Service
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Service Manual

COMPACT disc DIGITAL AUDIO

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CLASS 1
LASER PRODUCT

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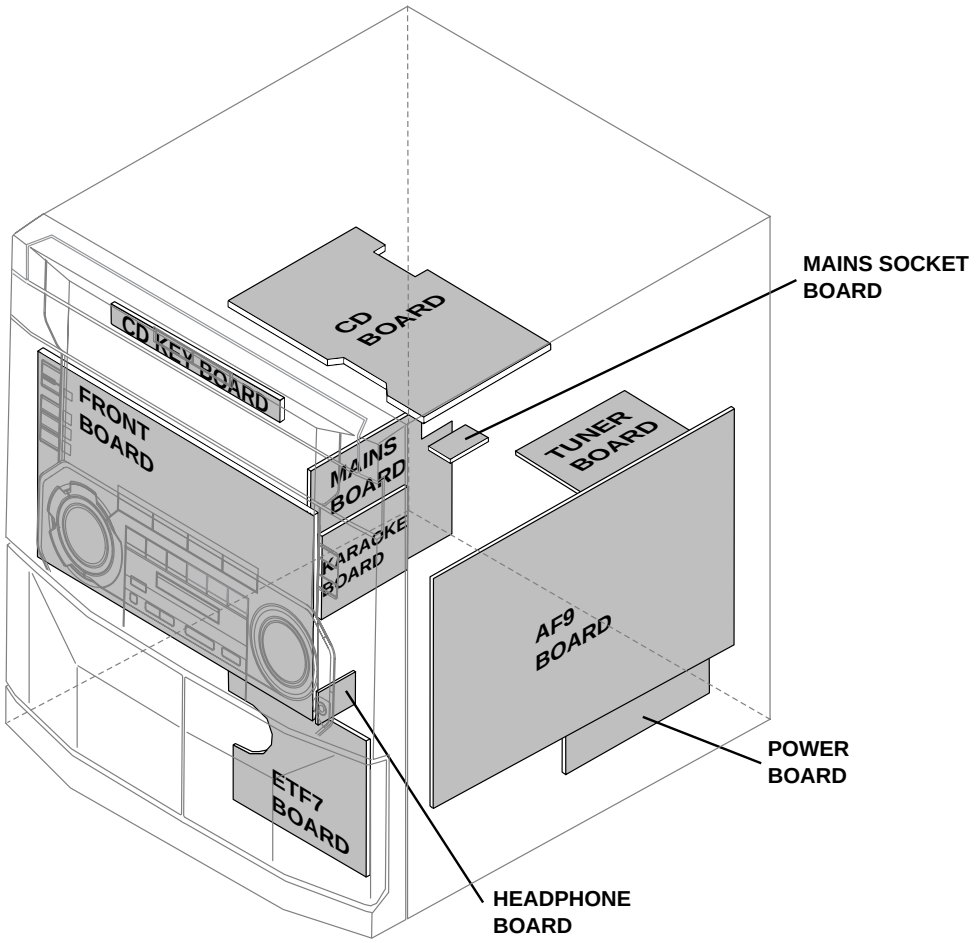
PHILIPS

LOCATION OF PRINTED CIRCUIT BOARDS



VERSION VARIATIONS:

Type /Versions: / Features & Board in used:	FW-C380									
	/21	/22	/30	/34	/37					
Aux in /CDR in	x	x	x	x	x					
Line Out										
Surround Out										
Subwoofer Out	x	x	x	x	x					
Digital Out	x	x	x	x	x					
Matrix Surround										
CD Text										
Dolby B										
RDS		x		x						
News		x		x						
Dolby Pro Logic (DPL)										
Incredible Surround	x	x	x	x	x					
Karaoke Features	x									
Voltage Selector	x									
ECO Power Standby (Clock Display Off)		x	x	x						
ECO6 Tuner Board - Systems Non-Cenelec	x		x	x	x					
ECO6 Tuner Board - Systems Cenelec		x								
Center/Surround Channel										

Note: 3CDC-LC-MB Module is mechanically the same as 3CDC-LC Module except the schematics, layouts & electrical parts list related to the CDC Board.The CDC Board (recognized by 12NC : *3103 303 34522* printed on the Board) is introduced as an alternative to supplement for the shortage of Servo IC TDA7073A.

SPECIFICATIONS

GENERAL:

Mains voltage : 110-127V/220-240V Switchable for /21/21M
120V for /37
220V for /33
220-230V for /22/34
230-240V for /30
Mains frequency : 50/60Hz
Power consumption : < 1W at ECO Power Standby
: < 15W at Standby
: 90W at Active
Clock accuracy : < 4 seconds per day
Dimension centre unit : 265 x 310 x 390mm

TUNER:

FM

Tuning range : 87.5-108MHz
65.81-74MHz for /34 1)
Grid : 50kHz (& 30kHz for /34)
100kHz for /37
IF frequency : 10.7MHz ± 25kHz
Aerial input : 75Ω coaxial
75Ω click fit for /37
Sensitivity at 26dB S/N : < 7µV
Selectivity at 600kHz bandwidth : > 25dB
Image rejection : > 25dB
Distortion at RF=1mV, dev. 75kHz : < 3%
-3dB Limiting point : < 8µV
Crosstalk at RF=1mV, dev. 40kHz : > 18dB

MW

Tuning range : 531-1602kHz
530-1700kHz for /21/21M/37
Grid : 9kHz
10kHz for /21/21M/37
IF frequency : 450kHz ± 1kHz
Aerial input : Frame aerial
Sensitivity at 26dB S/N : < 4.0mV/M
Selectivity at 18kHz bandwidth : > 18dB
IF rejection : > 45dB
Image rejection : > 28dB
Distortion at RF=50mV, m=80% : < 5%

LW

Tuning range : 153-279kHz /22
Grid : 3kHz
IF frequency : 450kHz ± 1kHz
Aerial input : Frame aerial
Sensitivity at 26dB S/N : [< 7.0mV/M]
Selectivity at 18kHz bandwidth : [> 24dB]
IF rejection : [> 30dB]
Image rejection : [> 30dB]
Distortion at RF=50mV, m=80% : [< 5%]

AMPLIFIER:

Output power (6Ω, 1kHz, 10% THD)
L & R : 2 x 60W

Output power (6Ω, 60Hz-12.5kHz, 10% THD) /37
L & R : 2 x 45W

Frequency response within -3dB : 60Hz-16kHz
Digital Sound Control (DSC) : Optimal, Jazz, Rock, Techno
Virtual Environment Control (VEC) : Hall, Concert, Cinema
Dynamic Bass Boost (DBB) : DBB 1, DBB 2, DBB 3, DBB OFF
Incredible Surround : IS ON, IS OFF

Input sensitivity
Aux in : 500mV ± 3dB at 600Ω
CDR in : 1V ± 3dB at 600Ω
Mic : {3mV ± 3dB at 600Ω}
Output sensitivity
Subwoofer out : 1.5V ± 2dB at 22 kΩ
Headphone output at 32Ω : 15mW ± 2dB
Digital (Coax) out : IEC 958, 44.1kHz

CASSETTE RECORDER:

Number of track : 2 x 2 stereo
Tape speed : 4.76 cm/sec ± 2%
Wow and flutter : < 0.4% DIN
Fast-wind/Rewind time C60 : 130 sec
Bias system : 75kHz ± 10kHz
Rec/Pb frequency response within 8dB : 80Hz - 12.5kHz
Signal to Noise Ratio (Type I) : > 48dBA

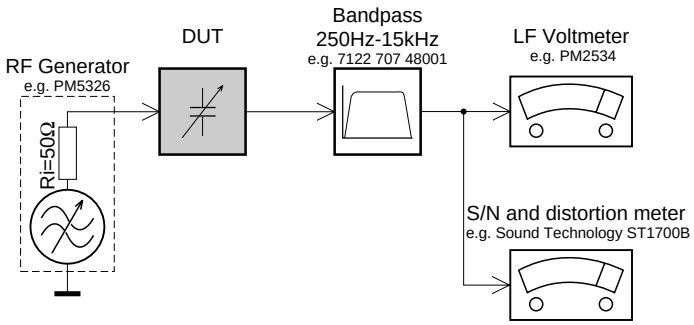
COMPACT DISC:

Measurement done at output conn. of the CDC module.
Frequency response : < ±1.5dB for 20Hz-20kHz
Output Voltage (in Vrms) : 550mV ± 1dB unloaded
Signal to Noise Ratio (A-weighted) : > 80dBA
Distortion at 1kHz : < 0.003%
Channel Unbalance : < ±1dB
Channel Separation (1kHz) : >60dB
De-emphasis : 0 or 15/50 mS (Switched by subcode on the disc)

[....] Values indicated are for "ECO6 Cenelec Board" only.
{....} Values for /21/21M only
1) Default setting is OFF, to switch on please refer page 3-4.

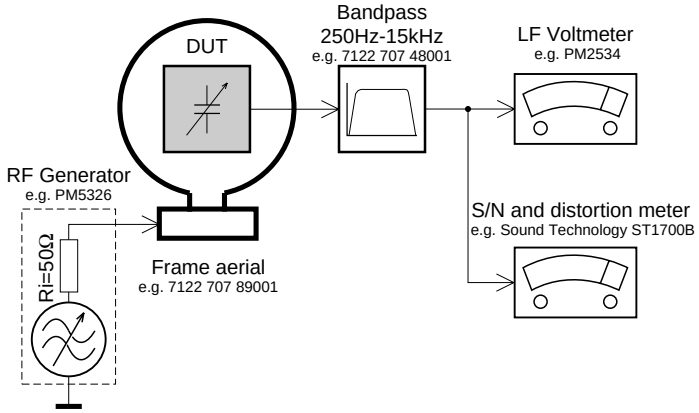
MEASUREMENT SETUP

Tuner FM



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

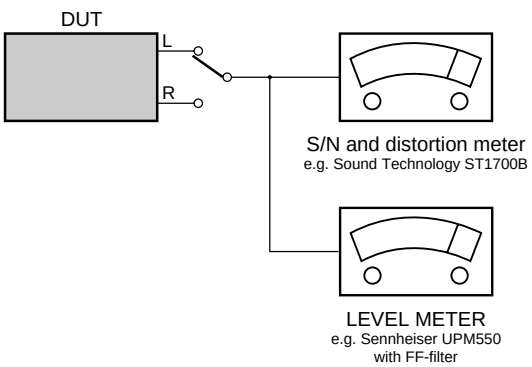
Tuner AM (MW,LW)



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

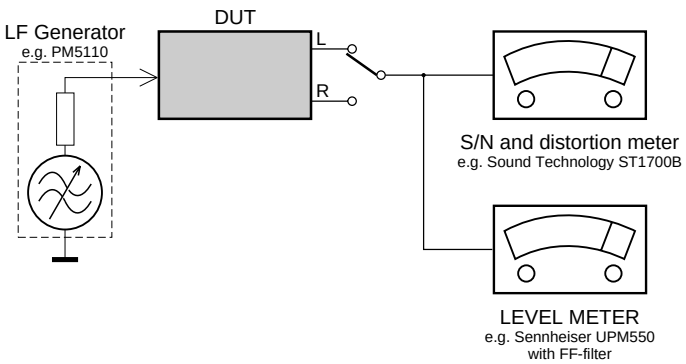
CD

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



Recorder

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



SERVICE AIDS

Service Tools:

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

Cassette:

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

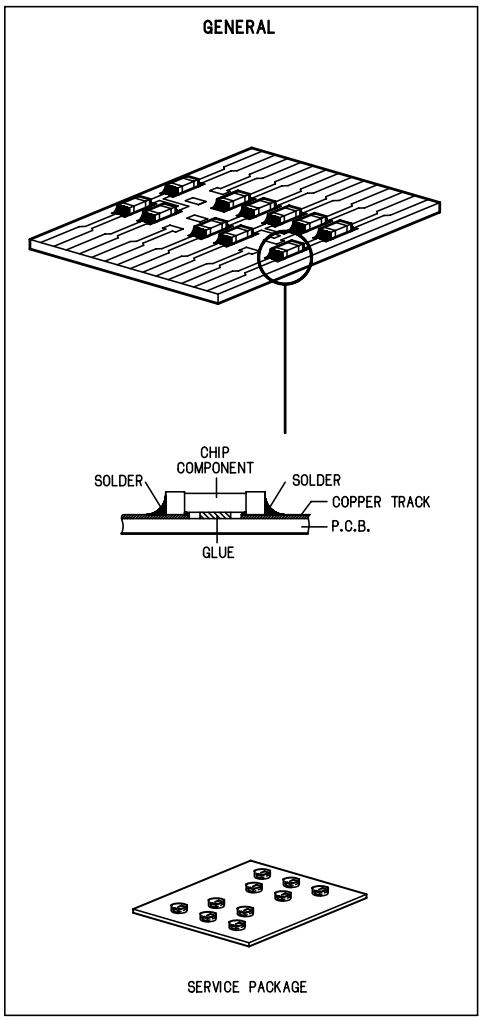
Compact Disc:

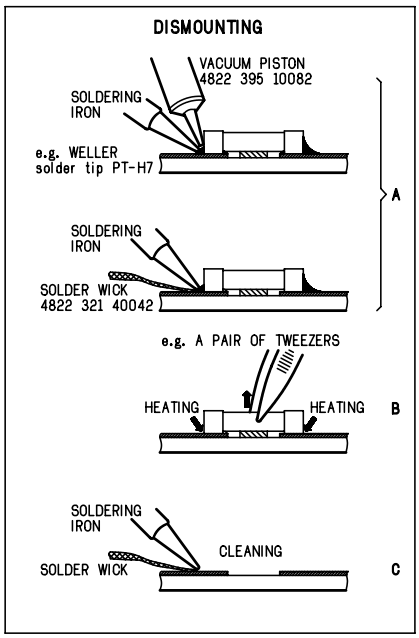
SBC426/426A Test disc 5 + 5A 4822 397 30096
SBC442 Audio Burn-in Test disc 1kHz 4822 397 30155
SBC429 Audio Signals disc 4822 397 30184
Dolby Pro-logic Test Disc 4822 395 10216

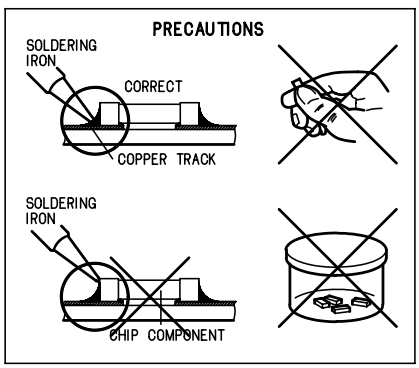
ESD Equipment:

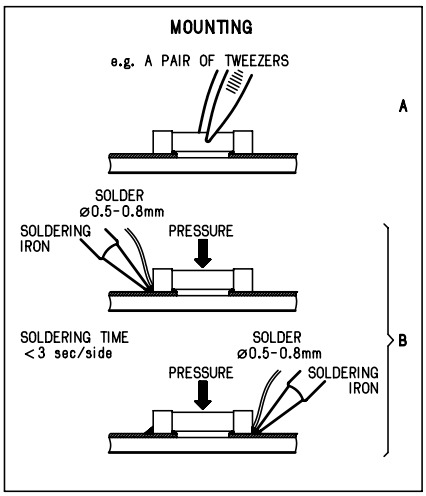
Anti-static table mat - large 1200x650x1.25mm ... 4822 466 10953
Anti-static table mat - small 600x650x1.25mm 4822 466 10958
Anti-static wristband 4822 395 10223
Connector box (1MΩ) 4822 320 11307
Extension cable
(to connect wristband to conn. box) 4822 320 11305
Connecting cable
(to connect table mat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

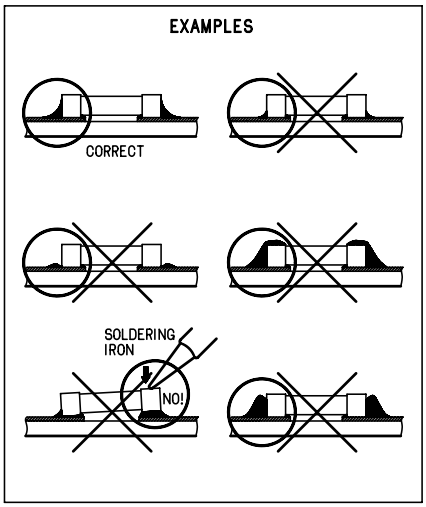
HANDLING CHIP COMPONENTS











ESD

GB WARNING

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

F ATTENTION

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

D WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kan die Lebensdauer drastisch reduzieren.
Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes.
Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

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.

I AVVERTIMENTO

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

GB

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

NL

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

F

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

D

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

I

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

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

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

GB Warning !

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

S Varning !

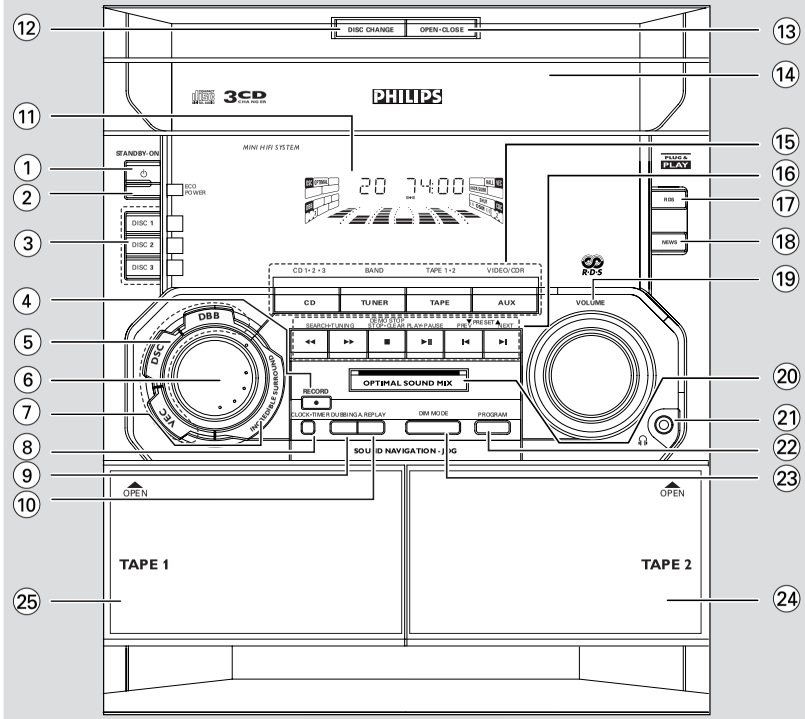
Osynlig laserstrålning när apparaten är öppnad och spärren är urkopplad. Betrakta ej strålen.

SF Varoitus !

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

DK Advarse !

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



English

Contents

General Information

- ***The type plate (which contains the serial number) is located at the rear of the player.***
- ***Recording is permissible if copyright or other rights of third parties are not infringed.***
- ***This product complies with the radio interference requirements of the European Community.***

Environmental Information

All unnecessary packaging has been omitted. We have tried to make the packaging easy to separate into three materials: cardboard (box), polystyrene foam (buffer) and polyethylene (bags, protective foam sheet).

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

Energy Star

As an ENERGY STAR® Partner; Philips has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

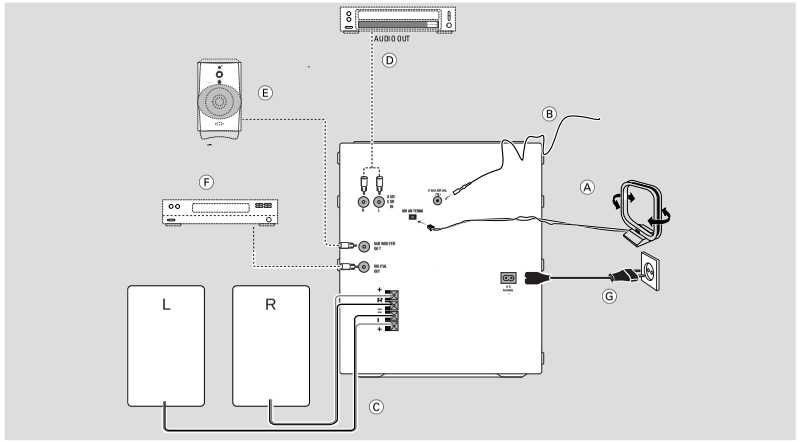
Supplied Accessories

– Remote control
– AM loop antenna
– FM wire antenna
– AC power cord

Safety Information

- Before operating the player, check that the operating voltage indicated on the typeplate (or the voltage indication beside the voltage selector) of your player is identical with the voltage of your local power supply. If not, please consult your dealer. The typeplate is located at the rear of your player.
- When the player is switched on, do not move it around.
- Place the player on a solid base (e.g. a cabinet).
- Place the player in a location with adequate ventilation to prevent internal heat build-up in your player. Allow at least 10 cm (4 inches) clearance from the rear and the top of the unit and 5 cm (2 inches) from the each side.
- Do not expose the player to excessive moisture, rain, sand or heat sources.
- Under no circumstances should you repair the player yourself, as this will invalidate the warranty!
- If the player is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense on the lens of the disc unit inside the player. Should this occur, the CD player will not operate normally. Leave the power on for about one hour with no disc in the player until normal playback is possible.
- Electrostatic discharge may cause unexpected problems. See whether these problems disappear if you unplug the AC power cord and plug it in again after a few seconds.
- **To disconnect the player from the power supply completely, remove the AC power plug from the wall socket.**

Preparations



Rear Connections

Ⓐ AM Loop Antenna Connection

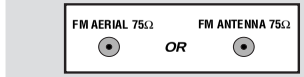
Connect the supplied loop antenna to the AM ANTENNA terminal. Place the AM loop antenna far away from the system and adjust its position for the best reception.

Ⓑ FM Wire Antenna Connection

Connect the supplied FM wire antenna to the FM AERIAL (FM ANTENNA) 75 Ω terminal. Adjust the position of the FM antenna for the best reception.

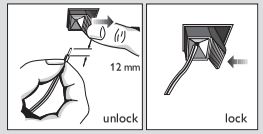
Outdoor Antenna

For better FM stereo reception, connect an outdoor FM antenna to the FM AERIAL (FM ANTENNA) 75 Ω terminal using a 75 Ω coaxial wire.



Ⓒ Speakers Connection

- Connect the right speaker to Front terminal R, with the colored wire to + and the black wire to −.
- Connect the left speaker to Front terminal L, with the colored wire to + and the black wire to −.
- Clip the stripped portion of the speaker wire as shown.



CAUTION:

– For optimal sound performance, it is recommended to use the supplied speakers.
– Do not connect more than one speaker to any one pair of + / − speaker terminal.
– Do not connect speakers with impedance lower than the speakers supplied. Please refer to SPECIFICATION section of this manual.

English

Ⓓ Connecting other equipment to your system

You can connect the audio left and right OUT terminals of a TV, VCR, Laser Disc player, DVD player or CD Recorder to the AUX IN terminals at the rear of the system.

Ⓔ Subwoofer Out Connection

Connect the optional active subwoofer to the SUBWOOFER OUT terminal. The subwoofer reproduces just the low bass sound effect (e.g. explosions, the rumble of spaceships, etc.). Be sure to follow the instructions supplied with the subwoofer.

Ⓕ Digital Out Connection

You can record the digital sound from the CD, through this output, on any audio equipment with digital input (e.g. CD Recorder, Digital Audio Tape (DAT) deck, Digital to Analog Converter and Digital Signal Processor).

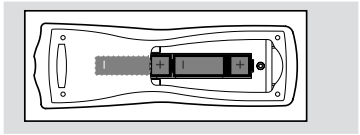
Connect one end of the cinch cable (not supplied) to the DIGITAL OUT socket and the other end to the audio equipment with digital input. When connecting the cinch cable, make sure it is fully inserted.

Ⓖ AC Power Supply

After all other connections have been made, connect the AC power cord to the system and to the wall outlet. Inserting batteries into the Remote Control

Inserting batteries into the Remote Control

- Insert the batteries *(not supplied)* into the remote control as shown in the battery compartment (Type R06 or AA).



CAUTION

– Remove batteries if they are exhausted or not to be used for a long time.

– Do not use old and new or different types of batteries in combination.

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

English

Controls on the player and remote control

① **STANDBY-ON** ⏻
– switches the system to standby/on.

② **ECO POWER**
– to switch the system to eco power standby mode or to wake up the system to last selected source.

③ **DISC 1 / DISC 2 / DISC 3 (DISC DIRECT PLAY)**
– to select a disc tray for playback.

④ **RECORD**
– to start recording on tape deck 2.

⑤ **SOUND CONTROL**
– to select the desired sound feature: DSC, VEC, or DBB.

⑥ **JOG**
– to select the desired sound effect of DSC/VEC/DBB setting. You must select the respective sound feature first.

DBB (DYNAMIC BASS BOOST)
– to select the desired bass effect : DBB 1, DBB 2, DBB 3, DBB OFF.

DSC (DIGITAL SOUND CONTROL)
– to select the desired Digital Sound Control effect : OPTIMAL, JAZZ, ROCK or TECHNO.

VEC
– to select the desired Virtual Environment Control effect : CINEMA, HALL or CONCERT.

⑦ **INCREDIBLE SURROUND**
– to switch on or off the surround sound effect.

⑧ **CLOCK•TIMER**
– to view the clock, set the clock or set the timer.

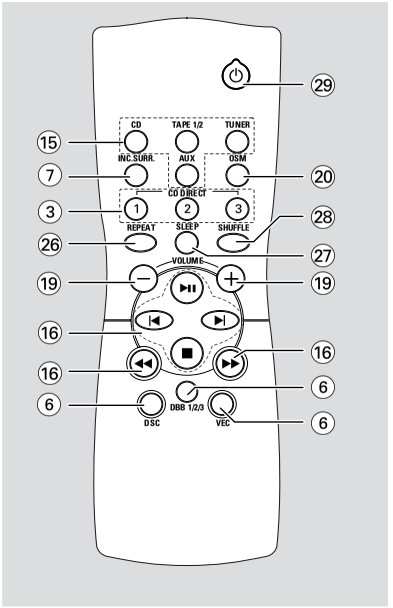
⑨ **DUBBING**
– to dub a tape.

⑩ **AUTO REPLAY**
– to select playback mode either in continuous AUTO REPLAY or ONCE only.

⑪ **DISPLAY SCREEN**
– to view the current setting of the system.

⑫ **DISC CHANGE**
– to change disc(s).

⑬ **OPEN•CLOSE**
– to open or close the CD changer tray.



⑭ **CD CHANGER TRAY**

⑮ **SOURCE** – to select the following:

CD / (CD 1•2•3)
– to select CD mode. When disc playback is stopped, press to select disc tray 1, 2 or 3.

TUNER / (BAND)
– to select Tuner mode. When in tuner mode, press to select the waveband: FM, MW or LW.

TAPE / (TAPE 1• 2)
– to select Tape mode. When tape playback is stopped, press to select either tape deck 1 or 2.

AUX (VIDEO/CDR)
– to select sound from an external source (e.g. TV, VCR, Laser Disc player, DVD player or CD Recorder). When in AUX mode, press to select either AUX or CDR.

English

⑯ **MODE SELECTION**

SEARCH ◀◀ ▶▶ (TUNING ◀◀ ▶▶)

for CD ..... to search backward/forward.
for TUNER ..... to tune to a lower or higher radio frequency.
for TAPE ..... to rewind or fast forward a tape.
for CLOCK ..... to set the hour *(on the system only)*.

STOP•CLEAR ■

for CD ..... to stop disc playback or to clear a program.
for TUNER ..... to stop programming *(on the system only)*.
for TAPE ..... to stop playback or recording.
for DEMO ..... to start or stop demonstration mode *(on the system only)*.
for CLOCK ..... to exit clock setting or cancel timer *(on the system only)*.
for PLUG & PLAY ..... to exit plug & play mode and return to standby mode *(on the system only)*.

PLAY ▶ / PAUSE ❚❚

for CD ..... to start or interrupt playback.
for TAPE ..... to start playback.
for PLUG & PLAY ..... to initiate and start plug & play from standby/demo mode *(on the system only)*.

PREV ⏮ / NEXT ⏭(PRESET ▼▲)

for CD ..... to skip to the beginning of the current, previous, or next track.
for TUNER ..... to select a preset station in memory.
for CLOCK ..... to set the minute *(on the system only)*.

⑰ **RDS**

– to select RDS data in the following order: station name, program type, radio text and frequency.

⑱ **NEWS**

– to hear news automatically.

⑲ **VOLUME**

– to increase or decrease the volume.

⑳ **OPTIMAL SOUND MIX**

– optimal mix of various sound features of the set to create the most impressive listening experience at one touch of a button.

㉑ 🎧

– to connect headphones.

㉒ **PROGRAM**

for CD ..... to program disc tracks.
for TUNER ..... to program preset radio stations.
for CLOCK ..... to select 12 or 24 hour in clock setting mode.

㉓ **DIM**

– to select different brightness for the display screen : DIM 1, DIM 2, DIM 3 or DIM OFF.

㉔ **TAPE DECK 2**

㉕ **TAPE DECK 1**

㉖ **REPEAT**

– to repeat a disc track, a disc, or all available discs.

㉗ **SLEEP**

– to switch the system to standby mode at a selected time.

㉘ **SHUFFLE**

– to play all the available discs and their tracks in random order.

y mode or eco

㉙ ⏻

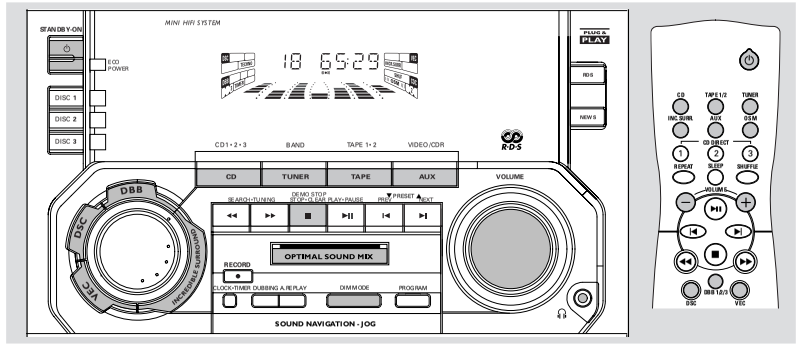
– to switch the system to standb power standby mode.

Notes for remote control:

– First select the source you wish to control by pressing one of the source select keys on the remote control (e.g. CD ,TUNER, etc.).

– Then select the desired function (▶ , ⏮, ⏭, etc.).

English



Important:
Before you operate the system, complete the preparation procedures.

Plug and Play

The system provides PLUG and PLAY feature that allows you to store all available radio stations and RDS stations automatically upon power up.

t

If the PLUG and PLAY has not been installed

1 Upon power up, "AUTO INSTALL - PRESS PLAY" will be displayed.

2 Press **PLAY** *(on the system only)* to start installation.
➜ "INSTALL" will be displayed and followed by "TUNER" and then "AUTO".
➜ The **PROGRAM** starts flashing.
➜ PLUG and PLAY will start searching for all RDS radio stations with sufficient signal strength and then followed by radio stations on FM, MW and LW band respectively. Weak RDS radio stations may be stored in later presets.
➜ All available RDS and radio stations with sufficient signal strength will be stored. Up to 40 presets may be stored.
➜ The last preset radio station or the first available RDS station will appear on the display when PLUG and PLAY is completed.

3 The system will proceed to set the RDS time automatically with the stored RDS preset station.

- If no RDS station is available in the first preset station, the program will exit automatically.
  ➜ After the RDS radio station is found, "INSTALL" will be displayed and followed by "TIME".
- When searching RDS time;
  ➜ "SEARCH RDS TIME" will be displayed.
  ➜ When RDS time is read, "RDS TIME" will be displayed. The current time will be displayed for 2 seconds and stored automatically.

Note:
– If RDS station does not transmit RDS time within 90 seconds, the program will exit automatically and the display will show "NO RDS TIME".

To reinstall the PLUG & PLAY

1 In **Standby or Demostration** mode, press and hold **PLAY** for 5 seconds *(on the system only)* "AUTO INSTALL - PRESS PLAY" will be displayed.

2 Press **PLAY** *(on the system only)* again to star installation.

- To exit without storing the PLUG and PLAY, press ■ button *(on the system only)*.

Notes:
– PLUG and PLAY will be reinitiated again during the next power up if :
i) PLUG and PLAY installation was not completed.
ii) No stereo frequency being detected during PLUG and PLAY, "CHECK ANTENNA" will be displayed.
– You can store any radio stations manually or automatically after PLUG and PLAY.
– When PLUG and PLAY is used, all previously stored radio stations will be replaced.
– During PLUG and PLAY, if no button is pressed within 15 seconds, the system will go to demonstration mode (if demonstration mode is enable)

Demonstration mode

The system has a demonstration mode that shows the various features offered by the system.

To disable the demonstration mode

- Press and hold ■ *(on the system only)* for ***5 seconds*** when the system is in demonstration mode.
  ➜ "DEMO OFF" is displayed.
  ➜ The system will switch to standby mode.

To enable the demonstration mode

- Press and hold ■ *(on the system only)* for ***5 seconds*** when the system is in standby mode.
  ➜ The demonstration will begin.

Notes:
– If the demonstration mode has not been disabled, it will resume 5 seconds later after the system switches to standby mode.
– When the system is switched on from the main power outlet, the CD changer tray may open and close again to initialize the set.
– Even though the AC power cord is removed from and reconnected to the wall socket, the demonstration will remain off until it is switched on again.

Switching the system ON

- Press **CD**, **TUNER**, **TAPE** or **AUX**.

You can also switch on the system by pressing any one of the CD DIRECT PLAY buttons.

Switching the system to standby mode

- Press **STANDBY-ON** or ⏻ on the remote control.
  ➜ The system will switch to standby mode.

Switching the system to ECO POWER standby mode *(when Demonstration mode is stopped)*

- Press **ECO POWER** or press and hold ⏻ on the remote control for more than 2 seconds to switch to eco power standby mode (< 2 watts).
  ➜ "ECO PWR" will be displayed, after which the display screen goes blank.
  ➜ The ECO POWER LED will be lit.

To switch on the system from ECO POWER mode

- Press **ECO POWER**.
  ➜ The system will switch to last selected source.
- Press **CD**, **TUNER**, **TAPE** or **AUX** on the remote control
  ➜ The system will switch to the selected source.

Note:
– If the demonstration mode has not been disabled, it will resume 5 seconds later.

Selecting the Source

- Press the respective source selection button: **CD**, **TUNER**, **TAPE** or **AUX**.
  ➜ The display indicates the selected source.

Note:
– For an external source, make sure you have connected the audio left and right OUT terminals of the external equipment (TV, VCR, Laser Disc player, DVD player or CD Recorder) to the AUX IN terminals.

DIM mode *(only on remote control)*

You can select the desired brightness for the display.

- Press **DIM** to select DIM 1, DIM 2, DIM 3 or DIM OFF display mode.
  ➜ The DIM appears on the display.
  ➜ "DIM 1", "DIM 2", "DIM 3" or "DIM OFF" will be displayed depending on the mode selected.

DIM OFF - normal brightness with Spectrum Analyzer On

DIM 1 - normal brightness with Spectrum Analyzer Off

DIM 2 - half brightness with Spectrum Analyzer On

DIM 3 - half brightness with Spectrum Analyzer Off and all LEDs off

Volume Control

Adjust **VOLUME** to increase or decrease the sound level.

For Personal Listening
Connect the headphones plug to the 🎧 socket at the front of the system. The speakers will be muted.

Sound Control

For Optimal sound listening, you can only select one of the following sound control at a time : DSC, VEC or OPTIMAL SOUND MIX.

DIGITAL SOUND CONTROL (DSC)
The DSC feature enables you to adjust the system to suit your type of music.

1. Press to select the **DSC** feature.
   ➜ DSC led lights up.
2. Adjust the **JOG** to select the desired Digital Sound Control setting : OPTIMAL, JAZZ, ROCK, or TECHNO.
   ➜ The selected digital sound is encircled.
   ➜ "OPTIMAL, JAZZ, ROCK or TECHNO" will be displayed.

Note:
– For neutral setting, select JAZZ.

English

VIRTUAL ENVIRONMENT CONTROL (VEC)

The VEC feature enables you to adjust the system to select a type of environment.

1 Press to select the **VEC** feature.
➜ VEC led lights up.
2 Adjust the **JOG** to select the desired Virtual Environment Control setting : CINEMA, HALL or CONCERT.
➜ The selected environment is encircled.
➜ "CINEMA, HALL or CONCERT" will be displayed.

DYNAMIC BASS BOOST (DBB)

The DBB mode enhances the bass response.

1 Press to select the **DBB** feature.
➜ DBB led lights up.
2 Adjust the **JOG** to select the desired DBB level or to switch off DBB.
➜ The selected bass response is encircled.
➜ "DBB 1, DBB 2, DBB 3 or DBB OFF" will be displayed.

Note:
– If DBB 1/2/3 is selected, the corresponding number flag will be displayed.

INCREDIBLE SURROUND

Normal stereo sound is determined by the distance between the front speakers. When Incredible Surround is switched on, it magnifies the virtual distance between the front speakers for an incredibly wide, enveloping, stereo effect.

- Press **INCREDIBLE SURROUND** to switch on.
➜ The INCREDIBLE SURROUND led lights up.
➜ "INCR SURROUND" and the INC. SUR flag will be displayed.

To switch off Incredible Surround

- Press **INCREDIBLE SURROUND** again.
➜ The INCREDIBLE SURROUND led is switched off.
➜ "IS OFF" will be displayed.
➜ The INC. SUR flag disappear from the display.

OPTIMAL SOUND MIX

The Optimal Sound Mix features gives a various sound features of the set to create the most impressive listening experience at one touch of a button.

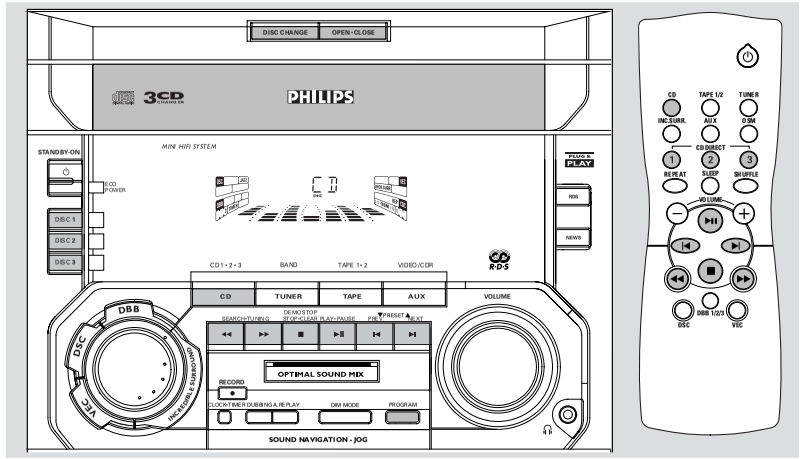
To switch on Optimal Sound Mix

- Press **OPTIMAL SOUND MIX**.
➜ The OPTIMAL SOUND MIX button lights up.
➜ "OPTIMAL SOUNDMIX" and (((OSM))) flag will be displayed.

To switch off Optimal Sound Mix

- Press **OPTIMAL SOUND MIX** again.
➜ The OPTIMAL SOUND MIX button light is switched off.
➜ "OSM OFF" will be displayed.
➜ (((OSM))) flag dissappear from the display.
- Press any of the sound button (**DBB**, **DSC**, **VEC**, **IS**).
➜ The sound feature message will be displayed.
➜ (((OSM))) flag dissappear from the display.

English



Warning!

1) This system is designed for conventional discs. Do not use any accessories such as disc stabilizer rings or disc treatment sheets, etc., which may damage the disc mechanism.

2) Do not load more than one disc into each tray.

3) When the CD changer is loaded with discs, do not turn over or shake the system. This may jam the changer.

You may load three discs in the CD changer for continuous playback without interruption.

Discs for playback

This system can play all digital audio disc, finalized digital audio CD-Recordable and finalized digital audio CD-Rewritable format discs.

Loading the CD Changer

1 Press **CD** to select CD mode.
2 Press **OPEN•CLOSE**.
➜ The CD changer tray slides out.
3 Load a disc with the printed side up in the right tray.
- You can load another disc in the left tray.
- To load the third disc, press the **DISC CHANGE** button.
➜ The CD changer tray will rotate until the empty tray is ready for loading.

4 Press **OPEN•CLOSE** to close the CD changer tray.
➜ The total number of tracks and the playing time of the selected disc appear on the display.

Note:
– To ensure good system performance, wait until the CD changer completely reads the disc(s) before proceeding.

Disc Direct Play

- You can play a disc directly by pressing the **DISC 1, DISC 2** or **DISC 3** button. The CD player will stop at the end of playback of the selected disc.
➜ A lit button indicates that a disc is loaded in the disc tray.
➜ A flashing button indicates that a disc is playing.

English

Playing a Disc

1 Press **PLAY ▶II** to start playback.
➜ The disc tray, track number and elapsed playing time of the current track appear on the display.
- To interrupt playback, press **PAUSE ▶II**.
➜ The playing time flashes.
- To resume playback, press **PLAY ▶II** again.

2 To stop playback, press ■.

Note:
– All the available discs will play once, then stop.

Disc Change

You can change the outer two discs while the third inner disc is stopped or is playing.

1 Press **DISC CHANGE**.
➜ The CD changer tray slides out.
2 Replace the discs in the left and right disc trays.
- If you wish to change the inner disc during playback, press **DISC CHANGE** again.
➜ "DISC CHANGE" will be displayed.
➜ The disc will stop playing.
➜ The CD changer tray will close to retrieve the inner disc and then open again with the inner disc accessible.

3 Press **OPEN•CLOSE** to close the CD changer tray.

Selecting a desired track

Selecting a desired track when playback is stopped

1 Press I◀ or ▶I until the desired track appears on the display.
2 Press **PLAY ▶II** to start playback.
➜ The selected track number and elapsed playing time appear on the display.

Selecting a desired track during playback

- Press I◀ or ▶I until the desired track appears on the display.
➜ The selected track number and elapsed playing time appear on the display.
- If you press I◀ once it will skip to the beginning of the current track and play the track again.

Note:
– Pressing I◀ during shuffling can only skip to the beginning of the current track.

Searching for a particular passage during playback

- Press and hold ◀◀ or ▶▶ until the desired passage is located.
➜ The volume will be reduced.
- Play returns to normal when ◀◀ or ▶▶ is released.

Programming Tracks

Programming tracks of a loaded disc is possible when playback is stopped. The display will indicate the total tracks stored in the programme. Up to 40 tracks can be stored in the memory in any order. When 40 tracks are stored and you attempt to store another track, the display will show "FULL".

1 Load the desired discs in the disc trays.
2 Press **PROGRAM** to start programming.
➜ The **PROG** flag starts flashing.
3 Press the **CD** (CD 1•2•3) or **DISC 1/2/3** button to select the disc.
4 Press I◀ or ▶I to select the desired track.
5 Press **PROGRAM** to store the track.
- Repeat steps ***3*** to ***5*** to store other discs and tracks.

6 Press ■ once to end programming.
➜ The total number of tracks programmed and total playing time appear on the display.

Notes:
– If the total playing time is more than "99:59" or if one of the programmed tracks has a number greater than 30, then "--:--" appears on the display instead of the total playing time.
– If the system is reading the discs, programming is not possible, "READING" will be displayed and followed by "DISC x". "x" is the current read disc number.
– During programming, if no button is pressed within 20 seconds, the system will exit programme mode automatically.
– "SELECT A DISC" will be displayed when programming an empty disc slot.

English

Reviewing the programme

Reviewing of the programme is possible only when playback is stopped.
- Press I◀ or ▶I repeatedly to review the programmed tracks.
- Press ■ to exit review mode.

Playing the programme

1 Press **PLAY ▶II** to start programme playback.
➜ "PLAY PROGRAM" will be displayed.
➜ The track number and elapsed playing time of the current track will appear on the display.
- If you press **REPEAT** during programme playback, the current track or all programmed tracks will be played repeatedly.
➜ "TRACK" or "PROGRAM" will be displayed.
➜ The **REP** and **PROG** flags appear on the display.

2 Press ■ to stop programme playback.

Notes:
– If you press any of the DISC DIRECT PLAY buttons, the system will play the selected disc and the stored programme will be ignored temporarily. The PROG display also will disappear temporarily from the display. It will reappear when playback of the selected disc ends.
– REPEAT DISC mode will be cancelled when programme playback begins.

Erasing the programme *(when playback is stopped)*

- Press ■.
➜ "PROGRAM CLEARED" will be displayed.

Note:
– The programme will be erased when the system is disconnected from the power supply or when the CD changer tray is opened.

Shuffle *(only on remote control)*

In shuffle mode, the system plays all the available discs and their tracks in random order. Shuffle may be used also when tracks are programmed.

To shuffle all the discs and tracks

1 Press **SHUFFLE**.
➜ "SHUFFLE" will be displayed.
➜ The **SHUF** flag and the track selected at random appear on the display.
- The discs and the tracks will be played in random order until you press ■.
- If you press **REPEAT** during shuffling, the current track or all available discs will be played repeatedly.
➜ "TRACK" or "ALL DISC" will be displayed.
➜ The **REP** and **SHUF** flags appear on the display.

2 Press **SHUFFLE** again to resume normal playback.
➜ The **SHUF** flag disappears from the display.

Note:
– REPEAT DISC mode will be cancelled when shuffle is selected.

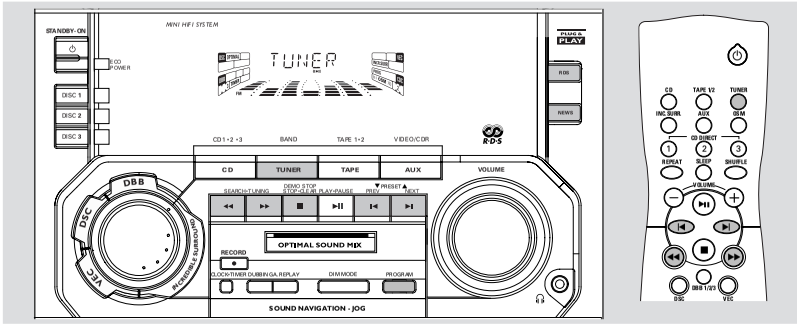
Repeat *(only on remote control)*

You can play the current track, a disc or all available discs repeatedly.

1 Press **REPEAT** on the remote control to select the various repeat modes.
➜ "TRACK", "DISC", "ALL DISC" or "OFF" will be displayed.
➜ The **REP** flag appears on the display.
- The selected track, selected disc or all available discs will now be played repeatedly until you press ■.

2 Press **REPEAT** until the "OFF" mode is displayed to resume normal playback.
➜ The **REP** flag disappears from the display.

Notes:
– REPEAT DISC mode is not available during programme play or shuffle mode.
– You can also repeat shuffling a programme.
i) "TRACK" or "PROGRAM" will be displayed.
ii) The REP, PROG, and SHUF flags appear on the display.



Note:
– For 'PLUG & PLAY' feature, please refer to page 12.

Tuning to radio stations

1 Press **TUNER** (BAND) to select TUNER mode.
➜ "TUNER" will be displayed.
A few seconds later, the current radio frequency will be displayed.
2 Press **TUNER** (BAND) again to select the desired waveband : FM, MW or LW.
3 Press ◀◀ or ▶▶ for more than one second, then release.
➜ The display will show "SEARCH" until a radio station with sufficient signal strength is found.

- Repeat this procedure until the desired station is reached.
- To tune to a weak station, briefly press ◀◀ or ▶▶ repeatedly until the display shows the desired frequency and/or when the best reception has been obtained.

Storing Preset Stations

You can store up to 40 radio stations in the memory. When a preset radio station is selected, the preset number appears next to the frequency on the display.

Automatic programming

1 Press **TUNER** (BAND).
2 Press **PROGRAM** for more than one second.
➜ The **PROG** flag starts flashing and "AUTO" will be displayed.
➜ The system will start searching for all radio stations with RDS and then followed by radio stations on FM, MW and LW band respectively.
➜ All available stations will be stored automatically. The frequency and preset number will be displayed briefly.
➜ The system will stop searching when all the available radio stations are stored or when the memory for 40 preset radio stations is used.
➜ The system will remain tuned to the last stored preset radio station.

Notes:
– You can cancel the automatic programming by pressing PROGRAM or ■ (on the system only).
– If you want to reserve a section of preset numbers, for example preset numbers 1 to 9, select preset 10 before starting automatic programming, only the preset numbers 10 to 40 will be programmed.

Manual programming

1 Press **TUNER** (BAND).
2 Press **TUNER** (BAND) again to select the desired waveband : FM, MW or LW.
3 Press **PROGRAM** for less than one second.
➜ The **PROG** flag starts flashing.
➜ The next available preset number will be displayed for selection.
4 Press ◀◀ or ▶▶ to tune to the desired frequency.

- If you wish to store the radio station to another preset number, press ▼ or ▲ to select the desired preset number.

5 Press **PROGRAM** again.
➜ The **PROG** flag disappears and the radio station will be stored.

- Repeat ***steps 3 – 5*** to store other preset radio stations.

Notes:
– When 40 radio stations are stored and you attempt to store another radio station, the display will show "FULL". If you want to change an existing preset number, repeat steps 3 – 5.
– You can cancel manual programming by pressing ■ (on the system only).
– During programming, if no button is pressed within 20 seconds, the system will exit programme mode automatically.

Tuning to Preset Radio Stations

- Press ▼ or ▲ to select the desired preset number.
➜ The preset number, radio frequency, and waveband appear on the display.

Receiving RDS Radio Station

RDS (Radio Data System) is a broadcasting service that allows FM stations to send additional information along with the regular FM radio signal. This additional information can contain:

- **STATION NAME**: The radio station name is displayed.
- **PROGRAM TYPE**: The following program types exist and can be received by your tuner: News, Affairs, Info, Sport, Educate, Drama, Culture, Science, Varied, Pop M, Rock M, M.O.R. (middle of the road music), Light M, Classics, Other M, No type.
- **RADIO TEXT (RT)**: text messages appear in the display.

When you have tuned to a RDS station, the RDS logo (RDS) and the radio station name will appear on the display:

- The display normally shows the radio station name if available.
By repeatedly pressing **RDS** button you can change the type of display information:

➜ The display shows in turn:
STATION NAME → PROGRAM TYPE → RADIO TEXT → TUNED FREQUENCY → STATION NAME ...

Note:
– When you press the RDS button and the display shows "NO RDS", it indicates that either the tuned station is not transmitting RDS signal or it is a non RDS station.

English

RDS Clock
Some RDS station may be transmitting a real clock time at an interval of every minute.

Setting the time with RDS clock

1 Press **CLOCK•TIMER**.
➜ "--:--" or current time appears on the display.
2 Press **CLOCK•TIMER** once more to enter clock setting mode.
➜ "00:00" or current time starts flashing.
3 Press **RDS**.
➜ The message "SEARCH RDS TIME" will be displayed.
➜ If the current station is not receiving any RDS information, "NO RDS TIME" will be displayed.
➜ When the RDS clock is read, "RDS TIME" will be displayed. The current clock time is displayed for 2 seconds and will be stored automatically.
➜ If within 90 seconds, the RDS time is not detected, "NO RDS TIME" will be displayed.

Note:
– Some RDS station may be transmitting a real time clock at a minute interval. The accuracy of the transmitted time depends on the transmitting RDS station.

News *(only available in Radio Station with RDS)*

You can activate NEWS function in Standby or any source mode except Tuner mode. Once the News PTY (program type) is detected in a RDS station, it will switch to TUNER mode automatically.

To start NEWS function

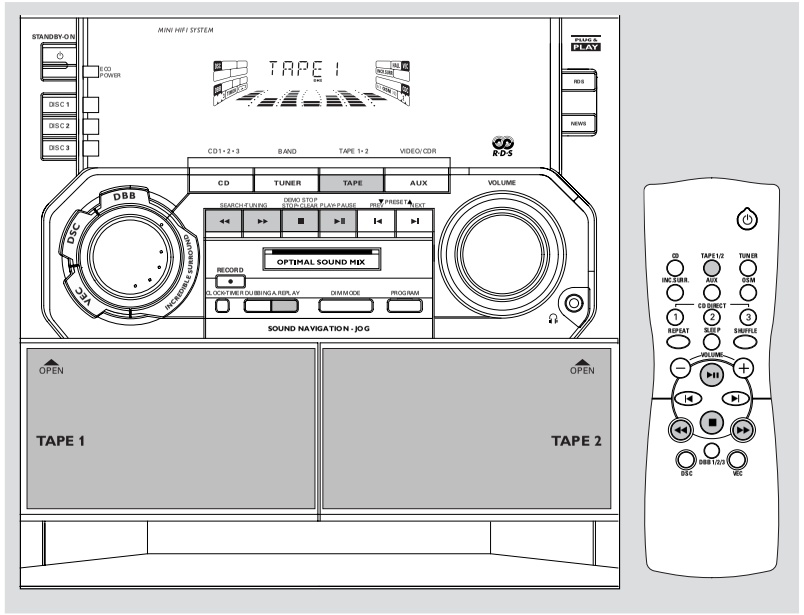
1 Press **NEWS**.
- The **NEWS** and "NEWS" will be displayed.
- It will scan stations stored in the first 5 preset and wait for the News Program Type data to be available in any of these RDS stations. During the search :
➜ The current source activity will remain uninterrupted.
➜ If no RDS station is found in the first 5 presets, the NEWS function will be switched off. The display will show "NO RDS NEWS" and **NEWS** will disappear from the display.
- When NEWS transmission is detected, the system will switch to Tuner mode.
➜ The **NEWS** starts flashing.

To cancel NEWS function

- Press **NEWS** again.
➜ The **NEWS** disappears and "NEWS OFF" will be displayed.

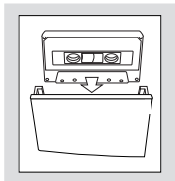
Notes:
– If you are listening to a non RDS TUNER radio station and should you decide to hear NEWS, first select other source (e.g. CD, TAPE or AUX), then press NEWS.
– Before using the NEWS feature, ensure that the first 5 presets are RDS stations.
– The NEWS works only once for each activation.
– During News bulletin, you can press any available source or Tuner function keys to cancel NEWS function and execute the relevant source mode.
– If set is switched to Tuner source, the NEWS function will be cancelled, "NEWS OFF" will be displayed immediately after the "TUNER" message.

English



Loading a tape

1 Press **OPEN**.
2 The tape deck door opens.
3 Load the tape with the open side downward and the full spool to the left.



4 Close the tape deck door.

Auto Replay

- Press **A. REPLAY** to select either continuous AUTO REPLAY or ONCE during tape playback.
➜ "AUTO REPLAY "(⇆) or "ONCE "(→) will be displayed.

Notes:
– This feature is available during tape playback only.
– When "AUTO REPLAY" is selected, the tape will rewind automatically at the end of playback for the selected side. Then it will start playing again. It will replay up to a maximum of 20 times until you press ■.
– When "ONCE" is selected, the tape will play the selected side once and then stop.

Tape Playback

1 Press **TAPE** (TAPE 1•2) to select TAPE mode.
➜ "TAPE 1" or "TAPE 2" will be displayed and followed by "T 1 >>> " or "T2 >>>".
2 Load the tape into the selected tape deck.
3 Press **PLAY ▶II** to start playback.
➜ "T 1" or "T2" with ">" scrolling right will be displayed.
- Press **A.REPLAY** to select the different type of playback mode (see Auto Replay)
4 Press ■ to end playback.
➜ "T 1" or "T2" with ">>>" will be displayed.

Tape

Rewind/Fast Forward

When playback is stopped

1 You can rewind or fast forward the tape by pressing ◀◀ or ▶▶ respectively.
➜ If rewinding, "T 1 < or T2 <" with "<" scrolling left will be displayed.
➜ If fast forwarding, "T 1 > or T2 >" with ">" scrolling right will be displayed.
➜ The tape will stop automatically at the end of rewinding or fast forwarding.

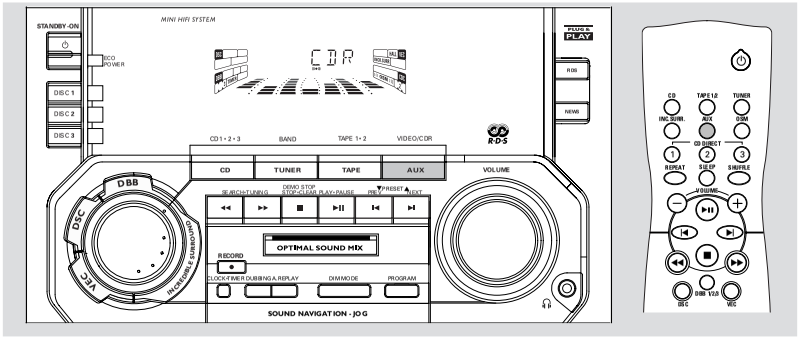
2 Press ■ to stop rewinding or fast forwarding.

During playback

- Press and hold ◀◀ or ▶▶ until the desired passage is located.
➜ "T 1 or T2" with "<< or >>'" scrolling left or right will be displayed depending on which button is pressed.
➜ During searching, the sound is reduced to a low volume.
➜ When you release ◀◀ or ▶▶, the tape continues playing.

Notes:
– During rewinding or fast forwarding of a tape, it is also possible to select another source (e.g. CD, TUNER, or AUX).
– Before playing a tape, check and tighten slack tape with a pencil. Slack tape may get jammed or may burst in the mechanism.
– C-120 tape is extremely thin and is easily deformed or damaged. It is not recommended for use in this system.
– Store the tapes at room temperature and do not put them too close to a magnetic field (for example, a transformer, TV, or speaker).

Aux



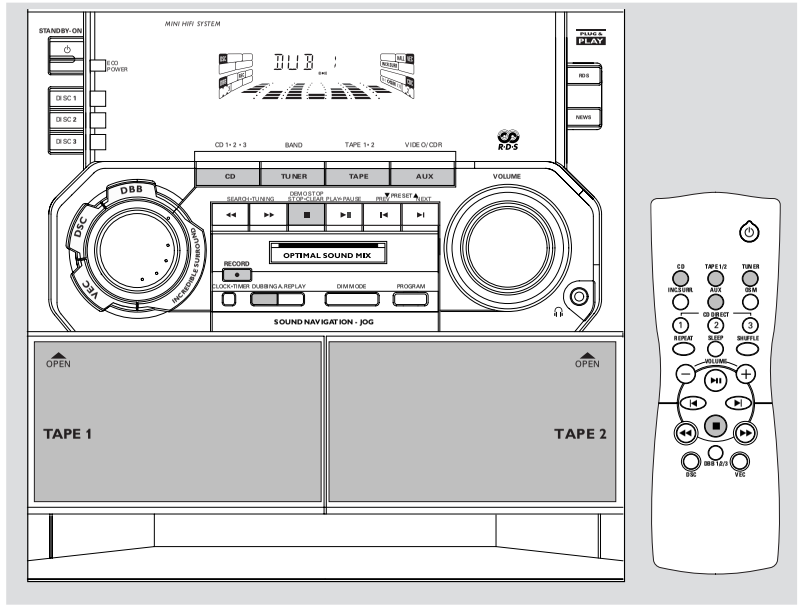
Selecting External Equipment

If you have connected the audio out terminals of the external equipment (TV, VCR, Laser Disc player, DVD player or CD Recorder) to the AUX/CDR IN terminals, you can hear the enhanced sound from the system.

- Press **AUX** (VIDEO/CDR) to select either AUX or CDR.
➜ "AUX" or "CDR" will be displayed.

Note:
– All the sound control features (e.g. DSC, VEC, DBB, etc.) are available for selection.

Recording



Notes:
– For recording, use only tape of IEC type I (normal tape).
– The tape is secured at both ends with leader tape. At the beginning and end of tape, nothing will be recorded for six to seven seconds.
– The recording level is set automatically, regardless of the position of VOLUME, DBB, Incredible Surround, DSC, VEC or Optimal Sound Mix.
– To prevent accidental recording, break out the tab on the left shoulder of the tape side you want to protect.
– If "CHECK TAPE" is displayed, the protection tab has been broken. Put a piece of clear adhesive tape over the opening.

One Touch Recording

- For One Touch Recording, as soon as you press RECORD, the current source (CD, TUNER or AUX) will be recorded on tape deck 2.

1 Load a blank tape in tape deck 2.
2 Press **RECORD** to start recording.
➜ The **REC** starts flashing.
3 Press ■ to stop recording.

Note:
– When you press RECORD while in TAPE mode, "SELECT SOURCE" will be displayed. One Touch Recording is not possible in TAPE mode.

English

CD Synchro Start Recording

1 Load a blank tape into tape deck 2 and a disc into a disc tray.
2 Press **CD** to select CD mode.
● You can program the tracks in the order you want them to be recorded (see Programming Tracks). If not, select the disc by pressing **CD** (CD 1•2•3) and the tracks are recorded according to the order on the selected disc.
3 Press **RECORD** to start recording.
➜ The **REC** starts flashing.
● Disc will start playback automatically.
4 Press ■ to stop recording.

Dubbing tapes *(from tape deck 1 to tape deck 2)*

1 Press **TAPE** (TAPE 1•2) to select tape deck 2.
2 Load the prerecorded tape into tape deck 1 and a blank tape into tape deck 2 with full spool to the left.
3 Press **DUBBING**.
➜ "DUB" with ">" scrolling right will be displayed.
● Dubbing will start immediately.
➜ The **REC** starts flashing.
4 Press ■ to stop dubbing.

Notes:
– At the end of side A, flip the tapes to side B and repeat the procedure.
– Dubbing of tapes is only possible from tape deck 1 to tape deck 2.
– To ensure good dubbing, use tapes of the same length.
– You can switch to other source while dubbing.

Recording from other sources *(only on tape deck 2)*

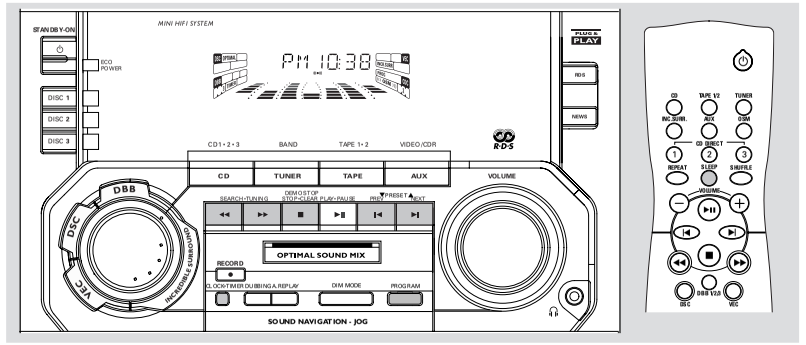
1 Load a blank tape into tape deck 2 with the open side downward.
2 Press **CD**, **TUNER** or **AUX**.
● Start playback of the selected source.
3 Press **RECORD** to start recording.
➜ The **REC** starts flashing.
4 Press ■ to stop recording.

Notes:
– During recording, it is not possible to listen to another source.

Digital Recording via Digital Out

For CD digital recording, please refer to the Instructions Manual of the CD Recorder, digital audio equipment, etc.

English



View Clock

You can view the clock (if it is set) if the system is in Standby mode or when any sound source is selected (CD,TUNER, etc.). The clock will be displayed for about seven seconds.

● Press **CLOCK•TIMER** briefly *(on the system only)*.
➜ "PM 10:38 or 22:38" (the current time) will be displayed depending on whether you have selected 12- or 24-hour mode.
➜ "--:--" will be displayed if the clock is not set.

Clock Setting

The clock can be set in either 12- or 24-hour mode, e.g. "AM 12:00" or "00:00". Before setting the clock, you must be in the View Clock mode.

1 Press **CLOCK•TIMER** to select clock mode.
2 Press **PROGRAM** to select 12- and 24- hour mode.
➜ If 12-hour mode is selected, "AM 12:00" starts flashing.
➜ If 24-hour mode is selected, "00:00" starts flashing.
3 Set the hour with ◀◀ or ▶▶ on the system.
4 Set the minute with ⏮ or ⏭ on the system.
5 Press **CLOCK•TIMER** again to store the setting.
➜ The clock starts.

● To exit without storing the setting, press ■ on the system.

Notes:
– During clock setting, if no button is pressed within 90 seconds, the system will exit clock setting mode automatically.
– When a power interruption occurs, the clock setting is erased.

Timer Setting

ou ● The system can switch on to CD , TUNER or TAPE mode automatically at a preset time. It can serve as an alarm to wake you up.
● Before setting the timer, make sure the clock is set correctly.
● The timer will always be switched on once it is set.
● **The volume of the timer will increase from the minimum level to the most recently selected volume level.**

1 Press and hold **CLOCK•TIMER** for more than ***2 seconds*** to select timer mode.
➜ "AM 12:00" or "00:00" or the last timer setting starts flashing depending on whether y have selected 12- or 24-hour mode.
➜ The **TIMER** starts flashing.
➜ The selected source is lit while other available sources are flashing.
2 Press **CD** , **TUNER** or **TAPE** to select the desired source.
● Before selecting CD or TAPE, make sure a disc or tape is loaded in the CD tray or tape deck 2.

3 Press ◀◀ or ▶▶ on the system to set the hour for the timer to start.
4 Press ⏮ or ⏭ on the system to set the minute for the timer to start.
5 Press **CLOCK•TIMER** to store the start time.
➜ The timer is now set.
➜ The **TIMER** remains on the display.
● At the preset time, the timer will be activated.
➜ The selected source will be played.

Notes:
– During timer setting, if no button is pressed within 90 seconds, the system will exit timer setting mode automatically.
– If the source selected is TUNER, the last tuned frequency will be switched on.
– If the source selected is CD, playback will begin with the first track of the selected disc or programme. If the disc trays are empty, the TUNER will be selected instead.
– The timer will not activate if a recording is in progress.

To switch off the TIMER
1 Press and hold **CLOCK•TIMER** for more than ***2 seconds***.
2 Press ■ on the system to cancel the timer.
➜ The timer is now switched off.
➜ The display will show "OFF" and the **TIMER** disappears.

To start the TIMER again *(for the same preset time and source)*
1 Press and hold **CLOCK•TIMER** for more than ***2 seconds***.
2 Press **CLOCK•TIMER** again to store the start time.
➜ The timer is now on.
➜ The **TIMER** appears on the display.

Sleep Timer *(only on remote control)*

This feature allows you to select a length of time after which the system will switch to the standby mode automatically.

1 Press **SLEEP** on the remote control repeatedly to select a period of time.
➜ The selections are as follows (time in minutes): 15 ➜ 30 ➜ 45 ➜ 60 ➜ OFF ➜ 15 ...
➜ "SLEEP xx" or "OFF" will be displayed. "xx" is the time in minutes.
2 When you reach the desired length of time, stop pressing the **SLEEP** button.
➜ The **SLEEP** display lights up.
➜ The Sleep Timer is now set. Before the system switches to standby mode, a countdown of 10 seconds will be displayed.
"SLEEP 10" ➜ "SLEEP 9".... ➜ "SLEEP 1" ➜ "SLEEP"

While SLEEP mode is activated
● Press **SLEEP** once to view the remaining length of time.
● Press **SLEEP** twice to change the pre-selected period of time.
➜ The display will show the remaining time followed by the sequence of sleep timer options.

To switch off the Sleep Timer
● Press **SLEEP** repeatedly until "OFF" is displayed, or press the **STANDBY-ON** button.

Cleaning the Cabinet
● Use a soft cloth slightly moistened with a mild detergent solution. Do not use a solution containing alcohol, spirits, ammonia or abrasives.

Cleaning Discs
● When a disc becomes dirty, clean it with a cleaning cloth. Wipe the disc from the center out.
● Do not use solvents such as benzine, thinner, commercially available cleaners, or antistatic spray intended for analog records.

Cleaning the Disc lens
● After prolonged use, dirt or dust may accumulate at the disc lens. To ensure good playback quality, clean the disc lens with Philips CD Lens Cleaner or any commercially available cleaner. Follow the instructions supplied with cleaner.

Cleaning the Heads and the Tape Paths
● To ensure good recording and playback quality, clean the heads, the capstan(s), and pressure roller(s) after every 50 hours of tape operation.
● Use a cotton swab slightly moistened with cleaning fluid or alcohol.
● You can also clean the heads by playing a cleaning tape once.

Demagnetizing the heads
● Use a demagnetizing tape available at your dealer.

Troubleshooting

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

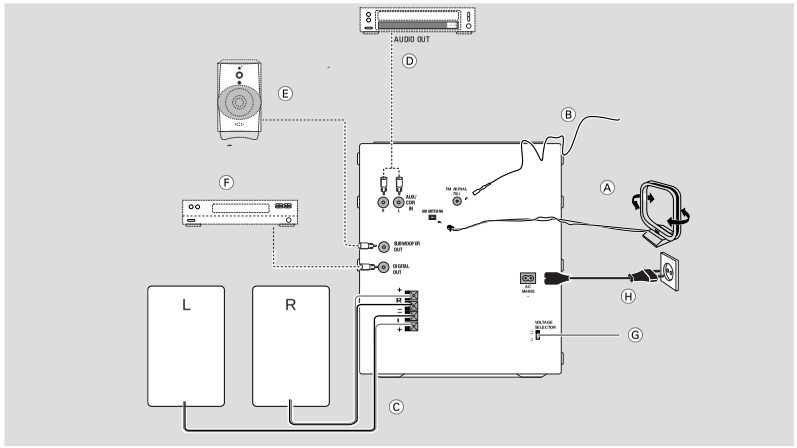
If a fault occurs, first check the points listed below before taking the player for repair. If you are unable to remedy a problem by following these hints, consult your dealer or service centre.

Symptom	Remedy
"NO DISC" **is displayed.**	– If the disc is inserted upside down. – Moisture condensation at the lens. – There is no disc in the CD tray. – The disc is dirty, badly scratched or warped. – The disc lens is dirty or dusty, refer to section under Maintenance.
"DISC NOT FINALIZED" **is displayed.**	– The CD-RW or CD-R disc is not properly recorded for use with a standard CD player. – The disc is badly scratched or dirty.
Poor radio reception.	– The signal is too weak, adjust the antenna or connect an external antenna for better reception. – The TV or VCR is too close to the stereo system.

Troubleshooting

Recording or playback cannot be made or there is a decrease in audio level.	– Dirty tape heads, capstans or pressure rollers, refer to section under Maintenance. – Magnetic build-up in the record/playback head, use demagnetizing tape.
Tape deck door cannot open.	– Reconnect the AC power plug and switch on the system again.
System does not react when any button is pressed.	– Press STANDBY-ON to switch the system off. Remove the AC power plug from the wall outlet, then reconnect the power plug and switch on the system again.
No or poor sound.	– Adjust the volume. – Disconnect the headphones. – Check that the speakers are connected correctly. – Check if the stripped speaker wire is clamped.
Reversed left and right sound.	– Check the speaker connections and location.
Lack of bass sound or apparently imprecise physical location of musical instruments.	– Check the speaker connection for proper phasing, colored/black wires to colored/ black terminals.
Remote control has no effect on the system.	– Select the source (CD, TUNER, etc.) before pressing the function button (▶, ⏮, ⏭, etc.). – Reduce the distance to the system. – Insert the batteries with their polarities (+/– signs) as indicated. – Replace the batteries.
Timer is not working.	– Set the clock. – Press CLOCK•TIMER to switch on the timer. – If recording is in progress, stop recording.
Clock setting is erased.	– Reset the clock.
System displays features automatically;buttons flash continuously.	– Press and hold ■ (on the system) for five seconds to switch off the demonstration.
All lighted buttons are not lit.	– Press DIM until DIM OFF display mode is shown.

Additional Features For FW-C380/21
Preparations



Rear Connections

Ⓖ Adjusting the Operating Voltage
(for /21 version only)
Before connecting the AC power cord to the wall outlet, make sure that the voltage selector at the rear of the system is set to the local power line voltage. If not, reset the selector before connecting to the wall outlet.

