

Service
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Service



Service Manual

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**CLASS 1
LASER PRODUCT**

GB

3140 785 32961

Version 1.1



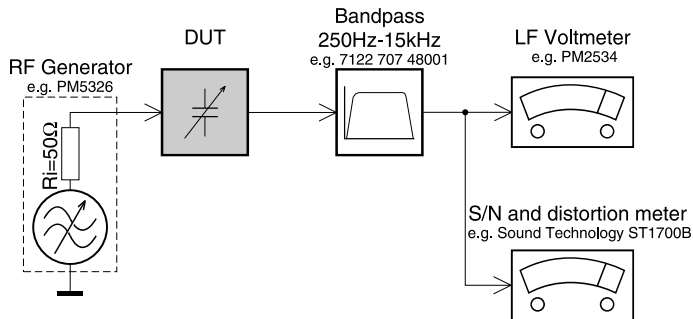
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SPECIFICATIONS

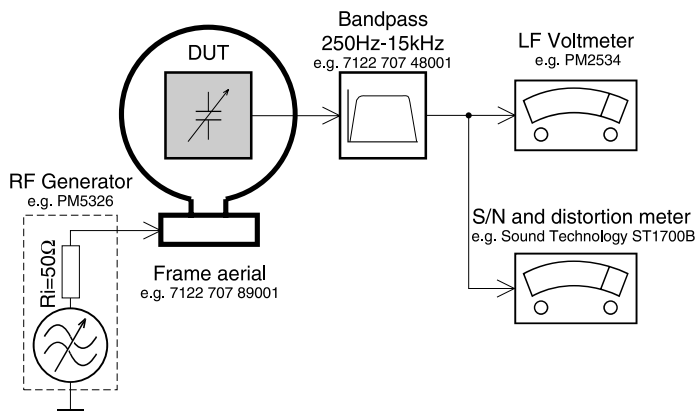
MEASUREMENT SETUP

Tuner FM



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

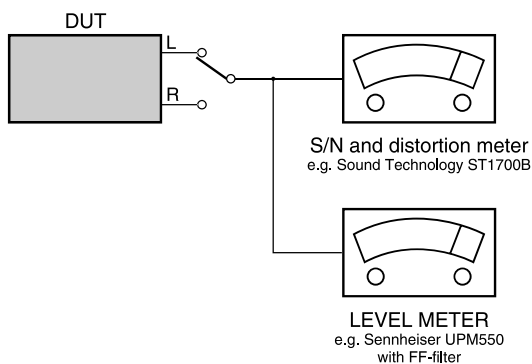
Tuner AM (MW, LW)



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).

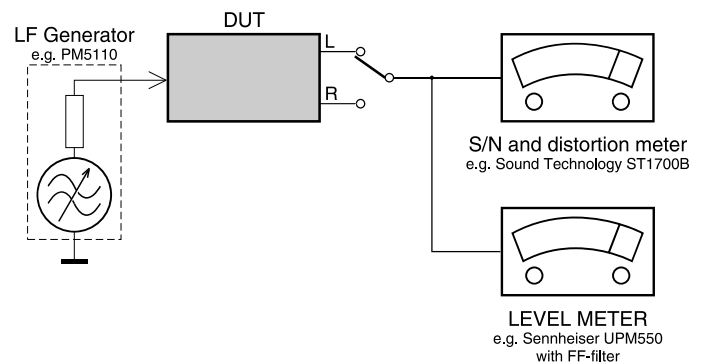
CD

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

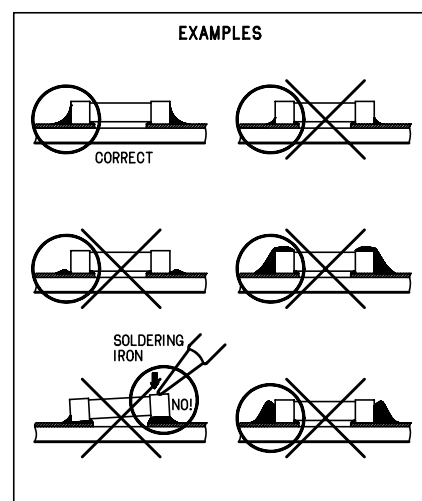
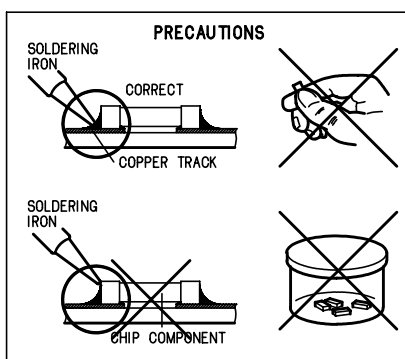
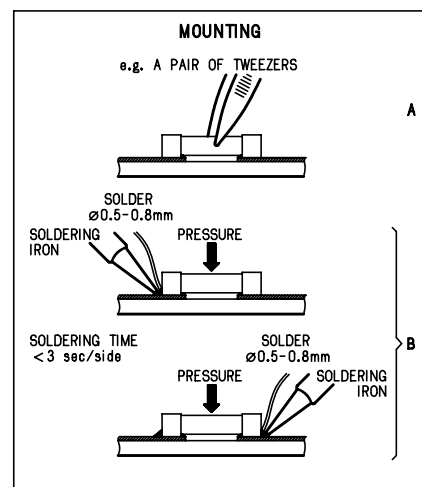
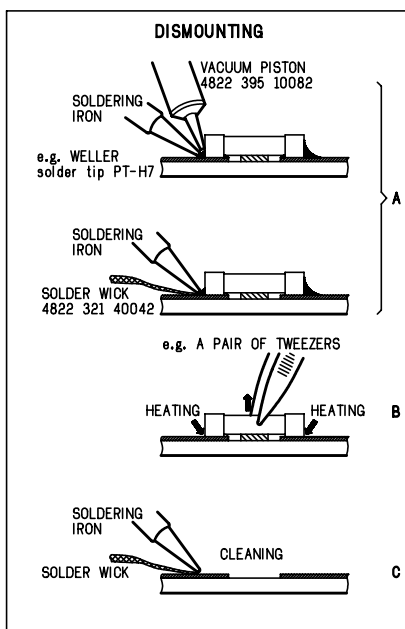
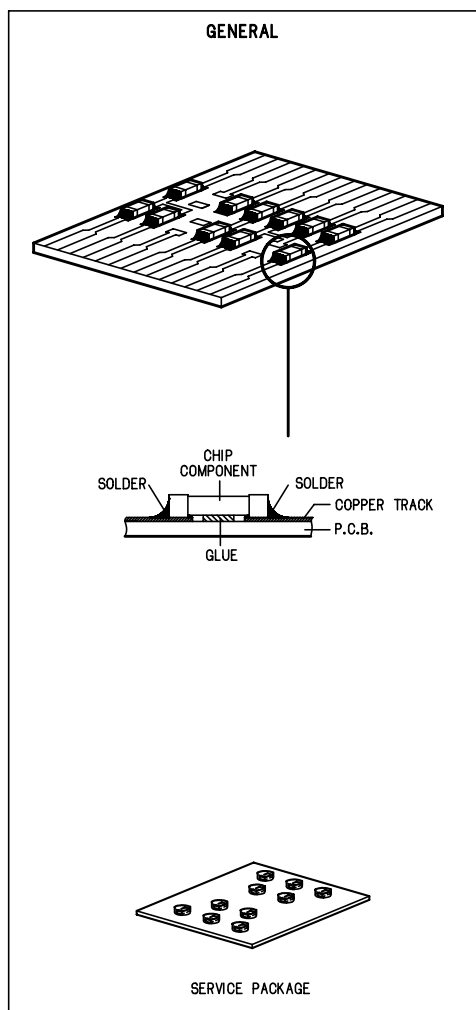
Compact Disc:

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 hetzelfde potentiaal.

F ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).

Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.

Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfilez le bracelet 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.

Les 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 spärren är urkopplad. Betrakta ej strålen.

SF Varoitus !

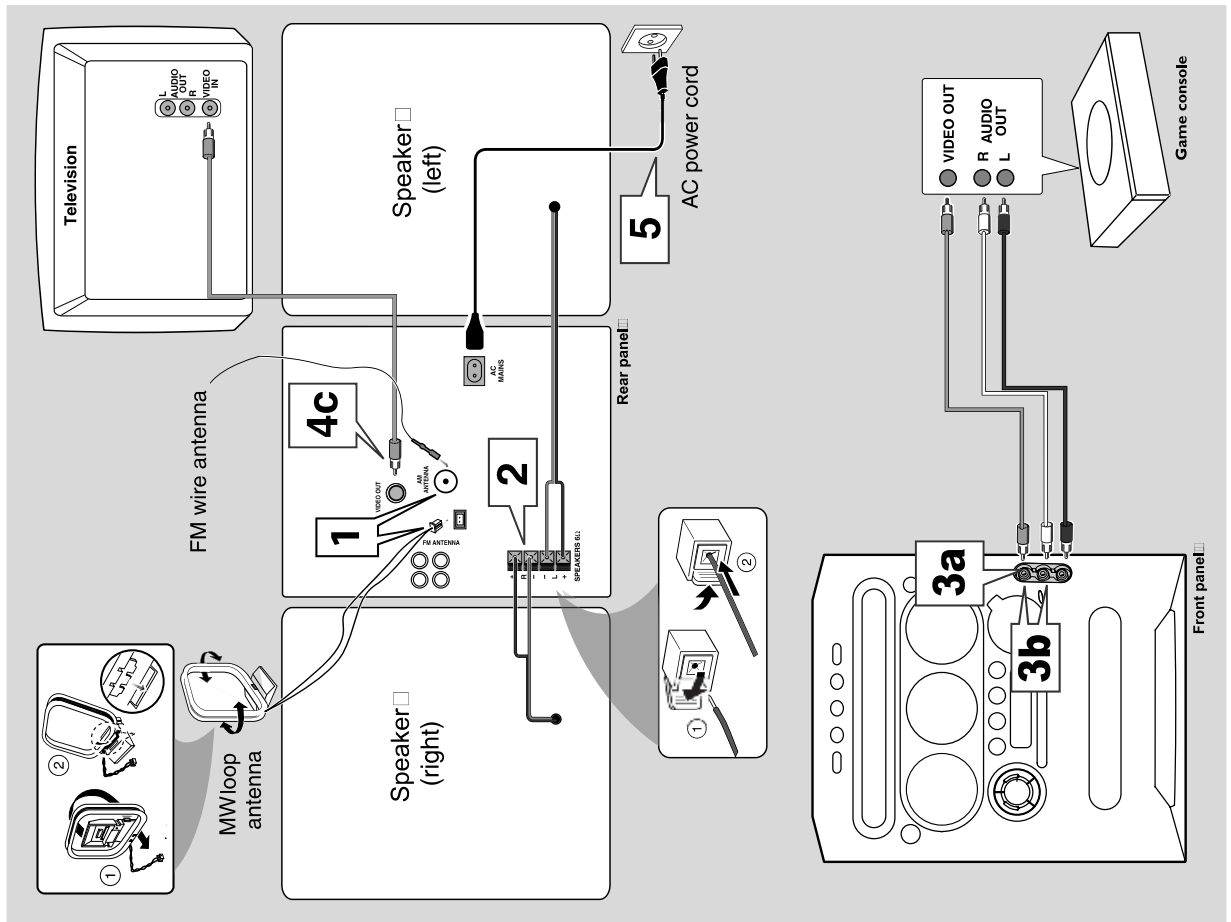
Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

DK Advarse !

