

Service
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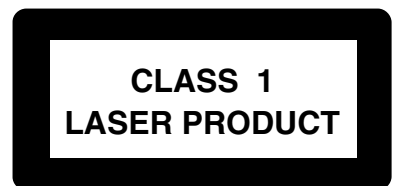


Service Manual



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3139 785 30063

Version 1.0



PHILIPS

SPECIFICATIONS**GENERAL:**

Mains voltage : 110-127V/220-240V Switchable for /21/21M
 120V for /37
 220V for /33
 220-230V for /22/34
 230-240V for /30

Mains frequency : 50/60Hz

Power consumption : < 0.5W at ECO Power Standby
 : <15W at Standby (DEMO mode off)
 : 80W at Active

Clock accuracy : < 4 seconds per day

Dimension centre unit : 175 x 244 x 366mm

TUNER:**FM**

Tuning range : 87.5-108MHz

Grid : 50kHz
 100kHz for /37

IF frequency : 10.7MHz \pm 25kHz

Aerial input : 75 Ω coaxial
 300 Ω click fit for /37

Sensitivity at 26dB S/N : < 7 μ V

Selectivity at 600kHz bandwidth : > 25dB

Image rejection : > 25dB

Distortion at RF=1mV, dev. 75kHz : < 3%

-3dB Limiting point : < 8 μ V

Crosstalk at RF=1mV, dev. 40kHz : > 18dB

MW

Tuning range : 531-1602kHz
 530-1700kHz for /21/21M/37

Grid : 9kHz
 10kHz for /21/21M/37

IF frequency : 450kHz \pm 1kHz

Aerial input : Frame aerial

Sensitivity at 26dB S/N : < 4.0mV/M

Selectivity at 18kHz bandwidth : > 18dB

IF rejection : > 45dB

Image rejection : > 28dB

Distortion at RF=50mV, m=80% : < 5%

LW

Tuning range : 153-279kHz /22

Grid : 3kHz

IF frequency : 450kHz \pm 1kHz

Aerial input : Frame aerial

Sensitivity at 26dB S/N : [< 6.0mV/M]

Selectivity at 18kHz bandwidth : [> 24dB]

IF rejection : [> 45dB]

Image rejection : [> 30dB]

Distortion at RF=50mV, m=80% : [< 5%]

AMPLIFIER:

Output power (6 Ω , 1kHz, 10% THD)

L & R : 2 x 50W RMS /21M/22

Output power (6 Ω , 60Hz-12.5kHz, 10% THD)

L & R : 2 x 40W FTC /37

Frequency response within -3dB : 50Hz-16kHz

Incredible Surround : ON/OFF

Treble : 12.5kHz \pm 3 Steps

Bass : 55Hz \pm 3 Steps

Woox : Level 1, 2, 3 & OFF

Input sensitivity

Aux in (at 1kHz) : 500mV \pm 3dB at 600 Ω

CDR in (at 1kHz) : 1V \pm 3dB at 600 Ω

Output sensitivity

Line out (Left/Right) : 500mV \pm 2dB at 22k Ω

Subwoofer out (50Hz - 8kHz) : 1.5V \pm 3dB at 22k Ω

Headphone output at 32 Ω : 680mV \pm 1dB (Vol. Max.)

COMPACT DISC:

Measurement done directly at the connector on the board.

Output resistance : < 100 Ω

Output voltage (in Vrms) : 550mV \pm 1dB (unloaded)

Frequency deviation : < 1%

Channel unbalance : < \pm 1dB

Frequency response : < \pm 1.5dB for 20Hz-20kHz

Signal to Noise Ratio (A-weighted) : > 80dBA

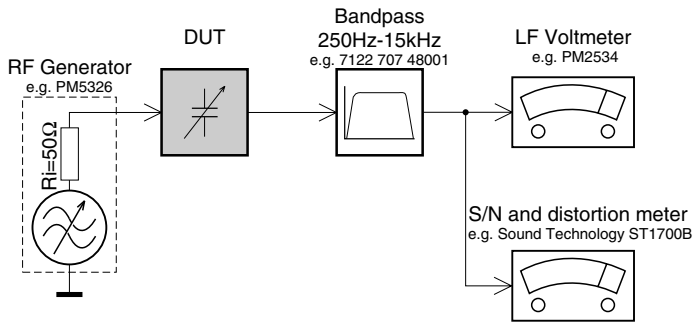
Distortion at 1kHz : < 0.02%

Crosstalk (1kHz) : > 60dB

[...] Values indicated are for "ECO6 Cenelec Board" only.

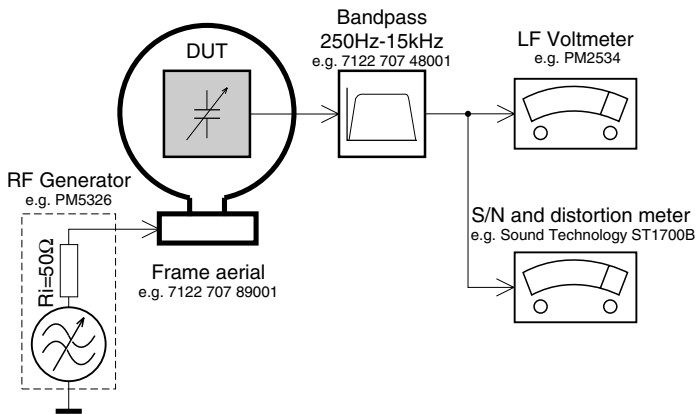
MEASUREMENT SETUP

Tuner FM



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

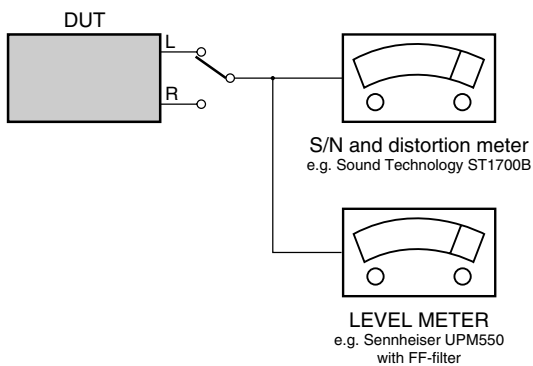
Tuner AM (MW,LW)



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

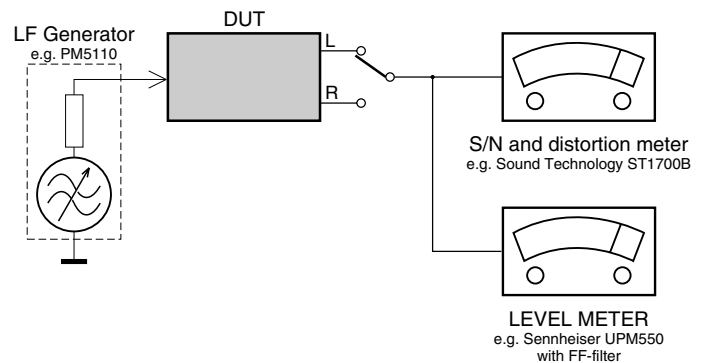
CD

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



Recorder

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



SERVICE AIDS

Service Tools:

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

Cassette:

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

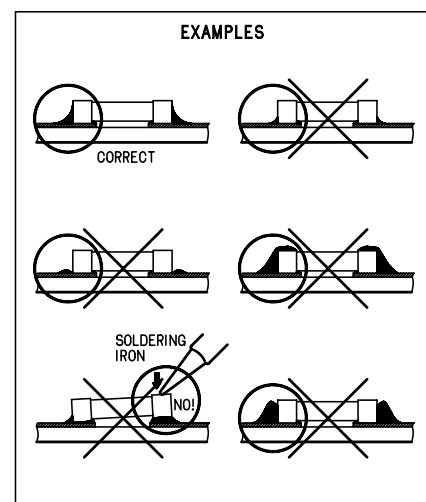
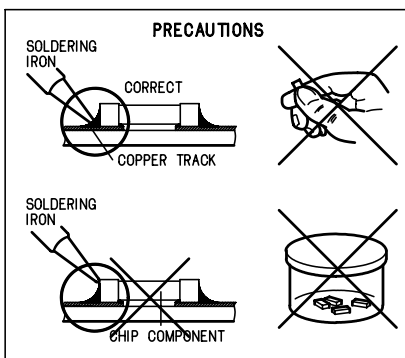
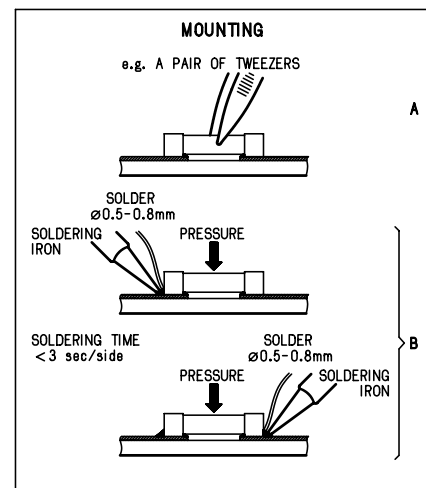
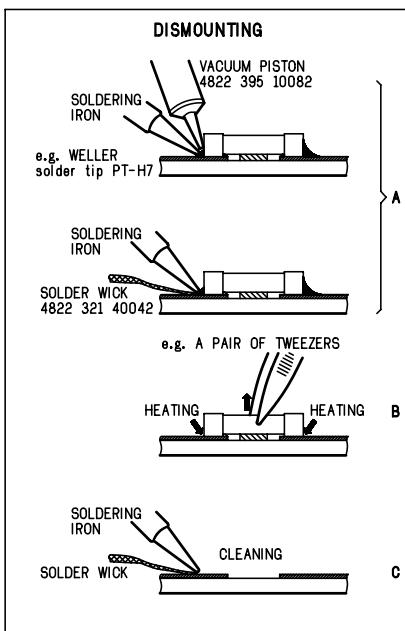
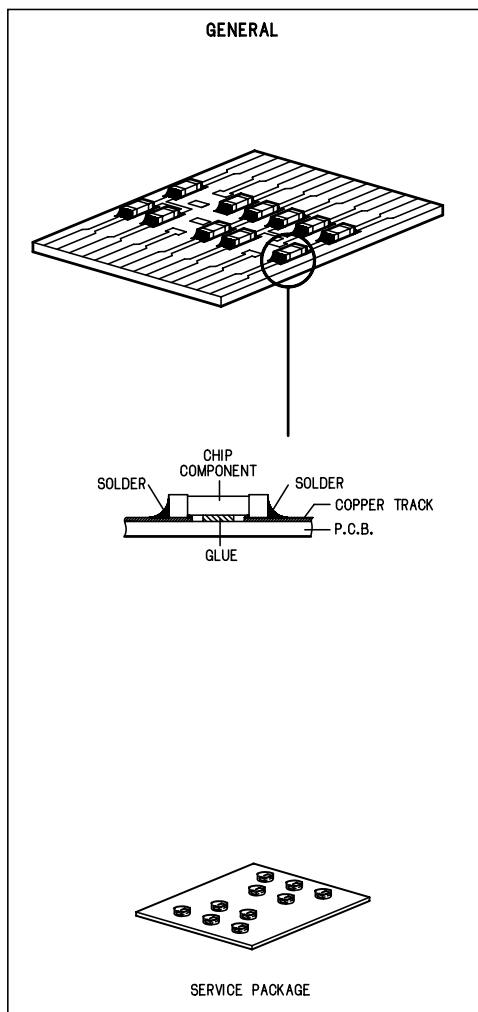
Compact Disc:

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

ESD Equipment:

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

HANDLING CHIP COMPONENTS



(GB) WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.

When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

ESD**(NL) WAARSCHUWING**

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

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

Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(F) ATTENTION

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

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

Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.

Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

(D) WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).

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 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 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.

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

(NL)

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

(F)

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

(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.

(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.

**(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 alltiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

(DK) Advarse !

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

"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."

DISMANTLING INSTRUCTIONS

Opening of the Universal Loader Tray manually & Dismantling of the Cover Tray

- 1) Loosen 4 screws and remove the Cover Top (pos 255) by sliding it out towards the rear before lifting up.
 - 2 screws on the rear
 - 1 screw each on the left & right side
- 2) Loosen 2 screws each to remove the Panel Left (pos 253) and Panel Right (pos 254). The Panels are removed by sliding it towards the rear and outwards.
 - 1 screw on the side
 - 1 screw on the rear

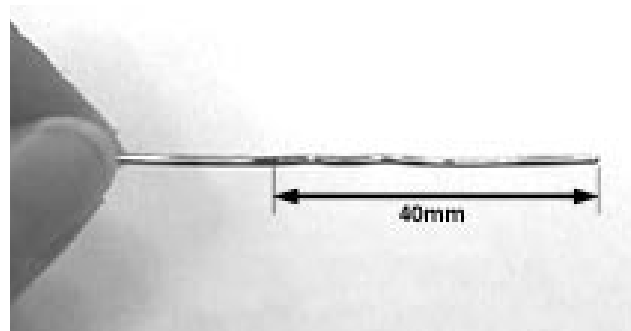


Figure 1

- 3) Take a paper clip or any stiff wire diameter of 1mm-1.5mm and make a marking about 40mm from the tip as shown in Figure 1.
- 4) Place the set in the position as shown in Figure 2 and insert the paper clip or stiff wire into the hole on the Left side of the Cabinet Front (pos 101).

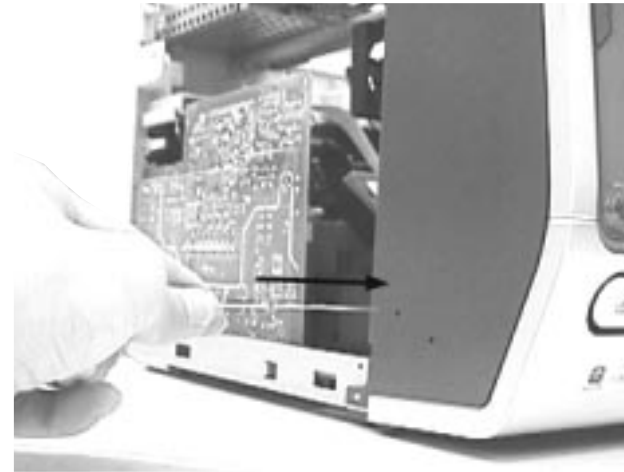


Figure 2

- 5) With the marking just outside the hole on the Cabinet Front (pos 101) as shown in Figure 3, you have to feel and give a push to unlock the tray of the Universal Loader before sliding it out.



Figure 3

- 6) With the tray of the Universal Loader opened, remove the Cover Tray (pos 158) as shown in Figure 4.



Figure 4

Detaching the Front Panel assembly from the Bottom/Rear assembly

- 1) Remove 2 screws A (pos 226) as shown in Figure 5 from the bottom of the Cabinet Front (pos 101).
- 2) Release the fixation of the Combi Board (pos 1101-1001) to Bracket Combi (pos 252) by releasing the 2 catches C2 (see Figure 6) and pulling the board outwards as shown in Figure 7.
- 3) Uncatch 2 catches C1 (see Figure 6) on the left & right sides of the Cabinet Front (pos 101) and slides the Front Panel assembly out towards the front.
- 4) Remove 2 screws B (pos 225) as shown in Figure 8 to remove the Universal Loader (pos 1109).

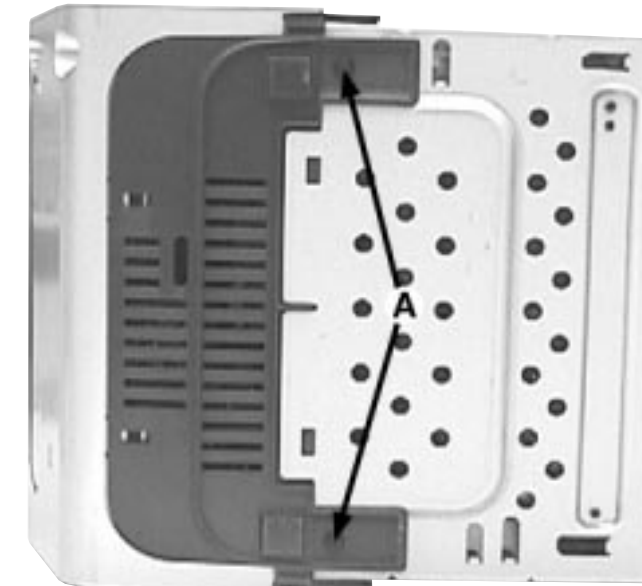


Figure 5

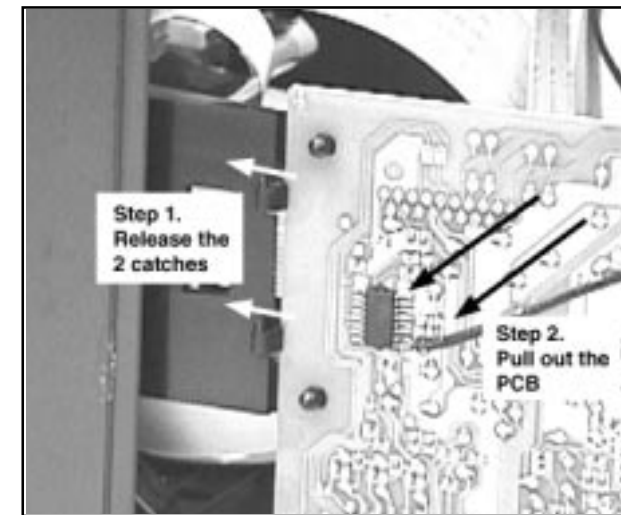


Figure 7

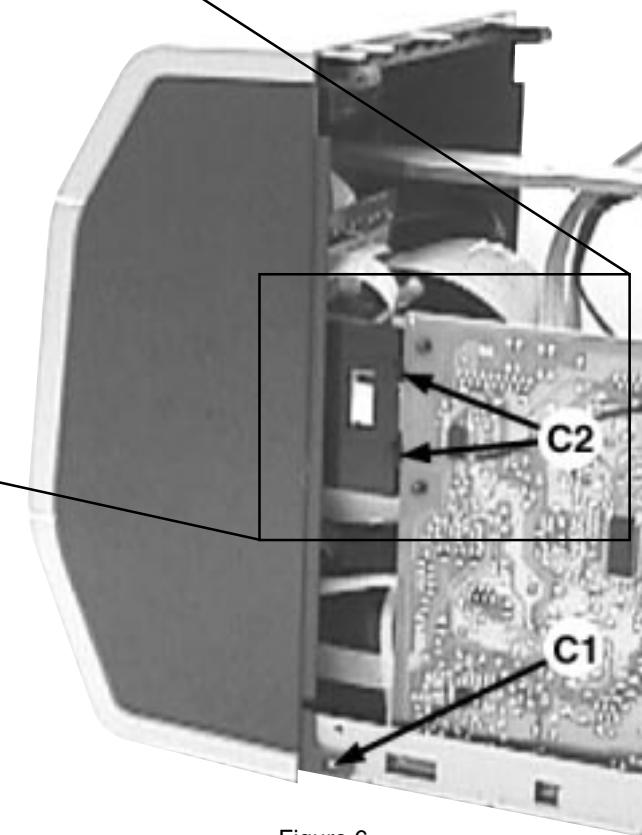


Figure 6

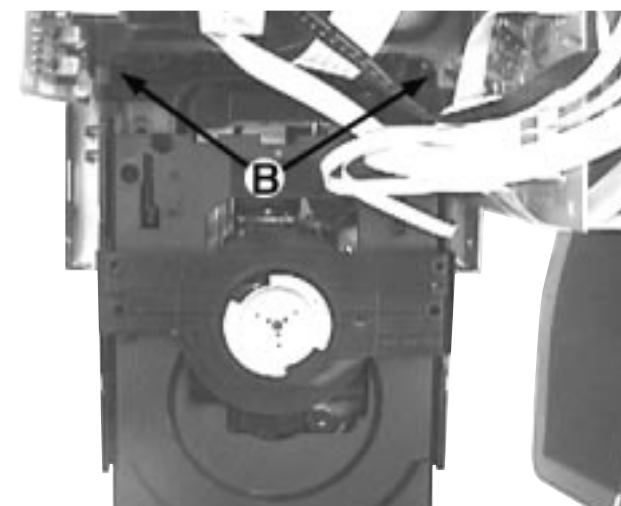


Figure 8

Dismantling of the Front Panel assembly

- 1) Loosen 3 screws D (see Figure 9) to remove the Control Board (pos 1107-B).
- 2) Loosen 2 screws E (see Figure 9) to remove the ECO Standby Board (pos 1107-D).
- 3) Loosen 4 screws F (see Figure 9) to remove the Volume Board (pos 1107-H).
- 4) Loosen 2 screws G (see Figure 9) to remove the Bracket Combi (pos 252).
- 5) Loosen 2 screws H (see Figure 10) to remove the Headphone Board (pos 1107-F).
- 6) Loosen 6 screws J (see Figure 11) to remove the Display Board (pos 1107-A).
- 7) Loosen 4 screws K (see Figure 12) to remove the Shuttle Board (pos 1107-G).
- 8) Loosen 2 screws L (see Figure 12) to remove the LCD Interconnect Board (pos 1107-J).

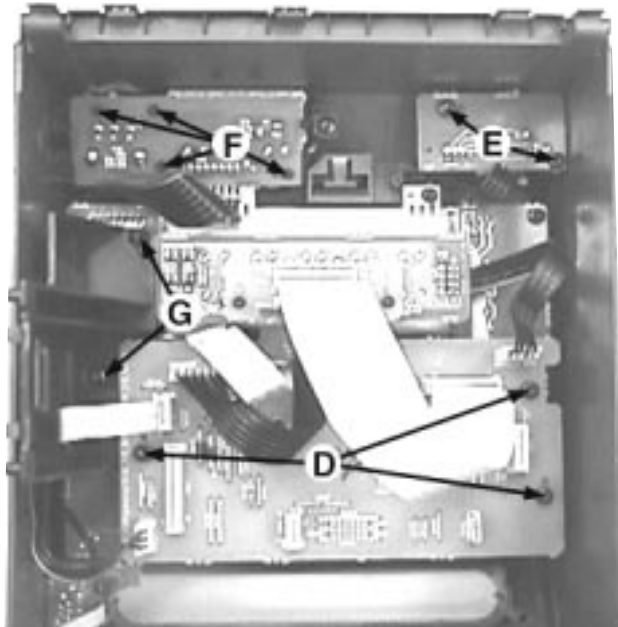


Figure 9

- 9) Loosen 1 screws V (see Figure 12) to remove the Infra Receiver Board (pos 1107-E).
- 10) Loosen 2 screws M (see Figure 13) to remove the LCD Back Light Board (pos 1107-C).

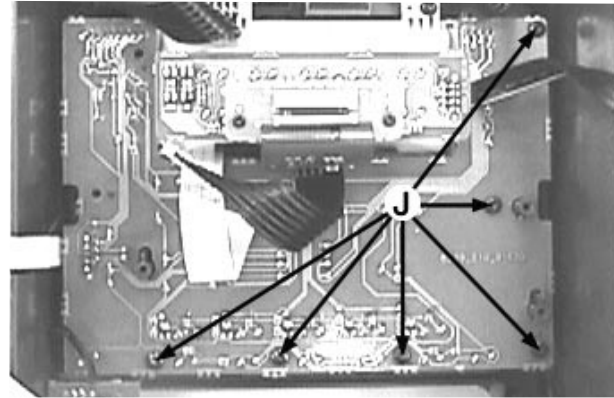


Figure 11

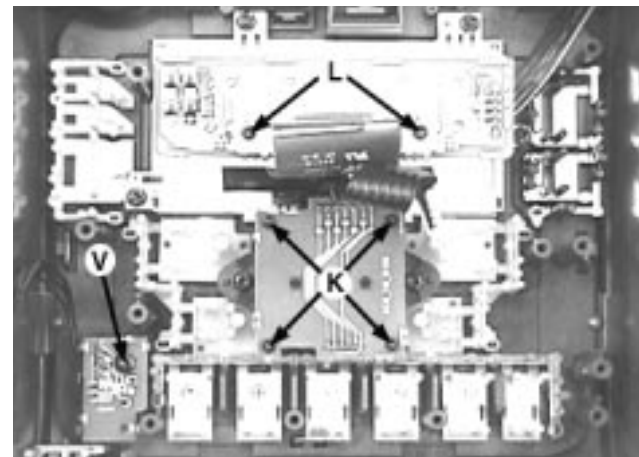


Figure 12

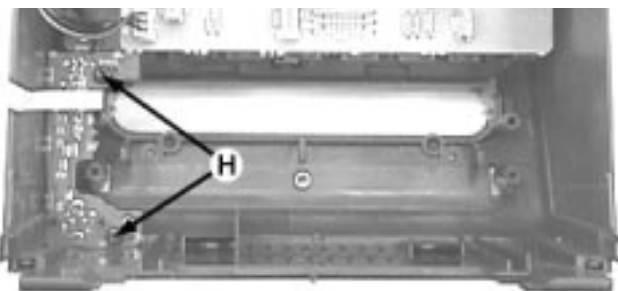


Figure 10

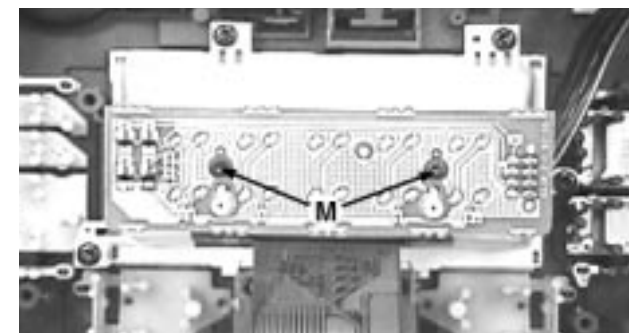


Figure 13

Dismantling of the Rear Panel

- 1) Loosen 2 screws N (see Figure 14) and 2 screws P (see Figure 15) to remove the Internet Audio Module and the Bar (pos 261).
- 2) Loosen 3 screws Q and 2 catches C3 (see Figure 15) to remove the Tuner Board assembly.
- 3) Loosen 1 screw S (see Figure 15) to free the Mains Socket Board from the Panel Rear (pos 256).
- 4) Loosen 5 screws R and 2 catches C4 (see Figure 15) to remove the Panel Rear (pos 256) by sliding it out towards the rear.

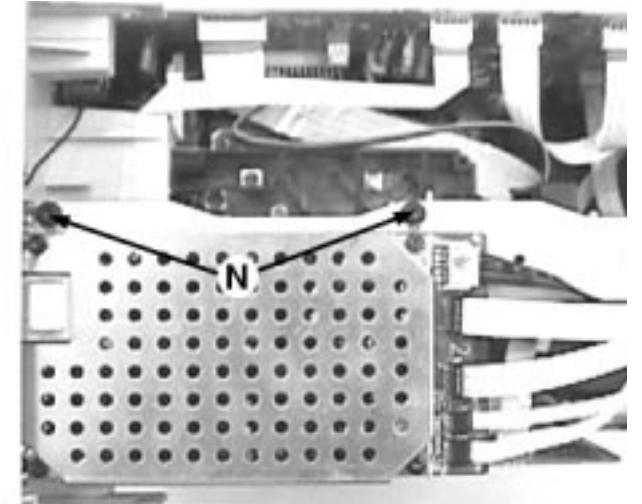


Figure 14

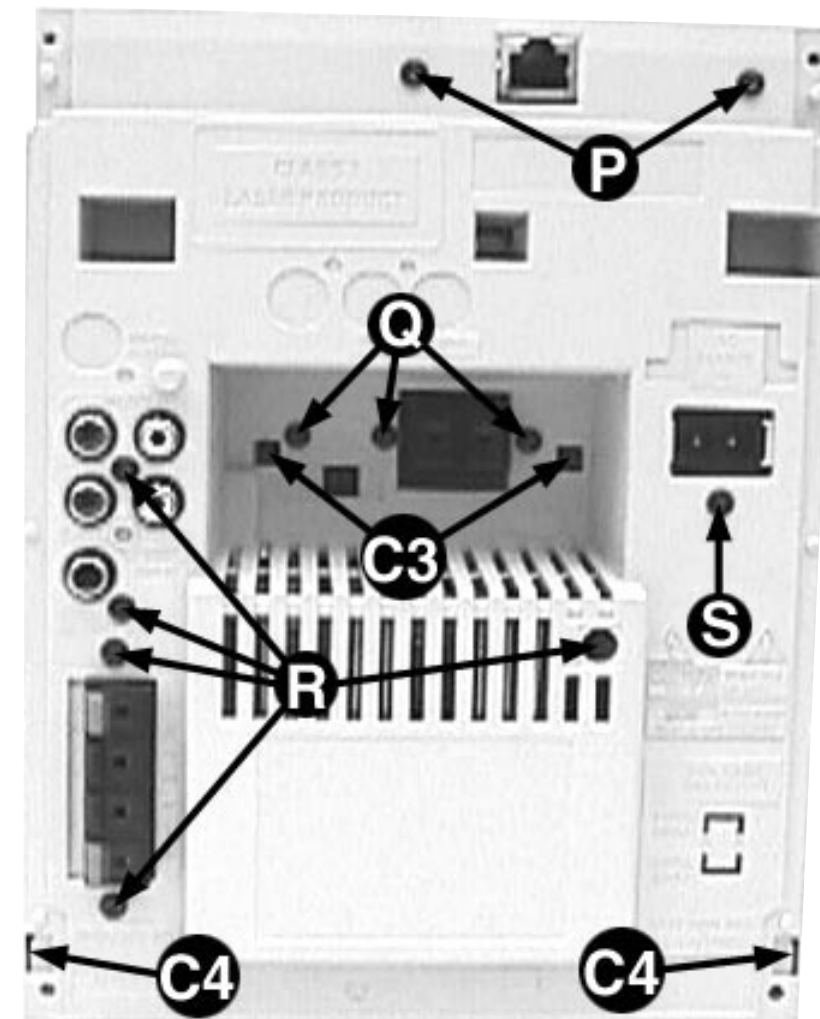


Figure 15

Dismantling of the Bottom assembly

- 1) Loosen 2 screws T as shown in Figure 16 to remove the Combi & Regulator boards assembly (pos 1101-1001 & pos 1101-1003).
 - 2) Loosen 2 screws U as shown in Figure 17 to remove the Housing Fan Top (pos 267).
- Note : During Fan replacement care should be taken to ensure that the following are correct:*
- fan blade direction
 - fan wire position

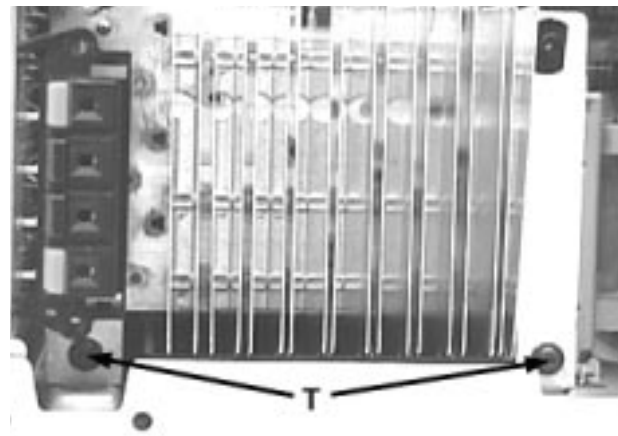


Figure 16

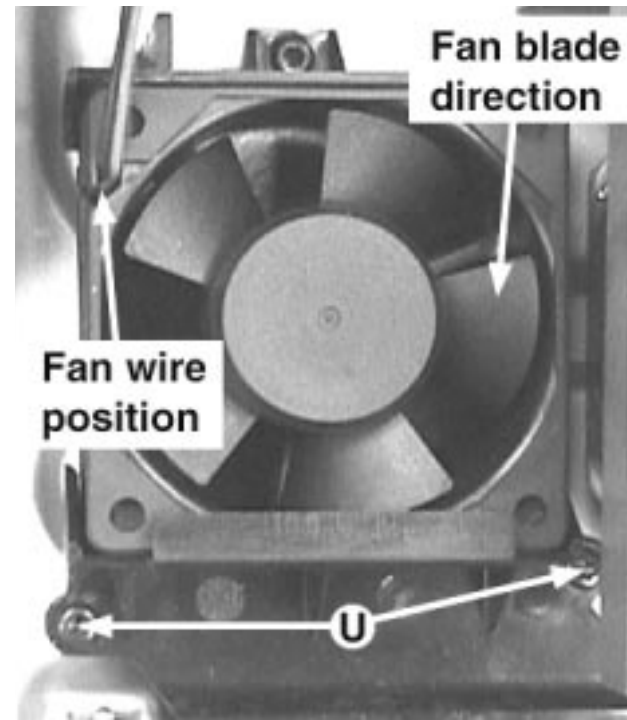


Figure 17

Service Positions & Repair Hints

- 1) During repair it is possible to disconnect the ECO6 Tuner Board completely unless the fault is suspected to be in that area. This will not affect the performance of the rest of the set.
- 2) Care should be taken not to damage or tear the LCD Module Cable during repair (see Figure 18 & Figure 19). The LCD Module Cable may be damage or tear as shown in Figure 20 if too much force is applied when removing the Black Tape during repair.

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

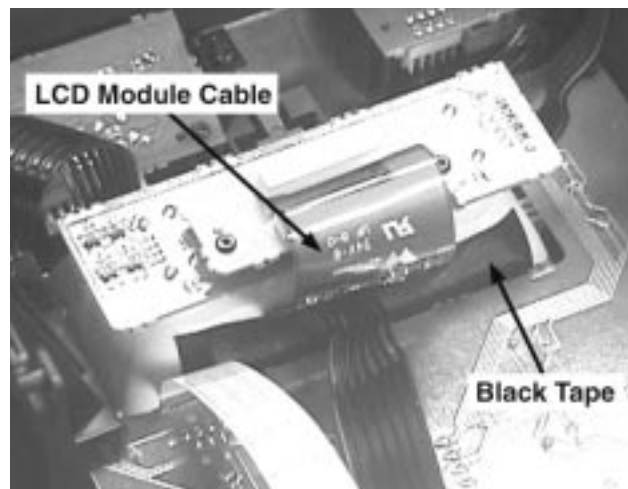


Figure 18

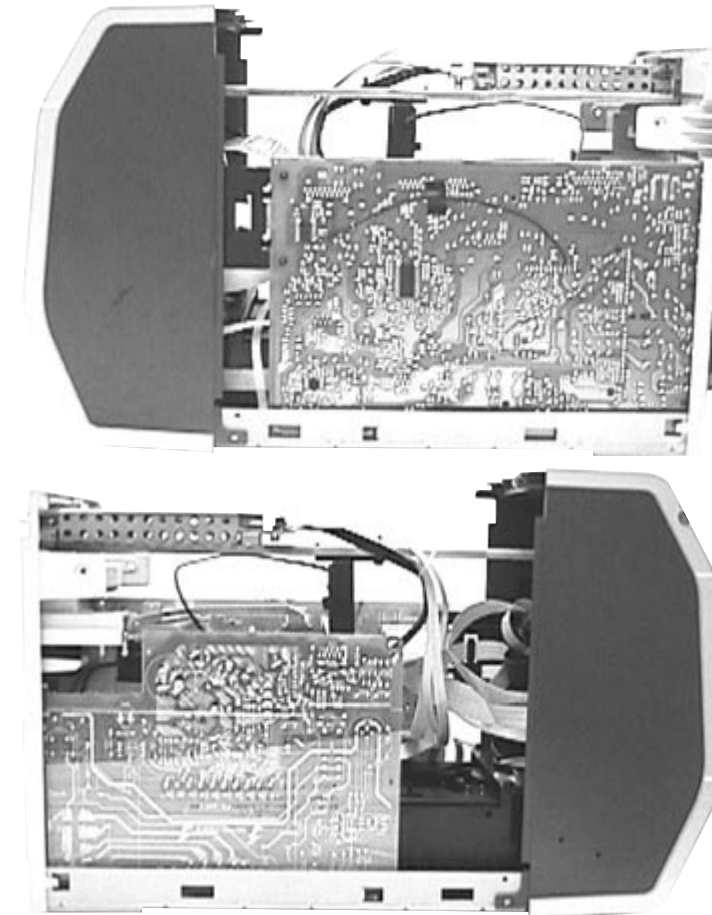


Figure 19

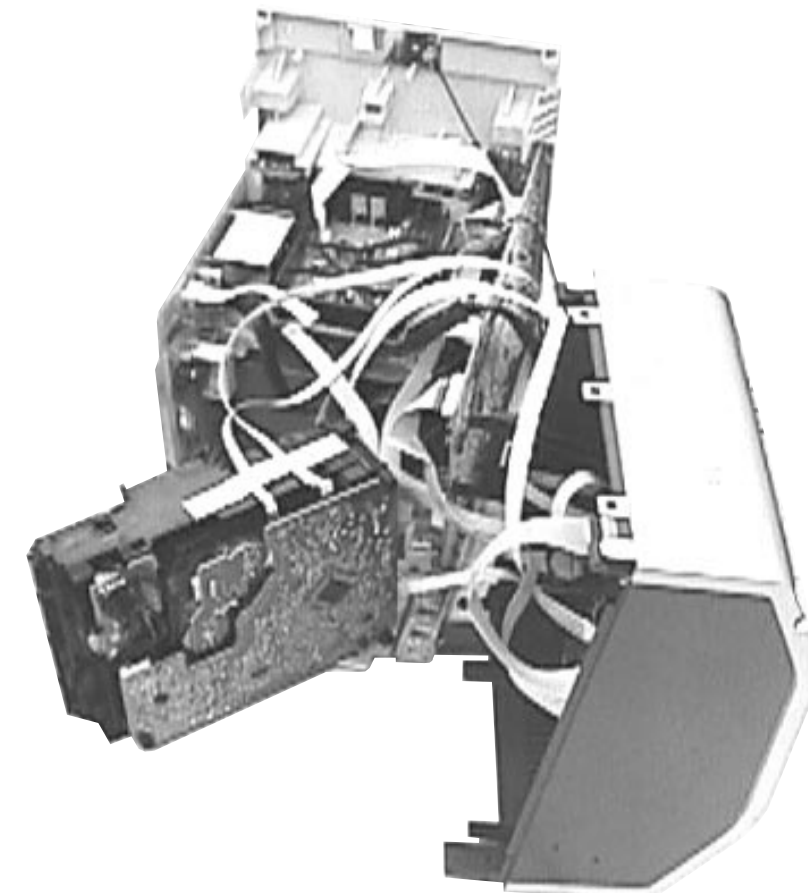


Figure 20

Service position A

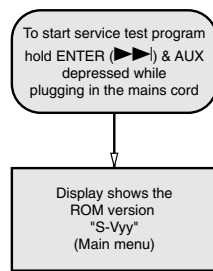


Service position B



SERVICE TEST PROGRAM

S refers to Service Mode
 V refers to Version
 yy refers to Software version number of the uProcessor (counting up from 01 to 99)



Module Internet Audio - Software Upgrading

Press CONNECT followed by OPTIONS buttons, then press the Right-Hand Soft Key (◀) on the system to select the "SET OPTIONS".
 Use the navigation Jog Shuttle to select "SOFTWARE UPGRADE" from the list and press OK (▶) to confirm and follow the instruction given on the display.

Module Internet Audio - Clear Email Address and Presets memory

By holding the CONNECT and ENTER (▶▶) buttons depressed while switching on the Mains supply (without the need to be in either Service or Factory mode), all Email address and presets stored in the memory will be cleared.

The display will show "CONNECT" for a few seconds. When the stored information in the memory has been cleared, the display will show "FACTORY RESET". Subsequently, the software is upgraded (if necessary) when the set is first connected to the internet.

Alternatively, press CONNECT followed by OPTIONS buttons, then press the Right-Hand Soft Key (◀) on the system to select the "SET OPTIONS".
 Use the navigation Jog Shuttle to select "RESTORE DEFAULTS" from the list and press OK (▶) to confirm and follow the instruction given on the display.

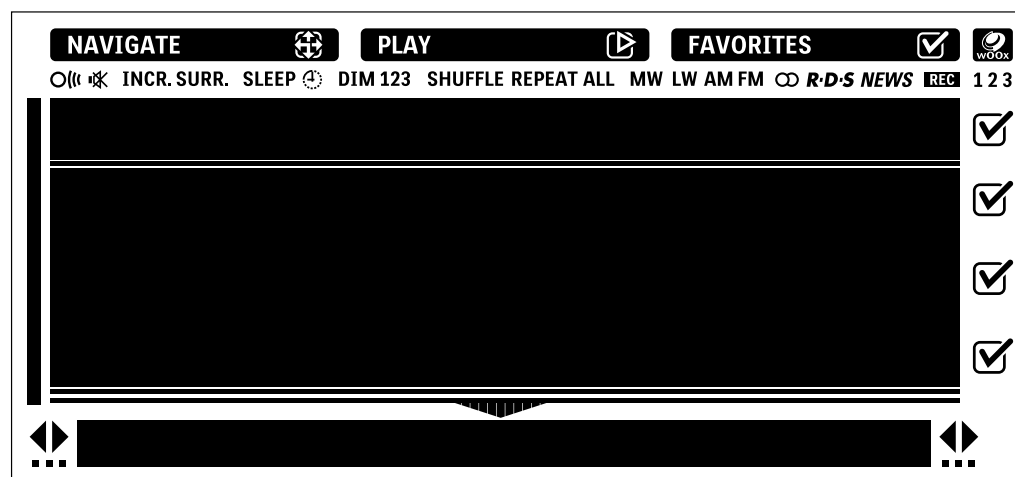
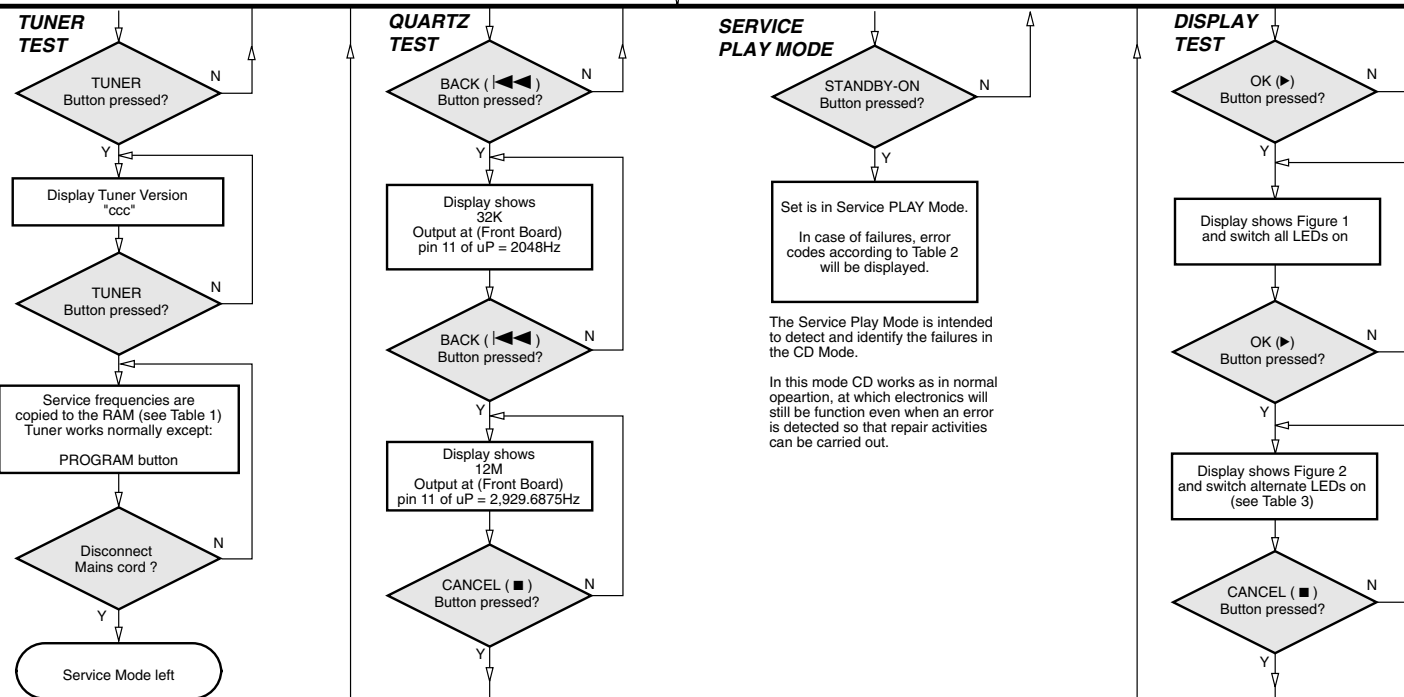


Figure 1

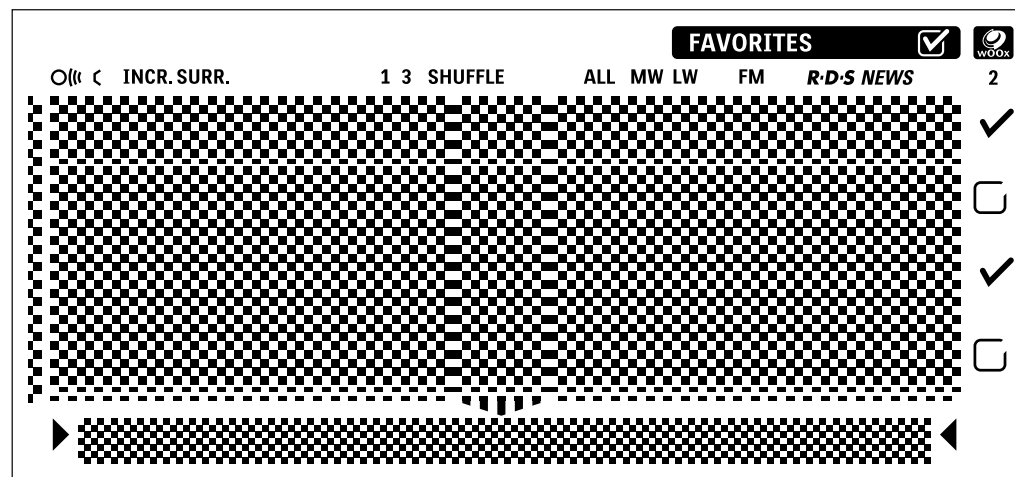


Figure 2

PRESET	Europe "EUR"	USA "USA"	Oversea "OSE"
1	87.5MHz	87.5MHz	87.5MHz
2	108MHz	108MHz	108MHz
3	531kHz	530kHz	531/530kHz*
4	1602kHz	1700kHz	1602/1700kHz*
5	558kHz	560kHz	558/560kHz*
6	1494kHz	1500kHz	1494/1500kHz*
7	153kHz	98MHz	87.5/98MHz*
8	279kHz	87.5MHz	87.5MHz
9	198kHz	87.5MHz	87.5MHz
10	98MHz	87.5MHz	87.5MHz
11	87.5MHz	87.5MHz	98/87.5MHz*

Table 1

* Depending on the selected grid frequency (9 or 10kHz).