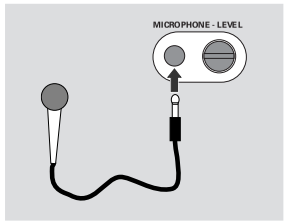
Ⓗ AC Power Supply
After all other connections have been made, connect the AC power cord to the system and to the wall outlet.

Karaoke

Microphone Mixing
(for /21 version only)

1 Set the **MIC LEVEL** control to the minimum level to prevent acoustic feedback (e.g. a loud howling sound) before you connect the microphone.
2 Connect a microphone to the **MICROPHONE** socket.
3 Press **CD**, **TUNER**, **TAPE** or **AUX**.
4 Play the selected source.
5 Adjust the volume level with **VOLUME** control.
6 Adjust the **MIC LEVEL** control to the mixing level that you want.
7 Start singing or talking through the microphone.

Note:
– Keep the mic away from the speakers to prevent howling.



Additional Features For FW-C380/21
Tuner

Changing the MW tuning grid
(for /21 version only)

The frequency step can be changed if necessary. In North and South America, the frequency step between adjacent channels in the MW band is 10 kHz. In other parts of the world, it is 9 kHz. The frequency step preset in the factory is 9 KHz.

For MW Band
To change from 9 kHz to 10 kHz or vice versa

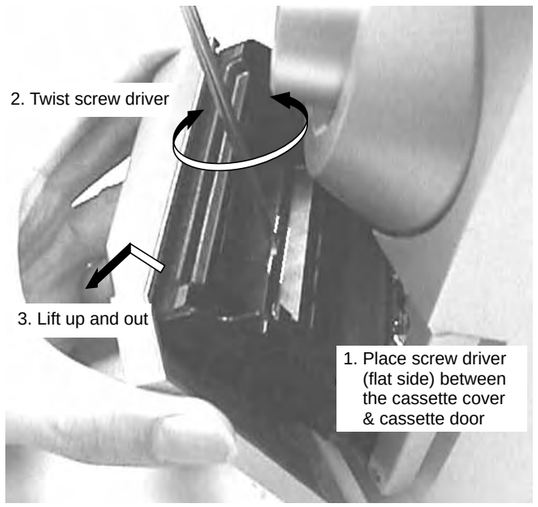
Changing of tuning grid will erase all previously stored preset stations.

1 Disconnect the system from the AC power supply *(pull out the AC power cord)*.
2 Press and hold **TUNER** and **TUNING ▶▶** while reconnecting the system to the AC power supply.
➜ Display will show "GRID 10" or "GRID 9".

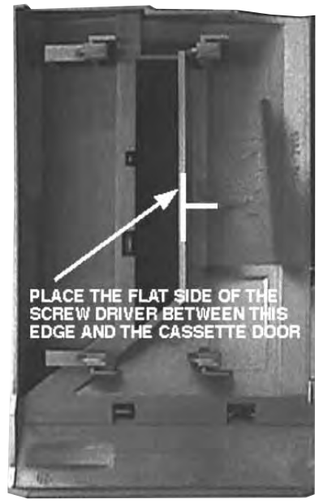
Notes:
– GRID 9 indicates that the tuning grid is in step of 9 kHz in MW band. GRID 10 indicates that the tuning grid is in step of 10 kHz in MW band.
– FM tuning grid will also be changed from 50 kHz to 100 kHz or vice versa.

DISMANTLING INSTRUCTIONS

Dismantling of the Cassette Cover



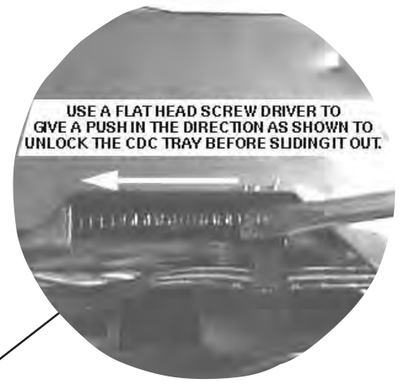
Remove Cassette Cover



Cassette Cover

Dismantling of the CDC Module and Front Panel

1) Loosen 4 screws to remove the Cover Top (pos 255) of the set.
2) Loosen 2 screws to remove the Panel Left (pos 253) and 2 screws to remove the Panel Right (pos 254) of the set.
3) Slide out the CDC Tray as shown in the diagram below with the help of a flat head screw driver.

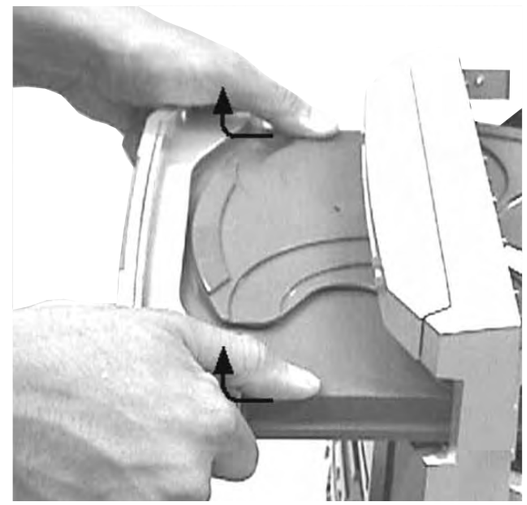


Sliding Out The CDC Tray

3-1

Dismantling of the CDC Module and Front Panel

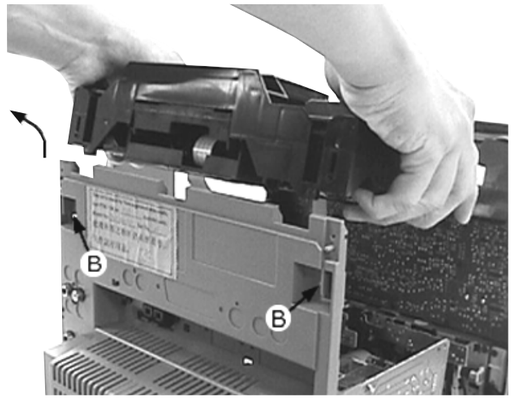
4) Remove the Cover Tray CDC (pos 106) as indicated.



Remove Cover Tray CDC

5) Loosen 2 screws A and 2 screws B to remove the CDC Module (pos 1105) as indicated.
6) Remove 2 screws (pos 226) at the bottom to separate the Front Panel Assembly from the Plate Bottom (pos 265).

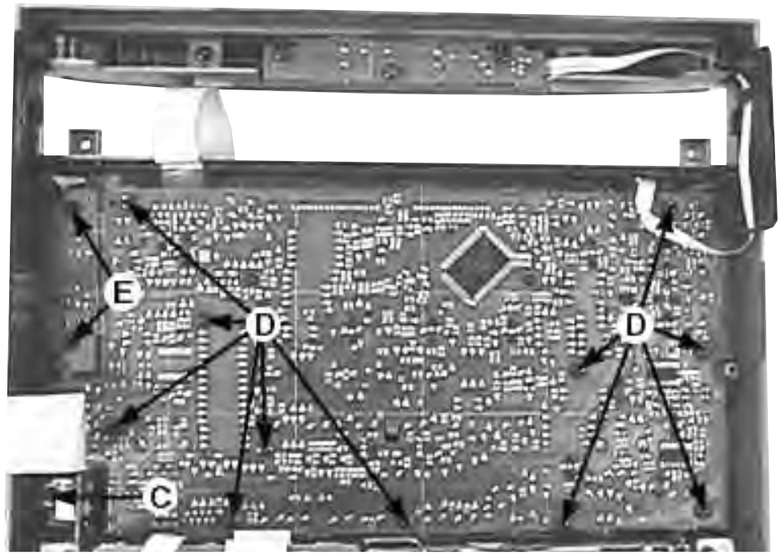
Front View CDC



Remove CDC Module

Dismantling of the Front Board

1) Remove 1 screw C as indicated to loosen the Headphone Board (pos 1101-C).
2) For set without Karaoke :
   Remove 11 screws D and 2 screws E as indicated to loosen the Front Board (pos 1101-A).
   For set with Karaoke :
   Remove 11 screws D as indicated to loosen the Front Board (pos 1101-A) and 2 screws E as indicated to loosen the Karaoke Board (pos 1101-D).

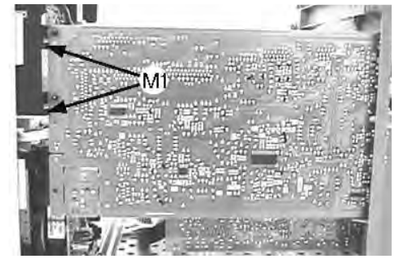


Dismantling of the ETF Tape Module

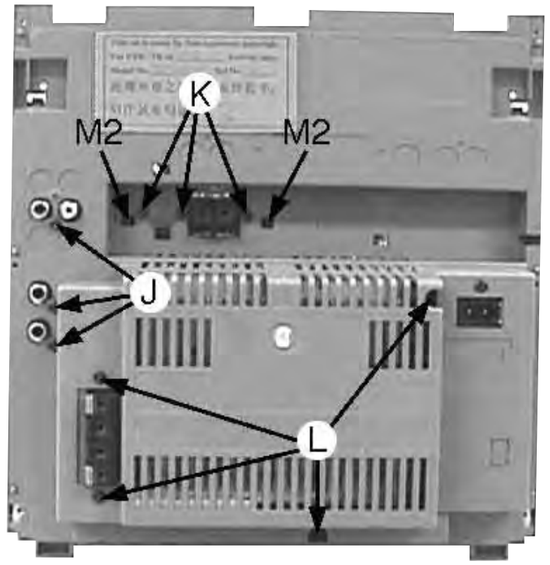
1) Remove 6 screws G as indicated to loosen the ETF Tape Module (pos 1104).

Dismantling of Rear Portion

1) Remove 3 screws J and uncatch M1 as indicated to loosen the AF Board (pos 1102).
2) Remove 3 screws K and uncatch M2 as indicated to loosen the Tuner Board (pos 1103).
3) Remove 4 screws L as indicated to loosen the Panel Rear (pos 256).



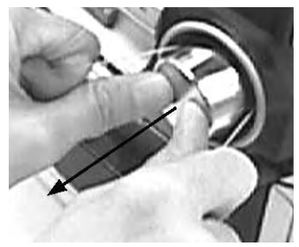
Remove AF Board



Repair Hints

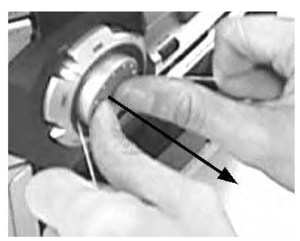
1) The Knob Volume (pos 139) can be remove by inserting a strong string into the slot and pull it out in the direction as indicated. See picture 1.

Picture 1



2) The Knob Rotary (pos 138) can be remove by inserting a strong string into the slot and pull it out in the direction as indicated. See picture 2.

Picture 2



3-3

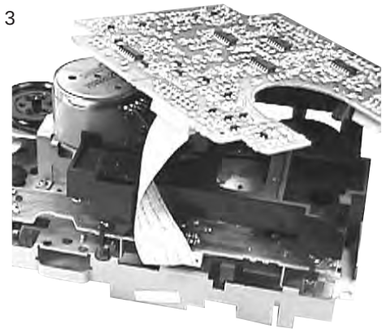
Repair Hints

3) During repair it is possible to disconnect the Tuner board and CDC Module completely unless the fault is suspected to be in that area. This will not affect the performance of the rest of the set.

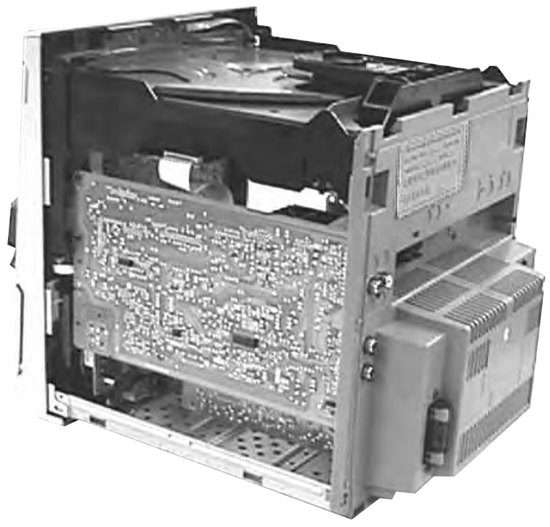
4) Due to the short flex cable wires in the ETF Module, the pc board should be disconnected and reconnected on the reverse side of the tape mechanism to keep it electrically connected during repair. See picture 3.

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

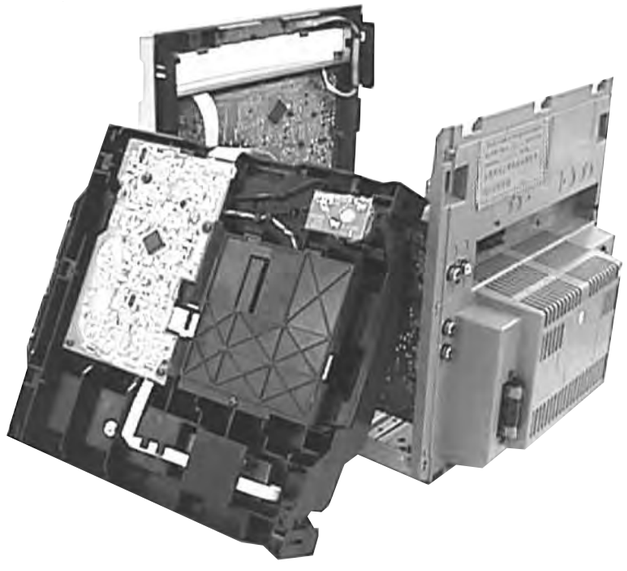
Picture 3



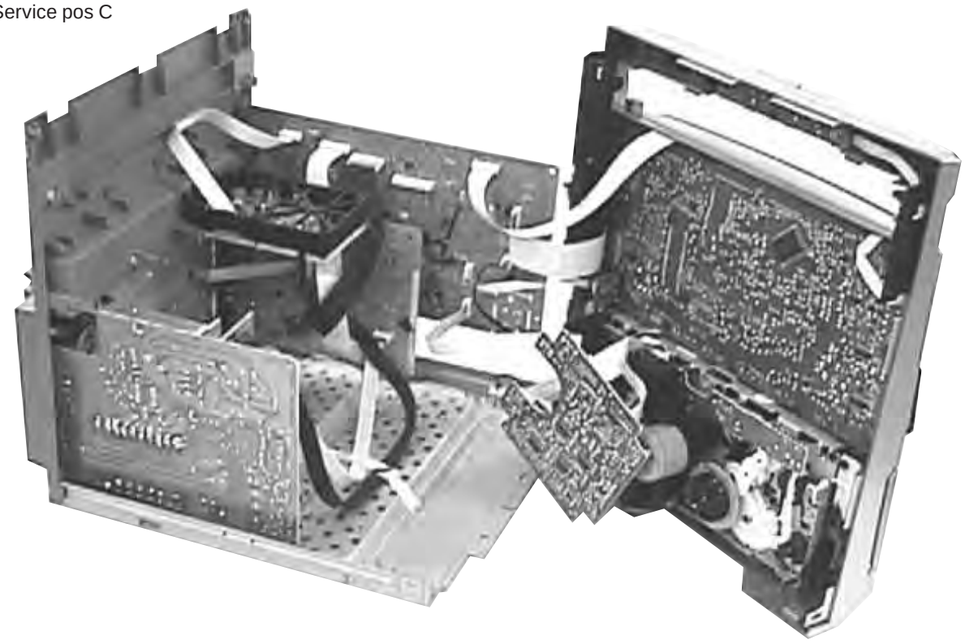
Service pos A



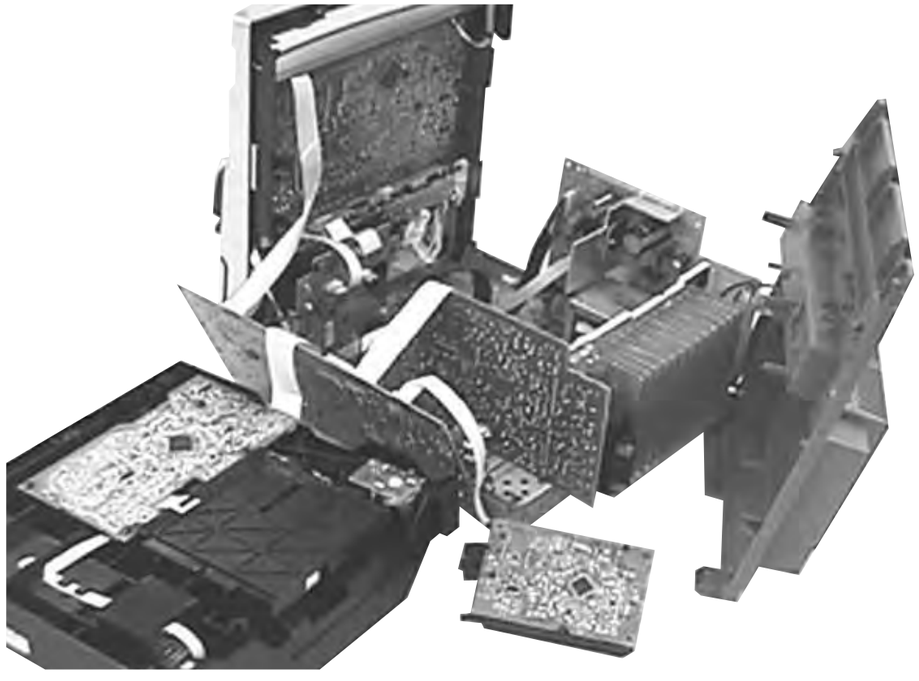
Service pos B



Service pos C

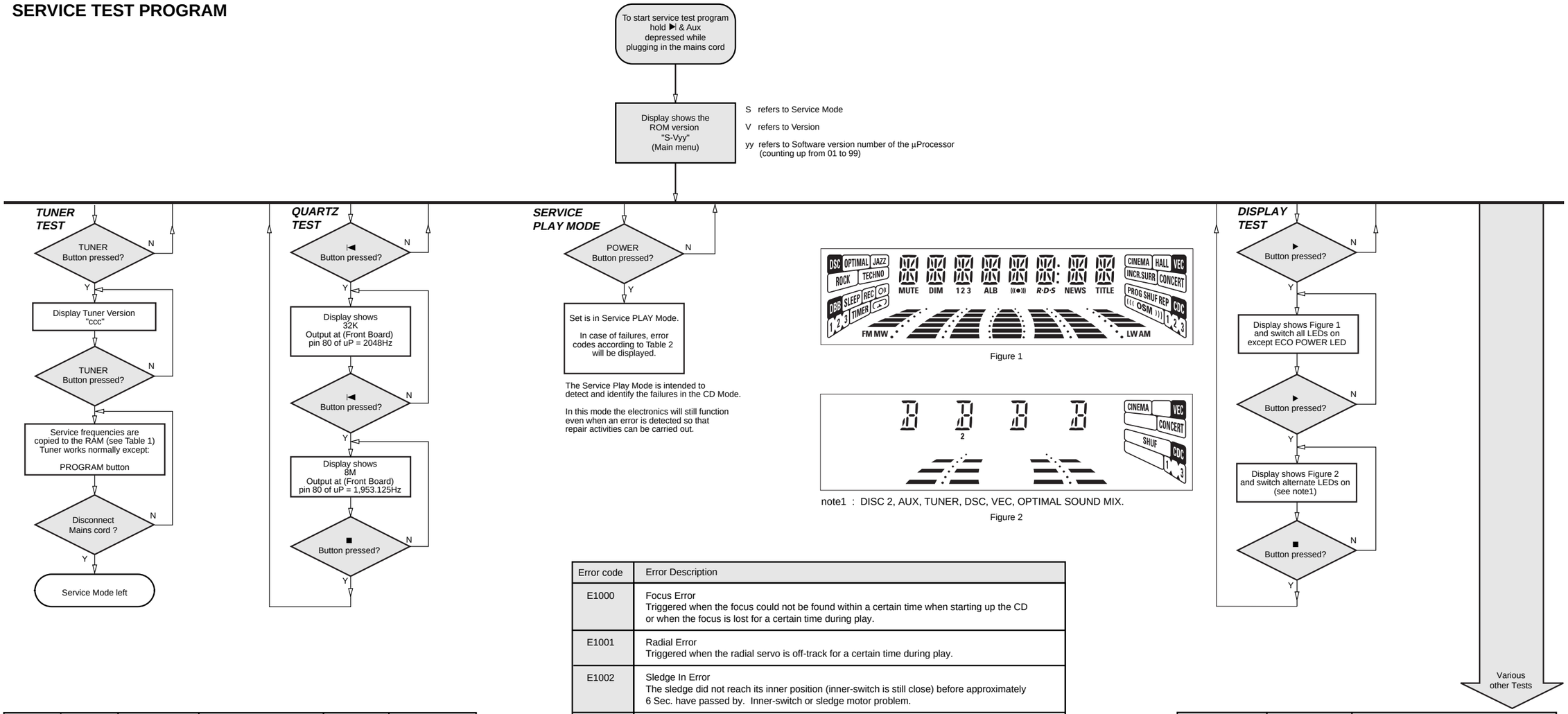


Service pos D



3-4

SERVICE TEST PROGRAM



The Service Play Mode is intended to detect and identify the failures in the CD Mode.

In this mode the electronics will still function even when an error is detected so that repair activities can be carried out.

Figure 1

note1 : DISC 2, AUX, TUNER, DSC, VEC, OPTIMAL SOUND MIX.

Figure 2

PRESET	Europe "EUR"	East Eur. "EAS"	East Eur. Extended-band "EAS"	USA "USA"	Oversea "OSE"
1	87.5MHz	87.5MHz	65.81MHz	87.5MHz	87.5MHz
2	108MHz	108MHz	108MHz	108MHz	108MHz
3	531kHz	531kHz	74MHz	530kHz	531/530kHz*
4	1602kHz	1602kHz	87.5MHz	1700kHz	1602/1700kHz*
5	558kHz	558kHz	531kHz	560kHz	558/560kHz*
6	1494kHz	1494kHz	1602kHz	1500kHz	1494/1500kHz*
7	153kHz	87.5MHz	558kHz	98MHz	87.5/98MHz*
8	279kHz	87.5MHz	1494kHz	87.5MHz	87.5MHz
9	198kHz	87.5MHz	98MHz	87.5MHz	87.5MHz
10	98MHz	87.5MHz	70.01MHz	87.5MHz	87.5MHz
11	87.5MHz	98MHz	65.81MHz	87.5MHz	98/87.5MHz*

Table 1

Note: * Depending on the selected grid frequency (9 or 10kHz)
By holding the TUNER and ►► buttons depressed while switching on the Mains supply, one of the undermentioned features will be activated:
- the tuning grid frequency is toggled between 9kHz and 10kHz for the Oversea (/21) version.
- the extended FM1 (65.81MHz - 74MHz) is toggled on and off for East Eur. (/34) version.

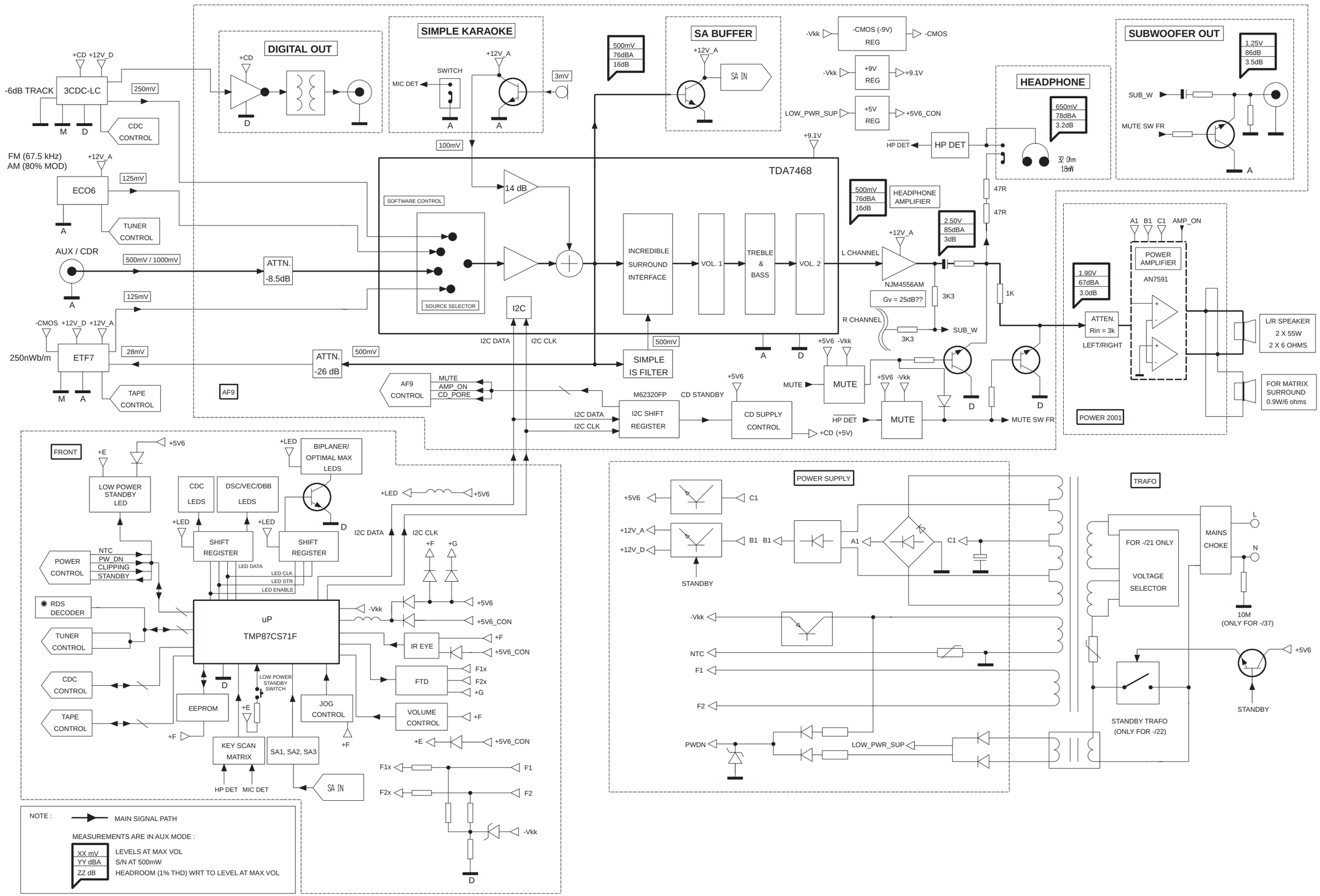
Error code	Error Description
E1000	Focus Error Triggered when the focus could not be found within a certain time when starting up the CD or when the focus is lost for a certain time during play.
E1001	Radial Error Triggered when the radial servo is off-track for a certain time during play.
E1002	Sledge In Error The sledge did not reach its inner position (inner-switch is still close) before approximately 6 Sec. have passed by. Inner-switch or sledge motor problem.
E1003	Sledge Out Error The sledge did not come out of its inner position (inner-switch is still open) before approximately 250 mSec. have passed by. Inner-switch or sledge motor problem.
E1005	Jump-offtrack error Triggered in normal play when the jump destination could not be found within a certain time. When this error occurred, software will try to recover by initiating the jump command again. If it is recoverable, the disc will continue to play.
E1006	Subcode Error Triggered when a new subcode was missing for a certain time during play.
E1007	PLL Error The Phase Lock Loop could not lock within a certain time.
E1008	Turntable Motor Error Generated when the CD could not reached 75% of speed during startup within a certain time. Discmotor problem.
E1020	Focus Search Error The focus point has not been found within a certain time.
E1070	The carousel switch is not open within certain time. This can happen when either the switch is defective and closed all the time, or when the carousel is blocked when located exactly at a disc position.
E1071	The carousel position switch did not close within a certain time. This can happen when the switch is defective and never closes electrically, or when the carousel is blocked in between two disc positions. The time-out is approximately 5 Sec.
E1079	The drawer could not enter the inside position is opening again. This can be caused because the drawer is blocked by something and cannot go fully inside, or the drawer switch is defective and does not close.

Table 2

TEST	***Activated with***	***ACTION***
EEPROM TEST	►► ■ to Exit	A test pattern will be sent to the EEPROM. "PASS" is displayed if the uProcessor read back the test pattern correctly, otherwise "ERROR" will be displayed.
EEPROM FORMAT TEST	◄◄	Load default data. Display shows "NEW" for 1 second. ***Caution!*** ***All presets from the customer will be lost!!***
ROTARY ENCODER TEST	Rotary Volume Knob or Jog Shuttle Knob	Display shows value for 2 seconds. Values increases or decreases in steps of 1 until 0 (Min.) or 40 (Max.) is reached.
LEAVE SERVICE TESTPROGRAM	Disconnect mains cord	

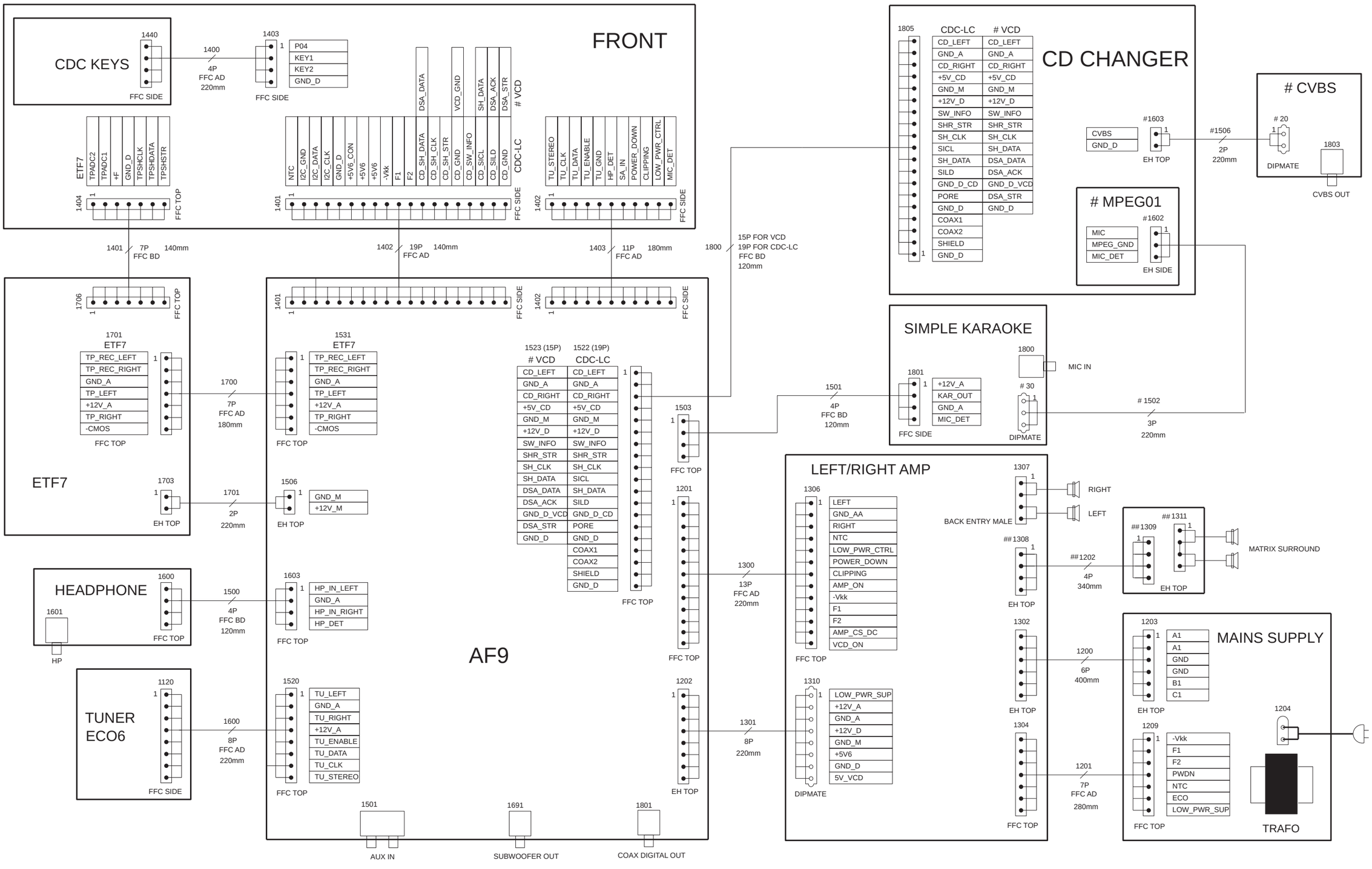
4-1

SET BLOCK DIAGRAM



5-1

SET WIRING DIAGRAM

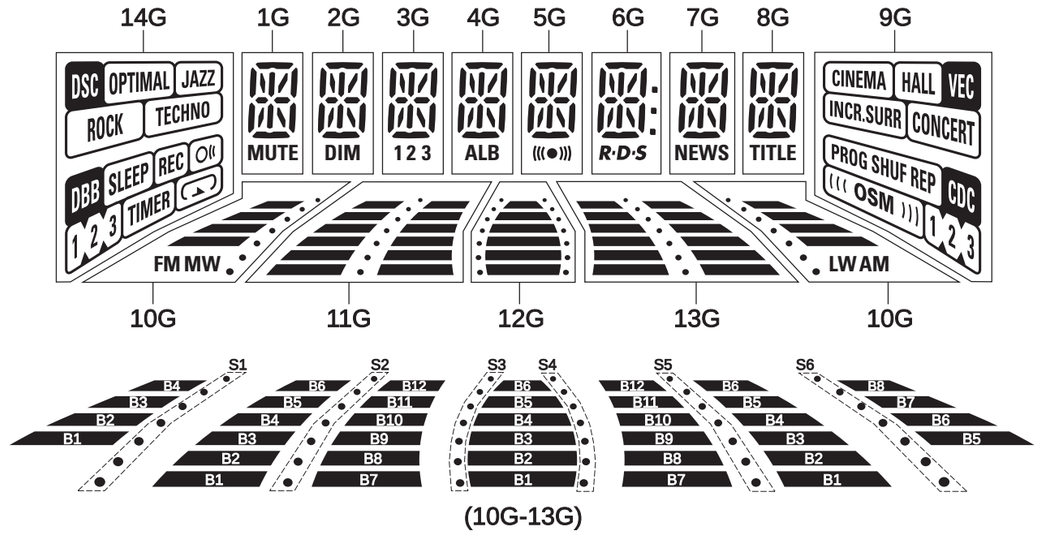


- PROVISION FOR SETS WITH VCD .
- PROVISION FOR SETS WITH MATRIX SURROUND.

FRONT BOARD

TABLE OF CONTENTS

FTD DISPLAY PIN CONNECTIONS

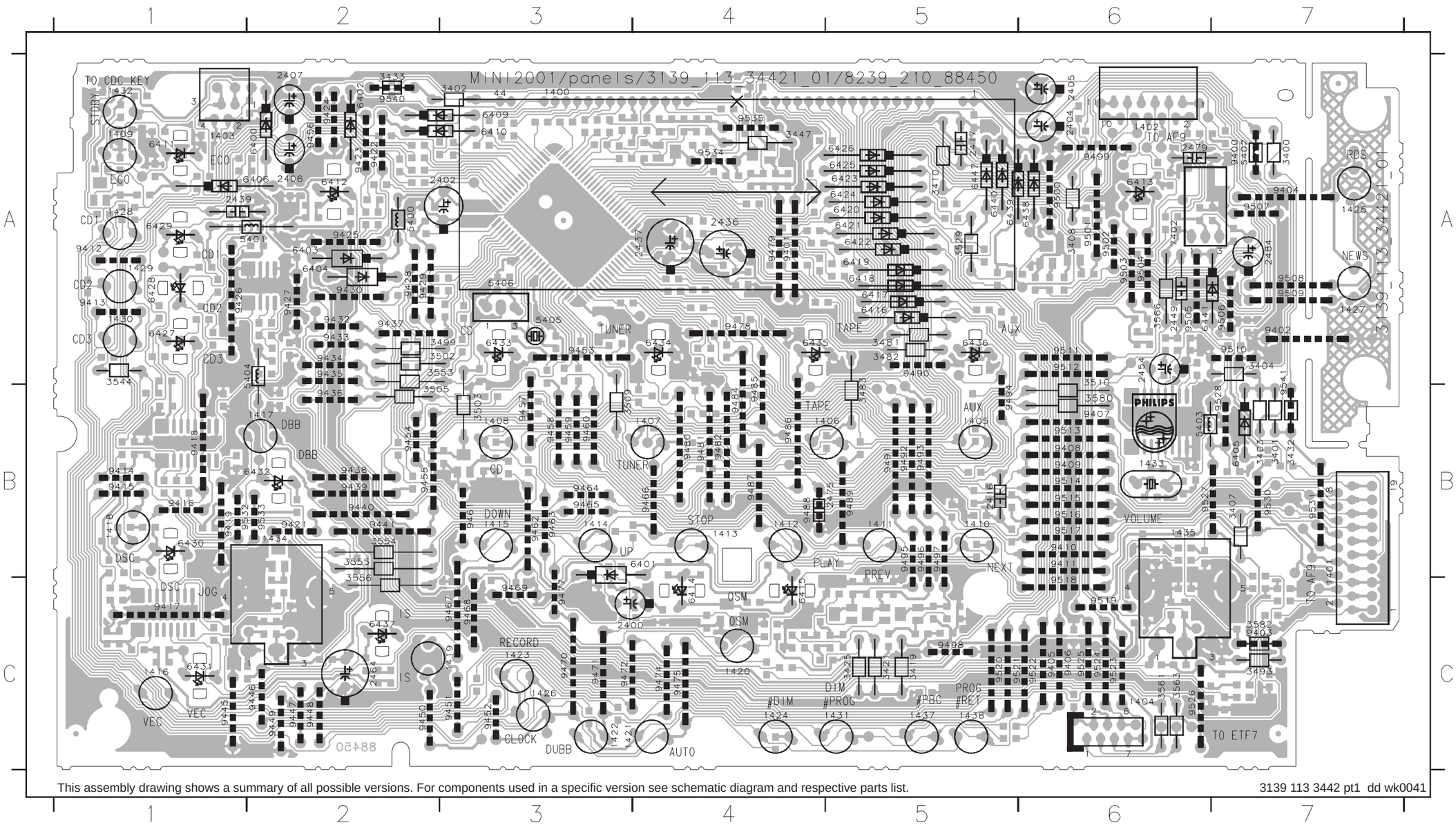


	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G	12G	13G	14G
P1	a	a	a	a	a	a	a	a	CINEMA	B1	B1	B1	B1	S7
P2	h	h	h	h	h	h	h	h	HALL	B2	B2	B2	B2	OPTIMAL
P3	j , p	j , p	j , p	j , p	j , p	j , p	j , p	j , p	S9	B3	B3	B3	B3	JAZZ
P4	k	k	k	k	k	k	k	k	INCR.SURR	B4	B4	B4	B4	ROCK
P5	b	b	b	b	b	b	b	b	CONCERT	S1	B5	B5	B5	TECHNO
P6	f	f	f	f	f	f	f	f	PROG	-	B6	B6	B6	S8
P7	m	m	m	m	m	m	m	m	SHUF	FM	S2	-	S5	SLEEP
P8	g	g	g	g	g	g	g	g	REP	MW	-	-	-	REC
P9	c	c	c	c	c	c	c	c	S10	B5	B7	-	B7	
P10	e	e	e	e	e	e	e	e	OSM	B6	B8	-	B8	1
P11	r	r	r	r	r	r	r	r	1	B7	B9	S3	B9	2
P12	n	n	n	n	n	n	n	n	2	B8	B10	S4	B10	3
P13	d	d	d	d	d	d	d	d	3	S6	B11	-	B11	TIMER
P14	MUTE	DIM	1	ALB		R·D·S	NEWS	TITLE	-	-	B12	-	B12	
P15	-	-	2	-	-	col	-	-	-	LW	-	-	-	
P16	-	-	3	-	-	Dp	-	-	-	AM	-	-	-	-

6-2

FRONT BOARD - COMPONENT LAYOUT

1400 A3 1412 B4 1424 C4 1437 C5 2439 A1 3407 B7 3493 C7 3556 C2 5406 A3 6413 A6 6425 A5 6437 C2 9405 C6 9417 C1 9430 A2 9446 C2 9458 B3 9470 C3 9485 B4 9497 B5 9509 A7 9521 C5 9534 A4
1401 B7 1413 B4 1425 A7 1438 C5 2449 A6 3408 A6 3499 A3 3561 C6 6400 A2 6414 C4 6426 A5 6438 A6 9406 C6 9418 B1 9432 A2 9447 C2 9459 B3 9471 C3 9486 B4 9498 C5 9510 A7 9522 C6 9535 A4
1402 A6 1414 B3 1426 C3 2400 C3 2454 A6 3410 A5 3502 A3 3563 C6 6401 B4 6415 C4 6427 A1 6439 A5 9407 B6 9419 B1 9433 A2 9448 C2 9460 B3 9472 C3 9487 B4 9499 A6 9511 A6 9523 C6 9540 A2
1403 A1 1415 B3 1427 A7 2402 A3 2464 C2 3419 C5 3503 B3 3566 A6 6402 A2 6416 A5 6428 A1 6440 A5 9408 B6 9421 B2 9434 A2 9449 C2 9461 B3 9474 C4 9488 B4 9500 A6 9512 A6 9524 C6 9541 A7
1404 C6 1416 C1 1428 A1 2404 A6 2475 B5 3421 C5 3505 B2 3580 B6 6403 A2 6417 A5 6429 A1 6441 A6 9409 B6 9422 A2 9435 A2 9450 C2 9462 B3 9475 C4 9489 B5 9501 A6 9513 B6 9525 C6
1405 B5 1417 B2 1429 A1 2405 A6 2479 A6 3425 C5 3509 B3 3582 C7 6404 A2 6418 A5 6430 B1 6447 A5 9410 B6 9423 A2 9436 B2 9451 C3 9463 B3 9477 C3 9490 A5 9502 A6 9514 B6 9526 C6
1406 B5 1418 B1 1430 A1 2406 A2 2484 A7 3432 B7 3510 A6 5400 A2 6405 B7 6419 A5 6431 C1 7402 A6 9411 B6 9424 A2 9437 A2 9452 C3 9464 B3 9478 A4 9491 B5 9503 A6 9515 B6 9527 B6
1407 B4 1419 C3 1431 C5 2407 A2 3400 A7 3433 A2 3529 A5 5401 A2 6406 A2 6420 A5 6432 B2 9400 A7 9412 A1 9425 A2 9438 B2 9453 A3 9465 B3 9479 A4 9492 B5 9504 A6 9516 B6 9528 B7
1408 B3 1420 C4 1432 A1 2416 B5 3401 B7 3447 A4 3544 A1 5402 A7 6409 A3 6421 A5 6433 A3 9401 A4 9413 A1 9426 A1 9439 B2 9454 B2 9466 B4 9480 B4 9493 B5 9505 A6 9517 B6 9530 B7
1409 A1 1421 C3 1433 B6 2417 A5 3402 A3 3481 A5 3553 A3 5403 B6 6410 A3 6422 A5 6434 A4 9402 A7 9414 B1 9427 A2 9440 B2 9455 B2 9467 C3 9481 B4 9494 B5 9506 A7 9518 C6 9531 B7
1410 B5 1422 C3 1434 B2 2436 A4 3403 B7 3482 A5 3554 B2 5404 A2 6411 A1 6423 A5 6435 A4 9403 C7 9415 B1 9428 A2 9441 B2 9456 A2 9468 C3 9482 B4 9495 B5 9507 A7 9519 C6 9532 B1
1411 B5 1423 C3 1435 B6 2437 A4 3404 A7 3483 B5 3555 B2 5405 A3 6412 A2 6424 A5 6436 A5 9404 A7 9416 B1 9429 A2 9445 C1 9457 B3 9469 C3 9484 B4 9496 B5 9508 A7 9520 C5 9533 B2

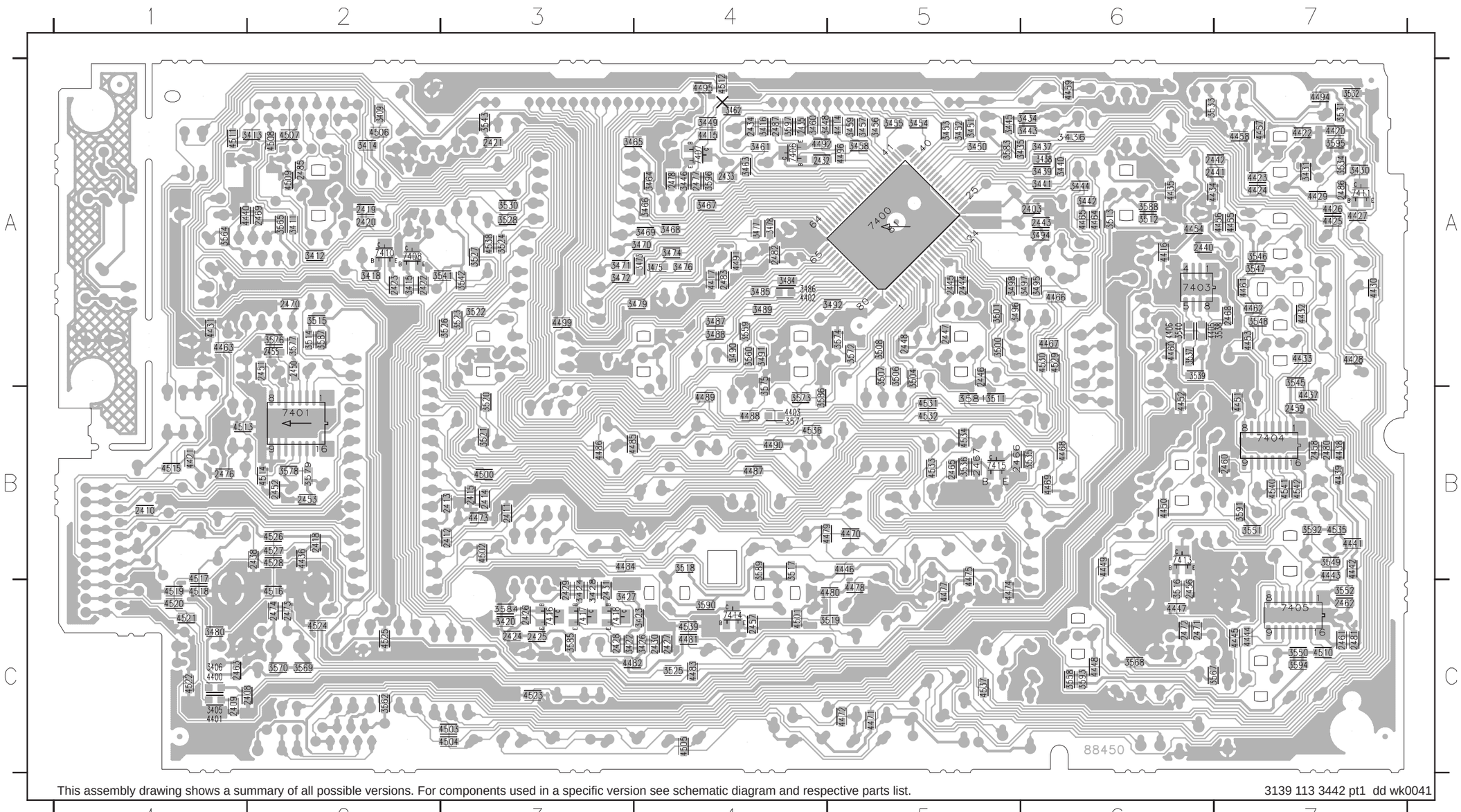


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

6-3

FRONT BOARD - CHIP LAYOUT

2403 A6 2425 C3 2444 A5 2462 C7 2481 C7 3420 C3 3441 A6 3458 A5 3474 A4 3494 A6 3516 C6 3533 A6 3550 C7 3574 A5 3592 B7 4420 A7 4436 B2 4452 B6 4468 B6 4485 B3 4504 C3 4520 C1 4536 B4 7411 A7
2408 C1 2426 C3 2445 A5 2463 C1 2482 A4 3422 C3 3442 A6 3459 A5 3475 A4 3495 A6 3517 B4 3534 A7 3551 B7 3575 A4 3593 C6 4421 B1 4437 B7 4453 A7 4469 B6 4486 B3 4505 C4 4521 C1 4537 C5 7413 B6
2409 C1 2427 C4 2446 A5 2465 B5 2483 A4 3423 C4 3443 A6 3460 A4 3476 A4 3496 A5 3518 B4 3535 B6 3552 C7 3576 A2 3594 C7 4422 A7 4438 B7 4454 A6 4470 B5 4487 B4 4506 A2 4522 C1 4538 A3 7414 C4
2410 B1 2428 C3 2447 A5 2466 B5 2485 A2 3424 C3 3444 A6 3461 A4 3477 A4 3497 A6 3519 C5 3536 B5 3558 C6 3577 A2 3595 A7 4423 A7 4439 B7 4455 A7 4471 C5 4488 B4 4507 A2 4523 C3 4539 C4 7415 B5
2411 B3 2429 C3 2448 A5 2467 B5 2486 A7 3426 C4 3445 A5 3462 A4 3478 A4 3498 A5 3520 B3 3537 A6 3559 A4 3578 B2 3596 A4 4424 A7 4440 A1 4456 A7 4472 C5 4489 B4 4508 A2 4524 C2 4540 B7 7416 C3
2412 B3 2430 C4 2450 A2 2468 A7 2487 A4 3427 C3 3446 A4 3463 A4 3479 A4 3500 A5 3521 B3 3538 A7 3560 A4 3579 B2 3597 A4 4425 A7 4441 B7 4457 A7 4473 B3 4490 B4 4509 A2 4525 C2 4541 B7 7417 C3
2413 B3 2431 C3 2451 A2 2469 A2 3405 C1 3428 C3 3448 A4 3464 A4 3480 C1 3501 A5 3522 A3 3539 A6 3562 C2 3581 B5 4400 C1 4426 A7 4442 B7 4458 A7 4474 C5 4491 A4 4510 C7 4526 B2 4542 B7 7418 C3
2414 B3 2432 A4 2452 B2 2470 A2 3406 C1 3430 A7 3449 A4 3465 A3 3484 A4 3504 A5 3523 A3 3540 A6 3564 A1 3583 A5 4401 C1 4427 A7 4443 B7 4459 A6 4475 B5 4492 A4 4511 A1 4527 B2 7400 A5
2415 B3 2433 A4 2453 B2 2471 C6 3409 A2 3431 A7 3450 A5 3466 A4 3485 A4 3506 A5 3524 A3 3541 A3 3565 A2 3584 C3 4402 A4 4428 A7 4444 C7 4460 A6 4477 C5 4494 A7 4512 A4 4528 B2 7401 B2
2418 B2 2434 A4 2455 A2 2472 C6 3411 A2 3434 A6 3451 A5 3467 A4 3486 A4 3507 A5 3525 C4 3542 A3 3567 C6 3585 C3 4403 B4 4429 A7 4445 C7 4461 A7 4478 C5 4495 A4 4513 B1 4529 A6 7403 A6
2419 A2 2435 A4 2456 C6 2473 C2 3412 A2 3435 A5 3452 A5 3468 A4 3487 A4 3508 A5 3526 A3 3543 A3 3568 C6 3586 B4 4405 A6 4430 A7 4446 B5 4462 A7 4479 B4 4496 A5 4514 B2 4530 A6 7404 B7
2420 A2 2438 B2 2457 C4 2474 C2 3413 A2 3436 A6 3453 A5 3469 A4 3488 A4 3511 B5 3527 A3 3545 A7 3569 C2 3587 A2 4406 A6 4431 A1 4447 C6 4463 A1 4480 C5 4499 A3 4515 B1 4531 B5 7405 C7
2421 A3 2440 A6 2458 B7 2476 B1 3414 A2 3437 A6 3454 A5 3470 A4 3489 A4 3512 A6 3528 A3 3546 A7 3570 C2 3588 A6 4414 A5 4432 A7 4448 C6 4464 A6 4481 C4 4500 B3 4516 C2 4532 B5 7406 A4
2422 A2 2441 A7 2459 B7 2477 A4 3415 A2 3438 A6 3455 A5 3471 A3 3490 A4 3513 A6 3530 A3 3547 A7 3571 B4 3589 B4 4415 A4 4433 A7 4449 B6 4465 A6 4482 C3 4501 C4 4517 B1 4533 B5 7407 A4
2423 A2 2442 A7 2460 B7 2478 A4 3416 A4 3439 A6 3456 A5 3472 A3 3491 A4 3514 A2 3531 A7 3548 A7 3572 A5 3590 C4 4416 A6 4434 A6 4450 B6 4466 A6 4483 C4 4502 B3 4518 C1 4534 B5 7408 A2
2424 C3 2443 A6 2461 C7 2480 B7 3418 A2 3440 A6 3457 A5 3473 A4 3492 A5 3515 A2 3532 A7 3549 B7 3573 B4 3591 B7 4417 A4 4435 A6 4451 B7 4467 A6 4484 B3 4503 C3 4519 C1 4535 B7 7410 A2



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

3139 113 3442 pt1 dd wk0041

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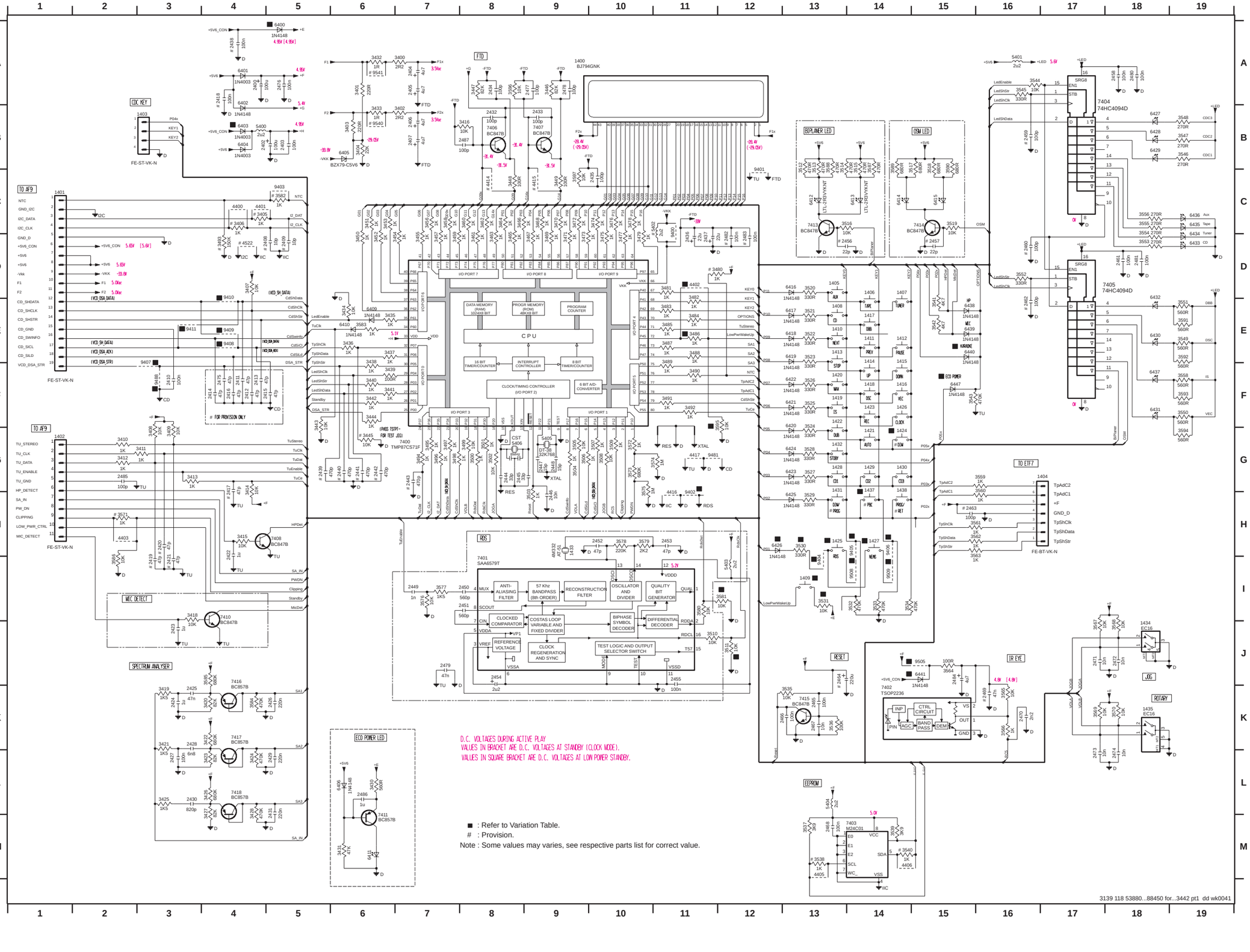
FRONT BOARD - CIRCUIT DIAGRAM

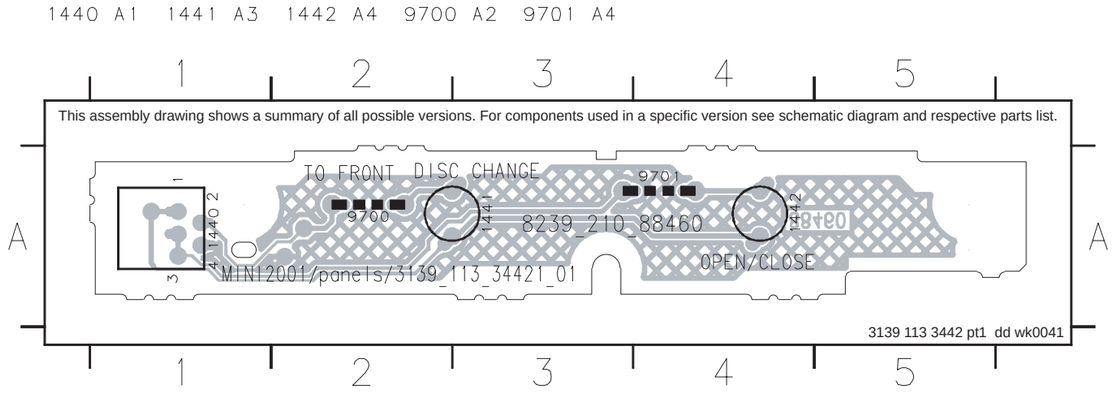


FRONT BOARD VARIATION TABLE

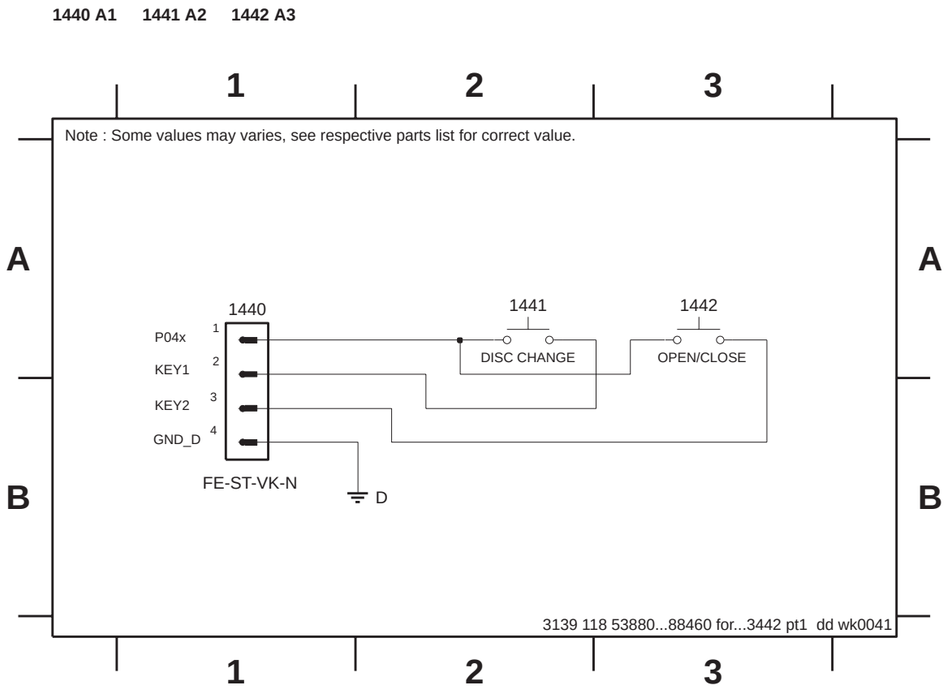
	FW-C380/37	FW-C380/21	FW-C380/22/34	VCD version only
1409	-	-	x	-
1424	-	-	-	x
1425	-	-	x	-
1427	-	-	x	-
1437	-	-	-	x
3486	-	-	1k	-
3511	10k	10k	-	10k
3530	-	-	330R	-
3531	-	-	10k	-
3581	10k	10k	-	10k
3595	10k	10k	-	10k
4402	x	x	-	x
6400	-	-	x	-
6403	-	-	x	-
6426	-	-	x	-
6440	-	x	-	x
6441	-	-	x	-
6447	-	-	x	-
9402	x	-	x	-
9404	-	-	x	-
9405	-	-	x	-
9406	-	-	x	-
9407	-	-	-	x
9408	x	x	x	-
9409	-	-	-	x
9410	x	x	x	-
9411	-	-	-	x
9488	x	x	x	-
9505	x	x	-	x
9508	-	-	x	-
9509	-	-	x	-

x - item in use

KEY-CDC BOARD - COMPONENT LAYOUT

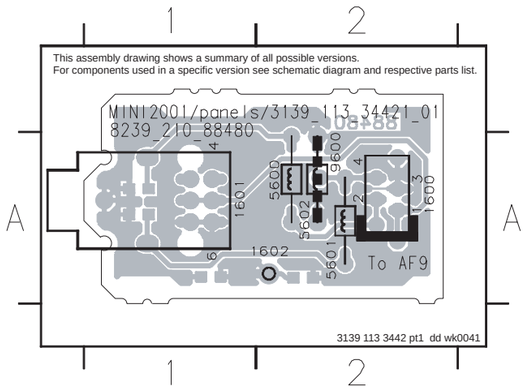


KEY-CDC PART - CIRCUIT DIAGRAM



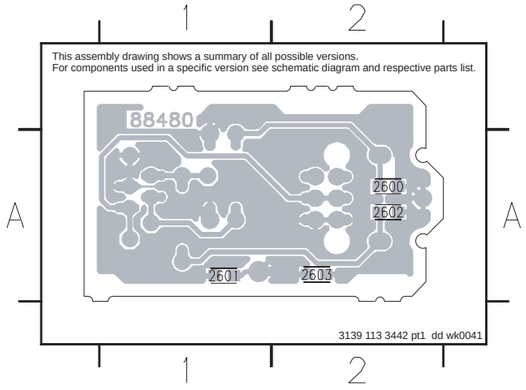
HEADPHONE BOARD - COMPONENT LAYOUT

1600 A2 1602 A2 5601 A2 9600 A2
1601 A1 5600 A2 5602 A2

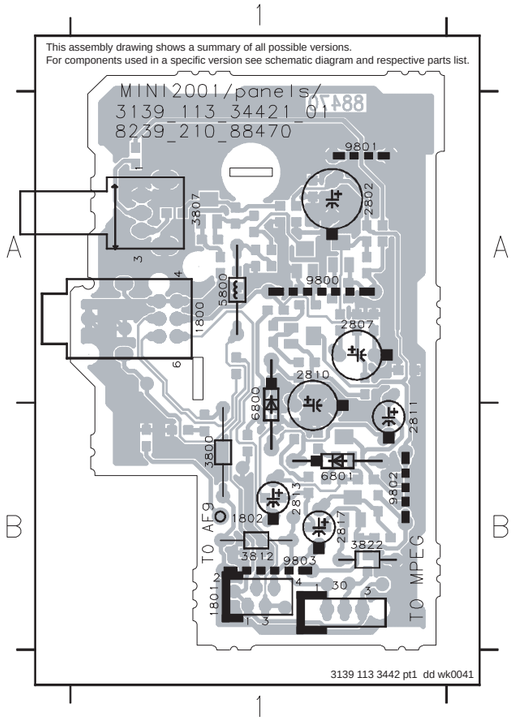


HEADPHONE BOARD - CHIP LAYOUT

2600 A2 2601 A1 2602 A2 2603 A2

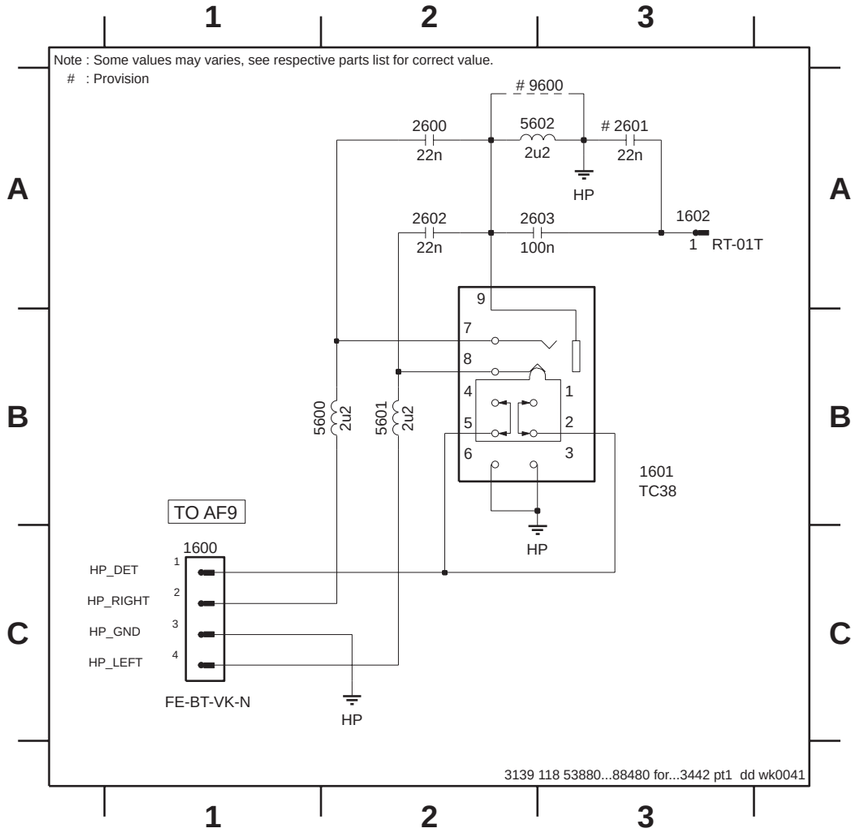


KARAOKE BOARD - COMPONENT LAYOUT



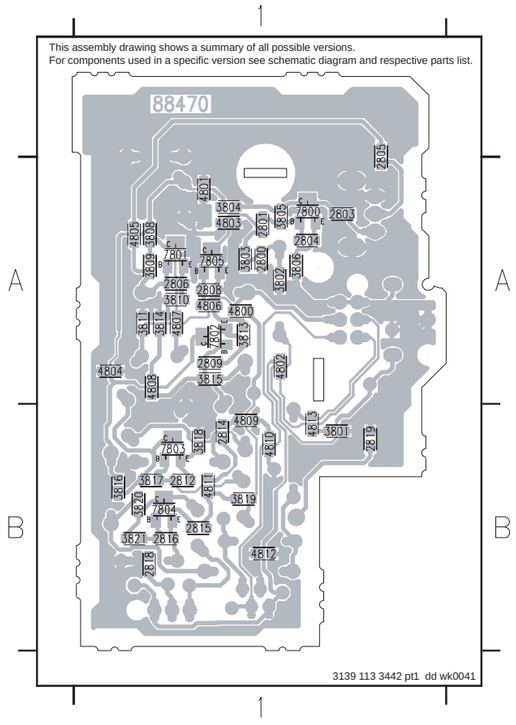
30 B1
1800 A1
1801 B1
2802 A1
2807 A1
2810 A1
2811 B1
2813 B1
2817 B1
3800 B1
3807 A1
3812 B1
3822 B1
5800 A1
6800 B1
6801 B1
9800 A1
9801 A1
9802 B1
9803 B1

HEADPHONE PART - CIRCUIT DIAGRAM



1600 C1 1602 A3 2601 A3 2603 A2 5601 B2 9600 A3
1601 B3 2600 A2 2602 A2 5600 B2 5602 A2

KARAOKE BOARD - CHIP LAYOUT



2800 A1 4811 B1
2801 A1 4812 B1
2803 A1 4813 B1
2804 A1 7800 A1
2805 A1 7801 A1
2806 A1 7802 A1
2808 A1 7803 B1
2809 A1 7804 B1
2812 B1 7805 A1
2814 B1
2815 B1
2816 B1
2818 B1
2819 B1
3801 B1
3802 A1
3803 A1
3804 A1
3805 A1
3806 A1
3808 A1
3809 A1
3810 A1
3811 A1
3813 A1
3814 A1
3815 A1
3816 B1
3817 B1
3818 B1
3819 B1
3820 B1
3821 B1
4800 A1
4801 A1
4802 A1
4803 A1
4804 A1
4805 A1
4806 A1
4807 A1
4808 A1
4809 B1
4810 B1

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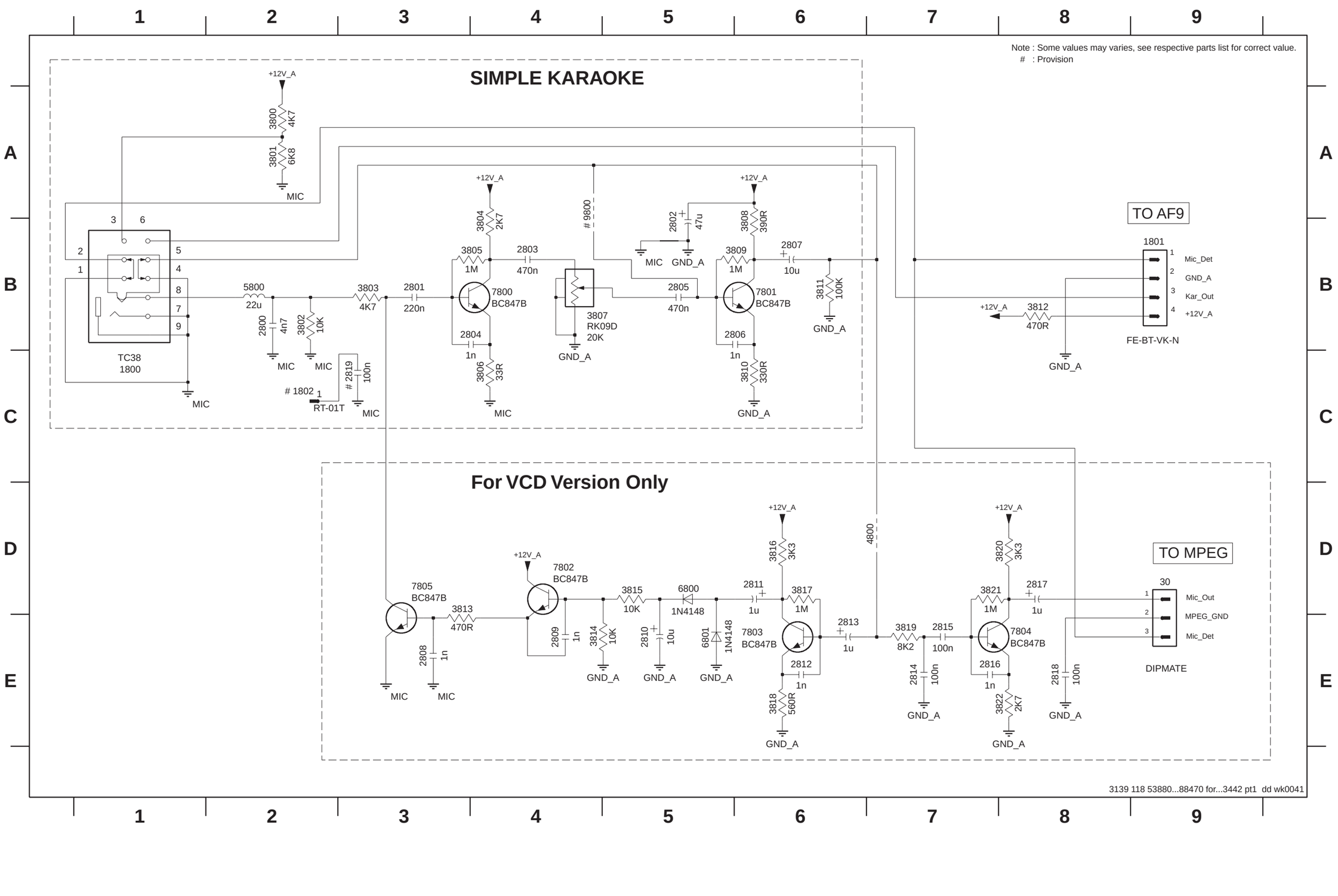
KARAOKE PART - CIRCUIT DIAGRAM