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

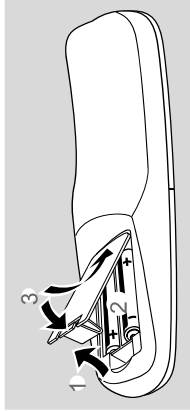
Notes:

- 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.

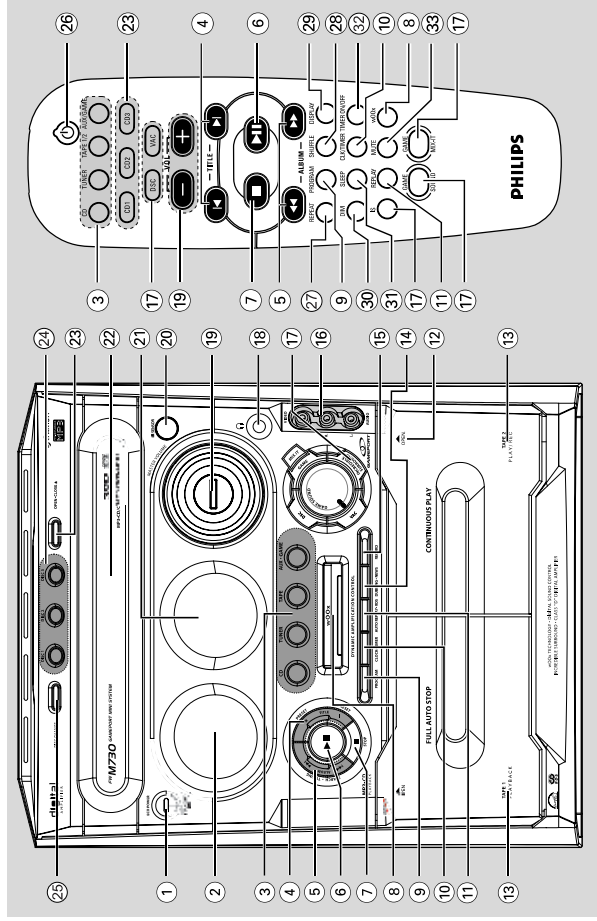
Using the remote control to operate the system

- 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 (-) (◀) PRESET (+) (▶)**
 - 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**
 - * = Press and hold the button for more than two seconds.

- CD: *searches backward/forward.
- MP3-CD: select an album
- TUNER: tunes the radio frequency up/down.
- CLOCK: sets the hours.
- TAPE: searches backward/forward.
- ⑥ **PLAY-PAUSE**
 - CD: starts/pauses playback.
 - TAPE: starts playback.
 - (only on the main unit)
 - TUNER: *enters Plug & Play mode and/or starts preset radio station installation.
- ⑦ **STOP**
 - Exits an operation.
 - CD: stops playback or clears a programme.
 - TUNER: *erases a preset radio station.
 - (only on the main unit)
 - *Turns on/off the demonstration mode.
- ⑧ **wOOx**
 - Selects the enhanced or normal wOOx sound effect.
- ⑨ **PROGRAM**
 - 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**
 - 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.
- AUDIO L. / AUDIO R.**
 - Use an audio cable to connect to your game console's left/right audio output.
- ⑰ **INCREDIBLE SURROUND**
 - Creates a super-enhanced stereo effect.
- DS**
 - Selects different type of preset sound equaliser settings (NEW AGE, ELECTRIC, DIGITAL, POP, CLASSIC or ROCK).
- VAC**
 - Selects different type of ambience-based equaliser settings (CINEMA, ARCADE, CONCERT, DISCO, CYBER or HALL).
- MIX IT (GAME MIX IT)**
 - Mixes the game sound with your favourite music from one of these music sources (CD, TUNER or AUX).
- GAME SOUND**
 - Adjusts the game's output volume level.
 - Selects different type of equaliser setting for Gameport (SPEED, PUNCH or BLAST).
- ⑱
 - Plugs in the headphones jack. The speakers output will be cancelled.
- ⑲ **MASTER VOLUME (VOL + -)**
 - Adjusts the volume level.
- ⑳ **IR SENSOR**
 - Points the remote control towards this sensor.
- ㉑ **VU meters**
 - Indicates signal strength of left/right channel.
- ㉒ **DISC TRAY**
- ㉓ **OPEN-CLOSE** **(DISC 1~3)**
 - Opens/closes the respective disc tray.
- ㉔ **DISC 1, 2 and 3**
 - Selects a disc tray to playback
- ㉕ **DISC CHANGE**
 - Changes discs

Control buttons available on the remote control only

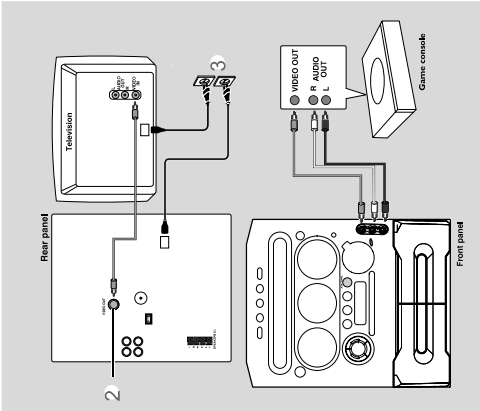
- ㉖
 - Switches to the Eco Power standby mode.
 - *Switches to the standby mode.
- ㉗ **REPEAT**
 - Repeats a track/disc/all programmed tracks.
- ㉘ **SHUFFLE**
 - Turns on/off the random play mode.
- ㉙ **DISPLAY**
 - Displays the album and title name for MP3 disc.
- ㉚ **DIM**
 - Turns on/off the dim mode.
- ㉛ **SLEEP**
 - Sets the sleep timer function.
- ㉜ **TIMER ON/OFF**
 - Turns on/off the timer function.
- ㉝ **MUTE**
 - Mutes or restores the volume

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

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.audiophilips.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

Detaching the Front Panel assembly from the Bottom/Rear assembly

- 1) Remove 2 screws B as shown in Figure 8 from the bottom of the Cabinet Front .
- 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 8.
- 3) Uncatch 2 catches C2 (see Figure 9) on the left & right sides of the Cabinet Front and slides the Front Panel assembly out towards the front.

