

Service
Service
Service



Service Manual



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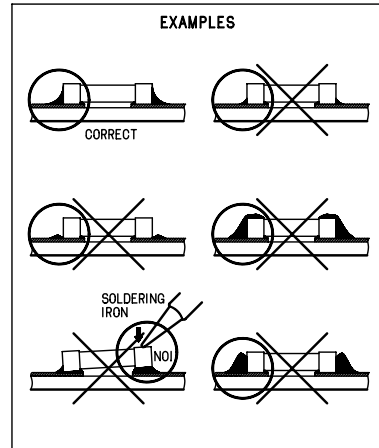
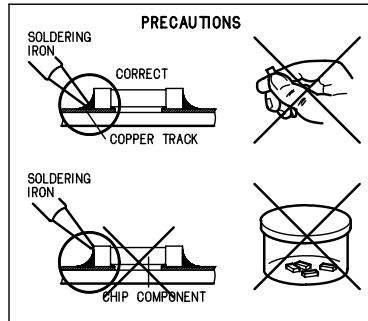
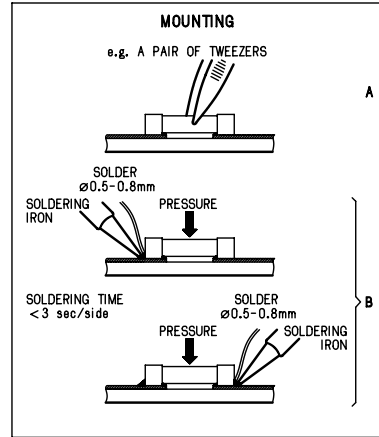
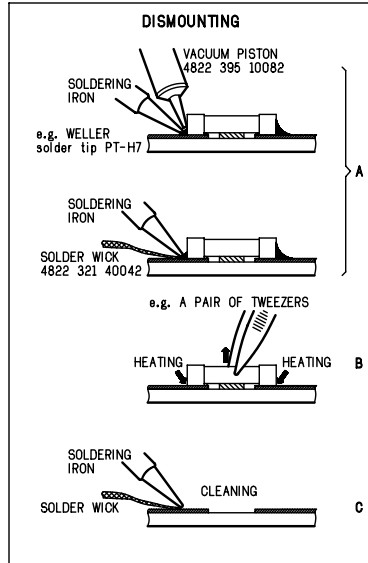
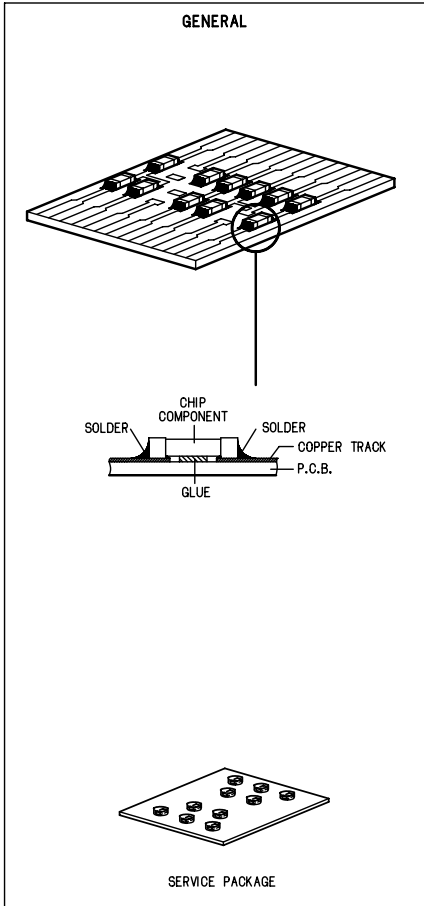
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PHILIPS

HANDLING CHIP COMPONENTS



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



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

(F) ATTENTION
Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD). Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfilez le bracelet serli 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.
Sorgen Sie dafür, daß Sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind.
Halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

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

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

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

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

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

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



(S) Varning!
Osynlig laserstrålning när apparaten är öppnad och spårren är urkopplad. Betrakta ej strålen.

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

(DK) Advarsel!
Usynlig laserstrålning ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

(FIN) Varoitus!
Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

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

TECHNICAL SPECIFICATIONS

GENERAL

Mains voltage	-/21/21M : 120 / 230 V
	-/22/25/30 : 230 V
	-/37 : 120 V
Mains frequency	-/22/25/30 : 50 Hz
	-/21/21M : 50 / 60 Hz
	-/37 : 60 Hz
Battery	remote : 3 V (R6 x 2)
Power consumption	: 75 W (normal)
	: 5.5 W (standby)
Dimension (W x H x D)	: 254 x 164 x 158 mm
Weight	: 6.7 Kg

AMPLIFIER

Output power	: 2 x 12.5 W
Speaker impedance	: 2 x 8 ohm
Frequency response	: 100 Hz - 10 kHz (± 4 dB)

TUNER - FM SECTION

Tuning range	: 87.5 - 108 MHz
IF frequency	: 10.7 MHz \pm 0.02 MHz
Sensitivity	: 16 dBf at 26dB S/N
Selectivity	300kHz : 55 dB
IF suppression	: 85 dB
Image suppression	: 40 dB
Channel separation	1kHz : 28 dB

TUNER - AM SECTION

Tuning range	MW : 531 - 1602 kHz
	-/37 : 530 - 1700 kHz
Tuning range	LW : 153 - 279 kHz
IF frequency	: 450 kHz \pm 1 kHz
Sensitivity	MW : \leq 3.5 mV/m at 26dB S/N
	LW : \leq 4.2 mV/m
Selectivity	MW : < 22 dB
	LW : < 35 dB
IF rejection	MW : < 64 dB
Spurious rejection ratio	MW : < 58 dB
	LW : < 51 dB
Image rejection ratio	MW : < 40 dB
	LW : < 47 dB

COMPACT DISC

Frequency response	: 20Hz – 20kHz within 1.5dB
S/N ratio (unw.)	: 80 dB
S/N ratio (A-wght.)	: 86 dB (90 dB typ.)
THD+N	1 kHz : 63 dB (68 dB typ.)
Channel crosstalk	: 40 dB
Channel unbalance	: < ± 1 dB

SERVICE TOOLS

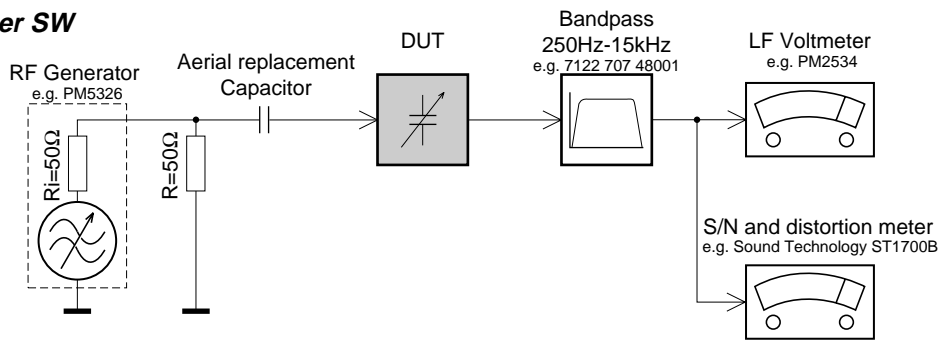
Audio signal disc SBC 429.....	4822 397 30184
Playability test disc SBC 444.....	4822 397 30245
Test disc 5 (disc without errors) +	
Test disc 5A (disc with dropout errors, black spots and fingerprints)	
SBC 426/426A.....	4822 397 30096
Burn in test disc (65 min. 1kHz signal at -30 dB level without "pause").....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

AVAILABLE ESD PROTECTION EQUIPMENT

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

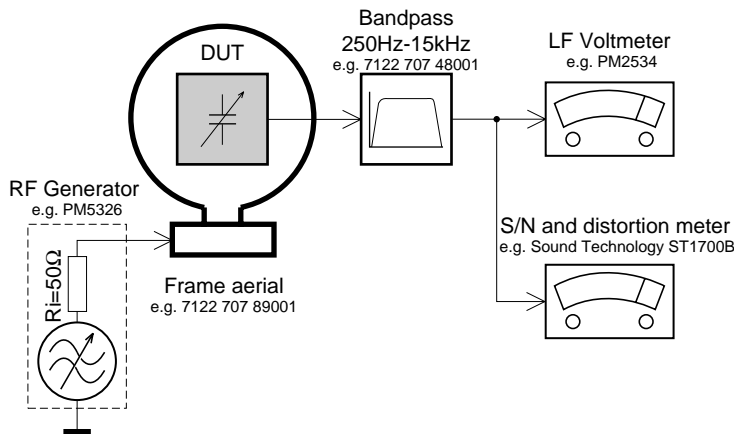
SERVICE MEASUREMENT

Tuner SW



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

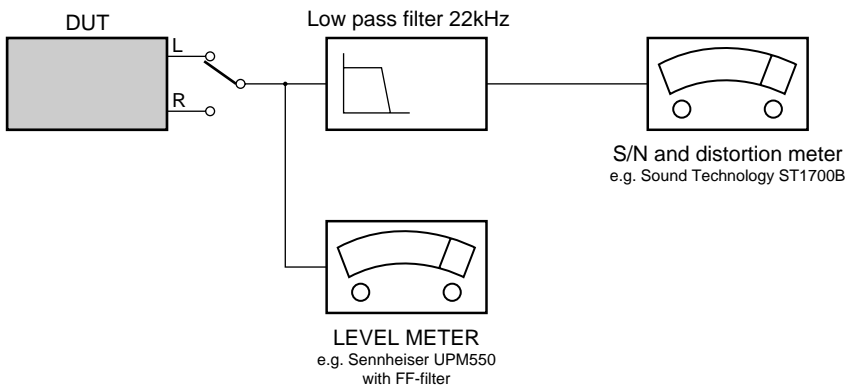
Tuner AM (MW,LW)



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






CD

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



Controls and connections

Top and front panels

- 1 STANDBY/ ON**  – switches the set to standby/on
- 2 SOURCE** – selects the sound source for CD/TUNER/ CD RW/ AUX; switches on the set
- 3 PROGRAM** – CD: programmes tracks and reviews the programme;
TUNER: programmes tuner stations manually or automatically;
TIMER: activates, sets and deactivates the timer function
- 4 RDS/CLOCK** – displays RDS information; sets the clock function
CD: selects shuffle and repeat options, e.g. repeats a track/ CD programme/ entire CD; plays tracks in random order
- 5 SOUND CONTROL** –
DBB: (Dynamic Bass Boost) enhances the bass;
DSC: (Digital Sound Control) selects sound characteristics: OPTIMAL/ CLASSIC/ JAZZ/ POP;
INCREDIBLE SURROUND: creates a super-enhanced stereo effect
- 6 Display** – shows the status of the set
- 7 VOLUME** – adjusts the volume level and sound settings; adjusts the hour and minutes for the clock/ timer functions
- 8 OPEN/CLOSE** – opens/ closes the CD tray
- 9  or PRESET ** – starts and pauses CD playback; selects a preset tuner station (up);
 or PRESET  – stops CD playback or erase a CD programme; activates/ deactivates demo mode; selects a preset tuner station (down)


10 , or TUNING , –

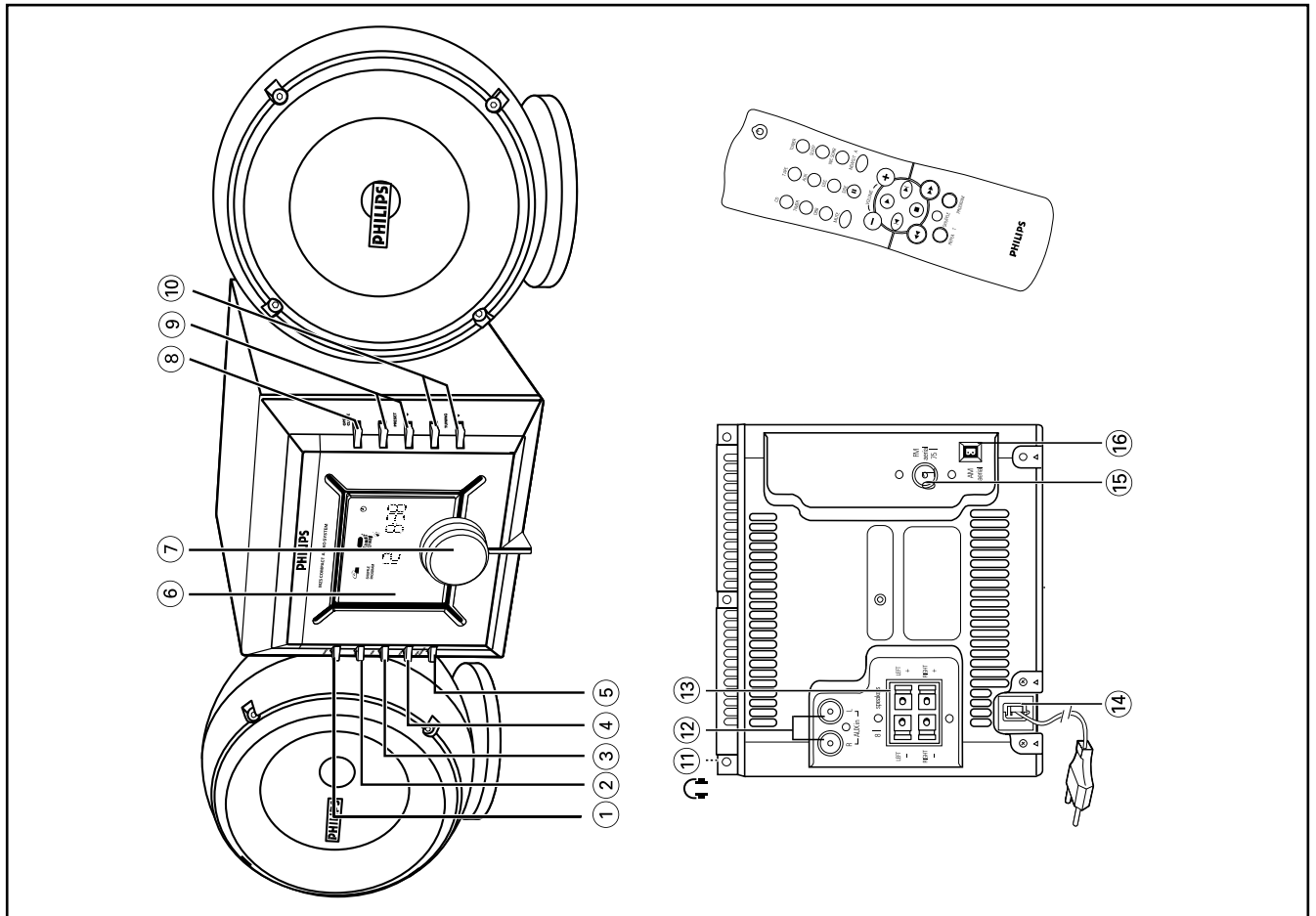
CD: fast searches back and forward within a track; skips to subsequent/ beginning of a current track or previous track
TUNER: (up, down) tunes to radio stations

Back panel

- 11 ** – 3.5 mm (16-150 Ω) stereo headphone socket
- 12 AUX IN RIGHT/ LEFT** – connects to the audio output of an additional appliance
- 13 SPEAKERS 8 Ω** – connects to the supplied speakers
- 14 AC MAINS** – after all other connections have been made, connect the mains plug to the wall socket
- 15 FM AERIAL 75** – connects to the supplied aerial wire or an aerial wall connection
- 16 AM (MW) AERIAL** – connects to the supplied AM (MW) frame aerial

Remote control

-  – switches the set to standby
- CD, TUNER, AUX, CDR** – selects the respective sound source
- TIMER** – activates and deactivates the timer
- SLEEP** – activates and deactivates the sleeper time; selects sleeper time
- DBB** (Dynamic Bass Boost) – enhances the bass



Controls and connections

DSC (Digital Sound Control) –

selects sound characteristics:
OPTIMAL/ CLASSIC/ JAZZ/ POP

INCR. SURR –

creates a super-enhanced stereo effect

MUTE –

interrupts and resumes sound reproduction

BAND –

selects wave range

NEWS/TA –

activates RDS news (not all versions) and Traffic Announcement

VOLUME →, + –

adjusts volume level

▶|| –

starts/ pauses CD playback

■ –

stops CD playback or erases a CD programme

◀, ▶ –

cd: skips to the beginning of a current track/ previous/ subsequent track;

TUNER: (down, up) selects a preset radio station

◀◀, ▶▶ –

cd: searches backwards or forwards within a track/CD;

TUNER: (down, up) tunes to radio stations

REPEAT –

repeats a track/ CD programme/ entire CD

SHUFFLE –

plays CD tracks in random order

PROGRAM –

cd: programmes tracks and reviews the programme;

TUNER: programmes radio stations or starts Auto programming

Notes:

Select the desired sound source first (e.g. CD CD R), then press the required function key (e.g. ▶).

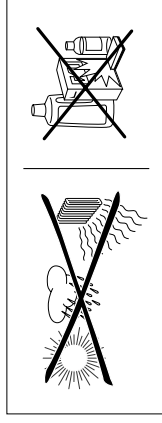
The CD function keys on the remote control can be used for a CD R.

General information

Supplied accessories

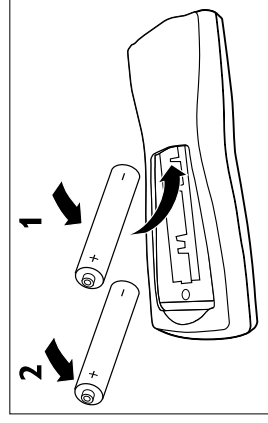
- 2 speaker boxes
- remote control with batteries
- AM (MW) frame aerial
- FM aerial wire

General maintenance



- Do not expose the set, batteries, CDs or cassettes to humidity, rain, sand or excessive heat caused by heating equipment or direct sunlight.
- To clean the set, use a soft, slightly dampened chamois leather; Do not use any cleaning agents containing alcohol, ammonia, benzene or abrasives as these may harm the housing.

Batteries for the remote control



- Open the battery compartment and insert two batteries, type **AA R06** or **UM3** (preferably alkaline) with the correct polarity as indicated by the "+" and "-" symbols inside the compartment.

IMPORTANT!

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

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

General information Power supply Connections

Safety information

- Place the set on a hard and flat surface so that the system does not tilt. Make sure there is adequate ventilation to prevent the system from overheating.

- The mechanical parts of the set contain self-lubricating bearings and must not be oiled or lubricated.

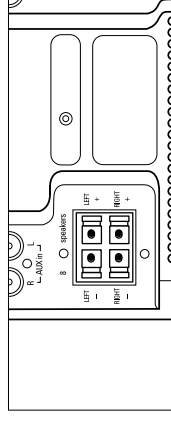
AUX IN

You can connect the audio left and right **OUT** terminals of another sound system, e.g. CDR, cassette recorder to the corresponding left and right **AUX IN** terminals at the rear of the set.

- Use the MZ-5 sound controls to adjust the sound of the other system.
- For playback of a connected CD-R(W), select the CD-R(W) source.

Speaker connections

The speaker terminals are click-fit connectors. Use them as shown below.



- Connect the unmarked wire to the red terminal and the marked black wire to the black terminal.
- When headphones are inserted into the headphone socket the speakers are disconnected.

Power supply

- 1 Check if the mains voltage, **as shown on the type plate located on the bottom of the set**, corresponds to your local mains voltage. If it does not, consult your dealer or service centre.
- 2 If your set is equipped with a voltage selector on the bottom of the set, adjust the selector so that it matches with the local mains.
- 3 Connect the mains plug to the wall socket and the set is now ready for use.
The clock display ... : ... flashes.
- 4 To disconnect the set from the mains completely, remove the plug from the wall socket.

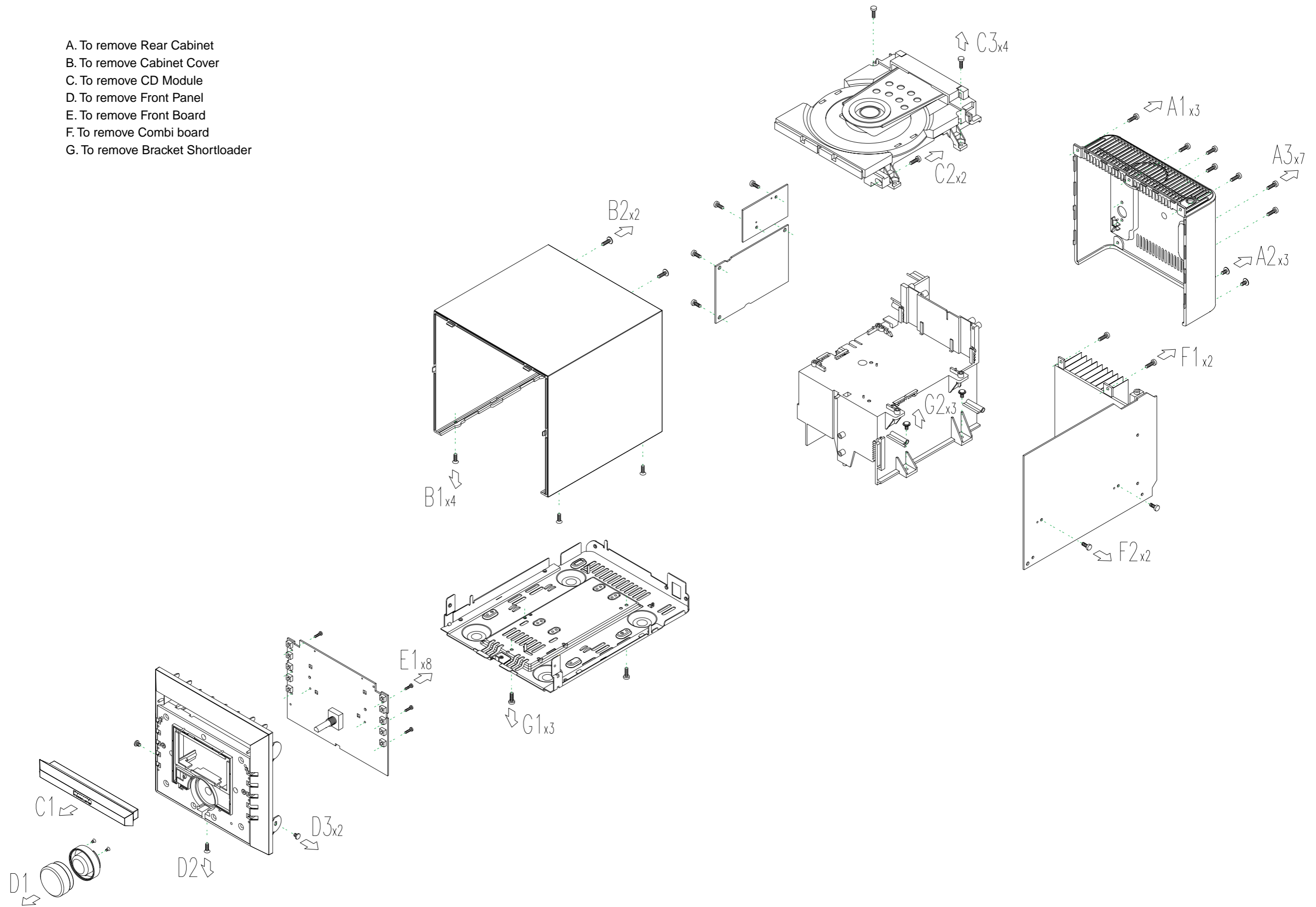
Power-saving automatic standby

As a power-saving feature, the unit automatically switches to standby if:

- 15 minutes after a CD has reached the end and no control is operated.
- after more than 24 hours no controls are operated.

DISASSEMBLY DIAGRAM

- A. To remove Rear Cabinet
- B. To remove Cabinet Cover
- C. To remove CD Module
- D. To remove Front Panel
- E. To remove Front Board
- F. To remove Combi board
- G. To remove Bracket Shortloader



SERVICE TEST PROGRAM

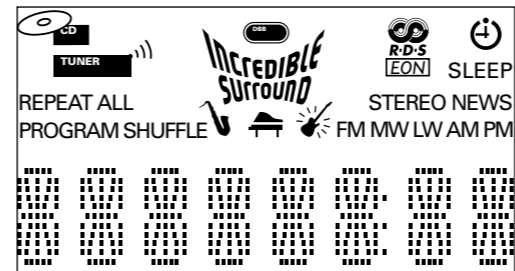
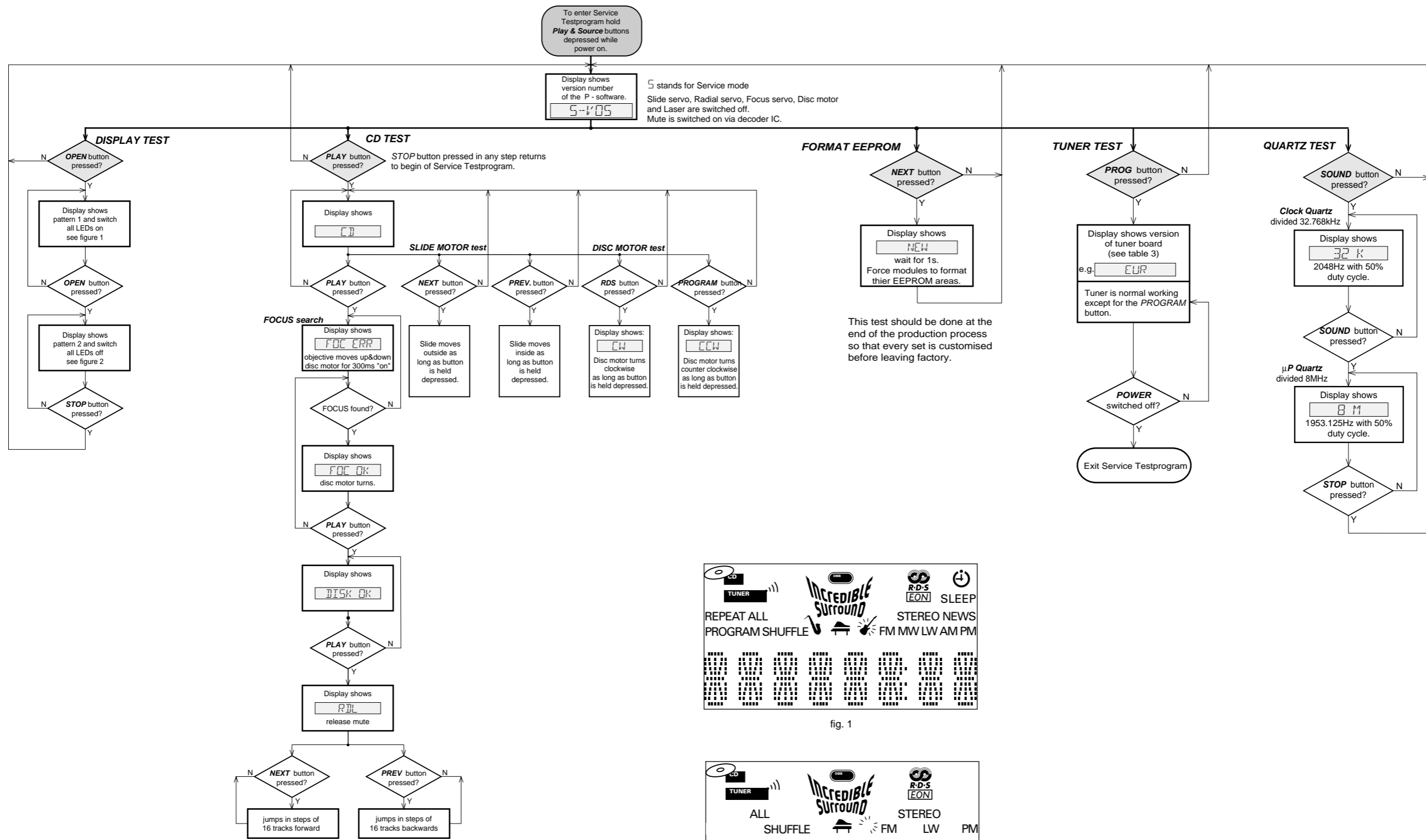


fig. 1

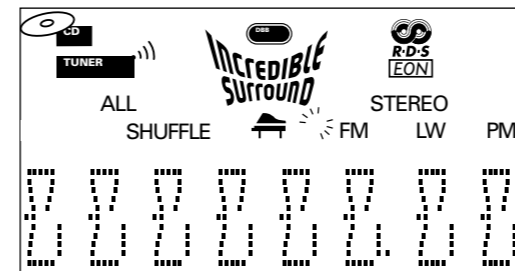
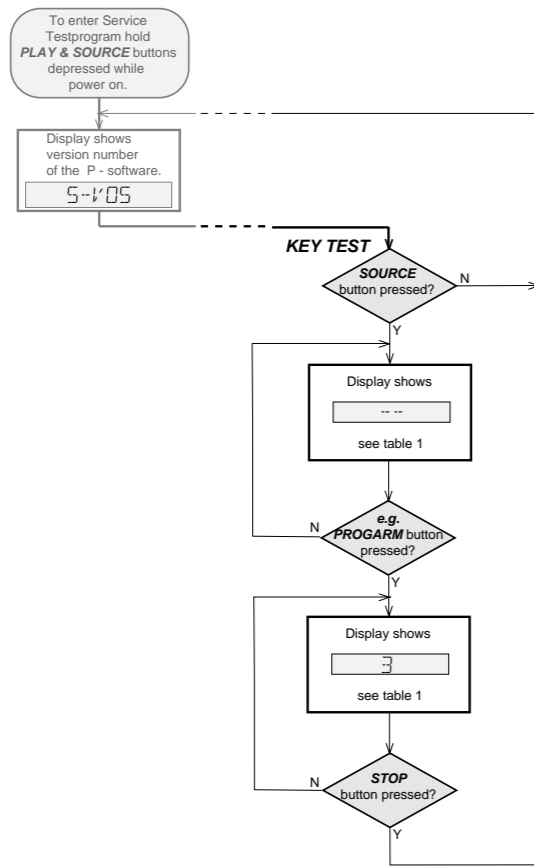


fig. 2

SERVICE TEST PROGRAM



KEY CODES

KEY CODE	KEY
1	Standby
2	Source
3	Program
4	RDS/Clockset
5	Sound
6	Previous
7	Next
8	Stop (Exit)
9	Play
10	Open/Close
11	CD
12	Aux
13	Tuner
14	Timer On/Off
15	CDR
16	Sleep
17	Mute
18	Vol Down
19	Vol Down

table 1

SERVICE PRESET FREQUENCIES

	EUR	EEU	USA	OSE	KOR
REGION	EUROPE FM/MW/LW	East EUROPE FM/MW/LW	USA FM/MW	OVERSEAS FM/MW <small>¹)Grid switchable 10-100kHz/9-50kHz</small>	KOREA FM/MW-stereo
PRESET	/00/02/05/20/25	/14/34	/17/37	/01/11	/13/33
1	87,5 MHz	65,81 MHz	87,5 MHz	87,5 MHz	87,5 MHz
2	108 MHz	108 MHz	108 MHz	108 MHz	108 MHz
3	531 kHz	74 MHz	530 kHz	530/531 kHz	531 kHz
4	1602 kHz	87,5 MHz	1700 kHz	1700/1602 kHz	1602 kHz
5	558 kHz	531 kHz	560 kHz	560/558 kHz	558 kHz
6	1494 kHz	1602 kHz	1500 kHz	1500/1494 kHz	1494 kHz
7	153 kHz	558 kHz	98 MHz	--	--
8	279 kHz	1494 kHz	--	--	--
9	198 kHz	98 MHz	--	--	--
10	98MHz	70.01 MHz	--	--	--
11	--	--	--	98 MHz	98 MHz

table 3

²) To toggle frequency grid press **PRESET DOWN** key for more than 5s in normal tuner mode (not in service testmode).

