

Service
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Service



Service Manual

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Published by SL 0418 Service Audio Printed In The Netherlands Subject to modification

**CLASS 1
LASER PRODUCT**



3140 785 32961

Version 1.1

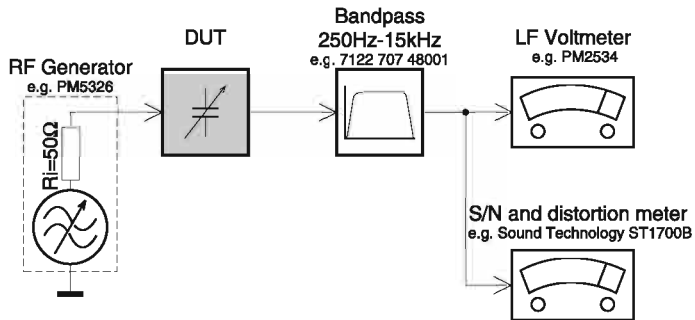
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SPECIFICATIONS

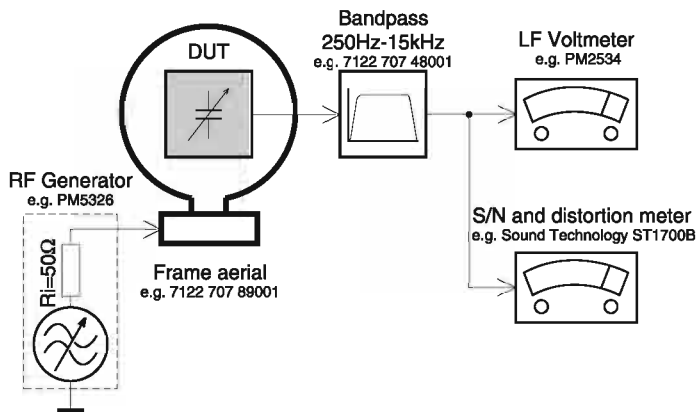
MEASUREMENT SETUP

Tuner FM



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

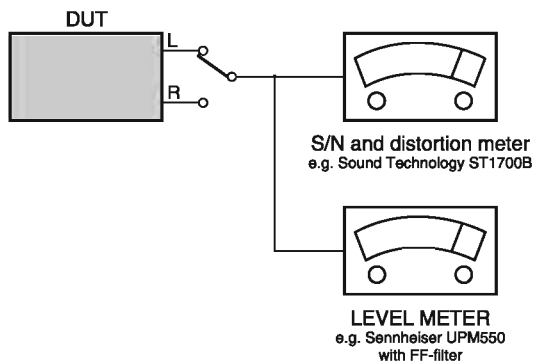
Tuner AM (MW,LW)



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

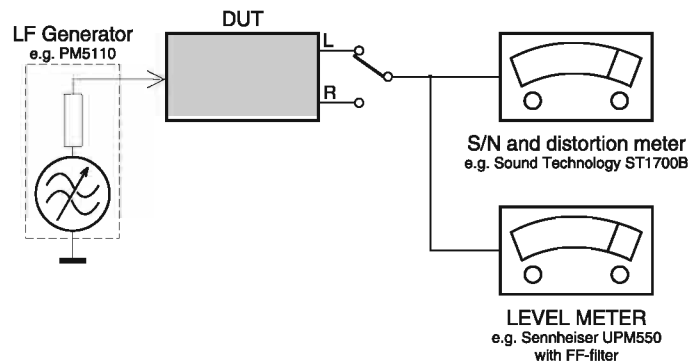
CD

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



Recorder

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



SERVICE AIDS

Service Tools:

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

Cassette:

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

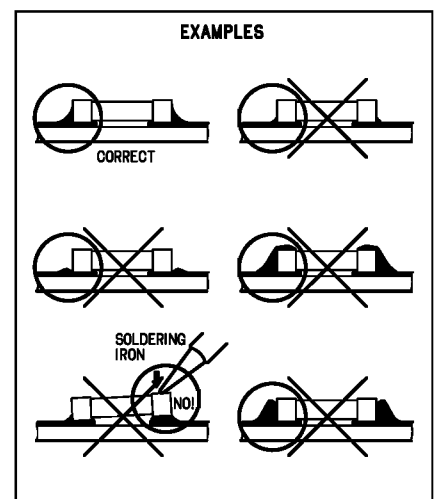
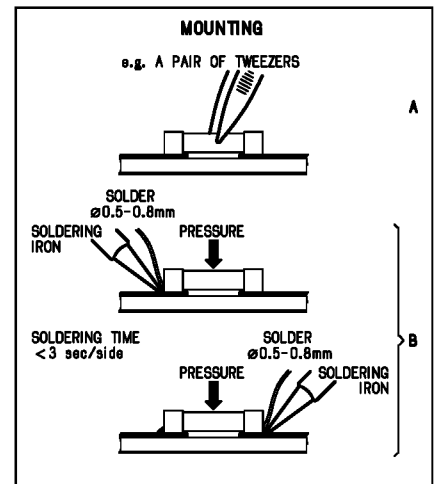
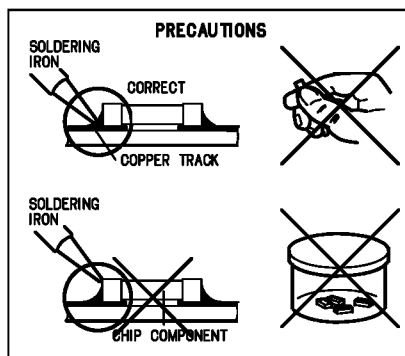
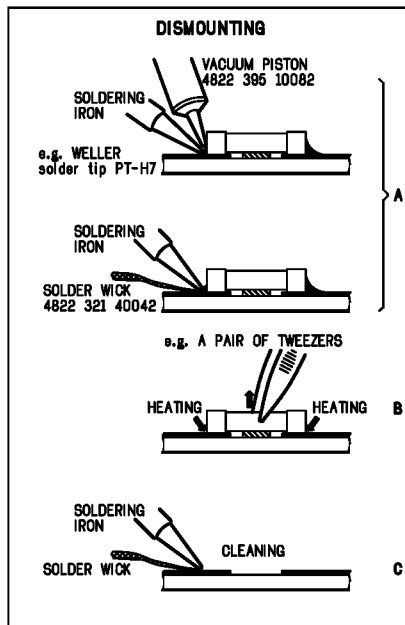
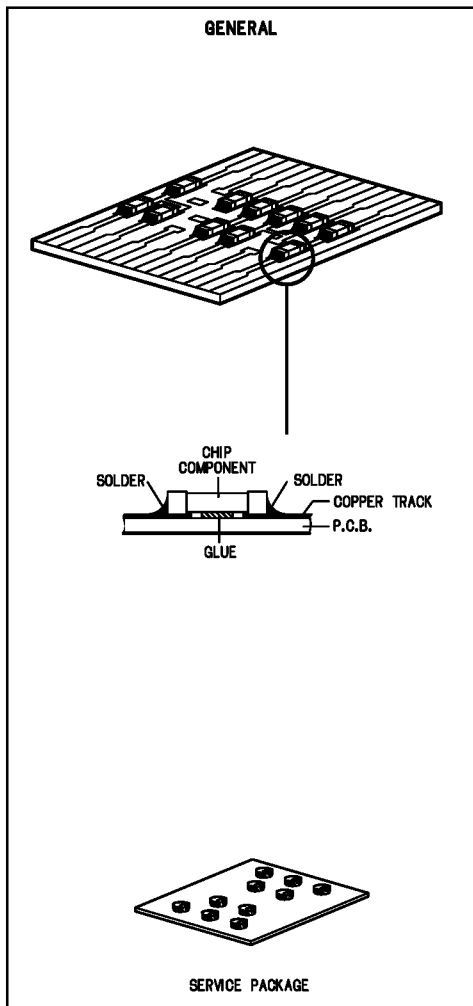
Compact Disc:

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

ESD Equipment:

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

HANDLING CHIP COMPONENTS



(GB) WARNING

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

ESD**(NL) WAARSCHUWING**

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).

Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen. Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.

Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(F) ATTENTION

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

(D) WARNUNG

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

(I) AVVERTIMENTO

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

(GB)

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

Safety components are marked by the symbol .

(NL)

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

De Veiligheidsonderdelen zijn aangeduid met het symbool .

(F)

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

Less composants de sécurité sont marqués .

(D)

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

Sicherheitsbauteile sind durch das Symbol  markiert.

(I)

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

Componenti di sicurezza sono marcati con .

(GB)

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

**(GB) Warning !**

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

(S) Varning !

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

(SF) Varoitus !

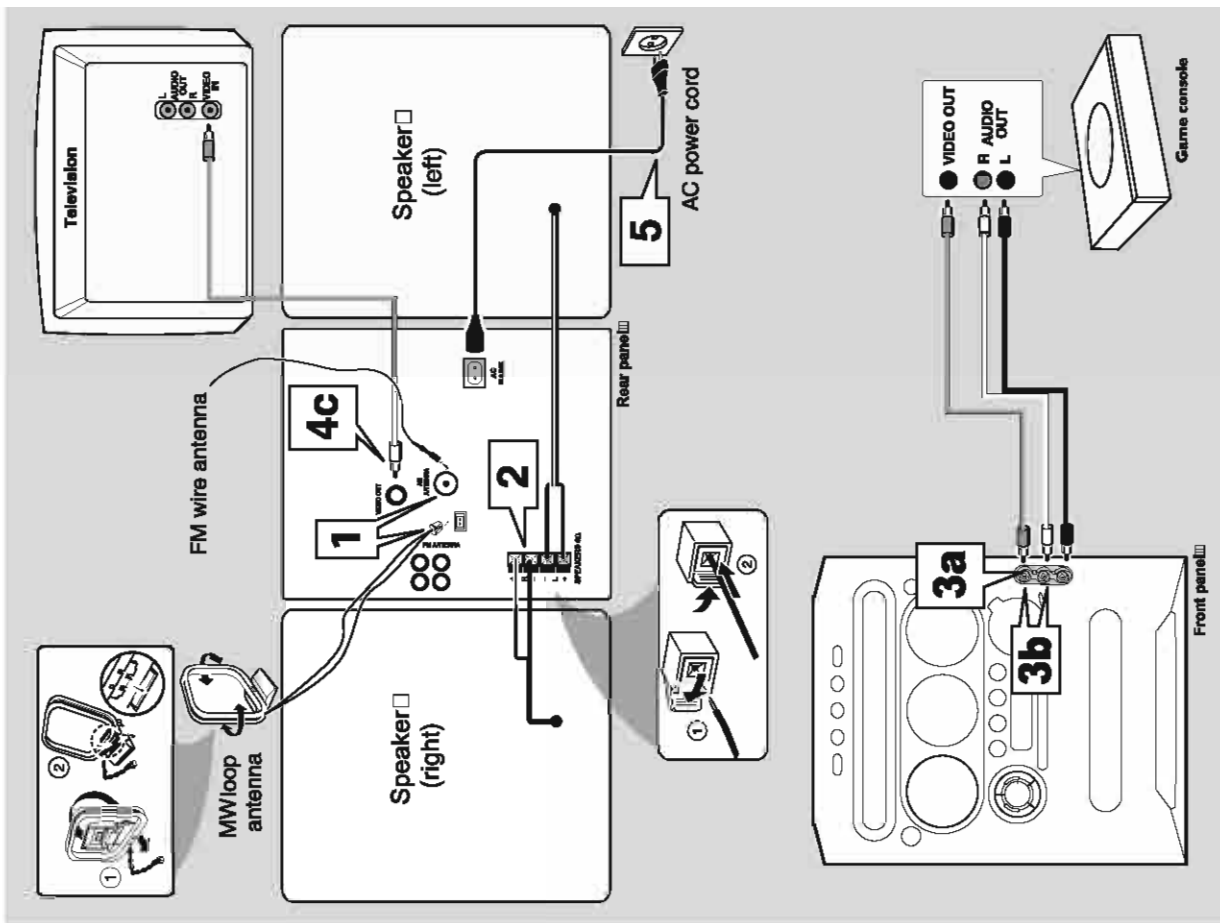
Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

(DK) Advarse !

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

(F)

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



Warning!

- Use only the supplied speakers. The combination of the main unit and speakers provides the best sound. Using other speakers can damage the unit and sound quality will be negatively affected.
- Never make or change connections with the power switched on.
- Connect the AC power cord to the power outlet only after you have finished hooking up everything.
- To avoid overheating of the system, a safety circuit has been built in. Therefore, your system may switch to Standby mode automatically under extreme conditions. If this happens, let the system cool down before reusing it (not available for all versions).

Step 1: Connecting FM/MW antennas

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

Step 2: Connecting the speakers

Connect the speaker wires to the SPEAKERS terminals, right speaker to "R" and left speaker to "L", coloured (marked) wire to "+" and black (unmarked) wire to "–". Fully insert the stripped portion of the speaker wire into the terminal as shown on page 10.

Notes:

- Ensure that the speaker cables are correctly connected. Improper connections may damage the system due to short-circuit.
- Do not connect more than one speaker to any one pair of +/- speaker terminals.

Step 3: Connecting to the game console

IMPORTANT!

Gameport inputs are for the game console only.

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

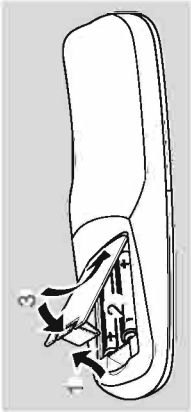
Notes:

- On the TV, the Video Input jack is usually yellow and might be labeled A/V In, CVBS, Composite or Baseband.
- To avoid magnetic interference, do not position the front speakers too close to your TV.

Step 4: Connecting the AC power cord

"AUTO INSTALL - PRESS PLAY" may appear on the display panel when the AC power cord is plugged into the power outlet for the first time. Press ► on the main unit to store all available radio stations (page 3 - P3) or press ■ to exit (refer to "Tuner Operations").

Step 5: Inserting batteries into the remote control



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

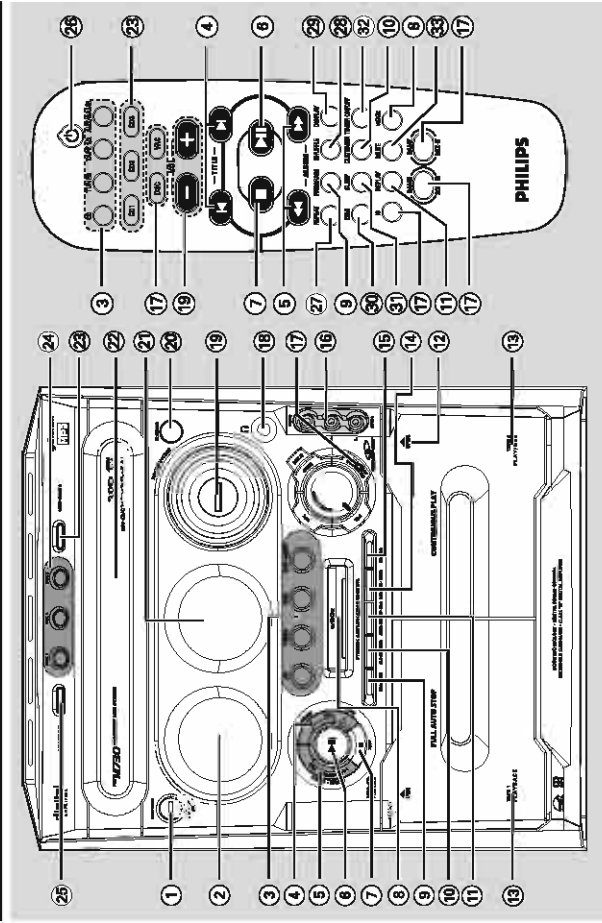
Using the remote control to operate the system

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

CAUTION!

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

Functional Overview



Main unit and remote control

- ① **STANDBY ON / ECO POWER**
 - Switches to the Eco Power standby mode or turns on the system.
 - *Switches to the standby mode.
- ② **Display screen**
- ③ **CD / TUNER / TAPE(TAPE1/2) / AUX-GAME**
 - Selects the relevant active mode.
 - CD: toggles between DISC 1-3.
 - TUNER: toggles between FM and MW band.
 - AUX-GAME: toggles between AUX and GAMEPORT mode.
 - TAPE: toggles between Tape Deck 1 and Tape Deck 2.
- ④ **PRESET (-) (14) PRESET (+) (15)**
 - CD: selects a track or selects a title from MP3 disc.
 - TUNER: selects a preset radio station.
 - CLOCK: sets the minutes.
- ⑤ **SEARCH-TUNING-ALBUM (16) (17) (18)**
 - * = Press and hold the button for more than two seconds.

- ⑥ **PLAY-PAUSE (19) (20)**
 - CD: *searches backward/forward.
 - MP3-CD: select an album
 - TUNER: tunes the radio frequency up/down.
 - CLOCK: sets the hours.
 - TAPE: searches backward/forward.
- ⑦ **STOP (21)**
 - CD: starts/pauses playback
 - TAPE: starts playback
 - (only on the main unit)
 - TUNER: *enters Plug & Play mode and/or starts preset radio station installation.
- ⑧ **WOOX (22)**
 - Selects the enhanced or normal WOOX sound effect.
- ⑨ **PROGRAM (23)**
 - CD: starts or confirms tracks programming.
 - TUNER: starts *automatic/manual preset

Functional Overview

- ⑩ **CLOCK-TIMER (CLK/TIMER)**
 - *Enters clock or timer setting mode.
- ⑪ **AUTO REPLAY-RDS**
 - Selects continuous playback in either AUTO PLAY or ONCE mode only.
 - Selects RDS information in the TUNER mode.
- ⑫ **OPEN (24)**
 - Opens the tape deck
- ⑬ **TAPE1 / TAPE2**
 - Tape deck 1 and tape deck 2.
- ⑭ **DUBBING-NEWS**
 - Dubs a tape
 - *Turns on/off news.
- ⑮ **RECORD**
 - Starts recording on tape deck 2
- ⑯ **VIDEO**
 - Use a video cable to connect to your game console's video output.
- ⑰ **AUDIO L / AUDIO R.**
 - Use an audio cable to connect to your game console's left/right audio output.
- ⑱ **INCREDIBLE SURROUND**
 - Creates a super-enhanced stereo effect.
- ⑲ **DSC**
 - Selects different type of preset sound equaliser settings (NEW AGE, ELECTRIC, DIGITAL, POP, CLASSIC or ROCK).
- ⑲ **VAC**
 - Selects different type of ambience-based equaliser settings (CINEMA, ARCADE, CONCERT, DISCO, CYBER or HALL).
- ⑲ **MIX IT (GAME MIX IT)**
 - Mixes the game sound with your favourite music from one of these music sources (CD, TUNER or AUX).
- ⑲ **GAME SOUND**
 - Adjusts the game's output volume level.
 - Selects different type of equaliser setting for Gameport (SPEED, PUNCH or BLAST).
- ⑲ **Plugs in the headphones jack. The speakers output will be cancelled.**
- ⑲ *** = Press and hold the button for more than two seconds.**

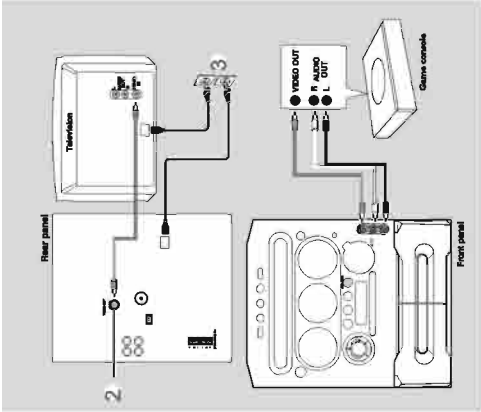
Control buttons available on the remote control only

- ⑲ **MASTER VOLUME (VOL + -)**
 - Adjusts the volume level.
- ⑲ **IR SENSOR**
 - Points the remote control towards this sensor.
- ⑲ **VU meters**
 - Indicates signal strength of left/right channel.
- ⑲ **DISC TRAY**
- ⑲ **OPEN-CLOSE (DISC 1-3)**
 - Opens/closes the respective disc tray.
- ⑲ **DISC 1, 2 and 3**
 - Selects a disc tray to playback
- ⑲ **DISC CHANGE**
 - Changes discs
- ⑲ **Switches to the Eco Power standby mode.**
- ⑲ ***Switches to the standby mode.**
- ⑲ **REPEAT**
 - Repeats a track/disc/all programmed tracks.
- ⑲ **SHUFFLE**
 - Turns on/off the random play mode.
- ⑲ **DISPLAY**
 - Displays the album and title name for MP3 disc.
- ⑲ **DIM**
 - Turns on/off the dim mode.
- ⑲ **SLEEP**
 - Sets the sleep timer function.
- ⑲ **TIMER ON/OFF**
 - Turns on/off the timer function.
- ⑲ **MUTE**
 - Mutes or restores the volume

About Gameport

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

Preparation before use



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

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

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

Starting operation

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

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

WARNING

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

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

Problem	Solution
Radio reception is poor.	If the signal is too weak, adjust the antenna or connect an external antenna for better reception. Increase the distance between the system and your TV or VCR.
"NO DISC" is displayed or the disc cannot be played.	Insert a disc. Load in the disc with the labeled side facing up. Replace or clean the disc, see "Care and safety information". Use a finalised CD-R(W) or a correct format disc.
The system does not react when buttons are pressed.	Remove and reconnect the AC power cord and switch on the system again.
Sound cannot be heard or is of poor quality.	Adjust the volume. Disconnect the headphones. Check that the speakers are connected correctly. Check that the AC power cord is connected properly.
The remote control does not function properly.	Select the source (CD or TUNER, for example) before pressing the function button (▶◀, ◀▶, ▶▶, ▶▶▶▶). Reduce the distance between the remote control and the system. Replace the battery. Point the remote control directly toward the IR sensor.
The timer is not working.	Set the clock correctly. Press TIMER ON/OFF to switch on the timer.
The system displays features automatically and buttons start flashing.	Press and hold DEMO STOP on the main unit to switch off the demonstration mode.

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

DISMANTLING INSTRUCTIONS

Dismantling of the Cassette Cover



Lift up and out

Figure 1

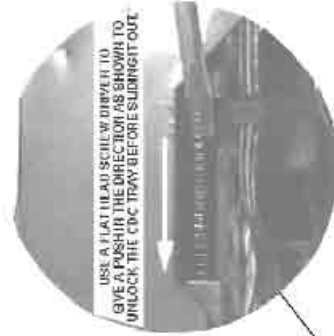
Remove Cassette Cover

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.

Figure 2



Sliding out the CDC Tray

Figure 3

Dismantling of the CDC Module and Front Panel

- 4) Remove the Cover Tray CDC as indicated.



Figure 4

Remove Cover Tray CDC

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



Front View CDC

Figure 5



Remove CDC Module

Figure 6

DISMANTLING INSTRUCTIONS

2-2

Dismantling the Front Panel assembly from the Mainframe assembly

- 1) Remove 2 screws B as shown in Figure 8 from the bottom of the Cabinet Front.

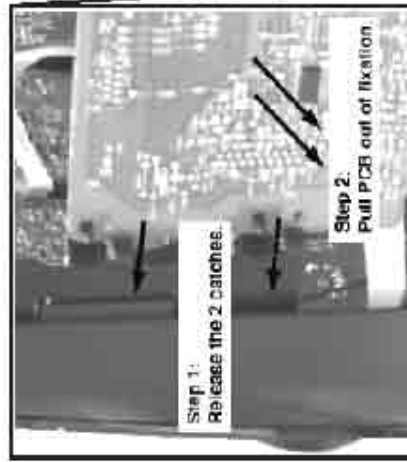


Figure 8

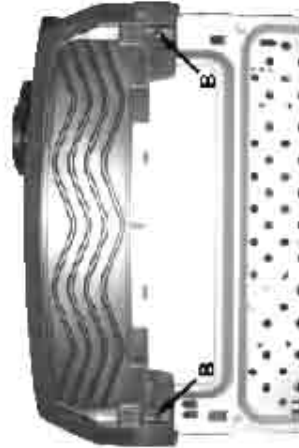


Figure 7

- 2) Release the fixation of the AF Board to Bracket CDC Right by releasing the 2 catches C1 (see Figure 9) and pulling the AF Board outwards as shown in Figure 9.
- 3) Unlatch 2 catches C2 (see Figure 9) on the left & right sides of the Cabinet Front and slide the Front Panel assembly out towards the front.

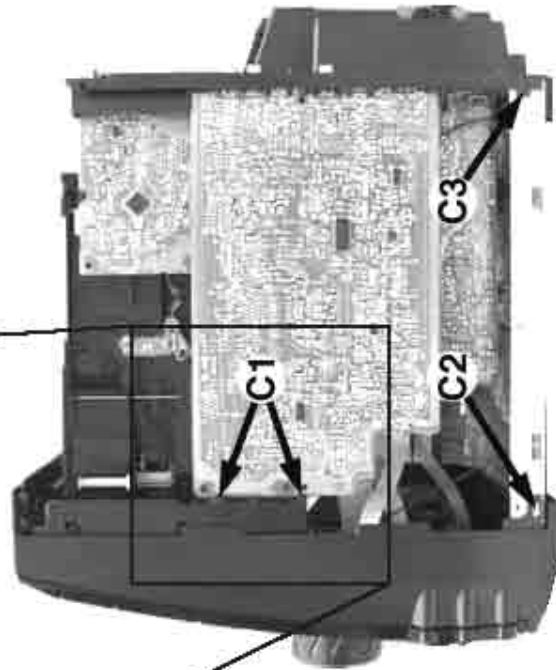


Figure 9

Dismantling of the Front Control Board and Front Display Board

2-2

- 1) The Knob Volume Rotary can be removed by pulling it out in the direction as shown in Figure 10.
- 2) The Knob Jog Rotary can be removed by inserting a strong string into the slot and pull it in the direction as shown in Figure 11.



Figure 10



Figure 11



Figure 12

- 3) Loosen 2 nuts (see Figure 12) to remove the Front Display Board.
- 4) Loosen 8 screws D (see Figure 13) to remove the Front Display Board.



Figure 13

- 5) Loosen 4 screws E (see Figure 13) to remove the CDC Key Board.



Figure 14

- 6) Loosen 8 screws F (see Figure 14) to remove the Front Control Board.
- 7) Loosen 3 screws G (see Figure 15) to remove the Headphone Board and Game Port Board.

DISMANTLING INSTRUCTIONS

Dismantling of the Game Port Board and Headphone Board

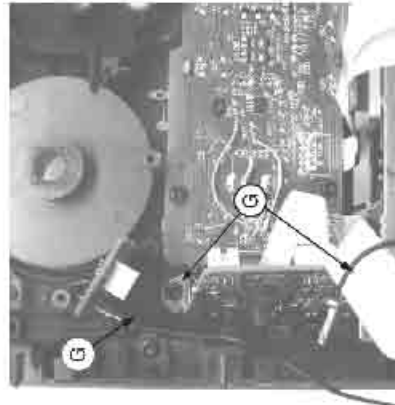


Figure 15

Dismantling of the ETF Tape Module



Figure 16

- 1) Loosen 6 screws H (see Figure 16) to remove the ETF Tape Module.

Dismantling of Rear Portion

- 1) Remove 2 screws I (see Figure 17) to loose the AF12 Board.
- 2) Loosen 3 screws J and uncatch N (see Figure 17) to remove the Tuner Board.
- 3) Loosen 1 screws K (see Figure 17) to remove the Video Board.
- 4) Loosen 4 screws L (see Figure 17) and uncatch C6 (see Figure 18) to remove the Fan.
- 5) Loosen 3 screws M (see Figure 17) and uncatch C3 (see Figure 8) to remove the Panel Rear by sliding it out towards the rear.

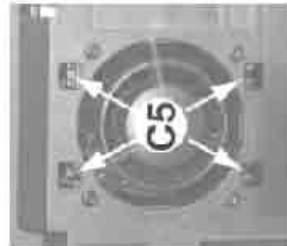


Figure 18

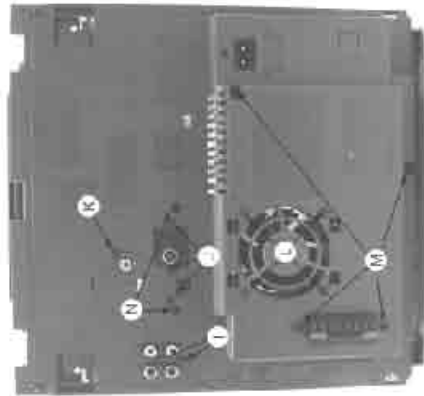


Figure 17

Repair Hint

- 1) During repair it is possible to disconnect the Tuner Board and CDC Module completely unless the fault is expected to be in that area. This will not affect the performance of the rest of the set.
- 2) Due to the short flex cable wires in the ETF Module, the PCB should be disconnected and reconnected on the reverse side of the tape mechanism to keep it electrically connected during repair, see Figure 19.

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

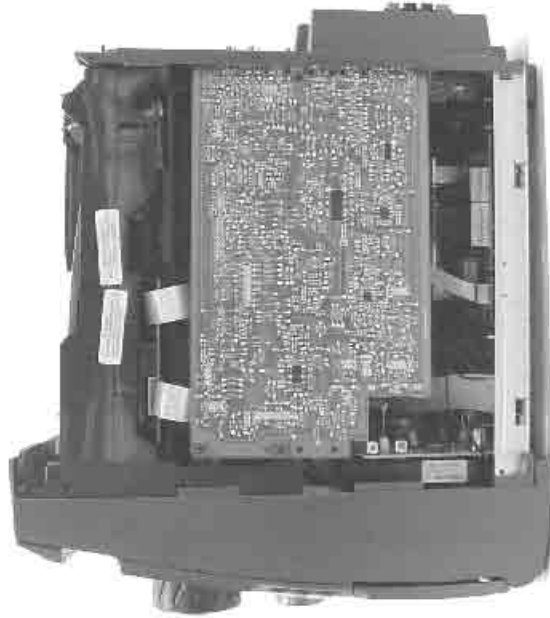


Figure 19

DISMANTLING INSTRUCTIONS

2-4

Service position A

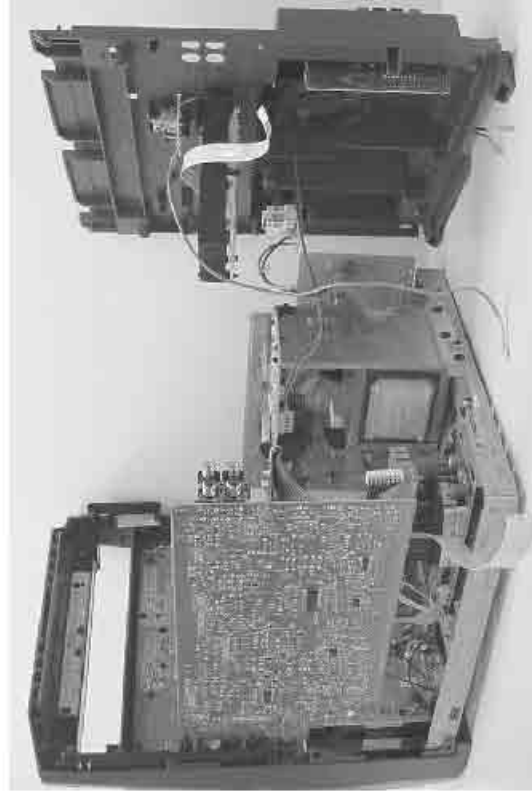


2-4

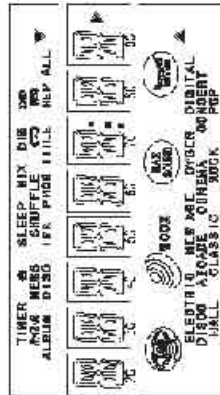
Service position B



Service position C



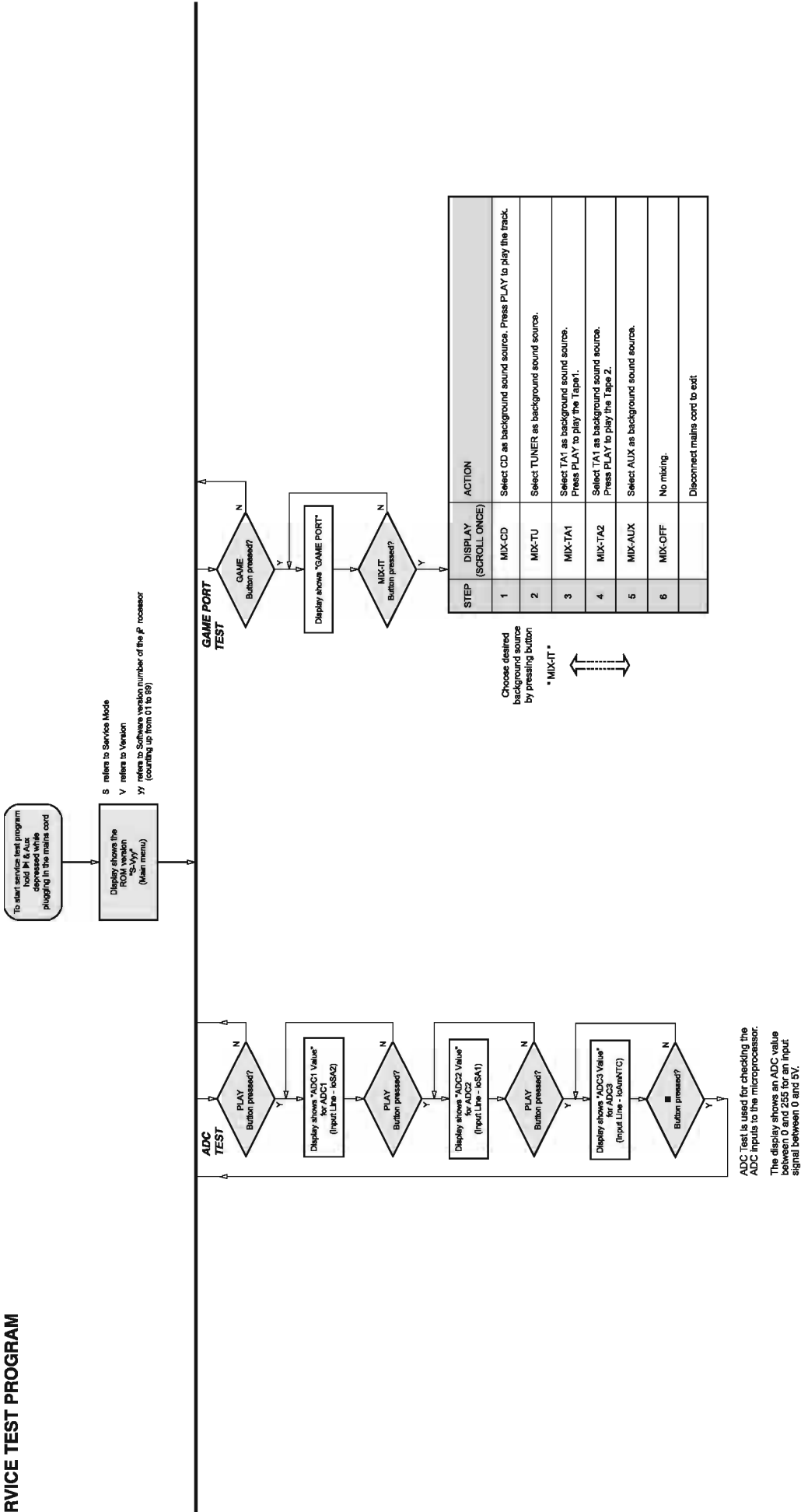
三



LED	PARAMETER	PARAMETER
CO	ON	-
TURN	OFF	-
TYPE	ON	-
AUX / SPARE	OFF	-
as MAKE (NOTICE)	OFF	OFF

To test Glendale LED, call for our new LED model.

TEST	Associated with	ACTION
EDFROM TEST	1-4 11 to 14	A test pattern will be sent to the EDFROM. "FBI" is displayed if the equipment read back the test pattern correctly. Otherwise "ERROR" will be displayed.
EDFROM FORMAT TEST	4-4	Local subject data. Display shows "TEST" for 1 second. Confirmed All prompts from the equipment will be tested
NOTARY ENCODER TEST	Radio Volume 100%	Display shows status for 2 seconds. Volume two shows no clearances in steps of 1 until 8 (Min.) or 49 (Max.) is reached.
DEMO	AA MAINWOCK 2	DEMO will begin on 12 or 17. The message "DEMO ON" or "DEMO OFF" will scroll across the display to show the new status of the set.
LEAVE SERVICE TEST PROGRAM	Disconnect main cable	

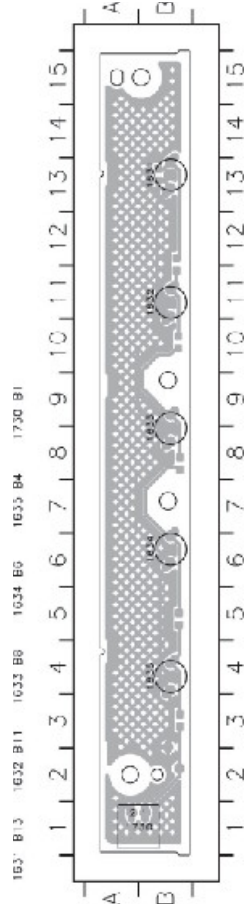


FRONT CONTROL BOARD

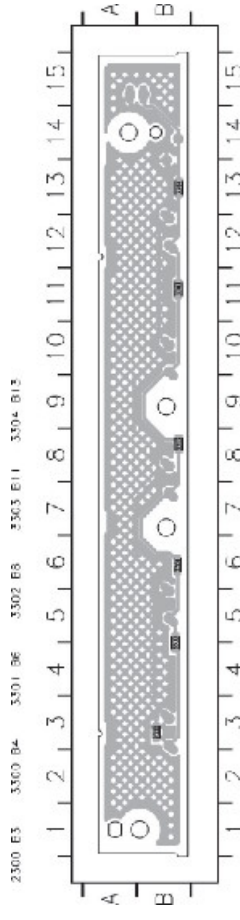
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Control part - Component Layout	5-2
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Control part - Circuit diagram	5-4
Game Port part - Layout & Circuit diagram	5-5
Electrical parts list.....	5-6

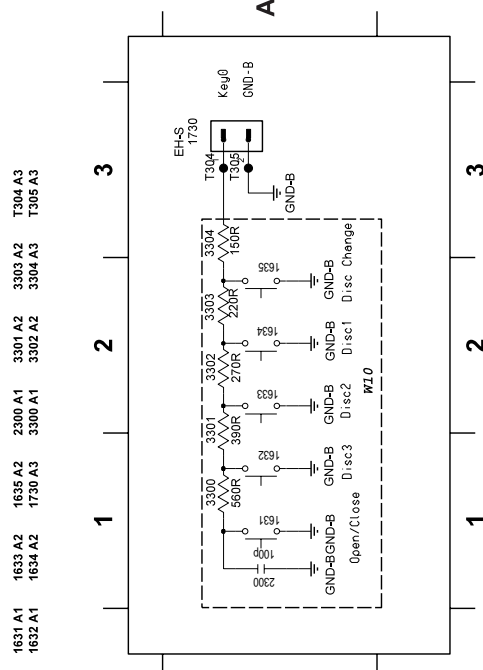
CDC KEY BOARD - COMPONENT LAYOUT



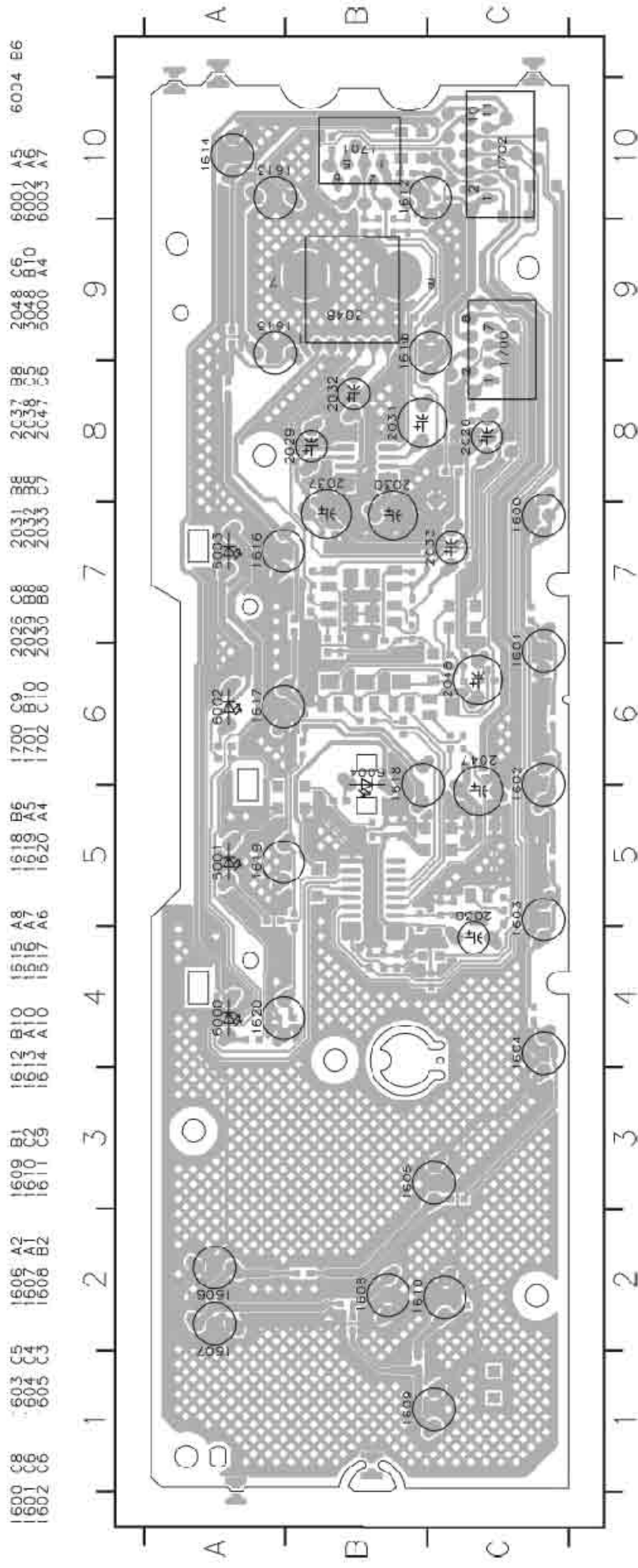
CDC KEY BOARD - CHIP LAYOUT



CDC KEY BOARD - CIRCUIT DIAGRAM



CONTROL BOARD - COMPONENT LAYOUT

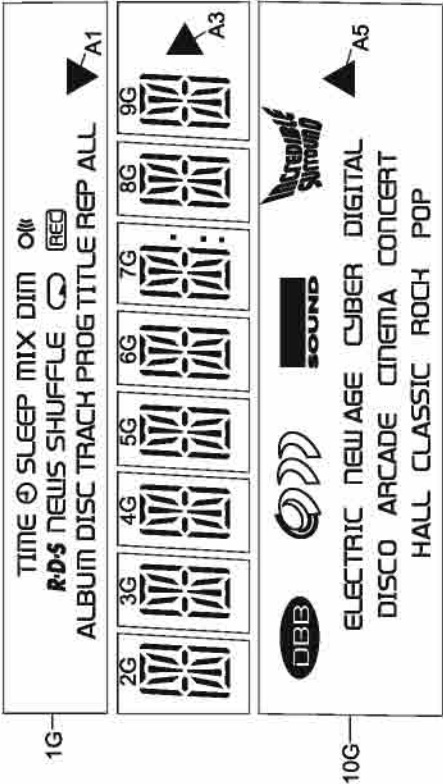


ELECTRICAL PARTSLIST - FRONT CONTROL BOARD

1600	4822 276 13775	SWITCH
1601	4822 276 13775	SWITCH
1602	4822 276 13775	SWITCH
1603	4822 276 13775	SWITCH
1604	4822 276 13775	SWITCH
1605	4822 276 13775	SWITCH
1606	4822 276 13775	SWITCH
1607	4822 276 13775	SWITCH
1608	4822 276 13775	SWITCH
1609	4822 276 13775	SWITCH
1610	4822 276 13775	SWITCH
1611	4822 276 13775	SWITCH
1612	4822 276 13775	SWITCH
1613	4822 276 13775	SWITCH
1614	4822 276 13775	SWITCH
1615	4822 276 13775	SWITCH
1616	4822 276 13775	SWITCH
1617	4822 276 13775	SWITCH
1618	4822 276 13775	SWITCH
1619	4822 276 13775	SWITCH
1620	4822 276 13775	SWITCH
1631	4822 276 13775	SWITCH
1632	4822 276 13775	SWITCH
1633	4822 276 13775	SWITCH
1634	4822 276 13775	SWITCH
1635	4822 276 13775	SWITCH
1720	2422 026 05625	SOC CINCH H 3P
3048	2122 400 00002	POTM CAR LIN 20KX2
6000	4822 130 11589	LED
6001	4822 130 11589	LED
6002	4822 130 11589	LED
6003	4822 130 11589	LED
6004	9322 178 87676	LED
7019	4822 209 15449	IC 74HC4094D