30 D9	1802 C2	2802 B5	2805 B5	2808 E3	2811 D6	2814 E7	2817 D8	3800 A2	3803 B3	3806 C4	3809 B6	3812 B8	3815 D5	3818 E6	3821 D7	5800 B2	7800 B4	7803 E6	9800 A4	
1800 C1	2800 B2	2803 B4	2806 B6	2809 E4	2812 E6	2815 E7	2818 E8	3801 A2	3804 B4	3807 B4	3810 C6	3813 D3	3816 D6	3819 E7	3822 E8	6800 D5	7801 B6	7804 E8		
1801 B9	2801 B3	2804 B4	2807 B6	2810 E5	2813 E6	2816 E7	2819 C3	3802 B2	3805 B4	3808 B6	3811 B6	3814 E4	3817 D6	3820 D8	4800 D7	6801 E5	7802 D4	7805 D3		



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ELECTRICAL PARTS LIST - FRONT BOARD

ELECTRICAL PARTS LIST - FRONT BOARD

MISCELLANEOUS

1400	3139 110 52530	FTD Display
1401	4822 265 11545	Flex Connector 19P
1402	2422 025 14541	Flex Connector 11P
1403	4822 265 11183	Flex Connector 4P
1404	4822 267 10953	Flex Connector 7P
1405	4822 276 13775	Tact Switch
1406	4822 276 13775	Tact Switch
1407	4822 276 13775	Tact Switch
1408	4822 276 13775	Tact Switch
1409	4822 276 13775	Tact Switch
1410	4822 276 13775	Tact Switch
1411	4822 276 13775	Tact Switch
1412	4822 276 13775	Tact Switch
1413	4822 276 13775	Tact Switch
1414	4822 276 13775	Tact Switch
1415	4822 276 13775	Tact Switch
1416	4822 276 13775	Tact Switch
1417	4822 276 13775	Tact Switch
1418	4822 276 13775	Tact Switch
1419	4822 276 13775	Tact Switch
1420	4822 276 13775	Tact Switch
1421	4822 276 13775	Tact Switch
1422	4822 276 13775	Tact Switch
1423	4822 276 13775	Tact Switch
1425	4822 276 13775	Tact Switch
1426	4822 276 13775	Tact Switch
1427	4822 276 13775	Tact Switch
1428	4822 276 13775	Tact Switch
1429	4822 276 13775	Tact Switch
1430	4822 276 13775	Tact Switch
1431	4822 276 13775	Tact Switch
1432	4822 276 13775	Tact Switch
1433	4822 242 72195	QUARZ 4,332MHz
1434	4822 273 10366	Rotary Encoder 24P
1435	4822 273 10365	Rotary Encoder 24P
1438	4822 276 13775	Tact Switch
1440	4822 265 11183	Flex Connector 4P
1441	4822 276 13775	Tact Switch
1442	4822 276 13775	Tact Switch
1600	4822 267 10733	Flex Connector 4P
1601	4822 265 11529	Headphone Socket
1800	4822 265 11529	Microphone Socket
1801	4822 267 10733	Flex Connector 4P

CAPACITORS

2400	4822 124 41584	100µF 20% 10V
2402	4822 124 23432	100µF 20% 10V
2403	4822 126 14305	100nF 10% 16V
2404	4822 124 12032	4,7µF 20% 50V
2405	4822 124 12032	4,7µF 20% 50V
2406	4822 124 12032	4,7µF 20% 50V
2407	4822 124 12032	4,7µF 20% 50V
2410	4822 126 14305	100nF 10% 16V
2422	3198 017 41050	1µF 10V
2423	3198 017 41050	1µF 10V
2424	3198 017 41050	1µF 10V
2425	3198 017 34730	47nF 16V
2426	4822 126 13879	220nF +80/-20% 16V
2427	4822 126 14305	100nF 10% 16V
2428	5322 126 11582	6,8nF 10% 63V
2429	4822 126 13879	220nF +80/-20% 16V
2430	3198 016 38210	820pF 25V
2431	4822 126 13879	220nF +80/-20% 16V
2432	4822 122 31765	100pF 2% 63V
2433	4822 122 31765	100pF 2% 63V
2434	4822 122 31765	100pF 2% 63V
2435	4822 122 31765	100pF 2% 63V
2436	3198 028 52290	22µF 20% 50V
2437	3198 028 52290	22µF 20% 50V
2444	4822 126 11671	33pF
2445	4822 126 11671	33pF
2446	5322 126 11583	10nF 10% 50V
2447	4822 122 33752	15pF 5% 50V
2448	4822 122 33752	15pF 5% 50V
2449	4822 122 33197	1nF 10% 50V
2450	4822 126 14249	560pF 10% 50V
2451	4822 126 14249	560pF 10% 50V
2452	4822 122 33777	47pF 5% 63V
2453	4822 122 33777	47pF 5% 63V
2454	4822 124 22652	2,2µF 20% 50V
2455	4822 126 14305	100nF 10% 16V
2458	4822 126 14305	100nF 10% 16V
2461	4822 126 14305	100nF 10% 16V
2465	4822 126 14305	100nF 10% 16V
2466	4822 126 14305	100nF 10% 16V
2467	5322 126 11583	10nF 10% 50V
2468	4822 126 14305	100nF 10% 16V
2470	4822 126 14238	2,2nF 50V
2471	5322 126 11583	10nF 10% 50V
2472	5322 126 11583	10nF 10% 50V
2473	5322 126 11583	10nF 10% 50V
2474	5322 126 11583	10nF 10% 50V
2476	4822 126 14305	100nF 10% 16V
2477	4822 122 31765	100pF 2% 63V
2478	4822 122 31765	100pF 2% 63V
2479	4822 126 12785	47nF 50V
2480	4822 126 14305	100nF 10% 16V
2481	4822 126 14305	100nF 10% 16V
2484	4822 124 40769	4,7µF 20% 100V
2485	4822 122 31765	100pF 2% 63V
2486	3198 017 41050	1µF 10V
2487	4822 122 31765	100pF 2% 63V
2600	4822 126 14494	22nF 10% 25V
2602	4822 126 14494	22nF 10% 25V
2603	4822 126 14305	100nF 10% 16V
2800	4822 126 13193	4,7nF 10% 63V
2801	4822 126 13879	220nF +80/-20% 16V
2802	3198 028 44790	47µF 20% 35V
2803	4822 126 13482	470nF +80/-20% 16V
2804	5322 126 11578	1nF 10% 50V
2805	4822 126 13482	470nF +80/-20% 16V
2806	5322 126 11578	1nF 10% 50V
2807	4822 124 12255	10µF 20% 50V

RESISTORS

3400	4822 116 81154	2R2 5% 0,5W
3401	4822 116 83872	220R 5% 0,5W
3402	4822 116 81154	2R2 5% 0,5W
3403	4822 116 83872	220R 5% 0,5W
3404	4822 116 52257	22k 5% 0,5W
3407	4822 050 21003	10k 1% 0,6W
3408	4822 050 21003	10k 1% 0,6W
3409	4822 051 30103	10k 5% 0,062W
3410	4822 050 11002	1k 1% 0,4W
3411	4822 051 30102	1k 5% 0,062W
3412	4822 051 30102	1k 5% 0,062W
3413	4822 051 30102	1k 5% 0,062W
3414	4822 051 30103	10k 5% 0,062W
3415	4822 051 30103	10k 5% 0,062W
3418	4822 051 30103	10k 5% 0,062W
3419	4822 116 52243	1k5 5% 0,5W
3420	4822 117 12864	82k 5% 0,6W
3421	4822 116 52243	1k5 5% 0,5W
3422	4822 051 30684	680k 5% 0,062W
3423	4822 117 12864	82k 5% 0,6W
3424	4822 051 30474	470k 5% 0,062W
3425	4822 116 52243	1k5 5% 0,5W
3426	4822 051 30684	680k 5% 0,062W
3427	4822 117 12864	82k 5% 0,6W
3428	4822 051 30474	470k 5% 0,062W
3430	4822 051 30561	560R 5% 0,062W
3431	4822 117 12925	47k 1% 0,063W
3432	4822 116 80176	1R 5% 0,5W
3433	4822 116 80176	1R 5% 0,5W
3434	4822 051 30103	10k 5% 0,062W
3435	4822 051 30102	1k 5% 0,062W
3436	4822 051 30102	1k 5% 0,062W
3437	4822 051 30102	1k 5% 0,062W
3438	4822 051 30102	1k 5% 0,062W
3439	4822 051 30101	100R 5% 0,062W
3440	4822 051 30102	1k 5% 0,062W
3441	4822 051 30102	1k 5% 0,062W
3442	4822 051 30102	1k 5% 0,062W
3443	4822 051 30103	10k 5% 0,062W
3444	4822 051 30102	1k 5% 0,062W
3446	4822 117 12864	82k 5% 0,6W
3447	4822 116 52304	82k 5% 0,5W
3448	4822 051 30101	100R 5% 0,062W
3449	4822 051 30101	100R 5% 0,062W
3450	4822 051 30102	1k 5% 0,062W
3451	4822 051 30102	1k 5% 0,062W
3452	4822 051 30102	1k 5% 0,062W
3453	4822 051 30102	1k 5% 0,062W
3454	4822 051 30102	1k 5% 0,062W
3455	4822 051 30102	1k 5% 0,062W
3456	4822 051 30102	1k 5% 0,062W
3457	4822 051 30102	1k 5% 0,062W
3458	4822 051 30102	1k 5% 0,062W
3459	4822 051 30102	1k 5% 0,062W
3460	4822 051 30102	1k 5% 0,062W
3461	4822 051 30102	1k 5% 0,062W
3462	4822 051 30102	1k 5% 0,062W
3463	4822 051 30102	1k 5% 0,062W
3464	4822 051 30102	1k 5% 0,062W
3465	4822 051 30102	1k 5% 0,062W
3466	4822 051 30102	1k 5% 0,062W
3467	4822 051 30102	1k 5% 0,062W
3468	4822 051 30102	1k 5% 0,062W
3469	4822 051 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 30102	1k 5% 0,062W
3477	4822 051 30102	1k 5% 0,062W
3478	4822 051 30102	1k 5% 0,062W
3479	4822 051 30102	1k 5% 0,062W
3481	4822 050 11002	1k 1% 0,4W
3482	4822 050 11002	1k 1% 0,4W
3483	4822 050 11002	1k 1% 0,4W
3484	4822 051 30102	1k 5% 0,062W
3485	4822 051 30102	1k 5% 0,062W
3486	4822 051 30102	1k 5% 0,062W
3487	4822 051 30102	1k 5% 0,062W
3488	4822 051 30102	1k 5% 0,062W
3489	4822 051 30102	1k 5% 0,062W
3490	4822 051 30102	1k 5% 0,062W
3491	4822 051 30102	1k 5% 0,062W
3492	4822 051 30102	1k 5% 0,062W
3494	4822 051 30102	1k 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 050 21003	10k 1% 0,6W
3500	4822 051 30102	1k 5% 0,062W

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ELECTRICAL PARTS LIST - FRONT BOARD

ELECTRICAL PARTS LIST - FRONT BOARD

RESISTORS

3501	4822 051 30102	1k 5% 0,062W
3502	4822 050 21003	10k 1% 0,6W
3503	4822 050 11002	1k 1% 0,4W
3504	4822 051 30102	1k 5% 0,062W
3505	4822 050 21003	10k 1% 0,6W
3506	4822 051 30102	1k 5% 0,062W
3507	4822 051 30102	1k 5% 0,062W
3508	4822 051 30103	10k 5% 0,062W
3509	4822 050 11002	1k 1% 0,4W
3510	4822 050 21003	10k 1% 0,6W
3511	4822 051 30103	10k 5% 0,062W
3512	4822 051 30471	470R 5% 0,062W
3513	4822 051 30471	470R 5% 0,062W
3514	4822 051 30471	470R 5% 0,062W
3515	4822 051 30471	470R 5% 0,062W
3516	4822 051 30103	10k 5% 0,062W
3517	4822 051 30681	680R 5% 0,062W
3518	4822 051 30681	680R 5% 0,062W
3519	4822 051 30103	10k 5% 0,062W
3520	4822 051 30331	330R 5% 0,062W
3521	4822 051 30331	330R 5% 0,062W
3522	4822 051 30331	330R 5% 0,062W
3523	4822 051 30331	330R 5% 0,062W
3524	4822 051 30331	330R 5% 0,062W
3525	4822 051 30331	330R 5% 0,062W
3526	4822 051 30331	330R 5% 0,062W
3527	4822 051 30331	330R 5% 0,062W
3528	4822 051 30331	330R 5% 0,062W
3529	4822 116 52219	330R 5% 0,5W
3530	4822 051 30331	330R 5% 0,062W
3531	4822 051 30103	10k 5% 0,062W
3532	4822 051 30474	470k 5% 0,062W
3533	4822 051 30474	470k 5% 0,062W
3534	4822 051 30474	470k 5% 0,062W
3535	4822 051 30103	10k 5% 0,062W
3536	4822 117 13632	100k 1% 0,62W
3537	4822 051 30392	3k9 5% 0,063W
3539	4822 051 30392	3k9 5% 0,063W
3541	4822 051 30472	4k7 5% 0,062W
3542	4822 051 30472	4k7 5% 0,062W
3543	4822 051 30474	470k 5% 0,062W
3544	4822 050 21003	10k 1% 0,6W
3545	4822 051 30331	330R 5% 0,062W
3546	4822 051 30271	270R 5% 0,062W
3547	4822 051 30271	270R 5% 0,062W
3548	4822 051 30271	270R 5% 0,062W
3549	4822 051 30561	560R 5% 0,062W
3550	4822 051 30561	560R 5% 0,062W
3551	4822 051 30561	560R 5% 0,062W
3552	4822 051 30331	330R 5% 0,062W
3553	4822 116 83876	270R 5% 0,5W
3554	4822 116 83876	270R 5% 0,5W
3555	4822 116 83876	270R 5% 0,5W
3556	4822 116 83876	270R 5% 0,5W
3558	4822 051 30561	560R 5% 0,062W
3559	4822 051 30102	1k 5% 0,062W
3560	4822 051 30102	1k 5% 0,062W
3561	4822 050 11002	1k 1% 0,4W
3562	4822 051 30102	1k 5% 0,062W
3563	4822 050 11002	1k 1% 0,4W
3564	4822 051 30101	100R 5% 0,062W
3565	4822 051 30103	10k 5% 0,062W
3566	4822 050 11002	1k 1% 0,4W
3567	4822 051 30103	10k 5% 0,062W
3568	4822 051 30103	10k 5% 0,062W
3569	4822 051 30103	10k 5% 0,062W
3570	4822 051 30103	10k 5% 0,062W
3572	4822 051 30102	1k 5% 0,062W
3573	4822 051 30684	680k 5% 0,062W
3574	4822 051 30105	1M 5% 0,062W
3575	4822 051 30105	1M 5% 0,062W
3576	4822 051 30103	10k 5% 0,062W
3577	4822 051 30152	1k5 5% 0,062W
3578	4822 117 12891	220k 1%
3579	4822 051 30222	2k2 5% 0,062W
3580	4822 050 21003	10k 1% 0,6W
3581	4822 051 30103	10k 5% 0,062W
3583	4822 051 30102	1k 5% 0,062W
3584	4822 051 30474	470k 5% 0,062W
3585	4822 051 30684	680k 5% 0,062W
3586	4822 051 30103	10k 5% 0,062W
3587	4822 051 30471	470R 5% 0,062W
3588	4822 051 30471	470R 5% 0,062W
3589	4822 051 30681	680R 5% 0,062W
3590	4822 051 30681	680R 5% 0,062W
3591	4822 051 30561	560R 5% 0,062W
3592	4822 051 30561	560R 5% 0,062W
3593	4822 051 30561	560R 5% 0,062W
3594	4822 051 30561	560R 5% 0,062W
3595	4822 051 30103	10k 5% 0,062W
3596	4822 051 30103	10k 5% 0,062W
3597	4822 051 30103	10k 5% 0,062W
3800	4822 116 52283	4k7 5% 0,5W
3801	4822 051 30682	6k8 5% 0,062W
3802	4822 051 30103	10k 5% 0,062W
3803	4822 051 30472	4k7 5% 0,062W
3804	4822 051 30272	2k7 5% 0,062W
3805	4822 051 30105	1M 5% 0,062W
3806	4822 051 30339	33R 5% 0,062W
3807	2120 366 90291	POTM CAR LOG 20k
3808	4822 051 30391	390R 5% 0,062W
3809	4822 051 30105	1M 5% 0,062W
3810	4822 051 30331	330R 5% 0,062W
3811	4822 117 13632	100k 1% 0603 0,62W
3812	4822 116 83883	470R 5% 0,5W
4400	4822 051 30008	0R Jumper 0603
4401	4822 051 30008	0R Jumper 0603
4402	4822 051 30008	0R Jumper 0603
4403	4822 051 30008	0R Jumper 0603
4405	4822 051 30008	0R Jumper 0603
4406	4822 051 30008	0R Jumper 0603
4416	4822 051 30008	0R Jumper 0603
4417	4822 051 30008	0R Jumper 0603
4420	4822 051 30008	0R Jumper 0603
4421	4822 051 30008	0R Jumper 0603
4422	4822 051 30008	0R Jumper 0603
4423	4822 051 30008	0R Jumper 0603
4424	4822 051 30008	0R Jumper 0603
4425	4822 051 30008	0R Jumper 0603
4426	4822 051 30008	0R Jumper 0603
4427	4822 051 30008	0R Jumper 0603
4428	4822 051 30008	0R Jumper 0603
4429	4822 051 30008	0R Jumper 0603
4430	4822 051 30008	0R Jumper 0603
4431	4822 051 30008	0R Jumper 0603
4432	4822 051 30008	0R Jumper 0603
4433	4822 051 30008	0R Jumper 0603
4434	4822 051 30008	0R Jumper 0603
4435	4822 051 30008	0R Jumper 0603
4436	4822 051 30008	0R Jumper 0603
4437	4822 051 30008	0R Jumper 0603
4438	4822 051 30008	0R Jumper 0603
4439	4822 051 30008	0R Jumper 0603
4440	4822 051 30008	0R Jumper 0603
4441	4822 051 30008	0R Jumper 0603
4442	4822 051 30008	0R Jumper 0603
4443	4822 051 30008	0R Jumper 0603
4444	4822 051 30008	0R Jumper 0603
4445	4822 051 30008	0R Jumper 0603
4446	4822 051 30008	0R Jumper 0603
4447	4822 051 30008	0R Jumper 0603
4448	4822 051 30008	0R Jumper 0603
4449	4822 051 30008	0R Jumper 0603
4450	4822 051 30008	0R Jumper 0603
4451	4822 051 30008	0R Jumper 0603
4452	4822 051 30008	0R Jumper 0603
4453	4822 051 30008	0R Jumper 0603
4454	4822 051 30008	0R Jumper 0603
4455	4822 051 30008	0R Jumper 0603
4456	4822 051 30008	0R Jumper 0603
4457	4822 051 30008	0R Jumper 0603
4458	4822 051 30008	0R Jumper 0603
4459	4822 051 30008	0R Jumper 0603
4460	4822 051 30008	0R Jumper 0603
4461	4822 051 30008	0R Jumper 0603
4462	4822 051 30008	0R Jumper 0603
4463	4822 051 30008	0R Jumper 0603
4464	4822 051 30008	0R Jumper 0603
4465	4822 051 30008	0R Jumper 0603
4466	4822 051 30008	0R Jumper 0603
4467	4822 051 30008	0R Jumper 0603
4468	4822 051 30008	0R Jumper 0603
4469	4822 051 30008	0R Jumper 0603
4470	4822 051 30008	0R Jumper 0603
4471	4822 051 30008	0R Jumper 0603
4472	4822 051 30008	0R Jumper 0603
4473	4822 051 30008	0R Jumper 0603
4474	4822 051 30008	0R Jumper 0603
4475	4822 051 30008	0R Jumper 0603
4476	4822 051 30008	0R Jumper 0603
4477	4822 051 30008	0R Jumper 0603
4478	4822 051 30008	0R Jumper 0603
4479	4822 051 30008	0R Jumper 0603
4480	4822 051 30008	0R Jumper 0603
4481	4822 051 30008	0R Jumper 0603
4482	4822 051 30008	0R Jumper 0603
4483	4822 051 30008	0R Jumper 0603
4484	4822 051 30008	0R Jumper 0603
4485	4822 051 30008	0R Jumper 0603
4486	4822 051 30008	0R Jumper 0603
4487	4822 051 30008	0R Jumper 0603
4488	4822 051 30008	0R Jumper 0603
4489	4822 051 30008	0R Jumper 0603
4490	4822 051 30008	0R Jumper 0603
4491	4822 051 30008	0R Jumper 0603
4492	4822 051 30008	0R Jumper 0603
4493	4822 051 30008	0R Jumper 0603
4494	4822 051 30008	0R Jumper 0603
4495	4822 051 30008	0R Jumper 0603
4496	4822 051 30008	0R Jumper 0603
4497	4822 051 30008	0R Jumper 0603
4498	4822 051 30008	0R Jumper 0603
4499	4822 051 30008	0R Jumper 0603
4500	4822 051 30008	0R Jumper 0603
4501	4822 051 30008	0R Jumper 0603
4502	4822 051 30008	0R Jumper 0603
4503	4822 051 30008	0R Jumper 0603
4504	4822 051 30008	0R Jumper 0603
4505	4822 051 30008	0R Jumper 0603
4506	4822 051 30008	0R Jumper 0603
4507	4822 051 30008	0R Jumper 0603
4508	4822 051 30008	0R Jumper 0603
4509	4822 051 30008	0R Jumper 0603
4510	4822 051 30008	0R Jumper 0603
4511	4822 051 30008	0R Jumper 0603
4512	4822 051 30008	0R Jumper 0603
4513	4822 051 30008	0R Jumper 0603
4514	4822 051 30008	0R Jumper 0603

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ELECTRICAL PARTS LIST - FRONT BOARD

ELECTRICAL PARTS LIST - FRONT BOARD

RESISTORS

4515	4822 051 30008	0R Jumper 0603
4516	4822 051 30008	0R Jumper 0603
4517	4822 051 30008	0R Jumper 0603
4518	4822 051 30008	0R Jumper 0603
4519	4822 051 30008	0R Jumper 0603
4520	4822 051 30008	0R Jumper 0603
4521	4822 051 30008	0R Jumper 0603
4523	4822 051 30008	0R Jumper 0603
4524	4822 051 30008	0R Jumper 0603
4525	4822 051 30008	0R Jumper 0603
4526	4822 051 30008	0R Jumper 0603
4527	4822 051 30008	0R Jumper 0603
4528	4822 051 30008	0R Jumper 0603
4529	4822 051 30008	0R Jumper 0603
4530	4822 051 30008	0R Jumper 0603
4531	4822 051 30008	0R Jumper 0603
4532	4822 051 30008	0R Jumper 0603
4533	4822 051 30008	0R Jumper 0603
4534	4822 051 30008	0R Jumper 0603
4535	4822 051 30008	0R Jumper 0603
4536	4822 051 30008	0R Jumper 0603
4537	4822 051 30008	0R Jumper 0603
4538	4822 051 30008	0R Jumper 0603
4539	4822 051 30008	0R Jumper 0603
4540	4822 051 30008	0R Jumper 0603
4541	4822 051 30008	0R Jumper 0603
4542	4822 051 30008	0R Jumper 0603
4801	4822 051 30008	0R Jumper 0603
4802	4822 051 30008	0R Jumper 0603
4803	4822 051 30008	0R Jumper 0603
4804	4822 051 30008	0R Jumper 0603
4805	4822 051 30008	0R Jumper 0603
4806	4822 051 30008	0R Jumper 0603
4807	4822 051 30008	0R Jumper 0603
4808	4822 051 30008	0R Jumper 0603
4809	4822 051 30008	0R Jumper 0603
4810	4822 051 30008	0R Jumper 0603
4811	4822 051 30008	0R Jumper 0603
4812	4822 051 30008	0R Jumper 0603
4813	4822 051 30008	0R Jumper 0603

COILS & FILTERS

5400	4822 157 62552	Coil 2,2µH 5%
5401	4822 157 62552	Coil 2,2µH 5%
5403	4822 157 62552	Coil 2,2µH 5%
5404	4822 157 62552	Coil 2,2µH 5%
5405	2422 543 01069	RES XTL 32kHz768
5406	4822 242 72066	RES CER 8MHz
5600	4822 157 62552	Coil 2,2µH 5%
5601	4822 157 62552	Coil 2,2µH 5%
5602	4822 157 62552	Coil 2,2µH 5%
5800	4822 157 11235	Coil 22µH 5%

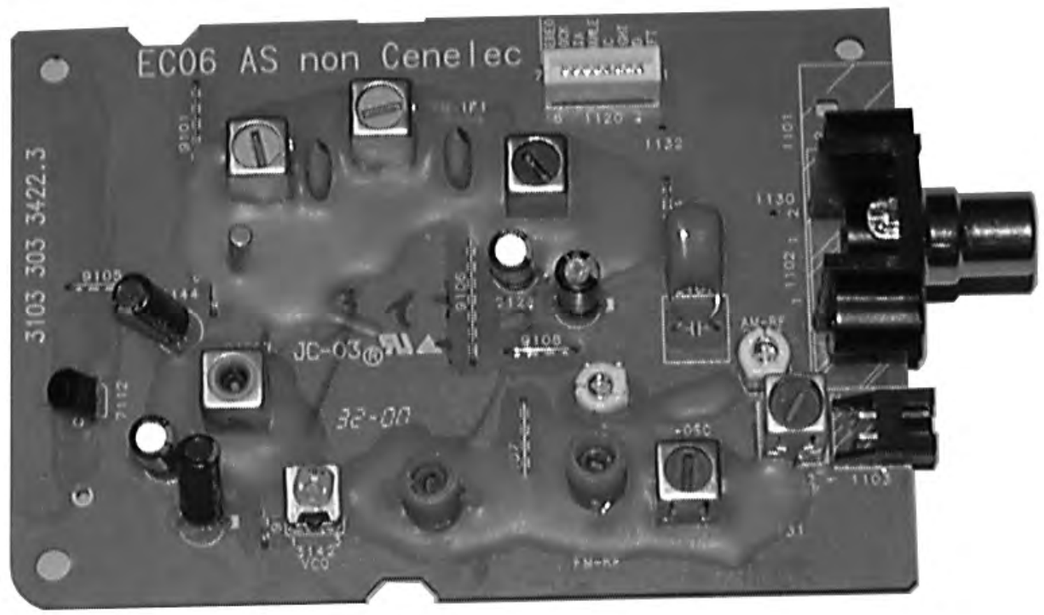
DIODES

6400	4822 130 30621	1N4148
6401	4822 130 31878	1N4003G
6402	4822 130 30621	1N4148
6403	4822 130 31878	1N4003G
6404	4822 130 31878	1N4003G
6405	4822 130 34173	BZX79-C5V6
6406	4822 130 30621	1N4148
6409	4822 130 30621	1N4148
6410	4822 130 30621	1N4148
6411	9322 160 65676	LED VS LTL-4221NLC-VA
6412	9322 161 99676	LED VS LTL-2R3VYKNT
6413	9322 161 99676	LED VS LTL-2R3VYKNT
6414	4822 130 82978	LTL-1CHPE
6415	4822 130 82978	LTL-1CHPE
6416	4822 130 30621	1N4148
6417	4822 130 30621	1N4148
6418	4822 130 30621	1N4148
6419	4822 130 30621	1N4148
6420	4822 130 30621	1N4148
6421	4822 130 30621	1N4148
6422	4822 130 30621	1N4148
6423	4822 130 30621	1N4148
6424	4822 130 30621	1N4148
6425	4822 130 30621	1N4148
6426	4822 130 30621	1N4148
6427	4822 130 11589	LTL-1CHAE
6428	4822 130 11589	LTL-1CHAE
6429	4822 130 11589	LTL-1CHAE
6430	4822 130 11589	LTL-1CHAE
6431	4822 130 11589	LTL-1CHAE
6432	4822 130 11589	LTL-1CHAE
6433	4822 130 11589	LTL-1CHAE
6434	4822 130 11589	LTL-1CHAE
6435	4822 130 11589	LTL-1CHAE
6436	4822 130 11589	LTL-1CHAE
6437	4822 130 10791	LTL-1CHGE
6438	4822 130 30621	1N4148
6439	4822 130 30621	1N4148
6441	4822 130 30621	1N4148
6447	4822 130 30621	1N4148

TRANSISTORS & INTEGRATED CIRCUITS

7400	3139 110 52490	TMP87CS71F - '380S52491'
7401	4822 209 31981	SAA6579T/V1
7402	9322 155 22667	TSOP2236ZC1
7403	9965 000 04931	M24C01-WMN6
7404	4822 209 15449	74HC4094D
7405	4822 209 15449	74HC4094D
7406	5322 130 60159	BC847B
7407	5322 130 60159	BC847B
7408	5322 130 60159	BC847B
7410	5322 130 60159	BC847B
7411	4822 130 60373	BC857B
7413	5322 130 60159	BC847B
7414	5322 130 60159	BC847B
7415	5322 130 60159	BC847B
7416	4822 130 60373	BC857B
7417	4822 130 60373	BC857B
7418	4822 130 60373	BC857B
7800	5322 130 60159	BC847B
7801	5322 130 60159	BC847B

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



ECO6 Tuner Board

version: ***SYSTEMS non-CENELEC***

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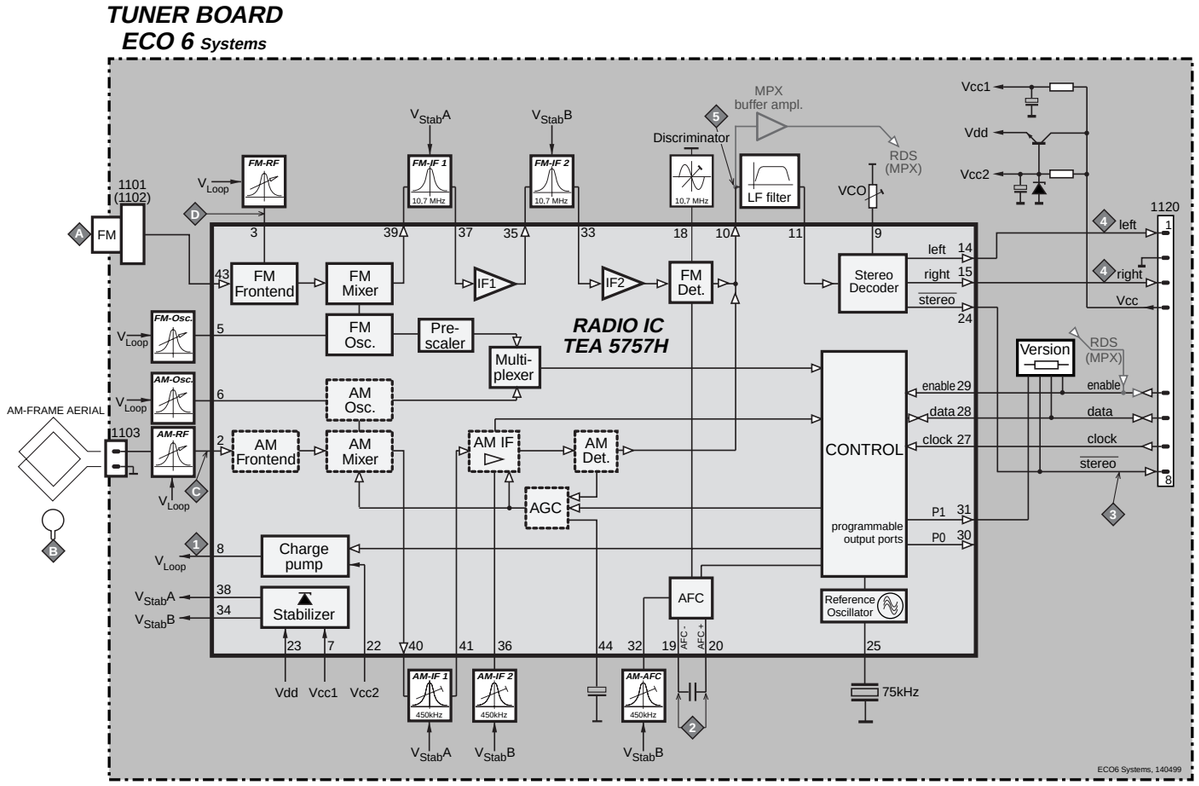
BLOCK DIAGRAM



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TUNER BOARD ECO6 / SYSTEMS NON CENELEC

VERSION PROGRAMMING COMPONENTS

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

X component mounted

LEGEND

ⓟ...for provision only
USA ... for USA version only
E-EU ... for East European version only
J ... for Japanese version only

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

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

ECO6 Sys-non Cenelec, 000911

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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 AM-frame aerial)

Waverange	Input frequency	Input	Tuned to	Adjust	Output	Scope/Voltmeter
VARICAP ALIGNMENT						
FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz)			108MHz	5130	◇1	8V ±0.2V
			87.5MHz (65.81MHz)	check		4.3V ±0.5V (1.2V ±0.5V)
MW FM/AM-version, 10kHz grid 530 - 1700kHz			1700kHz	5123		8V ±0.2V
			530kHz	check		1.1V ±0.4V
FM/MW-version, 9kHz grid 531 - 1602kHz			1602kHz	5123		6.9V ±0.2V
			531kHz	check		1.1V ±0.4V
LW 153 - 279kHz			279kHz	5122		8V ±0.2V
			153kHz	check		1.1V ±0.4V
MW FM/MW/LW- version, 9kHz grid 531 - 1602kHz			1602kHz	5123		8V ±0.2V
			531kHz	check		1.1V ±0.4V
FM IF						
FM	10.7MHz, 45mV continuous wave	◇D	IC 7101 21 — shortcircuit to block AFC — 2141	5119	◇2	0 ± 3 mV DC
FM RF						
FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz)	108MHz	◇A mod=1kHz Δf=±22.5kHz	108MHz	2155	◇4	MAX
	87.5MHz (65.81MHz)		87.5MHz (65.81MHz)	5131		
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 3.3kΩ to Vcc	◇C Δf=±10kHz V_{RF} = 0.5mV (as low as possible)	IC 7101 36 — 100nF — 220R	5111	◇5	max. / f_o symmetric
			IC 7101 40 — 100nF — 220R — see remark 2)	5112		
AM AFC **MW**		◇C continuous wave V_{RF} = 2mV		5114	◇2	0 ± 2 mV DC
AM RF 3)						
MW 4) FM/MW/LW- and FM/MW-version (9kHz grid) 531 - 1602kHz	1494kHz	◇B Δf = ±30kHz V_{RF} as low as possible	1494kHz	2106	◇5	max. / f_o symmetric
	558kHz		558kHz	5102		
LW	198kHz		198kHz	5103		
MW FM/AM-version, 10kHz grid 530 - 1700kHz	1500kHz		1500kHz	2106		
	560kHz		560kHz	5102		

ECO6, Sys + PA with frame aerial, 070799

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

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

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

3) For AM RF adjustments the original frame antenna has to be used !

4) MW has to be aligned before LW.

↕ Repeat

Electrical Partslist *ECO6* *SYSTEMS NON-CENELEC*

7A-4

MISCELLANEOUS

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

CAPACITORS

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

RESISTORS

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

RESISTORS

3143 ©	4822 051 20223	22kΩ	5%	0,1W	RDS only
3144 ©	4822 051 10102	1kΩ	2%	0,25W	RDS only
3145©	4822 117 11449	2,2kΩ	1%	0,1W	
3146 ©	4822 051 20229	22Ω	5%	0,1W	
3152 ©	4822 051 20471	470Ω	5%	0,1W	
3153 ©	4822 051 20471	470Ω	5%	0,1W	
3154 ©	4822 117 13577	330Ω	1%	0,1W	
3155 ©	4822 117 11503	220Ω	5%	0,1W	
3156 ©	4822 117 10837	100kΩ	1%	0,1W	
3157 ©	4822 117 10837	100kΩ	1%	0,1W	
3158 ©	4822 051 20471	470Ω	5%	0,1W	
3159 ©	4822 051 20471	470Ω	5%	0,1W	
3160 ©	4822 051 20471	470Ω	5%	0,1W	
3161 ©	4822 051 20223	22kΩ	5%	0,1W	
3167 ©	4822 051 20121	120Ω	5%	0,1W	
3168 ©	4822 051 20121	120Ω	5%	0,1W	
3169 ©	4822 051 20154	150kΩ	5%	0,1W	
3170 ©	4822 117 10837	100kΩ	1%	0,1W	
3172 ©	4822 051 20562	5,6kΩ	5%	0,1W	
3176 ©	4822 051 20333	33kΩ	5%	0,1W	RDS only
3181 ©	4822 051 10102	1kΩ	2%	0,25W	
4103 ©	4822 051 20008	CHIP JUMPER 0805			
4106 ©	4822 051 20008	CHIP JUMPER 0805			
4107 ©	4822 051 20008	CHIP JUMPER 0805			
4108 ©	4822 051 20008	CHIP JUMPER 0805			

COILS

5102	4822 157 71634	RF-COIL MW
5109	4822 242 70665	FM-IF FILTER 10,7MHz
5110	4822 242 70665	FM-IF FILTER 10,7MHz
5111	2422 549 44023	AM-IF FILTER 450kHz
5112	4822 157 70302	AM-IF FILTER 450kHz
5114	4822 157 70302	AM-IF FILTER 450kHz
5119	4822 157 11443	DISCRIMINATOR COIL
5121	4822 242 10261	QUARTZ 75kHz
5123	2422 549 44108	RF-COIL, AM-OSCILLATOR
5130	4822 157 11843	RF COIL 1,5 TURNS
5131	4822 157 11843	RF COIL 1,5 TURNS

DIODES

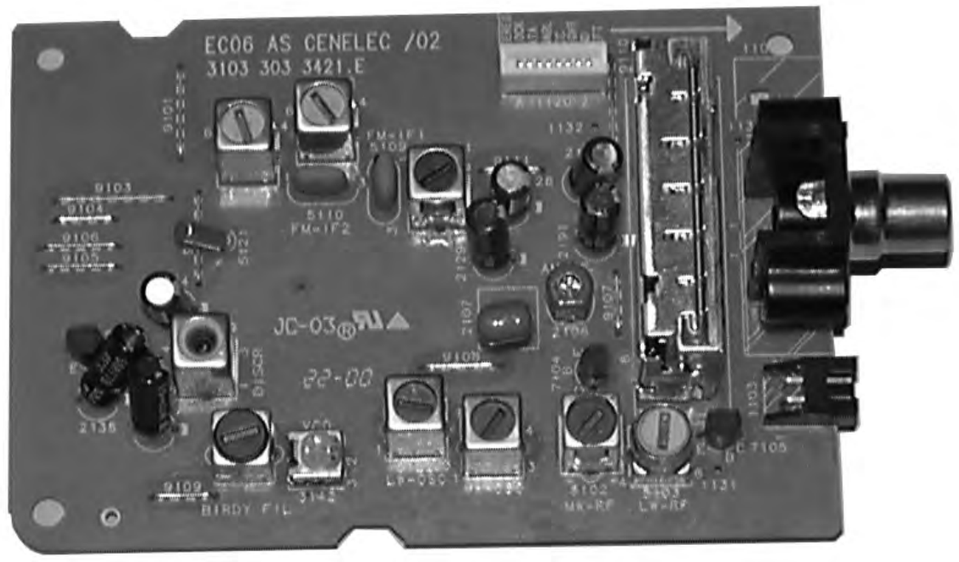
6103 ©	5322 130 34337	BAV99
6105 ©	4822 130 83075	HN1V02H
6106 ©	4822 130 83757	BAS216
6107 ©	9340 386 90115	BZX284-C11
6120 ©	4822 130 83757	BAS216
6130 ©	4822 130 82833	1SV228
6131 ©	4822 130 82833	1SV228

TRANSISTORS

7102	4822 130 42131	BF550	
7103 ©	5322 130 42756	BC857C	RDS only
7111 ©	5322 130 42755	BC847C	
7112	4822 130 44503	BC547C	

INTEGRATED CIRCUITS

7101 ©	9351 740 80557	TEA5757H/V1, RADIO IC



ECO6 Tuner Board

version: ***SYSTEMS CENELEC***

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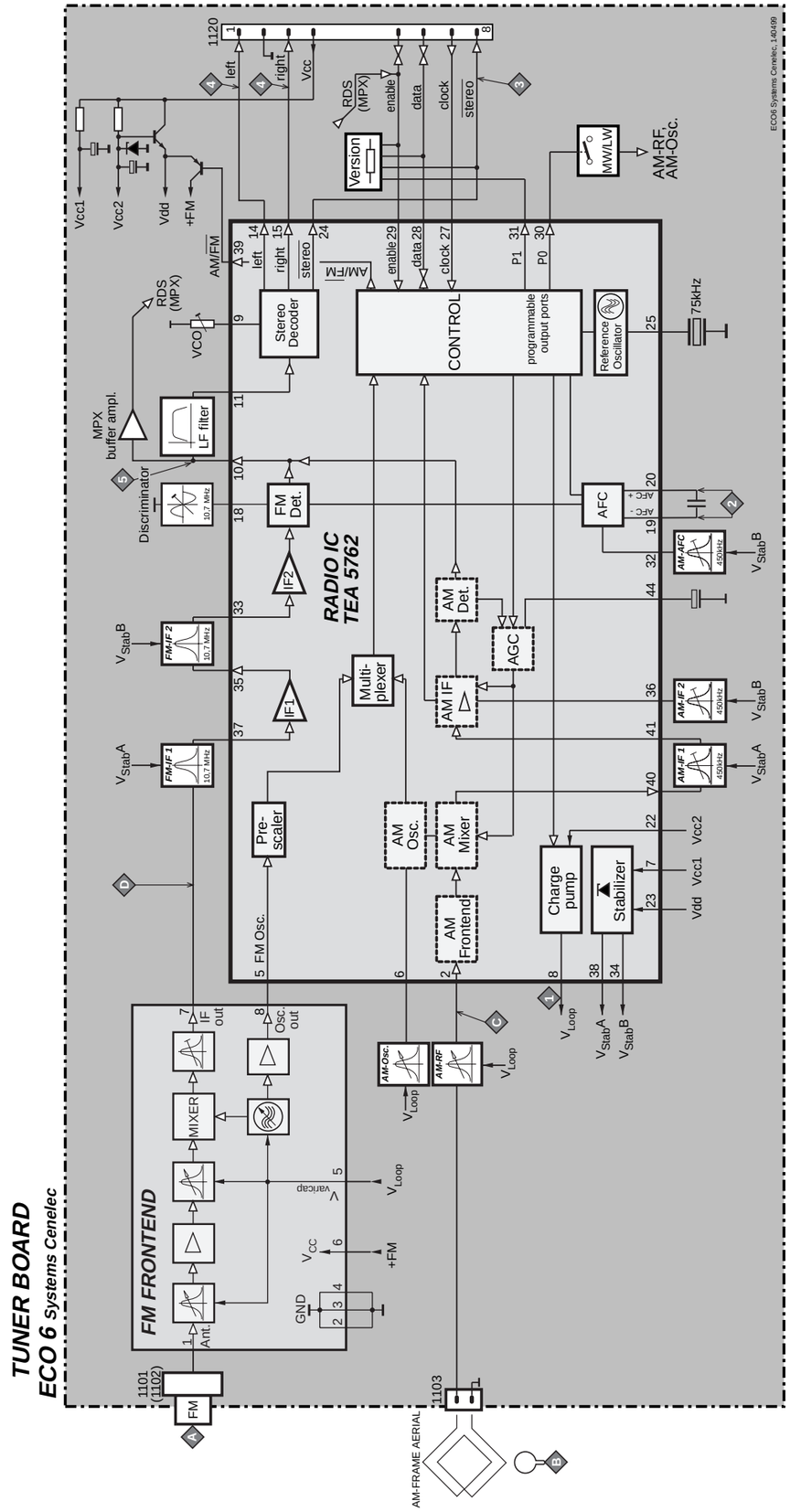
BLOCK DIAGRAM



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TUNER BOARD ECO6 / SYSTEMS-CENELEC

VERSION PROGRAMMING COMPONENTS

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

X component mounted

VERSION DETECTION

PROGRAMMABLE OUTPUT PORTS

LEGEND

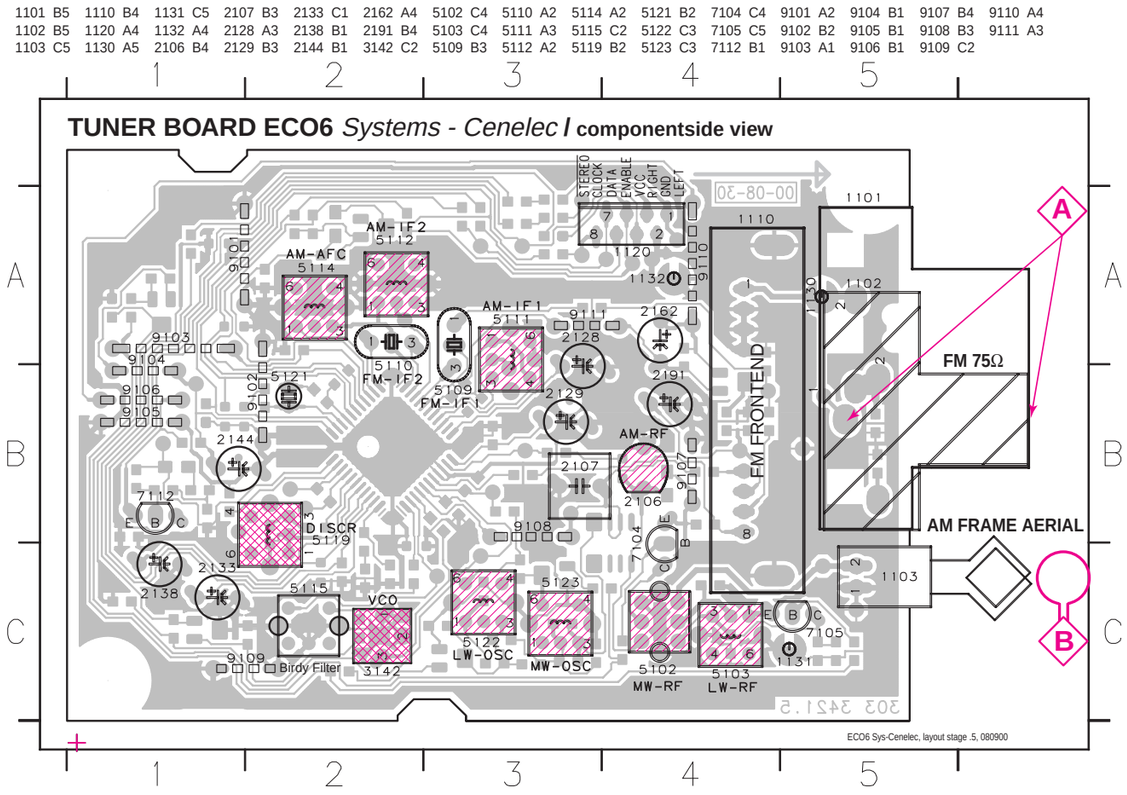
* ... only assembled in FM/AM-version
(P)...for provision only
USA ... for USA version only
LW ... for LW version only

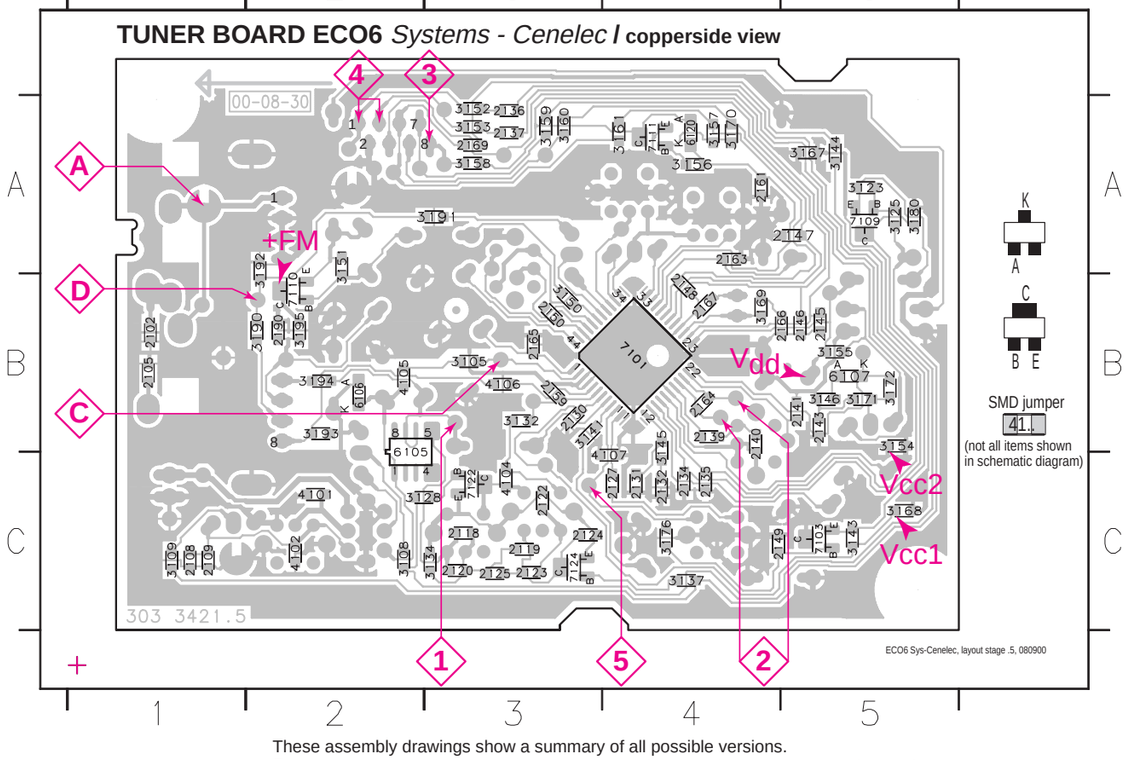
SMD jumper 41xx 0R

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

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

ECO6 Sys-Cenelec, 000907





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

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

Waverange	Input frequency	Input	Tuned to	Adjust	Output	Scope/Voltmeter
VARICAP ALIGNMENT						
FM 87.5 - 108MHz (50kHz grid)			108MHz	check	1	8V ±1.2V
			87.5MHz	check		1.6V ±0.5V
MW 531 - 1602kHz (9kHz grid)			1602kHz	5123		8V ±0.2V 3-band 6.9V ±0.2V 2-band
			531kHz	check		1.1V ±0.4V
LW 153 - 279kHz (3kHz grid)			279kHz	5122		8V ±0.2V
			153kHz	check		1.1V ±0.4V
FM - IF						
FM	10.7MHz, 45mV continuous wave	D	IC 7101 21 shortcircuit to block AFC 2141	5119	2	0mV ±3mV
FM - VCO						
FM	98MHz, 1mV continuous wave	A	98MHz	3142	3	152kHz ±1kHz 1)
FM RF (channel separation)	Note: The FM-frontend unit has already been adjusted by the factory and needs therefore no further adjustments for service purposes.					
FM	98MHz, 1mV 90% Left + 9% pilot mod=1kHz	A	98MHz	IF coil inside FM frontend 1110	4	right channel min.
AM IF						
MW	450kHz connect pin 6 of IC 7101 (AM Osc.) with 3.3kΩ to Vcc	C Δf = ±10kHz V_{RF} = 0.5mV (as low as possible)	IC 7101 36 220R 100nF	5111	5	max. f_o symmetric
			see remark 2) IC 7101 40 220R 100nF	5112		
AM AFC **MW**		C continuous wave V_{RF} = 2mV		5114	2	0mV ±2mV
AM RF 3)						
MW	1494kHz	B Δf = ±30kHz V_{RF} as low as possible	1494kHz	2106	5	max. f_o symmetric
	558kHz		558kHz	5102		
LW	198kHz		198kHz	5103		

ECO6 Sys Cenelec, 190599

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

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

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

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

↕ Repeat

Electrical Partslist *ECO6* SYSTEMS-CENELEC

7B-4

MISCELLANEOUS

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

CAPACITORS

2102 ©	4822 126 13838	100nF	10%	50V		not USA
2105 ©	4822 126 13838	100nF	10%	50V		USA only
2106	2020 800 00204	TRIMCAP. 4,2 - 20pF, N750				LW only
2106	2020 800 00191	TRIMCAP. 3 - 11pF, N450				FM/AM only
2107	4822 121 51319	1µF	20%	50V		
2108 ©	5322 122 32531	100pF	5%	50V		LW only
2109 ©	5322 122 32448	10pF	5%	50V		LW only
2120 ©	4822 126 13689	18pF	1%	63V		FM/AM only
2120 ©	5322 122 32658	22pF	5%	50V		LW only
2122 ©	4822 122 33891	3,3nF	10%	63V		LW only
2123 ©	2020 552 93494	390pF	1%	50V		LW only
2124 ©	4822 122 33177	10nF	20%	50V		FM/AM only
2125 ©	2020 552 96199	560pF	1%	50V		
2127 ©	4822 126 14076	220nF	20%	25V		
2128	4822 124 40248	10µF	20%	63V		
2129	4822 124 41584	100µF	20%	10V		
2130 ©	5322 122 32654	22nF	10%	63V		
2131 ©	4822 126 13482	470nF	20%	16V		
2132 ©	4822 126 13482	470nF	20%	16V		
2133	4822 124 21913	1µF	20%	63V		
2134 ©	4822 122 33893	18nF	5%	63V		not USA
2134 ©	5322 122 32654	22nF	10%	63V		USA only
2135 ©	4822 122 33893	18nF	5%	63V		not USA
2135 ©	5322 122 32654	22nF	10%	63V		USA only
2136 ©	4822 126 14076	220nF	20%	25V		
2137 ©	4822 126 14076	220nF	20%	25V		
2138	4822 124 22652	2,2µF	20%	50V		
2139 ©	4822 126 14236	15pF	5%	50V		
2140 ©	4822 126 13695	82pF	1%	63V		
2141 ©	4822 126 13838	100nF	10%	50V		
2143 ©	4822 126 14076	220nF	20%	25V		
2144	4822 124 21913	1µF	20%	63V		
2145 ©	4822 122 33575	220pF	5%	50V		
2146 ©	4822 122 33575	220pF	5%	50V		
2147 ©	4822 122 33575	220pF	5%	50V		
2148 ©	4822 122 33127	2,2nF	10%	63V		
2149 ©	5322 122 32659	33pF	5%	50V		RDS only
2150 ©	4822 126 13838	100nF	10%	50V		
2159 ©	5322 122 32659	33pF	5%	50V		
2162	4822 124 81151	22µF	20%	50V		
2163 ©	4822 126 13838	100nF	10%	50V		LW only
2164 ©	4822 126 13482	470nF	20%	16V		
2165 ©	4822 126 13838	100nF	10%	50V		
2166 ©	5322 122 31647	1nF	10%	63V		
2167 ©	4822 122 33926	12pF	5%	50V		
2169 ©	4822 122 33127	2,2nF	10%	63V		RDS only
2190 ©	4822 126 13838	100nF	10%	50V		
2191	4822 124 40178	100µF	20%	10V		

RESISTORS

3105 ©	4822 117 11503	220Ω	5%	0,1W		
3108 ©	4822 117 11449	2,2kΩ	1%	0,1W		LW only
3109 ©	4822 051 20472	4,7kΩ	5%	0,1W		LW only
3123 ©	4822 051 20472	4,7kΩ	5%	0,1W		LW only
3125 ©	4822 117 10833	10kΩ	1%	0,1W		LW only
3128 ©	4822 117 11449	2,2kΩ	1%	0,1W		LW only

RESISTORS

3132 ©	4822 051 20479	47Ω	5%	0,1W		
3134 ©	4822 051 20223	22kΩ	5%	0,1W		
3137 ©	4822 051 20223	22kΩ	5%	0,1W		LW only
3141 ©	4822 117 11148	56kΩ	1%	0,1W		
3142	4822 100 12159	TRIMPOT. 100kΩ				
3143 ©	4822 051 20223	22kΩ	5%	0,1W		RDS only
3144 ©	4822 051 10102	1kΩ	2%	0,25W		RDS only
3145 ©	4822 117 11449	2,2kΩ	1%	0,1W		
3146 ©	4822 051 20229	22Ω	5%	0,1W		
3150 ©	4822 117 10833	10kΩ	1%	0,1W		
3151 ©	4822 051 20683	68kΩ	5%	0,1W		
3152 ©	4822 051 20471	470Ω	5%	0,1W		
3153 ©	4822 051 20471	470Ω	5%	0,1W		
3154 ©	4822 117 13577	330Ω	1%	0,1W		
3155 ©	4822 117 10353	150Ω	5%	0,1W		
3156 ©	4822 117 10837	100kΩ	1%	0,1W		
3157 ©	4822 117 10837	100kΩ	1%	0,1W		
3158 ©	4822 051 20471	470Ω	5%	0,1W		
3159 ©	4822 051 20471	470Ω	5%	0,1W		
3160 ©	4822 051 20471	470Ω	5%	0,1W		
3161 ©	4822 051 20223	22kΩ	5%	0,1W		
3167 ©	4822 051 20121	120Ω	5%	0,1W		
3168 ©	4822 051 20121	120Ω	5%	0,1W		
3169 ©	4822 051 20154	150kΩ	5%	0,1W		
3170 ©	4822 117 10837	100kΩ	1%	0,1W		
3171 ©	4822 117 10834	47kΩ	1%	0,1W		
3172 ©	4822 051 20562	5,6kΩ	5%	0,1W		
3176 ©	4822 051 20333	33kΩ	5%	0,1W		RDS only
3180 ©	4822 117 10833	10kΩ	1%	0,1W		LW only
3190 ©	4822 051 20121	120Ω	5%	0,1W		
3191 ©	4822 051 20121	120Ω	5%	0,1W		
3192 ©	4822 117 13577	330Ω	1%	0,1W		
3193 ©	4822 117 13577	330Ω	1%	0,1W		
3194 ©	4822 117 11449	2,2kΩ	1%	0,1W		
3195 ©	4822 051 20101	100Ω	5%	0,1W		

4101 ©	4822 051 20008	CHIP JUMPER 0805	FM/AM only
4102 ©	4822 051 20008	CHIP JUMPER 0805	FM/AM only
4104 ©	4822 051 20008	CHIP JUMPER 0805	FM/AM only
4105 ©	4822 051 20008	CHIP JUMPER 0805	
4106 ©	4822 051 20008	CHIP JUMPER 0805	
4107 ©	4822 051 20008	CHIP JUMPER 0805	

COILS

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

DIODES

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

TRANSISTORS

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

INTEGRATED CIRCUITS

7101	4822 209 90315	TEA5762H/V1, RADIO IC	

ETF7 TAPE MODULE

(Non-Dolby Version)

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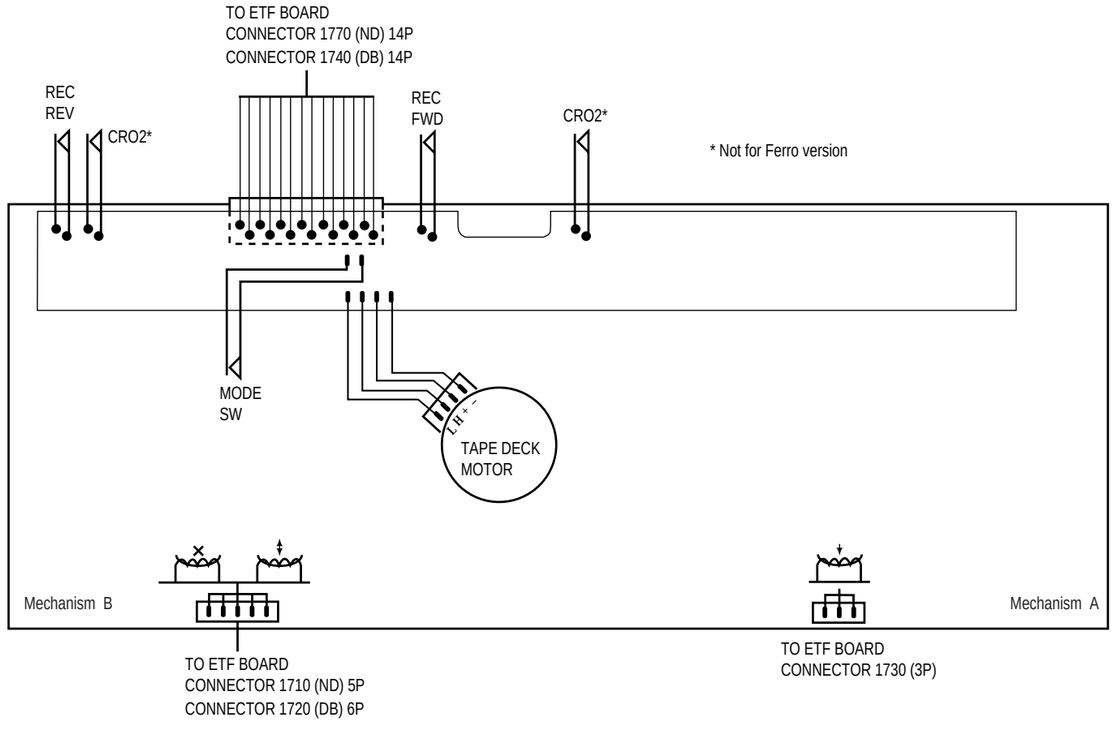
Tapedeck wiring (Double deck)



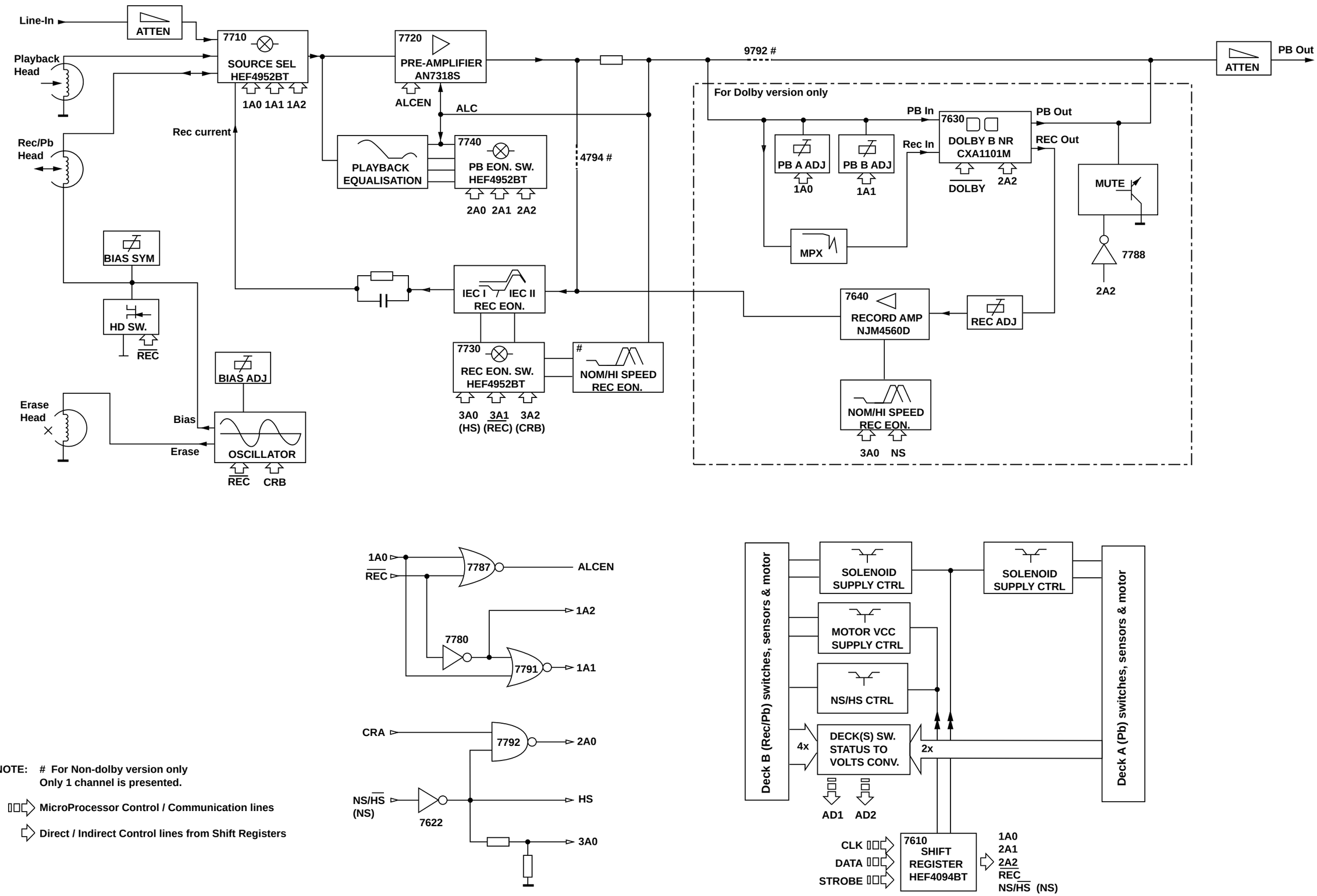
Variations table for Analog Circuit

	Autoreverse ND/DD/FR	Non-autoreverse ND/DD/FF	
	Chrome/Ferro	Chrome/Ferro	Ferro
2624	-	-	100nF
2701 , 2702	150pF	270pF	270pF
2703 , 2704	100pF	220pF	220pF
2717 , 2718	10nF	15nF	15nF
2721 , 2722	6,8nF	6,8nF	-
2727 , 2728	470pF	1nF	1nF
3616	10k	1k	1k
3618	6k8	-	-
3620	10k trimmer	-	-
3622	-	10k trimmer	10k trimmer
3672	4k7	-	-
3676	47k	-	-
3687	220R	220R	-
3688	680R	-	-
3723 , 3724	15k	18k	18k
3725 , 3726	10R	10R	-
3727 , 3728	5k6	6k8	6k8
3729 , 3730	3k3	4k7	4k7
3743 , 3744	1k5	2k2	2k2
3745 , 3746	3k3	5k6	5k6
3754 , 3755	1M	47R	47R

	Autoreverse ND/DD/FR	Non-autoreverse ND/DD/FF	
	Chrome/Ferro	Chrome/Ferro	Ferro
3769	12k	8k2	8k2
3772	6k8	5k6	5k6
4785	-	-	0R jumper
3774	15k	8k2	8k2
6614	1N4148	-	-
7616	BC857B	-	-
7622	BC847B	-	-

9-2

BLOCK DIAGRAM



NOTE: # For Non-dolby version only
Only 1 channel is presented.

MicroProcessor Control / Communication lines

Direct / Indirect Control lines from Shift Registers

9-3

Brief introduction

General

1. Playback Mode
   Signal from the playback head Deck A or Deck B is selected and fed through by the Mode Selector IC7710 (HEF4952BT). The signal is amplified by amplifier IC7720 (AN7323S) before feeding to the IC7740 (HEF4952BT) and out to the AF Board via connector 1701.

2. Recording Mode
   Recording Signal is selected and fed through by the Mode Selector IC7710 (HEF4952BT) which is then amplified by the amplifier IC7720 (AN7323S). The amplified output signal will pass through IC7730 (HEF4952BT) for record equalization and back to IC7710 (HEF4952BT) before registered into the Rec/PB Head of Deck B.

3. Dubbing Mode
   In Dubbing mode, signal from the playback head Deck A is selected and fed through by the Mode Selector IC7710 (HEF4952BT) which is then equalised for playback mode by the amplifier IC7720 (AN7323S) so that a flat response is obtained after the pre-amp. The equalised signal will then follow the same path as in the Recording mode.

4. Mode Selector
   The Mode Selector IC7710 (HEF4952BT) caters for 4 inputs signal, namely Playback Signal from Deck A, Playback Signal from Deck B, Recording Signal and Dubbing Signal.

5. Amplifier PB/REC
   Amplifier IC7720 (AN7323S) is for the purpose of amplifying the Playback and Recording signal from the Mode Selector.

6. Automatic Level Control (ALC)
   ALC circuit consists of resistors (3760, 3765, 3766, 3767), capacitors (2762 , 2763) and control by transistor 7787 (BC847B). ALC limits the amplifier output to a constant value when input signal becomes too large, thus limiting recording current to below saturation level, to prevent recording distortion.

7. Muting Circuit (For Non-Dolby version only)
   Switch S4 of the IC7740 (HEF4952BT) is for the purpose of muting the output during Recording mode. During Recording mode, S4 is closed and shorted to the ground.

8. IC7740 (HEF4952BT)
   The function of the IC7740 (HEF4952BT) is to change time constant between 120us Ferro (IEC I) and 70us Chrome (IEC II) during playback mode. It will automatically determined whether the tape type is 120us Ferro (IEC I) or 70us Chrome (IEC II). This IC will switch to Flat Gain during the Recording mode.

9. IC7730 (HEF4952BT)
   The function of the IC7730 (HEF4952BT) is to change gain and time constant according to tape type and recording speed to boost recording current at higher frequency during recording to compensate for head loss. It will automatically determined whether the tape type is 120us Ferro (IEC I) or 70us Chrome (IEC II).

10. Bias Level
    Bias Level making use of the Variable resistor (3773) for adjusting the optimal level of the bias current for Ferro or Chrome.

11. Bias Symm (For Dolby B NR version only)
    Bias Symm making use of the Variable resistor (3785) to adjust the bias current for the left and the right channel to be equal.

12. PB Switch
    Playback Switch which consists of the FETs 7785 (For Dolby B NR version only) & 7786 (J111) is for the purpose of providing a virtual ground for the Rec/PB Head (Deck B) during Playback mode. During the Playback mode, the FETs are turn on and shorted pin 2 and 4 of connector 1720 to the ground. During Recording mode, the FETs are turn off to allow the oscillator signal to be superposition onto the Recording signal for recording.

13. Motor Speed (For FR versions only)
    During High speed dubbing, a feedback signal from the uP through pin 03 of the IC7610 (HEF4094BT) will trigger the transistors 7622 (BC847B) and 7616 (BC857B) to cause a change in the voltage level between High and Low, thus changing the speed of the motor.

14. IC7610 (HEF4094BT)
    IC7610 (HEF4094BT) is a Shift Register use for issues the logic for cmos switch ICs (HEF4952BT) via 1A0, 2A1 and 2A2. It also issues logic to On/Off SOL_A, SOL_B and MOT. Recording speed is controlled via NS/HS.

Dolby Circuit (For sets with Dolby B NR version only)

15. IC7630 (CXA1551M)
    IC7630 (CXA1551M) in the Dolby circuit is a Dolby Noise Reduction Type B IC for the Playback and Recording signal. Noise Reduction ON/OFF are controlled by $\overline{\text{DOLBY}}$, which is from CLK, direct from uP. After clocking in DATA, CLK is set to HIGH/LOW for NR OFF/ON.