Note: By holding the TUNER and ENTER (▶▶) buttons depressed while switching on the Mains supply, the tuning grid frequency is toggled between 9kHz and 10kHz for the Oversea (/21) version.

Service Play Mode Error Codes

Error code	Error Description
E1000	Focus Error Triggered when the focus cannot be found within a certain time when starting up the CD, or if the focus is lost for more than a certain time during playing of CD.
E1001	Radial Error Triggered when the radial servo is off-track for a certain time during playing the CD.
E1002	Sledge In Error The sledge did not reach its inner position (inner-switch is close) before approximately 6 sec. have passed by - Inner-switch or sledge motor problem.
E1003	Sledge Out Error The sledge did not come out of its inner position (inner-switch is open) before approximately 250ms have passed by - Inner-switch or sledge motor problem.
E1005	Jump Error Triggered in normal play when the jump destination could not be found within a certain time.
E1006	Subcode Error Triggered when a new subcode was missing for a certain time during playing CD.
E1007	PLL Error The Phase-Lock-Loop could not lock within a certain time.
E1008	Turntable Motor Error Generated when the CD could not reached 75% of speed during startup within a certain time. Disc motor problem.
E1020	Focus Search Error The focus point has not been found within a certain time.
E1030	EBU Connection Error Generated when IM module could not receive any data from EBU interface within a certain time.
E1079	The drawer could not enter the inside position and is opening again. This can happen if the drawer is blocked such that it cannot go fully inside, or if the drawer switch is defective and does not close.

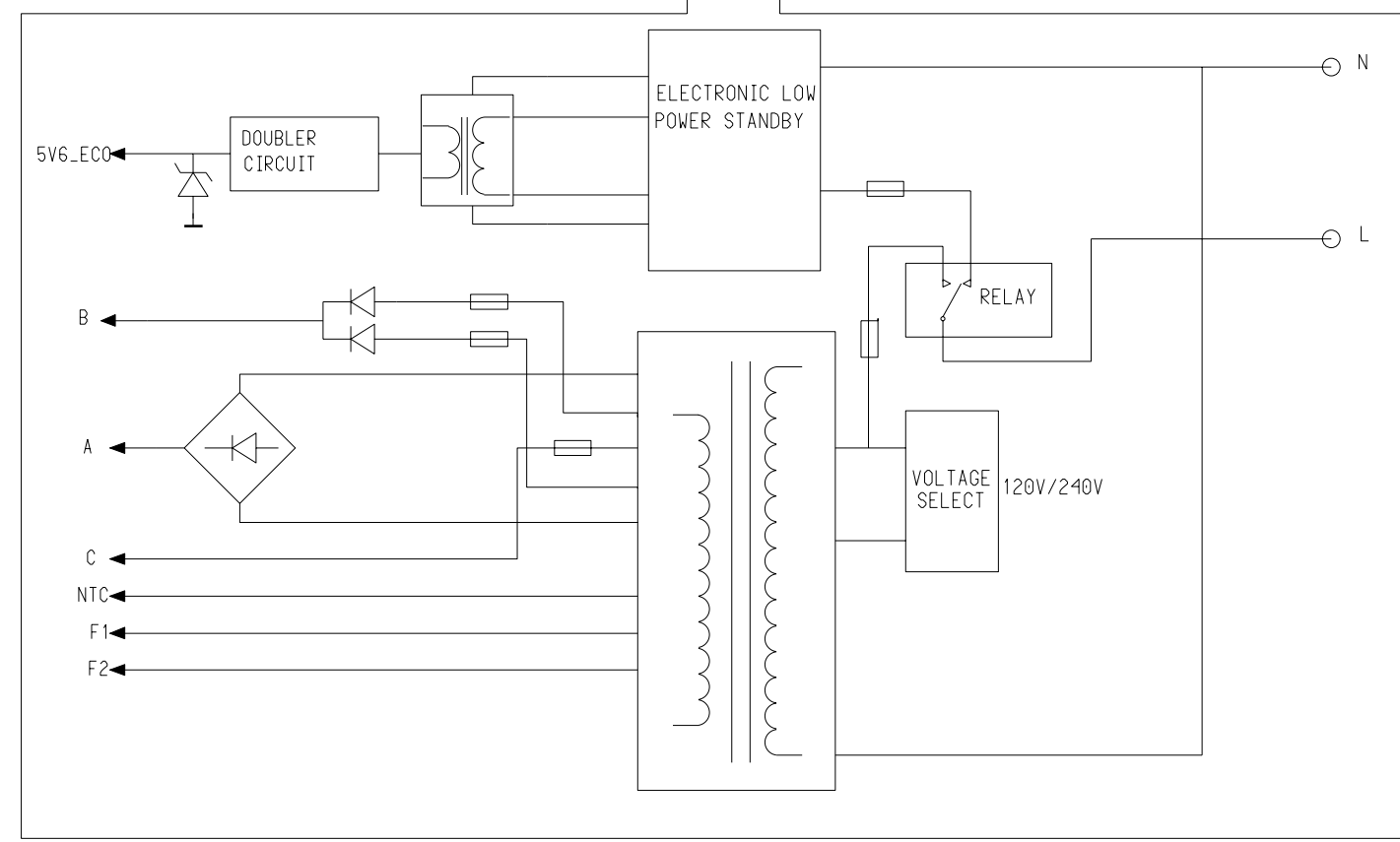
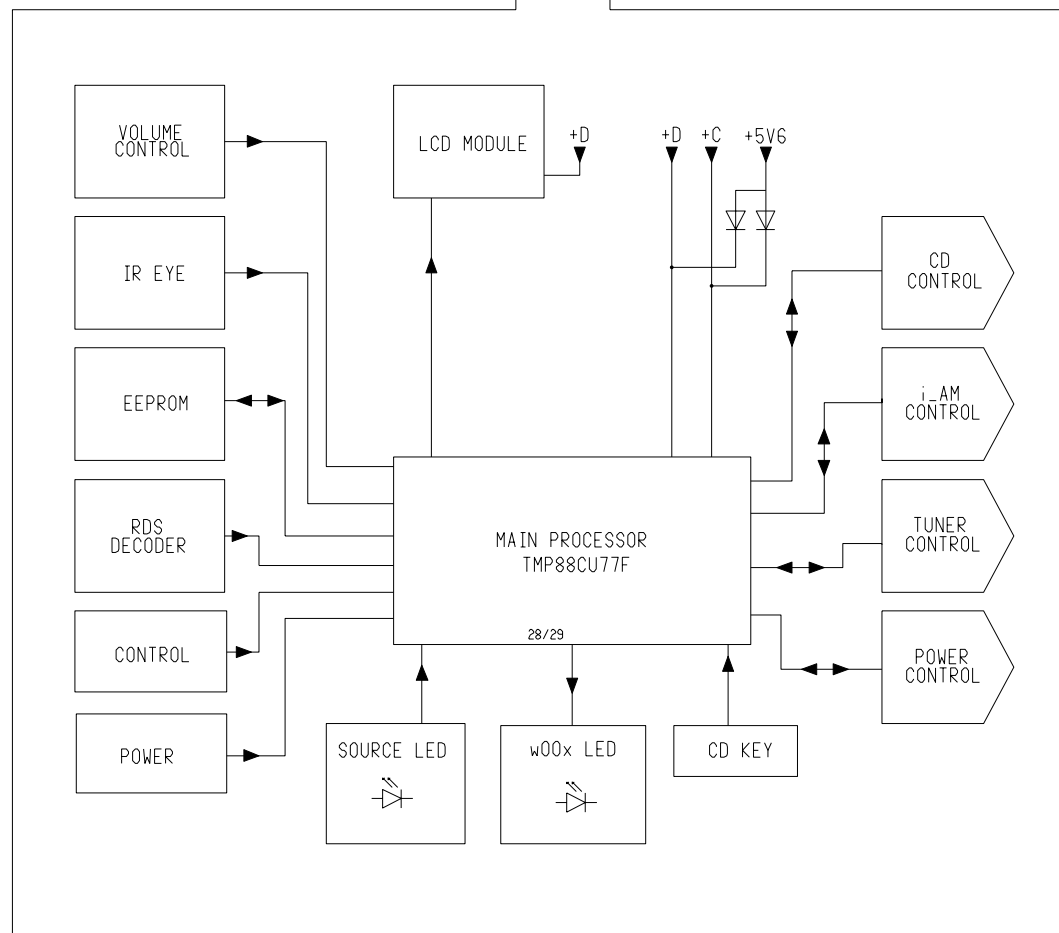
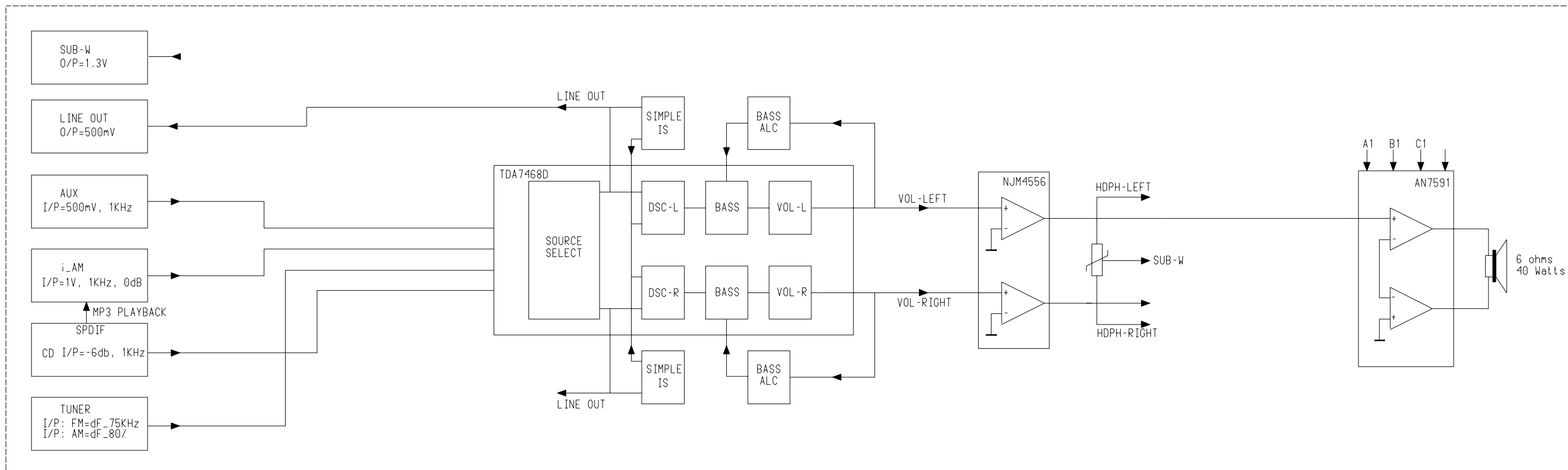
Table 2

LEDs	MC-i200
ECO POWER	On
PC LINK	On
TUNER	On
wOOx	On
LCD Back Light 2	On

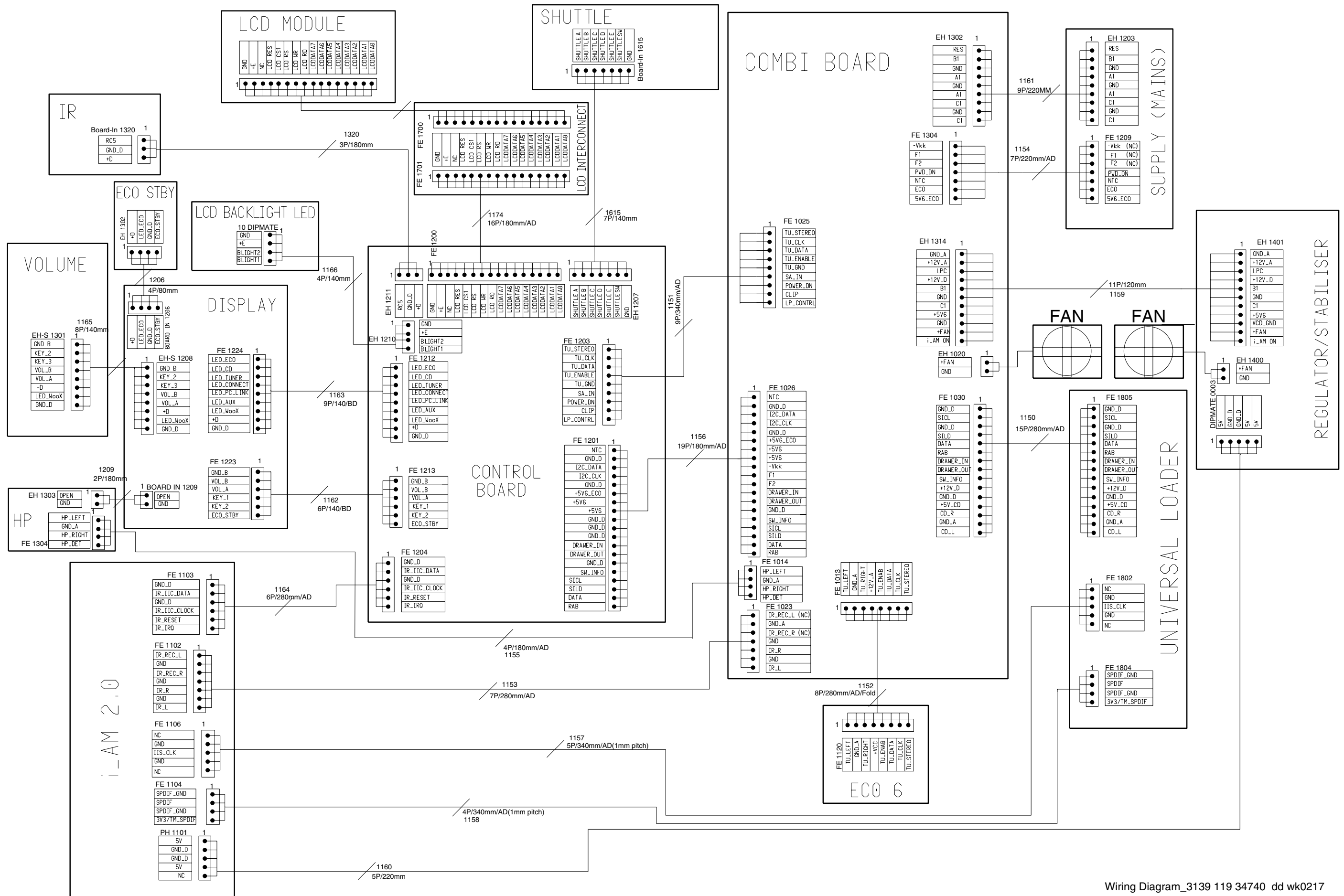
Table 3

TEST	Activated with	ACTION
EEPROM TEST	ENTER (▶▶) CANCEL (■) to Exit	A test pattern will be sent to the EEPROM. "PASS" is displayed if the uProcessor read back the test pattern correctly, otherwise "FAIL" will be displayed.
EEPROM FORMAT TEST	OPTIONS	Load default data. Display shows "NEW" for 1 second. Caution! All presets from the customer will be lost!!
ROTARY ENCODER TEST	Rotary Volume Knob Jog Shuttle	Display shows value for 2 seconds. Values increases or decreases until Min. (-87dB) or Max. (0dB) is reached. Display shows "LEVEL -1" or "LEVEL +1" when the Jog Shuttle turn in anti-clockwise or clockwise for the first step. Display shows "LEVEL -2" or "LEVEL +2" when the Jog Shuttle turn in anti-clockwise or clockwise for the second step.
DEMO TOGGLE	TREBLE	Pressing this button will toggle between DEMO ON and DEMO OFF. The DEMO status will be displayed.
LEAVE SERVICE TEST PROGRAM	Disconnect mains cord	

SET BLOCK DIAGRAM



SET WIRING DIAGRAM



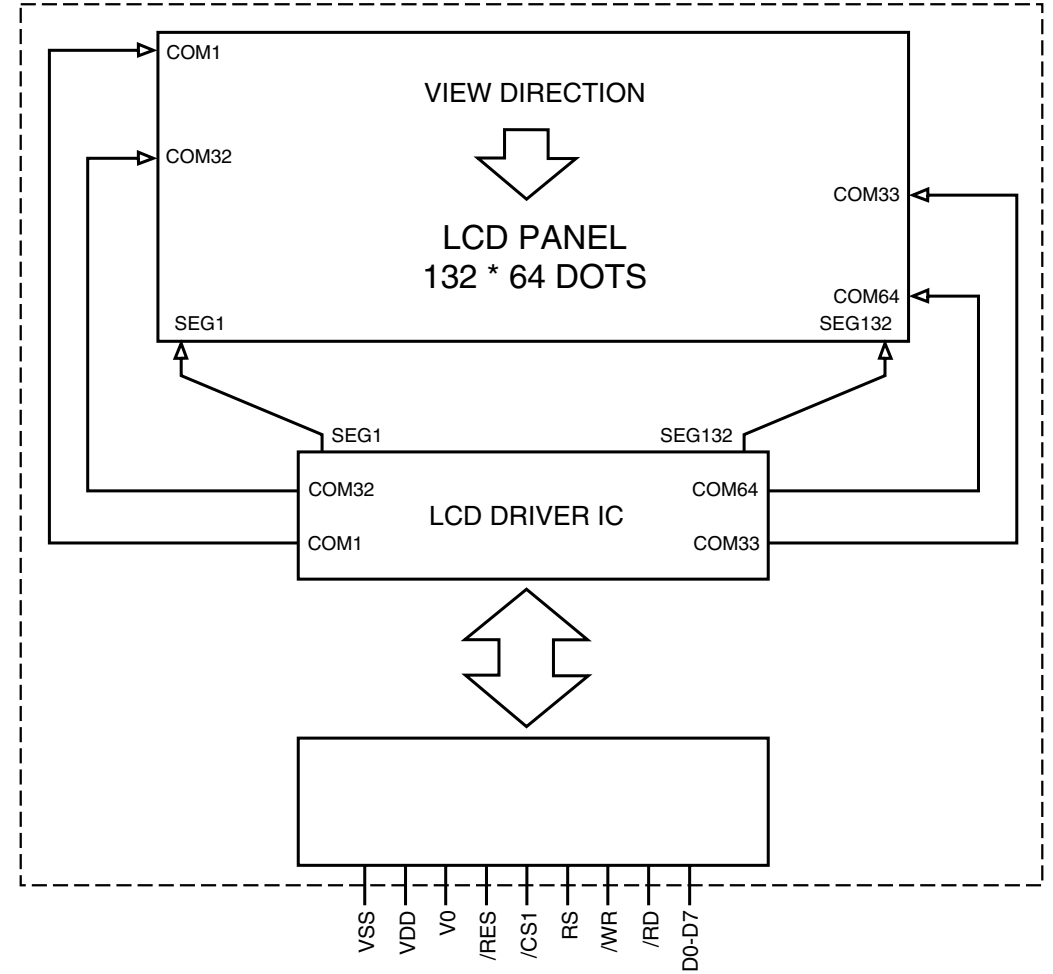
FRONT BOARD

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LCD MODULE (WD-G1306K-7BNN)

BLOCK DIAGRAM



INTERFACE PIN FUNCTION

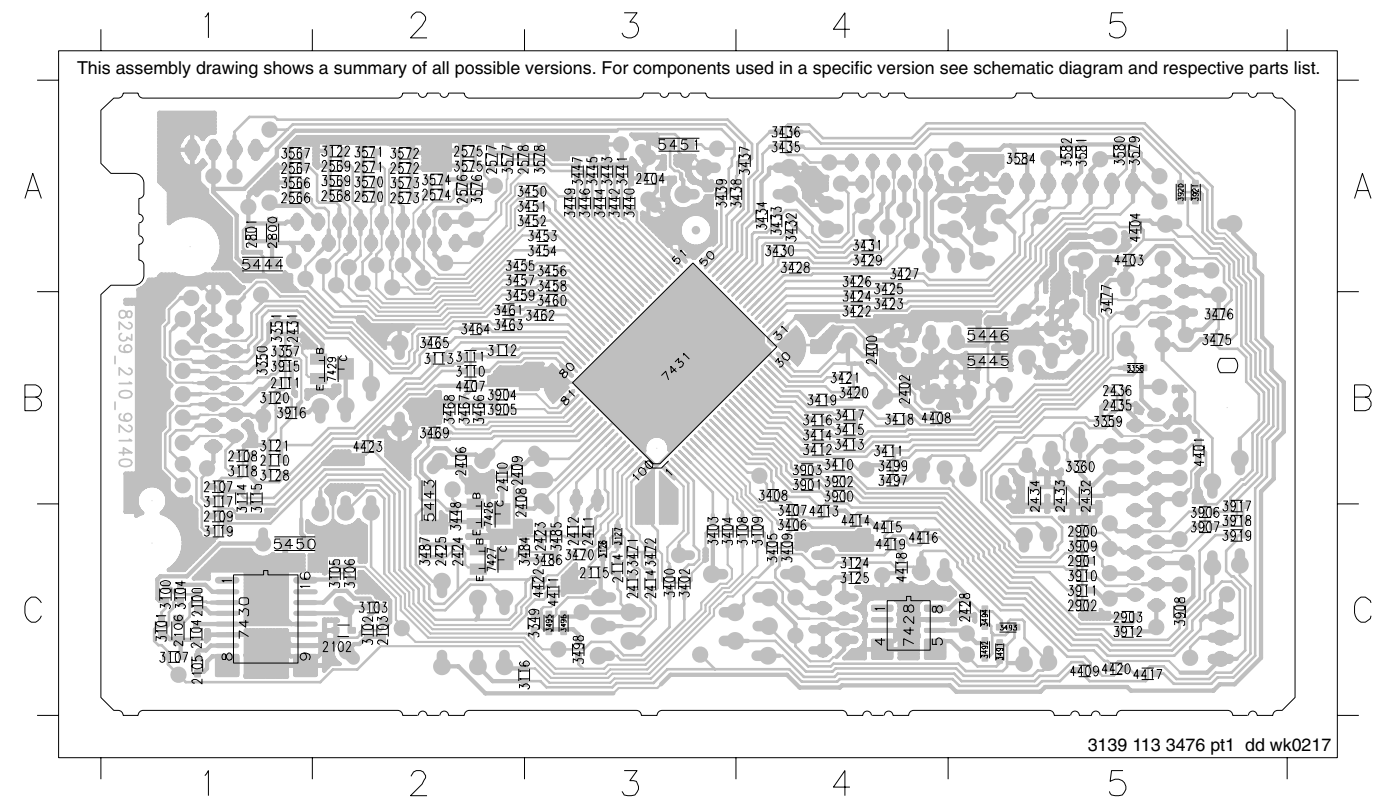
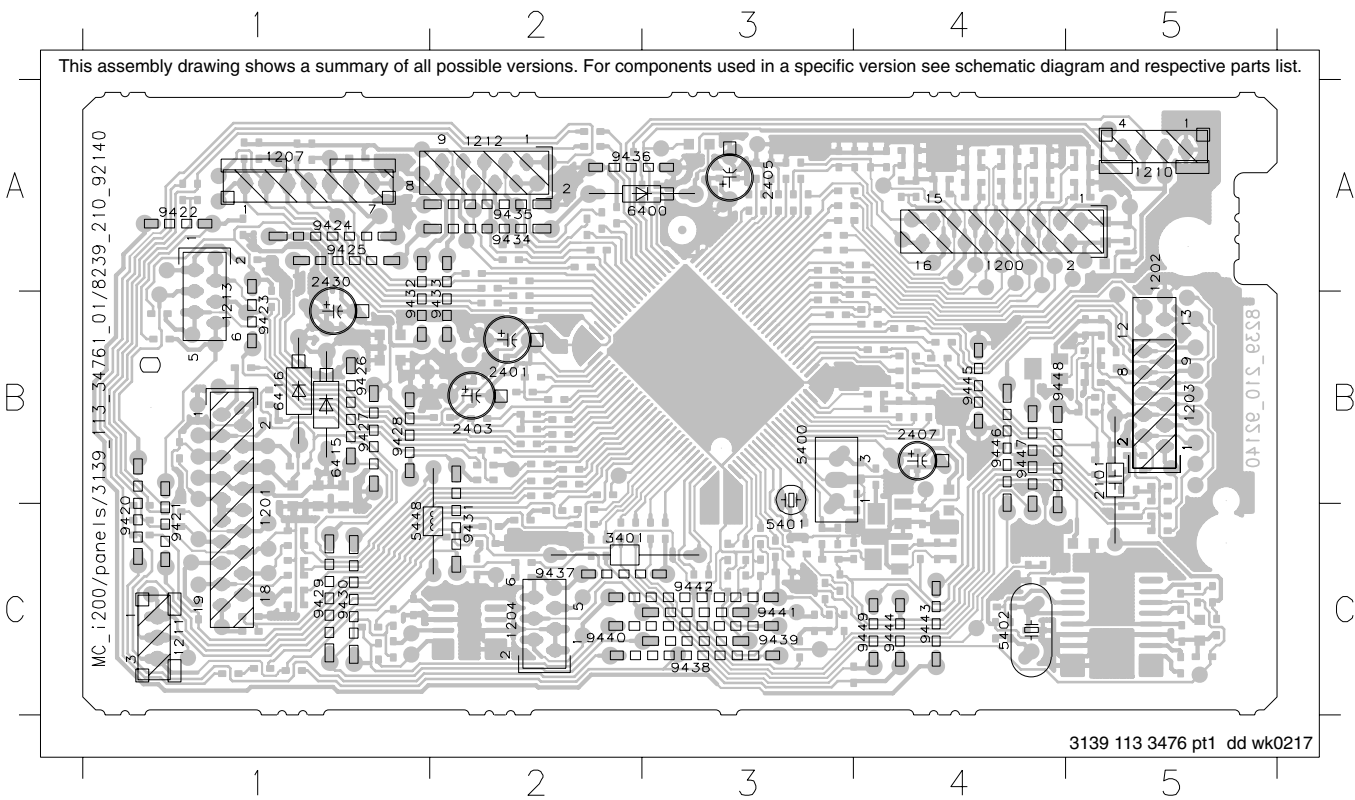
NO	SYMBOL	LEVEL	FUNCTION
1.	VSS	-	GND
2.	VDD	-	Power for Logic Circuit
3.	V0	-	V _{LCD} Output
4.	/RES	-	Reset
5.	/CS1	H/L	Chip Select
6.	RS	H/L	Instruction & Data Register Select H : D0 to D7 Display Data L : D0 to D7 are Display Control Data
7.	/WR	H/L	L : Writes Data to Internal Register
8.	/RD	H/L	L : Read Data from Register
9.	D7	H/L	Data Bus
10.	D6	H/L	Data Bus
11.	D5	H/L	Data Bus
12.	D4	H/L	Data Bus
13.	D3	H/L	Data Bus
14.	D2	H/L	Data Bus
15.	D1	H/L	Data Bus
16.	D0	H/L	Data Bus

CONTROL BOARD - COMPONENT LAYOUT

CONTROL BOARD - CHIP LAYOUT

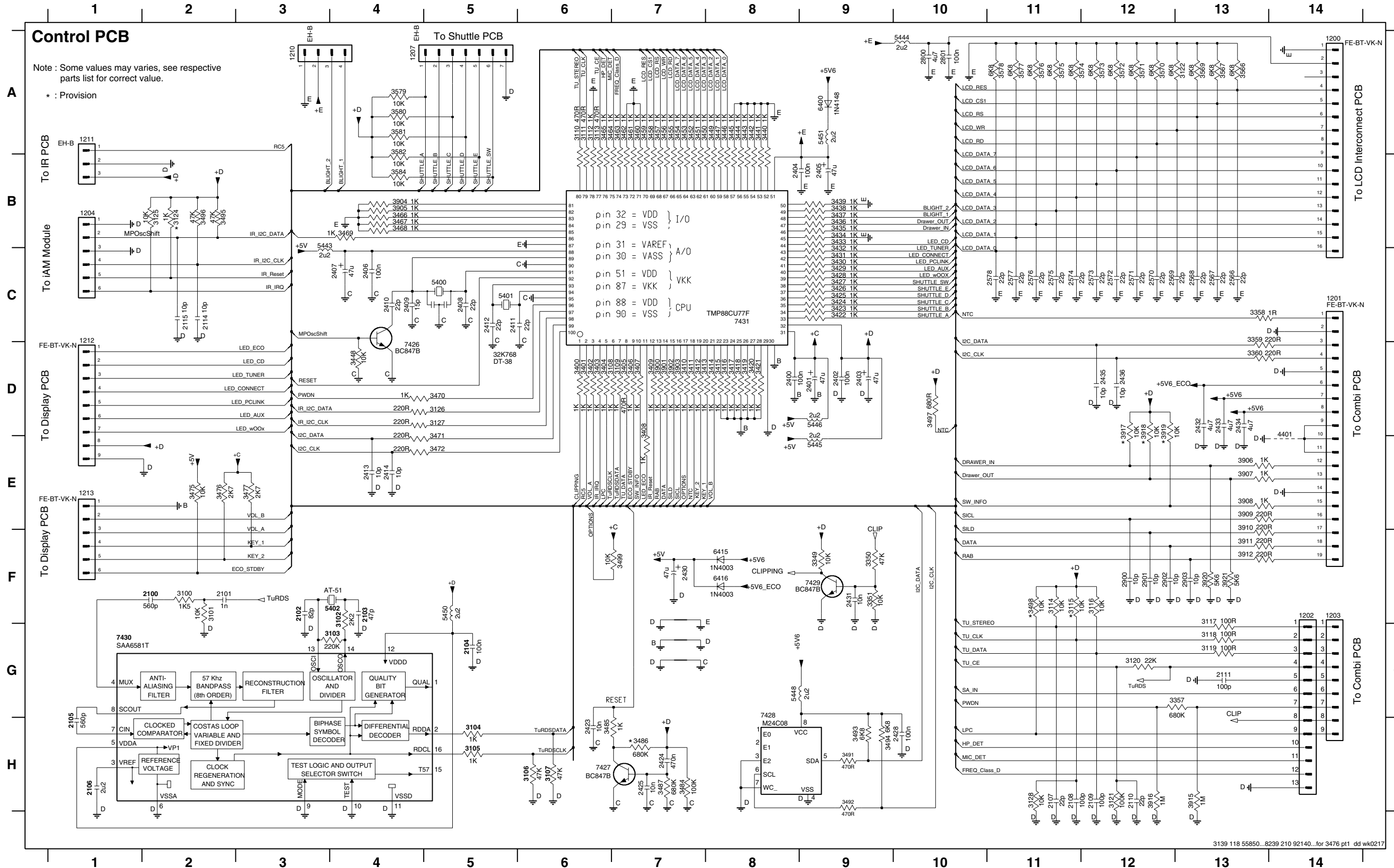
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1201 C1	1210 A5	2401 B2	3401 C2	6400 A3	9422 A1	9427 B1	9432 B1	9437 C2	9442 C3	9447 B4
1202 A5	1211 C1	2403 B2	5400 B3	6415 B1	9423 B1	9428 B1	9433 B2	9438 C3	9443 C4	9448 B4
1203 B5	1212 A2	2405 A3	5401 C3	6416 B1	9424 A1	9429 C1	9434 A2	9439 C3	9444 C4	9449 C4
1204 C2	1213 B1	2407 B4	5402 C4	9420 C1	9425 A1	9430 C1	9435 A2	9440 C2	9445 B4	

2100 C1	2412 C3	2574 A2	3110 B2	3357 B1	3418 B4	3439 A3	3460 B3	3492 C5	3580 A5	3919 C5	5444 A1
2102 C2	2413 C3	2575 A2	3111 B2	3358 B5	3419 B4	3440 A3	3461 B2	3493 C5	3581 A5	3920 A5	5445 B5
2103 C2	2414 C3	2576 A2	3112 B2	3359 B5	3420 B4	3441 A3	3462 B2	3494 C5	3582 A5	3921 A5	5446 B5
2104 C1	2423 C3	2577 A2	3113 B2	3360 B5	3421 B4	3442 A3	3463 B2	3495 C3	3584 A5	4401 B5	5450 C1
2105 C1	2424 C2	2578 A2	3114 B1	3400 C3	3422 B4	3443 A3	3464 B2	3496 C3	3900 B4	4403 A5	5451 A3
2106 C1	2425 C2	2800 A1	3115 B1	3402 C3	3423 B4	3444 A3	3465 B2	3497 B4	3901 B4	4404 A5	7426 C2
2107 B1	2428 C5	2801 A1	3116 C2	3403 C3	3424 B4	3445 A3	3466 B2	3498 C3	3902 B4	4407 B2	7427 C2
2108 B1	2431 B1	2900 C5	3117 B1	3404 C3	3425 A4	3446 A3	3467 B2	3499 B4	3903 B4	4408 B4	7428 C4
2109 C1	2432 B5	2901 C5	3118 B1	3405 C4	3426 A4	3447 A3	3468 B2	3566 A1	3904 B2	4409 C5	7429 B2
2110 B1	2433 B5	2902 C5	3119 C1	3406 C4	3427 A4	3448 C2	3469 B2	3567 A1	3905 B2	4411 C3	7430 C1
2111 B1	2434 B5	2903 C5	3120 B1	3407 C4	3428 A4	3449 A3	3470 C3	3569 A2	3906 C5	4413 C4	7431 B3
2114 C3	2435 B5	3100 C1	3121 B1	3408 B4	3429 A4	3450 A3	3471 C3	3570 A2	3907 C5	4414 C4	
2115 C3	2436 B5	3101 C1	3122 A2	3409 C4	3430 A4	3451 A3	3472 C3	3571 A2	3908 C5	4415 C4	
2400 B4	2566 A1	3102 C2	3124 C4	3410 B4	3431 A4	3452 A3	3475 B5	3572 A2	3909 C5	4416 C4	
2402 B4	2567 A1	3103 C2	3125 C4	3411 B4	3432 A4	3453 A3	3476 B5	3573 A2	3910 C5	4417 C5	
2404 A3	2568 A2	3104 C1	3126 C3	3412 B4	3433 A4	3454 A3	3477 B5	3574 A2	3911 C5	4418 C4	
2406 B2	2569 A2	3105 C2	3127 C3	3413 B4	3434 A4	3455 A2	3484 C2	3575 A2	3912 C5	4419 C4	
2408 B2	2570 A2	3106 C2	3128 B1	3414 B4	3435 A4	3456 A3	3485 C3	3576 A2	3915 B1	4420 C5	
2409 B2	2571 A2	3107 C1	3349 C3	3415 B4	3436 A4	3457 A2	3486 C3	3577 A2	3916 B1	4422 C3	
2410 B2	2572 A2	3108 C4	3350 B1	3416 B4	3437 A4	3458 A3	3487 C2	3578 A3	3917 C5	4423 B2	
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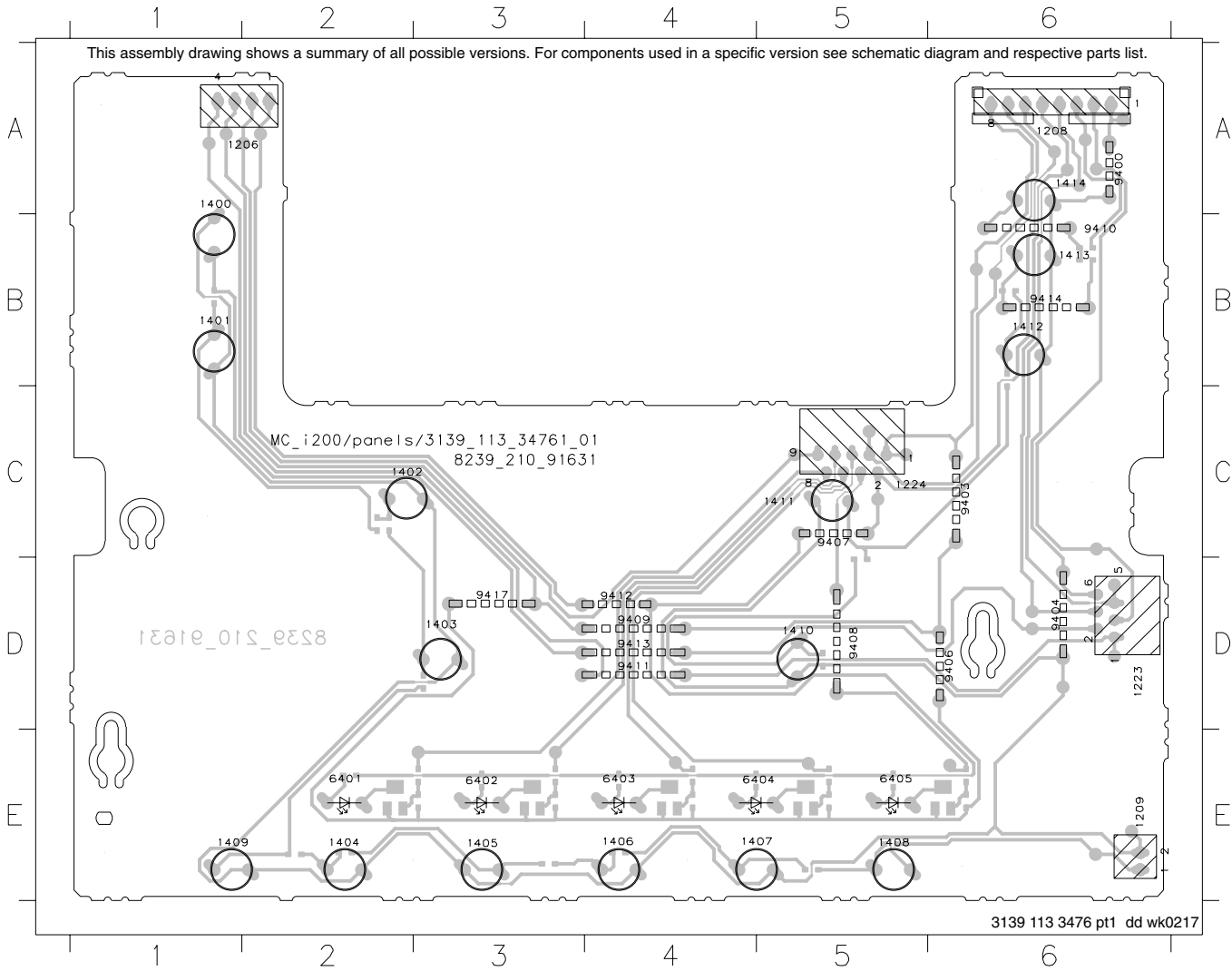
CONTROL BOARD - CIRCUIT DIAGRAM

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1201 C14	1213 E1	2107 H11	2401 D9	2409 C4	2425 H7	2436 D12	2573 C12	2900 F12	3104 H5	3112 A6	3120 G12	3349 F9	3401 D6	3409 D7	3417 D8	3425 C9	3433 B9	3441 A8	3449 A8	3457 A7	3465 A6	3473 E2	3492 H9	3566 A13	3575 A11	3584 B4	3907 E13	3917 D12	5402 F4	5403 B3	6415 F8
1202 F14	2100 F2	2108 H11	2402 D9	2410 C4	2428 H10	2566 C13	2574 C11	2901 F12	3105 H5	3113 A6	3121 H12	3350 F9	3402 D6	3410 D7	3418 D8	3426 C9	3434 B9	3442 A8	3450 A8	3458 A7	3466 B4	3474 E2	3493 H9	3567 A13	3576 A11	3900 D7	3908 E13	3918 D12	5443 B3	6416 F8	
1203 F14	2101 F2	2109 H12	2403 D9	2411 C5	2430 F7	2567 C13	2575 C11	2902 F12	3106 H6	3114 F11	3122 A13	3351 F9	3403 D6	3411 D7	3419 D8	3427 C9	3435 B9	3443 A8	3451 A7	3459 A7	3467 B4	3477 E3	3494 H9	3569 A13	3577 A11	3901 D7	3909 E13	3919 D12	5444 A10	6416 F8	
1204 B1	2102 F3	2110 H12	2404 B8	2412 C5	2431 F9	2568 C13	2576 C11	2903 F13	3107 H6	3115 F11	3124 B2	3357 G13	3404 D6	3412 D7	3420 D8	3428 C9	3436 B9	3444 A8	3452 A7	3460 A7	3468 B4	3484 H7	3495 B2	3570 A12	3578 A11	3902 D7	3910 F13	3920 F13	5445 E9	7426 D4	
1207 A4	2103 F4	2111 G13	2405 B9	2413 E4	2432 D13	2569 C12	2577 C11	3100 F2	3108 D7	3116 F12	3125 B2	3358 C13	3405 D7	3413 D8	3421 D8	3429 C9	3437 B9	3445 A8	3453 A7	3461 A7	3469 B4	3485 H6	3496 B2	3571 A12	3579 A4	3903 D7	3911 F13	3921 F13	5446 D9	7427 H6	
1210 A3	2104 G5	2114 C2	2406 C4	2414 E4	2433 D13	2570 C12	2578 C11	3101 F2	3109 D7	3117 G13	3126 D5	3359 D13	3406 D7	3414 D8	3422 C9	3430 C9	3438 B9	3446 A8	3454 A7	3462 A7	3470 D5	3486 H7	3497 D10	3572 A12	3580 A4	3904 B4	3912 F13	4401 E14	5448 G8	7428 G8	
1211 A1	2105 H1	2115 C2	2407 C4	2423 H6	2434 D13	2571 C12	2800 A10	3102 F4	3110 A6	3118 G13	3127 D5	3360 D13	3407 D7	3415 D8	3423 C9	3431 C9	3439 B9	3447 A8	3455 A7	3463 A7	3471 E5	3487 H7	3498 F11	3573 A12	3581 A4	3905 B4	3915 H13	5400 C5	5450 F5	7429 F9	



