

Service
Service
Service



Service Manual



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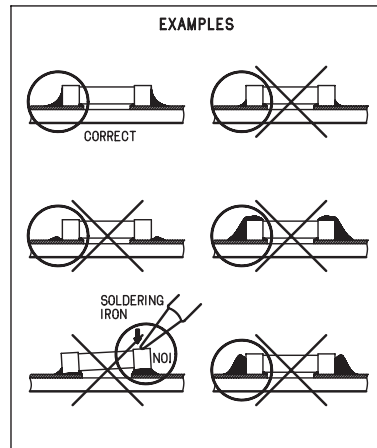
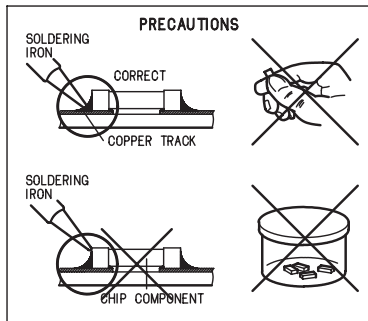
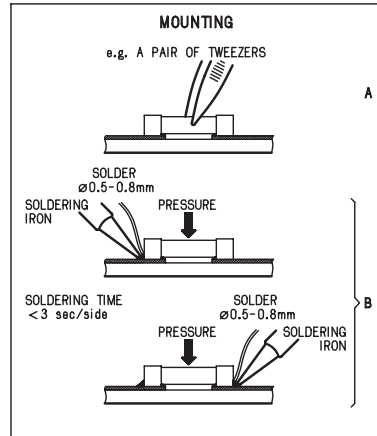
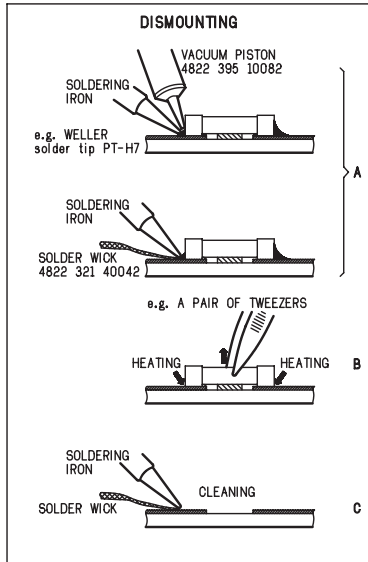
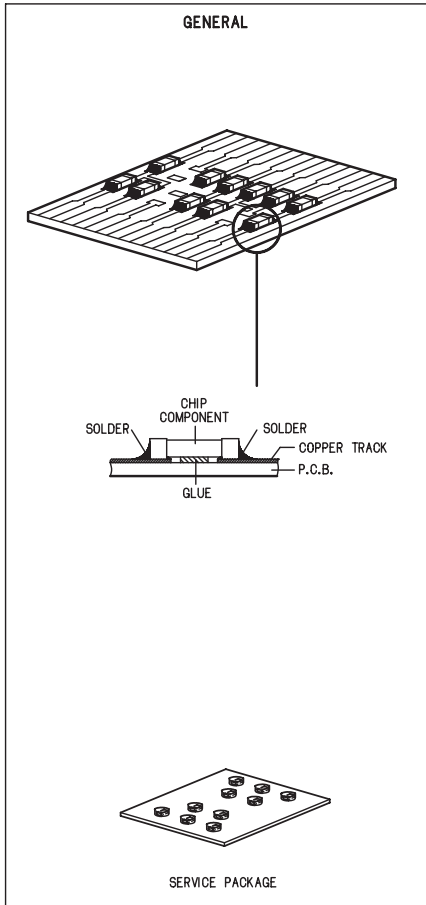
Electrical partslist14 - 1..14 - 16



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HANDLING CHIP COMPONENTS



(GB) WARNING

All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically. When repairing, make sure that you are connected with the same potential as the mass of the set via a wristband with resistance. Keep components and tools at this potential.

ESD



(NL) WAARSCHUWING

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

(F) ATTENTION

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

(D) WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD). Unsorgfältige Behandlung im Reparaturfall kann die Lebensdauer drastisch reduzieren. Sorgen Sie dafür, daß Sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind. Halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

(I) AVVERTIMENTO

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

(GB)

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used. Safety components are marked by the symbol

(F)

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

SAFETY



(D)

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

(NL)

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

(I)

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



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

(S) Varning !

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

(DK) Advarsel !

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

(FIN) Varoitus !

Avatussa laiteessa ja suojauslaituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen !

(GB)

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

(F)

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

TECHNICAL SPECIFICATIONS

GENERAL

| | |
|-----------------------|------------------------|
| Mains voltage | -/00C/05 : 230 V |
| | -/17 : 120 V |
| | -/01 : 120V/230 V |
| Mains frequency | -/00C/05 : 50 Hz |
| | -/17 : 60 Hz |
| | -/01 : 60 Hz/50 Hz |
| Battery | mains : 12 V (R20 x 8) |
| Power consumption | : < 5 W typ. |
| Dimension (W x H x D) | : 567 x 185 x 301 mm |
| Weight | : 5.6 Kg |

AMPLIFIER & LS WOOX

| | |
|--------------------|-------------------------|
| Output power | mains : 2 x 8.8 W |
| | battery : 2 x 8 W |
| Residual noise | : 60nW (volume minimum) |
| Channel difference | : 3dB typ. at 500mW |
| Hum & noise | : 500nw (Vol.max.-20dB) |

TUNER - FM SECTION

| | |
|-----------------|--------------------------|
| Tuning range | : 87.5 - 108 MHz |
| IF frequency | : 10.7 MHz \pm 0.02MHz |
| Sensitivity | : < 25 dBf at 26dB S/N |
| Selectivity | : > 20 dB at S9/300kHz |
| IF rejection | : > 50 dB |
| Image rejection | : > 20 dB |

TUNER - MW SECTION

| | |
|-----------------|--------------------------------|
| Tuning range | : 531 - 1602 kHz |
| | -/17 : 530 - 1700 kHz |
| IF frequency | : 450 kHz \pm 1 kHz |
| Sensitivity | : < 5000 μ V/m at 26dB S/N |
| Selectivity | : > 16 dB at S9/300kHz |
| IF rejection | : > 24 dB |
| Image rejection | : > 28 dB |

USB FUNCTION

| | |
|--------------------|---------------------------------|
| Channel balance | : \pm 2dB typ. |
| THD | : < 3% |
| Crosstalk | 0dB,1 kHz : > 26 dB |
| Crosstalk | 0dB,10 kHz : > 16 dB |
| Frequency response | : \pm 1dB typ. (63 Hz- 14kHz) |
| SNR unwd. | : > 50 dB |
| Channel difference | : < 3 dB |

COMPACT DISC

| | |
|--------------------|---------------------------------|
| SNR unwd. | : > 50 dB |
| Channel difference | : < 3 dB |
| Crosstalk | 1 kHz : > 26 dB |
| Crosstalk | 10 kHz : > 16 dB |
| Frequency response | : 0dB typ. at 100Hz |
| (500mW output) | |
| Frequency response | : -1dB typ. at 10kHz |
| (500mW output) | |
| THD (1kHz,-6dB) | : 0.2% typ. |
| THD (10kHz,-20dB) | : <3% |
| Shock resistance | \pm Z axis : > 2 g |
| | \pm X or \pm Y axis : > 3 g |

SERVICE TOOLS

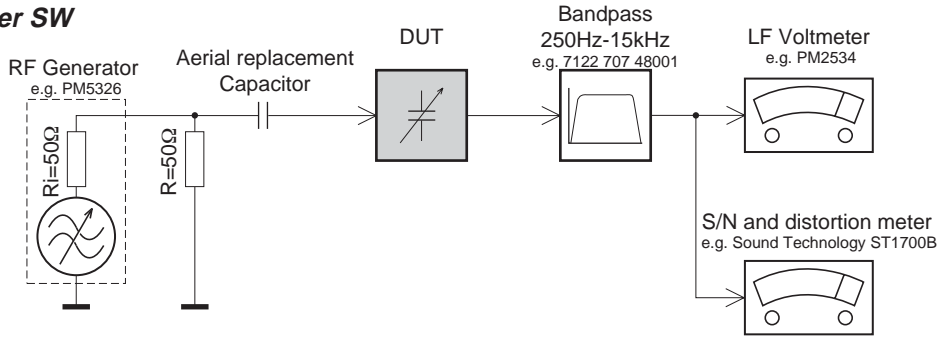
| | |
|--|----------------|
| Audio signal disc SBC 429..... | 4822 397 30184 |
| Playability test disc SBC 444..... | 4822 397 30245 |
| Test disc 5 (disc without errors) + | |
| Test disc 5A (disc with dropout errors, black spots and fingerprints) | |
| SBC 426/426A..... | 4822 397 30096 |
| Burn in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

AVAILABLE ESD PROTECTION EQUIPMENT

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

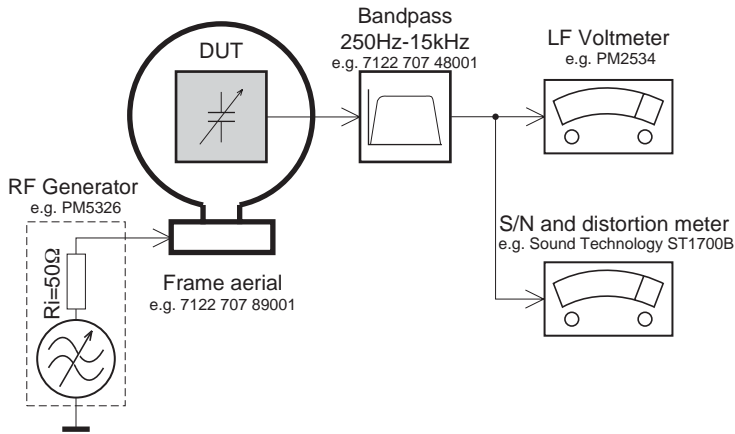
SERVICE MEASUREMENT

Tuner SW



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

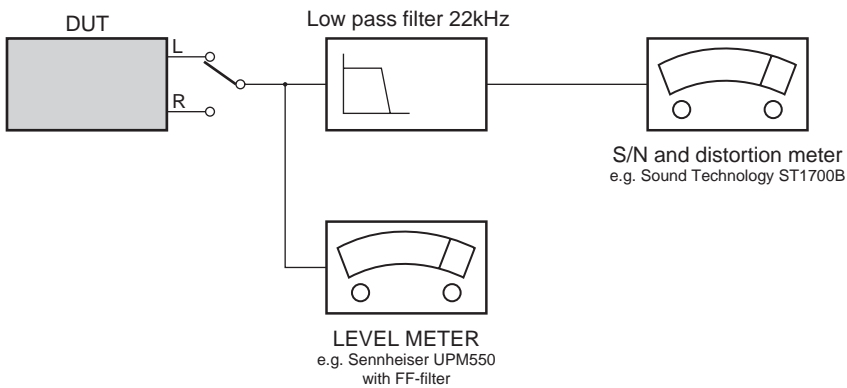
Tuner AM (MW,LW)




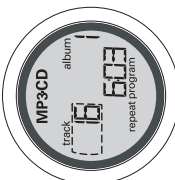
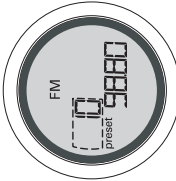
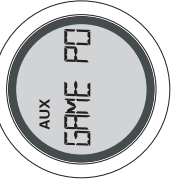
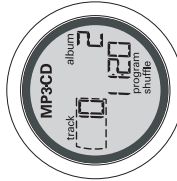

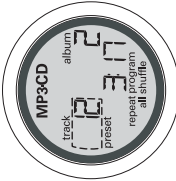
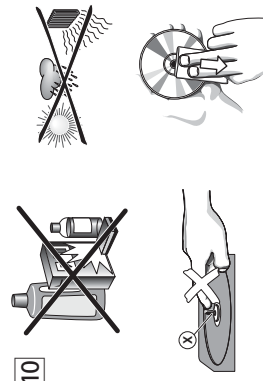
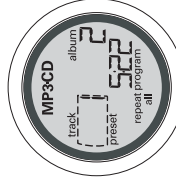
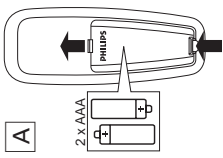
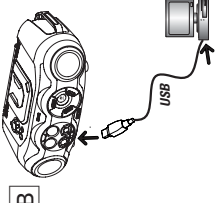
To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday's cage.

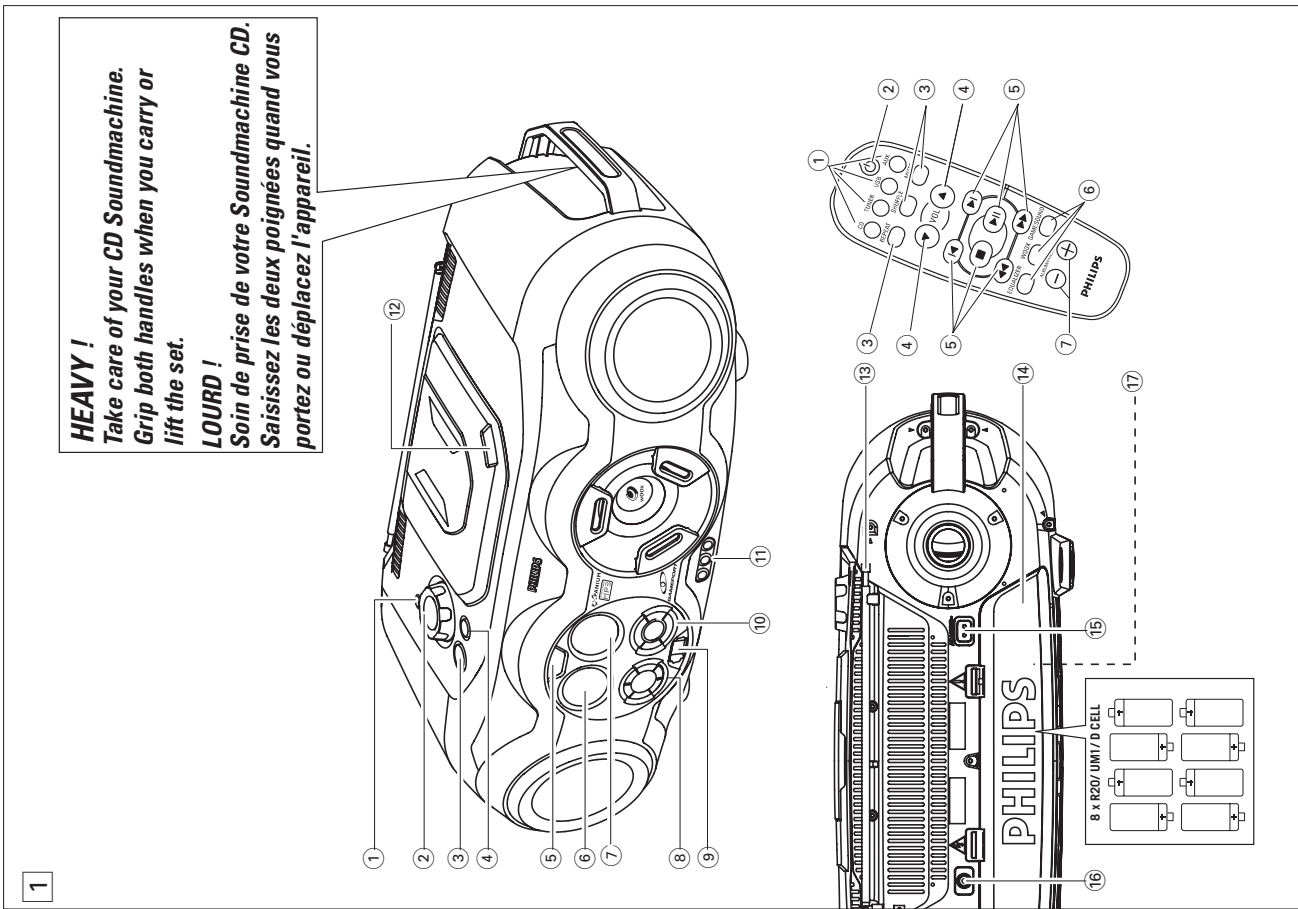
CD

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



CONNECTIONS AND CONTROLS

| | |
|--|---|
| <p>2</p>  | <p>7</p>  |
| <p>3</p>  | <p>8</p>  |
| <p>4</p>  | <p>9</p>  |
| <p>5</p>  | <p>10</p>  |
| <p>6</p>  | <p>A</p>  <p>B</p>  |



SUPPLIED ACCESSORIES

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

TOP AND FRONT PANEL (See [1])

- ① 3.5 mm stereo headphone jack.
Note: The speakers will be muted when headphones are connected to the set.

- ② **VOLUME** - adjust volume level or equalizer level (BASS/ MID / HIGH)
- ③ **STANDBY ON** - switch the set on/ off.
- ④ **SOURCE** - selects sound source for functions: **CD/ TUNER/ USB PC LINK/ GAME •AUX**
- ⑤ **IR SENSOR** - infrared sensor for remote control
- ⑥ **LCD Display** - shows the status of the set
- ⑦ **[dB]** - display to indicate bass power.
- ⑧ **ALBUM /PRESET -, +:**
MP3 only -: select previous / next album.
TUNER -:select a previous / next preset station.

SEARCH ◀◀, ▶▶

- MP3 CD / CD :**
- searches backward or forward ;
- skips to the beginning of a current track/ previous/ later track.
- USB PC LINK** -skips to the beginning of a previous/ later track.

- TUNER :** - tunes to radio stations
- ▶ **II** - starts or pauses MP3-CD / CD / USB PC LINK playback
- - stop MP3-CD / CD / USB PC LINK playback;
- erases a MP3-CD / CD program.

MODE :

- selects different MP3-CD play modes: e.g. **repeat** or **shuffle** order.
- ⑨ **USB** - connect the supplied USB cable here to the USB port of your computer
- ⑩ **GAMESOUND** - select sound effects: **BLAST/ PUNCH/ SPEED/ NORMAL** in **GAME •AUX** mode
- WOOX** - selects special bass enhancement on/ off
- EQUALIZER** -selects bass, mid and high frequencies.

CONTROL

PROG

- MP3-CD / CD :** -programs tracks and reviews the programmed songs;
- TUNER :** - programs radio stations.
- BAND / DISPLAY**
- BAND :** - selects waveband

- DISPLAY:** - display MP3-CD functions
- ⑪ **AUDIO IN (LEFT / RIGHT) -LINE-IN** jack for external audio appliance.
- VIDEO IN** - to keep video plug in place
- ⑫ **OPEN•CLOSE** – press to open/ close CD door

BACK PANEL (See [1])

- ⑬ **Telescopic antenna** - improved FM reception
- ⑭ **Battery compartment** - for 8 batteries, type R-20, UMJ-1 or D-cells
- ⑮ **AC MAINS** - inlet for power cord
- ⑯ **VIDEO OUT** - connect to the **VIDEO IN** jack on a TV or VCR for viewing or recording.
- ⑰ **Voltage selector** - adjust to match the local voltage 110/220V before plugging in the set

REMOTE CONTROL (See [1])

- ① **CD** - selects MP3-CD / CD sound source
- TUNER** - selects tuner source / wavebands
- USB** - selects **USB PC LINK**
- AUX** - selects **GAME •AUX**
- ⏪ - switches the set to standby / on if set operating on AC power. (Switches set off only if battery powered)
- ③ **REPEAT** -repeat all tracks in **USB PC LINK** source or selects the repeat modes in **CD** source
- SHUFFLE** -plays MP3-CD / CD tracks in random order in **CD / USB PC LINK** source
- MUTE** - interrupts/ resumes sound
- ④ **VOL ▼, ▲** -- adjust volume level or adjust equalizer level (BASS/ MID /HIGH)
- ⑤ ◀, ▶ -select previous/ next track in MP3-CD / CD / USB PC LINK playback
- - stop MP3-CD / CD / USB PC LINK playback;
- erases a MP3-CD / CD program.
- ▶ **II** - starts or pauses MP3-CD / CD / USB PC LINK playback
- ◀◀ / ▶▶ -searches backwards/ forwards within a MP3-CD / CD track.

TUNER: - tunes to radio stations

POWER SUPPLY

- ⑥ **EQUALIZER** -- selects bass, mid and high frequencies
- WOOX** -- select special bass enhancement on/ off
- GAMESOUND** - select sound effects: **BLAST/ PUNCH/ SPEED/ NORMAL** in game mode
- ⑦ **ALBUM /PRESET -, + :**
MP3 only -: select previous / next album.
TUNER -:select a previous / next preset station.

POWER SUPPLY

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

Batteries (not included) (See [1])

- Insert 8 batteries, type **R-20, UMJ-1** or **D-cells**, (preferably alkaline) with the correct polarity.
- Insert 2 batteries, type **AAA, R03** or **UM4** (preferably alkaline).

Incorrect use of batteries can cause electrolyte leakage and will corrode the compartment or cause the batteries to burst.

- Do not mix battery types: e.g. alkaline with carbon zinc. Only use batteries of the same type for the set.
- When inserting new batteries, do not try to mix old batteries with the new ones.
- **Batteries contain chemical substances, so they should be disposed of properly.**

Using AC Power

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

BASIC FUNCTIONS

POWER-SAVING AUTOMATIC STANDBY

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

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

BASIC FUNCTIONS

Switching on and off and selecting function

1. Press **STANDBY ON** on the set to switch on.
2. Press **SOURCE** once or more to select your desired function: **CD, TUNER, USB PC LINK** or **GAME•AUX**.
3. Press **STANDBY ON** to switch off the set.

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

Adjusting volume and sound (See [2])

1. Adjust the volume with the **VOLUME** control.
→ Display shows the volume level **VOL** and a number from 0-32.
2. **WOOX**
To enhance the bass response: press **WOOX** once or more to switch on / off.
→ **WOOX**-key backlight lights up when **WOOX** is turned on.

Notes:

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

3. EQUALIZER

To adjust the bass, mid and high frequencies press **EQUALIZER** once or more, then rotate **VOLUME** within 3 seconds to adjust each level.

- Display briefly shows **BASS, MID**, or **HIGH** level (-5 to +5) or **VOL**.

Note:

1. **EQUALIZER** can be used during **TUNER, CD, USB PC LINK** and **GAME•AUX** source.

INSTRUCTION FOR USE

MP3-CD / CD PLAYER

IMPORTANT SPECIFICATIONS

Supported formats:

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

General information

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

How to get MP3 music

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

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

When burning the MP3-CD

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

MP3-CD / CD PLAYER

- **NF IIS** is shown if you have inserted a non-finalized CD-R(W) / black disc.

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

4. Press **▶II** to start playback.
- Display: Current track number and elapsed track time during MP3-CD / CD playback.
- If MP3-CD, the album number also is shown.

5. To pause playback press **▶II**. Press **▶II** again to resume play.
- Time digits flashes during pause.

6. To stop MP3-CD / CD playback, press **■**.

7. Press **STANDBY ON** **○** to switch off the set.

Note: MP3-CD / CD play will also stop when:

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

MP3-CD / CD text display

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

MP3-CDS

Press **BAND / DISPLAY** once or more to view e.g.

- track name and elapsed track time;
- album name and elapsed track time;
- album number, track number and elapsed track time;
- ID3 tag details, if available. Otherwise, display shows **NF IIS TR15**.

CDS

- Press **BAND / DISPLAY** once or more to view e.g.
- Current track number and elapsed track time during CD playback;
 - Remaining playback time of current track.

Selecting a different track

- Press **SEARCH** **◀◀** or **▶▶** (on the remote control **◀** or **▶**) once or repeatedly until the desired track number appears in the display.
- If you have selected a track number shortly after loading a disc or in the **PAUSE** position, you will need to press **▶II** to start playback.

MP3-CD / CD PLAYER

MP3-CD mode only:

First press **ALBUM / PRESET** – or + once or more to find your album.

⇒ Display: **NF FLBUM** if no albums are available.

Finding a passage within a track

1. Press and hold **SEARCH** **◀◀** or **▶▶** (on the remote control **◀◀** or **▶▶**)
 - The CD is played at high speed and low volume.
 - No sound is heard during MP3-CD fast cue/ review.

2. When you recognize the passage you want, release **◀◀** or **▶▶**. Normal playback continues (on the remote control **◀◀** or **▶▶**)

Note: Searching is only possible within a track.

Different play modes: SHUFFLE and REPEAT (See 4 - 7)

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

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

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

repeat all - repeats the entire CD / program

repeat - plays the current track continuously

1. To select play mode, press **MODE** once or more. (**SHUFFLE / REPEAT** on the remote control).

2. Press **▶II** to start playback if in the stop position. ⇒ If you have selected **shuffle**, playback starts automatically.

3. To select normal playback, press **MODE**

repeatedly until the various modes are no longer displayed.

- You can also press the **■** to cancel your play mode in playing.

MP3-CD / CD PLAYER

How to organize MP3 files

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

Albums and titles are alphabetically sorted.

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

IMPORTANT!

This set does not play/support the following:

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

Playing MP3-CD & CD

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

- CD-I, CDV, VCD, DVD or computer CDs, are not possible.
1. Press **STANDBY ON** **○** once or more to on, then select **CD SOURCE**.
 2. Press **OPEN•CLOSE** to open the CD door. ⇒ **CD OPEN** is displayed when the CD door is open.
 3. Insert a CD with the printed side facing up and press down on **OPEN•CLOSE** to close the CD door. ⇒ Display show **READ**, when reading disc contents;

⇒ Display: **INSERT IIS** if no disc inserted / disc incorrectly inserted,

⇒ Display: **CHECK IIS** or **IIS ERROR**

if disc damaged / dirty.

- **CD** throughout CD operation;
- **MP3 CD** throughout MP3-CD operation;
- In CD stop mode: total track number and total playback time.

MP3-CD / CD PLAYER

Programming track numbers

Program in the stop position to select and store your CD tracks in the desired sequence. If you like, store any track more than once. Up to 20 tracks can be stored in the memory.

1. Press **SEARCH** (◀◀ or ▶▶) on the set to select your desired track number.(on the remote control (◀◀ or ▶▶))

MP3-CD mode only:

First press **ALBUM / PRESET** - or + once or more to find your album, then press **SEARCH** (◀◀ or ▶▶). (on the remote control (◀◀ or ▶▶))

2. Press **PROG.**
 - Display: **program** and the selected track number **PROG.** appears briefly.

→ Display : **SELECT TRACK** if no track selected for programming.

3. Repeat steps **1-2** to select and store all desired tracks.

→ Display: **FULL** if you try to program more than 20 tracks.

4. To start playback of your disc program, press **▶II**.

Note: During normal playback, you can press **PROG** to add a current track to your program list.

Reviewing the program

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

→ Display **NO PROG** if no tracks programmed.

Erasing a program

You can erase the program by:

- pressing **■** twice;
- **CLEAR** displayed briefly, and **program** disappears.
- pressing **STANDBY ON** (⏻)
- selecting another sound source
- opening the CD door.

GAMESOUND / USB PC LINK

GAMESOUND (See [B])

PLAYING WITH GAMESOUND:

1. Press **SOURCE** once or more on the set to select the **GAME-AUX** function (**AUX** on the remote control)
 - Display scrolls : **GAME PORT**
2. Connect your console to the cinches on the front of the set **AUDIO IN (LEFT / RIGHT)** and **VIDEO IN**.

3. Press **GAMESOUND** once or more to select your game sound option.

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

Connecting other equipment to your system

Use the supplied video cable to connect the **VIDEO**

OUT terminal on the back of the set to **VIDEO IN** on a TV or VCR for viewing or recording.

USB PC LINK

Quick Setup Guide

PC system requirements

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

Installing MusicMatch software

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

IMPORTANT!

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

DIGITAL TUNER

2. To prevent sound interference the bass control options operate exclusively. You cannot combine the bass from **EQUALIZER** with **w00x**

4. GAMESOUND

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

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

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

How to MUTE the sound

1. Press **MUTE** on the remote control to interrupt sound reproduction instantly.

→ Playback continues without sound and the display flashes **MUTE** .

2. To reactivate sound reproduction you can:

- press **MUTE** again;
- adjust the volume controls;
- change to another source.

DIGITAL TUNER (See [3])

Tuning to stations

1. Press **STANDBY ON** (⏻) to on, then press **SOURCE** once or more to select **TUNER** (or press **TUNER** once on the remote control).

→ Display shows **TUNER** briefly followed by waveband, frequency, and preset station number if already stored.

2. Press **BAND / DISPLAY** once or more to select your waveband (**TUNER** on the remote control)

3. **Tuning to stations:** you can tune to your stations manually or by automatic search tuning: Press down on **◀◀** or **▶▶** (◀◀ or ▶▶ on the remote control) and release button when the frequency in the display starts running.

→ The radio automatically tunes to a station of sufficient reception. Display shows **SEARCH** during automatic tuning.

4. Repeat step 3 if necessary until you find the desired station.

- To tune to a weak station, press **◀◀** or **▶▶** (◀◀ or ▶▶ on the remote control) briefly and repeatedly

DIGITAL TUNER

until you have found optimal reception.

To improve radio reception:

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

Programming tuner stations:

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

Autostore

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

1. Press **ALBUM / PRESET-** or + once or more to select the preset number .

2. Press **PROG** for 4 seconds or more to activate auto store programming.

→ Display: **AUTOSTORE** is shown and available stations are programmed in order of waveband **FM**, followed by **MW** , preset 1 station will then be played after all stations are stored automatically.

