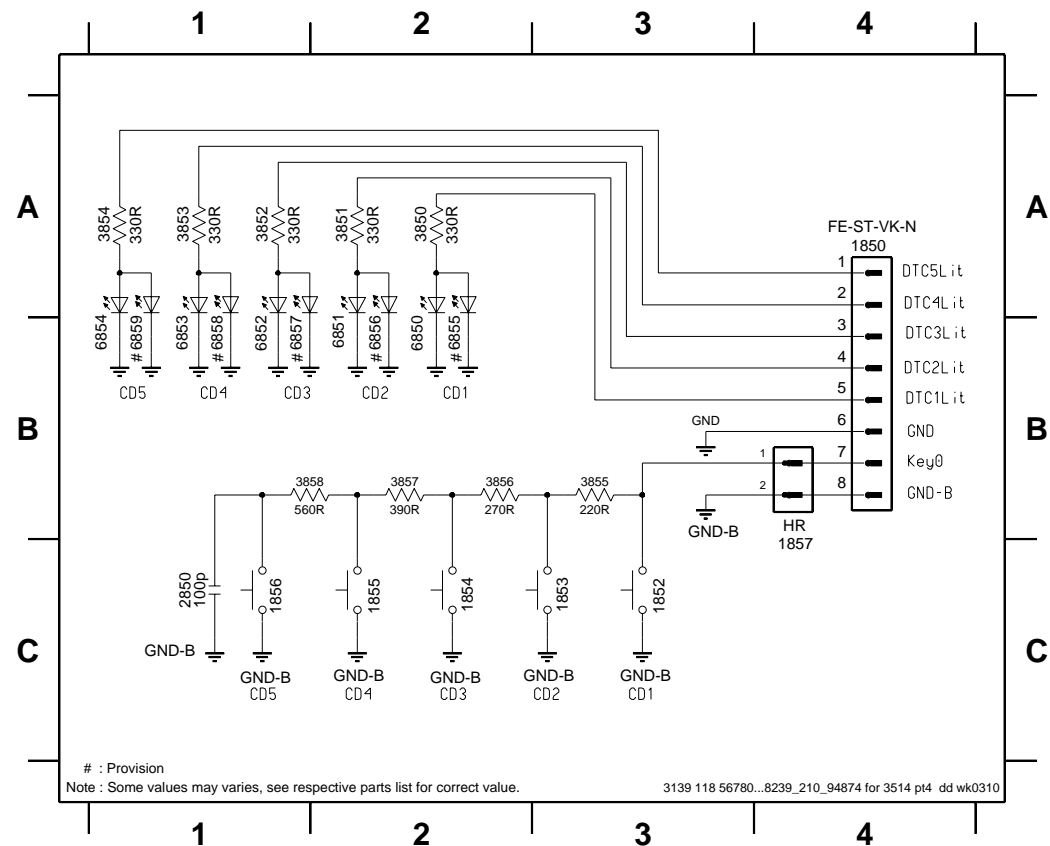
**5DTC KEY BOARD - CHIP LAYOUT**

2850 A1 3850 A5 3851 A4 3852 A3 3853 A2 3854 A1 3855 A5 3856 A4 3857 A3 3858 A2



**5DTC KEY BOARD - CIRCUIT DIAGRAM**

1850 A4 1854 C2 1857 C4 3851 A2 3854 A1 3857 B2 6851 A2 6854 B1 6857 B1  
 1852 C3 1855 C2 2850 C1 3852 A1 3855 B3 3858 B1 6852 A1 6855 B2 6858 B1  
 1853 C3 1856 C1 3850 A2 3853 A1 3856 B2 6850 A2 6853 A1 6856 B2 6859 B1



**ELECTRICAL PARTS LIST - FRONT DISPLAY BOARD**

**MISCELLANEOUS**

1400	4822 265 11531	Flex Connector 9P	2554	4822 126 11785	47pF 5% 50V
1401	4822 265 11545	Flex Connector 19P	2555	2238 586 59812	100nF 50V
1402	4822 267 10729	Flex Connector 10P	2556	4822 126 11785	47pF 5% 50V
1404	4822 265 11515	Flex Connector 8P	2557	2238 586 59812	100nF 50V
1407	4822 267 10954	Flex Connector 5P	2558	2020 552 94427	100pF 5% 50V
1408	4822 265 11515	Flex Connector 8P	2559	2020 552 94427	100pF 5% 50V
1420	3139 110 53411	FTD BJ902GNK	2560	2020 552 94427	100pF 5% 50V
1850	4822 265 11535	Flex Connector 8P	2561	2020 552 94427	100pF 5% 50V
1852	4822 276 13775	Tact Switch	2564	5322 126 11578	1nF 10% 50V
1853	4822 276 13775	Tact Switch	2566	3198 017 41050	1uF 10V
1854	4822 276 13775	Tact Switch	2567	4822 126 13879	220nF +80/-20% 16V
1855	4822 276 13775	Tact Switch	2568	4822 126 14223	2,2pF 50V
1856	4822 276 13775	Tact Switch	2569	4822 124 40248	10uF 20% 63V

**CAPACITORS**

2504	2020 552 94427	100pF 5% 50V	2570	4822 124 12233	47uF 20% 25V
2505	2020 552 94427	100pF 5% 50V	2571	4822 124 12233	47uF 20% 25V
2506	2020 552 94427	100pF 5% 50V	2572	3198 028 44790	47uF 20% 35V
2507	2020 552 94427	100pF 5% 50V	2574	4822 122 33761	22pF 5% 50V
2508	3198 024 44730	47nF 50V	2575	4822 122 33761	22pF 5% 50V
2509	2238 586 59812	100nF 50V	2576	4822 122 33761	22pF 5% 50V
2520	5322 126 11583	10nF 10% 50V	2577	4822 122 33761	22pF 5% 50V
2521	3198 017 34730	47nF 10% 16V	2578	2238 586 59812	100nF 50V
2522	2238 586 59812	100nF 50V	2579	4822 126 13883	220pF 5% 50V
2523	2238 586 59812	100nF 50V	2580	4822 126 13883	220pF 5% 50V
2524	2238 586 59812	100nF 50V	2581	4822 126 13883	220pF 5% 50V
2525	4822 124 12233	47uF 20% 25V	2582	4822 126 13883	220pF 5% 50V
2526	2238 586 59812	100nF 50V	2583	4822 126 13883	220pF 5% 50V
2527	4822 124 12312	4,7uF 20% 16V	2584	2020 552 94427	100pF 5% 50V
2528	4822 124 12312	4,7uF 20% 16V	2585	4822 126 11785	47pF 5% 50V
2529	4822 124 12312	4,7uF 20% 16V	2586	4822 126 11785	47pF 5% 50V
2530	4822 124 12312	4,7uF 20% 16V	2588	2020 552 96305	4,7uF +80/-20% 10V
2531	2020 552 96305	4,7uF +80/-20% 10V	2844	2020 552 94427	100pF 5% 50V
2532	4822 126 13879	220nF +80/-20% 16V	2845	2020 552 94427	100pF 5% 50V
2533	2020 552 94427	100pF 5% 50V	2850	2020 552 94427	100pF 5% 50V
2534	2020 552 96305	4,7uF +80/-20% 10V			
2535	5322 126 11578	1nF 10% 50V			
2536	4822 126 13883	220pF 5% 50V			
2537	3198 017 41050	1uF 10V			
2541	4822 126 13883	220pF 5% 50V			
2542	4822 126 13883	220pF 5% 50V			
2543	2238 586 59812	100nF 50V			
2544	2238 586 59812	100nF 50V			
2545	4822 126 13879	220nF +80/-20% 16V			
2546	4822 126 13883	220pF 5% 50V			
2547	4822 126 13883	220pF 5% 50V			
2548	2020 552 94427	100pF 5% 50V			
2549	4822 126 11785	47pF 5% 50V			
2550	4822 126 11785	47pF 5% 50V			
2551	4822 126 11785	47pF 5% 50V			
2552	4822 126 11785	47pF 5% 50V			
2553	4822 126 11785	47pF 5% 50V			

**RESISTORS**

3400	4822 051 30102	1k 5% 0,062W
3401	4822 051 30102	1k 5% 0,062W
3402	4822 051 30102	1k 5% 0,062W
3403	4822 051 30102	1k 5% 0,062W
3404	4822 051 30102	1k 5% 0,062W
3405	4822 117 12902	8k2 1% 0,063W
3406	4822 117 12902	8k2 1% 0,063W
3407	4822 051 20229	22R 5% 0,1W
3408	4822 051 20159	15R 5% 0,1W
3409	4822 051 30472	4k7 5% 0,062W
3410	4822 051 20229	22R 5% 0,1W
3411	4822 051 20159	15R 5% 0,1W
3412	4822 051 30102	1k 5% 0,062W
3413	4822 051 30105	1M 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

**ELECTRICAL PARTS LIST - FRONT DISPLAY BOARD****RESISTORS**

3417	4822 051 30102	1k 5% 0,062W
3418	4822 051 30102	1k 5% 0,062W
3419	4822 051 30102	1k 5% 0,062W
3420	4822 051 30102	1k 5% 0,062W
3421	4822 051 30102	1k 5% 0,062W
3422	4822 051 30102	1k 5% 0,062W
3423	4822 051 30102	1k 5% 0,062W
3424	4822 051 30102	1k 5% 0,062W
3425	4822 051 30102	1k 5% 0,062W
3426	4822 051 30102	1k 5% 0,062W
3427	4822 117 12925	47k 1% 0,063W
3428	4822 051 30102	1k 5% 0,062W
3429	4822 051 30102	1k 5% 0,062W
3430	4822 051 30102	1k 5% 0,062W
3431	4822 051 30102	1k 5% 0,062W
3432	4822 051 30102	1k 5% 0,062W
3433	4822 051 30102	1k 5% 0,062W
3434	4822 051 30102	1k 5% 0,062W
3435	4822 051 30102	1k 5% 0,062W
3436	4822 051 30102	1k 5% 0,062W
3437	4822 051 30102	1k 5% 0,062W
3440	4822 051 30153	15k 5% 0,062W
3441	4822 051 30103	10k 5% 0,062W
3442	4822 051 30474	470k 5% 0,062W
3443	4822 051 30684	680k 5% 0,062W
3444	4822 051 30102	1k 5% 0,062W
3445	4822 051 30102	1k 5% 0,062W
3446	4822 051 30102	1k 5% 0,062W
3447	4822 051 30102	1k 5% 0,062W
3448	4822 051 30102	1k 5% 0,062W
3449	4822 051 30102	1k 5% 0,062W
3450	4822 051 30102	1k 5% 0,062W
3451	4822 051 30102	1k 5% 0,062W
3452	4822 051 30102	1k 5% 0,062W
3453	4822 051 30102	1k 5% 0,062W
3454	4822 051 30102	1k 5% 0,062W
3455	4822 051 30102	1k 5% 0,062W
3456	4822 051 30102	1k 5% 0,062W
3457	4822 051 30102	1k 5% 0,062W
3458	4822 051 30102	1k 5% 0,062W
3459	4822 051 30102	1k 5% 0,062W
3460	4822 051 30102	1k 5% 0,062W
3461	4822 051 30102	1k 5% 0,062W
3462	4822 051 30102	1k 5% 0,062W
3463	4822 051 30102	1k 5% 0,062W
3464	4822 051 30102	1k 5% 0,062W
3465	4822 051 30102	1k 5% 0,062W
3466	4822 051 30102	1k 5% 0,062W
3467	4822 051 30102	1k 5% 0,062W
3468	4822 051 30102	1k 5% 0,062W
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
3473	4822 051 30103	10k 5% 0,062W
3474	4822 051 30102	1k 5% 0,062W
3475	4822 051 30102	1k 5% 0,062W
3476	4822 051 30102	1k 5% 0,062W
3477	4822 051 30102	1k 5% 0,062W
3479	4822 051 30102	1k 5% 0,062W
3480	4822 051 30102	1k 5% 0,062W
3481	4822 051 30221	220R 5% 0,062W
3483	4822 051 30471	470R 5% 0,062W
3484	4822 051 30471	470R 5% 0,062W
3488	4822 051 30102	1k 5% 0,062W
3489	4822 051 30102	1k 5% 0,062W
3490	4822 051 30471	470R 5% 0,062W
3491	4822 051 30471	470R 5% 0,062W
3492	4822 051 30471	470R 5% 0,062W
3493	4822 051 30102	1k 5% 0,062W
3495	4822 051 30103	10k 5% 0,062W
3496	4822 051 30221	220R 5% 0,062W
3497	4822 051 30221	220R 5% 0,062W
3498	4822 051 30151	150R 5% 0,062W
3502	4822 051 30683	68k 5% 0,062W
3503	4822 051 30683	68k 5% 0,062W
3511	4822 051 30272	2k7 5% 0,062W
3519	4822 117 12925	47k 1% 0,063W
3520	4822 117 12925	47k 1% 0,063W
3521	4822 051 30684	680k 5% 0,062W
3522	4822 117 12925	47k 1% 0,063W
3523	4822 051 30474	470k 5% 0,062W
3526	4822 051 30153	15k 5% 0,062W
3529	4822 051 30272	2k7 5% 0,062W
3530	4822 117 12968	820R 5% 0,62W
3531	4822 051 30682	6k8 5% 0,062W
3532	4822 116 83961	6k8 5%
3533	4822 051 30102	1k 5% 0,062W
3534	4822 051 30102	1k 5% 0,062W
3535	4822 051 20229	22R 5% 0,1W
3536	4822 051 20229	22R 5% 0,1W
3537	4822 052 10221	△ 220R 5% 0,33W
3538	4822 052 10221	△ 220R 5% 0,33W
3539	4822 051 30223	22k 5% 0,062W
3550	4822 051 30472	4k7 5% 0,062W
3551	4822 051 30103	10k 5% 0,062W
3552	4822 051 30103	10k 5% 0,062W
3553	4822 051 30103	10k 5% 0,062W
3554	4822 051 30103	10k 5% 0,062W
3560	4822 051 30101	100R 5% 0,062W
3561	4822 051 30101	100R 5% 0,062W
3563	4822 051 30103	10k 5% 0,062W
3564	4822 051 30221	220R 5% 0,062W
3565	4822 051 30221	220R 5% 0,062W

**ELECTRICAL PARTS LIST - FRONT DISPLAY BOARD**

3566	4822 051 30221	220R 5% 0,062W
3570	4822 051 20229	22R 5% 0,1W
3571	4822 051 20229	22R 5% 0,1W
3575	4822 051 30102	1k 5% 0,062W
3576	4822 051 30103	10k 5% 0,062W
3577	4822 051 30103	10k 5% 0,062W
3578	4822 051 30103	10k 5% 0,062W
3580	4822 051 30102	1k 5% 0,062W
3581	4822 051 30102	1k 5% 0,062W
3582	4822 051 30102	1k 5% 0,062W
3583	4822 051 30223	22k 5% 0,062W
3585	4822 051 30334	330k 5% 0,062W
3589	4822 051 30102	1k 5% 0,062W
3590	4822 117 13632	100k 1% 0,62W
3591	4822 117 13632	100k 1% 0,62W
3595	4822 051 30272	2k7 5% 0,062W
3596	4822 051 30272	2k7 5% 0,062W
3848	4822 051 30103	10k 5% 0,062W
3849	4822 051 30103	10k 5% 0,062W
3850	4822 051 30331	330R 5% 0,062W
3851	4822 051 30331	330R 5% 0,062W
3852	4822 051 30331	330R 5% 0,062W
3853	4822 051 30331	330R 5% 0,062W
3854	4822 051 30331	330R 5% 0,062W
3855	4822 051 30221	220R 5% 0,062W
3856	4822 051 30271	270R 5% 0,062W
3857	4822 051 30391	390R 5% 0,062W
3858	4822 051 30561	560R 5% 0,062W
4401	4822 051 30008	0R Jumper 0603
4402	4822 051 30008	0R Jumper 0603
4403	4822 051 30008	0R Jumper 0603
4404	4822 051 30008	0R Jumper 0603
4406	4822 051 30008	0R Jumper 0603
4407	4822 051 30008	0R Jumper 0603
4408	4822 051 30008	0R Jumper 0603
4409	4822 051 30008	0R Jumper 0603

**COILS & FILTERS**

5400	4822 157 62552	Coil 2,2uH 5%
5401	4822 157 62552	Coil 2,2uH 5%
5402	5322 242 73686	RES CER 12MHz
5403	4822 242 70938	RES XTL 32,768kHz
5406	4822 157 10586	Coil 2,2uH 10%

**DIODES**

6400	4822 130 30621	1N4148
6401	4822 130 30621	1N4148
6402	4822 130 30621	1N4148
6403	4822 130 30621	1N4148
6405	4822 130 34278	BZX79-B6V8
6406	4822 130 30621	1N4148
6407	4822 130 30621	1N4148

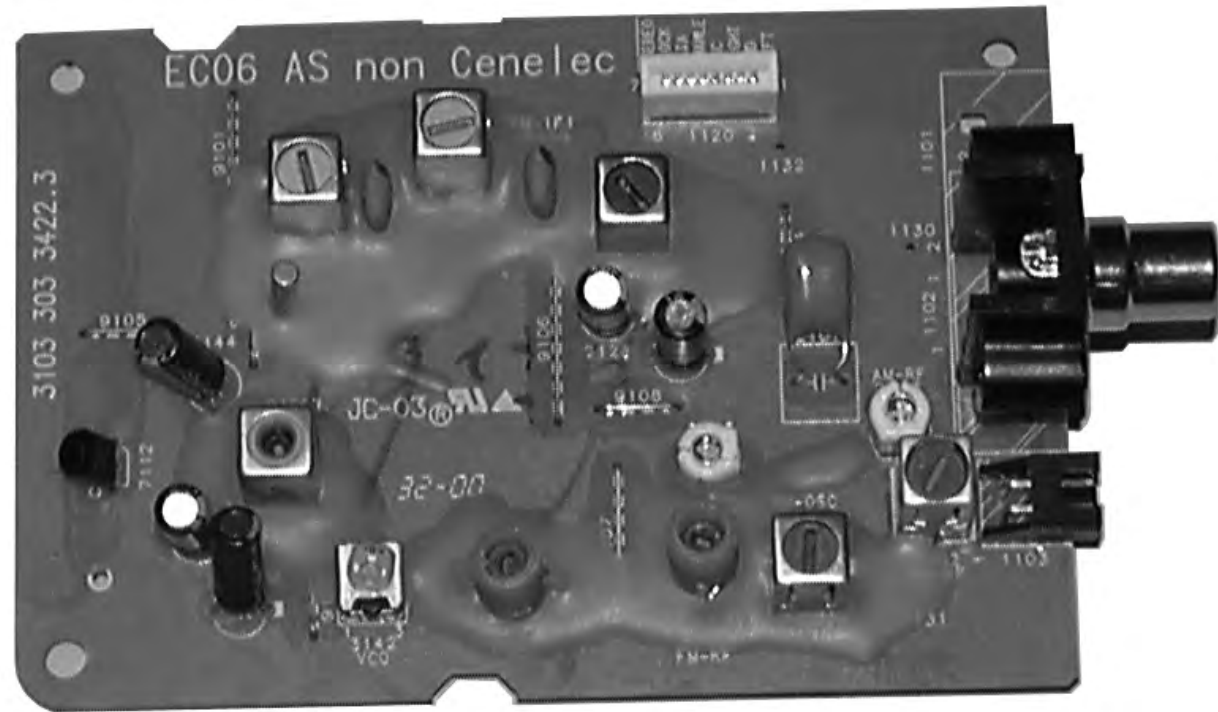
6408	4822 130 31878	1N4003G
6409	4822 130 30621	1N4148
6410	4822 130 31878	1N4003G
6411	4822 130 31878	1N4003G
6413	4822 130 31878	1N4003G
6414	4822 130 30621	1N4148
6416	4822 130 30621	1N4148
6855	9322 191 85676	LED VS LTL816KETN
6856	9322 191 85676	LED VS LTL816KETN
6857	9322 191 85676	LED VS LTL816KETN
6858	9322 191 85676	LED VS LTL816KETN
6859	9322 191 85676	LED VS LTL816KETN

**TRANSISTORS & INTEGRATED CIRCUITS**

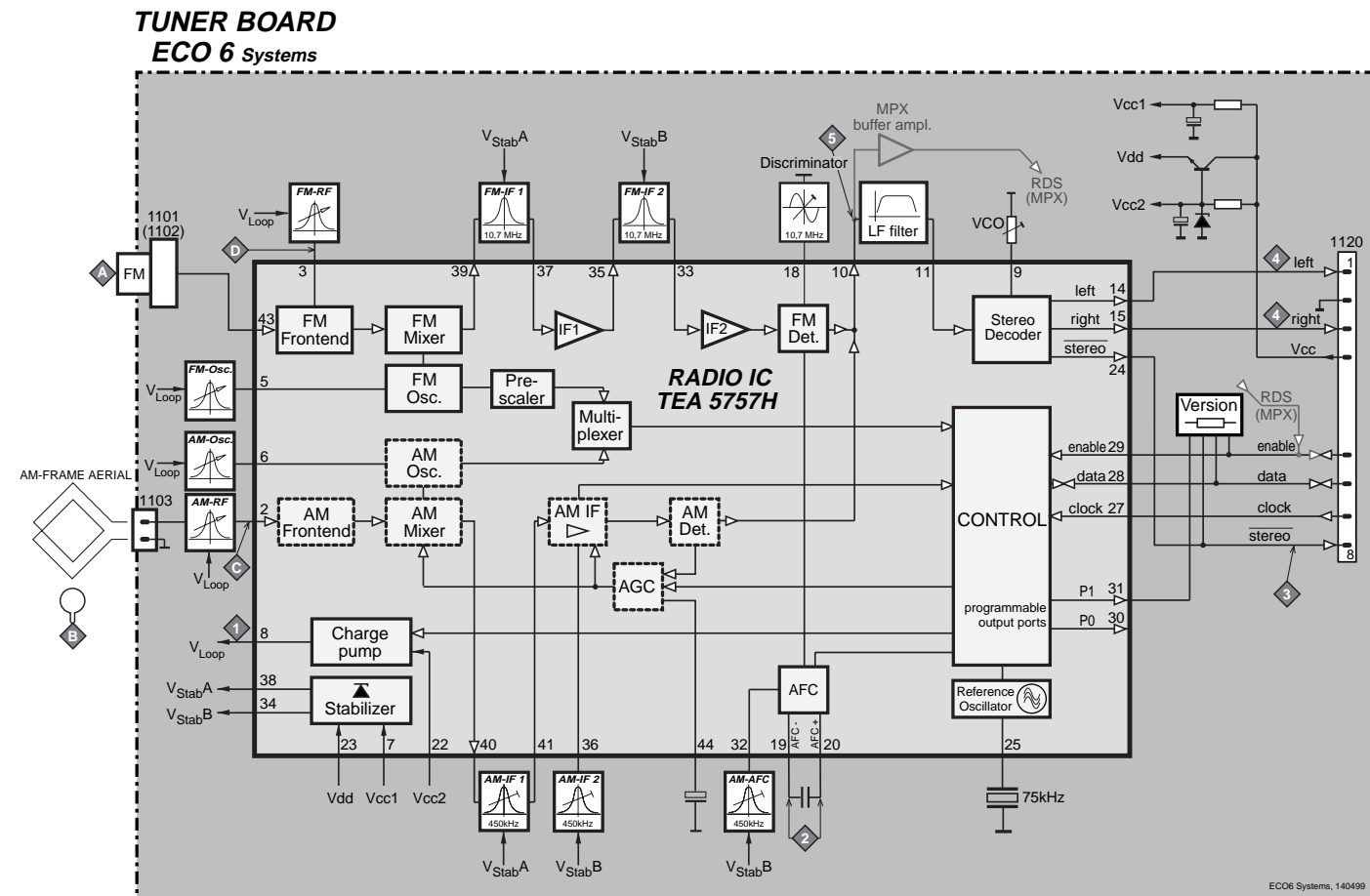
7400	3139 110 52071	TMP88CU74YF - 'FW569,779'
7403	4822 209 15449	74HC4094D
7405	9322 145 26668	M24C02-WMN6
7406	5322 130 60159	BC847B
7407	5322 130 60159	BC847B
7409	5322 130 60159	BC847B
7410	5322 130 60159	BC847B
7413	5322 130 60159	BC847B

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





BLOCK DIAGRAM

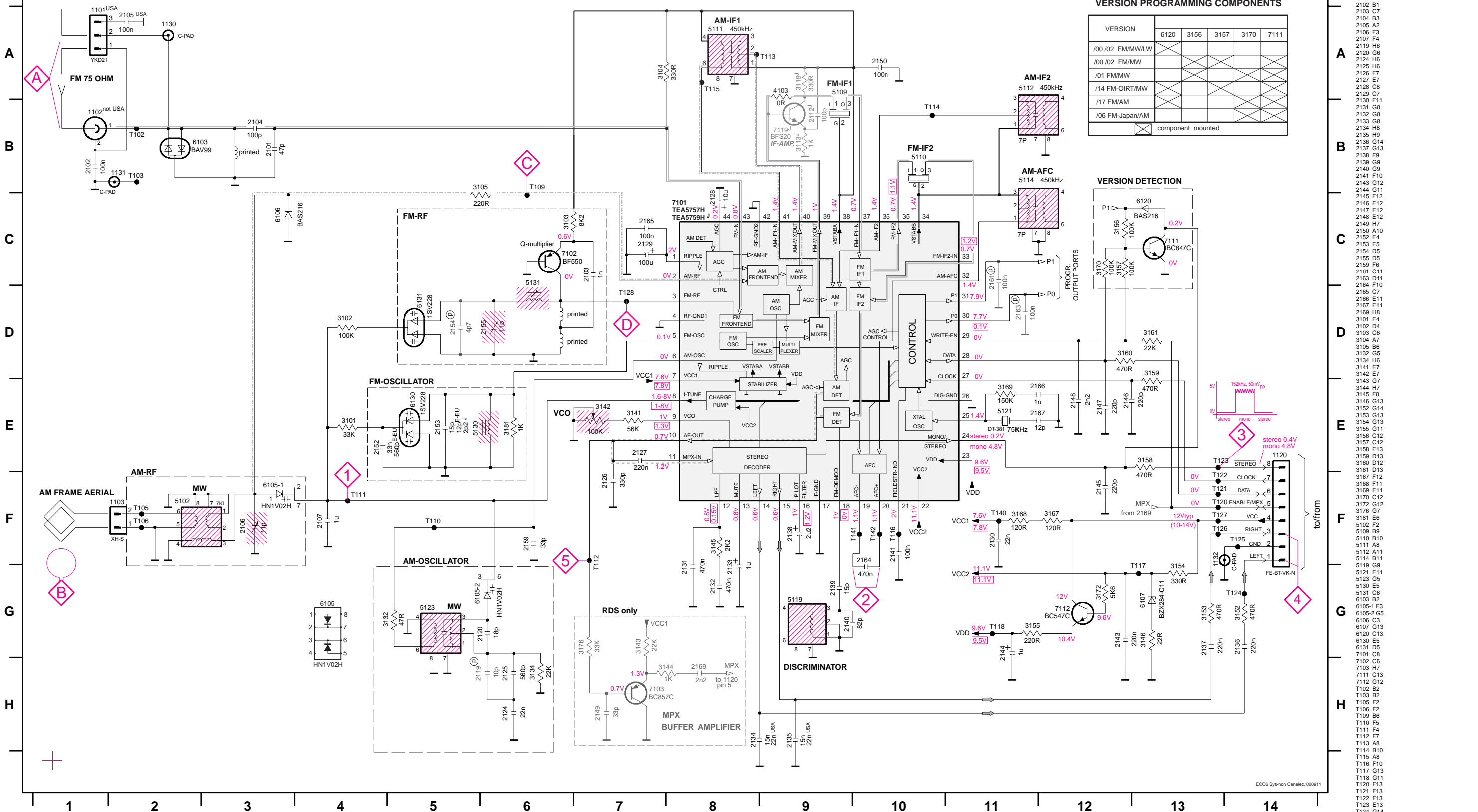


**ECO6 Tuner Board**  
version: **SYSTEMS non-CENELEC**

TABLE OF CONTENTS

Blockdiagram .....7A-1  
 Schematic Diagram .....7A-2  
 Component Layout.....7A-3  
 Adjustment table .....7A-3  
 Electrical Partslist.....7A-4

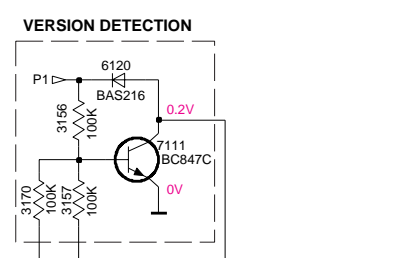
# TUNER BOARD ECO6 / SYSTEMS NON CENELEC



**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 FM-Japan/AM					

component mounted



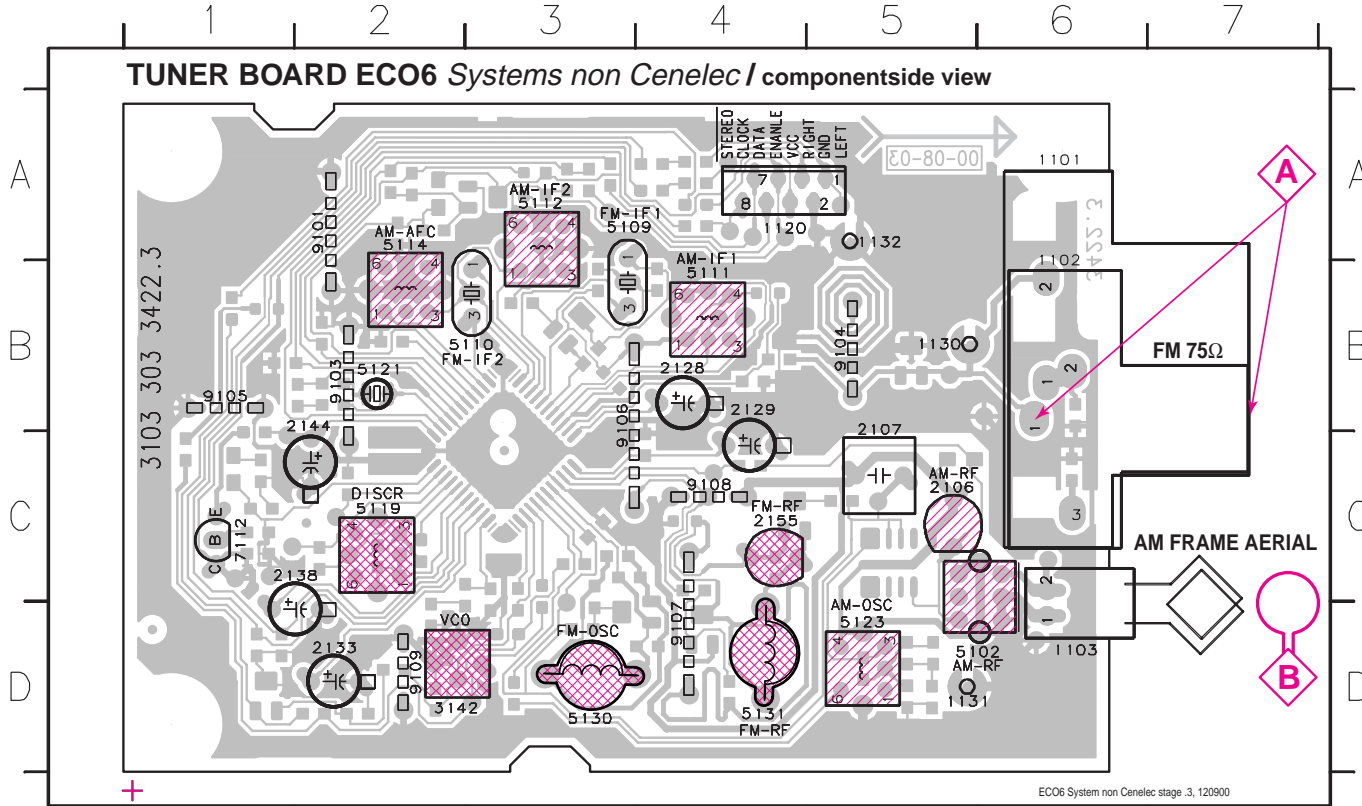
- 1101 A1
- 1102 B1
- 1103 F2
- 1120 E14
- 1130 A2
- 1131 B2
- 1132 G13
- 2101 B3
- 2102 B1
- 2103 C7
- 2104 B3
- 2105 A2
- 2106 F3
- 2107 F4
- 2119 H6
- 2120 G6
- 2124 H6
- 2125 H6
- 2126 F7
- 2127 E7
- 2128 C8
- 2129 C7
- 2130 F11
- 2131 G8
- 2132 G8
- 2133 G8
- 2134 H8
- 2135 H9
- 2136 G14
- 2137 G13
- 2138 F9
- 2139 G9
- 2140 G9
- 2141 F10
- 2143 G12
- 2144 G11
- 2145 F12
- 2146 E12
- 2147 E12
- 2148 E12
- 2149 H7
- 2150 A10
- 2152 A4
- 2153 E5
- 2154 D5
- 2155 D5
- 2159 F6
- 2161 C11
- 2163 D11
- 2164 F10
- 2165 C7
- 2166 E11
- 2167 E11
- 2169 H8
- 3101 E4
- 3102 D4
- 3103 C6
- 3104 A7
- 3105 B6
- 3132 G5
- 3134 H6
- 3141 E7
- 3142 E7
- 3143 G7
- 3144 H7
- 3145 F8
- 3146 G13
- 3152 G14
- 3153 G13
- 3154 G13
- 3155 G11
- 3156 C12
- 3157 C12
- 3158 E13
- 3159 D13
- 3160 D12
- 3161 D13
- 3167 F12
- 3168 F11
- 3169 E11
- 3170 C12
- 3172 G12
- 3176 G7
- 3181 E6
- 5102 E2
- 5109 B9
- 5110 B10
- 5111 A8
- 5112 A11
- 5114 A11
- 5119 G9
- 5121 E11
- 5123 G5
- 5130 E5
- 5131 C6
- 5132 B2
- 6105 F3
- 6105-2 G5
- 6106 C3
- 6107 G13
- 6120 C13
- 6130 E5
- 6131 D5
- 7101 C8
- 7102 C6
- 7103 H7
- 7111 C13
- 7112 F13
- 7127 F13
- T102 B2
- T103 B2
- T105 F2
- T106 F2
- T109 B6
- T110 F5
- T111 F4
- T112 F7
- T113 A8
- T114 B10
- T115 A8
- T116 A8
- T117 G10
- T118 G13
- T119 F13
- T120 F13
- T121 F13
- T122 F13
- T123 F13
- T124 F13

**LEGEND**  
 (P) ... for provision only  
 USA ... for USA version only  
 E-EU ... for East European version only  
 J ... for Japanese version only

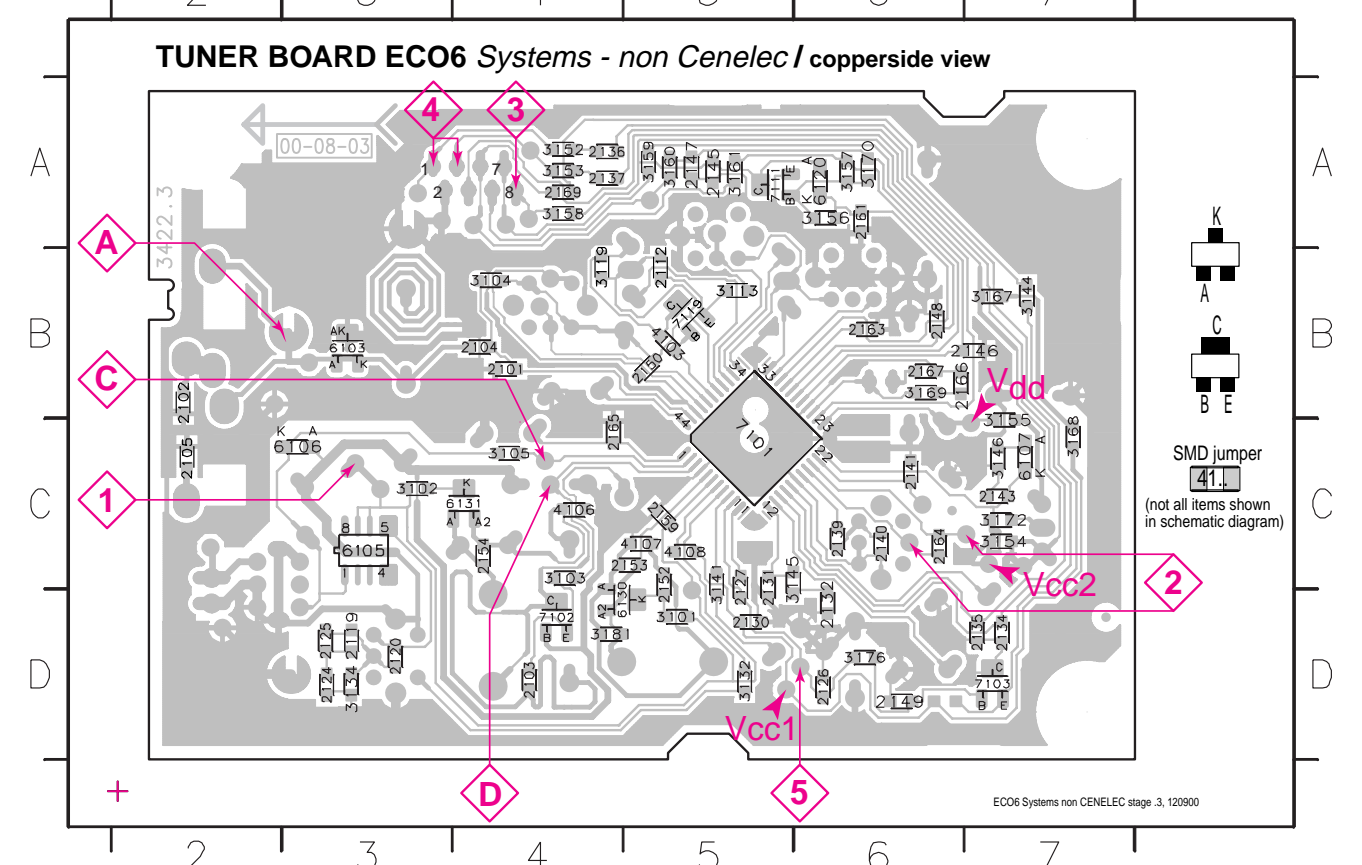
...V FM mode stereo  
 ...V MW mode  
 ...V LW mode  
 voltages measured while set is tuned to a strong transmitter

**Signal path**  
 — FM  
 - - - AM  
 - - - MPX (Audio Frequency)  
 ⇨ AF - left/right

1101 A6 1120 A4 1132 A5 2128 C4 2138 C2 3142 D2 5110 B3 5114 A2 5123 D5 7112 C1 9104 B5 9107 D4  
 1102 B6 1130 B5 2106 C5 2129 B4 2144 B2 5102 D6 5111 B4 5119 C2 5130 D3 9101 A2 9105 B1 9108 C4  
 1103 D6 1131 D5 2107 B5 2133 D2 2155 C4 5109 A3 5112 A3 5121 B2 5131 D4 9103 B2 9106 B3 9109 D2



2101 B4 2119 D3 2130 D5 2137 A4 2146 B7 2153 C5 2165 C4 3103 C4 3134 D3 3152 A4 3158 A4 3169 B6 4106 C4 6107 C7 7103 D7  
 2102 B1 2120 D3 2131 C5 2139 C6 2147 A5 2154 C4 2166 B6 3104 B4 3141 C5 3153 A4 3159 A5 3170 A6 4107 C5 6120 A6 7111 A5  
 2103 D4 2124 D3 2132 D6 2140 C6 2148 B6 2159 C5 2167 B6 3105 C4 3143 D6 3154 C7 3160 A5 3172 C7 4108 C5 6130 D4 7119 B5  
 2104 B4 2125 D3 2134 D7 2141 C6 2149 D6 2161 A6 2169 A4 3113 B5 3144 B7 3155 C7 3161 A5 3176 D6 6103 B3 6131 C4  
 2105 C1 2126 D6 2135 D7 2143 C7 2150 B5 2163 B6 3101 D5 3119 B5 3145 C5 3156 A6 3167 B7 3181 D4 6105 C3 7101 C5  
 2112 B5 2127 C5 2136 A4 2145 A5 2152 C5 3102 C3 3132 D5 3146 C7 3157 A6 3168 C7 4103 B5 6106 C3 7102 D4



These assembly drawings show a summary of all possible versions.  
 For components used in a specific version see schematic diagram respectively partlist.

TUNER ADJUSTMENT TABLE ( ECO6 FM/MW- and FM/MW/LW - versions with AM-frame aerial )

Waverange	Input frequency	Input	Tuned to	Adjust	Output	Scope/Voltmeter
<b>VARICAP ALIGNMENT</b>						
<b>FM</b> 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz)	108MHz		108MHz	5130		8V ±0.2V
	87.5MHz (65.81MHz)		87.5MHz (65.81MHz)	check		4.3V ±0.5V (1.2V ±0.5V)
<b>MW</b> FM/AM-version, 10kHz grid 530 - 1700kHz	1700kHz		1700kHz	5123		8V ±0.2V
	530kHz		530kHz	check		1.1V ±0.4V
FM/MW-version, 9kHz grid 531 - 1602kHz	1602kHz		1602kHz	5123	1	6.9V ±0.2V
	531kHz		531kHz	check		1.1V ±0.4V
<b>LW</b> 153 - 279kHz	279kHz		279kHz	5122		8V ±0.2V
	153kHz		153kHz	check		1.1V ±0.4V
<b>MW</b> FM/MW/LW- version, 9kHz grid 531 - 1602kHz	1602kHz		1602kHz	5123		8V ±0.2V
	531kHz		531kHz	check		1.1V ±0.4V
<b>FM IF</b>						
<b>FM</b>	10.7MHz, 45mV continuous wave	D		5119	2	0 ± 3 mV DC
<b>FM RF</b>						
<b>FM</b> 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz)	108MHz	A	108MHz	2155	4	MAX
	87.5MHz (65.81MHz)	mod=1kHz Δf=±22.5kHz	87.5MHz (65.81MHz)	5131		
<b>VCO</b>						
<b>FM</b>	98MHz, 1mV continuous wave	A	98MHz	3142	3	152kHz ±1kHz <sup>1)</sup>
<b>AM IF</b>						
<b>MW</b>	450kHz connect pin 6 of IC 7101 (AM Osc.) with 3.3kΩ to Vcc	C		5111	5	
		C		5112		
<b>AM AFC</b> <b>MW</b>		C		5114	2	0 ± 2 mV DC
<b>AM RF<sup>3)</sup></b>						
<b>MW<sup>4)</sup></b> FM/MW/LW- and FM/MW-version (9kHz grid)	1494kHz	B	1494kHz	2106	5	
	531 - 1602kHz		558kHz	5102		
<b>LW</b>	198kHz		198kHz	5103		
<b>MW</b> FM/AM-version, 10kHz grid 530 - 1700kHz	1500kHz	B	1500kHz	2106	5	
	560kHz		560kHz	5102		

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) For AM RF adjustments the original frame antenna has to be used!
- 4) MW has to be aligned before LW.