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

FTD DISPLAY PIN CONNECTION

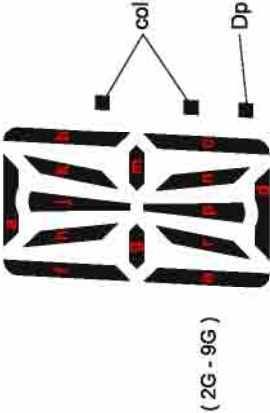


FRONT DISPLAY BOARD

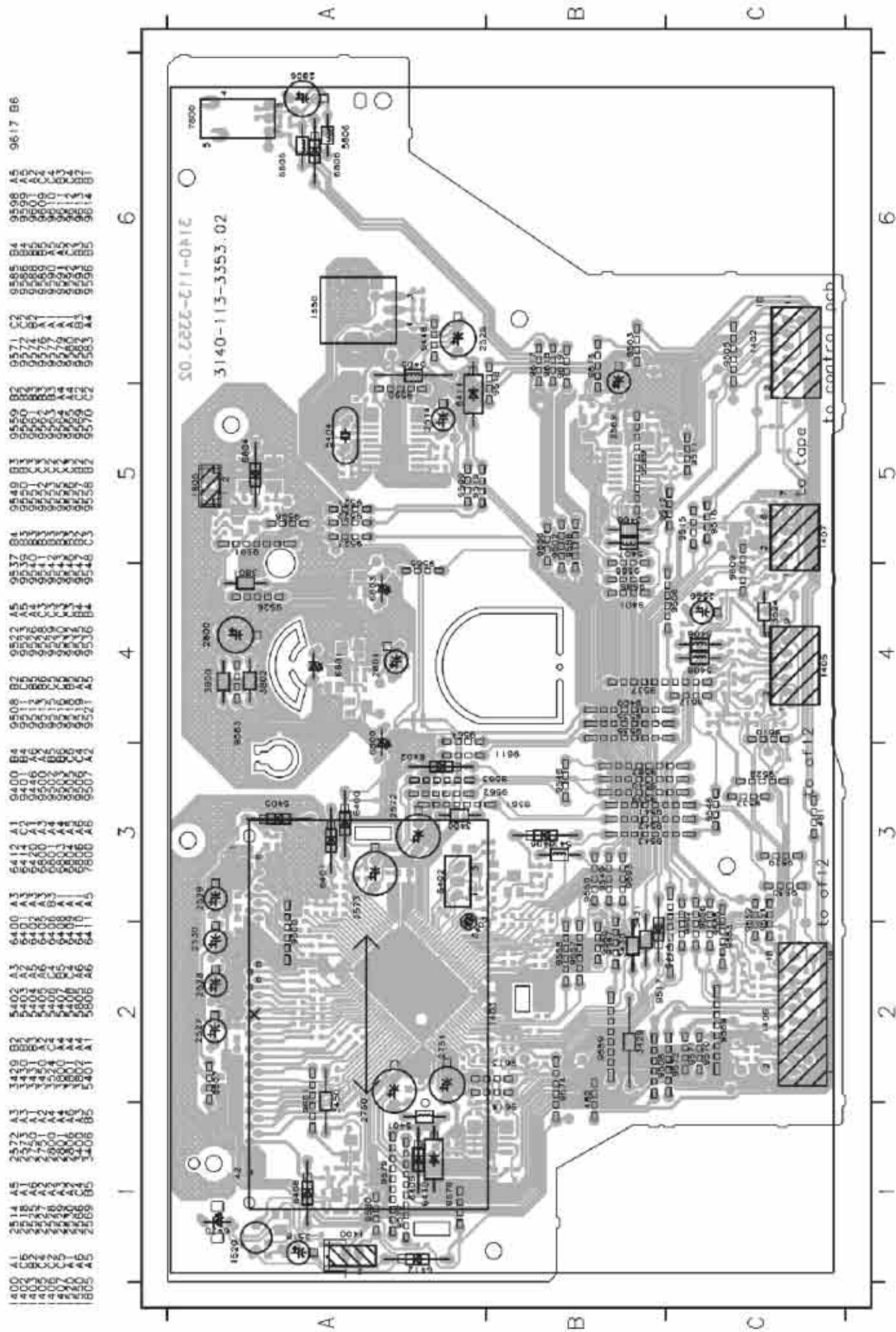
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SDTC Key part - Layout & Circuit diagram	6-5
Electrical parts list.....	6-5

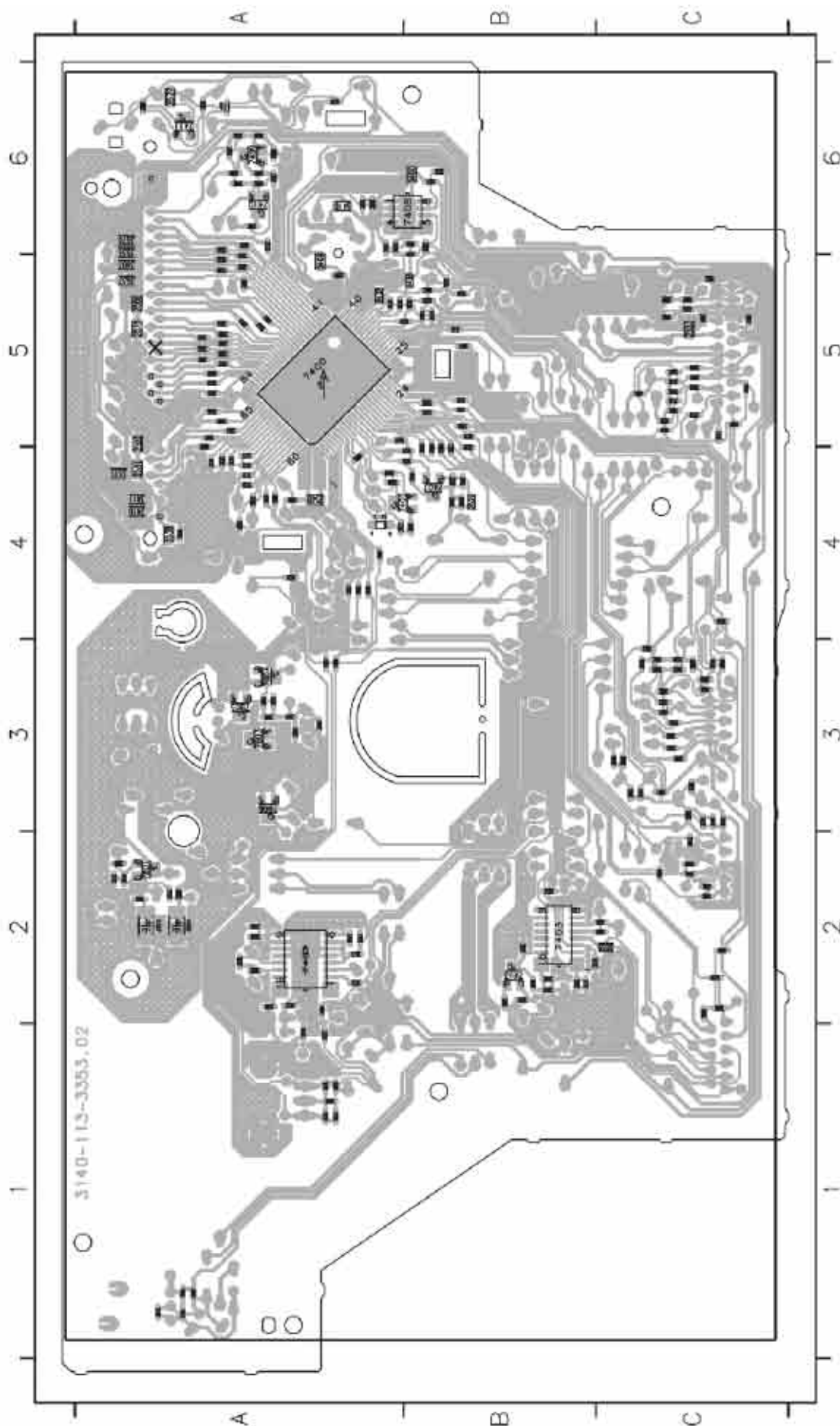
	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G
P1	TIME	a	a	a	a	a	a	a	a	DBB
P2	⊕	h	h	h	h	h	h	h	h	
P3	SLEEP	j.p	j.p	j.p	j.p	j.p	j.p	j.p	j.p	⌂(Left)
P4	MIX	k	k	k	k	k	k	k	k	⌂(Right)
P5	DIM	b	b	b	b	b	b	b	b	
P6	OFF	f	f	f	f	f	f	f	f	
P7	RDS	m	m	m	m	m	m	m	m	ELECTRIC
P8	NEWS	g	g	g	g	g	g	g	g	NEW AGE
P9	SHUFFLE	c	c	c	c	c	c	c	c	CYBER
P10		e	e	e	e	e	e	e	e	DIGITAL
P11	REG	r	r	r	r	r	r	r	r	DISCO
P12	ALBUM	n	n	n	n	n	n	n	n	ARCADE
P13	DISC	d	d	d	d	d	d	d	d	CINEMA
P14	TRACH	-	-	-	-	-	col	-	-	CONCERT
P15	PROG	-	-	-	-	-	Dp	-	-	HALL
P16	TITLE	-	-	-	-	-	-	-	-	CLASSIC
P17	RGP	-	-	-	-	-	-	-	-	ROCK
P18	ALL	-	-	-	-	-	-	-	-	POP
P19	▼	-	-	-	-	-	-	-	-	▲



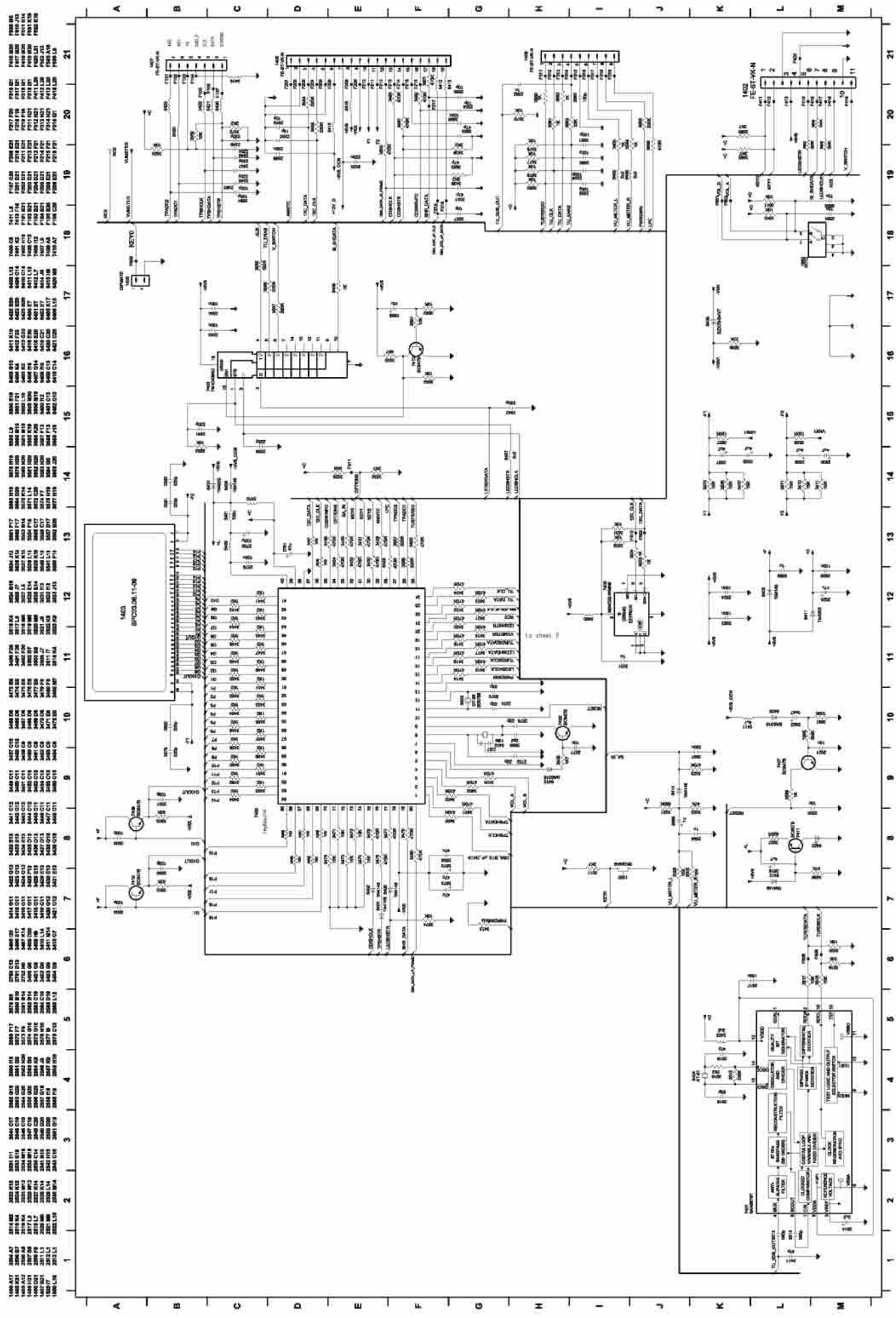
DISPLAY BOARD - COMPONENT LAYOUT



B-3

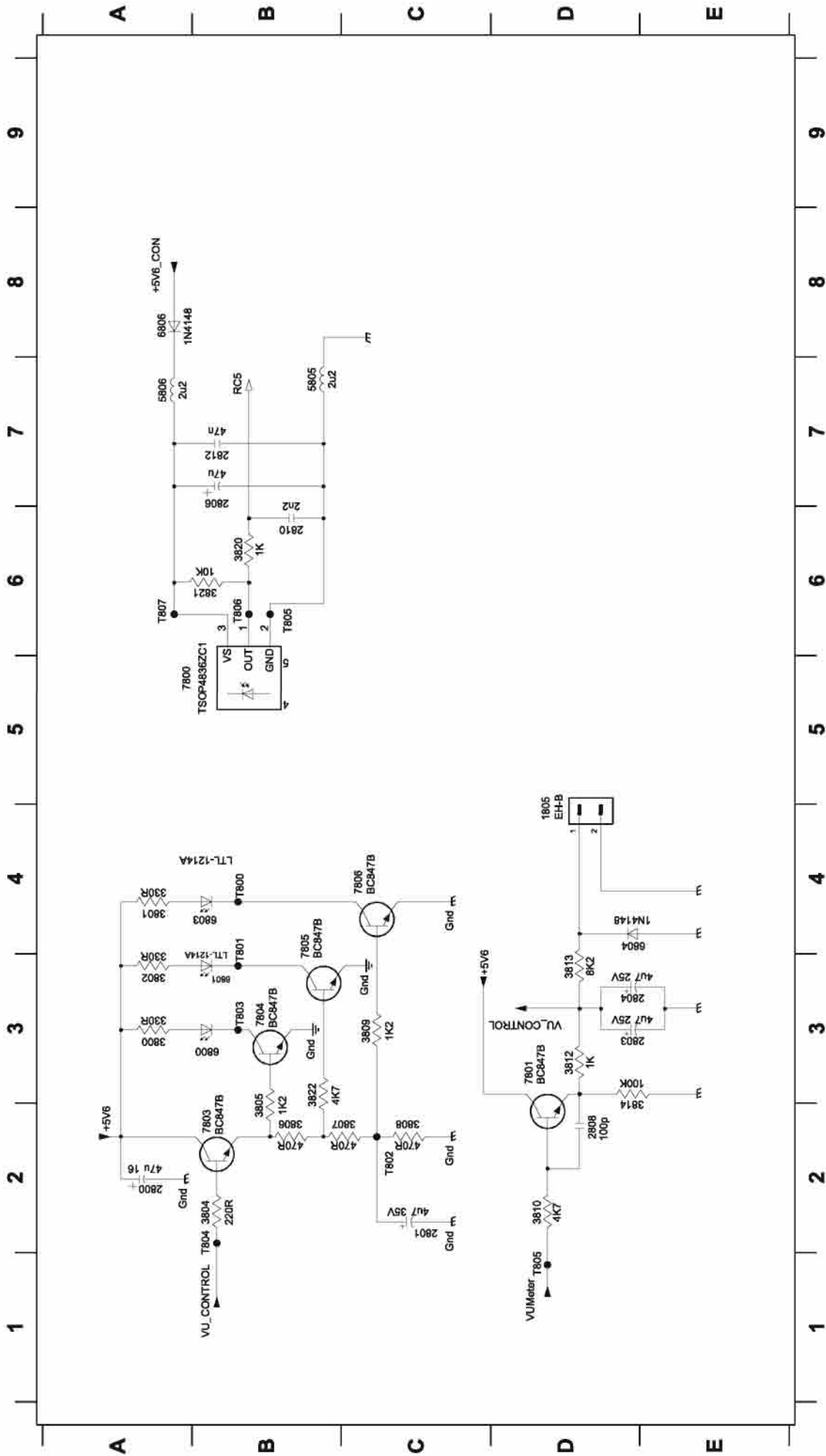


DISPLAY BOARD - CIRCUIT DIAGRAM 1

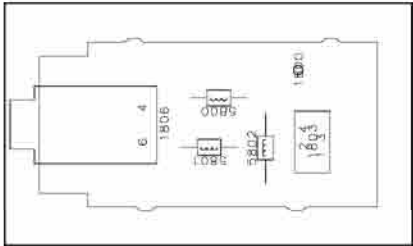


DISPLAY BOARD - CIRCUIT DIAGRAM 2

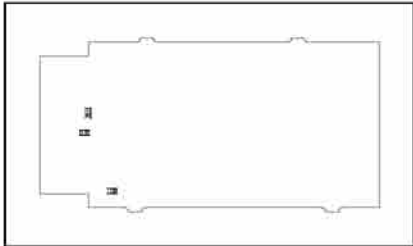
1805 D4	2803 D3	2808 D2	3800 A3	3804 B2	3807 C2	3810 D2	3814 D3	3822 B3	6800 B3	6804 D4	7801 D3	7805 B3	T801 B4	T804 B2	T806 B6
2800 A2	2804 D3	2810 B6	3801 A4	3805 B2	3808 C2	3812 D3	3820 B6	5805 B7	6801 B3	6806 A8	7803 B2	7806 C4	T802 C2	T805 D1	T807 A6
2801 C2	2806 B7	2812 B7	3802 A3	3806 B2	3809 C3	3813 D3	3821 B6	5806 A7	6803 B4	7800 A5	7804 B3	T800 B4	T803 B3	T805 B6	



HEADPHONE BOARD - COMPONENT LAYOUT



HEADPHONE BOARD - CHIP LAYOUT



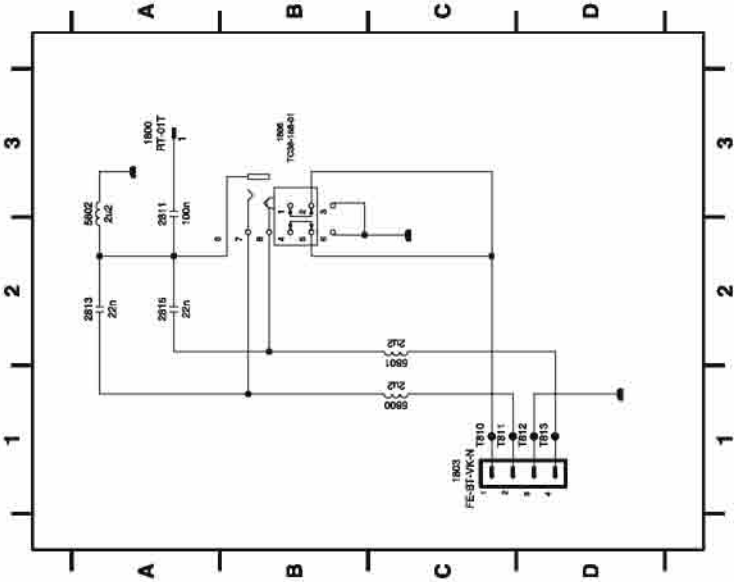
ELECTRICAL PARTSLIST - FRONT DISPLAY BOARD

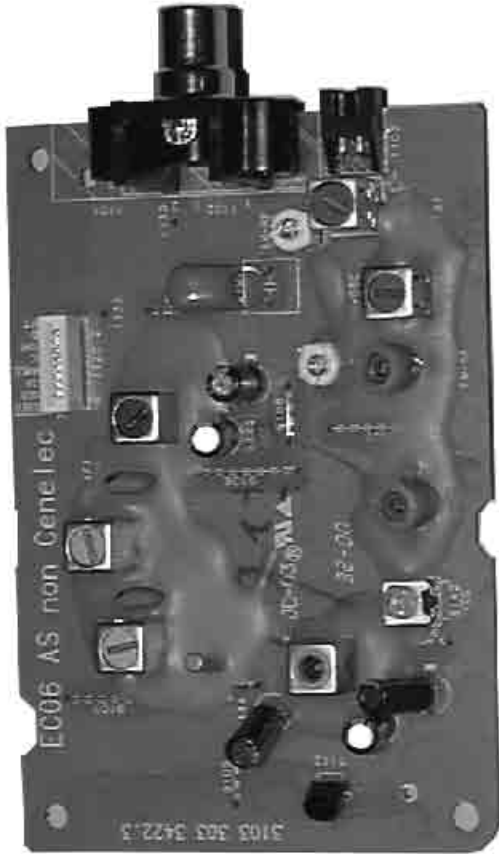
1403	3140	118	51831	FTD (MINI 404)
1520	4822	276	13775	SWITCH
1550	2422	129	16708	ROT ENCODER 24P
6420	9322	167	73676	LED LTL-4221NLC-KA
6800	9322	172	75676	LED VS LTL-1CHKFK
6801	9322	172	75676	LED VS LTL-1CHKFK
6803	9322	167	73676	LED LTL-4221NLC-KA
7400	9322	189	17671	IC SM TMP88PU74YF
7401	4822	209	31981	IC SAA6579T
7403	4822	209	15449	IC 74HC4094D
7405	9322	145	26668	EEPROM M24C02-WMN6
7800	9322	185	95667	IR RECEIVER TSOP4836

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

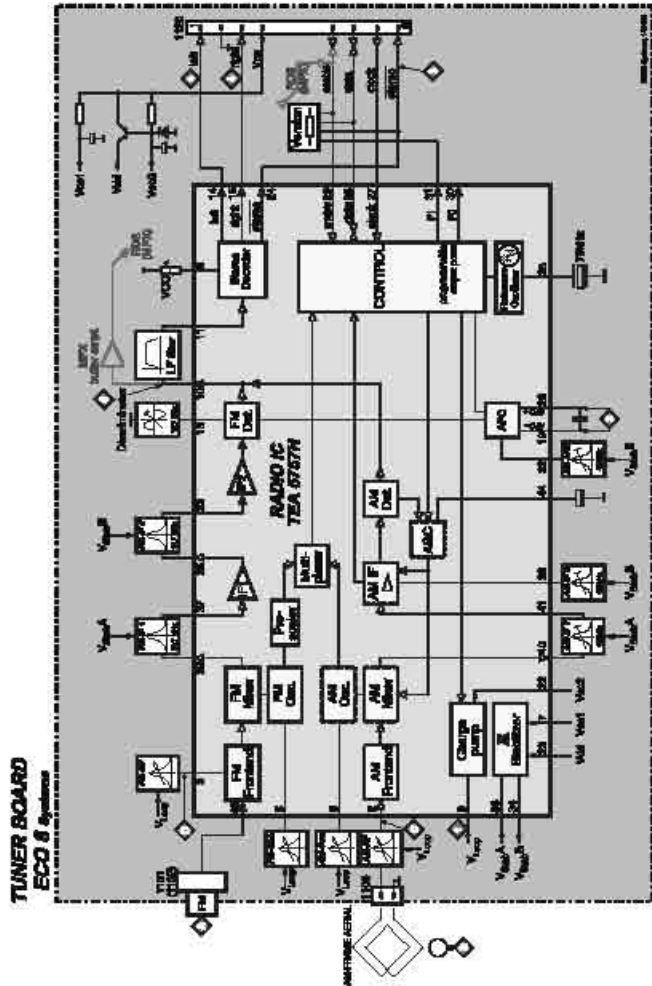
HEADPHONE BOARD - CIRCUIT DIAGRAM

1800 AJ 1800 B3 2813 A2 5802 C1 5800 C1 2811 A1 2815 A2 1803 C1 1803 D1 1803 D2 1803 D3 1803 D4 1803 D5 1803 D6 1803 D7 1803 D8 1803 D9 1803 D10 1803 D11 1803 D12 1803 D13 1803 D14 1803 D15 1803 D16 1803 D17 1803 D18 1803 D19 1803 D20 1803 D21 1803 D22 1803 D23 1803 D24 1803 D25 1803 D26 1803 D27 1803 D28 1803 D29 1803 D30 1803 D31 1803 D32 1803 D33 1803 D34 1803 D35 1803 D36 1803 D37 1803 D38 1803 D39 1803 D40 1803 D41 1803 D42 1803 D43 1803 D44 1803 D45 1803 D46 1803 D47 1803 D48 1803 D49 1803 D50 1803 D51 1803 D52 1803 D53 1803 D54 1803 D55 1803 D56 1803 D57 1803 D58 1803 D59 1803 D60 1803 D61 1803 D62 1803 D63 1803 D64 1803 D65 1803 D66 1803 D67 1803 D68 1803 D69 1803 D70 1803 D71 1803 D72 1803 D73 1803 D74 1803 D75 1803 D76 1803 D77 1803 D78 1803 D79 1803 D80 1803 D81 1803 D82 1803 D83 1803 D84 1803 D85 1803 D86 1803 D87 1803 D88 1803 D89 1803 D90 1803 D91 1803 D92 1803 D93 1803 D94 1803 D95 1803 D96 1803 D97 1803 D98 1803 D99 1803 D100





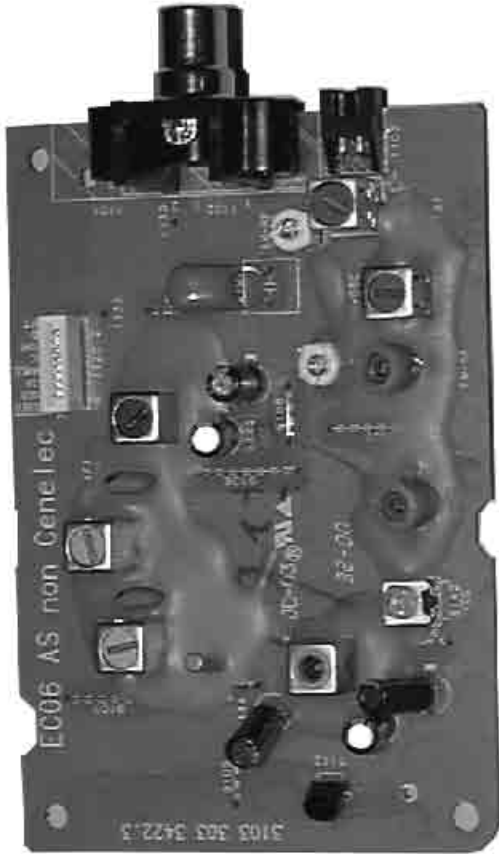
BLOCK DIAGRAM



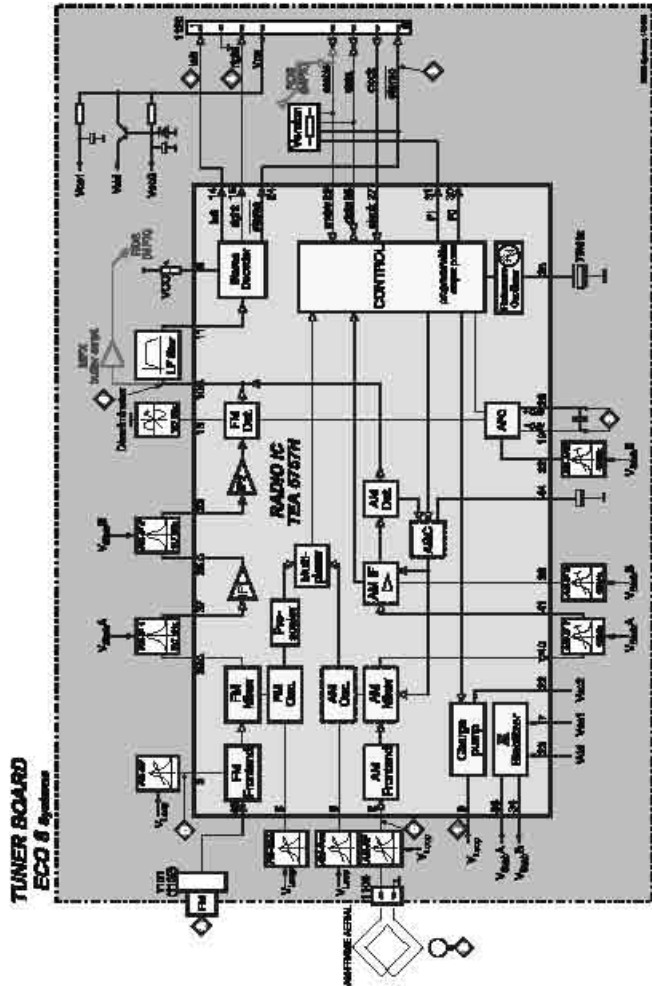
ECO6 Tuner Board
version: **SYSTEMS non-CENELEC**

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Schematic Diagram	7A-2
Component Layout	7A-3
Adjustment table	7A-3
Electrical Partials	7A-4



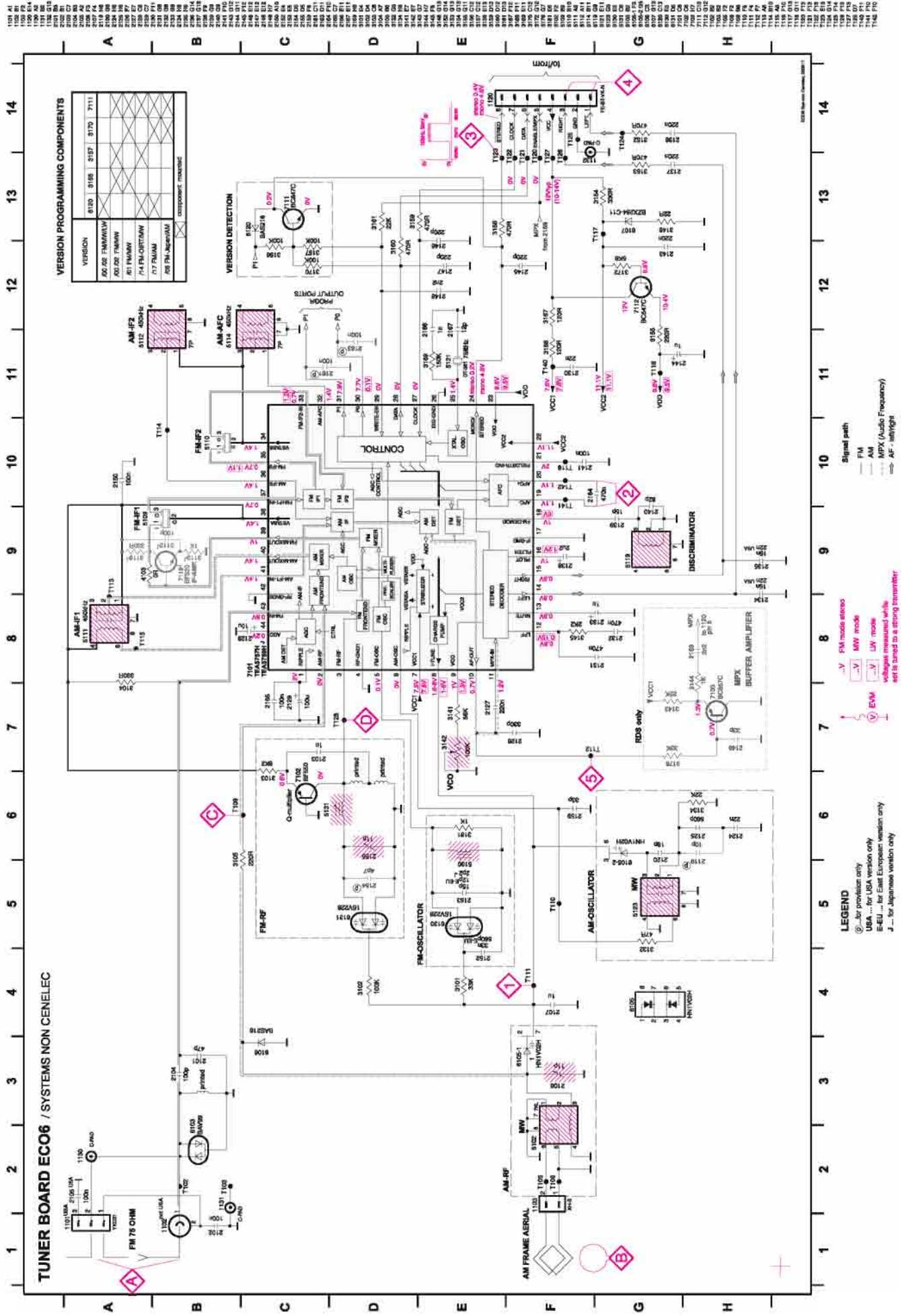
BLOCK DIAGRAM



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

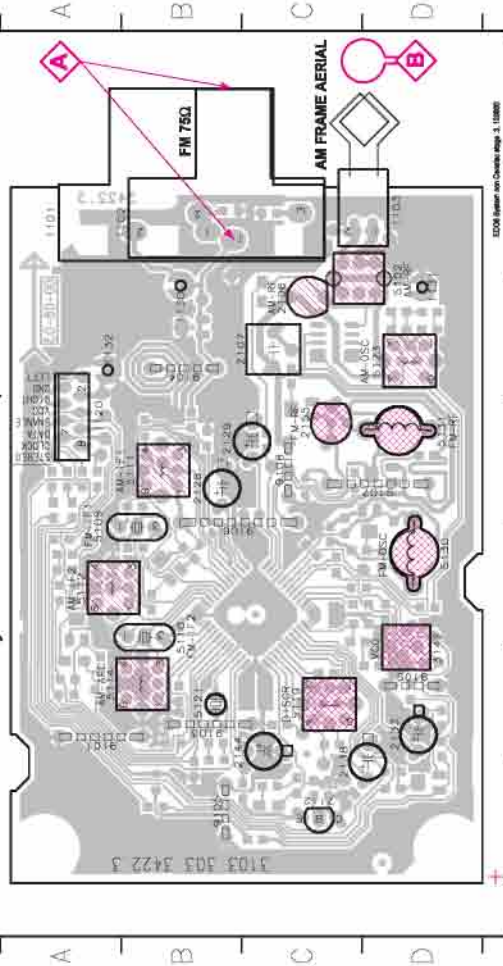
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1101 A8 1120 A4 1132 A5 2126 C4 2136 C5 3142 D2 5110 B3 5114 A2 5123 D5 7112 C1 9104 B5 9107 D4
1102 B6 1130 B5 2126 C5 2129 B4 2144 B2 5102 D6 5111 B4 5119 C2 5130 D3 9101 B4 9105 B1 9108 C4
1103 D6 1131 D5 2107 B5 2153 D2 2155 C4 5109 A3 5121 B2 5131 D4 9103 B2 9106 B3 9108 D2

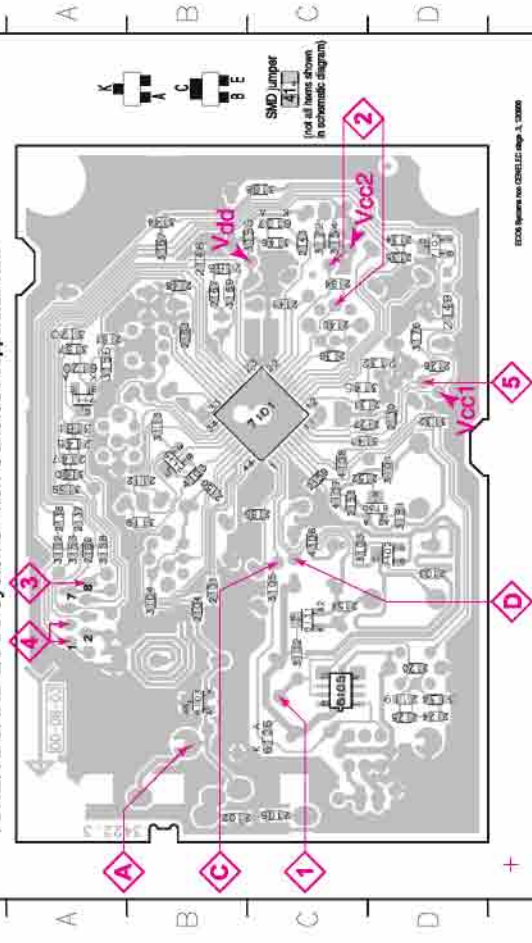
TUNER BOARD ECO6 Systems non Cenelec / componentside view



ECO6 System non Cenelec step 1, 110000

2101 B4 2119 D3 2130 D5 2137 A4 2148 B7 2153 C5 2165 C4 3103 C4 3134 D3 3152 A4 3159 A4 3169 B6 4106 C4 6107 C7 7103 D7
2102 B1 2120 D3 2131 C5 2136 C4 2147 A5 2154 A4 2166 B6 3104 B4 3141 C5 3153 A4 3159 A5 3170 A6 4107 C5 6103 A6 7111 A5
2103 D4 2124 D3 2132 D6 2140 C6 2148 B6 2159 C5 2167 B6 3105 C4 3143 D6 3154 C7 3172 C7 4108 C5 6103 D4 7119 B5
2104 B4 2125 D3 2134 D7 2141 C6 2149 D6 2161 A6 2169 A4 3113 B5 3144 B7 3155 C7 3161 A5 3176 D6 6103 B3 6131 C4
2105 C1 2126 D6 2135 D7 2143 C7 2150 B5 2163 B6 3101 D5 3119 B5 3146 C5 3155 A6 3167 B7 3181 D4 6105 C3 7101 C5
2112 B5 2127 C5 2135 A4 2145 A5 2162 C5 2164 C6 3102 C3 3132 D5 3146 C7 3167 A6 3168 C7 4103 B5 6106 C3 7102 D4

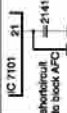
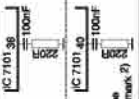
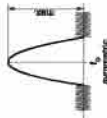
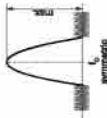
TUNER BOARD ECO6 Systems - non Cenelec / copper-side view



ECO6 System non Cenelec step 1, 120000

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

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

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

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

¹⁾ If sensitivity of frequency counter is too low adjust to max. channel separation (input signal: stereo left 80% + 9%, adjust output on right channel to minimum)

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

⁴⁾ MW has to be aligned before LW.