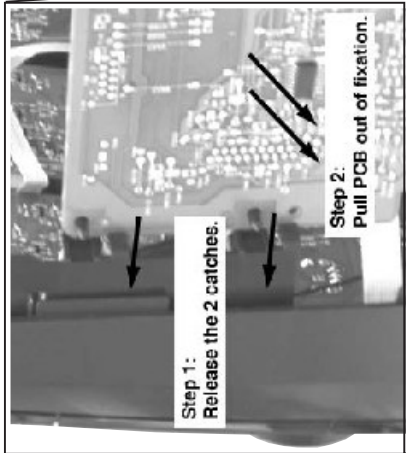


Figure 8

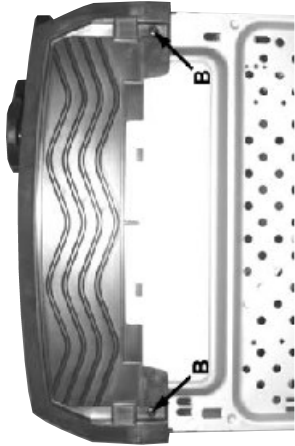


Figure 7

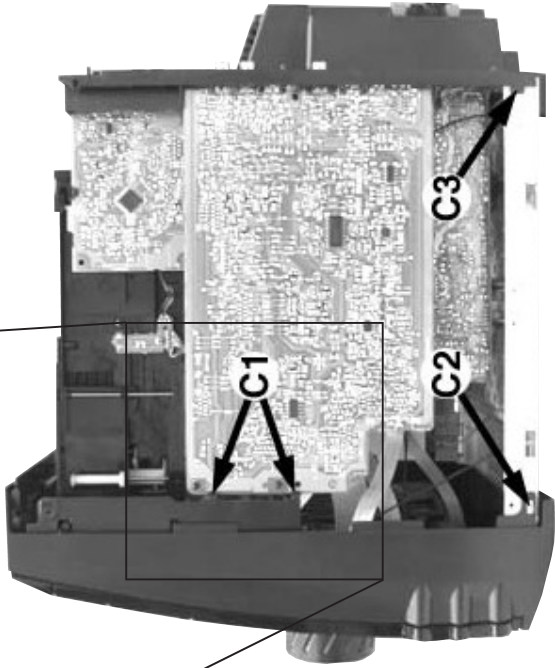


Figure 9

Dismantling of the Front Control Board and Front Display Board

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

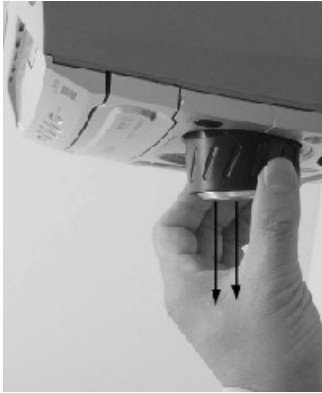


Figure 10



Figure 11

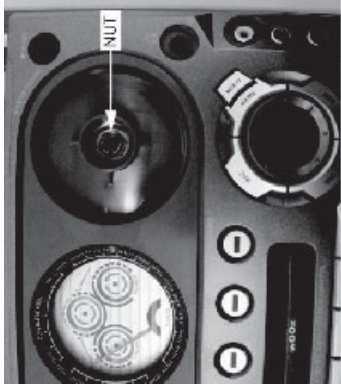


Figure 12

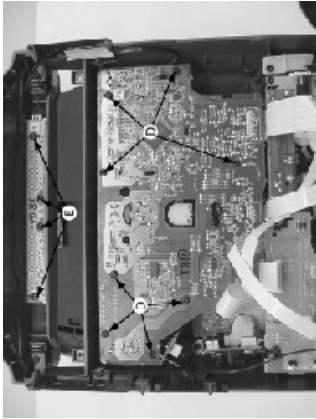


Figure 13

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

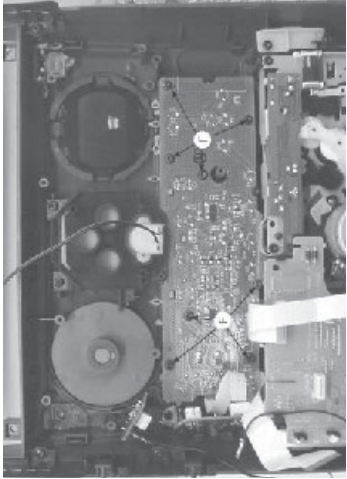


Figure 14

- 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

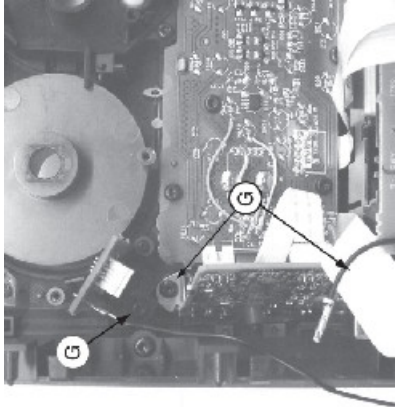


Figure 15

Dismantling of the ETF Tape Module

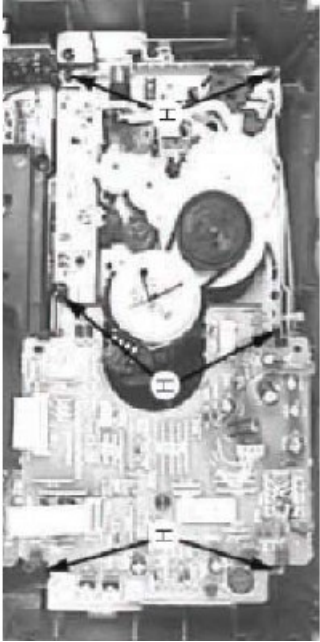


Figure 16

- 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 AF-12 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 C5 (see Figure 18) to remove the Fan.
- 5) Loosen 3 screws M (see Figure 17) and uncatch C3 (see Figure 9) to remove the Panel Rear by sliding it out towards the rear.

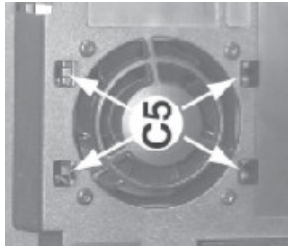


Figure 18

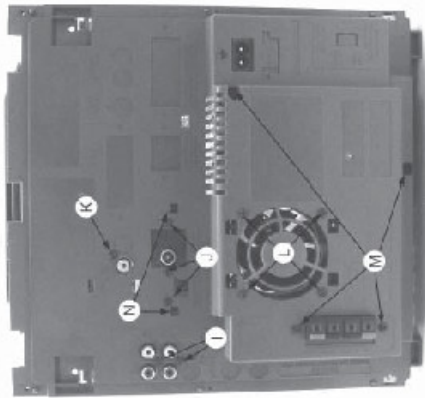


Figure 17

Repair Hint

- 1) During repair it is possible to disconnect the Tuner Board and CDC Module completely unless the fault is suspected 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.

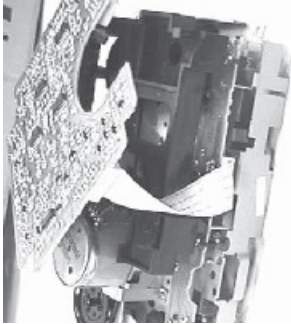
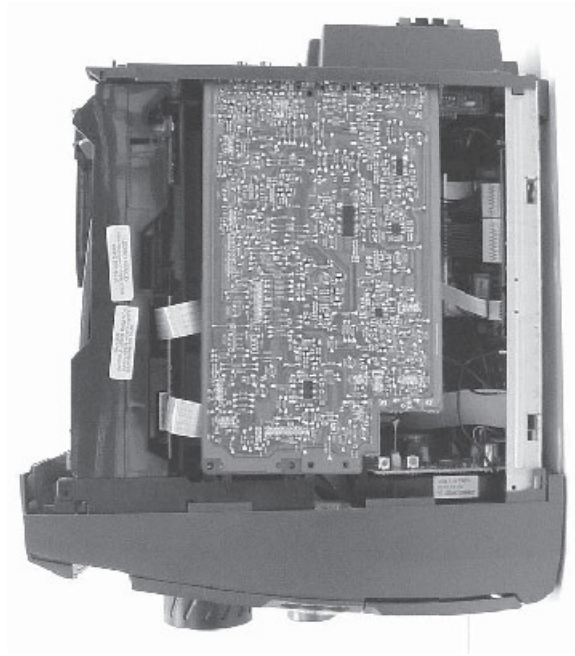


Figure 19

DISMANTLING INSTRUCTIONS

2-4

Service position A

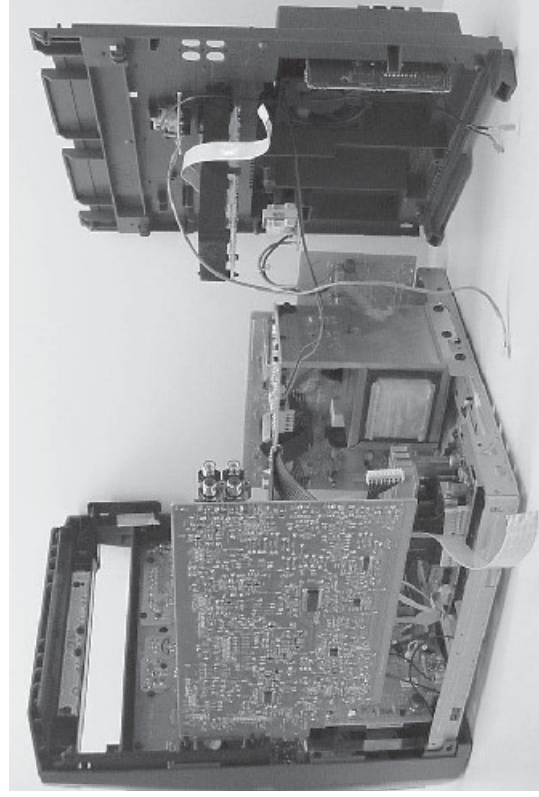
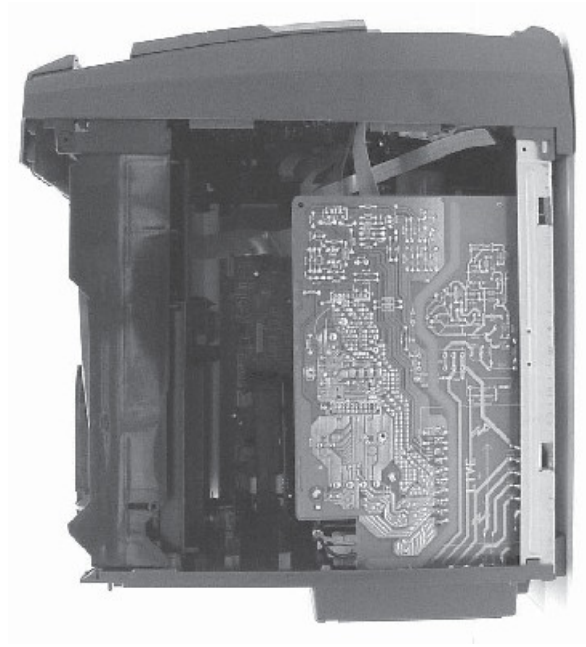