16. 19kHz Filter
    The 19kHz filters 5631 & 5632 (LXD-210) in the Dolby circuit is for the purpose of filtering the 19kHz Pilot Tone (for Tuner signal only) of the Recording signal.

17. Level Adjust
    The Variable resistor 3635, 3636,3641 and 3642 in the Dolby circuit is for adjusting the playback level of the Dolby reference (400Hz , 200nWb/m). Transistor 7631, 7632 are ON to enable adjustment of 3641, 3642 during Playback Deck A. Transistor 7633, 7634 and 3635, 3636 are active for Playback Deck B.

18. Amplifier IC7640 (NJM4560M)
    The Amplifiers 7640A & 7640B (NJM4560M) in the Dolby circuit is for the purpose of amplified the Recording signal.

19. Muting Circuit
    The muting circuit which consists of transistors 7788, 7789 and 7790 (BC847B) is for the purpose of muting the output during Recording mode.

NOTATIONS & ABBREVIATIONS USED IN THIS DOCUMENT

CR	Chrome (IEC type II)
DB	Dolby NR type B
DD	Double Deck
DM	Double Motor
FE	Ferro (IEC type I)
FF	Non-Autoreverse
FR	Autoreverse Deck B
Gnd x	Ground x
HSD	High speed dubbing
ND	Non Dolby
NR	Noise Reduction
NSD	Normal speed dubbing
PB	Playback
REC	Record
S/A	Sub-assy
SD	Single Deck
SM	Single Motor

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CONNECTORS ASSIGNMENTS:

CONNECTOR 1701 — INTERCONNECTION TO AF BOARD

1	REC-L	Record input left
2	REC-R	Record input right
3	GND A	AF Ground
4	TAPE-L	Playback output left
5	+12V	D.C. supply (+12V) for AF electronics
6	TAPE-R	Playback output right
7	-CMOS	Negative d.c. supply (-9V) for CMOS ICs

CONNECTOR 1703 — INTERCONNECTION TO AF BOARD

1	GND M	Motor Ground
2	+MOTOR	D.C. supply (+12V) for tape deck motor & solenoid

CONNECTOR 1706 — INTERCONNECTION TO FRONT BOARD

1	AD2	Deck sensing switches output voltage / Deck A EOT
2	AD1	Deck sensing switches output voltage / Deck B EOT
3	+5V	DC supply +5V for ADC network
4	GND P	Control & Oscillator Ground
5	CLK	HEF4094BT shift register Clock line
6	DATA	HEF4094BT shift register Data line
7	STROBE	HEF4094BT shift register Strobe line

CONNECTOR 1710 — DECK B HEADS CONNECTON ***(For Non-Dolby version only)***

1	B R/P HD L+	R/P Head left channel positive
2	GND A	R/P Head return ground
3	B R/P HD R+	R/P Head right channel positive
4	ERASE HEAD	Erase Head
5	GND A	Erase Head ground

CONNECTOR 1720 — DECK B HEADS CONNECTON ***(For Dolby B NR version only)***

1	B R/P HD L+	R/P Head left channel positive
2	B R/P HD L-	R/P Head left channel negative
3	B R/P HD R+	R/P Head right channel positive
4	B R/P HD R-	R/P Head right channel negative
5	ERASE HEAD	Erase Head
6	GND A	Erase Head ground

CONNECTOR 1730 — DECK A HEAD CONNECTIONS ***(For Double Deck versions only)***

1	A PB HD L+	Pb Head left channel positive
2	GND A	Pb Head return ground shield
3	A PB HD R+	Pb Head right channel positive

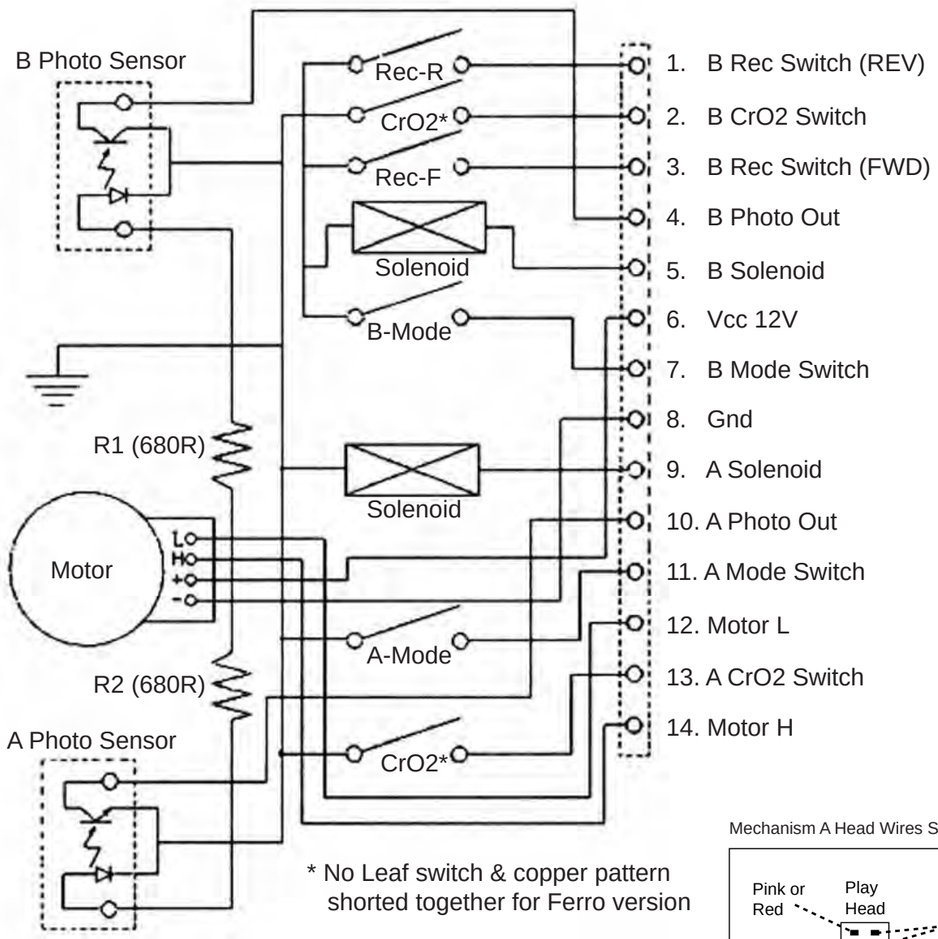
CONNECTOR 1740 — DECK A & B CONTROL INTERFACE ***(For Dolby B NR version only)***

1	REC REW	Record tab protection status switch (reverse)	[open=on: close=off]
2	CrO2 B	Chrome tape detection switch deck B	[open=Cr: close=Fe]
3	REC FWD	Record tab protection status switch (forward)	[open=on: close=off]
4	PHOTO B	Photo sensor output (tape movement indication)	
5	SOL B	Solenoid supply for deck B	
6	Vcc	Deck / Motor supply	
7	MODE B	Mode switch (head engagement)	[open=off: close=engaged]
8	GND M	Deck / Motor ground	
9	SOL A	Solenoid supply for deck A	
10	PHOTO A	Photo sensor output (tape movement indication)	
11	MODE A	Mode switch (head engagement)	[open=off: close=engaged]
12	L	L pin for motor	
13	CrO2 A	Chrome tape detection switch deck A	[open=Cr: close=Fe]
14	H	H pin for motor	

CONNECTOR 1770 — DECK A & B CONTROL INTERFACE ***(For Non-Dolby version only)***

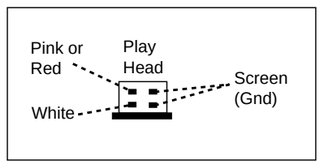
1	REC REW	Record tab protection status switch (reverse)	[open=on: close=off]
2	CrO2 B	Chrome tape detection switch deck B	[open=Cr: close=Fe]
3	REC FWD	Record tab protection status switch (forward)	[open=on: close=off]
4	PHOTO B	Photo sensor output (tape movement indication)	
5	SOL B	Solenoid supply for deck B	
6	Vcc	Deck / Motor supply	
7	MODE B	Mode switch (head engagement)	[open=off: close=engaged]
8	GND M	Deck / Motor ground	
9	SOL A	Solenoid supply for deck A	
10	PHOTO A	Photo sensor output (tape movement indication)	
11	MODE A	Mode switch (head engagement)	[open=off: close=engaged]
12	L	L pin for motor	
13	CrO2 A	Chrome tape detection switch deck A	[open=Cr: close=Fe]
14	H	H pin for motor	

TAPE MECHANISM ELECTRONICS

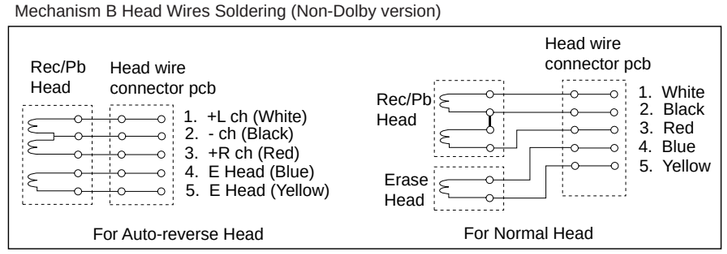


* No Leaf switch & copper pattern shorted together for Ferro version

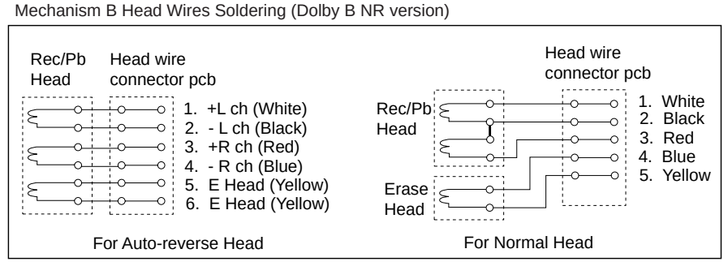
Mechanism A Head Wires Soldering



Mechanism B Head Wires Soldering (Non-Dolby version)



Mechanism B Head Wires Soldering (Dolby B NR version)



TAPE ADJUSTMENT & CHECK TABLE

	TEST CASSETTE	RECORDER MODE	MEASURE ON	READ ON	ADJUST with	ADJUST to
ADJUST MOTOR SPEED						
NORMAL SPEED	SBC420 3150Hz	PLAY B	◇1 or ◇2 LEFT RIGHT	frequency counter	3620	3150Hz – 0.5%
		PLAY A			check	3150Hz -0.8/+1.8%
CHECK WOW & FLUTTER						
DECK A & B	SBC420 3150Hz	PLAY	◇1 or ◇2 LEFT RIGHT	W&F-meter	check	†0.4 % DIN
ADJUST AZIMUTH						
DECK A & B	SBC420 10kHz	PLAY FWD	◇1 or ◇2 LEFT RIGHT	mV-meter	left hand screw	max. output level & left=right
		PLAY REV #			right hand screw	
CHECK PLAYBACK FREQUENCY RESPONSE						
DECK A & B	SBC420	PLAY	◇1 or ◇2 LEFT RIGHT	mV-meter	check	limits see fig.1
ADJUST BIAS CURRENT						
DECK B	SBC419A^	RECORD	◇5 or ◇6 LEFT RIGHT	mV-meter	3773	995mV
	SBC420				check	750mV – 1.5dB
CHECK OVERALL FREQUENCY RESPONSE AND DISTORTION						
Inject 3mV signals 100Hz, 250Hz, 1kHz, 10kHz, 12.5kHz via ◇3 or ◇4	SBC419A^ or SBC420	RECORD B				
	RECORDED CASSETTE	PLAY B	◇1 or ◇2 LEFT RIGHT	mV-meter	check	limits see fig. 2 *
Inject 1kHz 8.85mV via ◇3 or ◇4	SBC419A^ or SBC420	RECORD B				
	RECORDED CASSETTE	PLAY B	◇1 or ◇2 LEFT RIGHT	THD-meter	check	†3% *

SBC419A^ : 4822 397 30069
SBC420 : 4822 397 30071

\# For Auto-reverse version only
* If high frequencies are not within limits, decrease bias and re-measure.
If distortion is too high, increase bias and re-meaure
^ Not applicable for Ferro version

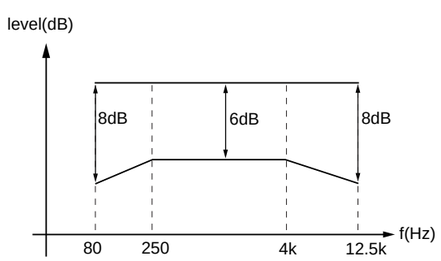


figure. 1

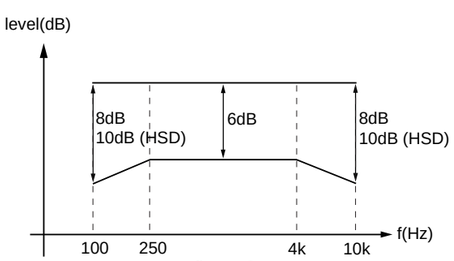
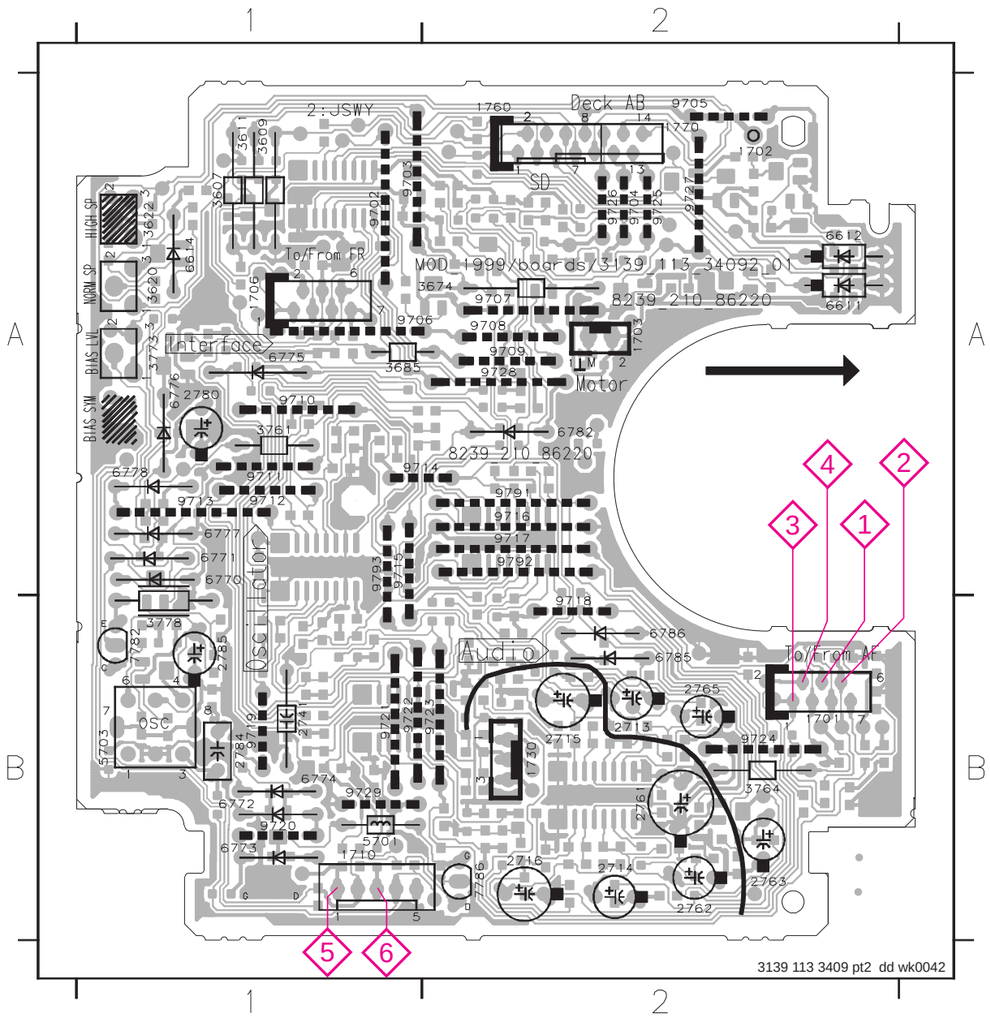


figure. 2

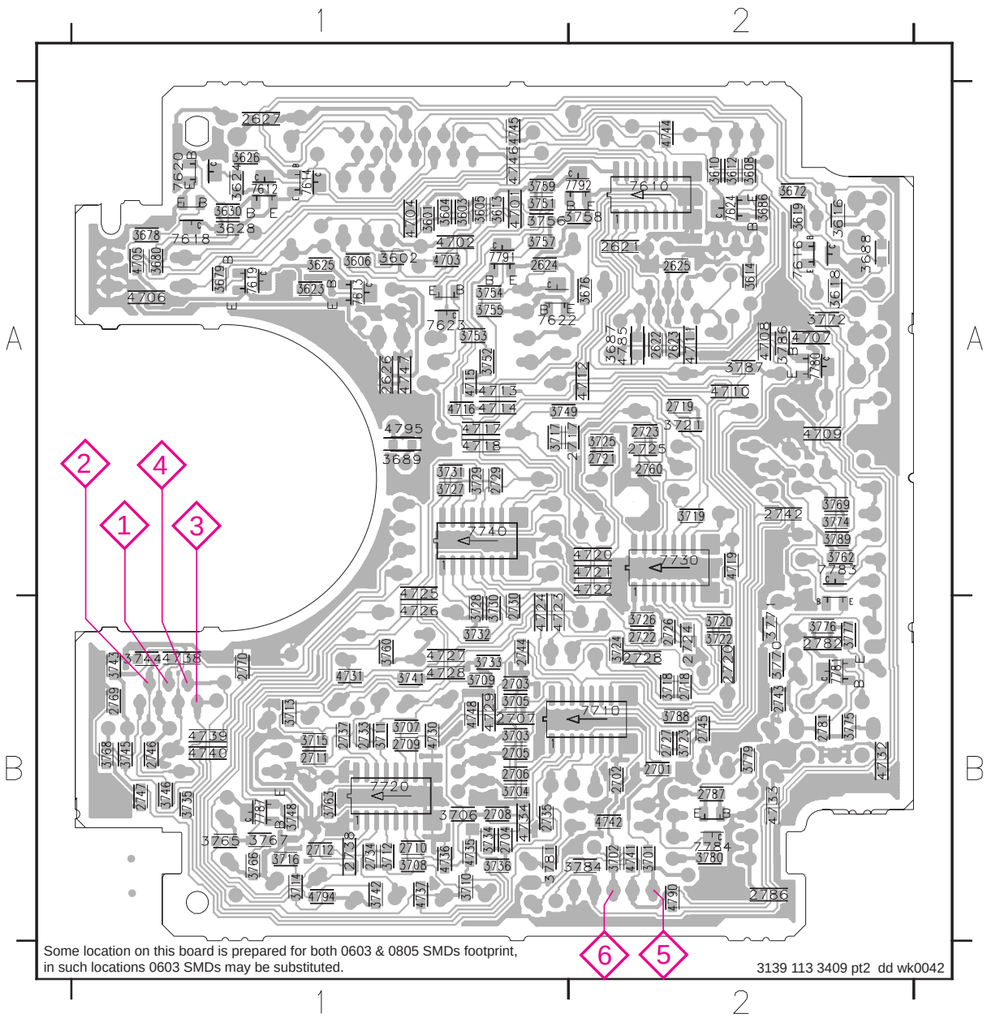
COMPONENT LAYOUT

1701 B2	2714 B2	2784 B1	3761 A1	6770 A1	6782 A2	9706 A1	9715 A1	9724 B2
1702 A2	2715 B2	2785 B1	3764 B2	6771 A1	6785 B2	9707 A2	9716 A2	9725 A2
1703 A2	2716 B2	3607 A1	3773 A1	6772 B1	6786 B2	9708 A2	9717 A2	9726 A2
1706 A1	2741 B1	3609 A1	3778 B1	6773 B1	7782 B1	9709 A2	9718 B2	9727 A2
1710 B1	2761 B2	3611 A1	5701 B1	6774 B1	7786 B2	9710 A1	9719 B1	9728 A2
1730 B2	2762 B2	3620 A1	5703 B1	6775 A1	9702 A1	9711 A1	9720 B1	9729 B1
1760 A2	2763 B2	3622 A1	6611 A2	6776 A1	9703 A1	9712 A1	9721 B1	9791 A2
1770 A2	2765 B2	3674 A2	6612 A2	6777 A1	9704 A2	9713 A1	9722 B1	9792 A2
2713 B2	2780 A1	3685 A1	6614 A1	6778 A1	9705 A2	9714 A1	9723 B2	9793 A1



CHIP LAYOUT

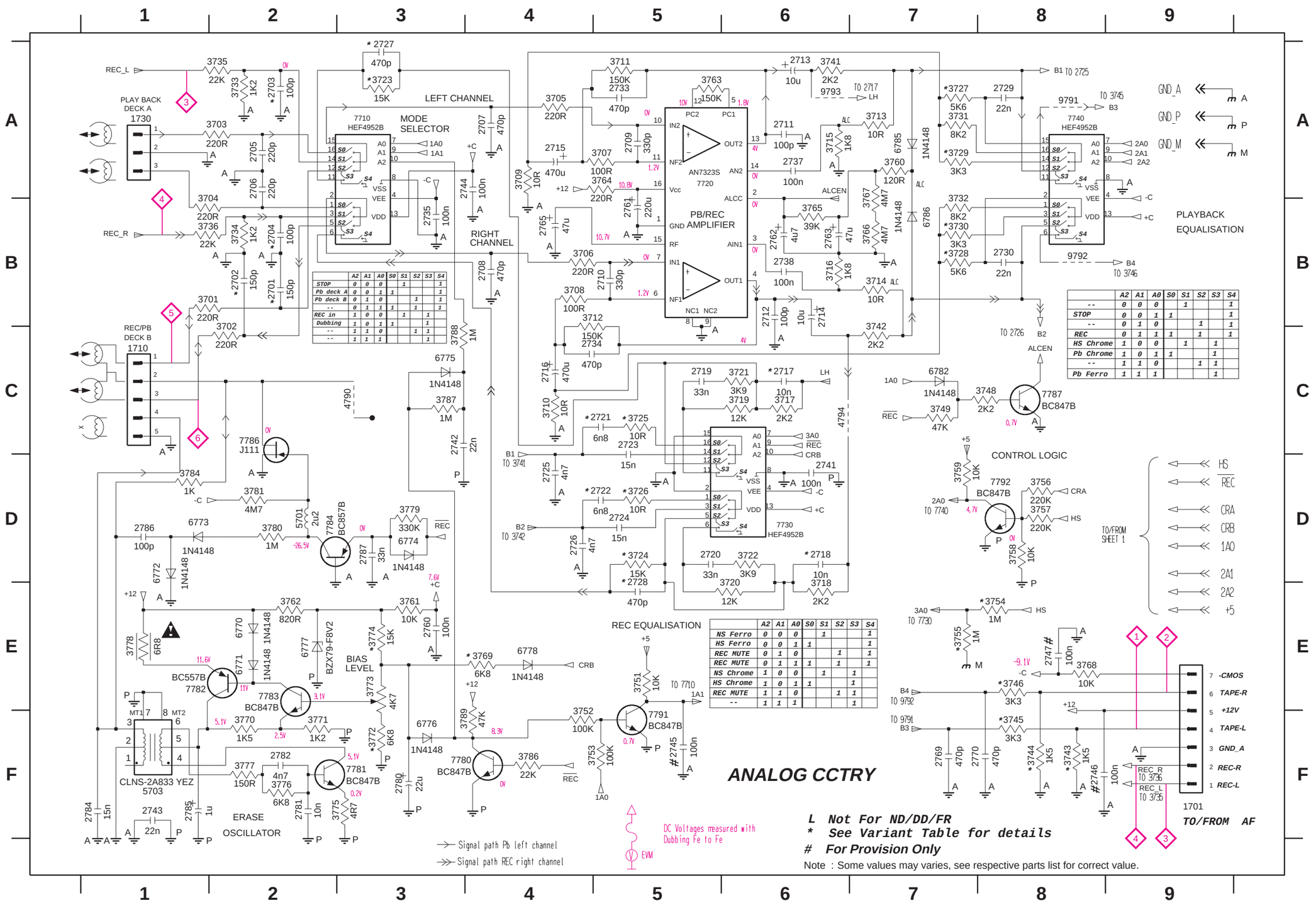
2621 A2	2724 B2	3602 A1	3688 A2	3725 A2	3757 A1	4701 A1	4727 B1	7612 A1
2622 A2	2725 A2	3603 A1	3689 A1	3726 B2	3758 A2	4702 A1	4728 B1	7613 A1
2623 A2	2726 B2	3604 A1	3701 B2	3727 A1	3759 A1	4703 A1	4729 B1	7614 A1
2624 A1	2727 B2	3605 A1	3702 B2	3728 B1	3760 B1	4704 A1	4730 B1	7616 A2
2625 A2	2728 B2	3606 A1	3703 B1	3729 A1	3762 A2	4705 A1	4731 B1	7618 A1
2626 A1	2729 A1	3608 A2	3704 B1	3730 B1	3763 B1	4706 A1	4732 B2	7619 A1
2627 A1	2730 B1	3610 A2	3705 B1	3731 A1	3765 B1	4707 A2	4733 B2	7620 A1
2701 B2	2733 B1	3612 A2	3706 B1	3732 B1	3766 B1	4708 A2	4734 B1	7622 A1
2702 B2	2734 B1	3613 A1	3707 B1	3733 B1	3767 B1	4709 A2	4735 B1	7623 A1
2703 B1	2735 B1	3614 A2	3708 B1	3734 B1	3768 B1	4710 A2	4736 B1	7624 A2
2704 B1	2737 B1	3616 A2	3709 B1	3735 B1	3769 A2	4711 A2	4737 B1	7710 B2
2705 B1	2738 B1	3618 A2	3710 B1	3736 B1	3770 B2	4712 A2	4738 B1	7720 B1
2706 B1	2742 A2	3619 A2	3711 B1	3741 B1	3771 B2	4713 A1	4739 B1	7730 A2
2707 B1	2743 B2	3623 A1	3712 B1	3742 B1	3772 A2	4714 A1	4740 B1	7740 A1
2708 B1	2744 B1	3624 A1	3713 B1	3743 B1	3774 A2	4715 A1	4741 B2	7780 A2
2709 B1	2745 B2	3625 A1	3714 B1	3744 B1	3775 B2	4716 A1	4742 B2	7781 B2
2710 B1	2746 B1	3626 A1	3715 B1	3745 B1	3776 B2	4717 A1	4744 A2	7783 A2
2711 B1	2747 B1	3628 A1	3716 B1	3746 B1	3777 B2	4718 A1	4745 A1	7784 B2
2712 B1	2760 A2	3630 A1	3717 A1	3748 B1	3779 B2	4719 A2	4746 A1	7787 B1
2717 A2	2769 B1	3672 A2	3718 B2	3749 A1	3780 B2	4720 A2	4747 A1	7791 A1
2718 B2	2770 B1	3676 A2	3719 A2	3751 A1	3781 B1	4721 A2	4748 B1	7792 A2
2719 A2	2781 B2	3678 A1	3720 B2	3752 A1	3784 B2	4722 A2	4785 A2	
2720 B2	2782 B2	3679 A1	3721 A2	3753 A1	3786 A2	4723 B1	4790 B2	
2721 A2	2786 B2	3680 A1	3722 B2	3754 A1	3787 A2	4724 B1	4794 B1	
2722 B2	2787 B2	3686 A2	3723 B2	3755 A1	3788 B2	4725 A1	4795 A1	
2723 A2	3601 A1	3687 A2	3724 B2	3756 A1	3789 A2	4726 B1	7610 A2	



9-7

ANALOG CIRCUIT

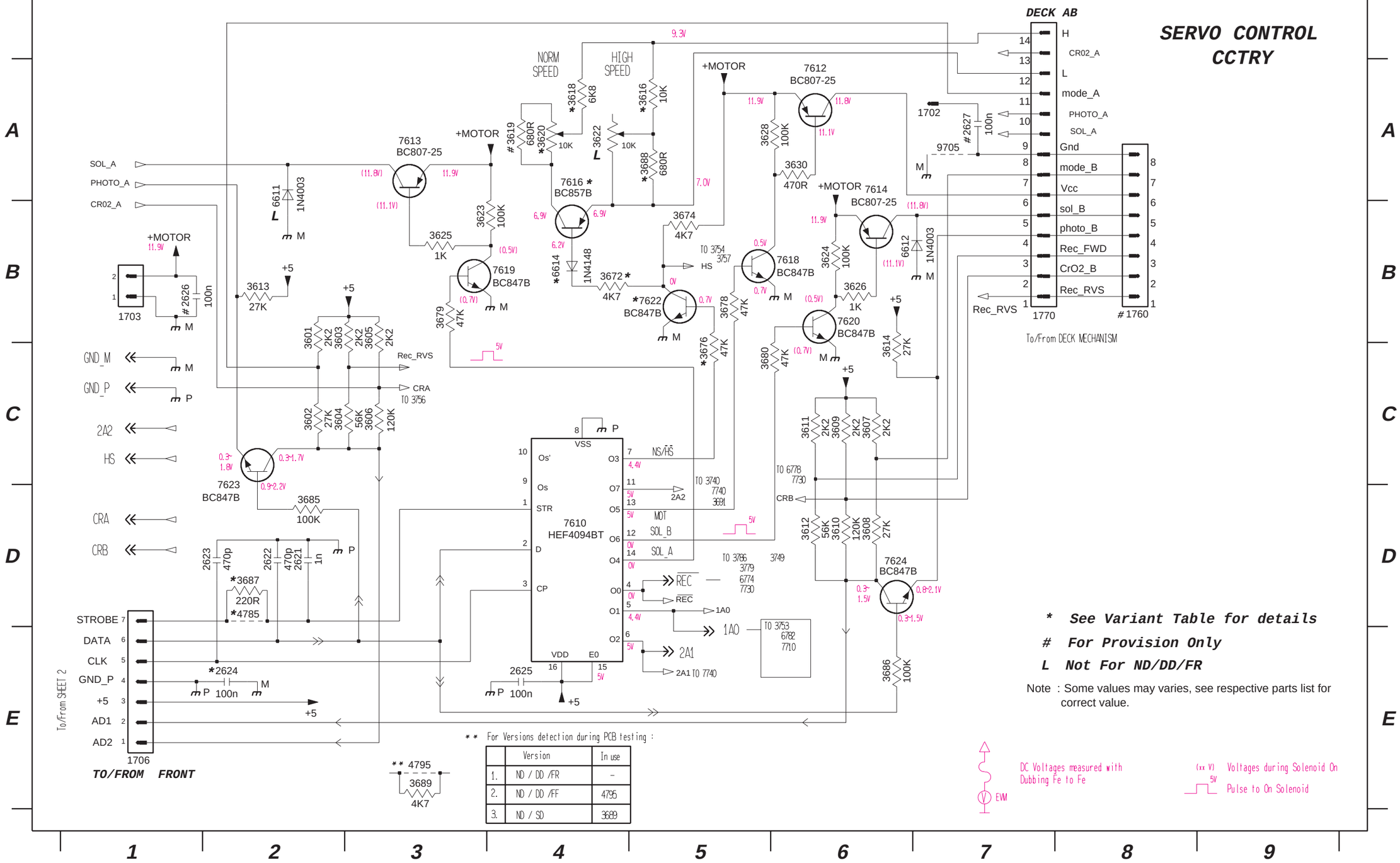
1701 F9	2705 A2	2712 B6	2719 C5	2726 D4	2735 B3	2745 F5	2765 B4	2785 F1	3705 A4	3712 B4	3719 C6	3726 D5	3733 A2	3744 F8	3753 F5	3760 A7	3767 A7	3774 E3	3781 D2	4794 C6	6774 D3	6786 B7	7782 E1	9791 A8
1710 C1	2706 A2	2713 A6	2720 D5	2727 A3	2737 A6	2746 F8	2769 F7	2786 D1	3706 B4	3713 A7	3720 E6	3727 A7	3734 B2	3745 F8	3754 E8	3761 E3	3768 E8	3775 F3	3784 D1	5701 D2	6775 C3	7710 A3	7783 E2	9792 B8
1730 A1	2707 A4	2714 B6	2721 C5	2728 E5	2738 B6	2747 E8	2770 F8	2787 D3	3707 A5	3714 B7	3721 C6	3728 B7	3735 A2	3746 E8	3755 E7	3762 E2	3769 E4	3776 F2	3786 F4	5703 F1	6776 F3	7720 A5	7784 D2	9793 A6
2701 B2	2708 B4	2715 A4	2722 D5	2729 A8	2741 D6	2760 E3	2780 F3	3701 B1	3708 B4	3715 A6	3722 D6	3729 A7	3736 B1	3748 C8	3756 D8	3763 A5	3770 F2	3777 F2	3787 C3	6770 E2	6777 E2	7730 D6	7786 C2	
2702 B2	2709 A5	2716 C4	2723 C5	2730 B8	2742 C3	2761 B5	2781 F2	3702 C2	3709 A4	3716 B6	3723 A3	3730 B7	3741 A6	3749 C7	3757 D8	3764 A5	3771 F2	3778 E1	3788 C3	6771 E2	6778 E4	7740 A8	7787 C8	
2703 A2	2710 B5	2717 C6	2724 D5	2733 A5	2743 F1	2762 B6	2782 F2	3703 A2	3710 C4	3717 C6	3724 D5	3731 A7	3742 C7	3751 E5	3758 D8	3765 B6	3772 F3	3779 D3	3789 F4	6772 D1	6782 C7	7780 F4	7791 F5	
2704 B2	2711 A6	2718 D6	2725 D4	2734 C4	2744 A4	2763 B6	2784 F1	3704 B1	3711 A5	3718 E6	3725 C5	3732 B7	3743 F8	3752 F4	3759 D7	3766 B7	3773 E3	3780 D2	4790 C3	6773 D1	6785 A7	7781 F3	7792 D8	

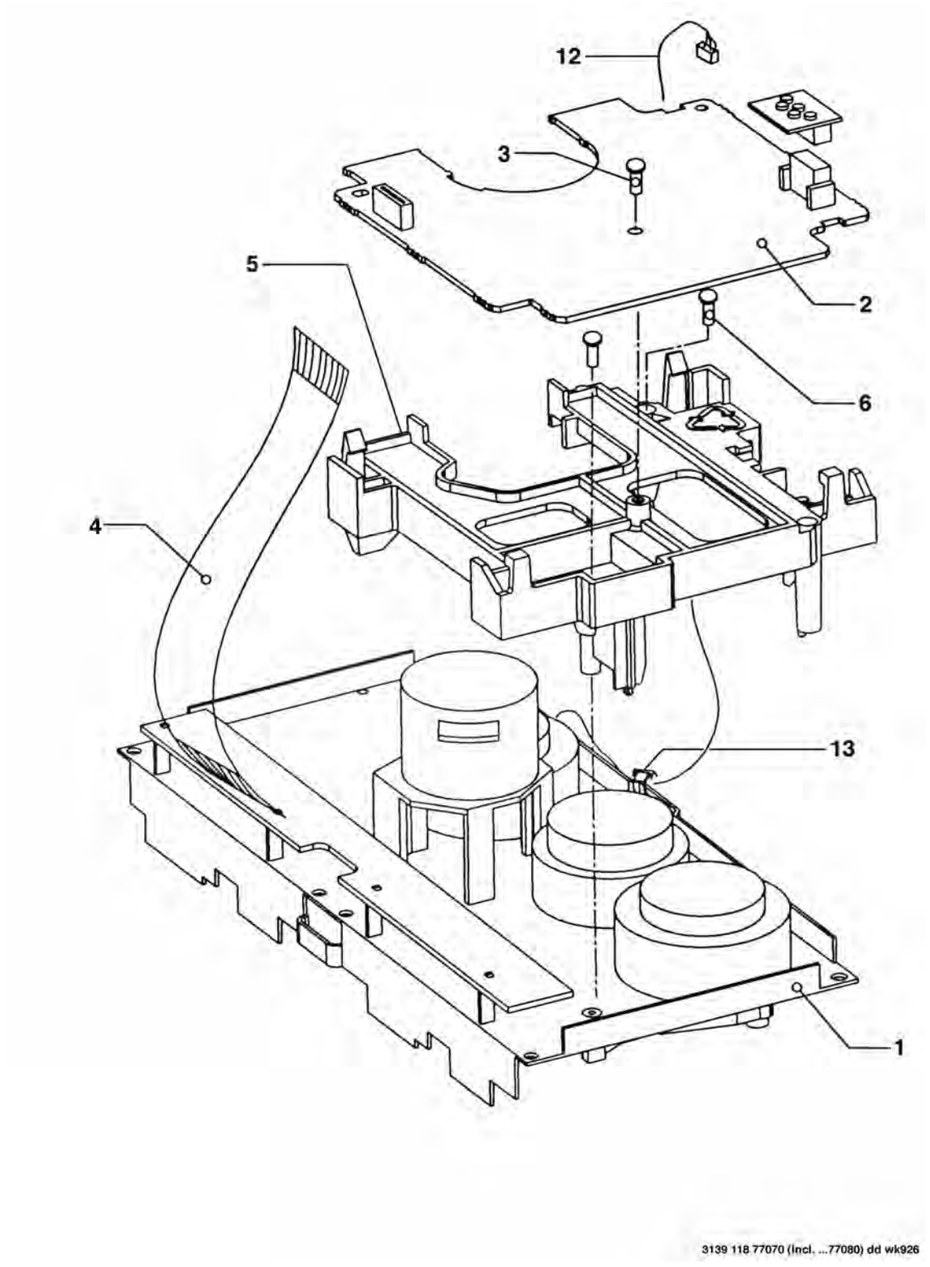


9-8

SERVO CONTROL CIRCUIT

1702 A7 1760 B8 2622 D2 2625 E4 3601 B2 3604 C2 3607 C6 3610 D6 3613 B2 3618 A4 3622 A4 3625 B3 3630 A6 3676 C5 3680 C5 3687 D2 4785 D2 6612 B6 7612 A6 7616 A4 7620 B6 7624 D6
1703 B1 1770 B7 2623 D2 2626 B1 2627 A7 3602 C2 3605 B3 3608 D6 3611 C6 3614 C6 3616 A5 3619 A4 3623 B3 3626 B6 3628 A5 3672 B4 3674 B5 3678 B5 3679 B3 3685 E6 3688 E5 3689 E3 4795 E3 6611 A2 6614 B4 7610 D4 7613 A6 7618 A4 7622 B5 9705 A7
1706 E1 2621 D2 2624 E2 2627 A7 3603 B2 3606 C3 3609 C6 3612 D6 3616 A5 3620 A4 3624 B6 3628 A5 3674 B5 3679 B3 3686 E6 3689 E3 6611 A2 6610 D4 6614 A6 7619 A4 7623 B2 7624 B6



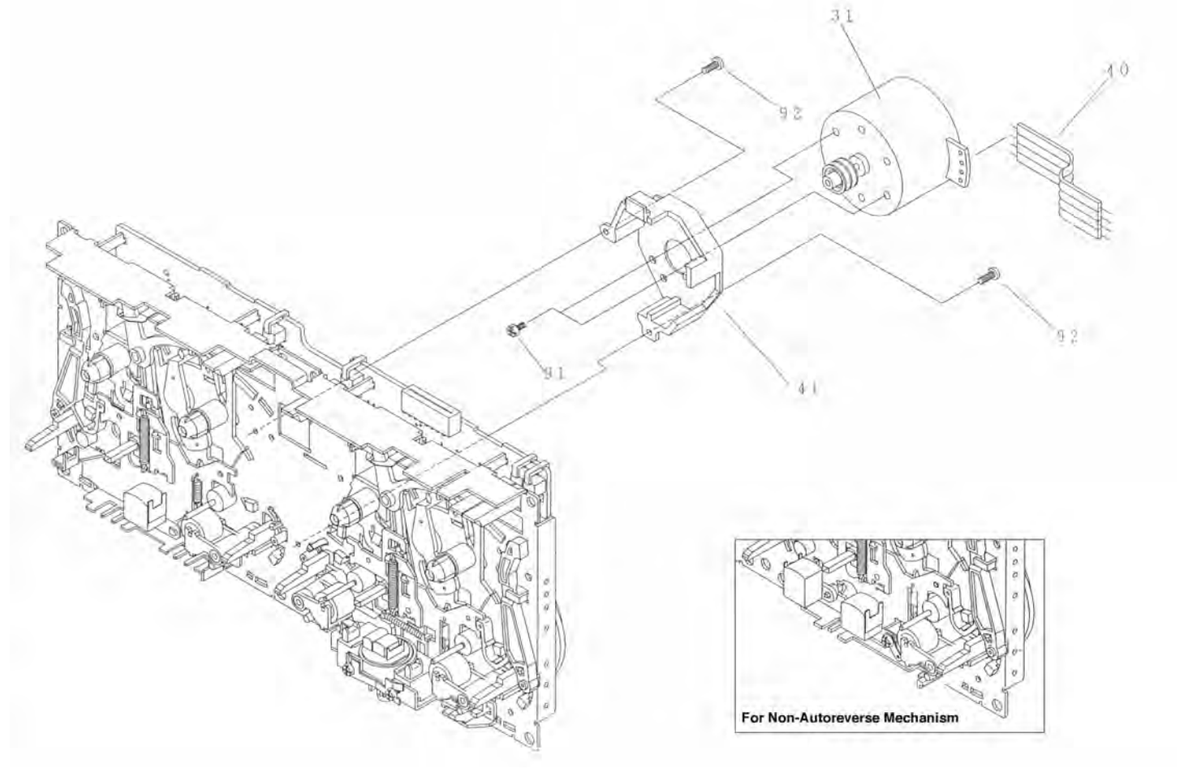


TAPE MODULE EXPLODED VIEW

1	3139 118 77130	Autoreverse Mech. CWE44FR01
1	3139 118 77140	Non-Autoreverse Mech. CWE44FF02 Chrome/Ferro
1	3139 118 77950	Non-Autoreverse Mech. CWE44FF05 Ferro
3	-	Screw D3 x 10
6	-	Screw M2 x 16
7	3139 110 34080	Flex Cable 14 pin 7,5 cm

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

9-9



TAPE MECHANISM - MOTOR EXPLODED VIEW

31	4822 361 11055	Motor Assembly
91	-	Screw M2,6 x 5
92	-	Screw M2 x 5

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

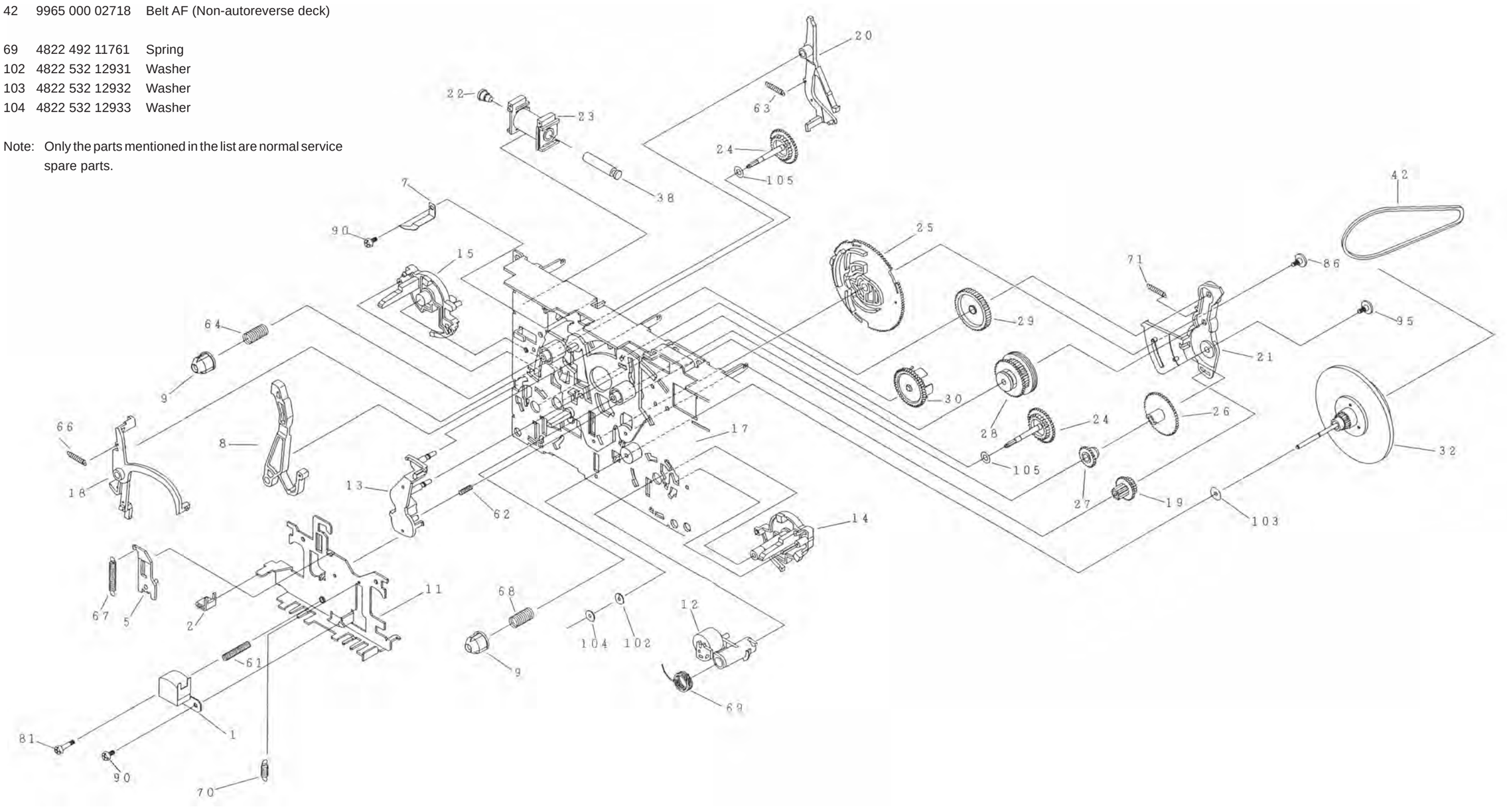
9-10

TAPE MECHANISM A - PLAY

MECHANICAL PARTS - PLAY MECHANISM

1	9965 000 02313	Play Head (Non-Autoreverse deck)
1	9965 000 02321	Play Head (Autoreverse deck)
12	4822 402 10972	Pinch Arm Assembly R
23	9965 000 02314	Coil Assembly
25	9965 000 06443	Cam Gear
32	4822 528 11209	Flywheel Assembly RV
42	9965 000 02315	Belt AF (Autoreverse deck)
42	9965 000 02718	Belt AF (Non-autoreverse deck)
69	4822 492 11761	Spring
102	4822 532 12931	Washer
103	4822 532 12932	Washer
104	4822 532 12933	Washer

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



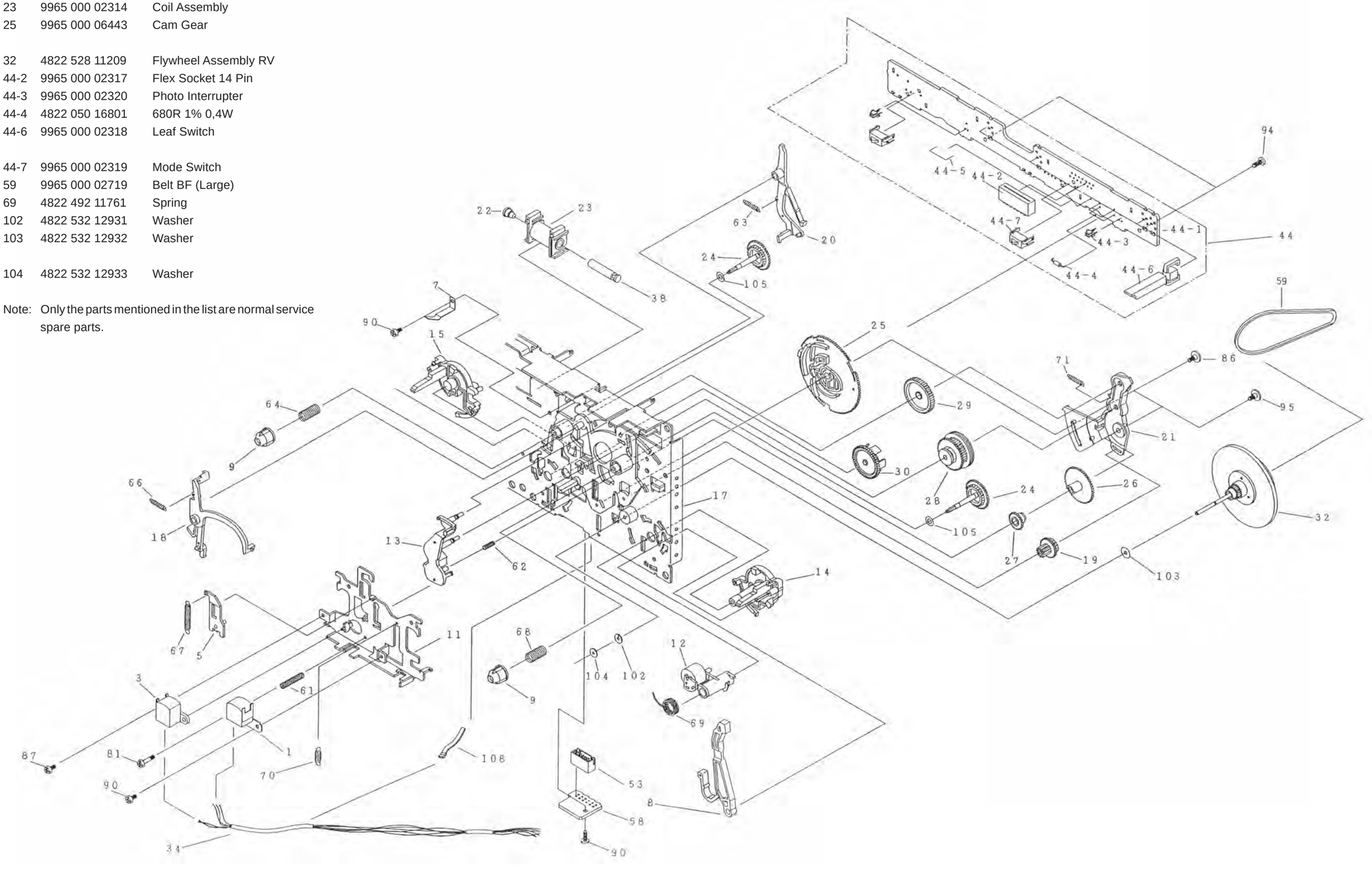
9-11

TAPE MECHANISM B - RECORD/PLAYBACK *(Non-Autoreverse version)*

MECHANICAL PARTS - REC/PB MECHANISM

1	9965 000 02313	Play Head
3	9965 000 02600	Head, Erase
12	4822 402 10972	Pinch Arm Assembly R
23	9965 000 02314	Coil Assembly
25	9965 000 06443	Cam Gear
32	4822 528 11209	Flywheel Assembly RV
44-2	9965 000 02317	Flex Socket 14 Pin
44-3	9965 000 02320	Photo Interrupter
44-4	4822 050 16801	680R 1% 0,4W
44-6	9965 000 02318	Leaf Switch
44-7	9965 000 02319	Mode Switch
59	9965 000 02719	Belt BF (Large)
69	4822 492 11761	Spring
102	4822 532 12931	Washer
103	4822 532 12932	Washer
104	4822 532 12933	Washer

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



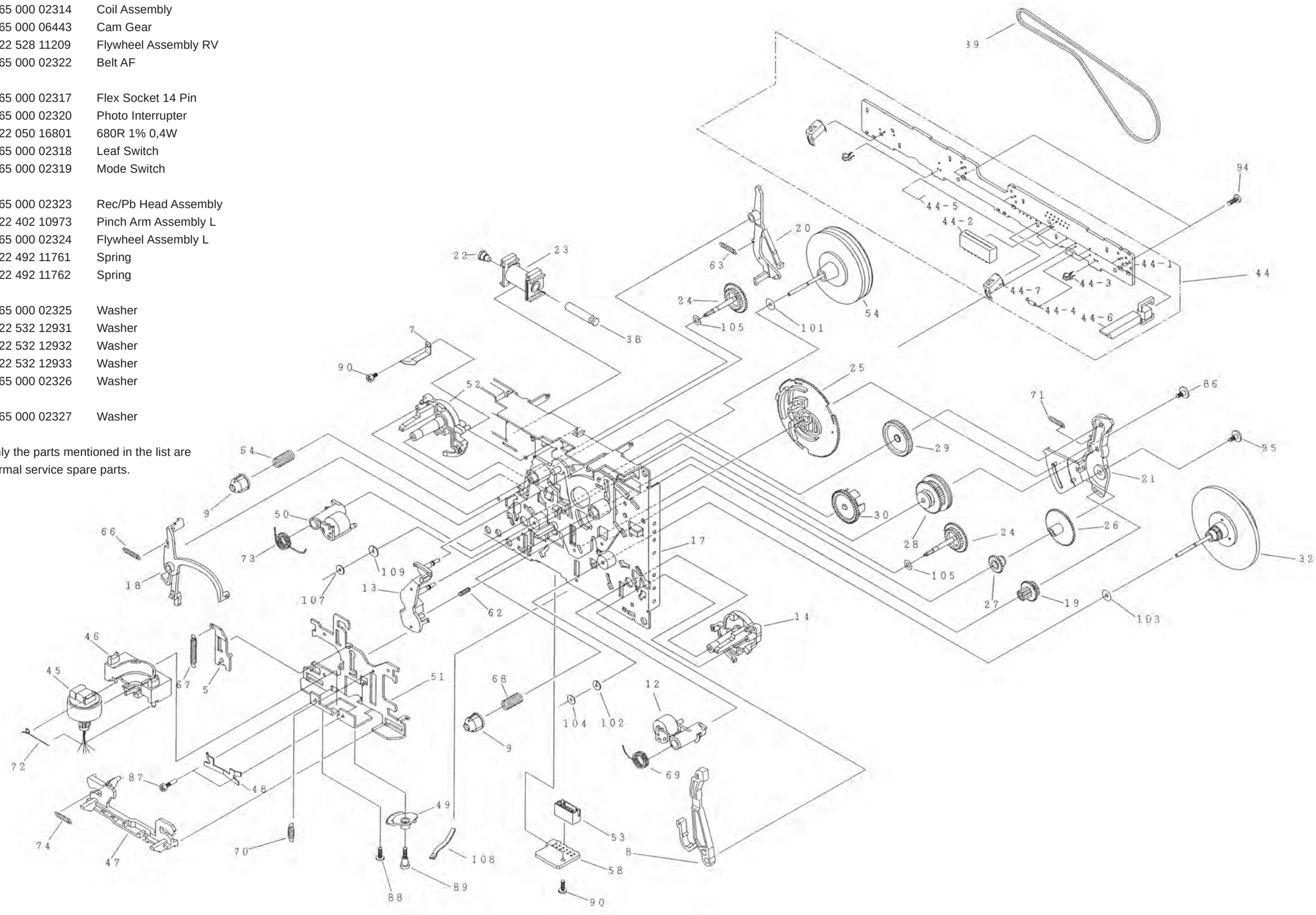
9-12

TAPE MECHANISM B - RECORD/PLAYBACK *(Autoreverse version)*

MECHANICAL PARTS - REC/PB MECHANISM

12	4822 402 10972	Pinch Arm Assembly R
23	9965 000 02314	Coil Assembly
25	9965 000 06443	Cam Gear
32	4822 528 11209	Flywheel Assembly RV
39	9965 000 02322	Belt AF
44-2	9965 000 02317	Flex Socket 14 Pin
44-3	9965 000 02320	Photo Interrupter
44-4	4822 050 16801	680R 1% 0,4W
44-6	9965 000 02318	Leaf Switch
44-7	9965 000 02319	Mode Switch
45	9965 000 02323	Rec/Pb Head Assembly
50	4822 402 10973	Pinch Arm Assembly L
54	9965 000 02324	Flywheel Assembly L
69	4822 492 11761	Spring
73	4822 492 11762	Spring
101	9965 000 02325	Washer
102	4822 532 12931	Washer
103	4822 532 12932	Washer
104	4822 532 12933	Washer
107	9965 000 02326	Washer
109	9965 000 02327	Washer

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



9-13

ELECTRICAL PARTS LIST - ETF7 NON-DOLBY BOARD

ELECTRICAL PARTS LIST - ETF7 NON-DOLBY BOARD

MISCELLANEOUS

1701	482226710953	Flex Socket 7pin Vert.
1706	482226710953	Flex Socket 7pin Vert.
1770	482226751255	Flex Socket 14pin Vert.

CAPACITORS

2621	532212231647	1nF 10% 63V	
2622	532212234099	470pF 10% 63V	
2623	532212234099	470pF 10% 63V	
2624	482212614585	100nF 10% 50V	only for Ferro
2625	482212614585	100nF 10% 50V	
2701	532212233538	150pF 2% 63V	Autoreverse
2701	482212233216	270pF 5% 63V	Non-autoreverse
2702	532212233538	150pF 2% 63V	Autoreverse
2702	482212233216	270pF 5% 63V	Non-autoreverse
2703	532212232531	100pF 5% 50V	Autoreverse
2703	482212233575	220pF 5% 63V	Non-autoreverse
2704	532212232531	100pF 5% 50V	Autoreverse
2704	482212233575	220pF 5% 63V	Non-autoreverse
2705	482212233575	220pF 5% 63V	
2706	482212233575	220pF 5% 63V	
2707	532212234099	470pF 10% 63V	
2708	532212234099	470pF 10% 63V	
2709	532212231863	330pF 5% 63V	
2710	532212231863	330pF 5% 63V	
2711	532212232531	100pF 5% 50V	
2712	532212232531	100pF 5% 50V	
2713	482212440248	10µF 20% 63V	
2714	482212440248	10µF 20% 63V	
2715	482212480195	470µF 20% 10V	
2716	482212480195	470µF 20% 10V	
2717	482212233177	10nF 20% 50V	Autoreverse
2717	482212613188	15nF 5% 63V	Non-autoreverse
2718	482212233177	10nF 20% 50V	Autoreverse
2718	482212613188	15nF 5% 63V	Non-autoreverse
2719	482212612105	33nF 5% 50V	
2720	482212612105	33nF 5% 50V	
2721	532212231866	6,8nF 10% 63V	not for Ferro
2722	532212231866	6,8nF 10% 63V	not for Ferro
2723	482212613188	15nF 5% 63V	
2724	482212613188	15nF 5% 63V	
2725	532212610223	4,7nF 10% 63V	
2726	532212610223	4,7nF 10% 63V	
2727	532212234099	470pF 10% 63V	Autoreverse
2727	532212231647	1nF 10% 63V	Non-autoreverse
2728	532212234099	470pF 10% 63V	Autoreverse
2728	532212231647	1nF 10% 63V	Non-autoreverse
2729	532212232654	22nF 10% 63V	
2730	532212232654	22nF 10% 63V	
2733	532212234099	470pF 10% 63V	
2734	532212234099	470pF 10% 63V	
2735	482212614585	100nF 10% 50V	
2737	482212614585	100nF 10% 50V	
2738	482212614585	100nF 10% 50V	
2741	482212611585	22nF +80/-20% 25V	
2742	532212232654	22nF 10% 63V	
2743	532212232654	22nF 10% 63V	
2744	482212614585	100nF 10% 50V	
2760	482212614585	100nF 10% 50V	
2761	482212480144	220µF 20% 25V	
2762	482212440769	4,7µF 20% 100V	
2763	482212440433	47µF 20% 25V	
2765	482212440433	47µF 20% 25V	
2769	532212234099	470pF 10% 63V	
2770	532212234099	470pF 10% 63V	
2780	482212481151	22µF 20% 50V	
2781	482212233177	10nF 20% 50V	
2782	532212610223	4,7nF 10% 63V	
2784	482212151305	15nF 10% 50V	
2785	482212421913	1µF 20% 63V	
2786	532212232531	100pF 5% 50V	
2787	482212612105	33nF 5% 50V	

RESISTORS

3601	482211711449	2k2 1% 0,1W	
3602	482205120273	27k 5% 0,1W	
3603	482211711449	2k2 1% 0,1W	
3604	482211711148	56k 1% 0,1W	
3605	482211711449	2k2 1% 0,1W	
3606	482205120124	120k 5% 0,1W	
3607	482211652256	2k2 5% 0,5W	
3608	482205120273	27k 5% 0,1W	
3609	482211652256	2k2 5% 0,5W	
3610	482205120124	120k 5% 0,1W	
3611	482211652256	2k2 5% 0,5W	
3612	482211711148	56k 1% 0,1W	
3613	482205120273	27k 5% 0,1W	
3614	482205120273	27k 5% 0,1W	
3616	482211710833	10k 1% 0,1W	Autoreverse
3616	482205110102	1k 2% 0,25W	Non-autoreverse
3618	482211711507	6k8 1% 0,1W	Autoreverse
3620	482210011141	Trim. 10k 30%	Autoreverse
3622	482210011141	Trim. 10k 30%	Non-autoreverse
3623	482211710837	100k 1% 0,1W	
3624	482211710837	100k 1% 0,1W	
3625	482205110102	1k 2% 0,25W	
3626	482205110102	1k 2% 0,25W	
3628	482211710837	100k 1% 0,1W	
3630	482205120471	470R 5% 0,1W	
3672	482205120472	4k7 5% 0,1W	Autoreverse
3674	482211652283	4k7 5% 0,5W	
3676	482211710834	47k 1% 0,1W	Autoreverse
3678	482211710834	47k 1% 0,1W	
3679	482211710834	47k 1% 0,1W	
3680	482211710834	47k 1% 0,1W	
3685	482211652234	100k 5% 0,5W	
3686	482211710837	100k 1% 0,1W	
3687	482211711503	220R 1% 0,1W	not for Ferro
3688	482211710361	680R 1% 0,1W	Autoreverse
3701	482211711503	220R 1% 0,1W	
3702	482211711503	220R 1% 0,1W	
3703	482211711503	220R 1% 0,1W	
3704	482211711503	220R 1% 0,1W	
3705	482211711503	220R 1% 0,1W	
3706	482211711503	220R 1% 0,1W	
3707	482205120101	100R 5% 0,1W	
3708	482205120101	100R 5% 0,1W	
3709	482205120109	10R 5% 0,1W	
3710	482205120109	10R 5% 0,1W	
3711	482205120154	150k 5% 0,1W	
3712	482205120154	150k 5% 0,1W	
3713	482205120109	10R 5% 0,1W	
3714	482205120109	10R 5% 0,1W	
3715	482205120182	1k8 5% 0,1W	
3716	482205120182	1k8 5% 0,1W	
3717	482211711449	2k2 1% 0,1W	
3718	482211711449	2k2 1% 0,1W	
3719	482211711383	12k 1% 0,1W	
3720	482211711383	12k 1% 0,1W	
3721	482205120392	3k9 5% 0,1W	
3722	482205120392	3k9 5% 0,1W	
3723	482211683933	15k 1% 0,1W	Autoreverse
3723	482211710965	18k 1% 0,1W	Non-autoreverse
3724	482211683933	15k 1% 0,1W	Autoreverse
3724	482211710965	18k 1% 0,1W	Non-autoreverse
3725	482205120109	10R 5% 0,1W	not for Ferro
3726	482205120109	10R 5% 0,1W	not for Ferro
3727	482205120562	5k6 5% 0,1W	Autoreverse
3727	482211711507	6k8 1% 0,1W	Non-autoreverse
3728	482205120562	5k6 5% 0,1W	Autoreverse
3728	482211711507	6k8 1% 0,1W	Non-autoreverse
3729	482205120332	3k3 5% 0,1W	Autoreverse
3729	482205120472	4k7 5% 0,1W	Non-autoreverse
3730	482205120332	3k3 5% 0,1W	Autoreverse
3730	482205120472	4k7 5% 0,1W	Non-autoreverse
3731	482205120822	8k2 5% 0,1W	
3732	482205120822	8k2 5% 0,1W	
3733	482205120122	1k2 5% 0,1W	
3734	482205120122	1k2 5% 0,1W	
3735	482205120223	22k 5% 0,1W	
3736	482205120223	22k 5% 0,1W	
3741	482211711449	2k2 1% 0,1W	
3742	482211711449	2k2 1% 0,1W	
3743	482211711139	1k5 1% 0,1W	Autoreverse
3743	482211711449	2k2 1% 0,1W	Non-autoreverse
3744	482211711139	1k5 1% 0,1W	Autoreverse
3744	482211711449	2k2 1% 0,1W	Non-autoreverse
3745	482205120332	3k3 5% 0,1W	Autoreverse
3745	482205120562	5k6 5% 0,1W	Non-autoreverse
3746	482205120332	3k3 5% 0,1W	Autoreverse
3746	482205120562	5k6 5% 0,1W	Non-autoreverse
3748	482211711449	2k2 1% 0,1W	
3749	482211710834	47k 1% 0,1W	
3751	482211710833	10k 1% 0,1W	
3752	482211710837	100k 1% 0,1W	
3753	482211710837	100k 1% 0,1W	
3754	482205120105	1M 5% 0,1W	Autoreverse
3754	482205120479	47R 5% 0,1W	Non-autoreverse
3755	482205120105	1M 5% 0,1W	Autoreverse
3755	482205120479	47R 5% 0,1W	Non-autoreverse
3756	482211713579	220k 1% 0,1W	
3757	482211713579	220k 1% 0,1W	
3758	482211710833	10k 1% 0,1W	
3759	482211710833	10k 1% 0,1W	
3760	482205120121	120R 5% 0,1W	
3761	482205021003	10k 1% 0,6W	
3762	482211711454	820R 1% 0,1W	
3763	482205120154	150k 5% 0,1W	
3764	482211683872	220R 5% 0,5W	
3765	482205120393	39k 5% 0,1W	
3766	482205120475	4M7 5% 0,1W	
3767	482205120475	4M7 5% 0,1W	
3768	482211710833	10k 1% 0,1W	
3769	482211711383	12k 1% 0,1W	Autoreverse
3769	482205120822	8k2 5% 0,1W	Non-autoreverse
3770	482211711139	1k5 1% 0,1W	
3771	482205120122	1k2 5% 0,1W	
3772	482211711507	6k8 1% 0,1W	Autoreverse
3772	482205120562	5k6 5% 0,1W	Non-autoreverse
3773	482210012227	Trimmer 4k7 30% 0,1W	
3774	482211683933	15k 1% 0,1W	Autoreverse
3774	482205120822	8k2 5% 0,1W	Non-autoreverse
3775	482205120478	4R7 5% 0,1W	
3776	482211711507	6k8 1% 0,1W	
3777	482211710353	150R 1% 0,1W	
3778	482205210688	⚠ 6R8 5% 0,33W	
3779	482205120334	330k 5% 0,1W	
3780	482205120105	1M 5% 0,1W	
3781	482205120475	4M7 5% 0,1W	
3784	482205110102	1k 2% 0,25W	
3786	482205120223	22k 5% 0,1W	
3787	482205120105	1M 5% 0,1W	
3788	482205120105	1M 5% 0,1W	
3789	482211710834	47k 1% 0,1W	
4701	482205120008	0R Jumper 0805	
4702	482205120008	0R Jumper 0805	
4703	482205120008	0R Jumper 0805	
4704	482205120008	0R Jumper 0805	
4705	482205120008	0R Jumper 0805	

9-14

ELECTRICAL PARTS LIST - ETF7 NON-DOLBY BOARD

RESISTORS

4706	482205120008	0R Jumper 0805	
4707	482205120008	0R Jumper 0805	
4708	482205120008	0R Jumper 0805	
4709	482205120008	0R Jumper 0805	
4710	482205120008	0R Jumper 0805	
4711	482205120008	0R Jumper 0805	
4712	482205120008	0R Jumper 0805	
4713	482205120008	0R Jumper 0805	
4714	482205120008	0R Jumper 0805	
4715	482205120008	0R Jumper 0805	
4716	482205120008	0R Jumper 0805	
4717	482205120008	0R Jumper 0805	
4718	482205120008	0R Jumper 0805	
4719	482205120008	0R Jumper 0805	
4720	482205120008	0R Jumper 0805	
4721	482205120008	0R Jumper 0805	
4722	482205120008	0R Jumper 0805	
4723	482205120008	0R Jumper 0805	
4724	482205120008	0R Jumper 0805	
4725	482205120008	0R Jumper 0805	
4726	482205120008	0R Jumper 0805	
4727	482205120008	0R Jumper 0805	
4728	482205120008	0R Jumper 0805	
4729	482205120008	0R Jumper 0805	
4730	482205120008	0R Jumper 0805	
4731	482205120008	0R Jumper 0805	
4732	482205120008	0R Jumper 0805	
4733	482205120008	0R Jumper 0805	
4734	482205120008	0R Jumper 0805	
4735	482205120008	0R Jumper 0805	
4736	482205120008	0R Jumper 0805	
4737	482205120008	0R Jumper 0805	
4738	482205120008	0R Jumper 0805	
4739	482205120008	0R Jumper 0805	
4740	482205120008	0R Jumper 0805	
4741	482205120008	0R Jumper 0805	
4742	482205120008	0R Jumper 0805	
4744	482205120008	0R Jumper 0805	
4745	482205120008	0R Jumper 0805	
4746	482205120008	0R Jumper 0805	
4748	482205120008	0R Jumper 0805	
4785	482205120008	0R Jumper 0805	only for Ferro
4790	482205120008	0R Jumper 0805	
4794	482205120008	0R Jumper 0805	
4795	482205120008	0R Jumper 0805	

COILS & FILTERS

5701	482215711477	Coil 2,2µH 5%
5703	482215620946	Osc Coil 100kHz

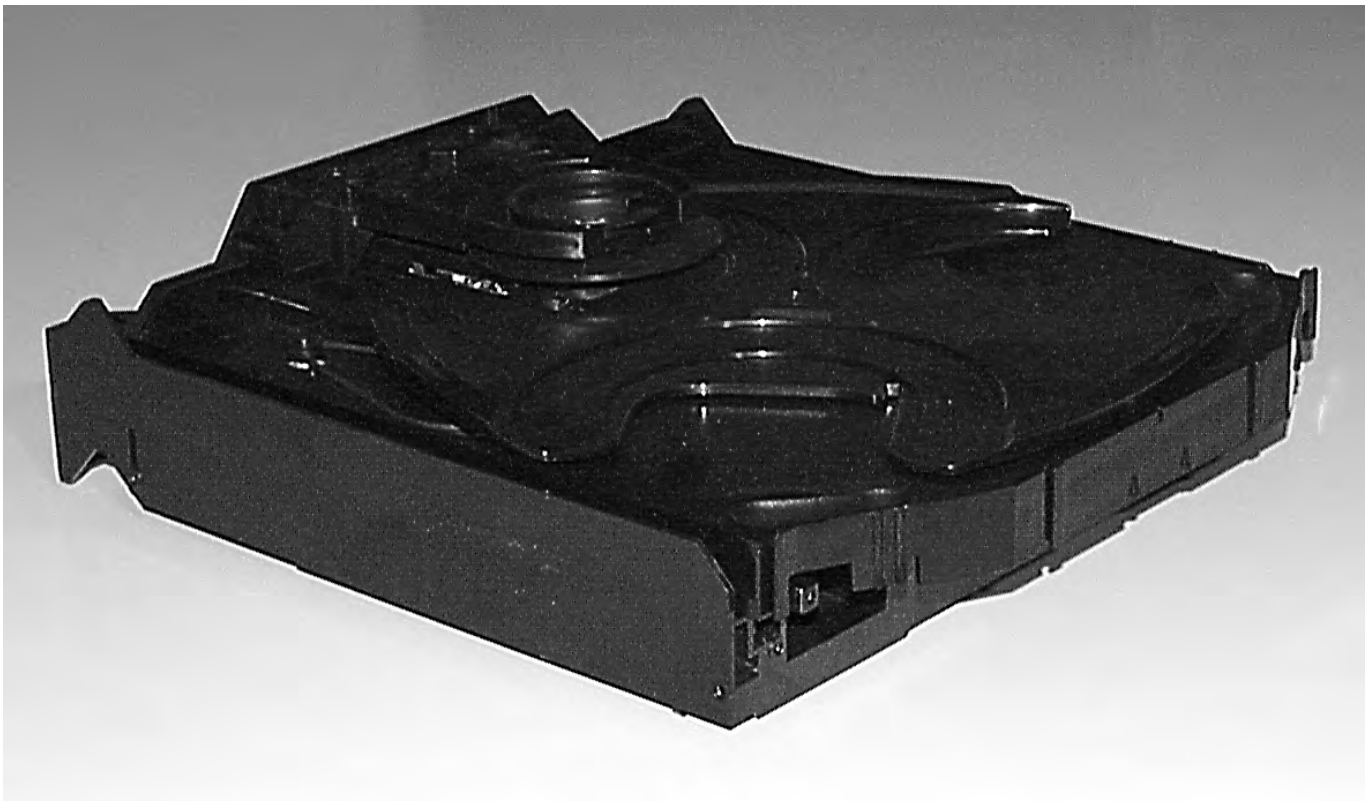
DIODES

6611	482213031878	1N4003G
6612	482213031878	1N4003G
6614	482213030621	1N4148 Autoreverse
6770	482213030621	1N4148
6771	482213030621	1N4148
6772	482213030621	1N4148
6773	482213030621	1N4148
6774	482213030621	1N4148
6775	482213030621	1N4148
6776	482213030621	1N4148
6777	482213034382	BZX79-F8V2
6778	482213030621	1N4148
6782	482213030621	1N4148
6785	482213030621	1N4148
6786	482213030621	1N4148

TRANSISTORS & INTEGRATED CIRCUITS

7610	532220911306	HEF4094BT	
7612	532213060845	BC807-25	
7613	532213060845	BC807-25	
7614	532213060845	BC807-25	
7616	482213060373	BC857B	Autoreverse
7618	482213060511	BC847B	
7619	482213060511	BC847B	
7620	482213060511	BC847B	
7622	482213060511	BC847B	Autoreverse
7623	482213060511	BC847B	
7624	482213060511	BC847B	
7710	482220932919	HEF4952BT	
7720	932214000668	AN7323S	
7730	482220932919	HEF4952BT	
7740	482220932919	HEF4952BT	
7780	482213060511	BC847B	
7781	482213042804	BC817-25	
7782	482213044568	BC557B	
7783	482213060511	BC847B	
7784	482213060373	BC857B	
7786	482213063494	J111	
7787	482213060511	BC847B	
7791	482213060511	BC847B	
7792	482213060511	BC847B	

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



3CDC-LC

(3 Disc Carrousel Changer)

Layout stage .2

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WARNING

CHARGED CAPACITORS ON THE SERVO BOARD MAY DAMAGE THE CD DRIVE ELECTRONICS WHEN CONNECTING A NEW CDM MECHANISM. THAT´S WHY, BESIDES THE SAFETY MEASURES LIKE
- ***SWITCH OFF POWER SUPPLY***
- ***ESD PROTECTION***

ADDITIONAL ACTIONS MUST BE TAKEN BY THE REPAIR TECHNICIAN.