↑ Repeat

MISCELLANEOUS

1101	2422 015 19376	SOCKET 2P CLICKFIT	USA only
1102	4822 267 10283	SOCKET COAX, IEC 75Ω	not USA
1103	4822 265 31184	JST CONNECTOR 2 POLE	
1120	4822 265 11515	FFC SOCKET, 8P	

CAPACITORS

2101	4822 126 13692	47pF	1%	63V	
2102	4822 126 13838	100nF	10%	50V	not USA
2103	5322 122 31647	1nF	10%	63V	
2104	5322 122 32531	100pF	5%	50V	
2105	4822 126 13838	100nF	10%	50V	USA only
2106	2020 800 00191	3-11pF TRIMCAP.,N450			
2107	4822 121 51319	1μF	20%	50V	
2120	4822 126 13689	18pF	1%	63V	
2124	5322 122 32654	22nF	10%	63V	
2125	2020 552 96199	560pF	1%	50V	
2126	5322 122 31863	330pF	5%	50V	
2127	4822 126 14076	220nF	20%	25V	
2128	4822 124 40248	10μF	20%	63V	
2129	4822 124 41584	100μF	20%	10V	
2130	5322 122 32654	22nF	10%	63V	
2131	4822 126 13482	470nF	20%	16V	
2132	4822 126 13482	470nF	20%	16V	
2133	4822 124 21913	1μF	20%	63V	
2134	4822 126 13188	15nF	5%	63V	not USA
2134	5322 122 32654	22nF	10%	63V	USA only
2135	4822 126 13188	15nF	5%	63V	not USA
2135	5322 122 32654	22nF	10%	63V	USA only
2136	4822 126 14076	220nF	20%	25V	
2137	4822 126 14076	220nF	20%	25V	
2138	4822 124 22652	2,2μF	20%	50V	
2139	4822 126 14236	15pF	5%	50V	
2140	4822 126 13695	82pF	1%	63V	
2141	4822 126 13838	100nF	10%	50V	
2143	4822 126 14076	220nF	20%	25V	
2144	4822 124 21913	1μF	20%	63V	
2145	4822 122 33575	220pF	5%	50V	
2146	4822 122 33575	220pF	5%	50V	
2147	4822 122 33575	220pF	5%	50V	
2148	4822 122 33127	2,2nF	10%	63V	
2149	5322 122 32659	33pF	5%	50V	RDS only
2150	4822 126 13838	100nF	10%	50V	
2152	4822 126 12105	33nF	5%	63V	not for East Europe
2152	5322 116 80853	560pF	5%	63V	for East Europe only
2153	4822 126 13486	15pF	2%	63V	not for East Europe
2153	4822 122 33926	12pF	2%	50V	for East Europe only
2155	2020 800 00191	3-11pF TRIMCAP.,N450			
2159	5322 122 32659	33pF	5%	50V	
2164	4822 126 13482	470nF	20%	16V	
2165	4822 126 13838	100nF	10%	50V	
2166	5322 122 31647	1nF	10%	63V	
2167	4822 122 33926	12pF	5%	50V	
2169	4822 122 33127	2,2nF	10%	63V	RDS only

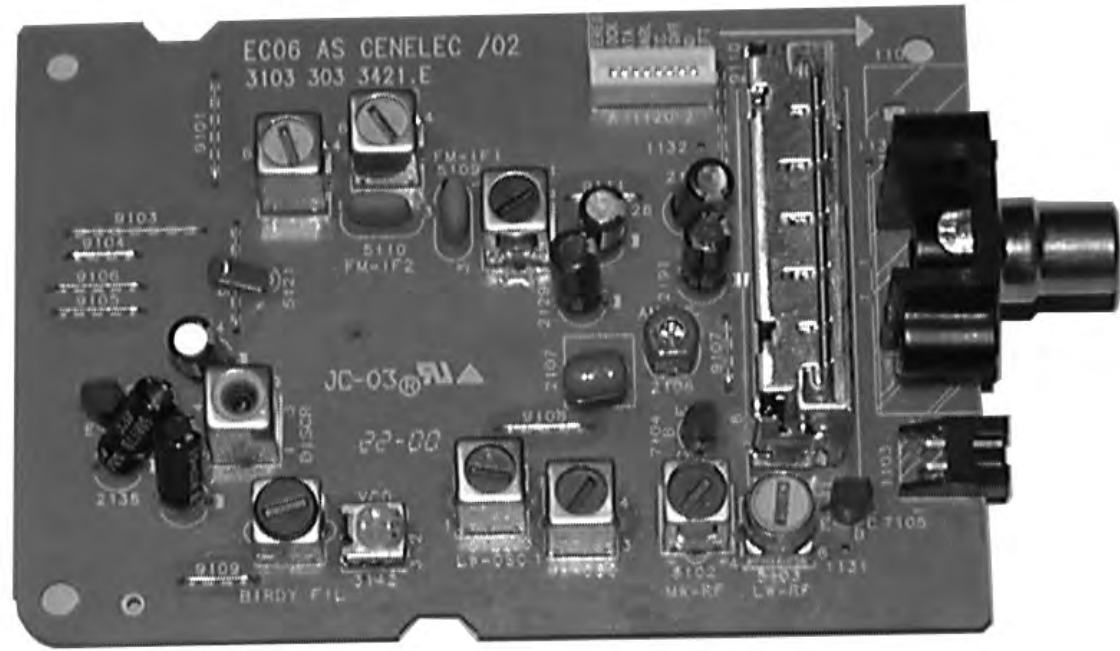
RESISTORS

3101	4822 051 20333	33kΩ	5%	0,1W
3102	4822 117 10837	100kΩ	1%	0,1W
3103	4822 051 20822	8,2kΩ	5%	0,1W
3104	4822 117 13577	330Ω	1%	0,1W
3105	4822 117 11503	220Ω	5%	0,1W
3132	4822 051 20479	47Ω	5%	0,1W
3134	4822 051 20223	22kΩ	5%	0,1W
3141	4822 117 11148	56kΩ	1%	0,1W
3142	4822 100 12159	TRIMPOT. 100kΩ		

RESISTORS

3143	4822 051 20223	22kΩ	5%	0,1W	RDS only
3144	4822 051 10102	1kΩ	2%	0,25W	RDS only
3145	4822 117 11449	2,2kΩ	1%	0,1W	
3146	4822 051 20229	22Ω	5%	0,1W	
3152	4822 051 20471	470Ω	5%	0,1W	
3153	4822 051 20471	470Ω	5%	0,1W	
3154	4822 117 13577	330Ω	1%	0,1W	
3155	4822 117 11503	220Ω	5%	0,1W	
3156	4822 117 10837	100kΩ	1%	0,1W	
3157	4822 117 10837	100kΩ	1%	0,1W	
3158	4822 051 20471	470Ω	5%	0,1W	
3159	4822 051 20471	470Ω	5%	0,1W	
3160	4822 051 20471	470Ω	5%	0,1W	
3161	4822 051 20223	22kΩ	5%	0,1W	
3167	4822 051 20121	120Ω	5%	0,1W	
3168	4822 051 20121	120Ω	5%	0,1W	
3169	4822 051 20154	150kΩ	5%	0,1W	
3170	4822 117 10837	100kΩ	1%	0,1W	
3172	4822 051 20562	5,6kΩ	5%	0,1W	
3176	4822 051 20333	33kΩ	5%	0,1W	RDS only
3181	4822 051 10102	1kΩ	2%	0,25W	
4103	4822 051 20008	CHIP JUMPER 0805			
4106	4822 051 20008	CHIP JUMPER 0805			
4107	4822 051 20008	CHIP JUMPER 0805			
4108	4822 051 20008	CHIP JUMPER 0805			
COILS					
5102	4822 157 71634	RF-COIL MW			
5109	4822 242 70665	FM-IF FILTER 10,7MHz			
5110	4822 242 70665	FM-IF FILTER 10,7MHz			
5111	2422 549 44023	AM-IF FILTER 450kHz			
5112	4822 157 70302	AM-IF FILTER 450kHz			
5114	4822 157 70302	AM-IF FILTER 450kHz			
5119	4822 157 11443	DISCRIMINATOR COIL			
5121	4822 242 10261	QUARTZ 75kHz			
5123	2422 549 44108	RF-COIL, AM-OSCILLATOR			
5130	4822 157 11843	RF COIL 1,5 TURNS			
5131	4822 157 11843	RF COIL 1,5 TURNS			
DIODES					
6103	5322 130 34337	BAV99			
6105	4822 130 83075	HN1V02H			
6106	4822 130 83757	BAS216			
6107	9340 386 90115	BZX284-C11			
6120	4822 130 83757	BAS216			
6130	4822 130 82833	1SV228			
6131	4822 130 82833	1SV228			
TRANSISTORS					
7102	4822 130 42131	BF550			
7103	5322 130 42756	BC857C			RDS only
7111	5322 130 42755	BC847C			
7112	4822 130 44503	BC547C			
INTEGRATED CIRCUITS					
7101	9351 740 80557	TEA5757H/V1, RADIO IC			





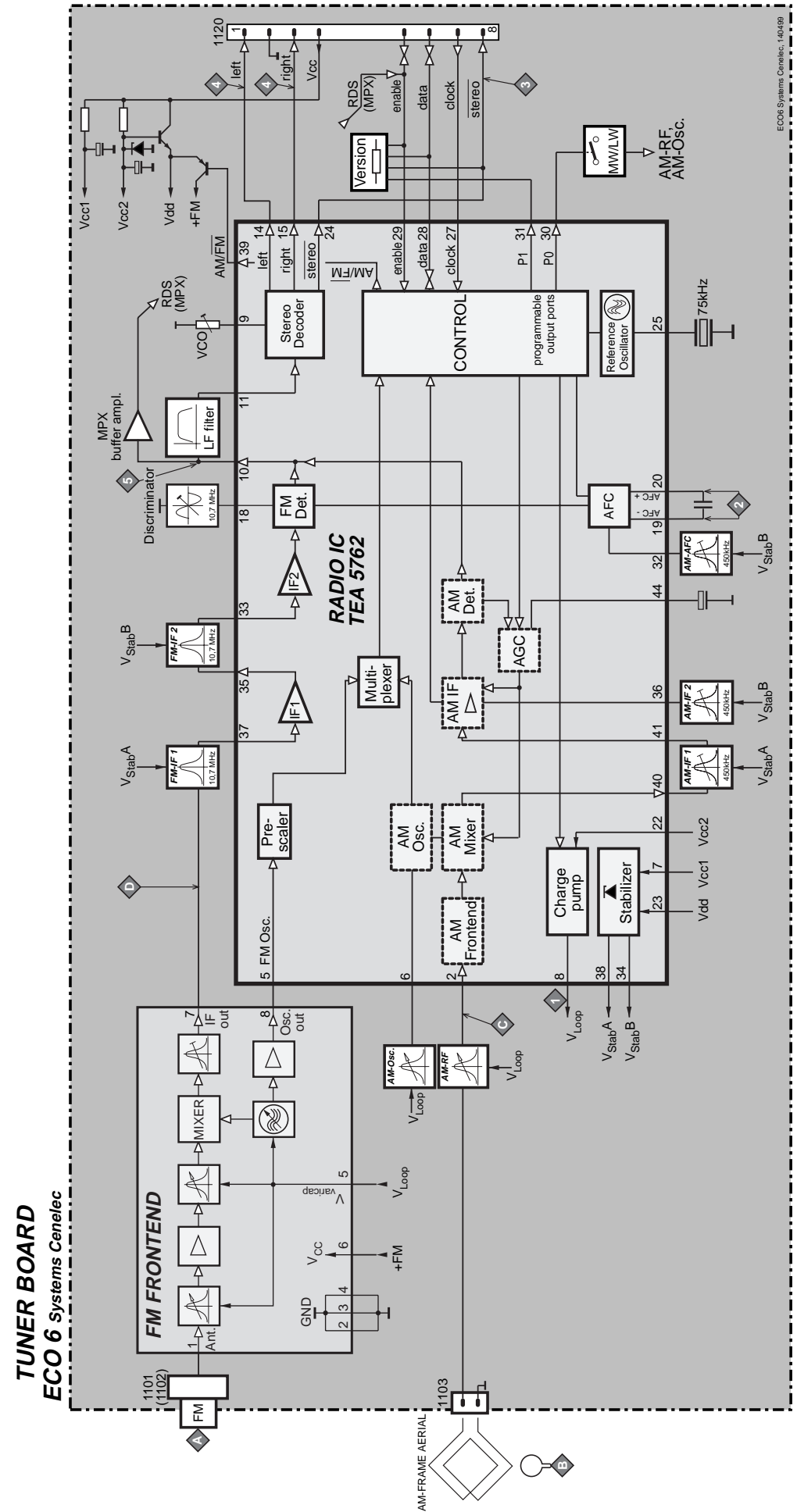
# ECO6 Tuner Board

version: **SYSTEMS CENELEC**

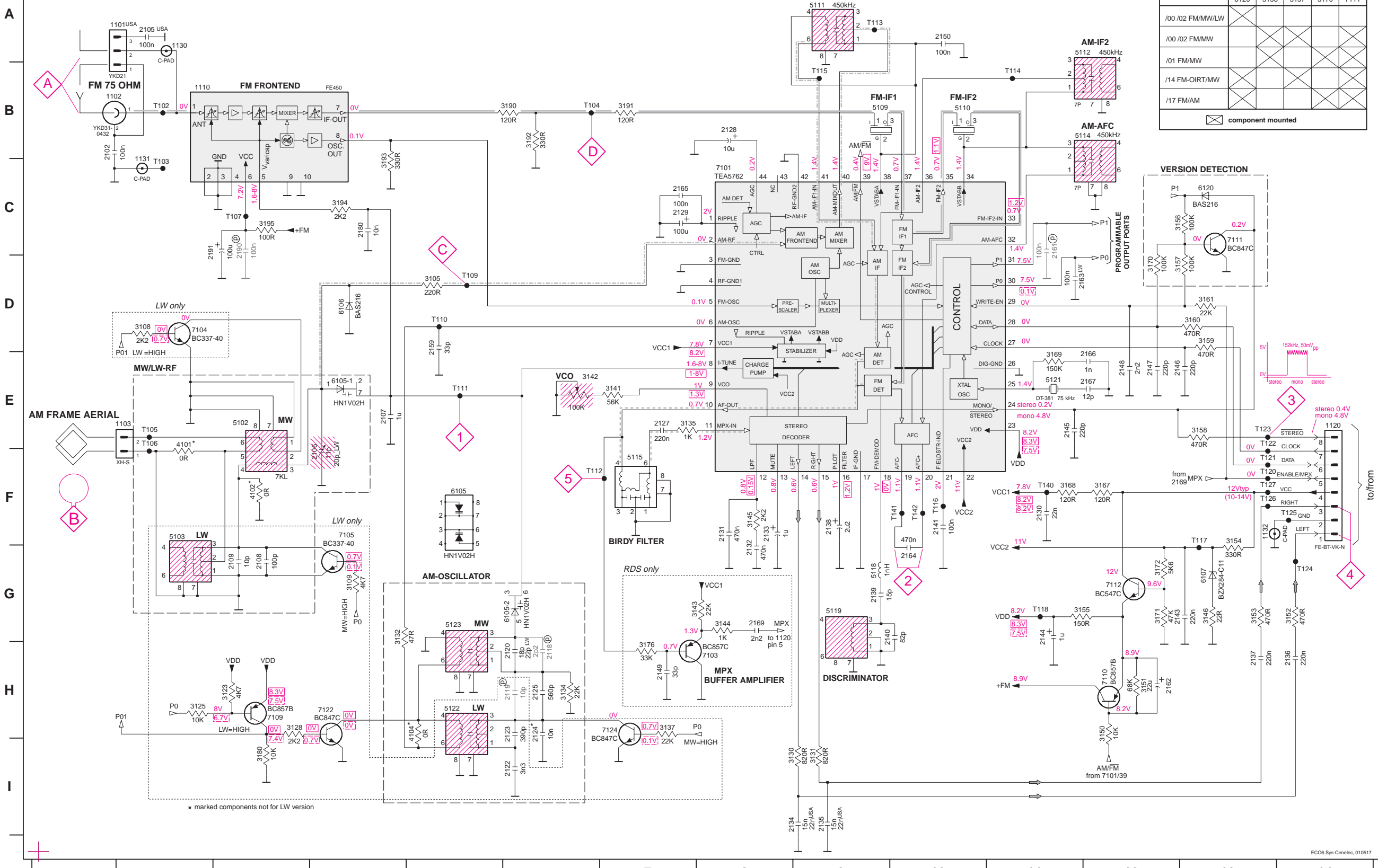
## TABLE OF CONTENTS

Blockdiagram .....	7B-1
Schematic Diagram .....	7B-2
Component Layout .....	7B-3
Adjustment table .....	7B-3
Electrical Partslist .....	7B-4

## BLOCK DIAGRAM



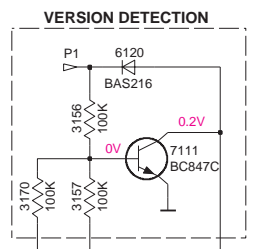
# TUNER BOARD ECO6 / SYSTEMS-CENELEC



### 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					

⊠ component mounted

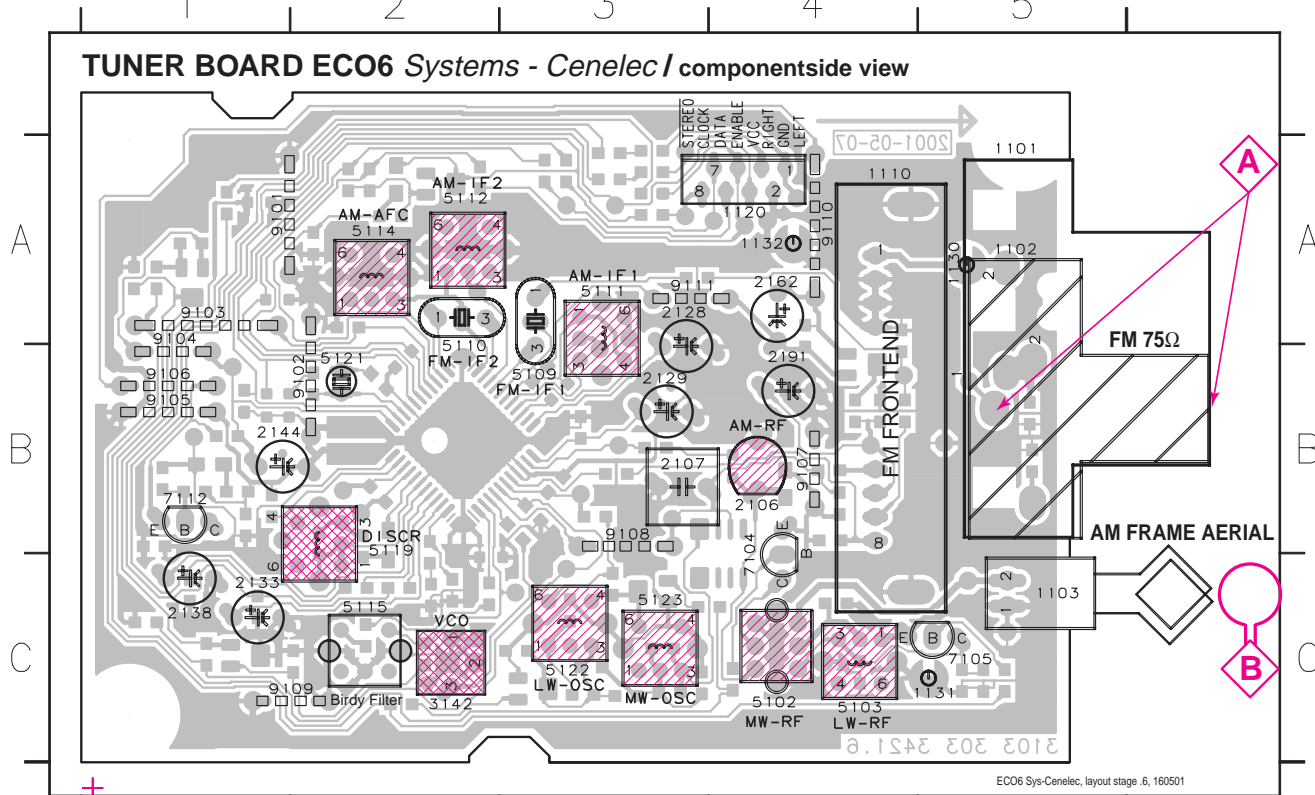


- 1101 A2
- 1102 B1
- 1103 E2
- 1110 B2
- 1120 E14
- 1130 A2
- 1131 C2
- 1132 F13
- 2102 B1
- 2105 A2
- 2106 E3
- 2107 E4
- 2108 G3
- 2109 G3
- 2118 H6
- 2119 H6
- 2120 H6
- 2122 I6
- 2123 H6
- 2124 H6
- 2125 H6
- 2127 E7
- 2128 B8
- 2129 C7
- 2130 F11
- 2131 F8
- 2132 F8
- 2133 F8
- 2134 I8
- 2135 I9
- 2136 H14
- 2137 H13
- 2138 F9
- 2139 G9
- 2140 G9
- 2141 F10
- 2143 G12
- 2144 G11
- 2145 E11
- 2146 E12
- 2147 E12
- 2148 E12
- 2149 H7
- 2150 A10
- 2159 D5
- 2161 C11
- 2162 H12
- 2163 D11
- 2164 G10
- 2165 C7
- 2166 E11
- 2167 E11
- 2169 G8
- 2180 C4
- 2190 C3
- 2191 C3
- 3105 D2
- 3108 D2
- 3109 S4
- 3123 H3
- 3128 H3
- 3130 I9
- 3131 I9
- 3132 G4
- 3134 E6
- 3135 E7
- 3137 H7
- 3141 E7
- 3142 E6
- 3143 G7
- 3144 G8
- 3145 F8
- 3146 G13
- 3150 H12
- 3151 H12
- 3152 G14
- 3153 G13
- 3154 F13
- 3155 G12
- 3156 C12
- 3157 D12
- 3158 I3
- 3159 D13
- 3160 D13
- 3161 D13
- 3167 F12
- 3168 F11
- 3169 E11
- 3170 D12
- 3171 G12
- 3172 G12
- 3176 H7
- 3180 I3
- 3190 B6
- 3191 B7
- 3192 B6
- 3193 B4
- 3194 C4
- 3195 C3
- 4101 E2
- 4102 F3
- 4104 H5
- 5102 E3
- 5103 F2
- 5109 B9
- 5110 B10
- 5111 A9
- 5112 A11
- 5114 B11
- 5115 E7
- 5118 G9
- 5119 G9
- 5121 E11
- 5122 H5
- 5123 G5
- 5125 G5
- 5126 G5
- 5127 G5
- 5128 G5
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- 5200 G5

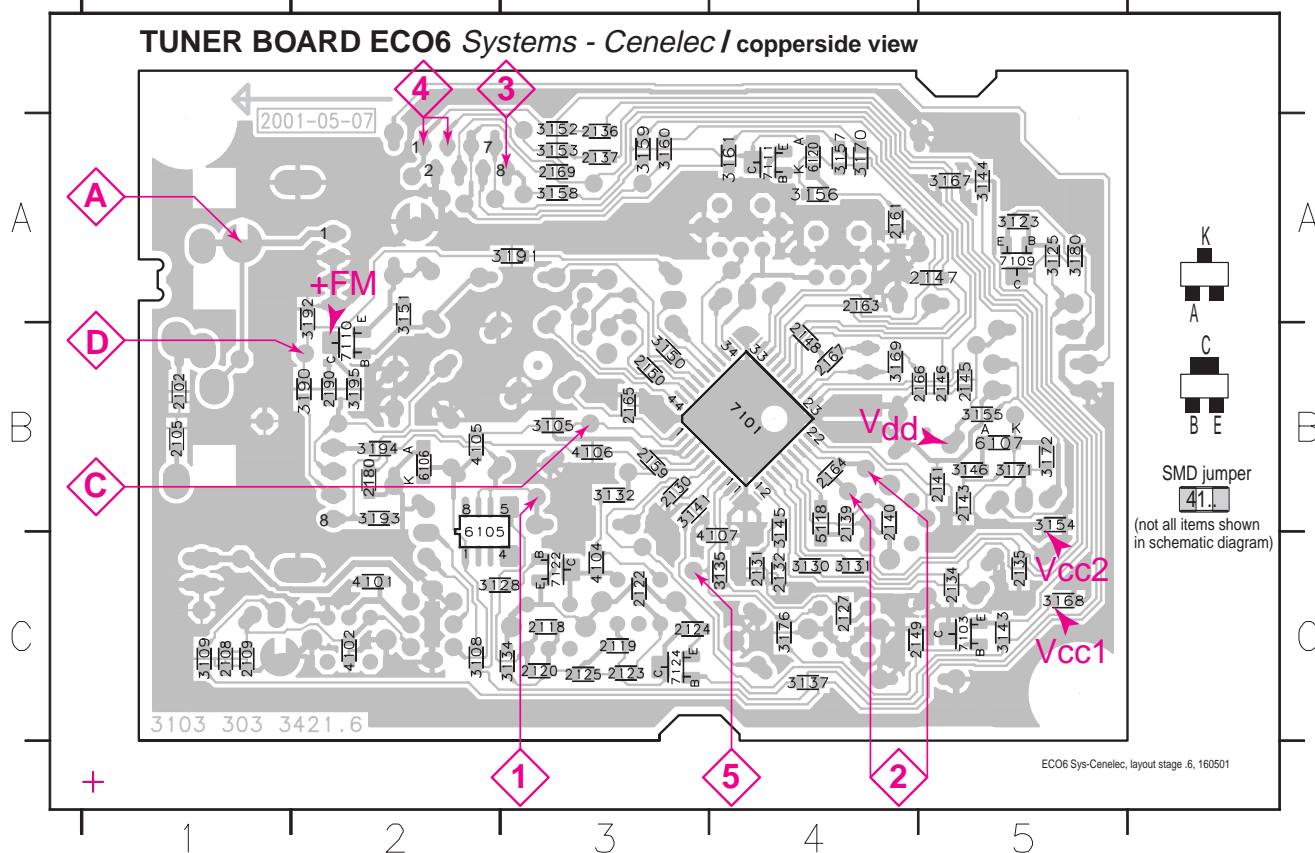
### LEGEND

- \* ... only assembled in FM/AM-version
- Ⓧ ... for provision only
- USA ... for USA version only
- LW ... for LW version only
- SMD jumper
- Ⓧ EVM
- ...V FM mode stereo
- ...V MW mode
- ...V LW mode
- voltages measured while set is tuned to a strong transmitter
- Signal path
- FM
- - - AM
- ⋯ MPX (Audio Frequency)
- ⇒ AF - left/right

1101 B5 1110 B4 1131 C5 2107 B3 2133 C1 2162 A4 5102 C4 5110 A2 5114 A2 5121 B2 7104 C4 9101 A2 9104 B1 9107 B4 9110 A4  
 1102 B5 1120 A4 1132 A4 2128 A3 2138 B1 2191 B4 5103 C4 5111 A3 5115 C2 5122 C3 7105 C5 9102 B2 9105 B1 9108 B3 9111 A3  
 1103 C5 1130 A5 2106 B4 2129 B3 2144 B1 3142 C2 5109 B3 5112 A2 5119 B2 5123 C3 7112 B1 9103 A1 9106 B1 9109 C2

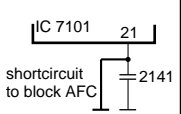
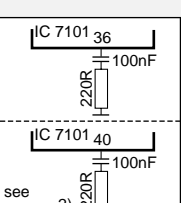
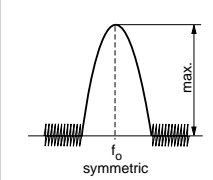

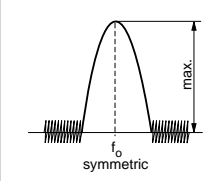


2102 B1 2120 C3 2130 B3 2137 A3 2146 B5 2161 A4 2169 A3 3123 A5 3134 C3 3145 C4 3154 B5 3160 A3 3171 B5 3192 A2 4104 C3 6106 B2 7110 B2  
 2105 B1 2122 C3 2131 C4 2139 B4 2147 A5 2163 A4 2180 B2 3125 A5 3135 C4 3146 B5 3155 B5 3161 A4 3172 B5 3193 B2 4105 B2 6107 B5 7111 A4  
 2108 C1 2123 C3 2132 C4 2140 B4 2148 B4 2164 B4 2190 B2 3128 C2 3137 C4 3150 B3 3156 A4 3167 A5 3176 C4 3194 B2 4106 B3 6120 A4 7122 C3  
 2109 C1 2124 C3 2134 C5 2141 B5 2149 C4 2165 B3 3105 B3 3130 C4 3141 B3 3151 A2 3157 A4 3168 C5 3180 A5 3195 B2 4107 C4 7101 B4 7124 C3  
 2118 C3 2125 C3 2135 C5 2143 B5 2150 B3 2166 B5 3108 C2 3131 C4 3143 C5 3152 A3 3158 A3 3169 B4 3190 B2 4101 C2 5118 C4 7103 C5  
 2119 C3 2127 C4 2136 A3 2145 B5 2159 B3 2167 B4 3109 C1 3132 B3 3144 A5 3153 A3 3159 A3 3170 A4 3191 A3 4102 C2 6105 B2 7109 A5



These assembly drawings show a summary of all possible versions.  
 For components used in a specific version see schematic diagram respectively partslist.

**TUNER ADJUSTMENT TABLE ( ECO6 Cenelec FM/MW - and FM/MW/LW - versions with AM-frame aerial )**

Waverange	Input frequency	Input	Tuned to	Adjust	Output	Scope/Voltmeter
<i>VARICAP ALIGNMENT</i>						
<b>FM</b> 87.5 - 108MHz (50kHz grid)			108MHz	check		8V ±1.2V
			87.5MHz	check		1.6V ±0.5V
<b>MW</b> 531 - 1602kHz (9kHz grid)			1602kHz	5123	1	8V ±0.2V 3-band 6.9V ±0.2V 2-band
			531kHz	check		1.1V ±0.4V
<b>LW</b> 153 - 279kHz (3kHz grid)			279kHz	5122		8V ±0.2V
			153kHz	check		1.1V ±0.4V
<i>FM - IF</i>						
<b>FM</b>	10.7MHz, 45mV continuous wave	D		5119	2	0mV ±3mV
<i>FM - VCO</i>						
<b>FM</b>	98MHz, 1mV continuous wave	A	98MHz	3142	3	152kHz ±1kHz <sup>1)</sup>
<i>FM RF (channel separation)</i> <span style="float:right">Note: The FM-frontend unit has already been adjusted by the factory and needs therefore no further adjustments for service purposes.</span>						
<b>FM</b>	98MHz, 1mV 90% Left + 9% pilot mod=1kHz	A	98MHz	IF coil inside FM frontend 1110	4	right channel min.
<i>AM IF</i>						
<b>MW</b>	450kHz  connect pin 6 of IC 7101 (AM Osc.) with 3.3kΩ to Vcc	C  $\Delta f = \pm 10\text{kHz}$ $V_{RF} = 0.5\text{mV}$ (as low as possible)  see remark 2)		5111	5	
				5112		
<b>AM AFC</b> <b>MW</b>		C  continuous wave $V_{RF} = 2\text{mV}$		5114	2	0mV ±2mV
<i>AM RF <sup>3)</sup></i>						
<b>MW</b>	1494kHz	B  	1494kHz	2106	5	
	558kHz		558kHz	5102		
<b>LW</b>	198kHz	$\Delta f = \pm 30\text{kHz}$ $V_{RF}$ as low as possible	198kHz	5103		

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) For AM RF adjustments the original frame antenna has to be used!  
 MW has to be aligned before LW.

↑ Repeat



MISCELLANEOUS

1101	2422 015 19376	SOCKET CLICKFIT 2P	USA only
1102	4822 267 10283	SOCKET COAX, IEC 75Ω	not USA
1103	4822 265 31184	JST CONNECTOR, 2 POLE	
1110	2422 542 90071	FM FRONTEND	
1120	4822 265 11515	FFC SOCKET, 8P	

CAPACITORS

2102	4822 126 13838	100nF 10% 50V	not USA
2105	4822 126 13838	100nF 10% 50V	USA only
2106	2020 800 00204	TRIMCAP. 4.2 - 20pF, N750	LW only
2106	2020 800 00191	TRIMCAP. 3 - 11pF, N450	FM/AM only
2107	4822 121 51319	1μF 20% 50V	
2108	5322 122 32531	100pF 5% 50V	LW only
2109	5322 122 32448	10pF 5% 50V	LW only
2120	4822 126 13689	18pF 1% 63V	FM/AM only
2120	5322 122 32658	22pF 5% 50V	LW only
2122	4822 122 33891	3,3nF 10% 63V	LW only
2123	2020 552 93494	390pF 1% 50V	LW only
2124	4822 122 33177	10nF 20% 50V	FM/AM only
2125	2020 552 96199	560pF 1% 50V	
2127	4822 126 14076	220nF 20% 25V	
2128	4822 124 40248	10μF 20% 63V	
2129	4822 124 41584	100μF 20% 10V	
2130	5322 122 32654	22nF 10% 63V	
2131	4822 126 13482	470nF 20% 16V	
2132	4822 126 13482	470nF 20% 16V	
2133	4822 124 21913	1μF 20% 63V	
2134	3198 017 31530	15nF 10% 50V	not USA
2134	5322 122 32654	22nF 10% 63V	USA only
2135	3198 017 31530	15nF 10% 50V	not USA
2135	3198 017 32230	22nF 10% 25V	USA only
2136	4822 126 14076	220nF 20% 25V	
2137	4822 126 14076	220nF 20% 25V	
2138	4822 124 22652	2,2μF 20% 50V	
2139	4822 126 14236	15pF 5% 50V	
2140	4822 126 13695	82pF 1% 63V	
2141	4822 126 13838	100nF 10% 50V	
2143	4822 126 14076	220nF 20% 25V	
2144	4822 124 21913	1μF 20% 63V	
2145	4822 122 33575	220pF 5% 50V	
2146	4822 122 33575	220pF 5% 50V	
2147	4822 122 33575	220pF 5% 50V	
2148	4822 122 33127	2,2nF 10% 63V	
2149	5322 122 32659	33pF 5% 50V	RDS only
2150	4822 126 13838	100nF 10% 50V	
2159	5322 122 31151	22μF 20% 50V	
2163	4822 126 13838	100nF 10% 50V	LW only
2164	4822 126 13482	470nF 20% 16V	
2165	4822 126 13838	100nF 10% 50V	
2166	5322 122 31647	1nF 10% 63V	
2167	4822 122 33926	12pF 5% 50V	
2169	4822 122 33127	2,2nF 10% 63V	RDS only
2180	3198 017 31030	10nF 10% 50V	
2190	4822 126 13838	100nF 10% 50V	
2191	4822 124 40178	100μF 20% 10V	

RESISTORS

3105	4822 117 11503	220Ω 5% 0,1W	
3108	4822 117 11449	2,2kΩ 1% 0,1W	LW only
3109	4822 051 20472	4,7kΩ 5% 0,1W	LW only
3123	4822 051 20472	4,7kΩ 5% 0,1W	LW only
3125	4822 117 10833	10kΩ 1% 0,1W	LW only

RESISTORS

3128	4822 117 11449	2,2kΩ 1% 0,1W	LW only
3130	3198 021 38210	820Ω 5% 0,06W	
3131	3198 021 38210	820Ω 5% 0,06W	
3132	4822 051 20479	47Ω 5% 0,1W	
3134	4822 051 20223	22kΩ 5% 0,1W	
3135	3198 021 31020	1kΩ 5% 0,06W	
3137	4822 051 20223	22kΩ 5% 0,1W	LW only
3141	4822 117 11148	56kΩ 1% 0,1W	
3142	4822 100 12159	TRIMPOT. 100kΩ	
3143	4822 051 20223	22kΩ 5% 0,1W	RDS only
3144	4822 051 10102	1kΩ 2% 0,25W	RDS only
3145	4822 117 11449	2,2kΩ 1% 0,1W	
3146	4822 051 20229	22Ω 5% 0,1W	
3150	4822 117 10833	10kΩ 1% 0,1W	
3151	4822 051 20683	68kΩ 5% 0,1W	
3152	4822 051 20471	470Ω 5% 0,1W	
3153	4822 051 20471	470Ω 5% 0,1W	
3154	4822 117 13577	330Ω 1% 0,1W	
3155	4822 117 10353	150Ω 5% 0,1W	
3156	4822 117 10837	100kΩ 1% 0,1W	
3157	4822 117 10837	100kΩ 1% 0,1W	
3158	4822 051 20471	470Ω 5% 0,1W	
3159	4822 051 20471	470Ω 5% 0,1W	
3160	4822 051 20471	470Ω 5% 0,1W	
3161	4822 051 20223	22kΩ 5% 0,1W	
3167	4822 051 20121	120Ω 5% 0,1W	
3168	4822 051 20121	120Ω 5% 0,1W	
3169	4822 051 20154	150kΩ 5% 0,1W	
3170	4822 117 10837	100kΩ 1% 0,1W	
3171	4822 117 10834	47kΩ 1% 0,1W	
3172	4822 051 20562	5,6kΩ 5% 0,1W	
3176	4822 051 20333	33kΩ 5% 0,1W	RDS only
3180	4822 117 10833	10kΩ 1% 0,1W	LW only
3190	4822 051 20121	120Ω 5% 0,1W	
3191	4822 051 20121	120Ω 5% 0,1W	
3192	4822 117 13577	330Ω 1% 0,1W	
3193	4822 117 13577	330Ω 1% 0,1W	
3194	4822 117 11449	2,2kΩ 1% 0,1W	
3195	4822 051 20101	100Ω 5% 0,1W	
4101	4822 051 20008	CHIP JUMPER 0805	FM/AM only
4102	4822 051 20008	CHIP JUMPER 0805	FM/AM only
4104	4822 051 20008	CHIP JUMPER 0805	FM/AM only
4105	4822 051 20008	CHIP JUMPER 0805	
4106	4822 051 20008	CHIP JUMPER 0805	
4107	4822 051 20008	CHIP JUMPER 0805	

COILS

5102	4822 157 71634	RF-COIL MW	
5103	2422 549 44107	RF-COIL LW	LW only
5109	4822 157 71639	FM-IF FILTER 10,7MHz	
5110	4822 242 70665	FM-IF FILTER 10,7MHz	
5111	2422 549 44023	AM-IF FILTER 450kHz	
5112	4822 157 70302	AM-IF FILTER 450kHz	
5114	4822 157 70302	AM-IF FILTER 450kHz	
5115	4822 157 71636	ANTI BIRDY FILTER	
5118	2422 535 95881	100nH	
5119	4822 157 11443	DISCRIMINATOR COIL	
5121	4822 242 10261	QUARTZ 75kHz	
5122	2422 549 44108	RF-COIL, LW-OSCILLATOR	LW only
5123	2422 549 44108	RF-COIL, MW-OSCILLATOR	

DIODES

6105	4822 130 83075	HN1V02H	
6106	4822 130 83757	BAS216	
6107	9340 386 90115	BZX284-C11	
6120	4822 130 83757	BAS216	

TRANSISTORS

7103	5322 130 42756	BC857C	RDS only
7104	9322 003 64676	TBC337-40	LW only
7105	9322 003 64676	TBC337-40	LW only
7109	4822 130 60373	BC856B	LW only
7110	4822 130 60373	BC856B	
7111	5322 130 42755	BC847C	
7112	4822 130 44503	BC547C	
7122	5322 130 42755	BC847C	LW only
7124	5322 130 42755	BC847C	LW only

INTEGRATED CIRCUITS

7101	4822 209 90315	TEA5762H/V1, RADIO IC	
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# PWR303 MODULE UCD 200-250W

Mains pt5 / Reg pt3 / Amp pt2 / Spk pt5 - 17 Nov 03

TABLE OF CONTENTS

Mains UCD Board

Mains Socket UCD Board - Component Layout ..... 8-1  
 Mains Socket UCD Board - Circuit Diagram ..... 8-1  
 Mains UCD Board - Component Layout ..... 8-2  
 Mains UCD Board - Circuit Diagram ..... 8-3

Regulator UCD Board

Component & Chip Layout ..... 8-4  
 Circuit Diagram ..... 8-5

Amplifier UCD Board (BTL Master/Slave)

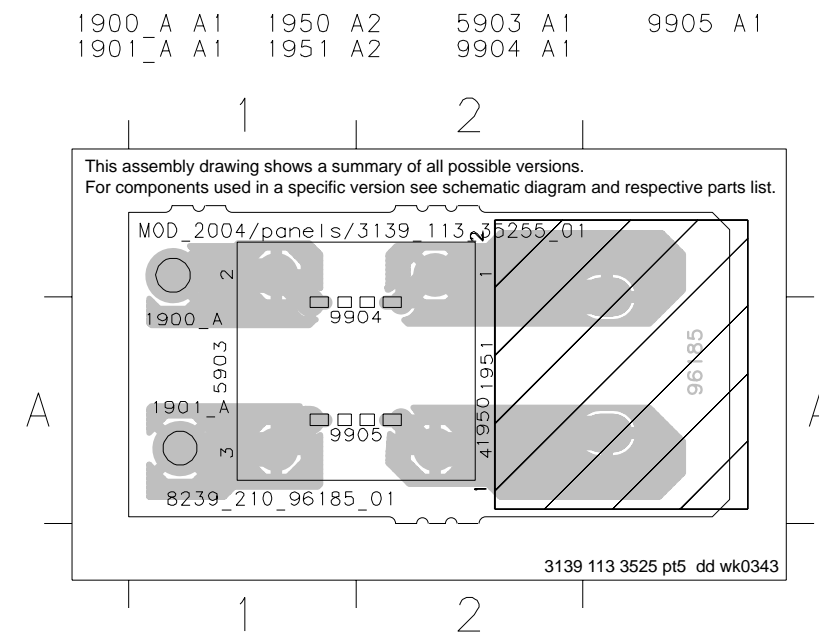
Component Layout ..... 8-6  
 Chip Layout ..... 8-7  
 Circuit Diagram Part 1 ..... 8-8  
 Circuit Diagram Part 2 ..... 8-9

Speaker UCD Board

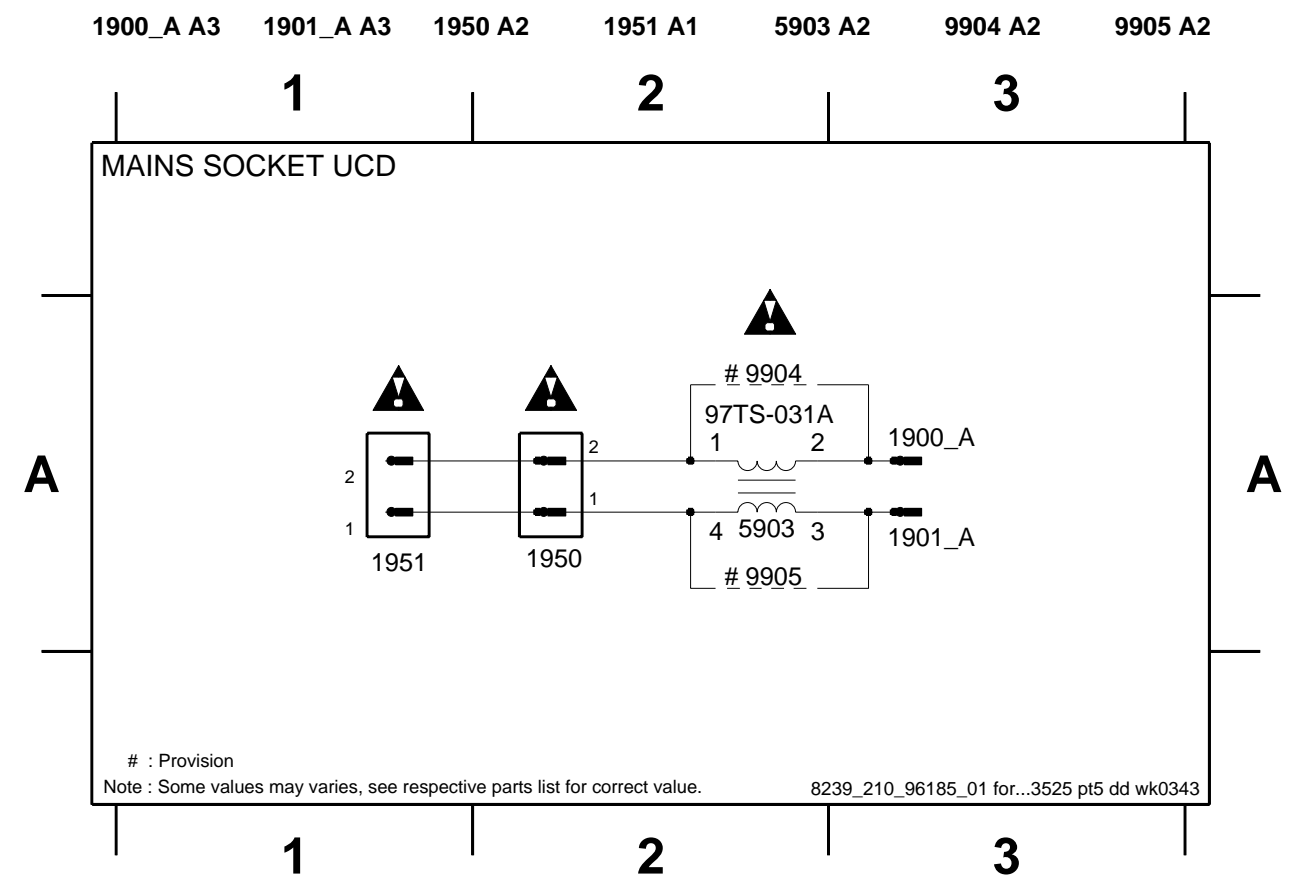
Component Layout ..... 8-10  
 Circuit Diagram ..... 8-10  
 Variation Table ..... 8-10