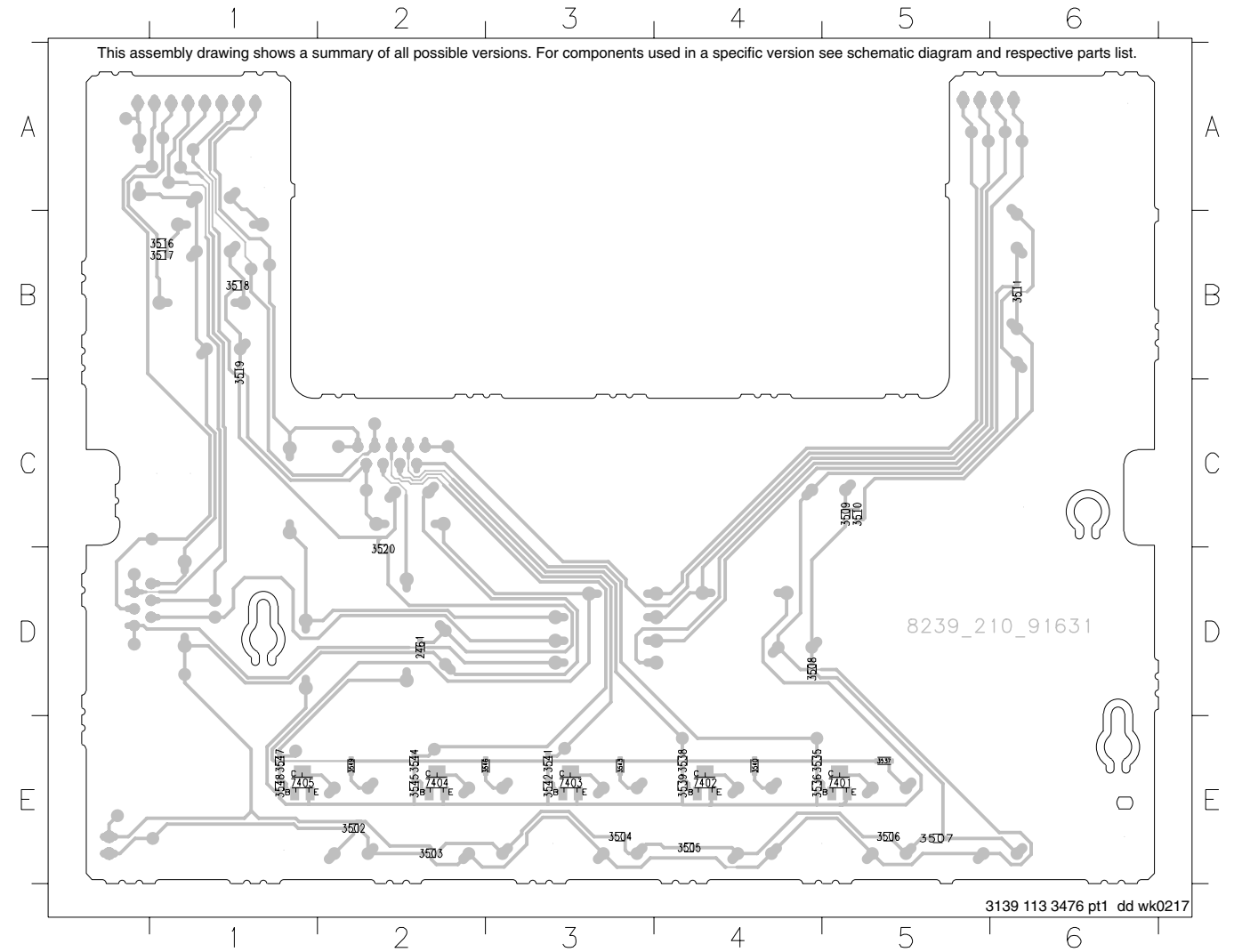
DISPLAY BOARD - COMPONENT LAYOUT

1206 A2	1224 C5	1403 D3	1407 E4	1411 C5	6401 E2	6405 E5	9406 D6	9410 B6	9414 B6
1208 A6	1400 A1	1404 E2	1408 E5	1412 B6	6402 E3	9400 A6	9407 C5	9411 D4	9417 D3
1209 E6	1401 B1	1405 E3	1409 E1	1413 B6	6403 E4	9403 C6	9408 D5	9412 D4	
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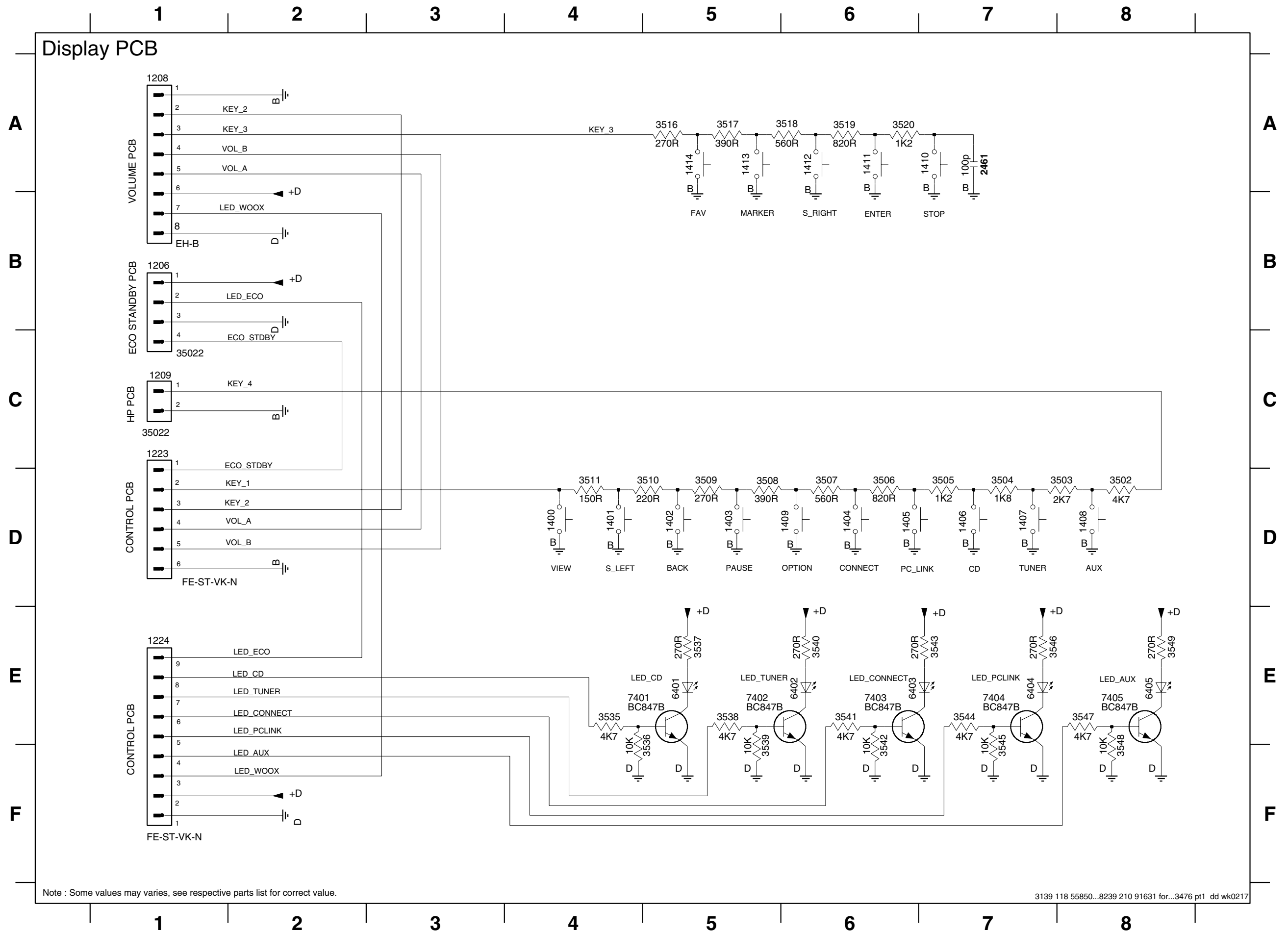


DISPLAY BOARD - CHIP LAYOUT

2461 D2	3504 E3	3507 E5	3510 C5	3517 B1	3520 D2	3537 E5	3540 E4	3543 E3	3546 E2	3549 E2	7403 E3
3502 E2	3505 E4	3508 D4	3511 B6	3518 B1	3535 E4	3538 E4	3541 E3	3544 E2	3547 E1	7401 E5	7404 E2
3503 E2	3506 E5	3509 C5	3516 B1	3519 B1	3536 E4	3539 E4	3542 E3	3545 E2	3548 E1	7402 E4	7405 E1



DISPLAY BOARD - CIRCUIT DIAGRAM



- 1206 B1
- 1208 A1
- 1209 C1
- 1223 C1
- 1224 E1
- 1400 D4
- 1401 D4
- 1402 D5
- 1403 D5
- 1404 D6
- 1405 D6
- 1406 D7
- 1407 D7
- 1408 D8
- 1409 D6
- 1410 A7
- 1411 A6
- 1412 A6
- 1413 A5
- 1414 A5
- 2461 A7
- 3502 D8
- 3503 D8
- 3504 D7
- 3505 D7
- 3506 D6
- 3507 D6
- 3508 D5
- 3509 D5
- 3510 D5
- 3511 D4
- 3516 A5
- 3517 A5
- 3518 A6
- 3519 A6
- 3520 A6
- 3535 E4
- 3536 F5
- 3537 E5
- 3538 E5
- 3539 F5
- 3540 E6
- 3541 E6
- 3542 F6
- 3543 E7
- 3544 E7
- 3545 F7
- 3546 E7
- 3547 E8
- 3548 F8
- 3549 E8
- 6401 E5
- 6402 E6
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- 7401 E4
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- 7405 E8

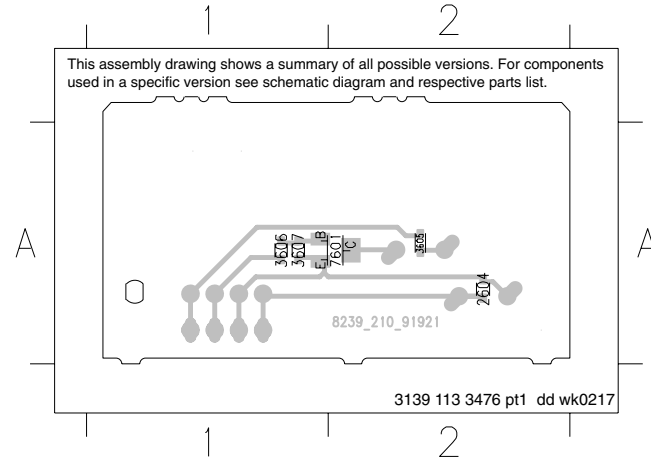
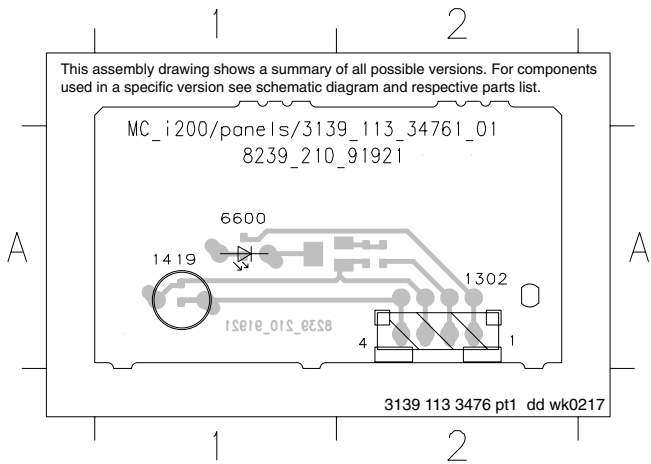
Note : Some values may varies, see respective parts list for correct value.

ECO STANDBY BOARD - COMPONENT LAYOUT

ECO STANDBY BOARD - CHIP LAYOUT

1302 A2 1419 A1 6600 A1

2604 A2 3606 A1 7601 A2
3605 A2 3607 A1

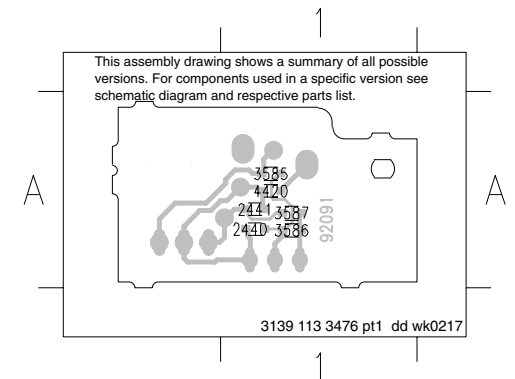
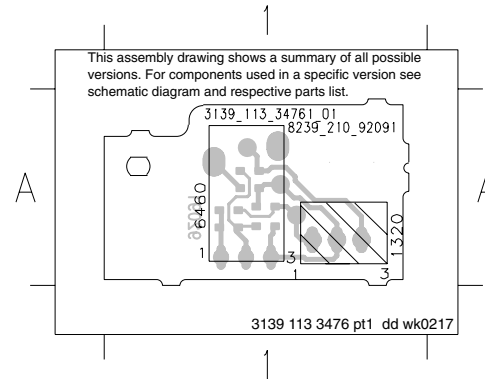


INFRA RECEIVER BOARD - COMPONENT LAYOUT

INFRA RECEIVER BOARD - CHIP LAYOUT

1320 A1 6460 A1

2440 A1 3585 A1 3587 A1
2441 A1 3586 A1 4420 A1

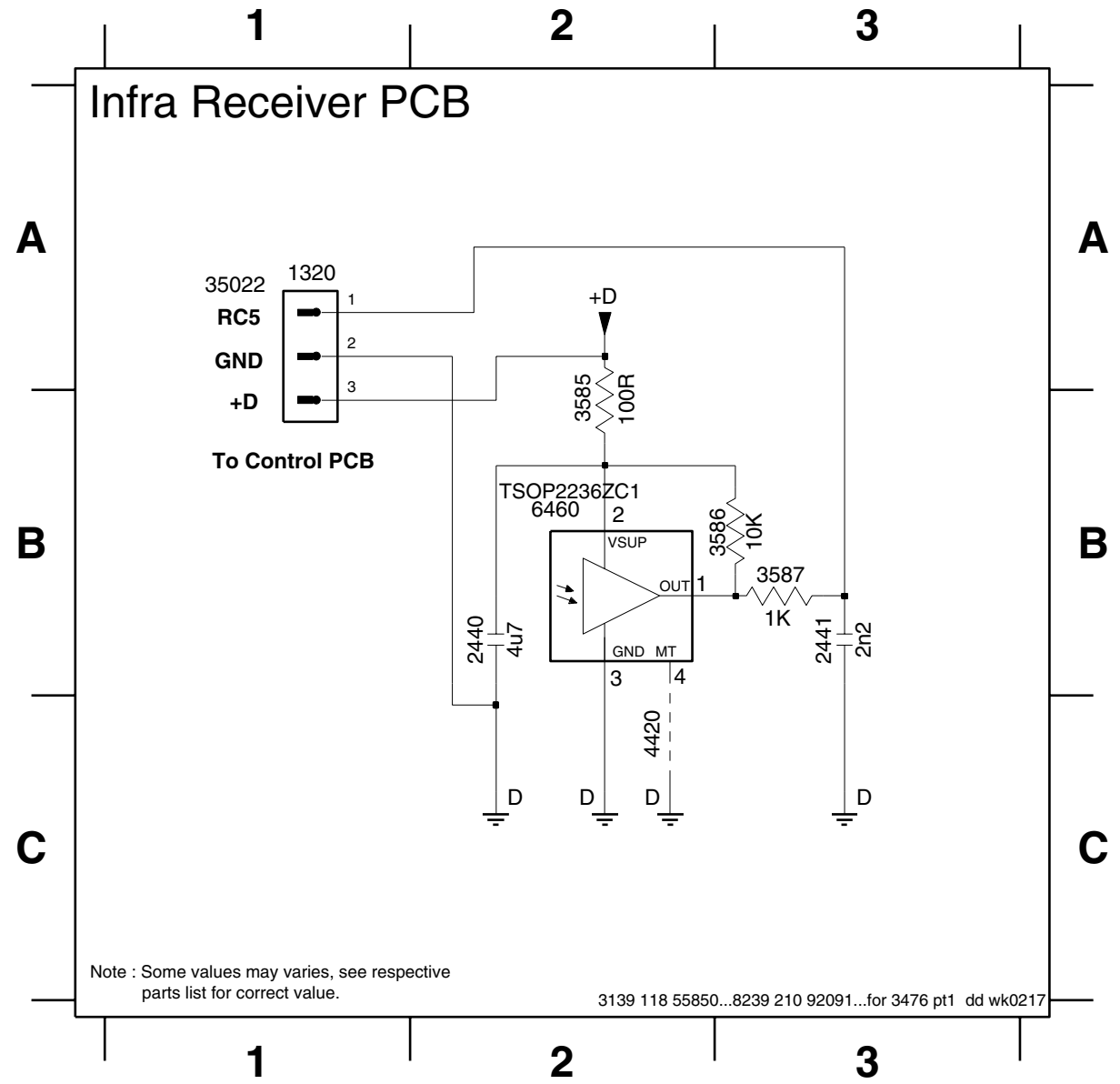
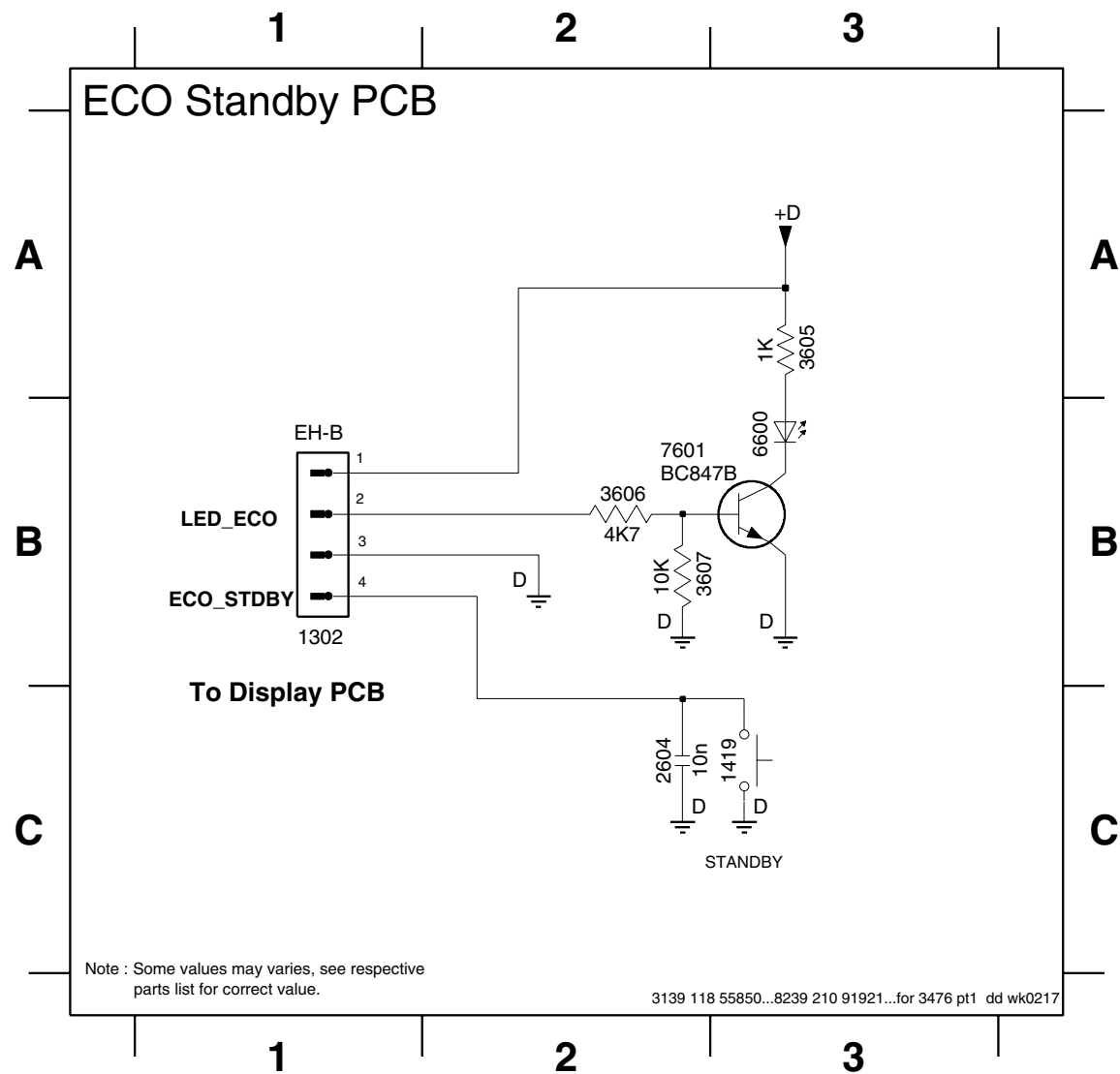


INFRA RECEIVER BOARD - CIRCUIT DIAGRAM

ECO STANDBY BOARD - CIRCUIT DIAGRAM

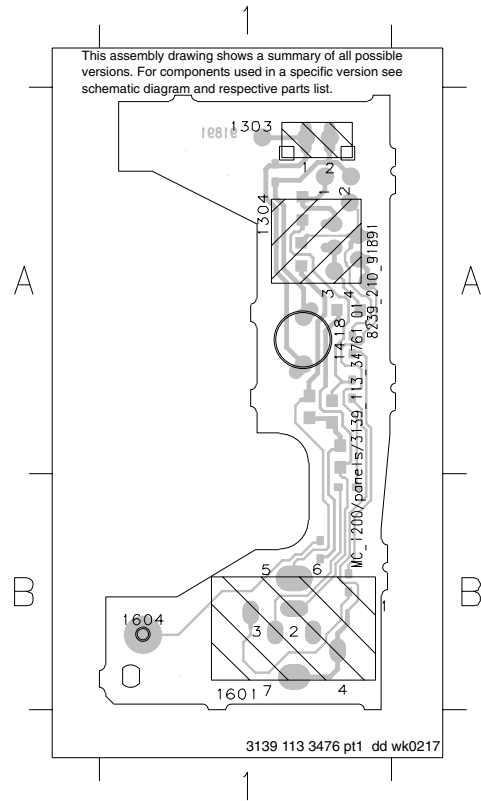
1320 A1 2440 B2 2441 B3 3585 B2 3586 B3 3587 B3 4420 C2 6460 B2

1302 B1 1419 C3 2604 C2 3605 A3 3606 B2 3607 B2 6600 B3 7601 B2



HEADPHONE BOARD - COMPONENT LAYOUT

1303 A1 1418 A1 1604 B1
1304 A1 1601 B1



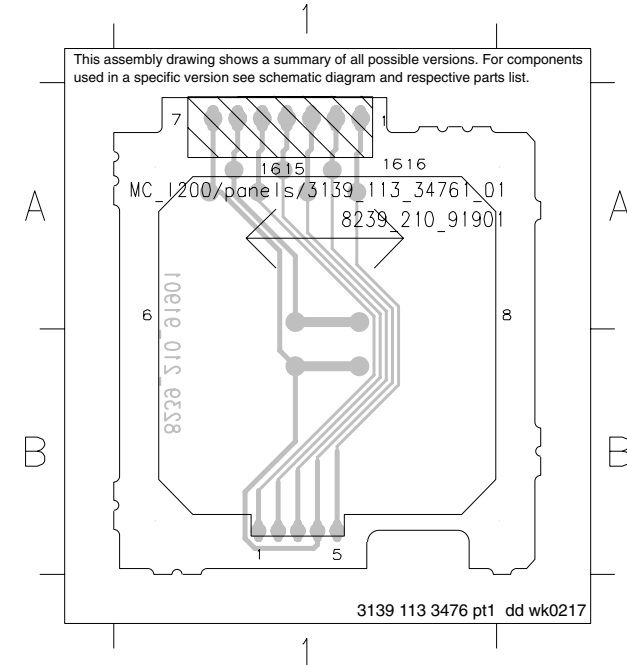
HEADPHONE BOARD - CHIP LAYOUT

J1 B1 2608 A1 4445 A1
2605 A1 4441 A1 5600 A1
2606 A1 4442 B1 5601 A1
2607 A1 4443 B1 5602 A1



SHUTTLE BOARD - COMPONENT LAYOUT

1615 A1 1616 A1

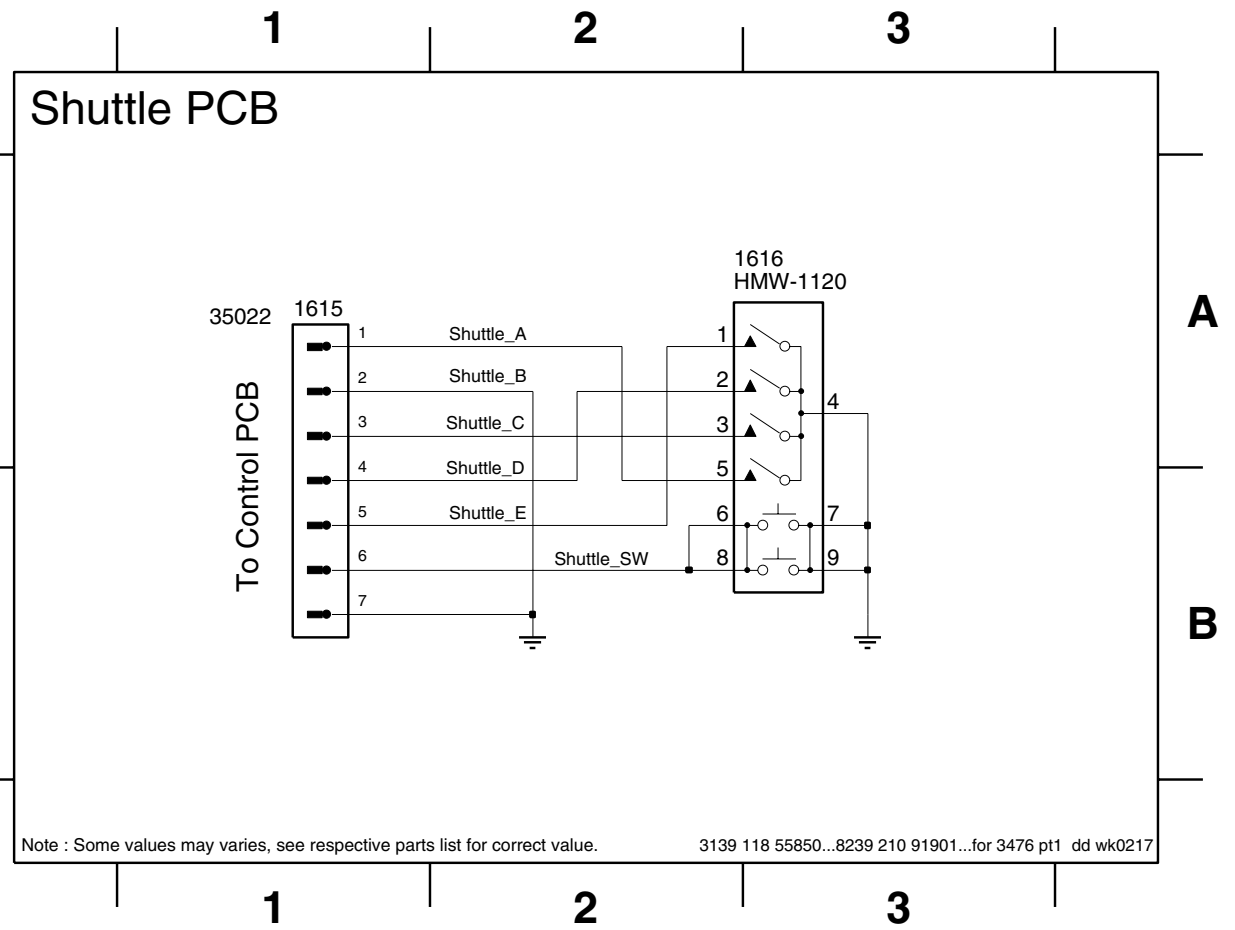
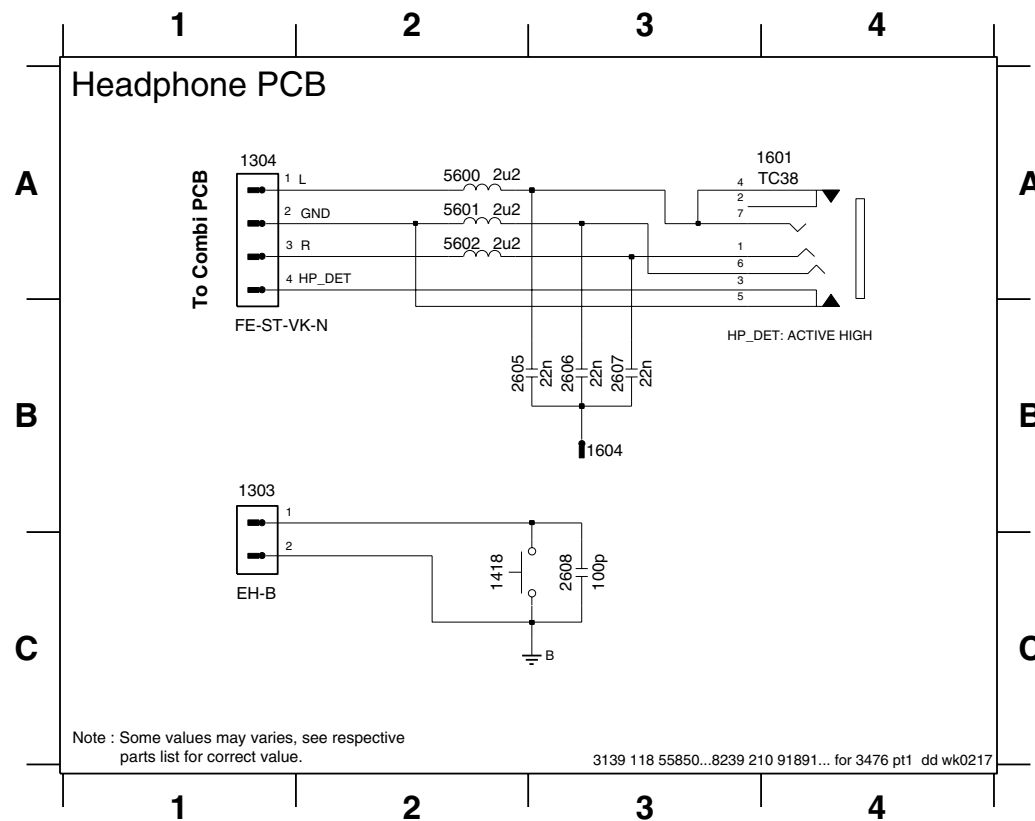


SHUTTLE BOARD - CIRCUIT DIAGRAM

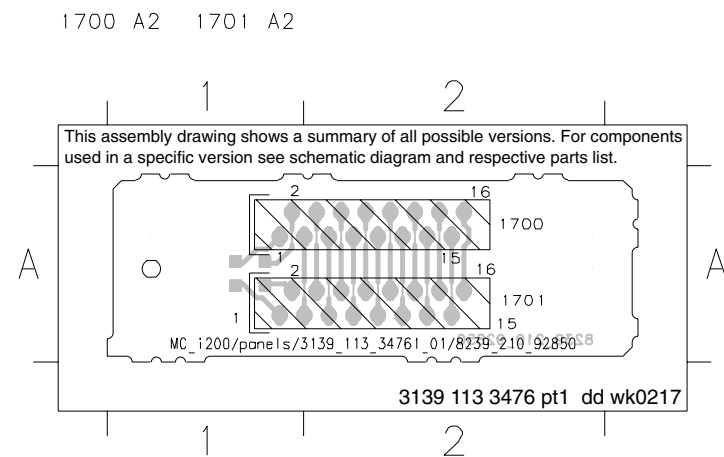
1615 A1 1616 A2

HEADPHONE BOARD - CIRCUIT DIAGRAM

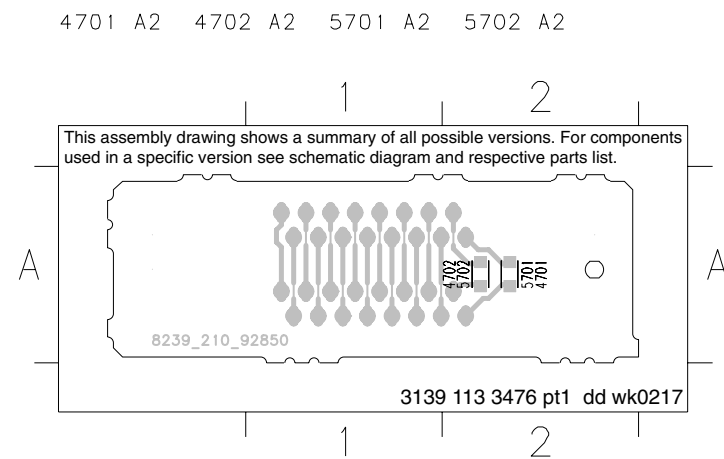
1303 B1 1418 C2 1604 B3 2606 B3 2608 C3 5601 A2
1304 A1 1601 A3 2605 B2 2607 B3 5600 A2 5602 A2



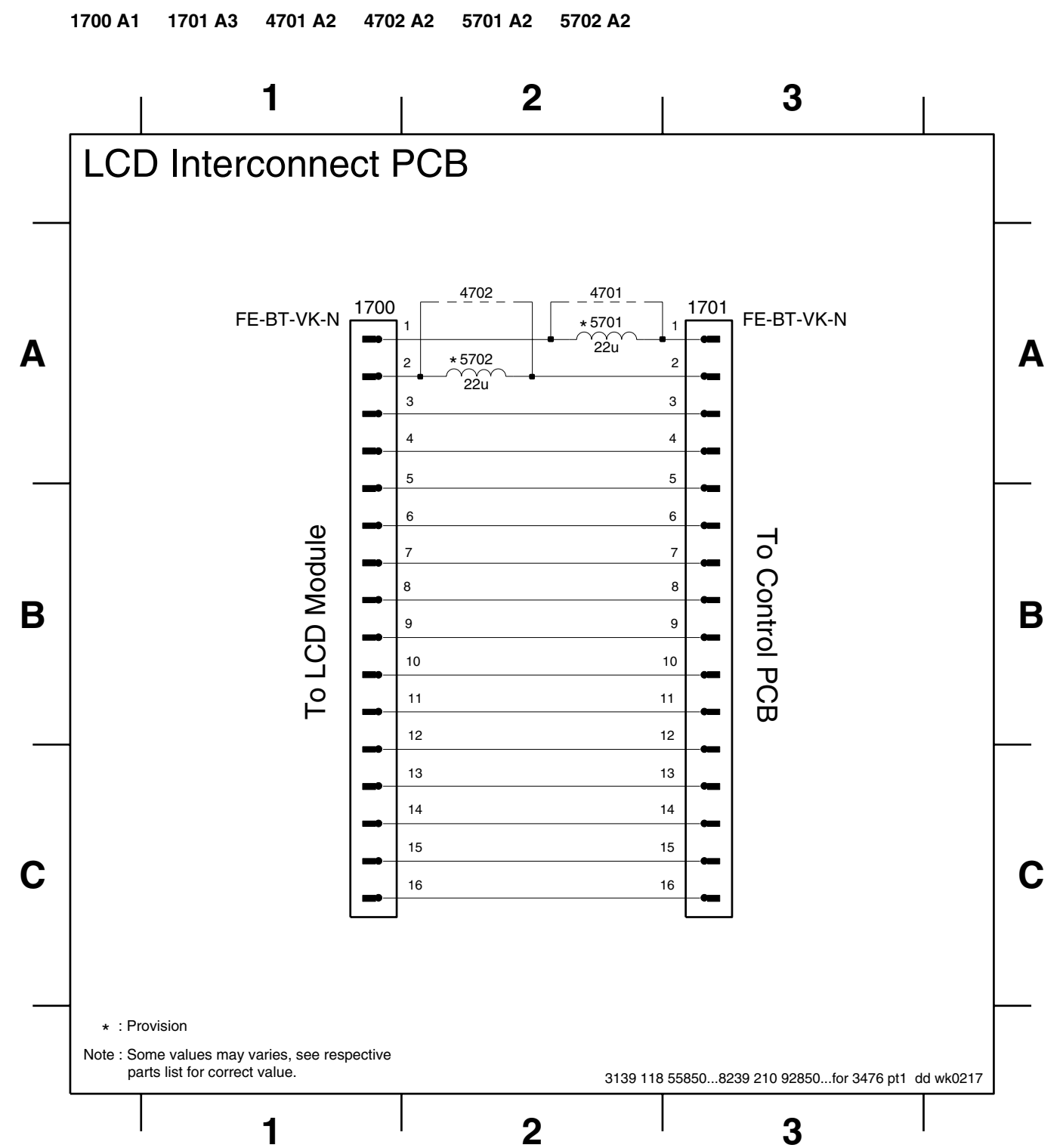
LCD INTERCONNECT BOARD - COMPONENT LAYOUT



LCD INTERCONNECT BOARD - CHIP LAYOUT

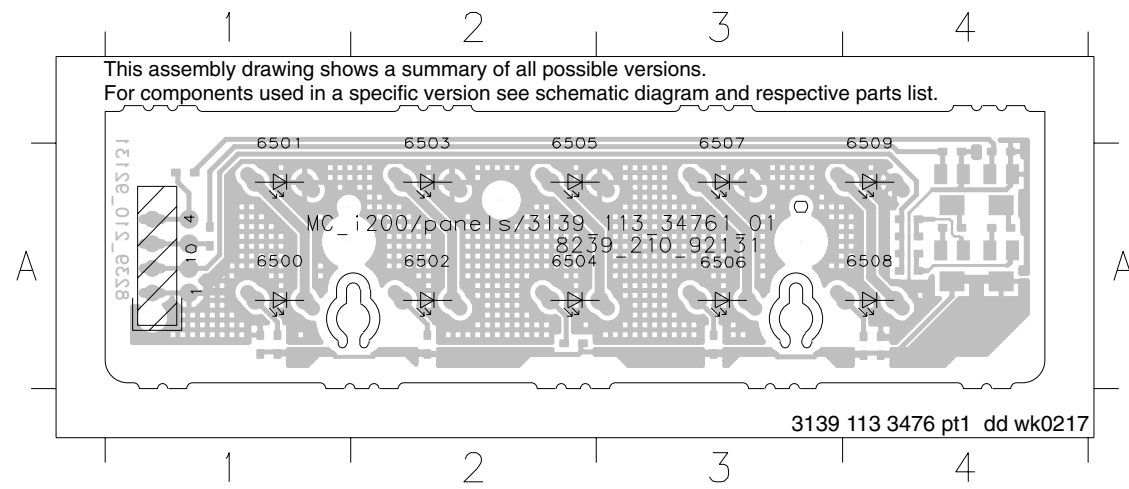


LCD INTERCONNECT BOARD - CIRCUIT DIAGRAM



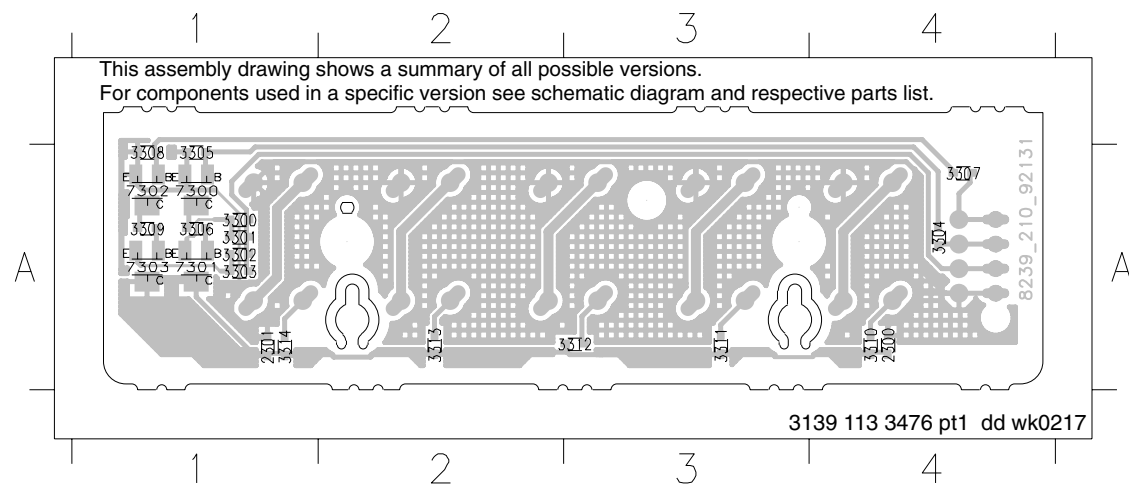
LCD BACK LIGHT BOARD - COMPONENT LAYOUT

10 A1 6501 A1 6503 A2 6505 A2 6507 A3 6509 A4
 6500 A1 6502 A2 6504 A2 6506 A3 6508 A4



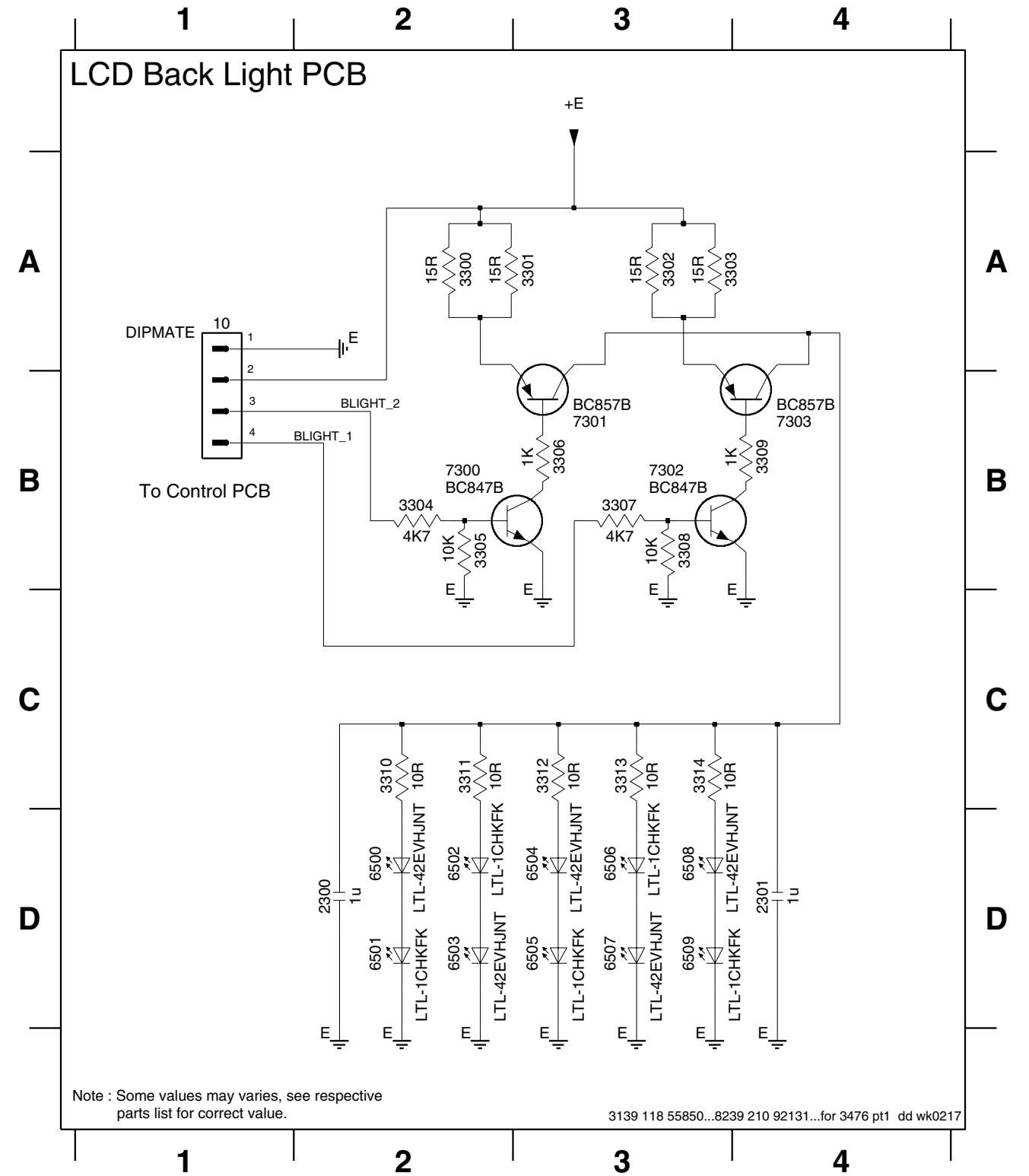
LCD BACK LIGHT BOARD - CHIP LAYOUT

2300 A4 3301 A1 3304 A4 3307 A4 3310 A4 3313 A2 7301 A1
 2301 A1 3302 A1 3305 A1 3308 A1 3311 A3 3314 A1 7302 A1
 3300 A1 3303 A1 3306 A1 3309 A1 3312 A3 7300 A1 7303 A1