Repeat

MISCELLANEOUS

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

CAPACITORS

2101	4822 126 13692	47pF	1%	63V	
2102	4822 126 13638	100nF	10%	50V	not USA
2103	5322 122 31647	1nF	10%	83V	
2104	5322 122 32531	100pF	5%	50V	
2105	4822 126 13638	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	
2128	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 13638	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	
2148	5322 122 32659	33pF	5%	50V	RDS only

2150	4822 126 13638	100nF	10%	50V	
2152	4822 126 12105	33nF	5%	63V	not for East Europe
2152	5322 116 80853	960pF	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 13638	100nF	10%	50V	
2166	5322 122 31647	1nF	10%	63V	

2167	4822 122 33926	12pF	5%	50V	
2168	4822 122 33127	2.2nF	10%	63V	RDS only

RESISTORS

3101	4822 051 20333	33kΩ	5%	0.1W	
3102	4822 117 10637	100kΩ	1%	0.1W	
3103	4822 051 20822	8.2kΩ	5%	0.1W	
3104	4822 117 13577	330kΩ	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 20228	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 20862	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			
4105	4822 051 20008	CHIP JUMPER 0805			
4107	4822 051 20008	CHIP JUMPER 0805			
4108	4822 051 20008	CHIP JUMPER 0805			

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			
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COILS

6103	5322 130 34337	BAV99			
6105	4822 130 83075	HN1V02H			
6106	4822 130 83757	BA5216			
6107	9340 386 90115	BZX284-C11			
6120	4822 130 83757	BA5216			

6130	4822 130 82833	1SV228			
6131	4822 130 82833	1SV228			

DIODES

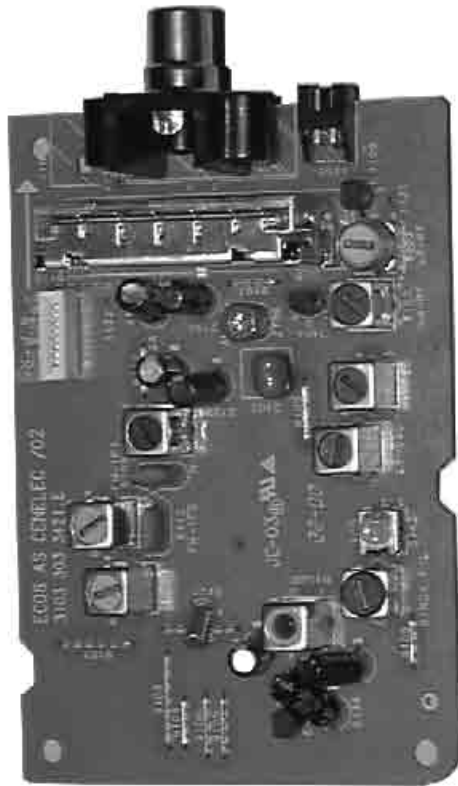
7102	4822 130 42131	BF550			
7103	5322 130 42756	BC857C			
7111	5322 130 42756	BC847C			
7112	4822 130 44503	BC547C			

TRANSISTORS

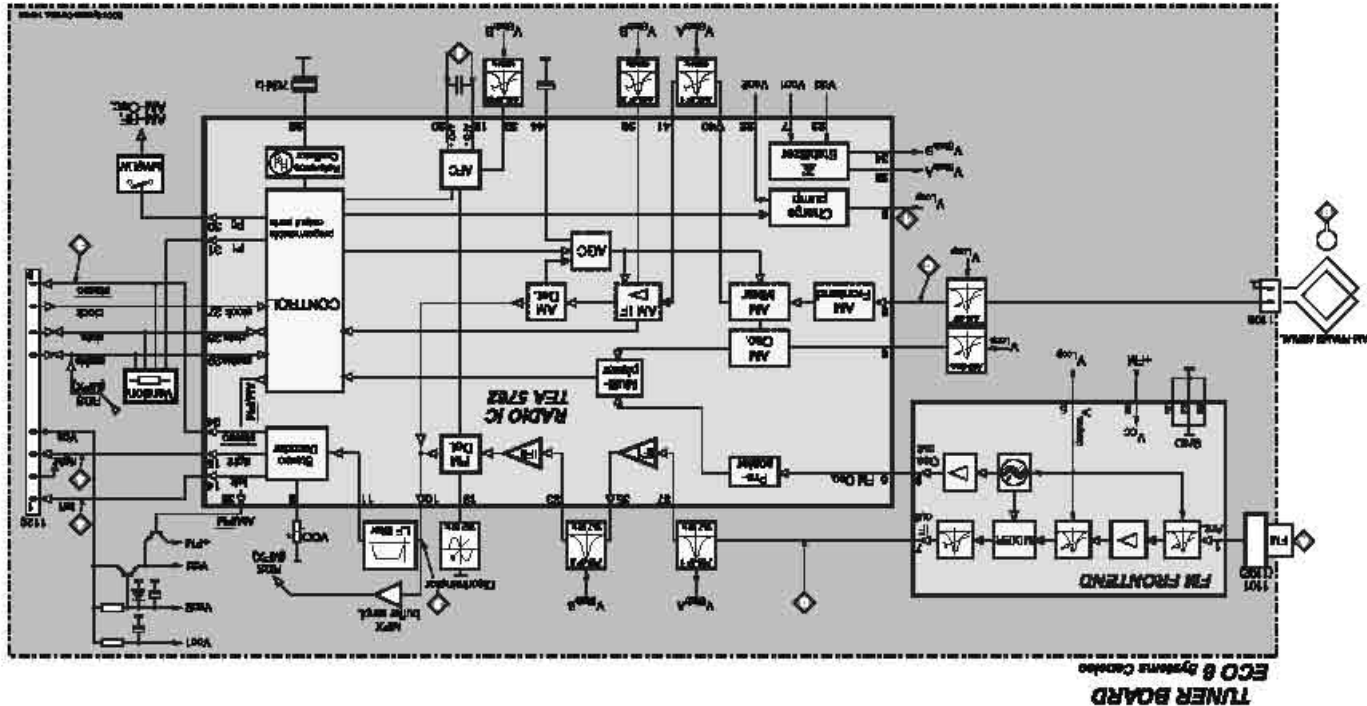
7101	9351 740 80557	TEA5757HV1, RADIO IC			
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INTEGRATED CIRCUITS

7101	9351 740 80557	TEA5757HV1, RADIO IC			
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BLOCK DIAGRAM

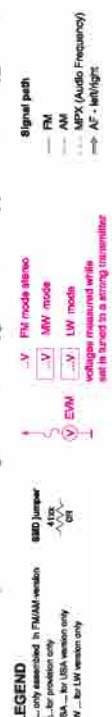


ECO6 Tuner Board version: **SYSTEMS CENELEC**

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VERSION PROGRAMMING COMPONENTS



... ministerial appointments and the PM himself.

1101 B5	1110 B4	1131 C5	2107 B3	2133 C1	2162 A4	5102 C4	5110 A2	5114 A2	5121 B2	7104 C4	9101 A2	9104 B1	9107 B4	9110 A4
1102 B5	1120 A4	1132 A4	2128 A3	2138 B1	2191 B4	5103 C4	5111 A3	5115 C2	5122 C3	7105 C5	9102 B2	9105 B1	9108 B3	9111 A3
1103 B5	1130 A5	1140 A4	2129 B3	2148 B1	3142 C3	5109 B3	5112 A2	5119 B2	5123 C3	7112 B1	9103 A1	9106 B1	9109 C2	

[illegible][illegible]

- 1) If sensitivity of frequency counter is too low adjust to max. channel separation (input signal: stereo left 80% + 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.

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

Electrical Partsilist *ECO6* SYSTEMS-CENELEC

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, 7, 8P	

CAPACITORS

2102	4822 126 13838	100nF	10%	50V	not USA
2105	4822 126 13838	100nF	10%	50V	not USA
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
2108	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 33991	3.3nF	10%	63V	LW only
2123	2020 552 93484	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 32854	22nF	10%	63V	
2131	4822 126 13482	470nF	20%	16V	
2132	4822 126 13482	470nF	20%	16V	
2133	4822 124 21913	1μF	20%	63V	
2134	3198 017 31530	15nF	10%	50V	not USA
2134	5322 122 32654	22nF	10%	63V	USA only
2135	3198 017 31530	15nF	10%	50V	not USA
2135	3198 017 32230	22nF	10%	25V	USA only
2136	4822 126 14076	220nF	20%	25V	
2137	4822 126 14076	220nF	20%	25V	
2138	4822 124 22852	2.2μF	20%	50V	
2138	4822 126 14238	19pF	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	
2150	4822 126 13838	100nF	10%	50V	RDS only
2159	5322 122 31151	22μF	20%	50V	
2163	4822 126 13838	100nF	10%	50V	LW only
2164	4822 126 13482	470nF	20%	16V	
2165	4822 126 13838	100nF	10%	50V	
2166	5322 122 31647	1nF	10%	63V	
2167	4822 122 33926	12pF	5%	50V	
2169	4822 122 33127	2.2nF	10%	63V	RDS only
2180	3198 017 31030	10nF	10%	50V	
2190	4822 126 13838	100nF	10%	50V	
2191	4822 124 40178	100μF	20%	10V	

RESISTORS

3105	4822 117 11503	220Ω	5%	0.1W	
3105	4822 117 11449	2.2kΩ	1%	0.1W	
3105	4822 051 20472	4.7kΩ	5%	0.1W	LW only
3123	4822 051 20472	4.7kΩ	5%	0.1W	LW only
3125	4822 117 10833	10kΩ	1%	0.1W	LW only

RESISTORS

3128	4822 117 11449	2.2kΩ	1%	0.1W	LW only
3130	3198 021 38210	820Ω	5%	0.06W	
3131	3198 021 38210	820Ω	5%	0.06W	
3132	4822 051 20478	47Ω	5%	0.1W	
3134	4822 051 20223	22kΩ	5%	0.1W	
3135	3198 021 31020	1kΩ	5%	0.06W	
3137	4822 051 20223	22kΩ	5%	0.1W	LW only
3141	4822 117 11448	56kΩ	1%	0.1W	
3142	4822 100 12169	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	RDS only
3171	4822 117 10834	47kΩ	1%	0.1W	LW only
3172	4822 051 20562	5.6kΩ	5%	0.1W	
3176	4822 051 20333	33kΩ	5%	0.1W	
3180	4822 117 10833	10kΩ	1%	0.1W	
3180	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			FM/AM only
4106	4822 051 20008	CHIP JUMPER 0805			FM/AM only
4107	4822 051 20008	CHIP JUMPER 0805			FM/AM only

COILS

5102	4822 157 71634	RF-COIL, MW			
5103	2422 549 44107	RF-COIL, LW			LW only
5109	4822 157 71639	FM-IF FILTER 10.7MHz			
5110	4822 242 70665	FM-IF FILTER 10.7MHz			
5111	2422 549 44023	AM-IF FILTER 450kHz			
5112	4822 157 70302	AM-IF FILTER 450kHz			
5114	4822 157 70302	AM-IF FILTER 450kHz			
5115	4822 157 71636	ANTI BIRDY FILTER			
5118	2422 535 95681	100nH			
5119	4822 157 11443	DISCRIMINATOR COIL			
5121	4822 242 10261	QUARTZ 75kHz			
5122	2422 549 44108	RF-COIL, LW-OSCILLATOR			LW only
5123	2422 549 44108	RF-COIL, MW-OSCILLATOR			

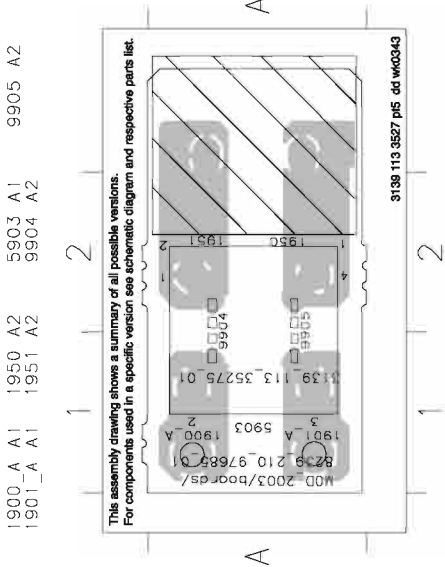
DIODES

6105	4822 130 83075	HN1V02H			
6106	4822 130 83757	BAS216			
6107	9340 386 90115	BZX284-C11			
6120	4822 130 83757	BAS216			
TRANSISTORS					
7103	5322 130 42756	BC857C			RDS only
7104	9322 003 84678	T8C337-40			LW only
7105	9322 003 84676	T8C337-40			LW only
7109	4822 130 60373	BC856B			LW only
7110	4822 130 60373	BC856B			
7111	5322 130 42755	BC847C			
7112	4822 130 44503	BC547C			LW only
7122	5322 130 42755	BC847C			LW only
7124	5322 130 42755	BC847C			

INTEGRATED CIRCUITS

7101	4822 209 90316	TEA5762HM1, RADIO IC			
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MAINS SOCKET UCD BOARD - COMPONENT LAYOUT



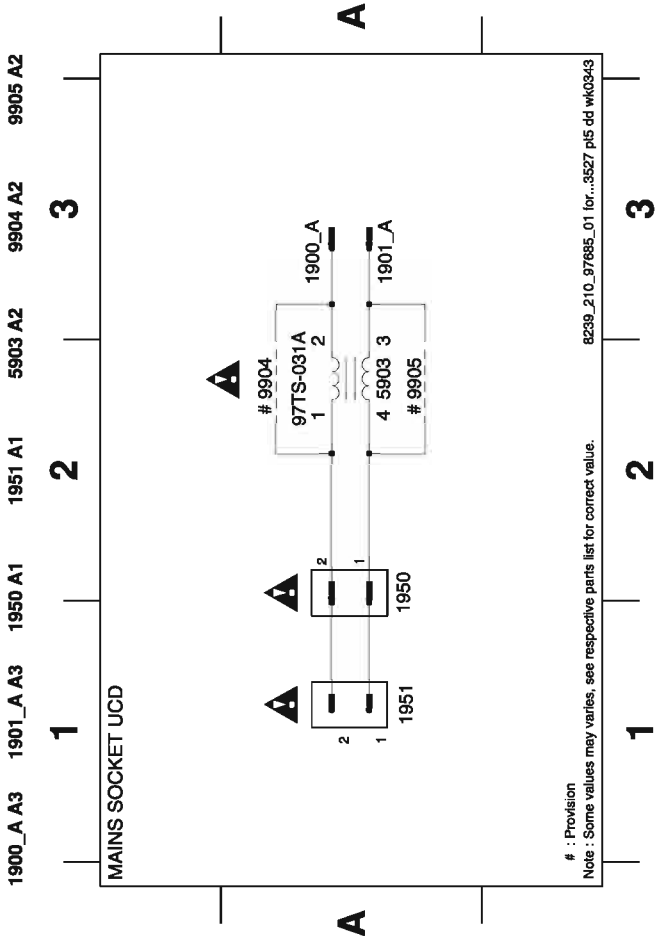
PWR303
MODULE UCD 100-150W

Mains p15 / Reg p15 / Amp p2 / Spk p15 - 17 Nov 05

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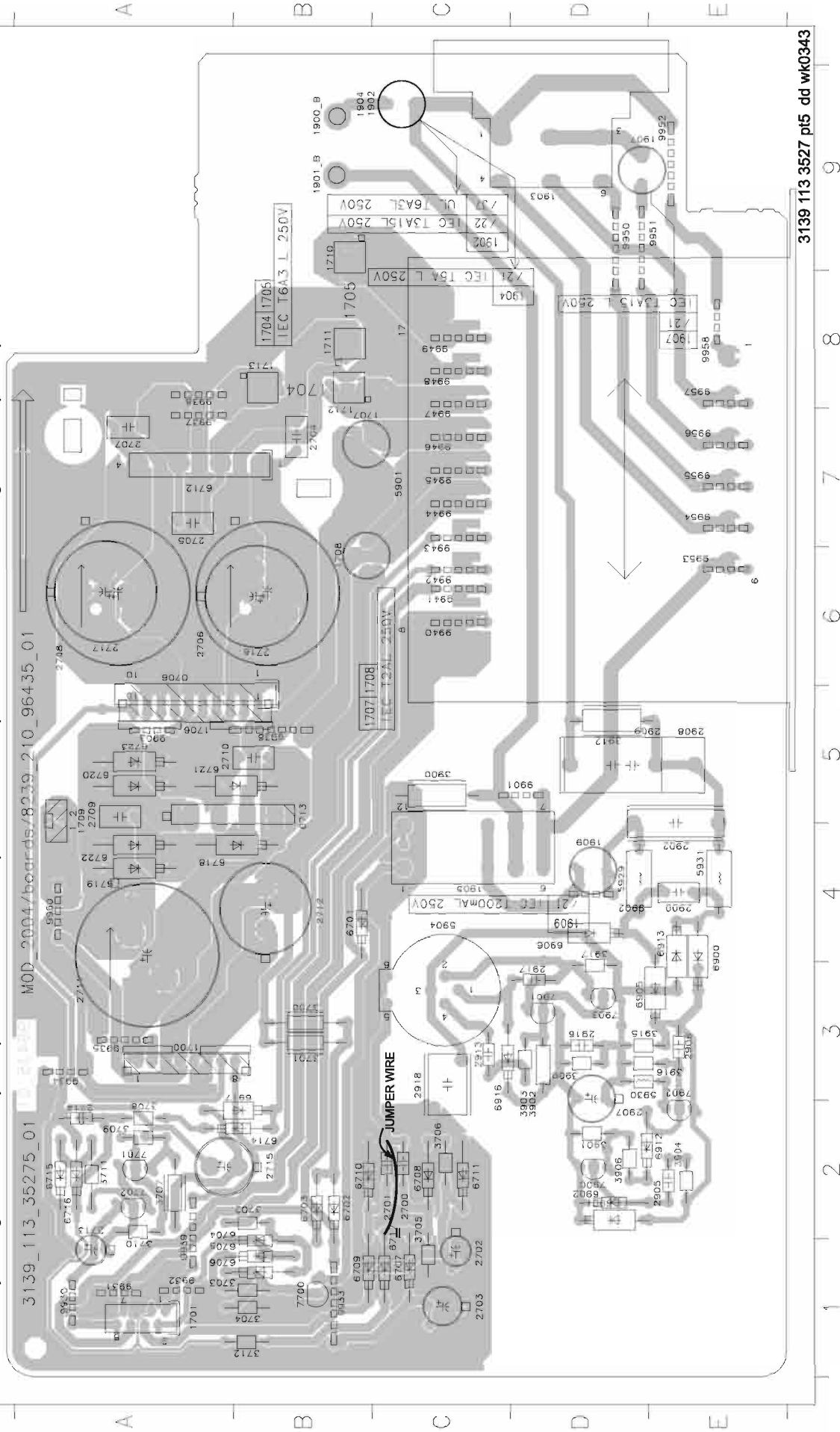
MAINS SOCKET UCD BOARD - CIRCUIT DIAGRAM



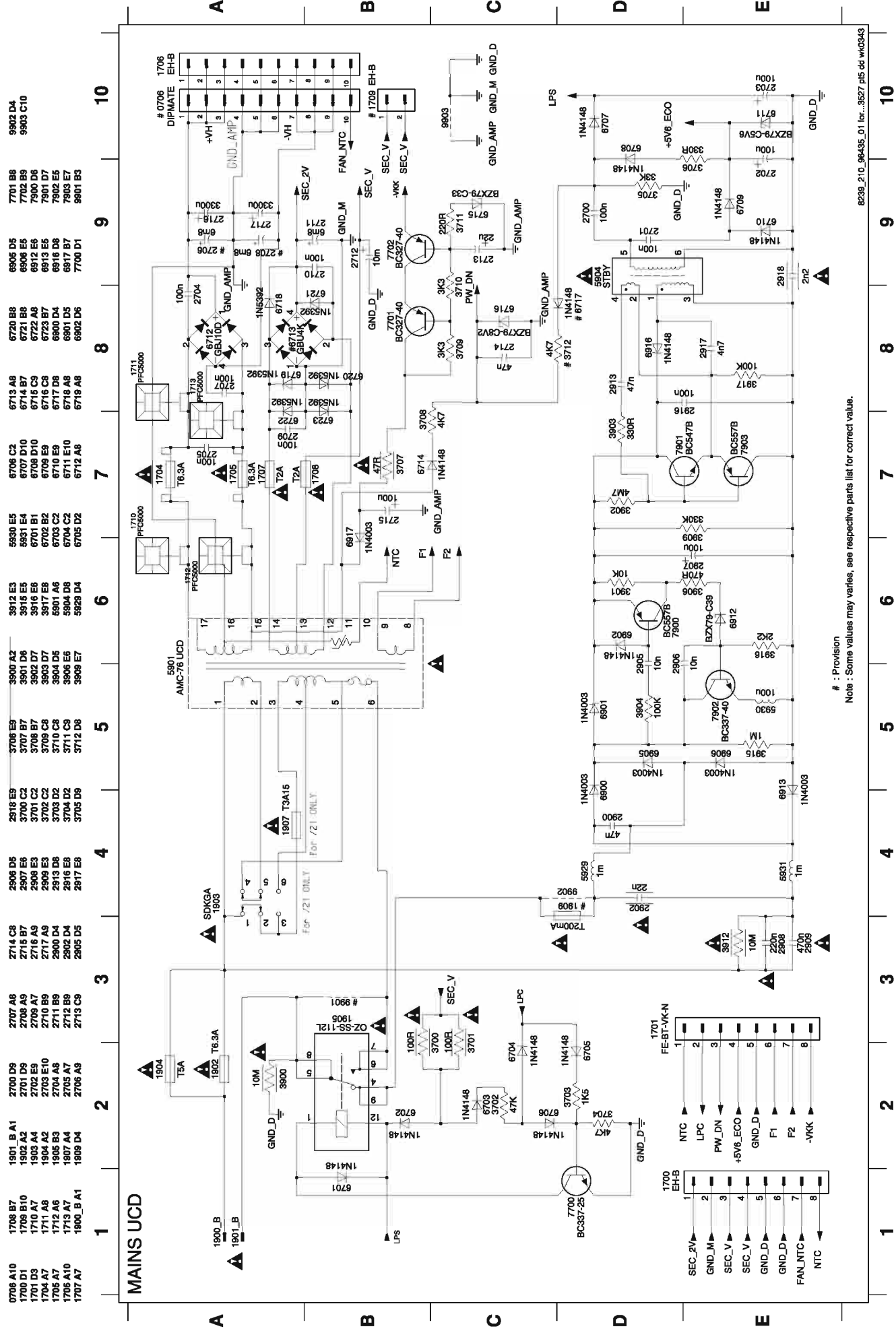
MAINS UCD BOARD - COMPONENT LAYOUT

0706 A6	1713 B8	2701 C2	2711 A3	2906 E3	3702 B2	3712 B1	3916 E3	6704 A2	6714 B2	6900 E4	7701 A2	9931 A1	9942 C6	9952 E9
1700 A3	1900 B B9	2702 C1	2712 B4	2907 D2	3703 A1	3900 C5	3917 D4	6705 A1	6715 A2	6901 D2	7702 A2	9932 A1	9943 C6	9953 E6
1701 A1	1901 B B9	2703 C1	2713 A2	2908 E5	3704 B1	3901 D2	5901 C7	6706 A1	6716 A2	6902 D2	7900 D2	9933 B1	9944 C7	9954 E7
1706 A5	1902 B9	2704 B7	2714 A2	2909 B5	3705 C2	3902 D2	5904 C4	6707 C1	6717 C2	6905 D3	7901 D3	9934 A3	9945 C7	9955 E7
1707 B7	1903 D9	2705 A7	2715 A2	2913 D3	3706 C2	3903 D2	5909 D4	6708 C2	6718 A4	6906 D4	7902 E3	9935 A3	9946 C7	9956 E7
1708 B6	1904 B9	2706 A6	2716 B6	2916 D3	3707 A2	3904 E2	5930 D3	6709 B1	6719 A4	6907 E2	7903 D3	9936 B5	9947 C7	9957 E8
1709 A5	1905 C4	2707 A7	2717 A6	2917 D3	3708 A2	3905 D2	5931 E4	6710 B2	6720 A5	6912 E1	7904 D5	9937 A7	9948 C8	9958 E8
1710 B9	1907 D9	2708 A6	2802 E4	2918 C3	3709 A2	3909 D3	6701 B4	6711 C2	6721 A5	6916 C3	7905 D4	9938 A8	9949 C8	9959 A1
1711 B9	1909 C1	2709 A5	2802 E4	2920 B3	3710 A1	3912 D5	6702 B2	6712 A7	6722 A4	6917 B3	7906 A5	9940 C8	9950 D9	9960 A4
1712 B7	2700 C2	2710 A5	2905 E2	2901 B3	3711 A2	3915 D5	6703 B2	6713 B5	6723 A5	7700 B1	9930 A1	9941 C6	9951 E9	

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



MAINS UCD BOARD - CIRCUIT DIAGRAM

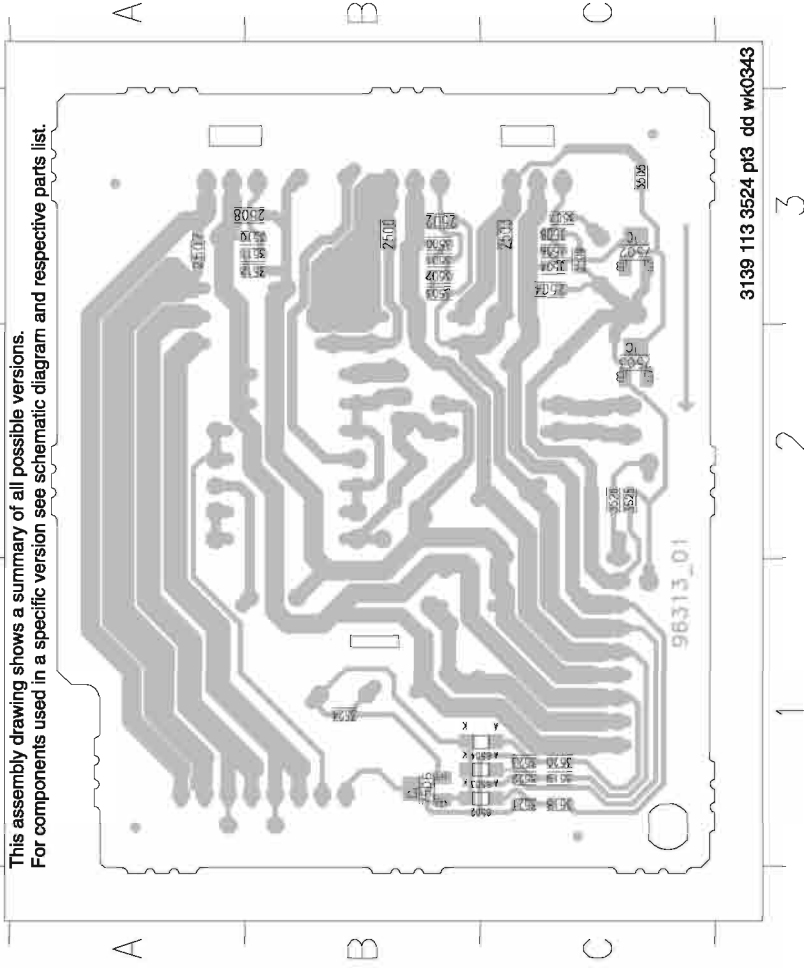


REGULATOR UCD BOARD - CHIP LAYOUT

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

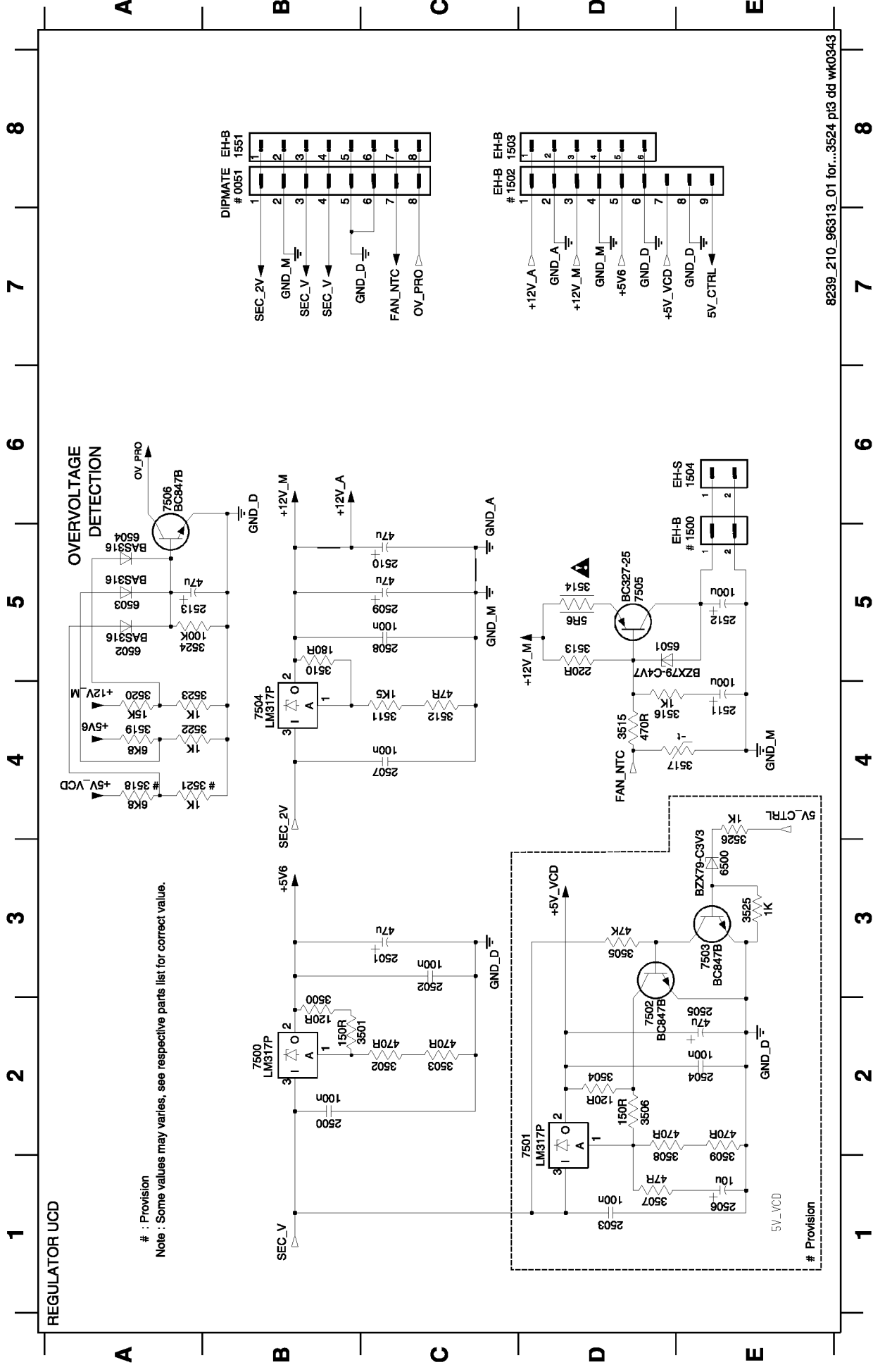
This assembly drawing shows a summary of all possible versions.

For components used in a specific version see schematic diagram and respective parts list.

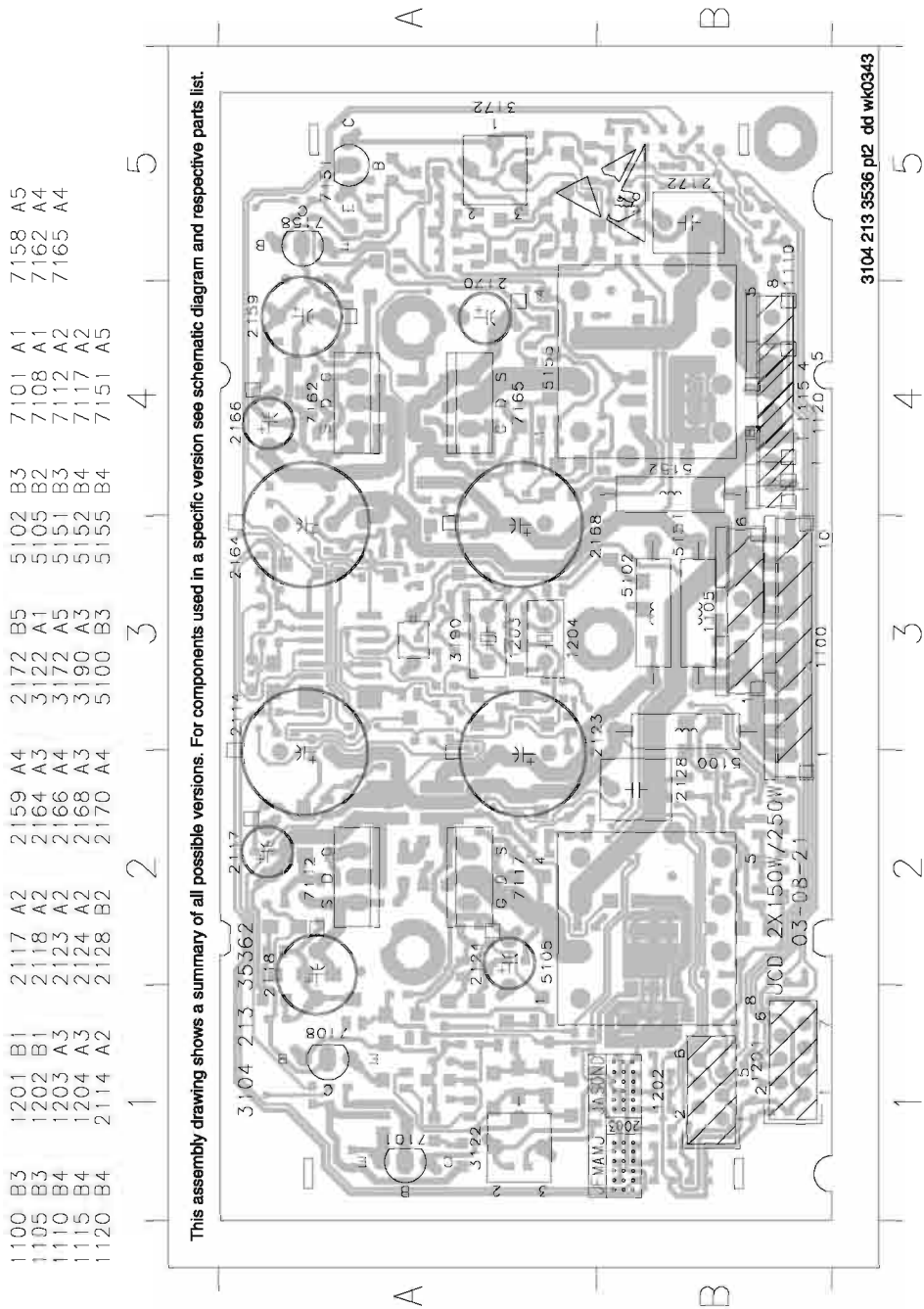


REGULATOR UCD BOARD - CIRCUIT DIAGRAM

0051 B8	1503 C8	2500 B2	2503 D1	2506 E1	2509 C5	2512 E5	3501 B2	3504 D2	3507 D1	3510 B5	3513 D5	3516 D4	3519 A4	3522 A4	3525 E3	6501 D5	6504 A5	7502 D2	7505 D3
1500 E5	1504 E6	2501 C3	2504 E2	2510 C4	2513 A5	2513 A5	3502 C2	3505 D3	3508 D2	3511 C4	3514 D5	3517 E4	3520 A4	3523 A4	3526 E4	6502 A5	7500 B2	7503 E3	7506 A6
1502 C8	1551 B8	2502 C3	2505 E2	2508 C5	2511 E4	3500 B2	3512 C4	3506 D2	3509 E2	3515 D4	3518 A4	3521 A4	3524 A5	3527 A5	6500 E3	6503 A5	7501 D1	7504 B4	



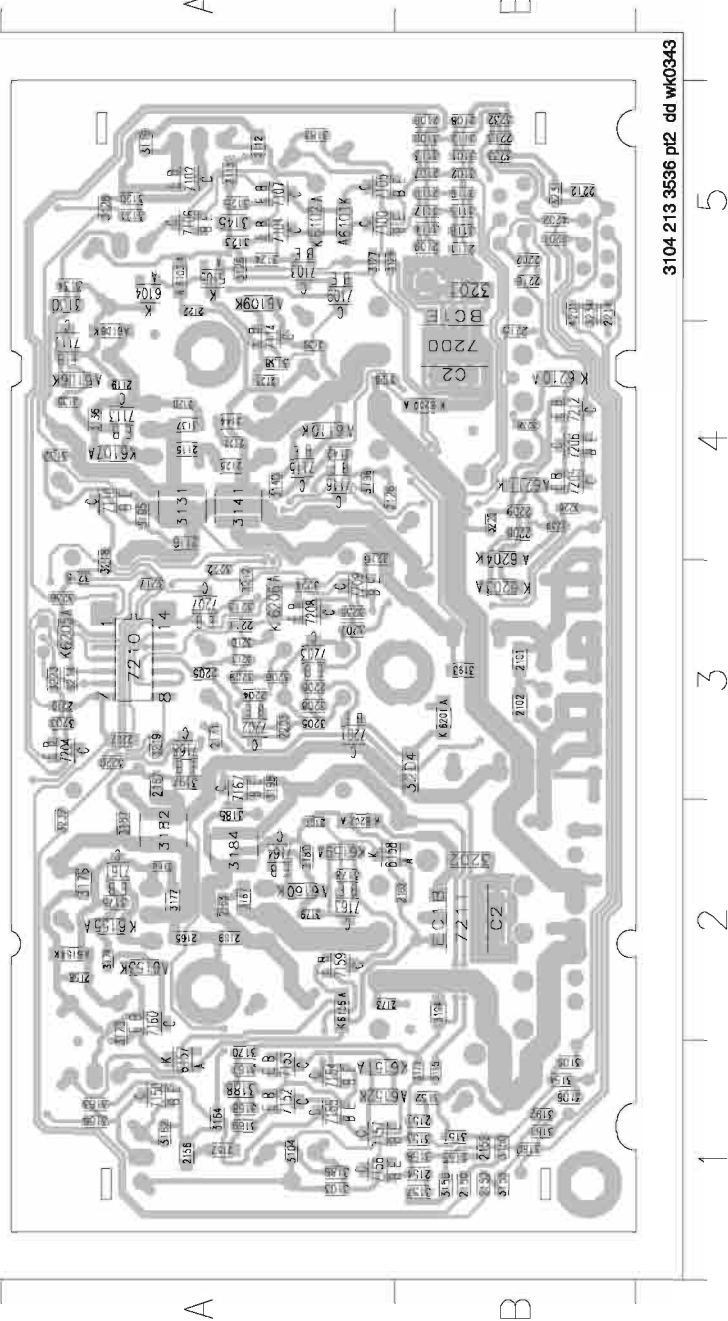
AMPLIFIER UCD BOARD (SE) - COMPONENT LAYOUT