Display will show either **9 GRID** or **10 GRID** for 2 s.

CD ERROR CODES

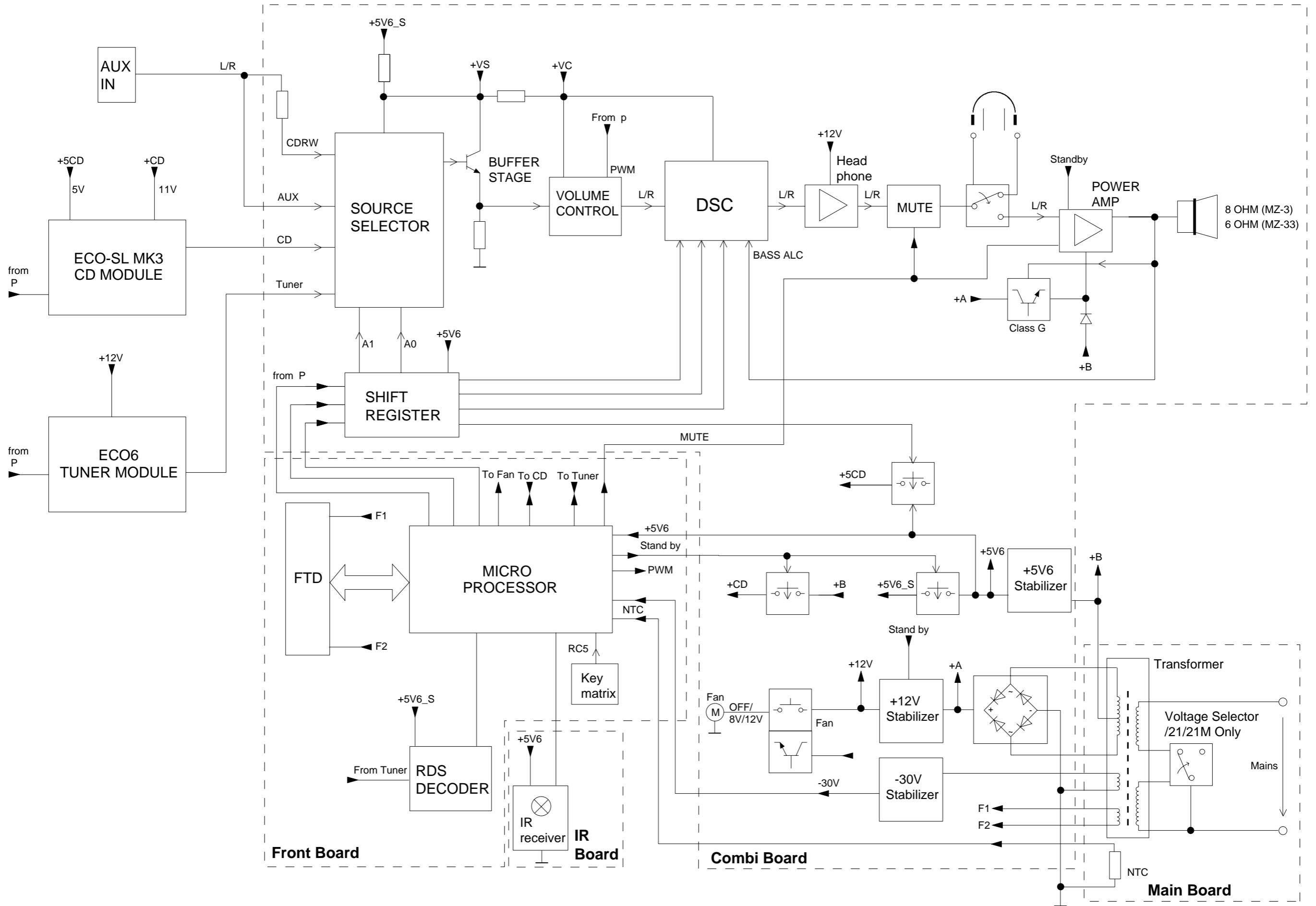
Error number	Error description	Error type
E1000	Focus error Triggered when the focus is lost during playing the CD.	W
E1001	Radial error Triggered when the radial servo is off- track for a certain time during playing the CD.	W
E1002	Sledge in error The sledge did not reach its inner position (innerswitch is closed) before approximately 6 seconds have passed by - innerswitch or sledgemotor problem.	W
E1005	Jump error Triggered when the jump destination could not be found within a certain time.	W
E1006	Subcode error No valid subcode for a certain time during play.	W
E1007	PLL error The Phase-Lock-Loop could not lock within a certain time.	W
E1008	Turntable motor error Generated when the CD could not reach 75% of speed during start-up within a certain time. Discmotor problem.	W
E1020	Focus search error The focus point has not been found within a certain time.	F
E1003	Fatal radial error Triggered when the radial error happened for several times.	F

table 2

Error type: W = Warning → set continues operation, message remains on the display until next error occurs or any key is pressed.

F = Fatal Error → set stops operation, message remains on the display.

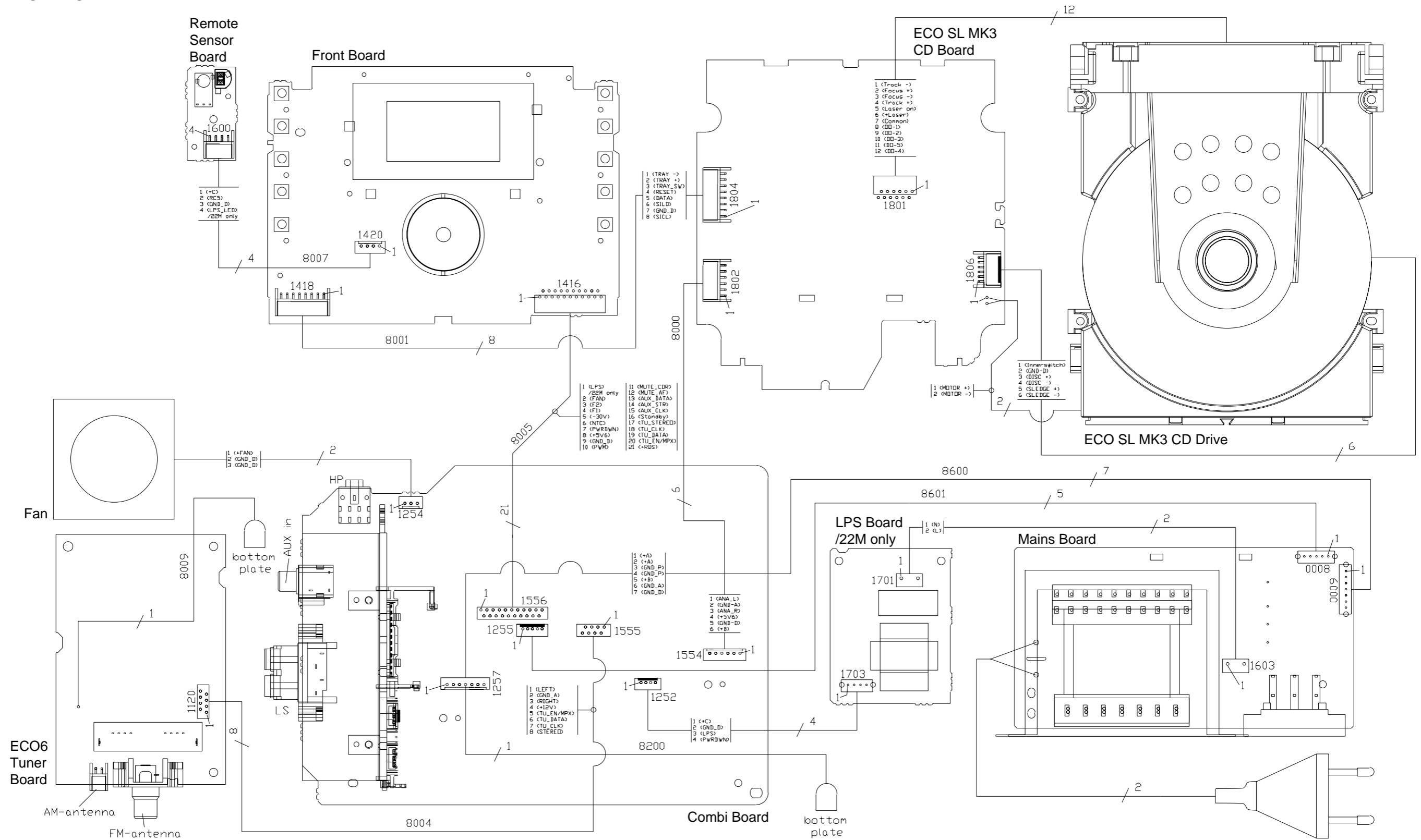
BLOCK DIAGRAM



WIRING DIAGRAM

5-2

5-2

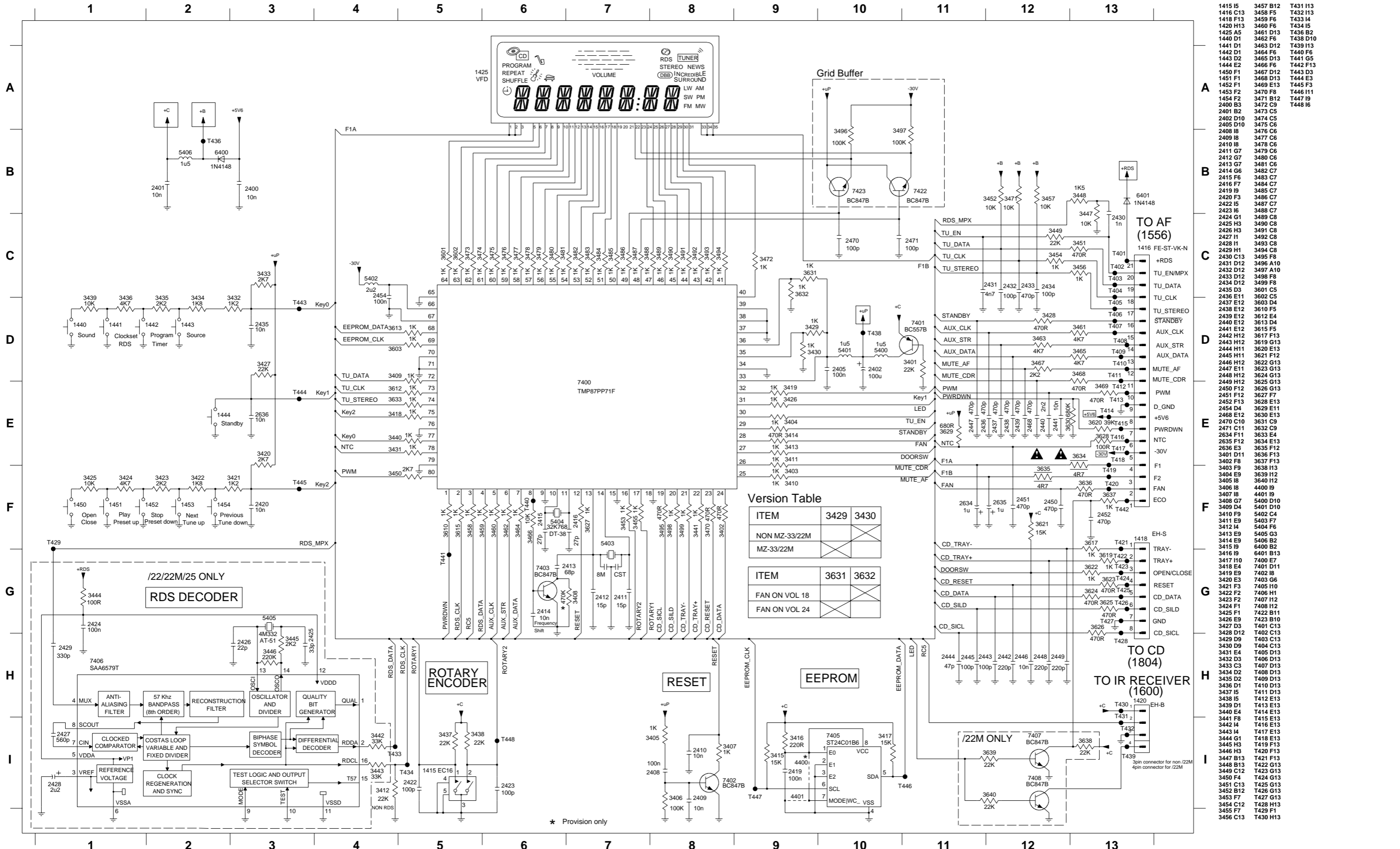


Notes: AUX-in, LINE-out, Digital-out sockets are grounded with metal stripes to the bottom

Legenda:



FRONT BOARD - CIRCUIT DIAGRAM



Version Table

ITEM	3429	3430
NON MZ-33/22M		
MZ-33/22M		
ITEM	3631	3632
FAN ON VOL 18		
FAN ON VOL 24		

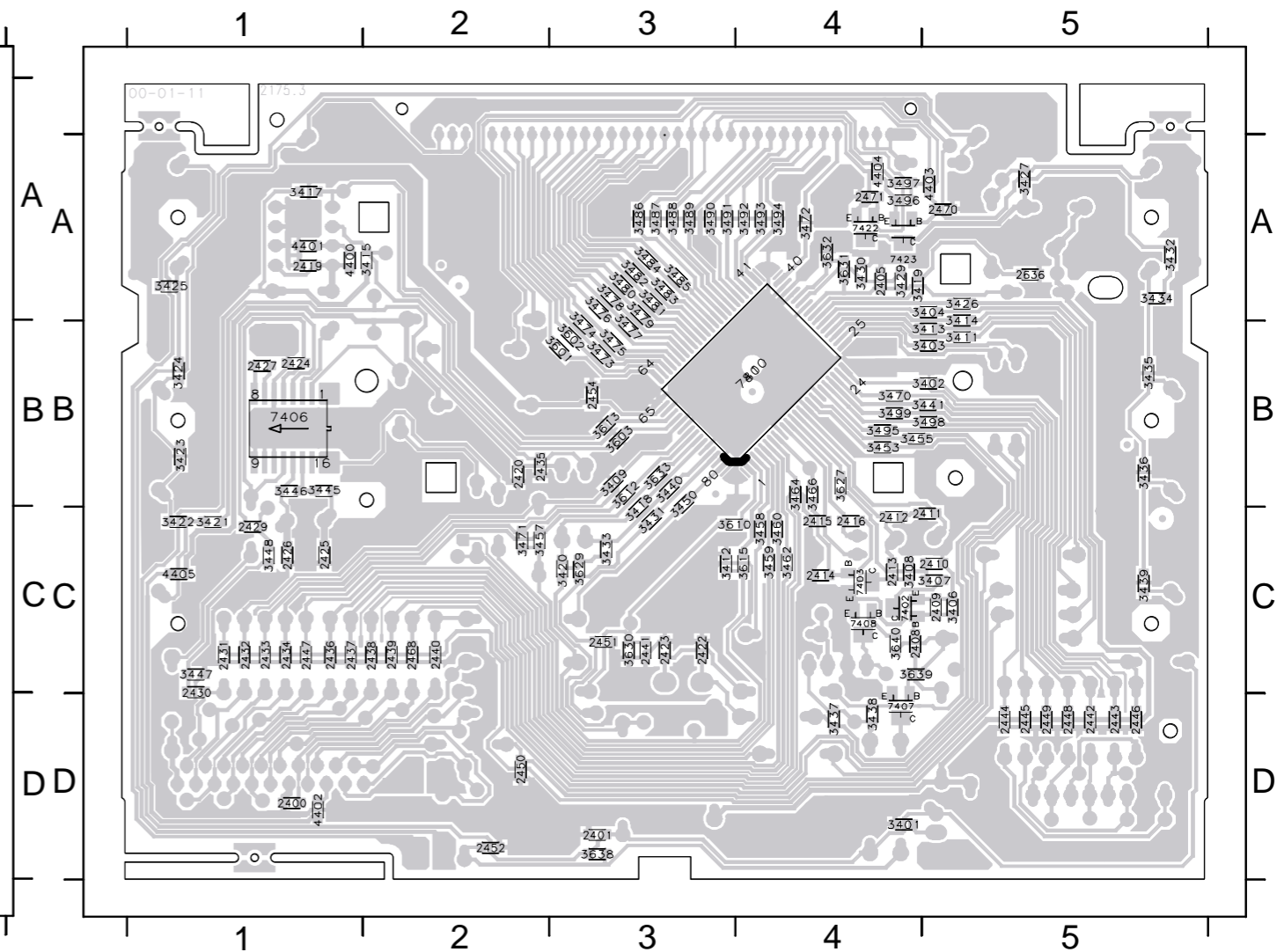
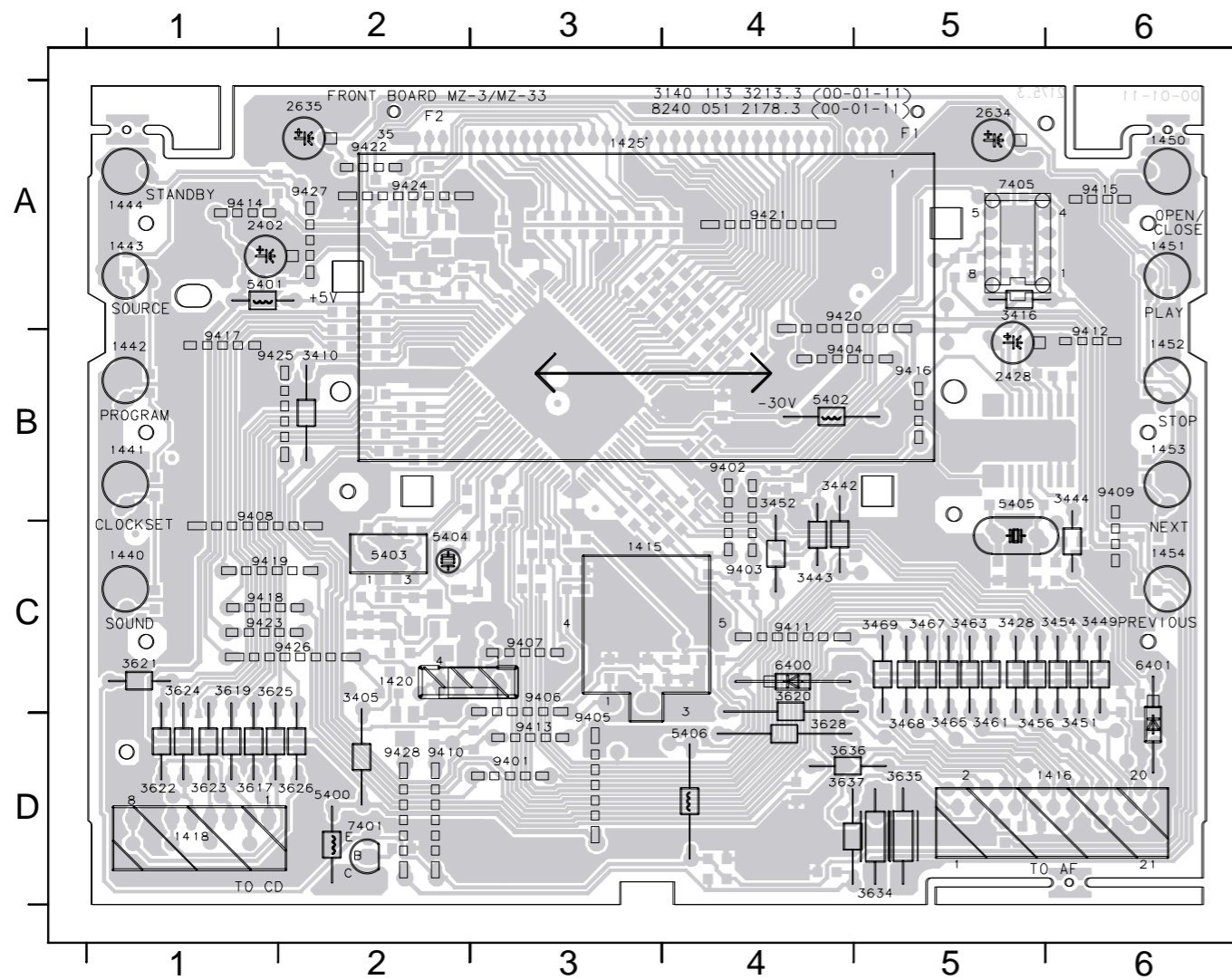
- 1415 I5
- 1416 C13
- 1418 F13
- 1420 H13
- 1425 A5
- 1440 D1
- 1441 D1
- 1442 D1
- 1443 D2
- 1444 E2
- 1450 F1
- 1451 F1
- 1452 F1
- 1453 F2
- 1454 F2
- 2400 B3
- 2401 B2
- 2402 D10
- 2405 D10
- 2408 I8
- 2409 I8
- 2410 I8
- 2411 G7
- 2412 G7
- 2413 G7
- 2414 G6
- 2415 F6
- 2416 F7
- 2419 I9
- 2420 F3
- 2422 I6
- 2423 I6
- 2424 G1
- 2425 H3
- 2426 H3
- 2427 I1
- 2428 I1
- 2429 H1
- 2430 C13
- 2431 D12
- 2432 D12
- 2433 D12
- 2434 D12
- 2435 D3
- 2436 E11
- 2437 E12
- 2438 E12
- 2439 E12
- 2440 E12
- 2441 E12
- 2442 H12
- 2443 H12
- 2444 H11
- 2445 H11
- 2446 H12
- 2447 E11
- 2448 H12
- 2449 H12
- 2450 F12
- 2451 F12
- 2452 F13
- 2454 D4
- 2468 E12
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- 3422 F2
- 3423 F2
- 3424 I1
- 3425 F1
- 3426 E9
- 3427 D3
- 3428 D12
- 3429 D9
- 3430 D9
- 3431 E4
- 3432 D3
- 3433 C3
- 3434 D2
- 3435 D2
- 3436 D1
- 3437 I5
- 3438 I5
- 3439 D1
- 3440 E4
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- 4000 C6

* Provision only

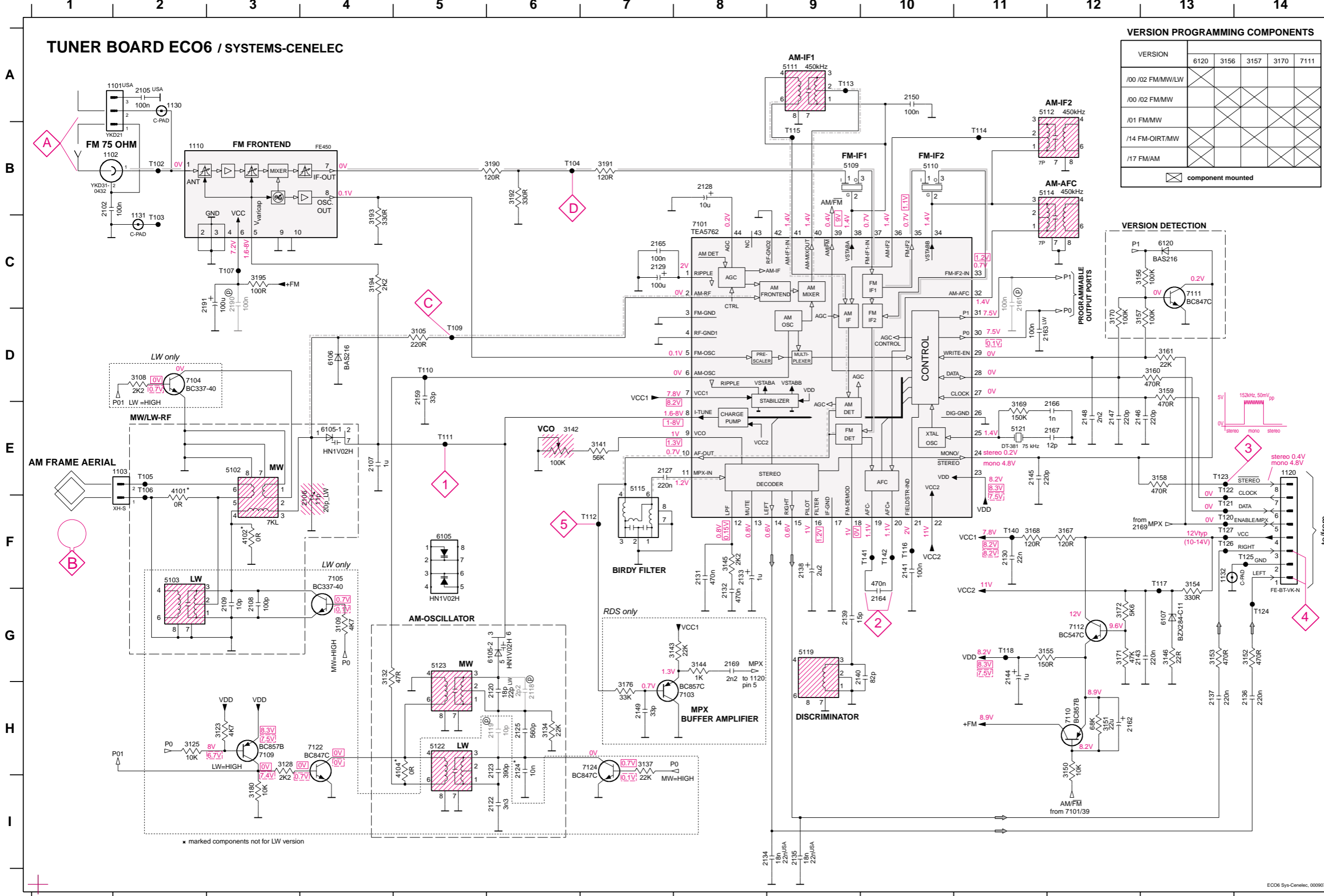
FRONT BOARD - LAYOUT DIAGRAM

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1416 D6	1443 A1	2402 A1	3428 C5	3454 C6	3469 C5	3624 C1	3637 D4	5406 D4	9403 B4	9410 D2	9417 B1	9424 A2
1418 D1	1444 A1	2428 A5	3442 C4	3456 C5	3617 C1	3625 C1	5400 D2	6400 C4	9404 B4	9411 C4	9418 C1	9425 B1
1420 C3	1450 A6	2634 A5	3443 C4	3461 C5	3619 C1	3626 C2	5401 A1	6401 D6	9405 D3	9412 A6	9419 C1	9426 C2
1425 A3	1451 A6	2635 A1	3444 C6	3463 C5	3620 C4	3628 D4	5402 B4	7401 D2	9406 C3	9413 D3	9420 B4	9427 A2
1440 C1	1452 B6	3405 D2	3449 C6	3465 C5	3621 C1	3634 D5	5403 C2	7405 A6	9407 C3	9414 A1	9421 A4	9428 D2
1441 B1	1453 B6	3410 B2	3451 C6	3467 C5	3622 C1	3635 D5	5404 C2	9401 D3	9408 B1	9415 A6	9422 A2	