Manual programming

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

2. Press **PROG** to activate programming.
 - Display: **program** flashes.

3. Press **ALBUM / PRESET-** or + once or more to allocate a number from 1 to 30 to this station.
4. Press **PROG** again to confirm.

→ Display shows the preset number, waveband and the frequency of the preset station.

→ Repeat the above four steps to store other stations.

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

To listen to a preset station

Press **ALBUM / PRESET-** or + once or more until the desired preset station is displayed.

INSTRUCTION FOR USE

USB PC LINK

4. The installation guide will appear automatically. If it does not, go to the CD-ROM drive in **Windows Explorer** and double click on the **USB PC LINK.exe**.

Then perform the following steps:

- Select your desired language from the list.
- Select **installer driver**.
- Select **installer MusicMatch**.
- Select other options (**Tutorial**, **Free goodies**, **FAQ**).

Note:

- You are advised to read the *MusicMatch tutorial before using it for the first time. Make sure the volume on your PC is suitably adjusted to ensure sound output on the set. For optimum performance, the equalizer function in MusicMatch should be set to a low level.*

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

Note:

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

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

Enable digital CD audio output

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

For Windows ME/ 2000/ XP

1. Enter the system panel menu and select **'SYSTEM', 'PROPERTIES', 'HARDWARE', 'DEVICE MANAGER', 'CD-ROM DRIVES'** and **'PROPERTIES'**.

For Windows 98 SE

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

Note: For **windows 98 SE**, you may need to refer to your PC's manual for correct configuration.

USB PC LINK**Connecting to USB PC Link (See [9])**

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

IMPORTANT!

Make sure the MusicMatch software has been installed. Refer to "Quick Setup Guide" for the USB PC Link.

1. Turn on your set and computer .
⇒ Check your PC volume is suitably adjusted and not set to minimum / mute.
2. Press **SOURCE (USB)** on the remote control once or more to select **USB PC LINK**.
3. If correctly connected your PC will automatically launch **MUSICMATCH JUKEBOX**.
⇒ If the audio streaming is detected, the current track name scrolls .
⇒ If **NO CONNECTION** scrolls for a while, check the connection between your PC and set.
4. Press **◀** or **▶** until the desired track in the playlist is highlighted.
5. Press **▶||** to start playback.
⇒ The track time appears and the track name scrolls once.

Note: The display only supports English characters in uppercase.

6. If you want to see the track details displayed press **MODE**.
During playback,
- Press **SHUFFLE** on the remote control to play all available tracks in the playlist in random order.
- Press **REPEAT** on the remote control to repeat playback all the tracks in the playlist.
7. To cancel play modes/ stop playback, press **■** or select another sound sources.

MAINTENANCE & SAFETY**MAINTENANCE & SAFETY (See [10])****CD player and disc handling**

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

MAINTENANCE & SAFETY**Safety Information**

- Don't expose the set, batteries, CDs to humidity, rain, sand or excessive heat.
- Clean the set with a dry cloth. Don't use any cleaning agents containing alcohol, ammonia, benzene or abrasives as these may harm the set.
- Place the set on a hard and flat surface so that the system does not tilt. Make sure there is good ventilation to prevent the set from overheating.

INSTRUCTION FOR USE

TROUBLESHOOTING

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

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

No sound /power

- Volume not adjusted
- Adjust the VOLUME
- Mains lead not securely connected
- Connect the AC mains lead properly
- Batteries flat / incorrectly inserted
- Insert (fresh) batteries correctly
- Headphones connected to the set
- Disconnect headphones
- Electrostatic discharge/interference
- Unplug the set. If batteries inserted, remove batteries from the battery compartment. Press and hold **STANDBY ON** \odot for 10 seconds, then re-plug / replace battery supply, and try activating the set again.
- When in USB PC LINK mode, check that your PC's volume is audible and not set to minimum.
- When playing a CD from the PC's CD-ROM drive, refer to **USB PC Link - Enable digital CD audio output**.
- CD contains non-audio files
- Press **SEARCH** or **▶▶** once or more to skip to a CD audio track, instead of the data file

Poor sound quality in GAME•AUX mode

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

Severe radio hum or noise

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

Remote control does not function properly

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

Poor radio reception

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

NF DISC indication

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

INSERT DISC/CHECK DISC/DISC ERROR indication

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

The CD skips tracks

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

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

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

Sound skips during MP3 playback

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

Cannot find desired MP3 title

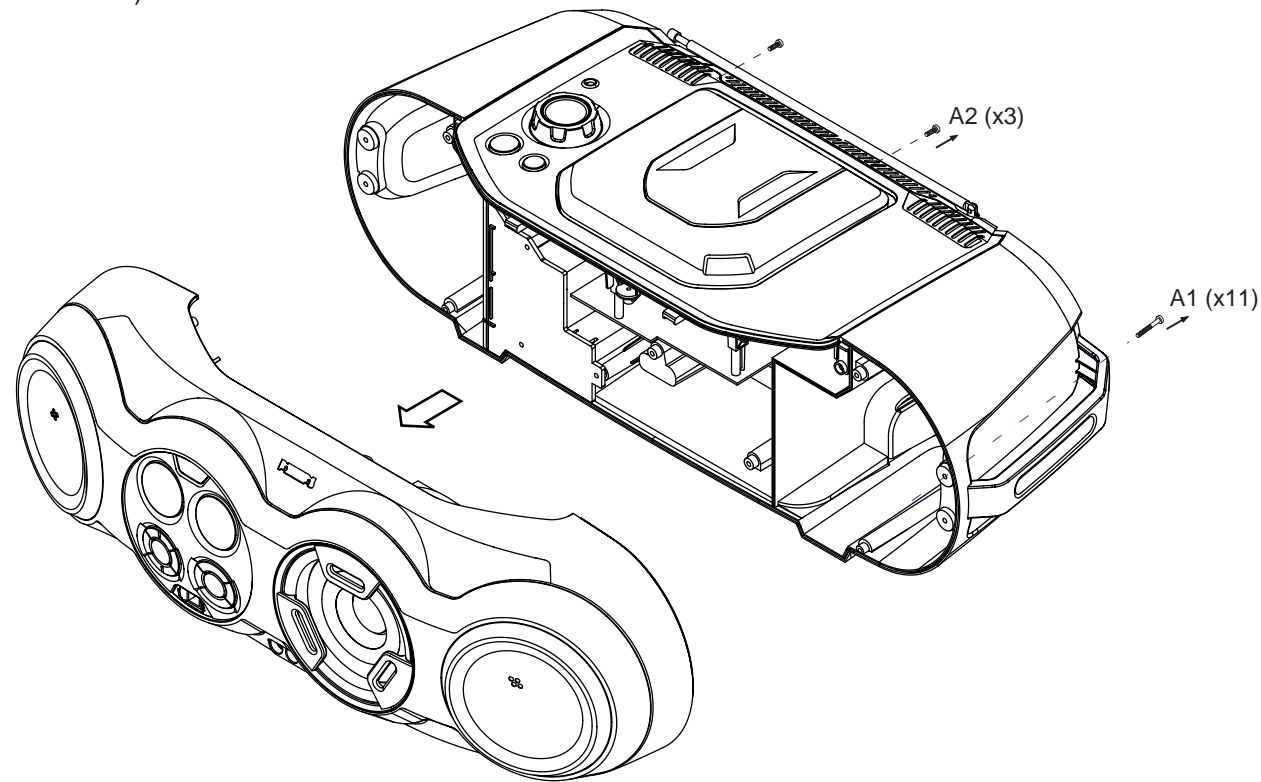
- Wrong file extension used and/ or file name with unsuitable text characters used
- Make sure the file names are typed in English text characters and that the MP3 files end with .mp3

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

DISASSEMBLY DIAGRAM

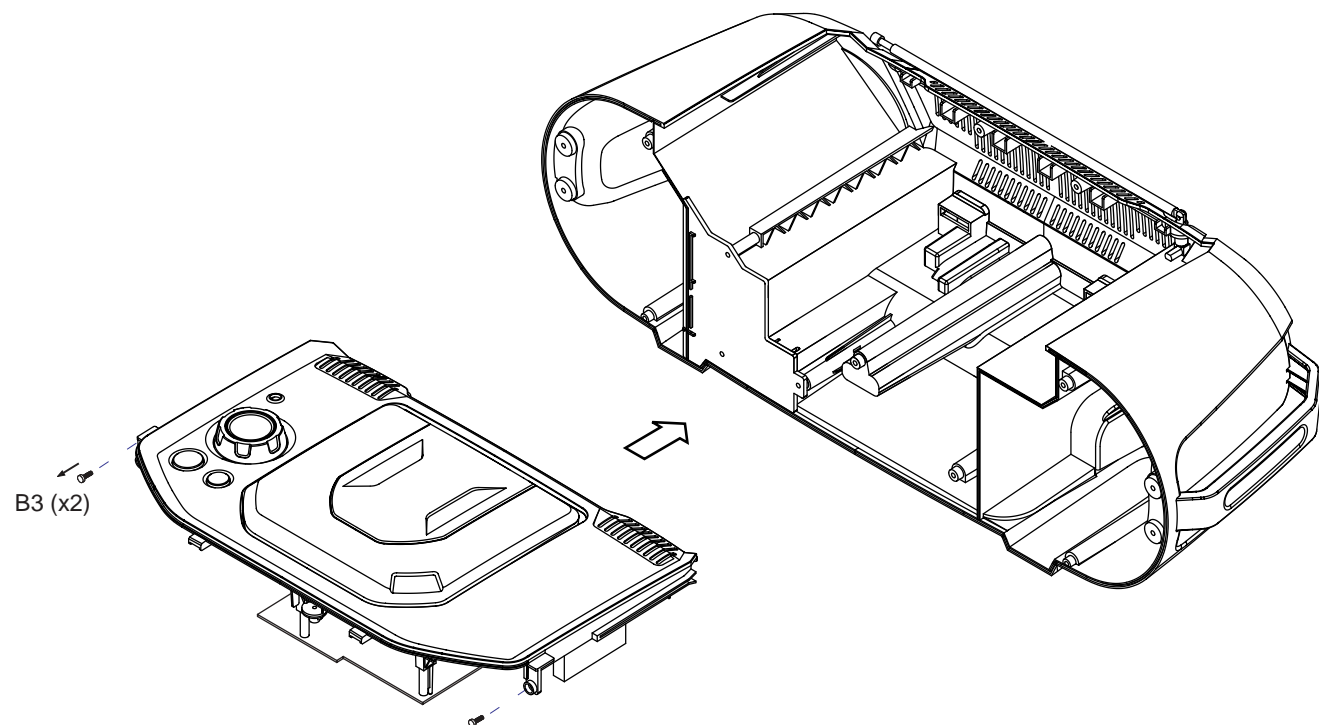
A. REMOVE FRONT CABINET ASSEMBLY

- REMOVE SCREWS A1 (3X16) 11 PCS.
- REMOVE SCREW A2 (3X10) 3 PCS (UNDER AERIAL)



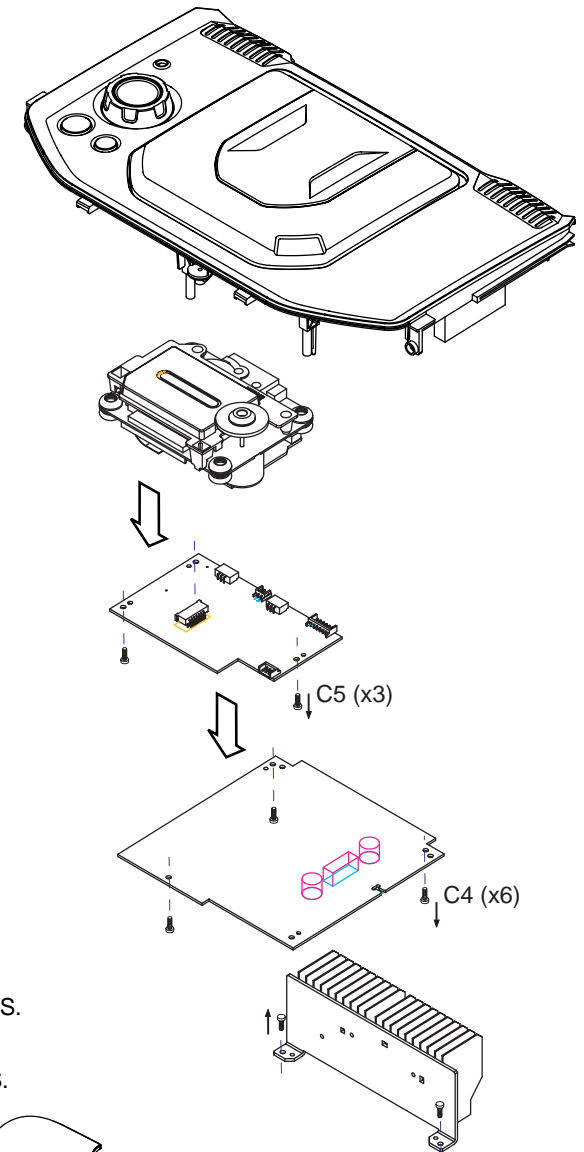
B. REMOVE BOTTOM CABINET ASSEMBLY

- REMOVE SCREWS B3 (3X10) 2 PCS.



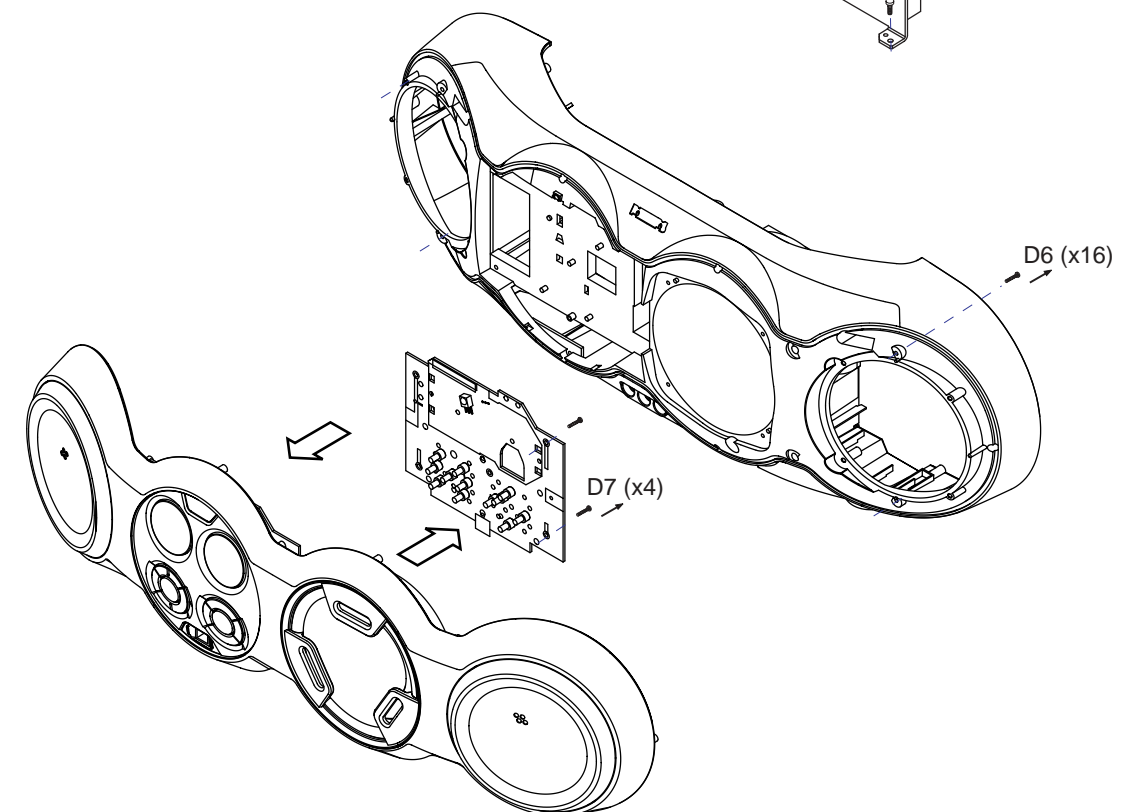
C. REMOVE DECK MECHANISM

- REMOVE SCREWS C4 (3X10) 6 PCS.
- REMOVE POWER BOARD
- REMOVE SCREWS C5 (3X10) 3 PCS.
- REMOVE CD BOARD

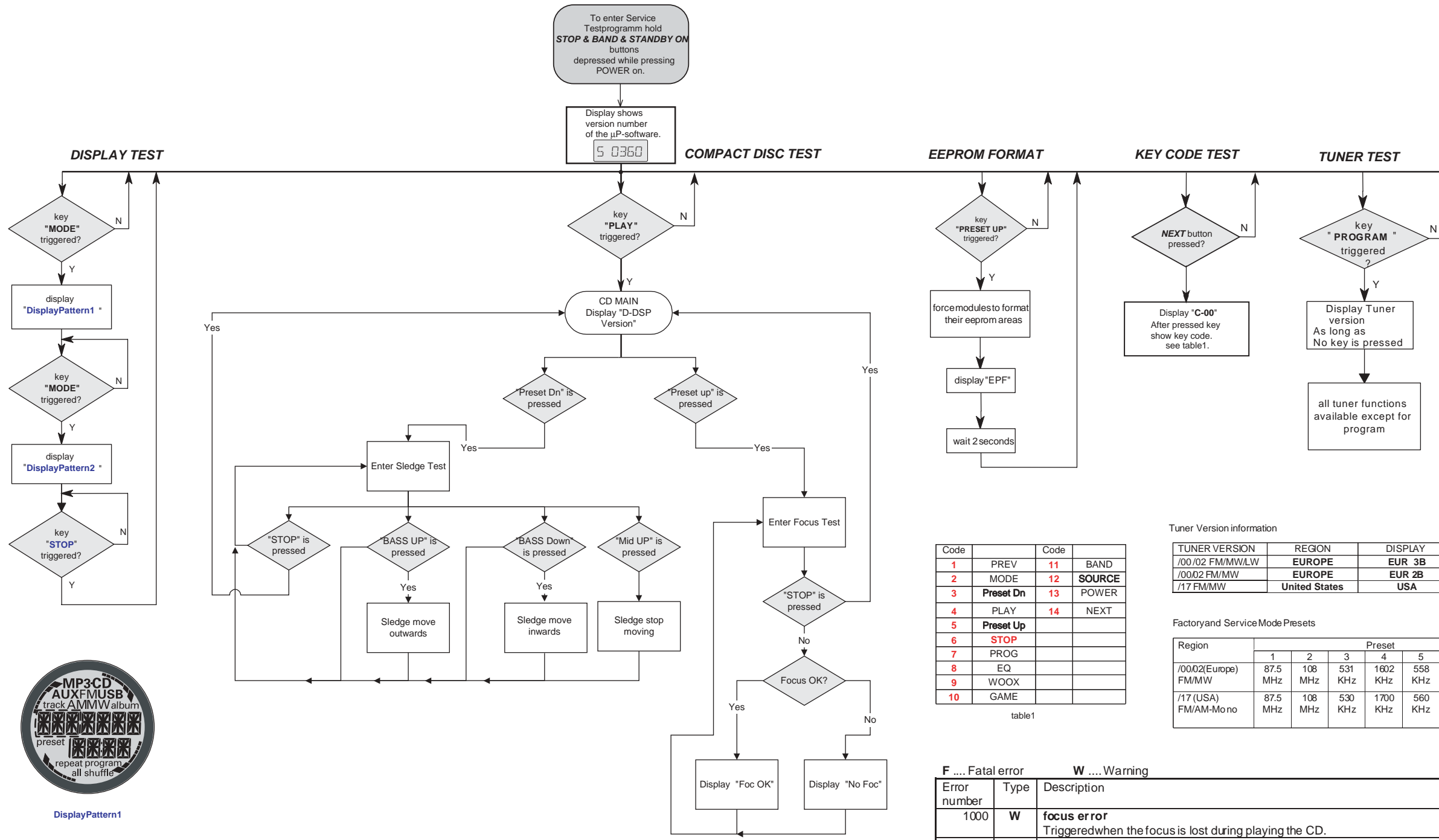


D. REMOVE KEY BOARD

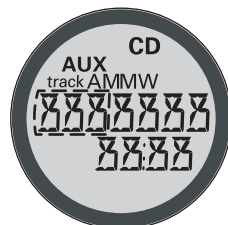
- REMOVE SCREWS D6 (2.5X10) 16 PCS.
- REMOVE FRONT PANEL ASSEMBLY
- REMOVE SCREWS D7 (2.5X10) 4 PCS.



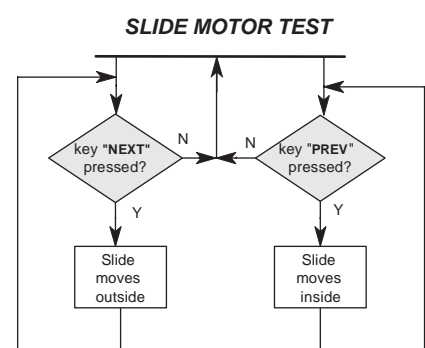
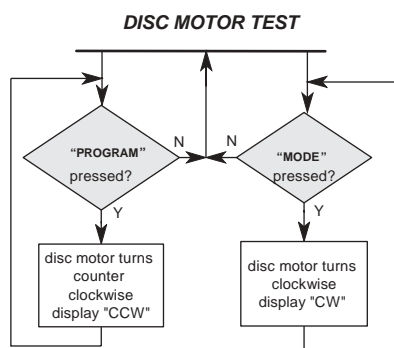
SERVICE TEST PROGRAM



DisplayPattern1



DisplayPattern2



| Code | PREV | Code | BAND |
|------|-----------|------|--------|
| 1 | PREV | 11 | BAND |
| 2 | MODE | 12 | SOURCE |
| 3 | Preset Dn | 13 | POWER |
| 4 | PLAY | 14 | NEXT |
| 5 | Preset Up | | |
| 6 | STOP | | |
| 7 | PROG | | |
| 8 | EQ | | |
| 9 | WOOX | | |
| 10 | GAME | | |

table1

Tuner Version information

| TUNER VERSION | REGION | DISPLAY |
|-----------------|---------------|---------|
| /00/02 FM/MW/LW | EUROPE | EUR 3B |
| /00/02 FM/MW | EUROPE | EUR 2B |
| /17 FM/MW | United States | USA |

Factory and Service Mode Presets

| Region | Preset | | | | | | |
|----------------------|----------|---------|---------|----------|---------|----------|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| /00/02(Europe) FM/MW | 87.5 MHz | 108 MHz | 531 KHz | 1602 KHz | 558 KHz | 1494 KHz | - |
| /17 (USA) FM/AM-Mono | 87.5 MHz | 108 MHz | 530 KHz | 1700 KHz | 560 KHz | 1500 KHz | - |

F Fatal error W Warning

| Error number | Type | Description |
|--------------|------|---|
| 1000 | W | focus error Triggered when the focus is lost during playing the CD. |
| 1001 | W | radial error Triggered when the radial servo is not on track for a certain time during playing the CD. |
| 1002 | W | sledge in error The sledge did not reach its inner position (innerswitch is closed) before approximately 6 seconds have passed by inner switch or sledge motor problem. |
| 1003 | W | sledge out error The sledge did not come out of its inner position (innerswitch is open) before approximately 300ms have passed by - innerswitch or sledge motor problem. |
| 1005 | W | jump error Triggered when the jump destination could not be found within a certain time. |
| 1006 | W | subcode error No valid subcode for a certain time during play. |
| 1007 | W | PLL error The Phase-Lock-Loop could not lock within a certain time. |
| 1008 | W | turntable motor error Generated when the CD could not reach 75% of speed during start-up within a certain time Disc motor problem |
| 1020 | F | focus search error The focus point has not been found within a certain time. |

table2

Abbreviations and Pin-description of CD ICs

SERVO PROCESSOR SAA7325H

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

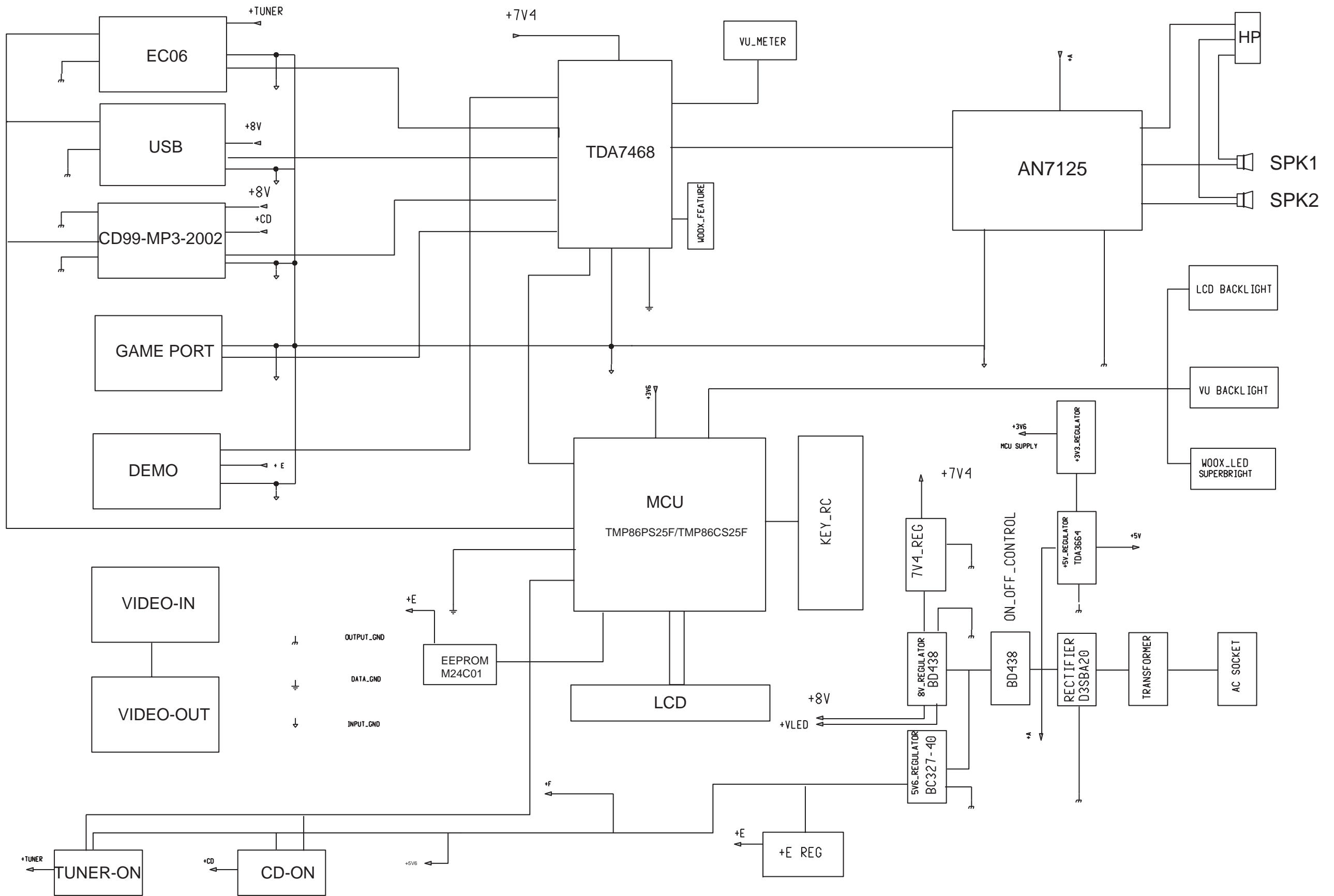
Abbreviations and Pin-description of CD ICs

SERVO PROCESSOR SAA7325H

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

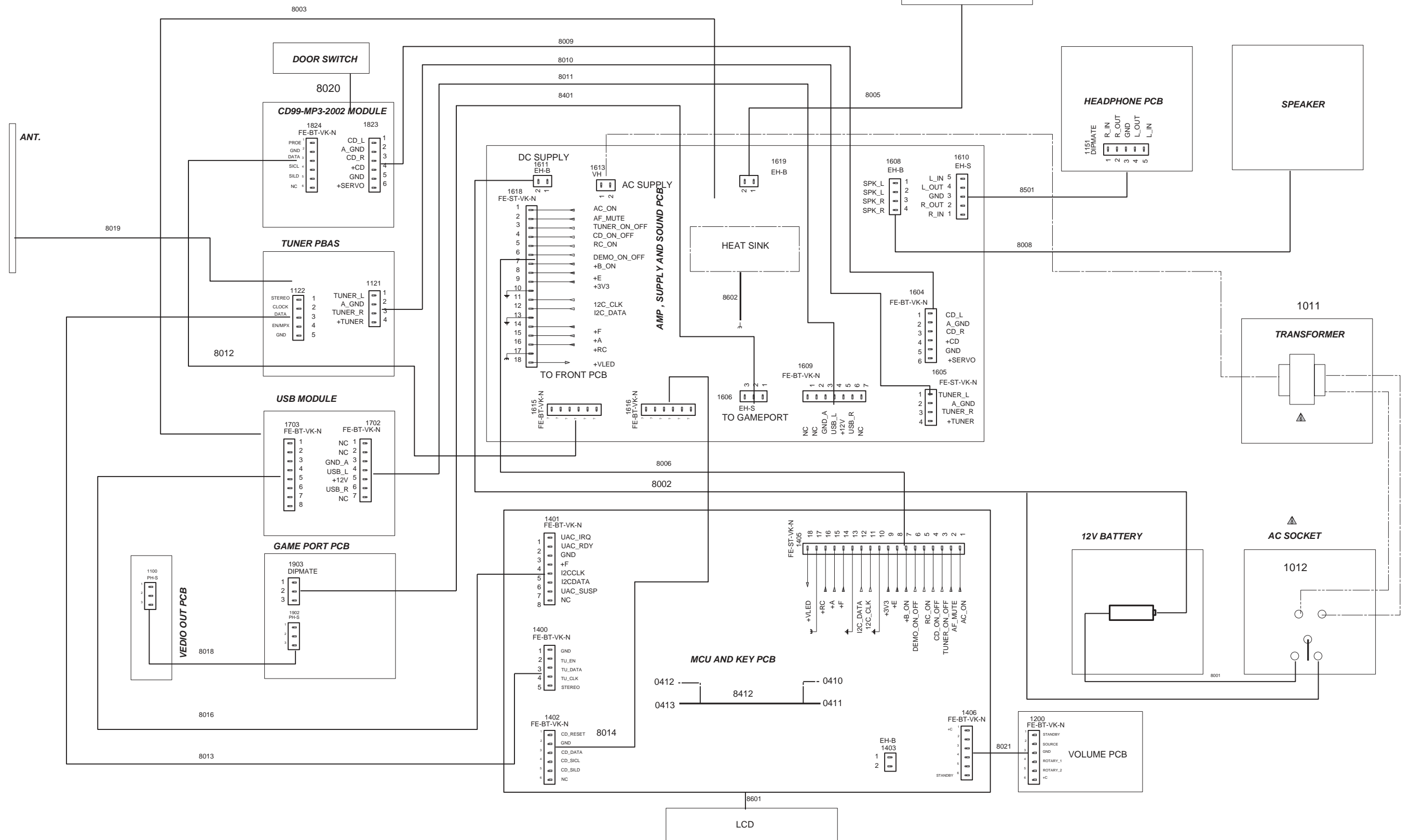
Note : All supply pins must be connected to the same external power supply voltage.