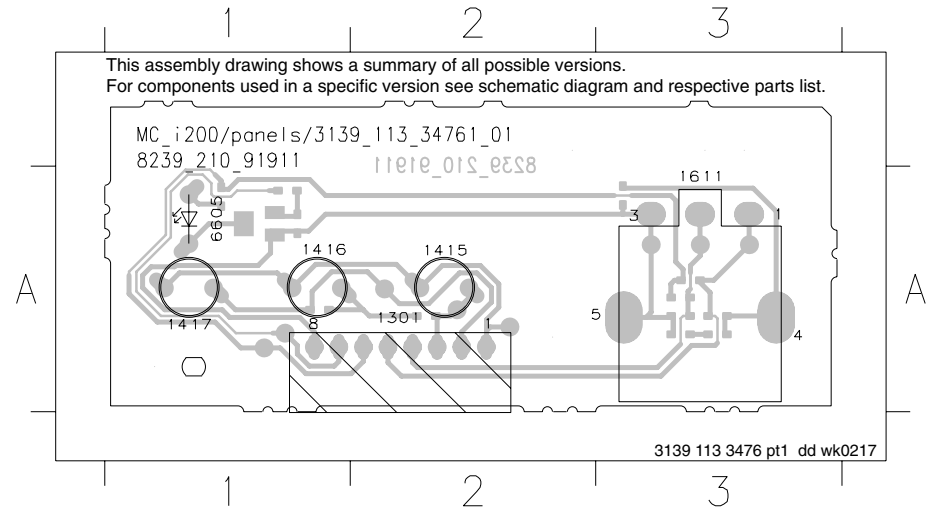
LCD BACK LIGHT BOARD - CIRCUIT DIAGRAM

10 A1 3300 A2 3303 A4 3306 B3 3309 B4 3312 C3 6500 D2 6503 D2 6506 D3 6509 D3 7302 B3
 2300 D2 3301 A3 3304 B2 3307 B3 3310 C2 3313 C3 6501 D2 6504 D3 6507 D3 7300 B2 7303 B4
 2301 D4 3302 A3 3305 B2 3308 B3 3311 C2 3314 C3 6502 D2 6505 D3 6508 D3 7301 B3



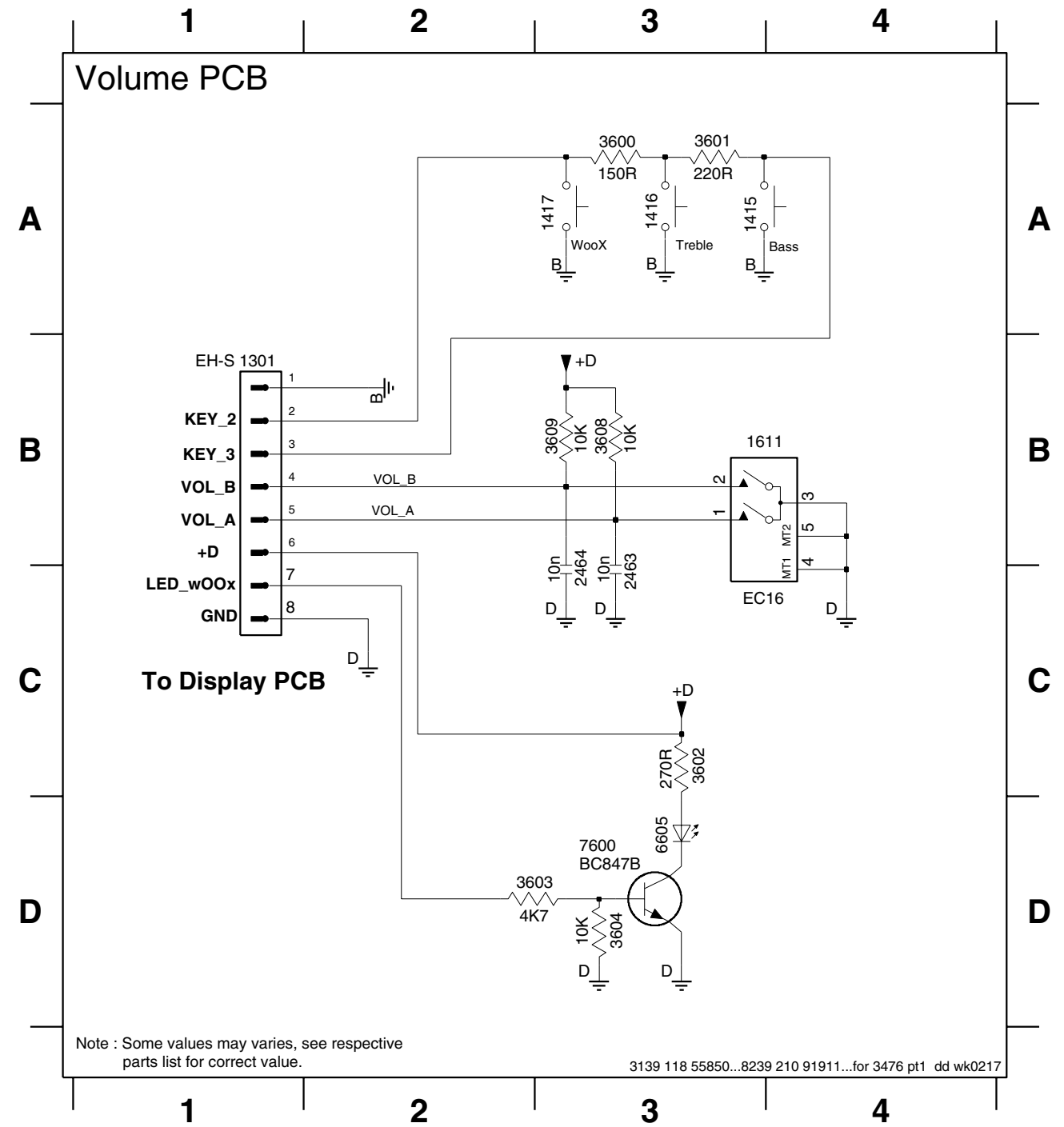
VOLUME BOARD - COMPONENT LAYOUT

1301 A2 1415 A2 1416 A1 1417 A1 1611 A3 6605 A1



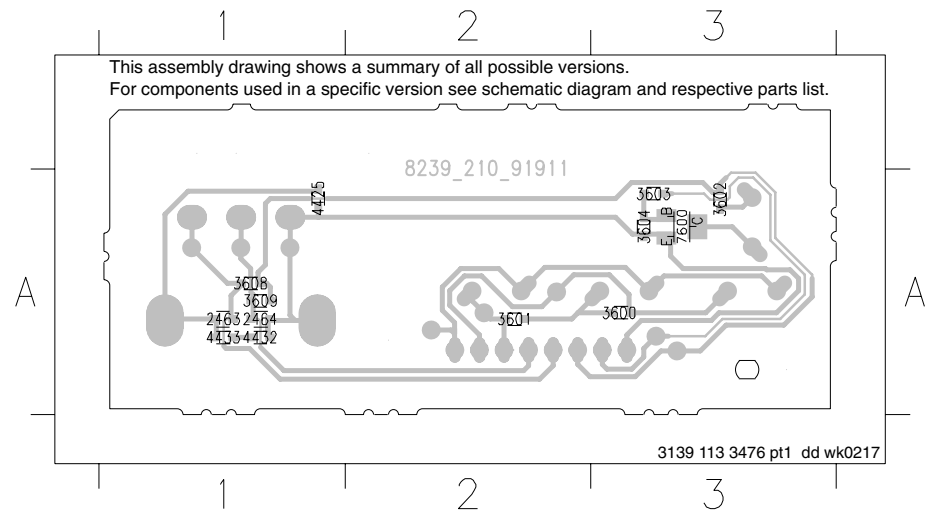
VOLUME BOARD - CIRCUIT DIAGRAM

1301 B1 1416 A3 1611 B4 2464 C3 3601 A3 3603 D2 3608 B3 6605 D3
 1415 A3 1417 A3 2463 C3 3600 A3 3602 C3 3604 D3 3609 B3 7600 D3



VOLUME BOARD - CHIP LAYOUT

2463 A1 3601 A2 3604 A3 4425 A1 7600 A3
 2464 A1 3602 A3 3608 A1 4432 A1
 3600 A3 3603 A3 3609 A1 4433 A1



ELECTRICAL PARTS LIST - FRONT BOARD**RESISTORS**

3447	4822 051 30102	1k 5% 0,062W	3517	4822 051 30391	390R 5% 0,062W
3448	4822 051 30103	10k 5% 0,062W	3518	4822 051 30561	560R 5% 0,062W
3449	4822 051 30102	1k 5% 0,062W	3519	4822 117 12968	820R 5% 0,62W
3450	4822 051 30102	1k 5% 0,062W	3520	4822 117 11817	1k2 1% 1/16W
3451	4822 051 30102	1k 5% 0,062W	3535	4822 051 30472	4k7 5% 0,062W
3452	4822 051 30102	1k 5% 0,062W	3536	4822 051 30103	10k 5% 0,062W
3453	4822 051 30102	1k 5% 0,062W	3537	4822 051 30271	270R 5% 0,062W
3454	4822 051 30102	1k 5% 0,062W	3538	4822 051 30472	4k7 5% 0,062W
3455	4822 051 30102	1k 5% 0,062W	3539	4822 051 30103	10k 5% 0,062W
3456	4822 051 30102	1k 5% 0,062W	3540	4822 051 30271	270R 5% 0,062W
3457	4822 051 30102	1k 5% 0,062W	3541	4822 051 30472	4k7 5% 0,062W
3458	4822 051 30102	1k 5% 0,062W	3542	4822 051 30103	10k 5% 0,062W
3459	4822 051 30102	1k 5% 0,062W	3543	4822 051 30271	270R 5% 0,062W
3460	4822 051 30102	1k 5% 0,062W	3544	4822 051 30472	4k7 5% 0,062W
3461	4822 051 30102	1k 5% 0,062W	3545	4822 051 30103	10k 5% 0,062W
3462	4822 051 30102	1k 5% 0,062W	3546	4822 051 30271	270R 5% 0,062W
3463	4822 051 30102	1k 5% 0,062W	3547	4822 051 30472	4k7 5% 0,062W
3464	4822 051 30102	1k 5% 0,062W	3548	4822 051 30103	10k 5% 0,062W
3465	4822 051 30102	1k 5% 0,062W	3549	4822 051 30271	270R 5% 0,062W
3466	4822 051 30102	1k 5% 0,062W	3566	4822 051 30682	6k8 5% 0,062W
3467	4822 051 30102	1k 5% 0,062W	3567	4822 051 30682	6k8 5% 0,062W
3468	4822 051 30102	1k 5% 0,062W	3569	4822 051 30682	6k8 5% 0,062W
3469	4822 051 30102	1k 5% 0,062W	3570	4822 051 30682	6k8 5% 0,062W
3470	4822 051 30102	1k 5% 0,062W	3571	4822 051 30682	6k8 5% 0,062W
3471	4822 051 30221	220R 5% 0,062W	3572	4822 051 30682	6k8 5% 0,062W
3472	4822 051 30221	220R 5% 0,062W	3573	4822 051 30682	6k8 5% 0,062W
3475	4822 051 30103	10k 5% 0,062W	3574	4822 051 30682	6k8 5% 0,062W
3476	4822 051 30272	2k7 5% 0,062W	3575	4822 051 30682	6k8 5% 0,062W
3477	4822 051 30272	2k7 5% 0,062W	3576	4822 051 30682	6k8 5% 0,062W
3484	4822 117 13632	100k 1% 0,62W	3577	4822 051 30682	6k8 5% 0,062W
3485	4822 051 30102	1k 5% 0,062W	3578	4822 051 30682	6k8 5% 0,062W
3487	4822 051 30684	680k 5% 0,062W	3579	4822 051 30103	10k 5% 0,062W
3491	4822 051 30471	470R 5% 0,062W	3580	4822 051 30103	10k 5% 0,062W
3492	4822 051 30471	470R 5% 0,062W	3581	4822 051 30103	10k 5% 0,062W
3493	4822 051 30682	6k8 5% 0,062W	3582	4822 051 30103	10k 5% 0,062W
3494	4822 051 30682	6k8 5% 0,062W	3584	4822 051 30103	10k 5% 0,062W
3495	4822 117 12925	47k 1% 0,063W	3585	4822 051 30101	100R 5% 0,062W
3496	4822 117 12925	47k 1% 0,063W	3586	4822 051 30103	10k 5% 0,062W
3497	4822 051 30681	680R 5% 0,062W	3587	4822 051 30102	1k 5% 0,062W
3499	4822 051 30103	10k 5% 0,062W	3600	4822 051 30151	150R 5% 0,062W
3502	4822 051 30472	4k7 5% 0,062W	3601	4822 051 30221	220R 5% 0,062W
3503	4822 051 30272	2k7 5% 0,062W	3602	4822 051 30271	270R 5% 0,062W
3504	4822 117 12903	1k8 1% 0,063W	3603	4822 051 30472	4k7 5% 0,062W
3505	4822 117 11817	1k2 1% 1/16W	3604	4822 051 30103	10k 5% 0,062W
3506	4822 117 12968	820R 5% 0,62W	3605	4822 051 30102	1k 5% 0,062W
3507	4822 051 30561	560R 5% 0,062W	3606	4822 051 30472	4k7 5% 0,062W
3508	4822 051 30391	390R 5% 0,062W	3607	4822 051 30103	10k 5% 0,062W
3509	4822 051 30271	270R 5% 0,062W	3608	4822 051 30103	10k 5% 0,062W
3510	4822 051 30221	220R 5% 0,062W	3609	4822 051 30103	10k 5% 0,062W
3511	4822 051 30151	150R 5% 0,062W	3900	4822 051 30102	1k 5% 0,062W
3516	4822 051 30271	270R 5% 0,062W	3901	4822 051 30102	1k 5% 0,062W

ELECTRICAL PARTS LIST - FRONT BOARD

3902	4822 051 30102	1k 5% 0,062W
3903	4822 051 30102	1k 5% 0,062W
3904	4822 051 30102	1k 5% 0,062W
3905	4822 051 30102	1k 5% 0,062W
3906	4822 051 30102	1k 5% 0,062W
3907	4822 051 30102	1k 5% 0,062W
3908	4822 051 30102	1k 5% 0,062W
3909	4822 051 30221	220R 5% 0,062W
3910	4822 051 30221	220R 5% 0,062W
3911	4822 051 30221	220R 5% 0,062W
3912	4822 051 30221	220R 5% 0,062W
3915	4822 051 30105	1M 5% 0,062W
3916	4822 051 30105	1M 5% 0,062W
3920	4822 051 30562	5k6 5% 0,063W
3921	4822 051 30562	5k6 5% 0,063W
4401	4822 051 30008	0R Jumper 0603
4403	4822 051 30008	0R Jumper 0603
4404	4822 051 30008	0R Jumper 0603
4407	4822 051 30008	0R Jumper 0603
4408	4822 051 30008	0R Jumper 0603
4409	4822 051 30008	0R Jumper 0603
4411	4822 051 30008	0R Jumper 0603
4413	4822 051 30008	0R Jumper 0603
4414	4822 051 30008	0R Jumper 0603
4415	4822 051 30008	0R Jumper 0603
4416	4822 051 30008	0R Jumper 0603
4417	4822 051 30008	0R Jumper 0603
4418	4822 051 30008	0R Jumper 0603
4419	4822 051 30008	0R Jumper 0603
4420	4822 051 30008	0R Jumper 0603
4422	4822 051 30008	0R Jumper 0603
4423	4822 051 30008	0R Jumper 0603
4425	4822 051 30008	0R Jumper 0603
4432	4822 051 30008	0R Jumper 0603
4433	4822 051 30008	0R Jumper 0603
4441	4822 051 30008	0R Jumper 0603
4442	4822 051 30008	0R Jumper 0603
4443	4822 051 30008	0R Jumper 0603
4445	4822 051 30008	0R Jumper 0603
4701	4822 051 20008	0R Jumper 0805
4702	4822 051 20008	0R Jumper 0805

COILS & FILTERS

5400	5322 242 73686	RES CER 12MHz
5401	2422 543 01069	RES XTL 32,768kHz
5402	4822 242 11033	RES XTL 4,332MHz /22
5443	4822 157 10586	Coil 2,2uH 10%
5444	4822 157 10586	Coil 2,2uH 10%
5445	4822 157 10586	Coil 2,2uH 10%
5446	4822 157 10586	Coil 2,2uH 10%
5448	4822 157 62552	Coil 2,2uH 5%

5450	4822 157 10586	Coil 2,2uH 10%	/22
5451	4822 157 10586	Coil 2,2uH 10%	
5600	4822 157 10586	Coil 2,2uH 10%	
5601	4822 157 10586	Coil 2,2uH 10%	
5602	4822 157 10586	Coil 2,2uH 10%	

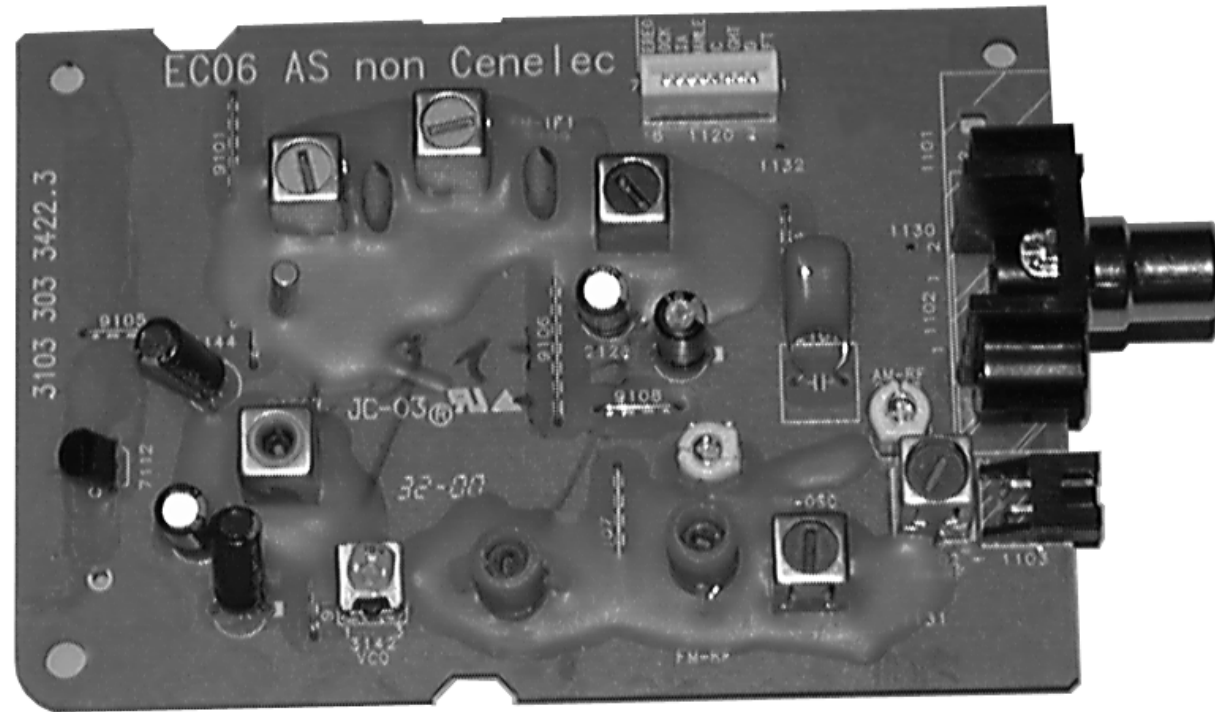
DIODES

6400	4822 130 30621	1N4148
6401	9322 178 15676	LED VS LTL-8166FTNN
6402	9322 178 15676	LED VS LTL-8166FTNN
6403	9322 178 15676	LED VS LTL-8166FTNN
6404	9322 178 15676	LED VS LTL-8166FTNN
6405	9322 178 15676	LED VS LTL-8166FTNN
6415	4822 130 31878	1N4003G
6416	4822 130 31878	1N4003G
6460	9322 155 22667	IR Receiver TSOP2236ZC1
6500	9322 184 65676	LED VS LTL-42EVHJNT
6501	9322 172 75676	LED VS LTL-1CHKFK
6502	9322 172 75676	LED VS LTL-1CHKFK
6503	9322 184 65676	LED VS LTL-42EVHJNT
6504	9322 184 65676	LED VS LTL-42EVHJNT
6505	9322 172 75676	LED VS LTL-1CHKFK
6506	9322 172 75676	LED VS LTL-1CHKFK
6507	9322 184 65676	LED VS LTL-42EVHJNT
6508	9322 184 65676	LED VS LTL-42EVHJNT
6509	9322 172 75676	LED VS LTL-1CHKFK
6600	9322 179 76676	LED VS LTL-816EELC
6605	9322 178 87676	LED VS LTL-1CHTBK4-KA

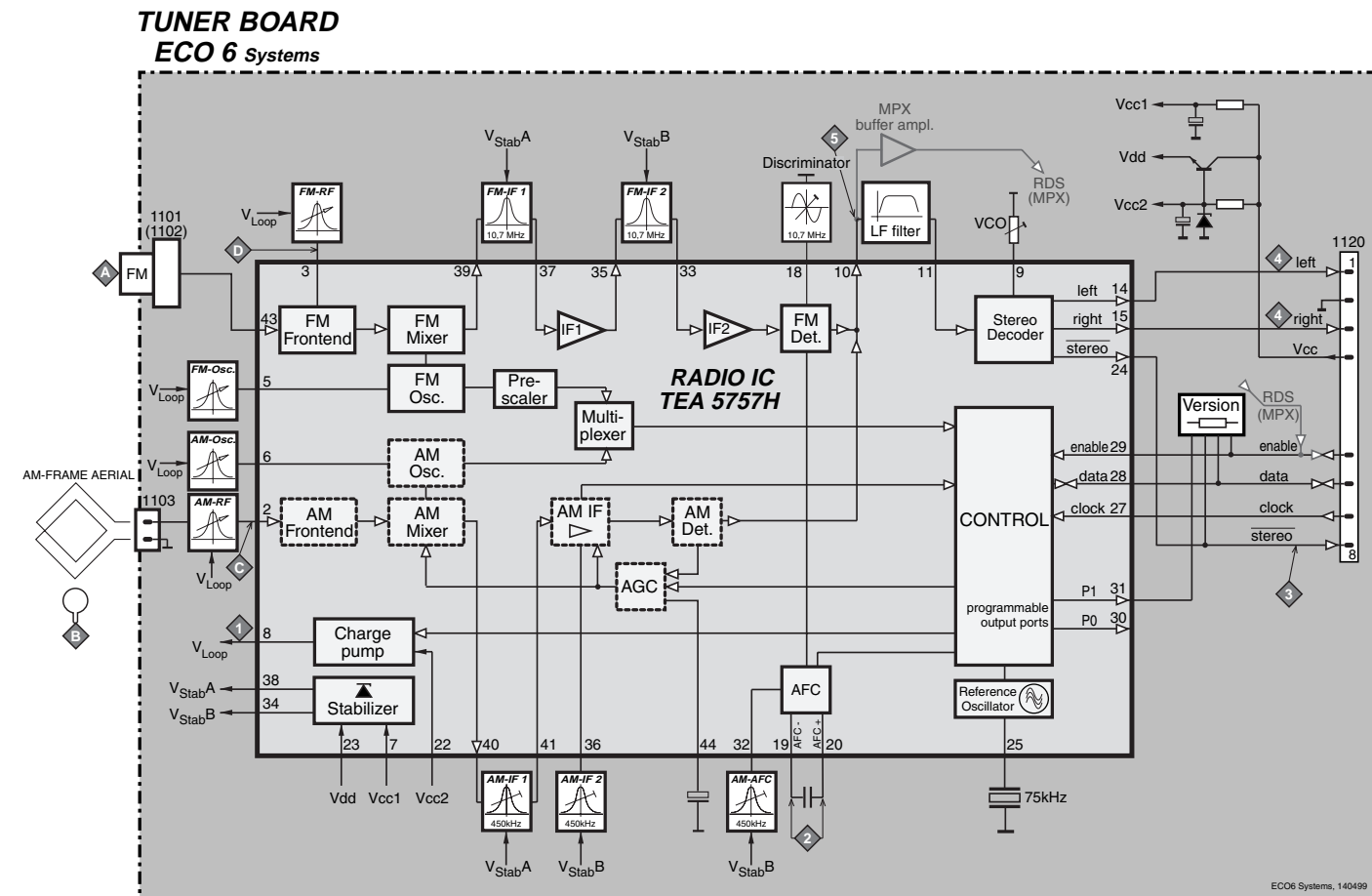
TRANSISTORS & INTEGRATED CIRCUITS

7300	5322 130 60159	BC847B
7301	4822 130 60373	BC857B
7302	5322 130 60159	BC847B
7303	4822 130 60373	BC857B
7401	5322 130 60159	BC847B
7402	5322 130 60159	BC847B
7403	5322 130 60159	BC847B
7404	5322 130 60159	BC847B
7405	5322 130 60159	BC847B
7426	5322 130 60159	BC847B
7427	5322 130 60159	BC847B
7428	4822 209 17226	M24C08-WMN6
7429	5322 130 60159	BC847B
7430	9352 686 05118	SAA6581T /22
7431	3139 110 53150	TMP88CU77F - 'i200S53151'
7600	5322 130 60159	BC847B
7601	5322 130 60159	BC847B

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



BLOCK DIAGRAM

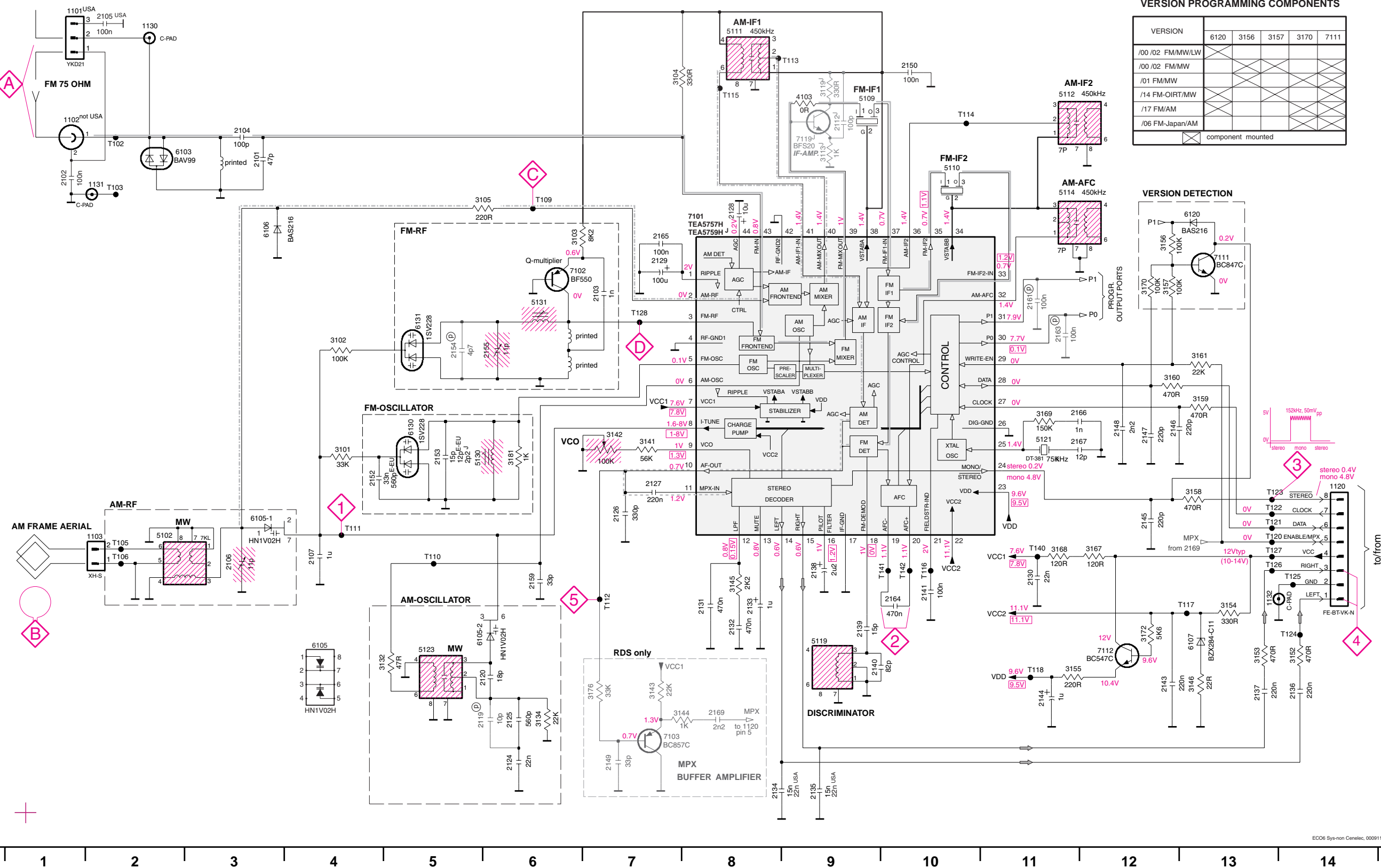


ECO6 Tuner Board
version: **SYSTEMS non-CENELEC**

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TUNER BOARD ECO6 / SYSTEMS NON CENELEC

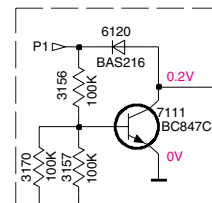


VERSION PROGRAMMING COMPONENTS

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

component mounted

VERSION DETECTION



LEGEND

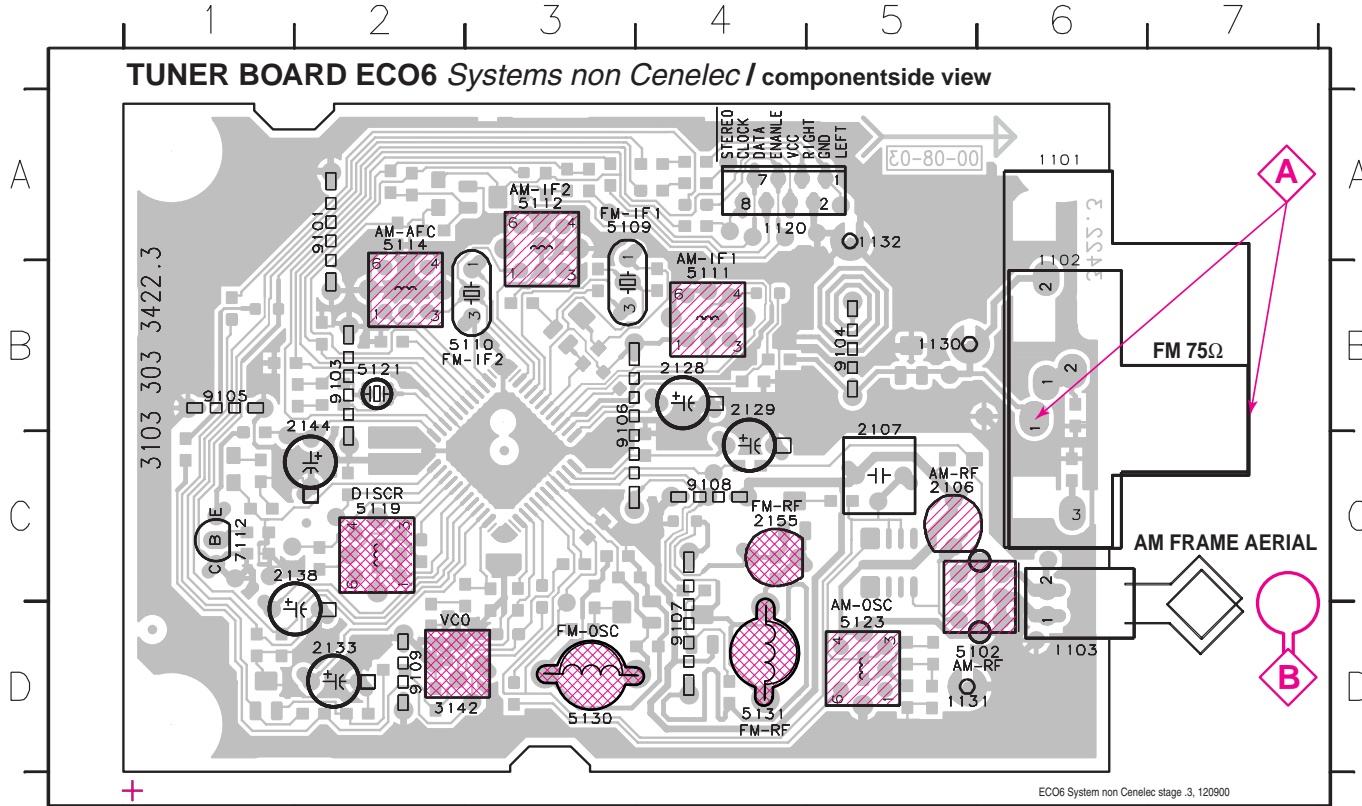
- Ⓟ...for provision only
- USA ... for USA version only
- E-EU ... for East European version only
- J ... for Japanese version only

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

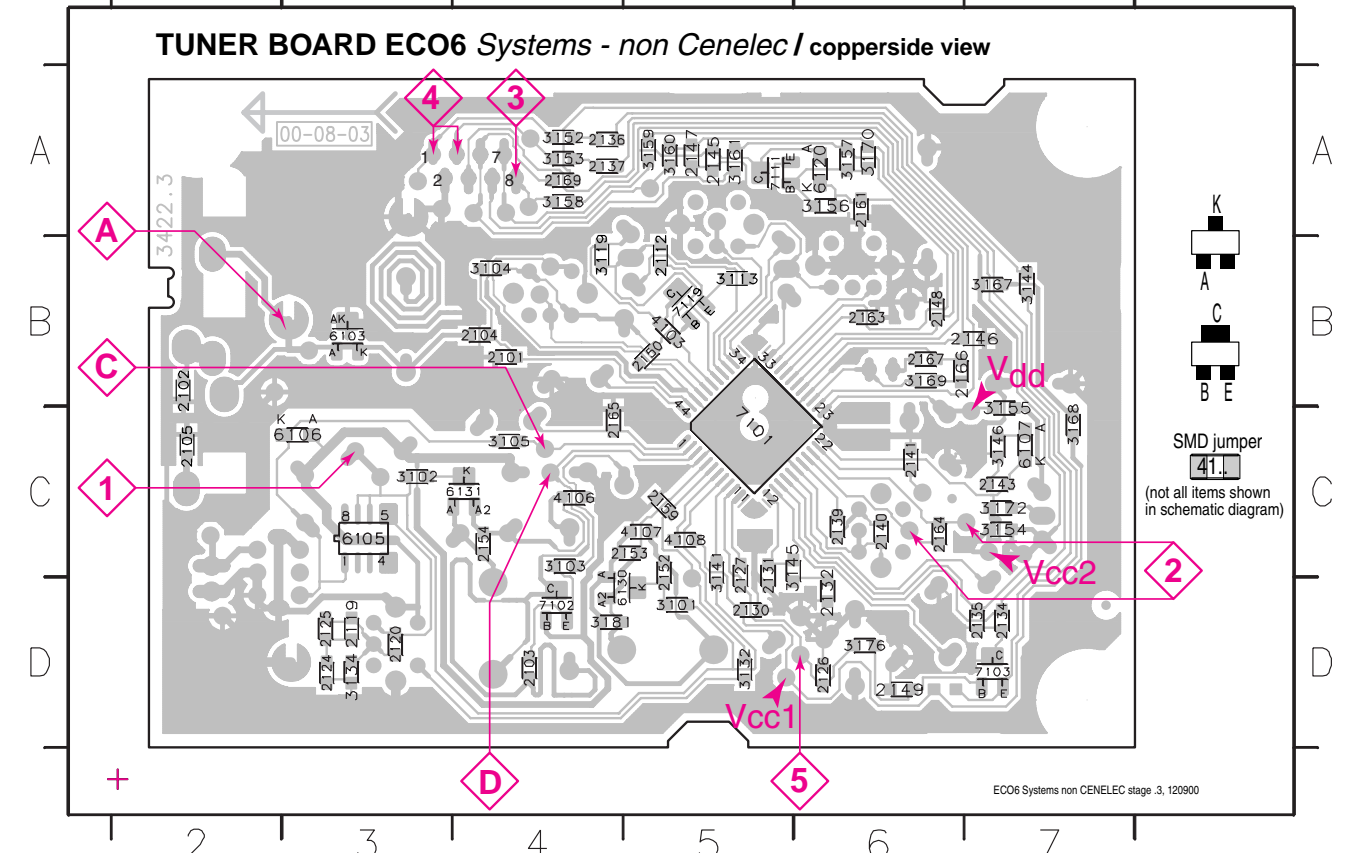
- Signal path
- FM
- - - AM
- · - · MPX (Audio Frequency)
- ⇒ AF - left/right

- 1101 A1
- 1102 B1
- 1103 F2
- 1120 E14
- 1130 A2
- 1131 B2
- 1132 G13
- 1133 B3
- 2102 B1
- 2103 C7
- 2104 B3
- 2105 A2
- 2106 F3
- 2107 F4
- 2119 H6
- 2120 G6
- 2124 H6
- 2125 H6
- 2126 F7
- 2127 E7
- 2128 C8
- 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 H7
- 2149 H7
- 2150 A10
- 2152 E4
- 2153 E5
- 2154 D5
- 2155 D5
- 2159 F6
- 2161 C11
- 2163 D11
- 2164 F10
- 2165 C7
- 2166 E11
- 2167 E11
- 2169 H8
- 3101 E4
- 3102 D4
- 3103 C6
- 3104 A7
- 3105 B6
- 3132 G5
- 3134 H6
- 3141 E7
- 3142 E7
- 3143 G7
- 3144 H7
- 3145 F8
- 3146 G13
- 3152 G14
- 3153 G13
- 3154 G13
- 3155 G11
- 3156 C12
- 3157 D12
- 3158 E13
- 3159 D13
- 3160 D13
- 3161 D13
- 3167 F12
- 3168 F11
- 3169 E11
- 3170 C12
- 3172 G12
- 3176 G7
- 3181 E6
- 5102 F2
- 5109 B9
- 5110 B10
- 5111 A8
- 5112 A11
- 5114 B11
- 5119 G9
- 5121 E11
- 5123 G5
- 5130 E5
- 5131 C6
- 5132 B2
- 6105-1 F3
- 6105-2 G5
- 6106 C3
- 6107 G13
- 6120 G13
- 6130 E5
- 6131 D5
- 7101 C8
- 7102 C6
- 7103 H7
- 7111 C13
- 7112 F13
- T102 B2
- T103 B2
- T105 F2
- T106 F2
- T109 B6
- T110 F5
- T111 F4
- T112 F7
- T113 A8
- T114 B10
- T115 A8
- T116 B10
- T117 G13
- T118 G13
- T119 F13
- T120 F13
- T121 F13
- T122 F13
- T123 F13
- T124 F13
- T125 F13
- T126 F13
- T127 F13
- T128 D7
- T140 F11
- T141 F10
- T142 F10

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 B4 2119 D3 2130 D5 2137 A4 2146 B7 2153 C5 2165 C4 3103 C4 3134 D3 3152 A4 3158 A4 3169 B6 4106 C4 6107 C7 7103 D7
 2102 B1 2120 D3 2131 C5 2139 C6 2147 A5 2154 C4 2166 B6 3104 B4 3141 C5 3153 A4 3159 A5 3170 A6 4107 C5 6120 A6 7111 A5
 2103 D4 2124 D3 2132 D6 2140 C6 2148 B6 2159 C5 2167 B6 3105 C4 3143 D6 3154 C7 3160 A5 3172 C7 4108 C5 6130 D4 7119 B5
 2104 B4 2125 D3 2134 D7 2141 C6 2149 D6 2161 A6 2169 A4 3113 B5 3144 B7 3155 C7 3161 A5 3176 D6 6103 B3 6131 C4
 2105 C1 2126 D6 2135 D7 2143 C7 2150 B5 2163 B6 3101 D5 3119 B5 3145 C5 3156 A6 3167 B7 3181 D4 6105 C3 7101 C5
 2112 B5 2127 C5 2136 A4 2145 A5 2152 C5 3102 C3 3132 D5 3146 C7 3157 A6 3168 C7 4103 B5 6106 C3 7102 D4



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

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

Waverange	Input frequency	Input	Tuned to	Adjust	Output	Scope/Voltmeter
VARICAP ALIGNMENT						
FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz)			108MHz	5130		8V ±0.2V
			87.5MHz (65.81MHz)	check		4.3V ±0.5V (1.2V ±0.5V)
MW FM/AM-version, 10kHz grid 530 - 1700kHz			1700kHz	5123		8V ±0.2V
			530kHz	check		1.1V ±0.4V
FM/MW-version, 9kHz grid 531 - 1602kHz			1602kHz	5123	1	6.9V ±0.2V
			531kHz	check		1.1V ±0.4V
LW 153 - 279kHz			279kHz	5122		8V ±0.2V
			153kHz	check		1.1V ±0.4V
MW FM/MW/LW- version, 9kHz grid 531 - 1602kHz			1602kHz	5123		8V ±0.2V
			531kHz	check		1.1V ±0.4V
FM IF						
FM	10.7MHz, 45mV continuous wave	D		5119	2	0 ± 3 mV DC
FM RF						
FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz)	108MHz	A	108MHz	2155	4	MAX
	87.5MHz (65.81MHz)	mod=1kHz Δf=±22.5kHz	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		5111	5	
		C		5112		
AM AFC MW		C		5114	2	0 ± 2 mV DC
AM RF³⁾						
MW⁴⁾ FM/MW/LW- and FM/MW-version (9kHz grid)	1494kHz	B	1494kHz	2106	5	
	531 - 1602kHz		558kHz	5102		
LW	198kHz		198kHz	5103		
MW FM/AM-version, 10kHz grid 530 - 1700kHz	1500kHz	B	1500kHz	2106	5	
	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

MISCELLANEOUS

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

CAPACITORS

2101	4822 126 13692	47pF	1%	63V	
2102	4822 126 13838	100nF	10%	50V	not USA
2103	5322 122 31647	1nF	10%	63V	
2104	5322 122 32531	100pF	5%	50V	
2105	4822 126 13838	100nF	10%	50V	USA only

2106	2020 800 00191	3-11pF TRIMCAP.,N450			
2107	4822 121 51319	1μF	20%	50V	
2120	4822 126 13689	18pF	1%	63V	
2124	5322 122 32654	22nF	10%	63V	
2125	2020 552 96199	560pF	1%	50V	

2126	5322 122 31863	330pF	5%	50V	
2127	4822 126 14076	220nF	20%	25V	
2128	4822 124 40248	10μF	20%	63V	
2129	4822 124 41584	100μF	20%	10V	
2130	5322 122 32654	22nF	10%	63V	

2131	4822 126 13482	470nF	20%	16V	
2132	4822 126 13482	470nF	20%	16V	
2133	4822 124 21913	1μF	20%	63V	
2134	4822 126 13188	15nF	5%	63V	not USA
2134	5322 122 32654	22nF	10%	63V	USA only

2135	4822 126 13188	15nF	5%	63V	not USA
2135	5322 122 32654	22nF	10%	63V	USA only
2136	4822 126 14076	220nF	20%	25V	
2137	4822 126 14076	220nF	20%	25V	
2138	4822 124 22652	2,2μF	20%	50V	