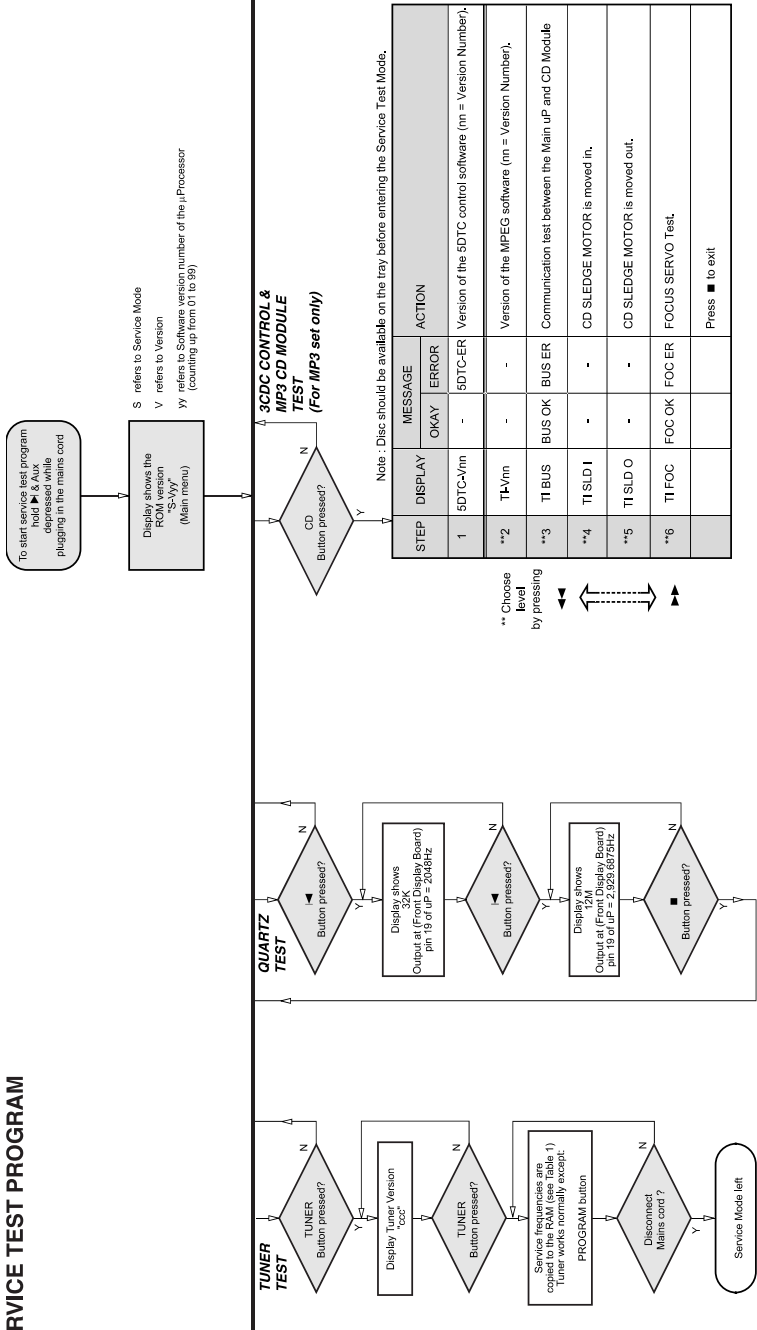
2-4

Service position B



Service position C





LEDs	FWM730	FWM570
CD	ON	-
TUNER	OFF	-
TAPE	ON	-
AUX / GAME	OFF	-
^^ MAX (WOOX)	OFF	OFF

To test Standby LED, put the set into ECO mode.

Table 2

TEST	Activated with	ACTION
EEPROM TEST	▶▶ ■ to Exit	A test pattern will be sent to the EEPROM. "PASS" is displayed if the μ Processor read back the test pattern correctly, otherwise ERROR will be displayed.
EEPROM FORMAT TEST	◀◀	Load default data. Display shows "NEW" for 1 second. Caution! All presets from the customer will be lost!
ROTARY ENCODER TEST	Rotary Volume Knob	Display shows value for 2 seconds. Values increases or decreases in steps of 1 until 0 (Min.) or 40 (Max.) is reached.
DEMO	^^ MAX/WOOX 2	DEMO will toggle on or off. 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 mains cord	

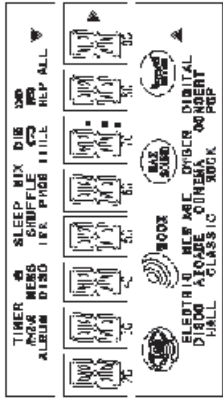


Figure 1



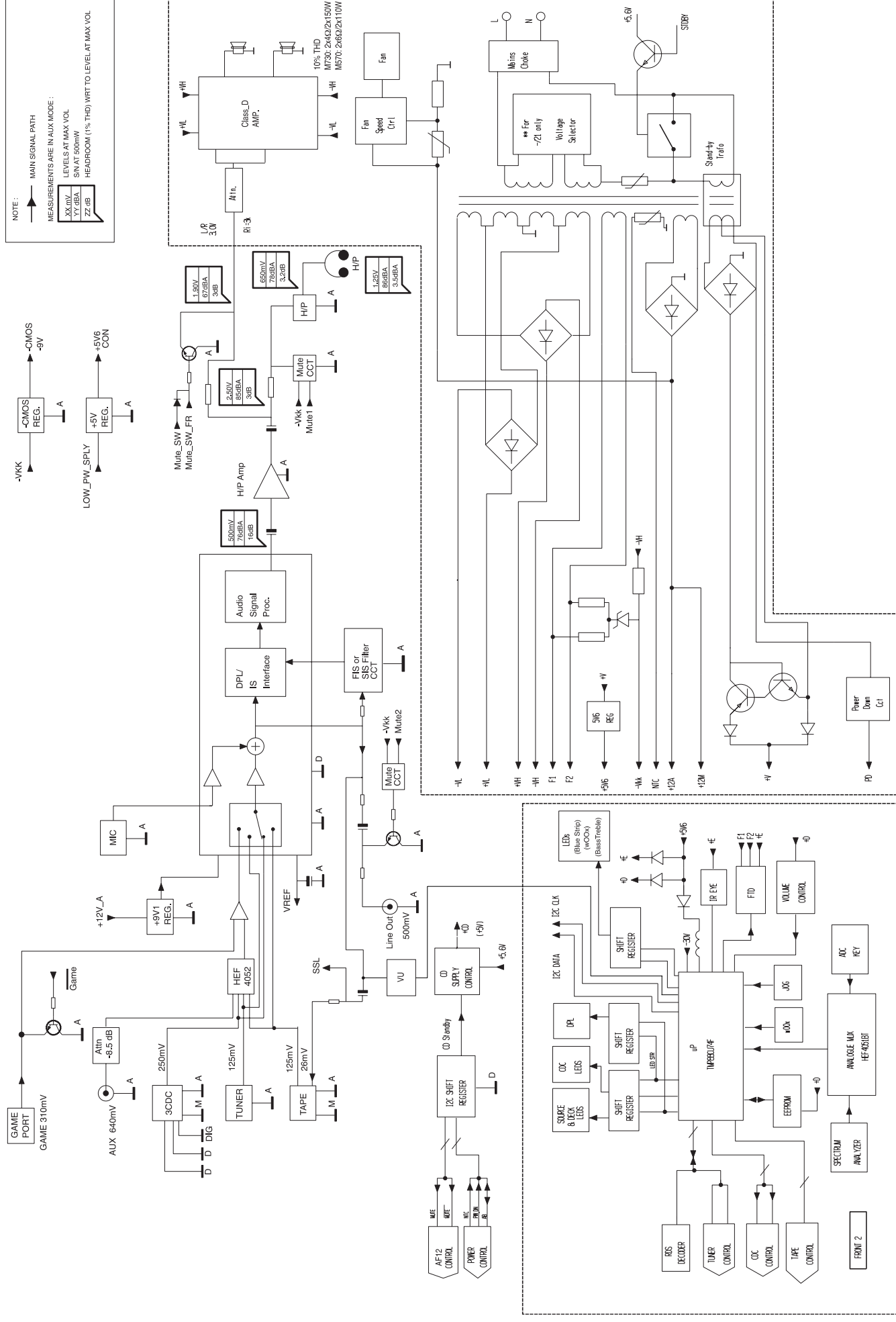
Figure 2

PRESET	Europe "EUR"	East Eur. "EAS"	East Eur. Extended-band "EAS"	USA "USA"	Oversea "OSE"
1	87.5MHz	87.5MHz	65.511MHz	87.5MHz	87.5MHz
2	108MHz	108MHz	108MHz	108MHz	108MHz
3	531kHz	531kHz	74MHz	530kHz	531/530kHz*
4	1602kHz	1602kHz	87.5MHz	1700kHz	1602/1700kHz*
5	558kHz	558kHz	531kHz	560kHz	558/560kHz*
6	1494kHz	1494kHz	1602kHz	1500kHz	1494/1500kHz*
7	153kHz	87.5MHz	558kHz	98MHz	87.5MHz
8	279kHz	87.5MHz	1494kHz	87.5MHz	87.5MHz
9	198kHz	87.5MHz	98MHz	87.5MHz	87.5MHz
10	98MHz	87.5MHz	70.011MHz	87.5MHz	87.5MHz
11	87.5MHz	98MHz	65.511MHz	87.5MHz	98MHz