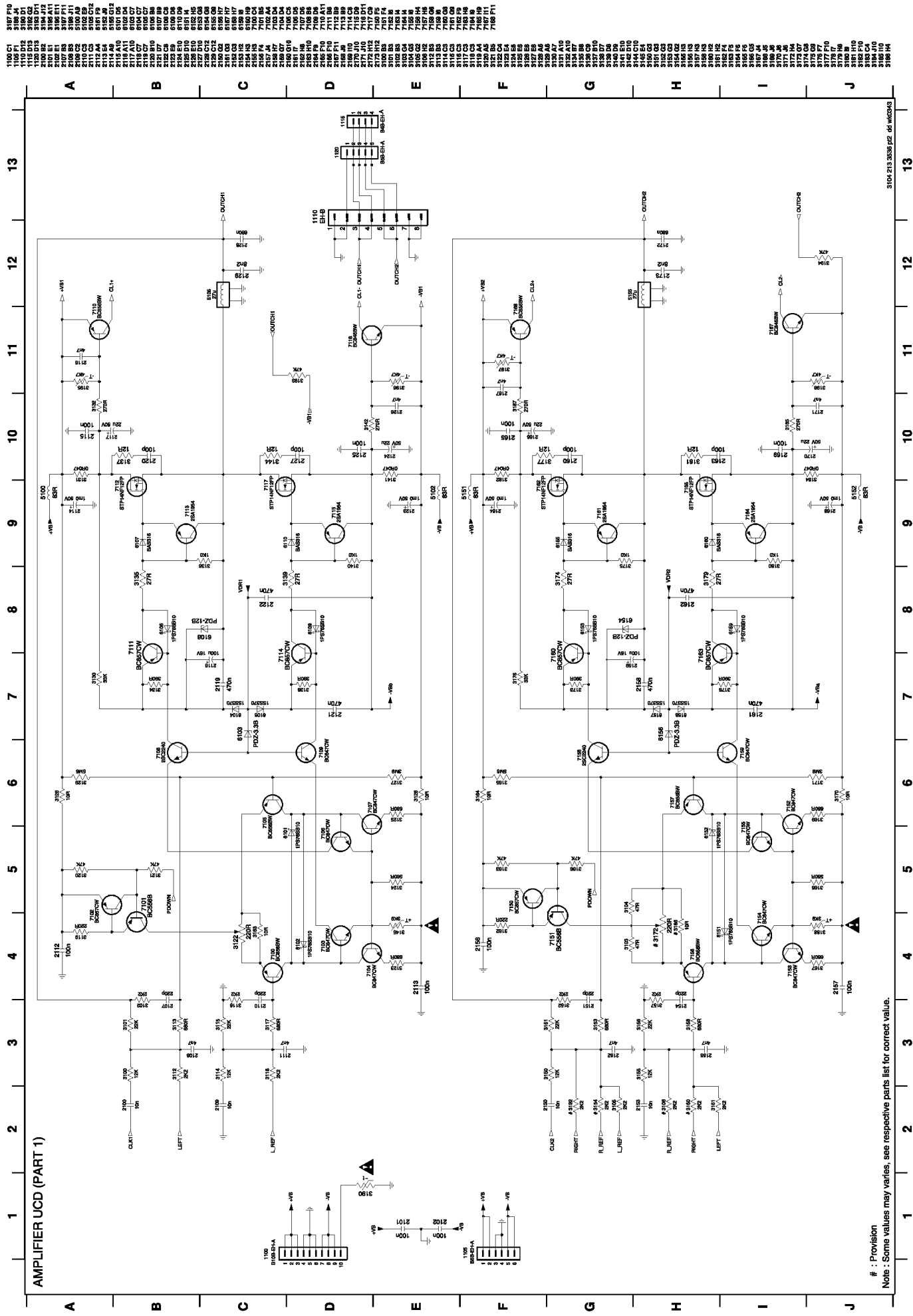
AMPLIFIER UCD BOARD (SE) - CHIP LAYOUT

2100 B5	2122 A5	2161 A2	2208 B4	3106 B1	3127 A5	3144 A4	3164 A1	3180 A2	3198 A3	6158 A2	F101 B3
2101 B3	2125 A4	2162 B2	2209 B4	3112 B5	3128 A5	3145 A5	3165 B1	3181 A2	3201 B5	6159 A2	F102 B3
2102 B3	2126 A4	2163 A2	2210 A3	3113 B5	3129 A5	3150 B1	3166 A1	3182 A2	3202 B2	6160 A2	F103 B2
2107 B5	2127 A4	2165 A2	2211 A3	3114 B5	3130 A5	3151 B1	3167 A1	3183 A5	3203 A3	6200 B4	F104 B2
2108 B5	2129 A4	2167 A3	2212 B5	3115 B5	3131 A4	3152 B1	3168 A1	3184 A2	3204 B3	6201 B3	F105 B2
2109 B5	2150 B1	2169 A2	2213 B5	3116 B5	3132 A4	3153 B1	3169 A1	3185 A2	3205 A3	6202 A2	F106 B3
2110 B5	2151 B1	2171 A3	2214 B4	3117 B5	3134 A5	3154 B1	3170 A1	3186 A1	3206 A3	6203 B3	F107 A4
2111 B5	2152 B1	2173 A2	2215 B4	3118 B5	3135 A4	3155 B1	3171 B1	3187 A2	3207 A3	6204 B4	F108 A4
2112 A5	2153 B1	2201 B5	2216 B5	3119 A5	3136 A4	3156 B1	3173 A2	3188 A1	3208 A3	6205 A4	F109 A2
2113 A5	2154 B1	2202 B5	3100 B5	3120 A5	3137 A4	3157 B1	3174 A2	3192 B1	3209 A3	6206 A3	F110 A3
2115 A4	2155 B1	2203 A3	3101 B5	3121 A5	3138 A4	3158 B1	3175 A2	3193 B3	3210 B4	6210 B4	F111 A5
2116 A4	2156 A1	2204 A3	3102 B5	3123 A5	3139 A4	3160 B1	3176 A2	3194 B2	3211 A3	6211 B4	F112 B2
2119 A4	2157 A1	2205 A3	3103 A1	3124 A5	3140 A4	3161 B1	3177 A2	3195 A4	3212 A3	7100 A5	F113 A3
2120 A4	2158 A2	2206 A3	3104 A1	3125 A5	3141 A4	3162 A1	3178 A2	3196 A4	3213 A3	7102 A5	F114 B1
2121 A4	2160 A2	2207 A3	3105 B1	3126 A5	3142 A4	3163 A1	3179 A2	3197 A3	3214 A3	7103 A5	F115 B1
									3215 A3	7104 A5	F116 B1
									3216 A4	7105 A5	F117 B1
									3217 A3	7106 A5	F118 B4
									3218 A3	7107 A5	F119 B4
									3219 A3	7109 A5	F120 B4
									3220 A3	7110 A4	F121 A3
									3222 A3	7111 A4	F122 A3
									3223 A3	7113 A4	
									3224 A3	7114 A4	
									3225 B4	7115 A4	
									3226 B4	7116 A4	
									3231 B5	7150 A1	
									3232 B5	7152 A1	
									3233 B5	7153 A1	
									3234 B5	7154 A1	
									3235 A3	7155 A1	
									3236 A3	7156 A1	
									3237 A2	7157 A1	
									3238 B4	7159 A2	
									3239 B4	7160 A2	
									4201 B5	7161 A2	
									4202 B5	7163 A2	
									6101 A5	7164 A2	
									6102 A5	7167 A3	
									6103 A5	7168 A3	
									6104 A5	7200 B4	
									6105 A5	7201 A3	
									6106 A4	7202 A3	
									6107 A4	7203 A3	
									6108 A4	7204 A3	
									6109 A5	7205 B4	
									6110 A4	7206 B4	
									6151 A1	7207 A3	
									6152 A1	7208 A3	
									6153 A2	7209 A3	
									6154 A2	7210 A3	
									6155 A2	7211 B2	
									6156 A2	7212 B4	
									6157 A1	F100 B3	

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



AMPLIFIER UCD BOARD (SE) - CIRCUIT DIAGRAM PART 1

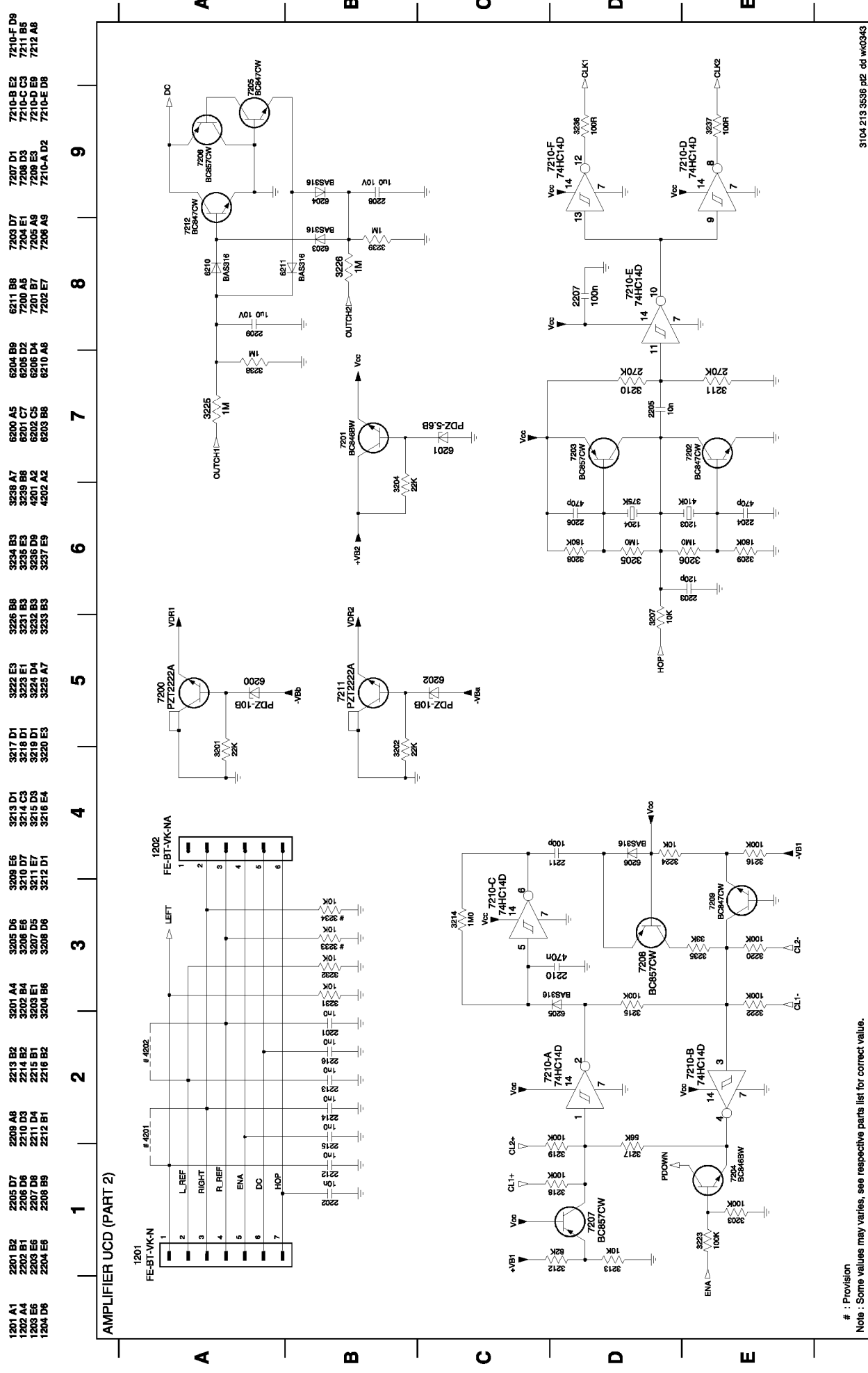


: Provision

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

3104 213 3536 p22 4d wk0243

AMPLIFIER UCD BOARD (SE) - CIRCUIT DIAGRAM PART 2

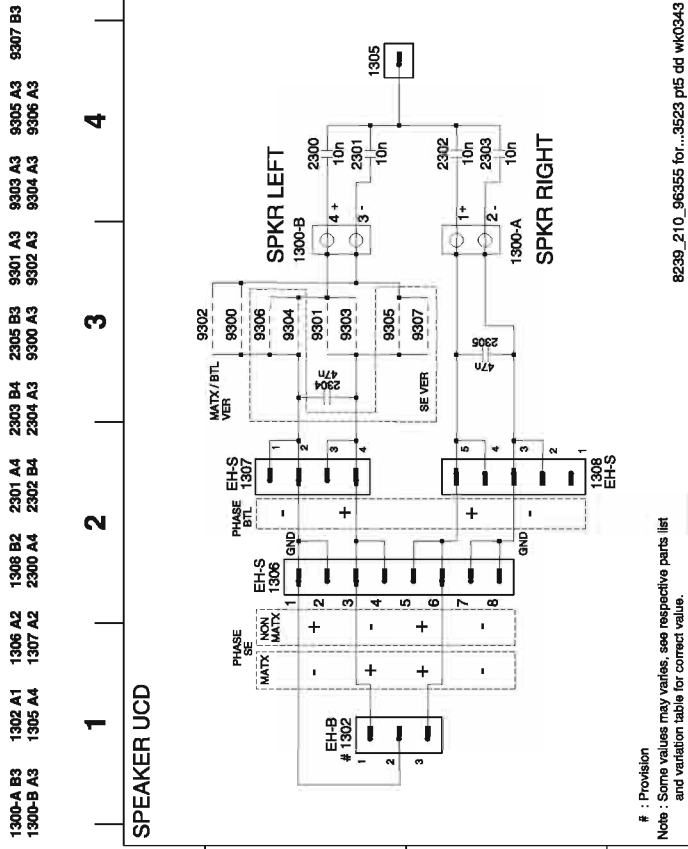


: Provision

Note : Some values may vary, see respective parts list for correct value.

3104 213 3536 p12 dd wk0343

SPEAKER UCD BOARD - CIRCUIT DIAGRAM



Note : Some values may varies, see respective parts list and variation table for correct value.

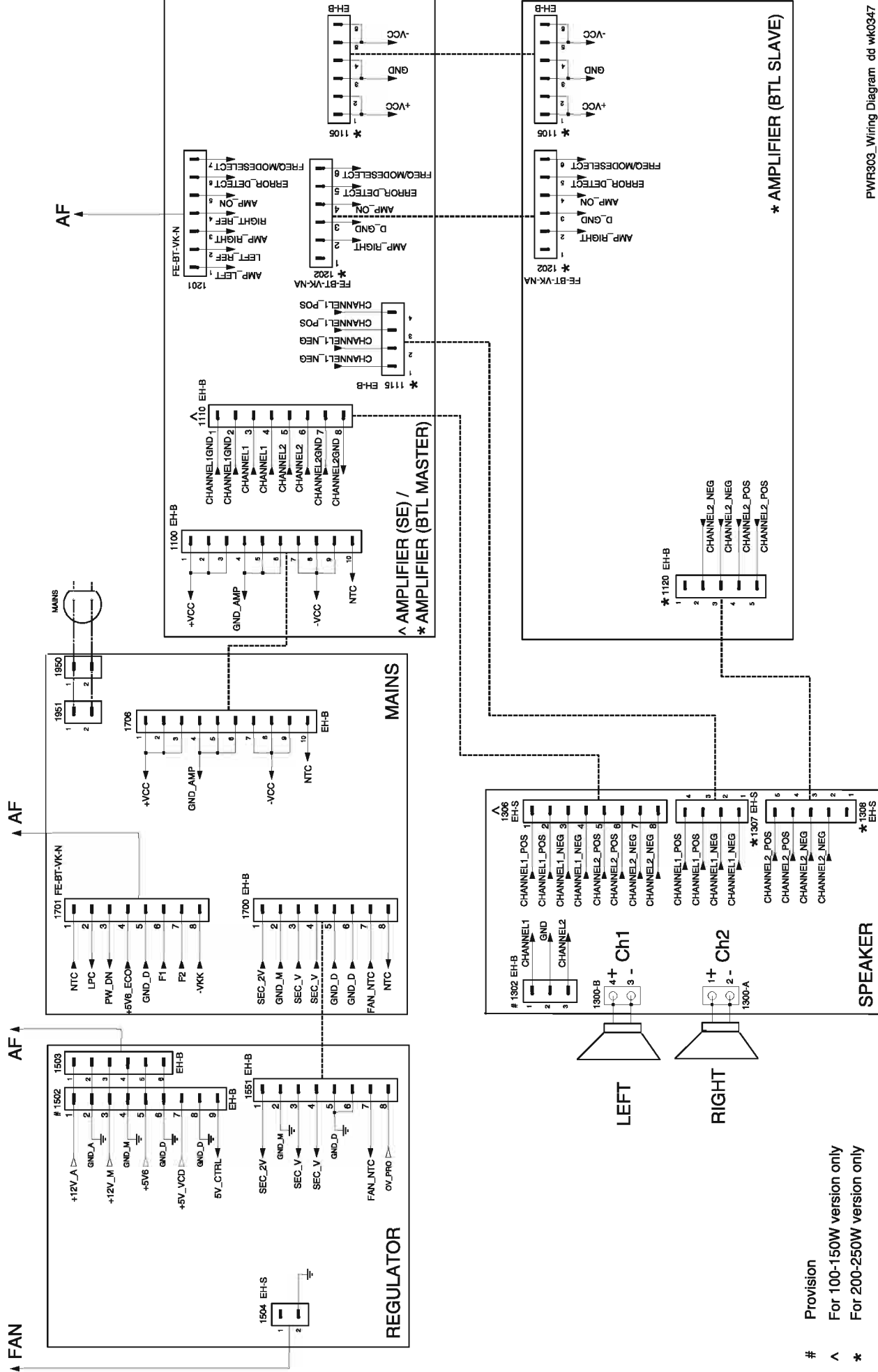
	SPEAKER UCD BOARD	
Item No.	100-150W (Non Matrix Version)	200-250W
1302	-	-
1306	X	-
1307 , 1308	-	X
2304 , 2305	-	X
9300 , 9301	-	X
9302 , 9303	-	X
9304 , 9305	X	-
9306 , 9307	X	-

X - item in use.

WIRING DIAGRAM

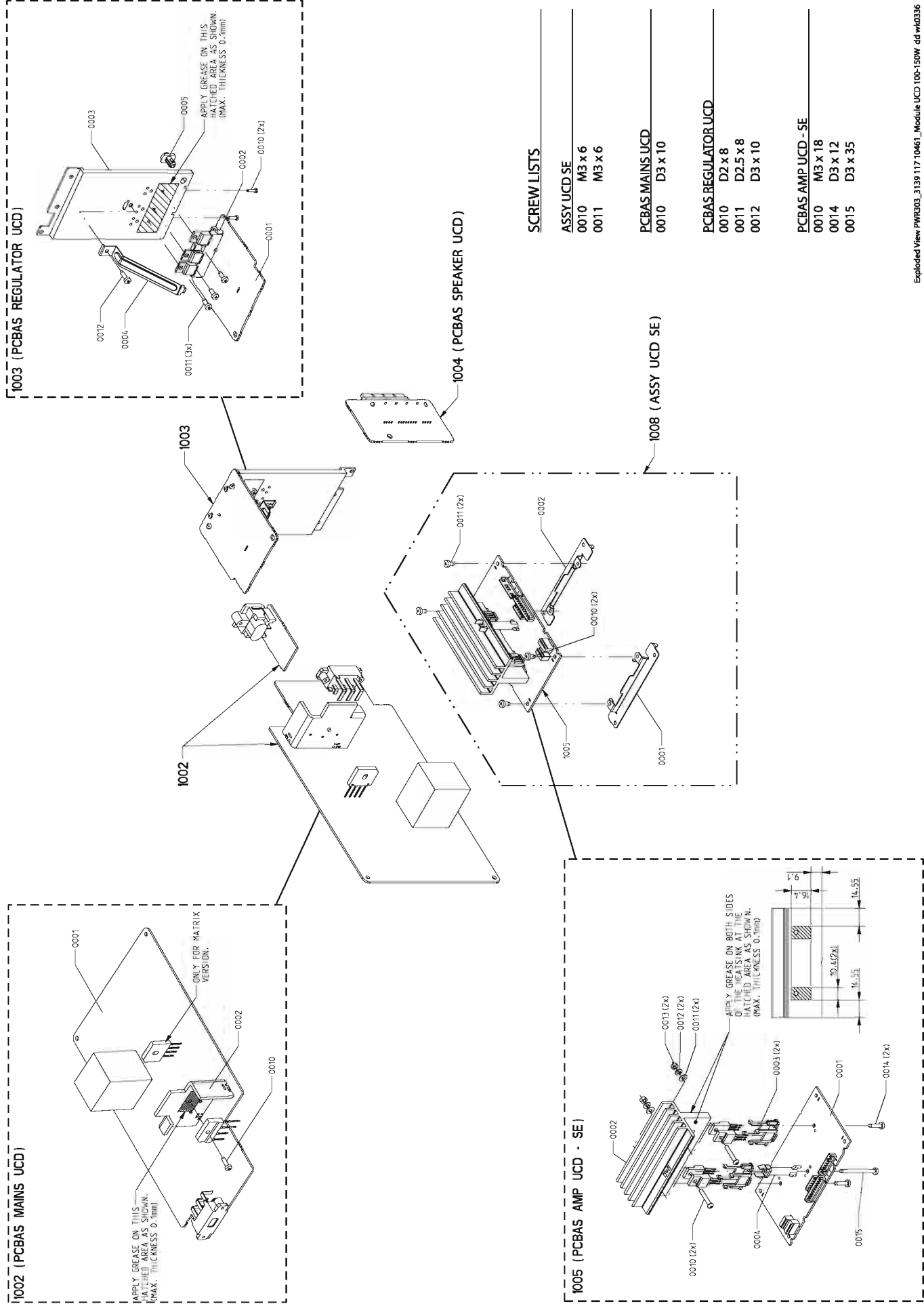
8-11

8-11



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

EXPLODED VIEW



ELECTRICAL PARTS LIST - MAINS UCD BOARD

MISCELLANEOUS		
1701	4822 265 11515	FLEX CONNECTOR 8P
1704	4822 070 36302	Δ FUSE 5X20 T 6.3A 250V
1705	4822 070 36302	Δ FUSE 5X20 T 6.3A 250V
1707	9965 000 07788	Δ FUSE RAD LT 2A 250V
1708	9965 000 07788	Δ FUSE RAD LT 2A 250V
1710	2422 090 01101	SOC FUSE V 1P F
1711	2422 090 01101	SOC FUSE V 1P F
1712	2422 090 01101	SOC FUSE V 1P F
1713	2422 090 01101	SOC FUSE V 1P F
1902	4822 071 53152	Δ FUSE RAD LT 3,15A 250V/22
1902	4822 252 51123	Δ FUSE RAD LT 6,3A 250V /37
1903	9965 000 07789	Δ VOLTAGE SELECTOR /21
1904	4822 071 55002	Δ FUSE RAD LT 5A 250V /21
1905	2422 132 07519	Δ RELAY 1P 12V 16A OZ-SS L
1907	4822 071 53152	Δ FUSE RAD LT 3,15A 250V/21
1950	4822 265 31015	Δ MAINS SOCKET /21/22
1951	2422 030 00328	Δ MAINS SOCKET /37
CAPACITORS		
2700	2020 561 90365	100nF +80/-20% 50V
2701	2020 561 90365	100nF +80/-20% 50V
2702	4822 124 41584	100uF 20% 10V
2703	4822 124 40207	100uF 20% 25V
2704	5322 121 42578	100nF 5% 250V
2705	5322 121 42578	100nF 5% 250V
2707	5322 121 42578	100nF 5% 250V
2709	5322 121 42578	100nF 5% 250V
2710	5322 121 42578	100nF 5% 250V
2711	2022 020 00782	6800uF 20% 35V
2712	2020 012 93745	10000uF 20% 16V
2713	4822 124 81151	22uF 50V
2714	4822 126 12785	47nF 50V
2715	2020 012 93741	100uF 20% 100V
2716	2022 020 00644	3300uF 20% 50V
2717	2022 020 00644	3300uF 20% 50V
2900	4822 121 43526	47nF 5% 250V
2902	2222 336 19106	Δ 22nF 20% 275V
2905	4822 121 51387	10nF 20% 16V
2906	4822 121 51387	10nF 20% 16V
2907	4822 124 40255	100uF 20% 63V
2908	4822 121 10512	Δ 220nF 20% 275V /22
2909	4822 126 13589	Δ 470nF 20% 275V /21/37
2913	4822 126 12785	47nF 50V
2916	2020 561 90365	100nF +80/-20% 50V
2917	4822 126 11714	4,7nF 20%
2918	4822 126 14088	Δ 2,2nF 20% 250V
RESISTORS		
3700	4822 052 10101	Δ 100R 5% 0,33W
3701	4822 052 10101	Δ 100R 5% 0,33W
3702	4822 116 83884	47k 5% 0,5W
3703	4822 116 52243	1k5 5% 0,5W

ELECTRICAL PARTS LIST - MAINS UCD BOARD

6905	4822 130 31878	1N4003G	7701	4822 130 41327	BC327-40
6906	4822 130 31878	1N4003G	7702	4822 130 41327	BC327-40
6912	4822 130 34145	BZX79-C39	7900	4822 130 44568	BC557B
6913	4822 130 31878	1N4003G	7901	4822 130 40959	BC547B
6916	4822 130 30621	1N4148	7902	4822 130 40855	BC337-40
6917	4822 130 31878	1N4003G	7903	4822 130 44568	BC557B
TRANSISTORS & INTEGRATED CIRCUITS			Note : Only the parts mentioned in this list are normal service spare parts.		
7700	4822 130 40981	BC337-25			

ELECTRICAL PARTS LIST - REGULATOR UCD BOARD					
MISCELLANEOUS					
0002	3139 114 75361	HOLDER IC	3514	4822 052 10568	Δ 5R6 5% 0,33W
0005	3139 114 71010	STOPPER HEATSINK	3515	4822 116 83883	470R 5% 0,5W
CAPACITORS			3516	4822 050 11002	1k 1% 0,4W
2500	4822 126 14585	100nF 10% 50V	3517	4822 117 12063	NTC DC 5W 10k 5%
2501	4822 124 81286	47uF 20% 16V	3519	4822 051 30682	6k8 5% 0,062W
2502	4822 126 14585	100nF 10% 50V	3520	4822 051 30153	15k 5% 0,062W
2507	2222 580 15649	100nF 10% 50V	3522	4822 051 30102	1k 5% 0,062W
2508	4822 126 14585	100nF 10% 50V	3523	4822 051 30102	1k 5% 0,062W
2509	4822 124 81286	47uF 20% 16V	3524	4822 117 13632	100k 1% 0,62W
2510	4822 124 81286	47uF 20% 16V	DIODES		
2511	4822 124 41643	100uF 20% 16V	6501	4822 130 34174	BZX79-CAV7
2512	4822 124 41643	100uF 20% 16V	6502	4822 130 11397	BAS316
2513	4822 124 80231	47uF 20% 16V	6503	4822 130 11397	BAS316
RESISTORS			6504	4822 130 11397	BAS316
3500	4822 051 30121	120R 5% 0,062W	TRANSISTORS & INTEGRATED CIRCUITS		
3501	4822 051 30151	150R 5% 0,062W	7500	4822 209 81351	IC LM317P
3502	4822 051 30471	470R 5% 0,062W	7504	4822 209 81351	IC LM317P
3503	4822 051 30471	470R 5% 0,062W	7505	4822 130 41246	BC327-25
3510	4822 051 30181	180R 5% 0,062W	7506	5322 130 60159	BC847B
3511	4822 051 30152	1k5 5% 0,062W	Note : Only the parts mentioned in this list are normal service spare parts.		
3512	4822 051 30479	47R 5% 0,062W			
3513	4822 116 83872	220R 5% 0,5W			

ELECTRICAL PARTS LIST - SPEAKER UCD BOARD					
MISCELLANEOUS					
1300	4822 267 31176	SOC CLICK 4P	2302	4822 121 41857	10nF 5% 250V
CAPACITORS			2303	4822 121 41857	10nF 5% 250V
2300	4822 121 41857	10nF 5% 250V	Note : Only the parts mentioned in this list are normal service spare parts.		
2301	4822 121 41857	10nF 5% 250V			

ELECTRICAL PARTS LIST - AMPLIFIER UCD BOARD (SE)

ELECTRICAL PARTS LIST - AMPLIFIER UCD BOARD (SE)

MISCELLANEOUS									
0003	3104 214 39321	TO-220 HOLDER		2169	2222 580 15649	100nF 10% 50V	3139	2322 702 60279	RST SM 0603 27R 5%
0004	3104 214 39331	SPACER		2170	4822 124 81151	22uF 50V	3140	4822 051 30102	1k 5% 0,062W
1201	4822 267 10953	FLEX CONNECTOR 7P		2171	4822 126 13193	4,7nF 10% 63V	3141	2122 118 06384	RST SM 1218 R047 5%
1203	2422 540 98578	RES CER 410kHz		2172	5322 121 42498	680nF 5% 63V	3142	4822 051 30271	270R 5% 0,062W
1204	2422 540 98552	RES CER 375kHz		2173	2238 586 15635	8,2nF 10% 50V	3144	4822 051 20129	12R 5% 0,1W
CAPACITORS									
2100	5322 126 11583	10nF 10% 50V		2201	5322 126 11578	1nF 10% 50V	3145	2122 663 00025	Δ PTC SM 0805 40V 3k9 10%
2101	2222 580 15649	100nF 10% 50V		2202	5322 126 11583	10nF 10% 50V	3150	4822 051 30123	12k 5% 0,062W
2102	2222 580 15649	100nF 10% 50V		2203	5322 122 33861	120pF 10% 50V	3151	4822 051 30223	22k 5% 0,062W
2107	4822 126 13881	220pF 5% 50V		2204	4822 126 13881	470pF 5% 50V	3152	4822 051 30222	2k2 5% 0,062W
2108	4822 126 13193	4,7nF 10% 63V		2205	5322 126 11583	10nF 10% 50V	3153	4822 051 30681	680R 5% 0,062W
2109	5322 126 11583	10nF 10% 50V		2206	4822 126 13881	470pF 5% 50V	3154	4822 051 30222	2k2 5% 0,062W
2110	4822 126 13883	220pF 5% 50V		2207	2222 580 15649	100nF 10% 50V	3155	4822 051 30123	12k 5% 0,062W
2111	4822 126 13193	4,7nF 10% 63V		2208	3198 017 41050	1uF 10V	3156	4822 051 30223	22k 5% 0,062W
2112	2222 580 15649	100nF 10% 50V		2209	3198 017 41050	1uF 10V	3157	4822 051 30222	2k2 5% 0,062W
2113	2020 552 94427	100pF 5% 50V		2210	3198 017 44740	470nF 10V	3158	4822 051 30681	680R 5% 0,062W
2114	3198 026 51020	1000uF 20% 50V		2211	5322 126 11578	1nF 10% 50V	3160	4822 051 30222	2k2 5% 0,062W
2115	2222 580 15649	100nF 10% 50V		2212	5322 126 11578	1nF 10% 50V	3162	4822 051 30221	220R 5% 0,062W
2116	4822 126 13193	4,7nF 10% 63V		2213	5322 126 11578	1nF 10% 50V	3163	4822 117 12925	47k 1% 0,063W
2117	4822 124 81151	22uF 50V		2214	5322 126 11578	1nF 10% 50V	3164	4822 051 30109	10R 5% 0,062W
2118	4822 124 41643	100uF 20% 16V		2215	5322 126 11578	1nF 10% 50V	3165	2322 702 60565	RST SM 0603 5M6 5%
2119	3198 017 44740	470nF 10V		2216	5322 126 11578	1nF 10% 50V	3166	4822 117 12925	47k 1% 0,063W
2120	2020 557 90726	100pF 5% 100V		RESISTORS			3167	4822 051 30681	680R 5% 0,062W
2121	3198 017 44740	470nF 10V		3100	4822 051 30123	12k 5% 0,062W	3168	4822 051 30561	560R 5% 0,062W
2122	3198 017 44740	470nF 10V		3101	4822 051 30223	22k 5% 0,062W	3169	4822 051 30681	680R 5% 0,062W
2123	3198 026 51020	1000uF 20% 50V		3102	4822 051 30222	2k2 5% 0,062W	3170	4822 051 30109	10R 5% 0,062W
2124	4822 124 81151	22uF 50V		3112	4822 051 30222	2k2 5% 0,062W	3171	2322 702 60395	RST SM 0603 3M9 5%
2125	2222 580 15649	100nF 10% 50V		3113	4822 051 30681	680R 5% 0,062W	3172	4822 101 11382	220R 30% 1W
2126	4822 126 13193	4,7nF 10% 63V		3114	4822 051 30123	12k 5% 0,062W	3173	4822 051 30391	390R 5% 0,062W
2127	2020 557 90726	100pF 5% 100V		3115	4822 051 30223	22k 5% 0,062W	3174	2322 702 60279	RST SM 0603 27R 5%
2128	5322 121 42498	680nF 5% 63V		3116	4822 051 30222	2k2 5% 0,062W	3175	4822 051 30102	1k 5% 0,062W
2129	2238 586 15635	8,2nF 10% 50V		3117	4822 051 30681	680R 5% 0,062W	3176	4822 051 20333	33k 5% 0,1W
2150	5322 126 11583	10nF 10% 50V		3118	4822 051 30222	2k2 5% 0,062W	3177	4822 051 20129	12R 5% 0,1W
2151	4822 126 13883	220pF 5% 50V		3119	4822 051 30221	220R 5% 0,062W	3178	4822 051 30391	390R 5% 0,062W
2152	4822 126 13193	4,7nF 10% 63V		3120	4822 117 12925	47k 1% 0,063W	3179	2322 702 60279	RST SM 0603 27R 5%
2153	5322 126 11583	10nF 10% 50V		3121	4822 117 12925	47k 1% 0,063W	3180	4822 051 30102	1k 5% 0,062W
2154	4822 126 13883	220pF 5% 50V		3122	4822 101 11382	220R 30% 1W	3181	4822 051 20129	12R 5% 0,1W
2155	4822 126 13193	4,7nF 10% 63V		3123	4822 051 30681	680R 5% 0,062W	3182	2122 118 06384	RST SM 1218 R047 5%
2156	2222 580 15649	100nF 10% 50V		3124	4822 051 30561	560R 5% 0,062W	3183	4822 051 30109	10R 5% 0,062W
2157	2222 580 15649	100nF 10% 50V		3125	4822 051 30681	680R 5% 0,062W	3184	2122 118 06384	RST SM 1218 R047 5%
2158	3198 017 44740	470nF 10V		3126	4822 051 30109	10R 5% 0,062W	3185	4822 051 30271	270R 5% 0,062W
2159	4822 124 41643	100uF 20% 16V		3127	2322 702 60395	RST SM 0603 3M9 5%	3186	4822 051 30109	10R 5% 0,062W
2160	2020 557 90726	100pF 5% 100V		3128	4822 051 30109	10R 5% 0,062W	3187	4822 051 30271	270R 5% 0,062W
2161	3198 017 44740	470nF 10V		3129	2322 702 60565	RST SM 0603 5M6 5%	3188	2122 663 00025	Δ PTC SM 0805 40V 3k9 10%
2162	3198 017 44740	470nF 10V		3130	4822 051 20333	33k 5% 0,1W	3190	4822 117 12063	Δ NTC DC 5W 10k 5%
2163	2020 557 90726	100pF 5% 100V		3131	2122 118 06384	RST SM 1218 R047 5%	3193	4822 117 10834	47k 1% 0,1W
2164	3198 026 51020	1000uF 20% 50V		3132	4822 051 30271	270R 5% 0,062W	3194	4822 117 10834	47k 1% 0,1W
2165	2222 580 15649	100nF 10% 50V		3134	4822 051 30391	390R 5% 0,062W	3195	2322 615 33472	NTC SM 0603 0W125 4k7 5%
2166	4822 124 81151	22uF 50V		3135	2322 702 60279	RST SM 0603 27R 5%	3196	2322 615 33472	NTC SM 0603 0W125 4k7 5%
2167	4822 126 13193	4,7nF 10% 63V		3136	4822 051 30102	1k 5% 0,062W	3197	2322 615 33472	NTC SM 0603 0W125 4k7 5%
2168	3198 026 51020	1000uF 20% 50V		3137	4822 051 20129	12R 5% 0,1W	3198	2322 615 33472	NTC SM 0603 0W125 4k7 5%
				3138	4822 051 30391	390R 5% 0,062W	3201	4822 051 10223	22k 2% 0,25W
							3202	4822 051 10223	22k 2% 0,25W

ELECTRICAL PARTS LIST - AMPLIFIER UCD BOARD (SE)

DIODES			
6151	4822 130 11528	1PS76SB10	7163 9340 218 60115 TRA SIG SM BC857CW
6152	4822 130 11528	1PS76SB10	7164 9322 198 96685 TRA SIG SM 2SA1954B
6153	4822 130 11528	1PS76SB10	7165 9322 173 29687 FET POW STP14NF12FP
6154	9340 548 61115	DIO REG SM PDZ12B	7167 9340 217 40135 TRA SIG SM BC846BW
6155	4822 130 11397	BA5316	7168 9340 218 20135 TRA SIG SM BC856BW
6156	9340 548 47115	PDZ3.3B	7200 9339 753 30135 TRA POW SM PZT2222A
6157	9322 198 95685	DIO SIG SM 1SS370	7201 9340 217 40135 TRA SIG SM BC846BW
6158	9322 198 95685	DIO SIG SM 1SS370	7202 3198 010 42310 TRA SIG SM BC847BW
6159	4822 130 11528	1PS76SB10	7203 3198 010 42320 TRA SIG SM BC857BW
6160	4822 130 11397	BA5316	7204 9340 217 40135 TRA SIG SM BC846BW
6200	4822 130 11551	PDZ10B	7205 9340 217 80115 TRA SIG SM BC847CW
6201	3198 020 55680	DIO REG SM PDZ5.6B	7206 9340 218 60115 TRA SIG SM BC857CW
6202	4822 130 11551	PDZ10B	7207 9340 218 60115 TRA SIG SM BC857CW
6203	4822 130 11397	BA5316	7208 9340 218 60115 TRA SIG SM BC857CW
6204	4822 130 11397	BA5316	7209 9340 217 80115 TRA SIG SM BC847CW
6205	4822 130 11397	BA5316	7210 5322 209 11548 IC SM 74HC14D
6206	4822 130 11397	BA5316	7211 9339 753 30135 TRA POW SM PZT2222A
6210	4822 130 11397	BA5316	7212 9340 217 80115 TRA SIG SM BC847CW
6211	4822 130 11397	BA5316	

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

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

ETF7 TAPE MODULE

(Non-Dolby Version)

Tapedeck wiring (Double deck)

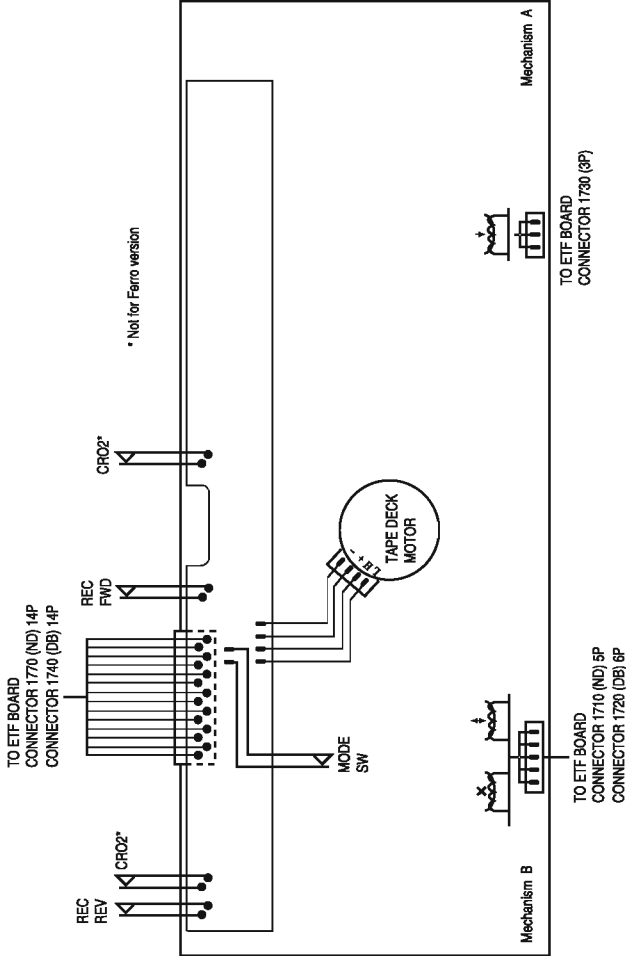


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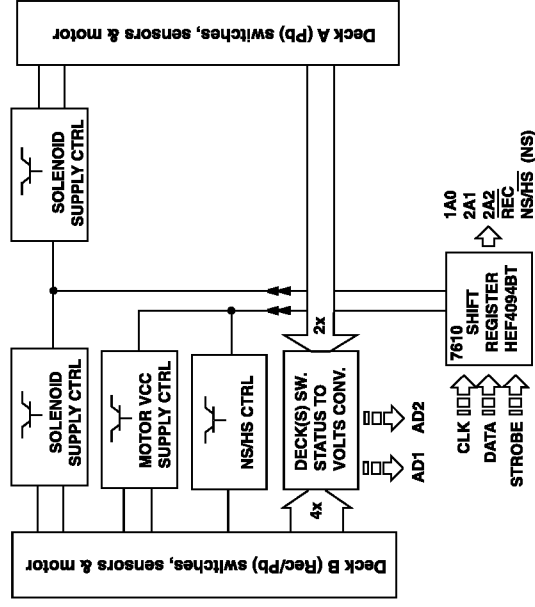
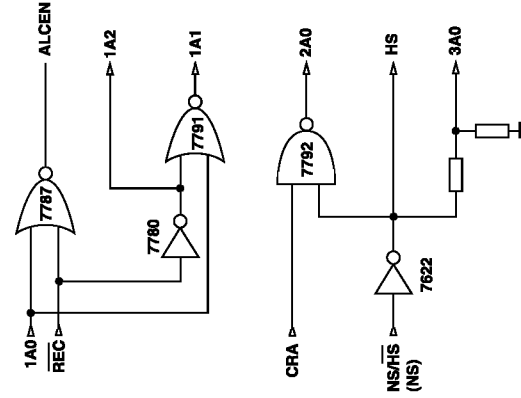
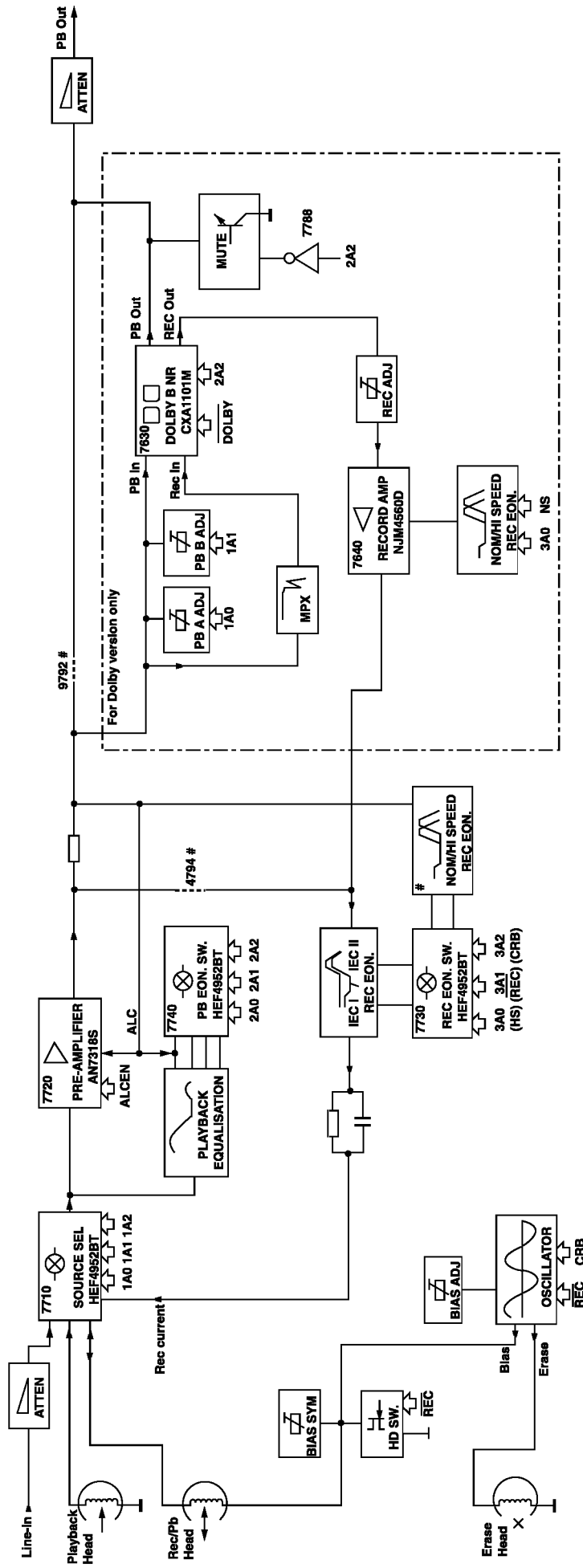
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Variations table for Analog Circuit