RESISTORS

3101	4822 051 20333	33kΩ	5%	0,1W	
3102	4822 117 10837	100kΩ	1%	0,1W	
3103	4822 051 20822	8,2kΩ	5%	0,1W	
3104	4822 117 13577	330Ω	1%	0,1W	
3105	4822 117 11503	220Ω	5%	0,1W	

RESISTORS

3143	4822 051 20223	22kΩ	5%	0,1W	RDS only
3144	4822 051 10102	1kΩ	2%	0,25W	RDS only
3145	4822 117 11449	2,2kΩ	1%	0,1W	
3146	4822 051 20229	22Ω	5%	0,1W	
3152	4822 051 20471	470Ω	5%	0,1W	

3153	4822 051 20471	470Ω	5%	0,1W	
3154	4822 117 13577	330Ω	1%	0,1W	
3155	4822 117 11503	220Ω	5%	0,1W	
3156	4822 117 10837	100kΩ	1%	0,1W	
3157	4822 117 10837	100kΩ	1%	0,1W	

3158	4822 051 20471	470Ω	5%	0,1W	
3159	4822 051 20471	470Ω	5%	0,1W	
3160	4822 051 20471	470Ω	5%	0,1W	
3161	4822 051 20223	22kΩ	5%	0,1W	
3167	4822 051 20121	120Ω	5%	0,1W	

3168	4822 051 20121	120Ω	5%	0,1W	
3169	4822 051 20154	150kΩ	5%	0,1W	
3170	4822 117 10837	100kΩ	1%	0,1W	
3172	4822 051 20562	5,6kΩ	5%	0,1W	
3176	4822 051 20333	33kΩ	5%	0,1W	RDS only

COILS

5102	4822 157 71634	RF-COIL MW	
5109	4822 242 70665	FM-IF FILTER 10,7MHz	
5110	4822 242 70665	FM-IF FILTER 10,7MHz	
5111	2422 549 44023	AM-IF FILTER 450kHz	
5112	4822 157 70302	AM-IF FILTER 450kHz	

5114	4822 157 70302	AM-IF FILTER 450kHz	
5119	4822 157 11443	DISCRIMINATOR COIL	
5121	4822 242 10261	QUARTZ 75kHz	
5123	2422 549 44108	RF-COIL, AM-OSCILLATOR	
5130	4822 157 11843	RF COIL 1,5 TURNS	

5131	4822 157 11843	RF COIL 1,5 TURNS	
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DIODES

6103	5322 130 34337	BAV99	
6105	4822 130 83075	HN1V02H	
6106	4822 130 83757	BAS216	
6107	9340 386 90115	BZX284-C11	
6120	4822 130 83757	BAS216	

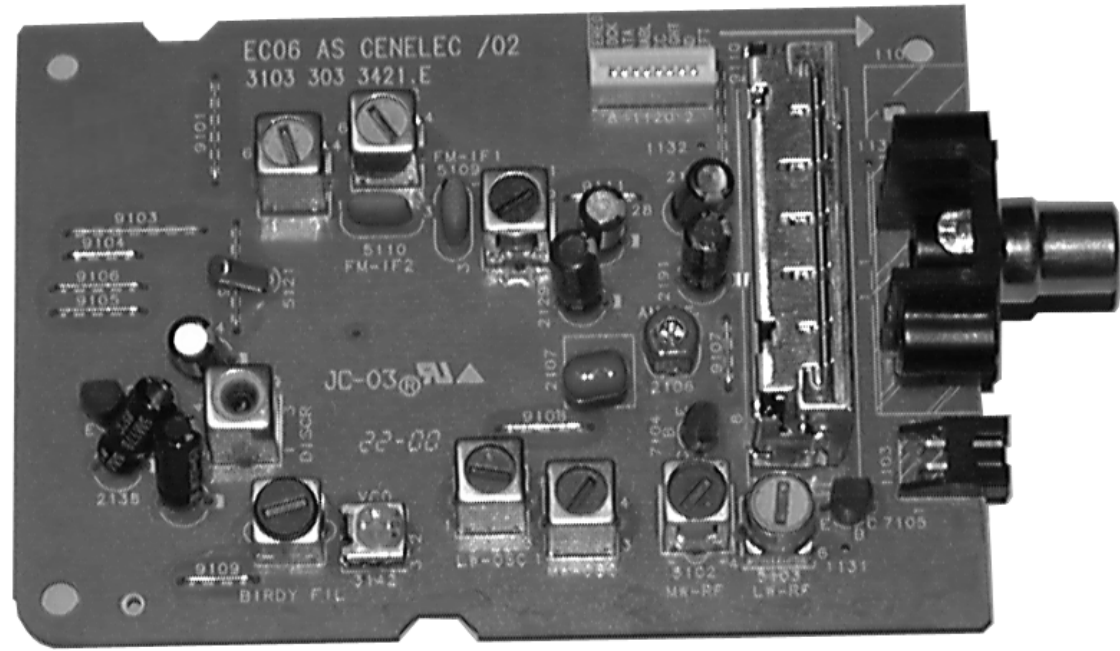
6130	4822 130 82833	1SV228	
6131	4822 130 82833	1SV228	

TRANSISTORS

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

INTEGRATED CIRCUITS

7101	9351 740 80557	TEA5757H/V1, RADIO IC	
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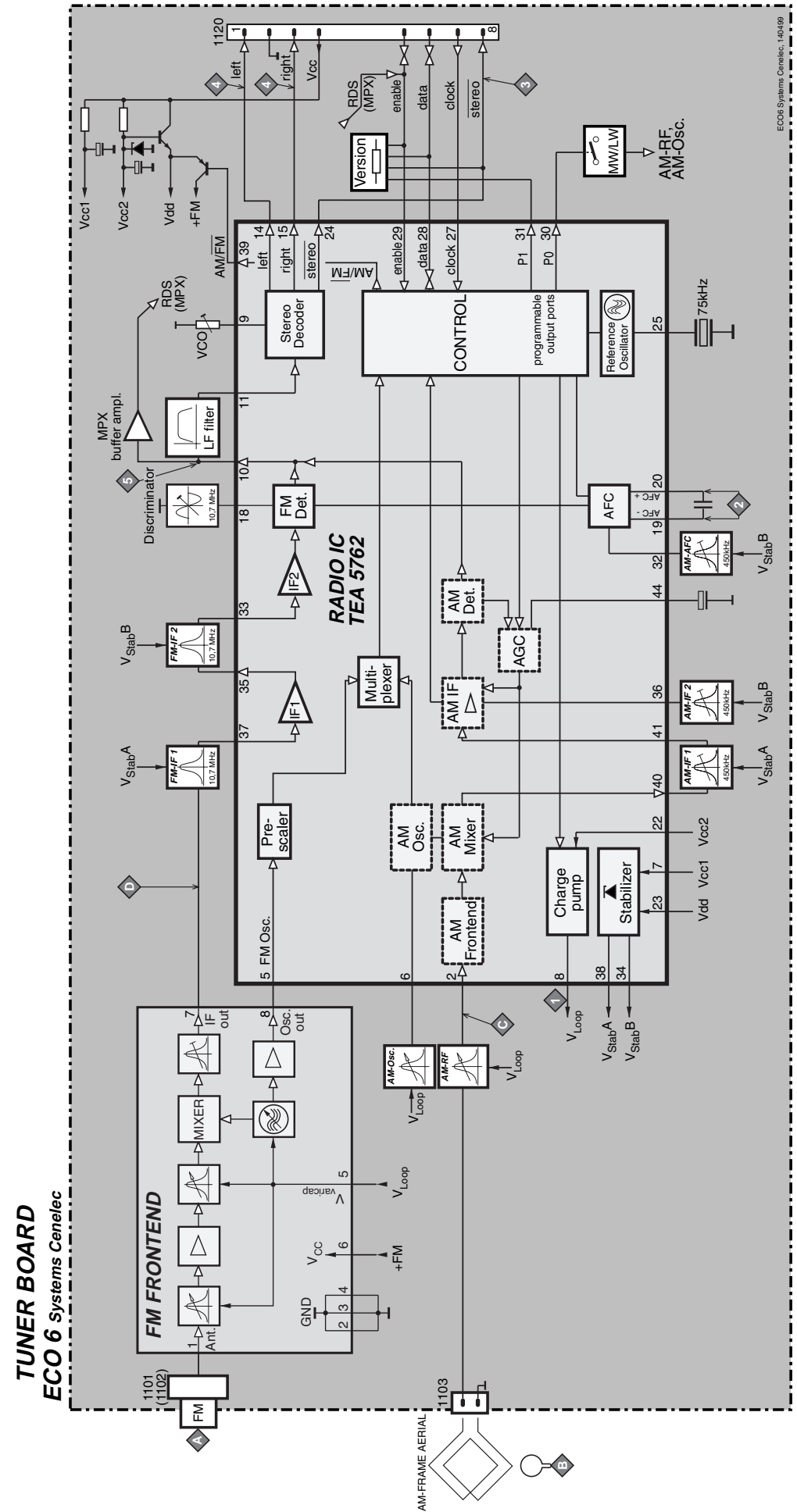
ECO6 Tuner Board

version: **SYSTEMS CENELEC**

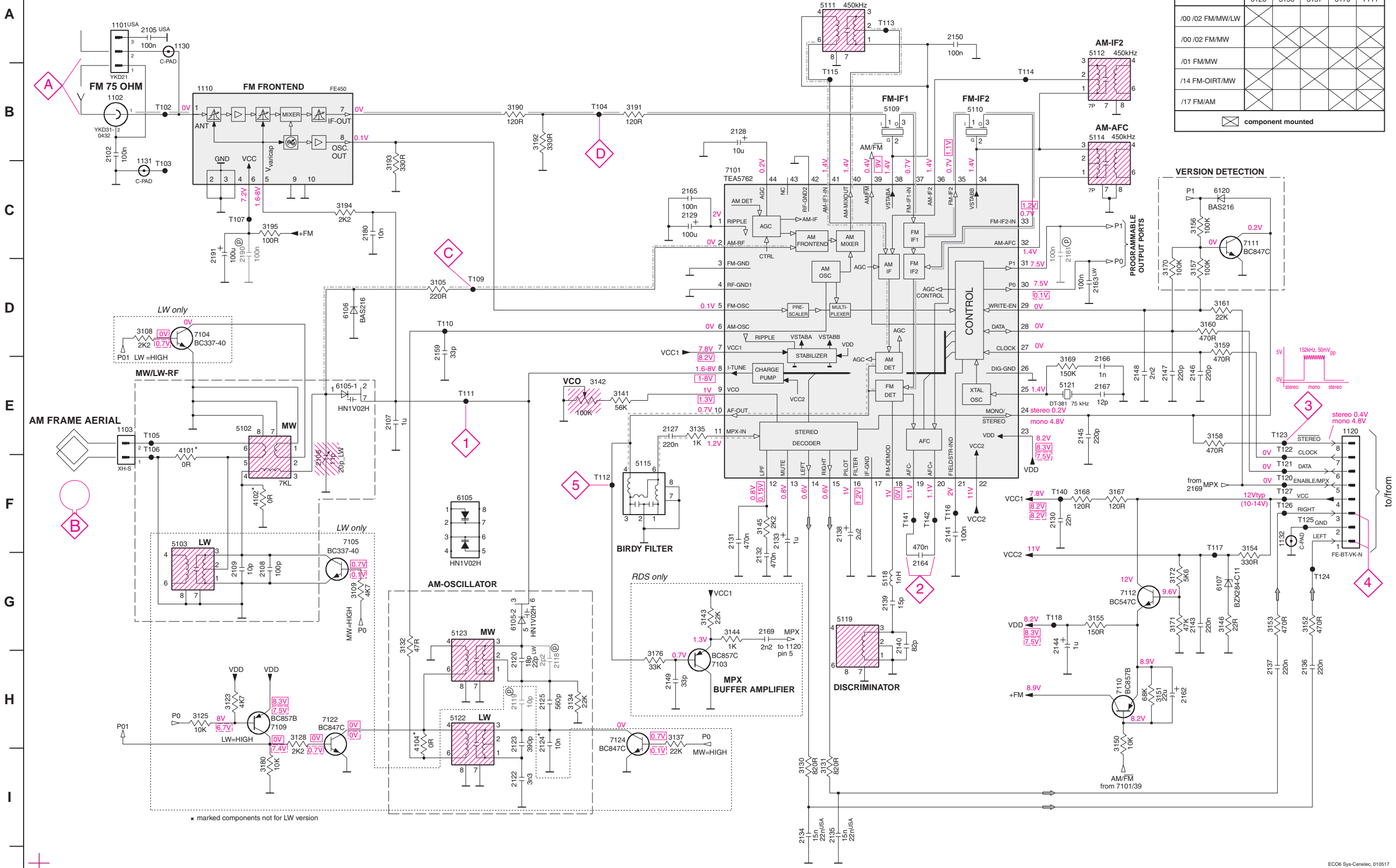
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BLOCK DIAGRAM



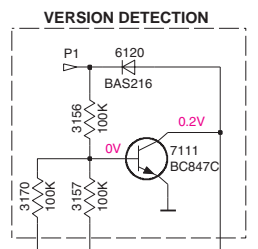
TUNER BOARD ECO6 / SYSTEMS-CENELEC



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

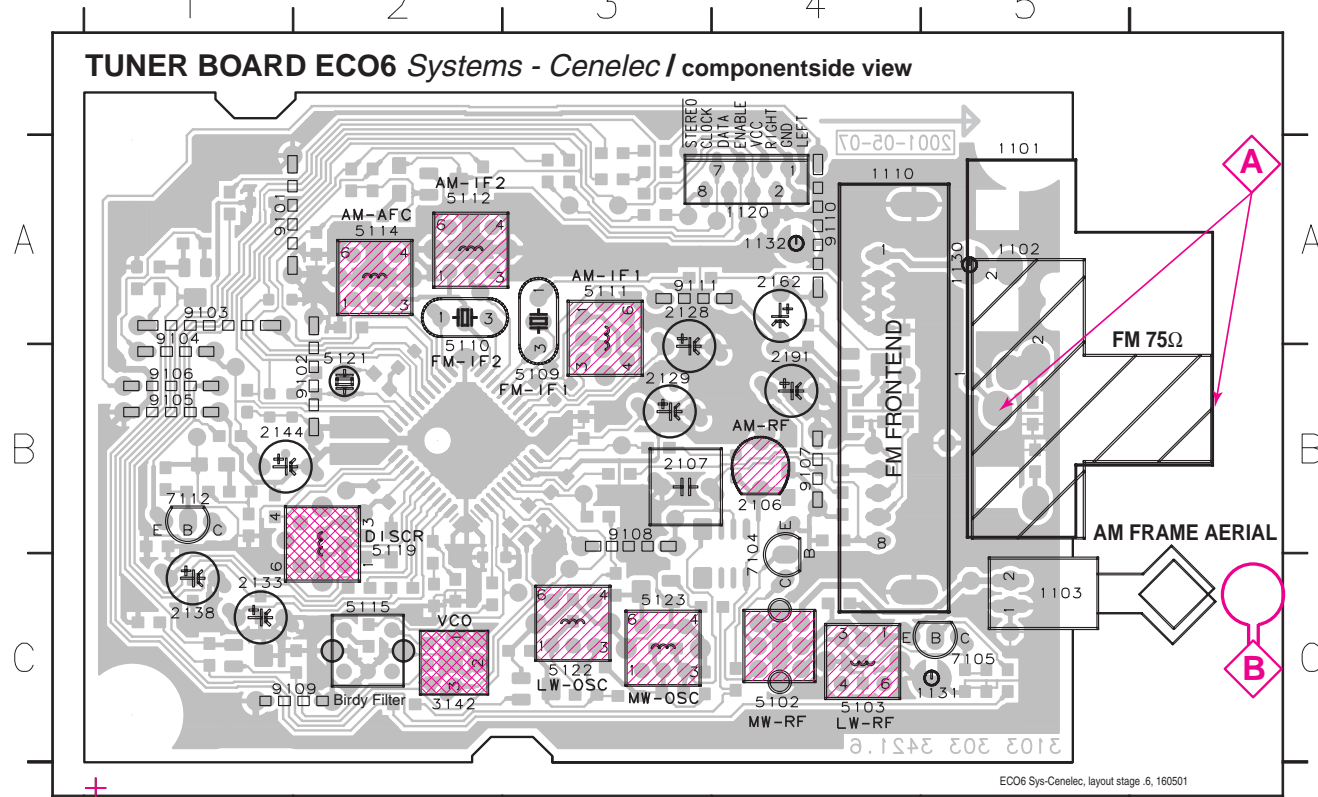


- 1101 A2
- 1102 B1
- 1103 E2
- 1110 B2
- 1120 E14
- 1130 A2
- 1131 C2
- 1132 F13
- 2102 B1
- 2105 A2
- 2106 E3
- 2107 E4
- 2108 G3
- 2109 G3
- 2118 H6
- 2119 H6
- 2120 H6
- 2122 I6
- 2123 H6
- 2124 H6
- 2125 H6
- 2127 E7
- 2128 B8
- 2129 C7
- 2130 F11
- 2131 F8
- 2132 F8
- 2133 F8
- 2134 I8
- 2135 I9
- 2136 H14
- 2137 H13
- 2138 F9
- 2139 G9
- 2140 G9
- 2141 F10
- 2143 G12
- 2144 G11
- 2145 E11
- 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 E11
- 2169 G8
- 2180 C4
- 2190 C3
- 2191 C3
- 3105 D5
- 3108 D2
- 3109 D4
- 3123 H3
- 3128 H3
- 3130 I9
- 3131 I9
- 3132 G4
- 3134 H6
- 3135 E7
- 3137 H7
- 3141 E7
- 3142 E6
- 3143 G7
- 3144 G8
- 3145 F8
- 3146 G13
- 3150 H12
- 3151 H12
- 3152 G14
- 3153 G13
- 3154 F13
- 3155 G12
- 3156 C12
- 3157 D12
- 3158 E13
- 3159 D13
- 3160 D13
- 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
- 5118 G9
- 5119 G9
- 5121 E11
- 5122 H5
- 5123 G5
- 5125-2 G6
- 6106 D4
- 6107 G13
- 6120 C13
- 7101 C8
- 7103 H8
- 7104 D2
- 7105 F4
- 7109 H3
- 7110 H12
- 7111 C13
- 7112 G12
- 7113 A3
- 7114 B11
- 7116 F10
- 7117 F13
- 7118 G11
- 7120 F13
- 7121 F13
- 7122 E13
- 7123 E13
- 7124 G14
- 7125 F14
- 7126 F13
- 7127 F13
- 7140 F11
- 7141 F10
- 7142 F10

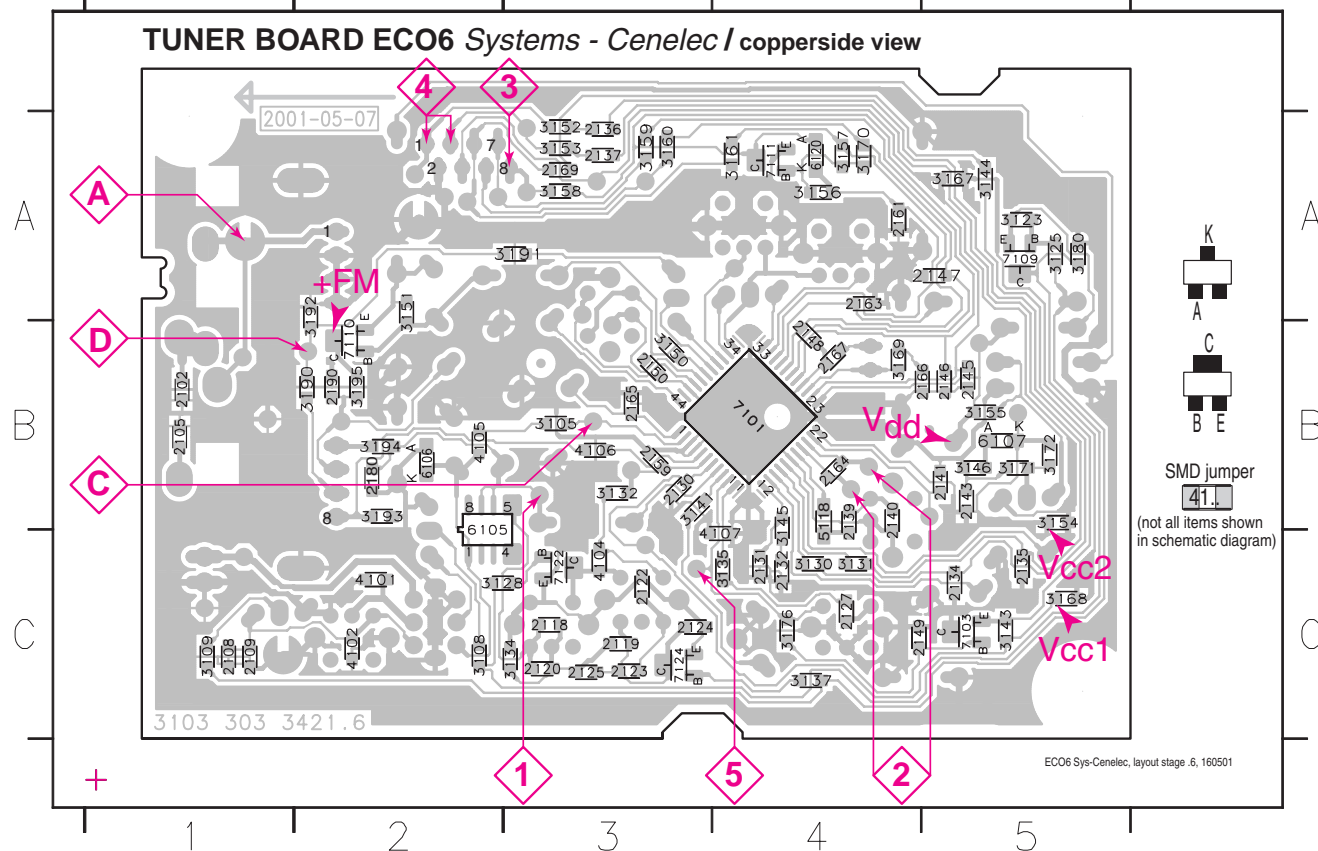
LEGEND

- * ... only assembled in FM/AM-version
- Ⓧ ... for provision only
- USA ... for USA version only
- LW ... for LW version only
- SMD jumper
- Ⓧ EVM
- ...V FM mode stereo
- ...V MW mode
- ...V LW mode
- voltages measured while set is tuned to a strong transmitter
- Signal path
- FM
- - - AM
- ⋯ MPX (Audio Frequency)
- ⇒ AF - left/right

1101 B5 1110 B4 1131 C5 2107 B3 2133 C1 2162 A4 5102 C4 5110 A2 5114 A2 5121 B2 7104 C4 9101 A2 9104 B1 9107 B4 9110 A4
 1102 B5 1120 A4 1132 A4 2128 A3 2138 B1 2191 B4 5103 C4 5111 A3 5115 C2 5122 C3 7105 C5 9102 B2 9105 B1 9108 B3 9111 A3
 1103 C5 1130 A5 2106 B4 2129 B3 2144 B1 3142 C2 5109 B3 5112 A2 5119 B2 5123 C3 7112 B1 9103 A1 9106 B1 9109 C2

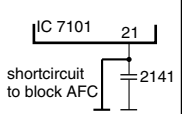
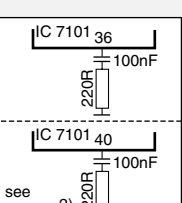
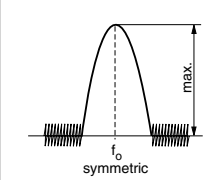
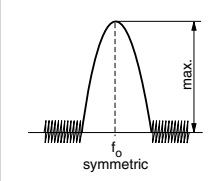


2102 B1 2120 C3 2130 B3 2137 A3 2146 B5 2161 A4 2169 A3 3123 A5 3134 C3 3145 C4 3154 B5 3160 A3 3171 B5 3192 A2 4104 C3 6106 B2 7110 B2
 2105 B1 2122 C3 2131 C4 2139 B4 2147 A5 2163 A4 2180 B2 3125 A5 3135 C4 3146 B5 3155 B5 3161 A4 3172 B5 3193 B2 4105 B2 6107 B5 7111 A4
 2108 C1 2123 C3 2132 C4 2140 B4 2148 B4 2164 B4 2190 B2 3128 C2 3137 C4 3150 B3 3156 A4 3167 A5 3176 C4 3194 B2 4106 B3 6120 A4 7122 C3
 2109 C1 2124 C3 2134 C5 2141 B5 2149 C4 2165 B3 3105 B3 3130 C4 3141 B3 3151 A2 3157 A4 3168 C5 3180 A5 3195 B2 4107 C4 7101 B4 7124 C3
 2118 C3 2125 C3 2135 C5 2143 B5 2150 B3 2166 B5 3108 C2 3131 C4 3143 C5 3152 A3 3158 A3 3169 B4 3190 B2 4101 C2 5118 C4 7103 C5
 2119 C3 2127 C4 2136 A3 2145 B5 2159 B3 2167 B4 3109 C1 3132 B3 3144 A5 3153 A3 3159 A3 3170 A4 3191 A3 4102 C2 6105 B2 7109 A5



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 Cenelec FM/MW - and FM/MW/LW - versions with AM-frame aerial)

Waverange	Input frequency	Input	Tuned to	Adjust	Output	Scope/Voltmeter
<i>VARICAP ALIGNMENT</i>						
FM 87.5 - 108MHz (50kHz grid)			108MHz	check		8V ±1.2V
			87.5MHz	check		1.6V ±0.5V
MW 531 - 1602kHz (9kHz grid)			1602kHz	5123	1	8V ±0.2V 3-band 6.9V ±0.2V 2-band
			531kHz	check		1.1V ±0.4V
LW 153 - 279kHz (3kHz grid)			279kHz	5122		8V ±0.2V
			153kHz	check		1.1V ±0.4V
<i>FM - IF</i>						
FM	10.7MHz, 45mV continuous wave	D		5119	2	0mV ±3mV
<i>FM - VCO</i>						
FM	98MHz, 1mV continuous wave	A	98MHz	3142	3	152kHz ±1kHz ¹⁾
<i>FM RF (channel separation)</i> Note: The FM-frontend unit has already been adjusted by the factory and needs therefore no further adjustments for service purposes.						
FM	98MHz, 1mV 90% Left + 9% pilot mod=1kHz	A	98MHz	IF coil inside FM frontend 1110	4	right channel min.
<i>AM IF</i>						
MW	450kHz connect pin 6 of IC 7101 (AM Osc.) with 3.3kΩ to Vcc	C		5111	5	
				5112		
AM AFC MW		C		5114	2	0mV ±2mV
<i>AM RF³⁾</i>						
MW	1494kHz	B		1494kHz	2106	
	558kHz			5102		
LW	198kHz			198kHz	5103	

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

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

↑ Repeat

MISCELLANEOUS

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

CAPACITORS

2102	4822 126 13838	100nF 10% 50V	not USA
2105	4822 126 13838	100nF 10% 50V	USA only
2106	2020 800 00204	TRIMCAP. 4.2 - 20pF, N750	LW only
2106	2020 800 00191	TRIMCAP. 3 - 11pF, N450	FM/AM only
2107	4822 121 51319	1μF 20% 50V	
2108	5322 122 32531	100pF 5% 50V	LW only
2109	5322 122 32448	10pF 5% 50V	LW only
2120	4822 126 13689	18pF 1% 63V	FM/AM only
2120	5322 122 32658	22pF 5% 50V	LW only
2122	4822 122 33891	3,3nF 10% 63V	LW only
2123	2020 552 93494	390pF 1% 50V	LW only
2124	4822 122 33177	10nF 20% 50V	FM/AM only
2125	2020 552 96199	560pF 1% 50V	
2127	4822 126 14076	220nF 20% 25V	
2128	4822 124 40248	10μF 20% 63V	
2129	4822 124 41584	100μF 20% 10V	
2130	5322 122 32654	22nF 10% 63V	
2131	4822 126 13482	470nF 20% 16V	
2132	4822 126 13482	470nF 20% 16V	
2133	4822 124 21913	1μF 20% 63V	
2134	3198 017 31530	15nF 10% 50V	not USA
2134	5322 122 32654	22nF 10% 63V	USA only
2135	3198 017 31530	15nF 10% 50V	not USA
2135	3198 017 32230	22nF 10% 25V	USA only
2136	4822 126 14076	220nF 20% 25V	
2137	4822 126 14076	220nF 20% 25V	
2138	4822 124 22652	2,2μF 20% 50V	
2139	4822 126 14236	15pF 5% 50V	
2140	4822 126 13695	82pF 1% 63V	
2141	4822 126 13838	100nF 10% 50V	
2143	4822 126 14076	220nF 20% 25V	
2144	4822 124 21913	1μF 20% 63V	
2145	4822 122 33575	220pF 5% 50V	
2146	4822 122 33575	220pF 5% 50V	
2147	4822 122 33575	220pF 5% 50V	
2148	4822 122 33127	2,2nF 10% 63V	
2149	5322 122 32659	33pF 5% 50V	RDS only
2150	4822 126 13838	100nF 10% 50V	
2159	5322 122 31151	22μF 20% 50V	
2163	4822 126 13838	100nF 10% 50V	LW only
2164	4822 126 13482	470nF 20% 16V	
2165	4822 126 13838	100nF 10% 50V	
2166	5322 122 31647	1nF 10% 63V	
2167	4822 122 33926	12pF 5% 50V	
2169	4822 122 33127	2,2nF 10% 63V	RDS only
2180	3198 017 31030	10nF 10% 50V	
2190	4822 126 13838	100nF 10% 50V	
2191	4822 124 40178	100μF 20% 10V	

RESISTORS

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

RESISTORS

3128	4822 117 11449	2,2kΩ 1% 0,1W	LW only
3130	3198 021 38210	820Ω 5% 0,06W	
3131	3198 021 38210	820Ω 5% 0,06W	
3132	4822 051 20479	47Ω 5% 0,1W	
3134	4822 051 20223	22kΩ 5% 0,1W	
3135	3198 021 31020	1kΩ 5% 0,06W	
3137	4822 051 20223	22kΩ 5% 0,1W	LW only
3141	4822 117 11148	56kΩ 1% 0,1W	
3142	4822 100 12159	TRIMPOT. 100kΩ	
3143	4822 051 20223	22kΩ 5% 0,1W	RDS only
3144	4822 051 10102	1kΩ 2% 0,25W	RDS only
3145	4822 117 11449	2,2kΩ 1% 0,1W	
3146	4822 051 20229	22Ω 5% 0,1W	
3150	4822 117 10833	10kΩ 1% 0,1W	
3151	4822 051 20683	68kΩ 5% 0,1W	
3152	4822 051 20471	470Ω 5% 0,1W	
3153	4822 051 20471	470Ω 5% 0,1W	
3154	4822 117 13577	330Ω 1% 0,1W	
3155	4822 117 10353	150Ω 5% 0,1W	
3156	4822 117 10837	100kΩ 1% 0,1W	
3157	4822 117 10837	100kΩ 1% 0,1W	
3158	4822 051 20471	470Ω 5% 0,1W	
3159	4822 051 20471	470Ω 5% 0,1W	
3160	4822 051 20471	470Ω 5% 0,1W	
3161	4822 051 20223	22kΩ 5% 0,1W	
3167	4822 051 20121	120Ω 5% 0,1W	
3168	4822 051 20121	120Ω 5% 0,1W	
3169	4822 051 20154	150kΩ 5% 0,1W	
3170	4822 117 10837	100kΩ 1% 0,1W	
3171	4822 117 10834	47kΩ 1% 0,1W	
3172	4822 051 20562	5,6kΩ 5% 0,1W	
3176	4822 051 20333	33kΩ 5% 0,1W	RDS only
3180	4822 117 10833	10kΩ 1% 0,1W	LW only
3190	4822 051 20121	120Ω 5% 0,1W	
3191	4822 051 20121	120Ω 5% 0,1W	
3192	4822 117 13577	330Ω 1% 0,1W	
3193	4822 117 13577	330Ω 1% 0,1W	
3194	4822 117 11449	2,2kΩ 1% 0,1W	
3195	4822 051 20101	100Ω 5% 0,1W	
4101	4822 051 20008	CHIP JUMPER 0805	FM/AM only
4102	4822 051 20008	CHIP JUMPER 0805	FM/AM only
4104	4822 051 20008	CHIP JUMPER 0805	FM/AM only
4105	4822 051 20008	CHIP JUMPER 0805	
4106	4822 051 20008	CHIP JUMPER 0805	
4107	4822 051 20008	CHIP JUMPER 0805	

COILS

5102	4822 157 71634	RF-COIL MW	
5103	2422 549 44107	RF-COIL LW	LW only
5109	4822 157 71639	FM-IF FILTER 10,7MHz	
5110	4822 242 70665	FM-IF FILTER 10,7MHz	
5111	2422 549 44023	AM-IF FILTER 450kHz	
5112	4822 157 70302	AM-IF FILTER 450kHz	
5114	4822 157 70302	AM-IF FILTER 450kHz	
5115	4822 157 71636	ANTI BIRDY FILTER	
5118	2422 535 95881	100nH	
5119	4822 157 11443	DISCRIMINATOR COIL	
5121	4822 242 10261	QUARTZ 75kHz	
5122	2422 549 44108	RF-COIL, LW-OSCILLATOR	LW only
5123	2422 549 44108	RF-COIL, MW-OSCILLATOR	

DIODES

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

TRANSISTORS

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

INTEGRATED CIRCUITS

7101	4822 209 90315	TEA5762H/V1, RADIO IC	
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Brief introduction of the Mains Board

ECO Power

Standby Transformer 5203 provides the LPS supply to control the relay 1210, cutting of the Mains supply to the Mains transformer during the ECO Power (standby) mode.

The Mains transformer provides the following:

- 5V6_ECO for Low Power Supply
- +A, +A/2 and +B to the Combi board

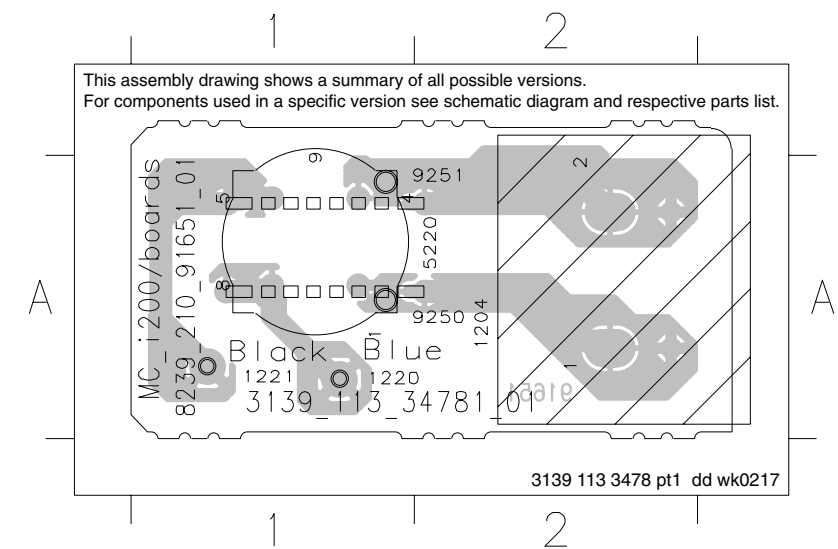
MAINS BOARD

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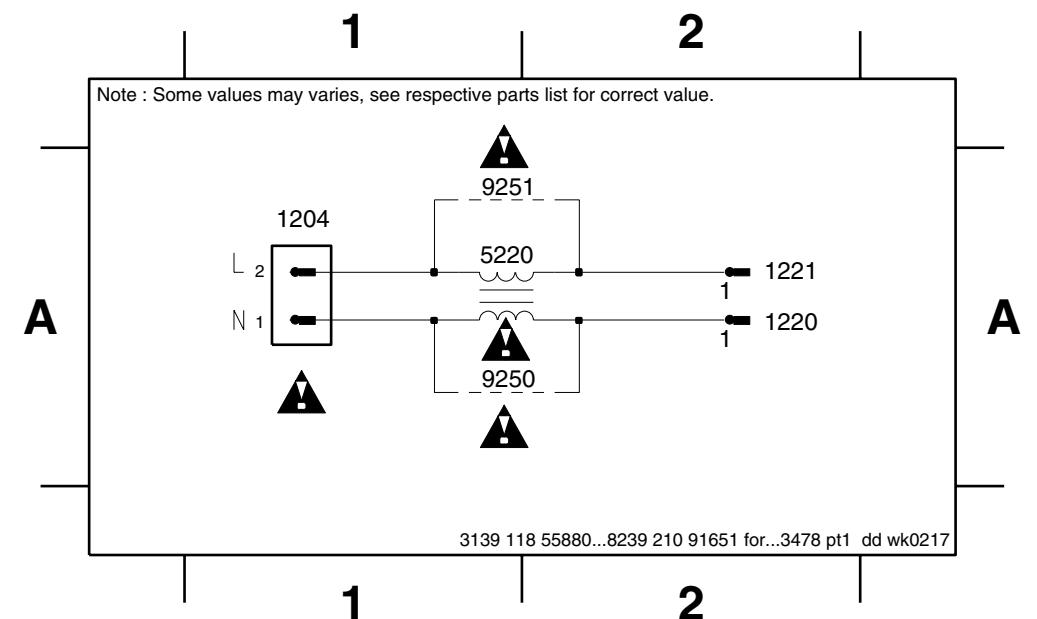
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 Mains Board - Component layout 8-2
 Mains Board - Chip layout 8-3
 Mains Board - Circuit diagram 8-4
 Electrical parts list 8-5

MAINS SOCKET - CIRCUIT DIAGRAM & COMPONENT LAYOUT

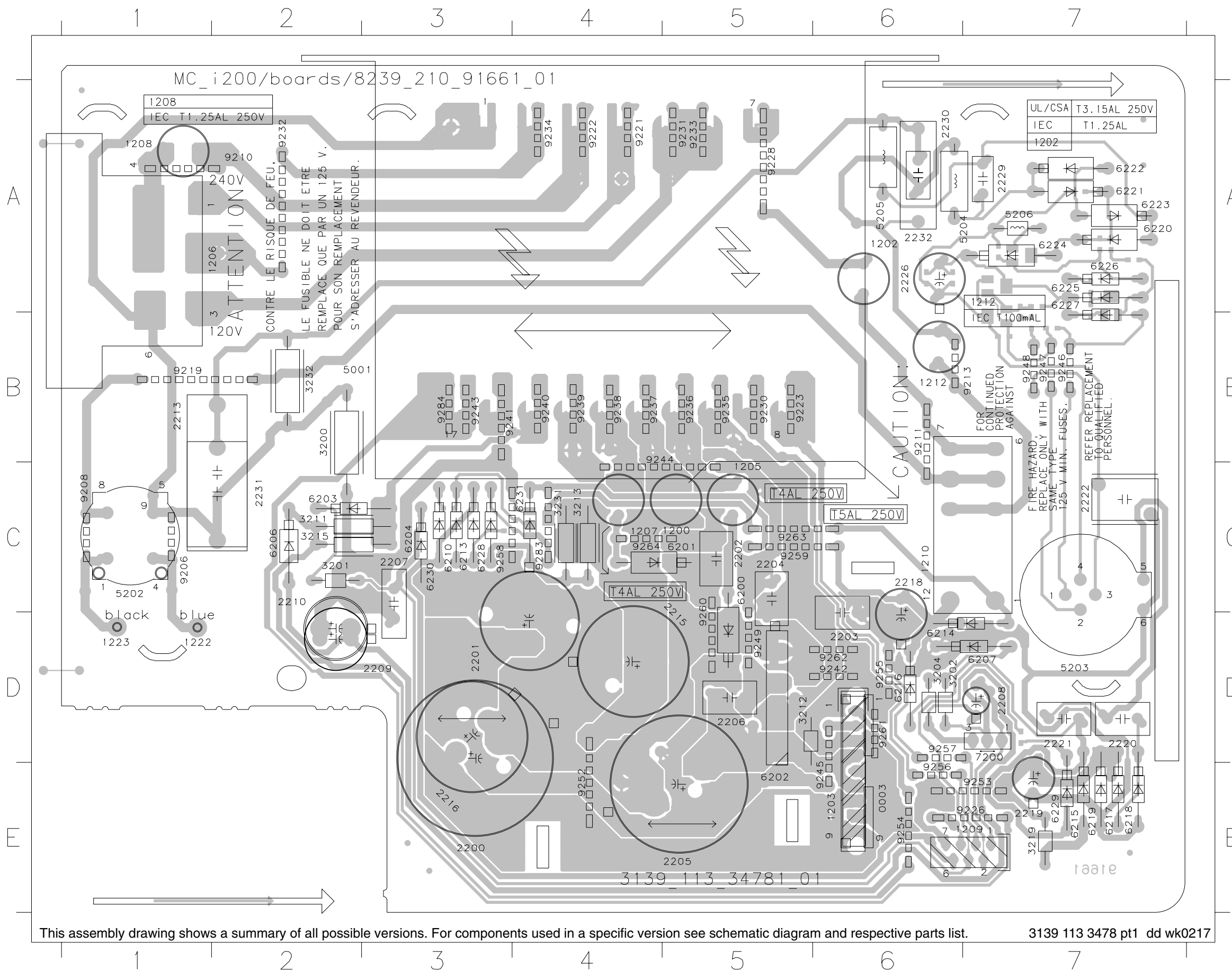
1204 A2 1221 A1 9250 A2
 1220 A1 5220 A2 9251 A2