BLOCK DIAGRAM

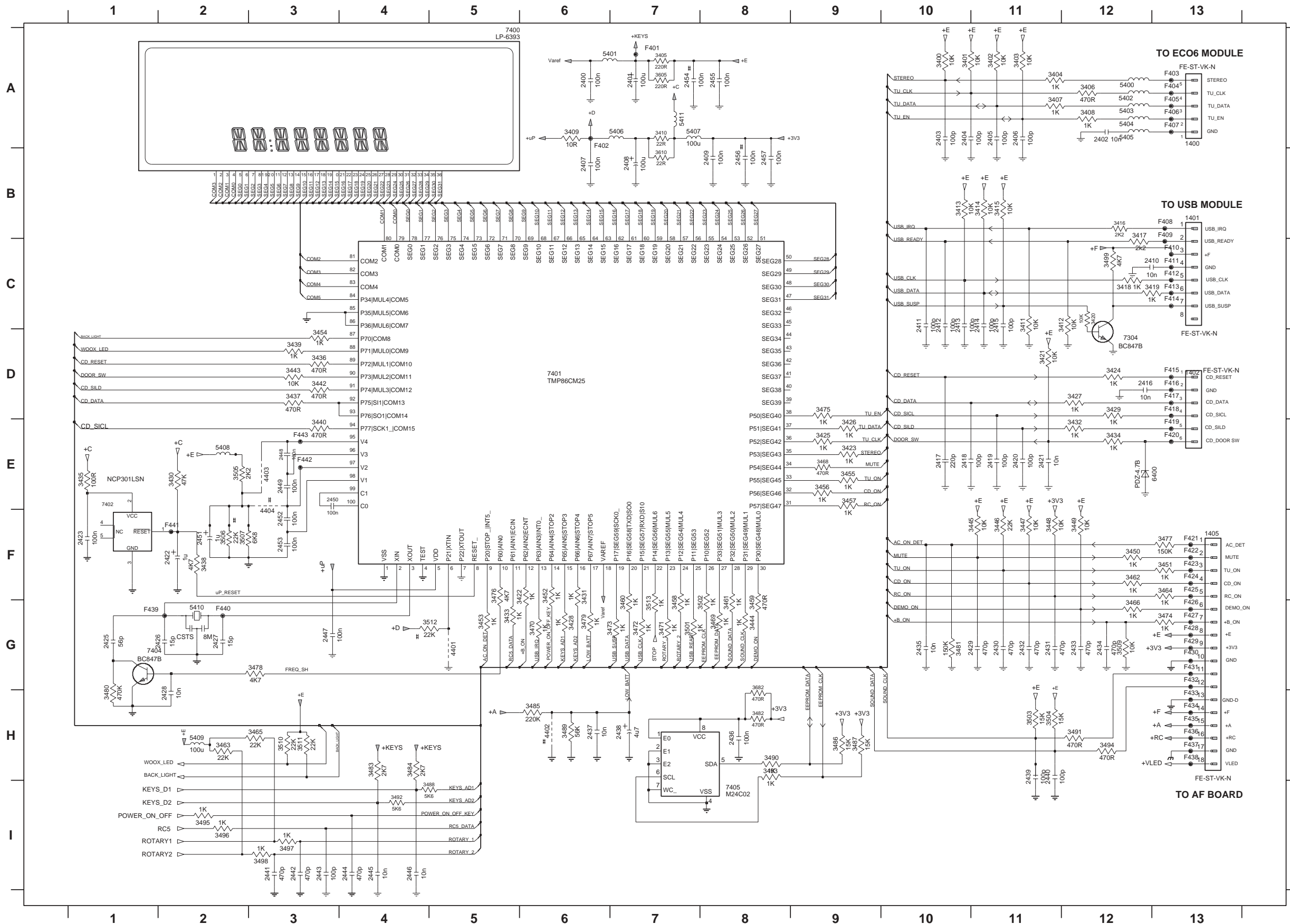


WIRING DIAGRAM

| | | | | | | | |
|------|-------------------------------|------|--------------------------|------|--------------------------------|------|-------------------------------------|
| 8001 | 3140 110 21801 400mm 22 | 8011 | 313911034130 180mm 7p ad | 8018 | 314011022331 SCR WIRE 3p 400mm | 8401 | 313911037291 180mm 3p |
| 8002 | 314011022361 340mm 2p 22 | 8012 | 313911034020 140mm 6p bd | 8019 | smF/sto 220mm | 8501 | 314011021981 340mm 24 |
| 8003 | 313911034171 SRA/SMF 220mm | 8013 | 313911102201 400mm 5p ad | 8020 | 313911037171 220mm 2p | 8502 | 36pin Heat sealing tape con. to LCD |
| 8005 | 313911037171 220mm 2p | 8014 | 313911034330 180mm 6p bd | 8021 | 313911034330 180mm 6p BD | 8602 | 313911039780 100mm 1p |
| 8006 | 313911102331 ffc 220mm 18p ad | 8016 | 313911034740 180mm 8p AD | | | | |
| 8008 | 314011022323 spk wire | | | | | | |
| 8009 | 313911102561 280mm bd 6p | | | | | | |
| 8010 | 313911034100 140mm 04p bd | | | | | | |

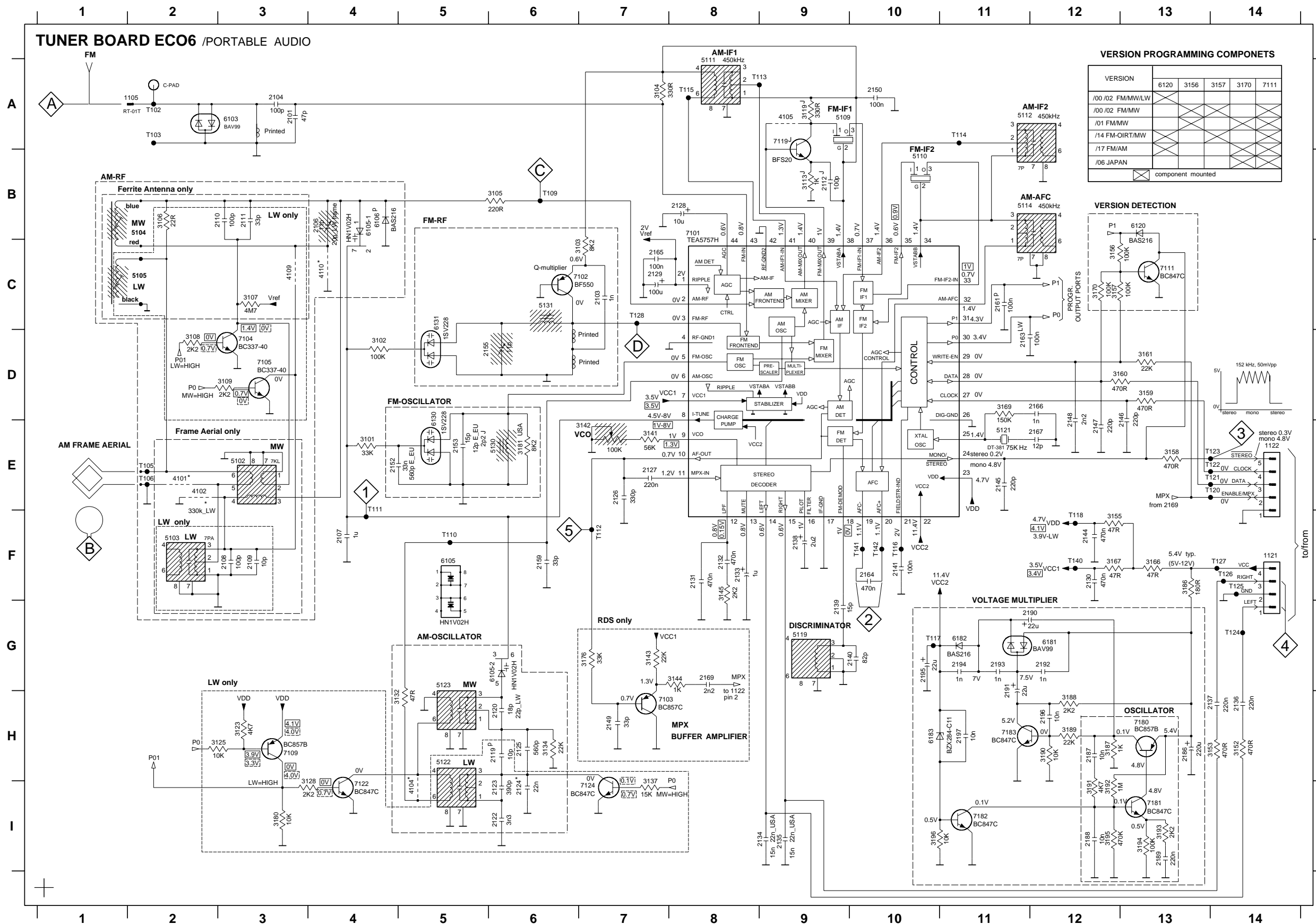


KEY BOARD - CIRCUIT DIAGRAM



- 1400 A13 3456 E9 F436 H13
- 1401 B13 3457 E9 F437 H13
- 1402 D13 3458 G7 F438 H13
- 1405 F13 3459 G8 F439 G1
- 2400 A6 3460 G7 F440 G2
- 2401 A7 3461 G8 F441 F2
- 2402 A12 3462 F12 F442 E3
- 2403 A10 3463 H2 F443 E3
- 2404 A10 3464 F13
- 2405 A11 3465 H3
- 2406 A11 3466 G12
- 2407 B6 3468 E9
- 2408 B7 3469 G8
- 2409 B8 3470 G6
- 2410 C12 3471 G7
- 2411 C10 3472 G7
- 2412 C10 3473 G7
- 2413 C10 3474 G13
- 2414 C11 3475 D9
- 2415 C11 3476 F5
- 2416 D12 3477 F13
- 2417 E10 3478 G3
- 2418 E10 3479 G6
- 2419 E11 3480 H1
- 2420 E11 3481 G10
- 2421 E11 3482 H8
- 2422 F2 3483 H4
- 2423 F1 3484 H4
- 2425 G1 3485 H6
- 2426 G2 3486 H9
- 2427 G2 3487 H9
- 2428 H2 3488 I4
- 2429 H1 3489 H6
- 2430 G11 3490 H8
- 2431 G11 3491 H12
- 2432 G11 3492 I4
- 2433 G12 3493 H8
- 2434 G12 3494 H12
- 2435 G10 3495 I2
- 2436 H8 3496 I2
- 2437 H6 3497 I3
- 2438 H7 3498 I3
- 2439 H11 3499 C12
- 2440 H11 3501 G7
- 2441 I3 3502 G8
- 2442 I3 3503 H11
- 2443 I3 3504 H11
- 2444 I4 3505 E2
- 2445 I4 3506 F2
- 2446 I4 3507 F2
- 2447 G3 3509 G12
- 2448 E3 3510 H3
- 2449 E3 3511 H3
- 2450 E3 3512 G5
- 2451 F2 3513 G7
- 2452 F3 3505 A7
- 2453 F3 3510 B7
- 2454 A7 3512 G8
- 2455 A8 4401 G5
- 2456 B8 4402 H6
- 2457 B8 4403 E3
- 2458 A10 4404 E3
- 3401 A10 5400 A12
- 3402 A11 5401 A6
- 3403 A11 5402 A12
- 3404 A11 5403 A12
- 3405 A7 5404 A12
- 3406 A12 5405 A12
- 3407 A12 5406 A7
- 3409 A6 5408 E2
- 3410 A7 5409 H2
- 3411 C11 5410 G2
- 3412 C12 5411 A7
- 3413 B10 6400 E12
- 3414 B11 7304 D12
- 3415 B11 7400 A6
- 3416 B12 7401 D6
- 3417 B12 7402 E1
- 3418 C12 7404 G2
- 3419 C13 7405 I8
- 3420 C12 7401 A7
- 3421 D11 7402 A6
- 3422 F6 7403 A13
- 3423 E9 7404 A13
- 3424 D12 7405 A13
- 3425 E9 7406 A13
- 3426 E9 7407 A13
- 3427 D12 7408 B13
- 3428 G6 7409 B13
- 3429 D12 7410 C13
- 3430 E2 7411 C13
- 3431 F6 7412 C13
- 3432 E12 7413 C13
- 3433 G5 7414 C13
- 3434 E12 7415 D13
- 3435 E1 7416 D13
- 3436 D3 7417 D13
- 3437 D3 7418 D13
- 3438 F2 7419 E13
- 3439 D3 7420 E13
- 3440 E3 7421 F13
- 3442 D3 7422 F13
- 3443 D3 7423 F13
- 3444 G8 7424 F13
- 3445 F11 7425 F13
- 3446 F11 7426 G13
- 3447 F11 7427 G13
- 3448 F11 7428 G13
- 3449 F12 7429 G13
- 3450 F12 7430 G13
- 3451 F13 7431 G13
- 3452 F6 7432 G13
- 3453 G5 7433 H13
- 3454 D3 7434 H13
- 3455 E9 7435 H13

TUNER BOARD - CIRCUIT DIAGRAM



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 JAPAN | | | | | |

component mounted

VERSION DETECTION

Output ports: P1, P0, PROG, OUTPUT PORTS

152 kHz, 50mVpp

stereo 0.3V mono 4.8V

LEGEND

- * ... only assembled in FM/AM-version
- p... for provision only
- USA... for USA version only
- LW... for LW version only
- LW frame... for LW version with frame aerial only
- E_EU... for East European version only
- J... for JAPAN version only

...V FM mode stereo

...V MW mode

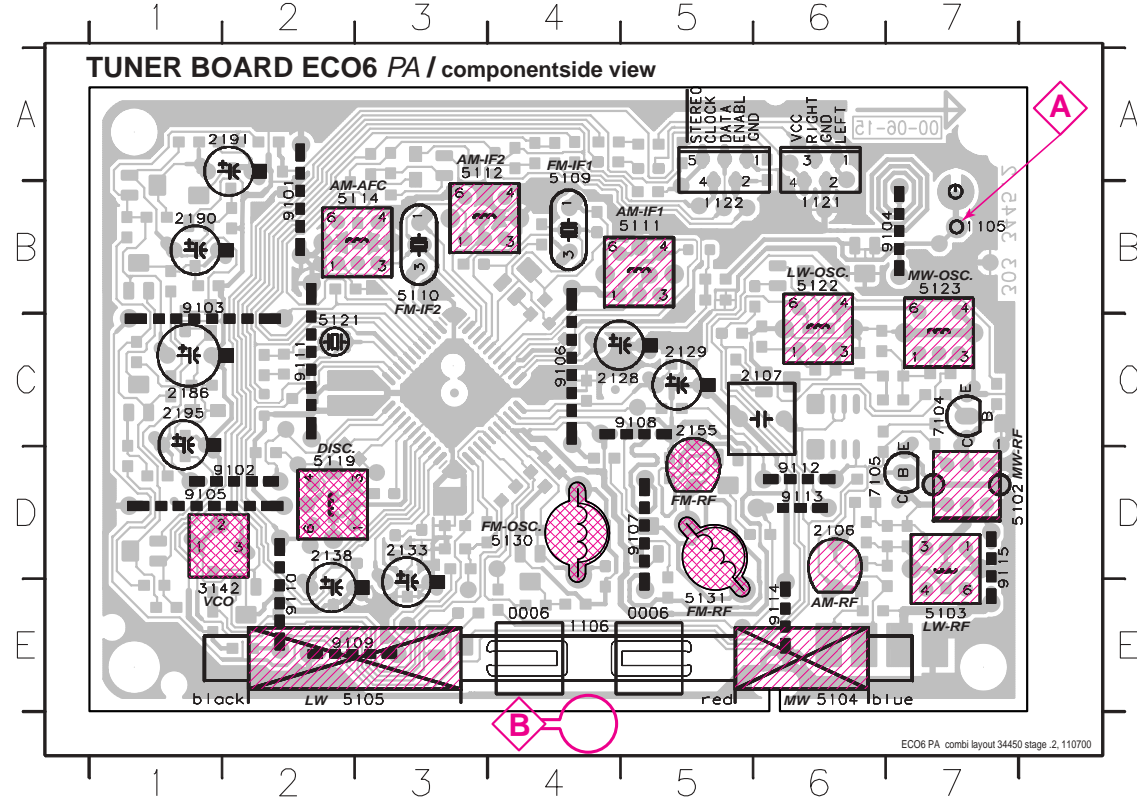
...V LW mode

voltages measured while set is tuned to a strong transmitter

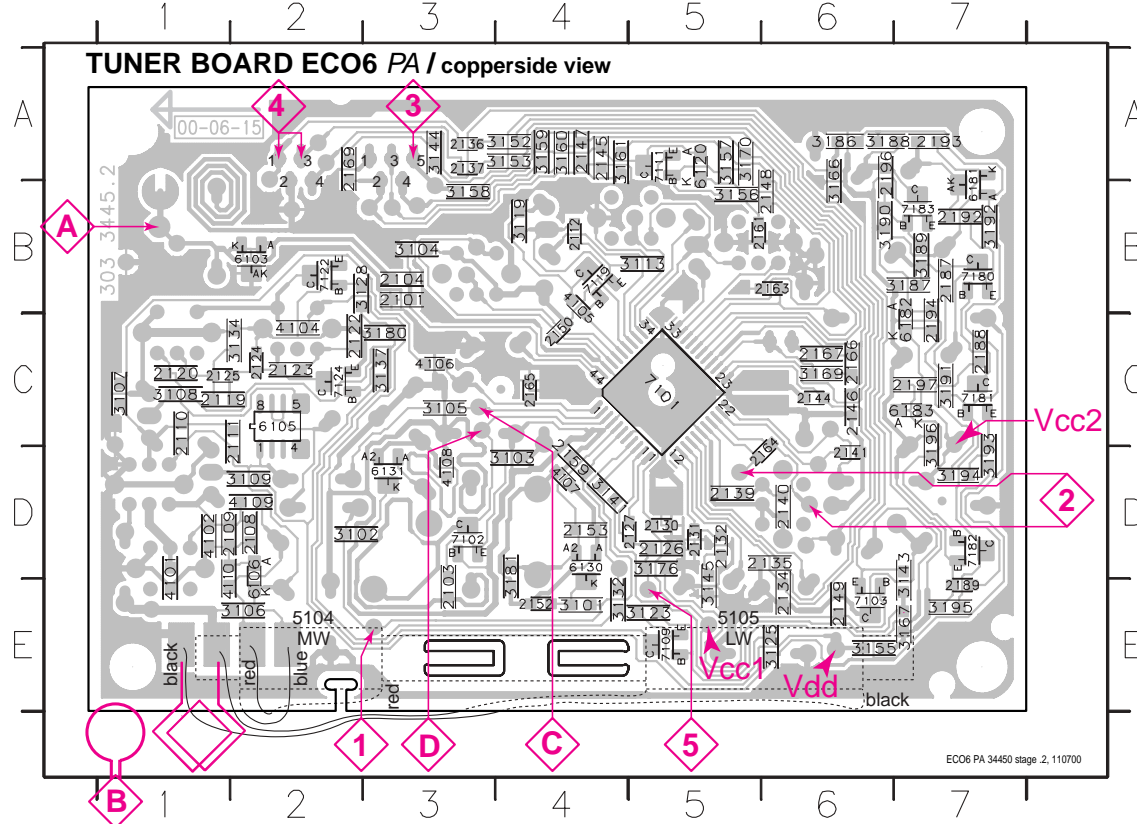
- 1105 A1
- 1121 F14
- 1122 E14
- 2101 A3
- 2103 C7
- 2104 A3
- 2106 B4
- 2107 F4
- 2108 F3
- 2109 F3
- 2110 B3
- 2111 B3
- 2112 B9
- 2119 H6
- 2120 H6
- 2122 I6
- 2123 I6
- 2124 I6
- 2125 H6
- 2126 E7
- 2127 E7
- 2128 B8
- 2129 C7
- 2130 F12
- 2131 F8
- 2132 F8
- 2133 F8
- 2134 I9
- 2135 I9
- 2136 H14
- 2137 H14
- 2138 F9
- 2139 G9
- 2140 G10
- 2141 F10
- 2144 F12
- 2145 E11
- 2146 D13
- 2147 E12
- 2148 D12
- 2149 H7
- 2150 A10
- 2152 E4
- 2153 E5
- 2155 D5
- 2159 F6
- 2161 C11
- 2163 D11
- 2164 F10
- 2165 C7
- 2166 D12
- 2167 E12
- 2169 G8
- 2186 H13
- 2187 H12
- 2188 H12
- 2189 H13
- 2190 G12
- 2191 H11
- 2192 G12
- 2193 G11
- 2194 G11
- 2195 G10
- 2196 H12
- 2197 H11
- 3101 E4
- 3102 D4
- 3103 C7
- 3104 A7
- 3105 B6
- 3106 B2
- 3107 C3
- 3108 D2
- 3109 D3
- 3113 B9
- 3119 A9
- 3123 H3
- 3125 H3
- 3128 I4
- 3132 H5
- 3134 H6
- 3137 I7
- 3141 E7
- 3142 E7
- 3143 G7
- 3144 G8
- 3145 F8
- 3152 H4
- 3153 H4
- 3155 F12
- 3156 C12
- 3157 C12
- 3158 E13
- 3159 D13
- 3160 D13
- 3161 D13
- 3166 F13
- 3167 F12
- 3169 D11
- 3170 C12
- 3176 G7
- 3180 I3
- 3181 E6
- 3186 F13
- 3187 H12
- 3188 H12
- 3189 H12
- 3190 H12
- 3191 H12
- 3192 H12
- 3193 H13
- 3194 H3
- 3195 H12
- 3196 H10
- 4101 E2
- 4102 E2
- 4104 I5
- 4105 A9
- 4109 C3
- 4110 C4
- 5102 E3
- 5103 F2
- 5109 A9
- 5110 B10
- 5111 A8
- 5112 A11
- 5114 B11
- 5119 G9
- 5121 E11
- 5122 H5
- 5123 G5
- 5130 E6
- 5131 C6
- 6103 A3
- 6105-1 B4
- 6105-2 G6
- 6106 B4
- 6120 B13
- 6130 D5
- 6131 C5
- 6181 G12
- 6183 H10
- 7101 B8
- 7102 C7
- 7103 H7
- 7104 D3
- 7105 D3
- 7109 H3
- 7111 C13
- 7119 A9
- 7122 I4
- 7124 I7
- 7180 H13
- 7181 H13
- 7182 H11
- 7183 H11
- 7184 A2
- 7185 A2
- 7186 H13
- 7187 H12
- 7188 H12
- 7189 H13
- 7190 G12
- 7191 H11
- 7192 G12
- 7193 G11
- 7194 G11
- 7195 G10
- 7196 H12
- 7197 H11
- 7198 H11
- 7199 H11
- 7200 H11
- 7201 H11
- 7202 H11
- 7203 H11
- 7204 H11
- 7205 H11
- 7206 H11
- 7207 H11
- 7208 H11
- 7209 H11
- 7210 H11
- 7211 H11
- 7212 H11
- 7213 H11
- 7214 H11
- 7215 H11
- 7216 H11
- 7217 H11
- 7218 H11
- 7219 H11
- 7220 H11
- 7221 H11
- 7222 H11
- 7223 H11
- 7224 H11
- 7225 H11
- 7226 H11
- 7227 H11
- 7228 H11
- 7229 H11
- 7230 H11
- 7231 H11
- 7232 H11
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- 7260 H11
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- 7262 H11
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- 7264 H11
- 7265 H11
- 7266 H11
- 7267 H11
- 7268 H11
- 7269 H11
- 7270 H11
- 7271 H11
- 7272 H11
- 7273 H11
- 7274 H11
- 7275 H11
- 7276 H11
- 7277 H11
- 7278 H11
- 7279 H11
- 7280 H11
- 7281 H11
- 7282 H11
- 7283 H11
- 7284 H11
- 7285 H11
- 7286 H11
- 7287 H11
- 7288 H11
- 7289 H11
- 7290 H11
- 7291 H11
- 7292 H11
- 7293 H11
- 7294 H11
- 7295 H11
- 7296 H11
- 7297 H11
- 7298 H11
- 7299 H11
- 7300 H11

TUNER BOARD ECO6 - LAYOUT DIAGRAM

1105 B7 2106 D6 2129 C5 2155 C5 2191 A2 5102 D7 5110 B3 5114 B3 5122 B6 5131 E5 9101 B2 9104 B7 9107 D5 9110 E2 9113 D6
 1121 B6 2107 C6 2133 D3 2186 C1 2195 C1 5103 E7 5111 B4 5119 D2 5123 B7 7104 C7 9102 D2 9105 D1 9108 C5 9111 C2 9114 E6
 1122 B5 2128 C4 2138 D2 2190 B1 3142 E1 5109 B4 5112 B3 5121 C2 5130 D4 7105 D6 9103 B1 9106 C4 9109 E2 9112 D6 9115 D7



2101 B3 2119 C1 2130 D5 2140 D6 2150 C4 2166 C6 2194 C7 3106 E2 3128 B2 3152 A4 3161 A4 3186 A6 3194 D7 4107 D4 6130 D4 7109 E5 7183 B7
 2103 E3 2120 C1 2131 D5 2141 D6 2152 E4 2167 C6 2196 A6 3107 C1 3132 E4 3153 A4 3166 B6 3187 B7 3195 E7 4108 D3 6131 D3 7111 A5
 2104 B3 2122 C2 2132 D5 2144 C6 2153 D4 2169 A2 2197 C7 3108 C1 3134 C2 3155 E6 3167 E7 3188 A6 3196 C7 4109 D2 6181 B7 7119 B5
 2108 D2 2123 C2 2134 E6 2145 A4 2159 D4 2187 B7 3101 E4 3109 D2 3137 C3 3156 B5 3169 C6 3189 B7 4101 D1 4110 D1 6182 C7 7122 B2
 2109 D1 2124 C2 2135 D6 2146 C6 2161 B5 2188 C7 3102 D2 3113 B5 3141 D4 3157 A5 3170 A5 3190 B6 4102 D1 6103 B2 6183 C7 7124 C2
 2110 C1 2125 C1 2136 A3 2147 A4 2163 B6 2189 E7 3103 D4 3119 B5 3143 D7 3158 B3 3176 D5 3191 C7 4104 C2 6105 C2 7101 C5 7180 B7
 2111 C2 2126 D5 2137 A3 2148 B6 2164 D6 2192 B7 3104 B3 3123 E5 3144 A3 3159 A4 3180 C3 3192 B7 4105 B4 6106 D2 7102 D3 7181 C7
 2112 B4 2127 D5 2139 D5 2149 E6 2165 C4 3105 C3 3125 E6 3145 E5 3160 A4 3181 D4 3193 D7 4106 C3 6120 A5 7103 E6 7182 D7



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 FM/MW- and FM/MW/LW - versions with ferrite antenna)

| Waverange | Input frequency | Input | Tuned to | Adjust | Output | Scope/Voltmeter |
|--|--|---|-------------------------|-------------------------|--------|----------------------------|
| VARICAP ALIGNMENT | | | | | | |
| FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz) | | | 108MHz | 5130 | 1 | 8V -0.2V |
| | | | 87.5MHz (65.81MHz) | check | | 4.3V -0.5V (1.2V -0.5V) |
| MW FM/AM-version, 10kHz grid 530 - 1700kHz | | | 1700kHz | 5123 | 1 | 8V -0.2V |
| | | | 530kHz | check | | 1.1V -0.4V |
| FM/MW-version, 9kHz grid 531 - 1602kHz | | | 1602kHz | 5123 | 1 | 6.9V -0.2V |
| | | | 531kHz | check | | 1.1V -0.4V |
| LW 153 - 279kHz | | | 279kHz | 5122 | 1 | 8V -0.2V |
| | | | 153kHz | check | | 1.1V -0.4V |
| MW FM/MW/LW- version, 9kHz grid 531 - 1602kHz | | | 1602kHz | 5123 | 1 | 8V -0.2V |
| | | | 531kHz | check | | 1.1V -0.4V |
| FM IF | | | | | | |
| FM | 10.7MHz, 45mV continuous wave | D | | 5119 | 2 | 0 - 3 mV DC |
| FM RF | | | | | | |
| FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz) | 108MHz | A | 108MHz | 2155 | 4 | MAX |
| | 87.5MHz (65.81MHz) | mod=1kHz $\Delta f = -22.5\text{kHz}$ | 87.5MHz (65.81MHz) | 5131 | | |
| VCO | | | | | | |
| FM | 98MHz, 1mV continuous wave | A | 98MHz | 3142 | 3 | 152kHz -1kHz ¹⁾ |
| AM IF | | | | | | |
| MW | 450kHz connect pin 6 of IC 7101 (AM Osc.) with 2.2k% to Vcc | C $\Delta f = -10\text{kHz}$ $V_{RF} = 0.5\text{mV}$ (as low as possible) see remark 2) | | 5111 | 5 | |
| | | | | 5112 | | |
| AM AFC | | C | | 5114 | 2 | 0 - 2 mV DC |
| AM RF³⁾ | | | | | | |
| LW | 198kHz | B | 198kHz | 5105 LW ferrite coil | 5 | |
| MW FM/MW/LW- and FM/MW-version (9kHz grid) 531 - 1602kHz | 1494kHz | | 2106 | | | |
| | 558kHz | | 5104 MW ferrite coil | | | |
| MW FM/AM-version, 10kHz grid 530 - 1700kHz | 1500kHz | | 2106 | 5104 MW ferrite coil | | |
| | 560kHz | | | | | |

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

(input signal: stereo left 90% + 9%, adjust output on right channel to minimum)

³⁾ LW has to be aligned before MW.