	Autoreverse ND/DD/FR		Non-autoreverse ND/DD/FF	
	Chrome/Ferro	Chrome/Ferro	Chrome/Ferro	Ferro
2624	-	-	-	100nF
2701 . 2702	150pF	270pF	270pF	270pF
2703 . 2704	100pF	220pF	220pF	220pF
2717 . 2718	10nF	15nF	15nF	15nF
2721 . 2722	6.8nF	6.8nF	-	-
2727 . 2728	470pF	1nF	1nF	1nF
3616	10k	1k	1k	1k
3618	6k8	-	-	-
3620	10k trimmer	-	-	-
3622	-	10k trimmer	10k trimmer	10k trimmer
3672	4k7	-	-	-
3676	47k	-	-	-
3687	220R	220R	-	-
3688	680R	-	-	-
3723 . 3724	15k	18k	18k	18k
3725 . 3726	10R	10R	-	-
3727 . 3728	5k6	6k8	6k8	6k8
3729 . 3730	3k3	4k7	4k7	4k7
3743 . 3744	1k5	2k2	2k2	2k2
3745 . 3746	3k3	5k6	5k6	5k6
3754 . 3755	1M	47R	47R	47R

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

BLOCK DIAGRAM



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

MicroProcessor Control / Communication lines

Direct / Indirect Control lines from Shift Registers

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 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

CONNECTORS ASSIGNMENTS:

CONNECTOR 1701

<input type="radio"/>	1	REC-L
<input type="radio"/>	2	REC-R
<input type="radio"/>	3	GND A
<input type="radio"/>	4	TAPE-L
<input type="radio"/>	5	+12V
<input type="radio"/>	6	TAPE-R
<input type="radio"/>	7	-CMOS

INTERCONNECTION TO AF BOARD

Record input left
Record input right
AF Ground
Playback output left
D.C. supply (+12V) for AF electronics
Playback output right
Negative d.c. supply (-9V) for CMOS ICs

CONNECTOR 1703

<input type="radio"/>	1	GND M
<input type="radio"/>	2	+MOTOR

INTERCONNECTION TO AF BOARD

Motor Ground
D.C. supply (+12V) for tape deck motor & solenoid

CONNECTOR 1706

<input type="radio"/>	1	AD2
<input type="radio"/>	2	AD1
<input type="radio"/>	3	+5V
<input type="radio"/>	4	GND P
<input type="radio"/>	5	CLK
<input type="radio"/>	6	DATA
<input type="radio"/>	7	STROBE

Deck sensing switches output voltage / Deck A EOT
Deck sensing switches output voltage / Deck B EOT
DC supply +5V for ADC network
Control & Oscillator Ground
HEF4094BT shift register Clock line
HEF4094BT shift register Data line
HEF4094BT shift register Strobe line

CONNECTOR 1710

<input type="radio"/>	1	B R/P HD L+
<input type="radio"/>	2	GND A
<input type="radio"/>	3	B R/P HD R+
<input type="radio"/>	4	ERASE HEAD
<input type="radio"/>	5	GND A

DECK B HEADS CONNECTOR (For Non-Dolby version only)

R/P Head left channel positive
R/P Head return ground
R/P Head right channel positive
Erase Head
Erase Head ground

CONNECTOR 1720

<input type="radio"/>	1	B R/P HD L+
<input type="radio"/>	2	B R/P HD L-
<input type="radio"/>	3	B R/P HD R+
<input type="radio"/>	4	B R/P HD R-
<input type="radio"/>	5	ERASE HEAD
<input type="radio"/>	6	GND A

DECK B HEADS CONNECTOR (For Dolby B NR version only)

R/P Head left channel positive
R/P Head left channel negative
R/P Head right channel positive
R/P Head right channel negative
Erase Head
Erase Head ground

CONNECTOR 1730

<input type="radio"/>	1	A PB HD L+
<input type="radio"/>	2	GND A
<input type="radio"/>	3	A PB HD R+

DECK A HEAD CONNECTIONS (For Double Deck versions only)

Pb Head left channel positive
Pb Head return ground shield
Pb Head right channel positive

CONNECTOR 1740

<input type="radio"/>	1	REC REW
<input type="radio"/>	2	CrO2 B
<input type="radio"/>	3	REC FWD
<input type="radio"/>	4	PHOTO B
<input type="radio"/>	5	SOL B
<input type="radio"/>	6	Vcc
<input type="radio"/>	7	MODE B
<input type="radio"/>	8	GND M
<input type="radio"/>	9	SOLA
<input type="radio"/>	10	PHOTO A
<input type="radio"/>	11	MODE A
<input type="radio"/>	12	L
<input type="radio"/>	13	CrO2 A
<input type="radio"/>	14	H

DECK A & B CONTROL INTERFACE (For Dolby B NR version only)

Record tab protection status switch (reverse)
Chrome tape detection switch deck B
Record tab protection status switch (forward)
Photo sensor output (tape movement indication)
Solenoid supply for deck B
Deck / Motor supply
Mode switch (head engagement)
Deck / Motor ground
Solenoid supply for deck A
Photo sensor output (tape movement indication)
Mode switch (head engagement)
L pin for motor
Chrome tape detection switch deck A
H pin for motor

[open=on: close=off]
[open=Cr: close=Fe]
[open=on: close=off]

[open=off: close=engaged]

[open=off: close=engaged]

[open=Cr: close=Fe]

DECK A & B CONTROL INTERFACE (For Non-Dolby version only)

<input type="radio"/>	1	REC REW
<input type="radio"/>	2	CrO2 B
<input type="radio"/>	3	REC FWD
<input type="radio"/>	4	PHOTO B
<input type="radio"/>	5	SOL B
<input type="radio"/>	6	Vcc
<input type="radio"/>	7	MODE B
<input type="radio"/>	8	GND M
<input type="radio"/>	9	SOLA
<input type="radio"/>	10	PHOTO A
<input type="radio"/>	11	MODE A
<input type="radio"/>	12	L
<input type="radio"/>	13	CrO2 A
<input type="radio"/>	14	H

Record tab protection status switch (reverse)
Chrome tape detection switch deck B
Record tab protection status switch (forward)
Photo sensor output (tape movement indication)
Solenoid supply for deck B
Deck / Motor supply
Mode switch (head engagement)
Deck / Motor ground
Solenoid supply for deck A
Photo sensor output (tape movement indication)
Mode switch (head engagement)
L pin for motor
Chrome tape detection switch deck A
H pin for motor

[open=on: close=off]
[open=Cr: close=Fe]
[open=on: close=off]

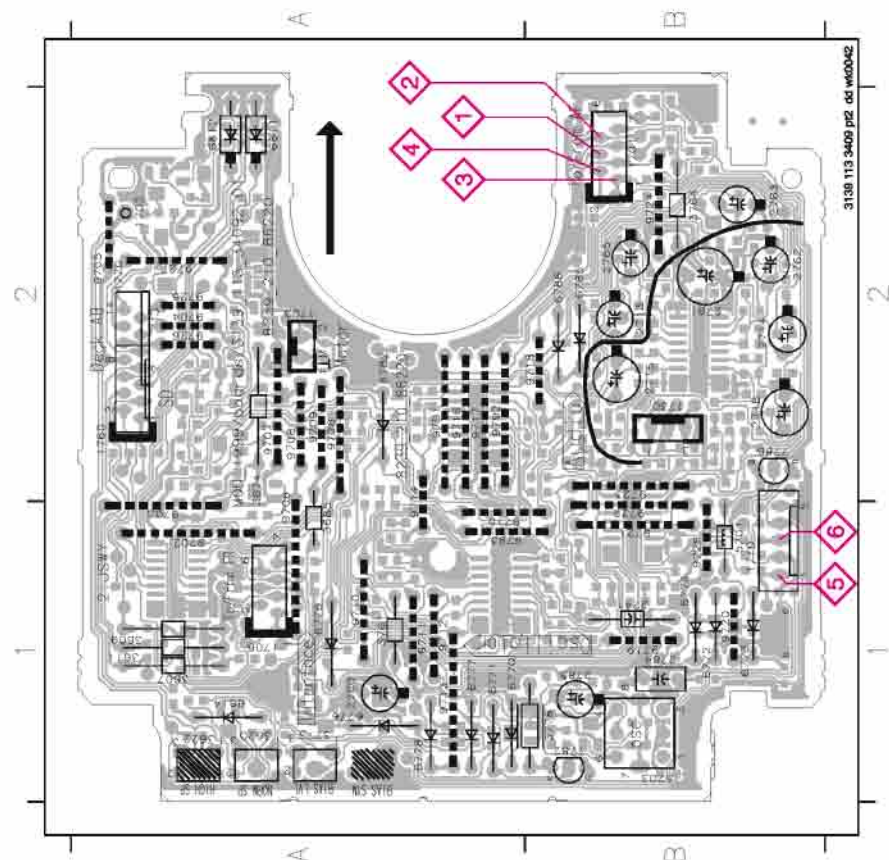
[open=off: close=engaged]

[open=off: close=engaged]

[open=Cr: close=Fe]

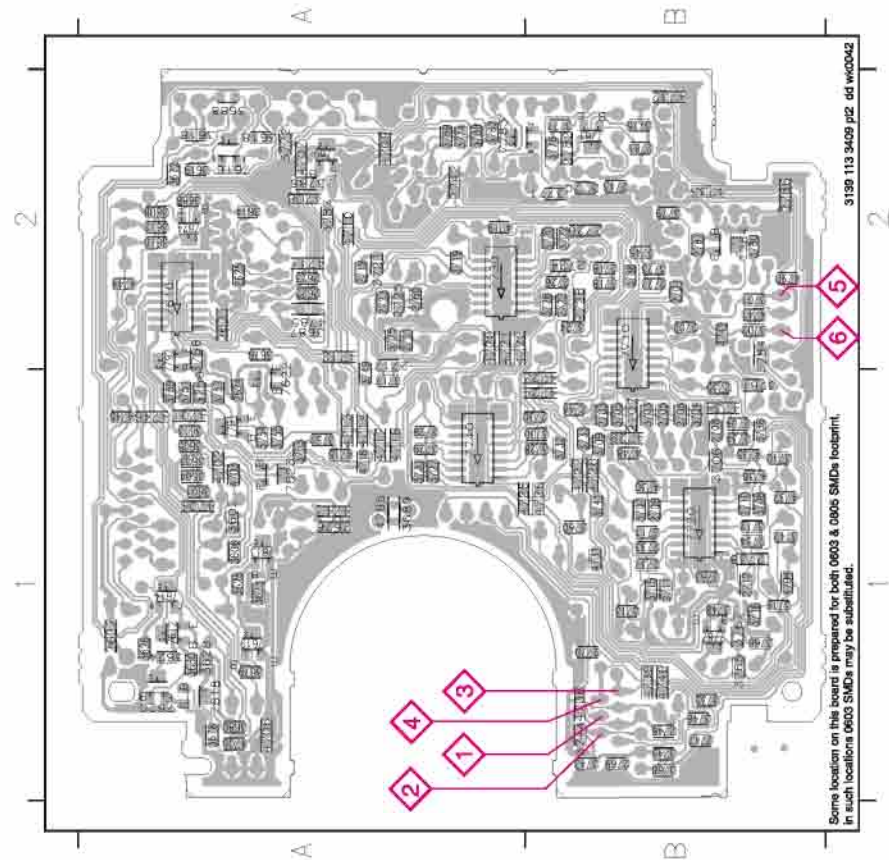
COMPONENT LAYOUT

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1703	Q3	2N7000	1704	Q4	2N7000
1705	Q5	2N7000	1706	Q6	2N7000
1707	Q7	2N7000	1708	Q8	2N7000
1709	Q9	2N7000	1710	Q10	2N7000
1711	Q11	2N7000	1712	Q12	2N7000
1713	Q13	2N7000	1714	Q14	2N7000
1715	Q15	2N7000	1716	Q16	2N7000
1717	Q17	2N7000	1718	Q18	2N7000
1719	Q19	2N7000	1720	Q20	2N7000
1721	Q21	2N7000	1722	Q22	2N7000
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1793	Q93	2N7000	1794	Q94	2N7000
1795	Q95	2N7000	1796	Q96	2N7000
1797	Q97	2N7000	1798	Q98	2N7000
1799	Q99	2N7000	1800	Q100	2N7000



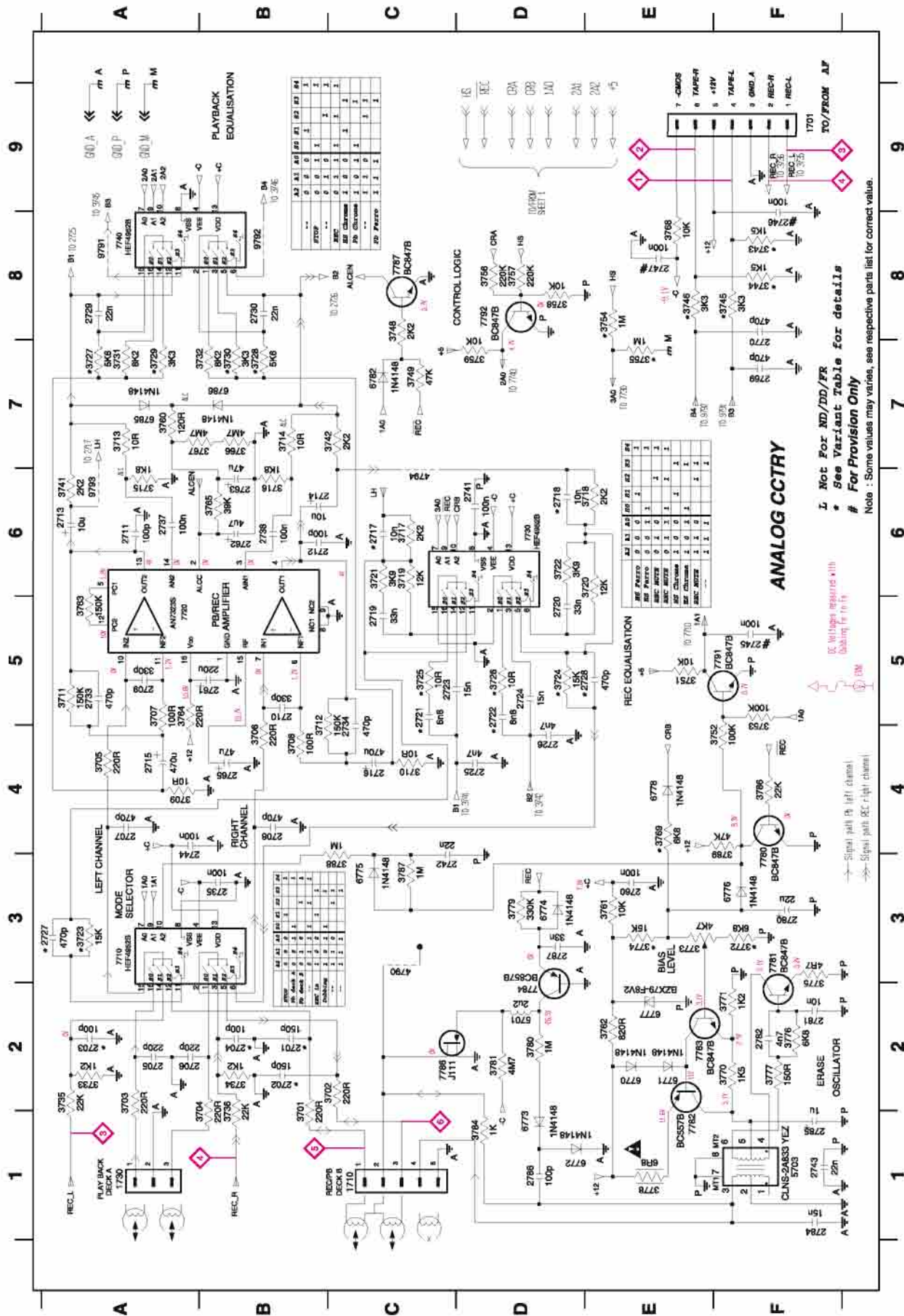
CHIP LAYOUT

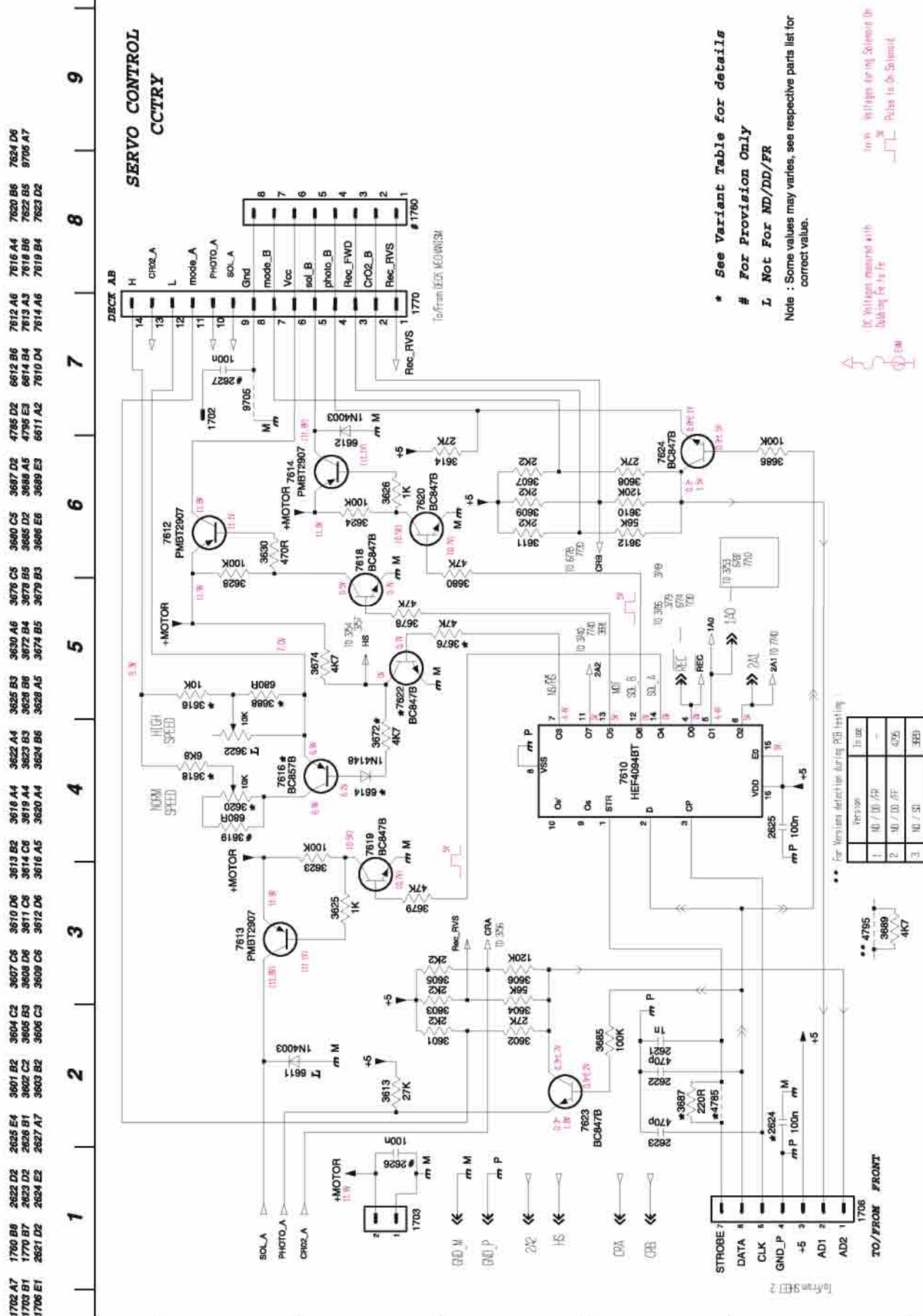
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1705	Q5	2N7000	1706	Q6	2N7000
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1797	Q97	2N7000	1798	Q98	2N7000
1799	Q99	2N7000	1800	Q100	2N7000



Some location on this board is prepared for both 0603 & 0805 SMDs footprint. In such locations 0603 SMDs may be substituted.

2705 A2	2712 B6	2719 C5	2728 D4	2735 E3	2742 F5	2750 B4	2758 F1	2765 A4	2772 B4	2779 C6	2786 D5	2793 A2	2800 A7	2807 A7	2814 E3	2821 D2	2828 C8	2835 A1	2842 A3	2849 B3	2856 B7	2863 E1	2870 E1	2877 A3	2884 E2	2891 B8	2898 B8	2905 A2	2912 C1	2919 A1	2926 A1	2933 A1	2940 A1	2947 A1	2954 A1	2961 A1	2968 A1	2975 A1	2982 A1	2989 A1	2996 A1	3003 A1	3010 A1	3017 A1	3024 A1	3031 A1	3038 A1	3045 A1	3052 A1	3059 A1	3066 A1	3073 A1	3080 A1	3087 A1	3094 A1	3101 A1	3108 A1	3115 A1	3122 A1	3129 A1	3136 A1	3143 A1	3150 A1	3157 A1	3164 A1	3171 A1	3178 A1	3185 A1	3192 A1	3199 A1	3206 A1	3213 A1	3220 A1	3227 A1	3234 A1	3241 A1	3248 A1	3255 A1	3262 A1	3269 A1	3276 A1	3283 A1	3290 A1	3297 A1	3304 A1	3311 A1	3318 A1	3325 A1	3332 A1	3339 A1	3346 A1	3353 A1	3360 A1	3367 A1	3374 A1	3381 A1	3388 A1	3395 A1	3402 A1	3409 A1	3416 A1	3423 A1	3430 A1	3437 A1	3444 A1	3451 A1	3458 A1	3465 A1	3472 A1	3479 A1	3486 A1	3493 A1	3500 A1	3507 A1	3514 A1	3521 A1	3528 A1	3535 A1	3542 A1	3549 A1	3556 A1	3563 A1	3570 A1	3577 A1	3584 A1	3591 A1	3598 A1	3605 A1	3612 A1	3619 A1	3626 A1	3633 A1	3640 A1	3647 A1	3654 A1	3661 A1	3668 A1	3675 A1	3682 A1	3689 A1	3696 A1	3703 A1	3710 A1	3717 A1	3724 A1	3731 A1	3738 A1	3745 A1	3752 A1	3759 A1	3766 A1	3773 A1	3780 A1	3787 A1	3794 A1	3801 A1	3808 A1	3815 A1	3822 A1	3829 A1	3836 A1	3843 A1	3850 A1	3857 A1	3864 A1	3871 A1	3878 A1	3885 A1	3892 A1	3899 A1	3906 A1	3913 A1	3920 A1	3927 A1	3934 A1	3941 A1	3948 A1	3955 A1	3962 A1	3969 A1	3976 A1	3983 A1	3990 A1	3997 A1	4004 A1	4011 A1	4018 A1	4025 A1	4032 A1	4039 A1	4046 A1	4053 A1	4060 A1	4067 A1	4074 A1	4081 A1	4088 A1	4095 A1	4102 A1	4109 A1	4116 A1	4123 A1	4130 A1	4137 A1	4144 A1	4151 A1	4158 A1	4165 A1	4172 A1	4179 A1	4186 A1	4193 A1	4200 A1	4207 A1	4214 A1	4221 A1	4228 A1	4235 A1	4242 A1	4249 A1	4256 A1	4263 A1	4270 A1	4277 A1	4284 A1	4291 A1	4298 A1	4305 A1	4312 A1	4319 A1	4326 A1	4333 A1	4340 A1	4347 A1	4354 A1	4361 A1	4368 A1	4375 A1	4382 A1	4389 A1	4396 A1	4403 A1	4410 A1	4417 A1	4424 A1	4431 A1	4438 A1	4445 A1	4452 A1	4459 A1	4466 A1	4473 A1	4480 A1	4487 A1	4494 A1	4501 A1	4508 A1	4515 A1	4522 A1	4529 A1	4536 A1	4543 A1	4550 A1	4557 A1	4564 A1	4571 A1	4578 A1	4585 A1	4592 A1	4599 A1	4606 A1	4613 A1	4620 A1	4627 A1	4634 A1	4641 A1	4648 A1	4655 A1	4662 A1	4669 A1	4676 A1	4683 A1	4690 A1	4697 A1	4704 A1	4711 A1	4718 A1	4725 A1	4732 A1	4739 A1	4746 A1	4753 A1	4760 A1	4767 A1	4774 A1	4781 A1	4788 A1	4795 A1	4802 A1	4809 A1	4816 A1	4823 A1	4830 A1	4837 A1	4844 A1	4851 A1	4858 A1	4865 A1	4872 A1	4879 A1	4886 A1	4893 A1	4900 A1	4907 A1	4914 A1	4921 A1	4928 A1	4935 A1	4942 A1	4949 A1	4956 A1	4963 A1	4970 A1	4977 A1	4984 A1	4991 A1	4998 A1	5005 A1	5012 A1	5019 A1	5026 A1	5033 A1	5040 A1	5047 A1	5054 A1	5061 A1	5068 A1	5075 A1	5082 A1	5089 A1	5096 A1	5103 A1	5110 A1	5117 A1	5124 A1	5131 A1	5138 A1	5145 A1	5152 A1	5159 A1	5166 A1	5173 A1	5180 A1	5187 A1	5194 A1	5201 A1	5208 A1	5215 A1	5222 A1	5229 A1	5236 A1	5243 A1	5250 A1	5257 A1	5264 A1	5271 A1	5278 A1	5285 A1	5292 A1	5299 A1	53
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SERVO CONTROL
CCTRY

* See Variant Table for details

For Provision Only

Not For ND/DD/FR

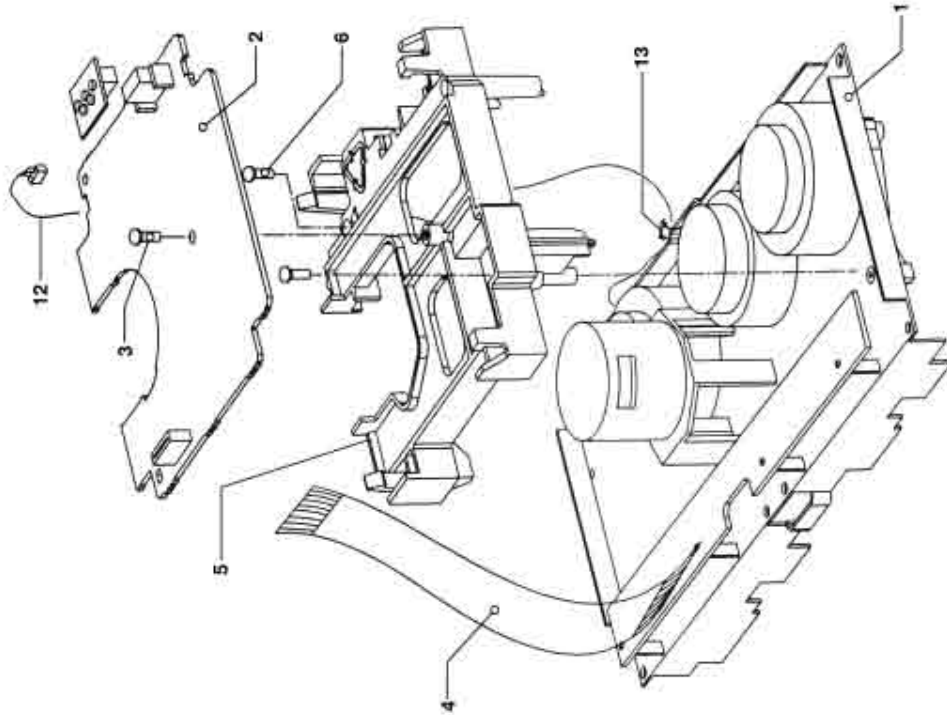
Note : Some values may varies, see respective parts list for correct value.

Cell Voltages measured with
Adding Fe^{2+} Fe^{3+}

See Fig. 10-10

Voltagers during Solenoid On

Pulse to On Solenoid

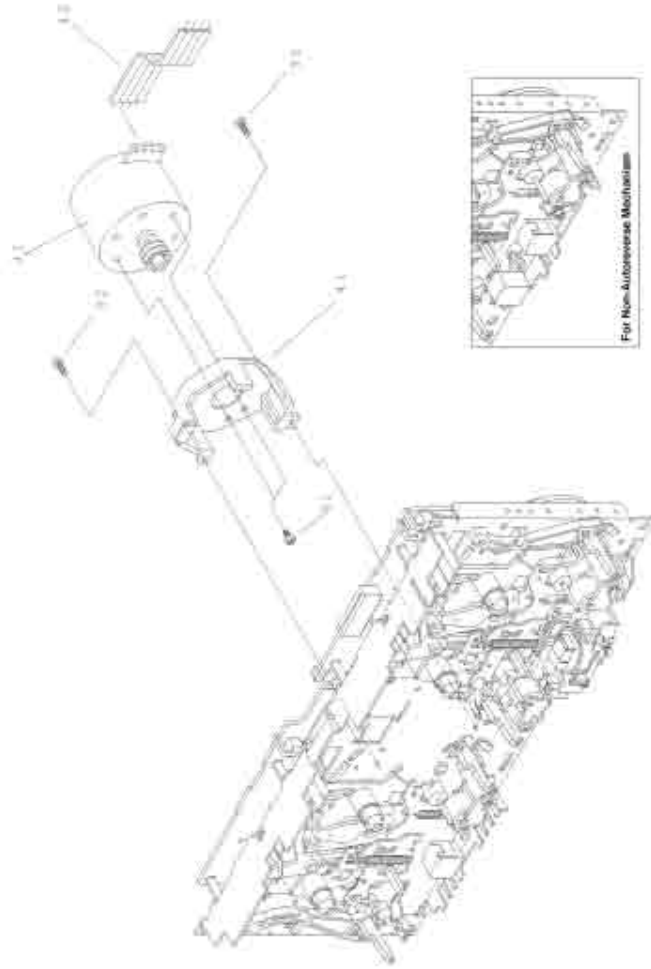


3139 118 77075 (incl. ...77085) 346 440006

TAPE MODULE EXPLODED VIEW

- | | | |
|---|----------------|--------------------------------------------|
| 1 | 3139 118 77130 | Autoreverse Mech. CME44FF01 |
| 1 | 3139 118 77140 | Non-Autoreverse Mech. CME44FF02 Chromafino |
| 1 | 3139 118 77860 | Non-Autoreverse Mech. CME44FF05 Ferro |
| 5 | - | Screws D3 x 10 |
| 6 | - | Screw M2 x 10 |
| 7 | 3139 110 34080 | Flat Cable 14 pin 7.8 cm |

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

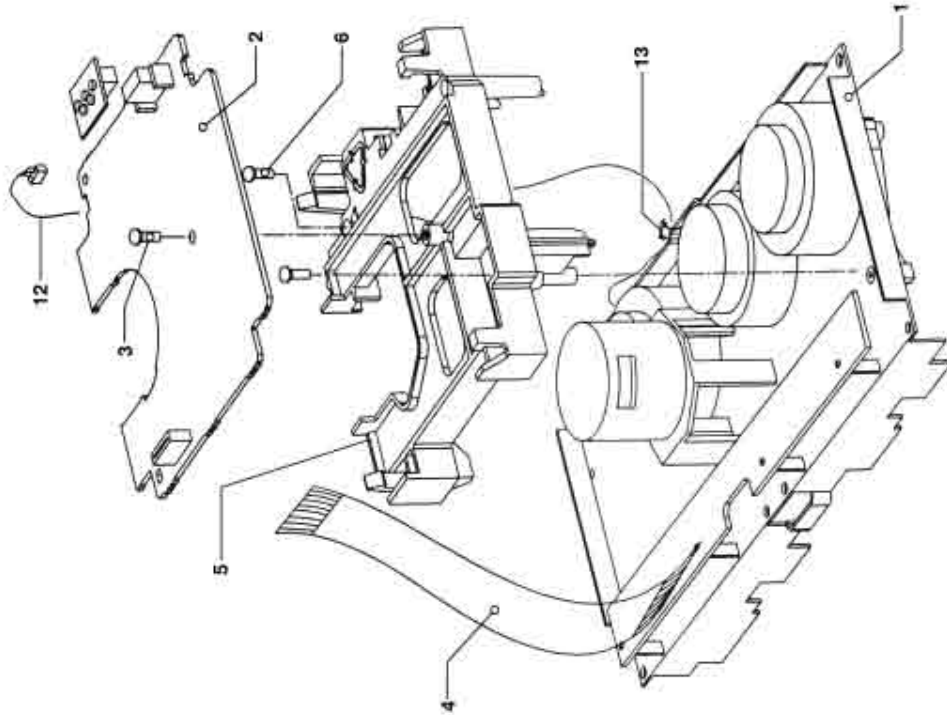


For Non-Autoreverse Mechanism

TAPE MECHANISM - MOTOR EXPLODED VIEW

- | | | |
|----|----------------|----------------|
| 31 | 4022 381 11053 | Motor Assembly |
| 01 | - | Screw M2.6 x 6 |
| 92 | - | Screw M2 x 3 |

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

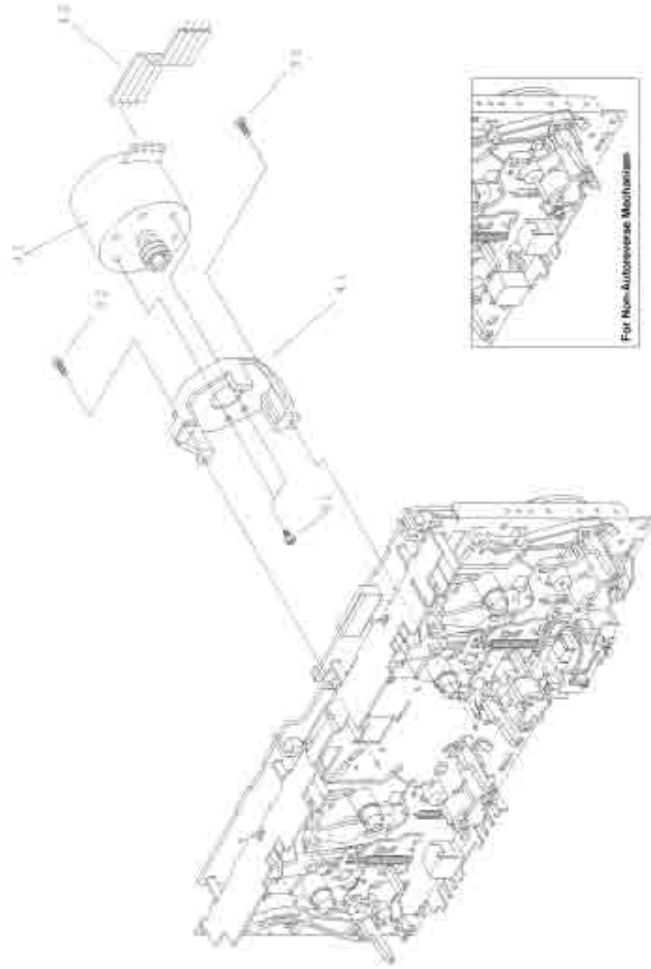


3139 118 77075 (incl. ...77085) 346 440006

TAPE MODULE EXPLODED VIEW

- | | | |
|---|----------------|--------------------------------------------|
| 1 | 3139 118 77130 | Autoreverse Mech. CME44FF01 |
| 1 | 3139 118 77140 | Non-Autoreverse Mech. CME44FF02 Chromafino |
| 1 | 3139 118 77860 | Non-Autoreverse Mech. CME44FF05 Ferro |
| 5 | - | Screws D3 x 10 |
| 6 | - | Screw M2 x 10 |
| 7 | 3139 110 34080 | Flat Cable 14 pin 7.8 cm |

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



For Non-Autoreverse Mechanism

TAPE MECHANISM - MOTOR EXPLODED VIEW

- | | | |
|----|----------------|----------------|
| 31 | 4022 381 11053 | Motor Assembly |
| 01 | - | Screw M2.6 x 6 |
| 92 | - | Screw M2 x 3 |

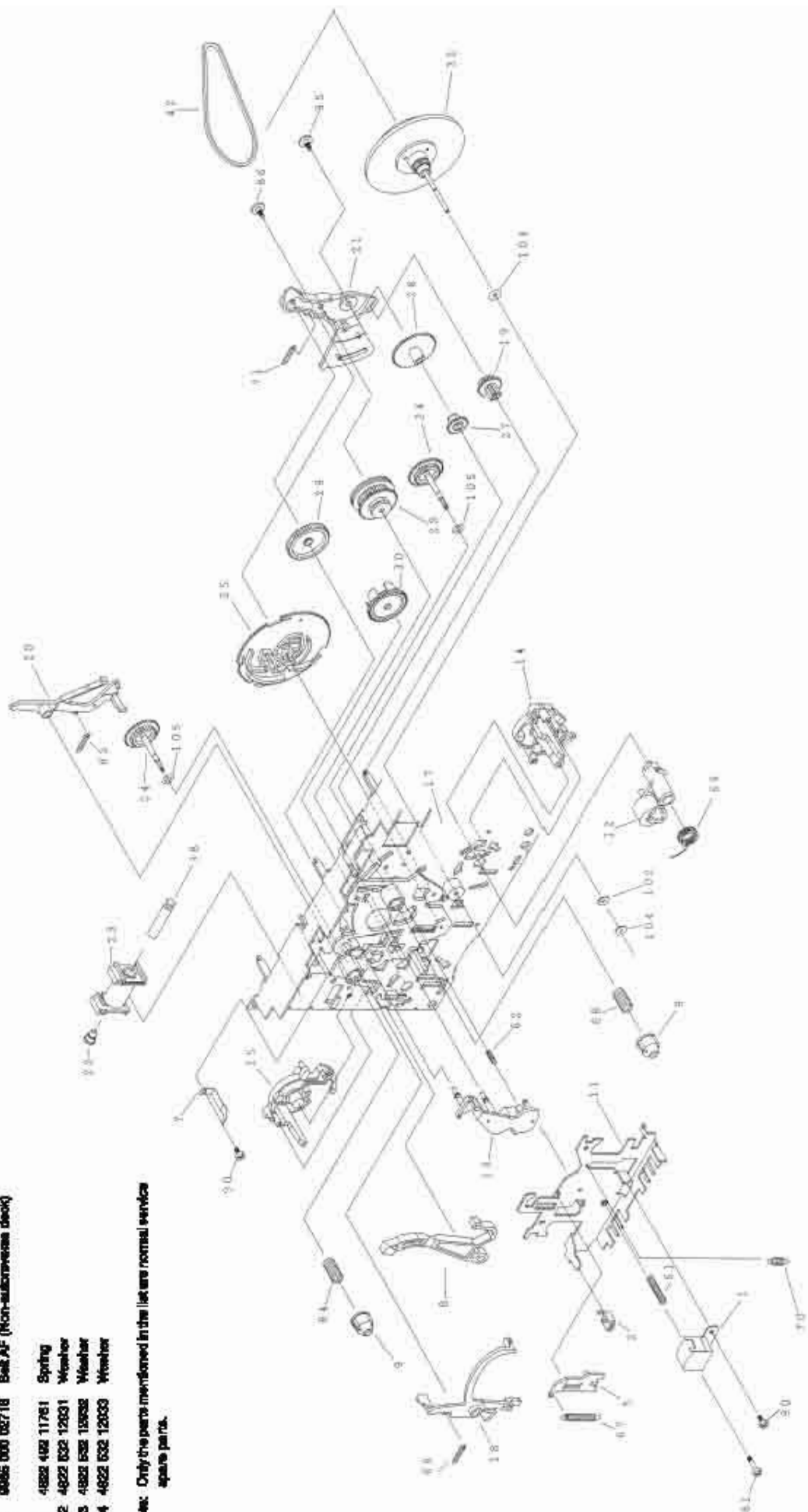
Note: Only the parts mentioned in this list are normal service spare parts.