1204 A1 1220 A2 1221 A2 5220 A1 9250 A1 9251 A1



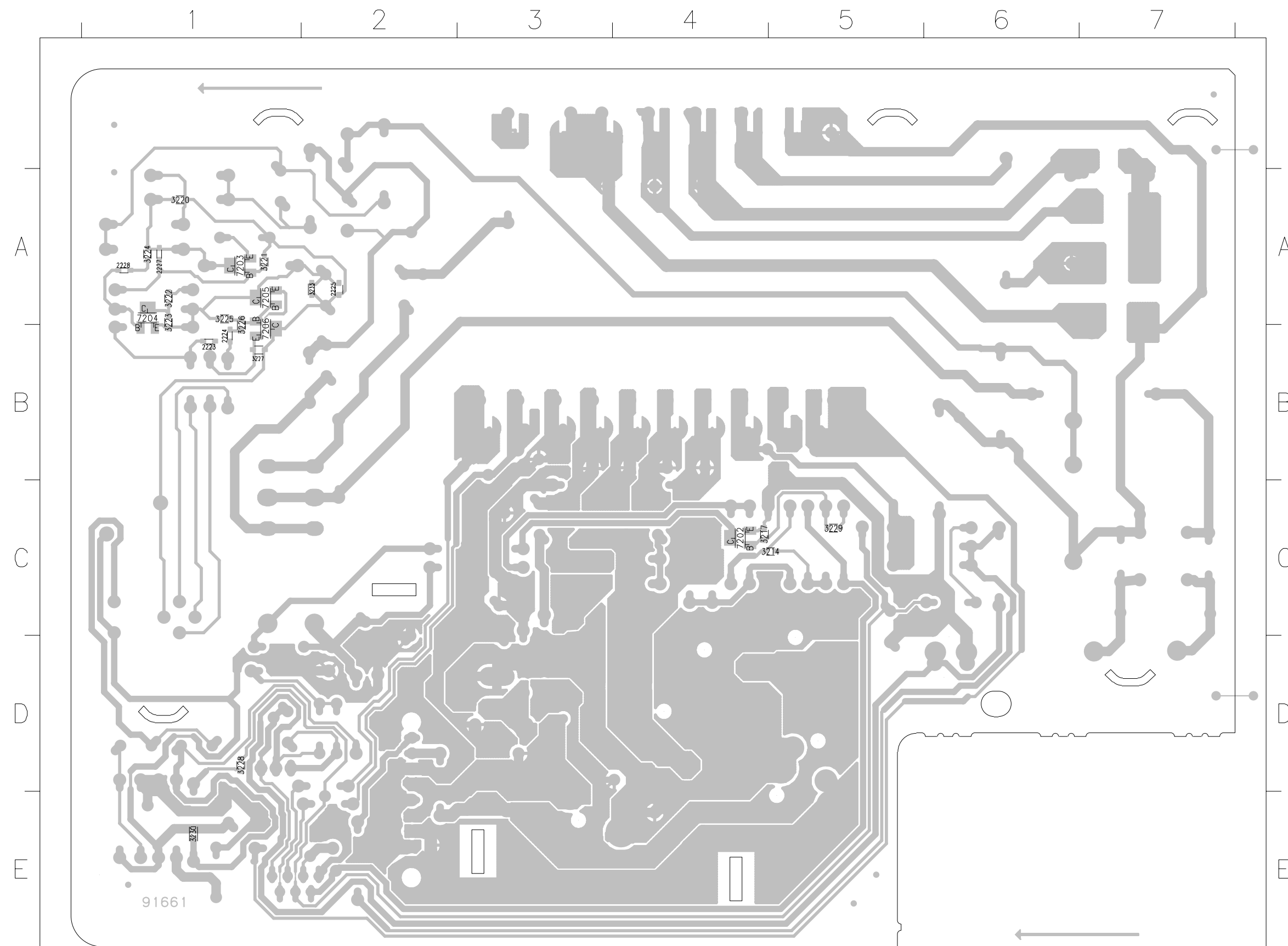
MAINS BOARD - COMPONENT LAYOUT



0003	E6	6222	A7
1200	C5	6223	A7
1202	A6	6224	A7
1203	E6	6225	A7
1205	C5	6226	A7
1206	A2	6227	A7
1207	C4	6228	C3
1208	A1	6229	E7
1209	E7	6230	C3
1210	C6	6231	C4
1212	B6	7200	D7
1222	D1	9206	C1
1223	D1	9208	C1
2200	E3	9210	A2
2201	D3	9211	B6
2202	C5	9213	B7
2203	D6	9219	B1
2204	C5	9221	A4
2205	E5	9222	A4
2206	D5	9223	B5
2207	C3	9226	E7
2208	D7	9228	A5
2209	D3	9230	B5
2210	C2	9231	A5
2213	B1	9232	A2
2215	D5	9233	A5
2216	E3	9234	A4
2218	C6	9235	B5
2219	E7	9236	B5
2220	D7	9237	B4
2221	D7	9238	B4
2222	C7	9239	B4
2226	A6	9240	B4
2229	A7	9241	B3
2230	A6	9242	D6
2231	C2	9243	B3
2232	A6	9244	B4
3200	B2	9245	E6
3201	C2	9246	B7
3202	D6	9247	B7
3204	D6	9248	B7
3211	C2	9249	D5
3212	D5	9252	F4
3213	C4	9253	E7
3215	C2	9254	E6
3219	E7	9255	D6
3231	C4	9256	E6
3232	B2	9257	D6
5001	B2	9258	C3
5202	C1	9259	C5
5203	D7	9260	C5
5204	A7	9261	D6
5205	A6	9262	D6
5206	A7	9263	C5
6200	C5	9264	C4
6201	C5	9283	C4
6202	E5	9284	B3
6203	C2		
6204	C3		
6206	C2		
6207	D7		
6210	C3		
6213	C3		
6214	D6		
6215	E7		
6216	D6		
6217	E7		
6218	E7		
6219	E7		
6220	A7		
6221	A7		

This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list. 3139 113 3478 pt1 dd wk0217

MAINS BOARD - CHIP LAYOUT

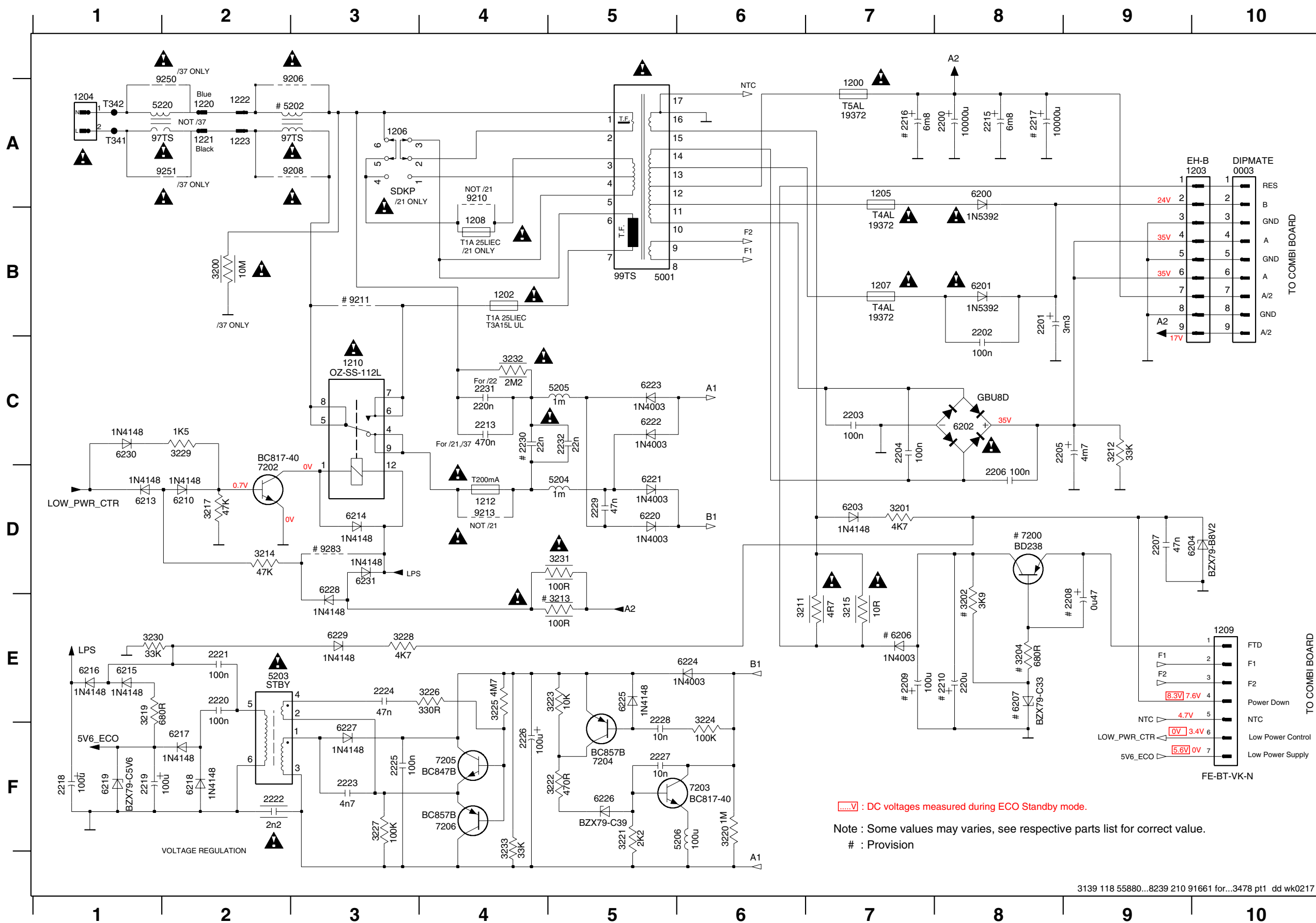


- 2223 B1
- 2224 B1
- 2225 A2
- 2227 A1
- 2228 A1
- 3214 C5
- 3217 C4
- 3220 A1
- 3221 A1
- 3222 A1
- 3223 A1
- 3224 A1
- 3225 A1
- 3226 B1
- 3227 B1
- 3228 D1
- 3229 C5
- 3230 E1
- 3233 A2
- 7202 C4
- 7203 A1
- 7204 A1
- 7205 A1
- 7206 B1

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

3139 113 3478 pt1 dd wk0217

MAINS BOARD - CIRCUIT DIAGRAM



0003	A10	6219	F1
1200	A7	6220	D5
1202	B4	6221	D5
1203	A9	6222	C5
1205	A7	6223	C5
1206	A3	6224	E6
1207	B7	6225	E5
1208	B4	6226	F5
1209	E10	6227	F3
1210	C3	6228	D3
1212	D4	6229	E3
1222	A2	6230	C1
1223	A2	6231	D3
2200	A8	7200	D8
2201	B8	7202	D2
2202	B8	7203	F6
2203	C7	7204	E5
2204	C7	7205	F4
2205	C8	7206	F4
2206	D8	9206	A3
2207	D9	9208	A3
2208	E9	9210	A4
2209	E7	9211	B3
2210	E8	9213	D4
2213	C4	9283	D3
2215	A8		
2216	A7		
2217	A8		
2218	F1		
2219	F1		
2220	E2		
2221	E2		
2222	F2		
2223	F3		
2224	E3		
2225	F3		
2226	F4		
2227	F5		
2228	E5		
2229	D5		
2230	C4		
2231	C4		
2232	C5		
3200	B2		
3201	D7		
3202	E8		
3204	E8		
3211	E6		
3212	C9		
3213	E5		
3214	D2		
3215	E7		
3217	D2		
3219	E1		
3220	F6		
3221	F5		
3222	F5		
3223	E5		
3224	F6		
3225	E4		
3226	E4		
3227	F3		
3228	E3		
3229	C2		
3230	E1		
3231	D5		
3232	C4		
3233	F4		
5001	B5		
5202	A3		
5203	E3		
5204	D5		
5205	C5		
5206	F6		
6200	A8		
6201	B8		
6202	C8		
6203	D7		
6204	D9		
6206	E7		
6207	E8		
6210	D2		
6213	D1		
6214	D3		
6215	E1		
6216	E1		
6217	F2		
6218	F2		

.....V : DC voltages measured during ECO Standby mode.
 Note : Some values may varies, see respective parts list for correct value.
 # : Provision

ELECTRICAL PARTS LIST - MAINS BOARD**MISCELLANEOUS**

1200	2422 086 10963	△ Fuse RAD LT 5A
1202	4822 071 51252	△ Fuse RAD LT 1,25A /21M/22
1202	4822 252 51121	△ Fuse RAD LT 3,15A /37
1204	4822 265 31015	△ Mains Socket /21M/22
1204	2422 030 00328	△ Mains Socket /37
1205	2422 086 10786	△ Fuse RAD LT 4A
1206	2422 129 16478	△ Voltage Selector /21M
1207	2422 086 10786	△ Fuse RAD LT 4A
1208	4822 071 51252	△ Fuse RAD LT 1,25A /21M
1209	4822 267 10953	Flex Connector 7P
1210	2422 132 07519	△ Relay 1P 12V 16A OZ-SS L
1212	4822 071 52001	△ Fuse RAD LT 200mA/21M

CAPACITORS

2200	2022 020 00646	10000uF 20% 25V
2201	4822 124 42367	3300uF 20% 35V
2202	5322 121 42386	100nF 5% 63V
2203	5322 121 42386	100nF 5% 63V
2204	5322 121 42386	100nF 5% 63V
2205	4822 124 80415	4700uF 20% 50V
2206	5322 121 42386	100nF 5% 63V
2207	4822 122 33449	47nF 30% 50V
2213	4822 126 13589	470nF 275V /21M/37
2215	4822 124 12328	6800uF 25V
2218	2020 012 93583	100uF 20% 25V
2219	4822 124 23052	100uF 20% 16V
2220	5322 121 42386	100nF 5% 63V
2221	5322 121 42386	100nF 5% 63V
2222	4822 126 14088	△ 2,2nF 20% 250V
2223	4822 126 13193	4,7nF 10% 63V
2224	3198 017 34730	47nF 16V
2225	2238 586 59812	100nF 50V
2226	4822 124 40255	100uF 20% 63V
2227	5322 126 11583	10nF 10% 50V
2228	5322 126 11583	10nF 10% 50V
2229	4822 121 43526	47nF 5% 250V
2231	4822 121 10512	220nF 20% 275V /22
2232	2222 336 19106	22nF 20% 275V

RESISTORS

3200	4822 053 21106	△ 10M 5% 0,5W /37
3201	4822 116 52283	4k7 5% 0,5W
3211	4822 052 10478	△ 4R7 5% 0,33W
3212	4822 050 23303	33k 1% 0,6W
3214	4822 117 12925	47k 1% 0,063W
3215	4822 052 10109	△ 10R 5% 0,33W
3217	4822 117 12925	47k 1% 0,063W
3219	4822 116 52228	680R 5% 0,5W
3220	4822 051 30105	1M 5% 0,062W
3221	4822 051 30222	2k2 5% 0,062W
3222	4822 051 30471	470R 5% 0,062W

3223	4822 051 30103	10k 5% 0,062W
3224	4822 117 13632	100k 1% 0,62W
3225	4822 051 30475	4M7 5% 0,062W
3226	4822 051 30331	330R 5% 0,062W
3227	4822 117 13632	100k 1% 0,62W
3228	4822 051 30472	4k7 5% 0,062W
3229	4822 051 30152	1k5 5% 0,062W
3230	4822 051 30333	33k 5% 0,062W
3231	4822 052 10101	△ 100R 5% 0,33W
3232	4822 053 21225	△ 2M2 5% 0,5W
3233	4822 051 30333	33k 5% 0,062W

COILS & FILTERS

5203	2422 549 45157	△ TRAFO STANDBY 3A1631N
5204	4822 157 53473	Coil 1000uH 10%
5205	4822 157 53473	Coil 1000uH 10%
5206	4822 157 11228	Coil 100uH 5%
5220	4822 157 11832	△ 400uH 3A /21M/22

DIODES

6200	4822 130 31878	△ 1N4003G
6200	5322 130 80686	△ 1N5392
6201	4822 130 31878	△ 1N4003G
6201	5322 130 80686	△ 1N5392
6202	4822 130 11139	△ GBU8D
6203	4822 130 30621	1N4148
6204	4822 130 34382	BZX79-B8V2
6210	4822 130 30621	1N4148
6213	4822 130 30621	1N4148
6214	4822 130 30621	1N4148
6215	4822 130 30621	1N4148
6216	4822 130 30621	1N4148
6217	4822 130 30621	1N4148
6218	4822 130 30621	1N4148
6219	4822 130 34173	BZX79-C5V6
6220	4822 130 31878	1N4003G
6221	4822 130 31878	1N4003G
6222	4822 130 31878	1N4003G
6223	4822 130 31878	1N4003G
6224	4822 130 31878	1N4003G
6225	4822 130 30621	1N4148
6226	4822 130 34145	BZX79-C39
6227	4822 130 30621	1N4148
6228	4822 130 30621	1N4148
6229	4822 130 30621	1N4148
6230	4822 130 30621	1N4148
6231	4822 130 30621	1N4148

TRANSISTORS & INTEGRATED CIRCUITS

7202	4822 130 42615	BC817-40
7203	4822 130 42615	BC817-40

ELECTRICAL PARTS LIST - MAINS BOARD**TRANSISTORS & INTEGRATED CIRCUITS**

7204	4822 130 60373	BC857B
7205	5322 130 60159	BC847B
7206	4822 130 60373	BC857B

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

COMBI & REGULATOR BOARDS

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Brief introduction of the Regulator Board

The regulator board provides the following:

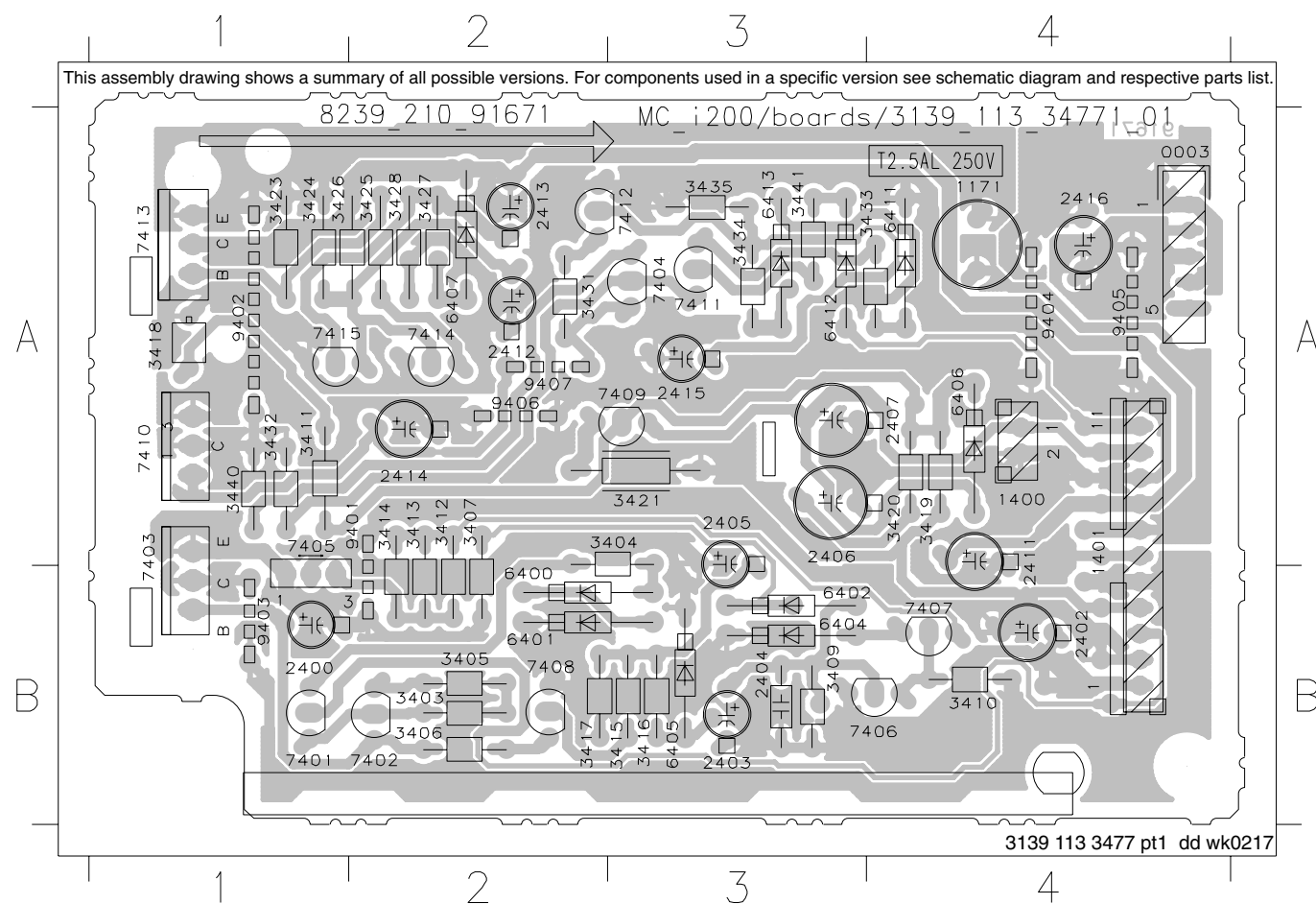
- a) 12V supply : +12V_A and +12V_D derived from the +A supply
- b) 5,6V and 5V supply : +5V6 and 5V_iAM derived from the +A/2 supply

Brief introduction of the Combi Board

1. Source select & Sound control
Audio Processor IC 7506 (TDA7468D) provides the source selection and sound control features via the I2C bus (I2C_CLK and I2C_DATA lines).
2. Line out
Line out is taken directly from the Audio Processor IC 7506. Muting is done via transistors 7003, 7007 and 7008.
3. Pre-amplifier
IC 7700 (NJM4556AM) provides pre-amplification of the output signals from the Audio Processor IC 7506. Muting of audio signals to Power Amplifier IC 7301 and 7302 during Headphone application and Source switching is done via transistors 7328 and 7329.
4. Headphone and Subwoofer outputs
The Headphone and Subwoofer outputs are taken from the pre-amplifier out. Muting of these outputs are done via transistors 7004, 7009, 7011 and 7012.
5. Power Amplifier
IC 7301 and 7302 (AN7591) are used as Power Amplifier. They function as Super Class G Amplifier together with transistors 7304 and 7309 (STP16NE06) which switches the supply between supply source A1, B1 and C1.
6. I/O Expander
I/O Expander IC 7005 (M62320FP) converts the I2C bus (I2C_CLK and I2C_DATA lines) into additional control lines.

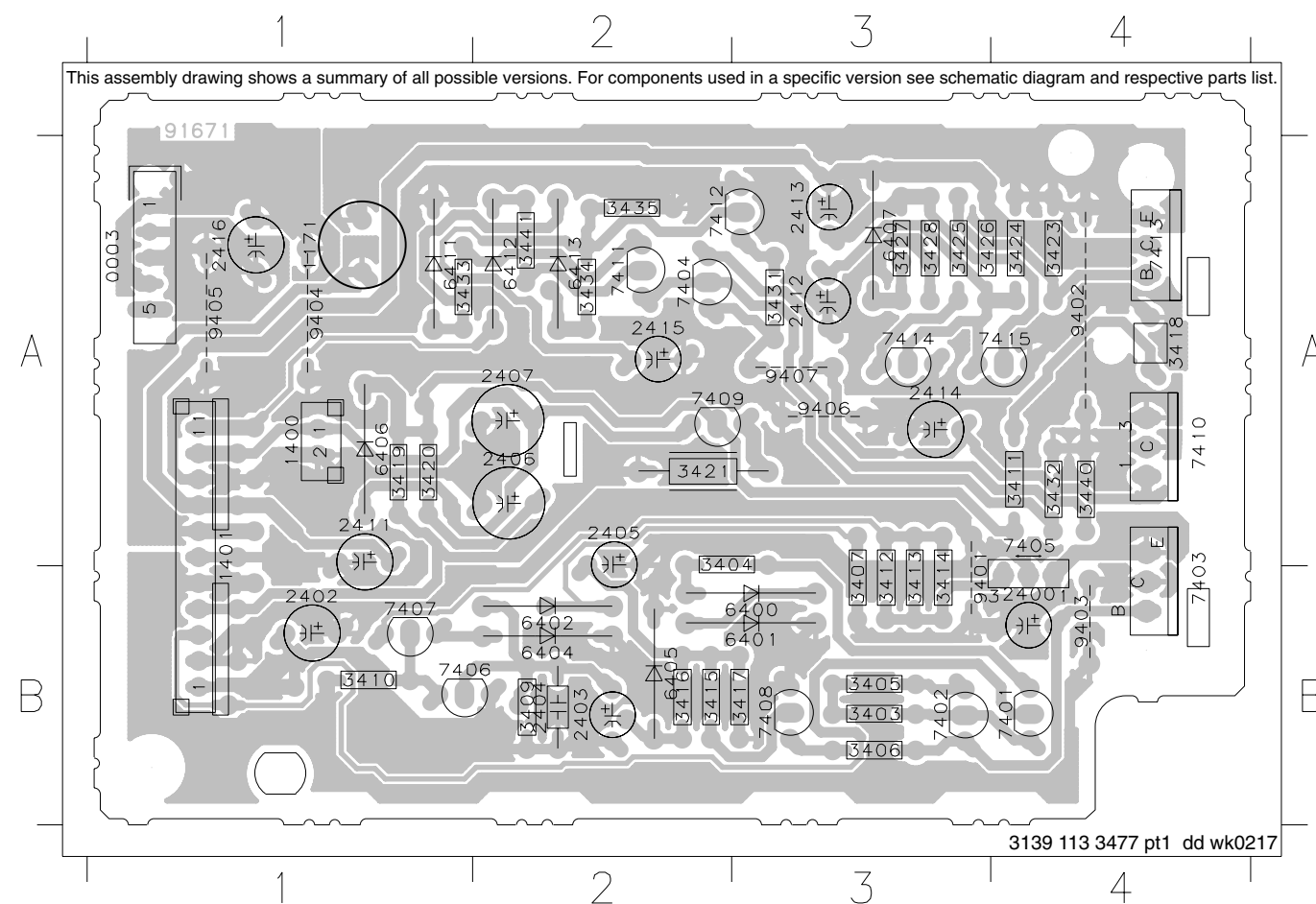
REGULATOR BOARD - COMPONENT SIDE VIEW

0003 A4	2406 A3	3404 A3	3414 A2	3424 A1	3435 A3	6407 A2	7406 B4	7415 A1
1171 A4	2407 A4	3405 B2	3415 B3	3425 A2	3440 A1	6411 A4	7407 B4	9401 A2
1400 A4	2411 A4	3406 B2	3416 B3	3426 A1	3441 A3	6412 A3	7408 B2	9402 A1
1401 A4	2412 A2	3407 A2	3417 B2	3427 A2	6400 B2	6413 A3	7409 A3	9403 B1
2400 B1	2413 A2	3409 B3	3418 A1	3428 A2	6401 B2	7401 B1	7410 A1	9404 A4
2402 B4	2414 A2	3410 B4	3419 A4	3431 A2	6402 B3	7402 B2	7411 A3	9405 A4
2403 B3	2415 A3	3411 A1	3420 A4	3432 A1	6404 B3	7403 A1	7412 A3	9406 A2
2404 B3	2416 A4	3412 A2	3421 A3	3433 A3	6405 B3	7404 A3	7413 A1	9407 A2
2405 A3	3403 B2	3413 A2	3423 A1	3434 A3	6406 A4	7405 A1	7414 A2	



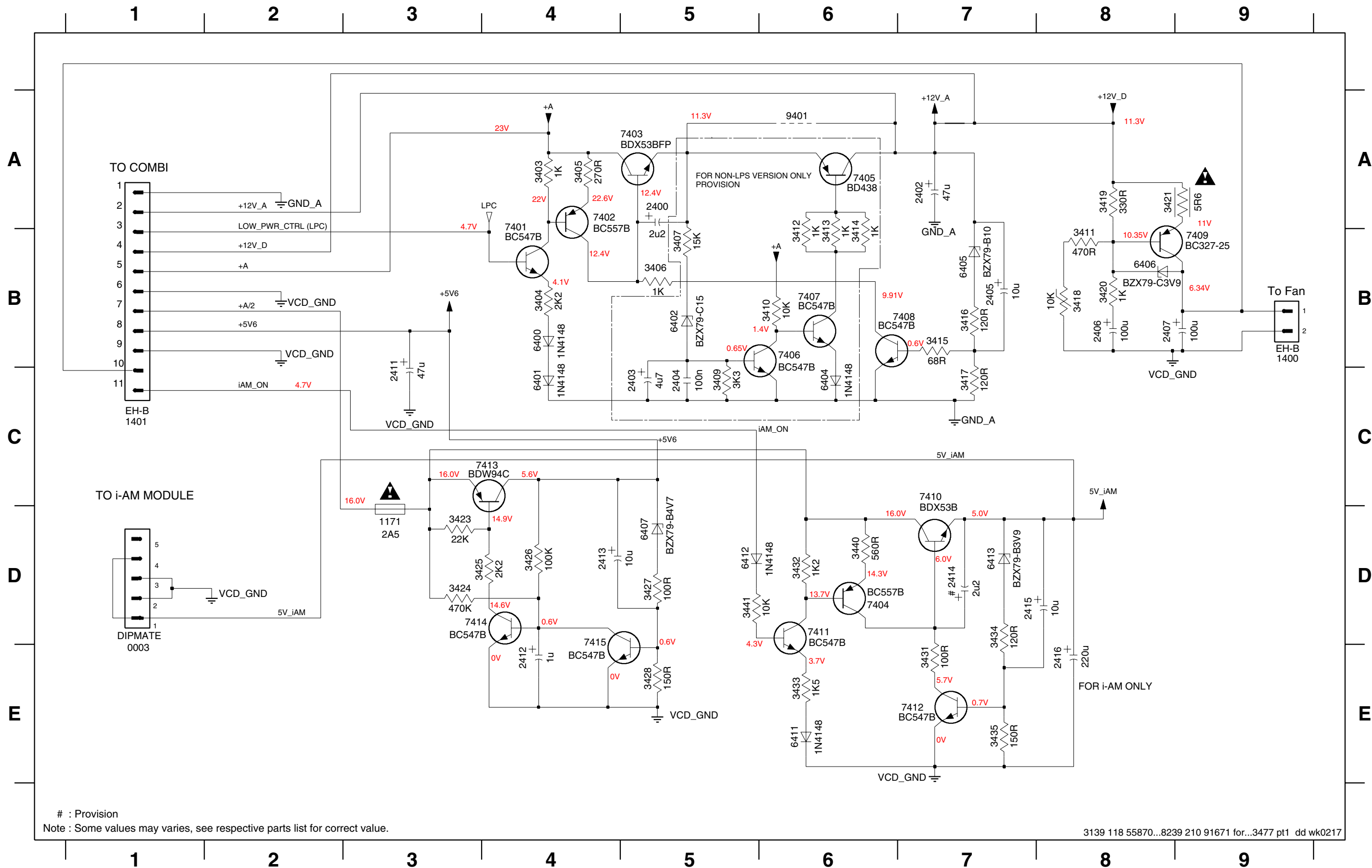
REGULATOR BOARD - COPPER SIDE VIEW

0003 A1	2406 A2	3404 A2	3414 B3	3424 A4	3435 A2	6407 A3	7406 B1	7415 A4
1171 A1	2407 A2	3405 B3	3415 B2	3425 A3	3440 A4	6411 A1	7407 B1	9401 B3
1400 A1	2411 A1	3406 B3	3416 B2	3426 A3	3441 A2	6412 A2	7408 B3	9402 A4
1401 A1	2412 A3	3407 B3	3417 B3	3427 A3	6400 B3	6413 A2	7409 A2	9403 B4
2400 B4	2413 A3	3409 B2	3418 A4	3428 A3	6401 B3	7401 B4	7410 A4	9404 A1
2402 B1	2414 A3	3410 B1	3419 A1	3431 A3	6402 B2	7402 B3	7411 A2	9405 A1
2403 B2	2415 A2	3411 A4	3420 A1	3432 A4	6404 B2	7403 B4	7412 A2	9406 A3
2404 B2	2416 A1	3412 B3	3421 A2	3433 A1	6405 B2	7404 A2	7413 A4	9407 A3
2405 A2	3403 B3	3413 B3	3423 A4	3434 A2	6406 A1	7405 A4	7414 A3	



REGULATOR BOARD - CIRCUIT DIAGRAM

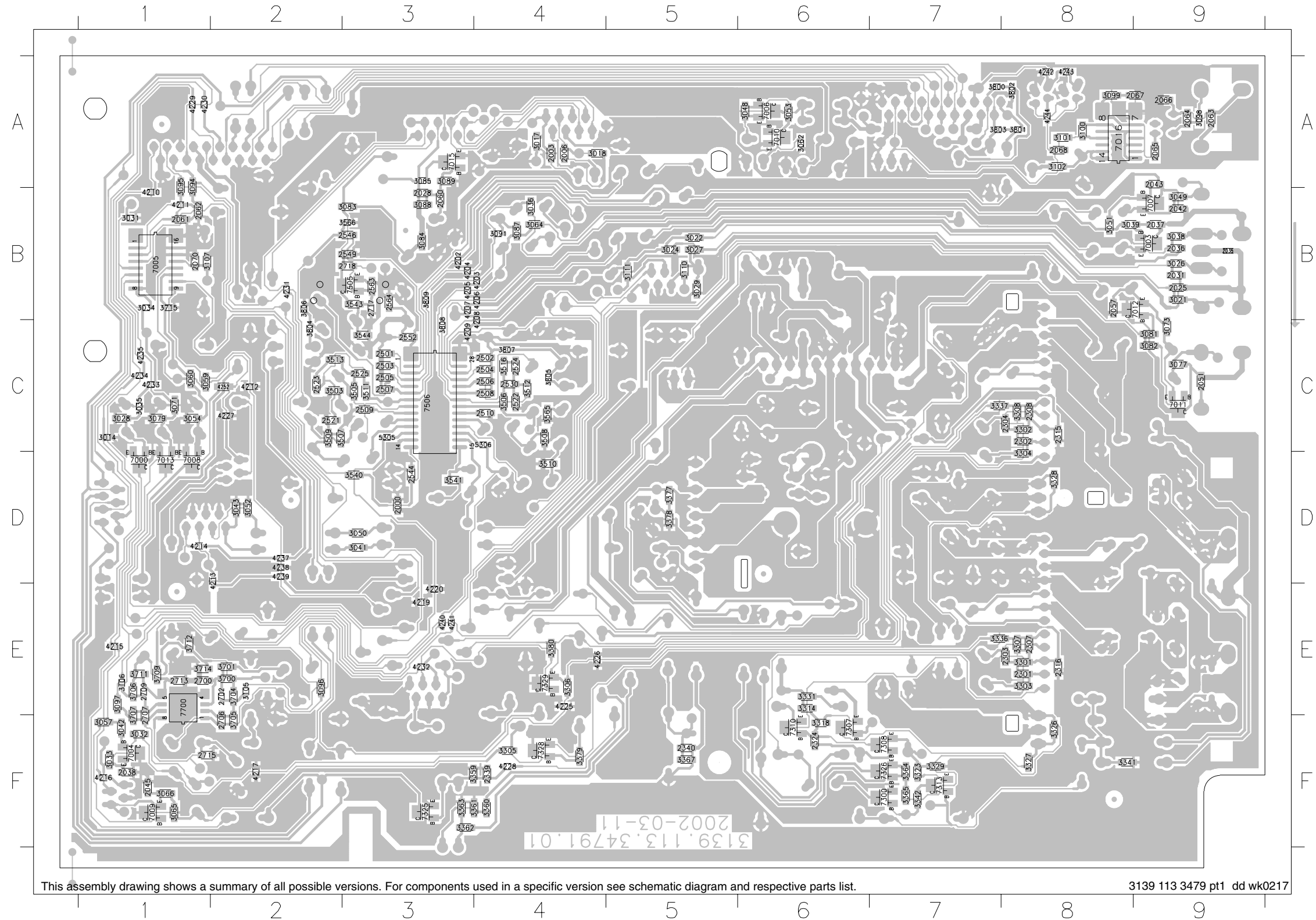
0003 D1	1401 C1	2403 C5	2406 B8	2412 E4	2415 D7	3404 B4	3407 B5	3411 B8	3414 B6	3417 C7	3420 B8	3424 D3	3427 D5	3432 D6	3435 E7	6400 B4	6404 C6	6407 D5	6413 D7	7403 A5	7406 B6	7409 B9	7412 E7	7415 E4
1171 D3	2400 A5	2404 C5	2407 B8	2413 D4	2416 E8	3405 A4	3409 C5	3412 B6	3415 B7	3418 B8	3421 A8	3425 D4	3428 E5	3433 E6	3440 D6	6401 C4	6405 B7	6411 E6	7401 A4	7404 D6	7407 B6	7410 C7	7413 C3	9401 A6
1400 B9	2402 A7	2405 B7	2411 C3	2414 D7	3403 A4	3406 B5	3410 B6	3413 B6	3416 B7	3419 A8	3423 D3	3426 D4	3431 E7	3434 D7	3441 D5	6402 B5	6406 B8	6412 D5	7402 A4	7405 A6	7408 B7	7411 D6	7414 D4	



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

COMBI BOARD - CHIP LAYOUT

2000	D3	2060	B3	2308	C8	2510	C4	2706	F2	3028	C1	3050	D3	3079	C1	3099	A8	3307	E8	3360	F4	3508	C4	3704	E2	3806	B2	4213	D2	4233	C1	7003	B9	7308	F7
2003	A4	2061	B1	2315	C8	2521	C2	2707	F1	3029	B5	3051	B8	3081	C9	3100	A8	3308	C8	3361	F3	3509	C2	3705	F2	3807	C4	4214	D1	4234	C1	7004	F1	7310	F6
2006	A4	2062	B1	2316	E8	2522	C4	2709	F1	3031	B1	3052	D2	3082	C9	3101	A8	3314	E6	3362	F3	3510	D4	3706	F1	3808	C3	4215	E1	4235	C1	7005	B1	7313	F7
2025	B9	2063	A9	2324	F6	2523	C2	2713	F1	3032	F1	3053	A6	3083	B3	3102	A8	3318	F6	3363	F3	3511	C3	3707	F1	3809	B3	4216	F1	4237	D2	7006	A6	7325	F3
2028	B3	2064	A9	2339	F4	2524	C4	2715	F1	3033	F1	3054	C1	3084	B3	3105	E2	3323	F7	3364	F7	3512	C4	3709	E1	4202	B3	4217	F2	4238	D2	7007	B9	7326	F7
2031	B9	2065	A9	2340	F5	2525	C3	2717	B3	3034	B1	3057	F1	3085	A3	3106	F1	3326	F8	3365	F7	3513	C2	3711	E1	4203	B4	4219	E3	4239	D2	7008	D1	7328	F4
2035	B9	2066	A9	2501	C3	2530	C4	2718	B3	3035	C1	3059	C1	3087	B4	3107	B1	3327	F8	3367	F5	3516	C4	3712	E1	4204	B3	4220	E3	4240	E3	7009	F1	7329	F4
2036	B9	2067	A9	2502	C4	2544	D3	3014	C1	3036	B4	3060	C1	3088	B3	3110	B5	3328	D8	3377	D5	3540	D3	3714	F1	4205	B3	4225	E4	4241	E3	7010	A6	7505	B4
2037	B9	2068	A8	2503	C3	2546	B3	3017	A4	3038	B9	3062	A6	3089	A3	3111	B5	3329	F7	3378	D5	3541	D3	3715	B1	4206	B4	4226	E4	4242	A8	7011	C9	7506	C3
2038	F1	2070	B1	2504	C4	2549	B3	3018	A4	3039	B8	3064	B4	3091	B4	3301	E8	3331	E6	3379	F4	3543	B3	3800	A7	4207	B3	4227	C2	4243	A8	7012	B9	7700	E1
2042	B9	2301	E8	2505	C3	2552	C3	3021	B9	3041	D3	3065	F1	3094	A1	3302	C8	3336	E7	3380	E4	3544	C3	3801	A8	4208	C4	4228	F4	4244	A8	7013	D1		
2043	A9	2302	C8	2506	C4	2563	B3	3022	B5	3042	F1	3066	F1	3095	A1	3303	E8	3337	C7	3503	C2	3565	C4	3802	A8	4209	C3	4229	A1	4252	C2	7015	A3		
2045	F1	2303	E8	2507	C3	2564	B3	3024	B5	3043	D2	3071	C1	3096	E2	3304	D8	3341	F8	3505	C3	3566	B4	3803	A7	4210	B1	4230	A1	5305	C3	7016	A8		
2051	C9	2304	C8	2508	C4	2700	F1	3026	B9	3048	A6	3073	C9	3097	F1	3305	F4	3342	F7	3506	C4	3700	E2	3804	C2	4211	B1	4231	B2	5306	C4	7300	F7		
2057	B8	2307	E8	2509	C3	2702	E2	3027	B5	3049	B9	3077	C9	3098	A9	3306	E4	3359	F3	3507	C2	3701	E2	3805	C4	4212	C2	4232	E3	7000	D1	7307	F6		

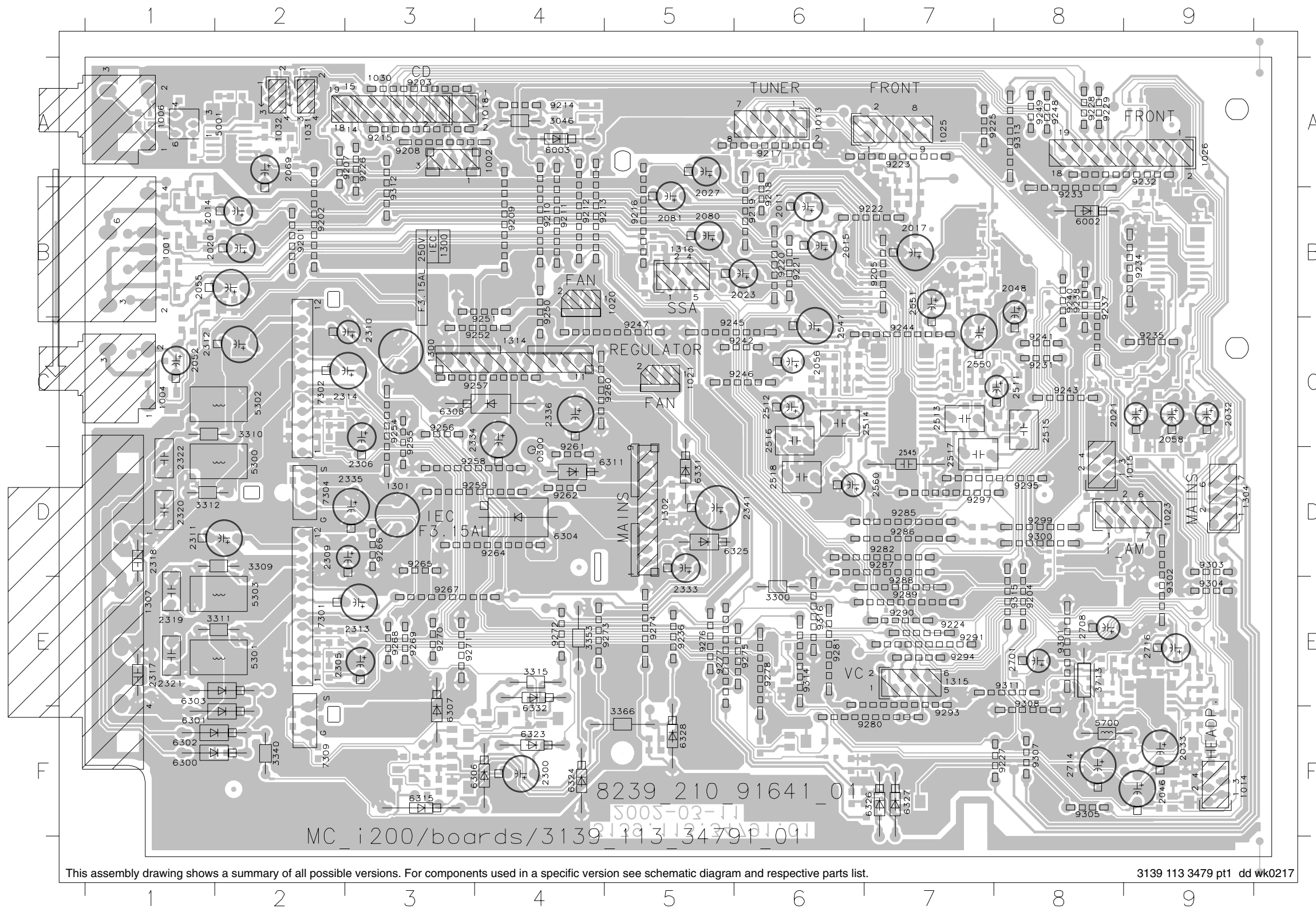


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3479 pt1 dd wk0217

COMBI BOARD - COMPONENT LAYOUT

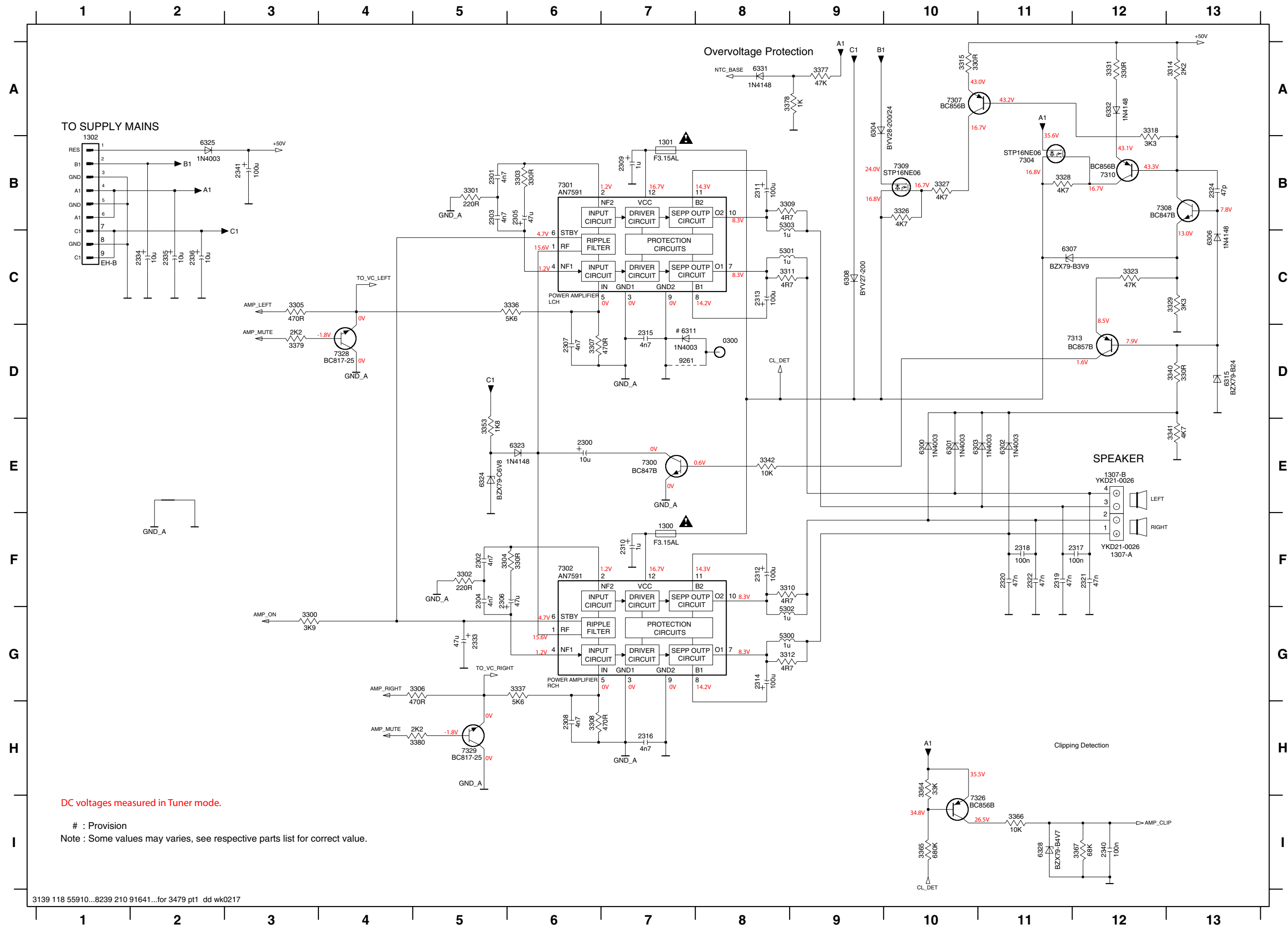
0300	D4	1026	A9	2014	B1	2056	C6	2314	C3	2512	C6	2708	E8	3713	E8	6304	D4	6332	F4	9210	B4	9223	A7	9237	B8	9251	C4	9266	D3	9280	F7	9297	D7	9314	E6
1001	B1	1030	A3	2015	B6	2058	C9	2317	F1	2513	C7	2714	F8	5001	A2	6306	F3	7301	E2	9211	B4	9224	E7	9238	B8	9252	C4	9267	E3	9281	E6	9299	D8	9315	E8
1002	A4	1031	A2	2017	B7	2069	A2	2318	D1	2514	C7	2716	E9	5300	D2	6307	F3	7302	C2	9212	B4	9225	A7	9240	B8	9254	C3	9268	E3	9282	D7	9300	D8	9316	E6
1004	C1	1032	A2	2020	B1	2080	B5	2319	F1	2515	C8	3046	A4	5301	E2	6308	C3	7304	D2	9213	B4	9226	A3	9241	C8	9255	C3	9269	E3	9285	D7	9301	F8		
1006	A1	1300	C3	2021	C8	2081	B5	2320	D1	2516	C6	3300	F6	5302	C2	6311	D5	7309	F2	9214	A4	9227	F8	9242	C6	9256	C3	9270	E3	9286	D7	9302	E9		
1013	A6	1301	D3	2023	B6	2300	F4	2321	F1	2517	D7	3309	D2	5303	F2	6315	F3	9201	B2	9215	A3	9228	A8	9243	C8	9257	C4	9271	F3	9287	D7	9303	D9		
1014	F9	1302	D5	2027	B5	2305	F2	2322	D1	2518	D6	3310	C2	5700	F8	6323	F4	9202	B2	9216	B5	9229	A8	9244	C7	9258	D3	9272	F4	9288	E7	9304	F9		
1015	D9	1304	D9	2032	C9	2306	D3	2333	F5	2545	D7	3311	E2	6002	B8	6324	F4	9203	A3	9217	A6	9231	C8	9245	C5	9259	D3	9273	E5	9289	E7	9305	F8		
1018	A4	1307	F1	2033	F9	2309	D2	2334	C3	2547	C6	3312	D1	6003	A4	6325	D6	9204	E8	9218	B6	9232	A9	9246	C6	9260	C5	9274	E5	9290	E7	9307	F8		
1020	B5	1314	C4	2046	F9	2310	C3	2335	D3	2550	C7	3315	F4	6300	F1	6326	F7	9205	B7	9219	B6	9233	B8	9247	C5	9261	C4	9275	E6	9291	E7	9308	E8		
1021	C5	1315	F7	2048	B8	2311	D1	2336	C4	2551	B7	3340	F2	6301	F1	6327	F7	9207	A3	9220	B6	9234	B9	9248	A8	9262	D4	9276	E5	9293	F7	9311	E8		
1023	D9	1316	B5	2052	C1	2312	C1	2341	D6	2560	D7	3353	F4	6302	F1	6328	F5	9208	A3	9221	B6	9235	C9	9249	A8	9264	D4	9277	E5	9294	E7	9312	B3		
1025	A7	2011	B6	2055	B1	2313	E3	2511	C8	2701	E8	3366	F5	6303	E1	6331	D5	9209	B4	9222	B7	9236	E5	9250	B4	9265	D3	9278	E6	9295	D8	9313	A8		