Repeat

CD99 BOARD - CIRCUIT DIAGRAM

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------|---------|----------|----------|----------|---------|---------|----------|---------|---------|---------|----------|----------|----------|---------|---------|---------|----------|-----------|-----------|-----------|-----------|-----------|----------|-----------|-----------|
| 1800 D1 | 2807 E4 | 2815 E10 | 2823 B11 | 2831 G12 | 2839 H4 | 2864 D5 | 2875 D5 | 3800 B2 | 3808 A2 | 3816 E5 | 3824 E9 | 3832 B14 | 3842 G14 | 3850 F5 | 3858 G5 | 3890 B4 | 3898 C5 | 7802-F F8 | MP800 A2 | MP814 B4 | MP822 F7 | MP838 F11 | MP847 F2 | MP860 C2 | MP882 F5 |
| 1801 G1 | 2808 E4 | 2816 F10 | 2824 B11 | 2832 F5 | 2840 H4 | 2865 D5 | 2876 B6 | 3801 A1 | 3809 A2 | 3817 E7 | 3825 E9 | 3834 B14 | 3843 G14 | 3851 F6 | 3859 H5 | 3891 C4 | 3899 D5 | 7803 B2 | MP802 B2 | MP815 E2 | MP823 F7 | MP839 F11 | MP848 E2 | MP862 B14 | MP883 E10 |
| 2801 A2 | 2809 E6 | 2817 D9 | 2825 B12 | 2833 F4 | 2841 C1 | 2869 E2 | 2877 B6 | 3802 B1 | 3810 A3 | 3818 E6 | 3826 D10 | 3835 C14 | 3844 G13 | 3852 F5 | 3860 H5 | 3892 C4 | 3899 D12 | 7804-A A1 | MP803 F10 | MP816 B4 | MP826 F12 | MP840 F12 | MP849 F2 | MP870 F4 | MP895 E14 |
| 2802 A3 | 2810 E6 | 2818 D9 | 2826 A13 | 2834 F5 | 2842 F7 | 2870 B5 | 2878 A10 | 3803 B1 | 3811 E4 | 3819 E6 | 3827 D9 | 3837 C14 | 3845 G12 | 3853 F5 | 3861 H5 | 3893 D4 | 3899 D10 | 7804-B C3 | MP808 F13 | MP817 A4 | MP827 A10 | MP841 F12 | MP850 E2 | MP873 H4 | MP896 B12 |
| 2803 A4 | 2811 F7 | 2819 B10 | 2827 C14 | 2835 F4 | 2843 B5 | 2871 B5 | 2879 G12 | 3804 B1 | 3812 D5 | 3820 E7 | 3828 A10 | 3838 D14 | 3846 F10 | 3854 F5 | 3862 H5 | 3894 A5 | 3899 D13 | 7802-A E6 | MP809 D10 | MP818 E4 | MP828 A11 | MP842 F12 | MP851 E2 | MP876 D14 | MP897 F11 |
| 2804 E4 | 2812 E8 | 2820 B10 | 2828 C14 | 2836 F4 | 2844 B5 | 2872 C5 | 2879 G11 | 3805 A1 | 3813 E5 | 3821 E7 | 3829 A11 | 3839 D14 | 3847 F6 | 3855 F4 | 3863 H4 | 3895 B5 | 3899 D14 | 7802-C E5 | MP810 B13 | MP819 C1 | MP829 C4 | MP843 G14 | MP852 F2 | MP877 E2 | |
| 2805 E4 | 2813 E9 | 2821 B11 | 2829 G14 | 2837 G5 | 2845 B5 | 2873 C5 | 2880 G11 | 3806 B2 | 3814 E5 | 3822 E7 | 3830 B12 | 3840 D15 | 3848 F5 | 3856 G6 | 3864 C1 | 3896 B5 | 3899 D15 | 7802-D E8 | MP812 D4 | MP820 E9 | MP831 F13 | MP844 E9 | MP854 G2 | MP880 E6 | |
| 2806 E4 | 2814 E9 | 2822 B11 | 2830 F13 | 2838 G4 | 2846 C5 | 2874 D5 | 2881 G5 | 3807 A2 | 3815 E5 | 3823 E8 | 3831 B14 | 3841 E14 | 3849 E5 | 3857 G5 | 3865 F7 | 3897 C5 | 3899 D16 | 7802-E E7 | MP813 C4 | MP821 C15 | MP837 B2 | MP846 F2 | MP855 E2 | MP881 F5 | |

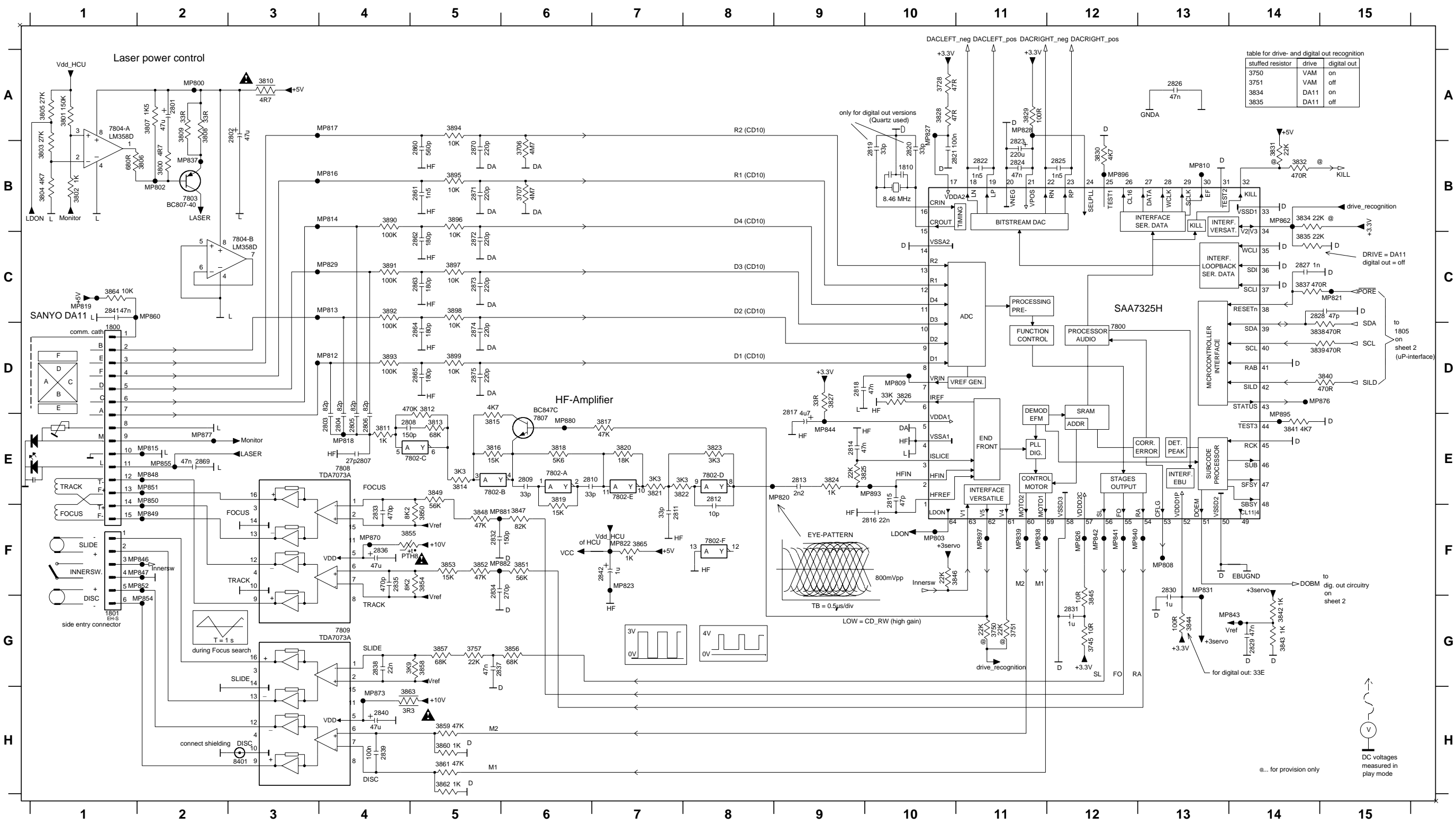
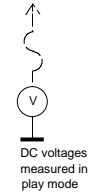
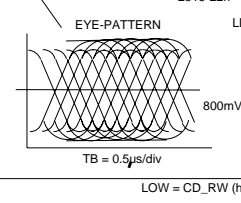


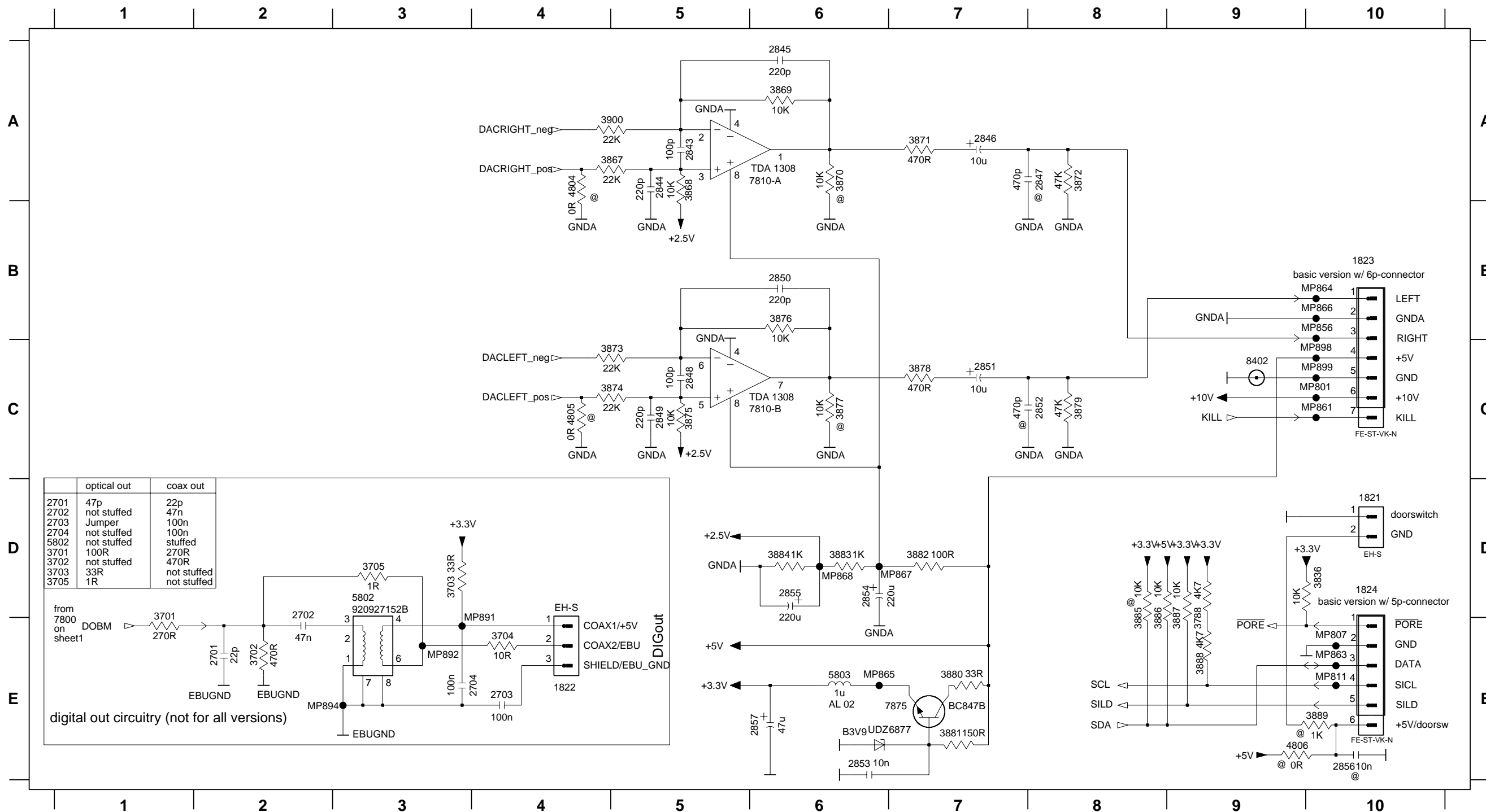
table for drive- and digital out recognition

| stuffed resistor | drive | digital out |
|------------------|-------|-------------|
| 3750 | VAM | on |
| 3751 | VAM | off |
| 3834 | DA11 | on |
| 3835 | DA11 | off |



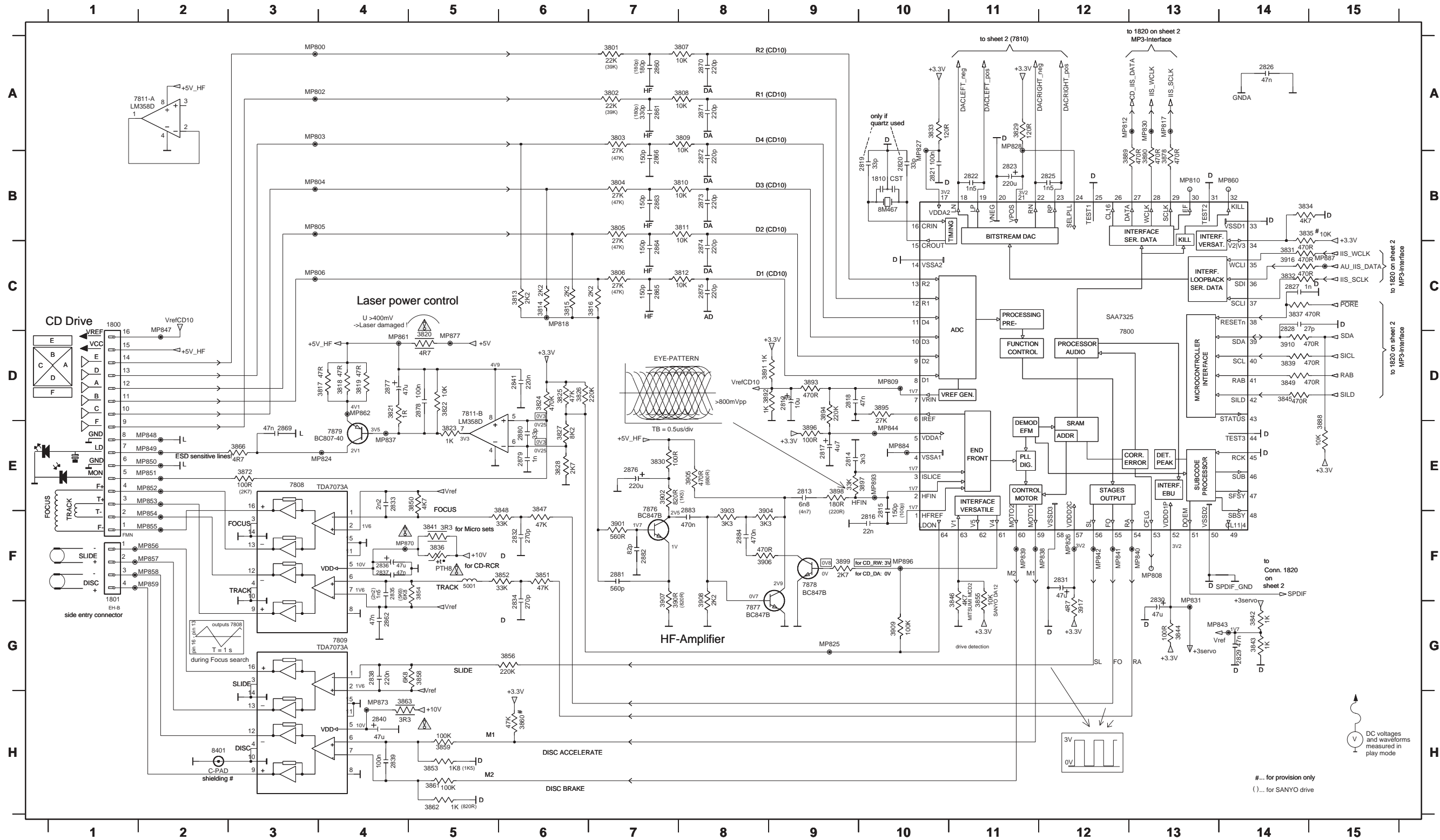
CD99 BOARD - CIRCUIT DIAGRAM

| | | | | | | | | | | | | | | | |
|----------|---------|---------|---------|----------|----------|---------|---------|---------|---------|----------|---------|-----------|-----------|-----------|-----------|
| 1821 D10 | 2702 E2 | 2845 A6 | 2850 B6 | 2855 D6 | 3703 D3 | 3867 A5 | 3872 A8 | 3877 C6 | 3882 D7 | 3887 E9 | 4805 C4 | 7810-A A5 | MP807 E10 | MP864 B10 | MP891 E4 |
| 1822 E4 | 2703 E4 | 2846 A7 | 2851 C7 | 2856 E10 | 3704 E4 | 3868 A5 | 3873 C5 | 3878 C7 | 3883 D6 | 3888 E9 | 4806 E9 | 7810-B C5 | MP811 E10 | MP865 E6 | MP892 E3 |
| 1823 B10 | 2704 E3 | 2847 A8 | 2852 C8 | 2857 E6 | 3705 D3 | 3869 A6 | 3874 C5 | 3879 C8 | 3884 D6 | 3889 E10 | 5802 D3 | 7875 E7 | MP856 B10 | MP866 B10 | MP894 E2 |
| 1824 D10 | 2843 A5 | 2848 C5 | 2853 E6 | 3701 E1 | 3788 E9 | 3870 A6 | 3875 C5 | 3880 E7 | 3885 E8 | 3900 A5 | 5803 E6 | 8402 C9 | MP861 C10 | MP867 D7 | MP898 C10 |
| 2701 E2 | 2844 A5 | 2849 C5 | 2854 D6 | 3702 E2 | 3836 D10 | 3871 A7 | 3876 B6 | 3881 E7 | 3886 E8 | 4804 A4 | 6877 E7 | MP801 C10 | MP863 E10 | MP868 D6 | MP899 C10 |



MP3 BOARD - CIRCUIT DIAGRAM

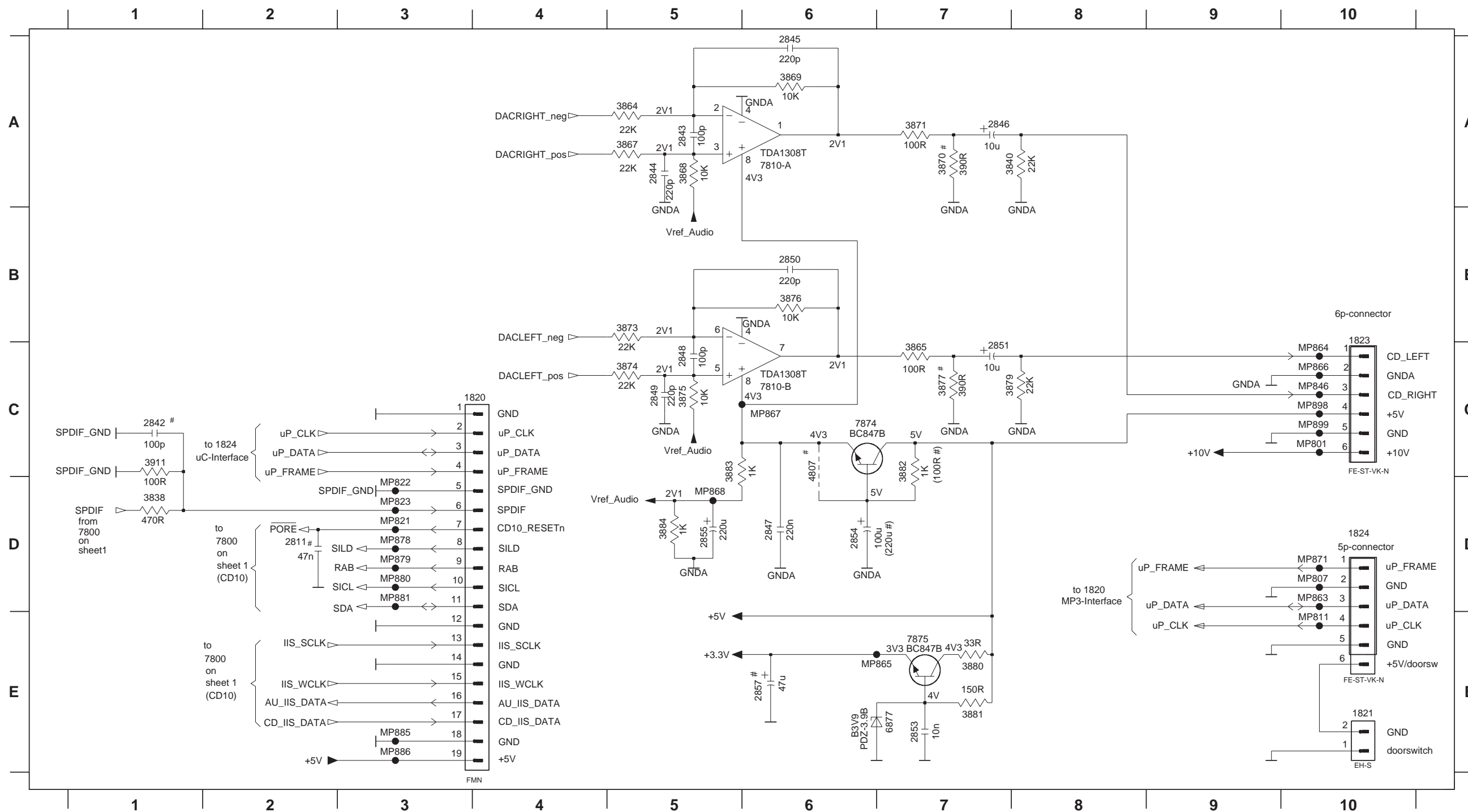
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|----------|----------|----------|----------|---------|---------|---------|---------|---------|---------|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|-----------|-----------|
| 1800 C1 | 2816 F10 | 2823 B11 | 2831 F12 | 2838 G4 | 2863 B7 | 2872 B8 | 2879 E6 | 3802 A7 | 3809 A8 | 3816 C7 | 3823 E5 | 3830 E7 | 3837 C14 | 3846 F11 | 3853 H5 | 3861 H5 | 3869 B12 | 3896 E9 | 3904 F8 | 3916 C14 | 7811-B D5 | MP802 A3 | MP810 B13 | MP827 A10 | MP840 F13 | MP849 E2 | MP856 F2 | MP870 F4 |
| 1801 G1 | 2817 E9 | 2825 B12 | 2832 F6 | 2839 H4 | 2864 C7 | 2873 B8 | 2880 E6 | 3803 A7 | 3810 B8 | 3817 D3 | 3824 D6 | 3831 C14 | 3839 D14 | 3847 E6 | 3854 F5 | 3862 H5 | 3890 B13 | 3897 E10 | 3905 E8 | 3917 G12 | 7876 F7 | MP803 A3 | MP812 A12 | MP828 A11 | MP841 F12 | MP850 E2 | MP857 F2 | MP873 H4 |
| 1810 B10 | 2818 D9 | 2826 A14 | 2833 E4 | 2840 H4 | 2865 C7 | 2874 C8 | 2881 F7 | 3804 B7 | 3811 B8 | 3818 D4 | 3825 D6 | 3832 C14 | 3841 F5 | 3848 F6 | 3855 F11 | 3863 H4 | 3891 D8 | 3898 E9 | 3906 F8 | 5001 F5 | 7877 G8 | MP804 B3 | MP817 A13 | MP830 A13 | MP842 F12 | MP851 E2 | MP858 F2 | MP877 D5 |
| 2812 D9 | 2819 B10 | 2827 C14 | 2834 G6 | 2841 D6 | 2866 B7 | 2875 C8 | 2882 F7 | 3805 B7 | 3812 C8 | 3819 D4 | 3826 D6 | 3833 A10 | 3842 G14 | 3849 D14 | 3856 G6 | 3864 E3 | 3892 D8 | 3899 F9 | 3907 F7 | 7800 C12 | 7878 F9 | MP805 B3 | MP818 C6 | MP831 G13 | MP843 G13 | MP852 E2 | MP859 F2 | MP884 E10 |
| 2813 E9 | 2820 B10 | 2828 C14 | 2835 F4 | 2860 A7 | 2869 E3 | 2876 E7 | 2883 F8 | 3806 C7 | 3813 C6 | 3820 D5 | 3827 E6 | 3834 B14 | 3843 G14 | 3850 E5 | 3858 G5 | 3872 E3 | 3893 D9 | 3901 F7 | 3908 F8 | 7808 E3 | 7879 E4 | MP806 C3 | MP824 E4 | MP837 E4 | MP844 E10 | MP853 E2 | MP860 B14 | MP887 C5 |
| 2814 E9 | 2821 B10 | 2829 G14 | 2836 F4 | 2861 A7 | 2870 A8 | 2877 D4 | 2884 F8 | 3807 A8 | 3814 C6 | 3821 D5 | 3828 E6 | 3835 B14 | 3844 G13 | 3851 F6 | 3859 H5 | 3878 B13 | 3894 D9 | 3902 E7 | 3909 G10 | 7809 G4 | 8401 H2 | MP808 F13 | MP825 G9 | MP838 F12 | MP847 D2 | MP854 F2 | MP861 D4 | MP893 E10 |
| 2815 E10 | 2822 B11 | 2830 G13 | 2837 F4 | 2862 G4 | 2871 A8 | 2878 D5 | 2881 A7 | 3808 A8 | 3815 C6 | 3822 D5 | 3829 A11 | 3836 F5 | 3845 D14 | 3852 F6 | 3860 H6 | 3868 E15 | 3895 D10 | 3903 F8 | 3910 D14 | 7811-A A2 | MP800 A3 | MP809 D10 | MP826 F12 | MP839 F11 | MP848 E2 | MP855 F2 | MP862 D4 | MP896 F10 |