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

1. Disconnect CD drive flexfoil from old CD drive
2. Connect paperclip to CD drive flexfoil to short-circuit flexfoil (fig.1)
3. Remove old CD drive
4. Remove short-circuit from flexfoil of CD drive
5. Connect flexfoil to new CD drive
6. Position new CD drive in its studs
7. Remove short-circuit from Laserunit

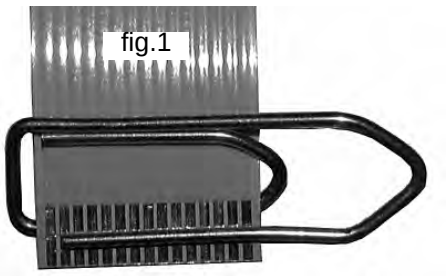
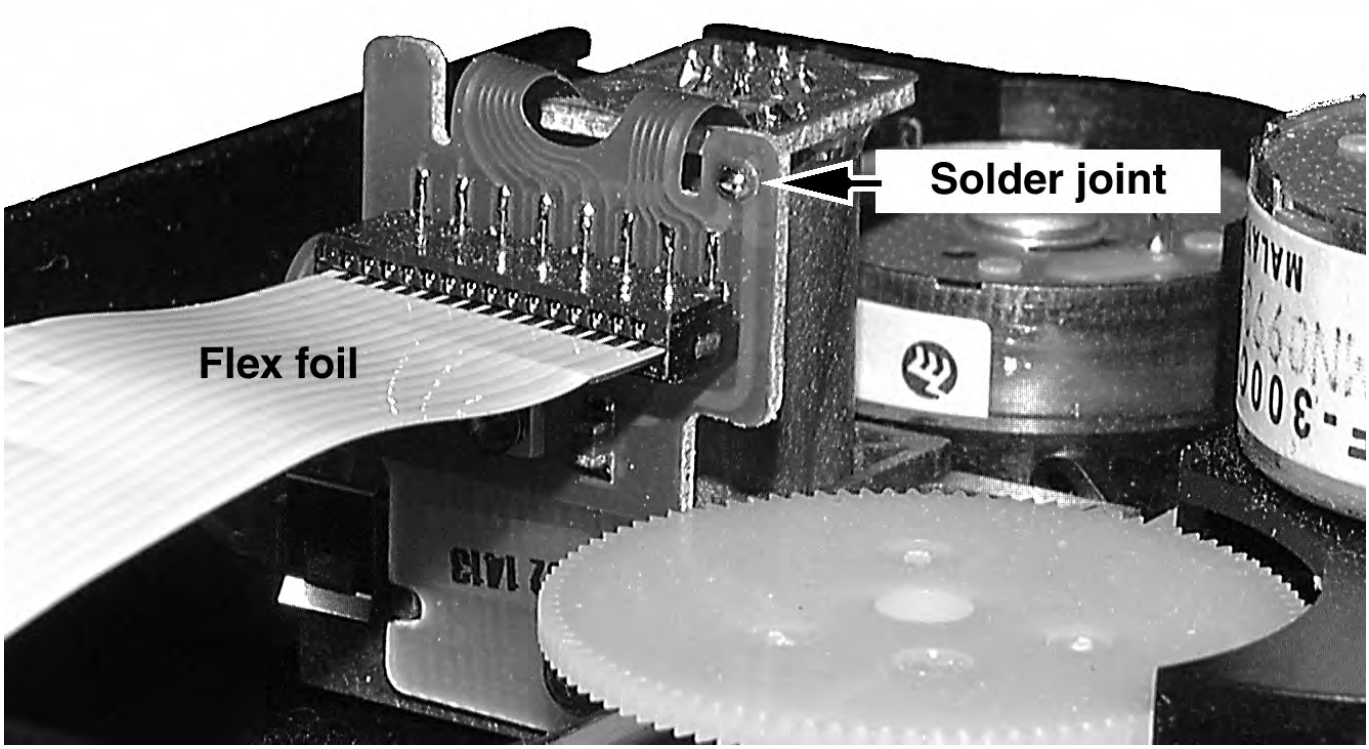
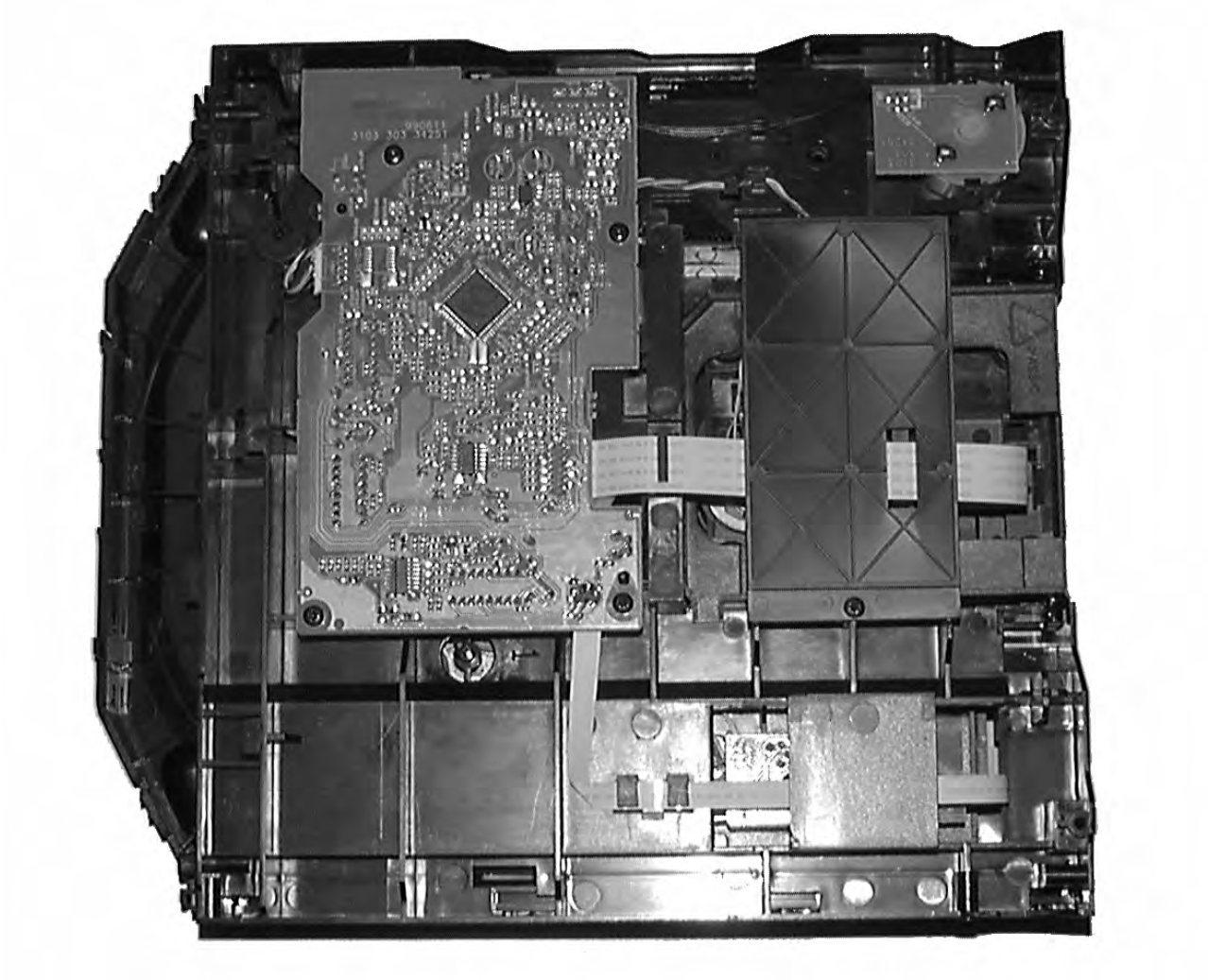


fig.1

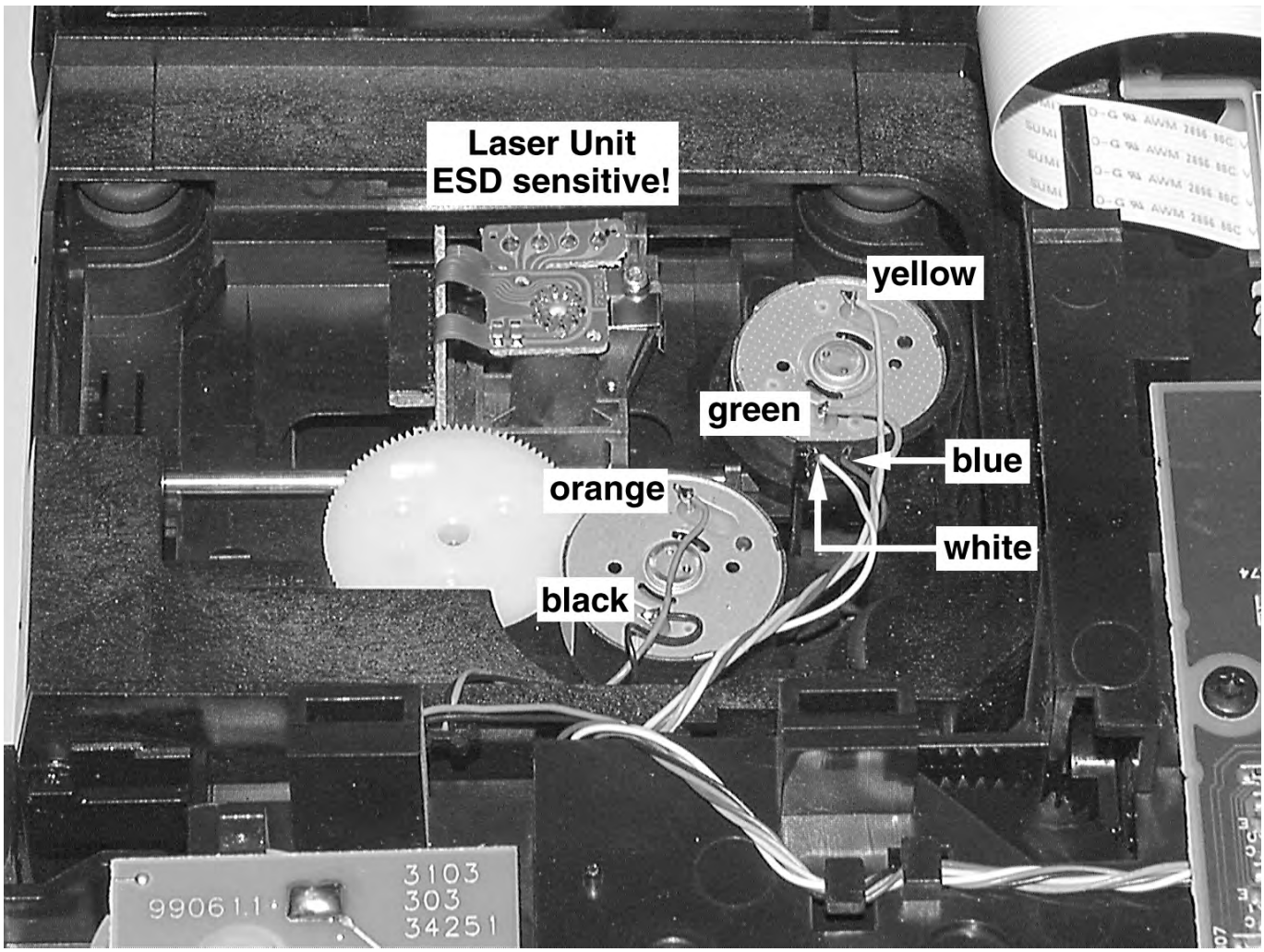
Attention: The laser diode of this CD drive is protected against ESD by a solder joint which shortcircuits the laserdiode to ground.
For proper functionality of the CD drive this solder joint must be removed **after** connection the drive to the set.



Service Position



Wiring


Laser Unit
ESD sensitive!
yellow
green
blue
orange
white
black
3103
303
34251

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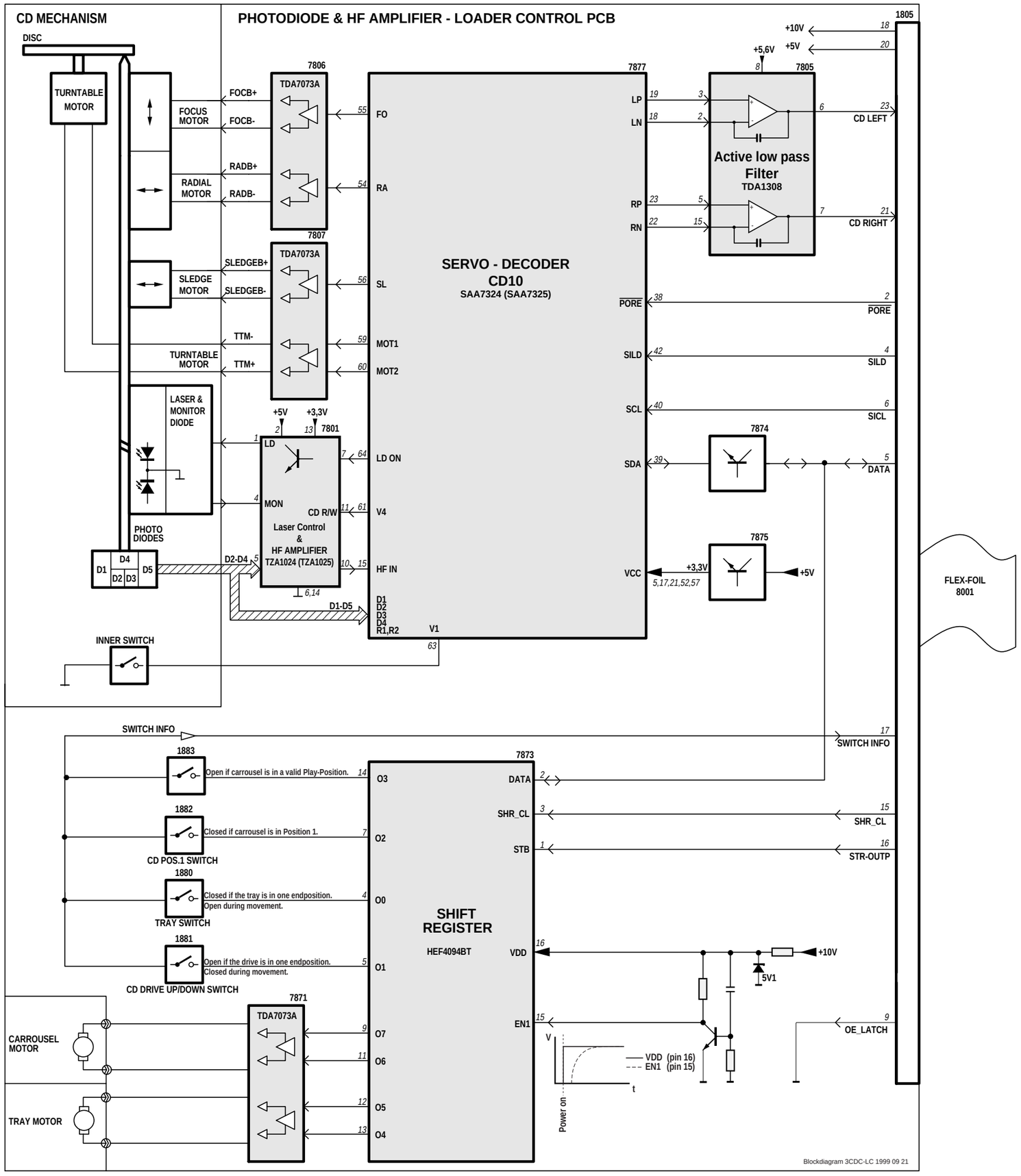
Blockdiagram



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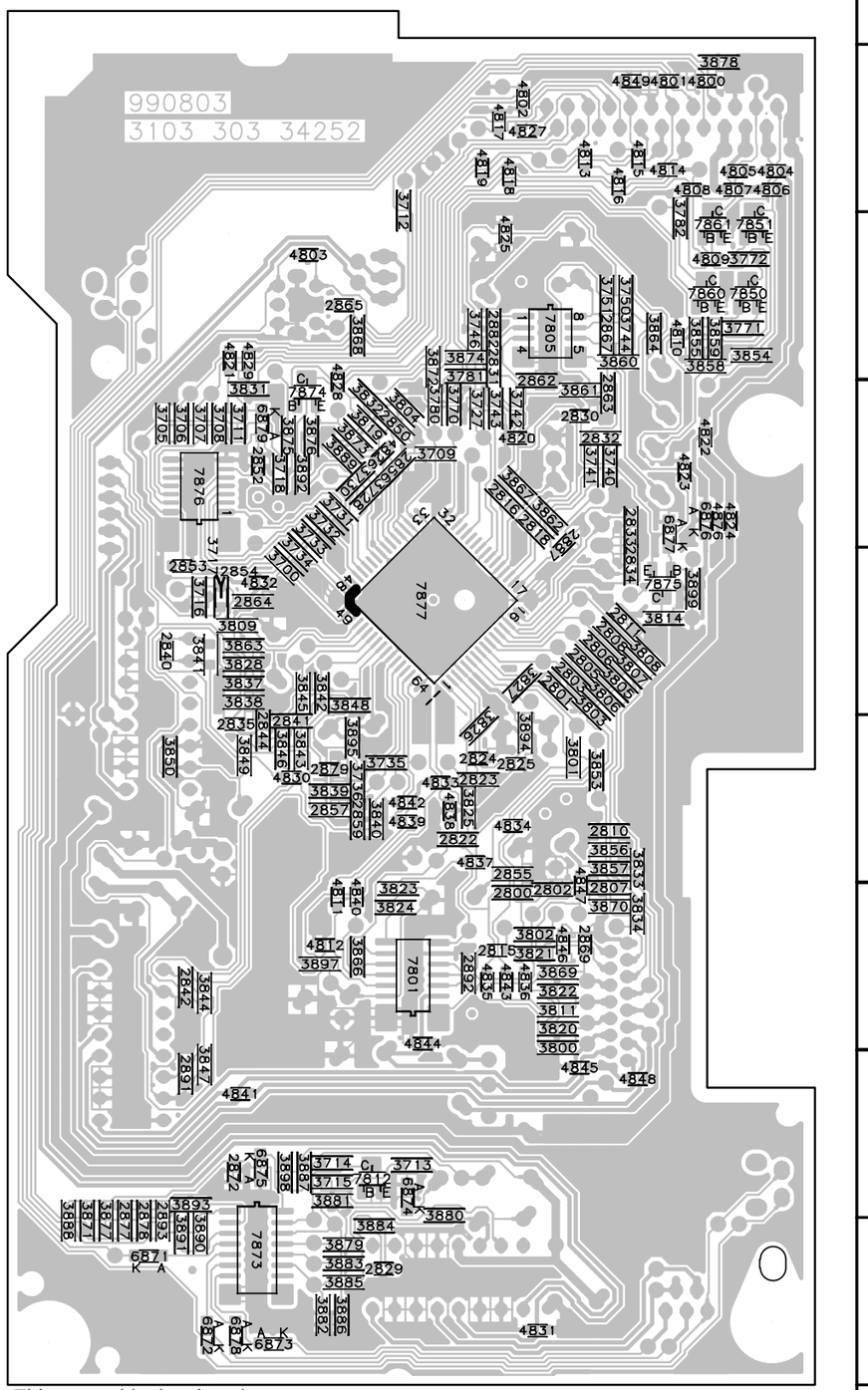
3CDC-LC Mainboard Copperside view



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

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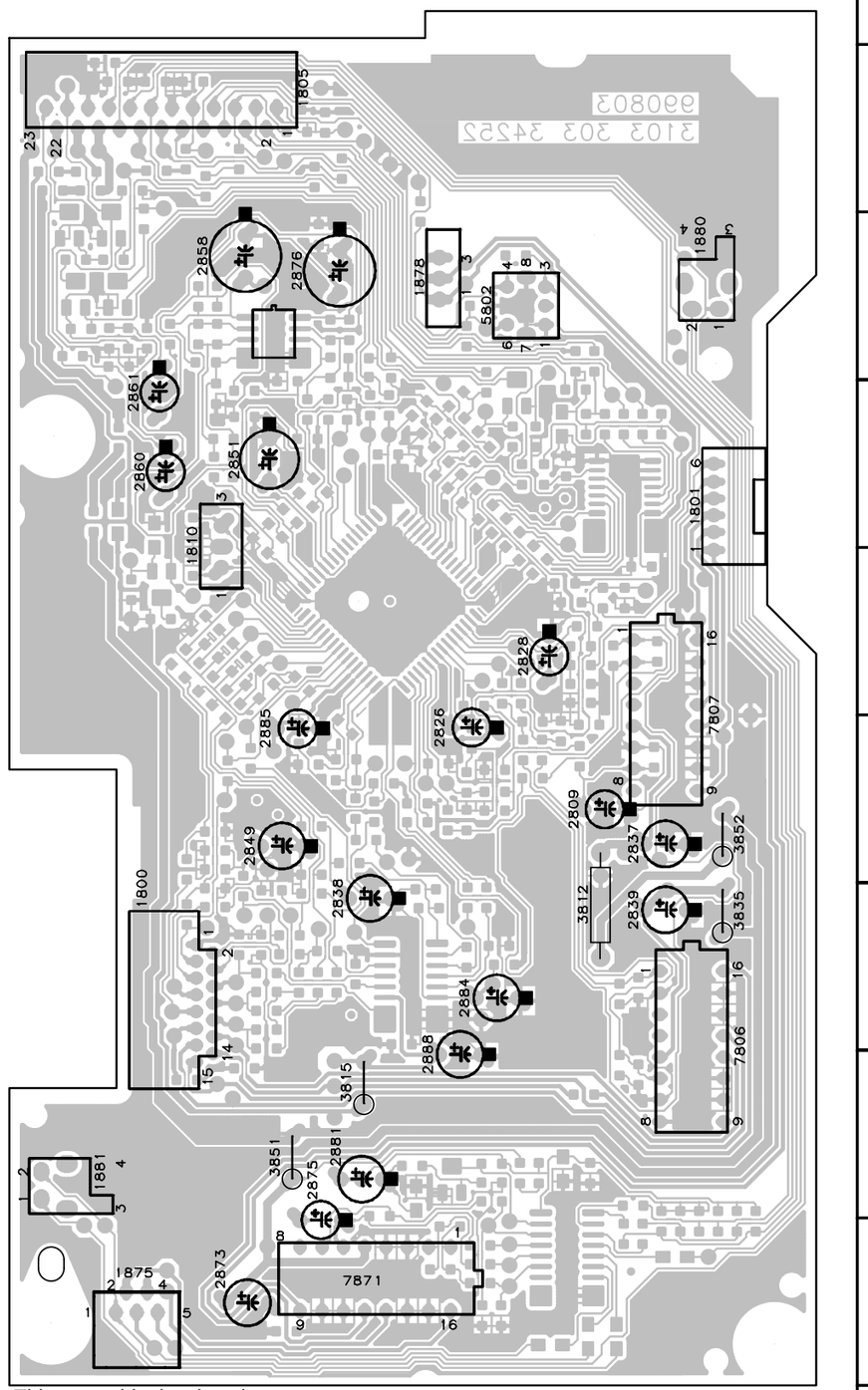
Mapping

Copperside							Componentside	
2800	B6	3751	B2	3889	D3		1800	A6
2801	B4	3770	C3	3890	D8		1801	E3
2802	B6	3771	A2	3891	D8		1805	B1
2803	B4	3772	A2	3892	D3		1810	B3
2805	B4	3780	C3	3893	D7		1875	A8
2806	B4	3781	C2	3894	B5		1878	C2
2807	B6	3782	A2	3895	C5		1880	E2
2808	B4	3800	B6	3897	D6		1881	A7
2810	B5	3801	B5	3898	D7		2809	D5
2811	B4	3802	B6	3899	A4		2826	C5
2815	C6	3803	B4	4800	A1		2828	D4
2816	C3	3804	C3	4801	B1		2837	D5
2818	B3	3805	B4	4802	B1		2838	C6
2822	C5	3806	B4	4803	D2		2839	D6
2823	C5	3807	B4	4804	A1		2849	B5
2824	C5	3808	B4	4805	A1		2851	B3
2825	B5	3809	D4	4806	A1		2858	B2
2829	C8	3811	B6	4807	A1		2860	A3
2830	B3	3814	B4	4808	A1		2861	A3
2831	C2	3819	C3	4809	A2		2873	B8
2832	B3	3820	B6	4810	B2		2875	B7
2833	B3	3821	B6	4811	D6		2876	B2
2834	B4	3822	B6	4812	D6		2881	C7
2835	D5	3823	C6	4813	B1		2884	C6
2840	E4	3824	C6	4814	B1		2885	B5
2841	D5	3825	C5	4815	B1		2888	C7
2842	D6	3826	C5	4816	B1		3812	D6
2844	D5	3827	B4	4817	C1		3815	C7
2850	C3	3828	D4	4818	C1		3835	E6
2852	D3	3831	D3	4819	C1		3851	B7
2853	D4	3832	C3	4820	B3		3852	E5
2854	D4	3833	B5	4821	D2		5802	D2
2855	B5	3834	B6	4822	A3		7806	E6
2856	C3	3837	D4	4823	A3		7807	E5
2857	D5	3838	D4	4824	A3		7871	C8
2859	C5	3839	D5	4825	C2			
2862	B3	3840	C5	4826	C3			
2863	B3	3841	D4	4827	B1			
2864	D4	3842	D4	4828	D3			
2865	C2	3843	D5	4829	D2			
2867	B2	3844	D6	4830	D5			
2869	B6	3845	D4	4831	B8			
2872	D7	3846	D5	4832	D4			
2877	E8	3847	D7	4833	C5			
2878	E8	3848	C4	4834	B5			
2879	D5	3849	D5	4835	C6			
2882	C2	3850	E5	4836	B6			
2887	B3	3853	B5	4837	C5			
2891	D7	3854	A2	4838	C5			
2892	C6	3855	A2	4839	C5			
2893	E8	3856	B5	4840	C6			
3700	D4	3857	B5	4841	D7			
3705	E3	3858	A2	4842	C5			
3706	D3	3859	A2	4843	C6			
3707	D3	3860	B2	4844	C6			
3708	D3	3861	B3	4845	B7			
3709	C3	3862	B3	4846	B6			
3711	D3	3863	D4	4847	B6			
3712	C1	3864	B2	4848	B7			
3713	C7	3866	C6	4849	B1			
3714	D7	3867	B3	4876	A3			
3715	D7	3868	C2	6871	E8			
3716	D4	3869	B6	6872	D8			
3717	D4	3870	B6	6873	D8			
3718	D3	3871	E8	6874	C7			
3727	C3	3872	C2	6875	D7			
3728	C3	3873	C3	6876	A3			
3730	C3	3874	C2	6877	B3			
3731	D3	3875	D3	6878	D8			
3732	D3	3876	D3	6879	D3			
3733	D3	3877	E8	7801	C6			
3734	D4	3878	A1	7805	B2			
3735	C5	3879	C8	7812	C7			
3736	C5	3880	C7	7850	A2			
3740	B3	3881	D7	7851	A2			
3741	B3	3882	D8	7860	A2			
3742	B3	3883	C8	7861	A2			
3743	C3	3884	C8	7873	D8			
3744	B2	3885	C8	7874	D3			
3746	C2	3886	D8	7875	B4			
3750	B2	3887	D7	7876	D3			
		3888	E8	7877	C4			

3CDC-LC Mainboard Componentside view



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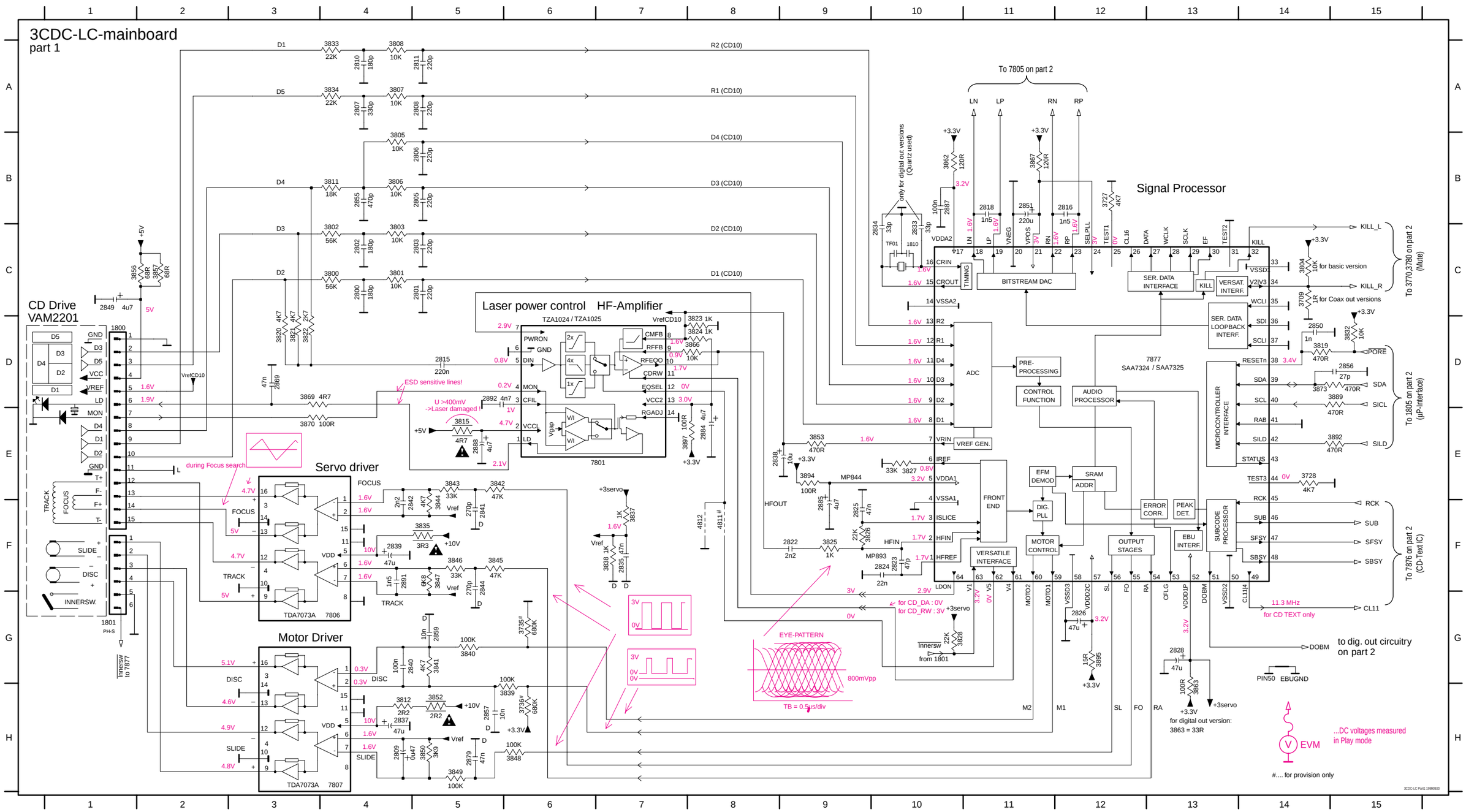
1800 D1	2802 C4	2808 A5	2816 B12	2825 F9	2835 F7	2841 F5	2851 B11	2869 D3	2888 E5	3728 E14	3802 C4	3807 A4	3819 D14	3824 D8	3832 D15	3838 F7	3843 E5	3848 H6	3856 C1	3867 B11	3892 E15	4812 F8	MP713 C5	MP730 B5	MP800 E3	MP814 F2	MP819 G9	MP829 B3	MP841 F6	MP846 G1	MP851 E2	MP859 F10	MP873 H4	MP883 E5
1801 G1	2803 C5	2809 H4	2818 B11	2826 G12	2837 H4	2842 F5	2855 B4	2879 H5	2891 F4	3735 G6	3803 C4	3808 A4	3820 D3	3825 F9	3833 A4	3839 H6	3844 F5	3849 H5	3857 C2	3869 D3	3894 E9	7801 E7	MP715 C5	MP731 B13	MP802 B15	MP815 C3	MP820 F8	MP837 E3	MP842 H6	MP847 G2	MP852 F2	MP860 C2	MP875 G13	MP884 E5
1810 C10	2805 B5	2810 A4	2822 F9	2828 G13	2838 E8	2844 F5	2856 D15	2884 E8	2892 D5	3736 H6	3804 C14	3811 B4	3821 D3	3826 F9	3834 A4	3840 G5	3845 F5	3850 H5	3862 B10	3870 E3	3895 G12	7806 G4	MP716 A5	MP743 D2	MP809 E10	MP816 A3	MP821 D15	MP838 G6	MP843 F6	MP848 E2	MP853 F2	MP861 E8	MP877 E4	MP893 F10
2800 C4	2806 B5	2811 A5	2823 F10	2833 C10	2839 F4	2849 C1	2857 H5	2885 F9	3709 C14	3800 C4	3805 B4	3812 H4	3822 D3	3827 E10	3835 F5	3841 G5	3846 F5	3852 H5	3863 H13	3873 D14	3897 E7	7807 H4	MP717 A5	MP744 D2	MP812 F2	MP817 A3	MP827 B10	MP839 G6	MP844 E9	MP849 F2	MP855 E10	MP870 D8	MP878 B13	MP895 E14
2801 C5	2807 A4	2815 D5	2824 F10	2834 C10	2840 G4	2850 D14	2859 G5	2887 B10	3727 B12	3801 C4	3806 B4	3815 E5	3823 D8	3828 G10	3837 F7	3842 E5	3847 F5	3853 E9	3866 D8	3889 D15	4811 F8	7877 D12	MP729 B5	MP745 E2	MP813 C3	MP818 D3	MP828 G9	MP840 E6	MP845 F4	MP850 F2	MP858 F9	MP872 C15	MP879 B11	MP896 B12



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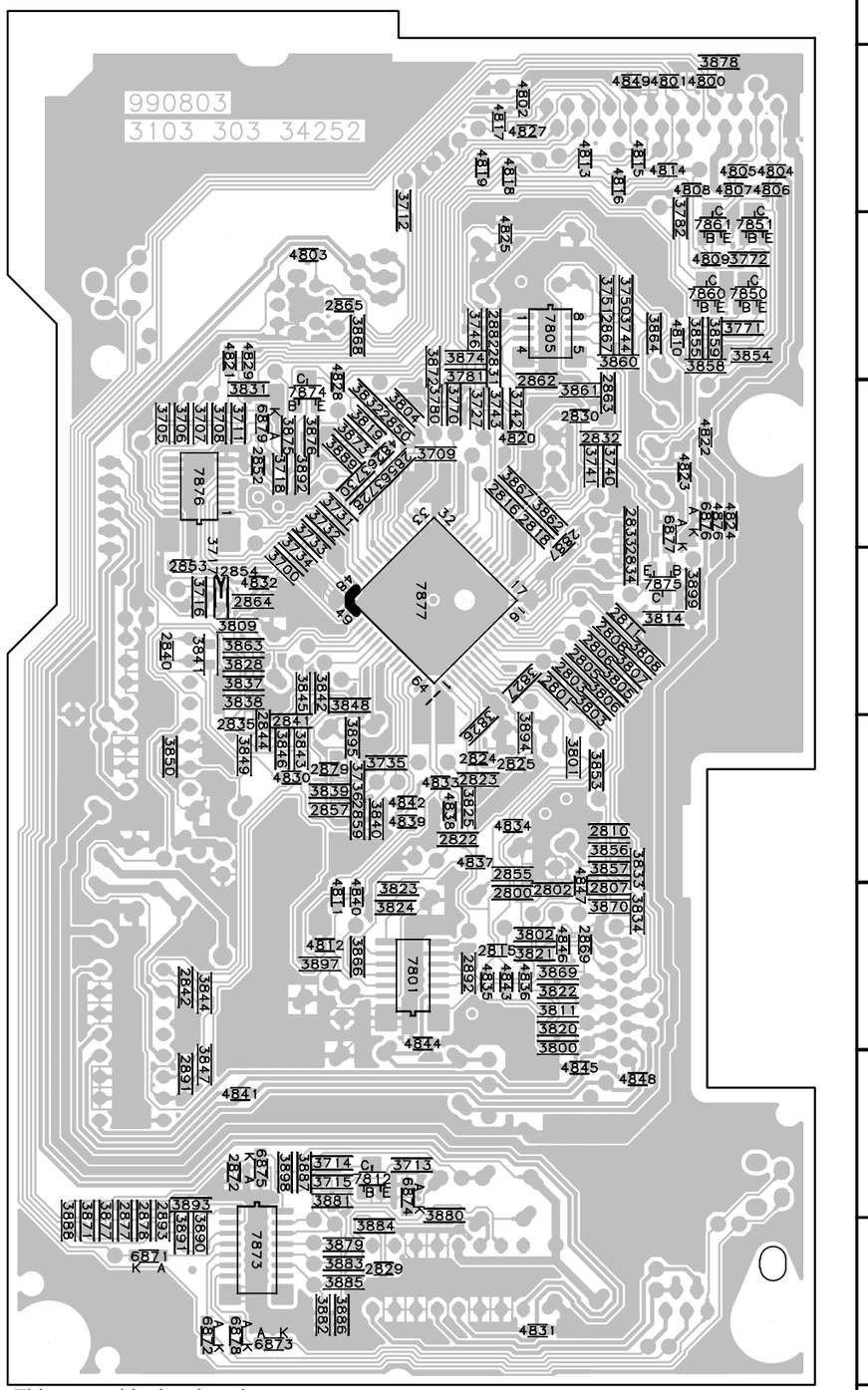
3CDC-LC Mainboard Copperside view



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2803	B4	3772	A2	3892	D3	1810	B3
2805	B4	3780	C3	3893	D7	1875	A8
2806	B4	3781	C2	3894	B5	1878	C2
2807	B6	3782	A2	3895	C5	1880	E2
2808	B4	3800	B6	3897	D6	2809	D5
2810	B5	3801	B5	3898	D7	2826	C5
2811	B4	3802	B6	3899	A4	2828	D4
2815	C6	3803	B4	4800	A1	2837	D5
2816	C3	3804	C3	4801	B1	2838	C6
2818	B3	3805	B4	4802	B1	2839	D6
2822	C5	3806	B4	4803	D2	2849	B5
2823	C5	3807	B4	4804	A1	2851	B3
2824	C5	3808	B4	4805	A1	2858	B2
2825	B5	3809	D4	4806	A1	2860	A3
2829	C8	3811	B6	4807	A1	2861	A3
2830	B3	3814	B4	4808	A1	2873	B8
2831	C2	3819	C3	4809	A2	2875	B7
2832	B3	3820	B6	4810	B2	2876	B2
2833	B3	3821	B6	4811	D6	2881	C7
2834	B4	3822	B6	4812	D6	2884	C6
2835	D5	3823	C6	4813	B1	2885	B5
2840	E4	3824	C6	4814	B1	2888	C7
2841	D5	3825	C5	4815	B1	3812	D6
2842	D6	3826	C5	4816	B1	3815	C7
2844	D5	3827	B4	4817	C1	3835	E6
2850	C3	3828	D4	4818	C1	3851	B7
2852	D3	3831	D3	4819	C1	3852	E5
2853	D4	3832	C3	4820	B3	5802	D2
2854	D4	3833	B5	4821	D2	7806	E6
2855	B5	3834	B6	4822	A3	7807	E5
2856	C3	3837	D4	4823	A3	7871	C8
2857	D5	3838	D4	4824	A3		
2859	C5	3839	D5	4825	C2		
2862	B3	3840	C5	4826	C3		
2863	B3	3841	D4	4827	B1		
2864	D4	3842	D4	4828	D3		
2865	C2	3843	D5	4829	D2		
2867	B2	3844	D6	4830	D5		
2869	B6	3845	D4	4831	B8		
2872	D7	3846	D5	4832	D4		
2877	E8	3847	D7	4833	C5		
2878	E8	3848	C4	4834	B5		
2879	D5	3849	D5	4835	C6		
2882	C2	3850	E5	4836	B6		
2887	B3	3853	B5	4837	C5		
2891	D7	3854	A2	4838	C5		
2892	C6	3855	A2	4839	C5		
2893	E8	3856	B5	4840	C6		
3700	D4	3857	B5	4841	D7		
3705	E3	3858	A2	4842	C5		
3706	D3	3859	A2	4843	C6		
3707	D3	3860	B2	4844	C6		
3708	D3	3861	B3	4845	B7		
3709	C3	3862	B3	4846	B6		
3711	D3	3863	D4	4847	B6		
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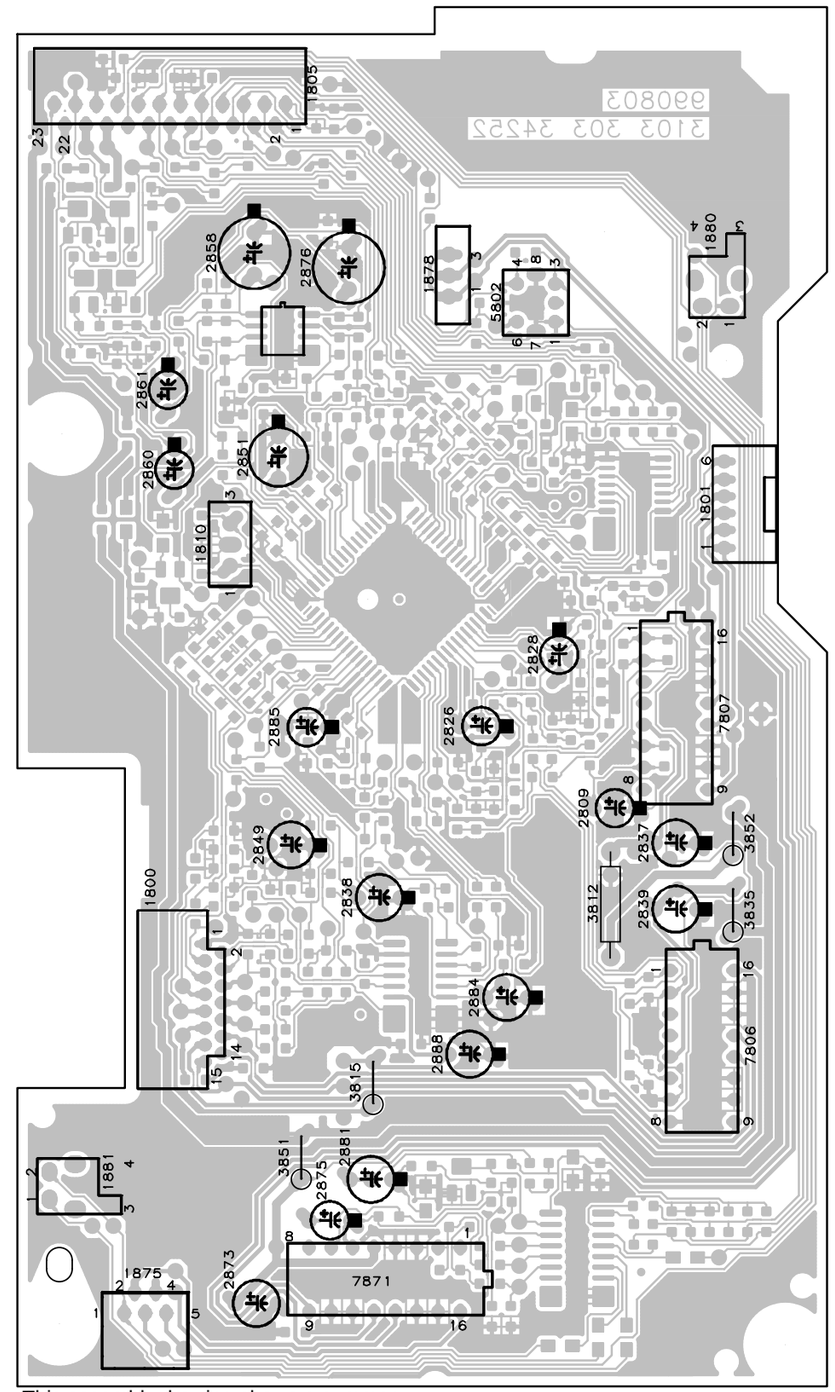
3713	C7	3866	C6	4849	B1		
3714	D7	3867	B3	4876	A3		
3715	D7	3868	C2	6871	E8		
3716	D4	3869	B6	6872	D8		
3717	D4	3870	B6	6873	D8		
3718	D3	3871	E8	6874	C7		
3727	C3	3872	C2	6875	D7		
3728	C3	3873	C3	6876	A3		
3730	C3	3874	C2	6877	B3		
3731	D3	3875	D3	6878	D8		
3732	D3	3876	D3	6879	D3		
3733	D3	3877	E8	7801	C6		
3734	D4	3878	A1	7805	B2		
3735	C5	3879	C8	7812	C7		
3736	C5	3880	C7	7850	A2		
3740	B3	3881	D7	7851	A2		
3741	B3	3882	D8	7860	A2		
3742	B3	3883	C8	7861	A2		
3743	C3	3884	C8	7873	D8		
3744	B2	3885	C8	7874	D3		
3746	C2	3886	D8	7875	B4		
3750	B2	3887	D7	7876	D3		
		3888	E8	7877	C4		

3CDC-LC Mainboard Componentside view



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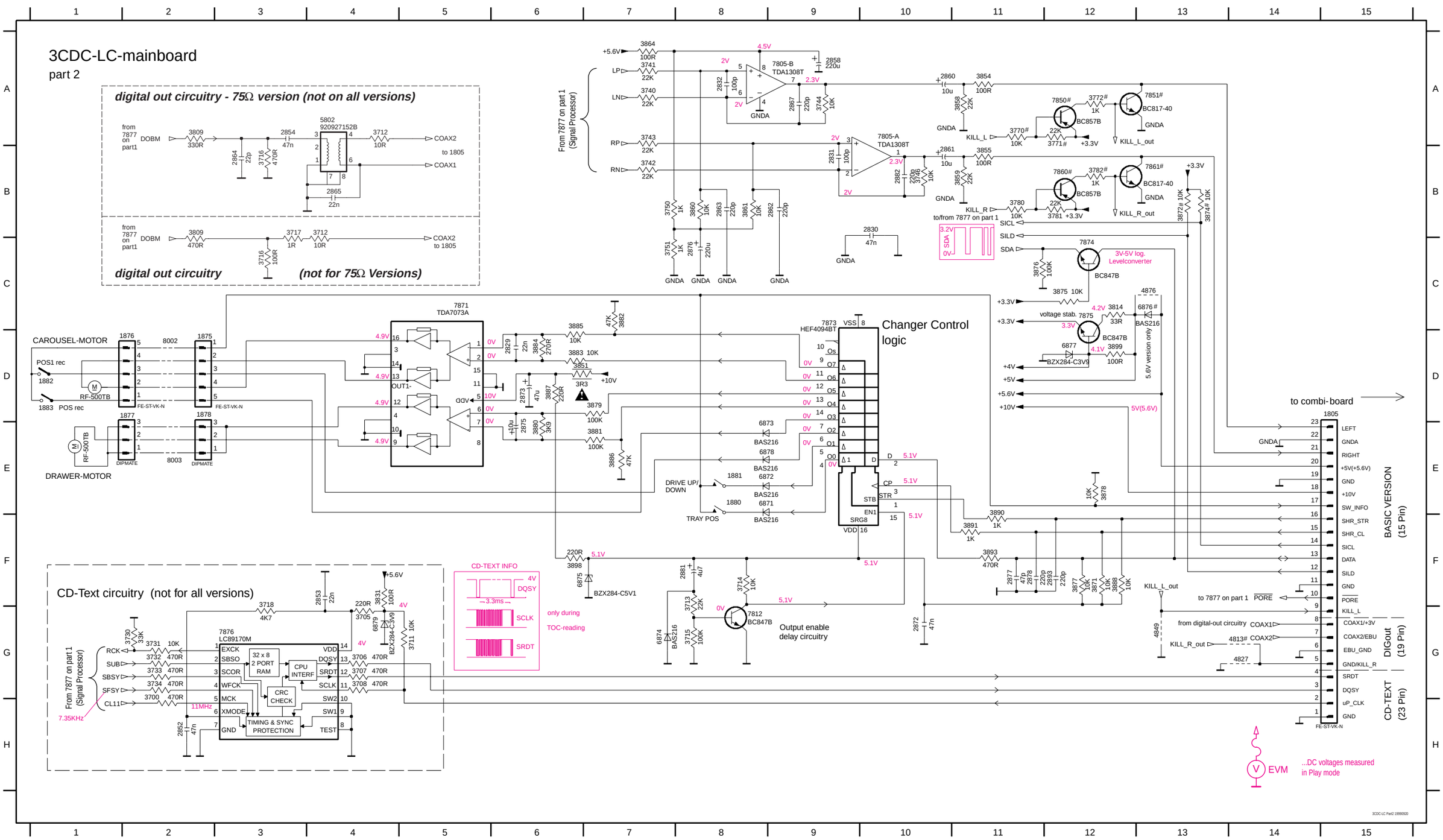
1805 D15	2830 B10	2858 A10	2865 C4	2877 F11	3705 G4	3713 F8	3730 G2	3741 A7	3751 C7	3782 B12	3855 B11	3868 C4	3877 F12	3883 D6	3890 F11	4813 G14	6872 E8	6878 E8	7851 A13	7875 C12	MP725 D8	MP803 F10	MP810 F13	MP830 A9	MP856 E14	MP867 E8	MP882 G2	MP891 B5		
1875 D2	2831 B9	2860 A10	2867 A9	2878 F11	3706 G4	3714 F8	3731 G2	3742 B7	3770 A11	3809 B2	3858 A11	3871 F12	3878 E12	3884 D6	3891 F11	4827 G14	6873 E8	6879 G4	7860 B12	7876 G3	MP726 D8	MP804 G14	MP811 F13	MP832 G9	MP857 B13	MP868 F8	MP886 G3	MP892 B5		
1878 D2	2832 A8	2861 B10	2872 G10	2881 F8	3707 G4	3715 G8	3732 G2	3743 A7	3771 A12	3814 C12	3859 B11	3872 B13	3879 D7	3885 C6	3893 F11	4849 G13	6874 G7	7805-A A10	7861 B13	MP721 C8	MP740 H14	MP805 E13	MP822 E3	MP833 F13	MP862 G13	MP869 C12	MP887 H5	MP897 D12		
1880 E8	2852 H2	2862 B9	2873 D6	2882 B10	3708 G4	3716 B3	3733 G2	3744 A9	3772 A12	3831 F4	3860 B8	3874 B13	3880 E6	3886 E7	3898 F6	4876 C13	6875 F6	7805-B A9	7871 C5	MP722 E8	MP741 G14	MP806 F13	MP823 D3	MP834 G14	MP863 C11	MP871 D6	MP888 G5	MP898 D13		
1881 E8	2853 F4	2863 B8	2875 E6	2893 F12	3711 G5	3717 B3	3734 G2	3746 B10	3780 B11	3851 D6	3861 B8	3875 C12	3881 E7	3887 D6	3899 D12	5802 B4	6876 C13	7812 G8	7873 C9	MP723 C8	MP742 G14	MP807 F14	MP824 D4	MP835 F14	MP865 D11	MP874 D12	MP889 G5	MP899 E14		
2829 D6	2854 B3	2864 B3	2876 C8	3700 H2	3712 B4	3718 G3	3740 A7	3750 B7	3781 B12	3854 A11	3864 A7	3876 C11	3882 C7	3888 F12	4803 B4	6871 E8	6877 D12	7850 A12	7874 C12	MP724 D8	MP801 D12	MP808 E13	MP825 D4	MP854 A13	MP866 E8	MP881 G2	MP890 B3			



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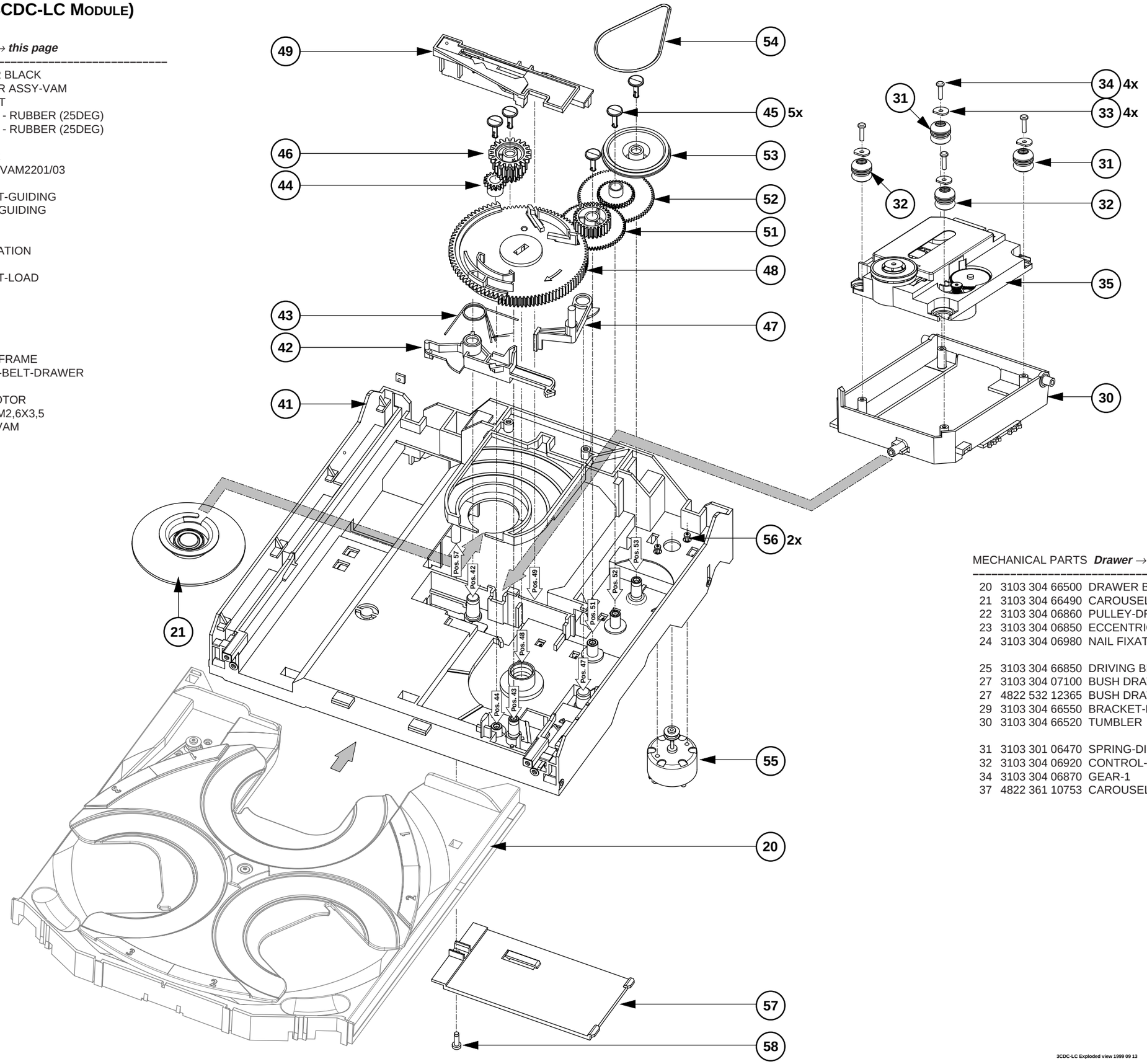
EXPLODED VIEW (3CDC-LC MODULE)

MECHANICAL PARTS ***Loader*** → ***this page***

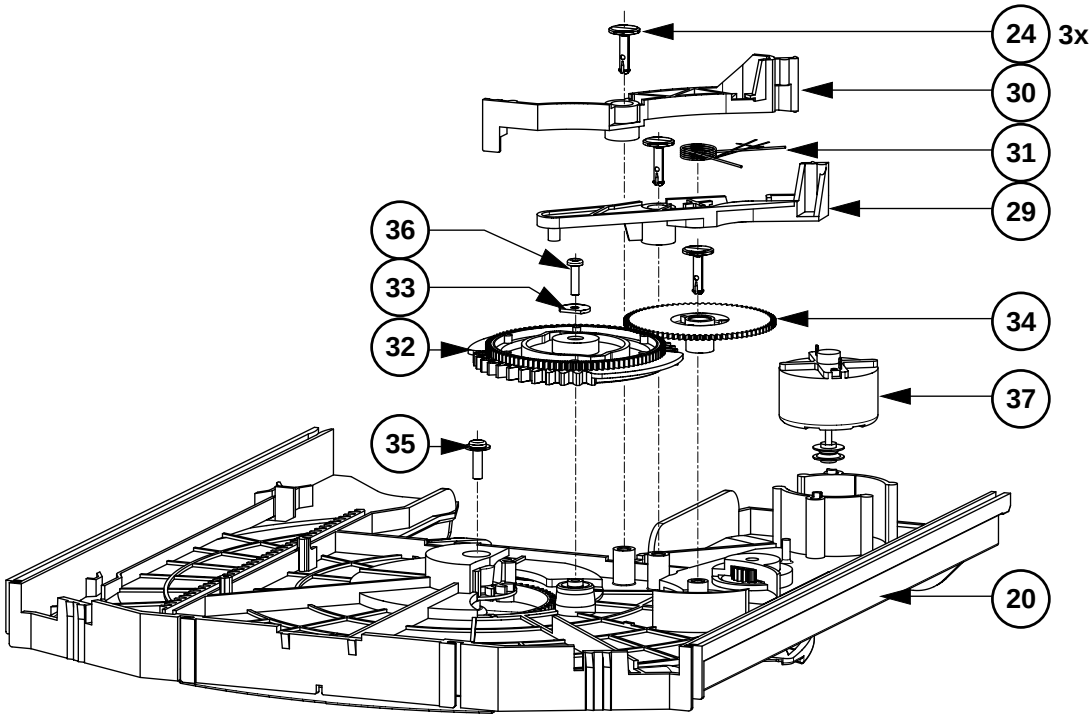
20	3103 304 66500	DRAWER BLACK
21	3140 117 58650	CLAMPER ASSY-VAM
30	3103 304 66560	SUPPORT
31	4822 529 10431	DAMPER - RUBBER (25DEG)
32	4822 529 10431	DAMPER - RUBBER (25DEG)
33	3103 304 06970	WASHER
35	9305 022 30103	CD Drive VAM2201/03
41	3103 304 66480	FRAME
42	3103 304 66540	BRACKET-GUIDING
43	3103 301 06460	SPRING-GUIDING
44	3103 304 06890	GEAR-3
45	3103 304 06980	NAIL FIXATION
46	3103 304 06880	GEAR-2
47	3103 304 66530	BRACKET-LOAD
48	3103 304 06910	CAM
49	3103 304 66510	GUIDING
51	3103 304 06900	GEAR-4
52	3103 304 06870	GEAR-1
53	3103 304 06960	PULLEY-FRAME
54	3103 304 66910	DRIVING-BELT-DRAWER
55	4822 361 10753	TRAY MOTOR
56	4822 502 12548	SCREW M2,6X3,5
57	3103 304 68890	COVER-VAM
59	4822 466 12146	RUBBER



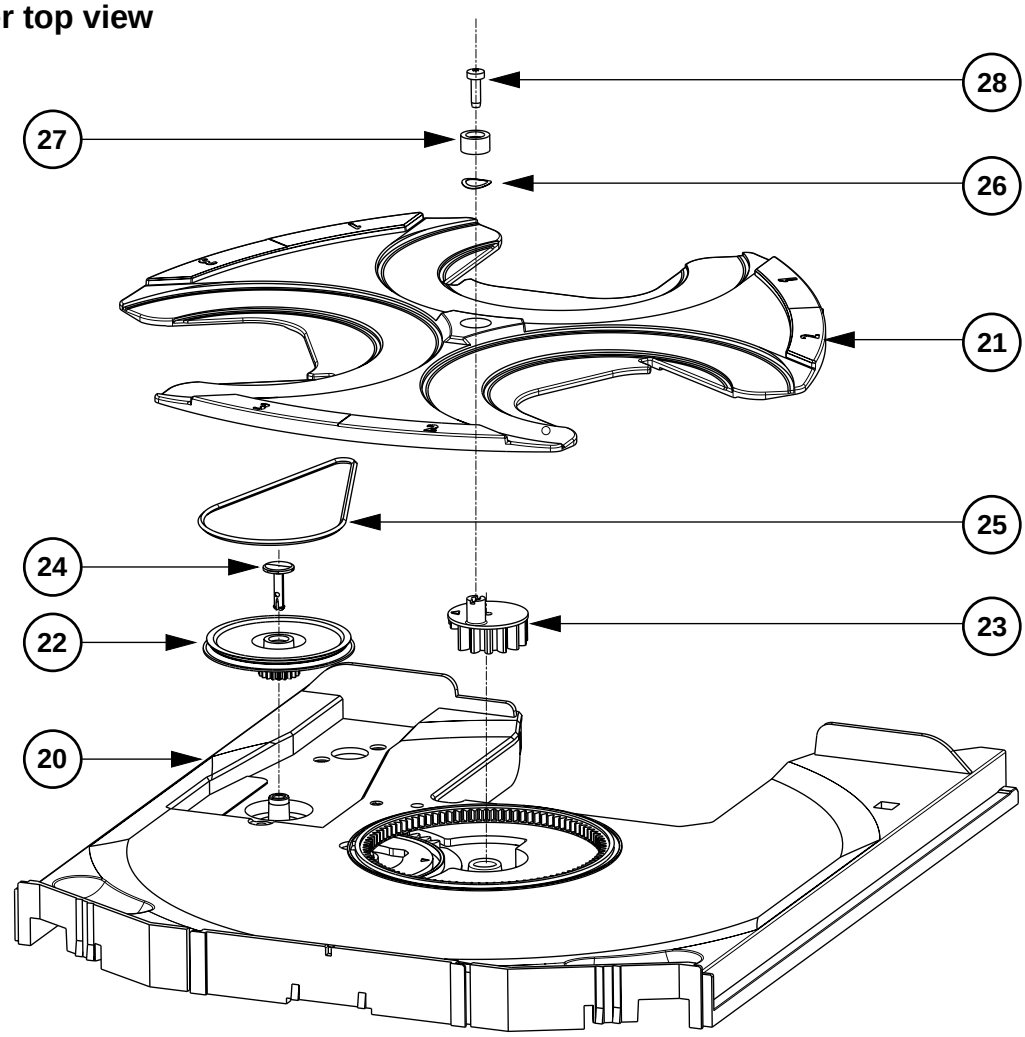
MECHANICAL PARTS ***Drawer*** → ***Chapter 10-11***

20	3103 304 66500	DRAWER BLACK
21	3103 304 66490	CAROUSEL BLACK
22	3103 304 06860	PULLEY-DRAWER
23	3103 304 06850	ECCENTRIC GEAR WHEEL
24	3103 304 06980	NAIL FIXATION
25	3103 304 66850	DRIVING BELT CAROUSEL
27	3103 304 07100	BUSH DRAWER (height=8,5mm,d=16mm)
27	4822 532 12365	BUSH DRAWER (height=5,5mm,d=9,4mm)
29	3103 304 66550	BRACKET-DISC
30	3103 304 66520	TUMBLER
31	3103 301 06470	SPRING-DISC
32	3103 304 06920	CONTROL-DISC
34	3103 304 06870	GEAR-1
37	4822 361 10753	CAROUSEL MOTOR

Drawer bottom view



Drawer top view



ELECTRICAL PARTSLIST 3CDC-LC MODULE

MISCELLANEOUS

1800	4822 265 10925	FFC-CONNECTOR, 15P, SIDE ENTRY
1805	4822 265 10979	FFC-CONNECTOR 15PIN
1805	4822 265 11182	FFC-CONNECTOR 23PIN
1805	4822 265 11545	FFC-CONNECTOR 19PIN
1875	4822 267 10958	FFC-CONNECTOR, 5P, SIDE ENTRY
1876	2422 025 08332	FLEX FOIL CONNECTOR 5PIN
1880	4822 276 13503	SWITCH, Tray in endposition
1881	4822 276 13503	SWITCH, Drive up/down
1882	4822 276 13503	SWITCH, Position 1
1883	4822 276 13503	SWITCH, Position recogniced
8002	3103 308 91990	FLEX FOIL CABLE 5P, 200mm
8005	3103 308 91980	FLEX FOIL CABLE 15P, 170mm

CAPACITORS

2800 ©	4822 126 10326	180pF	5%	
2801 ©	4822 122 33575	220pF	5%	50V
2802 ©	4822 126 10326	180pF	5%	
2803 ©	4822 122 33575	220pF	5%	50V
2805 ©	4822 122 33575	220pF	5%	50V
2806 ©	4822 122 33575	220pF	5%	50V
2807 ©	5322 122 31863	330pF	5%	50V
2808 ©	4822 122 33575	220pF	5%	50V
2809	5322 124 41948	0,47µF	20%	50V
2810 ©	4822 126 10326	180pF	5%	
2811 ©	4822 122 33575	220pF	5%	50V
2815 ©	4822 126 14076	220nF	20%	25V
2816 ©	4822 126 13344	1,5nF	5%	63V
2818 ©	4822 126 13344	1,5nF	5%	63V
2822 ©	2222 861 15222	2,2nF	10%	50V
2823 ©	4822 126 13693	56pF	1%	63V
2824 ©	4822 126 13751	47nF	10%	50V
2825 ©	4822 122 33177	10nF	20%	50V
2826	4822 124 12362	47µF	20%	4V
2828	4822 124 12362	47µF	20%	4V
2829 ©	5322 122 32654	22nF	10%	63V
2830 ©	4822 126 13751	47nF	10%	50V
2831 ©	5322 122 32531	100pF	5%	50V
2832 ©	5322 122 32531	100pF	5%	50V
2833 ©	5322 122 32659	33pF	5%	50V
2834 ©	5322 122 32659	33pF	5%	50V
2835 ©	4822 126 13751	47nF	10%	50V
2837	4822 124 40433	47µF	20%	25V
2838	4822 124 40248	10µF	20%	63V
2839	4822 124 40433	47µF	20%	25V
2840 ©	4822 126 14585	100nF	10%	50V
2841 ©	4822 122 33216	270pF	5%	50V
2842 ©	4822 122 33127	2,2nF	10%	63V
2844 ©	4822 122 33216	270pF	5%	50V
2849	4822 124 40769	4,7µF	20%	100V
2850 ©	5322 122 31647	1nF	10%	63V
2851	4822 124 42383	220µF	20%	4V
2852 ©	4822 126 13751	47nF	10%	50V
2853 ©	5322 122 32654	22nF	10%	63V
2854 ©	4822 126 13751	47nF	10%	50V
2855 ©	5322 122 34099	470pF	10%	63V
2856 ©	4822 126 13691	27pF	1%	63V
2857 ©	4822 122 33177	10nF	20%	50V
2858	4822 124 12245	220µF	20%	16V
2859 ©	4822 122 33177	10nF	20%	50V
2860	4822 124 11947	10µF	20%	16V
2861	4822 124 11947	10µF	20%	16V
2862 ©	4822 122 33575	220pF	5%	50V
2863 ©	4822 122 33575	220pF	5%	50V
2864 ©	5322 122 32658	22pF	5%	50V

CAPACITORS

2865 ©	5322 122 32654	22nF	10%	63V
2867 ©	4822 122 33575	220pF	5%	50V
2869 ©	4822 126 13751	47nF	10%	50V
2872 ©	4822 126 13751	47nF	10%	50V
2873	4822 124 80231	47µF	20%	16V
2875	4822 124 11947	10µF	20%	16V
2876	4822 124 12245	220µF	20%	16V
2877 ©	4822 126 13692	47pF	1%	63V
2878 ©	4822 122 33575	220pF	5%	50V
2879 ©	4822 126 13751	47nF	10%	50V
2881	4822 124 40769	4,7µF	20%	100V
2882 ©	4822 122 33575	220pF	5%	50V
2884	4822 124 40769	4,7µF	20%	100V
2885	4822 124 40769	4,7µF	20%	100V
2887 ©	4822 126 14585	100nF	10%	50V
2888	4822 124 40769	4,7µF	20%	100V
2891 ©	5322 122 31865	1,5nF	10%	63V
2892 ©	5322 126 10223	4,7nF	10%	63V
2893 ©	4822 122 33575	220pF	5%	50V