2400 D1	2422 C3	2437 C1	2451 C3	3409 B3	3425 A1	3440 B3	3464 B4	3482 A3	3496 A4	3631 A4	7403 C4
2401 D3	2423 C3	2438 C2	2452 D2	3411 B5	3426 A5	3441 B5	3466 B4	3483 A4	3497 A4	3632 A4	7406 B1
2405 A4	2424 B1	2439 C2	2454 B3	3412 C3	3427 A5	3445 B1	3470 B4	3484 A3	3498 B5	3633 B3	7407 D4
2408 C4	2425 C1	2440 C2	2468 C2	3413 B5	3429 A4	3446 B1	3471 C2	3485 A3	3499 B4	3638 D3	7408 C4
2409 C5	2426 C1	2441 C3	2470 A5	3414 B5	3430 A4	3447 C1	3472 A4	3486 A3	3601 B3	3639 C4	7422 A4
2410 C5	2427 B1	2442 D5	2471 A4	3415 A2	3431 C3	3448 C1	3473 B3	3487 A3	3602 B3	3640 C4	7423 A4
2411 C5	2429 C1	2443 D5	2636 A5	3417 A1	3432 A5	3450 B3	3474 B3	3488 A3	3603 B3	4400 A1	
2412 C4	2430 C1	2444 D5	3401 D4	3418 C3	3433 C3	3453 B4	3475 B3	3489 A3	3610 C3	4401 A1	
2413 C4	2431 C1	2445 D5	3402 B5	3419 A4	3434 A5	3455 B4	3476 A3	3490 A3	3612 B3	4402 D1	
2414 C4	2432 C1	2446 D5	3403 B5	3420 C3	3435 B5	3457 C2	3477 B3	3491 A3	3613 B3	4403 A5	
2415 C4	2433 C1	2447 C1	3404 A5	3421 C1	3436 B5	3458 C4	3478 A3	3492 A4	3615 C4	4404 A4	
2416 C4	2434 C1	2448 D5	3406 C5	3422 C1	3437 D4	3459 C4	3479 A3	3493 A4	3627 B4	4405 C1	
2419 A1	2435 B2	2449 D5	3407 C5	3423 B1	3438 D4	3460 C4	3480 A3	3494 A4	3629 C3	7400 B4	
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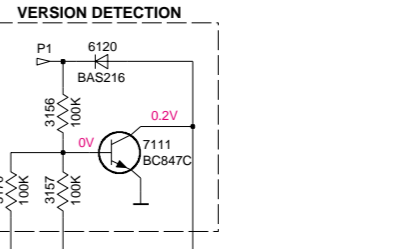
TUNER BOARD ECO6-CIRCUIT DIAGRAM



VERSION PROGRAMMING COMPONENTS

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

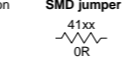
component mounted



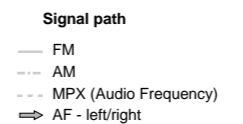
- 1101 A2
- 1102 B1
- 1103 E2
- 1110 B2
- 1120 E14
- 1130 A2
- 1131 C2
- 1132 F13
- 2102 B1
- 2105 A2
- 2106 E3
- 2107 E4
- 2108 G3
- 2109 G3
- 2118 H6
- 2119 H6
- 2120 H6
- 2122 I6
- 2123 H6
- 2124 H6
- 2125 H6
- 2127 E7
- 2128 B8
- 2129 C7
- 2130 F11
- 2131 F8
- 2132 F8
- 2133 F8
- 2134 I8
- 2135 I9
- 2136 H14
- 2137 H13
- 2138 F9
- 2139 G9
- 2140 G9
- 2141 F10
- 2143 G12
- 2144 G11
- 2145 F11
- 2146 E12
- 2147 E12
- 2148 E12
- 2149 H7
- 2150 A10
- 2159 D5
- 2161 C11
- 2162 H12
- 2163 D11
- 2164 G10
- 2165 C7
- 2166 E11
- 2167 H11
- 2169 G8
- 2190 C3
- 2191 C3
- 3105 D5
- 3108 D2
- 3109 G4
- 3123 H3
- 3128 H3
- 3132 G4
- 3134 H6
- 3137 H7
- 3141 F7
- 3142 E6
- 3143 G7
- 3144 G8
- 3145 F8
- 3146 G13
- 3150 H12
- 3151 H12
- 3152 G14
- 3153 G13
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- 3161 D13
- 3167 F12
- 3168 F11
- 3169 E11
- 3170 D12
- 3171 G12
- 3172 G12
- 3176 H7
- 3180 I3
- 3190 B6
- 3191 B7
- 3192 B6
- 3193 B4
- 3194 C4
- 3195 C3
- 4101 E2
- 4102 F3
- 4104 H5
- 5102 E3
- 5103 F2
- 5109 B9
- 5110 B10
- 5111 A9
- 5112 A11
- 5114 B11
- 5115 E7
- 5119 G9
- 5121 E11
- 5122 H5
- 5123 G5
- 6105-1 E4
- 6105-2 G6

LEGEND

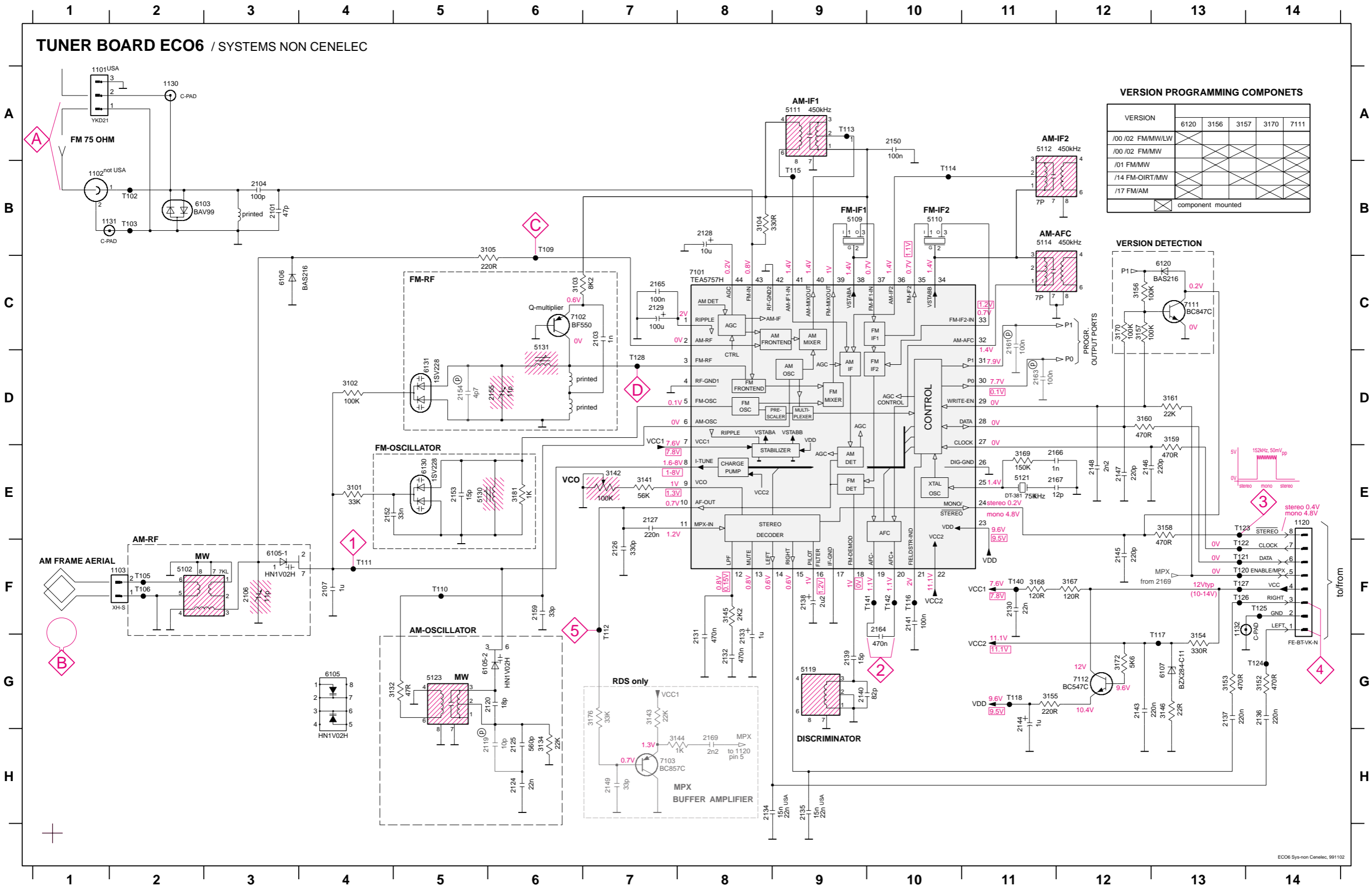
- * ... only assembled in FM/AM-version
- Ⓟ ... for provision only
- USA ... for USA version only
- LW ... for LW version only



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



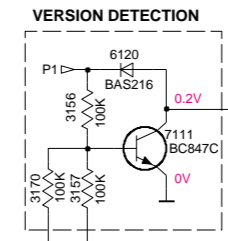
TUNER BOARD ECO6 (Non Cenelec) - CIRCUIT DIAGRAM



VERSION PROGRAMMING COMPONENTS

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

component mounted



LEGEND
 (P) ... for provision only
 USA ... for USA version only

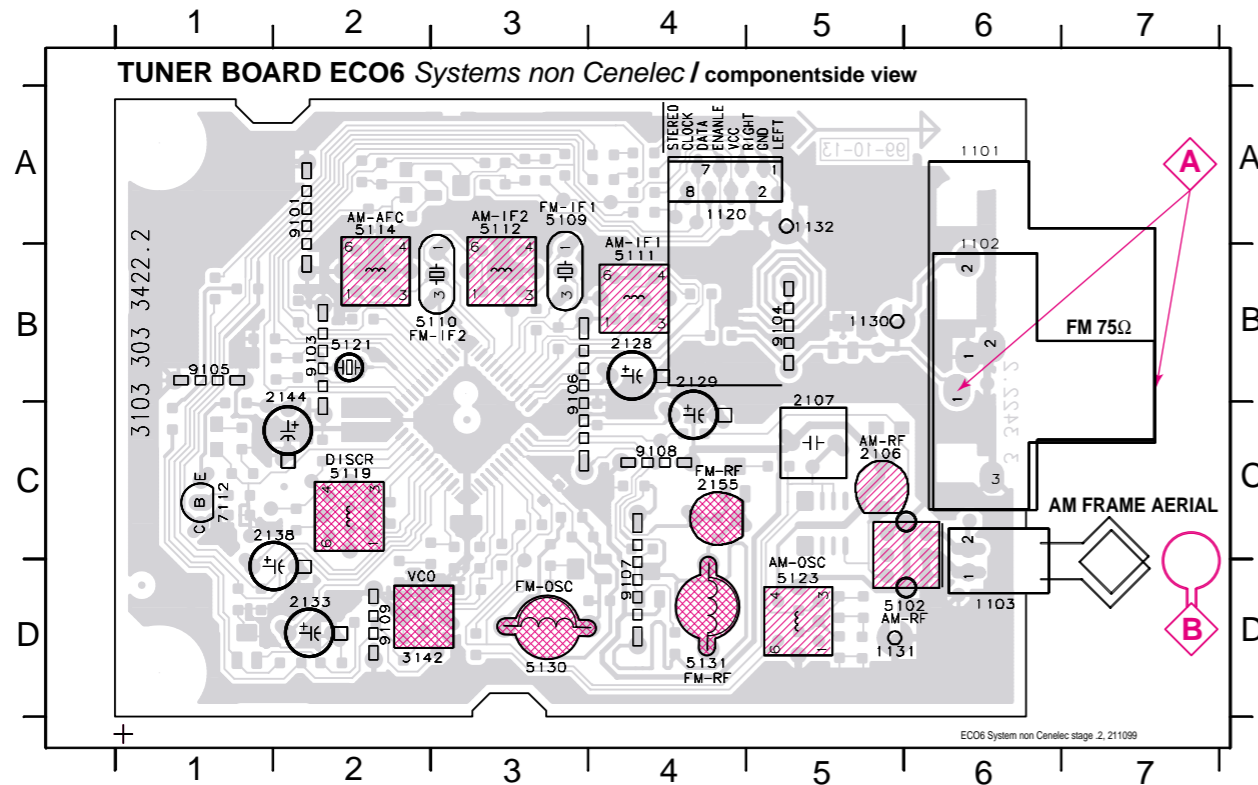
...V FM mode stereo
 ...V MW mode
 ...V LW mode
 EVM
 voltages measured while set is tuned to a strong transmitter

- 1101 A1
- 1102 B1
- 1103 F2
- 1120 E14
- 1130 A2
- 1131 B1
- 1132 G13
- 2101 B3
- 2103 C7
- 2104 B3
- 2106 F3
- 2107 F4
- 2119 H6
- 2120 G6
- 2124 H6
- 2125 H6
- 2126 F7
- 2127 E7
- 2128 B8
- 2129 C7
- 2130 F11
- 2131 G8
- 2132 G8
- 2133 G8
- 2134 H8
- 2135 H9
- 2136 G14
- 2137 G13
- 2138 F9
- 2139 G9
- 2140 G9
- 2141 F10
- 2143 G12
- 2144 G11
- 2145 F12
- 2146 E12
- 2147 E12
- 2148 E12
- 2149 H7
- 2150 A10
- 2152 E4
- 2153 E5
- 2154 D5
- 2155 D5
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- 2161 C11
- 2163 D11
- 2164 F10
- 2165 C7
- 2166 E11
- 2167 E11
- 2169 H8
- 3101 E4
- 3102 D4
- 3103 C6
- 3104 B8
- 3105 B6
- 3132 G5
- 3134 H6
- 3141 E7
- 3142 E7
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- 3145 F8
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- 3170 C12
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- 3176 G7
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- 5102 F2
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- 5112 A11
- 5114 B11
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- 5130 G5
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- 6103 B3
- 6105-1 F3
- 6105-2 G5
- 6106 C3
- 6107 G13
- 6120 C13
- 6130 E5
- 6131 D5
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- 7102 C6
- 7103 H7
- 7111 C13
- 7112 G12
- T102 B2
- T103 B2
- T105 F2
- T106 F2
- T109 B6
- T110 F5
- T111 F4
- T112 F7
- T113 A9
- T114 B10
- T115 B9
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- T121 F13
- T122 F13
- T123 E13
- T124 G14

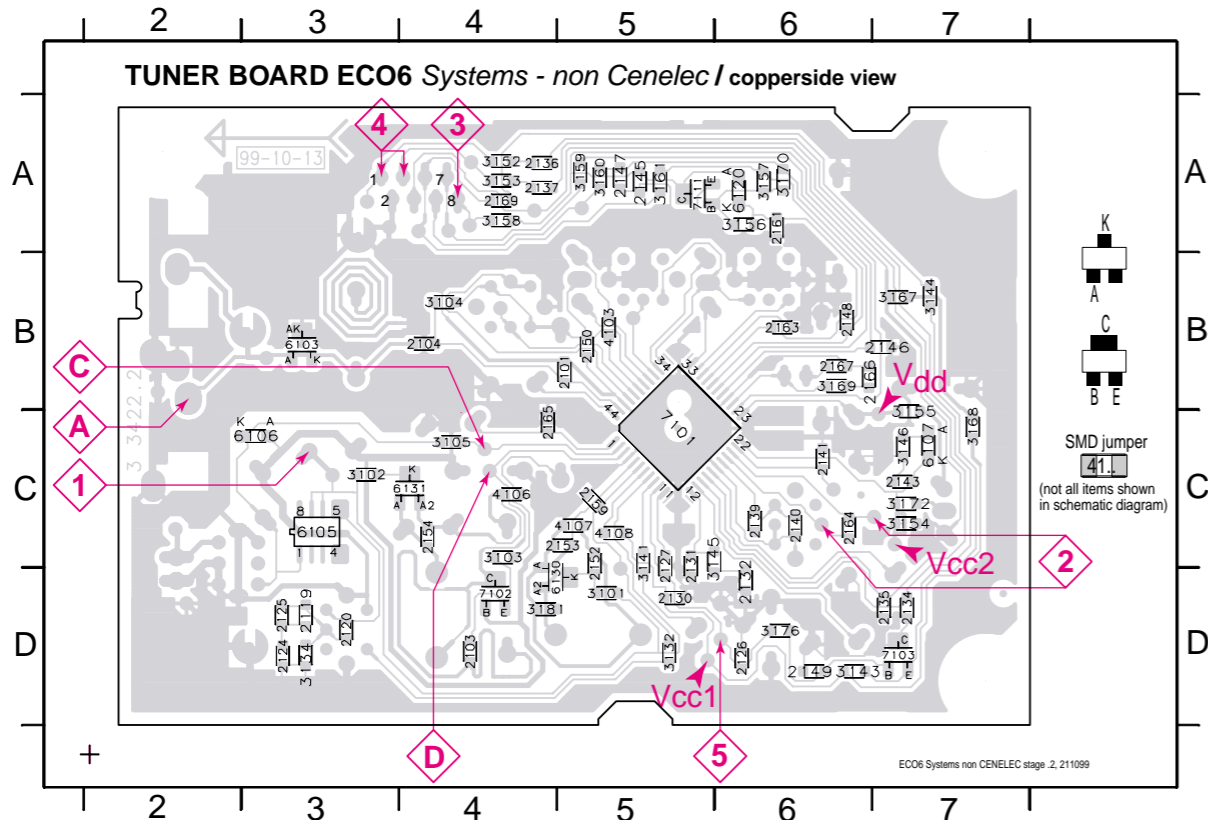
ECO6 Sys-non Cenelec, 991102

TUNER BOARD ECO6 (Non Cenelec) - LAYOUT DIAGRAM

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



2101 B5 2125 D3 2134 D7 2141 C6 2149 D6 2161 A6 2169 A4 3132 D5 3146 C7 3157 A6 3168 C7 4103 B5 6106 C3 7102 D4
 2103 D4 2126 D6 2135 D7 2143 C7 2150 B5 2163 B6 3101 D5 3134 D3 3152 A4 3158 A4 3169 B6 4106 C4 6107 C7 7103 D7
 2104 B4 2127 C5 2136 A4 2145 A5 2152 C5 2164 C6 3102 C3 3141 C5 3153 A4 3159 A5 3170 A6 4107 C5 6120 A6 7111 A5
 2119 D3 2130 D5 2137 A4 2146 B7 2153 C5 2165 C4 3103 C4 3143 D6 3154 C7 3160 A5 3172 C7 4108 C5 6130 D4
 2120 D3 2131 C5 2139 C6 2147 A5 2154 C4 2166 B6 3104 B4 3144 B7 3155 C7 3161 A5 3176 D6 6103 B3 6131 C4
 2124 D3 2132 D6 2140 C6 2148 B6 2159 C5 2167 B6 3105 C4 3145 C5 3156 A6 3167 B7 3181 D4 6105 C3 7101 C5



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

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

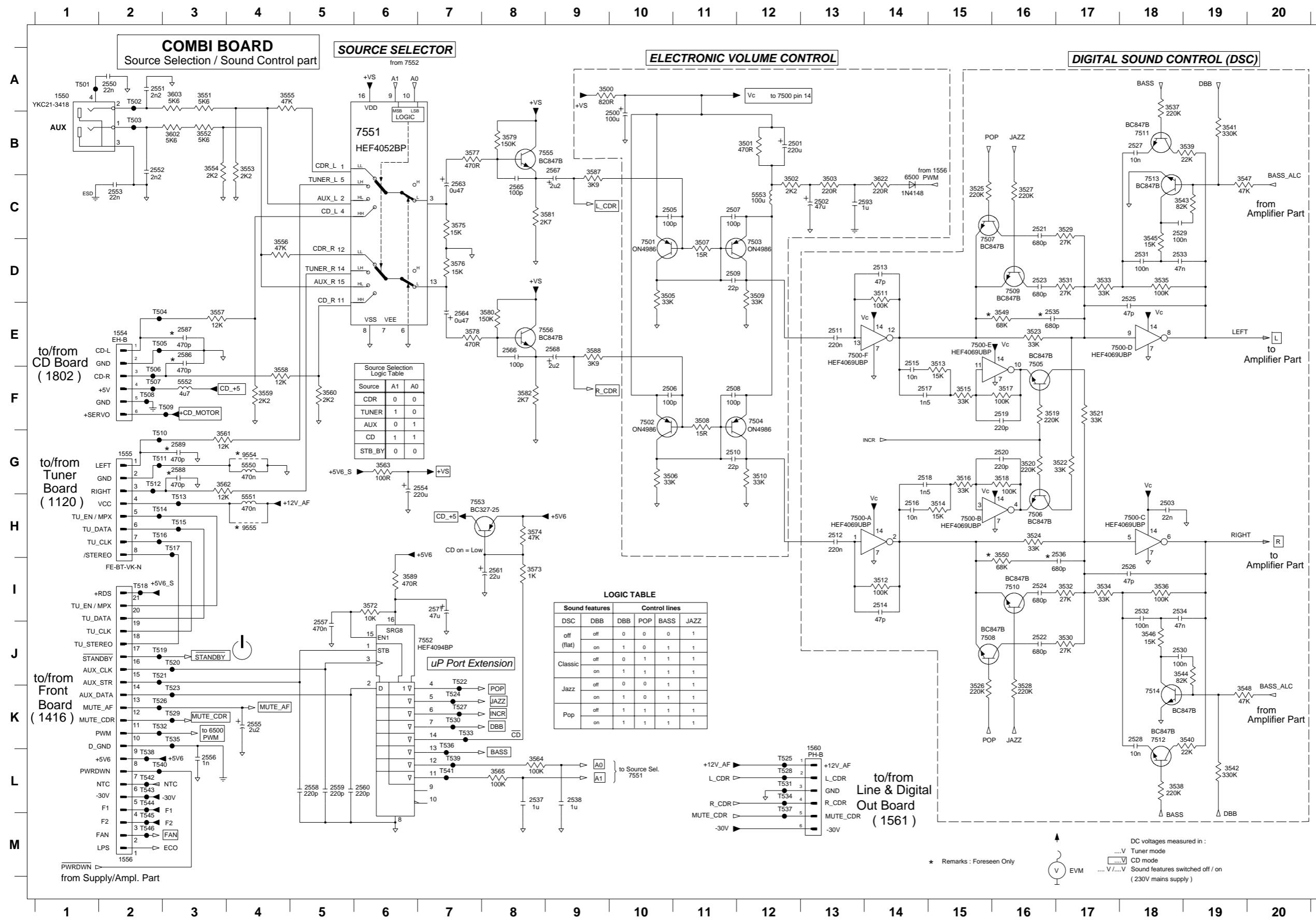
Waverange	Input frequency	Input	Tuned to	Adjust	Output	Scope/Voltmeter
VARICAP ALIGNMENT						
FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz)	108MHz		108MHz	5130		8V ±0.2V
	87.5MHz (65.81MHz)		87.5MHz (65.81MHz)	check		4.3V ±0.5V (1.2V ±0.5V)
MW FM/AM-version, 10kHz grid 530 - 1700kHz	1700kHz		1700kHz	5123		8V ±0.2V
	530kHz		530kHz	check		1.1V ±0.4V
FM/MW-version, 9kHz grid 531 - 1602kHz	1602kHz		1602kHz	5123	1	6.9V ±0.2V
	531kHz		531kHz	check		1.1V ±0.4V
LW 153 - 279kHz	279kHz		279kHz	5122		8V ±0.2V
	153kHz		153kHz	check		1.1V ±0.4V
MW FM/MW/LW- version, 9kHz grid 531 - 1602kHz	1602kHz		1602kHz	5123		8V ±0.2V
	531kHz		531kHz	check		1.1V ±0.4V
FM IF						
FM	10.7MHz, 45mV continuous wave	D	IC 7101 21 shortcircuit to block AFC	5119	2	0 ± 3 mV DC
FM RF						
FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz)	108MHz	A mod=1kHz Δf=±22.5kHz	108MHz	2155	4	MAX
	87.5MHz (65.81MHz)		87.5MHz (65.81MHz)	5131		
VCO						
FM	98MHz, 1mV continuous wave	A	98MHz	3142	3	152kHz ±1kHz ¹⁾
AM IF						
MW	450kHz connect pin 6 of IC 7101 (AM Osc.) with 3.3kΩ to Vcc	C Δf=±10kHz V _{RF} = 0.5mV (as low as possible) see remark 2)	IC 7101 36 100nF	5111	5	symmetric
			IC 7101 40 100nF	5112		
AM AFC MW		C continuous wave V _{RF} = 2mV		5114	2	0 ± 2 mV DC
AM RF³⁾						
MW⁴⁾ FM/MW/LW- and FM/MW-version (9kHz grid) 531 - 1602kHz	1494kHz	B	1494kHz	2106	5	symmetric
	558kHz		558kHz	5102		
LW	198kHz		198kHz	5103		
MW FM/AM-version, 10kHz grid 530 - 1700kHz	1500kHz	Δf = ±30kHz V _{RF} as low as possible	1500kHz	2106	5	symmetric
	560kHz		560kHz	5102		

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

- 1) If sensitivity of frequency counter is too low adjust to max. channel separation (input signal: stereo left 90% + 9%, adjust output on right channel to minimum)
 2) RC network serves for damping the IF-filter while adjusting the other one.
 3) For AM RF adjustments the original frame antenna has to be used!
 4) MW has to be aligned before LW. Repeat

COMBI BOARD - CIRCUIT DIAGRAM

Source Selector / Volume Control / Digital Sound Control



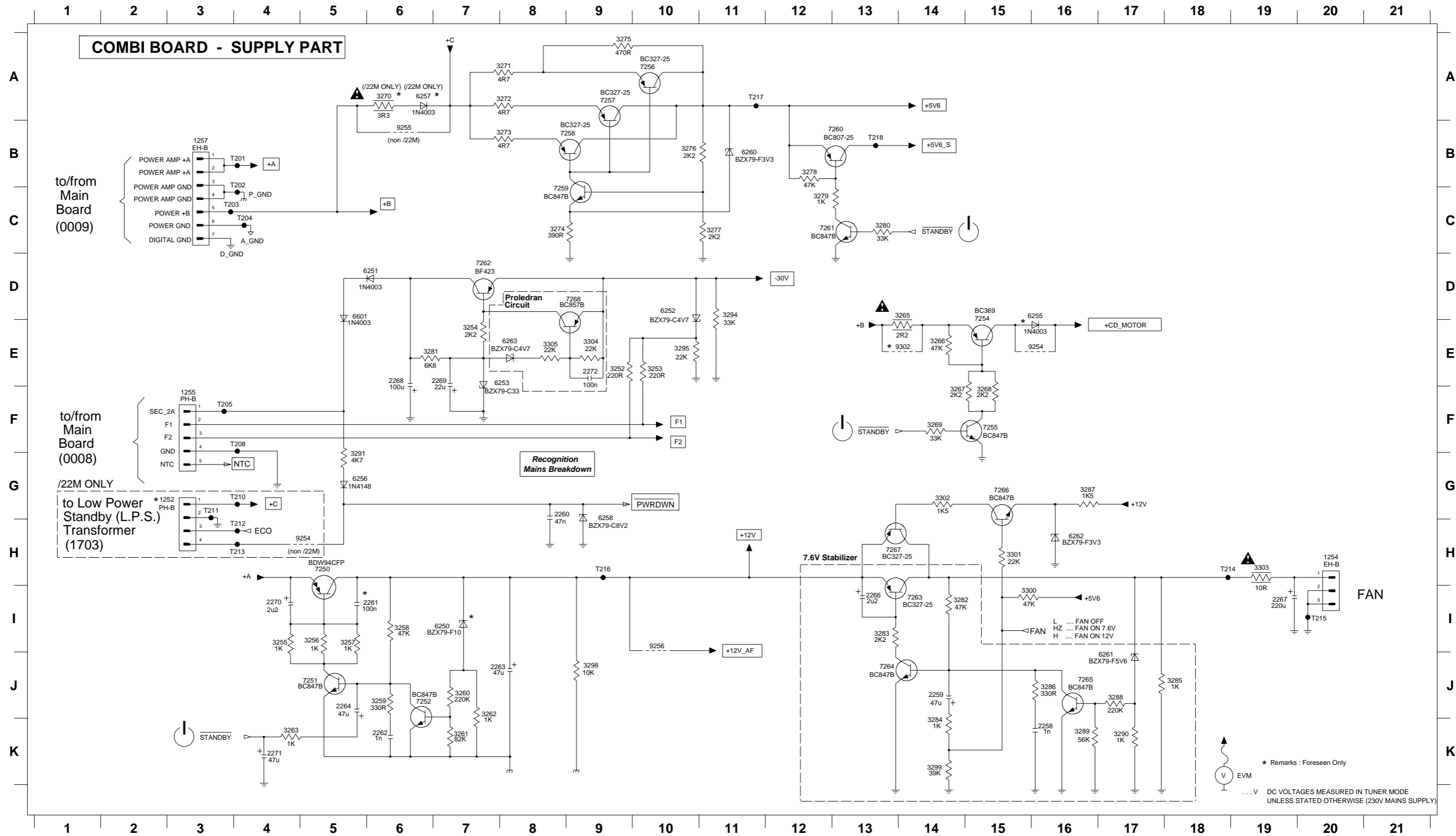
- 1550 A1
- 1554 E2
- 1555 G2
- 1556 M2
- 1560 L13
- 2500 B10
- 2501 B12
- 2502 C13
- 2503 H18
- 2505 C10
- 2506 F10
- 2507 C11
- 2508 F11
- 2509 D11
- 2510 G11
- 2511 E13
- 2512 H13
- 2513 D14
- 2514 H4
- 2515 E14
- 2516 H14
- 2517 F14
- 2518 G14
- 2519 F16
- 2520 G16
- 2521 C16
- 2522 J16
- 2523 D16
- 2524 H16
- 2525 D18
- 2526 H18
- 2527 B18
- 2528 K18
- 2529 C18
- 2530 J18
- 2531 D18
- 2532 H18
- 2533 D18
- 2534 H18
- 2535 E16
- 2536 H17
- 2537 L8
- 2538 L9
- 2550 A2
- 2551 A2
- 2552 B2
- 2553 C2
- 2554 G7
- 2555 K4
- 2556 L3
- 2557 J5
- 2558 L5
- 2559 L5
- 2560 L6
- 2561 L8
- 2563 C7
- 2564 E7
- 2565 C8
- 2566 E8
- 2567 B9
- 2568 E9
- 2569 E9
- 2571 I7
- 2575 B8
- 2576 E8
- 2577 E3
- 2588 G3
- 2589 G3
- 2593 C14
- 2594 A14
- 2595 B2
- 2596 A2
- 2597 B2
- 2598 E2
- 2599 F2
- 2600 F2
- 2601 D11
- 2602 F11
- 2603 G12
- 2604 G12
- 2605 H3
- 2606 H3
- 2607 H3
- 2608 H3
- 2609 H3
- 2610 G2
- 2611 G2
- 2612 G2
- 2613 H3
- 2614 H2
- 2615 H3
- 2616 H2
- 2617 H3
- 2618 I2
- 2619 J2
- 2620 J3
- 2621 J2
- 2622 J2
- 2623 K3
- 2624 K7
- 2625 L12
- 2626 K2
- 2627 K7
- 2628 L12
- 2629 K3
- 2630 K7
- 2631 L12
- 2632 K2
- 2633 K7
- 2634 L12
- 2635 K3
- 2636 K7
- 2637 L12
- 2638 L2
- 2639 L7
- 2640 L2
- 2641 L7
- 2642 L2
- 2643 L2
- 2644 L2
- 2645 M2
- 2646 M2
- 3546 J18
- 3547 C19
- 3548 K19
- 3549 E16