TAPE MECHANISM A - PLAY

MECHANICAL PARTS - PLAY MECHANISM

1	9065 000 02313	Play Head (Non-Autoreverse deck)
1	9065 000 02321	Play Head (Autoreverse deck)
12	4822 402 10072	Pinch Arm Assembly R
23	8965 000 02314	Coil Assembly
25	8965 000 00443	Cam Gear
32	4822 628 11209	Flywheel Assembly RV
42	8965 000 02316	Belt AF (Autoreverse deck)
42	9065 000 02718	Belt AF (Non-autoreverse deck)
69	4822 402 11761	Spring
102	4822 632 12631	Washer
103	4822 632 13032	Washer
104	4822 632 12033	Washer

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

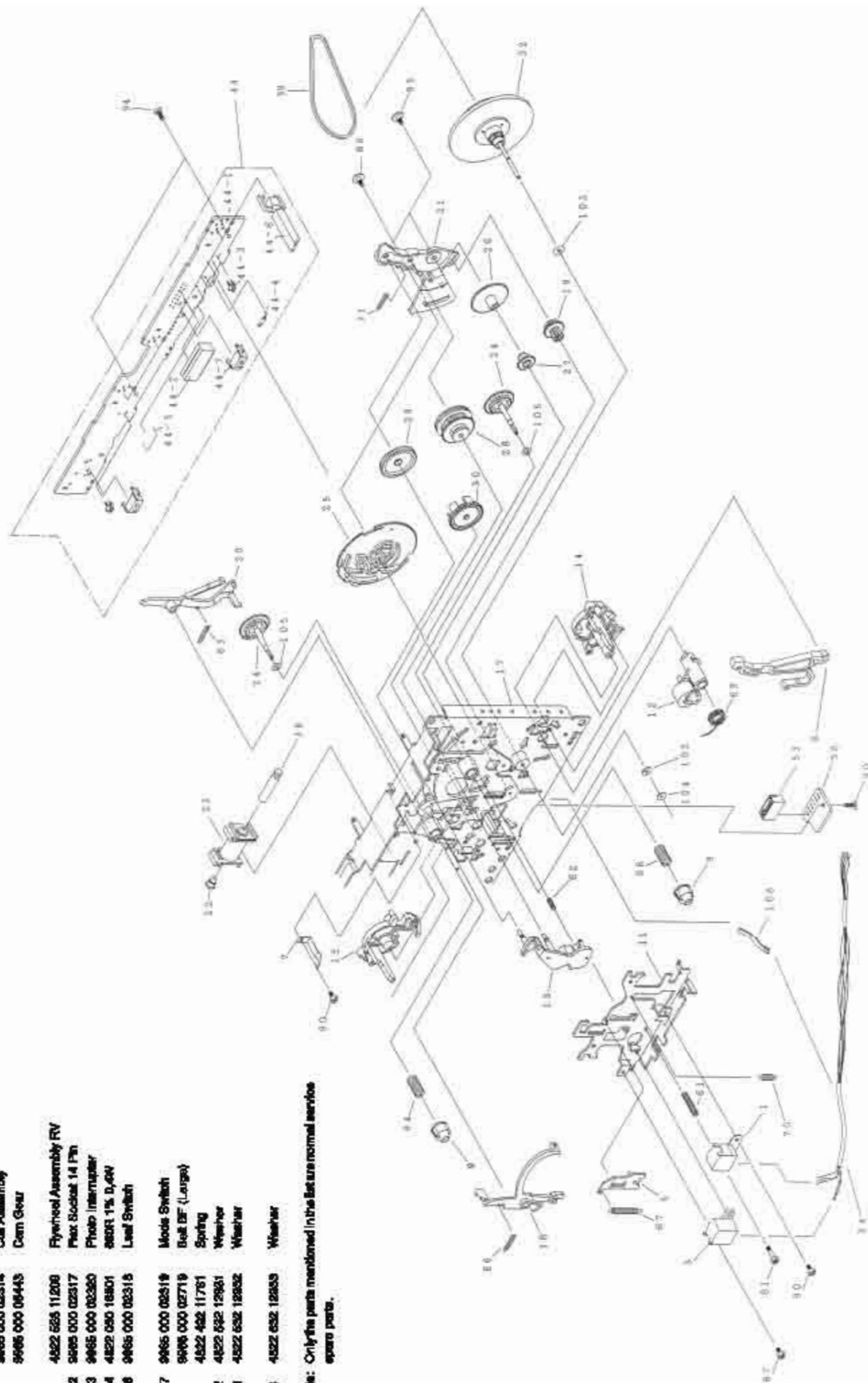


TAPE MECHANISM B - RECORD/PLAYBACK (Non-Adjustable version)

MECHANICAL PARTS - RECORD MECHANISM

1	9965 000 02313	Play Head
3	9965 000 02800	Head, Erase
12	4822 402 10972	Pinch Arm Assembly R
23	9965 000 02314	Coil Assembly
25	9965 000 05443	Corn Gear
32	4822 525 11208	Flywheel Assembly RV
44-2	9965 000 02317	Pinch Socket 14 Pin
44-3	9965 000 02380	Photo Interrupter
44-4	4822 050 18801	800R 1% D, 0.04
44-6	9965 000 02315	Leaf Switch
44-7	9965 000 02319	Mode Switch
98	9965 000 02719	Ball BF (Large)
99	4822 402 11761	Spring
102	4822 632 12961	Washer
103	4822 632 12962	Washer
104	4822 632 12963	Washer

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

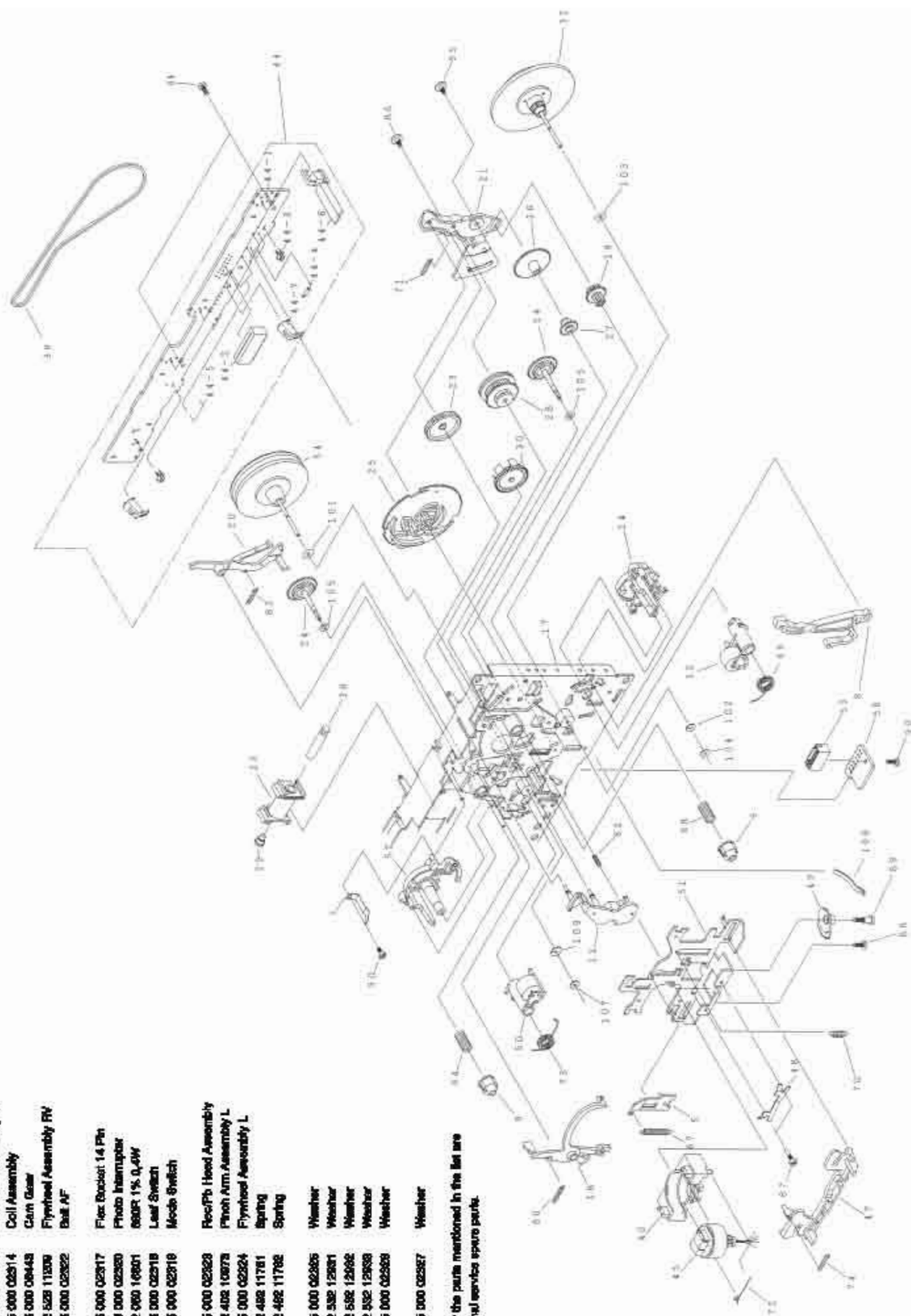


TAPE MECHANISM B - RECORD/PLAYBACK (Autoreverse version)

MECHANICAL PARTS - REC/PB MECHANISM

12	4822 402 10072	Pinch Arm Assembly R
23	9095 000 02514	Coil Assembly
25	9095 000 08443	Corn Gear
32	4822 529 11309	Flywheel Assembly RV
38	9095 000 02522	Ball AF
44-2	9095 000 02517	Flex Robot 14 Pin
44-3	9095 000 02520	Photo Interrupter
44-4	4822 500 10601	9095R 1% 0.4W
44-5	9095 000 02519	Leaf Switch
44-7	9095 000 02518	Mode Switch
45	9095 000 02523	Rec/Pb Head Assembly
50	4822 402 10073	Pinch Arm Assembly L
54	9095 000 02524	Flywheel Assembly L
68	4822 402 11761	Ispring
73	4822 462 11762	Spring
101	9095 000 02585	Washer
102	4822 532 12631	Washer
105	4822 532 12632	Washer
104	4822 532 12633	Washer
107	9095 000 02589	Washer
109	9095 000 02587	Washer

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



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

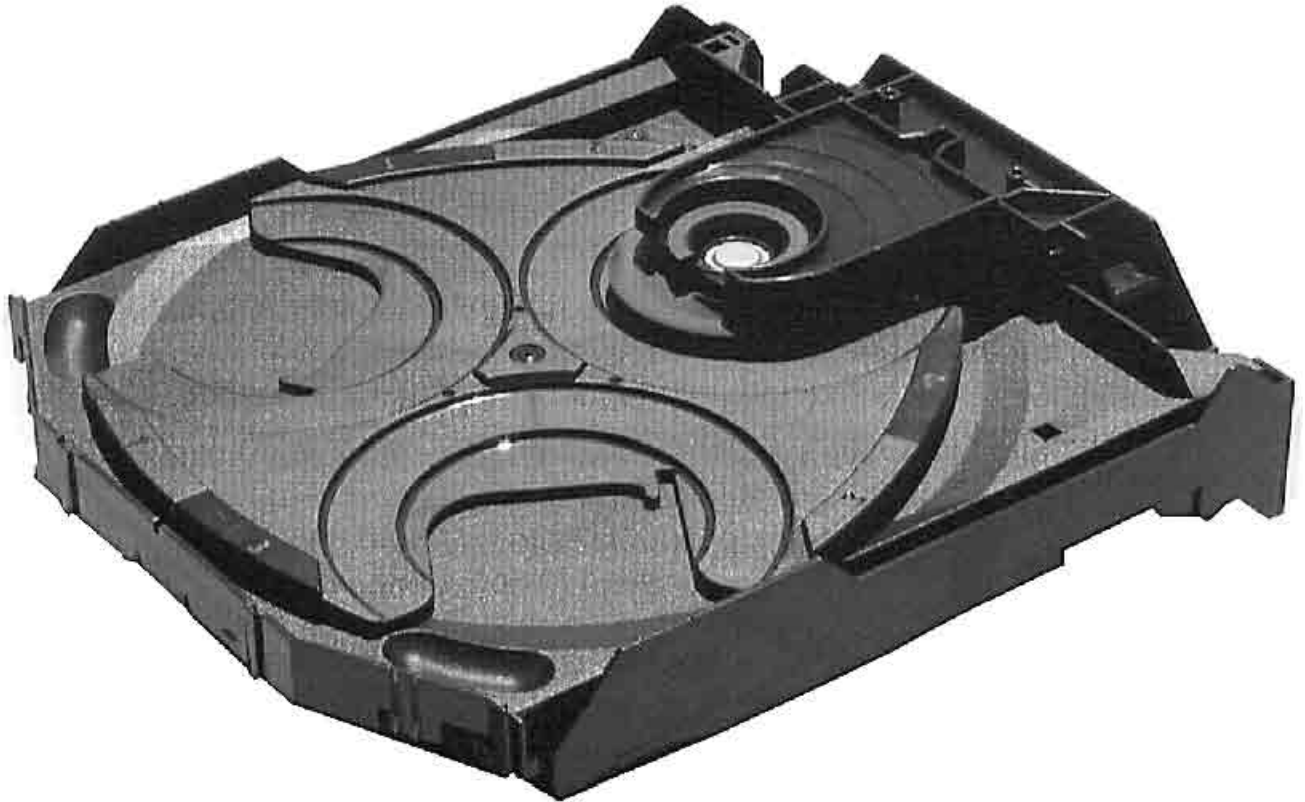
2621	532212231647	1nF 10% 63V
2622	532212234099	470pF 10% 63V
2623	532212234099	470pF 10% 63V
2624	482212614585	100nF 10% 50V only for Ferro
2625	482212614585	100nF 10% 50V
2701	532212233538	150pF 2% 63V Autoreverse
2701	482212233216	170pF 5% 63V Non-autoreverse
2702	532212233538	220pF 5% 63V Autoreverse
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	10uF 20% 63V
2714	482212440248	10uF 20% 63V
2715	482212480195	470uF 20% 10V
2716	482212480195	470uF 20% 10V
2717	482212233177	10nF 50V Autoreverse
2717	482212613188	15nF 5% 63V Non-autoreverse
2718	482212233177	10nF 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

ELECTRICAL PARTS LIST - ETF7 NON-DOLBY BOARD

3685	482211652234	100k 5% 0.5W	3745	482205120332	3kK 5% 0.1W	Autoreverse
3686	482211710837	100k 1% 0.1W	3745	482205120562	5k6 5% 0.1W	Non-autoreverse
3687	482211711503	220R 1% 0.1W not for Ferro	3746	482205120332	3kK 5% 0.1W	Autoreverse
3688	482211710361	680R 1% 0.1W Autoreverse	3746	482205120562	5k6 5% 0.1W	Non-autoreverse
3701	482211711503	220R 1% 0.1W	3748	482211711449	2k2 1% 0.1W	
3702	482211711503	220R 1% 0.1W	3749	482211710834	47k 1% 0.1W	
3703	482211711503	220R 1% 0.1W	3751	482211710833	10k 1% 0.1W	
3704	482211711503	220R 1% 0.1W	3752	482211710837	100k 1% 0.1W	
3705	482211711503	220R 1% 0.1W	3753	482211710837	100k 1% 0.1W	
3706	482211711503	220R 1% 0.1W	3754	482205120105	1M 5% 0.1W	Autoreverse
3707	482205120101	100R 5% 0.1W	3754	482205120479	47R 5% 0.1W	Non-autoreverse
3708	482205120101	100R 5% 0.1W	3755	482205120105	1M 5% 0.1W	Autoreverse
3709	482205120109	10R 5% 0.1W	3755	482205120479	47R 5% 0.1W	Non-autoreverse
3710	482205120109	10R 5% 0.1W	3756	482211713579	220k 1% 0.1W	
3711	482205120154	150k 5% 0.1W	3757	482211713579	220k 1% 0.1W	
3712	482205120154	150k 5% 0.1W	3758	482211710833	10k 1% 0.1W	
3713	482205120109	10R 5% 0.1W	3759	482211710833	10k 1% 0.1W	
3714	482205120109	10R 5% 0.1W	3760	482205120121	120R 5% 0.1W	
3715	482205120182	1k8 5% 0.1W	3761	482205021003	10k 1% 0.6W	
3716	482205120182	1k8 5% 0.1W	3762	482211711454	820R 1% 0.1W	
3717	482211711449	2k2 1% 0.1W	3763	482205120154	150k 5% 0.1W	
3718	482211711449	2k2 1% 0.1W	3764	482211683872	220R 5% 0.5W	
3719	482211711383	12k 1% 0.1W	3765	482205120393	39k 5% 0.1W	
3720	482211711383	12k 1% 0.1W	3766	482205120475	4M7 5% 0.1W	
3721	482205120392	3k8 5% 0.1W	3767	482205120475	4M7 5% 0.1W	
3722	482205120392	3k8 5% 0.1W	3768	482211710833	10k 1% 0.1W	
3723	482211683933	15k 1% 0.1W	3769	482211711383	12k 1% 0.1W	Autoreverse
3723	482211710965	18k 1% 0.1W	3769	482205120822	8k2 5% 0.1W	Non-autoreverse
3724	482211683933	15k 1% 0.1W	3770	482211711139	1k5 1% 0.1W	
3724	482211710965	18k 1% 0.1W	3771	482205120122	1k2 5% 0.1W	
3725	482205120109	10R 5% 0.1W not for Ferro	3772	482211711507	6k8 1% 0.1W	Autoreverse
3726	482205120109	10R 5% 0.1W not for Ferro	3772	482205120562	5k6 5% 0.1W	Non-autoreverse
3727	482205120562	5k6 5% 0.1W	3773	482210012227	Trimmer 4k7 30% 0.1W	
3727	482211711507	6k8 1% 0.1W	3774	482211683933	15k 1% 0.1W	Autoreverse
3728	482205120562	5k6 5% 0.1W	3774	482205120822	8k2 5% 0.1W	Non-autoreverse
3728	482211711507	6k8 1% 0.1W	3775	482205120478	4R7 5% 0.1W	
3729	482205120332	3k3 5% 0.1W	3776	482211711507	6k8 1% 0.1W	
3729	482205120472	4k7 5% 0.1W	3777	482211710353	150R 1% 0.1W	
3730	482205120332	3k3 5% 0.1W	3778	482205210688	Δ 6R8 5% 0.33W	
3730	482205120472	4k7 5% 0.1W	3779	482205120334	330k 5% 0.1W	
3731	482205120822	8k2 5% 0.1W	3780	482205120105	1M 5% 0.1W	
3732	482205120822	8k2 5% 0.1W	3781	482205120475	4M7 5% 0.1W	
3733	482205120122	1k2 5% 0.1W	3784	482205110102	1k 2% 0.25W	
3734	482205120122	1k2 5% 0.1W	3786	482205120223	22k 5% 0.1W	
3735	482205120223	22k 5% 0.1W	3787	482205120105	1M 5% 0.1W	
3736	482205120223	22k 5% 0.1W	3788	482205120105	1M 5% 0.1W	
3741	482211711449	2k2 1% 0.1W	3789	482211710834	47k 1% 0.1W	
3742	482211711449	2k2 1% 0.1W	4701	482205120008	0R Jumper 0805	
3743	482211711139	1k5 1% 0.1W	4702	482205120008	0R Jumper 0805	
3743	482211711449	2k2 1% 0.1W	4703	482205120008	0R Jumper 0805	
3744	482211711139	1k5 1% 0.1W	4704	482205120008	0R Jumper 0805	
3744	482211711449	2k2 1% 0.1W	4705	482205120008	0R Jumper 0805	

ELECTRICAL PARTS LIST - E177 NON-DOLBY BOARD

RESISTORS			Autoreverse		
4706	482205120008	OR Jumper 0805	6612	482213031878	1N4003G
4707	482205120008	OR Jumper 0805	6614	482213030621	1N4148
4708	482205120008	OR Jumper 0805	6770	482213030621	1N4148
4709	482205120008	OR Jumper 0805	6771	482213030621	1N4148
4710	482205120008	OR Jumper 0805	6772	482213030621	1N4148
4711	482205120008	OR Jumper 0805	6773	482213030621	1N4148
4712	482205120008	OR Jumper 0805	6774	482213030621	1N4148
4713	482205120008	OR Jumper 0805	6775	482213030621	1N4148
4714	482205120008	OR Jumper 0805	6776	482213030621	1N4148
4715	482205120008	OR Jumper 0805	6777	482213034382	BZX79-F8V2
4716	482205120008	OR Jumper 0805	6778	482213030621	1N4148
4717	482205120008	OR Jumper 0805	6782	482213030621	1N4148
4718	482205120008	OR Jumper 0805	6785	482213030621	1N4148
4719	482205120008	OR Jumper 0805	6786	482213030621	1N4148
4720	482205120008	OR Jumper 0805	TRANSISTORS & INTEGRATED CIRCUITS		
4721	482205120008	OR Jumper 0805	7610	532220911306	HEF4094BT
4722	482205120008	OR Jumper 0805	7612	482213011201	PMBT2907
4723	482205120008	OR Jumper 0805	7613	482213011201	PMBT2907
4724	482205120008	OR Jumper 0805	7614	482213011201	PMBT2907
4725	482205120008	OR Jumper 0805	7616	482213060373	BC857B
4726	482205120008	OR Jumper 0805	7618	482213060511	BC847B
4727	482205120008	OR Jumper 0805	7619	482213060511	BC847B
4728	482205120008	OR Jumper 0805	7620	482213060511	BC847B
4729	482205120008	OR Jumper 0805	7622	482213060511	BC847B
4730	482205120008	OR Jumper 0805	7623	482213060511	BC847B
4731	482205120008	OR Jumper 0805	7624	482213060511	BC847B
4732	482205120008	OR Jumper 0805	7710	482220932919	HEF4952BT
4733	482205120008	OR Jumper 0805	7720	932214000688	AN7323S
4734	482205120008	OR Jumper 0805	7730	482220932919	HEF4952BT
4735	482205120008	OR Jumper 0805	7740	482220932919	HEF4952BT
4736	482205120008	OR Jumper 0805	7780	482213060511	BC847B
4737	482205120008	OR Jumper 0805	7781	482213042804	BC817-25
4738	482205120008	OR Jumper 0805	7782	482213044568	BC557B
4739	482205120008	OR Jumper 0805	7783	482213060511	BC847B
4740	482205120008	OR Jumper 0805	7784	482213060373	BC857B
4741	482205120008	OR Jumper 0805	7786	482213063494	J111
4742	482205120008	OR Jumper 0805	7787	482213060511	BC847B
4744	482205120008	OR Jumper 0805	7791	482213060511	BC847B
4745	482205120008	OR Jumper 0805	7792	482213060511	BC847B
4746	482205120008	OR Jumper 0805	Note: Only the parts mentioned in this list are normal service spare parts.		
4748	482205120008	OR Jumper 0805			
4785	482205120008	only for Ferro			
4790	482205120008	OR Jumper 0805			
4794	482205120008	OR Jumper 0805			
4795	482205120008	OR Jumper 0805			
COILS & FILTERS					
5701	482215711477	Coil 2.2μH 5%			
5703	482215620946	Osc Coil 100kHz			
DIODES					
6611	482213031878	1N4003G			



3CDC-LC-MP3CD2002 **(3 Disc Carousel Changer+MP3 Board)**

Layout stage .2

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CD PART

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MP3 PART

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Service hints

CAUTION

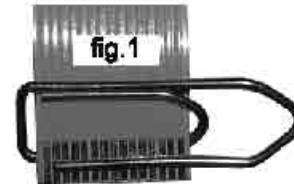
CHARGED CAPACITORS ON THE SERVO BOARD MAY DAMAGE THE CD DRIVE ELECTRONICS WHEN CONNECTING A NEW CD MECHANISM. THAT'S WHY, BESIDES THE SAFETY MEASURES LIKE

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

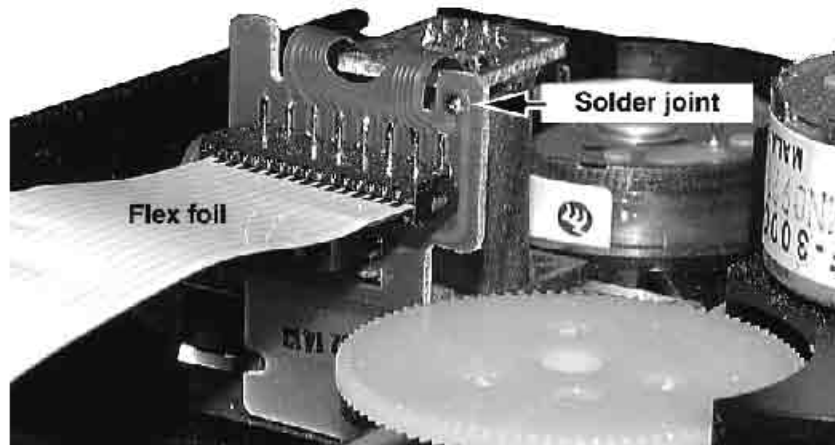
ADDITIONAL ACTIONS MUST BE TAKEN BY THE REPAIR TECHNICIAN.

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

1. Disconnect flexfoil cable from the old CD drive
2. Put a paperclip on the flexfoil to short-circuit the contacts (fig. 1)
3. Remove the old CD drive
4. Remove paperclip from the flexfoil and connect it to the new drive
5. Position the new CD drive in its studs
6. Remove solder joint from the Laserunit



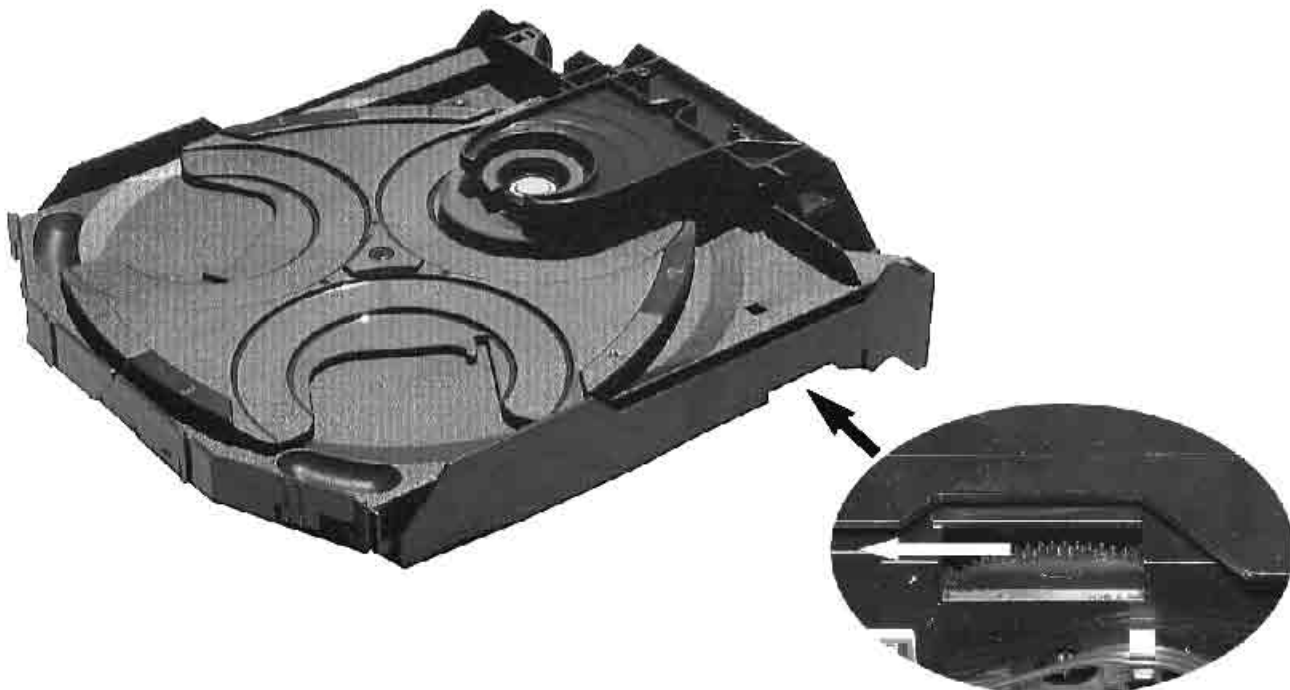
Attention: The laser diode of this CD drive is protected against ESD by a solder joint which shortcircuits the laser diode to ground.
For proper functionality of the CD drive this solder joint must be removed after connection the drive to the set.



Emergency open

In case of a Supply fault, the tray can be opened manually.

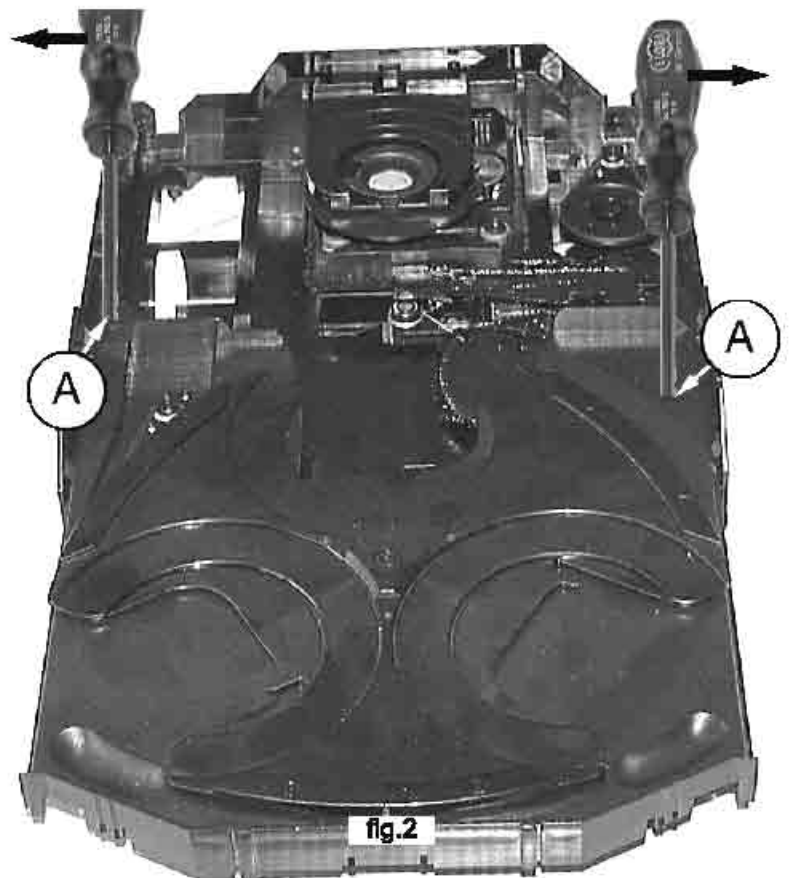
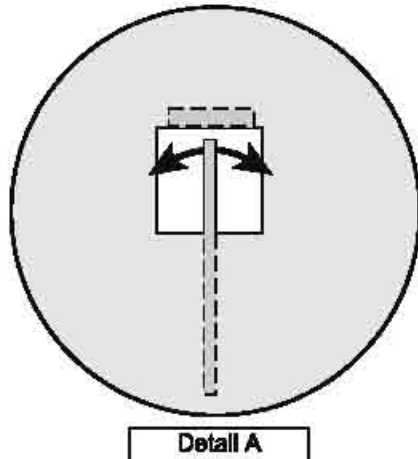
1. Remove the top cover of the set to get access to the Changer Module.
2. Turn gearwheel clockwise (as shown in picture below).



Service hints

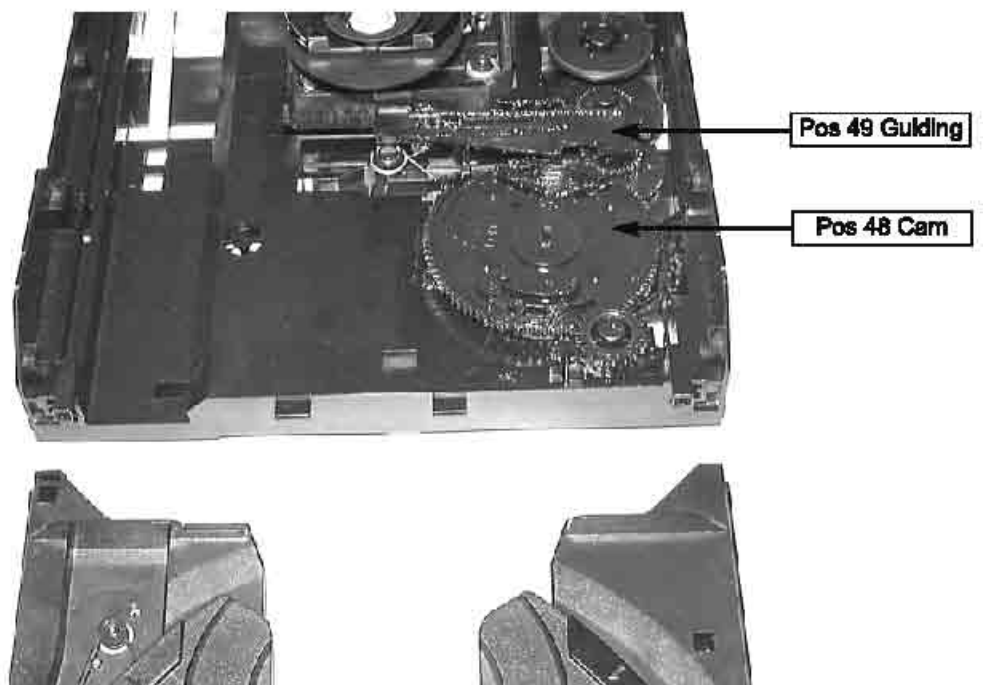
Dismantling of Tray

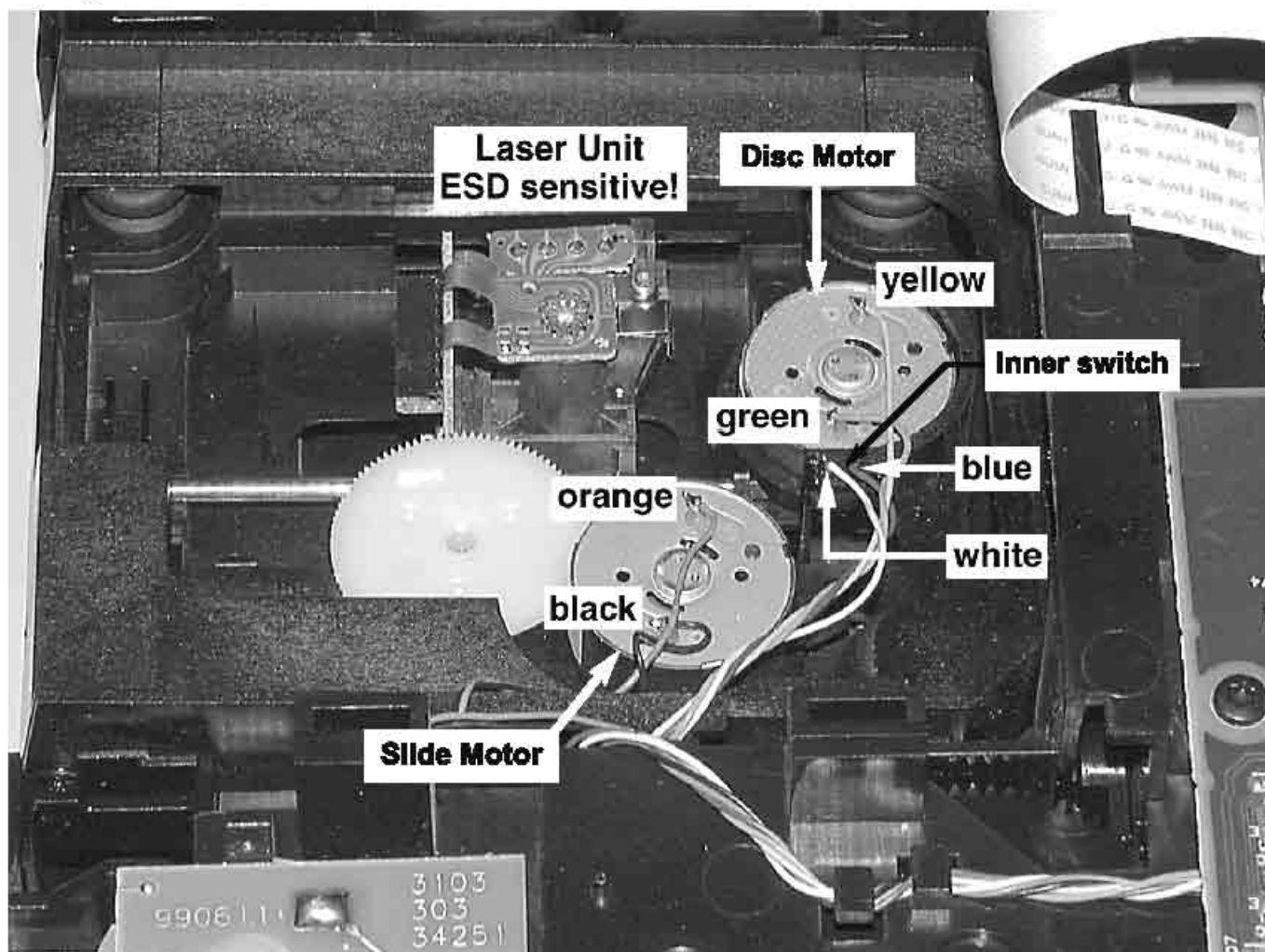
1. Open the tray.
2. Release 2x catch as shown in fig. 2 and Detail A
3. Pull tray out.



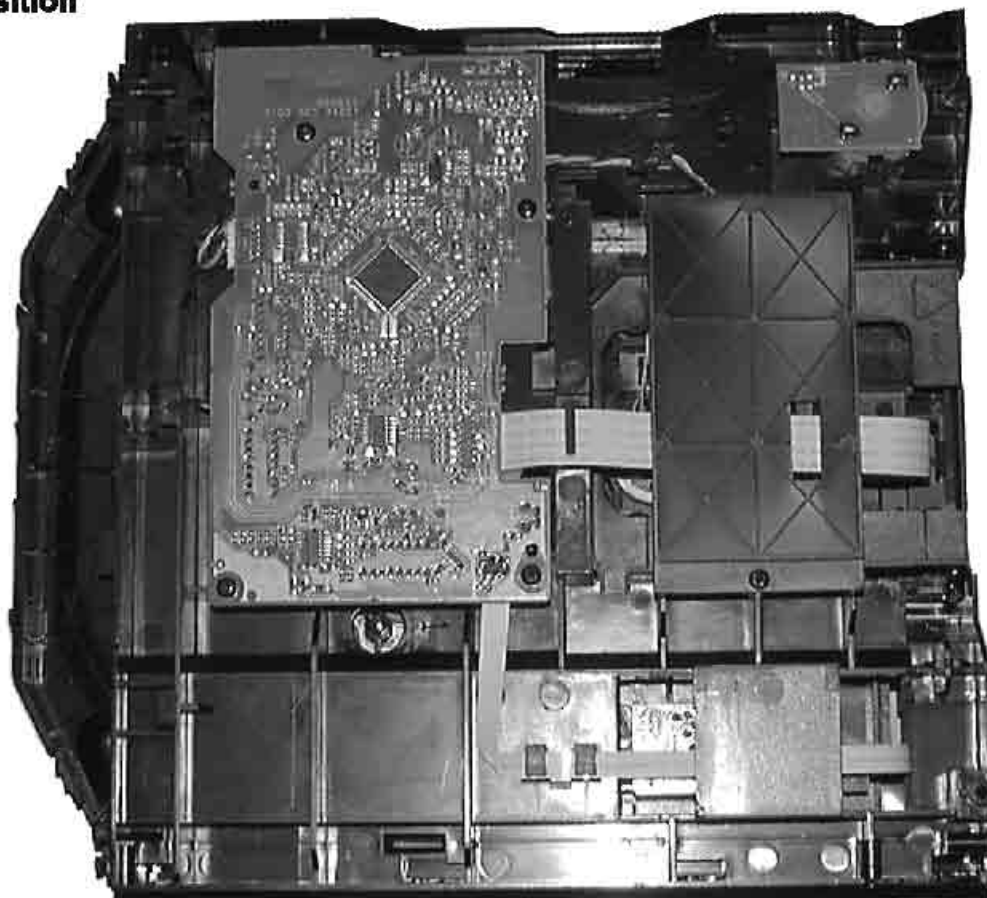
Assembling of Tray

1. Turn Cam (pos. 48) clockwise to end position.
2. If necessary - move Guiding (pos. 49) to the right end position.
3. Insert the Tray.