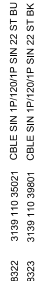
Table 1

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

SERVICE BLOCK DIAGRAM

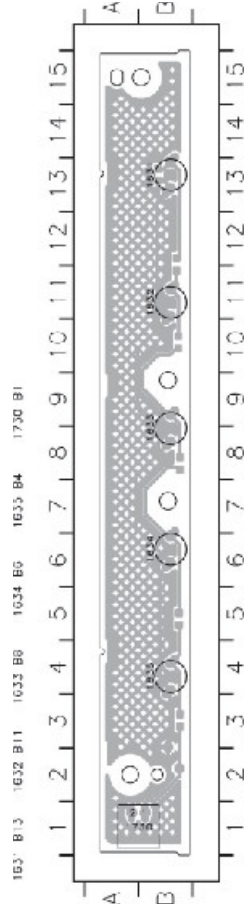


8400	3139 113 102491	FFC FOIL 08P/28008P	AD	8601	3139 110 35056	FFC FOIL 08P/28008P	AD	8222	3139 111 02131	CBLE MS 08P/22008P	MS 260S
8401	3139 113 102491	FFC FOIL 08P/28008P	AD	8602	3139 110 35211	FFC FOIL 08P/28008P	AD	8226	3139 111 02131	CBLE MS 08P/22008P	MS 260S
8402	3139 113 102491	FFC FOIL 08P/28008P	AD	8603	3139 110 35211	FFC FOIL 08P/28008P	AD	8227	3139 111 02131	CBLE MS 08P/22008P	MS 260S
8403	3139 110 124271	FFC FOIL 08P/28008P	AD	8604	3139 110 35381	CBLE HR 02P/22008P	AD	8228	3139 111 02131	CBLE MS 08P/22008P	MS 260S
8404	3139 110 124271	FFC FOIL 08P/28008P	AD	8605	3139 111 02821	CWAS SMF 1P/2801P	STO-B BK	8229	3139 110 22501	FFC FOIL 08P/28008P	MS 260S
8405	3139 110 35881	FFC FOIL 15P/18015P	BD	8606	3139 110 33331	CWAS SMF 1P/2801P	STO-B BK	8230	3139 111 01631	CBLE MS 08P/22008P	MS 260S
8406	3139 113 102491	FFC FOIL 08P/28008P	AD	8607	3139 110 35056	FFC FOIL 08P/28008P	AD	8231	3139 111 01631	CBLE MS 08P/22008P	MS 260S
8407	3139 113 102491	FFC FOIL 08P/28008P	AD	8608	3139 110 35211	FFC FOIL 08P/28008P	AD	8232	3139 111 01631	CBLE MS 08P/22008P	MS 260S
8408	3139 113 102491	FFC FOIL 08P/28008P	AD	8609	3139 110 35211	FFC FOIL 08P/28008P	AD	8233	3139 111 01631	CBLE MS 08P/22008P	MS 260S
8409	3139 113 102491	FFC FOIL 08P/28008P	AD	8610	3139 110 35211	FFC FOIL 08P/28008P	AD	8234	3139 111 01631	CBLE MS 08P/22008P	MS 260S
8410	3139 113 102491	FFC FOIL 08P/28008P	AD	8611	3139 110 35211	FFC FOIL 08P/28008P	AD	8235	3139 111 01631	CBLE MS 08P/22008P	MS 260S
8411	3139 113 102491	FFC FOIL 08P/28008P	AD	8612	3139 110 35211	FFC FOIL 08P/28008P	AD	8236	3139 111 01631	CBLE MS 08P/22008P	MS 260S
8412	3139 113 102491	FFC FOIL 08P/28008P	AD	8613	3139 110 35211	FFC FOIL 08P/28008P	AD	8237	3139 111 01631	CBLE MS 08P/22008P	MS 260S
8413	3139 113 102491	FFC FOIL 08P/28008P	AD	8614	3139 110 35211	FFC FOIL 08P/28008P	AD	8238	3139 111 01631	CBLE MS 08P/22008P	MS 260S
8414	3139 113 102491	FFC FOIL 08P/28008P	AD	8615	3139 110 35211	FFC FOIL 08P/28008P	AD	8239	3139 111 01631	CBLE MS 08P/22008P	MS 260S
8415	3139 113 102491	FFC FOIL 08P/28008P	AD	8616	3139 110 35211	FFC FOIL 08P/28008P	AD	8240	3139 111 01631	CBLE MS 08P/22008P	MS 260S
8416	3139 113 102491	FFC FOIL 08P/28008P	AD	8617	3139 110 35211	FFC FOIL 08P/28008P	AD	8241	3139 111 01631	CBLE MS 08P/22008P	MS 260S
8417	3139 113 102491	FFC FOIL 08P/28008P	AD	8618	3139 110 35211	FFC FOIL 08P/28008P	AD	8242	3139 111 01631	CBLE MS 08P/22008P	MS 260S
8418	3139 113 102491	FFC FOIL 08P/28008P	AD	8619	3139 110 35211	FFC FOIL 08P/28008P	AD	8243	3139 111 01631	CBLE MS 08P/22008P	MS 260S
8419	3139 113 102491	FFC FOIL 08P/28008P	AD	8620	3139 110 35211	FFC FOIL 08P/28008P	AD	8244	3139 111 01631	CBLE MS 08P/22008P	MS 260S
8420	3139 113 102491	FFC FOIL 08P/28008P	AD	8621	3139 110 35211	FFC FOIL 08P/28008P	AD	8245	3139 111 01631	CBLE MS 08P/22008P	MS 260S
8421	3139 113 102491	FFC FOIL 08P/28008P	AD	8622	3139 110 35211	FFC FOIL 08P/28008P	AD	8246	3139 111 01631	CBLE MS 08P/22008P	MS 260S
8422	3139										

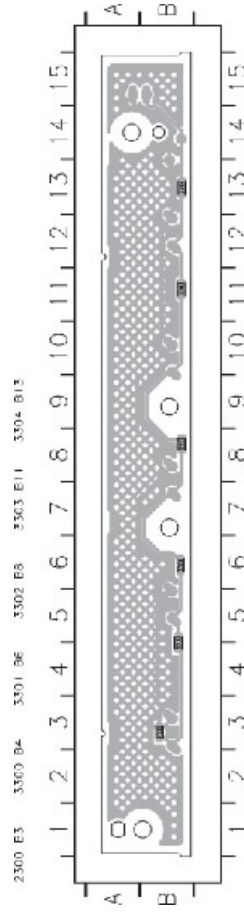


FRONT CONTROL BOARD

CDC KEY BOARD - COMPONENT LAYOUT



CDC KEY BOARD - CHIP LAYOUT



CDC KEY BOARD - CIRCUIT DIAGRAM

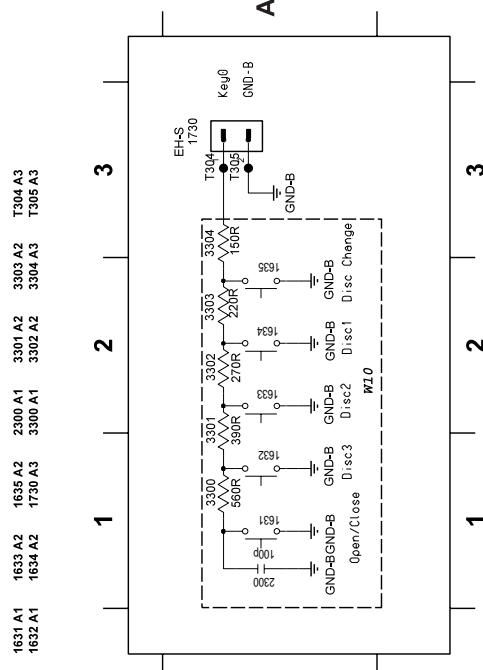
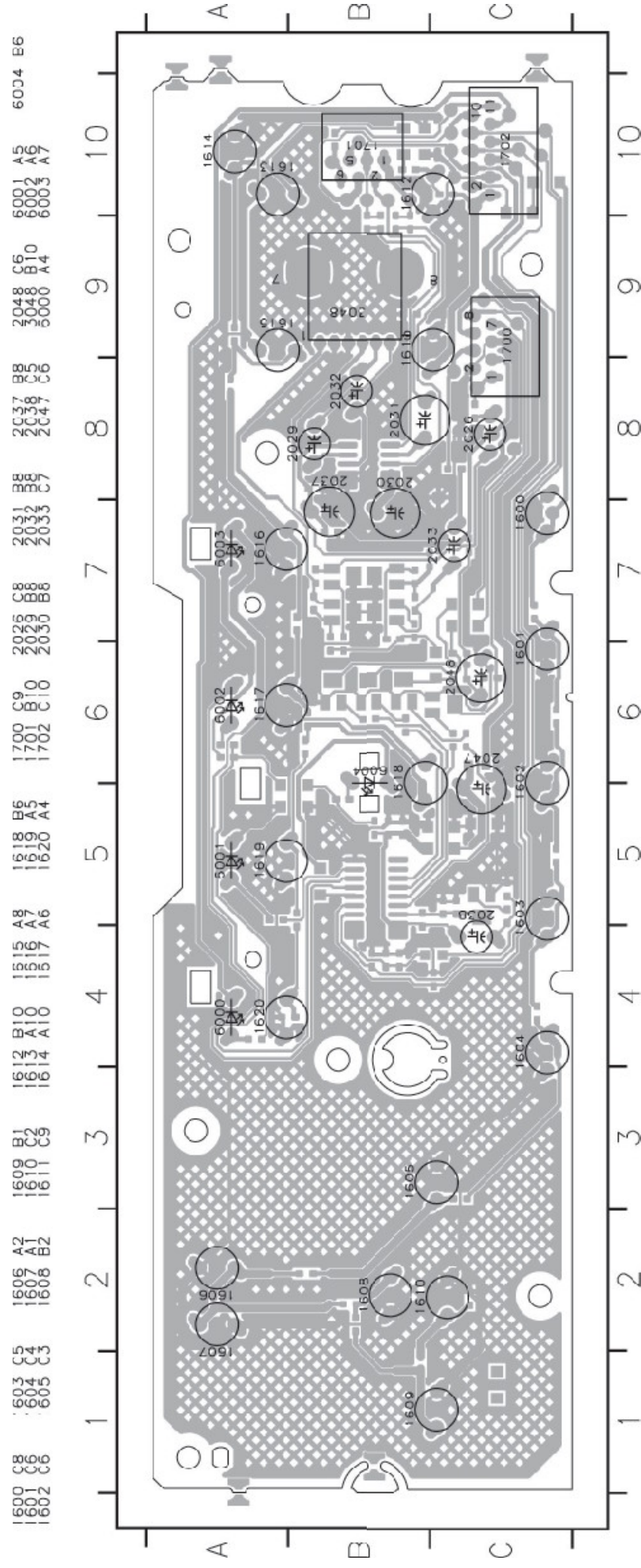