DC voltages measured in :
 Tuner mode
 CD mode
 Sound features switched off / on
 (230V mains supply)

* Remarks : Foreseen Only

COMBI BOARD - CIRCUIT DIAGRAM Supply Part

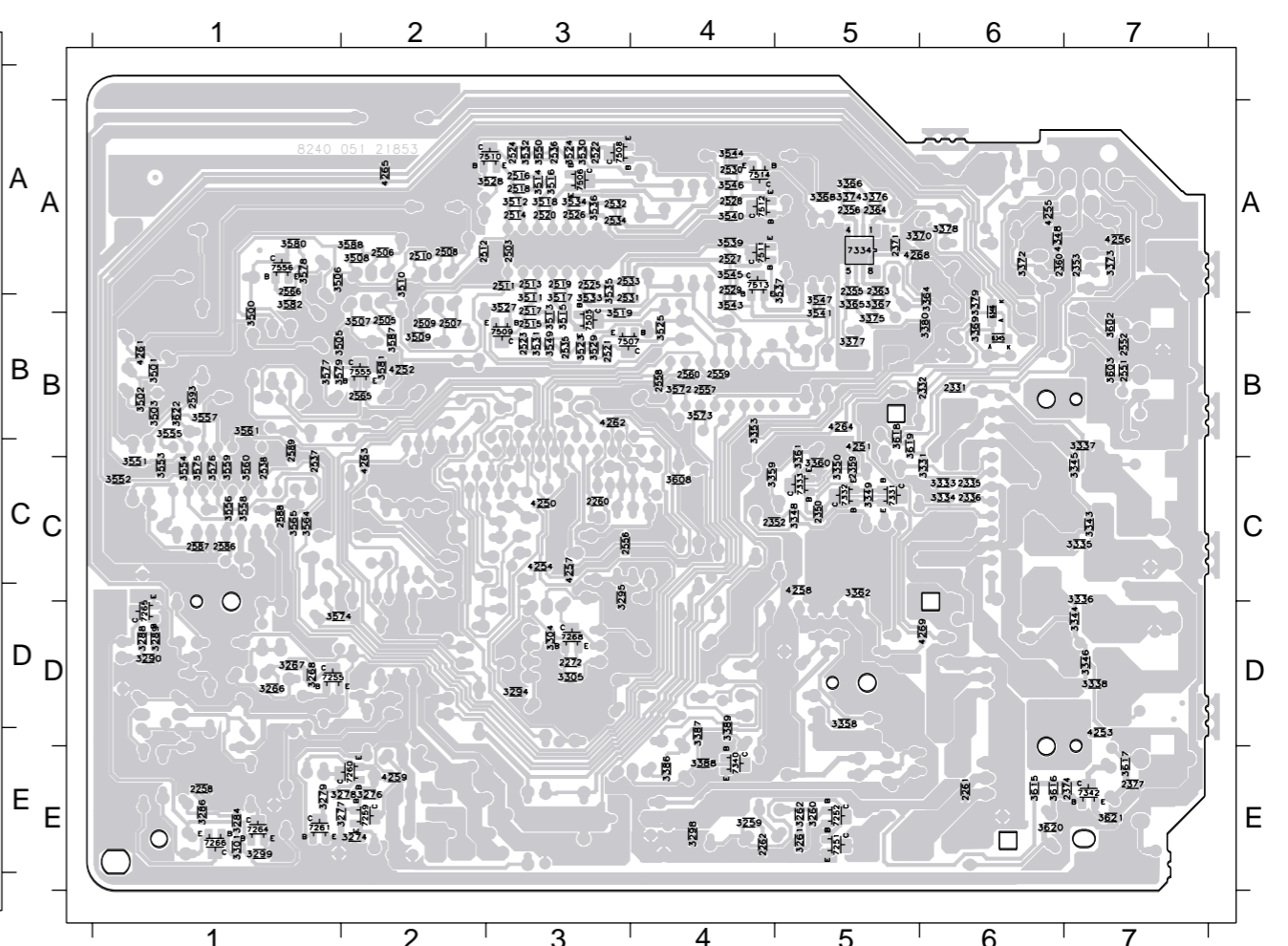
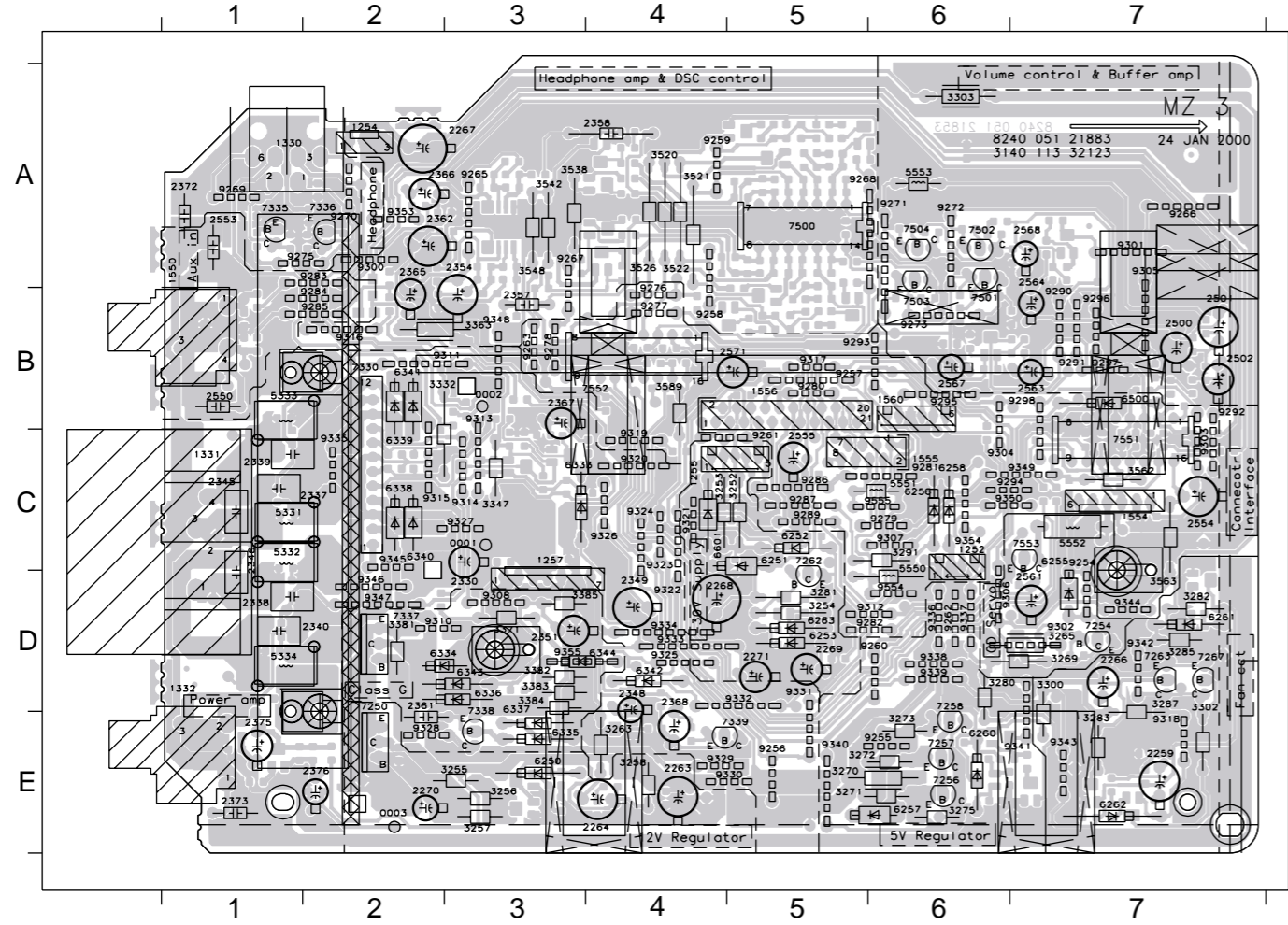
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1254 H20	2259 J14	2263 J7	2268 E6	2272 E9	3255 I4	3259 J6	3263 K4	3268 F15	3272 A8	3276 B10	3280 C13	3284 K14	3288 J17	3294 D11	3300 I15	3304 E9	6252 D10	6257 A6	6262 H16	7251 J5	7256 A10	7260 B12	7264 J13	7268 D8	9256 I10	T203 C3	T210 G4	T214 H18	T218 B13
1255 F3	2260 G8	2264 J5	2269 E7	3252 E9	3256 I5	3260 J7	3265 D14	3269 F14	3273 B8	3277 C11	3281 E6	3285 J18	3289 K16	3295 E10	3301 H15	3305 E8	6253 E8	6258 G9	6263 E8	7252 J6	7257 A9	7261 C13	7265 J16	9254 E16	9302 E14	T204 C4	T211 G3	T215 I20	T216 H9
1257 B3	2261 I6	2266 I13	2270 I4	3253 E10	3257 I5	3261 K7	3266 E14	3270 A6	3274 C8	3278 B12	3282 I14	3286 J16	3290 K17	3298 J9	3302 G14	6250 I7	6255 D16	6260 B11	6601 D5	7254 D15	7258 B8	7262 D7	7266 G15	9254 H5	T201 B4	T205 F3	T212 H4		



COMBI BOARD - LAYOUT DIAGRAM

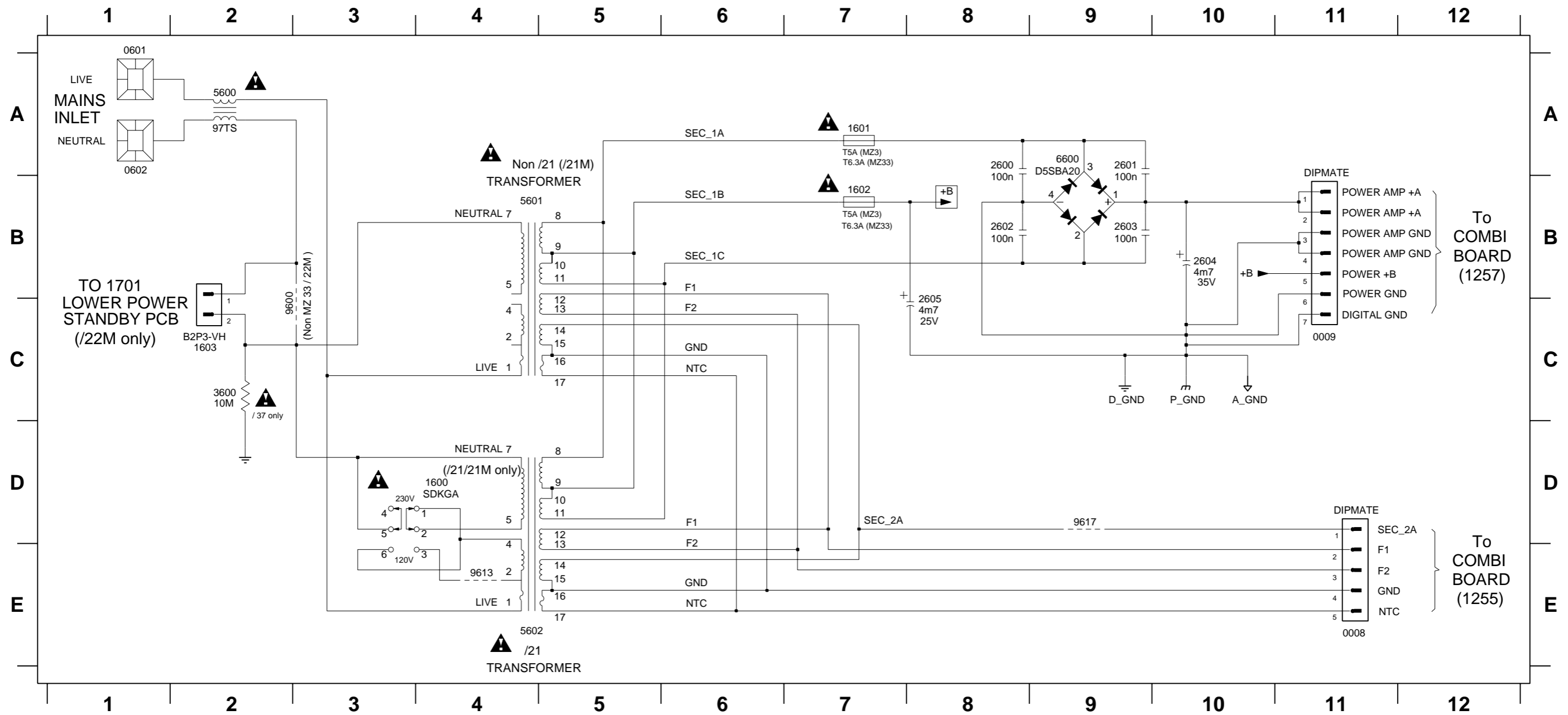
0001 C3	2268 D5	2366 A2	3252 C5	3287 E7	3548 A3	6260 E6	7256 E6	9254 D7	9276 B4	9297 B7	9319 C4	9339 D6
0002 B3	2269 D5	2367 B3	3253 C4	3291 C6	3562 C7	6261 D7	7257 E6	9255 E6	9277 B4	9298 C7	9320 C4	9340 E5
0003 E2	2270 E2	2368 E4	3254 D5	3300 E7	3563 C7	6262 E7	7258 D6	9256 E5	9278 B3	9300 A2	9321 C4	9341 D7
1252 C6	2271 D4	2372 A1	3255 E3	3302 E7	3589 B4	6263 D5	7262 C5	9257 B5	9279 C6	9301 A7	9322 C4	9342 D7
1254 A2	2330 D3	2373 E1	3256 E3	3303 A6	5331 C1	6333 C4	7263 D7	9258 A4	9280 B5	9302 D7	9323 C4	9343 E7
1255 C4	2337 C1	2375 E1	3257 E3	3332 B2	5332 C1	6334 D2	7267 D7	9259 A4	9281 C6	9303 B7	9324 C4	9344 D7
1257 D3	2338 D1	2376 E2	3258 E4	3347 C3	5333 B1	6335 E3	7330 C2	9260 D6	9282 D6	9304 B6	9325 D4	9345 C2
1330 A1	2339 C1	2500 B7	3263 E4	3363 B2	5334 D1	6336 D3	7335 A1	9261 C5	9283 A2	9305 B7	9326 C4	9346 D2
1331 C1	2340 D2	2501 B7	3265 D7	3371 D3	5550 C6	6337 E3	7336 A2	9262 D6	9284 B2	9306 C6	9327 C3	9347 D2
1332 E1	2345 C1	2502 B7	3269 D7	3381 D2	5551 C6	6338 C2	7337 D2	9263 B3	9285 B2	9307 C6	9328 E2	9348 B3
1550 A1	2346 D1	2550 B1	3270 E6	3382 D3	5552 C7	6339 B2	7338 E3	9265 A3	9286 C5	9308 D3	9329 E4	9349 C7
1554 C7	2348 D4	2553 A1	3271 E6	3383 D3	5553 A6	6340 C2	7339 E5	9266 A7	9287 C5	9310 D2	9330 E5	9350 C6
1555 C6	2349 D4	2554 C7	3272 E6	3384 D3	6250 E3	6341 B2	7500 A5	9267 B3	9289 C5	9311 B2	9331 E5	9353 A2
1556 B5	2351 D3	2555 C5	3273 E6	3385 D3	6251 D5	6342 D4	7501 A6	9268 B6	9290 B7	9312 D6	9332 D5	9354 C6
1560 B6	2354 B3	2561 D7	3275 E6	3520 A4	6252 C5	6343 D3	7502 A6	9269 A1	9291 B7	9313 C3	9333 D4	9355 D3
2259 E7	2357 B3	2563 B7	3280 D6	3521 A4	6253 D5	6344 D4	7503 A6	9270 A2	9292 C7	9314 C3	9334 D4	9554 D6
2263 E4	2358 A4	2564 B7	3281 D5	3522 A4	6255 D7	6500 B7	7504 A6	9271 A6	9293 B6	9315 C2	9335 C2	9555 C6
2264 E4	2361 D2	2567 B6	3282 D7	3526 A4	6256 C6	6601 C4	7551 C7	9272 A6	9294 C7	9316 B2	9336 D6	
2266 D7	2362 A2	2568 A7	3283 E7	3538 A3	6257 E5	7250 E2	7552 B4	9273 B6	9295 B6	9317 B5	9337 D6	
2267 A2	2365 B2	2571 B5	3285 D7	3542 A3	6258 C6	7254 D7	7553 C7	9275 A1	9296 B7	9318 E7	9338 D6	

2258 E1	2503 A3	2525 A3	2565 B2	3288 D1	3348 C5	3377 B5	3514 A3	3540 A4	3565 C1	3619 B5	4348 A6	7507 B3
2260 C3	2505 B2	2526 A3	2566 A1	3289 D1	3349 C5	3378 A6	3515 B3	3541 B5	3572 B4	3620 E6	6345 B6	7508 A3
2261 E6	2506 A2	2527 A4	2586 C1	3290 D1	3350 C5	3379 A6	3516 A3	3543 A4	3573 B4	3621 E7	6346 A6	7509 B3
2262 E4	2507 B2	2528 A4	2587 C1	3294 D3	3353 B4	3380 B6	3517 A3	3544 A4	3574 D1	3622 B1	7251 E5	7510 A3
2272 D3	2508 A2	2529 A4	2588 C1	3295 C3	3358 D5	3386 E4	3518 A3	3545 A4	3575 C1	4250 C3	7252 E5	7511 A4
2331 B6	2509 B2	2530 A4	2589 B1	3298 E4	3359 C4	3387 D4	3519 B3	3546 A4	3576 C1	4251 B5	7255 D1	7512 A4
2332 B6	2510 A2	2531 A3	2593 B1	3299 E1	3360 C5	3388 E4	3523 B3	3547 A5	3577 B1	4252 B2	7259 E2	7513 A4
2335 C6	2511 A3	2532 A3	3259 E4	3301 E1	3361 B5	3389 D4	3524 A3	3549 B3	3578 A1	4253 D7	7260 E2	7514 A4
2336 C6	2512 A2	2533 A3	3260 E5	3304 D3	3362 C5	3500 B1	3525 B4	3550 A3	3579 B1	4254 C3	7261 E1	7555 B2
2350 C5	2513 A3	2534 A3	3261 E5	3305 D3	3363 A6	3501 B1	3527 A3	3551 C1	3580 A1	4255 A6	7264 E1	7556 A1
2352 C4	2514 A3	2535 B3	3262 E5	3331 C6	3365 A5	3502 B1	3528 A3	3552 C1	3581 B2	4256 A7	7265 D1	
2353 A7	2515 B3	2536 A3	3266 D1	3333 C6	3366 A5	3503 B1	3529 B3	3553 C1	3582 A1	4257 C3	7266 E1	
2355 A5	2516 A3	2537 C1	3267 D1	3334 C6	3367 A5	3505 B1	3530 A3	3554 C1	3587 B2	4258 C5	7268 D3	
2356 A5	2517 A3	2538 C1	3268 D1	3335 C7	3368 A5	3506 A1	3531 B3	3555 B1	3588 A2	4259 E2	7331 C5	
2359 C5	2518 A3	2551 B7	3274 E2	3336 C7	3369 B6	3507 B2	3532 A3	3556 C1	3602 B7	4261 B1	7332 C5	
2360 A6	2519 A3	2552 B7	3276 E2	3337 B7	3370 A5	3508 A2	3533 A3	3557 B1	3603 B7	4262 B3	7333 C5	
2363 A5	2520 A3	2556 C3	3277 E1	3338 D7	3372 A6	3509 B2	3534 A3	3558 C1	3608 C4	4263 C2	7334 A5	
2364 A5	2521 B3	2557 B4	3278 E2	3343 C7	3373 A7	3510 A2	3535 A3	3559 C1	3615 E6	4264 B5	7340 E4	
2371 A5	2522 A3	2558 B4	3279 E1	3344 D7	3374 A5	3511 A3	3536 A3	3560 C1	3616 E6	4265 A2	7342 E7	
2374 E7	2523 B3	2559 B4	3284 E1	3345 C7	3375 B5	3512 A3	3537 A5	3561 B1	3617 E7	4268 A5	7505 B3	
2377 E7	2524 A3	2560 B4	3286 E1	3346 D7	3376 A5	3513 B3	3539 A4	3564 C1	3618 B5	4269 D6	7506 A3	



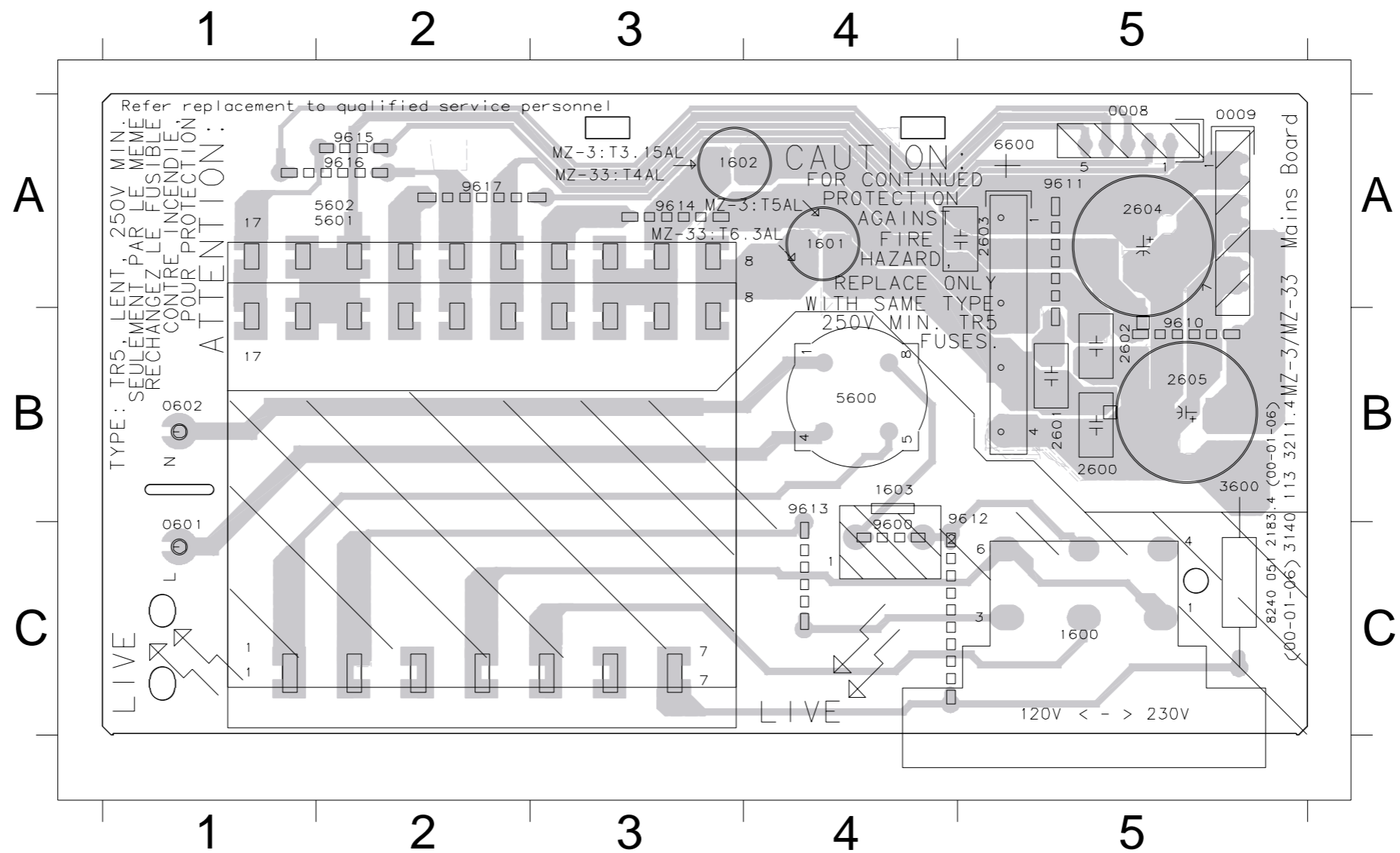
MAINS BOARD - CIRCUIT DIAGRAM

0008 E11 0009 C11 0601 A1 0602 A1 1600 D4 1601 A7 1602 B7 1603 C2 2600 A8 2601 A9 2602 B8 2603 B9 2604 B10 2605 C8 3600 C2 5600 A2 5601 B4 5602 E4 6600 A9 9600 C2 9613 E4 9617 D9

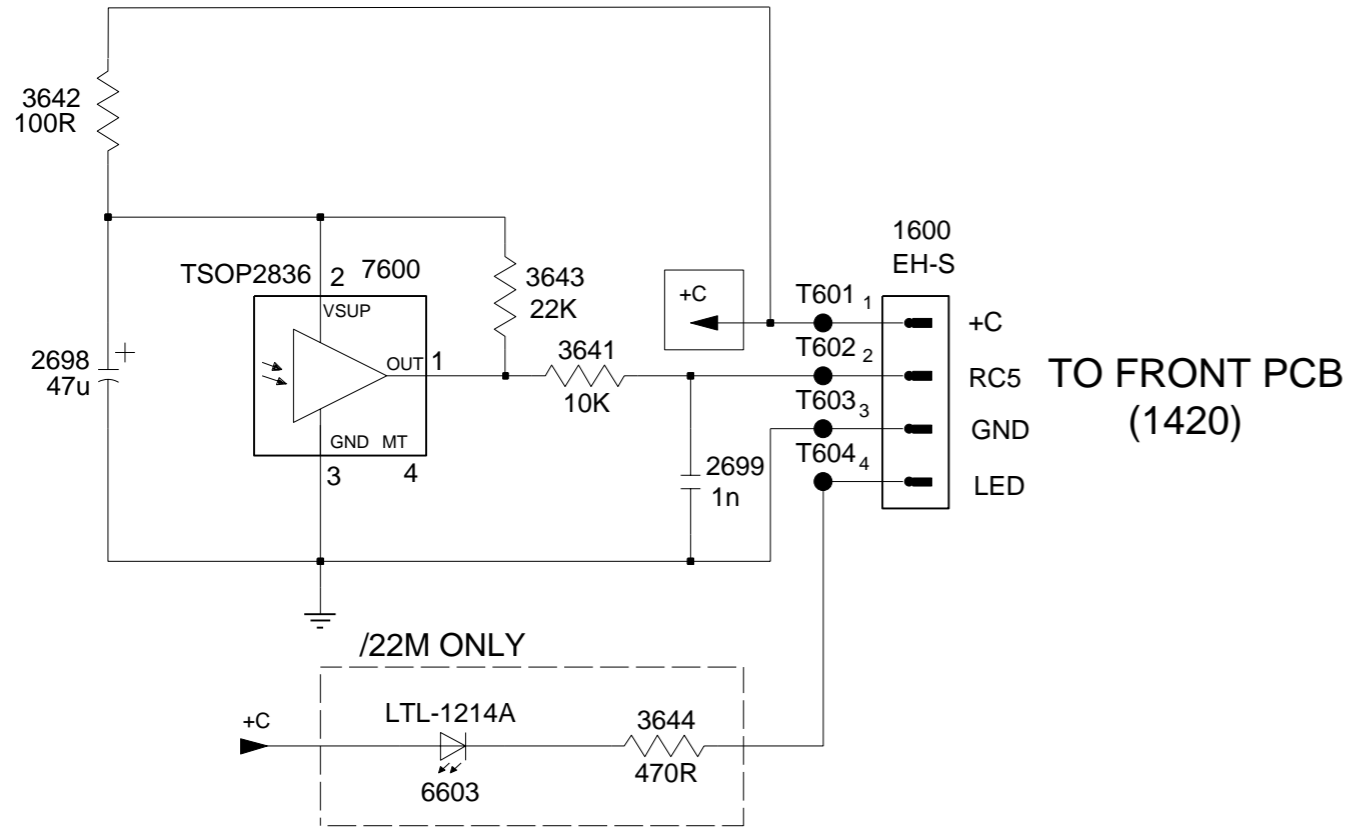


MAINS BOARD - LAYOUT DIAGRAM

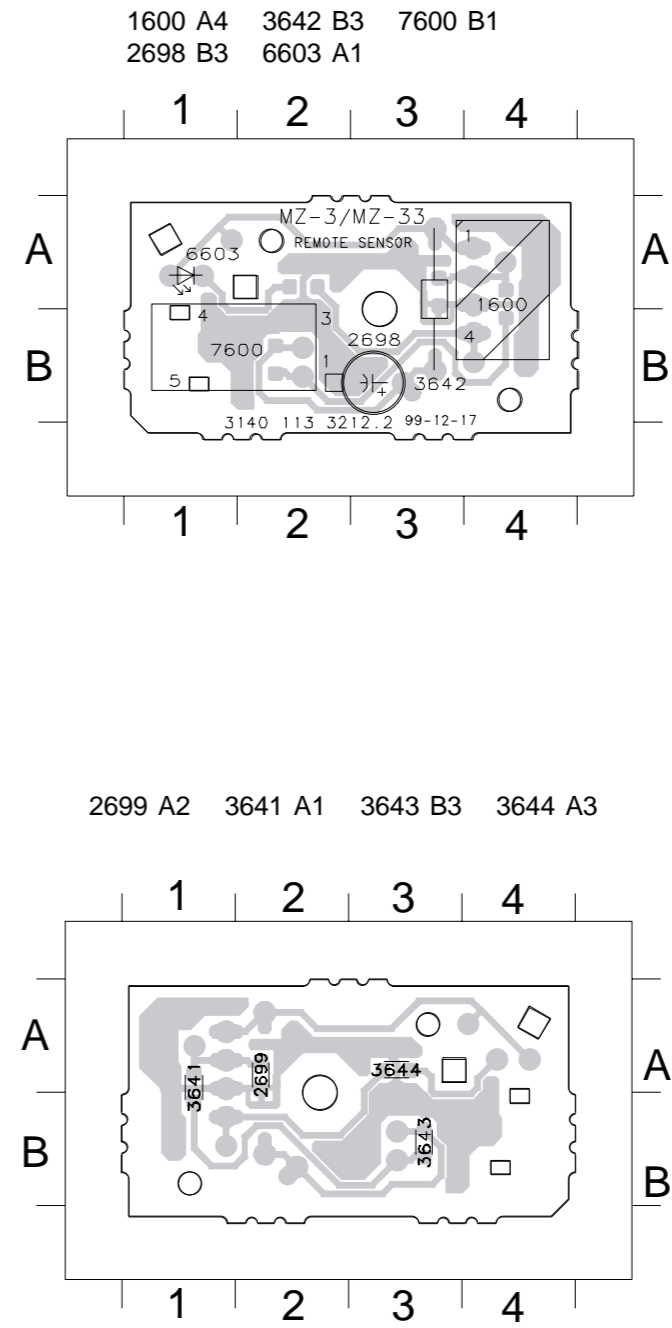
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0009 A5	1602 A3	2603 A5	5601 A1	9611 A5	9616 A2
0601 B1	1603 C4	2604 A5	5602 A1	9612 C4	9617 A2
0602 B1	2600 B5	2605 B5	6600 A5	9613 C4	
1600 C5	2601 B5	3600 C5	9600 C4	9614 A3	