Wiring Diagram ..... 8-11  
 Exploded View ..... 8-12  
 Electrical parts list ..... 8-13

## MAINS SOCKET UCD BOARD - COMPONENT LAYOUT

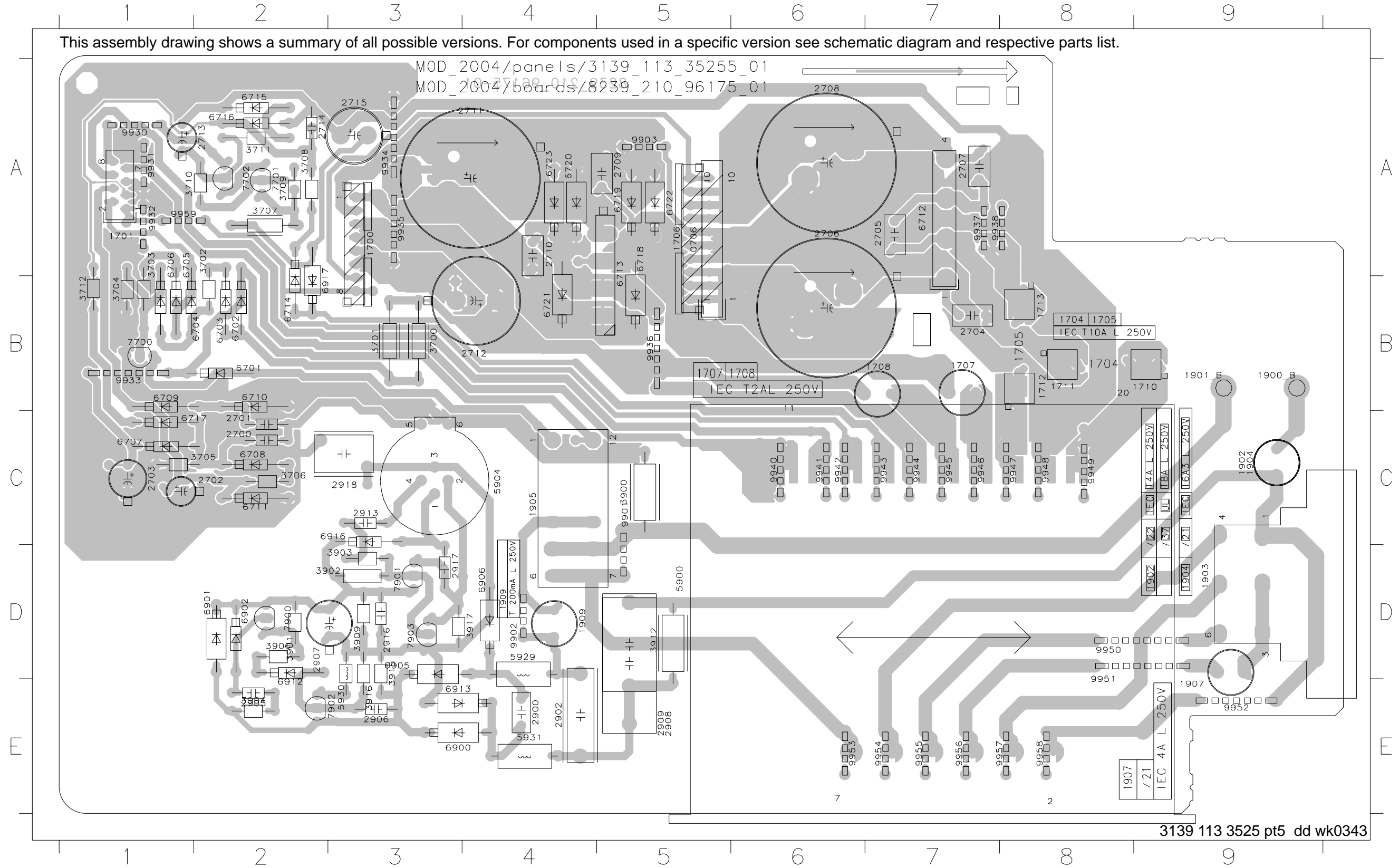


## MAINS SOCKET UCD BOARD - CIRCUIT DIAGRAM



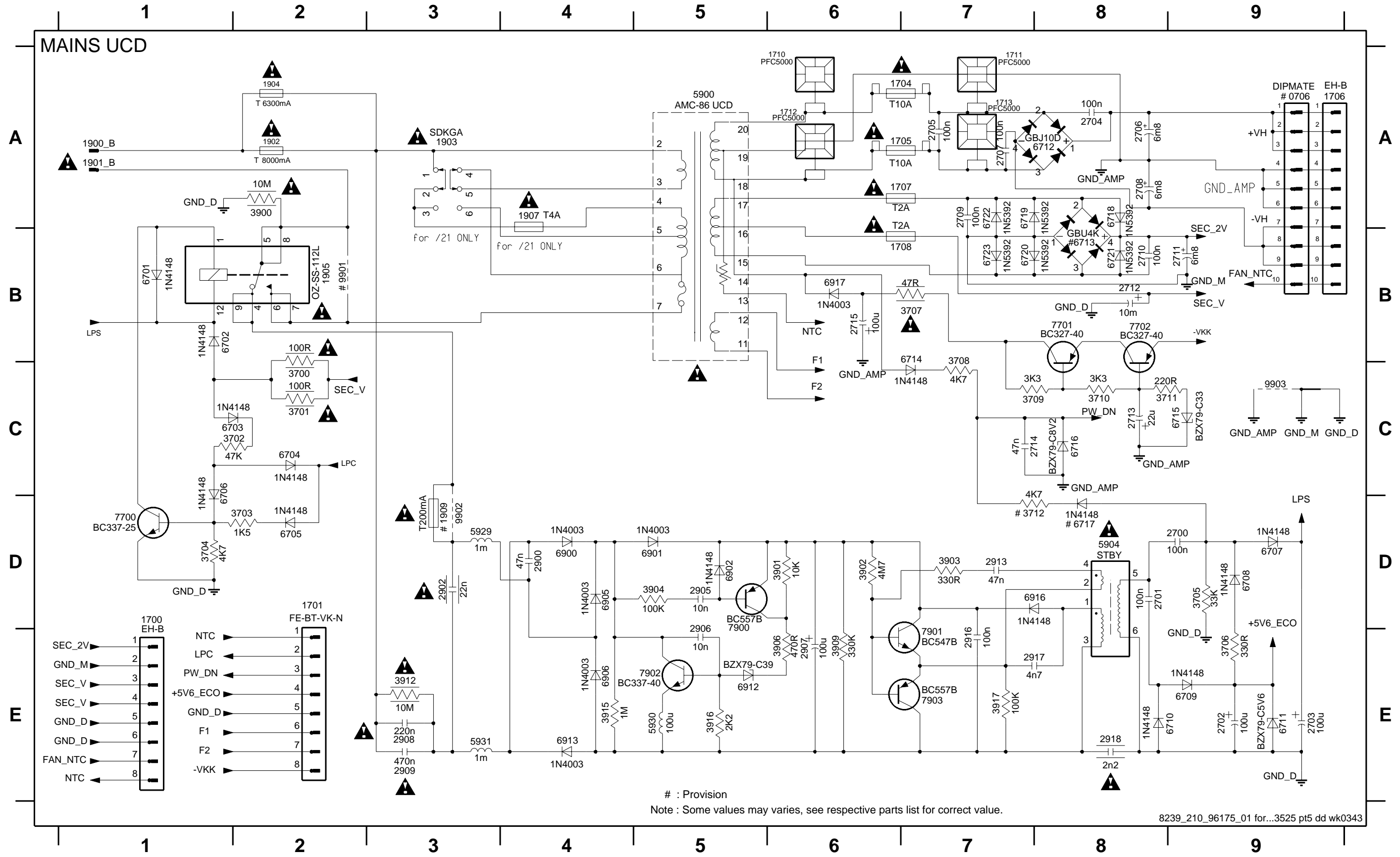
# MAINS UCD BOARD - COMPONENT LAYOUT

0706 A5	1900_B B9	2702 C2	2712 B4	2909 E5	3705 C2	3902 D3	5904 C4	6707 C1	6717 C2	6905 D3	7901 D3	9934 A3	9945 C7	9955 E7
1700 A3	1901_B B9	2703 C1	2713 A2	2913 C3	3706 C2	3903 D3	5929 D4	6708 C2	6718 A5	6906 D4	7902 E3	9935 A3	9946 C7	9956 E7
1701 A1	1902 C9	2704 B7	2714 A2	2916 D3	3707 A2	3904 E2	5930 E3	6709 B1	6719 A5	6912 E2	7903 D3	9936 B5	9947 C8	9957 E7
1706 A5	1903 D9	2705 A7	2715 A3	2917 D3	3708 A2	3906 D2	5931 E4	6710 B2	6720 A4	6913 E3	9901 C5	9937 A7	9948 C8	9958 E8
1707 B7	1904 C9	2706 A6	2900 E4	2918 C3	3709 A2	3909 D3	6701 B2	6711 C2	6721 B4	6916 C3	9902 D4	9938 A7	9949 C8	9959 A1
1708 B7	1905 C4	2707 A7	2902 E4	3700 B3	3710 A1	3912 D5	6702 B2	6712 A7	6722 A5	6917 B2	9903 A5	9940 C6	9950 D8	
1710 B9	1907 E9	2708 A6	2905 E2	3701 B3	3711 A2	3915 D3	6703 B2	6713 A5	6723 A4	7700 B1	9930 A1	9941 C6	9951 D8	
1711 B8	1909 D4	2709 A5	2906 E3	3702 A2	3712 B1	3916 E3	6704 B2	6714 B2	6900 E3	7701 A2	9931 A1	9942 C6	9952 E9	
1712 B8	2700 C2	2710 A4	2907 D2	3703 A1	3900 C5	3917 D4	6705 A1	6715 A2	6901 D2	7702 A2	9932 A1	9943 C7	9953 E6	
1713 B8	2701 C2	2711 A4	2908 E5	3704 B1	3901 D2	5900 D5	6706 A1	6716 A2	6902 D2	7900 D2	9933 B1	9944 C7	9954 E7	



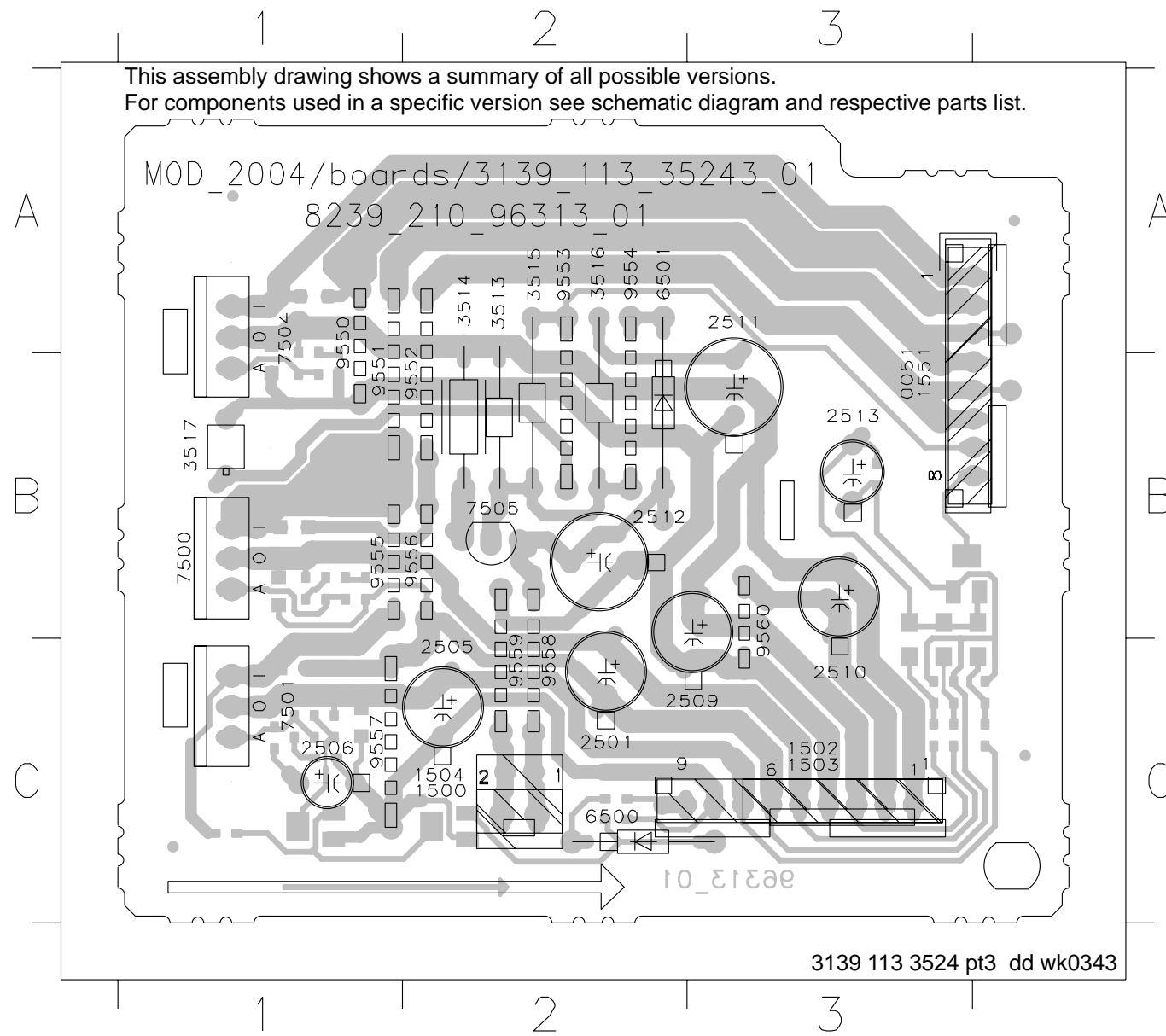
# MAINS UCD BOARD - CIRCUIT DIAGRAM

0706 A9	1707 A6	1900_B A1	1907 A4	2704 A8	2710 B8	2900 D4	2909 E3	3701 C2	3707 B7	3900 A2	3909 E6	5904 D8	6703 C1	6709 E9	6715 C9	6721 B8	6905 D4	7700 D1	7903 E7
1700 E1	1708 B6	1901_B A1	1909 D3	2705 A7	2711 B9	2902 D3	2913 D7	3702 C2	3708 C7	3901 D6	3912 E3	5929 D3	6704 C2	6710 E8	6716 C8	6722 A7	6906 E4	7701 B8	9901 B2
1701 D2	1710 A6	1902 A2	2700 D9	2706 A8	2712 B8	2905 D5	2916 E7	3703 D2	3709 C7	3902 D6	3915 E4	5930 E5	6705 D2	6711 E9	6717 D8	6723 B7	6912 E5	7702 B8	9902 D3
1704 A6	1711 A7	1903 A3	2701 D8	2707 A7	2713 C8	2906 E5	2917 E7	3704 D1	3710 C8	3903 D7	3916 E5	5931 E3	6706 C1	6712 A8	6718 A8	6900 D4	6913 E4	7900 D5	9903 C9
1705 A6	1712 A6	1904 A2	2702 E9	2708 A8	2714 C7	2907 E6	2918 E8	3705 D9	3711 C8	3904 D5	3917 E7	6701 B1	6707 D9	6713 B8	6719 A8	6901 D5	6916 D8	7901 E7	
1706 A9	1713 A7	1905 B2	2703 E9	2709 A7	2715 B6	2908 E3	3700 C2	3706 E9	3712 D7	3906 E6	5900 A5	6702 B1	6708 D9	6714 B7	6720 B7	6902 D5	6917 B6	7902 E5	



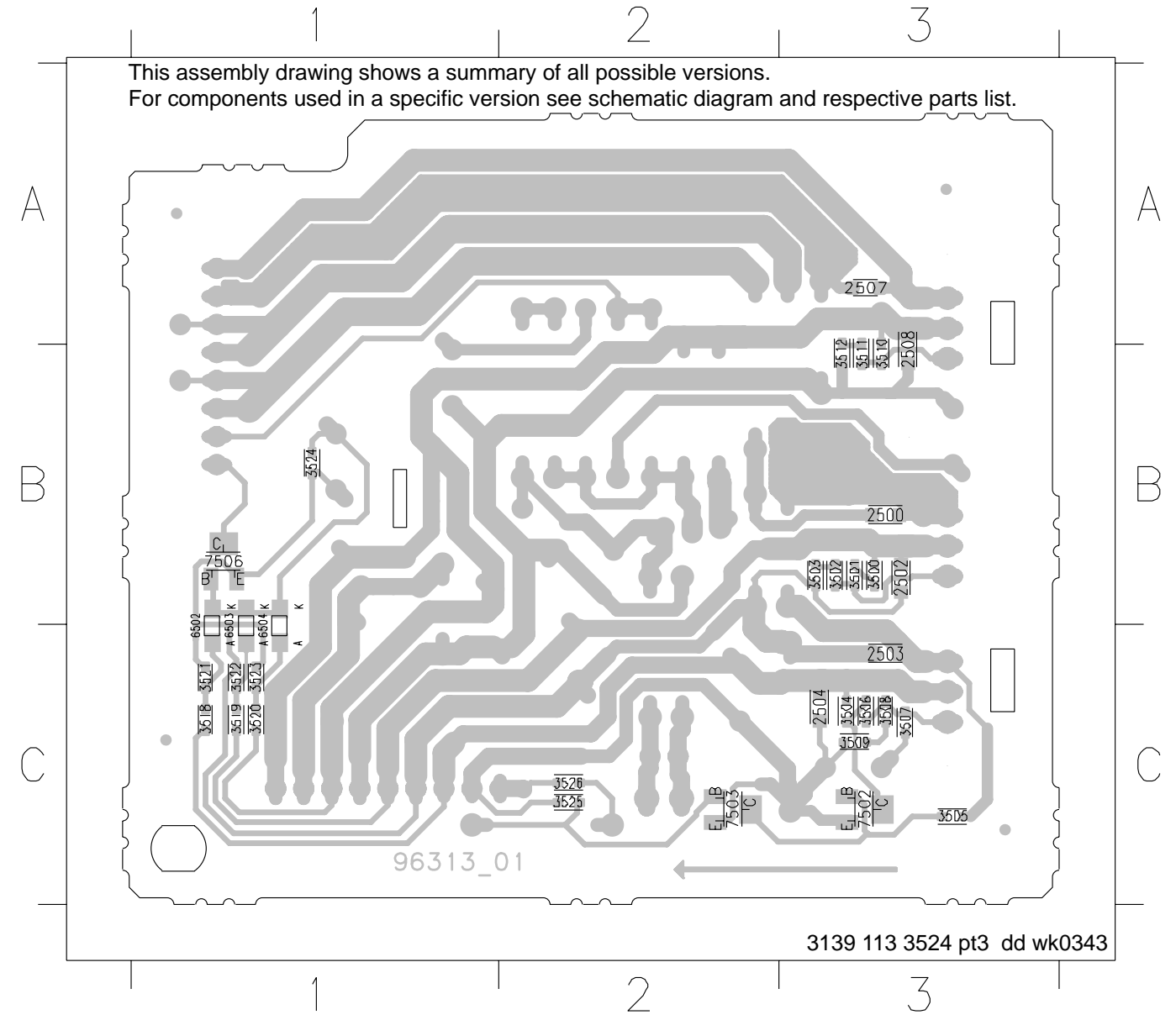
REGULATOR UCD BOARD - COMPONENT LAYOUT

0051 B3	2501 C2	2512 B2	3517 B1	7505 B2	9555 B1
1500 C2	2505 C2	2513 B3	6500 C2	9550 A1	9556 B2
1502 C3	2506 C1	3513 A2	6501 A2	9551 B1	9557 C1
1503 C3	2509 C3	3514 A2	7500 B1	9552 B2	9558 C2
1504 C2	2510 C3	3515 A2	7501 C1	9553 A2	9559 C2
1551 B3	2511 A3	3516 A2	7504 A1	9554 A2	9560 B3



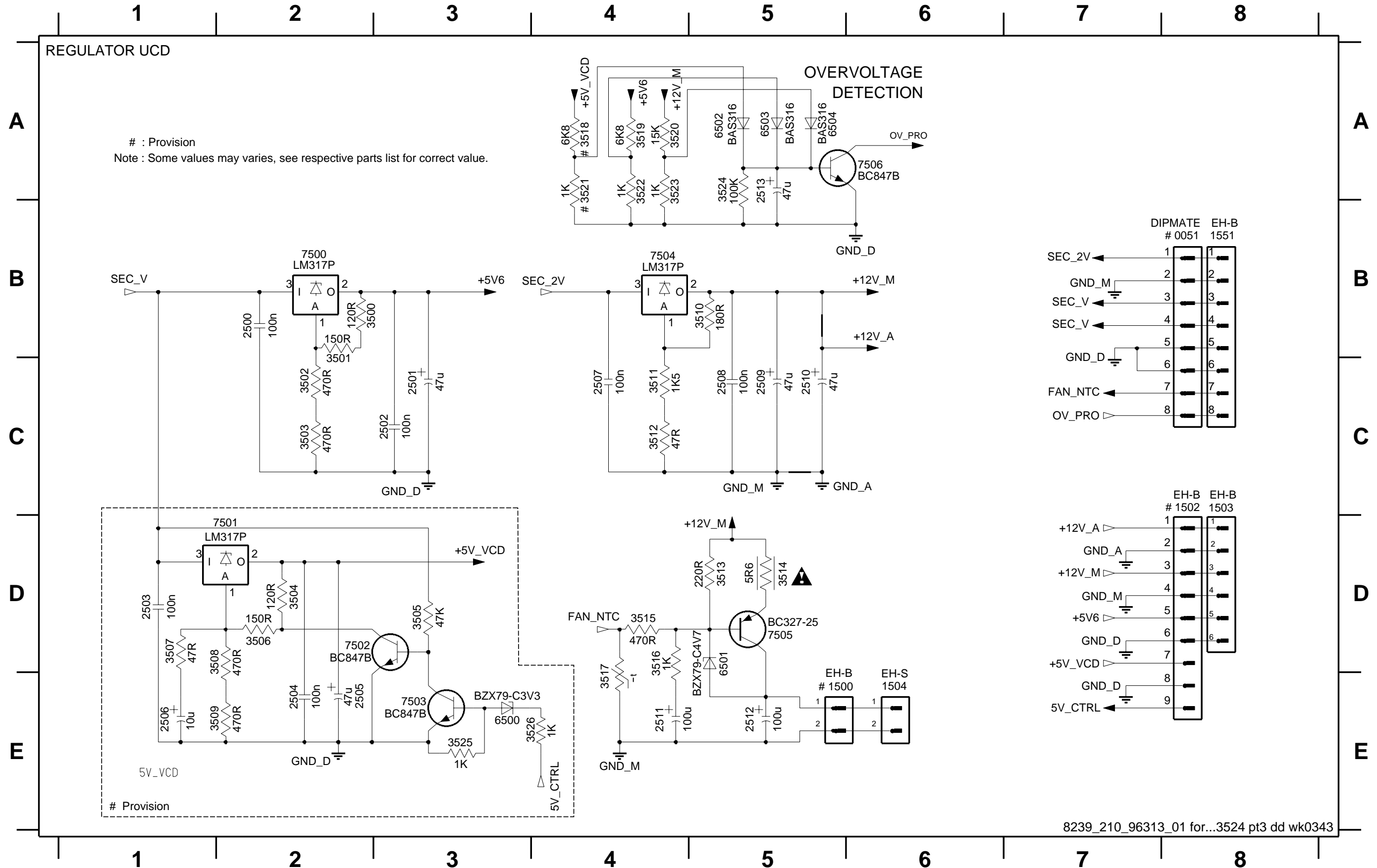
REGULATOR UCD BOARD - CHIP LAYOUT

2500 B3	2508 B3	3504 C3	3509 C3	3519 C1	3524 B1	6504 C1
2502 B3	3500 B3	3505 C3	3510 B3	3520 C1	3525 C2	7502 C3
2503 C3	3501 B3	3506 C3	3511 B3	3521 C1	3526 C2	7503 C2
2504 C3	3502 B3	3507 C3	3512 B3	3522 C1	6502 C1	7506 B1
2507 A3	3503 B3	3508 C3	3518 C1	3523 C1	6503 C1	



REGULATOR UCD BOARD - CIRCUIT DIAGRAM

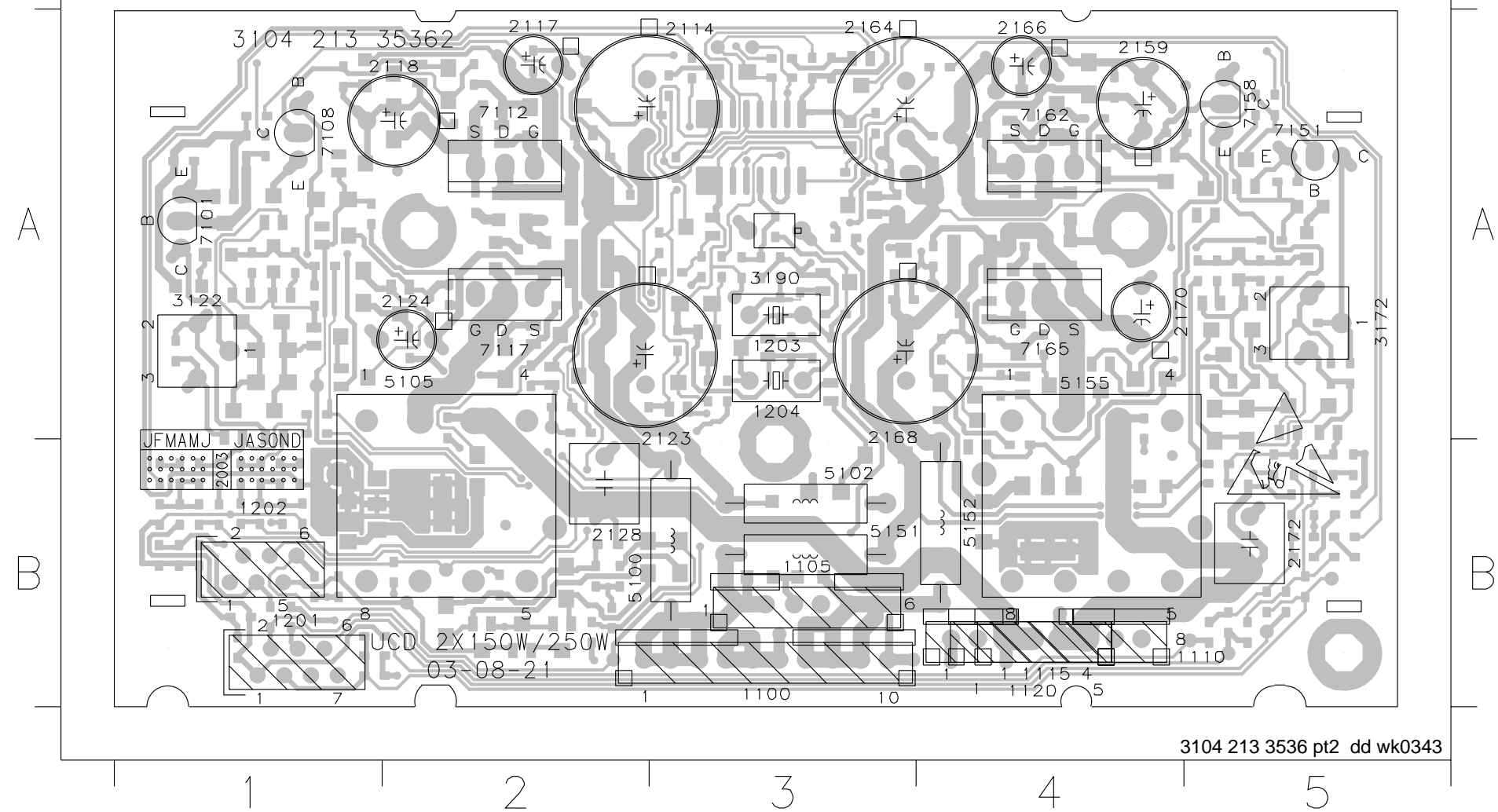
0051 B8	1503 C8	2500 B2	2503 D1	2506 E1	2509 C5	2512 E5	3501 B2	3504 D2	3507 D1	3510 B5	3513 D5	3516 D4	3519 A4	3522 A4	3525 E3	6501 D5	6504 A5	7502 D2	7505 D5
1500 E5	1504 E6	2501 C3	2504 E2	2507 C4	2510 C5	2513 A5	3502 C2	3505 D3	3508 D2	3511 C4	3514 D5	3517 E4	3520 A4	3523 A4	3526 E4	6502 A5	7500 B2	7503 E3	7506 A6
1502 C8	1551 B8	2502 C3	2505 E2	2508 C5	2511 E4	3500 B2	3503 C2	3506 D2	3509 E2	3512 C4	3515 D4	3518 A4	3521 A4	3524 A5	6500 E3	6503 A5	7501 D1	7504 B4	



**AMPLIFIER UCD BOARD (BTL MASTER/SLAVE) - COMPONENT LAYOUT**

1100 B3	1201 B1	2117 A2	2159 A4	2172 B5	5102 B3	7101 A1	7158 A5
1105 B3	1202 B1	2118 A2	2164 A3	3122 A1	5105 B2	7108 A1	7162 A4
1110 B4	1203 A3	2123 A2	2166 A4	3172 A5	5151 B3	7112 A2	7165 A4
1115 B4	1204 A3	2124 A2	2168 A3	3190 A3	5152 B4	7117 A2	
1120 B4	2114 A2	2128 B2	2170 A4	5100 B3	5155 B4	7151 A5	

This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

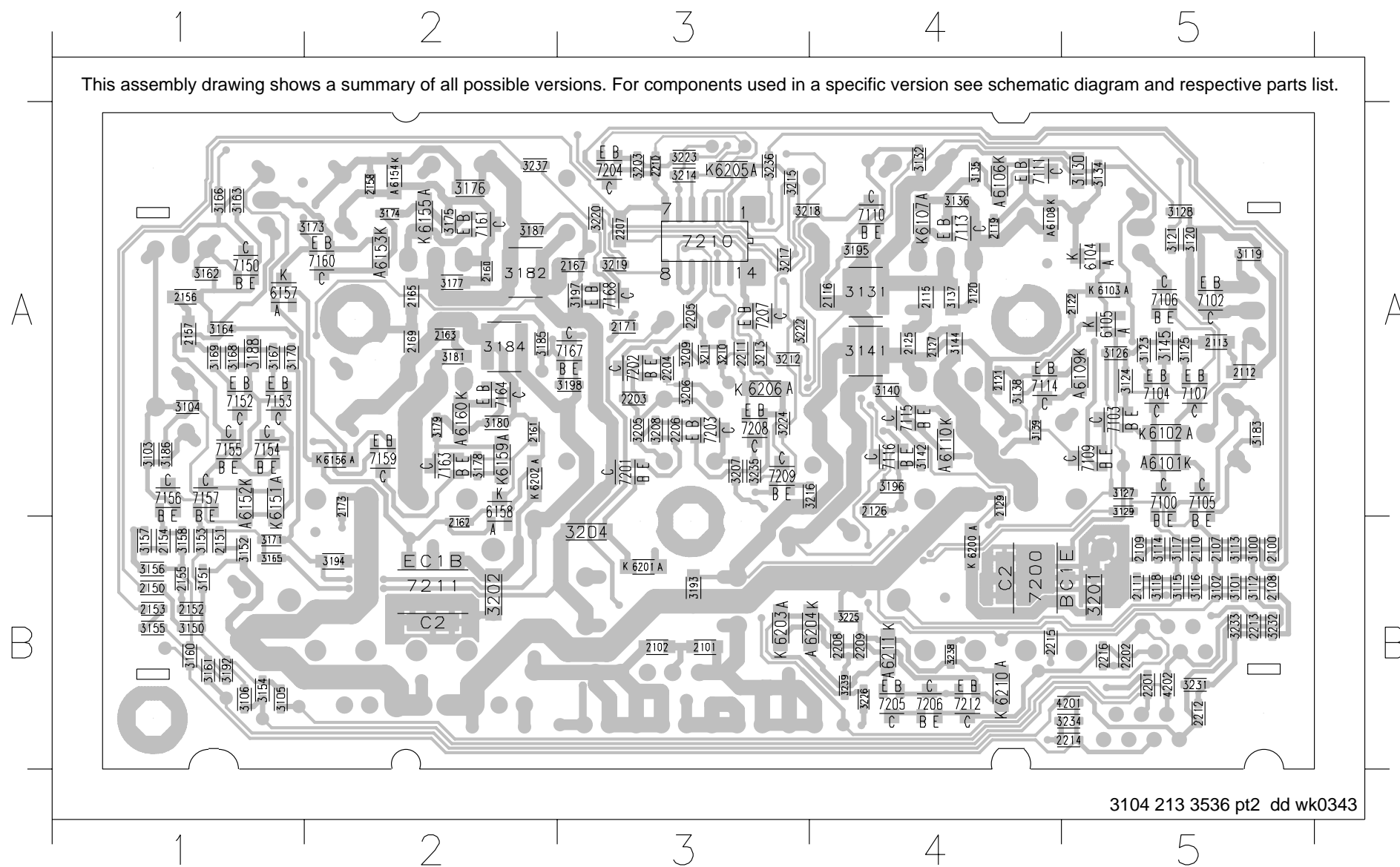


3104 213 3536 pt2 dd wk0343

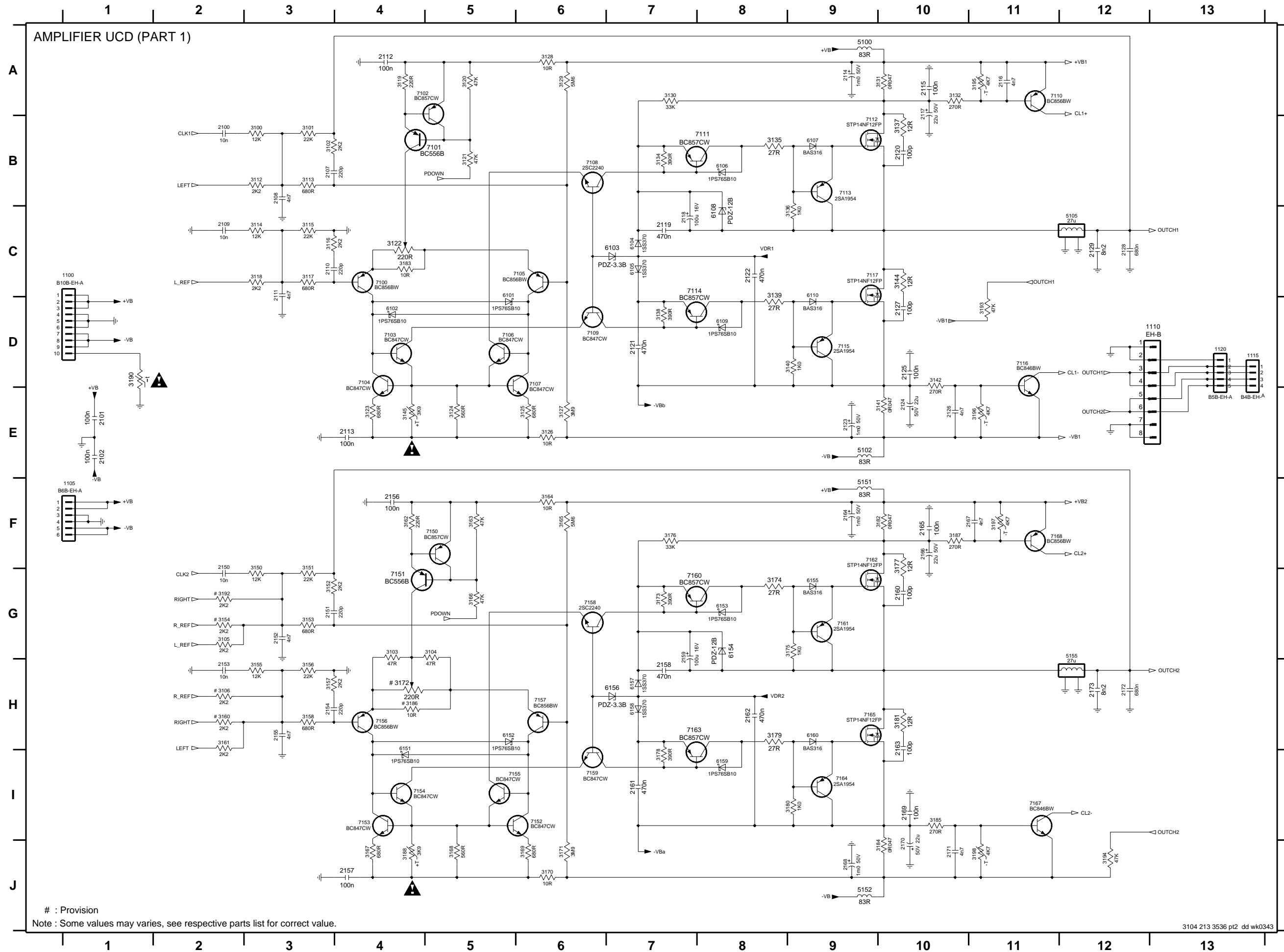
AMPLIFIER UCD BOARD (BTL MASTER/SLAVE) - CHIP LAYOUT

2100	B5	2122	A5	2161	A2	2208	B4	3106	B1	3127	A5	3144	A4	3164	A1	3180	A2
2101	B3	2125	A4	2162	B2	2209	B4	3112	B5	3128	A5	3145	A5	3165	B1	3181	A2
2102	B3	2126	A4	2163	A2	2210	A3	3113	B5	3129	A5	3150	B1	3166	A1	3182	A2
2107	B5	2127	A4	2165	A2	2211	A3	3114	B5	3130	A5	3151	B1	3167	A1	3183	A5
2108	B5	2129	A4	2167	A3	2212	B5	3115	B5	3131	A4	3152	B1	3168	A1	3184	A2
2109	B5	2150	B1	2169	A2	2213	B5	3116	B5	3132	A4	3153	B1	3169	A1	3185	A2
2110	B5	2151	B1	2171	A3	2214	B5	3117	B5	3134	A5	3154	B1	3170	A1	3186	A1
2111	B5	2152	B1	2173	A2	2215	B4	3118	B5	3135	A4	3155	B1	3171	B1	3187	A2
2112	A5	2153	B1	2201	B5	2216	B5	3119	A5	3136	A4	3156	B1	3173	A2	3188	A1
2113	A5	2154	B1	2202	B5	3100	B5	3120	A5	3137	A4	3157	B1	3174	A2	3192	B1
2115	A4	2155	B1	2203	A3	3101	B5	3121	A5	3138	A4	3158	B1	3175	A2	3193	B3
2116	A4	2156	A1	2204	A3	3102	B5	3123	A5	3139	A4	3160	B1	3176	A2	3194	B2
2119	A4	2157	A1	2205	A3	3103	A1	3124	A5	3140	A4	3161	B1	3177	A2	3195	A4
2120	A4	2158	A2	2206	A3	3104	A1	3125	A5	3141	A4	3162	A1	3178	A2	3196	A4
2121	A4	2160	A2	2207	A3	3105	B1	3126	A5	3142	A4	3163	A1	3179	A2	3197	A3

3198	A3	6158	A2	F101	B3
3201	B5	6159	A2	F102	B3
3202	B2	6160	A2	F103	B2
3203	A3	6200	B4	F104	B2
3204	B3	6201	B3	F105	B2
3205	A3	6202	A2	F106	B3
3206	A3	6203	B3	F107	A4
3207	A3	6204	B4	F108	A4
3208	A3	6205	A3	F109	A2
3209	A3	6206	A3	F110	A3
3210	A3	6210	B4	F111	A5
3211	A3	6211	B4	F112	B2
3212	A3	7100	A5	F113	A3
3213	A3	7102	A5	F114	B1
3214	A3	7103	A5	F115	B1
3215	A3	7104	A5	F116	B1
3216	A4	7105	A5	F117	B1
3217	A3	7106	A5	F118	B4
3218	A3	7107	A5	F119	B4
3219	A3	7109	A5	F120	B4
3220	A3	7110	A4	F121	A3
3222	A3	7111	A4	F122	A3
3223	A3	7113	A4		
3224	A3	7114	A4		
3225	B4	7115	A4		
3226	B4	7116	A4		
3231	B5	7150	A1		
3232	B5	7152	A1		
3233	B5	7153	A1		
3234	B5	7154	A1		
3235	A3	7155	A1		
3236	A3	7156	A1		
3237	A2	7157	A1		
3238	B4	7159	A2		
3239	B4	7160	A2		
4201	B5	7161	A2		
4202	B5	7163	A2		
6101	A5	7164	A2		
6102	A5	7167	A3		
6103	A5	7168	A3		
6104	A5	7200	B4		
6105	A5	7201	A3		
6106	A4	7202	A3		
6107	A4	7203	A3		
6108	A4	7204	A3		
6109	A5	7205	B4		
6110	A4	7206	B4		
6151	A1	7207	A3		
6152	A1	7208	A3		
6153	A2	7209	A3		
6154	A2	7210	A3		
6155	A2	7211	B2		
6156	A2	7212	B4		
6157	A1	F100	B3		