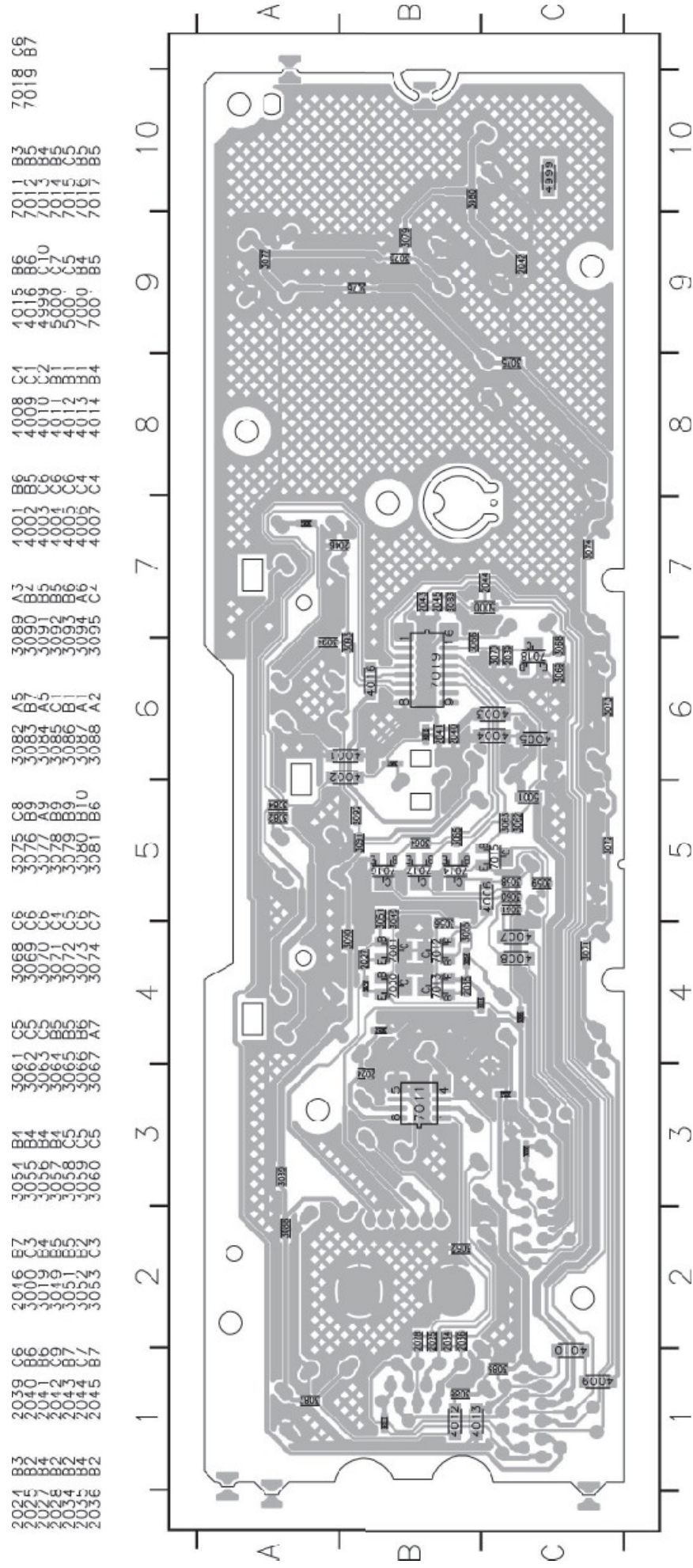
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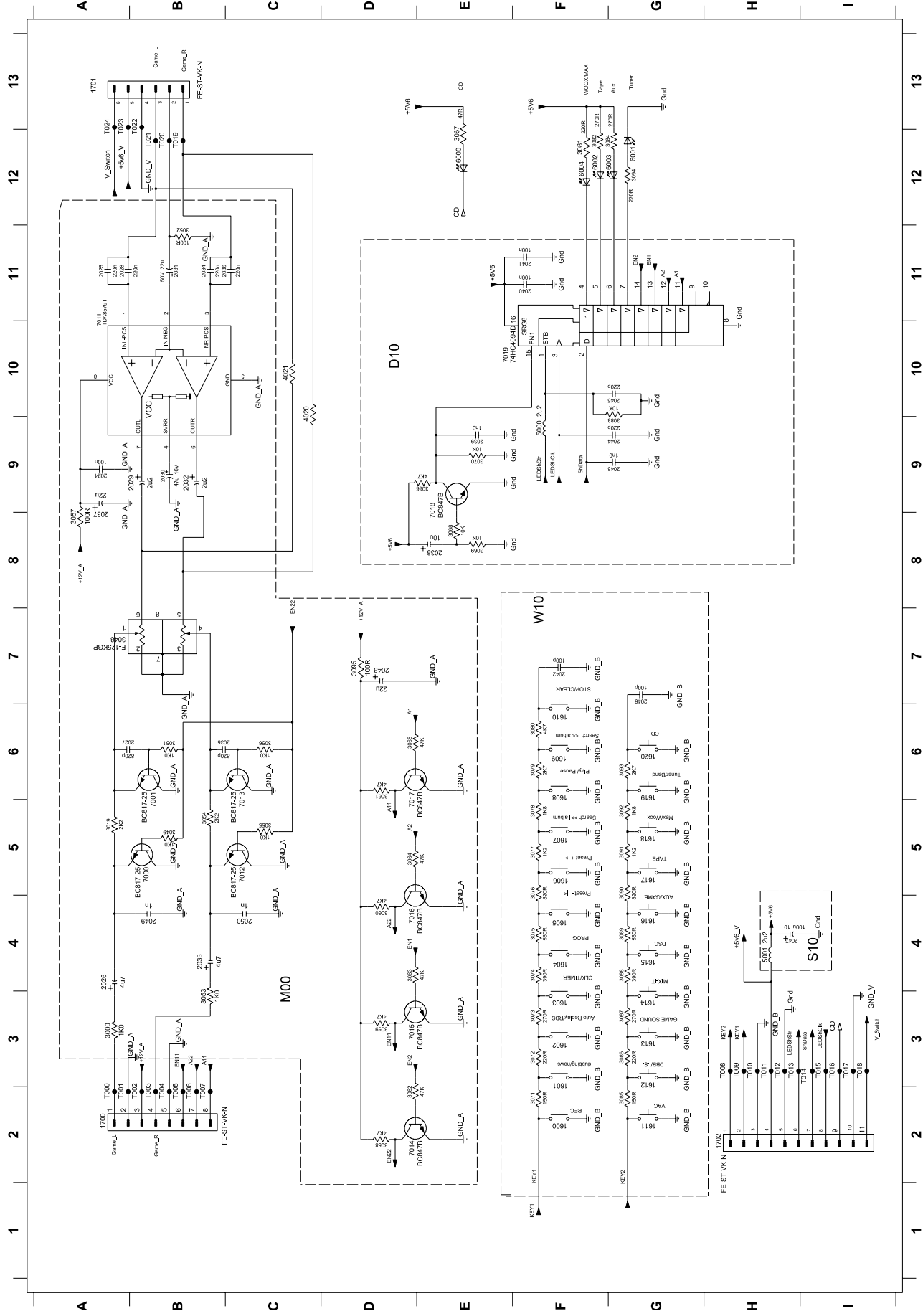
CDC Key part - Layout & Circuit diagram	5-1
Control part - Component Layout	5-2
Control part - Chip Layout	5-3
Control part - Circuit diagram	5-4
Game Port part - Layout & Circuit diagram	5-5
Electrical parts list.....	5-6

CONTROL BOARD - COMPONENT LAYOUT

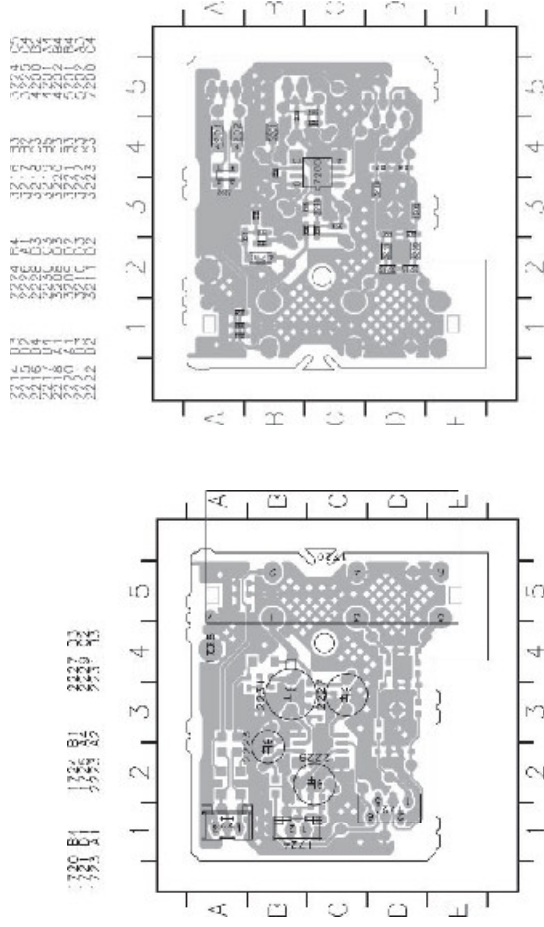


CONTROL BOARD - CHIP LAYOUT



[illegible]