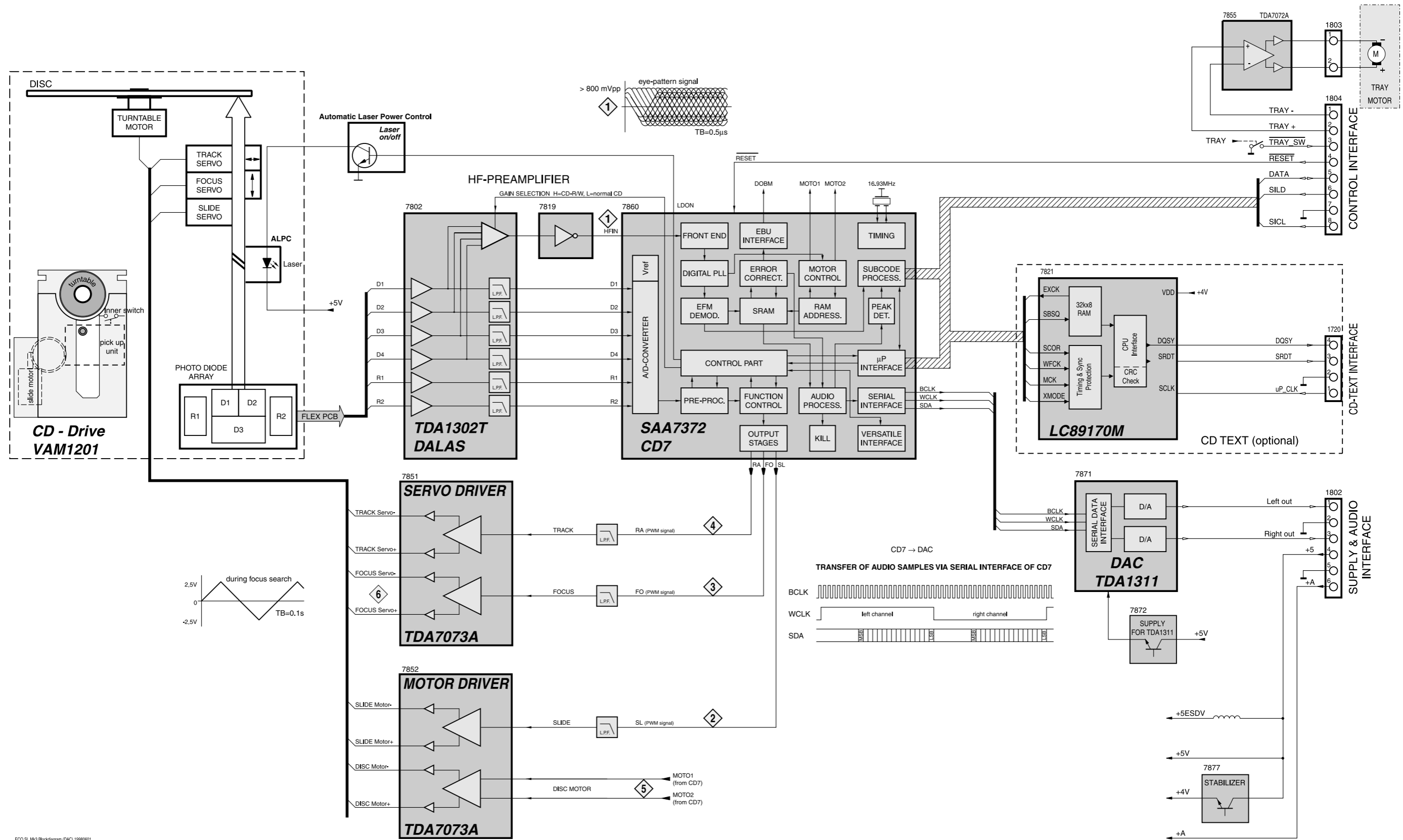
REMOTE SENSOR - CIRCUIT DIAGRAM



REMOTE SENSOR - LAYOUT DIAGRAM



ECO-SL MK3 BLOCK DIAGRAM



ECO SL MK3 Blockdiagram (DAC) 19980601

ABBREVIATIONS CD PART

SAA7372 – DECODER AND DIGITAL SERVO IC CD7

Pin	Name	Direction	Description
1	VSSA1	GND	supply (analog) of CD7
2	VDDA1	+4V	supply (analog) of CD7
3	D1	HF-preamp → CD7	unipolar current input (central diode signal input)
4	D2	HF-preamp → CD7	unipolar current input (central diode signal input)
5	D3	HF-preamp → CD7	unipolar current input (central diode signal input)
6	VRL	GND	reference input for ADC
7	D4	HF-preamp → CD7	unipolar current input (central diode signal input)
8	R1	HF-preamp → CD7	unipolar current input (satellite diode signal input)
9	R2	HF-preamp → CD7	unipolar current input (satellite diode signal input)
10	IREFT	→ CD7	current reference for calibration ADC
11	VRH	not connected	reference output from ADC
12	VSSA2	GND	supply (analog) of CD7
13	SELPLL	+4V	selects whether internal clock multiplier PLL is used
14	ISLICE	CD7 →	current feedback from data slicer
15	HFIN	→ CD7	comparator signal input
16	VSSA3	GND	supply (analog) of CD7
17	HFREF	→ CD7	comparator common mode input
18	IREF	→ CD7	reference current pin (nom. VDD/2)
19	VDDA2	+4V	supply (analog) of CD7
20	TEST1	GND	test control input
21	CRIN	X-Tal → CD7	crystal/resonator input
22	CDOUT	X-Tal → CD7	crystal/resonator output
23	TEST2	GND	test control input
24	CL16	not connected	16.9344MHz system clock output
25	CL11	not connected	11.2896MHz or 5.6448MHz clock output (3-state)
26	RA	CD7 → servo driver	radial actuator output
27	FO	CD7 → servo driver	focus actuator output
28	SL	CD7 → servo driver	slide actuator output
29	TEST3	GND	test control input
30	VDD1P	+4V	supply (digital) of CD7
31	DOBM	CD7 → digital output	bi-phase mark output (3-state)
32	VSS1	GND	supply (digital) of CD7
33	MOTO1	CD7 → servo driver	motor output1 of CD7; versatile (3-state)
34	MOTO2	CD7 → servo driver	motor output2 of CD7; versatile (3-state)
35	SBSY	not connected	subcode block sync (3-state)
36	SFSY	not connected	subcode frame sync (3-state)
37	RCK	GND	subcode clock input
38	SUB	not connected	P to W subcode bits (3-state)
39	VSS2	GND	supply (digital) of CD7
40	V5	not connected	versatile output pin of CD7
41	V4	not connected	versatile output pin of CD7
42	V3	not connected	versatile output pin of CD7 (open drain)
43	KILL	CD7 →	kill output; programmable (open drain)
44	MISC	not connected	C2 error flag; output only defined in CD-ROM modes (3-state)
45	DATA	CD7 → DAC	serial data output (3-state)
46	WCLK	CD7 → DAC	word clock output (3-state)
47	VDD2P	+4V	supply (digital) of CD7
48	BCLK	CD7 → DAC	serial bit clock output (3-state)
49	VSS3	GND	supply (digital) of CD7
50	CL4	not connected	4.2336MHz P clock output
51	SDA	μP → CD7	P interface data I/O line (open drain output)
52	SCL	μP → CD7	P interface clock line
53	RAB	μP → CD7	P interface R/W and load control line
54	SILD	μP → CD7	P interface R/W and load control line
55	NC		no connection
56	VSS4	GND	supply (digital) of CD7
57	RESET	μP → CD7	power-on reset input (active low)
58	STATUS	not connected	servo interrupt request line/CD7 status register output (open drain)
59	VDD3C	+4V	supply core (digital)
60	C2FAIL	not connected	indication of correction failure (open drain)
61	CFLG	not connected	correction flag output (open drain)
62	V1	→ CD7	versatile input pin
63	V2	→ CD7	versatile input pin
64	LDON	CD7 → 7820	laser drive on output (open drain)

DISMANTLING HINTS CD SHORT LOADER

Dismantling the tray

- Press open/close button to open the tray. If the tray doesn't work, use a small screwdriver as shown in Fig.1 point 1 to move the tray outside. After the first centimetre it is possible to pull the tray out by hand.
- Release two snaps and remove tray.

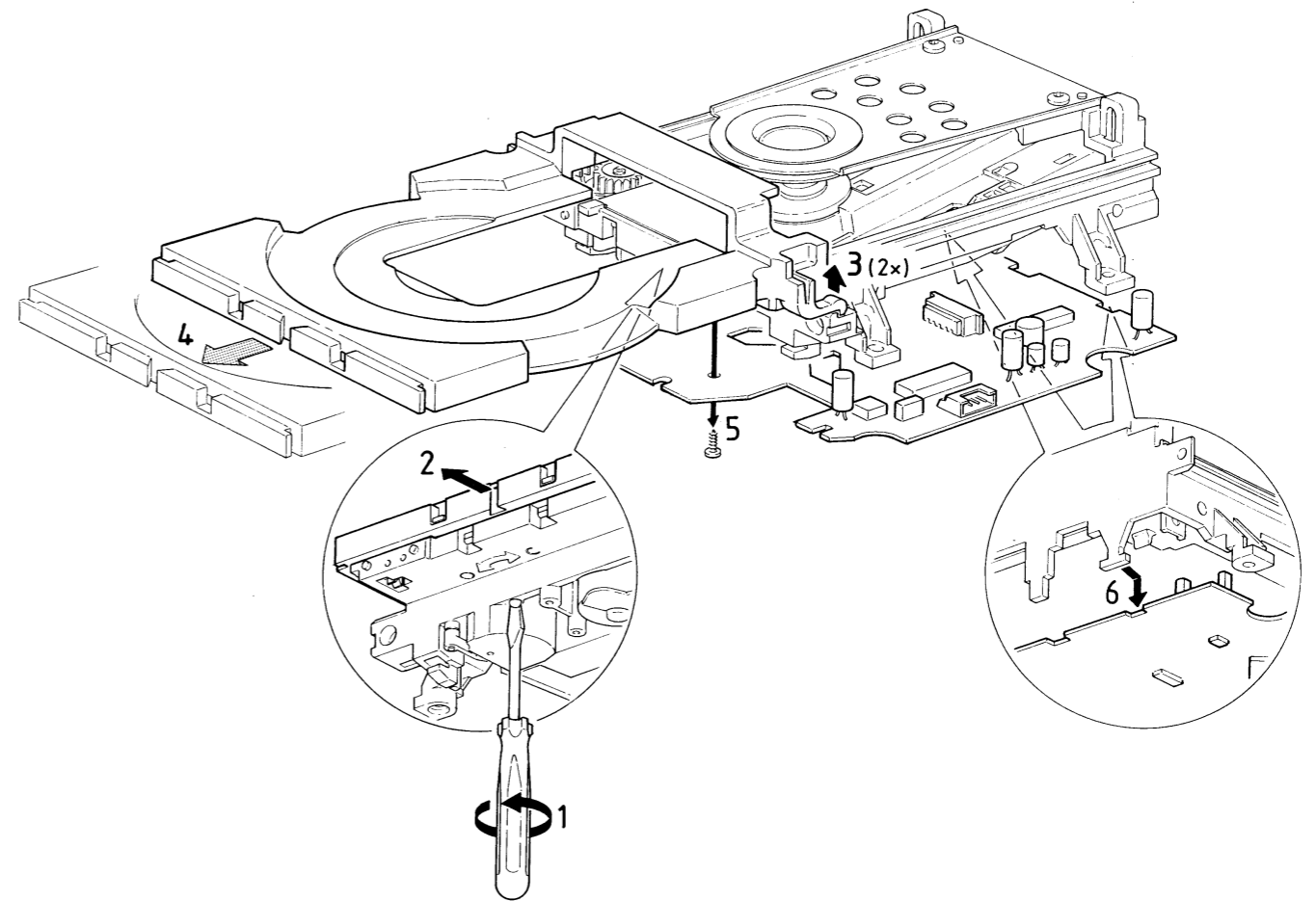


Fig. 1

DISMANTLING HINTS CD SHORT LOADER

Assembly of gear

- a) Use a pin (e.g. a paperclip) to align the cam wheel (a) with the gear wheel (b). See Fig. 2.
- b) Fix the wheels with the small plastic washers.

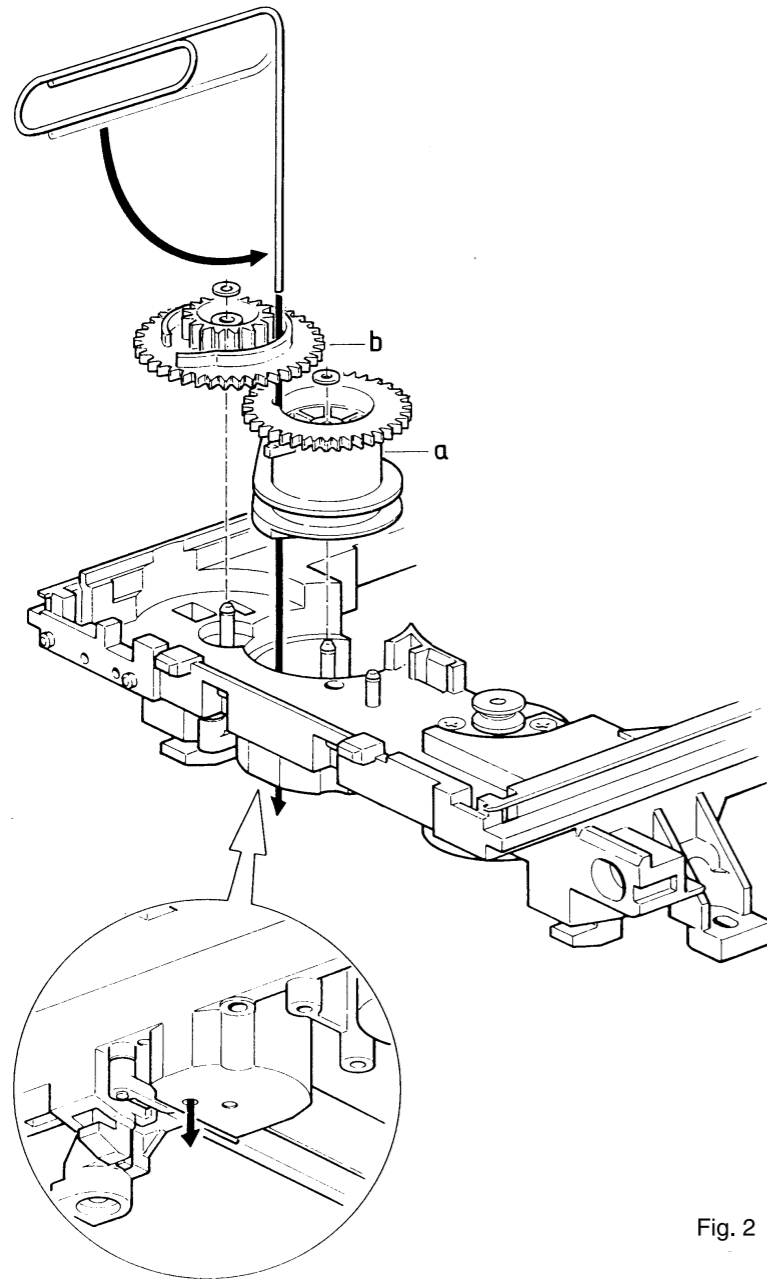


Fig. 2

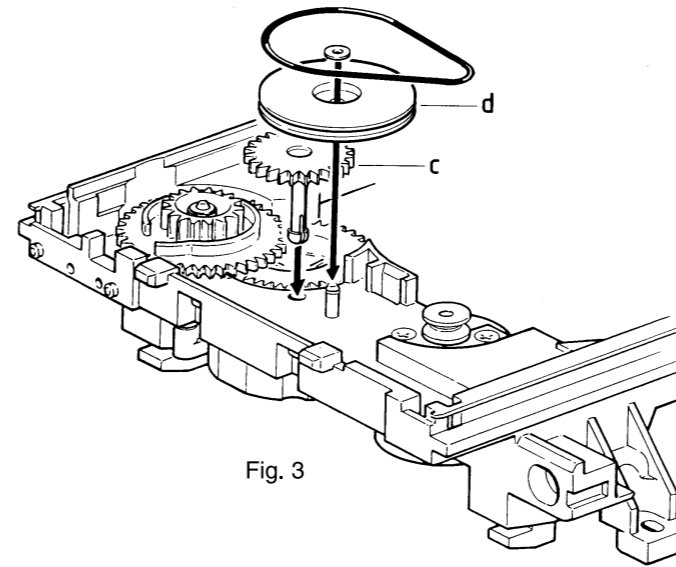


Fig. 3

- c) Mount idle wheel 2 (c) and idle wheel 1 (d) in any position. See Fig. 3.
- d) Fix the idle wheel 1 (d) with the small plastic washer.
- e) Mount the driving belt.

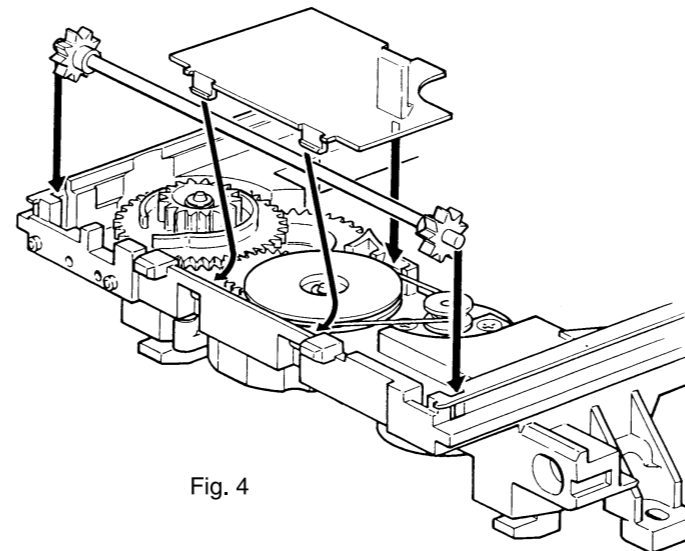


Fig. 4

- f) Mount the pinion guiding assy and the cover as shown in Fig. 4.
- g) Turn the gear wheel (b) counter clockwise to endposition.

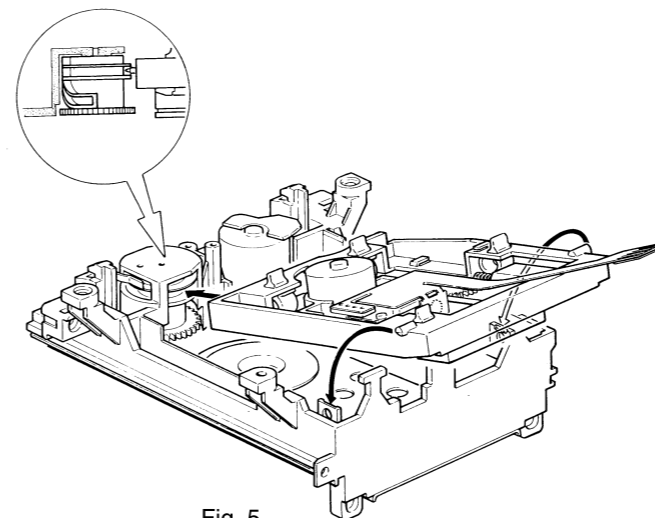


Fig. 5

- h) Mount the CD Mechanism as shown in Fig. 5.
- i) Mount the tray (Align the tray to the chassis and push it inside).

Check if tray mechanism works correctly!

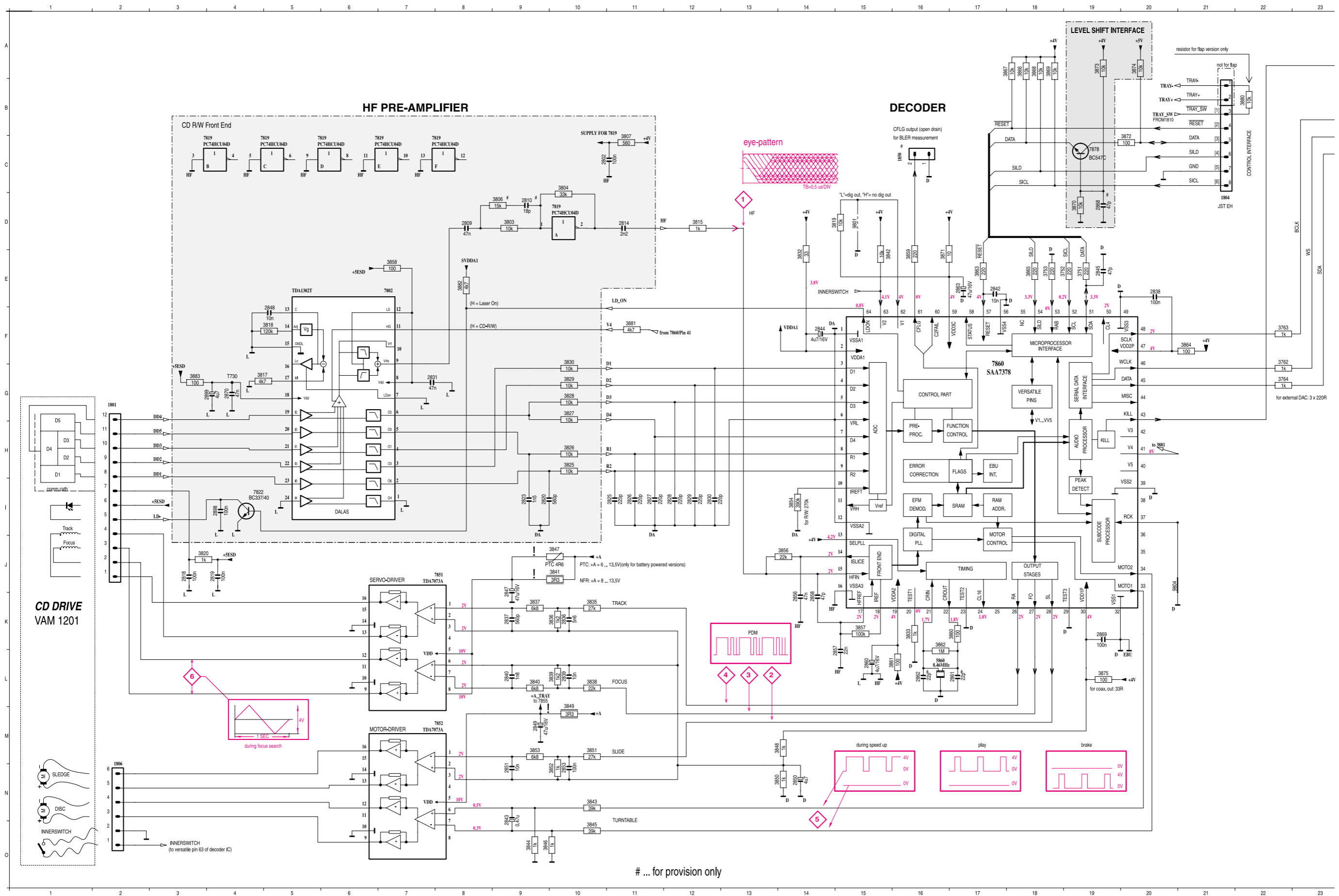
- 1) Turn the gear wheel (b) clockwise to its endposition (Use a small screwdriver as shown in Fig. 1 point 1).

The tray has to move to inner position first and then the CD mechanism has to move to its upper position.

- 2) Turn the gear wheel (b) counter clockwise to its endposition.

The CD Mechanism has to move to its lower position first and then the tray has to move outside.

ECO-SL MK3 - CIRCUIT DIAGRAM



WARNING

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

- SWITCH OFF POWER SUPPLY
- ESD PROTECTION

ADDITIONAL ACTIONS MUST BE TAKEN BY THE REPAIR TECHNICIAN.