RESISTORS

3700 ©	4822 051 20471	470Ω	5%	0,1W
3705 ©	4822 117 11503	220Ω	5%	0,1W
3706 ©	4822 051 20471	470Ω	5%	0,1W
3707 ©	4822 051 20471	470Ω	5%	0,1W
3708 ©	4822 051 20471	470Ω	5%	0,1W
3709 ©	4822 051 20108	1Ω	5%	0,1W
3711 ©	4822 117 10833	10kΩ	1%	0,1W
3712 ©	4822 051 20109	10Ω	5%	0,1W
3713 ©	4822 051 20223	22kΩ	5%	0,1W
3714 ©	4822 117 10833	10kΩ	1%	0,1W
3715 ©	4822 117 10837	100kΩ	1%	0,1W
3716 ©	4822 051 20471	470Ω	5%	0,1W
3718 ©	4822 051 20472	4,7kΩ	5%	0,1W
3727 ©	4822 051 20472	4,7kΩ	5%	0,1W
3728 ©	4822 051 20472	4,7kΩ	5%	0,1W
3730 ©	4822 051 20333	33kΩ	5%	0,1W
3731 ©	4822 117 10833	10kΩ	1%	0,1W
3732 ©	4822 051 20471	470Ω	5%	0,1W
3733 ©	4822 051 20471	470Ω	5%	0,1W
3734 ©	4822 051 20471	470Ω	5%	0,1W
3740 ©	4822 051 20223	22kΩ	5%	0,1W
3741 ©	4822 051 20223	22kΩ	5%	0,1W
3742 ©	4822 051 20223	22kΩ	5%	0,1W
3743 ©	4822 051 20223	22kΩ	5%	0,1W
3744 ©	4822 117 10833	10kΩ	1%	0,1W
3746 ©	4822 117 10833	10kΩ	1%	0,1W
3750 ©	4822 051 10102	1kΩ	2%	0,25W
3751 ©	4822 051 10102	1kΩ	2%	0,25W
3800 ©	4822 117 11148	56kΩ	1%	0,1W
3801 ©	4822 117 10833	10kΩ	1%	0,1W
3802 ©	4822 117 11148	56kΩ	1%	0,1W
3803 ©	4822 117 10833	10kΩ	1%	0,1W
3805 ©	4822 117 10833	10kΩ	1%	0,1W
3806 ©	4822 117 10833	10kΩ	1%	0,1W
3807 ©	4822 117 10833	10kΩ	1%	0,1W
3808 ©	4822 117 10833	10kΩ	1%	0,1W
3809 ©	4822 117 13577	330Ω	1%	0,1W
3811 ©	4822 051 20273	27kΩ	5%	0,1W
3812	4822 053 10228	2,2Ω	5%	1W
3814 ©	4822 051 20339	33Ω	5%	0,1W
3815	4822 052 10478	4,7Ω	5%	NFR
3819 ©	4822 051 20471	470Ω	5%	0,1W
3820 ©	4822 051 20472	4,7kΩ	5%	0,1W

ELECTRICAL PARTSLIST 3CDC-LC MODULE

RESISTORS

3821 ©	4822 051 20472	4,7kΩ	5%	0,1W
3822 ©	4822 117 12955	2,7kΩ	1%	0,1W
3823 ©	4822 051 10102	1kΩ	2%	0,25W
3824 ©	4822 051 10102	1kΩ	2%	0,25W
3825 ©	4822 051 10102	1kΩ	2%	0,25W
3826 ©	4822 051 20223	22kΩ	5%	0,1W
3827 ©	4822 051 20273	27kΩ	5%	0,1W
3828 ©	4822 051 20223	22kΩ	5%	0,1W
3831 ©	4822 051 20101	100Ω	5%	0,1W
3832 ©	4822 117 10833	10kΩ	1%	0,1W
3833 ©	4822 051 20223	22kΩ	5%	0,1W
3834 ©	4822 051 20223	22kΩ	5%	0,1W
3835	4822 052 10338	3,3Ω		NFR25
3837 ©	4822 051 10102	1kΩ	2%	0,25W
3838 ©	4822 051 10102	1kΩ	2%	0,25W
3839 ©	4822 117 10837	100kΩ	1%	0,1W
3840 ©	4822 117 10837	100kΩ	1%	0,1W
3841 ©	4822 051 20472	4,7kΩ	5%	0,1W
3842 ©	4822 117 10834	47kΩ	1%	0,1W
3843 ©	4822 051 20333	33kΩ	5%	0,1W
3844 ©	4822 051 20472	4,7kΩ	5%	0,1W
3845 ©	4822 117 10834	47kΩ	1%	0,1W
3846 ©	4822 051 20333	33kΩ	5%	0,1W
3847 ©	4822 117 11507	6,8kΩ	1%	0,1W
3848 ©	4822 117 10837	100kΩ	1%	0,1W
3849 ©	4822 117 11149	82kΩ	1%	0,1W
3850 ©	4822 051 20472	4,7kΩ	5%	0,1W
3851	4822 052 10338	3,3Ω		NFR25
3852	4822 052 10228	2,2Ω	5%	0,33W
3853 ©	4822 051 20471	470Ω	5%	0,1W
3854 ©	4822 051 20101	100Ω	5%	0,1W
3855 ©	4822 051 20101	100Ω	5%	0,1W
3856 ©	4822 117 12521	68Ω	1%	0,1W
3857 ©	4822 117 12521	68Ω	1%	0,1W
3858 ©	4822 051 20223	22kΩ	5%	0,1W
3859 ©	4822 051 20223	22kΩ	5%	0,1W
3860 ©	4822 117 10833	10kΩ	1%	0,1W
3861 ©	4822 117 10833	10kΩ	1%	0,1W
3862 ©	4822 051 20121	120Ω	5%	0,1W
3863 ©	4822 051 20339	33Ω	5%	0,1W
3864 ©	4822 051 20101	100Ω	5%	0,1W
3866 ©	4822 117 10833	10kΩ	1%	0,1W
3867 ©	4822 051 20121	120Ω	5%	0,1W
3869 ©	4822 051 20478	4,7Ω	5%	0,1W
3870 ©	4822 051 20101	100Ω	5%	0,1W
3871 ©	4822 117 10833	10kΩ	1%	0,1W
3873 ©	4822 051 20471	470Ω	5%	0,1W
3875 ©	4822 117 10833	10kΩ	1%	0,1W
3876 ©	4822 117 10837	100kΩ	1%	0,1W
3877 ©	4822 117 10833	10kΩ	1%	0,1W
3878 ©	4822 117 10833	10kΩ	1%	0,1W
3879 ©	4822 117 10837	100kΩ	1%	0,1W
3880 ©	4822 051 20392	3,9kΩ	5%	0,1W
3881 ©	4822 117 10837	100kΩ	1%	0,1W
3882 ©	4822 117 10834	47kΩ	1%	0,1W
3883 ©	4822 117 10833	10kΩ	1%	0,1W
3884 ©	4822 117 11504	270Ω	1%	0.1W
3885 ©	4822 117 10833	10kΩ	1%	0,1W
3886 ©	4822 117 10834	47kΩ	1%	0,1W
3887 ©	4822 117 11503	220Ω	5%	0,1W
3888 ©	4822 117 10833	10kΩ	1%	0,1W
3889 ©	4822 051 20471	470Ω	5%	0,1W
3890 ©	4822 051 10102	1kΩ	2%	0,25W
3891 ©	4822 051 10102	1kΩ	2%	0,25W

RESISTORS

3892 ©	4822 051 20471	470Ω	5%	0,1W
3893 ©	4822 051 20471	470Ω	5%	0,1W
3894 ©	4822 051 20101	100Ω	5%	0,1W
3895 ©	4822 051 20159	15Ω	5%	0,1W
3897 ©	4822 051 20101	100Ω	5%	0,1W
3898 ©	4822 117 11503	220Ω	5%	0,1W
3899 ©	4822 051 20101	100Ω	5%	0,1W
4800 ©	4822 051 20008	CHIP JUMPER 0805		
4801 ©	4822 051 20008	CHIP JUMPER 0805		
4802 ©	4822 051 20008	CHIP JUMPER 0805		
4804 ©	4822 051 20008	CHIP JUMPER 0805		
4805 ©	4822 051 20008	CHIP JUMPER 0805		
4806 ©	4822 051 20008	CHIP JUMPER 0805		
4807 ©	4822 051 20008	CHIP JUMPER 0805		
4808 ©	4822 051 20008	CHIP JUMPER 0805		
4810 ©	4822 051 20008	CHIP JUMPER 0805		
4812 ©	4822 051 20008	CHIP JUMPER 0805		
4817 ©	4822 051 20008	CHIP JUMPER 0805		
4818 ©	4822 051 20008	CHIP JUMPER 0805		
4819 ©	4822 051 20008	CHIP JUMPER 0805		
4820 ©	4822 051 20008	CHIP JUMPER 0805		
4821 ©	4822 051 20008	CHIP JUMPER 0805		
4822 ©	4822 051 20008	CHIP JUMPER 0805		
4823 ©	4822 051 20008	CHIP JUMPER 0805		
4824 ©	4822 051 20008	CHIP JUMPER 0805		
4825 ©	4822 051 20008	CHIP JUMPER 0805		
4826 ©	4822 051 20008	CHIP JUMPER 0805		
4827 ©	4822 051 20008	CHIP JUMPER 0805		
4828 ©	4822 051 20008	CHIP JUMPER 0805		
4830 ©	4822 051 20008	CHIP JUMPER 0805		
4831 ©	4822 051 20008	CHIP JUMPER 0805		
4832 ©	4822 051 20008	CHIP JUMPER 0805		
4833 ©	4822 051 20008	CHIP JUMPER 0805		
4834 ©	4822 051 20008	CHIP JUMPER 0805		
4835 ©	4822 051 20008	CHIP JUMPER 0805		
4836 ©	4822 051 20008	CHIP JUMPER 0805		
4837 ©	4822 051 20008	CHIP JUMPER 0805		
4838 ©	4822 051 20008	CHIP JUMPER 0805		
4839 ©	4822 051 20008	CHIP JUMPER 0805		
4840 ©	4822 051 20008	CHIP JUMPER 0805		
4841 ©	4822 051 20008	CHIP JUMPER 0805		
4842 ©	4822 051 20008	CHIP JUMPER 0805		
4843 ©	4822 051 20008	CHIP JUMPER 0805		
4844 ©	4822 051 20008	CHIP JUMPER 0805		
4845 ©	4822 051 20008	CHIP JUMPER 0805		
4846 ©	4822 051 20008	CHIP JUMPER 0805		
4847 ©	4822 051 20008	CHIP JUMPER 0805		
4848 ©	4822 051 20008	CHIP JUMPER 0805		
4849 ©	4822 051 20008	CHIP JUMPER 0805		
4876 ©	4822 051 20008	CHIP JUMPER 0805		

COILS

1810	2422 543 01068	RESONATOR 8MHZ
5802	4822 157 70601	100µH

DIODES

6871 ©	4822 130 11397	BAS316
6872 ©	4822 130 11397	BAS316
6873 ©	4822 130 11397	BAS316
6874 ©	4822 130 11397	BAS316
6875 ©	9340 548 52115	BZX284-C5V1
6877 ©	9322 129 34685	BZX284-C3V9
6878 ©	4822 130 11397	BAS316
6879 ©	9322 129 34685	BZX284-C3V9

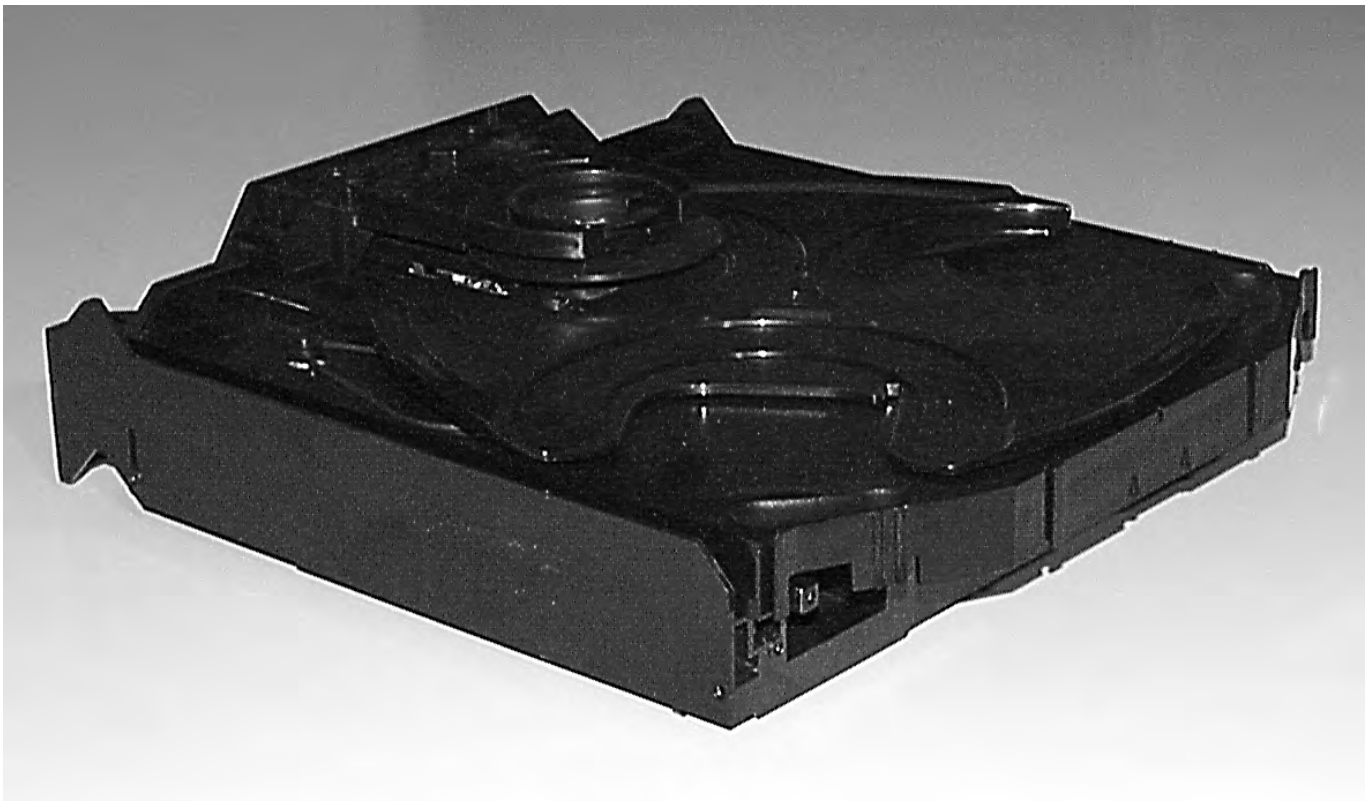
ELECTRICAL PARTSLIST 3CDC-LC MODULE

TRANSISTORS

7812 ©	5322 130 60159	BC846B
7874 ©	5322 130 60159	BC846B
7875 ©	5322 130 60159	BC846B

INTEGRATED CIRCUITS

7801 ©	9352 622 36118	TZA1025T/V2 HF-Amplifier
7805 ©	4822 209 33165	TDA1308T/N1, OPAMP
7806	4822 209 32852	TDA7073A/N2, Motor driver
7807	4822 209 32852	TDA7073A/N2, Motor driver
7871	4822 209 32852	TDA7073A/N2, Motor driver
7873	5322 209 11306	HEF4094BT, Shift register
7876	4822 209 16143	LC89170M, CD TEXT IC
7877 ©	9352 642 17557	SAA7325H/M2B CD10/M2



3CDC-LC-MB Module

(3 Disc Carousel Changer)

Layout stage .2

TABLE OF CONTENTS

WARNING

CHARGED CAPACITORS ON THE SERVO BOARD MAY DAMAGE THE CD DRIVE ELECTRONICS WHEN CONNECTING A NEW CDM MECHANISM. THAT´S WHY, BESIDES THE SAFETY MEASURES LIKE
• SWITCH OFF POWER SUPPLY
• ESD PROTECTION
ADDITIONAL ACTIONS MUST BE TAKEN BY THE REPAIR TECHNICIAN.

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

1. Disconnect CD drive flexfoil from old CD drive
2. Connect paperclip to CD drive flexfoil to short-circuit flexfoil (fig.1)
3. Remove old CD drive
4. Remove short-circuit from flexfoil of CD drive
5. Connect flexfoil to new CD drive
6. Position new CD drive in its studs
7. Remove short-circuit from Laserunit

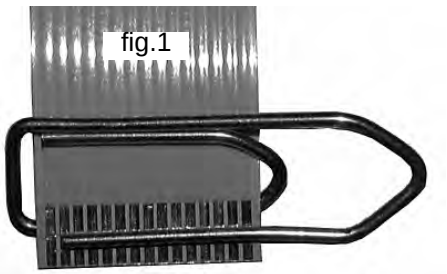
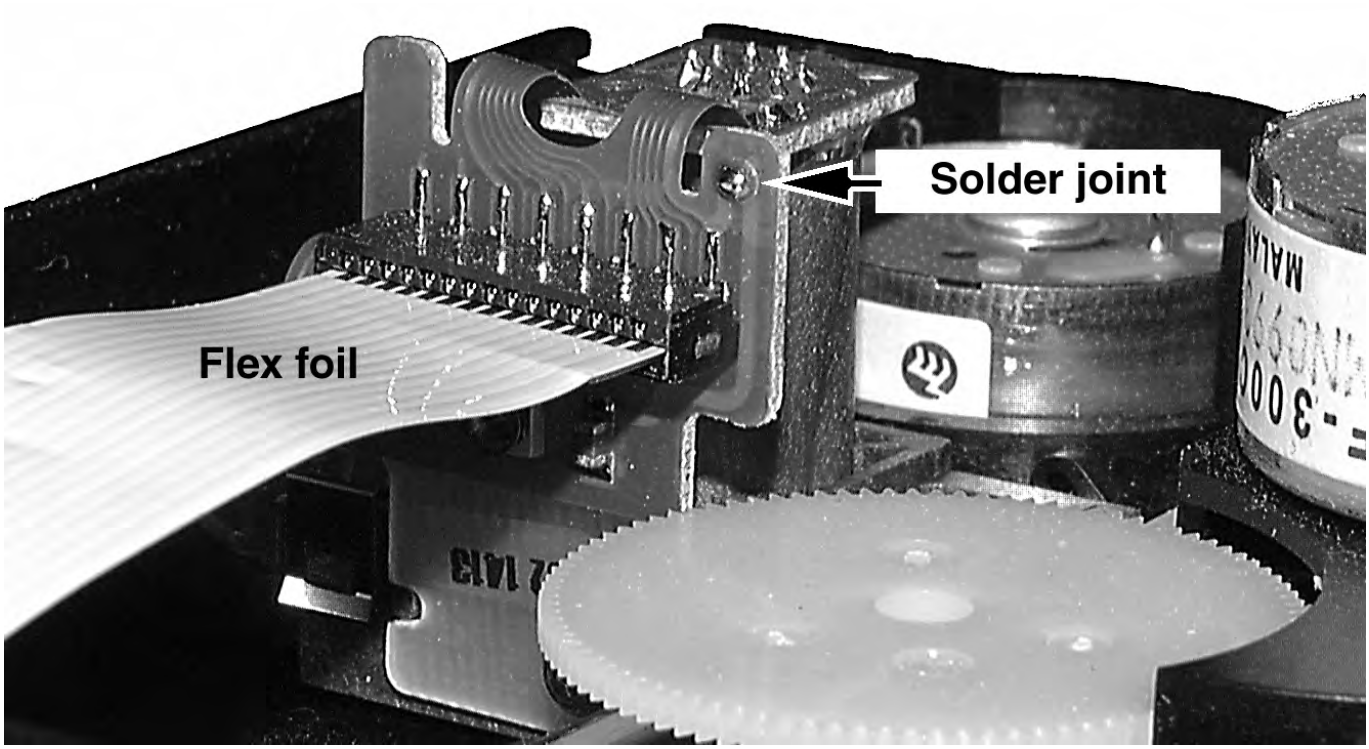
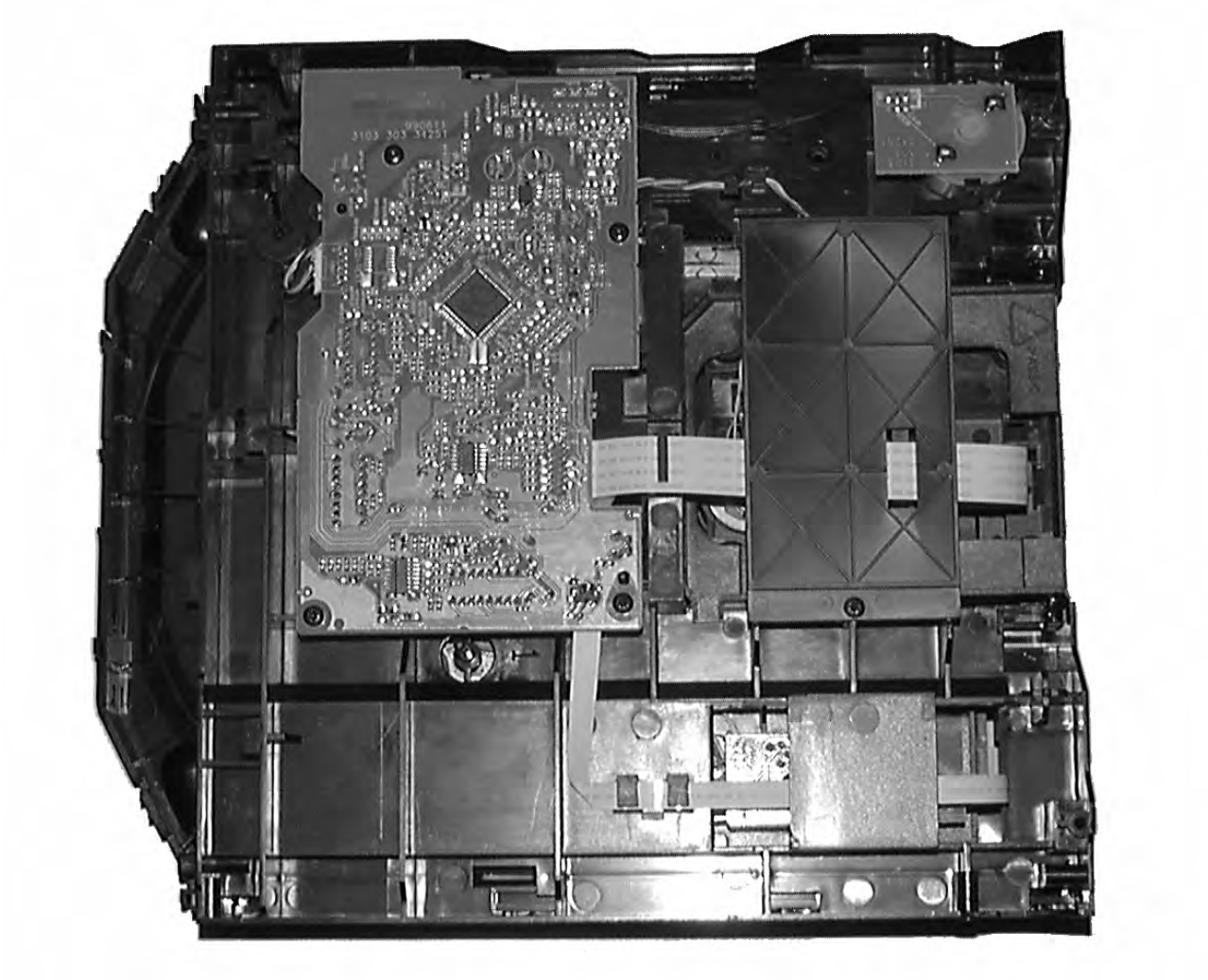


fig.1

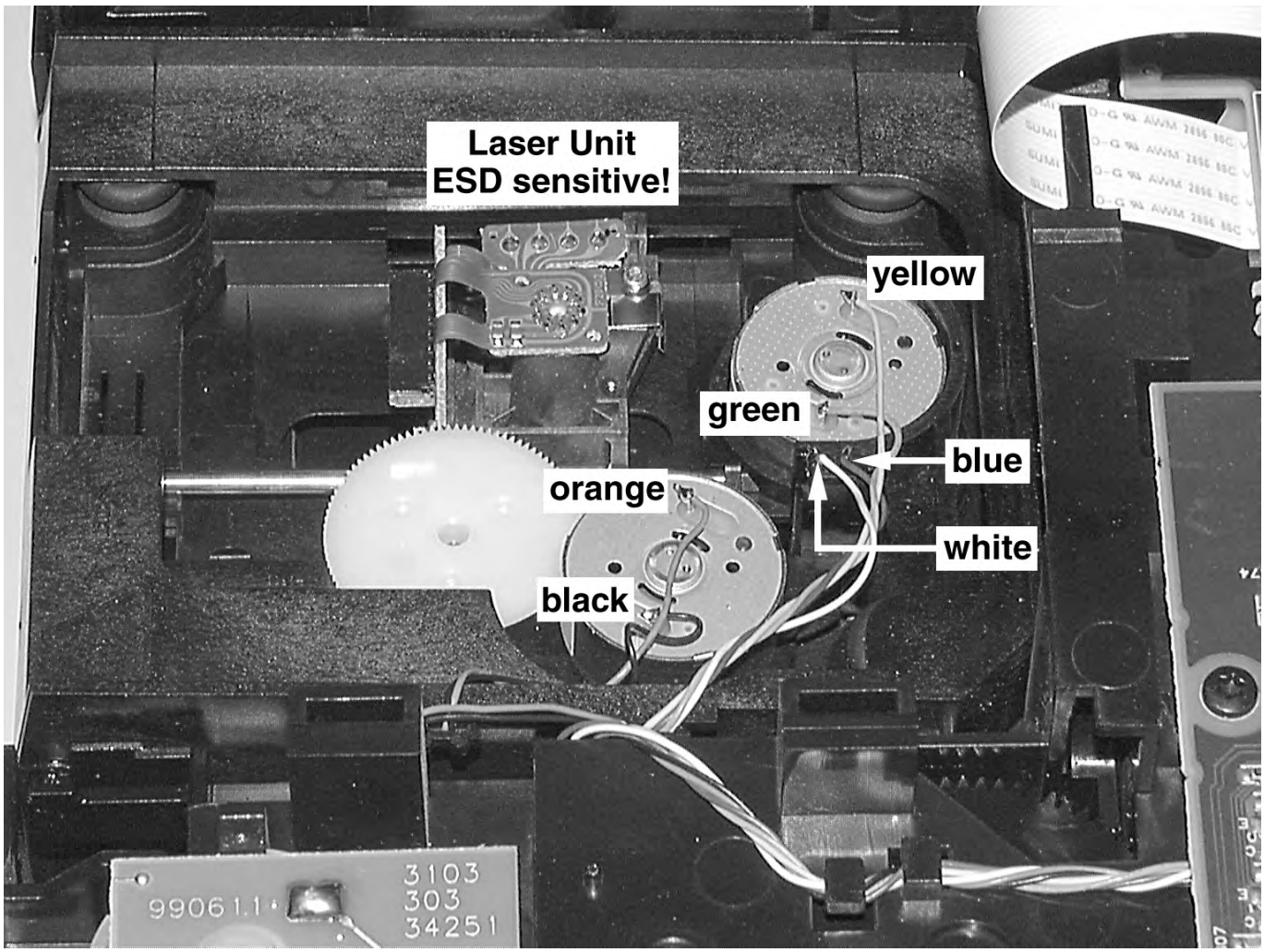
Attention: The laser diode of this CD drive is protected against ESD by a solder joint which shortcircuits the laserdiode to ground.
For proper functionality of the CD drive this solder joint must be removed **after** connection the drive to the set.



Service Position

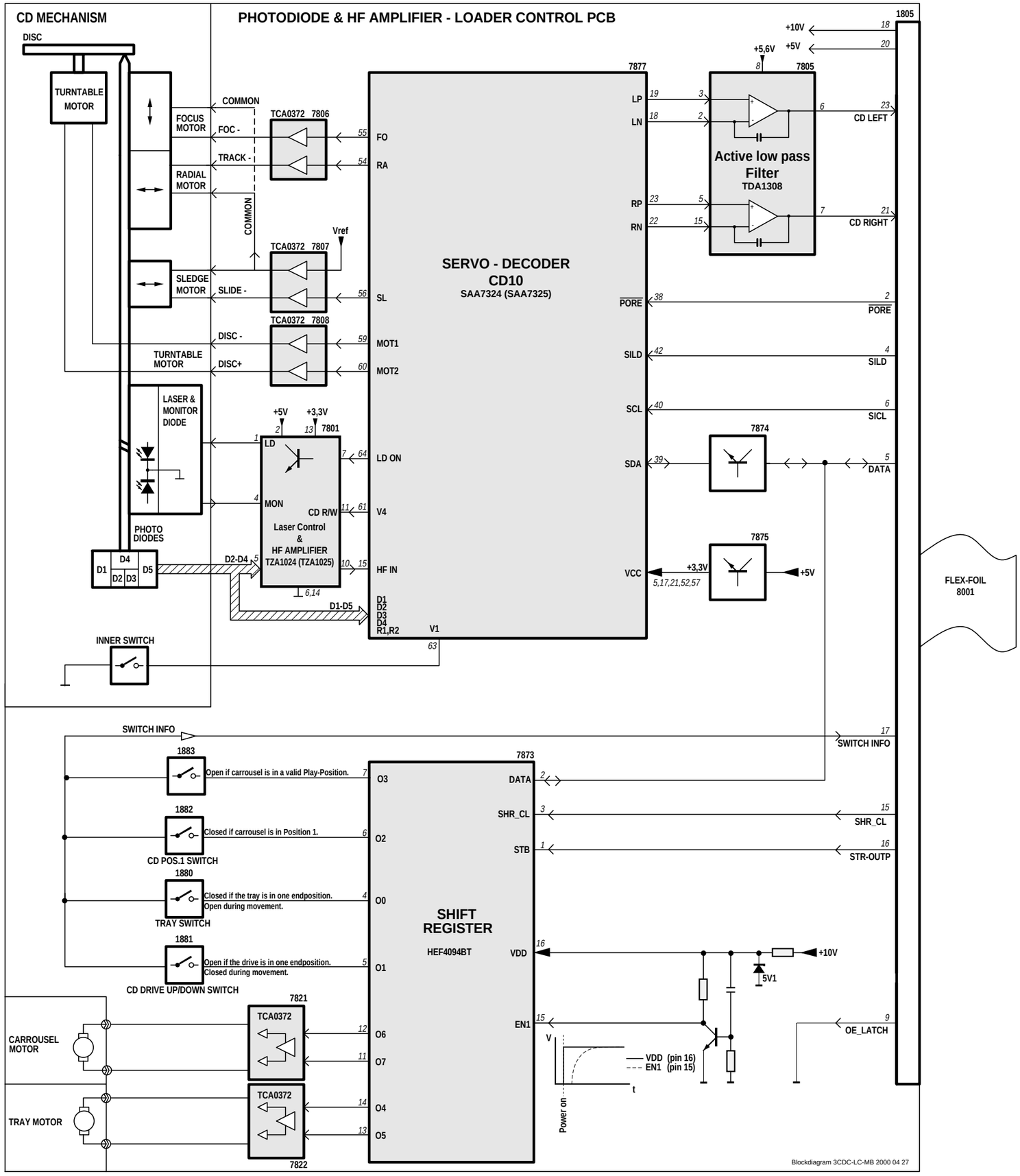


Wiring


Laser Unit
ESD sensitive!
yellow
green
blue
orange
white
black
3103
303
34251

10A-5

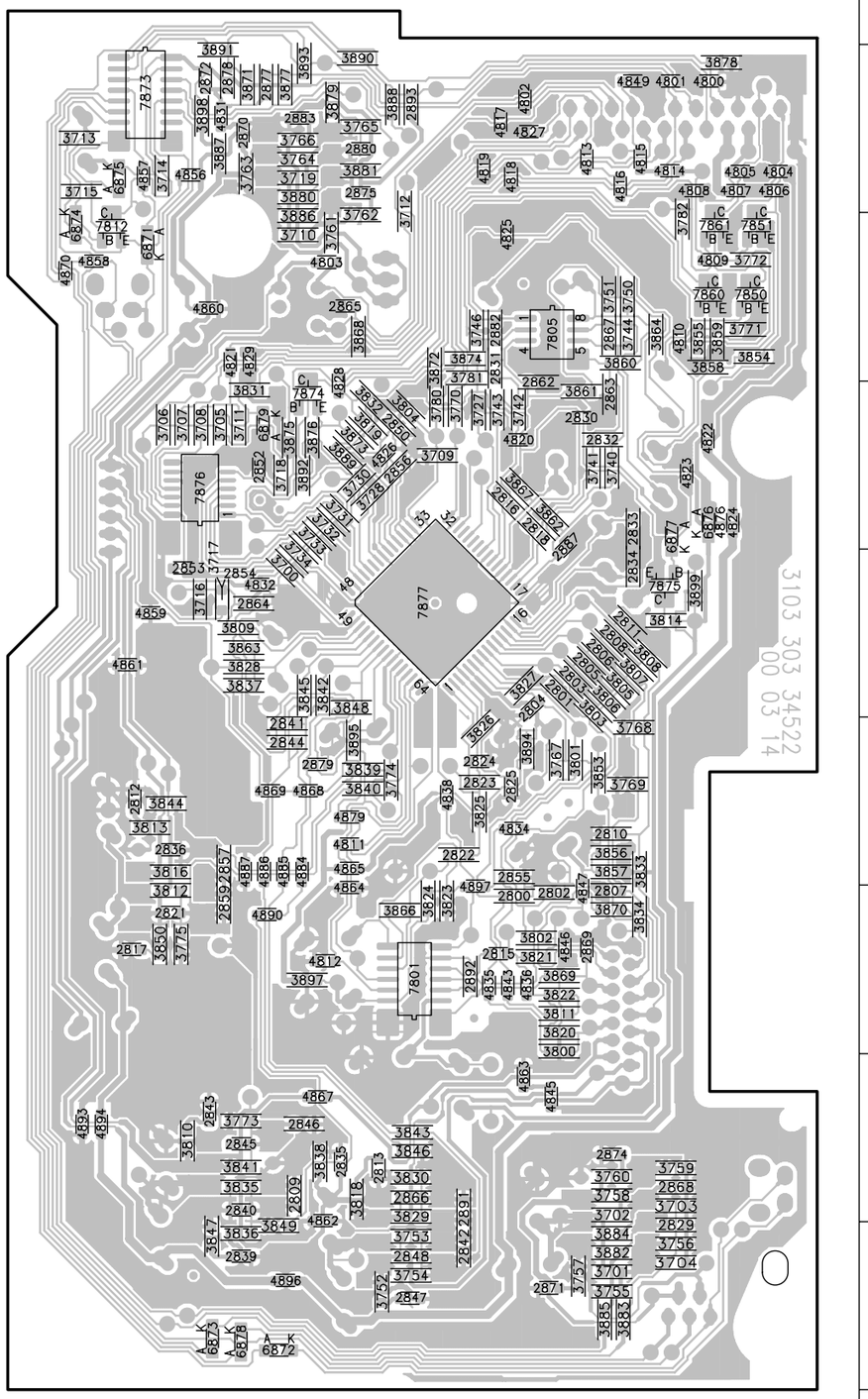
Blockdiagram



Blockdiagram 3CDC-LC-MB 2000 04 27

10A-6

3CDC-LC-MB Copperside view



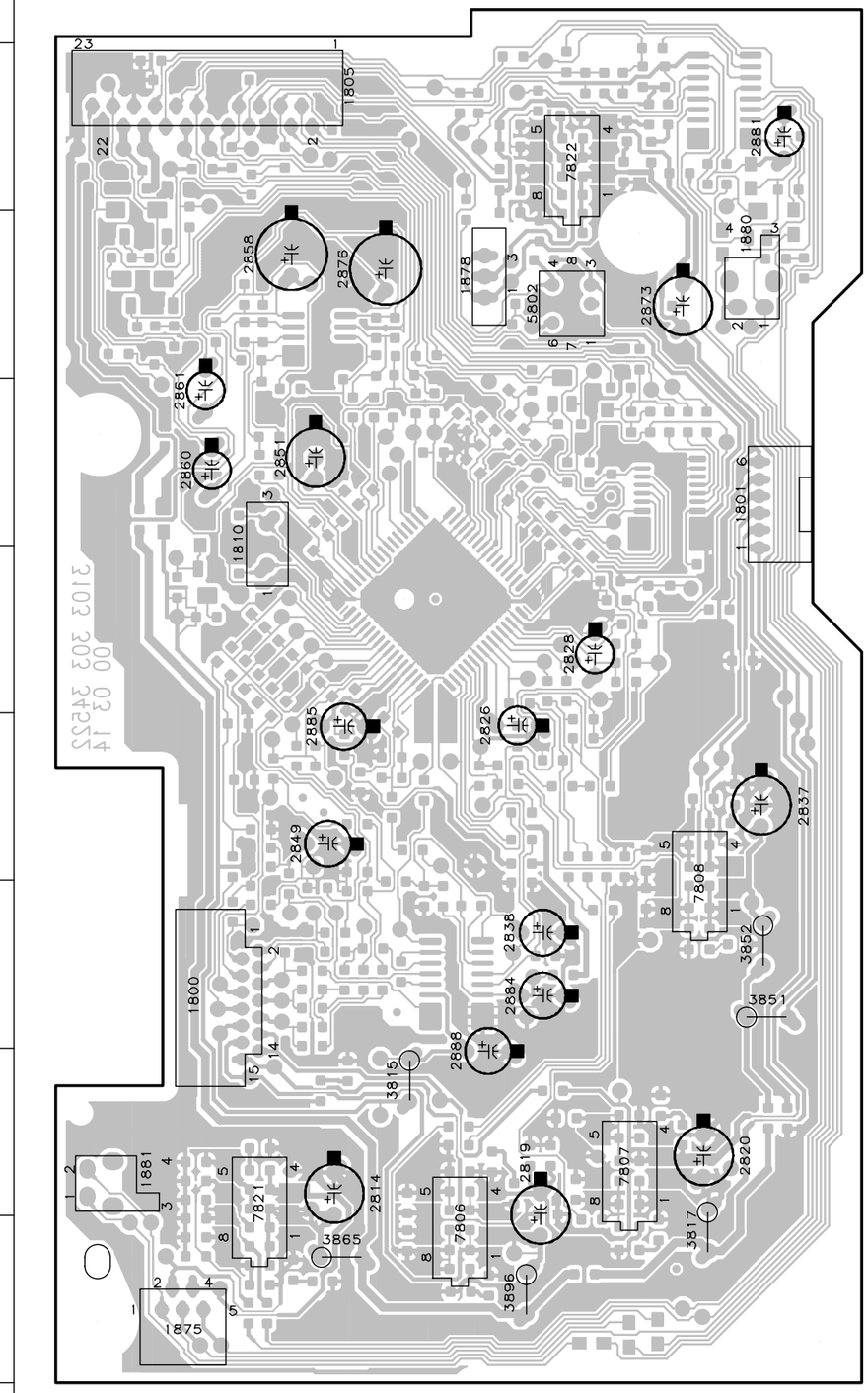
This assembly drawing shows a summary
of all possible versions.
For components used in a specific version
see schematic diagram respectively partslist.

3CDC-LC-MB Layout stage .2 2000-05-02

Mapping

Copperside						Componentside	
2800	F4	3750	B4	3881	A3	1800	F1
2801	D4	3751	B4	3882	H4	1801	C5
2802	F4	3752	H3	3883	H4	1805	A2
2803	D4	3753	H3	3884	H4	1810	C2
2804	D4	3754	H3	3885	H4	1875	H1
2805	D4	3755	H4	3886	B2	1878	B3
2806	D4	3756	H4	3887	A2	1880	B5
2807	F4	3757	H4	3888	A3	1881	G1
2808	D4	3758	G4	3889	C2	2814	G3
2809	G2	3759	G4	3890	A3	2819	G3
2810	E4	3760	G4	3891	A2	2820	G5
2811	D4	3761	B2	3892	C2	2826	E3
2812	E1	3762	B3	3893	A2	2828	D4
2813	G3	3763	A2	3894	E4	2837	E5
2815	F3	3764	A2	3895	E3	2838	F3
2816	C3	3765	A3	3897	F2	2849	E2
2817	F1	3766	A2	3898	A2	2851	C2
2818	C4	3767	E4	3899	D5	2858	B2
2821	F1	3768	E4	4800	A5	2860	C1
2822	E3	3769	E4	4801	A4	2861	C1
2823	E3	3770	C3	4802	A4	2873	B4
2824	E3	3771	B5	4803	B2	2876	B2
2825	E3	3772	B5	4804	A5	2881	A5
2829	H4	3773	G2	4805	A5	2884	F3
2830	C4	3774	E3	4806	A5	2885	E2
2831	B3	3775	F2	4807	A5	2888	G3
2832	C4	3780	C3	4808	A5	3815	G3
2833	C4	3781	B3	4809	B5	3817	H4
2834	D4	3782	B5	4810	B4	3851	F5
2835	G2	3800	F4	4811	E3	3852	F5
2836	E1	3801	E4	4812	F2	3865	H2
2839	H2	3802	F4	4813	A4	3896	H3
2840	G2	3803	D4	4814	A4	5802	B4
2841	E2	3804	C3	4815	A4	7806	H3
2842	H3	3805	D4	4816	A4	7807	G4
2843	G2	3806	D4	4817	A3	7808	E4
2844	E2	3807	D4	4818	A3	7821	G2
2845	G2	3808	D4	4819	A3	7822	A3
2846	G2	3809	D2	4820	C4		
2847	H3	3810	G2	4821	B2		
2848	H3	3811	F4	4822	C5		
2850	C3	3812	F1	4823	C5		
2852	C2	3813	E1	4824	C5		
2853	D2	3814	D4	4825	B3		
2854	D2	3816	E1	4826	C3		
2855	E4	3818	G3	4827	A4		
2856	C3	3819	C3	4828	C2		
2857	E2	3820	F4	4829	B2		
2859	F2	3821	F4	4831	A2		
2862	C4	3822	F4	4832	D2		
2863	C4	3823	F3	4834	E4		
2864	D2	3824	F3	4835	F3		
2865	B3	3825	E3	4836	F4		
2866	G3	3826	E3	4838	E3		
2867	B4	3827	D4	4843	F3		
2868	G4	3828	D2	4845	G4		
2869	F4	3829	G3	4846	F4		
2870	A2	3830	G3	4847	F4		
2871	H4	3831	C2	4849	A4		
2872	A2	3832	C3	4856	A2		
2874	G4	3833	E4	4857	A1		
2875	A3	3834	F4	4858	B1		
2877	A2	3835	G2	4859	D1		
2878	A2	3836	H2	4860	B2		
2879	E2	3837	D2	4861	D1		
2880	A3	3838	G2	4862	G2		
2882	B3	3839	E3	4863	G4		
2883	A2	3840	E3	4864	F3		
2887	C4	3841	G2	4865	E3		
2891	G3	3842	D2	4867	G2		
2892	F3	3843	G3	4868	E2		
2893	A3	3844	E1	4869	E2		
3700	D2	3845	D2	4870	B1		
3701	H4	3846	G3	4876	C5		
3702	G4	3847	H2	4879	E3		
3703	G4	3848	D3	4884	E2		
3704	H4	3849	H2	4885	E2		
3705	C2	3850	F1	4886	E2		
3706	C1	3853	E4	4887	E2		
3707	C2	3854	B5	4890	F2		
3708	C2	3855	B5	4893	G1		
3709	C3	3856	E4	4894	G1		
3710	B2	3857	E4	4896	H2		
3711	C2	3858	B5	4897	F3		
3712	A3	3859	B5	6871	B1		
3713	A1	3860	B4	6872	H2		
3714	A1	3861	C4	6873	H2		
3715	A1	3862	C4	6874	B1		
3716	D2	3863	D2	6875	A1		
3717	D2	3864	B4	6876	C5		
3718	C2	3866	F3	6877	C4		
3719	A2	3867	C4	6878	H2		
3727	C3	3868	B3	6879	C2		
3728	C3	3869	F4	7801	F3		
3730	C3	3870	F4	7805	B4		
3731	C2	3871	A2	7812	B1		
3732	C2	3872	B3	7850	B5		
3733	C2	3873	C3	7851	B5		
3734	D2	3874	B3	7860	B5		
3740	C4	3875	C2	7861	B5		
3741	C4	3876	C2	7873	A1		
3742	C4	3877	A2	7874	C2		
3743	C3	3878	A5	7875	D4		
3744	B4	3879	A2	7876	C2		
3746	B3	3880	A2	7877	D3		

3CDC-LC-MB Componentside view



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

3CDC-LC-MB Layout stage .2 2000-05-02

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3CDC-LC
part 1

CD Drive VAM2201

Laser power control / HF-Amplifier
7801
TZA1024 / TZA1025

Signal Processor
7877
SAA7324 / SAA7325

to part 2
7805

from part 2

to part 2
3770, 3780

to/from part 2
1805/7874
(µP-interface)

to/from part 2
7876
(CD-TEXT IC)

to dig. out circuitry
on part 2

FOCUS
TRACK
SLIDE

DISC MOTOR 1

DISC MOTOR 2

EYE-PATTERN
800mVpp
TB = 0,5µs/div

ESD sensitive lines!

U >400mV
->Laser damaged !

Focus search
Service step 2

only for digital out versions
(in combination with Quartz)

for basic version

for Coax out versions

33R for digital out version

for CD_DA : 0V
for CD_RW : 3V

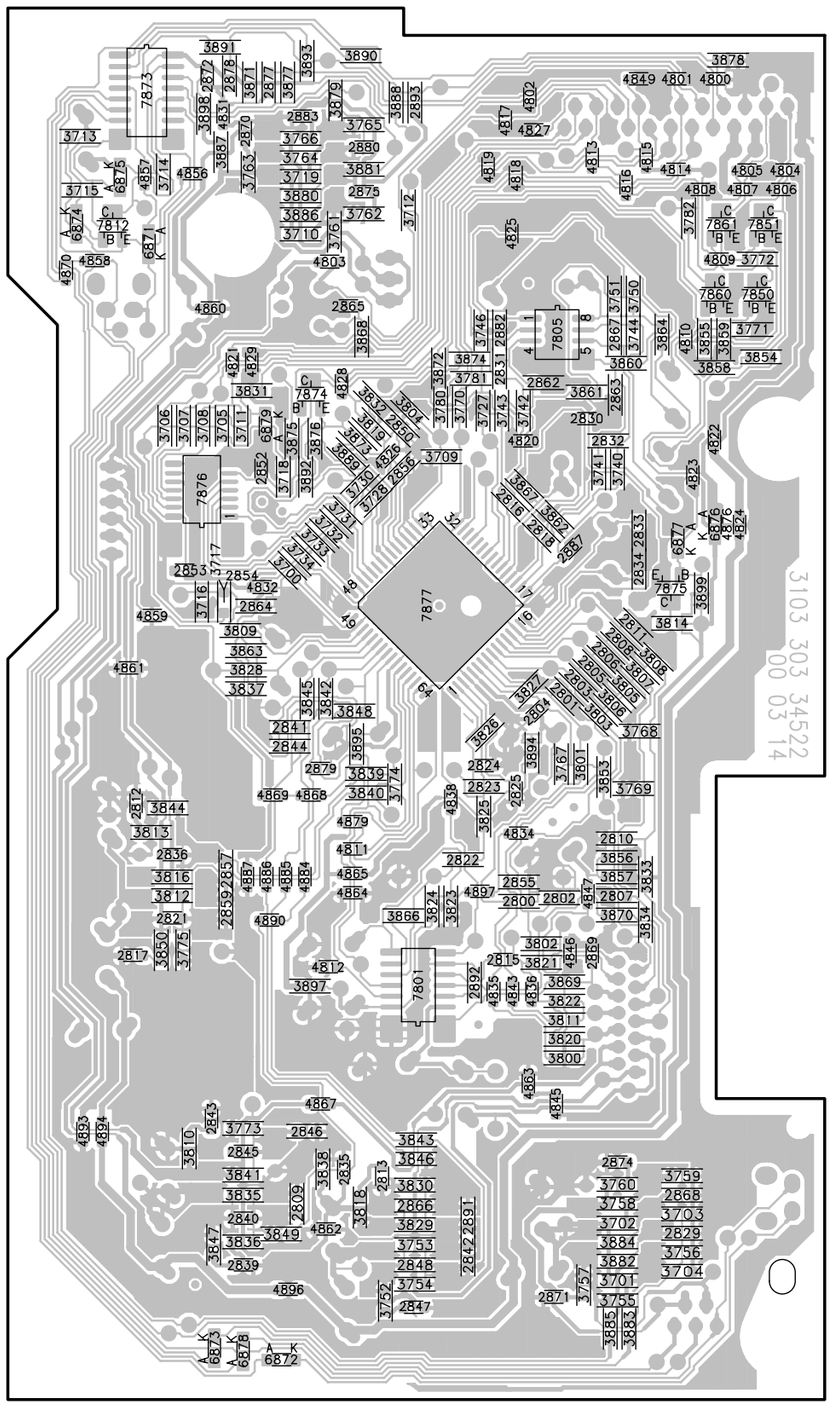
for CD TEXT only

#.... for provision only

. . . V DC voltages measured in
PLAY MODE
with following conditions:
"+10V" = 11,6V
"+5V" = 5V

3CDC LC-MB sh1, 260400

3CDC-LC-MB Copperside view



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

Mapping

Copperside						Componentside	
2800	F4	3750	B4	3881	A3	1800	F1
2801	D4	3751	B4	3882	H4	1801	C5
2802	F4	3752	H3	3883	H4	1805	A2
2803	D4	3753	H3	3884	H4	1810	C2
2804	D4	3754	H3	3885	H4	1875	H1
2805	D4	3755	H4	3886	B2	1878	B3
2806	D4	3756	H4	3887	A2	1880	B5
2807	F4	3757	H4	3888	A3	1881	G1
2808	D4	3758	G4	3889	C2	2814	G3
2809	G2	3759	G4	3890	A3	2819	G3
2810	E4	3760	G4	3891	A2	2820	G5
2811	D4	3761	B2	3892	C2	2826	E3
2812	E1	3762	B3	3893	A2	2828	D4
2813	G3	3763	A2	3894	E4	2837	E5
2815	F3	3764	A2	3895	E3	2838	F3
2816	C3	3765	A3	3897	F2	2849	E2
2817	F1	3766	A2	3898	A2	2851	C2
2818	C4	3767	E4	3899	D5	2858	B2
2821	F1	3768	E4	4800	A5	2860	C1
2822	E3	3769	E4	4801	A4	2861	C1
2823	E3	3770	C3	4802	A4	2873	B4
2824	E3	3771	B5	4803	B2	2876	B2
2825	E3	3772	B5	4804	A5	2881	A5
2829	H4	3773	G2	4805	A5	2884	F3
2830	C4	3774	E3	4806	A5	2885	E2
2831	B3	3775	F2	4807	A5	2888	G3
2832	C4	3780	C3	4808	A5	3815	G3
2833	C4	3781	B3	4809	B5	3817	H4
2834	D4	3782	B5	4810	B4	3851	F5
2835	G2	3800	F4	4811	E3	3852	F5
2836	E1	3801	E4	4812	F2	3865	H2
2839	H2	3802	F4	4813	A4	3896	H3
2840	G2	3803	D4	4814	A4	5802	B4
2841	E2	3804	C3	4815	A4	7806	H3
2842	H3	3805	D4	4816	A4	7807	G4
2843	G2	3806	D4	4817	A3	7808	E4
2844	E2	3807	D4	4818	A3	7821	G2
2845	G2	3808	D4	4819	A3	7822	A3
2846	G2	3809	D2	4820	C4		
2847	H3	3810	G2	4821	B2		
2848	H3	3811	F4	4822	C5		
2850	C3	3812	F1	4823	C5		
2852	C2	3813	E1	4824	C5		
2853	D2	3814	D4	4825	B3		
2854	D2	3816	E1	4826	C3		
2855	E4	3818	G3	4827	A4		
2856	C3	3819	C3	4828	C2		
2857	E2	3820	F4	4829	B2		
2859	F2	3821	F4	4831	A2		
2862	C4	3822	F4	4832	D2		
2863	C4	3823	F3	4834	E4		
2864	D2	3824	F3	4835	F3		
2865	B3	3825	E3	4836	F4		
2866	G3	3826	E3	4838	E3		
2867	B4	3827	D4	4843	F3		
2868	G4	3828	D2	4845	G4		
2869	F4	3829	G3	4846	F4		
2870	A2	3830	G3	4847	F4		
2871	H4	3831	C2	4849	A4		
2872	A2	3832	C3	4856	A2		
2874	G4	3833	E4	4857	A1		
2875	A3	3834	F4	4858	B1		
2877	A2	3835	G2	4859	D1		
2878	A2	3836	H2	4860	B2		
2879	E2	3837	D2	4861	D1		
2880	A3	3838	G2	4862	G2		
2882	B3	3839	E3	4863	G4		
2883	A2	3840	E3	4864	F3		
2887	C4	3841	G2	4865	E3		
2891	G3	3842	D2	4867	G2		
2892	F3	3843	G3	4868	E2		
2893	A3	3844	E1	4869	E2		
3700	D2	3845	D2	4870	B1		
3701	H4	3846	G3	4876	C5		
3702	G4	3847	H2	4879	E3		
3703	G4	3848	D3	4884	E2		
3704	H4	3849	H2	4885	E2		
3705	C2	3850	F1	4886	E2		
3706	C1	3853	E4	4887	E2		
3707	C2	3854	B5	4890	F2		
3708	C2	3855	B5	4893	G1		
3709	C3	3856	E4	4894	G1		
3710	B2	3857	E4	4896	H2		
3711	C2	3858	B5	4897	F3		
3712	A3	3859	B5	6871	B1		
3713	A1	3860	B4	6872	H2		
3714	A1	3861	C4	6873	H2		
3715	A1	3862	C4	6874	B1		
3716	D2	3863	D2	6875	A1		
3717	D2	3864	B4	6876	C5		
3718	C2	3866	F3	6877	C4		
3719	A2	3867	C4	6878	H2		
3727	C3	3868	B3	6879	C2		
3728	C3	3869	F4	7801	F3		
3730	C3	3870	F4	7805	B4		
3731	C2	3871	A2	7812	B1		
3732	C2	3872	B3	7850	B5		
3733	C2	3873	C3	7851	B5		
3734	D2	3874	B3	7860	B5		
3740	C4	3875	C2	7861	B5		
3741	C4	3876	C2	7873	A1		
3742	C4	3877	A2	7874	C2		
3743	C3	3878	A5	7875	D4		
3744	B4	3879	A2	7876	C2		
3746	B3	3880	A2	7877	D3		

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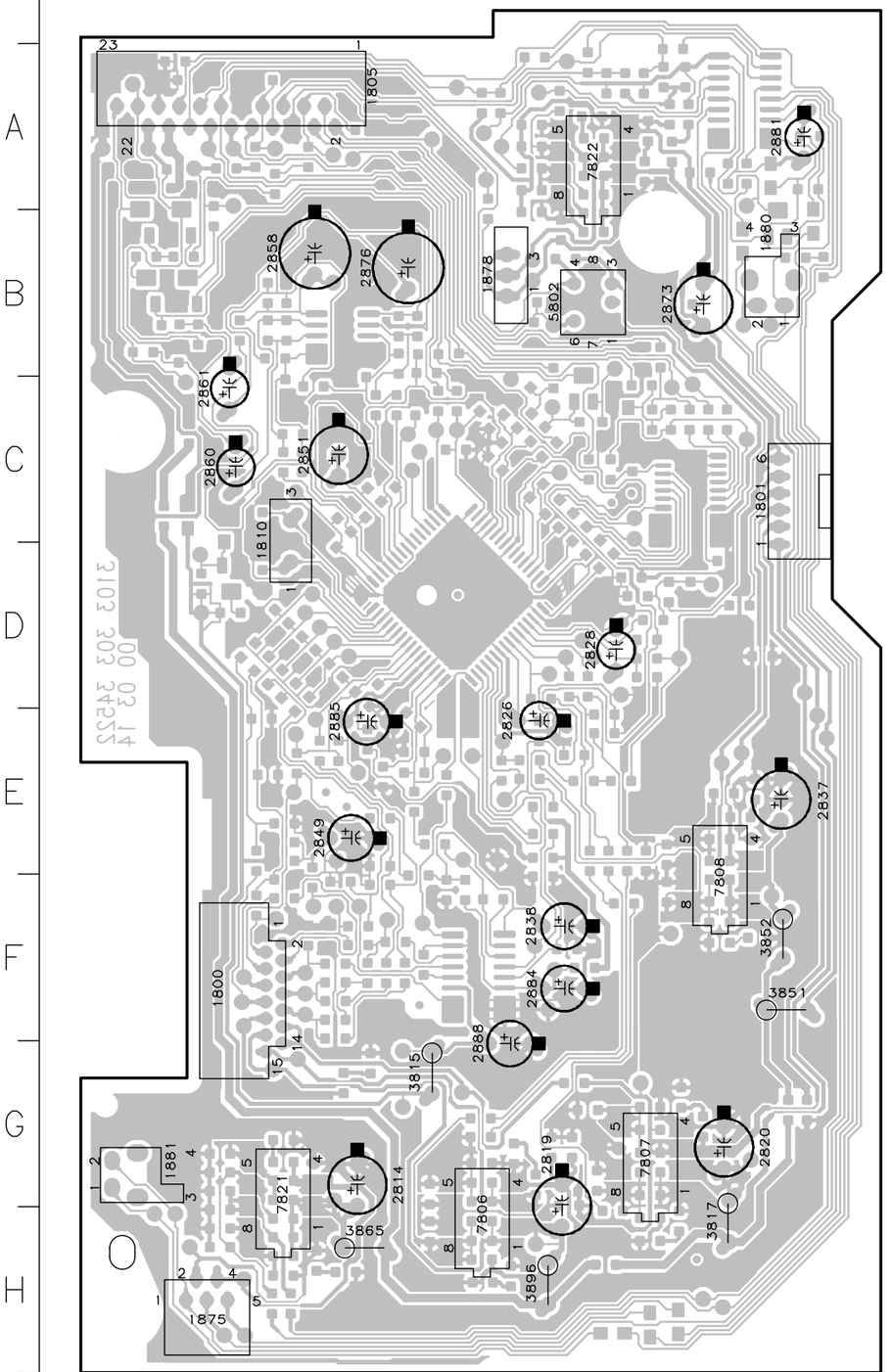
3CDC-LC-MB Componentside view



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

3CDC-LC-MB Layout stage .2 2000-05-02

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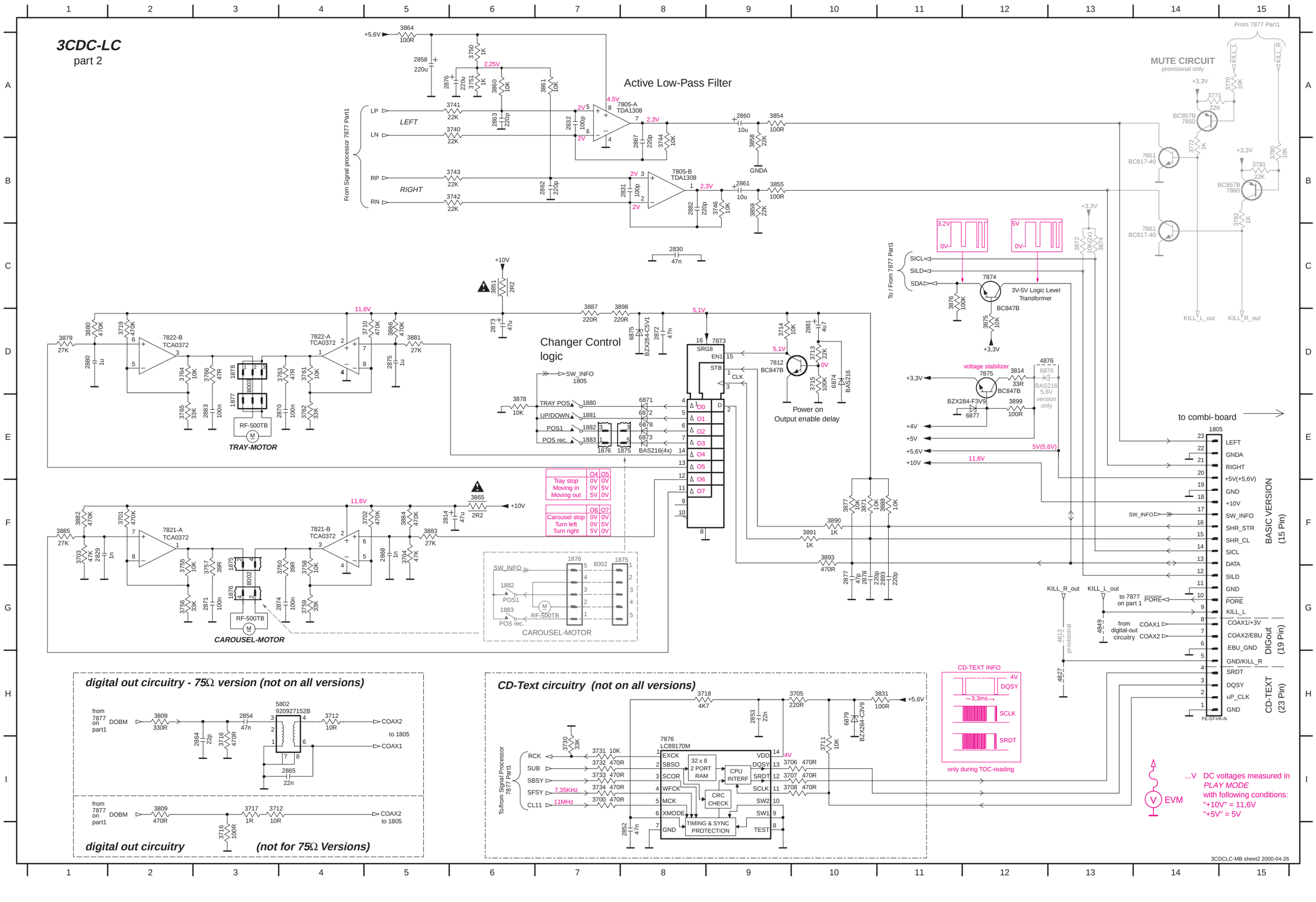
1805	E14	1880	E7	2831	B8	2861	B9	2870	E4	2877	G10	3372	C13	3705	H10	3713	D10	3730	I7	3743	B6	3757	G3	3764	D2	3781	B15	3855	B9	3871	F10	3881	D5	3888	F11	4827	H13	6874	D10	7805-B	B8	7851	B14
1850	G3	1881	E7	2832	A7	2862	B7	2871	G3	2878	G10	3374	C13	3706	I10	3714	D9	3732	I7	3744	B8	3758	G4	3765	E2	3782	B15	3858	B9	3875	D12	3882	F1	3890	F10	4849	G13	6875	D8	7812	D9	7860	B15
1875	E8	1882	E7	2852	I8	2863	A6	2872	D8	2880	D1	3700	I7	3707	I10	3715	D10	3733	I7	3746	B9	3759	G4	3766	D3	3809	H2	3859	B9	3876	C11	3883	F5	3891	F10	4876	D12	6876	D12	7821-A	F2	7861	C14
1876	E7	1883	E7	2853	H9	2864	I3	2873	D6	2881	D10	3701	F2	3708	I10	3716	I3	3734	I7	3750	A6	3760	G4	3770	A15	3814	D12	3860	A6	3877	F10	3884	F5	3893	E12	5802	H4	6877	E12	7821-B	F4	7873	D9
1877	E3	2814	F6	2854	H3	2865	I4	2874	G4	2882	B8	3702	F5	3710	D5	3718	H8	3740	A6	3751	A6	3761	D4	3771	A14	3831	H11	3861	A7	3878	E6	3885	F1	3898	D7	6871	E8	6878	E8	7822-A	D4	7874	C12
1878	D3	2829	F2	2858	A5	2867	B8	2875	D5	2883	E3	3703	F1	3711	I10	3719	D2	3741	A6	3755	G2	3762	E4	3772	B14	3851	C6	3864	A5	3879	D1	3886	D5	3899	E12	6872	E8	6879	H10	7822-B	D2	7875	D12
1878	G3	2830	C8	2860	A9	2868	F5	2876	A6	2893	G11	3704	F5	3712	H4	3730	I7	3742	B6	3756	G2	3763	D4	3780	B15	3854	A9	3865	F6	3880	D1	3887	D7	4813	G13	6873	E8	7805-A	A7	7850	A14	7876	I8

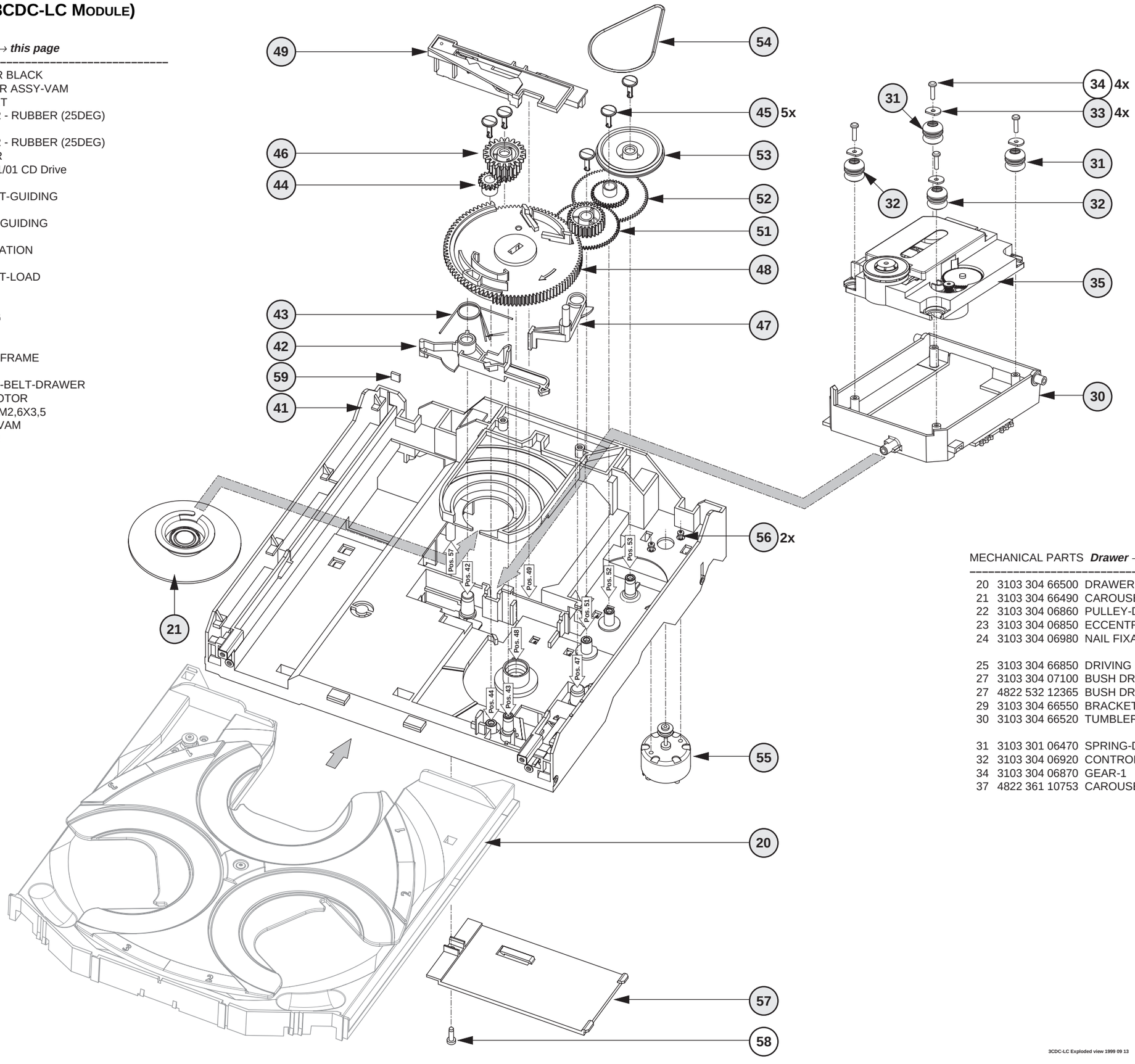


10A-10

EXPLODED VIEW (3CDC-LC MODULE)

MECHANICAL PARTS ***Loader → this page***

20	3103 304 66500	DRAWER BLACK
21	3140 117 58650	CLAMPER ASSY-VAM
30	3103 304 66560	SUPPORT
31	4822 529 10431	DAMPER - RUBBER (25DEG)
32	4822 529 10431	DAMPER - RUBBER (25DEG)
33	3103 304 06970	WASHER
35	4822 691 10772	VAM2201/01 CD Drive
41	3103 304 66480	FRAME
42	3103 304 66540	BRACKET-GUIDING
43	3103 301 06460	SPRING-GUIDING
44	3103 304 06890	GEAR-3
45	3103 304 06980	NAIL FIXATION
46	3103 304 06880	GEAR-2
47	3103 304 66530	BRACKET-LOAD
48	3103 304 06910	CAM
49	3103 304 66510	GUIDING
51	3103 304 06900	GEAR-4
52	3103 304 06870	GEAR-1
53	3103 304 06960	PULLEY-FRAME
54	3103 304 66910	DRIVING-BELT-DRAWER
55	4822 361 10753	TRAY MOTOR
56	4822 502 12548	SCREW M2,6X3,5
57	3103 304 68890	COVER-VAM
59	4822 466 12146	RUBBER



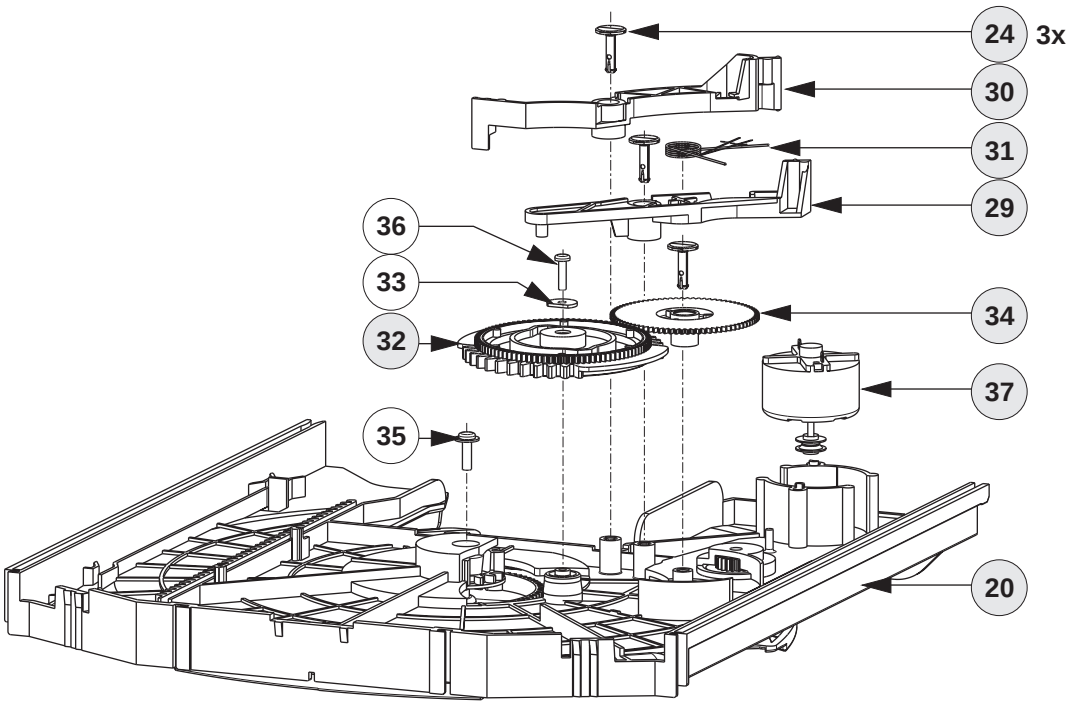
MECHANICAL PARTS ***Drawer → Chapter 10A-11***