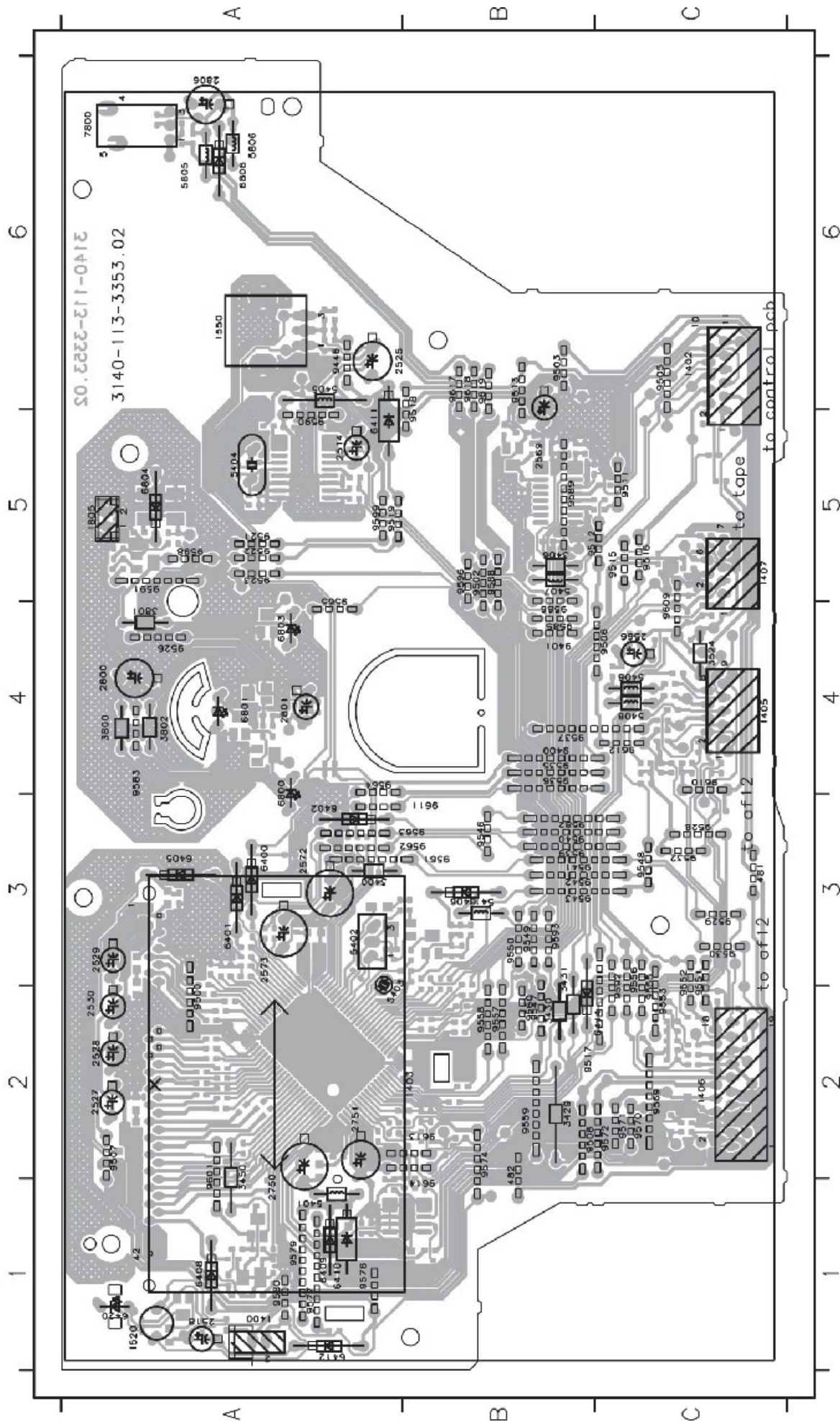
GAME PORT BOARD - CIRCUIT DIAGRAM

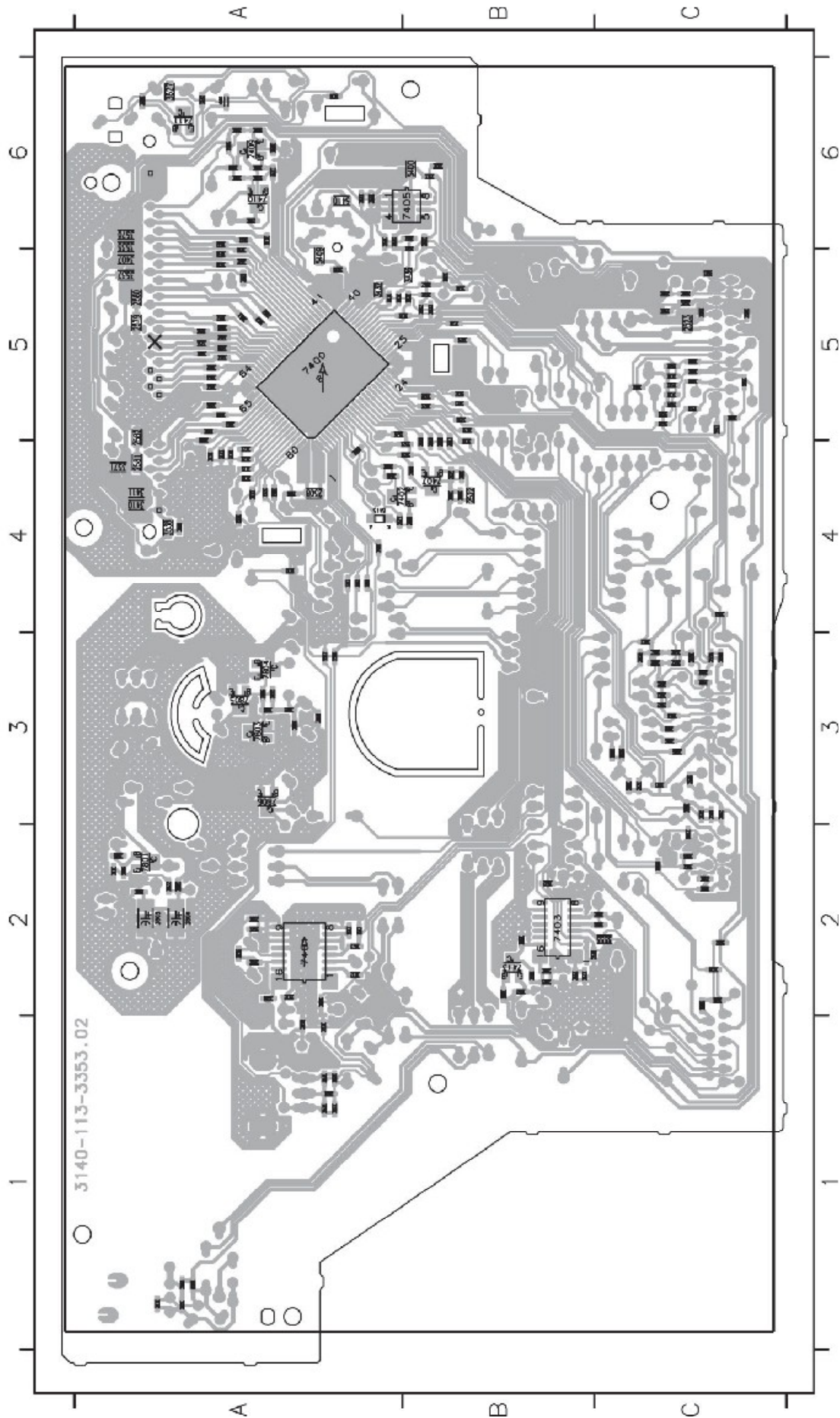


ELECTRICAL PARTSLIST - FRONT CONTROL BOARD

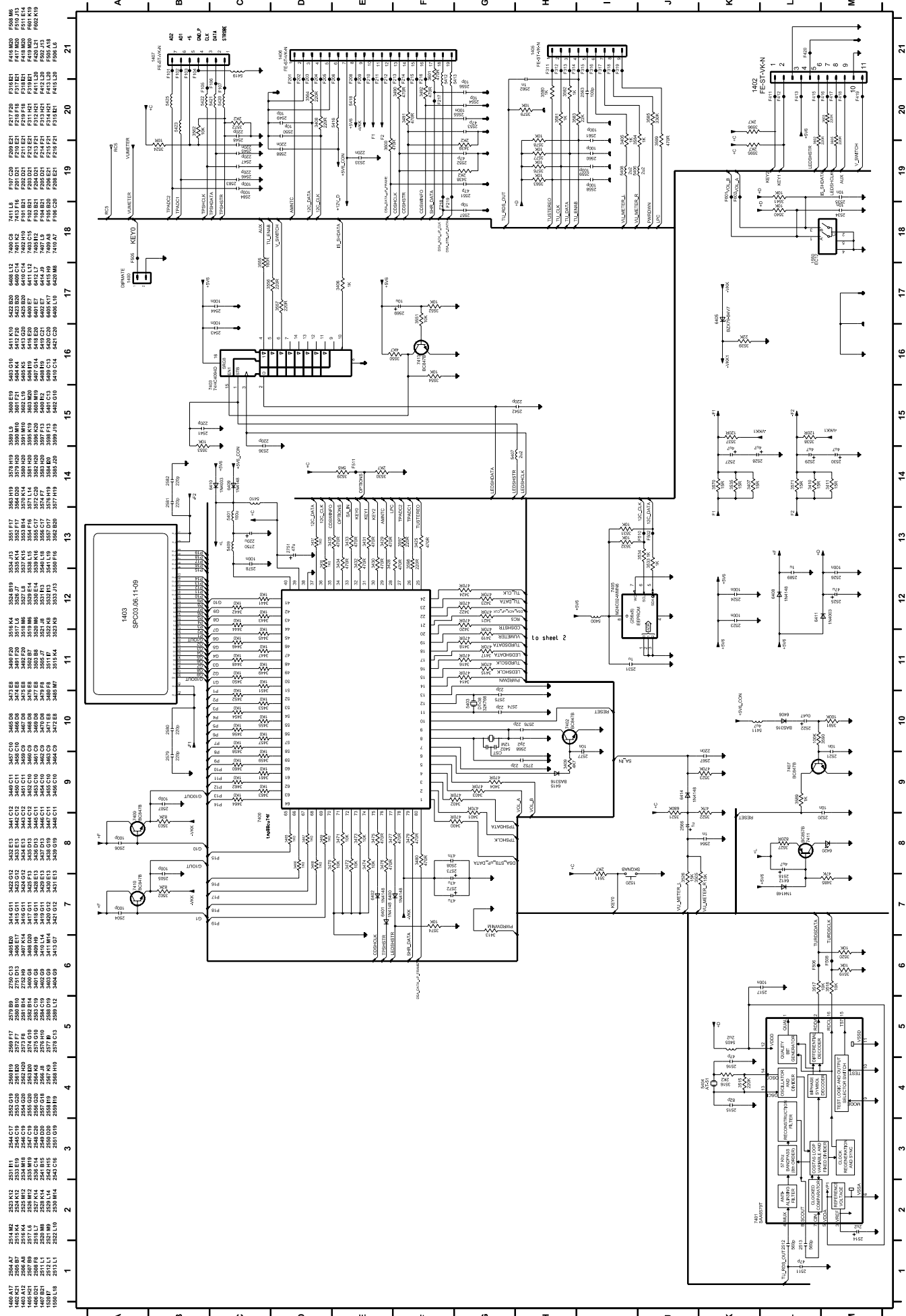
1600	4822 276 13775	SWITCH
1601	4822 276 13775	SWITCH
1602	4822 276 13775	SWITCH
1603	4822 276 13775	SWITCH
1604	4822 276 13775	SWITCH
1605	4822 276 13775	SWITCH
1606	4822 276 13775	SWITCH
1607	4822 276 13775	SWITCH
1608	4822 276 13775	SWITCH
1609	4822 276 13775	SWITCH
1610	4822 276 13775	SWITCH
1611	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.