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

1. Disconnect old CDM flexfoil from printed board
2. Connect paperclip to CDM flexfoil to short-circuit flexfoil (fig.1)
3. Short-circuit printed board with **brass-sheet (4822 321 11197)** plugged into the flexfoil connector (fig.2)
4. Remove old CDM mechanism
5. Position new CDM mechanism in its studs
6. Remove short-circuit from printed board connector
7. Remove short-circuit from flexfoil of new CDM
8. Connect new flexfoil to print connector (fig.3)

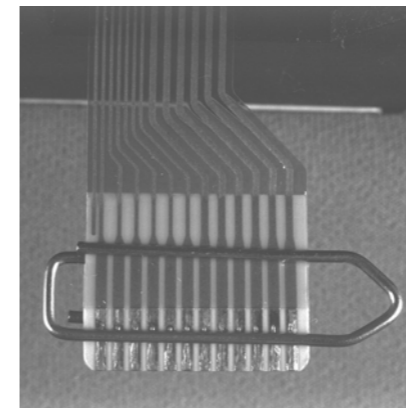


fig.1

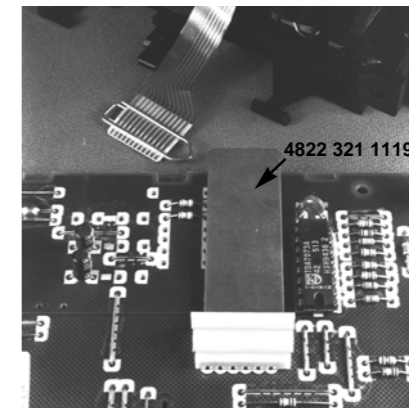


fig.2

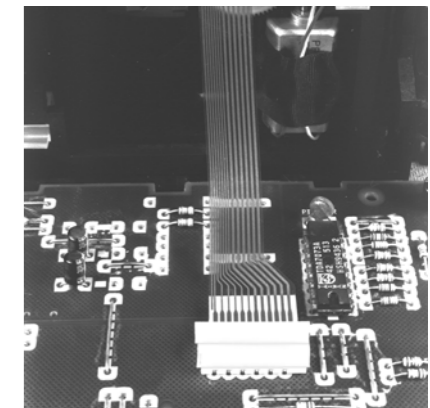
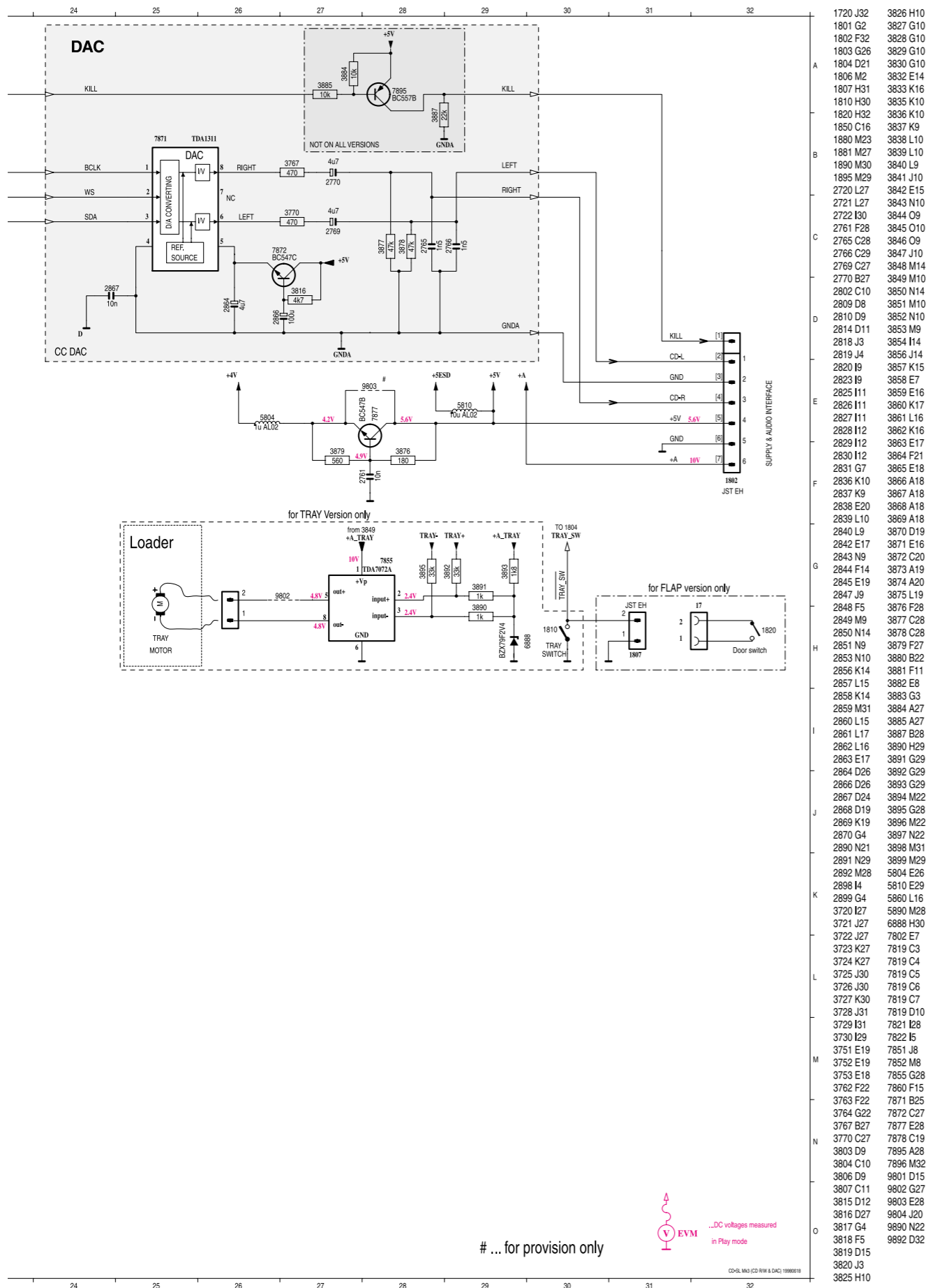
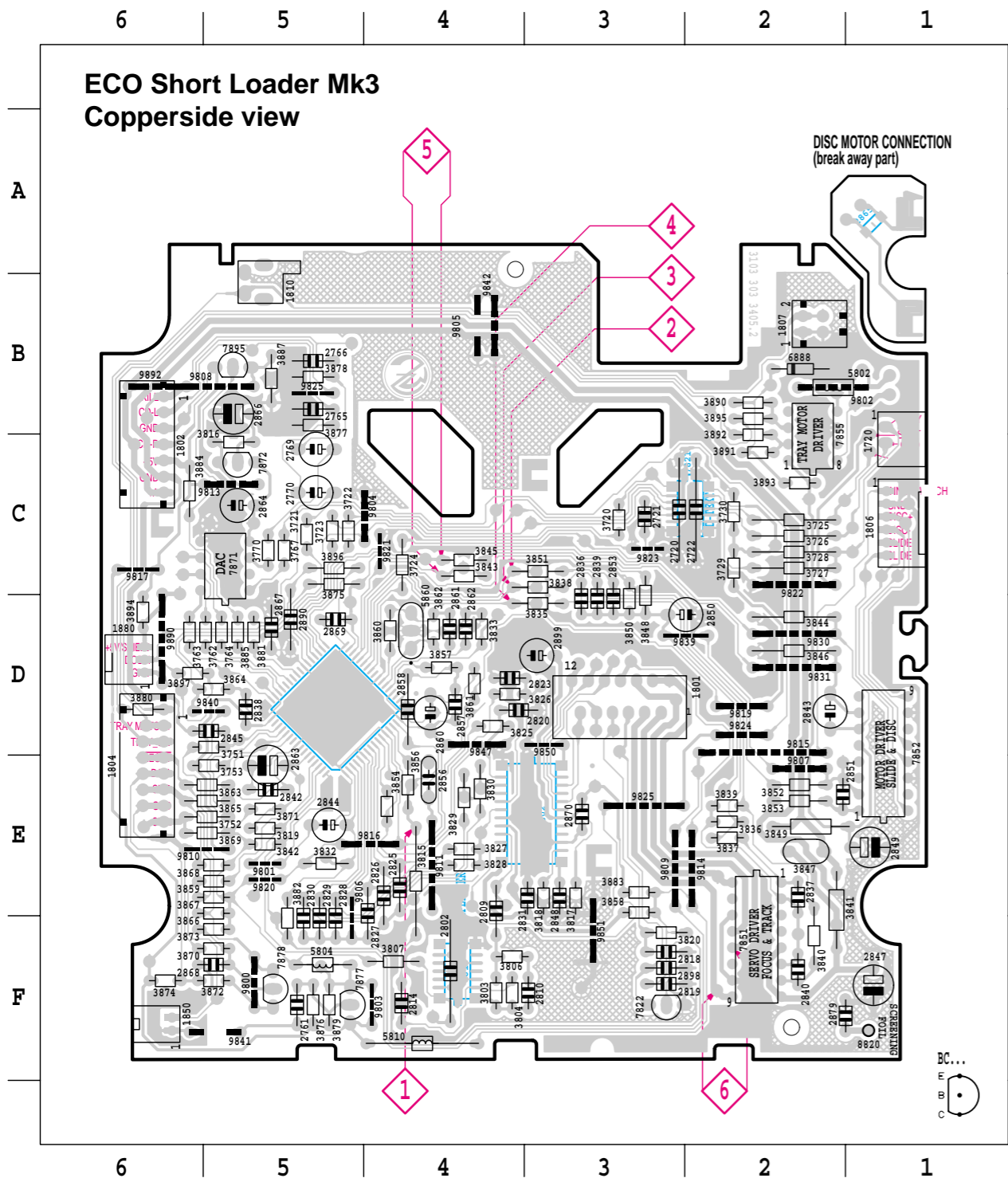


fig.3

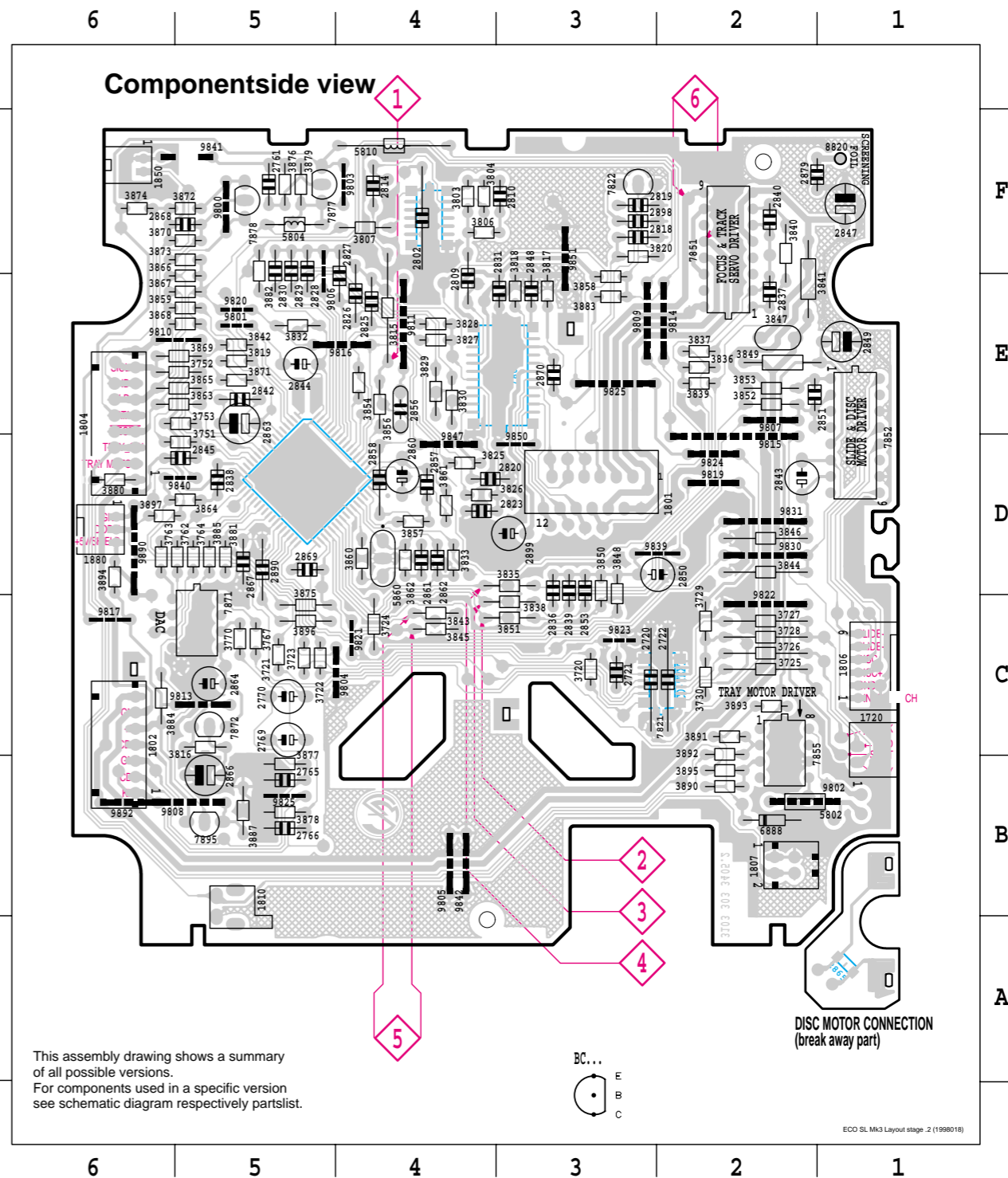
Remarks



ECO - SL MK3 - LAYOUT DIAGRAM

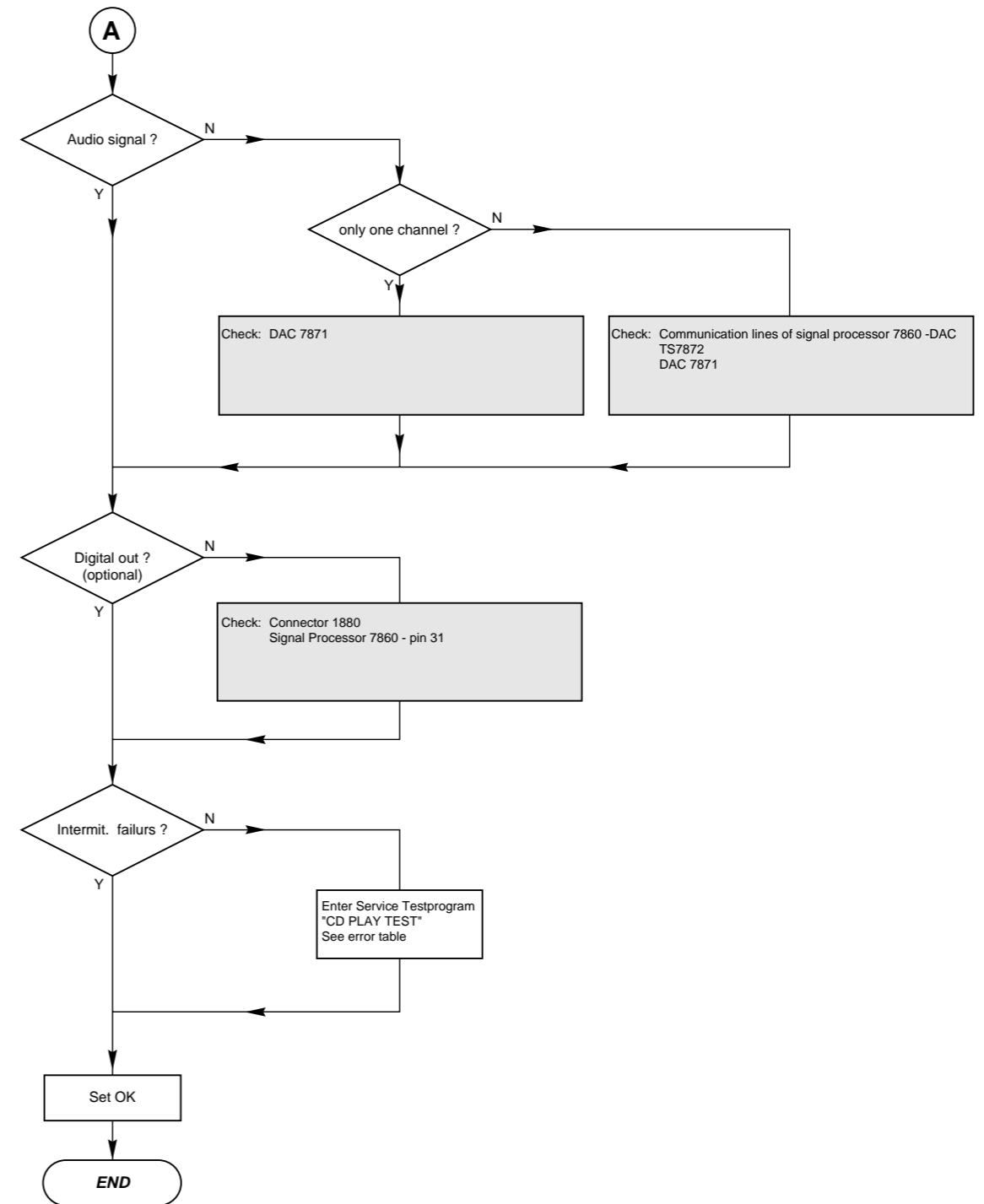
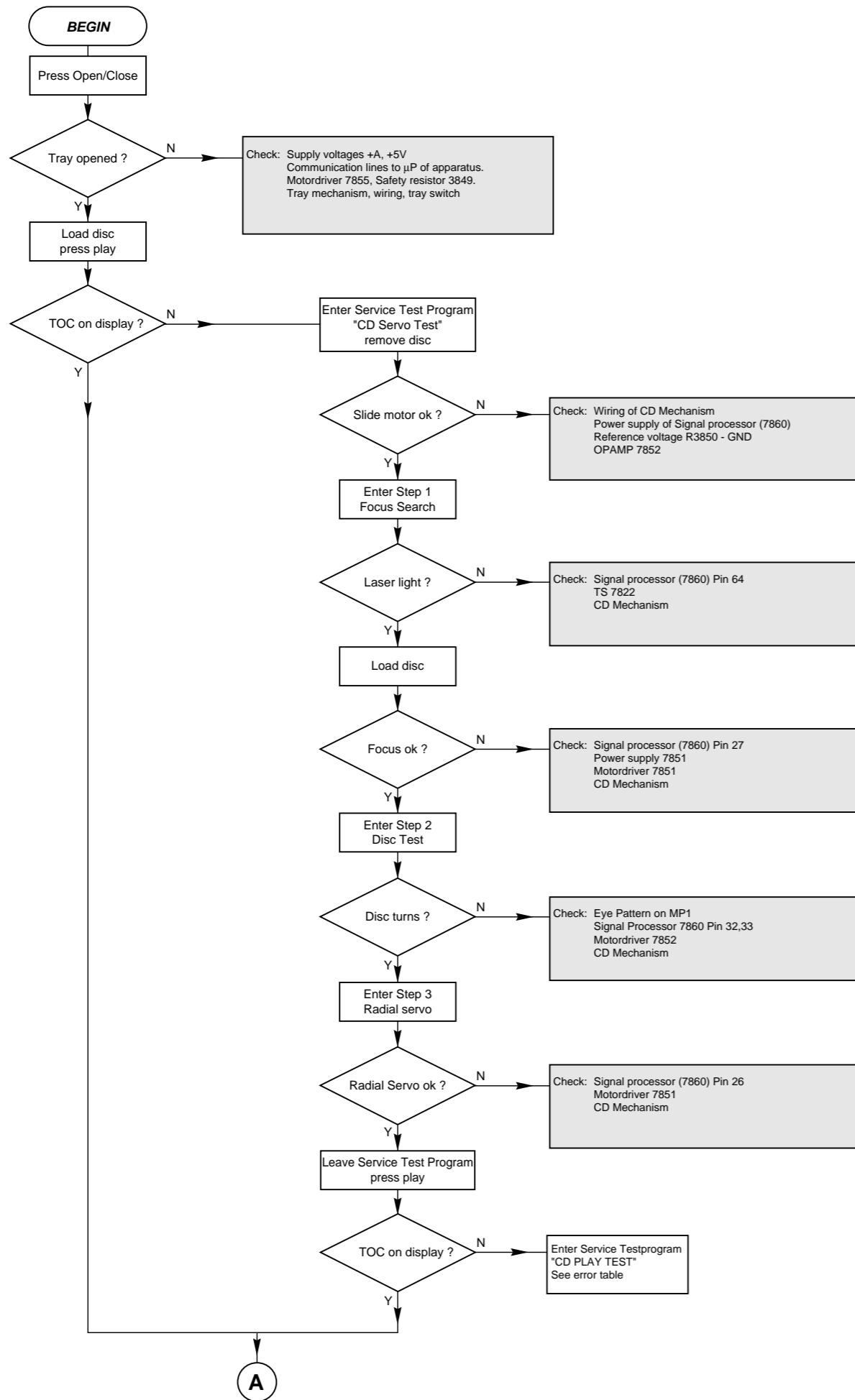


17	opt.	3839	E2
1720	C1	3840	F2
1801	D3	3841	E2
1802	C6	3842	E5
1804	E6	3843	C4
1806	C1	3844	D2
1807	B2	3845	C4
1810	B5	3846	D2
1820	B3	3847	E2
1850	F6	3848	D3
1880	D6	3849	E2
1881	opt.	3850	D3
1890	opt.	3851	C3
1895	opt.	3852	E2
2720	C3	3853	E2
2721	C3	3854	E4
2722	C2	3856	E4
2761	F5	3857	D4
2765	B6	3858	E3
2766	B6	3859	E5
2769	C5	3860	D4
2770	C5	3861	D4
2802	F4	3862	D4
2809	F4	3863	E5
2810	F4	3864	D6
2814	F4	3865	E5
2818	F3	3866	E5
2819	F3	3867	E5
2820	D4	3868	E5
2823	D4	3869	E5
2825	F5	3870	F5
2826	F4	3871	F5
2827	F4	3872	F5
2828	F5	3873	F5
2829	F5	3874	F5
2830	C5	3875	C5
2831	E3	3876	F5
2836	D3	3877	B5
2837	E2	3878	B5
2838	D6	3879	F5
2839	D3	3880	D6
2840	F2	3881	D5
2842	E5	3882	D5
2843	C5	3883	C5
2845	D6	3884	D6
2847	F1	3887	B5
2848	E3	3890	D2
2849	F1	3891	C2
2850	D2	3892	C2
2851	E2	3893	C2
2853	D3	3894	D6
2856	F5	3895	B5
2857	D4	3896	C6
2858	D4	3897	D6
2859	opt.	3898	opt.
2860	D4	3899	opt.
2861	F1	3900	opt.
2862	D4	5804	F5
2863	E5	5810	F4
2864	C5	5860	D4
2865	A5	6888	B2
2866	B5	6888	B2
2867	D6	7802	E3
2868	F5	7819	F4
2869	D5	7822	F3
2870	F5	7851	C3
2879	F2	7852	D1
2890	D6	7855	C2
2891	opt.	7860	D5
2892	opt.	7871	C3
2898	F5	7872	C5
2899	D3	7877	F5
3720	C3	7878	F5
3721	C5	7895	B5
3722	C2	7896	opt.
3723	C6	9800	F5
3724	C4	9801	F5
3725	C2	9802	B2
3726	C2	9803	F4
3727	C2	9804	C4
3728	C2	9805	B4
3729	C2	9806	F5
3730	C2	9807	E2
3751	D6	9808	B5
3752	E5	9809	E3
3753	E5	9810	E5
3762	D5	9811	E4
3763	D6	9813	C5
3764	D5	9814	E2
3767	C5	9815	D2
3770	C5	9816	F4
3803	F4	9817	C6
3804	F4	9819	D2
3806	F4	9820	D4
3807	F4	9821	C4
3815	E4	9822	C2
3816	C5	9823	C3
3817	E3	9824	D2
3818	E3	9825	B5
3819	E5	9825	E3
3820	F3	9830	D2
3825	D4	9831	D2
3826	D4	9839	D2
3827	F4	9840	D5
3828	F4	9841	F5
3829	F4	9842	B4
3830	E4	9847	D4
3832	E5	9850	D3
3833	D4	9851	F3
3835	D3	9890	D6
3836	E2	9892	D6
3837	E2		
3838	C3		

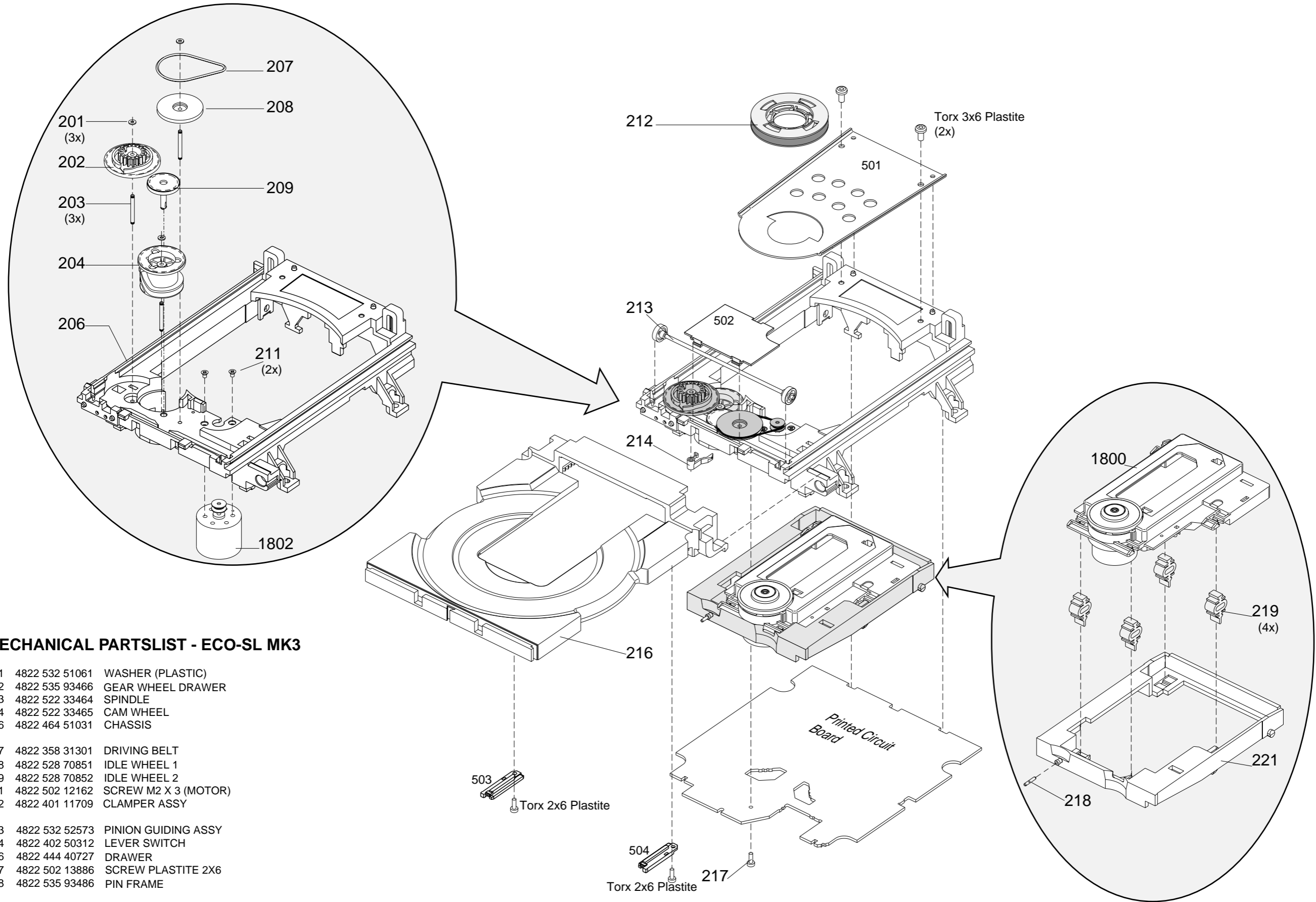


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram respectively partlist.

FAULTFINDING TREE



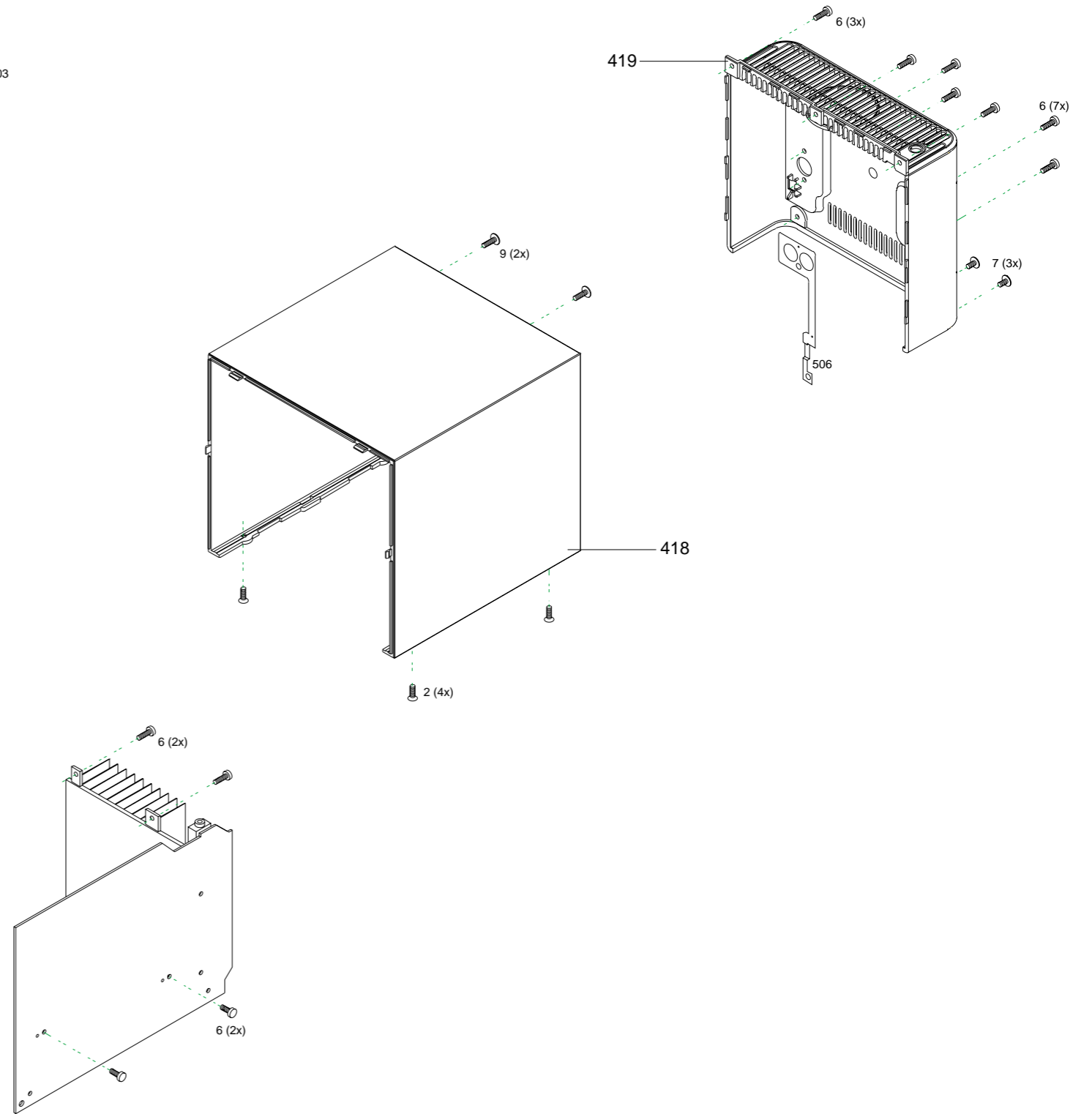
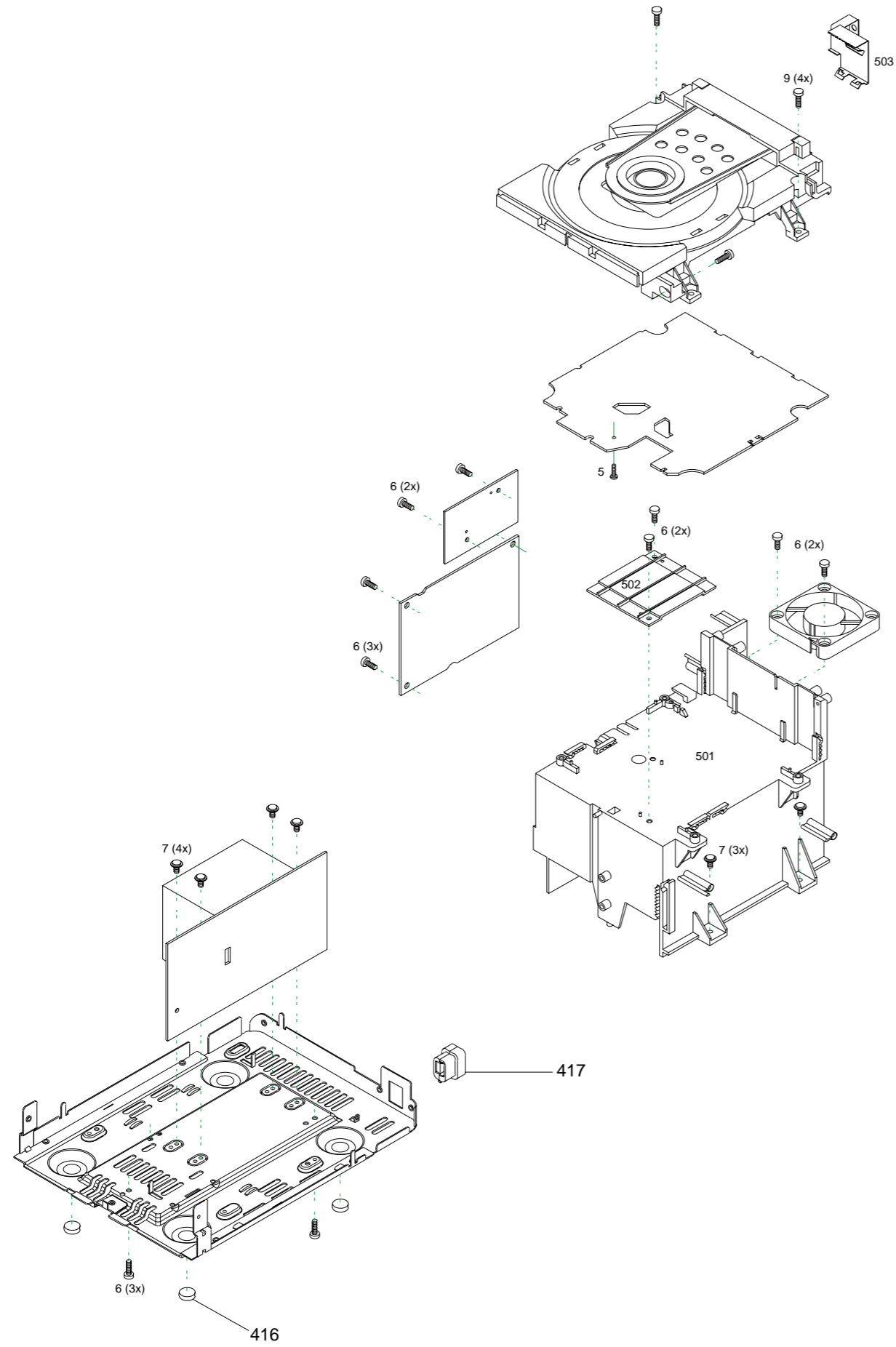
EXPLODED VIEW DIAGRAM - ECO-SL MK3