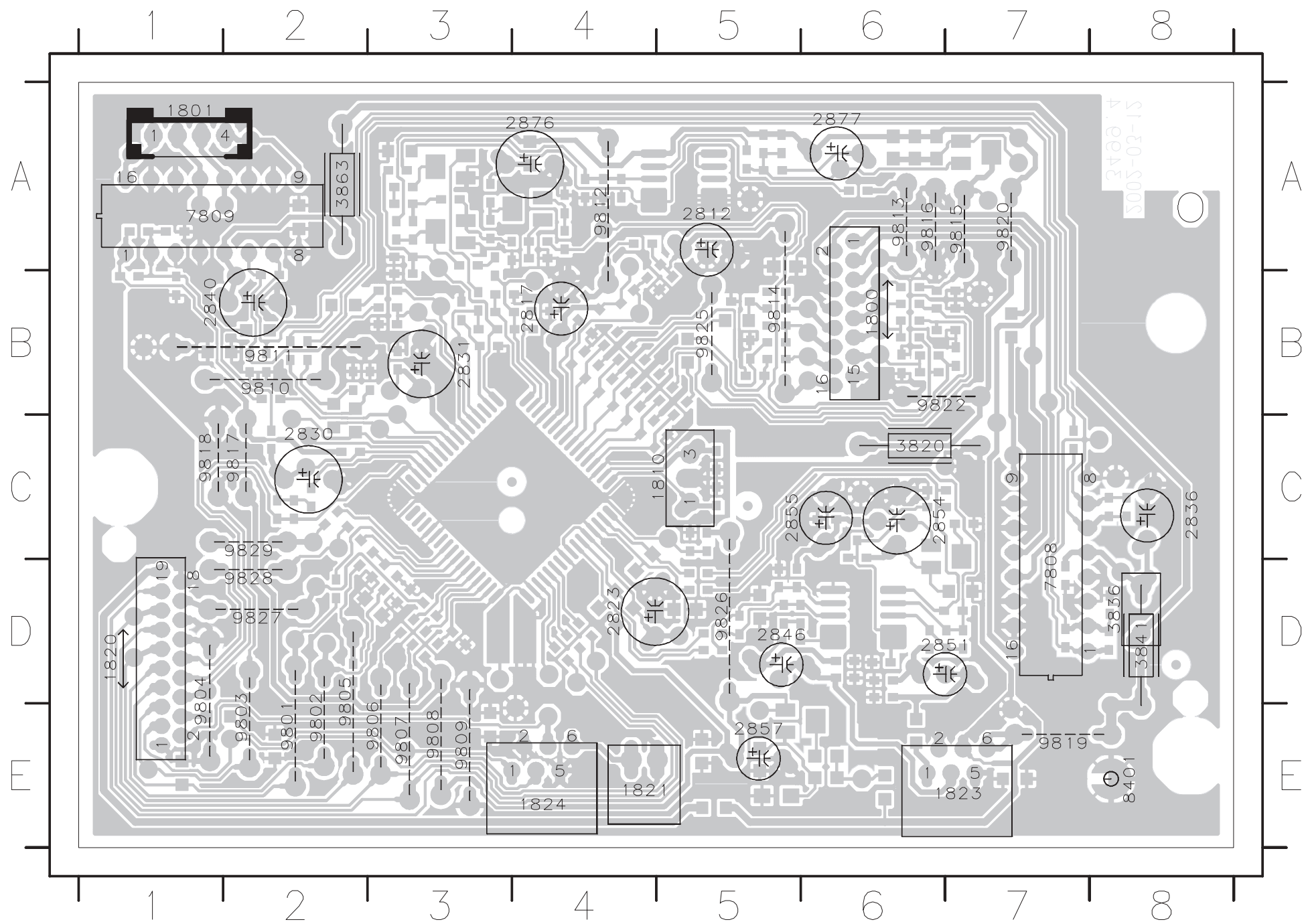
DC voltages and waveforms measured in play mode

MP3 BOARD- CIRCUIT DIAGRAM

| | | | | | | | | | | | | | | | | |
|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-----------|-----------|-----------|-----------|-----------|----------|-----------|
| 1820 C3 | 2811 D2 | 2845 A6 | 2849 C5 | 2854 D6 | 3840 A7 | 3868 A5 | 3873 B5 | 3877 C7 | 3882 C7 | 4807 C6 | 7874 C6 | MP811 E10 | MP846 C10 | MP866 C10 | MP878 D3 | MP885 E3 |
| 1821 E10 | 2842 C1 | 2846 A7 | 2850 B6 | 2855 D5 | 3864 A5 | 3869 A6 | 3874 C5 | 3879 C7 | 3883 C5 | 6877 E7 | 7875 E7 | MP821 D3 | MP863 D10 | MP867 C6 | MP879 D3 | MP886 E3 |
| 1823 C10 | 2843 A5 | 2847 D6 | 2851 C7 | 2857 E6 | 3865 C7 | 3870 A7 | 3875 C5 | 3880 E7 | 3884 D5 | 7810-A A6 | MP801 C10 | MP822 D3 | MP864 C10 | MP868 D5 | MP880 D3 | MP898 C10 |
| 1824 D10 | 2844 A5 | 2848 C5 | 2853 E7 | 3838 D1 | 3867 A5 | 3871 A7 | 3876 B6 | 3881 E7 | 3911 C1 | 7810-B C6 | MP807 D10 | MP823 D3 | MP865 E6 | MP871 D10 | MP881 D3 | MP899 C10 |



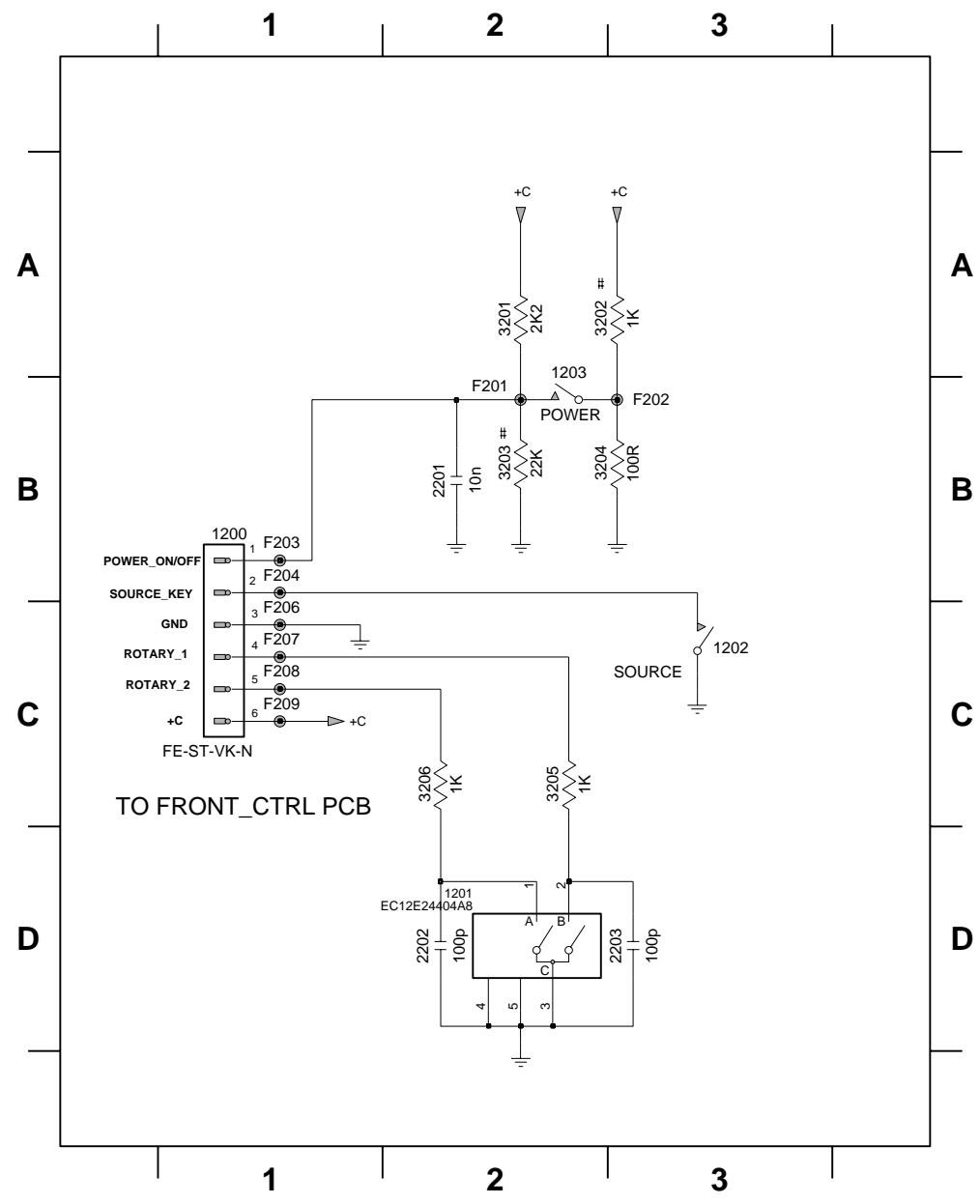
MP3 BOARD - LAYOUT DIAGRAM (COMPONENT SIDE VIEW)



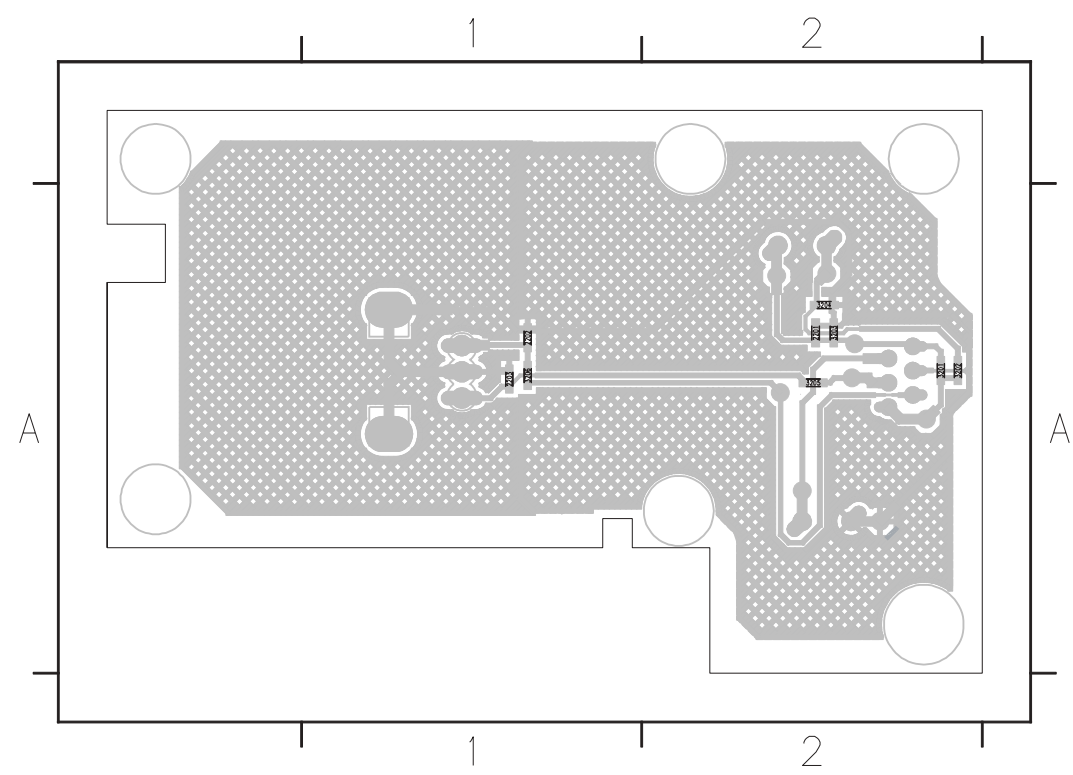
| | | | |
|------|----|------|----|
| 1800 | B6 | 9819 | E7 |
| 1801 | A1 | 9820 | A7 |
| 1810 | C5 | 9822 | B6 |
| 1820 | D1 | 9825 | B5 |
| 1821 | E4 | 9826 | D5 |
| 1823 | E7 | 9827 | D2 |
| 1824 | E4 | 9828 | D2 |
| 2812 | A5 | 9829 | C2 |
| 2817 | B4 | | |
| 2823 | D4 | | |
| 2830 | C2 | | |
| 2831 | B3 | | |
| 2836 | C8 | | |
| 2840 | B1 | | |
| 2846 | D5 | | |
| 2851 | D6 | | |
| 2854 | C6 | | |
| 2855 | C5 | | |
| 2857 | E5 | | |
| 2876 | A4 | | |
| 2877 | A6 | | |
| 3820 | C6 | | |
| 3836 | D8 | | |
| 3841 | D8 | | |
| 7808 | A2 | | |
| 7809 | D7 | | |
| 7809 | A1 | | |
| 8401 | E8 | | |
| 9801 | E2 | | |
| 9802 | F2 | | |
| 9803 | E2 | | |
| 9804 | D1 | | |
| 9805 | D2 | | |
| 9806 | E3 | | |
| 9807 | E3 | | |
| 9808 | F3 | | |
| 9809 | E3 | | |
| 9810 | B2 | | |
| 9811 | B2 | | |
| 9812 | A4 | | |
| 9813 | A6 | | |
| 9814 | B5 | | |
| 9815 | A7 | | |
| 9816 | A6 | | |
| 9817 | C2 | | |
| 9818 | C1 | | |

VOLUME BOARD - CIRCUIT DIAGRAM

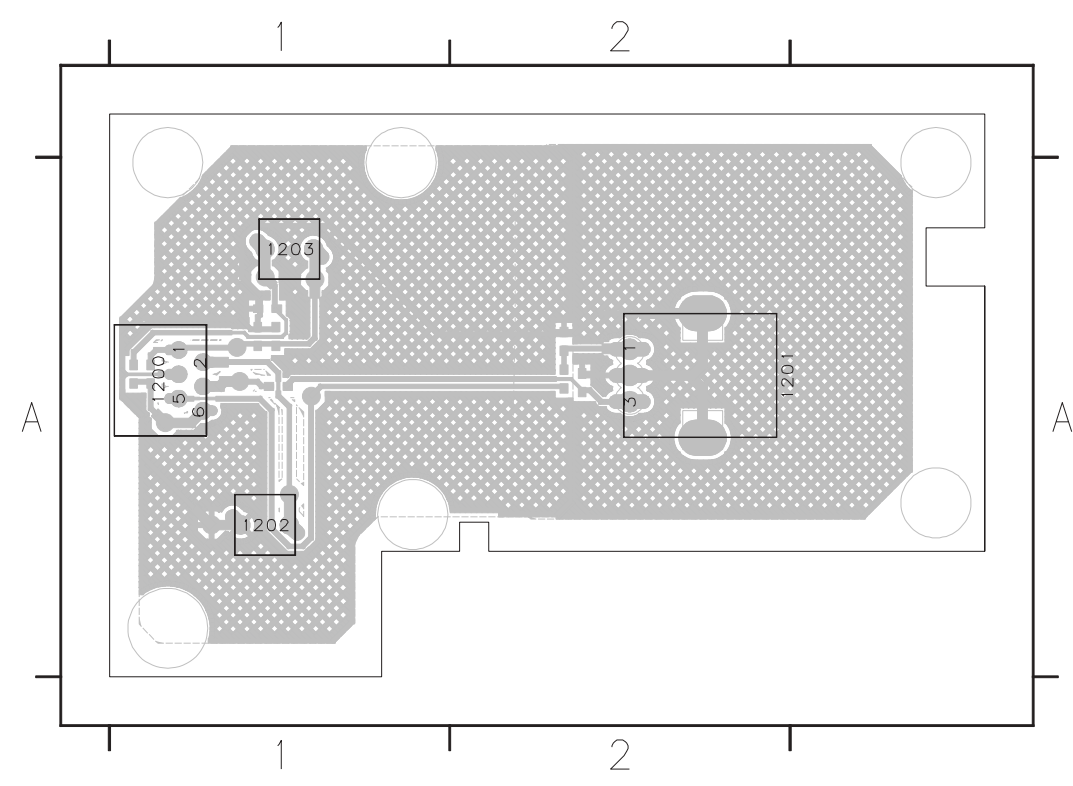
| | | | | | | |
|---------|---------|---------|---------|---------|---------|---------|
| 1200 B1 | 1203 B2 | 2203 D3 | 3203 B2 | 3206 C2 | F203 B1 | F207 C1 |
| 1201 D2 | 2201 B2 | 3201 A2 | 3204 B2 | F201 B2 | F204 B1 | F208 C1 |
| 1202 C3 | 2202 D2 | 3202 A2 | 3205 C2 | F202 B3 | F206 C1 | F209 C1 |



VOLUME BOARD - LAYOUT DIAGRAM



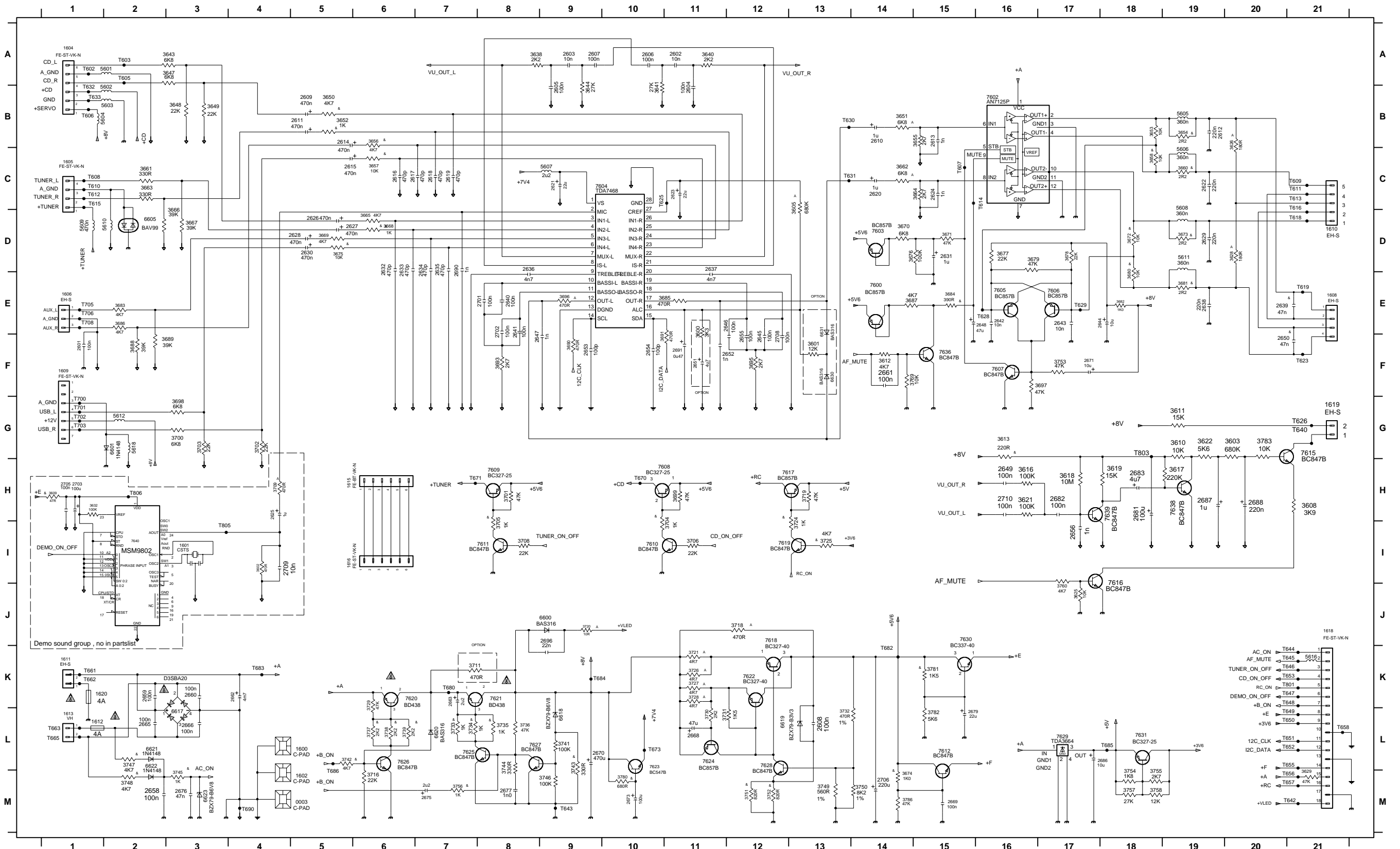
| | |
|------|----|
| 2201 | A2 |
| 2202 | A1 |
| 2203 | A1 |
| 2201 | A2 |
| 2202 | A2 |
| 2203 | A2 |
| 2204 | A2 |
| 2205 | A2 |
| 3206 | A1 |



| | |
|------|----|
| 1200 | A1 |
| 1201 | A2 |
| 1202 | A1 |
| 1203 | A1 |

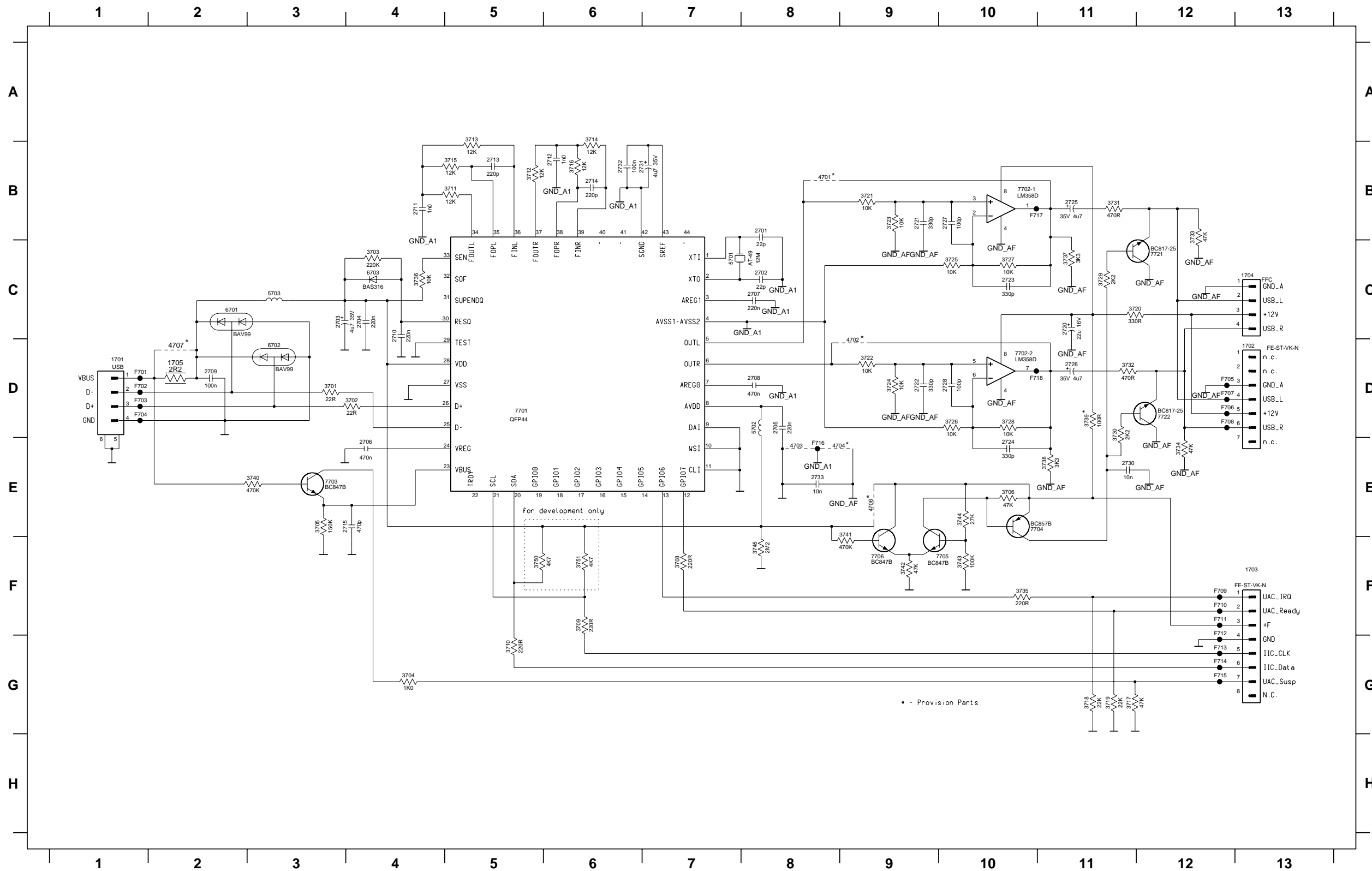
POWER BOARD - CIRCUIT DIAGRAM

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 0003 M5 | 1610 D21 | 2601 F1 | 2610 B14 | 2619 C7 | 2628 D5 | 2637 D11 | 2646 E12 | 2655 F12 | 2666 L3 | 2679 L15 | 2696 J9 | 3600 E11 | 3612 F14 | 3626 B20 | 3647 A3 | 3656 B6 | 3666 D3 | 3675 D5 | 3684 E15 | 3695 F12 | 3704 H1 | 3720 J9 | 3731 L11 | 3741 L9 | 3750 M14 | 3760 J17 | 5603 B2 | 5612 G2 | 6620 L7 | 7604 C9 | 7615 G21 | 7624 L11 | 7638 H19 | T609 C21 | T619 E21 | T633 B1 | T649 L21 | T661 K1 | T683 K4 | T705 E1 |
| 1600 L5 | 1611 K1 | 2602 A11 | 2611 B5 | 2620 C14 | 2629 D19 | 2638 E19 | 2647 F9 | 2656 H17 | 2668 L11 | 2681 H18 | 2701 E8 | 3601 F13 | 3613 G16 | 3628 D29 | 3648 B3 | 3657 C6 | 3667 D3 | 3676 D14 | 3686 E11 | 3696 E9 | 3705 I8 | 3721 K11 | 3732 L13 | 3742 L5 | 3751 M12 | 3769 F15 | 5604 B1 | 5616 K21 | 6621 L2 | 7605 E16 | 7616 H18 | 7625 L7 | 7639 H18 | T610 C1 | T623 F21 | T640 G21 | T650 L21 | T662 K1 | T684 K9 | T706 E1 |
| 1601 L3 | 1612 L1 | 2603 A9 | 2612 B19 | 2621 C9 | 2630 D5 | 2639 E20 | 2648 E16 | 2658 M2 | 2669 M15 | 2682 H17 | 2702 E8 | 3602 I4 | 3616 H16 | 3629 M21 | 3649 B3 | 3658 C18 | 3668 D6 | 3677 D16 | 3686 E14 | 3697 F17 | 3706 H1 | 3724 H3 | 3733 L7 | 3743 L9 | 3752 M12 | 3760 M10 | 5605 B19 | 5618 G2 | 6622 L2 | 7606 F17 | 7617 H13 | 7626 L6 | 7640 I2 | T611 C21 | T625 C10 | T642 M21 | T651 L21 | T663 L1 | T685 L18 | T708 E1 |
| 1602 M5 | 1613 L1 | 2604 B11 | 2613 B15 | 2622 C19 | 2631 D15 | 2640 E8 | 2649 H16 | 2659 K2 | 2670 L9 | 2683 H18 | 2703 H1 | 3603 G20 | 3617 H19 | 3632 H1 | 3650 B5 | 3660 C19 | 3669 D5 | 3678 D17 | 3687 E14 | 3698 G3 | 3708 I8 | 3725 H3 | 3734 L7 | 3744 L8 | 3753 F17 | 3781 K15 | 5606 C19 | 5609 J9 | 6623 M3 | 7607 F16 | 7618 J12 | 7627 L9 | T602 A1 | T612 C1 | T626 G21 | T643 M9 | T652 L21 | T665 L1 | T686 M5 | T801 K21 |
| 1604 A1 | 1615 H5 | 2605 B9 | 2614 B5 | 2623 C11 | 2632 D6 | 2641 E8 | 2650 F20 | 2660 K3 | 2671 F17 | 2686 L18 | 2705 H1 | 3605 C13 | 3618 H17 | 3638 A8 | 3651 B14 | 3661 C2 | 3670 D14 | 3679 D16 | 3688 F2 | 3699 H11 | 3709 H4 | 3728 K11 | 3738 L8 | 3745 M3 | 3754 M18 | 3782 L15 | 5607 C9 | 5609 G2 | 6630 F13 | 7608 H11 | 7619 I13 | 7628 L12 | T603 A2 | T613 C21 | T628 E16 | T644 K21 | T653 K21 | T670 H10 | T690 M4 | T803 G18 |
| 1605 C1 | 1616 I5 | 2606 A10 | 2615 C5 | 2624 C15 | 2633 D6 | 2642 E16 | 2651 F11 | 2661 F14 | 2673 M10 | 2687 H19 | 2706 H14 | 3608 H21 | 3619 H18 | 3640 A11 | 3652 B5 | 3662 C14 | 3671 D15 | 3680 E18 | 3689 F3 | 3700 G3 | 3711 K7 | 3727 K11 | 3738 L8 | 3746 M9 | 3755 M19 | 3783 G20 | 5608 D19 | 5605 D2 | 6631 E13 | 7609 H8 | 7629 K6 | 7639 L17 | T605 A2 | T614 C16 | T629 E17 | T645 K21 | T655 L21 | T671 H7 | T700 G1 | T805 I3 |
| 1606 E1 | 1618 J21 | 2607 A9 | 2616 C6 | 2625 H4 | 2634 D7 | 2643 E17 | 2652 F12 | 2662 K4 | 2675 M7 | 2688 H20 | 2708 F12 | 3609 H1 | 3621 H16 | 3641 B10 | 3653 B18 | 3663 C2 | 3672 D18 | 3681 E9 | 3690 F9 | 3701 H8 | 3716 M6 | 3728 K11 | 3737 L6 | 3747 L2 | 3756 M7 | 3786 M14 | 5609 D1 | 5617 L3 | 6632 M4 | 7610 E10 | 7621 K8 | 7630 J15 | T606 B1 | T615 C1 | T630 B13 | T646 K21 | T656 M21 | T673 L10 | T701 G1 | T806 H2 |
| 1608 E21 | 1619 G21 | 2608 L13 | 2617 C6 | 2626 D5 | 2635 D7 | 2644 E18 | 2653 F9 | 2663 K7 | 2676 M3 | 2690 D7 | 2709 I4 | 3610 G19 | 3622 G19 | 3643 A3 | 3654 B19 | 3664 C15 | 3673 D19 | 3682 E18 | 3691 F10 | 3702 G4 | 3718 J12 | 3729 K6 | 3738 L6 | 3748 M2 | 3757 M18 | 5601 A2 | 5610 D1 | 6618 L9 | 7602 B16 | 7611 B8 | 7622 K12 | 7631 L18 | T607 C15 | T616 C21 | T631 C13 | T647 K21 | T657 M21 | T680 K7 | T702 G1 | T807 G1 |
| 1609 F1 | 1620 K1 | 2609 B5 | 2618 C7 | 2627 D5 | 2636 D8 | 2645 F12 | 2654 F10 | 2665 L2 | 2677 M8 | 2691 F11 | 2710 H16 | 3611 G19 | 3625 J17 | 3644 B9 | 3655 B15 | 3665 D6 | 3674 M14 | 3683 E2 | 3693 F8 | 3703 G3 | 3719 H13 | 3730 L11 | 3739 L6 | 3749 M13 | 3758 M18 | 5602 B2 | 5611 D19 | 6619 L12 | 7603 D14 | 7612 L15 | 7623 L10 | 7636 F15 | T608 C1 | T618 D21 | T632 B1 | T648 K21 | T658 L21 | T682 K14 | T703 G1 | |