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

3139 113 13479 pt1 dd wk0217

COMBI CIRCUIT - POWER AMPLIFIER PART



TO SUPPLY MAINS

Overvoltage Protection

SPEAKER

Clipping Detection

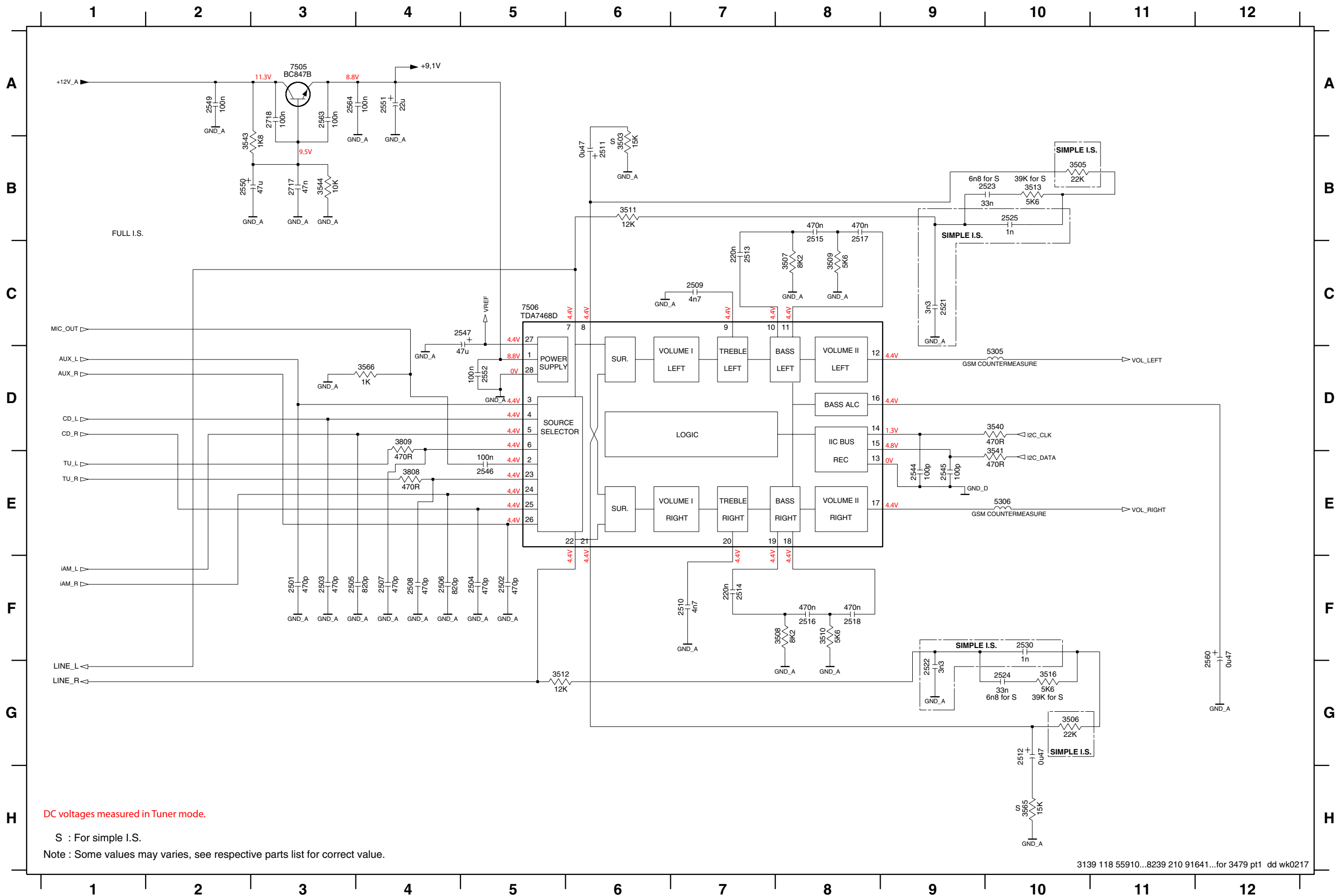
DC voltages measured in Tuner mode.

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

- 0300 D8
- 1300 F7
- 1301 B7
- 1302 B1
- 1307-A F12
- 2300 E6
- 2301 B5
- 2302 F5
- 2303 B5
- 2304 F5
- 2305 B6
- 2306 F5
- 2307 D6
- 2308 H6
- 2309 B7
- 2310 F7
- 2311 B8
- 2312 F8
- 2313 C8
- 2314 G8
- 2315 D7
- 2316 H7
- 2317 F12
- 2318 F11
- 2319 F11
- 2320 F11
- 2321 F12
- 2322 F11
- 2324 B13
- 2333 G5
- 2334 C2
- 2335 C2
- 2336 C2
- 2340 I12
- 2341 B3
- 3300 G3
- 3301 B5
- 3302 F5
- 3303 B6
- 3304 F5
- 3305 C3
- 3306 G5
- 3307 D6
- 3308 H6
- 3309 B8
- 3310 F8
- 3311 C8
- 3312 G8
- 3314 A13
- 3315 A10
- 3318 A12
- 3323 C12
- 3326 B10
- 3327 B10
- 3328 B11
- 3329 C13
- 3331 A12
- 3336 C6
- 3337 G6
- 3340 D13
- 3341 E13
- 3342 E8
- 3353 E5
- 3364 H10
- 3365 I10
- 3366 I11
- 3367 I12
- 3377 A9
- 3378 A8
- 3379 D3
- 3380 H5
- 5300 G8
- 5301 C8
- 5302 G8
- 5303 B8
- 6300 E10
- 6301 E10
- 6302 E11
- 6303 E10
- 6304 A9
- 6306 C13
- 6307 C11
- 6308 C9
- 6311 D7
- 6315 D13
- 6323 E6
- 6324 E5
- 6325 B2
- 6328 I11
- 6331 A8
- 6332 A12
- 7300 E7
- 7301 B6
- 7302 F6
- 7304 B11
- 7307 A10
- 7308 B13
- 7309 B10
- 7310 B12
- 7313 D12
- 7326 I10
- 7328 D4
- 7329 H5
- 9261 D7

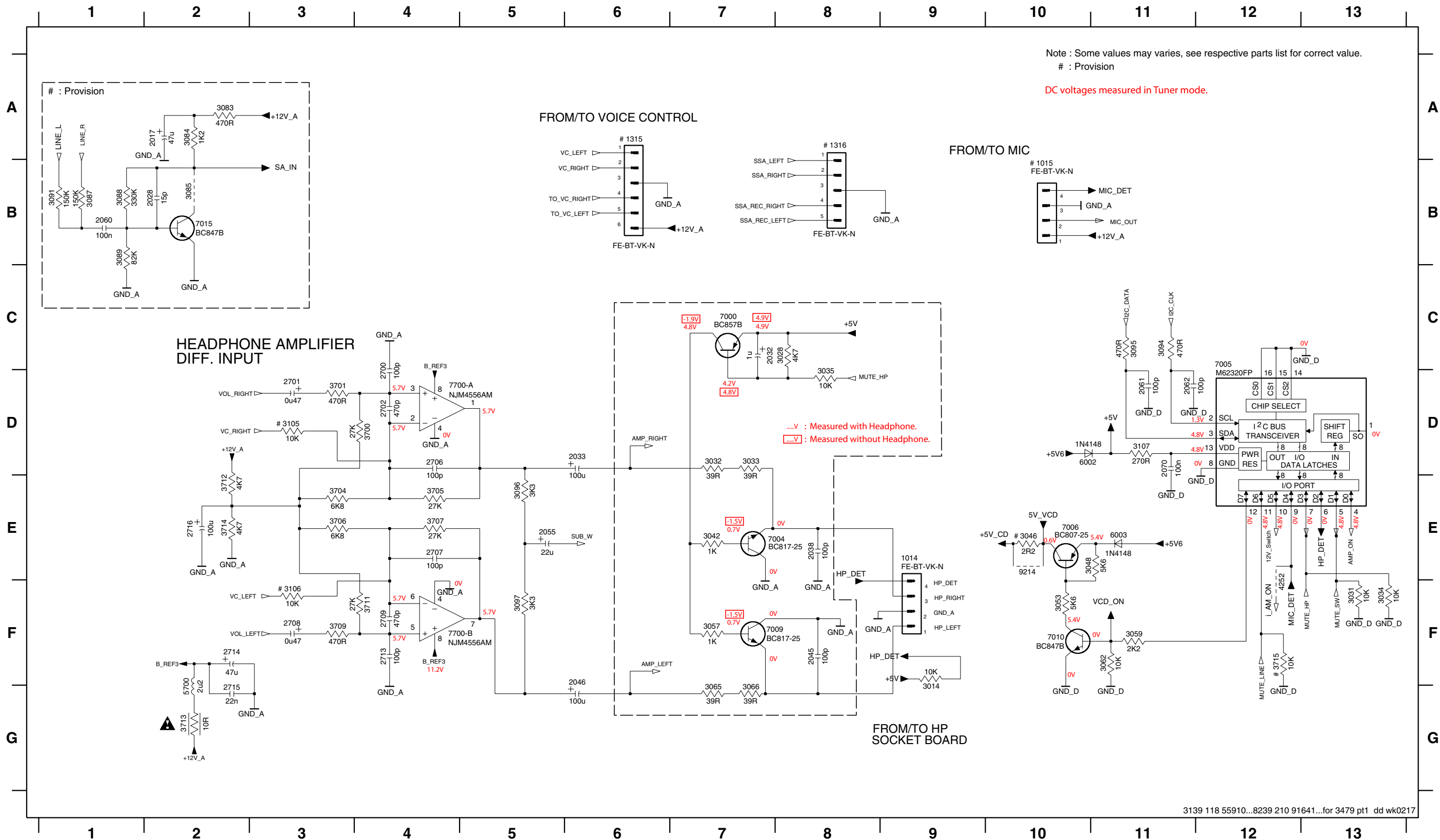
COMBI CIRCUIT - SOURCE SELECT & SOUND CONTROL PART

2501 F3	2504 F5	2507 F4	2510 F7	2513 C7	2516 F8	2521 C9	2524 G10	2544 E9	2547 C5	2551 A4	2563 A3	2718 A3	3506 G10	3509 C8	3512 G5	3540 D10	3544 B3	3808 E4	5306 E10
2502 F5	2505 F3	2508 F4	2511 B6	2514 F7	2517 B8	2522 G9	2525 B10	2545 E9	2549 A2	2552 D5	2564 A3	3503 B6	3507 C8	3510 F8	3513 B10	3541 E10	3565 H10	3809 D4	7505 A3
2503 F3	2506 F4	2509 C7	2512 G10	2515 B8	2518 F8	2523 B10	2530 F10	2546 E5	2550 B2	2560 F12	2717 B3	3505 B10	3508 F8	3511 B6	3516 G10	3543 B2	3566 D4	5305 D10	7506 C5



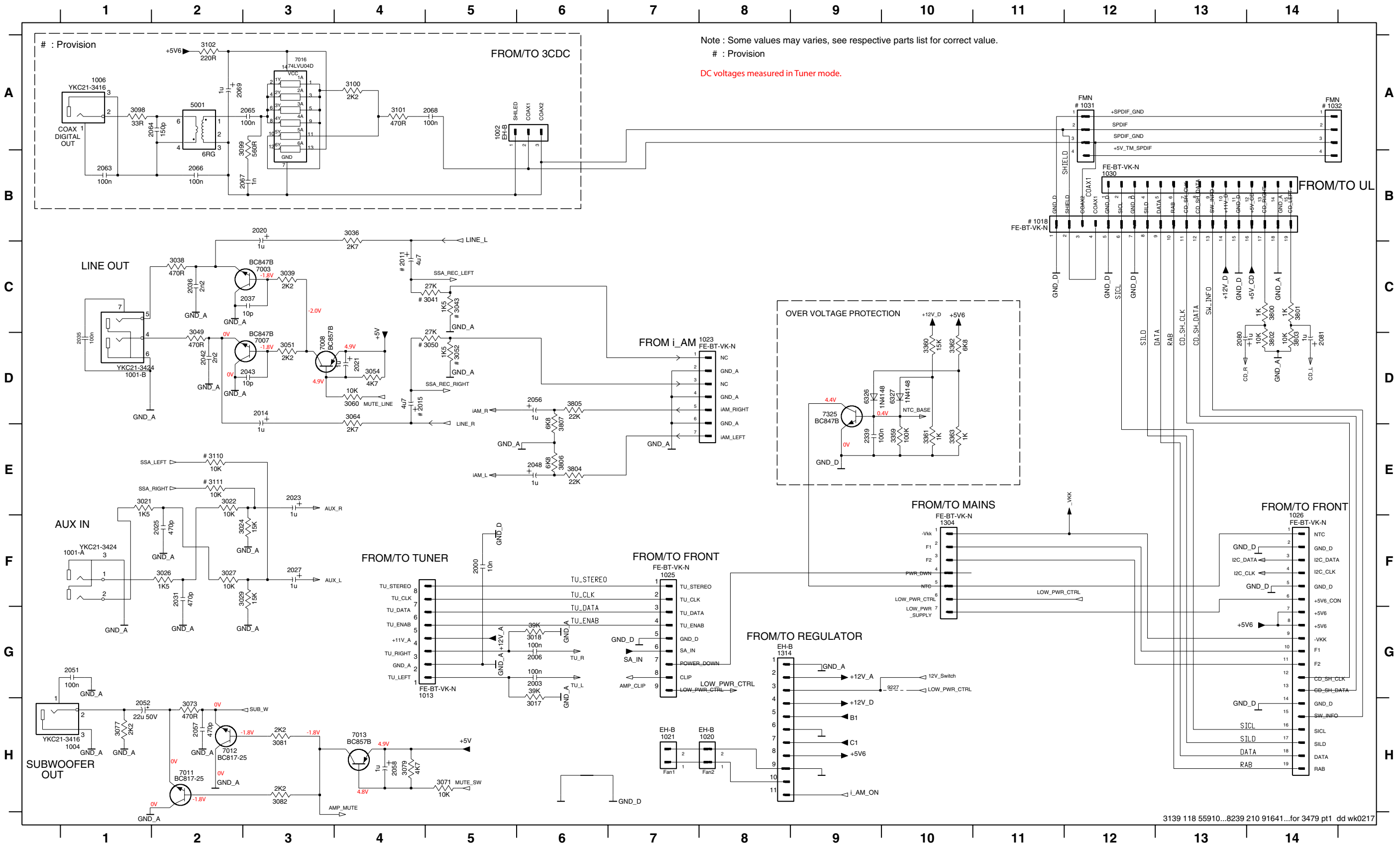
COMBI CIRCUIT - HEADPHONE AMPLIFIER PART

1014 E9	2017 A2	2038 E8	2060 B1	2700 D4	2707 E4	2714 F2	3028 C8	3034 F13	3048 E11	3062 F11	3084 A2	3089 B1	3096 E5	3107 D11	3705 E4	3711 F4	3715 F12	6003 E11	7006 E10	7700-A D4
1015 B10	2028 B2	2045 F8	2061 D11	2701 D3	2708 F3	2715 G2	3031 F13	3035 D8	3053 F10	3065 G7	3085 B2	3091 B1	3097 F5	3700 D4	3706 E3	3712 E2	4252 F12	7000 C7	7009 F7	7700-B F4
1315 A6	2032 C7	2046 F6	2062 D11	2702 D4	2709 F4	2716 E2	3032 D7	3042 E7	3057 F7	3066 G7	3087 B1	3094 C11	3105 D3	3701 D3	3707 E4	3713 G2	5700 G2	7004 E7	7010 F10	9214 E10
1316 A8	2033 D6	2055 E5	2070 D11	2706 D4	2713 F4	3014 F9	3033 D7	3046 E10	3059 F11	3083 A2	3088 B1	3095 C11	3106 F3	3704 E3	3709 F3	3714 E2	6002 D10	7005 C12	7015 B2	



COMBI CIRCUIT - CONNECTOR PART

1001-A F1	1006 A1	1021 H7	1030 B12	1314 G8	2011 C4	2021 D4	2031 F2	2042 D2	2052 H1	2063 B1	2067 B3	2081 D14	3021 E1	3027 F2	3039 C3	3050 D5	3060 D4	3077 H1	3098 A1	3102 A2	3360 D10	3800 C14	3804 E6	5001 A2	7007 D3	7013 H4
1001-B D1	1013 G4	1023 D7	1031 A12	2000 F5	2014 D3	2023 E3	2035 D1	2043 D3	2056 D6	2064 A2	2068 A5	2339 E9	3022 E2	3029 F3	3041 C5	3051 D3	3064 D4	3079 H4	3099 A3	3110 E2	3361 E10	3801 C14	3805 D6	6326 D9	7008 D3	7016 A3
1002 A5	1018 B11	1025 F7	1032 A14	2003 G6	2015 D4	2025 F2	2036 C2	2048 E6	2057 H2	2065 A3	2069 A2	3017 H6	3024 F3	3036 B4	3043 C5	3052 D5	3071 H5	3081 H3	3100 A4	3111 E2	3362 D10	3802 D14	3806 E6	6326 D10	7011 H2	7325 D9
1004 H1	1020 H8	1026 F14	1304 F10	2006 G6	2020 B3	2027 F3	2037 C3	2051 G1	2058 H4	2066 B2	2080 D13	3018 G6	3026 F2	3038 C2	3049 D2	3054 D4	3073 H2	3082 H3	3101 A4	3359 E10	3363 E10	3803 D14	3807 D6	7003 C3	7012 H2	9227 G10



Note : Some values may varies, see respective parts list for correct value.
 # : Provision
 DC voltages measured in Tuner mode.

MECHANICAL PARTS LIST

4822 492 11735 SPRING TRANS

ELECTRICAL PARTS LIST - REGULATOR BOARD**MISCELLANEOUS**1171 4822 071 52502 Δ Fuse RAD LT 2,5A**CAPACITORS**

2400 4822 124 22652 2,2uF 20% 50V
 2402 4822 124 80231 47uF 20% 16V
 2405 4822 124 11947 10uF 20% 16V
 2406 4822 124 23052 100uF 20% 16V
 2407 4822 124 23052 100uF 20% 16V
 2411 4822 124 80231 47uF 20% 16V
 2412 4822 124 22651 1uF 20% 50V
 2413 4822 124 11947 10uF 20% 16V
 2415 4822 124 11947 10uF 20% 16V
 2416 2022 020 00625 220uF 20% 16V

RESISTORS

3403 4822 050 11002 1k 1% 0,4W
 3404 4822 116 52256 2k2 5% 0,5W
 3405 4822 116 83876 270R 5% 0,5W
 3406 4822 050 11002 1k 1% 0,4W
 3407 4822 116 52244 15k 5% 0,5W
 3411 4822 116 83883 470R 5% 0,5W
 3415 4822 116 52199 68R 5% 0,5W
 3416 4822 116 52206 120R 5% 0,5W
 3417 4822 116 52206 120R 5% 0,5W
 3418 4822 117 12063 NTC DC 5W 10k 5%
 3419 4822 116 52219 330R 5% 0,5W
 3420 4822 050 11002 1k 1% 0,4W
 3421 4822 052 10568 Δ 5R6 5% 0,33W
 3423 4822 116 52257 22k 5% 0,5W
 3424 4822 116 52285 470k 5% 0,5W
 3425 4822 116 52256 2k2 5% 0,5W
 3426 4822 116 52234 100k 5% 0,5W
 3427 4822 116 52175 100R 5% 0,5W
 3428 4822 116 83868 150R 5% 0,5W
 3431 4822 116 52175 100R 5% 0,5W
 3432 4822 116 52207 1k2 5% 0,5W
 3433 4822 116 52243 1k5 5% 0,5W
 3434 4822 116 52206 120R 5% 0,5W
 3435 4822 116 83868 150R 5% 0,5W
 3440 4822 116 52226 560R 5% 0,5W
 3441 4822 050 21003 10k 1% 0,6W

DIODES

6400 4822 130 30621 1N4148
 6401 4822 130 30621 1N4148
 6405 4822 130 61219 BZX79-B10

6406 4822 130 31981 BZX79-C3V9
 6407 4822 130 34174 BZX79-B4V7
 6411 4822 130 30621 1N4148
 6412 4822 130 30621 1N4148
 6413 3198 010 53980 BZX79-B3V9

TRANSISTORS & INTEGRATED CIRCUITS

7401 4822 130 40959 BC547B
 7402 4822 130 44568 BC557B
 7403 9322 139 23687 BDX53BFP
 7404 4822 130 44568 BC557B
 7408 4822 130 40959 BC547B
 7409 4822 130 41246 BC327-25
 7410 5322 130 62071 BDX53B
 7411 4822 130 40959 BC547B
 7412 4822 130 40959 BC547B
 7413 4822 130 10847 BDW94C
 7414 4822 130 40959 BC547B
 7415 4822 130 40959 BC547B

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

ELECTRICAL PARTS LIST - COMBI BOARD**MISCELLANEOUS**

1001 4822 267 31823 Cinch Socket-Line out & Aux in
 1004 4822 267 31729 Cinch Socket - Subwoofer out
 1013 4822 265 11515 Flex Connector 8P
 1014 4822 267 10733 Flex Connector 4P
 1023 4822 267 10953 Flex Connector 7P
 1025 2422 025 14518 Flex Connector 9P
 1026 4822 265 11553 Flex Connector 19P
 1030 4822 265 10981 Flex Connector 15P
 1300 4822 252 11225 Δ Fuse RAD LF 3,15A
 1301 4822 252 11225 Δ Fuse RAD LF 3,15A
 1304 4822 267 10953 Flex Connector 7P
 1307 4822 267 31176 Speaker Terminal

CAPACITORS

2000 5322 126 11583 10nF 10% 50V
 2003 2238 586 59812 100nF 50V
 2006 2238 586 59812 100nF 50V
 2014 4822 124 22466 1uF 20% 50V
 2020 4822 124 22466 1uF 20% 50V
 2021 4822 124 22651 1uF 20% 50V
 2023 4822 124 22466 1uF 20% 50V
 2025 4822 126 13881 470pF 5% 50V
 2027 4822 124 22466 1uF 20% 50V
 2031 4822 126 13881 470pF 5% 50V
 2032 4822 124 22651 1uF 20% 50V
 2033 4822 124 23052 100uF 20% 16V
 2035 2238 586 59812 100nF 50V
 2036 4822 126 14238 2,2nF 50V
 2037 4822 122 33741 10pF 10% 50V
 2038 2020 552 94427 100pF 5% 50V
 2042 4822 126 14238 2,2nF 50V
 2043 4822 122 33741 10pF 10% 50V
 2045 2020 552 94427 100pF 5% 50V
 2046 4822 124 23052 100uF 20% 16V
 2048 4822 124 22466 1uF 20% 50V
 2051 2238 586 59812 100nF 50V
 2052 4822 124 81151 22uF 50V
 2055 4822 124 40764 22uF 100 V
 2056 4822 124 22466 1uF 20% 50V
 2057 4822 126 13881 470pF 5% 50V
 2058 4822 124 22651 1uF 20% 50V
 2061 2020 552 94427 100pF 5% 50V
 2062 2020 552 94427 100pF 5% 50V
 2070 2238 586 59812 100nF 50V
 2080 4822 124 22466 1uF 20% 50V
 2081 4822 124 22466 1uF 20% 50V
 2300 4822 124 12255 10uF 20% 50V
 2301 4822 126 13193 4,7nF 10% 63V
 2302 4822 126 13193 4,7nF 10% 63V
 2303 4822 126 13193 4,7nF 10% 63V
 2304 4822 126 13193 4,7nF 10% 63V
 2305 4822 124 40433 47uF 20% 25V
 2306 4822 124 40433 47uF 20% 25V
 2307 4822 126 13193 4,7nF 10% 63V
 2308 4822 126 13193 4,7nF 10% 63V
 2309 4822 124 22651 1uF 20% 50V
 2310 4822 124 22651 1uF 20% 50V
 2311 4822 124 40207 100uF 20% 25V
 2312 4822 124 40207 100uF 20% 25V
 2313 4822 124 40207 100uF 20% 25V
 2314 4822 124 40207 100uF 20% 25V
 2315 4822 126 13193 4,7nF 10% 63V
 2316 4822 126 13193 4,7nF 10% 63V
 2317 2020 561 90365 100nF +80/-20% 50V
 2318 2020 561 90365 100nF +80/-20% 50V
 2319 4822 121 43526 47nF 5% 250V
 2320 4822 121 43526 47nF 5% 250V
 2321 4822 121 43526 47nF 5% 250V
 2322 4822 121 43526 47nF 5% 250V
 2324 4822 126 11785 47pF 5% 50V
 2333 4822 124 40433 47uF 20% 25V
 2334 4822 124 12255 10uF 20% 50V
 2335 4822 124 12255 10uF 20% 50V
 2336 4822 124 12255 10uF 20% 50V
 2339 2238 586 59812 100nF 50V
 2340 2238 586 59812 100nF 50V
 2341 2020 012 93664 100uF 20% 50V
 2501 4822 126 13881 470pF 5% 50V
 2502 4822 126 13881 470pF 5% 50V
 2503 4822 126 13881 470pF 5% 50V
 2504 4822 126 13881 470pF 5% 50V
 2505 3198 016 38210 820pF 25V
 2506 3198 016 38210 820pF 25V
 2507 4822 126 13881 470pF 5% 50V
 2508 4822 126 13881 470pF 5% 50V
 2509 4822 126 13193 4,7nF 10% 63V
 2510 4822 126 13193 4,7nF 10% 63V
 2511 5322 124 41948 470nF 20% 50V
 2512 5322 124 41948 470nF 20% 50V
 2513 4822 121 42408 220nF 5% 63V
 2514 4822 121 42408 220nF 5% 63V
 2515 4822 121 51252 470nF 5% 63V
 2516 4822 121 51252 470nF 5% 63V
 2517 4822 121 51252 470nF 5% 63V
 2518 4822 121 51252 470nF 5% 63V
 2521 5322 126 11579 3,3nF 10% 63V
 2522 5322 126 11579 3,3nF 10% 63V
 2523 4822 126 14549 33nF 16V
 2524 4822 126 14549 33nF 16V
 2525 3198 016 31020 1nF 25V
 2530 3198 016 31020 1nF 25V
 2544 2020 552 94427 100pF 5% 50V
 2545 4822 122 33195 100pF 10% 50V
 2546 4822 126 14585 100nF 10% 50V

ELECTRICAL PARTS LIST - COMBI BOARD

CAPACITORS

2547	4822 124 81286	47uF 20% 16V	3065	2120 108 91909	RST SM 0603 ERJ3G 39R 5%
2549	2238 586 59812	100nF 50V	3066	2120 108 91909	RST SM 0603 ERJ3G 39R 5%
2550	4822 124 40433	47uF 20% 25V	3071	4822 051 30103	10k 5% 0,062W
2551	4822 124 81151	22uF 50V	3073	4822 051 30471	470R 5% 0,062W
2552	2238 586 59812	100nF 50V	3077	4822 051 30222	2k2 5% 0,062W
2560	5322 124 41948	470nF 20% 50V	3079	4822 051 30472	4k7 5% 0,062W
2563	2238 586 59812	100nF 50V	3081	4822 051 30222	2k2 5% 0,062W
2564	2238 586 59812	100nF 50V	3082	4822 051 30222	2k2 5% 0,062W
2700	2020 552 94427	100pF 5% 50V	3094	4822 051 30471	470R 5% 0,062W
2701	5322 124 41948	470nF 20% 50V	3095	4822 051 30471	470R 5% 0,062W
2702	4822 126 13881	470pF 5% 50V	3096	4822 051 30332	3k3 5% 0,062W
2706	2020 552 94427	100pF 5% 50V	3097	4822 051 30332	3k3 5% 0,062W
2707	2020 552 94427	100pF 5% 50V	3107	4822 051 30271	270R 5% 0,062W
2708	5322 124 41948	470nF 20% 50V	3300	4822 116 52276	3k9 5% 0,5W
2709	4822 126 13881	470pF 5% 50V	3301	4822 051 30221	220R 5% 0,062W
2713	2020 552 94427	100pF 5% 50V	3302	4822 051 30221	220R 5% 0,062W
2714	4822 124 81286	47uF 20% 16V	3303	4822 051 30331	330R 5% 0,062W
2715	3198 017 42230	22nF 50V	3304	4822 051 30331	330R 5% 0,062W
2716	4822 124 23052	100uF 20% 16V	3305	4822 051 30471	470R 5% 0,062W
2717	3198 017 34730	47nF 16V	3306	4822 051 30471	470R 5% 0,062W
2718	2238 586 59812	100nF 50V	3307	4822 051 30471	470R 5% 0,062W

RESISTORS

3014	4822 051 30103	10k 5% 0,062W	3308	4822 051 30471	470R 5% 0,062W
3017	4822 051 30393	39k 5% 0,062W	3309	4822 050 24708	4R7 1% 0,6W
3018	4822 051 30393	39k 5% 0,062W	3310	4822 050 24708	4R7 1% 0,6W
3021	4822 051 30152	1k5 5% 0,062W	3311	4822 050 24708	4R7 1% 0,6W
3022	4822 051 30103	10k 5% 0,062W	3312	4822 050 24708	4R7 1% 0,6W
3024	4822 051 30153	15k 5% 0,062W	3314	4822 051 30222	2k2 5% 0,062W
3026	4822 051 30152	1k5 5% 0,062W	3315	4822 116 52219	330R 5% 0,5W
3027	4822 051 30103	10k 5% 0,062W	3318	4822 051 30332	3k3 5% 0,062W
3028	4822 051 30472	4k7 5% 0,062W	3323	4822 117 12925	47k 1% 0,063W
3029	4822 051 30153	15k 5% 0,062W	3326	4822 051 30472	4k7 5% 0,062W
3031	4822 051 30103	10k 5% 0,062W	3327	4822 051 30472	4k7 5% 0,062W
3032	2120 108 91909	RST SM 0603 ERJ3G 39R 5%	3328	4822 051 30472	4k7 5% 0,062W
3033	2120 108 91909	RST SM 0603 ERJ3G 39R 5%	3329	4822 051 30332	3k3 5% 0,062W
3034	4822 051 30103	10k 5% 0,062W	3331	4822 051 30331	330R 5% 0,062W
3035	4822 051 30103	10k 5% 0,062W	3336	4822 051 30562	5k6 5% 0,063W
3036	4822 051 30272	2k7 5% 0,062W	3337	4822 051 30562	5k6 5% 0,063W
3038	4822 051 30471	470R 5% 0,062W	3340	4822 116 52219	330R 5% 0,5W
3039	4822 051 30222	2k2 5% 0,062W	3341	4822 051 30472	4k7 5% 0,062W
3042	4822 051 30102	1k 5% 0,062W	3342	4822 051 30103	10k 5% 0,062W
3048	4822 051 30562	5k6 5% 0,063W	3353	4822 116 52249	1k8 5% 0,5W
3049	4822 051 30471	470R 5% 0,062W	3359	4822 117 13632	100k 1% 0,62W
3051	4822 051 30222	2k2 5% 0,062W	3360	4822 051 30153	15k 5% 0,062W
3053	4822 051 30562	5k6 5% 0,063W	3361	4822 051 30102	1k 5% 0,062W
3054	4822 051 30472	4k7 5% 0,062W	3362	4822 051 30682	6k8 5% 0,062W
3057	4822 051 30102	1k 5% 0,062W	3363	4822 051 30102	1k 5% 0,062W
3059	4822 051 30222	2k2 5% 0,062W	3364	4822 051 30333	33k 5% 0,062W
3060	4822 051 30103	10k 5% 0,062W	3365	4822 051 30684	680k 5% 0,062W
3062	4822 051 30103	10k 5% 0,062W	3366	4822 050 21003	10k 1% 0,6W
3064	4822 051 30272	2k7 5% 0,062W	3367	4822 051 30683	68k 5% 0,062W
			3377	4822 117 12925	47k 1% 0,063W
			3378	4822 051 30102	1k 5% 0,062W

ELECTRICAL PARTS LIST - COMBI BOARD

3379	4822 051 30222	2k2 5% 0,062W	4214	4822 051 30008	0R Jumper 0603
3380	4822 051 30222	2k2 5% 0,062W	4215	4822 051 30008	0R Jumper 0603
3503	4822 051 30153	15k 5% 0,062W	4216	4822 051 30008	0R Jumper 0603
3505	4822 051 30223	22k 5% 0,062W	4217	4822 051 30008	0R Jumper 0603
3506	4822 051 30223	22k 5% 0,062W	4219	4822 051 30008	0R Jumper 0603
3507	4822 117 12902	8k2 1% 0,063W	4220	4822 051 30008	0R Jumper 0603
3508	4822 117 12902	8k2 1% 0,063W	4225	4822 051 30008	0R Jumper 0603
3509	4822 051 30562	5k6 5% 0,063W	4226	4822 051 30008	0R Jumper 0603
3510	4822 051 30562	5k6 5% 0,063W	4227	4822 051 30008	0R Jumper 0603
3511	4822 051 30123	12k 5% 0,062W	4228	4822 051 30008	0R Jumper 0603
3512	4822 051 30123	12k 5% 0,062W	4231	4822 051 30008	0R Jumper 0603
3513	4822 051 30562	5k6 5% 0,063W	4232	4822 051 30008	0R Jumper 0603
3516	4822 051 30562	5k6 5% 0,063W	4233	4822 051 30008	0R Jumper 0603
3540	4822 051 30471	470R 5% 0,062W	4234	4822 051 30008	0R Jumper 0603
3541	4822 051 30471	470R 5% 0,062W	4235	4822 051 30008	0R Jumper 0603
3543	4822 117 12903	1k8 1% 0,063W	4237	4822 051 30008	0R Jumper 0603
3544	4822 051 30103	10k 5% 0,062W	4238	4822 051 30008	0R Jumper 0603
3565	4822 051 30153	15k 5% 0,062W	4239	4822 051 30008	0R Jumper 0603
3566	4822 051 30102	1k 5% 0,062W	4240	4822 051 30008	0R Jumper 0603
3700	4822 051 30273	27k 5% 0,062W	4241	4822 051 30008	0R Jumper 0603
3701	4822 051 30471	470R 5% 0,062W	4252	4822 051 30008	0R Jumper 0603
3704	4822 051 30682	6k8 5% 0,062W	9208	4822 052 10108	△ 1R 5% 0,33W
3705	4822 051 30273	27k 5% 0,062W			
3706	4822 051 30682	6k8 5% 0,062W			
3707	4822 051 30273	27k 5% 0,062W			
3709	4822 051 30471	470R 5% 0,062W			
3711	4822 051 30273	27k 5% 0,062W			
3712	4822 051 30472	4k7 5% 0,062W			
3713	4822 052 10109	△ 10R 5% 0,33W			
3714	4822 051 30472	4k7 5% 0,062W			
3800	4822 051 30102	1k 5% 0,062W			
3801	4822 051 30102	1k 5% 0,062W			
3802	4822 051 30103	10k 5% 0,062W			
3803	4822 051 30103	10k 5% 0,062W			
3804	4822 051 30223	22k 5% 0,062W			
3805	4822 051 30223	22k 5% 0,062W			
3806	4822 051 30682	6k8 5% 0,062W			
3807	4822 051 30682	6k8 5% 0,062W			
3808	4822 051 30471	470R 5% 0,062W			
3809	4822 051 30471	470R 5% 0,062W			
4202	4822 051 30008	0R Jumper 0603			
4203	4822 051 30008	0R Jumper 0603			
4204	4822 051 30008	0R Jumper 0603			
4205	4822 051 30008	0R Jumper 0603			
4206	4822 051 30008	0R Jumper 0603			
4207	4822 051 30008	0R Jumper 0603			
4208	4822 051 30008	0R Jumper 0603			
4209	4822 051 30008	0R Jumper 0603			
4210	4822 051 30008	0R Jumper 0603			
4211	4822 051 30008	0R Jumper 0603			
4212	4822 051 30008	0R Jumper 0603			
4213	4822 051 30008	0R Jumper 0603			

COILS & FILTERS

5300	4822 157 62255	Coil 18,5 Turns
5301	4822 157 62255	Coil 18,5 Turns
5302	4822 157 62255	Coil 18,5 Turns
5303	4822 157 62255	Coil 18,5 Turns
5305	2422 549 44607	IND FXD EMI 100MHz 600R
5306	2422 549 44607	IND FXD EMI 100MHz 600R
5700	4822 157 62552	Coil 2,2uH 5%

DIODES

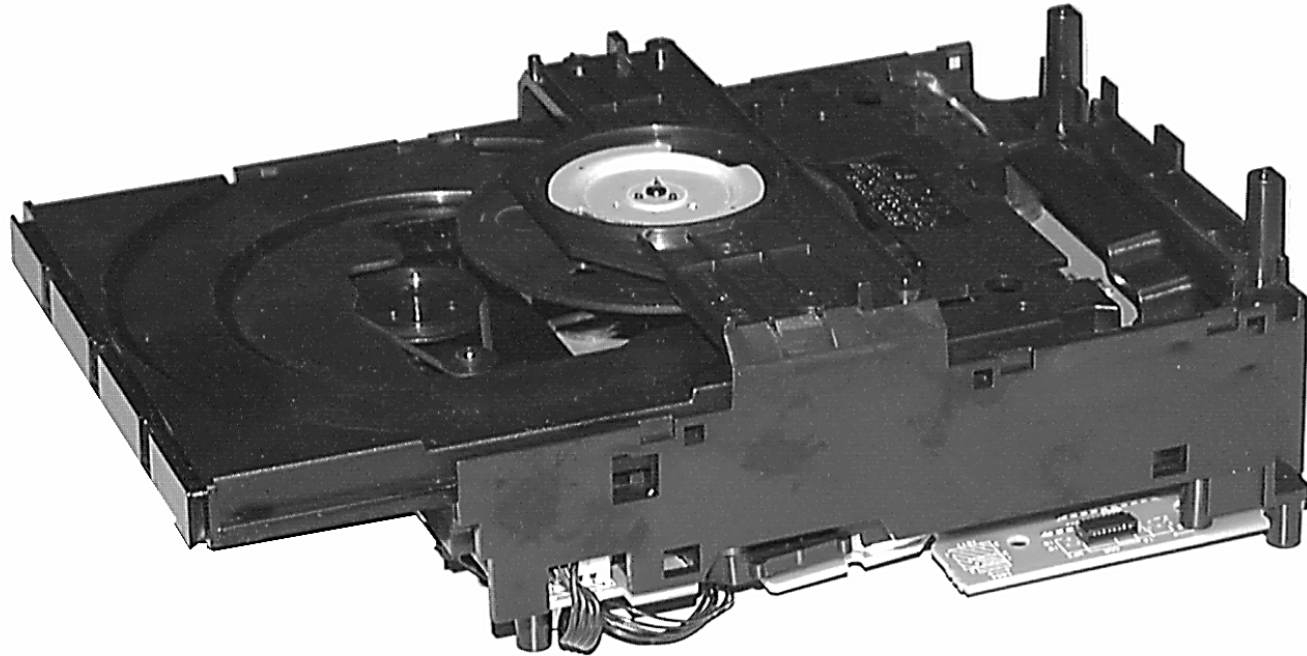
6002	4822 130 30621	1N4148
6003	4822 130 30621	1N4148
6300	4822 130 31878	1N4003G
6301	4822 130 31878	1N4003G
6302	4822 130 31878	1N4003G
6303	4822 130 31878	1N4003G
6304	9340 550 66112	BYV28-200/24
6306	4822 130 30621	1N4148
6307	3198 010 53980	BZX79-B3V9
6308	5322 130 31938	BYV27-200
6315	4822 130 34398	BZX79-B24
6323	4822 130 30621	1N4148
6324	4822 130 34278	BZX79-C6V8
6325	4822 130 31878	1N4003G
6326	4822 130 30621	1N4148
6327	4822 130 30621	1N4148
6328	4822 130 34174	BZX79-B4V7
6331	4822 130 30621	1N4148
6332	4822 130 30621	1N4148