# AMPLIFIER UCD BOARD (BTL MASTER/SLAVE) - CIRCUIT DIAGRAM PART 1



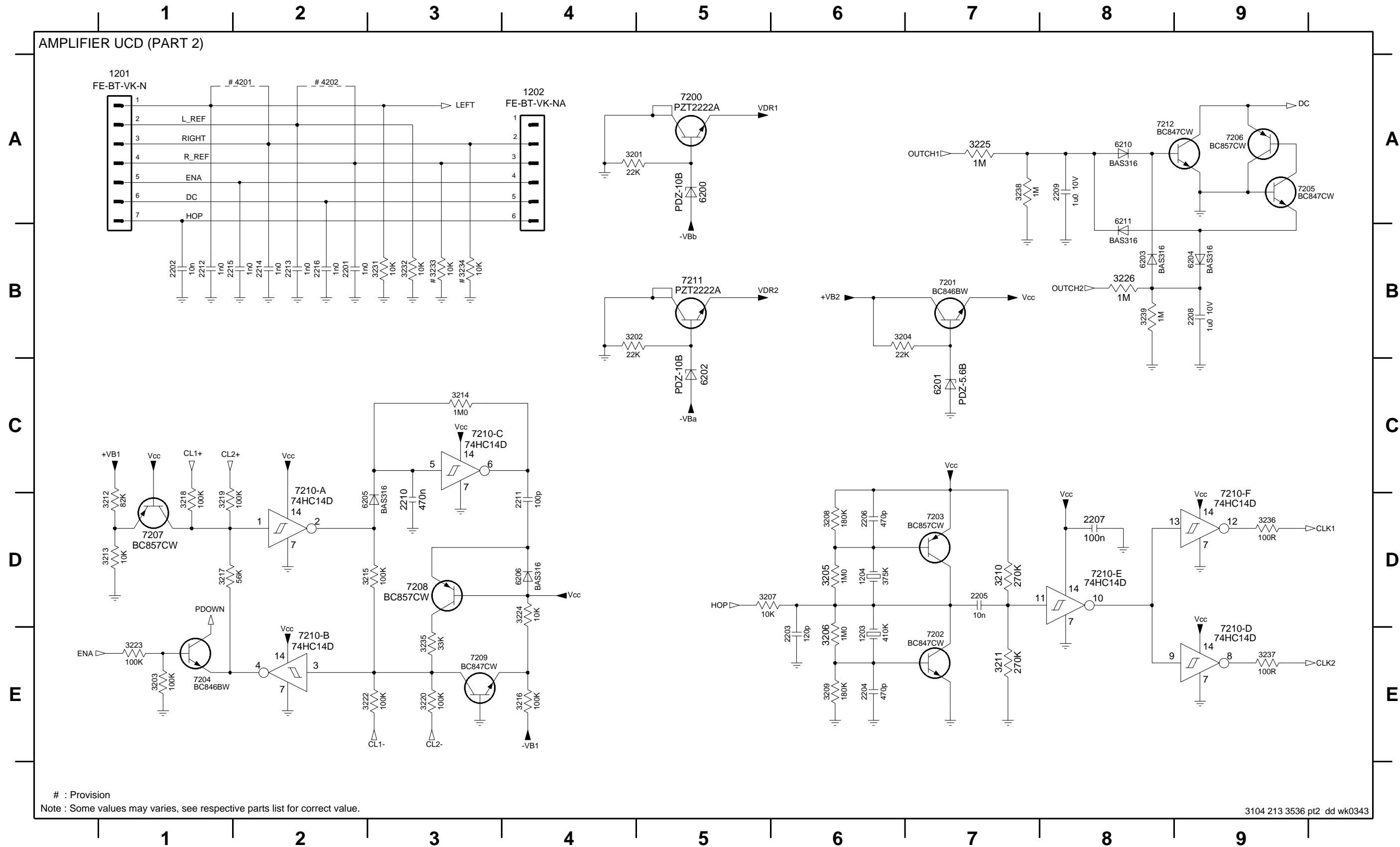
1100 C1	3187 F10
1105 F1	3188 J4
1110 D12	3190 D1
1115 D13	3192 G2
1120 D13	3193 D11
2100 B2	3194 J12
2101 E1	3195 A11
2102 E1	3196 E11
2107 B3	3197 F11
2108 B3	3198 J11
2109 C2	5100 A9
2110 C3	5102 E9
2111 C3	5105 C12
2112 A4	5151 F9
2113 E4	5152 J9
2114 A9	5155 G12
2115 A10	6101 D5
2116 A11	6102 D4
2117 A10	6103 C7
2118 C7	6104 C7
2119 C7	6105 C7
2120 B10	6106 B8
2121 D7	6107 B9
2122 C8	6108 C8
2123 E9	6109 D8
2124 E10	6110 D9
2125 D10	6151 I4
2126 E10	6152 H5
2127 D10	6153 G8
2128 C12	6154 G8
2129 C12	6155 G9
2150 G2	6156 H7
2151 G3	6157 H7
2152 G3	6158 H7
2153 H2	6159 I8
2154 H3	6160 H9
2155 H3	7100 C4
2156 F4	7101 B5
2157 J4	7102 A4
2158 H7	7103 D4
2159 G7	7104 D4
2160 G10	7105 C6
2161 I7	7106 D5
2162 H8	7107 D6
2163 H10	7108 B6
2164 F9	7109 D6
2165 F10	7110 A11
2166 F10	7111 B8
2167 F11	7112 B9
2168 J9	7113 B9
2169 I10	7114 C8
2170 J10	7115 D9
2171 J10	7116 D11
2172 H12	7117 C9
2173 H12	7150 F5
3100 B3	7151 F4
3101 B3	7152 I6
3102 B3	7153 I4
3103 G4	7154 I4
3104 G5	7155 I6
3105 G2	7156 H4
3106 H2	7157 H6
3112 B3	7158 G6
3113 B3	7159 I6
3114 C3	7160 G8
3115 C3	7161 G9
3116 C3	7162 F9
3117 C3	7163 H8
3118 C3	7164 I9
3119 A4	7165 H9
3120 A5	7167 I11
3121 B5	7168 F11
3122 C4	
3123 C4	
3124 E5	
3125 E6	
3126 E6	
3127 E6	
3128 A6	
3129 A6	
3130 A7	
3131 A10	
3132 A10	
3134 B7	
3135 B8	
3136 C9	
3137 B10	
3138 D7	
3139 D8	
3140 D9	
3141 E10	
3142 D10	
3144 C10	
3145 E4	
3150 G3	
3151 G3	
3152 G3	
3153 G3	
3154 G2	
3155 H3	
3156 H3	
3157 H3	
3158 H3	
3160 H2	
3161 H2	
3162 F4	
3163 F5	
3164 F6	
3165 F6	
3166 G5	
3167 J4	
3168 J5	
3169 J6	
3170 J6	
3171 J6	
3172 H4	
3173 G7	
3174 G8	
3175 G9	
3176 F7	
3177 F10	
3178 I7	
3179 H8	
3180 I9	
3181 H10	
3182 F10	
3183 C4	
3184 J10	
3185 J10	
3186 H4	

# : Provision  
 Note : Some values may varies, see respective parts list for correct value.



### AMPLIFIER UCD BOARD (BTL MASTER/SLAVE) - CIRCUIT DIAGRAM PART 2

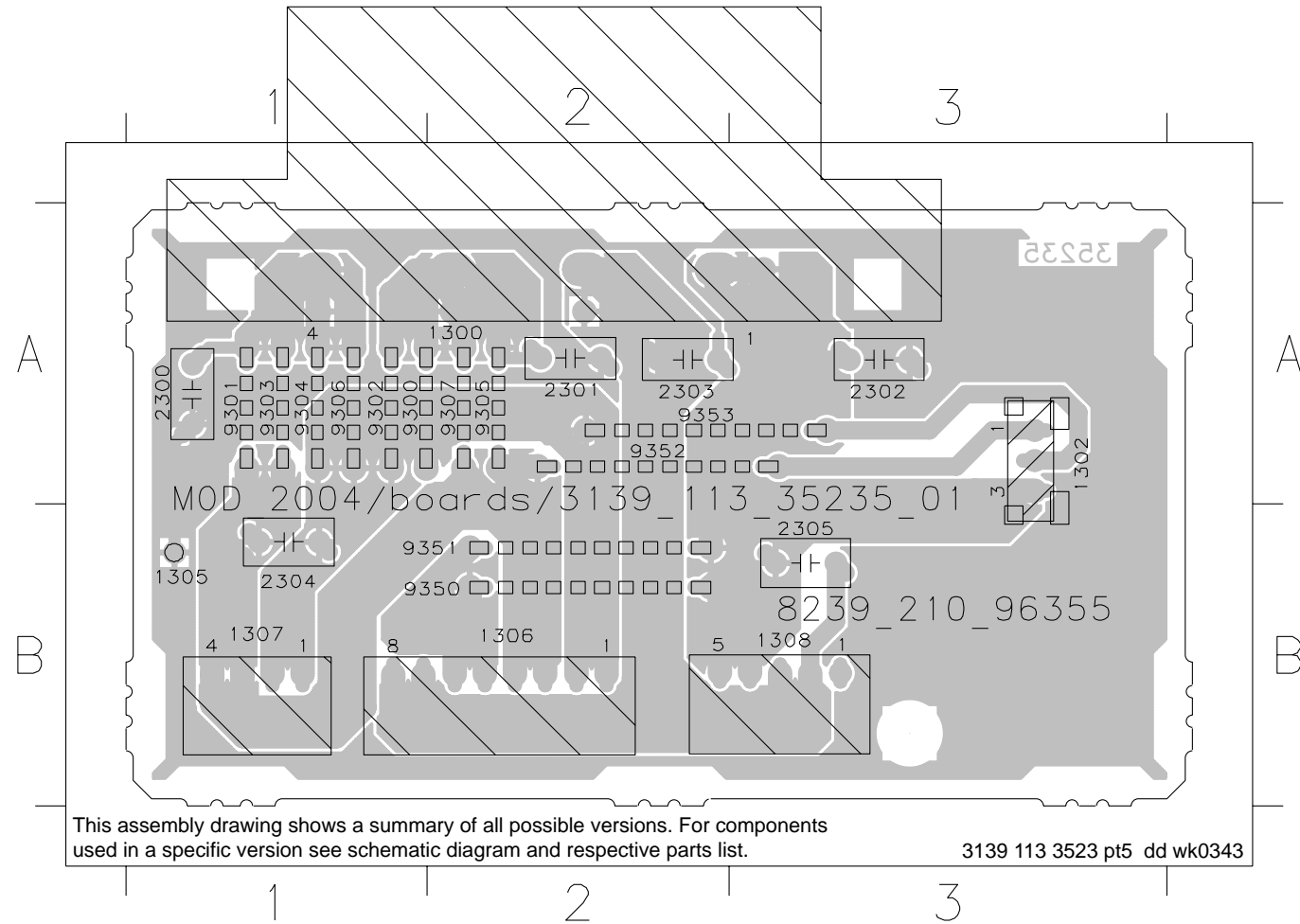
1201 A1	2201 B2	2205 D7	2209 A8	2213 B2	3201 A4	3205 D6	3209 E6	3213 D1	3217 D1	3222 E3	3226 B8	3234 B3	3238 A7	6200 A5	6204 B9	6211 B8	7203 D7	7207 D1	7210-B E2	7210-F D9
1202 A4	2202 B1	2206 D6	2210 D3	2214 B2	3202 B4	3206 E6	3210 D7	3214 C3	3218 D1	3223 E1	3231 B3	3235 E3	3239 B8	6201 C7	6205 D2	7200 A5	7204 E1	7208 D3	7210-C C3	7211 B5
1203 E6	2203 E6	2207 D8	2211 D4	2215 B1	3203 E1	3207 D5	3211 E7	3215 D3	3219 D1	3224 D4	3232 B3	3236 D9	4201 A2	6202 C5	6206 D4	7201 B7	7205 A9	7209 E3	7210-D E9	7212 A8
1204 D6	2204 E6	2208 B9	2212 B1	2216 B2	3204 B6	3208 D6	3212 D1	3216 E4	3220 E3	3225 A7	3233 B3	3237 E9	4202 A2	6203 B8	6210 A8	7202 E7	7206 A9	7210-A D2	7210-E D8	



# : Provision  
 Note : Some values may varies, see respective parts list for correct value.

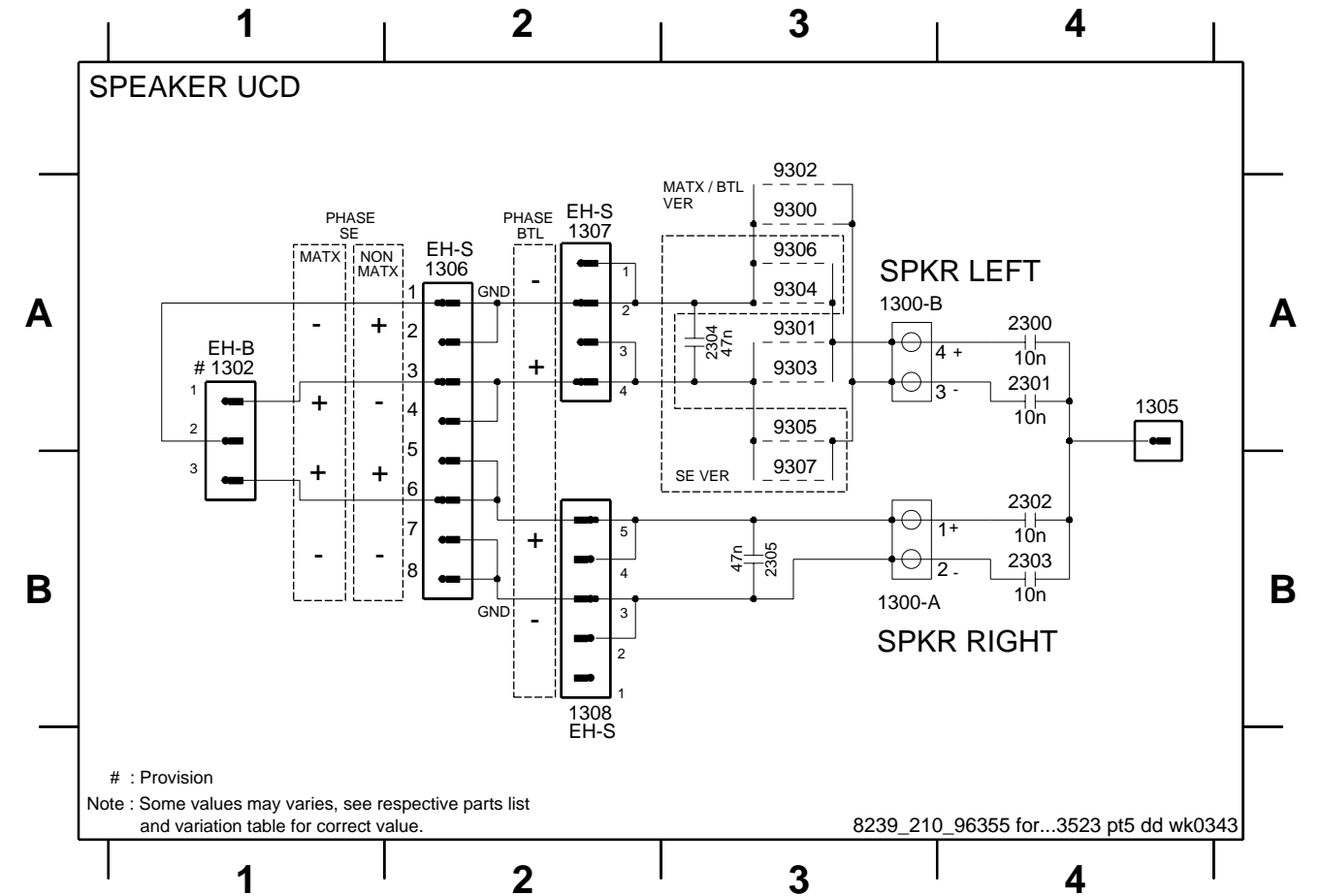
**SPEAKER UCD BOARD - COMPONENT LAYOUT**

1300 A2	1307 B1	2302 A3	9300 A1	9304 A1	9350 B2
1302 A3	1308 B3	2303 A2	9301 A1	9305 A2	9351 B2
1305 B1	2300 A1	2304 B1	9302 A1	9306 A1	9352 A2
1306 B2	2301 A2	2305 B3	9303 A1	9307 A2	9353 A2



**SPEAKER UCD BOARD - CIRCUIT DIAGRAM**

1300-A B3	1302 A1	1306 A2	1308 B2	2301 A4	2303 B4	2305 B3	9301 A3	9303 A3	9305 A3	9307 B3
1300-B A3	1305 A4	1307 A2	2300 A4	2302 B4	2304 A3	9300 A3	9302 A3	9304 A3	9306 A3	

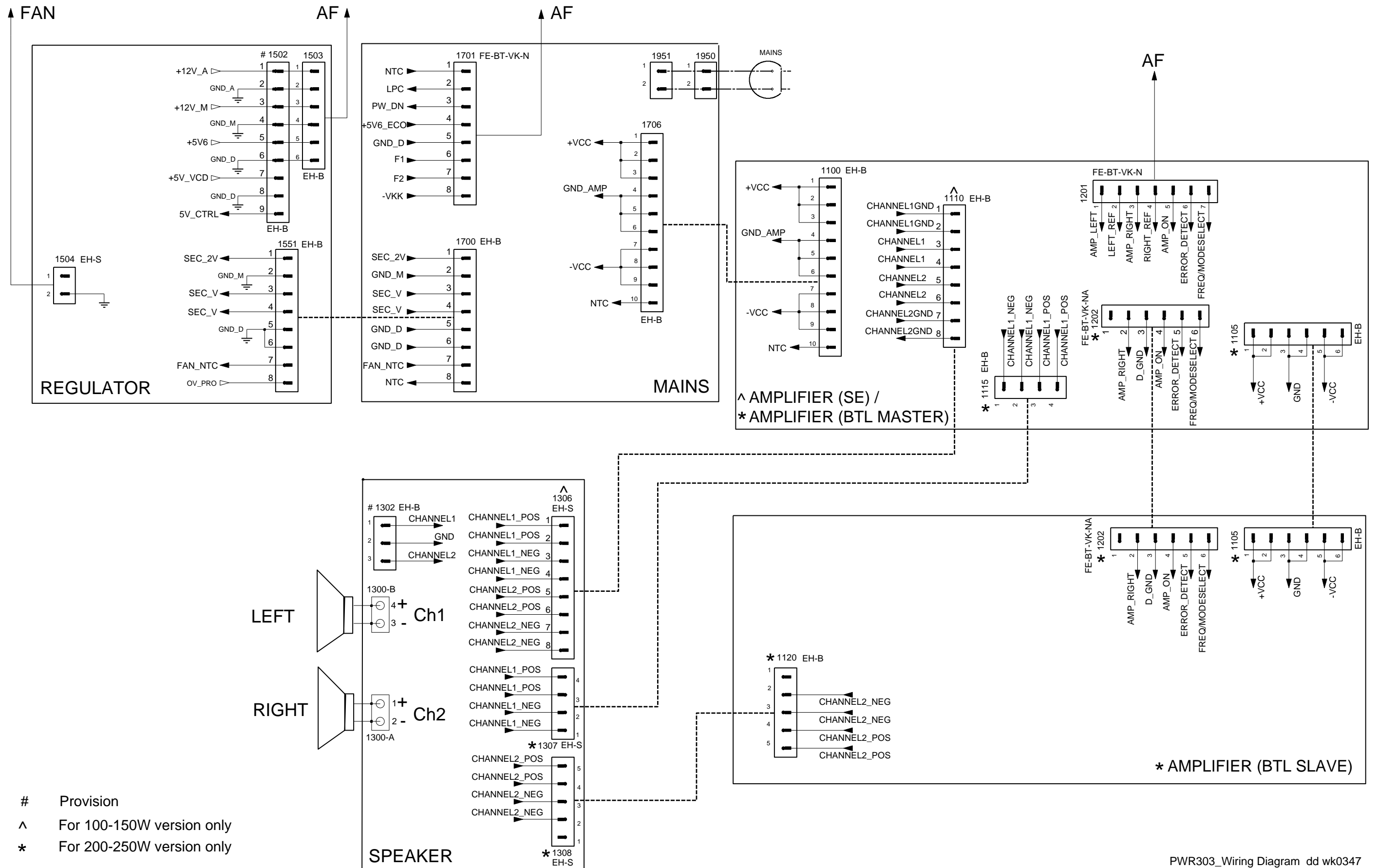


**SPEAKER UCD BOARD - VARIATION TABLE**

Item No.	SPEAKER UCD BOARD	
	100-150W (Non Matrix Version)	200-250W
1302	-	-
1306	X	-
1307 , 1308	-	X
2304 , 2305	-	X
9300 , 9301	-	X
9302 , 9303	-	X
9304 , 9305	X	-
9306 , 9307	X	-

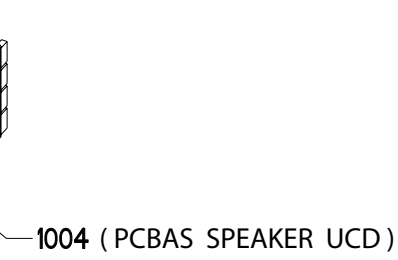
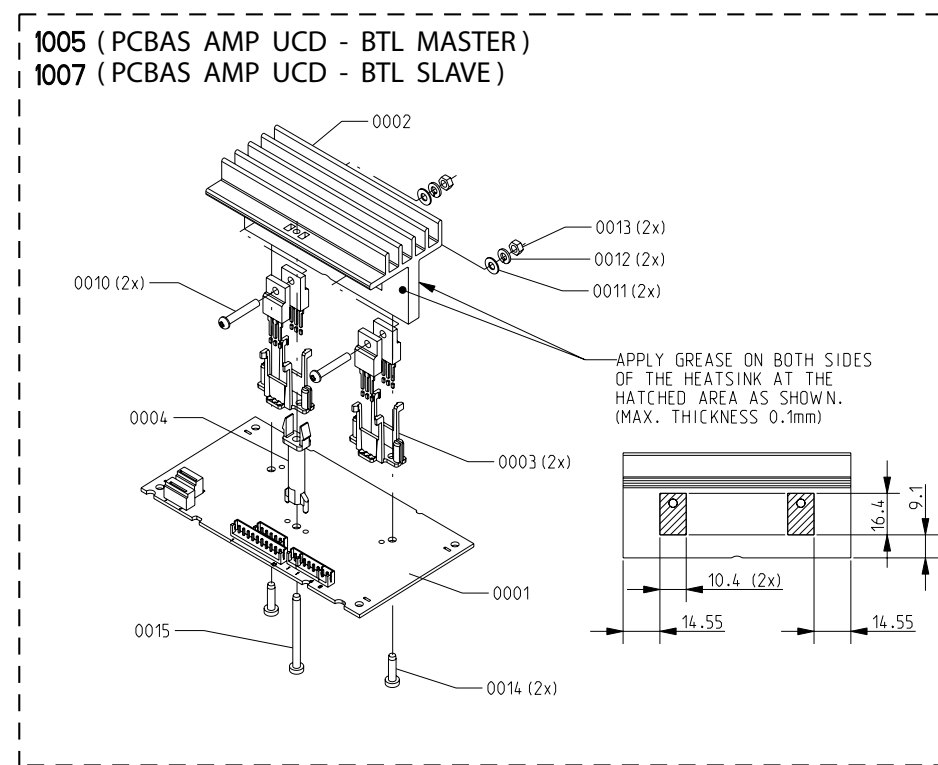
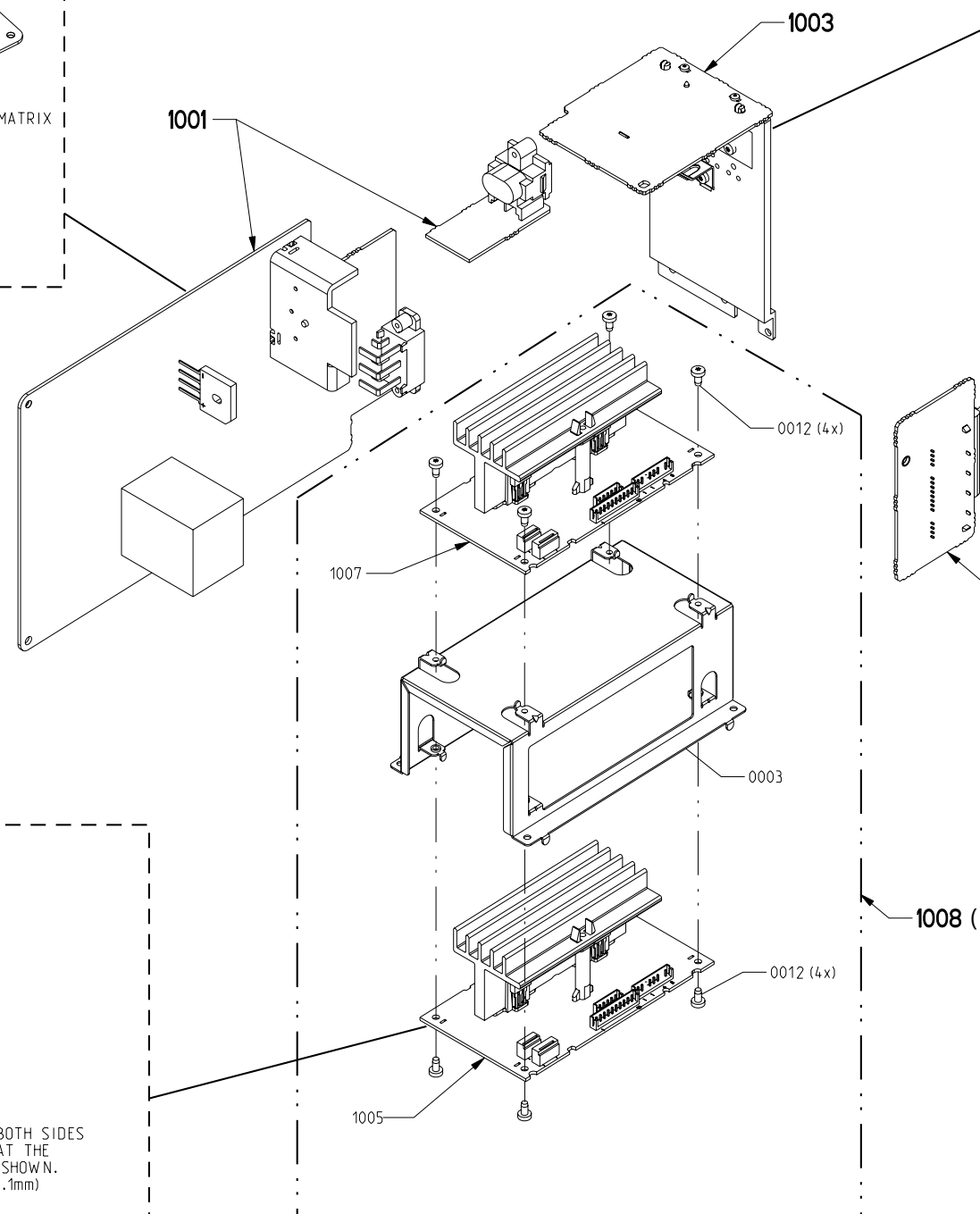
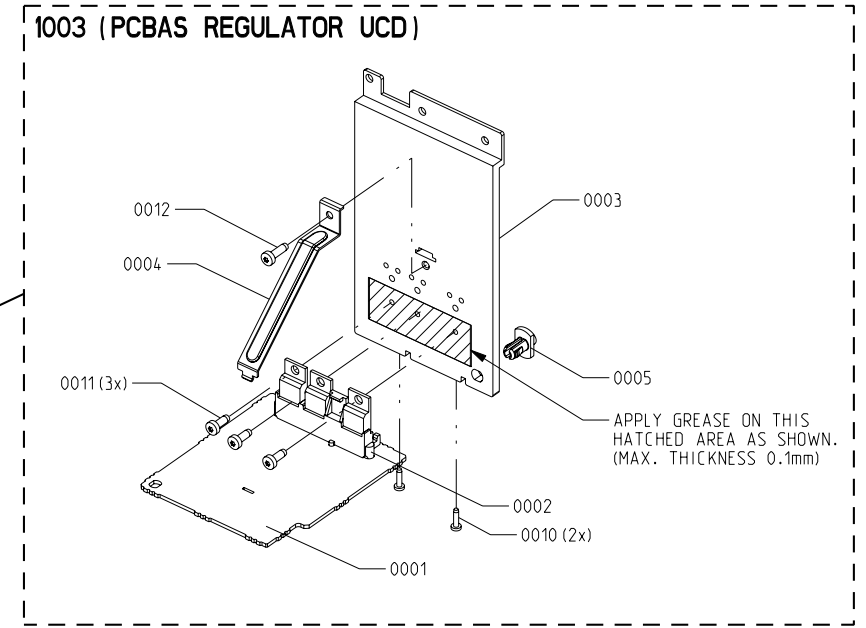
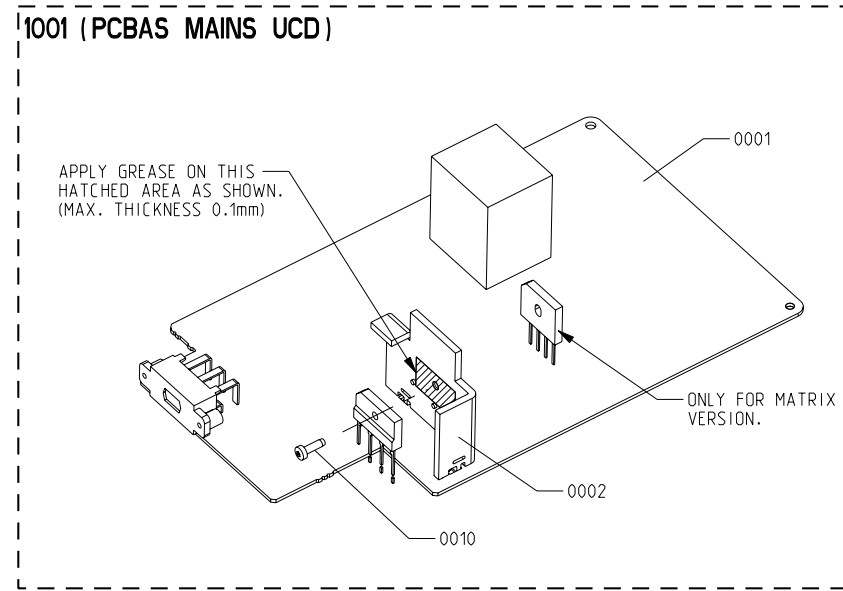
X - item in use.

# WIRING DIAGRAM



- # Provision
- ^ For 100-150W version only
- \* For 200-250W version only

EXPLODED VIEW



**1008 (ASSY UCD BTL)**

SCREW LISTS

ASSY UCD BTL  
0012 M3 x 6

PCBAS MAINS UCD  
0010 D3 x 10

PCBAS REGULATOR UCD  
0010 D2 x 8  
0011 D2.5 x 8  
0012 D3 x 10

PCBAS AMP UCD - BTL MASTER/SLAVE  
0010 M3 x 18  
0014 D3 x 12  
0015 D3 x 35

**ELECTRICAL PARTS LIST - MAINS UCD BOARD****MISCELLANEOUS**

1701	4822 265 11515	FLEX CONNECTOR 8P
1704	2422 086 02152	△ FUSE 5X20 T 10A 250V
1705	2422 086 02152	△ FUSE 5X20 T 10A 250V
1707	9965 000 07788	△ FUSE RAD LT 2A 250V
1708	9965 000 07788	△ FUSE RAD LT 2A 250V
1710	2422 090 01101	SOC FUSE V 1P F
1711	2422 090 01101	SOC FUSE V 1P F
1712	2422 090 01101	SOC FUSE V 1P F
1713	2422 090 01101	SOC FUSE V 1P F
1902	9965 000 07786	△ FUSE RAD LT 4A 250V /22
1902	2422 086 11115	△ FUSE RAD T 8A 250V /37
1903	9965 000 07789	△ VOLTAGE SELECTOR /21
1904	2422 086 11109	△ FUSE RAD T 6A3 250V/21
1905	2422 132 07519	△ RELAY 1P 12V 16A OZ-SS L
1907	9965 000 07786	△ FUSE RAD LT 4A 250V /21
1950	4822 265 31015	△ MAINS SOCKET /21/22
1951	2422 030 00328	△ MAINS SOCKET /37

**CAPACITORS**

2700	2020 561 90365	100nF +80/-20% 50V
2701	2020 561 90365	100nF +80/-20% 50V
2702	4822 124 41584	100uF 20% 10V
2703	4822 124 40207	100uF 20% 25V
2704	5322 121 42578	100nF 5% 250V
2705	5322 121 42578	100nF 5% 250V
2706	2022 020 00737	6800uF 20% 50V
2707	5322 121 42578	100nF 5% 250V
2708	2022 020 00737	6800uF 20% 50V
2709	5322 121 42578	100nF 5% 250V
2710	5322 121 42578	100nF 5% 250V
2711	2022 020 00782	6800uF 20% 35V
2712	2020 012 93745	10000uF 20% 16V
2713	4822 124 81151	22uF 50V
2714	4822 126 12785	47nF 50V
2715	2020 012 93741	100uF 20% 100V
2900	4822 121 43526	47nF 5% 250V
2902	2222 336 19106	△ 22nF 20% 275V
2905	4822 121 51387	10nF 20% 16V
2906	4822 121 51387	10nF 20% 16V
2907	4822 124 40255	100uF 20% 63V
2908	4822 121 10512	△ 220nF 20% 275V /22
2909	4822 126 13589	△ 470nF 20% 275V /21/37
2913	4822 126 12785	47nF 50V
2916	2020 561 90365	100nF +80/-20% 50V
2917	4822 126 11714	4,7nF 20%
2918	4822 126 14088	△ 2,2nF 20% 250V

**RESISTORS**

3700	4822 052 10101	△ 100R 5% 0,33W
3701	4822 052 10101	△ 100R 5% 0,33W
3702	4822 116 83884	47k 5% 0,5W
3703	4822 116 52243	1k5 5% 0,5W

3704	4822 116 52283	4k7 5% 0,5W
3705	4822 050 23303	33k 1% 0,6W
3706	4822 116 52219	330R 5% 0,5W
3707	4822 052 10479	△ 47R 5% 0,33W
3708	4822 116 52283	4k7 5% 0,5W
3709	4822 116 52269	3k3 5% 0,5W
3710	4822 116 52269	3k3 5% 0,5W
3711	4822 116 83872	220R 5% 0,5W
3900	4822 053 21106	△ 10M 5% 0,5W /37
3901	4822 050 21003	10k 1% 0,6W
3902	4822 050 24705	4M7 1% 0,6W
3903	4822 116 52219	330R 5% 0,5W
3904	4822 116 52234	100k 5% 0,5W
3906	4822 116 83883	470R 5% 0,5W
3909	4822 116 52272	330k 5% 0,5W
3912	4822 053 21106	△ 10M 5% 0,5W
3915	4822 116 83866	1M 5% 0,5W
3916	4822 116 52256	2k2 5% 0,5W
3917	4822 116 52234	100k 5% 0,5W

**COILS & FILTERS**

5903	4822 157 11628	△ FIL MAINS
5904	2422 549 45157	△ TRAFO STANDBY 3A1631N
5929	4822 157 53473	IND FXD 1000uH 10%
5930	4822 157 52333	IND FXD 100uH 5%
5931	4822 157 53473	IND FXD 1000uH 10%

**DIODES**

6701	4822 130 30621	1N4148
6702	4822 130 30621	1N4148
6703	4822 130 30621	1N4148
6704	4822 130 30621	1N4148
6705	4822 130 30621	1N4148
6706	4822 130 30621	1N4148
6707	4822 130 30621	1N4148
6708	4822 130 30621	1N4148
6709	4822 130 30621	1N4148
6710	4822 130 30621	1N4148
6711	4822 130 34173	BZX79-C5V6
6712	9322 197 92682	BRIDGE GBJ10D
6714	4822 130 30621	1N4148
6715	4822 130 34142	BZX79-C33
6716	4822 130 34382	BZX79-C8V2
6718	4822 130 31878	1N5392
6719	4822 130 31878	1N5392
6720	4822 130 31878	1N5392
6721	4822 130 31878	1N5392
6722	4822 130 31878	1N5392
6723	4822 130 31878	1N5392
6900	4822 130 31878	1N4003G
6901	4822 130 31878	1N4003G
6902	4822 130 30621	1N4148

**ELECTRICAL PARTS LIST - MAINS UCD BOARD**

6905	4822 130 31878	1N4003G
6906	4822 130 31878	1N4003G
6912	4822 130 34145	BZX79-C39
6913	4822 130 31878	1N4003G
6916	4822 130 30621	1N4148
6917	4822 130 31878	1N4003G

**TRANSISTORS & INTEGRATED CIRCUITS**

7700	4822 130 40981	BC337-25
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7701	4822 130 41327	BC327-40
7702	4822 130 41327	BC327-40
7900	4822 130 44568	BC557B
7901	4822 130 40959	BC547B
7902	4822 130 40855	BC337-40
7903	4822 130 44568	BC557B

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

**ELECTRICAL PARTS LIST - REGULATOR UCD BOARD****MISCELLANEOUS**

0002	3139 114 75361	HOLDER IC
0005	3139 114 71010	STOPPER HEATSINK

**CAPACITORS**

2500	4822 126 14585	100nF 10% 50V
2501	4822 124 81286	47uF 20% 16V
2502	4822 126 14585	100nF 10% 50V
2507	2222 580 15649	100nF 10% 50V
2508	4822 126 14585	100nF 10% 50V
2509	4822 124 81286	47uF 20% 16V
2510	4822 124 81286	47uF 20% 16V
2511	4822 124 41643	100uF 20% 16V
2512	4822 124 41643	100uF 20% 16V
2513	4822 124 80231	47uF 20% 16V

**RESISTORS**

3500	4822 051 30121	120R 5% 0,062W
3501	4822 051 30151	150R 5% 0,062W
3502	4822 051 30471	470R 5% 0,062W
3503	4822 051 30471	470R 5% 0,062W
3510	4822 051 30181	180R 5% 0,062W
3511	4822 051 30152	1k5 5% 0,062W
3512	4822 051 30479	47R 5% 0,062W
3513	4822 116 83872	220R 5% 0,5W

3514	4822 052 10568	△ 5R6 5% 0,33W
3515	4822 116 83883	470R 5% 0,5W
3516	4822 050 11002	1k 1% 0,4W
3517	4822 117 12063	NTC DC 5W 10k 5%
3519	4822 051 30682	6k8 5% 0,062W
3520	4822 051 30153	15k 5% 0,062W
3522	4822 051 30102	1k 5% 0,062W
3523	4822 051 30102	1k 5% 0,062W
3524	4822 117 13632	100k 1% 0,62W

**DIODES**

6501	4822 130 34174	BZX79-C4V7
6502	4822 130 11397	BAS316
6503	4822 130 11397	BAS316
6504	4822 130 11397	BAS316

**TRANSISTORS & INTEGRATED CIRCUITS**

7500	4822 209 81351	IC LM317P
7504	4822 209 81351	IC LM317P
7505	4822 130 41246	BC327-25
7506	5322 130 60159	BC847B

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

**ELECTRICAL PARTS LIST - SPEAKER UCD BOARD****MISCELLANEOUS**

1300	4822 267 31176	SOC CLICK 4P
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**CAPACITORS**

2300	4822 121 41857	10nF 5% 250V
2301	4822 121 41857	10nF 5% 250V
2302	4822 121 41857	10nF 5% 250V

2303	4822 121 41857	10nF 5% 250V
2304	4822 121 43526	47nF 5% 250V
2305	4822 121 43526	47nF 5% 250V

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

**ELECTRICAL PARTS LIST - ASSEMBLY UCD BTL**

8002 3139 110 36161 FFC FOIL 06P/100/06P AD

**ELECTRICAL PARTS LIST - AMPLIFIER UCD BOARD (BTL MASTER)****MISCELLANEOUS**

0003 3104 214 39321 TO-220 HOLDER  
 0004 3104 214 39331 SPACER  
 1201 4822 267 10953 FLEX CONNECTOR 7P  
 1202 4822 267 10731 FLEX CONNECTOR 6P  
 1203 2422 540 98578 RES CER 410kHz  
 1204 2422 540 98552 RES CER 375kHz

**CAPACITORS**

2100 5322 126 11583 10nF 10% 50V  
 2101 2222 580 15649 100nF 10% 50V  
 2102 2222 580 15649 100nF 10% 50V  
 2107 4822 126 13883 220pF 5% 50V  
 2108 4822 126 13193 4,7nF 10% 63V  
 2109 5322 126 11583 10nF 10% 50V  
 2110 4822 126 13883 220pF 5% 50V  
 2111 4822 126 13193 4,7nF 10% 63V  
 2112 2222 580 15649 100nF 10% 50V  
 2113 2222 580 15649 100nF 10% 50V  
 2114 3198 026 51020 1000uF 20% 50V  
 2115 2222 580 15649 100nF 10% 50V  
 2116 4822 126 13193 4,7nF 10% 63V  
 2117 4822 124 81151 22uF 50V  
 2118 4822 124 41643 100uF 20% 16V  
 2119 3198 017 44740 470nF 10V  
 2120 2020 557 90726 100pF 5% 100V  
 2121 3198 017 44740 470nF 10V  
 2122 3198 017 44740 470nF 10V  
 2123 3198 026 51020 1000uF 20% 50V  
 2124 4822 124 81151 22uF 50V  
 2125 2222 580 15649 100nF 10% 50V  
 2126 4822 126 13193 4,7nF 10% 63V  
 2127 2020 557 90726 100pF 5% 100V  
 2128 5322 121 42498 680nF 5% 63V  
 2129 2238 586 15635 8,2nF 10% 50V  
 2150 5322 126 11583 10nF 10% 50V  
 2151 4822 126 13883 220pF 5% 50V  
 2152 4822 126 13193 4,7nF 10% 63V  
 2153 5322 126 11583 10nF 10% 50V  
 2154 4822 126 13883 220pF 5% 50V  
 2155 4822 126 13193 4,7nF 10% 63V  
 2156 2222 580 15649 100nF 10% 50V  
 2157 2222 580 15649 100nF 10% 50V  
 2158 3198 017 44740 470nF 10V  
 2159 4822 124 41643 100uF 20% 16V  
 2160 2020 557 90726 100pF 5% 100V

2161 3198 017 44740 470nF 10V  
 2162 3198 017 44740 470nF 10V  
 2163 2020 557 90726 100pF 5% 100V  
 2164 3198 026 51020 1000uF 20% 50V  
 2165 2222 580 15649 100nF 10% 50V  
 2166 4822 124 81151 22uF 50V  
 2167 4822 126 13193 4,7nF 10% 63V  
 2168 3198 026 51020 1000uF 20% 50V  
 2169 2222 580 15649 100nF 10% 50V  
 2170 4822 124 81151 22uF 50V  
 2171 4822 126 13193 4,7nF 10% 63V  
 2172 5322 121 42498 680nF 5% 63V  
 2173 2238 586 15635 8,2nF 10% 50V  
 2201 5322 126 11578 1nF 10% 50V  
 2202 5322 126 11583 10nF 10% 50V  
 2203 5322 122 33861 120pF 10% 50V  
 2204 4822 126 13881 470pF 5% 50V  
 2205 5322 126 11583 10nF 10% 50V  
 2206 4822 126 13881 470pF 5% 50V  
 2207 2222 580 15649 100nF 10% 50V  
 2208 3198 017 41050 1uF 10V  
 2209 3198 017 41050 1uF 10V  
 2210 3198 017 44740 470nF 10V  
 2211 2020 552 94427 100pF 5% 50V  
 2212 5322 126 11578 1nF 10% 50V  
 2213 5322 126 11578 1nF 10% 50V  
 2214 5322 126 11578 1nF 10% 50V  
 2215 5322 126 11578 1nF 10% 50V  
 2216 5322 126 11578 1nF 10% 50V

**RESISTORS**

3100 4822 051 30123 12k 5% 0,062W  
 3101 4822 051 30223 22k 5% 0,062W  
 3102 4822 051 30222 2k2 5% 0,062W  
 3103 4822 051 30479 47R 5% 0,062W  
 3104 4822 051 30479 47R 5% 0,062W  
 3105 4822 051 30222 2k2 5% 0,062W  
 3112 4822 051 30222 2k2 5% 0,062W  
 3113 4822 051 30681 680R 5% 0,062W  
 3114 4822 051 30123 12k 5% 0,062W  
 3115 4822 051 30223 22k 5% 0,062W  
 3116 4822 051 30222 2k2 5% 0,062W  
 3117 4822 051 30681 680R 5% 0,062W  
 3118 4822 051 30222 2k2 5% 0,062W  
 3119 4822 051 30221 220R 5% 0,062W

**ELECTRICAL PARTS LIST - AMPLIFIER UCD BOARD (BTL MASTER)**

3120 4822 117 12925 47k 1% 0,063W  
 3121 4822 117 12925 47k 1% 0,063W  
 3122 4822 101 11382 220R 30% 1W  
 3123 4822 051 30681 680R 5% 0,062W  
 3124 4822 051 30561 560R 5% 0,062W  
 3125 4822 051 30681 680R 5% 0,062W  
 3126 4822 051 30109 10R 5% 0,062W  
 3127 2322 702 60395 RST SM 0603 3M9 5%  
 3128 4822 051 30109 10R 5% 0,062W  
 3129 2322 702 60565 RST SM 0603 5M6 5%  
 3130 4822 051 20333 33k 5% 0,1W  
 3131 2122 118 06384 RST SM 1218 R047 5%  
 3132 4822 051 30271 270R 5% 0,062W  
 3134 4822 051 30391 390R 5% 0,062W  
 3135 2322 702 60279 RST SM 0603 27R 5%  
 3136 4822 051 30102 1k 5% 0,062W  
 3137 4822 051 20129 12R 5% 0,1W  
 3138 4822 051 30391 390R 5% 0,062W  
 3139 2322 702 60279 RST SM 0603 27R 5%  
 3140 4822 051 30102 1k 5% 0,062W  
 3141 2122 118 06384 RST SM 1218 R047 5%  
 3142 4822 051 30271 270R 5% 0,062W  
 3144 4822 051 20129 12R 5% 0,1W  
 3145 2122 663 00025  $\Delta$  PTC SM 0805 40V 3k9 10%  
 3150 4822 051 30123 12k 5% 0,062W  
 3151 4822 051 30223 22k 5% 0,062W  
 3152 4822 051 30222 2k2 5% 0,062W  
 3153 4822 051 30681 680R 5% 0,062W  
 3155 4822 051 30123 12k 5% 0,062W  
 3156 4822 051 30223 22k 5% 0,062W  
 3157 4822 051 30222 2k2 5% 0,062W  
 3158 4822 051 30681 680R 5% 0,062W  
 3161 4822 051 30222 2k2 5% 0,062W  
 3162 4822 051 30221 220R 5% 0,062W  
 3163 4822 117 12925 47k 1% 0,063W  
 3164 4822 051 30109 10R 5% 0,062W  
 3165 2322 702 60565 RST SM 0603 5M6 5%  
 3166 4822 117 12925 47k 1% 0,063W  
 3167 4822 051 30681 680R 5% 0,062W  
 3168 4822 051 30561 560R 5% 0,062W  
 3169 4822 051 30681 680R 5% 0,062W  
 3170 4822 051 30109 10R 5% 0,062W  
 3171 2322 702 60395 RST SM 0603 3M9 5%  
 3173 4822 051 30391 390R 5% 0,062W  
 3174 2322 702 60279 RST SM 0603 27R 5%  
 3175 4822 051 30102 1k 5% 0,062W  
 3176 4822 051 20333 33k 5% 0,1W  
 3177 4822 051 20129 12R 5% 0,1W  
 3178 4822 051 30391 390R 5% 0,062W  
 3179 2322 702 60279 RST SM 0603 27R 5%  
 3180 4822 051 30102 1k 5% 0,062W  
 3181 4822 051 20129 12R 5% 0,1W