[illegible]

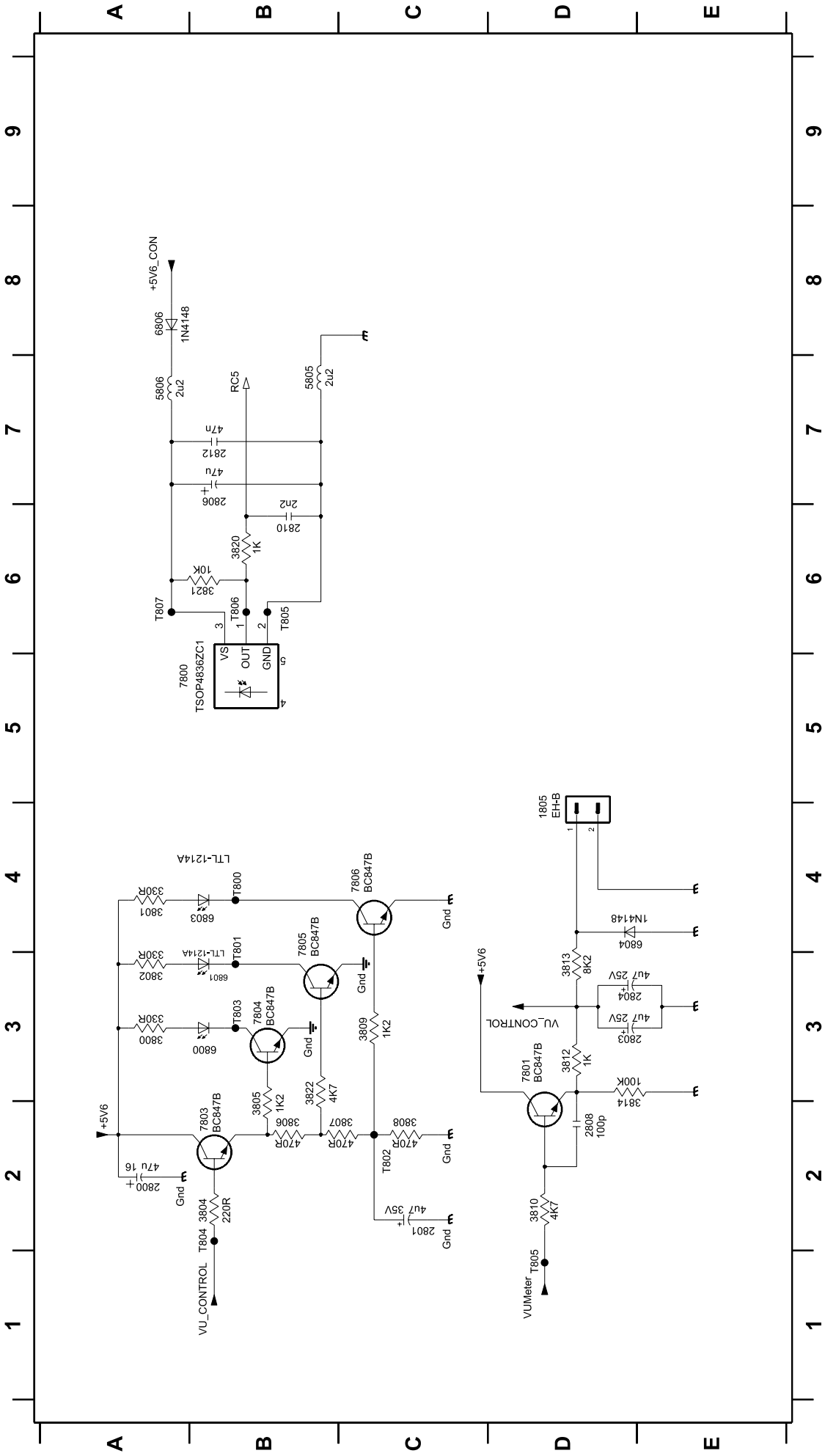


DISPLAY BOARD - CIRCUIT DIAGRAM 1



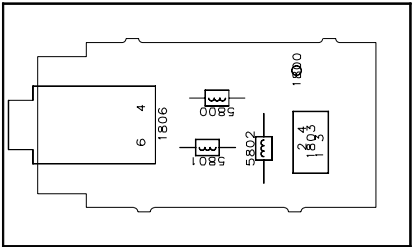
DISPLAY BOARD - CIRCUIT DIAGRAM 2

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	

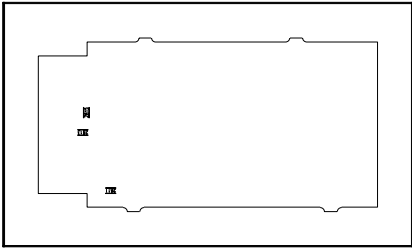


HEADPHONE BOARD - COMPONENT LAYOUT

1800
1803
1806
1810
5800
5801
5802



2811
2813
2815

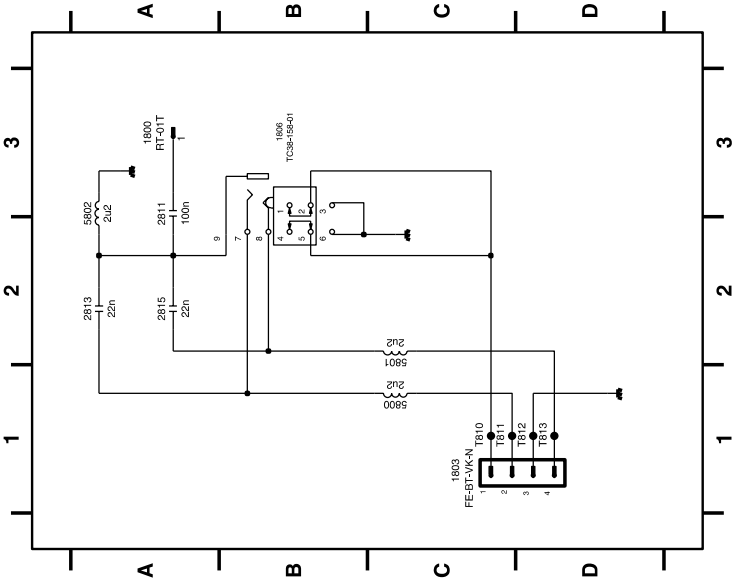


ELECTRICAL PARTSLIST - FRONT DISPLAY BOARD

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-VMN6
7800	9322	185	95667	IR RECEIVER TSOP4836

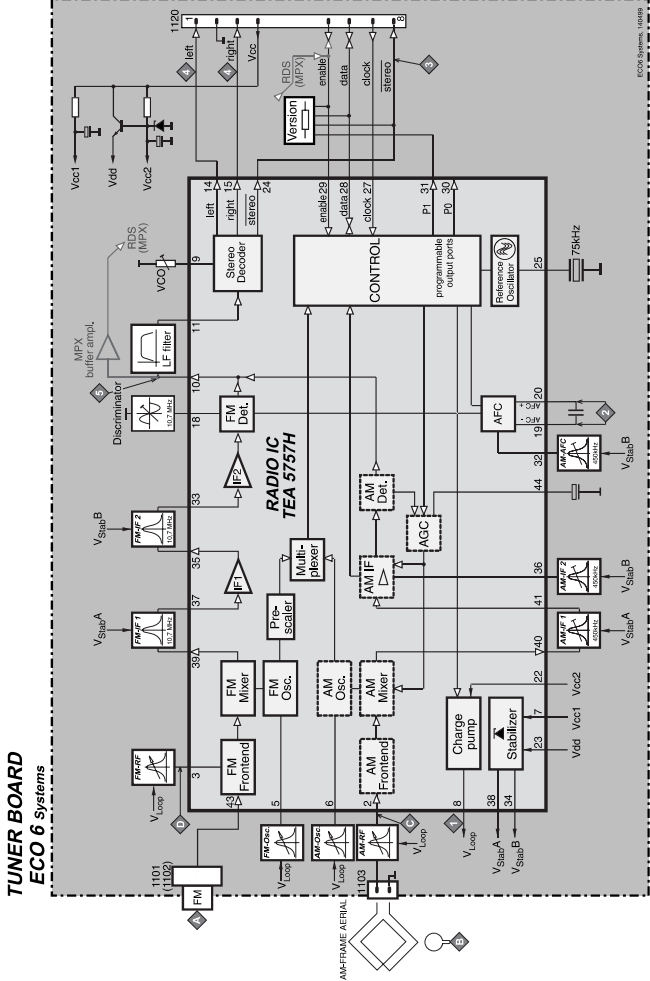
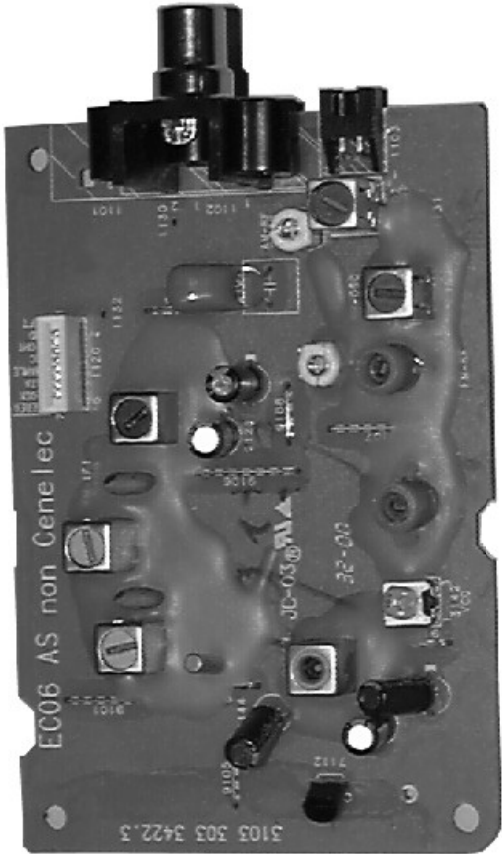
HEADPHONE BOARD - CIRCUIT DIAGRAM

1800 A3 1806 B3 2813 A2 5800 C1 T811 C1 T813 D1
1803 C1 2811 A3 2815 A2 5801 C2 T810 C1 T812 D1



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

BLOCK DIAGRAM



ECO6 Tuner Board
version: *SYSTEMS non-CENELEC*

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