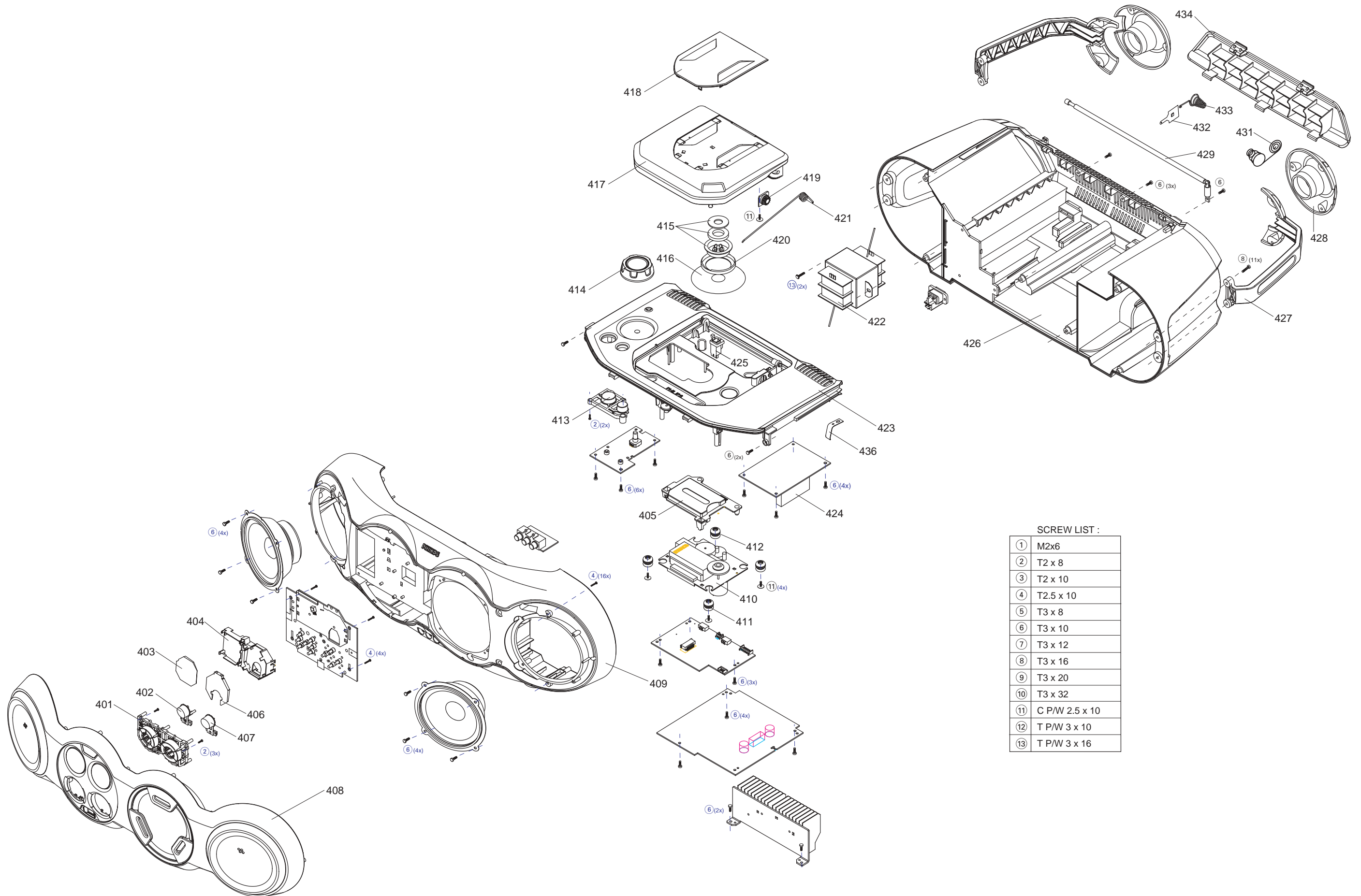
NOTE
 & EXPRESS 0805 INSTANCES
 A EXPRESS AI INSTANCES

USB BOARD - CIRCUIT DIAGRAM



- 1701 D1
- 1702 D13
- 1703 F13
- 1704 C13
- 1705 D2
- 1701 B8
- 2702 C8
- 2703 C3
- 2704 C4
- 2705 D8
- 2706 E4
- 2707 C8
- 2708 D8
- 2709 D2
- 2710 C4
- 2711 B4
- 2712 B6
- 2713 B5
- 2714 B6
- 2715 E4
- 2720 C11
- 2721 B9
- 2722 D9
- 2723 C10
- 2724 E10
- 2725 B11
- 2726 D11
- 2727 B10
- 2728 D10
- 2730 E11
- 2731 B7
- 2732 B6
- 2733 E8
- 3701 D3
- 3702 D4
- 3703 C4
- 3704 C4
- 3705 E3
- 3706 E10
- 3709 F7
- 3709 F6
- 3710 G5
- 3711 B5
- 3712 B5
- 3713 A5
- 3714 A6
- 3715 B5
- 3716 B6
- 3717 G11
- 3718 G11
- 3719 G11
- 3720 C11
- 3721 B9
- 3722 D9
- 3723 B9
- 3724 D9
- 3725 C10
- 3726 D10
- 3727 C10
- 3728 D10
- 3729 C11
- 3730 D11
- 3731 B11
- 3732 D11
- 3733 B12
- 3734 E12
- 3735 F10
- 3736 C4
- 3737 C11
- 3738 E11
- 3739 D11
- 3740 E3
- 3741 E9
- 3742 F9
- 3743 F10
- 3744 E10
- 3745 F8
- 3750 F5
- 3751 F6
- 4701 B8
- 4702 D9
- 4703 E8
- 4704 E8
- 4706 E9
- 4707 D2
- 5701 C7
- 5702 D8
- 5703 C3
- 6701 C2
- 6702 D3
- 6703 C4
- 7701 D5
- 7702-1 B10
- 7702-2 D10
- 7703 E3
- 7704 E10
- 7705 F10
- 7706 F9
- 7721 C12
- 7722 D12
- F701 D1
- F702 D1
- F703 D1
- F704 D1
- F705 D12
- F706 D12
- F707 D12
- F708 D12
- F709 F12
- F710 F12
- F711 F12
- F712 F12
- F713 G12
- F714 G12
- F715 G12
- F716 E8
- F717 B10
- F718 D10

EXPLODED VIEW DIAGRAM - CABINET



SCREW LIST :

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

MECHANICAL PARTSLIST - CABINET

| | | |
|-----|----------------|-------------------------------------|
| 401 | 3140 117 66681 | BUTTON TREE PNT PRT |
| 402 | 3140 117 66671 | PLAY/PAUSE BUTTON PNT PRT |
| 403 | 3140 114 49271 | LIGHT GUIDE-LCD |
| 404 | 3140 114 49231 | BRACKET-LCD |
| 405 | 4822 442 01713 | COVER CD COMPATIBLE |
| 406 | 3140 114 49261 | LIGHT GUIDE-VU |
| 407 | 3140 117 66661 | WOOX BUTTON PRT |
| 408 | 3140 117 68301 | FRONT PANEL ASSY |
| 409 | 3140 117 66561 | FRONT CABINET ASSY |
| 410 | 3103 309 05380 | CD MCD2 ASSY |
| 411 | 4822 529 10387 | DAMPER - RUBBER (40 DEG) |
| 412 | 4822 529 10386 | DAMPER - RUBBER (30 DEG) |
| 413 | 3140 117 66611 | POWER-SOURCE BUTTON PNT PRT |
| 414 | 3140 117 66711 | VOLUME KNOB ASSY |
| 415 | 4822 532 12798 | RING PRESSURE |
| 416 | 4822 535 60096 | DISC |
| 417 | 3140 117 68261 | CD DOOR PRT |
| 418 | 3140 117 66621 | CD DOOR DETAIL PRT |
| 419 | 4822 529 10322 | DAMPER ASSY |
| 420 | 4822 532 13153 | RING (CD LID) |
| 421 | 3140 111 22761 | SPRING-CD (LONG) |
| 422 | 4822 263 21206 | P50 ADAPTOR |
| 423 | 3140 118 68252 | CD TRAY ASSY AZ2555 |
| 424 | 4822 256 90463 | HOLDER FERRITE BAR |
| 425 | 4822 276 13963 | CD DOOR SWITCH |
| 426 | 3140 117 66531 | BACK CABINET ASSY |
| 427 | 3140 117 67111 | HANDLE PNT |
| 428 | 3140 117 66741 | BASS PORT CAP PNT |
| 429 | 3140 118 71790 | ROD ANTENNA EXTEND 660MM |
| 431 | 4822 492 51733 | SPRING |
| 432 | 3140 111 21320 | CONTACT PLATE |
| 433 | 3140 111 22951 | SPRING-COMPRESSION |
| 434 | 3140 117 68141 | BATTERY DOOR PNT AZ2555 |
| 436 | 3140 111 22971 | START SPRING PLATE |
| | 2422 070 98151 | MAINSCORD EUR 1M5 BK B |
| | 2422 070 98246 | MAINSCORD UL 7A 1M5 DET 2P B (-/17) |
| | 3139 228 61871 | REMOTE CONTROL 19621005/01 PACKED |
| | 3140 110 22391 | CBLE USB-A/1500/USB-B |

Note: Only these parts mentioned in the list are

normal service parts.

ELECTRICAL PARTSLIST - KEY BOARD**- MISCELLANEOUS -**

| | | |
|------|----------------|----------------------|
| 1100 | 2422 025 10768 | CONNECTOR 3P |
| 1101 | 4822 267 31996 | CONNECTOR 1P |
| 1150 | 2422 026 05099 | CONNECTOR PHONE H 1P |
| 1151 | 4822 265 30735 | CONNECTOR 5P |
| 1400 | 4822 267 10958 | CONNECTOR5P |
| 1401 | 4822 265 11535 | SOCKET FFC 8P |
| 1402 | 4822 265 11207 | SOCKET FFC 6P |
| 1405 | 4822 265 11184 | CONNECTOR |
| 1406 | 4822 265 11207 | SOCKET FFC 6P |
| 1430 | 2422 128 02922 | SWITCH-TACT |
| 1431 | 2422 128 02922 | SWITCH-TACT |
| 1432 | 2422 128 02922 | SWITCH-TACT |
| 1433 | 2422 128 02922 | SWITCH-TACT |
| 1434 | 2422 128 02922 | SWITCH-TACT |
| 1435 | 2422 128 02922 | SWITCH-TACT |
| 1436 | 2422 128 02922 | SWITCH-TACT |
| 1437 | 2422 128 02922 | SWITCH-TACT |
| 1438 | 2422 128 02922 | SWITCH-TACT |
| 1439 | 2422 128 02922 | SWITCH-TACT |
| 1440 | 2422 128 02922 | SWITCH-TACT |
| 1441 | 2422 128 02922 | SWITCH-TACT |

- CAPACITORS -

| | | |
|------|----------------|-----------------------|
| 2101 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2150 | 5322 126 11578 | 1nF 10% X7R 50V |
| 2151 | 5322 126 11578 | 1nF 10% X7R 50V |
| 2300 | 4822 124 81286 | 47µF 20% 16V |
| 2301 | 3198 016 31020 | 1nF NP0 25V |
| 2302 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2303 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2400 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2401 | 4822 124 23432 | 100µF 20% 10V |
| 2402 | 5322 126 11583 | 10nF 10% X7R 50V |
| 2403 | 2020 552 94427 | 100pF 5% NP0 50V |
| 2404 | 2020 552 94427 | 100pF 5% NP0 50V |
| 2405 | 2020 552 94427 | 100pF 5% NP0 50V |
| 2406 | 2020 552 94427 | 100pF 5% NP0 50V |
| 2407 | 2238 586 59812 | 100nF +80-20% Y5V 50V |

| | | |
|------|----------------|-----------------------|
| 2408 | 4822 124 23432 | 100µF 20% 10V |
| 2409 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2410 | 5322 126 11583 | 10nF 10% X7R 50V |
| 2411 | 2020 552 94427 | 100pF 5% NP0 50V |
| 2412 | 2020 552 94427 | 100pF 5% NP0 50V |
| 2413 | 2020 552 94427 | 100pF 5% NP0 50V |
| 2414 | 2020 552 94427 | 100pF 5% NP0 50V |
| 2415 | 2020 552 94427 | 100pF 5% NP0 50V |
| 2416 | 5322 126 11583 | 10nF 10% X7R 50V |
| 2417 | 4822 126 13883 | 220PF 5% 50V |

- CAPACITORS -

| | | |
|------|----------------|-----------------------|
| 2418 | 2020 552 94427 | 100pF 5% NP0 50V |
| 2419 | 2020 552 94427 | 100pF 5% NP0 50V |
| 2420 | 2020 552 94427 | 100pF 5% NP0 50V |
| 2421 | 5322 126 11583 | 10nF 10% X7R 50V |
| 2422 | 4822 124 22651 | 1,0µF 20% 50V |
| 2423 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2425 | 4822 126 14225 | 56pF 5% NP0 50V |
| 2426 | 4822 122 33752 | 15pF 5% NP0 50V |
| 2427 | 4822 122 33752 | 15pF 5% NP0 50V |
| 2428 | 5322 126 11583 | 10nF 10% X7R 50V |
| 2429 | 4822 126 13881 | 470pF 5% 50V |
| 2430 | 4822 126 13881 | 470pF 5% 50V |
| 2431 | 4822 126 13881 | 470pF 5% 50V |
| 2432 | 4822 126 13881 | 470pF 5% 50V |
| 2433 | 4822 126 13881 | 470pF 5% 50V |
| 2434 | 4822 126 13881 | 470pF 5% 50V |
| 2435 | 5322 126 11583 | 10nF 10% X7R 50V |
| 2436 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2437 | 5322 126 11583 | 10nF 10% X7R 50V |
| 2438 | 4822 124 12032 | 4,7µF 20% 50V |
| 2439 | 2020 552 94427 | 100pF 5% NP0 50V |
| 2440 | 2020 552 94427 | 100pF 5% NP0 50V |
| 2441 | 4822 126 13881 | 470pF 5% 50V |
| 2442 | 4822 126 13881 | 470pF 5% 50V |
| 2443 | 2020 552 94427 | 100pF 5% NP0 50V |
| 2444 | 4822 126 13881 | 470pF 5% 50V |
| 2445 | 5322 126 11583 | 10nF 10% X7R 50V |
| 2446 | 5322 126 11583 | 10nF 10% X7R 50V |
| 2447 | 4822 126 14585 | 100nF 10% X7R 50V |
| 2448 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2449 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2450 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2451 | 4822 124 22651 | 1,0µF 20% 50V |
| 2452 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2453 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2455 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2457 | 2238 586 59812 | 100nF +80-20% Y5V 50V |

- RESISTORS -

| | | |
|------|----------------|----------------|
| 3150 | 4822 116 52219 | 330R 5% 0,5W |
| 3151 | 4822 116 52219 | 330R 5% 0,5W |
| 3152 | 4822 116 52219 | 330R 5% 0,5W |
| 3153 | 4822 116 52219 | 330R 5% 0,5W |
| 3154 | 4822 116 52226 | 560R 5% 0,5W |
| 3155 | 4822 116 52226 | 560R 5% 0,5W |
| 3300 | 4822 051 30221 | 220R 5% 0,062W |
| 3302 | 4822 117 12864 | 82K 5% 0,6W |
| 3303 | 4822 051 30681 | 680R 5% 0,062W |
| 3304 | 4822 051 30103 | 10K 5% 0,062W |

ELECTRICAL PARTSLIST - KEY BOARD

- RESISTORS -

| | | |
|------|----------------|----------------|
| 3305 | 4822 117 12139 | 22R 5% 0,062W |
| 3306 | 4822 051 30339 | 33R 5% 0,062W |
| 3307 | 4822 051 30109 | 10R 5% 0,062W |
| 3308 | 4822 051 30331 | 330R 5% 0,062W |
| 3330 | 4822 051 30102 | 1K 5% 0,062W |
| 3331 | 4822 051 30681 | 680R 5% 0,062W |
| 3332 | 4822 051 30471 | 470R 5% 0,062W |
| 3333 | 4822 051 30331 | 330R 5% 0,062W |
| 3334 | 4822 051 30331 | 330R 5% 0,062W |
| 3335 | 4822 051 30102 | 1K 5% 0,062W |
| 3336 | 4822 051 30681 | 680R 5% 0,062W |
| 3337 | 4822 051 30471 | 470R 5% 0,062W |
| 3338 | 4822 051 30331 | 330R 5% 0,062W |
| 3339 | 4822 051 30331 | 330R 5% 0,062W |
| 3340 | 4822 051 30103 | 10K 5% 0,062W |
| 3341 | 4822 051 30103 | 10K 5% 0,062W |
| 3400 | 4822 051 30103 | 10K 5% 0,062W |
| 3401 | 4822 051 30103 | 10K 5% 0,062W |
| 3402 | 4822 051 30103 | 10K 5% 0,062W |
| 3403 | 4822 051 30103 | 10K 5% 0,062W |
| 3404 | 4822 051 30102 | 1K 5% 0,062W |
| 3405 | 4822 051 30221 | 220R 5% 0,062W |
| 3406 | 4822 051 30471 | 470R 5% 0,062W |
| 3407 | 4822 051 30102 | 1K 5% 0,062W |
| 3408 | 4822 051 30102 | 1K 5% 0,062W |
| 3409 | 4822 051 30109 | 10R 5% 0,062W |
| 3410 | 4822 117 12139 | 22R 5% 0,062W |
| 3411 | 4822 051 30103 | 10K 5% 0,062W |
| 3412 | 4822 051 30103 | 10K 5% 0,062W |
| 3413 | 4822 051 30103 | 10K 5% 0,062W |
| 3414 | 4822 051 30103 | 10K 5% 0,062W |
| 3415 | 4822 051 30103 | 10K 5% 0,062W |
| 3416 | 4822 051 30222 | 2,2K 5% 0,062W |
| 3417 | 4822 051 30222 | 2,2K 5% 0,062W |
| 3418 | 4822 051 30102 | 1K 5% 0,062W |
| 3419 | 4822 051 30102 | 1K 5% 0,062W |
| 3420 | 4822 051 30103 | 10K 5% 0,062W |
| 3421 | 4822 051 30103 | 10K 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 051 30102 | 1K 5% 0,062W |
| 3428 | 4822 051 30102 | 1K 5% 0,062W |
| 3429 | 4822 051 30102 | 1K 5% 0,062W |
| 3430 | 4822 117 12925 | 47K 1% 0,063W |
| 3431 | 4822 051 30102 | 1K 5% 0,062W |
| 3432 | 4822 051 30102 | 1K 5% 0,062W |
| 3433 | 4822 051 30102 | 1K 5% 0,062W |

- RESISTORS -

| | | |
|------|----------------|----------------|
| 3434 | 4822 051 30102 | 1K 5% 0,062W |
| 3435 | 4822 051 30101 | 100R 5% 0,062W |
| 3436 | 4822 051 30471 | 470R 5% 0,062W |
| 3437 | 4822 051 30471 | 470R 5% 0,062W |
| 3438 | 4822 051 30472 | 4,7K 5% 0,062W |
| 3439 | 4822 051 30102 | 1K 5% 0,062W |
| 3440 | 4822 051 30471 | 470R 5% 0,062W |
| 3442 | 4822 051 30471 | 470R 5% 0,062W |
| 3443 | 4822 051 30103 | 10K 5% 0,062W |
| 3444 | 4822 051 30102 | 1K 5% 0,062W |
| 3445 | 4822 051 30103 | 10K 5% 0,062W |
| 3446 | 4822 051 30223 | 22K 5% 0,062W |
| 3447 | 4822 051 30103 | 10K 5% 0,062W |
| 3448 | 4822 051 30103 | 10K 5% 0,062W |
| 3449 | 4822 051 30103 | 10K 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 30471 | 470R 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 30223 | 22K 5% 0,062W |
| 3464 | 4822 051 30102 | 1K 5% 0,062W |
| 3465 | 4822 051 30223 | 22K 5% 0,062W |
| 3466 | 4822 051 30102 | 1K 5% 0,062W |
| 3468 | 4822 051 30471 | 470R 5% 0,062W |
| 3469 | 4822 051 30102 | 1K 5% 0,062W |
| 3470 | 4822 051 30102 | 1K 5% 0,062W |
| 3471 | 4822 051 30102 | 1K 5% 0,062W |
| 3472 | 4822 051 30102 | 1K 5% 0,062W |
| 3473 | 4822 051 30102 | 1K 5% 0,062W |
| 3474 | 4822 051 30102 | 1K 5% 0,062W |
| 3475 | 4822 051 30102 | 1K 5% 0,062W |
| 3476 | 4822 051 30472 | 4,7K 5% 0,062W |
| 3477 | 4822 051 30154 | 150K 5% 0,062W |
| 3478 | 4822 051 30472 | 4,7K 5% 0,062W |
| 3479 | 4822 051 30102 | 1K 5% 0,062W |
| 3480 | 4822 051 30474 | 470K 5% 0,062W |
| 3481 | 4822 051 30154 | 150K 5% 0,062W |
| 3482 | 4822 051 30471 | 470R 5% 0,062W |
| 3483 | 4822 051 30272 | 2,7K 5% 0,062W |
| 3484 | 4822 051 30272 | 2,7K 5% 0,062W |
| 3485 | 5322 117 13039 | 220K 1% 0,063W |

ELECTRICAL PARTSLIST - KEY BOARD

- RESISTORS -

| | | |
|------|----------------|----------------|
| 3486 | 4822 051 30153 | 15K 5% 0,062W |
| 3487 | 4822 051 30153 | 15K 5% 0,062W |
| 3488 | 4822 051 30562 | 5,6K 5% 0,063W |
| 3489 | 2322 704 65603 | 56K 1% |
| 3490 | 4822 051 30102 | 1K 5% 0,062W |
| 3491 | 4822 051 30471 | 470R 5% 0,062W |
| 3492 | 4822 051 30562 | 5,6K 5% 0,063W |
| 3493 | 4822 051 30102 | 1K 5% 0,062W |
| 3494 | 4822 051 30471 | 470R 5% 0,062W |
| 3495 | 4822 051 30102 | 1K 5% 0,062W |
| 3496 | 4822 051 30102 | 1K 5% 0,062W |
| 3497 | 4822 051 30102 | 1K 5% 0,062W |
| 3498 | 4822 051 30102 | 1K 5% 0,062W |
| 3499 | 4822 051 30472 | 4,7K 5% 0,062W |
| 3501 | 4822 051 30102 | 1K 5% 0,062W |
| 3502 | 4822 051 30102 | 1K 5% 0,062W |
| 3503 | 4822 051 30153 | 15K 5% 0,062W |
| 3504 | 4822 051 30153 | 15K 5% 0,062W |
| 3505 | 4822 051 30152 | 1,5K 5% 0,062W |
| 3507 | 4822 051 30682 | 6,8K 5% 0,062W |
| 3509 | 4822 051 30103 | 10K 5% 0,062W |
| 3510 | 4822 051 30223 | 22K 5% 0,062W |
| 3511 | 4822 051 30223 | 22K 5% 0,062W |
| 3513 | 4822 051 30102 | 1K 5% 0,062W |
| 3600 | 4822 051 30221 | 220R 5% 0,062W |
| 3603 | 4822 051 30681 | 680R 5% 0,062W |
| 3605 | 4822 051 30221 | 220R 5% 0,062W |
| 3608 | 4822 051 30331 | 330R 5% 0,062W |
| 3610 | 4822 117 12139 | 22R 5% 0,062W |
| 3682 | 4822 051 30471 | 470R 5% 0,062W |
| 4330 | 4822 051 30008 | OR JUMPER |
| 4331 | 4822 051 30008 | OR JUMPER |
| 4332 | 4822 051 30008 | OR JUMPER |
| 4401 | 4822 051 30008 | OR JUMPER |
| 4403 | 4822 051 30008 | OR JUMPER |
| 4451 | 4822 051 30008 | OR JUMPER |
| 4453 | 4822 051 30008 | OR JUMPER |
| 4454 | 4822 051 30008 | OR JUMPER |
| 4455 | 4822 051 30008 | OR JUMPER |
| 4456 | 4822 051 30008 | OR JUMPER |
| 4457 | 4822 051 30008 | OR JUMPER |
| 4458 | 4822 051 30008 | OR JUMPER |
| 4459 | 4822 051 30008 | OR JUMPER |
| 4460 | 4822 051 30008 | OR JUMPER |
| 4461 | 4822 051 30008 | OR JUMPER |
| 4463 | 4822 051 30008 | OR JUMPER |
| 4464 | 4822 051 30008 | OR JUMPER |
| 4465 | 4822 051 30008 | OR JUMPER |
| 4466 | 4822 051 30008 | OR JUMPER |
| 4468 | 4822 051 30008 | OR JUMPER |

- RESISTORS -

| | | |
|------|----------------|-----------|
| 4469 | 4822 051 30008 | OR JUMPER |
| 4470 | 4822 051 30008 | OR JUMPER |

- COILS & FILTERS -

| | | |
|------|----------------|------------------------|
| 5150 | 2422 549 44919 | IND FXD SM 100MHZ 600R |
| 5400 | 2422 549 43062 | IND FXD SM 100MHZ 600R |
| 5401 | 2422 549 44393 | IND FXD SM 100MHZ 2,7K |
| 5402 | 2422 549 43062 | IND FXD SM 100MHZ 600R |
| 5403 | 2422 549 43062 | IND FXD SM 100MHZ 600R |
| 5404 | 2422 549 43062 | IND FXD SM 100MHZ 600R |
| 5405 | 2422 549 43062 | IND FXD SM 100MHZ 600R |
| 5406 | 2422 549 44393 | IND FXD SM 100MHZ 2,7K |
| 5407 | 4822 157 11228 | 100µH LAN02TB101J 5% |
| 5408 | 2422 549 44393 | IND FXD SM 100MHZ 2,7K |
| 5409 | 4822 157 11228 | 100µH LAN02TB101J 5% |
| 5410 | 2422 540 98518 | 8MHZ CSTS*MG03 |
| 5411 | 2422 549 44393 | IND FXD SM 100MHZ 2,7K |
| 5500 | 3140 110 51881 | METER VU |

- DIODES -

| | | |
|------|----------------|---------------|
| 6300 | 9322 172 75676 | VS LTL-1CHKFK |
| 6301 | 5322 130 34337 | BAV99 |
| 6303 | 9322 172 75676 | VS LTL-1CHKFK |
| 6304 | 9322 172 75676 | VS LTL-1CHKFK |
| 6305 | 5322 130 34337 | BAV99 |
| 6307 | 9322 172 75676 | VS LTL-1CHKFK |
| 6400 | 4822 130 11148 | UDZ4,7B |

- IC & TRANSISTORS -

| | | |
|------|----------------|-------------|
| 7300 | 4822 130 42804 | BC817-25 |
| 7301 | 4822 130 42804 | BC817-25 |
| 7304 | 5322 130 60159 | BC846B |
| 7400 | 3140 110 51911 | LCD PANEL |
| 7401 | 3140 110 51831 | TMP86CS25F |
| 7402 | 9322 178 88685 | NCP301LSN27 |
| 7404 | 5322 130 60159 | BC846B |
| 7405 | 9965 000 04931 | M24C01-WMN6 |
| 7406 | 9322 185 95667 | TSOP4836 |

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

ELECTRICAL PARTSLIST - TUNER BOARD**- MISCELLANEOUS -**

| | | |
|------|----------------|----------------------|
| 1105 | 4822 267 10676 | CONNECTOR 1P |
| 1106 | 4822 526 10176 | FERRITE BAR |
| 1121 | 4822 267 10733 | CONNECTOR CABLE/WIRE |
| 1122 | 4822 267 10954 | SOCKET FFC 5P |