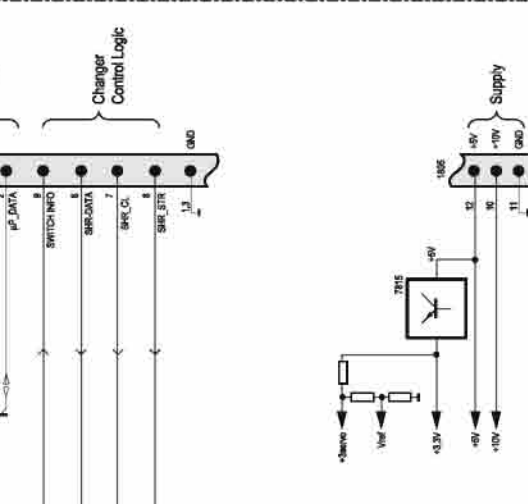
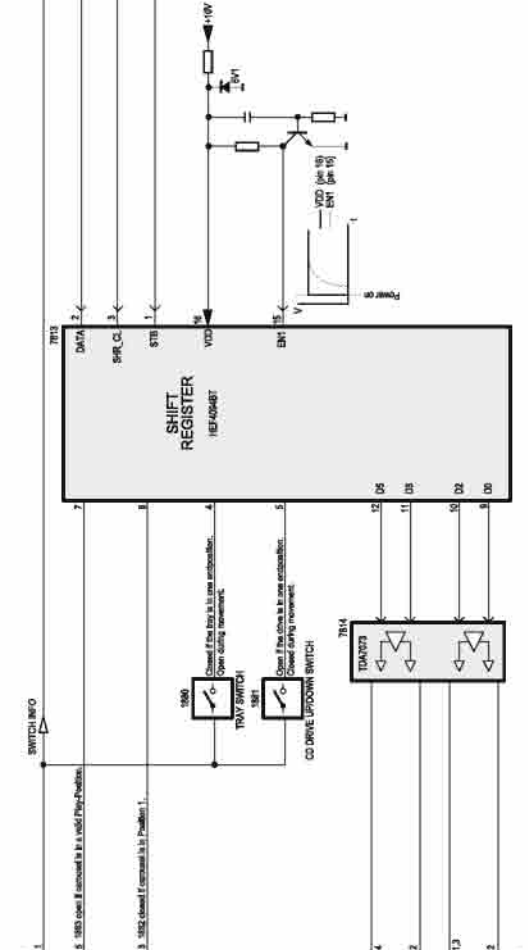
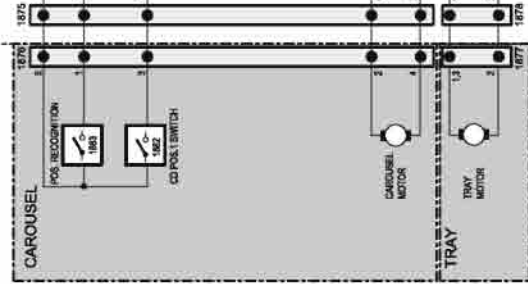
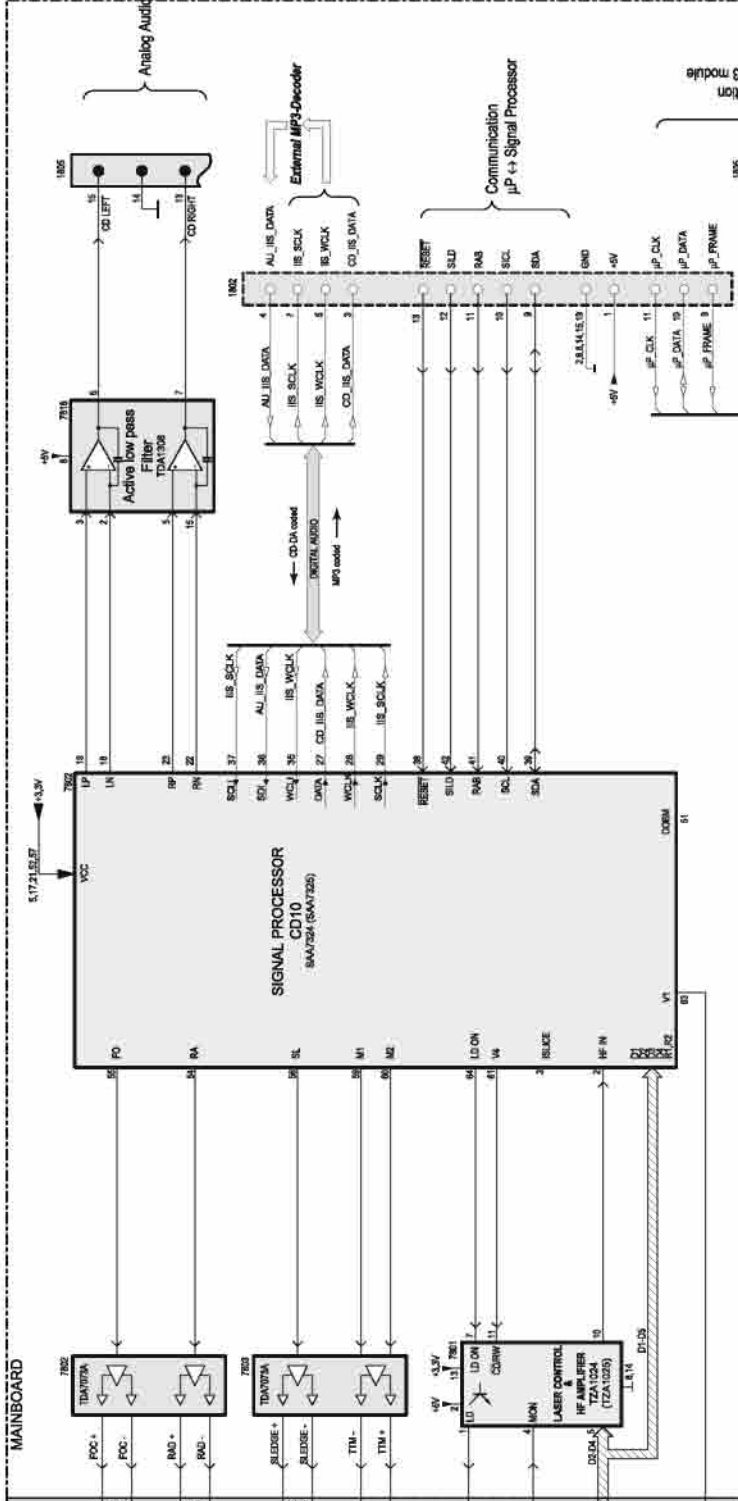
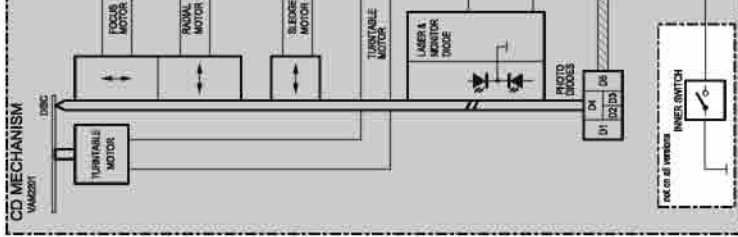


Service Position



BLOCK DIAGRAM 3CDC-LC MP3 Version

MAINBOARD



3CDC-LC-MP3CD2002 Copperside view



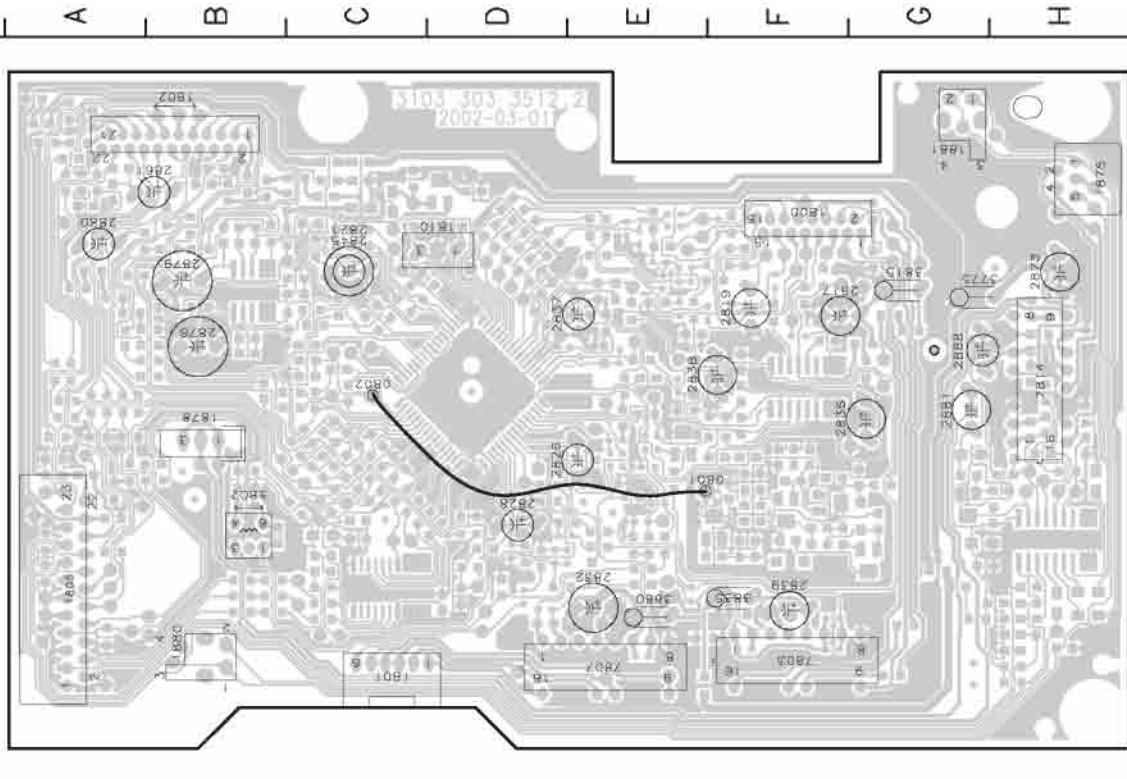
This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram respectively partlist.

3CDC-LC-MP3CD2002 Layout Map 3 2002-09-27

Mapping

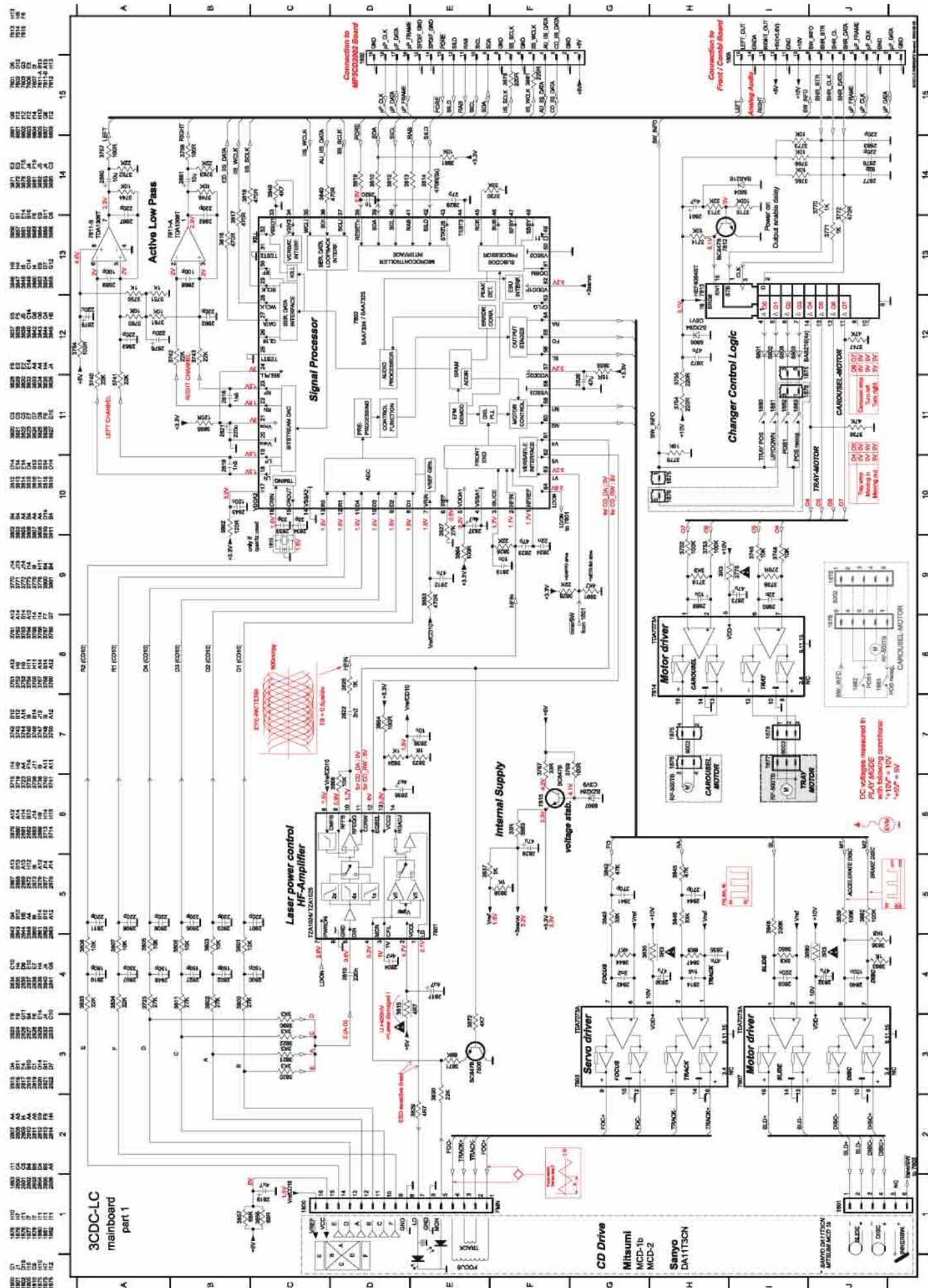
Copperside		Componentside	
2800 E4	3730 C3	3948 D3	4823 E3
2801 D4	3731 C2	3949 C3	4824 C5
2802 E4	3732 C2	3950 D1	4825 B4
2803 D4	3733 C2	3953 E4	4826 C3
2804 F3	3734 D2	3954 E3	4828 C3
2805 D4	3735 G2	3955 E3	4829 G4
2806 D4	3736 H3	3956 F4	4830 G3
2807 E4	3738 H3	3957 F4	4831 G3
2808 D4	3740 C4	3958 C2	4832 F3
2809 D1	3741 C4	3959 C2	4833 E3
2810 E4	3742 C4	3960 C2	4834 F4
2811 D4	3743 C4	3961 C2	4837 F4
2812 E4	3744 B4	3962 C4	4838 E3
2813 E4	3745 H3	3963 D2	4839 E3
2814 F1	3746 B3	3964 E4	4840 F3
2815 F4	3747 H3	3965 C4	4841 E3
2816 C4	3748 H3	3966 F3	4842 G3
2818 C4	3750 B4	3967 E4	4844 G3
2820 C3	3751 B4	3971 E2	4845 G4
2822 E3	3752 H3	3972 C3	4846 E4
2823 E3	3753 H2	3978 C3	4847 E4
2824 E3	3754 G2	3981 C4	4848 G4
2827 E4	3755 G1	3982 E2	4849 E3
2828 C3	3756 B2	3983 E2	4851 F3
2831 F4	3757 A5	3984 E3	4855 F1
2833 C4	3758 A5	3985 E2	4856 E4
2834 D4	3759 D2	3990 F4	4857 G1
2835 D2	3760 B4	3991 E2	4858 E1
2840 E1	3761 C4	4700 B2	4868 E1
2841 D2	3762 A4	4702 B2	4869 E2
2843 D4	3763 A4	4703 B2	4871 E2
2844 D2	3765 H2	4704 B1	4872 D2
2848 E4	3766 H1	4705 B1	4873 E2
2850 F2	3767 D4	4706 A3	4874 E2
2860 H3	3769 C5	4707 A3	4875 E2
2862 C4	3770 H2	4708 A3	4878 D2
2863 C4	3771 H1	4709 A3	4878 D2
2864 D2	3772 H2	4710 A3	4879 C3
2865 B2	3773 H1	4711 A3	4880 E3
2866 C4	3774 C2	4712 B3	4881 D2
2867 B4	3776 H1	4713 B3	4882 E4
2868 C4	3777 C5	4714 B3	4883 E4
2869 C4	3800 E4	4715 B4	4884 A2
2870 C2	3801 E4	4716 B3	4885 A2
2871 D2	3802 E4	4717 A3	4886 A2
2872 G2	3803 C4	4718 A1	4887 A2
2874 D2	3804 C3	4719 A1	4888 A2
2877 H1	3805 D4	4720 A4	4889 B2
2882 B3	3807 D4	4722 A4	4890 A2
2883 H1	3808 D4	4724 B4	4891 A2
2884 F2	3810 C3	4727 B4	4892 A3
2885 G2	3811 E4	4728 A4	4894 A3
2886 F3	3812 C3	4729 A4	4895 A3
2887 F2	3813 C2	4730 B4	4896 A3
3700 F2	3814 C2	4731 B4	4897 A3
3701 D2	3815 C3	4732 C5	4898 A3
3702 F3	3817 C3	4733 B3	4899 D2
3703 F2	3818 C3	4734 C4	4901 H2
3704 F2	3819 C3	4735 B5	4902 H2
3705 C2	3820 E4	4736 A5	4903 H2
3706 C1	3821 F4	4737 C5	4904 G3
3707 C2	3822 F4	4738 B5	4905 G2
3708 C2	3823 F3	4739 C4	4906 C4
3709 F2	3824 F3	4740 C5	4907 C4
3710 F2	3825 E3	4741 B4	4908 H2
3711 C2	3826 E3	4742 A5	4909 C2
3712 B3	3827 D4	4743 A5	4911 G2
3713 G2	3828 D2	4744 A5	4912 F2
3714 H2	3829 F4	4745 A5	7801 F3
3715 H2	3830 F4	4746 A5	7802 D3
3716 D2	3832 C3	4747 A5	7806 E3
3717 D2	3833 E4	4748 A5	7811 B4
3718 C2	3834 E4	4749 A5	7812 G2
3719 H3	3839 E2	4801 G1	7813 H2
3720 F2	3837 D2	4803 B2	7815 D4
3721 F3	3838 D2	4804 A1	7816 C2
3722 F3	3839 E3	4805 B5	7820 F2
3723 F4	3840 C3	4806 C4	7821 F2
3724 G2	3842 D2	4807 H3	7822 G2
3725 F2	3843 E2	4808 H3	7823 F2
3726 F2	3844 F1	4809 H3	
3727 F2	3846 D2	4810 H4	
3728 F3	3846 E2	4811 H4	
3729 F2	3847 E2	4820 C4	

3CDC-LC-MP3CD2002 Components seen from Copperside



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

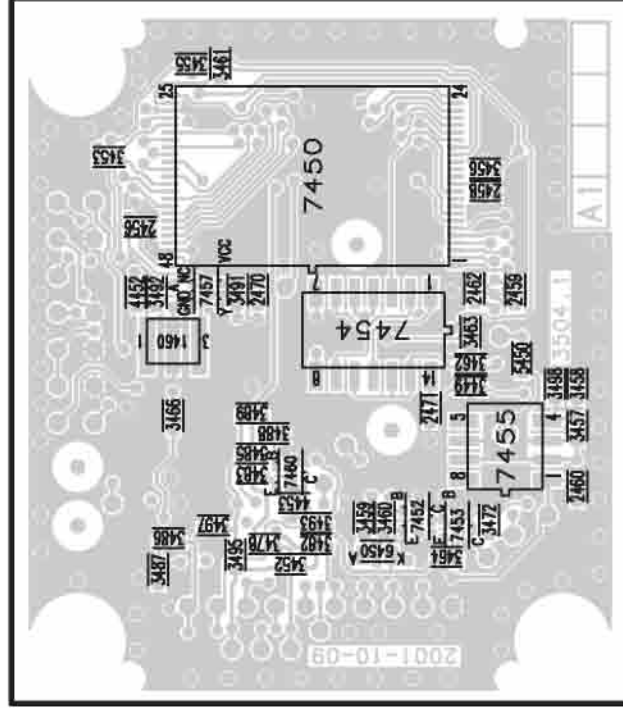
3CDC-LC-MP3CD2002 Layout Map 3 2002-09-27



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

1 2 3 4 5

Side A



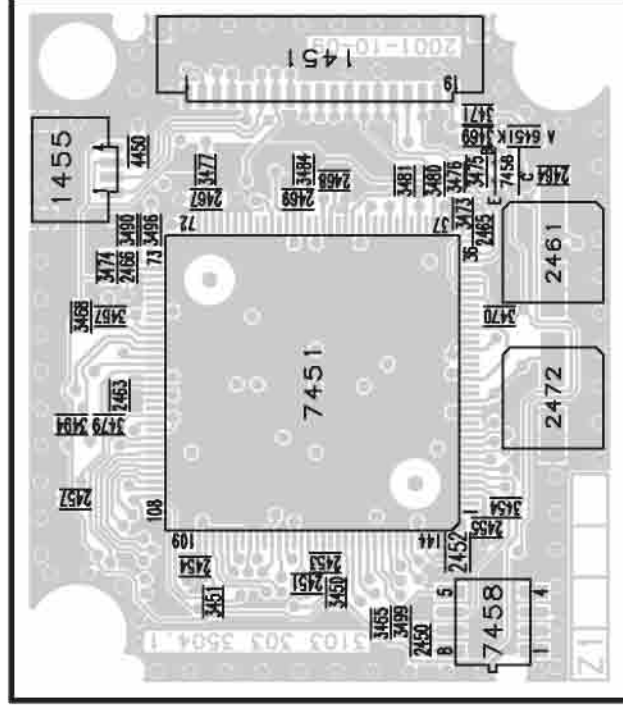
This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram
respectively partlist.

1 2 3 4 5

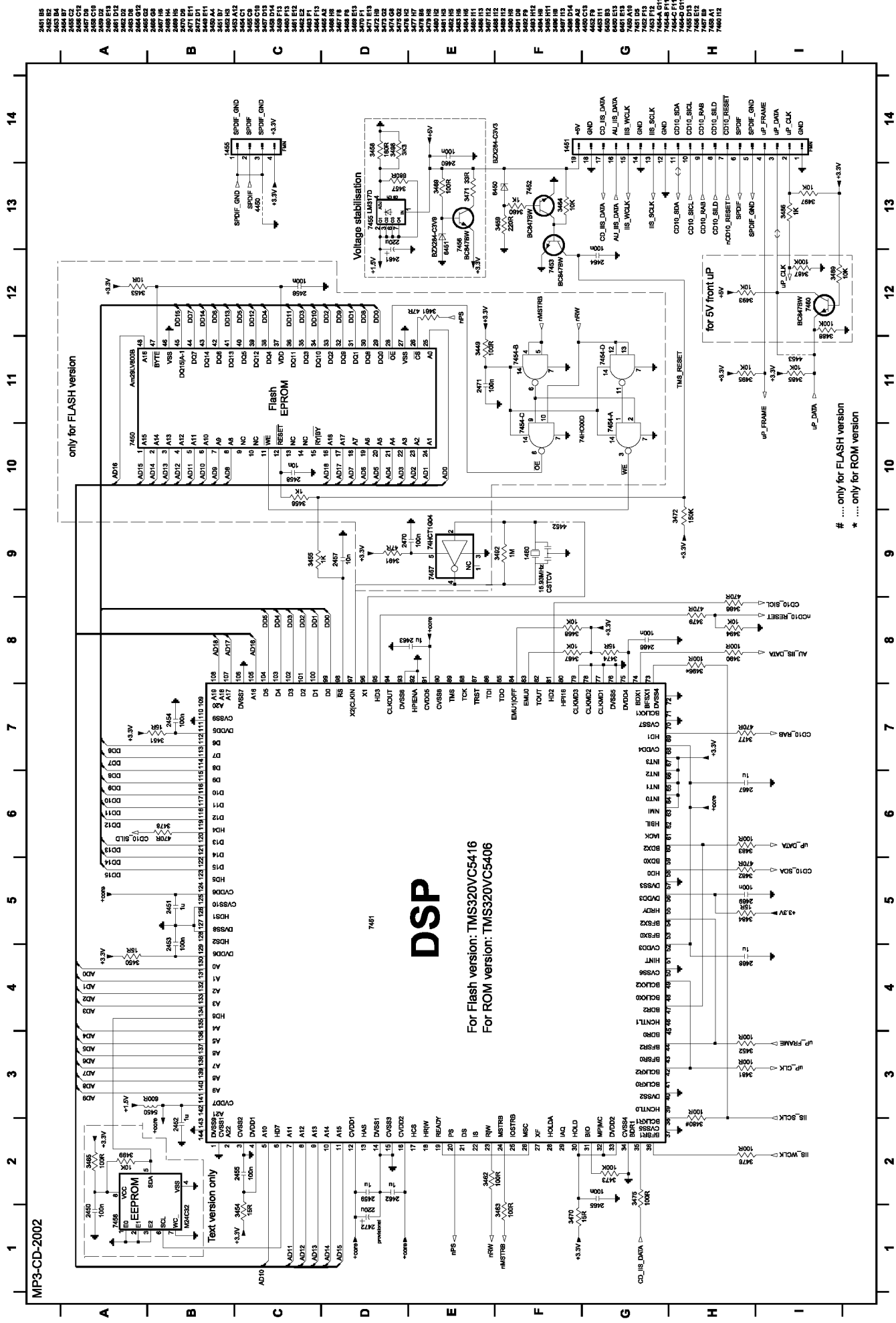
1451 B5	2457 A2	2469 B4	3469 C4	3479 A2	4450 A4
1455 A4	2461 D4	2472 D3	3470 D3	3480 C4	6451 D4
2450 C1	2463 A3	3450 C1	3471 C4	3481 C4	7451 B3
2451 B1	2464 D4	3451 B1	3473 C4	3484 B4	7456 D4
2452 C2	2465 D4	3454 D2	3474 A3	3490 A4	7458 D1
2453 B1	2466 A3	3465 C1	3475 C4	3494 A2	
2454 B1	2467 B4	3467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

1 2 3 4 5

Side B



1 2 3 4 5



EXPLODED VIEW (3CDC-LC Module)

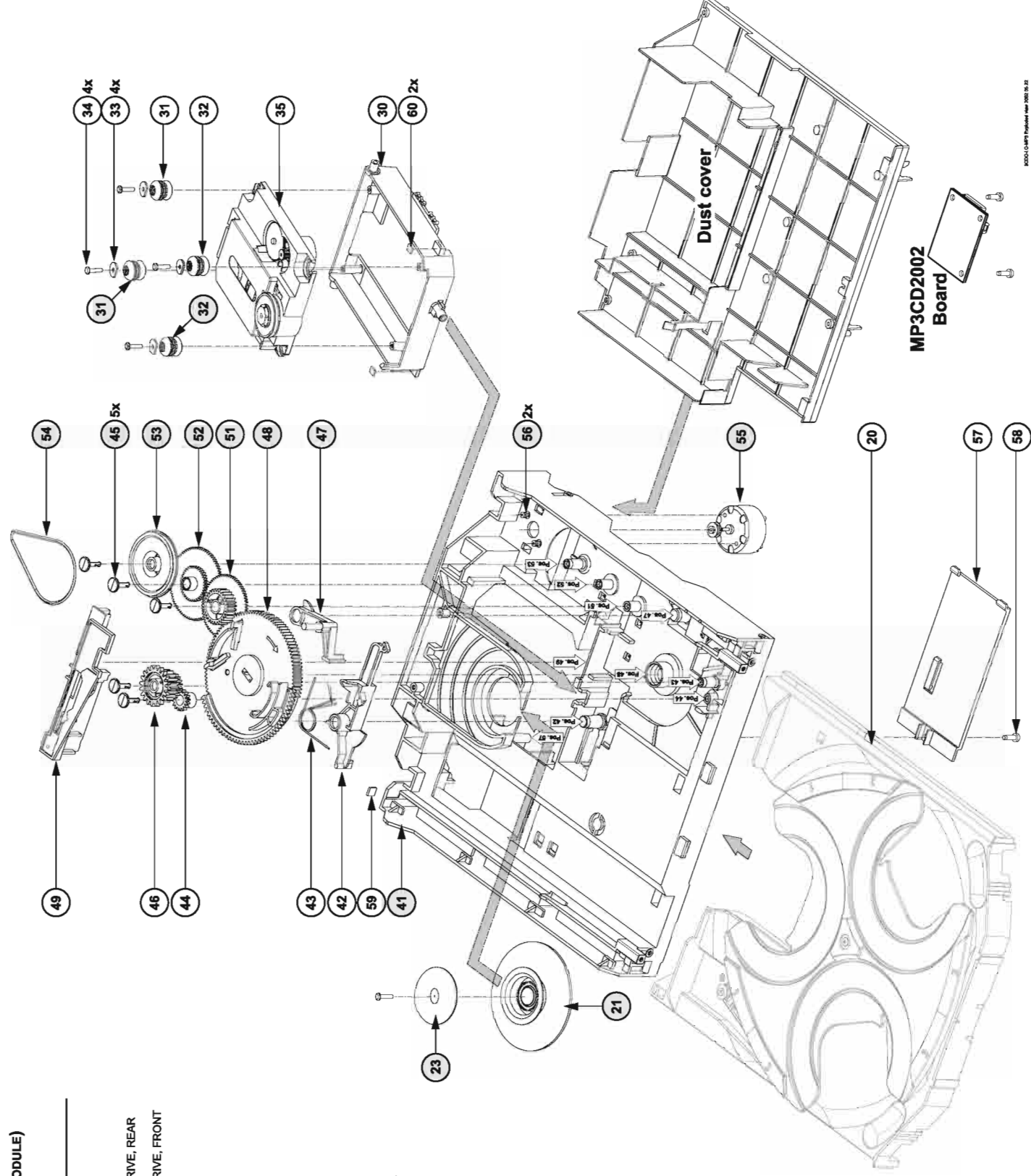
MECHANICAL PARTS Loader

20	3103 304 66500	DRAWER BLACK
21	3140 114 29070	PRESSURE RING-DA11
23	3140 111 21270	METAL RING-DA11
30	3103 304 66560	SUPPORT
31	4822 529 10386	RUBBER DAMPER CD DRIVE, REAR
32	4822 529 10387	RUBBER DAMPER CD DRIVE, FRONT
33	3103 304 06870	WASHER
35	3103 308 05350	CD DRIVE MCD1B
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 06800	GEAR-4
52	3103 304 06870	GEAR-1
53	3103 304 06960	PULLEY-FRAME
54	3103 304 66810	DRIVING-BELT-DRAWER
55	4822 361 10753	TRAY MOTOR
56	4822 502 12548	SCREW M2.6X3.5
57	3103 304 69880	COVER-DA11
59	4822 466 12146	RUBBER

X spare part
Y non spare part

10-10

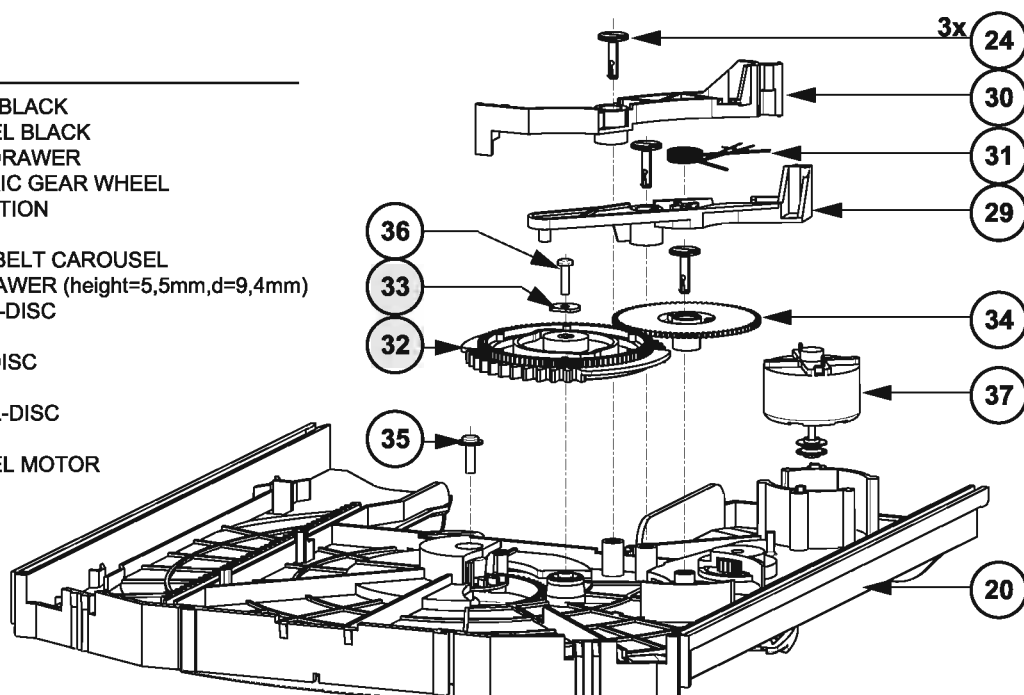
10-10



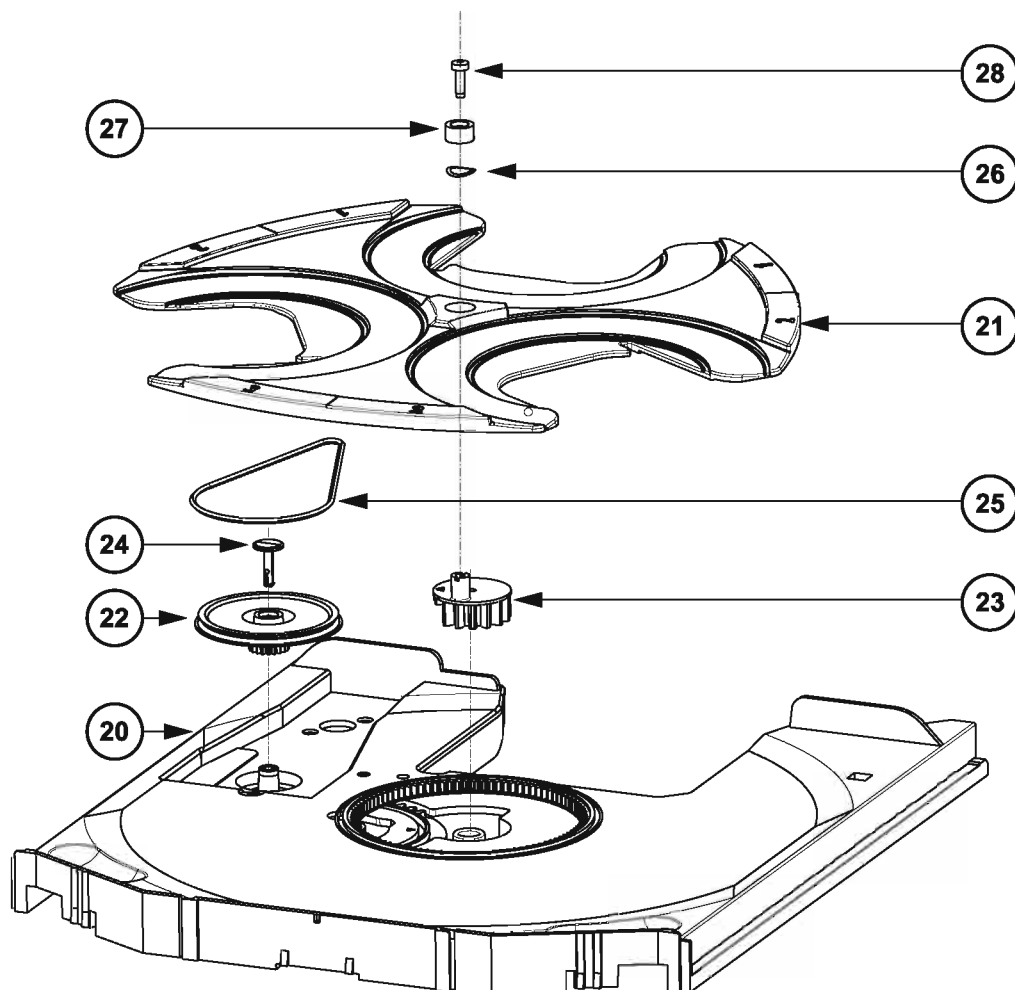
Drawer bottom view

MECHANICAL PARTS *Drawer*

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	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 top view



- (X) spare part
(Y) non spare part

ELECTRICAL PARTSLIST 3CDC-LC MODULE**MISCELLANEOUS**

37	4822 361 10753	CAROUSEL MOTOR
55	4822 361 10753	TRAY MOTOR
1800	2422 025 17389	FFC-CONNECTOR 16Pin
1805	4822 265 10979	FFC-CONNECTOR 15Pin
1875	4822 267 10958	FFC-CONNECTOR 5Pin
1876	2422 025 08332	FFC-CONNECTOR 5Pin
1880	4822 276 13503	SWITCH
1881	4822 276 13503	SWITCH
1882	4822 276 13503	SWITCH
1883	4822 276 13503	SWITCH
8001	3103 308 93070	FLEX FOIL CABLE 19P, 170mm BD
8002	3103 308 91990	FLEXFOIL CABLE, 5P, 200mm AD
8005	3103 308 92930	FLEX FOIL CABLE 16P 170mm 1:n

CAPACITORS

2800 ©	4822 122 33753	150pF	5%	50V
2801 ©	4822 126 13883	220pF	5%	50V
2802 ©	4822 122 33753	150pF	5%	50V
2803 ©	4822 126 13883	220pF	5%	50V
2804 ©	4822 126 13193	4,7nF	10%	63V
2805 ©	4822 126 13883	220pF	5%	50V
2806 ©	4822 126 13883	220pF	5%	50V
2807 ©	4822 126 14241	330pF		50V
2808 ©	4822 126 13883	220pF	5%	50V
2809 ©	4822 126 13879	220nF	20%	16V
2810 ©	4822 126 14508	180pF	5%	50V
2811 ©	4822 126 13883	220pF	5%	50V
2812 ©	3198 024 44730	47nF	5%	50V
2813 ©	4822 122 33177	10nF	20%	50V
2814 ©	4822 126 14247	1,5nF	10%	50V
2815 ©	4822 126 14076	220nF	20%	25V
2816 ©	4822 126 13344	1,5nF	5%	63V
2817	4822 124 40769	4,7µF	20%	100V
2818 ©	4822 126 13344	1,5nF	5%	63V
2819	4822 124 40769	4,7µF	20%	100V
2820 ©	5322 126 11578	1nF	10%	63V
2821	4822 124 42383	220µF	20%	4V
2822 ©	4822 126 14238	2,2nF	10%	50V
2823 ©	4822 126 11785	47pF	5%	50V
2824 ©	5322 122 32654	22nF	10%	63V
2826	4822 124 12362	47µF	20%	4V
2827 ©	4822 122 33753	150pF	5%	50V
2828	4822 124 12362	47µF	20%	4V
2829 ©	4822 126 11669	27pF	10%	50V
2832	4822 124 40433	47µF	20%	25V
2833 ©	2222 867 15339	33pF	5%	50V
2835 ©	3198 024 44730	47nF	5%	50V
2836	4822 124 40769	4,7µF	20%	100V
2837	4822 124 22726	4,7µF	20%	35V
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 126 14238	2,2nF	10%	50V
2843 ©	4822 126 14585	100nF	10%	50V
2844 ©	4822 122 33216	270pF	5%	50V
2848 ©	4822 122 33753	150pF	5%	50V
2860 ©	4822 126 14494	22nF	10%	25V
2861	4822 124 11947	10µF	20%	16V
2862 ©	4822 126 13883	220pF	5%	50V
2863 ©	4822 126 13883	220pF	5%	50V
2865 ©	5322 122 32654	22nF	10%	63V
2866 ©	4822 126 13751	47nF	10%	50V

CAPACITORS

2867 ©	4822 126 13883	220pF	5%	50V
2868 ©	2020 552 94427	100pF	5%	50V
2869 ©	2020 552 94427	100pF	5%	50V
2872 ©	3198 024 44730	47nF	5%	50V
2873	4822 124 80231	47µF	20%	16V
2876	4822 124 12245	220µF	20%	16V
2877 ©	4822 126 14226	82pF		50V
2878 ©	4822 126 13883	220pF	5%	50V
2879	4822 124 12245	220µF	20%	16V
2880	4822 124 11947	10µF	20%	16V
2881	4822 124 40769	4,7µF	20%	100V
2882 ©	4822 126 13883	220pF	5%	50V
2888	4822 124 11947	10µF	20%	16V

RESISTORS

3713 ©	4822 051 30223	22kΩ	5%	0,06W
3714 ©	4822 051 30103	10kΩ	5%	0,06W
3715 ©	4822 117 13632	100kΩ	1%	0,06W
3719 ©	4822 051 30392	3,9kΩ	5%	0,06W
3723 ©	4822 051 20273	27kΩ	5%	0,1W
3730 ©	4822 051 20333	33kΩ	5%	0,1W
3736 ©	4822 117 12925	47kΩ	1%	0,06W
3738 ©	4822 051 30271	270Ω	5%	0,06W
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 051 30103	10kΩ	5%	0,06W
3745 ©	4822 117 10833	10kΩ	1%	0,1W
3746 ©	4822 051 30103	10kΩ	5%	0,06W
3747 ©	4822 117 12925	47kΩ	1%	0,06W
3748 ©	4822 051 30103	10kΩ	5%	0,06W
3750 ©	4822 051 30102	1kΩ	5%	0,06W
3751 ©	4822 051 30102	1kΩ	5%	0,06W
3752 ©	4822 117 13632	100kΩ	1%	0,06W
3753 ©	4822 117 13632	100kΩ	1%	0,06W
3754 ©	4822 051 30221	220Ω	5%	0,06W
3755 ©	4822 117 11503	220Ω	5%	0,1W
3757 ©	4822 117 11373	100Ω	1%	0,1W
3758 ©	4822 051 30101	100Ω	5%	0,06W
3760 ©	4822 117 10833	10kΩ	1%	0,1W
3761 ©	4822 051 30103	10kΩ	5%	0,06W
3762 ©	4822 051 30223	22kΩ	5%	0,06W
3763 ©	4822 051 30223	22kΩ	5%	0,06W
3764 ©	4822 117 11373	100Ω	1%	0,1W
3765 ©	4822 051 30103	10kΩ	5%	0,06W
3766 ©	4822 117 10833	10kΩ	1%	0,1W
3767 ©	4822 051 30339	33Ω	5%	0,06W
3769 ©	4822 051 30101	100Ω	5%	0,06W
3770 ©	4822 051 30102	1kΩ	5%	0,06W
3771 ©	4822 051 30102	1kΩ	5%	0,06W
3772 ©	4822 051 30471	470Ω	5%	0,06W
3773 ©	4822 117 10833	10kΩ	1%	0,1W
3774 ©	4822 117 11373	100Ω	1%	0,1W
3775 ▲	4822 052 10338	3,3Ω	5%	NFR25
3776 ©	4822 051 30103	10kΩ	5%	0,06W
3800 ©	4822 051 30273	27kΩ	5%	0,06W
3801 ©	4822 117 10833	10kΩ	1%	0,1W
3802 ©	4822 051 30273	27kΩ	5%	0,06W
3803 ©	4822 117 10833	10kΩ	1%	0,1W
3805 ©	4822 051 30103	10kΩ	5%	0,06W
3806 ©	4822 051 30103	10kΩ	5%	0,06W
3807 ©	4822 051 30103	10kΩ	5%	0,06W
3808 ©	4822 051 30103	10kΩ	5%	0,06W

ELECTRICAL PARTSLIST 3CDC-LC MODULE**RESISTORS**

3810	4822 051 30471	470Ω	5%	0,06W
3811	4822 051 30273	27kΩ	5%	0,06W
3812	4822 051 20471	470Ω	5%	0,1W
3813	4822 051 20471	470Ω	5%	0,1W
3814	4822 051 20471	470Ω	5%	0,1W
3815	4822 052 10478	4,7Ω	5%	NFR25
3816	4822 051 20471	470Ω	5%	0,1W
3817	4822 051 30471	470Ω	5%	0,06W
3818	4822 051 30471	470Ω	5%	0,06W
3819	4822 051 20471	470Ω	5%	0,1W
3820	4822 051 30332	3,3kΩ	5%	0,06W
3821	4822 051 30332	3,3kΩ	5%	0,06W
3822	4822 051 20332	3,3kΩ	5%	0,1W
3823	4822 051 30102	1kΩ	5%	0,06W
3824	4822 051 30102	1kΩ	5%	0,06W
3825	4822 051 10102	1kΩ	2%	0,25W
3826	4822 051 30223	22kΩ	5%	0,06W
3827	4822 051 20273	27kΩ	5%	0,1W
3829	4822 117 13608	4,7Ω	5%	0,06W
3830	4822 051 20223	22kΩ	5%	0,1W
3833	4822 051 30223	22kΩ	5%	0,06W
3834	4822 051 30223	22kΩ	5%	0,06W
3835	4822 052 10338	3,3Ω	5%	NFR25
3836	4822 117 12903	1,8kΩ	1%	0,06W
3837	4822 051 10102	1kΩ	2%	0,25W
3838	4822 051 30102	1kΩ	5%	0,06W
3839	4822 117 13632	100kΩ	1%	0,06W
3840	4822 051 20471	470Ω	5%	0,1W
3842	4822 117 10834	47kΩ	1%	0,1W
3843	4822 051 20333	33kΩ	5%	0,1W
3844	4822 051 30472	4,7kΩ	5%	0,06W
3845	4822 117 10834	47kΩ	1%	0,1W
3846	4822 051 20333	33kΩ	5%	0,1W
3847	4822 051 30682	6,8kΩ	5%	0,06W
3848	3198 021 52240	220kΩ	5%	0,1W
3849	4822 051 30472	4,7kΩ	5%	0,06W
3850	4822 051 30682	6,8kΩ	5%	0,06W
3853	4822 051 20471	470Ω	5%	0,1W
3854	4822 117 11373	100Ω	1%	0,1W
3855	4822 117 12971	15Ω	5%	0,06W
3856	4822 117 12521	68Ω	1%	0,1W
3857	4822 117 12521	68Ω	1%	0,1W
3861	4822 051 30103	10kΩ	5%	0,06W
3862	4822 051 20121	120Ω	5%	0,1W
3863	4822 051 30339	33Ω	5%	0,06W
3864	4822 051 30101	100Ω	5%	0,06W
3865	4822 051 30121	120Ω	5%	0,06W
3866	4822 051 30103	10kΩ	5%	0,06W
3871	4822 051 20683	68kΩ	5%	0,1W
3872	4822 051 30472	4,7kΩ	5%	0,06W
3878	4822 117 11503	220Ω	5%	0,1W
3880	4822 052 10338	3,3Ω	5%	NFR25
3881	4822 117 11503	220Ω	5%	0,1W
3882	4822 117 10837	100kΩ	1%	0,1W
3883	4822 051 10102	1kΩ	2%	0,25W
3890	4822 051 30332	3,3kΩ	5%	0,06W
3891	4822 051 30472	4,7kΩ	5%	0,06W
4700	4822 051 20008	CHIP JUMPER	0805	
4701	4822 051 20008	CHIP JUMPER	0805	
4702	4822 051 20008	CHIP JUMPER	0805	
4703	4822 051 20008	CHIP JUMPER	0805	
4704	4822 051 20008	CHIP JUMPER	0805	
4705	4822 051 20008	CHIP JUMPER	0805	
4706	4822 051 20008	CHIP JUMPER	0805	