MECHANICAL PARTSLIST - ECO-SL MK3

201	4822 532 51061	WASHER (PLASTIC)
202	4822 535 93466	GEAR WHEEL DRAWER
203	4822 522 33464	SPINDLE
204	4822 522 33465	CAM WHEEL
206	4822 464 51031	CHASSIS
207	4822 358 31301	DRIVING BELT
208	4822 528 70851	IDLE WHEEL 1
209	4822 528 70852	IDLE WHEEL 2
211	4822 502 12162	SCREW M2 X 3 (MOTOR)
212	4822 401 11709	CLAMPER ASSY
213	4822 532 52573	PINION GUIDING ASSY
214	4822 402 50312	LEVER SWITCH
216	4822 444 40727	DRAWER
217	4822 502 13886	SCREW PLASTITE 2X6
218	4822 535 93486	PIN FRAME
219	4822 325 50215	SUSPENSION
221	4822 464 51032	FRAME
1800	4822 691 10615	CD Drive VAM1201
1802	4822 361 21708	MOTOR ASSY
	4822 502 30735	SCREW 3 X 6 PLASTITE

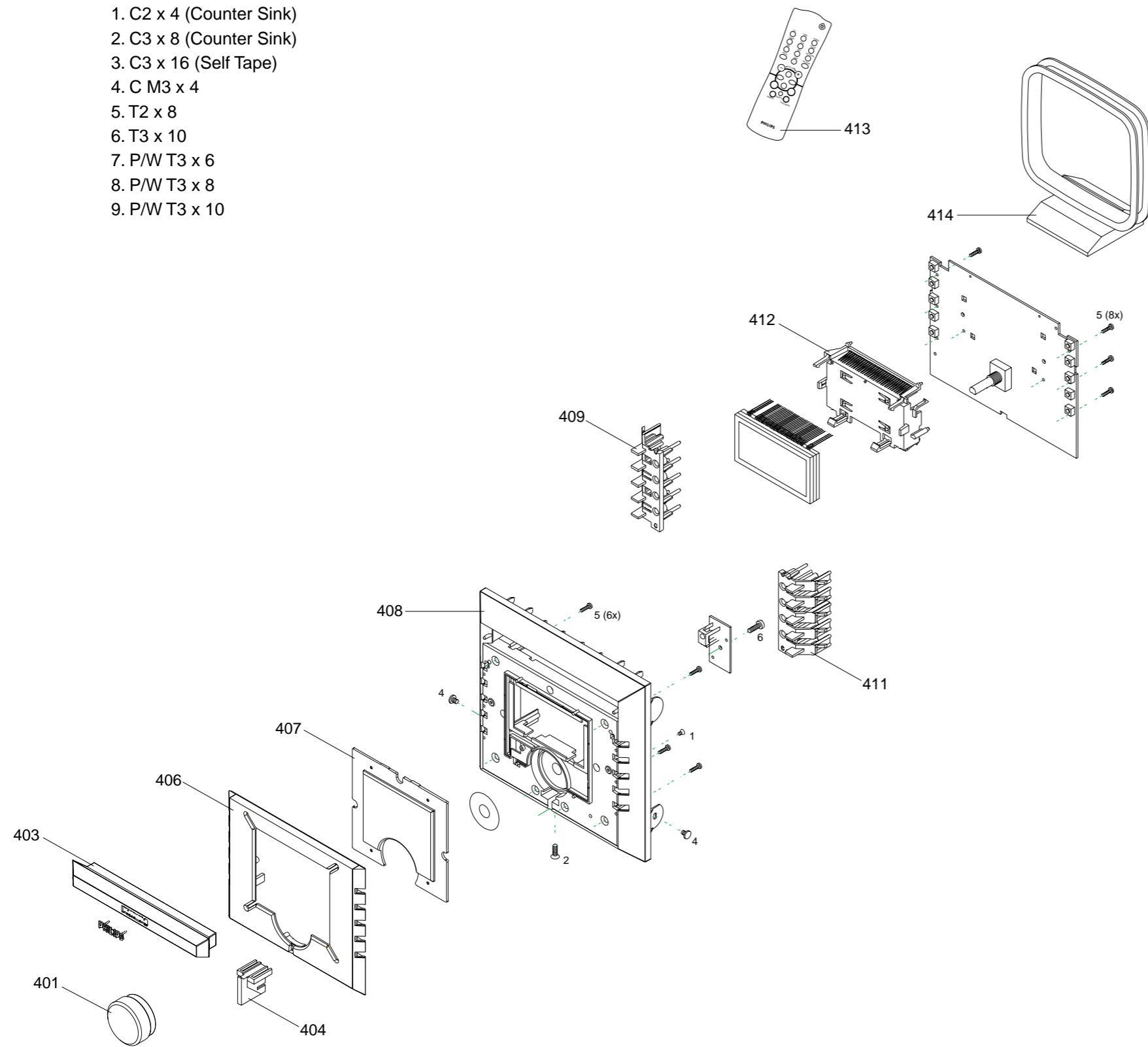
EXPLODED VIEW DIAGRAM - CABINET



EXPLODED VIEW DIAGRAM - CABINET

SCREW LIST

1. C2 x 4 (Counter Sink)
2. C3 x 8 (Counter Sink)
3. C3 x 16 (Self Tape)
4. C M3 x 4
5. T2 x 8
6. T3 x 10
7. P/W T3 x 6
8. P/W T3 x 8
9. P/W T3 x 10



MECHANICAL PARTSLIST - CABINET

401	3140 117 63660	Knob Volume Assy
402	3140 114 44880	Volume Holder
403	3140 117 63540	CD Door Assy
404	3140 114 30470	Rib Decorating
406	3140 114 44950	Front Panel
407	3140 114 44990	Front Lens
408	3140 114 45290	Cabinet Front (For /21/30/33)
408	3140 114 45310	Cabinet Front (For /22)
408	3140 114 44900	Cabinet Front (For /37)
409	3140 114 30510	Keypad (L)
411	3140 114 30520	Keypad (R)
412	3140 114 30550	FTD Holder
413	3139 238 02320	Remote RC282429/01
414	4822 303 50082	AM Frame
416	4822 462 40692	Rubber Stand
417	3140 113 21880	Mains Cord Relief (Not for /37)
417	3140 113 22100	Mains Cord Relief (For /37)
418	3140 114 45270	Cabinet Cover (Not for /37)
418	3140 114 44910	Cabinet Cover (For /37)
419	3140 114 45280	Cabinet Rear (Not for /37)
419	3140 114 44920	Cabinet Rear (For /37)
	3140 118 51130	Loudspeaker Box Assy
	3139 118 71160	FM Aerial

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

ELECTRICAL PARTSLIST - FRONT BOARD**- MISCELLANEOUS -**

1415	4822 273 10366	ROTARY ENCODER VOLUME
1425	2722 171 07193	FLUORESCENT DISPLAY
1440	4822 276 13114	SWITCH, TACT
1441	4822 276 13114	SWITCH, TACT
1442	4822 276 13114	SWITCH, TACT
1443	4822 276 13114	SWITCH, TACT
1444	4822 276 13114	SWITCH, TACT
1450	4822 276 13114	SWITCH, TACT
1451	4822 276 13114	SWITCH, TACT
1452	4822 276 13114	SWITCH, TACT
1453	4822 276 13114	SWITCH, TACT
1454	4822 276 13114	SWITCH, TACT

- CAPACITORS -

2400	4822 122 33177	10nF 20% X7R 50V
2401	4822 122 33177	10nF 20% X7R 50V
2402	4822 124 41584	100µF 20% 10V
2405	4822 126 14585	100nF 10% X7R 50V
2408	4822 126 14585	100nF 10% X7R 50V
2409	4822 122 33177	10nF 20% X7R 50V
2410	4822 122 33177	10nF 20% X7R 50V
2411	4822 126 13486	15pF 2% NP0 63V
2412	4822 126 13486	15pF 2% NP0 63V
2413	4822 126 13694	68pF 1% NP0 63V
2414	4822 122 33177	10nF 20% X7R 50V
2415	4822 126 13691	27pF 1% NP0 63V
2416	4822 126 13691	27pF 1% NP0 63V
2419	4822 126 14585	100nF 10% X7R 50V
2420	5322 122 34098	10nF 10% X7R 63V
2422	4822 126 14585	100nF 10% X7R 50V
2423	4822 126 14585	100nF 10% X7R 50V
2424	4822 126 14585	100nF 10% X7R 50V
2425	5322 122 32659	33pF 5% 50V
2426	5322 122 32658	22pF 5% 50V
2427	5322 116 80853	560pF 5% NP0 63V
2428	4822 124 22652	2,2µF 20% 50V
2429	5322 122 31863	330pF 5% NP0 63V
2430	5322 122 31647	1nF 10% X7R 63V
2431	5322 126 10223	4,7nF 10% X7R 63V
2432	5322 122 32531	100pF 5% NP0 50V
2433	5322 122 34099	470pF 10% X7R 63V
2434	5322 122 32531	100pF 5% NP0 50V
2435	5322 122 34098	10nF 10% X7R 63V
2436	5322 122 34099	470pF 10% X7R 63V
2437	5322 122 34099	470pF 10% X7R 63V
2438	5322 122 34099	470pF 10% X7R 63V
2439	5322 122 34099	470pF 10% X7R 63V
2440	4822 122 33127	2,2nF 10% X7R 63V
2441	4822 122 33177	10nF 20% X7R 50V

- CAPACITORS -

2442	4822 122 33575	220pF 5% NP0 63V
2443	5322 122 32531	100pF 5% NP0 50V
2444	4822 126 13692	47pF 1% NP0 63V
2445	5322 122 32531	100pF 5% NP0 50V
2446	4822 122 33177	10nF 20% X7R 50V
2447	5322 122 34099	470pF 10% X7R 63V
2448	4822 122 33575	220pF 5% NP0 63V
2449	4822 122 33575	220pF 5% NP0 63V
2450	5322 122 34099	470pF 10% X7R 63V
2451	5322 122 34099	470pF 10% X7R 63V
2454	4822 126 14585	100nF 10% X7R 50V
2468	5322 122 34099	470pF 10% X7R 63V
2470	5322 122 32531	100pF 5% NP0 50V
2471	5322 122 32531	100pF 5% NP0 50V
2634	4822 124 21913	1µF 20% 63V
2635	4822 124 21913	1µF 20% 63V
2636	5322 122 34098	10nF 10% X7R 63V

- RESISTORS -

3401	4822 051 20223	22K 5% 0,1W
3402	4822 051 20471	470R 5% 0,1W
3403	4822 051 10102	1K 2% 0,25W
3404	4822 051 10102	1K 2% 0,25W
3405	4822 050 11002	1K 1% 0,4W
3406	4822 117 10837	100K 1% 0,1W
3407	4822 051 10102	1K 2% 0,25W
3408	4822 051 20474	470K 5% 0,1W
3409	4822 051 10102	1K 2% 0,25W
3410	4822 050 11002	1K 1% 0,4W
3411	4822 051 10102	1K 2% 0,25W
3413	4822 051 10102	1K 2% 0,25W
3414	4822 051 20471	470R 5% 0,1W
3415	4822 116 83933	15K 1% 0,1W
3416	4822 116 83872	220R 5% 0,5W
3417	4822 116 83933	
3418	4822 051 10102	1K 2% 0,25W
3419	4822 051 10102	1K 2% 0,25W
3420	4822 117 12955	2,7K 5% 0,1W
3421	4822 051 20122	1,2K 5% 0,1W
3422	4822 051 20182	1,8K 5% 0,1W
3423	4822 117 11449	2,2K 5% 0,1W
3424	4822 051 20472	4,7K 5% 0,1W
3425	4822 117 10833	10K 1% 0,1W
3426	4822 051 10102	1K 2% 0,25W
3427	4822 051 20223	22K 5% 0,1W
3428	4822 116 83883	470R 5% 0,5W
3430	4822 051 10102	1K 2% 0,25W
3431	4822 051 10102	1K 2% 0,25W
3432	4822 051 20122	1,2K 5% 0,1W

ELECTRICAL PARTSLIST - FRONT BOARD**- RESISTORS -**

3433	4822 117 12955	2,7K 5% 0,1W
3434	4822 051 20182	1,8K 5% 0,1W
3435	4822 117 11449	2,2K 5% 0,1W
3436	4822 051 20472	4,7K 5% 0,1W
3437	4822 051 20223	22K 5% 0,1W
3438	4822 051 20223	22K 5% 0,1W
3439	4822 117 10833	10K 1% 0,1W
3440	4822 051 10102	1K 2% 0,25W
3441	4822 051 10102	1K 2% 0,25W
3442	4822 050 23303	33K 1% 0,6W
3443	4822 050 23303	33K 1% 0,6W
3444	4822 116 52175	100R 5% 0,5W
3445	4822 117 11449	2,2K 5% 0,1W
3446	4822 117 13579	220K 1% 0,1W
3447	4822 117 10833	10K 1% 0,1W
3448	4822 117 11139	1,5K 1% 0,1W
3449	4822 116 52257	22K 5% 0,5W
3450	4822 117 12955	2,7K 5% 0,1W
3451	4822 116 83883	470R 5% 0,5W
3452	4822 050 21003	10K 1% 0,6W
3453	4822 051 10102	1K 2% 0,25W
3454	4822 050 11002	1K 1% 0,4W
3455	4822 051 10102	1K 2% 0,25W
3456	4822 050 11002	1K 1% 0,4W
3457	4822 117 10833	10K 1% 0,1W
3458	4822 051 10102	1K 2% 0,25W
3459	4822 051 10102	1K 2% 0,25W
3460	4822 051 10102	1K 2% 0,25W
3461	4822 116 52283	4,7K 5% 0,5W
3462	4822 051 10102	1K 2% 0,25W
3463	4822 116 52283	4,7K 5% 0,5W
3464	4822 051 10102	1K 2% 0,25W
3465	4822 116 52283	4,7K 5% 0,5W
3466	4822 117 10833	10K 1% 0,1W
3467	4822 116 52256	2,2K 5% 0,5W
3468	4822 116 83883	470R 5% 0,5W
3469	4822 116 83883	470R 5% 0,5W
3470	4822 051 20471	470R 5% 0,1W
3471	4822 117 10833	10K 1% 0,1W
3472	4822 051 10102	1K 2% 0,25W
3473	4822 051 10102	1K 2% 0,25W
3474	4822 051 10102	1K 2% 0,25W
3475	4822 051 10102	1K 2% 0,25W
3476	4822 051 10102	1K 2% 0,25W
3477	4822 051 10102	1K 2% 0,25W
3478	4822 051 10102	1K 2% 0,25W
3479	4822 051 10102	1K 2% 0,25W
3480	4822 051 10102	1K 2% 0,25W
3481	4822 051 10102	1K 2% 0,25W
3482	4822 051 10102	1K 2% 0,25W

- RESISTORS -

3483	4822 051 10102	1K 2% 0,25W
3484	4822 051 10102	1K 2% 0,25W
3485	4822 051 10102	1K 2% 0,25W
3486	4822 051 10102	1K 2% 0,25W
3487	4822 051 10102	1K 2% 0,25W
3488	4822 051 10102	1K 2% 0,25W
3489	4822 051 10102	1K 2% 0,25W
3490	4822 051 10102	1K 2% 0,25W
3491	4822 051 10102	1K 2% 0,25W
3492	4822 051 10102	1K 2% 0,25W
3493	4822 051 10102	1K 2% 0,25W
3494	4822 051 10102	1K 2% 0,25W
3495	4822 051 20471	470R 5% 0,1W
3496	4822 117 10837	100K 1% 0,1W
3497	4822 117 10837	100K 1% 0,1W
3498	4822 051 10102	1K 2% 0,25W
3499	4822 051 10102	1K 2% 0,25W
3601	4822 051 10102	1K 2% 0,25W
3602	4822 051 10102	1K 2% 0,25W
3603	4822 051 10102	1K 2% 0,25W
3610	4822 051 10102	1K 2% 0,25W
3612	4822 051 10102	1K 2% 0,25W
3613	4822 051 10102	1K 2% 0,25W
3615	4822 051 10102	1K 2% 0,25W
3617	4822 050 11002	1K 1% 0,4W
3619	4822 050 11002	1K 1% 0,4W
3620	4822 116 83882	39K 5% 0,5W
3621	4822 116 52244	15K 5% 0,5W
3622	4822 050 11002	1K 1% 0,4W
3623	4822 116 83883	470R 5% 0,5W
3624	4822 116 83883	470R 5% 0,5W
3625	4822 116 83883	470R 5% 0,5W
3626	4822 116 83883	470R 5% 0,5W
3627	4822 051 10102	1K 2% 0,25W
3628	4822 116 52175	100R 5% 0,5W
3629	4822 117 10361	680R 1% 0,1W
3630	4822 051 20684	680K 5% 0,1W
3631	4822 051 10102	1K 2% 0,25W
3633	4822 051 10102	1K 2% 0,25W
3634	4822 052 10478	4,7R 5% 0,33W
3635	4822 052 10478	4,7R 5% 0,33W
3636	4822 116 83883	470R 5% 0,5W
4401	4822 051 20008	0R JUMPER (0805)
4402	4822 051 20008	0R JUMPER (0805)
4403	4822 051 20008	0R JUMPER (0805)
4404	4822 051 20008	0R JUMPER (0805)
4405	4822 051 20008	0R JUMPER (0805)

ELECTRICAL PARTSLIST - FRONT BOARD**- COILS & FILTERS -**

5400	3198 018 11580	FXD IND 1,5μH 5%
5401	3198 018 11580	FXD IND 1,5μH 5%
5402	4822 157 62552	FXD IND 2,2μH
5403	4822 242 72066	FILTER CST8,00MT
5404	2422 543 01069	CRYSTAL 32,768KHZ

5405	4822 242 72195	CRYSTAL 4,332MHZ
5406	3198 018 11580	FXD IND 1,5μH 5%

- DIODES -

6400	4822 130 30621	1N4148
6401	4822 130 30621	1N4148

- IC & TRANSISTORS -

7400	4822 816 10895	TMP87PS71F
7401	4822 130 44568	BC557B
7402	4822 130 60511	BC847B
7403	4822 130 60511	BC847B
7405	9322 140 83682	M24C01-BN6

7406	4822 209 31981	SAA6579T
7422	4822 130 60511	BC847B
7423	4822 130 60511	BC847B

ELECTRICAL PARTSLIST - RC EYE BOARD**- MISCELLANEOUS -**

7600	4822 130 10165	GP1U28XP
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- CAPACITORS -

2698	4822 124 80483	47μF 20% 6,3V
2699	5322 122 31647	1nF 10% X7R 63V

- RESISTORS -

3641	4822 117 10833	10K 1% 0,1W
3642	4822 116 52175	100R 5% 0,5W
3643	4822 051 20223	22K 5% 0,1W

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

ELECTRICAL PARTSLIST - TUNER BOARD (ECO6-AS)**- MISCELLANEOUS -**

1101	2422 015 19376	FM ANT. SOCKET (/37)
1102	4822 267 10283	FM ANT. SOCKET
1103	4822 265 31184	AM ANT. SOCKET
1110	2422 542 90071	FM FRONTEND FE450-G01
1120	4822 265 11515	CONNECTOR 8P

- CAPACITORS -

2101	4822 122 33777	47pF 5% NP0 63V
2102	4822 126 14305	100nF 10% X7R 16V
2103	5322 126 11578	1nF 10% X7R 50V
2104	4822 122 31765	100pF 2% NP0 63V
2105	4822 126 14305	100nF 10% X7R 16V
2106	2020 800 00204	CTRM 4P-20P N750 (/22)
2106	2020 800 00191	CTRM 3P-11P N450
2107	4822 121 51319	1µF 10% 63V
2108	4822 122 31765	100pF 2% NP0 63V
2109	4822 122 33741	10pF 10% NP0 50V

2120	4822 122 33761	22pF 5% NP0 50V
2120	4822 126 14507	18pF 5% 50V NP0
2122	5322 126 11579	3,3nF 10% X7R 63V
2123	2238 861 18391	390pF 1% NP0 50V
2124	4822 126 14494	22nF 10% X7R 25V

2125	2238 861 18561	560pF 1% NP0 50V
2126	4822 126 14241	330pF 5% NPO 50V
2127	4822 126 13879	220nF +80-20% 16V
2128	4822 124 40248	10µF 20% 63V
2129	4822 124 41584	100µF 20% 10V

2130	4822 126 14494	22nF 10% X7R 25V
2131	3198 017 44740	470nF Y5V 10V
2132	3198 017 44740	470nF Y5V 10V
2133	4822 124 21913	1µF 20% 63V
2134	3198 017 31530	15nF X7R 50V

2134	4822 126 14494	22nF 10% X7R 25V (/37 only)
2135	3198 017 31530	15nF X7R 50V
2135	4822 126 14494	22nF 10% X7R 25V (/37 only)
2136	4822 126 13879	220nF +80-20% 16V
2137	4822 126 13879	220nF +80-20% 16V

2138	4822 124 22652	2,2µF 20% 50V
2139	4822 122 33752	15pF 5% NP0 50V
2140	4822 126 14226	82pF 5% NP0 50V
2141	4822 126 14305	100nF 10% X7R 16V
2143	4822 126 13879	220nF +80-20% 16V

2144	4822 124 21913	1µF 20% 63V
2145	4822 126 13883	220pF 5% 50V
2146	4822 122 33575	220pF 5% NP0 63V
2147	4822 122 33575	220pF 5% NP0 63V
2148	4822 122 33127	2,2nF 10% X7R 63V

- CAPACITORS -

2149	4822 126 11671	33pF 1% 50V
2150	4822 126 13838	100nF +80-20% 50V
2152	4822 126 14549	33nF 16V X7R
2153	4822 122 33752	15pF 5% NP0 50V
2155	2020 800 00191	CTRM \3P-11P N450

2159	4822 126 11671	33pF 1% 50V
2162	4822 124 81151	22µF 20% 50V
2163	4822 126 14305	100nF 10% X7R 16V
2164	3198 017 44740	470nF Y5V 10V
2165	4822 126 14305	100nF 10% X7R 16V

2166	5322 122 31647	1nF 10% X7R 63V
2167	4822 126 11663	12pF 1% 50V
2169	4822 126 14238	2,2nF 10% X7R 50V
2180	5322 126 11583	10nF 10% X7R 50V
2191	4822 124 41584	100µF 20% 10V

- RESISTORS -

3101	4822 051 30333	33K 5% 0,062W
3102	4822 117 13632	100K 1% 0,62W
3103	4822 117 12902	8,2K 1% 0,063W
3104	4822 117 13577	330R 1% 1,25W
3105	4822 051 30221	220R 5% 0,062W

3108	4822 051 30222	2,2K 5% 0,062W
3109	4822 051 30472	4,7K 5% 0,062W
3123	4822 051 30472	4,7K 5% 0,062W
3125	4822 051 30103	10K 5% 0,062W
3128	4822 051 30222	2,2K 5% 0,062W

3130	4822 117 12968	820R 5% 0,62W
3131	4822 117 12968	820R 5% 0,62W
3132	4822 051 30479	47R 5% 0,062W
3134	4822 051 30223	22K 5% 0,062W
3135	4822 051 30102	1K 5% 0,062W

3137	4822 051 30223	22K 5% 0,062W
3141	4822 051 30563	56K 5% 0,062W
3142	4822 100 12159	100K 30% VAR.
3143	4822 051 30223	22K 5% 0,062W
3144	4822 051 30102	1K 5% 0,062W

3145	4822 051 30222	2,2K 5% 0,062W
3146	4822 117 12139	22R 5% 0,062W
3150	4822 051 30103	10K 5% 0,062W
3151	4822 051 30683	68K 5% 0,062W
3152	4822 051 30471	470R 5% 0,062W

3153	4822 051 30471	470R 5% 0,062W
3154	4822 051 30331	330R 5% 0,062W
3155	4822 051 30151	150R 5% 0,062W
3158	4822 051 30471	470R 5% 0,062W
3159	4822 051 30471	470R 5% 0,062W

ELECTRICAL PARTSLIST - TUNER BOARD (ECO6-AS)**- RESISTORS -**

3160	4822 051 30471	470R 5% 0,062W
3161	4822 051 30223	22K 5% 0,062W
3167	4822 051 20121	120R 5% 0,1W
3168	4822 051 30121	120R 5% 0,062W
3169	4822 051 30154	150K 5% 0,062W

3170	4822 117 13632	100K 1% 0,62W
3171	4822 117 12925	47K 1% 0,063W
3172	4822 051 30562	5,6K 5% 0,063W
3176	4822 051 30333	33K 5% 0,062W
3180	4822 051 30103	10K 5% 0,062W

3181	4822 051 30102	1K 5% 0,062W
3190	4822 051 30121	120R 5% 0,062W
3191	4822 051 30121	120R 5% 0,062W
3192	4822 051 30331	330R 5% 0,062W
3193	4822 051 30331	330R 5% 0,062W

3194	4822 051 30222	2,2K 5% 0,062W
3195	4822 051 30101	100R 5% 0,062W
4103	4822 051 30008	0R JUMPER (0603)
4105	4822 051 20008	0R JUMPER (0805)
4106	4822 051 20008	0R JUMPER (0805)

4107	4822 051 30008	0R JUMPER (0603)
4108	4822 051 30008	0R JUMPER (0603)

- COILS & FILTERS -

5102	4822 157 71634	MW ANT. COIL
5103	2422 549 44107	LW ANT. COIL
5109	4822 157 71639	FILTER SFE10,7MS3-A
5110	4822 242 70665	FILTER SFE10,7MS3-A
5111	2422 549 44023	AM IFT 450KHZ

5112	4822 157 70302	AM IFT 450KHZ
5114	4822 157 70302	AM IFT 450KHZ
5115	4822 157 71636	BIRDIE FILTER
5118	2422 535 95881	IND FXD 0,1UH 5%
5119	4822 157 11443	FM DISCRIMINATOR

5121	4822 242 10261	CRYSTAL 75KHZ
5122	2422 549 44108	MW/LW OSC. COIL
5123	2422 549 44108	MW/LW OSC. COIL
5130	4822 157 11843	FM COIL MD7B-01F
5131	4822 157 11843	FM COIL MD7B-01F

- DIODES -

6103	5322 130 34337	BAV99
6105	4822 130 83075	HN1V02H-B
6106	4822 130 83757	MCL4148
6107	9340 386 90115	BZX284-C11
6120	4822 130 83757	MCL4148

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

- TRANSISTOR & IC -

7101	9351 772 20557	TEA5762HV/1
7102	4822 130 42131	BF550
7103	5322 130 42756	BC857C
7104	4822 130 40855	BC337
7105	4822 130 40855	BC337

7109	4822 130 60373	BC856B
7110	4822 130 60373	BC856B
7111	5322 130 42755	BC847C
7112	4822 130 40959	BC547B
7122	5322 130 42755	BC847C

7124	5322 130 42755	BC847C
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Note: Only these parts mentioned in the list are normal service parts.