- CAPACITORS -

| | | |
|------|----------------|-------------------------|
| 2101 | 4822 126 13692 | 47pF 1% NP0 63V |
| 2103 | 5322 122 31647 | 1nF 10% X7R 63V |
| 2104 | 5322 122 32531 | 100pF 5% NP0 50V |
| 2106 | 2020 800 00191 | CTRM 100V 3pF-11pF N450 |
| 2107 | 4822 121 51319 | 1µF 10% 63V |

| | | |
|------|----------------|-------------------|
| 2120 | 4822 126 14507 | 18pF 5% 50V NP0 |
| 2124 | 2238 916 15641 | 22nF 10% X7R 25V |
| 2125 | 2238 861 18561 | 560pF 1% NP0 50V |
| 2126 | 4822 126 14241 | 330pF NP0 50V |
| 2127 | 4822 126 13879 | 220nF +80-20% 16V |

| | | |
|------|----------------|---------------|
| 2128 | 4822 124 40248 | 10µF 20% 63V |
| 2129 | 4822 124 41584 | 100µF 20% 10V |
| 2130 | 3198 017 44740 | 470nF Y5V 10V |
| 2131 | 3198 017 44740 | 470nF Y5V 10V |
| 2132 | 3198 017 44740 | 470nF Y5V 10V |

| | | |
|------|----------------|-------------------|
| 2133 | 4822 124 21913 | 1µF 20% 63V |
| 2134 | 4822 126 13188 | 15nF 5% X7R 63V |
| 2135 | 4822 126 13188 | 15nF 5% X7R 63V |
| 2136 | 4822 126 13879 | 220nF +80-20% 16V |
| 2137 | 4822 126 13879 | 220nF +80-20% 16V |

| | | |
|------|----------------|-----------------------|
| 2138 | 4822 124 22652 | 2,2µF 20% 50V |
| 2139 | 4822 126 14236 | 15pF 5% 50V |
| 2140 | 4822 126 13695 | 82pF 1% NP0 63V |
| 2141 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2144 | 3198 017 44740 | 470nF Y5V 10V |

| | | |
|------|----------------|-------------------|
| 2145 | 4822 126 13883 | 220pF 5% 50V |
| 2146 | 4822 122 33575 | 220pF 5% NP0 63V |
| 2147 | 4822 126 13883 | 220pF 5% 50V |
| 2148 | 4822 126 14238 | 2,2nF X7R 50V |
| 2150 | 4822 126 14585 | 100nF 10% X7R 50V |

| | | |
|------|----------------|-------------------------|
| 2152 | 4822 126 14549 | 33nF 16V X7R |
| 2153 | 4822 126 13486 | 15pF 2% NP0 63V |
| 2155 | 2020 800 00191 | CTRM 100V 3pF-11pF N450 |
| 2159 | 2238 861 18339 | 33pF 1% NP0 50V |
| 2164 | 3198 017 44740 | 470nF Y5V 10V |

| | | |
|------|----------------|-----------------------|
| 2165 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2166 | 5322 122 31647 | 1nF 10% X7R 63V |
| 2167 | 4822 122 33926 | 12pF 50V |
| 2186 | 4822 124 40196 | 220µF 20% 16V |
| 2187 | 4822 122 33177 | 10nF 20% X7R 50V |

- CAPACITORS -

| | | |
|------|----------------|-------------------|
| 2188 | 4822 122 33177 | 10nF 20% X7R 50V |
| 2189 | 4822 126 13879 | 220nF +80-20% 16V |
| 2190 | 4822 124 81151 | 22µF 50V |
| 2191 | 4822 124 81151 | 22µF 50V |
| 2192 | 5322 122 31647 | 1nF 10% X7R 63V |

| | | |
|------|----------------|------------------|
| 2193 | 5322 122 31647 | 1nF 10% X7R 63V |
| 2194 | 5322 122 31647 | 1nF 10% X7R 63V |
| 2195 | 4822 124 81151 | 22µF 50V |
| 2196 | 4822 122 33177 | 10nF 20% X7R 50V |
| 2197 | 4822 122 33177 | 10nF 20% X7R 50V |

- RESISTORS -

| | | |
|------|----------------|---------------|
| 3101 | 4822 051 30333 | 33K 5% 0,062W |
| 3102 | 4822 117 10837 | 100K 1% 0,1W |
| 3103 | 4822 051 20822 | 8,2K 5% 0,1W |
| 3104 | 4822 117 13577 | 330R 1% 1,25W |
| 3105 | 4822 117 11503 | 220R 1% 0,1W |

| | | |
|------|----------------|---------------|
| 3132 | 4822 051 30479 | 47R 5% 0,062W |
| 3134 | 4822 051 20223 | 22K 5% 0,1W |
| 3141 | 4822 051 30563 | 56K 5% 0,062W |
| 3142 | 4822 100 12159 | 100K 30% |
| 3145 | 4822 117 11449 | 2,2K 5% 0,1W |

| | | |
|------|----------------|----------------|
| 3152 | 4822 051 30471 | 470R 5% 0,062W |
| 3153 | 4822 051 30471 | 470R 5% 0,062W |
| 3155 | 4822 051 30479 | 47R 5% 0,062W |
| 3156 | 4822 117 10837 | 100K 1% 0,1W |
| 3157 | 4822 117 10837 | 100K 1% 0,1W |

| | | |
|------|----------------|----------------|
| 3158 | 4822 051 30471 | 470R 5% 0,062W |
| 3159 | 4822 051 30471 | 470R 5% 0,062W |
| 3160 | 4822 051 30471 | 470R 5% 0,062W |
| 3161 | 4822 051 20223 | 22K 5% 0,1W |
| 3166 | 4822 051 30479 | 47R 5% 0,062W |

| | | |
|------|----------------|---------------|
| 3167 | 4822 051 30479 | 47R 5% 0,062W |
| 3169 | 4822 051 20154 | 150K 5% 0,1W |
| 3170 | 4822 117 10837 | 100K 1% 0,1W |
| 3186 | 4822 117 11448 | 180R 1% 0,1W |
| 3187 | 4822 051 10102 | 1K 2% 0,25W |

| | | |
|------|----------------|----------------|
| 3188 | 4822 117 11449 | 2,2K 5% 0,1W |
| 3189 | 4822 051 20223 | 22K 5% 0,1W |
| 3190 | 4822 117 10833 | 10K 1% 0,1W |
| 3191 | 4822 051 30472 | 4,7K 5% 0,062W |
| 3192 | 4822 051 20105 | 1M 5% 0,1W |

| | | |
|------|----------------|----------------|
| 3193 | 4822 117 11449 | 2,2K 5% 0,1W |
| 3194 | 4822 117 10837 | 100K 1% 0,1W |
| 3195 | 4822 051 30474 | 470K 5% 0,062W |
| 3196 | 4822 117 10833 | 10K 1% 0,1W |
| 4104 | 4822 051 30008 | 0R JUMPER |

ELECTRICAL PARTSLIST - TUNER BOARD**- RESISTORS -**

| | | |
|------|----------------|-----------|
| 4105 | 4822 051 30008 | 0R JUMPER |
| 4107 | 4822 051 30008 | 0R JUMPER |
| 4108 | 4822 051 30008 | 0R JUMPER |
| 4110 | 4822 051 30008 | 0R JUMPER |

- COILS & FILTERS -

| | | |
|------|----------------|----------------------------------|
| 5104 | 2422 536 00364 | IND FXD ANT FM065 190 μ H 5% |
| 5109 | 4822 242 70665 | SFE10,7MS3-A |
| 5110 | 4822 242 70665 | SFE10,7MS3-A |
| 5111 | 2422 549 44023 | IND VAR 7MM 7PY 450KHZ |
| 5112 | 4822 157 70302 | F7MCS-12216N |
| 5114 | 4822 157 70302 | F7MCS-12216N |
| 5119 | 4822 157 11443 | 2,4 μ H 10,7MHZ |
| 5121 | 4822 242 10261 | T6252F00 (75KHZ) |
| 5123 | 2422 549 44108 | IND VAR 7MM 7PY 796KHZ |
| 5130 | 4822 157 11843 | MD7B-01F |
| 5131 | 4822 157 11843 | MD7B-01F |

- DIODES -

| | | |
|------|----------------|------------|
| 6103 | 5322 130 34337 | BAV99 |
| 6105 | 4822 130 83075 | HN1V02H-B |
| 6130 | 4822 130 82833 | 1SV228 |
| 6131 | 4822 130 82833 | 1SV228 |
| 6181 | 5322 130 34337 | BAV99 |
| 6182 | 4822 130 83649 | 1SS355 |
| 6183 | 9340 386 90115 | BZX284-C11 |

- IC & TRANSISTORS -

| | | |
|------|----------------|-------------|
| 7101 | 9351 740 80557 | TEA5757H/V1 |
| 7102 | 4822 130 42131 | BF550 |
| 7111 | 5322 130 42755 | BC847C |
| 7180 | 4822 130 60373 | BC856B |
| 7181 | 5322 130 42755 | BC847C |
| 7182 | 5322 130 42755 | BC847C |
| 7183 | 5322 130 42755 | BC847C |

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

ELECTRICAL PARTSLIST - CD99 BOARD**- MISCELLANEOUS -**

| | | |
|------|----------------|-------------------------|
| 1002 | 3103 308 67031 | MP3CD2002 ROM TXT 5V-IF |
| 1800 | 4822 267 11028 | SOCKER FFC H 16P |
| 1801 | 4822 267 10565 | CONNECTOR SOCKET 4P |
| 1820 | 2422 025 16836 | SOCKER FFC H 19P |
| 1821 | 2422 025 12488 | SOCKER FFC H 2P |
| 1823 | 4822 265 11207 | CONNECTOR SOCKET 6P |
| 1824 | 4822 265 11207 | CONNECTOR SOCKET 6P |
| 8001 | 3103 308 92680 | SOCKER FFC H 19P |
| 8002 | 3103 308 93040 | SOCKET FFC 16P |

- CAPACITORS -

| | | |
|------|----------------|-----------------------|
| 2814 | 5322 126 11579 | 3,3nF 10% X7R 63V |
| 2815 | 4822 122 33753 | 150pF 5% NP0 50V |
| 2816 | 2238 916 15641 | 22nF 10% X7R 25V |
| 2817 | 4822 124 40769 | 4,7µF 20% 100V |
| 2818 | 3198 017 34730 | 47nF X7R 16V |
| 2821 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2822 | 2238 916 11552 | 1,5nF 5% NP0 25V |
| 2823 | 4822 124 42383 | 220µF 20% 4V |
| 2825 | 2238 916 11552 | 1,5nF 5% NP0 25V |
| 2826 | 3198 017 34730 | 47nF X7R 16V |
| 2827 | 5322 126 11578 | 1nF 10% X7R 50V |
| 2828 | 4822 126 11669 | 27pF |
| 2829 | 3198 017 34730 | 47nF X7R 16V |
| 2830 | 4822 124 81286 | 47µF 20% 16V |
| 2831 | 4822 124 81286 | 47µF 20% 16V |

| | | |
|------|----------------|-----------------------|
| 2832 | 4822 126 14506 | 270pF 5% 50V NP0 |
| 2833 | 4822 126 14238 | 2,2nF X7R 50V |
| 2834 | 4822 126 14506 | 270pF 5% 50V NP0 |
| 2835 | 4822 126 14247 | 1,5nF X7R 50V |
| 2836 | 4822 124 40433 | 47µF 20% 25V |
| 2837 | 3198 017 34730 | 47nF X7R 16V |
| 2838 | 4822 126 13879 | 220nF +80-20% 16V |
| 2839 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2840 | 4822 124 81286 | 47µF 20% 16V |
| 2841 | 4822 126 13879 | 220nF +80-20% 16V |
| 2843 | 2020 552 94427 | 100pF 5% NP0 50V |
| 2844 | 4822 126 13883 | 220pF 5% 50V |
| 2845 | 4822 126 13883 | 220pF 5% 50V |
| 2846 | 4822 124 21732 | 10µF 20% 25V |
| 2847 | 4822 126 13879 | 220nF +80-20% 16V |

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

- CAPACITORS -

| | | |
|------|----------------|------------------|
| 2854 | 4822 124 23052 | 100µF 20% 16V |
| 2855 | 4822 124 11912 | 220µF 20% 6,3V |
| 2860 | 4822 126 14508 | 180pF 5% 50V NP0 |
| 2861 | 4822 126 14241 | 330pF NP0 50V |
| 2862 | 3198 017 34730 | 47nF X7R 16V |
| 2863 | 4822 122 33753 | 150pF 5% NP0 50V |
| 2864 | 4822 122 33753 | 150pF 5% NP0 50V |
| 2865 | 4822 122 33753 | 150pF 5% NP0 50V |
| 2866 | 4822 122 33753 | 150pF 5% NP0 50V |
| 2869 | 3198 017 34730 | 47nF X7R 16V |
| 2870 | 4822 126 13883 | 220pF 5% 50V |
| 2871 | 4822 126 13883 | 220pF 5% 50V |
| 2872 | 4822 126 13883 | 220pF 5% 50V |
| 2873 | 4822 126 13883 | 220pF 5% 50V |
| 2874 | 4822 126 13883 | 220pF 5% 50V |

| | | |
|------|----------------|-----------------------|
| 2875 | 4822 126 13883 | 220pF 5% 50V |
| 2876 | 4822 124 40196 | 220µF 20% 16V |
| 2877 | 4822 124 40433 | 47µF 20% 25V |
| 2878 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2879 | 5322 126 11578 | 1nF 10% X7R 50V |
| 2880 | 2222 867 15339 | 33pF 5% NP0 50V |
| 2881 | 4822 126 14249 | 560pF 10% X7R 50V |
| 2882 | 4822 126 14226 | 82pF 5% NP0 50V |
| 2883 | 3198 017 44740 | 470nF Y5V 10V |
| 2884 | 3198 017 44740 | 470nF Y5V 10V |

- RESISTORS -

| | | |
|------|----------------|----------------|
| 3801 | 4822 051 30223 | 22K 5% 0,062W |
| 3802 | 4822 051 30223 | 22K 5% 0,062W |
| 3803 | 4822 051 30273 | 27K 5% 0,062W |
| 3804 | 4822 051 30273 | 27K 5% 0,062W |
| 3805 | 4822 051 30273 | 27K 5% 0,062W |
| 3806 | 4822 051 30273 | 27K 5% 0,062W |
| 3807 | 4822 051 30103 | 10K 5% 0,062W |
| 3808 | 4822 051 30103 | 10K 5% 0,062W |
| 3809 | 4822 051 30103 | 10K 5% 0,062W |
| 3810 | 4822 051 30103 | 10K 5% 0,062W |
| 3811 | 4822 051 30103 | 10K 5% 0,062W |
| 3812 | 4822 051 30103 | 10K 5% 0,062W |
| 3813 | 4822 051 30222 | 2,2K 5% 0,062W |
| 3814 | 4822 051 30222 | 2,2K 5% 0,062W |
| 3815 | 4822 051 30222 | 2,2K 5% 0,062W |
| 3816 | 4822 051 30222 | 2,2K 5% 0,062W |
| 3817 | 4822 051 30479 | 47R 5% 0,062W |
| 3818 | 4822 051 30479 | 47R 5% 0,062W |
| 3819 | 4822 051 30479 | 47R 5% 0,062W |
| 3820 | 4822 052 10478 | 4,7R 5% 0,33W |

ELECTRICAL PARTSLIST - CD99 BOARD**- RESISTORS -**

| | | |
|------|----------------|-----------------|
| 3821 | 4822 117 12917 | 1R 5% 0,062W |
| 3822 | 4822 051 30103 | 10K 5% 0,062W |
| 3823 | 4822 051 30102 | 1K 5% 0,062W |
| 3824 | 4822 051 20474 | 470K 5% 0,1W |
| 3825 | 5322 117 13029 | 47K 1% 0,063W |
| 3826 | 4822 117 12891 | 220K 1% |
| 3827 | 5322 117 13056 | 8,2K 1% 0,063W |
| 3828 | 5322 117 13052 | 2,7K 1% 0,063W |
| 3829 | 4822 051 30121 | 120R 5% 0,062W |
| 3830 | 4822 117 11373 | 100R 1% |
| 3831 | 4822 051 30471 | 470R 5% 0,062W |
| 3832 | 4822 051 30471 | 470R 5% 0,062W |
| 3833 | 4822 051 30121 | 120R 5% 0,062W |
| 3834 | 4822 051 30472 | 4,7K 5% 0,062W |
| 3836 | 4822 116 40227 | 4,6R 25% 12V |
| 3837 | 4822 051 30471 | 470R 5% 0,062W |
| 3839 | 4822 051 30471 | 470R 5% 0,062W |
| 3840 | 4822 051 30223 | 22K 5% 0,062W |
| 3842 | 4822 051 30102 | 1K 5% 0,062W |
| 3843 | 4822 051 30102 | 1K 5% 0,062W |
| 3844 | 4822 051 30101 | 100R 5% 0,062W |
| 3845 | 4822 051 30471 | 470R 5% 0,062W |
| 3846 | 4822 051 30472 | 4,7K 5% 0,062W |
| 3847 | 4822 117 10834 | 47K 1% 0,1W |
| 3848 | 4822 051 30333 | 33K 5% 0,062W |
| 3849 | 4822 051 30471 | 470R 5% 0,062W |
| 3850 | 4822 051 30472 | 4,7K 5% 0,062W |
| 3851 | 4822 117 10834 | 47K 1% 0,1W |
| 3852 | 4822 051 30333 | 33K 5% 0,062W |
| 3853 | 4822 117 12903 | 1,8K 1% 0,063W |
| 3854 | 4822 051 30682 | 6,8K 5% 0,062W |
| 3856 | 4822 117 12891 | 220K 1% |
| 3858 | 4822 051 30682 | 6,8K 5% 0,062W |
| 3859 | 4822 117 13632 | 100K 1% 0,62W |
| 3861 | 4822 117 13632 | 100K 1% 0,62W |
| 3862 | 4822 051 30102 | 1K 5% 0,062W |
| 3863 | 4822 052 10338 | 3,3R 5% 0,33W |
| 3864 | 4822 051 30223 | 22K 5% 0,062W |
| 3865 | 4822 051 30101 | 100R 5% 0,062W |
| 3866 | 4822 117 13608 | 4,7R 5% 0,0016W |
| 3867 | 4822 051 30223 | 22K 5% 0,062W |
| 3868 | 4822 051 30103 | 10K 5% 0,062W |
| 3869 | 4822 051 30103 | 10K 5% 0,062W |
| 3871 | 4822 051 30101 | 100R 5% 0,062W |
| 3872 | 4822 051 30101 | 100R 5% 0,062W |
| 3873 | 4822 051 30223 | 22K 5% 0,062W |
| 3874 | 4822 051 30223 | 22K 5% 0,062W |
| 3875 | 4822 051 30103 | 10K 5% 0,062W |
| 3876 | 4822 051 30103 | 10K 5% 0,062W |
| 3878 | 4822 051 30471 | 470R 5% 0,062W |

- RESISTORS -

| | | |
|------|----------------|-----------------|
| 3879 | 4822 051 30223 | 22K 5% 0,062W |
| 3880 | 4822 051 30339 | 33R 5% 0,062W |
| 3881 | 4822 051 30151 | 150R 5% 0,062W |
| 3882 | 4822 051 10102 | 1K 2% 0,25W |
| 3883 | 4822 051 30102 | 1K 5% 0,062W |
| 3884 | 4822 051 30102 | 1K 5% 0,062W |
| 3888 | 4822 051 30103 | 10K 5% 0,062W |
| 3889 | 4822 051 30471 | 470R 5% 0,062W |
| 3890 | 4822 051 30471 | 470R 5% 0,062W |
| 3891 | 4822 051 30102 | 1K 5% 0,062W |
| 3892 | 4822 051 30102 | 1K 5% 0,062W |
| 3893 | 4822 051 30471 | 470R 5% 0,062W |
| 3894 | 4822 117 12891 | 220K 1% |
| 3895 | 4822 051 30273 | 27K 5% 0,062W |
| 3896 | 4822 051 30101 | 100R 5% 0,062W |
| 3897 | 4822 051 30333 | 33K 5% 0,062W |
| 3898 | 4822 051 30181 | 180R 5% 0,062W |
| 3899 | 4822 051 30272 | 2,7K 5% 0,062W |
| 3901 | 4822 051 30561 | 560R 5% 0,062W |
| 3902 | 4822 117 12968 | 820R 5% 0,62W |
| 3903 | 4822 051 30332 | 3,3K 5% 0,062W |
| 3904 | 4822 051 30332 | 3,3K 5% 0,062W |
| 3905 | 4822 051 30471 | 470R 5% 0,062W |
| 3906 | 4822 051 30471 | 470R 5% 0,062W |
| 3907 | 4822 051 30391 | 390R 5% 0,062W |
| 3908 | 4822 051 30222 | 2,2K 5% 0,062W |
| 3909 | 4822 117 13632 | 100K 1% 3 0,62W |
| 3910 | 4822 051 30471 | 470R 5% 0,062W |
| 3916 | 4822 051 30471 | 470R 5% 0,062W |
| 3917 | 4822 117 13608 | 4,7R 5% 0,0016W |
| 4801 | 4822 051 20008 | 0R JUMPER(0805) |
| 4802 | 4822 051 20008 | 0R JUMPER(0805) |
| 4803 | 4822 051 20008 | 0R JUMPER(0805) |
| 4805 | 4822 051 20008 | 0R JUMPER(0805) |
| 4808 | 4822 051 20008 | 0R JUMPER(0805) |
| 4809 | 4822 051 20008 | 0R JUMPER(0805) |
| 4811 | 4822 051 20008 | 0R JUMPER(0805) |
| 4817 | 4822 051 30008 | 0R JUMPER |
| 4818 | 4822 051 20008 | 0R JUMPER(0805) |
| 4824 | 4822 051 20008 | 0R JUMPER(0805) |
| 4827 | 4822 051 20008 | 0R JUMPER(0805) |
| 4830 | 4822 051 20008 | 0R JUMPER(0805) |
| 4832 | 4822 051 20008 | 0R JUMPER(0805) |
| 4834 | 4822 051 20008 | 0R JUMPER(0805) |
| 4836 | 4822 051 20008 | 0R JUMPER(0805) |
| 4840 | 4822 051 20008 | 0R JUMPER(0805) |
| 4841 | 4822 051 20008 | 0R JUMPER(0805) |
| 4842 | 4822 051 20008 | 0R JUMPER(0805) |
| 4845 | 4822 051 30008 | 0R JUMPER |

ELECTRICAL PARTSLIST - CD99 BOARD

- COILS & FILTERS -

| | | |
|------|----------------|---------------------|
| 1810 | 2422 540 98519 | 8MHZ467 CSTS*MG03 A |
| 5001 | 2422 549 44607 | EMI100MHZ600RR |

- DIODES -

| | | |
|------|----------------|------------|
| 6877 | 9322 129 34685 | BZM55-C3V9 |
|------|----------------|------------|

- IC & TRANSISTORS -

| | | |
|------|----------------|----------------|
| 7800 | 9352 684 20557 | SAA7325H/T/M2B |
| 7808 | 4822 209 32852 | TDA7073A/N2 |
| 7809 | 4822 209 32852 | TDA7073A/N2 |
| 7810 | 4822 209 33165 | TDA1308T/N1 |
| 7811 | 5322 209 82941 | LM358D |
| 7874 | 5322 130 60159 | BC846B |
| 7875 | 5322 130 60159 | BC846B |
| 7876 | 5322 130 60159 | BC846B |
| 7877 | 5322 130 60159 | BC846B |
| 7878 | 5322 130 60159 | BC846B |
| 7879 | 5322 130 60123 | BC807-40 |

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

ELECTRICAL PARTSLIST - POWER BOARD**- MISCELLANEOUS -**

| | | |
|------|----------------|---------------------|
| 1604 | 4822 265 11207 | SOCKET FFC 6P |
| 1605 | 4822 265 11183 | SOCKET FFC 4P |
| 1609 | 4822 267 10956 | SOCKET FFC 7P |
| 1612 | 4822 253 10126 | FUSE 4,0A |
| 1613 | 2422 025 16043 | CONNECTOR H 2P |
| 1615 | 4822 267 10731 | 06FE-BT-VK-N |
| 1616 | 4822 265 11207 | CONNECTOR SOCKET 6P |
| 1618 | 4822 265 11184 | SOCKET FFC 18P |
| 1620 | 4822 253 10126 | FUSE 4,0A |
| 1904 | 8240 009 37971 | SOCKET CINCH H 3P |

- CAPACITORS -

| | | |
|------|----------------|-----------------------|
| 2601 | 5322 121 42386 | 100nF 5% 63V |
| 2602 | 5322 126 11583 | 10nF 10% X7R 50V |
| 2603 | 5322 126 11583 | 10nF 10% X7R 50V |
| 2604 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2605 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2606 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2607 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2608 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2609 | 4822 124 41407 | 0,47µF 20% 63V |
| 2610 | 4822 124 21913 | 1µF 20% 63V |
| 2611 | 4822 124 41407 | 0,47µF 20% 63V |
| 2612 | 4822 121 42408 | 220nF 5% 63V |
| 2613 | 3198 016 31020 | 1nF NP0 25V |
| 2614 | 4822 124 41407 | 0,47µF 20% 63V |
| 2615 | 4822 124 41407 | 0,47µF 20% 63V |
| 2616 | 4822 126 13881 | 470pF 5% 50V |
| 2617 | 4822 126 13881 | 470pF 5% 50V |
| 2618 | 4822 126 13881 | 470pF 5% 50V |
| 2619 | 4822 126 13881 | 470pF 5% 50V |
| 2620 | 4822 124 21913 | 1µF 20% 63V |
| 2621 | 4822 124 81151 | 22µF 50V |
| 2622 | 4822 121 42408 | 220nF 5% 63V |
| 2623 | 4822 124 81151 | 22µF 50V |
| 2624 | 3198 016 31020 | 1nF NP0 25V |
| 2626 | 4822 124 41407 | 0,47µF 20% 63V |
| 2627 | 4822 124 41407 | 0,47µF 20% 63V |
| 2628 | 4822 124 41407 | 0,47µF 20% 63V |
| 2629 | 4822 121 42408 | 220nF 5% 63V |
| 2630 | 4822 124 41407 | 0,47µF 20% 63V |
| 2631 | 4822 124 21913 | 1µF 20% 63V |
| 2632 | 4822 126 13881 | 470pF 5% 50V |
| 2633 | 4822 126 13881 | 470pF 5% 50V |
| 2634 | 4822 126 13881 | 470pF 5% 50V |
| 2635 | 4822 126 13881 | 470pF 5% 50V |
| 2636 | 4822 126 13193 | 4,7nF 10% X7R 63V |

- CAPACITORS -

| | | |
|------|----------------|-----------------------|
| 2637 | 4822 126 13193 | 4,7nF 10% X7R 63V |
| 2638 | 4822 121 42408 | 220nF 5% 63V |
| 2639 | 4822 126 13751 | 47nF 10% X7R 63V |
| 2640 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2641 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2642 | 5322 126 11583 | 10nF 10% X7R 50V |
| 2643 | 5322 126 11583 | 10nF 10% X7R 50V |
| 2644 | 4822 124 40248 | 10µF 20% 63V |
| 2645 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2646 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2647 | 3198 016 31020 | 1nF NP0 25V |
| 2648 | 4822 124 40433 | 47µF 20% 25V |
| 2649 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2650 | 4822 126 13751 | 47nF 10% X7R 63V |
| 2651 | 4822 124 22726 | 4,7µF 35V |
| 2652 | 3198 016 31020 | 1nF NP0 25V |
| 2653 | 2020 552 94427 | 100pF 5% NP0 50V |
| 2654 | 2020 552 94427 | 100pF 5% NP0 50V |
| 2655 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2656 | 3198 016 31020 | 1nF NP0 25V |
| 2658 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2659 | 5322 121 42386 | 100nF 5% 63V |
| 2660 | 5322 121 42386 | 100nF 5% 63V |
| 2661 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2662 | 4822 124 12012 | 4700µF 20% 25V |
| 2663 | 4822 124 22652 | 2,2µF 20% 50V |
| 2665 | 5322 121 42386 | 100nF 5% 63V |
| 2666 | 5322 121 42386 | 100nF 5% 63V |
| 2668 | 4822 124 40433 | 47µF 20% 25V |
| 2669 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2670 | 4822 124 80791 | 470µF 16V 20% |
| 2671 | 4822 124 40248 | 10µF 20% 63V |
| 2673 | 4822 124 41584 | 100µF 20% 10V |
| 2675 | 4822 124 22652 | 2,2µF 20% 50V |
| 2676 | 3198 017 34730 | 47nF X7R 16V |
| 2677 | 3198 016 31020 | 1nF NP0 25V |
| 2679 | 4822 124 81151 | 22µF 50V |
| 2681 | 4822 124 41584 | 100µF 20% 10V |
| 2682 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2683 | 4822 124 12032 | 4,7µF 20% 50V |
| 2686 | 4822 124 40248 | 10µF 20% 63V |
| 2687 | 4822 124 22651 | 1,0µF 20% 50V |
| 2688 | 4822 124 40746 | 0,22µF 20% 63V |
| 2690 | 3198 016 31020 | 1nF NP0 25V |
| 2691 | 5322 124 41948 | 470nF+80-20% 50V |
| 2696 | 2238 916 15641 | 22nF 10% X7R 25V |
| 2701 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2702 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
| 2706 | 4822 124 40196 | 220µF 20% 16V |
| 2708 | 2238 586 59812 | 100nF +80-20% Y5V 50V |