3182 2122 118 06384 RST SM 1218 R047 5%  
 3183 4822 051 30109 10R 5% 0,062W  
 3184 2122 118 06384 RST SM 1218 R047 5%  
 3185 4822 051 30271 270R 5% 0,062W  
 3187 4822 051 30271 270R 5% 0,062W  
 3188 2122 663 00025  $\Delta$  PTC SM 0805 40V 3k9 10%  
 3190 4822 117 12063  $\Delta$  NTC DC 5W 10k 5%  
 3193 4822 117 10834 47k 1% 0,1W  
 3194 4822 117 10834 47k 1% 0,1W  
 3195 2322 615 33472 NTC SM 0603 0W125 4k7 5%  
 3196 2322 615 33472 NTC SM 0603 0W125 4k7 5%  
 3197 2322 615 33472 NTC SM 0603 0W125 4k7 5%  
 3198 2322 615 33472 NTC SM 0603 0W125 4k7 5%  
 3201 4822 051 10223 22k 2% 0,25W  
 3202 4822 051 10223 22k 2% 0,25W  
 3203 4822 117 13632 100k 1% 0,62W  
 3204 4822 051 10223 22k 2% 0,25W  
 3205 4822 051 30105 1M 5% 0,062W  
 3206 4822 051 30105 1M 5% 0,062W  
 3207 4822 051 30103 10k 5% 0,062W  
 3208 2322 702 60184 RST SM 0603 180k 5%  
 3209 2322 702 60184 RST SM 0603 180k 5%  
 3210 4822 117 12889 270k 1% 0,063W  
 3211 4822 117 12889 270k 1% 0,063W  
 3212 4822 117 12864 82k 5% 0,6W  
 3213 4822 051 30103 10k 5% 0,062W  
 3214 4822 051 30105 1M 5% 0,062W  
 3215 4822 117 13632 100k 1% 0,62W  
 3216 4822 117 13632 100k 1% 0,62W  
 3217 4822 051 30563 56k 5% 0,062W  
 3218 4822 117 13632 100k 1% 0,62W  
 3219 4822 117 13632 100k 1% 0,62W  
 3220 4822 117 13632 100k 1% 0,62W  
 3222 4822 117 13632 100k 1% 0,62W  
 3223 4822 117 13632 100k 1% 0,62W  
 3224 4822 051 30103 10k 5% 0,062W  
 3225 4822 051 30105 1M 5% 0,062W  
 3226 4822 051 30105 1M 5% 0,062W  
 3231 4822 051 30103 10k 5% 0,062W  
 3232 4822 051 30103 10k 5% 0,062W  
 3235 4822 051 30333 33k 5% 0,062W  
 3236 4822 051 30101 100R 5% 0,062W  
 3237 4822 051 30101 100R 5% 0,062W  
 3238 4822 051 30105 1M 5% 0,062W  
 3239 4822 051 30105 1M 5% 0,062W

**COILS & FILTERS**

5100 4822 157 11411 IND FXD BEAD 100MHz 83R  
 5102 4822 157 11411 IND FXD BEAD 100MHz 83R  
 5105 3104 218 15671 IND FXD SC4684-145 PM1  
 5151 4822 157 11411 IND FXD BEAD 100MHz 83R  
 5152 4822 157 11411 IND FXD BEAD 100MHz 83R

**ELECTRICAL PARTS LIST - AMPLIFIER UCD BOARD (BTL MASTER)****COILS & FILTERS**

5155 3104 218 15671 IND FXD SC4684-145 PM1

**DIODES**

6101 4822 130 11528 1PS76SB10  
 6102 4822 130 11528 1PS76SB10  
 6103 9340 548 47115 PDZ3.3B  
 6104 9322 198 95685 DIO SIG SM 1SS370  
 6105 9322 198 95685 DIO SIG SM 1SS370  
 6106 4822 130 11528 1PS76SB10  
 6107 4822 130 11397 BAS316  
 6108 9340 548 61115 DIO REG SM PDZ12B  
 6109 4822 130 11528 1PS76SB10  
 6110 4822 130 11397 BAS316  
 6151 4822 130 11528 1PS76SB10  
 6152 4822 130 11528 1PS76SB10  
 6153 4822 130 11528 1PS76SB10  
 6154 9340 548 61115 DIO REG SM PDZ12B  
 6155 4822 130 11397 BAS316  
 6156 9340 548 47115 PDZ3.3B  
 6157 9322 198 95685 DIO SIG SM 1SS370  
 6158 9322 198 95685 DIO SIG SM 1SS370  
 6159 4822 130 11528 1PS76SB10  
 6160 4822 130 11397 BAS316  
 6200 4822 130 11551 PDZ10B  
 6201 3198 020 55680 DIO REG SM PDZ5.6B  
 6202 4822 130 11551 PDZ10B  
 6203 4822 130 11397 BAS316  
 6204 4822 130 11397 BAS316  
 6205 4822 130 11397 BAS316  
 6206 4822 130 11397 BAS316  
 6210 4822 130 11397 BAS316  
 6211 4822 130 11397 BAS316

**TRANSISTORS & INTEGRATED CIRCUITS**

7100 9340 218 20135 TRA SIG SM BC856BW  
 7101 4822 130 41691 TRA SIG BC556B  
 7102 9340 218 60115 TRA SIG SM BC857CW  
 7103 9340 217 80115 TRA SIG SM BC847CW  
 7104 9340 217 80115 TRA SIG SM BC847CW  
 7105 9340 218 20135 TRA SIG SM BC856BW  
 7106 9340 217 80115 TRA SIG SM BC847CW  
 7107 9340 217 80115 TRA SIG SM BC847CW  
 7108 4822 130 43233 TRA SIG 2SC2240  
 7109 9340 217 80115 TRA SIG SM BC847CW  
 7110 9340 218 20135 TRA SIG SM BC856BW  
 7111 9340 218 60115 TRA SIG SM BC857CW  
 7112 9322 173 29687 FET POW STP14NF12FP  
 7113 9322 198 96685 TRA SIG SM 2SA1954B  
 7114 9340 218 60115 TRA SIG SM BC857CW  
 7115 9322 198 96685 TRA SIG SM 2SA1954B  
 7116 9340 217 40135 TRA SIG SM BC846BW  
 7117 9322 173 29687 FET POW STP14NF12FP

7150 9340 218 60115 TRA SIG SM BC857CW  
 7151 4822 130 41691 TRA SIG BC556B  
 7152 9340 217 80115 TRA SIG SM BC847CW  
 7153 9340 217 80115 TRA SIG SM BC847CW  
 7154 9340 217 80115 TRA SIG SM BC847CW  
 7155 9340 217 80115 TRA SIG SM BC847CW  
 7156 9340 218 20135 TRA SIG SM BC856BW  
 7157 9340 218 20135 TRA SIG SM BC856BW  
 7158 4822 130 43233 TRA SIG 2SC2240  
 7159 9340 217 80115 TRA SIG SM BC847CW  
 7160 9340 218 60115 TRA SIG SM BC857CW  
 7161 9322 198 96685 TRA SIG SM 2SA1954B  
 7162 9322 173 29687 FET POW STP14NF12FP  
 7163 9340 218 60115 TRA SIG SM BC857CW  
 7164 9322 198 96685 TRA SIG SM 2SA1954B  
 7165 9322 173 29687 FET POW STP14NF12FP  
 7167 9340 217 40135 TRA SIG SM BC846BW  
 7168 9340 218 20135 TRA SIG SM BC856BW  
 7200 9339 753 30135 TRA POW SM PZT2222A  
 7201 9340 217 40135 TRA SIG SM BC846BW  
 7202 3198 010 42310 TRA SIG SM BC847BW  
 7203 3198 010 42320 TRA SIG SM BC857BW  
 7204 9340 217 40135 TRA SIG SM BC846BW  
 7205 9340 217 80115 TRA SIG SM BC847CW  
 7206 9340 218 60115 TRA SIG SM BC857CW  
 7207 9340 218 60115 TRA SIG SM BC857CW  
 7208 9340 218 60115 TRA SIG SM BC857CW  
 7209 9340 217 80115 TRA SIG SM BC847CW  
 7210 5322 209 11548 IC SM 74HC14D  
 7211 9339 753 30135 TRA POW SM PZT2222A  
 7212 9340 217 80115 TRA SIG SM BC847CW

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

**ELECTRICAL PARTS LIST - AMPLIFIER UCD BOARD (BTL SLAVE)****MISCELLANEOUS**

0003 3104 214 39321 TO-220 HOLDER  
 0004 3104 214 39331 SPACER  
 1202 4822 267 10731 FLEX CONNECTOR 6P  
 1203 2422 540 98578 RES CER 410kHz  
 1204 2422 540 98552 RES CER 375kHz

**CAPACITORS**

2100 5322 126 11583 10nF 10% 50V  
 2101 2222 580 15649 100nF 10% 50V  
 2102 2222 580 15649 100nF 10% 50V  
 2107 4822 126 13883 220pF 5% 50V  
 2108 4822 126 13193 4,7nF 10% 63V  
 2109 5322 126 11583 10nF 10% 50V  
 2110 4822 126 13883 220pF 5% 50V  
 2111 4822 126 13193 4,7nF 10% 63V  
 2112 2222 580 15649 100nF 10% 50V  
 2113 2222 580 15649 100nF 10% 50V  
 2114 3198 026 51020 1000uF 20% 50V  
 2115 2222 580 15649 100nF 10% 50V  
 2116 4822 126 13193 4,7nF 10% 63V  
 2117 4822 124 81151 22uF 50V  
 2118 4822 124 41643 100uF 20% 16V  
 2119 3198 017 44740 470nF 10V  
 2120 2020 557 90726 100pF 5% 100V  
 2121 3198 017 44740 470nF 10V  
 2122 3198 017 44740 470nF 10V  
 2123 3198 026 51020 1000uF 20% 50V  
 2124 4822 124 81151 22uF 50V  
 2125 2222 580 15649 100nF 10% 50V  
 2126 4822 126 13193 4,7nF 10% 63V  
 2127 2020 557 90726 100pF 5% 100V  
 2128 5322 121 42498 680nF 5% 63V  
 2129 2238 586 15635 8,2nF 10% 50V  
 2150 5322 126 11583 10nF 10% 50V  
 2151 4822 126 13883 220pF 5% 50V  
 2152 4822 126 13193 4,7nF 10% 63V  
 2153 5322 126 11583 10nF 10% 50V  
 2154 4822 126 13883 220pF 5% 50V  
 2155 4822 126 13193 4,7nF 10% 63V  
 2156 2222 580 15649 100nF 10% 50V  
 2157 2222 580 15649 100nF 10% 50V  
 2158 3198 017 44740 470nF 10V  
 2159 4822 124 41643 100uF 20% 16V  
 2160 2020 557 90726 100pF 5% 100V  
 2161 3198 017 44740 470nF 10V  
 2162 3198 017 44740 470nF 10V  
 2163 2020 557 90726 100pF 5% 100V  
 2164 3198 026 51020 1000uF 20% 50V  
 2165 2222 580 15649 100nF 10% 50V  
 2166 4822 124 81151 22uF 50V  
 2167 4822 126 13193 4,7nF 10% 63V  
 2168 3198 026 51020 1000uF 20% 50V

2169 2222 580 15649 100nF 10% 50V  
 2170 4822 124 81151 22uF 50V  
 2171 4822 126 13193 4,7nF 10% 63V  
 2172 5322 121 42498 680nF 5% 63V  
 2173 2238 586 15635 8,2nF 10% 50V  
 2201 5322 126 11578 1nF 10% 50V  
 2202 5322 126 11583 10nF 10% 50V  
 2203 5322 122 33861 120pF 10% 50V  
 2204 4822 126 13881 470pF 5% 50V  
 2205 5322 126 11583 10nF 10% 50V  
 2206 4822 126 13881 470pF 5% 50V  
 2207 2222 580 15649 100nF 10% 50V  
 2208 3198 017 41050 1uF 10V  
 2209 3198 017 41050 1uF 10V  
 2210 3198 017 44740 470nF 10V  
 2211 2020 552 94427 100pF 5% 50V  
 2212 5322 126 11578 1nF 10% 50V  
 2213 5322 126 11578 1nF 10% 50V  
 2214 5322 126 11578 1nF 10% 50V  
 2215 5322 126 11578 1nF 10% 50V  
 2216 5322 126 11578 1nF 10% 50V

**RESISTORS**

3100 4822 051 30123 12k 5% 0,062W  
 3101 4822 051 30223 22k 5% 0,062W  
 3102 4822 051 30222 2k2 5% 0,062W  
 3103 4822 051 30479 47R 5% 0,062W  
 3104 4822 051 30479 47R 5% 0,062W  
 3105 4822 051 30222 2k2 5% 0,062W  
 3112 4822 051 30222 2k2 5% 0,062W  
 3113 4822 051 30681 680R 5% 0,062W  
 3114 4822 051 30123 12k 5% 0,062W  
 3115 4822 051 30223 22k 5% 0,062W  
 3116 4822 051 30222 2k2 5% 0,062W  
 3117 4822 051 30681 680R 5% 0,062W  
 3118 4822 051 30222 2k2 5% 0,062W  
 3119 4822 051 30221 220R 5% 0,062W  
 3120 4822 117 12925 47k 1% 0,063W  
 3121 4822 117 12925 47k 1% 0,063W  
 3122 4822 101 11382 220R 30% 1W  
 3123 4822 051 30681 680R 5% 0,062W  
 3124 4822 051 30561 560R 5% 0,062W  
 3125 4822 051 30681 680R 5% 0,062W  
 3126 4822 051 30109 10R 5% 0,062W  
 3127 2322 702 60395 RST SM 0603 3M9 5%  
 3128 4822 051 30109 10R 5% 0,062W  
 3129 2322 702 60565 RST SM 0603 5M6 5%  
 3130 4822 051 20333 33k 5% 0,1W  
 3131 2122 118 06384 RST SM 1218 R047 5%  
 3132 4822 051 30271 270R 5% 0,062W  
 3134 4822 051 30391 390R 5% 0,062W  
 3135 2322 702 60279 RST SM 0603 27R 5%

**ELECTRICAL PARTS LIST - AMPLIFIER UCD BOARD (BTL SLAVE)****RESISTORS**

3136	4822 051 30102	1k 5% 0,062W	3204	4822 051 10223	22k 2% 0,25W
3137	4822 051 20129	12R 5% 0,1W	3205	4822 051 30105	1M 5% 0,062W
3138	4822 051 30391	390R 5% 0,062W	3206	4822 051 30105	1M 5% 0,062W
3139	2322 702 60279	RST SM 0603 27R 5%	3207	4822 051 30103	10k 5% 0,062W
3140	4822 051 30102	1k 5% 0,062W	3208	2322 702 60184	RST SM 0603 180k 5%
3141	2122 118 06384	RST SM 1218 R047 5%	3209	2322 702 60184	RST SM 0603 180k 5%
3142	4822 051 30271	270R 5% 0,062W	3210	4822 117 12889	270k 1% 0,063W
3144	4822 051 20129	12R 5% 0,1W	3211	4822 117 12889	270k 1% 0,063W
3145	2122 663 00025	△ PTC SM 0805 40V 3k9 10%	3212	4822 117 12864	82k 5% 0,6W
3150	4822 051 30123	12k 5% 0,062W	3213	4822 051 30103	10k 5% 0,062W
3151	4822 051 30223	22k 5% 0,062W	3214	4822 051 30105	1M 5% 0,062W
3152	4822 051 30222	2k2 5% 0,062W	3215	4822 117 13632	100k 1% 0,62W
3153	4822 051 30681	680R 5% 0,062W	3216	4822 117 13632	100k 1% 0,62W
3155	4822 051 30123	12k 5% 0,062W	3217	4822 051 30563	56k 5% 0,062W
3156	4822 051 30223	22k 5% 0,062W	3218	4822 117 13632	100k 1% 0,62W
3157	4822 051 30222	2k2 5% 0,062W	3219	4822 117 13632	100k 1% 0,62W
3158	4822 051 30681	680R 5% 0,062W	3220	4822 117 13632	100k 1% 0,62W
3161	4822 051 30222	2k2 5% 0,062W	3222	4822 117 13632	100k 1% 0,62W
3162	4822 051 30221	220R 5% 0,062W	3223	4822 117 13632	100k 1% 0,62W
3163	4822 117 12925	47k 1% 0,063W	3224	4822 051 30103	10k 5% 0,062W
3164	4822 051 30109	10R 5% 0,062W	3225	4822 051 30105	1M 5% 0,062W
3165	2322 702 60565	RST SM 0603 5M6 5%	3226	4822 051 30105	1M 5% 0,062W
3166	4822 117 12925	47k 1% 0,063W	3231	4822 051 30103	10k 5% 0,062W
3167	4822 051 30681	680R 5% 0,062W	3232	4822 051 30103	10k 5% 0,062W
3168	4822 051 30561	560R 5% 0,062W	3235	4822 051 30333	33k 5% 0,062W
3169	4822 051 30681	680R 5% 0,062W	3236	4822 051 30101	100R 5% 0,062W
3170	4822 051 30109	10R 5% 0,062W	3237	4822 051 30101	100R 5% 0,062W
3171	2322 702 60395	RST SM 0603 3M9 5%	3238	4822 051 30105	1M 5% 0,062W
3173	4822 051 30391	390R 5% 0,062W	3239	4822 051 30105	1M 5% 0,062W
3174	2322 702 60279	RST SM 0603 27R 5%	4201	4822 051 30008	0R JUMPER 0603
3175	4822 051 30102	1k 5% 0,062W	4202	4822 051 30008	0R JUMPER 0603
3176	4822 051 20333	33k 5% 0,1W			
3177	4822 051 20129	12R 5% 0,1W			
3178	4822 051 30391	390R 5% 0,062W			
3179	2322 702 60279	RST SM 0603 27R 5%			
3180	4822 051 30102	1k 5% 0,062W			
3181	4822 051 20129	12R 5% 0,1W			
3182	2122 118 06384	RST SM 1218 R047 5%			
3183	4822 051 30109	10R 5% 0,062W			
3184	2122 118 06384	RST SM 1218 R047 5%			
3185	4822 051 30271	270R 5% 0,062W			
3187	4822 051 30271	270R 5% 0,062W			
3188	2122 663 00025	△ PTC SM 0805 40V 3k9 10%			
3193	4822 117 10834	47k 1% 0,1W			
3194	4822 117 10834	47k 1% 0,1W			
3195	2322 615 33472	NTC SM 0603 0W125 4k7 5%			
3196	2322 615 33472	NTC SM 0603 0W125 4k7 5%			
3197	2322 615 33472	NTC SM 0603 0W125 4k7 5%			
3198	2322 615 33472	NTC SM 0603 0W125 4k7 5%			
3201	4822 051 10223	22k 2% 0,25W			
3202	4822 051 10223	22k 2% 0,25W			
3203	4822 117 13632	100k 1% 0,62W			

**COILS & FILTERS**

5100	4822 157 11411	IND FXD BEAD 100MHz 83R
5102	4822 157 11411	IND FXD BEAD 100MHz 83R
5105	3104 218 15671	IND FXD SC4684-145 PM1
5151	4822 157 11411	IND FXD BEAD 100MHz 83R
5152	4822 157 11411	IND FXD BEAD 100MHz 83R
5155	3104 218 15671	IND FXD SC4684-145 PM1

**DIODES**

6101	4822 130 11528	1PS76SB10
6102	4822 130 11528	1PS76SB10
6103	9340 548 47115	PDZ3.3B
6104	9322 198 95685	DIO SIG SM 1SS370
6105	9322 198 95685	DIO SIG SM 1SS370
6106	4822 130 11528	1PS76SB10
6107	4822 130 11397	BAS316
6108	9340 548 61115	DIO REG SM PDZ12B
6109	4822 130 11528	1PS76SB10
6110	4822 130 11397	BAS316
6151	4822 130 11528	1PS76SB10

**ELECTRICAL PARTS LIST - AMPLIFIER UCD BOARD (BTL SLAVE)**

6152	4822 130 11528	1PS76SB10	7164	9322 198 96685	TRA SIG SM 2SA1954B
6153	4822 130 11528	1PS76SB10	7165	9322 173 29687	FET POW STP14NF12FP
6154	9340 548 61115	DIO REG SM PDZ12B	7167	9340 217 40135	TRA SIG SM BC846BW
6155	4822 130 11397	BAS316	7168	9340 218 20135	TRA SIG SM BC856BW
6156	9340 548 47115	PDZ3.3B	7200	9339 753 30135	TRA POW SM PZT2222A
6157	9322 198 95685	DIO SIG SM 1SS370	7201	9340 217 40135	TRA SIG SM BC846BW
6158	9322 198 95685	DIO SIG SM 1SS370	7202	3198 010 42310	TRA SIG SM BC847BW
6159	4822 130 11528	1PS76SB10	7203	3198 010 42320	TRA SIG SM BC857BW
6160	4822 130 11397	BAS316	7204	9340 217 40135	TRA SIG SM BC846BW
6200	4822 130 11551	PDZ10B	7205	9340 217 80115	TRA SIG SM BC847CW
6201	3198 020 55680	DIO REG SM PDZ5.6B	7206	9340 218 60115	TRA SIG SM BC857CW
6202	4822 130 11551	PDZ10B	7207	9340 218 60115	TRA SIG SM BC857CW
6203	4822 130 11397	BAS316	7208	9340 218 60115	TRA SIG SM BC857CW
6204	4822 130 11397	BAS316	7209	9340 217 80115	TRA SIG SM BC847CW
6205	4822 130 11397	BAS316	7210	5322 209 11548	IC SM 74HC14D
6206	4822 130 11397	BAS316	7211	9339 753 30135	TRA POW SM PZT2222A
6210	4822 130 11397	BAS316	7212	9340 217 80115	TRA SIG SM BC847CW
6211	4822 130 11397	BAS316			

**TRANSISTORS & INTEGRATED CIRCUITS**

7100	9340 218 20135	TRA SIG SM BC856BW
7101	4822 130 41691	TRA SIG BC556B
7102	9340 218 60115	TRA SIG SM BC857CW
7103	9340 217 80115	TRA SIG SM BC847CW
7104	9340 217 80115	TRA SIG SM BC847CW
7105	9340 218 20135	TRA SIG SM BC856BW
7106	9340 217 80115	TRA SIG SM BC847CW
7107	9340 217 80115	TRA SIG SM BC847CW
7108	4822 130 43233	TRA SIG 2SC2240
7109	9340 217 80115	TRA SIG SM BC847CW
7110	9340 218 20135	TRA SIG SM BC856BW
7111	9340 218 60115	TRA SIG SM BC857CW
7112	9322 173 29687	FET POW STP14NF12FP
7113	9322 198 96685	TRA SIG SM 2SA1954B
7114	9340 218 60115	TRA SIG SM BC857CW
7115	9322 198 96685	TRA SIG SM 2SA1954B
7116	9340 217 40135	TRA SIG SM BC846BW
7117	9322 173 29687	FET POW STP14NF12FP
7150	9340 218 60115	TRA SIG SM BC857CW
7151	4822 130 41691	TRA SIG BC556B
7152	9340 217 80115	TRA SIG SM BC847CW
7153	9340 217 80115	TRA SIG SM BC847CW
7154	9340 217 80115	TRA SIG SM BC847CW
7155	9340 217 80115	TRA SIG SM BC847CW
7156	9340 218 20135	TRA SIG SM BC856BW
7157	9340 218 20135	TRA SIG SM BC856BW
7158	4822 130 43233	TRA SIG 2SC2240
7159	9340 217 80115	TRA SIG SM BC847CW
7160	9340 218 60115	TRA SIG SM BC857CW
7161	9322 198 96685	TRA SIG SM 2SA1954B
7162	9322 173 29687	FET POW STP14NF12FP
7163	9340 218 60115	TRA SIG SM BC857CW

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



**BRIEF INTRODUCTION OF THE AF12 BOARD**


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# AF12 BOARD

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## TABLE OF CONTENTS

Brief Introduction of the AF12 Board .....	9-1
AF12 Board - Component Layout .....	9-2
AF12 Board - Component & Chip Layout (Mapping) .....	9-3
AF12 Board - Chip Layout .....	9-4
AF12 Board - Circuit Diagram (Part 1) .....	9-5
AF12 Board - Circuit Diagram (Part 2) .....	9-6
AF12 Board - Circuit Diagram (Part 3) .....	9-7
Video Out Cinch part - Layout & Circuit diagram .....	9-8
Electrical parts list.....	9-8

The AF12 Board consists of the following features :

a. TDA7468D IC

TDA7468D IC (7501) which includes functions such as source selection, loudness control, dynamic bass control, treble control, volume control and muting function. Sound features such as ALC, DBB, DSC and IS are controllable via I<sup>2</sup>C Bus from the microprocessor.

The TDA7468D IC caters for 4 input sources namely TUNER, PC LINK, CD and AUX. It also has a Mic mix input. In our application, software will switch the input source to previous source MUTE during STANDBY mode and some other occasions where noise from other input sources is undesirable.

Note that the input to the TDA7468D IC must be ac coupled to prevent 'pop' noise. Input networks are included to provide appropriate attenuation for various sources.

b. SIMPLE MIC MIXING

The AF12 Board has provisions which can be configured to cater for one of the following:

MM : which caters for Mic mixing with additional Mic amplifier board.  
 NM : non Mic mixing.

c. LINE OUT

Line out cinch socket for connection to external amplifier.

d. SUB-WOOFER OUT

Sub-woofer out cinch socket for connection to active sub-woofer speaker.

e. INCREDIBLE SURROUND

Incredible surround effect using transistor circuit to create phase shifting and spatial effect.

f. HEADPHONE AMPLIFIER

Headphone amplifier to drive 32 ohm to 1kohm headphone.

g. CD STANDBY CONTROL

CD Standby Control circuit which switches on the supply to CD servo control IC, digital out buffer IC, HF circuit and the laser light pen in CD mode only.

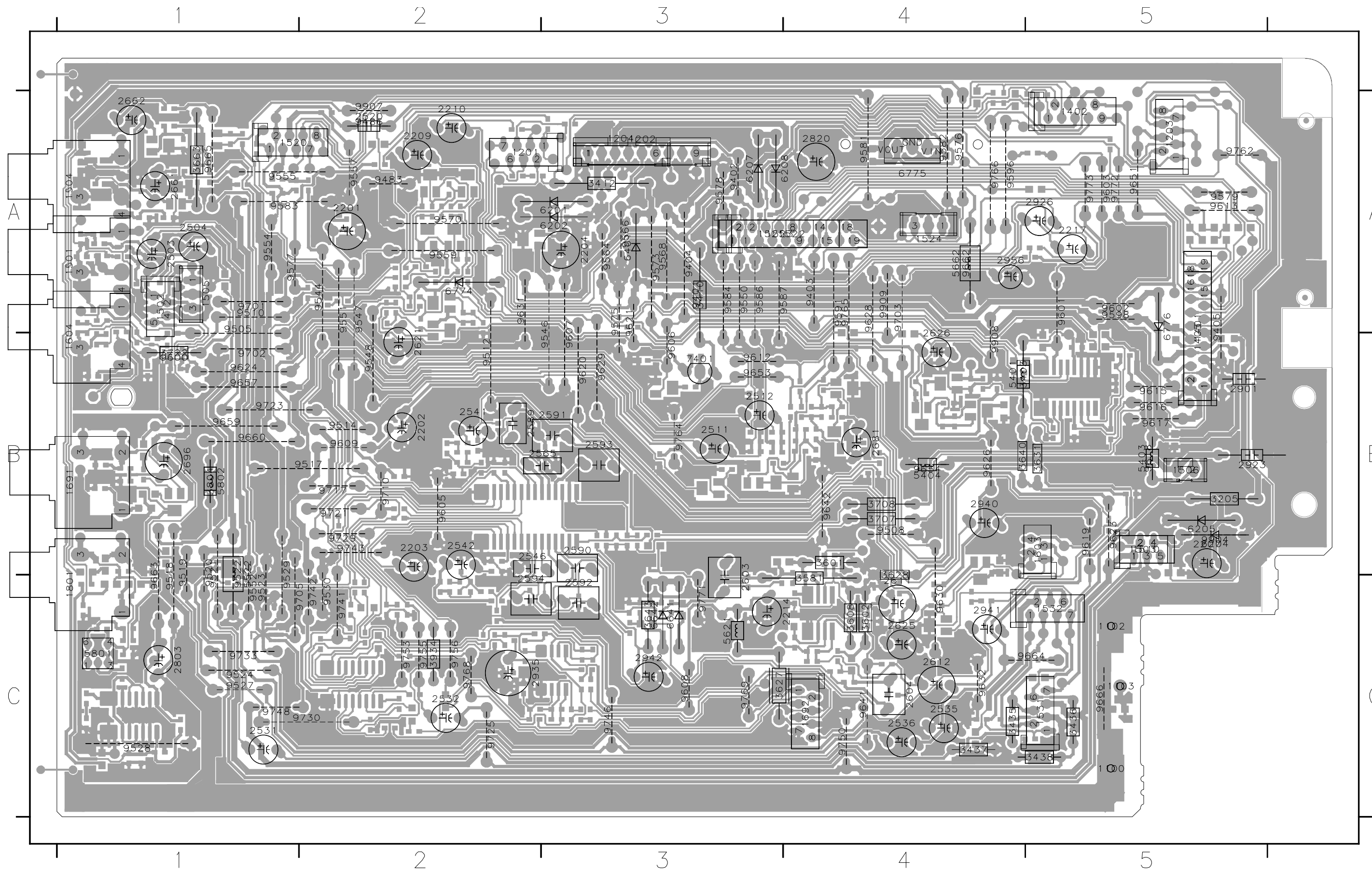
h. ATTENUATION NETWORK

Attenuation network is provided at the output of the AF12 Board for interfacing with power board of different output power.

i. CD DIGITAL OUT

CD Digital out cinch socket for connection to external digital audio decoders.

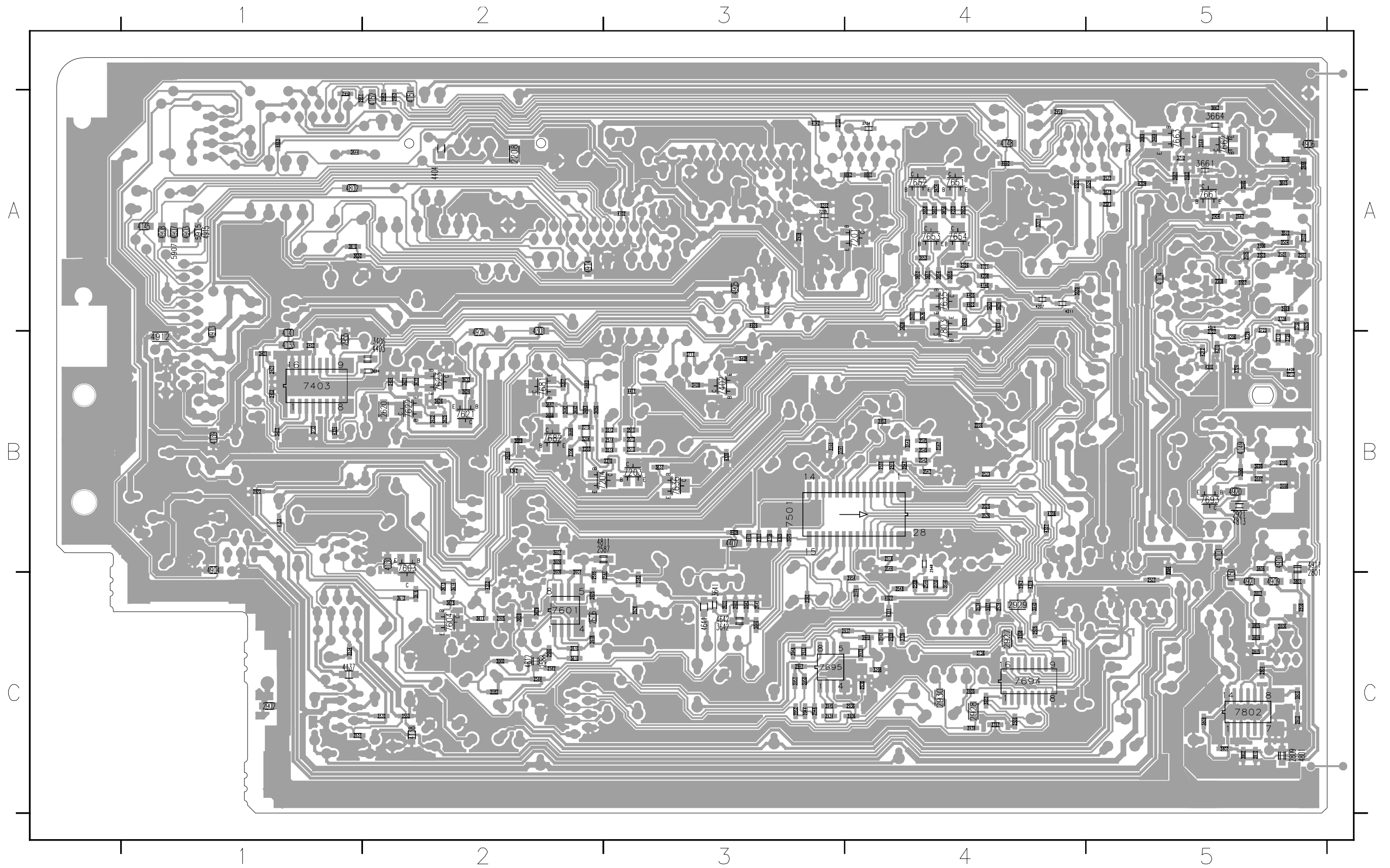
# AF12 BOARD - COMPONENT LAYOUT



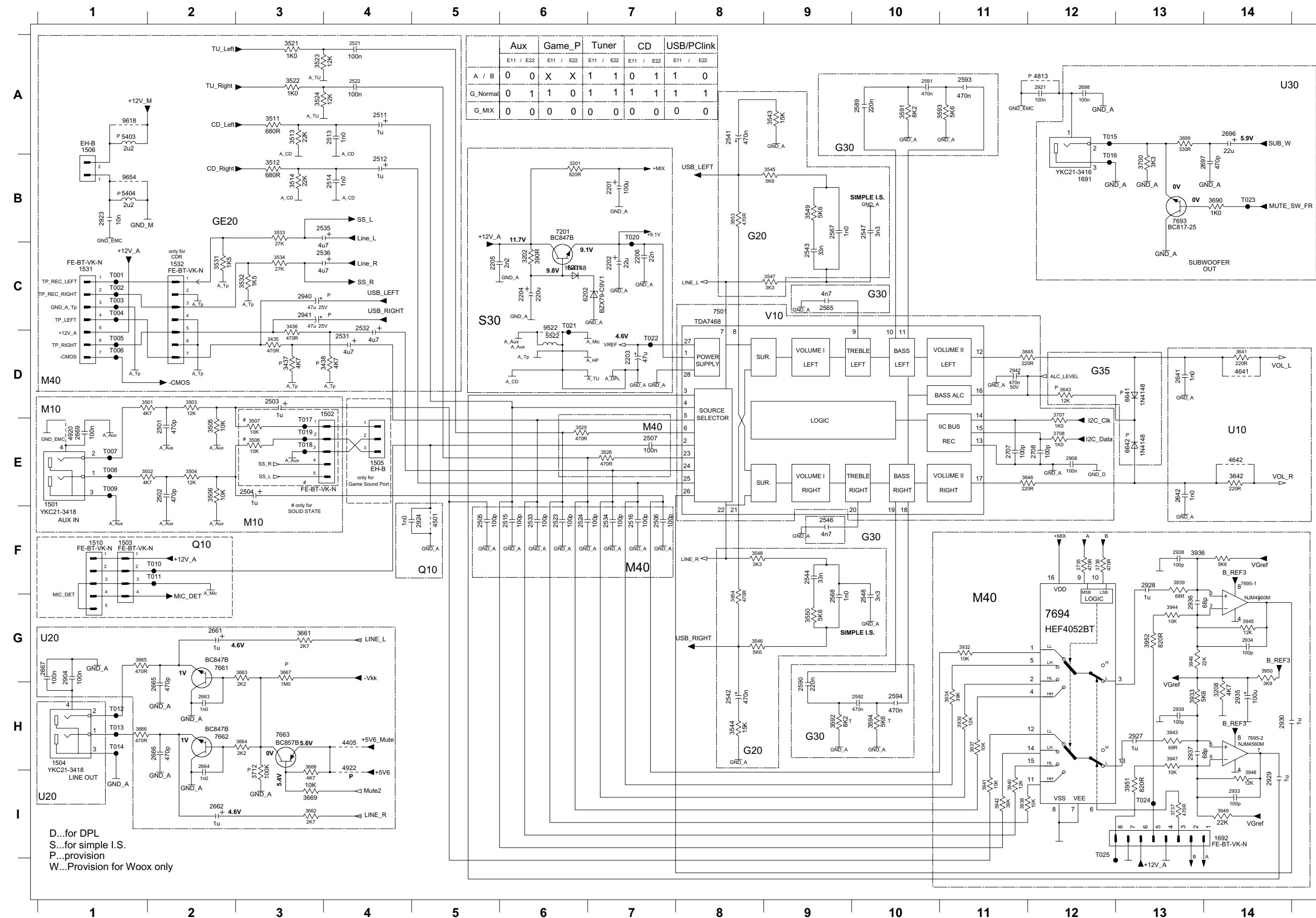




# AF12 BOARD - CHIP LAYOUT

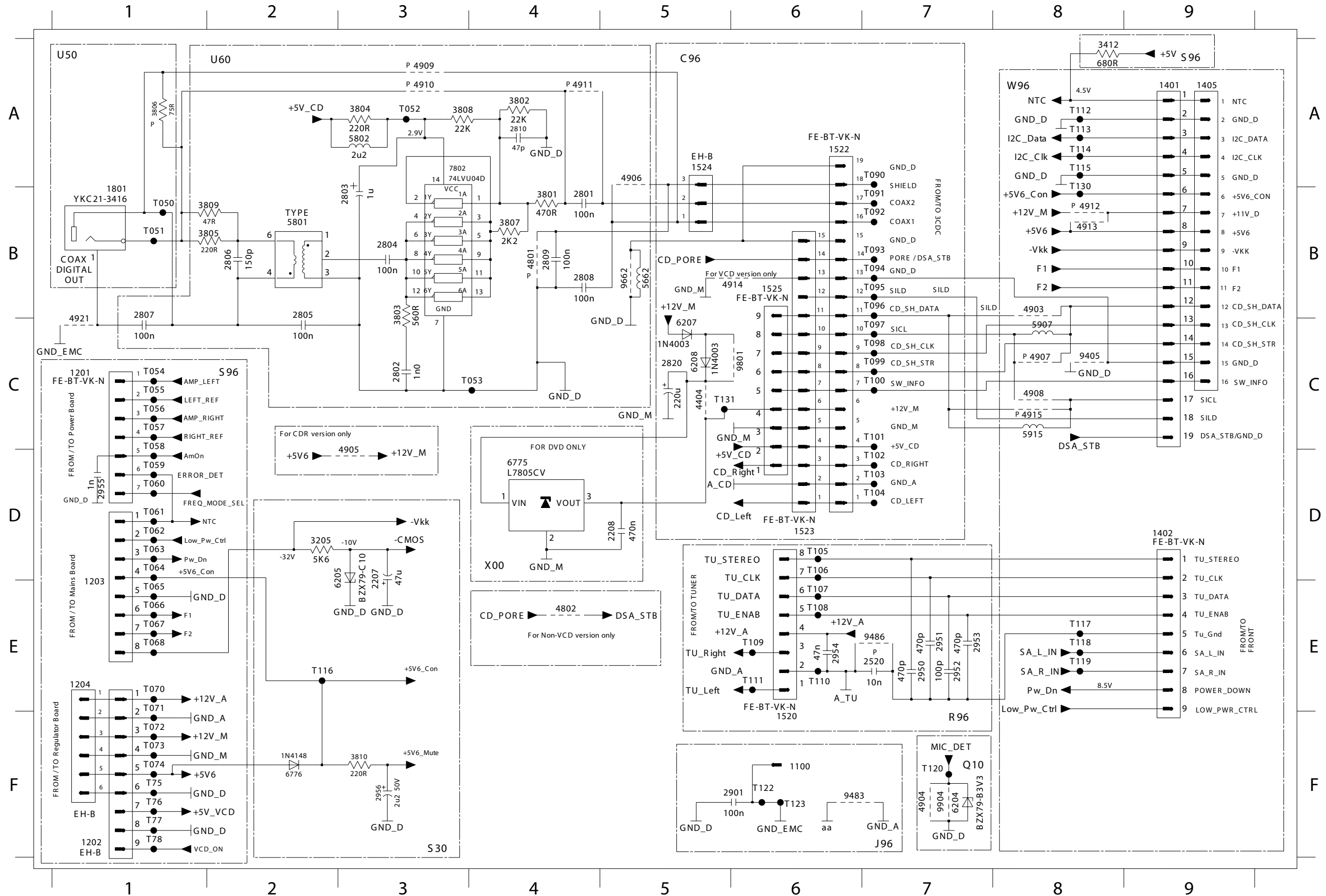


AF12 BOARD - CIRCUIT DIAGRAM (PART 1)



- 1501 E1
- 1502 D3
- 1503 F1
- 1504 H1
- 1505 E4
- 1506 A1
- 1510 F1
- 1531 C1
- 1532 C2
- 1535 G9
- 1691 B12
- 1692 I14
- 2201 B7
- 2202 C7
- 2203 D7
- 2204 C6
- 2205 C5
- 2206 C7
- 2501 E2
- 2502 E2
- 2503 D3
- 2504 E3
- 2505 F5
- 2506 F7
- 2507 E7
- 2511 A4
- 2512 B4
- 2513 A4
- 2514 B4
- 2515 F6
- 2516 F7
- 2521 A4
- 2522 A4
- 2523 F6
- 2524 F6
- 2531 D4
- 2532 D4
- 2533 F6
- 2534 F7
- 2535 B3
- 2536 C3
- 2541 A8
- 2542 H8
- 2543 C9
- 2544 F9
- 2546 F9
- 2547 B10
- 2548 G10
- 2549 C9
- 2590 H9
- 2591 A10
- 2592 H10
- 2593 A11
- 2594 H10
- 2641 D13
- 2642 E13
- 2661 G2
- 2662 I2
- 2663 H2
- 2664 H2
- 2665 H2
- 2666 H2
- 2667 G1
- 2669 E1
- 2696 A14
- 2697 B14
- 2698 A12
- 2707 E11
- 2708 E12
- 2904 G1
- 2908 E12
- 2921 A2
- 2923 B1
- 2924 F5
- 2927 H13
- 2928 F13
- 2929 H14
- 2930 H14
- 2933 I14
- 2934 G14
- 2935 H14
- 2936 G13
- 2937 H13
- 2938 F13
- 2939 H13
- 2940 C3
- 2941 C3
- 2942 D11
- 3201 B6
- 3202 C6
- 3208 H14
- 3435 D3
- 3436 C3
- 3437 D3
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- 3507 E3
- 3508 E3
- 3511 A3
- 3512 B3
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- 3514 B3
- 3522 A3
- 3523 A3
- 3524 A3
- 3525 E7
- 3526 E7
- 3531 C2
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- 3533 B3
- 3534 C3
- 3543 A8
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- 3663 G3
- 3664 H3
- 3665 G1
- 3666 H1
- 3667 G3
- 3668 H3
- 3669 I3
- 3690 B14
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- 3707 D12
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- 3737 I13
- 3932 G11
- 3933 H13
- 3934 H11
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- 3936 F13
- 3937 H11
- 3938 H11
- 3939 F13
- 3940 H11
- 3941 I11
- 3942 I11
- 3943 H13
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- 3947 H13
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- 3949 H14
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- 3951 H13
- 3952 G13
- 3953 B8
- 3954 G8
- 4405 H4
- 4501 F5
- 4641 D14
- 4642 E14
- 4813 A12
- 4920 E1
- 4922 H4
- 5403 A1
- 5404 B1
- 5522 D6
- 6201 C6
- 6202 C6
- 6641 D13
- 7201 B6
- 7501 C8
- 7661 G2
- 7662 H2
- 7663 H3
- 7693 B13
- 7694 G12
- 7695-1 F14
- 7695-2 H14
- 9522 C6
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- 9524 C6
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- 9527 C6
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- 9599 C6
- 9600 C6