RESISTORS

4707	4822 051 20008	CHIP JUMPER	0805
4708	4822 051 20008	CHIP JUMPER	0805
4709	4822 051 20008	CHIP JUMPER	0805
4710	4822 051 20008	CHIP JUMPER	0805
4711	4822 051 20008	CHIP JUMPER	0805
4712	4822 051 20008	CHIP JUMPER	0805
4713	4822 051 20008	CHIP JUMPER	0805
4714	4822 051 20008	CHIP JUMPER	0805
4715	4822 051 20008	CHIP JUMPER	0805
4716	4822 051 20008	CHIP JUMPER	0805
4717	4822 051 30008	CHIP JUMPER	0603
4718	4822 051 20008	CHIP JUMPER	0805
4719	4822 051 20008	CHIP JUMPER	0805
4720	4822 051 20008	CHIP JUMPER	0805
4722	4822 051 20008	CHIP JUMPER	0805
4724	4822 051 20008	CHIP JUMPER	0805
4726	4822 051 20008	CHIP JUMPER	0805
4727	4822 051 20008	CHIP JUMPER	0805
4728	4822 051 20008	CHIP JUMPER	0805
4729	4822 051 20008	CHIP JUMPER	0805
4730	4822 051 20008	CHIP JUMPER	0805
4731	4822 051 30008	CHIP JUMPER	0603
4732	4822 051 20008	CHIP JUMPER	0805
4733	4822 051 30008	CHIP JUMPER	0603
4734	4822 051 20008	CHIP JUMPER	0805
4735	4822 051 20008	CHIP JUMPER	0805
4736	4822 051 30008	CHIP JUMPER	0603
4737	4822 051 30008	CHIP JUMPER	0603
4738	4822 051 30008	CHIP JUMPER	0603
4739	4822 051 30008	CHIP JUMPER	0603
4740	4822 051 30008	CHIP JUMPER	0603
4741	4822 051 20008	CHIP JUMPER	0805
4742	4822 051 20008	CHIP JUMPER	0805
4743	4822 051 20008	CHIP JUMPER	0805
4744	4822 051 30008	CHIP JUMPER	0603
4745	4822 051 20008	CHIP JUMPER	0805
4746	4822 051 20008	CHIP JUMPER	0805
4747	4822 051 20008	CHIP JUMPER	0805
4748	4822 051 20008	CHIP JUMPER	0805
4749	4822 051 30008	CHIP JUMPER	0603
4801	4822 051 20008	CHIP JUMPER	0805
4804	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
4809	4822 051 20008	CHIP JUMPER	0805
4810	4822 051 20008	CHIP JUMPER	0805
4811	4822 051 20008	CHIP JUMPER	0805
4820	4822 051 20008	CHIP JUMPER	0805
4823	4822 051 30008	CHIP JUMPER	0603
4824	4822 051 30008	CHIP JUMPER	0603
4825	4822 051 20008	CHIP JUMPER	0805
4826	4822 051 20008	CHIP JUMPER	0805
4828	4822 051 30008	CHIP JUMPER	0603
4829	4822 051 20008	CHIP JUMPER	0805
4830	4822 051 20008	CHIP JUMPER	0805
4831	4822 051 20008	CHIP JUMPER	0805
4832	4822 051 30008	CHIP JUMPER	0603
4833	4822 051 20008	CHIP JUMPER	0805
4834	4822 051 20008	CHIP JUMPER	0805
4837	4822 051 20008	CHIP JUMPER	0805
4838	4822 051 30008	CHIP JUMPER	0603
4839	4822 051 20008	CHIP JUMPER	0805
4840	4822 051 20008	CHIP JUMPER	0805

ELECTRICAL PARTSLIST 3CDC-LC MODULE**RESISTORS**

4841 ©	4822 051 20008	CHIP JUMPER 0805
4842 ©	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 30008	CHIP JUMPER 0603
4851 ©	4822 051 30008	CHIP JUMPER 0603
4855 ©	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
4868 ©	4822 051 20008	CHIP JUMPER 0805
4869 ©	4822 051 20008	CHIP JUMPER 0805
4870 ©	4822 051 20008	CHIP JUMPER 0805
4871 ©	4822 051 20008	CHIP JUMPER 0805
4872 ©	4822 051 20008	CHIP JUMPER 0805
4873 ©	4822 051 20008	CHIP JUMPER 0805
4874 ©	4822 051 20008	CHIP JUMPER 0805
4875 ©	4822 051 20008	CHIP JUMPER 0805
4876 ©	4822 051 20008	CHIP JUMPER 0805
4878 ©	4822 051 20008	CHIP JUMPER 0805
4879 ©	4822 051 20008	CHIP JUMPER 0805
4880 ©	4822 051 20008	CHIP JUMPER 0805
4882 ©	4822 051 20008	CHIP JUMPER 0805
4883 ©	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 30008	CHIP JUMPER 0603
4888 ©	4822 051 20008	CHIP JUMPER 0805
4889 ©	4822 051 20008	CHIP JUMPER 0805
4890 ©	4822 051 20008	CHIP JUMPER 0805
4891 ©	4822 051 30008	CHIP JUMPER 0603

RESISTORS

4892 ©	4822 051 20008	CHIP JUMPER 0805
4893 ©	4822 051 20008	CHIP JUMPER 0805
4894 ©	4822 051 20008	CHIP JUMPER 0805
4895 ©	4822 051 20008	CHIP JUMPER 0805
4896 ©	4822 051 20008	CHIP JUMPER 0805
4897 ©	4822 051 20008	CHIP JUMPER 0805
4898 ©	4822 051 20008	CHIP JUMPER 0805
4899 ©	4822 051 20008	CHIP JUMPER 0805

COILS

1810	2422 540 98519	RESONATOR 8,467MHz
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DIODES

6801 ©	4822 130 11397	BAS316
6802 ©	4822 130 11397	BAS316
6803 ©	4822 130 11397	BAS316
6804 ©	4822 130 11397	BAS316
6805 ©	9340 548 52115	BZX284-C5V1
6807 ©	9322 129 34685	BZX284-C3V9
6808 ©	4822 130 11397	BAS316
6809 ©	9322 129 34685	BZX284-C3V9

TRANSISTORS

7806 ©	5322 130 60159	BC846B
7812 ©	5322 130 60159	BC846B
7815 ©	5322 130 60159	BC846B

INTEGRATED CIRCUITS

7801 ©	9352 622 36118	TZA1025T/V2 HF-Amplifier
7802 ©	9352 641 80557	SAA7324H/M2B,"CD10" SIGN.PROC.
7803	4822 209 32852	TDA7073A/N2
7807	4822 209 32852	TDA7073A/N2
7811 ©	4822 209 33165	TDA1308T/N1
7813 ©	5322 209 11306	HEF4094BT, SHIFT REGISTER
7814	4822 209 32852	TDA7073A/N2

ELECTRICAL PARTSLIST MP3CD2002 MODULE**MISCELLANEOUS**

3103 308 67020 complete MP3CD2002 Module
1451 2422 025 17303 FLEX FOIL CONNECTOR 19P

CAPACITORS

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

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

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

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

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

RESISTORS

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

3454 © 4822 117 12971 15Ω 5% 0,06W
3455 © 4822 051 30102 1kΩ 5% 0,06W
3456 © 4822 051 30102 1kΩ 5% 0,06W
3457 © 5322 117 13051 680Ω 1% 0,063W
3458 © 5322 117 13061 180Ω 1% 0,063W

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

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

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

RESISTORS

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

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

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

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

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

COILS

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

DIODES

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

TRANSISTORS

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

INTEGRATED CIRCUITS

7450 © not available please order complete MP3 module
7451 © not available please order complete MP3 module
7455 © 4822 209 17108 LM317LD Voltage Regulator
7457 © 9352 456 50115 HC1G04, Inverter
7458 © 9322 130 41668 M24C64, EEPROM

3103 308 67020 complete MP3CD2002 Module

BRIEF INTRODUCTION OF THE AF12 BOARD

The AF12 Board consists of the following features :

- a. TDA7468D IC
TDA7468D IC (7501) which includes functions such as source selection, loudness control, dynamic bass control, treble control, volume control and muting function. Sound features such as ALC, DBB, DSC and IS are controllable via i2C Bus from the microprocessor.
- The TDA7468D IC caters for 4 input sources namely TUNER, PC LINK, CD and AUX. It also has a Mic mix input. In our application, software will switch the input source to previous source MUTE during STANDBY mode and some other occasions where noise from other input sources is undesirable.
- Note that the input to the TDA7468D IC must be ac coupled to prevent 'pop' noise. Input networks are included to provide appropriate attenuation for various sources.
- b. SIMPLE MIC MIXING
The AF12 Board has provisions which can be configured to cater for one of the following:
MM : which caters for Mic mixing with additional Mic amplifier board.
NM : non Mic mixing.
- c. LINE OUT
Line out cinch socket for connection to external amplifier.
- d. SUB-WOOFER OUT
Sub-woofer out cinch socket for connection to active sub-woofer speaker.
- e. INCREDIBLE SURROUND
Incredible surround effect using transistor circuit to create phase shifting and spatial effect.
- f. HEADPHONE AMPLIFIER
Headphone amplifier to drive 32 ohm to 1kohm headphone.
- g. CD STANDBY CONTROL
CD Standby Control circuit which switches on the supply to CD servo control IC, digital out buffer IC, HF circuit and the laser light pen in CD mode only.
- h. ATTENUATION NETWORK
Attenuation network is provided at the output of the AF12 Board for interfacing with power board of different output power.
- i. CD DIGITAL OUT
CD Digital out cinch socket for connection to external digital audio decoders.

AF12 BOARD

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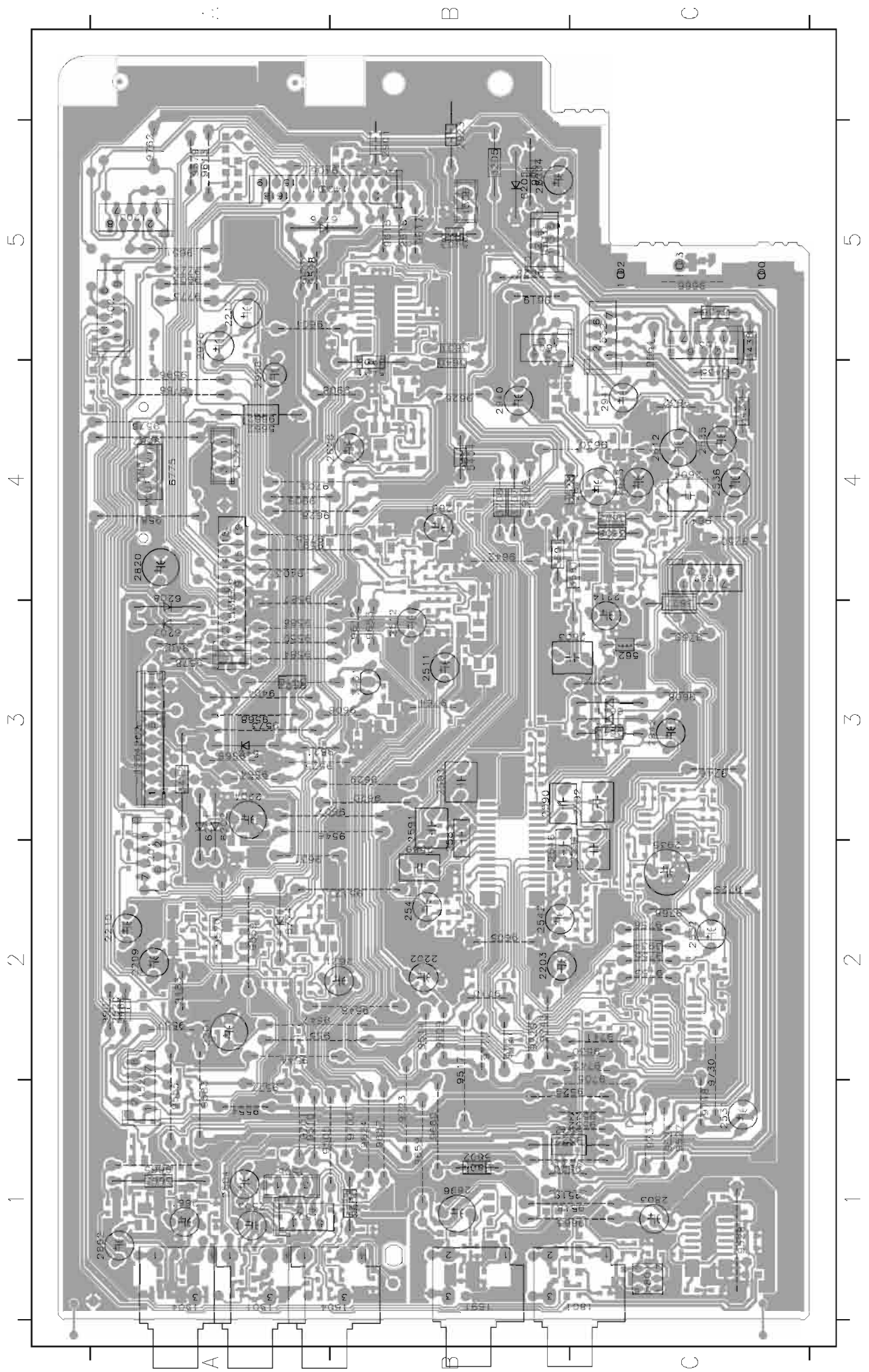
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AF12 BOARD - COMPONENT LAYOUT

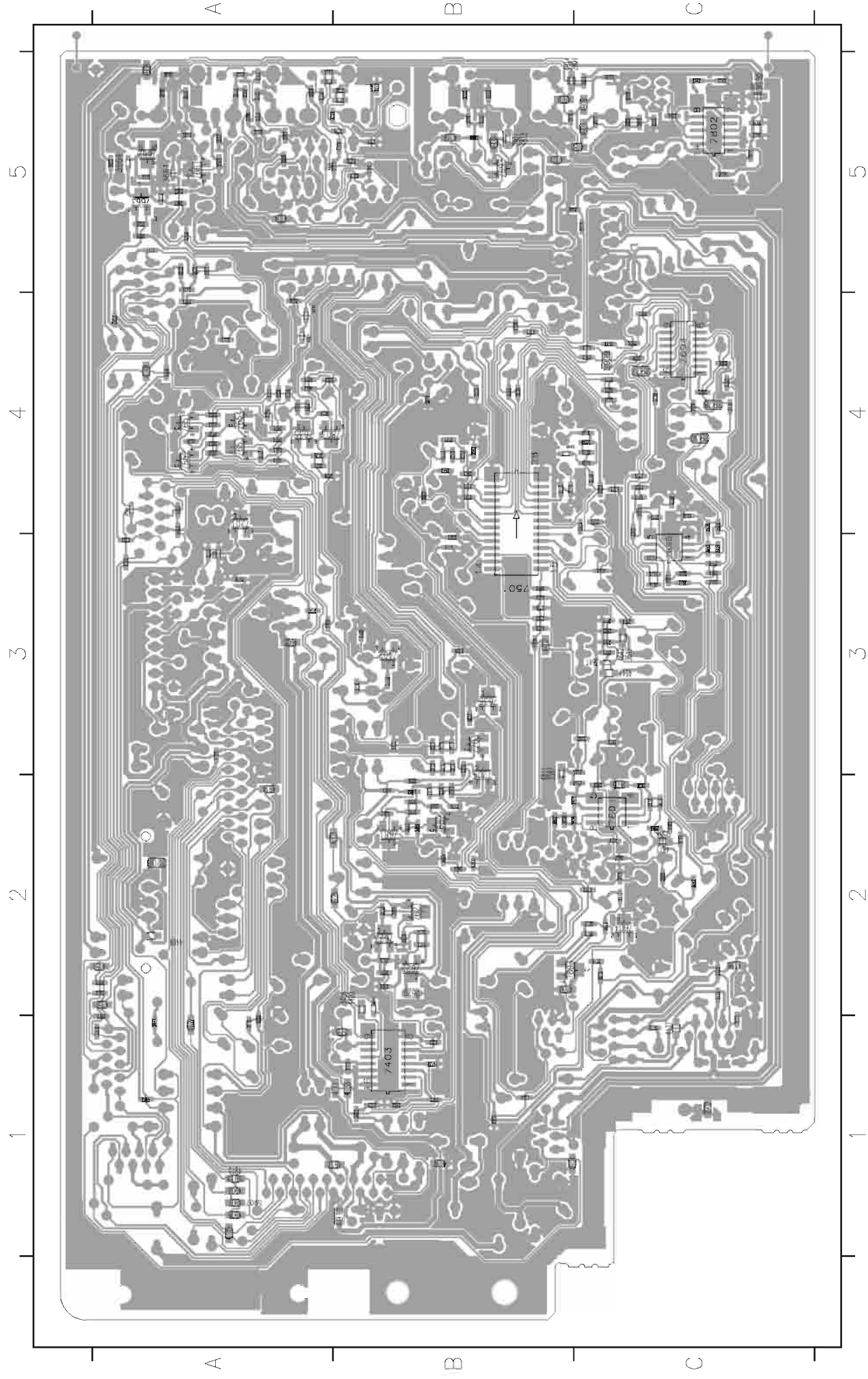
11-2

11-2

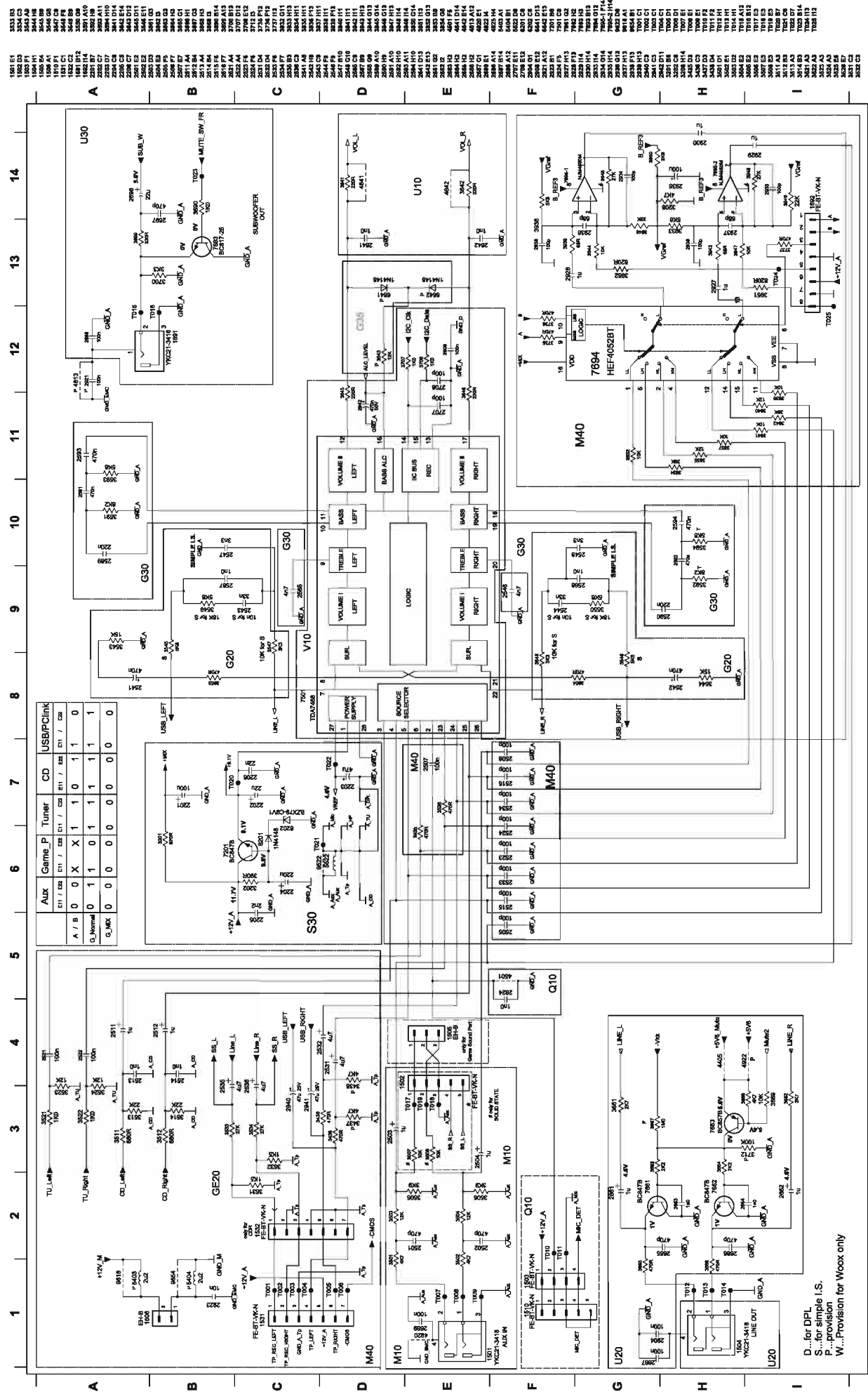


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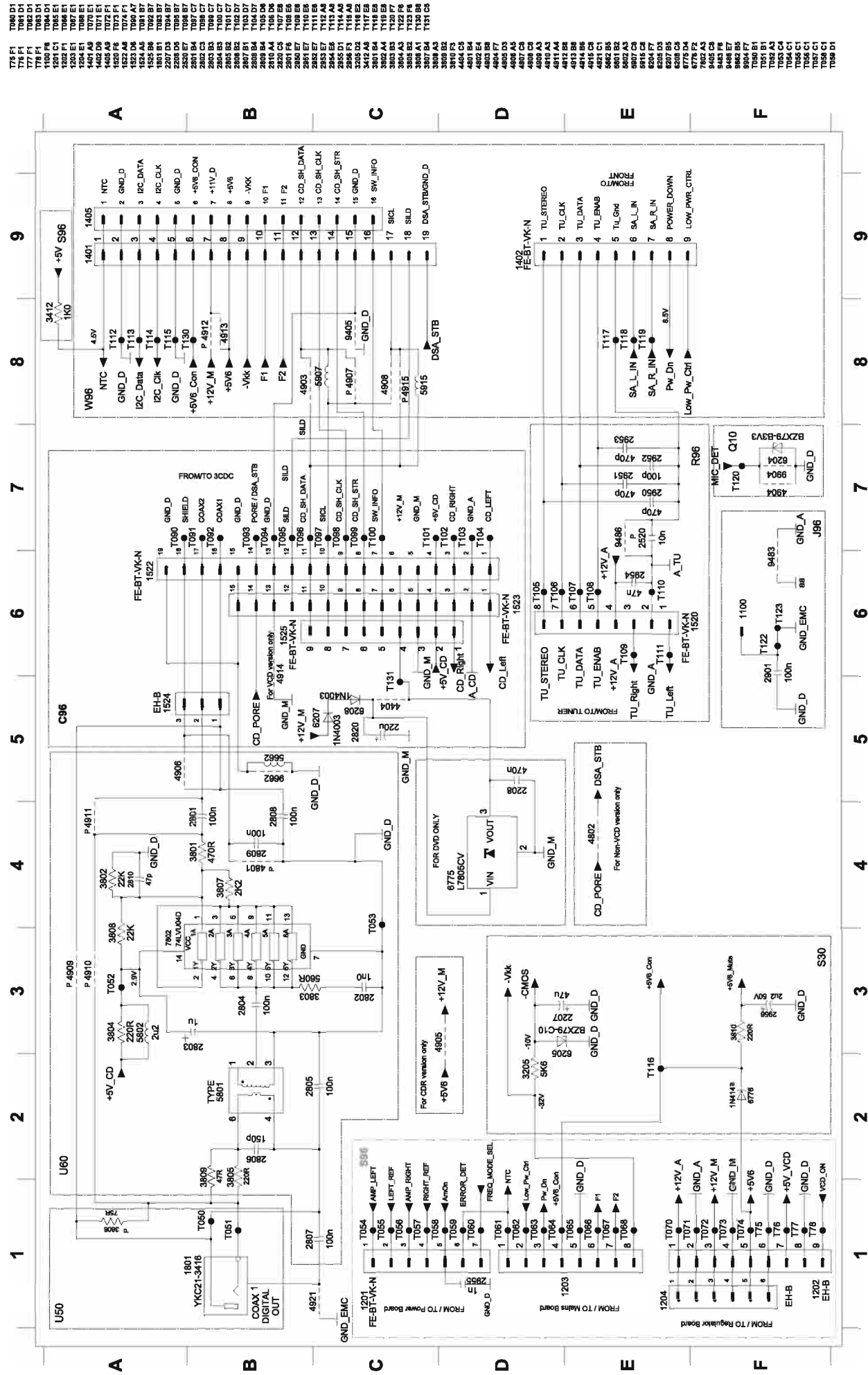
AF12 BOARD - CHIP LAYOUT



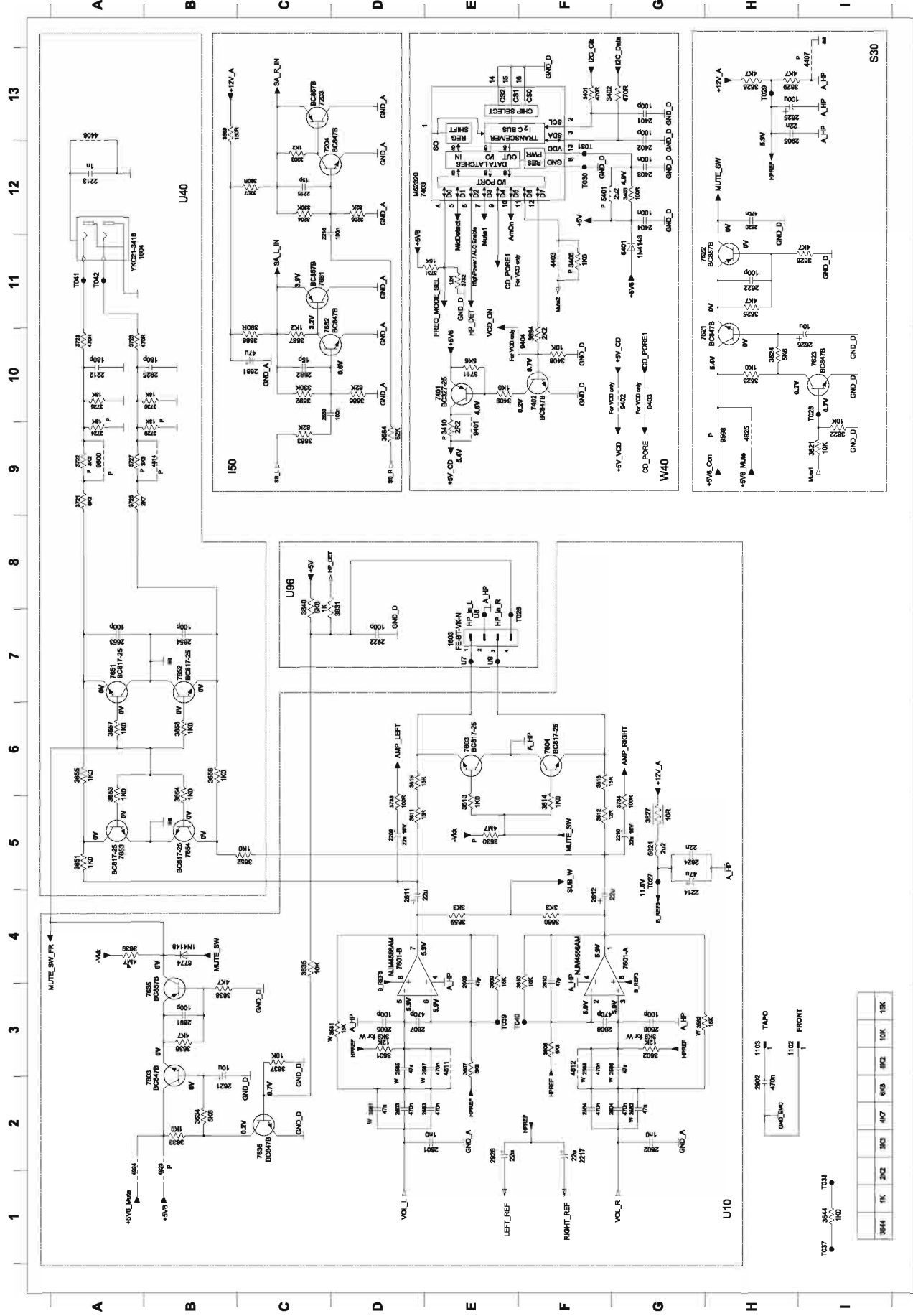
AF12 BOARD - CIRCUIT DIAGRAM (PART 1)



AF12 BOARD - CIRCUIT DIAGRAM (PART 2)



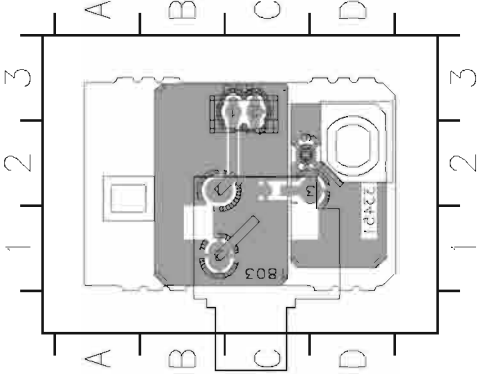
AF12 BOARD - CIRCUIT DIAGRAM (PART 3)



U17	3846 D10
U18	3847 C10
U19	3848 C10
U20	3849 C10
U21	3850 F10
U22	3851 E10
U23	3852 A10
U24	3853 A10
U25	3854 A10
U26	3855 A10
U27	3856 A10
U28	3857 A10
U29	3858 A10
U30	3859 A10
U31	3860 A10
U32	3861 A10
U33	3862 A10
U34	3863 A10
U35	3864 A10
U36	3865 A10
U37	3866 A10
U38	3867 A10
U39	3868 A10
U40	3869 A10
U41	3870 A10
U42	3871 A10
U43	3872 A10
U44	3873 A10
U45	3874 A10
U46	3875 A10
U47	3876 A10
U48	3877 A10
U49	3878 A10
U50	3879 A10
U51	3880 A10
U52	3881 A10
U53	3882 A10
U54	3883 A10
U55	3884 A10
U56	3885 A10
U57	3886 A10
U58	3887 A10
U59	3888 A10
U60	3889 A10
U61	3890 A10
U62	3891 A10
U63	3892 A10
U64	3893 A10
U65	3894 A10
U66	3895 A10
U67	3896 A10
U68	3897 A10
U69	3898 A10
U70	3899 A10
U71	3900 A10
U72	3901 A10
U73	3902 A10
U74	3903 A10
U75	3904 A10
U76	3905 A10
U77	3906 A10
U78	3907 A10
U79	3908 A10
U80	3909 A10
U81	3910 A10
U82	3911 A10
U83	3912 A10
U84	3913 A10
U85	3914 A10
U86	3915 A10
U87	3916 A10
U88	3917 A10
U89	3918 A10
U90	3919 A10
U91	3920 A10
U92	3921 A10
U93	3922 A10
U94	3923 A10
U95	3924 A10
U96	3925 A10
U97	3926 A10
U98	3927 A10
U99	3928 A10
U100	3929 A10

VIDEO OUT CINCH BOARD -
COMPONENT LAYOUT

1800 C3 1803 C1 1809 C2



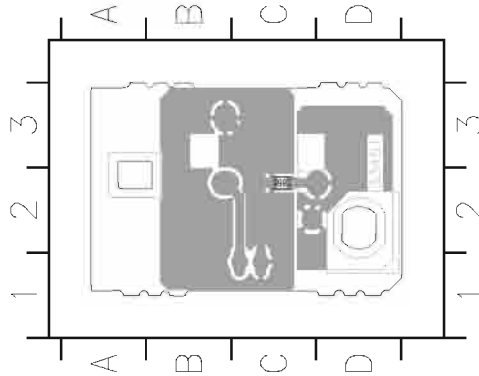
ELECTRICAL PARTSLIST - AF12 BOARD

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

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

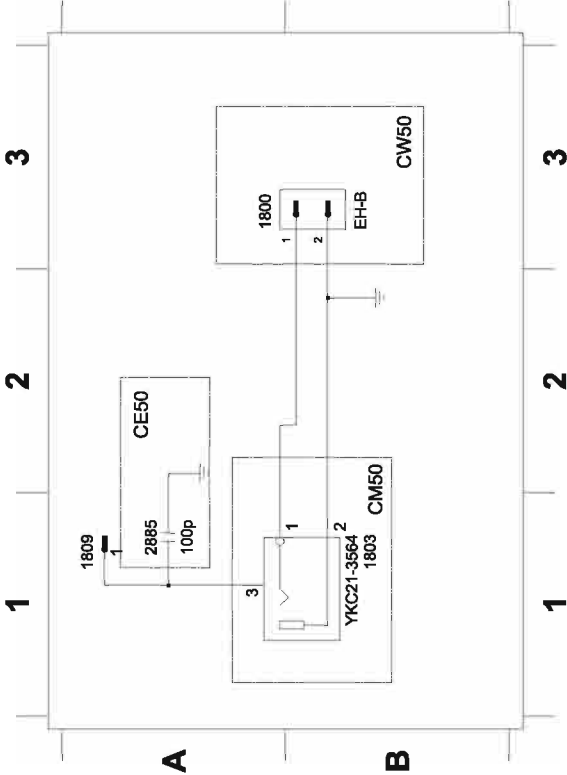
VIDEO OUT CINCH BOARD - CHIP
LAYOUT

2885 C2



VIDEO OUT CINCH BOARD - CIRCUIT DIAGRAM

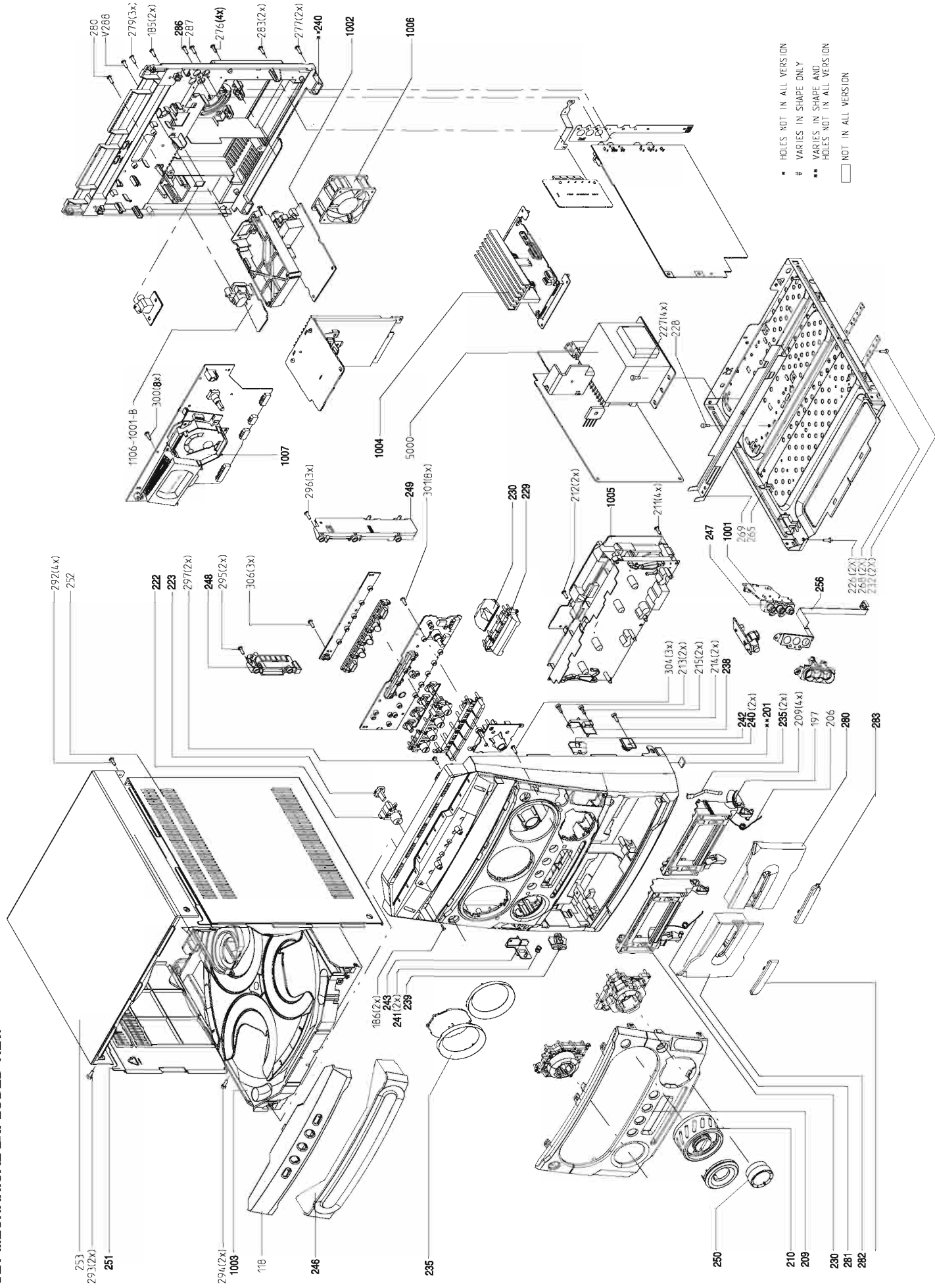
1800 A3 1803 B1 1809 A1 2885 A1



SET MECHANICAL EXPLODED VIEW

12-1

12-1



MECHANICAL & ACCESSORIES PARTSLIST

201	3141 077 50001	CAB-FRONT PRE-ASSY /21
201	3140 117 72301	CAB-FRONT PRE-ASSY /22
210	3140 117 73021	KNOB VOLUME PRE ASSY
230	3140 117 73031	DOOR CASSETTE PRE ASSY
235	3140 117 73041	WINDOW PRE ASSY
240	3140 117 72311	PANEL REAR PRE-ASSY
246	3140 114 62861	COVER TRAY CDC FWM730
250	3140 114 62991	KNOB ROTARY FWM730
251	3139 114 79081	PANEL LEFT M2003
252	3139 114 79101	PANEL RIGHT M2003
253	3139 114 78341	COVER TOP MINI2003
298	3139 114 71012	STOPPER HEATSINK
330	3140 118 51931	BOX SPK ASSY
331	4822 320 11094	COAXIAL 300R
333	2422 549 45067	ANT AM LOOP
335	3139 238 06501	REMOTE CONTROL
337	Δ 2422 070 98151	MAINSKORD EUR 1M5 BK B
338	4822 263 21206	P50 ADAPTOR
240	4822 529 10322	DAMPER ASSY MODULE 0.8
1002	3103 308 64260	PBAS TUNER ECO6 AS/01 RDS /21
1002	3103 308 64251	PBAS TUNER ECO6 AS/02 RDS /22
1005	3139 118 77971	T/DECK BRICK ETF7-FERRO DD/FF
1006	2822 031 01494	FAN 12VDC 0.8W 3100RPM B
1007	3140 110 52141	METER VU FOR MINI404
1903	2422 129 15195	VOL.TSEL 2P 5A
5000	Δ 3139 118 32831	TRAFO MAINS UCD 150W / 21
5000	Δ 3139 118 32821	TRAFO MAINS UCD 150W / 22
8226	3139 110 35900	FFC FOIL 07P/220/07P AD
8228	3140 110 22501	FFC FOIL 8P/280/8P AD
8400	3139 110 34920	FFC FOIL 08P/280/08P BD
8401	3139 111 02491	FFC FOIL 19P/280/19P AD
8402	3140 110 22471	FFC FOIL 09P/280/09P AD
8404	3139 110 34610	FFC FOIL 11P/180/11P AD
8406	3140 110 22481	FFC FOIL 07P/180/07P BD
8500	3139 110 35210	FFC FOIL 06P/080/06P AD
8501	3139 110 33940	CWAS FFC BD04P 180
8503	3139 110 35880	FFC FOIL 15P/180/15P BD
8601	3139 110 34740	FFC FOIL 08P/180/08P AD
8602	4822 320 12752	FFC 7P - 180MM

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

REVISION LIST

Version 1.0 (3140 785 32960)

* Initial Release FWM730/21/22

Version 1.1 (3140 785 32961)

* Page 8-2 : Power 303 Module (UCD 100-150W) - Update
- a Jumper Wiring in Section C2 added
- the track between pos.6717 and pos.6707 cut