ELECTRICAL PARTSLIST - POWER BOARD**- CAPACITORS -**

| | | |
|------|----------------|-----------------------|
| 2710 | 2238 586 59812 | 100nF +80-20% Y5V 50V |
|------|----------------|-----------------------|

- RESISTORS -

| | | |
|------|----------------|----------------|
| 3600 | 4822 051 30332 | 3,3K 5% 0,062W |
| 3601 | 4822 051 30123 | 12K 5% 0,062W |
| 3603 | 4822 051 30684 | 680K 5% 0,062W |
| 3605 | 4822 116 52298 | 680K 5% 0,5W |
| 3608 | 4822 051 30392 | 3,9K 5% 0,063W |

| | | |
|------|----------------|----------------|
| 3610 | 4822 051 30103 | 10K 5% 0,062W |
| 3611 | 4822 051 30153 | 15K 5% 0,062W |
| 3612 | 4822 051 30472 | 4,7K 5% 0,062W |
| 3613 | 4822 117 11503 | 220R 1% 0,1W |
| 3616 | 4822 117 13632 | 100K 1% 0,62W |

| | | |
|------|----------------|----------------|
| 3617 | 4822 117 12891 | 220K 1% |
| 3619 | 4822 051 30153 | 15K 5% 0,062W |
| 3621 | 4822 117 13632 | 100K 1% 0,62W |
| 3622 | 4822 051 30562 | 5,6K 5% 0,063W |
| 3625 | 4822 051 30103 | 10K 5% 0,062W |

| | | |
|------|----------------|----------------|
| 3626 | 4822 116 52213 | 180R 5% 0,5W |
| 3628 | 4822 116 52213 | 180R 5% 0,5W |
| 3629 | 4822 117 12925 | 47K 1% 0,063W |
| 3638 | 4822 051 30222 | 2,2K 5% 0,062W |
| 3640 | 4822 051 30222 | 2,2K 5% 0,062W |

| | | |
|------|----------------|----------------|
| 3641 | 4822 051 30273 | 27K 5% 0,062W |
| 3643 | 4822 051 30682 | 6,8K 5% 0,062W |
| 3644 | 4822 051 30273 | 27K 5% 0,062W |
| 3647 | 4822 051 30682 | 6,8K 5% 0,062W |
| 3648 | 4822 051 30223 | 22K 5% 0,062W |

| | | |
|------|----------------|---------------|
| 3649 | 4822 051 30223 | 22K 5% 0,062W |
| 3650 | 4822 051 20472 | 4,7K 5% 0,1W |
| 3651 | 4822 116 83961 | 6,8K 5% |
| 3652 | 4822 051 10102 | 1K 2% 0,25W |
| 3653 | 4822 051 30103 | 10K 5% 0,062W |

| | | |
|------|----------------|----------------|
| 3654 | 4822 051 20228 | 2,2R 5% 0,1W |
| 3655 | 4822 051 30272 | 2,7K 5% 0,062W |
| 3656 | 4822 051 20472 | 4,7K 5% 0,1W |
| 3657 | 4822 117 10833 | 10K 1% 0,1W |
| 3658 | 4822 117 10833 | 10K 1% 0,1W |

| | | |
|------|----------------|----------------|
| 3660 | 4822 051 20228 | 2,2R 5% 0,1W |
| 3661 | 4822 051 30331 | 330R 5% 0,062W |
| 3662 | 4822 116 83961 | 6,8K 5% |
| 3663 | 4822 051 30331 | 330R 5% 0,062W |
| 3664 | 4822 051 30272 | 2,7K 5% 0,062W |

| | | |
|------|----------------|---------------|
| 3665 | 4822 051 20472 | 4,7K 5% 0,1W |
| 3666 | 4822 051 30393 | 39K 5% 0,062W |
| 3667 | 4822 051 30393 | 39K 5% 0,062W |
| 3668 | 4822 051 10102 | 1K 2% 0,25W |
| 3669 | 4822 051 20472 | 4,7K 5% 0,1W |

- RESISTORS -

| | | |
|------|----------------|----------------|
| 3670 | 4822 051 30682 | 6,8K 5% 0,062W |
| 3671 | 4822 117 12925 | 47K 1% 0,063W |
| 3672 | 4822 117 10833 | 10K 1% 0,1W |
| 3673 | 4822 051 20228 | 2,2R 5% 0,1W |
| 3674 | 4822 051 10102 | 1K 2% 0,25W |

| | | |
|------|----------------|---------------|
| 3675 | 4822 117 10833 | 10K 1% 0,1W |
| 3676 | 4822 117 13632 | 100K 1% 0,62W |
| 3677 | 4822 051 30223 | 22K 5% 0,062W |
| 3678 | 4822 051 30223 | 22K 5% 0,062W |
| 3679 | 4822 117 12925 | 47K 1% 0,063W |

| | | |
|------|----------------|----------------|
| 3680 | 4822 117 10833 | 10K 1% 0,1W |
| 3681 | 4822 051 20228 | 2,2R 5% 0,1W |
| 3682 | 4822 051 30102 | 1K 5% 0,062W |
| 3683 | 4822 051 30472 | 4,7K 5% 0,062W |
| 3684 | 4822 051 20391 | 390R 5% 0,1W |

| | | |
|------|----------------|----------------|
| 3685 | 4822 051 30471 | 470R 5% 0,062W |
| 3686 | 4822 051 30472 | 4,7K 5% 0,062W |
| 3687 | 4822 051 30472 | 4,7K 5% 0,062W |
| 3688 | 4822 051 30393 | 39K 5% 0,062W |
| 3689 | 4822 051 30393 | 39K 5% 0,062W |

| | | |
|------|----------------|----------------|
| 3690 | 4822 051 30471 | 470R 5% 0,062W |
| 3691 | 4822 051 30471 | 470R 5% 0,062W |
| 3693 | 4822 051 30272 | 2,7K 5% 0,062W |
| 3695 | 4822 051 30272 | 2,7K 5% 0,062W |
| 3696 | 4822 116 83883 | 470R 5% 0,5W |

| | | |
|------|----------------|----------------|
| 3697 | 4822 117 12925 | 47K 1% 0,063W |
| 3698 | 4822 051 30682 | 6,8K 5% 0,062W |
| 3699 | 4822 117 12925 | 47K 1% 0,063W |
| 3700 | 4822 051 30682 | 6,8K 5% 0,062W |
| 3701 | 4822 117 12925 | 47K 1% 0,063W |

| | | |
|------|----------------|---------------|
| 3702 | 4822 051 30223 | 22K 5% 0,062W |
| 3703 | 4822 051 30223 | 22K 5% 0,062W |
| 3704 | 4822 051 10102 | 1K 2% 0,25W |
| 3705 | 4822 051 10102 | 1K 2% 0,25W |
| 3706 | 4822 051 30223 | 22K 5% 0,062W |

| | | |
|------|----------------|---------------|
| 3708 | 4822 051 30223 | 22K 5% 0,062W |
| 3716 | 4822 051 30223 | 22K 5% 0,062W |
| 3718 | 4822 116 83883 | 470R 5% 0,5W |
| 3719 | 4822 117 12925 | 47K 1% 0,063W |
| 3720 | 4822 116 52176 | 10R 5% 0,5W |

| | | |
|------|----------------|--------------|
| 3721 | 4822 050 24708 | 4,7R 1% 0,6W |
| 3724 | 4822 051 10102 | 1K 2% 0,25W |
| 3725 | 4822 051 20472 | 4,7K 5% 0,1W |
| 3726 | 4822 050 24708 | 4,7R 1% 0,6W |
| 3727 | 4822 050 24708 | 4,7R 1% 0,6W |

| | | |
|------|----------------|----------------|
| 3728 | 4822 050 24708 | 4,7R 1% 0,6W |
| 3729 | 4822 117 12925 | 47K 1% 0,063W |
| 3730 | 4822 051 30222 | 2,2K 5% 0,062W |
| 3731 | 4822 051 30152 | 1,5K 5% 0,062W |
| 3732 | 5322 117 13049 | 470R 1% 0,063W |

ELECTRICAL PARTSLIST - POWER BOARD**- RESISTORS -**

| | | |
|------|----------------|-----------------|
| 3733 | 4822 051 10102 | 1K 2% 0,25W |
| 3734 | 4822 051 10102 | 1K 2% 0,25W |
| 3735 | 4822 051 10102 | 1K 2% 0,25W |
| 3736 | 4822 117 10834 | 47K 1% 0,1W |
| 3737 | 4822 117 11449 | 2,2K 5% 0,1W |
| 3738 | 4822 117 11449 | 2,2K 5% 0,1W |
| 3739 | 4822 117 11449 | 2,2K 5% 0,1W |
| 3741 | 4822 117 13632 | 100K 1% 0,62W |
| 3742 | 4822 051 20472 | 4,7K 5% 0,1W |
| 3743 | 4822 117 13577 | 330R 1% 1,25W |
| 3744 | 4822 051 30331 | 330R 5% 0,062W |
| 3745 | 4822 051 10102 | 1K 2% 0,25W |
| 3746 | 4822 117 13632 | 100K 1% 0,62W |
| 3747 | 4822 051 20472 | 4,7K 5% 0,1W |
| 3748 | 4822 051 20472 | 4,7K 5% 0,1W |
| 3749 | 5322 117 13059 | 560R 1% 0,063W |
| 3750 | 5322 117 13056 | 8,2K 1% 0,063W |
| 3751 | 4822 117 11454 | 820R 1% 0,1W |
| 3752 | 4822 117 11454 | 820R 1% 0,1W |
| 3753 | 4822 117 12925 | 47K 1% 0,063W |
| 3754 | 4822 117 12903 | 1,8K 1% 0,063W |
| 3755 | 4822 051 30272 | 2,7K 5% 0,062W |
| 3756 | 4822 051 10102 | 1K 2% 0,25W |
| 3757 | 4822 051 30273 | 27K 5% 0,062W |
| 3758 | 4822 051 30123 | 12K 5% 0,062W |
| 3760 | 4822 051 30472 | 4,7K 5% 0,062W |
| 3769 | 4822 051 30103 | 10K 5% 0,062W |
| 3780 | 4822 117 10361 | 680R 1% 0,1W |
| 3781 | 4822 117 11139 | 1,5K 1% 0,1W |
| 3782 | 4822 051 30562 | 5,6K 5% 0,063W |
| 3783 | 4822 051 30103 | 10K 5% 0,062W |
| 3786 | 4822 117 12925 | 47K 1% 0,063W |
| 4600 | 4822 051 30008 | 0R00 JUMPER |
| 4601 | 4822 051 30008 | 0R00 JUMPER |
| 4602 | 4822 051 30008 | 0R00 JUMPER |
| 4605 | 4822 051 30008 | 0R00 JUMPER |
| 4610 | 4822 051 20008 | 0R JUMPER(0805) |
| 4653 | 4822 051 30008 | 0R00 JUMPER |
| 4663 | 4822 051 30008 | 0R00 JUMPER |
| 4665 | 4822 051 20008 | 0R JUMPER(0805) |
| 4682 | 4822 051 30008 | 0R00 JUMPER |
| 4686 | 4822 051 30008 | 0R00 JUMPER |
| 4691 | 4822 051 30008 | 0R00 JUMPER |
| 4692 | 4822 051 30008 | 0R00 JUMPER |
| 4693 | 4822 051 30008 | 0R00 JUMPER |
| 4698 | 4822 051 20008 | 0R JUMPER(0805) |
| 4880 | 4822 051 20008 | 0R JUMPER(0805) |

- COILS & FILTERS -

| | | |
|------|----------------|-------------------|
| 5601 | 2422 549 43062 | EMI 100MHZ 600R |
| 5602 | 2422 549 43062 | EMI 100MHZ 600R |
| 5603 | 2422 549 44919 | EMI 100MHZ 600R |
| 5604 | 2422 549 44919 | EMI 100MHZ 600R |
| 5605 | 4822 157 11837 | 0,36µH 10% 5,6X5 |
| 5606 | 4822 157 11837 | 0,36µH 10% 5,6X5 |
| 5607 | 4822 157 62552 | 2,2µH |
| 5608 | 4822 157 11837 | 0,36µH 10% 5,6X5 |
| 5609 | 4822 157 10686 | CHOKE COIL 0,47µF |
| 5610 | 2422 549 44393 | EMI 100MHZ 2,7K |
| 5611 | 4822 157 11837 | 0,36µH 10% 5,6X5 |
| 5612 | 2422 549 44919 | EMI 100MHZ 600R |
| 5616 | 2422 549 43062 | EMI 100MHZ 600R |
| 5618 | 2422 549 43062 | EMI 100MHZ 600R |

- DIODES -

| | | |
|------|----------------|------------|
| 6600 | 4822 130 11397 | BAS316 |
| 6601 | 4822 130 30621 | 1N4148 |
| 6605 | 5322 130 34337 | BAV99 |
| 6617 | 4822 130 82079 | D3SBA20 |
| 6618 | 4822 130 34278 | BZX79-B6V8 |
| 6619 | 3198 010 53380 | BZX79-B3V3 |
| 6620 | 4822 130 11397 | BAS316 |
| 6621 | 4822 130 30621 | 1N4148 |
| 6622 | 4822 130 30621 | 1N4148 |
| 6623 | 4822 130 34278 | BZX79-B6V8 |
| 6630 | 4822 130 11397 | BAS316 |
| 6631 | 4822 130 11397 | BAS316 |

- IC & TRANSISTORS -

| | | |
|------|----------------|----------|
| 7600 | 4822 130 60373 | BC856B |
| 7602 | 9322 133 18682 | AN7125P |
| 7603 | 4822 130 60373 | BC856B |
| 7604 | 9322 150 74668 | TDA7468D |
| 7605 | 4822 130 60373 | BC856B |
| 7606 | 4822 130 60373 | BC856B |
| 7607 | 5322 130 60159 | BC846B |
| 7608 | 4822 130 41246 | BC327-25 |
| 7609 | 4822 130 41246 | BC327-25 |
| 7610 | 5322 130 60159 | BC846B |
| 7611 | 5322 130 60159 | BC846B |
| 7612 | 5322 130 60159 | BC846B |
| 7615 | 5322 130 60159 | BC846B |
| 7616 | 5322 130 60159 | BC846B |
| 7617 | 4822 130 60373 | BC856B |

ELECTRICAL PARTSLIST - POWER BOARD**- IC & TRANSISTORS -**

| | | |
|------|----------------|-----------|
| 7618 | 4822 130 41327 | BC327-40 |
| 7619 | 5322 130 60159 | BC846B |
| 7620 | 4822 130 40995 | BD438 |
| 7621 | 4822 130 40995 | BD438 |
| 7622 | 4822 130 41327 | BC327-40 |
| 7623 | 4822 130 40959 | BC547B |
| 7624 | 4822 130 60373 | BC856B |
| 7625 | 5322 130 60159 | BC846B |
| 7626 | 5322 130 60159 | BC846B |
| 7627 | 5322 130 60159 | BC846B |
| 7628 | 5322 130 60159 | BC846B |
| 7629 | 9352 621 95135 | TDA3664/N |
| 7630 | 4822 130 40855 | BC337 |
| 7631 | 4822 130 41246 | BC327-25 |
| 7636 | 5322 130 60159 | BC846B |
| 7638 | 5322 130 60159 | BC846B |
| 7639 | 5322 130 60159 | BC846B |

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

ELECTRICAL PARTSLIST - USB BOARD**- MISCELLANEOUS -**

| | | | | | |
|------|----------------|-------------------|------|----------------|---------------|
| 1701 | 2422 025 16747 | SOCKET USB H 4P | 3712 | 4822 051 30123 | 12K 5% 0,062W |
| 1702 | 4822 267 10956 | SOCKET FFC 7P | 3713 | 4822 051 30123 | 12K 5% 0,062W |
| 1703 | 4822 265 11535 | SOCKET FFC 8P | 3714 | 4822 051 30123 | 12K 5% 0,062W |
| 1705 | 4822 117 11748 | FUSE 2,2R 1206 5% | 3715 | 4822 051 30123 | 12K 5% 0,062W |
| | | | 3716 | 4822 051 30123 | 12K 5% 0,062W |

| | | |
|------|----------------|----------------|
| 3717 | 4822 117 12925 | 47K 1% 0,063W |
| 3718 | 4822 051 30223 | 22K 5% 0,062W |
| 3719 | 4822 051 30223 | 22K 5% 0,062W |
| 3720 | 4822 051 30331 | 330R 5% 0,062W |
| 3721 | 4822 117 12706 | 10K 1% 0,063W |

- CAPACITORS -

| | | | | | |
|------|----------------|-----------------------|------|----------------|----------------|
| 2701 | 4822 122 33761 | 22pF 5% NP0 50V | 3722 | 4822 117 12706 | 10K 1% 0,063W |
| 2702 | 4822 122 33761 | 22pF 5% NP0 50V | 3723 | 4822 117 12706 | 10K 1% 0,063W |
| 2703 | 4822 124 22726 | 4,7µF 35V | 3724 | 4822 117 12706 | 10K 1% 0,063W |
| 2704 | 4822 126 13879 | 220nF +80-20% 16V | 3725 | 4822 117 12706 | 10K 1% 0,063W |
| 2705 | 4822 126 13879 | 220nF +80-20% 16V | 3726 | 4822 117 12706 | 10K 1% 0,063W |
| 2706 | 4822 126 14583 | 470nF 10% 16V | 3727 | 4822 117 12706 | 10K 1% 0,063W |
| 2707 | 4822 126 13879 | 220nF +80-20% 16V | 3728 | 4822 117 12706 | 10K 1% 0,063W |
| 2708 | 4822 126 14583 | 470nF 10% 16V | 3729 | 4822 051 30222 | 2,2K 5% 0,062W |
| 2709 | 2238 586 59812 | 100nF +80-20% Y5V 50V | 3730 | 4822 051 30222 | 2,2K 5% 0,062W |
| 2710 | 4822 126 13879 | 220nF +80-20% 16V | 3731 | 4822 051 30471 | 470R 5% 0,062W |
| 2711 | 3198 016 31020 | 1nF NP0 25V | 3732 | 4822 051 30471 | 470R 5% 0,062W |
| 2712 | 3198 016 31020 | 1nF NP0 25V | 3733 | 4822 117 12925 | 47K 1% 0,063W |
| 2713 | 4822 126 13883 | 220pF 5% 50V | 3734 | 4822 117 12925 | 47K 1% 0,063W |
| 2714 | 4822 126 13883 | 220pF 5% 50V | 3735 | 4822 051 30221 | 220R 5% 0,062W |
| 2715 | 4822 126 13881 | 470pF 5% 50V | 3736 | 4822 051 30103 | 10K 5% 0,062W |
| 2720 | 4822 124 41796 | 22µF 20% 16V | 3737 | 4822 051 30332 | 3,3K 5% 0,062W |
| 2721 | 4822 126 14241 | 330pF NP0 50V | 3738 | 4822 051 30332 | 3,3K 5% 0,062W |
| 2722 | 4822 126 14241 | 330pF NP0 50V | 3740 | 4822 051 30474 | 470K 5% 0,062W |
| 2723 | 4822 126 14241 | 330pF NP0 50V | 3741 | 4822 051 30474 | 470K 5% 0,062W |
| 2724 | 4822 126 14241 | 330pF NP0 50V | 3742 | 4822 117 12925 | 47K 1% 0,063W |
| 2725 | 4822 124 22726 | 4,7µF 35V | 3743 | 4822 117 13632 | 100K 1% 0,62W |
| 2726 | 4822 124 22726 | 4,7µF 35V | 3744 | 4822 051 30273 | 27K 5% 0,062W |
| 2727 | 2020 552 94427 | 100pF 5% NP0 50V | 3745 | 3198 021 32250 | 2,2M 5% |
| 2728 | 2020 552 94427 | 100pF 5% NP0 50V | 4703 | 4822 051 30008 | 0R JUMPER |
| 2730 | 5322 126 11583 | 10nF 10% X7R 50V | | | |
| 2731 | 4822 124 22726 | 4,7µF 35V | | | |
| 2732 | 2238 586 59812 | 100nF +80-20% Y5V 50V | | | |
| 2733 | 5322 126 11583 | 10nF 10% X7R 50V | | | |

- RESISTORS -

| | | |
|------|----------------|----------------|
| 3701 | 4822 117 12139 | 22R 5% 0,062W |
| 3702 | 4822 117 12139 | 22R 5% 0,062W |
| 3703 | 4822 117 12891 | 220K 1% |
| 3704 | 4822 051 30102 | 1K 5% 0,062W |
| 3705 | 4822 051 30154 | 150K 5% 0,062W |

| | | |
|------|----------------|----------------|
| 3706 | 4822 117 12925 | 47K 1% 0,063W |
| 3708 | 4822 051 30221 | 220R 5% 0,062W |
| 3709 | 4822 051 30221 | 220R 5% 0,062W |
| 3710 | 4822 051 30221 | 220R 5% 0,062W |
| 3711 | 4822 051 30123 | 12K 5% 0,062W |

- COILS & FILTERS -

| | | |
|------|----------------|------------------------|
| 5701 | 2422 543 01243 | OSC XTL 12MHZ 7P AT-49 |
| 5702 | 2422 549 43062 | EMI 100MHZ 600R |
| 5703 | 4822 157 11499 | BLM11P600SPT |

- DIODES -

| | | |
|------|----------------|--------|
| 6701 | 5322 130 34337 | BAV99 |
| 6702 | 5322 130 34337 | BAV99 |
| 6703 | 4822 130 11397 | BAS316 |

ELECTRICAL PARTSLIST - USB BOARD**- IC & TRANSISTORS -**

| | | |
|------|----------------|-----------------|
| 7701 | 9322 190 70671 | UAC3553-B-QG-F5 |
| 7702 | 5322 209 82941 | LM358D |
| 7703 | 5322 130 60159 | BC846B |
| 7704 | 4822 130 60373 | BC856B |
| 7705 | 5322 130 60159 | BC846B |
| 7706 | 5322 130 60159 | BC846B |
| 7721 | 4822 130 42804 | BC817-25 |
| 7722 | 4822 130 42804 | BC817-25 |

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

ELECTRICAL PARTSLIST - MP3 BOARD**- MISCELLANEOUS -**

| | | |
|------|----------------|----------------|
| 1451 | 2422 025 17303 | SOCKET FFC 19P |
|------|----------------|----------------|

- CAPACITORS -

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

| | | |
|------|----------------|----------------------|
| 2455 | 2238 586 59812 | 100nF +80-20%Y5V 50V |
| 2457 | 5322 126 11583 | 10nF 10% X7R 50V |
| 2459 | 3198 017 41050 | 1µF Y5V 10V |
| 2460 | 2238 586 59812 | 100nF +80-20%Y5V 50V |
| 2461 | 4822 124 81059 | 220µF 20% 4V |

| | | |
|------|----------------|----------------------|
| 2462 | 3198 017 41050 | 1µF Y5V 10V |
| 2463 | 3198 017 41050 | 1µF Y5V 10V |
| 2464 | 2238 586 59812 | 100nF +80-20%Y5V 50V |
| 2465 | 2238 586 59812 | 100nF +80-20%Y5V 50V |
| 2466 | 2238 586 59812 | 100nF +80-20%Y5V 50V |

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

- RESISTORS -

| | | |
|------|----------------|----------------|
| 3450 | 4822 117 12971 | 15R 5% 0,62W |
| 3451 | 4822 117 12971 | 15R 5% 0,62W |
| 3452 | 4822 051 30101 | 100R 5% 0,062W |
| 3454 | 4822 117 12971 | 15R 5% 0,62W |
| 3455 | 4822 051 30102 | 1K 5% 0,062W |

| | | |
|------|----------------|----------------|
| 3456 | 4822 051 30101 | 100R 5% 0,062W |
| 3457 | 5322 117 13051 | 680R 1% 0,063W |
| 3458 | 5322 117 13061 | 180R 1% 0,063W |
| 3459 | 4822 051 30221 | 220R 5% 0,062W |
| 3460 | 4822 051 30102 | 1K 5% 0,062W |

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

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

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

- RESISTORS -

| | | |
|------|----------------|----------------|
| 3479 | 4822 051 30102 | 1K 5% 0,062W |
| 3481 | 4822 051 30101 | 100R 5% 0,062W |
| 3482 | 4822 051 30471 | 470R 5% 0,062W |
| 3483 | 4822 051 30101 | 100R 5% 0,062W |
| 3484 | 4822 117 12971 | 15R 5% 0,62W |

| | | |
|------|----------------|----------------|
| 3486 | 4822 051 30101 | 100R 5% 0,062W |
| 3488 | 4822 117 13632 | 100K 1% 0,62W |
| 3489 | 4822 051 30103 | 10K 5% 0,062W |
| 3490 | 4822 051 30101 | 100R 5% 0,062W |
| 3491 | 4822 051 30101 | 100R 5% 0,062W |

| | | |
|------|----------------|----------------|
| 3492 | 4822 051 30105 | 1M 5% 0,062W |
| 3493 | 4822 051 30103 | 10K 5% 0,062W |
| 3494 | 4822 051 30103 | 10K 5% 0,062W |
| 3495 | 4822 051 30103 | 10K 5% 0,062W |
| 3496 | 4822 051 30101 | 100R 5% 0,062W |

| | | |
|------|----------------|----------------|
| 3497 | 4822 051 30103 | 10K 5% 0,062W |
| 3498 | 4822 051 30332 | 3,3K 5% 0,062W |
| 3499 | 4822 051 30103 | 10K 5% 0,062W |
| 4450 | 4822 051 30008 | 0R JUMPER |
| 4451 | 4822 051 30008 | 0R JUMPER |

- COILS & FILTERS -

| | | |
|------|----------------|------------------------|
| 1460 | 4822 242 10989 | CSTCV16,93MXJ0C3 |
| 5450 | 2422 549 43062 | IND FXD SM 100MHZ 600R |

- DIODES -

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

- IC & TRANSISTORS -

| | | |
|------|----------------|-------------|
| 7452 | 3198 010 42310 | BC847BW |
| 7453 | 3198 010 42310 | BC847BW |
| 7455 | 4822 209 17108 | LM317LD |
| 7456 | 3198 010 42310 | BC847BW |
| 7458 | 9322 130 41668 | M24C64-WMN6 |

| | | |
|------|----------------|---------|
| 7460 | 3198 010 42310 | BC847BW |
|------|----------------|---------|

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

ELECTRICAL PARTSLIST - VOLUME BOARD

- MISCELLANEOUS -

| | | |
|------|----------------|--------------------|
| 1200 | 4822 265 11207 | SOCKET FFC 6P |
| 1201 | 2422 129 16545 | ROTARY ENCODER 24P |
| 1202 | 2422 128 02917 | SWITCH-TACT |
| 1203 | 2422 128 02917 | SWITCH-TACT |

- CAPACITORS -

| | | |
|------|----------------|------------------|
| 2201 | 5322 126 11583 | 10nF 10% X7R 50V |
| 2202 | 2020 552 94427 | 100pF 5% NP0 50V |
| 2203 | 2020 552 94427 | 100pF 5% NP0 50V |

- RESISTORS -

| | | |
|------|----------------|----------------|
| 3201 | 4822 051 30222 | 2,2K 5% 0,062W |
| 3204 | 4822 051 30101 | 100R 5% 0,062W |
| 3205 | 4822 051 30102 | 1K 5% 0,062W |
| 3206 | 4822 051 30102 | 1K 5% 0,062W |

- MISCELLANEOUS -

| | | |
|------|------------------|----------------------------|
| 1006 | 3103 308 66991 | PBAS USB PC LINK |
| 1009 | 2440 257 40406 | LSP 6R 10W OPN FULR R105S |
| 1010 | 2440 257 40406 | LSP 6R 10W OPN FULR R105S |
| 1011 | ⚠ 3140 118 33701 | TRANSFORMER AZ2558/00C/05 |
| 1011 | ⚠ 3140 118 33711 | TRANSFORMER AZ2558/01 |
| 1011 | ⚠ 3140 118 33721 | TFM POW EI-57 UL (-/17) |
| 1012 | 2422 030 00374 | CON NBM SUPP H 2P M TC08 B |
| 1012 | 2422 030 00333 | CON NBM SUPP H 2P M TC08 |
| 8006 | 3139 111 02331 | FFC FOIL 18P/220/18P AD |
| 8009 | 3139 111 02561 | FFC F1IL 06P/280/06P BD |
| 8010 | 3139 110 34100 | CWAS FFC BD 04P 140 |
| 8011 | 4822 320 12752 | 7P - 180MM |
| 8012 | 4822 320 12702 | 6P - 140MM |
| 8013 | 3139 110 34650 | FFC FOIL 05P/400/05P AD |
| 8014 | 3139 110 34330 | FFC FOIL |
| 8016 | 3139 110 34740 | FFC FOIL 08P/180/08P AD |
| 8021 | 3139 110 34330 | FFC FOIL |

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