ELECTRICAL PARTS LIST - COMBI BOARD

TRANSISTORS & INTEGRATED CIRCUITS

7000	4822 130 60373	BC857B
7003	5322 130 60159	BC847B
7004	4822 130 42804	BC817-25
7005	4822 209 17345	M62320FP
7006	5322 130 60845	BC807-25
7007	5322 130 60159	BC847B
7008	4822 130 60373	BC857B
7009	4822 130 42804	BC817-25
7010	5322 130 60159	BC847B
7011	4822 130 42804	BC817-25
7012	4822 130 42804	BC817-25
7013	4822 130 60373	BC857B
7300	5322 130 60159	BC847B
7301	9322 153 02682	AN7591
7302	9322 153 02682	AN7591
7304	4822 130 11578	STP16NE06
7307	4822 130 60373	BC856B
7308	5322 130 60159	BC847B
7309	4822 130 11336	STP16NE06FP
7310	4822 130 60373	BC856B
7313	4822 130 60373	BC857B
7325	5322 130 60159	BC847B
7326	4822 130 60373	BC856B
7328	4822 130 42804	BC817-25
7329	4822 130 42804	BC817-25
7505	5322 130 60159	BC847B
7506	9322 150 74668	TDA7468D
7700	4822 209 31378	NJM4556AM

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



Universal Loader

(Single Disc Tray Loader)

Layout stage .5

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Pin description.....10-2
 Blockdiagram10-3
 Component Layout Main Board10-4
 Circuit Diagram10-5
 Exploded View10-6
 Partslist10-7



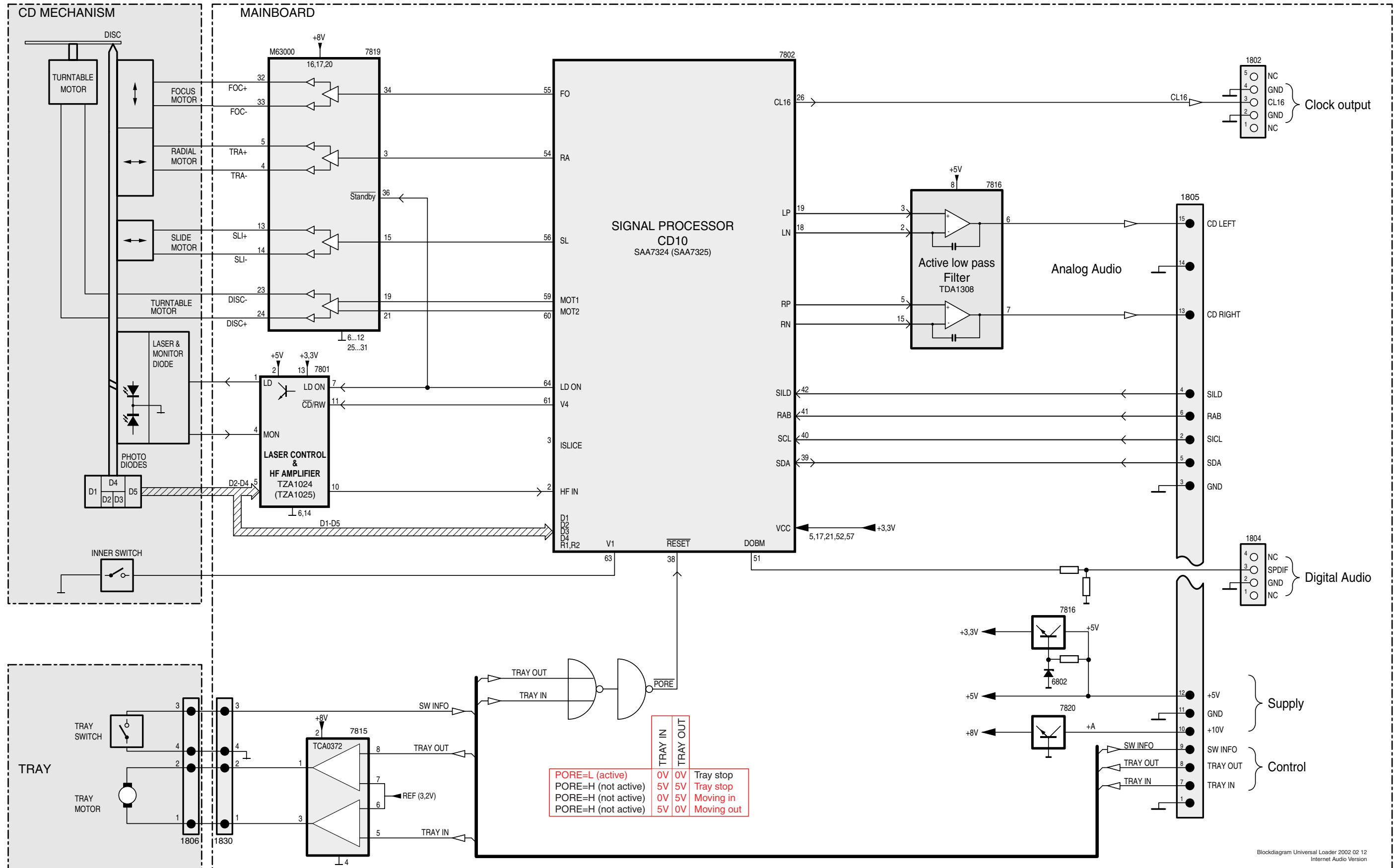
Laser Power Control & HF Amplifier (ADALAS) TZA1024/TZA1025

Pin	Name	Direction	Description
1	LD	HF-preamp → CD-drive	current output to laser diode
2	VCCL	+5V	laser supply voltage
3	CFIL	→ HF-preamp	external filter capacitor
4	MON	CD-drive → HF-preamp	laser monitor diode input
5	DIN	CD-drive → HF-preamp	central diode input
6	GND	GND	ground
7	PWRON	CD10 → HF-preamp	power-on select input
8	CMFB	VrefCD10 (+3,3V / 2)	common mode feedback voltage input
9	RFFB	→ HF-preamp	external RF feedback resistor
10	RFEQO	HF-preamp →	RF amplifier output
11	CDRW	CD10 → HF-preamp	gain select input for CDDA/CDRW
12	EQSEL	CD10 → HF-preamp	equalizer/speed select input
13	VCC2	+3,3V	supply voltage
14	RGADJ	GND	external laser supply gain adjust resistor

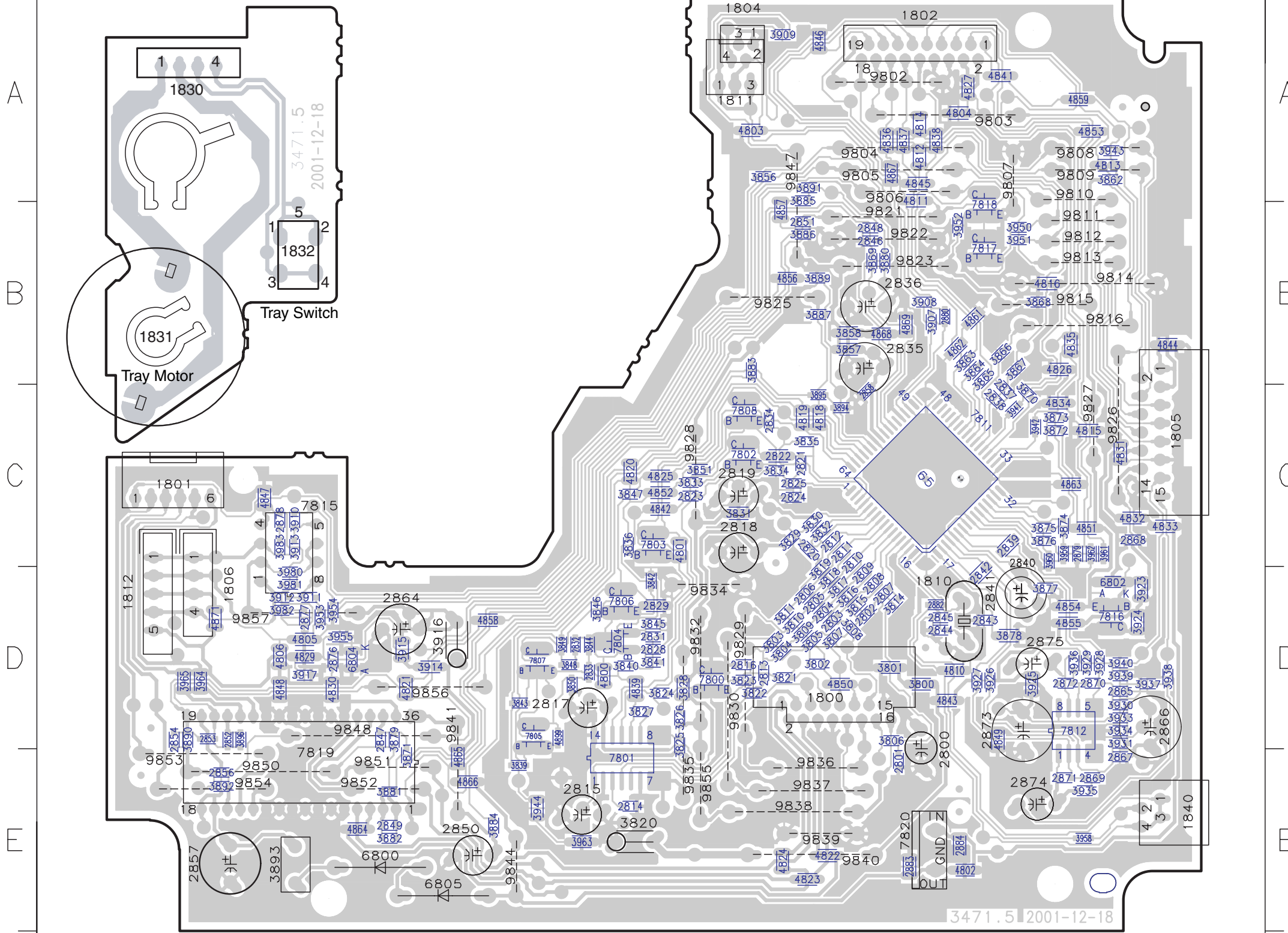
SIGNAL PROCESSOR (CD10) SAA7325

Pin	Name	Direction	Description
1	HFREF	→ CD10	comparator common mode input
2	HFIN	→ CD10	comparator signal input
3	ISLICE	CD10 →	current feedback from data slicer
4	VSSA1	GND	analog ground 1
5	VDDA1	+3,3V	analog supply voltage 1
6	IREF	CD10 →	reference current output pin
7	VRIN	CD10 →	reference voltage for servo ADC's
8	D1	CD-drive → CD10	unipolar current input (central diode signal input)
9	D2	CD-drive → CD10	unipolar current input (central diode signal input)
10	D3	CD-drive → CD10	unipolar current input (central diode signal input)
11	D4	CD-drive → CD10	unipolar current input (central diode signal input)
12	R1	CD-drive → CD10	unipolar current input (satellite diode signal input)
13	R2	CD-drive → CD10	unipolar current input (satellite diode signal input)
14	VSSA2	GND	analog ground 2
15	CROUT	CD10 → X-TAL	crystal/resonator output
16	CRIN	X-TAL → CD10	crystal/resonator input
17	VDDA2	+3,3V	analog supply voltage 2
18	LN	CD10 →	DAC left channel differential output - negative
19	LP	CD10 →	DAC left channel differential output - positive
20	VNEG	GND	DAC negative reference input
21	VPOS	+3,3V	DAC positive reference input
22	RN	CD10 →	DAC right channel differential output - negative
23	RP	CD10 →	DAC right channel differential output - positive
24	SELPLL	CD10 →	selects whether internal clock multiplier PLL is used
25	TEST1	GND	test control input 1; this pin should be tied low
26	CL16	CD10 → NPC	16.9344 MHz system clock output
27	DATA	CD10 → NPC	serial data output (3-state)
28	WCLK	CD10 → NPC	word clock output (3-state)
29	SCLK	CD10 → NPC	serial bit clock output (3-state)
30	EF	CD10 → NPC	C2 error flag output (3-state)
31	TEST2	GND	test control input 2; this pin should be tied low
32	KILL	CD10 → Mute control	kill output (programmable; open-drain)
33	VSSD1	GND	digital ground 2
34	V2/V3	CD10 → NPC	versatile I/O: input versatile pin 2 or output versatile pin 3 (open-drain)
35	WCLI	NPC → CD10	word clock input (for data loopback to DAC)
36	SDI	NPC → CD10	serial data input (for data loopback to DAC)
37	SCLI	NPC → CD10	serial bit clock input (for data loopback to DAC)
38	RESETn	µP → CD10	power-on reset input (active low)
39	SDA	µP ↔ CD10	microcontroller interface data I/O line (open-drain output)
40	SCL	µP → CD10	microcontroller interface clock line input
41	RAB	µP → CD10	microcontroller interface R/W and load control line input (4-wire bus mode)
42	SILD	µP → CD10	microcontroller interface R/W and load control line input (4-wire bus mode)
43	STATUS	CD10 →	servo interrupt request line/decoder status register output (open-drain)
44	TEST3	GND	test control input 3; this pin should be tied low
45	RCK	→ CD10	subcode clock input
46	SUB	CD10 →	P-to-W subcode bits output (3-state)
47	SFSY	CD10 → µP	subcode frame sync output (3-state)
48	SBSY	CD10 → NPC	subcode block sync output (3-state)
49	CL11/4	CD10 →	11.2896 MHz or 4.2336 MHz (for microcontroller) clock output
50	VSSD2	GND	digital ground 3
51	DOBM	CD10 →	bi-phase mark output (externally buffered; 3-state)
52	VDDD1P	+3,3V	digital supply voltage 2 for periphery
53	CFLG	CD10 →	correction flag output (open-drain)
54	RA	CD10 → servo driver	radial actuator output
55	FO	CD10 → servo driver	focus actuator output
56	SL	CD10 → servo driver	slide control output
57	VDDD2C	+3,3V	digital supply voltage 3 for core
58	VSSD3	GND	digital ground 4
59	MOTO1	CD10 → servo driver	motor output 1; versatile (3-state)
60	MOTO2	CD10 →	motor output 2; versatile (3-state)
61	V4	CD10 → HF-preamp	versatile output pin 4
62	V5	CD10 → HF-preamp	versatile output pin 5
63	V1	innerswitch → CD10	versatile input pin 1
64	LDON	CD10 → HF-preamp	laser drive on output (open-drain)

BLOCK DIAGRAM Universal Loader Internet Audio Version



CD Board Copperside view (Universal Loader)



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

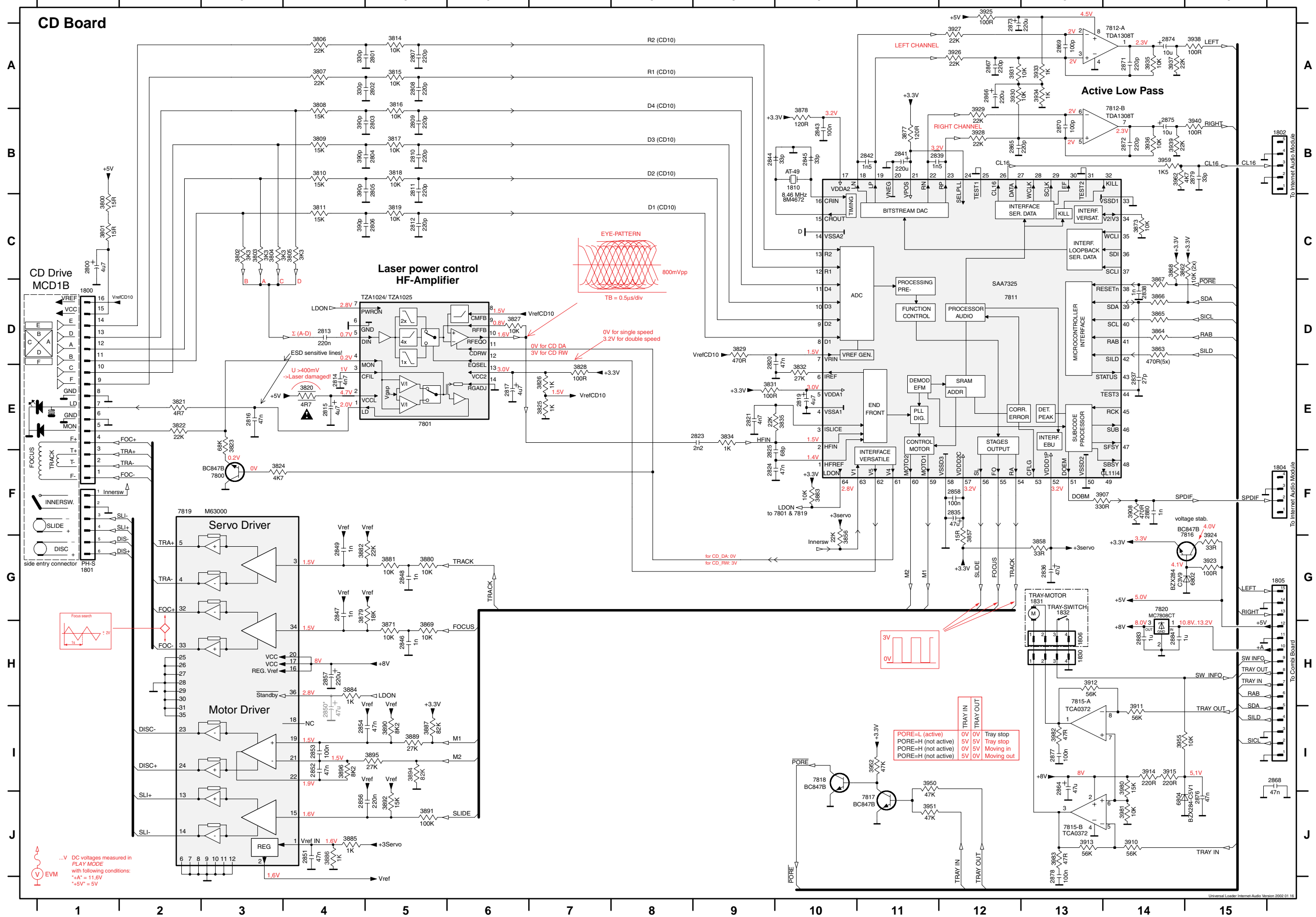
Mapping SMD parts

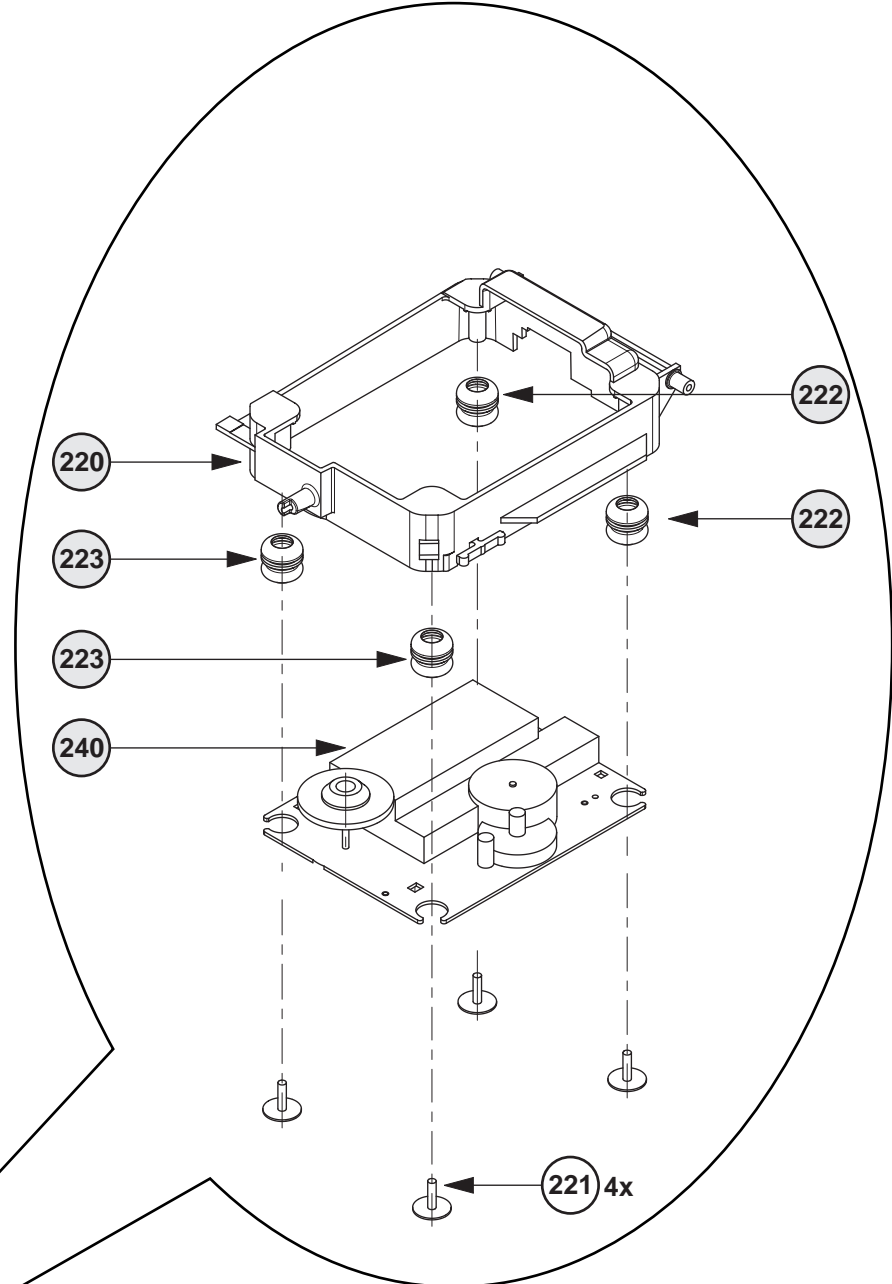
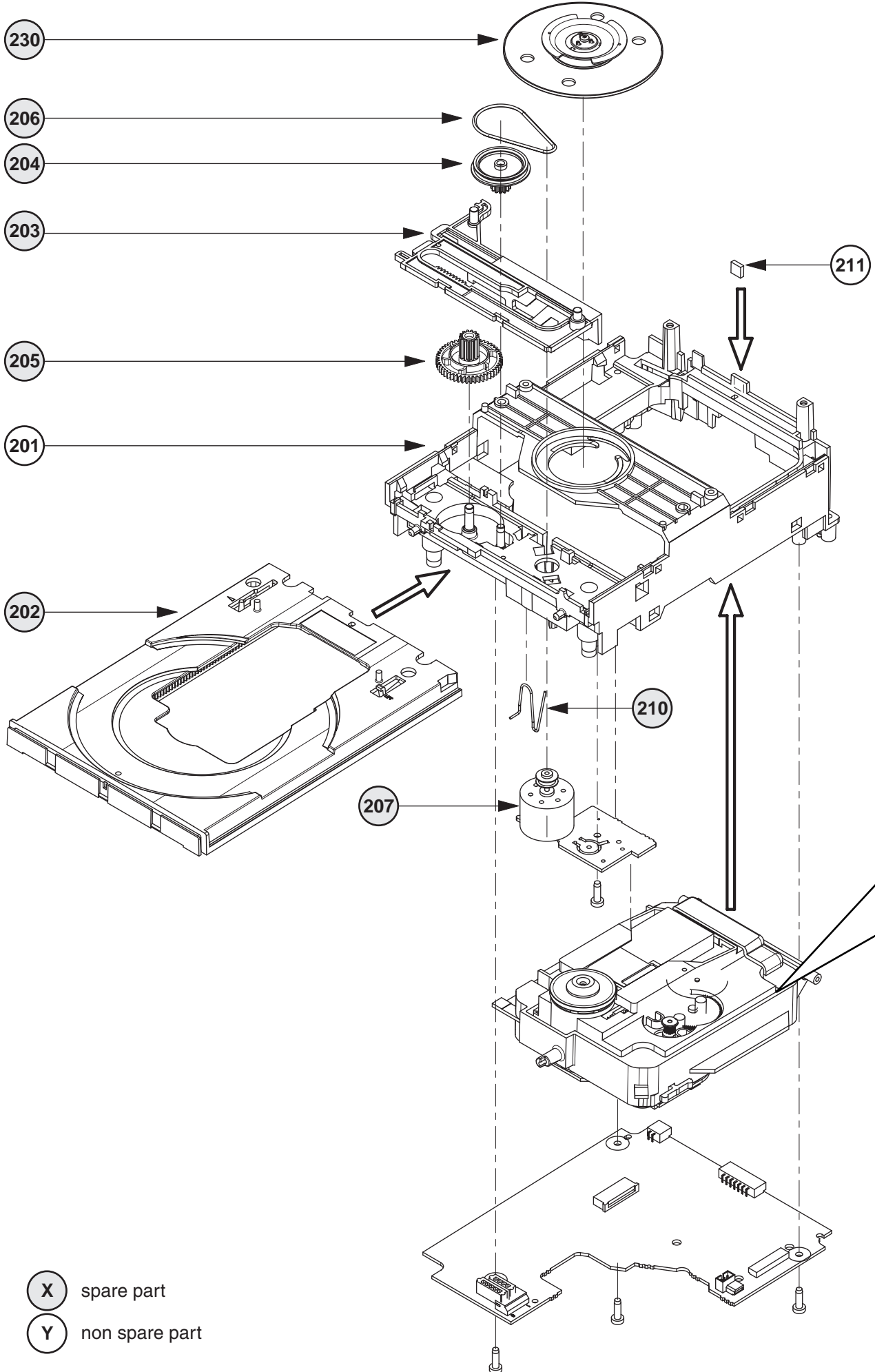
2801 E5	3835 C4	3961 C6
2802 D5	3836 C3	3962 C6
2803 D4	3839 E3	3963 E3
2804 D4	3840 D3	3964 D1
2805 D4	3841 D3	3965 D1
2806 D4	3842 D3	3980 D2
2807 D5	3843 D3	3981 D2
2808 D5	3844 D3	3982 D1
2809 D5	3845 D3	3983 C1
2810 C5	3846 D3	4800 D3
2811 C5	3847 C3	4801 C4
2812 C4	3848 D3	4802 E5
2813 D4	3849 D3	4803 A4
2814 E3	3850 D3	4804 A5
2816 D4	3851 C4	4805 D2
2820 C4	3856 A4	4806 D1
2821 C4	3857 B5	4810 D5
2822 C4	3858 B5	4811 A5
2823 C4	3862 A6	4812 A5
2824 C4	3863 B5	4813 A6
2825 C4	3864 B5	4814 A5
2828 D3	3865 B5	4815 C6
2829 D4	3866 B5	4816 B6
2831 D3	3867 B5	4818 C4
2832 D3	3868 B6	4819 C4
2833 D3	3869 B5	4820 C3
2834 C4	3870 C6	4821 D2
2837 C5	3871 E2	4822 E4
2838 C5	3872 C6	4823 E4
2839 C5	3873 C6	4824 E4
2842 D5	3874 C6	4825 C4
2843 D5	3875 C6	4826 B6
2844 D5	3876 C6	4827 A5
2845 D5	3877 D6	4829 D2
2846 B5	3878 D5	4830 D2
2847 D2	3879 D2	4831 C6
2848 B5	3880 B5	4832 C6
2849 E2	3881 E2	4833 C6
2851 B4	3882 E2	4834 C6
2852 D1	3883 B4	4835 B6
2853 D1	3884 E3	4836 A5
2854 D1	3885 A4	4837 A5
2856 E1	3886 B4	4838 A5
2858 C5	3887 B4	4839 D3
2865 D6	3889 B4	4841 A5
2867 E6	3890 D1	4842 C4
2868 C6	3891 A4	4843 D5
2869 E6	3892 E1	4844 B6
2870 D6	3894 C5	4845 A5
2871 E6	3895 C4	4846 A4
2872 D6	3896 D1	4847 C1
2876 D2	3907 B5	4848 D1
2877 D2	3908 B5	4849 D5
2878 C1	3909 A4	4850 D5
2879 C6	3910 C2	4851 C6
2880 B5	3911 D2	4852 C4
2882 D5	3912 D1	4853 A6
2883 E5	3913 C2	4854 D6
2884 E5	3914 D2	4855 D6
3800 D5	3915 D2	4856 B4
3801 D5	3917 D2	4857 B4
3802 D4	3923 D6	4858 D3
3803 D4	3924 D6	4859 A6
3804 D4	3925 D6	4861 B5
3805 D4	3926 D5	4862 B5
3806 D5	3927 D5	4863 C6
3807 D4	3928 D6	4864 E2
3808 D5	3929 D6	4865 E2
3809 D4	3930 D6	4866 E2
3810 D4	3931 D6	4867 A5
3811 D4	3933 D6	4868 B5
3814 D5	3934 D6	4869 B5
3815 D5	3935 E6	4871 D1
3816 D5	3936 D6	4899 D3
3817 D5	3937 D6	6802 D6
3818 D4	3938 D6	6804 D2
3819 D4	3939 D6	7800 D4
3821 D4	3940 D6	7801 E3
3822 D4	3941 C5	7802 C4
3823 D4	3942 C6	7803 C3
3824 D4	3943 A6	7804 D3
3825 D4	3944 E3	7805 D3
3826 D4	3950 B5	7806 D3
3827 D3	3951 B5	7807 D3
3828 D4	3952 B5	7808 C4
3829 C4	3953 D2	7811 C5
3830 C4	3954 D2	7812 D6
3831 C4	3955 D2	7816 D6
3832 C4	3958 E6	7817 B5
3833 C4	3959 C6	7818 B5
3834 C4	3960 C6	

HMC parts

1800 D4
1801 C1
1802 A5
1804 A4
1805 C6
1806 D1
1810 D5
1811 A4
1812 D1
1830 A1
1831 B1
1832 B1
1840 E6
2800 D5
2815 E3
2817 D3
2818 C4
2819 C4
2835 B5
2836 B5
2840 D6
2841 D5
2850 E3
2857 E1
2864 D2
2866 D6
2873 D5
2874 E6
2875 D6
2876 E3
3893 E2
3916 D2
6800 E2
6805 E2
7815 C1
7819 E2
7820 E5
9802 A5
9803 A5
9804 A5
9805 A5
9806 A5
9807 A6
9808 A6
9809 A6
9810 A6
9811 B6
9812 B6
9813 B6
9814 B6
9815 B6
9816 B6
9821 B5
9822 B5
9823 B5
9825 B4
9826 C6
9827 C6
9828 C4
9829 D4
9830 D4
9832 D4
9833 D4
9834 D4
9835 D4
9836 E4
9837 E4
9838 E4
9839 E4
9840 E4
9841 E2
9842 E3
9843 E3
9844 B4
9848 D2
9850 E1
9851 E2
9852 E2
9853 D1
9854 E1
9855 E4
9856 D2
9857 D2

1800	D1	1810	B10	2802	A5	2808	A5	2814	E4	2820	D10	2835	F12	2842	B11	2848	G5	2854	I5	2866	A12	2872	B14	2878	J13	3801	C1	3807	A4	3815	A5	3821	E2	3827	D6	3835	E10	3864	D14	3871	H5	3881	G5	3887	I5	3895	I5	3912	H13	3925	A12	3931	A12	3938	A15	3955	I15	3983	J13	7812A	A13	7818	I10
1801	G1	1830	H13	2803	B5	2809	B5	2815	E4	2821	E9	2836	G13	2843	B10	2849	G4	2856	J5	2867	A12	2873	A12	2879	B15	3802	C3	3808	B4	3816	B5	3822	E2	3828	E7	3836	G10	3865	D14	3873	B14	3882	G5	3889	I5	3896	I4	3913	J13	3926	A12	3933	A13	3939	B14	3959	B14	6802	G15	7812B	B13	7819	F3
1802	B15	1831	H13	2804	B5	2810	B5	2816	E3	2823	E9	2837	E14	2844	B10	2850	I4	2857	H4	2868	I15	2874	A14	2880	F14	3803	C3	3809	B4	3817	B5	3823	E3	3829	D9	3837	G12	3866	D14	3877	E11	3883	F10	3890	I5	3897	F13	3914	I14	3927	A13	3934	A14	3942	B14	6804	J15	7815-A	I13	7820	H15		
1804	F15	1832	H13	2805	B5	2811	B5	2817	E6	2824	F10	2839	D14	2845	B10	2851	J4	2858	F12	2869	A13	2875	B14	2883	H14	3804	C3	3810	B4	3818	B5	3824	F3	3831	E9	3838	E9	3846	D14	3878	B10	3884	H4	3891	J5	3908	F14	3915	I14	3928	G15	3929	B12	3936	B14	3951	J11	3981	J14	7801	E5	7816	G15
1805	H15	2800	C1	2806	C5	2812	C5	2818	E7	2825	F10	2839	B11	2846	H5	2852	I4	2864	I13	2870	B13	2876	J15	2884	H15	3805	C4	3811	C4	3819	C5	3825	E7	3832	E10	3840	E9	3848	C15	3868	C14	3879	G5	3885	J4	3892	J5	3910	J14	3923	G15	3929	B12	3936	B14	3951	J11	3981	J14	7801	E5	7816	G15
1806	H13	2801	A5	2807	A5	2813	A5	2819	E10	2828	H7	2841	B11	2847	G4	2853	I4	2865	B12	2871	A14	2877	I13	2880	C1	3806	A4	3814	A5	3820	E4	3826	E7	3834	E9	3842	E9	3850	D14	3869	H5	3880	G5	3886	J4	3894	I5	3911	I14	3924	G15	3930	A12	3937	A14	3952	I13	3982	I13	7811	D12	7817	J11



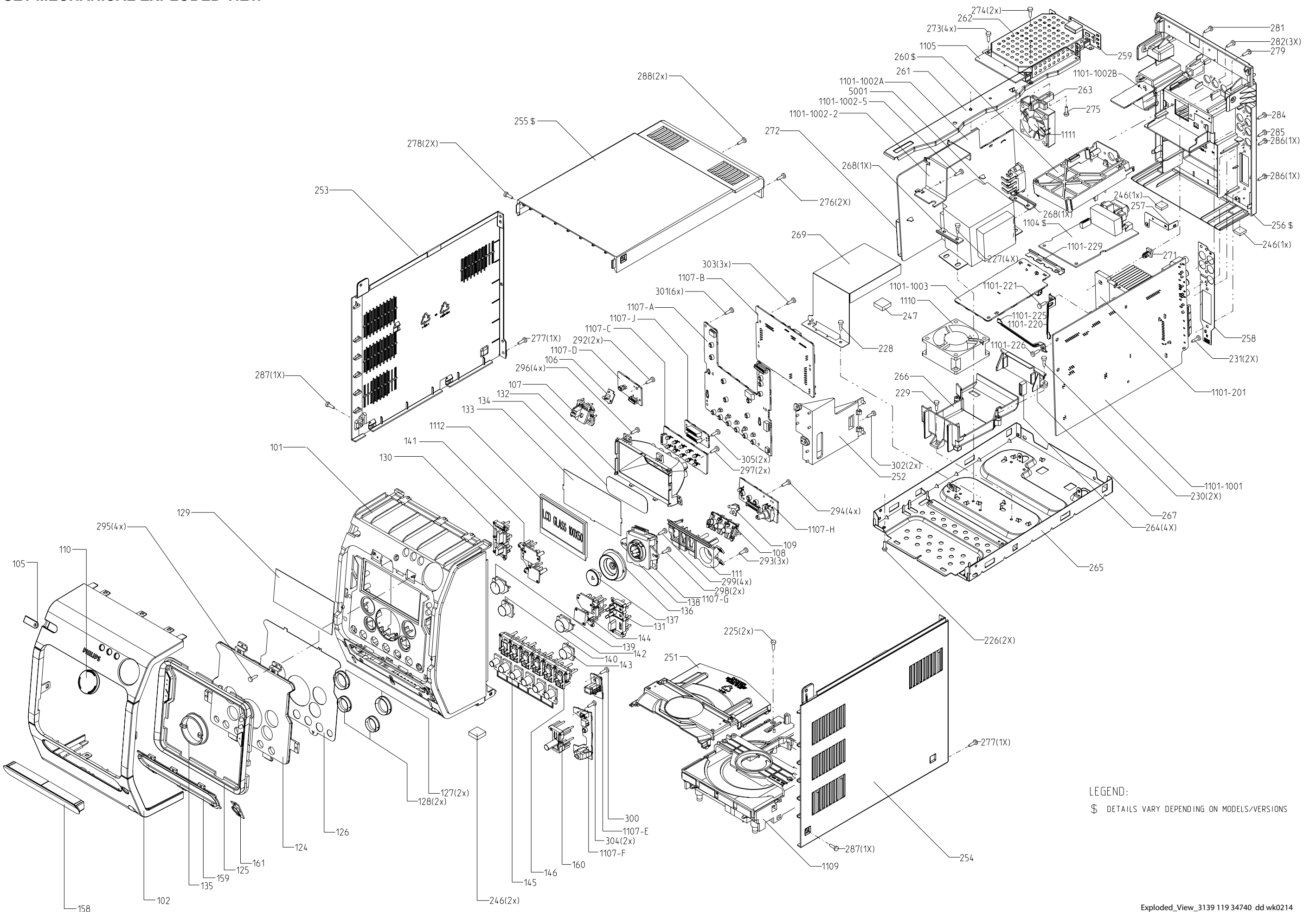


(X) spare part
 (Y) non spare part

MECHANICAL PARTS

202	3103 304 71780	DRAWER
203	3103 304 71800	SLIDER
204	3103 304 71820	PULLEY GEARWHEEL
205	3103 304 71830	GEARWHEEL
206	3103 304 71910	DRIVING BELT
207	3103 308 54160	MOTOR ASSY
210	3103 301 06660	SPRING SUPPORT
220	3103 304 71790	SUPPORT CD
222	4822 529 10387	RUBBER DAMPER CD DRIVE, FRONT
223	4822 529 10387	RUBBER DAMPER CD DRIVE, FRONT
230	3103 308 11940	CLAMPER ASSY DA11
240	3103 309 05350	CD DRIVE MCD1B

SET MECHANICAL EXPLODED VIEW



LEGEND:
 \$ DETAILS VARY DEPENDING ON MODELS/VERSIONS

MECHANICAL & ACCESSORIES PARTS LIST - MAIN UNIT**SCREW LISTS - MAIN UNIT**

0101	3139 118 18360	Cabinet Front	/21M/22	0350	3139 118 79770	L/R Loudspeaker Box /37	225	M3 x 15
0101	3139 118 17920	Cabinet Front (V2)	/37	0351	4822 303 50063	FM Aerial /21M/22	226	M3 x 6
0102	3139 118 17740	Panel Front		0351	4822 320 11094	FM Antenna /37	227	M3 x 6
0105	3139 118 17810	Cap Power Chrome		0356	3139 238 01820	Remote Control	228	M3 x 6
0107	3139 114 75000	Button Power		0384	2422 549 45067	Antenna AM Loop	229	M3 x 6
0108	3139 118 17770	Button Set Sound Chrome		0385	2422 070 98151	△ Mains Cord /21M/22	230	D3 x 10
0110	3139 118 17820	Knob Volume		0385	2422 070 98152	△ Mains Cord /37	231	M3 x 10
0111	3139 114 75330	Bracket Tilt Volume Rotary		0386	3139 118 78840	Cable LAN RJ45	273	M3 x 6
0124	3139 118 17750	Window Display		0387	3139 115 21560	Instruction For Use /21M	274	M3 x 6
0125	3139 114 75210	Frame Window Display		0387	3139 115 21550	Instruction For Use /22	275	M3 x 15
0127	3139 118 17830	Ring Next/Prev Chrome		0387	3139 115 21470	Instruction For Use /37	276	D3 x 12
0128	3139 118 17840	Ring Pause/Stop Chrome		0388	3139 115 21750	Instruction For Use Book 2 /22	277	M3 x 10
0130	3139 114 75020	Button Set Display Left		1105	3139 118 55840	Internet Audio Module G2.0	278	D3 x 10
0131	3139 118 17780	Button Set Display Right Chrome		1110	4822 361 11161	Fan KD1206PTS3	279	D3 x 16
0132	3139 114 75200	Lightbox		1111	3139 118 79760	Fan KD1245PFS3	281	D3 x 10
0135	3139 118 17930	Cap Knob Shuttle		1112	3139 118 79750	LCD (WD-G1306K-7BNN)	282	D3 x 10
0136	3139 118 17910	Knob Shuttle		1150	3139 110 36150	FFC Foil 15P/280/15P AD	284	D3 x 10
0137	3139 118 17790	Button Play Chrome		1151	3139 110 35400	FFC Foil 09P/340/09P AD	285	D3 x 10
0138	3139 114 75340	Bracket Tilt Shuttle		1152	3139 110 35240	FFC Foil 08P/280/08P AD Fold	286	D3 x 10
0139	3139 118 17870	Cap Prev (Back)		1153	3139 110 34600	FFC Foil 07P/280/07P AD	287	M3 x 6
0140	3139 118 17880	Cap Pause (Resume)		1154	4822 320 12654	FFC Foil 07P/220/07P AD	288	M3 x 10
0141	3139 114 75060	Button Set Prev/Pause		1155	3139 110 36140	FFC Foil 04P/180/04P AD	292	D3 x 10
0142	3139 118 17860	Cap Next (Enter)		1156	3139 110 34970	FFC Foil 19P/180/19P AD	293	D3 x 10
0143	3139 118 17890	Cap Stop (Cancel)		1157	3139 110 36020	FFC Foil 05P/340/05PAD 1MMP	294	D2 x 8
0144	3139 114 75070	Button Set Next/Stop		1158	3139 110 36010	FFC Foil 04P/340/04PAD 1MMP	295	D2 x 8
0145	3139 118 17900	Cap Mode		1162	4822 320 12702	FFC Foil 06P/140/06P BD	296	D3 x 10
0146	3139 114 75090	Button Set Mode/Options		1163	3139 110 36180	FFC Foil 09P/140/09P BD	297	D2 x 8
0158	3139 118 17760	Cover Tray		1164	3139 110 34360	FFC Foil 06P/280/06P AD	298	D3 x 10
0159	3139 114 75220	Ring Cover Tray		1174	3139 110 36220	FFC Foil 16P/180/16P AD	299	D2 x 8
0160	3139 118 17800	Button Open/Close		5001	3103 308 30790	△ Mains Transformer /21M	300	D3 x 10
0161	3139 118 17850	Ring Open/Close Chrome		5001	3103 308 30780	△ Mains Transformer /22	301	D3 x 10
0246	3139 113 27270	Foot Rubber 11x11x4mm		5001	3103 308 30770	△ Mains Transformer /37	302	D3 x 10
0252	3139 114 75290	Bracket Combi					303	D3 x 10
0253	3139 114 76040	Panel Left	/21M/22				304	D3 x 10
0253	3139 114 75880	Panel Left (V2)	/37				305	D2 x 8
0254	3139 114 76050	Panel Right	/21M/22					
0254	3139 114 75890	Panel Right (V2)	/37					
0255	3139 114 76030	Cover Top	/21M/22					
0255	3139 114 75380	Cover Top (V2)	/37					
0256	3139 114 76390	Panel Rear	/21M					
0256	3139 114 76020	Panel Rear	/22					
0256	3139 114 75370	Panel Rear (V2)	/37					
0263	3139 114 75310	Bracket Fan						
0271	3139 114 71010	Stopper Heatsink						
0350	3139 118 79780	L/R Loudspeaker Box	/21M/22					

LEFT/RIGHT LOUDSPEAKER BOX BREAKDOWN

9965 000 12993	Grille Assembly
9965 000 12994	Grommet (Dark Grey)
9965 000 12995	Rubber Foot

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