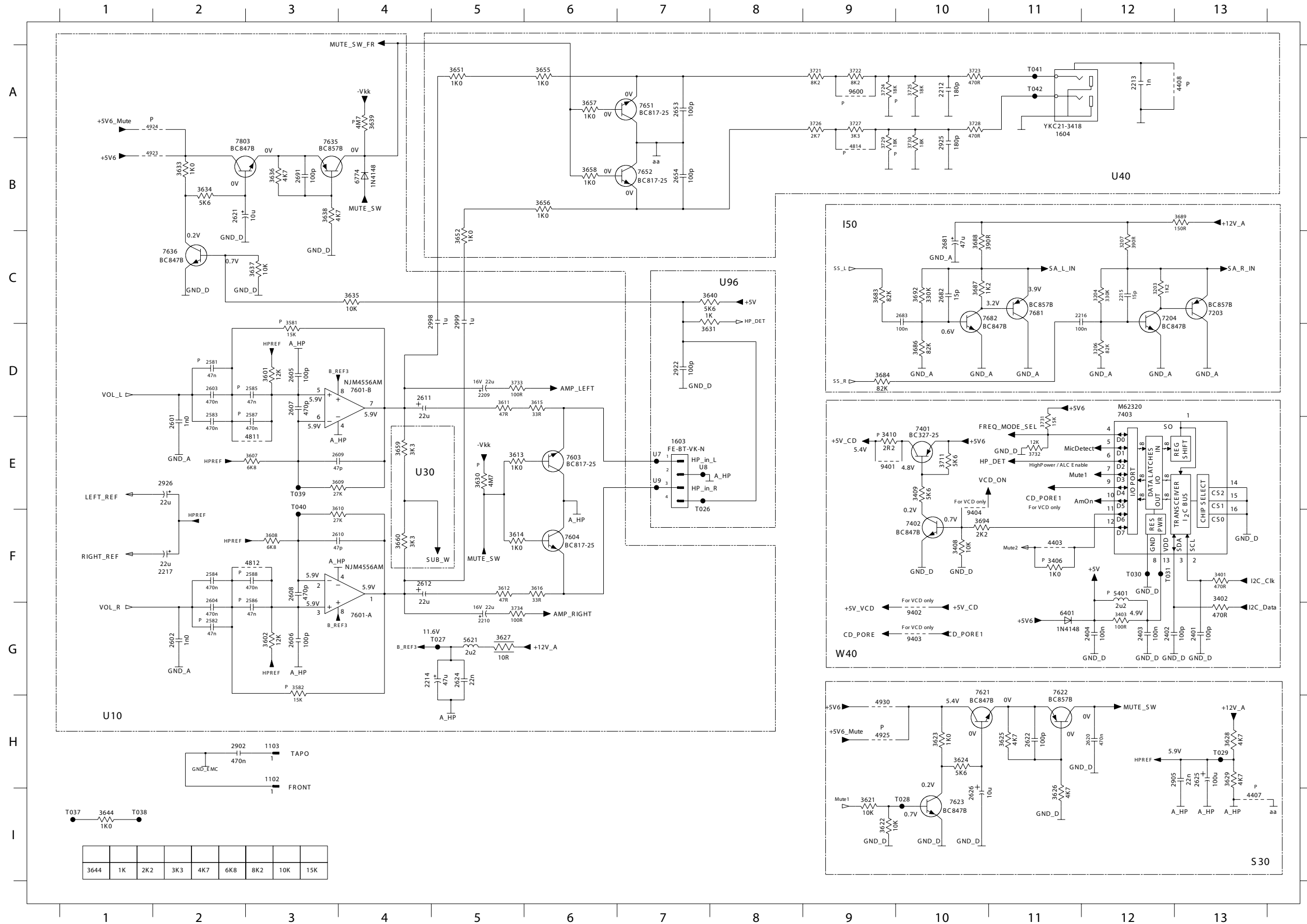
AF12 BOARD - CIRCUIT DIAGRAM (PART 2)



- T75 F1
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- T79 F1
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- T82 F1
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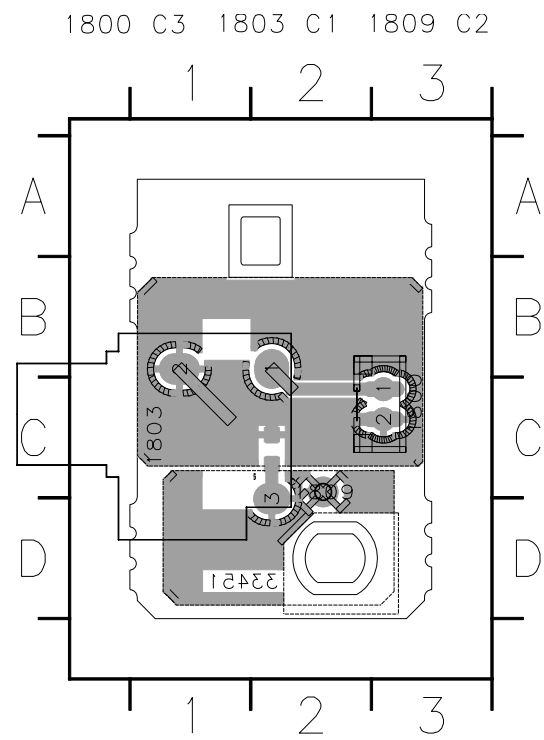


# AF12 BOARD - CIRCUIT DIAGRAM (PART 3)

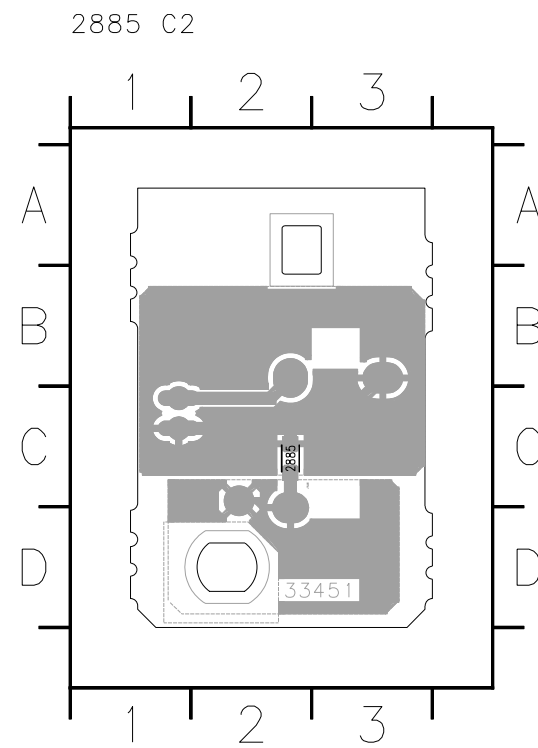


- U7 E7 3686 D10
- U8 E7 3687 C10
- U9 E7 3688 C10
- 1102 H3 3689 B13
- 1103 H3 3692 C10
- 1603 E7 3694 F10
- 1604 A11 3711 E10
- 2209 D5 3721 A9
- 2210 G5 3722 A9
- 2212 A10 3723 A10
- 2213 A12 3724 A9
- 2214 G4 3725 A10
- 2215 C12 3726 A9
- 2216 C11 3727 A9
- 2217 F2 3728 A10
- 2401 G13 3729 B9
- 2402 G12 3730 B10
- 2403 G12 3731 E11
- 2404 G12 3732 E11
- 2581 D2 3733 D5
- 2582 G2 3734 G5
- 2583 E2 4403 F11
- 2584 F2 4407 I13
- 2585 D3 4408 A13
- 2586 G3 4811 E3
- 2587 E3 4812 F3
- 2588 F3 4814 B9
- 2601 E2 4923 B1
- 2602 G2 4924 A1
- 2603 D2 4925 H9
- 2604 G2 4930 H9
- 2605 D3 5401 F12
- 2606 G3 5621 G5
- 2607 D3 6401 G11
- 2608 F3 6774 B4
- 2609 E3 7203 C13
- 2610 C12 7204 C12
- 2611 D4 7401 E10
- 2612 F4 7402 F10
- 2620 H12 7403 D12
- 2621 B2 7601-A G4
- 2622 H11 7601-B D4
- 2624 G5 7603 E6
- 2625 H13 7604 F6
- 2626 I10 7621 G10
- 2653 A7 7622 G11
- 2654 B7 7623 I10
- 2681 C10 7635 B3
- 2682 C10 7636 C2
- 2683 C10 7651 A7
- 2691 B3 7652 B7
- 2902 H2 7681 C11
- 2905 H13 7682 C10
- 2922 D7 7803 B3
- 2925 B10 9401 E9
- 2926 E2 9402 G10
- 2998 C5 9403 G10
- 2999 C5 9409 E10
- 3203 C12 9600 A9
- 3204 C12 T026 F7
- 3206 D12 T027 G5
- 3207 C12 T028 H10
- 3401 F13 T029 H13
- 3402 F13 T030 F12
- 3403 G12 T031 F12
- 3406 F11 T037 I1
- 3408 F10 T038 I1
- 3409 E10 T039 E3
- 3410 E9 T040 E3
- 3581 D3 T041 A11
- 3582 G3 T042 A11
- 3601 D3 3602 D3
- 3607 E3 3608 F3
- 3609 E3 3609 E3
- 3610 F3 3610 F3
- 3611 D5 3611 D5
- 3612 F5 3612 F5
- 3613 E5 3613 E5
- 3614 F5 3614 F5
- 3615 D6 3615 D6
- 3616 F6 3616 F6
- 3621 I9 3621 I9
- 3622 I9 3622 I9
- 3623 H10 3623 H10
- 3624 H10 3624 H10
- 3625 H11 3625 H11
- 3626 I11 3626 I11
- 3627 G5 3627 G5
- 3628 H13 3628 H13
- 3629 H13 3629 H13
- 3630 E5 3630 E5
- 3631 D7 3631 D7
- 3633 B2 3633 B2
- 3634 B2 3634 B2
- 3635 C4 3635 C4
- 3636 B3 3636 B3
- 3637 C3 3637 C3
- 3638 B3 3638 B3
- 3639 A4 3639 A4
- 3640 C8 3640 C8
- 3644 I1 3644 I1
- 3651 A5 3651 A5
- 3652 C5 3652 C5
- 3655 A6 3655 A6
- 3656 B6 3656 B6
- 3657 A6 3657 A6
- 3658 B6 3658 B6
- 3659 E4 3659 E4
- 3660 F4 3660 F4
- 3683 C9 3683 C9
- 3684 D9 3684 D9

**VIDEO OUT CINCH BOARD - COMPONENT LAYOUT**



**VIDEO OUT CINCH BOARD - CHIP LAYOUT**



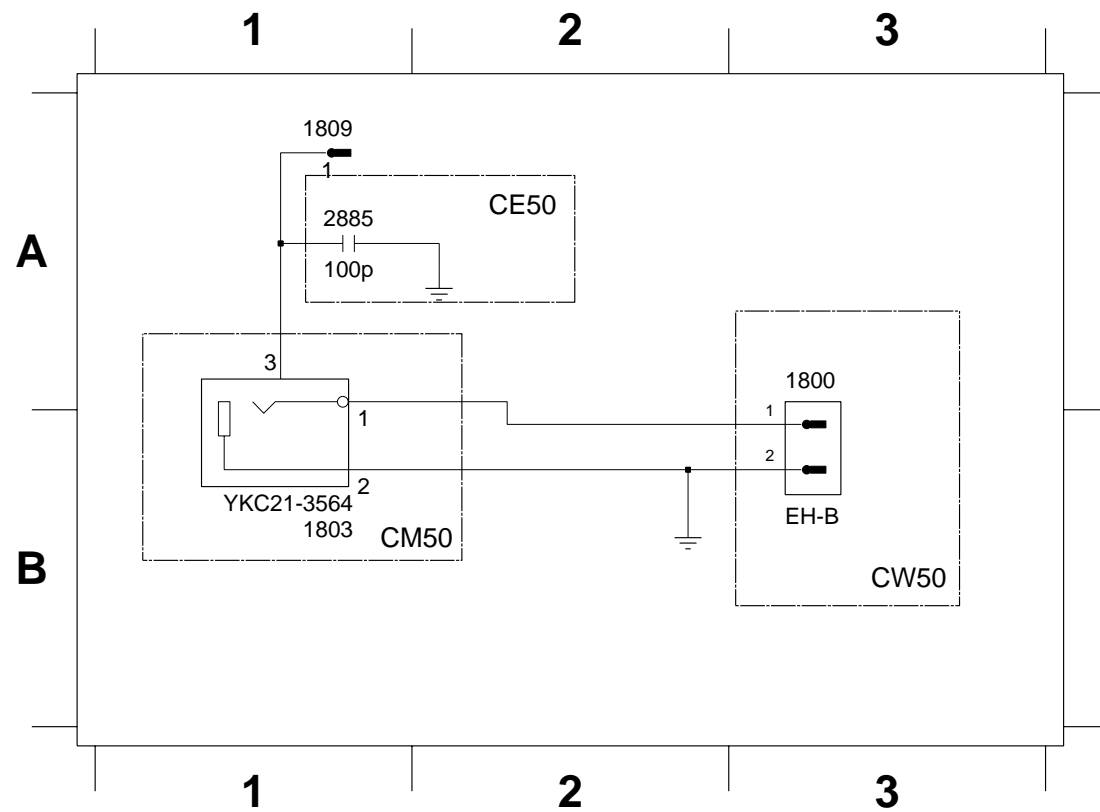
**ELECTRICAL PARTSLIST - AF12 BOARD**

**- IC & TRANSISTORS -**

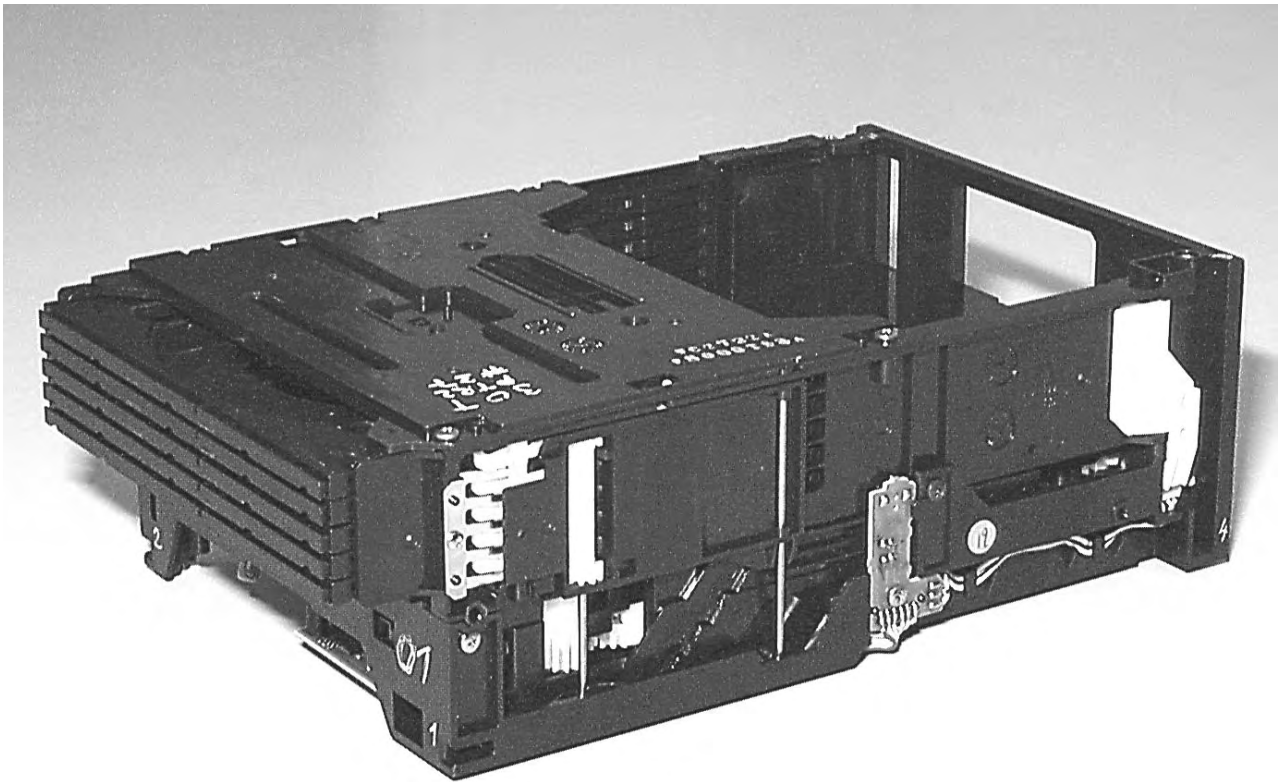
7201	5322 130 60159	BC846B
7204	5322 130 60159	BC846B
7402	5322 130 60159	BC846B
7621	5322 130 60159	BC846B
7623	5322 130 60159	BC846B
7636	5322 130 60159	BC846B
7682	5322 130 60159	BC846B
7803	5322 130 60159	BC846B
7203	4822 130 60373	BC856B
7622	4822 130 60373	BC856B
7635	4822 130 60373	BC856B
7681	4822 130 60373	BC856B
7603	4822 130 42804	BC817-25
7604	4822 130 42804	BC817-25
7401	4822 130 41246	BC327-25
7601	4822 209 31378	NJM4556MB
7403	4822 209 17345	M62320FP
7501	9322 150 74668	IC SM TDA7468D
7694	5322 209 11102	HEF4052BT
7695	4822 209 83357	NJM4560M

**VIDEO OUT CINCH BOARD - CIRCUIT DIAGRAM**

1800 A3 1803 B1 1809 A1 2885 A1



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



# **5DTC Module**

## **(MP3 version)**

Layout stage .4

### **TABLE OF CONTENTS**

Service hints .....	10-2
Location of Printed Circuit Boards .....	10-5
Wiring .....	10-6
Emergency opening .....	10-7
Location of switches.....	10-8
Blockdiagram .....	10-9
<b>CD BOARD</b>	
Circuit Diagram .....	10-10
Component Layout side A .....	10-11
Component Layout side B .....	10-12
<b>CONTROL BOARD</b>	
Circuit Diagram .....	10-13
Component Layout .....	10-13
<b>MP3 BOARD</b>	
Circuit Diagram .....	10-14
Component Layout .....	10-15
Exploded view loader .....	10-16
Partslist .....	10-17

**Service Hints**

**In case of symptom „skipping tracks“ perform following actions:**

**1. VERIFY THE COMPLAINT**

**PLAYABILITY CHECK**

Use CDDA SBC 444A: .....4822 397 30245  
 TR 14 (600µ black dot) maximum at 01:15  
 TR 19 (fingerprint)  
 TR 10 (1000µ wedge)

Use CD-RW Printed Audio Disk .....7104 099 96611  
 TR 3 (Fingerprint)  
 TR 8 (600µ black dot) maximum at 01:00

- playback of all these tracks without audible disturbance
- jump forward/backward within a reasonable time

**2. CLEAN THE LENS**

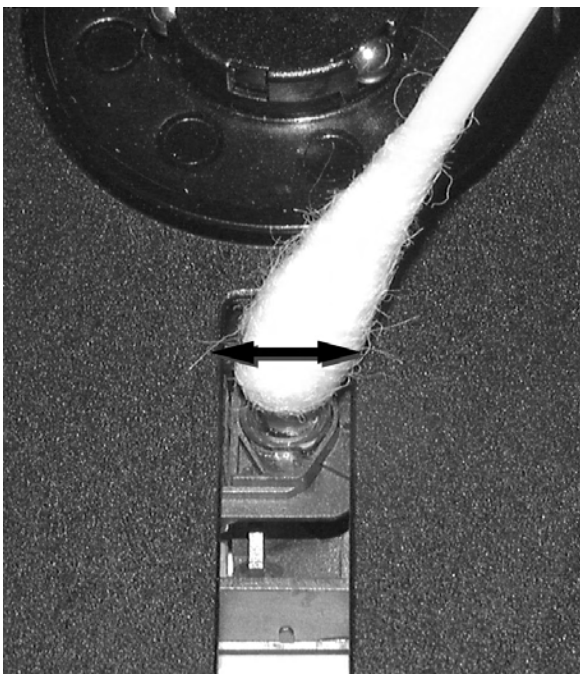
**CD DRIVE – LENS CLEANING**

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

Because the material of the lens is synthetic and coated with a special anti-reflectivity layer, cleaning must be done with a non-aggressive cleaning fluid. It is advised to use “KODAK LENS CLEANER CAT 176 71 36”, available in normal photo shops.

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

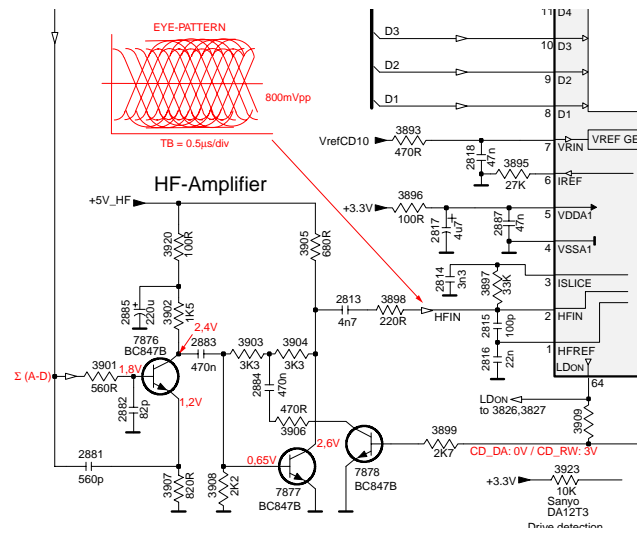
The direction of cleaning must be in the way as indicated in the picture below.



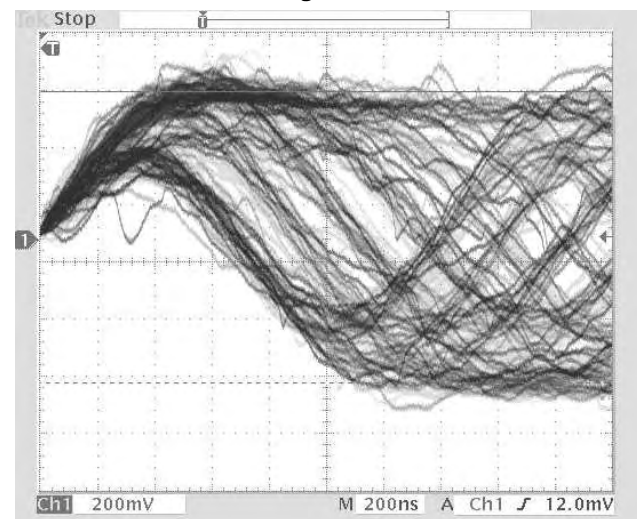
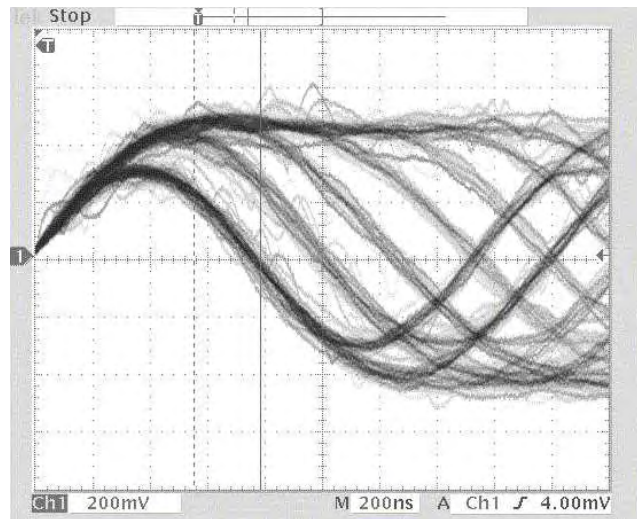
**3. MEASURE THE EYE-PATTERN SIGNAL**

**EYE-PATTERN SIGNAL – JITTER MEASUREMENT**

Measure the signal direct on resistor 3898 using an oscilloscope (see also chapter 10-9).



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



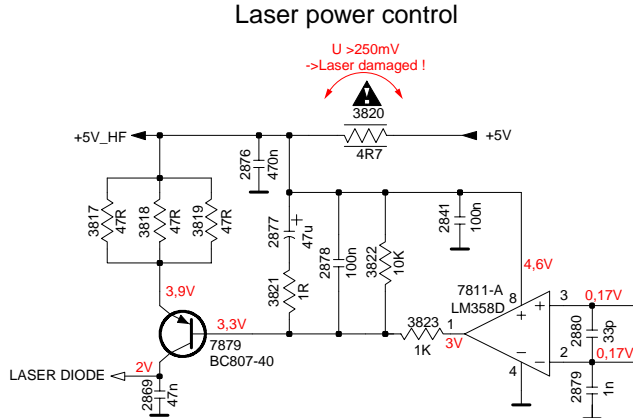
If the oscilloscope shows a signal like the 'bad' one, and/or the amplitude decreases within 1minute - the CD drive has to be replaced.



**4. MEASURE THE LASER CURRENT**

**CD DRIVE – LASER CURRENT MEASUREMENT**

The laser current can be measured as a voltage drop on resistor 3820. Typical value 170 - 190mV for CD-DA respectively 200 - 220mV for CD-RW.



**5. MEASURE THE OFFSETS OF THE CD-DRIVE**

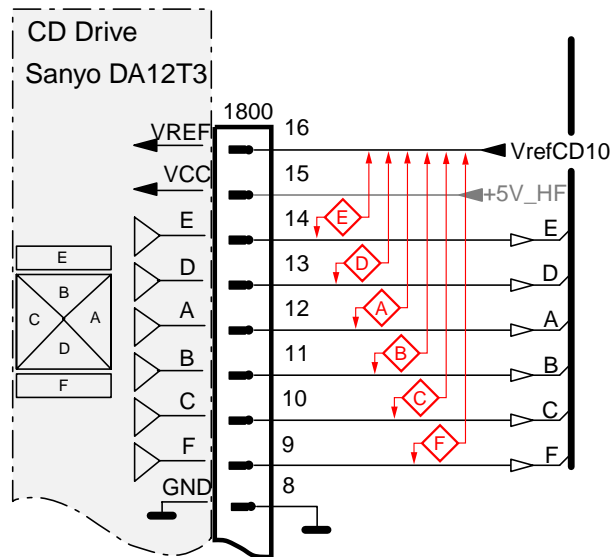
**CD DRIVE – OFFSET MEASUREMENT**

Each photodiode of the CD-drive may have an offset. This offset has to be compensated by the signal processor. A high offset of the CD-drive leads to poor playability of some CDs (skipping tracks).

Start the **Service Test Program** - section „Focus Test“ without a CD. Focus sensitivity = CD-RW.

Use a DC Millivoltmeter for measurement. The offsets can be measured direct on the connector. See drawing below.

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



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

**6. MEASURE THE OFFSETS OF THE CD10**

**SIGNAL PROCESSOR – OFFSET MEASUREMENT**

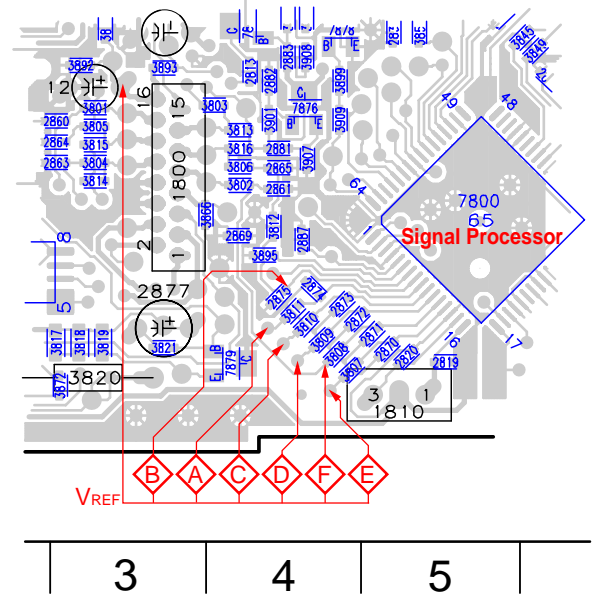
Each ADC input of the CD10 may have an offset too. Also this offset leads (together with the offsets of the CD Drive) to poor playability of some CDs (skipping tracks).

Start the **Service Test Program** - section „Focus Test“ using a CD-RW disc.

Use a DC Millivoltmeter for measurement. The offsets can be measured on capacitors near the signal processor. See drawing below.

**The value should read  $0mV \pm 10mV$ .**

**CD Board side A view**



If one of the offsets is higher than  $\pm 10mV$  the signal processor has to be replaced.

**If none of the measured offsets is higher than  $\pm 10mV$  - replace the part with the higher value.**

**WARNING**

**CHARGED CAPACITORS ON THE SERVO BOARD MAY DAMAGE THE CD DRIVE ELECTRONICS WHEN CONNECTING A NEW CDM MECHANISM. THAT'S WHY, BESIDES THE SAFETY MEASURES LIKE**

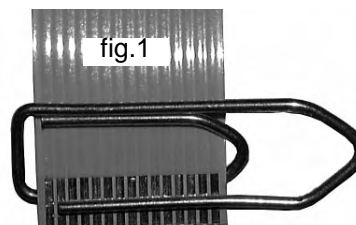
- **SWITCH OFF POWER SUPPLY**
- **ESD PROTECTION**

**ADDITIONAL ACTIONS MUST BE TAKEN BY THE REPAIR TECHNICIAN.**

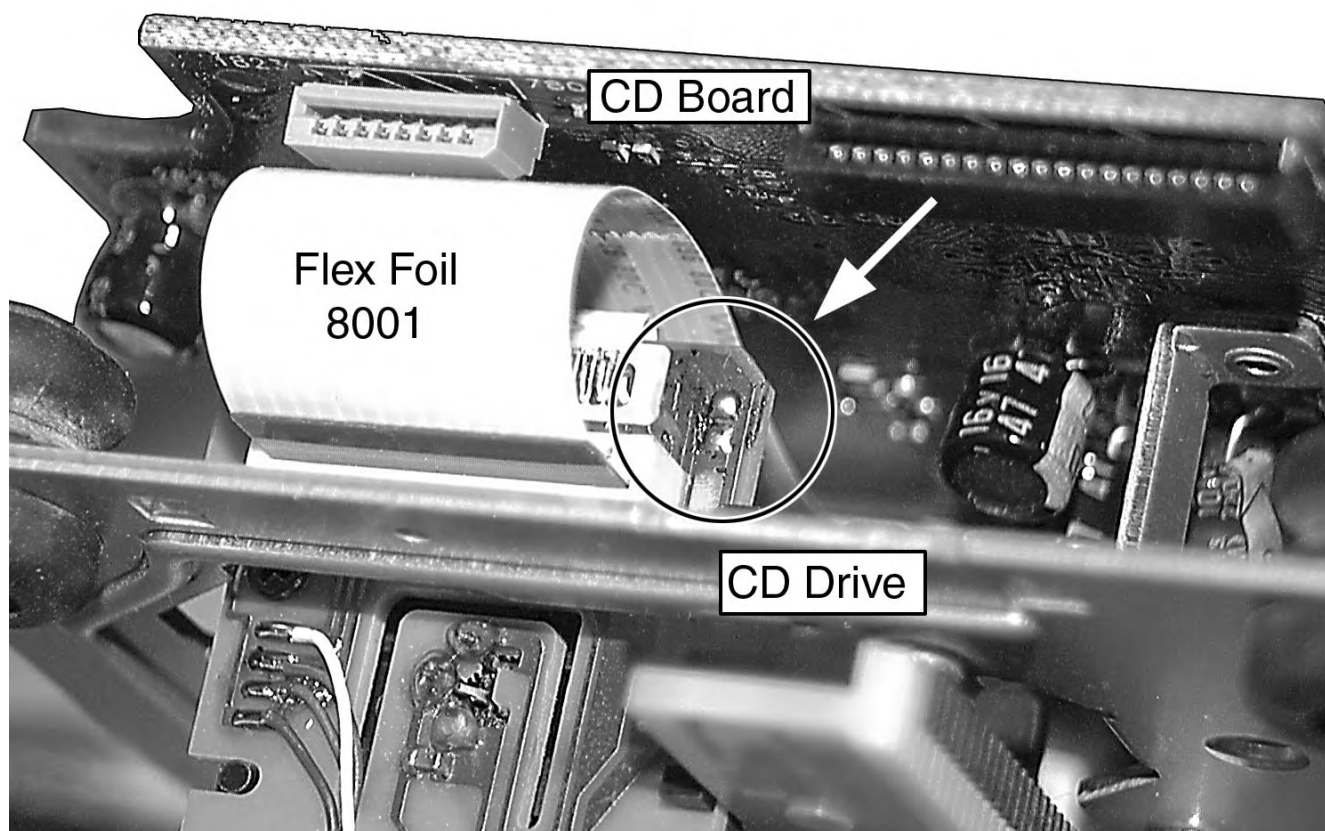
The CD drive forms a compact building block with the CD Board.

The following steps have to be done when replacing the CD mechanism:

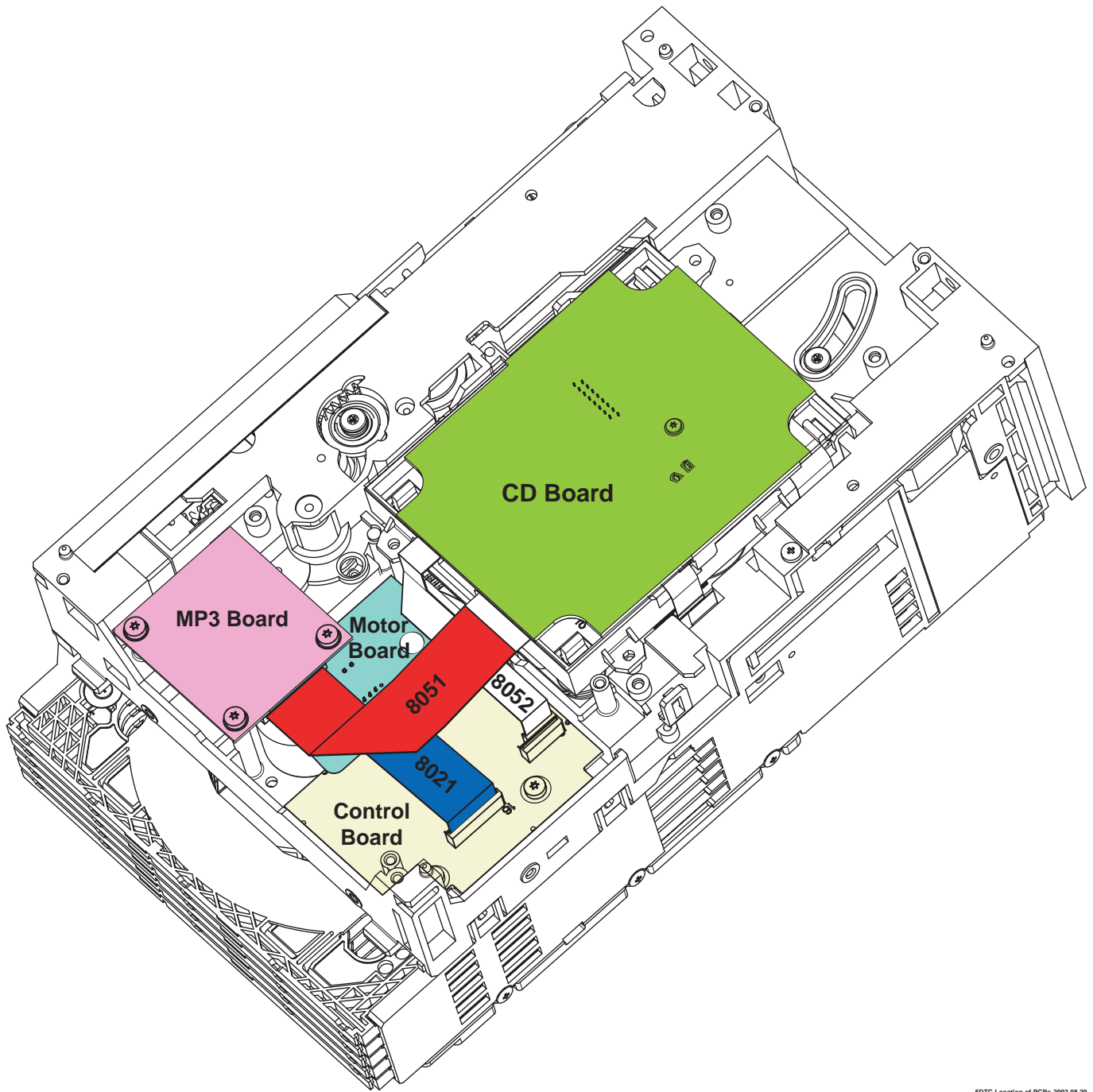
1. Desolder disc and slide motor
2. Loosen 2x screw
1. Disconnect flexfoil from old CD drive
2. Put a paperclip over contacts of flexfoil to short-circuit the contacts (fig.1)
3. Remove old CD drive
4. Mount new CD drive to CD board
5. Solder disc and slide motor **after** fixing the drive to the board
5. Move slide outside
6. Remove paperclip from flexfoil
7. Connect flexfoil to new CD drive
8. Remove ESD-protection (solder joint) from laserunit (see picture below)



**Attention:** The laser diode of this CD drive is protected against ESD by a solder joint which shortcircuits the laserdiode to ground. For proper functionality of the CD drive this solder joint must be removed **after** connection the drive to the set.

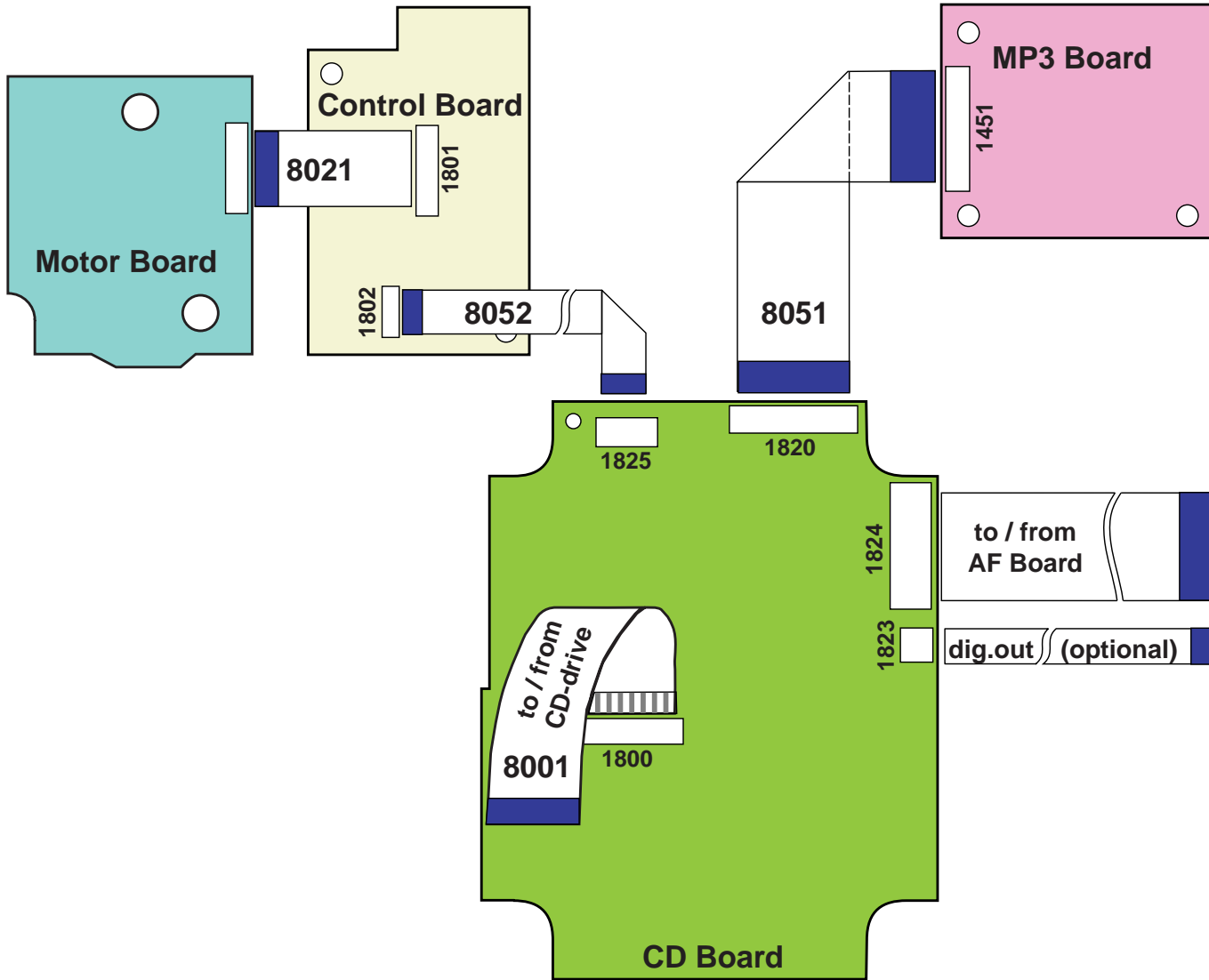


# Location of Printed Circuit Boards





## Wiring Diagram 5DTC Module



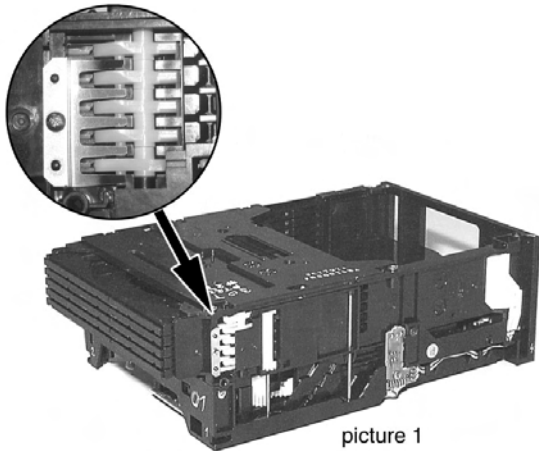
5DTC Wiring Diagram 2002 08 30

The FFC-Cables are available as sparepart.

8001	3103 308 93090	FFC CABLE 16Pin 80mm BD	Connection from CD Board to CD Drive
8051	3103 308 93100	FFC-CABLE 19Pin 90mm AD	Connection from CD Board to MP3 Board
8052	3103 308 93120	FFC CABLE 8Pin 80mm BD	Connection from CD Board to Control Board
8021	3103 308 93110	FFC-CABLE 16Pin 60mm AD	Connection from Control Board to Motor Board

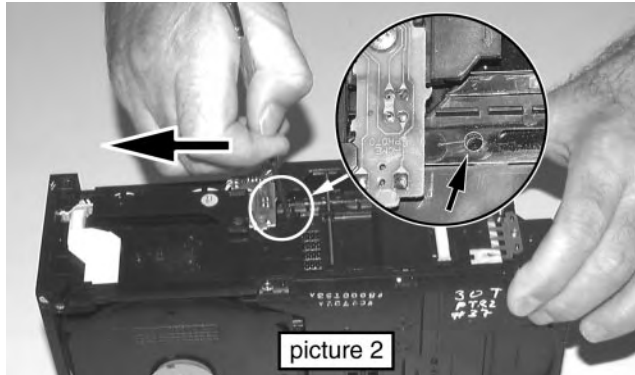
## Emergency opening of the trays

The trays of the 5DTC are mechanically locked.