20	3103 304 66500	DRAWER BLACK
21	3103 304 66490	CAROUSEL BLACK
22	3103 304 06860	PULLEY-DRAWER
23	3103 304 06850	ECCENTRIC GEAR WHEEL
24	3103 304 06980	NAIL FIXATION
25	3103 304 66850	DRIVING BELT CAROUSEL
27	3103 304 07100	BUSH DRAWER (height=8,5mm,d=16mm)
27	4822 532 12365	BUSH DRAWER (height=5,5mm,d=9,4mm)
29	3103 304 66550	BRACKET-DISC
30	3103 304 66520	TUMBLER
31	3103 301 06470	SPRING-DISC
32	3103 304 06920	CONTROL-DISC
34	3103 304 06870	GEAR-1
37	4822 361 10753	CAROUSEL MOTOR

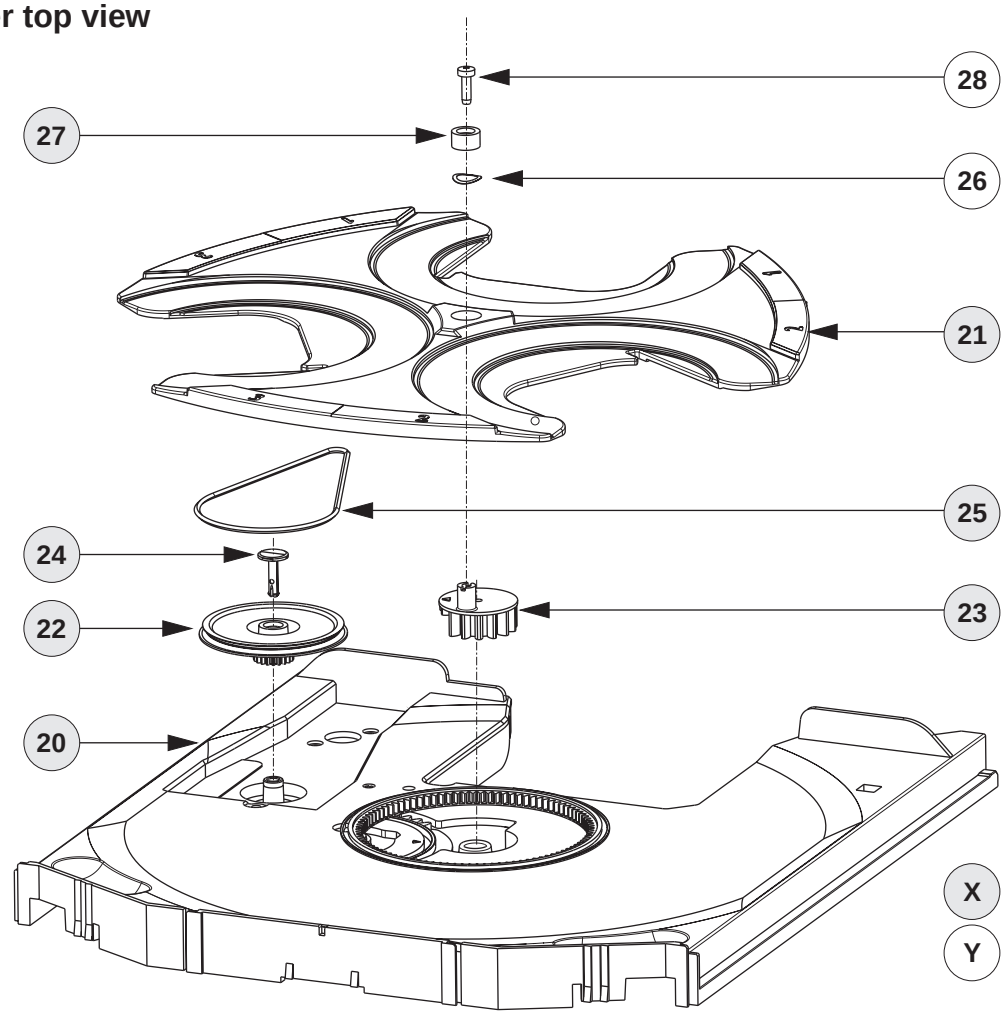
X spare part

Y non spare part

Drawer bottom view



Drawer top view



X spare part

Y non spare part

3CDC-LC Drawer assy 1999 09 13

ELECTRICAL PARTSLIST 3CDC-LC-MB MODULE

MISCELLANEOUS

1800	4822 265 10925	FFC-CONNECTOR, 15P, SIDE ENTRY
1805	4822 265 10979	FLEX FOIL CONNECTOR 15PIN
1805	4822 265 11182	FLEX FOIL CONNECTOR 23PIN
1805	4822 265 11545	FLEX FOIL CONNECTOR 19PIN
1875	4822 267 10958	FFC-CONNECTOR, 5P, SIDE ENTRY
1876	2422 025 08332	FLEX FOIL CONNECTOR 5PIN
1880	4822 276 13503	SWITCH, Tray in endposition
1881	4822 276 13503	SWITCH, Drive up/down
1882	4822 276 13503	SWITCH, Position 1
1883	4822 276 13503	SWITCH, Position recogniced
8002	3103 308 91990	FLEX FOIL CABLE 5P, 200mm
8005	3103 308 91980	FLEX FOIL CABLE 15P, 170mm

CAPACITORS

2800 ©	4822 126 10326	180pF	5%	
2801 ©	4822 122 33575	220pF	5%	50V
2802 ©	4822 126 10326	180pF	5%	
2803 ©	4822 122 33575	220pF	5%	50V
2804 ©	4822 126 13751	47nF	10%	50V
2805 ©	4822 122 33575	220pF	5%	50V
2806 ©	4822 122 33575	220pF	5%	50V
2807 ©	5322 122 31863	330pF	5%	50V
2808 ©	4822 122 33575	220pF	5%	50V
2809 ©	4822 122 33575	220pF	5%	50V
2810 ©	4822 126 10326	180pF	5%	
2811 ©	4822 122 33575	220pF	5%	50V
2812 ©	4822 126 14585	100nF	10%	50V
2813 ©	4822 126 14585	100nF	10%	50V
2814	4822 124 40433	47µF	20%	25V
2815 ©	4822 126 14076	220nF	20%	25V
2816 ©	4822 126 13344	1,5nF	5%	63V
2817 ©	4822 126 14585	100nF	10%	50V
2818 ©	4822 126 13344	1,5nF	5%	63V
2819	4822 124 40433	47µF	20%	25V
2820	4822 124 40433	47µF	20%	25V
2821 ©	4822 126 14585	100nF	10%	50V
2822 ©	2222 861 15222	2,2nF	10%	50V
2823 ©	4822 126 13693	56pF	1%	63V
2824 ©	4822 126 13751	47nF	10%	50V
2825 ©	4822 122 33177	10nF	20%	50V
2826	4822 124 12362	47µF	20%	4V
2828	4822 124 12362	47µF	20%	4V
2829 ©	5322 122 31647	1nF	10%	63V
2830 ©	4822 126 13751	47nF	10%	50V
2831 ©	5322 122 32531	100pF	5%	50V
2832 ©	5322 122 32531	100pF	5%	50V
2833 ©	5322 122 32659	33pF	5%	50V
2834 ©	5322 122 32659	33pF	5%	50V
2835 ©	4822 126 13751	47nF	10%	50V
2836 ©	4822 126 14585	100nF	10%	50V
2837	4822 124 40433	47µF	20%	25V
2838	4822 124 40248	10µF	20%	63V
2839 ©	4822 126 14585	100nF	10%	50V
2840 ©	4822 126 14585	100nF	10%	50V
2841 ©	5322 122 31647	1nF	10%	63V
2842 ©	5322 126 10794	220pF	10%	
2843 ©	4822 126 14585	100nF	10%	50V
2844 ©	5322 122 34099	470pF	10%	63V
2845 ©	4822 126 14585	100nF	10%	50V
2846 ©	4822 122 33575	220pF	5%	50V
2847 ©	4822 126 14585	100nF	10%	50V
2848 ©	5322 122 33538	150pF	5%	63V
2849	4822 124 40769	4,7µF	20%	100V
2850 ©	5322 122 31647	1nF	10%	63V

CAPACITORS

2851	4822 124 42383	220µF	20%	4V
2852 ©	4822 126 13751	47nF	10%	50V
2853 ©	5322 122 32654	22nF	10%	63V
2854 ©	4822 126 13751	47nF	10%	50V
2855 ©	5322 122 34099	470pF	10%	63V
2856 ©	4822 126 13691	27pF	1%	63V
2857 ©	4822 122 33575	220pF	5%	50V
2858	4822 124 12245	220µF	20%	16V
2859 ©	4822 122 33575	220pF	5%	50V
2860	4822 124 11947	10µF	20%	16V
2861	4822 124 11947	10µF	20%	16V
2862 ©	4822 122 33575	220pF	5%	50V
2863 ©	4822 122 33575	220pF	5%	50V
2864 ©	5322 122 32658	22pF	5%	50V
2865 ©	5322 122 32654	22nF	10%	63V
2866 ©	5322 122 33538	150pF	5%	63V
2867 ©	4822 122 33575	220pF	5%	50V
2868 ©	5322 122 31647	1nF	10%	63V
2869 ©	4822 126 13751	47nF	10%	50V
2870 ©	4822 126 14585	100nF	10%	50V
2871 ©	4822 126 14585	100nF	10%	50V
2872 ©	4822 126 13751	47nF	10%	50V
2873	4822 124 40433	47µF	20%	25V
2874 ©	4822 126 14585	100nF	10%	50V
2875 ©	4822 126 14043	1µF	20%	16V
2876	4822 124 12245	220µF	20%	16V
2877 ©	4822 126 13692	47pF	1%	63V
2878 ©	4822 122 33575	220pF	5%	50V
2879 ©	4822 126 14585	100nF	10%	50V
2880 ©	4822 126 14043	1µF	20%	16V
2881	4822 124 40769	4,7µF	20%	100V
2882 ©	4822 122 33575	220pF	5%	50V
2883 ©	4822 126 14585	100nF	10%	50V
2884	4822 124 40769	4,7µF	20%	100V
2885	4822 124 40769	4,7µF	20%	100V
2887 ©	4822 126 14585	100nF	10%	50V
2888	4822 124 40769	4,7µF	20%	100V
2891 ©	4822 122 33575	220pF	5%	50V
2892 ©	5322 126 10223	4,7nF	10%	63V
2893 ©	4822 122 33575	220pF	5%	50V

RESISTORS

3700 ©	4822 051 20471	470Ω	5%	0,1W
3701 ©	4822 051 20474	470kΩ	5%	0,1W
3702 ©	4822 051 20474	470kΩ	5%	0,1W
3703 ©	4822 117 10834	47kΩ	1%	0,1W
3704 ©	4822 117 10834	47kΩ	1%	0,1W
3705 ©	4822 117 11503	220Ω	5%	0,1W
3706 ©	4822 051 20471	470Ω	5%	0,1W
3707 ©	4822 051 20471	470Ω	5%	0,1W
3708 ©	4822 051 20471	470Ω	5%	0,1W
3709 ©	4822 051 20108	1Ω	5%	0,1W
3710 ©	4822 051 20474	470kΩ	5%	0,1W
3711 ©	4822 117 10833	10kΩ	1%	0,1W
3712 ©	4822 051 20109	10Ω	5%	0,1W
3713 ©	4822 051 20223	22kΩ	5%	0,1W
3714 ©	4822 117 10833	10kΩ	1%	0,1W
3715 ©	4822 117 10837	100kΩ	1%	0,1W
3716 ©	4822 051 20471	470Ω	5%	0,1W
3718 ©	4822 051 20472	4,7kΩ	5%	0,1W
3719 ©	4822 051 20474	470kΩ	5%	0,1W
3727 ©	4822 051 20472	4,7kΩ	5%	0,1W
3728 ©	4822 051 20472	4,7kΩ	5%	0,1W
3730 ©	4822 051 20333	33kΩ	5%	0,1W
3731 ©	4822 117 10833	10kΩ	1%	0,1W
3732 ©	4822 051 20471	470Ω	5%	0,1W
3733 ©	4822 051 20471	470Ω	5%	0,1W

ELECTRICAL PARTSLIST 3CDC-LC-MB MODULE

RESISTORS

3734 ©	4822 051 20471	470Ω	5%	0,1W	
3740 ©	4822 051 20223	22kΩ	5%	0,1W	
3741 ©	4822 051 20223	22kΩ	5%	0,1W	
3742 ©	4822 051 20223	22kΩ	5%	0,1W	
3743 ©	4822 051 20223	22kΩ	5%	0,1W	
3744 ©	4822 117 10833	10kΩ	1%	0,1W	
3746 ©	4822 117 10833	10kΩ	1%	0,1W	
3750 ©	4822 051 10102	1kΩ	2%	0,25W	
3751 ©	4822 051 10102	1kΩ	2%	0,25W	
3752 ©	4822 051 20399	39Ω	5%	0,1W	
3753 ©	4822 117 10834	47kΩ	1%	0,1W	
3754 ©	4822 117 12024	27kΩ	1%	0,1W	
3755 ©	4822 117 10833	10kΩ	1%	0,1W	
3756 ©	2120 108 92632	33kΩ	1%	0,1W	
3757 ©	4822 051 20399	39Ω	5%	0,1W	
3758 ©	4822 117 10833	10kΩ	1%	0,1W	
3759 ©	2120 108 92632	33kΩ	1%	0,1W	
3760 ©	4822 051 20399	39Ω	5%	0,1W	
3761 ©	4822 117 10833	10kΩ	1%	0,1W	
3762 ©	2120 108 92632	33kΩ	1%	0,1W	
3763 ©	4822 051 20479	47Ω	5%	0,1W	
3764 ©	4822 117 10833	10kΩ	1%	0,1W	
3765 ©	2120 108 92632	33kΩ	1%	0,1W	
3766 ©	4822 051 20479	47Ω	5%	0,1W	
3773 ©	4822 117 12024	27kΩ	1%	0,1W	
3775 ©	4822 117 12024	27kΩ	1%	0,1W	
3800 ©	4822 117 11148	56kΩ	1%	0,1W	
3801 ©	4822 117 10833	10kΩ	1%	0,1W	
3802 ©	4822 117 11148	56kΩ	1%	0,1W	
3803 ©	4822 117 10833	10kΩ	1%	0,1W	
3804 ©	4822 117 10833	10kΩ	1%	0,1W	
3805 ©	4822 117 10833	10kΩ	1%	0,1W	
3806 ©	4822 117 10833	10kΩ	1%	0,1W	
3807 ©	4822 117 10833	10kΩ	1%	0,1W	
3808 ©	4822 117 10833	10kΩ	1%	0,1W	
3809 ©	4822 117 13577	330Ω	1%	0,1W	
3810 ©	4822 051 20399	39Ω	5%	0,1W	
3811 ©	4822 051 20273	27kΩ	5%	0,1W	
3812 ©	4822 117 10834	47kΩ	1%	0,1W	
3813 ©	4822 051 20399	39Ω	5%	0,1W	
3814 ©	4822 051 20339	33Ω	5%	0,1W	
3815	4822 052 10478	4,7Ω	5%	NFR	
3816 ©	4822 117 10834	47kΩ	1%	0,1W	
3817	4822 052 10228	2,2Ω	5%	0,33W	
3818 ©	4822 051 20399	39Ω	5%	0,1W	
3819 ©	4822 051 20471	470Ω	5%	0,1W	
3820 ©	4822 051 20472	4,7kΩ	5%	0,1W	
3821 ©	4822 051 20472	4,7kΩ	5%	0,1W	
3822 ©	4822 117 12955	2,7kΩ	1%	0,1W	
3823 ©	4822 051 10102	1kΩ	2%	0,25W	
3824 ©	4822 051 10102	1kΩ	2%	0,25W	
3825 ©	4822 051 10102	1kΩ	2%	0,25W	
3826 ©	4822 051 20223	22kΩ	5%	0,1W	
3827 ©	4822 051 20273	27kΩ	5%	0,1W	
3828 ©	4822 051 20223	22kΩ	5%	0,1W	
3829 ©	4822 117 10834	47kΩ	1%	0,1W	
3830 ©	4822 117 12024	27kΩ	1%	0,1W	
3831 ©	4822 051 20101	100Ω	5%	0,1W	
3832 ©	4822 117 10833	10kΩ	1%	0,1W	
3833 ©	4822 051 20223	22kΩ	5%	0,1W	
3834 ©	4822 051 20223	22kΩ	5%	0,1W	
3835 ©	4822 117 10834	47kΩ	1%	0,1W	
3836 ©	4822 117 12024	27kΩ	1%	0,1W	
3837 ©	4822 051 10102	1kΩ	2%	0,25W	
3838 ©	4822 051 10102	1kΩ	2%	0,25W	

RESISTORS

3839 ©	4822 051 20273	27kΩ	5%	0,1W	
3840 ©	4822 051 20273	27kΩ	5%	0,1W	
3841 ©	4822 117 10834	47kΩ	1%	0,1W	
3842 ©	4822 117 10833	10kΩ	1%	0,1W	
3843 ©	4822 117 12955	2,7kΩ	1%	0,1W	
3844 ©	4822 117 12024	27kΩ	1%	0,1W	
3845 ©	4822 117 10833	10kΩ	1%	0,1W	
3846 ©	4822 117 12955	2,7kΩ	1%	0,1W	
3847 ©	4822 051 20399	39Ω	5%	0,1W	
3848 ©	4822 117 10965	18kΩ	2%	0,1W	
3849 ©	4822 117 10965	18kΩ	2%	0,1W	
3850 ©	4822 051 20399	39Ω	5%	0,1W	
3851	4822 052 10228	2,2Ω	5%	0,33W	
3852	4822 052 10228	2,2Ω	5%	0,33W	
3853 ©	4822 051 20471	470Ω	5%	0,1W	
3854 ©	4822 051 20101	100Ω	5%	0,1W	
3855 ©	4822 051 20101	100Ω	5%	0,1W	
3856 ©	4822 117 12521	68Ω	1%	0,1W	
3857 ©	4822 117 12521	68Ω	1%	0,1W	
3858 ©	4822 051 20223	22kΩ	5%	0,1W	
3859 ©	4822 051 20223	22kΩ	5%	0,1W	
3860 ©	4822 117 10833	10kΩ	1%	0,1W	
3861 ©	4822 117 10833	10kΩ	1%	0,1W	
3862 ©	4822 051 20121	120Ω	5%	0,1W	
3863 ©	4822 051 20101	100Ω	5%	0,1W	
3863 ©	4822 051 20339	33Ω	5%	0,1W	
3864 ©	4822 051 20101	100Ω	5%	0,1W	
3865	4822 052 10228	2,2Ω	5%	0,33W	
3866 ©	4822 117 10833	10kΩ	1%	0,1W	
3867 ©	4822 051 20121	120Ω	5%	0,1W	
3869 ©	4822 051 20478	4,7Ω	5%	0,1W	
3870 ©	4822 051 20101	100Ω	5%	0,1W	
3871 ©	4822 117 10833	10kΩ	1%	0,1W	
3873 ©	4822 051 20471	470Ω	5%	0,1W	
3875 ©	4822 117 10833	10kΩ	1%	0,1W	
3876 ©	4822 117 10837	100kΩ	1%	0,1W	
3877 ©	4822 117 10833	10kΩ	1%	0,1W	
3878 ©	4822 117 10833	10kΩ	1%	0,1W	
3879 ©	4822 051 20273	27kΩ	5%	0,1W	
3880 ©	4822 051 20474	470kΩ	5%	0,1W	
3881 ©	4822 051 20273	27kΩ	5%	0,1W	
3882 ©	4822 051 20474	470kΩ	5%	0,1W	
3883 ©	4822 051 20273	27kΩ	5%	0,1W	
3884 ©	4822 051 20474	470kΩ	5%	0,1W	
3885 ©	4822 051 20273	27kΩ	5%	0,1W	
3886 ©	4822 051 20474	470kΩ	5%	0,1W	
3887 ©	4822 117 11503	220Ω	5%	0,1W	
3888 ©	4822 117 10833	10kΩ	1%	0,1W	
3889 ©	4822 051 20471	470Ω	5%	0,1W	
3890 ©	4822 051 10102	1kΩ	2%	0,25W	
3891 ©	4822 051 10102	1kΩ	2%	0,25W	
3892 ©	4822 051 20471	470Ω	5%	0,1W	
3893 ©	4822 051 20471	470Ω	5%	0,1W	
3894 ©	4822 051 20101	100Ω	5%	0,1W	
3895 ©	4822 051 20159	15Ω	5%	0,1W	
3896	4822 052 10228	2,2Ω	5%	0,33W	
3897 ©	4822 051 20101	100Ω	5%	0,1W	
3898 ©	4822 117 11503	220Ω	5%	0,1W	
3899 ©	4822 051 20101	100Ω	5%	0,1W	
4800 ©	4822 051 20008	CHIP JUMPER 0805			
4801 ©	4822 051 20008	CHIP JUMPER 0805			
4802 ©	4822 051 20008	CHIP JUMPER 0805			
4804 ©	4822 051 20008	CHIP JUMPER 0805			
4805 ©	4822 051 20008	CHIP JUMPER 0805			
4806 ©	4822 051 20008	CHIP JUMPER 0805			

ELECTRICAL PARTSLIST 3CDC-LC-MB MODULE

RESISTORS

4807 ©	4822 051 20008	CHIP JUMPER 0805
4808 ©	4822 051 20008	CHIP JUMPER 0805
4809 ©	4822 051 20008	CHIP JUMPER 0805
4810 ©	4822 051 20008	CHIP JUMPER 0805
4812 ©	4822 051 20008	CHIP JUMPER 0805
4814 ©	4822 051 20008	CHIP JUMPER 0805
4815 ©	4822 051 20008	CHIP JUMPER 0805
4816 ©	4822 051 20008	CHIP JUMPER 0805
4817 ©	4822 051 20008	CHIP JUMPER 0805
4818 ©	4822 051 20008	CHIP JUMPER 0805
4819 ©	4822 051 20008	CHIP JUMPER 0805
4820 ©	4822 051 20008	CHIP JUMPER 0805
4821 ©	4822 051 20008	CHIP JUMPER 0805
4822 ©	4822 051 20008	CHIP JUMPER 0805
4823 ©	4822 051 20008	CHIP JUMPER 0805
4824 ©	4822 051 20008	CHIP JUMPER 0805
4825 ©	4822 051 20008	CHIP JUMPER 0805
4826 ©	4822 051 20008	CHIP JUMPER 0805
4827 ©	4822 051 20008	CHIP JUMPER 0805
4828 ©	4822 051 20008	CHIP JUMPER 0805
4831 ©	4822 051 20008	CHIP JUMPER 0805
4832 ©	4822 051 20008	CHIP JUMPER 0805
4834 ©	4822 051 20008	CHIP JUMPER 0805
4835 ©	4822 051 20008	CHIP JUMPER 0805
4836 ©	4822 051 20008	CHIP JUMPER 0805
4838 ©	4822 051 20008	CHIP JUMPER 0805
4843 ©	4822 051 20008	CHIP JUMPER 0805
4845 ©	4822 051 20008	CHIP JUMPER 0805
4846 ©	4822 051 20008	CHIP JUMPER 0805
4847 ©	4822 051 20008	CHIP JUMPER 0805
4849 ©	4822 051 20008	CHIP JUMPER 0805
4856 ©	4822 051 20008	CHIP JUMPER 0805
4857 ©	4822 051 20008	CHIP JUMPER 0805
4858 ©	4822 051 20008	CHIP JUMPER 0805
4859 ©	4822 051 20008	CHIP JUMPER 0805
4860 ©	4822 051 20008	CHIP JUMPER 0805
4861 ©	4822 051 20008	CHIP JUMPER 0805
4862 ©	4822 051 20008	CHIP JUMPER 0805
4863 ©	4822 051 20008	CHIP JUMPER 0805
4864 ©	4822 051 20008	CHIP JUMPER 0805
4865 ©	4822 051 20008	CHIP JUMPER 0805
4867 ©	4822 051 20008	CHIP JUMPER 0805
4868 ©	4822 051 20008	CHIP JUMPER 0805
4869 ©	4822 051 20008	CHIP JUMPER 0805
4870 ©	4822 051 20008	CHIP JUMPER 0805
4876 ©	4822 051 20008	CHIP JUMPER 0805
4879 ©	4822 051 20008	CHIP JUMPER 0805
4884 ©	4822 051 20008	CHIP JUMPER 0805
4885 ©	4822 051 20008	CHIP JUMPER 0805
4886 ©	4822 051 20008	CHIP JUMPER 0805
4887 ©	4822 051 20008	CHIP JUMPER 0805
4890 ©	4822 051 20008	CHIP JUMPER 0805
4893 ©	4822 051 20008	CHIP JUMPER 0805
4894 ©	4822 051 20008	CHIP JUMPER 0805
4896 ©	4822 051 20008	CHIP JUMPER 0805
4897 ©	4822 051 20008	CHIP JUMPER 0805

COILS

1810	2422 543 01068	RESONATOR 8MHZ
1810	4822 242 73557	CERAMIC RES. 8,46MHz
5802	4822 156 31058	FILTER DIGITAL OUT

DIODES

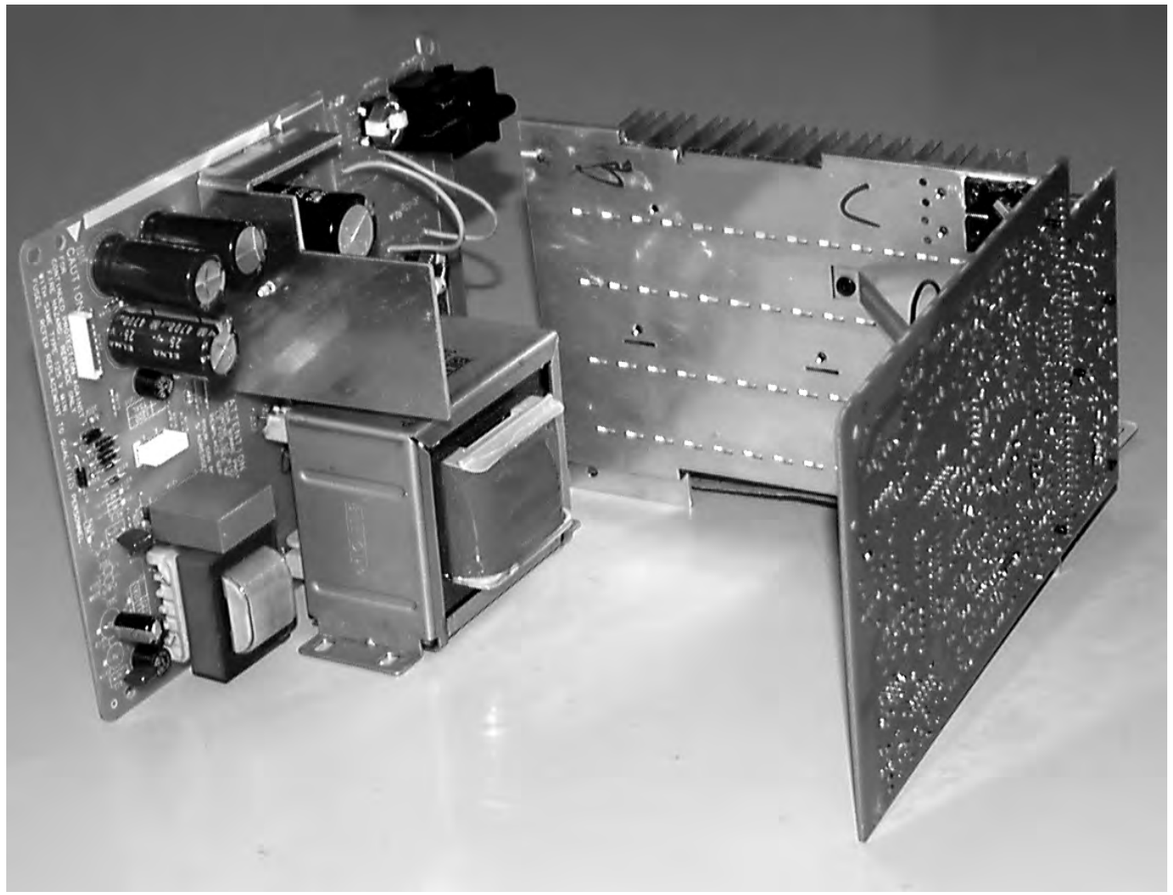
6871 ©	4822 130 11397	BAS316
6872 ©	4822 130 11397	BAS316
6873 ©	4822 130 11397	BAS316
6874 ©	4822 130 11397	BAS316
6875 ©	9340 548 52115	BZX284-C5V1
6877 ©	9322 129 34685	BZX284-C3V9
6878 ©	4822 130 11397	BAS316
6879 ©	9322 129 34685	BZX284-C3V9

TRANSISTORS

7812 ©	5322 130 60159	BC846B
7874 ©	5322 130 60159	BC846B
7875 ©	5322 130 60159	BC846B

INTEGRATED CIRCUITS

7801 ©	9352 622 36118	TZA1025T/V2, HF-Amplifier
7805 ©	4822 209 33165	TDA1308T/N1, OPAMP
7806	4822 209 62059	TCA0372DP1, Motor driver
7807	4822 209 62059	TCA0372DP1, Motor driver
7808	4822 209 62059	TCA0372DP1, Motor driver
7821	4822 209 62059	TCA0372DP1, Motor driver
7822	4822 209 62059	TCA0372DP1, Motor driver
7873	5322 209 11306	HEF4094BT, Shift register
7876	4822 209 16143	LC89170M, CD TEXT IC
7877 ©	9352 642 17557	SAA7325H/M2B Signal processor CD10



POWER 2001 Module

(30 - 70W Version)

stage .6

TABLE OF CONTENTS

11-1

Circuit details:

Amplifier:

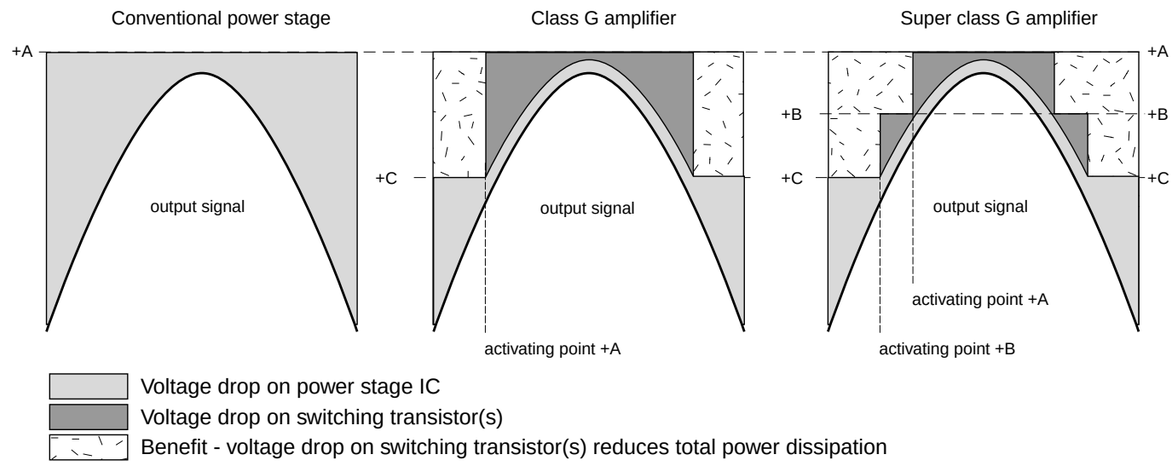
Attention: In the POWER 2001 module the power amplifier IC AN7591 is used as a bridge-amplifier.
Any connection from output to ground will destroy the outpout stages!

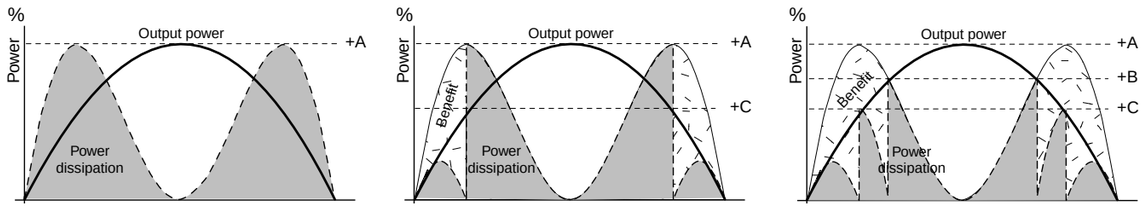
- Via the AMP_ON control line, connected to pins 6 (Stby), the power amplifiers are switched on/off by the µP.
  High level (approx. 4,5V): power amplifiers switched on
  Low level (approx. 0V): power amplifiers switched off

- Super class G - operation

  The power amplifiers operate as so-called super class G - amplifiers:
  The supply pins 12 (Vcc) are not just connected to one fixed DC-supply as in conventional amplifiers.
  Dependent on the output power there are three different DC-voltages supplied to the power amplifiers:
  ⇒ +C1 (+20V) for low output power
  ⇒ +B1 (+29V) for medium output power
  ⇒ +A1 (+41V for high output power

Principle / benefit of Super Class G





Circuit details continued:

- **Low power standby feature**

An additional small standby transformer, reduces power consumption in standby-mode.
In case power is switched on, the control line ECO is low → relay 1210 is activated → contacts 1 and 2 are closed → transformer 5001is connected to mains.
When the set is switched off (standby) the control line ECO is high → relay 1210 is not activated → mainstransformer is disconnected. Via standby transformer and rectifiers 6210-6214 the supply voltage LOW_PWR_SUP is substituted. This voltage is always available and so the microprocessor is kept running.

- **DC voltages +A1, +B1, +C1**

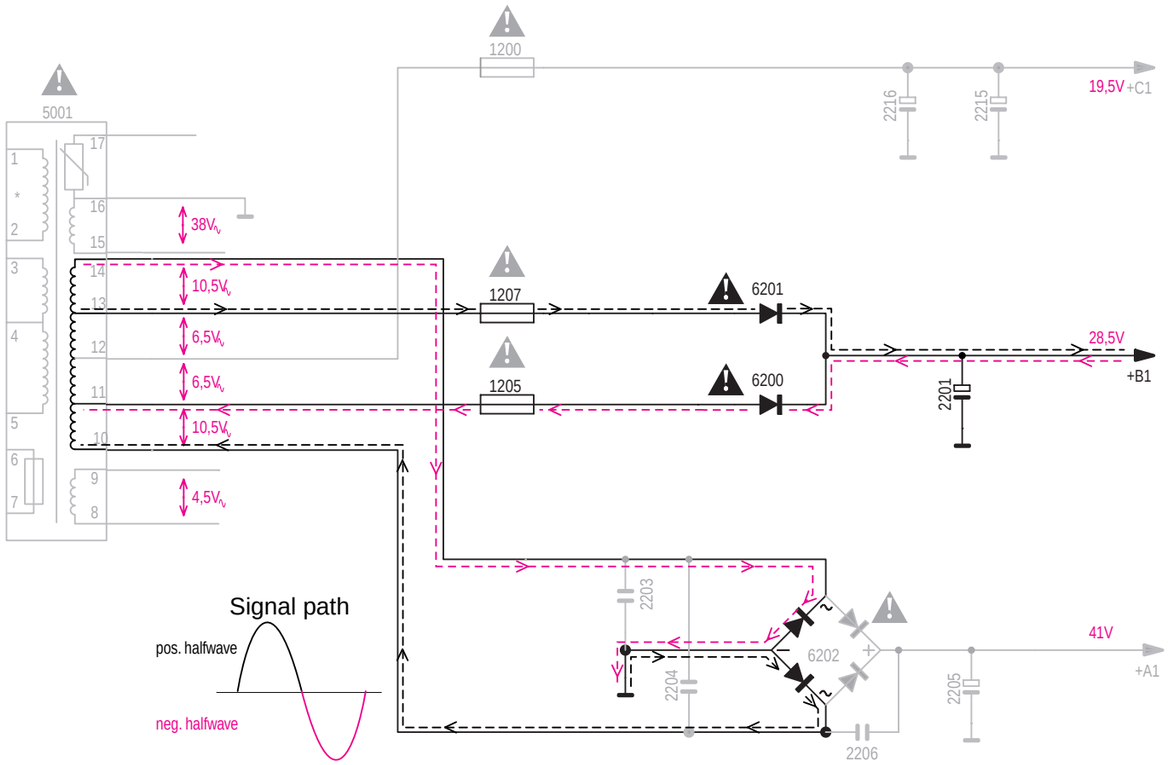
These voltages supply the Super Class G amplifier, described on previous page.
The whole power supply is optimized for the special characteristic of this type of amplifier. For that reason several “tricky” details have been applied to ensure optimal efficiency and symmetrical load to the mains transformer.

Generation of +A1

Common full wave rectifying with bridge rectifier 6202, using 100% secondary winding of mains transformer (pin 10-14).

Generation of +B1

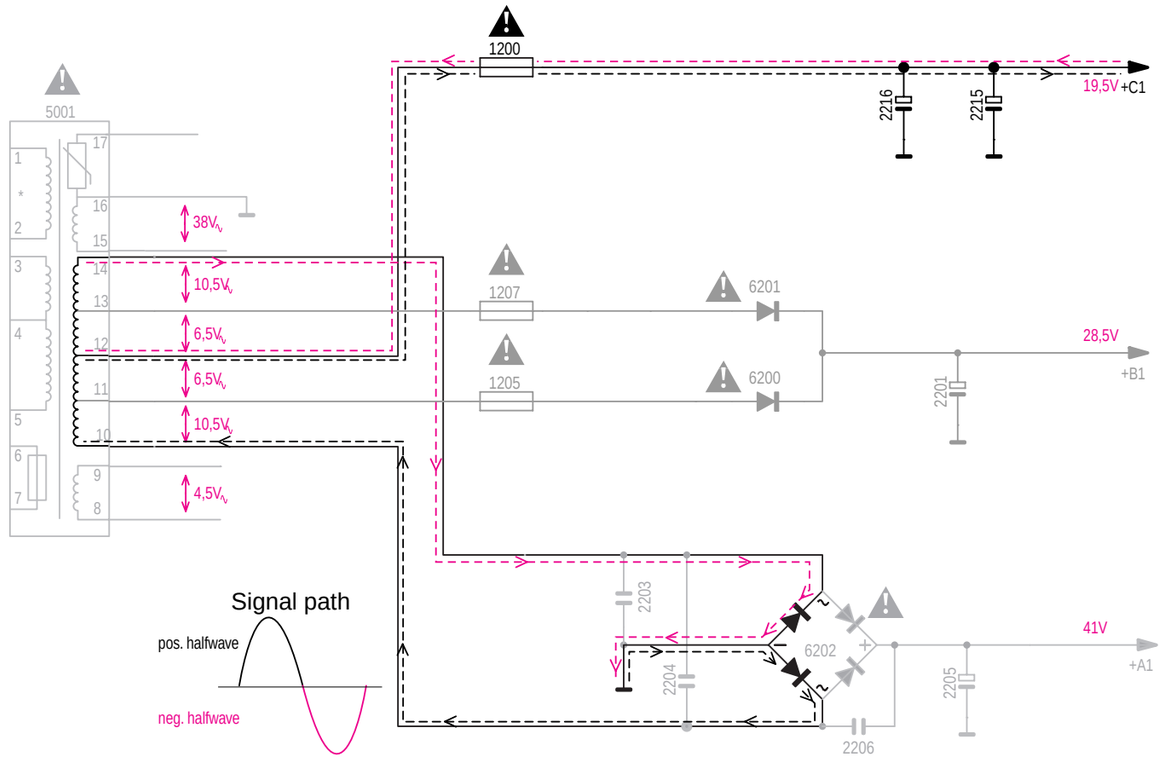
The supply for +B1 consists of one full wave rectifier:
– 2 diodes of bridge rectifier 6202, with 6200(6220 in parallel) 6201(6221 in parallel) for generation of +B1using approx. 70% secondary winding of mains transformer (pin 10-13 respectively pin 11-14).
As example for generation of +B1 see picture 1.



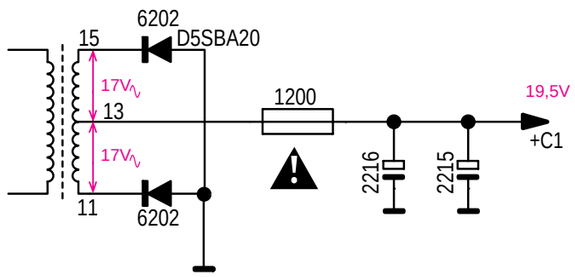
picture 1

11-2

Generation of +C1
Full wave rectifying with 2 diodes of bridge rectifier 6202, using 50% secondary winding of mains transformer (pin 13-15/13-11).
See picture 2 below.



simplified:

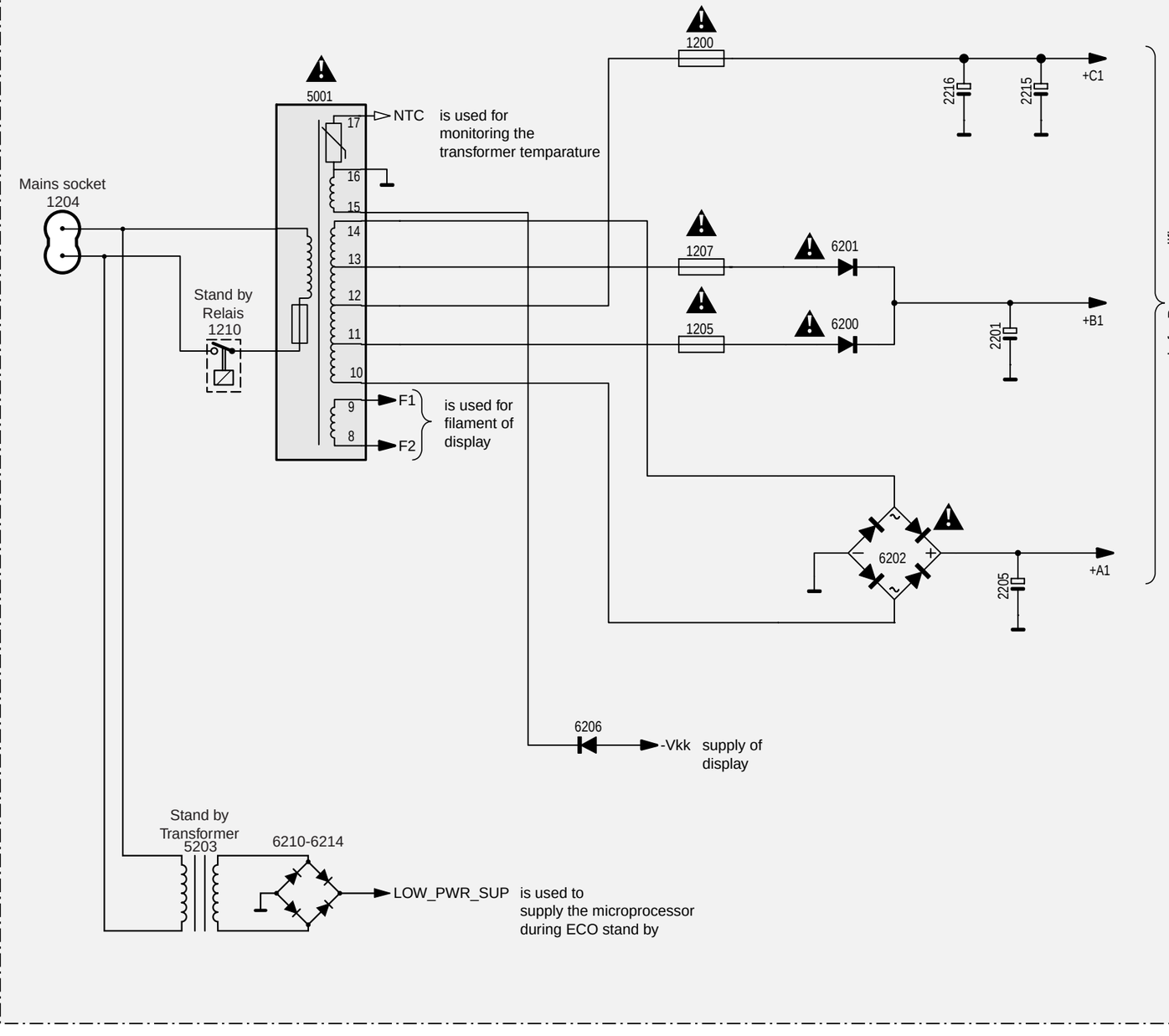


picture 2

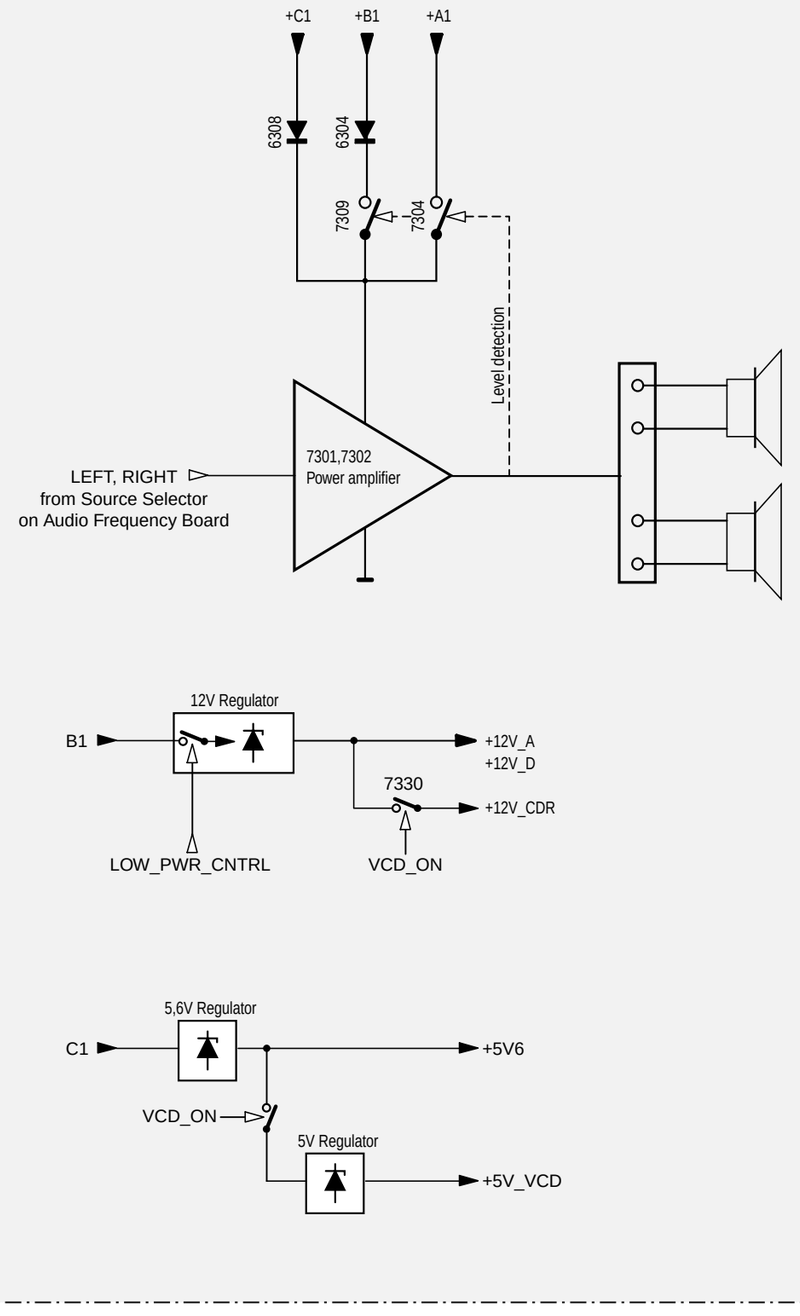
11-3

Block Diagram

MAINS BOARD



P2001 BOARD



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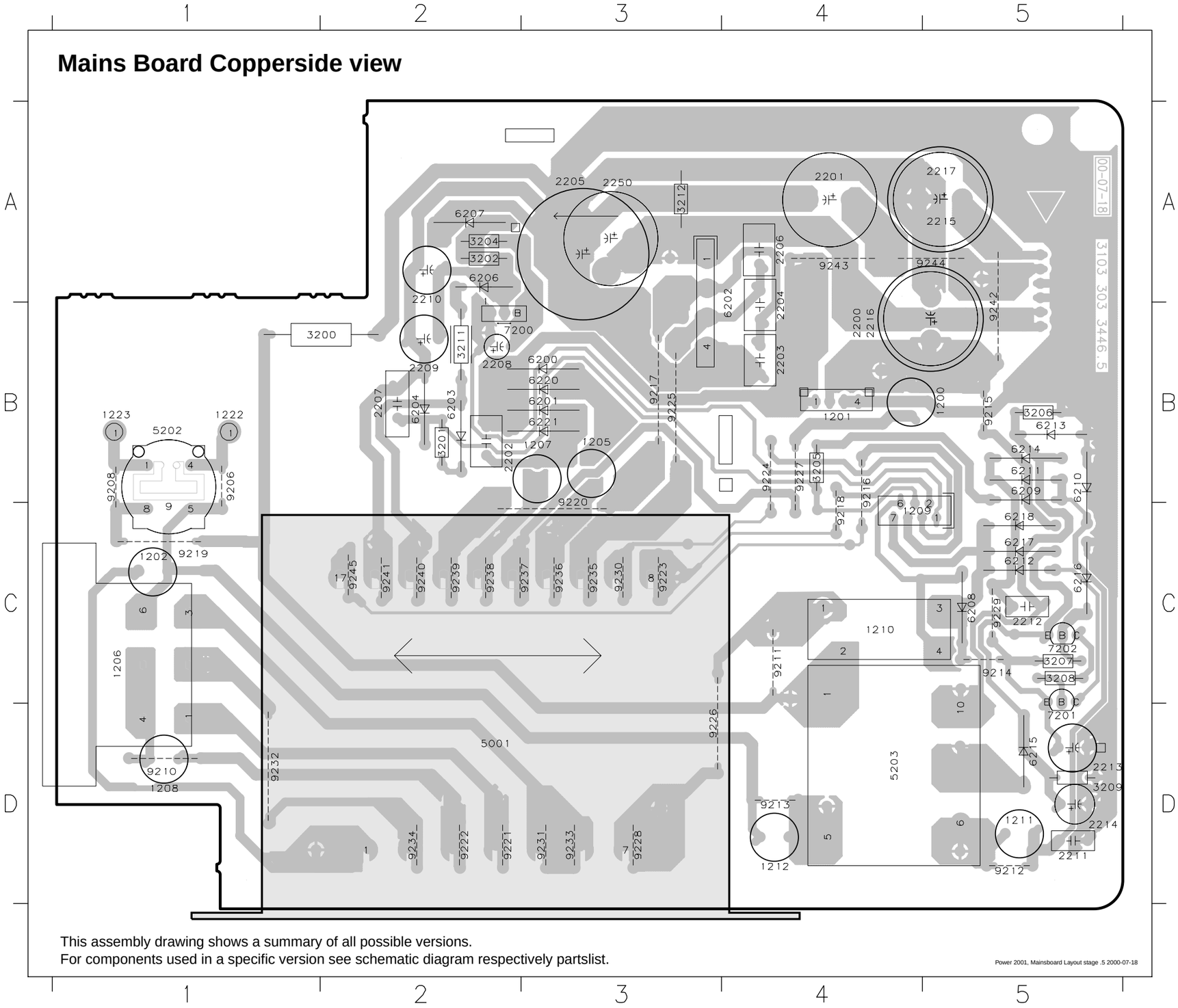
Mains Board Copperside view

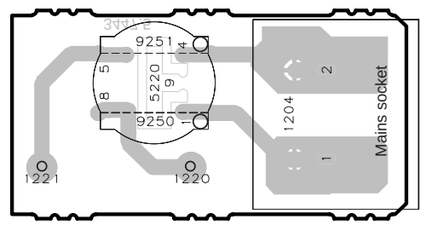


This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

Power 2001, Mainsboard Layout stage .5 2000-07-18

1200	B5	6209	B5
1201	B4	6210	B5
1202	C1	6211	B5
1203	A5	6212	C5
1205	B3	6213	B5
1206	C1	6214	B5
1207	B3	6215	D5
1208	D1	6216	C5
1209	C5	6217	C5
1210	C5	6218	C5
1211	D5	6220	B3
1212	D4	6221	B3
1222	B1	7200	B3
1223	B1	7201	D5
2200	B5	7202	C5
2201	A4	9206	B1
2202	B3	9208	B1
2203	B4	9210	D1
2204	B4	9211	C4
2205	A3	9212	D5
2206	A4	9213	D4
2207	B2	9214	C5
2208	B3	9215	B5
2209	B2	9216	B5
2210	A2	9217	B3
2211	D5	9218	C4
2212	C5	9219	C1
2213	D5	9220	C3
2214	D5	9221	D3
2215	A5	9222	D3
2216	B5	9223	C4
2217	A5	9224	B4
2250	A3	9225	B4
3200	B2	9226	D4
3201	B2	9227	B4
3202	A3	9228	D3
3204	A2	9229	C5
3205	B4	9230	C3
3206	B5	9231	D3
3207	C5	9232	D2
3208	C5	9233	D3
3209	D5	9234	D2
3211	B3	9235	C3
3212	A4	9236	C3
5001	D3	9237	C3
5202	B1	9238	C3
5203	D5	9239	C2
6200	B3	9240	C2
6201	B3	9241	C2
6202	A4	9242	B5
6203	B2	9243	A4
6204	B2	9244	A5
6206	A3	9245	C2
6207	A3		
6208	C5		

Mains Socket



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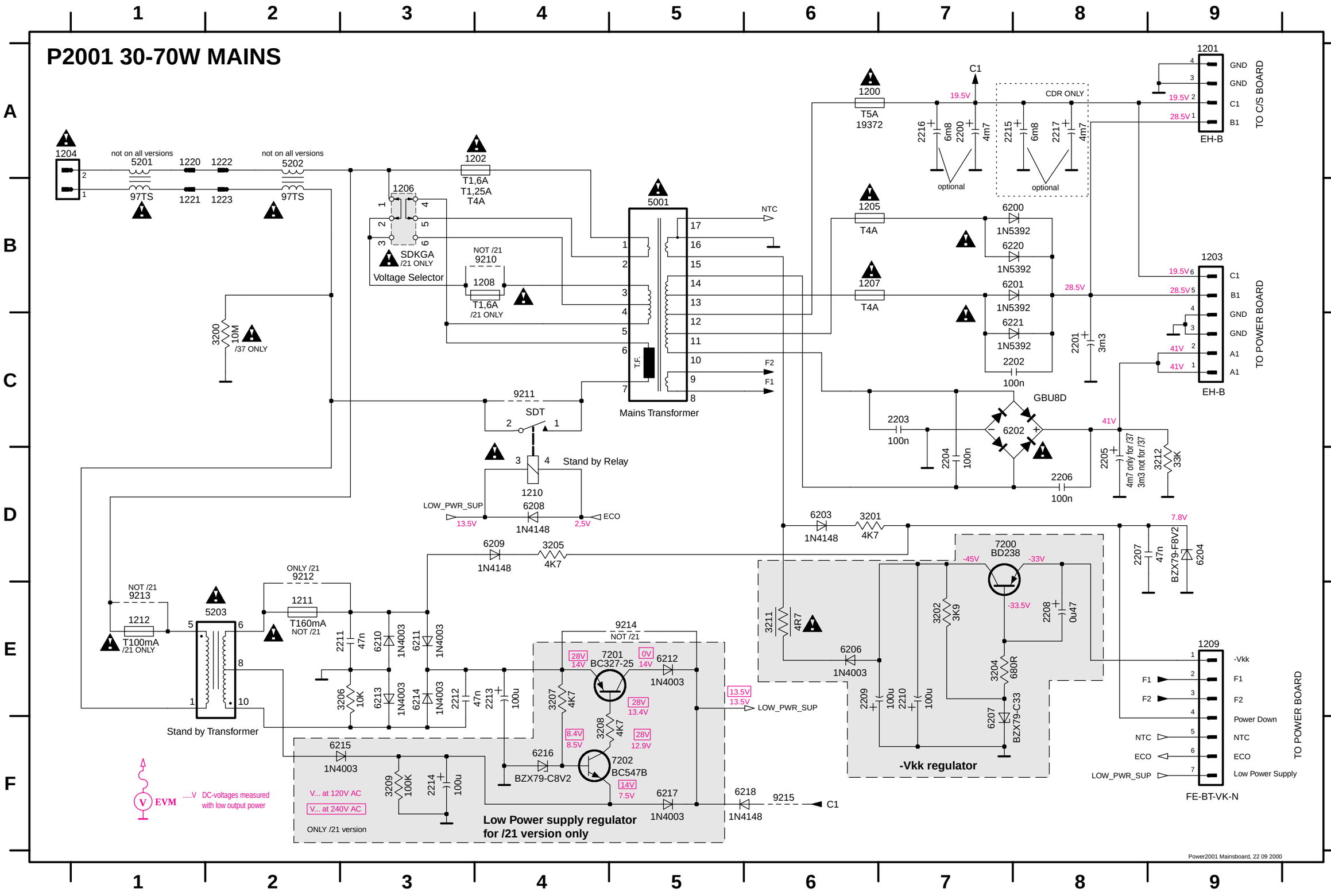
1200 A6	1207 B6	1222 A2	2204 D7	2210 E7	2216 A7	3205 E4	3212 D9	6202 C8	6209 E4	6215 F3	7200 D7	9211 C4
1201 A9	1208 B4	1223 B2	2205 D8	2211 E3	2217 A8	3206 E3	5001 C5	6203 D6	6210 E3	6216 F4	7201 E4	9212 D2
1202 A4	1209 E9	2200 A7	2206 D8	2212 E3	3200 C2	3207 E4	5202 A2	6204 D9	6211 E3	6217 F5	7202 F5	9213 E1
1203 B9	1210 D4	2201 C8	2207 D8	2213 E4	3201 D6	3208 F4	5203 E1	6206 E6	6212 E5	6218 F6	9206 A2	9214 E5
1205 B6	1211 E2	2202 C8	2208 E8	2214 F3	3202 E7	3209 F3	6200 B8	6207 F7	6213 E3	6220 B8	9208 B2	9215 F6
1206 B3	1212 E1	2203 C7	2209 E6	2215 A7	3204 E7	3211 E6	6201 B8	6208 D4	6214 E3	6221 C8	9210 B4	



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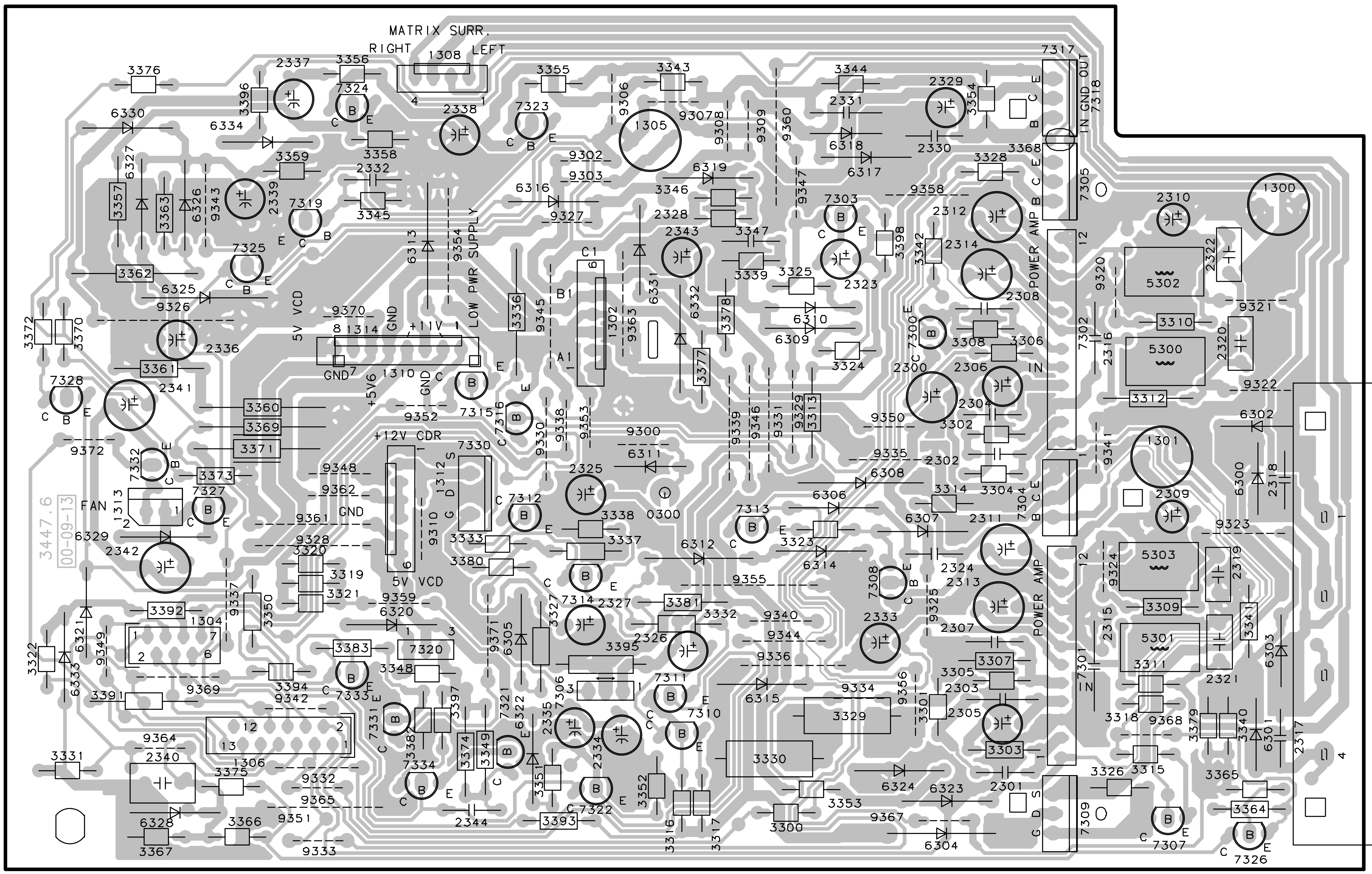
Ref	Pos
0300	B3
1300	A5
1301	B5
1302	A3
1304	C1
1305	A3
1306	C1
1307	B5
1308	A2
1310	B2
1312	B2
1313	B1
1314	A2
2300	B4
2301	C4
2302	B4
2303	C4
2304	B4
2305	C4
2306	B4
2307	C4
2308	A4
2309	B5
2310	A5
2311	B4
2312	A4
2313	B4
2314	A4
2315	C4
2316	A4
2317	C5
2318	B5
2319	B5
2320	A5
2321	C5
2322	A5
2323	A3
2324	B4
2325	B2
2326	C3
2327	B3
2328	A3
2329	A4
2330	A4
2331	A3
2332	A2
2333	B4
2334	C2
2335	C2
2336	A1
2337	A1
2338	A2
2339	A1
2340	C1
2341	B1
2342	B1
2343	A3
2344	C2
3300	C3
3301	C4
3302	B4
3303	C4
3304	B4
3305	C4
3306	A4
3307	C4
3308	A4
3309	B5
3310	A5
3311	C5
3312	B5
3313	B3
3314	B4
3315	C5
3316	C3
3317	C3
3318	C5
3319	B1
3320	B1
3321	B1
3322	C1
3323	B3
3324	A3
3325	A3
3326	C4
3327	B2
3328	A4
3329	C3
3330	C3
3331	C1
3332	B3
3333	B2
3336	A2
3337	B3
3338	B3
3339	A3
3340	C5
3341	C5
3342	A4
3343	A3
3344	A3
3345	A2
3346	A3
3347	A3
3348	C2
3349	C2
3350	B1
3351	C2
3352	C3
3353	C3
3354	A4
3355	A2
3356	A1
3357	A1
3358	A2
3359	A1
3360	B1
3361	B1
3362	A1
3363	A1
3364	C5
3365	C5
3366	C1
3367	C1
3368	A4
3369	B1
3370	A1
3371	B1
3372	A1
3373	B1
3374	C2
3375	C1
3376	A1
3377	B3
3378	A3
3379	C5
3380	B2
3381	B3
3382	C2
3383	C1
3391	C1
3392	B1
3393	C2
3394	C1
3395	C3
3396	A1
3397	C2
3398	A4
5300	A5
5301	C5
5302	A5
5303	B5
6300	B5
6301	C5
6302	B5
6303	C5
6304	C4
6305	C2
6306	B3
6307	B4
6308	B4
6309	A3
6310	A3
6311	B3
6312	B3
6313	A2
6314	B3
6315	C3
6316	A2
6317	A4
6318	A3
6319	A3
6320	B2
6321	B1
6322	C2
6323	C4
6324	C4
6325	A1
6326	A1
6327	A1
6328	C1
6329	B1
6330	A1
6331	A3
6332	A3
6333	C1
6334	A1
7300	A4
7301	C4
7302	A4
7303	A3
7304	B4
7305	A4
7306	C2
7307	C5
7308	B4
7309	C4
7310	C3
7311	C3
7312	B2
7313	B3
7314	B2
7315	B2
7316	B2
7317	A4
7318	A4
7319	A1
7320	C2
7321	C2
7322	C2
7323	A2
7324	A1
7325	A1
7326	C5
7327	B1
7328	B1
7330	B2
7331	C2
7332	B1
7333	C1
7334	C2
9300	B3
9302	A2
9303	A2
9306	A3
9307	A3
9308	A3
9309	A3
9310	B2
9320	A4
9321	A5
9322	B5
9323	B5
9324	B5
9325	B4
9326	A1
9327	A2
9328	B1
9329	B3
9330	B2
9331	B3
9332	C1
9333	C1
9334	C3
9335	B4
9336	C3
9337	B1
9338	B2
9339	B3
9340	B3
9341	B4
9342	C1
9343	A1
9344	C3
9345	A2
9346	B3
9347	A3
9348	B1
9349	B1
9350	B4
9351	C1
9352	B2
9353	B2
9354	A2
9355	B3
9356	C4
9358	A4
9359	B2
9360	A3
9361	B1
9362	B1
9363	A3
9364	C1
9365	C1
9367	C4
9368	C5
9369	C1
9370	A1
9371	C2
9372	B1

Power Board Copperside view



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

Power 2001, Powerboard Layout stage .6 2000-09-22

0300	D10	1307-a	F14	2301	B7	2308	H8	2315	D9	2322	F13	2329	E5	2336	E4	2343	D3	3306	H7	3313	A5
1300	F9	1307-b	E14	2302	F7	2309	B9	2316	H9	2323	A4	2330	E5	2337	F4	3300	G6	3307	D8	3314	A14
1301	B9	1308	F12	2303	B7	2310	F9	2317	F13	2324	B14	2331	E6	2338	F4	3301	B7	3308	H8	3315	A12
1302	A1	1310	G1	2304	G7	2311	B10	2318	F13	2325	A5	2332	F5	2339	I2	3302	F7	3309	B10	3316	A3
1304	C1	1312	H1	2305	B8	2312	F10	2319	F13	2326	B3	2333	G7	2340	I14	3303	B8	3310	F10	3317	A3
1305	D3	1313	I9	2306	G7	2313	C10	2320	F13	2327	B6	2334	H6	2341	I7	3304	F7	3311	C10	3318	B13
1306	E1	2300	E8	2307	D8	2314	G10	2321	F14	2328	D4	2335	H5	2342	I8	3305	C7	3312	G10	3319	B4

3320	B5	3327	B6	3336	C5	3343	F3	3350	H5	3357	F5	3364	I12	3371	H8	3378	A10	5300	G10
3321	B5	3328	B3	3337	C6	3344	E6	3351	H5	3358	F5	3365	I12	3372	I11	3379	D13	5301	C10
3322	B2	3329	C14	3338	C2	3345	F5	3352	I5	3359	I3	3366	I13	3373	I10	3380	A7	5302	G10
3323	B13	3330	C14	3339	D4	3346	G2	3353	E7	3360	H3	3367	I14	3374	H4	3381	A8	5303	C10
3324	B4	3331	B2	3340	D14	3347	G2	3354	E3	3361	I3	3368	I6	3375	I13	3382	A8	6300	E12
3325	B4	3332	B3	3341	E14	3348	G4	3355	F3	3362	H3	3369	H7	3376	I7	3383	A8	6301	E12
3326	B12	3333	C6	3342	E10	3349	H4	3356	F4	3363	I3	3370	I7	3377	A10	3391	I8	6302	E13

6303	E12	6310	C4	6317	E6	6324	E7	6331	A10	7305	A3	7312	B6	7319	F6	7326	I12	9302	D3
6304	B11	6311	D9	6318	E6	6325	E5	6332	A11	7306	A5	7313	D12	7320	G4	7327	I8	9303	D2
6305	A6	6312	C2	6319	G3	6326	H2	7300	E9	7307	B12	7314	C2	7321	H4	7328	H10	9306	D3
6306	B14	6313	D5	6320	H4	6327	H3	7301	B8	7308	B14	7315	C5	7322	I5	7330	A7	9307	E3
6307	B13	6314	D2	6321	H5	6328	I13	7302	F8	7309	B12	7316	C5	7323	F3	7331	A8	9308	D4
6308	C11	6315	D14	6322	H5	6329	I7	7303	A4	7310	B3	7317	E3	7324	F4	7332	I9	9309	D4
6309	C4	6316	F5	6323	E8	6330	H11	7304	A13	7311	B3	7318	D6	7325	I2	9300	D9	9310	A5

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ELECTRICAL PARTSLIST POWER2001 MODULE

MISCELLANEOUS

1200	2422 086 10963	FUSE RAD 5A 250V IEC			
1202	4822 071 51252	FUSE 1.25A	for sets without 5203		
1202	4822 071 51602	FUSE 1,6A	for sets with 5203		
1202	4822 253 10126	FUSE T4A			
1204	2422 030 00328	MAINS SOCKET /37			
1204	4822 265 31015	MAINS SOCKET, IEC			
1205	2422 086 10786	FUSE RAD 4A 250V IEC			
1206	2422 129 16478	VOLTAGE SELECTOR			
1207	2422 086 10786	FUSE RAD 4A 250V IEC			
1208	4822 071 51252	FUSE 1.25A			
1208	4822 071 51602	FUSE 1,6A			
1209	4822 267 10953	FLEX FOIL CONNECTOR 7P			
1210	2422 132 07402	RELAY 1P 12V			
1211	2422 086 10771	FUSE RAD 160mA 250V IEC			
1212	4822 071 51001	FUSE 100mA			
1300	4822 252 11225	FUSE F3.15A IEC 250V			
1301	4822 252 11225	FUSE F3.15A IEC 250V			
1304	4822 267 10953	FLEX FOIL CONNECTOR 7P			
1305	4822 071 51002	FUSE T1A	for sets without 5203		
1305	4822 071 52502	FUSE T 2,5A	for sets with 5203		
1306	4822 267 10738	FFC-CONNECTOR 13P			
1307	4822 267 31176	SPEAKER TERMINAL			
5203	3103 308 30600	STANDBY TRANSFORMER /21			
5203	3103 308 30610	STANDBY TRANSFORMER /22			
5203	3103 308 30800	STANDBY TRANSFORMER /37			
8010	3139 110 34600	FLEX FOIL CABLE 7Pin, 280mm			
	4822 492 11735	SPRING TRANSISTOR			