ELECTRICAL PARTSLIST - CD BOARD (ECO-SL)**- MISCELLANEOUS -**

1801	4822 267 51453	FFC CONNECTOR 12P
1810	4822 276 13503	SWITCH SPPB62010A

- CAPACITORS -

2761	4822 121 51387	10nF 20% 16V
2765	4822 126 12878	1,5nF 10% 16V
2766	4822 126 12878	1,5nF 10% 16V
2769	4822 124 22726	4,7µF 20% 35V
2770	4822 124 22726	4,7µF 20% 35V

2802	4822 126 12882	100nF +80-20% 50V
2809	4822 126 12785	47nF Y5V 50V
2814	4822 126 12339	2,2nF 10% Y5R
2818	4822 126 12882	100nF +80-20% 50V
2819	4822 126 12882	100nF +80-20% 50V

2820	4822 122 10459	560pF 10% 50V
2823	4822 126 12878	1,5nF 10% 16V
2825	4822 122 10466	220pF 10% 50V
2826	4822 122 10466	220pF 10% 50V
2827	4822 122 10466	220pF 10% 50V

2828	4822 122 10466	220pF 10% 50V
2829	4822 122 10466	220pF 10% 50V
2830	4822 122 10466	220pF 10% 50V
2831	4822 126 12785	47nF Y5V 50V
2836	4822 126 13098	5,6nF 20% 16V

2837	4822 122 10459	560pF 10% 50V
2838	4822 126 12882	100nF +80-20% 50V
2839	4822 121 51387	10nF 20% 16V
2840	4822 122 10576	1,8nF 10% 16V
2842	4822 121 51387	10nF 20% 16V

2843	5322 124 41948	470nF 20% 50V
2844	4822 124 22726	4,7µF 20% 35V
2845	4822 122 33848	47pF 5% SL 50V
2847	4822 124 40433	47µF 20% 25V
2848	4822 121 51387	10nF 20% 16V

2849	4822 124 40433	47µF 20% 25V
2850	4822 124 22726	4,7µF 20% 35V
2851	4822 121 51387	10nF 20% 16V
2853	4822 126 12882	100nF +80-20% 50V
2856	4822 121 70619	22nF 10% 50V

2857	4822 126 11585	22nF +80-20% Y5V 25V
2858	4822 122 33848	47pF 5% SL 50V
2860	4822 124 22726	4,7µF 20% 35V
2861	4822 122 33191	22pF 5% 50V
2862	4822 122 33191	22pF 5% 50V

2863	4822 124 81286	47µF 20% 16V
2864	4822 124 22726	4,7µF 20% 35V
2866	4822 124 23432	100µF 20% 10V
2867	4822 121 51387	10nF 20% 16V
2869	4822 126 12882	100nF +80-20% 50V

- CAPACITORS -

2870	4822 126 12785	47nF Y5V 50V
2890	4822 122 10466	220pF 10% 50V
2898	4822 126 12882	100nF +80-20% 50V
2899	4822 124 23401	4,7µF 20% 25V

- RESISTORS -

3751	4822 116 83872	220R 5% 0,5W
3752	4822 116 83872	220R 5% 0,5W
3753	4822 116 83872	220R 5% 0,5W
3762	4822 116 83872	220R 5% 0,5W
3763	4822 116 83872	220R 5% 0,5W

3764	4822 116 83872	220R 5% 0,5W
3767	4822 116 83883	470R 5% 0,5W
3770	4822 116 83883	470R 5% 0,5W
3803	4822 050 21003	10K 1% 0,6W
3804	4822 116 52257	22K 5% 0,5W

3807	4822 116 52226	560R 5% 0,5W
3815	4822 050 11002	1K 1% 0,4W
3816	4822 116 52283	47K 5% 0,5W
3817	4822 116 52283	47K 5% 0,5W
3818	4822 116 52239	120K 5% 0,5W

3819	4822 050 21003	10K 1% 0,6W
3820	4822 050 11002	1K 1% 0,4W
3825	4822 050 21003	10K 1% 0,6W
3826	4822 050 21003	10K 1% 0,6W
3827	4822 050 21003	10K 1% 0,6W

3828	4822 050 21003	10K 1% 0,6W
3829	4822 050 21003	10K 1% 0,6W
3830	4822 050 21003	10K 1% 0,6W
3832	4822 116 52191	33R 5% 0,5W
3833	4822 050 11002	1K 1% 0,4W

3835	4822 116 52264	27K 5% 0,5W
3836	4822 116 52207	1,2K 5% 0,5W
3837	4822 116 83961	6,8K 5% 0,5W
3838	4822 116 52257	22K 5% 0,5W
3839	4822 116 52207	1,2K 5% 0,5W

3840	4822 116 83961	6,8K 5% 0,5W
3841	4822 052 10338	3,3R 5% 0,33W
3842	4822 050 21003	10K 1% 0,6W
3843	4822 116 83882	39K 5% 0,5W
3844	4822 050 11002	1K 1% 0,4W

3845	4822 116 83882	39K 5% 0,5W
3846	4822 050 11002	1K 1% 0,4W
3848	4822 050 11002	1K 1% 0,4W
3849	4822 052 10338	3,3R 5% 0,33W
3850	4822 050 11002	1K 1% 0,4W

ELECTRICAL PARTSLIST - CD BOARD (ECO-SL)**- RESISTORS -**

3851	4822 116 52264	27K 5% 0,5W
3852	4822 050 11002	1K 1% 0,4W
3853	4822 116 83961	6,8K 5% 0,5W
3854	4822 116 83878	270K 5% 0,5W
3856	4822 116 52257	22K 5% 0,5W
3857	4822 116 52234	100K 5% 0,5W
3858	4822 116 52175	100R 5% 0,5W
3859	4822 116 83872	220R 5% 0,5W
3860	4822 116 52175	100R 5% 0,5W
3861	4822 116 52175	100R 5% 0,5W
3862	4822 116 83866	1M 5% 0,5W
3863	4822 116 83872	220R 5% 0,5W
3864	4822 116 52175	100R 5% 0,5W
3865	4822 116 83872	220R 5% 0,5W
3866	4822 050 21003	10K 1% 0,6W
3867	4822 050 21003	10K 1% 0,6W
3868	4822 050 21003	10K 1% 0,6W
3869	4822 050 21003	10K 1% 0,6W
3870	4822 050 21003	10K 1% 0,6W
3871	4822 116 52176	10R 5% 0,5W
3872	4822 116 52175	100R 5% 0,5W
3873	4822 050 21003	10K 1% 0,6W
3874	4822 050 21003	10K 1% 0,6W
3875	4822 116 52191	33R 5% 0,5W
3876	4822 116 52213	180R 5% 0,5W
3877	4822 116 83884	47K 5% 0,5W
3878	4822 116 83884	47K 5% 0,5W
3879	4822 116 52226	560R 5% 0,5W
3881	4822 116 52283	47K 5% 0,5W
3882	4822 116 52283	47K 5% 0,5W
3883	4822 116 52175	100R 5% 0,5W
3890	4822 050 11002	1K 1% 0,4W
3891	4822 050 11002	1K 1% 0,4W
3892	4822 050 23303	33K 1% 0,6W
3893	4822 116 52249	1,8K 5% 0,5W
3895	4822 050 23303	33K 1% 0,6W
3896	4822 116 52191	33R 5% 0,5W

- COILS & FILTERS -

5804	4822 157 53302	1μH
5810	4822 157 11517	10μH 5%
5860	2422 543 01068	RES XTL 8,4672MHZ

- DIODES -

6888	4822 130 83351	BZX55-B2V4
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- IC & TRANSISTORS -

7802	4822 209 12636	TDA1320T/N1
7819	5322 209 11517	PC74HCU04T
7822	4822 130 40855	BC337
7851	4822 209 32852	TDA7073A/N2
7852	4822 209 32852	TDA7073A/N2
7855	4822 209 31519	TDA7072A/N1
7860	4822 209 12752	SAA7378GP/M1
7871	4822 209 32421	TDA1311A/N2
7872	4822 130 44503	BC547C
7877	4822 130 40959	BC547B
7878	4822 130 44503	BC547C

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

ELECTRICAL PARTSLIST - COMBI BOARD**- MISCELLANEOUS -**

1330	2422 026 05076	HEADPHONE SOCKET
1331	4822 265 10967	SPEAKER TERMINAL
1550	4822 265 20553	AUX-IN SOCKET
1555	4822 265 11515	CONNECT 8P

- CAPACITORS -

2258	5322 126 10511	1nF 5% NP0 50V
2259	4822 124 41751	47µF 20% 50V
2260	4822 126 13751	47nF 10% X7R 63V
2262	5322 126 10511	1nF 5% NP0 50V
2263	4822 124 41751	47µF 20% 50V
2264	4822 124 41751	47µF 20% 50V
2266	4822 124 22652	2,2µF 20% 50V
2267	4822 124 80144	220µF 20% 25V
2268	4822 124 40255	100µF 20% 25V
2269	4822 124 81151	22µF 20% 50V
2270	4822 124 22652	2,2µF 20% 50V
2271	4822 124 40433	47µF 20% 25V
2272	4822 126 13838	100nF +80-20% Y5V 50V
2330	4822 124 40769	4,7µF 20% 100V
2331	4822 126 14325	1µF 80/20% 16V
2332	4822 126 14325	1µF 80/20% 16V
2337	4822 121 42408	220nF 5% 63V
2338	4822 121 42408	220nF 5% 63V
2339	4822 121 42408	220nF 5% 63V
2340	4822 121 42408	220nF 5% 63V
2345	5322 121 42386	100nF 5% 63V
2346	5322 121 42386	100nF 5% 63V
2348	4822 124 22652	2,2µF 20% 50V
2349	4822 124 40207	100µF 20% 25V
2351	4822 124 40769	4,7µF 20% 100V
2352	5322 122 34098	10nF 10% X7R 63V
2353	5322 122 31647	1nF 10% X7R 63V
2354	4822 124 40207	100µF 20% 25V
2355	5322 122 32531	100pF 5% NP0 50V
2356	5322 122 32531	100pF 5% NP0 50V
2357	4822 126 11585	22nF +80-20% Y5V 25V
2358	4822 126 11585	22nF +80-20% Y5V 25V
2359	5322 122 34098	10nF 10% X7R 63V
2360	5322 122 31647	1nF 10% X7R 63V
2361	4822 126 12339	2,2nF 10% Y5R
2362	4822 124 40207	100µF 20% 25V
2363	5322 122 32448	10pF 5% NP0 63V
2364	5322 122 32448	10pF 5% NP0 63V
2365	4822 124 40433	47µF 20% 25V
2366	4822 124 40433	47µF 20% 25V

- CAPACITORS -

2367	4822 124 40433	47µF 20% 25V
2368	4822 124 21913	1µF 20% 63V
2371	4822 126 13838	100nF +80-20% Y5V 50V
2372	4822 126 11585	22nF +80-20% Y5V 25V
2500	4822 124 42234	100µF 20% 6,3V
2501	4822 124 12052	220µF 20% 6,3V
2502	4822 124 40433	47µF 20% 25V
2503	5322 122 32654	22nF 10% X7R 63V
2505	5322 122 32531	100pF 5% NP0 50V
2506	5322 122 32531	100pF 5% NP0 50V
2507	5322 122 32531	100pF 5% NP0 50V
2508	5322 122 32531	100pF 5% NP0 50V
2509	5322 122 32658	22pF 5% 50V
2510	5322 122 32658	22pF 5% 50V
2511	4822 126 14076	220nF +80-20% 25V
2512	4822 126 14076	220nF +80-20% 25V
2513	4822 126 13692	47pF 1% NP0 63V
2514	4822 126 13692	47pF 1% NP0 63V
2515	4822 122 33177	10nF 20% X7R 50V
2516	4822 122 33177	10nF 20% X7R 50V
2517	5322 122 31865	1,5nF 10% X7R 63V
2518	5322 122 31865	1,5nF 10% X7R 63V
2519	4822 122 33575	220pF 5% NP0 63V
2520	4822 122 33575	220pF 5% NP0 63V
2521	4822 122 32535	680pF 10% X7R 63V
2522	4822 122 32535	680pF 10% X7R 63V
2523	4822 122 32535	680pF 10% X7R 63V
2524	4822 122 32535	680pF 10% X7R 63V
2525	4822 126 13692	47pF 1% NP0 63V
2526	4822 126 13692	47pF 1% NP0 63V
2527	5322 122 34098	10nF 10% X7R 63V
2528	5322 122 34098	10nF 10% X7R 63V
2529	4822 126 14585	100nF 10% X7R 50V
2530	4822 126 14585	100nF 10% X7R 50V
2531	4822 126 14585	100nF 10% X7R 50V
2532	4822 126 14585	100nF 10% X7R 50V
2533	4822 126 13751	47nF 10% X7R 63V
2534	4822 126 13751	47nF 10% X7R 63V
2537	4822 126 14043	1µF +80-20% Y5V 16V
2538	4822 126 14043	1µF +80-20% Y5V 16V
2550	4822 126 11585	22nF +80-20% Y5V 25V
2551	4822 122 33127	2,2nF 10% X7R 63V
2552	4822 122 33127	2,2nF 10% X7R 63V
2553	4822 126 11585	22nF +80-20% Y5V 25V
2554	4822 124 40196	220µF 20% 16V
2555	4822 124 22652	2,2µF 20% 50V
2556	5322 126 10511	1nF 5% NP0 50V
2557	4822 126 13482	470nF 80/20% 16V
2558	4822 122 33575	220pF 5% NP0 63V
2559	4822 122 33575	220pF 5% NP0 63V

ELECTRICAL PARTSLIST - COMBI BOARD**- CAPACITORS -**

2560	4822 122 33575	220pF 5% NP0 63V
2561	4822 124 81151	22µF 20% 50V
2563	5322 124 41948	470nF 20% 50V
2564	5322 124 41948	470nF 20% 50V
2565	5322 122 32531	100pF 5% NP0 50V
2566	5322 122 32531	100pF 5% NP0 50V
2567	4822 124 22652	2,2µF 20% 50V
2568	4822 124 22652	2,2µF 20% 50V
2571	4822 124 40433	47µF 20% 25V
2593	4822 126 14325	1µF 80/20% 16V

- RESISTORS -

3252	4822 116 83872	220R 5% 0,5W
3253	4822 116 83872	220R 5% 0,5W
3254	4822 116 52256	2,2K 5% 0,5W
3255	4822 050 11002	1K 1% 0,4W
3256	4822 050 11002	1K 1% 0,4W
3257	4822 050 11002	1K 1% 0,4W
3258	4822 116 83884	47K 5% 0,5W
3259	4822 117 13577	330R 1% 0,1W
3260	4822 117 13579	220K 1% 0,1W
3261	4822 117 11149	82K 1% 0,1W
3262	4822 051 10102	1K 2% 0,25W
3263	4822 050 11002	1K 1% 0,4W
3266	4822 117 10834	47K 1% 0,1W
3267	4822 117 11449	2,2K 5% 0,1W
3268	4822 117 11449	2,2K 5% 0,1W
3269	4822 050 23303	33K 1% 0,6W
3271	4822 050 24708	4,7R 1% 0,6W
3272	4822 050 24708	4,7R 1% 0,6W
3273	4822 050 24708	4,7R 1% 0,6W
3274	4822 051 20391	390R 5% 0,1W
3275	4822 116 83883	470R 5% 0,5W
3276	4822 117 11449	2,2K 5% 0,1W
3277	4822 117 11449	2,2K 5% 0,1W
3278	4822 117 10834	47K 1% 0,1W
3279	4822 051 10102	1K 2% 0,25W
3280	4822 050 23303	33K 1% 0,6W
3281	4822 116 52283	4,7K 5% 0,5W
3282	4822 116 83884	47K 5% 0,5W
3283	4822 116 52256	2,2K 5% 0,5W
3284	4822 051 10102	1K 2% 0,25W
3285	4822 050 11002	1K 1% 0,4W
3286	4822 117 13577	330R 1% 0,1W
3287	4822 116 52243	1,5K 5% 0,5W
3288	4822 117 13579	220K 1% 0,1W
3289	4822 117 11148	56K 1% 0,1W

- RESISTORS -

3290	4822 051 10102	1K 2% 0,25W
3291	4822 116 52283	4,7K 5% 0,5W
3294	4822 051 20333	33K 5% 0,1W
3295	4822 051 20223	22K 5% 0,1W
3298	4822 117 10833	10K 1% 0,1W
3299	4822 051 20393	39K 5% 0,1W
3300	4822 116 83884	47K 5% 0,5W
3301	4822 051 20223	22K 5% 0,1W
3302	4822 116 52243	1,5K 5% 0,5W
3303	4822 052 10109	10R 5% 0,33W
3304	4822 051 20472	4,7K 5% 0,1W
3305	4822 051 20223	22K 5% 0,1W
3331	4822 117 10833	10K 1% 0,1W
3332	4822 050 21003	10K 1% 0,6W
3333	4822 117 10361	680R 1% 0,1W
3334	4822 117 10361	680R 1% 0,1W
3335	4822 051 20228	2,2R 5% 0,1W
3336	4822 051 20228	2,2R 5% 0,1W
3337	4822 051 20228	2,2R 5% 0,1W
3338	4822 051 20228	2,2R 5% 0,1W
3343	4822 117 10833	10K 1% 0,1W
3344	4822 117 10833	10K 1% 0,1W
3345	4822 117 10833	10K 1% 0,1W
3346	4822 117 10833	10K 1% 0,1W
3347	4822 116 52257	22K 5% 0,5W
3348	4822 051 20223	22K 5% 0,1W
3349	4822 051 20223	22K 5% 0,1W
3350	4822 117 10834	47K 1% 0,1W
3353	4822 051 20479	47R 5% 0,1W
3358	4822 051 20472	4,7K 5% 0,1W
3359	4822 117 11507	6,8K 1% 0,1W
3360	4822 117 10837	100K 1% 0,1W
3361	4822 051 20101	100R 5% 0,1W
3362	4822 051 20472	4,7K 5% 0,1W
3363	4822 052 10109	10R 5% 0,33W
3364	4822 051 20154	150K 5% 0,1W
3365	4822 117 11149	82K 1% 0,1W
3366	4822 116 83933	15K 1% 0,1W
3367	4822 117 11149	82K 1% 0,1W
3368	4822 051 20332	3,3K 5% 0,1W
3369	4822 051 20101	100R 5% 0,1W
3370	4822 117 10833	10K 1% 0,1W
3371	4822 116 83872	220R 5% 0,5W
3372	4822 051 10102	1K 2% 0,25W
3373	4822 051 10102	1K 2% 0,25W
3374	4822 117 11149	82K 1% 0,1W
3375	4822 116 83933	15K 1% 0,1W
3376	4822 117 11149	82K 1% 0,1W
3377	4822 051 20332	3,3K 5% 0,1W
3378	4822 051 20101	100R 5% 0,1W

ELECTRICAL PARTSLIST - COMBI BOARD**- RESISTORS -**

3379	4822 117 10833	10K 1% 0,1W
3380	4822 051 20154	150K 5% 0,1W
3381	4822 116 83883	470R 5% 0,5W
3382	4822 116 52249	1,8K 5% 0,5W
3383	4822 116 52249	1,8K 5% 0,5W
3384	4822 116 52249	1,8K 5% 0,5W
3386	4822 051 20101	100R 5% 0,1W
3387	4822 117 10837	100K 1% 0.1W
3388	4822 117 10837	100K 1% 0.1W
3389	4822 117 10837	100K 1% 0.1W
3500	4822 117 11454	820R 1% 0,1W
3501	4822 051 20471	470R 5% 0,1W
3502	4822 117 11449	2,2K 5% 0,1W
3503	4822 117 11503	220R 1% 0.1W
3505	4822 051 20333	33K 5% 0,1W
3506	4822 051 20333	33K 5% 0,1W
3507	4822 051 20159	15R 5% 0,1W
3508	4822 051 20159	15R 5% 0,1W
3509	4822 051 20333	33K 5% 0,1W
3510	4822 051 20333	33K 5% 0,1W
3511	4822 117 10837	100K 1% 0.1W
3512	4822 117 10837	100K 1% 0.1W
3513	4822 116 83933	15K 1% 0,1W
3514	4822 116 83933	15K 1% 0,1W
3515	4822 051 20333	33K 5% 0,1W
3516	4822 051 20333	33K 5% 0,1W
3517	4822 117 10837	100K 1% 0.1W
3518	4822 117 10837	100K 1% 0.1W
3519	4822 117 13579	220K 1% 0.1W
3520	4822 116 83874	220K 5% 0,5W
3521	4822 050 23303	33K 1% 0,6W
3522	4822 050 23303	33K 1% 0,6W
3523	4822 051 20333	33K 5% 0,1W
3524	4822 051 20333	33K 5% 0,1W
3525	4822 117 13579	220K 1% 0.1W
3526	4822 116 83874	220K 5% 0,5W
3527	4822 117 13579	220K 1% 0.1W
3528	4822 117 13579	220K 1% 0.1W
3529	4822 051 20273	27K 5% 0,1W
3530	4822 051 20273	27K 5% 0,1W
3531	4822 051 20273	27K 5% 0,1W
3532	4822 051 20273	27K 5% 0,1W
3533	4822 051 20333	33K 5% 0,1W
3534	4822 051 20333	33K 5% 0,1W
3535	4822 117 10837	100K 1% 0.1W
3536	4822 117 10837	100K 1% 0.1W
3537	4822 117 13579	220K 1% 0.1W
3538	4822 116 83874	220K 5% 0,5W
3539	4822 051 20223	22K 5% 0,1W
3540	4822 051 20223	22K 5% 0,1W

- RESISTORS -

3541	4822 051 20334	330K 5% 0,1W
3542	4822 116 52272	330K 5% 0,5W
3543	4822 117 11149	82K 1% 0,1W
3544	4822 117 11149	82K 1% 0,1W
3545	4822 116 83933	15K 1% 0,1W
3546	4822 116 83933	15K 1% 0,1W
3547	4822 117 10834	47K 1% 0,1W
3548	4822 116 83884	47K 5% 0,5W
3551	4822 051 20562	5,6K 5% 0,1W
3552	4822 051 20562	5,6K 5% 0,1W
3553	4822 117 11449	2,2K 5% 0,1W
3554	4822 117 11449	2,2K 5% 0,1W
3555	4822 117 10834	47K 1% 0,1W
3556	4822 117 10834	47K 1% 0,1W
3557	4822 117 11383	12K 1% 0,1W
3558	4822 117 11383	12K 1% 0,1W
3559	4822 117 11449	2,2K 5% 0,1W
3560	4822 117 11449	2,2K 5% 0,1W
3561	4822 117 11383	12K 1% 0,1W
3562	4822 116 52238	12K 5% 0,5W
3563	4822 116 52175	100R 5% 0,5W
3564	4822 117 10837	100K 1% 0.1W
3565	4822 117 10837	100K 1% 0.1W
3572	4822 117 10833	10K 1% 0,1W
3573	4822 051 10102	1K 2% 0,25W
3574	4822 117 10834	47K 1% 0,1W
3575	4822 116 83933	15K 1% 0,1W
3576	4822 116 83933	15K 1% 0,1W
3577	4822 051 20471	470R 5% 0,1W
3578	4822 051 20471	470R 5% 0,1W
3579	4822 051 20154	150K 5% 0,1W
3580	4822 051 20154	150K 5% 0,1W
3581	4822 117 12955	2,7K 1% 0,1W
3582	4822 117 12955	2,7K 1% 0,1W
3587	4822 051 20392	3,9K 5% 0,1W
3588	4822 051 20392	3,9K 5% 0,1W
3589	4822 116 83883	470R 5% 0,5W
3602	4822 051 20562	5,6K 5% 0,1W
3603	4822 051 20562	5,6K 5% 0,1W
3608	4822 051 20475	4,7M 5% 0,1W
3622	4822 117 11503	220R 1% 0.1W
4250	4822 051 20008	0R JUMPER (0805)
4251	4822 051 20008	0R JUMPER (0805)
4252	4822 051 20008	0R JUMPER (0805)
4253	4822 051 20008	0R JUMPER (0805)
4254	4822 051 20008	0R JUMPER (0805)
4255	4822 051 20008	0R JUMPER (0805)
4256	4822 051 20008	0R JUMPER (0805)
4257	4822 051 20008	0R JUMPER (0805)
4259	4822 051 20008	0R JUMPER (0805)

ELECTRICAL PARTSLIST - COMBI BOARD**- RESISTORS -**

4261	4822 051 20008	OR JUMPER (0805)
4262	4822 051 20008	OR JUMPER (0805)
4263	4822 051 20008	OR JUMPER (0805)
4264	4822 051 20008	OR JUMPER (0805)
4265	4822 051 20008	OR JUMPER (0805)
4268	4822 051 20008	OR JUMPER (0805)
4269	4822 051 20008	OR JUMPER (0805)
4348	4822 051 20008	OR JUMPER (0805)

- COILS & FILTERS -

5331	4822 157 62255	COIL 1 μ H
5332	4822 157 62255	COIL 1 μ H
5333	4822 157 62255	COIL 1 μ H
5334	4822 157 62255	COIL 1 μ H
5550	3198 018 14770	FXD IND 470nH 10%
5551	3198 018 14770	FXD IND 470nH 10%
5552	4822 157 53139	4,7 μ H 5%
5553	4822 157 11228	100 μ H 5%

- DIODES -

6250	4822 130 61219	BZX79-B10
6251	4822 130 31878	1N4003G
6252	4822 130 34174	BZX79-B4V7
6253	4822 130 34142	BZX79-B33
6256	4822 130 30621	1N4148
6258	4822 130 34382	BZX79-B8V2
6260	3198 010 53380	BZX79-B3V3
6261	4822 130 34173	BZX79-B5V6
6262	3198 010 53380	BZX79-B3V3
6263	4822 130 34174	BZX79-B4V7
6333	4822 130 30621	1N4148
6334	4822 130 10871	SBYV27-200
6335	4822 130 30621	1N4148
6336	4822 130 31981	BZX79-B3V9
6337	4822 130 31024	BZX79-B18
6338	4822 130 31878	1N4003G
6339	4822 130 31878	1N4003G
6340	4822 130 31878	1N4003G
6341	4822 130 31878	1N4003G
6342	4822 130 30621	1N4148
6345	4822 130 83757	MCL4148
6346	4822 130 83757	MCL4148
6500	4822 130 30621	1N4148
6601	4822 130 31878	1N4003G

- IC & TRANSISTORS -

7250	9322 139 24687	BDW94CFP
7251	4822 130 60511	BC847B
7252	4822 130 60511	BC847B
7254	5322 130 44593	BC369
7255	4822 130 60511	BC847B
7256	4822 130 41246	BC327-25
7257	4822 130 41246	BC327-25
7258	4822 130 41246	BC327-25
7259	4822 130 60511	BC847B
7260	5322 130 60845	BC807-25
7261	4822 130 60511	BC847B
7262	4822 130 41646	BF423
7263	4822 130 41246	BC327-25
7264	4822 130 60511	BC847B
7265	4822 130 60511	BC847B
7266	4822 130 60511	BC847B
7267	4822 130 41246	BC327-25
7268	4822 130 60373	BC856B
7330	4822 209 16224	AN7125
7331	4822 130 60373	BC856B
7332	4822 130 60373	BC856B
7333	4822 130 60511	BC847B
7334	4822 209 31378	NJM4556MB
7335	4822 130 40981	BC337-25
7336	4822 130 40981	BC337-25
7337	4822 130 10847	BDW94C
7338	4822 130 40959	BC547B
7339	4822 130 44568	BC557B
7340	4822 130 60511	BC847B
7500	4822 209 10264	HEF4069UBP
7501	4822 130 44568	BC557B
7502	4822 130 44568	BC557B
7503	4822 130 44568	BC557B
7504	4822 130 44568	BC557B
7505	4822 130 60511	BC847B
7506	4822 130 60511	BC847B
7507	4822 130 60511	BC847B
7508	4822 130 60511	BC847B
7509	4822 130 60511	BC847B
7510	4822 130 60511	BC847B
7511	4822 130 60511	BC847B
7512	4822 130 60511	BC847B
7513	4822 130 60511	BC847B
7514	4822 130 60511	BC847B
7551	4822 209 10263	HEF4052BP
7552	5322 209 10421	HEF4094BP
7553	4822 130 41246	BC327-25
7555	4822 130 60511	BC847B
7556	4822 130 60511	BC847B

ELECTRICAL PARTSLIST - MAINS BOARD & MISCELLANEOUS**- MISCELLANEOUS -**

1020	4822 361 11151	FAN
1601	△ 4822 071 55002	FUSE 5A
1602	△ 4822 071 53152	FUSE 3.15A
1600	△ 4822 272 10269	SWITCH - VOLTAGE
	4822 492 71733	CLAMP
5601	△ 3140 118 32900	TRANSFORMER VDE 230V
5601	△ 3140 118 32910	TRANSFORMER 120/230V
5601	△ 3140 118 32920	TRANSFORMER UL 120V

- CAPACITORS -

2600	5322 121 42386	100nF 5% 63V
2601	5322 121 42386	100nF 5% 63V
2602	5322 121 42386	100nF 5% 63V
2603	5322 121 42386	100nF 5% 63V
2604	4822 124 80563	4700µF 20% 35V
2605	4822 124 12012	4700µF 20% 25V

- COILS & FILTERS -

5600	4822 157 11832	FILTER 400UH 3A
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- DIODES -

6600	4822 130 82078	D5SBA20
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Note: Only these parts mentioned in the list are normal service parts.