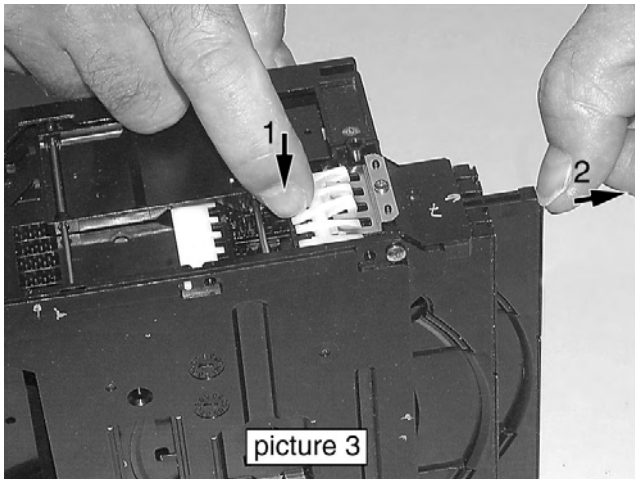
picture 1

To open tray 1, 2 and 3 move lever (pos 29) backwards (e.g. with a screwdriver - see picture 2) to its endposition.



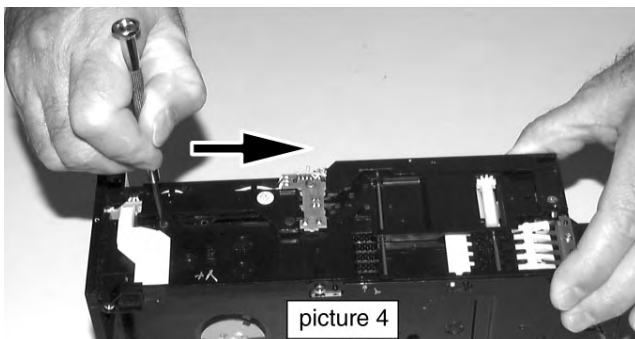
picture 2

Release the locking mechanism and pull out the tray (see picture 3).



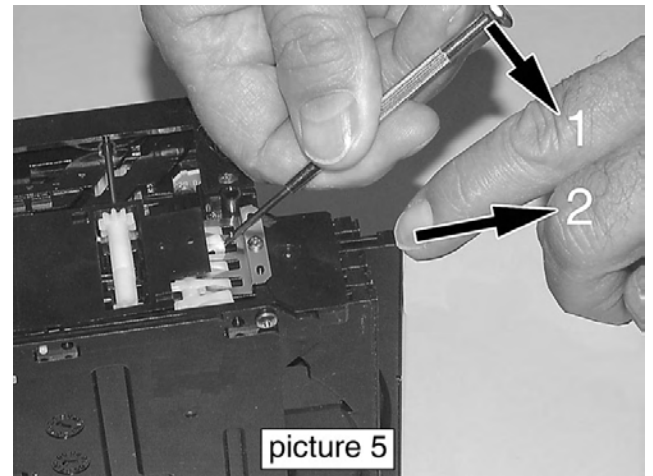
picture 3

To open tray 4 and 5 move lever (pos 29) forward to its endposition (see picture 4).



picture 4

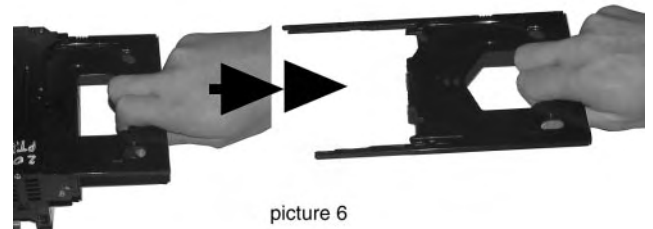
Release snap as shown in picture 5 and pull tray out.



picture 5

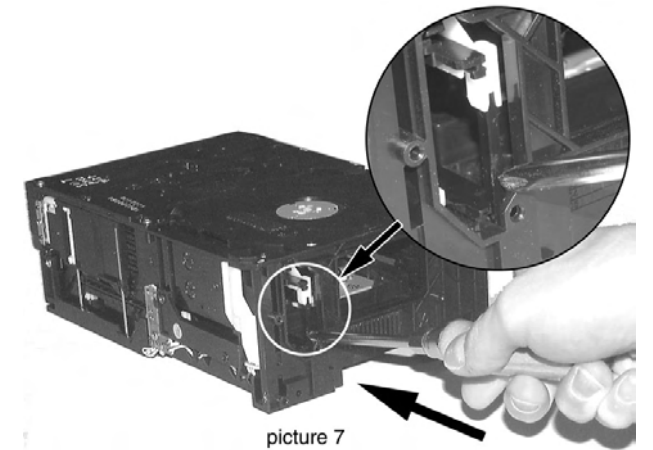
To remove a CD from Play Position perform following steps:

1. Open tray 1 as described before.
2. Tear the tray out with speed (see picture 6). The tray can be inserted afterwards without any alignment.



picture 6

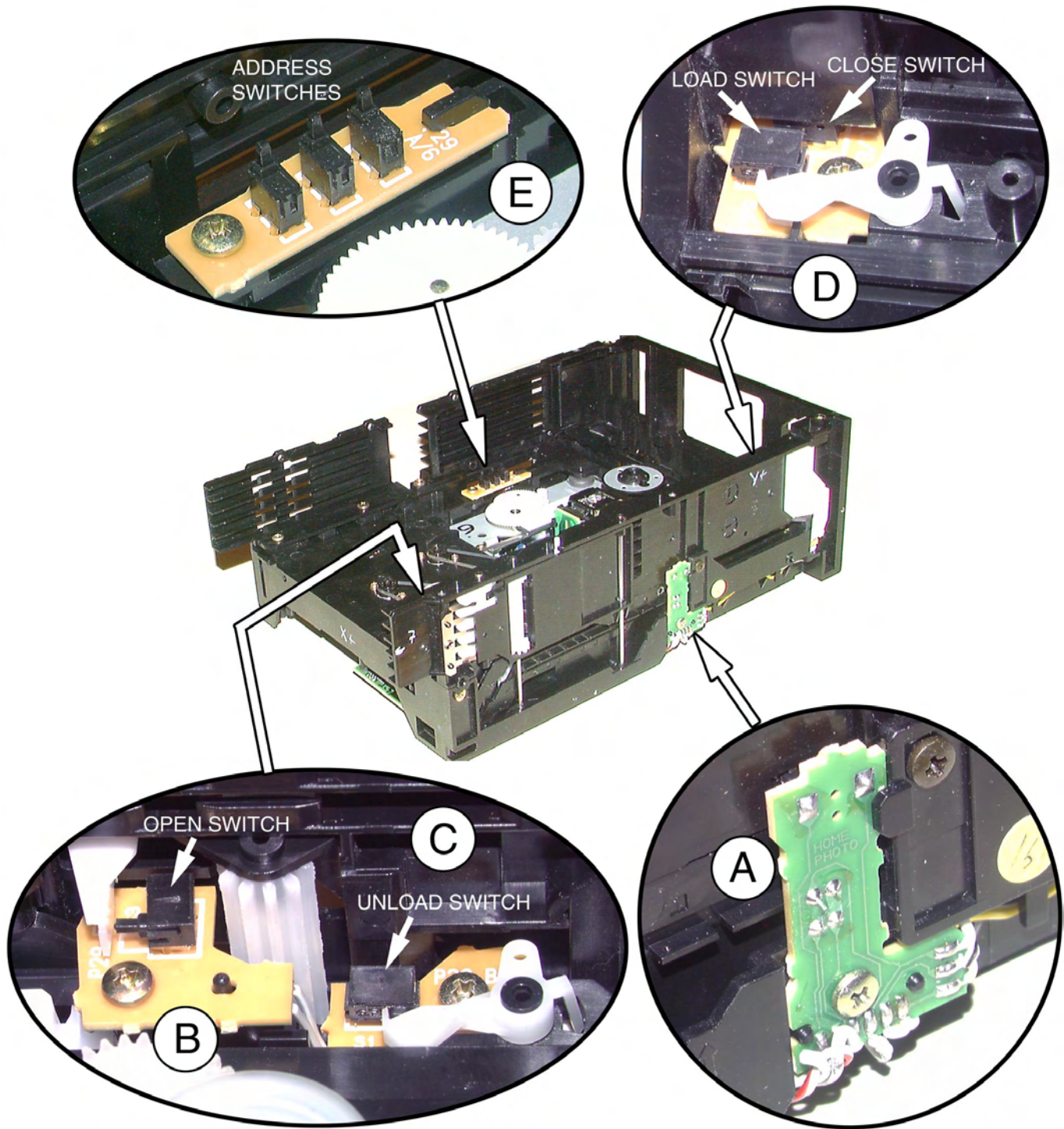
3. Move lever (pos 29) forward to its endposition (see picture 4).
4. Push lever (pos 31) forward (see picture 7).



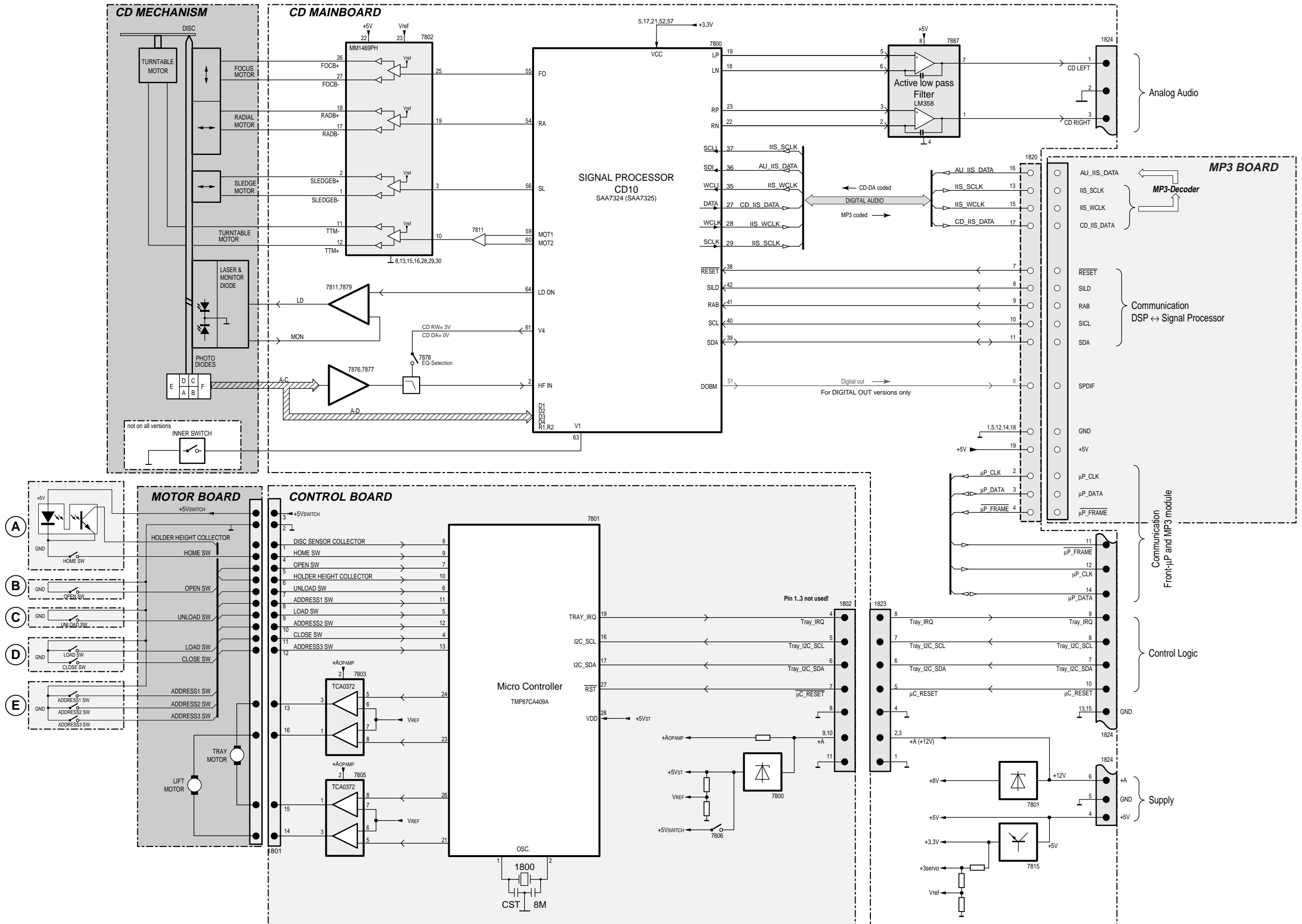
picture 7

5. Remove CD.

### Location of switches



### BLOCK DIAGRAM 5DTC MP3 Version

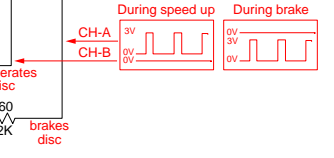
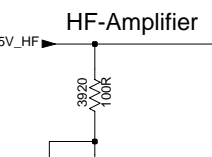
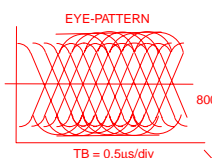
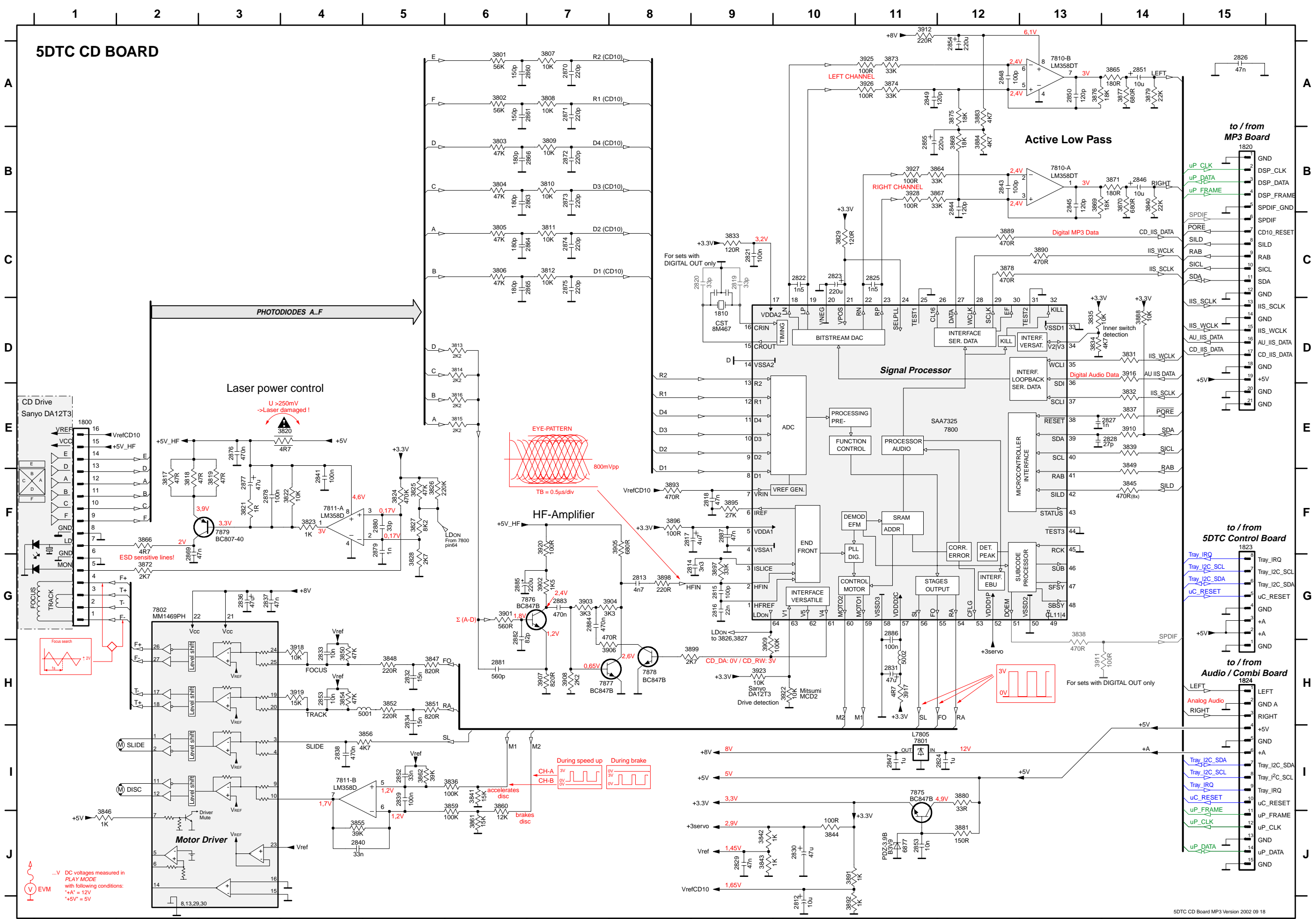




# 5DTC CD BOARD

A  
B  
C  
D  
E  
F  
G  
H  
I  
J

A  
B  
C  
D  
E  
F  
G  
H  
I  
J



...V DC voltages measured in PLAY MODE with following conditions:  
 \*+A = 12V  
 \*+5V = 5V

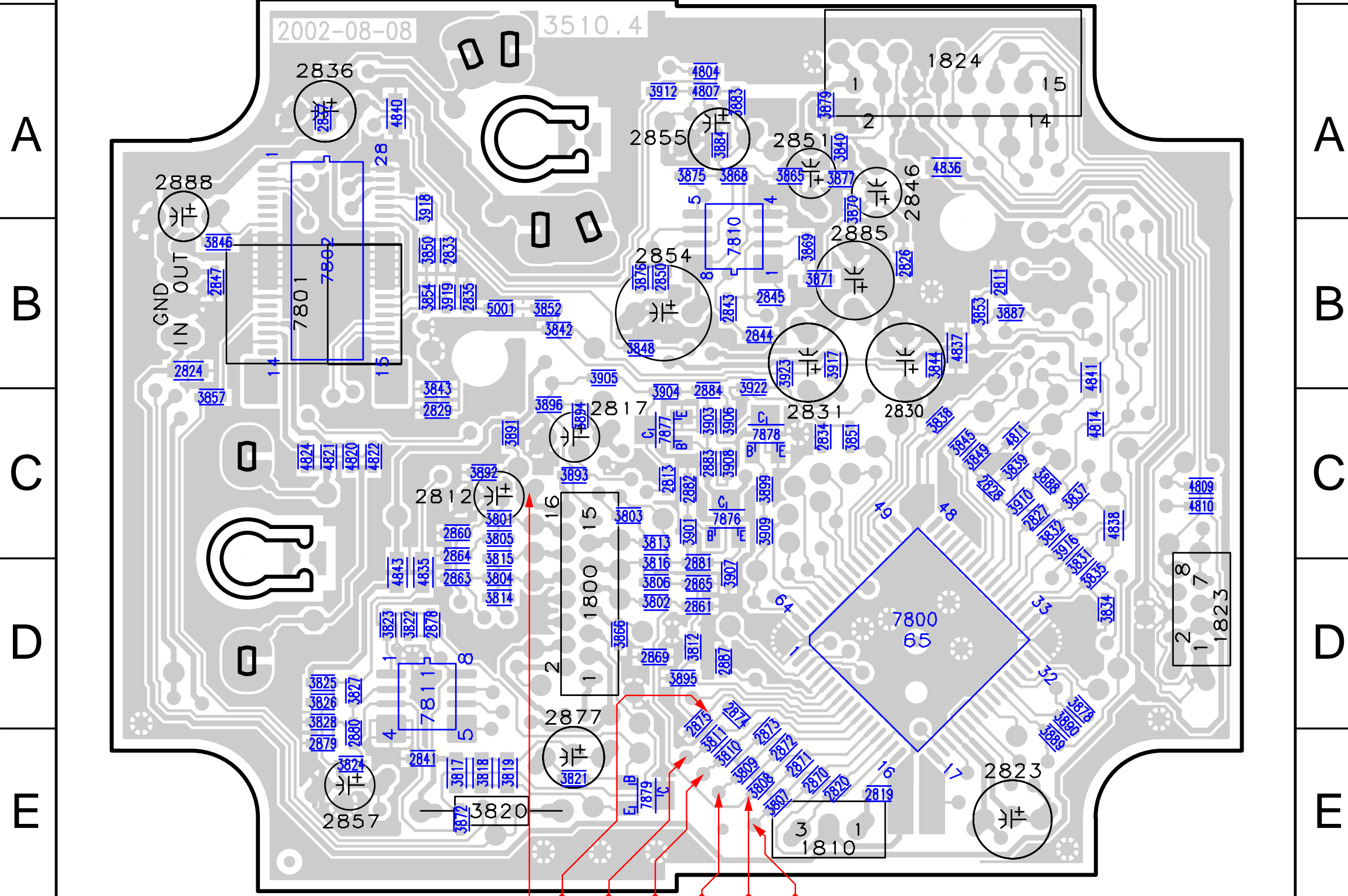
MAPPING FOR  
CIRCUIT DIAGRAM

1800	E1	3827	F5
1810	D9	3828	G5
1820	B15	3829	C10
1823	F15	3831	D14
1824	H15	3832	E14
2187	F9	3833	C9
2812	J10	3834	D13
2813	G8	3835	D13
2814	G9	3836	I6
2815	G9	3837	E14
2816	G9	3838	G13
2817	F9	3839	E14
2818	F9	3840	B14
2819	C9	3841	I6
2820	C9	3842	J9
2821	C9	3843	J9
2822	C10	3844	J10
2823	C10	3845	F14
2824	I12	3846	J1
2825	C11	3847	H5
2826	A15	3848	H5
2827	E13	3849	F14
2828	E13	3850	H4
2829	J9	3851	H5
2830	J10	3852	H5
2831	H11	3854	H4
2832	H5	3855	J4
2833	H4	3856	I5
2834	H5	3859	I6
2836	G3	3860	I6
2837	G3	3861	J6
2838	I4	3862	I5
2839	I5	3864	B11
2840	J4	3865	A14
2841	F4	3866	F2
2843	B12	3867	B11
2844	B12	3868	B12
2845	B13	3869	B13
2846	B14	3870	B14
2847	I11	3871	B14
2848	A12	3872	G2
2849	A11	3873	A11
2850	A13	3874	A11
2851	A14	3875	A12
2852	I5	3876	A13
2853	H4	3877	A14
2853	J11	3878	C12
2854	A12	3879	A14
2855	B11	3880	I12
2860	A6	3881	J12
2861	A6	3883	A12
2863	B6	3884	B12
2864	C6	3888	D14
2865	C6	3889	C12
2866	B6	3890	C13
2869	F2	3891	J10
2870	A7	3892	J10
2871	A7	3893	F8
2872	B7	3895	F9
2873	B7	3896	F8
2874	C7	3897	G9
2875	C7	3898	G8
2876	E3	3899	H8
2877	F3	3901	G6
2878	F3	3902	G7
2879	F5	3903	G7
2880	F5	3904	G8
2881	H6	3905	F8
2882	G6	3906	H8
2884	G7	3907	H7
2885	G6	3908	H7
2886	G11	3909	H9
2893	G7	3910	E14
3801	A6	3911	H13
3802	A6	3912	A11
3803	B6	3917	H11
3804	B6	3918	H4
3805	C6	3919	H4
3806	C6	3920	F7
3807	A7	3922	H10
3808	A7	3923	H9
3809	B7	3925	A11
3810	B7	3926	A11
3811	C7	3927	B11
3812	C7	3928	B11
3813	D6	5001	H5
3814	D6	5002	H11
3815	E6	6877	J11
3816	D14	7800	D11
3816	E6	7801	I11
3817	F2	7802	G2
3818	F2	7810-A	B13
3819	F3	7810-B	A13
3820	E4	7811-A	F4
3821	F3	7811-B	I4
3822	F4	7875	I11
3823	F4	7876	G7
3824	F5	7877	H8
3825	F5	7878	H8
3826	F5	7879	F3

MAPPING FOR  
COMPONENT LAYOUT

1800	D3	3851	C5
1810	E5	3852	B3
1823	D7	3853	B6
1824	A5	3854	B2
2811	B6	3857	C1
2812	C3	3865	A4
2813	C4	3866	D3
2817	C3	3868	A4
2819	E5	3869	B5
2820	E5	3870	A5
2823	E6	3871	B5
2824	B1	3872	E3
2826	B5	3875	A4
2827	C6	3876	B4
2828	C6	3877	A5
2829	C2	3878	D6
2830	B5	3879	A5
2831	B5	3883	A4
2833	B2	3884	A4
2834	C5	3887	B6
2835	B3	3888	C6
2836	A2	3889	E6
2837	A2	3890	E6
2841	E2	3891	C3
2843	B4	3892	C3
2844	B4	3893	C3
2845	B4	3894	C3
2846	A5	3895	D4
2847	B1	3896	C3
2850	B4	3899	C4
2851	A5	3901	C4
2854	B4	3903	C4
2855	A4	3904	C4
2857	E2	3905	B3
2860	C3	3906	C4
2861	D4	3907	D4
2863	D3	3908	C4
2864	D3	3909	C4
2865	D4	3910	C6
2869	D4	3912	A4
2870	E5	3916	C6
2871	E5	3917	B5
2872	E4	3918	A2
2873	E4	3919	B2
2874	D4	3922	C4
2875	E4	3923	B4
2877	D3	4804	A4
2878	D2	4807	A4
2879	E2	4809	C7
2880	E2	4810	C7
2881	D4	4811	C6
2882	C4	4814	C6
2883	C4	4820	C2
2884	C4	4821	C2
2885	B5	4822	C2
2887	D4	4824	C2
2888	A1	4835	D2
3801	C3	4836	A5
3802	D4	4837	B5
3803	C4	4838	C6
3804	D3	4840	A2
3805	C3	4841	B6
3806	D4	4843	D2
3807	E4	5001	B3
3808	E4	7800	C6
3809	E4	7801	B2
3810	E4	7802	B2
3811	E4	7810	B4
3812	D4	7811	D2
3813	C4	7876	C4
3814	D3	7877	C4
3815	D3	7878	C4
3816	D4	7879	E4

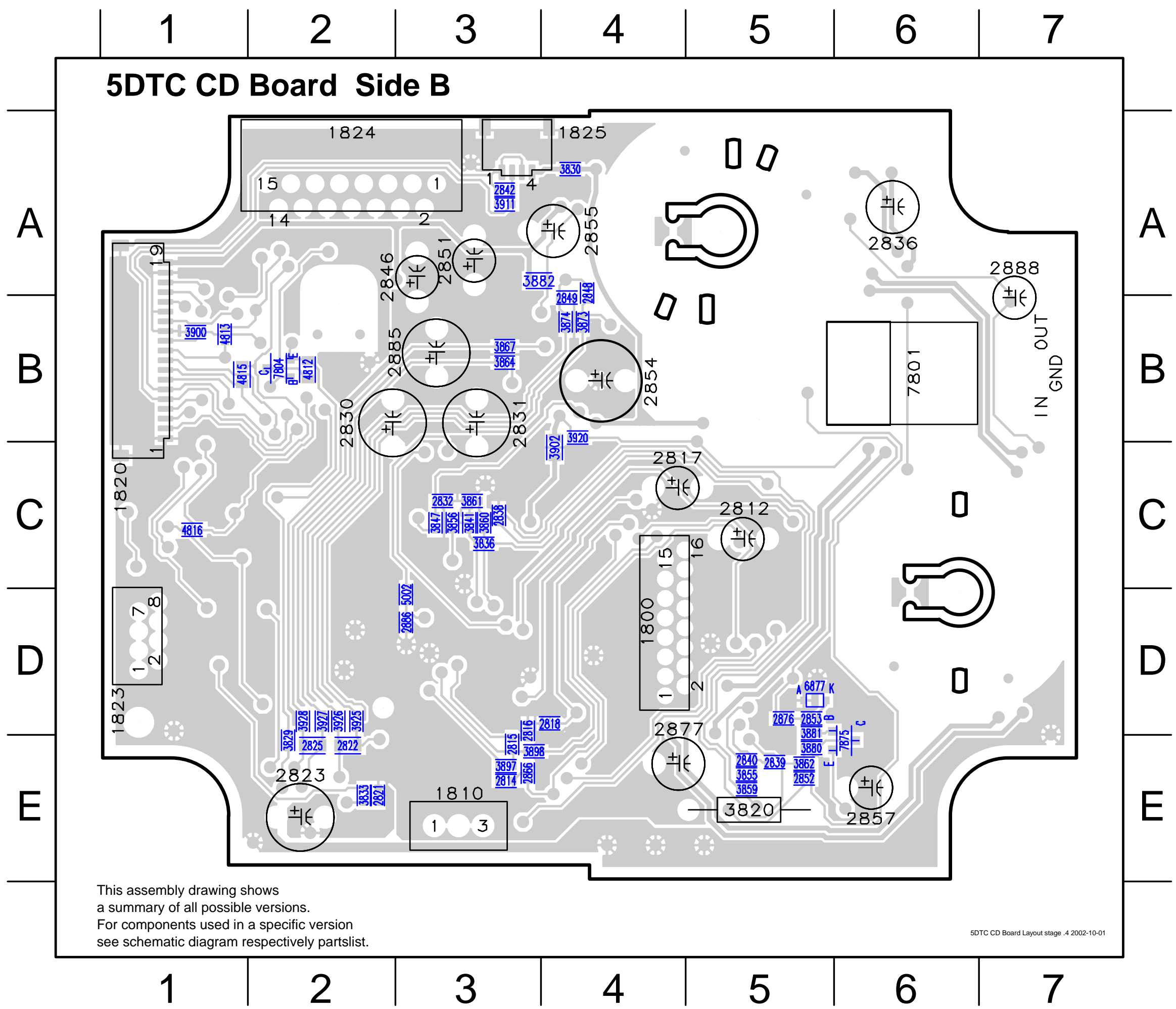
# 5DTC CD Board Side A



This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram respectively partslist.



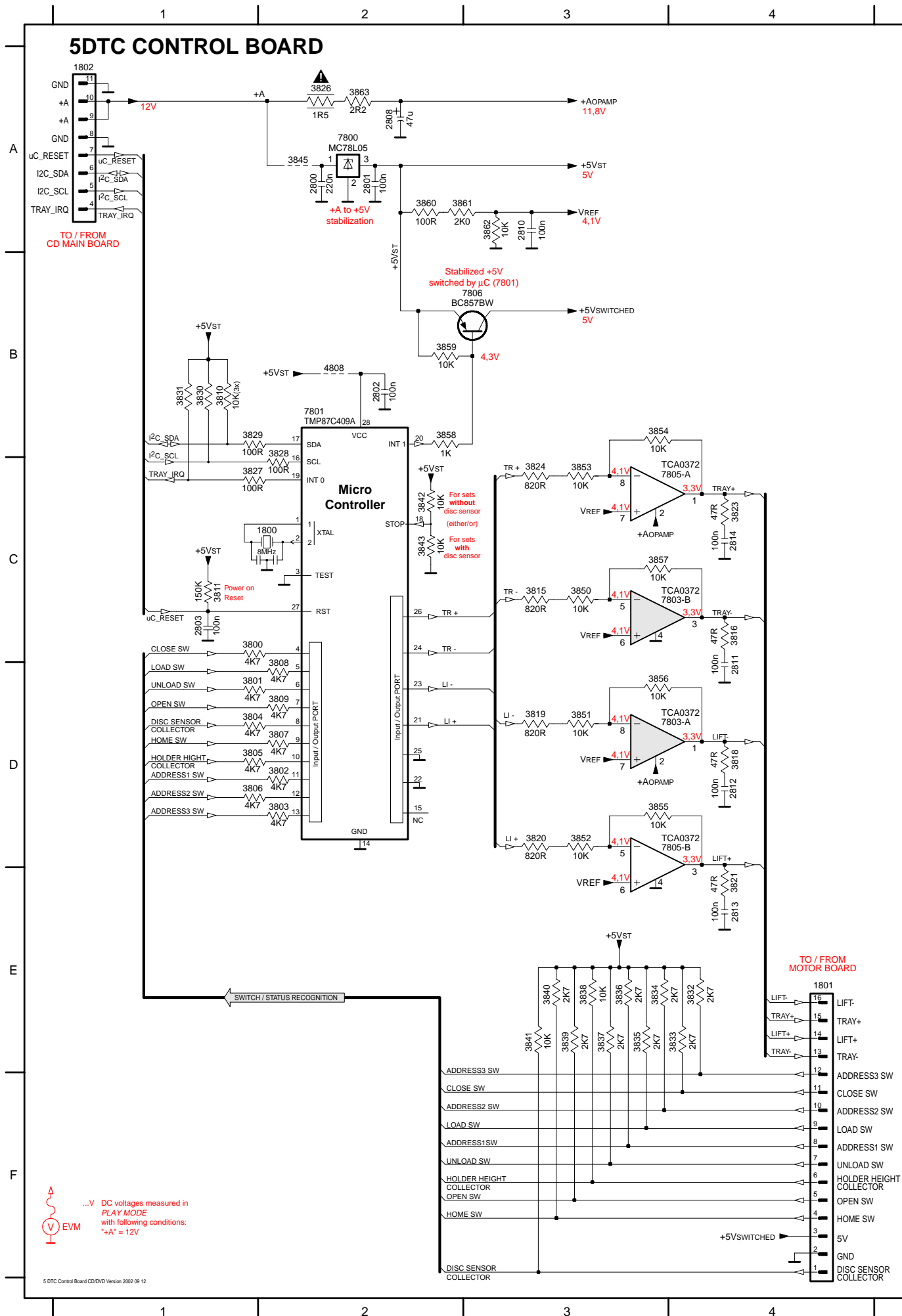
# 5DTC CD Board Side B



- 1800 D5
- 1810 E3
- 1820 C1
- 1823 D1
- 1824 A3
- 1825 A4
- 2812 C5
- 2814 E4
- 2815 E4
- 2816 D4
- 2817 C5
- 2818 D4
- 2821 E3
- 2822 E3
- 2823 E2
- 2825 E2
- 2830 B2
- 2831 B4
- 2832 C3
- 2836 A6
- 2838 C4
- 2839 E5
- 2840 E5
- 2842 A4
- 2846 A3
- 2848 A4
- 2849 B4
- 2851 A3
- 2852 E6
- 2853 D6
- 2854 B5
- 2855 A4
- 2857 E6
- 2866 E4
- 2876 D5
- 2877 D5
- 2885 B3
- 2886 D3
- 2888 A7
- 3820 E5
- 3829 E2
- 3830 A4
- 3833 E3
- 3836 C3
- 3841 C3
- 3847 C3
- 3855 E5
- 3856 C3
- 3859 E5
- 3860 C3
- 3861 C3
- 3862 E6
- 3864 B4
- 3867 B4
- 3873 B4
- 3874 B4
- 3880 E6
- 3881 D6
- 3882 A4
- 3897 E4
- 3898 E4
- 3900 B1
- 3902 C4
- 3911 A4
- 3920 B4
- 3925 D3
- 3926 D2
- 3927 D2
- 3928 D2
- 4812 B2
- 4813 B2
- 4815 B2
- 4816 C1
- 5002 D3
- 6877 D6
- 7801 B6
- 7804 B2
- 7875 E6

This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram respectively partslist.



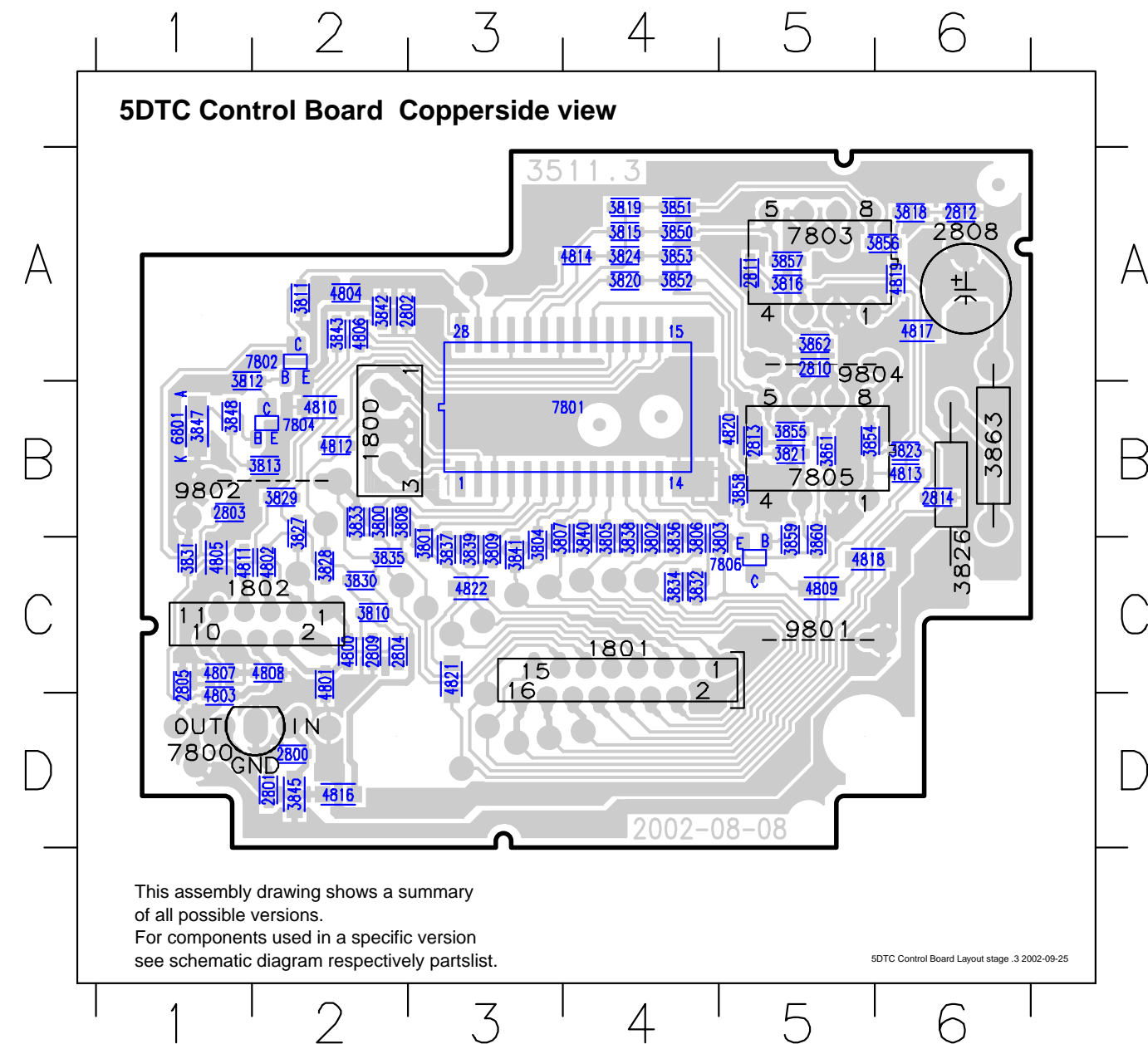


#### MAPPING FOR CIRCUIT DIAGRAM

1800	C2	2810	A3	3804	D1	3811	C1	3824	C3	3833	E4	3841	E3	3854	B3	3862	A3	7805-B	D3
1801	E4	2811	D4	3805	D1	3815	C3	3826	A2	3834	E3	3842	C2	3855	D3	3863	A2	7806	B3
1802	A1	2812	D4	3806	D1	3816	C4	3827	C1	3835	E3	3843	C2	3856	D3	3868	B2		
2800	A2	2813	E4	3807	D2	3818	D4	3828	C2	3836	E3	3845	A2	3857	C3	7800	A2		
2801	A2	2814	C4	3808	D1	3819	D3	3829	B1	3837	E3	3850	C3	3858	B2	7801	B2		
2802	B2	3800	C1	3808	D2	3820	D3	3830	B1	3838	E3	3851	D3	3859	B3	7803-A	D3		
2803	C1	3802	D2	3809	D2	3821	E4	3831	B1	3839	E3	3852	D3	3860	A2	7803-B	C3		
2808	A2	3803	D2	3810	B1	3823	C4	3832	E4	3840	E3	3853	C3	3861	A2	7805-A	C3		

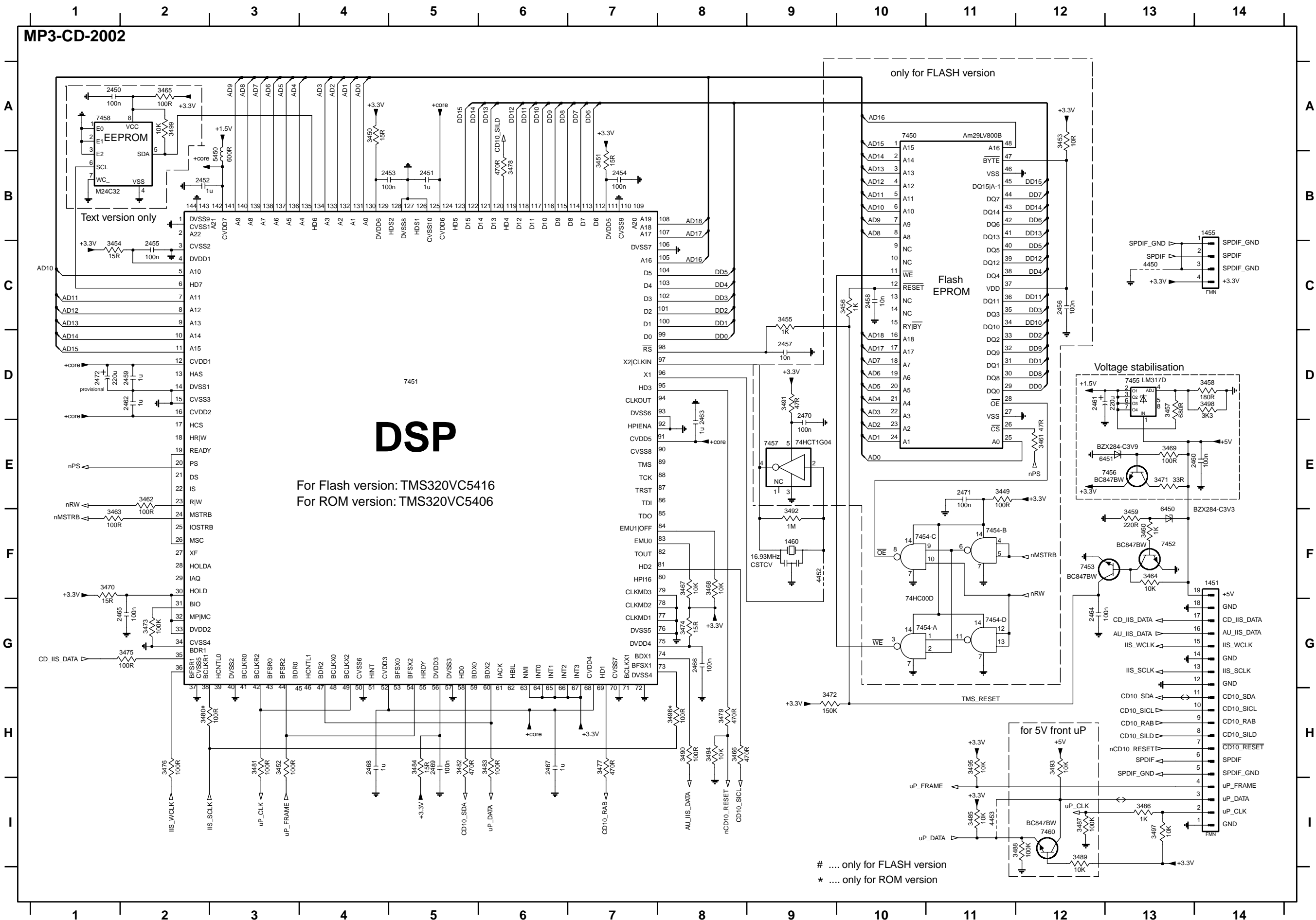
#### MAPPING FOR COMPONENT LAYOUT

1800	B2	2810	A5	3806	C4	3819	A4	3832	C4	3843	A2	3857	A5	4804	A2	4816	D2	7803	A5
1801	C4	2811	A5	3807	C3	3820	A4	3833	B2	3845	D2	3858	B5	4805	C1	4817	A6	7804	B2
1802	C2	2812	A6	3808	B2	3821	B5	3834	C4	3847	B1	3859	C5	4806	A2	4818	C5	7806	C5
2800	D2	2813	B5	3809	C3	3823	B6	3835	C2	3848	B1	3860	C5	4807	C1	4819	A6	9801	C5
2801	D2	2814	B6	3810	C2	3824	A4	3836	C4	3850	A4	3861	B5	4808	C2	4820	B5	9802	B2
2802	A2	3800	B2	3811	A2	3826	B6	3837	C3	3851	A4	3862	A5	4809	C5	4821	C3	9804	A5
2803	B1	3801	C3	3812	A1	3827	B2	3838	C4	3852	A4	3863	B6	4810	B2	4822	C3		
2804	C2	3802	C4	3813	B2	3828	C2	3839	C3	3853	A4	4800	C2	4811	C1	6801	B1		
2805	C1	3803	C4	3815	A4	3829	B2	3840	C4	3854	B5	4801	C2	4812	B2	7800	D2		
2808	A6	3804	C3	3816	A5	3829	C2	3841	C3	3855	B5	4802	C2	4813	B6	7801	B4		
2809	C2	3805	C4	3818	A6	3831	C1	3842	A2	3856	A6	4803	D1	4814	A4	7802	A2		



This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram respectively partslist.