CAPACITORS

2200	4822 124 12012	4700µF	20%	25V
2201	4822 124 42367	3300µF	20%	35V
2202	5322 121 42386	100nF	5%	63V
2203	5322 121 42386	100nF	5%	63V
2204	5322 121 42386	100nF	5%	63V
2205	4822 124 80415	4700µF	20%	50V
2205	8203 303 85640	3300µF	20%	50V
2206	5322 121 42386	100nF	5%	63V
2207	4822 122 33449	47nF	30%	50V
2208	5322 124 41948	0,47µF	20%	50V
2209	2020 012 93547	100µF	20%	63V
2211	4822 121 43526	47nF	5%	100V
2212	4822 121 43526	47nF	5%	100V
2213	4822 124 40255	100µF	20%	50V
2214	4822 124 40207	100µF	20%	25V
2217	4822 124 12012	4700µF	20%	25V
2300	4822 124 40248	10µF	20%	63V
2301	4822 126 11714	4,7nF	20%	16V
2302	4822 126 11714	4,7nF	20%	16V
2303	4822 126 11714	4,7nF	20%	16V
2304	4822 126 11714	4,7nF	20%	16V
2305	4822 124 40433	47µF	20%	25V
2306	4822 124 40433	47µF	20%	25V
2307	4822 126 11714	4,7nF	20%	16V
2308	4822 126 11714	4,7nF	20%	16V
2309	4822 124 21913	1µF	20%	63V
2310	4822 124 21913	1µF	20%	63V
2311	4822 124 40207	100µF	20%	25V
2312	4822 124 40207	100µF	20%	25V
2313	4822 124 40207	100µF	20%	25V
2314	4822 124 40207	100µF	20%	25V
2315	4822 126 11714	4,7nF	20%	16V
2316	4822 126 11714	4,7nF	20%	16V
2317	4822 126 12882	100nF	20%	50V
2318	4822 126 12882	100nF	20%	50V
2319	4822 121 43526	47nF	5%	100V
2320	4822 121 43526	47nF	5%	100V
2321	4822 121 43526	47nF	5%	100V
2322	4822 121 43526	47nF	5%	100V
2323	4822 124 40248	10µF	20%	63V
2324	4822 122 33069	33pF	5%	50V
2325	4822 124 40433	47µF	20%	25V

CAPACITORS

2326	4822 124 22652	2,2µF	20%	50V
2327	4822 124 40248	10µF	20%	63V
2328	4822 126 12882	100nF	20%	50V
2329	4822 124 21913	1µF	20%	63V
2330	4822 126 12882	100nF	20%	50V
2331	4822 126 12882	100nF	20%	50V
2332	4822 126 12882	100nF	20%	50V
2333	4822 124 40433	47µF	20%	25V
2334	4822 124 40433	47µF	20%	25V
2335	4822 124 40248	10µF	20%	63V
2336	4822 124 40433	47µF	20%	25V
2337	4822 124 40248	10µF	20%	63V
2338	4822 124 21913	1µF	20%	63V
2339	4822 124 40433	47µF	20%	25V
2341	4822 124 23052	100µF	20%	16V
2342	4822 124 23052	100µF	20%	16V
2343	4822 124 21913	1µF	20%	63V

RESISTORS

3200	4822 053 21106	10MΩ	5%	0,5W
3201	4822 116 52283	4,7kΩ	5%	0,5W
3202	4822 116 52276	3,9kΩ	5%	0,5W
3204	4822 116 52228	680Ω	5%	0,5W
3205	4822 116 52283	4,7kΩ	5%	0,5W
3206	4822 050 21003	10kΩ	2%	0,25W
3207	4822 116 52283	4,7kΩ	5%	0,5W
3208	4822 116 52283	4,7kΩ	5%	0,5W
3209	4822 116 52234	100kΩ	5%	0,5W
3211	4822 052 10478	4,7Ω	5%	NFR
3212	4822 050 23303	33kΩ	1%	0,6W
3300	4822 116 52276	3,9kΩ	5%	0,5W
3301	4822 116 83872	220Ω	5%	0,5W
3302	4822 116 83872	220Ω	5%	0,5W
3303	4822 116 52219	330Ω	5%	0,5W
3304	4822 116 52219	330Ω	5%	0,5W
3305	4822 116 83961	6,8kΩ	5%	0,16W
3306	4822 116 83961	6,8kΩ	5%	0,16W
3307	4822 116 83883	470Ω	5%	0,16W
3308	4822 116 83883	470Ω	5%	0,16W
3309	4822 050 24708	4,7Ω	1%	0,6W
3310	4822 050 24708	4,7Ω	1%	0,6W
3311	4822 050 24708	4,7Ω	1%	0,6W
3312	4822 050 24708	4,7Ω	1%	0,6W
3313	4822 116 83961	6,8kΩ	5%	0,16W
3314	4822 116 83883	470Ω	5%	0,16W
3315	4822 116 52219	330Ω	5%	0,5W
3316	4822 050 11002	1kΩ	5%	0,2W
3317	4822 116 83876	270Ω	5%	0,16W
3318	4822 116 52269	3,3kΩ	5%	0,5W
3319	4822 050 11002	1kΩ	5%	0,2W
3320	4822 050 11002	1kΩ	5%	0,2W
3321	4822 050 11002	1kΩ	5%	0,2W
3322	4822 116 83884	47kΩ	5%	0,16W
3323	4822 116 83884	47kΩ	5%	0,16W
3324	4822 116 52244	15kΩ	5%	0,5W
3325	4822 116 52269	3,3kΩ	5%	0,5W
3326	4822 116 52283	4,7kΩ	5%	0,5W
3327	4822 116 52213	180Ω	5%	0,5W
3328	4822 050 11002	1kΩ	5%	0,2W
3329	4822 053 11221	220Ω	5%	2W
3330	4822 053 11221	220Ω	5%	2W
3331	4822 050 23303	33kΩ	1%	0,6W
3332	4822 116 52256	2,2kΩ	5%	0,16W
3333	4822 116 52199	68Ω	5%	0,16W
3336	4822 050 21003	10kΩ	2%	0,25W
3337	4822 116 52206	120Ω	5%	0,5W
3338	4822 116 52176	10Ω	5%	0,5W
3339	4822 116 52269	3,3kΩ	5%	0,5W
3340	4822 116 83872	220Ω	5%	0,5W
3341	4822 116 52283	4,7kΩ	5%	0,5W
3342	4822 050 21003	10kΩ	2%	0,25W

RESISTORS

3343	4822 116 52285	470kΩ	5%	0,5W
3344	4822 050 21003	10kΩ	2%	0,25W
3345	4822 116 83876	270Ω	5%	0.16W
3346	4822 116 52249	1,8kΩ	5%	0,16W
3347	4822 116 52249	1,8kΩ	5%	0,16W
3348	4822 050 21003	10kΩ	2%	0,25W
3349	4822 116 52213	180Ω	5%	0,5W
3350	4822 050 21003	10kΩ	2%	0,25W
3351	4822 116 83868	150Ω	5%	0,5W
3352	4822 116 52206	120Ω	5%	0,5W
3353	4822 116 52249	1,8kΩ	5%	0,16W
3354	4822 116 52257	22kΩ	5%	0,5W
3355	4822 116 52256	2,2kΩ	5%	0,16W
3356	4822 116 52234	100kΩ	5%	0,5W
3357	4822 116 52175	100Ω	5%	0,5W
3358	4822 116 83868	150Ω	5%	0,5W
3359	4822 116 52234	100kΩ	5%	0,5W
3360	4822 116 52244	15kΩ	5%	0,5W
3361	4822 050 11002	1kΩ	5%	0,2W
3362	4822 116 83961	6,8kΩ	5%	0,16W
3363	4822 050 11002	1kΩ	5%	0,2W
3368	2322 640 63103	10kΩ	NTC	
3369	4822 116 83876	270Ω	5%	0.16W
3370	4822 050 11002	1kΩ	5%	0,2W
3371	4822 052 10568	5,6Ω	5%	0,33W
3372	4822 116 83884	47kΩ	5%	0,16W
3373	4822 050 21003	10kΩ	2%	0,25W
3374	4822 116 52213	180Ω	5%	0,5W
3376	4822 116 83883	470Ω	5%	0,16W
3377	4822 050 21003	10kΩ	2%	0,25W
3378	4822 116 52231	820Ω	5%	0,5W
3379	4822 116 83872	220Ω	5%	0,5W
3380	4822 050 11002	1kΩ	5%	0,2W
3381	4822 116 52234	100kΩ	5%	0,5W
3382	4822 116 52234	100kΩ	5%	0,5W
3383	4822 116 52234	100kΩ	5%	0,5W
3391	4822 116 52276	3,9kΩ	5%	0,5W
3392	4822 116 52283	4,7kΩ	5%	0,5W

COILS

5202	4822 157 11832	400µH
5220	4822 157 11832	400µH
5300	4822 157 62255	COIL 18,5 TURNS
5301	4822 157 62255	COIL 18,5 TURNS
5302	4822 157 62255	COIL 18,5 TURNS
5303	4822 157 62255	COIL 18,5 TURNS

DIODES

6200	4822 130 31878	1N4003G
6201	4822 130 31878	1N4003G
6202	4822 130 11139	GBU8D
6203	4822 130 30621	1N4148
6204	3198 010 58280	BZX79-B8V2
6206	4822 130 31878	1N4003G
6207	4822 130 34142	BZX79-B33
6208	4822 130 30621	1N4148
6209	4822 130 30621	1N4148
6210	4822 130 31878	1N4003G
6211	4822 130 31878	1N4003G
6212	4822 130 31878	1N4003G
6213	4822 130 31878	1N4003G
6214	4822 130 31878	1N4003G
6215	4822 130 31878	1N4003G
6216	4822 130 34382	BZX79-B8V2
6217	4822 130 31878	1N4003G
6218	4822 130 30621	1N4148
6220	4822 130 31878	1N4003G
6221	4822 130 31878	1N4003G
6300	4822 130 31878	1N4003G
6301	4822 130 31878	1N4003G
6302	4822 130 31878	1N4003G

DIODES

6303	4822 130 31878	1N4003G
6304	9340 550 66112	BYV28-200/24
6305	4822 130 61219	BZX79-C10
6306	4822 130 30621	1N4148
6307	3198 010 53980	DIO REG BZX79-B3V9
6308	5322 130 31938	BYV27-200
6309	4822 130 34281	BZX79-C15
6310	3198 010 58280	BZX79-B8V2
6311	4822 130 31878	1N4003G
6312	4822 130 30621	1N4148
6313	4822 130 30621	1N4148
6314	4822 130 30621	1N4148
6315	4822 130 34398	BZX79-C24
6316	4822 130 34278	BZX79-C6V8
6317	4822 130 30621	1N4148
6318	4822 130 31878	1N4003G
6319	4822 130 30621	1N4148
6321	4822 130 30621	1N4148
6322	3198 010 53980	DIO REG BZX79-B3V9
6323	4822 130 30621	1N4148
6324	4822 130 34278	BZX79-C6V8
6325	4822 130 34174	BZX79-B4V7
6326	4822 130 30621	1N4148
6327	4822 130 30621	1N4148
6329	4822 130 31981	BZX79-B3V9
6330	4822 130 30621	1N4148
6331	4822 130 30621	1N4148
6332	4822 130 34281	BZX79-C15
6333	4822 130 34173	BZX79-B5V6

TRANSISTORS

7200	4822 130 40917	BD238
7201	4822 130 41246	BC327-25
7202	4822 130 40959	BC547B
7303	4822 130 44568	BC557B
7304	4822 130 10847	BDW94C
7305	9322 139 23687	BDX53BFP
7306	4822 130 40995	BD438
7307	4822 130 41691	BC556B
7308	4822 130 40855	BC337-40
7309	4822 130 11336	STP16NE06FP
7310	4822 130 44568	BC557B
7311	4822 130 40959	BC547B
7312	4822 130 40959	BC547B
7313	4822 130 44568	BC557B
7314	4822 130 44503	BC547C
7315	4822 130 40959	BC547B
7316	4822 130 40959	BC547B
7317	4822 130 10847	BDW94C
7319	5322 130 44647	BC368
7320	4822 130 40995	BD438
7321	4822 130 40959	BC547B
7322	4822 130 40959	BC547B
7323	4822 130 40959	BC547B
7324	4822 130 40959	BC547B
7325	4822 130 40959	BC547B
7327	4822 130 41246	BC327-25
7328	4822 130 44568	BC557B
7330	4822 130 11336	STP16NE06FP
7331	4822 130 40959	BC547B
7332	4822 130 40855	BC337-40

INTEGRATED CIRCUITS

7301	9322 161 89682	AN7591, Power amplifier
7302	9322 161 89682	AN7591, Power amplifier
7318	4822 209 31841	L7805CP

AF9 BOARD

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BRIEF INTRODUCTION OF THE AF9 BOARD

The AF9 Board consists of the following features :

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

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

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

b. SIMPLE MIC MIXING
The AF9 Board has provisions which can be configured to cater for one of the following:
MM : which caters for Mic mixing with additional Mic amplifier board.
NM : non Mic mixing.

c. DOLBY PRO LOGIC (DPL) INTERFACE
The AF9 Board has provisions which can be configured to cater for DPL.

d. LINE OUT
Line out cinch socket for connection to external amplifier.

e. SUB-WOOFER OUT
Sub-woofer out cinch socket for connection to active sub-woofer speaker.

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

g. HEADPHONE AMPLIFIER
Headphone amplifier to drive 32 ohm to 1kohm headphone.

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

i. ATTENUATION NETWORK
Attenuation network is provided at the output of the AF9 Board for interfacing with power board of different output power.

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

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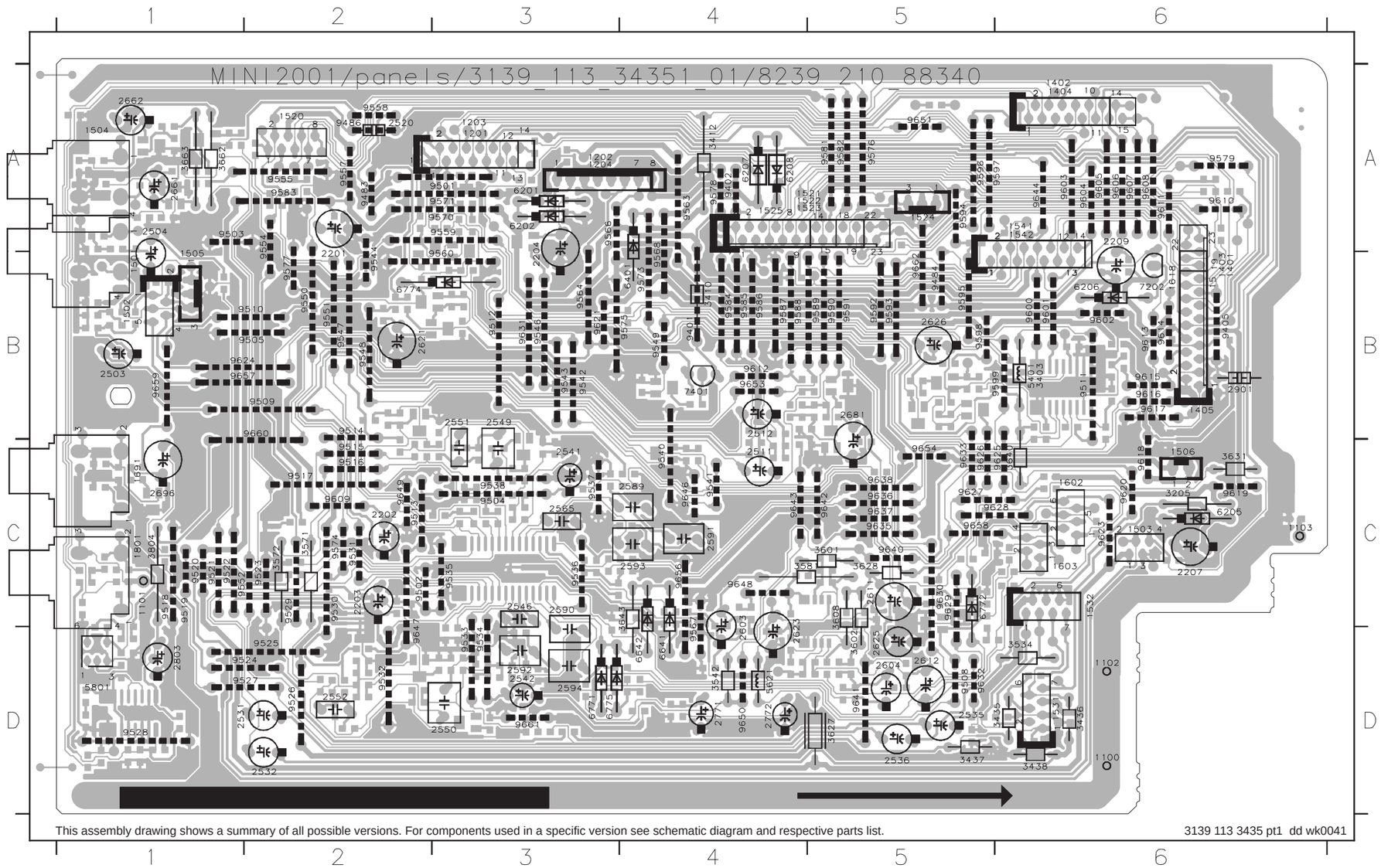
AF9 BOARD - COMPONENT LAYOUT



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

3139 113 3435 pt1 dd wk0041

1100	D6	2626	B5	9515	C2	9594	A5
1101	C1	2661	A1	9516	C2	9595	B5
1102	D6	2662	A1	9517	C2	9596	A5
1103	C6	2681	B5	9518	C1	9597	A6
1201	A3	2696	C1	9519	C1	9598	B5
1202	A3	2771	D4	9520	C1	9599	B6
1203	A3	2772	D4	9521	C1	9600	B6
1204	A3	2803	D1	9522	C1	9601	B6
1401	B6	2901	B6	9523	C2	9602	B6
1402	A6	3205	C6	9524	D2	9603	A6
1403	B6	3403	B6	9525	D2	9604	A6
1404	A6	3410	B4	9526	D2	9605	A6
1405	B6	3412	A4	9527	D2	9606	A6
1501	B1	3435	D6	9528	D1	9607	A6
1502	B1	3436	D6	9529	C2	9608	A6
1503	C6	3437	D5	9530	C2	9609	C2
1504	A1	3438	D6	9531	C2	9610	A6
1505	B1	3534	D6	9532	D2	9611	A6
1506	C6	3542	D4	9533	D3	9612	B4
1520	A2	3571	C2	9534	D3	9613	B6
1521	A5	3572	C2	9535	C3	9614	B6
1522	A5	3581	C4	9536	C3	9615	B6
1523	A5	3601	C5	9537	C3	9616	B6
1524	A5	3602	D5	9538	C3	9617	B6
1525	A4	3608	C5	9540	C4	9618	C6
1531	D6	3627	D5	9541	C4	9619	C6
1532	C6	3628	C5	9542	B3	9620	C6
1541	A6	3631	C6	9543	B3	9621	B3
1542	A6	3640	C6	9544	B2	9623	C6
1602	C6	3643	C4	9546	B3	9624	B1
1603	C6	3662	A1	9547	B2	9625	C6
1691	C1	3663	A1	9548	B2	9626	C5
1801	C1	3804	C1	9549	B4	9627	C5
2201	B2	5401	B6	9550	B2	9628	C6
2202	C2	5621	D4	9551	B2	9629	C5
2203	C2	5801	D1	9552	C1	9630	C5
2204	B3	6201	A3	9554	A2	9631	B3
2207	C6	6202	A3	9555	A2	9632	D5
2209	A6	6205	C6	9557	A2	9633	C5
2503	B1	6206	B6	9558	A2	9635	C5
2504	A1	6207	A4	9559	A3	9636	C5
2511	C4	6208	A4	9560	B3	9637	C5
2512	B4	6401	B4	9563	A4	9638	C5
2520	A2	6641	D4	9564	B3	9640	C5
2531	D1	6642	D4	9566	A3	9641	D5
2532	D2	6771	D3	9567	D4	9642	C5
2535	D5	6772	C5	9568	B4	9643	C4
2536	D5	6774	B2	9570	A3	9644	A6
2541	C3	6775	D3	9571	A3	9646	C4
2542	D3	7202	B6	9573	B4	9647	D2
2546	C3	7401	B4	9574	C2	9648	C4
2549	B3	9401	B4	9575	B4	9649	C2
2550	D3	9402	A4	9576	A5	9650	D4
2551	B3	9405	B6	9577	B2	9651	A5
2552	D2	9483	A2	9578	A4	9653	B4
2565	C3	9484	B5	9579	A6	9654	C5
2589	C4	9486	A2	9581	A5	9656	C4
2590	C3	9501	A3	9582	A5	9657	B1
2591	C4	9502	C2	9583	A2	9658	C5
2592	D3	9503	A1	9584	B4	9659	B1
2593	C4	9504	C3	9585	B4	9660	B2
2594	D3	9505	B2	9586	B4	9661	D3
2603	D4	9508	D5	9587	B4	9662	B5
2604	D5	9509	B2	9588	B4		
2611	C5	9510	B2	9589	B5		
2612	D5	9511	B6	9590	B5		
2621	B2	9512	B3	9591	B5		
2623	D4	9513	C2	9592	B5		
2625	D5	9514	B2	9593	B5		

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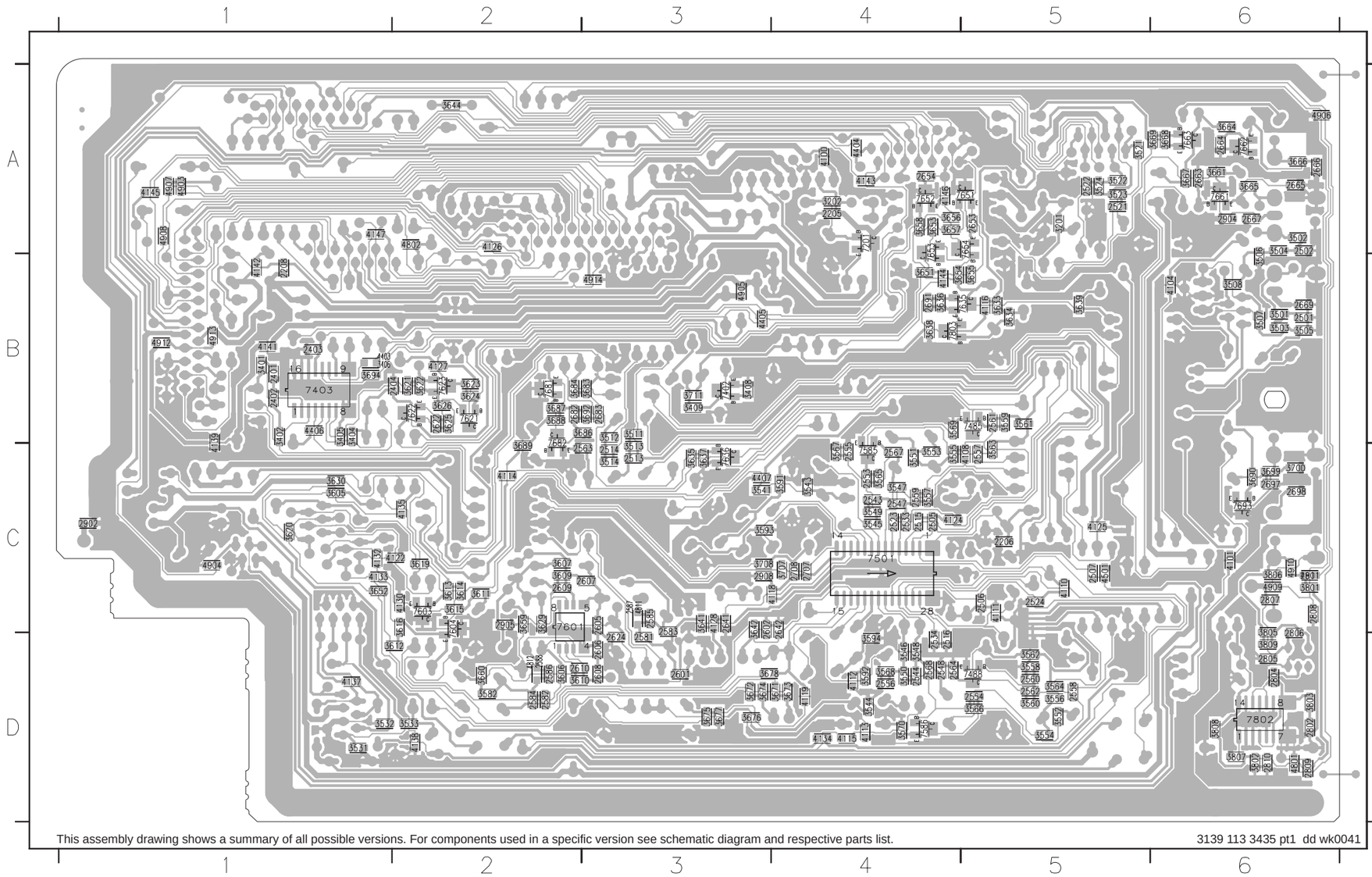
AF9 BOARD - CHIP LAYOUT



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

3139 113 3435 pt1 dd wk0041

2205	A4	2683	B3	3564	D5	3684	B2	4907	A1		
2206	C5	2691	B4	3565	C4	3686	B3	4908	A1		
2208	B1	2697	C6	3566	D5	3687	B2	4909	C6		
2401	B1	2698	C6	3567	C4	3688	B2	4910	C6		
2402	B1	2707	C4	3568	D4	3689	C2	4911	C6		
2403	B1	2708	C4	3569	B4	3690	C6	4912	B1		
2404	B2	2801	C6	3570	D4	3692	B3	4913	B1		
2501	B6	2802	D6	3582	D2	3694	B1	4914	B3		
2502	A6	2804	D6	3591	C4	3699	C6	7201	A4		
2505	C4	2805	D6	3592	D4	3700	C6	7402	B3		
2506	C5	2806	D6	3593	C3	3707	C4	7403	B1		
2507	C5	2807	C6	3594	D4	3708	C3	7485	B5		
2513	C3	2808	C6	3605	C1	3711	B3	7488	D5		
2514	C3	2809	D6	3606	D2	3801	C6	7501	C4		
2515	C4	2810	D6	3607	C2	3802	D6	7585	C4		
2516	D4	2902	C1	3609	C2	3803	D6	7586	D4		
2521	A5	2904	A6	3610	D2	3805	C6	7601	C2		
2522	A5	2905	C2	3611	C2	3806	C6	7603	C2		
2523	C4	2908	C3	3612	D2	3807	D6	7604	C2		
2524	C5	3201	A5	3613	C2	3808	D6	7621	B2		
2533	C4	3202	A4	3614	C2	3809	D6	7622	B2		
2534	D4	3401	B1	3615	C2	4100	A4	7623	B2		
2543	C4	3402	B1	3616	C2	4101	C6	7635	B5		
2544	D4	3404	B1	3619	C2	4104	B6	7636	C3		
2547	C4	3405	B1	3620	C1	4108	C5	7651	A5		
2548	D4	3406	B1	3621	B2	4110	C5	7652	A4		
2553	C4	3408	B3	3622	B2	4111	C5	7653	A4		
2554	D5	3409	B3	3623	B2	4112	D4	7654	A5		
2555	C4	3501	B6	3624	B2	4113	D4	7661	A6		
2556	D4	3502	A6	3625	B2	4114	C2	7662	A6		
2557	C5	3503	B6	3626	B2	4115	D4	7663	A6		
2558	D5	3504	A6	3629	C2	4116	B5	7681	B2		
2559	C4	3505	B6	3630	C1	4118	C4	7682	B2		
2560	D5	3506	B6	3633	B5	4119	D4	7693	C6		
2561	B5	3507	B6	3634	B5	4122	C2	7802	D6		
2562	D5	3508	B6	3635	C3	4124	C4	7803	B4		
2563	C3	3511	B3	3636	B4	4125	C5				
2564	D4	3512	B3	3637	C3	4126	A2				
2567	C4	3513	C3	3638	B4	4127	B2				
2568	D4	3514	C3	3639	B5	4128	C3				
2581	D3	3521	A5	3641	C3	4130	C2				
2582	D2	3522	A5	3642	C3	4132	C1				
2583	C3	3523	A5	3644	A2	4133	C1				
2584	D2	3524	A5	3651	B4	4134	D4				
2585	C3	3531	D1	3652	C1	4135	C2				
2586	D2	3532	D1	3653	A4	4137	D1				
2587	C3	3533	D2	3654	B4	4138	D2				
2588	D2	3541	C3	3655	B5	4139	B1				
2601	D3	3543	C4	3656	A4	4141	B1				
2602	C3	3544	D4	3657	A4	4142	B1				
2605	C3	3545	C4	3658	A4	4143	A4				
2606	D3	3546	D4	3659	C2	4144	B4				
2607	C3	3547	C4	3660	D2	4145	A1				
2608	D3	3548	D4	3661	A6	4146	A4				
2609	C2	3549	C4	3664	A6	4147	A1				
2610	D2	3550	D4	3665	A6	4403	B1				
2622	B2	3551	C4	3666	A6	4404	A4				
2624	D3	3552	D5	3667	A6	4405	B3				
2641	C3	3553	C4	3668	A6	4406	B1				
2642	C4	3554	D5	3669	A6	4407	C3				
2653	A5	3555	C4	3671	D4	4501	C5				
2654	A4	3556	D5	3672	D3	4801	D6				
2663	A6	3557	C4	3673	D4	4802	A2				
2664	A6	3558	D5	3674	D3	4811	C3				
2665	A6	3559	B5	3675	D3	4812	D2				
2666	A6	3560	D5	3676	D3	4903	A1				
2667	A6	3561	B5	3677	D3	4904	C1				
2669	B6	3562	D5	3678	D3	4905	B3				
2682	B2	3563	C5	3683	B3	4906	A6				

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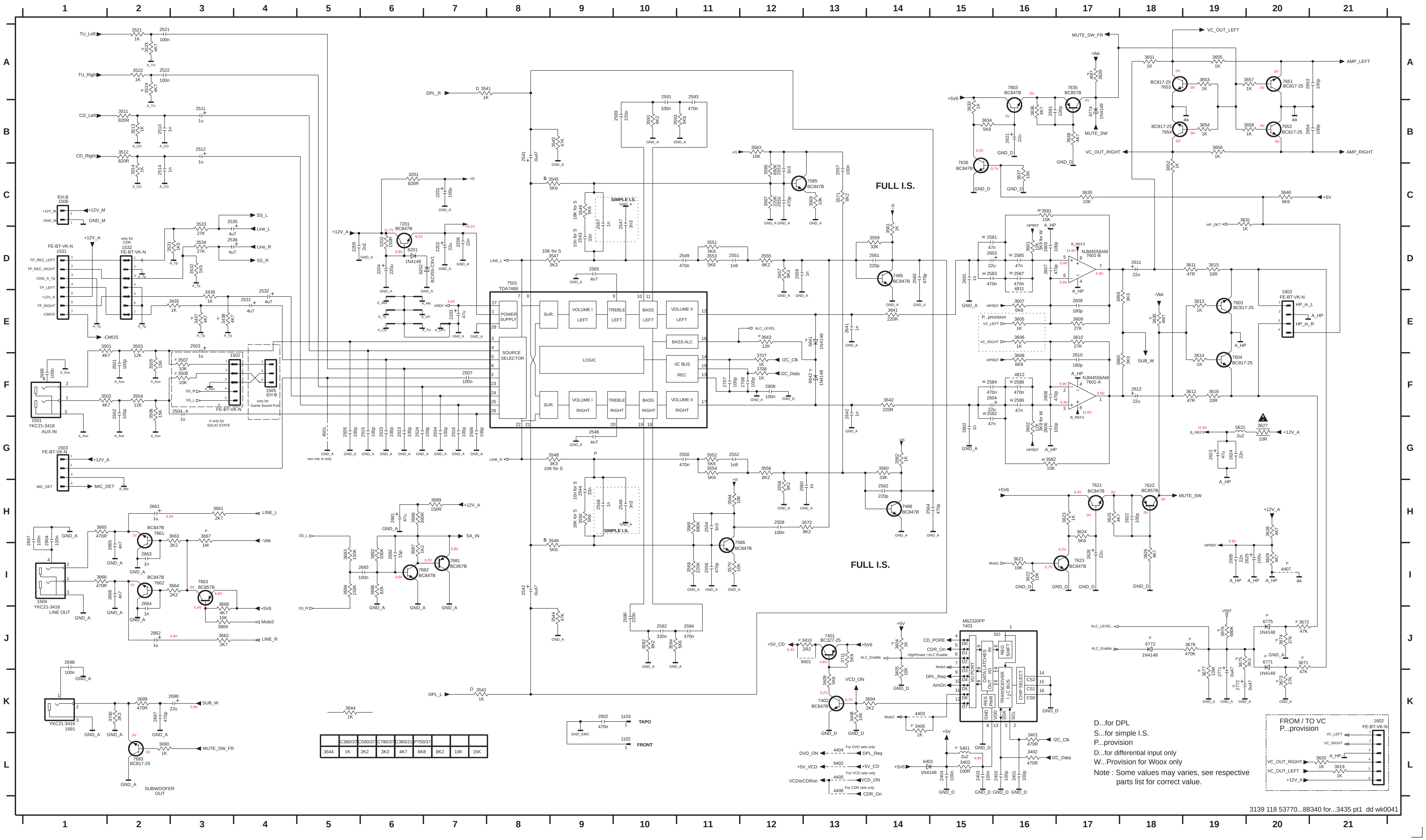
AF9 BOARD - CIRCUIT DIAGRAM (PART 1)

1102 L10	1532 D2	2206 D7	2505 G5	2521 A2	2536 D3	2550 G11	2559 D12	2581 D15	2590 J10
1103 K10	1602 K21	2401 L16	2506 G7	2522 A2	2541 B8	2551 D11	2560 H12	2582 F15	2591 A10
1501 G1	1603 E20	2402 L16	2507 F7	2523 G6	2542 I8	2552 G11	2561 D14	2583 D15	2592 J10
1502 F3	1691 K1	2403 L15	2511 B3	2524 G6	2543 D9	2553 C12	2562 H14	2584 F15	2593 A11
1503 G1	2201 C7	2404 L15	2512 B3	2531 E4	2544 H9	2554 H11	2563 D14	2585 D16	2594 J11
1504 I1	2202 D7	2501 F2	2513 B2	2532 E4	2546 G9	2555 C12	2564 H14	2586 F16	2601 D15
1505 F4	2203 E7	2502 F2	2514 C2	2533 G6	2547 C10	2556 I11	2565 D9	2587 D16	2602 G15
1506 C1	2204 D6	2503 E3	2515 G6	2534 G7	2548 H10	2557 C13	2567 C9	2588 F16	2603 D15
1531 D1	2205 D5	2504 F3	2516 G7	2535 C3	2549 D11	2558 H12	2568 H9	2589 B10	2604 F15

2605 D16	2622 H18	2661 H2	2682 I6	2772 K19	3403 L15	3437 E3	3508 F3	3531 D3	3546 H9
2606 G16	2623 G19	2662 J2	2683 I6	2902 K9	3404 J14	3438 E3	3511 B2	3532 D3	3547 D9
2607 D16	2624 G19	2663 I2	2691 B16	2904 H1	3405 K14	3501 E1	3512 B2	3533 C3	3548 G9
2608 F16	2625 I20	2664 I2	2696 K3	2905 I19	3406 K14	3502 F1	3513 B2	3534 D3	3549 C9
2609 E17	2626 I17	2665 I2	2697 K2	2908 F12	3408 K13	3503 E2	3514 C2	3541 A7	3550 H9
2610 F17	2641 E13	2666 I2	2698 J1	3201 C6	3409 K13	3504 F2	3521 A2	3542 K7	3551 D11
2611 D18	2642 F13	2667 H1	2707 F11	3202 D6	3410 J13	3505 F2	3522 A2	3543 B9	3552 G11
2612 F18	2653 A20	2669 F1	2708 F12	3401 L16	3435 E3	3506 F2	3523 A2	3544 J9	3553 D11
2621 B16	2654 B20	2681 H6	2771 K19	3402 L16	3436 E3	3507 F3	3524 A2	3545 C9	3554 G11

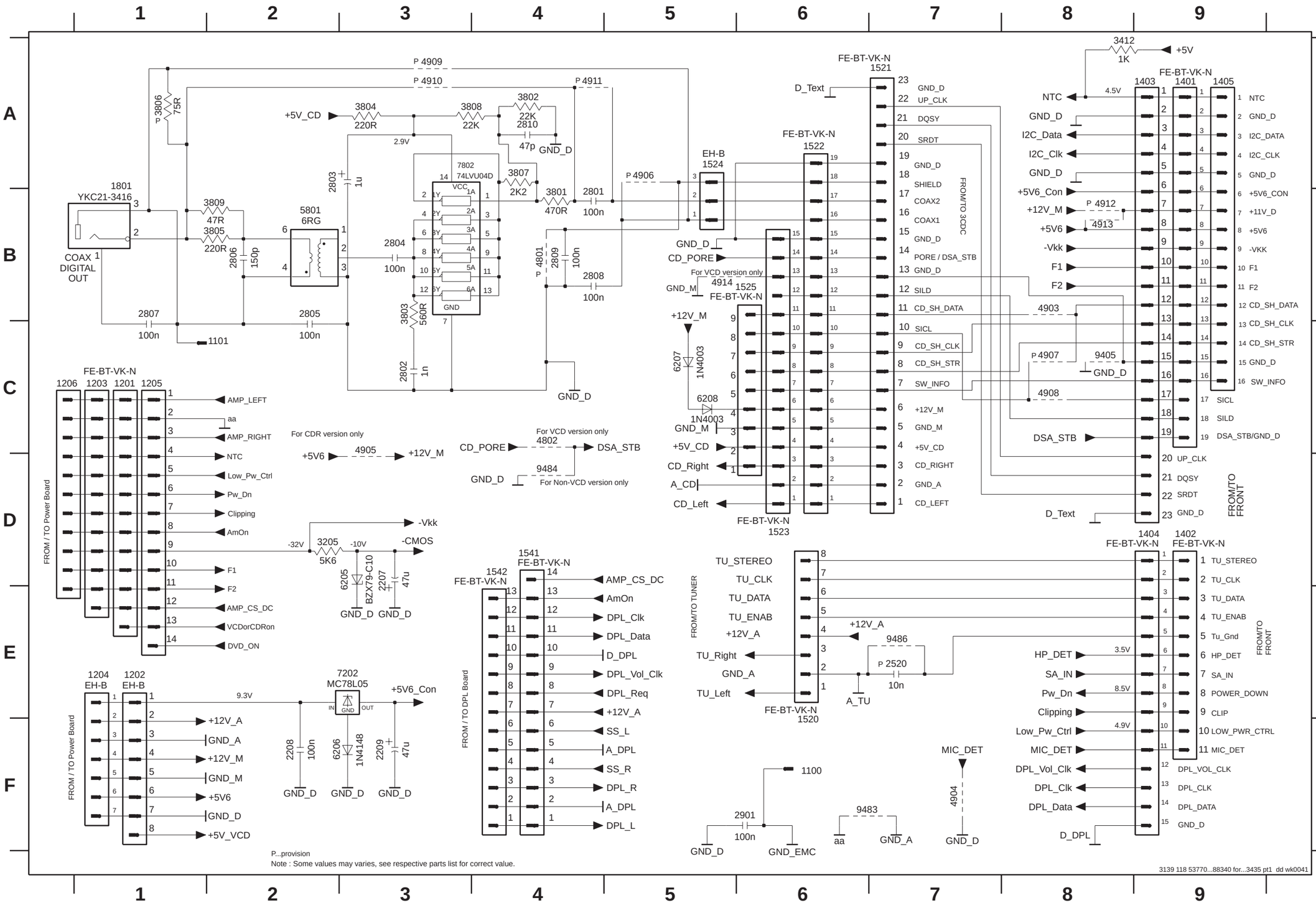
3555 D12	3564 H11	3581 C16	3606 E16	3615 D19	3626 I18	3636 B16	3651 A18	3660 F18	3669 J3
3556 G12	3565 C12	3582 G16	3607 E16	3616 F19	3627 G20	3637 C16	3652 C18	3661 H3	3671 J20
3557 D12	3566 H11	3591 B10	3608 F16	3619 L21	3628 H20	3638 B17	3653 A19	3662 J3	3672 J20
3558 H12	3567 C12	3592 J10	3609 E17	3620 L21	3629 I20	3639 A17	3654 B19	3663 H3	3673 K20
3559 D14	3568 I11	3593 B11	3610 E17	3621 I16	3630 E18	3640 C20	3655 A19	3664 I3	3674 J20
3560 G14	3569 C13	3594 J10	3611 D19	3622 I16	3631 C19	3641 E14	3656 B19	3665 H1	3675 J19
3561 D14	3570 I11	3601 D16	3612 F19	3623 H17	3633 B15	3642 F14	3657 A20	3666 I1	3676 J19
3562 G14	3571 C13	3602 G16	3613 E19	3624 H17	3634 B15	3643 E12	3658 B20	3667 H3	3677 K19
3563 B12	3572 H13	3605 E16	3614 F19	3625 H17	3635 C17	3644 K5	3659 E18	3668 I3	3678 J19

3683 I5	3699 K2	4407 I20	6641 E13	7403 J15	7604 F19	7654 B18	9402 L13
3684 I5	3700 K2	4501 G5	6642 F13	7485 D14	7621 H17	7661 H2	
3686 I6	3707 F12	4811 E16	6771 J20	7488 H14	7622 H18	7662 I2	
3687 I6	3708 F12	4812 F16	6772 J18	7501 D8	7623 I17	7663 I3	
3688 H6	3711 J13	5401 L15	6774 B17	7585 C13	7635 A17	7681 I7	
3689 H7	4403 K14	5621 G19	6775 J20	7586 I11	7636 C15	7682 I6	
3690 L2	4404 L13	6201 D6	7201 C6	7601-A F17	7651 A20	7693 L2	
3692 I6	4405 L13	6202 D6	7401 J13	7601-B D17	7652 B20	7803 A16	
3694 K14	4406 L13	6401 L14	7402 K13	7603 E19	7653 A18	9401 J13	



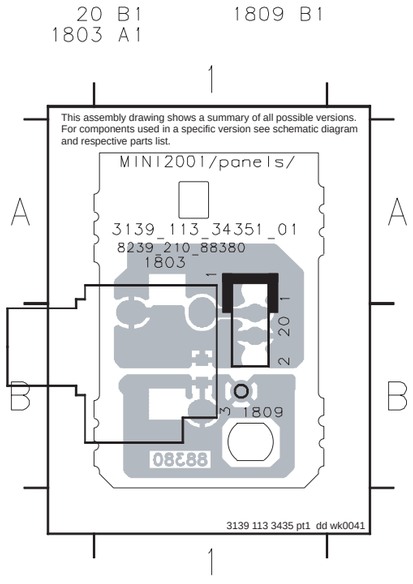
12-5

AF9 BOARD - CIRCUIT DIAGRAM (PART 2)

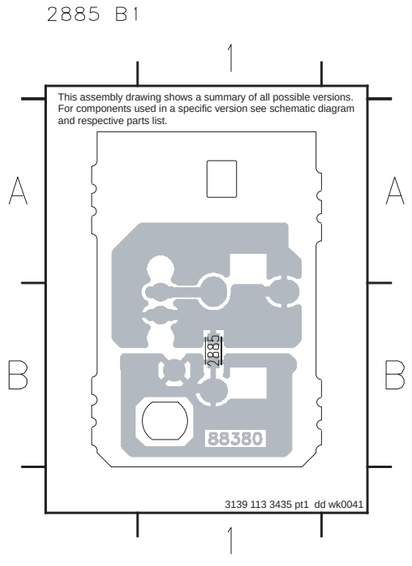


1100 F6
1101 C2
1201 C1
1202 E1
1203 C1
1204 E1
1205 C1
1206 C1
1401 A9
1402 D9
1403 A9
1404 D9
1405 A9
1520 E6
1521 A7
1522 A6
1523 D6
1524 A5
1525 B5
1541 D4
1542 D4
1801 B1
2207 D3
2208 F2
2209 F3
2520 E7
2801 B4
2802 C3
2803 A2
2804 B3
2805 B2
2806 B2
2807 B1
2808 B4
2809 B4
2810 A4
2901 F6
3205 D2
3412 A8
3801 B4
3802 A4
3803 B3
3804 A3
3805 B2
3806 A1
3807 A4
3808 A3
3809 B2
4801 B4
4802 C4
4903 B8
4904 F7
4905 C3
4906 A5
4907 C8
4908 C8
4909 A3
4910 A3
4911 A4
4912 B8
4913 B8
4914 B5
5801 B2
6205 D3
6206 F3
6207 C5
6208 C5
7202 E3
7802 A3
9405 C8
9483 F6
9484 D4
9486 E7

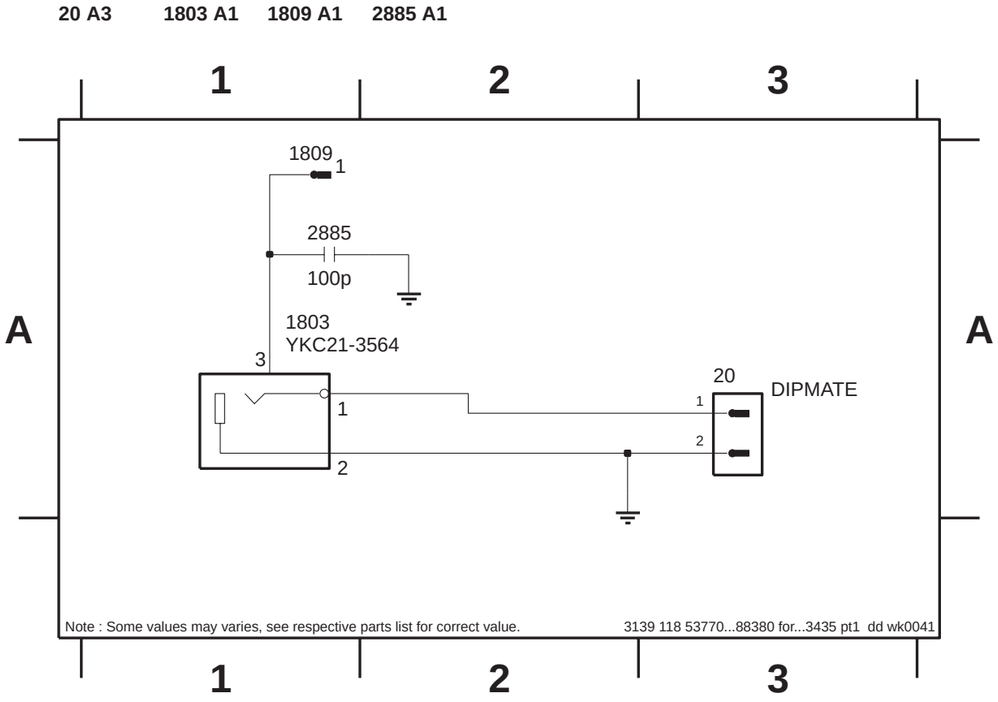
VIDEO OUT CINCH BOARD - COMPONENT LAYOUT



VIDEO OUT CINCH BOARD - CHIP LAYOUT



VIDEO OUT CINCH PART - CIRCUIT DIAGRAM



12-6

ELECTRICAL PARTS LIST - AF9 BOARD

MISCELLANEOUS

1201	4822 267 10738	Flex Connector 13P
1401	4822 265 11553	Flex Connector 19P
1402	4822 267 11039	Flex Connector 11P
1501	4822 265 20553	Cinch Socket - Aux in
1503	4822 267 10733	Flex Connector 4P
1520	4822 265 11515	Flex Connector 8P
1522	4822 265 11553	Flex Connector 19P
1531	4822 267 10953	Flex Connector 7P
1603	4822 267 10733	Flex Connector 4P
1691	4822 267 31729	Cinch Socket - Subwoofer out
1801	4822 267 31729	Cinch Socket - Digital out

CAPACITORS

2201	4822 124 40207	100µF 20% 25V
2202	4822 124 81151	22µF 50V
2203	4822 124 40433	47µF 20% 25V
2204	4822 124 40196	220µF 20% 16V
2205	4822 126 14238	2,2nF 50V
2206	4822 126 14494	22nF 10% 25V
2207	4822 124 40433	47µF 20% 25V
2208	4822 126 14305	100nF 10% 16V
2209	4822 124 41751	47µF 20% 50V
2401	4822 122 31765	100pF 2% 63V
2402	4822 122 31765	100pF 2% 63V
2403	4822 126 14305	100nF 10% 16V
2404	4822 126 14305	100nF 10% 16V
2501	4822 122 31765	100pF 2% 63V
2502	4822 122 31765	100pF 2% 63V
2503	4822 124 21913	1µF 20% 63V
2504	4822 124 21913	1µF 20% 63V
2505	4822 122 31765	100pF 2% 63V
2506	4822 122 31765	100pF 2% 63V
2507	4822 126 14305	100nF 10% 16V
2511	4822 124 21913	1µF 20% 63V
2512	4822 124 21913	1µF 20% 63V
2513	3198 016 31020	1nF 25V
2514	3198 016 31020	1nF 25V
2515	4822 122 31765	100pF 2% 63V
2516	4822 122 31765	100pF 2% 63V
2521	4822 126 14305	100nF 10% 16V
2522	4822 126 14305	100nF 10% 16V
2523	4822 122 31765	100pF 2% 63V
2524	4822 122 31765	100pF 2% 63V
2531	4822 124 40769	4,7µF 20% 100V
2532	4822 124 40769	4,7µF 20% 100V
2533	4822 122 31765	100pF 2% 63V
2534	4822 122 31765	100pF 2% 63V
2535	4822 124 40769	4,7µF 20% 100V
2536	4822 124 40769	4,7µF 20% 100V
2541	4822 124 41407	0,47µF 20% 63V
2542	4822 124 41407	0,47µF 20% 63V
2543	5322 126 11583	10nF 10% 50V
2544	5322 126 11583	10nF 10% 50V
2546	4822 121 43856	4,7nF 5% 250V
2547	5322 126 11579	3,3nF 10% 63V
2548	5322 126 11579	3,3nF 10% 63V
2565	4822 121 43856	4,7nF 5% 250V
2567	3198 016 31020	1nF 25V
2568	3198 016 31020	1nF 25V
2589	4822 121 42408	220nF 5% 63V
2590	4822 121 42408	220nF 5% 63V
2591	5322 121 42661	330nF 5% 63V
2592	5322 121 42661	330nF 5% 63V
2593	4822 121 51252	470nF 5% 63V
2594	4822 121 51252	470nF 5% 63V
2601	3198 016 31020	1nF 25V
2602	3198 016 31020	1nF 25V
2603	4822 124 81151	22µF 50V
2604	4822 124 81151	22µF 50V
2605	4822 122 31765	100pF 2% 63V
2606	4822 122 31765	100pF 2% 63V
2607	4822 126 13881	470pF 5% 50V
2608	4822 126 13881	470pF 5% 50V
2609	4822 126 14508	180pF 5% 50V
2610	4822 126 14508	180pF 5% 50V
2611	4822 124 81151	22µF 50V
2612	4822 124 81151	22µF 50V
2621	4822 124 81151	22µF 50V
2622	4822 122 31765	100pF 2% 63V
2623	4822 124 40433	47µF 20% 25V
2624	3198 017 42230	22nF 50V
2625	4822 124 40207	100µF 20% 25V
2626	4822 124 81151	22µF 50V
2641	3198 016 31020	1nF 25V
2642	3198 016 31020	1nF 25V
2653	4822 122 31765	100pF 2% 63V
2654	4822 122 31765	100pF 2% 63V
2669	4822 126 14305	100nF 10% 16V
2681	4822 124 40433	47µF 20% 25V
2682	4822 122 33752	15pF 5% 50V
2683	4822 126 14305	100nF 10% 16V
2691	4822 122 31765	100pF 2% 63V
2696	4822 124 81151	22µF 50V
2697	4822 126 13881	470pF 5% 50V
2698	4822 126 14305	100nF 10% 16V
2707	4822 122 31765	100pF 2% 63V
2708	4822 122 31765	100pF 2% 63V
2771	4822 124 41407	0,47µF 20% 63V
2801	4822 126 14305	100nF 10% 16V
2802	3198 016 31020	1nF 25V
2803	4822 124 21913	1µF 20% 63V
2804	4822 126 14305	100nF 10% 16V
2805	4822 126 14305	100nF 10% 16V
2806	4822 122 33753	150pF 5% 50V

ELECTRICAL PARTS LIST - AF9 BOARD

CAPACITORS

2807	4822 126 14305	100nF 10% 16V
2808	4822 126 14305	100nF 10% 16V
2809	4822 126 14305	100nF 10% 16V
2810	4822 122 33777	47pF 5% 63V
2901	4822 126 12882	100nF +80/-20% 50V
2902	3198 017 44740	470nF 10V
2905	3198 017 42230	22nF 50V
2908	4822 126 14305	100nF 10% 16V

RESISTORS

3201	4822 117 12968	820R 5% 0,62W
3202	4822 051 30151	150R 5% 0,062W
3205	4822 116 52289	5k6 5% 0,5W
3401	4822 051 30471	470R 5% 0,062W
3402	4822 051 30471	470R 5% 0,062W
3403	4822 116 52175	100R 5% 0,5W
3405	4822 051 30103	10k 5% 0,062W
3408	4822 051 30103	10k 5% 0,062W
3409	4822 051 30562	5k6 5% 0,063W
3412	4822 050 11002	1k 1% 0,4W
3435	4822 050 11002	1k 1% 0,4W
3436	4822 050 11002	1k 1% 0,4W
3501	4822 051 30472	4k7 5% 0,062W
3502	4822 051 30472	4k7 5% 0,062W
3503	4822 051 30123	12k 5% 0,062W
3504	4822 051 30123	12k 5% 0,062W
3505	4822 051 30153	15k 5% 0,062W
3506	4822 051 30153	15k 5% 0,062W
3511	4822 117 12968	820R 5% 0,62W
3512	4822 117 12968	820R 5% 0,62W
3513	4822 051 30102	1k 5% 0,062W
3514	4822 051 30102	1k 5% 0,062W
3521	4822 051 30102	1k 5% 0,062W
3522	4822 051 30102	1k 5% 0,062W
3531	4822 051 30152	1k5 5% 0,062W
3532	4822 051 30152	1k5 5% 0,062W
3533	4822 051 30273	27k 5% 0,062W
3534	4822 116 52264	27k 5% 0,5W
3543	4822 117 12925	47k 1% 0,063W
3544	4822 117 12925	47k 1% 0,063W
3545	4822 051 30562	5k6 5% 0,063W
3546	4822 051 30562	5k6 5% 0,063W
3547	4822 051 30103	10k 5% 0,062W
3548	4822 051 30103	10k 5% 0,062W
3549	4822 051 30183	18k 5% 0,062W
3550	4822 051 30183	18k 5% 0,062W
3591	4822 117 12902	8k2 1% 0,063W
3592	4822 117 12902	8k2 1% 0,063W
3593	4822 051 30562	5k6 5% 0,063W
3594	4822 051 30562	5k6 5% 0,063W
3601	4822 116 52238	12k 5% 0,5W
3602	4822 116 52238	12k 5% 0,5W
3607	4822 051 30682	6k8 5% 0,062W
3608	4822 116 83961	6k8 5%
3609	4822 051 30273	27k 5% 0,062W
3610	4822 051 30273	27k 5% 0,062W
3611	4822 051 30479	47R 5% 0,062W
3612	4822 051 30479	47R 5% 0,062W
3613	4822 051 30102	1k 5% 0,062W
3614	4822 051 30102	1k 5% 0,062W
3615	4822 051 30339	33R 5% 0,062W
3616	4822 051 30339	33R 5% 0,062W
3621	4822 051 30103	10k 5% 0,062W
3622	4822 051 30103	10k 5% 0,062W
3623	4822 051 30102	1k 5% 0,062W
3624	4822 051 30562	5k6 5% 0,063W
3625	4822 051 30472	4k7 5% 0,062W
3626	4822 051 30472	4k7 5% 0,062W
3627	4822 052 10109	⚠ 10R 5% 0,33W
3628	4822 116 52283	4k7 5% 0,5W
3629	4822 051 30472	4k7 5% 0,062W
3631	4822 050 11002	1k 1% 0,4W
3633	4822 051 30102	1k 5% 0,062W
3634	4822 051 30562	5k6 5% 0,063W
3635	4822 051 30103	10k 5% 0,062W
3636	4822 051 30472	4k7 5% 0,062W
3637	4822 051 30103	10k 5% 0,062W
3638	4822 051 30472	4k7 5% 0,062W
3640	4822 116 52289	5k6 5% 0,5W
3641	4822 051 30221	220R 5% 0,062W
3642	4822 051 30221	220R 5% 0,062W
3644	4822 051 30102	1k 5% 0,062W
3644	4822 051 30472	4k7 5% 0,062W /21
3651	4822 051 30102	1k 5% 0,062W
3652	4822 051 30102	1k 5% 0,062W
3653	4822 051 30102	1k 5% 0,062W
3654	4822 051 30102	1k 5% 0,062W
3655	4822 051 30102	1k 5% 0,062W
3656	4822 051 30102	1k 5% 0,062W
3657	4822 051 30102	1k 5% 0,062W
3658	4822 051 30102	1k 5% 0,062W
3659	4822 051 30332	3k3 5% 0,062W
3660	4822 051 30332	3k3 5% 0,062W
3662	4822 051 30272	2k7 5% 0,062W
3683	4822 051 30154	150k 5% 0,062W
3684	4822 051 30154	150k 5% 0,062W
3686	4822 117 12864	82k 5% 0,6W
3687	4822 117 11817	1k2 1% 1/16W
3688	4822 051 30391	390R 5% 0,062W
3689	4822 051 30151	150R 5% 0,062W
3690	4822 051 30102	1k 5% 0,062W
3692	4822 051 30334	330k 5% 0,062W
3694	4822 051 30222	2k2 5% 0,062W
3699	4822 051 30471	470R 5% 0,062W

ELECTRICAL PARTS LIST - AF9 BOARD

RESISTORS

3700	4822 051 30332	3k3 5% 0,062W
3707	4822 051 30102	1k 5% 0,062W
3708	4822 051 30102	1k 5% 0,062W
3711	4822 051 30562	5k6 5% 0,063W
3801	4822 051 30471	470R 5% 0,062W
3802	4822 051 30223	22k 5% 0,062W
3803	4822 051 30561	560R 5% 0,062W
3804	4822 116 83872	220R 5% 0,5W
3805	4822 051 30221	220R 5% 0,062W
3807	4822 051 30222	2k2 5% 0,062W
3808	4822 051 30223	22k 5% 0,062W
3809	4822 051 30479	47R 5% 0,062W
4100	4822 051 30008	0R Jumper 0603
4101	4822 051 30008	0R Jumper 0603
4102	4822 051 30008	0R Jumper 0603
4104	4822 051 30008	0R Jumper 0603
4108	4822 051 30008	0R Jumper 0603
4110	4822 051 30008	0R Jumper 0603
4111	4822 051 30008	0R Jumper 0603
4112	4822 051 30008	0R Jumper 0603
4113	4822 051 30008	0R Jumper 0603
4114	4822 051 30008	0R Jumper 0603
4115	4822 051 30008	0R Jumper 0603
4116	4822 051 30008	0R Jumper 0603
4118	4822 051 30008	0R Jumper 0603
4119	4822 051 30008	0R Jumper 0603
4122	4822 051 30008	0R Jumper 0603
4124	4822 051 30008	0R Jumper 0603
4125	4822 051 30008	0R Jumper 0603
4126	4822 051 30008	0R Jumper 0603
4127	4822 051 30008	0R Jumper 0603
4128	4822 051 30008	0R Jumper 0603
4130	4822 051 30008	0R Jumper 0603
4132	4822 051 30008	0R Jumper 0603
4133	4822 051 30008	0R Jumper 0603
4134	4822 051 30008	0R Jumper 0603
4135	4822 051 30008	0R Jumper 0603
4137	4822 051 30008	0R Jumper 0603
4138	4822 051 30008	0R Jumper 0603
4139	4822 051 30008	0R Jumper 0603
4141	4822 051 30008	0R Jumper 0603
4142	4822 051 30008	0R Jumper 0603
4143	4822 051 30008	0R Jumper 0603
4144	4822 051 30008	0R Jumper 0603
4145	4822 051 30008	0R Jumper 0603
4146	4822 051 30008	0R Jumper 0603
4147	4822 051 30008	0R Jumper 0603
4403	4822 051 30008	0R Jumper 0603
4501	4822 051 30008	0R Jumper 0603
4801	4822 051 30008	0R Jumper 0603
4811	4822 051 30008	0R Jumper 0603
4812	4822 051 30008	0R Jumper 0603
4903	4822 051 30008	0R Jumper 0603
4904	4822 051 30008	0R Jumper 0603
4908	4822 051 30008	0R Jumper 0603
4913	4822 051 30008	0R Jumper 0603

COILS & FILTERS

5621	4822 157 62552	Coil 2,2µH 5%
5801	2422 536 00019	Transformer 6RG

DIODES

6201	4822 130 30621	1N4148
6202	4822 130 30862	BZX55-C9V1
6205	4822 130 61219	BZX79-C10
6206	4822 130 30621	1N4148
6207	4822 130 31878	1N4003G
6208	4822 130 31878	1N4003G
6401	4822 130 30621	1N4148
6774	4822 130 30621	1N4148

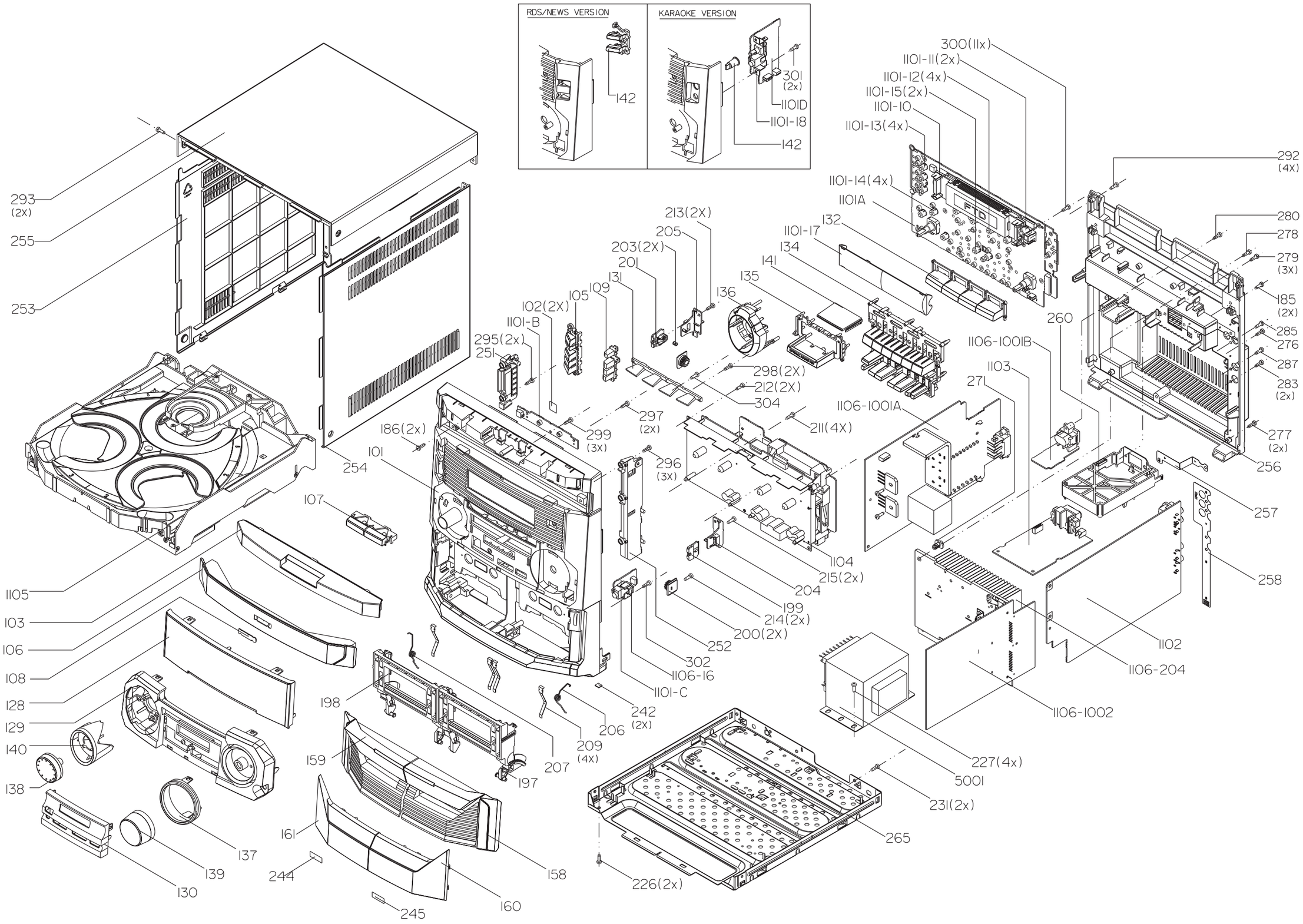
TRANSISTORS & INTEGRATED CIRCUITS

7201	5322 130 60159	BC847B
7202	4822 209 72042	MC78L05ACP
7401	4822 130 41246	BC327-25
7402	5322 130 60159	BC847B
7403	4822 209 17345	M62320FP
7501	9322 150 74668	TDA7468D
7601	4822 209 31378	NJM4556AM
7603	4822 130 42804	BC817-25
7604	4822 130 42804	BC817-25
7621	5322 130 60159	BC847B
7622	4822 130 60373	BC857B
7623	5322 130 60159	BC847B
7635	4822 130 60373	BC857B
7636	5322 130 60159	BC847B
7651	4822 130 42804	BC817-25
7652	4822 130 42804	BC817-25
7653	4822 130 42804	BC817-25
7654	4822 130 42804	BC817-25
7681	4822 130 60373	BC857B
7682	5322 130 60159	BC847B
7693	4822 130 42804	BC817-25
7802	4822 209 17235	74LVU04D
7803	5322 130 60159	BC847B

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

13-1

SET MECHANICAL EXPLODED VIEW



13-2

MECHANICAL & ACCESSORIES PARTS LIST - MAIN UNIT

0101	3139 118 14640	Cabinet Front /21	0256	3139 114 73090		Panel Rear /34
0101	3139 118 14590	Cabinet Front /22/34	0271	3139 114 71010		Stopper Heatsink
0101	3139 118 13030	Cabinet Front /37	0350	3139 118 78410		L/R Loudspeaker Box
0103	3139 118 13040	Cover Front CDC	0350	3139 118 78150		L/R Loudspeaker Box /37
0105	3139 118 14730	Button Set CDC Select /21/37	0351	4822 303 50063		FM Aerial
0105	3139 118 13120	Button Set P/CDC Select /22/34	0351	4822 320 11094		FM Antenna Wire /37
0106	3139 118 13050	Cover Tray CDC	0356	3139 228 86350		Remote Control
0107	3139 118 13060	Button Set Open/Close	0384	4822 303 50082		AM Frame Aerial
0108	4822 454 13408	Badge Philips	0385	4822 321 10249	⚠	Mains Cord
0128	3139 118 14650	Window Display /21	0385	4822 321 11466	⚠	Mains Cord /37
0128	3139 118 14580	Window Display /22/34	0386	4822 263 21092	⚠	Adaptor Plug 6A 250V /21
0128	3139 118 13110	Window Display /37	0387	3139 115 20700		Instruction For Use /21
0129	3139 118 13090	Cover Front Display	0387	3139 115 20640		Instruction For Use /22
0130	3139 118 13100	Cover Front Orna.	0387	3139 115 20660		Instruction For Use /34
0132	3139 118 13130	Button Set Source	0387	3139 115 20460		Instruction For Use /37
0134	3139 118 15140	Button Set C/Prog	1201	3139 110 34600		FFC Foil 07P/280/07P AD
0135	3139 118 13150	Button Max	1300	4822 320 12246		FFC Foil 13P/220/13P AD
0136	3139 118 13160	Button DSC/DBB/VEC/IS	1400	3139 110 35110		FFC Foil 04P/220/04P AD
0137	3139 118 13170	Ring Volume	1401	4822 320 12703		FFC Foil 07P/140/07P BD
0138	3139 118 13180	Knob Rotary	1402	3139 110 35100		FFC Foil 19P/140/19P AD
0139	3139 118 13190	Knob Volume	1403	3139 110 34610		FFC Foil 11P/180/11P AD
0142	3139 118 13200	Knob Level Karaoke /21	1500	3139 110 33960		FFC Foil 04P/120/04P BD
0142	3139 118 13910	Button Set RDS/NEWS /22/34	1600	3139 110 35050		FFC Foil 08P/220/08P AD
0158	3139 118 13080	Cover Cassette Right	1700	4822 320 12752		FFC Foil 07P/180/07P AD
0159	3139 118 13070	Cover Cassette Left	1800	3139 110 34910		FFC Foil 19P/120/19P BD
0160	3139 118 13900	Lens Cassette Right	5001	3103 308 30640	⚠	Mains Transformer /21
0161	3139 118 13890	Lens Cassette Left	5001	3103 308 30630	⚠	Mains Transformer /22/34
0197	3139 114 68630	Door Cassette Right ETF	5001	3103 308 30620	⚠	Mains Transformer /37
0198	3139 114 68620	Door Cassette Left ETF				
0199	4822 402 10621	Push-Catch				
0200	4822 529 10322	Damper Assembly				
0201	3139 114 68640	Push Catch Left				
0203	4822 492 11344	Spring Compression				
0204	4822 402 11246	Bracket Right				
0205	4822 402 11245	Bracket Left				
0206	3139 111 01380	Spring Torsion Right				
0207	3139 111 01390	Spring Torsion Left				
0209	4822 492 42787	Spring Cassette				
0242	4822 462 40683	Foot Rubber (SQ)				
0251	3139 114 70970	Bracket CDC Left				
0252	3139 114 70980	Bracket CDC Right				
0253	3139 114 70930	Panel Left				
0254	3139 114 70940	Panel Right				
0255	3139 114 70960	Cover Top				
0256	3139 114 70950	Panel Rear				

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

SCREW LISTS - MAIN UNIT

185	D3 x 10
186	D3 x 10
211	D3 x 12
212	D3 x 12
213	D3 x 12
214	M3 x 12
215	M3 x 12
226	M3 x 6
227	M3 x 6
231	M3 x 10
276	D3 x 12
277	D3 x 12
278	D3 x 12
279	D3 x 12
280	D3 x 12
283	D3 x 20
285	D3 x 12
287	D3 x 12
292	D3 x 12
293	D3 x 12
295	D3 x 12
296	D3 x 12
297	D2 x 8
298	D3 x 12
299	D3 x 12
300	D3 x 12
301	D3 x 12
302	D3 x 12
304	D3 x 12

Mini System

FW-C380/30

Service
Service
Service

Service Manual

COMPACT disc DIGITAL AUDIO

Introduction of FW-C380/30

For Service documentation please refer to Service Manual FW-C380/21/22/34/37 - 3139 785 22550.

FW-C380/30 refers to FW-C380/34 with the following adaptations:

1. Mechanical & Accessories

Change	0101	3139 118 15731	Cabinet Front
	0128	3139 118 14660	Window Display
	0256	3139 114 70950	Panel Rear
	0385	4822 321 10954 ⚠	Mains Cord
	0387	3139 115 20920	Instruction For Use
Delete	0142		

2. Front Board

Add	3511	4822 051 30103	10k 5% 0,062W
	3581	4822 051 30103	10k 5% 0,062W
Delete	1425, 1427, 1433, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2479, 3510, 3576, 3577, 3578, 3579, 3580, 4498, 5403, 7401		

3. Tuner Board : Refer to Tuner ECO6 AS/01 version (Systems Non-Cenelec).

CLASS 1
LASER PRODUCT

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PHILIPS