MP3 BOARD - CIRCUIT DIAGRAM



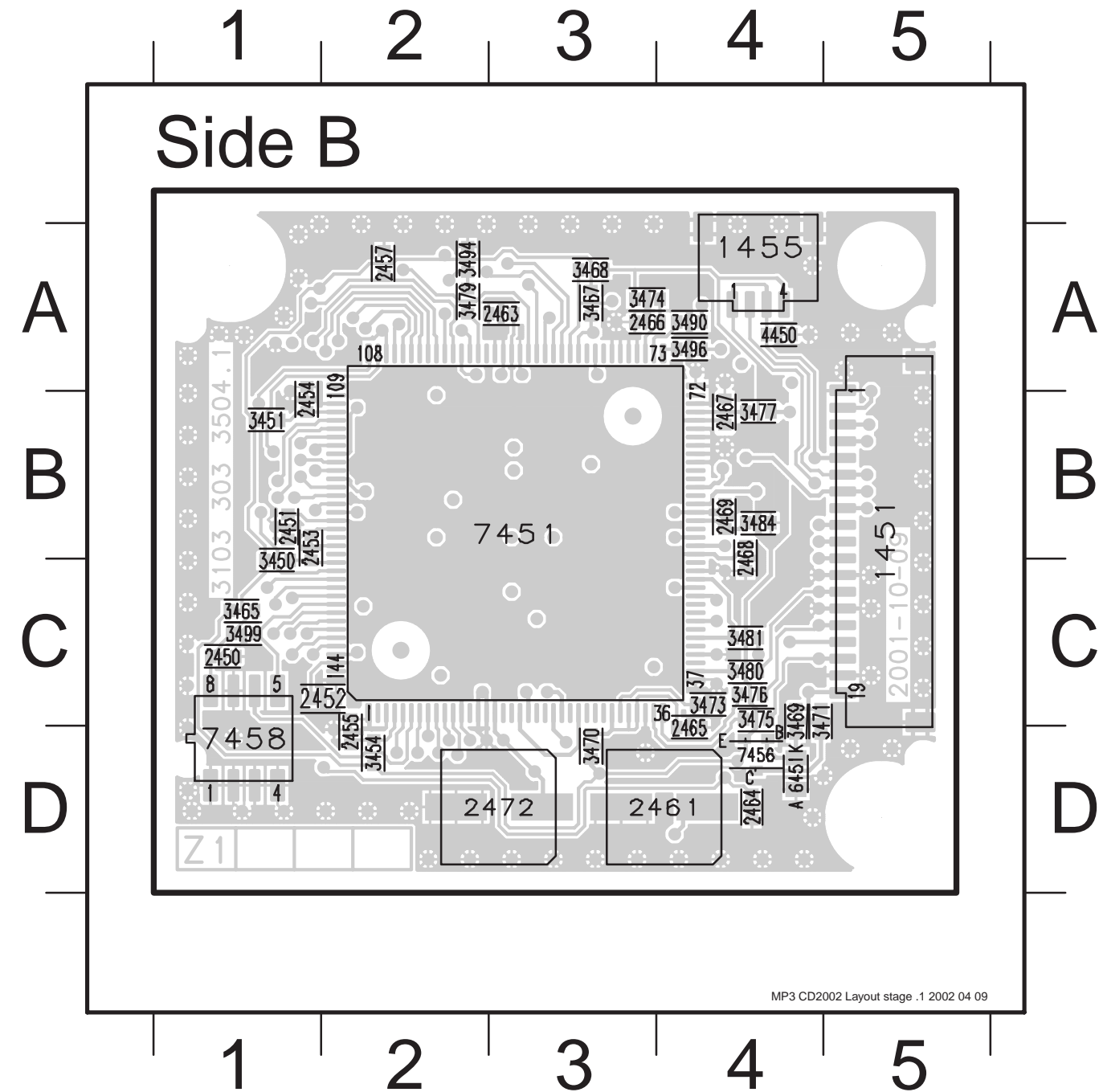
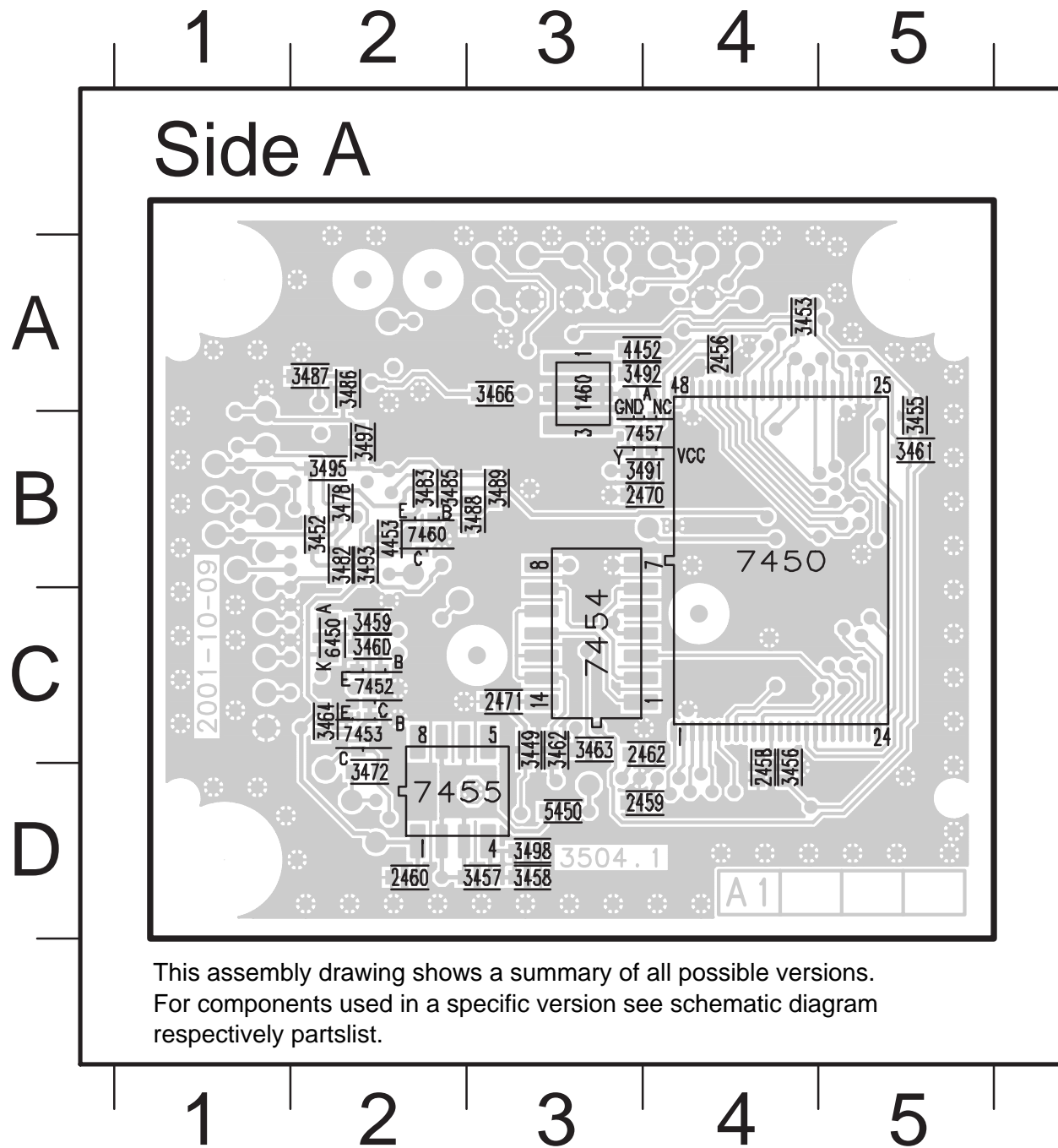
- 2451 B5
- 2452 B2
- 2453 B4
- 2454 B7
- 2455 C2
- 2456 C12
- 2457 D9
- 2458 C10
- 2459 D2
- 2460 E13
- 2461 D12
- 2462 D2
- 2463 D8
- 2464 G12
- 2465 G2
- 2466 G8
- 2467 H6
- 2468 H4
- 2469 H5
- 2470 D9
- 2471 E11
- 2472 D1
- 3449 E11
- 3450 A4
- 3451 B7
- 3452 H3
- 3453 A12
- 3454 C1
- 3455 C9
- 3456 C10
- 3457 D13
- 3458 D14
- 3459 F13
- 3460 F13
- 3461 E12
- 3462 E2
- 3463 F1
- 3464 F13
- 3465 A2
- 3466 H8
- 3467 F8
- 3468 F8
- 3469 E13
- 3470 F1
- 3471 E13
- 3472 H9
- 3473 G2
- 3474 G8
- 3475 G2
- 3476 H2
- 3477 H7
- 3478 B6
- 3479 H8
- 3480 D2
- 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
- 4454 B3
- 6450 E13
- 6451 E13
- 7450 A10
- 7451 D5
- 7452 F13
- 7453 F12
- 7454-A G11
- 7454-B F11
- 7454-C F11
- 7454-D G11
- 7455 D13
- 7456 E12
- 7457 E9
- 7458 A1
- 7460 I12

# .... only for FLASH version  
 \* .... only for ROM version

MP3 BOARD - COMPONENT LAYOUT

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

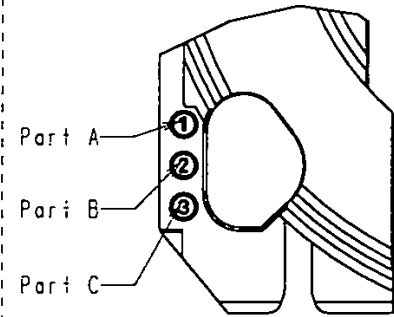
1451 B5	2457 A2	2469 B4	3469 C4	3479 A2	4450 A4
1455 A4	2461 D4	2472 D3	3470 D3	3480 C4	6451 D4
2450 C1	2463 A3	3450 C1	3471 C4	3481 C4	7451 B3
2451 B1	2464 D4	3451 B1	3473 C4	3484 B4	7456 D4
2452 C2	2465 D4	3454 D2	3474 A3	3490 A4	7458 D1
2453 B1	2466 A3	3465 C1	3475 C4	3494 A2	
2454 B1	2467 B4	3467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



Exploded view 5DTC mechanic - for orientation only

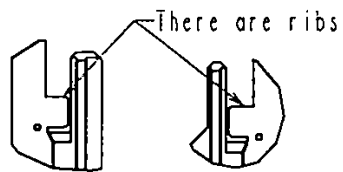
Sketch-1

TRAY(SUB)	3	83	84	85	86
TRAY No.	TRAY 1	TRAY 2; TRAY 3	TRAY 4	TRAY 5	
Part A	1	HOLE	1	HOLE	1
Part B	2	2	HOLE	HOLE	2
Part C	3	3	3	3	HOLE

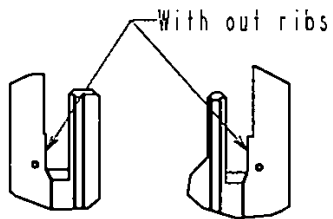


Sketch-2

TRAY(MAIN)

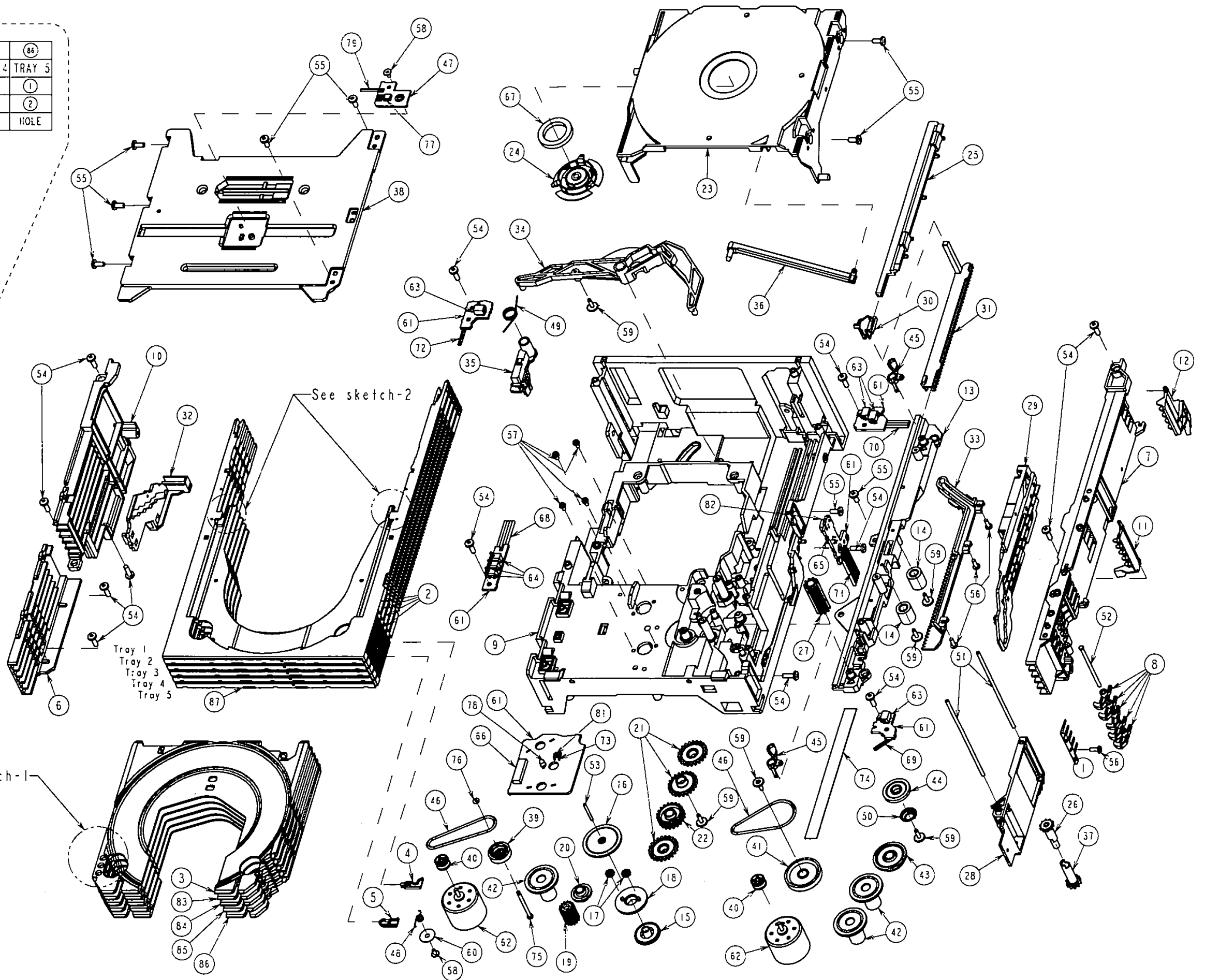


2 TRAY 1~4



87 TRAY 5

See sketch-1



**ELECTRICAL PARTSLIST 5DTC MODULE MP3CD Version CD Board****MECHANICAL PARTS**

	<b>3103 308 54710</b>	<b>5DTC Module</b> (mechanic w/o electronic)
201	3103 309 05390	CD DRIVE DA12T3
252	4822 529 10387	Rubber damper CD DRIVE, FRONT
253	4822 529 10386	Rubber damper CD DRIVE, REAR

**MISCELLANEOUS**

	<b>3103 308 67020</b>	<b>MP3 Board</b>
1800	4822 267 11028	FFC-CONNECTOR 16P, Side entry
1820	2422 025 17303	FFC-CONNECTOR 19P, Side entry
1823	2422 025 16371	FFC-CONNECTOR 8P, Side entry
1824	4822 265 10979	FFC-CONNECTOR, 15P, Side entry

8001	3103 308 93090	FFC CABLE 16Pin 80mm BD
8051	3103 308 93100	FFC-CABLE 19Pin 90mm AD
8052	3103 308 93120	FFC CABLE 8Pin 80mm BD

**CAPACITORS**

2812	4822 124 11947	10 $\mu$ F	20%	16V
2813	4822 126 13193	4,7nF	10%	63V
2814	5322 126 11579	3,3nF	10%	63V
2815	2020 552 94427	100pF	5%	50V
2816	3198 017 42230	22nF	10%	50V

2817	4822 124 22726	4,7 $\mu$ F	20%	35V
2818	3198 024 44730	47nF	5%	50V
2821	2238 586 59812	100nF	10%	50V
2822	4822 126 13344	1,5nF	5%	63V
2823	4822 124 42383	220 $\mu$ F	20%	4V

2824	4822 126 14043	1 $\mu$ F	20%	16V
2825	4822 126 13344	1,5nF	5%	63V
2826	3198 017 34730	47nF	10%	16V
2827	5322 126 11578	1nF	10%	63V
2828	4822 126 11669	27pF	10%	50V

2829	3198 017 34730	47nF	10%	16V
2830	4822 124 81286	47 $\mu$ F	20%	16V
2831	4822 124 81286	47 $\mu$ F	20%	16V
2832	3198 017 31530	15nF	10%	50V
2833	5322 126 11583	10nF	10%	63V

2834	3198 017 31530	15nF	10%	50V
2835	5322 126 11583	10nF	10%	63V
2836	4822 124 40433	47 $\mu$ F	20%	25V
2837	3198 017 34730	47nF	10%	16V
2838	3198 017 44740	470nF	20%	10V

2839	2238 586 59812	100nF	10%	50V
2840	4822 126 14549	33nF	10%	16V
2841	2238 586 59812	100nF	10%	50V
2843	2020 552 94427	100pF	5%	50V
2844	5322 122 33861	120pF	5%	NP0

2845	5322 122 33861	120pF	5%	NP0
2846	4822 124 40248	10 $\mu$ F	20%	63V
2847	3198 017 41050	1 $\mu$ F	20%	10V
2848	2020 552 94427	100pF	5%	50V
2849	5322 122 33861	120pF	5%	NP0

2850	5322 122 33861	120pF	5%	NP0
2851	4822 124 40248	10 $\mu$ F	20%	63V
2852	4822 126 14549	33nF	10%	16V
2853	5322 126 11583	10nF	10%	63V
2854	4822 124 12245	220 $\mu$ F	20%	16V

2855	4822 124 11912	220 $\mu$ F	20%	6,3V
2860	4822 122 33753	150pF	5%	50V
2861	4822 122 33753	150pF	5%	50V
2863	4822 126 14508	180pF	5%	50V
2864	4822 126 14508	180pF	5%	50V

2865	4822 126 14508	180pF	5%	50V
2866	4822 126 14508	180pF	5%	50V

**CAPACITORS**

2869	3198 017 34730	47nF	10%	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	3198 017 44740	470nF	20%	10V
2877	4822 124 40433	47 $\mu$ F	20%	25V
2878	2238 586 59812	100nF	10%	50V

2879	5322 126 11578	1nF	10%	63V
2880	2222 867 15339	33pF	5%	50V
2881	4822 126 14249	560pF	10%	50V
2882	4822 126 14226	82pF	5%	50V
2883	3198 017 44740	470nF	20%	10V

2884	3198 017 44740	470nF	20%	10V
2885	4822 124 40196	220 $\mu$ F	20%	16V
2886	2238 586 59812	100nF	10%	50V
2887	3198 017 34730	47nF	10%	16V

**RESISTORS**

3801	4822 051 30563	56k $\Omega$	5%	0,06W
3802	4822 051 30563	56k $\Omega$	5%	0,06W
3803	4822 117 12925	47k $\Omega$	1%	0,06W
3804	4822 117 12925	47k $\Omega$	1%	0,06W
3805	4822 117 12925	47k $\Omega$	1%	0,06W

3806	4822 117 12925	47k $\Omega$	1%	0,06W
3807	4822 051 30103	10k $\Omega$	5%	0,06W
3808	4822 051 30103	10k $\Omega$	5%	0,06W
3809	4822 051 30103	10k $\Omega$	5%	0,06W
3810	4822 051 30103	10k $\Omega$	5%	0,06W

3811	4822 051 30103	10k $\Omega$	5%	0,06W
3812	4822 051 30103	10k $\Omega$	5%	0,06W
3813	4822 051 30222	2,2k $\Omega$	5%	0,06W
3814	4822 051 30222	2,2k $\Omega$	5%	0,06W
3815	4822 051 30222	2,2k $\Omega$	5%	0,06W

3816	4822 051 30222	2,2k $\Omega$	5%	0,06W
3817	4822 051 30479	47 $\Omega$	5%	0,06W
3818	4822 051 30479	47 $\Omega$	5%	0,06W
3819	4822 051 30479	47 $\Omega$	5%	0,06W
3820	4822 052 10478	4,7 $\Omega$	5%	NFR25

3821	4822 117 12917	1 $\Omega$	5%	0,06W
3822	4822 051 30103	10k $\Omega$	5%	0,06W
3823	4822 051 30102	1k $\Omega$	5%	0,06W
3824	4822 051 30474	470k $\Omega$	5%	0,06W
3825	5322 117 13029	47k $\Omega$	1%	0,06W

3826	4822 117 12891	220k $\Omega$	1%	0,06W
3827	5322 117 13056	8,2k $\Omega$	1%	0,06W
3828	5322 117 13052	2,7k $\Omega$	1%	0,06W
3829	4822 051 30121	120 $\Omega$	5%	0,06W
3831	4822 051 30471	470 $\Omega$	5%	0,06W

3832	4822 051 30471	470 $\Omega$	5%	0,06W
3833	4822 051 30121	120 $\Omega$	5%	0,06W
3834	4822 051 30472	4,7k $\Omega$	5%	0,06W
3836	4822 117 13632	100k $\Omega$	1%	0,06W
3837	4822 051 30471	470 $\Omega$	5%	0,06W

3839	4822 051 30471	470 $\Omega$	5%	0,06W
3840	4822 051 30223	22k $\Omega$	5%	0,06W
3841	4822 051 30153	15k $\Omega$	5%	0,06W
3842	4822 051 30102	1k $\Omega$	5%	0,06W
3843	4822 051 30102	1k $\Omega$	5%	0,06W

3844	4822 051 30101	100 $\Omega$	5%	0,06W
3845	4822 051 30471	470 $\Omega$	5%	0,06W



## ELECTRICAL PARTSLIST 5DTC MODULE MP3CD Version CD Board

## RESISTORS

3846	4822 051 30102	1kΩ	5%	0,06W
3847	4822 117 12968	820Ω	5%	0,06W
3848	4822 051 30221	220Ω	5%	0,06W
3849	4822 051 30471	470Ω	5%	0,06W
3850	4822 117 12925	47kΩ	1%	0,06W
3851	4822 117 12968	820Ω	5%	0,06W
3852	4822 051 30221	220Ω	5%	0,06W
3854	4822 117 12925	47kΩ	1%	0,06W
3855	4822 051 30393	39kΩ	5%	0,06W
3856	4822 051 30472	4,7kΩ	5%	0,06W
3857	4822 051 30008	CHIP JUMPER 0603		
3859	4822 117 13632	100kΩ	1%	0,06W
3860	4822 051 30123	12kΩ	5%	0,06W
3861	4822 051 30153	15kΩ	5%	0,06W
3862	4822 051 30393	39kΩ	5%	0,06W
3864	4822 051 30333	33kΩ	5%	0,06W
3865	4822 051 30181	180Ω	5%	0,06W
3866	4822 117 13608	4,7Ω	5%	0,06W
3867	4822 051 30333	33kΩ	5%	0,06W
3868	4822 051 30183	18kΩ	5%	0,06W
3869	4822 051 30183	18kΩ	5%	0,06W
3870	4822 051 30681	680Ω	5%	0,06W
3871	4822 051 30181	180Ω	5%	0,06W
3872	4822 051 30272	2,7kΩ	5%	0,06W
3873	4822 051 30333	33kΩ	5%	0,06W
3874	4822 051 30333	33kΩ	5%	0,06W
3875	4822 051 30183	18kΩ	5%	0,06W
3876	4822 051 30183	18kΩ	5%	0,06W
3877	4822 051 30681	680Ω	5%	0,06W
3878	4822 051 30471	470Ω	5%	0,06W
3879	4822 051 30223	22kΩ	5%	0,06W
3880	4822 051 30339	33Ω	5%	0,06W
3881	4822 051 30151	150Ω	5%	0,06W
3883	4822 051 30472	4,7kΩ	5%	0,06W
3884	4822 051 30472	4,7kΩ	5%	0,06W
3888	4822 051 30103	10kΩ	5%	0,06W
3889	4822 051 30471	470Ω	5%	0,06W
3890	4822 051 30471	470Ω	5%	0,06W
3891	4822 051 30102	1kΩ	5%	0,06W
3892	4822 051 30102	1kΩ	5%	0,06W
3893	4822 051 30471	470Ω	5%	0,06W
3895	4822 051 30273	27kΩ	5%	0,06W
3896	4822 051 30101	100Ω	5%	0,06W
3897	4822 051 30333	33kΩ	5%	0,06W
3898	4822 051 30221	220Ω	5%	0,06W
3899	4822 051 30272	2,7kΩ	5%	0,06W
3901	4822 051 30561	560Ω	5%	0,06W
3902	4822 117 11139	1,5kΩ	1%	0,1W
3903	4822 051 30332	3,3kΩ	5%	0,06W
3904	4822 051 30332	3,3kΩ	5%	0,06W
3905	4822 051 30681	680Ω	5%	0,06W
3906	4822 051 30471	470Ω	5%	0,06W
3907	4822 117 12968	820Ω	5%	0,06W
3908	4822 051 30222	2,2kΩ	5%	0,06W
3909	4822 117 13632	100kΩ	1%	0,06W
3910	4822 051 30471	470Ω	5%	0,06W
3912	4822 051 30221	220Ω	5%	0,06W
3916	4822 051 30471	470Ω	5%	0,06W
3917	4822 117 13608	4,7Ω	5%	0,06W
3918	4822 051 30103	10kΩ	5%	0,06W
3919	4822 051 30153	15kΩ	5%	0,06W
3920	4822 051 30101	100Ω	5%	0,06W
3923	4822 051 30103	10kΩ	5%	0,06W

## RESISTORS

3925	4822 051 30101	100Ω	5%	0,06W
3926	4822 051 30101	100Ω	5%	0,06W
3927	4822 051 30101	100Ω	5%	0,06W
3928	4822 051 30101	100Ω	5%	0,06W
4807	4822 051 30008	CHIP JUMPER 0603		
4809	4822 051 30008	CHIP JUMPER 0603		
4820	4822 051 30008	CHIP JUMPER 0603		
4824	4822 051 30008	CHIP JUMPER 0603		
4835	4822 051 20008	CHIP JUMPER 0805		
4836	4822 051 20008	CHIP JUMPER 0805		
4837	4822 051 20008	CHIP JUMPER 0805		
4838	4822 051 20008	CHIP JUMPER 0805		
4840	4822 051 20008	CHIP JUMPER 0805		
4841	4822 051 20008	CHIP JUMPER 0805		
4843	4822 051 20008	CHIP JUMPER 0805		

## COILS

1810	2422 540 98519	RESONATOR 8,467MHz
5001	2422 549 44607	FERRITE BEAD
5002	2422 549 44607	FERRITE BEAD

## DIODES

6877	9322 129 34685	BZX284-C3V9
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## TRANSISTORS

7875	5322 130 42755	BC847C
7876	5322 130 42755	BC847C
7877	5322 130 42755	BC847C
7878	5322 130 42755	BC847C
7879	5322 130 60123	BC807-40

## INTEGRATED CIRCUITS

7800	9352 684 20557	SAA7325H/T/M2B, Signal Processor
7801	4822 209 72554	MC7808CT 8V Regulator
7802	9322 181 79668	MM1469PH Motor Driver
7810	5322 209 82941	LM358D, Dual Opamp
7811	5322 209 82941	LM358D, Dual Opamp



**ELECTRICAL PARTSLIST 5DTC MODULE MP3CD Version Control Board****MECHANICAL PARTS**

**3103 308 54710 5DTC Module** (mechanic w/o electronic)

**MISCELLANEOUS**

1801 2422 025 17065 FFC-CONNECTOR 16P, top entry  
 1802 2422 025 17788 FFC-CONNECTOR 8P, top entry  
 8021 3103 308 93110 FFC-CABLE 16Pin 60mm AD

**CAPACITORS**

2800© 4822 126 13879 220nF 20% 16V  
 2801© 2238 586 59812 100nF 10% 50V  
 2802© 2238 586 59812 100nF 10% 50V  
 2803© 2238 586 59812 100nF 10% 50V  
 2808 4822 124 40433 47µF 20% 25V  
  
 2810© 3198 017 34730 47nF 10% 16V  
 2811© 2238 586 59812 100nF 10% 50V  
 2812© 2238 586 59812 100nF 10% 50V  
 2813© 2238 586 59812 100nF 10% 50V  
 2814© 2238 586 59812 100nF 10% 50V

**RESISTORS**

3800© 4822 051 30472 4,7kΩ 5% 0,06W  
 3801© 4822 051 30472 4,7kΩ 5% 0,06W  
 3802© 4822 051 30472 4,7kΩ 5% 0,06W  
 3803© 4822 051 30472 4,7kΩ 5% 0,06W  
 3804© 4822 051 30472 4,7kΩ 5% 0,06W  
  
 3805© 4822 051 30472 4,7kΩ 5% 0,06W  
 3806© 4822 051 30472 4,7kΩ 5% 0,06W  
 3807© 4822 051 30472 4,7kΩ 5% 0,06W  
 3808© 4822 051 30472 4,7kΩ 5% 0,06W  
 3809© 4822 051 30472 4,7kΩ 5% 0,06W  
  
 3810© 4822 051 30103 10kΩ 5% 0,06W  
 3811© 4822 051 30154 150kΩ 5% 0,0625W  
 3815© 5322 117 13057 820Ω 1% 0,06W  
 3816© 4822 051 30479 47Ω 5% 0,06W  
 3818© 4822 051 30479 47Ω 5% 0,06W  
  
 3819© 5322 117 13057 820Ω 1% 0,06W  
 3820© 5322 117 13057 820Ω 1% 0,06W  
 3821© 4822 051 30479 47Ω 5% 0,06W  
 3823© 4822 051 30479 47Ω 5% 0,06W  
 3824© 5322 117 13057 820Ω 1% 0,06W  
  
 3826▲ 4822 117 12148 1,5Ω 5% 0,33W  
 3827© 4822 051 30101 100Ω 5% 0,06W  
 3828© 4822 051 30101 100Ω 5% 0,06W  
 3829© 4822 051 30101 100Ω 5% 0,06W  
 3830© 4822 051 30103 10kΩ 5% 0,06W  
  
 3831© 4822 051 30103 10kΩ 5% 0,06W  
 3832© 4822 051 30272 2,7kΩ 5% 0,06W  
 3833© 4822 051 30272 2,7kΩ 5% 0,06W  
 3834© 4822 051 30272 2,7kΩ 5% 0,06W  
 3835© 4822 051 30272 2,7kΩ 5% 0,06W  
  
 3836© 4822 051 30272 2,7kΩ 5% 0,06W  
 3837© 4822 051 30272 2,7kΩ 5% 0,06W  
 3838© 4822 051 30103 10kΩ 5% 0,06W  
 3839© 4822 051 30272 2,7kΩ 5% 0,06W  
 3840© 4822 051 30272 2,7kΩ 5% 0,06W  
  
 3841© 4822 051 30103 10kΩ 5% 0,06W  
 3842© 4822 051 30103 10kΩ 5% 0,06W  
 3845© 4822 051 20159 15Ω 5% 0,1W  
 3850© 4822 117 12706 10kΩ 1% 0,06W  
 3851© 4822 117 12706 10kΩ 1% 0,06W  
  
 3852© 4822 117 12706 10kΩ 1% 0,06W  
 3853© 4822 117 12706 10kΩ 1% 0,06W  
 3854© 4822 117 12706 10kΩ 1% 0,06W

**RESISTORS**

3855© 4822 117 12706 10kΩ 1% 0,06W  
 3856© 4822 117 12706 10kΩ 1% 0,06W  
 3857© 4822 117 12706 10kΩ 1% 0,06W  
 3858© 4822 051 30102 1kΩ 5% 0,06W  
 3859© 4822 051 30103 10kΩ 5% 0,06W  
  
 3860© 5322 117 13017 100Ω 1% 0,06W  
 3861© 2322 704 62002 2kΩ 1% 0,06W  
 3862© 4822 117 12706 10kΩ 1% 0,06W  
 3863 4822 053 10228 2,2Ω 5% 1W  
 4800© 4822 051 30008 CHIP JUMPER 0603  
  
 4802© 4822 051 30008 CHIP JUMPER 0603  
 4803© 4822 051 30008 CHIP JUMPER 0603  
 4804© 4822 051 30008 CHIP JUMPER 0603  
 4805© 4822 051 20008 CHIP JUMPER 0805  
 4806© 4822 051 30008 CHIP JUMPER 0603  
  
 4807© 4822 051 30008 CHIP JUMPER 0603  
 4808© 4822 051 30008 CHIP JUMPER 0603  
 4809© 4822 051 20008 CHIP JUMPER 0805  
 4810© 4822 051 20008 CHIP JUMPER 0805  
 4811© 4822 051 30008 CHIP JUMPER 0603  
  
 4812© 4822 051 30008 CHIP JUMPER 0603  
 4813© 4822 051 30008 CHIP JUMPER 0603  
 4814© 4822 051 30008 CHIP JUMPER 0603  
 4816© 4822 051 20008 CHIP JUMPER 0805  
 4817© 4822 051 20008 CHIP JUMPER 0805  
  
 4818© 4822 051 20008 CHIP JUMPER 0805  
 4819© 4822 051 30008 CHIP JUMPER 0603  
 4820© 4822 051 30008 CHIP JUMPER 0603  
 4821© 4822 051 20008 CHIP JUMPER 0805  
 4822© 4822 051 20008 CHIP JUMPER 0805

**COILS**

1800 4822 242 72066 CERAMIC FILTER 8,0MHz

**TRANSISTORS**

7806© 3198 010 42320 BC857BW

**INTEGRATED CIRCUITS**

7800 4822 209 72042 MC78L05ACP, STABILIZER  
 7801© 3103 307 01640 TMP87P809M Microcontroller  
 7803 4822 209 62059 TCA0372DP1, 2-FOLD OP-AMP.  
 7805 4822 209 62059 TCA0372DP1, 2-FOLD OP-AMP.

**ELECTRICAL PARTSLIST 5DTC MODULE MP3CD Version MP3 Board****MISCELLANEOUS**

1451 2422 025 17303 FFC-CONNECTOR 19P,side entry

**CAPACITORS**

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

2455	2238 586 59812	100nF	10%	50V
2456	2238 586 59812	100nF	10%	50V
2457	5322 126 11583	10nF	10%	63V
2458	5322 126 11583	10nF	10%	63V
2459	3198 017 41050	1µF	20%	10V

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

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

2470	2238 586 59812	100nF	10%	50V
2471	2238 586 59812	100nF	10%	50V

**RESISTORS**

3449	4822 051 30101	100Ω	5%	0,06W
3450	4822 117 12971	15Ω	5%	0,06W
3451	4822 117 12971	15Ω	5%	0,06W
3452	4822 051 30101	100Ω	5%	0,06W
3453	4822 051 30109	10Ω	5%	0,06W

3454	4822 117 12971	15Ω	5%	0,06W
3455	4822 051 30102	1kΩ	5%	0,06W
3456	4822 051 30102	1kΩ	5%	0,06W
3457	5322 117 13051	680Ω	1%	0,06W
3458	5322 117 13061	180Ω	1%	0,06W

3459	4822 051 30221	220Ω	5%	0,06W
3460	4822 051 30102	1kΩ	5%	0,06W
3461	4822 051 30479	47Ω	5%	0,06W
3462	4822 051 30101	100Ω	5%	0,06W
3463	4822 051 30101	100Ω	5%	0,06W

3464	4822 051 30103	10kΩ	5%	0,06W
3465	4822 051 30101	100Ω	5%	0,06W
3466	4822 051 30471	470Ω	5%	0,06W
3467	4822 051 30103	10kΩ	5%	0,06W
3468	4822 051 30103	10kΩ	5%	0,06W

3469	4822 051 30101	100Ω	5%	0,06W
3470	4822 117 12971	15Ω	5%	0,06W
3471	4822 051 30339	33Ω	5%	0,06W
3472	4822 051 30154	150kΩ	5%	0,06W
3473	4822 117 13632	100kΩ	1%	0,06W

3474	4822 117 12971	15Ω	5%	0,06W
3475	4822 051 30101	100Ω	5%	0,06W
3476	4822 051 30101	100Ω	5%	0,06W
3477	4822 051 30471	470Ω	5%	0,06W
3478	4822 051 30471	470Ω	5%	0,06W

3479	4822 051 30471	470Ω	5%	0,06W
3480	4822 051 30101	100Ω	5%	0,06W
3481	4822 051 30101	100Ω	5%	0,06W
3482	4822 051 30471	470Ω	5%	0,06W
3483	4822 051 30101	100Ω	5%	0,06W

**RESISTORS**

3484	4822 117 12971	15Ω	5%	0,06W
3486	4822 051 30101	100Ω	5%	0,06W
3488	4822 117 13632	100kΩ	1%	0,06W
3489	4822 051 30103	10kΩ	5%	0,06W
3490	4822 051 30101	100Ω	5%	0,06W

3491	4822 051 30479	47Ω	5%	0,06W
3492	4822 051 30105	1MΩ	5%	0,06W
3493	4822 051 30103	10kΩ	5%	0,06W
3494	4822 051 30103	10kΩ	5%	0,06W
3495	4822 051 30103	10kΩ	5%	0,06W

3497	4822 051 30103	10kΩ	5%	0,06W
3498	4822 051 30332	3,3kΩ	5%	0,06W
3499	4822 051 30103	10kΩ	5%	0,06W
4450	4822 051 30008			CHIP JUMPER 0603

**COILS**

1460	4822 242 10989	CER.RES. 16,9MHz
5450	4822 157 11074	100µH

**DIODES**

6450	4822 130 11411	BZX284-C3V3
6451	4822 130 11366	BZX284-C3V9
7454	4822 130 34174	BZX79-B4V7

**TRANSISTORS**

7452	3198 010 42310	BC847BW
7453	3198 010 42310	BC847BW
7456	3198 010 42310	BC847BW
7460	3198 010 42310	BC847BW

**INTEGRATED CIRCUITS**

7451	not available	please order complete MP3 Board
7455	4822 209 17108	LM317LD Voltage Regulator
7457	9352 456 50115	HC1G04, Inverter
7458	9322 130 41668	M24C64, EEPROM

**3103 308 67020 MP3 Board**



**MECHANICAL & ACCESSORIES PARTS LIST - MAIN UNIT****SCREW LISTS - MAIN UNIT**

0112	3140 117 72141	Cover Tray Pre-Assy	5901	3139 110 53521	Meter VU	191	D3 x 12
0120	3140 117 70601	Panel Front Display	8051	3103 308 93100	FFC Foil 19P	192	D2 x 6
0176	3139 118 19931	Knob Game Sound Control	8052	3103 308 93120	FFC Foil 8P	193	D3 x 12
			8201	4822 320 12654	FFC Foil 07P/220/07P AD	194	D3 x 12
0177	4822 492 51374	Ring	8203	3140 110 22501	FFC Foil 08P/280/08P AD	226	M3 x 6
0201	3140 117 70291	Cab Front Pre-Assy					
0122	3140 117 72641	But ECO/Stdby Power	8404	3139 111 02511	FFC Foil 08P/300/08PAD Fold	227	M3 x 10
0130	3140 117 72531	Button Set 5DTC Play	8405	3139 110 35281	FFC Foil 10P/120/10P AD	228	M3 x 6
0132	3140 117 72681	Button DIM	8407	3139 110 34921	FFC Foil 08P/280/08P BD	229	D3 x 12
			8408	3139 111 02491	FFC Foil 19P/280/19P AD	232	M3 x 6
0136	3140 117 72821	Button PROG	8410	3139 111 02501	FFC Foil 05P/180/05PAD Fold	276	M3 x 6
0137	3140 117 72831	Button CLOCK					
0138	3140 117 72691	Butt Set Source Select	8412	3139 110 35031	FFC Foil 08P/140/08P AD	277	M3 x 10
0148	3140 117 72701	Butt Set IS/DSC/VAC	8413	3139 110 35401	FFC Foil 09P/340/09P AD	278	D3 x 16
0160	3139 118 19841	Button Set Func Control	8415	3139 110 34601	FFC Foil 07P/280/07P AD	279	D3 x 12
			8417	3139 110 36151	FFC Foil 15P/280/15P AD	280	D3 x 12
0171	3140 117 72741	Butt MIX-IT/Game Mode	8501	3139 110 33940	FFC Foil 04P/180/04P BD	283	D3 x 12
0246	3139 113 27141	Foot Rubber 4mm					
						287	D3 x 12
0202	3140 117 72471	Panel Rear Pre-Assy /21/22				288	D3 x 12
0202	3140 117 72481	Panel Rear Pre-Assy /37				292	M3 x 12
0203	3140 117 72811	Windows Pre-Assy				293	M3 x 12
0204	3141 077 50191	Volume Knob Pre-Assy				294	M3 x 6
0166	4822 492 51374	Ring					
						295	D3 x 12
0253	3139 114 79081	Panel Left				296	D3 x 12
0254	3139 114 79101	Panel Right				299	D2 x 8
0255	3139 114 78341	Cover Top				300	D3 x 12
0271	3139 114 71012	Stopper Heatsink				301	D3 x 12
0345	3140 118 51911	Box Speaker Assy /21					
						302	D3 x 10
0347	3140 118 51901	Box Speaker Assy /22/37				303	D3 x 10
0351	4822 303 50063	FM Aerial /21/22				304	D3 x 12
0351	4822 320 11094	FM Aerial 300R /37				305	D3 x 12
0352	4822 303 50082	Antenna AM Loop				306	D3 x 12
0353	3139 238 07321	Remote Control					
						307	D3 x 12
0356	2422 070 98151	△ Mains Cord /21/22				308	D3 x 12
0356	2422 070 98246	△ Mains Cord /37				309	D2 x 8
0357	3139 128 73010	△ Adaptor Plug /21				310	D3 x 10
0358	2422 076 00208	Cable Cinch/1M7/Cinch				311	D2 x 8
0364	3140 110 22491	Cable USB 3M M589					
						312	D3 x 12
0369	3140 118 72181	CD-ROM USB PC LINK Installer SW				313	D3 x 12
						314	D3 x 12
1007	3103 308 67741	PBAS USB Sound Agent					
1008	2822 031 01494	Fan 12VDC 0,8W 3100RPM					
5001	3139 118 32891	△ Mains Transformer /21					
5001	3139 118 32911	△ Mains Transformer /22					
5001	3139 118 32921	△ Mains Transformer /37					
5900	3139 110 53521	Meter VU					

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